WORKSHOP

Growth and Inclusion: Theoretical and Applied Perspectives

Session I

Food Inflation: Drivers and Policy Implications

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Reserve Bank of India

January 12, 2012

The Claridges Hotel
12 Aurangzeb Road
New Delhi, India
Food Inflation: Drivers and Policy Implications

Subir Gokarn
Deputy Governor
Reserve Bank of India

Seminar on
Growth and Inclusion:
Theoretical and Applied Perspectives

New Delhi, January 12, 2012
Structure of Presentation

- Characteristics of food inflation
- Demand factors
- Supply factors
- Policy implications
CHARACTERISTICS OF FOOD INFLATION
Food Inflation in India
A Long View

Per cent

-25
-15
-5
5
15
25

Food Inflation

Apr-54
May-55
Jun-56
Jul-57
Aug-58
Sep-59
Oct-60
Nov-61
Dec-62
Jan-63
Feb-64
Mar-65
Apr-66
May-67
Jun-68
Jul-69
Aug-70
Sep-71
Oct-72
Nov-73
Dec-74
Jan-75
Feb-76
Mar-77
Apr-78
May-79
Jun-80
Jul-81
Aug-82
Sep-83
Oct-84
Nov-85
Dec-86
Jan-87
Feb-88
Mar-89
Apr-90
May-91
Jun-92
Jul-93
Aug-94
Sep-95
Oct-96
Nov-97
Dec-98
Jan-99
Feb-00
Mar-01
Apr-02
May-03
Jun-04
Jul-05
Aug-06
Sep-07
Oct-08
Nov-09
Dec-10
Jan-11
Persistence of Food Inflation

Per cent

Avg. food inflation
Peak food inflation
Persistence of Food Inflation...

Number of months

- 1954:3-57:7: 17 months
- 1963:12-65:8: 21 months
- 1966:5-68:1: 23 months
- 1972:7-75:5: 35 months
- 1979:8-82:3: 32 months
- 1983:3-84:2: 12 months
- 1987:8-89:1: 18 months
- 1990:10-92:12: 27 months
- 1994:4-95:11: 20 months
- 1996:4-97:4: 13 months
- 1998:5-99:4: 12 months
- 2006:1-07:8: 20 months
- 2008:9-11:10: 38 months
Contribution of Food Inflation

![Graph showing the contribution of food inflation to the Total WPI from 1950-51 to 2010-11. The graph displays the percentage of weighted contribution of food (prim+mfg) to Total WPI and the WPI Inflation rate on the y-axis.]

- Weighted contribution of food (prim+mfg) to Total WPI
- WPI Inflation rate (RHS)
Drivers of Food Inflation
1960s & 1970s

Per cent

-20  0  20  40  60  80  100  120

Cereals
Fruits and Vegetables
Sugar and Allied Products
Edible Oils
Condiments and Spices
Other Food Articles
Protein-based items

1966-67  1967-68

1972-73  1973-74  1974-75
Drivers of Food Inflation
1980s & 1990s

Per cent


Per cent

1991-92 1992-93

- Cereals
- Fruits and Vegetables
- Sugar and Allied Products
- Edible Oils
- Condiments and Spices
- Other Food Articles
- Protein-based items


1991-92 1992-93
Drivers of Food Inflation 2000s

<table>
<thead>
<tr>
<th>Year</th>
<th>Cereals</th>
<th>Fruits and Vegetables</th>
<th>Sugar and Allied Products</th>
<th>Edible Oils</th>
<th>Condiments and Spices</th>
<th>Other manufactured food</th>
<th>Protein-based items</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2007-08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

2008-09
- Cereals
- Fruits and Vegetables
- Sugar and Allied Products
- Edible Oils
- Condiments and Spices
- Other manufactured food
- Protein-based items

2009-10
- Cereals
- Fruits and Vegetables
- Sugar and Allied Products
- Edible Oils
- Condiments and Spices
- Other manufactured food
- Protein-based items

2010-11
- Cereals
- Fruits and Vegetables
- Sugar and Allied Products
- Edible Oils
- Condiments and Spices
- Other manufactured food
- Protein-based items

2011-12
- Cereals
- Fruits and Vegetables
- Sugar and Allied Products
- Edible Oils
- Condiments and Spices
- Other manufactured food
- Protein-based items
Proteins and Fruits & Vegs

Percentage contribution to food inflation

2006-07

2007-08

Pulses
Milk & Milk Products
Eggs, Meat and Fish
Fruits and Vegetables
Proteins and Fruits & Vegs…2

Percentage contribution to food inflation

- Pulses
- Milk & Milk Products
- Eggs, Meat and Fish
- Fruits and Vegetables

Per cent

<table>
<thead>
<tr>
<th>Year</th>
<th>Per cent</th>
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<tbody>
<tr>
<td>2008-09</td>
<td>30</td>
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<tr>
<td>2009-10</td>
<td>40</td>
</tr>
<tr>
<td>2010-11</td>
<td>50</td>
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<tr>
<td>2011-12</td>
<td>60</td>
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DEMAND FACTORS
Changing Consumption Patterns

MPCE Rural

Per cent

<table>
<thead>
<tr>
<th>Year</th>
<th>Food Total</th>
<th>Non-food Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1933-94</td>
<td>83.2</td>
<td>16.8</td>
</tr>
<tr>
<td>1999-00</td>
<td>59.4</td>
<td>40.6</td>
</tr>
<tr>
<td>2004-05</td>
<td>55.0</td>
<td>45.0</td>
</tr>
<tr>
<td>2009-10</td>
<td>53.6</td>
<td>46.4</td>
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MPCE Urban

Per cent

<table>
<thead>
<tr>
<th>Year</th>
<th>Food Total</th>
<th>Non-food Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1933-94</td>
<td>54.7</td>
<td>45.3</td>
</tr>
<tr>
<td>1999-00</td>
<td>48.1</td>
<td>51.9</td>
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<tr>
<td>2004-05</td>
<td>42.5</td>
<td>57.5</td>
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<tr>
<td>2009-10</td>
<td>40.7</td>
<td>59.3</td>
</tr>
</tbody>
</table>

Source: NSSO surveys, Various rounds
Urban Engel Curves
Decile-wise Monthly PCE on Select Food Items: All India (Urban) (Rupees)

Cereals and Substitutes

Fruits and Vegetables

Protein Rich food

Processed food and Beverages

Source: Estimated from NSSO unit level data, 2009-10
Rural Engel Curves
Decile-wise Monthly PCE on Select Food Items: All India (Rural) (Rupees)

Cereals and Substitutes

Fruits and Vegetables

Protein Rich food

Processed food and Beverages

Source: Estimated from NSSO unit level data, 2009-10
## Income Elasticities

### Multiples of MPCE: Top Decile/Bottom Decile

<table>
<thead>
<tr>
<th></th>
<th>Rural Areas</th>
<th>Urban Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals and Substitutes</td>
<td>1.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Fruits and Vegetables</td>
<td>2.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Protein Rich food</td>
<td>4.0</td>
<td>4.4</td>
</tr>
<tr>
<td>Processed food &amp; Beverages</td>
<td>3.1</td>
<td>9.0</td>
</tr>
</tbody>
</table>

Source: NSSO 2009-10, GOI.
SUPPLY FACTORS
Stagnant Productivity in Pulses

Yield of pulses (Kg per hectare)
Productivity Differentials

State-wise yield of total pulses in 2009-10 (kg per hectare)

Source: Ministry of Agriculture, GOI
Slowing Growth in Milk Yields

Source: FAO
South-west Monsoon Rainfall
50 year moving average

South-west Monsoon rainfall in India (in mm)

- IMD-LPA is calculated every 10 years as the 50 years average i.e.
- IMD LPA for 2011-2019 is 89 cm and is the average rainfall over the country as a whole for the period 1951-2000.
POLICY IMPLICATIONS
Rising Wages

CPI-Rural Labourers Inflation and Wage Growth*

Policy Implications

❖ Persistence and Expectations
  ■ Food inflation part of core inflation
  ■ Wage-price feedback
  ■ Persistent supply shock implies slower growth for any given rate of inflation

❖ Supply Responses
  ■ Opportunities for productivity increases
  ■ Product and region-specific constraints
  ■ Threats from water scarcity
  ■ Role of stocks