Food Inflation: The Role of Monetary Policy in India

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Plan of presentation

A. The importance of food inflation in India
   • Motivation
   • Related literature
   • Why India differs?
   • How important are second-round effects in India?

B. Implications for monetary policy
   • Modeling framework
   • Key results

C. Conclusions and policy implications
A. The importance of food inflation in India
Motivation: Food inflation is important

- The share of food in the household expenditure is high
- Inflation expectations are anchored by food inflation
- Inflation expectations feed into wages

Sources: CEIC and IMF staff calculations.
Relevant theoretical background

- Food prices:
  - Transitory and volatile
  - Supply side and non-monetary in nature

- Theoretical Basis
  - Goodfriend and King (1997)
  - Aoki (2001)

- Major assumption: markets are complete – only aggregate shocks matter
However, emerging market economies, including India, are different

- Food inflation is more persistent than non-food inflation in EMs and propagate strongly into non-food inflation (Walsh, 2011)

- Food inflation in India has demand component
Why India differs?

- On theoretical grounds:
  - Markets are far from complete – consumers are credit-constrained
  - Idiosyncratic shocks matter for consumption choice
  - Income and expenditure of households depend on
    - Composition of household expenditure
    - Price elasticity of demand for goods
  - Share of food in households’ consumption basket is large, and elasticity of substitution for food is low
High share of expenditure on food in household expenditure in EMs

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<th>Emerging Markets</th>
<th>Advanced Economies</th>
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<td><strong>Average</strong></td>
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# Share of population with access to formal finance

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<tr>
<th>Emerging Markets</th>
<th>Percent with access</th>
<th>Advanced Economies</th>
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<td>Average</td>
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Implications for emerging market economies:

- High persistence: ignoring them may lead to misspecification of inflation and result in policy mistakes (Walsh, 2011)

- Financial frictions, large share of food in households’ consumption basket, low elasticity of substitution: Monetary policy can’t ignore food price inflation if it aims at maximizing welfare (Anand and Prasad, 2010)
How important are second-round effects in India?

Following Cecchetti and Moessner (2008) and Clark (2001) we focus on two questions:

1) Does headline inflation revert to core inflation?

2) Does core inflation revert to headline inflation?
Q1: Does headline inflation revert to core inflation?

\[
\pi_t^{\text{headline}} - \pi_{t-12}^{\text{headline}} = \alpha + \beta(\pi_{t-12}^{\text{headline}} - \pi_{t-12}^{\text{core}}) + \epsilon_t
\]

- Sample: 1997M1-2013M6
- Cannot reject that headline inflation does not revert to core (\(\beta = 0\)).
- But reject that headline inflation fully reverts to core within a year (\(\beta = -1; \alpha = 0 \text{ and } \beta = -1\))

Therefore, headline does not revert to core, suggesting that either food shocks are persistent or the second-round effects are large.
Q2: Does core inflation revert to headline inflation?

\[ \pi_t^{core} - \pi_{t-12}^{core} = \delta + \gamma (\pi_{t-12}^{core} - \pi_{t-12}^{headline}) + \varepsilon_t \]

- Sample: 1997M1-2013M6
- \( \gamma = -0.8 \) and highly statistically significant, which corresponds to a situation where core inflation reverts to headline.
- Cannot reject that core inflation fully reverts to headline within a year and allowing for sample biases in the direction of shocks to non-core inflation (\( \gamma = -1 \); and \( \gamma = -1 \) and \( \delta = 0 \))

Therefore, core inflation appears to revert to headline, suggesting that the second-round effects are large.
B. Implications for
Monetary Policy
Structure of the model

- Two-country small open economy model
- Forward-looking aggregate supply and demand curves
- Rest of the world output feeds directly into the small economy
- Changes in foreign inflation and/or interest rates affect the exchange rate and, subsequently, demand and inflation
- The model is set up in gap terms
- Core inflation equation with a pass-through from headline to core inflation
And more formally

Five behavioral blocks:
1) An aggregate demand (IS curve)
2) A price setting (Phillips curve): core and food
3) A pass-through equation (from headline to core)
4) Uncovered interest parity
5) Monetary policy reaction function (Taylor rule)
Key results:

• Inflation is backward looking and highly persistent
• Second round effect of food inflation is large
  • the gap between headline inflation and core inflation decreases by about three fourths in a year as core inflation catches up with headline inflation
• Confidence matters for economic activity
• Exchange rate impact on output gap small
• High interest rate persistence: in line with other EMs
• Monetary policy has output stabilization as an objective
C. Conclusions
Conclusions

• Second-round pass-through from food and fuel to core is high: monetary policy should focus on headline inflation

• Inflation is persistent: monetary tightening needed to bring inflation down sustainably

• Burden of monetary policy could be reduced if supply bottlenecks are addressed
Thank you