

National price indices and inflation during 2012

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Consumer Price Indices (CPI) released at national level are CPI for Industrial Workers (IW), CPI for Agricultural Labourers (AL)/ Rural Labourers (RL) and CPI (Rural/Urban/Combined). While the first two are compiled and released by the Labour Bureau in the Ministry of Labour and Employment, the third by the Central Statistics Office (CSO) in the Ministry of Statistics and Programme Implementation. Wholesale Price Index (WPI) is compiled and released by the Office of the Economic Adviser in the Department of Industrial Policy and Promotion. A number of users of these price indices are not clear about the need for so many indices and also on measurement of inflation rates. In this paper, an attempt has been made to compare these price index numbers and also inflation rates based on these indices.

Primary use of WPI is to have inflationary trend in the economy as a whole whereas CPI is used for adjusting income and expenditure streams for changes in the cost of living. There are conceptual and definitional differences between CPI and WPI. These differences contribute to the differences in their price movements. Definitional differences are due to composition of the commodities and also due to types of prices used in compilation. WPI is based on wholesale prices for primary articles, administered prices for fuel items and ex-factory prices for manufactured products. On the other hand, CPI is based on retail prices, which include all distribution costs and taxes. Prices for WPI are collected on voluntary basis while price data for CPI are collected by investigators by visiting markets. CPI covers only consumer goods and consumer services while WPI covers all goods including intermediate goods transacted in the economy. Methodologies adopted for deriving their weighting patterns are also different, WPI weights primarily based on national accounts and enterprise survey data and CPI weights are derived from consumer expenditure survey data. Methodologies adopted for treatment of missing prices, seasonal items etc. are different; imputed price using the current available prices or repeating the previous prices for missing prices and earmarking months for seasonal items

Salient features of these price indices including target population, weights used, price collection mechanism and method of release of monthly indices are as under

CPI for Industrial Workers

Consumer Price Index for Industrial Workers [CPI (IW)] is compiled by the Labour Bureau, Ministry of Labour and Employment.

Target Population:

Target population for this index is working class family. At the time of collection of data for preparation of weighting diagram, a working class family was defined as one (i) which was located within the center (industrial area), (ii) which had at least one member working as manual worker in an establishment in any of the seven sectors of employment covered viz., factories, plantations, mining, ports and docks, public motor transport undertakings, electricity generating

and distributing establishments, and railways; and (iii) which derived 50 per cent or more of its income during the calendar month preceding the day of enquiry through any manual work.

Source of weight:

The present series of CPI (IW) is on base 2001=100. The weighting diagrams for the purpose of compilation of index numbers had been derived on the basis of average monthly family expenditure of the working class as obtained from the Working Class Family Income Expenditure Survey conducted during 1999-2000.

Price Collection mechanism:

For CPI (IW), the retail prices in respect of selected items of goods and services are collected from 78 centres by the officials of various state Directorates of Economics and Statistics or State Labour Commissioners, etc. The number of items in the consumption baskets of different centers generally varies from center to center, depending upon the prevailing situation in each center and the consumption pattern of the center. The various items of goods and services are classified into six groups namely, (i) food, (ii) pan, supari, tobacco and intoxicants, (iii) fuel and light, (iv) housing, (v) clothing, bedding, and footwear, (vi) miscellaneous. The prices of items like cereals, vegetables, oils and fats, etc., which change frequently, are collected on weekly basis, and the prices of items such as clothing, furniture, utensils, household appliances, durable goods etc. are collected on monthly basis, from two selected outlets/shops in the selected markets. The data on prices of commodities which are supplied through subsidized outlets (fair price shops), and their availability in these outlets are also collected so that weighted average prices can be worked out.

Release of Index and its major uses:

CPI (IW) is released every month (on the last working day of the following month) for each of the selected 78 centers as well at all India level. It is mainly used for the determination of dearness allowance being paid to Central/State Government employees as also to the workers in the industrial sectors besides fixation and revision of minimum wages in scheduled employments.

CPI for Agricultural Labourers and Rural Labourers

Consumer Price Index for Agricultural Labourers and Rural Labourers {CPI (AL/RL)} is compiled and released by the Labour Bureau, Ministry of Labour and Employment.

Target Population:

Target populations of these indices are agricultural and rural labour households. A rural labour household is defined as one, which derives major income during the last 365 days from wage, paid manual employment (rural labour) vis-à-vis wage paid non-manual employment as also self-employment. From amongst the rural labour households, those households, which earn 50% or more of their total income (from gainful occupation) during the last 365 days from wage paid manual labour in agriculture, are categorized as agricultural labour households. Agriculture

labour households is a subset of rural labour households. A person is considered engaged in agricultural labour if he/she follows one or more of the agricultural occupations in the capacity of wage paid manual labourer, whether paid in cash or kind (excluding exchange labour) or both. A person who does manual work in return for wages in cash or kind or partly in cash and partly in kind (excluding exchange labour) is a wage paid manual labourer. Persons who are self-employed doing manual work are not treated as wage paid manual labourers. People living in rural areas and engaged in manual labour by working in agricultural and/or non-agricultural occupations in return for wages paid either in cash or kind (excluding exchange labour) or both, are considered as rural labourers. Thus, rural labourers include both agricultural labourers and other labourers.

Source of weight:

The present series of CPI (AL/RL) is on base 1986-87=100. Estimates of consumer expenditure generated from the results of NSS 38th round (1983), formed the source of weights for the different items of goods and services, used in compilation of CPI (AL) and CPI (RL).

Price collection mechanism:

For both the current series of CPI (AL) and CPI (RL), the retail prices in respect goods and services are collected on monthly basis, from fixed markets in 600 sample villages in 20 states by the National Sample Survey Organisation. The various items of goods and services are categorized into four main groups namely, (i) Food, (ii) Fuel and Light, (iii) Clothing, bedding and Footwear; and (iv) Miscellaneous. The items of goods and services are common but the varieties of most of the items differ from village to village. The collection of retail prices is staggered over four weeks of a month with one-fourth of the sample covered every week.

Release of Index and its major uses:

CPI (AL/RL) is released on 20th of every month for each of the selected states as well at all India level. It is mainly used for the determination/ fixation and revision of minimum wages in agricultural sector.

CPI separately for rural and urban areas and also combined (rural and urban)

The Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation releases Consumer Price Indices (CPI) on base 2010=100 for all-India and States/UTs separately for rural, urban and combined every month with effect from January, 2011 and annual inflation rates from January 2012. Details of CPI(Rural/Urban/Combined) are given in Annex I.

Weighting Diagram

The consumption patterns (weighting diagrams) for this series of CPI have been derived on the basis of average monthly consumer expenditure of an urban/rural household obtained from the results of the Consumer Expenditure Survey conducted by the National Sample Survey Office during 2004-05. Number of weighted items (having consumption share) varies among states/UTs and it is around 175 in the rural and about 200 in the urban areas. These items include services such as railway fare, airway fare, telephone charges, barber/beautician charges, washer man charges, tailoring charges etc. All India Weights are as under:

| Group | CPI(Rural) | CPI(Urban) | CPI(Combined) |
|-----------------------------|------------|------------|---------------|
| Food, beverages and tobacco | 59.31 | 37.15 | 49.71 |
| Fuel and light | 10.42 | 8.40 | 9.49 |
| Housing | | 22.53 | 9.77 |
| Clothing and footwear | 5.36 | 3.91 | 4.73 |
| Miscellaneous | 24.91 | 28.00 | 26.31 |
| All Groups | 100.00 | 100.00 | 100.00 |

Data collection

(i) CPI (Rural)

From each district, two villages were selected. However, in case of some states with higher population but lesser number of districts, additional villages have been selected. There are in total 1181 villages. These villages have been distributed more or less equally among the four weeks to take in to account weekly variations in the prices. Number of items for price data collection identified through the market survey varies not only among states/UTs but also among the villages within the state/UT and it is around 225. Price data are collected from the selected shops in the villages every month by the Department of Posts.

(ii) CPI (Urban)

All cities/towns having population (2001 Population Census) of more than 9 lakh and all state/UT capitals not covered therein were selected and other towns were selected randomly. Total number of selected towns across the country is 310. Allocation of price quotations and rented dwellings to the selected towns was done on the basis of 2001 population of the town as under:

| Population of town | Number of quotations | Number of rented dwellings |
|----------------------------|----------------------|----------------------------|
| More than 1 crore | 24 | 144 |
| 25 lakh - 1 crore | 12 | 72 |
| 9- 25 lakh | 8 | 48 |
| Remaining state/UT capital | 4 | 24 |
| 50000 - 9 lakh | 4 | 24 |
| Less than 50000 | 2 | 12 |

Total number of quotations is 1114 and these quotations represent different geographical areas of the town and also popularity among different segments of the population (poor, middle and affluent) living in the town. These quotations have been distributed more or less equally among the four weeks of the month to capture week to week variations. Number of items for price data collection identified through the market survey varies not only among states/UTs but also among the markets within the state/UT and it is around 250. Each selected market is visited every month for price data collection from shops/outlets.

As regards rent data collection, each of 6684 sample rented dwellings is visited once in six months period (January—June, July- December) for canvassing the house rent schedule. Data collection in the urban areas is undertaken by the National Sample Survey Office.

Data submission

Data collected from rural and urban areas of about 4.75 lakh price data records per month are uploaded to the web portals of the National Informatics Centre from various offices of the data collection agencies.

Revision of Indices

These CPI numbers would be revised regularly (five years interval or so) on the basis of the results of the five yearly Consumer Expenditure Survey (CES) being conducted by the NSSO. CPI series is expected to be revised in 2014 on the basis of CES 2011-12 results.

Comparison of CPI numbers

Comparative position of CPI numbers is indicated in Annex II and their weighting diagrams are presented in Annex III.

Wholesale Price Index

The OEA introduced new series of WPI with a base year of 2004-05 with effect from August 2010, replacing the old series of 1993-94 base. The universe of the wholesale price index comprises all transactions at first point of bulk sale in the domestic market.

Method of selection of products in the Manufactured Group:

The manufactured product basket in the 1993-94 series included all such products with traded value of Rs 120 crore or above. (*Traded value=Domestic production+ Import net of direct import reaching factories-Direct export*). This led to poor representation of products in some of the product groups. In order to remove the anomaly in a selection method based on a uniform cut-off criterion and make the method of selection more representative, the Working Group, decided to adopt a method, in which each product group in the manufactured basket gets represented by such number of items which together cover at least 80 per cent of the traded value at the group level.

The New Series with 2004-05 as the base has 676 items in the commodity basket. A comparison of the number of items and price quotations at the level of the groups in the previous and the existing as well as in the revised base series is presented in the following table. There has been a significant increase in number of items and price quotations for each item, particularly in the manufacturing segment to not only better reflect the structural shifts but also to make WPI more broad based.

| Comparative Statement of Commodities and price quotations | | | | | | | | |
|---|-----------------------|---------|---------|---------|----------------------------|---------|---------|---------|
| | Number of Commodities | | | | Number of price quotations | | | |
| Major Group/Group | 1970-71 | 1981-82 | 1993-94 | 2004-05 | 1970-71 | 1981-82 | 1993-94 | 2004-05 |
| All Commodities | 360 | 447 | 435 | 676 | 1295 | 2371 | 1918 | 5482 |
| Primary Articles | 80 | 93 | 98 | 102 | 411 | 519 | 455 | 579 |
| Food Articles | 39 | 44 | 54 | 55 | 264 | 320 | 340 | 431 |
| Non Food Articles | 26 | 28 | 25 | 29 | 115 | 132 | 96 | 108 |
| Minerals | 15 | 21 | 19 | 18 | 32 | 67 | 19 | 40 |
| Fuel and Power | 10 | 20 | 19 | 19 | 30 | 73 | 72 | 72 |
| Manufactured Products | 270 | 334 | 318 | 555 | 854 | 1779 | 1391 | 4831 |
| Food Products | 37 | 35 | 41 | 57 | 117 | 231 | 168 | 406 |
| Beverages, Tobacco and Tobacco Products | 8 | 7 | 11 | 15 | 19 | 39 | 49 | 102 |
| Textiles | 12 | 27 | 29 | 55 | 99 | 120 | 100 | 457 |

| | | | | | | | | |
|---|----|----|----|-----|-----|-----|-----|------|
| Wood and Wood Products | 4 | 2 | 2 | 10 | 13 | 14 | 9 | 64 |
| Paper and Paper Products | 4 | 11 | 11 | 18 | 16 | 74 | 67 | 138 |
| Leather and Leather Products | 4 | 3 | 1 | 13 | 18 | 26 | 9 | 91 |
| Rubber and Plastic Products | 7 | 13 | 15 | 45 | 42 | 73 | 55 | 351 |
| Chemicals and Chemical Products | 67 | 77 | 69 | 107 | 182 | 428 | 276 | 1111 |
| Non-Metallic Mineral Products | 21 | 22 | 9 | 26 | 63 | 125 | 42 | 225 |
| Basic Metals, Alloys and Metal Products | 42 | 57 | 53 | 69 | 125 | 235 | 203 | 696 |
| Machinery and Machine Tools | 35 | 44 | 56 | 107 | 104 | 266 | 312 | 903 |
| Transport Equipment and Parts | 21 | 22 | 21 | 33 | 39 | 118 | 101 | 287 |

Treatment of crude oil

In the 1981-82 series, crude petroleum was included as an independent item in the mineral group of the major group Primary Articles. However, in the 1993-94 series, the crude petroleum was taken away from the mineral group as an independent item and its value was distributed among the items in the mineral fuel group of the major group Fuel and Power. The Analytical Sub- Group of the Working Group for the new series observed that the prices of crude petroleum could now be collected from the open market which is interlinked with international market.

Weighting diagram

The weighting diagram for the WPI series has been derived on the basis of Gross Value of Output (GVO). The output values at current prices, wherever available at appropriate disaggregation, have been obtained from the National Accounts Statistics (NAS), 2007 published by the Central Statistics Office. The same have been reallocated and aggregated to conform to the structure of WPI basket. Specific group-wise approach for allocation of weights is as under:

a. Primary Articles: In the case of agricultural and related commodities, the average value of output for the triennium ending 2005-06 (i.e., 2003-04, 2004-05 and 2005-06) has been derived by using the value of output at current prices for the relevant years obtained from the National Accounts Statistics 2007 (Statements -55 & 56). The Marketed Surplus Ratios (MSRs) for the year 2000-01 have been used for deriving the value of marketed output for the agricultural and related commodities for the base year 2004-05, as it was felt that the MSRs are unlikely to undergo any significant change within a short span of three to four years.

b. Minerals: 'Minerals' is a group under the major group Primary Articles. The value of output of minerals other than crude petroleum has been taken from the National Accounts Statistics, 2007 (Statement -59). Crude petroleum has also been shifted to 'minerals' in the revised series. The output value of domestically produced crude petroleum has been taken from the Indian Bureau of Mines (IBM) and has been added to the value of output of minerals other than crude to arrive at the total value of output of minerals in the new WPI basket. The value of imported crude has not been taken into account while deriving the weighting diagram for the

crude petroleum on the ground that crude is not traded as such in the domestic market and its derivatives are already included in the basket as independent items in the major group Fuel and Power.

c. Fuel Minerals (coal, coke and lignite): The value of output for fuel minerals, i.e. coal, coke and lignite, has been taken from the NAS 2007 (Statement 59). The export and import figures for fuel minerals have been taken from the Office of the Coal Controller, Kolkata. As in case of minerals (except crude petroleum), the imported fuel minerals are taken as traded in the domestic market and the export of such minerals are taken as direct exports from the mines for estimation of traded value figures for the fuel minerals.

d. Mineral oils: The value of mineral oils as a group as well as item-wise values of important mineral oils like petrol, diesel, naphtha, LPG, kerosene, lubricants etc. are not available in NAS 2007. The Ministry of Petroleum has made available the sales figures of the mineral oils by different oil companies for the year 2004-05. The Ministry has also provided the import and export figures for 2004-05 for such items. While computing the traded value of the items in the mineral oils group, the value of imports have not been included as the import figures are already included in the sales figures. It has been taken that the imported mineral oils are traded in the domestic market. The export of mineral oils has been treated as direct export for estimation of traded value figures for mineral oils and therefore subtracted from the sales value of the mineral oils to arrive at the traded value for mineral oils.

e. Electricity: The value of electricity output provided by Central Electricity Authority (CEA) for 2004-05 has been used in derivation of weight for the electricity group and the item level weights have been derived by distributing the group level weight amongst the different sectors of use (agriculture, industry, domestic, commercial and railways traction) as per the quantum of generated electricity used by these sectors.

f. Manufactured Products: The National Accounts Statistics 2007 provides the NIC two digit group wise output figures for 2004-05 both for the registered (Statement 61) and unregistered (Statement 62-a) manufacturing sector. Necessary adjustments have been done in NIC group level output figures to arrive at the group level output figures for the 12 product groups of the Manufactured Products major group of the WPI basket. Adjustments were done in the NAS group level output figures for a few groups to harmonize it with the WPI manufactured product grouping.

The group-wise combined registered and unregistered manufacturing figures have been adjusted for import and direct export figures to arrive at the traded value figures in respect of each of the 12 groups. The group level weights, derived on the basis of respective traded value figures, have been distributed pro-rata amongst the items covered in the respective groups, as per the output figures of such items obtained from ASI data / Office of DCSSI.

The weights have therefore been assigned on the basis of entire wholesale transactions in the economy.

The following table presents a comparative picture of weights.

| Comparative Statement of Weights assigned to Product Groups | | | | |
|---|---------|---------|---------|---------|
| Major Group/Group | 1970-71 | 1981-82 | 1993-94 | 2004-05 |
| All Commodities | 100.000 | 100.000 | 100.000 | 100.000 |
| Primary Articles | 41.667 | 32.295 | 22.025 | 20.118 |

| | | | | |
|---|--------|--------|--------|--------|
| Food Articles | 29.799 | 17.386 | 15.402 | 14.337 |
| Non Food Articles | 10.621 | 10.081 | 6.138 | 4.258 |
| Minerals | 1.247 | 4.823 | 0.485 | 1.521 |
| Fuel and Power | 8.459 | 10.663 | 14.226 | 14.910 |
| Coal | | 1.256 | 1.753 | 2.094 |
| Mineral Oils | | 6.666 | 6.987 | 9.364 |
| Electricity | | 2.741 | 5.484 | 3.452 |
| Manufactured Products | 49.874 | 57.042 | 63.749 | 64.972 |
| Food Products | 13.322 | 10.143 | 11.538 | 9.974 |
| Beverages, Tobacco | 2.708 | 2.149 | 1.339 | 1.762 |
| Textiles | 11.026 | 11.545 | 9.800 | 7.326 |
| Wood and Wood Products | 0.174 | 1.198 | 0.173 | 0.587 |
| Paper and Paper Products | 0.851 | 1.988 | 2.044 | 2.034 |
| Leather and Leather Products | 0.385 | 1.018 | 1.019 | 0.835 |
| Rubber and Plastic Products | 1.207 | 1.592 | 2.388 | 2.987 |
| Chemicals and Chemical Products | 5.548 | 7.355 | 11.931 | 12.018 |
| Non-Metallic Mineral Products | 1.415 | 2.477 | 2.516 | 2.556 |
| Basic Metals, Alloys and Metal Products | 5.974 | 7.632 | 8.342 | 10.748 |
| Machinery and Machine Tools | 5.045 | 6.268 | 8.363 | 8.931 |
| Transport Equipment and Parts | 1.673 | 2.705 | 4.295 | 5.213 |
| Other Industries | 0.546 | 0.972 | 0.000 | 0.000 |

Seasonal Items

There are a number of agricultural commodities, especially, some fruits and vegetables, which are seasonal in their availability and whose prices are quoted only during a particular period of the year. Such seasonal items are handled in the index in a special manner. When a particular seasonal item disappears from the market and its prices cease to get quoted, the index for such an item ceases to be compiled and its weight is distributed over the remaining items within the concerned sub- group on a pro-rata basis.

Other Methodological Changes

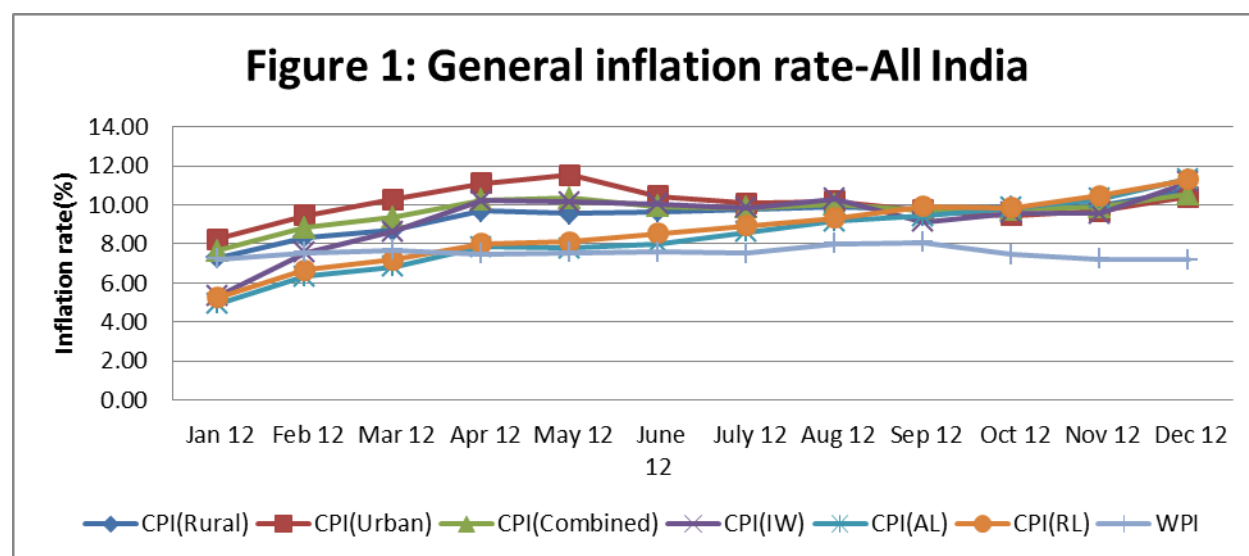
The WPI series of 1993-94 base had included the PDS price quotations for wheat and rice. The Working Group was of the opinion that since they did not represent the first point of sale, these may not be included. In view of this it was decided to include the procurement prices of paddy and wheat, which in a way represent the first point of sale in the price quotations for wheat and rice.

Release of index

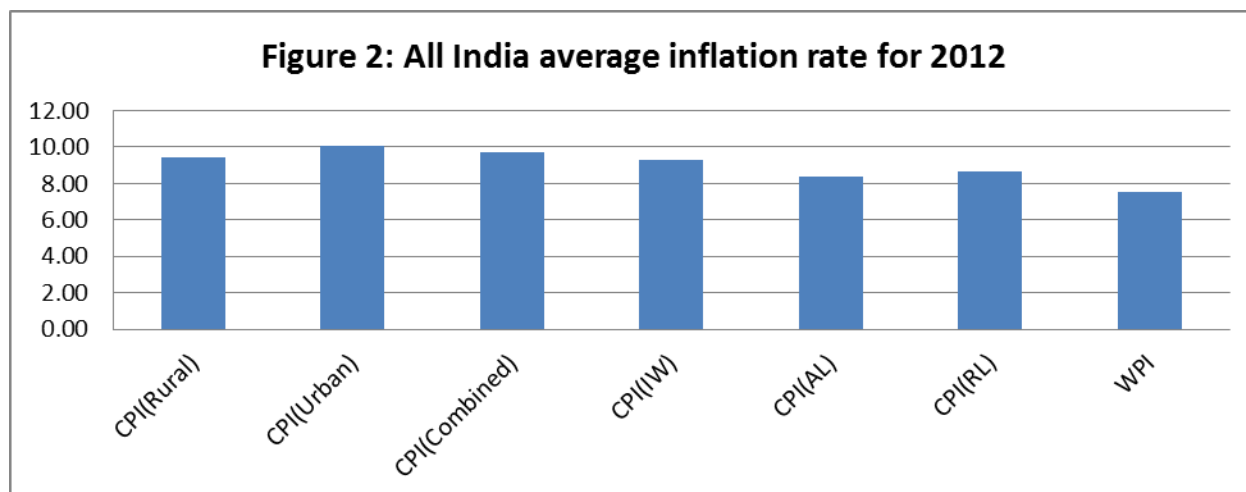
The monthly provisional WPI is released on 14th of the following month (if 14th happens to be a holiday, the WPI would be released on the next working day). The provisional index is made 'final' after a period of two months.

General all India Inflation rates

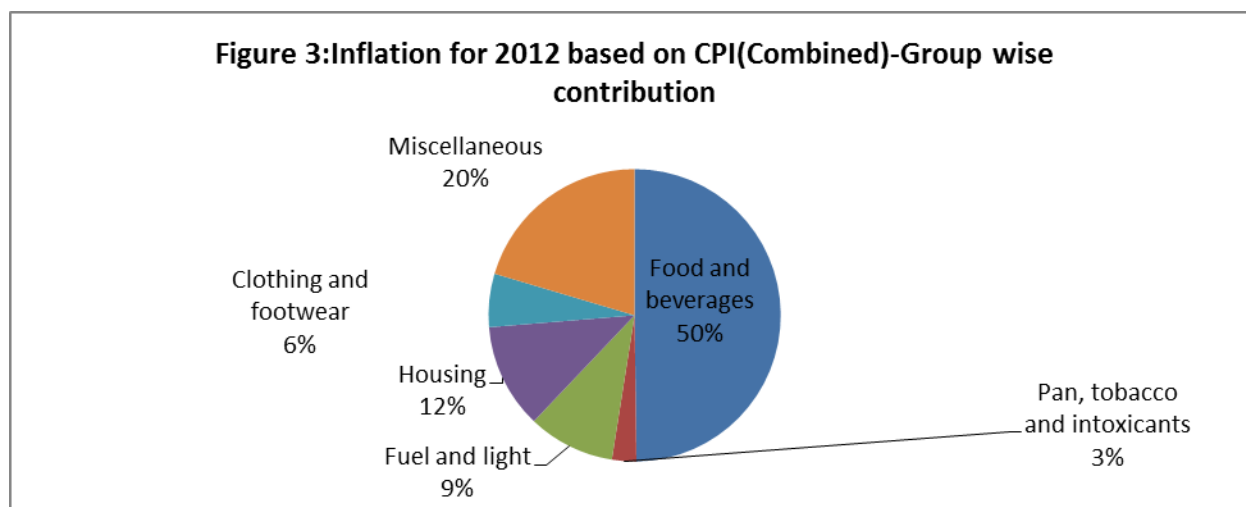
All India annual inflation rates on a point to point basis as revealed by these price indices during 2012 are presented in Annex IV. It may be seen that population segment specific CPI numbers (IW, AL and RL) revealed annual inflation rate of 4.9% to 5.3% in January 2012 as against 7.7% by CPI for entire rural and urban population. The corresponding rate based on WPI was 7.2%. As compared to January 2012 rates, consumer price inflation rates in February 2012 rose by around one percentage point excepting in the case of CPI (IW) which registered two percentage points increase. In April 2012 also, consumer price inflation moved up by about one percentage point. Rates more or less declined in June 2012 and July 2012 as compared to the respective previous month rates and also in September 2012. Increasing trend in the inflation rates was seen in November 2012 and December 2012. Consumer price inflation rate in December 2012 was about 11%. However, the wholesale inflation was 7 to 8% in the entire year of 2012 (Figures 1 and 2). Differences in inflation rates measured from WPI and CPI are due to collection of prices from the type of markets- wholesale markets or from factories for WPI as compared to retail markets in CPIs and also due to coverage of items and their weighting patterns.



Average consumer price inflation for 2012 was about 10% based on CPI (Rural/Urban/Combined) and the segment specific CPI numbers revealed about 9% inflation in 2012 while wholesale inflation was 7.5 % (Figure 2).



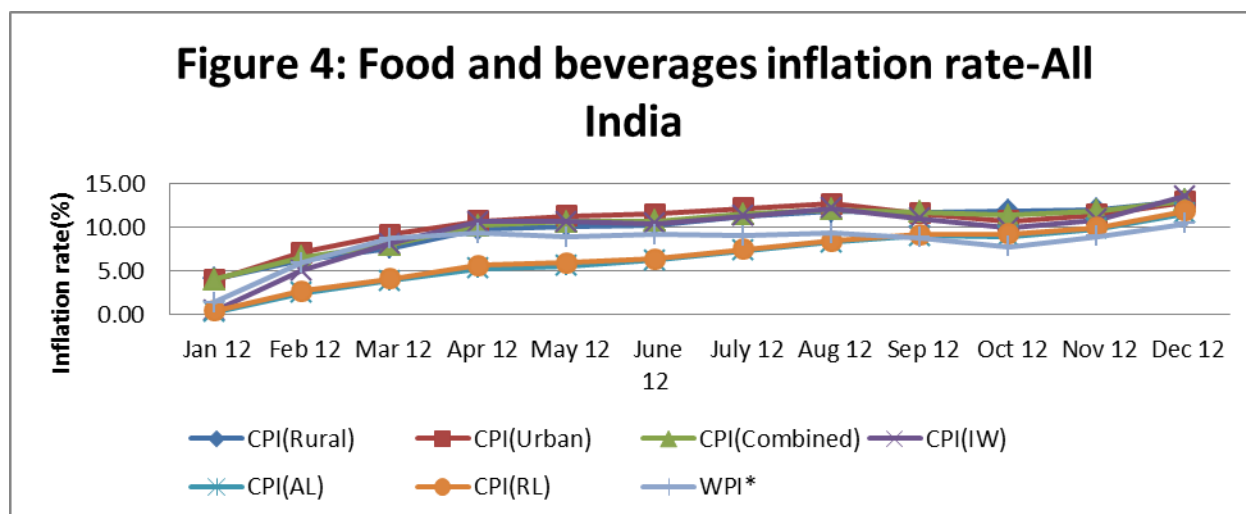
It is seen that out of average inflation for 2012 based on CPI(Combined) of 9.7%, 49.8% is attributed to food and beverages, 2.7% to pan, tobacco and intoxicants, 9.6% to fuel and light, 11.6% to housing, 5.9% to clothing and footwear and 20.4% to miscellaneous group.(Figure 3). ‘Cereals and products’ and ‘milk and products’ in the food group contributed around 10% each in the total inflation, 7% each by ‘oils and fats’ and vegetables. ‘Transport and communication’ and ‘household requisites’ accounted for about 5% each in the total inflation for 2012.



All India group level inflation rates

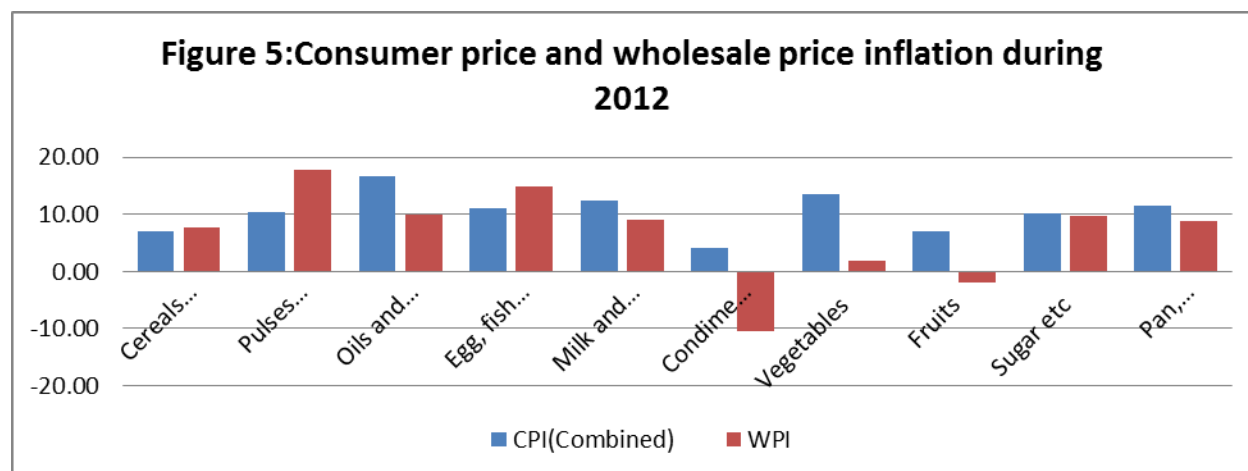
Analyzing the all India inflation rates at group level (Annex V), food and beverages group inflation was more than 10% from May 2012 and reached 13% in December 2012, excepting the rates based on CPI (AL/RL). Though CPI (AL/RL) revealed lower food inflation in the beginning of 2012, it reached around 12% in December 2012. Consumer price food

inflation rose sharply by about two percentage points in February 2012 compared to January 2012 and also in April 2012 compared to March 2012 and one percentage point in March 2012 over February 2012 and also in July 2012 over June 2012 rate. Food inflation based on segment specific CPI numbers showed an increase of about one percentage point in August 2012 and November 2012 compared with the respective previous month rates. Increase in food inflation in December 2012 was about two percentage points excepting in the case of CPI (IW) which recorded about three points increase. WPI (food and food products) inflation reached 10.4% in December 2012 from 1.5% in January 2012 (Figure 4). It increased by about 5 percentage points in February 2012 compared to January 2012 rate and about 3 percentage points increase in March 2012 from February 2012. Thereafter, more or less declining trend was exhibited by the WPI (Food) and it rose by about 1 percentage point each in November 2012 and December 2012.



Comparison of consumer price and wholesale inflation at food commodity groups

Comparing the consumer price and wholesale inflation at food commodity groups for 2012(Annex V), these rates are more or less same in respect of ‘cereals and products’ and ‘sugar etc.’ ‘Pulse and products’, oils, ‘Egg, fish and meat’, ‘milk and products’, spices, vegetables and fruits groups have shown completely different consumer price and wholesale price inflation rates. Wholesale price inflation rate was more than that of consumer price inflation in respect of ‘pulses and products’ and ‘egg, fish and meat’. On the other hand, consumer price inflation was more than wholesale price inflation in respect of ‘oils and fats’ ‘milk and products’ vegetables and fruits (Figure 5)



Consumer price inflation for non-food groups

CPI numbers showed high fuel inflation of 10 to 20% during the first six months of 2012 and thereafter the rate declined. Sharp declining in fuel inflation was in July 2012 over June 2012, as much as about 4 to 6 percentage point in respect of CPI (IW) and CPI (Urban), two percentage points in CPI (Rural) and about one percentage point in CPI (AL/RL). Rural fuel inflation in November 2012 declined by one percentage point as compared to October 2012 rate.

Clothing and footwear inflation was 14 to 18% in January 2012 and it mostly declined every month and it was 9 to 11% in December 2012.

Inflation of miscellaneous group consisting of items of medical, education, transport, communication etc. was mostly 7 to 8% in respect of all the CPI numbers excepting in the case of CPI (AL/RL), which exhibited 12% inflation in January 2012 and 10% in December 2012.

Summary

Salient features viz. coverage of population and area, derivation of weighting diagrams, price collection mechanism, dissemination of indices etc. of Consumer Price indices for rural population, urban population, industrial workers, agricultural/rural labourers and also Wholesale Price Index are given in this paper. Comparison of weights is also presented in this article. Inflation rates during 2012 based on these indices are also analysed.

References

- i) www.mospi.gov.in
- ii) www.eaindustry.nic.in
- iii) www.labourbureau.nic.in

Annex I**Important features of CPI (Rural/Urban/Combined)**

The Central Statistics Office (CSO) of the Ministry of Statistics and Programme Implementation releases every month CPI for the entire rural population, viz. CPI (Rural), and CPI for the entire urban population, viz. CPI (Urban), which reflects the changes in the price levels of various goods and services consumed by the rural and urban population and also CPI (Combined). These indices on base 2010=100 are compiled at State/UT and all-India levels and are available from January 2011 onwards. For construction of CPI numbers, two requisite components are weighting diagrams (consumption patterns) and price data collected at regular intervals.

Weighting Diagram

Weighting diagram gives the share of each item considered in the total consumption expenditure. The weighting diagrams for the new CPI series have been derived on the basis of average monthly consumer expenditure of an urban/rural household obtained from the NSS 61st round Consumer Expenditure Survey data (2004-05). Only consumption expenditure has been considered for the purpose of preparation of weighting diagrams. Non-consumption expenditure items, like legal expenses, have been excluded.

Classification of items of consumption

After exclusion of non-consumption expenditure items, the remaining items were classified into several consumption groups and subgroups considering Classification of Individual Consumption according to Purpose (COICOP), the standard international classification as well as present classification of items adopted in the other CPI numbers compiled at national level. These items have been divided in five groups as follows:

| | |
|--|---|
| Gr. 1 Food, beverages and tobacco 1.1 Cereals and products 1.2 Pulses and products 1.3 Oils and Fats 1.4 Egg, Fish and Meat 1.5 Milk and Milk Products 1.6 Condiments and spices 1.7 Vegetables 1.8 Fruits 1.9 Sugar, honey etc. 1.10 Non-alcoholic beverages 1.11 Prepared meals etc 1.12 Pan, tobacco and intoxicants | Gr. 2 Fuel and light |
| | Gr. 3 Housing |
| | Gr. 4 Clothing, bedding and footwear 4.1 Clothing and bedding 4.2 Footwear |
| | Gr. 5 Miscellaneous 5.1 Medical Care 5.2 Education 5.3 Recreation and amusement 5.4 Transport & communication 5.5 Personal care and effects |
| | |

| | |
|--|--------------------------|
| | 5.6 Household requisites |
| | 5.7 Others |

Criteria of selection of items

Multiple norms were adopted for selecting the items depending on their importance, their popularity and suitability for pricing on a continuing basis. Accordingly, following four-fold criteria were adopted:

- i) to include all PDS items
- ii) to include all items accounting for 1% or more of total expenditure at sub-group level.
- iii) to include all items accounting for more than specified percentage of total expenditure of all consumption items as given below:

| Group | Group Description | Specified percentage out of total expenditure |
|------------------|--|---|
| Gr.1, Gr.3, Gr.5 | Food, beverages and tobacco, Housing and Miscellaneous | >0.04% |
| Gr. 2 | Fuel and light | >0.03% |
| Gr. 4 | Clothing, bedding and footwear | >0.02% |

- iv) to include all items for which more than 75% households have reported consumption.

All items satisfying any of the above four conditions were retained. These are termed as weighted items. Expenditure on certain item was imputed considering its insignificant share and/or difficulties involved in pricing to the item(s) retained on the basis of mainly same or similar price movements.

Price collection in urban areas

Number of price schedules (quotations) that could be canvassed by the field investigators available was fixed around 1100 and distributed to States/UTs on the basis of urban population (Population Census 2001).

For regular price collection by NSSO (FOD)/Specified State Governments, all cities/towns having population (2001 Population Census) more than 9 lakh and all state/UT capitals not covered therein were selected purposively. Quotations were allotted to these cities/towns as per following criteria.

| Towns having population | No. of quotations allotted |
|--------------------------------|-----------------------------------|
| More than 1 crore | 24 |
| 25 lakh – 1 crore | 12 |
| 9-25 lakh | 8 |
| Remaining State/UT capitals | 4 |

After selecting the towns/cities as stated above, each State/UT was divided into four strata:

| Stratum | Towns |
|----------------|---|
| I | Remaining Class I towns (population more than 1 lakh but less than or equal to 9 lakh) |
| II | All Class II towns (population 50000- 1 lakh) |
| III | All Class III towns(population 20000- 50000) |
| IV | All Class IV towns(population less than 20000) |

After allocating quotations to the selected towns of more than 9 lakh population and State/UT capitals, remaining quotations earmarked for a State/UT were further allocated to different strata in proportion to total urban population of the towns falling in different strata. Number of towns to be selected from strata I and II was decided on the basis of no. of quotations allotted to those strata taking 4 quotations per town. For Strata III and IV, no. of towns were selected based on number of quotations allotted to those strata, taking 2 quotations per town. Towns were selected from each stratum circular systematically ensuring regional representation. In all 310 towns have been selected covering all the States and UTs from which 1114 price quotations (Schedules) are canvassed every month. Quotations allocated to a particular town have been distributed by ensuring both the geographical coverage of the selected town and the different segments of population living in the town (poor, middle and affluent). Further, quotations allotted for the town have been distributed over the four weeks of a month to take into account week to week variation in the prices.

In the selected towns, market survey was undertaken by NSSO (FOD) for (i) identification of popular markets (ii) selection of shops/outlets for different commodities in the selected markets and (iii) determination of specifications of commodities to be priced. Rented dwellings, from which house rent data are to be collected, were also identified in all the selected towns during the market survey. Prices are collected by the NSSO (FOD) every month.

Web portal for data submission

National Informatics Centre (NIC) Delhi has developed a web-portal for urban price data, to facilitate on line data entry from different field offices of NSSO (FOD). Provision on web portal has also been kept for (i) uploading of data entered in the off line mode (ii) generation of scrutiny tables (Diagnostic Tables) giving price variations exceeding certain limits for verification and updation of price data.

House rent data Collection

For compilation of house rent index which is a component in the Housing group of CPI (Urban) rent data are also collected from a sample rented dwellings in each of the selected town. For each quotation, six rented dwellings units have been selected. These are selected in such a way that they represent various categories of dwellings with different number of living rooms. Dwellings are visited once in six months for canvassing house rent schedule.

PDS price data collection

Public Distribution System (PDS) prices, also known as Fair Price Shop prices, are also collected in respect of four items viz. Rice – PDS, Wheat/ wheat- atta – PDS, Sugar-PDS and Kerosene- PDS. These are collected in respect of two groups of beneficiaries viz. Above Poverty Line (APL) and Below Poverty Line (BPL) households.

Price collection in rural areas

With a view to have a workload within manageable limits and considering the fact that the CPI (Rural) would provide the price changes for the entire rural population of the country, a total of 1181 villages have been selected at all India level. The broad criterion of selection of villages is indicated below. These villages have been distributed more or less equally among the four weeks to take in to account weekly variations in the prices.

- (i) Within each State/UT, top 50 villages(if villages in a district are more than 50, all villages if it is less than 50) are arranged in the descending order on the basis of 2001 population for each district;
- (ii) 50 villages selected above have been divided into two sets i.e Set 1 and Set 2 (Set 1 consists of top 25 villages and Set 2 the remaining 25 villages);
- (iii) Within a district two villages (one each from Set 1 and Set 2) have been selected randomly from different tehsils. In case of only one tehsil available in a district, both the villages have been selected from the same tehsil;
- (iv) In case of some UTs where number of districts is less than three, minimum five villages were selected within UT.

- (v) Sample size in some States/UTs, wherever required, was adjusted on the basis of rural population of the State/UT.

As the field investigators of NSSO (FOD) are not available for price collection in the rural areas, this work has been entrusted to the Department of Posts. Postal officials are trained by NSSO (FOD) and CSO at selected centres in the country for price data collection in the rural areas. Data from different locations are uploaded through a web portal developed by the Department of Posts and NIC. This web-portal has all the features needed for monitoring of field work and scrutiny/editing of price data, as explained in the case of uploading of urban price data.

Selection of base year

Considering the availability of reliable data, especially rural price data from January 2010 and also necessity of bringing all these CPI numbers at the earliest, the Technical Advisory Committee on Statistics of Prices and Cost of Living (TAC on SPCL) in its 49th meeting decided to have 2010 (Jan.-Dec.) as the base year.

Compilation of indices

Compilation of CPI numbers for items other than house rent consists of two stages i.e. (i) calculation of price indices for elementary aggregates (item level indices) and (ii) the aggregation of these elementary price indices to higher level indices using the weights associated with each level. Laspeyre's formula is used for aggregation of indices. Specifications of items have been selected on the basis of popularity in the respective areas. These specifications are different in terms of units, quantity, quality etc. for different price schedules. Prices relative of each product specification (current month price/base year average price) is worked out. Average of these price relatives under the respective item multiplied with 100 gives the index for that item.

In case of seasonal items of vegetables and fruits, whenever prices of these items are not reported in a particular month, weights of such items are imputed on pro-rata basis to the items in the respective section (root vegetables, fresh vegetables, fresh fruits, and dry fruits).

House rent index is compiled by chain base method. Two categories of dwellings viz. rented dwellings and self-owned dwellings are considered in the compilation of the house rent index. The rental equivalence approach is adopted in respect of self-owned dwellings. For each State/UT, previous five months and current month data are used to compile rent relatives for the current month. Rent relative is calculated as current month rent/rent six months ago and then simple average relative is worked out by classifying the dwellings by number of living rooms (1 room, 2 rooms, 3 rooms and 4 or more rooms). These rent relatives are weighted to get a combined rent relative using the estimated proportions of dwellings under each group, obtained from the NSS 65th round survey (2008-09) on Housing Conditions. House rent index is obtained by multiplying the combined rent relative with the corresponding rent index six months ago.

For PDS items, price relatives are worked out separately for Above Poverty Line (APL) and Below Poverty Line (BPL) categories. These price relatives are combined with the respective share of expenditure as obtained from the Consumer Expenditure Survey (2004-05).

All India index at sub group level is compiled by taking the respective expenditure of the State/UT (average household expenditure X total estimated households) as weights. Rural and urban indices are also combined by taking expenditure as weight so as to get State/UT and national indices.

Dissemination of Indices

CSO has started releasing all India point-to point (annual) inflation rates for January 2012 onwards. These provisional numbers are subsequently revised and final numbers are released along with the provisional indices of the next month. Indices are now released on 12th of the following month (on next working day if 12th is a holiday). This CPI series is used for formulation of monetary and fiscal policies.

*Annex II***Comparison of CPI numbers in respect of certain features**

| S.No. | Feature | CPI(Rural) | CPI(Urban) | CPI(IW) | CPI(AL) | CPI(RL) |
|-------|--|------------------------------|------------------------------|--------------------------|-------------------------|-------------------------|
| 1 | Compilation and release by | Central Statistics Office | | Labour Bureau | | |
| 2. | Source of weights | - | - | 1999-2000 | - | - |
| | a) Family Living Survey | | | | | |
| | b) Consumer Expenditure Survey | 2004-05 | 2004-05 | - | 1983 | 1983 |
| 3. | Base year of the series | 2010 | 2010 | 2001 | 1986-87 | 1986-87 |
| 4. | No. of centres/villages | 1181 | 310 | 78 | 600* | 600* |
| 5. | No. of markets/quotations | 1181 | 1114 | 289 | 1461* | 1461* |
| 6. | No. of items in the consumption basket | 175 | 200 | 175-200 | 260* | 260* |
| 7. | Index released for | All States/UTs and all India | All States/UTs and all India | 78 centres and all-India | 20 states and all-India | 20 states and all-India |
| 8. | Periodicity of index | Monthly | Monthly | Monthly | Monthly | Monthly |
| 9. | Time lag in release of the index | 1½ week | 1½ week | 1 month | 3 weeks | 3 weeks |

*Villages and items for collection of price data for CPI (AL) and CPI (RL) are same
 IW: Industrial Workers, AL: Agricultural Labourers, RL: Rural Labourers

Annex IV

| All India annual inflation rates (point to point) during 2012 | | | | | | | |
|--|-------------------|-------------------|----------------------|----------------|----------------|----------------|-------------|
| Month | CPI(Rural) | CPI(Urban) | CPI(Combined) | CPI(IW) | CPI(AL) | CPI(RL) | WPI |
| Jan 12 | 7.28 | 8.25 | 7.65 | 5.32 | 4.92 | 5.27 | 7.23 |
| Feb 12 | 8.36 | 9.45 | 8.83 | 7.57 | 6.34 | 6.68 | 7.56 |
| Mar 12 | 8.70 | 10.30 | 9.38 | 8.65 | 6.84 | 7.19 | 7.69 |
| Apr 12 | 9.67 | 11.10 | 10.26 | 10.22 | 7.84 | 8.01 | 7.50 |
| May 12 | 9.57 | 11.52 | 10.36 | 10.16 | 7.77 | 8.11 | 7.55 |
| June 12 | 9.65 | 10.44 | 9.93 | 10.05 | 8.03 | 8.54 | 7.58 |
| July 12 | 9.76 | 10.10 | 9.86 | 9.84 | 8.61 | 8.94 | 7.52 |
| Aug 12 | 9.90 | 10.19 | 10.03 | 10.31 | 9.18 | 9.34 | 8.01 |
| Sep 12 | 9.79 | 9.72 | 9.73 | 9.14 | 9.43 | 9.93 | 8.07 |
| Oct 12 | 9.90 | 9.46 | 9.75 | 9.60 | 9.85 | 9.84 | 7.32 |
| Nov 12 | 9.97 | 9.69 | 9.90 | 9.55 | 10.31 | 10.47 | 7.24 |
| Dec 12 | 10.74 | 10.42 | 10.56 | 11.17 | 11.33 | 11.31 | 7.18 |
| Average | 9.46 | 10.05 | 9.70 | 9.31 | 8.40 | 8.67 | 7.54 |

| Comparison of all India group level inflation rates (%) during 2012 | | | | | | | |
|--|-------------------|-------------------|----------------------|----------------|----------------|----------------|-------------|
| Group: Food and beverages | | | | | | | |
| Month | CPI(Rural) | CPI(Urban) | CPI(Combined) | CPI(IW) | CPI(AL) | CPI(RL) | WPI* |
| Jan 12 | 4.16 | 4.01 | 4.08 | 0.49 | 0.33 | 0.50 | 1.45 |
| Feb 12 | 6.30 | 7.14 | 6.61 | 5.08 | 2.55 | 2.72 | 5.93 |
| Mar12 | 7.63 | 9.15 | 8.03 | 8.16 | 3.94 | 4.10 | 8.70 |
| Apr 12 | 9.77 | 10.69 | 10.18 | 10.66 | 5.30 | 5.64 | 9.31 |
| May12 | 10.16 | 11.29 | 10.66 | 10.61 | 5.61 | 5.94 | 8.91 |
| June12 | 10.31 | 11.52 | 10.71 | 10.45 | 6.24 | 6.40 | 9.14 |
| July12 | 11.33 | 12.15 | 11.53 | 11.27 | 7.35 | 7.50 | 9.05 |
| Aug12 | 11.81 | 12.67 | 12.03 | 12.20 | 8.28 | 8.43 | 9.32 |
| Sep 12 | 11.67 | 11.61 | 11.71 | 11.00 | 9.05 | 9.20 | 8.84 |
| Oct 12 | 11.85 | 10.7 | 11.35 | 9.91 | 8.97 | 9.28 | 7.79 |
| Nov12 | 12.04 | 11.43 | 11.89 | 10.85 | 9.80 | 9.95 | 8.96 |
| Dec 12 | 13.09 | 12.94 | 13.04 | 13.53 | 11.59 | 11.90 | 10.39 |
| * Food and food products | | | | | | | |
| Group: Fuel and light | | | | | | | |
| Month | CPI(Rural) | CPI(Urban) | CPI(Combined) | CPI(IW) | CPI(AL) | CPI(RL) | |
| Jan 12 | 13.60 | 12.43 | 13.13 | 17.37 | 16.72 | 16.92 | |
| Feb 12 | 13.05 | 12.19 | 12.78 | 17.16 | 16.01 | 16.23 | |
| Mar12 | 11.67 | 11.92 | 11.80 | 18.93 | 13.90 | 14.10 | |
| Apr 12 | 10.32 | 12.63 | 11.21 | 20.47 | 14.33 | 14.35 | |
| May12 | 9.28 | 13.06 | 10.74 | 18.39 | 13.17 | 13.36 | |
| June12 | 9.08 | 12.55 | 10.34 | 18.08 | 12.87 | 12.73 | |
| July12 | 6.83 | 7.98 | 7.27 | 12.37 | 12.08 | 11.94 | |
| Aug 12 | 7.35 | 8.09 | 7.55 | 11.70 | 11.18 | 11.04 | |
| Sep 12 | 7.12 | 7.27 | 7.21 | 12.11 | 9.94 | 9.81 | |
| Oct 12 | 7.23 | 8.11 | 7.58 | 12.50 | 11.21 | 10.93 | |
| Nov 12 | 6.43 | 9.08 | 7.44 | 13.02 | 10.30 | 10.01 | |
| Dec 12 | 7.65 | 9.14 | 8.23 | 12.89 | 10.33 | 9.90 | |
| Group: Clothing and footwear | | | | | | | |
| Month | CPI(Rural) | CPI(Urban) | CPI(Combined) | CPI(IW) | CPI(AL) | CPI(RL) | |
| Jan 12 | 13.78 | 15.39 | 14.25 | 13.48 | 18.22 | 16.38 | |
| Feb 12 | 12.68 | 14.01 | 13.22 | 13.38 | 16.92 | 15.99 | |
| Mar 12 | 11.99 | 12.97 | 12.41 | 12.50 | 15.49 | 15.02 | |
| Apr 12 | 11.45 | 12.33 | 11.78 | 11.64 | 14.44 | 14.23 | |
| May12 | 11.01 | 11.94 | 11.36 | 10.74 | 12.28 | 12.87 | |
| June12 | 10.79 | 11.56 | 11.04 | 10.00 | 11.36 | 12.15 | |
| July 12 | 10.59 | 11.44 | 10.93 | 9.87 | 10.69 | 11.45 | |
| Aug 12 | 10.37 | 11.14 | 10.62 | 9.15 | 10.56 | 10.79 | |
| Sep 12 | 9.96 | 10.94 | 10.32 | 9.03 | 10.83 | 11.22 | |
| Oct 12 | 10.30 | 10.72 | 10.38 | 8.28 | 10.74 | 10.60 | |

| | | | | | | | |
|-----------------------------|-------------------|-------------------|----------------------|----------------|----------------|----------------|--|
| Nov 12 | 11.38 | 10.60 | 11.08 | 8.23 | 10.96 | 10.66 | |
| Dec 12 | 11.03 | 10.34 | 10.74 | 8.81 | 10.86 | 10.39 | |
| Group: Miscellaneous | | | | | | | |
| Month | CPI(Rural) | CPI(Urban) | CPI(Combined) | CPI(IW) | CPI(AL) | CPI(RL) | |
| Jan 12 | 9.81 | 7.97 | 8.93 | 6.88 | 12.29 | 12.36 | |
| Feb 12 | 9.26 | 7.63 | 8.49 | 6.83 | 12.78 | 12.45 | |
| Mar12 | 8.93 | 7.60 | 8.37 | 7.45 | 12.31 | 12.17 | |
| Apr 12 | 8.58 | 7.76 | 8.22 | 7.41 | 11.83 | 11.69 | |
| May12 | 8.29 | 7.89 | 8.13 | 7.36 | 11.74 | 11.99 | |
| June12 | 8.22 | 8.21 | 8.16 | 7.27 | 11.05 | 11.29 | |
| July12 | 7.50 | 7.57 | 7.53 | 7.23 | 10.36 | 10.41 | |
| Aug12 | 6.60 | 7.12 | 6.80 | 7.78 | 10.44 | 10.50 | |
| Sep 12 | 6.70 | 6.98 | 6.83 | 7.69 | 10.70 | 10.76 | |
| Oct 12 | 6.94 | 6.93 | 6.97 | 7.65 | 11.15 | 11.21 | |
| Nov12 | 6.63 | 6.98 | 6.74 | 8.82 | 11.25 | 11.30 | |
| Dec 12 | 6.62 | 7.14 | 6.82 | 9.36 | 10.19 | 10.05 | |

Annual inflation rate (%) for 2012 measured by CPI(Combined) and WPI

| Category | Weight (%) | | Inflation-- 2012 | | Diff. CPI- WPI |
|------------------------------|--------------|--------------|------------------|-------|----------------------|
| | CPI(C) | WPI | CPI(C) | WPI | |
| Cereals and products | 14.59 | 4.68 | 7.06 | 7.68 | -0.62 |
| Pulses and products | 2.65 | 0.89 | 10.47 | 17.67 | -7.20 |
| Oils and fats | 3.90 | 3.04 | 16.67 | 9.94 | 6.73 |
| Egg, fish and meat | 2.89 | 2.62 | 11.10 | 14.97 | -3.87 |
| Milk and milk products | 7.73 | 3.81 | 12.38 | 8.96 | 3.42 |
| Condiments and spices | 1.71 | 0.51 | 4.12 | 10.51 | 14.63 |
| Vegetables | 5.44 | 1.80 | 13.41 | 1.96 | 11.45 |
| Fruits | 1.89 | 2.50 | 7.08 | -1.86 | 8.94 |
| Sugar etc | 1.91 | 1.92 | 10.14 | 9.77 | 0.37 |
| Pan, tobacco and Intoxicants | 2.13 | 1.52 | 11.56 | 8.92 | 2.64 |
| | 44.84 | 23.29 | | | |

** Derived by following classification of items adopted in the CPI*