

# **Farm Sector Performance and Food Price Inflation in India: Insights and Lessons from Pre- and Post- Economic Liberalisation Experiences**

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# The Context

- High **food inflation** has emerged as a major economic challenge in recent times.
- Among others, the **prolonged stagnation in the agricultural sector** since 1991 is considered to be a major contributing factor.
- However, a clear **long-term link** between the slowdown in agricultural growth and rising food prices is not yet established.
- The present understanding of the impact of agrarian slowdown on food inflation is based on the **recent experience (since year 2008)** with rising food prices

- Many **critical questions** which have significant policy implications are left unanswered as a result:

(a) *How did **food prices** behave in India in response to the **growth of agricultural sector** during the post-economic reforms period as a whole?*

(b) *Is the food price scenario experienced during the deceleration phase (post-1991) of agricultural growth **significantly different from** the one witnessing the pre-economic reforms phase?*

(c) *What are the root **causes of various instances of food price spiral** witnessed during the pre- and post-economic reforms period?*

(d) *How did **India meet its food requirements and control the food prices** throughout the post-reform period of decelerating agricultural output?*

# The Objective

To examine the long-term trends in the food price inflation in India in relation to the growth performance of Indian agriculture for the period from 1950-51 to 2012-13, so as to answer the aforementioned questions.

# Research Process

- Process followed in our work is **descriptive**.
- Trends in **WPI inflation rate** of various food items is examined in relation to the trends in indicators of agrarian performance such as **growth rate of production of the food items and agricultural GDP**.
- For this purpose, growth performance of Indian agricultural sector is divided into **four phases**:

*Pre-GR period (1950-51 to 1964-65)*

*Initial stage of GR (1967-68 to 1979-80)*

*Maturing stage of GR (1980-81 to 1991-92)*

*Post-economic reform period (1992-93 to 2012-13)*

**Compound Annual Growth Rates of Gross Domestic Product (GDP)  
and Agricultural GDP (Base: 2004-05)**

*(Percent)*

Period	Total GDP	Agricultural GDP
1950-51 to 1964-65	3.95	2.66
1967-68 to 1979-80	3.45	2.19
1980-81 to 1991-92	5.21	3.09
<b>1992-93 to 2012-13</b>	<b>7.01</b>	<b>2.92</b>

**Note:** Data for 2010-11 are Second Revised Estimates, for 2011-12 are First Revised Estimates and for 2012-13 are Provisional.

**Annual Compound Growth Rate of Production and  
Yield of various Food Commodities (%)**

Items	1950-1 to 1964-5		1967-8 to 1979-0		1980-1 to 1991-2		1992-93 to 12-13	
	Output	Yield	Output	Yield	Output	Yield	Output	Yield
Total Foodgrains	3.54	2.12	2.16	1.73	2.74	3.01	1.58	1.57
Cereal	3.76	2.43	2.47	2.08	2.87	3.20	1.59	1.68
Rice	4.35	2.86	1.95	1.18	3.71	3.12	1.38	1.34
Wheat	4.27	1.53	5.48	2.30	3.63	3.24	1.93	1.12
Coarse cereals	2.75	1.68	0.72	1.81	-0.01	1.73	1.45	2.58
Pulses	2.19	0.40	-0.54	-1.08	1.33	1.27	1.34	0.91
Oilseeds	3.54	0.89	1.83	0.67	6.06	2.73	2.03	1.75
Sugarcane	6.36	3.07	2.79	1.16	3.67	1.44	1.48	0.01
Tea	-	-	3.33*	-	2.76	1.87	1.99	0.03
Coffee	-	-	5.01*	-	2.67	1.17	2.33	-0.23
Milk	1.64≠	-	2.23⊗	-	5.14	-	4.15	-
Egg	4.63≠	-	6.49⊗	-	7.71	-	5.95	-
Fish	-	-	-	-	5.14	-	3.35	-

**Notes:** - Not available; \* - From 1970-71 to 1979-80; ≠ - From 1950-51 to 1960-61 based on point-to-point data; ⊗ - From 1960-61 to 1979-80 based on point-to-point data

# **Behaviour of Food Prices During various** **Agrarian Eras**



**Average WPI Inflation Rate (Base: 2004-05) Recorded during various Episodes of Food Articles Price Inflation**

<b>Period</b>	<b>Duration (in months)</b>	<b>Inflation Rate (%)</b>
<b>Pre-GR Period (1954-55 to 1964-65)</b>		
March 1956 to August 1957	18	15.02
July 1958 to May 1959	11	9.91
May 1962 to November 1962	7	8.50
June 1963 to March 1965	22	13.70
<i>Overall Period (April 1954 to March 1965)*</i>	-	<b>4.48</b>
<b>Initial Stage of GR (1967-68 to 1979-80)</b>		
<b>June 1972 to May 1975</b>	<b>36</b>	<b>20.22</b>
February 1977 to January 1978	12	13.15
<b>July 1979 to March 1981⊗</b>	<b>21</b>	<b>10.96</b>
<i>Overall Period (March 1968 to March 1981) #</i>	-	<b>5.98</b>
<b>Maturing Stage of GR (1980-81 to 1991-92)</b>		
<b>April 1981 to August 1984</b>	<b>41</b>	<b>11.67</b>
April 1986 to February 1989	35	9.88
April 1990 to February 1993 @	35	15.11
<i>Overall Period (April 1981 to February 1993)</i>	-	<b>10.20</b>
<b>Post-Economic Reforms Period (1992-93 to 2012-13)</b>		
June 1994 to April 1997	35	11.47
<b>May 1998 to April 1999</b>	<b>12</b>	<b>12.99</b>
October 2005 to September 2007	24	9.22
<b>March 2008 to March 2013</b>	<b>61</b>	<b>11.16</b>
<i>Overall Period (March 1993 to March 2013)</i>	-	<b>7.86</b>

**Average Food Articles Inflation Rate during Agricultural Eras**  
**(Based on WPI Index with Base 2004-05)**

<b>Period</b>	<b>Food Grains*</b>	<b>Cereals</b>	<b>Pulses</b>	<b>Fruits &amp; Veg</b>	<b>Milk</b>	<b>Eggs, Meat &amp; Fish</b>	<b>Condim ents &amp; Spices*</b>
Pre-GR Period	-	3.69	8.34	6.62	4.09	7.42	-
Initial Stage of GR	5.10	5.40	7.54	6.87	5.07	8.64	4.34
Maturing Stage of GR	<span style="color: red;">9.89</span>	<span style="color: red;">9.94</span>	<span style="color: red;">9.00</span>	<span style="color: red;">9.81</span>	<span style="color: red;">10.28</span>	<span style="color: red;">9.59</span>	<span style="color: red;">18.89</span>
Post-ERs Period	7.32	7.36	8.44	7.68	8.04	9.64	6.14

**Notes:** \* - Until April 1963 foodgrains and condiments and spices classification were not existent.

**Average Inflation Rate (Base: 2004-05) Recorded during various Episodes of Food Products Price Inflation**

<b>Period</b>	<b>Duration (in months)</b>	<b>Inflation Rate (%)</b>
<b>Initial Stage of GR (1972-73 to 1979-80)</b>		
April 1972 to June 1975	39	15.00
December 1976 to June 1977	7	18.31
<b>April 1979 to June 1981⊗</b>	<b>27</b>	<b>37.72</b>
<i>Overall Period (April 1972 to June 1981)*</i>	-	<b>12.57</b>
<b>Maturing Stage of GR (1980-81 to 1991-92)</b>		
April 1983 to August 1984	17	10.57
February 1986 to October 1988	33	8.68
<b>April 1989 to March 1993 @</b>	<b>48</b>	<b>10.86</b>
<i>Overall Period (July 1981 to March 1993)</i>	-	<b>7.24</b>
<b>Post-Economic Reforms Period (1992-93 to 2012-13)</b>		
<b>April 1993 to March 1995</b>	<b>24</b>	<b>12.20</b>
December 1996 to March 1999	28	9.46
March 2003 to January 2005	23	7.29
January 2008 to July 2010	31	10.20
April 2011 to March 2013	24	7.64
<i>Overall Period (April 1993 to March 2013)</i>	-	<b>5.94</b>

**Average Food Products Inflation Rate during Agricultural Eras**  
**(Based on WPI Index with Base 2004-05)**

<b>Period</b>	<b>Dairy Products</b>	<b>Grain Mill Products</b>	<b>Sugar, Khandsari &amp; Gur</b>	<b>Edible Oils</b>	<b>Oil cake</b>	<b>Tea &amp; Coffee Processing</b>
Initial Stage of GR	8.96	6.17	11.39	11.14	10.49	-
Maturing Stage of GR	<span style="color: red;">10.21</span>	<span style="color: red;">9.43</span>	<span style="color: red;">2.32</span>	<span style="color: red;">9.64</span>	<span style="color: red;">8.32</span>	<span style="color: red;">6.66</span>
Post-ERs Period	6.58	5.21	7.16	4.43	8.84	5.69

# Reasons behind food price pressures

- Each episode of food articles and food products inflation was preceded by a **supply-shortfall**.
- Host of **other factors (Table 5 in paper)** such as flood, drought, wars, increase in procurement and issue prices, delay in importing food and speculative hoarding (as revealed from literature survey)



# Key conclusions from food Inflation Trend

- Despite the decline in food output growth, the **post-economic reforms period has experienced lower food inflation**, on an average, compared to the maturing stage of GR (in case of food articles) and to initial and maturing stages of GR (in case of food products).
- The prices of **majority of the individual food articles and food products** were turned out to be lower, on an average, in the post-economic reforms period compared to the maturing stage of GR

# Understanding the Behaviour of Food Prices

- We offer **three explanations** for relatively low food articles (compared with maturing stage of GR) and food products (compared with initial and maturing stages of GR) inflation rate witnessed during post-ERs period notwithstanding marked slowdown in agricultural growth since 1991 reforms.

## 1. Stable food production

- Though at a lower level, the growth of agricultural output and GDP was **more stable** during post-ERs period .
- Implication is that even if the rate of agricultural growth is slow, **low fluctuations in growth** cause few disruptions in food supply thereby contributing to low food price inflation.
- OTOH, high agricultural growth may not guarantee low food prices if accompanied by **frequent fluctuations in growth**
- This is evident from the experience of **maturing stage of GR**.
- High growth performance of Indian agriculture during this period was made possible due to extraordinary growth achieved in just **three years: 80-81 (14.44%), 83-84 (10.75) and 88-89 (16.85)**.
- In all other years the y-o-y growth rates of agricultural GDP and food grain output was either **negative or quite low**.

**Standard Deviation of Y-o-Y Growth Rates of Food Production and  
Agricultural GDP (%)**

	<b>1951-52 to 1964-65</b>	<b>1967-68 to 1979-80</b>	<b>1980-81 to 1991-92</b>	<b>1992-93 to 12-13</b>
Foodgrains	8.40	12.52	9.51	<b>8.45</b>
Total Cereals	7.75	11.90	9.36	<b>8.24</b>
Rice	10.20	14.80	13.43	<b>9.38</b>
Wheat	12.74	14.91	8.10	<b>6.45</b>
Pulses	14.66	19.27	13.94	<b>13.74</b>
Non Oilseeds	10.32	18.91	18.00	<b>20.68</b>
Sugarcane	16.51	13.04	8.37	11.33
Tea	-	3.49	4.34	<b>4.21</b>
Coffee	-	24.06	46.16	<b>10.35</b>
Milk	-	-	2.19	<b>0.96</b>
Egg	-	-	3.31	4.33
Fish (Total)	-	-	5.65	<b>2.69</b>
Agricultural GDP	5.05	9.05	6.49	<b>4.65</b>

## 2. Change in food consumption pattern

- A “secular shift” in food consumption pattern in favour of high-value food items has occurred in India during the maturing stage of GR (1983 to 1994), as evident from following trends
  - ❑ Drop experienced in expenditure share of cereals both in rural and urban India during 1983-1988 was historical highs & significantly higher than other periods
  - ❑ Except sugar, all high-value food commodities registered highest expenditure shares both in rural and urban areas during time interval 1983-1994
  - ❑ Highest percentage points increase recorded in expenditure shares of pulses, milk, sugar, edible oil, vegetables and fruits in rural India falls during 1983-1994.



**Trends in Percentage Composition of MPCE (at Current Prices) on  
Groups of Food Items in Rural India  
(Share in Total Consumer Expenditure on Food)**

	1967-68	1972-73	1977-78	1983	1987-88	1993-94	1999-00	2004-05	2011-12
Cereal	58.69	55.72 (-2.97)	50.96 (-4.76)	49.25 (-1.71)	40.99 <b>(-8.25)</b>	38.30 (-2.69)	37.31 (-0.99)	32.72 (-4.59)	24.62 <b>(-8.10)</b>
Gram	1.08	0.78 (-0.31)	0.65 (-0.12)	0.39 (-0.26)	0.38 (-0.02)	0.28 (-0.10)	0.22 (-0.06)	0.24 (0.02)	0.35 (0.11)
Cereal substitutes	1.08	0.75 (-0.34)	0.52 (-0.23)	0.28 (-0.23)	0.21 (-0.08)	0.17 (-0.04)	0.12 (-0.04)	0.13 (0.00)	0.14 (0.01)
Pulses and pulse products	5.69	5.88 (0.19)	5.93 (0.06)	5.37 (-0.56)	<b>6.22</b> <b>(0.85)</b>	6.02 (-0.20)	6.41 (0.39)	5.59 (-0.82)	6.39 (0.80)
Milk and milk products	9.56	10.01 (0.45)	11.93 (1.92)	11.46 (-0.47)	13.52 <b>(2.06)</b>	<b>15.02</b> (1.50)	14.74 (-0.28)	15.38 (0.64)	18.67 (3.29)
Sugar	5.07	5.16 (0.09)	4.11 (-1.06)	4.29 (0.18)	4.47 (0.19)	4.84 <b>(0.36)</b>	4.01 (-0.83)	4.31 (0.30)	3.8 (-0.51)
Edible Oil	3.76	4.82 (1.06)	5.55 (0.73)	6.14 (0.59)	<b>7.82</b> <b>(1.67)</b>	7.03 (-0.79)	6.29 (-0.74)	8.36 (2.07)	7.75 (-0.61)
Egg, Fish and Meat	3.10	3.39 (0.29)	4.15 (0.76)	4.61 (0.46)	5.07 (0.46)	<b>5.29</b> (0.22)	5.59 (0.30)	6.05 (0.46)	7.33 (1.28)
Vegetables	4.22	4.94 (0.72)	5.87 (0.92)	7.19 (1.32)	8.16 (0.97)	<b>9.56</b> <b>(1.40)</b>	10.38 (0.82)	11.08 (0.70)	9.95 (-1.13)
Fruits and Nuts	1.16	1.40 (0.24)	1.74 (0.34)	2.12 (0.38)	2.55 <b>(0.43)</b>	<b>2.76</b> (0.21)	2.89 (0.14)	3.39 (0.49)	3.08 (-0.31)

**Note:** Figures in the brackets are percentage points change over the years.

**Trends in Percentage Composition of MPCE (at Current Prices) on  
Groups of Food Items in Urban India  
(Share in Total Consumer Expenditure on Food)**

	<b>1967-68</b>	<b>1972-73</b>	<b>1977-78</b>	<b>1983</b>	<b>1987-88</b>	<b>1993-94</b>	<b>1999-00</b>	<b>2004-05</b>	<b>2011-12</b>
Cereal	38.06	36.17 (-1.90)	34.09 (-2.08)	32.85 (-1.25)	26.46 <b>(-6.39)</b>	25.69 (-0.77)	25.70 (0.01)	23.65 (-2.04)	19.02 <b>(-4.63)</b>
Gram	0.47	0.49 (0.02)	0.42 (-0.07)	0.32 (-0.10)	0.29 (-0.03)	0.32 (0.03)	0.23 (-0.09)	0.25 (0.01)	0.32 (0.07)
Cereal substitutes	0.23	0.20 (-0.04)	0.17 (-0.02)	0.13 (-0.04)	0.12 (-0.01)	0.12 (0.00)	0.09 (-0.03)	0.12 (0.03)	0.14 (0.02)
Pulses and pulse products	5.63	5.29 (-0.34)	5.95 (0.66)	5.46 (-0.49)	<b>6.04</b> (0.58)	5.55 (-0.49)	5.90 (0.35)	5.03 (-0.87)	5.59 (0.56)
Milk and milk products	14.12	14.47 (0.35)	15.88 (1.41)	15.62 (-0.26)	17.06 (1.44)	<b>17.94</b> (0.88)	18.05 (0.11)	18.62 (0.57)	20.2 (1.58)
Sugar	5.40	5.58 (0.18)	4.40 (-1.18)	4.16 (-0.25)	4.19 (0.04)	4.35 (0.16)	3.41 (-0.95)	3.55 (0.14)	3.0 (-0.55)
Edible Oil	6.14	7.52 (1.38)	7.73 (0.22)	8.19 (0.45)	<b>9.47</b> (1.28)	8.03 (-1.44)	6.53 (-1.50)	8.13 (1.60)	6.89 (-1.24)
Egg, Fish and Meat	4.86	5.07 (0.21)	5.77 (0.71)	6.10 (0.33)	<b>6.33</b> (0.23)	6.19 (-0.14)	6.52 (0.33)	6.36 (-0.16)	7.25 (0.89)
Vegetables	6.24	6.78 (0.55)	7.33 (0.55)	8.43 (1.09)	9.39 (0.96)	<b>9.99</b> (0.60)	10.69 (0.70)	10.47 (-0.22)	8.82 (-1.65)
Fruits and Nuts	2.75	3.11 (0.36)	3.26 (0.15)	3.57 (0.31)	4.49 (0.92)	<b>4.87</b> (0.39)	5.03 (0.16)	5.29 (0.25)	4.55 (-0.74)

- Two possible factors can be held responsible for the shift in food consumption demand
  - ❑ First, after experiencing low and stagnant economic growth during first three decades after Independence, Indian economy grew at a noticeably high rate during 1980s
  - ❑ Second, the significant increase in real agricultural wages during 1980s might have pushed up rural demand for high-value food.

## Increase in Real Wages

- Growth rate of real agricultural wages was not only highest during the period falling under the **maturing stage of GR** but also strikingly different from other periods.
- Real wages for male agricultural labour grew at the rate of **3.75% during 1983 to 1993-94**, against **1.33% and 0.59%** recorded respectively during the periods 1993-94 to 1999-00 and 1999-00 to 2010-11
- Prior to maturing stage of GR (i.e. from 1964 to 1980) as well, the growth of real agricultural wages was slow (see Chavan and Bedamatta, 2006).
- Higher wages might have added pressure on food prices in the 1980s by feeding into the cost of food production

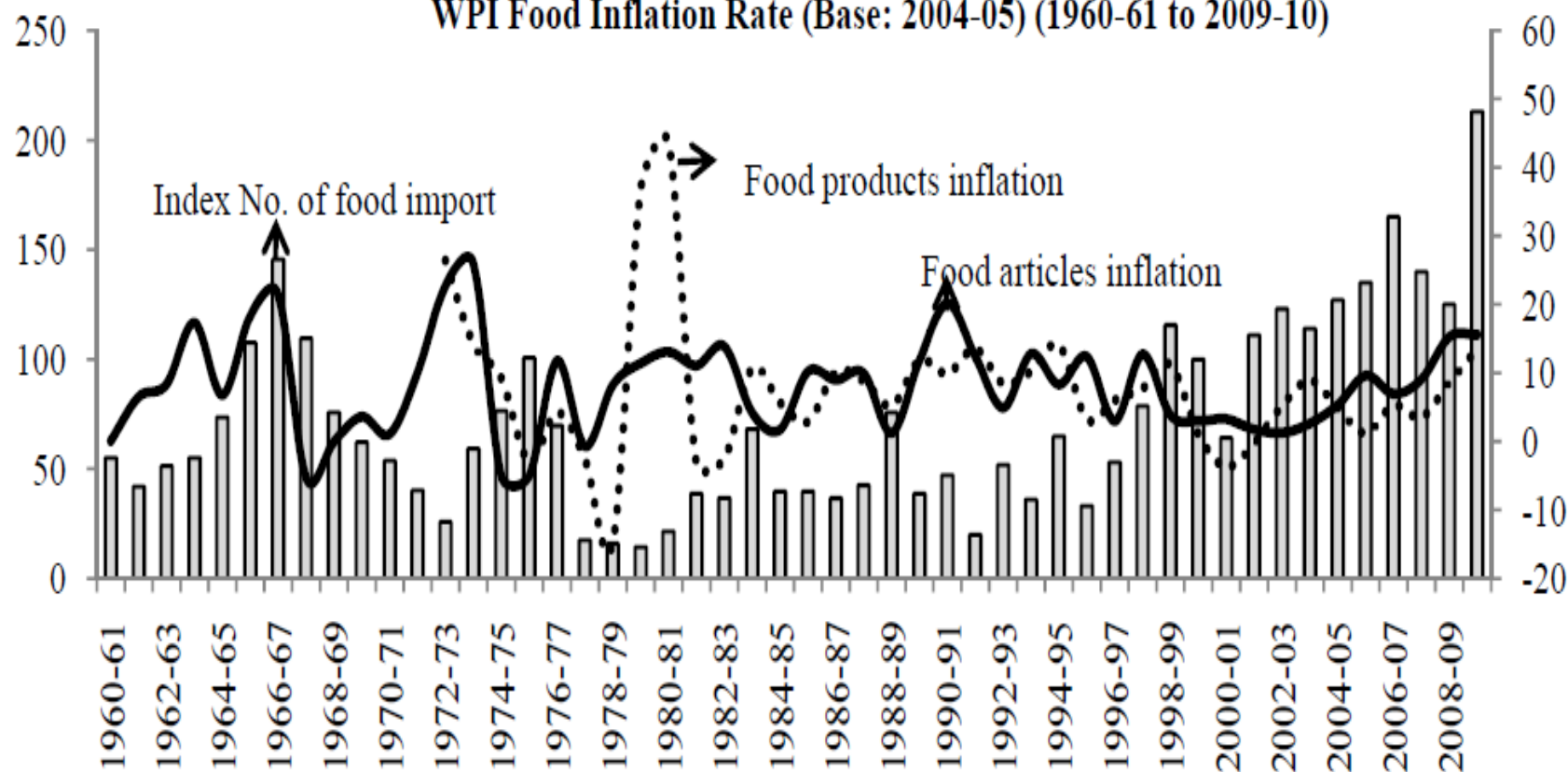
### 3. Import Liberalisation

- Liberalisation of agricultural imports as part of economic liberalisation policies, has enabled India to **import more quantities of various food items** to meet her food requirement at times of domestic shortage and escalating food prices.
- Since Independence, India's aggregate food imports remained at a high level and were adequately responsive to food price escalations **before mid-1970s and after mid-1990s**.
- Prior to the opening up of the Indian economy only the import of **cereals, milk, and milk products** have responded adequately to the inflationary pressures witnessed in these commodities



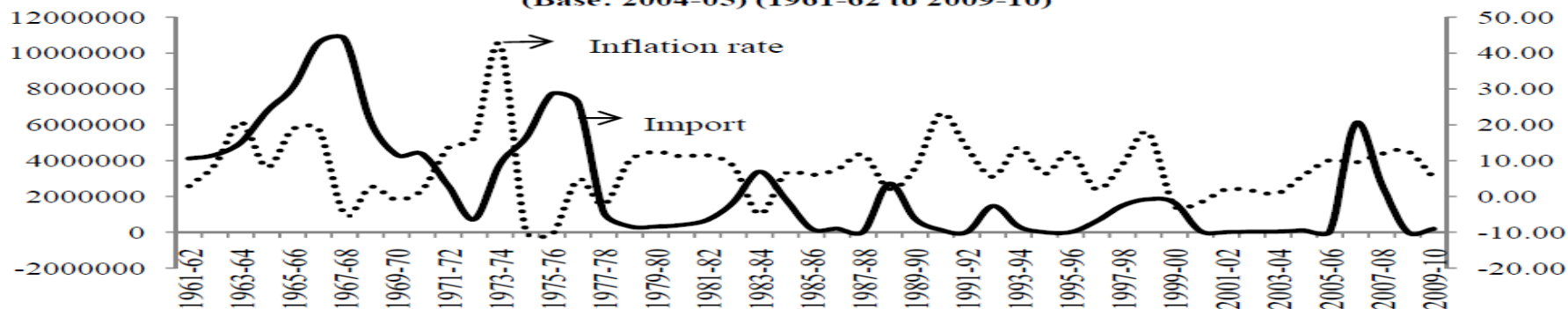
- The import of other food commodities, though responded positively to price escalation, was **very limited** during the same period.
- After opening up of the Indian economy, import of **several agricultural products** namely pulses, vegetables, fruits, spices, milk products, edible oils, oil cake, and sugar increased significantly in response to the price shocks occurred in these products
- In particular, increase in imports of many of these products was phenomenal **since early 2000s**

**Yearly Movements in Index Number (Base: 1999-00) of Food Imports (Quantum) and  
WPI Food Inflation Rate (Base: 2004-05) (1960-61 to 2009-10)**



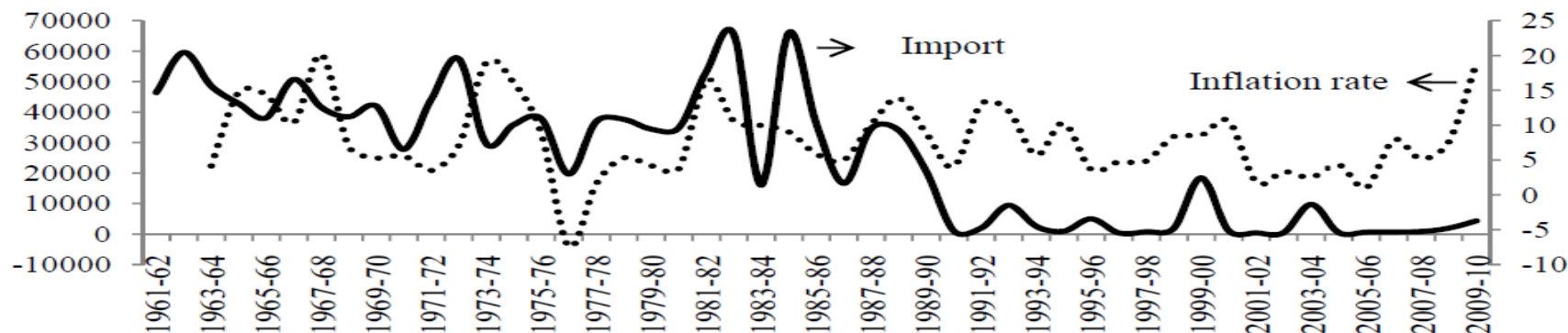
**Source:** HSIE RBI (For Import Index) and CSO (For Inflation)

**Yearly Movements in Cereal Imports (in Tonnes) and WPI Inflation Rate of Cereals  
(Base: 2004-05) (1961-62 to 2009-10)**

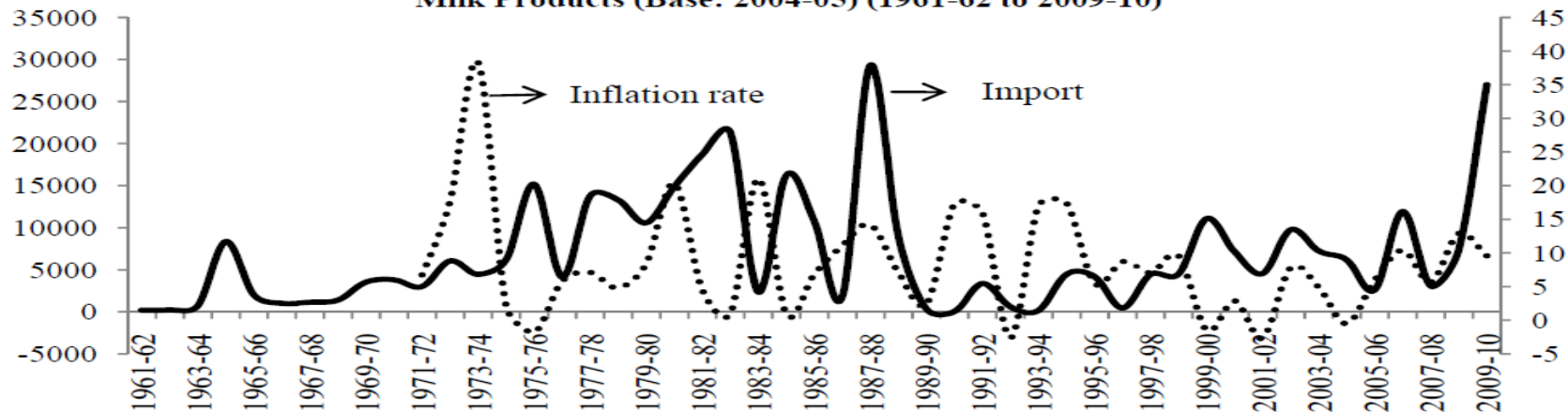


Source: Food and Agriculture Organization STAT (FAOSTAT) (for imports) and CSO (for inflation)

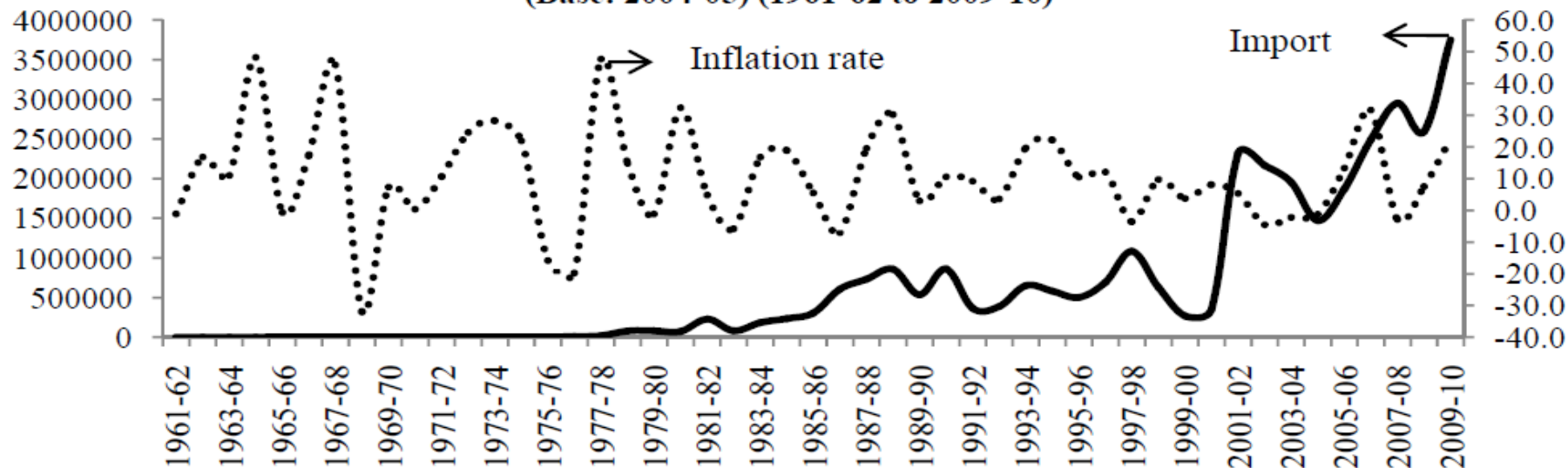
**Yearly Movements in Milk Imports (in Tonnes) and WPI Inflation Rate of Milk  
(Base: 2004-05) (1961-62 to 2009-10)**



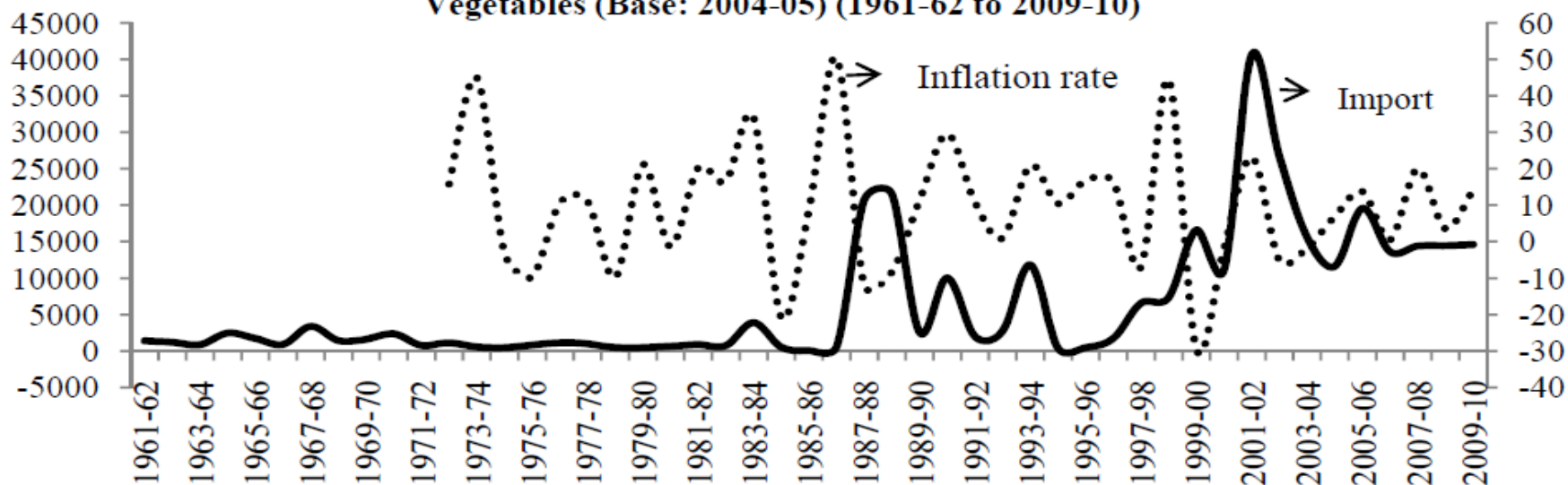
**Yearly Movements in Milk Products Imports (in Tonnes) and WPI Inflation Rate of Milk Products (Base: 2004-05) (1961-62 to 2009-10)**



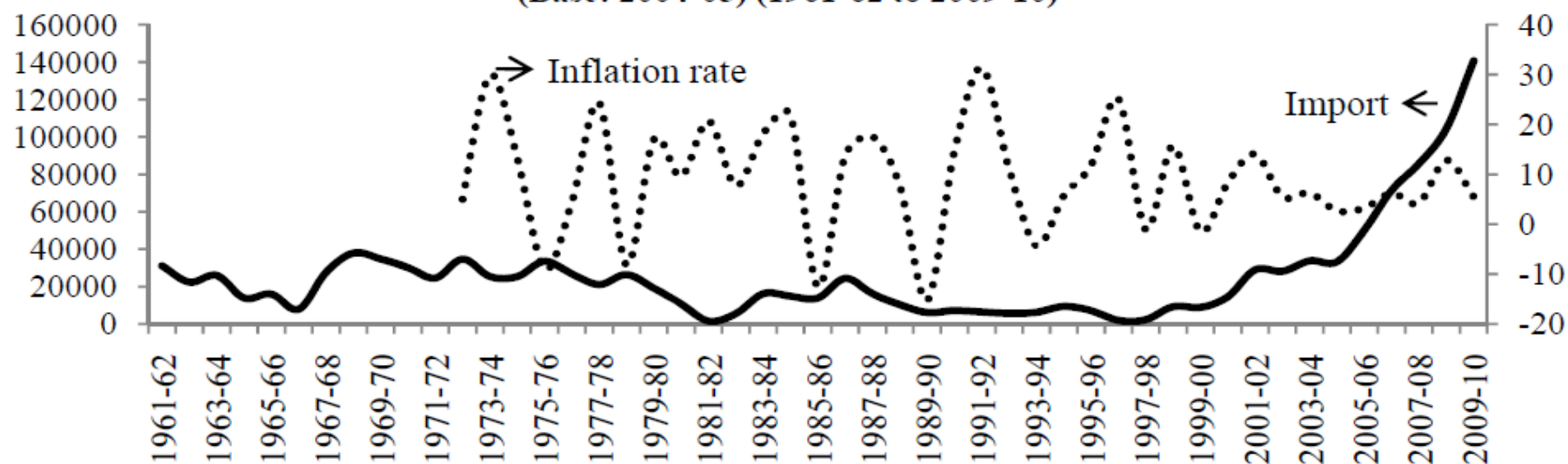
**Yearly Movements in Pulses Imports (in Tonnes) and WPI Inflation Rate of Pulses  
(Base: 2004-05) (1961-62 to 2009-10)**



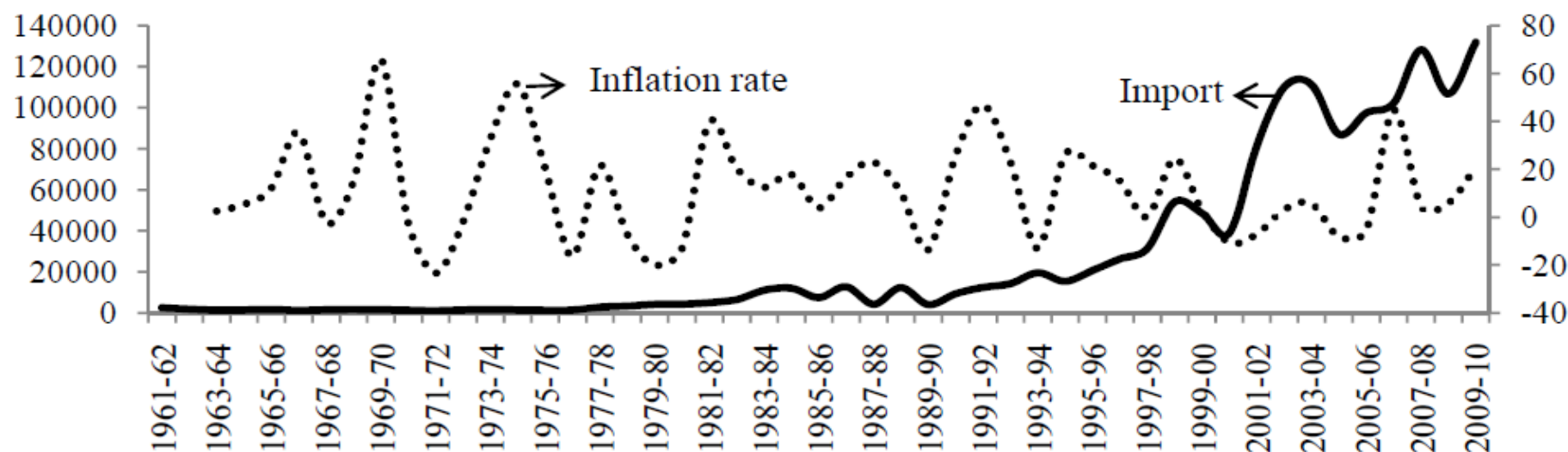
**Yearly Movements in Vegetables Imports (in Tonnes) and WPI Inflation Rate of Vegetables (Base: 2004-05) (1961-62 to 2009-10)**



**Yearly Movements in Fruits Imports (in Tonnes) and WPI Inflation Rate of Fruits**  
(Base: 2004-05) (1961-62 to 2009-10)

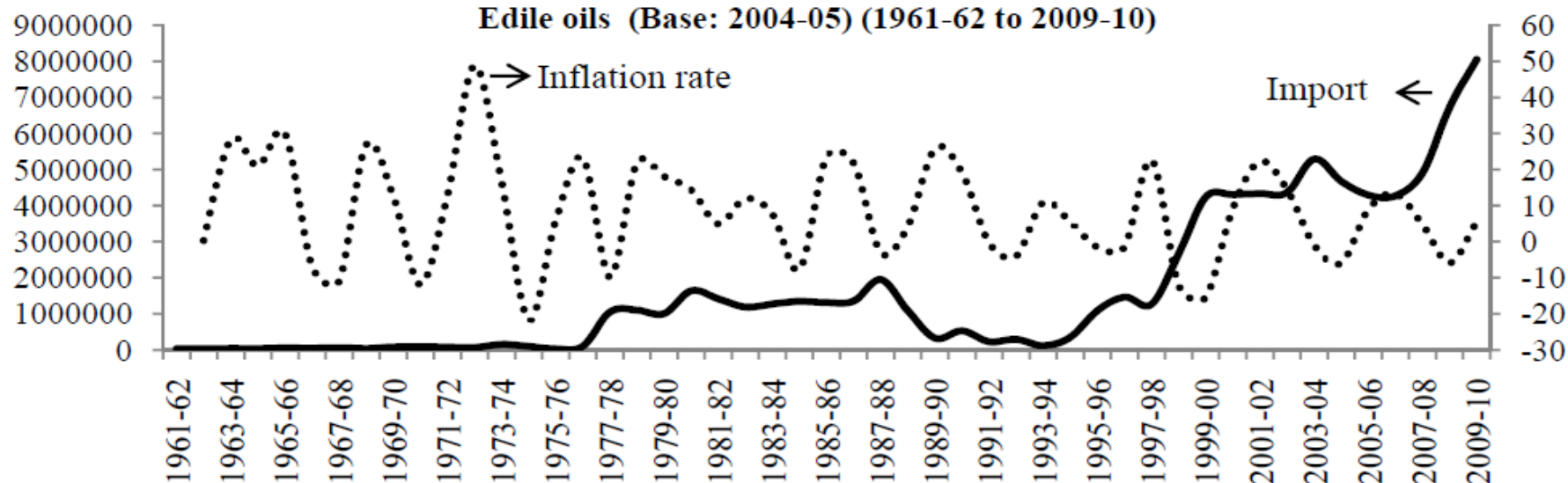


**Yearly Movements in Spices Imports (in Tonnes) and WPI Inflation Rate of Spices**  
(Base: 2004-05) (1961-62 to 2009-10)

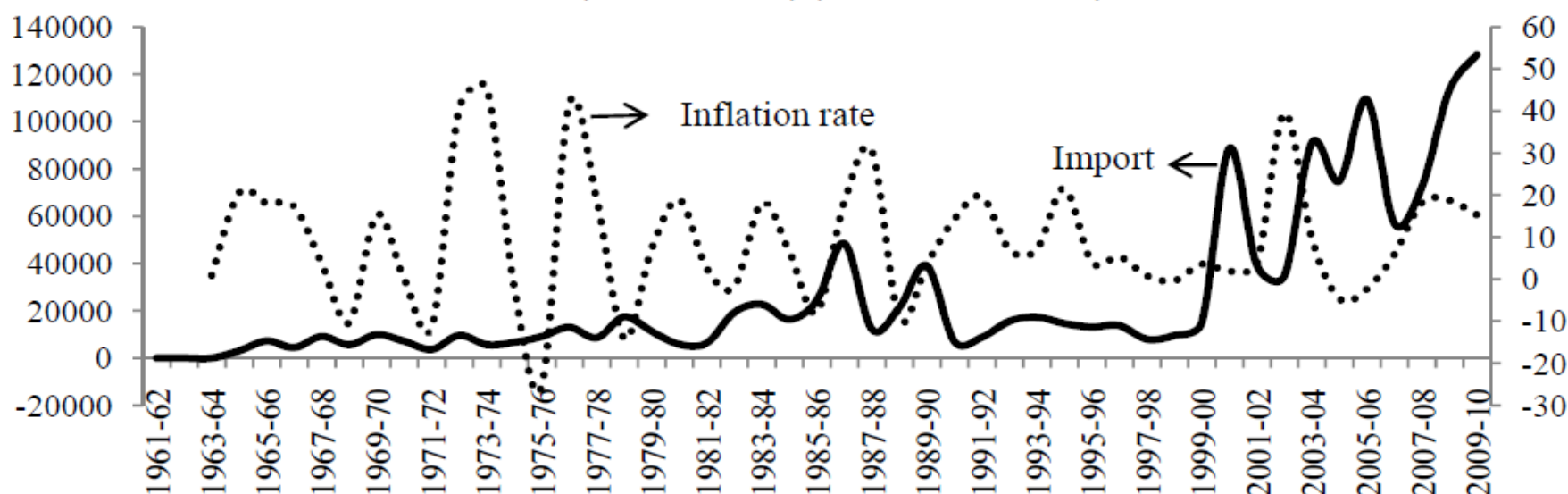




**Yearly Movements in Edible Oils Imports (in Tonnes) and WPI Inflation Rate of Edible oils (Base: 2004-05) (1961-62 to 2009-10)**



**Yearly Movements in Oil Cakes Imports (in Tonnes) and WPI Inflation Rate of Oil Cakes (Base: 2004-05) (1961-62 to 2009-10)**



## Summary

- Despite the dismal performance by the farm sector during post-ERs period, **food was cheaper** during this period compared with the initial and maturing stages of GR
- Surprisingly, the **maturing stage of GR** has not turned out to be food price friendly
- In our view, this unexpected outcome could be the result of **three factors**: stable food production, shift in food consumption pattern, and trade liberalisation.

# Policy Implications

- From food inflation point of view, **stability of growth** is more important than **high and fluctuating growth**.
- A combination of **liberal external sector regime** and **stable but not necessarily high agricultural growth and food production** can be helpful to keep food inflation under control.
- At least from an inflation angle, the concerns about the deceleration of agricultural growth during the post-ERs period need to be **revisited**.
- Along with the level of growth we need to focus on **stability of growth**.
- The notion that economic (trade) liberalisation and the consequent strengthening of foreign exchange reserve position have made the government to be **less focused on agricultural self-sufficiency** since 1992 has substance