The study ‘Inter-State Disparities in the Levels of Development- The Indian Experience, 1950-2001’ acknowledges and accepts the inherent natural diversity as well as the historically evolved disparities across Indian States existing at the time of independence. Given that initial State, the study aimed at exploring the differences, as also the movement therein, in the levels of development over time across the administrative divisions called States, of the Indian Union. As is well known, independent India opted for the Mixed Economy Model, thanks to Nehru’s sensitivities and his politics of consensus, for a peaceful socio-economic transformation aimed at creating a Socialistic Pattern of Society. The declared objective of ‘growth with justice’ was articulated to address spatial divide as well. Thus, the study, in the main, probed the issue that how India fared in achieving that objective and how the State outlays influenced the pattern of regional disparities.

Not only the levels of disparities in development computed at four points of time but also the trajectories of growth/development of various States were generated for examining the issues related to convergence. And, since the pro-market economic policy shift adopted in 1991-1992 was expected to un-leash India’s growth potential, the study also endeavored to estimate the incidence and pattern of inter-State disparities in the new economic policy regime.

A review of the studies undertaken so far to examine the problem of inter-State disparities in the Indian context was undertaken for identifying the possible gaps if any. The survey literature revealed that:

- studies were largely confined to examining the inter-State disparities in the distribution of incomes (PC NSDP, and the likes) across States;
- studies that made an attempt to analyze inter-State disparities in the development experiences of States by constructing composite indices of
development, invariably, deployed a mix of input and output variables for capturing development; and

- with the exceptions of the attempts by Purfield (2006), 1990s formed the terminal point.

Thus, the present study could be considered an attempt to add to the pool of studies on inter-State disparities in India through-

- A varied conceptual content: The study embraces the input approach to development. It was acknowledged that the determinants of development themselves can also be considered as reflections of development, thus the variables that had a direct bearing on availability of opportunities, appropriate knowledge of the available options, and accessibility to the opportunities have been considered as inputs for furthering the process of development.

- A more exacting methodology: The problem of inter-State disparities has been studied both for the income levels and the development experiences of States. The per capita net state domestic product at constant (1993-94) prices has been used in our analysis of the problem of income imbalances.

Besides measuring the levels of income inequalities at five points of time during the period 1961-2001 and analyzing the trend therein, the study examined the PC NSDP data series for absolute sigma (σ) and beta (β) convergence.

The notion of spatial dependence of States has also been examined through spatial autocorrelation (spatial error and spatial lag models). The same had been introduced in the convergence analysis for examining the implications of spatial dependence for convergence.

Unlike most of the studies that rely on PCA for constructing composite development indices, we subjected the dataset to Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and the Bartlett’s Test of Sphericity for factor analysis before undertaking computational exercise. Accordingly, the study
computed five sectoral level development indices namely agriculture development index (ADI), Industrial Development Index (IDI), Institutional Infrastructure Index (INII), Human Infrastructure Index (HI1), and Social Upliftment Index (SUI) and these five indices were put together to compute an overall Composite Index of Development (CID). The five dimensions of development that complimented each other took account of multidimensional character of the development process.

The study made use of the three main measures of disparity. These were the standard deviation of the natural logarithm values of PC NSDP/development constructs, the coefficient of variance (CV), and the gini coefficient. Also, the convergence analysis was carried out for each of the development indices. Besides examining the absolute convergence, the development experience of the States has been also analyzed for conditional convergence. Since the integration of spatial dependence of States in the convergence analysis did not significantly alter the results from the conventional convergence analysis, the spatial dependence was not examined in the development experiences of the States and hence was not introduced to the convergence analysis therein.

With reference to the composite index of development, the study calculated the speed of convergence for estimating the half-life for States to reach their steady State levels. In each case, the stepwise regression analysis narrowed down the development analysis to variables that best explained/summarized the development experiences of the States.

The main findings of the study, both at the sectoral as well as the aggregative levels are as follows. But, before turning to these results we are inclined to report the results obtained for customary index of development- the PC NSDP.

1. The gap between the poorest and the richest States increased by 3.4 times during the period 1961-2001. The State of Bihar remained the poorest State since 1966-1967 and Punjab held the richest State status until Maharashtra outshined her in 1995-1996. The richest four States of Punjab, Maharashtra,
Haryana, Gujarat and the poorest three States of Bihar, Orissa, and Uttar Pradesh retained their respective polar status throughout 1971-2001.

2. The inter-State income disparities showed an increase since 1971, irrespective of the measure used for estimating disparities. A more pronounced increase in disparities was observed for the post reforms period. While the absolute \( \sigma \)-convergence was evident for the period 1961-1971, the latter period showed opposite tendencies.

3. Though a negative association was observed between the growth of PC NSDP during the period 1961-2001 and their respective initial (1961) PC NSDP values, the insignificant \( \beta \) estimate for this period did not support the absolute convergence hypothesis.

4. In the intermediate sub-periods of 1961-2001, absolute \( \beta \)-convergence, on 1961 base, was found to be significant for the period 1961-1976. However, the rate of convergence started declining since 1971. Thus, the period since 1971 seems to have added more to divergence than to convergence. A sharp fall in the convergence rate during the period 1989-1991 had greater relevance to explain the break in the trend rate of growth in PC NSDP. The change in sign of the \( \beta \) estimate from negative to positive in the subsequent period 1991-1996 suggested that the initial years of 1990s set in the possibilities for divergence. The positive estimate of \( \beta \) was however statistically insignificant and hence divergence was also not confirmed.

5. An interesting pattern of economic performance was depicted by Moran’s I values on spatial autocorrelation. The estimates revealed formation of clusters with rich States having rich neighbours and the poor States having poor neighbours. This pattern was not observed on either of the estimates on 1971, 1981, and 1991 base values. This indicated dispersion of economic activities that seems to have broken the clustering of States in the latter periods. However, this dispersion was also not found to be statistically significant.
Taken as a whole, no definite trend for convergence or otherwise can be read for the post reforms period. Consequently, the study does not support the fears of any acceleration in the inter-State economic divide for the post reforms period.

Having reported the results on the conventional lines we now turn to our findings flowing from our exercise in PCA/FA. Coming to the sectoral levels first, further agricultural sector it was found that:

1. the gap between the agriculturally development levels attained by Punjab (the best performer in 1971) and that of Himachal Pradesh (the worst performance for the same year) increased by 33 per cent over the period 1971-2001. The agricultural status of Punjab was found to be approximately four times better than that of Himachal Pradesh in 2001. Punjab took the lead in 1970s itself, while Himachal Pradesh lagged in this regard. Consequently, the gap in their levels of agricultural development substantially increased during 1971-1981. However, it remained more or less constant there-after. Punjab and Haryana have been the top two States, and retained their respective positions all through 1971-2001;

2. also, Punjab is the only State that recorded a high growth rate (18.11 per cent) over the years during the period 1971-2001. It is followed by West Bengal and Uttar Pradesh with 9.73 per cent and 5.68 per cent growth respectively. The States that registered maximum decline in their Agriculture Development Index (ADI) in the same period are Maharashtra, Gujarat, Tamil Nadu, and Himachal Pradesh;

3. the inter-State disparities in agricultural development of the States, measured in terms of Coefficient of Variance (CV), increased from 29.72 per cent in 1971 to 36.26 per cent in 2001. Most of this increase was noticed for the initial period 1971-1981. The regular increase in the Standard Deviation of natural logarithm index values (SD of ln ADI values) during 1971-2001 did not suggest absolute σ-convergence, instead it indicated divergence in the levels of agricultural development of States:
4. a positive association between the change (increase) in levels of agricultural development of States during the period 1971-2001 and their respective initial (1971 base) values suggested absolute $\beta$-divergence. However, the insignificant ‘$\beta$’ estimate did not statistically supported divergence;

5. The possibility of divergence in the agricultural development standards of the States got strengthened when the initial (1971) PC NSDP values were controlled in the conditional convergence analysis. This confirmed divergence with 90 per cent significance level attached to the ‘$\beta$’ estimate; and

6. The extent of tractorization emerged as the most significant variable when it came to summarizing the levels of agricultural development of States during the period 1971-2001.

The extent of industrialization, when measured in terms of total inputs to industries or in terms of the net value addition (NVA) by industries appeared to be very high for Maharashtra, Gujarat, and Tamil Nadu. That is in line with the popular perception that these States were the most industrialized States of India. This approach, no doubt, takes into account the extent of industrialization but it ignores other important aspects viz., type/scale of industrialization, location of industries, health and safety conditions of the workers, wage differentials among the wage workers and other employees, and the efficiency in the use of industrial inputs. For want of comparable data for taking cognizance of these aspects, a composite measure of net value addition per unit of industrial input was used. Our chosen variable may not be an ideal one but the informed opinion was in its favour. So deploying the latter, we found that:

1. the gap between the industrially most developed and the least developed States was found at 159.16 points in 1971 that has declined by 75 per cent during the period 1971-2001. Even then, the State in the former category was found to be almost twice the latter in 2001. The decline in the gap was not a smooth affair. It registered an upward movement between 1971-1981, only to be followed by a persistent downwards journey during the subsequent period;
2. maximum decline in the Industrial Development Index (IDI) during the period 1971-2001 is seen for the State with high industrial efficiency. These States included the States of Himachal Pradesh and Karnataka. Even then, the States of Himachal Pradesh and Karnataka have been among the five most industrialized States along with Madhya Pradesh, Orissa, and Bihar in 2001. While the States of Punjab, Haryana, and Gujarat have been the States with weak industrial efficiency;

3. the inter-State disparities in industrial development levels of States, measured in terms of CV, declined sharply from 35.10 per cent in 1971 to 19.63 per cent in 2001. This decline however, includes initial increase in inter-State disparities during the period 1971-1981. The standard deviation of natural logarithm index values of industrial development followed the same trend. Thus, absolute $\sigma$-convergence has been evident only for the period 1981-2001;

4. the highly significant negative association between the growth of industrial development levels of States and their respective base year standards suggested significant absolute $\beta$-convergence in IDI of States for the period 1971-2001; and

5. the availability of technically qualified population in the total workforce was expected to be a condition conducive for the industrial growth of States. However, the two did not show any positive correlation either for 1971 or that for 2001. Also, since the IDI was not found to be significantly associated with PC NSDP further analysis on these lines was aborted.

Though development of infrastructure has always been on the state agenda but it assumed greater significance with the publication of the Rakesh Mohan Committee Report. Ever since then several arrangements have been made for the creation of infrastructure. If we go by the cumulative causative thesis, we can expect a dramatically widening of the gaps. However, as per our exercise, the change has been insignificant. To be specific, our analysis reveals that:

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1. the gap between the States with the best institutional infrastructure (Kerala) and that with the worst institutional infrastructure (Jammu and Kashmir) has increased only marginally (eight per cent) during the period 1971-2001 from its initial value 137.57. even then, the current value of this index for Kerala stood at 204.2 which was 3.7 times the value of the index for Jammu and Kashmir in 2001;

2. Kerala and Punjab have been the States with best institutional infrastructure. In the relative ranking of States for their INII levels, Kerala was at the top in 1971 and 2001 while Punjab had the top position in 1981 and 1991. by and large stagnated around those very levels the States at the lowest levels largely remained the same throughout 1971-2001. Understandably, Jammu and Kashmir registered the lowest value since 1981;

3. fastest growth during the period 1971-2001 was recorded by the States of Haryana and Himachal Pradesh and maximum decline was registered for the States of Jammu and Kashmir and West Bengal, it is a matter of concern that West Bengal registered a sharp decline in the value of the index during this period;

4. the inter-State disparities, measured in terms of CV, increased only marginally from 32.73 per cent in 1971 to 33.60 per cent in 2001. This increase follows a relatively higher increase in inter-State disparities during the initial period 1971-1981 which is followed by a modest slow decline until 2001. A persistent increase in the standard deviation of the natural logarithm values of the index (INII) militated against absolute σ-convergence. The tendency for divergence stands vindicated by a statistically insignificant value of ‘β’ in spite of its right sign;

5. prior to 1984, plugging the infrastructural gaps was deemed to be the sole responsibility of the state. And, reliance on private investment, in particular foreign direct investment for the same purpose was scouted to be a crucial plank of the new policy paradigm. Therefore, it was expected that in company with the individual endeavor of States the two channels would bring about significant changes in the infrastructural scenario. However, an interesting feature is
reflected in insignificant correlation between INI I and PC NSDP, per capita State plan outlay, and per capita foreign direct investments, which enforces the conclusion that the institutional infrastructure construct was considered to have its own identity that provided the structure but not the services;

While the preceding index focused on the physical and institutional aspect of infrastructural provisions for good and services in general, our Infrastructure for Human Development (Human Infrastructure Index, H1I) caters mainly to the provisioning for institutions involved in the creation of human resources. In this regard, the H1I analysis results highlighted that:

1. Kerala once again tops the chart throughout the period under study while Madhya Pradesh seems to be struck at the lowest rung of the ladder;

2. in spite of an irregular path the overall gap showed a marginal decline without significantly affecting the incidence of disparity;

3. it may however be added that the interim period registered an increase in disparities up to 1981 and a decline there-after. We are inclined to associate the first phase with our emphasis on growth with an attendant trickle down strategy while the latter can be associated with an appreciation of the Kerala model of development following the popularity of the physical quality of life index as a measure of development performance;

4. the negative association between the growth rates in H1I of States during the period 1971-2001 and their initial standards suggested the possibility for β-convergence. However, the same is not vindicated by the corresponding exercise- the values of the relevant parameter ‘β’;

5. as argued in Chapter 4, section IV, we included adult literacy rate as a proxy for the initial conditions reflecting the level of human development. When included it in the conditional convergence analysis, the strength of β-convergence further improved for time periods, 1971-2001 as well as 1981-2001; and
6. the availability of primary school teachers emerged as the dominating constituent for HI1 of States during the period 1971-1991 and the adult female literacy rates assumed the same level of importance in 2001.

It may not be out of context to reiterate our stand that some of the inputs going into the process of development carry with them the strains of output. A little reflection would suggest that the argument can be put on its head that is, the so called outputs themselves serve as inputs enforcing the development dynamics. That is why we insisted on adopting one of the two rather than going for a mix up. While the preceding discussion on infrastructure was intended on the input side, our Social Upliftment Index (SUI) is reflective of the dialectical unity of the two. The results from our exercise suggested that:

1. the gap between the States with the highest (Kerala) and the lowest (Rajasthan) levels of SUI at 155.87 in 1971 declined by 30.29 per cent over the period 1971-2001 to reach at 108.65 between Himachal Pradesh and Bihar in 2001. Himachal Pradesh still had 4.12 times better SUI levels as compared to Bihar in 2001. The top position was held by Kerala in 1971 and 1981, Tamil Nadu in 1991, and Himachal Pradesh in 2001. While the lowest position was held by Rajasthan in 1971 and 1981, and Bihar in 1991 and 2001;

2. the inter-State disparities in the SUI levels of States, measured in terms of CV, declined from 39.36 per cent in 1971 to 30.82 per cent in 2001. This decline followed an initial increase in disparities for the initial period 1971-1981 and a decline there-after. The post reforms period noticed a pronounced decline in disparities. Following the same trends, the natural logarithm SUI values indicated absolute σ-convergence for the period 1981-2001;

3. a negative and significant association between the change in social upliftment values of States during the period 1971-2001 and their initial (1971) SUI levels confirmed absolute β-convergence;

4. as the economic stability was expected to be favorable for convergence in SUI levels, a conditional convergence test including PC NSDP was carried out to support the argument. The results favored our expectations; and
Though our sectoral indices captured sufficient information about the prevalent state of affairs in different administrative units and are significantly positively related, yet none of those could have been taken as a surrogate of the overall development performance of individual State. The rationale for an aggregative performance index—the Composite Index of Development (CID)—flows from (i) lack of concordance across sectoral values and (ii) differing composition/activity mix displayed by the growth trajectories of the States. Following this logic, presentation of the results based on our exercise relating to the composite index of development stands justified. The exercise carried in Chapter 5 revealed that:

1. the top five slots in terms of overall development belonged to Kerela, Punjab, Tamil Nadu, West Bengal, and Maharashtra in that order. Interestingly, of these five the States, Kerala, Punjab, Tamil Nadu, and Maharashtra retained their membership of this elitist club throughout the period of the study, planning and switch over to the market logic notwithstanding. While Tamil Nadu remained pegged to number three status, the inter-State position of other three in the group did change sometime or the other in this period. Kerala remained at the top position throughout 1971-1991 until Punjab took over from her in 2001. so far as the fifth member of the set is concerned, no single State could claim the distinction all the time. When it comes to the group of bottom five States, Orissa, Bihar, and Jammu and Kashmir has the dubious distinction of remaining in the whole throughout the period under consideration, while the States of Madhya Pradesh and Rajasthan kept company only till 1991. On the last count, that is 2001, their position went to Andhra Pradesh and Uttar Pradesh;

2. the States of the Indian Union did not display similar growth paths. While Rajasthan, Madhya Pradesh, and Orissa were the fastest growing States, the pace of development was quite slack in the other States;

3. this differential development performance resulted in a narrowing of the maximal developmental gap and a reduction in disparities irrespective of the measure used to capture the same. Such a movement was only suggestive of a
sigma convergence. The exercise carried in Chapter 5 statistically confirmed the happening:

4. the negative and significant association between the growth of CID levels and their initial 1971 values indicated significant absolute β-convergence for the period of the study. The estimated half-life for States to converge in terms of the chosen composite index of development came to 56 years. However, an accelerated pace of convergence attained in the post reforms period produced a considerably lower values for the states half-life (32 years);

5. our analysis brought to the fore another interesting result- the half-life mentioned above further go down if initial 1971 ‘per capita net state domestic product’ is controlled for. It may be mentioned that almost a similar pattern, an extent of reduction in the estimate of half-life is registered if ‘per capita net state domestic product’ is replaced by ‘per capita foreign direct investments’ as the control variable while the ‘per capita state plan outlays’ did not bring any improvement in the results, and

6. the speed of convergence is more for the post reform period 1991-2001 and the estimated speed of convergence at 2.16 per cent per annum suggest that the half-life of States to reach their steady State is reduced to 32 years on the basis of post reform convergence estimates.

To sum up, the results reveal the Janus like character of the prevalent design of development- the dialectical unity of convergence and divergence. It may be noticed that our conclusion number one depicted a strong current of divergence by way of increasing inter-State disparities during 1971-2001, while the results listed at three and four very strongly indicate a reduction in disparities and both β and σ convergence. Obviously, there is something in the prevalent design of development which brings a concentration in terms of control over production while espousing semblance of equality by way of styles.