

REGIONAL GROWTH AND DISPARITY IN INDIA: A COMPARISON OF PRE AND POST-REFORM DECADES

Abstract

Has the regional disparity widened in the post-reform period? This study attempts to probe into this by analysing growth rates of aggregate and sectoral domestic product of major states in the pre (1980s) and post-reform (1990s) decades. Our results indicate that while the growth rate of gross domestic product has improved only marginally in the post-reform decade, the regional disparity in state domestic product has widened much more drastically. Industrial states are now growing much faster than the backward states, and there is no evidence of convergence of growth rates among states. Even more disturbing is that there is now an inverse relationship between population growth and SDP growth. The inverse relationship is stronger for the per capita income growth among states. This has a very serious implication for employment and the political economy of India.

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REGIONAL GROWTH AND DISPARITY IN INDIA: A COMPARISON OF PRE AND POST-REFORM DECADES

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I. Introduction

The regional disparity in India is now a matter of serious concern. It is well known that in a large economy, different regions with different resource bases and endowments would have a dissimilar growth path over time. One of the reasons why centralised planning was advocated earlier was that it could restrain the regional disparity. In spite of planning, however, the regional disparity remained a serious problem in India. A new controversy in this respect is whether growth rates and standard of living in different regions would eventually converge or not. The convergence theorem (Barro, 1991) postulates that when the growth rate of an economy accelerates, initially some regions with better resources would grow faster than others. But after sometime, when the law of diminishing marginal returns set in, first growth rates would converge, due to differential marginal productivity of capital (higher in poorer regions and lower in richer regions), and this in turn would bridge the gaps in the levels of income across regions. The empirical evidence on this is however very controversial. It has also been observed that when an economy is liberated, especially after controls on investment are lifted, then regions with better infrastructure would attract more investment, especially foreign capital, through market mechanism, and this in turn would lead to regional inequity, at least in the early phase of reforms. The regional disparity in China after economic reform is a classic example of this.

In India, the growth rate of gross domestic product (GDP) accelerated since 1980s. The average annual GDP growth rate in the first three decades (1950s to 1980s) was only 3.6 percent. During the 1980s, the GDP growth rate accelerated to 5.6 percent, and after economic reforms in the 1990s, it has further accelerated to 6.0 percent. The reforms led to a lot of structural changes in the Indian economy, such as, deregulation of investment – both domestic and foreign – and liberalisation of trade, exchange rate, interest rate, capital flows and prices. The post reform period also witnessed a sharp deceleration in public investment due to fiscal constraint. At the aggregate level, the average share of public investment in total investment has declined from 45 percent in the

early-1980s to about one-third in early-2000s. Although, there is very little information on investment at the regional level, the available indicators suggest that more and more investments are now taking place in richer states. The RBI data on capital flows show that four/five developed states have cornered the major chunk of foreign direct investment in India. The poorer states with inadequate infrastructure are not able to attract foreign investment. The poorer states are also investing less because historically they mobilised resources for public investment mainly through grants and assistance from the Centre, which are now declining due to fiscal constraints.

This paper analyses the growth and disparity among major states in the pre and post-reform period. In the recent period, a number of studies (for instance, Ahluwalia, 2000 and 2002; Nagaraj, Varoudakis and Veganzous, 1998; Rao, Shand and Kalirajan, 1999; and Shand and Bhide, 2000) have observed that the regional disparity in India has widened, especially during the 1990s. However, these studies have used pre-revised state domestic product (SDP) data. Further, their analyses do not cover adequately the post reform period, especially the late 1990s when the growth rate has slackened at the aggregate as well as at the regional levels. Ahluwalia's study covers data for the period up to 1998-99, but he has compared the pre and post reform periods on the basis of two different sets of SDP data. It may be noted that 1993-94 base GDP (and corresponding SDP series) are based on the United Nations system of national accounts (SNA) 1993. The new GDP and SDP series not only changed base year in terms of price, but also revised the production boundary in a number of sectors, notably, agriculture, real estate and finance. It has also shifted the occupation force database from the Census to the National Sample Survey (NSS). Finally, it has incorporated some new dynamic economic activities, such as, software, which were not included in the earlier series. The SDP growth rates from the earlier series therefore cannot be compared with the same from the revised series. A proper comparison of pre and post reform regional growth and equity should be therefore done through a common database. This paper tries to fill this gap by extending the 1993-94 SDP series backwards to compare growth and regional variation across states on a common database.

The methodology of extending 1993-94 series SDP data for the period 1980-81 to 1992-93 is explained in section II. Section III compares growth rates of SDP and

per capita SDP of major states for the pre and post reform periods. Technically, market oriented economic reforms in India were initiated from July 1991. However, for analytical convenience, throughout this analysis pre-reform period would refer to 1980s (1980-81 through 1989-90) and post-reform period to 1990s (1990-91 through 1999-2000). Following this, we have examined the relationships between SDP growth and population growth in section IV. The growth-inflation trade-off is examined in section V. Section VI analyses structural changes in sectoral – primary, secondary and tertiary - growth rates and shares in SDP in the pre and the post- reform periods. Conclusions are drawn in section VII.

The main findings of the study are as follows. While the average growth rate of gross domestic product increased only marginally in the 1990s, as compared to 1980s, the regional disparity has widened significantly during the 1990s, and so far there is no evidence of convergence. Whether this is due to the ongoing economic reform is a matter of investigation, but the evidence very clearly indicates rise in regional inequity in the post reform period. Secondly, there has been an inverse relationship between population growth and income growth across states in 1990s. This has a very serious implication not only for growth but also for employment.

II. Methodology of Extending 1993-94 SDP Series Backwards

The Central Statistical Organisation (CSO) has revised the GDP series with base 1993-94. The SDP series for states have also been revised accordingly. The revised series based on SNA 1993 alter relative growth rates across states, sectors and periods. For a proper comparison of regional growth and disparity over time, the revised series of SDP should be extended backwards.

When we began our analysis the revised series SDP data were available only from 1993-94. Since then, CSO has extended the 1993-94 SDP series backwards. However, the CSO has combined the 1980-81 and 1993-94 SDP series by simple splicing method. We have used a slightly more sophisticated method. For this purpose, we first compute the price correction factor (defined as the ratio of implicit deflator for 1993-94 series to the 1980-81 series for the year 1993-94). The price correction factor is computed for each state and sector (13 sub-sectors in national accounts) separately. The aggregate and major

sub-sectors – primary, secondary and tertiary - SDP deflators for the years 1980-81 through 1992-93 are then calculated as weighted averages of appropriate sub-sectors' indices. The weights for the period 1980-81 through 1992-93 are assumed to be the same as in 1993-94 series.

As mentioned before, the database and definition of production sectors have changed in 1993-94 SDP series. We shall incorporate these changes in the earlier SDP series (1980-81) in the following manner. We first compute the average ratio of 1993-94 series data to 1980-81 series data at current prices for the common period (1993-94 through 1996-97) for which data on both the series are available. Unlike in the case of price correction, the quantum correction is computed from data for a number of years because changes in production may not be adequately captured by a single year data. Similar to price correction, the quantum correction factor is computed for each sector (13 in all) and each state separately. In the next stage, we slide down the quantum correction factor for production change by a geometrically declining rate to unity for the year 1980-81. It is assumed that all production changes have become significant since 1981-82 (otherwise it would have been incorporated in 1980-81 SDP series) and the quantum correction factor has increased geometrically since then till it is officially accounted in 1993-94 series. In this manner, we extend the 1993-94 SDP current price series backwards up to 1980-81. Dividing the computed current price series (corrected for production changes) by the computed price deflator (corrected for price changes) we get the computed constant price SDP series for each sector and state for the period 1980-81 through 1992-93 that are consistent with the 1993-94 series data.

It may be noted that this method is an improved version over the CSO conventional splicing method of combining two series of GDP or SDP. In our method the value of correction factor for production changes declines as the series is extended backwards, whereas in the CSO method it remains fixed. We assume that all production changes do not occur at the same rate over time, so the correction factor should decline as the new series is extended backwards.

Limitations of SDP Data

At this stage, it is important to note some limitations of SDP data. First, there are some conceptual problems of measuring gross domestic product at the state level.

Secondly, although we have used the CSO compiled SDP data, these are based on the primary data on production and prices collected by the concerned state statistical department. The CSO only processes and makes corrections in methodology of SDP measurement, particularly the value added, but CSO does not change the original data on production and prices. It is well known that there are a lot of measurement problems at the state level (and also at the national level). In some states, the quality of primary data is very weak, partly because of poor statistical system and partly because of biases in data collection and dissemination. In many cases, the consistency checking raises doubts about the quality of original data. For instance, we find a very poor relationship between electricity consumption and industrial growth in some states. In some other states, SDP growth is at variance with employment growth in both industry and tertiary sectors. The relationship between input and output in agriculture is also weak in some states. Finally, in some cases, the unusually high agricultural growth for a long time, more than two decades for instance, raises doubts about the authenticity of data. It appears that either the law of diminishing marginal returns do not apply or there has been hidden structural changes not recognised independently. These limitations would have to be borne in mind in measuring growth and disparity at the state level through SDP data.

III. Regional Disparities in Growth

SDP Growth

SDP growth rates have shown a fair degree of variation. While some states have witnessed rapid and phenomenal growth, the rest lagged behind the all-India growth rate. For this analysis we have included 17 major states. Jammu & Kashmir is excluded because of political disturbance during 1990s. Pondichery and six smaller states of North-East are excluded because they are too small to reflect general economic behaviour of states in India. Three newly created states, namely, Chattishgarh, Jharkhand and Uttaranchal are also excluded because there are no time-series data on these states. Bihar, M.P. and U.P. therefore refer to undivided states. The comparative average growth rates of SDP for 17 major states at 1993-94 prices for the decades 1980s (1980-81 to 1989-90) and 1990s (1990-91 to 1999-2000) as well for the overall period (1980-81 to 1999-2000) are given in Table 1. It may be seen that except few states -Andhra Pradesh, Assam and

Kerala - all the other major states had recorded over five percent growth during the 1980s, against the all-India growth rate of 5.6 percent per annum. Tamil Nadu, Karnataka, Haryana, Himachal Pradesh and Rajasthan have progressed rapidly during the 1980s with over six percent per annum growth, with Rajasthan recording the highest with above seven percent. In general, there was a comparatively balanced regional growth during the 1980s, even though the disparity widened across the states. However, the 1990s belongs to the relatively industrialised states. Highly industrialised states like, Gujarat and Maharashtra, grew at over 8 and nearly 7 percent per annum respectively. Goa, a small state, also grew at over 8 percent. Among other major states, Karnataka and West Bengal have performed very well with over 7 percent growth.

Table 1

Growth Rate of SDP at Constant Prices (percent per annum)

States	1980-90	1990-00	1980-00
Andhra Pradesh	4.81	5.12	5.05
Assam	3.91	2.47	3.49
Bihar	5.20	3.46	3.85
Goa	5.71	8.23	7.47
Gujarat	5.71	8.28	6.80
Haryana	6.68	6.71	7.80
Himachal Prad.	6.10	6.91	6.20
Karnataka	6.10	7.07	6.53
Kerala	4.50	6.00	5.97
Madhya Pradesh	5.18	5.45	5.89
Maharashtra	5.98	6.80	6.30
Orissa	5.85	3.60	3.90
Punjab	5.14	4.63	4.70
Rajasthan	7.17	6.46	6.95
Tamil Nadu	6.35	6.65	6.51
Uttar Pradesh	5.88	4.33	5.15
West Bengal	5.20	7.24	6.11
All India	5.60	6.03	5.66
Coefficient of Variation	0.14	0.29	0.22

It is interesting to note that West Bengal which is not considered to be a pro-market state, has grown not only faster than the all-India average, but also many pro-reform states, such as, Andhra Pradesh (4.8 percent) and Punjab (5.1 percent), during the

reform era. These two states have in fact grown much slower than the all-India average, particularly the former. The poor performance of both Punjab and Andhra Pradesh during the reform era came as a surprise. These states have comparatively better infrastructure and known to have pro-market attitude. While Punjab's slow growth may be attributed to stagnation in agriculture and fiscal mismanagement, that of Andhra Pradesh needs a careful scrutiny. It appears that pro-reform policies in Andhra Pradesh have yet to borne fruits in terms of SDP growth. A detailed study on Andhra Pradesh (Rao and Mahendra Dev, 2003) also confirms this. Among other states, Rajasthan, Kerala, Haryana, Himachal Pradesh and Tamil Nadu have recorded above average growth rate during the reform era.

Some of the high growth states during reform era, notably Gujarat, Maharashtra, Karnataka and Tamil Nadu, got the lion's shares in foreign investment in the 1990s. On the other hand, poor states like, Bihar, Orissa, Assam and U.P. have attracted less foreign capital (and also probably domestic) and performed badly, with SDP growth below 4 percent per annum. Apart from lack of investment, poor infrastructure combined with poor governance (and terrorism in the case of Assam) might have also restrained growth in these states.

Per Capita SDP Growth

For a better analysis of regional disparities, we should analyse not merely aggregate growth rate but also the growth of per capita SDP. The growth of per capita SDP for seventeen major states along with all-India average is presented in Table 2. It may be seen that the regional disparities in standard of living, as measured by per capita SDP at constant prices, have accentuated in the 1990s. In the 1980s, Assam recorded the lowest per capita SDP growth at 1.7 percent per annum and Tamil Nadu the highest at 4.8 percent. As against these, the all-India growth rate was 3.4 percent. In the 1990s, the disparity range has widened from 0.7 for Assam to as high as 6.7 for Goa and 6.4 for Gujarat. In comparison, the all-India rate has improved only marginally: 4.1 percent in the 1990s against 3.4 in the 1980s. Maharashtra, Tamil Nadu, West Bengal, Karnataka and Himachal Pradesh have also improved the standard of living by over 5 percent per annum during the post reform period. Gujarat's performance is particularly noteworthy, as the growth rate has jumped from a moderate 3.62 in the 1980s to 6.38 percent in the 1990s.

West Bengal has also managed to push up its per capita income growth tremendously, from a mere 2.93 percent in the 1980s to 5.41 percent in the 1990s. In Maharashtra and Karnataka also per capita income growth rate jumped significantly in the 1990s.

Table 2
Growth Rate of Per Capita SDP (percent per annum)

States	1980-90	1990-00	1980-00
Andhra Pradesh	2.56	3.62	3.09
Assam	1.74	0.65	1.38
Bihar	2.97	1.86	1.92
Goa	4.08	6.84	6.01
Gujarat	3.62	6.38	4.85
Haryana	4.12	4.42	5.32
Himachal Pradesh	4.36	5.11	4.29
Karnataka	4.00	5.27	4.63
Kerala	3.04	4.78	4.64
Madhya Pradesh	2.74	3.22	3.08
Maharashtra	3.60	5.04	4.83
Orissa	3.96	2.12	2.15
Punjab	3.19	2.71	2.73
Rajasthan	4.41	4.09	4.20
Tamil Nadu	4.79	5.40	5.10
Uttar Pradesh	3.46	1.98	2.92
West Bengal	2.93	5.41	3.99
All-India	3.36	4.07	3.54
Coefficient of Variation	0.22	0.43	0.34

While the standard of living improved faster in 1990s in comparison to 1980s in most states, the opposite happened in Assam, Bihar, Orissa, Punjab, Rajasthan and U.P. The main reason for this could be the comparatively higher growth of population in these states. In Rajasthan, the per capita growth rate declined in spite of a fairly high SDP growth in 1990s. Punjab, which was the richest state in India in the 1980s, performed relatively worse in terms of per capita income growth in the 1990s. As a result, it is no longer the richest state.

From tables 1 and 2 it may be seen that in general the Southern states have performed better than the Eastern and the Central states. West Bengal is a major exception in this regard. The standard of living in the Southern states increased faster in the 1990s due to a combination of slackening of population growth and acceleration of SDP growth. Even in Andhra Pradesh, despite a below national average SDP growth, per capita SDP growth

accelerated in the 1990s over 1980s due to a significant fall in population growth rate. In the Western states, however, per capita SDP growth accelerated mainly due to higher SDP growth rate.

Convergence

Table 1 indicates that the regional disparity has widened during the 1990s. The coefficient of variation of SDP growth rates among states has jumped from 0.14 in the 1980s to 0.29 in the 1990s. In terms of per capita SDP the coefficient of variation has become even worse in the 1990s: from 0.22 in the 1980s to 0.43 in the 1990s. And this has happened despite a very modest rise in average GDP growth rate at the all-India level, from 5.6 percent in 1980s to 6.0 in 1990s. This reflects an uneven regional development in the post-reform years. This is corroborated by other studies as well. While Ahluwalia's (2000) study shows significant degree of dispersion in growth across states based on 1980-81 series SDP data, Deaton and Dreze (2002) report wide variation in the growth rate of average per capita consumption expenditure during the 1990s. Ahluwalia found that while the gini coefficient remained fairly stable till about the mid-1980s, it had risen since then, from 0.16 in 1986-87 to 0.23 in 1997-98, indicating an increasing regional disparity.

The rise in coefficient of variation does not necessarily imply lack of convergence. A proper test of convergence would require estimating marginal impact of initial level of income (negative value would imply convergence) on subsequent period growth after considering impact of different factors of growth, such as capital, labour, technology etc. At state level there are no data on capital and other relevant variables for estimating growth function. Pending that, an inference can be derived from the coefficient of correlation between average growth rates of SDP in the 1980s and 1990s. The estimated coefficient turns out to be 0.50, which is positive and statistically significant at 5 percent level. This means that states with faster growth of SDP in the 1980s continued to grow faster in the 1990s, or there is no evidence of convergence.

IV. Relationship between SDP Growth and Population Growth

We have noted that the regional disparity has widened in the 1990s, and that there is no evidence of convergence. In general, the poorer states – notably, Bihar and U.P. - with

faster population growth have performed badly in terms of SDP growth in the 1990s. It may be therefore worth investigating the relationship between SDP growth and population growth at the state level. Table 3 shows compound growth rate of population in the 1980s and 1990s based on decennial Censuses 1981, 1991 and 2001.

The simple correlation between population growth and SDP growth at constant prices in the 1980s turns out to be positive (0.25) but not significant, which means that SDP growth in 1980s was neutral with respect to population growth. However, in the 1990s, the relationship between population growth and SDP growth became negative (-0.22). The population growth in Orissa, a backward state, was unusually low at 1.5 percent per annum in the 1990s due to high mortality rate. Assam on the other hand recorded a very poor SDP growth (2.47 percent per annum) due to terrorism in the 1990s. If a dummy variable is used for abnormal behaviour in these two states, then the correlation coefficient between SDP growth and population growth in the 1990s rises to -0.69 and becomes statistically significant at 1 percent level.

The inverse relationship becomes even stronger in terms of per capita SDP growth. The correlation coefficient between population growth rate and per capita SDP growth, which was -0.22 in the 1980s, shoots up to -0.39 (significant at 10 percent level) in the 1990s. If a dummy variable is used for abnormal behaviour in Assam and Orissa, then the correlation coefficient at -0.76 turns out highly significant at 1 percent level. The direction of causality however cannot be attributed from this result. It may imply either the faster income growth has begun to slow down population growth, or population growth is constraining development. If the former is true then it is a positive sign because development is expected to be the best deterrent to population growth. However, if the latter is true, then it can create a serious anomaly: faster population and consequently workforce growth with lower SDP and consequently job creation growth means higher unemployment. In the pre-reform era, public investment was made mainly in backward states. Even the private investment was also directed towards backward regions through licensing etc. The policy measures therefore restrained inverse relationship between population growth and SDP growth. In the post-reform era, the private investment has become deregulated and public investment has shrunk and consequently the inverse relationship between income and population growth has become a serious problem.

Table 3
Population Growth Rates (percent per annum)

Year	1980-90	1990-00	1980-00
Andhra Pradesh	2.19	1.36	1.77
Assam	2.05	1.74	1.90
Bihar	2.14	2.43	2.28
Goa	1.57	1.30	1.38
Gujarat	1.94	1.59	1.77
Haryana	2.45	2.50	2.48
Himachal Pradesh	1.91	1.62	1.76
Karnataka	1.93	1.60	1.77
Kerala	1.35	0.90	1.13
Madhya Prad.	2.41	2.05	2.23
Maharashtra	2.32	2.06	2.19
Orissa	1.84	1.49	1.67
Punjab	1.91	1.83	1.87
Rajasthan	2.53	2.53	2.53
Tamil Nadu	1.44	1.07	1.25
U.P.	2.30	2.30	2.30
West Bengal	2.22	1.67	1.94
All-India	2.44	1.94	2.19

Computed from Census 1981, 1991 and 2001.

VI. Relationship between Growth and Inflation

The growth-inflation trade-off is a matter of controversy in development economics, see Bhattacharya (1984). At the state level, there is no direct measure of inflation. However, we may compute inflation rate as the difference between the SDP growth rate at current and constant prices. Table 4 shows the average annual inflation rate in 17 major states in 1980s and 1990s. It may be seen that the variation in inflation rate is comparatively smaller than in the SDP growth rate. In the 1980s, the inflation rate varied between 8 to 10 percent. In the 1990s, the range increased to 7 to 12 percent. At the all-India level, there has been only a marginal change in average inflation rate between the pre and post reform decades. Assam, Andhra Pradesh Kerala and M.P. recorded comparatively higher inflation rate in the 1980s, and Kerala, Goa and Himachal Pradesh recorded comparatively higher inflation (double-digit) rate in the 1990s. Bihar, M.P. and Tamil Nadu were among the lower inflation states. There appears to be no geographical pattern in inflation rate.

Table 4**Inflation Rate in States (Percent Per Annum)**

States	1980-90	1990-00	1980-00
Andhra Pradesh	9.75	9.18	10.72
Assam	10.77	8.49	9.65
Bihar	8.86	7.77	8.88
Goa	6.68	12.57	8.96
Gujarat	8.09	8.09	8.93
Haryana	7.07	8.81	9.07
Himachal Pradesh	6.55	10.88	9.48
Karnataka	8.39	8.43	9.25
Kerala	9.30	10.54	9.87
Madhya Pradesh	9.53	7.75	9.29
Maharashtra	8.10	8.65	9.15
Orissa	7.47	9.76	9.40
Punjab	8.30	9.53	9.83
Rajasthan	8.00	8.69	9.24
Tamil Nadu	6.91	6.89	6.65
Uttar Pradesh	8.16	8.48	8.85
West Bengal	8.21	8.35	8.03
All-India	8.46	9.04	9.13

We examine the relationship between growth of GDP and inflation rate by estimating a simple correlation coefficient between the two. The results indicate that while there was a negatively significant relationship (correlation coefficient -0.69 , significant at 1 percent level) between the growth rate and inflation rate at the state level in the 1980s, there was no significant relationship between the two in the 1990s (correlation coefficient 0.25). For the overall period also there is no significant relationship between growth and inflation at the state level. The growth-inflation trade-off therefore does not exist at the state level. On the other hand, lower inflation promoted higher growth in the 1980s, and vice versa, which reflects the dominance of supply side over the demand side in the determination of prices. The positive correlation (though not statistically significant) in the 1990s, and in particular a big change in the value of correlation coefficient towards a positive number however indicates a beginning of growth-inflation trade-off in the post-reform period. It is possible that when the market forces become fully operative, the demand side effects would become prominent and growth-inflation trade-off may become significant.

VI. Sectoral Shares and Growth Rates

Sectoral composition and growth rates of GDP are given in tables 5 and 6 respectively (at the end of the text). It may be seen that except for a few states, the share of primary sector has dwindled drastically from about one-half in the early 1980s to one-third or one-fourth in 1999-00. In industrial states, such as Gujarat, Maharashtra and Tamil Nadu, the share of primary sector in GDP has come down to around 15 percent by the end of 1990s. The drastic reduction in the contribution of primary sector in Gujarat (by 30 percentage point) during this period is partly on account of faster growth in industry and tertiary and partly on account of negative growth of primary sector in the 1980s, the only state to have registered so. In Maharashtra and Tamil Nadu, the two other leading industrial states, where the primary sector has also performed quite well, the share of primary sector in GDP declined more moderately, by about 10 percent each. Goa, a tourist state, has the lowest share of the primary sector in GDP at below 10 percent.

Even in the poorer states - Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh – the share of the primary sector has declined significantly over the last two decades. In Bihar, for instance, the share of primary sector, which was nearly 60 percent in GDP in the early 1980s, has now come down to about 30 percent in the late 1990s. Poor performance of agriculture, rather than a rapid growth of non-agriculture, has brought this change. In Punjab, an agriculturally prosperous state, the share of primary sector has declined marginally due to a slower growth of non-agriculture. This is despite a slackening of agricultural growth in Punjab in the 1990s.

In general, when an economy progressed, the share of primary sector declined and that of the secondary sector increased. After industry gathered momentum, the secondary sector became the dominant sector in the economy. It is only at a later stage when the economy attained a fairly high level of development, typically when it became a middle-income country - the tertiary sector overtook the secondary sector. This was the general pattern of development, especially in the East Asia. In China, for instance, the secondary sector now contributes almost 50 percent of GDP. However, in India, at the aggregate level, and also at the regional level, the tertiary sector became the largest sector even before the secondary sector predominated the economy, see, Bhattacharya and Mitra (1991). The present analysis further confirms this.

Gujarat is the only exception in this respect, where the secondary sector has become the largest sector with more than 40 percent share in SDP in 1999-2000. In no other state, the share of secondary sector has risen above 35 percent. In Maharashtra, a major industrial state, the share of the secondary sector has remained stable around 35 percent for the last two decades. In Tamil Nadu and West Bengal, the two other industrial states, the share has fallen marginally in the last two decades. The fastest acceleration in the secondary sector growth has taken place in Gujarat with average growth rate of 7.8 and 10.6 percent in 1980s and 1990s respectively, followed by Haryana (at 7.45 and 11.9 percent). Maharashtra, Tamil Nadu and West Bengal also performed impressively, with average growth of 7/8 percent in the post-reform period.

Surprisingly, secondary sector in Bihar and Rajasthan, two backward states, grew fairly rapidly in the 1980s and 1990s. As a result, the share of the secondary sector in Bihar increased from 22 percent in 1980-81 to about 28 percent in 1999-00. In Rajasthan it increased even more significantly during this period, from 19 percent to close to 30 percent. In Uttar Pradesh, another poor state, the share of the secondary sector has increased from less than 20 percent in 1980-81 to 26 percent in 1999-2000.

The tertiary sector has recorded the fastest growth in most states, both before and after the reforms. In most states, the share of the tertiary sector now exceeds 40 percent of SDP. During the last two decades, the tertiary sector has grown on an average by 8 to 9 percent per annum in many states, notably, Gujarat, Haryana, Kerala, Maharashtra, Tamil Nadu and West Bengal. With the exception of Gujarat, the tertiary sector now accounts for almost half of SDP in all rich states. The tertiary, rather than the secondary, sector has become the engine of growth in most states. This reflects a poor pace of industrialisation in India at both aggregate and regional levels.

VII. Conclusions

An analysis of the growth performance and structural changes in domestic product of Indian states in the last two decades reveals that the development process has been uneven across states. While the advanced industrial states have tended to leapfrog in the reform years, other states have lagged behind. The regional disparity in the growth rates becomes sharper in terms of per capita income. The poorer states have not only

performed poorly but their failure to stem population growth has left them in even worse position. We also note that the tertiary, rather than the industry, has become the engine of growth in the last two decades.

The growing regional disparity in the post reform period is now a matter of serious concern. With deregulation of private investment, faster growth in turn would induce more investment, and this in turn would further accentuate regional disparity. The problem is compounded by the negative relationship between population growth and income growth during the 1990s. Unfortunately, backward states with higher population growth are not able to attract investment – both public and private – due to a variety of reasons, like poor income and infrastructure and probably also poor governance. Our results support the view that there is a strong case for pro-active public policy to induce more investment in backward states either through public investment or through fiscal incentives. Simultaneously, efforts should be made to restrain population growth, especially in backward states. Finally, the quality of governance and in particular the efficiency of investment should be given more attention at the state level.

The inverse relationship between population growth and income growth at the state level in the recent years can become an explosive issue not only economically but also politically. States with higher population growth and lower income growth would tend to have higher unemployment rate. Migration can only partially mitigate this thorny problem. Besides, large-scale migration in a country with wide diversities in religion, language, caste and education levels can create socio-political problems. It is already evident in some states and regions. In China, the social discontent of rising regional disparity and consequent migration is contained by a strict communist party dictatorship. In India, the democracy is very vibrant. If the inverse relationship between income and population growth persist longer then sooner or later there would be a serious conflict between states in terms of sharing of resources. It is already evident in the allocation of resources through the Planning Commission and the Finance Commission. The social consequences of migration could become an additional source of conflict. The solution, however, does not lie in curbing growth in fast growing and market friendly states, but in accelerating reforms in backward states to attain a balanced regional growth.

Table 5
Sectoral Composition of SDP (Percent)

States	Sectors	1980-81	1990-91	1999-00
Andhra Pradesh	Primary	41.21	34.20	27.16
	Secondary	21.88	24.67	26.10
	Tertiary	36.91	41.13	46.74
Assam	Primary	50.11	41.48	35.80
	Secondary	20.17	24.49	25.02
	Tertiary	29.72	34.03	39.18
Bihar	Primary	59.93	46.52	29.59
	Secondary	21.89	24.66	28.06
	Tertiary	18.18	28.82	42.36
Goa	Primary	18.45	14.30	8.93
	Secondary	43.48	34.50	38.09
	Tertiary	38.10	51.19	52.98
Gujarat	Primary	46.25	30.95	15.96
	Secondary	29.90	34.38	42.47
	Tertiary	23.85	34.67	41.58
Haryana	Primary	58.80	42.60	34.10
	Secondary	11.00	24.60	28.60
	Tertiary	30.20	32.70	37.83
Himachal Pradesh	Primary	47.55	35.67	21.16
	Secondary	22.27	24.88	36.01
	Tertiary	30.17	39.45	42.83
Karnataka	Primary	46.56	33.10	27.11
	Secondary	24.54	27.59	28.40
	Tertiary	28.89	39.31	44.49
Kerala	Primary	42.31	31.26	24.74
	Secondary	25.38	21.47	21.74
	Tertiary	32.32	47.27	53.53
Maharashtra	Primary	28.75	21.80	15.60
	Secondary	35.41	35.26	34.93
	Tertiary	35.84	42.94	49.47
M.P.	Primary	50.71	38.43	30.79
	Secondary	29.60	28.56	30.67
	Tertiary	19.70	33.01	38.55
Orissa	Primary	49.79	42.43	33.78
	Secondary	17.18	22.90	23.00
	Tertiary	33.03	34.67	43.22
Punjab	Primary	47.87	46.31	40.68
	Secondary	18.94	21.12	24.29
	Tertiary	33.18	32.57	35.04
Rajasthan	Primary	51.93	42.72	28.88
	Secondary	18.77	24.65	30.19
	Tertiary	29.30	32.64	40.93
Tamil Nadu	Primary	24.64	22.83	17.23
	Secondary	34.78	34.03	34.06
	Tertiary	40.58	43.15	48.70
U.P.	Primary	49.53	36.74	34.68
	Secondary	19.54	24.17	26.37
	Tertiary	30.93	39.09	38.95
W. Bengal	Primary	33.15	31.82	28.45
	Secondary	27.46	25.58	24.50
	Tertiary	39.39	42.60	47.05
All-India	Primary	39.64	32.91	25.20
	Secondary	24.36	28.03	21.83
	Tertiary	35.99	39.06	52.97

Table 6
Sectoral Growth Rate of SDP (Percent per annum)

States	Sectors	1980-90	1990-00	1980-00
Andhra Pradesh	Primary	2.37	2.41	2.78
	Secondary	5.93	6.00	5.98
	Tertiary	6.62	6.53	6.45
Assam	Primary	2.41	0.86	1.84
	Secondary	4.94	2.62	2.78
	Tertiary	5.63	4.00	6.18
Bihar	Primary	2.62	-0.93	0.38
	Secondary	6.15	4.79	4.83
	Tertiary	9.84	7.09	8.27
Goa	Primary	2.91	2.07	2.95
	Secondary	2.42	8.82	6.59
	Tertiary	9.91	9.24	9.72
Gujarat	Primary	-0.34	2.67	1.96
	Secondary	7.83	10.61	8.89
	Tertiary	11.34	9.62	9.55
Haryana	Primary	3.37	4.07	5.40
	Secondary	15.08	8.37	12.58
	Tertiary	7.49	8.38	8.11
Himachal Pradesh	Primary	2.92	1.20	2.44
	Secondary	7.35	11.86	9.49
	Tertiary	9.54	7.35	7.23
Karnataka	Primary	2.83	4.06	3.59
	Secondary	7.58	7.72	7.62
	Tertiary	9.17	8.93	8.75
Kerala	Primary	1.24	3.00	3.48
	Secondary	2.31	6.04	5.01
	Tertiary	8.88	7.71	8.39
Maharashtra	Primary	2.93	3.42	3.75
	Secondary	6.27	7.00	6.69
	Tertiary	7.74	8.00	8.73
M.P.	Primary	1.53	3.28	2.92
	Secondary	4.85	7.07	6.73
	Tertiary	12.05	7.17	9.28
Orissa	Primary	4.75	0.65	0.98
	Secondary	7.44	4.36	6.21
	Tertiary	5.67	6.14	6.07
Punjab	Primary	4.75	2.60	3.77
	Secondary	6.26	6.65	6.13
	Tertiary	5.04	5.97	5.06
Rajasthan	Primary	3.27	3.08	4.27
	Secondary	11.00	8.15	9.96
	Tertiary	10.36	8.60	9.37
Tamil Nadu	Primary	4.99	2.68	4.90
	Secondary	5.68	7.41	6.81
	Tertiary	7.72	7.98	7.56
U.P.	Primary	2.55	3.70	3.30
	Secondary	8.34	6.13	6.55
	Tertiary	8.64	4.54	6.44
W. Bengal	Primary	6.39	7.09	6.12
	Secondary	4.00	6.68	5.46
	Tertiary	5.04	9.30	7.11
All-India	Primary	2.95	3.33	3.25
	Secondary	7.34	7.37	6.93
	Tertiary	6.46	7.63	6.83

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