

Inflation Monitor

March 2018



State Bank of Pakistan

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Review

Inflation in Brief

1. Headline CPI inflation (2007-08=100) is recorded at level of 3.2 percent on year-on-year basis in March 2018 as compared to 3.8 percent in the previous month and 4.9 percent during corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at level of 0.3 percent in March 2018 as compared to -0.3 percent in the previous month and 0.8 percent during corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.20 percent in March 2018 compared to 0.26 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis is recorded at 4.1 percent in March 2018 as compared to 4.3 percent in the previous month and 4.5 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is recorded at 0.2 percent in March 2018 as compared to 0.1 percent in the previous month and remained at level during corresponding month of last year.
5. Non-food, non-energy inflation measured by CPI Core (NFNE) on year-on-year basis is recorded at 5.8 percent in March 2018 and 5.2 percent in the previous month and during corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.7 percent in March 2018 as compared to 0.2 percent in the previous month. Core NFNE inflation was 0.1 percent in the corresponding month of last year.
7. WPI inflation on year-on-year basis recorded at 3.6 percent in March 2018 as compared to 4.1 percent in the previous month and 6.4 percent during the corresponding month of last year.

8. WPI inflation on month-on-month basis recorded at 0.2 percent in March 2018 as compared to -0.1 percent in the previous month. It was 0.7 percent in the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at -0.9 percent in March 2018 as compared to 1.3 percent in the previous month. It was 3.9 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at -0.2 percent in March 2018 as compared to -0.9 percent in the previous month. It was 2.0 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 2018 are described below:

11. Core RSC inflation on year-on-year basis is recorded at 4.4 percent in March 2018 compared to 4.1 percent in the previous month and 5.0 percent in the corresponding month of last year.
12. Core RSC inflation on month-on-month basis is recorded at 0.6 percent in March 2018 compared to 0.2 percent in the previous month and 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-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
Apr-17	4.8	1.4	4.4	1.7	5.1	1.2	5.5	1.3	4.8	0.8	5.3	1.1	6.0	0.9	2.9	-0.7
May-17	5.0	0.0	4.9	-0.2	5.1	0.2	5.5	0.2	4.8	0.2	5.3	0.3	5.2	-0.2	2.9	-0.7
Jun-17	3.9	-0.4	2.4	-1.1	5.0	0.1	5.5	0.1	4.2	0.0	4.5	-0.4	3.3	-0.5	1.9	0.1
Jul-17	2.9	0.3	-0.1	0.0	5.1	0.6	5.6	0.7	4.0	0.4	4.4	0.4	0.7	-0.2	0.2	-0.6
Aug-17	3.4	0.2	1.2	0.4	5.0	0.1	5.5	0.1	4.2	0.1	4.3	0.2	1.0	0.3	0.5	0.2
Sep-17	3.9	0.6	2.4	1.3	4.9	0.2	5.4	0.1	4.1	0.1	4.2	0.1	1.6	0.1	2.2	1.6
Oct-17	3.8	0.7	2.2	0.6	4.9	0.8	5.3	0.9	4.0	0.6	4.3	0.8	2.3	0.6	2.3	0.8
Nov-17	4.0	0.4	2.4	0.4	5.1	0.4	5.4	0.3	4.2	0.3	4.3	0.2	2.9	0.4	2.5	0.5
Dec-17	4.6	-0.1	3.8	-0.6	5.1	0.2	5.5	0.2	4.7	0.2	4.3	0.1	3.4	0.4	2.7	-0.3
Jan-18	4.4	0.0	3.7	-1.0	4.9	0.8	5.2	0.8	4.6	0.6	4.0	0.6	4.7	1.8	2.6	-0.7
Feb-18	3.8	-0.3	2.2	-1.1	4.9	0.2	5.2	0.2	4.3	0.1	4.1	0.2	4.1	-0.1	1.3	-0.9
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
* NFNE is Non-food non-energy ** Relatively Stable Component of CPI *** SPI for all income groups combined																

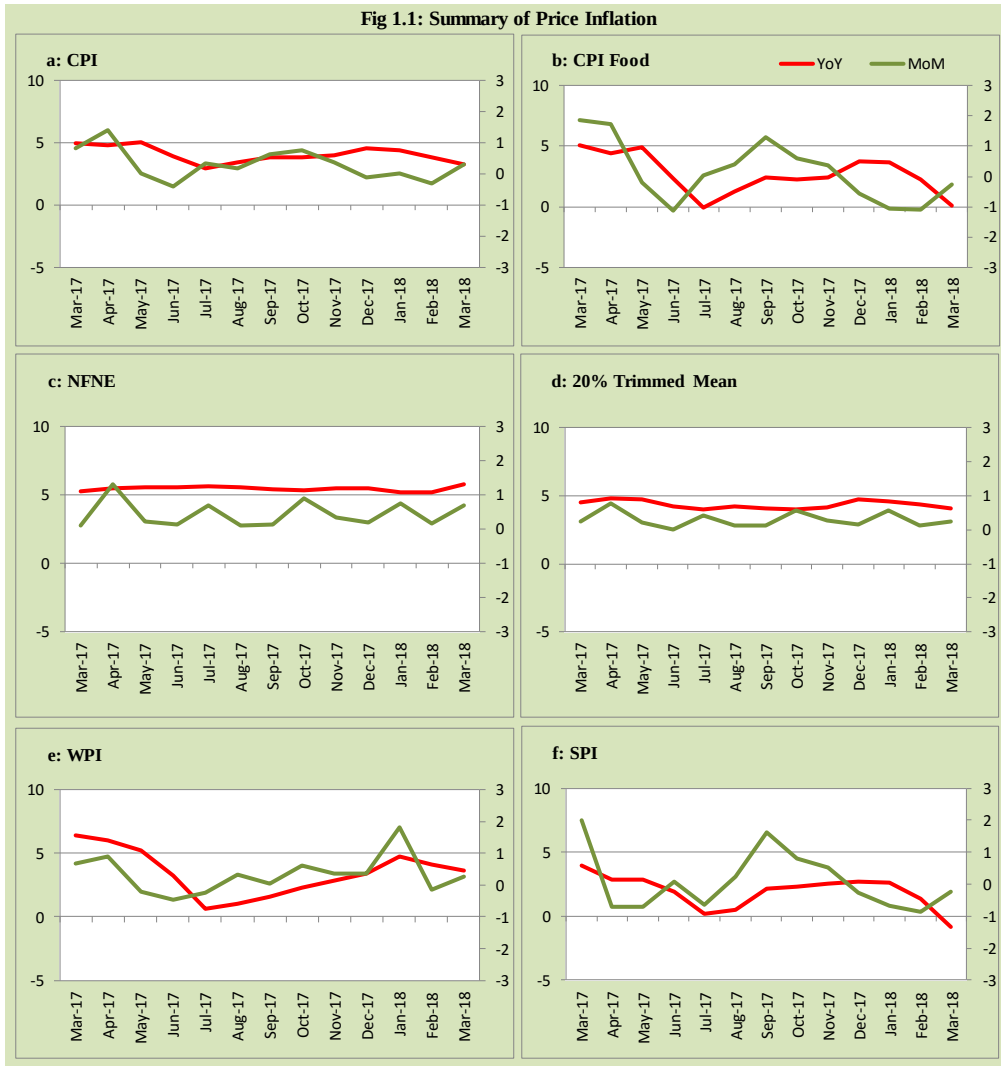


Fig 1.2: Movements in Price Indices (percent)

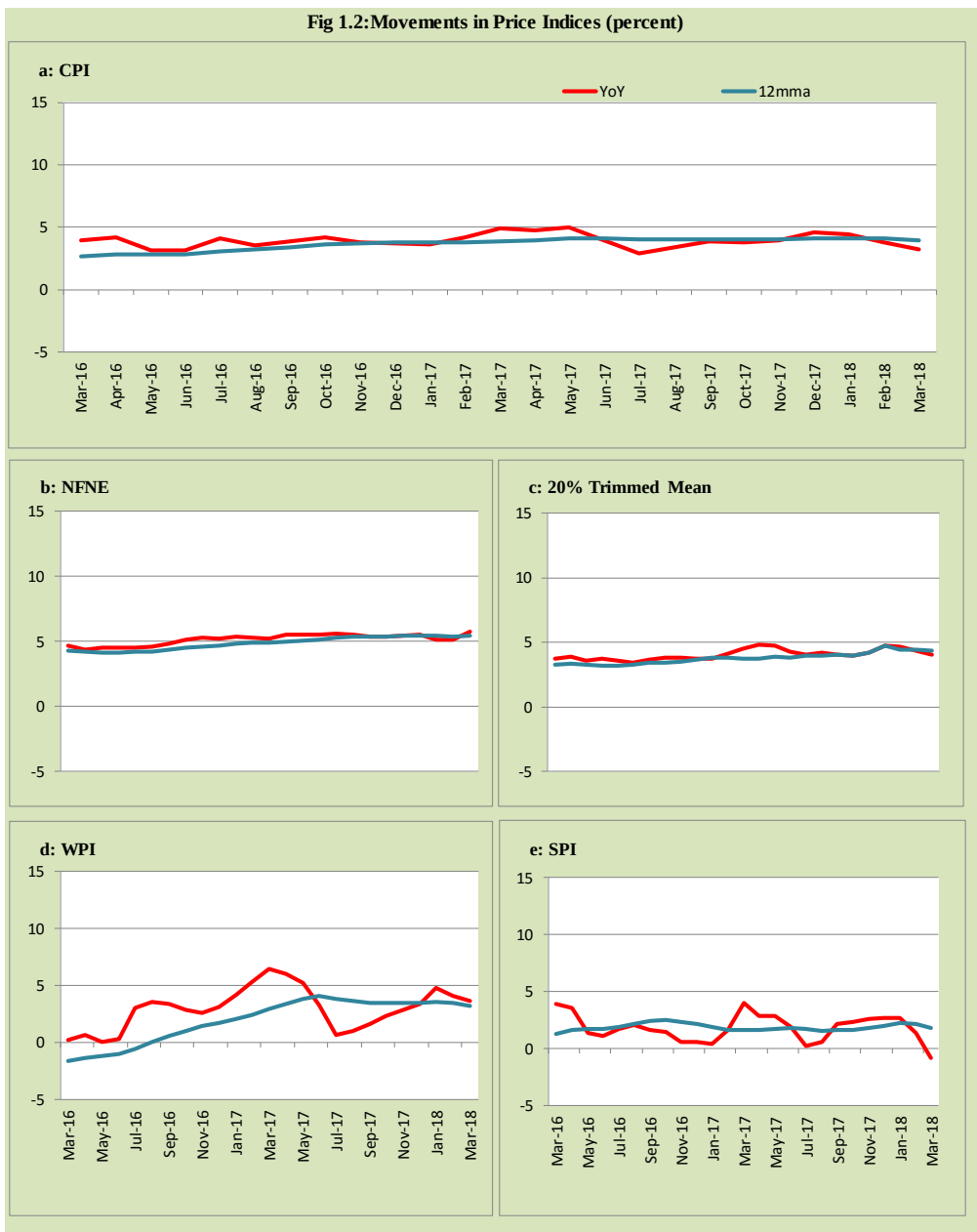


Fig 1.3: Movements in Price Indices -MoM (percent)

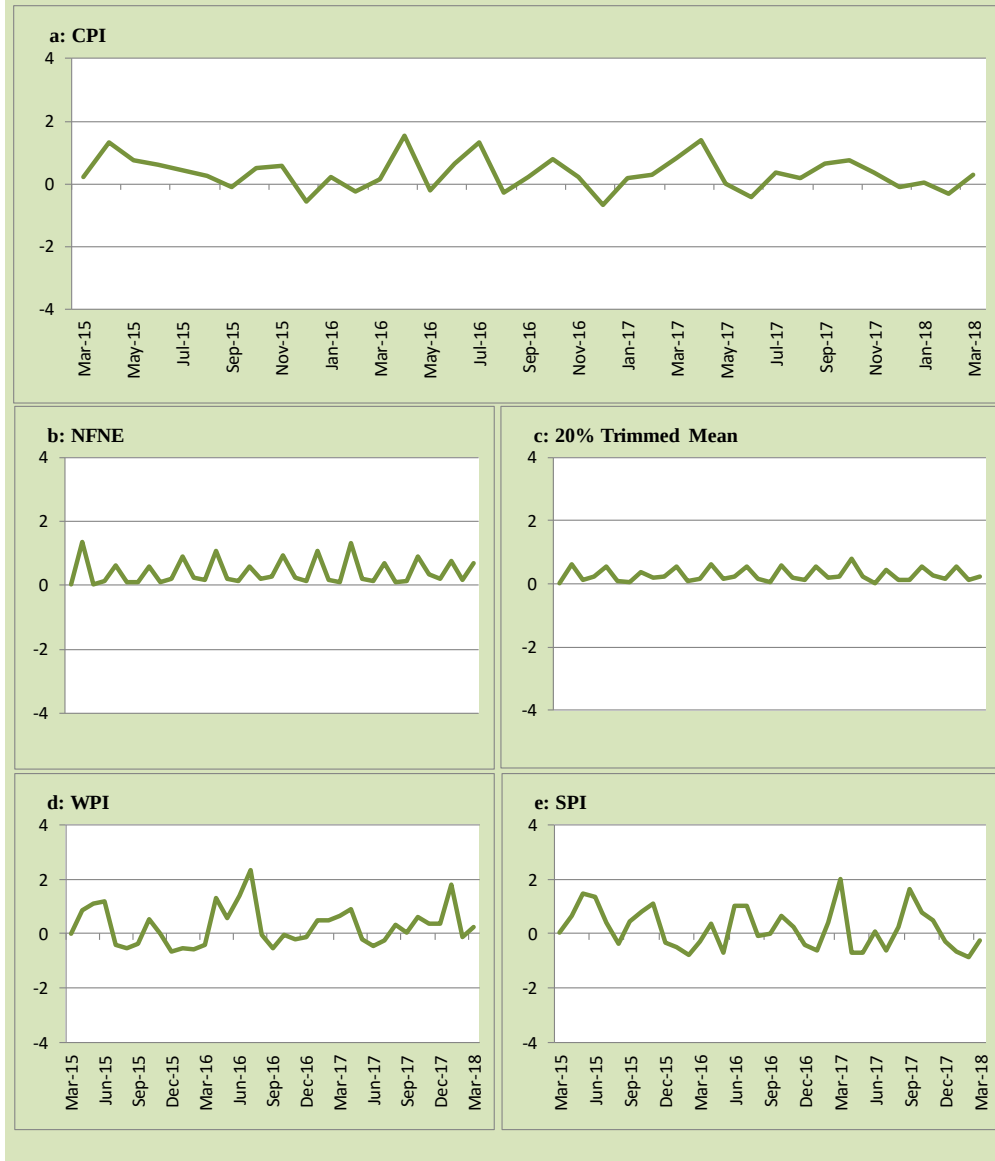
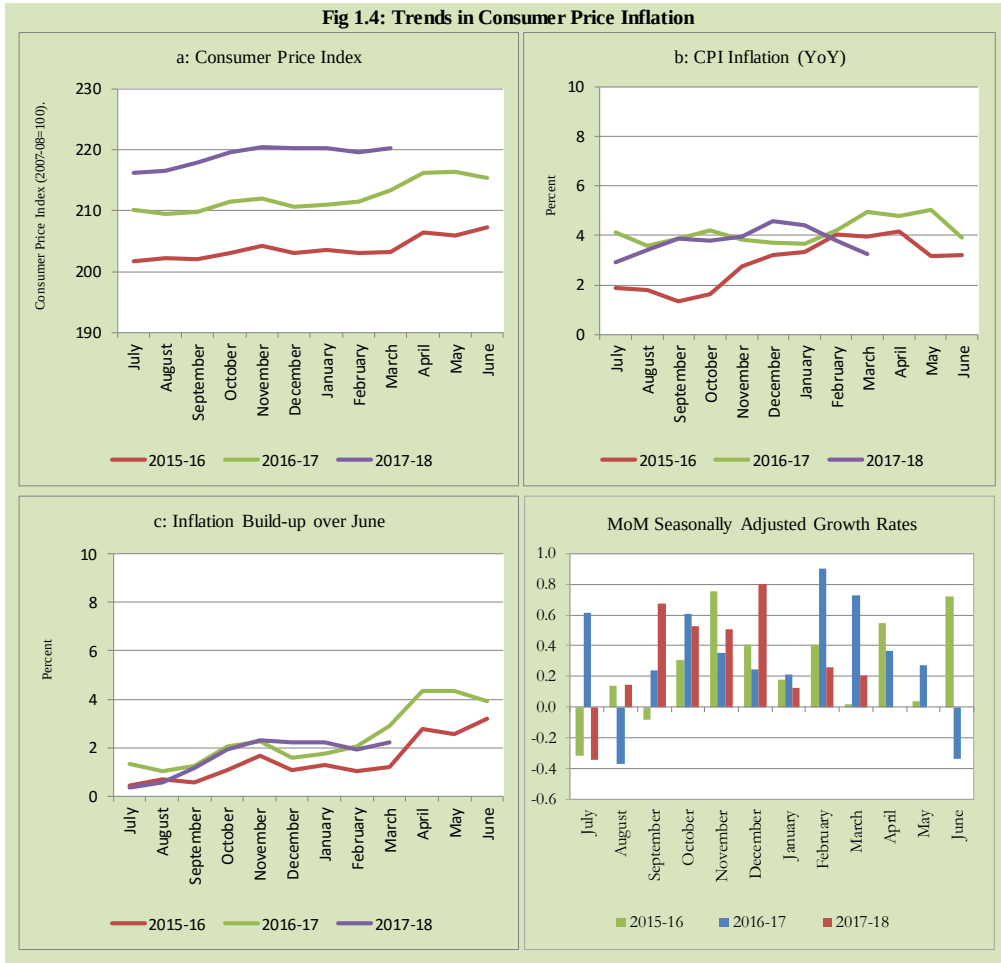


Fig 1.4: Trends in Consumer Price Inflation



2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan showed mixed trend during March 2018. Among these five cities, the lowest inflation was observed in Karachi at 1.9 percent while the highest inflation was observed in Islamabad at 3.8 percent (Table A6 of annexure-A).

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

	Mar-17		Feb-18		Mar-18	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	0.8	4.9	-0.3	3.8	0.3	3.2
Islamabad	0.6	5.7	-0.1	4.4	0.0	3.8
Karachi	0.9	4.9	0.1	2.9	0.0	1.9
Lahore	1.4	5.5	-0.4	4.4	0.7	3.7
Peshawar	0.5	3.1	-0.3	3.2	-0.1	2.6
Quetta	0.8	3.9	-1.2	5.0	-0.3	3.7

3. Income Group wise Inflation

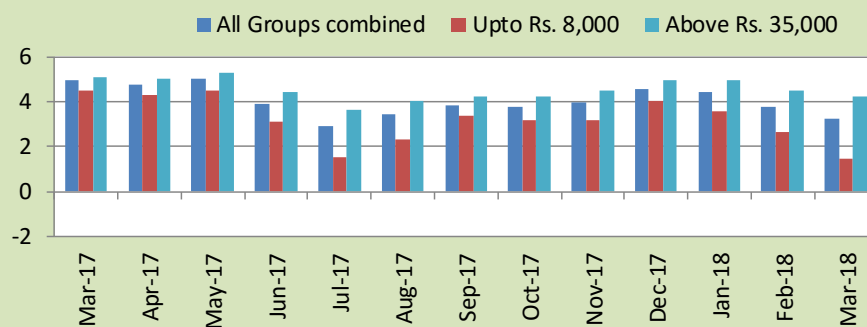
Income group-wise data shows that income group above Rs. 35,000 witnessed higher inflation as compared to other quintiles as well as overall CPI during March 2018 in General, Food and Non-food groups. The income groups (Up to Rs. 8, 000) observed lowest inflation in general CPI, food groups and non-food groups among income groups during the month of March 2018 (Table A7 of annexure-A).

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

Income Groups	General			Food			Non-food		
	Mar-17	Feb-18	Mar-18	Mar-17	Feb-18	Mar-18	Mar-17	Feb-18	Mar-18
All Groups Combined	4.9	3.8	3.2	5.0	2.2	0.1	4.9	4.9	5.4
Up to Rs. 8,000	4.5	2.7	1.5	4.2	1.3	-1.1	4.8	4.3	4.6
Rs. 8,001- 12,000	4.5	2.9	1.9	4.6	1.6	-0.7	4.5	4.3	4.7
Rs. 12,001- 18,000	4.8	3.1	2.2	4.8	1.7	-0.6	4.7	4.4	4.8
Rs. 18,001- 35,000	4.9	3.4	2.6	5.2	1.8	-0.3	4.7	4.6	5.1
Above Rs. 35,000	5.1	4.5	4.3	5.4	3.1	1.1	5.0	5.2	5.9

Fig 3.1: Income Group- wise Inflation

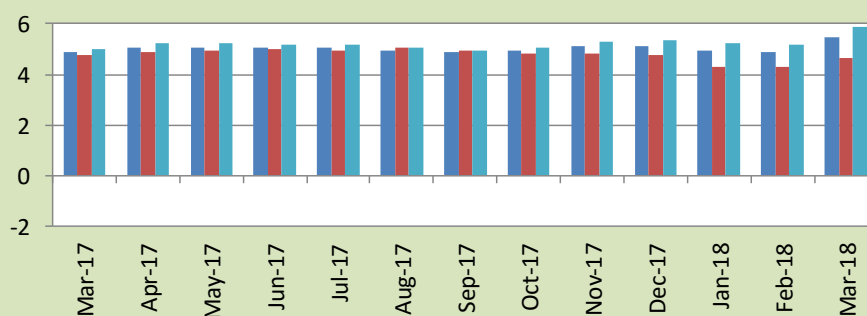
a: CPI Overall Inflation (Yo Y)



b: CPI Food Inflation (Yo Y)



c: CPI Non-Food Inflation (Yo Y)



4. Weighted Contribution

The weighted contribution of food group in the overall inflation decreased to 1.07 percent during March 2018 from 23.85 percent in previous month. It was 41.86 percent in March 2017.

The weighted contribution of non-food group increased to 98.93 percent in March 2018 from 76.15 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-17	41.86	6.08	26.25	5.34	9.03	11.44
Apr-17	37.84	5.94	28.43	5.11	11.07	11.60
May-17	40.46	6.15	27.25	4.96	9.55	11.63
Jun-17	24.92	8.04	34.43	5.77	11.93	14.92
Jul-17	-1.32	11.08	48.14	6.37	16.42	19.31
Aug-17	15.23	9.58	41.22	4.54	13.48	15.94
Sep-17	26.02	8.46	36.50	4.83	9.28	14.91
Oct-17	24.31	8.25	34.17	5.96	13.05	14.27
Nov-17	25.04	7.95	32.53	6.73	13.57	14.18
Dec-17	34.01	6.68	28.47	5.73	11.85	13.26
Jan-18	34.02	8.17	25.57	7.58	12.23	12.43
Feb-18	23.85	10.07	29.89	8.71	13.92	13.56
Mar-18	1.07	12.39	35.10	11.73	23.44	16.27

5. Inflation Diffusion Index

Table 5.1 Inflation Diffusion Index - based on MoM change

	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18
General	28.5	41.6	35.3	22.4	36.8	26.8	33.1	44.6	37.7	39.2	48.9	32.5	40.2
Food & Non-Alcoholic Beverages	25.7	40.4	27.1	5.3	28.7	17.5	17.4	46.1	17.1	25.0	42.1	19.3	20.4
Alcoholic Beverages & Tobacco	33.3	100.0	33.3	0.0	0.0	-50.0	0.0	50.0	33.3	50.0	33.3	33.3	66.7
Clothing & Footwear	25.4	45.8	54.2	47.5	52.5	49.2	42.4	44.1	59.3	78.0	78.0	44.1	47.5
Housing, Water, Elect, Gas & other Fuels	0.0	41.7	19.4	13.9	55.6	27.8	19.4	41.7	30.6	41.7	44.4	30.6	41.7
Furnishing & Household Equip. Maintenance etc	44.9	56.5	73.9	42.0	63.8	47.8	62.3	60.9	66.7	43.5	75.4	62.3	69.6
Health	38.5	38.5	17.9	7.7	30.8	20.5	33.3	25.6	33.3	35.9	43.6	33.3	30.8
Transport	11.6	11.6	11.6	16.3	16.3	16.3	20.9	34.9	25.6	20.9	32.6	23.3	27.9
Communication	50.0	50.0	16.7	33.3	16.7	0.0	16.7	25.0	25.0	8.3	41.7	41.7	25.0
Recreation & Culture	23.1	17.9	12.8	10.3	20.5	23.1	30.8	17.9	20.5	20.5	23.1	23.1	30.8
Education	12.5	37.5	6.3	12.5	18.8	6.3	0.0	50.0	50.0	0.0	0.0	0.0	25.0
Restaurant & Hotels	83.3	83.3	66.7	66.7	33.3	0.0	83.3	100.0	33.3	66.7	66.7	33.3	50.0
Miscellaneous	45.7	57.1	57.1	40.0	37.1	37.1	60.0	68.6	60.0	77.1	54.3	31.4	74.3
NFNE	28.1	40.2	38.5	28.4	42.3	33.4	38.2	43.2	45.0	43.2	51.5	36.7	46.2

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-17		Feb-18		Mar-18	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	0.07	0.55	-1.05	-0.17	-2.08	-0.50
2	Wheat Flour Bag	10 Kg	-1.80	0.06	-0.86	0.17	-1.66	-0.74
3	Rice Basmati Sup. Qlty.	Kg	5.67	1.42	15.52	1.06	14.91	0.89
4	Pulse Masoor (Washed)	Kg.	-8.93	-3.78	-16.36	-1.31	-13.28	-0.24
5	Pulse Moong (Washed)	Kg.	-17.22	-3.66	-13.87	0.41	-11.42	-0.92
6	Pulse Mash (Washed)	Kg.	-19.95	-3.54	-23.47	-3.30	-22.08	-1.80
7	Pulse Gram	Kg.	10.00	-8.06	-17.22	-0.65	-11.86	-2.11
8	Vegetable Ghee (Loose)	Kg.	5.77	-0.33	0.98	0.02	1.10	-0.22
9	Sugar Refined	Kg.	-2.82	-4.39	-17.80	-3.44	-14.91	-1.03
10	Milk Fresh (Unboiled)	Ltr	3.88	0.39	4.11	0.16	3.71	0.00
11	Tapal Danedar Tea 200 Gm	Pkt	5.99	5.54	10.24	1.73	9.62	4.94
12	Beef With Bone Av.Qlty.	Kg	3.20	0.89	7.01	0.43	6.83	0.73
13	Mutton Av.Qlty.	Kg	5.82	1.06	11.09	0.37	11.34	1.29
14	Chicken Farm Broiler (Live)	Kg	18.92	21.60	20.15	-5.02	3.14	4.39
15	Eggs Farm	Doz	6.79	-21.34	-6.99	-10.01	9.66	-7.26
16	Potatoes	Kg	49.92	15.48	7.49	-18.76	-14.86	-8.53
17	Onion	Kg	-17.60	18.16	45.59	-25.29	-0.39	-19.16
18	Tomatoes	Kg	128.17	68.43	-3.77	-20.52	-54.33	-20.06
19	Ginger	Kg	-1.35	-1.79	18.71	-2.55	19.57	-1.08
20	Garlic	Kg	11.56	-1.64	-43.95	-0.09	-40.42	4.55

7. Global Commodity Prices

Table 7.1 Changes in Major Global Indices (percent)

Item/ Group	Mar-17		Mar-18		Mar-18	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	6.1	-2.0	0.4	2.1	3.7	1.3
Metals	22.4	-0.6	18.4	-0.1	14.2	-4.1
Energy	38.0	-5.9	15.9	-5.4	23.9	0.6
Agricultural	4.5	-2.0	-1.0	1.9	2.6	1.6
Cotton	32.6	1.9	3.7	-3.1	6.2	4.4

Source: World Bank

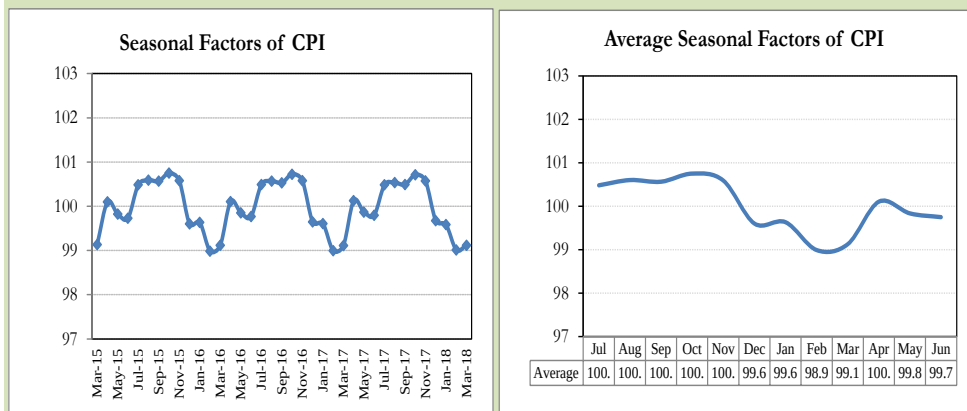
8. Seasonal Adjustment in CPI

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 2018 has been used for seasonal adjustment analysis. The seasonal analysis is carried out without taking trading-day or Islamic calendar month's effects.

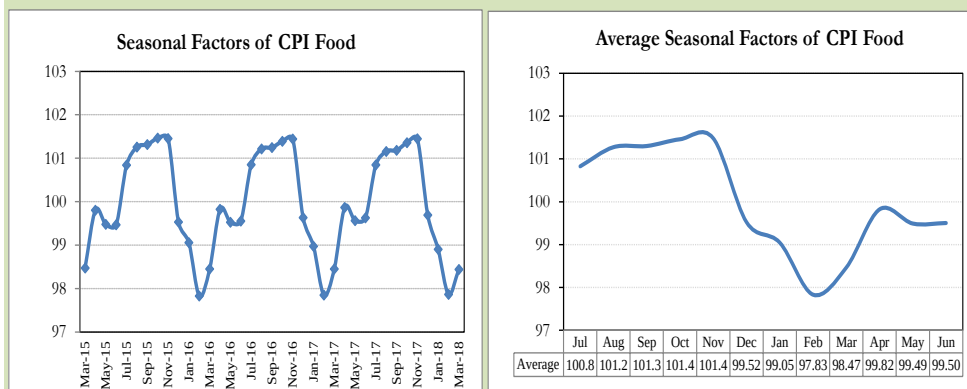
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the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

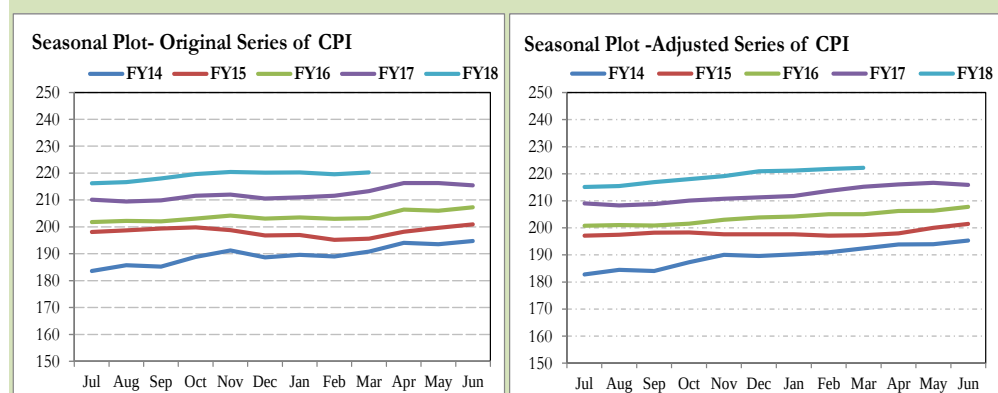
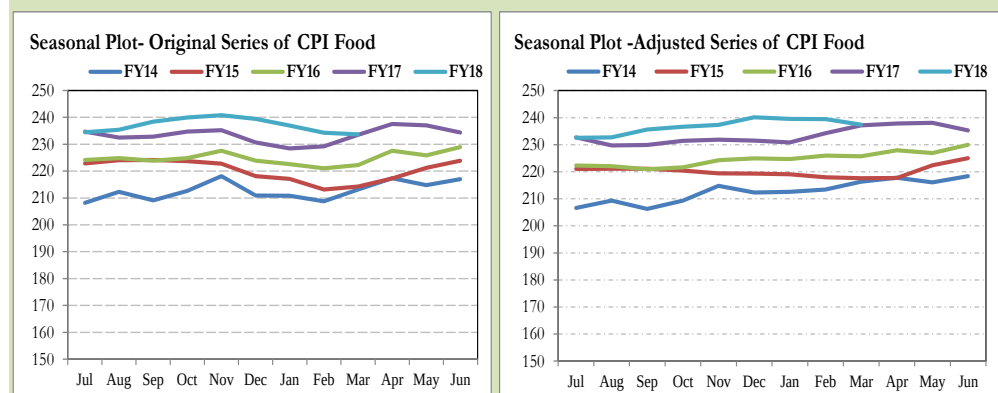


Fig. 8.4 Seasonal Plots of CPI (Food)



Seasonally adjusted CPI for March 2018 stood at 222.22 against 220.25 in original series showing an increase of 1.97 on account of adjustment of downward seasonality in March 2018.

Seasonally adjusted CPI food group for March 2018 stood at 237.37 against 233.67 in original series showing an increase of 3.70 on account of adjustment of downward seasonality in March 2018.

Month-on-month change of seasonally adjusted CPI series stood at 0.20% reflecting an increase during March 2018 over previous month and an increase of 0.31% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at -0.86% reflecting a decrease during March 2018 over previous month and a decrease of -0.27% 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 2018 (corresponding to the seasonally adjusted month-on-month rate) is 2.46 percent.

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

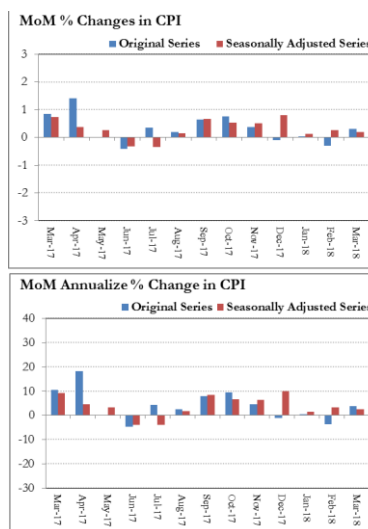
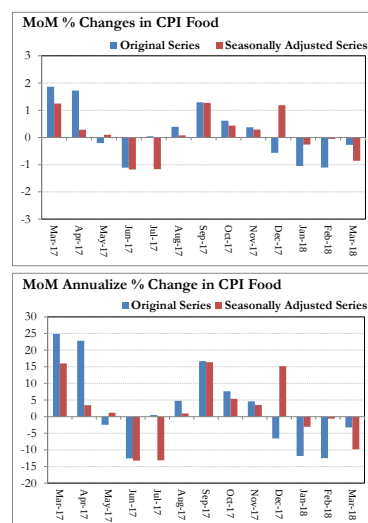


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



Annexure A

Table A1: CPI Inflation by Groups (percent)							
	Weights	MoM change			YoY change		
		Mar-17	Feb-18	Mar-18	Mar-17	Feb-18	Mar-18
I. Food Group	37.5	1.9	-1.1	-0.3	5.0	2.2	0.1
Food & Non-Alcoholic Beverages	34.8	2.0	-1.3	-0.4	4.6	3.4	1.0
Alcoholic Beverages & Tobacco	1.4	0.4	1.4	1.0	12.4	-17.4	-16.9
Restaurant & Hotels	1.2	0.5	0.1	0.2	3.5	6.5	6.2
II. Non-Food Group	62.5	0.1	0.2	0.7	4.9	4.9	5.4
Clothing & Footwear	7.6	0.1	0.4	0.3	3.6	4.6	4.8
Housing, Water, Elect, Gas &	29.4	0.0	0.0	0.0	4.8	4.2	4.3
Furnishing & Household Equip. Maintenance etc	4.2	0.1	0.2	0.5	2.3	4.1	4.5
Health	2.2	0.5	1.1	0.3	13.7	5.0	4.8
Transport	7.2	0.5	1.0	1.4	4.4	5.6	6.4
Communication	3.2	0.8	0.1	0.1	1.5	1.3	0.5
Recreation & Culture	2.0	0.1	0.1	0.9	1.2	0.9	1.6
Education	3.9	0.0	0.0	4.9	10.9	12.1	17.6
Miscellaneous	2.8	0.5	-0.2	0.4	4.1	5.9	5.8
Headline	100.0	0.8	-0.3	0.3	4.9	3.8	3.2

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-17	Mar-18	Mar-17	Mar-18	Mar-17	Mar-18	Mar-17	Mar-18	Mar-17	Mar-18
I. Food Group	0.1	124	125	25	33	53	55	27	21	19	16
Food & Non-Alcoholic Beverages	1.0	112	113	25	30	47	51	24	20	16	12
Alcoholic Beverages & Tobacco	-16.9	6	6	0	3	1	1	2	0	3	2
Restaurant & Hotels	6.2	6	6	0	0	5	3	1	1	0	2
II. Non-Food Group	5.4	348	348	81	67	177	167	68	80	22	34
Clothing & Footwear	4.8	59	59	7	8	37	27	15	22	0	2
Housing, Water, Elect, Gas & other Fuels	4.3	36	36	11	13	11	4	12	16	2	3
Furnishing & Household Equip. Maintenance etc	4.5	69	69	9	1	52	49	8	18	0	1
Health	4.8	39	39	5	5	21	27	6	4	7	3
Transport	6.4	43	43	24	22	13	13	2	3	4	5
Communication	0.5	12	12	3	5	4	4	4	1	1	2
Recreation & Culture	1.6	39	39	19	13	14	19	4	1	2	6
Education	17.6	16	16	1	0	3	3	8	2	4	11
Miscellaneous	5.8	35	35	2	0	22	21	9	13	2	1
Overall	3.2	472	473	106	100	230	222	95	101	41	50
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, 2018					
Top 15 Contributors		YoY Change		Weighted Contribution	
Items/ Contributors	Weights	Mar -17	Mar -18		
Ranked by Weighted Contribution					
1	House Rent	21.81	6.62	5.43	31.79
2	Education	3.94	10.90	17.60	23.44
3	Milk Fresh	6.68	3.78	3.78	9.81
4	Motor Fuel	3.03	10.79	13.18	8.53
5	Meat	2.43	4.09	8.39	7.97
6	Rice	1.58	8.14	13.29	5.15
7	Fresh Fruits	1.86	14.48	4.99	3.41
8	Tailoring	0.88	6.63	8.13	3.23
9	Personal Equipments	0.84	3.61	8.81	3.15
10	Ready Made Food	1.23	3.52	6.21	2.98
11	Cotton Cloth	1.73	3.88	4.85	2.75
12	Household Servent	1.04	1.71	6.17	2.32
13	Ready Made Garments	0.97	3.32	6.68	2.26
14	Betel Leaves & Nuts	0.02	3.53	280.15	2.25
15	Personal Care	1.49	4.97	4.52	2.18
Total		49.56			111.22
Bottom 15 Contributors					
1	Cigarettes	1.39	12.55	-19.98	-15.37
2	Tomatoes	0.43	128.16	-54.32	-7.22
3	Fresh Vegetables	1.71	11.04	-10.32	-5.75
4	Sugar	1.04	-2.82	-14.91	-4.87
5	Pulse Mash (Washed)	0.21	-19.95	-22.08	-1.87
6	Potatoes	0.46	49.92	-14.86	-1.85
7	Pulse Gram	0.24	10.00	-11.86	-1.19
8	Wheat Flour	4.16	-1.75	-0.76	-0.98
9	Pulse Masoor	0.27	-8.98	-13.38	-0.97
10	Pulse Moong	0.23	-17.22	-11.42	-0.95
11	Besan	0.15	14.56	-9.68	-0.62
12	Text Books	0.57	0.62	-1.51	-0.36
13	Wheat	0.35	0.07	-2.09	-0.22
14	Gur	0.02	-2.48	-8.57	-0.07
15	Gram Whole	0.16	27.59	-0.95	-0.06
Total		11.40			-42.36

Table A3.1: Top and Bottom 15 Contributors to CPI Inflation (MoM) in March, 2018

<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution	
Items/ Contributors	Weights	Feb-18	Mar-18		
Ranked by Weighted Contribution					
1	Education	3.94	0.00	4.89	75.45
2	Fresh Fruits	1.86	5.83	6.65	46.23
3	Chicken	1.36	-5.02	4.39	17.74
4	Motor Fuel	3.03	2.10	2.26	16.76
5	Tea	0.84	1.74	3.12	11.23
6	Meat	2.43	0.41	0.92	9.76
7	Betel Leaves & Nuts	0.02	53.06	22.25	5.74
8	Motor Vehicle	0.66	0.09	3.14	5.59
9	News Papers	0.19	0.82	8.90	4.79
10	Household Servent	1.04	0.00	0.97	3.95
11	Cotton Cloth	1.73	0.38	0.65	3.95
12	Transport Services	2.70	0.50	0.46	3.63
13	Ready Made Garments	0.97	0.00	0.58	2.15
14	Construction Input Items	0.56	0.83	0.93	2.04
15	Rice	1.58	0.60	0.44	1.98
Total		22.94			210.99
Bottom 15 Contributors					
1	Fresh Vegetables	1.71	-8.10	-7.33	-40.90
2	Onion	0.52	-25.29	-19.16	-37.85
3	Tomatoes	0.43	-20.52	-20.06	-15.76
4	Eggs	0.46	-10.02	-7.26	-10.54
5	Potatoes	0.46	-18.76	-8.53	-10.25
6	Wheat Flour	4.16	0.23	-0.62	-8.21
7	Sugar	1.04	-3.44	-1.04	-3.01
8	Pulse Gram	0.24	-0.65	-2.11	-1.97
9	Gram Whole	0.16	-1.45	-2.46	-1.71
10	Pulse Mash (Washed)	0.21	-3.30	-1.80	-1.25
11	Besan	0.15	-1.03	-1.49	-0.91
12	Pulse Moong	0.23	0.41	-0.91	-0.70
13	Pulse Masoor	0.27	-1.63	-0.71	-0.47
14	Wheat	0.35	-0.17	-0.50	-0.22
15	Gur	0.02	-4.66	-2.70	-0.22
Total		10.42			-133.94

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in March, 2018					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Mar -17	Mar -18	
A. Ranked by Percentage Change					
1	Betel Leaves & Nuts	0.02	3.53	280.15	2.25
2	Kerosene Oil	0.01	3.88	30.58	0.05
3	Education	3.94	10.90	17.60	23.44
4	Rice	1.58	8.14	13.29	5.15
5	Motor Fuel	3.03	10.79	13.18	8.53
6	News Papers	0.19	2.87	12.34	0.62
7	Eggs	0.46	6.79	9.65	1.15
8	Construction Wage Rate	0.33	4.68	9.05	1.03
9	Personal Equipments	0.84	3.61	8.81	3.15
10	Cleaning & Laundering	0.21	3.84	8.59	0.69
11	Meat	2.43	4.09	8.39	7.97
12	Doctor (Mbbs) Clinic Fee	0.59	8.71	8.14	1.92
13	Tailoring	0.88	6.63	8.13	3.23
14	Motor Vehicle	0.66	4.67	7.48	1.24
15	Beans	0.03	-0.72	6.81	0.06
Total		15.21			60.46
B. Ranked by Weights					
1	House Rent	21.81	6.62	5.43	31.79
2	Milk Fresh	6.68	3.78	3.78	9.81
3	Electricity	4.40	0.00	0.00	0.00
4	Wheat Flour	4.16	-1.75	-0.76	-0.98
5	Education	3.94	10.90	17.60	23.44
6	Communication & Apparatus	3.15	1.42	0.32	0.19
7	Motor Fuel	3.03	10.79	13.18	8.53
8	Transport Services	2.70	0.73	1.77	1.33
9	Meat	2.43	4.09	8.39	7.97
10	Vegetable Ghee	2.07	4.23	1.22	0.52
11	Fresh Fruits	1.86	14.48	4.99	3.41
12	Cooking Oil	1.75	3.08	1.87	0.65
13	Cotton Cloth	1.73	3.88	4.85	2.75
14	Fresh Vegetables	1.71	11.04	-10.32	-5.75
15	Rice	1.58	8.14	13.29	5.15
Total		63.03			88.80
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 3.2 percent in March, 2018.					

Table A3.3: Top Ten Contributors to CPI Food Inflation (YoY) in March, 2018

Table 1: Top 10 Contributors to CPI Food Inflation (YoY) in March, 2018					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Mar -17	Mar -18	
A. Ranked by Weighted Contribution					
1	Milk Fresh	6.68	3.78	3.78	9.81
2	Meat	2.43	4.09	8.39	7.97
3	Rice	1.58	8.14	13.29	5.15
4	Fresh Fruits	1.86	14.48	4.99	3.41
5	Ready Made Food	1.23	3.52	6.21	2.98
6	Betel Leaves & Nuts	0.02	3.53	280.15	2.25
7	Tea	0.84	8.68	4.46	1.53
8	Beverages	1.20	1.65	3.62	1.38
9	Bakery & Confectionary	1.16	2.27	3.43	1.24
10	Chicken	1.36	18.92	3.14	1.24
Total		18.36			36.96
B. Ranked by Percentage Change					
1	Betel Leaves & Nuts	0.02	3.53	280.15	2.25
2	Rice	1.58	8.14	13.29	5.15
3	Eggs	0.46	6.79	9.65	1.15
4	Meat	2.43	4.09	8.39	7.97
5	Beans	0.03	-0.72	6.81	0.06
6	Ready Made Food	1.23	3.52	6.21	2.98
7	Dry Fruits	0.25	1.08	6.03	0.58
8	Honey	0.04	5.38	5.38	0.11
9	Milk Product	0.63	2.95	5.13	1.21
10	Fresh Fruits	1.86	14.48	4.99	3.41
Total		8.54			24.87
C. Ranked by Weights					
1	Milk Fresh	6.68	3.78	3.78	9.81
2	Wheat Flour	4.16	-1.75	-0.76	-0.98
3	Meat	2.43	4.09	8.39	7.97
4	Vegetable Ghee	2.07	4.23	1.22	0.52
5	Fresh Fruits	1.86	14.48	4.99	3.41
6	Cooking Oil	1.75	3.08	1.87	0.65
7	Fresh Vegetables	1.71	11.04	-10.32	-5.75
8	Rice	1.58	8.14	13.29	5.15
9	Cigarettes	1.39	12.55	-19.98	-15.37
10	Chicken	1.36	18.92	3.14	1.24
Total		25.01			6.65
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 0.1 percent in March, 2018.					

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in March, 2018					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Mar -17	Mar -18	
A. Ranked by Weighted Contribution					
1	House Rent	21.81	6.62	5.43	31.79
2	Education	3.94	10.90	17.60	23.44
3	Motor Fuel	3.03	10.79	13.18	8.53
4	Tailoring	0.88	6.63	8.13	3.23
5	Personal Equipments	0.84	3.61	8.81	3.15
6	Cotton Cloth	1.73	3.88	4.85	2.75
7	Household Servent	1.04	1.71	6.17	2.32
8	Ready Made Garments	0.97	3.32	6.68	2.26
9	Personal Care	1.49	4.97	4.52	2.18
10	Doctor (Mbbs) Clinic Fee	0.59	8.71	8.14	1.92
Total		36.34			81.57
B. Ranked by Percentage Change					
1	Kerosene Oil	0.01	3.88	30.58	0.05
2	Education	3.94	10.90	17.60	23.44
3	Motor Fuel	3.03	10.79	13.18	8.53
4	News Papers	0.19	2.87	12.34	0.62
5	Construction Wage Rate	0.33	4.68	9.05	1.03
6	Personal Equipments	0.84	3.61	8.81	3.15
7	Cleaning & Laundering	0.21	3.84	8.59	0.69
8	Doctor (Mbbs) Clinic Fee	0.59	8.71	8.14	1.92
9	Tailoring	0.88	6.63	8.13	3.23
10	Motor Vehicle	0.66	4.67	7.48	1.24
Total		10.69			43.89
C. Ranked by Weights					
1	House Rent	21.81	6.62	5.43	31.79
2	Electricity	4.40	0.00	0.00	0.00
3	Education	3.94	10.90	17.60	23.44
4	Communication & Apparatus	3.15	1.42	0.32	0.19
5	Motor Fuel	3.03	10.79	13.18	8.53
6	Transport Services	2.70	0.73	1.77	1.33
7	Cotton Cloth	1.73	3.88	4.85	2.75
8	Gas	1.58	0.00	0.00	0.00
9	Footware	1.55	0.89	0.57	0.21
10	Personal Care	1.49	4.97	4.52	2.18
Total		45.39			70.43
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 5.4 percent in March, 2018.					

Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: March, 2018

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	Tomatoes, Garlic, Peas, Pulse Mash (Washed), Sugar Refined, Potatoes, Cauliflower.	Tomato Ketchup Ahmed/Mitchells, Ice Cream Walls, Lemon, Curd, Almonds Whole Av.Qlty.	Eggs Farm, Tapal Danedar Tea 200 Gm, Carrot, Chillies Powd.National 200 Gm, Butter Local Packed, Guava.	Coconut Dry Av.Qlty., Ginger, Cuminseed White National, Radish, Rice Basmati Sup. Qlty., Rice Basmati Broken Av.Ql, Turnip, Brinjal, Rice Basmati 385/386.
Alcoholic Beverages & Tobacco	Cigarettes Capstan 20,S, Cigarettes Morven Gold 20,S, Cigarettes K-20,S.	Cigarettes Gold Leaf 20,S.		Betel Nuts, Betel Leaves.
Clothing & Footwear	Gents Shoe, Art 1109 Servis, Child Shoe Power Lite Bata, Sports Shoes, Ladies Spoung Chappal Bata, Ladies Sandal Bata, Gents Sandal Bata.	Shirting Av.Qlty., Tropical Suiting Law.Pur, Vest/Shameez (Women) Avg.Qlty, Heavy Wt Suiting Law.Pur Sup. Qlty, Second-Hand Coat For Men.	Washing Ch. (Kamiz-Shalwar), Tailoring Awami-Suit (Male), Tailoring Charges Pant (Men), Gloves Av.Qlty, Dry Cleaning Suit Coat Pant.	Frock W/Wear Girls, Brassier Av.Qlty,
Housing, Water, Elect, Gas & other Fuels	Cement (Local), Elect.Charges Upto 50 Units, Elect.Charges 01 - 100 Units, Elect.Charges Above 1000 Units, Elect.Charges 301 - 1000	Firewood Whole, Timber Shesham Log, Bricks (New) 1st Class, Bajree,	Plumber Wage Rate, Mason (Raj) Wage Rate, Unskilled Labour Wage Rat, Synthetic Enemal Ici, Electrician Wage Rate(P/Day), Electrician Wage Rate(P/Pnt), Synthetic Enemal	Kerosene Oil, Iron Bar (M.S. Bar) 1/2", Carpenter Wage Rate,
Furnishing & Household Equip. Maintenance etc	Washing Powder 1000 Grm (Express),	Dinner Set Plastic 72 Pcs, Dari Cotton (6'X2 1/2'), Marriage Hall Charges Without Refreshment, Gas Burner Double, Tube Light Philips 40	Toilet Paper Roll (R.Petal), Thermos Starvac 1 Ltr, Boot Polish Cherry/Kiwi 50 Ml, Single Bed Without Foam, Bed Sheet Single Bed	Tea Set Pak. China Wear 21 Pcs,
Health	Calcium Syrup Sandoz, Phenergan Syrup 120 ML, Betnesol Eye Drops, Sancos Syrup (50 ML), Burnol Cream 30 Gm,	Trisil Tab., Septran Tablets, Entox Tab., Thermometer China, Jouhar Joshanda, Ecg Charges, Sugar Test (Random/Fasting), Disprin	Doctor (Mbbs) Clinic Fee, Blood Test (Cp) Charges, Urine Test (Dr) Charges, Gripe-Water Woodward's,	Dettol (Medium), Glycrine Small Bottle, X-Ray (Chest) Charges,
Transport	Tyre Car W/O Tube, Plateform Ticket, Bus Fare Min (Within City), Bus Fare Max (Within City), Minibus Fare Max. Within City,	Bus Fare Outside City (Non A/C), Tyre Puncture Charges, Motor Cycle Service Charges, Auto Rickshaw Fare, Cng, Tyre Motor Cycle Without	Car Suzuki 800 Cc (W/O. Ac), Gas Cylinder S.Size (L.P.G), Car Service Charges,	Bus Fare Outside City (A/C), Petrol Super, High Speed Diesel Hsd, Car Suzuki 1000 Cc, Car Toyota 1300 Cc,
Communication	Postal Envelope Domestic, Telephone Charges Local Call, Telephone Charges Outside City, U.M.S. Reg	Mobile Set Nokia/Sony/Ericsson Av.Qlty, Fax Charges (Local), Postal Envelope For Saudi Arabia,	Internet Charges,	T.C.S. Ch. Min.Within Zone, Telephone Set Av. Qlty,
Recreation & Culture	Urdu Book Class Ix/X (T.B.Board), Urdu Book Class V (T.B.Board), English Book Class V1, Maths Book Class Ix Or X, Maths Book Calss V	Photostate Paper 70 Gm, Fountain Pen Hero/Wings/China, Computer Cd (Tdk/Imation), Exercise Book Lined 80/10, Radio With C.Player National, Pencil	Weekly "Akhbar-E-Jahan",	Cinema A/C High Class, Daily "Nawa-E-Waqt", Daily "Jang", Cinema Non-A/C High Class, Daily "Dawn", Weekly "Mag",
Education		Mba Tuition Fee, Coaching Charges For Class Xi/ Xii Science Group, I.T. Tuition Fees,	Coaching Fee For Class Ix/ X, Pvt Eng.Colege Fee (1st Year),	Govt. University Fee Msc/ Ma, Govt. Engg. Coll. Fee 1st Year, Govt. College Fee 1st. Year, Pvt School Fee Eng.Med (Class-I), Pvt School Fee Eng.Med (Classs-V), Pvt School Fee
Restaurant & Hotels		Cooked Dal (Av. Hotel), Tea Prepared (Ordinary), Bread Tandoori St. Size,	Chicken Biryani Full/Double,	Cooked Mutton (Av. Hotel), Cooked Beef (Av. Hotel),
Miscellaneous		Gel Medium Size, Suitcase Rexin (24"X16"X6"), Toothbrush Sheild, Shaving Cream Touch-Me/Admiral,	Artificial Jewellery Set, Purse Ladies (Leather) Av. Qlty, Toilet Soap Lifebouy 140 Gms, Shaving Charges,	Gold Tezabi 24 Ct,

Table A5: City- wise CPI Inflation by Income Groups, March, 2018

	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	-0.2	-0.2	-3.7	-3.7	4.0	4.0	0.1	0.1	-3.5	-3.5	3.8	3.8
2 Islamabad	0.6	0.6	-2.4	-2.4	4.1	4.1	1.8	1.8	-2.6	-2.6	6.5	6.5
3 Lahore	1.1	1.1	-2.7	-2.7	6.6	6.6	1.7	1.7	-2.7	-2.7	7.1	7.1
4 Gujranwala	-0.8	-0.8	-3.2	-3.2	2.0	2.0	-0.7	-0.7	-3.3	-3.3	2.1	2.1
5 Sialkot	3.2	3.2	-0.2	-0.2	7.6	7.6	4.0	4.0	0.6	0.6	7.8	7.8
6 Faisalabad	3.6	3.6	-2.8	-2.8	11.3	11.3	4.2	4.2	-2.5	-2.5	11.5	11.5
7 Multan	0.8	0.8	-2.1	-2.1	4.3	4.3	1.1	1.1	-1.9	-1.9	4.3	4.3
8 Sargodha	0.8	0.8	-0.9	-0.9	2.6	2.6	1.1	1.1	-0.2	-0.2	2.3	2.3
9 Bahawalpur	0.9	0.9	-1.4	-1.4	3.3	3.3	1.7	1.7	-0.7	-0.7	4.0	4.0
10 Karachi	0.5	0.5	-1.9	-1.9	3.5	3.5	0.7	0.7	-1.4	-1.4	2.9	2.9
11 Hyderabad	0.7	0.7	-1.4	-1.4	3.6	3.6	1.1	1.1	-1.1	-1.1	3.5	3.5
12 Sukkur	-0.3	-0.3	-1.7	-1.7	1.3	1.3	0.5	0.5	-0.9	-0.9	2.0	2.0
13 Larkana	0.4	0.4	-1.4	-1.4	2.2	2.2	1.3	1.3	-0.5	-0.5	3.0	3.0
14 Peshawar	0.3	0.3	-2.9	-2.9	4.1	4.1	0.7	0.7	-2.5	-2.5	3.9	3.9
15 Bannu	0.9	0.9	-1.5	-1.5	3.7	3.7	1.5	1.5	-0.8	-0.8	3.8	3.8
16 Quetta	2.9	2.9	0.7	0.7	5.4	5.4	3.1	3.1	1.0	1.0	5.2	5.2
17 Khuzdar	4.5	4.5	1.3	1.3	8.3	8.3	5.1	5.1	1.7	1.7	8.8	8.8
	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	0.3	0.3	-3.3	-3.3	3.7	3.7	0.8	0.8	-3.1	-3.1	3.9	3.9
2 Islamabad	1.9	1.9	-2.4	-2.4	6.0	6.0	2.1	2.1	-2.5	-2.5	5.9	5.9
3 Lahore	2.1	2.1	-2.5	-2.5	7.3	7.3	3.1	3.1	-2.4	-2.4	8.4	8.4
4 Gujranwala	-0.4	-0.4	-3.1	-3.1	2.4	2.4	-0.1	-0.1	-3.0	-3.0	2.4	2.4
5 Sialkot	4.6	4.6	1.2	1.2	8.1	8.1	4.8	4.8	1.1	1.1	7.9	7.9
6 Faisalabad	4.9	4.9	-2.1	-2.1	11.8	11.8	5.7	5.7	-1.7	-1.7	12.1	12.1
7 Multan	1.6	1.6	-1.6	-1.6	4.6	4.6	1.9	1.9	-1.3	-1.3	4.5	4.5
8 Sargodha	1.5	1.5	-0.2	-0.2	3.0	3.0	2.2	2.2	0.0	0.0	3.8	3.8
9 Bahawalpur	2.2	2.2	-0.5	-0.5	4.5	4.5	3.2	3.2	-0.3	-0.3	5.8	5.8
10 Karachi	0.6	0.6	-1.5	-1.5	2.7	2.7	0.9	0.9	-1.4	-1.4	2.9	2.9
11 Hyderabad	1.8	1.8	-0.9	-0.9	4.6	4.6	2.4	2.4	-0.1	-0.1	4.8	4.8
12 Sukkur	1.7	1.7	-0.1	-0.1	3.5	3.5	2.7	2.7	0.2	0.2	4.7	4.7
13 Larkana	1.9	1.9	-0.2	-0.2	3.7	3.7	2.8	2.8	0.8	0.8	4.2	4.2
14 Peshawar	1.2	1.2	-2.6	-2.6	4.7	4.7	1.7	1.7	-2.2	-2.2	4.9	4.9
15 Bannu	1.9	1.9	-1.0	-1.0	4.6	4.6	2.0	2.0	-1.1	-1.1	4.6	4.6
16 Quetta	3.4	3.4	1.0	1.0	5.7	5.7	3.7	3.7	1.2	1.2	5.8	5.8
17 Khuzdar	6.1	6.1	2.2	2.2	10.0	10.0	6.2	6.2	2.0	2.0	9.8	9.8
	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	2.1	2.1	-1.4	-1.4	3.7	3.7	1.5	1.5	-2.2	-2.2	4.0	4.0
2 Islamabad	4.0	4.0	-0.2	-0.2	6.2	6.2	3.8	3.8	-0.6	-0.6	7.0	7.0
3 Lahore	5.0	5.0	-1.0	-1.0	8.5	8.5	3.7	3.7	-1.9	-1.9	8.4	8.4
4 Gujranwala	0.6	0.6	-2.2	-2.2	2.0	2.0	-0.1	-0.1	-2.9	-2.9	1.9	1.9
5 Sialkot	5.7	5.7	2.4	2.4	7.4	7.4	4.9	4.9	1.4	1.4	7.5	7.5
6 Faisalabad	7.5	7.5	0.9	0.9	11.0	11.0	5.7	5.7	-1.4	-1.4	10.7	10.7
7 Multan	3.1	3.1	0.0	0.0	4.6	4.6	2.2	2.2	-1.0	-1.0	4.4	4.4
8 Sargodha	3.3	3.3	0.9	0.9	4.4	4.4	2.0	2.0	0.0	0.0	3.3	3.3
9 Bahawalpur	5.0	5.0	3.5	3.5	5.6	5.6	3.2	3.2	0.4	0.4	4.8	4.8
10 Karachi	2.7	2.7	0.0	0.0	4.0	4.0	1.9	1.9	-0.7	-0.7	3.8	3.8
11 Hyderabad	4.1	4.1	1.4	1.4	5.5	5.5	2.6	2.6	-0.1	-0.1	4.6	4.6
12 Sukkur	2.9	2.9	1.8	1.8	3.4	3.4	1.9	1.9	0.1	0.1	3.1	3.1
13 Larkana	3.2	3.2	2.0	2.0	3.7	3.7	1.9	1.9	0.0	0.0	3.1	3.1
14 Peshawar	4.4	4.4	-0.6	-0.6	6.8	6.8	2.6	2.6	-2.0	-2.0	5.7	5.7
15 Bannu	2.7	2.7	-0.6	-0.6	4.3	4.3	1.9	1.9	-1.1	-1.1	3.8	3.8
16 Quetta	4.5	4.5	2.5	2.5	5.4	5.4	3.7	3.7	1.6	1.6	5.2	5.2
17 Khuzdar	7.7	7.7	4.6	4.6	9.3	9.3	5.5	5.5	1.6	1.6	8.2	8.2

Table A6: City- wise CPI Inflation (YoY) March, 2018

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Mithi	10.6	8.0	12.2	Nawabshah	3.1	4.0	2.6
Gawadar	6.4	2.4	9.0	Peshawar	2.6	-2.0	5.7
Faisalabad	5.7	-1.4	10.7	D. G. Khan	2.6	0.5	4.0
Khuzdar	5.5	1.6	8.2	Hyderabad	2.6	-0.1	4.6
Turbat	5.5	1.8	7.5	Mardan	2.3	0.5	3.4
Vehari	5.3	0.6	8.6	Sahiwal	2.3	-2.5	5.2
Sialkot	4.9	1.4	7.5	Multan	2.2	-1.0	4.4
D. I. Khan	4.9	2.6	6.4	Jhang	2.1	-2.8	5.2
Bahawalnagar	4.2	-0.3	7.1	Loralai	2.0	-1.3	4.1
Islamabad	3.8	-0.6	7.0	Sargodha	2.0	0.0	3.3
Quetta	3.7	1.6	5.2	Karachi	1.9	-0.7	3.8
Lahore	3.7	-1.9	8.4	R. Y. Khan	1.9	-3.5	5.6
D. M. Jamali	3.5	3.6	3.4	Larkana	1.9	0.0	3.1
Mianwali	3.5	-2.3	7.0	Bannu	1.9	-1.1	3.8
Bahawalpur	3.2	0.4	4.8	Sukkur	1.9	0.1	3.1
				Mingora	1.8	-0.9	3.4
				Rawalpindi	1.5	-2.2	4.0
				Abbottabad	1.4	-1.0	2.9
				Attock	1.4	-2.9	4.3
				Dadu	1.4	-0.8	2.9
				Jhelum	1.3	-3.0	4.4
				Mirpukhas	0.8	-1.1	2.2
				Gujranwala	-0.1	-2.9	1.9
				Wazirabad	-0.4	-4.9	2.9
				Muzaffargarh	-0.4	-3.6	1.8

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-17	Feb-18	Mar-18	Mar-17	Feb-18	Mar-18
<u>Up to Rs. 8000</u>						
General	0.9	-0.7	-0.2	4.5	2.7	1.5
Food	1.7	-1.5	-0.7	4.2	1.3	-1.1
Non-food	0.1	0.2	0.4	4.8	4.3	4.6
<u>Rs. 8001- 12000</u>						
General	0.9	-0.6	-0.1	4.5	2.9	1.9
Food	1.8	-1.3	-0.6	4.6	1.6	-0.7
Non-food	0.1	0.2	0.5	4.5	4.3	4.7
<u>Rs. 12001- 18000</u>						
General	0.9	-0.5	0.1	4.8	3.1	2.2
Food	1.8	-1.3	-0.5	4.8	1.7	-0.6
Non-food	0.1	0.2	0.5	4.7	4.4	4.8
<u>Rs. 18001- 35000</u>						
General	0.9	-0.4	0.2	4.9	3.4	2.6
Food	1.9	-1.1	-0.3	5.2	1.8	-0.3
Non-food	0.1	0.2	0.6	4.7	4.6	5.1
<u>Above Rs. 35000</u>						
General	0.7	-0.1	0.5	5.1	4.5	4.3
Food	1.9	-0.9	0.0	5.4	3.1	1.1
Non-food	0.2	0.2	0.8	5.0	5.2	5.9
<u>All income groups</u>						
General	0.8	-0.3	0.3	4.9	3.8	3.2
Food	1.9	-1.1	-0.3	5.0	2.2	0.1
Non-food	0.1	0.2	0.7	4.9	4.9	5.4

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices	Percentage change	
			Mar-18	YoY	MoM
1	Wheat	10Kg.	341.9	-2.2	0.1
2	Wheat Flour Bag	10Kg.	384.2	-0.7	-0.5
3	Rice Basmati Broken	Kg.	73.9	13.4	0.6
4	Rice Irri-6/9	Kg.	52.0	5.3	-0.5
5	Bread Plain Med.Size (340-400 Gm.)	Each	42.6	3.5	0.0
6	Beef	Kg.	350.4	5.6	0.6
7	Mutton	Kg.	744.9	10.8	0.7
8	Chicken Live (Farm)	Kg.	168.9	-2.2	2.1
9	Milk Fresh	Litr	82.5	2.1	0.0
10	Curd	Kg.	99.1	4.6	0.3
11	Milk Powdered Nido	500G	384.3	2.8	0.3
12	Egg Hen (Farm)	Doz.	94.7	5.1	-6.2
13	Mustard Oil	Kg.	183.6	1.0	-0.3
14	Cooking Oil (Tin)	2.5Ltr	471.0	1.1	0.4
15	Veg. Ghee (Tin)	2.5Kg.	464.4	1.1	0.5
16	Veg.Ghee Loose	Kg.	145.7	0.0	0.1
17	Bananas	Doz.	81.1	-1.5	5.0
18	Masoor Pulse Washed	Kg.	115.4	-11.3	-2.4
19	Moong Pulse Washed	Kg.	116.2	-10.7	-1.6
20	Mash Pulse Washed	Kg.	151.2	-19.9	-2.4
21	Gram Pulse Washed	Kg.	114.8	-11.7	-2.0
22	Potatoes	Kg.	24.0	-16.6	-11.2
23	Onions	Kg.	33.1	-1.2	-23.1
24	Tomatoes	Kg.	31.8	-60.6	-13.4
25	Sugar	Kg.	51.3	-15.0	-0.3
26	Gur	Kg.	76.3	-9.4	-2.8
27	Salt Powdered Loose (Lahori)	Kg.	11.1	3.8	0.0
28	Red Chillies Powder Loose	Kg.	260.2	-2.4	1.0
29	Garlic	Kg.	174.5	-41.9	1.4
30	Tea (Yellow Lable 200 Gm.)	200Gm.	193.3	-1.3	5.0
31	Cooked Beef Plate	Each	103.9	11.4	0.4
32	Cooked Dal Plate	Each	58.3	2.4	0.0
33	Tea Prepared (Sada)	Cup	21.2	2.9	0.0
34	Cigarettes K-2 (20'S)	20'S	50.8	-24.5	0.0
35	Long Cloth (Coarse Latha)	Mtr.	214.0	4.1	0.0
36	Shirting	Mtr.	171.1	4.1	0.0
37	Lawn	Mtr.	258.8	3.0	1.2
38	Georgette (Voil Printed)	Mtr.	128.3	3.4	1.4
39	Sandal Gents Bata	Pair	699.0	0.0	0.0
40	Chappal Spng.Bata (Gents)	Pair	179.1	0.0	0.0
41	Sandal Ladies Bata	Pair	502.4	0.0	0.0
42	Electric Charges 1-50	Unit	2.0	0.0	0.0
43	Gas Charges Upto 3.3719	Mmbtu	128.7	0.0	0.0
44	Kerosene	Litr	115.1	45.9	5.5
45	Firewood	40Kg	633.0	3.9	0.0
46	Energy Savor 14 Watt	Each	170.2	1.4	0.3
47	Washing Soap (200-250 Gm.)	Cake	26.2	0.9	0.9
48	Match Box	Each	2.3	3.7	0.9
49	Petrol	Litr	89.0	20.5	4.1
50	Diesel	Litr	99.4	19.8	2.7
51	L.P.G.(11 Kg Cylander.)	Each	1190.0	6.4	-9.1
52	Tele. Local Call	Call	3.9	0.0	0.0
53	Bath Soap Lifebouy (Standard)	Cake	39.4	1.2	-0.6
Maximum				45.9	5.5
Median				1.1	0.0
Minimum				-60.6	-23.1

Table A9: Distribution of Price Changes (YoY) - WPI Items: March, 2018				
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, Vegetables, Pulses, Cotton Seeds, Hides And Fur Skins,Raw, Sugar Crops, Wheat, Other Oil Seeds, Raw Animal Material/Wool,	Milk From Bovine Animals, Fish Live Fresh Or Chilled, Sorghum/Jowar, Fuel Wood In Logs, Poultry,	Rice, Fresh Fruits, Maize, Fibre Crops,	Stimulant And Spice Crops, Eggs, Millet/Bajra, Dry Fruits, Unmanufactured Tobacco,
Ores & Minerals, Electricity Gas & Water	Electrical Energy, Coal Not Agglomerated,	Natural Gas Liquified,		Salt & Pure Sodium Chloride,
Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products	Tobacco Products, Other Cereal Flour, Sugar Refined, Leather With Out Hairs, Wheat Flour, Sugar Confectionary, Other Leather N.E.C, Nylon Yarn, Woolen Carpets, Footwears, Chocolate, Towels, Synthetic Carpets,	Blended Yarn, Woven Fabrics, Ready Made Garments, Milk And Cream In Solid Form, Cotton Fabrics, Fruit Juices, Other Fabrics, Vegetable Oil Refined, Hosiery Products, Silk And Reyon Fabrics, Vegetables & Fruit Juices, Vegetable Ghee, Beverages, Bed Sheets, Other Food Products, Oil Cakes,	Processed Liquid Milk, Quilts, Ice Cream, Cotton Yarn, Dairy Products N.E.C, Blankets, Mineral Water, Spices, Coffee And Tea,	Meat Of Animals, Dried Fruits & Nuts,
Other Transportable Goods except Metal Products, Machinery and Equipments	Cement, Insecticised, Coke, Dying Materials,	Timber, Fertilizers, Matches, Paints & Varnishes, Mobil Oil, Hard Board, Pesticides, Printing Paper, Other Glass Articles, Bed Foams, Medicines, Glass Sheets, Bricks Blocks And Tiles, Ceramics And Sanitary, Soaps & Detergent, Plastic Products, Auto Tyres,		Kerosine Oil, Diesel Oil, Motor Sprit, Furnace Oil, Chemicals,
Metal Product Machinery & Equipment	Steel Products, Engines And Motors, Vacuum Pumps, Bicycles, Pig Iron, Concrate Mixer, Radio And Television, Tractors, Cultivators, Lathe Machines, Chuff Cutter, Air Conditioners,	Refrige,Wash& Sew Mach,Iron,Fan, Electrical Wires, Lighting Equipments, Pipe Fittings, Motor Cycles,		Motor Vehicales, Steel Bars & Sheets,

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

Items and specification	Weights	Index		
		Mar-17	Feb-18	Mar-18
General	100.00	213.32	219.58	220.25
Food & Non-Alcoholic Beverages.	34.83	226.16	229.23	228.39
1 Wheat	0.35	208.99	205.66	204.63
2 Wheat Flour	4.16	213.15	212.84	211.52
3 Wheat Product	0.10	216.57	214.30	214.16
4 Besan	0.15	296.24	271.63	267.57
5 Rice	1.58	169.87	191.61	192.45
6 Cereals	0.16	253.81	259.02	259.04
7 Bakery & Confectionary	1.16	217.20	224.55	224.66
8 Nimco	0.46	250.97	257.41	258.14
9 Meat	2.43	270.81	290.84	293.53
10 Chicken	1.36	201.47	199.06	207.80
11 Fish	0.30	218.06	221.93	224.31
12 Milk Fresh	6.68	269.32	279.48	279.50
13 Milk Product	0.63	258.90	271.59	272.17
14 Milk Powder	0.11	234.74	238.41	239.08
15 Eggs	0.46	180.60	213.54	198.03
16 Mustard Oil	0.10	157.82	162.81	162.97
17 Cooking Oil	1.75	136.67	138.56	139.23
18 Vegetable Ghee	2.07	142.06	143.55	143.79
19 Dry Fruits	0.25	263.92	278.60	279.84
20 Fresh Fruits	1.86	253.63	249.68	266.29
21 Pulse Masoor	0.27	184.74	161.17	160.02
22 Pulse Moong	0.23	247.04	220.84	218.82
23 Pulse Mash (Washed)	0.21	279.33	221.64	217.65
24 Pulse Gram	0.24	294.15	264.85	259.27
25 Gram Whole	0.16	283.59	287.97	280.90
26 Beans	0.03	229.58	243.43	245.21
27 Potatoes	0.46	188.01	175.00	160.07
28 Onion	0.52	204.99	252.59	204.19
29 Tomatoes	0.43	213.35	121.90	97.45
30 Fresh Vegetables	1.71	225.89	218.60	202.58
31 Sugar	1.04	216.84	186.44	184.51
32 Gur	0.02	260.80	245.06	238.44
33 Honey	0.04	323.63	341.03	341.03
34 Sweet Meet	0.25	247.44	256.66	257.09
35 Beverages	1.20	219.43	226.80	227.38
36 Jam, Tomato Ketchup & Pickle	0.25	217.05	224.88	225.48
37 Condiments	0.27	266.36	277.53	278.51
38 Spices	0.54	237.90	239.80	239.75
39 Tea	0.84	283.96	287.65	296.63
Alcoholic Beverages, Tobacco	1.41	380.92	313.39	316.60
40 Cigarettes	1.39	383.20	306.13	306.62
41 Betel Leaves & Nuts	0.02	242.66	754.58	922.46
Clothing & Footwear	7.57	234.46	245.03	245.80
42 Cotton Cloth	1.73	226.99	236.48	238.01
43 Woolen Cloth	0.88	254.82	263.65	264.09
44 Ready Made Garments	0.97	240.15	254.72	256.20
45 Woolen Readymade Garments	0.40	260.01	266.71	266.38
46 Hosiery	0.51	246.06	258.30	259.22
47 Dopatta	0.44	243.87	254.12	255.58
48 Cleaning & Laundering	0.21	261.93	284.23	284.44

Table A10: Consumer Price Index Numbers by Major Groups and Composite Commodities					
Items and specification		Weights	Index		
			Feb-17	Jan-18	Feb-18
49	Tailoring	0.88	311.57	336.77	336.91
50	Footware	1.55	166.99	167.82	167.95
Housing,Water,Elect,Gas & Other Fuel		29.41	194.44	202.62	202.71
51	House Rent	21.81	185.86	195.96	195.96
52	Construction Input Item	0.56	250.25	261.97	264.40
53	Construction Wage Rate	0.33	235.79	255.15	257.14
54	Water Supply	0.50	164.74	173.82	174.83
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	198.79	246.23	259.58
58	Fire Wood Whole	0.23	290.59	301.93	302.24
Furnished H.Hold Equip.& Maint. Etc		4.21	224.59	233.50	234.67
59	Furniture	0.33	216.92	227.53	228.22
60	Household Textile	0.65	226.73	235.96	236.78
61	Household Equipment	0.59	180.25	184.74	185.70
62	Utensils	0.32	229.10	242.26	242.89
63	Plastic Products	0.25	209.59	218.40	218.99
64	Washing Soap & Detergent	0.79	230.42	235.23	235.67
65	Sewing Needle & Dry Cell	0.15	205.59	210.07	211.92
66	Household Servant	1.04	249.98	262.86	265.40
67	Marriage Hall Charges	0.08	245.66	257.76	257.76
Health		2.19	211.21	220.58	221.26
68	Drug Medicine	1.27	184.27	187.75	187.99
69	Medical Equipment	0.01	251.01	256.26	256.26
70	Doctor (MBBS) Clinic Fee	0.59	277.47	298.32	300.06
71	Medical Test	0.32	194.69	206.26	206.75
Transport		7.20	175.69	184.47	186.98
72	Motor Vehicle	0.66	172.91	180.19	185.84
73	Motor Vehicle Accessories	0.24	213.27	215.18	216.02
74	Motor Fuel	3.03	148.11	163.92	167.63
75	Mechanical Service	0.46	229.92	237.06	238.14
76	Motor Vehicle Tax	0.11	210.18	210.18	210.18
77	Transport Services	2.70	193.34	195.86	196.76
Communication		3.22	132.69	133.28	133.37
78	Postal Services	0.07	246.14	255.80	259.00
79	Communication & Apparatus	3.15	130.31	130.71	130.73
Recreation & Culture		2.02	197.14	198.62	200.38
80	Recreation & Culture	0.86	129.62	131.62	132.03
81	Text Books	0.57	292.41	287.98	287.98
82	News Papers	0.19	180.53	186.23	202.81
83	Stationery	0.40	215.22	222.00	222.02
Education		3.94	233.98	262.35	275.17
84	Education	3.94	233.98	262.35	275.17
Restaurants And Hotels		1.23	271.02	287.21	287.84
85	Ready Made Food	1.23	271.02	287.21	287.84
Miscellaneous Goods And Services		2.76	242.19	255.21	256.35
86	Personal Care	1.49	224.06	233.45	234.18
87	Cosmetics	0.39	203.77	206.60	208.65
88	Blades	0.03	195.52	201.62	201.85
89	Personal Equipments	0.84	293.59	317.95	319.45

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

Items and Specifications	Index		
	Mar-17	Feb-18	Mar-18
General	217.29	224.66	225.22
Agriculture Forestry & Fishery	247.41	252.97	254.55
1 Wheat	215.36	210.64	209.00
2 Maize	188.80	199.27	205.11
3 Rice	158.39	174.06	173.85
4 Sorghum/Jowar	252.72	242.65	256.85
5 Millet/Bajra	166.48	183.60	188.77
6 Vegetables	228.79	219.44	195.23
7 Fresh Fruits	266.14	265.01	291.61
8 Dry Fruits	237.76	267.56	269.25
9 Cotton Seeds	273.72	256.23	257.18
10 Other Oil Seeds	181.57	187.75	177.04
11 Edible Roots/ Potatoes	193.76	167.22	148.10
12 Stimulant And Spice Crops	218.25	269.38	266.39
13 Pulses	262.14	249.60	240.45
14 Sugar Crops	268.94	257.62	257.62
15 Fibre Crops	219.67	226.99	234.67
16 Unmanufactured Tobacco	277.89	305.98	308.03
17 Poultry	217.22	211.05	219.05
18 Milk From Bovine Animals	266.07	275.47	275.47
19 Eggs	173.47	212.43	201.84
20 Raw Animal Material/Wool	177.63	173.81	173.81
21 Hides And Fur Skins, Raw	106.49	105.02	101.97
22 Fuel Wood In Logs	279.63	283.56	283.56
23 Fishes Live Fresh Or Chilled	466.06	477.80	476.70
Ores/Minerals, Gas & Elect.	242.56	243.39	242.92
24 Coal Not Agglomerated	155.29	155.29	155.29
25 Natural Gas Liquefied	210.52	212.02	211.00
26 Salt & Pure Sodium Chloride	240.26	264.37	266.38
27 Electrical Energy	288.00	288.00	288.00
Food, Beverages, Tobacco, Textiles	227.09	231.40	231.06
28 Meat Of Animals	283.49	311.27	314.84
29 Vegetables & Fruit Juices	223.21	224.97	224.97
30 Dried Fruits & Nuts	264.08	297.11	291.20
31 Fruit Juices	179.97	182.60	183.21
32 Vegetable Oil Refined	154.86	156.36	156.57
33 Vegetable Ghee	126.57	126.69	127.28
34 Oil Cakes	226.58	231.54	226.67
35 Processed Liquid Milk	262.24	286.83	288.23
36 Milk And Cream In Solid Form	218.15	223.55	223.34
37 Ice Cream	245.21	266.02	266.02
38 Dairy Products N.E.C	254.42	267.61	272.54
39 Wheat Flour	197.79	195.72	194.41
40 Other Cereal Flour	250.54	218.04	210.20
41 Sugar Refined	223.81	189.16	189.93
42 Chocolate	100.00	100.00	100.00
43 Sugar Confectionary	128.44	127.85	127.85
44 Coffee And Tea	254.52	261.80	267.98
45 Spices	190.42	202.23	202.23
46 Other Food Products	293.85	294.50	294.50
47 Mineral Water	198.57	208.14	211.50
48 Beverages	172.33	172.85	173.00
49 Tobacco Products	445.85	318.37	318.37
50 Cotton Yarn	203.06	227.49	218.16
51 Nylon Yarn	143.99	143.99	143.99
52 Blended Yarn	182.33	188.55	189.19
53 Woven Fabrics	310.72	321.49	321.49
54 Cotton Fabrics	209.30	213.18	214.23
55 Other Fabrics	224.40	227.16	227.16

Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities				
Items and Specifications		Index		
		Feb-17	Jan-18	Feb-18
56	Silk And Rayon Fabrics	186.55	188.14	188.14
57	Towels	276.14	276.14	276.14
58	Blankets	247.52	265.03	265.03
59	Bed Sheets	256.07	256.87	256.87
60	Quilts	203.79	222.32	222.32
61	Woolen Carpets	196.43	196.43	196.43
62	Synthetic Carpets	130.95	130.95	130.95
63	Hosiery Products	241.83	244.11	244.42
64	Ready Made Garments	196.08	201.37	201.37
65	Leather With Out Hairs	221.97	212.68	212.68
66	Other Leather N.E.C	207.31	207.02	207.02
67	Footwear's	145.51	145.51	145.51
Other Transportable Goods		171.65	190.61	191.75
68	Timber	226.13	237.00	237.00
69	Printing Paper	165.63	168.59	168.59
70	Hard Board	220.83	225.00	225.00
71	Coke	163.45	163.45	163.45
72	Motor Sprit	123.29	142.75	148.77
73	Diesel Oil	155.81	201.27	205.65
74	Kerosene Oil	117.12	187.24	203.79
75	Furnace Oil	104.67	130.29	125.91
76	Mobil Oil	196.91	200.85	200.85
77	Chemicals	170.99	188.23	188.57
78	Dying Materials	146.55	146.55	146.55
79	Fertilizers	216.49	225.55	226.19
80	Pesticides	304.43	310.16	310.16
81	Insecticides	143.92	140.56	140.61
82	Paints & Varnishes	294.51	301.12	301.12
83	Medicines	174.85	177.01	177.01
84	Soaps & Detergent	191.21	191.35	191.35
85	Auto Tyres	177.07	177.07	177.11
86	Plastic Products	225.88	226.00	226.00
87	Glass Sheets	298.97	302.27	302.27
88	Other Glass Articles	312.91	318.10	318.10
89	Ceramics And Sanitary	233.92	234.76	234.76
90	Bricks Blocks And Tiles	220.98	223.59	223.30
91	Cement	216.71	209.70	210.55
92	Bed Foams	170.83	173.00	173.00
93	Matches	165.53	171.36	171.36
Metal Product Machinery & Equip		175.44	178.47	179.07
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	133.96	144.61	147.50
96	Pipe Fittings	215.29	215.66	215.66
97	Steel Products	177.48	176.70	176.70
98	Engines And Motors	116.98	116.98	116.98
99	Vacuum Pumps	123.69	123.69	123.69
100	Air Conditioners	200.10	200.10	200.10
101	Cultivators	190.66	190.66	190.66
102	Chuff Cutter	153.46	153.46	153.46
103	Tractors	201.75	201.75	201.75
104	Lathe Machines	241.06	241.06	241.06
105	Concrete Mixer	138.83	138.83	138.83
106	Refrige,Wash& Sew Mach, Iron,Fan	208.84	217.87	218.55
107	Electrical Wires	204.51	205.92	205.92
108	Lighting Equipments	170.73	171.39	171.39
109	Radio And Television	140.42	140.42	140.42
110	Motor Vehicles	191.39	195.36	211.00
111	Motor Cycles	125.89	126.05	126.05
112	Bicycles	187.65	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	123.11	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	233.37	199.65	216.02	248.74	195.27	220.10
2015	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
	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

*: all groups combined

Table A13: International Commodity Prices/ Indices

Table A13: International Commodity Prices/Indices				
	Dec-17	Jan-18	Feb-18	Mar-18
Energy				
Crude Oil (US\$ per barrel) *	61.2	66.2	63.5	64.2
Energy Index (2010 = 100)	77.8	85.0	80.5	81.0
Food				
Rice (\$/MT)	406.0	442.0	425.0	430.0
Wheat (\$/MT)	184.1	192.2	192.2	192.2
Sugar (US cent/ pound)^	0.3	0.3	0.3	0.3
Palm Oil (\$/MT)	672.0	677.0	663.0	681.0
Soybean Oil (\$/MT)	866.0	864.0	842.0	834.0
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	1.9	2.0	1.9	2.0
Metal Price Index (2010 = 100)	92.2	97.0	96.9	92.9
Copper (\$/MT)	6,833.9	7,065.9	7,006.5	6,799.2
Aluminum (\$/MT)	2,080.5	2,209.7	2,181.8	2,069.2
Iron Ore (\$ cents/dry MT)	72.3	76.3	77.5	70.4
Tin (\$/MT)	19,476.4	20,696.9	21,651.6	21,211.9
Nickel (\$/MT)	11,495.1	12,864.9	13,595.9	13,392.5
Zinc (\$/MT)	3,196.0	3,441.5	3,532.9	3,269.2
Lead (\$/MT)	2,509.9	2,584.1	2,581.1	2,390.0
Uranium (\$/MT)@	22.3	21.9	21.4	21.1
DAP (\$/MT)	385.0	395.0	404.0	412.0
Urea (\$/MT)	219.0	224.0	229.0	232.0
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 \$ / \$/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	FY14	FY15	FY16	FY17	FY18
Jul	183.58	198.05	201.76	210.08	216.19
Aug	185.71	198.70	202.25	209.46	216.61
Sep	185.18	199.40	202.04	209.88	217.98
Oct	188.82	199.81	203.03	211.57	219.61
Nov	191.21	198.79	204.22	212.01	220.42
Dec	188.68	196.79	203.06	210.57	220.20
Jan	189.60	196.95	203.49	210.94	220.27
Feb	189.00	195.13	202.98	211.54	219.58
Mar	190.82	195.57	203.28	213.32	220.25
Apr	194.06	198.16	206.43	216.30	
May	193.55	199.66	205.99	216.33	
Jun	194.74	200.89	207.30	215.45	
Seasonally Adjusted Series					
Jul	182.74	197.10	200.79	209.05	215.15
Aug	184.46	197.45	201.06	208.27	215.46
Sep	184.03	198.20	200.90	208.77	216.91
Oct	187.34	198.28	201.52	210.05	218.06
Nov	190.03	197.61	203.04	210.79	219.16
Dec	189.59	197.66	203.87	211.32	220.92
Jan	190.23	197.63	204.23	211.76	221.19
Feb	190.96	197.15	205.06	213.68	221.77
Mar	192.46	197.28	205.09	215.23	222.22
Apr	193.90	197.97	206.21	216.03	
May	193.96	200.01	206.29	216.61	
Jun	195.34	201.43	207.78	215.88	

Table 15: CPI Food Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY14	FY15	FY16	FY17	FY18
Jul	208.19	222.80	224.14	234.69	234.47
Aug	212.27	224.05	224.86	232.48	235.38
Sep	209.09	224.12	223.87	232.80	238.43
Oct	212.61	223.74	224.86	234.68	239.89
Nov	218.16	222.74	227.55	235.17	240.79
Dec	210.89	218.08	223.90	230.69	239.43
Jan	210.81	217.10	222.58	228.45	236.92
Feb	208.74	213.15	221.07	229.19	234.31
Mar	213.11	214.25	222.25	233.47	233.67
Apr	217.33	217.26	227.53	237.50	
May	214.75	221.22	225.84	237.01	
Jun	216.98	223.84	228.95	234.37	
Seasonally Adjusted Series					
Jul	206.59	220.99	222.27	232.71	232.50
Aug	209.32	221.12	222.07	229.69	232.69
Sep	206.23	221.10	220.96	229.93	235.64
Oct	209.33	220.40	221.62	231.46	236.67
Nov	214.83	219.43	224.29	231.82	237.36
Dec	212.31	219.34	224.95	231.54	240.17
Jan	212.57	219.03	224.70	230.82	239.54
Feb	213.41	217.93	225.98	234.23	239.42
Mar	216.33	217.58	225.75	237.15	237.37
Apr	217.78	217.68	227.93	237.82	
May	216.05	222.39	226.92	238.05	
Jun	218.36	225.04	229.98	235.25	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY14	FY15	FY16	FY17	FY18	Average
Jul	100.46	100.48	100.48	100.49	100.49	100.48
Aug	100.68	100.63	100.59	100.57	100.53	100.60
Sep	100.62	100.60	100.57	100.53	100.49	100.56
Oct	100.79	100.77	100.75	100.73	100.71	100.75
Nov	100.62	100.60	100.58	100.58	100.58	100.59
Dec	99.52	99.56	99.60	99.65	99.68	99.60
Jan	99.67	99.66	99.64	99.61	99.59	99.63
Feb	98.98	98.98	98.99	99.00	99.01	98.99
Mar	99.15	99.13	99.12	99.11	99.12	99.13
Apr	100.08	100.10	100.11	100.13		100.10
May	99.79	99.82	99.85	99.87		99.83
Jun	99.69	99.73	99.77	99.80		99.75

Table 17: CPI Food Monthly & Average Seasonal Factors

Period	FY14	FY15	FY16	FY17	FY18	Average
Jul	100.77	100.82	100.84	100.85	100.85	100.83
Aug	101.41	101.33	101.26	101.22	101.16	101.27
Sep	101.39	101.37	101.32	101.25	101.18	101.30
Oct	101.57	101.51	101.46	101.39	101.36	101.46
Nov	101.55	101.51	101.46	101.44	101.45	101.48
Dec	99.33	99.43	99.53	99.63	99.69	99.52
Jan	99.17	99.12	99.06	98.97	98.91	99.05
Feb	97.81	97.81	97.83	97.85	97.86	97.83
Mar	98.51	98.47	98.45	98.45	98.44	98.47
Apr	99.80	99.81	99.82	99.87		99.82
May	99.40	99.48	99.53	99.56		99.49
Jun	99.37	99.47	99.55	99.63		99.50

Table 18: CPI Month-on-Month % Change Original & Seasonally Adjusted					
Original Series					
Period	FY14	FY15	FY16	FY17	FY18
Jul	2.02	1.70	0.43	1.34	0.34
Aug	1.16	0.33	0.24	-0.30	0.19
Sep	-0.29	0.35	-0.10	0.20	0.63
Oct	1.97	0.21	0.49	0.81	0.75
Nov	1.27	-0.51	0.59	0.21	0.37
Dec	-1.32	-1.01	-0.57	-0.68	-0.10
Jan	0.49	0.08	0.21	0.18	0.03
Feb	-0.32	-0.92	-0.25	0.28	-0.31
Mar	0.96	0.23	0.15	0.84	0.31
Apr	1.70	1.32	1.55	1.40	
May	-0.26	0.76	-0.21	0.01	
Jun	0.61	0.62	0.64	-0.41	
Seasonally Adjusted Series					
Jul	1.21	0.90	-0.32	0.61	-0.34
Aug	0.94	0.18	0.14	-0.37	0.15
Sep	-0.23	0.38	-0.08	0.24	0.67
Oct	1.79	0.04	0.31	0.61	0.53
Nov	1.44	-0.34	0.75	0.35	0.50
Dec	-0.23	0.03	0.41	0.25	0.80
Jan	0.33	-0.02	0.18	0.21	0.12
Feb	0.38	-0.24	0.40	0.91	0.26
Mar	0.79	0.07	0.02	0.73	0.20
Apr	0.75	0.35	0.55	0.37	
May	0.04	1.03	0.04	0.27	
Jun	0.71	0.71	0.72	-0.34	

Table 19: CPI Food Month-on-Month % Change Original & Seasonally Adjusted					
Original Series					
Period	FY14	FY15	FY16	FY17	FY18
Jul	3.01	2.68	0.13	2.50	0.04
Aug	1.96	0.56	0.32	-0.94	0.39
Sep	-1.50	0.03	-0.44	0.14	1.29
Oct	1.68	-0.17	0.44	0.81	0.61
Nov	2.61	-0.45	1.20	0.21	0.37
Dec	-3.33	-2.09	-1.61	-1.90	-0.56
Jan	-0.04	-0.45	-0.59	-0.97	-1.05
Feb	-0.98	-1.82	-0.68	0.32	-1.11
Mar	2.10	0.52	0.54	1.87	-0.27
Apr	1.98	1.41	2.38	1.73	
May	-1.19	1.82	-0.74	-0.21	
Jun	1.04	1.18	1.38	-1.11	
Seasonally Adjusted Series					
Jul	1.48	1.20	-1.23	1.19	-1.17
Aug	1.32	0.06	-0.09	-1.30	0.08
Sep	-1.48	-0.01	-0.50	0.11	1.27
Oct	1.51	-0.31	0.30	0.67	0.44
Nov	2.63	-0.44	1.20	0.16	0.29
Dec	-1.18	-0.04	0.30	-0.12	1.18
Jan	0.12	-0.14	-0.11	-0.31	-0.26
Feb	0.39	-0.50	0.57	1.48	-0.05
Mar	1.37	-0.16	-0.10	1.24	-0.86
Apr	0.67	0.05	0.96	0.28	
May	-0.79	2.16	-0.45	0.10	
Jun	1.07	1.19	1.35	-1.18	



Figure A2: Frequency Distribution of Price Changes of CPI Items, March 2018

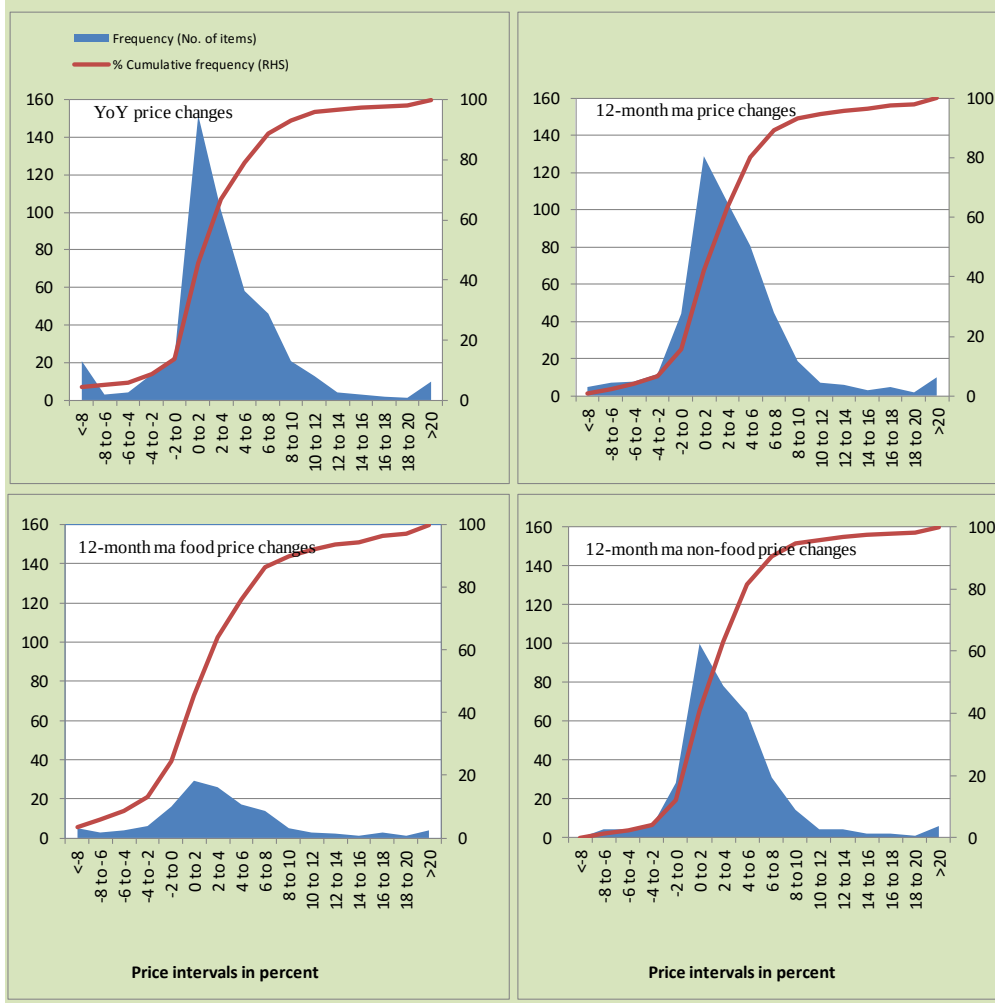


Figure A3: Frequency Distribution of Price Changes of WPI Commodities, March 2018

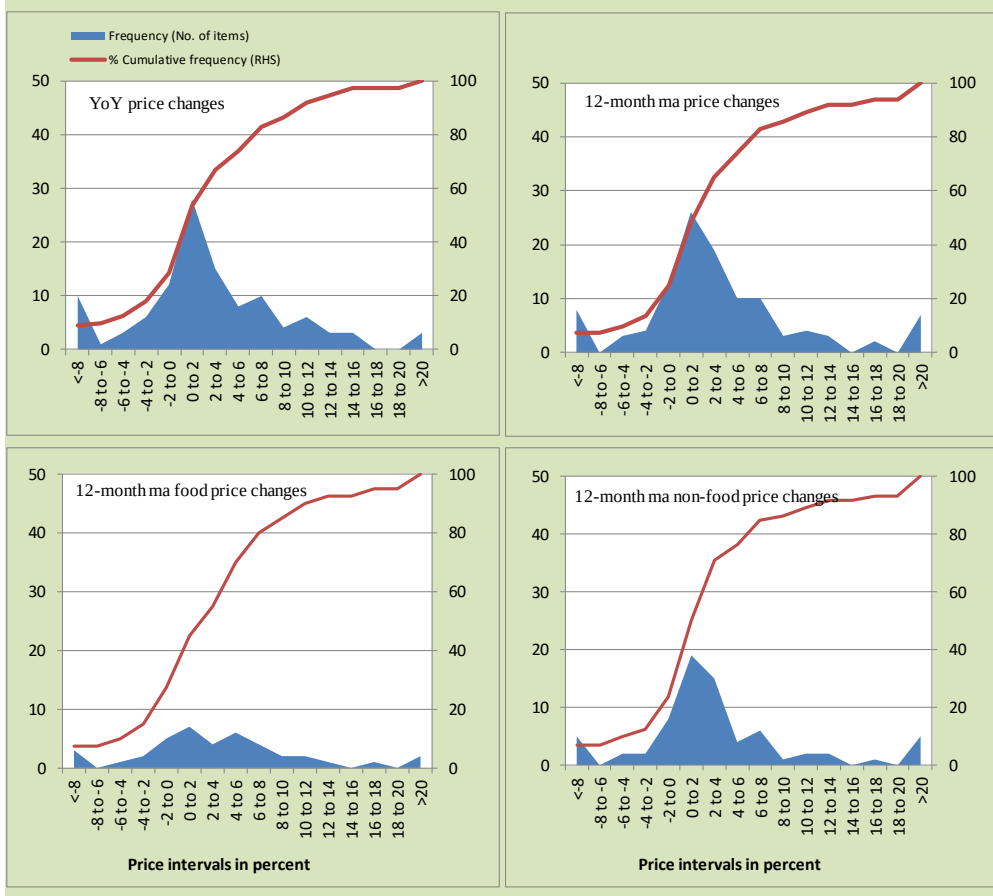
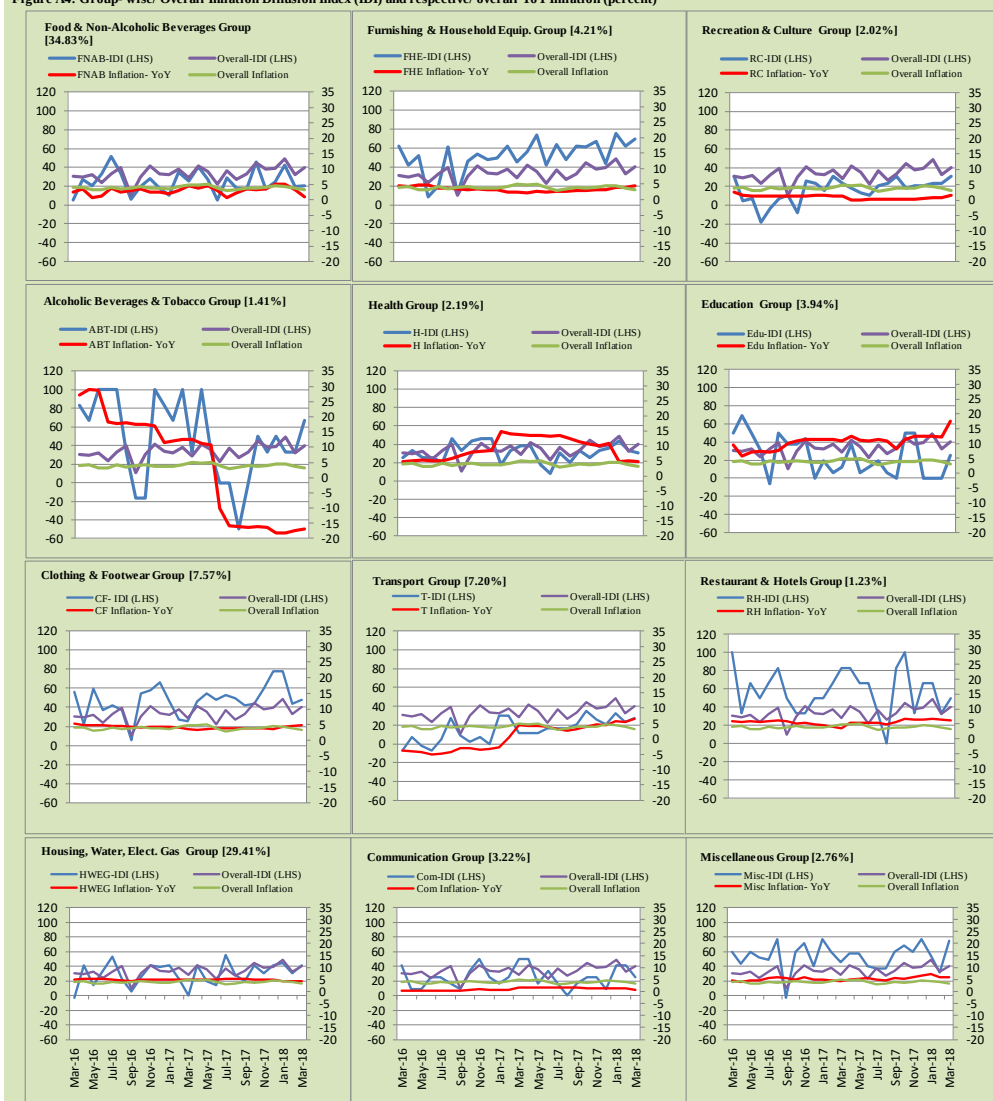


Figure A4: Group-wise/ Overall Inflation Diffusion Index (IDI) and respective/ overall YoY Inflation (percent)



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.