

CHAPTER 5

REGIONAL CONVERGENCE AND ECONOMIC GROWTH IN INDIA

In this chapter, the σ and β -convergence hypotheses test is computed in order to know the trend of income inequality in terms of per capita income after reforms period 1991-92 to 2016-17. σ -convergence exists if the dispersion across the cross-section units of the economies decreases over the time in terms of per capita outputs. β -convergence exists if the poorer economies grow faster than the rich economies in terms of per capita income.

5.1 σ -Convergence Hypothesis

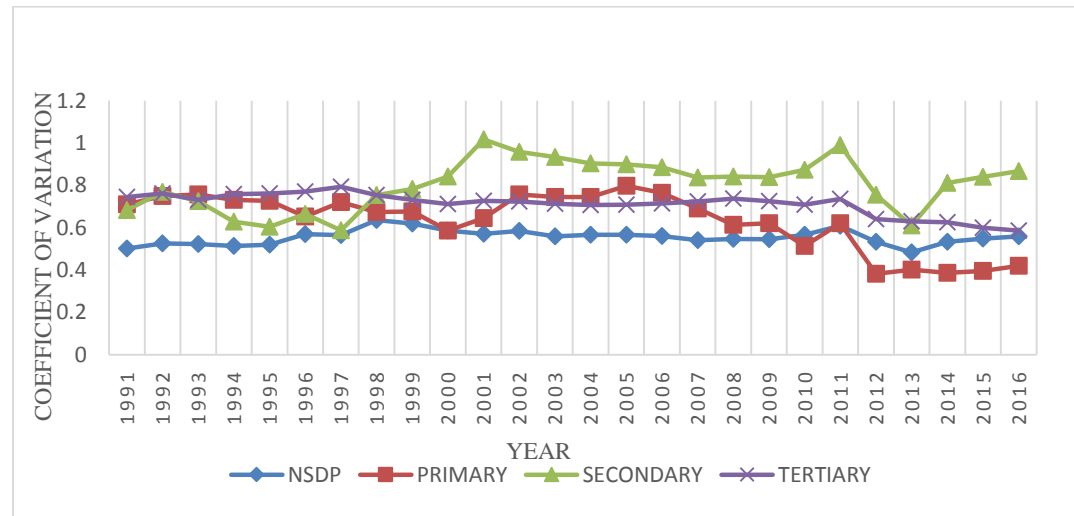
To check the presence of σ -convergence initially the value of coefficient of variation (CV) of per capita NSDP is computed at 2011-12 prices across the regions for each year. Then we fit a linear time trend over the series of CV.

Estimated Value			
Row No.	Dependent Variable	Intercept	Coefficient of Time
1	CV of states' PCNSDP	0.282	0.030
2	CV of states' PCNSDP originating in primary	26.827	-0.745
3	CV of states' PCNSDP originating in secondary	-12.519	0.421
4	CV of states' PCNSDP originating in tertiary	11.894	-0.806

Source: Researcher's Calculation

From the above table, it can be observed that the Indian states are diverging at the aggregate level in terms of per capita output over the time. The value of the coefficient of time is small but positive (0.030) which indicates that the income gap has increased among the states after reforms. For the better results of the σ -convergence, the same linear trend analysis of CV has been carried out for the broad components of per capita NSDP, viz, the primary, the secondary and the tertiary sectors. It was found that the CV for the primary and tertiary sector have a decreasing trend while for the secondary sector, it has increased over the time across the states of India. Therefore, it can be seen in the above table that the CV of per capita NSDP originating from primary and tertiary sector had a negative coefficient. It means that the per capita NSDP originating from the primary and tertiary sector is tended to convergence among the states. The declining trend of CV for the primary sector is more than the tertiary sector. On the other hand, per capita NSDP originating from the secondary sector tended to diverge. The value of the coefficient of the time is positive (0.408) which is very high than the total NSDP's coefficient. So, the interesting finding of this section is that the Indian states are diverging, due to the divergence of the secondary sector among the states.

Figure 5.1.1 Inter-state Dispersion in PCNSDP across Sectors from 1991 to 2016 at 2011-12 Constant Prices (in rupees)



Source: Author’s calculation

In the above diagram represents the interstate dispersion in per capita NSDP across sectors by using the coefficient of variation. The value of coefficient of variation has increased from 0.50 in 1991 to 0.56 in 2016 in NSDP. It means that the inequality has increased but not significantly at the aggregate level. The growth of the economy has increased after the economic reforms; as a result the inequality of the primary sector falls down from 0.71 to 0.42 across the states. Whereas the inequality in the secondary sector has increased from 0.69 in 1991 to 0.87 in 2016. Further, the tertiary sector has witnessed a declining trend in inequality over the time from 0.71 in 1991 to 0.59 in 2016.

5.2 β -Convergence Hypothesis

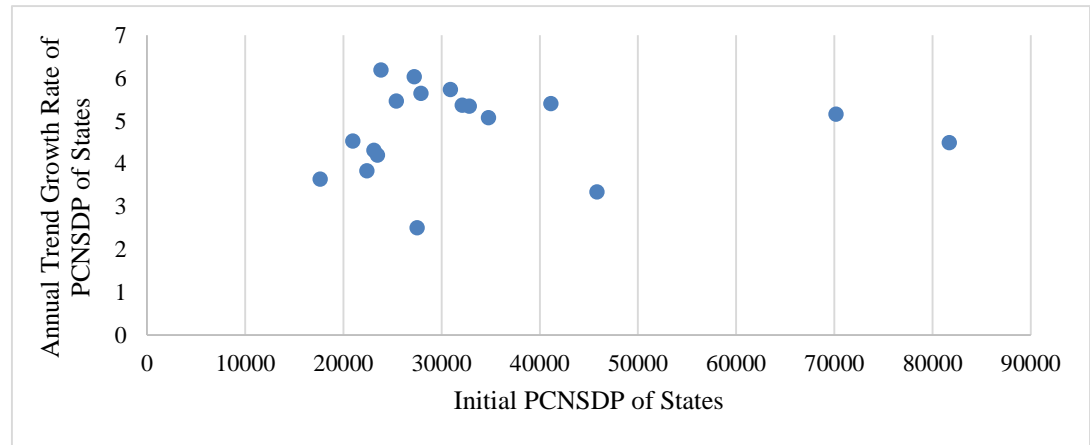
β -convergence predicts a negative relationship between the initial per capita income and the growth rate of economies over the time. The below table show the

results of the test of β -convergence among the Indian states.

Table 5.2.1: Estimated Linear Regression of Growth Rates of PCNSDPs of States on Their Respective Initial Per Capita NSDPs				
Estimated Value				
Equation No.	Dependent Variable	Intercept	Initial Value of PCNSDP	
			Y_{1991}	Averages of PCNSDP's for First Five Years
1	Estimated trend growth rate	4.738	0.027	
2	Estimated trend growth rate	4.640		0.078
<i>Source:</i> Researcher's Calculation				

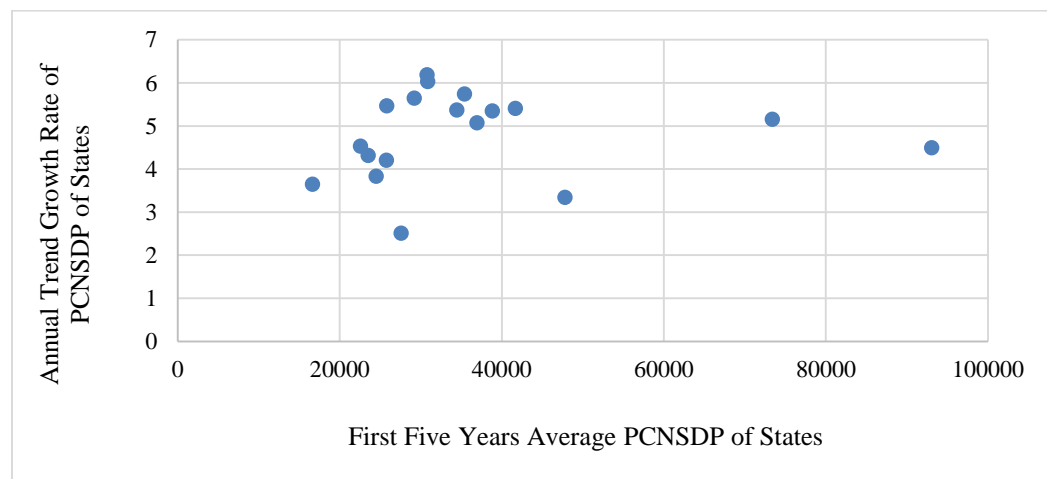
To check the presence of β -convergence first, semi-log trend equation ($\ln Y_t = a + b_t$) is estimated for per capita NSDP of each region and after that regressing the estimated value of b on Y_{1991} . The phenomena of β -convergence occur if the latter regression yields the negative value of coefficients for Y_{1991} . However, Y_{1991} may be the weak indicator of the initial per capita income, so an alternative approach is used i.e. the average of first five years per capita NSDPs for the initial conditions. The results show that in both the cases, there is no evidence of β -convergence. The values of the coefficients of the indices of initial per capita income are positive in both the regressions. The value of the coefficient is more than the double when second approach is applied than the first, which indicates the more divergence.

Figure 5.2.1 Scatter of States' Estimated Annual Trend Growth Rate of PCNSDP during 1991-92 to 2016-17 and the Value of Their Initial PCNSDP



Source: Authors' calculation

Figure 5.2.2 Scatter of States' Estimated Annual Trend Growth Rate of PCNSDP during 1991-92 to 2016-17 and the Value of First Five Years Average PCNSDP



Source: Authors' calculation

The scatter diagrams provide enough indication that Indian states are diverging, there are some outlier states (Goa and Delhi) with a high initial per capita NSDP and with the growth rate 4-5 per cent. Removal of these outliers leads to the better regression results as testified above.

5.3 Concluding Remarks:

In this chapter we tested the σ and β -convergence hypotheses in order to know the trend of income inequality in terms of per capita income among the states in after reforms period. σ -convergence is measured at aggregate as well as at sectoral level. The results of σ and β -convergence hypotheses reveal that the Indian economy is diverging at aggregate level and this divergence is occurring due to the divergence in the income of the secondary sector. The income of the primary and tertiary sector is converging among the states.