



Understanding India's Inflation: CPI Insights

This case study analyzes India's Consumer Price Index (CPI) and inflation trends using Microsoft Excel, identifying key drivers and assessing the impact of major events on price levels.

Objectives of the Analysis

Category Contribution

Identify the contribution of broader categories (food, energy, transportation, services) to overall CPI.

Inflation Trends

Analyze year-on-year inflation from 2017 onward and identify peak periods.

Food Dynamics

Examine food inflation, including month-on-month changes and category contributors.

COVID-19 Impact

Assess the impact of COVID-19 on CPI behavior before and after March 2020.

Crude Oil Influence

Evaluate the influence of imported crude oil price fluctuations (2021–2023) on inflation.

Methodology: Excel-Based Analysis

01

Data Preparation

Conducted data cleaning and preparation in Excel.

02

Aggregation

Used pivot tables, formulas, and calculated fields to aggregate CPI indices and inflation rates.

03

Visual Analysis

Created line charts, bar charts, and trend visuals for YoY and MoM movements.

04

Component Grouping

Grouped detailed CPI components into broader buckets to assess contribution percentages.

05

Correlation Analysis

Applied correlation analysis to study the relationship between imported oil prices and inflation.

Key Insights: Drivers of India's Inflation



Food Dominance

Food-related categories consistently contributed most to CPI, especially during inflation spikes.



Upward Trend

India's inflation showed a clear YoY upward trend post-2017, with peaks driven by food and energy.



COVID-19 Shift

The pandemic marked a structural shift in inflation behavior, particularly in essentials like food and healthcare.



Oil Price Link

Imported crude oil prices (2021–2023) strongly correlated with fuel and transportation inflation.



Conclusion: Volatility and Policy

India's inflation is largely driven by food and energy price volatility, with external shocks like pandemics and global oil prices playing a significant role.

This project demonstrates Excel's effectiveness for macroeconomic analysis, combining quantitative rigor with visual storytelling for policy and business decisions.

Broader Category Contribution to CPI

Food & Beverages has the highest contribution to CPI calculation.

Food & Beverages	49.56%
Clothing and Footwear	11.89%
Recreation and miscellaneous	11.77%
Health and Personal care	7.97%
Housing and Household	7.54%
Energy	3.93%
Education	3.81%
Transportation	3.54%



Year-on-Year Inflation Trends (2017-2023)

2019 had the highest Y-o-Y inflation rate (7.7%) between 2017 and 2022.

2019 Peak Inflation

Sharp increases in vegetable and onion prices due to unseasonal rainfall and floods affecting crop yields.

Food Inflation Driver

Primary cause was food inflation driven by poor agricultural output and weather disruptions.

Compounding Factors

Additional pressure from global oil prices, currency depreciation, and a low base effect.

Food Inflation: Month-on-Month Analysis

India's retail inflation reached 5.55% in November 2022, largely due to rising food prices.

Highest M-M Food Inflation

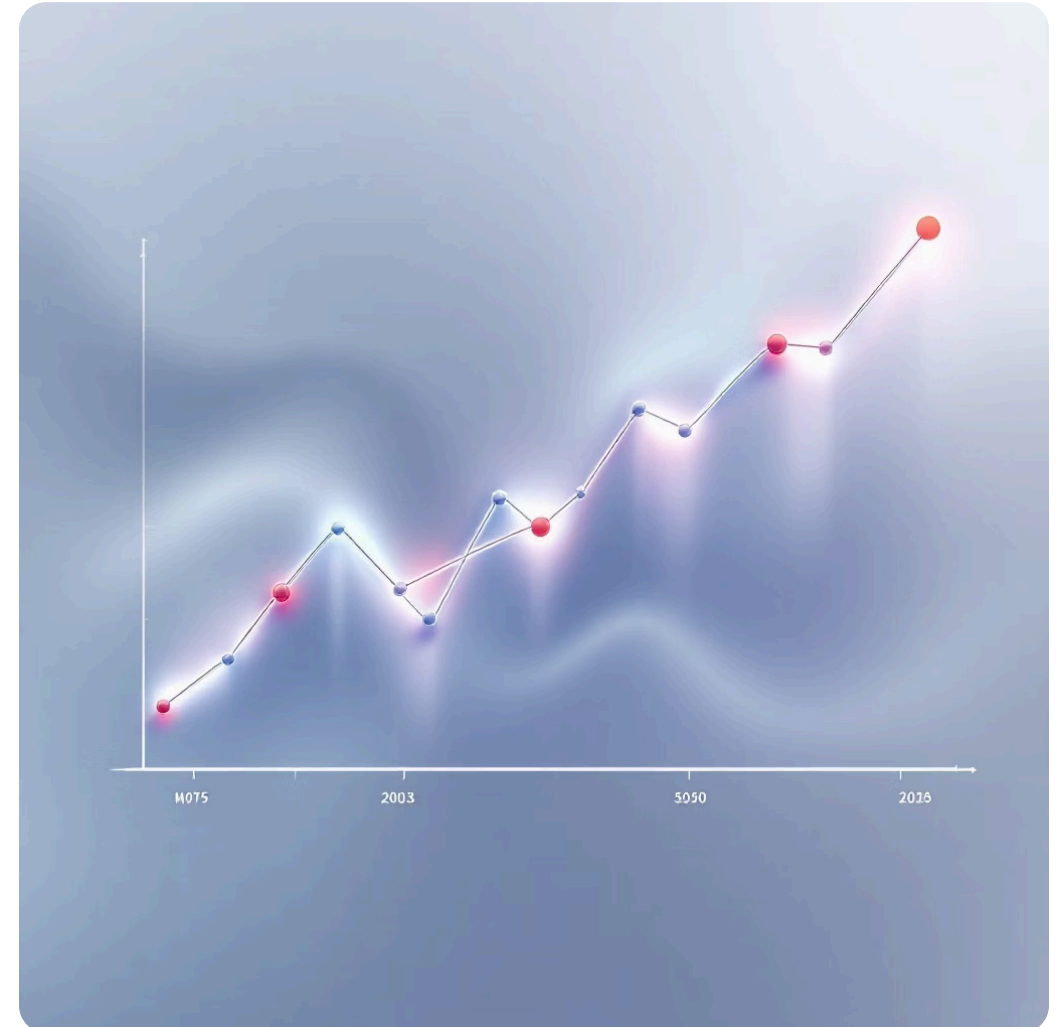
May 2023 (0.75%)

Lowest M-M Food Inflation

February 2023 (-0.60%)

Biggest Contributor

Spices (17% absolute change)





COVID-19 Impact on Inflation: Before & After

Before March 2020

- Food Inflation: Generally stable (0.2% to 2.2%).
- Health Inflation: Steady with little volatility.
- Essential Infra: Cyclical pattern, sharp increases/declines.

After March 2020

- Food Inflation: More volatile due to supply chain disruptions.
- Health Inflation: Slightly increased, greater variability.
- Essential Infra: Cyclical pattern continued, but moderated.

Key Observations: Post-Pandemic Volatility

The pandemic disrupted usual inflation patterns, especially in food and health sectors.

1

Sharp Reactions

Health and food prices reacted more sharply, indicating sensitivity to demand shocks and logistical constraints.

2

Moderated Essentials

Essential goods retained cyclical nature but appeared somewhat moderated, possibly due to government intervention.

3

Increased Volatility

Overall, economic volatility increased post-pandemic onset, with inflationary pressures in critical sectors.

