A Review of States' Performance and Synchronicity

Highlights:

- ***The EAC-PM report finds that the eastern region in India remains a concern for growth and development.***
- ***The report further suggests that the western and the southern regions are leaders in relative performance.***
- ***This is further reinforced by RBI's study conducted on the business cycles which asserts higher synchronicity of the central and western regions with the national cycle.***

Aditya Vyas
aditya@stcipd.com
022-66202245

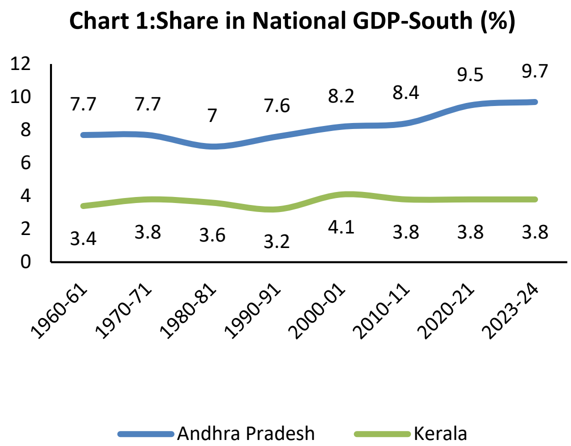
The two studies on Indian States: Two public institutions have simultaneously published studies on Indian states, one being RBI and the other the Economic Advisory Council to the Prime Minister (EAC-PM). The titles of the report published by the EAC-PM is: Relative performance of the Indian states: 1960-61 to 2023-24, while the study published by RBI is titled: Synchronisation of Indian States' Business Cycle. The RBI study covers a relatively shorter time period as compared to the study done by the EAC-PM, with the RBI study considering data since 1980-81. This is done to avoid the problems of data inconsistencies arriving out of the scarcity of very early data in India, specifically pertaining to states. This problem has been well outlined in the EAC-PM study as well.

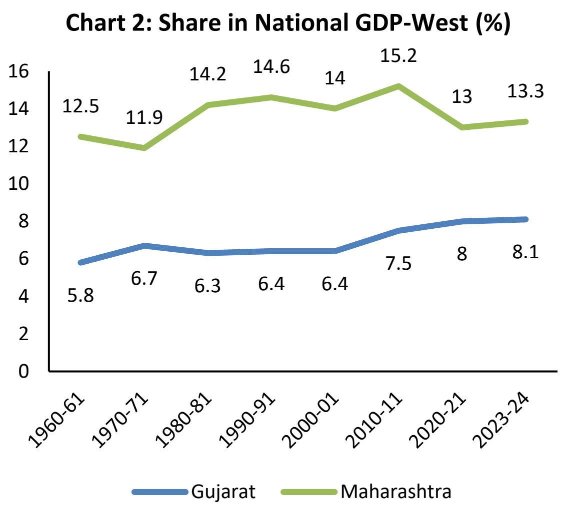
A fallout of the subject of the study being common has led to some overlap in terms of the findings of both the studies. Though the objectives and motives of the studies are entirely different. The economic advisors' council study is focused on tracking the relative performance of states vis-à-vis national performance. The RBI study is centered around the theory of business cycles and the co-movement of the business cycles or the synchronization of business cycles among states, and the resultant effect on the respective states GSDP. We review both the studies and assess the relationship between the various regions of India based on these studies.

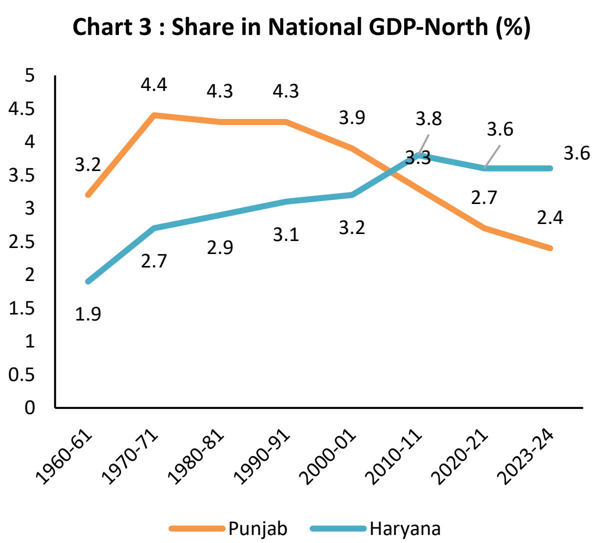
Relative performance of States since 1960: Before delving into the findings of the report, a brief review of the basics is in order. The study considers the national product to be the sum of the gross state domestic products of all the states and UTs. The relative performance of the states is measured in terms of two indicators.

1. Share in India's GDP
2. Relative per capita income

As per the methodology outlined in the report, an individual state's share in India's GDP is measured as the ratio of the respective state's GSDP by the sum of the GSDP of all the states. Relative per capita income is measured as the ratio of the per capita Net State domestic product (NSDP), of the state as a percentage of the all-India per capita net national product.







The authors note that remittances have been excluded by virtue of measuring relative per capita income as per capita NSDP, and this could have an adverse impact on states like Kerala, Bihar and Uttar Pradesh. Since, household incomes will be larger due to inclusion of remittances. The study classifies five regions as are well known in India. Since the authors are measuring and comparing only relative performance and not real growth rates all the data used in the study are at current prices, i.e. nominal. The other important issue highlighted by the authors is the data discrepancy in the initial years of the period under study. The standard five region classification for Indian states has been used in the study to get a better comparison amongst the various regions.

Southern Region: The findings point to the better performance of the southern region comprising the states of Karnataka, Andhra Pradesh, Telangana, Tamil Nadu and Kerala. This region accounted for ~30 per cent of India's GDP in 2023-24. Though before the globalization the southern states were lackluster and did not show any remarkable progress during that period. Only after 1991, and the implementation of the globalization reforms the economic activity has picked up in the southern region.

Western Region: The western region comprises of the states of Maharashtra, Gujarat and Goa and these states have shown consistent performance since 1960. The report indicates that these states have performed consistently well throughout the study period. Though Gujarat's share remained more or less flat pre-2000-01, and has increased rapidly since then from 6.4 per cent to 8.1 per cent in 2022-23. Maharashtra has been the state which has consistently maintained the highest share of India's GDP for almost all of the period under study. Both these western states have per capita incomes exceeding the national average since 1960. Goa has seen a near tripling of per capita income since 1960-61.

Northern Region: Among the northern states Delhi and Haryana have been performing well according to the report while Punjab faces economic woes due to over-reliance on agriculture. The authors show that post the green revolution push that Punjab received in its growth, the share of the state has been consistently on the decline. Punjab's per capita income has declined from a peak of 169 per cent of the national average to 106.7 per cent.

Chart 4: Share in National GDP-Central Region (%)

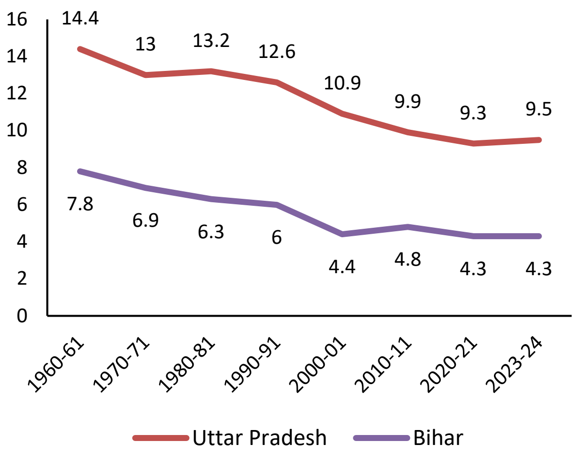


Chart 5: Share in National GDP-East (%)

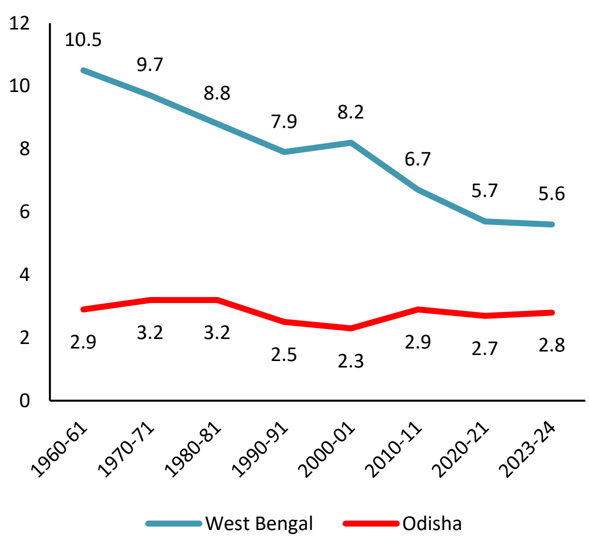
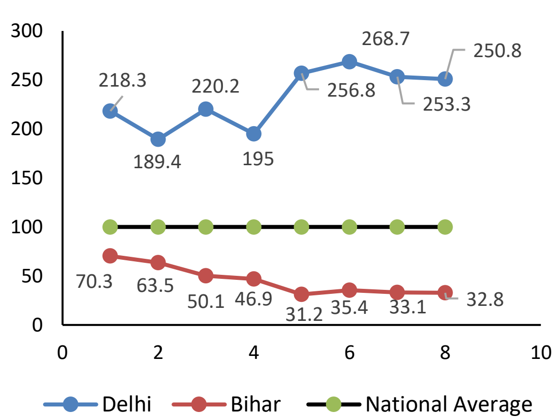


Chart 6 :Per Capita Income (%)-Highest and Lowest since 1960-61



The authors ask whether the excessive focus on agriculture post the green revolution hinder Punjab's industrialization? Haryana on the other hand, which was initially lagging behind Punjab in both metrics, has not only overtaken Punjab but continues to perform better than it.

Central Region: Uttar Pradesh, once the largest state in the country, witnessed a decline in share from a significant 14.4 per cent to 8.4 per cent in 2023-24, post bifurcation. A similar trend was seen in Madhya Pradesh which had seen a declining trend in the relative per capita income from 82.4 per cent in 1960-61 to 60.1 per cent in 2010-11. Though in the recent past the states has witnessed some uptick with its share increasing from 60.1 per cent to 77.4 per cent in2023-24.

East and North East Region: These states have shown progress over time but remain a concern as far as their shares in the country's GDP. The authors observe that maritime states have performed very well during the period with the notable exception of West Bengal. The states had the third highest share of national GDP at 10.5 per cent in 1960-61 which has declined to a measly 5.6 per cent in 2023-24. Even the per capita income was above the national average at 127.5 per cent which has now declined to 83.7 per cent, this is below the average of low performing states like Odisha and Rajasthan.

Perhaps the most underperforming state would be Bihar in terms of per capita income. The relative per capita income declined from 70.3 per cent in 1960-61 to a bottom of 31 per cent in the bifurcated state of Bihar in 2000-01, while not really making any significant progress and plateauing at 33 per cent. Odisha has been showing consistent progress in relative per capita income. Initial years saw a marked decline in relative per capita income from 1960s to 1990-91 from 70.9-54.3 per cent, but has seen a significant improvement. The relative per capita income has increased from 54.3 per cent in 1990-91 to 88.5 per cent in 2023-24.

In the north eastern states Sikkim has shown remarkable progress with relative per capita income surged from 100 per cent in 2000-01 to 320 per cent in 2023-24. Assam initially witnessed a decline in relative per capita income from 103 per cent in 1960-61 to 61.2 per cent in 2010-11, before increasing to 73.7 per cent in 2023-24.

Chart 7 :Measure of Synchronisation with the National Cycle (%)

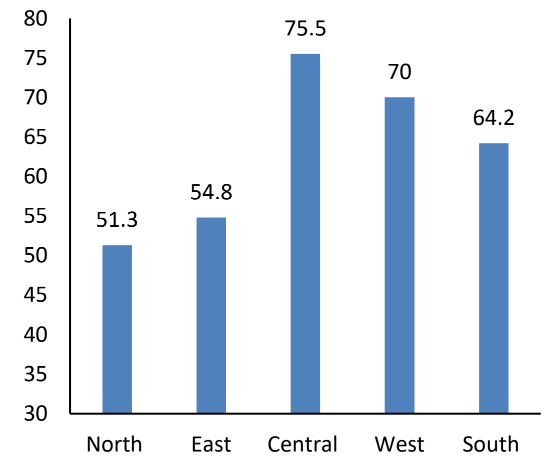


Chart 8 :CAGR of Real GSDP (%)- North

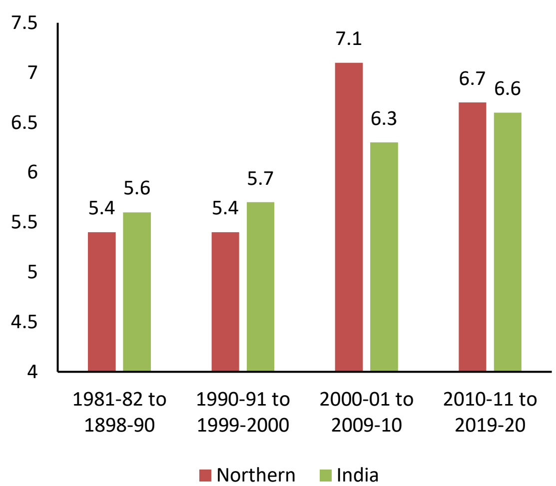
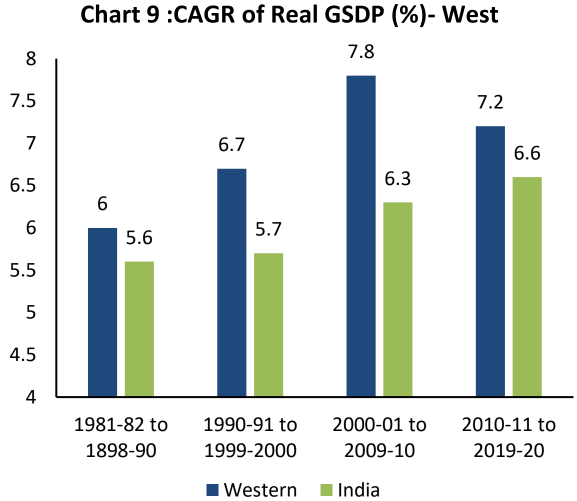


Chart 9 :CAGR of Real GSDP (%)- West



Synchronisation of Indian States' Business Cycle: This article was published in the RBI Bulletin of September 2024, authored by Satyananda Sahoo et al. The distinguishing factor of this research is that till now majority of the research has focused on growth divergence or convergence amongst states giving no particular importance to the dynamics of business cycles. This is a gap which is filled partially by this article as this kind of focus on regional business cycles is done largely for advanced economies like US, Australia and the European Union.

The standard representation of the five regions along with union territories (UTs) is common to both the studies that are in discussion. By using econometric tools such as the Baxter King band pass filter and Kalman filter under the unobserved components model (UCM), the study decomposes the trends and cycles for the various states. This is done for a shorter time period as compared to the EAC-PM report, beginning 1981-82 to 2019-20 keeping in mind the consistency of data for all states and UTs. Also, north eastern region has been excluded owing to lack of longer time series data in states such as Mizoram, Nagaland and Sikkim.

The authors observe that in line with the India growth trajectory, most of the states have seen their respective compound annual growth rates (CAGRs) increase rapidly since the 2000s. While the western states of Maharashtra, Gujarat and Goa outperformed the other states during 1980-2000 period the southern states have now surpassed the western states in the last decade i.e. 2010-11 to 2019-20.

The authors test two hypotheses on a state level basis to explore how varied shocks and their spillover effects impact business cycle synchronisation. The hypotheses are as follows:

Hypotheses 1: Geographical proximity strengthens co-movement of business cycles.

Hypotheses 2: Economic structure of states influences business cycles synchronisation through sectoral linkages and complementarities.

Geographical proximity is defined by whether two states share at least one common geographical border. The economic structure of a state is defined in terms of the sector contributing highest to the state's GSVA vis-à-vis the share of that sector at the national level.

Chart 10 :CAGR of Real GSDP (%)- East

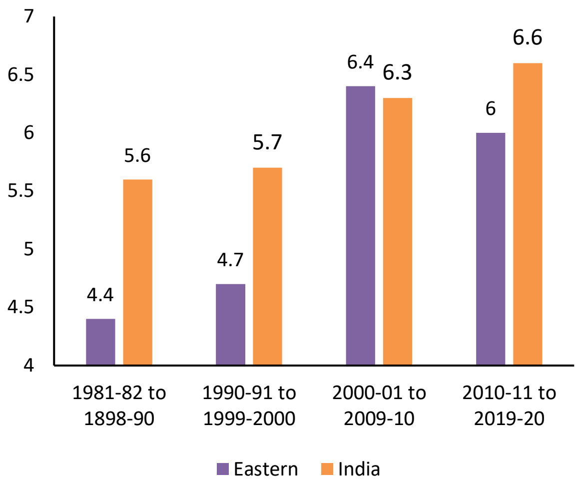


Chart 11 :CAGR of Real GSDP (%)- South

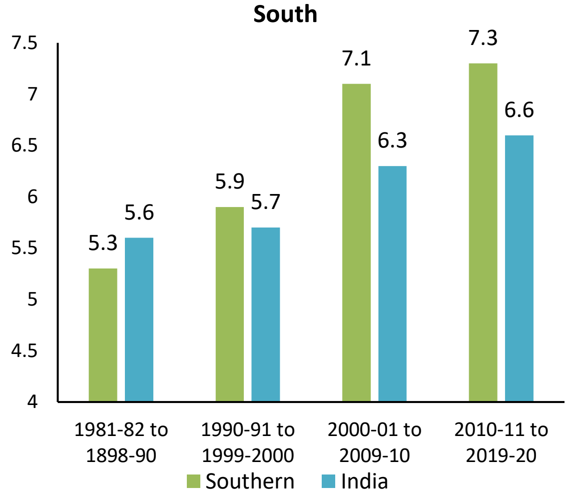
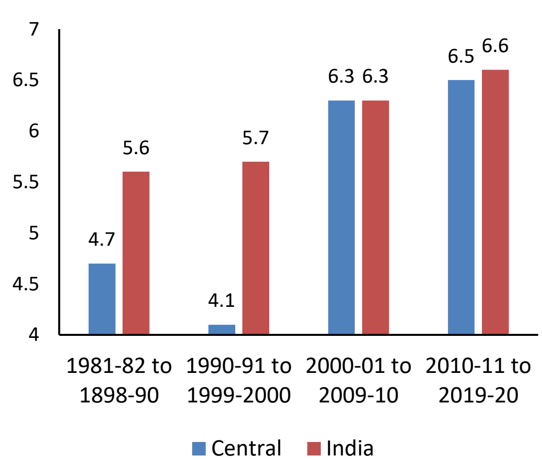


Chart 12 :CAGR of Real GSDP (%)- Central Region



In terms of contribution amongst sectors services have been contributing more than 50 per cent on average across all regions. In the industry the western region dominates with a ~33 per cent share. The eastern and central region have on an average 20 per cent share of agriculture and allied activities in their gross state value added (GSVA). The northern region mirrors the national economic structure more closely, while the authors observe that the differences in economic structures across states and regions can contribute to growth variations.

The major findings presented in the article are as follows**:**

- Between the national and regional business cycles there is moderate synchronisation.
- Cyclical fluctuations tend to diminish over time.
- Cyclicality is more pronounced in the case of western and southern regions in comparison with other regions.
- This is because the nine major states and UTs comprising the western and southern regions account for more than 50 per cent of the national GDP.
- The central region displays the highest correlation with the national cycle followed by the western and southern regions for the period under consideration.
- Geographical proximity and sectoral composition of the constituent states have an influence over synchronisation of regional cycles.
- Business cycles appear to be stronger among the agricultural states as compared to the industrial and service-oriented states.
- Geographical proximity does not affect the co-movement of cycles in agricultural states, though it has significance in service-oriented states.
- The synchronisation of cycles between the agri-industry and agri-services pair is significantly high for several states-both neighboring and faraway states.

Concluding remarks: Both the studies have similar observations on the southern and western regions being more dominant players in the national GDP as well as in terms of influencing the business cycle of the nation. These features have come with many reasons such as connectedness (geographical proximity) and variation and similarities in the economic structures of the states. The time periods of the two reports are not the same, though they ultimately reach the same conclusion. Eastern and north eastern states remain an area of concern for economic growth, while the central, western and southern regions have done well in terms of relative economic performance. The government needs to frame policies keeping in mind these factors to bridge the gap between the east and the national averages.

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