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Understanding Recent Trends in Inflation

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This article aims at providing a comprehensive analysis of the trends in the current surge in inflation. It tracks the movements in the wholesale price index over the past two years to understand when inflation began to accelerate, asks if this is the result of an across the board price increase and compares consumer prices with wholesale prices.

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Inflation, as measured by the wholesale price index (WPI), has become a cause of major concern ever since it crossed 6.5 per cent in March 2008. In the weeks since then it has been steadily rising without respite.

The recent hike in petroleum product prices is sure to give a new momentum to inflation – first with a one-off jump and then as prices of other products begin to factor in the higher cost of petroleum products.

When did the current surge in inflation really begin? Has there been an across the board rise in prices? If not, which products are driving inflation? And from the point of view of the consumer, what has been the trend in prices of food articles – particularly important in the light of the global spikes in prices of these commodities. How have consumer prices moved vis-a-vis wholesale prices? The unusual aspect of all the heated discussion in the media and in the political arena is that few have cared to look at these issues in any detail.

This short article makes a tentative exploration by looking at the trends in WPI of groups of commodities, over different time periods and identifies the spurts in both. It also sets out the movement in consumer prices to the extent data are available.

In January 2007, there was a dramatic increase in inflation to 6 per cent, much higher than the Reserve Bank of India's (RBI) stated band of 5 to 5.5 per cent. Inflation increased alarmingly to touch 6.6 per cent in March 2007. Thereafter, it declined to reach 3.6 per cent in December 2007. However, March 2008 saw inflation cross 6.5 per cent. The acceleration continues with inflation hitting 8.24 per cent in the week ending on May 24, 2008.

Measurement

As is well known there are broadly three measures of inflation used in India, each with its own limitations and problems: the WPI, consumer price index (CPI) and implicit GDP deflator.

There are four consumer price indices: the CPI for industrial workers (CPI-IW), CPI for agricultural labour (CPI-AL), CPI for rural labour (CPI-RL) and CPI for urban non-manual employees (CPI-UNME).[1]

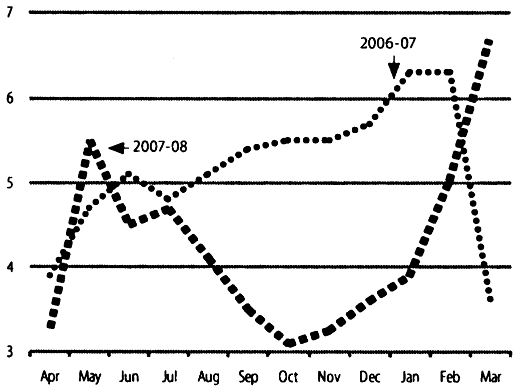
The base years for the WPI and CPI are not revised frequently. The current base year for the WPI is 1993-94. Until 2005, the base years for CPI-IW, CPI-UNME and CPI-AL were 1982, 1984-85 and 1986-87, respectively. With effect from 2006, the base year for CPI-IW was revised to 2001.

In May 2008, the Department of Industrial Policy and Promotion announced that the weekly WPI would be released on a monthly basis by the end of the year, in an attempt to increase the accuracy of data. The base year will also be revised to 2005-06 from 1993-94. The new index will also include data for over 400 more new commodities. However, the government will continue to release weekly WPI information for certain essential commodities including farm products. The finance ministry and RBI are reportedly opposed to the WPI being reported every month instead of it being reported every week. It is felt that the switchover would delay policy responses to combat inflation.

Owing to its wide coverage of commodities and frequently available data, the WPI is the most commonly used measure of inflation in India. However, it excludes services and non-tradable commodities. Further, it only measures headline inflation.

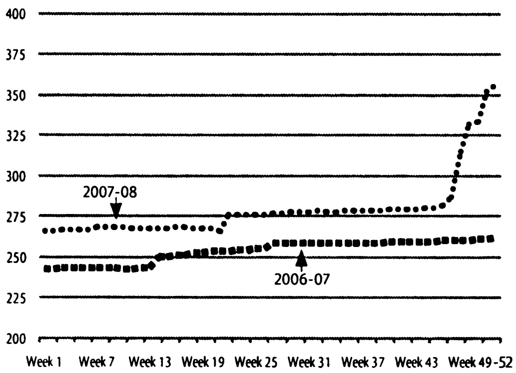
It is important to distinguish between headline inflation and core inflation. Headline inflation includes the entire set of commodities in the general price index; in this case, the WPI. Core inflation does not take into consideration commodities that have volatile prices, for example, food and fuel. It follows that supply shocks that arise from a poor crop yield or hikes in international prices of fuel will lead to increases in headline inflation. In contrast, core inflation would not be affected by these shocks and would only serve as an indicator of the price levels of commodities that have (relatively) non-volatile prices. In India and most other developing countries, food articles are significantly weighted in the price index. As such, a measure of core inflation may not provide a complete picture of the price scenario.

Figure 1: Annual WPI Inflation, 2006-07 and 2007-08 (in %)



Figures are point-to-point annual inflation rates based on monthly averages of the WPI.
Source: Office of the Economic Adviser (OEA), web site (http://eaindustry.nic.in).

Figure 2: Weekly WPI for Iron and Steel, 2006-07 and 2007-08



Source: OEA web site.

Further, owing to the fact that the availability of official data on core inflation is limited, policy and academic discussions are based on headline inflation.

The simplest computations of inflation often lead to erroneous inferences, partly because of the incomplete nature of the data. For instance, the first estimates of the WPI are "provisional" ones and the final figures reported after some weeks are usually higher than in the first release. Hence, percentage price increases based on provisional WPI figures are usually underestimates.

For example, the final WPI figures for the week ending March 1, 2008 were only available at the end of April 2008. The final index for all commodities for that date stood at 222.3 as opposed to the provisional index of 222.0; the annual rate of inflation based on the final index was 6.21 per cent (point-to-point) as compared to the provisional rate of 5.11 reported earlier. Similarly, for the week ending March 29, 2008, the final index for all commodities stood at 226.7 as opposed to the provisional index of 226.0; the annual rate of inflation based on the final index was 7.75 per cent (point-to-point) as compared to the provisional rate of 5.41 reported earlier.

A different kind of error creeps in when computing inflation at a point of time. The usual practice is to estimate the "point-to-point" rise in prices, i e, compare the most recent WPI with the price level at another point of time in the past – usually a year ago. However, point-to-point inflation figures, while useful for understanding immediate or short-term trends give misleading results when one is interested in the movement of prices over a period of time since many prices follow a seasonal pattern. That is why the more comprehensive analyses usually look at the "average" level of prices over a period of time.

To illustrate: the point-to-point inflation in the last week of March 2008, was 7.74 per cent. While this indicates that there has been an increase in inflation since the previous year, one cannot gauge the pattern (if any) of the movement of prices. The average annual inflation for 2006-07 was 5.9 per cent, while that in 2007-08 was 4.71 per cent.

Trends in WPI

As mentioned earlier, inflation has occupied the headlines after crossing 6.5 per cent in mid-March. However, as Figure 1 (charting point-to-point WPI in 2006-07 and 2007-08) shows, the current surge in inflation is not a new one.

Indeed, Figure 1 suggests a rough cyclical movement over the past two years: a steady rise to cross 6 per cent in December 2006, before falling sharply in the first quarter of 2007, rising again briefly in April-May 2007, declining during the course of the year and then beginning its new momentum in January 2008, one which continues today. Indeed, WPI inflation crossed the February 2007 peak of over 6 per cent only in March this year.

This does not suggest that the current cyclical rise will soon be followed by a dip. The causes for the inflationary bouts in 2006-07 and today are possibly different: the earlier one was fuelled by the surge in liquidity (driven by capital inflows), while the post-January 2008 movement appears to be fuelled by global commodity price movements.

However, what is important to note is that (i) the present phase of accelerating inflation follows on a similar one that took place in 2006-07, the difference being that the 2006-07 upswing was brought under control while the ongoing acceleration shows little sign of slowing down; and (ii) while the upward trend since March 2008 has been the focus of attention, WPI inflation has actually been on an upward trend since December 2007.

Which products drove prices up in 2006-07, which ones showed a slowdown during the phase of a decline in inflation in 2007-08 and which products have been driving prices up since December 2007? As Table 1 shows, in 2006-07, primary articles were the major drivers of inflation. Among primary articles, it was minerals that showed the sharpest increase, but it is important to observe that the rise in food articles (given its weight in the index) was not insignifcant. The contribution of primary articles was as much as

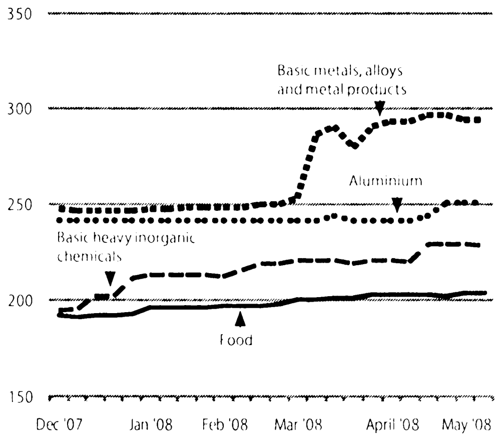
Table 1: Variation on WPI Inflation, 2006-07 and 2007-08 (year-on-year)

Commodity	Weight	Inflation 2006-07	Inflation 2007-08
Primary articles:	22	10.7	8.9
Food articles	15.4	8	6.1
Rice	2.4	5.7	1.2
Vegetables	1.5	1.2	15.8
Non-food articles	6.1	17.2	11.1
Minerals	0.5	17.5	41.8
Fuel and power:	14.2	1	6.7
Mineral oil	7	0.5	9.2
Coal mining	1.8	0	8.8
Manufactured products:	63.8	6.1	7.1
Food products	11.5	6.1	9.1
Sugar	3.6	-12.7	0
Chemicals	11.9	3.6	5.4
Fertilisers	3.7	1.8	1.9
Basic metals and alloys	8.3	11.3	20
Iron and steel	3.6	8.1	34.2
Transport equipment	4.3	2	4.7

Only commodities with a weight of more than 0.5 are taken into consideration.
Source: Adapted from RBI (2008).

39 per cent in 2006-07; this fell to 27.1 per cent in 2007-08. Indeed, while there has been much concern about the rise in prices of food articles and the year-on-year WPI figures show an increase in inflation for rice and vegetables, the point is that, overall, food articles actually saw a decline in inflation to 6.1 per cent in 2007-08 from 8 per cent the previous year. An interesting point is that there was no significant difference in the contribution of manufactured products to inflation in the two years (Table 1).

Figure 3: Weekly WPI for Select Manufactured Products
(December 2007- April 2008)



Source: OEA web site.

A decrease is seen in the prices in the non-food articles category over the last two years but since March 2008 this category of commodities has been experiencing an increase driven by fibres, raw cotton, niger seed and soyabean. Minerals saw a dramatic increase in inflation from 17.5 per cent from 2006-07 to 41.8 per cent in 2007-08. This increasing trend was also seen in April 2008 and remained steady in May 2008 – the main contributors to inflation being the iron ore, magnesite and the metallic minerals category.

Figure 2 (p 109) shows that the end of 2007-08 saw an extremely sharp increase in the price of iron and steel. This increase is partially responsible for the increase in headline inflation from 5 per cent in February 2008 to 7.4 per cent in March 2008 [RBI 2008]. Such sudden increases are seen in the prices of several commodities such as coke and copper wire. This can partially be explained by the delay in the revision of prices of metals. As of April 2008, the index for 167 of the 435 goods that make up the WPI basket had not been revised for eight to 60 months. For 131 items, the index had not been revised for almost a year [Mishra and Zarabi 2008].

Current Surge in Inflation

The current surge in WPI inflation can be dated to December 2007. Since then, WPI inflation has increased steadily, rising to 7.4 per cent in the last week of March 2008, much higher than the 5.0 per cent inflation seen during the corresponding period of the previous year. This increase continued well into April and May 2008, hitting a 43-month high of 8.24 per cent (provisional figures) in the week ending May 24, 2008.

The weekly inflation for April and May 2008 is also considerably higher than in April and May 2007 (Table 2). Further into the current fiscal year, high WPI inflation persists at 8.24 per cent in the week ending May 24, 2008. This increase holds true for all three components of the WPI.

After decreasing steadily for a period of eight months, primary articles inflation stood at 3.7 per cent in the last week of December 2007 and increased steadily thereafter to 8.9 per cent in the last week of March 2008. This was mainly due to increases in the prices of food articles (particularly rice, wheat, vegetables, milk and tea), non-food items (oilseeds and raw cotton) and minerals. This acceleration in the rise in prices of food articles reversed a trend in the earlier part of 2007-08, when inflation in these commodities had slowed.

Table 2: Weekly WPI Inflation,
(April and May 2007-08) (in %)

	2008	2007
April		
Week 1	7.14	6.44
Week 2	7.33	3.34
Week 3	7.57	6.07
Week 4	7.61	6.01
May		
Week 1	7.83	5.74
Week 2	7.82	5.62
Week 3	8.1	5.3
Week 4	8.24	5.15

Source: OEA web site.

The WPI for the manufactured products group sees a steady increase from December 2007 to mid-May 2008, reflecting the continuous increase in the prices of edible oils (and oil cakes), cement, basic metals and alloys and basic heavy inorganic chemicals. The prices of edible oils, gur and cement have firmed up continuously since November 2007. The major contributors to manufactured inflation are basic metals and alloys, driven by the increase in prices of iron and steel as well as aluminium. The prices of basic heavy inorganic chemicals have also increased sharply (Figure 3). At the end of the 2007-08 fiscal year, WPI inflation for the manufactured products group stood at 7.1 per cent (in the last week of March 2008) and has increased to 7.8 per cent (mid-May 2008).

Inflation in 2007-08 and in the current fiscal (so far) has been driven mostly by price increases of manufactured products, followed by primary articles and then the fuel group.

There is another aspect of the current surge in inflation that needs attention. The occasional spike has been the result of sudden and unexplained jumps in the index for particular commodities. For instance, a look at Figure 4 (p 111) shows that the increase in prices of commodities belonging to the food and non-food articles' groups has been gradual but steady. However, what jumps out is the dramatic increase in the prices of the minerals group after January 2008. The WPI for the minerals group (iron ore, in particular) stood at 425.4 in the third week of January and jumped to 594.8 in the following week. These prices moved considerably until the first week of April 2008 and have remained at that level (630.2) since then.

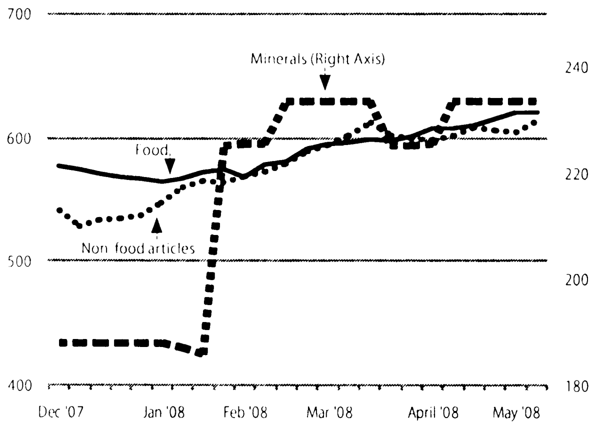
Trends in CPI

Owing to the difference in commodity composition as well as the weights assigned to commodities and services in the CPI, inflation measured in terms of the CPI differs significantly from that measured in terms of the WPI.

During 2006-07, CPI inflation remained higher than WPI inflation. This was probably due to two reasons: (i) the higher order of increase in food prices during 2006-07; and (ii) the higher weight that is assigned to food items in the CPIs (ranging from 46 per cent in the CPI-IW to 69 per cent in the CPI-AL) compared to that assigned in the WPI. In 2006-07, CPI inflation increased fairly steadily until February 2007 and declined thereafter. This decline continued well into 2007-08 until January 2008, when it rose sharply (Figure 5). The decelerating trend of the CPI in 2007-08 is similar to the one in the WPI for the same year.

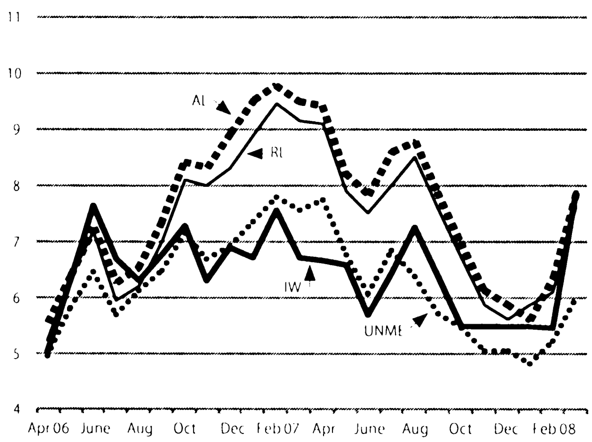
The deceleration seen until January 2008 in the CPI mainly reflects the decrease in food prices. A look at disaggregated data shows that inflation for the food group increased from 4.9 to 5.8[2] per cent in March 2006 to 10.9 to 12.2 per cent in March 2007. Another factor that contributed to an increase in CPI inflation was the increase in the fuel group prices: increasing from -2.9 to 4.3 per cent in March 2006 to 3.2 to 6.9 per cent in March 2007. Food inflation after March 2007 declined and stood at around 8 per cent in March 2008. Fuel prices stand between 8 and 10.5 per cent in March 2008. Further, looking at the CPI for December 2007 and February 2008, it is observed that inflation increased from 5.1 to 5.9 per cent to 5.2 to 6.4 per cent over the three-month period, remaining relatively stable in the period before (Table 3).[3]

Figure 4: Weekly WPI for Food Articles, Non-food Articles and Minerals
(December 2007-April 2008)



Source: OEA web site.

Figure 5: Annual CPI Inflation, 2006-07 and 2007-08 (in %)



Source: Labour ministry web site.

Concluding Remarks

The Indian economy has experienced robust growth since 2003-04 to date. However, while the first three years in this period showed moderate inflationary pressures, the last two years have experienced relatively high inflation. In terms of wholesale prices, inflation began to firm up mid 2006-07, mainly due to (i) an increase in the prices of wheat, pulses and edible oils because of the shortfall in domestic supply relative to demand and firm international prices; and (ii) an increase in prices of international crude. The RBI continued to follow its policy of gradual withdrawal of monetary accommodation in order to be able to stabilise using inflationary expectations. This, in addition to an improvement in the availability of wheat, pulses and edible oils and fiscal and supply-side measures put into place by the government of India helped contain inflation [RBI 2007]. This decelerating trend continued into 2007-08 until December 2007 and increased sharply thereafter. Increases in prices of food and non-food primary articles as well as manufactured products in combination with global inflationary pressures were contributing factors.

WPI inflation so far (in the current fiscal, 2008-09) has consistently been above the 7 per cent mark and touched a three-and-a-half year high of 8.24 per cent in the week ending May 24, 2008 on account of increases in the prices of food, metal products and industrial fuel. In order to combat the inflationary pressures, the government has taken a number of measures. However, much of this may come to nought because of the sharp rise in petroleum product prices that the government was compelled to effect in early June, following the unending rise in global crude oil prices.

Table 3: Variations in CPI Inflation (year-on-year)

	March 2006	March 2007	December 2007	February 2008	March 2008
CPI-IW					
General	4.9	6.7	5.5	5.5	-
Food	4.9	12.2	6.2	7*	-
Fuel	-2.9	3.2	2.3	2.3*	-
CPI-UNME					
General	5	7.6	5.1	5.2	6
Food	5.3	10.9	6.2	6.2	-
Fuel	-1.9	6.4	5.4	5.2	-
CPI-AL					
General	5.3	9.5	5.9	6.4	7.9
Food	5.5	11.8	6.2	6.7	8.5
Fuel	4.3	6.9	6.3	8	8
CPI-RL					
General	5.3	9.2	5.6	6.1	7.6
Food	5.8	11.5	6.2	6.7	8.2
Fuel	4	6.9	6.3	8	8

* Denotes figures for January 2008. Due to a time lag in the availability of CPI data, some figures are not available.
Source: Ministry of Labour web site, RBI (2008).

NOTES

1 The WPI is available on a weekly basis for all tradable goods (435 in all) that are divided into various groups and sub-groups. The weights of the goods are based on the value of quantities traded in the domestic market. The CPI reflects the cost of living for a homogeneous group of consumers. The commodity basket for the CPI is derived from group-specific consumer expenditure surveys and weights for each commodity are proportionate to their expenditure. The GDP deflator is derived from the national accounts as a ratio of GDP at current prices to GDP at constant prices.

2 These numbers indicate the CPI category with the lowest and highest inflation rates.

3 There is a lag in the availability of CPI data. As such, this article does not cover the movement in the CPI after the month of March 2008.

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