Taming Food Inflation in a Flexible Inflation Targeting (FIT) Regime – Lessons from Promising Practices

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At the Odisha Economic Association Colloquy
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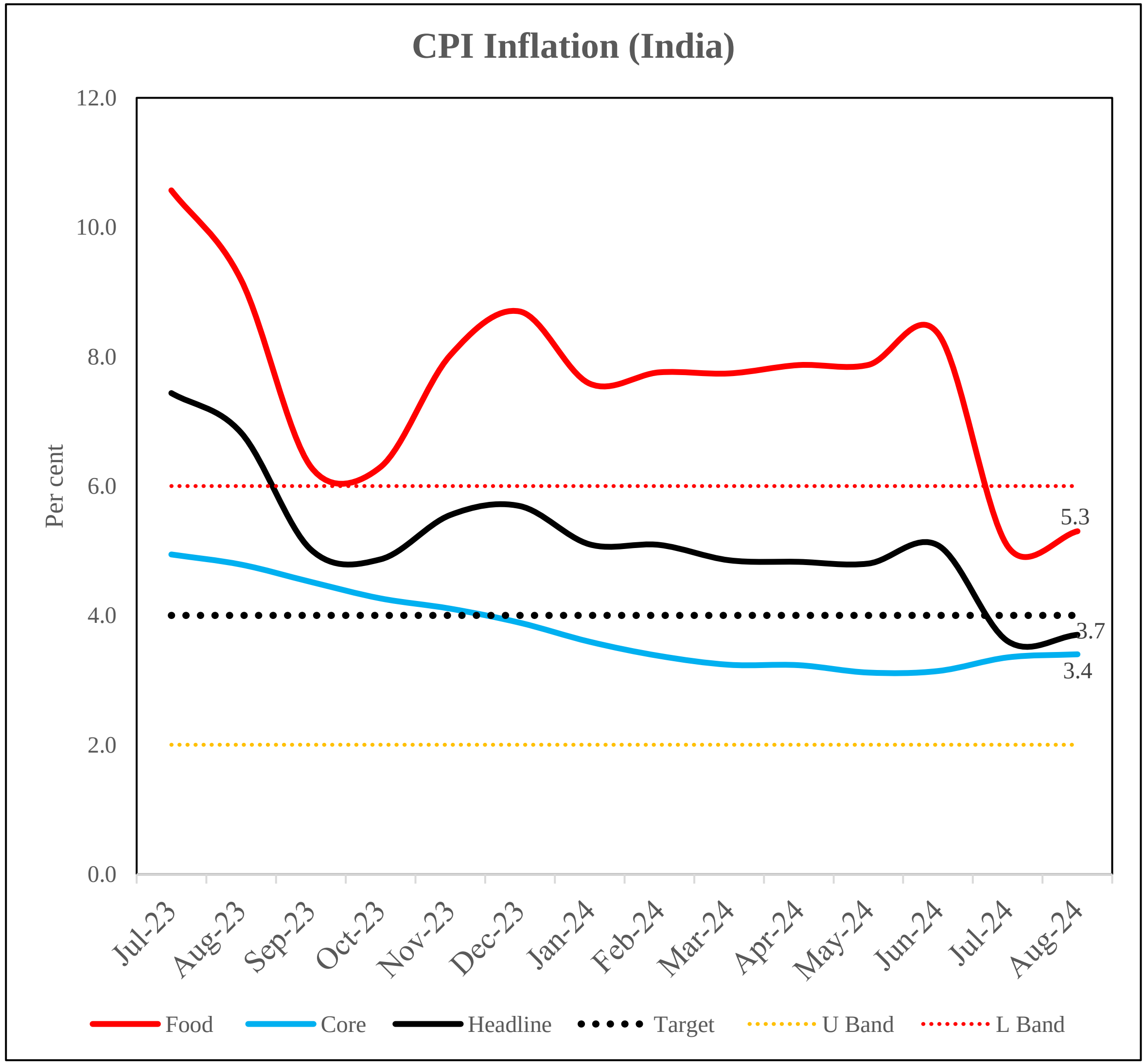
*This presentation reflects his personal views.

The Context for the Discussion



"Core Inflation" has dropped to below 4 per cent since December 2023.

Box III.2: Administrative measures to contain food inflation in FY24

Wheat/Atta

- Export of wheat flour, maida and semolina was placed under a prohibited category since August 2022.
- To prevent hoarding and unscrupulous speculation, stock limits were imposed on wheat from June 2023 to March 2024.
- In November 2023, the Government introduced Bharat Atta at a subsidised price of ₹27.50 per kg to make it affordable for consumers.
- Wheat and rice are offloaded periodically from the central pool under open market sale.

Rice/Paddy

- The Government placed the export of broken rice and non-basmati rice under the prohibited category in September 2022 and July 2023, respectively.
- To prevent the export of non-basmati rice under the garb of basmati rice, the floor price for the export of basmati rice was fixed in October 2023.
- To maintain adequate stock and to keep domestic prices under check, the Government imposed a 20 per cent export duty on parboiled rice until 31 March 2024.
- In February 2024, the Government mandated to declare the stock position of rice/paddy by traders/wholesalers, retailers, big chain retailers and processors/millers.
- In February 2024, the Government introduced Bharat Rice at a subsidised price of ₹29 per kg for selling through NAFED, NCCF and Kendriya Bhandar.

Pulses

- Calibrated release of stocks from the buffer of pulses is being done to ensure availability and affordability to consumers.
- To augment domestic availability and moderate the prices of pulses, import of tur and urad has been kept under 'Free Category' until 31 March 2025. Basic import duty on masur was reduced to zero until 31 March 2024.
- The Government launched Bharat Dal in July 2023 to convert chana stock into chana dal for retail disposal at a highly subsidised rate. Later, the Bharat Dal was extended to include Moong Dal and Moong Sabut.
- Besides, India imported considerable quantities of Tur (mainly from Mozambique, Myanmar, Tanzania, Sudan and Malawi), Masur (mainly from Australia, Canada and Russia) and Urad (mainly from Myanmar) in FY24.

Onion

- The onion buffer size under PSF was increased from 1.00 LMT in FY21 to 7.00 LMT in FY24. The stock was released through retail sales, e-Nam auctions and bulk sales in wholesale markets.
- The Government placed a Minimum Export Price on specific varieties of onion from October 2023 to December 2023.
- In December 2023, the export policy of onions was amended from the 'free' to the 'prohibited' category until 31 March 2024.

Edible Oils

- The basic duty on crude palm oil, crude soyabean oil, and crude sunflower oil was cut from 2.5 per cent to nil. The agri-cess on oil was reduced from 20 per cent to 5 per cent. In January 2024, this duty structure was extended until 31 March 2025.
- The reduced basic duty structure on refined soybean oil, refined sunflower oil and refined palm oil was extended until 31 March 2025.
- Free import of refined palm oils was extended till further orders.

Sugar

- In October 2023, the Government extended the date of restrictions on the export of sugar (raw sugar, white sugar, refined sugar and organic sugar) beyond 31 October 2023 until further orders.

A farmer-friendly policy framework: How do we let the markets function in the interests of the farmer? (Economic Survey, 2023-24).

The Context for the Discussion

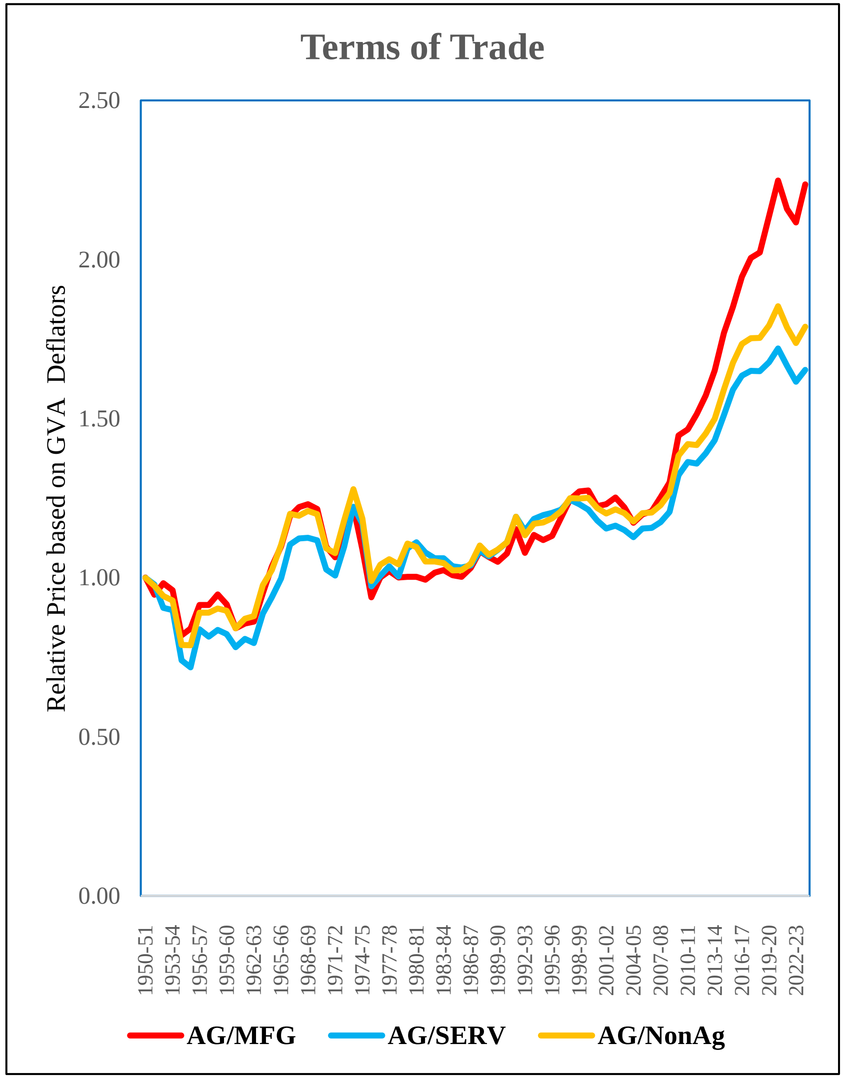
- Economic Survey, 2023-24 (released on July 22, 2024) – *when food prices rise, inflation targets come under threat. Therefore, the central bank appeals to the government to bring down the increase in the prices of food products. That prevents farmers from benefiting from the rise in terms of trade in their favour. India's inflation targeting framework should consider targeting inflation, excluding food…Short-run monetary policy tools are meant to counteract price pressures arising out of excess aggregate demand growth.*

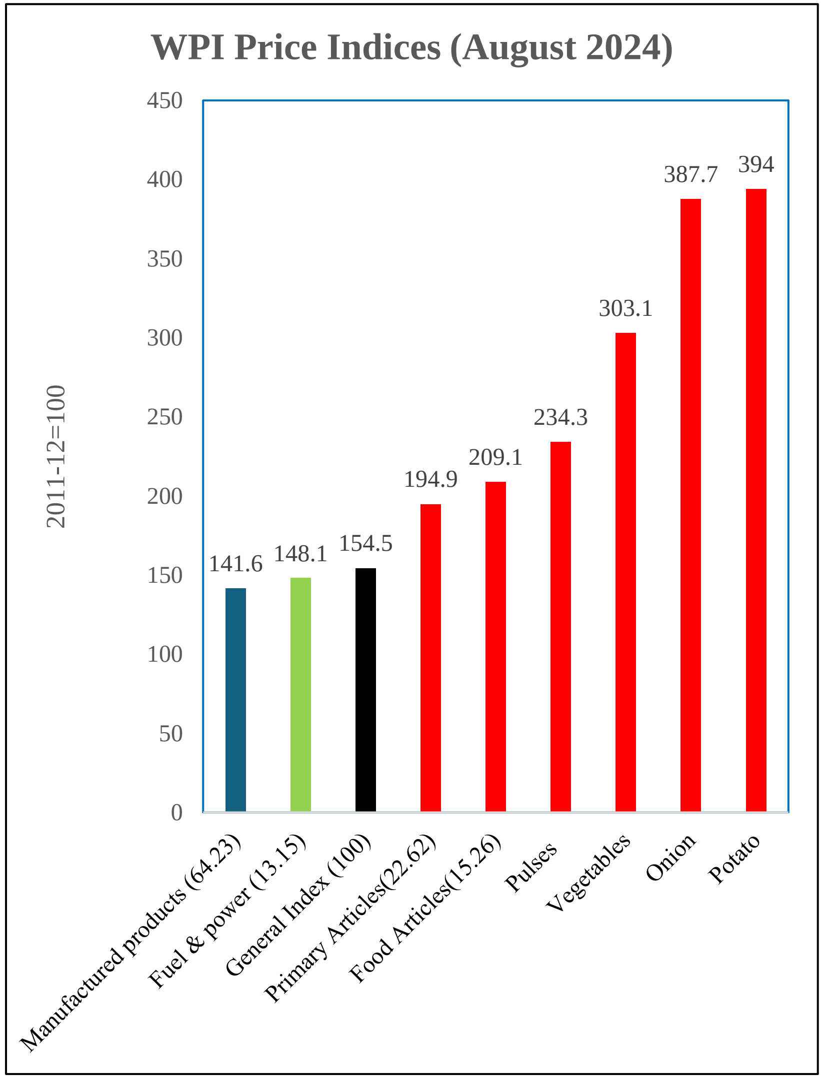
- In the August 2024 Monthly Bulletin of RBI (released on August 19, 2024), in an article titled "Are Food Prices Spilling Over? (Patra *et al.*, 2024)", a counter view appeared (without referring to the Economic Survey). It argued that: *Monetary policy is the only active disinflationary agent in the economy*. Food price shocks have imposed upside pressures on core inflation, which has been offset by disinflationary monetary policy. *Failing to act against persistent food inflation risks expectations getting unanchored, generalisation of price pressures and loss of control over inflation*."

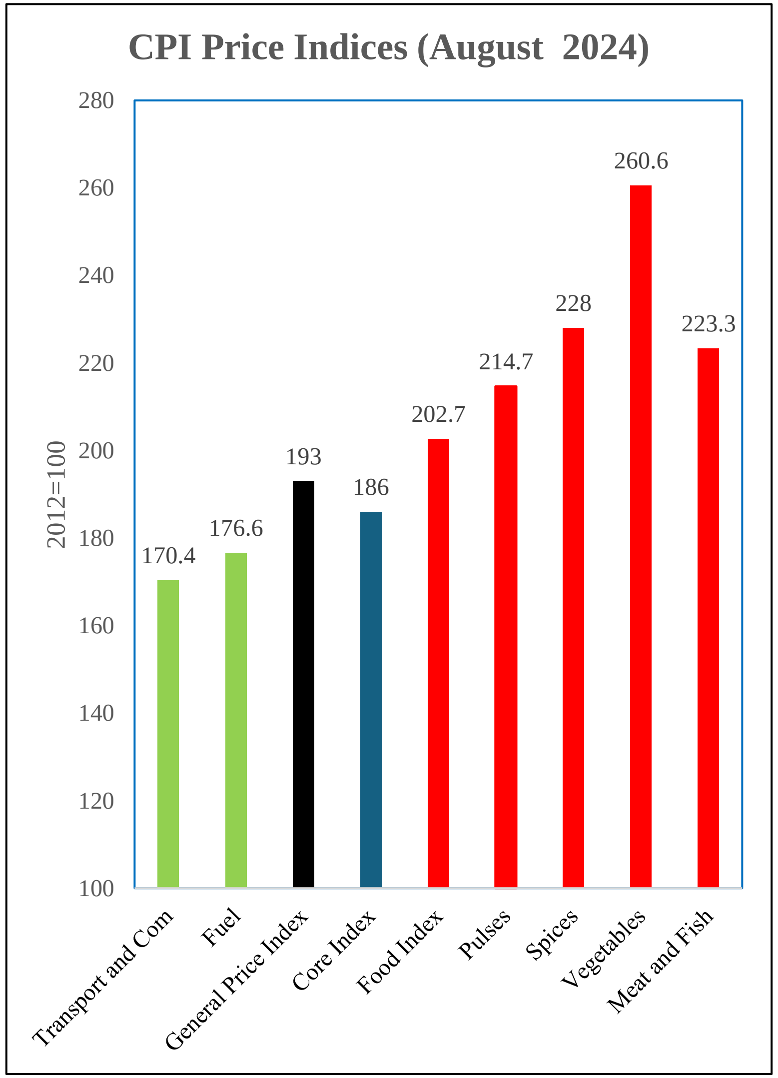
- "Inflation targeting: It's not set in stone and needs a critical review" (V Anantha Nageswaran, Mint of 3rd September 2024). Curbs on agri trade hit the earnings of farmers (Business Line, August 29, 2024).

- *Should we repeal the 2016 law? Should we ignore it? Should we amend it? If so, how? That's what needs a good debate.* (TCA Srinivasa Raghavan, "Who Needs Inflation Targeting", Business Line, September 23, 2024).

Has the Terms of Trade Moved Against Agriculture?
(How A Relative Price Change is Tackled in Inflation Management?)

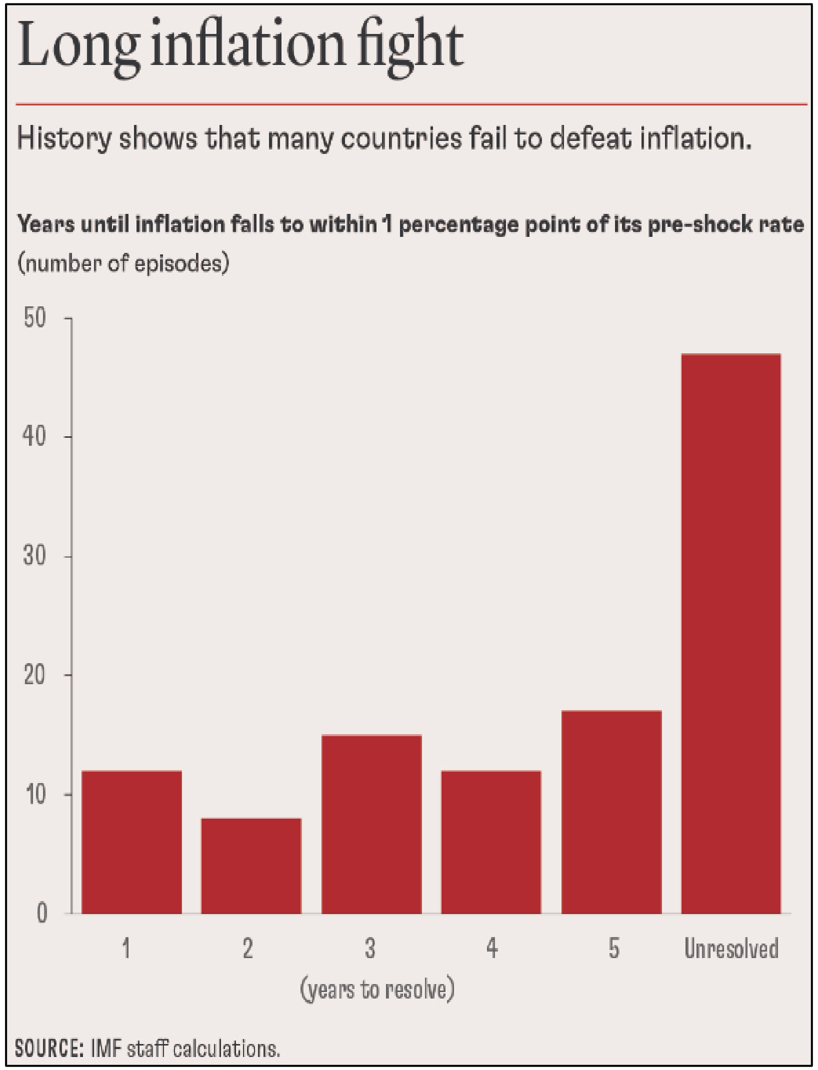


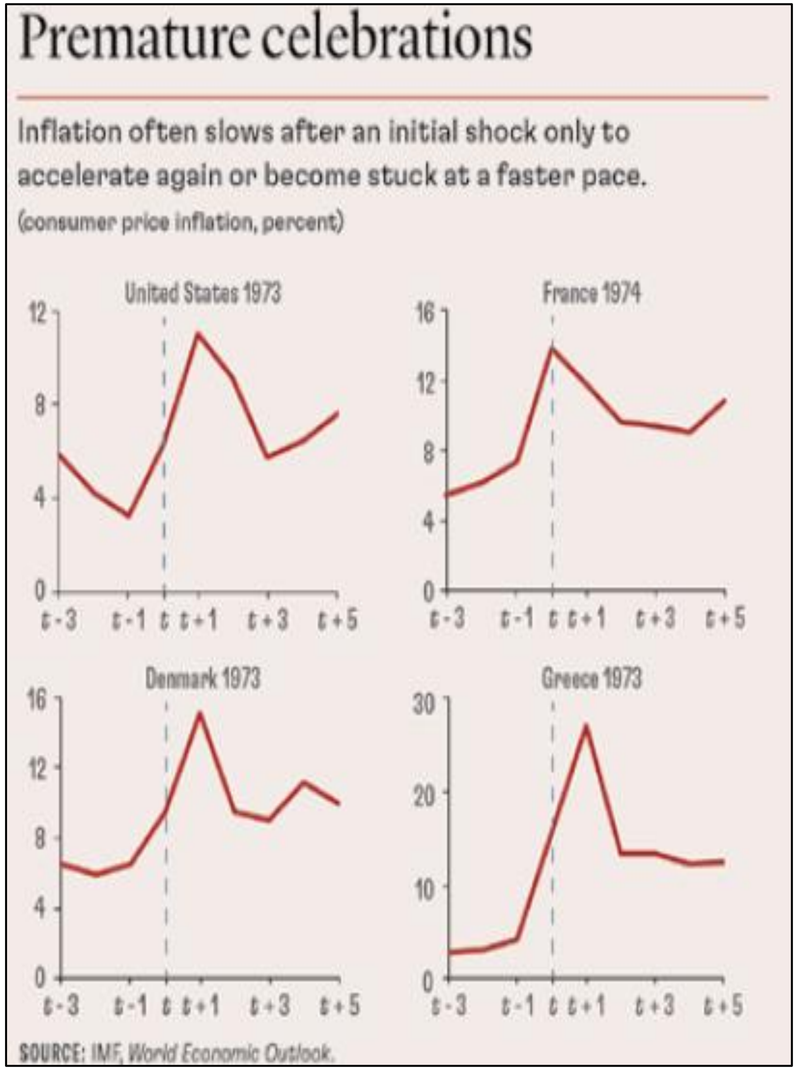


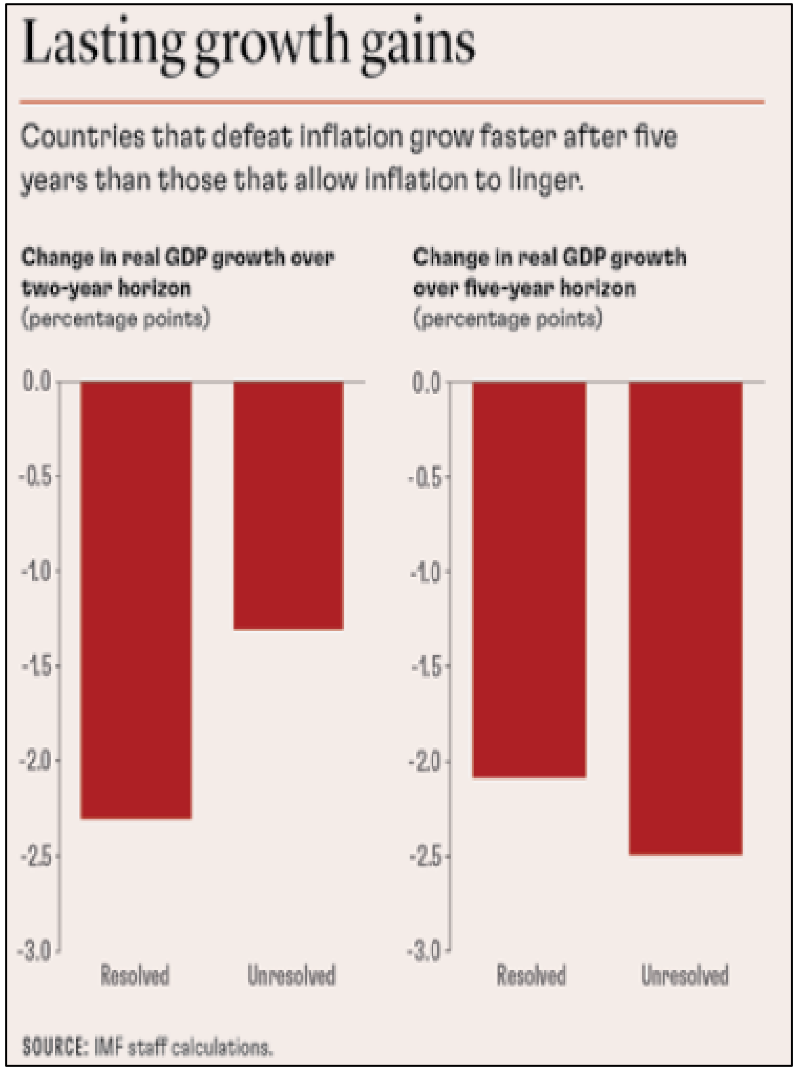


Source: RBI Handbook of Statistics

The Consequence of Not Resolving Inflation
(The Cost of Premature Celebration)







Source: Anil Ari, Carlos Mulas-Granados, Victor Mylonas, Lev Ratnovski, and Wei Zhao (2023), "One Hundred Inflation Shocks: Seven Stylized Facts,., IMF Working Paper 2023/190.

Q1. Is persistent food price inflation a monetary phenomenon in the medium-run? YES
Q2. Is FIT the most suitable framework to deal with food price (supply) shocks? YES
Q3. Is it possible to strengthen the FIT framework in future? YES

"*…monetary policy must act irrespective of what triggered inflation…In a situation of supply shocks, it may take longer for monetary policy to bring inflation down*" (Rangarajan, 2020).

"*…Some argue, rightly, that it is hard for RBI to directly control food demand through monetary policy. Then they proceed, incorrectly, to say we should not bother about controlling CPI inflation. …To prevent sustained food inflation from becoming generalized inflation …, we have to reduce inflation in other items.*" (Rajan, 2016).

The binary textbook prescriptions – monetary policy as the "first line of defence" *versus* a complete "hands off" approach to food inflation – underestimate the complexity of the policy challenge in practice (Subbarao, 2011).

Rangarajan C (2020), "The New Monetary Policy Framework – What it Means", S. Chakravarty Memorial Lecture delivered at Annual Conference of the Indian Econometric Society at Madurai Kamaraj University in January 2020.

Rajan, Raghuram (2016) "The fight against inflation - a measure of our institutional development", Foundation Day Lecture by Dr, Governor of the Reserve Bank of India, at Tata Institute of Fundamental Research, Mumbai, 20 June 2016.

Subbarao, Duvvuri, "The Challenge of Food Inflation", Presidential Address delivered by at the 25th Annual Conference of the Indian Society of Agricultural Marketing at Hyderabad on November 22, 2011.

Inflation is Always and Everywhere a Monetary Phenomenon
i.e.,
(A Monetary Policy Phenomenon)

- **"Why should the average level of all prices be affected significantly by changes in the prices of some things relative to others?" Milton Friedman (1975)**

  There is no reason for the overall price level, $P = \omega Pf + (1-\omega)Pnf$, to rise unless the money supply does.

- **Relative price changes as aggregate supply shocks – menu cost (Ball, 1995); downward price inflexibility (Fischer, 1981, 1982; Frenkel and Giavazzi, 1982); agents cannot distinguish between general and relative price changes (Lucas, 1973; Barro, 1976; Hercowitz, 1981)**

  Production linkages and heterogeneous price stickiness across sectors.

- **Why monetary policy does not stabilise such price pressures? – (a) it accommodates, by choice, to lower growth sacrifice; and (b) monetary policy is not effective to counter such price pressures (Murica and Wolman, 2023).**

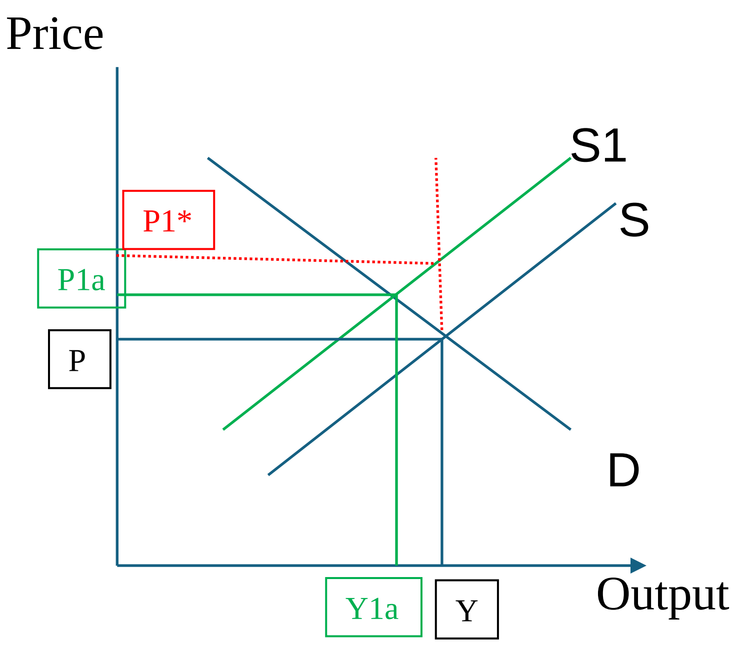
- **Supply of money is determined endogenously – money demand is accommodated automatically.**

  A "**demand for monetary accommodation**" is created by domestic demand shifts, domestic cost push, and supply shocks from abroad. The "**supply of monetary accommodation**" by the central bank depends on the weights in its countercyclical reaction function (Robert J Gordon, 1977).

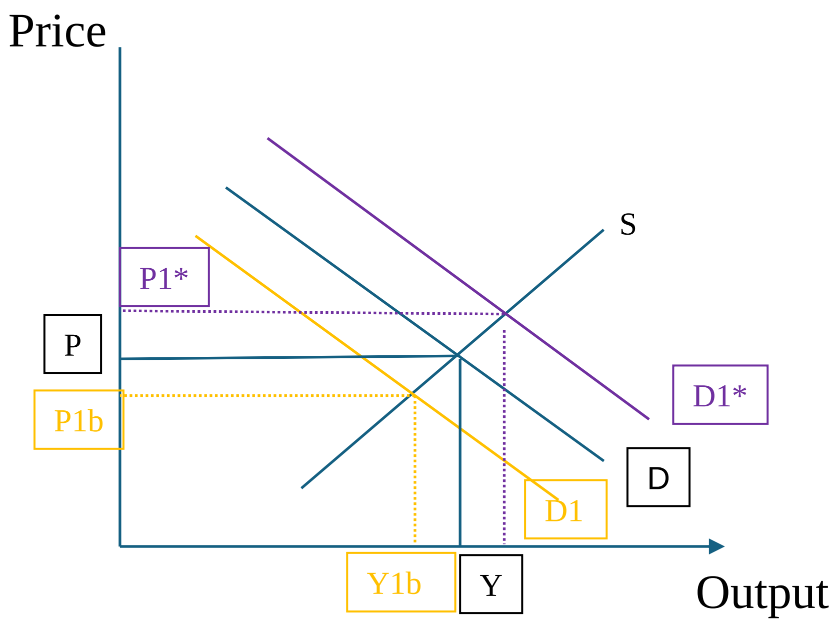
  "Exogenously" created excess money is not the culprit here – "Endogenous" monetary accommodation of inflation-induced demand for money (to keep the WACR closer to the policy repo rate, and avoid overshooting of the WACR, as per the current operating framework of monetary policy) is what makes supply-shock led inflation a monetary policy phenomenon.

Demand Impact of an Adverse Supply Shock (Change in Relative Prices, NOT Inflation?)

CPI Food Items Directly Impacted by the Supply Shock



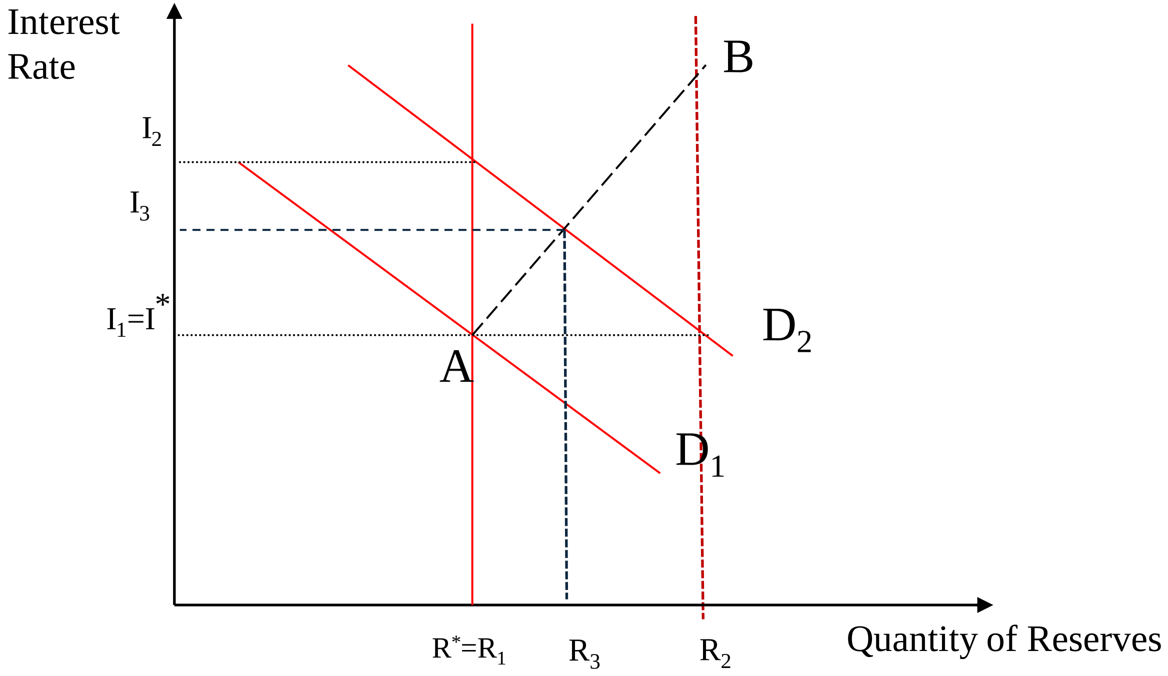
CPI Non-Food Items not Directly Impacted by the Supply Shock

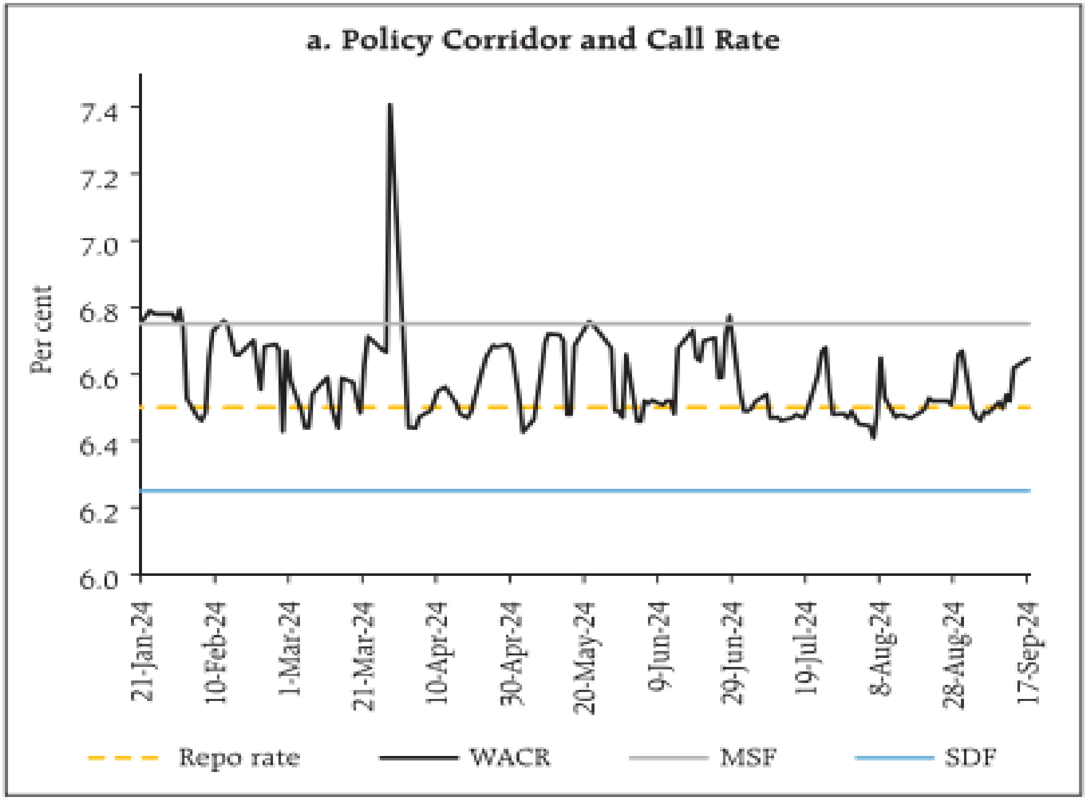


Depends on: Credit Constraints Facing Households; Inflation Expectations; Monetary Policy Expectations.
…More importantly, on "Monetary Policy Accommodation" of the supply shocks.

Choice of the Operating Framework: Trade-offs

- Target quantity – interest rate will vary.
- Target interest rate – primary liquidity unlimited.
- Target a combination of price and quantity – confusing signals, inefficient?

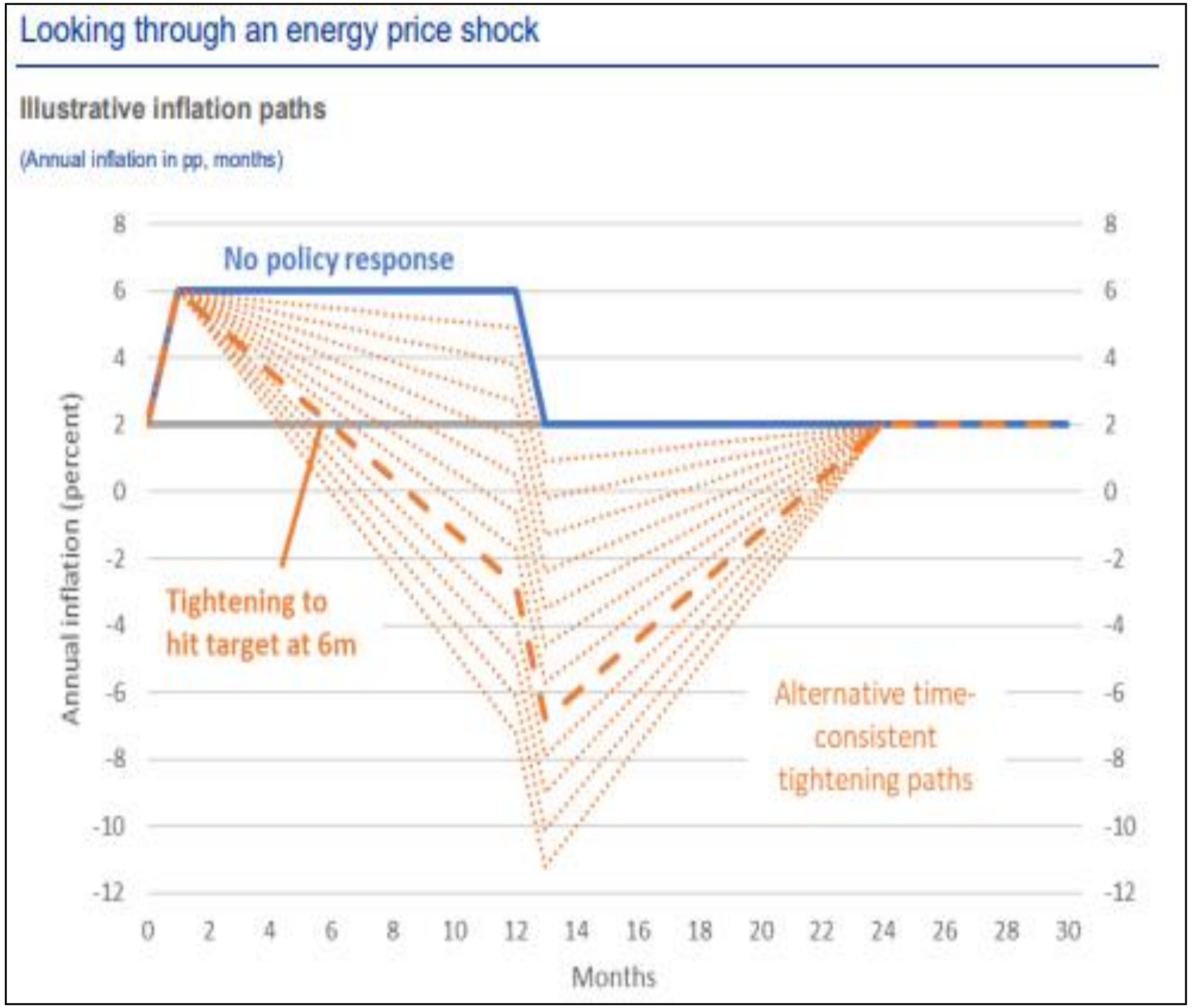


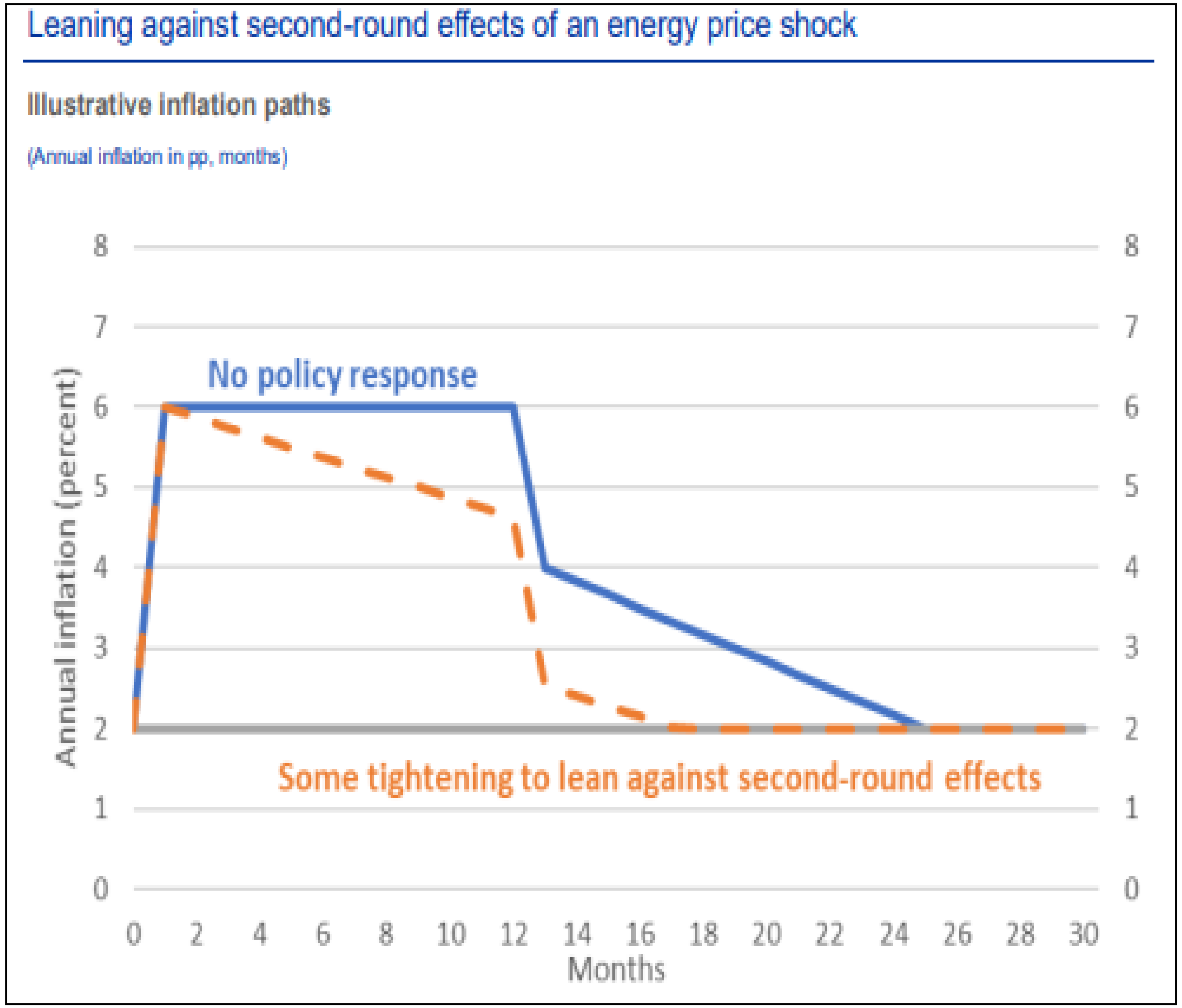


Sources: RBI; CCIL; and Bloomberg.

Source: RBI Bulletin, Sept 2024

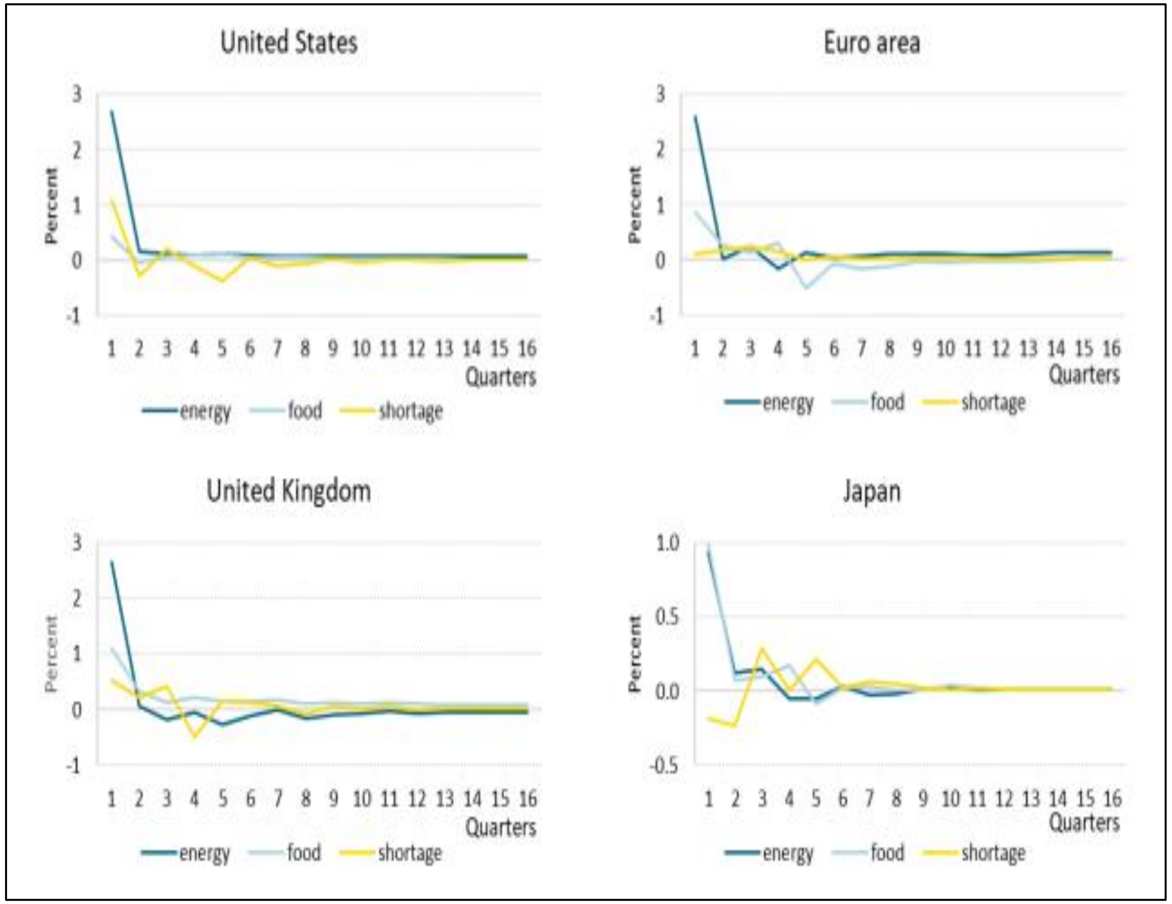
Monetary Policy Response to Supply Shocks
(Policy Implementation and Communication Challenge)

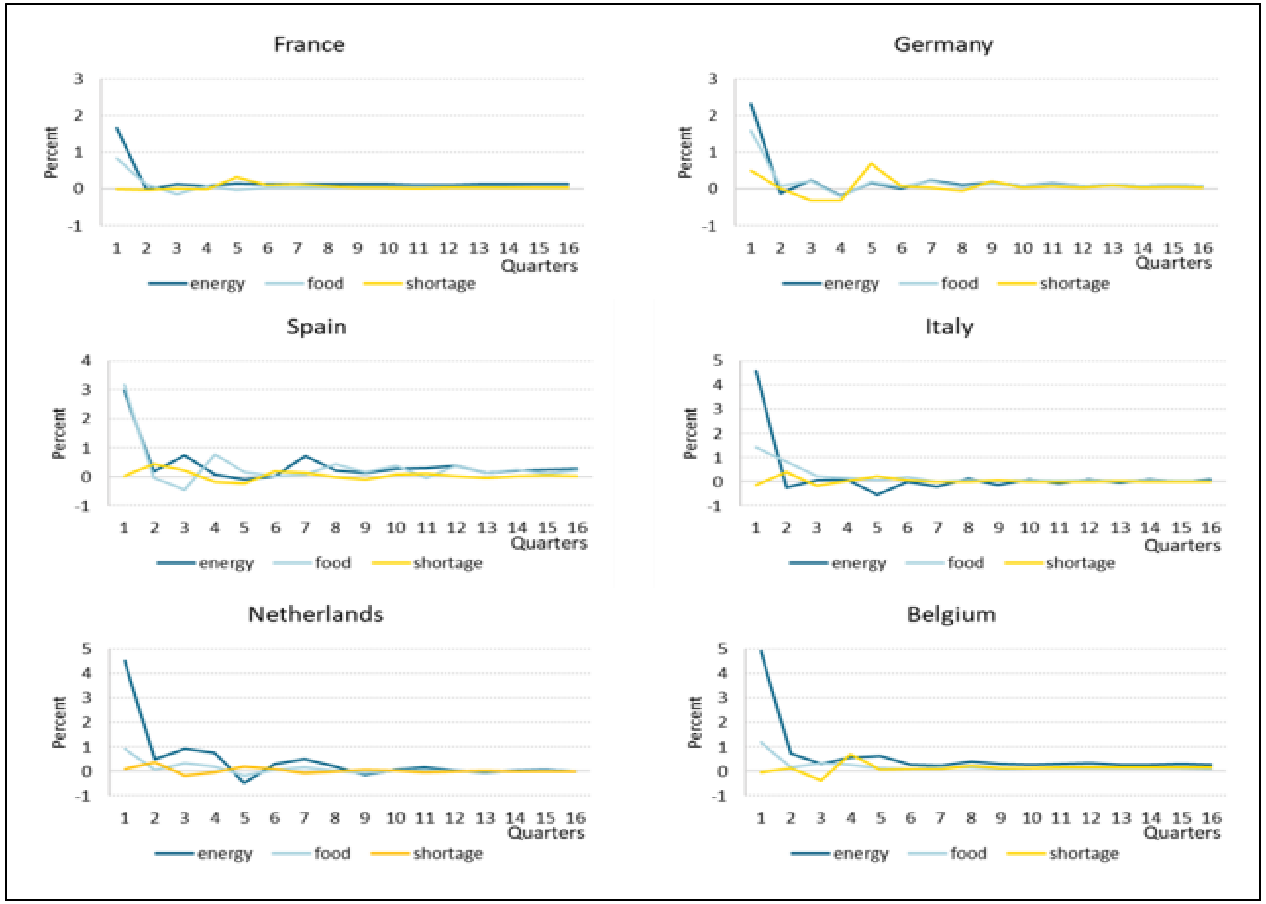




Source: Silvana Tenreyro; Macroeconomic stabilisation in a volatile inflation environment, ECB Forum June 26-28, 2023.

Impulse Responses of Inflation to Relative Price Shocks in AEs (per cent)- (How Quickly the Shock Impact Dissipates?)





Dynamic responses of inflation to a one-standard-deviation positive shock to relative energy prices, relative food prices, and the shortage variable (post-2019Q4 sample).

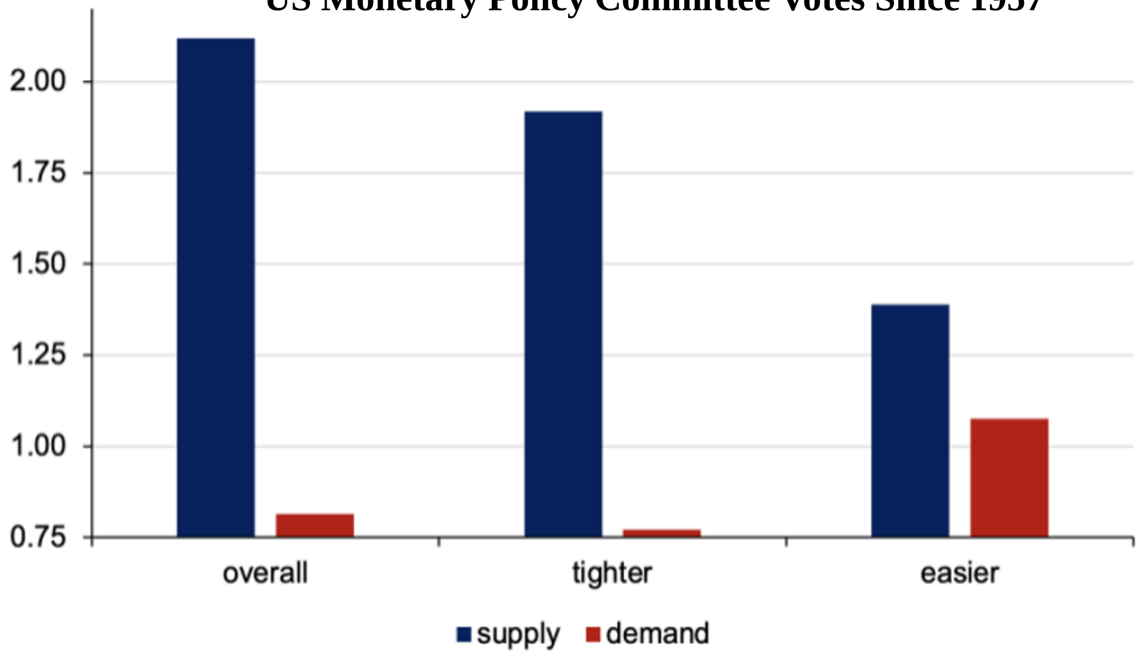
Source: Ben Bernanke and Olivier Blanchard (2024), "An Analysis of Pandemic-Era Inflation in 11 Economies", Hutchins Centre Working Paper No 91, M a y 2 0 2 4.

The (post-pandemic inflation) episode stands in sharp contrast to the persistent effects of relative price shocks in the 1970s. The more transient effects of price shocks this time around are traced in large part in the model to **more anchored inflation expectations** and to **limited catch-up of real wages**. The first is likely due to higher credibility of monetary policy; the second is likely due, in good part, to the disappearance of wage indexation.

Supply Shocks and Monetary Policy Disagreement

Monetary Policy Disagreement

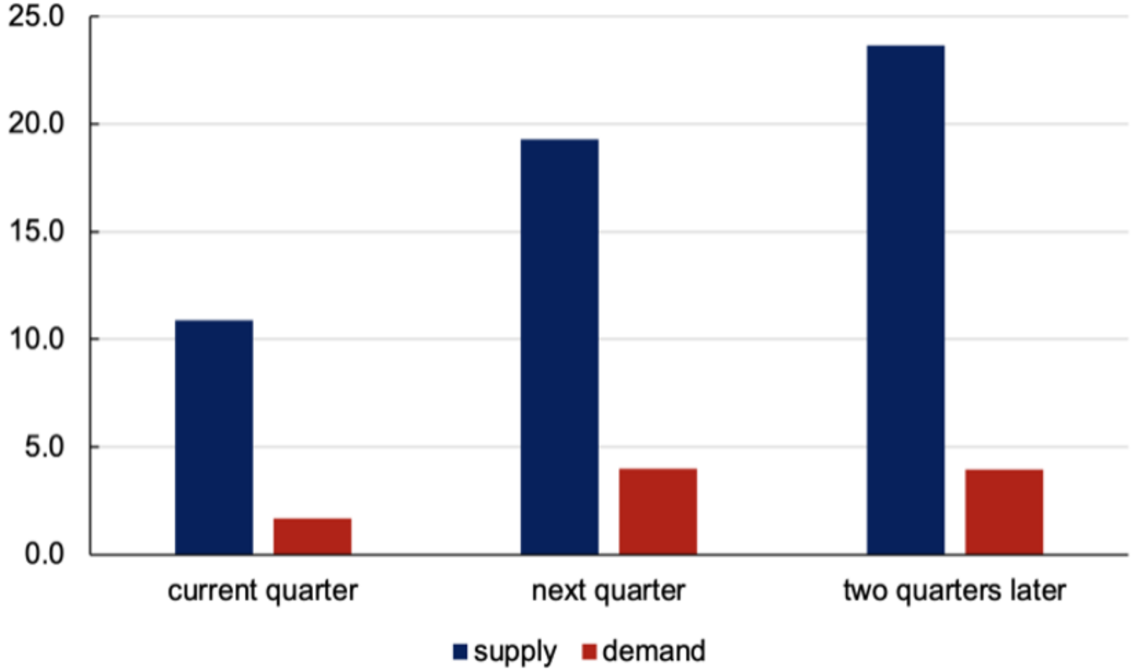
US Monetary Policy Committee Votes Since 1957



Notes: Effect of the median supply and demand shock on the probability of a meeting with disagreement

The median supply shock increases the probability odds of occurrence of disagreement at a meeting by 212%, with a respective increase of 192% for tighter and 139% for easier policies.

Supply Shocks Increase Market Uncertainty

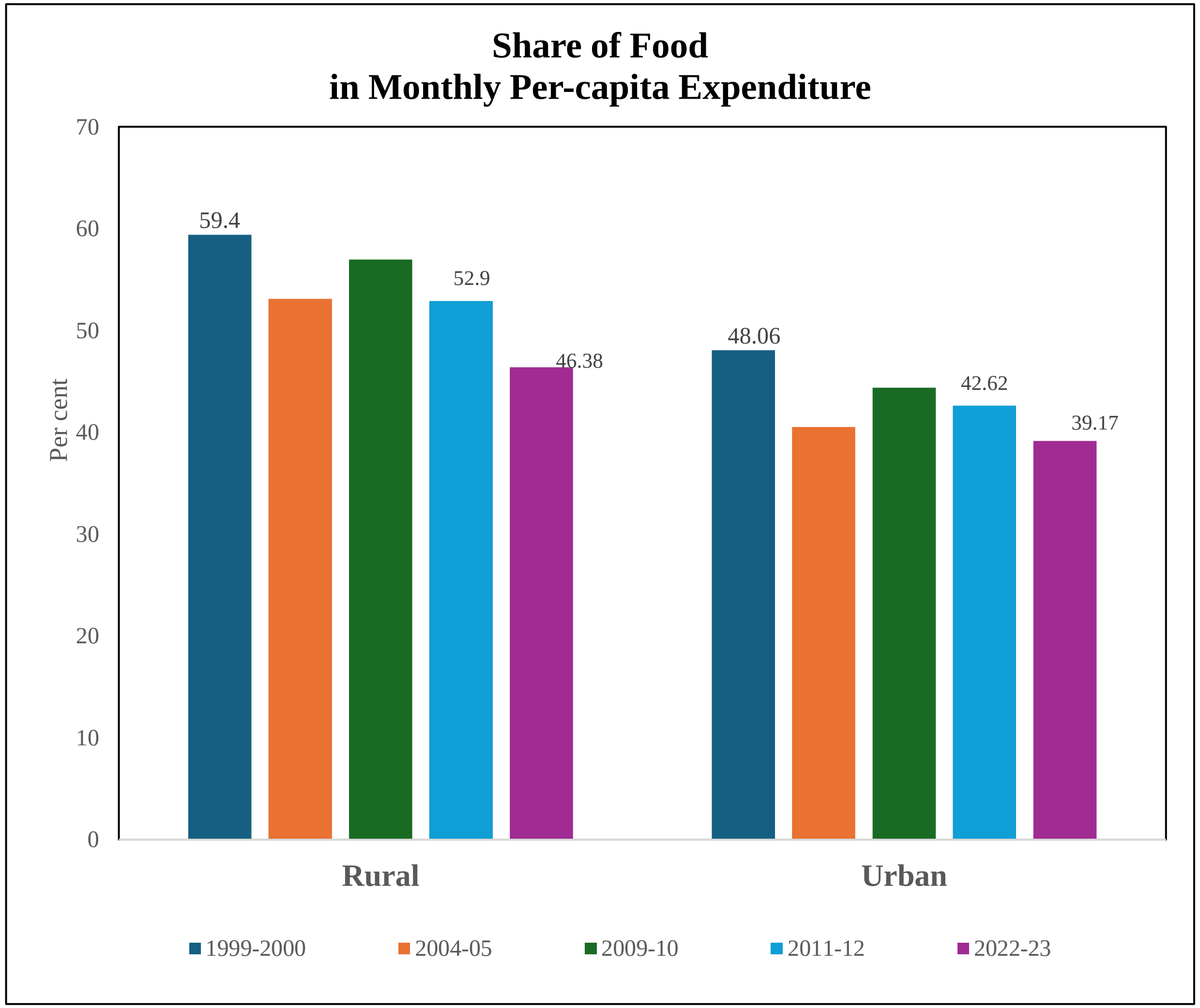


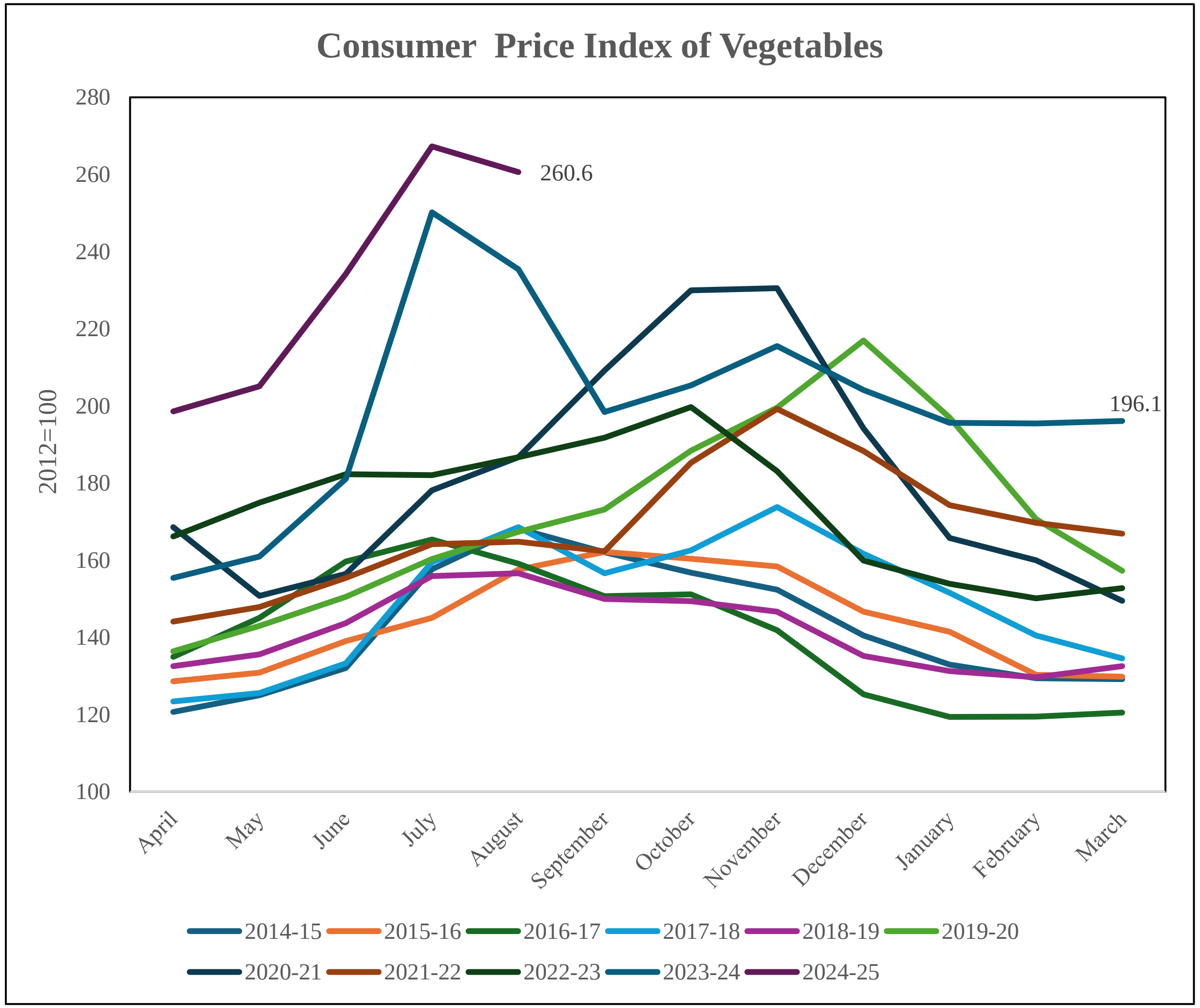
Note: Effect of the median supply and demand shock on the interquartile range (IQR) forecasts of the three-month Treasury-bill interest rate (basis points)

Median supply shock increases the interquartile range of the three-month Treasury bill interest rate forecasts by 11, 19, and 24 basis points, in the current quarter and the following two quarters, respectively.

Carlos Madeira, João Madeira, Paulo Santos Monteiro (2023), “The origins of monetary policy disagreement: The role of supply and demand shocks”, CEPR, Nov 21.

Share of Food in the Consumption Basket is Declining at Slow Pace – Nature of Food Shocks is also Changing





Source: RBI Handbook of Statistics

“Target Band”/ “Range Target” Ensure Flexibility in FIT to Deal with Supply Shocks Without Undermining the Anchor

Inflation Target and Tolerance Band for EMEs

EMEs with Higher Share of Food in CPI					EMEs with Lower Share of Food in CPI				
Sr. No	EME	Share of Food in CPI (per cent)	Inflation Target (per cent)	Tolerance Band (per cent)	Sr. No	EME	Share of Food in CPI (per cent)	Inflation Target (per cent)	Tolerance Band (per cent)
1	India	45.9	4.0	+/-2.0	13	Uganda	28.5	5.0	+/-2.0
2	Ukraine	45.0	5.0	+/- 1.0	14	Paraguay	26.9	4.0	+/-2.0
3	Ghana	43.9	8.0	+/-2.0	15	Uruguay	26.0	3.0 - 7.0	
4	Philippines	38.3	3.0	+/- 1.0	16	Mexico	25.8	3.0	+/- 1.0
5	Jamaica	37.5	4.0-6.0		17	Poland	25.2	2.5	+/- 1.0
6	Albania	37.3	3.0	+/- 1.0	18	Peru	25.1	2.0	+/- 1.0
7	Thailand	36.1	1.0 - 3.0		19	Indonesia	25.0	3.0	+/-1.0
8	Egypt	32.7	7.0	+/- 2.0	20	Dominican Republic	23.8	4.0	+/- 1.0
9	Serbia	31.2	3.0	+/- 1.5	21	Turkey	22.8	5.0	+/-2.0
10	Georgia	31.0	3.0		22	Hungary	21.5	3.0	+/- 1.0
11	Russia	31.0	4.0		23	Chile	19.3	3.0	+/- 1.0
12	Brazil	31.0	3.75	+/- 1.5	24	South Africa	17.2	3.0 - 6.0	
					25	Colombia	15.1	3.0	+/- 1.0

Sources: www.centralbanknews.info and IMF.

Performance of Different Food Sub-Groups during Pre and Post - FIT

Item	Weight	Inflation above 6 per cent (in per cent of months)		Inflation below 2 per cent (in per cent of months)		Inflation within 2 to 6 per cent (in per cent of months)	
		Pre -FIT	Post-FIT	Pre -FIT	Post-FIT	Pre -FIT	Post-FIT
CPI All Groups	100	57.9	7.1	0.0	4.8	42.1	88.1
Food and Beverages	45.86	71.9	14.3	1.8	42.9	26.3	42.9
Cereals and products	9.67	45.6	0.0	10.5	26.2	43.9	73.8
Meat and fish	3.61	78.9	33.3	0.0	4.8	21.1	61.9
Egg	0.43	57.9	38.1	19.3	40.5	22.8	21.4
Milk and products	6.61	75.4	4.8	0.0	28.6	24.6	66.7
Oils and fats	3.56	33.3	7.1	19.3	50.0	47.4	42.9
Fruits	2.89	63.2	21.4	15.8	35.7	21.1	42.9
Vegetables	6.04	61.4	40.5	22.8	45.2	15.8	14.3
Pulses and products	2.38	71.9	21.4	7.0	71.4	21.1	7.1
Sugar and confectionery	1.36	31.6	35.7	56.1	50.0	12.3	14.3
Spices	2.50	73.7	14.3	15.8	47.6	10.5	38.1
Non-alcoholic beverages	1.26	47.4	0.0	0.0	26.2	52.6	73.8
Prepared meals, snacks, sweets *etc.*	5.55	89.5	2.4	0.0	2.4	10.5	95.2

Note: Pre-FIT period covers January 2012 - September 2016.

EMEs - higher inflation targets and wider tolerance bands.

India - Food inflation remained within the tolerance band only about 43 per cent of the time in the FIT period – inflation in respect of pulses, vegetables and sugar remained within the tolerance band less than 20 per cent of the time. But headline inflation remained with 2-6 band 88.1 per cent of the time.

Source: RBI, RCF (2020-21)

Why Headline and not Core Inflation as the Target?

Contribution of Supply Shocks to Food Inflation (year-on-year; Agriculture Year Averages)

Agriculture year (AY)	Average monthly supply shock
2014-15	-0.05
2015-16	0.48
2016-17	-0.88
2017-18	-0.17
2018-19	-1.80
2019-20	1.82
2020-21	0.80
2021-22	-0.16
2022-23	0.25
2023-24	1.51

Note: Since the supply side factors affecting food inflation are in focus, averages are calculated based on agriculture year (June to July).

Determinants of Inflation Expectations

Dep. variable: IE	Coefficient	p-value
IE (-1)	0.44	0.000
Food Inflation	0.12	0.047
*Target**	0.65	0.006
Repo	-0.31	0.097
Constant	4.00	0.000

Diagnostics

Adjusted R^2: 0.740

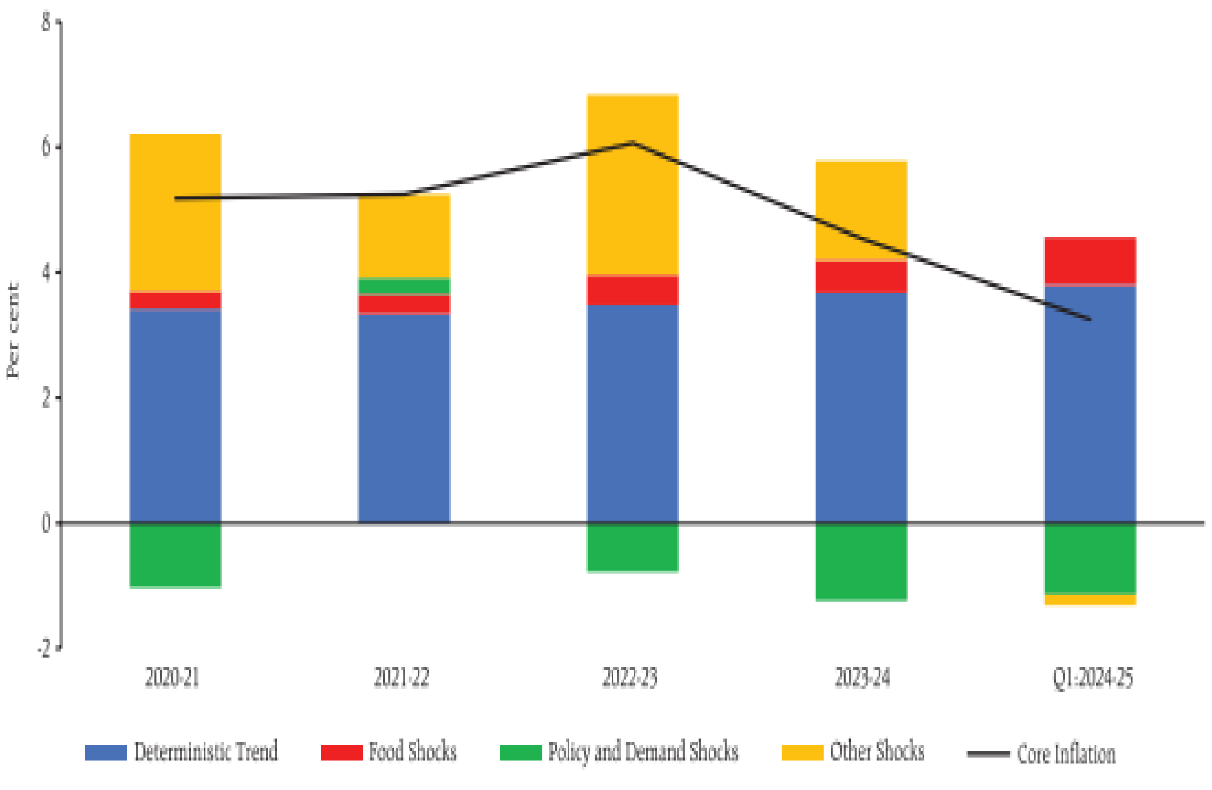
Breusch-Godfrey LM test for autocorrelation in errors p-value: 0.793

Note: *: Target is proxied using the glide path in the pre-flexible inflation targeting period (prior to Q3:2016-17) and 4 per cent thereafter.

Source: Michael Debabrata Patra, Joice John and Asish Thomas George (2024), "Are Food Prices Spilling Over?", RBI Monthly Bulletin, August 2024.

Use of Flexibility in FIT in Practice

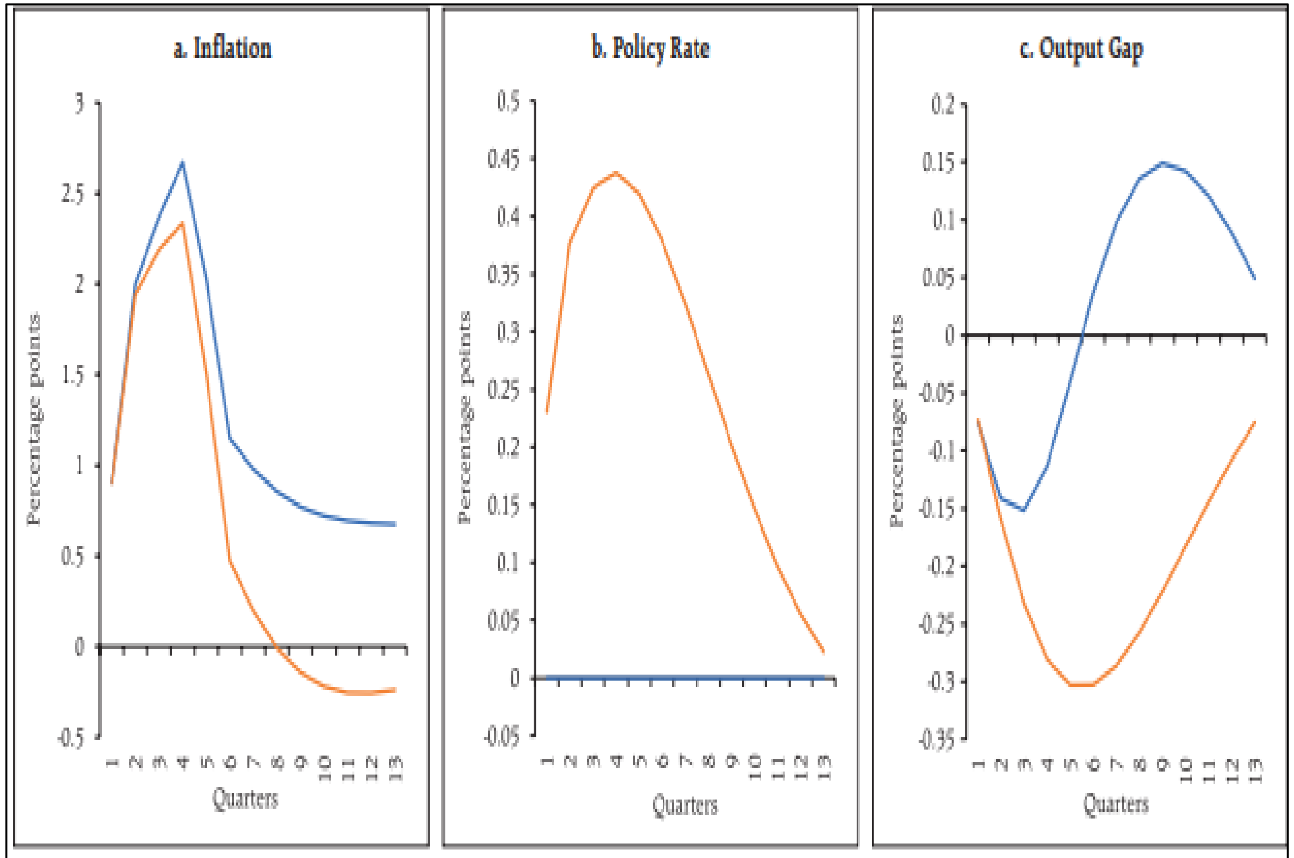
Historical Decomposition of Core Inflation (percentage points)



Source: NSO; RBI; and authors' estimates.

Note: These estimates present the contributions to average core inflation during the specified periods. Other shocks include cost-push shocks, external shocks and exchange rate shocks. The peak impact of each of these shocks may be differ in timing and magnitude.

Monetary Policy Choices (Persistent Food Inflation Shock)



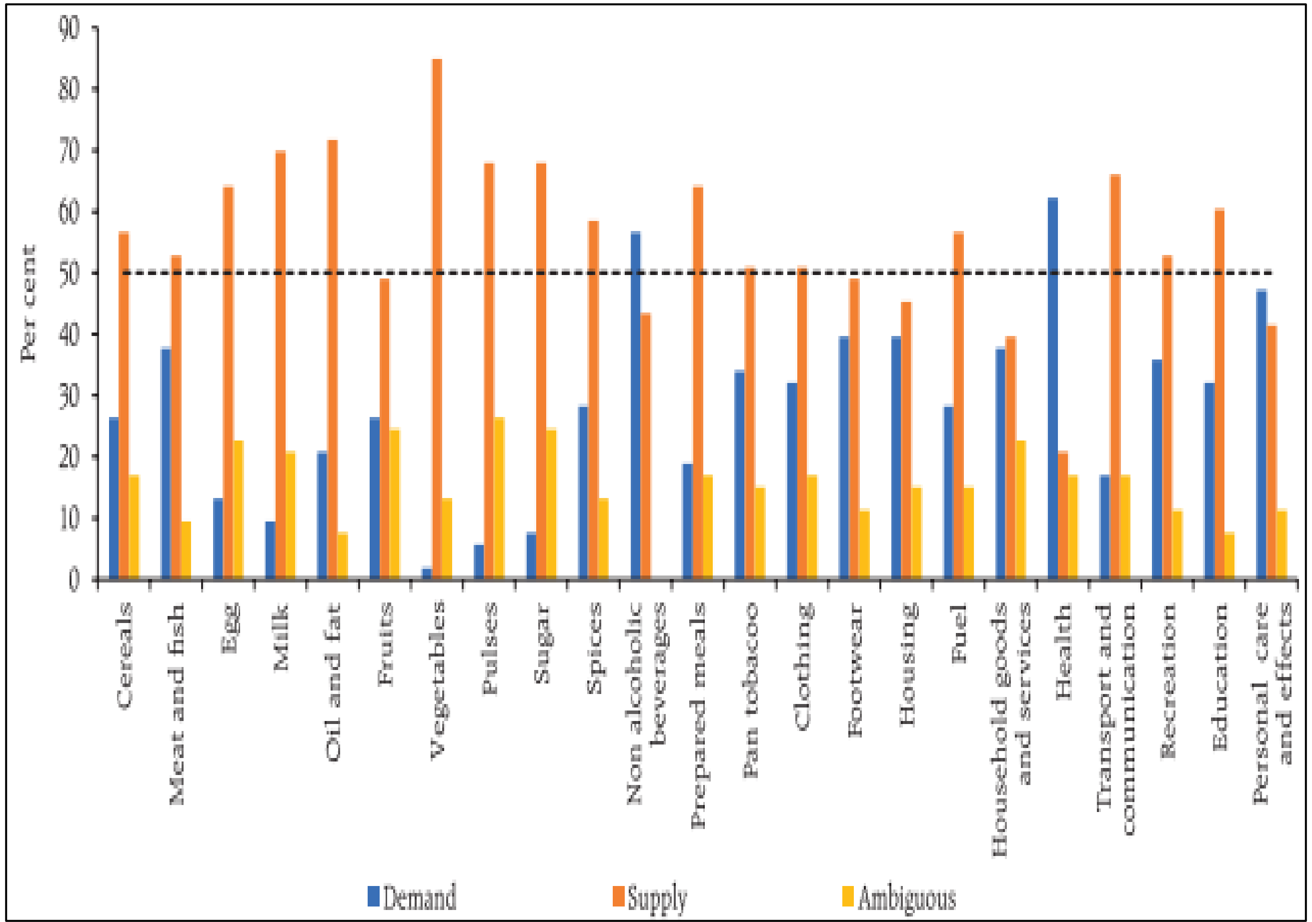
Note: Orange line repersents the IRFs with policy action and blue line repersents IRFs with no policy action.

Source: Michael Debabrata Patra, Joice John and Asish Thomas George (2024), "Are Food Prices Spilling Over?", RBI Monthly Bulletin August 2024

Michael Debabrata Patra, Joice John and Asish Thomas George (2024), "Are Food Prices the 'True' Core of India's Inflation?, RBI Bulletin January 2024.

Food Price Inflation Reflects also Demand Conditions

Contributions of Demand and Supply to CPI Sub-groups Level Inflation (January 2019-May 2023)



If unexpected change in prices and quantities in a month move in the same direction, it is demand driven - higher demand increases both prices and quantities (volumes).

It is classified as supply driven if unexpected change in prices and quantities move in the opposite direction – lower supply means a decrease in volume with an increase in price.

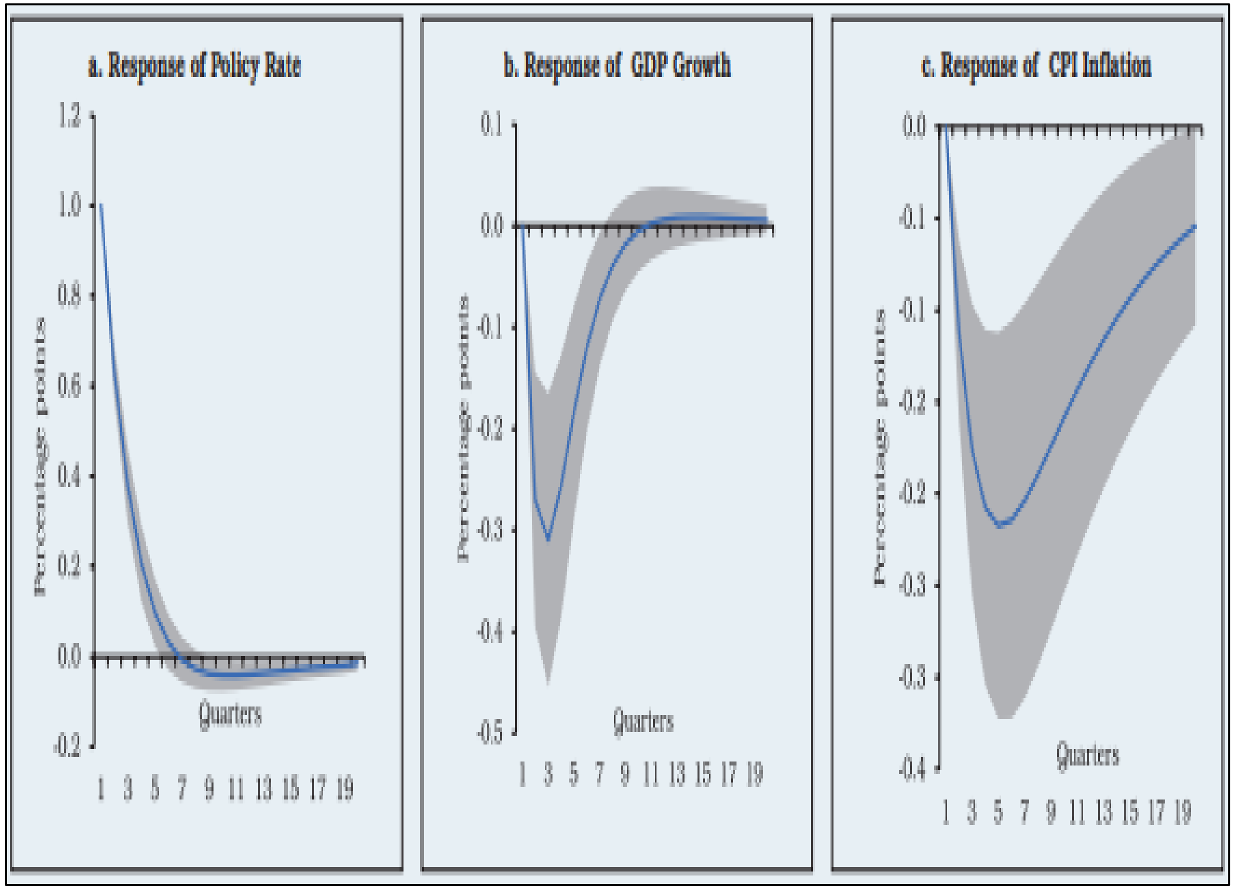
Classification by running a bivariate vector auto regressive (VAR) model for prices and quantities for different components of CPI on a rolling window basis and analysing the one period ahead forecast residuals to determine the direction of price and volume shocks for different items.

CMIE CPHS consumption expenditure data at the all-India level available for 153 items falling under different groups/sub-groups are mapped with the 23 CPI subgroup price indices.

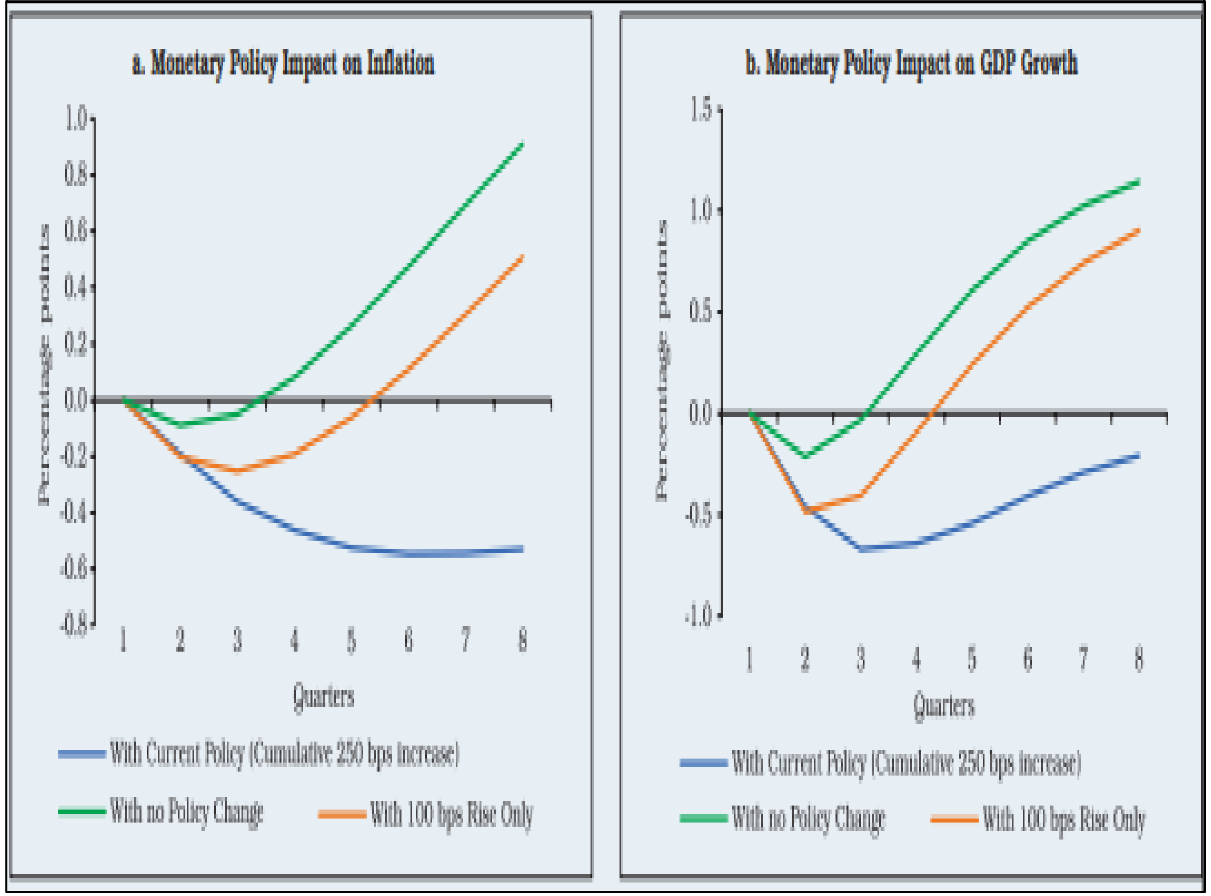
Source: Himani Shekhar, Vimal Kishore and Binod B. Bhoi (2023), “Recent Inflation Dynamics in India: Role of Supply vis-à-vis Demand”, RBI Bulletin December 2023.

Monetary Policy is Effective, but it Involves Growth Sacrifice

Impulse Response to One Percentage Point Increase in Policy Rate



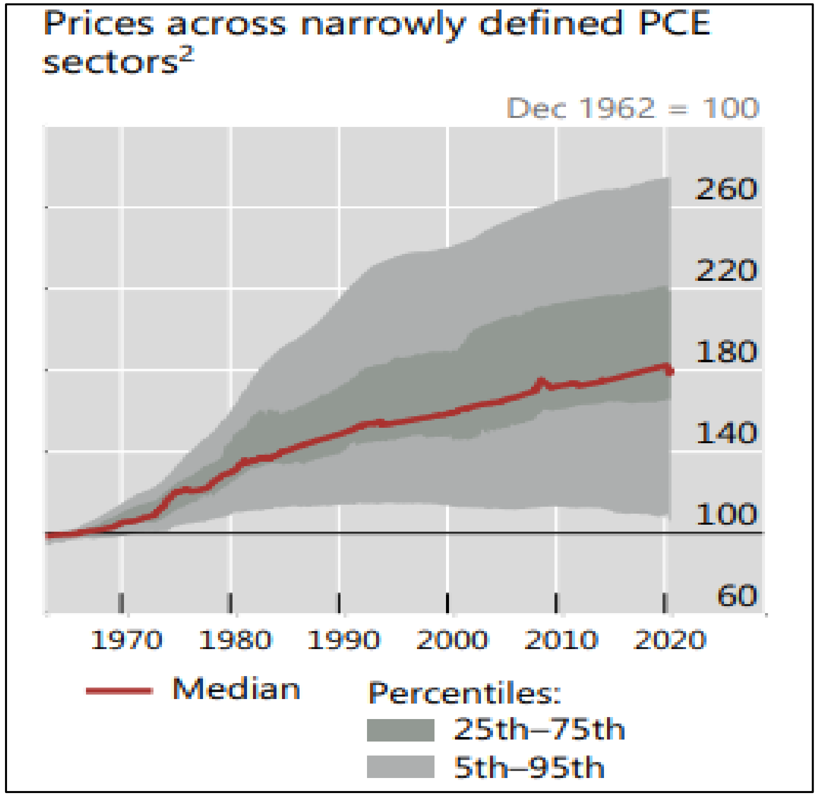
Impact of Monetary Policy on GDP Growth and Inflation

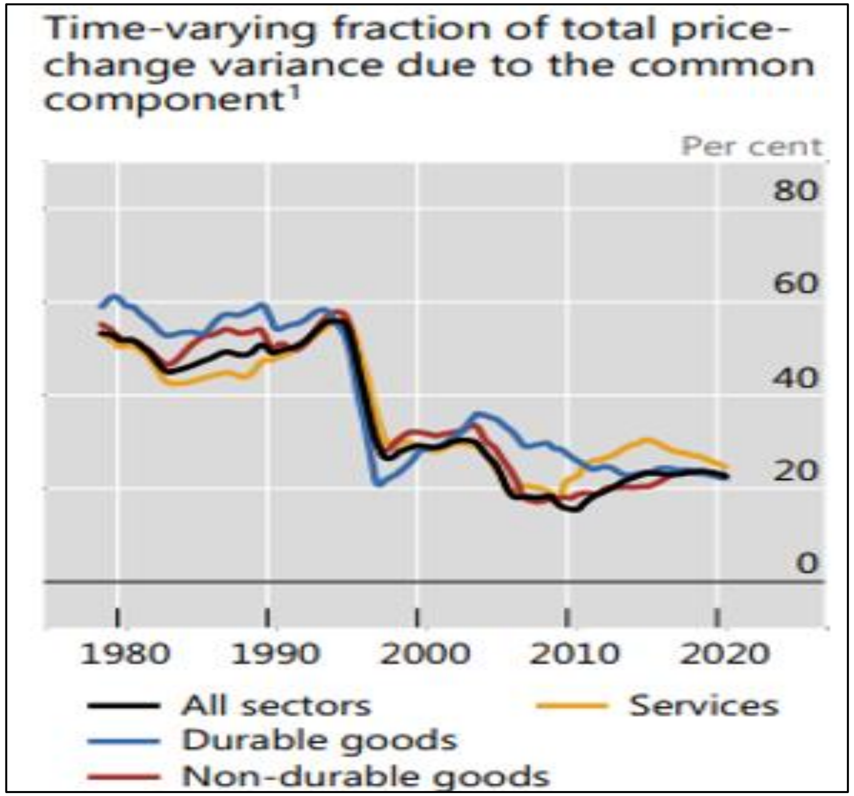


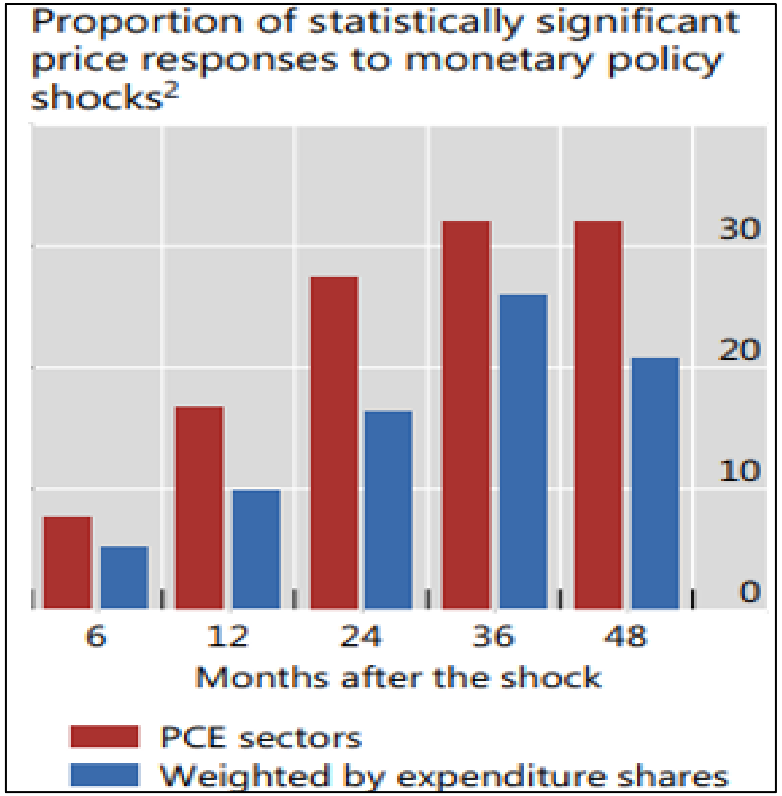
Inflation is estimated to have eased by more than 50 bps as compared to a rise in inflation of about 90 bps under policy repo rate left unchanged at 4 per cent. The efforts to control inflation by maintaining current policy stance might have sacrificed growth by about 65 bps

Source: Annual Report, 2022-23

Strengthening the FIT Framework – The Way Ahead







- **Sector-specific price changes across sectors, rather than generalised price co-movements, account for most of the fluctuations in aggregate price indices.**
- **Changes in the monetary policy stance affect a rather narrow set of prices, limiting the ability of monetary policy to steer inflation within narrow ranges.**
- **Evidence puts a premium on flexibility in pursuing inflation targets within a credible policy regime**
- **The importance of a degree of tolerance for deviations of inflation from targets within certain ranges and of longer horizons to bring inflation back within those ranges.**

Source: Claudio Borio, Piti Disyatat Dora Xia, and Egon Zakrajšek (2021), "Monetary policy, relative prices and inflation control: flexibility born out of success", BIS Quarterly Review, September 2021.

Key Takeaways

- **A cost of living index must cover all consumption expenses – can be approximated by headline inflation, not core inflation.**
- **While headline inflation as a target may require supply side measures for achieving price stability (thereby interfering with market dynamics of farm products), core inflation as a target may pose even greater complications for all markets – exchange rate (fair value assessment), capital markets (real rate of return on savings and discount rate for investment planning), and for the real economy (because of lack of clarity on who would stabilise food inflation, and as a result, how could monetary policy work amid higher risks of second round transmission to core inflation).**
- **Relative price shocks, when persist, send signals for warranted resource reallocation in the economy – productivity and climate resilience of the farm sector should be the policy focus (as in the last Union Budget), requiring fiscal and financial sector policies to respond appropriately. Excluding food from the inflation target will not help address the lingering structural bottlenecks in the Indian farm sector.**
- **Monetary policy accommodation of supply shocks makes inflation eventually a monetary phenomenon in the medium-run (endogenous money supply process); monetary policy does not respond to transitory supply shocks (so, no obvious costs of FIT); in the medium-run, monetary policy aims at minimising costs, while recognising the potential higher costs of a hands-off approach/delayed withdrawal of accommodation.**
- **F in FIT (+/- 2%) minimises the potential costs of using a headline inflation as the target; the 4 % target is critical to anchor inflation expectations – firmly anchored inflation expectations can enhance flexibility to accommodate supply shocks; supply-shock induced deviations usually return to within the (4+/-2%) tolerance band, most of the time within one year.**
- **Most countries use headline inflation as target – (Thailand, in the past, and Uganda now, are exceptions).**
- **Need for institutionalising greater flexibility in FIT in the future:**

    Extend the period defining failure of MPC (for inflation deviations) to four consecutive quarters form three consecutive quarters; raise the term of MPC to five years, from the current four years; highlight in every policy resolution the needed farm sector structural reforms that could improve supply response to relative price shocks and reduce the probability/magnitude of second round spillovers to core;

    Inflation forecast targeting in the presence of supply shocks – recognise that central forecast is not precise; reduce group think (team transitory); recognise risks of using models that assume total credibility of the central bank, and dangers of forward guidance (Mervyn A. King, 2024).

    More regular re-set of the CPI basket, to reflect the recent consumption pattern.

…Just like a credible conductor of a well-rehearsed orchestra can afford to lead with minimal gestures, so a credible central bank can afford to let inflation evolve within a wider range of its target without energetic adjustments to the policy stance. (Claudio Borio et al., 2021).