

Unemployment and Wages in India: Ideology, Reforms, Evidence

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Abstract

This paper examines the pattern of unemployment and wage growth in India for the last twenty five years. The paper uses the NSSO data on employment, unemployment and wages to examine some controversial propositions e.g. that despite economic reforms, unemployment rates increased or that the 1990s were characterized by “jobless” growth, or that the introduction of reforms in the 1990s led to a sharp deceleration in the rate of growth of agricultural wages.

This examination leads to results at a wide variance with the conventional wisdom. Rather than a large slowdown as claimed by several recent studies, real wage growth in the 1990s nearly doubled its earlier pace. Unemployment rates were found to be stable for the 1990s and to have sharply come down by 2003. Employment growth did slow down in the 1990s, but this appears to have been in response to a sharp slowdown in the growth of the potential labor force i.e. the growth in the number of people in the labor force age group, 15-59 years. Thus, instead of a job scarce economy, one strong conclusion of this paper is that India is transitioning from a labor surplus economy to one with lesser surpluses and emerging labor scarcities.

Executive Summary

Collecting the major results presented, the following conclusions emerge: there was acceleration of growth in the nineties, that the level of growth was extremely high throughout the 1980s & 1990s (among the top ten economies in the world), and there was little inequality change between the early 1980s (1983) and June 2000. Thus, the Indian economy probably achieved a perfect double: high growth with near constant inequality. Normally, such a result would be occasion to look for what went *right* with economic policies, and proceed with doing more of the same i.e. accelerating reforms. But there is a notable “negative” feature of the Indian economy, particularly in the nineties: low job growth. In the 1980s jobs were being created at the rate of 2.5 percent per year; in the 1990s, the rate more than halved to only 1.2 percent per annum. Despite all the results of good growth, low inequality change, and high poverty decline, this slow job growth is disturbing. How can a miracle economy produce so few jobs?

Government and analysts have noticed the low rate of growth of jobs, and concluded that something was wrong with economic policy. There is one explanation (not ours but a theoretical possibility) that fits a “pessimistic” scenario: economic reforms in India mattered for a privileged few, the economic growth rate was maintained by increases in productivity and wages of the rich, and that for the poor, unemployment and lack of work opportunities was the “reality”.

If something was wrong with economic policy in terms of job creation (or job creation primarily for the rich) then the fault lines should show up in unemployment rates. But no definition of unemployment shows any trend increase in unemployment in the 1990s: not for usual status, not for weekly status, not for males, not for females. For the period 1999 to 2003, unemployment rates have come down significantly to near historical lows. In addition, participation of child labor has significantly declined, and educational enrollment in the 15-24 age group has significantly gone up. Female wages have expanded at a faster rate than male wages. The 1990s were better. This is the **first major conclusion** of this paper: the labor markets in India have responded to the reforms, adjusted to the new reality, behaved in a very market oriented, and predictable, fashion, and benefited.

Unemployment rates, traditionally measured, are dismissed by the reform critics on grounds that usual status and weekly status unemployment rates are inappropriate for a developing economy like India, an economy, where, it is claimed, underemployment is the norm. Hence, the need for an alternative measure i.e. the construction of a “daily status” unemployment rate for Indian workers. Further, the critics argue, unemployment rates are endogenous and subject to the “discouraged worker” phenomenon. The reasoning goes as follows: there are few jobs available (“just look at the data on job growth”) so people withdraw from the labor force i.e. they stop looking for work. This causes the unemployment rate to be artificially lower. In other words, the critics mention, a plausible and consistent interpretation of the job reality is that there has been a large increase in the percentage of discouraged workers in India.

The **second major result** of this paper is that a proper construction of daily unemployment rates results in a trend *decline* in unemployment rates for the longer period 1983 to 1999/00 and only a marginal increase from 1993/94 to 1999/2000. The **third major result** is that the discouraged worker hypothesis/explanation for the Indian labor market of the nineties is a myth, albeit a seductive myth. Examination of population data reveals the well known result of a decline in the growth rate from 2 % p.a. in the 1980s to 1.75 % p.a. in the nineties, and 1.6 percent in recent years. There is one variable that can help identify whether low labor force growth was due to demand (low number of jobs) or supply (low number of people available for jobs). This variable is the *potential* labor force, the number of people in the age group 15-59. Strikingly, and little remarked upon, is the fact that the rate of growth of the potential labor force significantly declined in the 1990s: from a 1980s rate of growth of 2.6% p.a. to only 1.7% p.a.. Thus, low enough as the average job growth was, it may have been *caused* by low growth in “supply” i.e. the Indian economy produced as many jobs as “demanded”. Thus, a major reason for the lower rate of growth of jobs in the 1990s is the considerably lower rate of growth of the *potential labor force* in the 1990s. This means that jobs became scarcer in the 1990s.

This result is contrary to conventional wisdom, and certainly the prevailing political wisdom; the latter, in the name of social justice, is emphasizing a large expansion in “food for work” programs, and *employment generation* programs. Both interpretations of the labor market cannot be right. It cannot be that people are plentiful and also that

people are scarce, or even that people are becoming less plentiful. Some light can be shed on this debate by examining the pattern of wage growth. If people willing to work have become more plentiful, (the conventional view) then one should observe that the growth in real wages slowed down in the nineties. Indeed, this “fact” has been asserted to be true by several experts. The **fourth major result** is that this is also a myth, though it was propagated by no less an authority than the Planning Commission of India (via the Mid-Term Appraisal Report in 2000); the same institution, incidentally, responsible for the policy of creating more jobs and implementing the employment guarantee act. Real wages in India have not only not declined, they accelerated in the 1990s – from 2.4 % p.a. to 4.4 % p.a. Nor was this acceleration confined to the software sector, or the rich sector etc. Rural wages accelerated from 2.5 % p.a. to 4.1 % p.a. These wage growth numbers emerge from a detailed analysis of NSSO data on employment and income, and are supported by other sources of wage data. This broad based acceleration in wages in the 1990s can be taken to be in the nature of a “stylized fact”.

What, the wage facts indicate is that the conventional, government endorsed “jobs are scarce” conclusion needs to be modified. For some categories of workers, jobs are indeed scarce and these are likely to be for the non-poor, for urban, and for individuals belonging to households with rising aspirations i.e. the revolution of rising expectations, a revolution that occurs with the increased educational attainment. Preliminary indications of our ongoing research is that frictional employment has also increased in the 1990s i.e. another sign that India is moving from an economy characterized with under-employment and labor surplus to one increasingly characteristic of considerably less labor surplus and even lesser underemployment and unemployment.

The **fifth major result** is the light shed by wage growth on the “great inequality debate” in India. High wage growth in rural and urban areas for the longer 1983-2000 time period (3.1 % p.a. for rural and 3.2 % p.a. for urban) is strongly suggestive of at least a *constancy in inequality*. And a high average wage growth is indicative of a sharp decline in poverty. This is the **sixth major result**: the conventional view of poverty levels and decline in India needs to be radically changed. The official estimate of poverty in India for 1983 is 44.5 percent i.e. almost half the total population of India was absolutely poor just twenty years ago. After years of stagnation in the sixties and seventies, this rate declined to (again officially) to 26 percent in 1999/00. Our estimates, based *exclusively*

on the NSSO surveys for expenditure, income and employment, indicate that the level of poverty in the two years are 45 and 13 percent i.e. thus, rather than a 19 percentage point decline, there was a decline almost double that amount – a 33 percentage point decline. Looked at differently, the NSSO wage based data indicates a poverty level in India in 1999/00 which is exactly half the official estimate! In terms of the rate of decline, our estimates are that poverty dropped to 27.3 percent in 1993/94 and to 13 percent in 1999/00 i.e. the pace of poverty decline post-reforms was at a 40 percent faster rate (1.7 percentage points a year in the 1980s and 2.4 percentage points a year in the 1990s). Though the paper makes no attempt to causally link economic reforms to the pattern of economic growth and therefore poverty decline, it most likely is the case that a faster rate of poverty decline was associated with the economic reforms induced faster growth, especially since this faster growth was not accompanied by an increase in inequality.

The above six results emphasize the need for Indian policymakers to revisit their assumptions about the labor market and India, and the distributional impact of economic reforms. Poverty has declined at a fast pace and the time has come to revise upwards the poverty line, a line which has stayed constant for thirty years. India is *transiting* from an economy characterized by absolute poverty to one characterized by relative poverty. We need a higher fraction, and number, of poor people not because economic reform policies have failed but because they have ***succeeded***. There are significantly less absolutely poor people in India than the official data (and experts) would have us believe; there are significantly more relatively poor people in India than what the government of India (or experts) want to believe. This is the **seventh, and final, major result** of this paper.

Introduction

Reform of the labor market in India continues to be a major topic for policy discussions. Curiously, there is concern about its proper functioning from both sides of the political spectrum. One set argues that economic reforms, unleashed in the early 1990s and still continuing, have been responsible for slow job growth. The other side argues that stringent labor laws have prevented the job market from expanding by amounts proportionate to the economic growth that has occurred. Ironically, with the election of the party that first brought about the economic reforms, the Congress, opinions have converged. The flag-bearer of this convergence is the introduction of an Act of parliament, an Act that guarantees at least 100 days of employment to every able bodied person. This extreme act was necessary because it was believed that unemployment, especially in the rural areas, was persistently high.

The erstwhile reforms oriented Congress government now admits that not much has been well with the reforms that they helped unleash. Market forces have not delivered, at least have delivered significantly less than the “promise”. Government action is necessary to redress the imbalances that have been allowed to flourish in the name of reforms. Hence, the need for emergency measures like the Employment Guarantee Act (EGA). Intellectual support for this Act is now being provided through government documents, like the recently released Planning Commission report, Mid-Term Appraisal of 10th Five Year Plan (2002-2007), hereafter MTA(2005).

Major economic reforms were introduced in India in 1991-1993. Prior to that date, by most accounts and most definitions, India was a relatively closed economy. Both the domestic and external opening up of the economy has continued since 1991. However, such reforms have been accompanied by an intensive intellectual and political debate. It has been contended by various authors (and political parties) that the economic reforms have not been pro-poor, that inequality has increased significantly, and that growth has been of the “jobless” variety. In particular, the poor in the rural areas have lost with the rate of growth of agricultural wages collapsing to only a 2.5 percent level in the 1990s compared to a 5 percent plus level in the 1980s.

Not only wage growth has collapsed, but so has the rate of growth of jobs. In the 1980s sans economic reforms, jobs increased at a 2.9 % rate; in the 1990s, job growth

increased by only 1.2 percent per annum. Job growth has been estimated on the basis of the large sample¹ employment and unemployment surveys conducted by National Sample Surveys (NSSO) organization of India. The annual surveys conducted by the NSSO indicate that employment recovered post 1999/2000 and enjoyed a high 2.9 % per annum growth for the three year period, 2000 to 2003. (MTA, p.264). In 2003, unemployment rates reached near historical low levels (only 3.1% weekly status, and 2.2 %, usual status). Ironically, the government introduced the EGA a full year after the 2003 NSSO survey (Jan-Dec) was conducted, and a few months after its results on employment and unemployment were well known, at least to the policy makers and the new government.

The reality of wage growth in India is equally controversial. Here, the emphasis has been on the rate of growth of the poor in the country, especially rural poor. So rural and agricultural wages have received the most attention. This interest has been heightened by concern over the slow output growth in the agricultural sector, which, depending upon the period of choice, has either grown (agricultural GDP) at only 1.2 % per annum (first three years of the Tenth Plan, MTA p.264) or grown at over 2.9 % per annum for the period when the self-professed pro-farm Congress party was not in power, 1996 to 2003.

This paper wades into the political and ideological minefield by examining in detail the nature of unemployment, employment, and wages in India over the last twenty years, 1983-2003. This exercise covers both the high growth period of the 1980s, a period before the institution of economic reforms, and the period of high growth after the introduction of reforms (the 1990s). The paper uses the NSSO and associated data to examine the veracity of the various claims on employment, unemployment and wage growth. The exercise, in large part, is one of accounting i.e. what do the data state happened, what do the scholars state, and can the conclusions of the latter be derived from the former. A large part of the exercise deals with *what* the NSSO employment surveys actually reveal. Each of the “numbers” or “facts” on unemployment or wages are

¹ Every five years, the NSSO conducts a survey which sample more than 120,000 households, or more than 650,000 individuals. These are known as the large sample surveys. Such surveys were conducted in calendar year 1983, and agricultural years (July 1 to June 30) 1987/88, 1993/94 and 1999/00. In the other years, a “thin” sample survey is conducted with sample sizes often less than half of the large samples.

spitted out by the unit-level data. So all researchers should, theoretically, obtain the same results from the same data.

A detailed examination of trends in wage data, as revealed by all the NSSO and non-NSSO sources, is also conducted. In particular, the Agricultural Wages in India (AWI) series, the Cost of Cultivation surveys, (both issued by the Department of Agriculture) and the data on rural incomes collected by the NCAER are all analyzed along with the data on wages contained in the NSSO surveys.

This examination of unemployment and wages, along with examination of data on population and GDP growth, leads to an entirely different view of the Indian economy than conventionally reported. In particular, the following results stand out. First, that the 1990s were characterized by a decline in not just the labor force growth (as noted by most observers) but also by a large decline in the rate of growth of *potential labor supply* i.e. people in the 15-59 age group. This decline had major “intended” consequences for the labor market – if the labor market was characterized by underemployment in the 1980s, and overall GDP growth was maintained, then the labor market would reveal much less underemployment in the 1990s. The flip side of a tightening (or less slack) labor market is an increase in the rate of growth of real wages. And this is exactly what is observed.

Thus, contrary to the popular belief (a view critically examined) real wages accelerated significantly in the 1990s. For rural India, where most of the poor are, wage growth increased from a 2.5 % p.a. pace to 4.1 % p.a. For all India, the increase was from 2.4 % to 4.4 % p.a. For agricultural workers, the NSSO data indicate a constancy in the rate of growth, 2.7 to 2.8 percent. These NSSO based results are orthogonal to the popular view, repeated both by government agencies and development experts, that agricultural wage growth especially rural, decelerated in the 1990s to only about half its 1980s pace.

These “facts” have an important bearing on several controversies. First, if wage growth accelerated, and that to in rural areas, then how is this fact consistent with a decline in the rate of growth of agricultural output? Second, how is this acceleration consistent with unemployment rates increasing to record levels, or levels necessitating the demand and

urgency of an employment guarantee act? Third, what implication do these growth rates have for the pace of poverty decline in India, in the 1990s?

Which rural and agricultural wage growth estimate is “right” has an obvious effect on conclusions about poverty levels, and poverty decline. An overwhelming amount of the recent poverty literature in India has been devoted to establishing the percentage by which the NSSO consumer expenditure survey data for 1999/00 overstated mean expenditures, and hence overstated the cumulative six-year growth between 1993/94 and 1999/00². The overstatement for six years of *cumulative* growth is small, since the “error” for the terminal year is in the range of 1 to 2 percent. Average consumer expenditures are purported to have increased by only 8 percent for the six-year period 1993/94 to 1999/00, though some authors (see Sen-Himanshu) argue that the *cumulative* six-year growth of expenditures of the poor was no more than 3 percent! Most others (see Deaton-Kozel volume for a listing) argue that the average cumulative growth was about 6 percent in per capita expenditures. But the average wage growth of rural workers is estimated by the same organization (NSSO) to be 4.1 percent per annum, or 28 percent for six years. The different NSSO survey estimates of growth (consumption and income based) diverge by about 22 percentage points (6 vs. 22 percent). A couple of percentage points adjustment in consumption due to over-reporting of food expenditures due to a 7 day vs a 30 day method is therefore very, very minor. Thus, the significant “growth gap” between per worker rural wage growth and per capita rural consumption growth during both the 1980s and 1990s dwarfs any calculations of the over or under-estimate of mean per capita expenditures in 1999/00.

If unemployment rates have stayed the same (as documented in Section 3) then incomes of the poor have proceeded at a far more rapid pace than the NSSO expenditure survey would have us believe. Stated differently, poverty in 1999/00 was a lot lower, according to data contained in both the NSSO expenditure and unemployment surveys, than the figure implied by use of the NSSO expenditure data alone.

The different estimate of growth revealed by the NSSO Employment and Unemployment (E&U) survey provides a perspective on how different the poverty estimates would be if the Consumer Expenditure (CE) surveys had shown growth magnitudes consistent with

² See Deaton-Kozel(2005) edited volume for a listing of the papers devoted to this subject.

all other data. All calculations, and estimates, agree that inequality in 1999/00 was less than that in 1983; if not better, than certainly not worse. If the wage *growth* that is achieved by agricultural workers (2.5 % p.a. on average for sixteen and a half years) is imposed on the *entire* economy (a conservative assumption) then the poverty level realized in 1999/00 is half the official level of 26 percent i.e. 13 percent.

This number, and its significant departure from the official number, should be kept in mind as the paper traverses a mine-field of data and estimates of employment, unemployment and wage growth. Section 2 documents the data, definitions, and methods and the various methodological issues associated with the NSSO data on employment, especially unemployment according to the current daily status definition (CDS). Section 3 summarizes the conventional wisdom, and the reasoning, pertaining to the topics covered in this paper. Section 4 reports on the trend in unemployment in India, from 1983 to 2003. Section 5 examines data on employment, to verify if indeed the 1990s was an era of jobless growth. Section 6 takes a detailed look at the different estimates of wage growth, according to several different sources of data. A sub-section is devoted to the phenomena of the large catch-up that appears to be occurring with female wages. Section 7 concludes.

Section 2: Data, definitions, methods

Data on employment wages, etc. used for this paper are mainly from Employment-Unemployment Survey conducted by National Sample Survey for years 1983, 1993-94 and 1999-00. Unit level records on earnings, wages, status, occupation, education etc. have been used. For each member of the household (upwards of 120,000 households in the large sample surveys and about 30,000-60,000 households in the annual surveys) detailed data relating to activity in the preceding year and in each of the preceding 7 days is tabulated. What was the nature of work (e.g. self-employment, unpaid family labor, paid labor, paid labor in government works programs etc), how many days of work was in each activity (broken up into units of 0.5 days for 7 days), and what were the total earnings received. For self-employment and unpaid family labor, no earnings are reported, neither actual nor imputed. From these data, the NSSO authorities assign three classifications for each individual. She is assigned a Usual status of employment, a Weekly status and a current Daily status (CDS).

The Usual status is broken up into two categories: principal and subsidiary. In the *usual status* classification, the status of activity on which a person spent a plurality of time in the preceding 365 days is defined as the *principal status*. The second most common status is deemed to be subsidiary status. If the most common occurrence for an individual during the year was unemployment, then the individual was considered unemployed according to usual status. For classification of persons according to *current weekly status*, individuals were first assigned a unique activity status for each day of the week. Again, the most common activity is used to define the weekly activity. A person is considered Unemployed (weekly status) if she did not work at all during the preceding week.

The daily data definition of unemployment is whether the person wanted to work on that day but was unable to. While straightforward, implementation of this definition is plagued with problems. Salaried individuals, by definition, are considered to be employed full time i.e. they are deemed to have offered themselves for work in the preceding 7 days, and *worked during the preceding 7 days*. Non-salaried individuals, even if they worked for 6 days in the week, are deemed to be unemployed for one day. This essentially has the effect of biasing the daily unemployment rate upwards by at least 13 percent.

The data on wages are easily computed as total earnings from wage employment in the preceding week divided by the number of days associated with wage employment. In addition, rural and agricultural wages are estimated from three other sources: Agricultural Wages in India, Cost of Crop Cultivation, and rural surveys conducted by the NCAER. These data are in nominal terms; the poverty line was used as a deflator to obtain real wages with the rural price index in 1993/94 as the “comparator”.

The population projections based on NSSO individual weights do not match the population as revealed by Census data. These weights were adjusted, for rural and urban areas separately, for each of the survey years in order that the aggregate population was equal to the Census population at the time of the survey.

The NSSO E&U surveys contain a wealth of information about trends in employment and unemployment. Indeed, these surveys form the “official” source of information for the government on this important issue e.g. see three government of India reports on unemployment which have been reproduced in one volume (see Kapila and Kapila (ed), 2003). These surveys have not been much used (to date) for trends on household *incomes and welfare* for three important reasons. First, because a parallel consumer expenditure survey was always available to derive information on poverty, and this parallel (CE) survey was also the official, hence definitive, source for trends on poverty. Second, it is generally believed that household income is something considerably more difficult to achieve accuracy with than household expenditure. Third, the NSSO household income data were incomplete in that they only had information on labor income.

But the NSSO expenditure data are not without their share of problems. The urgency for an alternative source of information on poverty therefore arose sometime *before* the publication of the doomed-to-be-controversial NSSO 1999/2000 CE survey. A major reason was the recognition that the NSSO CE surveys had been capturing less and less of the consumption as revealed by the national accounts. Some have argued that this is to be expected since the consumption of the rich is difficult to capture in household surveys. But this stretches the imagination because half of national *consumption* (the survey to national accounts ratio fell below 50 percent in 2001/02) cannot be attributed

to a handful of percentiles. (In contrast, income or wealth can (theoretically) be attributed to a few.)

The NSSO E&U survey:

In the NSSO E&U survey, if an individual had any labor income, whether in cash or kind, such activity, occupation, industry and wages was recorded for the week in question i.e. the wage data are based on information about the previous week. For salaried or “regular” workers, this meant that a person worked the entire 7 days of the week. For non-salaried workers, the number of days worked, and the wages received per day, are recorded separately. Thus, the average per day wage rate, as per the preceding week, can be estimated for all workers.

In rural areas, and especially for small cultivators, incomes received from wages is an incomplete indicator of family income because it excludes the contribution of family labor, and excludes the income from any form of self-employment, including cultivation. But there is no problem in interpreting trends in per day wages as indicators of what is happening to the growth in incomes of those whose major asset is labor, especially the poor.³

Thus, these wage, and earnings, data can be used to shed light on the various controversies generated by the alternate NSSO consumer expenditure surveys. For the absolute poor, income growth should be equal to wage growth. Given this simple assumption, an alternative estimate can be obtained for the decline in poverty.

A simple calculation of what the NSSO data states on the trend in wages can help to resolve some of the various debates on what happened to poverty and inequality in India in the 1980s and 1990s. There are no definitional changes involved in the NSSO wage data so there should be little controversy over what it says. Neither has any author questioned the accuracy, or the importance, of the NSSO data on growth in real wages. The derived growth in real wages for the 1980s and 1990s can help shed light on the respective pace of poverty decline in the two periods – a higher rate of wage growth in

³ As Sen-Himanshu point out, there is a “problem” with the earlier wage surveys (prior to 1999/00) in that such surveys did not include data on overtime payments. It is unclear, however, as to what was the strict definition of overtime payments that were excluded before 1999/00; the impact on wage growth of the poor due to this earlier omission is likely to be minimal, if not inconsequential.

the 1980s, for example, would be indicative of the growth process being more pro-poor in the pre-reform period. A faster growth rate for urban wages in the 1990s may be indicative of increasing inequality.

Section 3: A broadly accepted view of what happened, 1983-2000

The conventional view, perhaps even universal wisdom, of what happened in the Indian economy in the 1980s and the 1990s is as follows. In the 1980s, economic growth averaged around 5.5 % p.a. Population growth was around 2 percent, so per capita growth averaged 3.5 percent. This growth was a major acceleration from the past, and both the agricultural and the non-agricultural sectors of the economy shared evenly in it. Agriculture grew at a robust 3.7 % p.a., and non-agriculture grew at 6.6 percent. Rural India, where most of the poor reside, benefited enormously and with high wage growth, and declining unemployment rates, absolute poverty declined at a fast pace in the eighties. The head-count ratio of poverty declined from 45 percent in 1983 to 37 percent in 1993/94. This decline is remarkable because both in the fifties and in the sixties, the poverty ratio had, in some year or another, hovered around 45 percent. (For the *same* poverty line, poverty in 1951 was 45.3, and in 1961, it was 46.5 percent).

In the early nineties, the Indian economy ran into a balance of payments crisis, a situation, which forced India (for the last time, as it happens) to go with a begging bowl to international agencies, namely the World Bank and the IMF. The government of India instituted major economic reforms in the short space of two years, 1991-93. The nature of these reforms is not in much doubt, or controversy. They were primarily oriented towards industry (e.g. abolishment of the licensing system; an industrialist just a decade ago needed the permission of the government to expand capacity, reduce capacity, or to initiate new investments), and external trade (the rupee was devalued in two super quick steps, over two days by 20 percent, and tariffs were reduced from outright bans and astronomical levels to open imports, and less astronomical levels.)

These reforms led to an acceleration of growth for a few years (particularly the three years from 1994/1995 to 1997/98, when GDP growth averaged over 7 percent). However, besides these years, growth acceleration was invisible, and GDP growth for the eleven years following the reforms (1992/93 to 2002/03) was exactly the same as the ten years prior (5.7 % p.a.). However, because the reforms were oriented towards

the rich, urban parts of the economy, this sector benefited disproportionately more and so inequality worsened, and worsened significantly.

According to this version of what happened, there are four important supporting pieces of evidence. First, the rate of agricultural output growth collapsed in the nineties – from 3.7 % p.a. to only 2.6 percent. Second, and perhaps even reflecting this slowdown, *the rate of growth of real wages in agriculture collapsed to less than half the robust rate of the eighties* – from 5.0 to 5.5 % p.a. to only 2.5 % per year. For considerations of poverty, this is considered clinching evidence because agricultural households constitute the poorest of the poor. Third, unemployment rates increased, albeit for only the current daily status of unemployment (see next section for a detailed discussion). From a 6 percent level in 1993/94, unemployment in 1993/94 was 7.3 percent (CDS definition). Thus, and not surprisingly, inequality worsened significantly – or so it is claimed.

NSSO surveys also showed that the rate of poverty decline was definitely slower in the nineties. This is revealed by the “fact” that in the 1980s, the head-count ratio of poverty declined by eight percentage points, while in the 1990s poverty declined by only five percentage points. This slower decline in poverty is all the more shocking because it occurred with considerably faster growth i.e. a lower poverty decline in the nineties with a major acceleration in economic growth.

While no formal connection is made, it is nevertheless contended (by those whose line of reasoning is as stated above) that the changed pattern of growth etc. in the 1990s was responsible for the worsening pattern of poverty decline and inequality change. The changed pattern of growth was made possible by the introduction of economic reforms in India in the early nineties. Thus, there is a presumed “match-up” between 1980s growth and its *favorable* consequences, and the economic reforms led 1990s growth, and its *unfavorable* consequences.

According to the critics of reforms, there were two other side effects which made the reforms particularly unpalatable. First, the above four “facts” conclusively “prove” that after decades of pro-poor growth, the situation in India paralleled that of China, a country where inequality deteriorated by more than 30 percent (on the basis of the Gini index) in the short space of six years. India, *in contrast*, at least until 1993/94, had witnessed

constant to declining inequality! This puts into perspective how bad economic reforms were for inequality, and therefore the poor.

Second, and worse than the trend in inequality, the popular view continues, is the skewed nature of growth in the 1990s; it was “bad”. And bad because it represented a period of (relatively) jobless growth. Organized sector employment after registering an annual growth of 1.6 percent in the 1980s, barely grew in the 1990s (0.4 per cent per annum) and has actually declined in the last three years, 2000-2003.⁴

There are debates within this overall story, but the broad parameters are as outlined. We want to emphasize that the above view of the Indian economy is accepted by virtually everybody: economists, sociologists, policy makers and politicians.

As the analysis in the following sections demonstrates, this in the name of the poor gloom and doom political economy story is flawed in several respects. The jobless growth story is explained by looking at the decline in the rate of growth of the **potential** labor force (population in the age group 15-59 years that is eligible to work). And the latter has declined for two reasons: first, because of demographic changes and a declining birth rate, and second, because of the increasing pull of education for the age group 15-24 years. So a slowing down in the rate of growth of jobs was more a reflection of declining supply, rather than diminishing demand. The second flaw in the story pertains to unemployment rates. Such rates were stable for the most preferred measure of unemployment, weekly status, as well as for the usual status definition of employment. Further, a *corrected* measure of daily unemployment (a person is not considered part time unemployed if she worked at least 4 days in the preceding week) shows such rates only increasing to 5.2 percent in 1999/00 from 4.5 % in 1993/94. (This rate was the highest in 1983, 5.7 %).

In addition to flattish unemployment rates, wage growth accelerated in the 1990s, and accelerated in a rather significant manner – from 2.4% per annum in the 1980s to 4.4 %

⁴ This decline is from 27.8 million in 2000 to 27.0 million in 2003 (MTA(2005), p. 265). It should be noted that the organized sector only accounts for 8 percent of total employment, and that all governments (since 1991) have been committed to reducing the size of the government sector which accounts for about two-third of total organized employment. In other words, there is a very weak link between organized sector employment and the efficacy of the growth process in generating employment.

per annum in the 1990s. For rural India, the increase was from 2.5 % to 4.1 %. For women, the increase in real wage growth was from 2.9 to 5 % per annum. These numbers are consistent with a broadly constant income distribution, rather than in which the magnitude of change is comparable to one of the worst inequality change economies, namely China (as alleged by Sen-Himanshu). Finally, if the NSSO wage data are deemed to be accurate, then it logically follows that poverty decline in India in the 1990s proceeded at a far more rapid pace in the 1990s than in the 1980s. This evidence is the most revealing about the likely pro-poor nature of the growth process in the 1990s, especially compared to the 1980s growth process (which, incidentally, was flawed enough to lead to a major economic crisis in 1991).⁵

A major conclusion of this paper is that there is an urgent need to critically re-examine conclusions about rates of wage growth, inequality etc. This re-examination is necessary because assertions about wage growth decline, outsized inequality increases etc. can and do affect government policy, and according to some, even affect electoral outcomes. So much so that many have argued (and many within the new Congress government) that the Congress party won the recent general election, May 2004, or that the Vajpayee led NDA government lost, because of the political economy of jobs and poverty – jobless growth and/or the poor getting at least relatively worse off, and thereby kicking out the pro-rich urban-biased reform oriented NDA government⁶.

⁵ There are several papers comparing the growth process in the 1980s and 1990s. See Bhalla(2000, 2004), Panagariya(2004), Rodrik-Subramaniam(2004) and Virmani(2004a,2004b).

⁶ It is ironically strange reasoning i.e. the NDA government was defeated because it was too reform oriented so the people preferred the party that first launched economic reforms in India.

Section 4: The reality of unemployment in India, 1983-2003

Unemployment is a major problem in developed economies, and is generally not thought to be a major problem in fast growing developing economies like India (and China). Population growth in India has declined to 1.6 percent per annum, and GDP has been expanding at a 6 % rate for twenty-five years. While some sectors may indeed show high productivity growth, it is unlikely that *trend* labor productivity has been growing significantly faster than 4.4 percent per annum rate, which is what needs to happen for a sustained increase in the unemployment rate to occur. However, according to several recent studies⁷, the conclusion is drawn that the post-reform period, 1991 to present, has been a period characterized by increasing unemployment. So much so that the government felt compelled to introduce an act guaranteeing every able bodied person in India with a job for a 100 days each year.

The empirical basis for these research and policy conclusions are the data on unemployment as revealed by the NSSO. There are three different definitions of employment/unemployment in India: unemployment according to usual status, weekly status, and daily status. (See Section 2 for a detailed discussion). The existence of these different definitions allows for a *variety* of interpretations about what happened to unemployment in India after the institution of economic reforms in 1991.

Broadly, the usual status of unemployment measures structural or long-term unemployment. If a person was in the labor force (working or seeking work) and unemployed for the major part of the year, her usual status would be unemployed. If a person was unemployed for all the seven days in the preceding week, the weekly status would register as unemployed. Theoretically, the definition of daily status of unemployment is straightforward: a person is considered unemployed if on the preceding day she did not work, and this calculation is repeated for 7 days of the week. Empirically, the implementation of this definition has turned out to be a bit problematical.

There are advantages to using the traditional usual status definition since the NSSO provides estimates of unemployment rates for this series for both the large sample (every five years) surveys and the small sample surveys conducted annually. The

⁷ In particular, three Planning Commission studies, two authored by Gupta(2002a,b), and the third the recently released Mid-Term Appraisal for the 10th Plan, Planning Commission(2005).

drawback in using these data is that the recall period for employment is 365 days, and the most common “occupation” is considered to be the defining one. The advantage of using the weekly status is that it is the definition of choice for most countries of the world; e.g. in the U.S., a person is considered unemployed if she did not work even 1 hour in the preceding week.

The daily status definition is almost unique to India and only gained attention when Gupta(2002b) of the Planning Commission used it to contend that unemployment rates in India had increased significantly since the institution of economic reforms in 1991-1993. His defense for the controversial use of the current daily status (CDS) definition was that it “not only captures the unemployed persons but also captures underemployed to some extent. CDS is closer to the real situation prevalent in the country on unemployment.” (Gupta(2002a, p.232)). The recently released Mid-Term Appraisal report for the 10th plan, MTA10(2005) also uses the daily status of definition to project that the daily unemployment rate had increased from “8.87 percent in the base year 2001-02 to 9.11 percent in 2004-05” (p.3).

Table 1a reports the Planning Commission⁸ and our own estimates of unemployment rates for the three different NSSO survey years, 1983, 1993/94 and 1999/2000. The usual status estimates match, and our weekly status estimates are slightly *below* the official estimates, while our daily status estimates are slightly above. We have also constructed the percentage of labor force days for which there is no employment. (Table 1b). If underemployment is the criterion then a variable which measures days of unemployment in the economy maybe more appropriate. Unemployed days are aggregate days that people are in the labor force and are unemployed. This measure yields a much lower level of unemployment (e.g. 5.5 % vs. 7.3 % in 1999/00) and a smaller increase between 1993/94 and 1999/00 – only 1 percentage point vs. 1.3 percentage points.

Regardless of which unemployment measure is used, there does not seem to be that large an increase between 1993 and 2000, and all measures show a largish decline between 1983 and 2000. The post-reform 1993/94 does appear to be a low point of

⁸ These are official estimates and are used by most authors e.g. Ahluwalia, Gupta, Sundaram, Sundaram-Tendulkar etc.

unemployment. However, it is not clear whether “credit” for this low point should go towards the post-reform 1990s (reforms were initiated in 1991) or pre-reform 1980s (as done by several scholars due to a lack of data for the intervening years). Employment data (next section) indicates that employment growth was relatively large between 1991 and 1993, so the conclusion that 1993 reflects a post-reform performance is tenable.

Reproduction of daily status unemployment rates

We have not been able to reproduce the official figures on the CDS unemployment rates. Some problems can arise if multiple observations per individual are present (as happens in the case of daily status where activity data are collected for 7 days, in units of half days. So, theoretically, there can be up to 14 observations per individual.) Our method was to reduce multiple observations per individual to one observation, with the current daily status of employment in the form of three estimates: the number of workers, and the activity days spent working in the week by those partly employed, the number of individuals fully unemployed, and the number of workers and activity days of those with zero unemployment status.

There are two further, and more severe, problems associated with the use of the CDS definition of unemployment. Salaried wage earners are all automatically assigned a 7 day workweek, while non-salaried wage earners, and self-employed individuals, are considered to be unemployed for two days even if they worked for five days in the week. The proportion of part-time unemployment accounted for by “week-end unemployment” is as large as two-thirds! Excluding this measurement error results in an adjusted rate of CDS unemployment.

If the daily status of unemployment is considered to be more useful than the universally accepted weekly status definition, we present the following alternate definition. A person is full-time unemployed on a daily basis if she did not work at all during the preceding week, and wanted to work. She is considered part-time unemployed if she worked for less than 4 days a week (and wanted to work more days). This is a conservative definition of unemployment in that a person is considered unemployed if they worked for as much as half of the week (3 out of 6 days). This definition also has the advantage of not suffering from week-end measurement error, as well as the advantage of conforming to most people’s expectations of what a person unemployed on a daily basis “should” be

defined as. A strict definition of daily unemployment is if a person worked for even 1 hour a day, she is unemployed. If a day is considered to be 6 days, then if a person worked for upto only half of this period, she is unemployed. Thus, our definition is stricter than that of either a weekly or daily definition of unemployment.

Table 1b details the method of computation, and magnitudes, of unemployment, CDS status. While full-time unemployment has stayed relatively constant at about 3.5 percent since 1983, the percent of people who are part-time unemployed have declined from 6.3 % in 1983 to only 4.5 % in 1999/00. Also worthy of note is the fact that the part-time unemployed have consistently worked more than 3.9 days a week!

Like the weekly and usual status definitions, the adjusted daily status definition shows some decline from 1983, and its 1983-2000 pattern is a mild V-shape: 5.7 % in 1983, 4.5 % in 1993/94 and 5.2 % in 1999/2000. Given the similarity in trends, and the confusion over definitions, and uncertainty about the right method of measurement (note the divergence between our figures and the official figures) it may be prudent to dispense with daily estimates of unemployment altogether, and just use the weekly status definition, a definition accepted in most parts of the world. This definition shows a slight dip in 1993/94 (about 0.5 percentage points) and an equal rise afterwards (0.7 percentage points). In other, words, not much of a trend.

Table 1a: Unemployment rates according to various definitions (%)

Status	1983	1993	1999
Daily status			
Official NSSO	8.3	6.0	7.3
Own	9.9	6.9	8.4
Own (worked < 4 days)	5.7	4.5	5.2
Weekly status	3.7	3.2	3.9
Usual status	2.7	2.7	2.9

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00.

Notes:

Table 1b: Unemployment rates according to different definitions

	1983	1993	1999
Daily status			
Official (% of labour force)	8.3	6.0	7.3
Own computations (% of labour force)	10.0	6.9	8.4
Own computations (worked at least 4 days)	5.7	4.5	5.2
Own computations (% of labour force days)	6.0	4.6	5.5
Weekly status			
Official (% of labour force)	4.5	3.6	4.4
Own computations (% of labour force)	3.7	3.2	3.9
Usual status			
Official (% of labour force)	2.8	2.6	2.8
Own computations (% of labour force)	2.7	2.7	2.9

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00.

Unemployment, 2000-2003

Unemployment rates are not available for the period 1984 to 1992. However, estimates of employment are available for this period (based on NSSO annual surveys) and these indicate that the decline in unemployment rate in 1993 should be attributed more to the reforms of 1991 than to the 1980s (as lack of unemployment data would lead us to do).

There are no large sample surveys since 1999 (fieldwork for the latest, July 2004-June 2005, has just been completed and preliminary results will only become known after six months or so). However, small sample survey results are known for each of the years 2000 to 2003 and have been tabulated in NSSO(2004). This publication reports the fraction of the population employed and unemployed for four classifications: males in urban and rural areas, and females in urban and rural areas – and according to usual and weekly status.

Both measures of unemployment show a steep decline post 1999/00. For calendar year 2003, unemployment according to weekly status was 3.1 %, down from 3.9 % in 1999/2000; for usual status, unemployment in 2003 was 2.2 %, down from 2.9 % in 1999/2000. Nor is this level of unemployment low because of a decline in labor supply growth due to discouraged workers etc. Labor force growth, according to both weekly and usual status, expanded at a 2.3 percent rate, 2000 to 2003.

Collecting all the results, the following conclusion emerges: *unemployment rates unambiguously declined following the introduction of economic reforms in 1991. This result emerges for both the weekly and usual status of unemployment. Further, unemployment rates in 2003 were close to historic lows.*

Poverty, Education, and Frictional Unemployment

The relationship between poverty and unemployment is a controversial one. Some argue that an important reason for the poor being poor is because they cannot find employment. Hence, the argument goes, there is need for an employment guarantee scheme, and especially a need for such a scheme for the poorest of the poor: agricultural households. Others argue that the poor are poor because of lack of human and physical capital, and not because of a lack of job opportunities, or jobs.

There is a third dimension as well – the relationship between education and poverty. It has been argued that the jobless growth process of the 1990s only provided employment for the educated rich; the uneducated poor were left behind. If so, then one should observe a strong negative relationship between education and unemployment i.e. the less educated you are, the more you are likely to be unemployed. There is an alternative hypothesis about this particular relationship, and this hypothesis yields the opposite sign. With economic development, and especially with globalization, one should expect the more educated members of the labor force to search longer for “better” jobs. This would imply that unemployment rates and education are positively related i.e. the rich have a much higher probability of unemployment than the poor.

Tables 3 and 4 discuss these two relationships for both the weekly and the usual status of employment, and do so for several classifications: urban, rural, agricultural and poor households. Most of the unemployment seems to be in the urban areas; in rural India, unemployment was 2.9 % in 1983, and 3.3 % in 1999/00. In contrast, in urban India the level was 6.3 % in 1983, and 5.8 % in 1999/00. Agricultural labour households average a 4 percent unemployment rate (weekly status) and a much lower 1.2 % rate, usual status.

The different patterns yield one very firm conclusion: the mean education level of the unemployed is very high, and has been increasing over time. For the weekly status definition, the mean education attainment of the unemployed in 1983 was 6 years, almost two and a half times the mean education level of an average Indian. The story in 1999/00 is no different: the mean education level of the unemployed increases to 7.5 years. Such individuals, in terms of education, are in the top 10 percent of society.

Table 3: Nature of unemployment (Weekly status)

	1983	1993	1999
Unemployment			
Rural	2.9	2.5	3.3
Urban	6.3	5.5	5.8
All India	3.7	3.2	3.9
Poor	3.9	2.9	4.4
Agricultural Labourer HH	4.4	2.9	4.1
Days worked in a week			
Rural	6.4	6.3	6.3
Urban	6.6	6.7	6.6
All India	6.5	6.4	6.4
Poor	6.3	6.4	6.2
Agricultural Labourer HH	6.0	6.1	6.0
Mean education years (labour force)			
Rural	2.4	3.0	3.5
Urban	6.0	6.5	7.1
All India	3.2	3.8	4.4
Poor	2.0	2.2	2.6
Agricultural Labourer HH	1.1	1.6	2.0
Mean education years (Unemployed)			
Rural	4.8	6.4	6.0
Urban	8.0	9.2	9.2
All India	6.0	7.5	7.2
Poor	4.1	5.0	4.5
Agricultural Labourer HH	2.1	3.2	3.3

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00.

Note:

1. Poor is defined as the household with monthly per capita income less than poverty line fixed by The Planning Commission of India.

Table 4: Nature of unemployment (Usual status)

	1983	1993	1999
Unemployment			
Rural	2.0	2.0	2.1
Urban	6.4	5.5	5.5
All India	3.0	2.8	3.0
Poor	2.5	2.0	2.4
Agricultural Labourer HH	1.4	1.0	1.2
Days worked in a week			
Rural	6.5	6.5	6.4
Urban	6.7	6.8	6.7
All India	6.5	6.6	6.5
Poor	6.4	6.5	6.3
Agricultural Labourer HH	6.0	6.2	6.1
Mean education years (labour force)			
Rural	2.3	3.0	3.5
Urban	6.0	6.6	7.2
All India	3.1	3.8	4.4
Poor	1.9	2.3	2.6
Agricultural Labourer HH	1.1	1.6	2.0
Mean education years (Unemployed)			
Rural	7.6	9.0	9.2
Urban	8.6	9.7	9.8
All India	8.1	9.3	9.5
Poor	6.5	7.2	7.1
Agricultural Labourer HH	4.7	6.8	7.2

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00.

Note:

1. A household is considered as a poor household if its per capita consumption is less than or equal to the poverty line specified by the Planning Commission of India.

Section 5: Trends in employment

The previous section documented that the glib conclusion - that economic reforms led to jobless growth which led to increasing unemployment - was not warranted. However, it might be the case that low employment growth led to a decline in labor force growth which led to a flat (or even declining) rate of unemployment. Thus, low or even declining unemployment rates are not necessarily indicative of either a healthy economy or of reforms having worked, for the poor or for the general population. This is correct and a detailed answer to the efficacy of reforms question cannot be made unless we have evidence on three important associated variables: employment, population growth for the group eligible to be in the labor force (the age group 15-59 years) and wages. The first two topics are examined here and a detailed analysis of the pattern of wage growth is presented in the next section.

Employment growth, 1983-2003

The literature has emphasized the growth in employment as revealed by the large sample five year surveys conducted since 1983. The period 1983-1994 is taken as indicative of growth in the 1980s and therefore belonging to the pre-reform era, and the six-year growth between 1993/94 and 1999/00 as reflecting post-reform growth. There is more information available, data which allows us to what happened in the early 1990s and subsequent to 1999 (till 2003).

NSSO publications (e.g. NSSO, 2004) contain information (on weekly and usual status) on employment and unemployment for every year between 1989 and 2003. These reports publish data on population work participation rates for men and women, in urban and rural areas. If the age and sex structure remains broadly the same (as the years for which such structure is known e.g. 1983, 1993/94 and 1999/00) then a time-series of NSSO aggregate employment can be *derived* for the different survey years.

Chart 1a and 1b show the time-pattern of employment and the trend growth. For the entire period 1983 to 2003 this trend is approximately 2 % per annum (actually 1.97 for weekly status and 1.81 for usual status). Tables 5a and 5b report the data for each survey and the rates of growth of employment for different periods.

Table 5a: Employment (in millions) according to different definitions

Survey	Year	NSSO Report		Own Estimates	
		Weekly status	Usual status	Weekly status	Usual status
38(Jan-Dec'83)	1983	263	274	229	240
43(July'87-June'88)	1987	270	281		
45(July'89-June'90)	1989	298	308		
46(July'90-June'91)	1990	311	317		
47(July-Dec'91)	1991	317	321		
48(Jan-Dec'92)	1992	328	332		
50(July'93-June'94)	1993	341	331	311	302
51(July'94-June'95)	1994	342	342		
52(July'95-June'96)	1995	344	346		
53(Jan-Dec.'97)	1997	351	353		
54(Jan-June'98)	1998	341	345		
55(July'99-June'00)	1999	363	359	334	331
56(July'00-June'01)	2000	364	369		
57(July'01-June'02)	2001	380	384		
58(July'02-Dec'02)	2002	377	379		
59(Jan'03-Dec'03)	2003	390	395		

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00; NSSO Report on Household Consumer Expenditure and Employment-Unemployment Situation in India, 59th round, No. 490 March, 2005.

Notes:

Table 5b: (Log) Growth of employment (annualized) according to different definitions

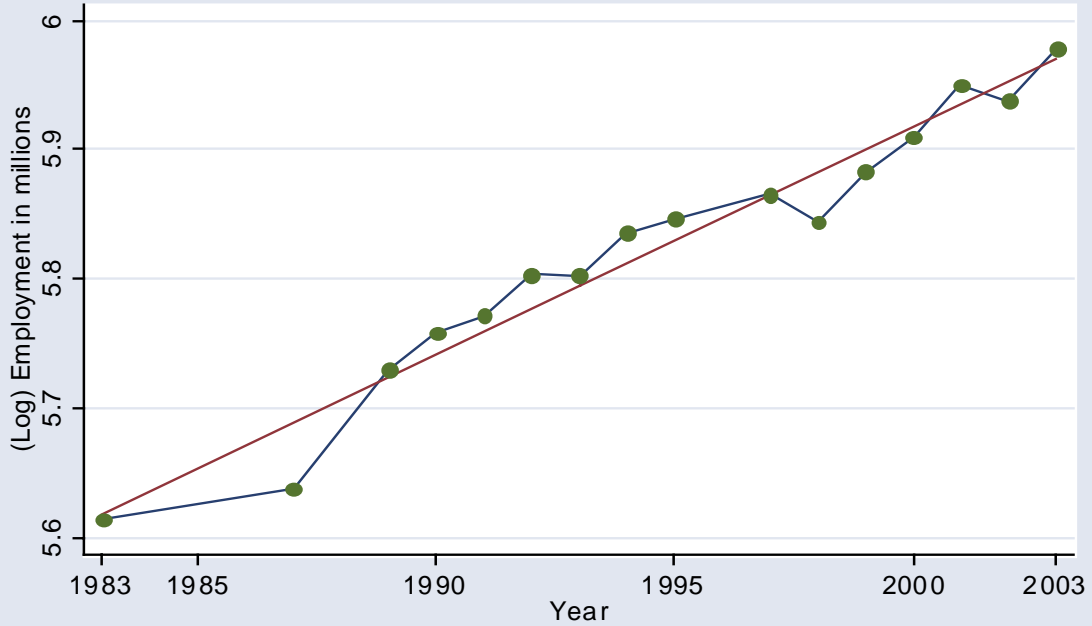
	NSSO Report		Own	
	Weekly status	Usual status	Weekly status	Usual status
1983-1989	1.9	1.8		
1983-93	2.5	1.8	2.9	2.2
1990-1993	3.1	1.4		
1993-1999	1.0	1.4	1.2	1.5
1990-1999	1.7	1.4		

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00; NSSO Report on Household Consumer Expenditure and Employment-Unemployment Situation in India, 59th round, No. 490 March, 2005

Notes:

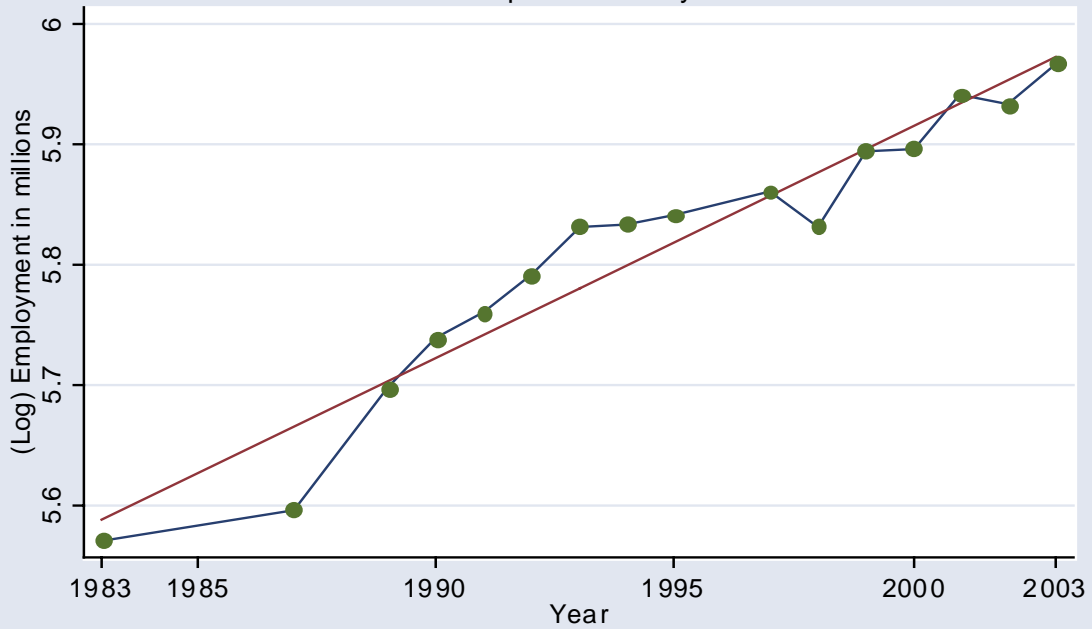
Employment in India - 1983-2003

NSSO Report - Usual status



Employment in India - 1983-2003

NSSO Report - Weekly status



Interestingly, both the end-points (1983 and 2003) lie on the trend line; the charts also reveal how employment started expanding faster after 1990/91. However, employment growth has been significantly lower post 1980s – by about 0.9 % per annum.

Annualized employment growth rate (Semi log) (%)

	1980s	1990s
	1980-90	1991-2003
Weekly status	2.4	1.5
Usual status	2.1	1.5

Source: Employment Unemployment Surveys conducted by NSSO for years 1983 to 2003.

If the result on a decline in the rate of employment growth is robust (it is) then how does one assert that job growth decline was not a function of the kind of reforms instituted by Dr. Manmohan Singh in his tenure as Finance Minister, 1991-96?

The literature (and policy makers) have not focused on the above corrected decline in the rate of job growth. Instead, the concentration has been on the much larger decline indicated by the large sample NSS data: a decline from 2.9 % (end-points 1983 and 1993/94) and 1.2%, (end points 1993/94 and 1999/00). Post 1999/00, job growth has recovered a bit of ground to increase at a 2.1 percent rate. A parallel pattern is observed for the usual status data.

While the “headline” decline in the growth rate is a large 1.7 % per annum, the actual decline is about 0.6 to 0.9 percent per year, on an average basis, and about 0.5 % per year if only the recent data (post 1999) are taken. The magnitudes remain the same regardless of whether the weekly⁹ or the usual status definition of employment is chosen.

⁹ While not popular in some government documents, the weekly status is the generally accepted international basis for employment and unemployment, and is also the definition used by Sivasubramonian in his definitive work on factor incomes.

The previous section documented how unemployment rates had shown a mild increase between 1993 and 2000 and a strong decline in the subsequent three years to levels even below 1993. The next section will show how wage growth accelerated, by a significant margin, in the 1990s (wage data for post 2000 are not yet available). So how can slow job growth be reconciled with lower unemployment rates and faster wage growth?

Potential Labor Supply

By looking at what is happening to potential labor supply. Its rate of growth can vary due to demographics, and due to increased demand for education among the 15-24 year olds. A decline in labor force growth, almost a necessary condition for observing the above set of facts, is exactly what seems to have happened.

The first statistic of note is that population growth has been declining – from an average 2.1 percent growth rate in the 1980s (1980-90) to 1.9 % p.a. in the 1990s (1990-2000). Perhaps, an imperceptible decline, but a very important one, as we shall soon observe. At the end of the decade i.e. around 1999/00, the population growth rate had further declined to only 1.6 % p.a. For purposes of jobs, workforce, wage incomes etc., the age group of concern is the 15 to 59 year olds. The census age-distribution data (available for 1981, 1991 and 2001) indicates that the growth rate of this age group, the potential labor force, declined from 2.6 % in the 1980s to 2.3 % per annum in the 1990s. (Table 6) This decline has gone un-noticed by most observers – indeed the popular belief is that the growth rate of this age group increased.

The table reports the age distribution as reported both by the Census (1981, 1991, 2001) and by the NSS (1983, 1993/94 and 1999/00). The NSSO age distribution data indicates a steeper decline in the rate of growth of the potential labour force – from 2.6 % to 1.7 percent. The reasons for the divergence of the 1990s NSSO growth rate with the Census (1.7 vs. 2.3 %) are unknown; the fact remains that there was a decline in the growth rate according to *both* sources. Further, growth in school enrolment by the 15-24 year olds exceeded the growth in the potential labour force. So the *effective* potential labour force i.e. the labour force willing and wanting to enter the labour market, declined from a rate of 2.3 % in the 1980s to only 1.6 % in the 1990s.

Table 6 : Population (in millions) & Labour force growth

Population	Fraction of population (15-59)			Annualized (Log) Growth		
	1981	1991	2001	1981-91	1991-01	1981-01
Census						
15-24	33.8	33.0	32.4	2.4	2.1	2.2
25-34	26.0	27.6	26.9	3.2	2.1	2.6
35-44	20.4	20.4	21.6	2.6	2.9	2.7
45-54	15.2	14.4	14.3	2.0	2.2	2.1
55-59	4.6	4.7	4.7	2.8	2.4	2.6
Total Population (15-59)	358.8	465.5	585.7	2.6	2.3	2.5
	Fraction of population (15-59)			Annualized (Log) Growth		
	1983	1993/94	1999/00	1983-93/94	1993/94-99/00	1983-99/00
NSSO						
15-24	31.6	30.4	29.5	2.2	1.2	1.8
25-34	27.7	28.1	28.1	2.7	1.7	2.3
35-44	20.1	21.2	22.3	3.0	2.6	2.9
45-54	15.3	14.8	14.9	2.3	1.8	2.1
55-59	5.3	5.5	5.3	2.9	1.1	2.2
Total Population (15-59)	393.4	514.2	570.8	2.6	1.7	2.3
Enrolment (15-59 years)	22.7	41.2	49.3	5.7	3.0	4.7
Potential labour force (15-59 years)	370.7	473.0	521.5	2.3	1.6	2.1
Actual labour force (15-59 years)	237.9	321.1	348.2	2.9	1.3	2.3

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00.; Census of India, 1981, 1991 and 2001

With information about growth in the potential labor force, the employment growth rate decline appears to be consistent with other data. The “headline” data on employment is a decline (in the rate of growth) from 2.9 to 1.2 % (end point data); the trend (based on annual) data indicates a decline from 2.4 to 1.5 %; the potential labor force growth declines from 2.3 to 1.6 percent. So the “employment gap” that needs to be explained is only 0.1 percent per annum (difference between the rate of growth of supply of labor, and rate of growth of demand), not 1.7 % per annum as believed by most policy makers (and some experts). What this simple calculation implies is that the much hyped jobless growth was (a) not at all jobless and (b) much more about the *supply of labor* bottlenecks in the 1990s rather than about jobless growth. For the future, a long-term growth rate in employment of 1.5 percent per annum will suffice to keep the unemployment rates low. However, it is likely that labor force participation of females will increase markedly. Accommodation of these new entrants would mean that the economy would need to have employment growth close to 2 percent per annum in order to prevent unemployment rates from rising. In the last few years, employment growth has well exceeded this “benchmark” rate, and this fact augurs well for a low unemployment rate for the next several years.

An additional indicator of employment and poverty change is the trend in child (10-14 years) labor. This percentage has halved since 1983 (only 7.3 % today) and is also lower than the 1993/94 level of 10.4 %.

Table: Child Labour (Age 10-14 years)

	1983	1993	1999
Population (in millions)	93	102	120
Population in labour force (in millions)	16	11	9
Population in working (in millions)	16	11	9
Percent of population working (%)	16.7	10.4	7.3
Number of days working in a week	6.5	6.1	6.0

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00.

Section 6: Wages and Earnings

The conventional view about the 1990s is that job growth declined, unemployment rates increased significantly, and wage growth declined precipitously after the introduction of reforms in 1991. As discussed earlier, the conclusions were imperfect in that the analysts were “forced” into assuming that the year 1993/94, a year full two years after the start of the reforms, actually belonged to the pre-reform area. Proper disaggregation of results according to pre and post 1991 periods suggests that unemployment rates declined post reforms, and that the decline in job growth was largely due to a structural decline in the rate of growth of labor force. This section examines the pattern of wage growth in the two periods; particular attention is paid (and this is following the literature) to the wages of the poorest, the agricultural workers.

Wages, agricultural workers, 1980-2000:

Deaton-Dreze underlined the importance of looking at wage growth of agricultural workers:

“Agricultural wages provide an important source of further information on poverty. There are, in fact, two ways of thinking about the relevance of this information. First, real agricultural wages are highly correlated with standard poverty indexes such as headcount ratios: where poverty is higher, wages tend to be lower, and vice versa. Based on this statistical association, real wages can be used to provide some information about other poverty indexes. Second, it is also possible to think about the real wage as a rough poverty indicator in its own right” (p 3737).

Two important, and authoritative studies, led the charge about the decline in agricultural wage growth in the 1990s: a Planning Commission Mid-Term Appraisal (9th Plan) report authored by Gupta(2000), and Dreze-Sen(2002).

The Gupta study stated, on the basis of AWI data (preliminary after 1996/97) that “Change in real wages in pre-reforms (1981-91) period was 4.7 percent and in the post reform period (1991-99) 2 percent” (Planning Commission, 2000, p. 468). Dreze-Sen reached a similar conclusion reporting a halving of the growth rate from above 5 % to only 2.5 percent.

“Similarly, the growth rate of real agricultural wages fell from over 5 per cent per year in the 1980s to 2.5 per cent or so in the 1990s...Sundaram (2001a) presents independent estimates of the growth rates of real wages and earnings, based on comparable NSSO data for 1993-4 and 1999-2000. His work suggests that the yearly ‘wage earnings’ of

casual agricultural labourers have grown at 2.5 per cent per year in real terms over the period. *This conclusion is highly consistent with our own estimates...*" (emphasis added, Dreze-Sen, p.348).

Both authors used the Agricultural Wages in India (AWI) series. These data were also published in the annual Government of India, document, *Economic Survey*¹⁰ for a few years in the 1990s. The advantage of the AWI data are that they provide annual state level data on agricultural wages. The AWI data are possibly the longest running set of data on agricultural wages in India, but in the recent past, the use of AWI data had been shunned by most observers on grounds that such data revealed volatile year to year trends. A further disadvantage is that these data are not as reliable as the more comprehensive and reliable NSSO data; but the NSSO data are only available on a five-year basis.

Given the data availability of the AWI, what seems a prudent research strategy is to estimate the trend according to the AWI data and see if this trend broadly conforms to the pattern yielded by the more reliable, but intermittent, large sample NSSO data. This seems to have been the strategy adopted by Dreze-Sen, Deaton-Dreze and Sen-Himanshu.

The major emphasis, by these authors, is on what they believe is contained in the AWI data on the trend in agricultural wages and to then match this trend with that revealed by the NSSO data. For example, Deaton-Dreze state:

"According to recent estimates based on AWI data, real agricultural wages were growing at about 5 per cent per year in the eighties and 2.5 per cent per year in the nineties. Thus, real agricultural wages were growing considerably faster in the eighties than in the nineties.... Sundaram estimates that the real earnings of agricultural labourers have grown at about 2.5 per cent per year between 1993-94 and 1999-2000. These are tentative estimates, based as they are on data for two years only. Yet *it is reassuring to find that they are consistent with the AWI estimates* (emphasis added, Deaton-Dreze (p. 3737, 3738):

Sen-Himanshu do the same::

¹⁰ Since the 2001/02 Economic Survey, the practice of publishing the AWI annual state level wage variation data has been discontinued.

The different time-series available agree that, *although less than during the 1980s, 1990s growth of real agricultural wage rates averaged 2-3 per cent per annum at the national level.....* The consequent decline, through unemployment and lower work participation, of days of employment per member of agricultural labour households makes clear why *although NSSO reports real wage rate growth of 2.8 per cent per annum during 1993-2000, much higher than rural MPCE, it reports per capita consumption of these households increasing less than the rural average... (emphasis added, Sen-Himanshu, p. 238)*

The above quotes indicate the **near universality of views indicating a halving of the growth in agricultural wages in the 1990s, and about how this pattern was replicated by the NSSO data. Given this “consistency”, the conclusion was reached that the AWI trend decline in agricultural wage growth in the 1990s was robust.**

There are no problems with the above research reasoning; however, there are three associated problems. And these problems may be large enough to invalidate most conclusions based on AWI data. First, the AWI data only yields an estimate of *wage growth*, while both wage and income growth data are obtained from the NSSO. (And the NSSO data does **not** indicate the *wage growth* that the authors claim it does). Second, the NSSO data can also yield an estimate of the wage growth in the 1980s, something none of the above authors mention in their 1980s and 1990s wage growth comparison. Third, the time-trend of wage growth yielded by the NSSO data shows a constancy or some acceleration in agricultural wages, and a marked *acceleration* in rural wages i.e. no sign of a *deceleration* as “found” by the AWI data is observed in the NSSO data.

Was there a major decline in agricultural wages, 1980s and 1990s?

The various authors cite Sundaram as the source for their conclusion that agricultural wage growth collapsed. In two articles, Sundaram(2001a,2001b) documented the pattern of wage growth as revealed by the NSSO data for the 1980s and 1990s. He was aware of the Planning Commission study, and its conclusion about the wage growth slowdown:

“In respect of agricultural wages and earnings, one of the issues highlighted in some recent studies, including the Mid-Term Appraisal of the Ninth Five-Year Plan, is the alleged slow down in the growth of real wages in rural India during the 1990s relative to the growth during the 1980s.....

Using tabulated data from the NSSO surveys, and using a constant price deflator for all individuals (based on the CPI for agricultural workers) Sundaram concluded that there was **no decline** in the rate of growth of agricultural wages: it stayed constant at 2.8 % per annum.

For adult rural male casual wage labourers, with the exception of 'non-manual work in agriculture', in all the other nine-categories distinguished, the rate of growth of wages between 1994 and 2000 has been about the same (in fact marginally higher) or significantly higher than that realized between 1983 and 1994...Thus, except for rural females engaged in manual work in other agricultural work and for manual work in agriculture as a whole, the *evidence from the NSSO Employment-Unemployment Surveys offers no support at all for the hypothesis of a slow-down in the rate of growth of average daily wage earnings of adult casual labourers during the 1990s relative to that between 1983 and 1994.*" (emphasis added, p. ??)

Sundaram's estimates were also supported by Ahluwalia(2002); both papers, in the public domain, emphasized that there had been **no** wage deceleration in the 1990s. Indeed, for some category of agricultural workers, an acceleration was emphasized. For casual labor in all activities, Sundaram documented a 1 percent *acceleration* for both male and female workers in the 1990s. The Ahluwalia report documented that there was only a 0.8 percent growth in real casual worker wages for males, 1987/88 to 1993/94, and an acceleration to 3.6 percent in the 1990s.

Thus, the pattern of wage acceleration revealed by the NSSO data in no manner supports the major trend decline in wages reported by the AWI data. Given the divergence between the AWI and NSSO data, it is imperative to assess which source is accurate, and therefore, which pattern, acceleration or deceleration, is closer to the "truth". Some (the authors quoted above) have concluded that both the AWI and the NSSO data are correct for the 1990s, and therefore *inferred* that the AWI wage growth figure for the 1980s is also correct. Hence, the conclusion about wage rate growth decline ala the AWI data is a "robust" finding.

AWI and other non-NSSO data on agricultural wages:

The AWI data is an annual series; the NSSO series is based on three points (1983, 1993/94 and 1999/00¹¹). What really happened in the 1980s (1980-89) and the 1990s (1990 and beyond) is not possible without recourse to another source of data.

Fortunately, there is another source: wage data derived from various issues of Cost of Cultivation of Principal Crops in India, Directorate of Economics & Statistics, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India¹². This Cost of Cultivation (CoC) survey data has details on the crops cultivated, the wage bill, and the quantity of labor used. Data for the AWI series for the 1980s are taken from Dreze-Sen and ILO(1996); for the 1990s, data published in the *Economic Survey*, Ministry of Finance, are used.

Table 7 documents semi-log regression results using the three different sources of wage data: AWI, CoC and NSSO. For the CoC series and NSSO data, *two* different price deflators are used. The first deflator is an All India consumer price index for agricultural workers (CPIAL). This index is the same for all parts of India. This deflator has been used by all users of the AWI data, as well as by Sundaram who used tabulated data on NSSO wages. The second price deflator is the poverty line price deflator. It is also based on the CPIAL for rural areas; its advantage is that it is state and region (rural/urban) specific and as such is more appropriate to use when disaggregated data (NSSO and CoC) are available. As we shall see, use of region specific price deflators not only changes the levels, but also the time pattern of change.

¹¹ There is an in between year, 1987/88, but the computer tape data for this year is not very clean).

¹² I am thankful to Mr. Abusalleh Sharif for use of his tables on AWI data, and Mr. Praduman Kumar for kindly providing the data on cost of cultivation data for the different states in India.

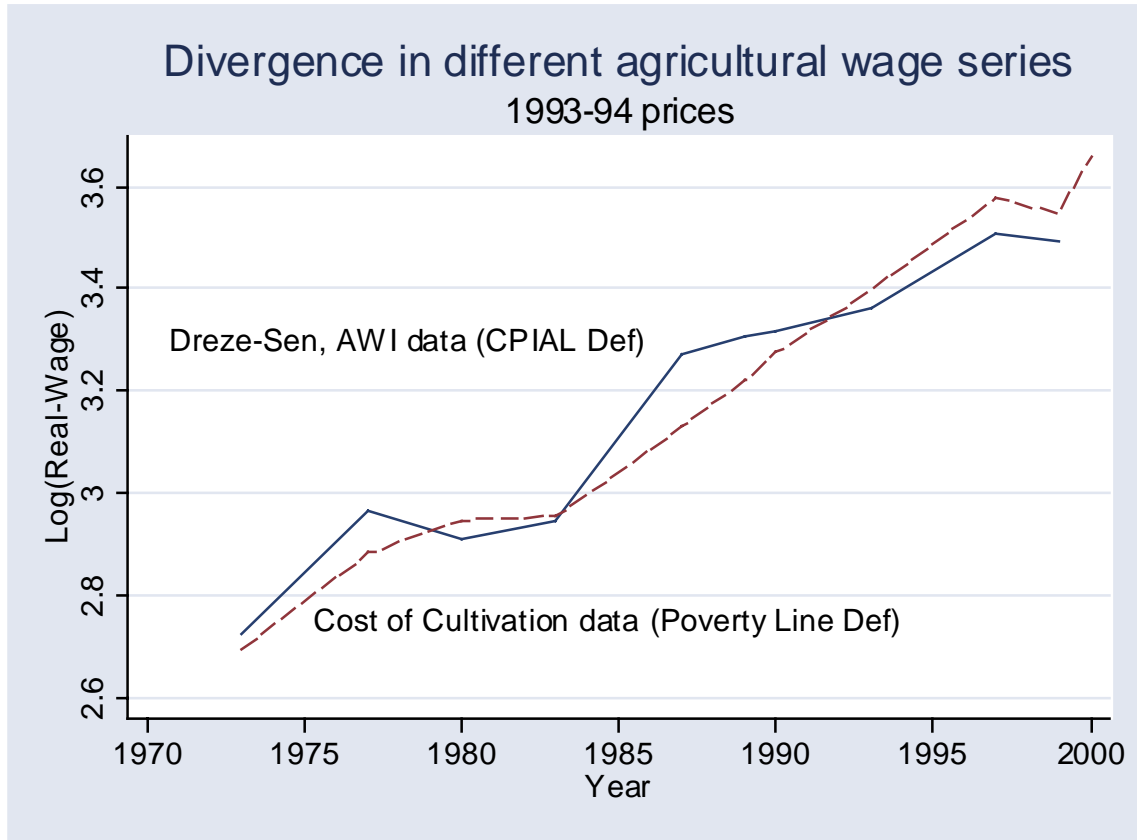
Table: Annualized wage growth in agriculture (Semi log)

	1980s			1990s		
	1980-89	1980-90	1983-93	>=1990	>=1991	1993-99
AWI (CPIAL deflator)	5.4	5.0	3.0	2.6	2.8	2.9
Cost of Cultivation survey (CPIAL deflator)	3.9	4.0	4.0	3.8	4.1	2.5
Cost of Cultivation survey (Poverty line deflator)	3.6	3.6	3.2	4.1	4.2	3.2
NSSO (Poverty line deflator, end point)			2.7			2.8

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00; Agricultural Wages in India, Department of Agriculture, Government of India; Cost of Cultivation of Principal Crops in India, Directorate of Economics & Statistics, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India; supplied by Mr. Praduman Kumar.

Chart 2 graphs the two series for which we have annual data, AWI and CoC. Collecting all the results, a firm conclusion which emerges is that agricultural wage growth did *not* decline in the 1990; a weaker conclusion is that there was an acceleration of about 0.5 % per annum. Further, the near constancy in the NSSO wage growth for the 1983-1993 and 1993-1999 time periods is in large part a reflection of the choice of the middle year, 1993/94. If a different (and earlier) 1990s time period is chosen, then the post-reform 1990s were indeed better for wage growth, and as noted earlier, also better for both unemployment and employment. These findings are some distance away from the conventional wisdom that there was a halving of agricultural wage growth in the 1990s. A “fact” that has been used by authors to extrapolate, and construct, inequality change in India that is matched by the worst form of inequality change observed anywhere in the world.

Chart 2: **Wage levels, 1973-2000**



The presumed match between AWI and NSSO data

An important rationale for the use of the AWI data was that its growth rate matched the **2.5 %** growth rate documented by Sundaram for the NSSO data. But Sundaram reports a higher 2.7 to 2.8 % growth rate for the period 1990s. However, Sundaram does report one figure as **2.5 %** - a *simulated* growth in per capita incomes of agricultural workers! The various numbers involved in this mis-match are summarized in Table 8.

Row 1 is the wage growth reported by Dreze-Deaton-Amartya Sen on the basis of AWI data – a high growth in the 1980s and a halving of the growth to 2.5 percent in the 1990s. Row 2 is the Planning Commission Mid-Term Appraisal estimate of a collapse in wage growth in the 1990s to almost a third of the 1980s level – a decline from 4.7 to 2.0 percent. Rows 3 through 5 are estimates contained in Sundaram(2001a, 2001b). The last row is a Sundaram estimate of average earnings per capita (not per worker); this estimate is an involved computation of the hours worked per week, the unemployment rate, the number of workers in a family, the “imputed” wages for self-employed workers in agriculture, etc. It is likely an accurate computation and it reveals that *per capita* wage earnings increased at a rate of 2.5 % p.a. in the 1990s. *This* is the NSSO number picked up by Dreze et. al and claimed as corresponding to the *per worker* wage growth estimate of the AWI. The two obviously are not comparable.

The data in the table also emphatically reaffirm the conclusion that there is no basis for an NSSO based conclusion, or support for a conclusion, that agricultural, or casual worker, or rural wages collapsed and/or declined in the 1990s over the level prevailing in the 1980s.

Table 8 : Wage growth, different estimates

	1980s	1990s
Wages per worker, AWI data		
Dreze-Sen; Deaton-Dreze	5 - 5.5	2.5
Planning Commission	4.7	2.0
NSSO (Sundaram)		
Wages per worker (casual worker in all activities)	2.7	3.5
Wages per worker in agricultural activities	2.9	2.8
Per capita earnings (Unemployed and other household members included)		2.5

Wage growth in the economy, 1983-93 and 1993-99

The NSSO data are used in Table 9 to estimate growth trends for various classifications, and whenever possible, corresponding national accounts data are also reported.

There has been some controversy in recent years about the reliability of the consumer expenditure surveys conducted by the NSSO (e.g. see Bhalla(2002)). These surveys have yielded a magnitude of consumption growth considerably lower than that obtained from alternative sources e.g. national accounts.

Several growth trends are reported for the 1980s and 1990s. The following results emerge. These growth trends yield the following results. The NSSO employment and unemployment survey (E&U) surveys reveal a very different pattern of growth than that obtained from the parallel NSSO consumer expenditure (CE) surveys. In sharp contrast to the average growth in mean per capita consumption of only 0.8 to 1.2 % p.a. in the 1980s (in years when the consumer expenditure surveys ostensibly had no problems), average wages rose at a robust 2.4 % p.a. – a gap of 1.4 percent per year. But the NSSO growth gap (between E&U and CE surveys) widens in a fashion identical to the widening observed with CE surveys and national accounts data¹³. For the 1990s, the gap almost triples to 3.1 % p.a. i.e. E&U growth is 4.4 percent in the 1990s, the CE growth is only 1.3 % p.a.

It could be argued that the above figures reflect the possibility that the high wage growth reflects the growth in incomes of the rich. But this is unlikely since the average wage growth is close to the growth in per worker incomes, NA data. Thus, the acceleration in average wage growth – from 2.4 % to 4.4 % - is consistent with a tightening labor market, or at least a labor market characterized by a decline in labor surplus.

The NSSO wage data are also consistent with all the other information available on trends in non-farm income, and the increasing importance of such income for rural workers. Rural workers per se also witnessed a near doubling of the growth rate in their incomes – from 2.5 percent to 4.1 % p.a. for an average sixteen and a half year growth

¹³ The corresponding wage growth data in the national accounts is the growth in the ratio of private income (national accounts) and the number of workers (weekly status, NSSO employment and unemployment survey). This growth is reported in Table 1. While not popular in some government documents, the weekly status is the generally accepted international basis for employment and unemployment, and is also the definition used by Sivasubramonian in his definitive work on factor incomes.

Table 9: Growth of Income, wage and consumption

	1983 to 1993-94	1993-94 to 1999-00	1983 to 1999-00
Income related growth rates			
GDP Per capita	2.9	4.9	3.7
Private Income (NA)	5	7	5.8
Work force (reporting positive wages, NSSO)	3.1	2.3	2.8
Work force (All workers, NSSO)	3.1	1.4	2.5
Per worker private income (Positive wage)	1.9	4.7	2.9
Per worker private income (All workers)	1.9	5.6	3.2
Per capita Income (NSSO)	3.1	4.2	3.5
Wage data (NSSO, E&U)			
Rural	2.5	4.1	3.0
Agricultural workers, rural	2.7	2.8	2.7
Urban	2.1	4.9	3.1
All India	2.4	4.4	3.1
NCAER surveys; rural; 1981-99			3.3
AWI wages, agriculture	4.4	1.8	3.1
Cost of cultivation survey, agriculture	2.5	4.0	2.9
Consumption related growth rates			
Consumption per capita (NA)	1.7	3.6	2.4
Consumption per capita (NSSO)			
CE survey - MPCE5y definition	1.2	1.3	1.2
CE survey - MPCE5m definition	0.8		
E&U survey - MPCE5y* definition		0	

Source: Consumer Expenditure and Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00.

rate of 3 percent per annum – not much different than a per worker growth rate of 3.2 percent per annum. Thus, an inescapable conclusion from the NSSO survey data is that the wages have accelerated, income growth has accelerated and if the CE survey is not showing a marked acceleration (it is not) then the CE survey has most likely underestimated the growth in consumption for all sectors in the economy – and done so continuously since 1983, and in an accelerated manner (of underestimation) since 1993/94.

The magnitude of wage growth in the 1990s – 4.1 % for rural workers, 4.9 % for urban workers - is large and alien to the expectations of most observers¹⁴. The growth data are not a mis-print and have been verified by the data published in the NSSO documents published for 1993/94 and 1999/00. Further, the *acceleration* in such growth, is also contrary to the expectations, and writings, of many scholars on Indian poverty.

In a recent paper, Rosenzweig and Foster have emphasized the development of the non-farm sector in India. Their analysis is based on a panel of households surveyed over two decades (1981 and 1999) by NCAER. Increase in real incomes of rural households revealed by the Rosenzweig-Foster for the seventeen year period 1982-1999 is 3.1 % p.a., a number identical to the 3.0 percent growth rate revealed by the NSSO data.

These data (NSSO *and* NCAER) lead to the following safe conclusion: *Rural wages exceeded 4 percent in the nineties, and at a rate double that which was observed in the eighties*. This acceleration is obtained for all workers – agricultural, non-agricultural, rural, urban, male, female, etc.¹⁵

¹⁴ When presented with these data, one leading poverty expert sarcastically asked if these growth rates were in nominal terms!

¹⁵ See Bhalla-Kaur(2004), "Getting Even: The Road to Gender Equality". This paper examines in considerable detail the trends in female and male wages, the trends in occupational choice, etc.

Are the rich getting richer? An examination of the Banerjee-Picketty conclusion

In a much cited working paper, Banerjee-Picketty(2002) assert that the rich are indeed getting richer i.e. the rate of growth of the incomes of the rich far exceeded average growth in incomes (or consumption). The authors do not use household survey data but instead use income-tax records to generate profiles of income growth in the 1980s and 1990s (and even prior to the 1980s).

“The average income growth among the top percentile of the tax units was 71% in real terms between 1987-8 and 1999-0, which is substantially more than average growth according to the national accounts. Moreover, the higher one goes within the top percentile, the higher the growth (up to +285% for the top 0.01% income fractile)”. (p. 10)

Their study has only limited use for information about *wage trends* because even today, only a fifth of India’s workforce is eligible to file tax returns, and out of this fifth only a third actually file tax returns. In other words, less than 10 percent of the 400 million workforce files tax returns. From synthetic data on this top decile of earners, Banerjee-Picketty (hereafter BP) conclude that the top 0.1 percent of Indians had faster growth (“the rich got richer”) than the top 1 percent! Even this limited conclusion is questionable, because an important assumption for the authors is that tax compliance levels have stayed the same. However, Bhalla(2002b, 2004) and Kelkar et. al. (2002), provide strong evidence which suggests that there is a “missing middle” in India’s tax returns; both the very rich and the very poor of India’s 20 percent tax eligible population have much higher compliance ratios (about 30 to 50 percent) than the less than 10 percent tax compliance ratios of the middle (those earning between Rs. 2 lacs - Rs. 4 lacs per annum). The BP method requires a constancy in compliance, and the fact that this assumption is violated makes their conclusions very difficult to accept. In addition, even if BP are completely correct, no *inequality* interpretation is possible from their results since it very well might be the case that the super-rich are taking from the very rich, leaving aggregate inequality unchanged.

But there are deeper problems with the BP data, and consequent estimates of wage and income trends. The quote above shows that the authors are talking about the change from 1987/88 to 1998/99. Since most data that we have analyzed in this paper is for the two periods, 1983 to 1993/94 and 1993/94 to 1999/00, it would be useful to note the BP

model estimates for just the 1990s. According to Table A2 in their paper, the average income of the 99th percentile (P99) was Rs. 90,345 in 1993/94 (in 1999/00 Rs.). In 1999/00, some six years later, the real income level of the richest percentile is reported by BP to have been *5 percent less*. Their table on wage incomes (as opposed to total incomes) shows a near doubling of wage incomes in just one year 1993/94.

There are two possibilities with regard to this unexpected result – either their data (simulated through a Pareto distribution) are incorrect, or that all the wage earners showed a decline in real income. If their data are “correct”, then one conclusion from the BP paper is that income distribution *improved* enormously in India, since all surveys show that there was an increase in mean incomes.

Limited as the intent of the BP paper was, and despite the fact that it reached contradictory conclusions, it has received considerable support for its “implications” of worsening aggregate inequality in India. The authors themselves never reach this conclusion, though their result has been accepted to be “true” and found by Deaton-Dreze to be “consistent” with their own results:

“our findings on rising economic inequality within the urban sector are consistent with recent work by Banerjee and Piketty (2001), who use income tax records to document very large increases in income among the very highest income earners. They show that, in the 1990s, real incomes among the top one per cent of income earners increased by a half in real terms, while those of the top 1 per cent of 1 per cent increased by a factor of three in real terms”. (p. 3740)

Sen-Himanshu also endorse the Banerjee-Piketty conclusions and find it supportive of their own conclusions about inequality change:

Banerjee and Piketty (2003) provide independent evidence from income tax data that inequality at the top of the distribution, that is, income shares of the top percentile and above (that had decreased earlier), increased very sharply between 1983 and 1987 and again after 1992. They show that, if these very rich were not captured adequately by NSS, their increased share alone can explain 20 to 40 per cent of enlarging NAS-NSS differences. This is in addition to inequality increases discussed here, i.e., those captured by the NSS itself, and disregards possible NAS overestimation. (p. 4375)

Strikingly, there is nothing in the BP paper to suggest that inequality worsened in India in the nineties; none of the commentators note that precisely at the time the top 0.01

percent was increasing its share in total income (increasing inequality), the top 1 percent was decreasing its share (improving inequality). Since the top 1 percent has 100 times as much ‘weight’ as the top 0.01 percent, surely the net result is greater equality, *ceteris paribus*. Independent of this observation, assume that the top 1 percent had actually increased its real incomes (contrary to the decline reported by BP). Overall inequality would only worsen if this increase was at the expense of say the bottom 80 percent or so, rather than at the expense of the 98th percentile. This computation is not only not shown by the authors, it is not even attempted.

Table 10 reports the growth in real wages, or incomes, for different time-periods and sectors of the population (all, 99th, 100th and an average for the top 2 percentiles). These estimates are presented according to BP and NSSO data. The BP results of the rich getting richer post the reforms is entirely based on their “low” estimates for 1993/94. If the base year post reforms is taken to be 1992/93 (as it should) then according to BP, the richest 2 % of the population witnessed only a 2.1 % annual increase in their wages, and a 5.9 % annual increase in their incomes. Given that the average wage increased by 4.4 % per annum (NSSO data) the conclusion that the rich got richer is unwarranted.

Table 10: Different estimates of real wage growth

Estimates	Real wage growth rate	Real income growth rate
Banerjee-Piketty		
Wage		
<i>(100th percentile)</i>		
1987-93	1.2	4.8
1992-99	6.2	7.4
1993-99	8.6	4.1
<i>(99th percentile)</i>		
1987-93	-1.9	8.4
1992-99	-6.4	2.6
1993-99	4.0	-0.5
<i>(99th + 100th percentile)</i>		
1987-93	0.3	5.9
1992-99	2.1	5.9
1993-99	7.4	2.7
Own estimates		
1983-93	2.6	
1993-99	4.4	
<i>(100th percentile)</i>		
1983-93	3.6	
1993-99	8.8	
<i>(99th percentile)</i>		
1983-93	3.5	
1993-99	5.8	
<i>(99th + 100th percentile)</i>		
1983-93	3.6	
1993-99	7.6	

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00; Jean Dreze and Amartya Sen, *India: Development and Participation*, pp-328 & Table A6, Oxford University Press, 2002; Angus Deaton and Jean Dreze, *Poverty and Inequality in India- A Reexamination (2002)*, Economic and Political Weekly, Sept 7. Abhijit Banerjee and Thomas Piketty, *Top Indian Incomes, 1956-2000 (2003)*, Bread working Paper No 046, September.

Wages, occupations and gender

A detailed analysis of occupational choice and wages is presented in Bhalla-Kaur(2004). The aggregate data is presented in four tables, Tables 11-14. Which sectors of the economy (rural urban) and which sex(male female) has benefited from the reforms is brought out by the tables. The occupations have been grouped into three broad categories: professional, technical and managerial workers; clerical, sales, service and production workers, and the remainder (farmers, fisherman others).

For sixteen years, and most likely continuing post 1999/2000, the agricultural work force (cultivators and agricultural workers) has only been expanding at 1.1 % per annum, compared to a 4.8 % growth rate for professionals and a 2.9 % growth rate in medium-skilled or blue-collar jobs. Two related statistics are the number of cultivators in the economy (relatively constant at 88 million for the entire period 1983 to 1999, though there is a marginal decline since 1993!) and the share of non-farm income in rural households (up from about 35 to 45 percent in 1983 to about 50 to 60 percent in 1999/00).¹⁶

The other major finding is that relating to gender parity. In 1983, average female wages were only half that of a male (52.1 %, Table 15); in 1999/2000, this ratio had increased to 57.7 %. Jobs for professional females increased at a robust 5.6 % annual rate over the last 16 years; equivalent male jobs only increased at a 4.5 % rate.

This result is for average wages. If a simple human capital model is estimated (with log daily wage as the dependent variable and education years, experience and experience squared as the independent variables)¹⁷ then a lot greater convergence towards gender parity in wages is observed. Even in 1993, the average wage of females was as much as 90 percent of that of the males. This convergence is on the assumption that women have had the same experience in the work force (defined as age – 6 – education years) as the men. If the crude assumption is made that starting from age 35 onwards women

¹⁶ Foster-Rosenzweig provide more direct estimates of this trend, estimates which are along the same lines as the indirect NSSO estimates reported. The reason our estimates are indirect is because NSSO does not report self-employment incomes, a statistic imputed by us via a human capital model.

¹⁷ See Bhalla-Kaur (2004, and in process) for a detailed analysis of male-female wage inequality.

Table 11 : Real Wages and population in different occupation (Rural Urban)

	1983			1993			1999		
	Rural	Urban	All India	Rural	Urban	All India	Rural	Urban	All India
Wage									
Professional., Technical., Administrative, Executive & Managerial.	58.2	67.0	63.1	85.1	86.0	85.7	114.0	125.5	121.2
Clerical, Sales, Services & Production	30.1	32.7	31.6	38.5	39.9	39.3	51.1	49.6	50.3
Farmers & Others	16.1	17.0	16.1	20.2	18.9	20.2	23.8	27.5	24.0
Total	21.0	35.8	25.4	27.3	45.0	32.7	34.7	59.9	42.5
Population (million)									
Professional., Technical., Administrative, Executive & Managerial.	5	6	11	7	11	18	9	14	24
Clerical, Sales, Services & Production	34	39	73	48	54	102	56	62	118
Farmers & Others	149	6	155	175	7	182	179	6	186
Total	188	51	239	230	72	302	245	83	328

Table 12: Growth of real wages and population in different occupation (Rural Urban)

	(Log) Growth, annualized (%)								
	1983-93			1993-99			1983-99		
	Rural	Urban	All India	Rural	Urban	All India	Rural	Urban	All India
Wage									
Professional., Technical., Administrative, Executive & Managerial.	3.6	2.4	2.9	4.9	6.3	5.8	4.1	3.8	4.0
Clerical, Sales, Services & Production	2.4	1.9	2.1	4.7	3.6	4.1	3.2	2.5	2.8
Farmers & Others	2.2	1.0	2.1	2.7	6.3	2.9	2.4	2.9	2.4
Total	2.5	2.2	2.4	4.0	4.8	4.3	3.1	3.1	3.1
Population (million)									
Professional., Technical., Administrative, Executive & Managerial.	4.1	5.0	4.6	4.3	5.3	4.9	4.2	5.2	4.8
Clerical, Sales, Services & Production	3.2	3.1	3.1	2.8	2.3	2.5	3.0	2.8	2.9
Farmers & Others	1.5	2.0	1.5	0.4	-1.8	0.3	1.1	0.6	1.1
Total	1.9	3.3	2.2	1.1	2.4	1.4	1.6	3.0	1.9

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00.

Notes:

1. Principal occupations are used to compute the occupation wage and population distribution.

Table 13: Wages and Number of people in different occupation (Male-Female)

	1983				1993				1999			
	Male		Female		Male		Female		Male		Female	
	Wage	Pop	Wage	Pop	Wage	Pop	Wage	Pop	Wage	Pop	Wage	Pop
Rural												
Professional, Technical, Administrative, Executive & Managerial.	60.5	3.8	47.0	0.8	92.2	5.6	56.4	1.5	125.7	7.3	79.0	1.9
Clerical, Sales, Services & Production	34.0	27.0	13.4	7.3	41.9	39.2	20.3	8.6	53.6	46.4	34.5	10.1
Farmers & Others	18.2	98.5	11.9	50.8	22.4	117.7	16.1	57.2	26.6	118.2	19.0	61.2
Total	24.3	129.3	13.0	58.9	31.3	162.5	17.7	67.3	39.7	171.9	22.9	73.2
Urban												
Professional, Technical, Administrative, Executive & Managerial.	73.1	5.0	48.4	1.2	94.9	8.2	62.1	2.3	139.0	11.4	92.1	3.1
Clerical, Sales, Services & Production	34.9	33.6	17.6	5.3	42.2	46.4	24.7	7.6	52.1	53.2	33.8	8.8
Farmers & Others	18.0	3.8	15.3	2.1	22.4	4.8	12.7	2.4	34.7	4.4	15.1	2.1
Total	38.3	42.3	23.1	8.6	47.8	59.4	31.3	12.2	62.7	68.9	46.3	14.1
All India												
Professional, Technical, Administrative, Executive & Managerial.	67.2	8.8	47.9	2.0	93.8	13.9	60.3	3.7	133.9	18.6	87.6	5.1
Clerical, Sales, Services & Production	34.6	60.5	15.6	12.6	42.1	85.6	22.7	16.2	52.8	99.6	34.1	18.9
Farmers & Others	18.2	102.3	12.1	52.9	22.4	122.5	15.9	59.6	26.9	122.6	18.9	63.3
Total	29.0	171.6	14.9	67.6	36.9	221.9	20.5	79.5	47.6	240.8	27.7	87.3

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00.

Notes:

1. Principal occupations are used to compute the occupation wage and population distribution.

Table 14: Growth of Wages and population in different occupation (Male -Female)

	(Log) Growth, annualized (%)											
	1983-93				1993-99				1983-99			
	Male		Female		Male		Female		Male		Female	
	Wage	Pop	Wage	Pop	Wage	Pop	Wage	Pop	Wage	Pop	Wage	Pop
Rural												
Professional, Technical, Administrative, Executive & Managerial.	4.0	3.7	1.7	5.9	5.2	4.3	5.6	4.4	4.4	3.9	3.1	5.4
Clerical, Sales, Services & Production	2.0	3.6	4.0	1.5	4.1	2.8	8.8	2.7	2.8	3.3	5.7	1.9
Farmers & Others	2.0	1.7	2.8	1.1	2.8	0.1	2.8	1.1	2.3	1.1	2.8	1.1
Total	2.4	2.2	3.0	1.3	4.0	0.9	4.3	1.4	3.0	1.7	3.4	1.3
Urban												
Professional, Technical, Administrative, Executive & Managerial.	2.5	4.8	2.4	5.9	6.4	5.3	6.6	5.4	3.9	5.0	3.9	5.7
Clerical, Sales, Services & Production	1.8	3.1	3.2	3.4	3.5	2.3	5.2	2.5	2.4	2.8	3.9	3.1
Farmers & Others	2.1	2.4	-1.8	1.3	7.3	-1.7	2.9	-2.2	4.0	0.9	-0.1	0.0
Total	2.1	3.2	2.9	3.3	4.5	2.5	6.5	2.3	3.0	3.0	4.2	3.0
All India												
Professional, Technical, Administrative, Executive & Managerial.	3.2	4.3	2.2	5.9	5.9	4.9	6.2	5.0	4.2	4.5	3.7	5.6
Clerical, Sales, Services & Production	1.9	3.3	3.6	2.4	3.8	2.5	6.7	2.6	2.6	3.0	4.7	2.4
Farmers & Others	2.0	1.7	2.6	1.1	3.0	0.0	2.8	1.0	2.4	1.1	2.7	1.1
Total	2.3	2.5	3.1	1.6	4.3	1.4	5.0	1.5	3.0	2.1	3.8	1.6

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00.

Notes:

Principal occupations are used to compute the occupation wage and population distribution.

typically have at least 2 to 3 years less of experience, then gender parity in wages has occurred in India – not just in urban India but across the board. In 1983, gender parity (human capital adjusted) was 84 %; in 1999/00, it was 89 %.

Table 15: Real wages (Male-Female)

	1983			1993/94			1999/00		
	Male	Female	Ratio	Male	Female	Ratio	Male	Female	Ratio
Rural									
Average wage	23.6	13.0	55.0	30.7	17.6	57.4	39.0	22.6	57.9
Average wage*	2.6	2.3	86.4	2.9	2.6	90.3	3.1	2.8	90.0
Urban									
Average wage	37.3	21.8	58.6	47.2	29.5	62.4	62.1	44.7	72.1
Average wage*	2.9	2.3	78.7	3.0	2.5	82.7	3.2	2.8	85.4
All India									
Average wage	28.1	14.6	52.1	36.2	20.0	55.3	46.8	27.0	57.7
Average wage*	2.7	2.3	84.1	2.9	2.6	88.0	3.1	2.8	88.8

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-00.

Note: * indicates the wages after controlling for human capital (years of education) and experience (age minus years of education – 6) and experience squared . The human capital equation, $\log(\text{wage})$ as a function of education, experience and experience squared was estimated separately for males and females, rural and urban areas.

Section 7: **Conclusions**

This paper, using all the evidence available, evaluates the performance of the Indian economy on four inter-related dimensions: aggregate economic growth, employment, unemployment and wages. Regarding growth, the overwhelming conclusion is that per capita income growth, as estimated by either the NA or the NSSO EU surveys, accelerated in the 1990s by about 1 percent per annum. This acceleration has been relatively neutral in its impact – per worker rural incomes expanded at a 4.1 percent annual rate in the 1990s compared to a 4.4 % annual rate for urban areas.

Given this trend in income growth, and the relatively static nature of inequality¹⁸, a firm result is that absolute poverty most likely declined at a rapid pace, and, given a higher wage growth rate, at a higher pace in the so-called reform period of the 1990s. If a ‘correct’ survey based minimum estimate of income growth is applied to the NSSO consumption distribution data for 1983, then poverty in India in 1999/00 was not 26 percent as officially stated by the government of India, not higher as claimed by several analysts, but considerably lower at 13 percent of the population.

Labor markets seem to have worked rather well, despite the lack of reforms in this political arena. As a well-operating labor market would predict, with the advent of economic reforms and globalization, wages in both rural and urban areas are expanding, education is at a premium, child labor is declining, school enrollment is up, and catch-up is occurring between female and male wages. Unemployment rates, often a policy concern, need not be a concern. Such rates have been falling, and have done so particularly since the institution of economic reforms in 1991, and since 1999/00. In 2003, both in absolute terms, and historically, very low unemployment rates were observed for all sectors of the population. Only one sector of the population seems to be prone to a high unemployment rates – the very well educated. The *average* education level of the unemployed is today close to 10 years of education. Further work on this subject is proceeding, in particular the subject of frictional unemployment.

¹⁸ There is firm evidence of a mild V-shaped pattern to aggregate inequality with the 1999-00 inequality level being generally below the 1983 level. The mildness of the change between 1993/94 and 1999/00 is exemplified by the fact that real consumption inequality (even according to the high-end nominal inequality deterioration of around 10 % as reported by Deaton-Dreze) only changed by about 5 percent i.e. a low change according to both an absolute standard, and especially a relative standard.

There was one undeniable, and on the face of it, an unfortunate aspect of growth in the 1990s. Job growth was very slow – about 1.2 % p.a. compared to a near 3 percent growth in the 1980s. But so was the growth in potential labour supply. And since 1999, labour supply growth has recovered to a level slightly exceeding 1.8 % per annum.

The growth in wages of agricultural workers increased from 2.2 % p.a. in the 1980s to 3.1 % p.a. in the 1990s. A marked acceleration, and one consistent with a tightening labor market, or at least a labor market characterized by a decline in labor surplus. This is the case because both under assumption and reality, total output growth (GDP growth) stayed the same or was higher in the 1990s. With a declining rate of growth of the labor force, labor tightening is to be expected, even with the same rate of growth, let alone with sharply accelerating growth. This simple logical exercise negates one of the major results of the “conventional view” i.e. the 1990s growth process was “jobless” because of the pattern of growth; it may have been “jobless”, but this had more (relatively) to do with the fact that there weren’t enough workers available (unless they were to be imported).

It could still be the case that the tightness in the labor market was only in select sectors of the economy, in particular, the poor rural areas of India. Hence, inequality worsened, rate of poverty decline slowed, etc. There are at least three answers to this extension of the conventional view. First, unemployment data per se does not corroborate this view – i.e. unemployment rates were the same, or declined marginally, over the rates prevailing in the eighties. This is according to all definitions of unemployment – usual status, weekly status, or daily status. Second, the average education level of the unemployed is very high relative to the average. This just proves the adage that the poor are too poor to be unemployed, a reality forgotten by some poverty experts.

If labor market was tightening, it should show up in numbers on growth in real wages. If tightening proceeds from slackness, then the market could still be tightening without an increase in real wages. The NSSO data on real wages, analyzed earlier, very convincingly shows that the poor, and others, have benefited significantly in the 1990s. Rural wages grew at 2.5 percent in the 1980s, somewhat ahead of urban wages which increased at 2.1 % p.a. In the nineties, there was a significant across the board

acceleration, a near doubling in average growth rates. As a result, wage growth in rural areas jumped to a rate of 4.1 % p.a., and those in the urban areas to 4.9 percent per annum.

These results are completely opposite to the conventional wisdom, expounded by several international and domestic experts - that wage growth declined in the 1990s. That wisdom was based on a questionable wage series. According to the more reliable NSSO data, wages grew faster, at near equal levels in urban and rural areas, and poverty is likely to have declined at a considerably faster rate, and inequality is likely to have remained the same. *And these trends have to have been observed, because of a tightening labor market (or a less slack labor market).*

Annex Table 1 : Economic Growth in India: 1950/51 - 2003/04

Decades	Share of Agri.	Growth In						
		GDP	NSSO					
			Agri.	Non-Agri	Pop.	Pop. (15-59)	Workers (15-59)	Wages (15-59)
1950s	57.5	3.8	3.1	4.9				
1960s	49.5	3.6	2.3	5.0	2.3			
1970s	44.5	3.0	1.6	4.2	2.3			
1980s	38.5	5.5	3.7	6.6	2.1			
1983-93	36.4	5.0	3.0	6.2	2.1	2.7	3.1	2.4
1990s	31.2	5.5	2.6	6.7	1.8			
1993-99	30.4	6.4	3.0	7.9	1.9	1.9	1.4	4.5
2000s*	25.3	5.8	3.4	6.6	1.6			

Source: Economic Survey, Govt. of India (2003/04)

Notes:

1. Growth figures for 1950s represent annualized growth in respective variables from the 1st year of the decade (1950-51) to the first year of the next decade (1960s), so on and so forth.
2. *Growth figures for 2000s are till the year 2003/04 for which advanced estimates reported in the Economic Survey are used.
3. Decadal share of agriculture is estimated by taking simple mean over the respective decade(s).
4. Wages are real, for all workers, with poverty line as a deflator, and NSSO data for 1983, 1993-94, and 1999-00.
5. Rural wages, non-NSSO data, are from Dreze-Sen and Deaton-Dreze.

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