China and India: From where? Where to? A preliminary investigation[1]

Amiya Kumar Bagchi

Paper presented at

International Development Economics Associates (IDEAS) and
United Nations Development Programme (UNDP) conference
on

'Post Liberalisation Constraints on Macroeconomic Policies',
Muttukadu, Chennai, India
27th-29th January, 2006

[1] Draft only: not to be quoted

China and India: From where? Where to?
A preliminary investigation

[Draft only: not to be quoted]
Amiya Kumar Bagchi <idsk1@vsnl.net>

[This is a revised version of the Haydn Williams Lecture delivered at the Curtin University of Technology, Perth, Australia on 12 September 2005; I am indebted to participants in the discussion for their comments]

The past

The theme I have chosen acquires significance not only because China and India have received considerable media attention in recent years as leading performers in respect of economic growth but also because they have been the home of the two largest masses of humanity for roughly the last five hundred years, if not for a longer period. In 1600, when Queen Elizabeth was on the throne of England, Akbar was the emperor of India and the Ming dynasty was ruling China, the six leading countries of Western Europe (England, Holland, France, Germany, Italy and Spain) had a population of 55 million, India had a population around 125 million, and China had a population between 150 and 175 million. In global terms, their combined population was probably even a larger fraction of the number of human beings than it is today. The available evidence indicates that in material terms those inhabitants were doing at least as well as the Western European nations and continued to do so until 1750 in the case of India and down to the early 1800s in the case of China (Bagchi, 2005b, chapters 9-10).

Let me say, in parenthesis, that for me China and India are not just two geopolitical entities whose worth is to be measured by their national incomes, natural resources or military potential but as the collection of, say, 2.35 billion human beings out of a global population of 6.25 billion. I will primarily be concerned with some of the economic and political processes that have shaped their fortunes. But the focus of our inquiry will remain on how the capacities of those myriads are expanded or squeezed by those processes.

These two cradles of human survival and preservers of human memory were also the craft-workers and workshops of the world in the eras of Galileo, Kabir, Newton and Voltaire. In 1750, China was producing around 33 percent of the manufactures of the world, and India was producing about 25 per cent of global manufactures. All the countries that possess developed economies today were producing 27 per cent of the global output of manufactures (Simmons, 1985). They were also the principal exporters of manufactures to the world. European countries had to buy those manufactures with gold and silver, and those precious metals had to be obtained from the Americas by using slave labour in mines and plantations. African slaves were paid for in Indian textiles and European guns.

But their crafts and their lives went into a cataclysmic decline for anywhere between a century and half, and two centuries. In the case of India, this was largely the result of almost two centuries of British rule. China was devastated by successive wars launched by the Western powers from the 1840s, and these assaults were attended by some of the biggest peasant revolts and famines the world has witnessed. Then the military-led Japanese ruling class tried to conquer China, starting with their occupation of

today's Taiwan, Province of China, and proceeding through the 15-year war mounted by them from 1931. In this phase of their history, famines killed tens of millions of people in both countries (Bagchi, 2005b, chapter 18). Incomes per capita and industrial production declined precipitously. In the meanwhile, the countries of the North Atlantic seaboard industrialized at a fast rate. By 1913, China's output of manufactures had fallen to 3.6 per cent of the global total and India's had fallen to 1.4 per cent of that total (Simmons, 1985).

Where do they stand in those respects today? According to World Bank figures, in 2002, the proportion of China's industrial output was 7 per cent, and India's was barely 1 per cent of the global figure. For the sake of comparability with earlier figures, if we add the figures for Pakistan and Bangladesh, which are parts of the Indian subcontinent, that figure will crawl a few decimal points above 1 per cent and no more. In respect of global GDP, India's share was 1.6 per cent in 2002 and China's share was 4 per cent.

We should keep these figures in mind, if we are either elated or terrified by the progress these countries are supposed to be making in the economic sphere. China became a unified country again in 1949. The countries of the Indian subcontinent gained their independence from British rule in 1947. Politically, the two countries have followed two very different trajectories since those dates. India has been the most populous formal democracy in the world since her independence. China has been ruled by the Communist Party since the end of the civil war in 1949.

Even though China's share of world GDP remains low, it has been growing at a much faster rate than India's. It is necessary to point to some of the principal reasons for this difference between the two countries.

Socio-political conditions for ascent from a colonial economic structure

In my view, there were at least three basic reasons for China's lead in rates of economic growth and levels of human development, reasons that pre-date the market-oriented reforms China has been carrying out since 1978-79. The first was the eradication of landlordism in China, and the second was the drive to make elementary education accessible to everybody. The third was a much stronger sense of the need for national autonomy among the ruling class of China, despite their differences of opinion in other respects.

By now, everybody accepts that literacy is both a crucial constituent part of human capabilities and is also an instrument for gaining access to many facilities that society offers. Acquiring literacy in Chinese was much more difficult than in most of the Indian languages, for basic literacy in Chinese requires the memorizing of 12000 characters, but in most of the Indian languages, the number comes to well below a hundred. Yet China was already a much more literate country than India in 1970. This happened even though education was inscribed as a fundamental right in the Indian constitution.

Landlordism and its ideological and social complement in India, namely, the caste system were and remain a major barrier against the poor and disadvantaged sections of population gaining access to the public as well as private educational facilities. The poor peasant often did not have the money or the information needed to send his child to a school. On top of that, in landlord-and upper caste dominated parts of India, the upper classes often denied the poor access even to publicly funded educational institutions. Finally, the lack of a proper sense of what national autonomy and the continuous

extension of the human capacities of all citizens required debilitated the Indian policy-makers' ability to learn from others. If they had examined the history of today's developed countries, they would have known that it was abolition of landlordism in all forms and the universalization of literacy that freed the energy of ordinary people in those countries and allowed them to respond to opportunities opened by the market or the public sphere and bring about innovative changes in technologies, market arrangements and institutions furthering the public good. The Indian leaders remained content with making those superficial changes that did not disturb the social order too much. They allowed British technologies to be entrenched in Indian industry when they were falling behind those of the USA, Germany or Japan. They failed to learn from the East Asian nations when these were the only poor countries that were forging ahead in the global economy.

But because of the sheer diversity of languages, religions and ethnic affiliations ─I talk about affiliations rather than origins because I doubt whether many of us know about origins beyond three or four generations─ in India and because of the strong dialogic tradition, democracy remained vibrant in India and with that, a kind of homeostatic equilibrium prevailed. The Indian electorate has repeatedly punished an excess of authoritarianism or an excess of sectarianism. But the leaders have often failed to learn that lesson, as I will illustrate with examples from the attempt to force through neoliberal reforms in India.

The histories of India and China would seem to indicate that it is important to get the basic social structure right, so that nobody's human capacity is enfeebled by lack of access to health, nutrition, education and gainful employment because of the circumstances of their birth or familial affiliation. Once those institutions have been put in place, countries as large as India and China (and I would claim all reasonably complex societies) have to make experiments of their own, based on their *lived* rather than *simulated* experience in order to advance along the road of economic and human development. Thus the reform process itself has to be contextual and a gradualist development, not consist of bang-bang changes that have repeatedly landed Latin American countries and the post-Soviet regimes in an economic mess.

In the many comparisons between India and China, few seem to have asked two vital questions: (a) How did the Chinese, with about the same level of income as India from the 1950s to the 1970s, manage to invest almost 80% more of its national income than India? One major explanation is the abolition of landlordism and the redirection of both the surplus produced by peasants and artisans into productive investment (Riskin, 1975). I had pointed out in 1963, that on very conservative assumptions, Indian saving rates could go up to 19 per cent of national income, if the government was prepared to tax the conspicuous consumption of the rich (Bagchi, 1963). The gross domestic rate of saving (GDS) in 1962-63 was 12.7 per cent of GDP and the net domestic saving (NDS) ratio to GDP was a mere 7.1 per cent. It was not until 1976-77 that the GDS as a percentage of GDP crossed 19 per cent; it slipped below that rate in 1980-81 and recovered to 19.5 per cent only in 1985-86. The ratio of GDS to GDP has varied between 22 and 24 per cent. The ratio of NDS to GDP has not yet reached 19 per cent in India (EPWRF, 2004, Table 6A). In China, the ratio of accumulation, which is roughly equivalent to GDS, to national income, was 32.9 per cent in 1970 and 36.5 per cent in 1978 (Bagchi, 1987, Table 4.5). While it went down below 30 per cent in some years of

the 1980s, it has exceeded 35 per cent in most years since then and in some years has been as high as 44 per cent.

In both countries there has been only a small difference between GDS and gross domestic investment (GDI). The enormous inflow of FDI into China in the 1990s has been only a supplement to a very much larger GDI and not a substitute for it[2]. The sheer difference in rates of investment over a forty-year period is evident not only in the difference in the infrastructure in the two countries but also in the much higher proportion of new, higher-productivity capital in China than in India. China's investment was also directed to manufacturing to a much larger extent than in India. Again, the difference shows up in the values of manufactures produced in the two countries as well as in the numbers of the manufacturing workforce: in 2002, that number came to just 6.2 million in India as against 160 million in China (*Economist,* 5 March 2005). With its higher rates of investment, China has also been able to deliver a higher rate of growth of consumption to its citizens (Table 2).

Table 1 **China and India: Gross capital formation and gross domestic saving as a percentage of GDP, 1990, 2003**

	Gross capital formation		Gross domestic saving	
	1990	2003	1990	2003
China	35	44	38	47
India	24	24	23	22

Source: WDI, 2005.

Table 2 **Average annual growth (per cent) of household final consumption, aggregate and per capita**

	Aggregate consumption		Consumption per capita	
	1980-90	1990-2003	1980-90	1990-2003
China	8.8	8.5	7.2	7.4
India	4.2	4.9	2.0	3.1

Source: WDI, 2005.

The history of human beings is not a matter of betting on rival candidates for winning a tournament. What happens to China and India is critical for all humankind. The challenge for both China and India is to prevail in restraining the insane military competition for resources of the earth and the monopoly of space, in co-operation with the peace-loving people everywhere. Internally, the challenge for India is to effect the social transformation that will allow her to move away from a forced trajectory of body-

[2] Moreover, doubts have been expressed about the real volume of net foreign investment in China (Chandra, 1999). A considerable fraction of it is round-tripping Chinese capital brought back as foreign investment in order to avail of the privileges enjoyed by foreign investors. Geng (2004) has estimated that in 2000, the round-tripping investment accounted for US$16.286 billion out of a total inward FDI of US $40.715 billion.

and-brain shopping as the facilitators of exports and growth. For China, the challenge is to move away from 'the two ends outside' strategy as the principal instrument for increasing her income and employment, while protecting her environment.

The foundations of China's economic growth were laid in the twenty-five years before the start of economic reforms in 1979. The structural features of an economy capable of generating rates of saving and investing of between 35 per cent and 45 per cent of its GDP were also put in place during that period, as I have already mentioned. China's economic reforms started in 1978-79, very largely because of a felt need to increase the incomes in the countryside and for workers who did not have the privilege of working in state enterprises (Fei Xiaotong, 1986). What the economic reforms sought to do was to create the incentives and improve the infrastructure that could fruitfully utilize the enormous productive potential of that economy. The leaders in charge of the reforms also proved adept at changing the direction of the investment and production flows in accordance with the opportunities offered by a globalizing world economy.

By contrast, in India, the foundations for what has been called 'modern economic growth' by Simon Kuznets were laid in a rather half-hearted manner. In particular, the Indian leadership was unable to carry out land reforms providing security of tenure to peasants, release the enormous potential surplus of resources and labour for productive investment, and free the peasants from coercive use and waste of their labour and resources at the service of landlords and upper-caste lineages. There was also a correlated failure to rescue the majority of the Indian people from the slough of illiteracy and denial of information for improving their own lives.

The Chinese and the Indians in their own ways set about constructing a developmental state that would create an upward spiral of sustainable economic and human development. In both countries, industrial growth accelerated and changed the structure of incomes. Agriculture produced a lower and lower fraction of national income. But the pattern of industrial growth produced its own problems. Large-scale industry was capital-intensive, located in urban agglomerations and failed to generate enough employment to absorb tens of millions of peasants who suffered from disguised and open unemployment. Fast commercialization further displaced many peasants from their older means of subsistence. Regional imbalances painfully and starkly revealed the difference between those who gained from the increased prosperity and those who did not.

Ascent in China: agriculture

From 1979, the Chinese policy-makers adopted a three-pronged strategy to address the problems of low farm incomes. The first was to create incentive structures for and direct investment towards diversification of agricultural activities. The incentives included raising the prices of farm products and providing more income-earning opportunities to families by exempting above-quota output from delivery to the state authorities and allowing more and more of the output to be sold in open markets. While continuing to stress increasing grain production (in China, this includes the production of tubers), farmers were encouraged to produce higher-value crops such as cotton, sugarcane and oilseeds and to diversify into animal husbandry, fishing and arboriculture. The second was to promote non-farm activities through the town and village enterprises. The third was to try and redirect both domestic investment

and foreign direct investment towards the more backward regions in the Northwest and Southwest of the country.

There was a substantial growth of farmers' incomes between 1979 and 1985, and the release of energy of farmers and non-farm workers laid the foundations of accelerated growth in China. The inputs took the form of greater use of fertilizers and water and their more efficient utilization, and diversification into better-paying cash crops such as cotton and sugarcane. But they also originated in research into new crop varieties. China, for example, achieved notable successes in producing new rice hybrids under the leadership of Yuan Longping. He 'developed the genetic materials, namely, the A-, B-, and R-line, for breeding hybrid rice varieties in 1973. The method was successful, and hybrid rice was produced commercially in China from 1976. Yuan's research provided an effective approach for China to increase its rice yield on a large scale—in general, the yield from hybrid rice was 20% higher than from conventional varieties. He also played a leading role in the nationwide research programme on hybrid rice development. He has shared his knowledge and ideas with foreign scientists, providing them with crucial breeding materials for the commercial production of hybrid rice in their own countries.

'In 1984, Yuan developed several new approaches for hybrid rice breeding: the one-line approach for the development distant hybrids with fixed heterosis; the two-line system for the development of inter-subspecies hybrid; and the three-line system for the development of inter-varietal hybrids…. Some superior two-line hybrids were commercially produced in 1995' (APBN, 1997).

After the start of the economic reforms in 1979, the per capita consumption of food in China rose substantially. Between 1978 and 1984, the consumption per capita of food grains rose from 196.0 to 251.3 kg, that of edible oil from 1.6 to 4.7 kg, that of pork from 7.7 to 13.0 kg and that of eggs from 2.0 to 3.9 kg (Riskin, 1989)[3] Despite some poor harvests in the 1990s, the supply and availability of food steadily outpaced population growth. The 1992 National Nutrition survey in China showed that the average energy intake of urban residents was 2395 kcal, 101 kcal higher than in rural areas (Zhang, 1999). Grain production reached a peak of more than 500m tons in 1996, but has shown a decline since then. But that fall has been more than made up by substantial increases in the output and availability of meat and marine products, oil seeds and vegetables. Between 1980 and 1997, the output of poultry eggs increased from 2.57 million tons to 21.25 million tons. Between 1978 and 1997, meat consumption per capita per year increased from 8.86 kg to 26.98 kg in urban areas and from .62 kg to 17.1 kg in rural areas (Zhang, 1999). As a recent report in the **Economist** put it 'According to the Food and Agriculture Organisation, the number of undernourished people in China fell from 194m in 1990-92 to 142m a decade later. In India, the corresponding numbers are 221m and 216m, meaning it is still home to a quarter of the world's undernourished. Some 47% of India's under-five-year-olds are underweight, compared with 10% in China. Infant mortality is 65 per 1000 in India against 30 in China; life expectancy at birth is 63 in India against 71 in China; and adult literacy is 57% against 91%' (**The Economist**, 6 March 2005, 'A survey of India and China', p.6). According to the UNICEF database, the proportion of underweight children went down in the 1990s by 49 per cent

[3] For the political economy of Chinese development from the Communist revolution of 1949 to the early years of economic reforms under the leadership of Deng Xiaoping, see Riskin, 1087.

(Http://www.childinfo.org/eddb/malnutrition/; accessed on 17.3.05). But the Chinese policy-makers are not complacent about their achievements. At a conference to mark the 23rd World Food Day, 16 October 2003, Zhang Bowen, Vice-Minister for Agriculture reported that about 120 million Chinese still suffered from malnutrition (http://lists.iww.org/pipermail/iww-news/2003-October/003601.html: accessed on 17.3.2005).

The rural-urban income differentials in China narrowed in the period from 1978 to the end of the 1980s but widened again in the 1990s. Rural incomes increased much more slowly than urban incomes (UNDP, 2005a, chapter II). The fall in farm incomes in the wake of the adoption of the highly asymmetrical WTO regime for agricultural subsidies and trade and the loss of valuable agricultural land to ambitious projects of resource- and capital-intensive projects have led to widespread farmer protests. The Chinese authorities were all the time conscious of these problems. In the reform era, authorities have regularly welcomed the good results but have pointed to areas of concern in various official pronouncements. For example, the Statistical Communiqué on National Economic and Social Development in 2000, made by the National Bureau of Statistics, acknowledged 'the persistence of various serious problems throughout 2000, including structural "contradictions", slow growth of farm incomes, daily living difficulties among various groups, poor enterprise competitiveness, and lack of progress in the implementation of SOE reform' (CQ, 2001, p.514). Again, the Statistical Communiqué for 2003 drew attention to 'the still lagging growth of farm incomes, excessively high fixed investment growth, …, widening income gaps and "relatively difficult" living conditions for low income groups, and heavy pressure on economic resources and the environment' (CQ, 2004, p. 567).

I have already indicated some of the Chinese successes in the pre-reform period. I shall argue that the post-reform period has been marked by such outstanding achievements because the reforms have been guided by a clear public purpose and have come in waves that have ridden on earlier successes and taken into account failures of some of the reforms. In particular, contrary to some of the received opinion, the reforms have not passively responded to markets but have been aimed at creating markets and regulating them at the same time. Moreover, the stakeholders in these entities have not been simply private individuals seeking to maximize their profit, but local, provincial and central government organs, collectives of employees and managers and firms to which improved products and new technologies have been transferred. The Chinese experiments have shown that if there is no monopolization of technologies and there is continuous communication among all the stakeholders about the direction of change, then it is possible to create a vibrant, competitive market without meeting too many problems of market failure at the micro-level. At the macro level, the continuous deployment of increases in output for further investment and technological upgradation has allowed them to largely escape the problem of demand deficiency, which is a constant attendant of capitalist growth.

The imponderables

Economists and other analysts of Chinese performance have yet to admit that their usual frameworks of analysis do not allow them to explain China's meteoric resurgence

in the world economy. There are two imponderables they have to grapple with. First, how did China, whose property rights lack transparency as defined by the mainstream theorists of property rights still manage to generate the incentives for an ever-increasing flow of productive investment? Secondly, how did they raise the levels of technology and productivity in most sectors of industry over a quarter of a century?

As it happens, the tentative answers to these questions are intertwined with one another. Mainstream economists generally think of innovations and absorption of new technologies as a Schumpeterian process driven primarily by private profit motives and proceeding through economic natural selection to pick out the efficient survivors of the competitive struggle (see, for example, Mansfield et al.1977). In Bagchi (1988) I had argued, however, that there were at least three routes to the absorption of technology and dynamic self-reliance in an economy. The first was the profit motive emphasized by mainstream economists and policy-makers. This motive can play a role even in an economy dominated by the public sector because (a) the merit of the workers and managers is often judged by the profits generated by their enterprise and (b) the earnings of the workers and their social security benefits may be linked to the profits by the enterprise. The second route to the absorption of technology and its upgradation can be associationist. One of the best studies of this route has been provided by Piore and Sabel (1984) in their analysis of the Lyonese silk industry in the nineteenth century. A series of small workshops specializing in particular segments of the manufacturing process were coordinated by merchant-manufacturers and larger firms while the regulatory framework prescribing fair prices and wages was laid down by the municipal authorities. This organization proved remarkably quick to new techniques, new raw materials and new markets. This is only one illustration of the co-operation and competition that characterizes the process of imitation, absorption and innovation in a dynamic setting. The third route to the appropriation and improvement of technology is mobilization. The Stakhanovite campaigns in Soviet Russia, the backyard furnaces campaigns in China are examples of this route in socialist countries. But in capitalist countries, too, industrial exhibitions, missions sent by the government, professional bodies or chambers of commerce to other advanced countries take on the character of a mobilization mode.

In the case of countries that are trying to catch up with more advanced economies, a speedy process of diffusion of more cost-effective technologies acquires an even greater significance than the setting up of appropriate mechanisms for invention of new products (Bagchi, 1978, 1988; UNIDO, 2005, chapters 2-5). In China, from the 1950s, a deliberate policy was followed of transferring advanced technology to suppliers and other co-operating institutions and to organizations producing similar products in less advanced regions. In many cases, firms producing industrial products such as diesel engines were given the status of educational institutions that trained engineers and technologists. In many respects, these policies were similar to those subsisting between principals and subcontractors in Japan. But there were three differences. First, there was no private ownership of the know-how transferred. Secondly, there was no relation of superior and subordinate firms as in Japan, though doubtless a relation of depend3ence must have grown up between firms with more advanced and those with less advanced technologies. Finally, of course, the growth of zaibatsu of the kind prevailing in the Japanese economy was inconceivable under socialist property relations (Bagchi, 1978).

Analysing the reform process in China up to about 1985, I had written (Bagchi, 1987, p. 78):

> China has a highly centralized planning system characterized by a high degree of administrative and political decentralization, and a systematic trend towards regional self-reliance, and vertical integration of enterprises at the same level of administrative or political control. Current trends towards reform can be understood in terms of attempts to strike a balance between vertical command and horizontal co-ordination, between inter-regional balance and regional specialization, between delinking of economic and other aspects of civil administration and increased subjection of economic decisions to parametric guidance by fiscal and monetary instruments, between a greater degree of flexibility of management and continued answerability of enterprises to political authorities, and between achieving market expansion, technical development and energy efficiency through resort to foreign trade and investment by foreigners and continued assurance about easy management of external deficits and surpluses.

This comment would still remain valid regarding the reform process during the subsequent period, except for the explicit recognition of private property rights from the beginning of the twentieth century. In analyzing the developments in the Chinese economy since 1979, it is important to remember that the basic objective of the reform process, namely, the four modernizations, those of agriculture, industry, science and technology and defence were not an empty slogan and that the Chinese policy-makers have always treated them as interrelated and sequential processes. But the sequences themselves are not strictly linear and the reform process has gone forward and backward again as the leaders have perceived new opportunities and new contradictions in this ever-ascending spiral.

A major source of befuddlement has been the continual redefinition of property rights in China. Neoclassical economists and lawyers of the Chicago School have tried to analyse them as the growth and clarification of private property rights in China. But unfortunately the continued non-transparency of property rights in many spheres, as defined by them, has not slowed down economic growth or progress in S&T. Oi and Walder (1999a) have tried to tackle the problem by adopting Demsetz's scheme of separation of property rights into loci of control, accrual of income, and the right to transfer (Demsetz, 1967). However, as Francis (1999) has pointed out, all these different kinds of rights have been bargained over, and their relative distribution has changed through the process of bargaining while the modernization project has gone forward. Moreover, the actual distribution has not been neatly separable between different components and different claimants either. Finally and perhaps most importantly, the assignment of different kinds of rights has been subject to the overarching control of the Chinese Communist Party.

The recent OECD study of the Chinese economy seeks to unbundled the property rights in China and comes up with the finding that by 2003 or so, the private sector accounted for more than 50 per cent of PRC's GDP (OECD, 2005). But as Chandrasekhar (2005) has pointed out, there is a degree of arbitrariness in the definition of the private sector in that study. In particular, it overestimates the 30-year leaseholds of land, even if that leasehold can be regarded as absolute private property. Moreover, the role of the state and SOEs as the prime mover of investment and growth is

underestimated by the said.study. Finally, as I have already mentioned, despite all the changes in different components of property rights, the role of the state and the Communist Party in major policy decisions, including those relating to the economy, remains pre-eminent.

The task of structural transformation

In both countries, the major task still remains a structural transformation of the economy such that agriculture ceases to provide not only the major share of income but also the employment in the economy. This transformation must also involve raising the levels of productivity in every sector of the economy and lead to a sustained increase in levels of human development for everybody.

In some ways, China's problems of transformation were even more severe than those of India. Agriculture provided livelihood to a larger proportion of the people in China than in India, and the per capita endowment of arable land was smaller than in India. While China made considerable progress in creating the physical, social and educational infrastructure for sustained development in rural areas, the rate of growth of agricultural output and transfer of the population to non-agricultural occupations was slow in the pre-reform period. One result of the introduction of reforms from 1979 was that agriculture experienced far higher rates of growth than before (for comparisons of growth of agriculture and its major components from 1957-78 and 1978-8, see Riskin, 1987, chapter 12). One estimate puts the rate of growth of agriculture at 7.4 per cent during 1978-85 and at 5.8 per cent during the 1985-95 period (Index-China 2005a). Between 1995 and 2000, the gross value of agricultural production in China increased from RMB1199.3 billion to RMB1421.2 billion that is at the rate of 3.5 per cent at constant prices (Xien, 2004). Increasingly, the growth in food production took the form of higher value products such as meat, edible oils, vegetables and aquatic products. Over the twenty-year period 1979-1999 the share of the workforce engaged in agriculture declined from 71 per cent to about 50 per cent. It took the USA 50 years and Japan 60 years to achieve the same rate of decline of population engaged in agriculture (Index-China 2000a). By 2000, the share of agriculture to GDP had declined to 15.9 percent (Xien, 2004). But the Chinese authorities want a much bigger decline in the share of agriculture in employment and income.

In spite of the high rate of growth of agricultural output, the increase in consumption of food products and the slow growth of cereal output led some analysts to project that China would increasingly depend on imports for its grain requirements, putting pressure on global food prices, or alternatively it would suffer increases in food prices and declines in basic food consumption. That fear has proved to be unfounded. In the aftermath of the global depression in primary product prices, especially after China's accession to the WTO in 2002, an opposite threat faces China, namely, a decline in farmer incomes caused by the decline in prices. Along with that the farmers' share of rural consumption also suffered a decline (Chen, 2004, Table 5.5). It was officially recognized that farmers as well producers of industrial output were facing a deficiency of demand: 'the current difficulties facing farmers' incomes are to a great extent related directly to the economic cycles both at home and abroad' (Ibid, p. 74).

The growth process in China, especially in the post-1985 period has been characterized by growing rural-urban, inter-regional and intra-sectoral inequality (Kahn and Riskin, 2001; UNDP, 2005a). The problems of structural or frictional unemployment

during the period of transition and regional imbalances have been compounded since the 1990s by the enormously increased importance of what are termed as 'foreign invested enterprises'. For example, the Northeast of China, consisting of Liaoning, Jilin and Heilongjiang was industrially more developed than the rest of China barring a few big cities and some coastal provinces But the GDP per capita ranks of Liaoning, Jilin and Heilongjiang among the 31 provinces slipped from 4, 11 and 5 respectively in 1980 to 8, 14 and 10 respectively in 2000 (Wang, 2005). One reason why the Northeast (Dongbei, in Chinese) became relatively backward was that down the 1990s, the resource-rich Dongbei was required to supply coal, oil and other resources to the other provinces at relatively low prices (Sigurdson, 2005). Around 2004, the share of FIEs in the industrial output of the 31 provinces was 19% whereas their share in their urban employment was only 3%. In the case of the three Northeast provinces, the shares of the FIEs in industrial output were 20% and 2% respectively (Ibid, Table 10). Thus foreign investment in these provinces was even more capital-intensive than for China as a whole. Moreover, foreign investment as such has not prevented the Northeast from slipping back in the league table of provincial economic development in China: the region is referred to as the 'rust belt' in official parlance, signifying the heavy industry and resource-bias of the Northeast industry.

Dongbei is a good example of the lack of perfect correlation between human and economic development levels. The rates of literacy and levels even of higher education are relatively high in the Northeast (except for Heilongjiang), although there are problems about the relatively low levels of transition from school education to tertiary education. The reason is apparently associated with lack of enough opportunities for new graduates of tertiary education. The official rates of unemployment have increased over the period 1990-2003: from 3.8%, 2.2% and 2.4% in 1990 in the case of Liaoning, Heilongjiang and Jilin respectively to corresponding figures of 4.5%, 4.2% and 4.1% in 2003 In respect of health indicators such as the number of hospital beds per thousand persons also Dongbei does better than the other provinces on an average (Wang, 2005; UNDP 2005a, 'Human development indices of different provinces and other relevant indicators').

Most analysts seem to be unwilling to face the problem that more capital-intensive FDI is unlikely to improve the absorption of manpower in employment. For example, Sigurdson (2005, p. 8) writes: 'Governments at all levels in the Northeast PRC should issue (*sic*) more favourable policies to attract South Korean and Japanese investors'.

Both economies are still plagued by an incompleteness of such a transformation and suffer from severe imbalances between earnings of people engaged in agricultural and industrial or service earnings, between rural and urban per capita incomes, between incomes of different regions. But China has proceeded much further in laying the basis for resolving these imbalances and in raising the levels of income, productivity and comparable indices of human development.

We will turn to the actual process of strengthening and upgrading of S&T in China in a later section. Before that let me discuss the precedents of the so-called economic reforms in India.

Successes and problems in India in the pre-and post-reform periods

The Chinese and the Indians in their own ways set about constructing a developmental state that would create an upward spiral of sustainable economic and

human development. I have argued elsewhere that virtually all the industrialized countries of the world had gone through a stage in which the state had played a major role in creating an infrastructure of universal literacy and continually increasing levels of education, strengthened social security, abolished the non-market power of private entities such as landlords and protected the domestic market from the unfavourable impact of foreign competition while the local industries were gearing up for competition with foreign produce in domestic and foreign markets (Bagchi, 2000, 2005a).The recent UNIDO report on industrial development and many of its background papers have again brought to the fore the importance of building up and establishing close relationships between public provisioning of education and R&D and the continual development of industry, agriculture and technology (Mazzoleni, 2005; Mowery 2005; UNIDO, 2005).

While the Chinese under communist leadership succeeded in building up and nurturing a developmental state through more than half a century, the construction of the Indian developmental state was a half-hearted and fragmented affair. The so-called economic reforms has further impaired the strength of state effort for economic and human development in many directions. I have indicated the roots of some socio-structural problems that have seriously hampered economic development in India. There are two areas, however, in which some sectors of the Indian economy and some regions had derived the benefits of democracy and of competition promoted with state help. Although most of the constituent state governments in India failed to carry through pro-peasant land reforms and thereby make it possible for the poor to access education or health care, in a few states, democratic struggles led to reforms in the land tenure system giving security of tenure to actual cultivators and providing some security to landless workers. The most outstanding case in this regard is that of Kerala. From 1959 onward, a group of left parties led by the communists, instituted pro-peasant land reforms, and delivered basic nutrition to the poor through a comprehensive system of public distribution of food grains. They also joined with social movements to universalize primary education and deliver affordable healthcare to everybody. Kerala was also a pioneer in implementing local level plans with intensive participation of the people. All these movements have elevated Kerala to the topmost place in respect of human development among the states of India. The longevity of the people of Kerala now is around 75 years, and the infant mortality rate has come down to 10-15, although the per capita income of Keralites is lower than that of inhabitants of several other states in India.

There are two sectors of the economy in which India had made significant advances in the pre-reform period. One is agriculture and the other is the drugs and pharmaceuticals industry. In both these cases certain aspects of public policy had played a major role in promoting the fortunes of the ordinary citizens. In the last fifty years of colonial rule in India, the output of food grains per capita had declined steadily. This legacy did not alter greatly in the first three decades after independence, and India was faced with a near-famine situation in 1966-67. But with the help of new high-yielding varieties of wheat and paddy, massive public expenditure on irrigation facilities, and an extensive network for delivering information and better technologies to farmers, India became self-sufficient in the production of food grains by the late 1970s. Two other factors helped in this. There was no monopolization of better seeds and better technologies and through a nationalized banking system, the government enabled farmers to access cheap credit. Farming was conducted in a free, competitive environment, with

the government providing a fall-back option in its policy of procuring a few varieties of food grains at competitive prices. It is also notable that the biggest advances in agricultural output and growth of non-farm employment generally took place in irrigated regions with a light burden of landlordism. It is also noteworthy that a close-knit partnership between publicly funded research institutions, administrators of government programmes in agriculture and farmers improved productivity (Janaiah and Hossain, 2004). Fortunately, such co-operation has not ceased in the reform era.

By the 1970s, despite its relatively low level of literacy, India already had a large complement of scientists and engineers who were able to absorb world-class technologies in drugs, pharmaceuticals and fine chemicals. But a patent regime, inherited from colonial times was preventing Indian firms from producing affordable medicines. A new patent law that was drawn up largely following Western European and Canadian precedents came into operation in 1972 and it allowed Indian firms to produce old drugs by inventing a new process. This, along with the pioneering of bulk drug production by public sector drug companies, led to the growth of a dynamic drugs and pharmaceuticals industry, as a result of which India became one of the cheapest producers of drugs for infectious diseases and many cardio-vascular diseases as well. India also became a mjor exporter of generic drugs, especially to poor countries (Chaudhuri, 2005, chapter 2).

Both these achievements are in grave danger because of the economic reforms initiated by the Indian government since 1991. The competitive and dynamic character of agriculture producing food for the malnourished in India is threatened by the drastic slowdown of public investment in irrigation, extension services and by the intrusion of monopolized seed varieties into Indian agriculture protected by the regressive intellectual property rights provisions of the WTO.

According to official figures themselves, the proportion of GDP going into capital formation in agriculture declined from 1.92 per cent in 1990-91, the year preceding the official beginning of the reform process to 1.27 per cent in 2001-02 before crawling up to 1.31 per cent in 2003-04 (GOI, 2005, Table 8.22). The proportion of that investment accounted for by public expenditure declined from 29.6 per cent to 23.2 per cent before recovering to 25.6 per cent in 2003-04. Given the fact that there is a strong complementarity between public investment and private investment in agriculture and given the fact that all the signals sent out by the reform policy package was hostile to agriculture in general and poor farmers in particular, it is not surprising that private investment failed to undo the damage caused by the slowdown or even absolute decline of public investment in many years.

Agricultural output and especially food grain output grew more slowly during the 1990s to the most recent year than in any comparable period since India's independence (RBI, 2004, Tables 13-15; GOI, 2005, Table 8.5). But the result of the credit crunch was such that the ratio of total direct credit to the GDP from agriculture and allied services fell from 0.27 in March 1992 to 0.20 in March 2000 (Bagchi, 2005, Table 1). In the post-nationalization period up to the end of the 1980s, there was a fast growth of rural bank offices, considerably exceeding the growth of rural population in every region of India— Northern, Northeastern, Eastern, Central, Western and Southern— so that the number of bank offices per million of population increased in every region. But after 1990, the number of rural bank offices has absolutely declined in all regions, so that in spite of an expansion of bank branches in urban and metropolitan areas in spite of a decline in

population growth rate in most regions, the number of bank offices per million persons has declined in all regions of India (Chavan, 2005). In practically all regions, the number of small borrower accounts (that is, accounts of borrowers with loans up to Rs 25000), the proportion of total bank credit granted to them, the proportions of loans granted to small and marginal farmers and the proportions of total credit granted to borrowers in the economically backward have all followed a downward trend after 1990 (Shetty, 2005).

The IPR regime of the WTO came into operation through intense lobbying by the big transnational drug manufacturers led by Pfizer (Drahos and Braithwaite, 2002). These companies spent much more money on marketing than R&D and wanted not only to prevent other firms following in the trail of their innovations but usurp herbal and medicinal knowledge that had been the property of common people all around the world for millennia. An earlier Indian government signed the WTO treaty without adequate public debate and without even informing the Indian parliament. That regime has adversely affected the ability of Indian firms to produce medicines at affordable cost for the ordinary citizens. The biggest Indian companies are now targeting the rich customers in India and abroad who can afford the drugs that include the horrendous advertising and marketing costs of the world's biggest drug manufacturers (Chaudhuri, 2005).

Aspects of regional inequality and rural-urban differentials in India

The pace of structural transformation has been such slower than in China. But that has not protected India from problems of growing rural-urban differentials. In every state the incomes per capita in urban areas are more than twice the levels of rural incomes. But in some of the so-called industrially advanced states these differences are even greater absolutely and relatively. There have been large differences in rates of growth between major states. By and large these differentials have grown over time and especially in the period since the adoption of neoliberal reforms (Ghosh, Marjit and Neogi, 1998; Rao, Shand and Kalirajan, 1999; Kurian, 2000; Nagaraj, 2000; Bhattacharya and Sakthivel, 2004). It has been recognized even by the World Bank that a decline in public investment in agriculture has contributed to a slowdown in agricultural growth during the fifteen years of reforms (World Bank, 2005). This has in turn led to more regional inequality because, as in the history of other countries and regions, agriculture provides the foundation and acts as the lead sector in the initial stages of structural transformation (Bairoch, 1973; Shand and Bhide, 2000). In India, public investment in irrigation has been particularly important in accelerating growth in regions favourably endowed with facilities for large-scale irrigation (Bagchi, 1965; Rao, 1971). There had always been a bias in public expenditure in favour of the richer states, especially those with large farmers' lobbies (Bagchi, 1965; Ravi Kumar, 2000) but under the neoliberal dispensation that bias has been compounded by regressive fiscal expenditures (Rao, Shand and Kalirajan, 2000). The richer states have been generally obtained more transfers from the Central government and have been slightly less burdened by high-interest debt, contracted under dress to the Central government. The decisions of the Twelfth Finance Commission has further accentuated the possibility of regional polarization by making a mockery of the debt forgiveness of constituent states that had been granted on a regular basis until the regime of the Eighth Finance Commission, by imposing conditionalities for the closing of the revenue deficit, by imposing the fiscal responsibility and budgetary management on states while being powerless to address the question of fiscal profligacy

of a Central government committed to pampering the speculative and the vulgarly ostentatious rich of India.

The issue of the social transformation needed to build the basis of a structural transformation of the economy crops up again in the context of interregional disparities in economic and human development in India. For instance, Gujarat, Uttar Pradesh and Bihar have higher proportions of their gross cropped area under irrigation than West Bengal (World Bank, 2005, Table 2.1). There are probably some problems about the coverage of the data on irrigation cited by the World Bank. But even after discounting those figures, it would appear that West Bengal has clocked up much higher rates of agriculture than the three states practically for the last quarter century. This is almost certainly to be attributed to the lack of access of small and marginal farmers to public sources of irrigation and their lack of incentives to utilize those sources because of the insecurity of their tenure. These problems had been highlighted a long time back by Daniel Thorner, Pradhan Prasad and Gerry Rodgers and they are still focused on by radical economists (see, for example, Ramachandran and Swaminathan, 2005), but have more or less disappeared from mainstream discourse.

Gujarat has a special interest from the point of view of figuring out strategies for industrialization. Gujarat has registered an above average rate of industrial growth than the rest of India. However, this has been accompanied by slow growth of output in agriculture and a slow growth of employment in non-agricultural sectors, especially the factory sector. While the share of agriculture in the State Domestic Product of Gujarat had declined to about 14 per cent in 2001, the share of people engaged in agriculture according to the census of 2001 still amounted to 52 percent. Thus a person engaged in non-agricultural occupations earns on an average more than six times the income of a person in engaged in agriculture (Bagchi, Das and Chattopadhyay, 2005; Bagchi and Das, 2005). The distribution of those earnings in the industrial sector are highly unequal: the share of profits in industrial value-added has increased almost continuously over the years (Bagchi, Das and Chattopadhyay, 2005). In the agricultural sector also, apart from class differences between large cotton and sugar cane farmers and small farmers, there are severe regional differences between mainly Adivasi-majority areas with dry land and more favoured areas with public irrigation facilities.

The post-reform achievements and problems in China

Let me first point out some critical difference between the reform processes in the two countries. First, reforms were started by the Chinese under their own volition, whereas it was a coercive process in India, triggered by a balance of payments crisis, and under a set of conditionalities imposed by the IMF. Secondly, the reform process was aimed, at least for the first ten years, at strengthening the agricultural sector and improving the standard of living of the farmers. In India, from the very beginning, the reform process downgraded farming and neglected the welfare of the farmers and the poor. Thirdly, in the reform process, fiscal measures for redressing the long-standing inequalities in India and the inequalities thrown up by the reform process itself were severely downgraded and the government substituted a credit process for such measures in an indiscriminate fashion. But since credit was rendered both more expensive and more inaccessible to the poorer customers, the latter were squeezed both by the fiscal crunch and by the expensiveness and scarcity of loans. This double squeeze hit the

farmers and rural inhabitants and the people in the more backward regions particularly hard.

In India the reform process was pushed through under the pressure of the IMF when India applied for a loan from that body to tide over the balance of payments crisis of 1991. I have argued elsewhere that the process had started already in 1985 when Rajiv Gandhi was Indian Prime Minister and influential bureaucrats almost deliberately pushed India into the crisis of 1990-91 in order to push through their IMF-style agenda.

In China's case, the reform originated endogenously and both its nature and pace were dictated by her own needs as perceived by the leaders rather than any outside body. A short summary of the reforms in the science and technology sector will illustrate the gradualism of China's reforms since 1979, and the foundations on which they were instituted. This will lead directly into the reasons for China's astonishing success in conquering foreign markets not only in traditional manufactures but increasingly in high-tech areas of machine production, automation and computer hardware. (This account draws mainly on Bagchi, 1987, chapter 4; Gu, 1995; Gabriele, 2001). China's drive for modernization comprised the four major areas, namely, agriculture, industry, defence and science and technology (S&T). China emulated the Soviet system of organizing specialized S&T institutions, with their own autonomous management systems. The State Council of Science and Technology was the policy-making body in this area. Initially, the Chinese Academy of Sciences (CAS) was the apex body responsible for implementing policies and advising the central government as regards the running of formal research institutions. But the government set up other apex bodies for looking after medical research or agricultural research. Moreover, many research units operated at provincial and county levels; some were attached to central or provincial ministries or to universities or large firms. In 1982, there were altogether 8000 research units and 4600 of them were controlled by or attached to bodies above the county level. Many of the lower-level units were engaged in agricultural research. In 1983, 177 institutes were controlled by the CAS. Even before 1978-79, the research institutes and state enterprises were expected to be actively engaged in the diffusion of technology to smaller enterprises or enterprises in the interior (Bagchi, 1978). This emphasis and the stress on R&D outfits productively serving enterprises engaged in production were accentuated after the onset of reforms and most of the changes that have occurred since then can be understood in the light of such motives.

In the period from 1983 up to say, 2000, we can distinguish several major stages of decision-making for the restructuring of S & T institutions. The first was the decision to create a technology market by pushing R &D institutions to earn money by providing technical services, by acting as consultants, by helping upgrade products, by selling innovations in process technologies. In many cases the state arranged for loans to enterprises or R&D bodies for undertaking new kinds of activities. Throughout the restructuring process while the state has pushed enterprises and S&T bodies to perform by cutting subsidies, it has at the same time acted as the big venture capitalist, shouldering the risks of innovation. Unlike in many capitalist settings (including, for example, big defaulters of bank loans in India), the state has not allowed private individuals to offload their losses on to the public while pocketing the gains.

While the Chinese state's effort to create a technology market has continued, its evident limitation in a situation in which many small enterprises did not know how to

utilize more advanced technology has led policy-makers to promote several other major programmes. One is the so-called Torch Programme under which R&D institutions have spun off manufacturing subsidiaries of their own. That programme has yielded ample returns in the area of information technology firms. Another initiative has taken the form of merging R&D institutions and big firms, generally state-owned enterprises, in their main field of operation. Such marriages, as in the case of other mergers and acquisitions, have not always been successful, and some of them have been dissolved again. Moreover, already by 1986, the Chinese authorities had launched The National High Technology Programme (commonly referred to as 863) under which they had identified seven key R&D intensive fields, namely, 'automation, biotechnology, energy, information technology, lasers, new materials and space technology' for special attention (Gabriele, 2001, p. 21). In these high-tech areas the Chinese plan at the central level, but their implementation often takes place through a number of decentralized bodies consulting together and acting in an interactive manner.

It is common in the literature to state that the Chinese authorities have downgraded state-owned enterprises (SOEs). But in fact, what they have done is to close down small, unviable SOEs or merge them with bigger enterprises or convert them into collectively owned enterprises (COEs). But they have continued to expand large SOEs which are capable of taking up high-technology, risky projects and fully exploit economies of scale and scope.

There were allegations in the literature, supported by data for secondary and tertiary education that while China had done well in respect of literacy and elementary education, it had neglected higher levels of education. It would appear that here also China adopted a gradualist programme or rather stage-by-stage programme, for once the Chinese authorities decide to take up a project the implementation is very quick. Enrolment and graduation have increased fast both at the secondary and tertiary levels of education from the second half of the 1990s.

The following table gives an idea of the differences between China and India in respect of achievement and progress.

Table 3 Enrolment ratios at primary (ISCED1), secondary (ISCED 2+3) and tertiary levels (ISCED 5+6), R&D personnel per million inhabitants, expenditure on R&D as a percentage of GDP in China and India in 2002/03

	Enrolment ratio (%)			Researchers per million persons	R&D expenditure as % of GDP	Pupil/teacher ratio at primary level
	Primary	Secondary	Tertiary			
China	100	70	about 18	633	1.2	21
India	About 90	50	10	120	0.8	41

Source: UNESCO.

Note: Some of the figures relate to years earlier than 2002/03.

Apart from these differences in the enrolment in all the three levels of education, China has outstripped India by a large margin in such areas as the number of papers cited in the Science Citation Index, the number of science & engineering PhDs. China's rate of

growth of PhDs in S&T is so high that it is predicted that China will outstrip the USA in this respect by 2010 (Freeman, 2005). It is interesting to note in this connection that China has moved towards convergence between supplies and returns through her advance towards frontier technologies. The returns to schooling and education were rather low until the 1980s and they have grown considerably in recent years (Fleisher and Wang, 2005; Tang, 2005)[4].

China, of course, has gained from the import of technology connected with the inflows of foreign investment into the country. But it needs again to be emphasized that the FDI, however large, in relation to inflows into other developing countries, including India have added only marginally to the investment resources of China. Moreover, China has used FDI strategically to import and absorb technologies in areas in which she had been deficient. Now many foreign firms are setting up R&D outfits in China as well as India, for the cost of S&T personnel is much lower in those countries than in the home bases of TNCs. But I have a sense that such R&D outfits are spread across most high-tech sectors in China whereas they are far more narrowly based in India, primarily in the IT and pharmaceuticals sectors, and the investments flowing into such outfits are far smaller than into their Chinese counterparts.

India's SITs sector

Indian policy-makers and some of the publicists writing on such issues make much of India's prominence in software and information technology-related services (SITs in short). Indian earnings from such exports, including business process outsourcing (BPO) rose from US$ 565 million in 1999-2000 to US$3.6 billion in 2003-04. However, this is till a pitiful amount compared with the Chinese export earnings from manufactures. Secondly, Indian earnings fro worker remittances, mainly from workers in the Gulf countries (but increasingly from the USA and EU as well) amount to US$ 19.2 billion in 2003-04 (GOI, 2005, p. 111). Thirdly, India's prominence in this sector is largely an unplanned response to the escalating costs of the SITs in the USA and other advanced capitalist countries. Indian software industry is trapped in a rather low-tech niche export. Even big Indian firms have invested very little in R&D and are capable of moving into the areas of product development, system integration or off-shore packaged services (Konana, Doggett and Balasubramanian, 2005; Radhakrishnan, 2005). Fourth, in spite of the proficiency of a small section of the population in English, which has become the dominant language of software, the low levels of literacy and secondary and tertiary education, along with the poverty of a very large section of the people, there is very little prospect of India becoming an 'information society' in the near future (Bagchi, 2005a). Software development in the major vernaculars continues at a snail's space and overemphasis on the prospects of more employment from BPO damages the prospects of developing indigenous linkages even further. The BPO sector can provide jobs for at most half a million people. The total BPO market in the advanced capitalist countries has been estimated at no more than about 4.6 million by the *Economist.* Competition for that market from other low-wage countries with a sizable English-speaking population is likely to adversely affect India's prospects in this area. Finally, if we think of India's relative position vis-à-vis China's in this area, it has to be recognized that China is already way ahead in terms of the infrastructure for SITS, in terms of the size of the

[4] Tang uses data from the household income and expenditure survey 1988-95 and comes up with the finding that the gender gap widened as the returns to education rose.

domestic market and in terms of the enormous progress China has made in secondary and tertiary education and in science and engineering education in particular in recent years (UNDP, 2004, 2005; UNESCO 2004; Freeman, 2005). Table….reproduces some of the key indicators of SITS infrastructure.

Basic infrastructure for the SITs sector: China and India

	China				India			
	1980	1990	2002	2003	1980	1990	2002	2003
Telephone main lines (a)		6	167	209		6	40	46
Cellular phone subscribers (a)			161	215			12	25
Internet users (a)			46.0	63			15.9	17
Electricity consumption per capita (in kwh)	307		1139(b)		173		561(b)	

Source: UNDP, 2004, 2005
Notes: (a) per thousand persons.
(b) relates to the year 2001.

.

In both countries, industrial growth accelerated and changed the structure of incomes. Agriculture produced a lower and lower fraction of national income. But the pattern of industrial growth produced its own problems. Large-scale industry was capital-intensive, located in urban agglomerations and failed to generate enough employment to absorb tens of millions of peasants who suffered from disguised and open unemployment. Fast commercialization further displaced many peasants from their older means of subsistence. Regional imbalances painfully and starkly revealed the difference between those who gained from the increased prosperity and those who did not.

The Chinese authorities were all the time conscious of these problems. In the reform era, authorities have regularly welcomed the good results but have pointed to areas of concern in various official pronouncements. For example, the Statistical Communiqué on National Economic and Social Development in 2000, made by the National Bureau of Statistics, acknowledged 'the persistence of various serious problems throughout 2000, including structural "contradictions", slow growth of farm incomes, daily living difficulties among various groups, poor enterprise competitiveness, and lack of progress in the implementation of SOE reform' (CQ, 2001, p.514). Again, the Statistical Communiqué for 2003 drew attention to 'the still lagging growth of farm incomes, excessively high fixed investment growth, …, widening income gaps and "relatively

difficult" living conditions for low income groups, and heavy pressure on economic resources and the environment' (CQ, 2004, p. 567).]

Rural and human development in India and China

Despite the attempt to move out of a colonial structure of economy, for a long time, the majority of the income-earners in China and India remained locked into an overcrowded agricultural sector and urban-rural differentials tended to widen rather narrow when the effort was made to increase the share of industry in national income and employment.

Fast economic growth and economic reforms in China have led to serious problems of open unemployment, widening rural-urban and interregional differentials. The Chinese policy-makers have monitored those developments continuously. For example, the Statistical Communiqué on National Economic and Social Development during 2002 reported that in that year, the Chinese workforce numbered 737.4 million, and 247.8 million of them worked in the cities. But by end-2002, the number of SOE workers who had remained unemployed was 4.1 million. The Communiqué also recorded that between 1998 and 2002, while the per capita disposable income of the urban population rose from 5425 yuan to 7703 yuan that of the rural population rose from 2162 yuan to 2476 yuan only, thus leading to a further widening of the rural-urban gap in incomes (CQ, 2003, p.587). China has urbanized at a much faster rate than India; while urbanization has led to a rise of migrants' incomes, it may also have led to an aggravation of imbalances between coastal and inland regions, and between rural and urban areas (see CQ, 2003, p. 589 for projections of the rate of urbanization and its costs by the Chinese Academy of Sciences).

In China, income inequality has increased steeply since 1988, the year in which the 'two-outsides' policy (that is, the policy of importing raw materials from abroad and exporting the products abroad) was adopted (Khan and Riskin, 2001; Fu, 2004). By using this policy, China attracted foreign direct investment and the acceleration of economic growth, which still depended mainly on domestic investment, was sustained. But because much of the new foreign investment was located in coastal areas and because the new investment created few backward or forward linkages into the Northwestern and Southwestern provinces, regional and rural-urban differentials in living standards were aggravated (Fu, 2004). As we have seen, Chinese policy-makers were aware of the problem and adopted two kinds of measures to address it. On the one hand, they tried to promote domestic consumption as a way of reducing China's dependence on exports for maintaining the growth process. The second strategy was to direct both public and foreign investment to the Western provinces. A recent analysis by Khan and Riskin (2005) would seem to indicate that this policy succeeded in moderating the growth of inequality. As they have put it:

> 'The 2002 survey revealed a complex result: Inequality of household income distribution somewhat unexpectedly declined, compared to 1995, in both rural and urban China taken separately. In both, the fall was connected to a marked decline in regional (inter-provincial) inequality. In rural but not urban China, the decrease was broad-based in that a majority of the provinces experienced declining inequality.[5]

[5] This conclusion should be regarded as tentative because the small sizes of provincial samples leave a large margin of error.

However, the Gini measure for China as a whole, including both urban and rural populations, showed no change from 1995. This is because a rise in the already very high gap between average urban and average rural incomes offset the fall in inequality within each sector, leaving overall national inequality unchanged. The increase in the rural-urban gap would have been even greater – and the advance of rural incomes smaller – had there not been a substantial decline in the rural population after 1995. This report underlines the importance of that watershed year, when the absolute size of the rural population peaked and began to fall' (Khan and Riskin, 2004).

The exact temporal trajectory of increases in the degree of income inequality in China and even more critically in India can be a mater of debate. In the Indian case there simply are not enough nationwide surveys of consumption and income: the interpretation of the NSS surveys of consumption in 1999-2000 has led to a fierce debate. But there is little doubt that the crisis in Indian agriculture in recent years, the emergence of finance as a major driver of increases in income and the capital-intensive nature of new industrial investment have led to exacerbation of regional, personal and rural-urban income inequality. In the Chinese case, the latest Human Development Report (2005a) has that government measures of raising prices in food grains in 1994 and 1995 led to a rise in farmer incomes, but the steady decline grain prices slowed down the rise of farmer incomes and increased the rural-urban differentials again (2005a, Chapter II).

The reform process in both countries has not only created wider regional and rural-urban differentials but also widened the gender gap especially as far as the survival of girl children is concerned. This gender gap is not only a crime against the half of humanity but is a source of enormous social stress and crime, especially in areas particularly stained with gender discrimination. Ironically, in India, female feticide is even more rampant among the rich and the more prosperous regions but the contagion is spreading in a society guided by the values of mercenary power-wielders.

I will not elaborate on the IMF conditionalities and their consequences for the Indian economy and the Indian people in general. A large number of books and hundreds of books deal with that (see, for example, Bhaduri and Nayyar, 1996 and Chandrasekhar and Ghosh, 2002). I will confine myself only to the consequences for agriculture and the condition of people living in rural areas. Take, for example, the proportion of GDP going into agriculture.

Apart from excluding the majority of the vulnerable sections from public provisioning and the reach of affordable credit, the neoliberal economic reforms in India led to a worsening of regional inequality in a situation in which such inequality was a disempowering feature of the Indian polity in the preceding forty years (Ghosh, Marjit and Neogi, 1998). Planning did not succeed in redressing this imbalance, because the Indian policy-makers at the Centre failed to address the problems of landlord control, denial of basic economic rights to the poor and illiteracy plaguing the more backward regions even more oppressively than the richer regions in general. One of the main factors aggravating the problem of regional inequality is the lack of infrastructure (Ghosh and De, 1998). It is a glaring contradiction of neoliberal reforms that while they are supposed to link everybody to the great god of the market, it is precisely the lack of

linkages of the more backward regions in the areas of infrastructure, credit, and literacy for access to the market and the state that have been further damaged by those reforms.

India has a far higher incidence of malnutrition among its adults and children than China, and it is also higher than in most other developing counties outside South Asia (Radhakrishna and Ravi, 2005). The reality has been hidden by the policy-makers through the use of fallacious poverty measures. The problem has worsened in the 1990s. The median monthly per capita calorie consumption in rural areas has declined between 1987-88 (NSS 43rd Round) and 1999-2000 (NSS 55th Round) in most major States and in India as a whole (Ray and Lancaster, 2005, Table 1). On the one hand, more and more people have been deprived of the distribution of subsidized food grain in the name of better targeting of government programmes. On the other hand, in the name of making up for the steep rise of procurement price of wheat and rice that benefits only a privileged group of farmers, prices in the PDS system have been raised even faster than the procurement prices and much faster than the wholesale prices in general (Swaminathan, 2000; Chand, 2005). On the basis of estimates of calorie consumption afforded by the per capita expenditure levels yielded by the 55th Round of the NSS, Ray and Lancaster (2005, Table 9) have calculated the poverty (head count) ratio for all rural households as 65.5 per cent without PDS and 57.7 per cent with PDS; in the case of SC/ST households, the corresponding ratios are 71.8 per cent and 64.4 per cent respectively. For urban areas the figures are lower by about 15-18 per cent in each case. These figures indicate what a gross underestimate the usually accepted head count ratios are and the pitiful reach of the PDS especially as far as the most vulnerable sections of Indian society are concerned.

Lessons for Indian policy-makers

China has a number of lessons to teach Indian policy-makers, and this conference is a good forum to advance their learning opportunity. (Of course, all Indians should learn from China and from other countries that have succeeded in raising their people from the slough of illiteracy, ill health and deprivation, but as I have argued elsewhere, Indian upper classes have not yet demonstrated that they have learned how to learn (Bagchi, 2004)).

The first thing they should learn is how to take control of the reform process in their own hands and wrest it from the wheelers and dealers who have taken over the Finance Ministry. The second is to empower local bodies for real, responsible decision-making while keeping a strong control of the macroeconomic balances in the economy. In China, local governments and enterprises promoted by them are foci of both saving and investment decisions. They have also become effective agents for managing their water and energy resources in a comprehensive, integrated manner (Shah, Giordano and Wang, 2004). There are numerous case studies of how in many of the regions in China, including poorer ones such as Sichuan, collective and individual efforts have been harnessed to meet challenges of a changing economic environment (see, for example, Ruf, 1999; Li, 2003). In India, we now have provision for local governments such as Panchayat Samitis and Zilla Parishads to co-ordinate economic activities in their respective areas of jurisdiction. But the centralizing tendency of both public finance and money markets and the increasing withdrawal of financial institutions from rural areas, the agricultural sector and development finance in general in general have proved to be serious obstacles against progress in this direction.

Some common concerns

In the immediate future, the establishment of the WTO regime poses grave challenges to both India and China. The flooding of the world markets by the highly subsidized products of the advanced capitalist countries, the withdrawal of all production and distribution subsidies for poor farmers and the continuing dependence of the largest occupational group on agriculture, especially in the economically more backward regions are all poised to damage the welfare of the agriculturists and especially in the more backward regions and worsen the problems of regional imbalance (for analyses of the prospects of Chinese agriculture from two different perspectives, see Diao, Fan and Zhang, 2003, and Chen, 2004). China is, however, better prepared than India in facing these problems. First, China has managed to transform itself into an industrialized economy, with a much larger proportion of its income and a much larger fraction of its employment being derived from manufacturing industry than is India's. China has emerged as the new workshop of the world in most sectors of manufactures except the industries using frontier technologies. Secondly, its much higher rate of investment out of a much higher level of per capita income means that it can not only continue to transfer workers from low-productivity occupations at a much higher rate than India but can move towards the high-tech industries with a confident tread. India's prowess in the software sector is yet to be translated either into a fast rate of growth of employment or into a dynamic anywhere near comparable to that of China's manufacturing sector. Moreover, China is far ahead of India in the manufacture of computer hardware, and more and more software is becoming encoded in proprietary hardware.

In India, the reform process has been guided by financiers with little idea of how to get the Indian rich to save and invest more and making it easy for speculators to grab assets without spending much effort in expanding them or improve their productivity.

The opportunistic, finance-capital-guided economic policy of India's reformers are also damaging India's ability to negotiate a global economy that is wreaking havoc on poor farmers across the world. India's policy-makers are misguidedly trying to convert an agrarian economy into a service-dependent economy dominated by an increasingly speculation-ridden stock market, even before the economy has graduated to becoming an industrialized one. Futures trading had been re-introduced in many agricultural products despite the evidence that they tended to fuel speculation without benefiting the general run of peasants. Now the government wants to link them up with stock exchanges. Whatever the other drawbacks of commodity futures might be, they are supposed to minimize risks of producers and end-users of commodities. Stock exchanges have no such features, and the much-vaunted fundamentals cannot be discovered through stock exchanges. Linking commodity futures with stock exchanges will, as one commentator has argued, deal a deathblow to futures markets in commodities (Pavaskar, 2005). In the area of rural health care, what India needs is a comprehensive system of properly equipped and manned (womanned) primary health care centers and not the fobbing off of the poor by handing them over to the mercy of private health insurance and a private health care system. The introduction of an employment guarantee scheme and the provision of mid-day meals to children in elementary schools on a universal basis are steps in the right direction. If the former is transformed into a universal programme, it will improve the economic conditions of the poor and upgrade the nutritional intakes of

their families and the latter, in combination with an effective ICDS scheme in every village, can improve the nourishment of the children and their mothers.

India is a country with much greater variations in political and social conditions than China. There are a few States in which land reforms, peasant proprietorship and political and social movements have improved literacy and health. There are others in which these conditions do not hold and the health and literacy of the rural poor remain abysmal. There are States in which Chief Ministers have died poor and States in which Chief Ministers think nothing of splurging the scarce contingency fund for ordering a fleet of Mitsubishi Lancers for his colleagues. There are also differences in the use of common property resources. Whereas in some States with scarcity of water, local people have successfully used collective co-operation to rationalize the use of water, in a State like Punjab, dominated as it is by rich farmers, the indiscriminate use of water delivered practically free by the State has damaged productivity (Singh, 2004). Punjab is also one of the worst performing States in the area of gender relations The people of the more disadvantaged States can learn from the better-performing States and demand land reforms and social justice for themselves. But all of the local organizations can learn from Chinese experience how to promote rural non-farm activities, which now provide the major part of their income to the rural population, though to a greater extent in the coastal provinces than in the interior regions.

The democratic system of governance in India does provide some redress against the worst abuses of human rights or freedom. The verdict of the ballot box against Indira Gandhi's emergency has told Indian rulers that they cannot travel that path to protect their own interests. Indian voters also threw out the NDA government which had committed crimes against religious minorities and had damaged the interests of the poor by its economic policies as we have argued above. In the Indian state of West Bengal voters have kept a leftist government led by the communists for the last twenty-eight years. The Congress Party has recently had to publicly accept blame for the anti-Sikh pogrom after Mrs Gandhi's assassination by a fanatical Sikh. One of the tasks of freedom-loving people everywhere is to strengthen the power of democracy by providing the disadvantaged people with the means of exercising that freedom by becoming well-nourished, well-educated and gainfully employed. The future of India and China is of concern to the whole world and not simply to the people of those countries.

India has made major strides in the production of affordable medicines. As the Chinese people ascend beyond the benefits of better nutrition, sanitation and public health care, their demand for medicines to control both the residual communicable diseases and the emerging lifestyle illnesses will increase. India and China can fruitfully collaborate in this area and also fight for removing the TRIPs provisions of the WTO, which are aimed at increasing the profits of giant drug TNCs at the cost of the health of the ordinary people around the world. A second area that seems to be worth exploring for Sino-Indian collaboration is that of computer hardware and software. India's relative advantage in software and China's in hardware can be combined to make both of them leaders in the field of computer technology in the not-too-distant future.

Both countries face the challenge of broadening the access of the more disadvantaged groups and regions to income-earning opportunities, public education, health care and sustainable development of their economies. In both countries, the Central government has failed to take the appropriate measures of fiscal transfer to disadvantaged regions or

introduce income support and investment inducement measures that would benefit millions of farmers and other groups facing the prospects of impoverishing displacement. But China seems to be better placed to face these challenges because of the plenitude of resources it has been able to mobilize through a state that still calls the shots in major economic decisions. Whether the leadership will opt for such immediately growth-lowering measures is another issue.