
WORKING PAPER 260/2024

**ECONOMIC OVERVIEW OF TAMIL NADU
(2023-24)**

**C. Rangarajan
K.R. Shanmugam**



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July 2024

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Economic Overview of Tamil Nadu (2023-24)

C. Rangarajan and K.R. Shanmugam

Abstract

This is a short overview of the Tamil Nadu economy in 2023-24. This covers some of the broad features of the Tamil Nadu economy including trends in growth, sectoral performance, social parameters, climate change issues and growth prospects. Tamil Nadu's economy is strong on many dimensions. Tamil Nadu's rate of growth has been higher than India's overall growth rate between 2005-06 and 2022-23. While all India economy grew at an annual rate of 6.71 percent, Tamil Nadu economy grew at 7.8 percent during this period. This trend needs to be maintained in order to reach a level of 1 trillion-dollar economy as early as possible. Also, Tamil Nadu like India must adapt itself to the far reaching changes in technology that are occurring. Details given in the study may help the readers to gain an understanding of the strengths and challenges of the Tamil Nadu economy.

Keywords: *Tamil Nadu economy, Growth prospects, Social indicators, Climate change*

JEL Codes: *H63, D72, H72, C22, E32*

Preface

Madras School of Economics (MSE) established the Centre for Public Finance (CPF), which is functioning from April 1, 2021. This Centre is financed by the Government of Tamil Nadu. Its activities are guided an Advisory Council (headed by me). The Centre focuses on both theoretical and empirical issues of public finance covering the following areas: deficit financing and public debt, monetary and fiscal interactions, tax policy and reforms, public expenditure management, public investment appraisal and cost benefit analysis, public enterprises reform, intergovernmental transfers local finances and environmental issues.

Apart from general research activities, the Centre is committed (I) to review the Tamil Nadu Economy and State Finances every year, (ii) to conduct an Annual conference on topics related to Public Finance and Policy, and (iii) to conduct training programs on public finance. It will also undertake specific studies on public finance funded by Government of Tamil Nadu and other National and International agencies.

During the academic year 2021-22, the Centre organized Virtual Meeting on Improving the Presentation of Tamil Nadu Budge Document on April 29, 2021 and conducted 5-day Training Programs on Public Finance for 15 batches covering a total of 270 Group A and Group B officials of Government of Tamil Nadu through online mode (From August 31, 2021 to December 31, 2021). It organized a two day National Conference on Public Finance during January 20-21, 2023 and also during March 7-8, 2024. It also organized summer training program for college teachers and Ph.d scholars from July 3-15, 2023. It has initiated several research studies and brought out working papers.

This study "Economic Overview of Tamil Nadu (2023 - 24) by me and K.R. Shanmugam is the fifteenth working paper of the CPF. This is a short overview of the Tamil Nadu economy in 2023-24. This covers some of the broad features of the Tamil Nadu economy including trends in growth, sectoral performance, social parameters, climate change issues and growth prospects.

**C. Rangarajan
Chairman**

Acknowledgement

We are thankful to Shri T. Udhayachandran, Principal Secretary to Tamil Nadu Government and his team for their valuable comments and suggestions.

**C. Rangarajan
K.R. Shanmugam**

INTRODUCTION

Tamil Nadu is the most progressive state in India in terms of many economic and social parameters. It is the second largest economy (₹ 23.65 lakh crore in 2022-23) in the country, with an ambitious target of achieving a trillion-dollar economy by 2030. It is a highly industrialized state, contributing 12.25 percent of the manufacturing real GDP of the country and its share of India's real GDP is 9.08 percent (2022-23). Tamil Nadu ranks first in number of factories and Export Preparedness Index (2022); second in urbanization (53.68 percent, next only to Kerala), low IMR (13), and low birth rate (13.8) and in head count ratio, i.e., percentage of population who are multidimensionally poor (2.2 percent);¹ third in credit-deposit ratio (in 2022-23) and life expectancy at birth, and fourth in literacy (Census of India, 2011) and per capita income.² It is a benchmark state for model startup ecosystem and it is placed in the 'Best Performer' category in the States Startup Ranking, 2022.

Tamil Nadu's Gross State Domestic Product (GSDP) is driven by services (48.8 percent share), manufacturing (18.8 percent) and agriculture and allied activities (11.6 percent share in 2022-23). It has the largest number of engineering and technical institutions (about 590), giving the service industry access to a qualified and skilled labour force.³ It is home to many auto components industries, the textile hub of India and a major contributor of software exports. It has a fast-growing base in electronic manufacturing. The state is leading the growth story of India from the front.

¹ Sources: Report of the Technical Group on Population Projection, July 2020; SRS Bulletin, May 2022; and National Multidimensional Poverty Index: A Progress Review, 2023 by the NITI Aayog.

² According to the latest logistics index chart (2023) released by the Ministry of Commerce and Industry, Tamil Nadu is one among the 13 states and union territories categorized as "Achievers" which means that it has shown efficient logistical services that contribute to export promotion and economic growth.

³ An estimate indicates that more than 50 percent of human resources required for the IT and ITES industry in the country are being sourced from Tamil Nadu.

Inclusive economic growth and social welfare, particularly education and health, have long been the priority for the Tamil Nadu Government. Tamil Nadu ranks first in gross enrolment ratio (GER) in higher education (2020-21) of 46.9 percent as against all India figure of 27.3 percent. It also ranks first in girls' GER in higher education (48.6 percent as against all-India figure of 27.9 percent). The State government gives a special emphasis on the development of women and children. While the State is a pioneer in conceptualizing and implementing various schemes for them, it has recently introduced landmark schemes such as the Chief Minister's Breakfast Scheme, *Kalaignar Magalir Urimai Thittam*, and free bus travel scheme for women.

While the state is doing well in both development and growth parameters, it also faces a few major challenges. While it has the potential to record a double-digit growth, its average growth in the last two years (i.e., after recovering from COVID-19 pandemic) was only 8.06 percent. While the state was growing at a rate faster than the national average, its average real growth rate from 2012-13 to 2022-23 was (6.21 percent) as against its own average growth from 2005-06 to 2011-12 (10.3 percent). To realize its full potential and to attain the top spot among states in terms of the size of the economy, it must grow at a much faster rate (i.e., around 10 percent).

As one of the most urbanized and industrialized states in the country, it has an increasing share of non-agriculture sectors. While this is a positive feature in terms of the state's overall growth story, this also makes the economy more vulnerable to external shocks. The state will have to address the consequent uncertainty to achieve sustainable growth. Notably, its services sector growth has slowed down since 2012-13, following a similar trend at all India level and in most other comparable states. The average growth of its service sector was 11.28 percent from 2005-06 to 2011-12 (as against the all-India figure of 9.71 percent) and it declined to 5.93 percent (as against the all-India figure of 6.7 percent) from 2012-13 to 2022-23. While the growth of the agriculture sector

depends heavily on the monsoons, the share of agriculture in the GSDP has been continuously decreasing as it has happened at the all-India level.

Tamil Nadu's average inflation has generally been higher than the all-India inflation and as it happens during the process of development, but for the last two years, it has been lower than the all-India figure. Higher investment led growth is critical to meet the state's rising consumption demand and to ensure non-inflationary growth in the long run. After 2016-17, the public debt started increasing significantly. If this trend continues, it may affect the future economic growth of the state.

Against this background, this overview 2023-24, provides a brief review of the Tamil Nadu's economy, sectoral performance, trends in inflation and employment, details of credit availability, social parameters, climate change issues, growth prospects for 2023-24 and 2024-25 and concluding remarks regarding growth scenario and suggestions to overcome challenges in the short term.

REVIEW OF TAMIL NADU ECONOMY

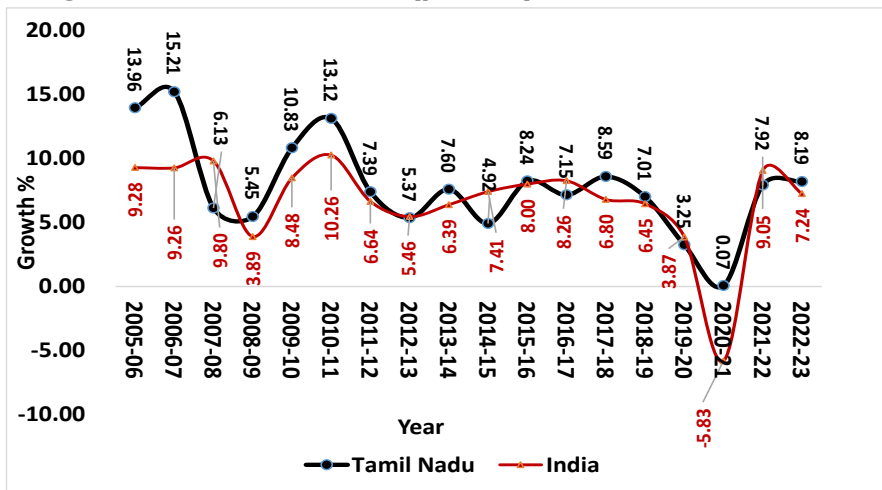
(i) Real Economic Growth

Growth matters as it paves the way for development and prosperity. Tamil Nadu registered a strong real growth performance of 10.3 percent (as against all-India growth of 8.23 percent) from 2005-06 to 2011-12 (2004-05 series), indicating a higher growth of 2 percentage points than all India growth. However, its average growth declined to 6.21 percent (as against all-India growth of 5.73 percent) from 2012-13 to 2022-23 (2011-12 series), registering a marginally (0.5 percent) higher rate than the all-India rate (Figure 1). It is noticed that there has been a downward shift in the growth path of both the Indian economy and the Tamil Nadu's economy since 2012-13.⁴ It is also true for many other major states. One main

⁴ The converted 2004-05 base series into 2011-12 new base series is available for GDP but not for state's GSDP. Throughout this overview, 2004-05 base series is used in the case of both GDP and GSDP till 2011-12 and after that 2011-12 series is used. In fact, the comparison between the two periods becomes difficult because of the change in the methodology and the base.

reason could be the change in the methodology of computing GDP and GSDP from 2011-12.

Figure 1: Economic Growth (percent): Tamil Nadu and India



Source (Basic Data): MOSPI Website.

At least three external shocks have hit the global economy since 2020: (i) COVID-19 pandemic, (ii) Russian-Ukraine conflict and (iii) rate hikes by advanced nations to curb inflation. These have affected all economies, including the Indian and the Tamil Nadu economy. In the COVID-19 pandemic year 2020-21, Tamil Nadu’s economy registered a marginally positive growth (0.07 percent) as against all India’s negative growth (-5.83 percent). In the two years since the pandemic, Tamil Nadu’s economy appears to have recovered almost fully from the drastic impact.

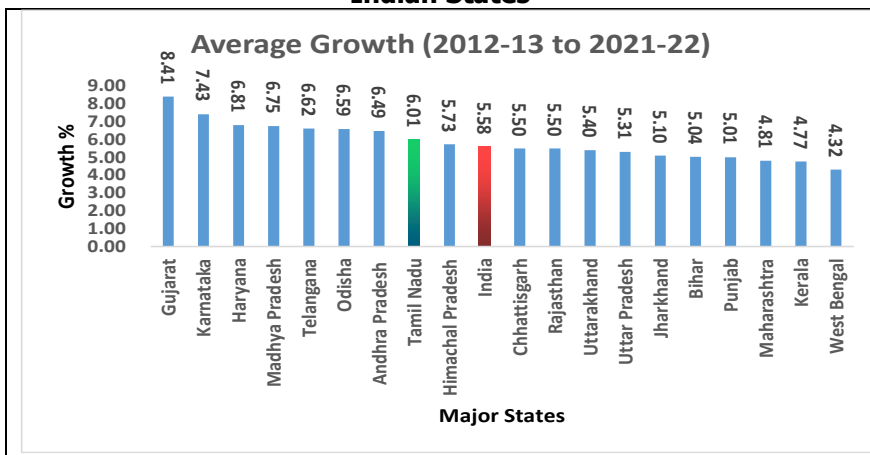
This cyclical nature of trend also hints that Tamil Nadu’s growth is more susceptible to global fluctuations compared to all-India’s growth pattern. Tamil Nadu is the major producer of automobiles, textiles, leather, and IT products which are consumed not only in the domestic market, but also in external markets. This may be a reason for the variation in growth pattern in tune with the global economy. This pattern of growth also

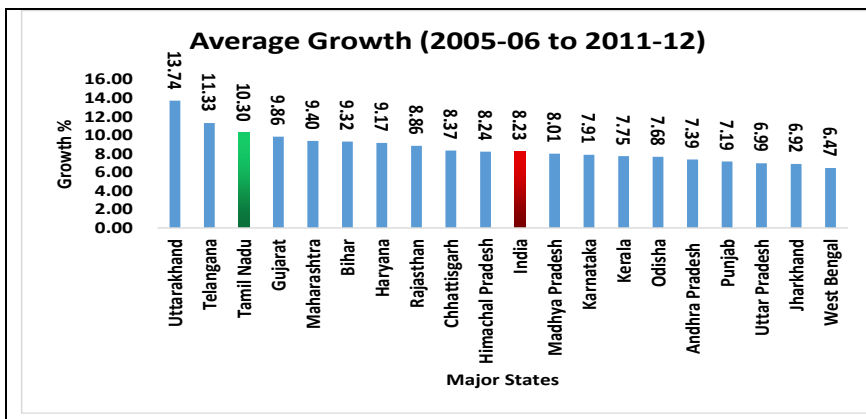
warrants the need for higher fiscal buffers for the Government of Tamil Nadu to undertake counter cyclical policy measures.

(ii) Interstate Growth Comparison

Tamil Nadu ranked third among major Indian states in average growth (10.3 percent) during 2005-06 to 2011-12 (using 2004-05 base series). From 2012-13 to 2021-22 (2011-12 series), its rank slipped to eighth among major states with an average growth of 6.01 percent. It is noted that from 2012-13 to 2018-19 (before the Covid-19 pandemic), it also ranked 9th and its average growth came down to about 6.98 percent, which is 3.32 percentage points less than the previous 7-year average growth of 10.3 percent (Figure 2).

Figure 2: Average Real Economic Growth (percent) of Major Indian States





Source (Basic Data): MOSPI Website.

(iii) Tamil Nadu needs to Strategize to Maintain a Competitive Advantage

In 2022-23, Tamil Nadu was the second largest economy in the country. However, the slowdown witnessed in Tamil Nadu's growth from 2012-13 to 2020-21, would likely to impact its strong economic position in nominal terms during the next 3-4 years. Table 1 presents projections of the nominal GSDP based on the average growth rate (2012-13 to 2022-23) of the top five states, including Tamil Nadu. The State must formulate and effectively implement appropriate strategies to achieve a higher growth trajectory and continue to be a strong contributor to India's GDP.

Table 1: Projected Nominal GSDP of Top 5 States (₹ Crore)

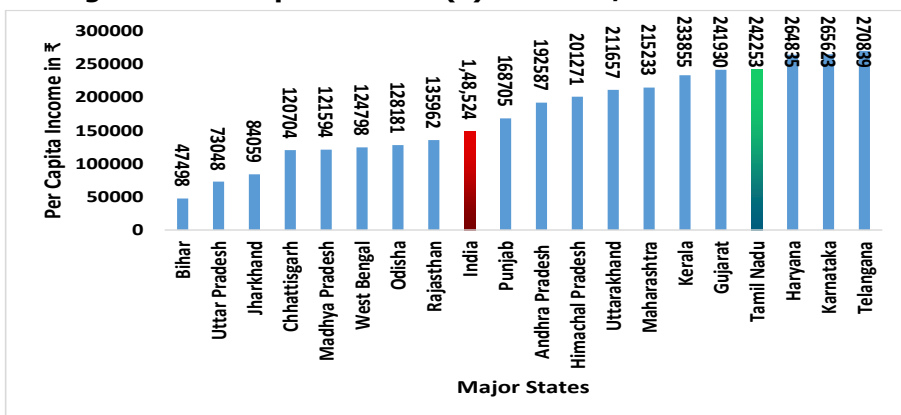
State\UT	Avg. Growth from 2012-13 to 2022-23 (%)	2022-23	2023-24	2024-25	2025-26
Gujarat	12.68	2261715*	2548500	2871650	3235776
Karnataka	12.74	2241368	2526919	2848848	3211791
Maharashtra	9.92	3581000*	3936235	4326710	4755919
Tamil Nadu	11.04	2364514	2625556	2915418	3237280
Uttar Pradesh	11.04	2257575	2506811	2783563	3090869

Source (Basic Data): MOSPI. * The GSDP figures for Gujarat and Maharashtra in 2022-23 are from their respective Budget documents.

(iv) Per Capita Income of Tamil Nadu and Other Major States

In terms of the per capital income (NSDP) at current prices, Tamil Nadu ranked fourth among major states in 2021-22 states (Figure 3), at a per capita income of ₹ 2.42 lakh in 2021-22 as against the all-India per capita income of ₹ 1.48 lakh. Telangana ranked first with ₹ 2.71 lakh followed by Karnataka (₹ 2.66 lakh) and Haryana (₹ 2.65 lakh).

Figure 3: Per Capita Income (₹) of States/UT in 2021-22

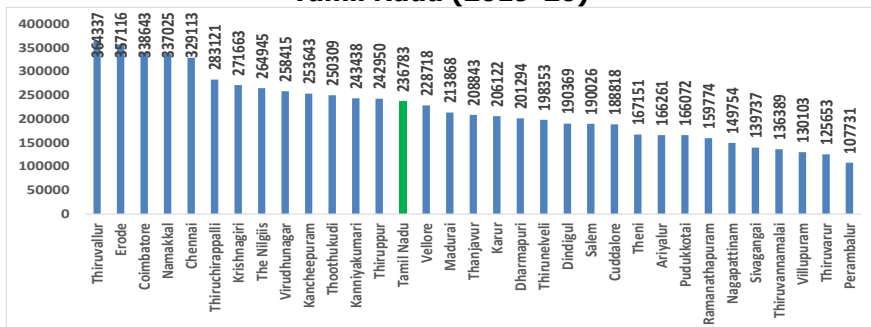


Source (Basic Data): MOSPI Website.

(v) District wise Per Capita Income in Tamil Nadu

There are wide variations in the district-wise per capita income in the state in 2019-20 (for which the latest data available). Thiruvallur has the highest per capita income of ₹ 3.67 lakh, followed by Erode and Coimbatore (Figure 4). In 13 out of 32 districts, the per capita income is higher than state average per capita income. Interestingly, in these districts, per capita income is higher than any of major Indian states in that year including Telangana, Haryana, Karnataka etc.

Figure 4: District wise Per Capita Income (₹.in current price) in Tamil Nadu (2019-20)



Source: District Income Estimates by Department of Economics and Statistics, GoTN.

In remaining 19 districts, the per capita income is lower than the average per capita income of Tamil Nadu. Perambalur has the lowest per capita income of ₹.1.07 lakh. But this is higher than per capita income levels in Assam, Bihar, Uttar Pradesh, Jharkhand, Madhya Pradesh, and Odisha in the same year. Interestingly, only in three districts-Perambalur, Thiruvarur and Villupuram, the per capita figures are lower than all India's per capita income of ₹.1.32 lakh in that year. It is noticed that Thiruvallur's per capita income is 3.38 times higher than Perambalur's per capita income.

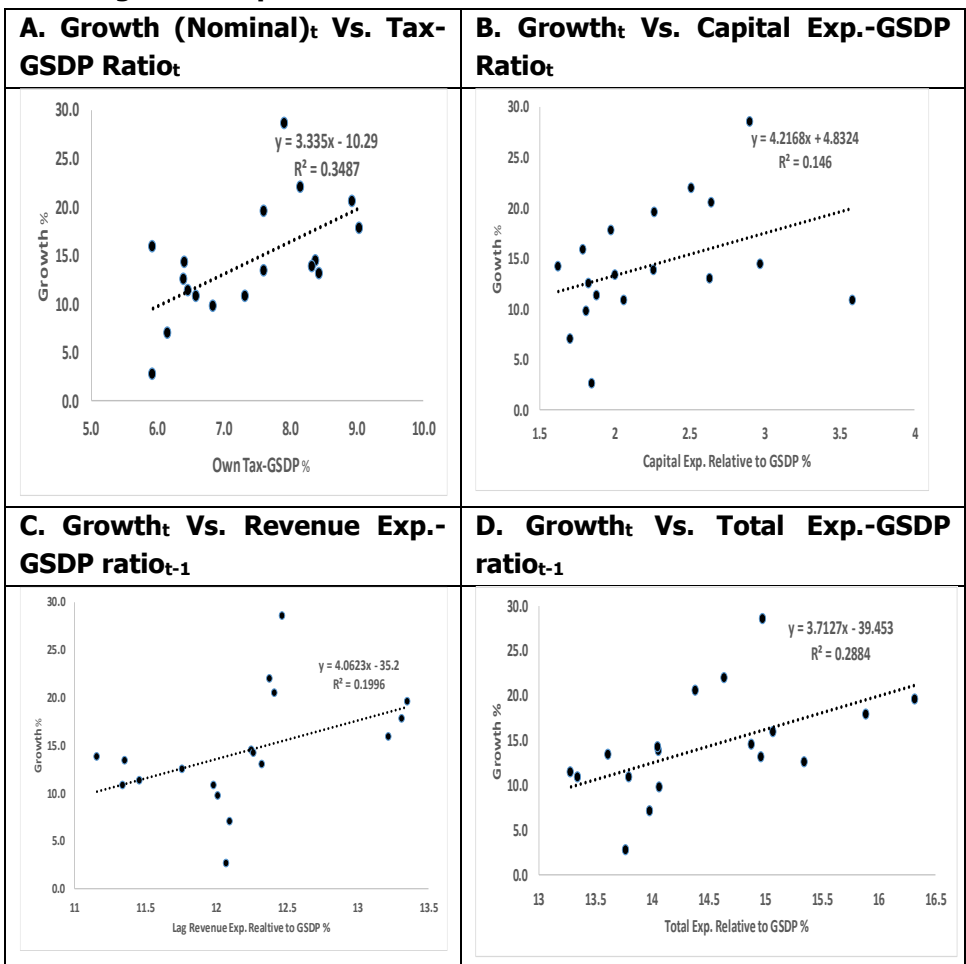
(vi) Fiscal Policy and Growth

In Tamil Nadu, from 2005-06 to 2022-23, the own tax-GSDP ratio moved along with nominal economic growth as it is expected (Figure 5A). The correlation between them is 0.59.⁵ From 2005-06 to 2014-15, Tamil Nadu's own tax-ratio was in the range of 7.3 and 9 percent, but after that it was below 7 percent. Therefore, a marginal hike in the tax-GDP ratio will not affect the economic growth of the state; instead, it may increase the growth. The capital expenditure-GSDP ratio had a positive effect on the growth (the correlation is 0.38) (Figure 5B). One year lagged revenue expenditure-GSDP ratio had a positive and significant effect on nominal

⁵ A moderate or low tax rates will raise after tax reward to working, saving and investment. This will in turn have a positive effect on growth.

economic growth (Figure 5C). Similarly, the one-year lag of total expenditure had a significant positive association with economic growth (Figure 5D). These results are clear indications that increased government spending has accelerated the growth during this period. Thus, Tamil Nadu's policies relating to expenditure and taxes seem to stimulate the state's economic growth.

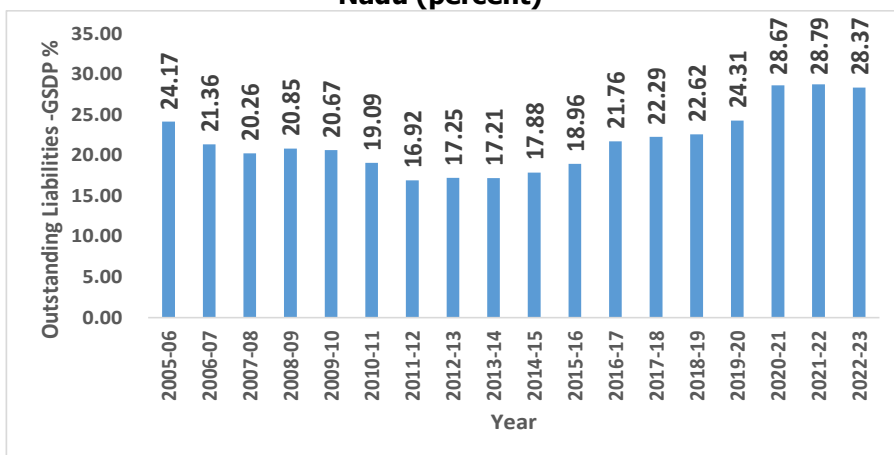
Figure 5: Impact of Fiscal Indicators on Economic Growth



Source (Basic Data): MOSPI Website for growth and Tamil Nadu Government budget documents for fiscal variables.

Figure 6 shows the outstanding liabilities (or public debt) of the state relative to GDP since 2005-06. After 2016-17, the debt ratio exceeded the 20 percent mark (the sustainable level) suggested by the New FRBM Review committee for all Indian states. In 2020-21, it had a sudden jump of 4.36 percentage points over the previous year due to the pandemic actions. After that, it stabilizes at the same level.

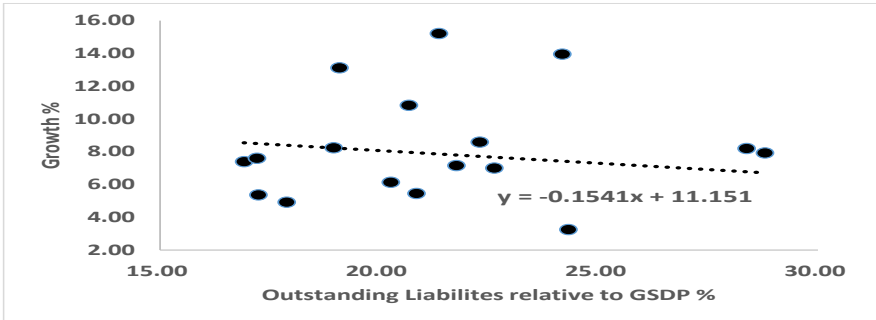
Figure 6: Outstanding Liabilities as percent of GDP in Tamil Nadu (percent)



Source: As in Figure 5.

In Tamil Nadu, from 2005-06 to 2022-23, the public debt-GDP ratio had a negative effect on real economic growth (Figure 7), but it is not significant. This means that during this period, public debt has neither adversely affected the growth or supported the growth. But in the future, higher debt ratio may adversely affect growth or reduction in debt-GDP ratio may induce growth. Therefore, the government needs to take appropriate strategies to control the debt in order to get rid of this adverse effect.

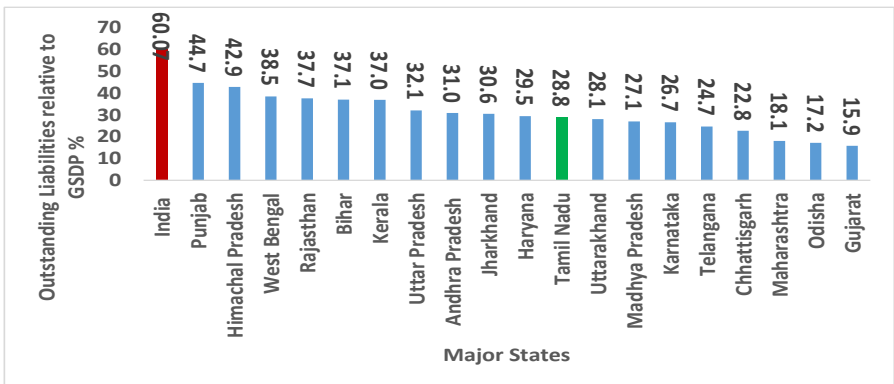
Figure 7: Impact of Outstanding Liabilities-GSDP ratio on Growth in Tamil Nadu



Source: As in Figure 5.

The interstate comparison reveals that the debt level exceeds the 20 percent mark (2021-22) not only in Tamil Nadu but also in all major states, except Maharashtra, Odisha and Gujarat (Figure 8). While 8 states have a lower debt ratio than Tamil Nadu, 10 other states have a higher rate than Tamil Nadu. For the Government of India, the FRBM committee suggested the 40 percent level. But its debt ratio (60 percent) is also very much higher than this mark (Figure 8).

Figure 8: Outstanding Liabilities-GSDP ratio of Indian States in 2021-22

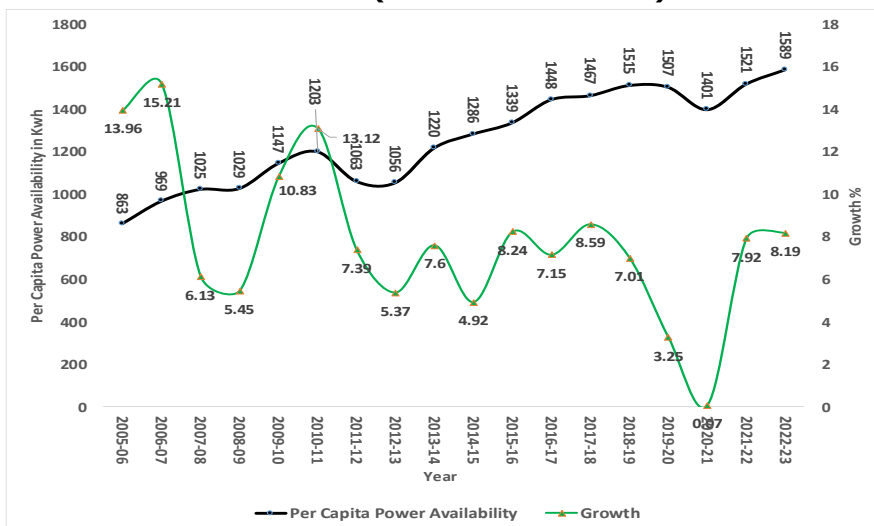


Source (Basic Data): State Finance Report of CAG of India for all except Kerala, Madhya Pradesh, Maharashtra, Telangana and West Bengal (for them, respective budget documents).

(vii) Power Availability and Growth

Figure 9 shows the trend in Tamil Nadu’s real GDP growth and per capita power availability (in Kwh.) from 2005-06 to 2022-23. The per capita power availability has been increasing over time. The growth path has shifted down after 2011-12. Growth depends on various factors, including power availability. As the availability of reliable and quality power at a competitive price to industries is essential making them to be globally competitive, which would in turn accelerate the growth, efforts should be made to increase the availability of power.

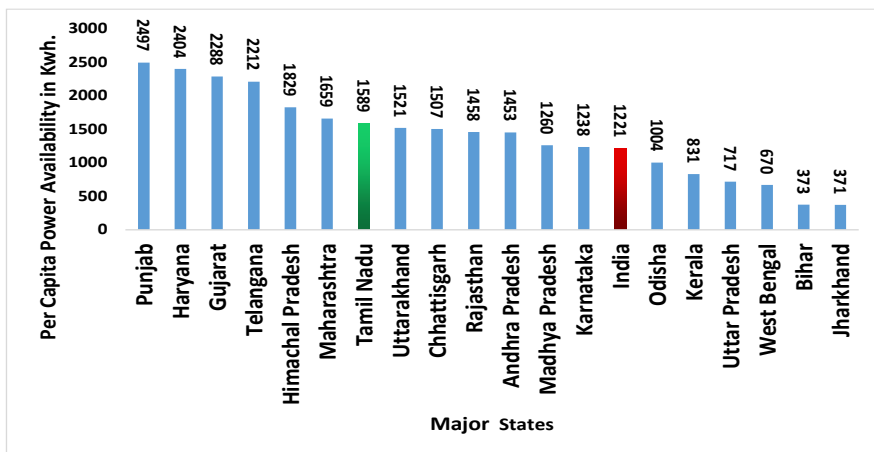
Figure 9: Per Capita Power Availability and Economic Growth in Tamil Nadu (2005-06 to 2022-23)



Source (Basic Data): RBI’s Handbook of Statistics on Indian States and MOSPI.

Interstate comparison reveals that Tamil Nadu (1589 kwh) ranked 7th among the major Indian states in 2022-23 in per capita power availability (Figure 10). Punjab had the highest per capita figure of 2497 kwh.

Figure 10: Per Capita Power Availability in Major Indian States in 2022-23



Source: RBI's Handbook of Statistics on Indian States.

(viii) Outlook for 2023-24

Despite the global slowdown and geopolitical upheavals, the recent NSO's estimates indicate that the Indian economy is projected to grow at 7.3 percent, which is higher than earlier estimates of 6.5 percent because of robust manufacturing, construction, and mining sector expansion. The average India IIP growth till November 2023 was 6.5 percent as against the average IIP growth of 5.5 percent (5.9 percent till November) in 2022-23 (Table 2), indicating increased economic activities at the all-India level. Since 2005-06, Tamil Nadu's average economic growth rate has stayed ahead of India's GDP growth. In 2022-23, Tamil Nadu grew at 8.19 percent registering a 1 percent higher growth than the national growth rate. The current economic landscape in the country is favorable to Tamil Nadu, making it conducive for the state to grow more than 1 percentage point higher than all India rate. The expected growth rate on this basis for 2023-24 is 8.3 percent.

Table 2: IIP Growth in India (percent)

Months	2022-23		2023-24	
	IIP	IIP Growth	IIP	IIP Growth
April	134.5	6.7	140.7	4.6
May	137.8	19.7	145.6	5.7
June	138.3	12.6	143.9	4
July	134.4	2.2	142.7	6.2
August	131.5	-0.7	145.8	10.9
September	133.8	3.3	142.1	6.2
October	129.5	-4.1	144.5	11.6
November	137.7	7.6	144	2.4
December	145.9	5.1		
January	147.4	5.8		
February	139.3	6		
March	151.7	1.9		
Average		5.5		6.5

Source: MOSPI

The government of Tamil Nadu has announced various policies to promote growth in 2023-24. Some major ones are:

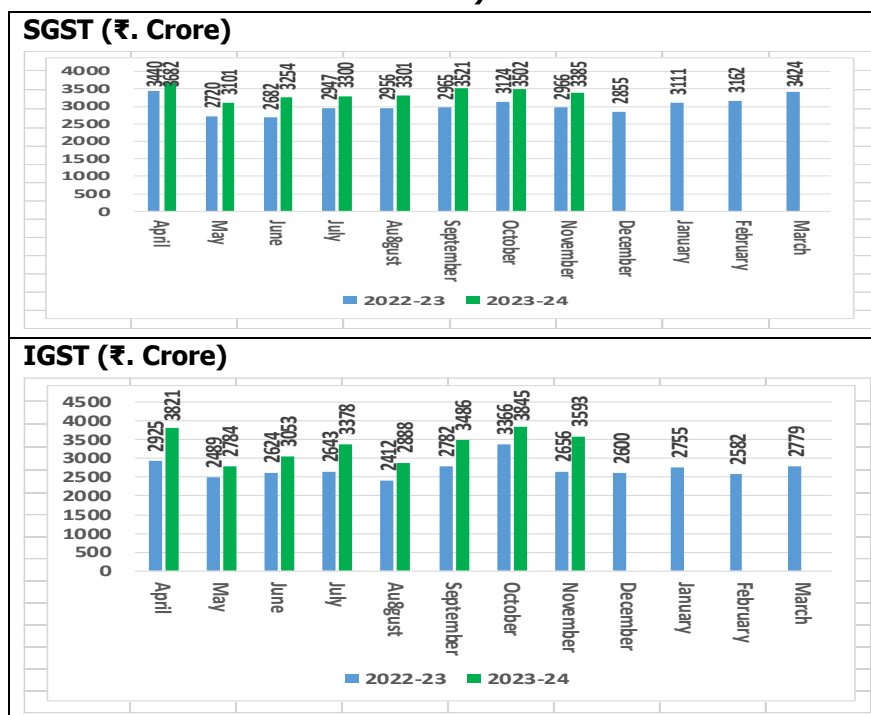
- (i) Tamil Nadu Semiconductor and Advanced Electronics Policy 2024
- (ii) Tamil Nadu Ethanol Blending Policy 2023
- (iii) Tamil Nadu City Gas distribution Plan 2023
- (iv) Tamil Nadu M-Sand Policy 2023
- (v) Special Scheme for Technical Textiles, MMF Yarn from Recycled Products, MMF Fabric and Apparel Manufacturing 2023
- (vi) Tamil Nadu Logistics Policy and Integrated Logistics Plan 2023
- (vii) TN Electrical Vehicles Policy 2023

Monthly tax revenue collections data also reveal an increase in the level of economic activities in Tamil Nadu in 2023-24. For instances, Figure 11 portrays Tamil Nadu's SGST and IGST monthly collections for the last

two years.⁶ The growth in both SGST and IGST revenue collections from April to November 2023-24 have been robust (compared to 2022-23) indicating an increased level of economic activities in Tamil Nadu in 2023-24.

Monthly VAT revenue collection in Tamil Nadu is also higher in almost all months in 2023-24 than in 2022-23 (Figure 12). Total stamp duty and registration fees revenue collection including stamp paper charges is also higher in almost all months in 2023-24 than in 2022-23 (Figure 13). These data clearly provide the evidence for increased economic activities in Tamil Nadu in 2023-24.

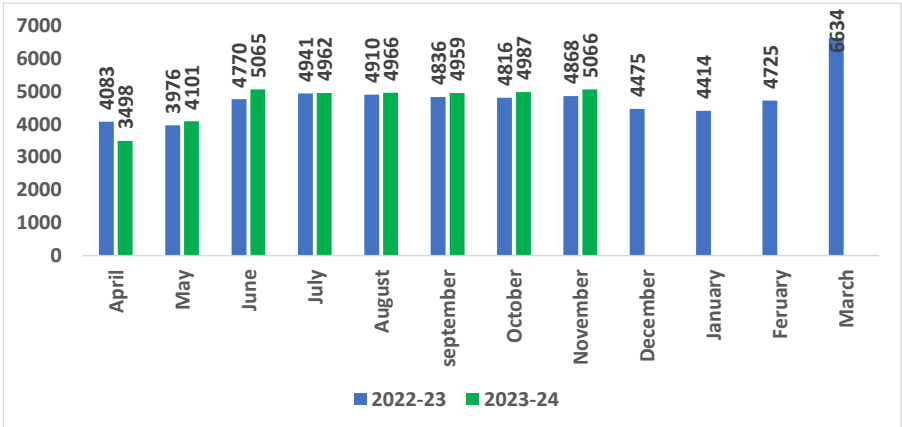
Figure 11: Monthly SGST and IGST Collections in Tamil Nadu (₹ Crore)



Source: GST Portal.

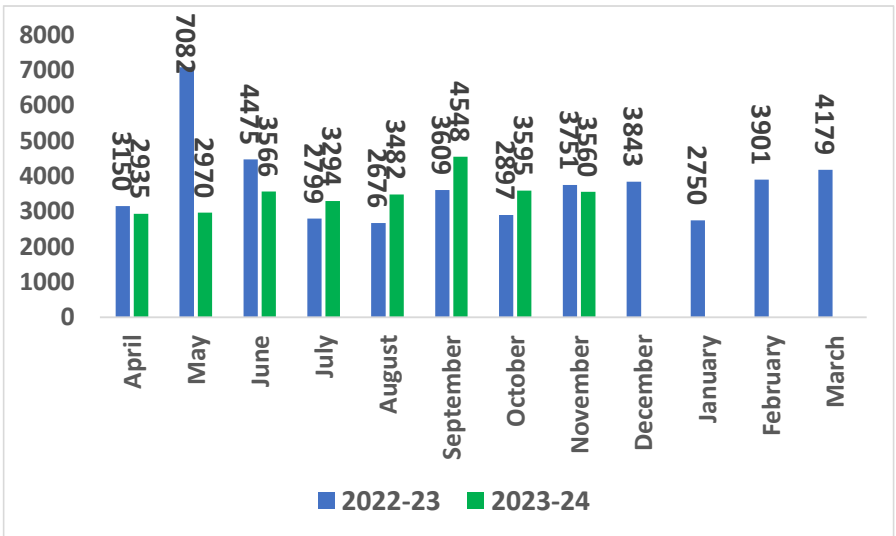
⁶ Data from December to March 2023-24 are not available.

Figure 12: Monthly VAT Collections in Tamil Nadu (₹ Crore)



Source: GoTN

Figure 13: Stamps and Registration Fees Collections in Tamil Nadu (₹. Crore)

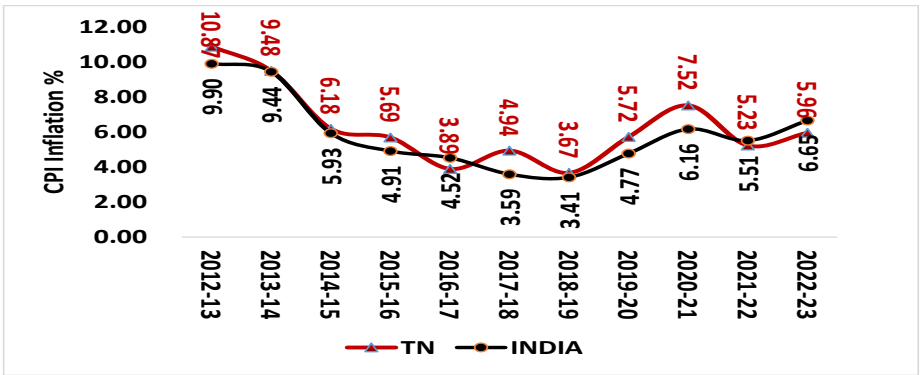


Source: As in Figure 12.

INFLATION

Rising prices are always a cause of concern for policy makers as they, in general, hurt the common people the most. Figure 14 plots the annual CPI inflation (2012 base) for Tamil Nadu and all India from 2012-13 to 2022-23. In the last two years, Tamil Nadu's inflation has been lower than India's inflation. However, from 2012 to 2022-23, the average inflation was 6.3 percent in Tamil Nadu and 5.9 percent in India. Tamil Nadu's inflation was higher than all India's inflation in 8 out of 11 years (mainly because of fuel and light subgroups' inflation).

Figure 14: CPI Inflation: Tamil Nadu Vs. India



Sources (Basic Data): MOPI.

It is also noticed that for the last five months (i.e., from September 2023 to January 2024) monthly inflation for Tamil Nadu was lower than all India inflation (Table 3).

Table 3: Monthly CPI Inflation (from April 2023 to November 2023)

Months	April	May	June	July	August	September	October	November	December	January
TN	5.61	4.57	6.41	8.95	7.76	4.49	4.00	4.92	4.97	4.12
INDIA	4.70	4.31	4.87	7.44	6.83	5.02	4.87	5.55	5.69	5.10

Sources (Basic Data): MOPI.

EMPLOYMENT

Employment is crucial for both economic and social development. It is essential for financial stability and security. According to the Periodic Labour Force Survey (PLFS) conducted by NSSO since 2017-18, the estimates of the labour force in the usual status (principal status + subsidiary status) includes the persons who either worked or were available for work for 365 days preceding the date of survey and persons from among the remaining population who worked at least 30 days during the reference period of 365 days preceding the date of survey.

At an aggregate level, Tamil Nadu’s Labour Force Participation Rate (LFPR) has always been higher than the national LFPR. Tamil Nadu’s LFPR increased from 59.8 percent in 2017-18 to 62.3 percent in 2022-23 with a peak in 2020-21 at 64.7 percent (Table 4). The slight decline in the State’s LFPR after peaking in 2020-21 is observed in both the rural and urban categories.

Table 4: Labour Force Participation Rate (percent) in Tamil Nadu and India*

Year	Tamil Nadu			India		
	Rural	Urban	Total	Rural	Urban	Total
2017-18	62.4	56.9	59.8	53.6	51.6	53
2018-19	64.8	55.7	60.4	54.5	51.6	53.6
2019-20	67.0	59.2	63.3	58.5	53.5	56.9
2020-21	69.1	59.5	64.7	60.4	53.7	58.4
2021-22	68.2	58.8	63.9	60.8	54.5	58.9
2022-23	66.3	57.1	62.3	64.2	55.1	61.6

Source: Annual Report, PLFS (various years), NSSO; * Age group 15-59 years

While the LFPR for India has always been lower than that for Tamil Nadu, it has been continuously increasing from 53 percent in 2017-18 to 61.6 percent in 2022-23. The gap between Tamil Nadu’s rate and India’s rate in 2017-18 was 6.8 percentage points, which narrowed down to 0.7 percent in 2022-23.

Interestingly, in both Tamil Nadu and India, the rural rate has always been higher than the urban rate. The LFPR for male has been higher than that for female in both Tamil Nadu and India (Table 5). While the female LFR rate in Tamil Nadu increased from 36.8 percent in 2017-18 to 43.9 percent in 2022-23, the male LFR rate declined from 84 percent to 81.2 percent. At the same period, both female and male LFR rates increased at India level.⁷

Table 5: Labour Force Participation Rate for Male and Female (percent)

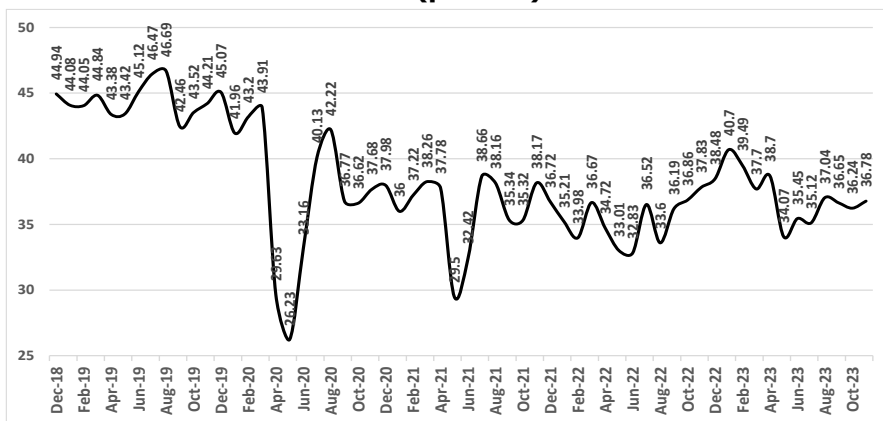
Year	Tamil Nadu		India	
	Male	Female	Males	Females
2017-18	84	36.8	80.2	25.3
2018-19	82.2	40.2	80.3	26.5
2019-20	84.4	43.8	81.2	32.3
2020-21	84.6	46.3	81.2	35.2
2021-22	84.1	44.4	81.8	35.6
2022-23	81.2	43.9	83.2	39.8

Sources: As in Table 3.

The CMIE monthly data also suggest that, at least since August 2019, there has been a steady decline in labour participation rate (LPR) in Tamil Nadu (Figure 15). This longer-term decline in labour participation rate in Tamil Nadu could be attributed to general economic shocks, such as demonetization and the introduction of GST, on the one hand, and growing international competition, on the other.

⁷ Unemployment rate (for 15 years and above) for Tamil Nadu increased from 7.5 percent in 2017-18 to 7.9 percent in 2022-23 (for India it declined from 6 percent to 5.1 percent in the same period).

Figure 15: Monthly Labour Force Participation Rate in Tamil Nadu (percent)



Source: CMIE data base

Tamil Nadu’s LPR dipped suddenly in April 2020 and further in May 2020 with a brief recovery in August 2022 (42.22 percent) and it continued to decline till August 2022. Thereafter, it improved continuously till January 2023 but reduced to 34 percent in May 2023. After that, it started increasing slowly. This trend is consistent with the trend shown in PLFR survey data. Literature evidence suggests that every 1 percent increase (decrease) in employment leads to 0.6 percent increase (decrease) in GDP growth. Following the past trend, it is expected to increase in the coming months.

CREDIT

The linkage between economic growth and bank credit is well established in literature. A key measure of bank credit called the credit-deposit ratio (CDR) indicates how much of a rupee of deposit goes towards the credit markets in a particular state/region. CDR is a useful indicator to measure the interstate disparities in banking development and the role of banking in economic activity.

Among major states, Tamil Nadu continues to rank high on the CDR which is reflective of its higher economic activity in the country. Table

6 shows the CDR of Tamil Nadu and India from 2017-18 to 2022-23. Both the all-India and Tamil Nadu's CDR decreased from 76.7 percent to 72.1 percent percent and from 113.5 percent to 103.07 percent, respectively between 2017-18 and 2021-22 partly due to the pandemic impact. In 2022-23, the CDR of both Tamil Nadu and All India increased, indicating that the economic activity is gradually picking up at the state and national level. The very high CDR essentially implies deposits flying into Tamil Nadu from outside.

Table 6: Deposit and Bank Credit of Scheduled Commercial Banks (₹ Crore)

Year	Tamil Nadu			All India		
	Deposits	Credits	Credit-Deposit Ratio	Deposits	Credits	Credit-Deposit Ratio
2017-18	716700	813600	113.5	11434400	8767000	76.7
2018-19	798738	891030	111.6	12639009	9897595	78.3
2019-20	899038	981665	109.2	13748655	10518812	76.5
2020-21	1008731	1046952	103.8	15443510	11078050	71.7
2021-22	1117412	1158606	103.7	17008795	12258748	72.1
2022-23	1211394	1325333	109.4	18742311	14198006	75.8

Source: RBI's Handbook of Statistics on Indian States.

Table 7 presents the CDR of the top six states from 2017-18 to 2022-23. Although Tamil Nadu stays in the top 3, but behind Andhra Pradesh and Telangana in some year, its credit and deposit amounts are significantly higher than both Andhra Pradesh and Telangana in absolute terms. For example, in 2022-23, Tamil Nadu disbursed credits of ₹13,25,333 crore against ₹6,41,272 crore by Andhra Pradesh and ₹ 7,76,338 crore by Telangana. Tamil Nadu made deposits of ₹12,11,394 crore compared to ₹4,29,719 crore by Andhra Pradesh and ₹6,93,887 crore by Telangana.

Table 7: Credit Deposit Ratio in Top 6 States

Year	Tamil Nadu	Andhra Pradesh	Telangana	Maharashtra	Rajasthan	Gujarat
2017-18	113.5 (1)	112.6 (2)	107.4 (3)	106.9 (4)	76.6 (5)	75.6 (6)
2018-19	111.6 (3)	124.3 (1)	113.1 (2)	93.1 (4)	85.8 (6)	87.6 (5)
2019-20	109.2 (3)	128.9 (1)	110.5 (2)	89.4 (4)	83.9 (5)	82.8 (6)
2020-21	103.8 (2)	135.2 (1)	99.3 (3)	79.2 (6)	81.9 (4)	79.5 (5)
2021-22	103.7 (2)	142.7 (1)	103.4 (3)	77.8 (6)	83.4 (4)	81.7 (5)
2022-23	109.4 (3)	149.2 (1)	111.9 (2)	85.0 (5)	86.6 (4)	80.6 (6)

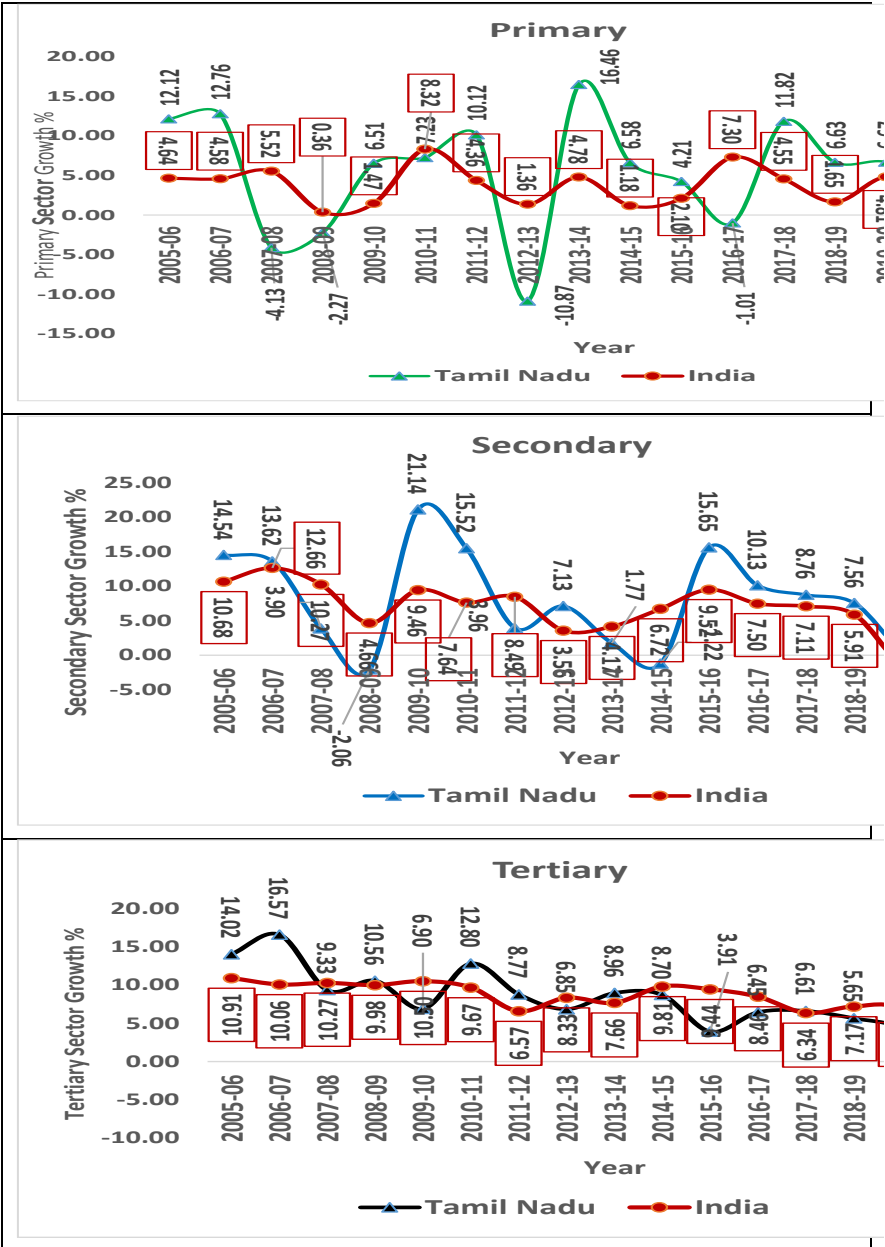
Source: RBI's Handbook of Statistics on Indian States.

SECTORAL GROWTH ANALYSES

(i) Sectoral Growth Pattern

Structurally, Tamil Nadu's economy and its growth patterns are like that of other large industrialized states and India's economy. However, it is noticed that Tamil Nadu was one of the few state economies that maintained a positive GSDP growth when India's GDP growth slipped to - 5.8 percent in 2020-21 due to the pandemic impact. In 2022-23, the share of the primary, secondary and the tertiary sectors in GVA of Tamil Nadu were 12.6 percent, 34.1 percent and 53.1 percent, respectively. Since, 2012-13, a downward shift in the overall economic growth path is observed in Tamil Nadu's economy as in many other similar states and in all India economy. Such a shift is also noticeable in the growth of the tertiary (services) sector, which has been the prime driver of Tamil Nadu's economy (Figure 16).

Figure 16: Sectoral Growth (percent) in Tamil Nadu and All India



Source (Basic Data): MOSPI.

From 2005-06 to 2010-11, the state's services sector grew at a double-digit rate in four out of six years with a peak of 16.6 percent in 2006-07. An analysis of the temporal trend indicates that the average growth rate fell from 11.3 percent (2005-06 to 2011-12) to 5.9 percent (2012-13 to 2021-22) with a revival in growth to 7.8 percent in 2022-23.

The secondary sector (comprising manufacturing, electricity, gas, water supply etc. and construction) also recorded a double-digit growth in four out of six years, from 2005-06 to 2010-11 with a peak of 14.54 percent in 2005-06 (Figure 16). The average growth rate declined from 10.09 percent (2005-06 – 2011-12) to 6.2 percent (2012-13-2021-22), although the sector did well in 2015-16 and 2016-17 by growing at 15.65 percent and 10.1 percent, respectively. During the past two years, it grew above 9 percent, indicating signs of increased economic activities in recent years.

Tamil Nadu tops in the production of banana, coconut, and clove in India. It is also one among the leading producers of sugarcane, cotton, turmeric, *kambu*, [maize](#), [rye](#), [groundnut](#) and oil seeds. Tamil Nadu is India's 4th largest producer of rice behind West Bengal, Uttar Pradesh, and Punjab. Tamil Nadu's Primary sector (consisting of agriculture crops, livestock, forestry and logging, fishing and aquaculture, and mining and quarrying) grew at an average rate of 4.95 percent from 2012-13 to 2022-23. This rate is also relatively low, as compared to its average growth of 6.05 percent during 2005-06 to 2011-12. Within the primary sector, during 2012-13 to 2022-23, the average growth of agriculture (crop) and fishing declined while that of livestock, forestry and mining increased (Table 8).

It is observed from Figure 16 that the growth paths of all these three broad sectors in Tamil Nadu are more volatile than the growth paths of respective sectors of the Indian economy. The growth paths of primary and secondary sectors are relatively more volatile as compared to the services growth curve. With a significant presence of MSMEs in Tamil Nadu, along with agriculture being the mainstay for nearly 42 percent of the workers in the state, a stable growth of the primary and secondary sectors

is critical for sustained economic growth of the state. As the growth path of the service sector has witnessed a structural downward shift since 2012-13, accelerating the growth of this sector is also essential to reach the target of the trillion-dollar economy.

Table 8: Average Rate of Growth of Sub Sectors from 2005-06 to 2011-12 and from 2012-13 to 2022-23

Sub Sectors	2005-06 to 2011-12 (1)	2012-13 to 2022-23 (2)	Difference (2)-(1)	2021-22 to 2022-23
Agriculture	6.40	2.06	-4.35	5.20
Livestock	6.40	10.33	3.93	4.72
Forestry and logging	2.30	7.24	4.94	1.06
Fishing and aquaculture	8.26	3.15	-5.11	5.29
Mining and quarrying	3.49	7.86	4.36	28.13
Primary	6.05	4.95	-1.10	5.30
Manufacturing	10.86	7.31	-3.56	10.07
Electricity, gas, water supply etc.	-3.09	2.51	5.59	4.47
Construction	11.64	4.63	-7.01	7.76
Secondary	10.09	6.19	-3.89	9.20
Trade, hotels, and restaurants	10.03	5.77	-4.26	6.57
Transport, storage, communication etc.	12.33	2.54	-9.79	7.49
Financial services	13.04	7.04	-6.00	7.42
Real estate, professional services etc.	13.26	6.76	-6.50	6.97
Public administration	7.39	2.36	-5.03	2.56
Other services	10.53	8.29	-2.25	8.93
Tertiary	11.28	5.93	-5.35	7.09
TOTAL GSVA at basic prices		5.85		7.65
Taxes on Products-subsidies on products		9.81		11.53
GSDP	10.30	6.21	-4.09	8.06

Source (Basic Data): MOSPI.

Within the Secondary sector, the average growth of both manufacturing and construction declined during 2012-13 to 2022-23 (Table 8). However, the growth rates have witnessed an increase during the last two years. The State Government announced the New Industrial Policy 2021 to achieve an annual growth of 15 percent in the manufacturing sector and provide an impetus to job creation. The average growth of all sub sectors of tertiary sector has slowed since 2012-13. It was more pronounced in transport, storage, communication, real estate and financial services. However, the growth rate of many of these sectors picked up since 2021-22. It provides the hope for reaching double-digit growth soon.

(ii) Structure of GSDP

In line with other large states, the structure and composition of Tamil Nadu's GSDP has been shifting towards non-primary sectors enabled by its high performance on human development and livelihood indicators. The share of the primary sector in Tamil Nadu's total GSDP (in 1999-00 prices) was about 17 percent in 1999-00 and it declined to 12.1 percent in 2011-12, and further to 10.4 percent in 2022-23. The secondary sector's share in state's GSDP increased from 29.6 percent in 1999-00 to 33.2 percent in 2022-23. During the same period, the tertiary sector stabilized to 46 percent (Table 9, excluding taxes and subsidies). This trend is likely to continue in the coming years.

Table 9: Share of GSDP (percent) in Tamil Nadu at 2011-12

Prices

Sub Sectors	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Primary	12.11	10.24	11.09	11.26	10.84	10.02	10.32	10.28	10.62	10.97	10.85	10.42
Secondary	33.56	34.12	32.27	30.39	32.47	33.37	33.43	33.60	32.76	32.49	32.86	33.19
Tertiary	46.55	47.21	47.80	49.52	47.54	47.23	46.37	45.79	46.26	46.05	45.39	45.23
Taxes - Subsidies	7.78	8.43	8.84	8.83	9.15	9.38	9.89	10.33	10.36	10.48	10.90	11.17
GSDP	100	100	100	100	100	100	100	100	100	100	100	100

Source (Basic Data): MOSPI

(iii) Sectoral Shares and their Growth Rates in Tamil Nadu, Gujarat, Karnataka and Uttar Pradesh

Table 10 presents average sectoral growth rates of India's four major economies namely Tamil Nadu, Gujarat, Karnataka, and Uttar Pradesh from 2011-12 to 2021-22. Tamil Nadu's GSDP growth was behind Gujarat and Karnataka by 2.41 percent and 1.4 percent, respectively. But it was 0.7 percent higher than Uttar Pradesh. In terms of the GSDP composition, Uttar Pradesh (45 percent), Tamil Nadu (47 percent) and Karnataka (55 percent) have a dominant tertiary sector which also is the prime driver of growth as it grows at 5.91 percent, 5.74 and 8.27 percent in their respective state. Gujarat has a 40 percent GSDP share of the secondary sector, which grew at nearly 10 percent; but its tertiary sector share lags other three economies. Tamil Nadu must improve the performance of both secondary and tertiary sectors to maintain its position as India's second largest economy and become the top state in the future.

Table 10: Sectoral Growth and Shares in Tamil Nadu, Gujarat, Karnataka and Uttar Pradesh (2011-12 to 2021-22)

Sector	Tamil Nadu		Gujarat		Karnataka		Uttar Pradesh	
	Avg. Growth (percent)	Avg. Share (percent)	Avg. Growth (percent)	Avg. Share (percent)	Avg. Growth (percent)	Avg. Share (percent)	Avg. Growth (percent)	Avg. Share (percent)
Primary	5.06	10.78	4.58	16.68	6.20	10.75	4.11	23.50
Secondary	5.89	32.85	9.78	39.34	5.42	23.62	6.18	25.65
Tertiary	5.74	46.88	7.29	31.62	8.27	55.53	5.91	45.22
GSA	5.64	90.51	7.76	87.63	7.12	89.90	5.41	94.38
GSDP	6.01	100	8.41	100	7.43	100	5.31	100

Source (Basic Data): MOSPI.

SOCIAL INDICATORS

Tables 11 A and B provide the details of select social and demographic indicators in major Indian states. Tamil Nadu ranks first in Social Progress Index (SPI-2022) and Gross Enrolment Ratio in Higher Education (GER-HE,

2020-21). It ranks second (next only to Kerala) in poverty head count ratio (2019-21), urbanization (2023), Infant Mortality Rate (IMR, 2020), and (low) birth rate. But it ranks third in life expectancy at birth (2016-20), fifth in the proportion of children underweight (weight for age, 2019-21) and eighth in death rates (2020).

Table 11 A: Social Indicators in Major (and Selective) Indian States

State	SPI (2022)	Rank	Poverty (2019-21)	Rank	Urbanization (2023)	Rank	GER-HE (2020-21)	Rank	IMR (2020)	Rank
Tamil Nadu	63.33	1	2.2	2	53.68	2	46.9	1	13	2
Himachal Pradesh	63.28	2	4.93	4	10.31	19	38.7	4	17	4
Kerala	62.05	3	0.55	1	75.32	1	43.2	2	6	1
Punjab	60.23	4	4.75	3	41.12	8	26.3	10	18	5
Uttarakhand	58.26	5	9.67	10	35.9	11	25.7	12	24	11
Karnataka	56.77	6	7.58	8	44.41	6	36	6	19	6
Haryana	54.15	7	7.07	7	42.1	7	31.1	8	28	14
Gujarat	53.81	8	11.66	11	48.73	3	22.2	14	23	9
Andhra Pradesh	53.6	9	6.06	6	36.47	10	37.2	5	24	10
West Bengal	53.13	10	11.89	12	36.79	9	21.3	15	19	7
Telangana	52.11	11	5.88	5	47.57	5	39.1	3	21	8
Chhattisgarh	51.36	12	16.37	15	27.12	13	19.6	17	38	18
Maharashtra	50.86	13	7.81	9	48.53	4	34.9	7	16	3
Rajasthan	50.69	14	15.31	13	26.61	14	26.1	11	32	15
Uttar Pradesh	49.16	15	22.93	17	24.03	16	23.2	13	38	17
Odisha	48.19	16	15.68	14	18.83	17	20.7	16	36	16
Madhya Pradesh	48.11	17	20.63	16	28.99	12	27.1	9	43	19
Bihar	44.47	18	33.76	19	12.28	18	15.9	19	27	13
Jharkhand	43.95	19	28.81	18	26.18	15	17	18	25	12

Source: SPI-IFC and EAC-PM; Poverty-NITI Aayog, 2023; Urbanization-Report of the Technical Group on Population Projections (2020); GER-HE: Economic Survey; IMR-SRS Bulletin, 2022.

Table 11 B: Social Indicators in Major (and Selective) Indian States

State	Birth Rate (2020)	Rank	Death Rate (2020)	Rank	LEB (2016-20)	Rank	Children underweight (2019-21)	Rank
Tamil Nadu	14	2	6	8	73	3	22	5
Himachal Pradesh	15	6	7	15	74	2	26	6
Kerala	13	1	7	16	75	1	20	2
Punjab	14	3	7	17	73	5	17	1
Uttarakhand	17	10	6	12	71	7	21	3
Karnataka	17	9	6	10	70	13	33	14
Haryana	20	13	6	9	70	12	22	4
Gujarat	19	12	6	5	71	9	40	18
Andhra Pradesh	16	7	6	11	71	8	30	8
West Bengal	15	4	6	3	72	6	32	13
Telangana	16	8	6	7	70	11	32	11
Chhattisgarh	22	14	8	19	65	19	31	10
Maharashtra	15	5	6	4	73	4	36	16
Rajasthan	24	16	6	6	69	16	28	7
Uttar Pradesh	25	18	7	14	66	18	32	12
Odisha	18	11	7	18	70	10	30	9
Madhya Pradesh	24	17	7	13	67	17	33	15
Bihar	26	19	5	2	70	15	41	19
Jharkhand	22	15	5	1	70	14	39	17

Source: Birth rate and Death rate-SRS Bulletin, 2022.LEB-RBI's Handbook of Statistics on Indian States; and Children underweight-NFHS-IV.

CLIMATE CHANGE⁸

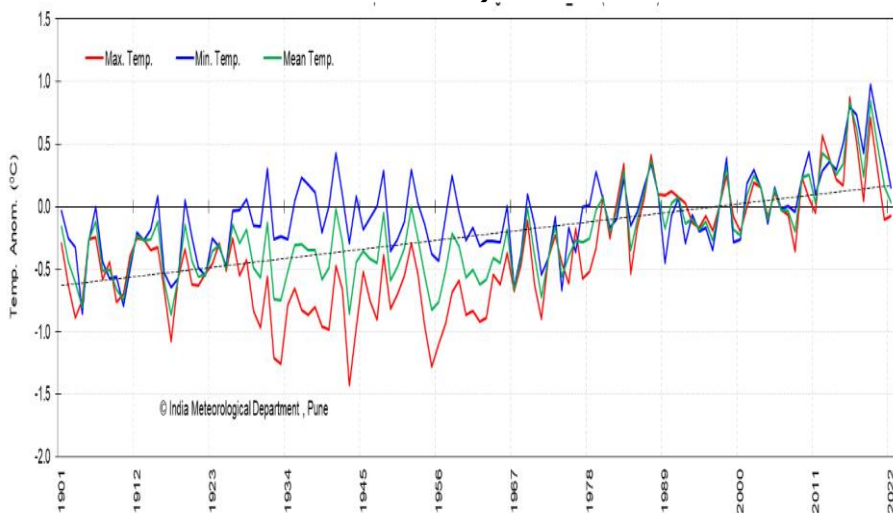
Tamil Nadu has a tropical climate with high temperatures and humidity with little variation in summer and winter temperatures due to its proximity to the sea. It receives most of its rainfall during the last three months of the year. This heavy reliance on post-monsoon rainfall leads to both flooding and droughts, impacting agriculture and livestock. The state has also experienced a greater incidence of cyclonic events (Vardah in 2016; Ockhi in 2017; Gaja in 2018; Michaung in 2023) and floods (2015 and 2017) recently, which is partially attributable to the changing climatic conditions.

⁸ Dr. K.S. Kavikumar, Professor of Madras School of Economics has provided inputs for this section.

Current Climate Variability and Trend

a. Temperature: The variation of annual maximum, minimum and mean land surface temperature anomalies over the state for the period 1901-2022 is shown in Figure 17. The increasing trends observed in maximum, minimum and mean annual temperature over the period 1901-2022 are respectively, 0.82 °C, 0.51 °C, and 0.67 °C per 100 years. The five warmest years on record for Tamil Nadu are 2019 (+0.848 °C), 2016 (+0.837 °C), 2017 (+0.624 °C), 2020 (+0.493 °C), and 2012 (+0.427 °C) – all in the recent past.

Figure 17: Variations in Annual Maximum, Minimum, and Mean Land Surface Air Temperature Anomalies over Tamil Nadu (1901 to 2022)

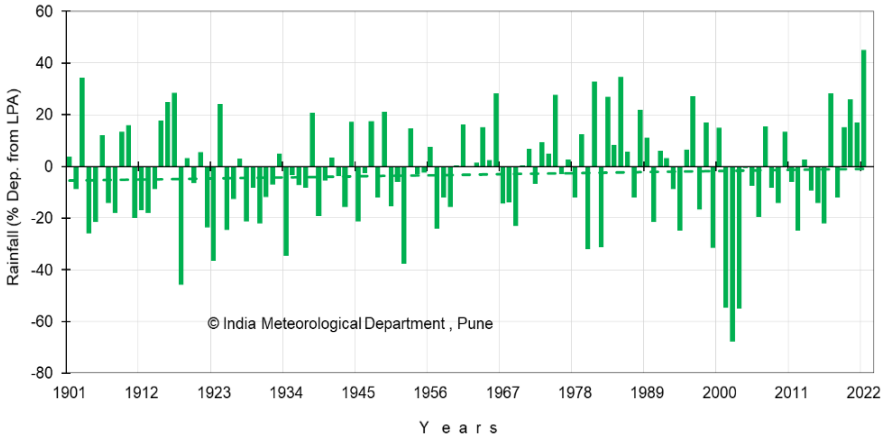


Source: IMD (2022)

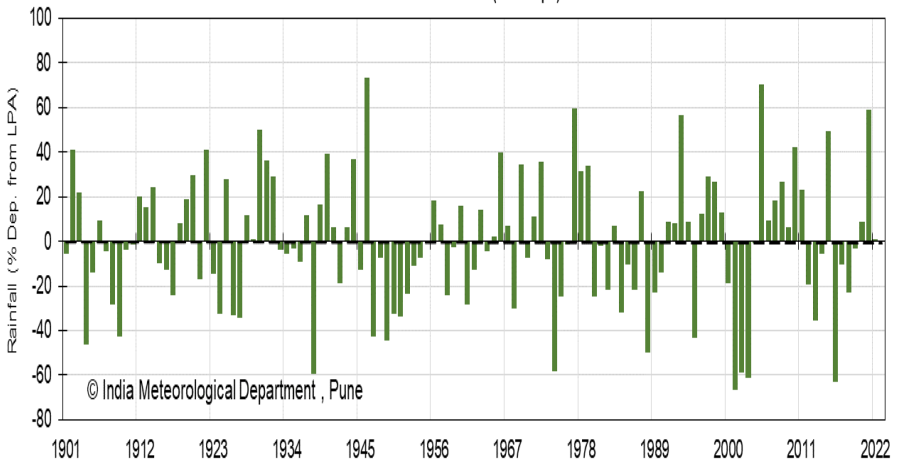
b. Rainfall: Figure 18 shows the percentage departure of Southwest monsoon, Northeast monsoon, and annual rainfall for the state for the period, 1901-2022 – with the deviations measured with respect to the Long Period Average for the period 1961-2020. There is a discernible downward trend in the annual rainfall in Tamil Nadu.

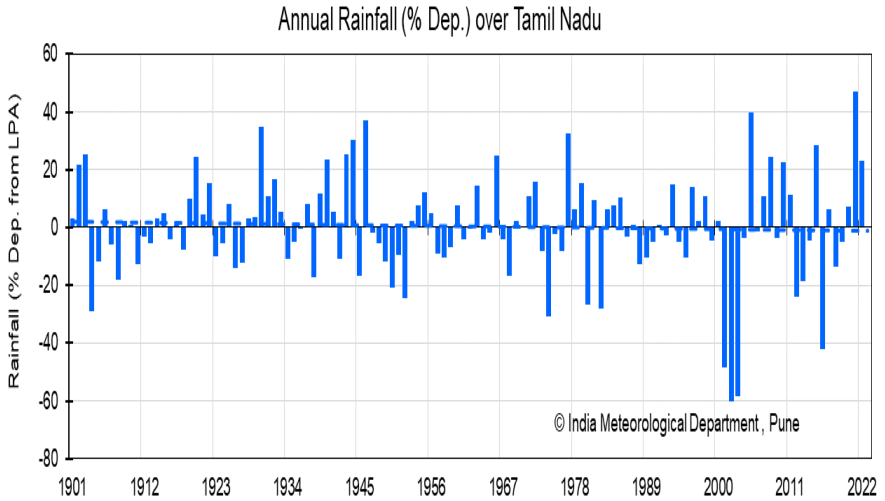
Figure 18: Percentage Departure of Southwest Monsoon, Northeast Monsoon, and Annual Rainfall over Tamil Nadu (1901 to 2022)

Southwest Monsoon Season Rainfall (% Dep.) over Tamil Nadu



Northeast Monsoon Rainfall (% Dep.) over Tamil Nadu



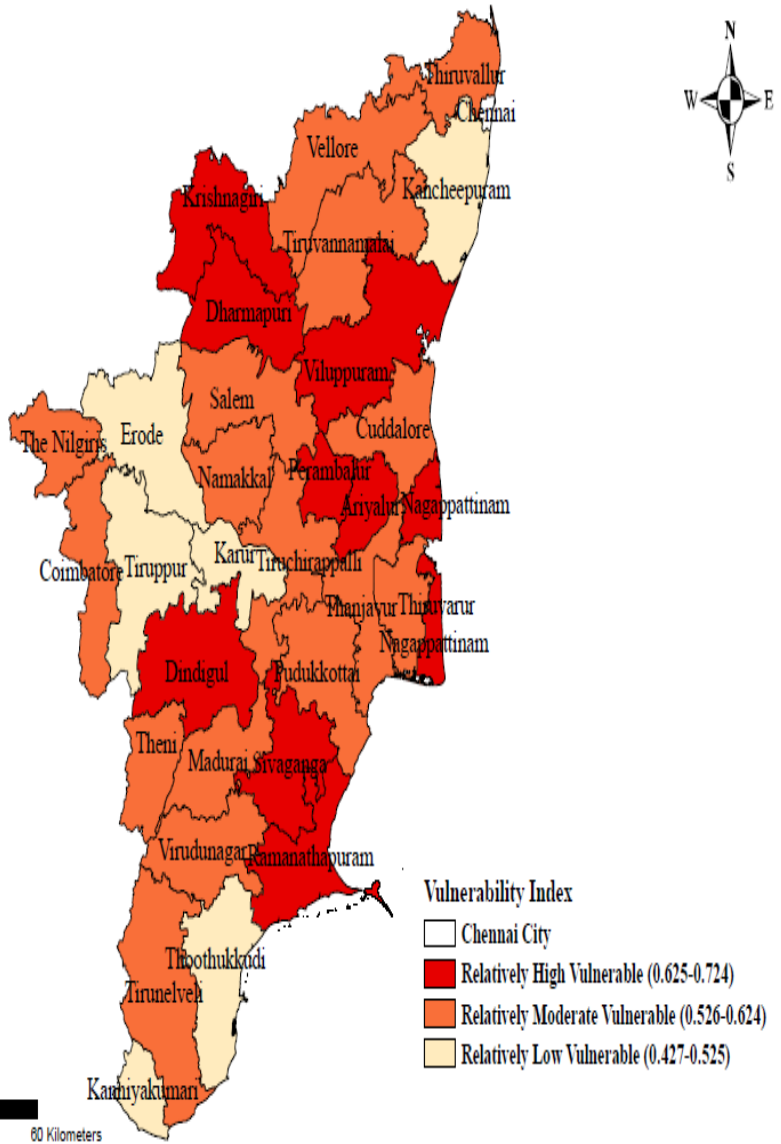


Source: IMD (2022)

c. Climate Change Risk and Vulnerability: Map 1 shows the relative climate vulnerability of the districts of Tamil Nadu based on a common framework assessed by the Department of Science and Technology (DST, 2021⁹). The climate change vulnerability indices for states and districts are constructed using 14 indicators: percent of BPL population, income shares from natural resources, share of horticulture in agriculture, marginal and small landholdings, yield variability of food grains, area covered under crop insurance, area under rainfed agriculture, forest cover per 1000 rural population, women’s participation in workforce, MGNREGA, road and railway density, density of health care workers, vector borne diseases, and water borne diseases. The composite index value lies between 0 -1. Tamil Nadu falls into low vulnerability category with score 0.46. While Ariyalur, Perambalur, Dharmapuri, Ramanathapuram, Nagapattinam, Krishnagiri, Dindigul, Sivagangai, and Villupuram are categorized as relatively highly vulnerable districts, Thoothukudi, Karur, Kanchipuram, Tirupur, Erode, Tiruvannamalai, and Kanniyakumari fall under relatively low vulnerable district category.

⁹ https://dst.gov.in/sites/default/files/Full_percent20Report_percent20_percent281_percent29.pdf .

Map 1: Climate Vulnerability of Tamil Nadu Districts



Source: DST (2021)

d. Response Strategies: Some of the important policy initiatives taken by the Government of Tamil Nadu to combat climate change include:

- The state of Tamil Nadu set up three key missions: the Climate Change Mission, the Green Tamil Nadu Mission and the Tamil Nadu Wetlands Mission, devoting about \$90 million to implementing them. The independent climate change mission is first of its kind in India.
- Tamil Nadu has set aside Rs. 1000 crore Green Fund to finance projects to mitigate climate change impacts.
- The state has also launched a District Climate Mission initiative across all 38 districts. The innovative plan institutionalizes adaptation at all levels of local government planning, from background research to training and groundwork implementation. Key departments of water, public works, energy and transport will now have climate adaptation as part of their remit. This type of approach to adaptation is a first for India and arguably one of the best existing examples globally of "mainstreaming adaptation."
- There has also been significant effort to climate-proof existing sectoral plans and build the capacity of public officials.

The state has also set for itself some ambitious goals, including:

- To achieve carbon neutrality well ahead of the national target of 2070. While the plan to usher in carbon neutrality through circular economy concepts seems appropriate, the groundwork for the same could be quite demanding given the current state of development and pressing need to enhance living standards.
- To enhance the green cover in the state from 23.7 percent to 33 percent in ten years. More than planting, efforts should be directed towards maintaining the saplings if the state wants to be anywhere near such ambitious targets.

GROWTH PROSPECTS FOR 2023-24 AND 2024-25

This section presents alternative projected scenarios of Tamil Nadu's GSDP and its sectors for 2023-24 and 2024-25 with reference to the real GSDP.

(i) A Simple Projection based on Sectoral Prospects

This scenario considers 11 sub sectors and an additional item i.e., "taxes minus subsidies".¹⁰ Table 12 shows the details of 11 sub sectors and an additional item and their (GSDP real) shares in total GSDP and real growth rate in 2022-23. As indicated earlier, India's economy is expected to grow at 7.3 percent in 2023-24. In general, Tamil Nadu is a better performing state and is expected to grow faster than the all-India growth rate. Given a favorable economic environment, it is assumed that all the 11 sub sectors, along with taxes less subsidies, shall grow 0.5 percentage points higher rate than 2022-23 in 2023-24 and in 2024-25 (***Scenario 1***). Considering the growth of sub sectors and shares in GSDP, the overall GSDP real growth is estimated at 8.74 percent in 2023-24 and at 9.29 percent in 2024-25 (Table 12).

¹⁰ The outputs of these 11 sectors add up to GSDP at factor cost or GSVA which is then added to Taxes less of subsidies to arrive at the GSDP at market prices.

Table 12: Growth Projection for Sub sectors of Tamil Nadu Economy in 2023-24 and 2024-25 (Scenario 1)

Sectors	2022-23			Forecast for 2023-24		Forecast for 2024-25				
	GSDP	Grow th perce nt	Shar e	Assu med Grow th perce nt	Cont ri- butio n to Grow th	GSDP	Sha re	Assu med Grow th perce nt	Contri - butio n to Grow th	GSDP
Agriculture and Allied	146155	3.94	0.10	4.44	0.45	152642	0.10	4.94	0.48	160181
Mining and quarrying	5225	1.29	0.004	1.79	0.01	5318	0.00	2.29	0.01	5440
Manu- facturing	320608	10.40	0.22	10.90	2.41	355564	0.22	11.40	2.57	396109
Electricity, gas, etc	10137	1.05	0.01	1.55	0.01	10293	0.01	2.05	0.01	10504
Construction	151548	7.51	0.10	8.01	0.84	163687	0.10	8.51	0.88	177616
Trade, repair, hotels etc	145138	6.18	0.10	6.68	0.67	154829	0.10	7.18	0.70	165941
Transport, storage etc	69527	8.16	0.05	8.66	0.41	75550	0.05	9.16	0.44	82474
Financial services	84459	8.23	0.06	8.73	0.51	91833	0.06	9.23	0.54	100310
Real estate, etc.	209663	7.88	0.14	8.38	1.21	227235	0.14	8.88	1.28	247416
Public administratio n	32806	3.82	0.02	4.32	0.10	34224	0.02	4.82	0.10	35873
Other services	115769	10.49	0.08	10.99	0.88	128489	0.08	11.49	0.93	143248
taxes- subsidies	162286	10.86	0.11	11.36	1.27	180727	0.11	11.86	1.36	202168
GSDP (Real)	1453321	8.19	1.00	8.74	8.74	1580392	1.00	9.29	9.29	1727280

In scenario 2, it is assumed that only six major sub sectors (Agriculture and allied, Manufacturing, Construction, Trade, Hotels etc., Real Estate, and taxes minus subsidies) will register a 0.5 percent higher growth than 2022-23 in 2023-24 and in 2024-25. Other sectors shall grow at the same rate as in 2022-23. Under this scenario, the overall GSDP real growth is estimated at 8.63 percent in 2023-24 and at 9.08 percent in 2024-25 (Table 13).

Two more optimistic scenarios are considered with the assumption that all sub sectors will grow 1.2 percentage points higher than the previous year (**Scenario 3**) and only six major sub sectors will register a 1.2 percent higher growth over the previous year (**Scenario 4**). As per Scenario 3, real GSDP growth will be 9.44 percent in 2023-24 and 10.69 percent in 2024-25, whereas under Scenario 4, the real GSDP growth shall be 9.18 percent in 2023-24 and 10.17 percent in 2024-25 (not shown).

Table 13 Growth Projection for Sub sectors of Tamil Nadu Economy in 2023-24 and 2024-25 (Scenario 2)

Sectors	2022-23			Forecast for 2023-24				Forecast for 2024-25		
	GSDP	Growth percent	Share	Assumed Growth percent	Contribution to Growth	GSDP	Share	Assumed Growth percent	Contribution to Growth	GSDP
Agriculture and Allied	146155	3.94	0.10	4.44	0.45	152642	0.10	4.94	0.48	160181
Mining and quarrying	5225	1.29	0.004	1.29	0.00	5292	0.00	1.29	0.00	5360
Manufacturing	320608	10.40	0.22	10.90	2.41	355564	0.23	11.40	2.57	396109
Electricity, gas, etc	10137	1.05	0.01	1.05	0.01	10243	0.01	1.05	0.01	10350
Construction	151548	7.51	0.10	8.01	0.84	163687	0.10	8.51	0.88	177616
Trade, repair, hotels etc	145138	6.18	0.10	6.68	0.67	154829	0.10	7.18	0.70	165941
Transport, storage etc	69527	8.16	0.05	8.16	0.39	75203	0.05	8.16	0.39	81343
Financial services	84459	8.23	0.06	8.23	0.48	91411	0.06	8.23	0.48	98935
Real estate, etc.	209663	7.88	0.14	8.38	1.21	227235	0.14	8.88	1.28	247416
Public administration	32806	3.82	0.02	3.82	0.09	34060	0.02	3.82	0.08	35361
Other services	115769	10.49	0.08	10.49	0.84	127910	0.08	10.49	0.85	141324
Taxes -subsidies	162286	10.86	0.11	11.36	1.27	180727	0.11	11.86	1.36	202168
GSDP (Real)	1453321	8.19	1.00	8.63	8.63	1578802	1.00	9.08	9.08	1722102

(ii) ARIMA Forecasting¹¹

It uses the real GSDP growth data for Tamil Nadu from 2005-06 to 2022-23. As the series is stationary, this series is used as such. AR(1) model suits the best the data. The estimated AR(1) results (using MLE) are shown in Table 14. The model forecasts that the real GSDP of Tamil Nadu growth will be 8.08 percent in 2023-24 and 8.04 percent in 2024-15.

Table 14: Estimation Results of ARIMA Model for GSDP Growth of Tamil Nadu

Variables	Coefficient	t-statistics
Constant	8.0163	6.705
AR(1)	0.3896	1.994
Sigmasq.	11.2131	1.908
Log-Likelihood	-47.3769	-

Thus, these models suggest that real GSDP growth of Tamil Nadu will be in the range between 8.08 percent and 9.44 percent in 2023-24 and between 8.05 percent and 10.69 percent in 2024-25. Assuming 6 percent inflation, the nominal growth will range between 14.08 percent and 15.44 percent in 2023-24 and between 14.05 percent and 16.69 percent in 2024-25.

CONCLUDING REMARKS

Based on the review of various economic indicators and their trends, the following key issues emerged:

(i) Tamil Nadu has the potential to register double –digit growth. It had actually grown at an average rate of 10.3 percent from 2005-06 to 2011-12. It has maintained a positive GSDP growth during the pandemic year.

¹¹ We have also used another machine learning approach. Utilizing the real growth rate data for Tamil Nadu economy from 1993-94 to 2022-23, it has identified the following parameters: number of windows=3 with lengths as 22, 20, and 15 and their weights as 0.1, 0.6 and 0.3 respectively. It provides the following forecasts of real GSDP of Tamil Nadu: 8.36 percent in 2023-24 and 9.68 percent in 2024-25 (Thanks to Dr. Rakesh Nigam, Professor of MSE for providing this projecton).

But after covid, it registered an average growth of 8 percent from 2021-22 to 2022-23. It is essential to take forward this growth momentum in the coming years to ensure double-digit growth to reach the 1 trillion-dollar economy.

(ii) Tamil Nadu ranks 4th in per capita income among major Indian states, and ranks 2nd in size of the economy. Since a few other economies are growing at a faster rate, Tamil Nadu economy needs to grow at its full potential level to sustain its economic position and continue to be a strong contributor to the national economy and improve its rank in per capita income.

(iii) As Tamil Nadu is highly globalized, its growth is more vulnerable to external shocks as compared to all India's growth pattern. There is a need for the government to undertake counter cyclical measures to protect the economy.

(iv) There has been a downward shift in the growth path of many states, including Tamil Nadu, since 2011-12. Such a shift is clearly witnessed in the growth of the tertiary (services) sector, which has been the prime driver of Tamil Nadu's economy. While this sector registered its peak growth (16.57 percent) in 2006-07, its average growth from 2012-13 to 2022-23 came down to 5.9 percent. The average growth of manufacturing also declined during this period, despite the fact that this sub sector has registered double-digit average growth in the last two years. Tamil Nadu must improve the performance of both manufacturing and tertiary sectors for sustained economic growth of the state.

(v) Despite the continuous fall of agriculture share (as in many states), its growth is highly volatile. Sustained growth of agriculture is important because it is vital for food security and this sector is the mainstay for 42 percent of workers in the state. Given limited availability of inputs like land and irrigation, the focus should be on productivity, technological progress, cultivation of highly remunerative and less water-intensive crops, increased usage of arable lands and proper water management for ensuring high output growth of this sector. Tapping the potential of deep-sea fishing and on shells on shrimp export will boost the growth of the fishing sector.

(vi) In 19 districts, the per capita income was below the state's per capita income in 2019-20. The per capita income of the top ranked district is 3.38 times larger than that of the poorest district. The regional disparity in per capita income needs to be reduced. For this, district-specific plan (for creating industrial corridors, infrastructure development etc.) needs to be developed to boost the income of these 19 districts. Increased income level of these districts will increase the overall GSDP of the state and its growth.

(vii) While Tamil Nadu ranks 7th in per capita power availability, its current level of power availability needs improvement. Ensuring reliable and quality power at a competitive price will accelerate growth.

(viii) While the prices in Tamil Nadu have come down below all-India prices in the last two years, they were higher than all-India in 8 out of 9 previous years. Government policies should ensure price stability, which is an important factor for sustainable growth.

(ix). Tamil Nadu is a better performing state in employment indicators. Its labour force participation rate was 6.8 percentage points higher than India's rate in 2017-18, but the gap narrowed down to 0.7 percent in 2022-23. As employment is important for economic development, it is essential for the state to improve its performance.

(x) In credit-deposit (C-D) ratio, Tamil Nadu (109 percent) compares well with India (76 percent) and other major economies (Maharashtra-85 percent, Gujarat-81 percent). This means that Tamil Nadu is able to fully avail of its own savings and some amounts of saving from other areas. It is essential to ensure that these investments are efficiently used for agriculture and industrial development in the state.

(xi) Tamil Nadu ranks first in the social progress index and is better performing state in many social indicators including poverty head count ratio, urbanization, infant mortality, low birth rate etc. It needs to improve its performance on a few other indicators -children under weight and death rate.

(xii) Tamil Nadu has experienced a greater incidence of cyclonic events and extreme weather events in recent years (2019, 2016, 2017, 2020, 2012). According to DST (2021), 9 districts are highly vulnerable. Tamil Nadu has set up an independent climate change mission, which is first of its kind in India. It has allocated Rs 1000 crore Green fund to mitigate climate change impacts.

(xiii) Tamil Nadu's fiscal policies relating to taxation and public expenditure are supportive of growth. Hikes in tax-GSDP ratio and expenditure -GSDP ratio will stimulate further growth. Since the current level of public debt is not supportive to growth, there is a need to control the growth of debt. Almost all major states have a similar problem. Tamil Nadu, along with others, should represent to the newly constituted 16th Finance Commission to support for debt consolidation and relief schemes/debt write off schemes as recommended by the 12th Finance Commission.

(xiv) Evidences indicate an increase in the level of economic activities in Tamil Nadu in 2023-24. The current economic landscape in the country is also favourable to Tamil Nadu's high growth. It is expected that Tamil Nadu's growth will be in the range of 8.08 percent and 9.44 percent in 2023-24 and between 8.05 percent and 10.69 percent in 2024-25. Assuming 6 percent inflation, the nominal growth will be between 14.08 percent and 15.44 percent in 2023-24 and between 14.05 percent and 16.69 percent in 2024-25.

Tamil Nadu, like India, must adapt itself to the far-reaching changes in technology that are occurring. While on the one hand, Tamil Nadu must enable the youth to acquire the new skills, on the other, a judicious use of new technology must be introduced so that employment concerns do not become serious. Several committees have recently submitted reports outlining measures that must be taken to strengthen and modernize the various sectors. These must be carefully examined and implemented. Special attention must be paid to sectors such as agriculture, fishing and aquaculture, textiles, automotive and electric vehicles, IT and Global Capacity Centers, and tourism.

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