

# **Inflation Monitor**

**April 2016**



**State Bank of Pakistan**

**Statistics & DWH Department**

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<b>Contents</b>		<b>Page</b>
1.	Inflation in Brief .....	1
2.	City- wise Inflation .....	7
3.	Income Group- wise Inflation .....	8
4.	Weighted Contribution .....	10
5.	Inflation Diffusion Index .....	11
6.	Domestic Commodity Prices .....	12
7.	Global Commodity Prices .....	12
8.	Seasonal Adjustment in CPI .....	13
Annexure A		
Table A1	CPI Inflation by Groups	17
Table A2	Distribution of Price Changes (YoY) of CPI Basket	17
Table A3	Top and Bottom 15 Contributors to CPI Inflation (YoY)	18
Table A3.1	Top and Bottom 15 Contributors to CPI Inflation (MoM)	19
Table A3.2	Top Fifteen Contributors to CPI Inflation (YoY)	20
Table A3.3	Top Ten Contributors to CPI Food Inflation (YoY)	21
Table A3.4	Top Ten Contributors to CPI Non-Food Inflation (YoY)	22
Table A4	Distribution of Price Changes (YoY) - Selected CPI Items	23
Table A5	City-wise CPI Inflation by Income Groups	24
Table A6	City- wise CPI Inflation (YoY)	25
Table A7	Income Group-wise Inflation	26
Table A8	SPI Item-wise Price Movements	27
Table A9	Distribution of Price Changes (YoY)-WPI Items	28
Table A10	Consumer Price Index Numbers by Major Groups and Composite Commodities	29-30
Table A11	Wholesale Price Index Numbers by Major Groups and Composite Commodities	31-32
Table A12	Price Indices	33
Table A13	International Commodity Prices/ Indices	34
Table A14	CPI Data Series- Original and Seasonally Adjusted	35
Table A15	CPI Food Data Series- Original and Seasonally Adjusted	36
Table A16	CPI Monthly & Average Seasonal Factors	37
Table A17	CPI Food Monthly & Average Seasonal Factors	37
Table A18	CPI Month-on-Month % Change- Original & Seasonally Adjusted	38
Table A19	CPI Food Month-on-Month % Change- Original & Seasonally Adjusted	39
Figure A1	CPI Non-food Inflation	40
Figure A2	Frequency Distribution of Price Changes of CPI Items	41
Figure A3	Frequency Distribution of Price Changes of WPI Commodities	42
Figure A4	Group- wise/ overall Inflation Diffusion Index and Respective/ Overall YoY Inflation	43
Annexure B	Technical Notes	44-47

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## **Review**

### **Inflation in Brief**

1. Headline CPI inflation (2007-08=100) is recorded at 4.2 percent on year-on-year basis in April 2016 compared to 3.9 percent in the previous month and 2.1 percent in the corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at 1.5 percent in April 2016 compared to 0.1 percent in the previous month and 1.3 percent during the corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.56 percent in April 2016 compared to 0.10 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis was at the level of 3.8 percent in April 2016 as in the previous month and 3.1 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) increased to 0.6 percent in April 2016 compared to 0.2 percent in the previous month and was at level of 0.6 percent during the corresponding month of last year.
5. Non-food, non-energy inflation measured by CPI Core (NFNE) on year-on-year basis recorded at 4.4 percent in April 2016 compared to 4.7 percent in the previous month. It was 5.4 percent in the corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 1.1 percent in April 2016 compared to 0.2 percent in the previous month. Core NFNE inflation witnessed 1.4 percent increase during April 2015.

7. WPI inflation on year-on-year basis recorded at 0.6 percent in April 2016 compared to 0.2 percent in the previous month. During April 2015, WPI inflation was recorded at -2.9 percent.
8. WPI inflation on month-on-month basis recorded at 1.3 percent in April 2016 compared to -0.4 percent in the previous month and 0.9 percent during the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 3.6 percent in April 2016 compared to 3.9 percent in the previous month. It was -1.6 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at 0.4 percent in April 2016 compared to -0.3 percent in the previous month and 0.7 percent during the corresponding month of last year.

### **1.1 A New Measure of Core Inflation**

A new method of permanently excluding relatively volatile commodities from CPI basket in Pakistan has been developed by SBP. This is achieved by making use of trimming approach on past data on monthly CPI changes to isolate a Relatively Stable Component of CPI (RSC-CPI) as a new measure of core inflation. This method ensures inclusion of both food and non-food commodities that show persistent price behavior in Pakistan (see technical notes for details). Developments in core inflation measured by RSC- CPI for the month of April 2016 are described below:

- Core RSC inflation on year-on-year basis is recorded at 5.0 percent in April 2016 compared to 5.1 percent in the previous month and 5.6 percent in the corresponding month of last year.

- Core RSC inflation on month-on-month basis is recorded at 0.9 percent in April 2016 compared to 0.1 percent in the previous month and 1.1 percent in April, 2015.

Monthly CPI, WPI and SPI data is summarized in the following table.

Table 1.1 Inflation Trends (percent) (Base 2007- 08 = 100)																
Period	CPI Inflation						Core Inflation						WPI Inflation		SPI*** Inflation	
	General		Food		Non-food		NFNE*		Trimmed		RSC**					
	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM
Apr-15	2.1	1.3	0.0	1.4	3.7	1.3	5.4	1.4	3.1	0.6	5.6	1.1	-2.9	0.9	-1.6	0.7
May-15	3.2	0.8	3.0	1.8	3.3	0.0	4.9	0.0	3.9	0.1	5.1	0.2	-1.8	1.1	0.8	1.5
Jun-15	3.2	0.6	3.2	1.2	3.2	0.2	4.6	0.1	3.8	0.2	4.8	0.7	-2.0	1.2	0.9	1.3
Jul-15	1.9	0.5	0.6	0.1	2.9	0.8	4.1	0.6	3.0	0.5	4.4	0.6	-2.9	-0.4	-0.5	0.4
Aug-15	1.8	0.2	0.4	0.3	2.8	0.1	4.1	0.1	2.8	0.1	4.4	0.2	-2.9	-0.6	-1.3	-0.4
Sep-15	1.3	-0.1	-0.1	-0.4	2.4	0.1	3.4	0.1	2.8	0.1	4.1	0.4	-3.5	-0.4	-0.8	0.4
Oct-15	1.6	0.5	0.5	0.4	2.4	0.5	3.4	0.6	2.8	0.4	4.0	0.5	-2.7	0.5	0.2	0.8
Nov-15	2.7	0.6	2.2	1.2	3.1	0.2	4.0	0.1	2.9	0.2	4.5	0.1	-1.7	0.0	2.3	1.1
Dec-15	3.2	-0.6	2.7	-1.6	3.6	0.2	4.1	0.2	2.7	0.2	4.8	0.5	-0.4	-0.6	3.2	-0.4
Jan-16	3.3	0.2	2.5	-0.6	3.9	0.8	4.3	0.9	3.0	0.6	4.9	0.7	0.1	-0.5	3.6	-0.5
Feb-16	4.0	-0.3	3.7	-0.7	4.2	0.0	4.5	0.2	3.6	0.1	5.1	0.2	0.6	-0.6	4.2	-0.8
Mar-16	3.9	0.1	3.7	0.5	4.1	-0.1	4.7	0.2	3.8	0.2	5.1	0.1	0.2	-0.4	3.9	-0.3
Apr-16	4.2	1.5	4.7	2.4	3.8	1.0	4.4	1.1	3.8	0.6	5.0	0.9	0.6	1.3	3.6	0.4
* NFNE is Non-food non-energy      ** Relatively Stable Component of CPI      *** SPI for all income groups combined																

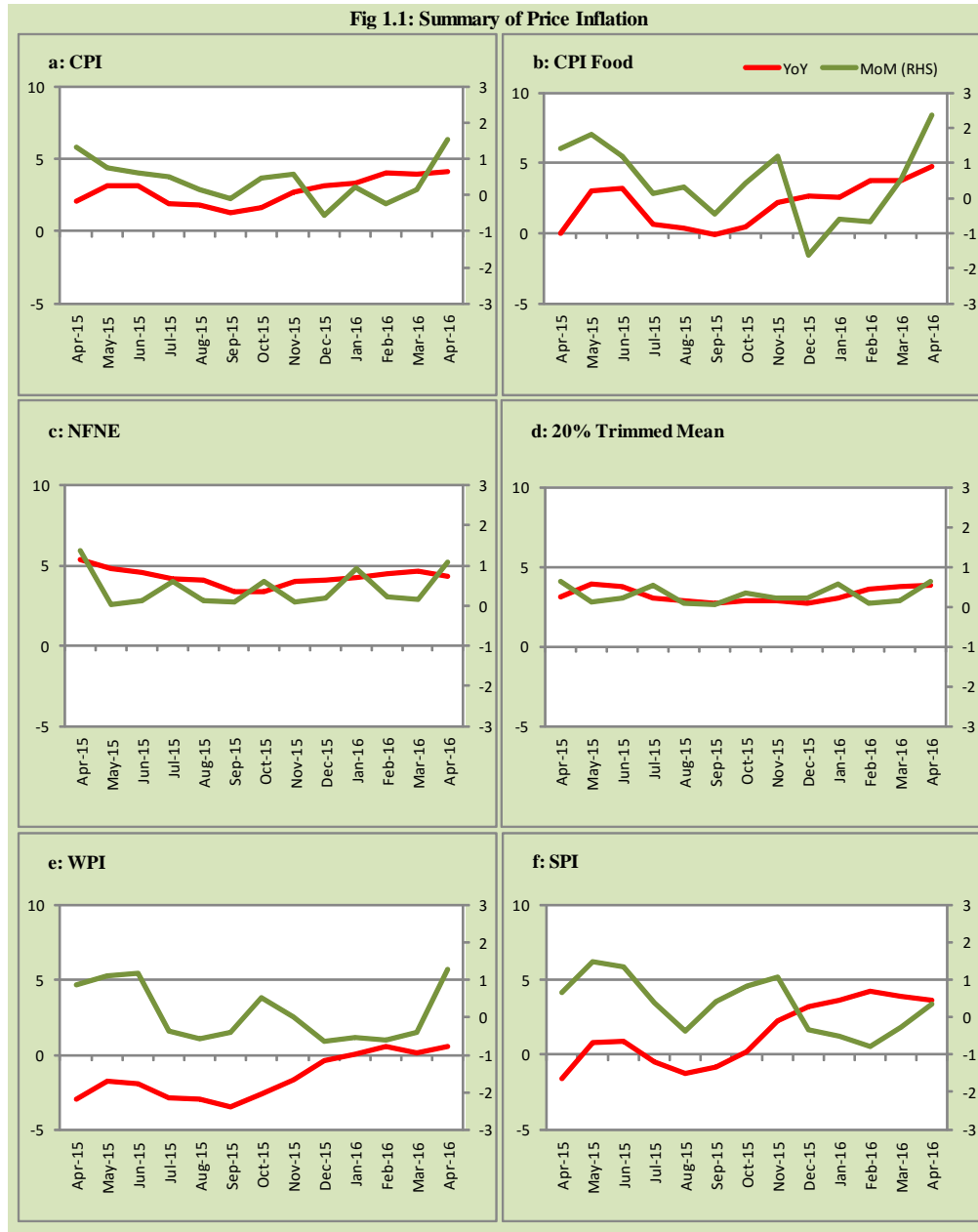
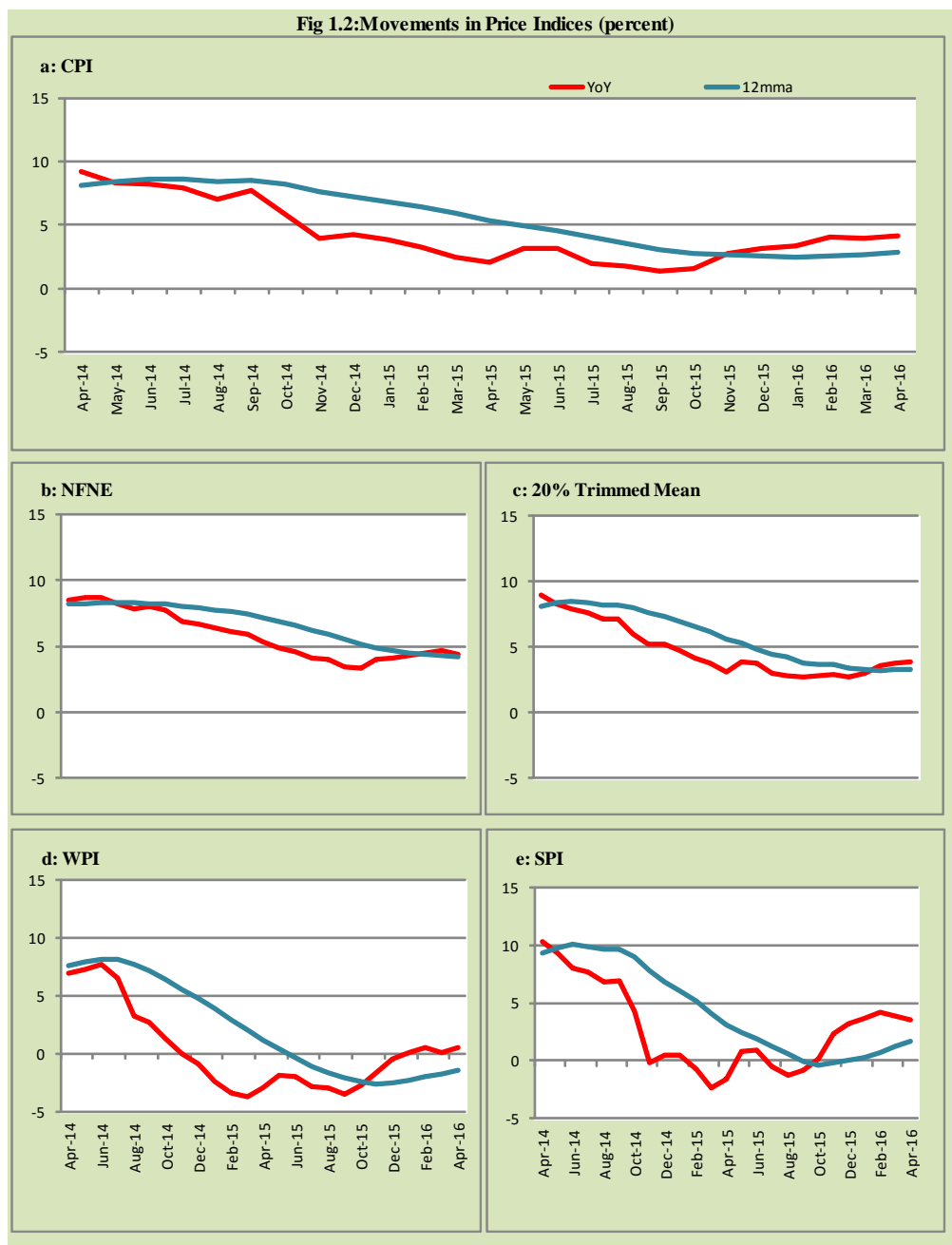




Fig 1.2: Movements in Price Indices (percent)



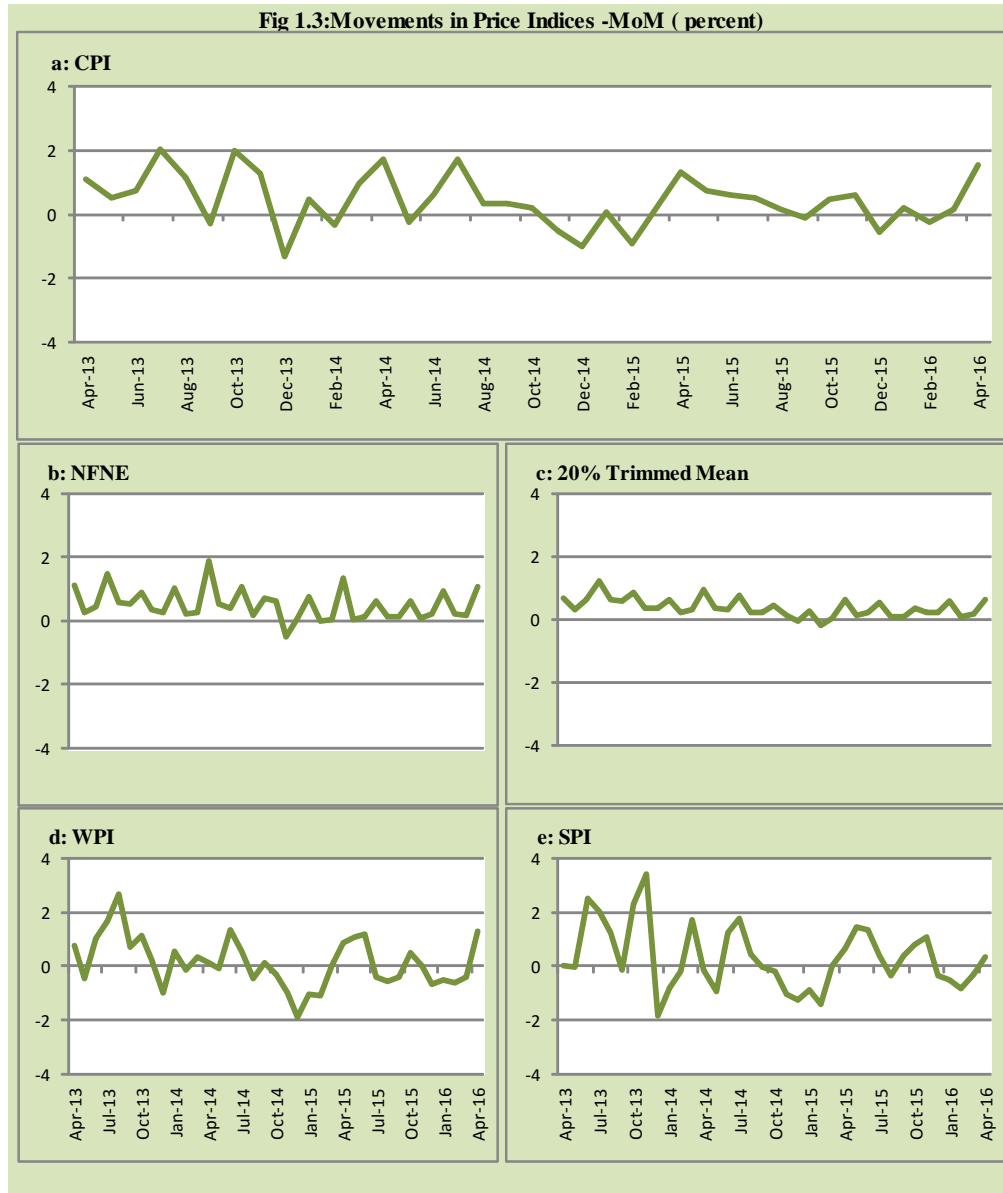
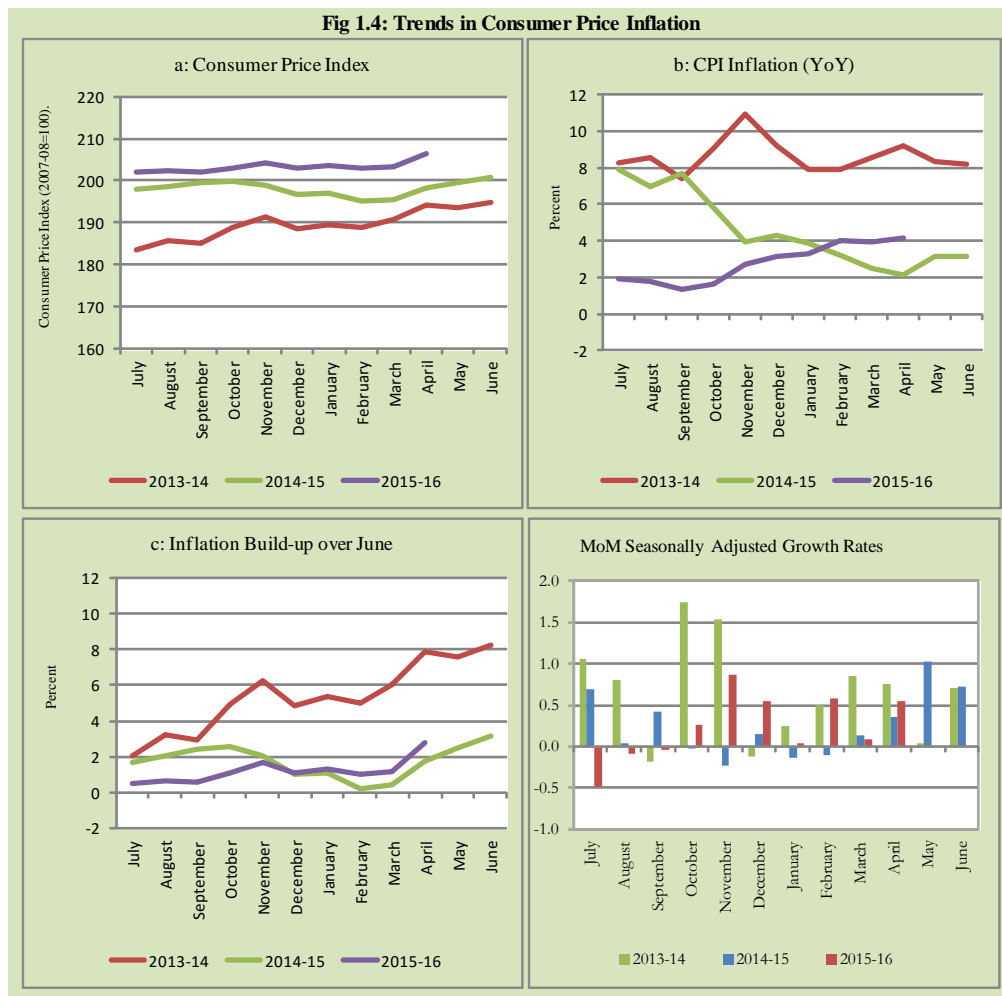


Fig 1.4: Trends in Consumer Price Inflation



## 2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan remained lower than overall inflation during April 2016 except Karachi. Among these five cities, the lowest inflation was observed in Lahore at 2.1 percent while the highest inflation was observed in Karachi at 5.2 percent (Table A6 of annexure-A).

<b>Table 2.1 City-wise Inflation of Selected Cities (percent)</b>						
	<b>Apr-15</b>		<b>Mar-16</b>		<b>Apr-16</b>	
	<b>MoM</b>	<b>YoY</b>	<b>MoM</b>	<b>YoY</b>	<b>MoM</b>	<b>YoY</b>
<b>Overall CPI</b>	1.3	2.1	0.1	3.9	1.5	4.2
Islamabad	1.1	4.0	0.1	3.0	1.0	3.0
Karachi	1.1	3.5	-0.6	4.9	1.4	5.2
Lahore	1.2	3.1	-0.4	1.4	1.9	2.1
Peshawar	0.8	1.6	-0.3	3.7	1.1	4.0
Quetta	1.2	-0.1	-0.7	3.7	1.6	4.1

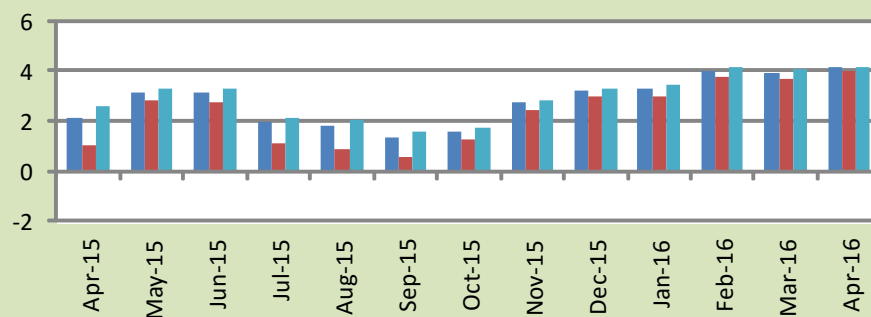
### **3. Income Group wise Inflation**

Income group- wise data shows that income group above Rs. 35,000 witnessed higher inflation as compared to overall inflation during April 2016 in food group. The lowest income group (Up to Rs. 8, 000) showed lowest inflation in food group among income groups during the month of April 2016 (Table A7 of annexure-A).

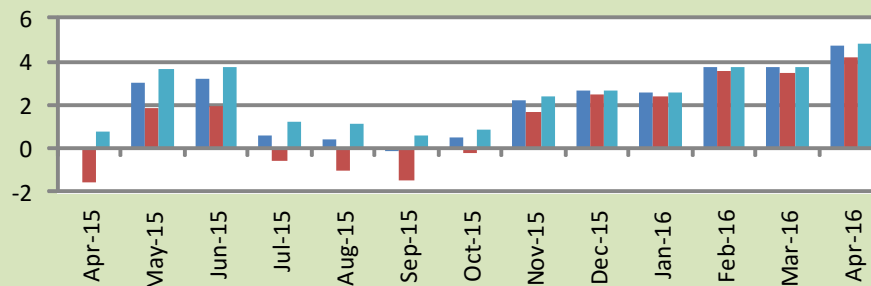
<b>Table 3.1 Income Group- wise Inflation (YoY)</b>									
<b>Income Groups</b>	<b>General</b>			<b>Food</b>			<b>Non-food</b>		
	<b>Apr-15</b>	<b>Mar-16</b>	<b>Apr-16</b>	<b>Apr-15</b>	<b>Mar-16</b>	<b>Apr-16</b>	<b>Apr-15</b>	<b>Mar-16</b>	<b>Apr-16</b>
<b>All Groups Combined</b>	2.1	3.9	4.2	0.0	3.7	4.7	3.7	4.1	3.8
Up to Rs. 8,000	1.0	3.7	4.0	-1.6	3.5	4.2	4.4	4.0	3.8
Rs. 8,001- 12,000	1.3	4.1	4.3	-1.1	3.5	4.4	4.0	4.7	4.3
Rs. 12,001- 18,000	1.7	3.4	3.8	-0.5	3.7	4.6	3.9	3.2	3.0
Rs. 18,001- 35,000	1.8	4.1	4.5	0.0	3.9	4.9	3.4	4.4	4.1
Above Rs. 35,000	2.6	4.0	4.2	0.8	3.8	4.9	3.6	4.2	3.8

**Fig 3.1: Income Group- wise Inflation**

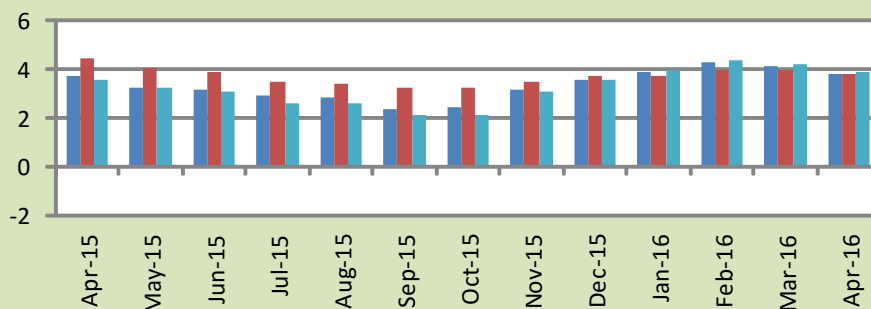
**a: CPI Overall Inflation (YoY)**



**b: CPI Food Inflation (YoY)**



**c: CPI Non-Food Inflation (YoY)**



#### **4. Weighted Contribution**

The weighted contribution of food group in the overall inflation increased to 46.55 percent during April 2016 from 38.91 percent in March 2016. It was -0.64 percent in April 2015.

The weighted contribution of non-food group increased to 53.45 percent in April 2016 from 61.09 percent in March 2016.

<b>Table 4.1 Weighted Contribution to CPI Inflation (YoY)</b>						
<b>Period</b>	<b>Food</b>	<b>Clothing &amp; Footwear</b>	<b>Housing, Water, Elect, Gas &amp; Other Fuel</b>	<b>Transport</b>	<b>Education</b>	<b>Others</b>
Apr-15	-0.64	26.66	59.33	-33.22	23.40	24.46
May-15	39.65	15.58	39.67	-21.47	13.19	13.38
Jun-15	41.77	14.28	39.36	-19.53	11.71	12.40
Jul-15	12.95	19.89	65.96	-36.87	18.22	19.84
Aug-15	8.48	21.50	71.76	-41.96	19.75	20.47
Sep-15	-3.59	27.85	104.73	-80.48	25.82	25.67
Oct-15	12.98	25.37	84.32	-64.95	20.62	21.67
Nov-15	33.23	13.58	46.86	-17.91	12.23	12.01
Dec-15	34.75	11.80	40.58	-8.59	10.63	10.84
Jan-16	31.38	11.62	39.80	-3.59	10.22	10.56
Feb-16	37.82	10.11	33.65	-1.23	8.91	10.74
Mar-16	38.91	11.14	34.22	-6.44	9.46	12.72
Apr-16	46.55	9.80	33.26	-6.42	5.87	10.94

## 5. Inflation Diffusion Index

**Table 5.1 Inflation Diffusion Index - based on MoM change**

	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16
General	25.8	23.1	31.1	37.3	32.6	29.3	34.5	34.7	36.4	37.0	26.2	30.7	29.4
Food & Non-Alcoholic Beverages	0.0	32.7	18.6	36.8	35.4	20.2	29.6	30.4	22.3	29.2	22.1	5.3	27.5
Alcoholic Beverages & Tobacco	16.7	100.0	100.0	66.7	33.3	33.3	0.0	66.7	100.0	100.0	100.0	83.3	66.7
Clothing & Footwear	49.2	30.5	50.8	55.9	57.6	49.2	54.2	66.1	64.4	59.3	59.3	55.9	22.0
Housing, Water, Elect, Gas & other Fuels	38.9	13.9	30.6	55.6	27.8	41.7	44.4	33.3	16.7	36.1	0.0	-2.8	41.7
Furnishing & Household Equip. Maintenance etc	52.2	42.0	73.9	71.0	50.7	56.5	59.4	58.0	71.0	55.1	39.1	62.3	42.0
Health	5.1	7.7	17.9	12.8	10.3	10.3	17.9	15.4	7.7	12.8	17.9	25.6	33.3
Transport	-2.3	4.7	11.6	9.3	0.0	4.7	11.6	18.6	16.3	30.2	-23.3	-7.0	7.0
Communication	25.0	0.0	8.3	16.7	8.3	8.3	0.0	16.7	41.7	25.0	-33.3	41.7	8.3
Recreation & Culture	30.8	2.6	0.0	7.7	10.3	12.8	10.3	20.5	7.7	17.9	17.9	30.8	5.1
Education	37.5	0.0	0.0	0.0	12.5	0.0	18.8	0.0	18.8	12.5	31.3	50.0	68.8
Restaurant & Hotels	50.0	50.0	50.0	33.3	33.3	66.7	100.0	66.7	66.7	50.0	100.0	100.0	33.3
Miscellaneous	45.7	17.1	34.3	37.1	57.1	42.9	45.7	20.0	65.7	48.6	57.1	60.0	42.9
NFNE	33.7	18.6	33.7	37.0	33.4	33.7	36.4	35.2	40.8	39.9	26.6	38.5	29.3

See annexure B (Technical Notes) for the definition of Inflation Diffusion Index.

## 6. Domestic Commodity Prices

**Table 6.1 Inflation in Domestic CPI Food Commodities**

Sr. No	Item	Unit	Apr-15		Mar-16		Apr-16	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-9.21	-2.18	1.34	-0.16	-0.86	-4.31
2	Wheat Flour Bag	10 Kg	-7.49	-1.67	-1.01	-0.01	-1.09	-1.74
3	Rice Basmati Sup. Qlty.	Kg	-7.44	0.12	-10.14	0.14	-11.10	-0.95
4	Pulse Masoor (Washed)	Kg	5.07	0.09	7.38	0.33	8.27	0.93
5	Pulse Moong (Washed)	Kg	10.09	-0.28	-4.34	-0.57	-3.34	0.77
6	Pulse Mash (Washed)	Kg	19.20	2.19	53.99	0.07	56.19	3.65
7	Pulse Gram	Kg	2.19	-1.36	52.32	-0.39	59.95	3.58
8	Vegetable Ghee (Loose)	Kg	-13.45	-4.47	-7.90	0.76	-2.26	1.38
9	Sugar Refined	Kg	7.50	5.84	14.91	-0.21	10.38	1.68
10	Milk Fresh (Unboiled)	Ltr	5.63	0.34	4.10	0.12	4.10	0.33
11	Tea- Tapal Danedar	200 Gm	1.12	3.55	26.28	-7.88	20.15	-1.47
12	Beef With Bone Av. Qlty.	Kg	4.05	0.31	5.78	0.10	5.31	-0.13
13	Mutton Av. Qlty.	Kg	4.54	0.77	6.76	0.00	6.41	0.44
14	Chicken Farm Broiler (Live)	Kg	-9.38	11.07	-0.51	13.92	17.12	30.75
15	Eggs Farm	Doz	-2.41	-7.07	-10.49	-16.56	-10.01	-6.58
16	Potatoes	Kg	-66.47	-16.02	-18.30	1.61	-3.29	-0.60
17	Onion	Kg	18.31	51.16	43.44	0.47	-10.54	-5.72
18	Tomatoes	Kg	0.69	-21.84	-49.61	-18.67	3.43	60.42
19	Ginger	Kg	-24.30	1.21	-19.81	-3.54	-19.25	1.91
20	Garlic	Kg	3.11	-1.52	86.24	16.76	63.05	-13.78

## 7. Global Commodity Prices

**Table 7.1 Changes in Major Global Indices (percent)**

Item/ Group	Apr-15		Mar-16		Apr-16	
	YoY	MoM	YoY	MoM	YoY	MoM
<b>Overall</b>	-35.2	2.1	-21.9	9.0	-20.0	4.7
Food	-22.5	-0.8	-3.3	3.5	0.3	2.8
Metals	-21.1	-0.6	-13.8	6.5	-11.9	1.6
Energy	-43.4	4.3	-31.6	14.9	-29.6	7.3
Agricultural Raw Material	-11.5	-0.7	-21.3	1.1	-18.6	2.6
Cotton	-23.9	3.4	-5.6	-1.7	-3.4	5.8

Source: IMF



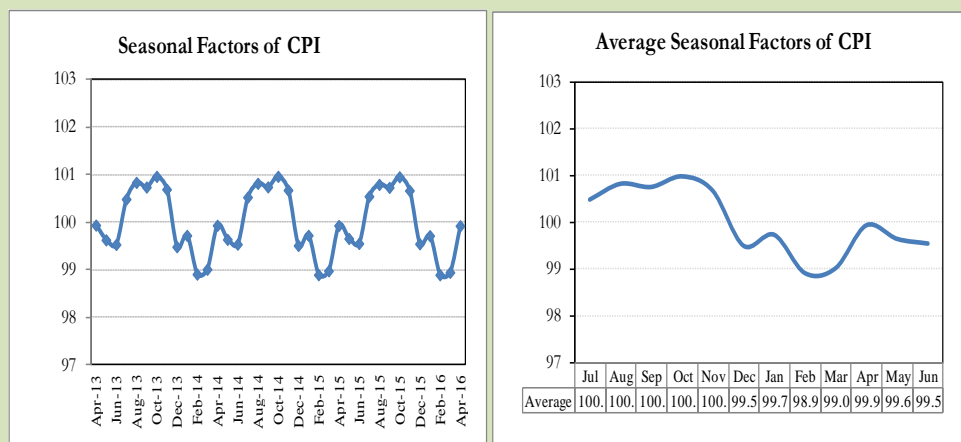
## **8. Seasonal Adjustment in CPI**

Seasonal adjustment is the process of estimating and removing the seasonal effects from a time series after decomposing it into seasonal, trend, cycle and irregular components. The purpose is to identify the different components of the time series and thus provide a better understanding of its underlying behavior. Seasonally adjusted changes are usually preferred for analyzing general price trends in the economy because they eliminate the effect of changes that normally occur at the same time and in about the same magnitude every year. Various statistical methods can be used to decompose a time series into its constituent components. The State Bank of Pakistan uses X-12- ARIMA Seasonal Adjustment Method for this purpose.

The changes in consumer prices are normally reported in terms of year-on-year and month-on-month basis. Seasonal adjustment is particularly useful for analyzing month-on-month changes. The monthly data series of Consumer Price Index (CPI) from July 2008 to April 2016 has been used for seasonal adjustment analysis. The seasonal analysis is carried out without taking trading-day or Islamic calendar month's effects.

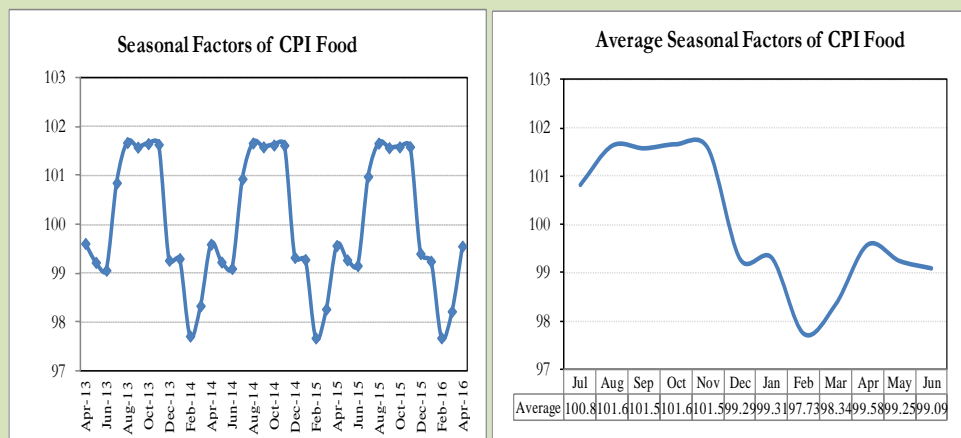
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the year. Upward and downward seasonality is above and below the trend line respectively. It is important to note that seasonal factors are estimates based on present and past experience and that future data may not necessarily show the same pattern of seasonal factors.

**Fig. 8.1 Seasonal Factors of CPI**



Note: Data Available in Annex Table 16.

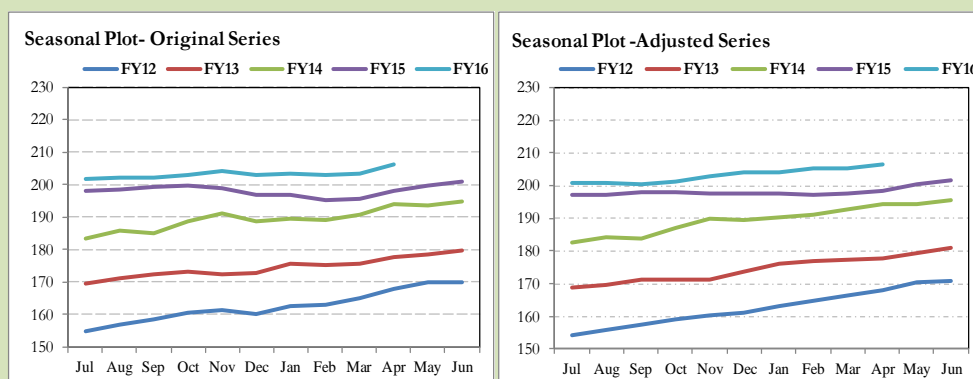
**Fig. 8.2 Seasonal Factors of CPI Food**



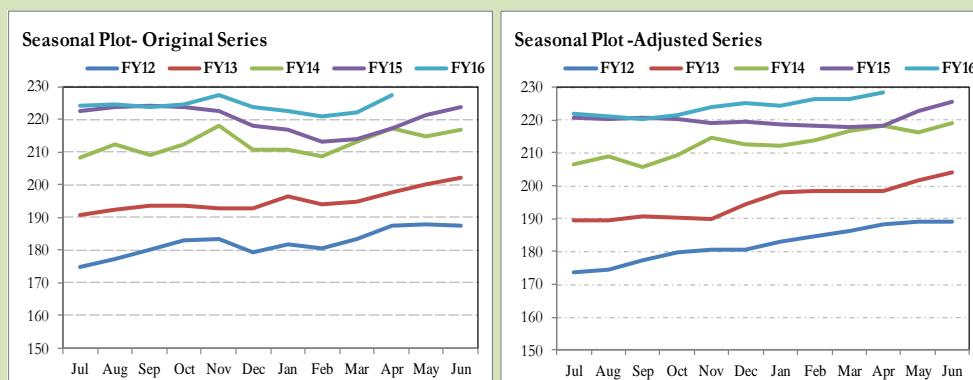
Note: Data Available in Annex Table 17.

Figures 8.3 & 8.4 show that seasonally adjusted series are relatively smoother than the original series due to the removal of the seasonal variations. The trend follows the long-term movement in original series, and is smoother than the original series because some irregular fluctuations have been removed.

**Fig. 8.3 Seasonal Plots of CPI**



**Fig. 8.4 Seasonal Plots of CPI (Food)**



Seasonally adjusted CPI for April 2016 stood at 206.58 against 206.43 in original series showing an increase of 0.15 on account of adjustment of downward seasonality in April 2016.

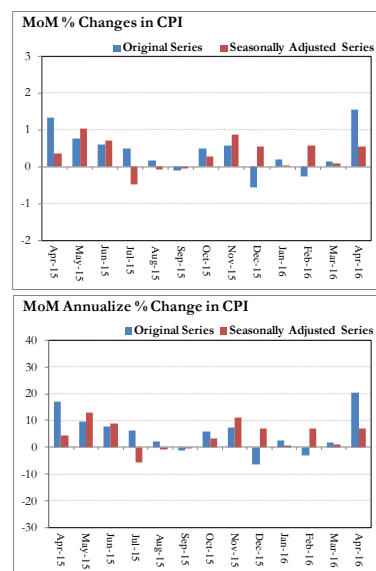
Seasonally adjusted CPI food group for April 2016 stood at 228.54 against 227.53 in original series showing an increase of 1.01 on account of adjustment of downward seasonality in April 2016.

Month-on-month change of seasonally adjusted CPI series stood at 0.56% reflecting increase during April 2016 over March 2016 and an increase of 1.55% in original series.

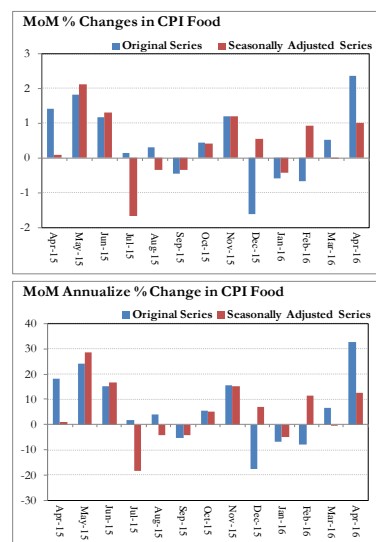
Month-on-month change of seasonally adjusted CPI food group series stood at 1.00% reflecting increase during April 2016 over March 2016 and an increase of 2.38% in original series.

It is important to note that inflation rates should be analyzed on the basis of seasonally adjusted rates. This is especially needed for inflation rates on month-on-month basis. The most recent annual rate of inflation is usually indicated by annualizing the seasonally adjusted month-on-month rate. Annualized rate of CPI inflation in April 2016 (corresponding to the seasonally adjusted month-on-month rate) is 6.87 percent.

**Fig. 8.5 Month-on-Month Percent Changes in CPI**



**Fig. 8.6 Month-on-Month Percent Changes in CPI Food**



**Annexure A**

<b>Table A1: CPI Inflation by Groups (percent)</b>							
	Weight	MoM change			YoY change		
		Apr-15	Mar-16	Apr-16	Apr-15	Mar-16	Apr-16
<b>I. Food Group</b>	<b>37.5</b>	<b>1.4</b>	<b>0.5</b>	<b>2.4</b>	<b>0.0</b>	<b>3.7</b>	<b>4.7</b>
Food & Non-Alcoholic Beverages	34.8	1.5	0.5	2.5	-1.0	2.5	3.5
Alcoholic Beverages & Tobacco	1.4	0.0	0.4	1.6	20.2	27.1	29.0
Restaurant & Hotels	1.2	0.2	0.9	0.0	4.5	5.9	5.7
<b>II. Non-Food Group</b>	<b>62.5</b>	<b>1.3</b>	<b>-0.1</b>	<b>1.0</b>	<b>3.7</b>	<b>4.1</b>	<b>3.8</b>
Clothing & Footwear	7.6	1.0	0.6	0.6	7.1	5.3	4.9
Housing, Water, Elect, Gas & other Fuels	29.4	0.7	0.0	0.9	4.9	5.1	5.3
Furnishing & Household Equip. Maintenance etc	4.2	0.6	0.3	0.3	5.0	4.6	4.3
Health	2.2	0.5	0.8	0.9	4.5	4.8	5.1
Transport	7.2	0.9	-3.3	0.6	-9.7	-3.9	-4.2
Communication	3.2	0.0	0.1	0.0	0.4	0.4	0.4
Recreation & Culture	2.0	1.5	0.2	0.5	2.5	2.6	1.5
Education	3.9	8.7	0.4	5.0	13.2	9.6	5.9
Miscellaneous	2.8	0.6	1.0	0.2	5.1	4.5	4.0
<b>Headline</b>	<b>100.0</b>	<b>1.3</b>	<b>0.1</b>	<b>1.5</b>	<b>2.1</b>	<b>3.9</b>	<b>4.2</b>

<b>Table A2: Distribution of Price changes (YoY) of CPI basket</b>											
Groups	% changes	No. of items in each inflation range									
		Total number of items		Decrease or no change (0% or less)		Subdued increase (>0% but <5%)		Moderate increase (5% but less than 10%)		Double digit increase (10% or more)	
		Apr-15	Apr-16	Apr-15	Apr-16	Apr-15	Apr-16	Apr-15	Apr-16	Apr-15	Apr-16
<b>I. Food Group</b>	<b>4.7</b>	<b>125</b>	<b>125</b>	<b>38</b>	<b>34</b>	<b>33</b>	<b>50</b>	<b>35</b>	<b>17</b>	<b>19</b>	<b>24</b>
Food & Non-Alcoholic Beverages	3.5	113	113	38	34	29	48	31	13	15	18
Alcoholic Beverages & Tobacco	29.0	6	6	0	0	1	0	1	0	4	6
Restaurant & Hotels	5.7	6	6	0	0	3	2	3	4	0	0
<b>II. Non-Food Group</b>	<b>3.8</b>	<b>348</b>	<b>348</b>	<b>89</b>	<b>93</b>	<b>138</b>	<b>141</b>	<b>97</b>	<b>101</b>	<b>24</b>	<b>13</b>
Clothing & Footwear	4.9	59	59	8	6	18	25	25	26	8	2
Housing, Water, Elect, Gas & other Fuels	5.3	36	36	11	5	13	12	12	17	0	2
Furnishing & Household Equip. Maintenance etc	4.3	69	69	2	3	35	42	29	24	3	0
Health	5.1	39	39	21	17	9	14	7	5	2	3
Transport	-4.2	43	43	25	28	11	10	6	5	1	0
Communication	0.4	12	12	5	5	4	5	2	1	1	1
Recreation & Culture	1.5	39	39	12	18	23	16	3	2	1	3
Education	5.9	16	16	0	6	6	2	5	8	5	0
Miscellaneous	4.0	35	35	5	5	19	15	8	13	3	2
<b>Overall</b>	<b>4.2</b>	<b>473</b>	<b>473</b>	<b>127</b>	<b>127</b>	<b>171</b>	<b>191</b>	<b>132</b>	<b>118</b>	<b>43</b>	<b>37</b>

Note: Prices of 14 seasonal items were not reported during the month.

Table A3: Top and Bottom 15 Contributors to CPI Inflation (YoY) in April 2016					
Top 15 Contributors		Weights	YoY Change		Weighted Contribution
Items/ Contributors			Apr-15	Apr-16	
Ranked by Weighted Contribution					
1	House Rent	21.81	6.26	5.73	25.22
2	Cigarette	1.39	20.39	29.24	13.16
3	Milk Fresh	6.68	5.91	3.95	8.00
4	Education	3.94	13.16	5.89	5.87
5	Chicken	1.36	-9.38	17.12	5.32
6	Fresh Fruits	1.86	-0.91	8.20	4.29
7	Meat	2.43	4.22	5.68	4.11
8	Electricity	4.40	1.79	2.84	3.50
9	Pulse Mash (Washed)	0.21	19.19	56.19	3.30
10	Tea	0.84	0.32	13.47	3.09
11	Pulse Gram	0.24	2.19	59.94	2.96
12	Gas	1.58	0.00	9.92	2.72
13	Sugar	1.04	7.51	10.38	2.70
14	Cotton Cloth	1.73	9.85	5.52	2.44
15	Tailoring	0.88	11.45	8.39	2.42
Total		50.40			89.11
Bottom 15 Contributors					
1	Motor Fuel	3.03	-20.11	-10.01	-5.52
2	Rice	1.58	-8.02	-12.75	-4.35
3	Cooking Oil	1.75	-9.33	-10.09	-3.15
4	Onion	0.55	18.31	-10.54	-1.85
5	Vegetable Ghee	2.07	-10.34	-4.29	-1.54
6	Transport Services	2.70	-6.11	-2.13	-1.37
7	Egg	0.46	-2.41	-10.01	-0.97
8	Pulse Moong	0.23	10.09	-3.34	-0.29
9	Motor Vehicle Accessories	0.24	0.41	-4.35	-0.29
10	Potatoes	0.49	-66.47	-3.29	-0.25
11	Wheat	0.35	-9.21	-0.86	-0.07
12	Kerosene Oil	0.01	-25.69	-7.08	-0.01
13	Mustard Oil	0.10	-2.60	-0.31	-0.01
14	Motor Vehicle Tax	0.11	36.71	0.00	0.00
15	News Papers	0.19	0.00	0.04	0.00
Total		13.86			-19.66

**Table A3.1: Top and Bottom 15 Contributors to CPI Inflation (MoM) in April 2016**

<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution	
Items/ Contributors	Weights	Mar-16	Apr-16		
Ranked by Weighted Contribution					
1	Chicken	1.36	13.92	30.75	22.48
2	Fresh Fruits	1.86	8.31	13.42	17.61
3	Fresh Vegetable	1.62	6.73	14.32	15.01
4	House Rent	21.81	0.00	1.22	14.68
5	Education	3.94	0.40	4.97	13.13
6	Tomatoes	0.46	-18.67	60.41	8.27
7	Cotton Cloth	1.73	0.94	2.11	2.52
8	Cigarette	1.39	0.33	1.59	2.38
9	Milk Fresh	6.68	0.10	0.32	1.78
10	Motor Fuel	3.03	-7.30	1.33	1.71
11	Sugar	1.04	-0.21	1.68	1.24
12	Transport Services	2.70	-1.94	0.64	1.05
13	Doctor (MBBS) Clinic Fee	0.59	0.69	2.05	0.98
14	Pulse Mash (Washed)	0.21	0.07	3.65	0.85
15	Beverages	1.20	0.10	0.88	0.73
Total		49.64			104.42
Bottom 15 Contributors					
1	Wheat Flour	4.16	-0.05	-1.45	-4.16
2	Onion	0.55	0.47	-5.72	-2.50
3	Egg	0.46	-16.56	-6.58	-1.61
4	Tea	0.84	-7.57	-1.58	-1.10
5	Wheat	0.35	-0.16	-4.31	-0.99
6	Rice	1.58	0.27	-0.99	-0.78
7	Motor Vehicle Accessories	0.24	-0.19	-1.75	-0.30
8	Cooking Oil	1.75	0.34	-0.23	-0.17
9	Dopatta	0.44	0.28	-0.40	-0.13
10	Potatoes	0.49	1.60	-0.60	-0.12
11	Household Textile	0.65	0.96	-0.21	-0.10
12	Woolen Cloth	0.88	1.11	-0.13	-0.09
13	Mustard Oil	0.10	0.24	-1.71	-0.08
14	Fire Wood Whole	0.23	0.16	-0.19	-0.04
15	Milk Product	0.63	0.33	-0.05	-0.02
Total		13.35			-12.19

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in April 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Apr-15	Apr-16	
A. Ranked by Percentage Change					
1	Pulse Gram	0.24	2.19	59.94	2.96
2	Pulse Mash (Washed)	0.21	19.19	56.19	3.30
3	Besan	0.15	2.39	51.73	1.65
4	Gram Whole	0.16	0.02	31.68	1.10
5	Cigarette	1.39	20.39	29.24	13.16
6	Chicken	1.36	-9.38	17.12	5.32
7	Betel Leaves & Nuts	0.02	4.61	14.10	0.08
8	Tea	0.84	0.32	13.47	3.09
9	Sugar	1.04	7.51	10.38	2.70
10	Gas	1.58	0.00	9.92	2.72
11	Pulse Masoor	0.27	5.42	8.76	0.54
12	Tailoring	0.88	11.45	8.39	2.42
13	Fresh Fruits	1.86	-0.91	8.20	4.29
14	Household Servant	1.04	6.71	7.80	2.25
15	Construction Wage Rate	0.33	7.10	7.66	0.65
Total		11.38			46.24
B. Ranked by Weights					
1	House Rent	21.81	6.26	5.73	25.22
2	Milk Fresh	6.68	5.91	3.95	8.00
3	Electricity	4.40	1.79	2.84	3.50
4	Wheat Flour	4.16	-7.08	0.13	0.14
5	Education	3.94	13.16	5.89	5.87
6	Communication & Apparatus	3.15	0.20	0.19	0.10
7	Motor Fuel	3.03	-20.11	-10.01	-5.52
8	Transport Services	2.70	-6.11	-2.13	-1.37
9	Meat	2.43	4.22	5.68	4.11
10	Vegetable Ghee	2.07	-10.34	-4.29	-1.54
11	Fresh Fruits	1.86	-0.91	8.20	4.29
12	Cooking Oil	1.75	-9.33	-10.09	-3.15
13	Cotton Cloth	1.73	9.85	5.52	2.44
14	Fresh Vegetable	1.62	1.89	3.17	1.40
15	Rice	1.58	-8.02	-12.75	-4.35
Total		62.94			39.14
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in YoY change in CPI, which is 4.2 percent in April, 2016.					



**Table A3.3: Top Ten Contributors to CPI Food Inflation (YoY) in April 2016**

Table 1: Top 10 Contributors to CPI Food Inflation (2017) in April 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Apr-15	Apr-16	
A. Ranked by Weighted Contribution					
1	Cigarette	1.39	20.39	29.24	13.16
2	Milk Fresh	6.68	5.91	3.95	8.00
3	Chicken	1.36	-9.38	17.12	5.32
4	Fresh Fruits	1.86	-0.91	8.20	4.29
5	Meat	2.43	4.22	5.68	4.11
6	Pulse Mash (Washed)	0.21	19.19	56.19	3.30
7	Tea	0.84	0.32	13.47	3.09
8	Pulse Gram	0.24	2.19	59.94	2.96
9	Sugar	1.04	7.51	10.38	2.70
10	Ready Made Food	1.23	4.54	5.72	2.10
Total		17.28			49.04
B. Ranked by Percentage Change					
1	Pulse Gram	0.24	2.19	59.94	2.96
2	Pulse Mash (Washed)	0.21	19.19	56.19	3.30
3	Besan	0.15	2.39	51.73	1.65
4	Gram Whole	0.16	0.02	31.68	1.10
5	Cigarette	1.39	20.39	29.24	13.16
6	Chicken	1.36	-9.38	17.12	5.32
7	Betel Leaves & Nuts	0.02	4.61	14.10	0.08
8	Tea	0.84	0.32	13.47	3.09
9	Sugar	1.04	7.51	10.38	2.70
10	Pulse Masoor	0.27	5.42	8.76	0.54
Total		5.68			33.91
C. Ranked by Weights					
1	Milk Fresh	6.68	5.91	3.95	8.00
2	Wheat Flour	4.16	-7.08	0.13	0.14
3	Meat	2.43	4.22	5.68	4.11
4	Vegetable Ghee	2.07	-10.34	-4.29	-1.54
5	Fresh Fruits	1.86	-0.91	8.20	4.29
6	Cooking Oil	1.75	-9.33	-10.09	-3.15
7	Fresh Vegetable	1.62	1.89	3.17	1.40
8	Rice	1.58	-8.02	-12.75	-4.35
9	Cigarette	1.39	20.39	29.24	13.16
10	Chicken	1.36	-9.38	17.12	5.32
Total		24.92			27.39
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in YoY change in CPI Food, which is 4.7 percent in April, 2016.					

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in April 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Apr-15	Apr-16	
A. Ranked by Weighted Contribution					
1	House Rent	21.81	6.26	5.73	25.22
2	Education	3.94	13.16	5.89	5.87
3	Electricity	4.40	1.79	2.84	3.50
4	Gas	1.58	0.00	9.92	2.72
5	Cotton Cloth	1.73	9.85	5.52	2.44
6	Tailoring	0.88	11.45	8.39	2.42
7	Household Servant	1.04	6.71	7.80	2.25
8	Ready Made Garment	0.97	8.95	6.44	1.67
9	Personal Equipments	0.84	5.18	5.07	1.40
10	Doctor (MBBS) Clinic Fee	0.59	6.51	7.64	1.32
Total		37.80			48.81
B. Ranked by Percentage Change					
1	Gas	1.58	0.00	9.92	2.72
2	Tailoring	0.88	11.45	8.39	2.42
3	Household Servant	1.04	6.71	7.80	2.25
4	Construction Wage Rate	0.33	7.10	7.66	0.65
5	Doctor (MBBS) Clinic Fee	0.59	6.51	7.64	1.32
6	Water Supply	0.50	0.00	7.46	0.67
7	Ready Made Garment	0.97	8.95	6.44	1.67
8	Cleaning & Laundering	0.21	6.63	6.16	0.37
9	Education	3.94	13.16	5.89	5.87
10	House Rent	21.81	6.26	5.73	25.22
Total		31.87			43.16
C. Ranked by Weights					
1	House Rent	21.81	6.26	5.73	25.22
2	Electricity	4.40	1.79	2.84	3.50
3	Education	3.94	13.16	5.89	5.87
4	Communication & Apparatus	3.15	0.20	0.19	0.10
5	Motor Fuel	3.03	-20.11	-10.01	-5.52
6	Transport Services	2.70	-6.11	-2.13	-1.37
7	Cotton Cloth	1.73	9.85	5.52	2.44
8	Gas	1.58	0.00	9.92	2.72
9	Footwear	1.55	0.69	1.00	0.31
10	Personal Care	1.49	5.07	3.10	1.16
Total		45.39			34.42
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in YoY change in CPI Non-food, which is 3.8 percent in April, 2016.					

**Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: April 2016**

Groups	Decrease or no change	Subdued increase (Greater than 0% but less than 5%)	Moderate increase (5% but less than 10%)	Double digit increase (10% or more)
Food & Non-Alcoholic Beverages	Ginger, Bottlegourd, Tinda, Rice Basmati 385/386, Cooking Oil (Pakwan), Rice Basmati Broken Av.Qlty	Bananas, Custard Powder, Rafhan 300, Cold Drink (Standard Size), Squash-Mitchelles, Milk Fresh (Unboiled)	Pulse Masoor (Whole), Ice, Pulse Masoor (Washed), Malta/Mosambi, Jam-E-Shireen, Powder Milk Nido 400Gm.	Garlic, Pulse Gram, Pulse Mash (Washed), Besan Av. Qlty., Gram Whole Black Av Qlty., Kinnu, Guava, Peas, Gram Whole Yellow Av.Qlty, Tapal Danedar Tea 200 Gm, Cauliflower, Chicken Farm Broiler (Live)
Alcoholic Beverages & Tobacco				Cigarettes Morven Gold 20,S, Cigarettes Capstan 20,S, Cigarettes K-20,S, Cigarettes Gold Leaf 20,S, Betel Nuts, Betel Leaves
Clothing & Footwear	Gents Shoe, Art 1109 Servis, Child Shoe Power Lite Bata, Sports Shoes, Ladies Spoung Chappal Bata, Ladies Sandal Bata, Gents Sandal Bata	Long Cloth 57" Gul Ahmed/Al Karam, Linen Av.Qlty, Socks Nylon (Pakistani), Pant Cloth Wash & Wear Av.Qlty, Vest For Men Av.Qlty., Georgetown Av.Qlty	Frock W/Wear Girls, Tailoring Awami-Suit (Male), Azarband Cotton Avg.Qlty, Brassier Sup.Qlty, Shoe Polish Charges Avg, Tailoring Suit (Female), Shirt Boy 24"/26" Length	Tailoring Shirt, Tailoring Charges Pant (Men)
Housing, Water, Elect, Gas & other Fuels	Iron Bar (M.S. Bar) 1/2", Kerosene Oil, Elect. Charges 101 - 300 Units, Cement (Local)	Elect. Charges 301 - 1000 Units, Electrician Wage Rate(P/Pnt), Cement Blocks (6"X8"X12"), Elect. Charges Above 1000 Units	Gas Chrg Overall/ Combined, Electrician Wage Rate(P/Day), Unskilled Labor Wage Rat, Plumber Wage Rate, Water Charges Per House	Gas Chrg All Over 500 Mmbtu, Gas Chrg Over 300 - 500 Mmbtu
Furnishing & Household Equip. Maintenance etc	Surf Excel 400 Gms Poly Bag, Washing Powder 1000 Grm (Express), Washing Powder (Wheel/Bonus)	Table Shesham Wood, Sewing Machine (Singer), Cleanser Powder Vim 1000 Gms, Thermos Starvac 1 Ltr, Tissu Paper Perfumed 100	Elect. Iron Philips, Towel(3'X2') Av. Qlty, Table Spoon S.Steel Sup.Qlty, Finis 500 Ml, Dining Table 6 Chairs	
Health	Glaxos-D (450 Gm), Brufen Tabs 200-Mg., Renitec Tab. 5 Mg., Amoxil Capsule 250 Mg., Sancos Syrup (50 Ml.)	Blood Test (Cp) Charges, O.R.S. (Nimcol), Sugar Test (Random/Fasting), Cotton Bandage 2" - 4", Thermometer China, Gripe-Water	X-Ray (Chest) Charges, Doctor (Mbbs) Clinic Fee, Urine Test (Dr) Charges, Jouhar Joshanda, Glycerine Small Bottle	Disprin Tab., Panadol Tab. Extra/Plain, Ventolin Tab. 2Mg.
Transport	Gas Cylinder S.Size (L.P.G), Petrol Super, High Speed Diesel HSD, Bus Fare Min (Within City)	Suzuki Fare Min.Within City, Car Service Charges, Motor Cycle Service Charges, Cycle Overhauling Charges, Bicycle With Tyres & Tube	Car Toyota 1300 CC, Tyre Puncture Charges, Taxi 4 Seater Fare, Full Tonga Charges, Suzuki Fare Maximum Within City	
Communication	Postal Envelope Domestic, Mobile Cell Charges, Telephone Charges Local Call	Fax Charges (Local), Telephone Set Av. Qlty, Internet Charges, Mobile Set Nokia/Sony/Ericsson Av.Qlty	T.C.S. Ch. Min.Within Zone	Postal Registration Charges
Recreation & Culture	Urdu Book Class V (T.B.Board), English Book Class IX or X, Urdu Book Class IX/X (T.B.Board), T.V. 20" Colored Sony	Exercise Book Lined 80/10, Photostat Paper 70 Gm, Fountain Pen Hero/Wings/China, Personnel Computer (Branded), Pen Ink Dollar 57 Ml Bottle	Cinema Non-A/C High Class, Pencil Goldfish/Deer	Maths Book Class V (T.B.Board), Cinema A/C High Class, Ball Pen (Local)
Education	Pvt Eng.College Fee (1st Year), Govt. Med. College Fee MBBS 1st Year, Govt. Engg. Coll. Fee 1st Year	Pvt Med. College Fee MBBS (1st Year), MBA Tuition Fee	Pvt School Fee Eng.Med (Class-VI), Pvt School Fee Eng.Med (Class-I), Pvt School Fee Eng.Med (Class-X)	
Restaurant & Hotels		Chicken Biryani Full/Double, Bread Tandoori St. Size	Cooked Mutton (Av. Hotel), Cooked Dal (Av. Hotel), Tea Prepared (Ordinary)	
Miscellaneous	Toilet Soap Lux 95 Gms, Toilet Soap Safeguard Bath Size, Shampoo Sunsilk/Pantene 100 Ml	Hair Color Bigen, Wall Clock Quartz Av.Qlty, Hair Oil Amla/Chambeli, Blade 7-O-Clock Steel (5)	Suitcase Rexin (24"X16"X6"), Shaving Charges, Beauty Parlour Hair Style Charges	Beauty Cream (Fair & Lovely), Purse Ladies (Leather) Av. Qlty

**Table A5: City- wise CPI Inflation by Income Groups, April 2016**

	Up to Rs: 8000						Rs 8001- 12000					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	1.4	4.8	2.2	6.2	0.5	3.2	1.4	4.9	2.2	6.1	0.6	3.7
2 Islamabad	0.8	3.6	1.2	5.2	0.3	1.8	1.0	3.5	1.5	5.7	0.4	1.2
3 Lahore	2.2	2.3	4.1	2.2	-0.4	2.3	2.2	2.4	4.1	2.3	-0.1	2.5
4 Gujranwala	1.2	3.0	1.7	2.6	0.5	3.6	-2.6	3.2	1.7	2.9	-7.0	3.5
5 Sialkot	1.1	4.5	2.1	5.6	-0.2	3.0	1.2	4.5	2.4	5.7	-0.1	3.3
6 Faisalabad	2.2	5.0	3.5	5.1	0.6	4.9	2.3	4.9	3.9	5.3	0.7	4.5
7 Multan	0.7	2.8	1.0	3.4	0.2	2.0	0.9	2.7	1.4	3.5	0.3	1.8
8 Sargodha	0.9	4.7	1.7	5.1	0.0	4.4	0.9	5.1	1.8	5.6	0.1	4.6
9 Bahawalpur	2.1	4.2	2.8	4.8	1.4	3.7	2.1	4.4	2.8	5.4	1.4	3.5
10 Karachi	1.3	5.2	1.3	4.4	1.3	6.3	1.4	5.1	1.5	4.1	1.3	6.3
11 Hyderabad	1.2	3.1	1.1	3.0	1.4	3.1	1.3	3.3	1.3	3.1	1.3	3.4
12 Sukkur	2.0	4.9	1.9	6.4	2.0	3.1	2.1	4.6	2.0	5.9	2.1	3.2
13 Larkana	2.6	2.5	0.7	-1.0	4.7	6.3	2.5	2.5	0.4	-1.3	4.4	6.1
14 Peshawar	1.0	4.8	1.5	7.3	0.3	2.1	1.1	4.9	1.7	7.5	0.4	2.5
15 Bannu	1.2	5.3	1.8	6.3	0.5	4.3	1.0	5.2	1.5	5.9	0.5	4.5
16 Quetta	2.1	4.3	3.7	4.1	0.2	4.5	1.7	4.2	3.2	4.2	0.1	4.2
17 Khuzdar	0.5	2.4	1.0	1.9	-0.1	3.1	0.4	2.2	1.1	2.9	-0.4	1.4
	Rs 12001-18000						Rs 18001-35000					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	1.6	5.1	2.5	6.3	0.9	4.0	1.7	4.9	3.0	6.6	0.7	3.6
2 Islamabad	1.1	3.4	1.9	5.9	0.3	1.2	1.1	3.4	2.2	6.3	0.3	1.1
3 Lahore	2.2	2.2	4.1	2.3	0.2	2.0	2.1	2.0	4.1	2.5	0.1	1.6
4 Gujranwala	1.2	3.2	1.8	3.2	0.7	3.1	1.3	3.2	2.1	3.7	0.7	2.7
5 Sialkot	1.4	4.4	2.5	5.7	0.2	3.1	1.3	4.5	2.6	6.5	0.2	2.8
6 Faisalabad	2.5	5.0	3.9	5.3	1.1	4.7	2.3	4.8	3.9	5.6	0.9	4.2
7 Multan	1.0	2.5	1.7	3.7	0.4	1.3	1.3	2.5	2.3	4.2	0.5	1.1
8 Sargodha	1.0	5.1	2.0	6.2	0.1	4.1	1.0	5.3	2.2	6.7	0.1	4.2
9 Bahawalpur	2.3	4.4	2.8	5.4	1.8	3.6	2.1	4.1	3.1	6.0	1.4	2.6
10 Karachi	1.6	5.3	1.8	4.4	1.4	6.2	1.6	5.2	1.9	4.6	1.2	5.7
11 Hyderabad	1.5	3.2	1.5	3.3	1.4	3.0	1.4	2.7	1.6	3.3	1.3	2.2
12 Sukkur	2.3	4.4	2.2	6.1	2.4	2.9	2.1	4.0	2.1	6.2	2.0	2.4
13 Larkana	2.6	2.8	0.4	-0.9	4.5	6.0	2.5	2.9	0.3	-0.7	4.1	5.6
14 Peshawar	1.2	4.6	2.0	7.4	0.4	2.1	1.1	4.3	2.1	7.6	0.4	1.8
15 Bannu	1.3	5.5	2.0	6.6	0.6	4.4	1.2	6.0	2.2	7.2	0.5	4.9
16 Quetta	1.6	4.0	3.1	4.2	0.2	3.8	1.7	4.0	3.5	4.5	0.2	3.5
17 Khuzdar	0.4	2.4	1.0	3.7	-0.3	1.0	0.5	3.0	1.2	4.5	-0.2	1.6
	Above Rs 35000						Combined					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	1.6	4.6	3.1	6.1	0.9	3.9	1.6	4.7	3.0	6.2	0.8	3.7
2 Islamabad	1.0	2.9	2.2	5.3	0.4	1.7	1.0	3.0	2.2	5.4	0.2	1.3
3 Lahore	1.7	2.0	4.4	2.3	0.3	1.8	1.9	2.1	4.2	2.3	0.1	1.9
4 Gujranwala	1.2	3.3	2.1	3.7	0.7	3.1	1.2	3.2	1.9	3.4	0.7	3.1
5 Sialkot	1.2	4.7	2.8	7.0	0.4	3.5	1.3	4.6	2.6	6.4	0.3	3.3
6 Faisalabad	1.9	4.7	3.9	5.3	1.0	4.3	2.2	4.9	3.8	5.4	1.0	4.5
7 Multan	1.1	2.2	2.2	4.1	0.6	1.3	1.1	2.5	1.9	4.0	0.5	1.4
8 Sargodha	0.6	4.9	1.9	6.9	0.0	4.1	0.9	5.1	2.0	6.3	0.2	4.3
9 Bahawalpur	2.0	4.1	3.1	5.7	1.5	3.4	2.1	4.3	2.9	5.6	1.6	3.4
10 Karachi	1.4	5.2	1.9	4.1	1.1	5.7	1.4	5.2	1.9	4.2	1.1	5.9
11 Hyderabad	1.5	2.7	2.2	3.4	1.1	2.4	1.4	3.0	1.6	3.3	1.2	2.8
12 Sukkur	1.9	4.0	1.5	5.7	2.1	3.2	2.0	4.3	1.9	6.1	2.1	3.2
13 Larkana	2.3	3.0	0.2	-1.0	3.3	4.8	2.5	2.8	0.4	-0.7	3.8	5.0
14 Peshawar	1.1	3.2	2.5	6.7	0.4	1.5	1.1	4.0	2.1	7.3	0.4	1.9
15 Bannu	1.3	4.6	2.3	6.5	0.8	3.7	1.2	5.4	2.0	6.7	0.7	4.5
16 Quetta	1.5	4.0	3.3	4.3	0.6	3.8	1.6	4.1	3.3	4.3	0.5	3.9
17 Khuzdar	0.4	4.1	1.0	6.7	0.2	2.8	0.4	2.6	1.1	4.1	0.0	1.6

**Table A6: City- wise CPI Inflation (YoY) April, 2016**

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Abbottabad	8.8	5.6	10.9	Quetta	4.1	4.3	3.9
Jhang	7.6	12.2	4.7	D.G. Khan	4.0	2.2	5.2
Mianwali	6.6	12.1	3.1	Peshawar	4.0	7.3	1.9
Nawabshah	5.5	7.8	4.3	Rahim Yar Khan	3.9	2.0	5.3
Mardan	5.5	5.5	5.4	Wazirabad	3.5	5.5	2.2
Bannu	5.4	6.7	4.5	Muzaffargarh	3.4	3.9	3.0
Turbat	5.4	-1.0	9.5	Gujranwala	3.2	3.4	3.1
Vehari	5.3	6.7	4.2	Bahawalnagar	3.1	5.8	1.3
Mithi	5.3	6.4	4.5	Hyderabad	3.0	3.3	2.8
Dera Mrd.Jamali	5.2	6.3	4.5	Islamabad	3.0	5.4	1.3
Karachi	5.2	4.2	5.9	Larkana	2.8	-0.7	5.0
Sargodha	5.1	6.3	4.3	Attock	2.8	3.4	2.3
Mingora	4.9	6.3	4.0	Khuzdar	2.6	4.1	1.6
Faisalabad	4.9	5.4	4.5	Sahiwal	2.6	1.6	3.1
Rawalpindi	4.7	6.2	3.7	Multan	2.5	4.0	1.4
Jhelum	4.6	5.4	4.1	D. I. Khan	2.2	1.4	2.8
Sialkot	4.6	6.4	3.3	Lahore	2.1	2.3	1.9
Loralai & Cantt	4.5	4.9	4.2	Dadu	1.9	2.4	1.6
Mir Pur Khas	4.4	5.6	3.6	Gawadar	1.1	-0.7	2.3
Sukkur	4.3	6.1	3.2				
Bahawalpur	4.3	5.6	3.4				

Note: High inflation refers to equal or above average inflation, and low inflation refers to below average

<b>Table A7: Income Group-wise Inflation ( percent)</b>						
	<b>MoM</b>			<b>YoY</b>		
	<b>Apr-15</b>	<b>Mar-16</b>	<b>Apr-16</b>	<b>Apr-15</b>	<b>Mar-16</b>	<b>Apr-16</b>
<b><u>Up to Rs. 8000</u></b>						
General	1.1	0.2	1.4	1.0	3.7	4.0
Food	1.2	0.4	1.9	-1.6	3.5	4.2
Non-food	1.0	0.0	0.9	4.4	4.0	3.8
<b><u>Rs. 8001- 12000</u></b>						
General	1.2	0.3	1.4	1.3	4.1	4.3
Food	1.3	0.5	2.1	-1.1	3.5	4.4
Non-food	1.1	0.1	0.7	4.0	4.7	4.3
<b><u>Rs. 12001- 18000</u></b>						
General	1.2	0.2	1.6	1.7	3.4	3.8
Food	1.4	0.5	2.3	-0.5	3.7	4.6
Non-food	1.1	-0.1	0.9	3.9	3.2	3.0
<b><u>Rs. 18001- 35000</u></b>						
General	1.3	0.2	1.6	1.8	4.1	4.5
Food	1.4	0.5	2.4	0.0	3.9	4.9
Non-food	1.2	-0.2	1.0	3.4	4.4	4.1
<b><u>Above Rs. 35000</u></b>						
General	1.4	0.1	1.5	2.6	4.0	4.2
Food	1.5	0.6	2.5	0.8	3.8	4.9
Non-food	1.4	-0.1	1.0	3.6	4.2	3.8
<b><u>All income groups</u></b>						
General	1.3	0.1	1.5	2.1	3.9	4.2
Food	1.4	0.5	2.4	0.0	3.7	4.7
Non-food	1.3	-0.1	1.0	3.7	4.1	3.8

**Table A8: SPI Item-wise Price Movements**

Sr.No.	Items	Unit	Prices Apr-16	Percentage change	
				YoY	MoM
1	Wheat	10Kg.	337.6	-0.4	-4.8
2	Wheat Flour Bag	10Kg.	383.0	-0.3	-3.0
3	Rice Basmati Broken	Kg.	59.7	-14.9	-0.4
4	Rice Irri-6	Kg.	46.2	-8.2	-0.1
5	Bread Plain Med. Size (340-400 Gm.)	Each	40.8	0.0	0.0
6	Beef	Kg.	318.0	4.9	0.0
7	Mutton	Kg.	636.8	7.0	0.4
8	Chicken Live (Farm)	Kg.	185.2	23.3	19.2
9	Milk Fresh	Litr	78.5	2.5	0.3
10	Curd	Kg.	92.5	3.0	0.1
11	Milk Powdered Nido	500G	379.5	6.6	0.2
12	Egg Hen (Farm)	Doz.	73.3	-9.7	-6.9
13	Mustard Oil	Kg.	179.0	0.0	0.0
14	Cooking Oil (Tin)	2.5Ltr	454.4	-5.1	-0.2
15	Veg. Ghee (Tin)	2.5Kg.	445.1	-5.2	0.0
16	Veg. Ghee Loose	Kg.	139.0	-2.5	1.3
17	Bananas	Doz.	78.3	9.1	4.2
18	Masoor Pulse Washed	Kg.	147.6	8.7	1.2
19	Moong Pulse Washed	Kg.	158.2	-5.6	-0.2
20	Mash Pulse Washed	Kg.	268.7	60.0	4.1
21	Gram Pulse Washed	Kg.	131.1	70.4	10.1
22	Potatoes	Kg.	18.8	-7.7	-3.3
23	Onions	Kg.	37.6	-12.1	-7.5
24	Tomatoes	Kg.	38.8	-8.5	13.6
25	Sugar	Kg.	63.8	12.0	1.3
26	Gur	Kg.	85.6	2.0	0.0
27	Salt Powdered Loose (Lahori)	Kg.	10.5	4.8	0.0
28	Red Chillies Powder Loose	Kg.	276.0	5.4	0.7
29	Garlic	Kg.	236.9	68.3	-12.4
30	Tea (Yellow Label )	200Gm.	157.9	7.6	-2.7
31	Cooked Beef Plate	Each	89.6	7.4	0.4
32	Cooked Dal Plate	Each	54.1	10.3	0.0
33	Tea Prepared (Sada)	Cup	19.6	3.7	0.0
34	Cigarettes K-2 (20'S)	20'S	60.0	32.2	0.3
35	Long Cloth (Coarse Latha)	Mtr.	204.4	1.3	0.8
36	Shirting	Mtr.	163.4	2.4	0.9
37	Lawn	Mtr.	248.4	3.4	1.8
38	Georgette (Voil Printed)	Mtr.	123.9	0.7	0.5
39	Sandal Gents Bata	Pair	699.0	0.0	0.0
40	Chappal Spong. Bata (Gents)	Pair	179.1	0.0	0.0
41	Sandal Ladies Bata	Pair	502.2	0.6	0.0
42	Electric Charges 1-50	Unit	2.0	0.0	0.0
43	Gas Charges upto 3.3719	Mmbtu	128.4	3.4	0.0
44	Kerosene	Litr	74.9	-13.2	0.6
45	Firewood	40Kg	602.0	4.4	-0.3
46	Energy Savor 14 Watts	Each	167.5	1.1	0.2
47	Washing Soap (200-250 Gm.)	Cake	25.0	2.8	1.0
48	Match Box	Each	2.1	13.7	4.0
49	Petrol	Litr	65.1	-13.3	2.6
50	Diesel	Litr	73.4	-13.1	2.0
51	L.P.G.( 11 Kg Cylinder.)	Each	903.9	-17.0	3.7
52	Tele. Local Call	Call	3.9	0.0	0.0
53	Bath Soap Lifebuoy (Standard)	Cake	35.7	-1.0	0.0
<b>Maximum</b>				<b>70.4</b>	<b>19.2</b>
<b>Median</b>				<b>1.3</b>	<b>0.0</b>
<b>Minimum</b>				<b>-17.0</b>	<b>-12.4</b>

<b>Table A9: Distribution of Price Changes (YoY) - WPI Items: April 2016</b>				
<b>Groups</b>	<b>Decrease or no change</b>	<b>Subdued increase (Greater than 0% but less than 5%)</b>	<b>Moderate increase (5% but less than 10%)</b>	<b>Double digit increase (10% or more)</b>
<b>Agriculture Forestry &amp; Fishery Products</b>	Stimulant and Spice Crops, Rice, Eggs, Edible Roots/Potatoes, Hides and Fur Skins-Raw, Sorghum/Jowar, Raw Animal Material/Wool, Sugar Crops	Dry Fruits, Fuel Wood in Logs, Milk from Bovine Animals, Other Oil Seeds, Fibre Crops, Wheat	Fresh Fruits, Maize, Millet/Bajra, Unmanufactured Tobacco, Vegetables	Fish Live Fresh or Chilled, Pulses, Poultry, Cotton Seeds
<b>Ores &amp; Minerals, Electricity Gas &amp; Water</b>	Coal not Agglomerated, Electrical Energy	Natural Gas Liquefied, Salt & Pure Sodium Chloride		
<b>Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products</b>	Blended Yarn, Vegetable Oil Refined, Other Leather N.E.C, Vegetable Ghee, Nylon Yarn, Milk and Cream in Solid Form, Processed Liquid Milk, Other Food Products, Spices, Bed Sheets	Footwear's, Ice Cream, Silk and Rayon Fabrics, Other Fabrics, Ready Made Garments, Mineral Water, Blankets, Meat of Animals, Leather Without Hairs, Cotton Fabrics, Synthetic Carpets, Cotton Yarn, Hosiery Products, Chocolate, Vegetables & Fruit Juices, Dairy Products N.E.C, Fruit Juices, Towels, Quilts, Beverages, Wheat Flour	Sugar Refined, Dried Fruits & Nuts, Woven Fabrics	Other Cereal Flour, Woolen Carpets, Tobacco Products, Sugar Confectionary, Coffee and Tea, Oil Cakes
<b>Other Transportable Goods except Metal Products, Machinery and Equipments</b>	Furnace Oil, Kerosene Oil, Diesel Oil, Motor Sprit, Chemicals, Insecticides, Fertilizers, Auto Tyres, Mobil Oil, Printing Paper, Cement, Hard Board, Coke, Dying Materials, Other Glass Articles	Bricks Blocks and Tiles, Ceramics and Sanitary, Soaps & Detergent, Plastic Products, Paints & Varnishes, Glass Sheets	Timber, Bed Foams, Pesticides	Matches, Medicines
<b>Metal Product Machinery &amp; Equipment</b>	Steel Bars & Sheets, Tractors, Lighting Equipments, Vacuum Pumps, Motor Cycles, Cultivators, Pig Iron, Concrete Mixer, Radio and Television, Lathe Machines, Chuff Cutter, Bicycles	Electrical Wires, Steel Products, Air Conditioners, Motor Vehicles, Refrige,Wash& Sew Mach,Iron,Fan, Pipe Fittings, Engines and Motors		



**Table A10: Consumer Price Index Numbers by Major Groups and Composite Commodities**

Items and specification	Weights	Index		
		Apr-15	Mar-16	Apr-16
<b>General</b>	<b>100.00</b>	<b>198.16</b>	<b>203.28</b>	<b>206.43</b>
<b>Food &amp; Non-Alcoholic Beverages.</b>	<b>34.83</b>	<b>214.18</b>	<b>216.13</b>	<b>221.59</b>
1 Wheat	0.35	201.58	208.84	199.84
2 Wheat Flour	4.16	213.53	216.95	213.80
3 Wheat Product	0.10	212.35	212.36	214.44
4 Besan	0.15	175.45	258.58	266.21
5 Rice	1.58	178.25	157.09	155.53
6 Cereals	0.16	239.89	248.03	248.02
7 Bakery & Confectionary	1.16	207.72	212.37	212.32
8 Nimco	0.46	238.93	244.62	245.22
9 Meat	2.43	246.33	260.17	260.33
10 Chicken	1.36	189.13	169.42	221.51
11 Fish	0.30	215.34	216.71	220.79
12 Milk Fresh	6.68	250.46	259.52	260.36
13 Milk Product	0.63	243.32	251.48	251.36
14 Milk Powder	0.11	225.93	235.07	235.13
15 Egg	0.46	175.57	169.12	157.99
16 Mustard Oil	0.10	153.75	155.95	153.28
17 Cooking Oil	1.75	147.12	132.58	132.28
18 Vegetable Ghee	2.07	143.28	136.29	137.14
19 Dry Fruits	0.25	250.60	261.11	263.06
20 Fresh Fruits	1.86	232.24	221.54	251.28
21 Pulse Masoor	0.27	188.36	202.97	204.86
22 Pulse Moong	0.23	311.10	298.42	300.71
23 Pulse Mash (Washed)	0.21	231.57	348.96	361.70
24 Pulse Gram	0.24	173.18	267.42	276.99
25 Gram Whole	0.16	178.42	222.26	234.94
26 Beans	0.03	232.45	231.25	233.02
27 Potatoes	0.49	128.90	125.41	124.66
28 Onion	0.55	262.15	248.77	234.53
29 Tomatoes	0.46	145.03	93.51	150.00
30 Fresh Vegetable	1.62	225.41	203.43	232.56
31 Sugar	1.04	205.53	223.13	226.87
32 Gur	0.02	256.44	267.43	264.70
33 Honey	0.04	303.39	307.12	307.78
34 Sweet Meet	0.25	234.89	239.96	239.96
35 Beverages	1.20	207.94	215.86	217.77
36 Jam, Tomato Ketchup & Pickle	0.25	207.59	211.82	213.44
37 Condiments	0.27	257.07	261.12	263.03
38 Spices	0.54	234.74	238.67	239.67
39 Tea	0.84	226.62	261.29	257.15
<b>Alcoholic Beverages, Tobacco</b>	<b>1.41</b>	<b>266.65</b>	<b>338.77</b>	<b>344.10</b>
40 Cigarette	1.39	267.63	340.48	345.88
41 Betel Leaves & Nuts	0.02	207.03	234.38	236.22
<b>Clothing &amp; Footwear</b>	<b>7.57</b>	<b>217.17</b>	<b>226.40</b>	<b>227.87</b>
42 Cotton Cloth	1.73	211.44	218.51	223.11
43 Woolen Cloth	0.88	234.13	243.45	243.14
44 Ready Made Garment	0.97	220.40	232.44	234.60
45 Woolen Readymade Garments	0.40	240.86	252.77	252.74
46 Hosiery	0.51	229.28	239.97	240.25
47 Dopatta	0.44	232.30	240.45	239.49
48 Cleaning & Laundering	0.21	237.64	252.25	252.29

Table A10: Consumer Price Index Numbers by Major Groups and Composite Commodities				
Items and specification	Weights	Index		
		Apr-15	Mar-16	Apr-16
49 Tailoring	0.88	270.28	292.19	292.96
50 Footwear	1.55	164.53	165.51	166.17
<b>Housing,Water,Elect,Gas &amp; Other Fuel</b>	<b>29.41</b>	<b>177.73</b>	<b>185.48</b>	<b>187.08</b>
51 House Rent	21.81	166.88	174.32	176.44
52 Construction Input Item	0.56	238.88	241.67	242.89
53 Construction Wage Rate	0.33	210.14	225.24	226.24
54 Water Supply	0.50	149.92	161.10	161.10
55 Electricity	4.40	231.52	238.10	238.10
56 Gas	1.58	143.81	158.08	158.08
57 Kerosene Oil	0.01	208.84	191.37	194.05
58 Fire Wood Whole	0.23	274.81	283.78	283.25
<b>Furnished H.Hold Equip.&amp; Maint. Etc</b>	<b>4.21</b>	<b>211.06</b>	<b>219.50</b>	<b>220.09</b>
59 Furniture	0.33	202.69	210.00	210.33
60 Household Textile	0.65	207.73	219.62	219.15
61 Household Equipment	0.59	173.79	176.51	177.64
62 Utensils	0.32	212.94	221.38	222.55
63 Plastic Products	0.25	201.48	206.73	206.90
64 Washing Soap & Detergent	0.79	225.12	225.20	226.13
65 Sewing Needle & Dry Cell	0.15	198.97	205.05	208.24
66 Household Servant	1.04	228.35	245.77	246.17
67 Marriage Hall Charges	0.08	231.83	238.96	238.96
<b>Health</b>	<b>2.19</b>	<b>178.21</b>	<b>185.68</b>	<b>187.29</b>
68 Drug Medicine	1.27	148.33	152.54	152.83
69 Medical Equipment	0.01	225.36	227.28	232.59
70 Doctor (MBBS) Clinic Fee	0.59	241.97	255.23	260.45
71 Medical Test	0.32	177.69	187.50	187.54
<b>Transport</b>	<b>7.20</b>	<b>176.70</b>	<b>168.25</b>	<b>169.33</b>
72 Motor Vehicle	0.66	163.41	165.19	165.22
73 Motor Vehicle Accessories	0.24	226.51	220.51	216.66
74 Motor Fuel	3.03	150.53	133.68	135.46
75 Mechanical Service	0.46	212.78	223.78	223.78
76 Motor Vehicle Tax	0.11	210.18	210.18	210.18
77 Transport Services	2.70	197.35	191.93	193.15
<b>Communication</b>	<b>3.22</b>	<b>130.29</b>	<b>130.74</b>	<b>130.77</b>
78 Postal Services	0.07	227.44	237.90	238.97
79 Communication & Apparatus	3.15	128.25	128.49	128.50
<b>Recreation &amp; Culture</b>	<b>2.02</b>	<b>192.74</b>	<b>194.71</b>	<b>195.68</b>
80 Recreation & Culture	0.86	128.25	128.83	129.09
81 Text Books	0.57	290.10	290.62	292.33
82 News Papers	0.19	175.42	175.49	175.49
83 Stationery	0.40	201.55	209.56	211.49
<b>Education</b>	<b>3.94</b>	<b>209.17</b>	<b>210.99</b>	<b>221.48</b>
84 Education	3.94	209.17	210.99	221.48
<b>Restaurants And Hotels</b>	<b>1.23</b>	<b>247.73</b>	<b>261.80</b>	<b>261.89</b>
85 Ready Made Food	1.23	247.73	261.80	261.89
<b>Miscellaneous Goods And Services</b>	<b>2.76</b>	<b>223.99</b>	<b>232.55</b>	<b>232.97</b>
86 Personal Care	1.49	207.29	213.45	213.72
87 Cosmetics	0.39	190.49	198.43	199.01
88 Blades	0.03	185.88	195.05	195.05
89 Personal Equipments	0.84	270.30	283.36	284.00

**Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities**

Items and Specifications	Index		
	Apr-15	Mar-16	Apr-16
<b>General</b>	<b>205.65</b>	<b>204.22</b>	<b>206.87</b>
<b>Agriculture Forestry &amp; Fishery</b>	<b>219.00</b>	<b>221.02</b>	<b>229.78</b>
1 Wheat	206.14	218.68	207.11
2 Maize	188.60	193.96	205.56
3 Rice	163.71	143.85	142.90
4 Sorghum/Jowar	292.62	278.40	286.45
5 Millet/Bajra	172.47	184.22	187.00
6 Vegetables	262.99	209.51	277.16
7 Fresh Fruits	242.95	244.90	267.02
8 Dry Fruits	237.25	248.22	248.97
9 Cotton Seeds	215.48	253.39	254.81
10 Other Oil Seeds	157.14	156.93	159.83
11 Edible Roots/ Potatoes	115.50	112.72	104.08
12 Stimulant And Spice Crops	286.93	235.21	234.41
13 Pulses	209.56	247.46	259.57
14 Sugar Crops	286.29	286.29	286.29
15 Fibre Crops	172.53	172.25	174.57
16 Unmanufactured Tobacco	217.50	230.02	230.61
17 Poultry	189.61	172.94	231.81
18 Milk From Bovine Animals	251.69	255.42	256.11
19 Eggs	170.54	161.26	150.83
20 Raw Animal Material/Wool	177.10	176.96	175.99
21 Hides And Fur Skins, Raw	159.72	150.63	151.73
22 Fuel Wood In Logs	259.53	266.30	264.77
23 Fishes Live Fresh Or Chilled	283.89	335.61	369.26
<b>Ores/Minerals, Gas &amp; Elect.</b>	<b>245.66</b>	<b>245.22</b>	<b>244.59</b>
24 Coal Not Agglomerated	223.53	176.47	168.63
25 Natural Gas Liquefied	200.74	208.35	208.04
26 Salt & Pure Sodium Chloride	248.84	252.31	252.31
27 Electrical Energy	295.61	293.09	293.09
<b>Food, Beverages, Tobacco, Textiles</b>	<b>205.98</b>	<b>214.66</b>	<b>214.90</b>
28 Meat Of Animals	260.64	268.99	269.28
29 Vegetables & Fruit Juices	199.28	201.36	202.69
30 Dried Fruits & Nuts	228.25	250.38	245.68
31 Fruit Juices	174.06	175.99	176.37
32 Vegetable Oil Refined	155.23	148.47	150.87
33 Vegetable Ghee	124.33	119.01	121.50
34 Oil Cakes	200.07	224.87	222.77
35 Processed Liquid Milk	251.52	247.57	248.90
36 Milk And Cream In Solid Form	221.70	219.09	219.24
37 Ice Cream	219.91	225.40	229.62
38 Dairy Products N.E.C	243.80	248.13	247.85
39 Wheat Flour	194.97	200.63	195.65
40 Other Cereal Flour	146.98	225.20	239.21
41 Sugar Refined	220.03	237.73	240.36
42 Chocolate	99.19	101.06	101.06
43 Sugar Confectionary	102.28	118.83	118.83
44 Coffee And Tea	203.67	238.86	234.40
45 Spices	189.90	189.77	189.67
46 Other Food Products	294.23	292.52	292.52
47 Mineral Water	187.86	194.37	194.37
48 Beverages	171.62	172.44	172.44
49 Tobacco Products	290.52	387.30	390.01
50 Cotton Yarn	170.12	174.54	173.67
51 Nylon Yarn	150.22	147.08	147.08
52 Blended Yarn	182.72	175.44	176.66
53 Woven Fabrics	258.39	275.66	275.66
54 Cotton Fabrics	201.34	204.95	206.45
55 Other Fabrics	212.61	218.24	220.25

<b>Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities</b>				
<b>Items and Specifications</b>		<b>Index</b>		
		<b>Apr-15</b>	<b>Mar-16</b>	<b>Apr-16</b>
56	Silk And Rayon Fabrics	181.33	186.80	188.44
57	Towels	265.62	267.20	267.20
58	Blankets	235.86	243.93	243.93
59	Bed Sheets	256.29	256.29	256.29
60	Quilts	196.84	201.47	198.00
61	Woolen Carpets	132.14	181.55	181.55
62	Synthetic Carpets	126.27	129.25	129.25
63	Hosiery Products	218.08	222.52	222.52
64	Ready Made Garments	186.77	193.27	193.27
65	Leather With Out Hairs	215.06	221.97	221.97
66	Other Leather N.E.C	212.39	207.31	207.31
67	Footwear's	134.22	139.36	140.89
<b>Other Transportable Goods</b>		<b>181.06</b>	<b>161.42</b>	<b>162.91</b>
68	Timber	202.05	220.36	220.36
69	Printing Paper	162.72	161.82	161.82
70	Hard Board	197.92	197.92	197.92
71	Coke	163.45	163.45	163.45
72	Motor Sprit	125.47	106.00	108.54
73	Diesel Oil	178.33	134.76	136.30
74	Kerosene Oil	178.93	115.11	115.11
75	Furnace Oil	94.70	51.43	58.58
76	Mobil Oil	200.74	196.00	196.00
77	Chemicals	195.03	182.47	182.61
78	Dying Materials	146.55	146.55	146.55
79	Fertilizers	272.54	264.83	262.47
80	Pesticides	293.74	312.37	312.37
81	Insecticides	143.34	133.20	135.79
82	Paints & Varnishes	291.69	295.36	295.36
83	Medicines	145.19	156.79	160.98
84	Soaps & Detergent	178.14	182.03	182.24
85	Auto Tyres	191.36	184.65	184.65
86	Plastic Products	222.47	226.58	226.58
87	Glass Sheets	228.76	231.30	231.30
88	Other Glass Articles	243.63	243.63	243.63
89	Ceramics And Sanitary	219.25	227.51	227.51
90	Bricks Blocks And Tiles	209.76	217.05	217.83
91	Cement	206.86	206.40	205.87
92	Bed Foams	156.67	167.67	167.67
93	Matches	143.20	162.62	162.62
<b>Metal Product Machinery &amp; Equip</b>		<b>172.88</b>	<b>170.45</b>	<b>171.22</b>
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	140.03	123.70	127.90
96	Pipe Fittings	191.94	193.06	193.06
97	Steel Products	173.88	176.80	176.99
98	Engines And Motors	109.07	109.24	109.24
99	Vacuum Pumps	115.39	114.95	114.95
100	Air Conditioners	197.69	201.18	201.18
101	Cultivators	219.76	219.76	219.76
102	Chuff Cutter	149.20	149.20	149.20
103	Tractors	214.54	205.43	205.43
104	Lathe Machines	208.81	208.81	208.81
105	Concrete Mixer	138.83	138.83	138.83
106	Refrige,Wash& Sew Mach, Iron,Fan	198.20	199.37	200.02
107	Electrical Wires	190.87	195.19	195.19
108	Lighting Equipments	168.19	167.30	167.30
109	Radio And Television	126.49	126.49	126.49
110	Motor Vehicles	183.03	185.25	185.25
111	Motor Cycles	125.89	125.89	125.89
112	Bicycles	185.63	185.63	185.63

**Table A12: Price Indices - Base 2007-08 = 100**

Period		CPI			WPI			SPI *
		Overall	Food	Non-food	Overall	Food	Non-Food	
2008-09		117.03	123.12	113.38	118.93	119.68	118.45	123.26
2009-10		128.85	139.05	122.73	135.40	136.85	134.48	139.84
2010-11		146.45	164.10	135.87	164.17	159.26	167.28	164.02
2011-12		162.57	182.20	150.80	181.28	181.32	181.26	178.67
2012-13		174.53	195.18	162.16	194.61	197.21	192.95	189.64
2013-14		189.58	212.74	175.69	210.48	213.04	208.85	208.66
2014-15		198.16	220.20	184.95	209.85	226.22	199.47	212.61
2013	Nov	191.21	218.16	175.06	212.22	215.77	209.97	214.76
	Dec	188.68	210.89	175.37	210.11	210.28	210.00	210.78
2014	Jan	189.60	210.81	176.89	211.23	209.87	212.10	208.99
	Feb	189.00	208.74	177.17	210.94	208.67	212.38	208.54
	Mar	190.82	213.11	177.46	211.66	212.89	210.88	212.08
	Apr	194.06	217.33	180.11	211.88	216.70	208.82	211.78
	May	193.55	214.75	180.84	211.71	215.95	209.02	209.80
	Jun	194.74	216.98	181.41	214.60	221.06	210.50	212.40
	Jul	198.05	222.80	183.21	215.76	225.52	209.57	216.14
	Aug	198.70	224.05	183.50	214.73	227.26	206.78	217.08
	Sep	199.40	224.12	184.58	215.06	228.41	206.59	217.06
	Oct	199.81	223.74	185.47	214.39	229.02	205.11	216.67
	Nov	198.79	222.74	184.44	212.26	227.29	202.73	214.45
	Dec	196.79	218.08	184.03	208.25	223.48	198.59	211.76
2015	Jan	196.95	217.10	184.87	206.11	223.48	195.09	209.89
	Feb	195.13	213.15	184.33	203.86	222.26	192.19	206.98
	Mar	195.57	214.25	184.37	203.89	222.11	192.33	207.05
	Apr	198.16	217.26	186.71	205.65	225.38	193.13	208.42
	May	199.66	221.22	186.74	207.92	228.09	195.12	211.48
	Jun	200.89	223.84	187.13	210.37	232.39	196.40	214.29
	Jul	201.91	224.14	188.59	209.58	233.68	194.29	215.13
	Aug	202.25	224.86	188.70	208.42	236.00	190.92	214.33
	Sep	202.04	223.87	188.95	207.60	234.37	190.61	215.23
	Oct	203.03	224.86	189.95	208.69	234.47	192.34	217.02
	Nov	204.22	227.55	190.23	208.72	232.83	193.43	219.37
	Dec	203.06	223.90	190.57	207.37	230.72	192.55	218.60
2016	Jan	203.49	222.58	192.05	206.27	231.14	190.49	217.47
	Feb	202.98	221.07	192.14	205.05	231.26	188.42	215.73
	Mar	203.28	222.25	191.91	204.22	231.43	186.95	215.13
	Apr	206.43	227.53	193.78	206.87	237.05	187.72	215.89

\*: all groups combined

<b>Table A13: International Commodity Prices/ Indices</b>				
	<b>Jan-16</b>	<b>Feb-16</b>	<b>Mar-16</b>	<b>Apr-16</b>
<b>Energy</b>				
Crude Oil (US\$ per barrel) *	29.9	31.1	37.3	40.7
IMF Energy Index (2005 = 100)	60.6	62.1	71.3	76.5
WB Energy Index (2010 = 100) @	40.5	41.2	47.4	51.2
<b>Food</b>				
Rice (\$/MT)	359.5	373.2	370.5	376.0
Wheat (\$/MT)	164.6	159.3	164.0	163.4
Sugar (US cent/ pound)	14.3	13.3	15.4	15.2
Palm Oil (\$/MT)	531.6	595.9	633.1	681.1
Soybean Oil (\$/MT)	659.9	686.9	713.9	748.5
<b>Non-Food Non-Energy</b>				
Cotton Outlook 'A' Index #	68.8	66.6	65.5	69.3
IMF Metal Price Index (2005 = 100)	103.7	108.9	116.0	117.8
Copper (\$/MT)	4,471.8	4,598.6	4,953.8	4,872.7
Aluminum (\$/MT)	1,481.1	1,531.3	1,531.0	1,571.2
Iron Ore (\$ cents/dry MT)	41.3	46.2	55.5	59.6
Tin (\$/MT)	13,808.1	15,610.1	16,897.6	17,032.7
Nickle (\$/MT)	8,507.3	8,298.5	8,717.3	8,878.9
Zinc (\$/MT)	1,520.4	1,709.8	1,801.7	1,855.4
Lead (\$/MT)	1,646.2	1,765.8	1,802.2	1,732.3
Uranium (\$/MT)	34.6	33.6	29.6	27.6
DAP (\$/MT)	385.0	355.0	360.0	358.0
Urea (\$/MT)	214.0	209.0	203.0	204.0
Source: IMF and World Bank				
\$/MT = US\$ per metric ton.				
* Crude Oil (Petroleum), simple average of three spot prices; Dated Brent, West Texas Intermediate, and the Dubai fateh				
# Middling 1-3/32 inch staple, Liverpool Index "A", average of the cheapest Cts/lb five of fourteen styles, CIF Liverpool (Cotton Outlook, Liverpool). From January 1968 to May 1981 strict middling 1-1/16 inch staple. Prior to 1968, Mexican 1-1/16.2/				
DAP: Diammonium Phosphate				
@ World Bank commodity index for low and middle income countries				

<b>Table 14. CPI Data Series Original and Seasonally Adjusted</b>					
<b>Original Series</b>					
<b>Period</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>
Jul	154.72	169.57	183.58	198.05	201.91
Aug	156.88	171.09	185.71	198.70	202.25
Sep	158.50	172.44	185.18	199.40	202.04
Oct	160.79	173.10	188.82	199.81	203.03
Nov	161.25	172.42	191.21	198.79	204.22
Dec	160.12	172.82	188.68	196.79	203.06
Jan	162.58	175.70	189.60	196.95	203.49
Feb	163.07	175.11	189.00	195.13	202.98
Mar	164.98	175.82	190.82	195.57	203.28
Apr	168.00	177.74	194.06	198.16	206.43
May	169.93	178.65	193.55	199.66	
Jun	169.99	179.94	194.74	200.89	
<b>Seasonally Adjusted Series</b>					
Jul	154.14	168.83	182.69	197.01	200.81
Aug	155.67	169.70	184.16	197.08	200.65
Sep	157.31	171.17	183.82	197.93	200.57
Oct	159.23	171.44	187.01	197.90	201.11
Nov	160.24	171.29	189.89	197.45	202.86
Dec	160.96	173.73	189.65	197.75	203.98
Jan	162.99	176.16	190.12	197.49	204.06
Feb	164.78	177.00	191.08	197.30	205.24
Mar	166.44	177.49	192.72	197.58	205.44
Apr	168.13	177.84	194.18	198.29	206.58
May	170.54	179.31	194.25	200.34	
Jun	170.76	180.78	195.64	201.78	

<b>Table 15. CPI Food Data Series Original and Seasonally Adjusted</b>					
<b>Original Series</b>					
<b>Period</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>
Jul	174.80	190.72	208.19	222.80	224.14
Aug	177.32	192.47	212.27	224.05	224.86
Sep	180.16	193.80	209.09	224.12	223.87
Oct	183.07	193.66	212.61	223.74	224.86
Nov	183.26	193.03	218.16	222.74	227.55
Dec	179.21	192.97	210.89	218.08	223.90
Jan	181.90	196.58	210.81	217.10	222.58
Feb	180.69	194.05	208.74	213.15	221.07
Mar	183.46	195.06	213.11	214.25	222.25
Apr	187.43	197.74	217.33	217.26	227.53
May	187.75	200.00	214.75	221.22	
Jun	187.35	202.11	216.98	223.84	
<b>Seasonally Adjusted Series</b>					
Jul	173.72	189.30	206.43	220.73	221.96
Aug	174.58	189.37	208.76	220.37	221.18
Sep	177.30	190.75	205.83	220.61	220.40
Oct	179.85	190.39	209.15	220.16	221.34
Nov	180.54	190.01	214.64	219.18	223.98
Dec	180.60	194.46	212.45	219.56	225.24
Jan	183.04	197.88	212.29	218.67	224.27
Feb	184.72	198.50	213.62	218.22	226.32
Mar	186.28	198.24	216.72	218.02	226.27
Apr	188.22	198.51	218.21	218.20	228.54
May	189.16	201.56	216.41	222.84	
Jun	189.15	204.02	218.95	225.74	



Table 16: CPI Monthly & Average Seasonal Factors						
Period	FY12	FY13	FY14	FY15	FY16	Average
Jul	100.38	100.44	100.49	100.53	100.55	100.48
Aug	100.78	100.82	100.84	100.82	100.80	100.81
Sep	100.76	100.74	100.74	100.74	100.73	100.74
Oct	100.98	100.97	100.97	100.97	100.96	100.97
Nov	100.63	100.66	100.69	100.68	100.67	100.67
Dec	99.48	99.48	99.49	99.51	99.55	99.50
Jan	99.75	99.74	99.73	99.73	99.72	99.73
Feb	98.96	98.93	98.91	98.90	98.90	98.92
Mar	99.12	99.06	99.01	98.98	98.95	99.03
Apr	99.92	99.94	99.94	99.93	99.93	99.93
May	99.64	99.63	99.64	99.66		99.64
Jun	99.55	99.54	99.54	99.56		99.55

Table 17: CPI Food Monthly & Average Seasonal Factors						
Period	FY12	FY13	FY14	FY15	FY16	Average
Jul	100.62	100.75	100.86	100.94	100.98	100.83
Aug	101.57	101.64	101.68	101.67	101.67	101.65
Sep	101.61	101.60	101.58	101.59	101.57	101.59
Oct	101.79	101.72	101.66	101.63	101.59	101.68
Nov	101.51	101.59	101.64	101.62	101.59	101.59
Dec	99.23	99.23	99.27	99.33	99.41	99.29
Jan	99.38	99.34	99.30	99.28	99.25	99.31
Feb	97.82	97.76	97.72	97.68	97.68	97.73
Mar	98.48	98.40	98.34	98.27	98.22	98.34
Apr	99.58	99.61	99.60	99.57	99.56	99.58
May	99.25	99.22	99.23	99.28		99.25
Jun	99.05	99.06	99.10	99.16		99.09

<b>Table 18: CPI Month-on-Month % Change Original &amp; Seasonally Adjusted</b>					
<b>Original Series</b>					
<b>Period</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>
Jul	1.27	-0.25	2.02	1.70	0.51
Aug	1.40	0.90	1.16	0.33	0.17
Sep	1.03	0.79	-0.29	0.35	-0.10
Oct	1.44	0.38	1.97	0.21	0.49
Nov	0.29	-0.39	1.27	-0.51	0.59
Dec	-0.70	0.23	-1.32	-1.01	-0.57
Jan	1.54	1.67	0.49	0.08	0.21
Feb	0.30	-0.34	-0.32	-0.92	-0.25
Mar	1.17	0.41	0.96	0.23	0.15
Apr	1.83	1.09	1.70	1.32	1.55
May	1.15	0.51	-0.26	0.76	
Jun	0.04	0.72	0.61	0.62	
<b>Seasonally Adjusted Series</b>					
Jul	0.44	-1.13	1.05	0.70	-0.48
Aug	0.99	0.52	0.81	0.04	-0.08
Sep	1.06	0.86	-0.19	0.43	-0.04
Oct	1.22	0.16	1.74	-0.01	0.27
Nov	0.64	-0.08	1.54	-0.23	0.87
Dec	0.45	1.42	-0.13	0.15	0.55
Jan	1.26	1.40	0.25	-0.13	0.04
Feb	1.10	0.48	0.50	-0.10	0.58
Mar	1.01	0.28	0.86	0.14	0.10
Apr	1.01	0.20	0.76	0.36	0.56
May	1.43	0.83	0.03	1.03	
Jun	0.13	0.82	0.72	0.72	

<b>Table 19: CPI Food Month-on-Month % Change Original &amp; Seasonally Adjusted</b>					
<b>Original Series</b>					
<b>Period</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>
Jul	2.90	1.80	3.01	2.68	0.13
Aug	1.44	0.92	1.96	0.56	0.32
Sep	1.60	0.69	-1.50	0.03	-0.44
Oct	1.62	-0.07	1.68	-0.17	0.44
Nov	0.10	-0.33	2.61	-0.45	1.20
Dec	-2.21	-0.03	-3.33	-2.09	-1.61
Jan	1.50	1.87	-0.04	-0.45	-0.59
Feb	-0.66	-1.29	-0.98	-1.82	-0.68
Mar	1.53	0.52	2.10	0.52	0.54
Apr	2.16	1.37	1.98	1.41	2.38
May	0.17	1.15	-1.19	1.82	
Jun	-0.21	1.05	1.04	1.18	
<b>Seasonally Adjusted Series</b>					
Jul	1.28	0.08	1.18	0.81	-1.68
Aug	0.49	0.03	1.13	-0.17	-0.35
Sep	1.56	0.73	-1.40	0.11	-0.35
Oct	1.44	-0.19	1.61	-0.21	0.43
Nov	0.38	-0.20	2.63	-0.44	1.19
Dec	0.04	2.34	-1.02	0.17	0.56
Jan	1.35	1.76	-0.07	-0.41	-0.43
Feb	0.92	0.31	0.63	-0.21	0.92
Mar	0.85	-0.13	1.45	-0.09	-0.02
Apr	1.04	0.14	0.69	0.08	1.00
May	0.50	1.54	-0.82	2.13	
Jun	-0.01	1.22	1.17	1.30	

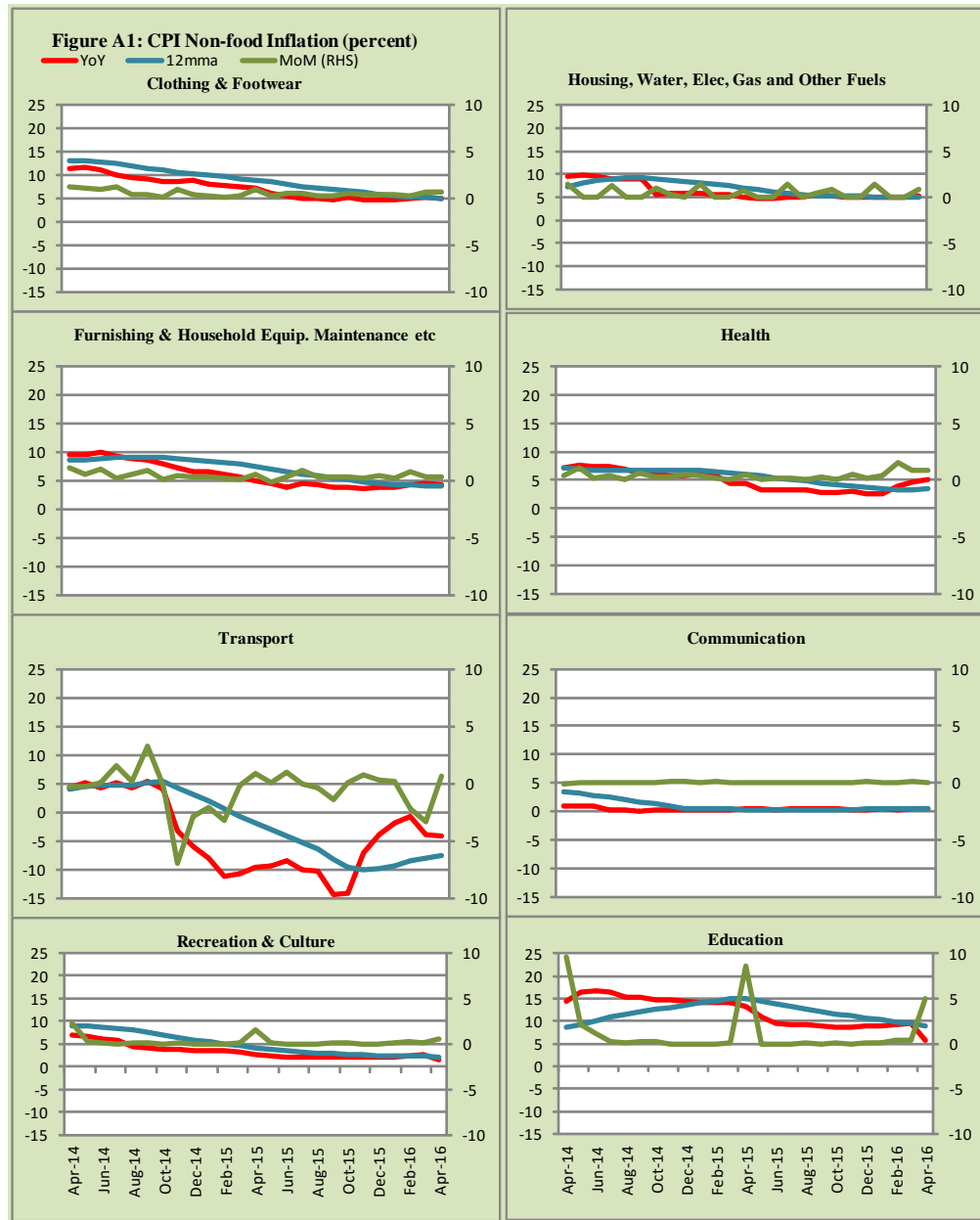
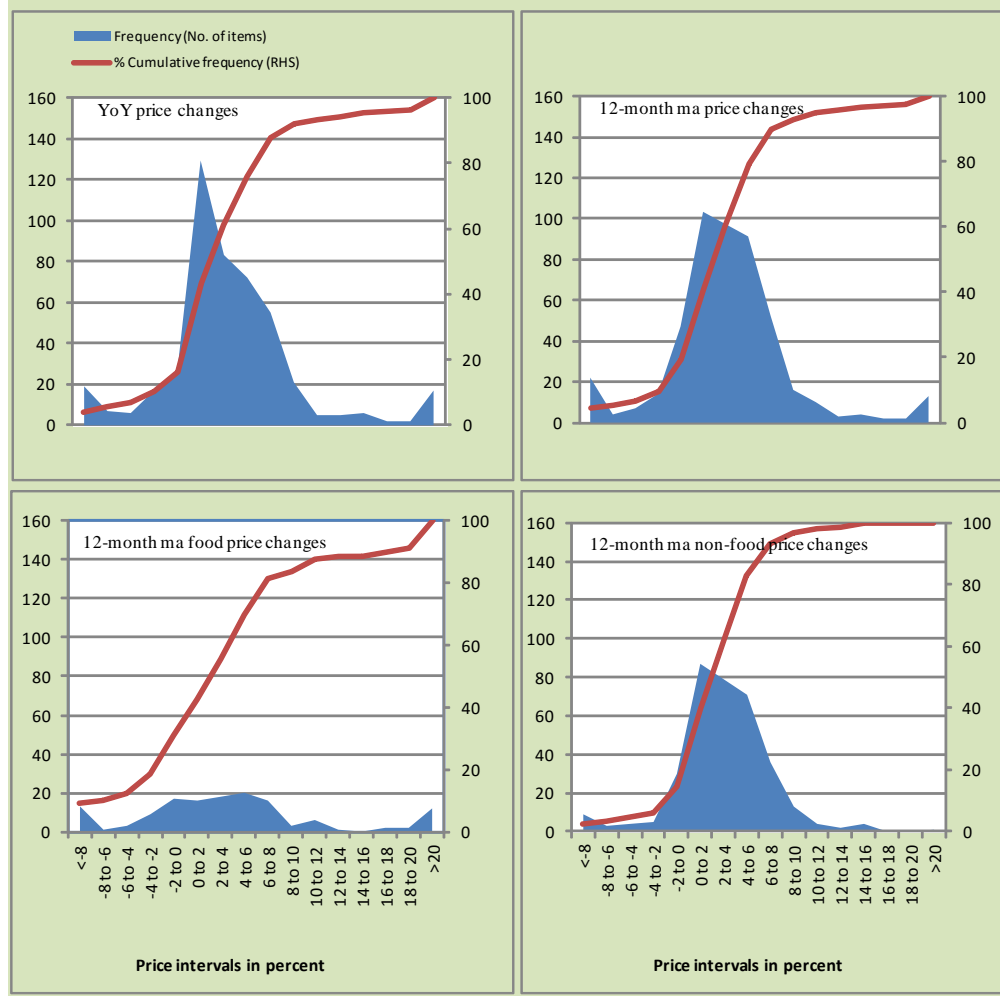


Figure A2: Frequency Distribution of Price Changes of CPI Items, April 2016



**Figure A3: Frequency Distribution of Price Changes of WPI Commodities, April 2016**

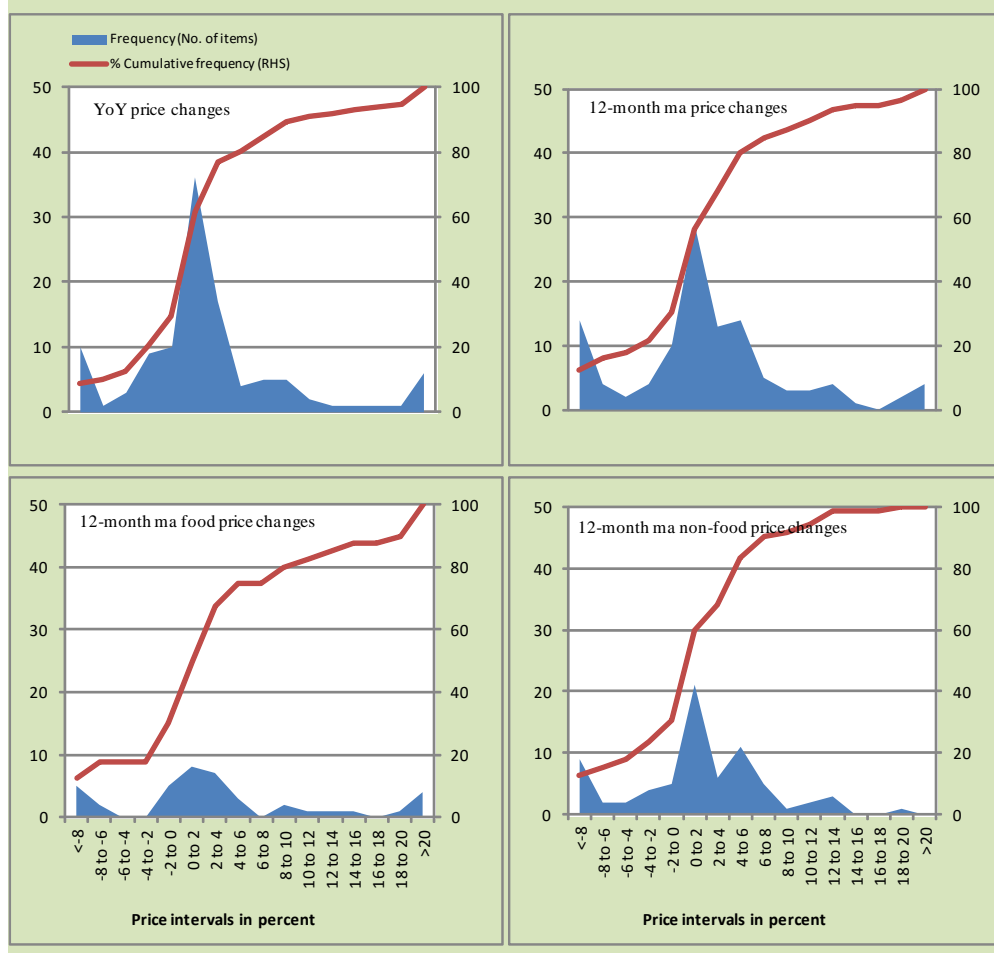
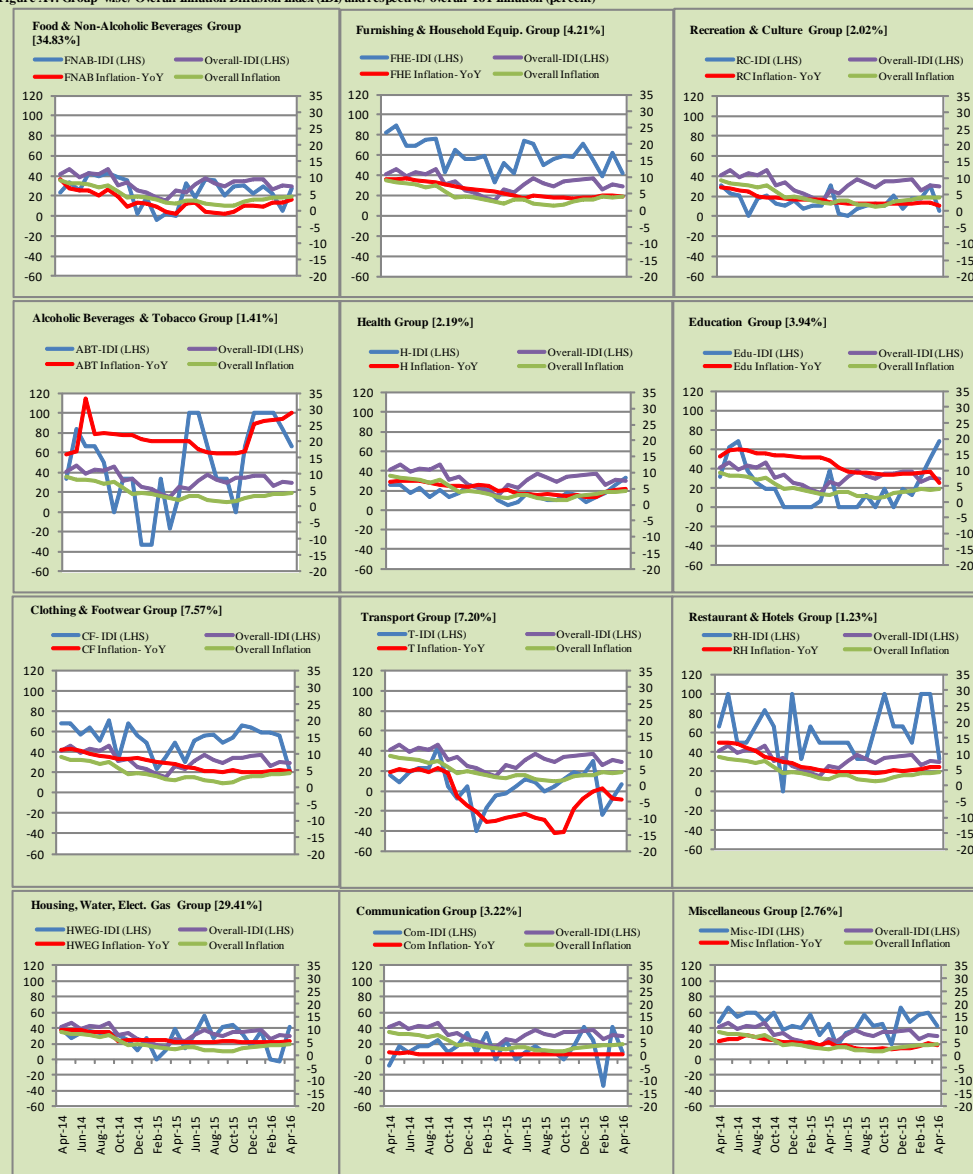


Figure A4: Group-wise/ Overall Inflation Diffusion Index (IDI) and respective/ overall YoY Inflation (percent)



Numbers in square brackets show the weights of respective groups in the CPI baskets.

## **Annexure B**

### **Technical Notes**

1. All the three measures of inflation, viz. CPI, WPI and SPI are computed by the following Laspeyres Index formula:

$$I_t = \sum_j w_0^j \left( \frac{P_t^j}{P_0^j} \right)$$

Where  $I_t$  is price index,  $w_0^j$  is weight of commodity  $j$  in the overall basket,  $P_t^j$  is price of commodity  $j$  in period  $t$  and  $P_0^j$  is its price in the base year.

2. Base year for all the indices is the year 2007-08.
3. CPI basket contains 487 consumers' goods; WPI basket contains 463 items; SPI contains 53 items.
4. YoY inflation is the percent change of an index in a given month over the index in the same month of the last year. It is computed as follows:

$$\pi_t = \left( \frac{I_t}{I_{t-12}} - 1 \right) \times 100$$

5. Period average inflation is the percent change of the average index during the period from July to the given month of a fiscal year over the average index during the corresponding period of the last year. It is computed as follows:

$$\bar{\pi}_t = \left( \frac{\sum_{i=0}^{t-v} I_{t-i}}{\sum_{i=0}^{t-12-v} I_{t-12-i}} - 1 \right) \times 100$$

Where  $v$  is the serial number of the month of July of current fiscal year in a given time series.

6. Monthly inflation is the percent change of an index in a given month over the index in the preceding month. It is computed as follows:



$$\pi_t = \left( \frac{I_t}{I_{t-1}} - 1 \right) \times 100$$

7. 12-month moving average inflation (Long-run trend inflation) is the percent change of 12-month moving average of a price index; it is computed as follows:

$$\tilde{\pi}_t = \left( \frac{\sum_{i=0}^{11} I_{t-i}}{\sum_{i=0}^{11} I_{t-12-i}} - 1 \right) \times 100$$

8. Core Inflation is defined as the persistent component of measured inflation that excludes volatile and controlled prices. It reflects the normal supply and demand conditions in the economy. Core inflation is computed by the following three methods:

- a) Non-food, Non-energy inflation (NFNE inflation); it is computed by excluding food group and energy items (kerosene oil, petrol, diesel, CNG, electricity and natural gas) from the CPI basket.
- b) 20% trimmed-mean inflation; it is computed through the following

steps:

- i. All CPI items are arranged in ascending order according to YoY/12-month moving average/monthly/period average changes in their price indices in a given month.
  - ii. 20 percent of the items showing extreme changes are excluded with 10 percent of the items at the top of the list (corresponding to cumulative weight of 90% or more) and 10 percent of the items at the bottom of the list (corresponding to cumulative weight of 10 percent or less).
  - iii. The weighted mean of the changes in price indices of the rest of the items is core inflation.
- c) Relatively Stable Component of CPI (RSC-CPI) developed by State Bank of Pakistan is a hybrid method based on permanent exclusion criteria. Volatile price items, to be excluded in the newly proposed

measure RSC-CPI, are identified by analyzing the list and frequency of commodities that have been trimmed frequently in the past while computing monthly weighted trimmed mean measure. Commodities that were trimmed out 13 and above times since July 2008 to February 2013 are selected for permanently excluding from the CPI basket. This newly developed component includes a mix of both food and non-food commodities that show persistent price behavior. Fifty Commodities included comprise relatively stable component (RSC-CPI) with a weight of 67.69. The detailed methodology of RSC-CPI and group wise items along their weights can be viewed at the following link;

<http://www.sbp.org.pk/publications/wpapers/2013/wp66.pdf>

9. Weighted contribution of different items (or sub-groups) to total inflation is worked out as below:

Let the overall index ( $I_t$ ) is the weighted average of price indexes of individual items or sub-groups ( $I_{it}$ ), i.e.

$$I_t = \sum_i w_i \cdot I_{it}$$

The weighted contribution of a single item (or a sub-group) to overall inflation is defined as below:

$$C_{it} = \alpha_{it-12} \cdot w_i \cdot \left( \frac{\pi_{it}}{\pi_t} \right)$$

Where  $C_{it}$ : Contribution of  $i^{\text{th}}$  item to the overall inflation

$$\alpha_{it-12} = \frac{I_{it-12}}{I_{t-12}}; \text{ i.e. ratio of item's index to overall index in the}$$

reference month

$w_i$  : Weights of  $i^{\text{th}}$  item

$\pi_{it}$  : Inflation of  $i^{\text{th}}$  item

$\pi_t$  : Overall inflation

10. Annualized rate of inflation (based on a month-on-month rate  $\pi$ ) is computed as follows

$$\text{Annualized } \pi = \left( \left( 1 + \frac{\pi}{100} \right)^{12} - 1 \right) \times 100$$

### Methodology for Estimating Inflation Diffusion Index for Pakistan

We constructed an index to measure the spread of inflation in the 487 commodities of the CPI basket. It is based on month-on-month (MoM) change in the prices of these commodities and can be obtained by estimating what is known as an ‘inflation diffusion index’ (IDI) as below:

$$\frac{\text{Number of Commodities with } \uparrow \text{ in MoM change} - \text{Number of Commodities with } \downarrow \text{ in MoM change}}{\text{Number of Commodities for which prices are reported}}$$

Thus, it is the difference between the share of items with increasing prices (i.e. depicting inflation) and the share of items with falling prices (i.e. depicting deflation) in CPI amongst the commodities for which prices have altered or remained constant<sup>1</sup>.

Based upon commodity level price data from July 2001 to February 2011 we computed inflation diffusion indices overall (general) CPI basket and for all groups in CPI basket (except House Rent Index being single item). A simple analysis<sup>2</sup> suggests that IDI is a leading indicator for Pakistan’s YoY inflation.

<sup>1</sup> We do not observe the prices of certain commodities (like the seasonal items) during certain periods of time. To calculate the inflation diffusion index we consider the commodities for which prices have been reported (irrespective of changed or not) during the month under review.

<sup>2</sup> Formal test shows one way ‘Granger’ causality from IDI to YoY inflation.