

Inflation Monitor

March 2019



State Bank of Pakistan

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Review

Inflation in Brief

1. Headline CPI inflation (2007-08=100) is recorded at level of 9.4 percent on year-on-year basis in March 2019 as compared to 8.2 percent in the previous month and 3.2 percent during corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at level of 1.4 percent in March 2019 as compared to 0.6 percent in the previous month and 0.3 percent during corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.70 percent in March 2019 compared to 1.05 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis is recorded at 7.9 percent in March 2019 as compared to 7.7 percent in the previous month and 4.1 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is recorded at 0.4 percent in March 2019, as compared to 0.2 percent in the previous month and corresponding month of last year.
5. Non-food, non-energy inflation measured by CPI Core (NFNE) on year-on-year basis is recorded at 8.5 percent in March 2019 as compared to 8.8 percent in the previous month and 5.8 percent during corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.5 percent in March 2019 as compared to 0.2 percent in the previous month. Core NFNE inflation was 0.7 percent in the corresponding month of last year.
7. WPI inflation on year-on-year basis recorded at 12.6 percent in March 2019 as compared to 11.0 percent in the previous month and 3.6 percent during the corresponding month of last year.

8. WPI inflation on month-on-month basis recorded at 1.7 percent in March 2019 as compared to 0.9 percent in the previous month. It was 0.2 percent in the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 12.0 percent in March 2019 as compared to 10.0 percent in the previous month. It was -0.9 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at 1.6 percent in March 2019 as compared to 2.2 percent in the previous month. It was -0.2 percent in 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 2019 are described below:

11. Core RSC inflation on year-on-year basis is recorded at 9.2 percent in March 2019 as compared to 9.4 percent in the previous month and 4.4 percent during the corresponding month of last year.
12. Core RSC inflation on month-on-month basis is recorded at 0.4 percent in March 2019 as compared to 0.2 percent in the previous month and 0.6 percent during 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-18	3.2	0.3	0.1	-0.3	5.4	0.7	5.8	0.7	4.1	0.2	4.4	0.6	3.6	0.2	-0.9	-0.2
Apr-18	3.7	1.8	-0.2	1.5	6.4	2.1	7	2.5	5.0	1.7	5.3	2.0	4.0	1.3	0.5	0.7
May-18	4.2	0.5	1.0	1.0	6.4	0.2	7	0.2	5.1	0.3	5.3	0.3	5.6	1.3	1.8	0.6
Jun-18	5.2	0.6	3.0	0.8	6.7	0.4	7.1	0.3	5.4	0.2	6.0	0.3	7.6	1.5	3.3	1.6
Jul-18	5.8	0.9	3.5	0.6	7.4	1.2	7.6	1.2	5.9	0.9	6.6	1.0	10.5	2.4	4.5	0.5
Aug-18	5.8	0.2	3.3	0.2	7.6	0.2	7.7	0.2	5.9	0.2	6.7	0.3	11.0	0.8	4.0	-0.2
Sep-18	5.1	-0.1	1.3	-0.7	7.7	0.3	8	0.4	5.8	0.1	7.0	0.3	9.2	-1.5	2.2	-0.2
Oct-18	6.8	2.3	2.7	1.9	9.6	2.6	8.2	1.1	6.7	0.8	8.7	2.4	13.1	4.2	4.5	3.0
Nov-18	6.5	0.1	1.8	-0.5	9.8	0.5	8.3	0.4	6.7	0.3	8.9	0.4	13.5	0.7	5.3	1.3
Dec-18	6.2	-0.4	0.9	-1.4	9.8	0.2	8.4	0.3	6.9	0.3	9.0	0.2	12.1	-0.9	5.5	-0.1
Jan-19	7.2	1.0	2.4	0.3	10.4	1.4	8.7	1.1	7.7	1.0	9.4	1.0	9.9	-0.2	6.7	0.4
Feb-19	8.2	0.6	5.0	1.4	10.3	0.1	8.8	0.2	7.7	0.2	9.4	0.2	11.0	0.9	10.0	2.2
Mar-19	9.4	1.4	8.4	2.9	10.1	0.5	8.5	0.5	7.9	0.4	9.2	0.4	12.6	1.7	12.0	1.6
* NFNE is Non-food non-energy ** Relatively Stable Component of CPI *** SPI for all income groups combined																

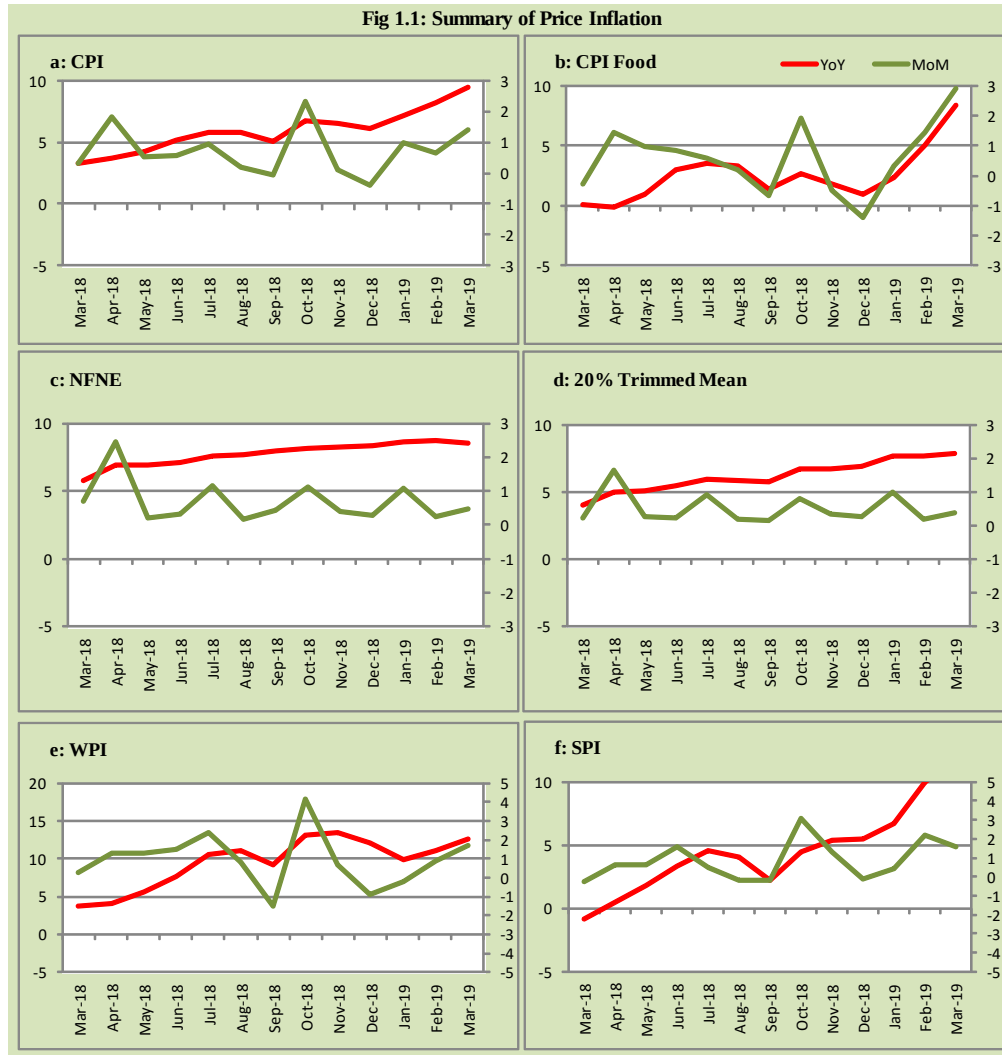
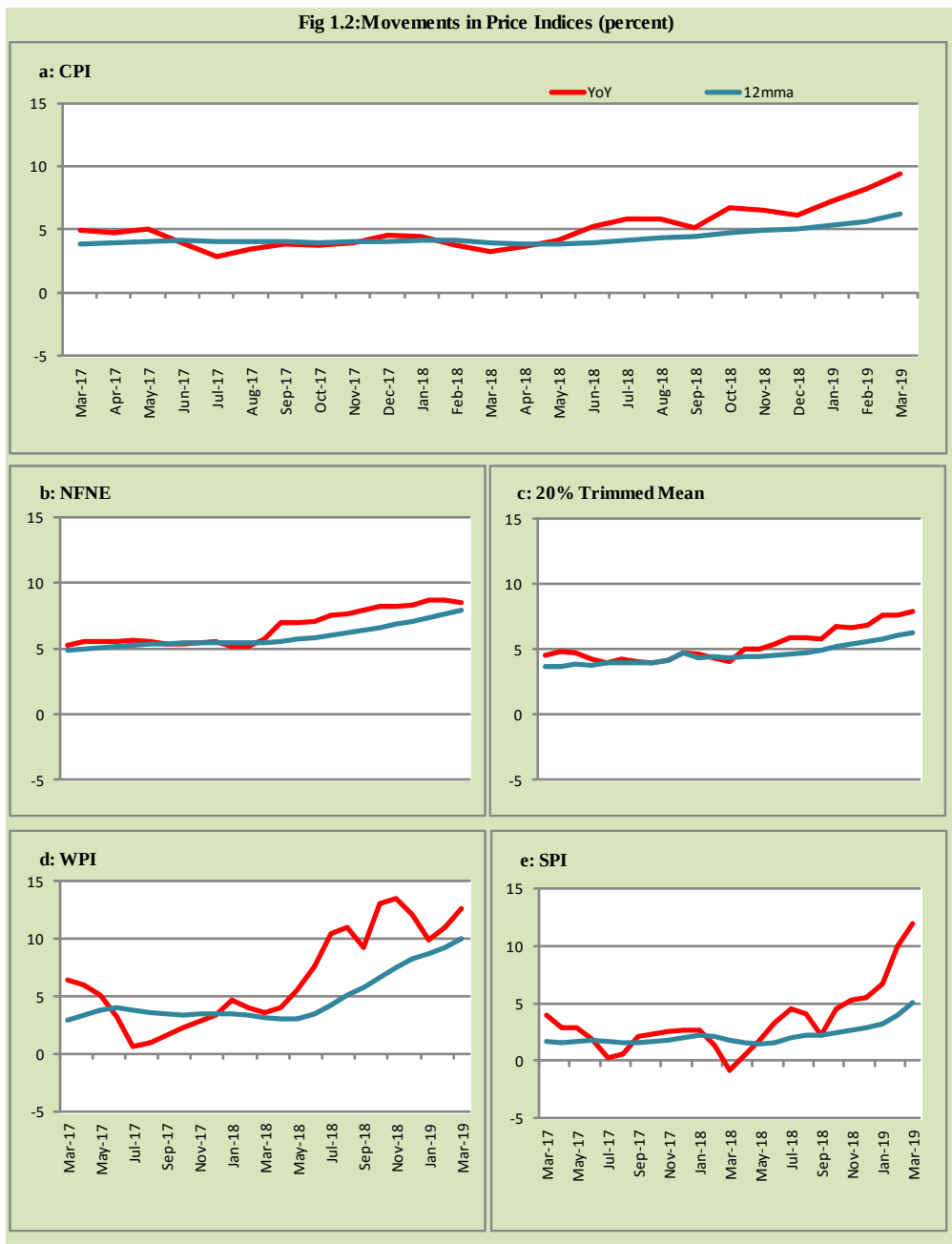


Fig 1.2: Movements in Price Indices (percent)



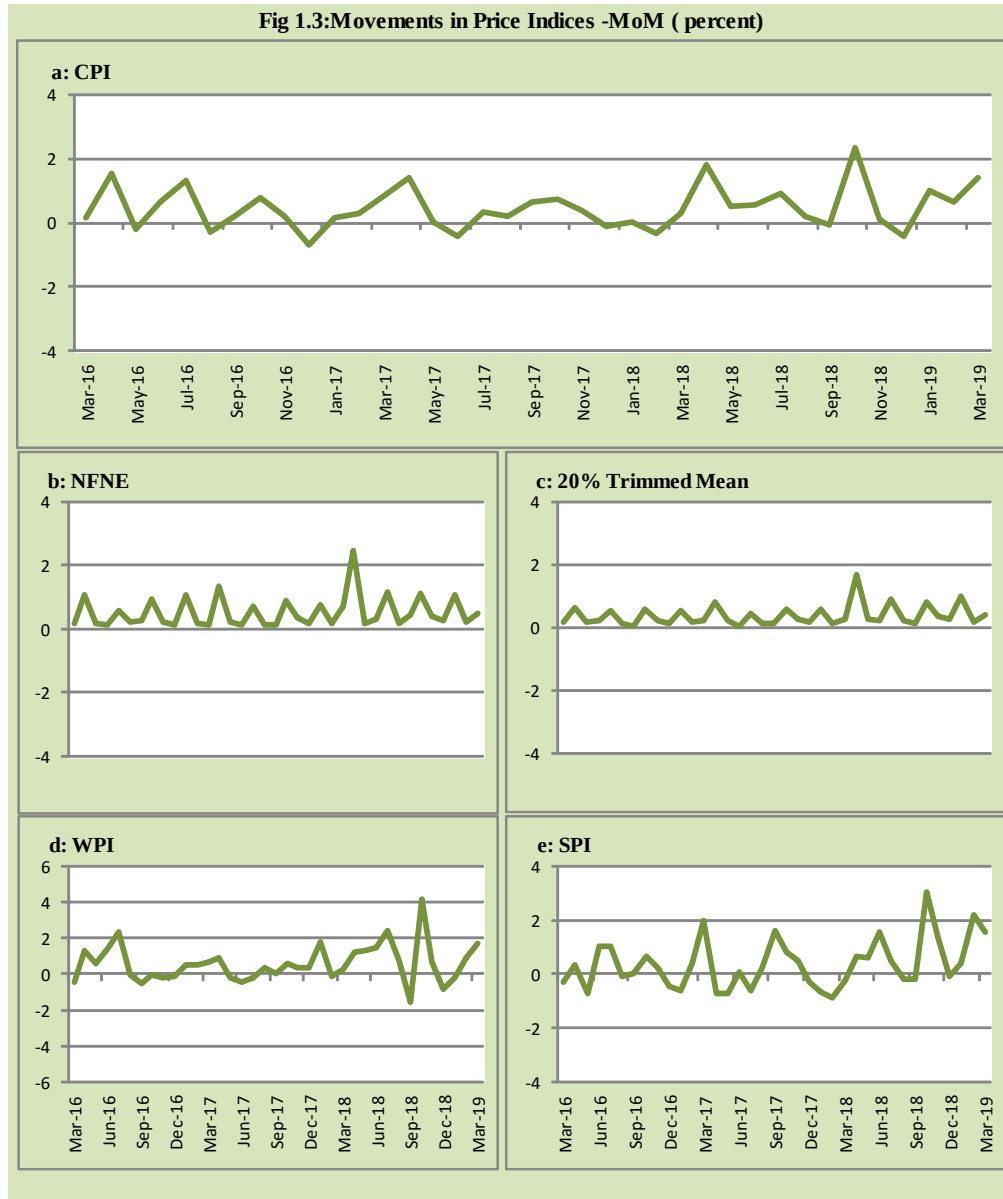
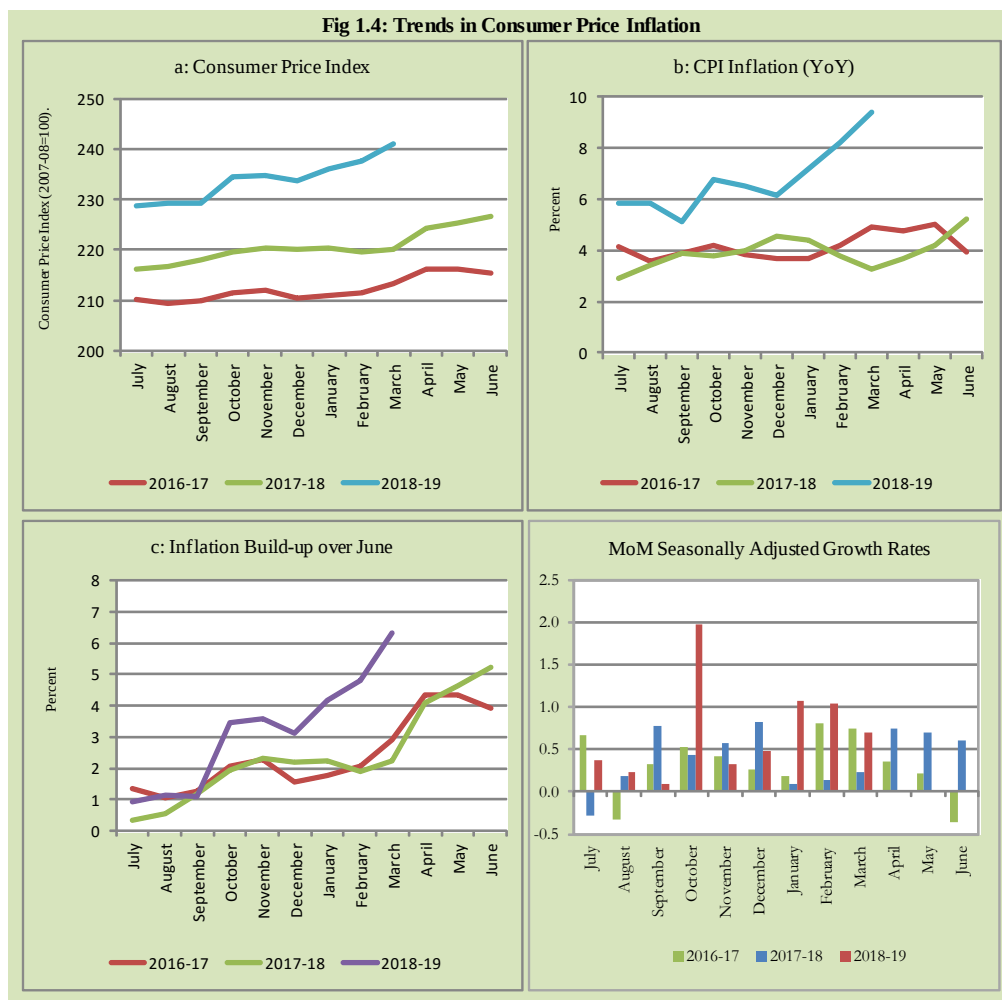


Fig 1.4: Trends in Consumer Price Inflation



2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan showed mixed trend during March 2019. Among these five cities, the lowest inflation was observed in Lahore at 5.8 percent while the highest inflation was observed in Quetta at 13.0 percent (Table A6 of annexure-A).

Table 2.1 City-wise Inflation of Selected Cities (percent)

	Mar-18		Feb-19		Mar-19	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	0.3	3.2	0.6	8.2	1.4	9.4
Islamabad	0.0	3.8	0.8	6.6	1.0	7.7
Karachi	0.0	1.9	0.3	7.4	1.4	8.9
Lahore	0.7	3.7	0.4	5.0	1.5	5.8
Peshawar	-0.1	2.6	1.0	10.2	1.1	11.5
Quetta	-0.3	3.7	0.6	11.2	1.3	13.0

3. Income Group wise Inflation

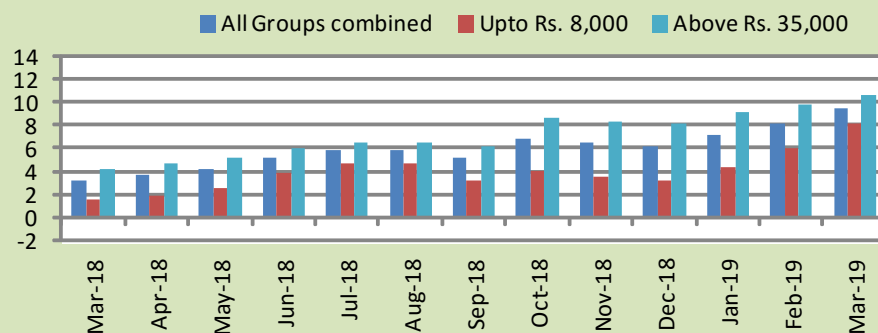
Income group-wise data shows that income group above Rs. 35,000 witnessed higher inflation as compared to other quintiles as well as overall CPI General during March 2019. The income groups (Rs. 8,001- 12,000 & Rs. 12,001- 18,000) observed lowest inflation in general CPI during the month of March 2019. The income group above Rs. 35,000 witnessed lower inflation as compared to other quintiles in food group during March 2019. (Table A7 of annexure-A).

Table 3.1 Income Group- wise Inflation (YoY) (percent)

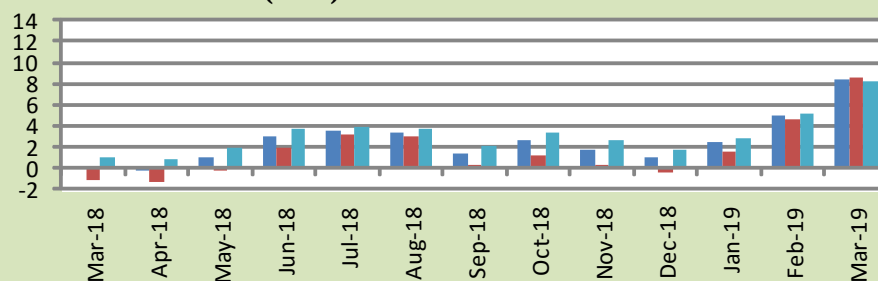
Income Groups	General			Food			Non-food		
	Mar-18	Feb-19	Mar-19	Mar-18	Feb-19	Mar-19	Mar-18	Feb-19	Mar-19
All Groups Combined	3.2	8.2	9.4	0.1	5.0	8.4	5.4	10.3	10.1
Up to Rs. 8,000	1.5	6.0	8.2	-1.1	4.6	8.5	4.6	7.7	7.8
Rs. 8,001- 12,000	1.9	6.3	8.1	-0.7	4.7	8.4	4.7	7.9	7.8
Rs. 12,001- 18,000	2.2	6.5	8.1	-0.6	4.9	8.5	4.8	7.9	7.8
Rs. 18,001- 35,000	2.6	8.3	9.7	-0.3	5.0	8.5	5.1	10.8	10.6
Above Rs. 35,000	4.3	9.8	10.6	1.1	5.2	8.2	5.9	12.0	11.7

Fig 3.1: Income Group- wise Inflation

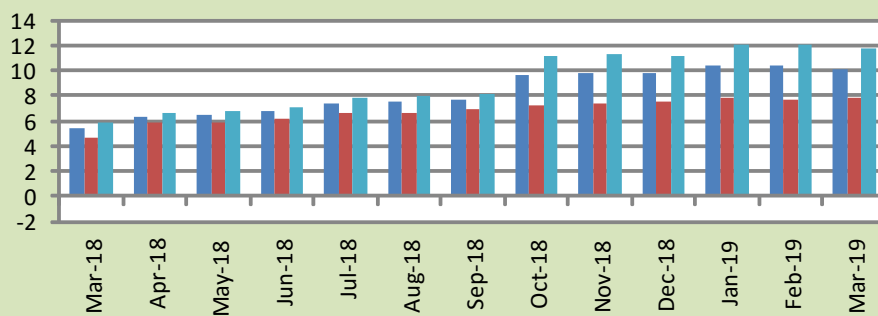
a: CPI Overall Inflation (YoY)



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 35.31 percent during March 2019 from 24.38 percent in previous month. It was 1.07 percent during corresponding month of last year.

The weighted contribution of non-food group decreased to 64.69 percent in March 2019 from 75.62 percent in previous month.

Table 4.1 Weighted Contribution to CPI Inflation (YoY)						
Period	Food	Clothing & Footwear	Housing, Water, Elect, Gas & Other Fuel	Transport	Education	Others
Mar-18	1.07	12.39	35.10	11.73	23.44	16.27
Apr-18	-2.00	15.67	39.70	10.10	16.06	20.47
May-18	9.73	13.25	35.28	10.11	14.19	17.43
Jun-18	23.35	10.45	28.60	12.04	11.46	14.10
Jul-18	24.57	9.29	27.60	15.72	10.12	12.70
Aug-18	23.30	9.26	27.58	17.14	10.05	12.67
Sep-18	10.81	10.75	31.29	19.01	13.36	14.80
Oct-18	16.06	8.22	35.92	15.95	7.92	15.94
Nov-18	11.22	9.54	37.56	17.74	7.23	16.70
Dec-18	6.27	10.43	39.55	17.35	7.89	18.50
Jan-19	13.26	8.36	43.58	12.43	6.55	15.81
Feb-19	24.38	7.05	38.18	9.82	5.86	14.72
Mar-19	35.31	6.48	33.22	8.45	3.21	13.33

5. Inflation Diffusion Index

Table 5.1 Inflation Diffusion Index - based on MoM change

	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
General	40.2	63.8	40.6	31.5	47.8	47.7	45.9	62.4	52.7	53.1	51.3	43.6	58.3
Food & Non-Alcoholic Beverages	20.4	50.0	46.3	30.1	60.9	46.5	32.2	54.3	35.0	49.6	62.3	51.8	71.7
Alcoholic Beverages & Tobacco	66.7	100.0	-16.7	33.3	-16.7	0.0	33.3	100.0	66.7	0.0	66.7	66.7	50.0
Clothing & Footwear	47.5	84.7	32.2	50.8	35.6	45.8	67.8	61.0	79.7	81.4	61.0	42.4	62.7
Housing, Water, Elect, Gas & other Fuels	41.7	52.8	27.8	36.1	47.2	44.4	16.7	75.0	38.9	16.7	41.7	13.9	19.4
Furnishing & Household Equip. Maintenance etc	69.6	100.0	69.6	37.7	63.8	79.7	76.8	91.3	91.3	84.1	79.7	84.1	71.0
Health	30.8	48.7	33.3	25.6	41.0	51.3	48.7	69.2	53.8	53.8	48.7	42.1	47.4
Transport	27.9	25.6	34.9	30.2	55.8	39.5	25.6	41.9	39.5	48.8	20.9	9.3	48.8
Communication	25.0	33.3	0.0	0.0	8.3	16.7	8.3	41.7	41.7	0.0	8.3	8.3	16.7
Recreation & Culture	30.8	64.1	15.4	5.1	28.2	23.1	20.5	35.9	28.2	12.8	17.9	12.8	51.3
Education	25.0	37.5	18.8	6.3	0.0	0.0	68.8	31.3	0.0	25.0	-25.0	0.0	62.5
Restaurant & Hotels	50.0	100.0	66.7	50.0	33.3	100.0	50.0	66.7	66.7	100.0	66.7	66.7	100.0
Miscellaneous	74.3	85.7	65.7	42.9	62.9	60.0	77.1	82.9	71.4	74.3	74.3	71.4	60.0
NFNE	46.2	69.2	39.3	31.4	45.0	48.8	52.7	66.9	58.9	56.5	47.6	42.1	54.3

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 (percent)

Sr. No	Item	Unit	Mar-18		Feb-19		Mar-19	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-2.08	-0.50	3.21	1.43	3.89	0.16
2	Wheat Flour Bag	10 Kg	-1.66	-0.74	3.44	0.33	4.32	0.09
3	Rice Basmati Sup. Qlty.	Kg	14.91	0.89	7.16	-0.11	6.26	0.05
4	Pulse Masoor (Washed)	Kg.	-13.28	-0.24	2.97	0.60	3.35	0.13
5	Pulse Moong (Washed)	Kg.	-11.42	-0.92	7.89	0.02	22.70	12.68
6	Pulse Mash (Washed)	Kg.	-22.08	-1.80	-0.46	-0.19	1.45	0.08
7	Pulse Gram	Kg.	-11.86	-2.11	6.92	0.06	9.87	0.60
8	Vegetable Ghee (Loose)	Kg.	1.10	-0.22	8.30	0.36	9.44	0.83
9	Sugar Refined	Kg.	-14.91	-1.03	13.86	-0.07	18.20	2.74
10	Milk Fresh (Unboiled)	Ltr	3.71	0.00	4.04	0.07	4.22	0.17
11	Tapal Danedar Tea 200 Gm	Pkt	9.62	4.94	10.23	0.06	5.04	0.00
12	Beef With Bone Av.Qlty.	Kg	6.83	0.73	14.42	0.57	13.88	0.25
13	Mutton Av.Qlty.	Kg	11.34	1.29	12.79	0.72	12.34	0.89
14	Chicken Farm Broiler (Live)	Kg	3.14	4.39	-11.00	4.17	-1.20	15.89
15	Eggs Farm	Doz	9.66	-7.26	7.21	-4.08	8.29	-6.32
16	Potatoes	Kg	-14.86	-8.53	-18.71	-8.98	-15.58	-5.01
17	Onion	Kg	-0.39	-19.16	-32.76	3.42	15.85	39.27
18	Tomatoes	Kg	-54.33	-20.06	179.40	150.04	315.30	18.82
19	Ginger	Kg	19.57	-1.08	16.21	-0.72	16.78	-0.58
20	Garlic	Kg	-40.42	4.55	-5.71	-2.97	0.26	11.18

7. Global Commodity Prices

Table 7.1 Changes in Major Global Indices (percent)

Item/ Group	Mar-18		Feb-19		Mar-19	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	3.0	1.2	-5.9	0.6	-8.4	-1.5
Metals	14.2	-4.1	-12.6	4.2	-7.2	1.8
Energy	23.8	0.4	-3.9	4.9	-1.1	3.3
Agricultural	2.0	1.5	-5.4	0.5	-7.7	-0.9
Cotton	6.2	4.4	-8.1	-1.5	-9.0	3.3

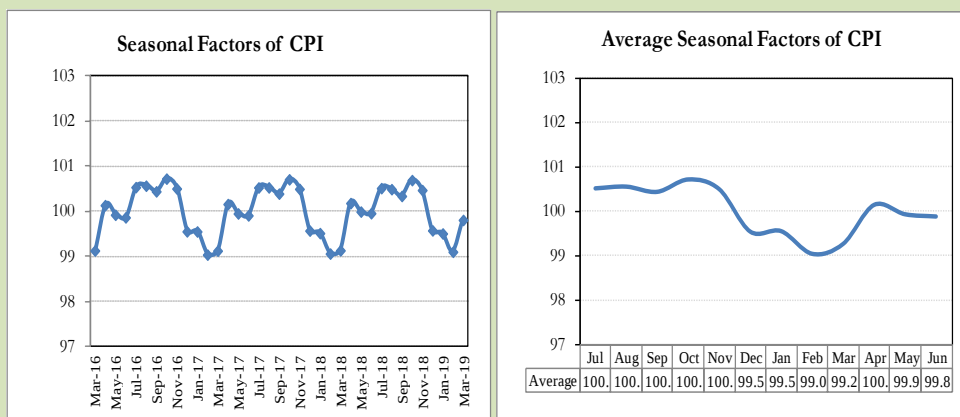
8. Seasonal Adjustment in CPI

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 2019 has been used for seasonal adjustment analysis. The seasonal analysis is carried out without taking trading-day or Islamic calendar month's effects.

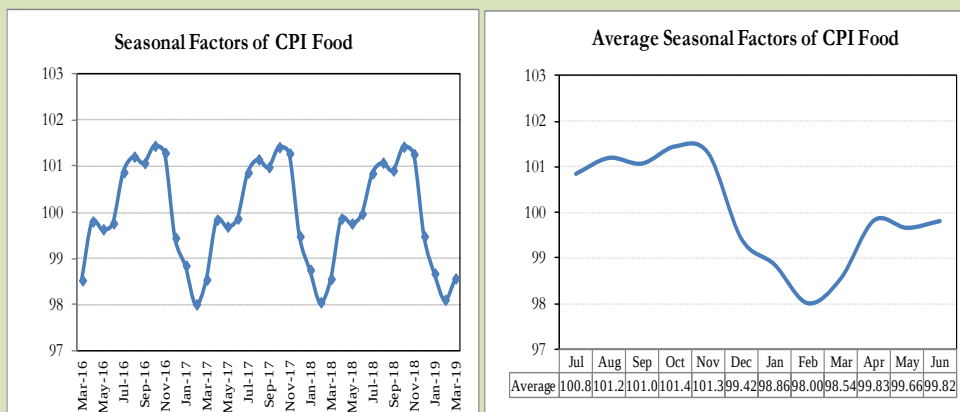
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to December and downward seasonality in the remaining months of the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

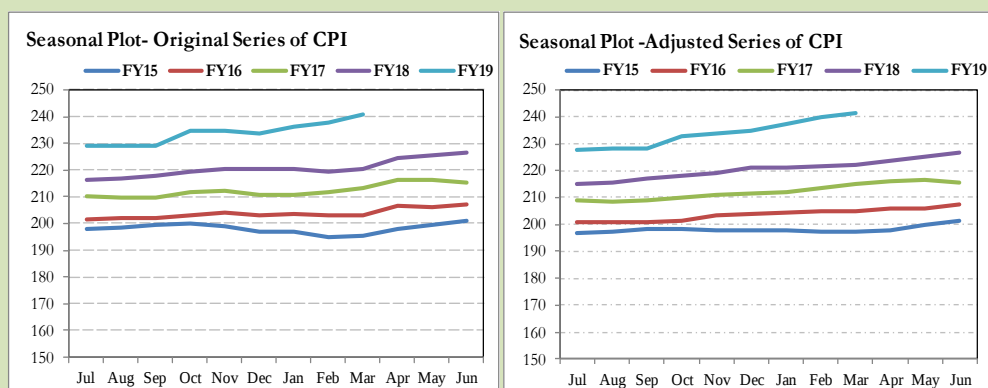
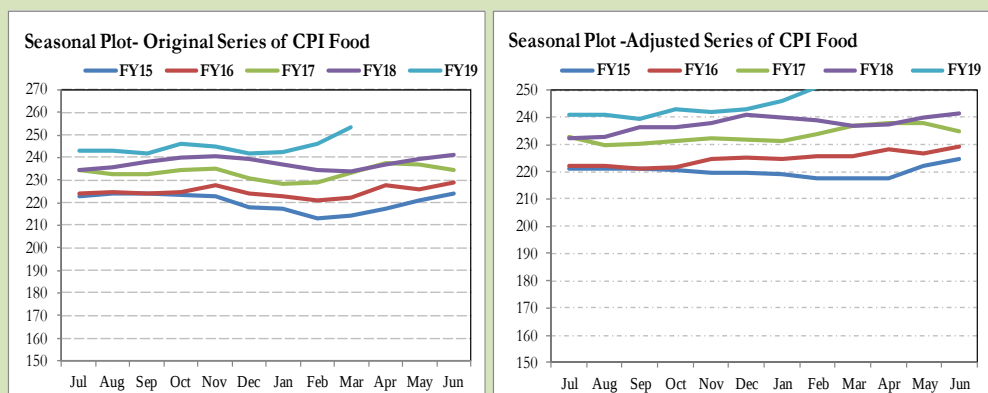


Fig. 8.4 Seasonal Plots of CPI (Food)



Seasonally adjusted CPI for March 2019 stood at 241.44 against 240.98 in original series showing an increase of 0.46 on account of adjustment of downward seasonality in March 2019.

Seasonally adjusted CPI food group for March 2019 stood at 252.51 against 253.20 in original series showing decrease of 0.69 on account of adjustment of upward seasonality in March 2019.

Month-on-month change of seasonally adjusted CPI series stood at 0.70% reflecting an increase during March 2019 over previous month and an increase of 1.42% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at 0.69% reflecting an increase during March 2019 over previous month and an increase of 2.91% 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 2019 (corresponding to the seasonally adjusted month-on-month rate) is 8.75 percent.

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

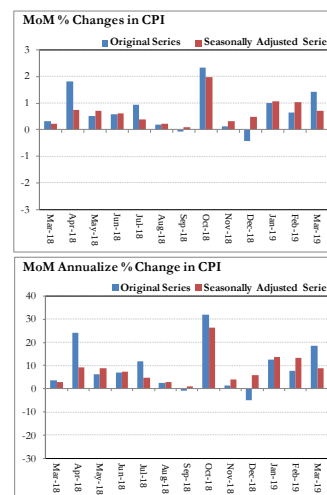
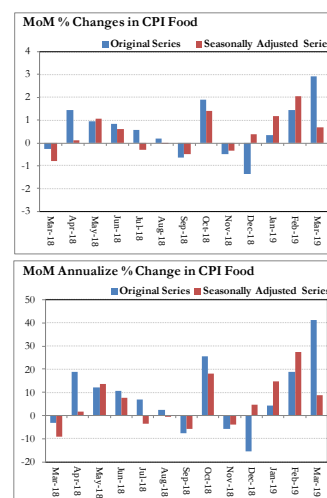


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



Annexure A

Table A1: CPI Inflation by Groups (percent)							
	Weight	MoM change			YoY change		
		Mar-18	Feb-19	Mar-19	Mar-18	Feb-19	Mar-19
I. Food Group	37.5	-0.3	1.4	2.9	0.1	5.0	8.4
Food & Non-Alcoholic Beverages	34.8	-0.4	1.6	3.2	1.0	4.5	8.2
Alcoholic Beverages & Tobacco	1.4	1.0	0.5	0.2	-16.9	13.2	12.3
Restaurant & Hotels	1.2	0.2	0.2	1.0	6.2	5.7	6.5
II. Non-Food Group	62.5	0.7	0.1	0.5	5.4	10.3	10.1
Clothing & Footwear	7.6	0.3	0.1	0.7	4.8	6.9	7.2
Housing, Water, Elect, Gas & Fuels	29.4	0.0	0.0	0.0	4.3	11.5	11.5
Furnishing & Household Equip. Maintenance etc	4.2	0.5	1.2	0.8	4.5	9.2	9.5
Health	2.2	0.3	0.5	0.6	4.8	7.8	8.1
Transport	7.2	1.4	-0.4	1.1	6.4	13.3	13.0
Communication	3.2	0.1	0.0	0.0	0.5	7.8	7.7
Recreation & Culture	2.0	0.9	0.2	1.8	1.6	8.6	9.7
Education	3.9	4.9	0.2	1.0	17.6	10.2	6.1
Miscellaneous	2.8	0.4	0.6	0.7	5.8	9.9	10.2
Headline	100.0	0.3	0.6	1.4	3.2	8.2	9.4

Table A2: Distribution of Price changes (YoY) of CPI basket											
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-18	Mar-19	Mar-18	Mar-19	Mar-18	Mar-19	Mar-18	Mar-19	Mar-18	Mar-19
I. Food Group	8.4	125	125	33	10	55	43	21	34	16	38
Food & Non-Alcoholic Beverages	8.2	113	113	30	9	51	41	20	31	12	32
Alcoholic Beverages & Tobacco	12.3	6	6	3	1	1	0	0	0	2	5
Restaurant & Hotels	6.5	6	6	0	0	3	2	1	3	2	1
II. Non-Food Group	10.1	348	348	67	27	167	66	80	133	34	122
Clothing & Footwear	7.2	59	59	8	3	27	10	22	37	2	9
Housing, Water, Elect, Gas & other Fuels	11.5	36	36	13	1	4	5	16	15	3	15
Furnishing & Household Equip. Maintenance etc	9.5	69	69	1	0	49	8	18	32	1	29
Health	8.1	39	39	5	4	27	14	4	9	3	12
Transport	13.0	43	43	22	8	13	2	3	13	5	20
Communication	7.7	12	12	5	1	4	7	1	0	2	4
Recreation & Culture	9.7	39	39	13	6	19	11	1	6	6	16
Education	6.1	16	16	0	3	3	5	2	2	11	6
Miscellaneous	10.2	35	35	0	1	21	4	13	19	1	11
Overall	9.4	473	473	100	37	222	109	101	167	50	160
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 2019					
Top 15 Contributors			YoY Change		Weighted Contribution
Items/ Contributors	Weights	Mar-18	Mar-19		
Ranked by Weighted Contribution					
1	House Rent	21.81	5.43	8.20	16.90
2	Gas	1.58	0.00	85.31	10.25
3	Tomatoes	0.42	-54.32	315.30	6.18
4	Fresh Vegetables	1.75	-10.32	28.18	4.83
5	Meat	2.43	8.39	13.33	4.59
6	Electricity	4.40	0.00	8.48	4.28
7	Transport Services	2.70	1.77	15.35	3.94
8	Milk Fresh	6.68	3.78	4.21	3.79
9	Education	3.94	17.60	6.12	3.21
10	Motor Fuel	3.03	13.18	12.99	3.18
11	Cigarettes	1.39	-19.98	14.73	3.03
12	Cotton Cloth	1.73	4.85	8.95	1.78
13	Personal Equipments	0.84	8.81	13.25	1.72
14	Sugar	1.04	-14.91	18.20	1.69
15	Communication & Apparatus	3.15	0.32	7.81	1.55
Total		56.91			70.92
Bottom 15 Contributors					
1	Potatoes	0.45	-14.86	-15.57	-0.54
2	Betel Leaves & Nuts	0.02	280.15	-37.02	-0.38
3	Fresh Fruits	1.86	4.99	-1.38	-0.33
4	Chicken	1.36	3.14	-1.20	-0.16
5	Gram Whole	0.16	-0.95	-5.15	-0.11
6	Motor Vehicle Tax	0.11	0.00	0.00	0.00
7	Kerosene Oil	0.01	30.58	7.19	0.01
8	Medical Equipments	0.01	2.09	8.19	0.01
9	Wheat Product	0.10	-1.11	1.61	0.02
10	Mustard Oil	0.10	3.26	2.65	0.02
11	Blades	0.03	3.24	9.56	0.03
12	Pulse Mash (Washed)	0.21	-22.08	1.45	0.03
13	Beans	0.03	6.81	10.09	0.03
14	Gur	0.02	-8.57	17.18	0.04
15	Postal Services	0.07	5.22	5.26	0.04
Total		4.53			-1.29

Table A3.1: Top and Bottom 15 Contributors to CPI Inflation (MoM) in March 2019

<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution	
Items/ Contributors	Weights	Feb-19	Mar-19		
Ranked by Weighted Contribution					
1	Fresh Vegetables	1.75	1.82	24.43	26.54
2	Fresh Fruits	1.86	2.02	12.52	16.17
3	Chicken	1.36	4.17	15.88	11.35
4	Onion	0.51	3.42	39.28	10.08
5	Tomatoes	0.42	150.03	18.83	7.94
6	Education	3.94	0.16	1.00	3.38
7	Cotton Cloth	1.73	0.12	2.30	3.00
8	Motor Fuel	3.03	-1.59	1.54	2.59
9	Pulse Moong	0.23	0.01	12.68	2.09
10	Text Books	0.57	0.00	3.95	2.04
11	Sugar	1.04	-0.07	2.74	1.80
12	Transport Services	2.70	0.11	0.97	1.74
13	Household Servent	1.04	2.47	1.35	1.20
14	Meat	2.43	0.62	0.47	1.13
15	Ready Made Food	1.23	0.21	0.96	1.06
Total		23.86			92.11
Bottom 15 Contributors					
1	Eggs	0.46	-4.08	-6.32	-1.96
2	Potatoes	0.45	-8.98	-5.00	-0.94
3	Woolen Cloth	0.88	0.07	-0.63	-0.46
4	Gram Whole	0.16	0.28	-0.70	-0.09
5	Betel Leaves & Nuts	0.02	-0.72	-2.09	-0.08
6	Wheat Product	0.10	-0.12	-0.41	-0.03
7	Motor Vehicle Tax	0.11	0.00	0.00	0.00
8	News Papers	0.19	0.00	0.00	0.00
9	Gas	1.58	0.00	0.00	0.00
10	Postal Services	0.07	0.00	0.00	0.00
11	Woolen Readymade Garments	0.40	0.00	0.00	0.00
12	Electricity	4.40	0.00	0.00	0.00
13	House Rent	21.81	0.00	0.00	0.00
14	Doctor (Mbbs) Clinic Fee	0.59	0.54	0.00	0.00
15	Mustard Oil	0.10	0.08	0.02	0.00
Total		31.30			-3.56

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in March 2019					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Mar-18	Mar-19	
A. Ranked by Percentage Change					
1	Tomatoes	0.42	-54.32	315.30	6.18
2	Gas	1.58	0.00	85.31	10.25
3	Fresh Vegetables	1.75	-10.32	28.18	4.83
4	Pulse Moong	0.23	-11.42	22.69	0.56
5	Sugar	1.04	-14.91	18.20	1.69
6	Spices	0.54	0.78	17.66	1.11
7	Gur	0.02	-8.57	17.18	0.04
8	News Papers	0.19	12.34	15.98	0.30
9	Onion	0.51	-0.39	15.85	0.80
10	Transport Services	2.70	1.77	15.35	3.94
11	Honey	0.04	5.38	15.23	0.11
12	Cigarettes	1.39	-19.98	14.73	3.03
13	Cosmetics	0.39	2.39	13.56	0.53
14	Meat	2.43	8.39	13.33	4.59
15	Personal Equipments	0.84	8.81	13.25	1.72
Total		14.09			39.68
B. Ranked by Weights					
1	House Rent	21.81	5.43	8.20	16.90
2	Milk Fresh	6.68	3.78	4.21	3.79
3	Electricity	4.40	0.00	8.48	4.28
4	Wheat Flour	4.16	-0.76	2.75	1.17
5	Education	3.94	17.60	6.12	3.21
6	Communication & Apparatus	3.15	0.32	7.81	1.55
7	Motor Fuel	3.03	13.18	12.99	3.18
8	Transport Services	2.70	1.77	15.35	3.94
9	Meat	2.43	8.39	13.33	4.59
10	Vegetable Ghee	2.07	1.22	7.18	1.03
11	Fresh Fruits	1.86	4.99	-1.38	-0.33
12	Fresh Vegetables	1.75	-10.32	28.18	4.83
13	Cooking Oil	1.75	1.87	6.62	0.78
14	Cotton Cloth	1.73	4.85	8.95	1.78
15	Rice	1.58	13.29	5.11	0.75
Total		63.07			51.44
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 9.4 percent in March 2019.					

Table A3.3: Top Ten Contributors to CPI Food Inflation (YoY) in March 2019

Table 1: Top 10 Contributors to CPI Food Inflation (2017) in March 2019					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Mar-18	Mar-19	
A. Ranked by Weighted Contribution					
1	Tomatoes	0.42	-54.32	315.30	6.18
2	Fresh Vegetables	1.75	-10.32	28.18	4.83
3	Meat	2.43	8.39	13.33	4.59
4	Milk Fresh	6.68	3.78	4.21	3.79
5	Cigarettes	1.39	-19.98	14.73	3.03
6	Sugar	1.04	-14.91	18.20	1.69
7	Wheat Flour	4.16	-0.76	2.75	1.17
8	Spices	0.54	0.78	17.66	1.11
9	Ready Made Food	1.23	6.21	6.48	1.10
10	Vegetable Ghee	2.07	1.22	7.18	1.03
Total		21.73			28.53
B. Ranked by Percentage Change					
1	Tomatoes	0.42	-54.32	315.30	6.18
2	Fresh Vegetables	1.75	-10.32	28.18	4.83
3	Pulse Moong	0.23	-11.42	22.69	0.56
4	Sugar	1.04	-14.91	18.20	1.69
5	Spices	0.54	0.78	17.66	1.11
6	Gur	0.02	-8.57	17.18	0.04
7	Onion	0.51	-0.39	15.85	0.80
8	Honey	0.04	5.38	15.23	0.11
9	Cigarettes	1.39	-19.98	14.73	3.03
10	Meat	2.43	8.39	13.33	4.59
Total		8.39			22.95
C. Ranked by Weights					
1	Milk Fresh	6.68	3.78	4.21	3.79
2	Wheat Flour	4.16	-0.76	2.75	1.17
3	Meat	2.43	8.39	13.33	4.59
4	Vegetable Ghee	2.07	1.22	7.18	1.03
5	Fresh Fruits	1.86	4.99	-1.38	-0.33
6	Fresh Vegetables	1.75	-10.32	28.18	4.83
7	Cooking Oil	1.75	1.87	6.62	0.78
8	Rice	1.58	13.29	5.11	0.75
9	Cigarettes	1.39	-19.98	14.73	3.03
10	Chicken	1.36	3.14	-1.20	-0.16
Total		25.05			19.47
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 8.4 percent in March 2019.					

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in March 2019					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Mar-18	Mar-19	
A. Ranked by Weighted Contribution					
1	House Rent	21.81	5.43	8.20	16.90
2	Gas	1.58	0.00	85.31	10.25
3	Electricity	4.40	0.00	8.48	4.28
4	Transport Services	2.70	1.77	15.35	3.94
5	Education	3.94	17.60	6.12	3.21
6	Motor Fuel	3.03	13.18	12.99	3.18
7	Cotton Cloth	1.73	4.85	8.95	1.78
8	Personal Equipments	0.84	8.81	13.25	1.72
9	Communication & Apparatus	3.15	0.32	7.81	1.55
10	Household Servent	1.04	6.17	9.50	1.27
Total		44.23			48.07
B. Ranked by Percentage Change					
1	Gas	1.58	0.00	85.31	10.25
2	News Papers	0.19	12.34	15.98	0.30
3	Transport Services	2.70	1.77	15.35	3.94
4	Cosmetics	0.39	2.39	13.56	0.53
5	Personal Equipments	0.84	8.81	13.25	1.72
6	Stationery	0.40	3.16	13.14	0.56
7	Motor Fuel	3.03	13.18	12.99	3.18
8	Utensils	0.32	6.02	12.64	0.48
9	Plastic Products	0.25	4.48	12.21	0.33
10	Construction Input Items	0.56	5.65	11.72	0.84
Total		10.26			22.12
C. Ranked by Weights					
1	House Rent	21.81	5.43	8.20	16.90
2	Electricity	4.40	0.00	8.48	4.28
3	Education	3.94	17.60	6.12	3.21
4	Communication & Apparatus	3.15	0.32	7.81	1.55
5	Motor Fuel	3.03	13.18	12.99	3.18
6	Transport Services	2.70	1.77	15.35	3.94
7	Cotton Cloth	1.73	4.85	8.95	1.78
8	Gas	1.58	0.00	85.31	10.25
9	Footware	1.55	0.57	7.88	0.99
10	Personal Care	1.49	4.52	7.05	1.19
Total		45.39			47.26
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 10.1 percent in March 2019.					

Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: March 2019

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	Potatoes, Malta/Mosambi, Gram Whole Yellow Av.Qlty, Carrot, Lemon, Ice.	Bread Plain Medium Size, Bananas, Cardamom Large Av.Qlty, Cloves Loose Av.Qlty.	Pulse Gram, Salt-Powdered (Lahori) Loose, Cuminseed White National, Vegetable Ghee (Loose).	Tomatoes, Chillies Green, Peas, Cucumber (Kheera), Cardamom Small Av.Qlty, Cauliflower, Pistachio Av.Qlty., Chillies Powder Loose, Brinjal.
Alcoholic Beverages & Tobacco	Betel Nuts.			Cigarettes Capstan 20,S, Cigarettes Morven Gold 20,S, Cigarettes K-20,S, Cigarettes Gold Leaf 20,S, Betel Leaves.
Clothing & Footwear	Gents Shoe, Art 1109 Servis, Gents Sandal Bata, Gents Shoes Paul Bata.	Tailoring Awami-Suit (Male), Washing Charges Paint & Shirt, Tailoring Coat-Pant Suit, Awami-Suit W & W (Boys) 24"/26".	Pullover Gents Oxford/Bon, Pullover (Gents) Others Av.Qlty, Pullover Ladies Oxford/Bon, Secondhand Sweater For Men, Shirt Boy 24"/26" Length.	Ladies Sandal Bata, Child Shoe Power Lite Bata, Shoe Polish Charges Avg, Tailoring Shirt, Long Cloth 57" Gul Ahmed/Al Karam, Ladies Spoung Chappal Bata, Heavy Wt Suiting Law.Pur Av. Qlty, Tropical Suiting Law.Pur, Shirting Av.Qlty.
Housing, Water, Elect, Gas & other Fuels	Elect.Charges Upto 50 Units.	Cement Blocks (6"X8"X12"), Sand (Black Pit Sand), Firewood Whole, Elect.Charges 01 - 100 Units, Elect.Charges 101 - 300 Units.	Carpanter Wage Rate, Timber Shesham Log, Mason (Raj) Wage Rate, Elect. Charges Overall/ Combined, House Rent For Q-Iii, House Rent For Q-Iv.	Gas Chrg All Over 500 Mmbtu, Gas Chrg Over 300 - 500 Mmbtu, Gas Chrg Overall/ Combined, Gas Chrg Over 200 - 300 Mmbtu, Gas Chrg Over 100 - 200 Mmbtu, Elect.Charges Above 1000 Units, Iron Bar (M.S. Bar) 1/2", Synthetic Enemal Ici, Cement (Local).
Furnishing & Household Equip. Maintenance etc		Finis 500 ML, Electric Blub Energy Saver 14 Watt, Washing Powder (Wheel/Bonus), Hand Stiching Needle, Carpet Plain Av. Qlty.	Bucket(Balti) Plastic Med, Gas Burner Double, Gizer Large Size 30 Gallon, Water Cooler 9/10 Ltr., Household Servant Female (Part Time).	Tube Light Philips 40 Watt, Non Stick Cooking Pan, Harpic, Tea Set Pak. China Wear 21 Pcs, Sewing Machine (Singer), Boot Polish Cherry/Kiwi 50 ML, Frying Pan Steel Avg. Qlty, Hotpot Set Plastic 3 Pcs, Chair Shesham Wood.
Health	Burnol Cream 30 Gm, Vicks Vaporub/ Balm, Calcium Syrup Sandoz, Hydryllin Syrup 120 ML.	Renitec Tab. 5 Mg., Sugar Test (Random/Fasting), Septran Tablets, Gripe-Water Woodward, Ventolin Tab.	Ecg Charges, Glycrine Small Bottle, Disprin Tab., Entox Tab., Panadol Tab. Extra/Plain.	Betnovate-N Ointment 5 Gm, Dettol (Medium), Calpol Syrup 60 ML., Sancos Syrup (50 ML), Flagyl Tab. 200 Mg., Brufen Tabs 200-Mg., Trisil Tab., Thermometer China.
Transport	Train Fare Ist Slp. > 500, Air Fare Economy Class., Train Fare Ist Slp.101-500, Train Fare A/C Slp > 500K, Plateform Ticket.	Car Service Charges, Motor Cycle Hero 70 Cc.	Car Suzuki 1000 Cc, Bicycle With Tyres & Tube, Motorcycle Honda Cd-70, Minibus Fare Min.Within City.	Train Fare Eco. 1-100 Km., Bus Fare Outside City (Non A/C), Train Fare Ist Slp. 1-100, Train Fare Eco. 101-500 K, Cng, Car Honda Civic 1500 Cc, Bus Fare Max (Within City), Bus Fare Min (Within City), Train Fare A/C Slp.101-500.
Communication	Mobile Cell Charges.	Fax Charges (Local), Mobile Set Nokia/Sony/Ericsson Av.Qlty, Internet Charges.		Telephone Charges Local Call, Telephone Charges Outside City, T.C.S. Ch. Min.Within Zone, Telephone Set Av. Qlty.
Recreation & Culture	Maths Book Class Ix Or X, V.C.P. Panasonic/Lg/National, Tv Licence Fee Domestic, Video Cassette Blank. Tdk/Sony, Weekly "Mag".	Cable Charges, T.V. 20" Colored Sony, Radio With C.Player National, Computer Cd (Tdk/Imation), Dvd/Vcd Player Panasonic/Lg, Maths Book Ist.Year (T.B. Board).	Urdu Book Ist Year/ Inter, English Book Class V1, Eng. Book Ist.Yr Complete Set, Maths Book Calss V (T.B.Board), Urdu Book Class V (T.B.Board).	Daily "Nawa-E-Waqt", Daily "Jang", Cinema Non-A/C High Class, Cinema A/C High Class, English Book Ba/B.Sc, Pakistan Studies Book Ba/B.Sc, Photostate Paper 70 Gm, Urdu Book Class Ix/X (T.B.Board), Urdu Book Ba/B.Sc, Pen Ink Dollor 57 ML Bottle.
Education	Coaching Charges For Class Xi/ Xii Commerce Group, Coaching Fee For Class Ix/ X.	Pvt School Fee Eng.Med (Class-X), Pvt School Fee Eng.Med (Class-V).	I.T. Tuition Fees, Pvt School Fee Eng.Med (Class-I).	Mba Tuition Fee, Govt. Med. College Fee Mbbs Ist Year, Pvt Eng.Colege Fee (Ist Year), Govt. University Fee Msc/ Ma, Govt. Engg. Coll. Fee Ist Year, Pvt Med.College Fee Mbbs(Ist Year).
Restaurant & Hotels		Chicken Biryani Full/Double, Bread Tandoori St. Size.	Cooked Beef (Av. Hotel), Cooked Dal (Av. Hotel), Tea Prepared (Ordinary).	Cooked Mutton (Av. Hotel).
Miscellaneous	Toothpaste Macleans 70 Gms.	Beauty Parlour Hair Style Charges, Toilet Soap Lifebouy 140 Gms, Shampoo Sunsilk/Pantene 100 ML.	Hair Oil Amla/Chambeli, Nail Polish S.Miss/Medora, Silver Tezabi 24 Ct, Hair Colour Bigen, Gel Medium Size.	Toothpowder Dentonic 90 Gms, Perfume Med.Size Medora/Broche, Gold Tezabi 24 Ct, Purse Ladies (Leather) Av. Qlty, Toothpast Med Size Colgate 70Gms, Toilet Soap Lux 95 Gms.

Table A5: City- wise CPI Inflation by Income Groups, March 2019

	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	8.7	8.7	9.2	9.2	8.1	8.1	8.9	8.9	9.1	9.1	8.7	8.7
2 Islamabad	6.2	6.2	6.4	6.4	5.9	5.9	6.3	6.3	6.6	6.6	6.0	6.0
3 Lahore	5.0	5.0	5.3	5.3	4.6	4.6	5.1	5.1	5.3	5.3	4.9	4.9
4 Gujranwala	8.9	8.9	11.6	11.6	5.8	5.8	9.3	9.3	11.8	11.8	6.7	6.7
5 Sialkot	8.1	8.1	8.5	8.5	7.6	7.6	7.7	7.7	8.2	8.2	7.2	7.2
6 Faisalabad	9.5	9.5	11.8	11.8	7.1	7.1	9.5	9.5	11.6	11.6	7.5	7.5
7 Multan	7.1	7.1	8.7	8.7	5.1	5.1	7.3	7.3	8.6	8.6	5.9	5.9
8 Sargodha	7.3	7.3	7.1	7.1	7.5	7.5	7.4	7.4	6.5	6.5	8.2	8.2
9 Bahawalpur	5.6	5.6	7.2	7.2	4.1	4.1	5.2	5.2	6.5	6.5	4.1	4.1
10 Karachi	8.2	8.2	11.1	11.1	4.8	4.8	8.7	8.7	11.2	11.2	6.0	6.0
11 Hyderabad	10.3	10.3	12.0	12.0	8.0	8.0	10.7	10.7	12.2	12.2	9.0	9.0
12 Sukkur	6.3	6.3	3.6	3.6	9.6	9.6	6.4	6.4	3.5	3.5	9.2	9.2
13 Larkana	7.6	7.6	9.1	9.1	6.1	6.1	7.2	7.2	8.3	8.3	6.3	6.3
14 Peshawar	10.3	10.3	11.8	11.8	8.7	8.7	10.5	10.5	11.2	11.2	9.8	9.8
15 Bannu	7.9	7.9	8.4	8.4	7.4	7.4	8.3	8.3	8.1	8.1	8.5	8.5
16 Quetta	11.7	11.7	12.6	12.6	10.7	10.7	12.0	12.0	12.2	12.2	11.8	11.8
17 Khuzdar	7.5	7.5	9.2	9.2	5.7	5.7	7.0	7.0	9.1	9.1	5.0	5.0
	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	9.6	9.6	9.1	9.1	10.0	10.0	9.8	9.8	9.6	9.6	9.9	9.9
2 Islamabad	6.9	6.9	6.9	6.9	7.0	7.0	7.4	7.4	7.6	7.6	7.3	7.3
3 Lahore	5.6	5.6	5.2	5.2	6.1	6.1	5.7	5.7	5.2	5.2	6.0	6.0
4 Gujranwala	10.0	10.0	11.9	11.9	8.3	8.3	10.0	10.0	11.6	11.6	8.7	8.7
5 Sialkot	8.1	8.1	8.2	8.2	8.0	8.0	8.0	8.0	8.3	8.3	7.6	7.6
6 Faisalabad	10.0	10.0	11.4	11.4	8.7	8.7	9.6	9.6	11.4	11.4	8.3	8.3
7 Multan	7.7	7.7	8.5	8.5	7.0	7.0	7.7	7.7	8.6	8.6	7.0	7.0
8 Sargodha	7.8	7.8	6.6	6.6	8.8	8.8	7.8	7.8	6.3	6.3	8.8	8.8
9 Bahawalpur	5.9	5.9	6.6	6.6	5.3	5.3	5.4	5.4	6.2	6.2	4.8	4.8
10 Karachi	9.3	9.3	11.1	11.1	7.5	7.5	9.2	9.2	10.8	10.8	7.8	7.8
11 Hyderabad	11.6	11.6	12.3	12.3	11.0	11.0	11.5	11.5	12.0	12.0	11.1	11.1
12 Sukkur	6.3	6.3	2.8	2.8	9.4	9.4	6.2	6.2	3.3	3.3	8.5	8.5
13 Larkana	7.5	7.5	8.2	8.2	7.0	7.0	7.2	7.2	7.6	7.6	6.9	6.9
14 Peshawar	11.4	11.4	11.1	11.1	11.7	11.7	11.3	11.3	11.0	11.0	11.6	11.6
15 Bannu	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.9	8.9	7.8	7.8
16 Quetta	13.0	13.0	12.2	12.2	13.8	13.8	13.0	13.0	12.0	12.0	13.8	13.8
17 Khuzdar	6.0	6.0	7.6	7.6	4.5	4.5	5.9	5.9	7.4	7.4	4.7	4.7
	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	10.0	10.0	9.3	9.3	10.3	10.3	9.8	9.8	9.3	9.3	10.0	10.0
2 Islamabad	8.0	8.0	7.5	7.5	8.3	8.3	7.7	7.7	7.4	7.4	7.9	7.9
3 Lahore	6.1	6.1	5.1	5.1	6.7	6.7	5.8	5.8	5.2	5.2	6.3	6.3
4 Gujranwala	10.1	10.1	12.0	12.0	9.2	9.2	10.0	10.0	11.8	11.8	8.7	8.7
5 Sialkot	8.7	8.7	9.1	9.1	8.6	8.6	8.3	8.3	8.6	8.6	8.1	8.1
6 Faisalabad	9.6	9.6	10.4	10.4	9.2	9.2	9.8	9.8	11.2	11.2	8.9	8.9
7 Multan	7.5	7.5	8.4	8.4	7.1	7.1	7.6	7.6	8.5	8.5	7.1	7.1
8 Sargodha	8.0	8.0	6.6	6.6	8.6	8.6	7.9	7.9	6.6	6.6	8.6	8.6
9 Bahawalpur	5.3	5.3	5.1	5.1	5.4	5.4	5.6	5.6	6.2	6.2	5.2	5.2
10 Karachi	9.0	9.0	9.7	9.7	8.6	8.6	8.9	8.9	10.3	10.3	8.0	8.0
11 Hyderabad	12.9	12.9	11.9	11.9	13.4	13.4	12.0	12.0	12.2	12.2	11.8	11.8
12 Sukkur	7.4	7.4	3.1	3.1	9.4	9.4	6.7	6.7	3.3	3.3	9.0	9.0
13 Larkana	7.6	7.6	7.5	7.5	7.7	7.7	7.6	7.6	8.1	8.1	7.3	7.3
14 Peshawar	11.9	11.9	10.2	10.2	12.7	12.7	11.5	11.5	10.9	10.9	11.9	11.9
15 Bannu	8.5	8.5	7.3	7.3	9.0	9.0	8.3	8.3	8.2	8.2	8.4	8.4
16 Quetta	13.2	13.2	10.8	10.8	14.3	14.3	13.0	13.0	11.7	11.7	13.8	13.8
17 Khuzdar	6.8	6.8	8.1	8.1	6.1	6.1	6.8	6.8	8.3	8.3	5.9	5.9

Table A6: City- wise CPI Inflation (YoY) March 2019

High inflation cities				Low inflation cities			
City	General	Food	Non-food	City	General	Food	Non-food
D. I. Khan	14.7	8.8	18.5	Mianwali	8.9	8.6	9.1
Turbat	14.0	3.6	19.6	Karachi	8.9	10.3	8.0
Quetta	13.0	11.7	13.8	Muzaffargarh	8.9	9.3	8.6
Dadu	12.7	8.0	16.0	Loralai	8.5	7.9	8.9
Abbottabad	12.7	16.9	10.2	Jhang	8.4	7.2	9.1
Wazirabad	12.6	11.6	13.3	D. M. Jamali	8.3	7.5	8.9
Hyderabad	12.0	12.2	11.8	Bannu	8.3	8.2	8.4
Peshawar	11.5	10.9	11.9	Sialkot	8.3	8.6	8.1
Mirpukhas	11.1	13.1	9.6	Sargodha	7.9	6.6	8.6
Mardan	10.8	9.4	11.6	Mingora	7.8	8.4	7.5
Jhelum	10.5	12.6	9.2	Islamabad	7.7	7.4	7.9
Bahawalnagar	10.5	7.4	12.4	Multan	7.6	8.5	7.1
Gujranwala	10.0	11.8	8.7	Larkana	7.6	8.1	7.3
Faisalabad	9.8	11.2	8.9	Sahiwal	7.5	6.1	8.3
Rawalpindi	9.8	9.3	10.0	R. Y. Khan	6.9	8.1	6.1
Attock	9.6	10.8	8.7	Khuzdar	6.8	8.3	5.9
				Sukkur	6.7	3.3	9.0
				D. G. Khan	6.7	7.4	6.2
				Vehari	6.3	6.5	6.2
				Lahore	5.8	5.2	6.3
				Bahawalpur	5.6	6.2	5.2
				Gawadar	5.4	-0.3	9.1
				Nawabshah	5.4	2.5	7.2
				Mithi	3.6	4.2	3.2

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

Table A7: Income Group-wise Inflation (percent)						
	MoM			YoY		
	Mar-18	Feb-19	Mar-19	Mar-18	Feb-19	Mar-19
<u>Up to Rs. 8000</u>						
General	-0.2	0.8	1.8	1.5	6.0	8.2
Food	-0.7	1.5	3.0	-1.1	4.6	8.5
Non-food	0.4	0.1	0.4	4.6	7.7	7.8
<u>Rs. 8001- 12000</u>						
General	-0.1	0.8	1.7	1.9	6.3	8.1
Food	-0.6	1.5	3.0	-0.7	4.7	8.4
Non-food	0.5	0.1	0.4	4.7	7.9	7.8
<u>Rs. 12001- 18000</u>						
General	0.1	0.7	1.6	2.2	6.5	8.1
Food	-0.5	1.5	3.0	-0.6	4.9	8.5
Non-food	0.5	0.1	0.4	4.8	7.9	7.8
<u>Rs. 18001- 35000</u>						
General	0.2	0.7	1.5	2.6	8.3	9.7
Food	-0.3	1.5	3.0	-0.3	5.0	8.5
Non-food	0.6	0.1	0.4	5.1	10.8	10.6
<u>Above Rs. 35000</u>						
General	0.5	0.5	1.2	4.3	9.8	10.6
Food	0.0	1.4	2.8	1.1	5.2	8.2
Non-food	0.8	0.2	0.5	5.9	12.0	11.7
<u>All income groups</u>						
General	0.3	0.6	1.4	3.2	8.2	9.4
Food	-0.3	1.4	2.9	0.1	5.0	8.4
Non-food	0.7	0.1	0.5	5.4	10.3	10.1

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices	Percentage change	
			Mar-19	YoY	MoM
1	Wheat	10Kg.	353.7	3.5	-0.4
2	Wheat Flour Bag	10Kg.	394.6	2.7	-0.2
3	Rice Basmati Broken	Kg.	78.3	5.9	0.2
4	Rice Irri-6/9	Kg.	57.7	10.9	2.1
5	Bread Plain Med.Size (340-400 Gm.)	Each	43.7	2.7	0.3
6	Beef	Kg.	402.1	14.8	0.5
7	Mutton	Kg.	821.2	10.3	0.2
8	Chicken Live (Farm)	Kg.	178.5	5.7	17.7
9	Milk Fresh	Litr	87.9	6.5	0.9
10	Curd	Kg.	103.2	4.1	0.2
11	Milk Powdered Nido	500G	406.3	5.7	0.1
12	Egg Hen (Farm)	Doz.	101.1	6.7	-9.5
13	Mustard Oil	Kg.	192.7	5.0	0.7
14	Cooking Oil (Tin)	2.5Ltr	515.5	9.5	0.5
15	Veg. Ghee (Tin)	2.5Kg.	493.2	6.2	0.5
16	Veg.Ghee Loose	Kg.	159.5	9.5	0.3
17	Bananas	Doz.	85.7	5.6	15.1
18	Masoor Pulse Washed	Kg.	121.8	5.6	0.1
19	Moong Pulse Washed	Kg.	138.4	19.1	10.5
20	Mash Pulse Washed	Kg.	152.1	0.6	-0.6
21	Gram Pulse Washed	Kg.	125.1	9.0	-0.7
22	Potatoes	Kg.	21.1	-11.8	-1.7
23	Onions	Kg.	36.9	11.4	28.9
24	Tomatoes	Kg.	100.0	214.6	-7.8
25	Sugar	Kg.	61.2	19.1	3.4
26	Gur	Kg.	91.0	19.2	4.4
27	Salt Powdered Loose (Lahori)	Kg.	12.4	11.3	0.2
28	Red Chillies Powder Loose	Kg.	348.7	34.0	0.3
29	Garlic	Kg.	180.3	3.4	8.8
30	Tea (Yellow Lable 200 Gm.)	200Gm.	219.5	13.5	0.0
31	Cooked Beef Plate	Each	118.2	13.7	2.5
32	Cooked Dal Plate	Each	63.6	9.1	1.0
33	Tea Prepared (Sada)	Cup	23.1	9.0	2.1
34	Cigarettes K-2 (20'S)	20'S	59.7	17.6	0.0
35	Long Cloth (Coarse Latha)	Mtr.	263.6	23.2	9.6
36	Shirting	Mtr.	181.7	6.2	0.5
37	Lawn	Mtr.	312.5	20.8	8.3
38	Georgette (Voil Printed)	Mtr.	136.1	6.1	2.1
39	Sandal Gents Bata	Pair	699.0	0.0	0.0
40	Chappal Spng.Bata (Gents)	Pair	199.0	11.1	0.0
41	Sandal Ladies Bata	Pair	599.0	19.2	0.0
42	Electric Charges 1-50	Unit	2.0	0.0	0.0
43	Gas Charges Upto 3.3719	Mmbtu	145.1	12.7	0.0
44	Kerosene	Litr	122.9	6.8	1.8
45	Firewood	40Kg	646.8	2.2	-0.1
46	Energy Savor 14 Watt	Each	171.5	0.8	0.2
47	Washing Soap (200-250 Gm.)	Cake	31.1	18.8	4.4
48	Match Box	Each	2.5	9.3	0.0
49	Petrol	Litr	94.0	5.6	2.8
50	Diesel	Litr	112.5	13.1	4.5
51	L.P.G.(11 Kg Cylander.)	Each	1374.2	15.5	0.2
52	Tele. Local Call	Call	4.7	18.0	0.0
53	Bath Soap Lifebouy (Standard)	Cake	40.5	2.7	0.0
Maximum				214.6	28.9
Median				9.0	0.3
Minimum				-11.8	-9.5

Table A9: Distribution of Price Changes (YoY) - WPI Items: March 2019				
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)
Agriculture Forestry & Fishery Products	Edible Roots/Potatos, Hides And Fur Skins,Raw, Fish Live Fresh Or Chilled.	Milk From Bovine Animals, Fuel Wood In Logs, Pulses, Cotton Seeds, Wheat, Fresh Fruits, Poultry.	Raw Animal Material/Wool, Eggs, Other Oil Seeds, Unmanufactured Tobacco.	Sorghum/Jowar, Vegetables, Sugar Crops, Millet/Bajra, Stimulant And Spice Crops, Fibre Crops, Maize, Rice.
Ores & Minerals, Electricity Gas & Water	Electrical Energy, Coal Not Agglomerated.	Salt & Pure Sodium Chloride.		Natural Gas Liquified.
Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products	Nylon Yarn, Woolen Carpets, Chocolate.	Vegetable Oil Refined, Bed Sheets, Blankets, Processed Liquid Milk, Other Fabrics, Silk And Reyon Fabrics, Fruit Juices, Quilts, Beverages, Wheat Flour, Vegetables & Fruit Juices, Synthetic Carpets, Mineral Water, Sugar Confectionary.	Ready Made Garments, Oil Cakes, Other Cereal Flour, Hosiery Products, Blended Yarn, Ice Cream, Leather With Out Hairs, Coffee And Tea, Vegetable Ghee, Dairy Products N.E.C.	Other Leather N.E.C., Tobbaco Products, Sugar Refined, Spices, Cotton Yarn, Footwears, Dried Fruits & Nuts, Meat Of Animals, Towels.
Other Transportable Goods except Metal Products, Machinery and Equipments	Coke.	Medicines, Other Glass Articles, Printing Paper, Timber, Pesticides, Bricks Blocks And Tiles, Matches.	Plastic Products, Ceramics And Sanitary, Dying Materials, Mobil Oil, Motor Sprit, Insecticised, Soaps & Detergent, Bed Foams.	Furnace Oil, Hard Board, Paints & Varnishes, Fertilizers, Chemicals, Diesel Oil, Auto Tyres, Kerosine Oil, Cement.
Metal Product Machinery & Equipment	Engines And Motors, Vacuum Pumps, Pig Iron, Concrate Mixer, Radio And Television, Cultivators, Chuff Cutter.	Bicycles, Lighting Equipments, Electrical Wires.	Motor Vehicales, Steel Products, Air Conditioners.	Motor Cycles, Lathe Machines, Steel Bars & Sheets, Tractors, Refrige,Wash& Sew Mach,Iron,Fan, Pipe Fittings.

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

Items and specification	Weights	Index		
		Mar-18	Feb-19	Mar-19
General	100.00	220.25	237.61	240.98
Food & Non-Alcoholic Beverages.	34.83	228.39	239.59	247.17
1 Wheat	0.35	204.63	212.26	212.59
2 Wheat Flour	4.16	211.52	216.91	217.34
3 Wheat Product	0.10	214.16	218.51	217.61
4 Besan	0.15	267.57	274.79	275.20
5 Rice	1.58	192.45	201.45	202.28
6 Cereals	0.16	259.04	269.41	270.70
7 Bakery & Confectionary	1.16	224.66	233.60	234.33
8 Nimco	0.46	258.14	263.41	264.08
9 Meat	2.43	293.53	331.09	332.66
10 Chicken	1.36	207.80	177.16	205.30
11 Fish	0.30	224.31	239.46	242.29
12 Milk Fresh	6.68	279.50	290.78	291.26
13 Milk Product	0.63	272.17	284.16	284.62
14 Milk Powder	0.11	239.08	257.66	258.38
15 Eggs	0.46	198.03	228.93	214.46
16 Mustard Oil	0.10	162.97	167.25	167.29
17 Cooking Oil	1.75	139.23	148.19	148.45
18 Vegetable Ghee	2.07	143.79	153.22	154.11
19 Dry Fruits	0.25	279.84	311.34	312.73
20 Fresh Fruits	1.86	266.29	233.39	262.61
21 Pulse Masoor	0.27	160.02	165.53	166.04
22 Pulse Moong	0.23	218.82	238.26	268.48
23 Pulse Mash (Washed)	0.21	217.65	220.61	220.80
24 Pulse Gram	0.24	259.27	283.17	284.87
25 Gram Whole	0.16	280.90	268.30	266.42
26 Beans	0.03	245.21	266.68	269.96
27 Potatoes	0.45	160.07	142.26	135.14
28 Onion	0.51	204.19	169.85	236.56
29 Tomatoes	0.42	97.45	340.59	404.71
30 Fresh Vegetables	1.75	202.58	208.68	259.66
31 Sugar	1.04	184.51	212.28	218.09
32 Gur	0.02	238.44	271.58	279.41
33 Honey	0.04	341.03	389.58	392.98
34 Sweet Meet	0.25	257.09	277.48	278.37
35 Beverages	1.20	227.38	234.18	234.23
36 Jam, Tomato Ketchup & Pickle	0.25	225.48	239.50	239.87
37 Condiments	0.27	278.51	297.84	299.19
38 Spices	0.54	239.75	279.54	282.09
39 Tea	0.84	296.63	319.43	319.96
Alcoholic Beverages, Tobacco	1.41	316.60	354.79	355.50
40 Cigarettes	1.39	306.62	350.86	351.79
41 Betel Leaves & Nuts	0.02	922.46	593.36	580.96
Clothing & Footwear	7.57	245.80	261.82	263.54
42 Cotton Cloth	1.73	238.01	253.46	259.30
43 Woolen Cloth	0.88	264.09	280.51	278.73
44 Ready Made Garments	0.97	256.20	269.46	270.90
45 Woolen Readymade Garments	0.40	266.38	289.31	289.31
46 Hosiery	0.51	259.22	275.19	277.45
47 Dopatta	0.44	255.58	272.04	273.38
48 Cleaning & Laundering	0.21	284.44	300.26	303.52

Table A10: Consumer Price Index Numbers by Major Groups and Composite Commodities					
Items and specification		Weights	Index		
			Mar-18	Feb-19	Mar-19
49 Tailoring		0.88	336.91	358.48	359.07
50 Footware		1.55	167.95	181.10	181.18
Housing, Water, Elect, Gas & Other Fuel		29.41	202.71	226.02	226.12
51 House Rent		21.81	195.96	212.02	212.02
52 Construction Input Item		0.56	264.40	293.08	295.39
53 Construction Wage Rate		0.33	257.14	278.16	281.40
54 Water Supply		0.50	174.83	194.95	195.29
55 Electricity		4.40	238.10	258.28	258.28
56 Gas		1.58	158.08	292.94	292.94
57 Kerosene Oil		0.01	259.58	274.12	278.25
58 Fire Wood Whole		0.23	302.24	305.94	307.17
Furnished H.Hold Equip.& Maint. Etc		4.21	234.67	255.07	257.00
59 Furniture		0.33	228.22	251.62	252.79
60 Household Textile		0.65	236.78	251.59	253.05
61 Household Equipment		0.59	185.70	198.07	198.67
62 Utensils		0.32	242.89	272.66	273.60
63 Plastic Products		0.25	218.99	242.52	245.73
64 Washing Soap & Detergent		0.79	235.67	260.03	261.30
65 Sewing Needle & Dry Cell		0.15	211.92	230.38	231.04
66 Household Servant		1.04	265.40	286.73	290.60
67 Marriage Hall Charges		0.08	257.76	275.23	277.33
Health		2.19	221.26	237.67	239.12
68 Drug Medicine		1.27	187.99	201.80	204.15
69 Medical Equipment		0.01	256.26	271.19	277.26
70 Doctor (MBBS) Clinic Fee		0.59	300.06	321.75	321.75
71 Medical Test		0.32	206.75	223.77	224.24
Transport		7.20	186.98	209.05	211.31
72 Motor Vehicle		0.66	185.84	205.06	206.44
73 Motor Vehicle Accessories		0.24	216.02	237.99	238.24
74 Motor Fuel		3.03	167.63	186.52	189.40
75 Mechanical Service		0.46	238.14	255.38	256.98
76 Motor Vehicle Tax		0.11	210.18	210.18	210.18
77 Transport Services		2.70	196.76	224.79	226.96
Communication		3.22	133.37	143.63	143.65
78 Postal Services		0.07	259.00	272.63	272.63
79 Communication & Apparatus		3.15	130.73	140.93	140.94
Recreation & Culture		2.02	200.38	215.79	219.77
80 Recreation & Culture		0.86	132.03	137.68	137.69
81 Text Books		0.57	287.98	304.92	316.96
82 News Papers		0.19	202.81	235.21	235.21
83 Stationery		0.40	222.02	248.25	251.19
Education		3.94	275.17	289.13	292.02
84 Education		3.94	275.17	289.13	292.02
Restaurants And Hotels		1.23	287.84	303.57	306.48
85 Ready Made Food		1.23	287.84	303.57	306.48
Miscellaneous Goods And Services		2.76	256.35	280.40	282.45
86 Personal Care		1.49	234.18	249.74	250.69
87 Cosmetics		0.39	208.65	233.79	236.95
88 Blades		0.03	201.85	217.60	221.15
89 Personal Equipments		0.84	319.45	358.33	361.77

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

Items and Specifications	Index		
	Mar-18	Feb-19	Mar-19
General	225.22	249.44	253.67
Agriculture Forestry & Fishery	254.55	269.34	278.88
1 Wheat	209.00	215.86	215.39
2 Maize	205.11	234.21	240.50
3 Rice	173.85	194.20	200.73
4 Sorghum/Jowar	256.85	309.61	414.71
5 Millet/Bajra	188.77	214.73	253.66
6 Vegetables	195.23	213.58	272.54
7 Fresh Fruits	291.61	268.34	299.74
8 Dry Fruits	269.25	282.99	283.90
9 Cotton Seeds	257.18	262.82	265.42
10 Other Oil Seeds	177.04	188.20	187.30
11 Edible Roots/ Potatoes	148.10	130.41	115.94
12 Stimulant And Spice Crops	266.39	322.69	325.84
13 Pulses	240.45	243.61	249.11
14 Sugar Crops	257.62	275.85	349.69
15 Fibre Crops	234.67	278.10	278.10
16 Unmanufactured Tobacco	308.03	325.00	324.89
17 Poultry	219.05	188.94	219.94
18 Milk From Bovine Animals	275.47	286.63	288.02
19 Eggs	201.84	234.20	215.43
20 Raw Animal Material/Wool	173.81	190.42	190.56
21 Hides And Fur Skins, Raw	101.97	92.90	92.98
22 Fuel Wood In Logs	283.56	295.14	295.14
23 Fishes Live Fresh Or Chilled	476.70	462.20	463.18
Ores/Minerals, Gas & Elect.	242.92	291.06	291.02
24 Coal Not Agglomerated	155.29	155.29	155.29
25 Natural Gas Liquefied	211.00	315.82	315.75
26 Salt & Pure Sodium Chloride	266.38	275.23	275.23
27 Electrical Energy	288.00	283.90	283.90
Food, Beverages, Tobacco, Textiles	231.06	256.00	258.24
28 Meat Of Animals	314.84	350.63	353.19
29 Vegetables & Fruit Juices	224.97	228.62	228.62
30 Dried Fruits & Nuts	291.20	329.84	331.44
31 Fruit Juices	183.21	188.98	189.38
32 Vegetable Oil Refined	156.57	163.26	164.09
33 Vegetable Ghee	127.28	136.85	136.92
34 Oil Cakes	226.67	250.97	247.94
35 Processed Liquid Milk	288.23	296.92	299.78
36 Milk And Cream In Solid Form	223.34	238.50	240.19
37 Ice Cream	266.02	287.85	287.85
38 Dairy Products N.E.C	272.54	289.39	293.13
39 Wheat Flour	194.41	198.07	198.19
40 Other Cereal Flour	210.20	231.67	229.53
41 Sugar Refined	189.93	222.13	233.17
42 Chocolate	100.00	100.00	100.00
43 Sugar Confectionary	127.85	127.25	128.15
44 Coffee And Tea	267.98	287.23	288.37
45 Spices	202.23	241.32	240.67
46 Other Food Products	294.50	314.10	316.48
47 Mineral Water	211.50	210.16	212.04
48 Beverages	173.00	176.55	176.55
49 Tobacco Products	318.37	393.80	393.80
50 Cotton Yarn	222.05	263.36	264.15
51 Nylon Yarn	143.99	143.99	143.99
52 Blended Yarn	189.19	204.12	204.96
53 Woven Fabrics	321.49	344.94	344.94
54 Cotton Fabrics	214.23	223.85	225.33
55 Other Fabrics	227.16	232.79	235.32

Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities				
Items and Specifications		Index		
		Mar-18	Feb-19	Mar-19
56	Silk And Rayon Fabrics	188.14	194.81	194.81
57	Towels	276.14	308.50	308.50
58	Blankets	265.03	277.52	277.52
59	Bed Sheets	256.87	269.00	269.00
60	Quilts	222.32	229.26	229.26
61	Woolen Carpets	196.43	196.43	196.43
62	Synthetic Carpets	130.95	131.80	131.80
63	Hosiery Products	244.42	266.64	266.64
64	Ready Made Garments	201.37	220.45	221.50
65	Leather With Out Hairs	212.68	228.93	229.55
66	Other Leather N.E.C	207.02	496.90	568.19
67	Footwear's	145.51	168.09	168.09
Other Transportable Goods		191.75	217.51	222.43
68	Timber	237.00	244.62	244.62
69	Printing Paper	168.59	174.76	174.76
70	Hard Board	225.00	291.67	291.67
71	Coke	163.45	163.45	163.45
72	Motor Sprit	148.77	152.67	156.91
73	Diesel Oil	205.65	229.16	238.13
74	Kerosene Oil	203.79	219.79	230.47
75	Furnace Oil	125.91	167.71	183.68
76	Mobil Oil	200.85	213.34	213.34
77	Chemicals	188.57	222.04	222.25
78	Dying Materials	146.55	150.72	155.94
79	Fertilizers	226.19	267.89	266.94
80	Pesticides	310.16	316.64	316.64
81	Insecticides	140.61	147.58	148.01
82	Paints & Varnishes	301.12	364.40	364.40
83	Medicines	177.01	181.30	185.56
84	Soaps & Detergent	191.35	200.46	201.14
85	Auto Tyres	177.11	204.20	204.20
86	Plastic Products	226.00	246.23	246.23
87	Glass Sheets	302.27	337.30	337.30
88	Other Glass Articles	318.10	331.31	331.31
89	Ceramics And Sanitary	234.76	249.92	249.92
90	Bricks Blocks And Tiles	223.30	228.34	227.28
91	Cement	210.55	238.29	237.32
92	Bed Foams	173.00	182.67	181.83
93	Matches	171.36	172.57	172.57
Metal Product Machinery & Equip		179.07	191.60	191.40
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	147.50	173.56	171.55
96	Pipe Fittings	215.66	238.51	238.51
97	Steel Products	176.70	189.08	189.19
98	Engines And Motors	116.98	116.98	116.98
99	Vacuum Pumps	123.69	123.69	123.69
100	Air Conditioners	200.10	211.33	211.33
101	Cultivators	190.66	190.66	190.66
102	Chuff Cutter	153.46	153.46	153.46
103	Tractors	201.75	226.93	226.93
104	Lathe Machines	241.06	299.21	299.21
105	Concrete Mixer	138.83	138.83	138.83
106	Refrige,Wash& Sew Mach, Iron,Fan	218.55	242.23	243.04
107	Electrical Wires	205.92	208.22	208.22
108	Lighting Equipments	171.39	174.13	174.13
109	Radio And Television	140.42	140.42	140.42
110	Motor Vehicles	211.00	227.69	229.70
111	Motor Cycles	126.05	159.20	159.20
112	Bicycles	187.65	194.31	194.31

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

Period		CPI			WPI			SPI *
		Overall	Food	Non-food	Overall	Food	Non-Food	
2008-09		117.03	123.11	113.37	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	167.27	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
2016-17		212.29	226.59	233.37	216.02	248.74	195.27	220.10
2017-18		220.62	232.95	237.59	223.52	253.34	204.61	223.60
2016	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
	Apr	216.30	237.50	203.59	219.22	252.45	198.13	222.07
	May	216.33	237.01	203.94	218.78	251.10	198.26	220.51
	Jun	215.45	234.37	204.11	217.77	248.90	198.02	220.68
	Jul	216.19	234.47	205.23	217.24	249.95	196.63	219.28
	Aug	216.61	235.38	205.36	217.96	251.05	196.96	219.82
	Sep	217.98	238.43	205.72	218.08	252.27	196.39	223.38
	Oct	219.61	239.89	207.45	219.41	254.40	197.22	225.15
	Nov	220.42	240.79	208.21	220.20	252.83	199.49	226.29
	Dec	220.20	239.43	208.67	221.00	253.31	200.49	225.66
2018	Jan	220.27	236.92	210.29	224.99	252.74	207.38	224.13
	Feb	219.58	234.31	210.75	224.66	250.56	208.23	222.19
	Mar	220.25	233.67	212.21	225.22	251.00	208.52	221.67
	Apr	224.25	237.08	216.56	228.07	254.52	211.28	223.13
	May	225.40	239.36	217.03	230.98	257.57	214.11	224.51
	Jun	226.68	241.37	217.87	234.40	259.86	218.25	228.00
	Jul	228.80	242.74	220.45	240.04	263.23	225.32	229.18
	Aug	229.27	243.25	220.89	241.93	262.42	228.93	228.72
	Sep	229.14	241.65	221.64	238.25	260.81	223.95	228.27
	Oct	234.49	246.27	227.43	248.19	266.83	236.36	235.22
	Nov	234.75	245.08	228.56	249.92	264.02	240.97	238.35
	Dec	233.78	241.70	229.03	247.72	261.58	238.93	238.12
2019	Jan	236.11	242.53	232.26	247.21	263.50	236.87	239.07
	Feb	237.61	246.03	232.56	249.44	265.38	239.32	244.35
	Mar	240.98	253.20	233.66	253.67	272.71	241.59	248.19

*: all groups combined

Table A13: International Commodity Prices/Indices				
	Dec-18	Jan-19	Feb-19	Mar-19
Energy				
Crude Oil (US\$ per barrel) *	54.0	56.6	61.1	63.8
Energy Index (2010 = 100)	72.6	73.8	77.4	80.0
Food				
Rice (\$/MT)	404.0	410.0	408.0	406.0
Wheat (\$/MT)	211.3	209.8	219.0	205.8
Sugar (US cent/ pound)^	0.3	0.3	0.3	0.3
Palm Oil (\$/MT)	535.0	584.6	603.0	573.0
Soybean Oil (\$/MT)	727.9	747.8	772.8	750.3
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	1.9	1.8	1.8	1.8
Metal Price Index (2010 = 100)	82.7	81.3	84.7	86.2
Copper (\$/MT)	6,075.3	5,939.1	6,300.5	6,439.5
Aluminum (\$/MT)	1,920.4	1,853.7	1,863.0	1,871.2
Iron Ore (\$ cents/dry MT)	69.2	76.2	88.2	86.5
Tin (\$/MT)	19,259.6	20,457.8	21,264.0	21,393.4
Nickel (\$/MT)	10,835.1	11,523.1	12,685.2	13,026.3
Zinc (\$/MT)	2,616.3	2,569.7	2,707.2	2,850.6
Lead (\$/MT)	1,972.3	1,997.1	2,062.8	2,046.5
Uranium (\$/MT)@	27.8	28.9	28.0	25.3
DAP (\$/MT)	389.7	382.1	357.4	335.0
Urea (\$/MT)	276.7	260.0	250.6	247.5
Source: World Bank for all variables / indices except Uranium which is taken from Cameco (World Largest Uranium Producer)				
@ Data has been taken from Cameco website as it is not available in World Bank dataset.				
^ The measurement unit for sugar and Cotton is US cent/ pound in IMF data source, whereas it is US dollar / kg in World bank dataset. The result of two datasets can be reconciled using conversion formula: 1US \$ / kilogram = 45.359237 U.S. \$/MT = US\$ per metric tonne.				
* 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				

Table 14: CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY15	FY16	FY17	FY18	FY19
Jul	198.05	201.76	210.08	216.19	228.80
Aug	198.70	202.25	209.46	216.61	229.27
Sep	199.40	202.04	209.88	217.98	229.14
Oct	199.81	203.03	211.57	219.61	234.49
Nov	198.79	204.22	212.01	220.42	234.75
Dec	196.79	203.06	210.57	220.20	233.78
Jan	196.95	203.49	210.94	220.27	236.11
Feb	195.13	202.98	211.54	219.58	237.61
Mar	195.57	203.28	213.32	220.25	240.98
Apr	198.16	206.43	216.30	224.25	
May	199.66	205.99	216.33	225.40	
Jun	200.89	207.30	215.45	226.68	
Seasonally Adjusted Series					
Jul	197.03	200.70	208.96	215.05	227.63
Aug	197.44	201.06	208.28	215.47	228.15
Sep	198.29	201.04	208.96	217.13	228.36
Oct	198.31	201.53	210.05	218.06	232.88
Nov	197.72	203.17	210.94	219.33	233.65
Dec	197.77	204.02	211.51	221.14	234.77
Jan	197.70	204.33	211.89	221.34	237.27
Feb	197.11	204.99	213.59	221.65	239.76
Mar	197.27	205.06	215.20	222.17	241.44
Apr	197.92	206.15	215.95	223.84	
May	199.89	206.15	216.43	225.41	
Jun	201.26	207.58	215.64	226.77	

Table 15: CPI Food Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY15	FY16	FY17	FY18	FY19
Jul	222.80	224.14	234.69	234.47	242.74
Aug	224.05	224.86	232.48	235.38	243.25
Sep	224.12	223.87	232.80	238.43	241.65
Oct	223.74	224.86	234.68	239.89	246.27
Nov	222.74	227.55	235.17	240.79	245.08
Dec	218.08	223.90	230.69	239.43	241.70
Jan	217.10	222.58	228.45	236.92	242.53
Feb	213.15	221.07	229.19	234.31	246.03
Mar	214.25	222.25	233.47	233.67	253.20
Apr	217.26	227.53	237.50	237.08	
May	221.22	225.84	237.01	239.36	
Jun	223.84	228.95	234.37	241.37	
Seasonally Adjusted Series					
Jul	220.95	222.23	232.66	232.46	240.70
Aug	221.10	222.07	229.70	232.70	240.65
Sep	221.29	221.28	230.33	236.11	239.47
Oct	220.39	221.54	231.34	236.54	242.81
Nov	219.67	224.59	232.17	237.75	242.02
Dec	219.57	225.29	231.97	240.68	242.96
Jan	219.19	224.93	231.11	239.91	245.78
Feb	217.75	225.68	233.85	238.96	250.78
Mar	217.47	225.57	236.92	237.08	252.51
Apr	217.72	227.98	237.87	237.40	
May	222.18	226.67	237.74	239.94	
Jun	224.61	229.49	234.68	241.44	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY15	FY16	FY17	FY18	FY19	Average
Jul	100.52	100.53	100.54	100.53	100.51	100.52
Aug	100.64	100.59	100.57	100.53	100.49	100.56
Sep	100.56	100.50	100.44	100.39	100.34	100.45
Oct	100.76	100.74	100.72	100.71	100.69	100.73
Nov	100.54	100.52	100.50	100.50	100.47	100.51
Dec	99.50	99.53	99.56	99.57	99.58	99.55
Jan	99.62	99.59	99.55	99.52	99.51	99.56
Feb	99.00	99.02	99.04	99.06	99.10	99.05
Mar	99.14	99.13	99.13	99.14	99.81	99.27
Apr	100.12	100.14	100.16	100.18		100.15
May	99.88	99.92	99.95	99.99		99.94
Jun	99.82	99.87	99.91	99.96		99.89

Table 17: CPI Food Monthly & Average Seasonal Factors

Period	FY15	FY16	FY17	FY18	FY19	Average
Jul	100.84	100.86	100.87	100.87	100.85	100.86
Aug	101.34	101.26	101.21	101.15	101.08	101.21
Sep	101.28	101.17	101.07	100.98	100.91	101.08
Oct	101.52	101.50	101.44	101.42	101.43	101.46
Nov	101.40	101.32	101.29	101.28	101.26	101.31
Dec	99.32	99.39	99.45	99.48	99.48	99.42
Jan	99.05	98.95	98.85	98.75	98.68	98.86
Feb	97.89	97.96	98.01	98.05	98.11	98.00
Mar	98.52	98.53	98.55	98.56	98.57	98.54
Apr	99.79	99.81	99.84	99.87		99.83
May	99.57	99.64	99.69	99.76		99.66
Jun	99.66	99.77	99.87	99.97		99.82

Table 18: CPI Month-on-Month % Change Original & Seasonally Adjusted					
Original Series					
Period	FY15	FY16	FY17	FY18	FY19
Jul	1.70	0.43	1.34	0.34	0.94
Aug	0.33	0.24	-0.30	0.19	0.21
Sep	0.35	-0.10	0.20	0.63	-0.06
Oct	0.21	0.49	0.81	0.75	2.33
Nov	-0.51	0.59	0.21	0.37	0.11
Dec	-1.01	-0.57	-0.68	-0.10	-0.41
Jan	0.08	0.21	0.18	0.03	1.00
Feb	-0.92	-0.25	0.28	-0.31	0.64
Mar	0.23	0.15	0.84	0.31	1.42
Apr	1.32	1.55	1.40	1.82	
May	0.76	-0.21	0.01	0.51	
Jun	0.62	0.64	-0.41	0.57	
Seasonally Adjusted Series					
Jul	0.93	-0.27	0.67	-0.27	0.38
Aug	0.21	0.18	-0.33	0.19	0.23
Sep	0.43	-0.01	0.33	0.77	0.09
Oct	0.01	0.24	0.52	0.43	1.98
Nov	-0.30	0.81	0.43	0.58	0.33
Dec	0.03	0.42	0.27	0.83	0.48
Jan	-0.03	0.15	0.18	0.09	1.07
Feb	-0.30	0.32	0.80	0.14	1.05
Mar	0.08	0.04	0.75	0.23	0.70
Apr	0.33	0.53	0.35	0.75	
May	1.00	0.00	0.22	0.70	
Jun	0.68	0.69	-0.36	0.60	

Table 19: CPI Food Month-on-Month % Change Original & Seasonally Adjusted					
Original Series					
Period	FY15	FY16	FY17	FY18	FY19
Jul	2.68	0.13	2.50	0.04	0.57
Aug	0.56	0.32	-0.94	0.39	0.21
Sep	0.03	-0.44	0.14	1.29	-0.66
Oct	-0.17	0.44	0.81	0.61	1.91
Nov	-0.45	1.20	0.21	0.37	-0.48
Dec	-2.09	-1.61	-1.90	-0.56	-1.38
Jan	-0.45	-0.59	-0.97	-1.05	0.34
Feb	-1.82	-0.68	0.32	-1.11	1.44
Mar	0.52	0.54	1.87	-0.27	2.91
Apr	1.41	2.38	1.73	1.46	
May	1.82	-0.74	-0.21	0.96	
Jun	1.18	1.38	-1.11	0.84	
Seasonally Adjusted Series					
Jul	1.33	-1.06	1.38	-0.95	-0.31
Aug	0.07	-0.07	-1.27	0.10	-0.02
Sep	0.09	-0.36	0.28	1.47	-0.49
Oct	-0.41	0.12	0.44	0.18	1.39
Nov	-0.33	1.38	0.36	0.51	-0.32
Dec	-0.05	0.31	-0.09	1.23	0.39
Jan	-0.17	-0.16	-0.37	-0.32	1.16
Feb	-0.66	0.33	1.18	-0.39	2.03
Mar	-0.13	-0.05	1.31	-0.79	0.69
Apr	0.12	1.07	0.40	0.13	
May	2.04	-0.57	-0.05	1.07	
Jun	1.10	1.25	-1.29	0.63	

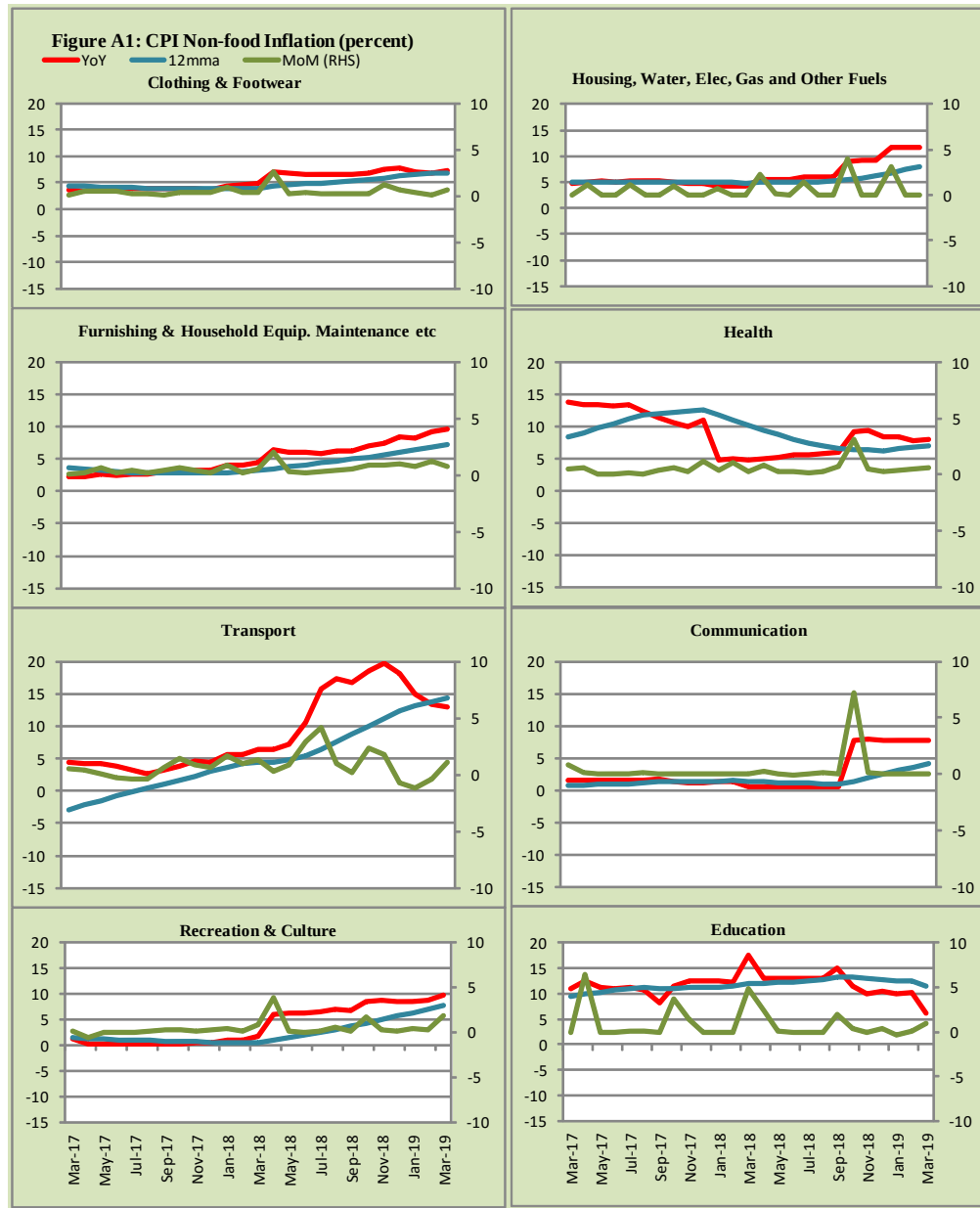


Figure A2: Frequency Distribution of Price Changes of CPI Items, March 2019

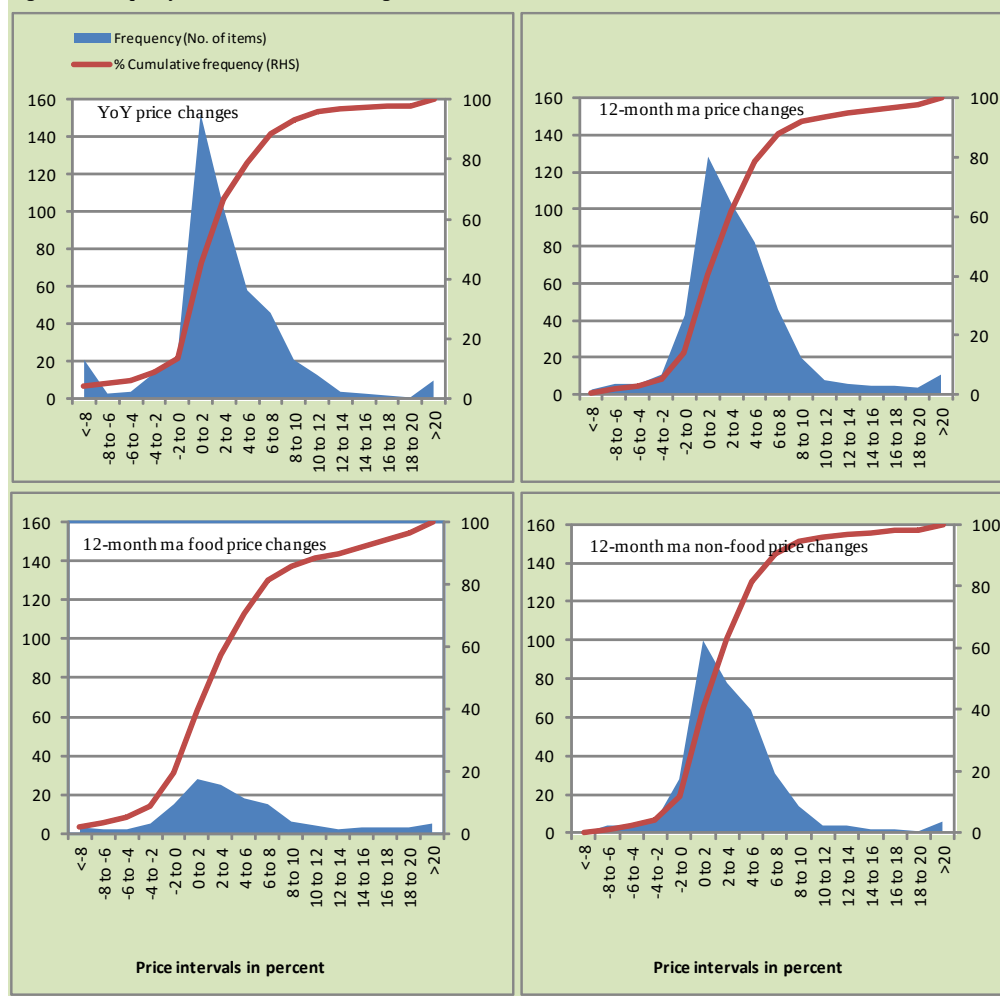


Figure A3: Frequency Distribution of Price Changes of WPI Commodities, March 2019

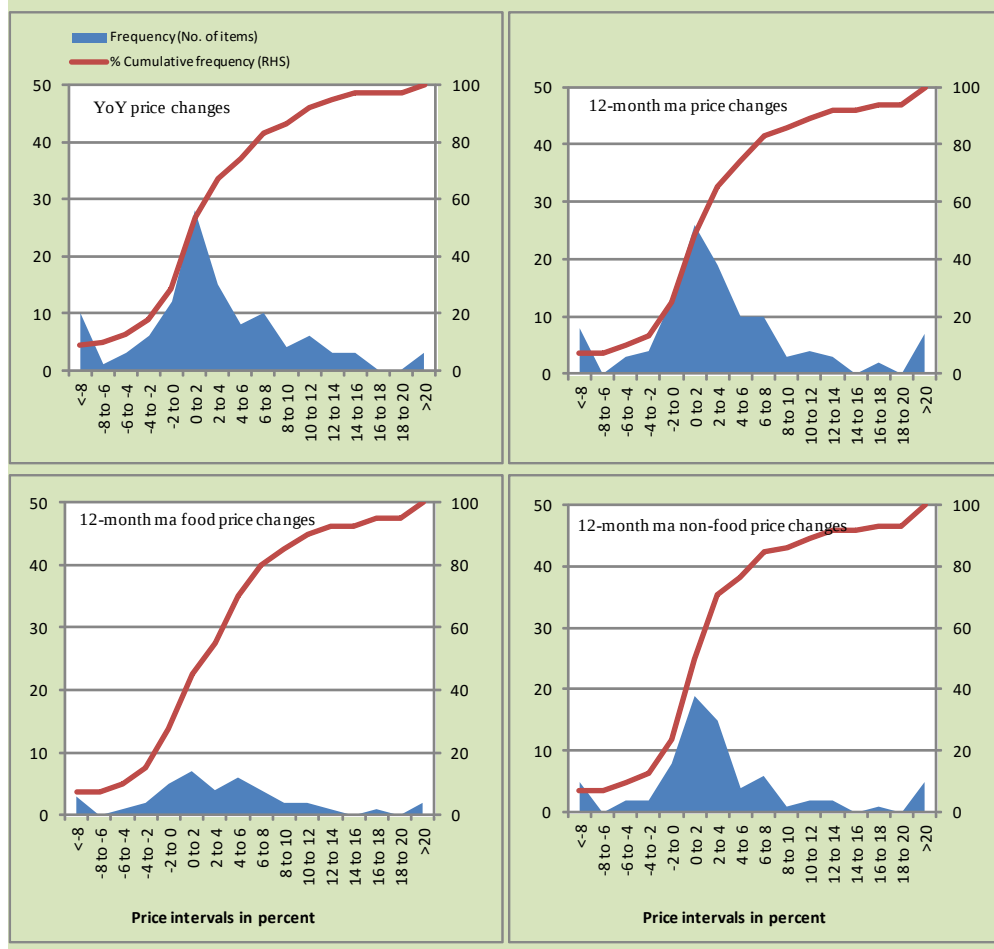
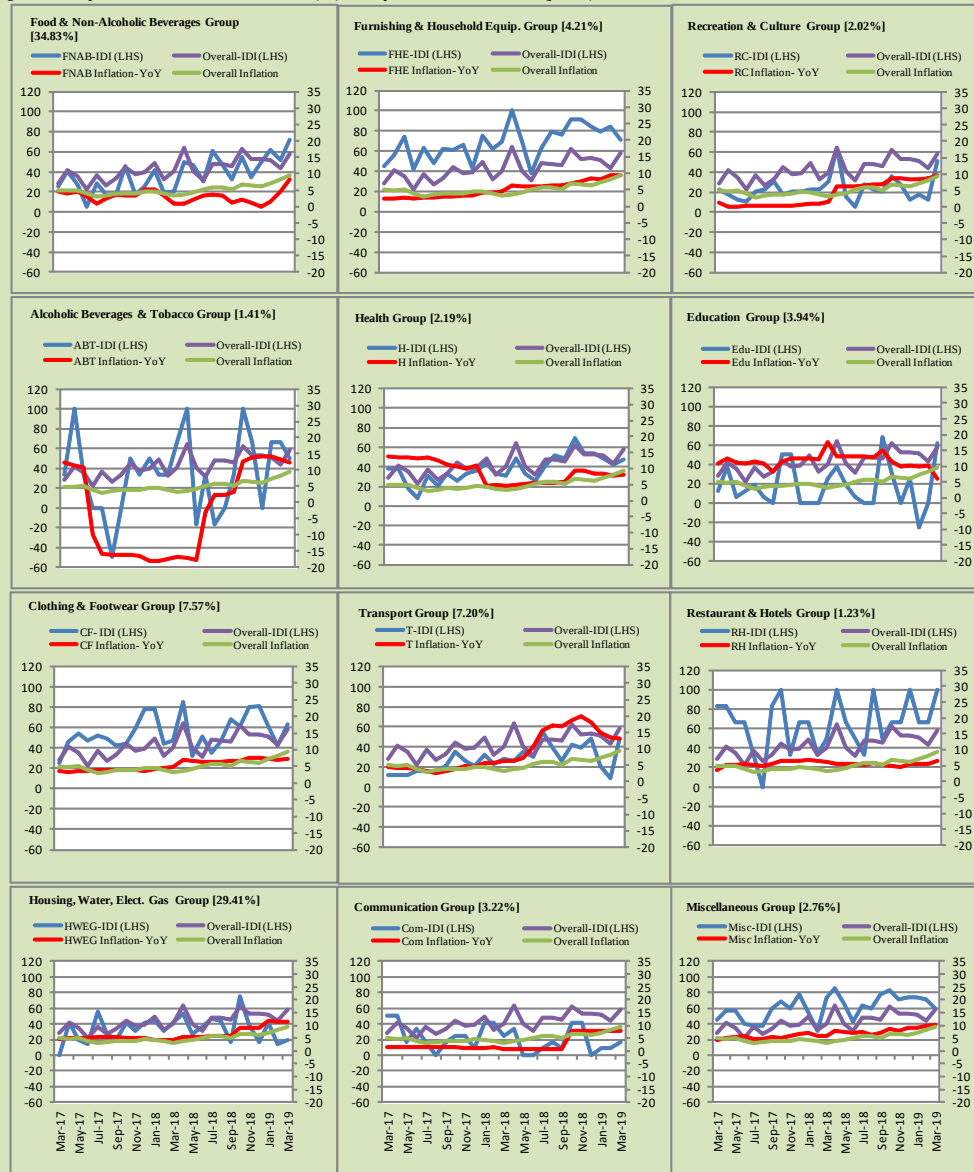


Figure A4: Group-wise/Overall Inflation Diffusion Index (IDI) and respective/overall YoY Inflation (percent)



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^{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^{th} item

π_{it} : Inflation of i^{th} item

π_t : Overall inflation

10. Annualized rate of inflation (based on a month-on-month rate π) 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:

$$IDI = \frac{\text{No. of items with positive MoM change in price} - \text{No. of items with negative MoM change in price}}{\text{No. of items for which prices are reported}}$$

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 constant¹.

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 analysis² suggests that IDI is a leading indicator for Pakistan’s YoY inflation.

¹ 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.

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