

# **Inflation Monitor**

**March 2017**



**State Bank of Pakistan**

**Statistics & DWH Department**

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## **Review**

### **Inflation in Brief**

1. Headline CPI inflation (2007-08=100) is recorded at level of 4.9 percent on year-on-year basis in March 2017 as compared to 4.2 percent in the previous month and 3.9 percent in the corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at 0.8 percent in March 2017 compared to 0.3 percent in the previous month and 0.1 percent during the corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.72 percent in March 2017 compared to 0.96 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis is recorded at 4.5 percent in March 2017 as compared to 4.1 percent in the previous month and 3.8 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is 0.2 percent in March 2017. In the previous month as well as in the corresponding month of last year, the Core inflation (trimmed) was at the level of current month.
5. Non-food, non-energy inflation measured by CPI Core (NFNE) on year-on-year basis is recorded at 5.2 percent in March 2017 compared to 5.3 percent in the previous month. It was 4.7 percent in the corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.1 percent in March 2017 compared to 0.2 percent in the previous month and 0.2 percent in the corresponding month of last year.

7. WPI inflation on year-on-year basis increased to 6.4 percent in March 2017 as compared to 5.3 percent in the previous month. During March 2016, WPI inflation was recorded at 0.2 percent.
8. WPI inflation on month-on-month basis recorded at 0.7 percent in March 2017 as compared to 0.5 in the previous month and -0.4 percent in the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 3.9 percent in March 2017 compared to 1.6 percent in the previous month. In the corresponding month of last year, SPI inflation was at the level of current month.
10. SPI inflation on month-on-month basis recorded at 2.0 percent in March 2017 compared to 0.4 percent in the previous month and -0.3 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 March 2017 are described below:

- Core RSC inflation on year-on-year basis is recorded at 5.0 percent in March 2017 compared to 4.9 in the previous month and 5.1 percent in the corresponding month of last year.

- Core RSC inflation on month-on-month basis is recorded at 0.2 percent in March 2017 as in the previous month and 0.1 percent in the corresponding month of last year.

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
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	0.3
May-16	3.2	-0.2	2.1	-0.7	3.9	0.2	4.5	0.2	3.6	0.2	5.1	0.3	0.0	0.6	1.4	-0.7
Jun-16	3.2	0.6	2.3	1.4	3.8	0.1	4.6	0.1	3.7	0.2	4.8	0.4	0.2	1.4	1.1	1.0
Jul-16	4.1	1.3	4.7	2.5	3.7	0.5	4.5	0.6	3.6	0.5	4.8	0.6	3.0	2.3	1.7	1.0
Aug-16	3.6	-0.3	3.4	-0.9	3.7	0.2	4.6	0.2	3.5	0.1	4.8	0.2	3.5	0.0	2.0	-0.1
Sep-16	3.9	0.2	4.0	0.1	3.8	0.2	4.8	0.3	3.7	0.1	4.7	0.2	3.4	-0.5	1.6	0.0
Oct-16	4.2	0.8	4.4	0.8	4.1	0.8	5.1	0.9	3.8	0.6	4.9	0.7	2.8	0.0	1.4	0.7
Nov-16	3.8	0.2	3.3	0.2	4.1	0.2	5.3	0.2	3.8	0.2	5.0	0.2	2.6	-0.2	0.6	0.3
Dec-16	3.7	-0.7	3.0	-1.9	4.2	0.2	5.2	0.1	3.7	0.1	4.7	0.2	3.1	-0.1	0.5	-0.4
Jan-17	3.7	0.2	2.6	-1.0	4.4	1.0	5.4	1.1	3.8	0.6	4.9	0.9	4.2	0.5	0.4	-0.6
Feb-17	4.2	0.3	3.7	0.3	4.6	0.3	5.3	0.2	4.1	0.2	4.9	0.2	5.3	0.5	1.6	0.4
Mar-17	4.9	0.8	5.0	1.9	4.9	0.1	5.2	0.1	4.5	0.2	5.0	0.2	6.4	0.7	3.9	2.0
* NFNE is Non-food non-energy      ** Relatively Stable Component of CPI      *** SPI for all income groups combined																

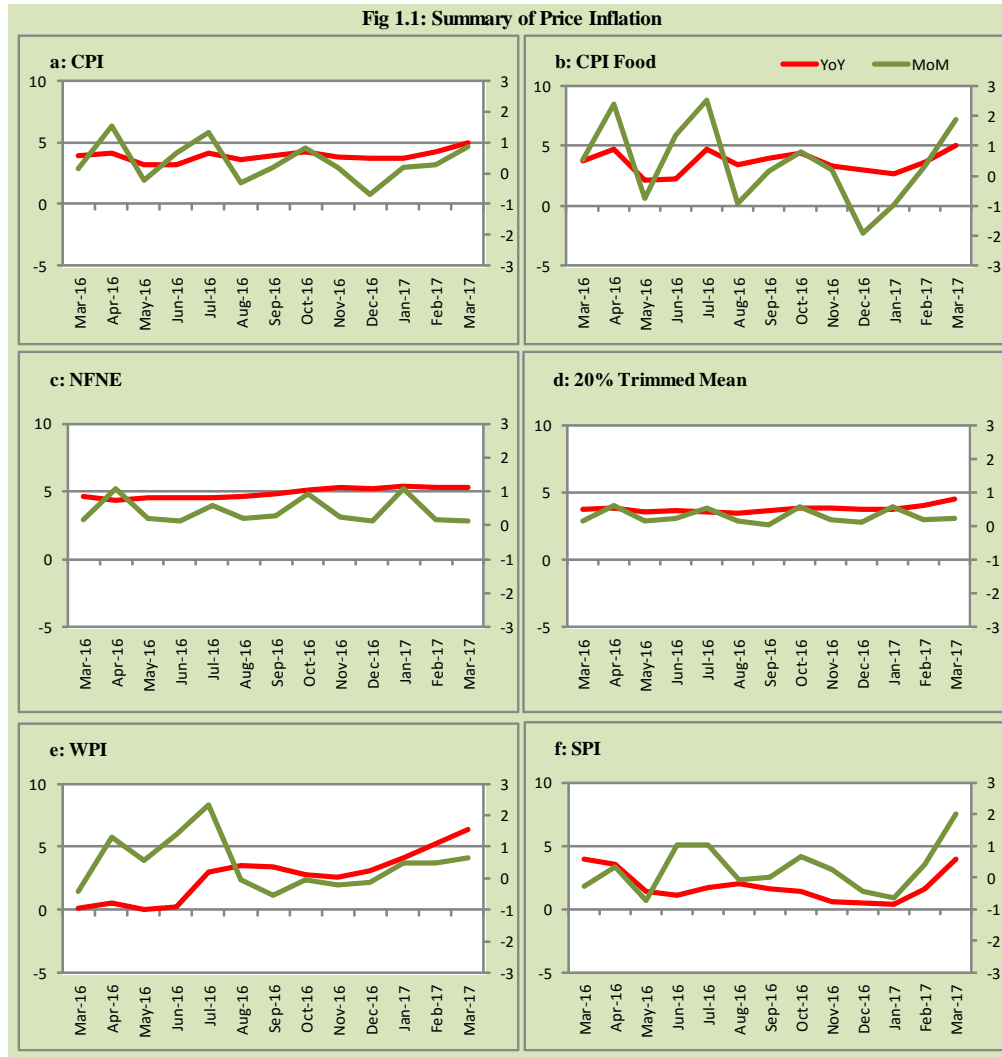




Fig 1.2: Movements in Price Indices (percent)

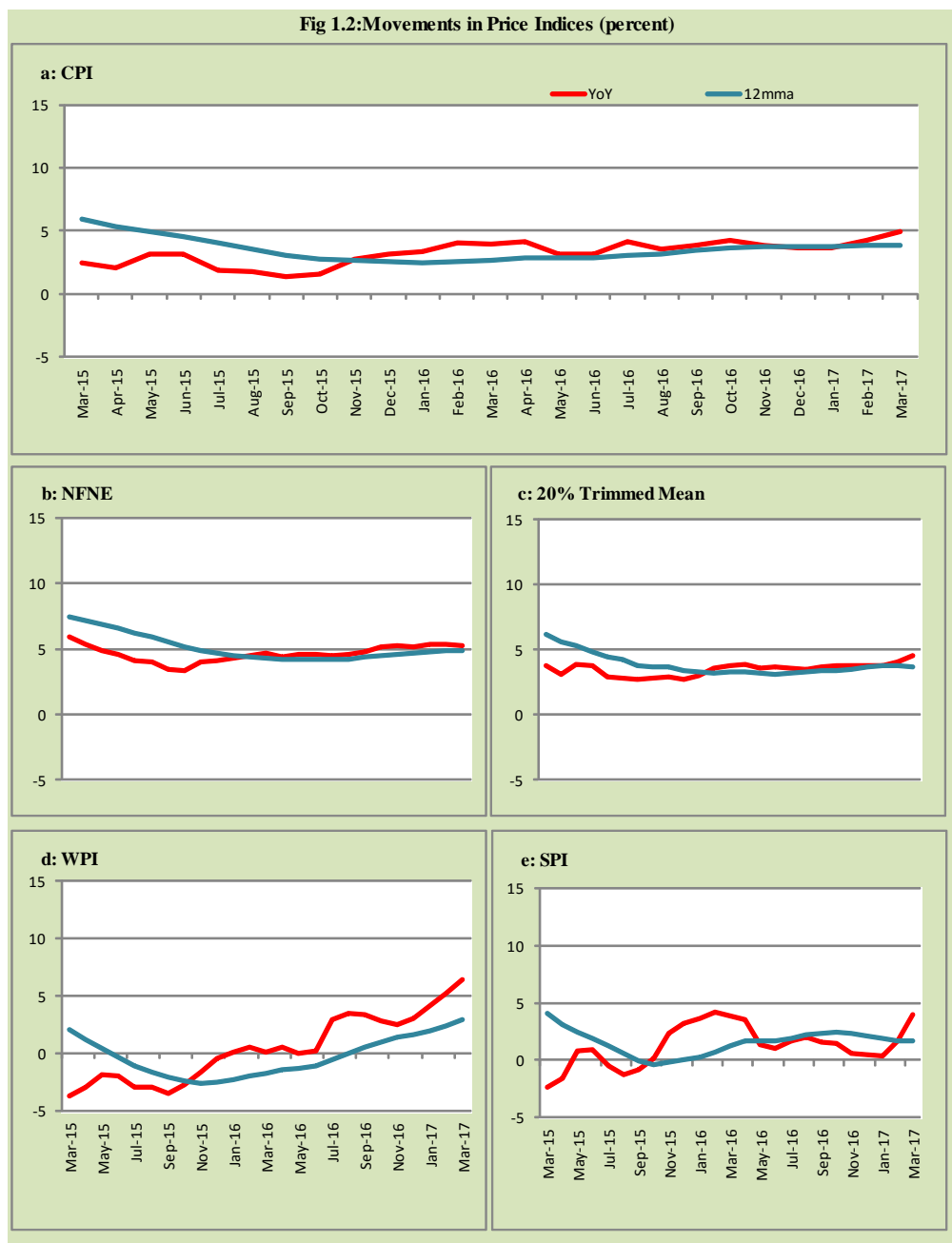


Fig 1.3: Movements in Price Indices -MoM ( percent)

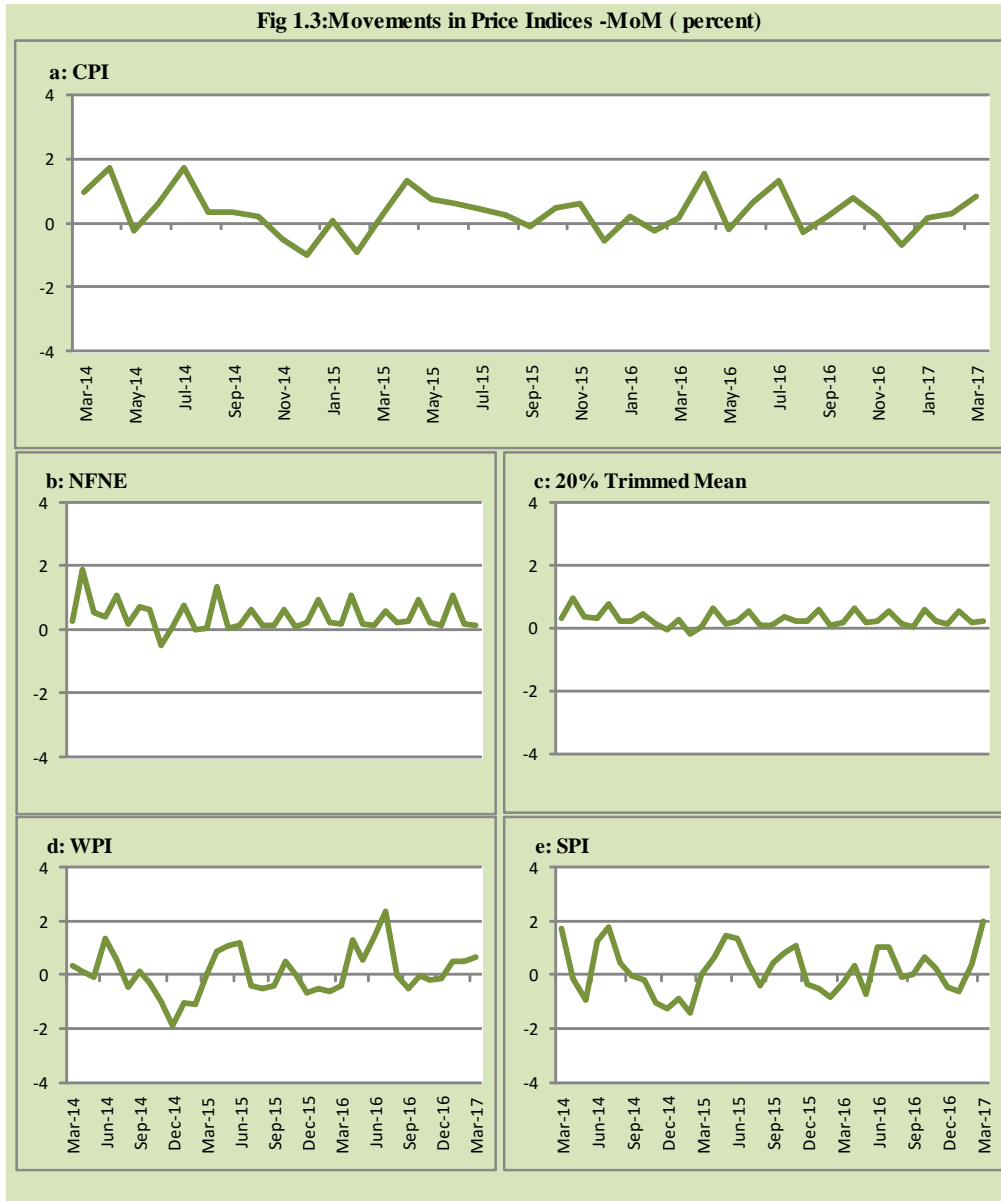
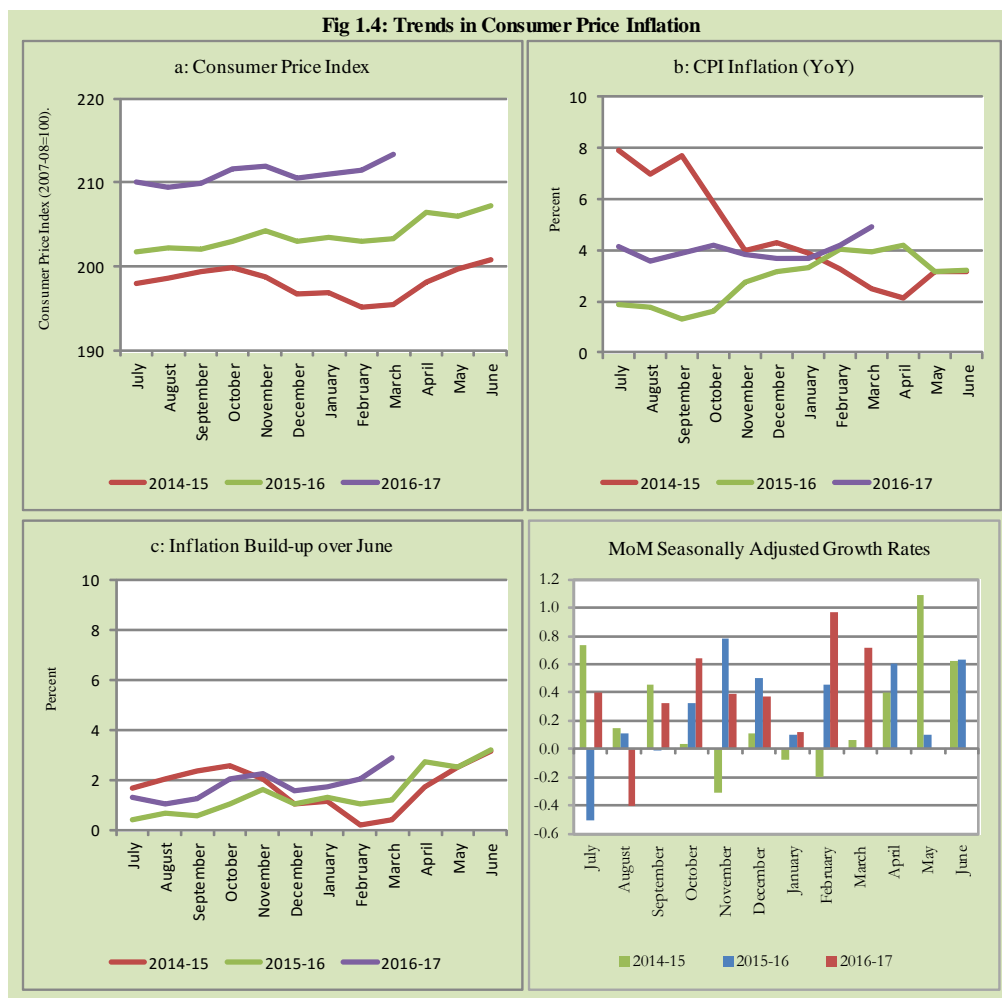


Fig 1.4: Trends in Consumer Price Inflation



## 2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan showed a mixed trend during March 2017. Among these five cities, the lowest inflation was observed in Peshawar at 3.1 percent while the highest inflation was observed in Islamabad at 5.7 percent (Table A6 of annexure-A).

<b>Table 2.1 City-wise Inflation of Selected Cities (percent)</b>						
	<b>Mar-16</b>		<b>Feb-17</b>		<b>Mar-17</b>	
	<b>MoM</b>	<b>YoY</b>	<b>MoM</b>	<b>YoY</b>	<b>MoM</b>	<b>YoY</b>
<b>Overall CPI</b>	0.1	3.9	0.3	4.2	0.8	4.9
Islamabad	0.1	3.0	0.7	5.1	0.6	5.7
Karachi	-0.6	4.9	0.1	3.3	0.9	4.9
Lahore	-0.4	1.4	0.3	3.6	1.4	5.5
Peshawar	-0.3	3.7	0.4	2.2	0.5	3.1
Quetta	-0.7	3.7	-0.3	2.2	0.8	3.9

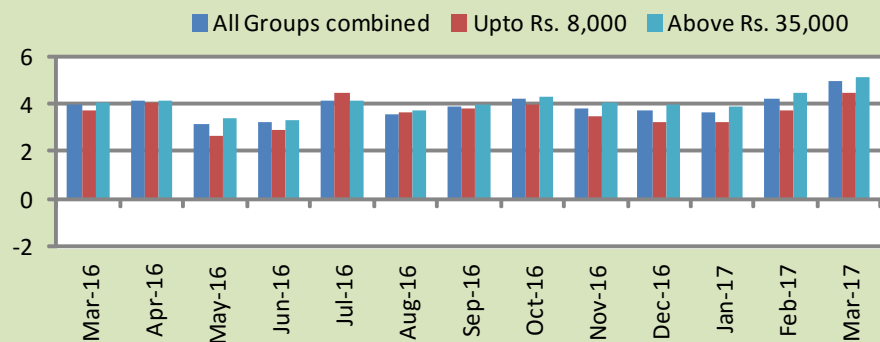
### **3. Income Group wise Inflation**

Income group- wise data shows that income group above Rs. 35,000 witnessed higher inflation as compared to other quintiles during March 2017 in General and Food groups. The income group (Rs. 8,001- 12,000) observed lowest inflation in general and food groups among income groups during March 2017 (Table A7 of annexure-A).

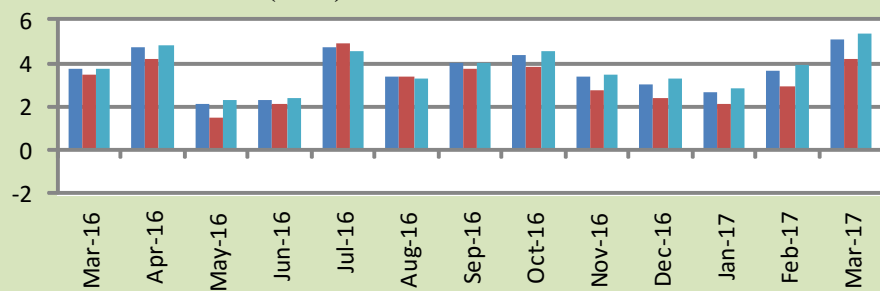
<b>Table 3.1 Income Group- wise Inflation (YoY) (percent)</b>									
<b>Income Groups</b>	<b>General</b>			<b>Food</b>			<b>Non-food</b>		
	<b>Mar-16</b>	<b>Feb-17</b>	<b>Mar-17</b>	<b>Mar-16</b>	<b>Feb-17</b>	<b>Mar-17</b>	<b>Mar-16</b>	<b>Feb-17</b>	<b>Mar-17</b>
<b>All Groups Combined</b>									
Up to Rs. 8,000	3.9	4.2	4.9	3.7	3.7	5.0	4.1	4.6	4.9
Rs. 8,001- 12,000	3.7	3.7	4.5	3.5	2.9	4.2	4.0	4.7	4.8
Rs. 12,001- 18,000	4.1	3.9	4.5	3.5	3.2	4.6	4.7	4.5	4.5
Rs. 18,001- 35,000	3.4	4.0	4.8	3.7	3.5	4.8	3.2	4.4	4.7
Above Rs. 35,000	4.1	4.1	4.9	3.9	3.8	5.2	4.4	4.4	4.7

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

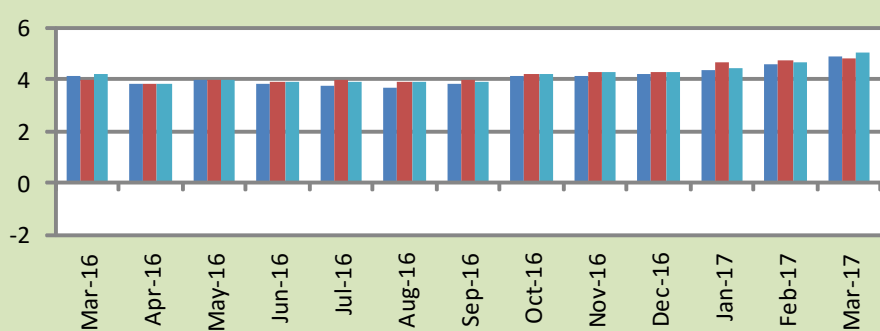
**a: CPI Overall Inflation (YoY)**



**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 41.86 percent during March 2017 from 35.54 percent in previous month. It was 38.91 percent in March 2016.

The weighted contribution of non-food group decreased to 58.14 percent in March 2017 from 64.46 percent in previous month.

<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>
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
May-16	27.39	12.83	43.54	-8.54	9.36	15.42
Jun-16	29.90	12.73	43.18	-10.39	9.49	15.09
Jul-16	47.51	9.16	32.21	-7.65	7.07	11.70
Aug-16	39.62	10.36	35.09	-7.91	8.72	14.13
Sep-16	42.70	9.45	29.26	-4.86	10.72	12.72
Oct-16	43.11	8.24	30.79	-4.55	10.57	11.84
Nov-16	36.64	9.16	33.91	-5.95	12.22	14.02
Dec-16	33.90	9.91	35.29	-5.45	12.65	13.70
Jan-17	29.56	9.82	35.77	-4.98	12.73	17.10
Feb-17	35.54	8.29	30.79	0.59	10.97	13.82
Mar-17	41.86	6.08	26.25	5.34	9.03	11.44

## 5. Inflation Diffusion Index

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

	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
General	30.7	29.4	32.0	23.7	32.7	39.7	10.3	30.1	41.1	33.5	32.3	38.0	28.5
Food & Non-Alcoholic Beverages	5.3	27.5	20.2	32.7	51.8	34.2	6.1	20.0	28.2	17.9	10.5	35.1	25.7
Alcoholic Beverages & Tobacco	83.3	66.7	100.0	100.0	100.0	33.3	-16.7	-16.7	100.0	83.3	66.7	100.0	33.3
Clothing & Footwear	55.9	22.0	59.3	37.3	42.4	37.3	5.1	54.2	57.6	66.1	45.8	27.1	25.4
Housing, Water, Elect, Gas & other Fuels	-2.8	41.7	13.9	33.3	52.8	22.2	5.6	25.0	41.7	38.9	41.7	22.2	0.0
Furnishing & Household Equip. Maintenance etc	62.3	42.0	52.2	8.7	20.3	60.9	11.6	46.4	53.6	47.8	49.3	62.3	44.9
Health	25.6	33.3	25.6	25.6	20.5	46.2	33.3	43.6	46.2	46.2	17.9	33.3	38.5
Transport	-7.0	7.0	-2.3	-7.0	4.7	27.9	9.3	2.3	7.0	0.0	30.2	30.2	11.6
Communication	41.7	8.3	8.3	25.0	25.0	16.7	8.3	33.3	50.0	25.0	16.7	25.0	50.0
Recreation & Culture	30.8	5.1	7.7	-17.9	-2.6	7.7	10.3	-7.7	25.6	23.1	15.4	30.8	23.1
Education	50.0	68.8	50.0	31.3	-6.3	50.0	37.5	37.5	43.8	0.0	18.8	6.3	12.5
Restaurant & Hotels	100.0	33.3	66.7	50.0	66.7	83.3	50.0	33.3	33.3	50.0	50.0	66.7	83.3
Miscellaneous	60.0	42.9	60.0	51.4	48.6	77.1	-2.9	60.0	71.4	40.0	77.1	60.0	45.7
NFNE	38.5	29.3	34.6	19.8	24.9	42.3	11.5	34.6	45.6	37.6	39.1	37.6	28.1

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 (percent)**

Sr. No	Item	Unit	Mar-16		Feb-17		Mar-17	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	1.34	-0.16	-0.64	0.52	0.07	0.55
2	Wheat Flour Bag	10 Kg	-1.01	-0.01	-1.87	-0.14	-1.80	0.06
3	Rice Basmati Sup. Qlty.	Kg	-10.14	0.14	4.34	2.46	5.67	1.42
4	Pulse Masoor (Washed)	Kg	7.38	0.33	-5.04	-4.18	-8.93	-3.78
5	Pulse Moong (Washed)	Kg	-4.34	-0.57	-14.57	-2.42	-17.22	-3.66
6	Pulse Mash (Washed)	Kg	53.99	0.07	-16.96	-6.16	-19.95	-3.54
7	Pulse Gram	Kg	52.32	-0.39	19.17	-12.44	10.00	-8.06
8	Vegetable Ghee (Loose)	Kg	-7.90	0.76	6.93	0.58	5.77	-0.33
9	Sugar Refined	Kg	14.91	-0.21	1.44	-2.47	-2.82	-4.39
10	Milk Fresh (Unboiled)	Ltr	4.10	0.12	3.60	0.16	3.88	0.39
11	Tea- Tapal Danedar	200 Gm	26.28	-7.88	-7.49	1.28	5.99	5.54
12	Beef With Bone Av. Qlty.	Kg	5.78	0.10	2.39	0.23	3.20	0.89
13	Mutton Av. Qlty.	Kg	6.76	0.00	4.71	0.43	5.82	1.06
14	Chicken Farm Broiler (Live)	Kg	-0.51	13.92	11.40	7.91	18.92	21.60
15	Eggs Farm	Doz	-10.49	-16.56	13.29	-8.74	6.79	-21.34
16	Potatoes	Kg	-18.30	1.61	31.91	-2.26	49.92	15.48
17	Onion	Kg	43.44	0.47	-29.93	6.31	-17.60	18.16
18	Tomatoes	Kg	-49.61	-18.67	10.17	28.98	128.17	68.43
19	Ginger	Kg	-19.81	-3.54	-3.11	-1.31	-1.35	-1.79
20	Garlic	Kg	86.24	16.76	32.43	1.32	11.56	-1.64

## 7. Global Commodity Prices

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

Item/ Group	Mar-16		Feb-17		Mar-17	
	YoY	MoM	YoY	MoM	YoY	MoM
<b>Overall</b>	-21.1	10.0	41.3	1.3	23.6	-3.8
Food	-3.1	3.4	12.4	-0.3	5.6	-2.8
Metals	-13.9	6.8	38.4	5.4	28.3	-1.0
Energy	-31.4	15.2	66.2	1.3	36.3	-5.6
Agricultural Raw Material	-13.1	10.3	19.8	0.5	8.4	-0.2
Cotton	-5.6	-1.7	27.9	3.4	32.6	1.9

Source: IMF



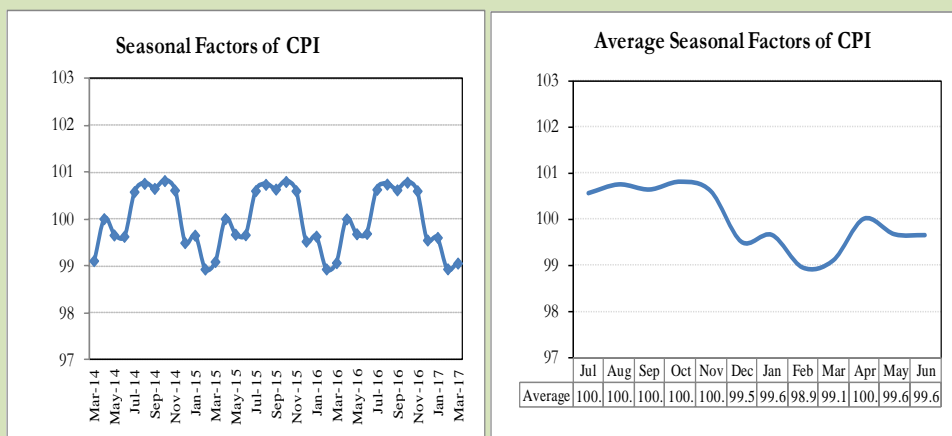
## **8. Seasonal Adjustment in CPI**

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 March 2017 has been used for seasonal adjustment analysis. The seasonal analysis is carried out without taking trading-day or Islamic calendar month's effects.

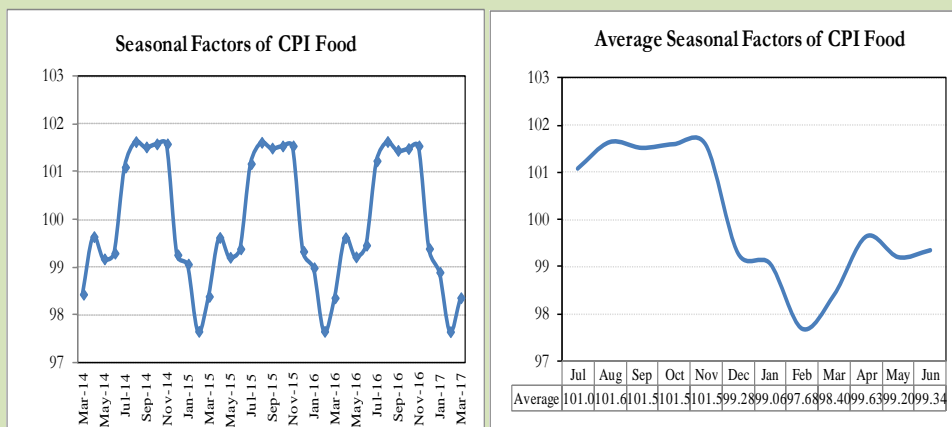
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the 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.

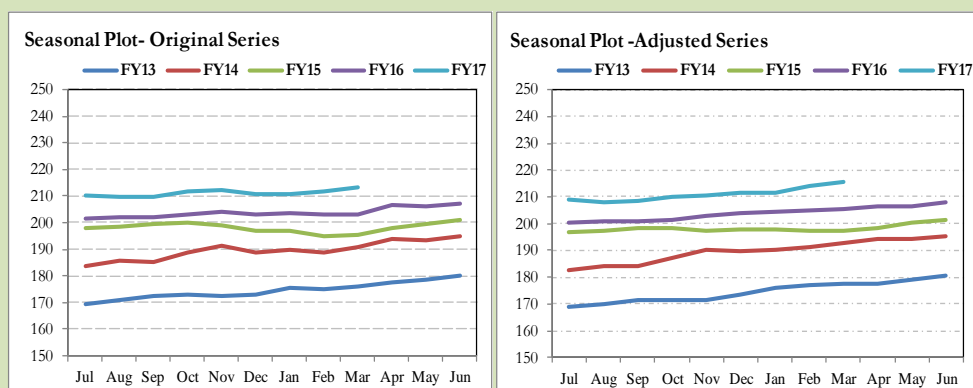
**Fig. 8.2 Seasonal Factors of CPI Food**



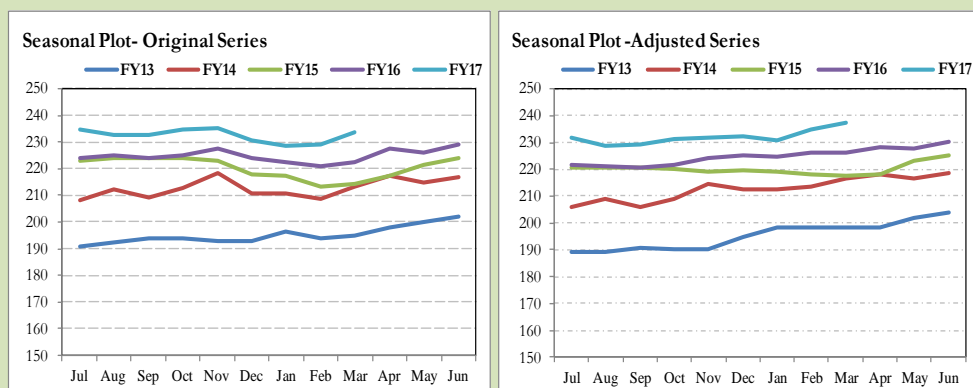
Note: Data Available in Annex Table 17.

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 March 2017 stood at 215.33 against 213.32 in original series showing increase of 2.01 on account of adjustment of downward seasonality in March 2017.

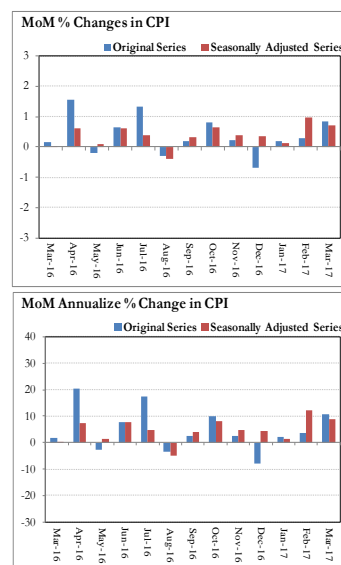
Seasonally adjusted CPI food group for March 2017 stood at 237.36 against 233.47 in original series showing increase of 3.89 on account of adjustment of downward seasonality in March 2017.

Month-on-month change of seasonally adjusted CPI series stood at 0.72% reflecting decrease during March 2017 over previous month and an increase of 0.84% in original series.

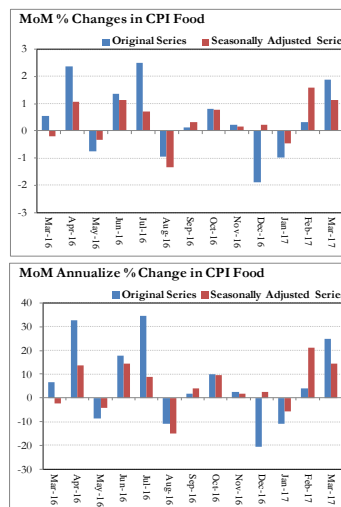
Month-on-month change of seasonally adjusted CPI food group series stood at 1.13% reflecting decrease during March 2017 over previous month and an increase of 1.87% in original series.

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 March 2017 (corresponding to the seasonally adjusted month-on-month rate) is 8.94 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		
		Mar-16	Feb-17	Mar-17	Mar-16	Feb-17	Mar-17
<b>I. Food Group</b>	<b>37.5</b>	<b>0.5</b>	<b>0.3</b>	<b>1.9</b>	<b>3.7</b>	<b>3.7</b>	<b>5.0</b>
Food & Non-Alcoholic Beverages	34.8	0.5	0.3	2.0	2.5	3.1	4.6
Alcoholic Beverages & Tobacco	1.4	0.4	0.4	0.4	27.1	12.4	12.4
Restaurant & Hotels	1.2	0.9	0.3	0.5	5.9	3.9	3.5
<b>II. Non-Food Group</b>	<b>62.5</b>	<b>-0.1</b>	<b>0.3</b>	<b>0.1</b>	<b>4.1</b>	<b>4.6</b>	<b>4.9</b>
Clothing & Footwear	7.6	0.6	0.1	0.1	5.3	4.2	3.6
Housing, Water, Elect, Gas & other Fuels	29.4	0.0	0.0	0.0	5.1	4.8	4.8
Furnishing & Household Equip. Maintenance etc	4.2	0.3	0.2	0.1	4.6	2.5	2.3
Health	2.2	0.8	0.8	0.5	4.8	14.1	13.7
Transport	7.2	-3.3	1.1	0.5	-3.9	0.4	4.4
Communication	3.2	0.1	0.0	0.8	0.4	0.8	1.5
Recreation & Culture	2.0	0.2	0.1	0.1	2.6	1.3	1.2
Education	3.9	0.4	0.2	0.0	9.6	11.3	10.9
Miscellaneous	2.8	1.0	1.0	0.5	4.5	4.7	4.1
<b>Headline</b>	<b>100.0</b>	<b>0.1</b>	<b>0.3</b>	<b>0.8</b>	<b>3.9</b>	<b>4.2</b>	<b>4.9</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)	
		Mar-16	Mar-17	Mar-16	Mar-17	Mar-16	Mar-17	Mar-16	Mar-17	Mar-16	Mar-17
<b>I. Food Group</b>	<b>5.0</b>	<b>123</b>	<b>124</b>	<b>41</b>	<b>25</b>	<b>41</b>	<b>53</b>	<b>17</b>	<b>27</b>	<b>24</b>	<b>19</b>
Food & Non-Alcoholic Beverages	4.6	111	112	41	25	39	47	13	24	18	16
Alcoholic Beverages & Tobacco	12.4	6	6	0	0	0	1	0	2	6	3
Restaurant & Hotels	3.5	6	6	0	0	2	5	4	1	0	0
<b>II. Non-Food Group</b>	<b>4.9</b>	<b>348</b>	<b>348</b>	<b>94</b>	<b>81</b>	<b>147</b>	<b>177</b>	<b>86</b>	<b>68</b>	<b>21</b>	<b>22</b>
Clothing & Footwear	3.6	59	59	7	7	20	37	28	15	4	0
Housing, Water, Elect, Gas & other Fuels	4.8	36	36	5	11	12	11	16	12	3	2
Furnishing & Household Equip. Maintenance etc	2.3	69	69	3	9	47	52	18	8	1	0
Health	13.7	39	39	21	5	11	21	4	6	3	7
Transport	4.4	43	43	28	24	12	13	3	2	0	4
Communication	1.5	12	12	5	3	5	4	1	4	1	1
Recreation & Culture	1.2	39	39	15	19	17	14	5	4	2	2
Education	10.9	16	16	6	1	6	3	0	8	4	4
Miscellaneous	4.1	35	35	4	2	17	22	11	9	3	2
<b>Overall</b>	<b>4.9</b>	<b>471</b>	<b>472</b>	<b>135</b>	<b>106</b>	<b>188</b>	<b>230</b>	<b>103</b>	<b>95</b>	<b>45</b>	<b>41</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 March 2017					
Top 15 Contributors		Weights	YoY Change		Weighted Contribution
Items/ Contributors			Mar-16	Mar-17	
Ranked by Weighted Contribution					
1	House Rent	21.81	5.46	6.62	25.07
2	Education	3.94	9.61	10.90	9.03
3	Milk Fresh	6.68	3.95	3.78	6.52
4	Fresh Fruits	1.86	4.87	14.48	5.96
5	Cigarettes	1.39	27.22	12.55	5.92
6	Tomatoes	0.46	-49.60	128.16	5.53
7	Motor Fuel	3.03	-8.76	10.79	4.35
8	Chicken	1.36	-0.51	18.92	4.34
9	Drug Medicine	1.27	2.84	20.80	4.00
10	Fresh Vegetables	1.62	3.18	11.04	3.61
11	Potatoes	0.49	-18.29	49.92	3.06
12	Meat	2.43	6.11	4.09	2.58
13	Rice	1.58	-12.80	8.14	2.01
14	Tea	0.84	19.18	8.68	1.89
15	Tailoring	0.88	9.75	6.63	1.71
Total		49.65			85.59
Bottom 15 Contributors					
1	Onion	0.56	43.44	-17.60	-2.42
2	Wheat Flour	4.16	0.26	-1.75	-1.58
3	Pulse Mash (Washed)	0.21	53.99	-19.95	-1.46
4	Pulse Moong	0.23	-4.34	-17.22	-1.20
5	Sugar	1.04	14.91	-2.82	-0.65
6	Pulse Masoor	0.27	7.72	-8.98	-0.49
7	Motor Vehicle Accessories	0.24	-4.20	-3.28	-0.18
8	Spices	0.54	1.54	-0.32	-0.04
9	Gur	0.02	6.03	-2.48	-0.01
10	Beans	0.03	-1.94	-0.72	0.00
11	Milk Powder	0.11	3.89	-0.14	0.00
12	Motor Vehicle Tax	0.11	0.00	0.00	0.00
13	Electricity	4.40	2.84	0.00	0.00
14	Gas	1.58	9.92	0.00	0.00
15	Blades	0.03	4.93	0.24	0.00
Total		13.55			-8.03

**Table A3.1: Top and Bottom 15 Contributors to CPI Inflation (MoM) in March 2017**

<u>Top 15 Contributors</u>		<u>MoM Change</u>			Weighted Contribution
Items/ Contributors		Weights	Feb-17	Mar-17	
Ranked by Weighted Contribution					
1	Fresh Fruits	1.86	2.62	12.52	29.58
2	Chicken	1.36	7.91	21.60	27.34
3	Tomatoes	0.46	28.98	68.43	22.57
4	Onion	0.56	6.31	18.16	9.83
5	Potatoes	0.49	-2.26	15.48	6.96
6	Tea	0.84	1.40	5.10	6.49
7	Fresh Vegetables	1.62	0.32	1.98	3.98
8	Milk Fresh	6.68	0.16	0.37	3.75
9	Meat	2.43	0.30	0.95	3.48
10	Motor Fuel	3.03	3.12	1.40	3.47
11	Communication & Apparatus	3.15	0.02	0.88	2.02
12	Personal Care	1.49	1.00	0.94	1.75
13	Rice	1.58	3.53	1.08	1.61
14	Cigarettes	1.39	0.42	0.37	1.09
15	Ready Made Food	1.23	0.27	0.52	0.96
Total		28.17			124.88
Bottom 15 Contributors					
1	Eggs	0.46	-8.74	-21.34	-12.54
2	Sugar	1.04	-2.47	-4.39	-5.84
3	Pulse Gram	0.24	-12.44	-8.06	-3.42
4	Pulse Moong	0.23	-2.42	-3.66	-1.23
5	Pulse Masoor	0.27	-4.25	-4.16	-1.22
6	Pulse Mash (Washed)	0.21	-6.17	-3.54	-1.21
7	Besan	0.15	-9.31	-4.49	-1.17
8	Woolen Readymade Garments	0.40	-0.16	-1.88	-1.11
9	Gram Whole	0.16	-5.92	-4.02	-1.08
10	Fire Wood Whole	0.23	0.22	-0.85	-0.32
11	Spices	0.54	0.23	-0.40	-0.29
12	Fish	0.30	0.62	-0.68	-0.25
13	Dry Fruits	0.25	-0.07	-0.40	-0.15
14	Milk Powder	0.11	0.03	-0.61	-0.09
15	Personal Equipments	0.84	1.34	-0.06	-0.09
Total		5.44			-30.02

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in March 2017					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Mar-16	Mar-17	
A. Ranked by Percentage Change					
1	Tomatoes	0.46	-49.60	128.16	5.53
2	Potatoes	0.49	-18.29	49.92	3.06
3	Gram Whole	0.16	24.11	27.59	0.99
4	Drug Medicine	1.27	2.84	20.80	4.00
5	Chicken	1.36	-0.51	18.92	4.34
6	Besan	0.15	47.78	14.56	0.56
7	Fresh Fruits	1.86	4.87	14.48	5.96
8	Cigarettes	1.39	27.22	12.55	5.92
9	Fresh Vegetables	1.62	3.18	11.04	3.61
10	Education	3.94	9.61	10.90	9.03
11	Motor Fuel	3.03	-8.76	10.79	4.35
12	Medical Equipments	0.01	2.07	10.44	0.02
13	Pulse Gram	0.24	52.32	10.00	0.63
14	Doctor (MBBS) Clinic Fee	0.59	7.02	8.71	1.31
15	Tea	0.84	19.18	8.68	1.89
Total		17.41			51.21
B. Ranked by Weights					
1	House Rent	21.81	5.46	6.62	25.07
2	Milk Fresh	6.68	3.95	3.78	6.52
3	Electricity	4.40	2.84	0.00	0.00
4	Wheat Flour	4.16	0.26	-1.75	-1.58
5	Education	3.94	9.61	10.90	9.03
6	Communication & Apparatus	3.15	0.20	1.42	0.57
7	Motor Fuel	3.03	-8.76	10.79	4.35
8	Transport Services	2.70	-2.71	0.73	0.38
9	Meat	2.43	6.11	4.09	2.58
10	Vegetable Ghee	2.07	-8.71	4.23	1.19
11	Fresh Fruits	1.86	4.87	14.48	5.96
12	Cooking Oil	1.75	-12.83	3.08	0.71
13	Cotton Cloth	1.73	4.40	3.88	1.46
14	Fresh Vegetables	1.62	3.18	11.04	3.61
15	Rice	1.58	-12.80	8.14	2.01
Total		62.93			61.88
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 4.9 percent in March, 2017.					



**Table A3.3: Top Ten Contributors to CPI Food Inflation (YoY) in March 2017**

Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Mar-16	Mar-17	
A. Ranked by Weighted Contribution					
1	Milk Fresh	6.68	3.95	3.78	6.52
2	Fresh Fruits	1.86	4.87	14.48	5.96
3	Cigarettes	1.39	27.22	12.55	5.92
4	Tomatoes	0.46	-49.60	128.16	5.53
5	Chicken	1.36	-0.51	18.92	4.34
6	Fresh Vegetables	1.62	3.18	11.04	3.61
7	Potatoes	0.49	-18.29	49.92	3.06
8	Meat	2.43	6.11	4.09	2.58
9	Rice	1.58	-12.80	8.14	2.01
10	Tea	0.84	19.18	8.68	1.89
Total		18.72			41.43
B. Ranked by Percentage Change					
1	Tomatoes	0.46	-49.60	128.16	5.53
2	Potatoes	0.49	-18.29	49.92	3.06
3	Gram Whole	0.16	24.11	27.59	0.99
4	Chicken	1.36	-0.51	18.92	4.34
5	Besan	0.15	47.78	14.56	0.56
6	Fresh Fruits	1.86	4.87	14.48	5.96
7	Cigarettes	1.39	27.22	12.55	5.92
8	Fresh Vegetables	1.62	3.18	11.04	3.61
9	Pulse Gram	0.24	52.32	10.00	0.63
10	Tea	0.84	19.18	8.68	1.89
Total		8.57			32.50
C. Ranked by Weights					
1	Milk Fresh	6.68	3.95	3.78	6.52
2	Wheat Flour	4.16	0.26	-1.75	-1.58
3	Meat	2.43	6.11	4.09	2.58
4	Vegetable Ghee	2.07	-8.71	4.23	1.19
5	Fresh Fruits	1.86	4.87	14.48	5.96
6	Cooking Oil	1.75	-12.83	3.08	0.71
7	Fresh Vegetables	1.62	3.18	11.04	3.61
8	Rice	1.58	-12.80	8.14	2.01
9	Cigarettes	1.39	27.22	12.55	5.92
10	Chicken	1.36	-0.51	18.92	4.34
Total		24.91			31.27
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 5.0 percent in March, 2017.					

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in March 2017					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Mar-16	Mar-17	
A. Ranked by Weighted Contribution					
1	House Rent	21.81	5.46	6.62	25.07
2	Education	3.94	9.61	10.90	9.03
3	Motor Fuel	3.03	-8.76	10.79	4.35
4	Drug Medicine	1.27	2.84	20.80	4.00
5	Tailoring	0.88	9.75	6.63	1.71
6	Personal Care	1.49	3.26	4.97	1.58
7	Cotton Cloth	1.73	4.40	3.88	1.46
8	Doctor (MBBS) Clinic Fee	0.59	7.02	8.71	1.31
9	Woolen Cloth	0.88	4.18	4.67	0.99
10	Personal Equipments	0.84	6.23	3.61	0.86
Total		36.47			50.36
B. Ranked by Percentage Change					
1	Drug Medicine	1.27	2.84	20.80	4.00
2	Education	3.94	9.61	10.90	9.03
3	Motor Fuel	3.03	-8.76	10.79	4.35
4	Medical Equipments	0.01	2.07	10.44	0.02
5	Doctor (MBBS) Clinic Fee	0.59	7.02	8.71	1.31
6	Tailoring	0.88	9.75	6.63	1.71
7	House Rent	21.81	5.46	6.62	25.07
8	Personal Care	1.49	3.26	4.97	1.58
9	Construction Wage Rate	0.33	7.87	4.68	0.35
10	Motor Vehicle	0.66	0.81	4.67	0.51
Total		34.02			47.93
C. Ranked by Weights					
1	House Rent	21.81	5.46	6.62	25.07
2	Electricity	4.40	2.84	0.00	0.00
3	Education	3.94	9.61	10.90	9.03
4	Communication & Apparatus	3.15	0.20	1.42	0.57
5	Motor Fuel	3.03	-8.76	10.79	4.35
6	Transport Services	2.70	-2.71	0.73	0.38
7	Cotton Cloth	1.73	4.40	3.88	1.46
8	Gas	1.58	9.92	0.00	0.00
9	Footwear	1.55	0.64	0.89	0.23
10	Personal Care	1.49	3.26	4.97	1.58
Total		45.39			42.67
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 4.9 percent in March, 2017.					

**Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: March 2017**

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	Pulse Mash (Washed), Onion, Pulse Moong (Washed), Pulse Masoor (Whole), Pulse Masoor (Washed)	Samosa (Vegetable), Fruit Juice Tetra Pack, Toffee (Hilal), Milo 200 Gm., Pickles Ahmed/Mitchelles, Milk Fresh (Unboiled)	Pulse Gram, Carrot, Bananas, Coconut Dry Av.Qlty., Rice Irri-6/9 (Sindh/Punj), Groundnuts (With Shell), Cardamom Small Av.Qlty	Tomatoes, Potatoes, Gram Whole Yellow Av.Qlty, Cauliflower, Lemon, Cabbage, Kinnu, Apple, Chicken Farm Broiler (Live), Chillies Green, Tea Lipton Yellow Label 200 Gm, Besan Av. Qlty., Malta/Mosambi, Garlic
Alcoholic Beverages & Tobacco		Betel Leaves	Cigarettes Gold Leaf 20,S, Betel Nuts	Cigarettes Morven Gold 20,S, Cigarettes Capstan 20,S, Cigarettes K-20,S
Clothing & Footwear	Sewing Thread/Reel, Gents Shoe, Art 1109 Servis, Child Shoe Power Lite Bata, Sports Shoes, Ladies Spoung Chappal Bata, Ladies Sandal Bata	Gloves Av.Qlty, Long Cloth 57" Gul Ahmed/Al Karam, Tropical Suiting Law.Pur, Foot Wear Local (Children), Brassier Av.Qlty, Lawn Printed Gul Ahmed	Heavy Wt Suiting Law.Pur Av. Qlty, Tailoring Charges Pant (Men), Frock W/Wear Girls, Tailoring Suit (Female), Tailoring Awami-Suit (Male), Secondhand Winter Jacket	
Housing, Water, Elect, Gas & other Fuels	Elect.Charges Upto 50 Units, Elect.Charges 01 - 100 Units, Elect.Charges Above 1000 Units	Carpanter Wage Rate, Kerosene Oil, Electrician Wage Rate(P/Day), Firewood Whole, Sand (Black Pit Sand), Water Charges Per House	Bajree, Bricks (New) 1st Class, Cement Blocks (6"X8"X12"), Iron Bar (M.S. Bar) 1/2" House Rent For Q-Iv, House Rent For Q-Ii, House Rent For Q-V, House Rent (Combined)	
Furnishing & Household Equip. Maintenance etc	Washing Powder 1000 Grm (Express), Match Box (Small), Sewing Machine Needle (Singer), Dari Cotton (6X2 1/2)	Boot Polish Cherry/Kiwi 50 Ml, Aluminium Cooking Pan, Blanket (90" X 54"), Tea Set Pak. China Wear 21 Pcs, Dinner Set Plastic 72 Pcs	Sewing Machine (Singer), Chair Shesham Wood, Robin Blue (35 Gms), Thermos Starvac 1 Ltr, Elect. Iron Philips	
Health	Saniplast (1 Putty), Galxos-D (450 Gm), Betnesol Eye Drops, Sancos Syrup (50 ML), Vicks Vaporub/ Balm	O.R.S. (Nimcol), Blood Test (Cp) Charges, Sugar Test (Random/Fasting), Urine Test (Dr) Charges, Panadol Tab. Extra/Plain	Doctor (Mbbs) Clinic Fee, Thermometer China, Ear Drops (Cardisporine), Disprin Tab., Hydryllin Syrup 120 ML, Brufen Tabs 200-Mg.	Burnol Cream 30 Gm, Lederplex Syrup, Dettol (Medium), Entox Tab., Jouhar Joshanda, Septran Tablets, Cotton Bandage 2" - 4"
Transport	Tyre Motor Cycle Without Tube, Tyre Car With Tube General, Tyre Cycle, Plateform Ticket, Motor Cycle Hero 70 Cc	Tyre Puncture Charges, Suzuki Fare Maximum Wityin City, Car Suzuki 800 Cc (W/O. Ac), Cycle Overhauling Charges, Taxi 4 Seater Fare, Cng	Car Toyota 1300 Cc, Car Suzuki 1000 Cc	Gas Cylinder S.Size (L.P.G), Petrol Super, High Speed Diesel Hsd, Car Honda Civic 1500 Cc
Communication	Postal Envelope Domestic, Telephone Charges Local Call, Telephone Charges Outside City	Mobile Cell Charges, Mobile Set Nokia/Sony/Ericsson Av.Qlty, Postal Envelope For Saudi Arabia	T.C.S. Ch. Min.Within Zone, Internet Charges, Telephone Set Av. Qlty, Fax Charges (Local)	Postal Registration Charges,
Recreation & Culture	Urdu Book Class V (T.B.Board), Computer Cd (Tdk/Imation), English Book Class Ix Or X, Urdu Book Class Ix/X (T.B.Board)	Daily "Dawn", Cinema A/C High Class, Fountain Pen Hero/Wings/China, Maths Book Class Ix Or X, Exercise Book Lined 80/10, Paper Fool Scape (27"X17")	Pencil Goldfish/Deer, Ball Pen (Local), Daily "Jang", Daily "Nawa-E-Waqt"	Maths Book Calss V (T.B.Board), Cinema Non-A/C High Class
Education	Mba Tuition Fee	Pvt Med.College Fee Mbbs(1st Year), Govt. College Fee Ist. Year, Govt. College Fee 4Th. Year	Govt. Med. College Fee Mbbs Ist Year, Pvt School Fee Eng.Med (Class-I)	Govt. Engg. Coll. Fee Ist Year, Govt. University Fee Msc/ Ma, I.T. Tuition Fees, Pvt Eng.Colege Fee (Ist Year)
Restaurant & Hotels		Cooked Mutton (Av. Hotel), Cooked Beef (Av. Hotel), Tea Prepared (Ordinary)	Cooked Dal (Av. Hotel)	
Miscellaneous	Shampoo Sunsilk/Pantene 100 MI, Toothpaste Macleans 70 Gms	Shaving Cream Touch-Me/Admiral, Artificial Jewellery Set, Beauty Parlour Hair Style Charges	Gel Medium Size, Suitcase Rexin (24"X16"X6"), Silver Tezabi 24 Ct, Hair Oil Amla/Chambeli	Toilet Soap Lifebouy 140 Gms, Toothpowder Dentonic 90 Gms

**Table A5: City- wise CPI Inflation by Income Groups, March 2017**

	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	0.9	6.6	1.6	6.8	0.0	6.3	0.8	7.2	1.7	7.2	0.0	7.2
2 Islamabad	0.8	5.6	1.5	5.5	-0.1	5.8	0.8	5.5	1.5	5.6	0.1	5.3
3 Lahore	1.4	5.2	2.5	7.1	-0.2	2.7	1.5	5.4	2.9	7.6	-0.1	2.9
4 Gujranwala	1.3	4.8	2.4	3.4	0.0	6.4	1.4	0.8	2.7	3.7	0.1	-2.2
5 Sialkot	0.6	1.7	1.2	1.5	-0.1	1.9	0.7	2.3	1.3	2.2	0.0	2.4
6 Faisalabad	1.6	6.6	3.1	7.3	-0.1	5.8	1.6	6.9	3.1	7.8	-0.1	5.9
7 Multan	1.2	3.8	2.1	3.5	0.1	4.1	1.2	4.2	2.2	3.9	0.1	4.5
8 Sargodha	1.5	3.4	2.5	4.4	0.3	2.4	1.4	3.6	2.5	4.8	0.3	2.4
9 Bahawalpur	0.8	5.4	1.5	3.7	0.1	7.1	0.8	6.3	1.5	4.2	0.2	8.4
10 Karachi	1.1	4.5	2.1	4.7	-0.2	4.4	1.1	4.8	2.2	5.2	-0.1	4.4
11 Hyderabad	1.2	4.6	2.1	4.2	0.1	5.1	1.2	4.6	2.0	4.4	0.1	4.8
12 Sukkur	1.1	3.9	1.3	3.8	0.9	4.1	1.2	4.1	1.2	3.8	1.3	4.4
13 Larkana	1.3	8.3	2.2	8.6	0.4	8.0	1.2	8.1	2.1	8.3	0.4	7.9
14 Peshawar	0.7	2.7	1.2	3.3	0.0	2.0	0.5	2.7	1.0	3.1	0.0	2.4
15 Bannu	0.9	4.2	1.8	3.0	0.0	5.5	0.7	5.3	1.6	3.3	-0.2	7.3
16 Quetta	1.1	3.8	2.0	2.8	0.1	5.1	0.9	3.6	1.8	2.7	0.0	4.6
17 Khuzdar	-0.2	1.1	0.3	0.1	-0.8	2.3	0.0	0.5	0.2	-0.5	-0.2	1.7
	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	0.9	7.3	1.7	7.5	0.1	7.2	0.9	7.2	1.9	8.0	0.1	6.6
2 Islamabad	0.9	5.5	1.7	5.9	0.2	5.1	0.9	5.7	1.9	6.4	0.1	5.1
3 Lahore	1.5	5.8	2.9	7.8	0.1	3.6	1.5	5.7	3.0	8.3	0.0	3.2
4 Gujranwala	1.6	5.2	2.8	4.2	0.4	6.2	1.6	5.1	2.9	4.7	0.5	5.4
5 Sialkot	0.8	2.3	1.4	2.2	0.2	2.3	0.7	2.0	1.3	2.5	0.2	1.6
6 Faisalabad	1.5	7.7	3.0	8.4	0.1	7.0	1.3	7.9	2.8	8.7	0.0	7.3
7 Multan	1.3	4.7	2.3	4.1	0.3	5.3	1.3	4.8	2.5	4.3	0.2	5.1
8 Sargodha	1.4	4.7	2.5	5.4	0.5	4.1	1.3	5.4	2.5	5.8	0.4	5.0
9 Bahawalpur	0.8	6.7	1.6	4.7	0.2	8.5	0.8	7.5	1.8	5.0	0.1	9.4
10 Karachi	1.2	5.2	2.3	5.7	0.1	4.8	1.1	5.2	2.3	6.1	0.0	4.4
11 Hyderabad	1.1	4.7	1.9	4.6	0.3	4.9	1.0	4.8	2.0	4.8	0.2	4.8
12 Sukkur	1.4	4.5	1.1	3.8	1.7	5.2	1.4	4.4	1.3	4.1	1.5	4.6
13 Larkana	1.2	8.2	2.1	8.1	0.5	8.4	1.1	7.7	1.9	7.8	0.5	7.7
14 Peshawar	0.6	2.9	1.1	3.3	0.1	2.7	0.5	2.8	1.2	3.5	0.0	2.3
15 Bannu	0.8	5.0	1.7	3.5	0.0	6.4	0.7	5.3	1.6	4.1	-0.1	6.2
16 Quetta	0.9	3.7	1.7	2.8	0.1	4.6	0.9	4.0	1.8	3.3	0.1	4.5
17 Khuzdar	0.0	1.0	0.1	-0.1	-0.1	2.2	-0.2	1.1	-0.2	-0.1	-0.1	2.2
	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	0.7	7.0	1.9	8.0	0.1	6.6	0.8	7.1	1.9	7.8	0.0	6.6
2 Islamabad	0.6	5.7	1.9	6.7	-0.1	5.2	0.6	5.7	1.9	6.5	-0.3	5.1
3 Lahore	1.3	5.4	3.3	9.5	0.1	3.0	1.4	5.5	3.1	8.6	0.0	3.0
4 Gujranwala	1.4	5.5	3.2	5.1	0.6	5.7	1.5	5.1	2.9	4.4	0.5	5.6
5 Sialkot	0.6	2.1	1.3	2.4	0.3	1.9	0.7	2.1	1.3	2.4	0.2	1.9
6 Faisalabad	1.0	7.9	2.7	8.9	0.1	7.4	1.3	7.5	2.9	8.3	0.2	7.0
7 Multan	1.0	5.9	2.8	4.5	0.2	6.6	1.1	5.0	2.5	4.2	0.2	5.7
8 Sargodha	1.0	6.9	2.4	6.4	0.5	7.2	1.3	5.1	2.5	5.5	0.6	4.9
9 Bahawalpur	0.6	9.0	1.7	4.6	0.1	11.0	0.7	7.4	1.6	4.4	0.2	9.3
10 Karachi	0.8	4.7	2.2	6.3	0.0	3.9	0.9	4.9	2.3	6.0	-0.1	4.0
11 Hyderabad	0.9	4.9	2.3	5.2	0.2	4.8	1.0	4.7	2.1	4.8	0.2	4.6
12 Sukkur	1.2	4.6	1.3	3.9	1.2	5.0	1.3	4.3	1.3	4.0	1.3	4.6
13 Larkana	1.0	7.9	2.0	7.7	0.6	8.0	1.2	8.0	2.0	8.1	0.6	7.9
14 Peshawar	0.5	3.4	1.3	3.8	0.1	3.2	0.5	3.1	1.2	3.5	0.1	2.8
15 Bannu	0.4	6.9	1.3	3.6	0.0	8.6	0.7	5.3	1.6	3.6	0.1	6.4
16 Quetta	0.7	4.1	1.7	3.5	0.3	4.4	0.8	3.9	1.7	3.1	0.2	4.4
17 Khuzdar	0.0	1.0	0.0	-1.6	-0.1	2.4	-0.1	0.9	0.1	-0.2	-0.2	1.7

**Table A6: City- wise CPI Inflation (YoY) March, 2017**

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Mianwali	11.0	8.2	12.8	Turbat	4.8	1.8	6.6
Abbottabad	8.6	5.7	10.5	Hyderabad	4.7	4.8	4.6
Gawadar	8.1	9.4	7.3	Jehlum	4.5	5.9	3.6
Rahim Yar Khan	8.1	8.3	8.0	Jhang	4.5	4.8	4.3
Larkana	8.0	8.1	7.9	Muzaffargarh	4.4	4.2	4.5
Faisalabad	7.5	8.3	7.0	Sukkur	4.3	4.0	4.6
Bahawalpur	7.4	4.4	9.3	Mithi	4.1	6.2	2.8
Rawalpindi	7.1	7.8	6.6	Mirpur Khas	4.0	6.0	2.7
Bahawalnagar	6.8	6.0	7.3	D. I. Khan	4.0	1.1	6.0
Sahiwal	6.7	8.3	5.8	Quetta	3.9	3.1	4.4
Attock	6.4	8.3	5.2	Wazirabad	3.9	5.3	2.9
Vehari	6.0	3.3	8.0	Nawabshah	3.3	5.8	1.8
Islamabad	5.7	6.5	5.1	Peshawar	3.1	3.5	2.8
Lahore	5.5	8.6	3.0	D. G. Khan	2.9	2.4	3.2
Dadu	5.4	7.8	3.7	Mardan	2.2	3.5	1.5
Loralai & Cantt	5.3	2.5	7.3	Sialkot	2.1	2.4	1.9
Bannu	5.3	3.6	6.4	Khuzdar	0.9	-0.2	1.7
Sargodha	5.1	5.5	4.9				
Gujranwala	5.1	4.4	5.6				
Multan	5.0	4.2	5.7				
Mingora	5.0	2.8	6.4				
Dera Mrd.Jamali	5.0	5.3	4.7				
Karachi	4.9	6.0	4.0				

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>Mar-16</b>	<b>Feb-17</b>	<b>Mar-17</b>	<b>Mar-16</b>	<b>Feb-17</b>	<b>Mar-17</b>
<b><u>Up to Rs. 8000</u></b>						
General	0.2	0.2	0.9	3.7	3.7	4.5
Food	0.4	0.2	1.7	3.5	2.9	4.2
Non-food	0.0	0.2	0.1	4.0	4.7	4.8
<b><u>Rs. 8001- 12000</u></b>						
General	0.3	0.2	0.9	4.1	3.9	4.5
Food	0.5	0.3	1.8	3.5	3.2	4.6
Non-food	0.1	0.2	0.1	4.7	4.5	4.5
<b><u>Rs. 12001- 18000</u></b>						
General	0.2	0.3	0.9	3.4	4.0	4.8
Food	0.5	0.3	1.8	3.7	3.5	4.8
Non-food	-0.1	0.2	0.1	3.2	4.4	4.7
<b><u>Rs. 18001- 35000</u></b>						
General	0.2	0.3	0.9	4.1	4.1	4.9
Food	0.5	0.3	1.9	3.9	3.8	5.2
Non-food	-0.2	0.2	0.1	4.4	4.4	4.7
<b><u>Above Rs. 35000</u></b>						
General	0.1	0.3	0.7	4.0	4.4	5.1
Food	0.6	0.4	1.9	3.8	4.0	5.4
Non-food	-0.1	0.3	0.2	4.2	4.7	5.0
<b><u>All income groups</u></b>						
General	0.1	0.3	0.8	3.9	4.2	4.9
Food	0.5	0.3	1.9	3.7	3.7	5.0
Non-food	-0.1	0.3	0.1	4.1	4.6	4.9

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices	Percentage change	
			Mar-17	YoY	MoM
1	Wheat	10Kg.	349.6	-1.4	0.0
2	Wheat Flour Bag	10Kg.	386.7	-2.1	0.0
3	Rice Basmati Broken	Kg.	65.2	8.7	1.8
4	Rice Irri-6	Kg.	49.4	6.8	0.0
5	Bread Plain Med. Size (340-400 Gm.)	Each	41.1	0.7	0.0
6	Beef	Kg.	331.8	4.3	1.2
7	Mutton	Kg.	672.5	6.0	1.5
8	Chicken Live (Farm)	Kg.	172.7	11.1	27.8
9	Milk Fresh	Litr	80.8	3.2	0.4
10	Curd	Kg.	94.8	2.5	0.3
11	Milk Powdered Nido	500G	373.9	-1.3	-0.6
12	Egg Hen (Farm)	Doz.	90.2	14.4	-19.3
13	Mustard Oil	Kg.	181.8	1.6	-0.2
14	Cooking Oil (Tin)	2.5Ltr	466.1	2.3	0.5
15	Veg. Ghee (Tin)	2.5Kg.	459.2	3.2	0.7
16	Veg. Ghee Loose	Kg.	145.7	6.2	0.4
17	Bananas	Doz.	82.4	9.6	11.1
18	Masoor Pulse Washed	Kg.	130.0	-10.9	-3.2
19	Moong Pulse Washed	Kg.	130.1	-18.0	-2.1
20	Mash Pulse Washed	Kg.	188.7	-26.9	-4.3
21	Gram Pulse Washed	Kg.	130.0	9.1	-6.4
22	Potatoes	Kg.	28.8	48.0	15.9
23	Onions	Kg.	33.5	-17.7	9.8
24	Tomatoes	Kg.	80.7	136.2	102.7
25	Sugar	Kg.	60.4	-4.0	-4.3
26	Gur	Kg.	84.2	-1.6	-1.3
27	Salt Powdered Loose (Lahori)	Kg.	10.7	2.3	0.0
28	Red Chilies Powder Loose	Kg.	266.7	-2.7	-1.0
29	Garlic	Kg.	300.5	11.2	-2.5
30	Tea (Yellow Label )	200Gm.	196.0	20.7	9.6
31	Cooked Beef Plate	Each	93.3	4.5	0.6
32	Cooked Dal Plate	Each	56.9	5.3	0.0
33	Tea Prepared (Sada)	Cup	20.6	5.3	0.0
34	Cigarettes K-2 (20'S)	20'S	67.2	12.3	0.3
35	Long Cloth (Coarse Latha)	Mtr.	205.6	1.4	0.0
36	Shirting	Mtr.	164.3	1.5	0.0
37	Lawn	Mtr.	251.2	3.0	0.0
38	Georgette (Voil Printed)	Mtr.	124.1	0.7	0.0
39	Sandal Gents Bata	Pair	699.0	0.0	0.0
40	Chappal Spong. Bata (Gents)	Pair	179.1	0.1	0.0
41	Sandal Ladies Bata	Pair	502.4	0.1	0.0
42	Electric Charges 1-50	Unit	2.0	0.0	0.0
43	Gas Charges upto 3.3719	Mmbtu	128.7	0.2	0.0
44	Kerosene	Litr	78.9	6.0	1.2
45	Firewood	40Kg	609.3	0.9	-0.5
46	Energy Savor 14 Watts	Each	167.8	0.3	0.0
47	Washing Soap (200-250 Gm.)	Cake	25.9	4.5	0.0
48	Match Box	Each	2.2	9.5	0.0
49	Petrol	Litr	73.8	16.3	3.1
50	Diesel	Litr	82.9	15.2	2.6
51	L.P.G.( 11 Kg Cylinder.)	Each	1117.9	28.2	-6.1
52	Tele. Local Call	Call	3.9	0.0	0.0
53	Bath Soap Lifebuoy (Standard)	Cake	38.9	9.2	1.8
Maximum				136.2	102.7
Median				3.0	0.0
Minimum				-26.9	-19.3

<b>Table A9: Distribution of Price Changes (YoY) - WPI Items: March 2017</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>	Hides And Fur Skins,Raw, Millet/Bajra, Sorghum/Jowar, Stimulant And Spice Crops, Sugar Crops, Dry Fruits, Maize, Wheat	Milk From Bovine Animals, Raw Animal Material/Wool	Vegetables, Fresh Fruits, Cotton Seeds, Eggs, Pulses, Fuel Wood In Logs	Edible Roots/Potatos, Fish Live Fresh Or Chilled, Fibre Crops, Poultry, Unmanufactured Tobacco, Other Oil Seeds, Rice
<b>Ores &amp; Minerals, Electricity Gas &amp; Water</b>	Coal Not Agglomerated, Salt & Pure Sodium Chloride, Electrical Energy	Natural Gas Liquified		
<b>Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products</b>	Sugar Refined, Nylon Yarn, Wheat Flour, Chocolate, Milk And Cream In Solid Form, Silk And Reyon Fabrics, Bed Sheets, Beverages, Other Leather N.E.C, Leather With Out Hair	Footwears, Vegetable Oil Refined, Blended Yarn, Towels, Other Fabrics, Dairy Products N.E.C, Fruit Juices, Mineral Water, Cotton Fabrics, Blankets, Ready Made Garments, Synthetic Carpets, Quilts, Oil Cakes, Other Food Products, Spices	Ice Cream, Hosiery Products, Woolen Carpets, Sugar Confectionary, Coffee And Tea, Vegetable Ghee, Processed Liquid Milk, Dried Fruits & Nuts, Meat Of Animals	Cotton Yarn, Tobbaco Products, Woven Fabrics, Other Cereal Flour, Vegetables & Fruit Juices
<b>Other Transportable Goods except Metal Products, Machinery and Equipments</b>	Fertilizers, Chemicals, Auto Tyres, Pesticides, Plastic Products, Paints & Varnishes, Coke, Dying Materials	Cement, Ceramics And Sanitary, Timber, Printing Paper, Bed Foams, Bricks Blocks And Tiles, Matches, Kerosine Oil, Mobil Oil	Insecticised, Soaps & Detergent	Furnace Oil, Glass Sheets, Other Glass Articles, Motor Sprit, Diesel Oil, Hard Board, Medicines
<b>Metal Product Machinery &amp; Equipment</b>	Cultivators, Tractors, Air Conditioners, Motor Cycles, Pig Iron, Concrate Mixer	Electrical Wires, Refrige,Wash& Sew Mach,Iron,Fan, Motor Vehicales, Chuff Cutter, Lighting Equipments, Bicycles, Steel Products	Steel Bars & Sheets, Vacuum Pumps, Engines And Motors	Lathe Machines, Pipe Fittings, Radio And Television



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

Items and specification	Weights	Index		
		Mar-16	Feb-17	Mar-17
<b>General</b>	<b>100.00</b>	<b>203.28</b>	<b>211.54</b>	<b>213.32</b>
<b>Food &amp; Non-Alcoholic Beverages.</b>	<b>34.83</b>	<b>216.13</b>	<b>221.66</b>	<b>226.16</b>
1 Wheat	0.35	208.84	207.84	208.99
2 Wheat Flour	4.16	216.95	213.15	213.15
3 Wheat Product	0.10	212.36	216.39	216.57
4 Besan	0.15	258.58	310.18	296.24
5 Rice	1.58	157.09	168.06	169.87
6 Cereals	0.16	248.03	253.65	253.81
7 Bakery & Confectionary	1.16	212.37	216.92	217.20
8 Nimco	0.46	244.62	250.62	250.97
9 Meat	2.43	260.17	268.26	270.81
10 Chicken	1.36	169.42	165.68	201.47
11 Fish	0.30	216.71	219.56	218.06
12 Milk Fresh	6.68	259.52	268.32	269.32
13 Milk Product	0.63	251.48	258.54	258.90
14 Milk Powder	0.11	235.07	236.18	234.74
15 Egg	0.46	169.12	229.60	180.60
16 Mustard Oil	0.10	155.95	158.04	157.82
17 Cooking Oil	1.75	132.58	135.95	136.67
18 Vegetable Ghee	2.07	136.29	141.52	142.06
19 Dry Fruits	0.25	261.11	264.98	263.92
20 Fresh Fruits	1.86	221.54	225.40	253.63
21 Pulse Masoor	0.27	202.97	192.76	184.74
22 Pulse Moong	0.23	298.42	256.42	247.04
23 Pulse Mash (Washed)	0.21	348.96	289.59	279.33
24 Pulse Gram	0.24	267.42	319.93	294.15
25 Gram Whole	0.16	222.26	295.48	283.59
26 Beans	0.03	231.25	232.05	229.58
27 Potatoes	0.49	125.41	162.81	188.01
28 Onion	0.56	248.77	173.49	204.99
29 Tomatoes	0.46	93.51	126.67	213.35
30 Fresh Vegetable	1.62	203.43	221.50	225.89
31 Sugar	1.04	223.13	226.80	216.84
32 Gur	0.02	267.43	267.08	260.80
33 Honey	0.04	307.12	322.20	323.63
34 Sweet Meet	0.25	239.96	246.37	247.44
35 Beverages	1.20	215.86	218.90	219.43
36 Jam, Tomato Ketchup & Pickle	0.25	211.82	216.89	217.05
37 Condiments	0.27	261.12	266.55	266.36
38 Spices	0.54	238.67	238.85	237.90
39 Tea	0.84	261.29	270.18	283.96
<b>Alcoholic Beverages, Tobacco</b>	<b>1.41</b>	<b>338.77</b>	<b>379.55</b>	<b>379.55</b>
40 Cigarette	1.39	340.48	381.80	383.20
41 Betel Leaves & Nuts	0.02	234.38	243.31	242.66
<b>Clothing &amp; Footwear</b>	<b>7.57</b>	<b>226.40</b>	<b>226.40</b>	<b>234.34</b>
42 Cotton Cloth	1.73	218.51	226.39	226.99
43 Woolen Cloth	0.88	243.45	254.92	254.82
44 Ready Made Garment	0.97	232.44	239.59	240.15
45 Woolen Readymade Garments	0.40	252.77	264.98	260.01
46 Hosiery	0.51	239.97	245.96	246.06
47 Dopatta	0.44	240.45	243.52	243.87
48 Cleaning & Laundering	0.21	252.25	261.12	261.93

<b>Table A10: Consumer Price Index Numbers by Major Groups and Composite Commodities</b>				
<b>Items and specification</b>	<b>Weights</b>	<b>Index</b>		
		<b>Mar-16</b>	<b>Feb-17</b>	<b>Mar-17</b>
49 Tailoring	0.88	292.19	310.54	311.57
50 Footwear	1.55	165.51	166.91	166.99
<b>Housing,Water,Elect,Gas &amp; Other Fuel</b>		<b>29.41</b>	<b>185.48</b>	<b>194.45</b>
51 House Rent	21.81	174.32	185.86	185.86
52 Construction Input Item	0.56	241.67	249.82	250.25
53 Construction Wage Rate	0.33	225.24	235.67	235.79
54 Water Supply	0.50	161.10	164.74	164.74
55 Electricity	4.40	238.10	238.10	238.10
56 Gas	1.58	158.08	158.08	158.08
57 Kerosene Oil	0.01	191.37	198.47	198.79
58 Fire Wood Whole	0.23	283.78	293.08	290.59
<b>Furnished H.Hold Equip.&amp; Maint. Etc</b>		<b>4.21</b>	<b>219.50</b>	<b>224.32</b>
59 Furniture	0.33	210.00	216.40	216.92
60 Household Textile	0.65	219.62	226.59	226.73
61 Household Equipment	0.59	176.51	179.63	180.25
62 Utensils	0.32	221.38	227.90	229.10
63 Plastic Products	0.25	206.73	209.42	209.59
64 Washing Soap & Detergent	0.79	225.20	230.50	230.42
65 Sewing Needle & Dry Cell	0.15	205.05	204.96	205.59
66 Household Servant	1.04	245.77	249.98	249.98
67 Marriage Hall Charges	0.08	238.96	244.86	245.66
<b>Health</b>		<b>2.19</b>	<b>185.68</b>	<b>210.17</b>
68 Drug Medicine	1.27	152.54	183.60	184.27
69 Medical Equipment	0.01	227.28	250.20	251.01
70 Doctor (MBBS) Clinic Fee	0.59	255.23	275.73	277.47
71 Medical Test	0.32	187.50	193.51	194.69
<b>Transport</b>		<b>7.20</b>	<b>168.25</b>	<b>174.75</b>
72 Motor Vehicle	0.66	165.19	172.13	172.91
73 Motor Vehicle Accessories	0.24	220.51	213.44	213.27
74 Motor Fuel	3.03	133.68	146.07	148.11
75 Mechanical Service	0.46	223.78	229.62	229.92
76 Motor Vehicle Tax	0.11	210.18	210.18	210.18
77 Transport Services	2.70	191.93	193.34	193.34
<b>Communication</b>		<b>3.22</b>	<b>130.74</b>	<b>131.58</b>
78 Postal Services	0.07	237.90	246.00	246.14
79 Communication & Apparatus	3.15	128.49	129.17	130.31
<b>Recreation &amp; Culture</b>		<b>2.02</b>	<b>194.71</b>	<b>196.88</b>
80 Recreation & Culture	0.86	128.83	129.61	129.62
81 Text Books	0.57	290.62	292.41	292.41
82 News Papers	0.19	175.49	179.59	180.53
83 Stationery	0.40	209.56	214.35	215.22
<b>Education</b>		<b>3.94</b>	<b>210.99</b>	<b>233.96</b>
84 Education	3.94	210.99	233.96	233.98
<b>Restaurants And Hotels</b>		<b>1.23</b>	<b>261.80</b>	<b>269.63</b>
85 Ready Made Food	1.23	261.80	269.63	271.02
<b>Miscellaneous Goods And Services</b>		<b>2.76</b>	<b>232.55</b>	<b>241.06</b>
86 Personal Care	1.49	213.45	221.97	224.06
87 Cosmetics	0.39	198.43	203.29	203.77
88 Blades	0.03	195.05	196.91	195.52
89 Personal Equipments	0.84	283.36	293.78	293.59

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

Items and Specifications	Index		
	Mar-16	Feb-17	Mar-17
<b>General</b>	<b>204.22</b>	<b>215.86</b>	<b>217.29</b>
<b>Agriculture Forestry &amp; Fishery</b>	<b>221.02</b>	<b>243.57</b>	<b>247.41</b>
1 Wheat	218.68	215.69	215.36
2 Maize	193.96	187.42	188.80
3 Rice	143.85	157.46	158.39
4 Sorghum/Jowar	278.40	235.79	252.72
5 Millet/Bajra	184.22	168.08	166.48
6 Vegetables	209.51	211.37	228.79
7 Fresh Fruits	244.90	230.94	266.14
8 Dry Fruits	248.22	241.74	237.76
9 Cotton Seeds	253.39	267.94	273.72
10 Other Oil Seeds	156.93	181.39	181.57
11 Edible Roots/ Potatoes	112.72	164.46	193.76
12 Stimulant And Spice Crops	235.21	224.40	218.25
13 Pulses	247.46	271.33	262.14
14 Sugar Crops	286.29	268.94	268.94
15 Fibre Crops	172.25	216.97	219.67
16 Unmanufactured Tobacco	230.02	277.88	277.89
17 Poultry	172.94	169.47	217.22
18 Milk From Bovine Animals	255.42	266.07	266.07
19 Eggs	161.26	229.04	173.47
20 Raw Animal Material/Wool	176.96	178.30	177.63
21 Hides And Fur Skins, Raw	150.63	105.67	106.49
22 Fuel Wood In Logs	266.30	277.01	279.63
23 Fishes Live Fresh Or Chilled	335.61	466.43	466.06
<b>Ores/Minerals, Gas &amp; Elect.</b>		<b>245.22</b>	<b>242.78</b>
24 Coal Not Agglomerated	176.47	155.29	155.29
25 Natural Gas Liquefied	208.35	210.99	210.52
26 Salt & Pure Sodium Chloride	252.31	238.53	240.26
27 Electrical Energy	293.09	288.00	288.00
<b>Food, Beverages, Tobacco, Textiles</b>		<b>214.66</b>	<b>226.40</b>
28 Meat Of Animals	268.99	279.49	283.49
29 Vegetables & Fruit Juices	201.36	223.21	223.21
30 Dried Fruits & Nuts	250.38	264.08	264.08
31 Fruit Juices	175.99	179.72	179.97
32 Vegetable Oil Refined	148.47	154.12	154.86
33 Vegetable Ghee	119.01	126.40	126.57
34 Oil Cakes	224.87	225.71	226.58
35 Processed Liquid Milk	247.57	257.27	262.24
36 Milk And Cream In Solid Form	219.09	219.31	218.15
37 Ice Cream	225.40	238.04	245.21
38 Dairy Products N.E.C	248.13	254.42	254.42
39 Wheat Flour	200.63	197.50	197.79
40 Other Cereal Flour	225.20	269.57	250.54
41 Sugar Refined	237.73	235.50	223.81
42 Chocolate	101.06	100.00	100.00
43 Sugar Confectionary	118.83	128.44	128.44
44 Coffee And Tea	238.86	244.86	254.52
45 Spices	189.77	190.46	190.42
46 Other Food Products	292.52	293.85	293.85
47 Mineral Water	194.37	198.57	198.57
48 Beverages	172.44	172.33	172.33
49 Tobacco Products	387.30	445.85	445.85
50 Cotton Yarn	174.54	203.06	203.06
51 Nylon Yarn	147.08	143.99	143.99
52 Blended Yarn	175.44	181.06	182.33
53 Woven Fabrics	275.66	310.72	310.72
54 Cotton Fabrics	204.95	209.30	209.30
55 Other Fabrics	218.24	224.40	224.40

<b>Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities</b>				
		<b>Index</b>		
<b>Items and Specifications</b>		<b>Mar-16</b>	<b>Feb-17</b>	<b>Mar-17</b>
56 Silk And Rayon Fabrics		186.80	186.55	186.55
57 Towels		267.20	276.14	276.14
58 Blankets		243.93	247.38	247.52
59 Bed Sheets		256.29	256.07	256.07
60 Quilts		201.47	203.79	203.79
61 Woolen Carpets		181.55	196.43	196.43
62 Synthetic Carpets		129.25	129.25	130.95
63 Hosiery Products		222.52	241.83	241.83
64 Ready Made Garments		193.27	199.15	196.08
65 Leather With Out Hairs		221.97	221.97	221.97
66 Other Leather N.E.C		207.31	207.31	207.31
67 Footwear's		139.36	145.51	145.51
<b>Other Transportable Goods</b>			<b>161.42</b>	<b>170.89</b>
68 Timber		220.36	225.41	226.13
69 Printing Paper		161.82	165.63	165.63
70 Hard Board		197.92	220.83	220.83
71 Coke		163.45	163.45	163.45
72 Motor Sprit		106.00	120.40	123.29
73 Diesel Oil		134.76	153.09	155.81
74 Kerosene Oil		115.11	115.11	117.12
75 Furnace Oil		51.43	105.61	104.67
76 Mobil Oil		196.00	196.91	196.91
77 Chemicals		182.47	170.99	170.99
78 Dying Materials		146.55	146.55	146.55
79 Fertilizers		264.83	215.96	216.49
80 Pesticides		312.37	304.43	304.43
81 Insecticides		133.20	143.12	143.92
82 Paints & Varnishes		295.36	296.43	294.51
83 Medicines		156.79	173.83	174.85
84 Soaps & Detergent		182.03	191.29	191.21
85 Auto Tyres		184.65	177.07	177.07
86 Plastic Products		226.58	225.73	225.88
87 Glass Sheets		231.30	297.20	298.97
88 Other Glass Articles		243.63	307.95	312.91
89 Ceramics And Sanitary		227.51	234.18	233.92
90 Bricks Blocks And Tiles		217.05	219.99	220.98
91 Cement		206.40	218.23	216.71
92 Bed Foams		167.67	167.17	170.83
93 Matches		162.62	165.53	165.53
<b>Metal Product Machinery &amp; Equip</b>			<b>170.45</b>	<b>174.49</b>
94 Pig Iron		128.97	128.97	128.97
95 Steel Bars & Sheets		123.70	129.50	133.96
96 Pipe Fittings		193.06	214.33	215.29
97 Steel Products		176.80	177.41	177.48
98 Engines And Motors		109.24	116.98	116.98
99 Vacuum Pumps		114.95	123.69	123.69
100 Air Conditioners		201.18	200.10	200.10
101 Cultivators		219.76	190.66	190.66
102 Chuff Cutter		149.20	153.46	153.46
103 Tractors		205.43	201.75	201.75
104 Lathe Machines		208.81	241.06	241.06
105 Concrete Mixer		138.83	138.83	138.83
106 Refrige,Wash& Sew Mach, Iron,Fan		199.37	207.15	208.84
107 Electrical Wires		195.19	204.51	204.51
108 Lighting Equipments		167.30	170.73	170.73
109 Radio And Television		126.49	140.42	140.42
110 Motor Vehicles		185.25	191.39	191.39
111 Motor Cycles		125.89	125.89	125.89
112 Bicycles		185.63	187.65	187.65

**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
2015-16		203.82	224.78	191.25	207.64	234.69	190.47	216.23
2014	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	201.76	224.14	188.35	209.53	233.68	194.20	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	190.48	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	215.88
	May	205.99	225.84	194.09	208.01	238.62	188.59	214.35
	Jun	207.30	228.95	194.32	210.88	244.68	189.44	216.58
	Jul	210.08	234.69	195.33	215.81	251.76	192.99	218.81
	Aug	209.46	232.48	195.66	215.75	250.12	193.95	218.66
	Sep	209.88	232.80	196.14	214.61	250.41	191.89	218.67
	Oct	211.57	234.68	197.72	214.53	250.63	191.64	220.11
	Nov	212.01	235.17	198.13	214.07	247.89	192.62	220.68
	Dec	210.57	230.69	198.51	213.76	244.40	194.32	219.73
2017	Jan	210.94	228.45	200.44	214.84	244.73	195.87	218.35
	Feb	211.54	229.19	200.96	215.86	244.91	197.42	219.25
	Mar	213.32	233.47	201.24	217.29	247.53	198.10	223.62

\*: all groups combined

<b>Table A13: International Commodity Prices/ Indices</b>				
	<b>Dec-16</b>	<b>Jan-17</b>	<b>Feb-17</b>	<b>Mar-17</b>
<b>Energy</b>				
Crude Oil (US\$ per barrel) *	52.6	53.6	54.4	50.9
IMF Energy Index (2005 = 100)	100.0	101.8	103.2	97.4
WB Energy Index (2010 = 100) @	68.4	68.9	69.4	65.3
<b>Food</b>				
Rice (\$/MT)	367.5	372.5	368.5	367.8
Wheat (\$/MT)	122.8	137.1	147.3	146.4
Sugar (US cent/ pound)	18.8	20.5	20.3	18.1
Palm Oil (\$/MT)	711.8	726.5	706.8	663.3
Soybean Oil (\$/MT)	800.3	771.9	742.9	723.4
<b>Non-Food Non-Energy</b>				
Cotton Outlook 'A' Index #	79.5	82.3	85.2	86.8
IMF Metal Price Index (2005 = 100)	140.7	143.2	150.9	149.4
Copper (\$/MT)	5,660.4	5,754.6	5,940.9	5,824.6
Aluminum (\$/MT)	1,727.7	1,791.2	1,860.8	1,901.5
Iron Ore (\$ cents/dry MT)	79.4	80.8	88.8	87.2
Tin (\$/MT)	21,204.4	20,691.8	19,446.5	19,875.2
Nickel (\$/MT)	10,972.3	9,971.5	10,643.3	10,204.7
Zinc (\$/MT)	2,664.8	2,714.8	2,845.6	2,776.9
Lead (\$/MT)	2,209.8	2,242.6	2,311.5	2,280.9
Uranium (\$/MT)	19.1	22.1	25.3	24.6
DAP (\$/MT)	315.0	325.0	360.0	375.0
Urea (\$/MT)	216.0	241.0	247.0	234.0
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>FY13</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>
Jul	169.57	183.58	198.05	201.76	210.08
Aug	171.09	185.71	198.70	202.25	209.46
Sep	172.44	185.18	199.40	202.04	209.88
Oct	173.10	188.82	199.81	203.03	211.57
Nov	172.42	191.21	198.79	204.22	212.01
Dec	172.82	188.68	196.79	203.06	210.57
Jan	175.70	189.60	196.95	203.49	210.94
Feb	175.11	189.00	195.13	202.98	211.54
Mar	175.82	190.82	195.57	203.28	213.32
Apr	177.74	194.06	198.16	206.43	
May	178.65	193.55	199.66	205.99	
Jun	179.94	194.74	200.89	207.30	
<b>Seasonally Adjusted Series</b>					
Jul	168.77	182.59	196.89	200.54	208.75
Aug	169.78	184.27	197.19	200.75	207.90
Sep	171.30	183.97	198.10	200.75	208.57
Oct	171.64	187.25	198.18	201.41	209.91
Nov	171.38	189.99	197.56	202.99	210.73
Dec	173.73	189.66	197.77	204.01	211.51
Jan	176.22	190.22	197.62	204.23	211.76
Feb	176.94	191.01	197.22	205.15	213.80
Mar	177.34	192.52	197.35	205.18	215.33
Apr	177.71	194.04	198.13	206.41	
May	179.26	194.20	200.30	206.63	
Jun	180.64	195.45	201.55	207.93	

<b>Table 15: CPI Food Data Series Original and Seasonally Adjusted</b>					
<b>Original Series</b>					
<b>Period</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>
Jul	190.72	208.19	222.80	224.14	234.69
Aug	192.47	212.27	224.05	224.86	232.48
Sep	193.80	209.09	224.12	223.87	232.80
Oct	193.66	212.61	223.74	224.86	234.68
Nov	193.03	218.16	222.74	227.55	235.17
Dec	192.97	210.89	218.08	223.90	230.69
Jan	196.58	210.81	217.10	222.58	228.45
Feb	194.05	208.74	213.15	221.07	229.19
Mar	195.06	213.11	214.25	222.25	233.47
Apr	197.74	217.33	217.26	227.53	
May	200.00	214.75	221.22	225.84	
Jun	202.11	216.98	223.84	228.95	
<b>Seasonally Adjusted Series</b>					
Jul	189.13	206.13	220.38	221.54	231.83
Aug	189.41	208.84	220.45	221.28	228.74
Sep	190.85	205.96	220.76	220.57	229.48
Oct	190.44	209.22	220.25	221.44	231.24
Nov	190.06	214.72	219.26	224.09	231.59
Dec	194.54	212.55	219.70	225.40	232.10
Jan	198.12	212.67	219.15	224.85	231.00
Feb	198.53	213.66	218.27	226.37	234.71
Mar	198.11	216.50	217.76	225.96	237.36
Apr	198.44	218.11	218.08	228.40	
May	201.66	216.53	222.98	227.62	
Jun	203.69	218.52	225.22	230.19	



**Table 16: CPI Monthly & Average Seasonal Factors**

Period	FY13	FY14	FY15	FY16	FY17	Average
Jul	100.47	100.54	100.59	100.61	100.64	100.57
Aug	100.77	100.78	100.77	100.74	100.75	100.76
Sep	100.67	100.66	100.66	100.64	100.63	100.65
Oct	100.85	100.84	100.82	100.81	100.79	100.82
Nov	100.61	100.64	100.62	100.61	100.61	100.62
Dec	99.47	99.48	99.50	99.53	99.56	99.51
Jan	99.71	99.67	99.66	99.64	99.61	99.66
Feb	98.97	98.95	98.94	98.94	98.94	98.95
Mar	99.14	99.12	99.10	99.08	99.07	99.10
Apr	100.01	100.01	100.01	100.01		100.01
May	99.66	99.67	99.68	99.69		99.67
Jun	99.61	99.64	99.67	99.70		99.65

**Table 17: CPI Food Monthly & Average Seasonal Factors**

Period	FY13	FY14	FY15	FY16	FY17	Average
Jul	100.84	101.00	101.10	101.17	101.23	101.07
Aug	101.62	101.64	101.63	101.62	101.64	101.63
Sep	101.55	101.52	101.52	101.50	101.45	101.51
Oct	101.69	101.62	101.59	101.54	101.49	101.59
Nov	101.57	101.60	101.59	101.54	101.54	101.57
Dec	99.19	99.22	99.26	99.33	99.39	99.28
Jan	99.22	99.12	99.07	98.99	98.90	99.06
Feb	97.74	97.70	97.66	97.66	97.65	97.68
Mar	98.46	98.44	98.39	98.36	98.36	98.40
Apr	99.65	99.64	99.63	99.62		99.63
May	99.18	99.18	99.21	99.22		99.20
Jun	99.22	99.30	99.39	99.46		99.34

<b>Table 18: CPI Month-on-Month % Change Original &amp; Seasonally Adjusted</b>					
<b>Original Series</b>					
<b>Period</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>
Jul	-0.25	2.02	1.70	0.43	1.34
Aug	0.90	1.16	0.33	0.24	-0.30
Sep	0.79	-0.29	0.35	-0.10	0.20
Oct	0.38	1.97	0.21	0.49	0.81
Nov	-0.39	1.27	-0.51	0.59	0.21
Dec	0.23	-1.32	-1.01	-0.57	-0.68
Jan	1.67	0.49	0.08	0.21	0.18
Feb	-0.34	-0.32	-0.92	-0.25	0.28
Mar	0.41	0.96	0.23	0.15	0.84
Apr	1.09	1.70	1.32	1.55	
May	0.51	-0.26	0.76	-0.21	
Jun	0.72	0.61	0.62	0.64	
<b>Seasonally Adjusted Series</b>					
Jul	-1.11	1.08	0.74	-0.51	0.39
Aug	0.60	0.92	0.15	0.11	-0.41
Sep	0.89	-0.16	0.46	0.00	0.32
Oct	0.20	1.79	0.04	0.33	0.64
Nov	-0.15	1.46	-0.31	0.78	0.39
Dec	1.37	-0.17	0.11	0.51	0.37
Jan	1.43	0.30	-0.08	0.10	0.12
Feb	0.41	0.41	-0.20	0.45	0.96
Mar	0.23	0.79	0.06	0.01	0.72
Apr	0.21	0.79	0.40	0.60	
May	0.87	0.09	1.09	0.10	
Jun	0.77	0.64	0.63	0.63	

<b>Table 19: CPI Food Month-on-Month % Change Original &amp; Seasonally Adjusted</b>					
<b>Original Series</b>					
<b>Period</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>
Jul	1.80	3.01	2.68	0.13	2.50
Aug	0.92	1.96	0.56	0.32	-0.94
Sep	0.69	-1.50	0.03	-0.44	0.14
Oct	-0.07	1.68	-0.17	0.44	0.81
Nov	-0.33	2.61	-0.45	1.20	0.21
Dec	-0.03	-3.33	-2.09	-1.61	-1.90
Jan	1.87	-0.04	-0.45	-0.59	-0.97
Feb	-1.29	-0.98	-1.82	-0.68	0.32
Mar	0.52	2.10	0.52	0.54	1.87
Apr	1.37	1.98	1.41	2.38	
May	1.15	-1.19	1.82	-0.74	
Jun	1.05	1.04	1.18	1.38	
<b>Seasonally Adjusted Series</b>					
Jul	0.11	1.20	0.85	-1.63	0.72
Aug	0.15	1.31	0.03	-0.12	-1.33
Sep	0.76	-1.38	0.14	-0.32	0.32
Oct	-0.21	1.58	-0.23	0.40	0.77
Nov	-0.20	2.63	-0.45	1.20	0.15
Dec	2.36	-1.01	0.20	0.58	0.22
Jan	1.84	0.06	-0.25	-0.24	-0.48
Feb	0.21	0.46	-0.40	0.68	1.60
Mar	-0.21	1.33	-0.23	-0.19	1.13
Apr	0.17	0.74	0.15	1.08	
May	1.62	-0.72	2.25	-0.34	
Jun	1.01	0.92	1.00	1.13	

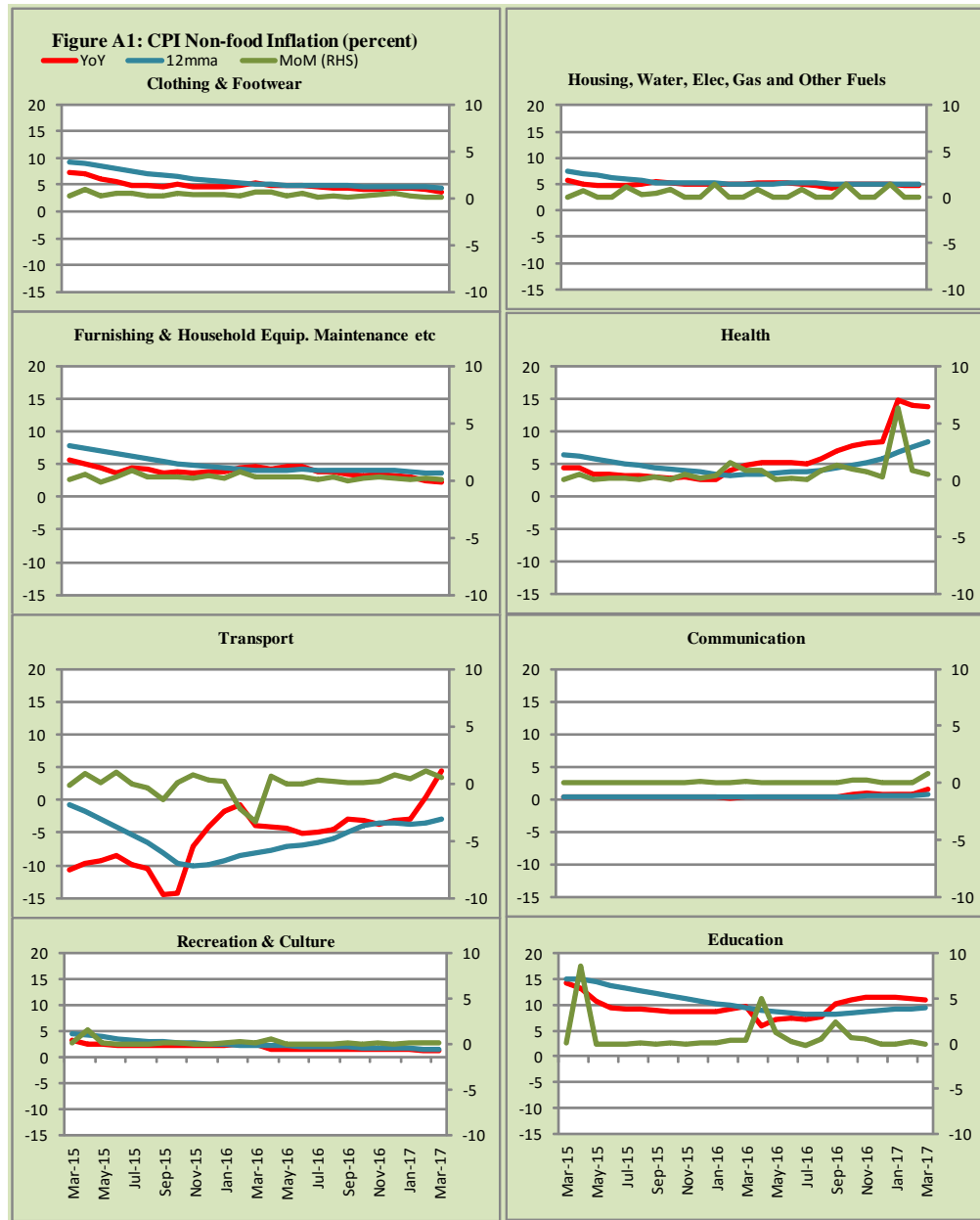
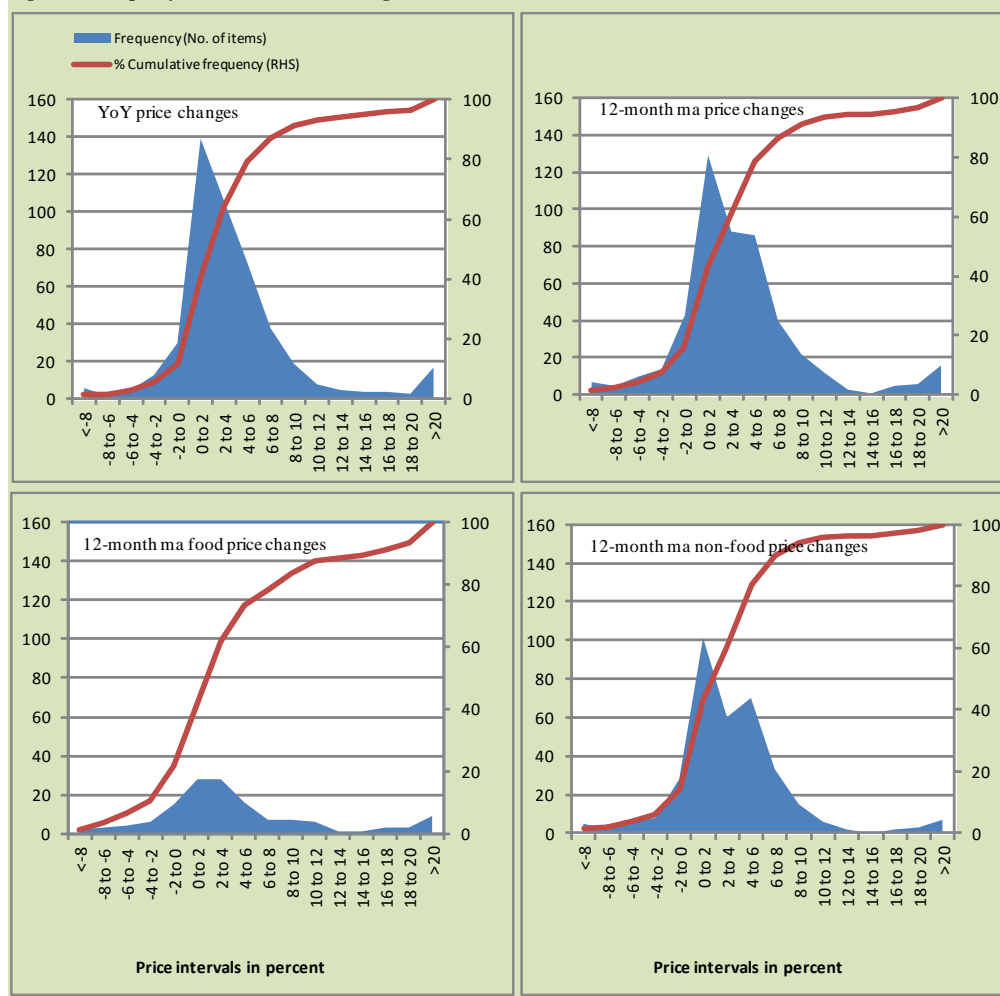


Figure A2: Frequency Distribution of Price Changes of CPI Items, March 2017



**Figure A3: Frequency Distribution of Price Changes of WPI Commodities, March 2017**

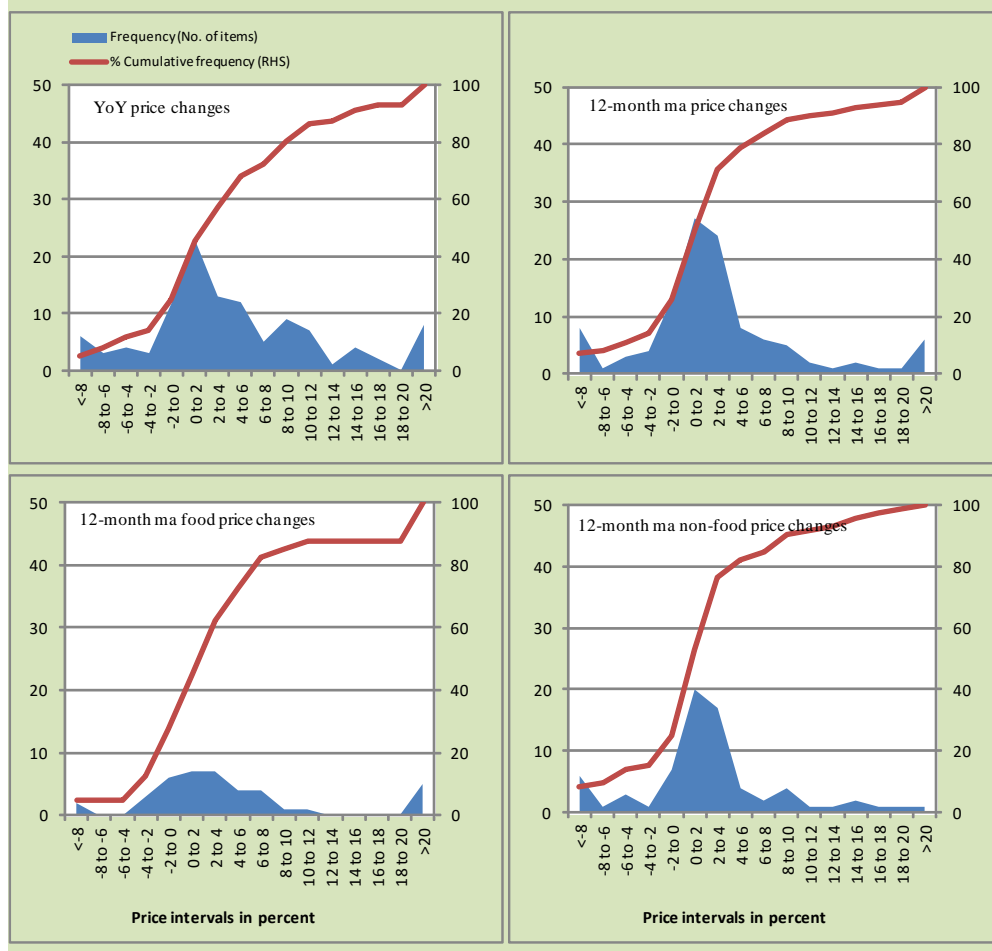
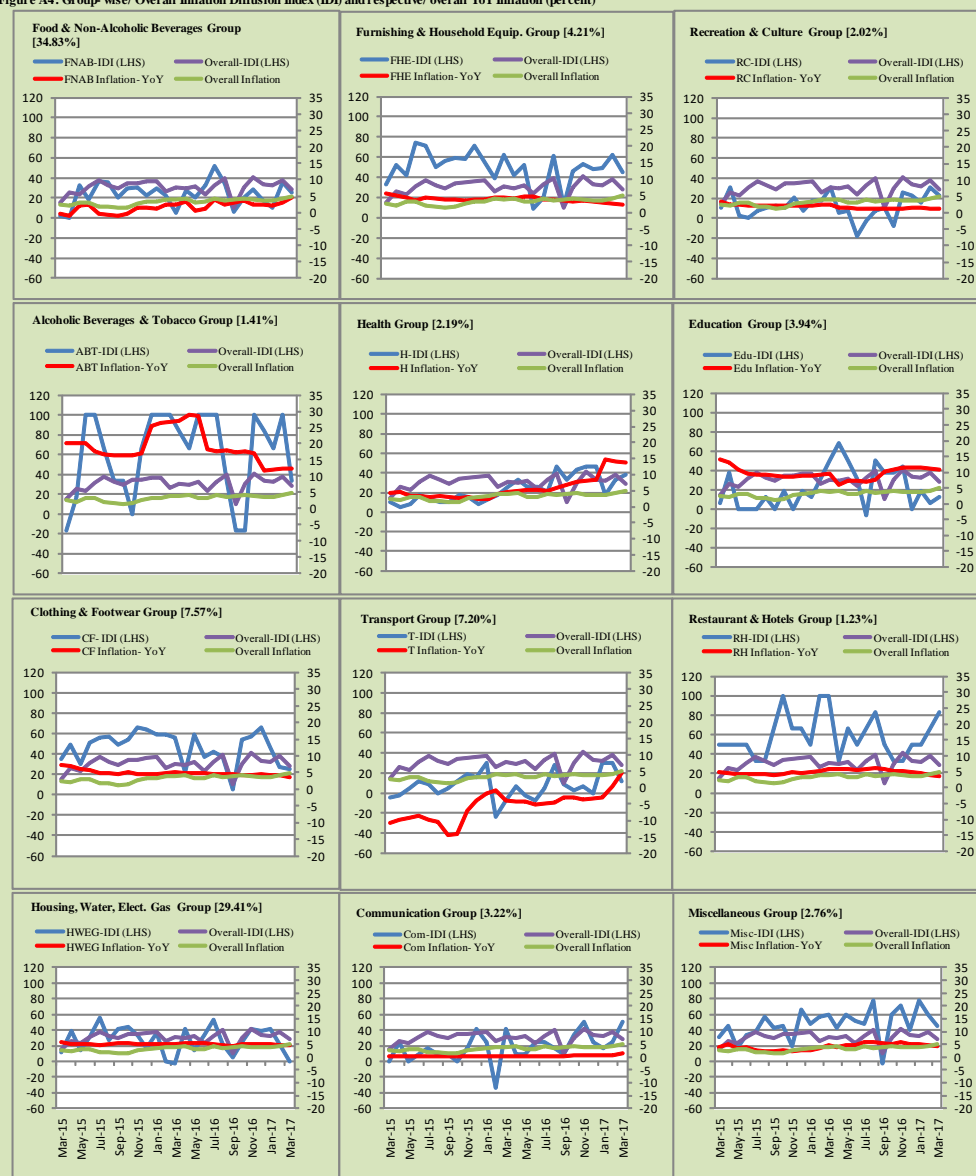


Figure A4: Group-wise/ Overall Inflation Diffusion Index (IDI) and respective/ overall YoY Inflation (percent)



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.