

# **Inflation Monitor**

**February 2018**



**State Bank of Pakistan**

**Statistics & DWH Department**

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## **Review**

### **Inflation in Brief**

1. Headline CPI inflation (2007-08=100) is recorded at level of 3.8 percent on year-on-year basis in February 2018 as compared to 4.4 percent in the previous month and 4.2 percent during corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at level of -0.3 percent in February 2018 as compared to 0.03 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 0.28 percent in February 2018 compared to 0.13 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis is recorded at 4.3 percent in February 2018 as compared to 4.6 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 0.1 percent in February 2018 as compared to 0.6 percent in the previous month and 0.2 percent 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 5.2 percent in February 2018 and remained at level in the previous month and 5.3 percent during corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.2 percent in February 2018 as compared to 0.8 percent in the previous month. Core NFNE inflation was at level in the corresponding month of last year.
7. WPI inflation on year-on-year basis recorded at 4.1 percent in February 2018 as compared to 4.7 percent in the previous month and 5.3 percent during the corresponding month of last year.

8. WPI inflation on month-on-month basis recorded at -0.1 percent in February 2018 as compared to 1.8 percent in the previous month. It was 0.5 percent in the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 1.3 percent in February 2018 as compared to 2.6 percent in the previous month. It was 1.6 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at -0.9 percent in February 2018 as compared to -0.7 percent in the previous month. It was 0.4 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 February 2018 are described below:

11. Core RSC inflation on year-on-year basis is recorded at 4.1 percent in February 2018 compared to 4.0 percent in the previous month and 4.9 percent in the corresponding month of last year.
12. Core RSC inflation on month-on-month basis is recorded at 0.2 percent in February 2018 compared to 0.6 percent in the previous month and remained at level 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	YoY	MoM	YoY	MoM
Feb-17	4.2	0.3	3.7	0.3	4.6	0.3	5.3	0.2	4.1	0.2	4.9	0.2	5.3	0.5	1.6	0.4
Mar-17	4.9	0.8	5.0	1.9	4.9	0.1	5.2	0.1	4.5	0.2	5.0	0.2	6.4	0.7	3.9	2.0
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

\* NFNE is Non-food non-energy      \*\* Relatively Stable Component of CPI      \*\*\* SPI for all income groups combined

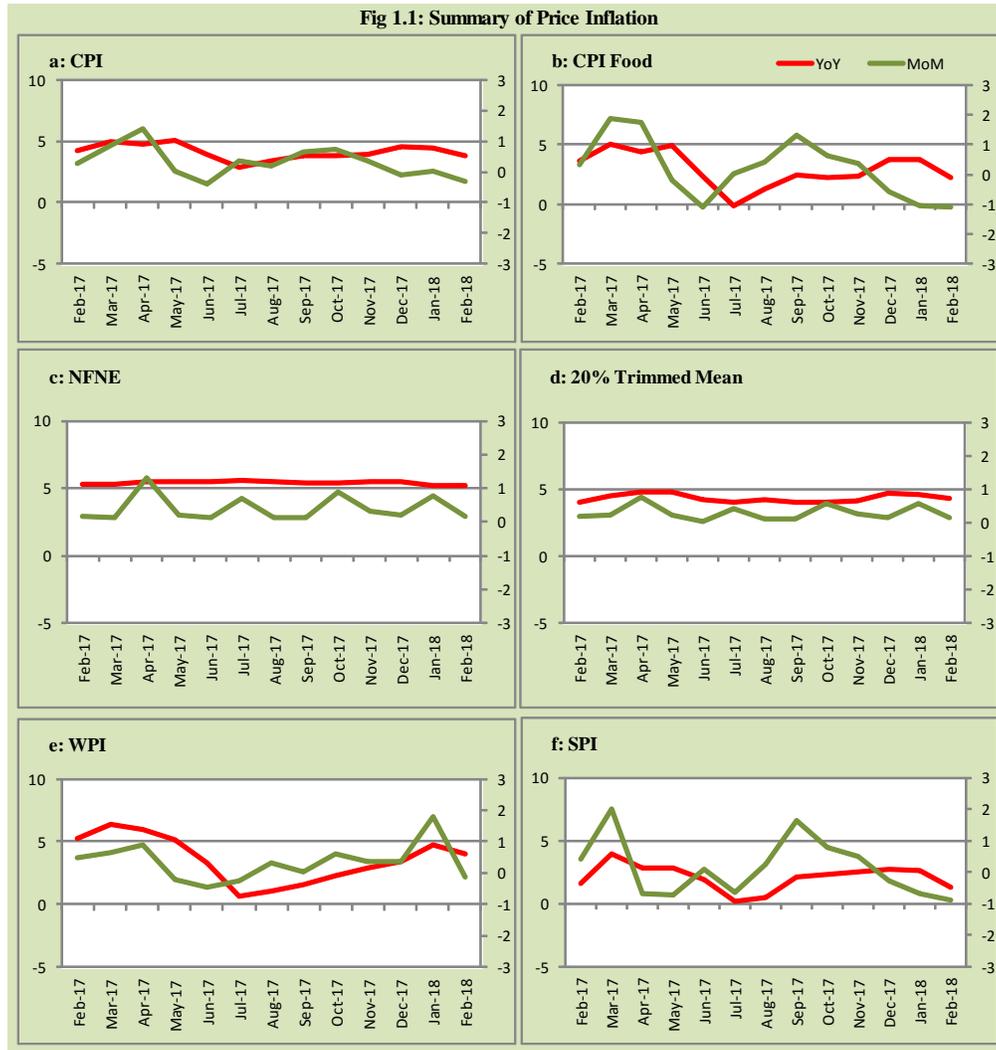


Fig 1.2: Movements in Price Indices (percent)

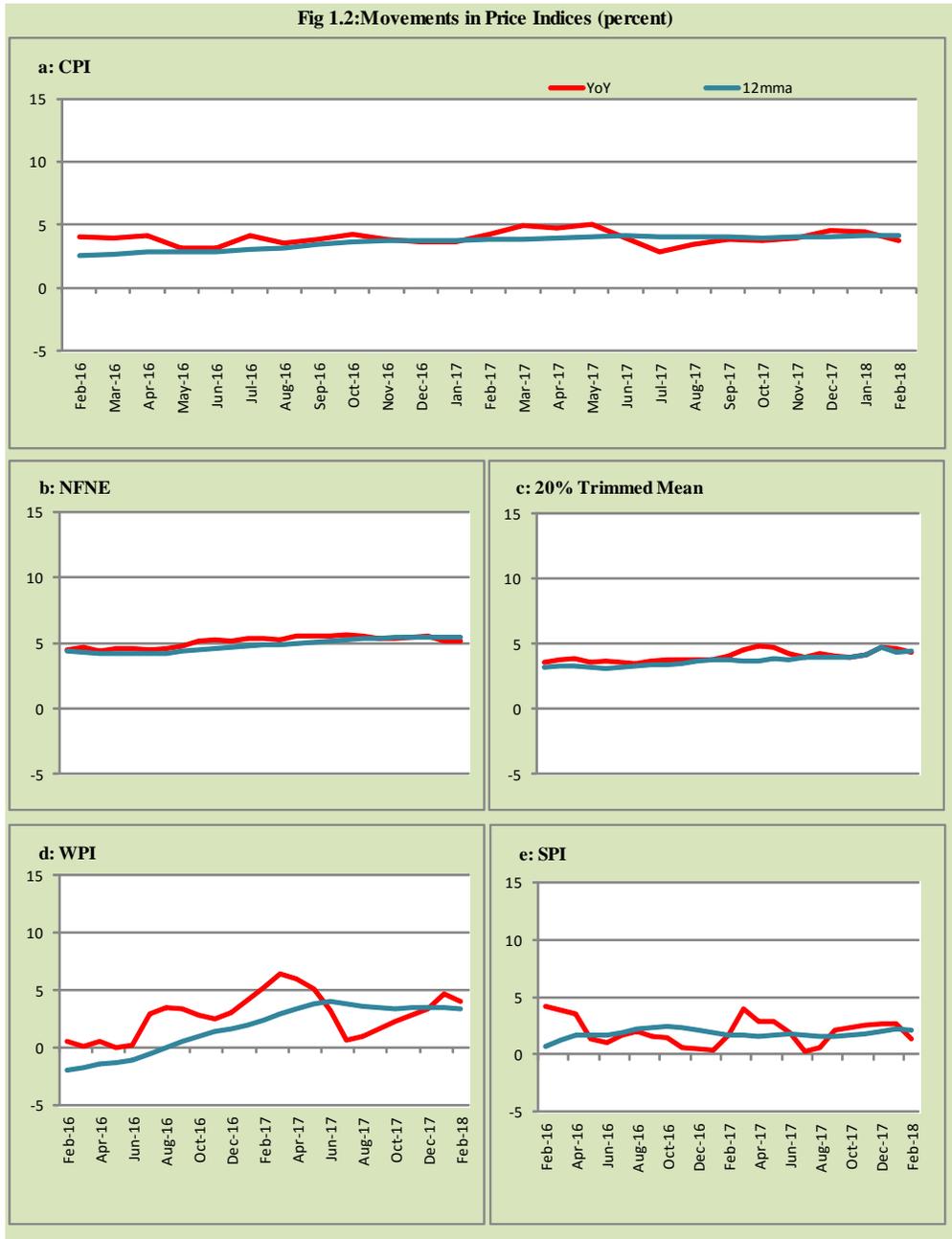
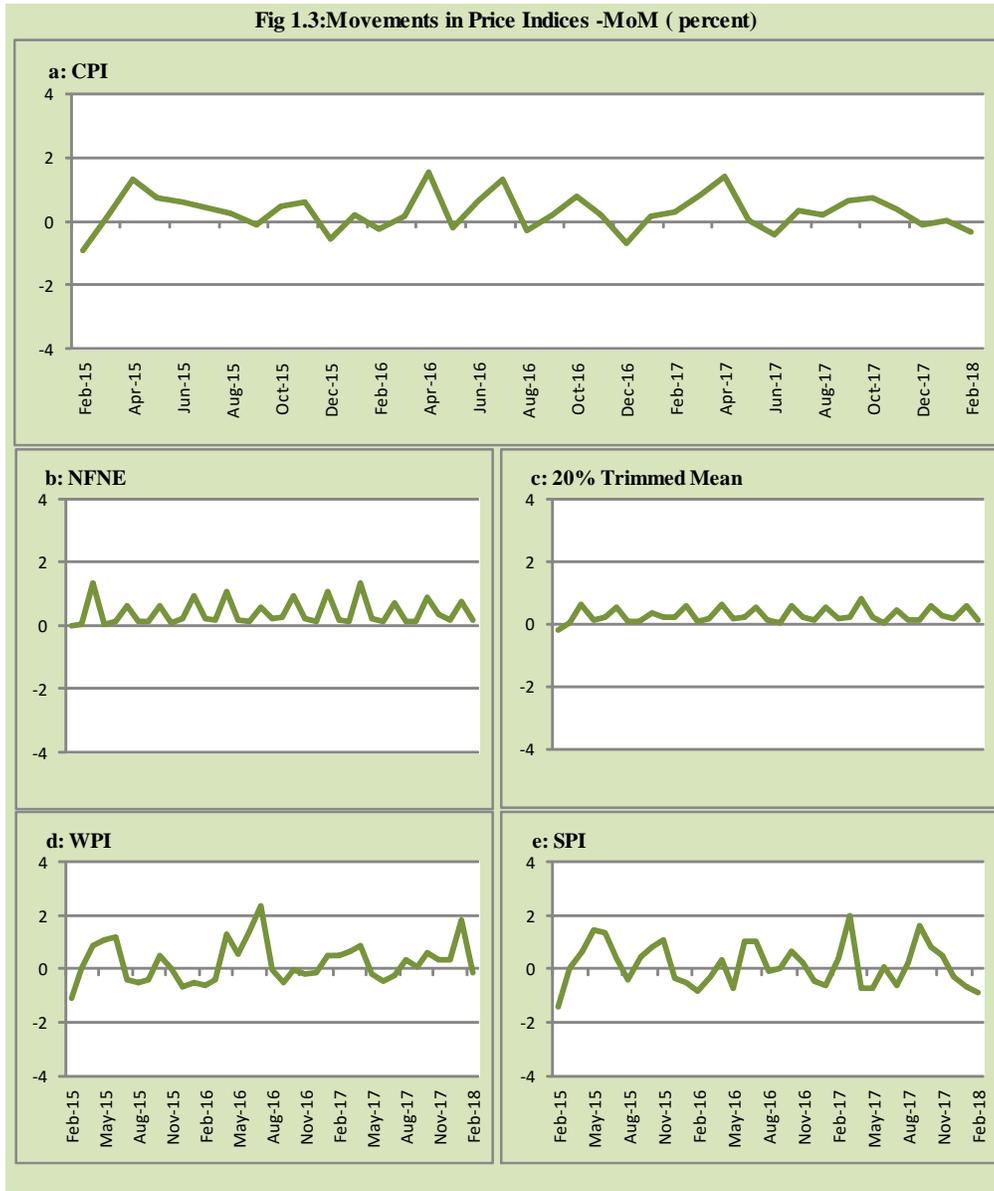
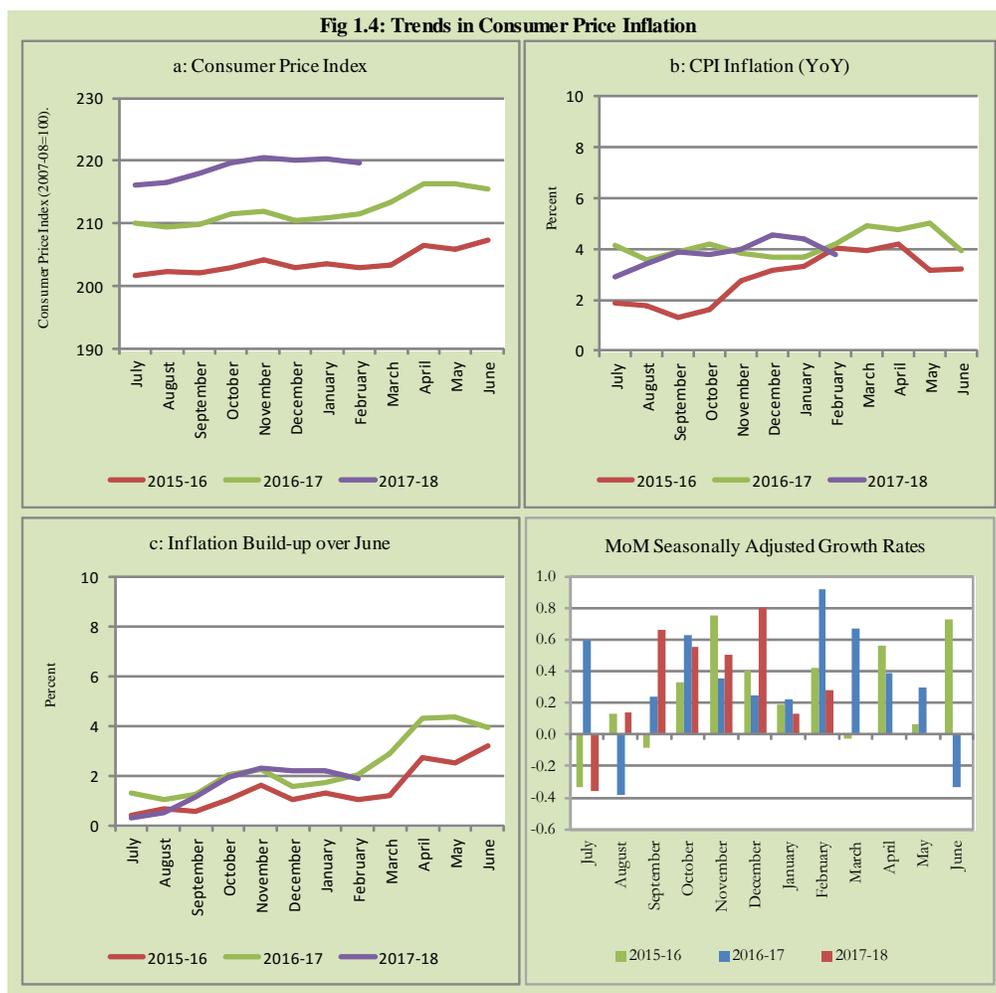


Fig 1.3: Movements in Price Indices -MoM ( percent)





## 2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan showed mixed trend during February 2018. Among these five cities, the lowest inflation was observed in Karachi at 2.9 percent while the highest inflation was observed in Quetta at 5.0 percent (Table A6 of annexure-A).

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

	Feb-17		Jan-18		Feb-18	
	MoM	YoY	MoM	YoY	MoM	YoY
<b>Overall CPI</b>	0.3	4.2	0.0	4.4	-0.3	3.8
Islamabad	0.7	5.1	-0.2	5.3	-0.1	4.4
Karachi	0.1	3.3	0.0	2.9	0.1	2.9
Lahore	0.3	3.6	-0.6	5.1	-0.4	4.4
Peshawar	0.4	2.2	0.1	3.9	-0.3	3.2
Quetta	-0.3	2.2	1.2	5.9	-1.2	5.0

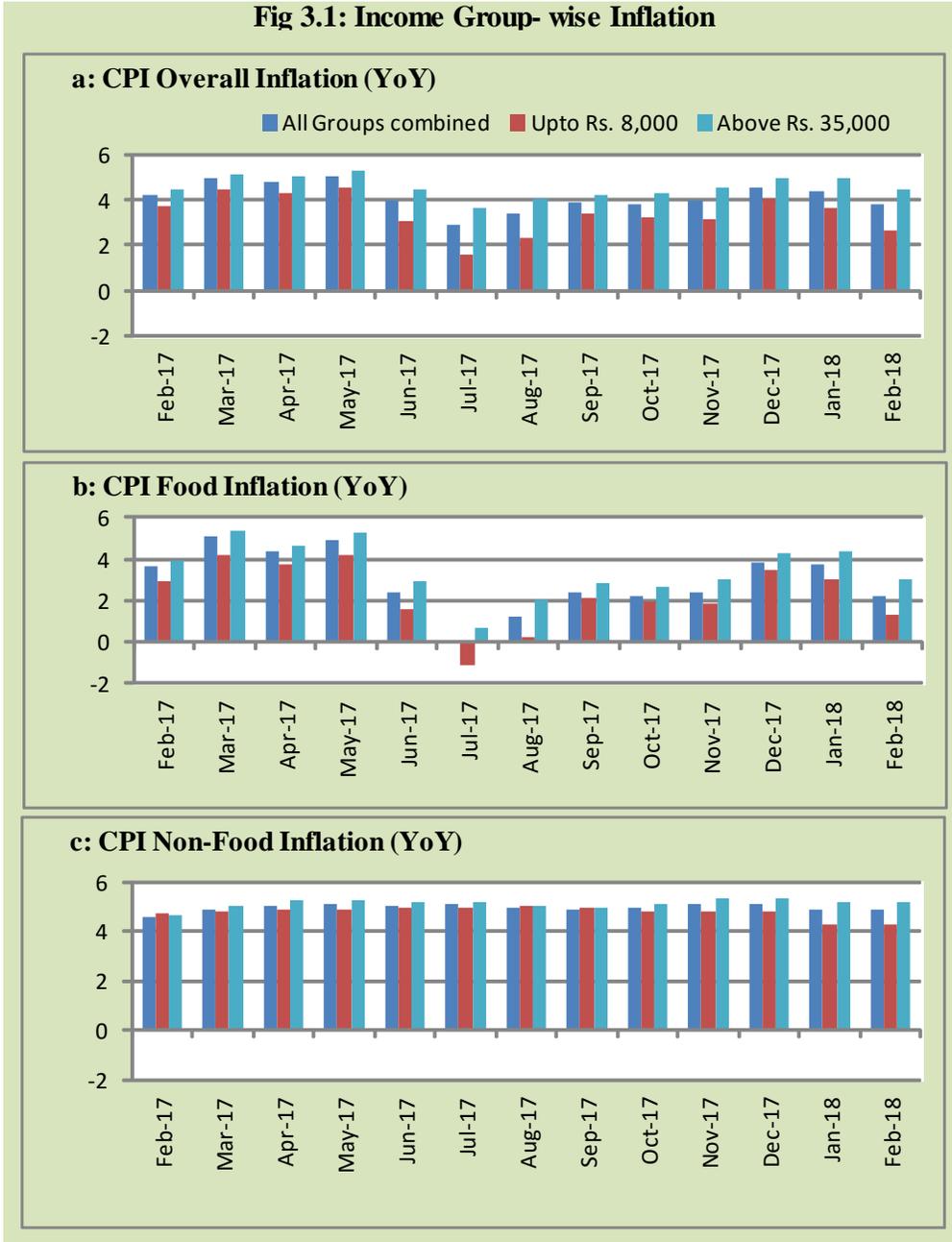
### 3. Income Group wise Inflation

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 during February 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 income groups (Up to Rs. 8, 000 & Rs. 8,001- 12,000) observed lowest inflation in non-food groups among income groups during the month of February 2018 (Table A7 of annexure-A).

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

Income Groups	General			Food			Non-food		
	Feb-17	Jan-18	Feb-18	Feb-17	Jan-18	Feb-18	Feb-17	Jan-18	Feb-18
<b>All Groups Combined</b>	4.2	4.4	3.8	3.7	3.7	2.2	4.6	4.9	4.9
Up to Rs. 8,000	3.7	3.6	2.7	2.9	3.0	1.3	4.7	4.3	4.3
Rs. 8,001- 12,000	3.9	3.8	2.9	3.2	3.3	1.6	4.5	4.3	4.3
Rs. 12,001- 18,000	4.0	3.9	3.1	3.5	3.3	1.7	4.4	4.5	4.4
Rs. 18,001- 35,000	4.1	4.1	3.4	3.8	3.4	1.8	4.4	4.6	4.6
Above Rs. 35,000	4.4	4.9	4.5	4.0	4.3	3.1	4.7	5.2	5.2

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



#### 4. Weighted Contribution

The weighted contribution of food group in the overall inflation decreased to 23.85 percent during February 2018 from 34.02 percent in previous month. It was 35.54 percent in February 2017.

The weighted contribution of non-food group increased to 76.15 percent in February 2018 from 65.98 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
Feb-17	35.54	8.29	30.79	0.59	10.97	13.82
Mar-17	41.86	6.08	26.25	5.34	9.03	11.44
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

## 5. Inflation Diffusion Index

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

	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18
General	38.0	28.5	41.6	35.3	22.4	36.8	26.8	33.1	44.6	37.7	39.2	48.9	32.5
Food & Non-Alcoholic Beverages	35.1	25.7	40.4	27.1	5.3	28.7	17.5	17.4	46.1	17.1	25.0	42.1	19.3
Alcoholic Beverages & Tobacco	100.0	33.3	100.0	33.3	0.0	0.0	-50.0	0.0	50.0	33.3	50.0	33.3	33.3
Clothing & Footwear	27.1	25.4	45.8	54.2	47.5	52.5	49.2	42.4	44.1	59.3	78.0	78.0	44.1
Housing, Water, Elect, Gas & other Fuels	22.2	0.0	41.7	19.4	13.9	55.6	27.8	19.4	41.7	30.6	41.7	44.4	30.6
Furnishing & Household Equip. Maintenance etc	62.3	44.9	56.5	73.9	42.0	63.8	47.8	62.3	60.9	66.7	43.5	75.4	62.3
Health	33.3	38.5	38.5	17.9	7.7	30.8	20.5	33.3	25.6	33.3	35.9	43.6	33.3
Transport	30.2	11.6	11.6	11.6	16.3	16.3	16.3	20.9	34.9	25.6	20.9	32.6	23.3
Communication	25.0	50.0	50.0	16.7	33.3	16.7	0.0	16.7	25.0	25.0	8.3	41.7	41.7
Recreation & Culture	30.8	23.1	17.9	12.8	10.3	20.5	23.1	30.8	17.9	20.5	20.5	23.1	23.1
Education	6.3	12.5	37.5	6.3	12.5	18.8	6.3	0.0	50.0	50.0	0.0	0.0	0.0
Restaurant & Hotels	66.7	83.3	83.3	66.7	66.7	33.3	0.0	83.3	100.0	33.3	66.7	66.7	33.3
Miscellaneous	60.0	45.7	57.1	57.1	40.0	37.1	37.1	60.0	68.6	60.0	77.1	54.3	31.4
NFNE	37.6	28.1	40.2	38.5	28.4	42.3	33.4	38.2	43.2	45.0	43.2	51.5	36.7

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	Feb-17		Jan-18		Feb-18	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-0.64	0.52	-0.36	1.40	-1.05	-0.17
2	Wheat Flour Bag	10 Kg	-1.87	-0.14	-1.16	-1.01	-0.86	0.17
3	Rice Basmati Sup. Qlty.	Kg	4.34	2.46	17.11	3.29	15.52	1.06
4	Pulse Masoor (Washed)	Kg.	-5.04	-4.18	-18.79	0.00	-16.36	-1.31
5	Pulse Moong (Washed)	Kg.	-14.57	-2.42	-16.30	2.29	-13.87	0.41
6	Pulse Mash (Washed)	Kg.	-16.96	-6.16	-25.73	-1.56	-23.47	-3.30
7	Pulse Gram	Kg.	19.17	-12.44	-27.03	0.42	-17.22	-0.65
8	Vegetable Ghee (Loose)	Kg.	6.93	0.58	1.55	0.34	0.98	0.02
9	Sugar Refined	Kg.	1.44	-2.47	-16.97	-1.10	-17.80	-3.44
10	Milk Fresh (Unboiled)	Ltr	3.60	0.16	4.12	0.42	4.11	0.16
11	Tapal Danedar Tea 200 Gm	Pkt	-7.49	1.28	9.75	0.41	10.24	1.73
12	Beef With Bone Av.Qlty.	Kg	2.39	0.23	6.79	0.37	7.01	0.43
13	Mutton Av.Qlty.	Kg	4.71	0.43	11.15	1.71	11.09	0.37
14	Chicken Farm Broiler (Live)	Kg	11.40	7.91	36.49	9.93	20.15	-5.02
15	Eggs Farm	Doz	13.29	-8.74	-5.67	-10.71	-6.99	-10.01
16	Potatoes	Kg	31.91	-2.26	29.32	-25.14	7.49	-18.76
17	Onion	Kg	-29.93	6.31	107.18	-9.45	45.59	-25.29
18	Tomatoes	Kg	10.17	28.98	56.17	-37.23	-3.77	-20.52
19	Ginger	Kg	-3.11	-1.31	20.22	-1.51	18.71	-2.55
20	Garlic	Kg	32.43	1.32	-43.17	3.54	-43.95	-0.09

## 7. Global Commodity Prices

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

Item/ Group	Feb-17		Jan-18		Feb-18	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	11.0	-0.2	-1.9	2.7	0.4	2.2
Metals	28.6	3.5	22.7	5.3	18.4	-0.1
Energy	68.3	0.8	23.4	9.3	15.9	-5.4
Agricultural	9.2	-0.1	-2.7	2.8	-1.0	1.7
Cotton	27.9	3.4	10.6	6.6	3.7	-3.1

Source: World Bank

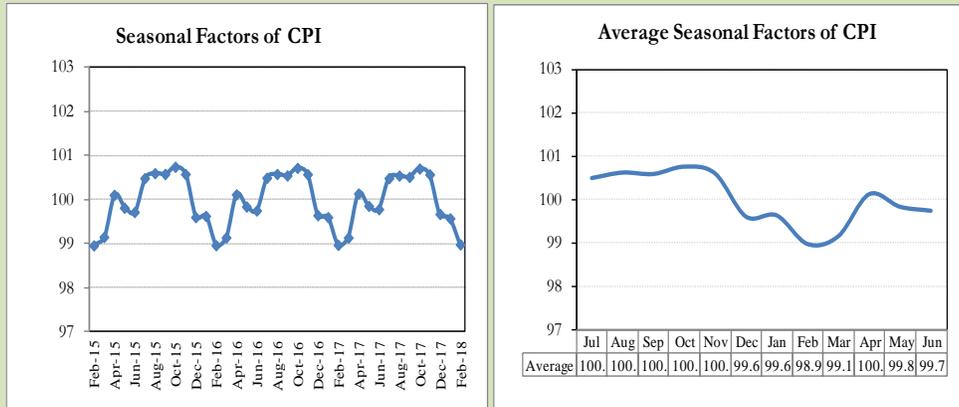
## **8. Seasonal Adjustment in CPI**

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

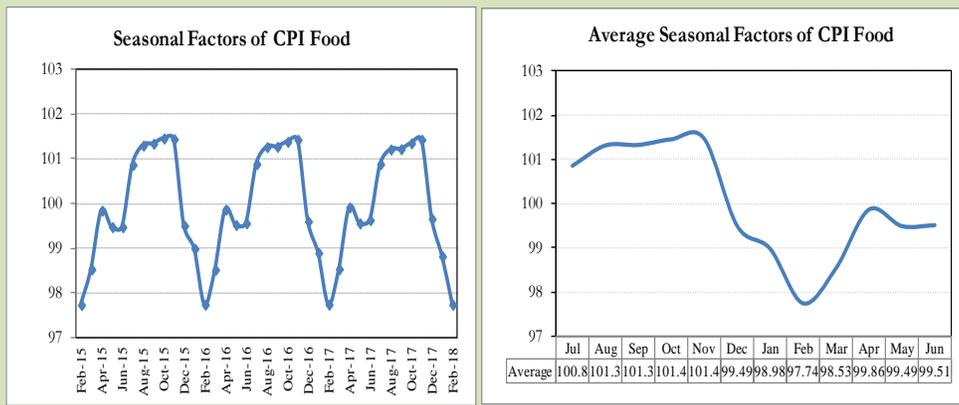
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the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



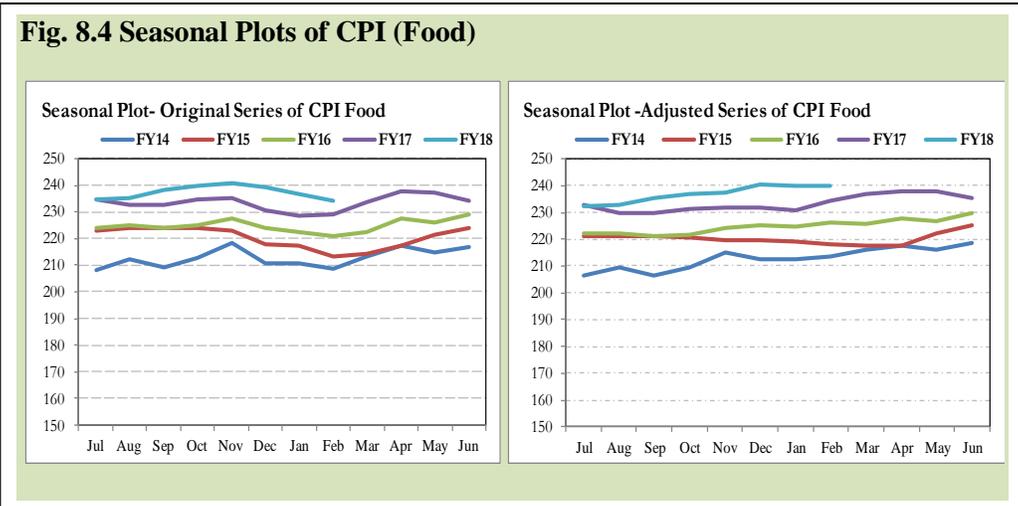
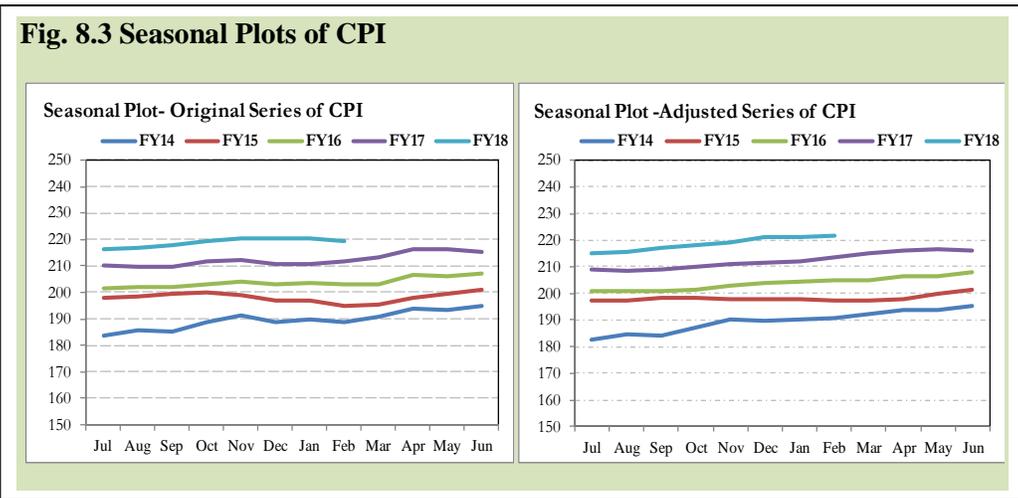
Note: Data Available in Annex Table 16.

**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.



Seasonally adjusted CPI for February 2018 stood at 221.84 against 219.58 in original series showing an increase of 2.26 on account of adjustment of downward seasonality in February 2018.

Seasonally adjusted CPI food group for February 2018 stood at 239.73 against 234.31 in original series showing an increase of 5.43 on account of adjustment of downward seasonality in February 2018.

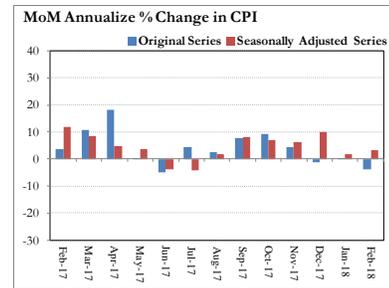
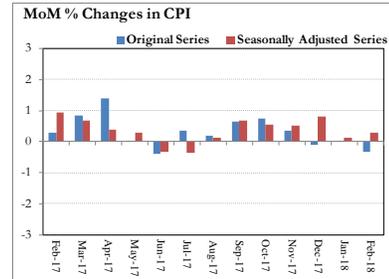
Month-on-month change of seasonally adjusted CPI series stood at 0.28% reflecting an increase during February 2018 over previous month and decrease of -0.31% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at -0.01% reflecting a decrease during February 2018 over previous month and a decrease of -1.11% in original series.

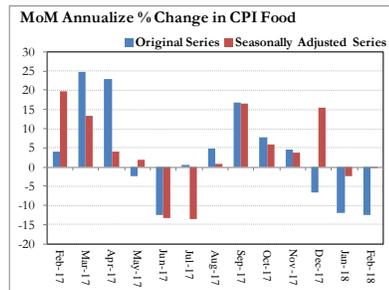
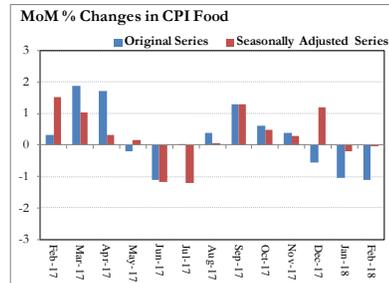
It is important to note that inflation rates should be analyzed on the basis of seasonally adjusted rates. This is especially needed for inflation rates on month-on-month basis.

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 February 2018 (corresponding to the seasonally adjusted month-on-month rate) is 3.43 percent.

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



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



**Annexure A**

	Weights	MoM change			YoY change		
		Feb-17	Jan-18	Feb-18	Feb-17	Jan-18	Feb-18
<b>I. Food Group</b>	<b>37.5</b>	<b>0.3</b>	<b>-1.0</b>	<b>-1.1</b>	<b>3.7</b>	<b>3.7</b>	<b>2.2</b>
Food & Non-Alcoholic Beverages	34.8	0.3	-1.2	-1.3	3.1	5.1	3.4
Alcoholic Beverages & Tobacco	1.4	0.4	1.1	1.4	12.4	-18.2	-17.4
Restaurant & Hotels	1.2	0.3	0.6	0.1	3.9	6.7	6.5
<b>II. Non-Food Group</b>	<b>62.5</b>	<b>0.3</b>	<b>0.8</b>	<b>0.2</b>	<b>4.6</b>	<b>4.9</b>	<b>4.9</b>
Clothing & Footwear	7.6	0.1	0.9	0.4	4.2	4.3	4.6
Housing, Water, Elect, Gas &	29.4	0.0	0.8	0.0	4.8	4.2	4.2
Furnishing & Household Equip. Maintenance etc	4.2	0.2	0.9	0.2	2.5	4.0	4.1
Health	2.2	0.8	0.4	1.1	14.1	4.7	5.0
Transport	7.2	1.1	1.6	1.0	0.4	5.7	5.6
Communication	3.2	0.0	0.0	0.1	0.8	1.3	1.3
Recreation & Culture	2.0	0.1	0.4	0.1	1.3	0.9	0.9
Education	3.9	0.2	0.0	0.0	11.3	12.4	12.1
Miscellaneous	2.8	1.0	1.0	-0.2	4.7	7.2	5.9
<b>Headline</b>	<b>100.0</b>	<b>0.3</b>	<b>0.0</b>	<b>-0.3</b>	<b>4.2</b>	<b>4.4</b>	<b>3.8</b>

Groups	% changes	No. of items in each inflation range									
		Total number of items		Decrease or no change (0% or less)		Subdued increase (>0% but <5%)		Moderate increase (5% but less than 10%)		Double digit increase (10% or more)	
		Feb-17	Feb-18	Feb-17	Feb-18	Feb-17	Feb-18	Feb-17	Feb-18	Feb-17	Feb-18
<b>I. Food Group</b>	<b>2.2</b>	<b>125</b>	<b>126</b>	<b>25</b>	<b>30</b>	<b>57</b>	<b>46</b>	<b>20</b>	<b>24</b>	<b>23</b>	<b>26</b>
Food & Non-Alcoholic Beverages	3.4	113	114	25	27	54	43	14	22	20	22
Alcoholic Beverages & Tobacco	-17.4	6	6	0	3	0	1	3	0	3	2
Restaurant & Hotels	6.5	6	6	0	0	3	2	3	2	0	2
<b>II. Non-Food Group</b>	<b>4.9</b>	<b>348</b>	<b>348</b>	<b>85</b>	<b>75</b>	<b>163</b>	<b>163</b>	<b>81</b>	<b>84</b>	<b>19</b>	<b>26</b>
Clothing & Footwear	4.6	59	59	7	9	34	27	17	21	1	2
Housing, Water, Elect, Gas & other Fuels	4.2	36	36	12	14	10	4	13	15	1	3
Furnishing & Household Equip. Maintenance etc	4.1	69	69	9	2	48	46	12	19	0	2
Health	5.0	39	39	6	7	17	24	8	6	8	2
Transport	5.6	43	43	25	23	13	13	5	3	0	4
Communication	1.3	12	12	3	4	4	4	4	2	1	2
Recreation & Culture	0.9	39	39	19	14	15	21	3	2	2	2
Education	12.1	16	16	1	0	4	3	7	5	4	8
Miscellaneous	5.9	35	35	3	2	18	21	12	11	2	1
<b>Overall</b>	<b>3.8</b>	<b>473</b>	<b>474</b>	<b>110</b>	<b>105</b>	<b>220</b>	<b>209</b>	<b>101</b>	<b>108</b>	<b>42</b>	<b>52</b>

Note: Prices of 13 seasonal items were not reported during the month.

<b>Table A3: Top and Bottom 15 Contributors to CPI Inflation (YoY) in February 2018</b>					
<b>Top 15 Contributors</b>		<b>Weights</b>	<b>YoY Change</b>		<b>Weighted Contribution</b>
<b>Items/ Contributors</b>	<b>Feb -17</b>		<b>Feb -18</b>		
<b>Ranked by Weighted Contribution</b>					
1	House Rent	21.81	6.62	5.43	27.40
2	Education	3.94	11.33	12.13	13.92
3	Milk Fresh	6.68	3.49	4.16	9.27
4	Meat	2.43	3.18	8.42	6.83
5	Motor Fuel	3.03	1.29	12.22	6.72
6	Chicken	1.36	11.40	20.15	5.64
7	Fresh Fruits	1.86	10.19	10.77	5.63
8	Onion	0.52	-29.93	45.59	5.15
9	Rice	1.58	7.28	14.01	4.63
10	Tailoring	0.88	7.10	8.45	2.88
11	Ready Made Food	1.23	3.95	6.52	2.69
12	Personal Equipments	0.84	5.88	8.23	2.54
13	Cotton Cloth	1.73	4.58	4.46	2.17
14	Personal Care	1.49	4.43	5.17	2.13
15	Ready Made Garments	0.97	4.26	6.31	1.83
<b>Total</b>		<b>50.38</b>			<b>99.45</b>
<b>Bottom 15 Contributors</b>					
1	Cigarettes	1.39	12.51	-19.82	-13.09
2	Sugar	1.04	1.44	-17.80	-5.24
3	Pulse Mash (Washed)	0.21	-16.96	-23.46	-1.77
4	Pulse Gram	0.24	19.17	-17.22	-1.62
5	Pulse Masoor	0.27	-4.83	-16.39	-1.07
6	Pulse Moong	0.23	-14.56	-13.88	-1.03
7	Eggs	0.46	13.28	-6.99	-0.91
8	Besan	0.15	20.08	-12.43	-0.72
9	Fresh Vegetables	1.71	16.21	-1.31	-0.62
10	Text Books	0.57	0.62	-1.51	-0.31
11	Tomatoes	0.43	10.17	-3.77	-0.26
12	Wheat Flour	4.16	-1.80	-0.15	-0.16
13	Gram Whole	0.16	32.36	-2.54	-0.15
14	Wheat	0.35	-0.64	-1.05	-0.09
15	Gur	0.02	0.06	-8.24	-0.06
<b>Total</b>		<b>11.40</b>			<b>-27.10</b>

<b>Table A3.1: Top and Bottom 15 Contributors to CPI Inflation (MoM) in February 2018</b>					
<b>Top 15 Contributors</b>					
<b>Items/ Contributors</b>	<b>Weights</b>	<b>MoM Change</b>		<b>Weighted Contribution</b>	
		<b>Jan-18</b>	<b>Feb-18</b>		
<b>Ranked by Weighted Contribution</b>					
1	Fresh Fruits	1.86	4.62	5.83	37.19
2	Motor Fuel	3.03	3.26	2.10	14.78
3	Betel Leaves & Nuts	0.02	74.01	53.06	8.68
4	Tea	0.84	-0.53	1.74	5.99
5	Doctor (Mbbs) Clinic Fee	0.59	0.60	1.93	4.84
6	Milk Fresh	6.68	0.41	0.16	4.45
7	Meat	2.43	0.84	0.41	4.19
8	Transport Services	2.70	0.61	0.50	3.80
9	Tailoring	0.88	1.32	0.87	3.73
10	Wheat Flour	4.16	-0.09	0.23	2.96
11	Rice	1.58	2.97	0.60	2.64
12	Dopatta	0.44	0.55	1.42	2.27
13	Cotton Cloth	1.73	0.45	0.38	2.23
14	Drug Medicine	1.27	0.18	0.57	1.95
15	Bakery & Confectionary	1.16	0.42	0.48	1.81
<b>Total</b>		<b>29.38</b>			<b>101.50</b>
<b>Bottom 15 Contributors</b>					
1	Onion	0.52	-9.45	-25.29	-64.93
2	Fresh Vegetables	1.71	-13.91	-8.10	-47.77
3	Potatoes	0.46	-25.14	-18.76	-26.93
4	Chicken	1.36	9.93	-5.02	-20.71
5	Tomatoes	0.43	-37.23	-20.52	-19.70
6	Eggs	0.46	-10.71	-10.02	-15.69
7	Sugar	1.04	-1.10	-3.44	-10.05
8	Pulse Mash (Washed)	0.21	-1.55	-3.30	-2.30
9	Personal Equipments	0.84	2.05	-0.43	-1.69
10	Pulse Masoor	0.27	0.01	-1.63	-1.05
11	Gram Whole	0.16	-0.63	-1.45	-0.99
12	Woolen Readymade Garments	0.40	-0.15	-0.51	-0.78
13	Besan	0.15	-1.78	-1.03	-0.61
14	Pulse Gram	0.24	0.42	-0.65	-0.60
15	Personal Care	1.49	0.53	-0.10	-0.50
<b>Total</b>		<b>9.75</b>			<b>-214.29</b>

<b>Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in February 2018</b>					
Items/ Contributors	Weights	YoY Change		Weighted Contribution	
		Feb -17	Feb -18		
<b>A. Ranked by Percentage Change</b>					
1	Betel Leaves & Nuts	0.02	6.11	210.13	1.46
2	Onion	0.52	-29.93	45.59	5.15
3	Kerosene Oil	0.01	4.99	24.06	0.03
4	Chicken	1.36	11.40	20.15	5.64
5	Rice	1.58	7.28	14.01	4.63
6	Motor Fuel	3.03	1.29	12.22	6.72
7	Education	3.94	11.33	12.13	13.92
8	Fresh Fruits	1.86	10.19	10.77	5.63
9	Cleaning & Laundering	0.21	3.98	8.85	0.61
10	Tailoring	0.88	7.10	8.45	2.88
11	Meat	2.43	3.18	8.42	6.83
12	Construction Wage Rate	0.33	4.68	8.27	0.81
13	Personal Equipments	0.84	5.88	8.23	2.54
14	Doctor (Mbbs) Clinic Fee	0.59	8.77	8.19	1.66
15	Potatoes	0.46	31.90	7.49	0.70
<b>Total</b>		<b>18.08</b>			<b>59.21</b>
<b>B. Ranked by Weights</b>					
1	House Rent	21.81	6.62	5.43	27.40
2	Milk Fresh	6.68	3.49	4.16	9.27
3	Electricity	4.40	0.00	0.00	0.00
4	Wheat Flour	4.16	-1.80	-0.15	-0.16
5	Education	3.94	11.33	12.13	13.92
6	Communication & Apparatus	3.15	0.63	1.19	0.60
7	Motor Fuel	3.03	1.29	12.22	6.72
8	Transport Services	2.70	-1.22	1.30	0.85
9	Meat	2.43	3.18	8.42	6.83
10	Vegetable Ghee	2.07	4.09	1.43	0.52
11	Fresh Fruits	1.86	10.19	10.77	5.63
12	Cooking Oil	1.75	2.89	1.92	0.57
13	Cotton Cloth	1.73	4.58	4.46	2.17
14	Fresh Vegetables	1.71	16.21	-1.31	-0.62
15	Rice	1.58	7.28	14.01	4.63
<b>Total</b>		<b>63.03</b>			<b>78.35</b>
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 3.8 percent in February 2018.					

<b>Table A3.3: Top Ten Contributors to CPI Food Inflation (YoY) in February 2018</b>					
Items/ Contributors	Weights	YoY Change		Weighted Contribution	
		Feb -17	Feb -18		
<b>A. Ranked by Weighted Contribution</b>					
1	Milk Fresh	6.68	3.49	4.16	9.27
2	Meat	2.43	3.18	8.42	6.83
3	Chicken	1.36	11.40	20.15	5.64
4	Fresh Fruits	1.86	10.19	10.77	5.63
5	Onion	0.52	-29.93	45.59	5.15
6	Rice	1.58	7.28	14.01	4.63
7	Ready Made Food	1.23	3.95	6.52	2.69
8	Tea	0.84	-4.43	6.47	1.82
9	Betel Leaves & Nuts	0.02	6.11	210.13	1.46
10	Beverages	1.20	1.51	3.61	1.18
<b>Total</b>		<b>17.73</b>			<b>44.30</b>
<b>B. Ranked by Percentage Change</b>					
1	Betel Leaves & Nuts	0.02	6.11	210.13	1.46
2	Onion	0.52	-29.93	45.59	5.15
3	Chicken	1.36	11.40	20.15	5.64
4	Rice	1.58	7.28	14.01	4.63
5	Fresh Fruits	1.86	10.19	10.77	5.63
6	Meat	2.43	3.18	8.42	6.83
7	Potatoes	0.46	31.90	7.49	0.70
8	Ready Made Food	1.23	3.95	6.52	2.69
9	Tea	0.84	-4.43	6.47	1.82
10	Honey	0.04	4.70	5.84	0.10
<b>Total</b>		<b>10.35</b>			<b>34.65</b>
<b>C. Ranked by Weights</b>					
1	Milk Fresh	6.68	3.49	4.16	9.27
2	Wheat Flour	4.16	-1.80	-0.15	-0.16
3	Meat	2.43	3.18	8.42	6.83
4	Vegetable Ghee	2.07	4.09	1.43	0.52
5	Fresh Fruits	1.86	10.19	10.77	5.63
6	Cooking Oil	1.75	2.89	1.92	0.57
7	Fresh Vegetables	1.71	16.21	-1.31	-0.62
8	Rice	1.58	7.28	14.01	4.63
9	Cigarettes	1.39	12.51	-19.82	-13.09
10	Chicken	1.36	11.40	20.15	5.64
<b>Total</b>		<b>25.01</b>			<b>19.24</b>
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 2.2 percent in February, 2018.					

<b>Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in February 2018</b>					
<b>Items/ Contributors</b>	<b>Weights</b>	<b>YoY Change</b>		<b>Weighted Contribution</b>	
		<b>Feb -17</b>	<b>Feb -18</b>		
<b>A. Ranked by Weighted Contribution</b>					
1	House Rent	21.81	6.62	5.43	27.40
2	Education	3.94	11.33	12.13	13.92
3	Motor Fuel	3.03	1.29	12.22	6.72
4	Tailoring	0.88	7.10	8.45	2.88
5	Personal Equipments	0.84	5.88	8.23	2.54
6	Cotton Cloth	1.73	4.58	4.46	2.17
7	Personal Care	1.49	4.43	5.17	2.13
8	Ready Made Garments	0.97	4.26	6.31	1.83
9	Household Servent	1.04	2.24	5.15	1.67
10	Doctor (Mbbs) Clinic Fee	0.59	8.77	8.19	1.66
<b>Total</b>		<b>36.34</b>			<b>62.93</b>
<b>B. Ranked by Percentage Change</b>					
1	Kerosene Oil	0.01	4.99	24.06	0.03
2	Motor Fuel	3.03	1.29	12.22	6.72
3	Education	3.94	11.33	12.13	13.92
4	Cleaning & Laundering	0.21	3.98	8.85	0.61
5	Tailoring	0.88	7.10	8.45	2.88
6	Construction Wage Rate	0.33	4.68	8.27	0.81
7	Personal Equipments	0.84	5.88	8.23	2.54
8	Doctor (Mbbs) Clinic Fee	0.59	8.77	8.19	1.66
9	Medical Test	0.32	4.45	6.59	0.51
10	Ready Made Garments	0.97	4.26	6.31	1.83
<b>Total</b>		<b>11.13</b>			<b>31.51</b>
<b>C. Ranked by Weights</b>					
1	House Rent	21.81	6.62	5.43	27.40
2	Electricity	4.40	0.00	0.00	0.00
3	Education	3.94	11.33	12.13	13.92
4	Communication & Apparatus	3.15	0.63	1.19	0.60
5	Motor Fuel	3.03	1.29	12.22	6.72
6	Transport Services	2.70	-1.22	1.30	0.85
7	Cotton Cloth	1.73	4.58	4.46	2.17
8	Gas	1.58	0.00	0.00	0.00
9	Footware	1.55	0.89	0.55	0.18
10	Personal Care	1.49	4.43	5.17	2.13
<b>Total</b>		<b>45.39</b>			<b>53.98</b>
<p>Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in YoY change in CPI Non-food, which is 4.9 percent in February, 2018.</p>					

**Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: February 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	Garlic, Peas, Pulse Mash (Washed), Sugar Refined, Pulse Gram, Pulse Masoor (Whole).	Beans (Lal Lobia), Tomato Ketchup Ahmed/Mitchells, Ice Cream Walls, Mineral Water Nestle 1.5 Litre, Curd.	Chillies Powd.National 200 Gm, Butter Local Packed, Pastry Av.Qlty., Potatoes, Bananas, Kinnu, Rooh Afza.	Brinjal, Chillies Green, Onion, Coconut Dry Av.Qlty., Turnip, Chicken Farm Broiler (Live), Carrot, Cocumber (Kheera), Cuminseed White National, Cauliflower, Ginger, Apple.
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	Secondhand Sweater For Men, Gents Shoe, Art 1109 Servis, Child Shoe Power Lite Bata, Sports Shoes, Ladies Spung Chappal Bata, Ladies Sandal Bata.	Lungi/Dhoti(Cotton) Avg.Qlty, Shirting Av.Qlty., Foot Wear Local (Male), Dopatta Cotton Av. Qlty, Pant Cloth Wash & Wear Av.Qlty, Tropical Suiting Law.Pur.	Washing Ch. (Kamiz-Shalwar), Dry Cleaning Suit Coat Pant, Tailoring Awami-Suit (Male), Tailoring Charges Pant (Men), Gloves Av.Qlty, Tailoring Suit (Female).	Frock W/Wear Girls, Brassier Av.Qlty.
Housing, Water, Elect, Gas & other Fuels	Cement (Local), Bajree, Elect.Charges Upto 50 Units, Elect.Charges 01 - 100 Units, Elect.Charges Above 1000 Units.	Sand (Black Pit Sand), Timber Shesham Log, Firewood Whole, Bricks (New) 1st Class.	Mason (Raj) Wage Rate, Unskilled Labour Wage Rat, Electrician Wage Rate(P/Pnt), Synthetic Enamel Ici, Electrician Wage Rate(P/Day).	Kerosene Oil, Iron Bar (M.S. Bar) 1/2", Carpenter Wage Rate.
Furnishing & Household Equip. Maintenance etc	Washing Powder 1000 Grm (Express), Washing Powder (Wheel/ Bonus).	Gas Burner Double, Pedestal Fan 22" Super Qlty, Towel(3'X2') Av. Qlty, Pressure Cooker 4 Ltr., Air Cooler Super Asia.	Thermos Starvac 1 Ltr, Single Bed Without Foam, Toilet Paper Roll (R.Petal), Chair Shesham Wood, Water Set Jug+6 Glasses.	Tea Set Pak. China Wear 21 Pcs, Boot Polish Cherry/Kiwi 50 ML.
Health	Calcium Syrup Sandoz, Phenergan Syrup 120 ML., Betnesol Eye Drops, Betnovate-N Ointment 5 Gm, Sancos Syrup (50 ML).	Septran Tablets, Thermometer China, Trisil Tab., Jouhar Joshanda, Sugar Test (Random/Fasting), Ecg Charges, Saniplast (1 Putty).	Glycerine Small Bottle, Doctor (Mbbs) Clinic Fee, Urine Test (Dr) Charges, Blood Test (Cp) Charges, Gripe-Water Woodward, Entox Tab.	Dettol (Medium), X-Ray (Chest) Charges.
Transport	Tyre Car W/O Tube, Platform Ticket, Bus Fare Outside City (Non A/C), Bus Fare Min (Within City), Bus Fare Max (Within City).	Car Suzuki 800 Cc (W/O. Ac), Car Toyota 1300 Cc, Cycle Overhauling Charges, Motor Cycle Service Charges, Auto Rickshaw Fare, Cng.	Car Suzuki 1000 Cc, Car Honda Civic 1500 Cc, Car Service Charges.	Bus Fare Outside City (A/C), High Speed Diesel Hsd, Petrol Super, Gas Cylinder S.Size (L.P.G).
Communication	Postal Envelope Domestic, Telephone Charges Local Call, Telephone Charges Outside City.	Mobile Set Nokia/Sony/Ericsson Av.Qlty, Mobile Cell Charges, Postal Registration Charges.	Internet Charges, Fax Charges (Local).	Telephone Set Av. Qlty, T.C.S. Ch. Min.Within Zone.
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.	Weekly "Mag", Daily "Dawn", Photostate Paper 70 Gm, Weekly "Akhbar-E-Jahan", Fountain Pen Hero/Wings/China, Daily "Nawa-E-Waqt".	Pencil Goldfish/Deer, Ball Pen (Local).	Cinema A/C High Class, Cinema Non-A/C High Class.
Education		Mba Tuition Fee, Coaching Charges For Class Xi/ Xii Science Group, I.T. Tuition Fees.	Pvt School Fee Eng.Med (Class-V), Pvt School Fee Eng.Med (Class-I), Coaching Fee For Class Ix/ X.	Govt. University Fee Msc/ Ma, Govt. Engg. Coll. Fee Ist Year, Govt. College Fee Ist. Year, Govt. College Fee 4Th. Year, Govt. Med. College Fee Mbbs Ist Year.
Restaurant & Hotels		Tea Prepared (Ordinary), Bread Tandoori St. Size.	Chicken Biryani Full/Double, Cooked Dal (Av. Hotel).	Cooked Mutton (Av. Hotel), Cooked Beef (Av. Hotel).
Miscellaneous	Shampoo Sunsilk/Pantene 100 ML, Perfume Med.Size Medora/Broche.	Hair Removing Cream (Eu-Cream), Beauty Parlour Hair Style Charges, Toothpowder Dentonic 90 Gms,	Gold Tezabi 24 Ct, Artificial Jewellery Set, Purse Ladies (Leather) Av. Qlty, Toilet Soap Lux 95 Gms.	Toilet Soap Lifebouy 140 Gms.

**Table A5: City- wise CPI Inflation by Income Groups, February 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	1.1	1.1	-1.1	-1.1	3.8	3.8	1.4	1.4	-0.8	-0.8	3.6	3.6
2 Islamabad	1.7	1.7	-0.1	-0.1	3.9	3.9	2.9	2.9	-0.4	-0.4	6.4	6.4
3 Lahore	2.4	2.4	0.2	0.2	5.5	5.5	2.9	2.9	0.4	0.4	5.8	5.8
4 Gujranwala	0.6	0.6	-0.4	-0.4	1.7	1.7	0.9	0.9	-0.2	-0.2	2.0	2.0
5 Sialkot	4.5	4.5	2.3	2.3	7.4	7.4	5.2	5.2	2.9	2.9	7.7	7.7
6 Faisalabad	5.3	5.3	1.4	1.4	9.9	9.9	5.6	5.6	1.3	1.3	10.1	10.1
7 Multan	1.5	1.5	-0.1	-0.1	3.3	3.3	1.9	1.9	0.3	0.3	3.6	3.6
8 Sargodha	2.4	2.4	1.9	1.9	2.9	2.9	2.6	2.6	2.4	2.4	2.7	2.7
9 Bahawalpur	1.6	1.6	0.0	0.0	3.3	3.3	2.3	2.3	0.4	0.4	3.9	3.9
10 Karachi	2.1	2.1	1.7	1.7	2.7	2.7	2.3	2.3	2.2	2.2	2.4	2.4
11 Hyderabad	1.9	1.9	0.8	0.8	3.5	3.5	2.0	2.0	1.0	1.0	3.2	3.2
12 Sukkur	0.8	0.8	-0.3	-0.3	2.1	2.1	1.7	1.7	0.3	0.3	3.1	3.1
13 Larkana	2.1	2.1	1.8	1.8	2.4	2.4	3.0	3.0	2.8	2.8	3.2	3.2
14 Peshawar	1.6	1.6	-0.4	-0.4	3.9	3.9	1.7	1.7	-0.3	-0.3	3.7	3.7
15 Bannu	2.1	2.1	1.1	1.1	3.4	3.4	2.5	2.5	1.7	1.7	3.4	3.4
16 Quetta	4.9	4.9	4.4	4.4	5.5	5.5	4.7	4.7	4.2	4.2	5.2	5.2
17 Khuzdar	5.3	5.3	3.5	3.5	7.5	7.5	6.2	6.2	3.7	3.7	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	1.6	1.6	-0.7	-0.7	3.6	3.6	1.9	1.9	-0.4	-0.4	3.7	3.7
2 Islamabad	3.1	3.1	0.0	0.0	6.1	6.1	3.3	3.3	0.1	0.1	5.8	5.8
3 Lahore	3.3	3.3	0.5	0.5	6.4	6.4	4.0	4.0	0.6	0.6	7.2	7.2
4 Gujranwala	1.2	1.2	-0.1	-0.1	2.5	2.5	1.4	1.4	0.1	0.1	2.5	2.5
5 Sialkot	6.0	6.0	3.7	3.7	8.3	8.3	6.0	6.0	3.5	3.5	8.1	8.1
6 Faisalabad	6.1	6.1	1.4	1.4	10.6	10.6	6.5	6.5	1.4	1.4	10.8	10.8
7 Multan	2.3	2.3	0.5	0.5	4.0	4.0	2.5	2.5	0.7	0.7	4.0	4.0
8 Sargodha	2.9	2.9	2.2	2.2	3.5	3.5	3.5	3.5	2.4	2.4	4.3	4.3
9 Bahawalpur	2.7	2.7	0.7	0.7	4.3	4.3	3.5	3.5	0.8	0.8	5.5	5.5
10 Karachi	2.3	2.3	2.2	2.2	2.4	2.4	2.3	2.3	2.2	2.2	2.4	2.4
11 Hyderabad	2.6	2.6	1.0	1.0	4.3	4.3	3.1	3.1	1.8	1.8	4.4	4.4
12 Sukkur	3.0	3.0	0.8	0.8	5.0	5.0	4.0	4.0	1.4	1.4	6.1	6.1
13 Larkana	3.6	3.6	2.9	2.9	4.2	4.2	4.3	4.3	3.9	3.9	4.6	4.6
14 Peshawar	2.2	2.2	-0.4	-0.4	4.4	4.4	2.5	2.5	-0.1	-0.1	4.5	4.5
15 Bannu	2.9	2.9	1.5	1.5	4.2	4.2	3.0	3.0	1.4	1.4	4.2	4.2
16 Quetta	4.8	4.8	3.9	3.9	5.7	5.7	5.0	5.0	4.0	4.0	5.7	5.7
17 Khuzdar	6.8	6.8	3.9	3.9	9.8	9.8	6.7	6.7	3.4	3.4	9.5	9.5
	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	2.8	2.8	1.1	1.1	3.6	3.6	2.4	2.4	0.4	0.4	3.7	3.7
2 Islamabad	4.6	4.6	2.1	2.1	5.9	5.9	4.4	4.4	1.8	1.8	6.3	6.3
3 Lahore	5.3	5.3	2.0	2.0	7.2	7.2	4.4	4.4	1.1	1.1	7.0	7.0
4 Gujranwala	1.7	1.7	1.1	1.1	2.0	2.0	1.3	1.3	0.2	0.2	2.1	2.1
5 Sialkot	6.6	6.6	4.6	4.6	7.6	7.6	6.1	6.1	3.8	3.8	7.7	7.7
6 Faisalabad	7.6	7.6	3.3	3.3	9.8	9.8	6.5	6.5	1.9	1.9	9.7	9.7
7 Multan	3.4	3.4	2.1	2.1	4.1	4.1	2.7	2.7	1.0	1.0	3.9	3.9
8 Sargodha	4.1	4.1	3.0	3.0	4.6	4.6	3.3	3.3	2.4	2.4	3.8	3.8
9 Bahawalpur	4.9	4.9	4.3	4.3	5.1	5.1	3.4	3.4	1.5	1.5	4.5	4.5
10 Karachi	3.3	3.3	3.2	3.2	3.3	3.3	2.9	2.9	2.8	2.8	3.0	3.0
11 Hyderabad	4.3	4.3	3.2	3.2	4.9	4.9	3.2	3.2	1.8	1.8	4.3	4.3
12 Sukkur	4.0	4.0	2.9	2.9	4.5	4.5	3.0	3.0	1.2	1.2	4.3	4.3
13 Larkana	4.5	4.5	5.2	5.2	4.2	4.2	3.5	3.5	3.1	3.1	3.8	3.8
14 Peshawar	4.6	4.6	1.4	1.4	6.2	6.2	3.2	3.2	0.2	0.2	5.3	5.3
15 Bannu	3.0	3.0	1.6	1.6	3.7	3.7	2.8	2.8	1.4	1.4	3.7	3.7
16 Quetta	5.3	5.3	4.8	4.8	5.6	5.6	5.0	5.0	4.3	4.3	5.4	5.4
17 Khuzdar	8.1	8.1	6.0	6.0	9.2	9.2	6.3	6.3	3.4	3.4	8.3	8.3

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

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Mithi	11.8	11.3	12.1	Mianwali	3.7	-1.4	6.7
Gawadar	6.9	3.7	9.1	Mardan	3.6	3.6	3.7
Faisalabad	6.5	1.9	9.7	Jhang	3.6	0.0	5.8
Khuzdar	6.3	3.4	8.3	Larkana	3.5	3.1	3.8
Turbat	6.2	3.5	7.7	D. G. Khan	3.4	2.7	3.9
Sialkot	6.1	3.8	7.7	Bahawalpur	3.4	1.5	4.5
Vehari	5.9	1.9	8.8	Sargodha	3.3	2.4	3.8
D. I. Khan	5.6	4.5	6.3	Peshawar	3.2	0.2	5.3
Quetta	5.0	4.3	5.4	Nawabshah	3.2	4.2	2.6
R. Y. Khan	4.8	2.4	6.4	Hyderabad	3.2	1.8	4.3
Bahawalnagar	4.6	1.9	6.3	Sahiwal	3.2	0.1	5.0
Islamabad	4.4	1.8	6.3	Sukkur	3.0	1.2	4.3
Lahore	4.4	1.1	7.0	Loralai	2.9	0.8	4.2
D. M. Jamali	4.0	4.5	3.7	Karachi	2.9	2.8	3.0
				Mingora	2.8	1.1	3.9
				Bannu	2.8	1.4	3.7
				Multan	2.7	1.0	3.9
				Attock	2.6	-0.1	4.4
				Rawalpindi	2.4	0.4	3.7
				Mirpukhas	2.3	2.5	2.2
				Jhelum	2.3	-0.8	4.4
				Dadu	2.2	1.5	2.7
				Abbottabad	1.7	2.0	1.5
				Gujranwala	1.3	0.2	2.1
				Wazirabad	0.8	-2.2	3.0
				Muzaffargarh	0.6	-1.8	2.2

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

<b>Table A7: Income Group-wise Inflation ( percent)</b>						
	<b>MoM</b>			<b>YoY</b>		
	<b>Feb-17</b>	<b>Jan-18</b>	<b>Feb-18</b>	<b>Feb-17</b>	<b>Jan-18</b>	<b>Feb-18</b>
<b><u>Up to Rs. 8000</u></b>						
General	0.2	-0.5	-0.7	3.7	3.6	2.7
Food	0.2	-1.6	-1.5	2.9	3.0	1.3
Non-food	0.2	0.7	0.2	4.7	4.3	4.3
<b><u>Rs. 8001- 12000</u></b>						
General	0.2	-0.4	-0.6	3.9	3.8	2.9
Food	0.3	-1.4	-1.3	3.2	3.3	1.6
Non-food	0.2	0.7	0.2	4.5	4.3	4.3
<b><u>Rs. 12001- 18000</u></b>						
General	0.3	-0.2	-0.5	4.0	3.9	3.1
Food	0.3	-1.3	-1.3	3.5	3.3	1.7
Non-food	0.2	0.7	0.2	4.4	4.5	4.4
<b><u>Rs. 18001- 35000</u></b>						
General	0.3	-0.1	-0.4	4.1	4.1	3.4
Food	0.3	-1.1	-1.1	3.8	3.4	1.8
Non-food	0.2	0.7	0.2	4.4	4.6	4.6
<b><u>Above Rs. 35000</u></b>						
General	0.3	0.3	-0.1	4.4	4.9	4.5
Food	0.4	-0.7	-0.9	4.0	4.3	3.1
Non-food	0.3	0.8	0.2	4.7	5.2	5.2
<b><u>All income groups</u></b>						
General	0.3	0.0	-0.3	4.2	4.4	3.8
Food	0.3	-1.0	-1.1	3.7	3.7	2.2
Non-food	0.3	0.8	0.2	4.6	4.9	4.9

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices		Percentage change	
			Feb-18		YoY	MoM
1	Wheat	10Kg.	341.6		-2.3	-0.2
2	Wheat Flour Bag	10Kg.	385.9		-0.3	-0.6
3	Rice Basmati Broken	Kg.	73.5		14.8	1.4
4	Rice Irri-6/9	Kg.	52.3		5.8	1.0
5	Bread Plain Med.Size (340-400 Gm.)	Each	42.6		3.5	0.0
6	Beef	Kg.	348.5		6.3	0.5
7	Mutton	Kg.	739.7		11.6	0.9
8	Chicken Live (Farm)	Kg.	165.4		22.4	-6.9
9	Milk Fresh	Litr	82.5		2.5	0.0
10	Curd	Kg.	98.8		4.6	0.0
11	Milk Powdered Nido	500G	383.1		1.8	0.5
12	Egg Hen (Farm)	Doz.	101.0		-9.6	-10.9
13	Mustard Oil	Kg.	184.1		1.1	-0.1
14	Cooking Oil (Tin)	2.5Ltr	469.1		1.2	-0.2
15	Veg. Ghee (Tin)	2.5Kg.	462.1		1.4	-0.2
16	Veg.Ghee Loose	Kg.	145.5		0.2	-0.1
17	Bananas	Doz.	77.3		4.2	9.7
18	Masoor Pulse Washed	Kg.	118.3		-11.9	-1.8
19	Moong Pulse Washed	Kg.	118.1		-11.1	0.8
20	Mash Pulse Washed	Kg.	154.9		-21.5	-2.1
21	Gram Pulse Washed	Kg.	117.0		-15.7	-1.8
22	Potatoes	Kg.	27.0		8.7	-18.1
23	Onions	Kg.	43.0		41.0	-19.8
24	Tomatoes	Kg.	36.7		-7.7	-15.6
25	Sugar	Kg.	51.5		-18.4	-3.0
26	Gur	Kg.	78.6		-8.0	-4.0
27	Salt Powdered Loose (Lahori)	Kg.	11.1		3.8	0.0
28	Red Chillies Powder Loose	Kg.	257.8		-4.4	-0.1
29	Garlic	Kg.	172.0		-44.2	2.2
30	Tea (Yellow Lable 200 Gm.)	200Gm.	184.1		3.0	2.9
31	Cooked Beef Plate	Each	103.5		11.6	1.3
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		-24.3	0.0
35	Long Cloth (Coarse Latha)	Mtr.	214.0		4.1	0.7
36	Shirting	Mtr.	171.1		4.1	0.9
37	Lawn	Mtr.	255.8		1.8	0.0
38	Georgette (Voil Printed)	Mtr.	126.6		2.0	0.7
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	109.1		40.0	5.7
45	Firewood	40Kg	633.0		3.4	0.8
46	Energy Savor 14 Watt	Each	169.6		1.1	0.0
47	Washing Soap (200-250 Gm.)	Cake	25.9		0.0	0.0
48	Match Box	Each	2.2		2.8	0.0
49	Petrol	Litr	85.5		19.3	3.7
50	Diesel	Litr	96.8		19.7	6.7
51	L.P.G.( 11 Kg Cylander.)	Each	1308.6		9.9	-5.3
52	Tele. Local Call	Call	3.9		0.0	0.0
53	Bath Soap Lifebouy (Standard)	Cake	39.7		3.7	-3.7
<b>Maximum</b>					<b>41.0</b>	<b>9.7</b>
<b>Median</b>					<b>1.8</b>	<b>0.0</b>
<b>Minimum</b>					<b>-44.2</b>	<b>-19.8</b>

<b>Table A9: Distribution of Price Changes (YoY) - WPI Items: February 2018</b>				
<b>Groups</b>	<b>Decrease or no change</b>	<b>Subdued increase (Greater than 0% but less than 5%)</b>	<b>Moderate increase (5% but less than 10%)</b>	<b>Double digit increase (10% or more)</b>
<b>Agriculture Forestry &amp; Fishery Products</b>	Pulses, Eggs, Cotton Seeds, Sugar Crops, Raw Animal Material/Wool, Wheat, Hides And Fur Skins,Raw.	Fibre Crops, Vegetables, Milk From Bovine Animals, Other Oil Seeds, Sorghum/Jowar, Fish Live Fresh Or Chilled, Fuel Wood In Logs, Edible Roots/Potatos.	Millet/Bajra, Maize.	Poultry, Stimulant And Spice Crops, Fresh Fruits, Dry Fruits, Rice, Unmanufactured Tobacco.
<b>Ores &amp; Minerals, Electricity Gas &amp; Water</b>	Electrical Energy, Coal Not Agglomerated.	Natural Gas Liquified.		Salt & Pure Sodium Chloride.
<b>Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products</b>	Tobacco Products, Sugar Refined, Other Cereal Flour, Leather With Out Hairs, Wheat Flour, Sugar Confectionary, Other Leather N.E.C, Nylon Yarn, Woolen Carpets, Footwears, Chocolate, Towels.	Mineral Water, Blended Yarn, Woven Fabrics, Oil Cakes, Milk And Cream In Solid Form, Cotton Fabrics, Fruit Juices, Vegetable Oil Refined, Synthetic Carpets, Other Fabrics, Ready Made Garments, Hosiery Products, Silk And Reyon Fabrics, Vegetables & Fruit Juices, Bed Sheets, Beverages, Vegetable Ghee, Other Food Products.	Quilts, Blankets, Coffee And Tea, Spices, Dairy Products N.E.C.	Dried Fruits & Nuts, Cotton Yarn, Ice Cream, Processed Liquid Milk, Meat Of Animals.
<b>Other Transportable Goods except Metal Products, Machinery and Equipments</b>	Cement, Insecticised, Coke, Dying Materials, Auto Tyres.	Fertilizers, Matches, Bed Foams, Other Glass Articles, Mobil Oil, Hard Board, Pesticides, Medicines, Printing Paper, Glass Sheets, Bricks Blocks And Tiles, Paints & Varnishes, Ceramics And Sanitary, Plastic Products, Soaps & Detergent.	Timber.	Kerosine Oil, Diesel Oil, Furnace Oil, Motor Sprit, Chemicals.
<b>Metal Product Machinery &amp; Equipment</b>	Steel Products, Engines And Motors, Vacuum Pumps, Bicycles, Pig Iron, Concrate Mixer, Radio And Television, Tractors, Cultivators, Lathe Machines, Chuff Cutter, Air Conditioners.	Motor Vehicales, Electrical Wires, Pipe Fittings, Lighting Equipments, Motor Cycles.	Refrige,Wash& Sew Mach,Iron,Fan.	Steel Bars & Sheets.

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

Items and specification	Weights	Index		
		Feb-17	Jan-18	Feb-18
<b>General</b>	<b>100.00</b>	<b>211.54</b>	<b>220.27</b>	<b>219.58</b>
<b>Food &amp; Non-Alcoholic Beverages.</b>	<b>34.83</b>	<b>221.66</b>	<b>232.23</b>	<b>229.23</b>
1 Wheat	0.35	207.84	206.02	205.66
2 Wheat Flour	4.16	213.15	212.35	212.84
3 Wheat Product	0.10	216.39	214.91	214.30
4 Besan	0.15	310.18	274.45	271.63
5 Rice	1.58	168.06	190.46	191.61
6 Cereals	0.16	253.65	257.76	259.02
7 Bakery & Confectionary	1.16	216.92	223.47	224.55
8 Nimco	0.46	250.62	257.77	257.41
9 Meat	2.43	268.26	289.65	290.84
10 Chicken	1.36	165.68	209.57	199.06
11 Fish	0.30	219.56	221.60	221.93
12 Milk Fresh	6.68	268.32	279.02	279.48
13 Milk Product	0.63	258.54	271.06	271.59
14 Milk Powder	0.11	236.18	237.95	238.41
15 Eggs	0.46	229.60	237.31	213.54
16 Mustard Oil	0.10	158.04	162.43	162.81
17 Cooking Oil	1.75	135.95	138.55	138.56
18 Vegetable Ghee	2.07	141.52	143.60	143.55
19 Dry Fruits	0.25	264.98	277.00	278.60
20 Fresh Fruits	1.86	225.40	235.92	249.68
21 Pulse Masoor	0.27	192.76	163.84	161.17
22 Pulse Moong	0.23	256.42	219.94	220.84
23 Pulse Mash (Washed)	0.21	289.59	229.20	221.64
24 Pulse Gram	0.24	319.93	266.59	264.85
25 Gram Whole	0.16	295.48	292.21	287.97
26 Beans	0.03	232.05	241.72	243.43
27 Potatoes	0.46	162.81	215.41	175.00
28 Onion	0.52	173.49	338.10	252.59
29 Tomatoes	0.43	126.67	153.38	121.90
30 Fresh Vegetables	1.71	221.50	237.87	218.60
31 Sugar	1.04	226.80	193.08	186.44
32 Gur	0.02	267.08	257.03	245.06
33 Honey	0.04	322.20	340.27	341.03
34 Sweet Meet	0.25	246.37	256.43	256.66
35 Beverages	1.20	218.90	225.95	226.80
36 Jam, Tomato Ketchup & Pickle	0.25	216.89	224.39	224.88
37 Condiments	0.27	266.55	276.77	277.53
38 Spices	0.54	238.85	239.66	239.80
39 Tea	0.84	270.18	282.72	287.65
<b>Alcoholic Beverages, Tobacco</b>	<b>1.41</b>	<b>379.55</b>	<b>309.16</b>	<b>313.39</b>
40 Cigarettes	1.39	381.80	306.13	306.13
41 Betel Leaves & Nuts	0.02	243.31	493.00	754.58
<b>Clothing &amp; Footwear</b>	<b>7.57</b>	<b>234.34</b>	<b>244.09</b>	<b>245.03</b>
42 Cotton Cloth	1.73	226.39	235.59	236.48
43 Woolen Cloth	0.88	254.92	262.43	263.65
44 Ready Made Garments	0.97	239.59	254.73	254.72
45 Woolen Readymade Garments	0.40	264.98	268.07	266.71
46 Hosiery	0.51	245.96	257.89	258.30
47 Dopatta	0.44	243.52	250.57	254.12
48 Cleaning & Laundering	0.21	261.12	280.95	284.23

Items and specification		Weights	Index		
			Feb-17	Jan-18	Feb-18
49	Tailoring	0.88	310.54	333.86	336.77
50	Footware	1.55	166.91	167.79	167.82
<b>Housing, Water, Elect, Gas &amp; Other Fuel</b>		<b>29.41</b>	<b>194.45</b>	<b>202.53</b>	<b>202.62</b>
51	House Rent	21.81	185.86	195.96	195.96
52	Construction Input Item	0.56	249.82	259.82	261.97
53	Construction Wage Rate	0.33	235.67	253.90	255.15
54	Water Supply	0.50	164.74	172.61	173.82
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	198.47	237.33	246.23
58	Fire Wood Whole	0.23	293.08	300.58	301.93
<b>Furnished H.Hold Equip.&amp; Maint. Etc</b>		<b>4.21</b>	<b>224.32</b>	<b>232.97</b>	<b>233.50</b>
59	Furniture	0.33	216.40	226.49	227.53
60	Household Textile	0.65	226.59	235.87	235.96
61	Household Equipment	0.59	179.63	184.14	184.74
62	Utensils	0.32	227.90	240.15	242.26
63	Plastic Products	0.25	209.42	217.34	218.40
64	Washing Soap & Detergent	0.79	230.50	234.72	235.23
65	Sewing Needle & Dry Cell	0.15	204.96	210.07	210.07
66	Household Servant	1.04	249.98	262.86	262.86
67	Marriage Hall Charges	0.08	244.86	256.32	257.76
<b>Health</b>		<b>2.19</b>	<b>210.17</b>	<b>218.26</b>	<b>220.58</b>
68	Drug Medicine	1.27	183.60	186.69	187.75
69	Medical Equipment	0.01	250.20	255.80	256.26
70	Doctor (MBBS) Clinic Fee	0.59	275.73	292.66	298.32
71	Medical Test	0.32	193.51	205.04	206.26
<b>Transport</b>		<b>7.20</b>	<b>174.75</b>	<b>182.63</b>	<b>184.47</b>
72	Motor Vehicle	0.66	172.13	180.02	180.19
73	Motor Vehicle Accessories	0.24	213.44	215.23	215.18
74	Motor Fuel	3.03	146.07	160.55	163.92
75	Mechanical Service	0.46	229.62	236.37	237.06
76	Motor Vehicle Tax	0.11	210.18	210.18	210.18
77	Transport Services	2.70	193.34	194.89	195.86
<b>Communication</b>		<b>3.22</b>	<b>131.58</b>	<b>133.20</b>	<b>133.28</b>
78	Postal Services	0.07	246.00	254.14	255.80
79	Communication & Apparatus	3.15	129.17	130.67	130.71
<b>Recreation &amp; Culture</b>		<b>2.02</b>	<b>196.88</b>	<b>198.46</b>	<b>198.62</b>
80	Recreation & Culture	0.86	129.61	131.60	131.62
81	Text Books	0.57	292.41	287.98	287.98
82	News Papers	0.19	179.59	184.72	186.23
83	Stationery	0.40	214.35	222.01	222.00
<b>Education</b>		<b>3.94</b>	<b>233.96</b>	<b>262.35</b>	<b>262.35</b>
84	Education	3.94	233.96	262.35	262.35
<b>Restaurants And Hotels</b>		<b>1.23</b>	<b>269.63</b>	<b>286.89</b>	<b>287.21</b>
85	Ready Made Food	1.23	269.63	286.89	287.21
<b>Miscellaneous Goods And Services</b>		<b>2.76</b>	<b>241.06</b>	<b>255.69</b>	<b>255.21</b>
86	Personal Care	1.49	221.97	233.68	233.45
87	Cosmetics	0.39	203.29	206.14	206.60
88	Blades	0.03	196.91	201.35	201.62
89	Personal Equipments	0.84	293.78	319.33	317.95

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

Items and Specifications	Index		
	Feb-17	Jan-18	Feb-18
<b>General</b>	<b>215.86</b>	<b>224.99</b>	<b>224.66</b>
<b>Agriculture Forestry &amp; Fishery</b>	<b>243.57</b>	<b>259.27</b>	<b>252.97</b>
1 Wheat	215.69	209.85	210.64
2 Maize	187.42	205.68	199.27
3 Rice	157.46	174.67	174.06
4 Sorghum/Jowar	235.79	239.51	242.65
5 Millet/Bajra	168.08	184.05	183.60
6 Vegetables	211.37	270.50	219.44
7 Fresh Fruits	230.94	242.06	265.01
8 Dry Fruits	241.74	267.11	267.56
9 Cotton Seeds	267.94	255.87	256.23
10 Other Oil Seeds	181.39	190.61	187.75
11 Edible Roots/ Potatoes	164.46	216.51	167.22
12 Stimulant And Spice Crops	224.40	271.65	269.38
13 Pulses	271.33	252.98	249.60
14 Sugar Crops	268.94	257.62	257.62
15 Fibre Crops	216.97	244.64	226.99
16 Unmanufactured Tobacco	277.88	305.98	305.98
17 Poultry	169.47	221.99	211.05
18 Milk From Bovine Animals	266.07	275.47	275.47
19 Eggs	229.04	237.06	212.43
20 Raw Animal Material/Wool	178.30	172.52	173.81
21 Hides And Fur Skins, Raw	105.67	104.72	105.02
22 Fuel Wood In Logs	277.01	283.56	283.56
23 Fishes Live Fresh Or Chilled	466.43	478.82	477.80
<b>Ores/Minerals, Gas &amp; Elect.</b>	<b>242.78</b>	<b>243.77</b>	<b>243.39</b>
24 Coal Not Agglomerated	155.29	155.29	155.29
25 Natural Gas Liquefied	210.99	212.87	212.02
26 Salt & Pure Sodium Chloride	238.53	257.14	264.37
27 Electrical Energy	288.00	288.00	288.00
<b>Food, Beverages, Tobacco, Textiles</b>	<b>226.40</b>	<b>231.89</b>	<b>231.40</b>
28 Meat Of Animals	279.49	311.27	311.27
29 Vegetables & Fruit Juices	223.21	226.05	224.97
30 Dried Fruits & Nuts	264.08	296.20	297.11
31 Fruit Juices	179.72	182.55	182.60
32 Vegetable Oil Refined	154.12	155.66	156.36
33 Vegetable Ghee	126.40	127.54	126.69
34 Oil Cakes	225.71	231.10	231.54
35 Processed Liquid Milk	257.27	287.08	286.83
36 Milk And Cream In Solid Form	219.31	223.37	223.55
37 Ice Cream	238.04	266.02	266.02
38 Dairy Products N.E.C	254.42	267.37	267.61
39 Wheat Flour	197.50	196.64	195.72
40 Other Cereal Flour	269.57	217.28	218.04
41 Sugar Refined	235.50	199.93	189.16
42 Chocolate	100.00	100.00	100.00
43 Sugar Confectionary	128.44	127.85	127.85
44 Coffee And Tea	244.86	253.63	261.80
45 Spices	190.46	202.13	202.23
46 Other Food Products	293.85	294.50	294.50
47 Mineral Water	198.57	208.14	208.14
48 Beverages	172.33	172.85	172.85
49 Tobacco Products	445.85	318.37	318.37
50 Cotton Yarn	203.06	227.49	227.49
51 Nylon Yarn	143.99	143.99	143.99
52 Blended Yarn	181.06	188.55	188.55
53 Woven Fabrics	310.72	321.49	321.49
54 Cotton Fabrics	209.30	212.43	213.18
55 Other Fabrics	224.40	227.16	227.16

<b>Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities</b>				
<b>Items and Specifications</b>		<b>Index</b>		
		<b>Feb-17</b>	<b>Jan-18</b>	<b>Feb-18</b>
56	Silk And Rayon Fabrics	186.55	188.14	188.14
57	Towels	276.14	276.14	276.14
58	Blankets	247.38	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	129.25	130.95	130.95
63	Hosiery Products	241.83	244.11	244.11
64	Ready Made Garments	199.15	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
<b>Other Transportable Goods</b>		<b>170.89</b>	<b>183.97</b>	<b>190.61</b>
68	Timber	225.41	233.32	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	120.40	137.71	142.75
73	Diesel Oil	153.09	185.90	201.27
74	Kerosene Oil	115.11	171.38	187.24
75	Furnace Oil	105.61	116.89	130.29
76	Mobil Oil	196.91	201.21	200.85
77	Chemicals	170.99	182.36	188.23
78	Dying Materials	146.55	146.55	146.55
79	Fertilizers	215.96	223.59	225.55
80	Pesticides	304.43	310.16	310.16
81	Insecticides	143.12	140.56	140.56
82	Paints & Varnishes	296.43	299.42	301.12
83	Medicines	173.83	177.01	177.01
84	Soaps & Detergent	191.29	192.28	191.35
85	Auto Tyres	177.07	177.07	177.07
86	Plastic Products	225.73	226.00	226.00
87	Glass Sheets	297.20	302.27	302.27
88	Other Glass Articles	307.95	318.10	318.10
89	Ceramics And Sanitary	234.18	234.59	234.76
90	Bricks Blocks And Tiles	219.99	223.59	223.59
91	Cement	218.23	211.23	209.70
92	Bed Foams	167.17	172.83	173.00
93	Matches	165.53	171.36	171.36
<b>Metal Product Machinery &amp; Equip</b>		<b>174.49</b>	<b>178.30</b>	<b>178.47</b>
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	129.50	144.52	144.61
96	Pipe Fittings	214.33	215.66	215.66
97	Steel Products	177.41	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	207.15	216.72	217.87
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	195.36
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	Oct	203.03	224.86	189.95	208.69	234.47	192.34	217.02
	Nov	204.22	227.55	190.23	208.72	232.83	193.43	219.37
	Dec	203.06	223.90	190.57	207.37	230.72	192.55	218.60
2016	Jan	203.49	222.58	192.05	206.27	231.14	190.48	217.47
	Feb	202.98	221.07	192.14	205.05	231.26	188.42	215.73
	Mar	203.28	222.25	191.91	204.22	231.43	186.95	215.13
	Apr	206.43	227.53	193.78	206.87	237.05	187.72	215.88
	May	205.99	225.84	194.09	208.01	238.62	188.59	214.35
	Jun	207.30	228.95	194.32	210.88	244.68	189.44	216.58
	Jul	210.08	234.69	195.33	215.81	251.76	192.99	218.81
	Aug	209.46	232.48	195.66	215.75	250.12	193.95	218.66
	Sep	209.88	232.80	196.14	214.61	250.41	191.89	218.67
	Oct	211.57	234.68	197.72	214.53	250.63	191.64	220.11
	Nov	212.01	235.17	198.13	214.07	247.89	192.62	220.68
	Dec	210.57	230.69	198.51	213.76	244.40	194.32	219.73
2017	Jan	210.94	228.45	200.44	214.84	244.73	195.87	218.35
	Feb	211.54	229.19	200.96	215.86	244.91	197.42	219.25
	Mar	213.32	233.47	201.24	217.29	247.53	198.10	223.62
	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

\*: all groups combined

<b>Table A13: International Commodity Prices/ Indices</b>	<b>Nov-17</b>	<b>Dec-17</b>	<b>Jan-18</b>	<b>Feb-18</b>
<b>Energy</b>				
Crude Oil (US\$ per barrel) *	59.9	61.2	66.2	63.5
Energy Index (2010 = 100)	76.2	77.8	85.0	80.5
<b>Food</b>				
Rice (\$/MT)	402.0	406.0	442.0	425.0
Wheat (\$/MT)	179.7	184.1	192.2	-
Sugar (US cent/ pound)^	0.3	0.3	0.3	0.3
Palm Oil (\$/MT)	716.0	672.0	677.0	663.0
Soybean Oil (\$/MT)	881.0	866.0	864.0	842.0
<b>Non-Food Non-Energy</b>				
Cotton Outlook 'A' Index #^	1.8	1.9	2.0	1.9
Metal Price Index (2010 = 100)	92.6	92.2	97.0	96.9
Copper (\$/MT)	6,826.6	6,833.9	7,065.9	7,006.5
Aluminum (\$/MT)	2,097.4	2,080.5	2,209.7	2,181.8
Iron Ore (\$ cents/dry MT)	64.2	72.3	76.3	77.5
Tin (\$/MT)	19,557.5	19,476.4	20,696.9	21,651.6
Nickel (\$/MT)	11,972.0	11,495.1	12,864.9	13,595.9
Zinc (\$/MT)	3,229.3	3,196.0	3,441.5	3,532.9
Lead (\$/MT)	2,461.4	2,509.9	2,584.1	2,581.1
Uranium (\$/MT)@	23.1	22.3	21.9	21.4
DAP (\$/MT)	370.0	385.0	395.0	404.0
Urea (\$/MT)	246.0	219.0	224.0	229.0
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				

<b>Table 14: CPI Data Series Original and Seasonally Adjusted</b>					
<b>Original Series</b>					
<b>Period</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>
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	
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	
<b>Seasonally Adjusted Series</b>					
Jul	182.74	197.10	200.78	209.04	215.14
Aug	184.45	197.44	201.05	208.25	215.44
Sep	184.02	198.19	200.87	208.74	216.86
Oct	187.34	198.29	201.53	210.06	218.07
Nov	190.03	197.61	203.04	210.80	219.17
Dec	189.59	197.66	203.87	211.32	220.92
Jan	190.22	197.64	204.25	211.78	221.21
Feb	190.97	197.18	205.10	213.74	221.84
Mar	192.43	197.24	205.04	215.17	
Apr	193.88	197.95	206.19	216.00	
May	193.98	200.03	206.31	216.64	
Jun	195.37	201.46	207.81	215.92	

<b>Table 15: CPI Food Data Series Original and Seasonally Adjusted</b>					
<b>Original Series</b>					
<b>Period</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>
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	
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	
<b>Seasonally Adjusted Series</b>					
Jul	206.55	220.94	222.21	232.64	232.42
Aug	209.27	221.05	221.98	229.58	232.56
Sep	206.20	221.06	220.91	229.88	235.56
Oct	209.34	220.41	221.63	231.48	236.69
Nov	214.85	219.45	224.32	231.86	237.40
Dec	212.35	219.39	225.02	231.62	240.26
Jan	212.67	219.15	224.85	231.01	239.75
Feb	213.51	218.10	226.19	234.49	239.73
Mar	216.25	217.45	225.59	236.94	
Apr	217.72	217.61	227.83	237.70	
May	216.05	222.39	226.92	238.07	
Jun	218.35	225.03	229.96	235.24	

<b>Period</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>	<b>Average</b>
Jul	100.46	100.48	100.49	100.50	100.49	100.48
Aug	100.68	100.64	100.60	100.58	100.55	100.61
Sep	100.63	100.61	100.58	100.55	100.51	100.58
Oct	100.79	100.77	100.74	100.72	100.70	100.75
Nov	100.62	100.60	100.58	100.58	100.57	100.59
Dec	99.52	99.56	99.60	99.65	99.67	99.60
Jan	99.67	99.65	99.63	99.60	99.57	99.63
Feb	98.97	98.96	98.97	98.97	98.98	98.97
Mar	99.16	99.15	99.14	99.14		99.15
Apr	100.09	100.11	100.12	100.14		100.11
May	99.78	99.82	99.84	99.86		99.82
Jun	99.68	99.72	99.75	99.78		99.73

<b>Period</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>	<b>Average</b>
Jul	100.79	100.84	100.87	100.88	100.88	100.85
Aug	101.43	101.36	101.30	101.26	101.21	101.31
Sep	101.40	101.39	101.34	101.27	101.22	101.32
Oct	101.56	101.51	101.46	101.38	101.35	101.45
Nov	101.54	101.50	101.44	101.43	101.43	101.47
Dec	99.31	99.40	99.50	99.60	99.66	99.49
Jan	99.13	99.06	98.99	98.89	98.82	98.98
Feb	97.77	97.73	97.74	97.74	97.74	97.74
Mar	98.55	98.53	98.52	98.54		98.53
Apr	99.82	99.84	99.87	99.92		99.86
May	99.40	99.47	99.52	99.56		99.49
Jun	99.37	99.47	99.56	99.63		99.51

<b>Table 18: CPI Month-on-Month % Change Original &amp; Seasonally Adjusted</b>					
<b>Original Series</b>					
<b>Period</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>
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	
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	
<b>Seasonally Adjusted Series</b>					
Jul	1.20	0.89	-0.33	0.59	-0.36
Aug	0.94	0.17	0.13	-0.38	0.14
Sep	-0.23	0.38	-0.09	0.23	0.66
Oct	1.80	0.05	0.33	0.63	0.56
Nov	1.43	-0.34	0.75	0.35	0.50
Dec	-0.23	0.03	0.41	0.25	0.80
Jan	0.33	-0.01	0.19	0.22	0.13
Feb	0.39	-0.23	0.42	0.92	0.28
Mar	0.76	0.03	-0.03	0.67	
Apr	0.75	0.36	0.56	0.39	
May	0.05	1.05	0.06	0.29	
Jun	0.72	0.71	0.73	-0.33	

<b>Table 19: CPI Food Month-on-Month % Change Original &amp; Seasonally Adjusted</b>					
<b>Original Series</b>					
<b>Period</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>
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	
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	
<b>Seasonally Adjusted Series</b>					
Jul	1.47	1.19	-1.25	1.16	-1.20
Aug	1.32	0.05	-0.11	-1.31	0.06
Sep	-1.47	0.00	-0.48	0.13	1.29
Oct	1.52	-0.29	0.33	0.70	0.48
Nov	2.63	-0.44	1.21	0.16	0.30
Dec	-1.16	-0.03	0.31	-0.10	1.20
Jan	0.15	-0.11	-0.08	-0.26	-0.21
Feb	0.40	-0.48	0.59	1.51	-0.01
Mar	1.28	-0.30	-0.26	1.05	
Apr	0.68	0.07	1.00	0.32	
May	-0.77	2.20	-0.40	0.15	
Jun	1.07	1.18	1.34	-1.19	



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

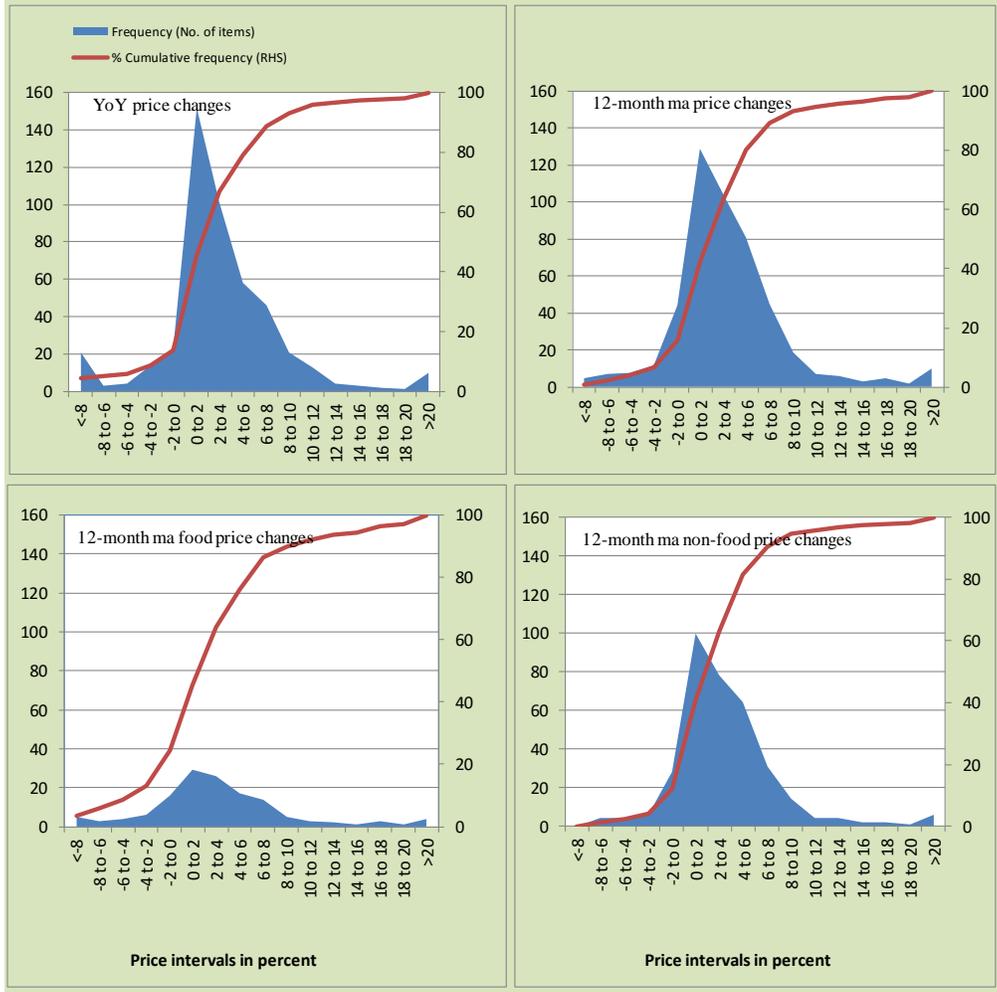


Figure A3: Frequency Distribution of Price Changes of WPI Commodities, February 2018

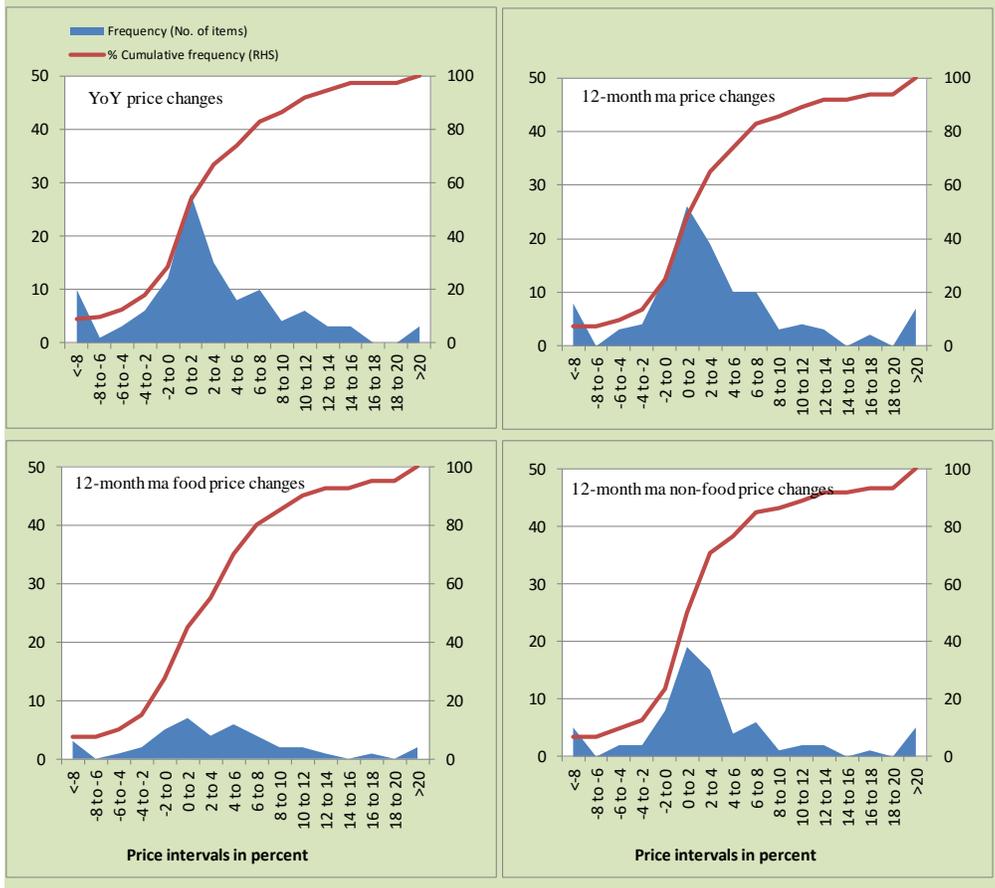
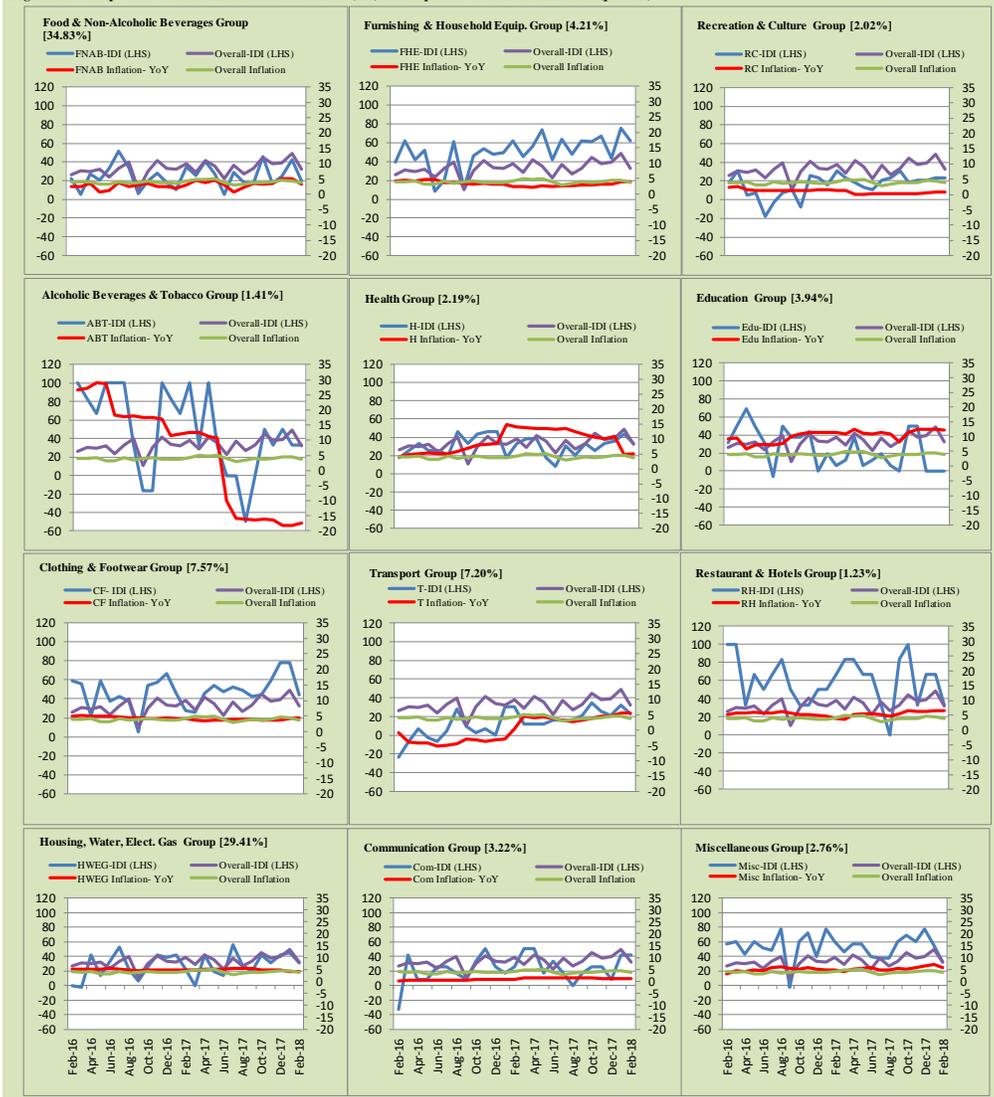


Figure A4: Group-wise/ Overall Inflation Diffusion Index (IDI) and respective/ overall YoY Inflation (percent)



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  $i^{\text{th}}$  item to the overall inflation

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

reference month

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

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

$\pi_t$  : Overall inflation

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

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

### **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 constant<sup>1</sup>.

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

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

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