

Contours of Inflation

Retail inflation among Indian states are converging toward 4% target level (basis Sigma-Type methodology in the last decade) underscoring that inflation targeting in broader sense is working in India. However, the pace of convergence is faster in high income states....We believe that migration of labour from Low-income states to High income states in search of employment opportunities is resulting in faster disinflation in High income states ...The case of an increase in wages exacerbating price increases may not be working in India as increase in wages has been modest....Rate cut in February is live...*chess prodigy D Gukesh checkmating Ding Liren of China is an omen of things in the offing in 2025!!*

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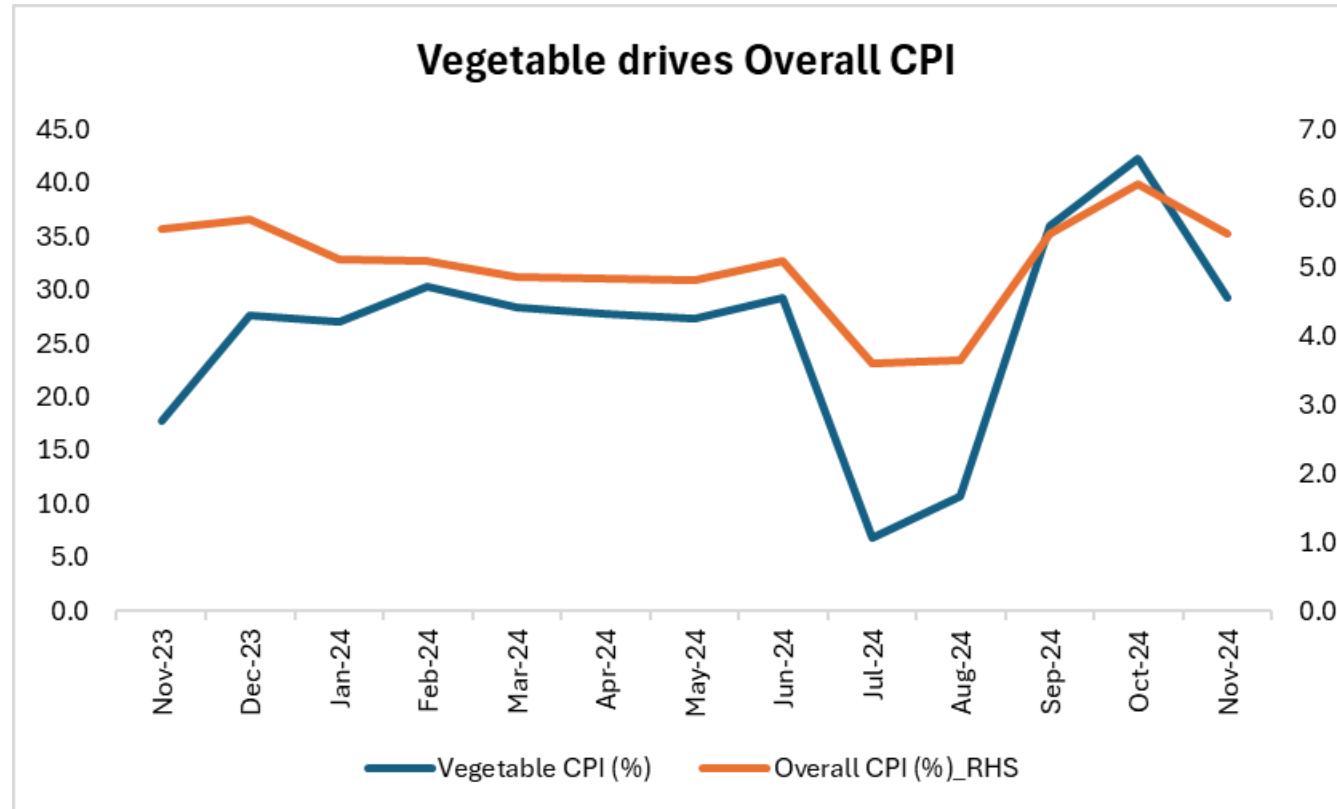
- ❑ CPI inflation eased to 5.48% in Nov'24 along expected lines, driven by softening vegetable prices, though uptick in protein component is a little worrisome. Core CPI also eased marginally to 3.71% in Nov'24 from 3.77% in Oct'24. For FY25, we expect CPI inflation to average to ~4.8%, with an upward bias
- ❑ Core CPI increased to 3.7% in Nov 24 from 3.07% in May'24. Of this increase, the three segments (transportation & communication-hike in mobile charges, personal care and effects-gold prices and housing contributing ~95%
- ❑ IIP recorded a rise in Oct'24 to 3.5% as compared to 3.1% in Sep'24
- ❑ **Retail inflation among Indian states are converging toward 4% target level (basis Sigma-Type methodology in the last decade) underscoring that inflation targeting in broader sense is working. In principle, Sigma convergence occurs when the dispersion (from 4%) across states fall over time. Further, both CPI General and CPI Food are converging, however the rate of convergence is steeper in headline CPI volatility in food inflation checkmating faster convergence**
 - Middle- and High-income states have shown higher decline in food inflation in last decade as compared to Low-Income States as reflected in downward shift of distribution
 - **We believe that migration of labour from Low-income states to High income states in search of employment opportunities is resulting faster disinflation in High income states – and is driving relatively gradual decline in food inflation**
 - The share of low-income states in GFCF has increased by 6.44% (FY 23 vis-à-vis FY15), while share of Middle-income states has remained stagnant at ~ 5%. On the flip side, Higher income states have witnessed a steep rise in GFCF, their share in total GFCF rising from 4.17% in FY 15 to ~ 30% in FY 23. The variations across states thus tend to stimulate greater migration in higher income states which might exacerbate inflationary pressures.
- ❑ **Average daily wage rate of Non-Agriculture Laborers and Rural inflation exhibits low correlation of 0.11 across states– indicating that rise in wages has not a significant impact on food inflation, implying that wage price spiral wherein rise in wage results in rise in price levels – is nearly absent in case of India. This could be the result of low wage growth in India**
 - In last four years Indian Inc. maintained average EBIDTA margin of 22%, while average wage bill grew by around 12%, reflects modulation in wage bill, among others, while keeping the margin of safety
- ❑ **Despite increase in per capita production/availability of fruits and vegetables (7 kg and 12 kg respectively in the last decade), there are only handful of states where the per capita production in both fruits and vegetable increased. This may be the result of significant extreme events in the last decade**
 - Most states exhibit negative correlation between foodgrain production and extreme weather conditions, repetitive climate shocks (multiple heat and cold waves) in last few years pushing up food inflation

Priorities of RBI to evolving situation in 2025

- ❑ The evolving situation in January appears quite challenging
 - The US political transition may create demand shock in exporting countries
 - Impending devaluation of Yuan in China
 - Geopolitical risk affecting energy prices
- ❑ Tackling foreign exchange volatility and weakening of rupee will affect inflation
- ❑ Addressing any build-up of stress in banking and financial system on account of external shocks
- ❑ **Agriculture financing needs a careful relook in light of persistence in food inflation**
 - Adaptation financing may be given a fresh look to curb domestic price volatility
- ❑ The development of a range of external benchmarks that can be used in pricing of loans and even tradeable bonds is an area that needs to be explored further. Whether these benchmarks can be used by NBFCs is also an open question
- ❑ With 10-years of the landmark PMJDY, the need to revisit the tenets of FI warrants attention. Formulation of the next iteration of the National Strategy for Financial Inclusion (NSFI) for the period 2025-30 is due and one hopes new strategy draws from the experience of PMJDY and other such initiatives

- ❑ The average CPI inflation in December fell to 5.48% but the food continues to be sticky despite moderation vis-à-vis November
- ❑ The imported inflation has risen in CPI basket and firmly in positive side
 - The impending trade protectionism can impact the international food prices
- ❑ **The persistence in food inflation imparts uncertainty to the overall outlook on inflation**
 - The IMD also expects fewer cold wave days than usual, attributed to the absence of western disturbances
- ❑ **Food inflation in MPC Minutes**
 - The MPC discussion have centered around food inflation and there is unanimity the food prices have been rising
 - The only member who voted for a rate cut also agreed that food inflation can increase including international food prices, despite a deficient demand
 - All eyes on kharif output and its impact on prices in general
- ❑ **RBI Priorities on inflation and rates**
 - Decision on rates has three priorities – impact of trade protectionism, kharif arrivals and global trends that may impact imported inflation in CPI basket
 - Q4 will be a time for watching how the three factors play out at this juncture
 - We expect RBI to cut rates in February 2025: cumulative 75 bps over the rate cut cycles and such a decision is unlikely to be impacted by what could happen to \$, as was the case in 2018 when the RBI did not hike rates even as rupee was under enormous pressure

- ❑ After crossing 6%-mark last month, the CPI inflation eased to 5.48% for Nov'24 due to sharp deceleration in vegetable prices (this was expected)
- ❑ The vegetable prices which grew by 42.2% in Oct'24 eased sharply to 29.3% in Nov'24
- ❑ However, the protein inflation showed some uptick in Nov'24



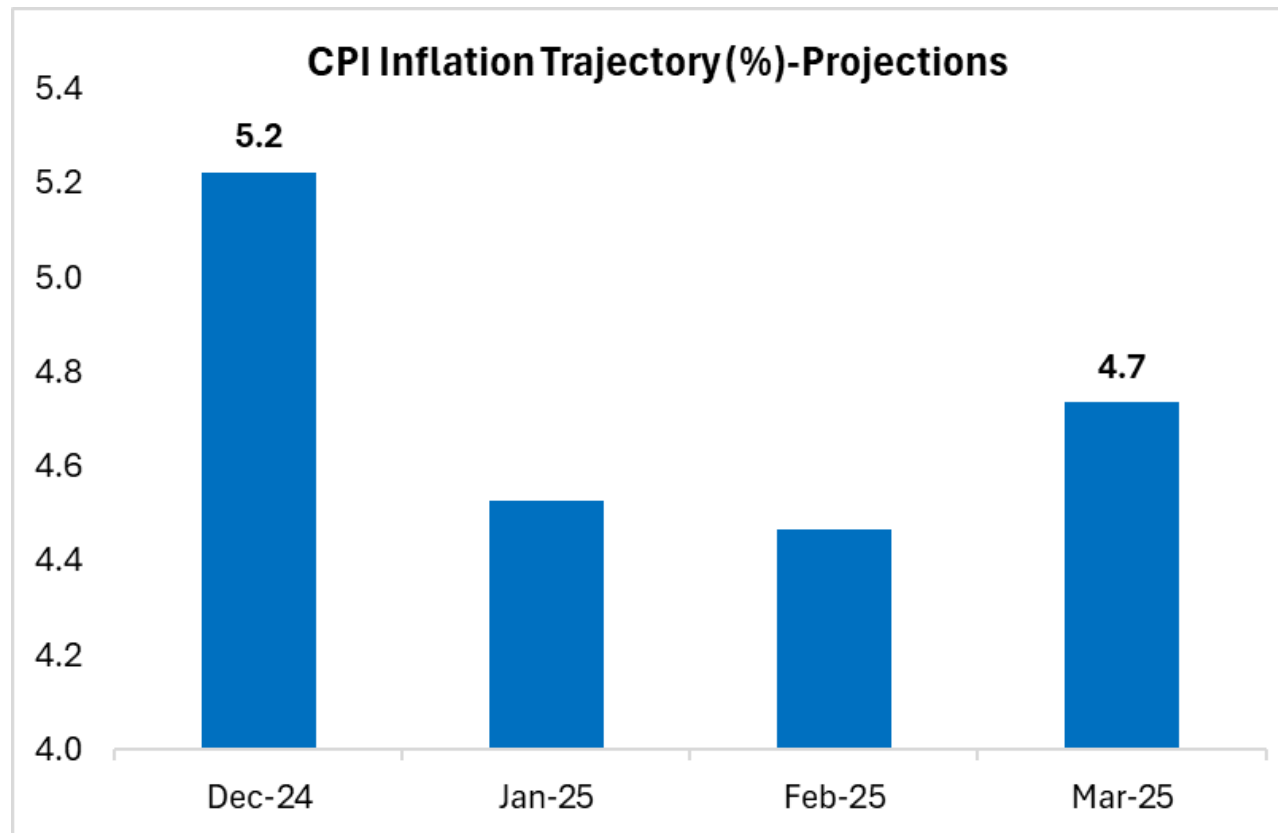
The increase in Core CPI is purely concentrated with 3 items at 95% contribution

- At all-India level, while CPI inflation increased by 67 bps to 5.48% in Nov'24 as compared to May'24 level
- Core CPI increased to 3.71% in Nov 24 from 3.07% in May'24 a 64-bps increase, the weighted contribution of core CPI in headline CPI increased by 26 bps
- Of this decline, the three segments (transportation & communication-hike in mobile charges (14 bps), personal care and effects-gold price (9 bps) and housing contributed ~95% of total increase in core inflation

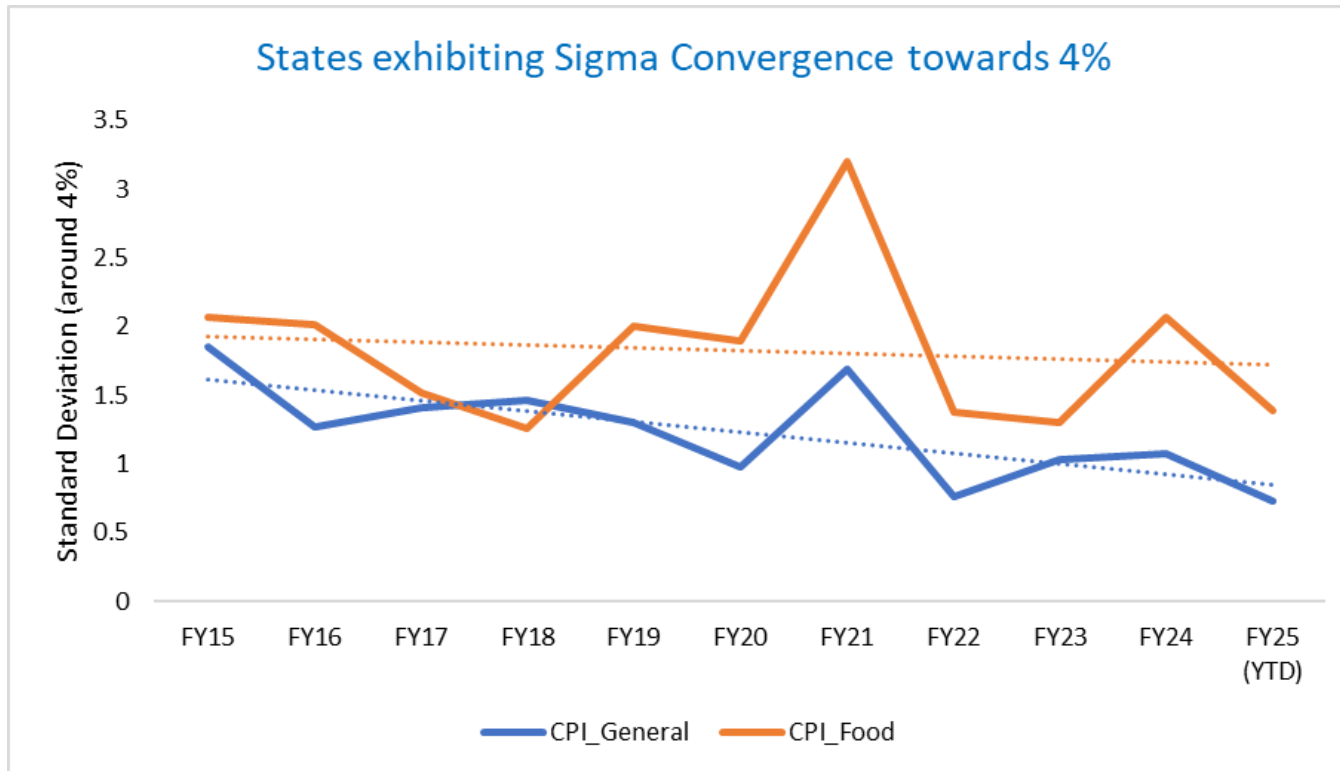
| All-Indiacore Inflation (%) | | | | |
|--|-----------|--------|--------|---------------|
| Item | Weight(%) | May-24 | Nov-24 | Change in bps |
| Overall CPI | 100 | 4.80 | 5.48 | 67 |
| Core CPI | 47.3 | 3.07 | 3.71 | 64 |
| Weighted Contribution | | | | |
| Core CPI | 47.3 | 1.45 | 1.71 | 26 |
| <i>of which,</i> | | | | |
| Housing | 10.1 | 0.25 | 0.28 | 2 |
| Household goods and services | 3.8 | 0.09 | 0.10 | 1 |
| Health | 5.9 | 0.26 | 0.24 | -2 |
| Transport and communication | 8.6 | 0.08 | 0.20 | 13 |
| Recreation and amusement | 1.7 | 0.04 | 0.04 | 0 |
| Personal care and effects | 3.9 | 0.31 | 0.41 | 10 |
| Core of Core CPI | 36.4 | 1.37 | 1.50 | 13 |
| Source: MOSPI, SBI Research, Core of Core CPI excludes transport and communication | | | | |

| Item-wise Decomposition of Weighted Average of Major Core Items | | | | |
|---|-------------|-------------|-------------|---------------|
| Item | Weight(%) | May-24 | Nov-24 | Change in bps |
| Transport and communication | 8.6 | 0.08 | 0.20 | 13 |
| <i>of which,</i> | | | | |
| telephone charges: mobile | 1.8 | 0.02 | 0.16 | 14 |
| Personal care and effects | 3.9 | 0.31 | 0.41 | 10 |
| <i>of which,</i> | | | | |
| gold | 1.1 | 0.22 | 0.31 | 9 |
| silver | 0.1 | 0.01 | 0.02 | 1 |
| Housing | 10.1 | 0.25 | 0.28 | 2 |
| <i>of which,</i> | | | | |
| house rent, garage rent | 9.5 | 0.24 | 0.25 | 1 |
| Source: MOSPI, SBI Research | | | | |

- With continuous moderation in fuel prices (fuel and light inflation is in negative territory for last 15 consecutive months), inflation is currently being driven by food price only
- Looking ahead evolving food prices will determine domestic inflation. For the whole FY25, CPI inflation is likely to average to 4.8%, with an upward bias

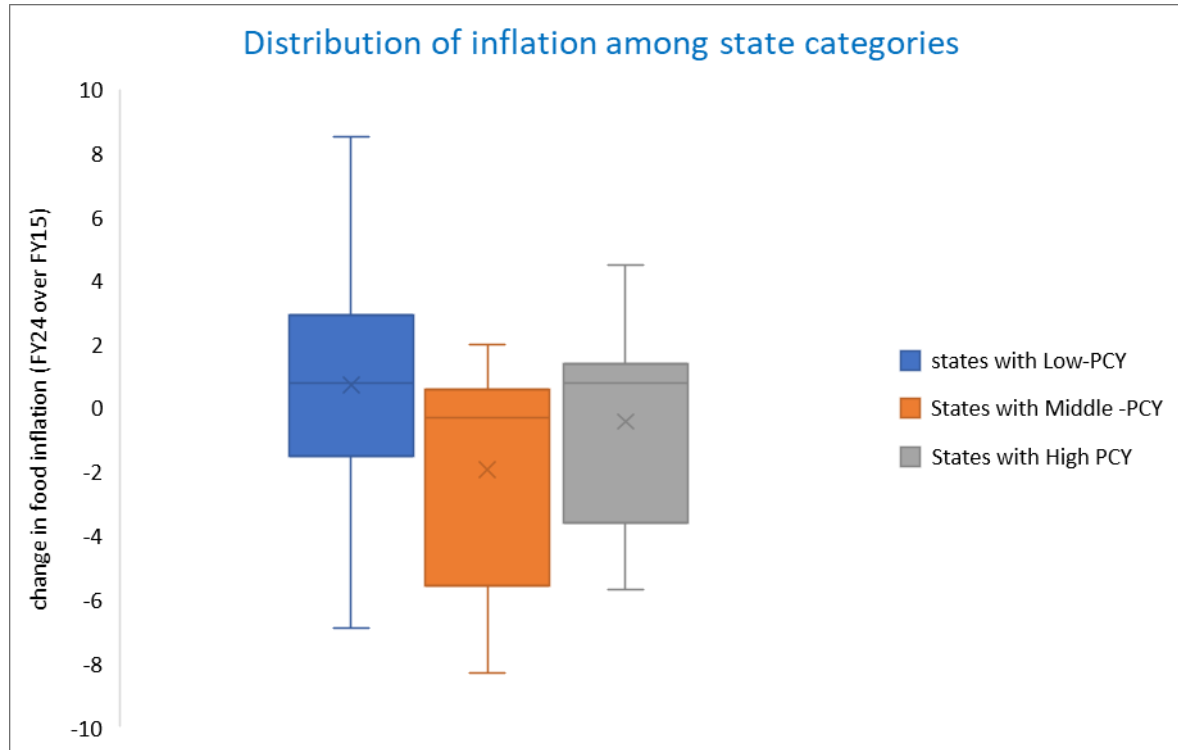


- ❑ Retail inflation among Indian states are converging toward 4% target level – as revealed using Sigma-Type methodology
- ❑ The absolute difference of inflation values are taken from 4% across states and years. The falling dispersion of derived inflation values across time reflects sigma convergence
- ❑ Both CPI general and CPI Food are converging, however, the rate of converging is steeper in general CPI. Food inflation converges at a tepid rate following the volatility in components – mainly vegetables.



YTD – OCT'24

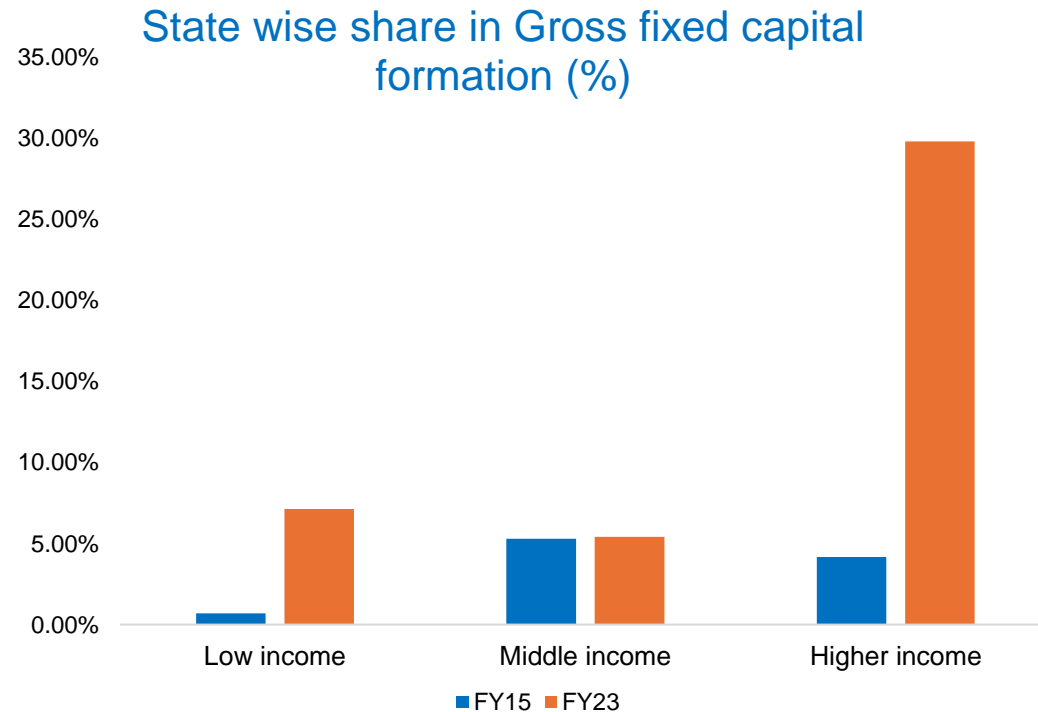
- ❑ Middle- and High-income states have shown higher decline in food inflation in last decade as compared to Low-Income States as reflected in downward shift of distribution
- ❑ **We believe that migration of labour from low-income states to high income states in search of employment opportunities is resulting in faster disinflation in High income states**



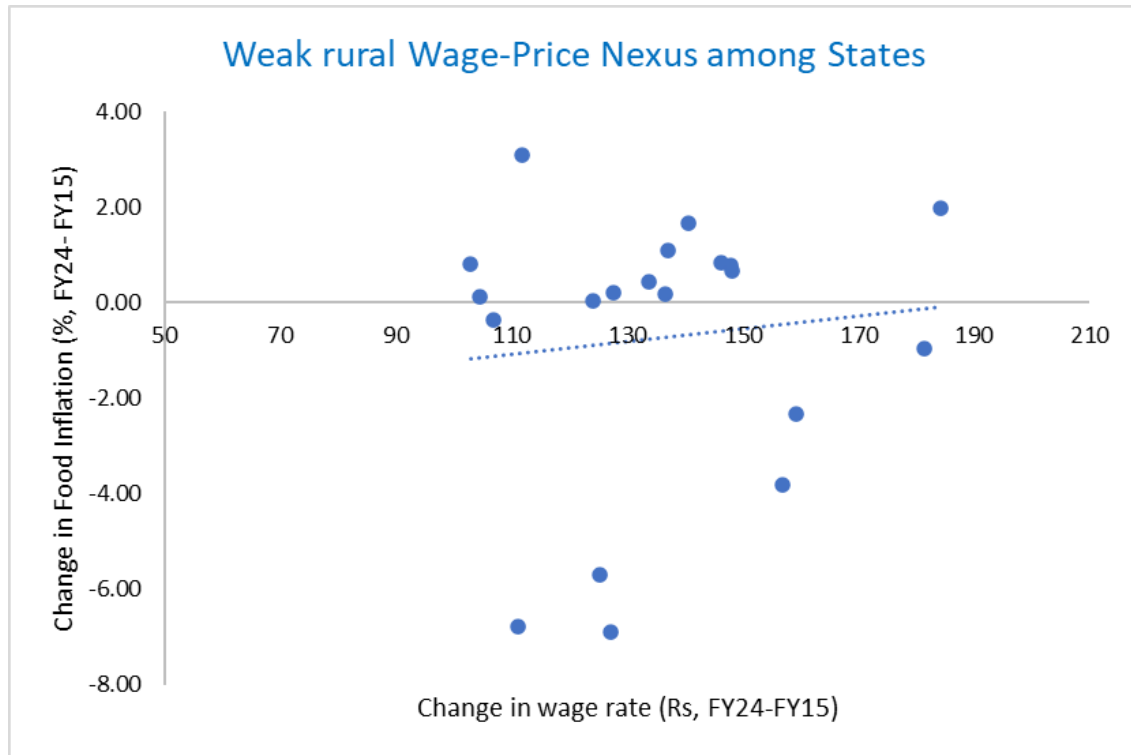
| Low Income | Middle Income | High Income |
|---------------------|-------------------------|-------------------|
| Bihar (-7) | West Bengal (2.5) | Maharashtra (5.1) |
| UP (-14.8) | Nagaland | Gujarat (1.5) |
| Jharkhand (-4.9) | Rajasthan (-3) | Kerala (-0.3) |
| Manipur | Tripura | Tamil Nadu (3) |
| Assam (0.8) | Punjab (0.2) | Karnataka (0.8) |
| Meghalaya | Mizoram | Telangana |
| MP(-4.5) | Andhra Pradesh (1.2) | Haryana (-2.8) |
| Odisha (-1.2) | Himachal Pradesh (-0.4) | Sikkim |
| Chhattisgarh (-2.8) | Uttarakhand (-1.5) | Goa (3.2) |

- Figures in parenthesis represents Total Net Flows at State Level (2016 in Mn)
- Negative figures represent net outflow movement of labor
- Source - Economic Survey (2016-17)

- ❑ The share of low-income states in GFCF has increased by 6.44% (FY 23 vis-à-vis FY15)
- ❑ Middle income states share has remained stagnant at ~ 5%
- ❑ Higher income states have witnessed a steep rise in GFCF. The share in total GFCF has risen from 4.17% in FY 15 to ~ 30% in FY 23
- ❑ The variations across states tend to stimulate greater migration in higher income states which might exacerbate inflationary pressures



- ❑ Average daily wage rate of non-Agriculture Laborers and rural inflation exhibits insignificant positive relation (with p-value > 0.1)
- ❑ Further, the variables of interest show low correlation of 0.11 across states– indicating that rise in wage has mere negligible impact on food inflation
- ❑ This implies that wage price spiral wherein rise in wage results in rise in price levels – is not rampant in case of India



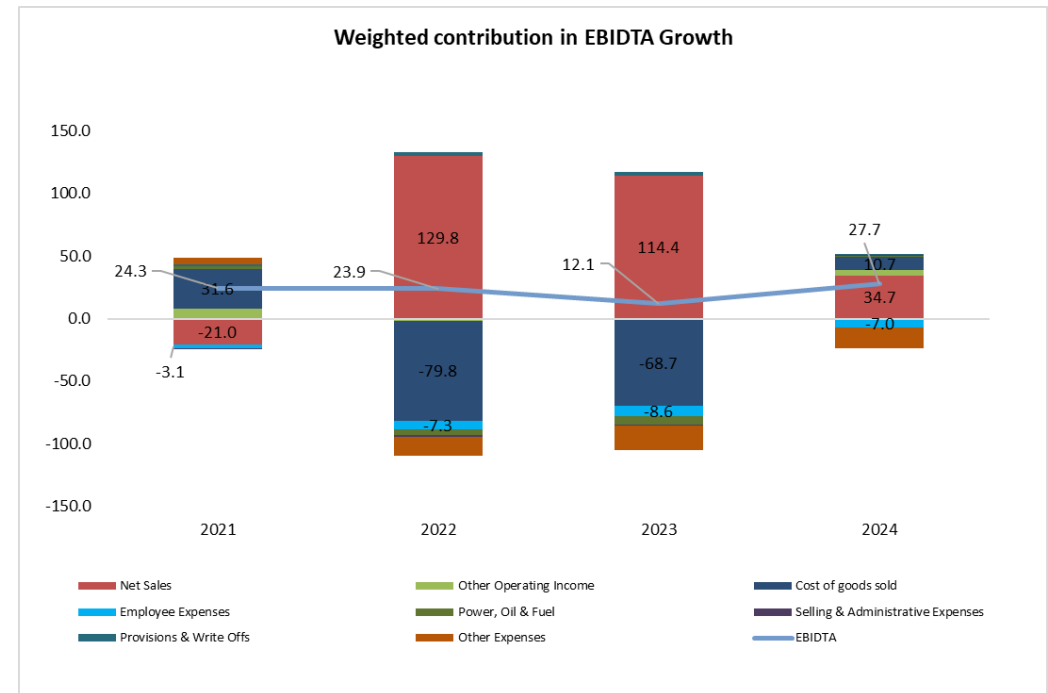
| | Y-Variable | x-Variable | Coeff. Estimate | P-Value |
|--------------|----------------|-------------|-----------------|---------|
| Regression-1 | Food Inflation | Wage growth | 0.013 | 0.65 |

.....Indian Inc. maintained margin by modulating wage Bill

- Around 4000 listed entities reported 6% growth in top line in FY24, while EBIDTA and PAT grew by 28% and 32% respectively. However, Employee expenses grew by only 13% in FY24 as compared to 17% in FY23
- In Q2FY25 also Corporate in listed space reported EBIDTA growth of around 7% while wage bill grew by 5.6% only
- In last four years Indian Inc. maintained average EBIDTA margin of 22%, while average wage bill grew by around 12%, reflects modulation in wage bill, among others, while keeping the margin of safety
- Deep dive into the expenditure side of the Indian Inc. through the weighted average contribution model suggests apart from Cost of Goods sold (COGS), which shown higher variations due to volatility in commodity prices, modulation in employee expenses contribute sizable weight in deciding EBIDTA
- Weighted average contribution (negative) of employee expense, in EBIDTA growth of ~ 28% in FY24, declined to 7% from 8.6% in FY23 when EBIDTA grew by 12%

| Growth in Key Parameters (%) | | | | |
|------------------------------|-------|------|------|------|
| Description/ FY ended | 2021 | 2022 | 2023 | 2024 |
| Net Sales | -3.3 | 26.5 | 22.9 | 6.3 |
| Employee Expenses | 4.6 | 12.9 | 16.8 | 13.0 |
| EBIDTA | 24.3 | 23.9 | 12.1 | 27.7 |
| Profit After Tax | 112.2 | 61.0 | 3.6 | 31.7 |

Source: Cline; SBI Research; around 4000 listed entities



weighted contribution of expenditure items in EBIDTA are calculated with a - sign, other expenses includes Impairment of Assets, Loss on Forex Transaction, Packaging Cost, Freight Charges, Development & Construction Cost and cost of good sold includes Raw Materials

Consumed, Stock Adjustment and Purchase of Finished Goods

Per Capita Fruits & Vegetable Availability Increased in Last Decade

- While the per capita production/availability of fruits and vegetables increased by 7 kg and 12 kg respectively in the last decade, there are only handful of states where the per capita production increased in both fruits and vegetable (notable ones are MP, UP, Punjab, J&K, etc.)
- Most of the N-E states exhibited decline in per capita production in both fruits and vegetables (or in any of them)
- While India produces 227 kg Fruits & vegetables per person per year (the general recommendation for intake of fruits & vegetables is at least 146 kg per person per year) due to the inherent perishable nature of the produce/short shelf life of these crops, as much as 30-35% of fruits & vegetables perishes during harvest, storage, grading, transport, packaging and distribution and hence impact the overall consumption

| State-wise Per Capita Production of Fruits & Vegetables (in kg) | | | | | | |
|---|-----------|-----------|----------|------------|------------|-----------|
| | Fruits | | | Vegetables | | |
| | FY14 | FY24 | Change | FY14 | FY24 | Change |
| Andhra Pradesh | - | 333 | - | | 119 | - |
| Arunachal Pradesh | 232 | 70 | -162 | 25 | 10 | -15 |
| Assam | 64 | 65 | 1 | 97 | 109 | 12 |
| Bihar | 39 | 36 | -3 | 145 | 133 | -12 |
| Chhattisgarh | 76 | 77 | 1 | 214 | 211 | -3 |
| Gujarat | 132 | 115 | -17 | 191 | 210 | 19 |
| Haryana | 22 | 28 | 6 | 220 | 185 | -34 |
| Himachal Pradesh | 126 | 96 | -30 | 238 | 242 | 4 |
| Jammu & Kashmir | 165 | 193 | 28 | 111 | 146 | 34 |
| Jharkhand | 27 | 32 | 5 | 128 | 110 | -18 |
| Karnataka | 109 | 105 | -4 | 123 | 90 | -33 |
| Kerala | 86 | 98 | 12 | 107 | 79 | -28 |
| Madhya Pradesh | 78 | 111 | 33 | 179 | 275 | 96 |
| Maharashtra | 120 | 121 | 1 | 90 | 96 | 6 |
| Manipur | 181 | 137 | -43 | 95 | 99 | 4 |
| Meghalaya | 117 | 119 | 2 | 174 | 162 | -11 |
| Mizoram | 313 | 277 | -37 | 232 | 180 | -52 |
| Nagaland | 208 | 153 | -54 | 249 | 205 | -44 |
| Odisha | 51 | 63 | 12 | 225 | 228 | 3 |
| Punjab | 56 | 81 | 26 | 142 | 223 | 81 |
| Rajasthan | 8 | 12 | 4 | 16 | 29 | 13 |
| Sikkim | 39 | 73 | 34 | 220 | 195 | -25 |
| Tamil Nadu | 102 | 97 | -5 | 120 | 119 | -1 |
| Telangana | - | 49 | - | - | 28 | |
| Tripura | 214 | 148 | -66 | 212 | 274 | 62 |
| Uttar Pradesh | 34 | 56 | 21 | 93 | 144 | 51 |
| Uttarakhand | 67 | 29 | -38 | 101 | 44 | -57 |
| West Bengal | 32 | 42 | 10 | 252 | 293 | 41 |
| ALL INDIA | 73 | 80 | 7 | 135 | 147 | 12 |

Source: RBI, SBI Research; We used 2011 census for FY14 calculation

Impact of Extreme Climate on Foodgrain Production is Negative

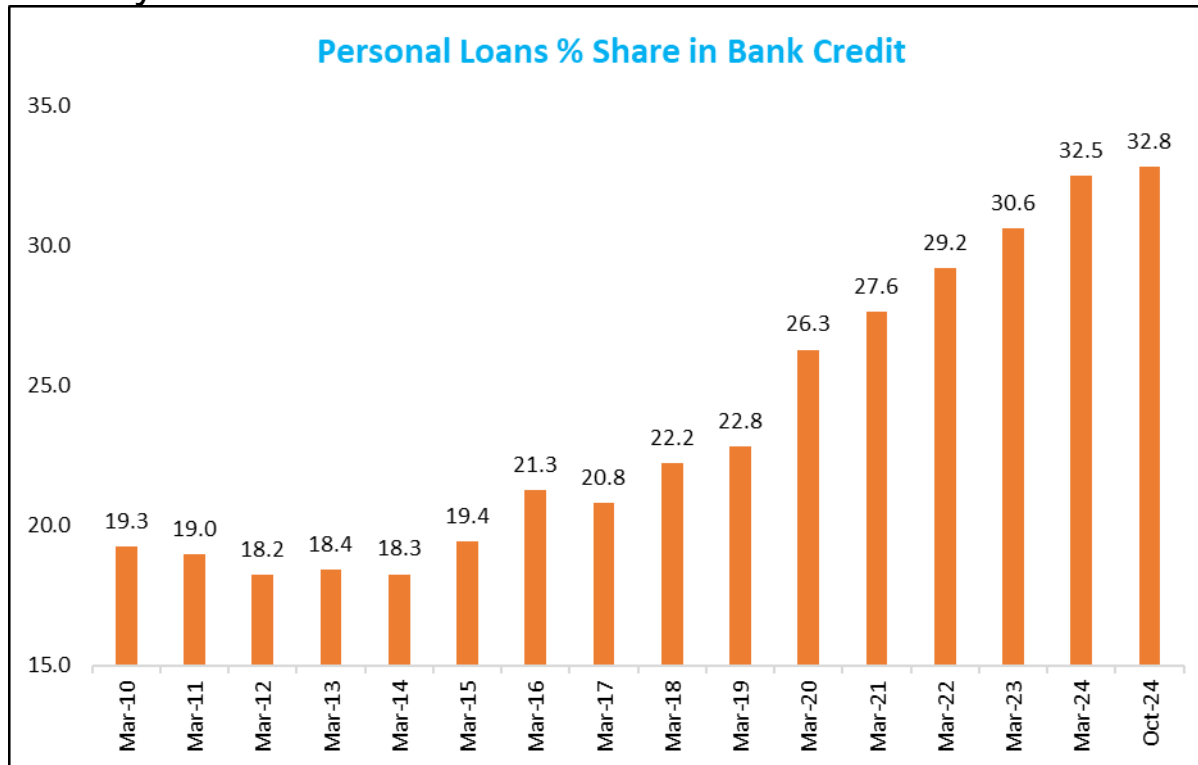
- ❑ Agriculture production and supply chains were affected by multiple heat and cold waves in the past few years
- ❑ The impact of these heat/cold wave is negative on foodgrains production as most of states have negative correlation between foodgrain production and extreme weather conditions
 - According to the Indian Council for Agricultural Research, every 1°C rise in temperature beyond 30°C during grain filling period reduces wheat yield by 3-4%
- ❑ **These repetitive climate shocks has pushed up food inflation as well**

| Impact of Heat & Cold Waves (Combined in days) on foodgrain production | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|--|
| State | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Correlation of heat/cold waves with foodgrain production |
| Andhra Pradesh | 19 | 12 | 11 | 13 | 16 | 14 | 9 | 11 | 6 | -0.35 |
| Bihar | 13 | 12 | 13 | 5 | 11 | 21 | 6 | 14 | 9 | -0.44 |
| Chhattisgarh | 10 | 11 | 7 | 7 | 2 | 9 | 6 | 6 | 12 | 0.19 |
| Gujarat | 5 | 2 | 4 | 4 | 3 | 5 | 2 | 0 | 6 | -0.13 |
| Haryana | 20 | 9 | 15 | 17 | 14 | 18 | 12 | 12 | 33 | 0.00 |
| Jharkhand | 10 | 13 | 18 | 12 | 8 | 15 | 4 | 2 | 19 | -0.21 |
| Karnataka | 1 | 2 | 3 | 0 | 0 | 2 | 4 | 0 | 0 | -0.06 |
| Madhya Pradesh | 11 | 8 | 14 | 9 | 8 | 21 | 6 | 6 | 20 | 0.32 |
| Maharashtra | 6 | 12 | 11 | 7 | 10 | 25 | 7 | 0 | 7 | -0.36 |
| Odisha | 19 | 13 | 20 | 10 | 7 | 16 | 6 | 7 | 10 | -0.08 |
| Punjab | 15 | 5 | 7 | 13 | 4 | 10 | 2 | 5 | 24 | -0.02 |
| Rajasthan | 14 | 12 | 17 | 16 | 24 | 25 | 11 | 7 | 27 | 0.34 |
| Tamil Nadu | 5 | 3 | 3 | 8 | 2 | 11 | 4 | 3 | 3 | 0.17 |
| Telangana | 8 | 15 | 16 | 6 | 7 | 18 | 4 | 4 | 8 | -0.42 |
| Uttar Pradesh | 16 | 12 | 10 | 6 | 12 | 17 | 9 | 8 | 18 | -0.10 |
| Uttarakhand | 4 | 2 | 9 | 4 | 5 | 14 | 0 | 0 | 15 | -0.20 |
| West Bengal | 13 | 2 | 6 | 3 | 5 | 4 | 1 | 4 | 4 | -0.57 |

Source: RBI; SBI Research

Personal Loans data Indicate Higher Urbanization across states like Uttar Pradesh and Rajasthan in the last decade

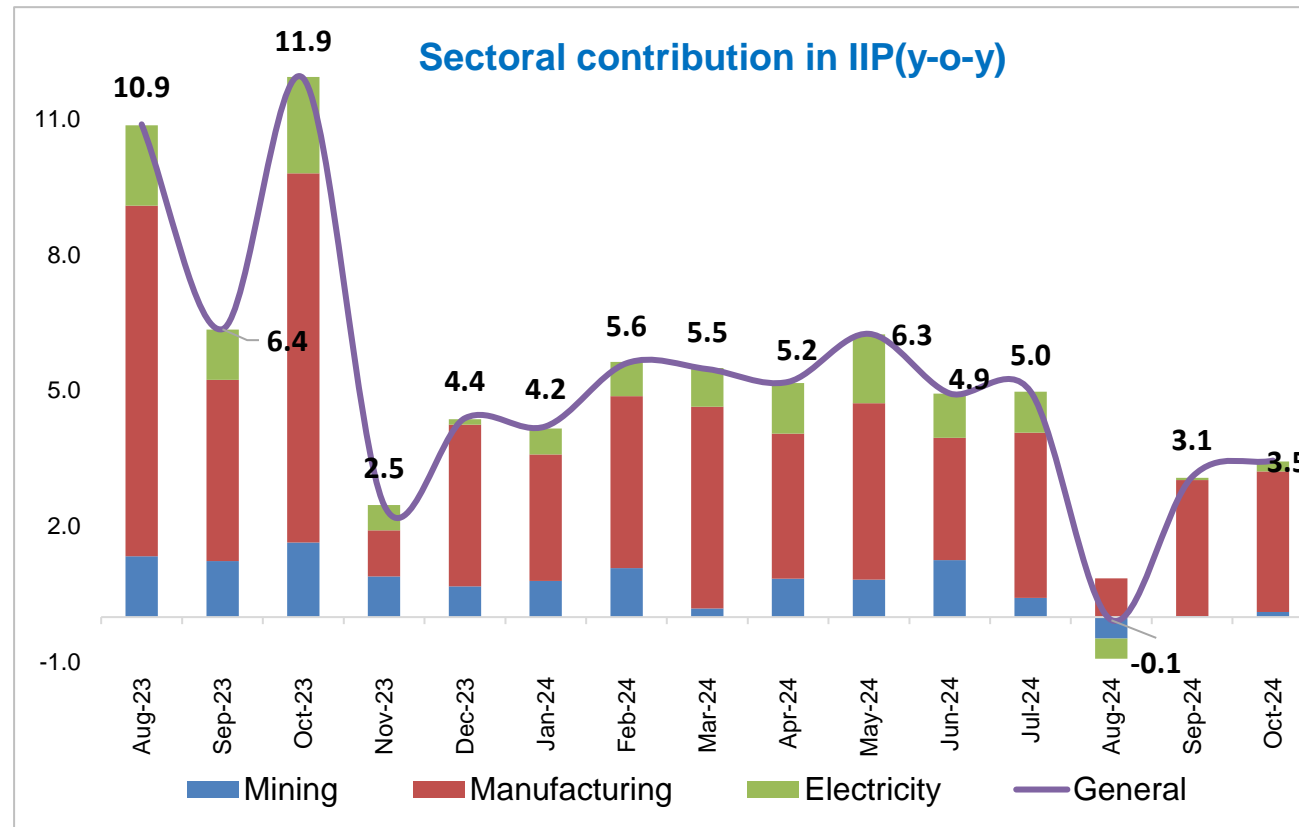
- Around a third of the total population in India lived in cities. The trend shows an increase of urbanization by more than 5% in the last decade (2014-2024)
- If we look the credit data on 'Personal Loans', which says around 115 bps increased in UP, followed by Rajasthan 97 bps. This seems urbanization might have increased in these states, as personal loans mostly demand from urban areas



| State-wise Personal Loans Share | | | | |
|---------------------------------|------|------|---------------|-------------------------------------|
| State | 2014 | 2024 | Change in bps | % of urban population (2011 Census) |
| Maharashtra | 17.8 | 19.8 | 198 | 45.22 |
| Gujarat | 5.2 | 7.0 | 185 | 42.6 |
| Telangana | 6.0 | 7.5 | 154 | 33.36 |
| Uttar Pradesh | 5.4 | 6.5 | 115 | 22.27 |
| Rajasthan | 3.1 | 4.1 | 97 | 24.87 |
| Haryana | 3.1 | 3.7 | 61 | 34.88 |
| Jammu & Kashmir | 0.9 | 1.1 | 24 | 27.38 |
| Bihar | 1.7 | 2.0 | 23 | 11.29 |
| Madhya Pradesh | 2.8 | 3.0 | 21 | 27.63 |
| Chhattisgarh | 1.1 | 1.3 | 17 | 23.24 |
| Manipur | 0.1 | 0.2 | 9 | 29.21 |
| West Bengal | 3.6 | 3.6 | 4 | 31.87 |
| Uttarakhand | 0.8 | 0.9 | 4 | 30.23 |
| Meghalaya | 0.1 | 0.2 | 3 | 20.07 |
| Odisha | 1.6 | 1.7 | 3 | 16.69 |

Source: SBI Research, RBI

- ❑ IIP recorded a rise in Oct'24 to 3.5% as compared to 3.1% in Sep'24
- ❑ Mining, Manufacturing and Electricity registered growth rates of 0.9 %, 4.1% and 2.0 % respectively suggesting stronger economic momentum
- ❑ Consumer non- durables rose by 2.7% (y-o-y) reflecting resilient consumer spending





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