The 'Demographic Dividend' and Young India's Economic Future

Declining fertility rates have changed the age structure of India's population, resulting in a "bulge" in the working age-group. This "demographic dividend" has improved the dependency ratio leading to the hypothesis that the bulge in working population will lead to an acceleration in growth. However, recent employment figures indicate that the absorption of the Indian youth into the labour force is not as high as one would expect. This is perhaps due to the poor employability of the workforce, which is severely affected by a deficit in educational attainment and health. This needs to be remedied in order to take advantage of the opportunity for growth that the demographic dividend is supposed to give India.

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Consistent and moderately high GDP growth rates during most years since 1980 have encouraged optimistic projections about India's future growth potential. The argument is as follows: just as India transited from the "Hindu rate of growth" of around 3.5 per cent during the first three decades of planned development to a higher growth trajectory of close to 6 per cent over the last 25 years, it can now move on to a new growth trajectory along which growth could average as much as 9 per cent per annum.

Needless to say, such projections must be based on an assessment identifying potential sources of the new dynamism. One such assessment turns on conventional sources of dynamism in developing countries during the post-war years. It points to recent improvements in India's merchandise export performance and the growing attractiveness of India as a destination for global foreign direct investment (FDI) flows. Attributing these to the effects of economic liberalisation it argues that once this process crosses some critical threshold level, India could replicate the experience of many east Asian countries and China.

A second assessment points to new sources of growth in financial, software and information technology-enabled services (ITES), with leadership performance in the latter two. The strength of this source of dynamism is seen to be reflected in the fact that even at its relatively low level of per capita income, services account for more than 50 per cent of GDP. India, it is argued, is experiencing an altogether new trajectory of growth intensive in intangibles such as knowledge and skills, because of its unique advantages in the current conjuncture. To quote a study by the World Bank (2005: 10), India "has a critical mass of skilled, English-speaking knowledge workers, especially in the sciences. It has a well-functioning democracy. Its domestic market is one of the world's largest. It has a large and impressive diaspora, creating valuable knowledge linkages and networks." It combines this with other key ingredients including: "macroeconomic stability, a dynamic private sector, institutions of a free market economy, a well-developed financial sector, and a broad and diversified science and technology (S&T) infrastructure". In this view: "Building on these strengths, India can harness the benefits of the knowledge revolution to improve its economic performance and boost the welfare of its people".

A third assessment, which is the concern of this paper, while not necessarily denying the importance of the other two, suggests that the effects of these are likely to be amplified because of the demographic advantage that India currently has relative to the developed countries and also countries like China. India is and for some time will remain one of the youngest countries in the world. A third of India's population was below 15 years of age in 2000 and close to 20 per cent were young people in the 15-24 age group. The population in the 15-24 age group grew from around 175 million in 1995 to 190 million in 2000 and 210 million in 2005, increasing by an average of 3.1 million a year between 1995 and 2000 and 5 million between 2000 and 2005. In 2020, the average Indian will be only 29 years old, compared with the average age of 37 years in China and the US, 45 in west Europe and 48 in Japan. The demographic process, this implies, would create a large and growing labour force, which is expected to deliver spin-offs in terms of growth and prosperity through a number of routes. The most obvious positive effect is that a higher growth trajectory is not likely to run into bottlenecks set by labour inadequacy. Of course, this assumes that the growing workforce of youth can be trained to acquire the skills needed by the newer and technologically more dynamic industries.

This notion of a "demographic dividend" overturns the older popular perception that a large and "excess" population is a problem rather than a benefit from an economic point of view [see for example, Coale and Hoover 1958]. For those in search of simplistic explanations of underdevelopment, excess population has always provided an easy way out. Large populations are seen to result in high levels of aggregate consumption even at low levels of per capita income, resulting in small surpluses. Since these surpluses must be spread thin across the population, their effects in terms of growth of employment and income are

seen as limited. Moreover, with limited resources thinly spread because of large numbers, the tasks of feeding the population, ensuring universal access to education and health and delivering basic services like water and sanitation are seen as near impossible. The conclusion then is that the growth of population has to be controlled if economic growth has to be triggered and the quality of life improved.

The pithy response to this argument was that every mouth to be fed comes with two hands that can be put to work. But in addition, a range of arguments have been advanced against various versions of neo-Malthusianism [Crenshaw et al 1977; Simon 1977; Kelley 1988]. The problem of development has been seen as that of employing more workers in more productive activities that can yield larger surpluses, without depriving them of the basket of goods they currently consume. If the larger surpluses thus garnered are invested, growth will accelerate. The economic problem in poor countries then becomes that of identifying and implementing a strategy that can make this happen. If the production of wage goods falls when workers are shifted to new activities, or if those remaining in the wage goods sector increase their self-consumption, the process of structural diversification can run into a wage goods bottleneck. Once that problem is resolved, the concern shifts to ensuring the availability of the capital goods needed for the labour employed in newer and more productive activities.

Demographic Dividend

More recently, however, a view has gained ground that what matters is not the size of the population, but its age structure. A population "bulge" in the working age groups, however large the total population, is seen as an inevitable advantage characterised as a "demographic dividend". This is why India – which is beginning to be characterised by such a bulge – is seen as advantaged, despite its large population. This has provided one more "macroeconomic" argument to those who see India emerging as a regional (or even global) power in the not too distant future, possibly even displacing China as potential world leader.

In this view, the demographic dividend is also expected to resolve the problem of garnering surpluses over consumption needed for investment. A nation's population can be divided into those in the labour force (say, the 15-64 age group) and those outside it. Given the availability of work and the resulting employment, the division broadens to include those outside the labour force, those available for work but unemployed and those in the actual workforce. Since those outside the workforce would be consuming part of what is produced by currently employed workers, the ratio of those outside the workforce to those in it (the dependency ratio) would be among the factors influencing the surplus available for investment after current consumption. Hence, everything else remaining the same, the higher the proportion of workers to non-workers, the larger would be the surplus. For given unemployment rates, the higher the ratio of those in the labour force to those outside it, the larger would be the surplus.

Effects of the Demographic Transition

Observed demographic trends suggest that both the size and age structure of the population (and therefore the dependency ratio) in all countries tend to change over time because of the nature of demographic transition. The latter is characterised by the fact that death rates tend to decline before declines in the birth rate set in. Initially, the death rate falls because of declines in infant and child mortality resulting from improved "public health interventions related to water and sanitation, and to medical interventions such as vaccine coverage and the use of antibiotics" [Bloom and Canning 2004: 11]. Improved knowledge and reduced costs allow for these factors to be exploited even at relatively low levels of per capita income so long as political pressure or the political will to provide basic social services and rudimentary health facilities exist. At a later stage, the decline in the death rate and increases in average life expectancy result from reduced death rates in the middle and older age groups because of higher incomes, improved lifestyles and better and more expensive medical technology.

As compared with this, birth rate reductions depend on the age of marriage and the fertility rate. Both of these depend on the level of development to a far greater degree. Development often leads to the dilution of social norms prescribing early marriage, and fertility rates within marriage decline as higher child survival rates, female education and labour market opportunities associated with development reduce the desired family size. Of course, social policy can make a substantial difference to child survival rates, and female education and family planning programmes can influence the desired fertility rate. But in general, the observed decline in birth rates tends to begin well after the decline in death rates sets in.

The difference in the relationship between death and birth rates on the one hand and development on the other affects not just the rate of population growth but the age structure of the population. The initial fall in infant mortality and improvement in child survival results in a boom generation, with a larger number of people in the youngest ages. After some time, the lagged fall in fertility rates reverses the baby boom, resulting in a "bulge" in the younger ages. (However, the earlier baby boom has its echo around 25 years later as the earlier baby boomers have their own children.) As is to be expected, the bulge created by the baby boom moves up the age structure, so that at some point the population in the working age (15-64) is much higher than it was previously or will be subsequently. Finally, the bulge enters the old age bracket, as is happening in the developed countries and epitomised by Japan currently.

Implications for Growth

Given the implications of the dependency ratio for surpluses available for investment and growth, it should be obvious that this shifting age structure can have significant consequences for economic growth. Periods characterised by low dependency ratios would be characterised by higher growth, if the inducement to invest surpluses exists. Conversely, periods characterised by high dependency ratios would be characterised by a slowing of growth, unless productivity increases raise the output of a smaller proportion of workers enough to neutralise the demographic deficit. But if the window of opportunity available when the population bulge enters the working age group is to result in an acceleration in growth the processes of development which in part created this bulge must have been such so as to ensure that the quality of those entering the workforce is of the desired level and that these workers find employment opportunities as and when they enter the labour force.

Despite the demographic determinism that characterises the work of those who emphasise the significance of the demographic

dividend, many of them admit that there is no guarantee that the benefits of the "window of opportunity" created by the population bulge will be exploited. To quote Bloom and Canning (2004: 22-23), "both empirically and theoretically there is nothing automatic about the link from demographic change to economic growth. Age distribution changes merely create the potential for economic growth. Whether or not this potential is captured depends on the policy environment." Thus, while east Asia's macroeconomic performance is seen as being tracked quite closely by its demographic transition, with as much as a third of its "miracle growth" estimated to be on account of the demographic dividend, Latin America is seen to have "stumbled" during the 1950s and 1980s, when its demographic trends resembled those in east Asia.

These caveats notwithstanding, there is indeed an element of automaticity about the relationship between demographic trends and economic outcomes in the "demographic dividend" school of thought. This element is built on a supply-side understanding of the determinants of economic growth, with a high savings rate seen as a prerequisite and investments in education and health to ensure the quality of the workforce seen as necessary facilitators. Beyond this, policy matters only inasmuch as it should not privilege an inward-looking strategy but rather encourage an export-oriented one, which also is seen as a prerequisite for growth. That is, policy matters only in the sense that it should not subvert the dividend but rather facilitate the realisation of its fruits.

The relation between demographic trends, savings and growth is illustrated, for example, by the analysis of the Taiwanese success by Bloom and Canning (2004). Their basic understanding of the east Asian miracle is (correctly) informed by the view that increased productive investment and expenditure on education, rather than increases in productivity were the proximate determinants of the east Asian miracle. Explanations of the east Asian model therefore, must revolve around the factors that resulted in higher investment. To some, the role of an interventionist state was crucial to this outcome. But Bloom and Canning attribute this to high savings rates, which are presumed to be automatically invested in pre-Keynesian fashion.

Once savings are seen as determining investment (and not the other way around), the demographic dividend argument rests on showing that high savings are related to demographic factors. There are two steps through which this is achieved. First, increased savings are seen as being due to rising life expectancy and the need to fund retirement income. And the choice of retirement as an option when increased life expectancy and health should encourage a lengthening of the working lifespan is attributed to "mandatory or conventional retirement ages, coupled with the strong financial incentives to retire that are inherent in many social security systems" [Bloom and Canning 2004: 35]. Taiwan is seen to have such a system.

Demography also affects educational investments, since greater longevity increases the private incentive to invest in education by increasing the time span over which such investments may be recouped. But all of this would be of little avail if the government does not ensure a "flexible" economy that has the ability to absorb a rapidly rising labour force. Thus, the benefits of the demographic dividend depend on "good policies", captured by indices such as the openness of an economy or the quality of government institutions. According to this literature, it is only when these conditions do not prevail that the demographic potential remains unexploited.

Thus, the notion of the demographic dividend is used by its leading advocates as the basis for advocating neoliberal economic policies, by arguing that large and young populations create a growth opportunity which can be exploited with open-door strategies and flexible labour markets. This argument is supported with the selective choice of empirical illustrations, despite numerous counter-examples. Thus, despite rapid liberalisation of their economic policies, conscious export-orientation and the availability of a surplus workforce, Latin American countries went through a "lost decade" in the 1980s and after a long period of typical neoliberal adjustment are now striving to discard that framework. Governments in east Asian countries were deeply protectionist and adopted strict interventionist measures, even when they pursued mercantilist policies of export expansion involving discipline of the domestic industrial class fostered by the state and supported by a range of incentives. So if these countries are seen as having exploited the demographic dividend, this resulted from the adoption of policies that were significantly interventionist.

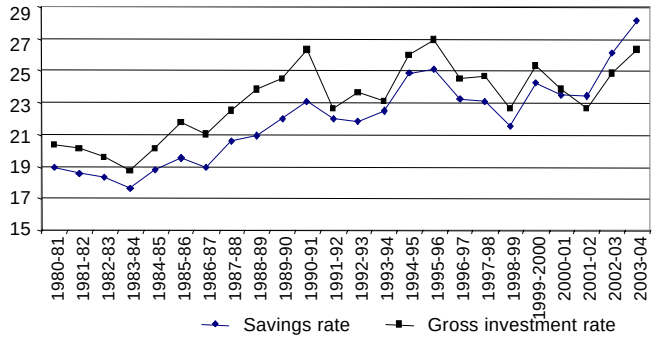
To understand what kinds of policies can help exploit the window of opportunity created by a demographic bulge in the working age groups, it is necessary to recognise that the dependency ratio must be defined not as the ratio of the non-working age to working age population but the ratio of actual non-workers to workers. The difference between the two is determined by the extent of absorption into work of the available labour force, which must take account of underemployment in addition to unemployment. Since unemployment and underemployment are typically the outcome of demand-side constraints, even if the presumption that increased longevity would be accompanied by higher savings rates is right, there could be scenarios in which investment rates fall short of savings rates and result in deflation rather than growth. What is more, even in periods when the population bulge is not in the working age groups, we may have large-scale unemployment and inadequate expenditure on education both by the government and by households. This would only erode the ability of countries to exploit the demographic dividend as and when it emerges.

The Indian Case

India is indeed in the midst of a process where it faces the window of opportunity created by the demographic dividend. During the first two decades of post-independence development, while infant mortality rates fell significantly, the fertility rate remained more or less stagnant. This would have increased the population of young people significantly, merely because of greater child survival. In the three decades since then, though the fertility rate has been declining, the infant mortality rate has fallen quite sharply, with possibly the same effect. One consequence of these trends is the sharper fall in the crude death rate than the birth rate, though declining mortality in the higher age groups would have influenced this as well.

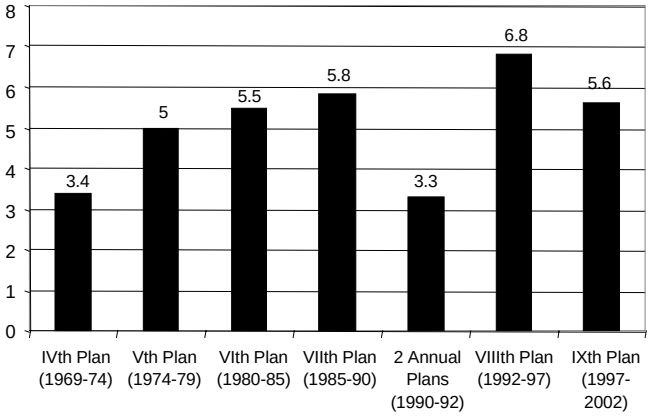
The effect of these trends on the dependency ratio is presented in Table 1, which shows that while the total dependency rose initially because of a rise in the child dependency ratio and stagnation in the old-age dependency ratio, it began to fall from 79 in 1970 as the child dependency ratio fell with the baby boomer generation moving into working age groups and with old-age dependency rising only marginally because of reduced death rates in older age groups. It is estimated to have fallen to 60 in 2005.

Chart 1: Savings and Investment Rates
(Gross Domestic Savings and Gross Domestic Investment as Per Cent of GDP at Current Market Prices)



Source: CSO National Accounts Statistics, various issues.

Chart 2: Average Annual Growth Rate of GDP (at Constant Prices) during Plan Periods
(Per cent)



Source: Economic Survey, Government of India, 2005-06.

Thus, India had actually begun to reap the demographic dividend around the mid-1970s. But the process is likely to extend well into this century with the dependency ratio projected to fall to 48 in 2025 because of the continued fall in the child dependency ratio. It would then start rising to reach 50 by 2050 because of an increase in the old-age dependency ratio as the bulge moves forward and the death rate in the older age groups declines. This suggests that the window of opportunity offered by a population bulge had clearly opened for India by the mid-1970s or early 1980s.

It is true that there are different projections of the future age structure of the population. As Table 2 shows, the United Nations population division's population database expects the youth population (15-24 age group) to begin to decline only by 2025. However, the official Indian projections based on the 2001 Census and the Sample Registration Scheme (SRS) suggest that the decline may set in earlier. Going by the registrar general's figures, India's youth population stood at 195.1 million in 2001 and was expected to increase by an annual average figure of 5.4 million during 2001-06 and 3.5 million during 2006-11, before beginning to decline.

It must be noted that the beginnings of the population bulge in the younger age groups in India did coincide with the shift to a new growth trajectory noted earlier in this paper. But was this the result merely of the demographic dividend and its supply-side effects on the rate of savings? And is the ability to exploit the dividend the result of the more open, export-oriented strategy adopted by the government?

Chart 1 provides estimates of gross domestic capital formation and gross domestic savings as percentages of GDP from 1980-81 onwards. These point in three directions. First, both savings and investment rates have generally increased over time, as part of a trend of much longer duration, whereby savings and investment rates have tended to increase with economic development, in an Engels curve type pattern in which increased aggregate incomes also allow for a larger share for savings. Second, this tendency is not so visible during the years of accelerated liberalisation in the 1990s, when amidst much volatility the savings rate seems to have stagnated. Third, there appears to be a clear return to the tendency for savings and investment rates to rise during the first three years of this decade, when there seems to be a reassertion of the broad historical tendency noted earlier. However, this very recent increase in both rates has involved savings rates which are higher and growing faster than domestic investment rates, reversing the historical pattern, and suggesting that there are other factors constraining investment in India despite the increased economic openness and the advantages of the population bulge.

So did the economic "reforms" of the 1990s help exploit the demographic dividend and spur economic growth? Advocates of reform have often argued that, whatever else may be said about the effects of the reform process, it cannot be denied that it has helped the Indian economy move to a higher annual average rate of growth. But it can be convincingly argued that the transition to a higher economic growth trajectory occurred well before the reforms of the 1990s [Chandrasekhar and Ghosh 2004]. Thus, as indicated in Chart 2, the transition to a high rate of growth

Table 1: Trends in the Dependency Ratio in India (Medium Variant)

	Dependency Ratio	Child Dependency Ratio	Old-Age Dependency Ratio
1950	73	67	6
1955	74	68	6
1960	76	70	6
1965	78	72	6
1970	79	72	7
1975	77	71	7
1980	74	67	7
1985	72	65	7
1990	69	62	7
1995	68	60	8
2000	64	56	8
2005	60	51	8
2025	48	36	12
2050	50	27	22

Source: Population division of the department of economic and social affairs of the United Nations secretariat, world population prospects, *The 2004 Revision and World Urbanisation Prospects: The 2003 Revision*, http://esa.un.org/unpp, accessed December 27, 2005.

Table 2: Average Annual Increment in Youth Population

	UN Population Database			Registrar General of India		
	Total	Male	Female	Total	Male	Female
2001-06	4028.8	2022.6	2006.2	5406.2	3025.2	2381.2
2006-11	2680.8	1330	1350.4	3532.4	1670.4	1861.8
2011-16	1312.6	621.2	691.8	-212.8	-343.6	131
2016-21	226.4	76	150.4	-1857.4	-777.2	-1080.2
2021-26	45.2	-8.8	54	-1112	-290.2	-821.6

Source: *World Population Prospects: The 2004 Revision*, available at http://esa.un.org/unpp/ and Government of India, Planning Commission.

occurred during the 1980s, when liberalisation was limited and halting, and not in the 1990s, when the pace of liberalisation substantially accelerated and was far more widespread.

Of course, it could be argued that the 1980s were also years of liberalisation, which is why aggregate income growth was higher in this decade as well. However, the primary factor behind the accelerated growth of the 1980s was the fiscal stimulus provided by the state, financed by growing internal and external public borrowing. Exploiting the access to foreign exchange afforded by the rise to dominance of finance internationally, the government chose to pump prime the system. Rising government expenditure, however, was not accompanied by an increase in resource mobilisation through rising taxes. The fiscal stimulus was financed through rising deficits, including a rising deficit on the revenue account of the government's budget. The demand stimulus resulting from such expenditure was serviced by domestic industry with the help of imported capital goods, intermediates and raw materials, imports of which were liberalised. This essentially meant that the import intensity of domestic production rose. But such growth was not constrained by inadequate access to foreign exchange, since it was accompanied by an increase in foreign borrowing from the International Monetary Fund (IMF), the international commercial banking system and non-resident Indians.

This expansion proved to be unsustainable, culminating in the crisis of 1990-91. The subsequent expansion from the mid-1990s witnessed an almost parallel build up of internal public debt and a balance of payments situation that was even more volatile because of the greater presence of short-term capital inflows. The very recent period has been characterised by another anomaly: the coexistence of relatively high growth rates with continuing slack in the economy, reflected in the ex ante excess of domestic savings over domestic investment, which in turn is expressed in growing holding of foreign exchange reserves by the Reserve Bank of India.

Demographic Dividend and Employment

Even to the extent that growth has occurred, it has not been such as so to absorb the rapidly rising labour force being generated by the demographic dividend. As Table 3 shows, the period between 1993 and 2000 showed a dramatic deceleration in employment generation, with the lowest rate of growth of rural employment in post-independence history. Even in urban areas, the rate of growth of employment was significantly lower than the previous periods since the early 1980s. Subsequently, the most recent NSS large survey indicates a recovery, although still not to the rates achieved in the period between 1987-88 and 1993-94.

This in turn reflects an increase in labour force participation rates for both men and women, as evident from Table 4. This includes both those who are actively engaged in work and those who are unemployed but looking for work. It should be noted that this aggregate increase incorporates declining rates of labour force participation among the youth, that is the age group 15-29 years, and a rise for the older age cohorts.

Despite the growth of employment, unemployment rates have also been increasing, and are now the highest ever recorded. Unemployment measured by current daily status, which describes the pattern on a typical day of the previous week, accounted for 8 per cent of the male labour force in both urban and rural India, and between 9 and 12 per cent of the female labour force, which is truly remarkable in a country that provides nothing in the form of unemployment benefit or insurance.

The most significant change has been in the pattern of employment. There has been a significant decline in wage employment in general, which includes both regular contracts and casual work. While regular employment had been declining as a share of total usual status employment for some time (except for urban women workers), wage employment had continued to grow in share because employment on casual contracts had been on the increase. But the latest data suggest that even casual employment has fallen in proportion to total employment. In fact, the share of casual labour has fallen for all categories of workers – men and women, in rural and urban India. The sharpest decline has been in agriculture, where wage employment in general has fallen at a rate of more than 3 per cent per year between 1999-2000 and 2004-05. But even for urban male workers, total wage employment is now the lowest that it has been in at least two decades, driven by declines in both regular and casual paid work. For women, in both rural and urban areas, the share of regular work has increased but that of casual employment has fallen so

Table 3: Growth Rates of Employment
(Per cent change per annum)

	Rural	Urban
1983 to 1987-88	1.36	2.77
1987-88 to 1993-94	2.03	3.39
1993-94 to 1999-2000	0.66	2.27
1999-2000 to 2004-05	1.97	3.22

Note: Employment here and in subsequent tables refers to all workers (principal status and subsidiary status).
Source: Based on NSS employment rates (NSS 38th, 43rd, 50th, 55th and 61st rounds) and census population figures and projections.

Table 4: Labour Force Participation Rates

	Usual Status (PS+SS)			Current Daily Status		
	1993-94	1999-2000	2004-05	1993-94	1999-2000	2004-05
Rural males	56.1	54	55.5	53.4	51.5	53.1
Rural females	33	30.2	33.3	23.2	22	23.7
Urban males	54.3	54.2	57	53.2	52.8	56.1
Urban females	16.5	14.7	17.8	13.2	12.3	15

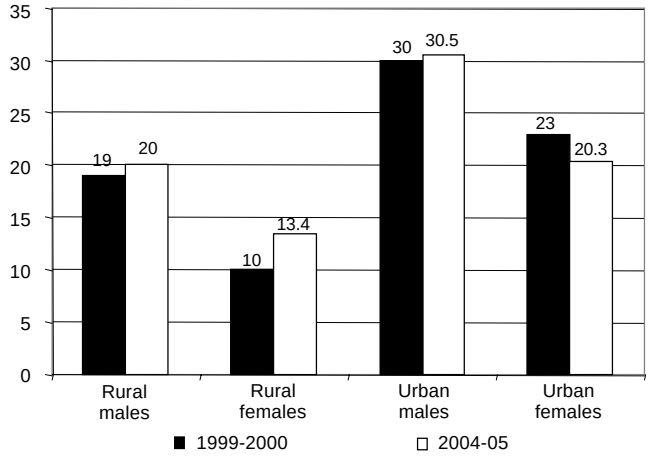
Source: Employment and Unemployment Situation in India, NSSO (2006).

Table 5: Labour Force Participation Rates of Youth according to Usual Status (Principal and Subsidiary Activities)

	15-19 Years	20-24 Years
Rural males		
1987-88	63.0	91.8
1993-94	59.8	90.2
1999-2000	53.2	88.9
2004-05	52.9	89.1
Rural females		
1987-88	41.5	48.4
1993-94	37.1	46.9
1999-2000	31.4	42.5
2004-05	33.1	43.5
Urban males		
1987-88	42.9	79.2
1993-94	40.4	77.1
1999-2000	36.6	75.2
2004-05	38.1	76.9
Urban females		
1987-88	16.9	22.5
1993-94	14.1	23.0
1999-2000	12.1	19.1
2004-05	14.4	25

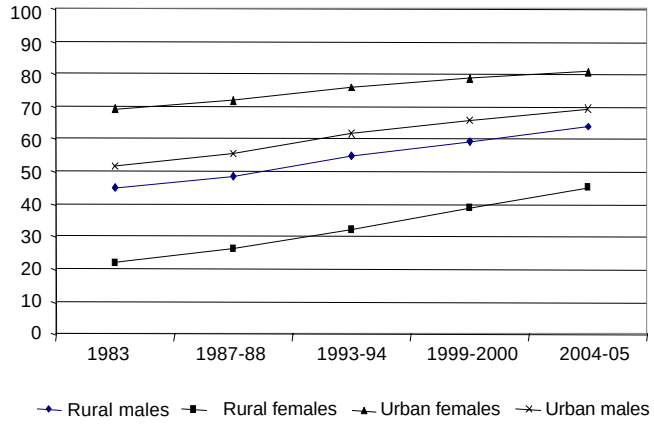
Source: Employment and Unemployment Situation in India, NSSO (2006).

Chart 3: Youth in Education according to Usual Status
(Share of those in education in youth aged 15-29 years)
(Per cent)



Source: Employment and Unemployment Situation in India, 55th and 61st rounds, NSSO.

Chart 4: Literacy Rates
(Per cent)



Source: Employment and Unemployment Situation in India, 55th and 61st rounds, NSSO.

sharply that the aggregate share of wage employment has fallen. So there is clearly a real and increasing difficulty among the working population, of finding paid jobs in any form.

This is probably the real reason why there has been a very significant increase in self-employment among all categories of workers in India. The increase has been sharpest among rural women, where self-employment now accounts for nearly two-thirds of all jobs. But it is also remarkable for urban workers, both men and women, among whom the self-employed currently constitute 45 and 48 per cent respectively, of all usual status workers.

Impact on Youth

While aggregate labour force participation rates have risen, the same is not true of the youth. As Table 5 shows, labour force participation rates have fallen quite substantially for male rural youth, and not increased for young women in rural areas either. In urban areas, there is a slight recovery of labour force participation rates from the low levels of 1999-2000 but only for young women in the age group 20-24 years is there evidence of any real increase.

It is certainly possible that declines in labour force participation among the youth result from their delayed entry into the workforce, partly because they are extending their years of education. If this is so, it would be a positive sign, indicating a greater degree of skill formation in the young labour force of the future. However, Chart 3 indicates that this is not the dominant reason. Except for rural females, where the ratio was very low to start with, there has been very little increase in the proportion of those reporting themselves as usually engaged in education. For young urban females, there was actually a decline in such a proportion.

What is more disturbing is that, despite the fact that labour force participation rates among the young population have decreased or not increased much (except for urban women in the age group 20-24 years), open unemployment rates have increased. Table 6 reveals that youth unemployment was substantially higher than unemployment across the entire working age population, and what is more, it also increased across all categories of young people – men or women, rural or urban. So the youth are far more prone to be actively seeking work and not finding it. Given that open unemployment by "usual status category" has generally been low in India because of the absence of any sort of social protection for the unemployed, it is disturbing to note that as many as 6-8 per cent of young rural males and 12-14 per cent of urban male youth describe themselves as available for work and seeking it but not finding it. The proportions of young women describing themselves as usually unemployed are even larger.

The current daily status criterion describes the nature of activity on a typical day of the reference week, and therefore can be thought of as a "flow" measure of work possibilities. By this indicator, open unemployment levels for the young are truly alarming, accounting for nearly 20 per cent of urban young men in the age-group 15-19 years and 30 per cent of urban women in the age-group 20-24 years. These numbers translate into an estimated 36 million young people of between 15 and 29 years who were "usually unemployed" at the start of 2005, and as many as 58 million young people who were unemployed on any particular day.

If this is a true description of labour markets in India at present, it has significant implications. One concern relates to the possibility of missing the window of opportunity provided by a large young population, because the economic growth process simply does not generate enough jobs to employ them productively. Another important concern follows from this, in terms of the

Table 6: Unemployment Rates among Young People and Overall Population

		Rural India			Urban India		
		15-19	20-24	All 15+	15-19	20-24	All 15+
Males							
Usual status	1993-94	3.3	4.9	2.0	11.9	12.6	5.4
	1999-2000	5.5	5.2	2.1	14.2	12.8	4.8
	2004-05	7.9	6.2	2.1	14	12.5	4.4
Current daily status	1993-94	9.0	10.3	5.6	16.2	17.0	6.7
	1999-2000	13.1	11.7	7.2	19	17.1	7.3
	2004-05	15	12.9	8.0	18.4	15.8	7.3
Females							
usual status	1993-94	1.9	2.8	1.3	12.8	21.7	8.3
	1999-2000	3.2	4.9	1.5	13.2	19.4	7.1
	2004-05	6.7	9.3	3.1	15.6	25.8	9.1
Current daily status	1993-94	8.3	8.2	5.6	18.6	28.5	10.4
	1999-2000	12.8	12.1	7	18	25.9	9.4
	2004-05	12.6	14.9	8.7	16.4	27.3	11.6

Source: Employment and Unemployment Situation in India, 50th, 55th and 61st rounds, NSSO.

negative social impact of growing numbers of young unemployed. If the economy does not generate adequate employment of a sufficiently attractive nature, the demographics could deliver not a dividend but anarchy.

Question of Employability

This naturally brings to the forefront not only issues related to the increasing demand for labour but also the nature of the labour force and its employability. In this context, the quantity, quality and relevance of education are all crucial. Several indicators suggest that, during the liberalisation years, there has been a setback on the literacy and education fronts, improvements in which are seen as not just conducive but even necessary to exploit the demographic dividend. As Chart 4 shows, the spread of literacy has been slow during the years of globalisation and even in 2004-05 the country was far short of achieving total literacy even in the more developed urban areas. Indeed, the pace of improvement in literacy rates appeared to have decelerated further in the first part of this decade.

In 2004-05, only 21.1 per cent of rural males and 10.2 per cent of rural females of 15 years and above had a minimum education of secondary school and above. In urban areas, the education level was slightly better with 48.3 per cent of urban males and 35.6 per cent of urban females with at least that much education. However, only around 1.5 per cent of persons aged 15 years or more in urban areas and less than 5 per cent in urban areas had technical qualifications of even the most rudimentary kind. By no stretch of imagination can India currently be characterised as a knowledge economy in any meaningful sense.

There is the further problem that even those who have been educated find it hard to get jobs, whether these jobs are appropriate to their skills or otherwise. Educated employment declined slightly for men between 2000 and 2005 but was still around 6 per cent for those with secondary school degrees and 7 per cent for graduates. Unemployment among educated women was much higher and also got worse, reaching rates of 34 per cent for rural female graduates, and 20 per cent for urban women with high school and above.[1]

Vocational training appears to be doing little to resolve this problem. To begin with, even in 2004-05 only a very small proportion of youth – less than 4 per cent – had received any sort of vocational training. Most of such training apparently does not increase employability. As Table 7 shows, the proportion that has received some sort of vocational training is significantly higher among the unemployed than the employed youth, by all categories.

The Gender Dimension

As has been repeatedly recognised but never adequately addressed, the challenge set by a young population is all the greater in the case of females. The principal problem is that participation in gainful economic activity is typically less for young women than for young men. In addition, there are the problems of lower levels of access to education and fewer opportunities for skill development for young women.

Female labour force participation according to the usual activity criterion was just 33 per cent and 43 per cent in the 15-19 and 20-24 age-groups in rural India in 2004-05, compared with 53 and 89 per cent respectively in the case of young men. The situation was even worse in urban India with the percentages at 14 and 25 per cent respectively for females, as compared with 38 and 77 per cent for males, although in the urban case there is some evidence of increase in the rate for young women aged 20-24 years compared to the previous period. There are other sources of concern. Despite lower labour force participation rates than men, there is higher incidence of unemployment among young women. For young women in the age-group 20-24, open unemployment rates by current daily status are as high as 16 per cent in rural areas and 27 per cent in urban areas.

The greater divergence between male and female youth labour participation in urban as compared with rural areas, points to the role that attitudes and perceptions play in the determination of the role of women. Their greater presence in the rural labour force is possibly the result of the availability of opportunities around the home and farm, whereas their relative absence from the urban labour market must be influenced by the common view that women should not be exposed to workplace environments and that the woman's role is not that of a breadwinner but of an (unpaid) home worker.

Such perceptions tell on attitudes towards female education as well. The gender gap in both literacy and education remains large, especially in some states, even though it has been narrowing in recent years. This in turn affects employment possibilities, although even for educated unemployment, young women show higher rates than young men. The attitudes that underlie these outcomes in turn impinge on the female experience with adolescence and youth itself. Gender-based expectations of future prospects and potential employment typically put girls at a disadvantage in many ways, such that these expectations become self-fulfilling.

IT as Solution

It is often held that the rapid growth of modern IT-driven services in India offers an opportunity to exploit the demographic dividend. In fact there is an increasingly popular perception that India would be able to encash the demographic dividend through the growth of its IT and IT-enabled services sector. Of course, there is no doubt that both in absolute and relative terms, the size of the IT sector in India is now impressive. The National Association of Software and Services Companies (NASSCOM) estimated the size of the software and IT-enabled services industry in 2004-05 at $ 22.6 billion, comprising $ 4.8 billion of domestic revenues, $ 13.1 billion of software and services export revenues and $ 4.6 billion of revenues from exports of IT-enabled services and business process outsourcing (BPO).[2] Placed in the context of the economy as a whole, the sector's revenues now amount to around 4.5 per cent of GDP. This makes it an important segment of the non-agricultural sector.

By way of comparison, the gross revenues from IT services in 2004-05 were about 20 per cent higher than the GDP generated in India's construction sector and almost three times as much

Table 7: Per Cent of Youth Aged 15-29 Years Who Have Received Vocational Training

	Among All Youth	Among Employed	Among Unemployed	Among Those Not in the Labour Force
Rural males	2.7	2.8	9.6	1.4
Rural females	2.3	4.8	17.4	1.3
Urban males	6.5	7.2	16.6	4.2
Urban females	4.7	15.8	24	3.1

Source: Same as Table 5.

as the GDP in mining and in electricity, gas and water supply. What is more, gross revenues from IT services exceeded 12 per cent of GDP generated in India's services sector as a whole, which accounts for more than 50 per cent of the nation's GDP. Thus, even though the software and IT-enabled services sector started from a small or negligible base a decade ago, its rapid expansion at an annual compound rate of more than 30 per cent between 1998-99 and 2004-05 has ensured that it is today an important presence in the economy.[3]

The fact that the rise to maturity of this sector has been driven predominantly by external demand is also well recognised now. Exports of software and IT-enabled services have risen at a compound annual rate of 38 per cent a year since 1997-98, and overwhelmingly explain the rapid rise of the sector. In 2004-05 exports of software and services as estimated by the RBI was, at $17.7 billion, equal to about a fifth of India's merchandise exports and higher than one of India's principal commodity exports, viz, textile and textile products (including carpets).

This has made IT services exports an important component of India's total (merchandise and non-merchandise) exports. The ratio of IT services to merchandise exports has risen from 14 per cent in 2000-01 to an estimated 22.5 per cent in 2005-06. Further, the ratio of net IT services export earnings to total net invisible earnings rose from 53 to 59 per cent between those two years.[4]

However, the sector's contribution to employment does not compare with its role in the generation of income and foreign exchange. The only available estimates here are those from NASSCOM, which indicate that employment rose from around 2,85,000 in 1999-2000 to just 1,287,000 in 2004-05,[5] or at a compound rate of about 35 per cent per annum. This is indeed remarkable given the fact that rate of growth of employment during 1999-2000 to 2004-05 as per NSS statistics amounted to just 1.97 per cent in rural areas and 3.22 per cent in urban areas. However, these growth rates conceal the low base from which employment has grown, making the absolute contribution of the sector to employment minimal.

The total IT industry, including both hardware and software elements, as well as IT-enabled services, still employs only slightly more than one million workers, out of an estimated total workforce in India of more than 415 million, and urban workforce of around 110 million. Total employment in this sector is far short of even the annual increment in the youth workforce. This mismatch between the sector's contribution to GDP and its contribution to employment does suggest that, despite its high growth, this sector can make only a marginal difference to employment, even of the more educated groups in urban areas.

Therefore, as of now, the expectation that the demographic dividend would itself trigger processes that would help exploit its benefits does not seem to be warranted in the Indian case. While the labour force is indeed expanding, thus far, the task of absorbing an increasingly youthful workforce has been postponed rather than undertaken. If the challenge is not met soon, the dividend can prove a liability.

Implications for Health Status of the Population

Discussions on the economic implications of the demographic dividend often also presume that the desired quality of the population bulge entering the workforce in terms of health is ensured. While the changing age distribution of the population can eventually lead to an increase in the supply of working age population, it may not necessarily lead to an increase in productivity (or lower rates of absenteeism), without significant improvements in the health status of the population (both of the working and the non-working age). Secondly, from the view point of the savings-growth causality, increased longevity in itself may not be accompanied by increased savings of the working age population because of the increase in disease burden across all age-groups (despite longer life spans) and rise in healthcare expenditures.

Although India accounts for 16.5 per cent of the world's population, it contributes to a fifth of the world's share of diseases. The National Commission on Macroeconomics and Health (2005) has classified health conditions into three major categories namely: communicable diseases, maternal and child health conditions; non-communicable diseases; and accidents and injuries. It has been projected that with a few exceptions such as leprosy and blindness, incidence of the majority of health conditions belonging to all the three categories will rise significantly by 2015. Diseases under the first category accounted for nearly half of India's disease burden in 1998. While the burden on account of most of these diseases and deaths on account of malaria, TB, diarrhoea, and other infectious diseases will reduce and leprosy will be eliminated, HIV/AIDS and TB and drug-resistant malaria are projected to increase.

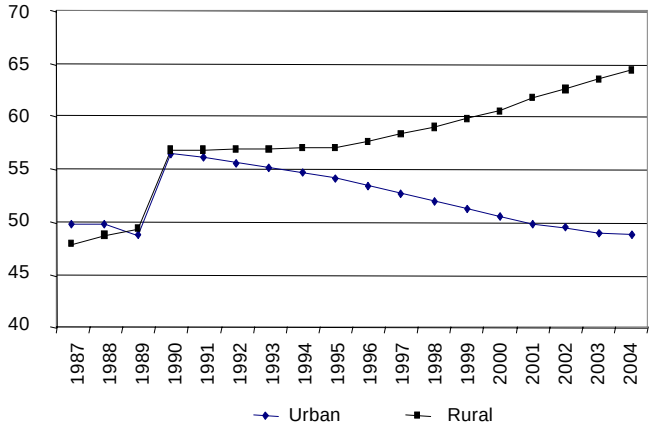
What needs to be noted is that the age distribution of prevalence varies with disease. In some cases such as asthma and tuberculosis prevalence is concentrated in the younger and/or older age-groups. In others such as jaundice and malaria the distribution is more even. But in areas like reproductive health, HIV/AIDS and possibly even mental health, the prevalence of health problems is likely to be concentrated in the bulge.

The other health challenge posed by the specific phase of the demographic transition that India is going through is that related to infant mortality and reproductive health. This is inevitable given the fact that the proportion of women in the reproductive age-group is projected to rise to a peak of nearly 55 per cent in 2016 and remain around that level for the next decade. The increase in this proportion will also require increased efforts to reduce not only maternal mortality but also the number of infant and child deaths. This would require investment in infrastructure to ensure safer and better facilities for child birth and advocacy to ensure utilisation of these facilities.

The nutritional problems associated with effective childbearing remain significant and widespread. Poor nutrition for girls during adolescence (and resultant anaemia and inadequate calcium intake) contributes to future obstetric risk, adversely affects the reproductive process and affects the health and development prospects of the children as well. Yet undernutrition and deficiencies of micro-nutrients may be described as characteristic features of the condition of women and girl-children in most parts of India. While there has been some improvement in nutritional conditions over time, gender disparities in this area remain significant and have probably even widened over time.

All this suggests that expenditures related to both nutrition and reproductive health will have to go up substantially,

Chart 5: Workforce Participation Rates in China
(Per cent of population)



Source: CEIC Database.

if there is to be any social and material benefit from the demographic bulge.

Comparison with China

The evolving employment, education and health situation therefore does not warrant great confidence in India's ability to exploit the demographic "window of opportunity". Despite this, the demographic argument is routinely invoked to suggest that India is likely to overtake China in economic performance. A typical example is a recent survey of China by *The Economist* [Miles 2006: 12], which notes: "Goldman Sachs, an investment bank, reckons that China's "demographic bonus" of a large working age population with a small number of dependents (helped by the one-child-per-couple policy introduced in the late 1970s) will shortly run out as the number of young workers starts declining. The country's dependency ratio will begin to rise by 2010, whereas India, on current trends, will not reach that point until 2040." It is also often suggested that China's shrinking workforce would soon raise wages to an extent where it would lose its export competitiveness [Barboza 2006].

These suggestive remarks are based on three presumptions, each of which need to be examined closely. The first is that China's high growth in the period since the early 1980s can be explained in terms of the demographic dividend. According to Feng and Mason (2005), the support ratio in China – defined as the ratio of the effective number of workers, or the population weighted by age-specific productivity weights, and the effective number of consumers, or the population weighted to allow for variation in consumption by age – increased by 28 per cent between 1982 and 2000 or at an average annual rate of 1.3 per cent. During the same period the purchasing power parity-adjusted GDP grew at an annual rate of 8.4 per cent. On this basis, it is held that the demographic dividend accounted for 15 per cent of China's economic growth.

Besides the fact that even this computation accounts for only 15 per cent of China's heady growth during the concerned period, what is important to note is that the computation is based on the growth of the actual workforce and not the labour force. As Table 8 indicates the rate of growth of the workforce was robust in urban areas and started slackening in rural areas only since the mid-1990s. Since this was accompanied by significant migration to urban areas, the workforce participation rate rose in urban areas till the mid-1990s and in rural areas throughout the recent period. Thus, China's success is partly related to its ability to maintain relatively reasonable employment growth rates even during the reform years, except for the more recent period when the reform of state-owned enterprises has resulted in a substantial loss of jobs (estimated at 20-30 million by *The Economist* and at 14 million over the five years ending 2003 by the OECD). As noted above, this was not true of India where the reform has been accompanied by a sharp deceleration in employment growth. This would mean that despite the rise in the share of population in the working age-group, the "support ratio" in India may not increase as expected. However, an area of concern for China is the decline in the urban employment-to-population ratio since the early 1990s, as apparent from Chart 5.

The second presumption often made in the kind of India-China comparisons noted above is that investments in human capital in India would match that of China's, making the former exploit the benefits of its growing workforce in the coming years, as China did in the recent past. On the surface India and China seem to doing equally well on the educational front, with the ratio of educational spending to GDP in India matching that in China, and the public share in India being larger. But outcomes have varied significantly. As compared with India's record discussed above, in as early as 1986, 85 per cent of the relevant age-group in China was receiving six years of primary education and this had risen to 100 per cent by 2000 [OECD 2005]. The graduation rate of junior secondary school rose from 41 per cent in 1986 to 85 per cent in 2003. In addition the participation in education after the nine-year level has been rising even if not as rapidly as for junior secondary schools. Going further, in 1999, the government declared its intention to double the size of tertiary education institutes, especially in technical fields of study. As a result the number of graduates from higher education institution doubled between 2000 and 2003. A further 50 per cent increase seems likely by 2006 based on enrolment rates since 2002. The emphasis on technical subjects has meant that graduates in science and engineering amounted to 5.25 per cent of the relevant age-group in 2003 and this ratio is rapidly rising.

Physical access to health facilities has also been improving rapidly in China. According to the OECD (2005), China's total health expenditure at 5.3 per cent of GDP in 2002 is only slightly lower than that in some OECD countries. The share of private financing is higher in China than in most OECD countries but substantially lower than in India, which (at more than 80 per cent) has one of the highest ratios of private to total health spending in the world. However, as in India, China during the reform years has displayed a rising proportion of private spending in total health expenditure. The share of public health outlays in on-budget spending in China has fallen from 4.2 per cent in 1994 to 2.9 per cent in 2002 and represented only 0.6 per cent of GDP. Thus, this is an area in which both countries need to make

Table 8: Employment Growth in China
(Average annual rates per cent)

	Urban	Rural
1984-87	4.04	2.71
1987-1994	4.91	3.67
1994-2000	3.84	0.02
2000-04	3.43	-0.15

Source: CEIC Database.

significant advances, though with much better physical access, a rapidly rising per capita income and a slower rate of population increase, China has some advantages in this respect.

Finally, the presumption is that India's growth is of a kind that would deliver productivity increases per worker comparable to that in China. It is true that GDP per worker has been rising in India, partly because employment growth has decelerated even as GDP growth has accelerated. But a disconcerting feature of GDP growth in India is the dominance of services in total growth. Of the cumulative increase in GDP between 1990 and 2004, while 55 per cent was accounted for by manufacturing in the case of China, as much as 60 per cent was accounted for by services in the Indian case. Given the technological trajectory, it should be expected that the potential for increases in productivity is far greater in industry than in services. This suggests that distorted growth of incomes in the services sector, illustrated by the discussion on the IT and IT-enabled services, explains the paradoxical acceleration of GDP per worker in India at a time when GDP in services is rising rapidly. This does raise questions about the sustainability of India's productivity growth trajectory.

For all these reasons, the Chinese experience does not necessarily establish the opportunity open to India in the coming decades on account of demographic advantages. Nor is there any certainty about predictions that India would catch up with or overtake China in the near future. What the comparison does suggest is that India can learn from the interventionist policies adopted by the Chinese government in the early years of the reform, and China needs to be wary of the implications of some of its reform policies, especially for employment and health.

Conclusion

In sum, the evidence suggests that India faces a major deficit in the areas of education and health which could adversely affect the conversion of a growing labour force into an effective workforce offering quality, low-cost labour. Further, the changing age structure of the population is likely to change the pattern of the disease burden substantially. The existing situation in areas that affect the population in the "bulge" age-group suggests that the disease burden is likely to rise, leading to a deficit in health capital. There are also reasons to believe that neoliberal economic reforms in India since the 1990s are weakening the ability of the state to intervene successfully and undertake the necessary investments in these and other areas, that would give India the wherewithal to benefit from the new opportunities that the global economy supposedly affords.

The implications are clear. Just as the "excess population" argument failed to recognise the benefits that can be garnered if these excess workers could be put to work, the "demographic dividend" argument ignores the fact that available workers are not automatically absorbed to deliver high growth. Strategies exist to exploit the demographic window of opportunity that India has today, but they need to be adopted and implemented. In addition, the challenge of meeting a range of goals related to education and health is bound to grow. Focusing on the automatic "gains" to be delivered by the demographic dividend may result in an underemphasis of the effort needed to meet the new challenges that the current phase of the demographic transition brings. In particular, emphasis on liberal and open-door policies and excessive fiscal prudence may militate against the adoption of appropriate policies. India's experience during the liberalisation years does suggest that markets do not ensure that these problems are resolved, and this can result in wasting of the opportunities that the country's demographic transition temporarily offers. EPW

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Notes

1 Figures from NSSO (2006), *Employment and Unemployment Situation in India*.
2 Figures from Indian http://www.nasscom.in/Nasscom/templates/NormalPage.aspx?id=28485, accessed November 18, 2006.
3 Computed from figures from NASSCOM and CSO.
4 Computed from figures of national accounts and balance of payments statistics available in Reserve Bank of India, *Handbook of Statistics on the Indian Economy*.
5 Figures from http://www.nasscom.in/Nasscom/templates/NormalPage.aspx?id=28487, accessed November 18, 2006.

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