

State-wise Analysis of Consumer Price Index (2011-2023)

By

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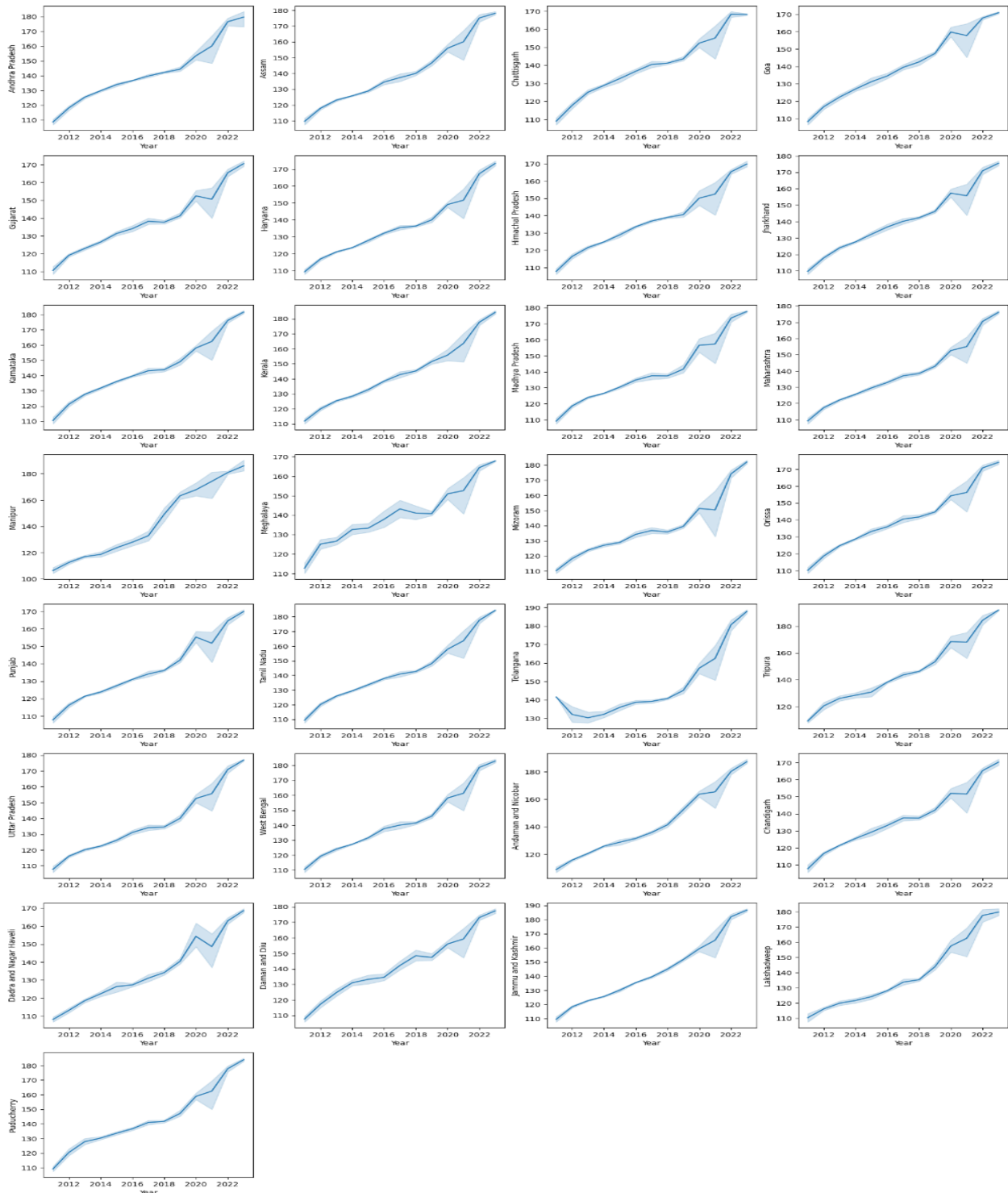
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Key Findings

Bivariate Analysis

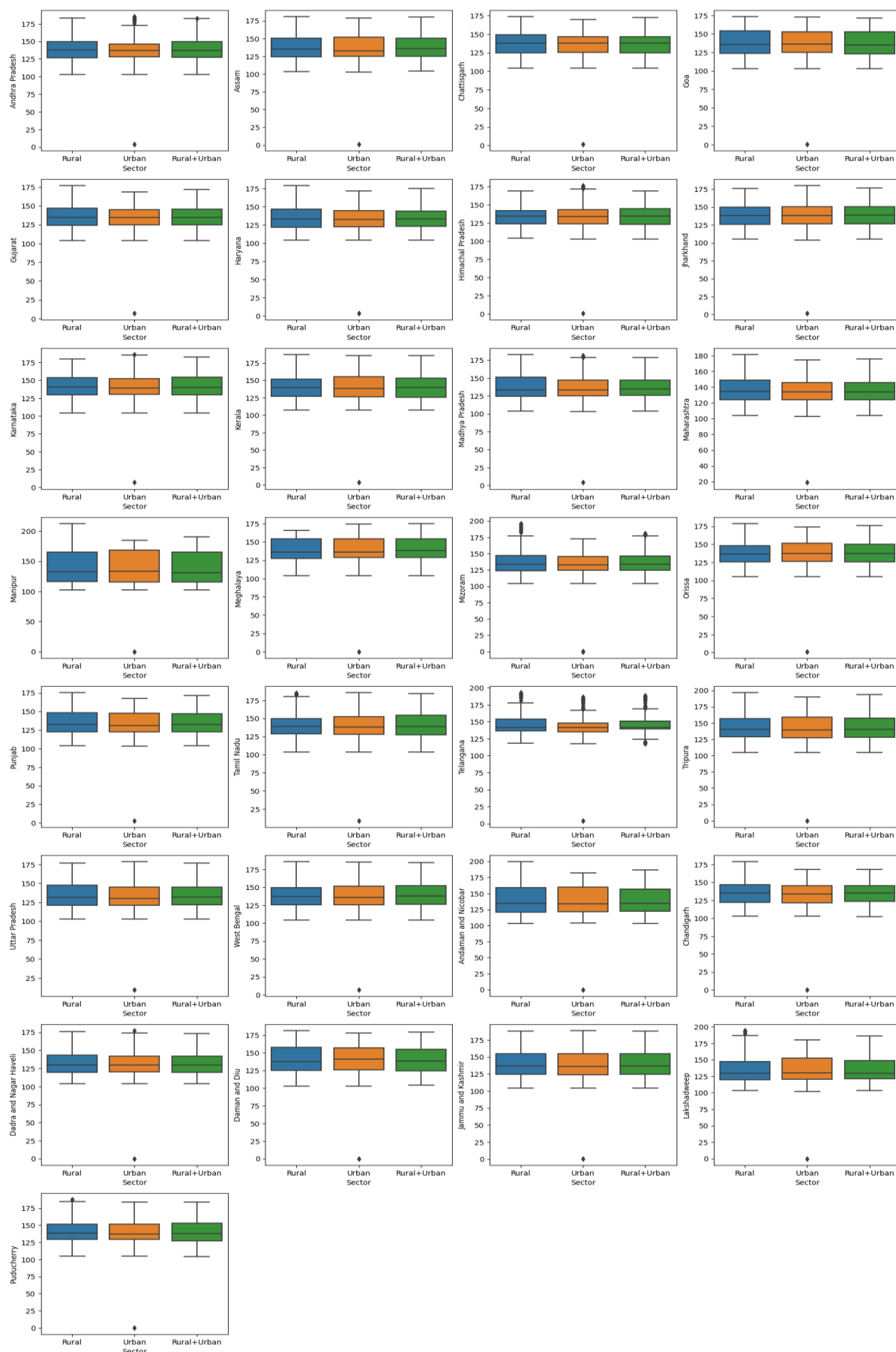
1. Consumer Price Index of each state vs year analysis:



Plotting the mean Consumer Price Index of each state for their corresponding year, we find a very similar trend being followed by all the states. all the states have had a gradual rise in Consumer Price Index over the period. however certain observations are made as follows:

- **Telangana** has witnessed a dramatic drop in Consumer Price Index from the year 2011 to 2013, after which it starts to follow the trend, but at a steeper level
- The states of **Gujarat, Goa, Jharkhand**, and **Dadra and Nagar Haveli** have a sharp incline in Consumer Price Index in the year 2020 followed by a decline in the year 2021
- While **Jammu and Kashmir** have an almost linear incline in their Consumer Price Index across the years, **Meghalaya** seems to have a very non-uniform incline.

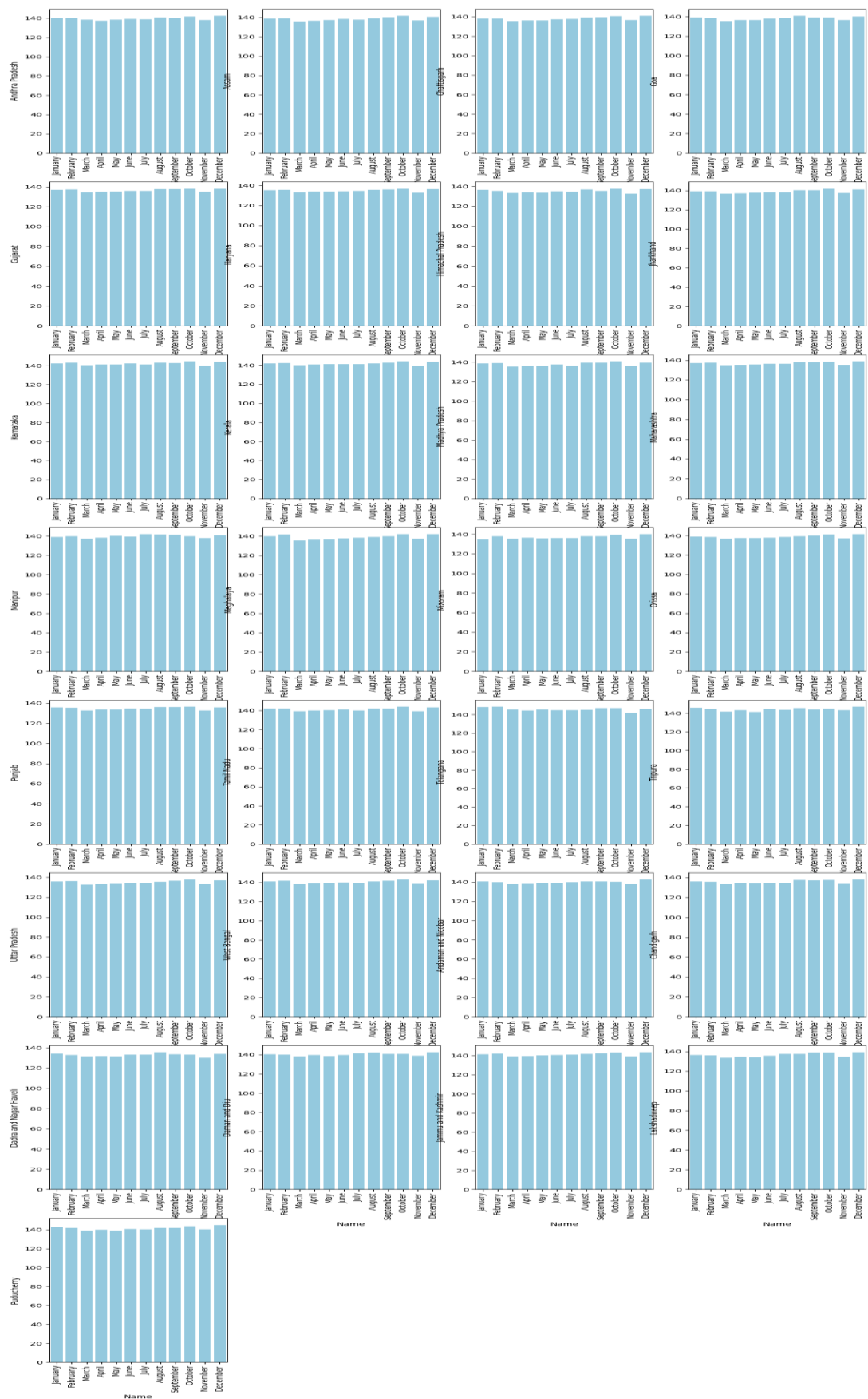
2. Consumer Price Index of each state vs Sector Analysis:



Plotting Consumer Price Index of each state vs their sectors again show very similar patterns with the following observations:

- Almost all sectors of all the states lie between the mean Consumer Price Index of 100-150, with their median between 125-150
- The state of **Manipur** has the highest spread/IQR across all sectors while the state of **Telangana** has the least spread/IQR across all states
- **Lakshadweep** seems to be the only state with their rural sector having a significantly lower third quantile compared to the other sectors.

3. Consumer Price Index of each state vs Month Analysis:

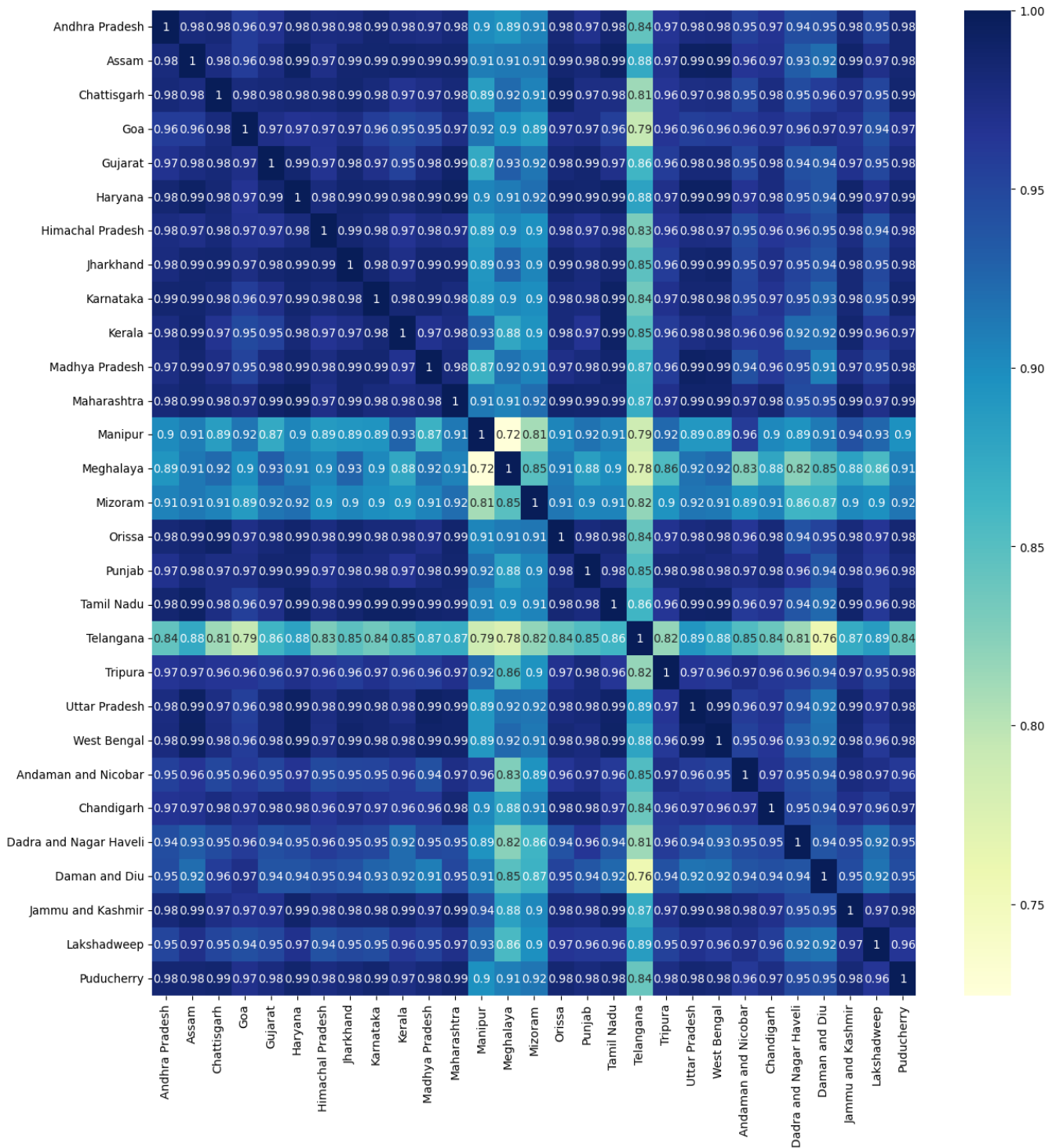


All the states follow a similar trend across all the months. the following observations can be made from the above plots:

- Almost all the states have a rise in Consumer Price Index from **March** ad continue to rise till **October**
- November witnesses a drop in Consumer Price Index in every state
- Consumer Price Index again rises in **December**

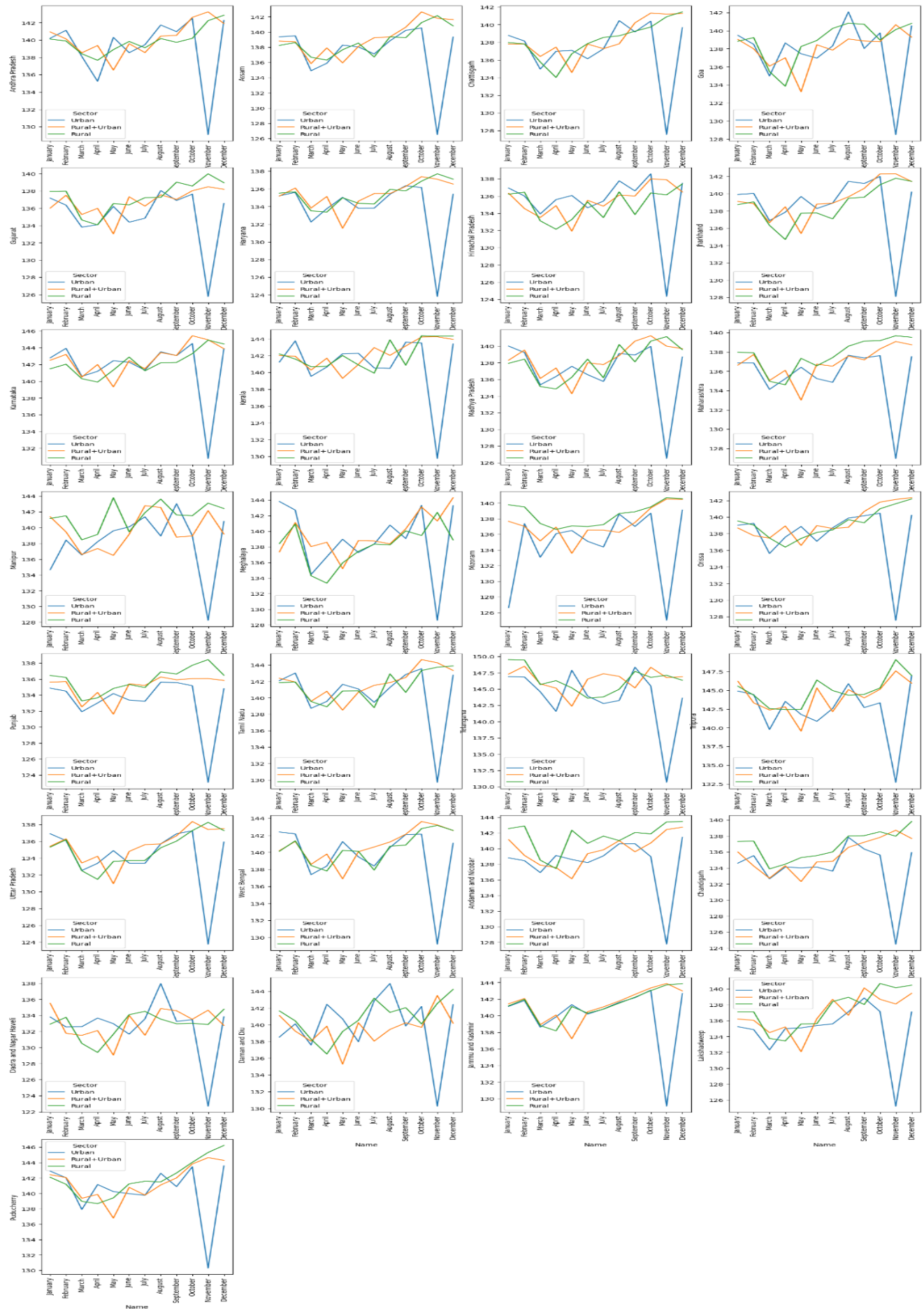
Multivariate Analysis

1. Heat Map Analysis



As is evident from the heatmap, all the states seem to be positively correlated with each other. However, the states of **Manipur**, **Mizoram**, **Meghalaya** and **Telangana** seem to have very low correlation with the other states, with **Telangana** having the least correlation.

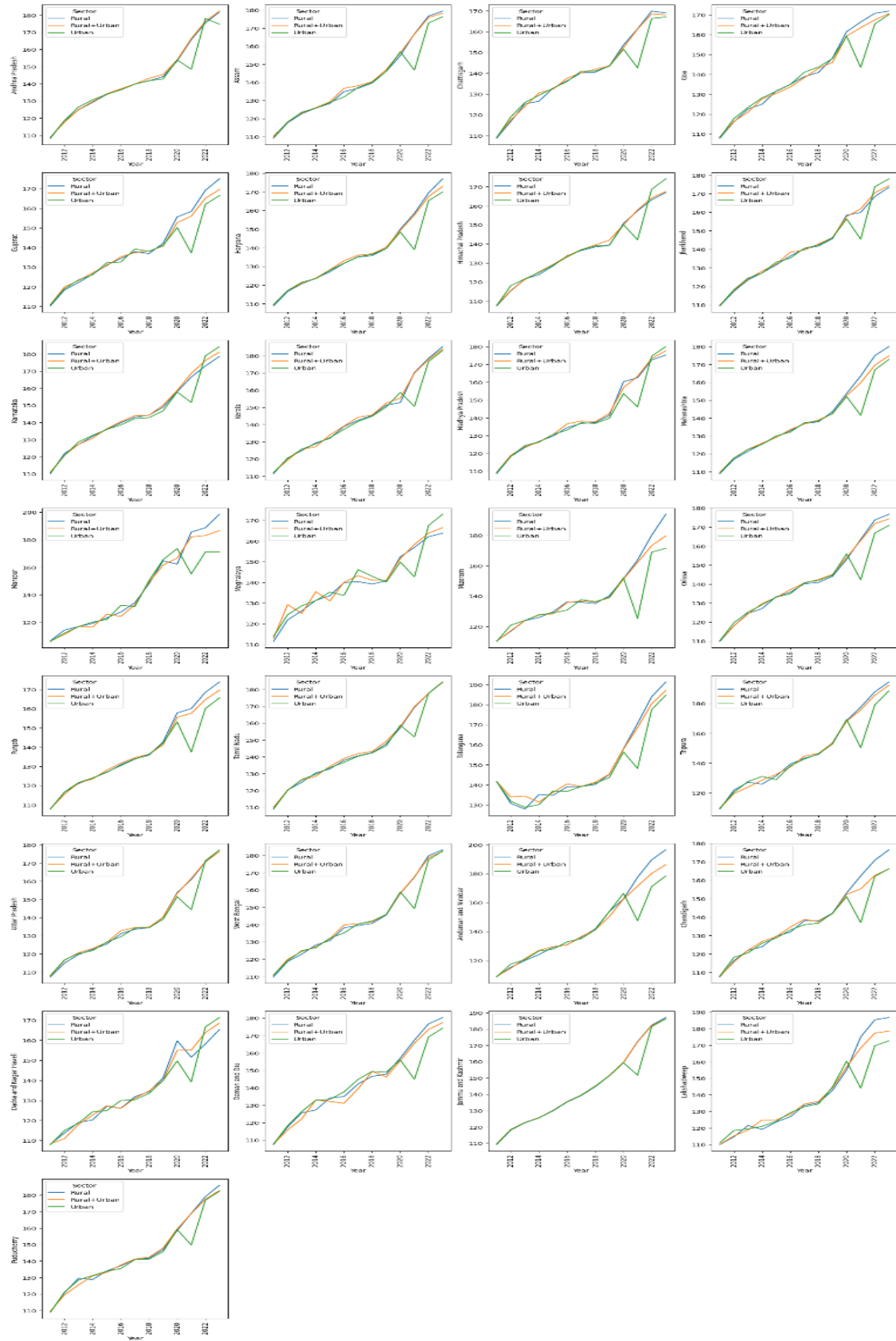
2. Consumer Price Index of each state vs Month by Sector Analysis



Plotting Consumer Price Index of the states vs months sector-wise give some very interesting observations. they are as follows:

- The Consumer Price Index of all the states in every sector for every month follow a similar general trend
- The fluctuations of Consumer Price Index in every state in urban sector is evidently more than the fluctuations seen by the rural and rural+urban sector
- The urban sector in every state witnesses a significant dive in Consumer Price Index in the month of November, returning back to normality in **December**
- Between the month of **April-June**, the Consumer Price Index in the rural+urban sector of every state drop, while the urban sectors see a simultaneous rise
- Urban sector in **Mizoram** in the month of **January** sees a drop comparative to the month of **November**
- From the month of **June-October**, all the sectors in **Jammu and Kashmir** see a collective and similar growth in CPI
- For majority of the months in almost every state, the urban and the rural+urban sectors seem to have an inverse effect on each other
- There is a significant rise in CPI in the urban sector in **August** for **Goa, Dadra and Nagar Haveli** and **Daman and Diu**.

3. Cpi of each state vs Year by Sector Analysis:



Plotting CPI of the states vs year, sector-wise give some very interesting observations. they are as follows:

- All the states (except **Telangana**) have had a very steady rise in their CPI over the year in every sector
- Urban sector of all the states have seen a massive dip in their CPI in the year 2021, while the rural and rural+urban sector have seen a normal rise or more
- The urban sector of **Mizoram** seems to have the lowest dip in their CPI of all the states and sectors, while **Mizoram**'s rural sector has witnessed a relatively steep rise.
- Except for the year of 2021, all the sectors in **Jammu and Kashmir** seem to have had the exact similar rise in their CPI over the years
- The state of **Meghalaya** seems to have the highest irregular rise in the CPI of all the states.

Conclusion

Based on the analysis of the Consumer Price Index (CPI) across different states, sectors, and years, the following conclusions can be drawn:

- **Inflation Trend:** All states have experienced a gradual rise in CPI over the years, indicating a general trend of inflation. This is consistent with the global economic trend where most countries have seen a steady rise in the cost of goods and services over time.
- **Impact of Events:** Certain events like the COVID-19 pandemic in 2020 could have contributed to the sharp incline in CPI in states like Gujarat, Goa, Jharkhand, and Dadra and Nagar Haveli. The pandemic led to disruptions in supply chains and increased costs in various sectors.
- **Drop in 2021:** There was a noticeable drop in CPI in every state, especially in the urban sector, in 2021. This could be due to a variety of factors such as changes in consumer behaviour, government stimulus packages, or economic recovery following the COVID-19 pandemic.
- **Seasonal Variations:** The CPI shows a cyclical pattern with a rise from March to October, a drop in November, and a rise again in December. This could be attributed to seasonal factors such as holiday spending during Christmas and New Year, and sales events like Black Friday and Cyber Monday.
- **Sector Differences:** The CPI trends vary between the urban, rural, and combined sectors. This could be due to differences in cost of living, income levels, and economic activities in these sectors. For example, urban areas might have higher CPI due to higher costs of housing and services.
- **State Policies:** Each state has a unique trend line, reflecting the different economic conditions and policies in each state. For example, Telangana experienced a significant drop in CPI from 2011 to 2013, possibly due to specific state policies or economic events during that period.