Reducing Poverty and Inequality in India: Has Liberalization Helped?

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ABSTRACT *This study examines the empirical relationship among inequality, poverty and economic growth in India. Using data on consumption from the 13th to the 55th Rounds of the National Sample Survey, the author computes, for both rural and urban sectors, the Gini coefficient and three popular measures of poverty. The observed changes in inequality and poverty are explained in terms of the behaviour of key macroeconomic aggregates. A sharp rise in rural and, particularly, urban inequality and only a marginal decline in poverty have characterized the post-reform period. The rise in inequality is explained in terms of an increase in the relative share of output going to capital as compared to labour, a drop in the rate of labour absorption and the rapid growth of the services sector. The rise in inequality has diminished the poverty-reducing effects of higher growth. The reforms have also been characterized by widening regional inequality. This is especially true in the case of the incidence of rural poverty, but also, to a lesser extent, urban poverty. Statistical convergence among states in terms of inequality, poverty and real mean consumption is weak. Several policy conclusions are advanced.*

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1. Introduction

The ultimate aim of economic growth must be the betterment of the living conditions of the poor. Economic growth that does not lead to sharp and sustained reductions in poverty may create more problems than it solves. Similarly, if rapid growth is achieved at the expense of a worsening in the distribution of resources, it ultimately becomes unsustainable, since it engenders social tensions. Indeed, it is possible to imagine a situation in which economic growth leads to such exacerbation of inequality that poverty actually rises.

In India, the accepted wisdom is that the trend rate of economic growth was low and stable for a considerable period. A break was achieved through the process of trade and investment liberalization and economic reforms begun in 1991.[1] This led to a sharp rise in the trend rate of economic growth. An important question that arises here is: How has this economic growth affected levels of inequality and poverty in India? This study is designed to arrive at some tentative conclusions on this important issue.

The approach to liberalization in India (the Delhi consensus) has some clear differences with the standard approach (the Washington consensus). Of particular importance are differences in the basic philosophy of liberalization. India has opted for gradual and controlled liberalization and downplayed the stress on the speed of reforms emphasized by the Washington consensus. In addition, there are differences in detail. Thus, apart from the IMF funds received in 1991, reliance on foreign bilateral or multilateral public capital inflows

has been very limited. Consequently, after the reforms, policy-makers have been facing a hard government budget constraint, but not a threatening external payments situation. The Delhi consensus has emphasized the slow liberalization of trade and very gradual privatization and avoided capital account liberalization.

This prudent approach has sidestepped major shocks, and the changes in inequality consequent upon these reforms have been modest by the standards of, say, the transition economies. Rural inequality has risen at a slower pace than have urban and overall inequality.

The rise in inequality has been the result of three factors: (i) a shift in earnings from labour to capital income, (ii) the rapid growth of the services sector – particularly the FIRE sector[2] – with a consequent explosion in demand for skilled workers and (iii) a drop in the rate of labour absorption during the reform period. There has also been an increase in regional inequality, especially in the incidence of rural poverty. This rise in inequality has implied that, despite better growth, poverty reduction has been sluggish.

The plan of this paper is as follows. Section 2 outlines salient aspects of the economic performance of the Indian economy since the 1950s and provides a brief overview of the economic reforms initiated. Section 3 analyses trends in aggregate inequality and poverty and suggests possible explanations. Section 4 outlines the major characteristics of poverty and inequality at the level of individual states. Section 5 concludes.

2. Salient Economic Performance Aspects and Recent Policy Reforms

Three broad phases[3] can be identified in the development of the Indian economy. (i) During 1951-63 the rate of growth of GDP was low. The industrial economy was in its infancy, and feudal structures such as the *Zamindari*[4] were being dismantled. (ii) Slightly higher economic growth was typical in 1964-90 primarily because of the boost in agriculture consequent upon

the Green Revolution and a more mature industrial base. (iii) Post-1991 has been characterized by much higher growth rates, though this growth is not propelled by the agricultural sector.

Table 1 provides a summary of the behaviour of key macroeconomic aggregates for these periods.

Table 1 here

The real GDP of the Indian economy has grown by about 4% per annum on a trend basis over the nearly 50 years since 1950-51. In per capita terms, this would mean a growth rate of about 2% per annum, which would then imply that per capita output grew by a factor of about 2.5 over the period 1950-99.

In consonance with international experience, economic growth in India has been characterized by considerable transformation in the sectoral composition of aggregate output (Figure 1). The share of agriculture in value added remained steady until about 1971 and then started to decline. Agricultural productivity was virtually stagnant and quite volatile (in per capita terms) until about 1974. Since around 1975 it has shown an almost steady growth of slightly above 1% per annum. The share of manufacturing has grown very slowly, reaching a plateau of about 20% in 1996. It is widely believed (Jha & Sahni, 1993) that total factor productivity growth in the manufacturing sector has been sluggish. The share of services has increased quite quickly, with two phases of rapid expansion. The years following the nationalization of banks in 1969 saw a rapid expansion in bank penetration, particularly in rural areas. The financial liberalization begun in 1991 and the rapid development of industries in the field of information technology have had beneficial effects on productivity and the growth of output in the services sector.

Figure 1 here

Fluctuations in the growth rate of GDP were until recently driven mostly by the vagaries of the monsoon. Good rainfall would lead to better harvests and better GDP performance.[5] However, since the 1980s, in a reflection of the shift in the sectoral composition of output, the economy has become less dependent on the monsoons. GDP growth was positive in 1987 and 1991 despite poor rains.

Changes in employment patterns have been sluggish in comparison to the shift in the sectoral composition of output. Agriculture still accounts for the bulk of employment (Table 2). Even as late as 1993-94, about 70% of the population was dependent for work on agriculture in rural areas. In urban areas, the figure was 8%. Since the rural population accounts for about three-quarters of the total population, a large majority of India's population is still dependent on agriculture for their livelihoods.

Table 2 here

Table 3 presents evidence on the rate of unemployment (the number of people unemployed per 1,000 persons in the work force) using three different time concepts. (i) Usual status (US) indicates the extent of unemployment "for a relatively longer period during the reference period of 365 days" and measures the magnitude of chronic unemployment. Some of those who are unemployed according to this criterion may be working in a subsidiary capacity. When the unemployment rate excludes those employed in a subsidiary capacity, the corresponding figures are reported in the column "us adjusted". (ii) Weekly status (CWS) indicates the number unemployed (per 1,000) during the average week of the

survey year. It includes those who are chronically unemployed, as well as those who, among the usually employed category, are intermittently unemployed due to seasonal fluctuations in labour demand. (iii) Daily status (CDS) gives this same information for an average day during the survey year.

Table 3 here

Between 1972-73 and 1993-94 the chronic unemployment rate among males varied between 2% and 2.8% in rural India and between 4.5% and 6.5% in urban India. These figures might appear low in comparison to those in some developed countries, but, as several authors have argued, the poor, who depend almost exclusively on labour income, can ill afford to remain unemployed on a regular basis. Their poverty is reflected by their earnings rather than by their unemployment status.

As we move from the usual status to the weekly or daily status, the unemployment rate rises substantially because of extensions in coverage. In 1993-94, it was 6% in the rural sector among both males and females and 7% (11%) for the urban male (urban female) population on a daily-status basis, indicating large seasonal or intermittent unemployment. There is no clear trend in the unemployment rates over the last two decades[6] except that there was a drop[7] between 1987-88 and 1993-94. Fluctuations in unemployment are more severe for females than they are for males.

Indian economic reforms, which began in 1990-91, were an amalgam of macroeconomic stabilization and structural adjustment and were initiated after a severe macroeconomic crisis. The contours of this crisis and the response to it have been well studied (Joshi & Little, 1996). Therefore, only brief comments are made on these now.

In the early months of 1991 there was a steep drop in foreign exchange reserves (to about $1 billion, or two weeks' imports). India's credit rating was sharply downgraded, and private foreign lending was cut off. Industrial growth was sluggish. Inflation at 12% (high by Indian standards) and rising, high fiscal and current account deficits[8] (at 10% and 3% of GDP, respectively) and a heavy and growing burden of domestic and external debt, as well as falling real investments, were signs of deep-rooted structural malaise.[9]

However, it was recognized that these problems were transitory and were occurring against the background of the relatively healthy economic performance in the latter half of the 1980s. Thus, the World Bank (1996) observes:

> India did not have the inflation, external debt, and social inequities so severe as in Latin America – and was thus able to stabilize the economy more rapidly and at lower social cost. Unlike former centrally planned economies in Eastern Europe and elsewhere, and while extremely regulated, India already had an ubiquitous private sector, all the institutions of a free market economy, and a relatively well-developed financial sector. India was thus able to avoid the costly industrial and financial closures and restructuring, so frequent and so painful in most of the former socialist economies of Eastern Europe and Central Asia, and which have considerably delayed the supply responses to reforms.

However, this also meant that, once the basic economic crisis had been tackled, the pressures to develop a consensus to advance and deepen structural reforms would be reduced,[10] and subsequent economic reforms would be gradual and not sweeping. The justification given for this is that India's economic crisis was not as serious as that of the transition economies and that there is a need to attain political consensus on economic

reforms in a large and varied democracy. The essential contours of the economic reform programme were as follows.

2.1 Fiscal Consolidation and Stabilization

Fiscal consolidation and stabilization were seen as preconditions for successful reforms and assigned the highest priority, especially during the initial phase of the reform programme. Some reduction in the fiscal deficit was achieved by systemic improvements, such as the abolition of export subsidies in 1991-92, the partial restructuring of the fertilizer subsidy in 1992-93 and the phasing out of budgetary support to loss-making public-sector enterprises. But this was accompanied by sharp reductions in capital expenditures and the transfers to the state governments. The state governments were unable to cut their recurrent expenditures and responded by decreasing their own capital expenditures, so that the expenditure pattern of both central and state governments was irrevocably biased in favour of non-capital (or revenue) expenditures from about 1987.

2.2 Industrial Policy and Foreign Investment

Industrial policy was subjected to a complete overhaul. Several barriers to entry into industries were removed. Industrial licensing was abolished except for a small number of small-scale sectoral units. The parallel, but separate controls over investment and expansion by larger industrial houses through the Monopolies and Restrictive Trade Practices Act were abolished. The Companies Act was streamlined. The list of industries reserved for the public sector was drastically reduced.

There was also a radical restructuring of the public policy towards foreign investment. Earlier, India's policy towards foreign investment had been very selective and had been perceived by foreigners as unfriendly. Equity participation was limited to about 40%, except in selected high technology or export-oriented sectors. With the beginning of reforms, the foreign investment limit was raised to 51% and then still further a little later. Foreign investment is now permitted in a much larger number of sectors. The Foreign Investment Promotion Board has been set up to facilitate foreign direct investment in India. India has entered into bilateral and multilateral investment guarantee schemes.

2.3 Trade and Exchange Rate Policies

Trade policies were substantially liberalized for all except final consumer goods. The complex import-control regime for imports of raw materials and intermediate and capital goods was virtually dismantled. Baggage allowances for international travelers were raised. Quantitative restrictions on imports and customs duties were lowered.[11] However, tariffs in India are still high by Asian standards.

The exchange rate regime has undergone complete transformation. The highly controlled regime based on a chronically overvalued exchange rate for the rupee was dismantled. Two substantial devaluations were followed by the establishment of a dual and then a unified exchange rate regime. In 1994 the rupee became convertible on the current account. The liberalization of the capital account is still to take place.[12]

2.4 Tax Reform

Tax reform was undertaken subsequent to the report of a government committee and had the following broad characteristics.

- The number of income tax categories was brought down. The top marginal rate of personal tax, which had been 56% in 1991, came down to as low as 30%.[13] The number of exemptions was lowered, although significant progress needs to be made on this front.[14] Stronger incentives for saving were provided by redefining the base of the wealth tax (which earlier included all personal assets) to exclude all productive assets including financial assets.
- Corporate tax rates, which (in 1991) had been 51.75% for a publicly listed company and 57.5% for closely held companies, were unified at 46%. Corporate taxes were further lowered.
- Excise duties on manufactured goods had hitherto been charged at varying rates on different commodities, and most of these duties had been specific rather than ad valorem. There had been an abundance of exemptions and interpretations of the tax laws. Indirect tax procedures were now simplified, and most duties were made ad valorem.[15] The "Modvat" system of tax credit for taxes paid on inputs was extended to include key sectors like textiles and petroleum. The number of excise rates was more than halved. A beginning was made with respect to the taxation of services. The longer term objective of the government is to move to a full-scale VAT. There are some important problems here, not the least of which is the integration of taxes on production (which are under the control of the central government) with taxes on sales (which are under the control of state governments).

2.5 Public Sector Policy

Under the patronage of the Feldman-Mahalanobis model of development, the public sector in India entered into almost every conceivable area of productive activity. Many public-sector enterprises were highly inefficient; indeed, they were little more than guarantors of continuous employment to some workers. In 1997, for example, the Bureau of Public Enterprise calculated that public-sector enterprises as a whole, representing a total capital worth of Rs. 600 billion, were earning a negative real rate of return. This aggregate picture masked considerable heterogeneity because some public-sector enterprises continued to be professionally managed.

Public-sector restructuring policy took the form of selective disinvestment rather than privatization per se. Initially, the government retained 51% of the equity and, therefore, control over management. This percentage has subsequently been lowered in some areas. Revenues from disinvestment have been used for general budgetary purposes.[16] Public sector undertakings were given the clear signal that their investment plans would have to be financed either by internal resource generation, or through the capital markets. Although the budget constraints of loss-making enterprises have become much harder, the government has not ordered any public-sector enterprise to be closed, but has brought public-sector undertakings under the purview of the Board of Industrial and Financial Reconstruction to facilitate their restructuring.

2.6 Financial Sector Policy

The crisis of 1991 brought into the open the full magnitude of the lingering and neglected problems of real sector stagnation and financial sector complacency. The government's

response followed the recommendations of the Narasimham Committee (formed in August 1991 against the backdrop of pressure from the IMF to lower the fiscal deficit).

The first banking reform dealt with regulation. The government's role in banking shifted from the management of credit to supervision and regulation. This carried the risk (moral hazard) that banks which had hitherto been protected were suddenly permitted, at least partially, to set their own credit goals would, in the competition to lend more, sacrifice prudent norms and face insolvency.[17] A government in the grips of a weak fiscal situation would not be able to bail such banks out in time.

Efforts to improve transparency and reduce transaction costs were undertaken (such as the adoption of modern accounting practices and appropriate definitions of assets and liabilities, the setting up of the Board of Financial Supervision within the Reserve Bank of India and the development of a reliable financial database). The massive clean-up needed for some public-sector banks could not be pursued because the government was the sole stakeholder and privatization was not possible until the banks had become profitable. Banks were recapitalized through the general budget.

In May 1989 the call money rate was freed from the ceiling of 10%, and the interest rate ceiling on the rediscounting of commercial bills was withdrawn. In 1994-95 the government agreed to phase out its automatic access to RBI financing within three years. Commercial banks, as well as public financial institutions, were allowed to issue certificates of deposits as of June 1989 and commercial paper as of 1990, and, as of April 1992, they were permitted to set up their own money market funds. Guidelines were also progressively liberalized.

The development of treasury bills as a money market instrument has deepened the government securities markets. Short-term liquidity management has been conducted through repos, particularly since November 1996. Interbank liabilities were exempted from cash

reserve requirements in April 1997 so that repo transactions could take place in a more flexible manner. Banks have been given considerable freedom in setting interest rates. Many anomalous practices in the Bombay Stock Exchange were contained. The creation and empowerment of the Securities and Exchange Board of India – a regulatory body – and the National Stock Exchange, with on-line trading from a large number of centres throughout the country, were important steps in this regard. Capital controls on foreign direct investment were gradually removed.

2.7 Agricultural Sector Reforms

Under the Indian Constitution, agriculture is within the purview of the states. Thus, the strategy adopted by the central government of lowering the budget deficit by reducing the transfers to the states has meant that investment (both public and private) in agriculture has stagnated. In contrast, the lowering of the protection for industry and the end of the overvaluation of the rupee have reduced the anti-agriculture bias in India's development strategy. Agricultural exports have become viable, particularly those from the agro-processing industry. All central government restrictions on interstate trade in foodgrains have been removed, although some state government restrictions remain. The procurement of foodgrains has registered handsome gains, leading to substantial increases in farm incomes.

Agricultural credit markets are a cause of worry. Laxness in loan recovery has made several cooperative banks non-viable.

2.8 Labour Market Reforms

Indian labour laws provide considerable protection from retrenchment to labour in the organized sector of the economy. These laws have reduced the impact of successes in other policy areas. Flexible labour laws are needed to attract new capital and to make old firms with a history of excess labour more viable.

Advocates of economic reform have argued that a successful long-term reform strategy should devote more attention to the sector that is slowest to change. In the Indian case, this is the labour market. Some flexibility has been transmitted through a voluntary retirement scheme, but this is not pervasive, nor is it a substitute for a rational policy towards exit from the workforce.

2.9 Complementary Social Measures

From the very beginning policy planners recognized that, while market-oriented economic reforms would improve investment and growth prospects, these could not be looked upon as ends in themselves, given India's mammoth and long-standing problems of inequality and poverty. In an important speech the then finance minister Manmohan Singh in his speech presenting the 1992-93 Union budget remarked that:

> …markets can only serve those who are part of the market system. A vast number of people in our country live on the edges of a subsistence economy. We need credible programmes of direct intervention focusing on the needs of these people. We have the responsibility to provide them with quality social services, such as education, health, safe drinking water and roads. In the same way, the development of capital and technology intensive sectors, characterized by long gestation periods, such as transport and communications and energy, will need to

be planned with much greater care than ever before. The control of land and water degradation, which threatens the livelihood of millions of poor people in this country, will also require effective government leadership and action.

What the Delhi consensus hoped to achieve was not less government, but more effective government to implement what the then prime minister, P.V. Narasimha Rao borrowing a term used by Cornia, Jolly & Stewart (1987), called "reforms with a human face".

The government was aware that the reform and structural adjustment programme would result in a temporary fall in public expenditure and that economic growth did not automatically "trickle down" to the poor.[18] Hence, a number of programmes directly attacking poverty were initiated. These included the food for work programme begun in 1977, subsidized food supplies through the public distribution system and concessional loan schemes for on- and off-farm development for small farmers, marginal farmers and agricultural labourers.

Other ongoing initiatives have concentrated on the creation of rural wage and self-employment programmes through asset endowment rather than on needs-oriented programmes designed to ensure access to basic amenities, such as drinking water, to the poor. The most prominent among these is the Jawahar Rozgar Yojana, which brings together the National Rural Employment Programme and the Rural Landless Employment Guarantee Programme. Among these, the Maharashtra Employment Guarantee Scheme, which derives its success mainly from the strong political commitment of the state government (Hirway & Terhal, 1994), is the most well known.

In addition, there are the Integrated Rural Development Programme, the Employment Assurance Scheme, the Accelerated Rural Water Supply Programme, and programmes to

counter area-specific endemic poverty caused by hostile agro-climatic conditions and the degeneration of the ecosystem (Gaiha, 1991).

A National Renewal Fund was set up in February 1992 to provide assistance to workers becoming redundant following the adjustment programme. This fund was expected to finance the retraining, redeployment, or retrenchment of workers made redundant.

Despite budgetary pressures, the financing has been maintained and even enhanced for these social programmes. Operational efficiency has been sought through decentralized programme operation. In 1994, the Indian Parliament passed the 73rd Amendment to the Constitution of India, making the panchayats, a village-level organization, directly responsible for implementing poverty-alleviation programmes.[19]

3. Trends in Inequality and Poverty in India

Some evidence on the temporal behaviour of inequality and poverty[20] at the all-India level is presented in Table 4. The poverty measures used are all drawn from the Foster-Greer-Thorbecke class of functions written as:

$$P_a = \sum_{y_i < z} [(z - y_i)/z]^a / n$$

where y_i is the consumption of the ith household or the ith class of household, z is the poverty line, n is the population size, and a is a non-negative parameter. The headcount ratio, H, given by the percentage of the population who are poor, is obtained when $a = 0$. The poverty gap index (PG), given by the aggregate income shortfall of the poor as a proportion of the poverty line and normalized by the population size, is given by $a = 1$, and the Foster-Greer-Thorbecke (SPG) measure is obtained when $a = 2$.

Table 4 here

Poverty measures are calculated for each of two parametric specifications of the Lorenz curve: the Beta model (BETA) of Kakwani (1980) and the general quadratic (GQL) model of Villasenor and Arnold (1989). Standard tests based on R^2 and log likelihood functions enable us to make a choice between the two functional forms.

The computations cover the 13th (1957-58) to the 53rd (1997) Rounds of the National Sample Survey (NSS).[21] Results for 1999-2000 are also noted.[22] Table 4 also notes movements in the level of real mean consumption in rural and urban areas, as well as the form of the distribution (Beta or GQL) which best fits the data. These results are graphed in Figure 2 (Figure 3) for the rural (urban) sector.

Figures 2 and 3 here

This time span can be usefully split up into three subperiods (i) 1951-63, (ii) 1964-90 and (iii) 1991 and later. (This last period is considered to begin during the crisis year, 1991, and, alternately, to include or exclude this year and extends to 1997. We exclude the year 1999-00 for reasons explained in footnote 22). In the first subperiod, as Table 1 indicates, the average rate of growth was low. Mildly redistributive policies, such as the abolition of the zamindari system, were effected, but the incidence of poverty was high. With rapid population growth, the number of the poor increased considerably.

The second subperiod was characterized by a controlled and stable policy regime. GDP growth was higher essentially because of the adoption of Green-Revolution-type technologies and a more mature industrial base. Inequality remained stable, so that there was

a more rapid drop in the incidence of poverty. However, because of rapid population growth, the absolute number of the poor increased.

In response to controlled liberalization, in the 1990s there was a modest rise in rural inequality and a more significant rise in urban inequality, and, because growth in this period was characterized by a shift of the population to urban areas, there was an increase in aggregate inequality. There was also an increase in regional inequality, of which the most striking aspect was the increase in inequality in the incidence of rural poverty. Despite healthy growth, poverty stagnated because of the increase in inequality and the sluggish increase in agricultural wages, as well as the rise in prices in the public distribution system consequent upon the reduction of food and fertilizer subsidies.

Table 5 illustrates the relationship between the salient characteristics of the economy and changes in inequality and poverty. Table 6 provides information on food availability.

Tables 5 and 6 here

3.1 Inequality and Poverty in the Rural Sector

The period until 1963 witnessed a fall in the rural Gini in response to the dismantling of the zamindari and other feudal structures. However, growth rates were so low that real mean consumption declined between 1957-58 and 1963-64. Thus, the distributional improvement was unable to generate a drop in poverty. Poverty was high, and the number of the poor rose.

From 1963-64 to 1990, inequality remained stable, with the rural Gini falling by only 0.78 points. Inequality (and poverty) increased in response to the brief, but costly war with Pakistan in 1965-66, which was followed by two years of poor monsoons and consequent near-famine-like conditions in many parts of the country. Inequality began to decline after the

initiation of land reforms in 1969. With inequality almost unchanged, the greater agricultural growth consequent upon the adoption of Green-Revolution-type technologies in some parts of the country led to a considerable drop in poverty (about 14 points in the head count ratio). The only aberration occurred in 1987-88, when poverty rose as a result of poor harvests (and lower agricultural wages) following a widespread failure of the monsoons.

The post 1991 period provided a major break with the past in rural inequality. The period began with a crisis. Foodgrain production declined between 1991 and 1992 largely as a result of an increase in the price of fertilizers after a cut in the fertilizer subsidy. Macroeconomic performance started to improve in 1993-94. GDP, NNP per capita, agricultural output and food availability registered good gains, and the inflation rate fell.

This growth, however, exacerbated rural inequality. The Gini was higher in 1997 than it had been at the onset of the economic crisis in 1990-91 (30.11 as compared to 27.71). Poverty initially rose in response to the economic crisis and the liberalization programme undertaken thereafter,[23] but then started to drop very marginally following the successful liberalization of the agricultural sector and substantial increases in the procurement prices for foodgrains. Although there were modest gains in real mean consumption (from 66.81 in 1990-91 to 78.90 in 1997), growing inequality meant that the drop in poverty was marginal (34.22 in 1997 compared to 36.43 in 1990-91). Given the rapid growth of population in rural areas, the number of the poor in the rural sector went up. Hence, the economic reform programme of the 1990s led to a rise in rural inequality, a very mild drop in rural poverty[24] and a small increase in real mean consumption. There was some year-to-year fluctuation.

Changes in the real wage in agriculture (graphed in Figure 4) have been a reasonable proxy for the movements in inequality and, particularly, for those in poverty in rural India. Real mean consumption has shown a weak upward trend, and, along with fluctuating real

agricultural wages, this indicates the slowly rising importance of (non-agricultural) labour income. Growth in urban real wages seems to have had little impact on rural poverty.

Figure 4 here

As an explanation of the movements in the real agricultural wage, the following regression had a good fit.

Agwage =	6.2865	+0.307*time	-0.0103*infl	-0.29*dummy	-0.03*ginir	-0.029*hcr
	(1.954)	(4.911)	(-1.45)	(-1.22)	(-0.26)	(-1.1)

R^2 = 0.96, DW and LM and F version of chi squared tests reject serial correlation.

Agwage, time, infl, dummy, ginir, and hcr are, respectively, the real agricultural wage, a time trend, inflation in the consumer price index for agricultural labourers (CPIAL), a dummy (with a value of 1 for a bad monsoon year and 0 otherwise), the rural Gini, and the rural headcount ratio. All signs are as expected. Figures in parentheses indicate t-values, which show that only the constant and the time trend are significant. On the basis of the likelihood ratio tests, ginir and hcr can be dropped from the regression. The new equation is:

Agwage =	3.7334	+0.37366*time	-0.101*infl	-0.4054*dummy
	(13.2733)	(11.12)	(-1.473)	(-1.875)

Inflation in CPIAL (the Mundle-Tulasidhar effect) has the right sign, but is insignificant, whereas the poor monsoon dummy has the right sign and is significant (at

10%). Hence, real agricultural wages in India seem to be growing along a trend, with fluctuations being caused largely by variations in the monsoons.

3.2 Inequality and Poverty in the Urban Sector

The urban Gini has always been higher than the rural Gini. During the first period it rose slightly. In the 26-year period 1963-64 to 1989-90, the urban Gini was almost constant (falling by only 0.95 points). In contrast, in the seven-year period between 1990-91 and 1997, the urban Gini went up by 2.17 points. In 1997 it stood at one of the highest values ever in the Indian context: 36.12. Thus, the reforms have led to a sharp rise in urban inequality.

For much of the period 1957-58 to 1997, urban poverty was falling. The only exceptions were (i) 1968-69, when growth was low following the drought (near-famine-like conditions) of 1967-68, (ii) 1987-88, when there was another severe drought, (iii) 1992, immediately after the stabilization programme was put into place, and (iv) 1997, when industrial recession set in. Poverty fell more sharply in the 1990s.[25] The industrial recession in 1997, however, led to a fall in mean consumption and a rise in inequality and poverty. Food availability varied continuously over this period, underscoring its diminished importance as a determinant of urban poverty as compared to rural poverty.

Urban poverty has had a perfect association with industrial growth, underscoring the fact that, with an almost stable distribution, higher growth means lower poverty. Whenever the industrial growth rate went up, the urban head count ratio fell – even in 1995-96, when higher industrial growth was associated with lower real GDP and lower agricultural growth. Similarly, whenever the industrial growth rate fell, urban poverty increased.

3.3 Comparison of Inequality and Poverty in the Rural and Urban Sectors

Figure 5 reports the differences in inequality and poverty between the rural and the urban sectors. The urban sector always has higher inequality and lower poverty than the rural sector. The difference between the Gini coefficients in the two sectors rose during the first period because of an increase in urban inequality, the implications of the import-substitution-led industrial growth strategy adopted during the second five-year plan and a drop in rural inequality. During 1964-89 this difference diminished and remained below 5 points until 1989-90, but rose during the reform period.

Figure 5 here

The difference between rural and urban poverty diminished in the first period as rural poverty fell and the industrial sector was still in its infancy. During the second period, the difference remained nearly stable, narrowing somewhat until 1989-90. With the onset of the reforms, urban poverty declined more sharply than did rural poverty, and the gap between the two widened.

The association between rural and urban poverty is much closer than the association between urban and rural inequality. The coefficient of correlation between the urban and rural head count ratios is 0.95 for the entire period and 0.78 for the 1990s, while the corresponding correlation between rural and urban Ginis is only 0.21 for the entire period and 0.67 for the 1990s.

The links between inequality and poverty within each sector are weak. The coefficient of correlation between the rural head count ratio and the rural Gini is 0.5 for the entire period and 0.12 for the 1990s. In the urban sector the Gini coefficient and the head count ratio

showed a correlation of -0.29 for the entire period and -0.12 for the 1990s. Hence, the reforms weakened the association between poverty and inequality within each sector.[26]

The variability of inflation for agricultural workers is higher than that for industrial workers (Figure 6) and increased in the 1990s.[27] If utility functions are concave, higher inflation variability would amount to lower expected utility, *ceteris paribus*, and a decline in the welfare of rural households. Except for 1993-94, agricultural workers experienced greater erosion in purchasing power in the 1990s.

Figure 6 here

3.4 Economic Reforms and Poverty

There are two broad reasons for the inability of the reforms to make a serious dent in poverty, particularly rural poverty. First, the effectiveness of economic growth in reducing poverty depends considerably on the pattern of this growth (Ravallion & Datt, 1996). In the countryside, if growth is primarily concentrated in the non-farm sector, its ability to reduce poverty in places characterized by "poor" human resources and "poor" initial development conditions (in absolute terms, as well as relative to urban areas) is limited.

Second, the effectiveness of anti-poverty programmes is crucial. The evidence on the effectiveness of these programmes in India is mixed. Gaiha (1998), Gaiha, Kaushik & Kulkarni (1998) and Gaiha & Kulkarni (1998) argue that these measures have not been very effective and that economic growth, by itself, is not able to make much of a dent in the core poverty in India.[28] In contrast, building upon a model of the movement in and out of poverty, Paul (1998) argues that the Integrated Rural Development Programme has been quite effective in reducing poverty in rural India.

Be that as it may, there remains considerable room for improvement in the design and execution of anti-poverty programmes. The strategy must involve resource mobilization to finance these programmes, which the current fiscal deficit of 10% of GDP makes difficult. The scope and design of the public distribution system (PDS) need to be enhanced so that the system can offer the poor improved access to food. Jha, Murthy, Nagarajan, & Seth (1999) show that the allocation of foodgrains through the PDS to various states has not been based on demand. Mundle & Tulasidhar (1998) have argued that the targeting and coverage of the PDS have been inadequate, and therefore the system has failed to shield the poor from the rise in foodgrain prices that has followed the boost in the price of fertilizers and the procurement price for foodgrains in the aftermath of the reforms.

3.5 Economic Reforms and Inequality

There is compelling evidence that the reforms have exacerbated inequality. However, the deterioration in India has been less substantial than that in several transition economies.[29]

What accounts for the rise in inequality in India?[30] An examination of the share of factor incomes sheds light on this issue. Particularly since 1992-93, as Table 7 and Figures 7, 8 and 9 indicate, the share of operating surpluses (profits) in net domestic product (NDP) has been rising, while that of mixed income has been falling. The share of wage income has been on a mild downward trend. In the organized sector of the economy, these tendencies are even more pronounced. The share of the organized sector in NDP has risen enormously (by about 50%) since 1992-93. Within this sector, the share of profits has gone up rapidly since 1992-93, whereas the share of wage income (the compensation of employees) has broadly stagnated. The share of the unorganized sector in NDP has dropped. The share of wages has

been stagnating within this sector, and that of mixed income (self-employment and agricultural income) has been declining, indicating a rise in the share of profit.

Table 7 and Figures 7, 8 and 9 here

Table 8 provides evidence that the economic reforms have been associated with a drop in the rate of labour absorption. Also, as Table 9 indicates, the growth of the FIRE sector has outstripped the growth of agriculture during almost every year of the reform period. Since 1996-97 the growth of the FIRE sector has consistently outpaced the growth in manufacturing. It is well known that growth in the FIRE sector creates demand for highly skilled and specialized factors of production and has a substantial speculative component. Facilitating the development of enterprise and investment has led to considerable improvement in profit opportunities, but less so in the case of labour earnings.

Tables 8 and 9 here

The gradual pace of the reforms and the practice of staggering major policy changes have limited the negative effects in terms of a worsening of inequality. Moreover, the lack of flexibility in labour markets, particularly the difficulties associated with the retrenchment of workers, has tended to cushion workers from the unemployment implications of the reforms. It is widely accepted, however, that this has also acted as a brake on more rapid economic growth. Hence, there has been a tradeoff. Furthermore, since India is a large country, the aggregate indicators may be concealing considerable diversity in regional experiences.[31] This necessitates a more disaggregated analysis of trends in inequality and poverty. Some results at the level of states are therefore now reported.

4. Poverty and Inequality at the State Level

To highlight the regional dimensions of inequality and poverty, the Gini index and *H*, *PG* and *SPG* have been calculated for 14 Indian states: Andhra Pradesh, Assam, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamilnadu, Uttar Pradesh, and West Bengal.[32] This analysis reveals a rich variety of experiences at the state level. For example, the rural Gini went up for India as a whole in 1994-95 (51st Round), but the rural Gini actually fell at the state level in Andhra Pradesh, Madhya Pradesh, Orissa, Punjab, Tamilnadu, and West Bengal. The aggregate rural Gini fell in 1995-96 (52nd Round), while the rural Gini rose in Assam, Bihar, Kerala, Madhya Pradesh, Orissa, and Uttar Pradesh. Some states have reduced poverty impressively. Thus, the rural head count ratio has been reduced sharply in Andhra Pradesh. Punjab has, expectedly, performed very well. In contrast, poverty has worsened in states such as Assam, and its incidence remains disturbingly high in a populous state such as Bihar.

Some states that have had high rates of economic growth and enjoy high per capita consumption also show low inequality (and poverty levels) compared to states that are lagging behind. For example, the rural Gini for Bihar was 31.65 in the 13th Round (1957-58) and had deteriorated to 38.9 by the 52nd Round (1995-96).. Bihar has also had low rates of economic growth and is among the poorest states in India. On the other hand, in Punjab, the richest state[33] in the country, the rural Gini coefficient dropped from 32.2 to 24.4 over the same time period, with poverty falling sharply. Thus, too much inequality seems to be an impediment to economic growth in this case. In specific situations, the cause and effect could work either way. Not only can more equality and less poverty be good for growth, but also high growth may lead to more equality and less poverty.

To illuminate the behaviour of inequality at the level of states as a group, a number of panel regressions have been run relating rural and urban Ginis to a host of variables. The best results are as follows.

$$\underset{}{GINIR = \underset{(3.2752)}{0.00528*time} + \underset{(16.1379)}{0.339*HR} + \underset{(3.638)}{0.2569*RMCR} + \underset{(1.8459)}{0.00125*RMCR2}}$$

$$\underset{}{GINIU = \underset{(3.543)}{0.00518*time} + \underset{(16.1367)}{0.3434*HU} + \underset{(9.076)}{0.4267*RMCU} \underset{(-3.359)}{-0.00111*RMCU2}}$$

where GINIR, GINIU, HR, HU, RMCR, RMCU, RMCR2, RMCU2 are, respectively, the rural Gini, the urban Gini, the rural head count ratio, the urban head count ratio, rural real mean consumption, urban real mean consumption; the square of the rural real mean consumption, and the square of the urban real mean consumption. The t-values (in parentheses) indicate that the coefficients are significant at 5%. The random effects model is rejected in favour of the fixed effects model in both sectors. In both sectors, inequality has a tendency to rise over time, and this tends to be accompanied by a rise in poverty**.** In the rural sector, inequality rises monotonically with mean consumption, whereas in the urban sector it may fall after a very large value of real mean consumption is reached.[34] Furthermore, whereas the coefficients on poverty and time are comparable for the two sectors, the coefficient on real consumption is much higher in the urban sector. This underscores our finding that urban growth has been more inequalizing than rural growth. Overall, in the Indian context, there is reason to view growth as tending to increase inequality.[35]

Given these differences among states, it is pertinent to inquire whether there is a long-term convergence in the performance of the states. As a first step in addressing this important question, Figures 10 and 11 report the time paths of the coefficients of variation of rural and

urban inequality and poverty. In neither sector is there a tendency for this diversity to diminish. Indeed, with the onset of reforms, the divergence among states in respect of the incidence of urban and, to a greater extent, rural poverty seems to have increased.

Figures 10 and 11 here

Then, two modern tests of convergence (the ranks test and the levels test) are carried out for any variable of interest, say, the urban Gini coefficient. The time period should be long for the levels test, whereas the ranks test is also valid for short time periods.

Kendall's index of rank concordance has been calculated in order to track the mobility of the states in respect of real mean consumption, the Gini coefficient and *H* (Boyle & McCarthy, 1997, Jha, Mohanty, Chatterjee, & Chitkara, 1999). Defining a coefficient of concordance, *W*, as an index of the divergence of the actual agreement of ranks from the maximum possible (perfect) agreement, *W* is calculated as:

$$W = s/\{(1/12)(k^2)N(N^2-1)\}$$

where s = the sum of the squares of the observed deviations from the means of *Rj* (the sums of the ranks obtained by a particular state in different years), that is,

$$s = \left[\sum_j R_j - mean(R_j) \right]^2$$

where $mean(R_j)$ is the mean of R_j, *N* is the total number of states, and *k* is the number of years.

The maximum possible sum of squared deviations is $(1/12)k^2(N^3-N)$. *W* varies between 0 and 1 and is computed for the first two sets of rankings (that is, the first two years), then for the first three years and so on, until all the years are covered, thus charting the mobility of rankings over time. The probability associated with the occurrence under H_0 (rankings are unrelated to each other) of any value as large as an observed *W* is determined by computing χ^2 as:

$$\chi^2 = s[(1/12)kN(N+1)] = k(N-1)W$$

with degrees of freedom, N-1. Table 10 presents these results for the rural and urban sectors. In the rural sector the critical value of χ^2 (at 5%) exceeds the computed value only for the first entry for the Gini coefficient. In the urban sector this happens for the first two entries for the Gini. In all other cases, the null hypothesis of no agreements among the ranks is rejected. Hence, by and large, there has been remarkable stability in ranks across these states in regards to these critical welfare-determining variables. The Kendall test statistics for the reform period are reported in Table 11for the rural and urban sectors. Rank convergence obtains in urban mean consumption for some years, but not for other variables.

Tables 10 and 11 here

States may not converge in ranks, but may do so in levels. To check this, the levels test of Evans & Karras (1996), an improvement upon the standard (β-type) tests of convergence, has been carried out. This test involves two steps. Consider y_t, the log of any variable of interest.

Step 1: Run the OLS regression:

$$\Delta(y_{nt} - \bar{y}_t) = d_n + r_n(y_{n,t-1} - \bar{y}_{t-1}) + \sum_{i=1}^{p} j_{ni}\Delta(y_{n,t-i} - \bar{y}_{t-i}) + u_{nt}$$

where *n* indexes states, and a bar (–) over a variable indicates mean value. ρ_n will be negative if the states converge, 0 otherwise. The φ's are parameters such that all roots of $\Sigma_i \varphi_{ni} L^i$ lie outside the unit circle. Use the standard error of each regression, $\hat{s}_n$, to compute the normalized series:

$$\hat{z}_{nt} \equiv (y_{nt} - \bar{y}_t) / \hat{s}_n$$

Step 2: Use OLS to obtain the estimate, $\hat{r}$, and its t-ratio, $\tau(\hat{r})$, by estimating:

$$\Delta \hat{z}_{nt} = \hat{d}_n + r\,\hat{z}_{n,t-1} + \sum_{i=1}^{p} j_{ni}\Delta \hat{z}_{n,t-i} + \hat{u}_{nt}$$

as a panel for n = 1, 2, …, N (states) and t = 1, 2, …, T (time), with $\hat{d}_n \equiv d_n / \hat{s}_n$ and $\hat{u}_{nt} \equiv u_{nt} / \hat{s}_n$. If $\tau(\hat{r})$ exceeds a specified value, one can reject $H_o : \forall n r_n = 0$ in favour of $H_A : \forall n r_n < 0$. In case H_A is accepted, there is convergence in levels. If H_o can be rejected, calculate the F-ratio:

$$f(\hat{d}) = \frac{1}{(N-1)} \sum_{n=1}^{N} [t(\hat{d}_n)]^2$$

$t(\hat{d}_n)$ is the t-ratio of the estimator of δ_n obtained from the OLS regression for state *n*. If $f(\hat{d})$ exceeds an appropriately chosen critical value, convergence is conditional. If not, convergence may be absolute. In our case, as Table 12 indicates, convergence in each of the categories of poverty, inequality and mean consumption in both the rural and urban sectors is conditional[36] and therefore weak.

Table 12 here

Thus, the ranks of states with respect to indicators of inequality, poverty and mean consumption are unlikely to change significantly over time. Moreover, there is only weak convergence in the levels. The results of the two convergence tests therefore reinforce each other and are in consonance with the results on the behaviour of coefficients of variation.

This rising regional inequality is now a matter of concern. Reducing interstate disparities has been an important objective of government policy. The five-year plans have used public investment and industrial licensing to promote balanced regional development. Transfers from the central government to state governments under both the capital and the current categories through the Finance Commission and the Planning Commission are overwhelmingly equalizing in nature. Thus, the 10th Finance Commission (Government of India, 1994), the recommendations of which guided federal transfers between 1995-2000, advocated the following weight structure for the devolution formula: 20% on the basis of the population of 1971 and 60% on the basis of the inverse of the distance between the per capita income of the state in question from the mean per capita income.[37] With the onset of market-oriented economic reforms, government transfers and investments began to play a diminished role in the economic activity of states, so that regional disparities, which exist because of divergent economic conditions among the various states of India, are exacerbated.

5. Tentative Conclusions

We go back now to the theme of this paper. Have the economic reforms reduced inequality and poverty in the Indian economy? An answer to this vexed question is not easy, since India has been a late and slow reformer. On the basis of a study of the data up to 1997, the following general statements can be made.

In both the rural and the urban sectors, at the all-India level inequality was higher post-reform than it was at the time of the crisis. Since the Gini coefficient for the urban sector is always higher than that for the rural sector, and since rapid economic growth implies a shift in the population from the rural to the urban sectors, the reform process has been accompanied by an increase in overall inequality. This rise in inequality is the result of a shift in the distribution of income from wages to profits, a drop in the rate of labour absorption and rapid growth of the FIRE sector. This has increased the demand and, therefore, the remuneration of skilled labour and specialized factors of production. However, since the reforms have been gradual and partial and labour still enjoys considerable security of tenure, this deterioration in inequality has been mild compared to that in the transition economies.

Poverty rose in the immediate aftermath of the reforms. Growth picked up, but the level of poverty remained stubborn (partially because of higher inequality and stagnation in the agricultural real wage), although there was some reduction in urban poverty. The decline in the crucial area of rural poverty was lower than that[38] during the 1980s and quite unsteady. Rural poverty actually rose in 1995-96, and urban poverty in 1997. Gains in real mean consumption have been higher for the urban sector than they have been for the rural sector.

Movements in aggregate inequality (and poverty) measures are actually the outcome of the movements in the measures in opposite directions in some states. This dispersion has increased with the reforms. There is no rank convergence among states in respect of inequality and poverty and only conditional convergence in levels. Thus, there is reason to be concerned about widening regional inequalities. Overall, growth seems to have increased inequality. In some cases, inequality is constraining growth because states with high Gini coefficients also have poor growth performance.

This reinforces the view that rapid economic growth remains the best bet for reducing India's immense problems of inequality and poverty. Along with this, efforts must be made to

see that the distribution of consumption does not become further skewed. This requires several steps.

First, the composition of growth needs to be altered to encourage agricultural as opposed to non-agricultural growth, especially in the poorest areas (Ravallion & Datt, 1999).

Widespread tax reform is necessary to increase tax revenues, effect more redistribution and offer support for more rapid economic growth that would enable greater provision for public expenditure for anti-poverty programmes.

The efficiency of public expenditure and of the social safety net should be improved. This would call for policies that sustain and enhance social expenditure levels and the more effective targeting of subsidies geared towards the poor.

Last, but not the least is the design of a good social-sector policy framework. Several factors are involved, and only a bare few are mentioned here.

First, as Ferreira, Prennushi & Ravallion (1999) emphasize, society must develop lasting, flexible organizations to protect the poor from the effects of macroeconomic shocks.

Second, appropriate safety nets, especially workfare programmes that are well targeted and involve appropriate transfer and credit programmes, need to be developed (Lipton & Ravallion, 1995). The relevant expenditures should be protected in real terms even when macroeconomic adjustments must be made.

Third, it is important to build up pressure groups of the poor to ensure that enough funds are made available for social programmes and that those in charge of these expenditures are accountable to the people (Gaiha & Kulkarni, 1998). Decision-making should be appropriately decentralized to ensure the smooth functioning of the programmes.[39]

Notes

1. Some have argued that growth picked up in the mid-1980s as a sequel to the reforms initiated then. Nevertheless, 1991 still marks a watershed year for economic reforms in India.
2. FIRE refers to banking, financial institutions, insurance, and real estate.
3. This periodization also characterizes the development of inequality and poverty, as discussed in Section III. There are important problems of comparability (discussed in footnote 22) of the consumption data for 1999-2000; hence in the analysis we confine ourselves to the period until 1997.
4. *Zamindari* is a landlord-serf type of agriculture tenure arrangement, whereby most of the land belongs to a landlord, and pay peasants pay the landlord for the right to till the soil and harvest crops.
5. The GDP growth rate was negative in the drought years of 1957-58, 1965-66, 1972-73, and 1979-80.
6. Mundle & Tulasidhar (1998) argue that recent economic reforms have not changed unemployment very much and that changes in unemployment cannot account for a significant portion of the increase in poverty in the immediate aftermath of the reforms.
7. There is evidence (discussed in section 3.5) suggesting that there has been a slowdown in the rate of growth of employment generation in the post-reform period.
8. Throughout this paper, fiscal deficit refers to the combined fiscal deficits of central and state governments.
9. External shocks themselves played a relatively minor role in the crisis. The Iraqi invasion of Kuwait in August 1990 cut off oil supplies for a while, but the problem could have been weathered without much difficulty (as, indeed, the quadrupling of oil prices in 1973 had been weathered), except for the fact that this impinged on an economy made highly vulnerable by unsound macroeconomic policy. Similarly, the cutoff in foreign private lending was not an external shock, but a reaction to unsustainable macroeconomic policies.
10. This is reflected, for example, in a reluctance to tackle the fresh fiscal crisis that has emerged. See Jha (1999).
11. Customs duties, on average, maintained a downward trend in the 1990s despite a rise in the duty on some items in the central government budget for 1999-2000.
12. In 1997 the government set up a committee to examine the possibility of making the rupee convertible on the capital account. This committee recommended stiff conditions and a target date of 2000. In the aftermath of the East Asian currency crisis, the enthusiasm for capital account convertibility has considerably waned.

13. In the budget for 1999-2000, a surcharge of 10% was added to the higher categories of income, raising the effective top marginal tax rate to 33.3%. A 10% surcharge was also levied on corporate taxes.
14. Agricultural income has never seriously been taxed in India. In the 1999-2000 union budget, dividend income was also made exempt from income taxation. Many perquisites still remain untaxed.
15. The duties on some major items, such as cement, remain specific, however.
16. The amount of the funds obtained from disinvestment has been consistently disappointing.
17. Reckless government borrowing because of the statutory liquidity requirement was partly responsible for this.
18. There is some disagreement about the extent of the increase in poverty during the initial phase of reform and the responsibility of the reforms for this increase. Tendulkar & Jain (1995) and Gupta (1995) attribute some of the increase in rural poverty to the reforms, but Datt & Ravallion (1997) argue that about nine-tenths of the measured deterioration in rural living standards in India in the immediate aftermath of the reforms occurred independent of the reforms.
19. The salient features of this amendment were "a three tier structure comprising District, Block and Village panchayats with the Gram Sabha (Village Assembly) as the foundation; direct and periodic elections; quotas for Scheduled Castes/Scheduled Tribes (SCs/STs) backward classes and women; delineation of major areas of financial and administrative requirements; a rational basis for sharing of resources between state governments and panchayats; provision for executive and supporting staff; clear-cut procedures for dissolution/suppression of panchayats, and mandatory elections within six months of dissolution" (Gaiha & Kulkarni, 1999).
20. The poverty line is taken as per capita consumption worth Rs. 49 (Rs. 57) at 1973-74 prices for the rural (urban) sector.
21. The database of the National Sample Survey is used here. NSS data in the socioeconomic field include details on consumer expenditure, demographic characteristics, labour force statistics, and employment and unemployment particulars. The sample households for consumption inquiries are selected on the basis of probability proportional to population. The sampling design chosen for the surveys is *two-stage stratified sampling*, instead of simple random sampling (where each household has an equal probability of being selected). The rural and urban sectors are separately divided into a number of strata. The villages are the *first stage units* in the rural areas, stratified on the basis of similarity with respect to population density or crop pattern. The blocks are the first stage units in the urban areas, stratified on the basis of population sizes

of towns and cities (Government of India, 1955). The *second stage units* are the households in both sectors. *Consumption* as defined by NSS is consumer expenditure mostly in value terms that relate to domestic consumption of the household only. NSS covers only private households and excludes the house-less population and the population residing in institutions such as prisons and hospitals. This does not take into account the expenditure by households for productive purposes. Consumption includes consumption (in value) of goods and services, (a) out of home-grown stock, (b) out of monetary purchases, (c) out of receipts in exchange of goods and services (d) out of gifts, loans, etc. The NSS provides data in quantity terms for select foodgrains; but only for a few Rounds. The food consumed by the employee at the employer's household is not included in the NSS estimates of food consumption for the former. This is done to avoid double counting of the expenditure on food. But at a given point of time, this procedure involves an underestimation of the consumption (of food, as well as in total) of the employee households which in all likelihood would belong to lower expenditure classes and an overestimation of the consumption of generally richer employer households. As a result, the foodgrain consumption and calorie intake of the poorer households in general would be underestimated (with implications for estimates of poverty measures based on calorie norms). NSS collects data from sample households with a reference period of a week, a month, or a year preceding the date of inquiry. When the entire sample is considered, the reference period becomes a moving one, as the NSS spreads out the interviews among different households uniformly over the duration of the survey. The moving reference period averages out the seasonal variations of the characteristics at the aggregate level. The dataset, although rich, has some drawbacks. For an assessment of the quality of the NSS dataset, see Dandedkar (1996), Deaton & Paxson (1998), Ghose & Bhattacharya (1994), Minhas (1988, 1991), Murthy & Roy (1975), Subramanian & Deaton (1996), and Ray & Bhattacharya (1992).

22. In the 55th Round the NSS made a major deviation from the technique it had been using. The basic change was in terms of the reference period used in questions of consumption. In Rounds of the NSS including and after the 50th. the reference period was uniform with respondents asked about their consumption (in all categories) in the past thirty days. During the 55th. Round however, the question on consumption of clothing, footwear, education and institutional health were asked with a reference period of 365 days and that on food consumption only for (alternately) thirty and seven days. It should be noted that several economists had asked for these adjustments. Many had felt that the 7-day recall period for food consumption would give a better indication of actual consumption. Hence this change in technique should

actually be welcomed. However, since the poverty estimates of the earlier rounds were done with the uniformly longer recall period, comparison of poverty estimates becomes difficult unless the results from the earlier Rounds are cast in terms of the new recall period. Unless this is accomplished the results of the 55th. Round are unlikely to provide any conclusive indication of the trends in poverty. Some authors, e.g. Visaria (2000) wanted to keep the seven- day recall period but argued that the poverty line should be raised to better reflect minimum nutritional norms. However, as Howes and Lanjouw (1998) argue differences in sample design can be a more serious distortion to poverty estimates than merely differences in recall periods. Others, such as Sen (2000) have argued for a completely new 55th Round with the old reference period so that comparability of data can be maintained. In Table 4 I report my calculations for poverty, inequality and real mean consumption for 1999-2000.

23. Gaiha (1998) avers that the most important cause of the increase in rural poverty, at least initially, was the rise in fertilizer prices. Mundle & Tulasidhar (1998) argue that, besides this, higher foodgrain prices also contributed.
24. Rural poverty rose in 1995-96 following an inadequate monsoon.
25. The decline was the steepest in the head count ratio and less so in the case of PG and SPG.
26. However, it can be argued that there are too few data points post-1990.
27. Ravallion & Datt ((1996, 1999)) confirm the deleterious effect of inflation on rural poverty in shorter data series. Nominal wages respond sluggishly to inflation, so that higher inflation leads to lower earnings and higher poverty in the short run.
28. Gaiha (1998) argues that a substantial amount of expenditure on anti-poverty programmes is cornered by middlemen or powerful vested interests who control the panchayats and that a coalition of the poor to force social expenditure towards more meaningful ends is necessary if anti-poverty programmes are to succeed.
29. Atkinson (1999) argues that economic growth following economic reform should not inevitably increase inequality. The Kuznets curve is no longer in vogue (Bruno, Ravallion & Squire, 1996). There is also an argument that there may be bidirectional causality between growth and distribution.
30. There is a substantial literature on the increase in inequality following economic reforms. In a study of the intertemporal and international variations in inequality (in a sample that included India), Li, Squire & Zou (1998) have identified credit market imperfections as the most important determinant of inequality. If the poor have limited access to well-functioning credit markets, then rapid economic growth would worsen their relative economic position. Other determinants include political economy considerations, such as the

extent of civil liberties and the initial inequality of assets. Financial deepening involving freer movement of financial variables and a larger number of financial instruments, permits the rich to push forward certain reforms that are of benefit to them, thus exacerbating inequalities.

31. Ravallion (1998) argues similarly in the case of rural China.
32. The detailed results are not reported here to conserve space. However, they are available from the author.
33. As a matter of fact, Punjab has a better track record in poverty reduction and mean consumption than even the welfare-oriented states with long periods of socialist rule such as Kerala and West Bengal.
34. This follows from the small value of the coefficient of RMCU2 in comparison to that for RMCU.
35. There are contrary views, however. Persson & Tabellini (1991) and Alesina & Perotti (1993) propose that inequality is harmful to growth because greater inequality leads to greater political instability and less capital formation. Fishlow (1995) finds no such link in Latin America. Bruno, Ravallion & Squire (1996) conclude that "initial distribution matters to the extent and nature of subsequent growth". Deininger & Squire (1997) show that the initial distribution of assets (in their case, land) has an influence on future income growth. Redistributive policies that increase people's access to credit markets and their opportunity to invest would contribute to growth.
36. This implies that the values for any state gravitate towards their own respective means rather than the means for all states. For a formal definition of conditional and absolute convergence, see Evans & Karras (1996), pp. 252. Conditional convergence is consistent with the finding of Datt & Ravallion (1998) that "initial conditions" are important in the evolution of poverty in the states.
37. The remainder of the weights were for area, index of infrastructure and tax effort.
38. The smaller decline in poverty despite higher growth in the 1990s relative to the 1980s was due to a drop in the elasticity of poverty measures with respect to growth. This drop was higher for rural poverty.
39. Boadway, Horiba & Jha (1999) discuss some problems in the appropriate design of such institutions.

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Table 1. Key national account aggregates (at 1980-81 prices, %)

		Mean growth				GDP share		
		RGDP	PFCE	GFCE	Per capita NNP	Agriculture	Manufactures	Services
1951-63	(phase I)	3.8	3.4	6.8	1.6	53.50	17.43	29.07
1964-90	(phase II)	4.3	3.8	5.8	1.8	40.92	24.22	34.82
1991-97	(phase III)*	5.02	5.22	3.16	3.8	31.53	25.65	42.82
1992-97		5.04	4.49	5.04	4.7	31.35	25.35	43.29
1997-01&		5.3			3.3	23.9	22.06	54.04

Notes: RGDP = real GDP (at 1980-81 prices). PFCE = private final consumption expenditure. GFCE = government final consumption expenditure. NNP = NET NATIONAL PRODUCT.* Phase III figures are given in two stages: one including, and the other excluding the "crisis year", 1991.

& = Computed from Economic Survey, Government of India, 2000-01 and Handbook of Statistics on the Indian Economy, 2001, Reserve Bank of India.

Table 2. Household distribution by employment (%)

	Rural				Urban			
	Agriculture	Industry	Service	Other	Agriculture	Industry	Service	Other
1983	77.3	10.0	12.7	–	16.5	31.0	52.5	–
1987-88	70.7	11.8	13.6	3.9	7.5	31.2	52.9	8.2
1993-94	71.0	10.9	14.8	3.4	7.7	29.6	54.2	8.6

Notes: "Other" represents households which had no income from economic activity. For 1983, agriculture includes "other".

Source: Government of India (1996a).

Table 3. All-India unemployment rates

	Male				Female			
	US	US (adj)	CWS	CDS	US	US (adj)	CWS	CDS
				Rural				
1993-94	2.0	1.4	3.0	5.6	1.4	0.8	3.0	5.6
1987-88	2.8	1.8	4.2	4.6	3.5	2.4	4.4	6.7
1983	2.1	1.4	3.7	7.5	1.4	0.7	4.3	9.0
1977-78	2.2	1.3	3.6	7.1	5.5	2.0	4.1	9.2
1972-73	–	1.2	3.0	6.8	–	0.5	5.5	11.2
				Urban				
1993-94	4.5	4.0	5.2	6.7	8.3	6.2	8.4	10.5
1987-88	6.1	5.2	6.6	8.8	8.5	6.2	9.2	12.0
1983	5.9	5.1	6.7	9.2	6.9	4.9	7.5	11.0
1977-78	6.5	5.4	7.1	9.4	17.8	12.4	10.9	14.5
1972-73	–	4.8	6.0	8.0	–	6.0	9.2	13.7

Notes: US: usual status; US (adj) US adjusted for subsidiary activity; CWS: current weekly status; CDS: current daily status.

Source: Government of India (1996a).

Table 4. Selected measures of inequality and poverty, 1957-00

Rural	Gini	H	PG	SPG	RMC	Index of RMC	Distribution
1957-58	33.74	55.16	19.01	8.77	55.68	103.07	GQL
1963-64	29.01	48.53	13.88	5.49	45.86	84.89	GQL
1968-69	30.70	59.00	18.96	8.19	50.32	93.15	BETA
1973-74	28.30	55.72	17.18	7.13	54.02	100.00	GQL
1977-78	31.20	50.64	15.04	6.06	61.17	113.24	GQL
1983	30.10	45.32	12.65	4.84	61.44	113.74	GQL
1986-87	30.15	38.90	10.02	3.72	66.89	123.82	BETA
1987-88	30.16	39.52	9.67	3.38	66.83	123.71	BETA
1989-90	28.23	34.30	7.80	2.50	67.50	124.95	BETA
1990-91	27.71	36.43	8.64	2.93	66.81	123.68	BETA
1992	29.88	43.47	10.88	3.81	63.84	118.18	BETA
1993-94	28.50	38.70	9.40	3.27	73.00	135.14	BETA
1994-95	29.19	34.22	8.70	2.90	76.50	141.61	BETA
1995-96	28.97	35.44	8.30	2.60	74.70	138.28	BETA
1997	30.11	34.22	8.13	2.57	78.90	146.06	BETA
1999-2000 (30 day recall)	26.22	27.61	5.45	1.61	79.2	146.6	BETA
1999-2000 (7 day recall)	26.23	24.49	4.75	1.42	79.5	147.1	BETA
Rural average							
1963-64 to 1990-91	29.51	45.37	12.65	4.92	60.09	111.24	
1992 to 1997	29.33	37.21	9.08	3.03	73.39	135.85	
Urban	**Gini**	**H**	**PG**	**SPG**	**RMC**	**Index of RMC**	**Distribution**
1957-58	35.90	47.75	15.95	7.00	76.16	109.61	GQL
1963-64	36.54	44.83	13.29	5.17	81.05	116.65	GQL
1968-69	32.90	49.29	15.54	6.54	72.14	103.83	BETA
1973-74	31.50	47.96	13.60	5.22	69.48	100.00	BETA
1977-78	33.70	40.50	11.69	4.50	83.77	120.57	BETA
1983	33.40	35.65	9.52	3.56	87.49	125.92	BETA
1986-87	35.60	34.29	9.10	3.41	93.84	135.06	BETA
1987-88	35.57	35.60	9.30	3.25	90.66	130.48	GQL
1989-90	35.59	33.40	8.51	3.04	93.44	134.48	BETA
1990-91	33.95	32.76	8.51	3.12	91.05	131.04	BETA
1992	35.55	33.70	8.82	3.19	84.70	121.91	BETA
1993-94	34.50	30.03	7.62	2.76	95.00	136.73	BETA
1994-95	33.43	28.40	7.10	2.60	102.30	147.24	BETA
1995-96	35.36	27.30	6.90	2.40	105.60	151.99	BETA
1997	36.12	27.9	7.2	2.5	103.50	148.96	BETA
1999-2000 (30 day recall)	34.40	25.09	5.75	1.86	106.2	152.8	BETA
1999-2000 (7 day recall)	34.25	23.22	5.20	1.67	107.1	154.1	BETA
Urban average							
1963-64 to 1990-91	34.31	39.36	11.01	4.20	84.77	122.00	
1992 to 1997	34.99	29.47	7.53	2.69	98.22	141.36	

Notes: (i) The table shows NATIONAL results. RMC = real mean consumption in terms of 28th Round prices. (ii) Results for the 55th Round of NSS (1999-2000) are not strictly comparable to the earlier rounds; the reasons for this are explained in footnote 22 of the text.

Table 5. Profile of inequality and poverty in India

Rural	Gini	H	Growth: real wage / real GDP / per capita NNP	Food availability / agricultural growth	Inflation, per CPIAL
1957-63	↓ (-4.73)	↓ (-6.63)	n.a / ↑ / n.a	↑ / n.a.	n.a.
1963-64 to 1989-90	↓ (-0.73)	↓ (-14.23)	n.a. / ↑ / n.a.	↑ / ↑	n.a.
1990-91 to 1997	↑ (+2.40)	↓ (-2.21)	↑ / ↑ / ↑	↑ / ↑	↓
Urban	**G**	**H**	**Growth: real wage / real GDP / per capita NNP**	**Food availability / industrial growth**	**Inflation, per CPIIIW**
1957-63	↓ (-0.6)	↓ (-2.92)	n.a.	n.a.	n.a.
1963-64 to 1989-90	↓ (-0.95)	↓ (-11.43)	n.a. / ↑ / n.a.	↑ / ↑	n.a.
1990-91 to 1997	↑ (+2.17)	↓ (-4.18)	↑ / ↑ / ↑	↑ / ↑	↓

Notes: G = Gini. H = headcount RATIO. NNP = NET NATIONAL PRODUCT. Inflation refers to percentage in CPIAL (for agricultural labourers) and CPIIW (for industrial workers). n.a. = data unavailable.

Table 6. Per capita food availability (metric tonnes per annum)

	Cereal	Food
1973-74	0.163206897	0.180465517
1977-78	0.180488959	0.199384858
1982-83	0.166186441	0.182937853
1986-87	0.170830091	0.186018158
1987-88	0.164200508	0.178109137
1989-90	0.19243309	0.208077859
1990-91	0.193241955	0.210238379
1991-92	0.182663551	0.196705607
1993-94	0.192511261	0.2075
1994-95	0.19630531	0.211836283
1995-96	0.182728261	0.196108696

Source: Reserve Bank of India (1998).

Table 7. Determinants of inequality in India (shares of net domestic product, %)

	Total			Organized sector			Unorganized sector		
	Employee compensation	Operating surplus	Mixed income	Private sector	Employee compensation	Operating surplus	Total	Employee compensation	Mixed income
1980-81	36.8	7.7	55.5	12.5	7.1	5.4	70	14.5	55.5
1981-82	36.2	9.4	54.4	12.9	7.1	5.8	68.4	14	54.4
1982-83	37	10.2	52.8	12.9	7.3	5.7	66.6	13.7	52.9
1983-84	37	10	53	13	7.3	5.7	66.6	13.7	52.9
1984-85	38.5	9.9	51.6	13.1	7.6	5.5	65.6	14	51.6
1985-86	38.5	10.3	51.2	12.3	6.9	5.4	65.1	13.9	51.2
1986-87	39.6	10.5	49.9	12.2	7.5	4.6	63.5	13.6	49.9
1987-88	40.2	9.9	49.9	11.8	7.3	4.4	63.6	13.7	49.9
1988-89	38.9	10.7	50.4	11.7	6.7	5	64	13.6	50.4
1989-90	38.7	11.3	50	11.9	6.2	5.7	63.7	13.7	50
1990-91	38.4	11.5	50.1	12.2	6.6	5.6	63.8	13.7	50.1
1991-92	38	12.1	49.9	11.8	6.7	5.1	63.3	13.4	49.9
1992-93	38	11.8	50.2	11.6	6.6	5	63.5	13.3	50.2
1993-94	36.5	14.2	49.3	12.6	6.5	6.1	62.3	13	49.3
1994-95	35.8	15.3	48.9	13.7	6.6	7.1	61.7	12.9	48.8
1995-96	36.8	16.2	47	16.2	7.3	8.9	59.7	12.6	47.1

Source: Central Statistical Organization.

Table 8. Annual compound growth in employment, by industry (%)

	1980-91[a]	1990-94[b]	1994-98[c]
Agriculture, forestry, fishing and hunting	0.9	-0.4	0.1
Mining and quarrying	1.5	0.5	-2.8
Manufacturing	0.3	0.4	2.0
Electricity, gas and water supply	2.8	1.1	0.7
Construction	0.5	-0.1	-0.9
Trades, hotels and restaurants	1.3	0.9	1.1
Transport, storage, communications	1.1	0.7	-0.2
Financing, insurance, real estate	4.4	2.4	1.1
Community, social, personal services	2.2	1.1	0.9
Total	1.6	0.8	0.8

a. Refers to the period April 1 1980 to March 30, 1991.

b. Refers to the period April 1 1990 to March 31, 1994.

c. Refers to the period April 1, 1994 to March 31, 1998.

Source: Central Statistical Organization

Table 9. Annual real GDP growth rates in agriculture, manufacturing and services

	Agriculture, forestry and logging, fishing, mining and quarrying	Manufacturing and construction	Transport, communications, trade	Banking and insurance, real estate and ownership of dwellings, business services
1991-92	-2.0	-1.7	2.3	10.5
1992-93	5.8	4.4	6.2	4.6
1993-94	3.6	6.9	12.5	5.6
1994-95	5.3	9.3	9.9	6.1
1995-96	-0.4	12.5	13.3	7.6
1996-97	8.8	6.6	7.7	7.1
1997-98	-1.1	5.6	5.8	11.8

Source: Author's calculations based on data of the Central Statistical Organization.

Table 10. Rank concordance among states

Number of rounds	Chi square				
	Gini	H	PG	SPG	Mean consumption
			Rural		
k = 2	21.43*	23.94	24.17	24.34	24.40
k = 3	28.56	33.93	34.99	35.30	35.95
k = 4	32.29	43.97	44.93	44.91	42.71
k = 5	43.03	52.57	54.55	54.49	50.37
k = 6	52.13	60.38	63.14	63.64	57.22
k = 7	62.61	68.24	71.78	72.80	65.84
k = 8	71.94	77.81	79.77	80.23	75.27
k = 9	80.78	84.95	87.17	86.55	83.16
k = 10	89.45	88.46	91.41	89.36	85.82
k = 11	99.92	94.58	97.05	96.95	89.90
k = 12	109.65	101.39	105.16	105.68	98.61
k = 13	114.97	110.89	113.46	114.09	106.50
k = 14	119.94	116.60	120.49	120.25	110.55
k = 15	115.22	122.79	127.39	127.21	108.75
k = 16	124.39	121.80	133.66	134.22	111.03
k = 17	128.70	124.70	137.82	138.62	112.27
k = 18	133.82	128.18	143.35	144.30	112.04
k = 19	141.33	130.71	147.99	149.77	112.70
k = 20	146.33	134.49	154.77	156.51	117.33
k = 21	148.42	137.41	157.01	158.61	120.31
k = 22	154.80	137.19	157.61	161.21	121.35
k = 23	158.88	138.69	160.64	165.58	124.04
k = 24	163.70	141.14	136.10	158.81	135.90
k = 25	169.81	142.59	128.89	154.81	141.40
k = 26	161.99	144.26	123.50	153.96	144.90
k = 27	163.41	145.45	124.52	154.23	145.61
			Urban		
k = 2	14.8*	23.83	24.69	23.63	26.03
k = 3	19.68*	35.57	37.21	35.52	38.00
k = 4	13.68*	43.23	48.97	46.82	44.22
k = 5	17.84*	50.94	56.91	53.09	45.51
k = 6	24.21	61.01	66.06	61.32	53.55
k = 7	28.52	71.95	78.27	72.50	65.30
k = 8	35.17	83.86	90.30	84.48	73.61
k = 9	37.52	94.47	101.52	95.60	85.32
k = 10	44.43	105.27	112.55	106.26	93.05
k = 11	52.28	115.55	124.16	116.55	101.89
k = 12	62.48	124.39	134.70	126.95	111.74
k = 13	69.22	133.41	143.22	132.51	122.35
k = 14	73.83	144.48	154.16	142.65	134.96
k = 15	78.40	156.23	165.96	154.15	147.66
k = 16	77.43	166.88	171.91	157.39	155.90
k = 17	82.56	176.82	181.89	164.50	164.98
k = 18	85.04	188.76	194.09	176.16	177.71
k = 19	91.72	195.22	200.94	182.90	190.38
k = 20	89.06	202.12	207.82	188.31	198.61
k = 21	97.09	210.15	214.03	194.67	208.47
k = 22	103.05	220.01	224.31	203.96	217.77
k = 23	110.83	226.78	231.05	210.60	220.57
k = 24	119.11	233.45	238.31	218.05	225.38
k = 25	126.70	235.18	240.38	220.67	210.61
k = 26	133.65	238.29	243.04	223.20	201.34
k = 27	135.09	239.54	244.01	225.32	203.45

Note: An asterisk (*) denotes acceptance of the null hypothesis at 5%.

Table 11. Rank concordance among states during the reform period (first year, 1991-92)

	Chi square			
Number of rounds	Gini	H	SPG	Mean consumption
Rural				
2	22.63	24.46	21.97*	23.31
3	34.50	36.94	25.78	35.23
4	43.86	39.69	33.96	36.43
5	37.98	43.88	44.66	29.14
6	37.45	44.01	45.98	32.01
Urban				
2	22.11*	23.31	23.80	22.57*
3	33.51	35.27	36.24	23.57
4	39.00	39.74	40.10	22.66*
5	45.71	48.47	48.60	27.99
6	45.72	49.03	48.06	22.45*

Note: An asterisk (*) indicates acceptance of the null hypothesis at 5%.

Table 12. Covergence tests in levels

	RH	RG	RC	UH	UG	UC
Andhra Pradesh	-1.4	-2.12	-2.29	-2.9	-1.9	-2.2
Assam	-1.28	-2.15	-1.83	-2.6	-4.4	-0.21
Bihar	-0.48	-1.39	-1.82	-1.7	0.19	-3.4
Gujarat	-2.26	-2.22	-1.27	-2.9	-2.2	-2.2
Karnatka	-1.72	-3.28	-2.58	-1.1	-2.3	-1.7
Kerala	0.83	-3.06	-1.27	0.05	-2.9	-0.5
Madhya Pradesh	-0.58	-4.3	-1.9	-2.7	-4.2	-4.2
Maharashtra	-2.49	-1.67	-1.4	-2.02	-3.5	-1.9
Orissa	1.42	-2.81	-3.5	-1.7	-4	-1.3
Punjab	-0.37	-1.65	-0.59	-1.6	-1.9	-2.2
Rajasthan	-3.2	-1.59	-4.9	-2.4	-3	-2.2
Tamilnadu	-2.84	-2.47	-2.4	-3.2	-3	-3.9
Uttar Pradesh	-1.15	-2.99	-1.5	-2.2	-2.3	-2.2
West Bengal	-2.06	-2.22	-1.8	-0.49	-1.9	-0.48
T-stat on rho from panel	-3.1	-5.5	-5.4	-4.49	-6.23	-4.87
F-value	3.47	6.97	5.78	5.03	9.06	5.94

Notes: Individual entries denote t-values in OLS regression. In each case, the panel T-statistic is significant, denoting convergence, and the F-value is greater than the critical value, denoting conditional convergence. RH, RG, RC = rural head count ratio, rural Gini and rural mean consumption, respectively. UH,UG,UC = urban head count ratio, urban Gini and urban real mean consumption, respectively.

Figure 1. Sectoral composition of GDP (%)

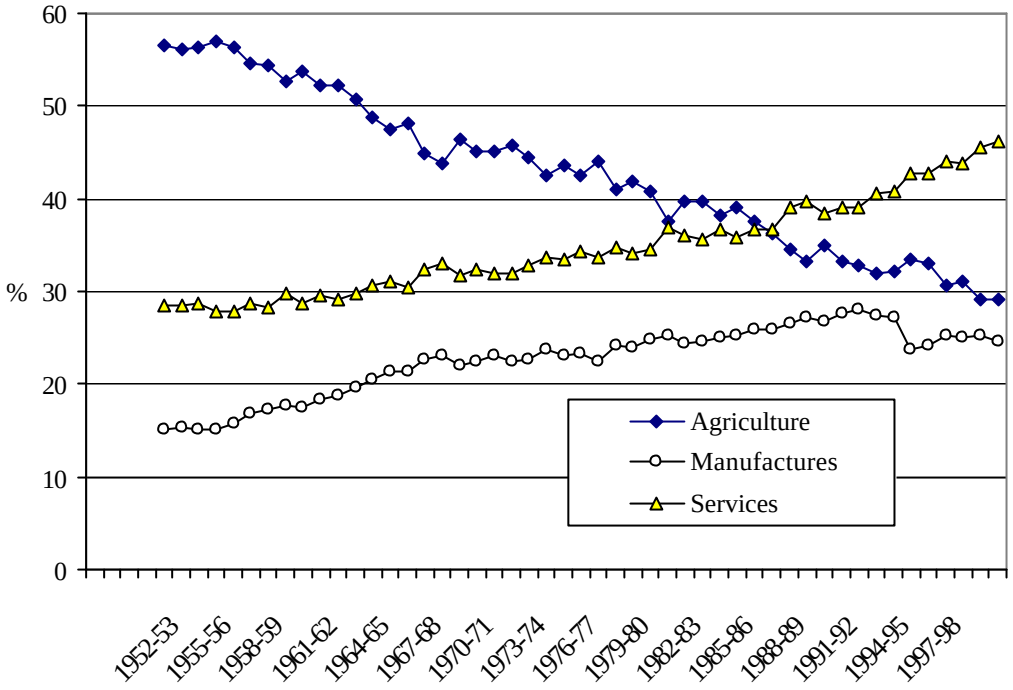
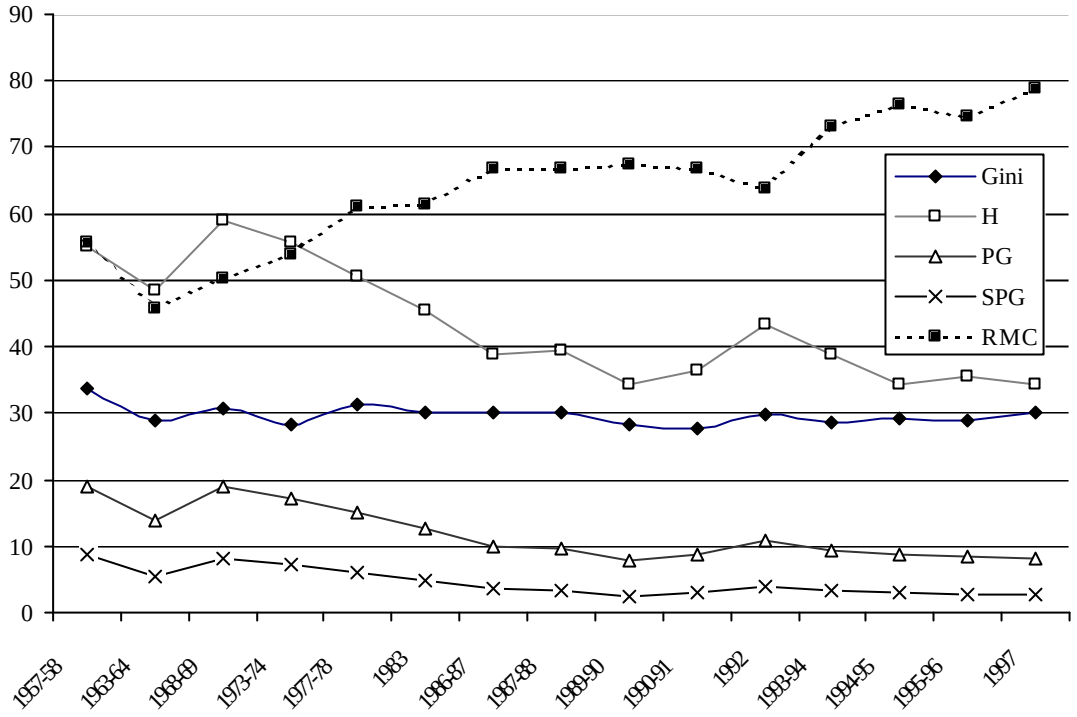
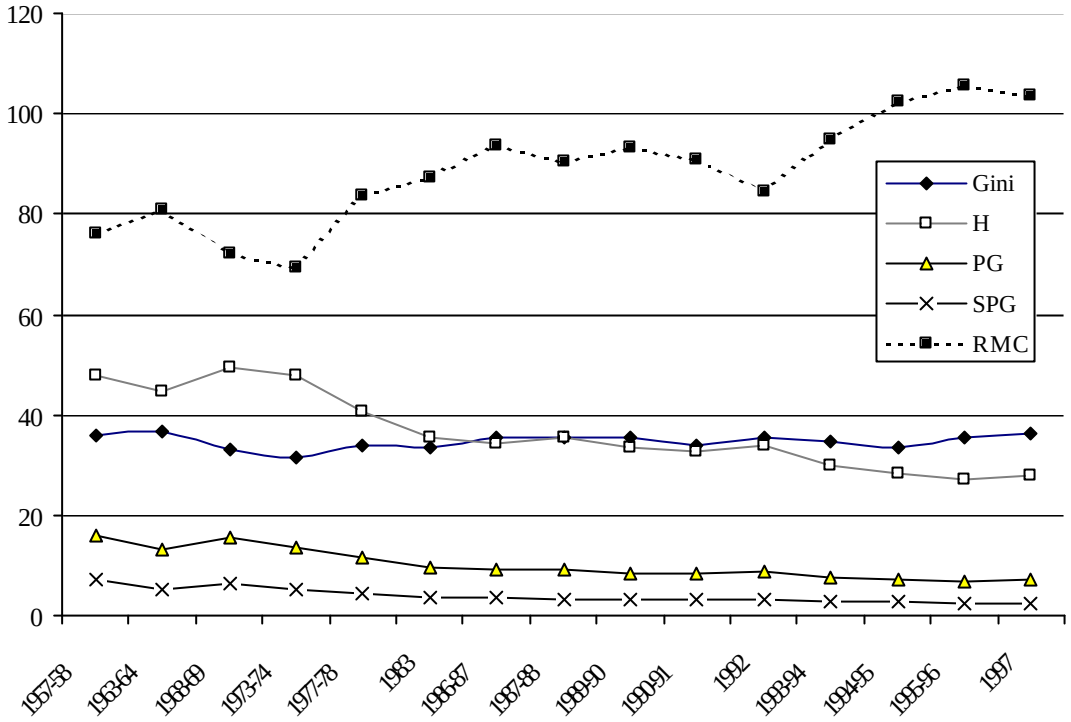


Figure 2. Rural sector results: selected measures of inequality and poverty, 1957-97



Note: See Table 4.

Figure 3. Urban sector results: selected measures of inequality and poverty, 1957-97



Note: See Table 4.

Figure 4. Real agricultural wages (rupees per day)

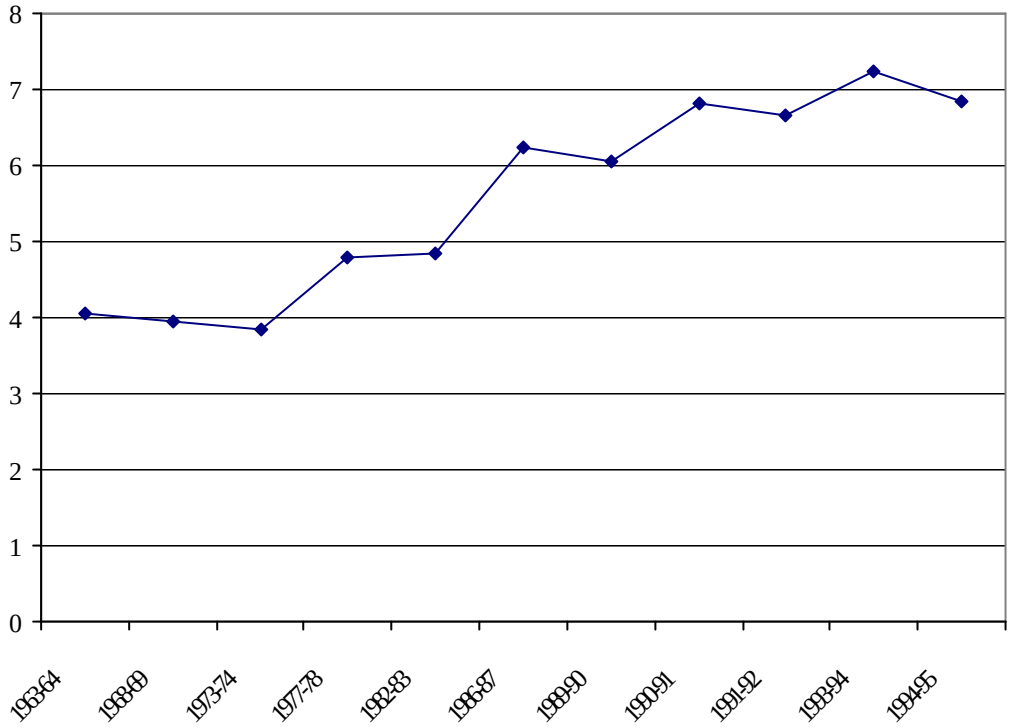


Figure 5. Inequality, poverty and mean consumption: urban-rural differences

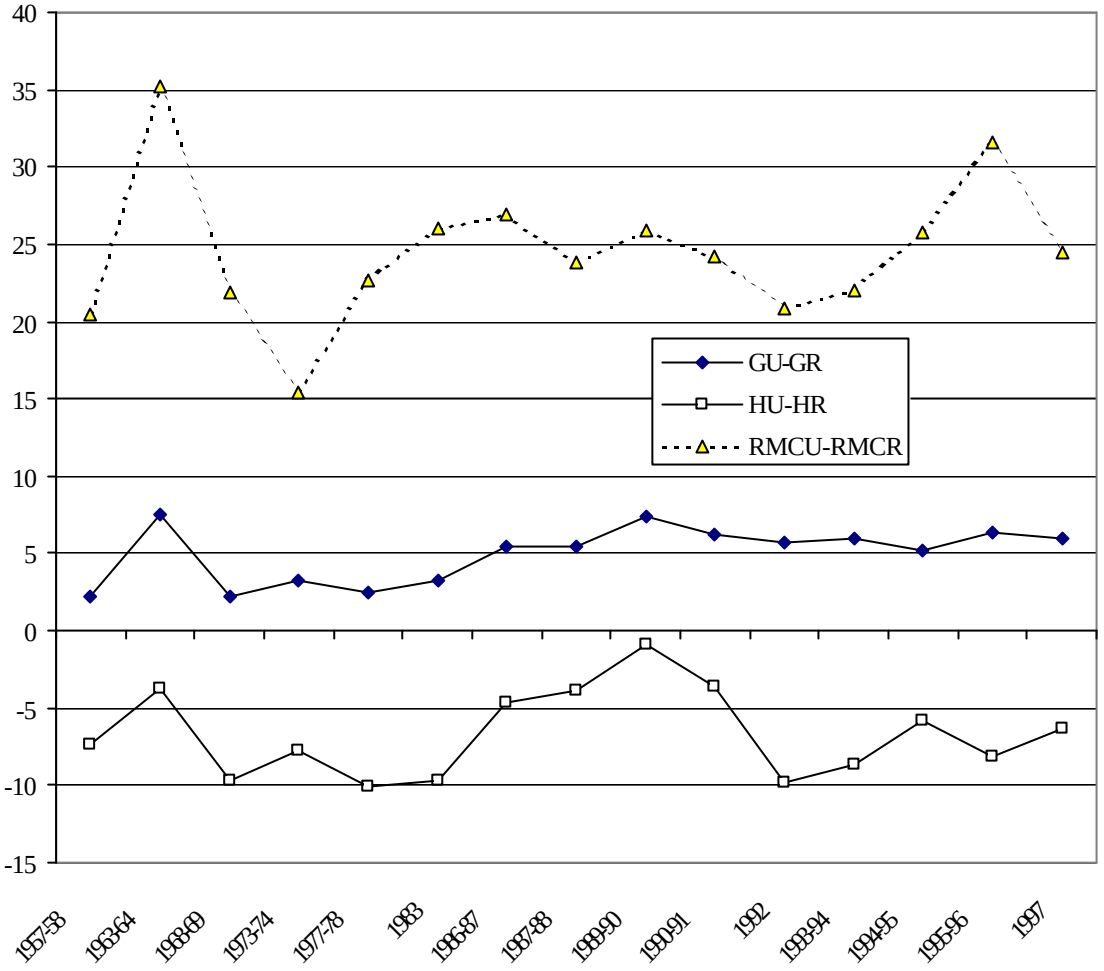


Figure 6. Inflation trends, industrial and agricultural workers (% variations, CPIAL and CPIIW)

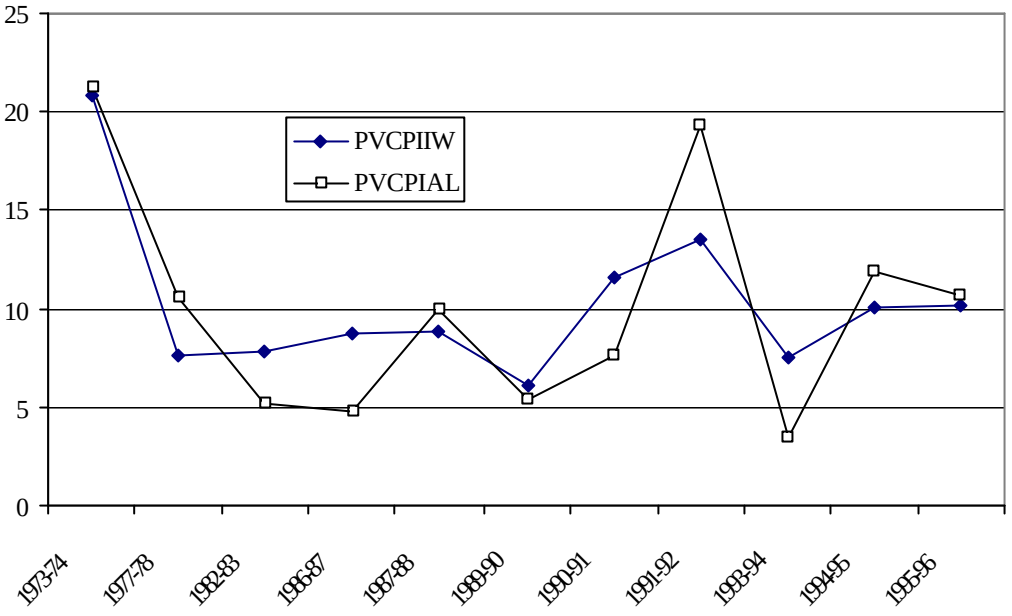
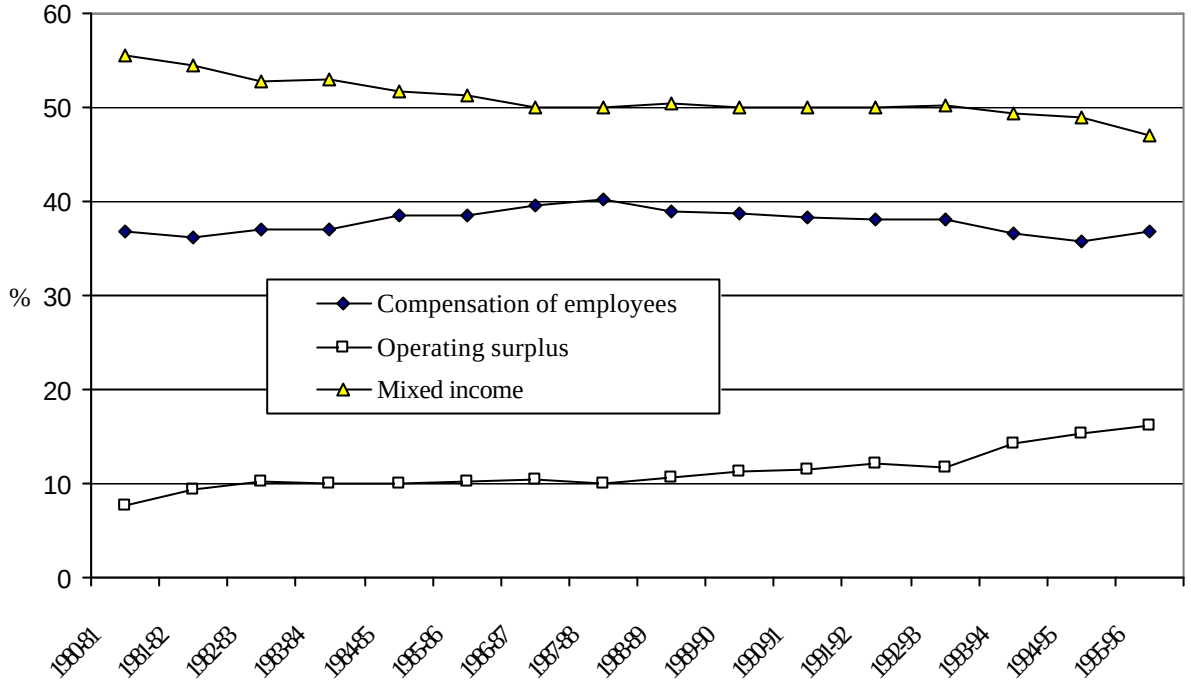


Figure 7. Share of factors in net domestic product



Note: See Table 7.

Figure 8. Factor incomes in the organized sector (% of NDP)

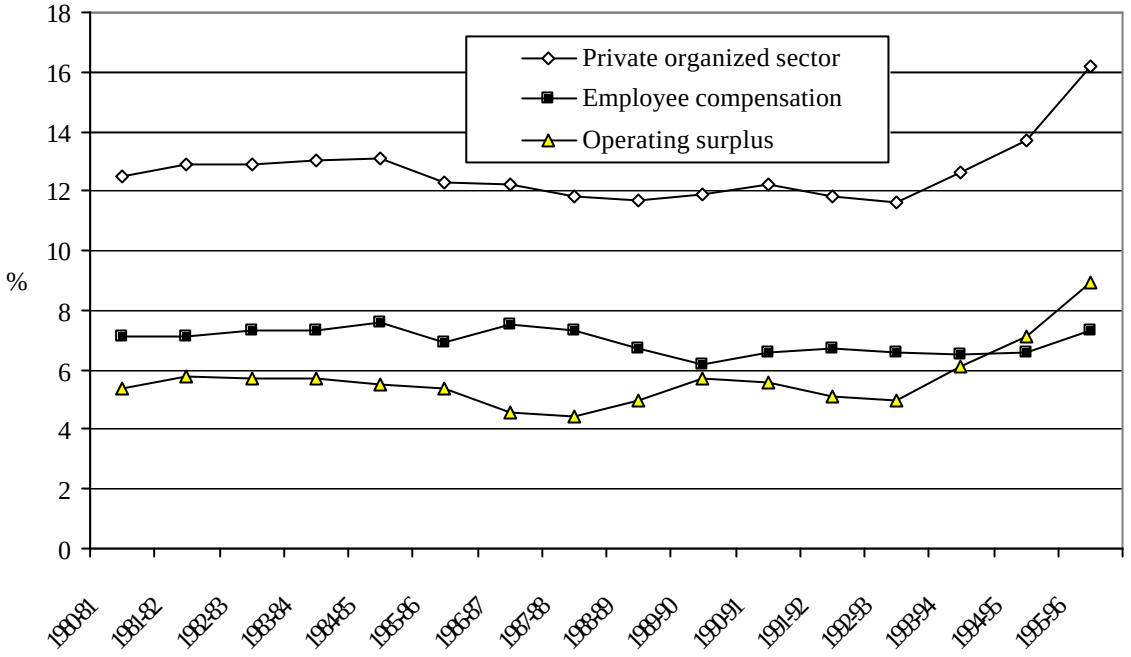


Figure 9. Factor incomes in the unorganized sector (% of NDP)

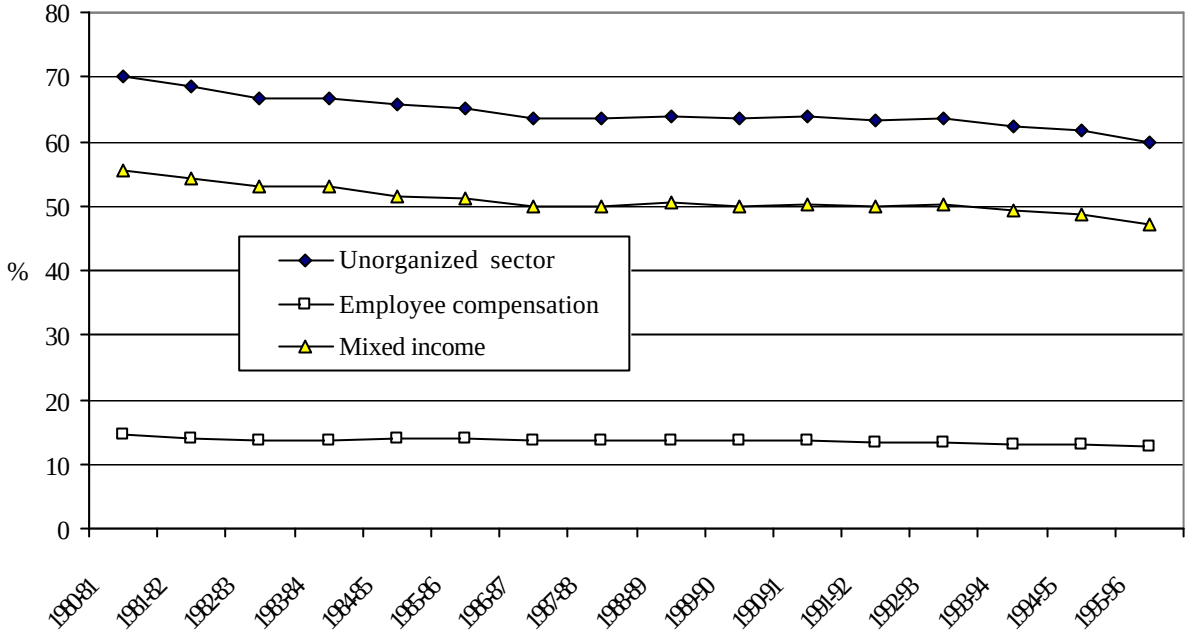


Figure 10. Coefficients of variation in rural mean consumption, inequality and poverty in Indian states

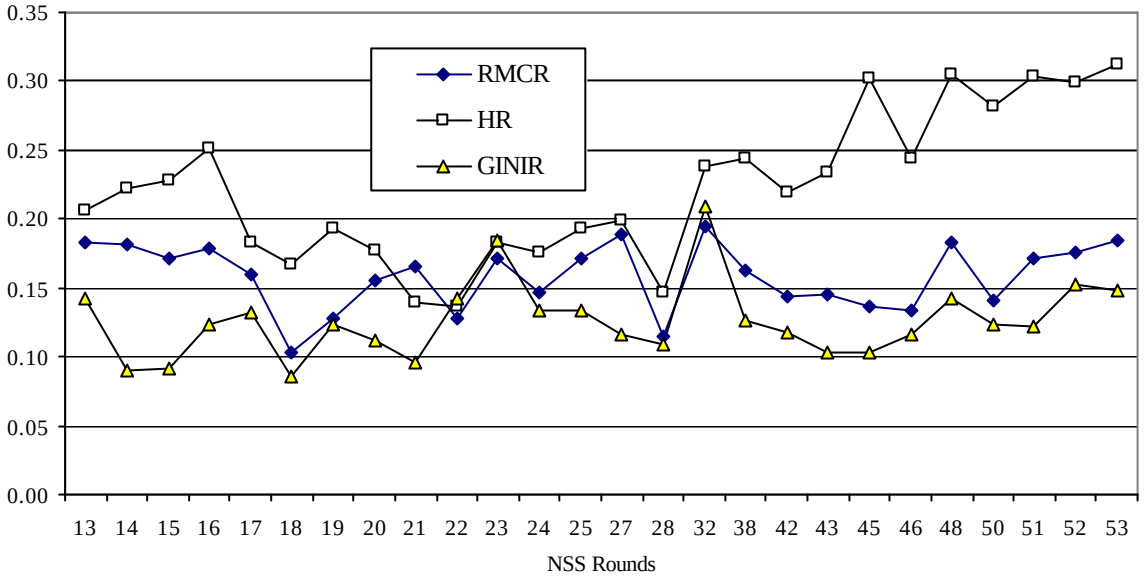


Figure 11. Coefficients of variation in urban mean consumption, inequality and poverty in Indian states