

RESEARCH ARTICLE

Inflation Measures in India

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ABSTRACT:

The RBI in its mid-quarterly review, however, hinted at rate cuts in future. It had increased rates 13 times since March, 2010, to tame inflation. The central bank today kept its key policy rates unchanged. From this point on, monetary policy actions are likely to reverse the cycle, responding to the risks to growth.

Which inflation index do we target? We look at detailed price data, expenditure patterns of households and the composition of different price indices available in India. Though monetary policy in India is not explicitly charged with delivering low and stable inflation, it still needs to choose a measure of inflation as a reference. Questions of timeliness, weights in the price index, accuracy of food price measurement, and inclusion of the prices of services are relevant to the choice of measure.

KEYWORDS:

1. Price indices available in India
2. Policies on inflation measurement
3. Consumer price index for industrial workers

INTRODUCTION:

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The Reserve Bank of India said it is closely watching the rupee situation and will respond appropriately, even as the local currency recovered against dollar by 2 per cent in the opening trade. "...the rupee has depreciated by about 17 per cent against the US dollar since August 5, 2011...In the face of this, several measures were taken to attract inflows...The Reserve Bank is closely monitoring the developments in the external sector and it will respond to the evolving situation as appropriate," RBI said in its mid-quarter policy review.

In recent years, consumer price index (CPI) inflation in India has slowly crept up and reached double digits. The year-on-year change in the CPI for industrial workers (CPI-IW) has exceeded 5% in every month from early 2006 onwards. This contrasts with other emerging economies which have, in general, witnessed low or single digit inflation, especially after the global financial crisis of 2008. Though monetary policy in India is not explicitly charged with delivering low and stable inflation, it still needs to choose a measure of inflation as a reference. In this context, a major problem identified by the Reserve Bank of India (RBI) is the measurement of inflation in India: Which inflation index do we target? Our headline inflation index is

the WPI and that does not, by definition, reflect the consumer price situation.

Monetary policy in India is not organised around an inflation-targeting central bank. Notwithstanding the arguments in favour of, or against, the usefulness of adopting an inflation targeting approach, or the choice of core versus headline inflation as the appropriate target, we attempt to answer the question of which measure of inflation should have primacy in thinking about macroeconomic policy.

We look at detailed price data, expenditure patterns of households and the composition of different price indices available in India. Further, we discuss policies on inflation measurement in other countries. We argue that at this juncture, despite some serious deficiencies, the CPI-IW should be given priority in discussions about overall inflation outcomes.

While this index needs to be improved upon, and updated in line with changing consumption baskets since 2001, it has the most recent weights among the CPIs and resembles today's consumer basket better than any other measure. To date, no other measure of inflation provides any information on the developments in prices of services. The CPI-IW does so, with a weight of almost 12% on services and of 15% on rents of dwellings.

We argue that the wholesale price index (WPI), while continuing to be a valuable source of price data, should be de-emphasised in the discussion of inflation outcomes. Increasing trade integration coupled with the domestic liberalisation of administered prices has turned a growing fraction of the WPI basket into trade able goods, whose prices are determined in international markets.

By this reasoning, the acceleration in year-on-year inflation beyond 5% from early 2006 onwards should be seen as a serious problem. The problem of high and volatile inflation should not be downplayed on the grounds that it is based on low quality information.

The Central Statistical Office (CSO) released the new CPI series for India in February 2011 (with 2010 as base year). This new CPI is likely to be the best candidate for a headline inflation indicator, through significant improvement upon the existing price indices in terms of representation, quality of price collection and weighting. The release of this new CPI is a natural opportunity for the RBI to de-emphasise other inflation measures and focus on the new CPI.

Multiple Inflation Measures

The multiplicity of inflation indices available in India has often been described as problematic and has been used as an argument for not adopting a full-fledged inflation targeting framework: In India, we have one wholesale price index and four consumer price indices. There are ongoing efforts

at a technical level to reduce the number of consumer price indices, and I believe the technical issues are not insurmountable. But that still will not give us a single representative inflation rate for an emerging market economy with market imperfections, diverse geography and 1.2 billion people (Subbarao 2010b). Table 1 shows that a multiplicity of inflation measures are also found in other countries. Indeed, India does not collate some of the indicators that are available in other countries. Some careful country descriptions are useful.

Issues in Choice of Inflation Measure

In most countries, the CPI is the most widely understood and recognized measure of inflation. It is available relatively frequently, and it is typically not subject to revisions. The overall CPI is meant to represent the cost of a representative basket of goods and services consumed by an average urban/rural household. In most countries, a PPI is also reported. While PPIs record the price change from the perspective of the seller, CPIs measure price change from the purchaser's perspective. Sellers' and purchasers' prices differ due to government subsidies, sales and excise taxes, and distribution costs. This distinction between the PPI and the CPI, used internationally, is considerably unlike the Indian distinction between the WPI and the CPI.

In India, the RBI has historically focused on developments in the WPI. This is visible in the much greater depth of analysis dedicated to the WPI in the central bank's communication. Consumer prices are referred to when significant departures from the dynamics of the WPI emerge, as has happened since early 2009 (RBI 2009-10).

In order to choose a measure of inflation that the monetary policy will focus on, three issues need to be addressed: (1) The choice of a reference population is the first challenge. In any country, no one price index will measure the impact of price changes on the entire population (be it consumers or producers). Thus a target population needs to be chosen. Ideally, the price index for this population should not move very differently from those of others. (2) The weights in the index need to be chosen. This distribution should be as close to the present consumption basket of the target population as possible. (3) Prices that go into the indicator should be measured properly, effectively reflect the consumption basket and the data should be timely and reliable. With these criteria in mind, we now analyze the various price indices available in India, with a view to choosing the one that best fits the above criteria.

Wholesale Price Index

India is one of the few countries where the WPI is considered as the headline inflation measure by the central bank. This preference over the CPI is often explained in terms of three criteria – national coverage, timeliness of release (now only limited to food products) and its availability in a disaggregate format. Of these criteria, only the last one is uncontroversial – the CPI numbers are not released to the public in the detail available for the WPI.

This however does not appear to be an insurmountable problem to address, because the detailed data is collected; it is just not made public with sufficient timeliness.

The Working Group for Revision of Wholesale Price Index Numbers OEA-DIPP (2008) discussed the construction of a new weighting scheme. The report pointed to the inherent difficulty of defining the concept of the universe of the WPI. While in principle, the WPI should comprise all transactions at first point of bulk sale in the domestic market, in practice, how to account for these transactions, and what sources to use, are issues that remain open to interpretation. Furthermore, the weighting could be based on the notion of value added, final demand or gross output. The approach underlying WPI relies on two concepts – gross value of output for manufactured products and value of marketed surplus for agricultural products.

Table 1: The Revised WI, with Weights (2004-05=100)

	2004-05	1993-94
All commodities	100	100
I Primary articles	20.1	22
Food articles	14.3	15.4
Non-food articles	4.3	6.1
Minerals	1.5	0.5
II Fuel and power	14.9	14.2
Coal	2.1	1.8
Mineral oils	9.4	7
Electricity	3.5	5.5
III Manufactured products	65	63.7
Food products	10	11.5
Beverages, tobacco and tobacco products	1.8	1.3
Textiles	7.3	9.8
Wood and wood products	0.6	0.2
Paper and paper products	2	2
Leather and leather products	0.8	1
Rubber and plastic products	3	2.4
Chemicals and chemical products	12	11.9
Non-metallic mineral products	2.6	2.5
Basic metals, alloys and metal products	10.7	8.3
Machinery and machine tools	8.9	8.4
Transport, equipment and parts	5.2	4.3

Source: Report by the Working Group on Revision of the WPI.

The set of weights in the base 2004-05=100 (Table 1) proposed by the Working Group has been adopted in the new WPI. It is interesting to note that the combined weight of food (primary food articles and manufactured food items) in the WPI has come down to 24% from 26.9% in the old base 1993-94=100. This appears inconsistent with both the reduction in the share of agricultural value added in gross domestic product (GDP) (by approximately 15 percentage points during this period) and that recorded by food products in the National Sample Survey (NSS) consumption expenditure basket, in rural and urban areas (Table 2 and 3). While producer prices reflect factory gate prices, valued from the producer's perspective, wholesale prices may record prices paid at various stages of the distribution chain – starting from prices of raw materials for intermediate and final consumption, or prices of intermediate goods, to prices of finished goods up to the retail stage. Furthermore, prices for WPI reflect discounts and rebates, taxes and subsidies on products, as well as trade and transport margins.

WPI prices refer to different stages in the production and distribution process (OEA 2008): The concept of a wholesale price adopted in practice represents the quoted price of bulk transaction generally at primary stage. The

price pertaining to bulk transaction of agricultural commodities may be farm harvest prices, or prices at the village mandi/market of the Agricultural Marketing Produce Committee/procurement prices, support prices. For manufactured goods the wholesale prices are administered prices, ex-factory gate/ex-mill, ex-mine level. Ex-factory prices exclude rebate if any, other taxes and levies are excluded though excise duty is currently included.

The difficulty this creates is clear in the case of agricultural commodities, where the WPI reflects not only market prices recorded in the mandis, but also administered prices. For example, the WPI for wheat is a mixture of the mandi price and the government procurement price or the minimum support price (MSP) – (in the old WPI it used to be the public distribution system price) – thereby significantly attenuating the actual price fluctuations.

Table 2: Rural Consumer Basket

Items	NSSO Round						
	43rd 1981-82	50th 1986-87	55th 1991-92	61st 1996-97	62nd 2001-02	63rd 2006-07	
Cereals	26.1	23.8	22.2	17.4	17	16.5	
Gram	0.2	0.2	0.1	0.1	0.2	0.2	
Cereal substitutes	0.1	0.1	0.1	0.1	0.1	0.1	
Pulses and their products	4	3.7	3.8	3	3.2	3.3	
Milk and milk products	8.6	9.3	8.8	8.2	8.2	8.1	
Edible oil	5	4.4	3.7	4.4	4.1	3.9	
Egg, fish and meat	3.2	3.3	3.3	3.2	3.9	3.5	
Vegetables	5.2	5.9	6.2	5.9	6.1	6.2	
Fruits and nuts	1.6	1.7	1.7	1.8	1.9	1.8	
Sugar	2.9	3	2.4	2.3	2.4	2	
Salt and spices	2.9	2.6	3	2.4	2.1	2.3	
Beverages, etc	3.9	4.1	4.2	4.4	4.2	4.4	
Food Total	63.8	62.1	59.4	53.1	53.3	52.3	
Pan, tobacco and intoxicants	3.2	3.1	2.9	2.6	2.5	2.5	
Fuel and light	7.4	7.2	7.5	9.8	9.7	9.5	
Clothing	6.7	7.4	6.8	6.7	6.3	6.1	
Footwear	1	1	1.1	1	1	0.9	
Misc goods and services	14.4	16.8	19.6	23	23.7	24.9	
Durable goods	3.6	2.3	2.6	3.8	3.5	3.8	
Non-food total	36.2	37.9	40.6	46.9	46.7	47.7	

Table 3: Urban Consumer Basket

Items	NSSO Round	43rd	50th	55th	61st	62nd	63rd
	1981-82	1986-87	1991-92	1996-97	2001-02	2006-07	
Cereals	14.8	13.8	12.3	9.6	9.4	9.1	
Gram	0.2	0.2	0.1	0.1	0.1	0.1	
Cereal substitutes	0.1	0.1	0	0	0	0	
Pulses and their products	3.4	3	2.8	2	2.2	2.3	
Milk and milk products	9.5	9.7	8.7	7.5	7.3	7.4	
Edible oil	5.3	4.3	3.1	3.3	3	2.9	
Egg, fish and meat	3.5	3.3	3.1	2.6	2.8	2.6	
Vegetables	5.2	5.4	5.1	4.2	4.2	4.3	
Fruits and nuts	2.5	2.6	2.4	2.1	2.2	2.1	
Sugar	2.3	2.3	1.6	1.4	1.5	1.3	
Salt and spices	2.3	2	2.2	1.6	1.5	1.6	
Beverages, etc	6.7	7.1	6.3	5.9	5.8	5.7	
Food total	55.9	53.9	48.1	40.5	40	39.4	
Pan, tobacco and intoxicants	2.6	2.3	1.9	1.5	1.5	1.4	
Fuel and light	6.7	6.5	7.8	9.5	9.4	8.9	
Clothing	6	7	6.1	5.6	5.4	5.4	
Footwear	1.1	1.2	1.2	1	1	1	
Misc goods and services	23.5	26.4	31.5	37.6	38.7	39.4	
Durable goods	4.2	2.6	3.6	4.3	4	4.5	
Non-food total	44.1	46.1	51.9	59.5	60	60.6	

This complicates not only the reading and analysis of the inflation rate recorded by the WPI, but also the communication to the public of the rate of inflation which is being used as a headline indicator. To gauge more effectively inflationary pressures mounting in the earlier stages of the production stage, a useful approach could entail re-aggregating the elementary WPI items by stage-of-processing, i.e., into raw materials, intermediate goods, capital goods and consumer goods, as is done for PPIs in advanced countries. However, it is not obvious to what extent this could be achieved without full details about price data collection.

Another important perspective on the WPI gives insights into its role in domestic policy thinking. The WPI tends to move with the PPI of other countries, as a consequence of the substantial share of tradeables in the WPI. This co-movement has become more dramatic across countries during the recent crisis. The domestic WPI is thus strongly influenced by the fluctuations of global prices of tradeables and the fluctuations of the rupee.

Domestic monetary policy has no impact on global tradeables prices. In addition, now that India has moved towards a flexible exchange rate policy, domestic monetary policy does not involve an administrative control of the exchange rate. There is a telling contrast between Figure 3,

where a range of countries have similar tradeables inflation, and which shows the divergence of consumer price inflation across the same countries. This suggests that the central bank should focus on the unique features of each domestic economy – rather than the common factor of global tradeables inflation.

GDP Deflator

The GDP deflator is another indicator of inflation, which is often considered to be broader than the CPI and the WPI. The GDP deflator in most countries is obtained by using a variety of primary price indices. These are used to deflate individual components of the GDP valued at current prices (either from the production or the demand side estimates) to obtain volume estimates. The GDP deflator is then defined implicitly as the ratio of the estimate at current prices to the one at constant prices. When this process is followed, the GDP deflator is legitimately recognized as a high quality measure of inflation. Nonetheless, given the delay in publication of national accounts it is seldom used as a headline indicator of inflation in a real-time setting.

In India, some observers have argued in favour of using the GDP deflator as the reference measure of inflation. While appealing in theory, these suggestions do not take into account the actual procedures used to estimate this deflator in India. For quarterly accounts, the production approach GDP estimates are first obtained using proxy indicators of quantity (e.g., industrial production) and then inflated to current price estimates. This operation, especially for the most recent quarters, is performed using the overall WPI series. It should not, therefore, come as a surprise that the dynamics in the deflator closely resemble the ones of WPI, especially so in the last available quarters, as mentioned in Nadhanael and Pattnaik (2010). Thus, by construction, the most recent figures on the quarterly GDP deflator contain little information beyond the already visible WPI and the CPI.

Consumer Price Index

The overall CPI is meant to represent the cost of a representative basket of goods and services consumed by an average household. However, in India, the existing CPIs refer to specific segments of the population.

In this nomenclature, the category “industrial worker” is actually a misnomer and should perhaps be called manual workers as it includes workers in factories, mines, plantations, railways, public motor transport undertakings, electricity generation and distribution establishments as well as ports and docks. It includes imputed rents, as is done by some CPI measures internationally, e.g., in the US. Roughly 10% of the index is services, in addition to the rent component (Labour Bureau 2009). Furthermore, from the point of view of monetary policy, one important property of the CPI-IW is that it is used as a reference index for the wage indexation for civil servants.

CONCLUSIONS:

In recent years, India has experienced a remarkable surge in the CPI-IW inflation. The article argues that CPI-IW should take centre stage among the existing measures of inflation in India as the headline inflation rate. The CPI reflects the consumption bundle of households, and is thus more relevant than any other measure of inflation. Second, the CPI-IW also reflects prices of food as accurately as the other measures. Third, CPI-IW includes the price of services, which are not included in any other measure of inflation. Further, the WPI or the PPI largely reflect global prices of tradeables expressed in rupees. The monetary Policy of the RBI has a minimal role in influencing these, other than through the exchange rate. On the contrary, the consumer price index has a large share of nontradeables.

Monetary policy has a much bigger role to play in influencing domestic non-tradeables prices. Thus macroeconomic analysis and policy thinking in India needs to move away from a focus on the WPI to the CPI. Inflation numbers from the recently released all India CPI will become available next year. The new index should help further increase confidence in the use of consumer prices for policymaking.

REFERENCES:

1. Arda, M (2006): "Food Retailing, Supermarkets and Food Security", UNU-WIDER Research Paper No 2006/107, UNU-WIDER, September.
2. Cohen, M J and J L Garrett (2009): "The Food Price Crisis and Urban Food (In)Security", IIED Human Settlements Working Paper Series, Urbanisation and Emerging Population Issues-2, August, IIED, London.
3. Durand, C (2007): "Externalities from Foreign Direct Investment in the Mexican Retailing Sector", *Cambridge Journal of Economics*, 31 (3), 393-411.
4. Figue, M and P Moustier (2009): "Market Appeal in an Emerging Economy: Supermarkets and Poor Consumers in Vietnam", *Food Policy*, 34, 210-17.
5. Kaufman P R, J M McDonald, S M Lutz and D M Smallwood(1997): "Do the Poor Pay More for Food? Item Selection and Price Difference Affect Low Income Household Food Costs", ERS Report No 759, ERS, Washington DC, November.
6. Singh, Sukhpal (2010): "Spencer's Retail" in M Harper, *Inclusive Value Chains: A Pathway Out of Poverty*, World Scientific, Singapore, 81-93.
7. Stichele, M V, S V Wal and J Oldenziel (2006): *Who Reaps the Fruit? Critical Issues in the Fresh Fruit and Vegetable Chain*, Centre for Research on Multinational Corporations (SOMO), Amsterdam, June.
8. Anand, R and E S Prasad (2010): "Optimal Price Indices for Targeting Inflation under Incomplete Markets", NBER Working Paper No 16290, August, available at <http://www.nber.org/papers/w16290>
9. Aoki, K (2001): "Optimal Monetary Policy Responses to Relative Price Changes", *Journal of Monetary Economics*, 48(3), 55-80.
10. Benigno, P and M Woodford (2005): "Inflation Stabilisation and Welfare: The Case of a Distorted Steady State", *Journal of the European Economic Association*, 3(6), 1185-1236.
11. Blinder, A S (1982): "Inventories and Sticky Prices: More on the Micro-foundations of Macroeconomics", *American Economic Review*, 72(3), 334-48.
12. Catão L and R Chang (2010): "World Food Prices and Monetary Policy", IMF Working Paper WP/10/161, available at <http://www.imf.org/external/pubs/ft/wp/2010/wp10161.pdf>
13. CSO (2008): "Manual on Index of Industrial Production (IIP)", available at http://www.mospi.gov.in/manual_iip_23oct08.pdf