

# **Inflation Monitor**

**November 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 6.5 percent on year-on-year basis in November 2018 as compared to 6.8 percent in the previous month and 4.0 percent during corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at level of 0.1 percent in November 2018 as compared to 2.3 percent in the previous month and 0.4 percent during corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.30 percent in November 2018 compared to 1.97 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis is recorded at 6.7 percent in November 2018, was at level in previous month and 4.2 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is recorded at 0.3 percent in November 2018 as compared to 0.8 percent in the previous month and was 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 8.2 percent in November 2018, was at level in previous month and 5.4 percent during corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.4 percent in November 2018 as compared to 1.1 percent in the previous month. Core NFNE inflation was 0.3 percent in the corresponding month of last year.
7. WPI inflation on year-on-year basis recorded at 13.5 percent in November 2018 as compared to 13.1 percent in the previous month and 2.9 percent during the corresponding month of last year.

8. WPI inflation on month-on-month basis recorded at 0.7 percent in November 2018 as compared to 4.2 percent in the previous month. It was 0.4 percent in the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 5.3 percent in November 2018 as compared to 4.5 percent in the previous month. It was 2.5 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at 1.3 percent in November 2018 as compared to 3.0 percent in the previous month. It was 0.5 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 November 2018 are described below:

11. Core RSC inflation on year-on-year basis is recorded at 8.9 percent in November 2018 compared to 8.7 percent in the previous month and 4.3 percent during the corresponding month of last year.
12. Core RSC inflation on month-on-month basis is recorded at 0.4 percent in November 2018 compared to 2.4 percent in the previous month and 0.2 percent during the corresponding month of last year.

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

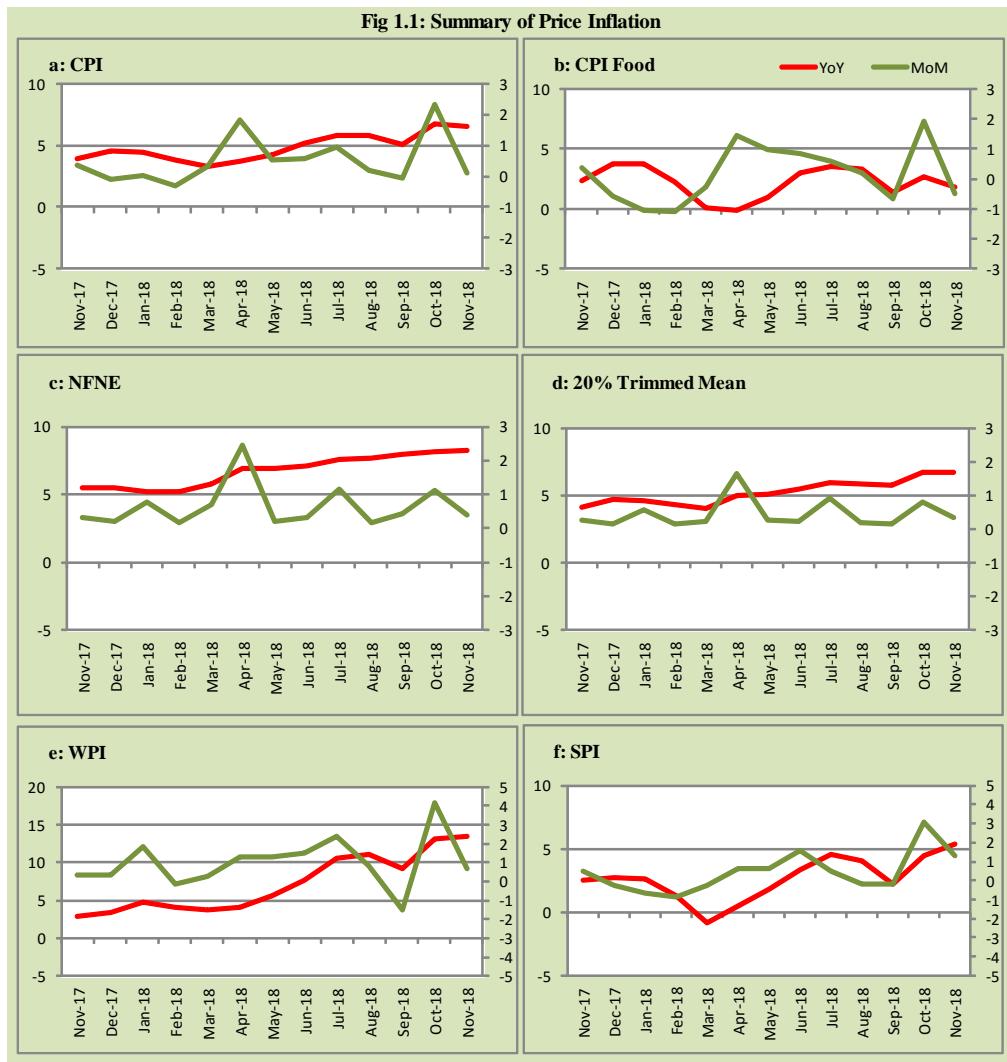
Period	CPI Inflation						Core Inflation						WPI Inflation	SPI*** Inflation
	General		Food		Non-food		NFNE*		Trimmed		RSC**			
	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM
Nov-17	4.0	0.4	2.4	0.4	5.1	0.4	5.4	0.3	4.2	0.3	4.3	0.2	2.9	0.4
Dec-17	4.6	-0.1	3.8	-0.6	5.1	0.2	5.5	0.2	4.7	0.2	4.3	0.1	3.4	0.4
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
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
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
Apr-18	3.7	1.8	-0.2	1.5	6.4	2.1	6.9	2.4	5.0	1.7	5.3	2.0	4.0	1.3
May-18	4.2	0.5	1.0	1.0	6.4	0.2	6.9	0.2	5.1	0.3	5.3	0.3	5.6	1.3
Jun-18	5.2	0.6	3.0	0.8	6.7	0.4	7.1	0.3	5.4	0.2	6.0	0.3	7.6	1.5
Jul-18	5.8	0.9	3.5	0.6	7.4	1.2	7.6	1.1	5.9	0.9	6.6	1.0	10.5	2.4
Aug-18	5.8	0.2	3.3	0.2	7.6	0.2	7.6	0.2	5.9	0.2	6.7	0.3	11.0	0.8
Sep-18	5.1	-0.1	1.3	-0.7	7.7	0.3	8.0	0.4	5.8	0.1	7.0	0.3	9.2	-1.5
Oct-18	6.8	2.3	2.7	1.9	9.6	2.6	8.2	1.1	6.7	0.8	8.7	2.4	13.1	4.2
Nov-18	6.5	0.1	1.8	-0.5	9.8	0.5	8.2	0.4	6.7	0.3	8.9	0.4	13.5	0.7

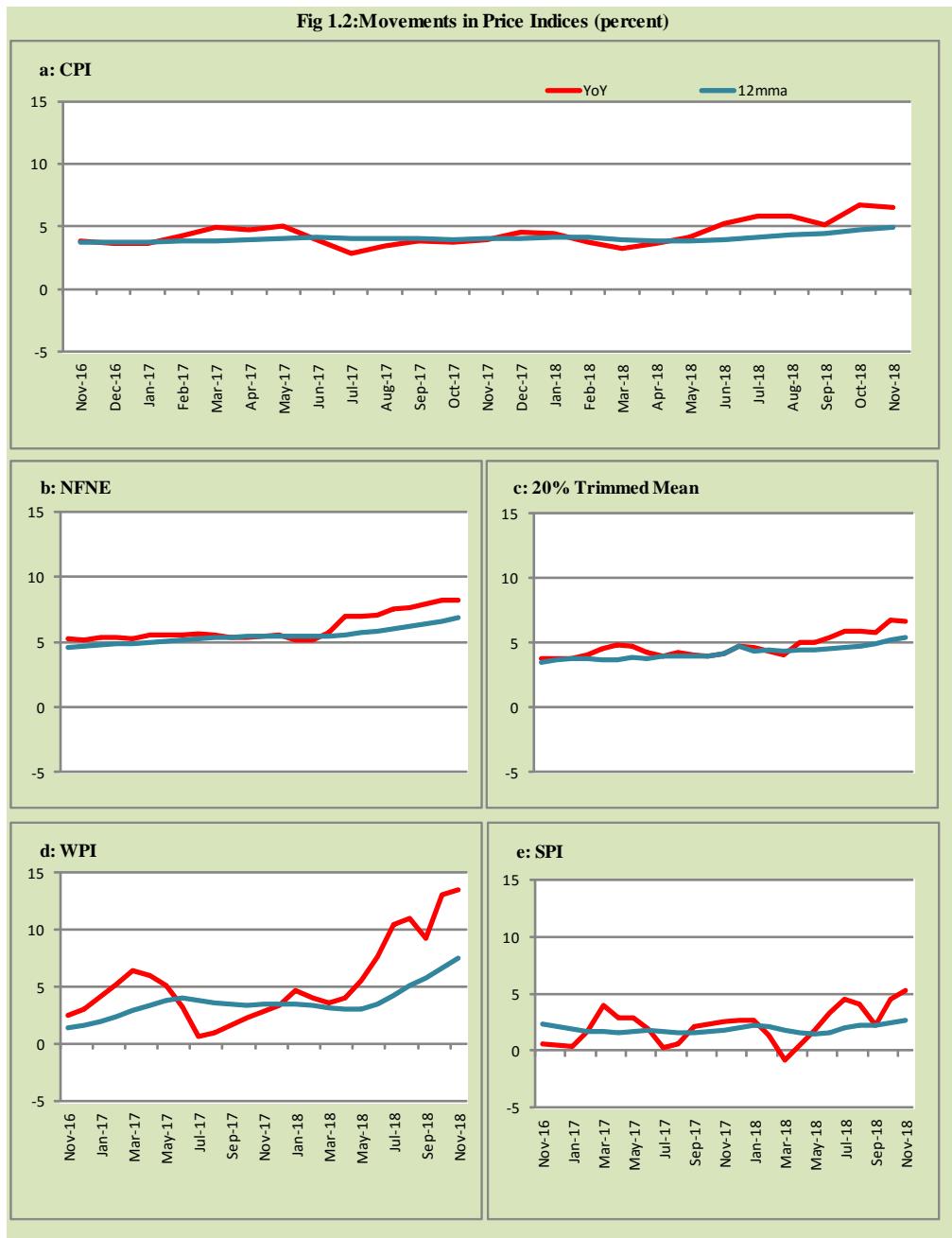
\* NFNE is Non-food non-energy

\*\* Relatively Stable Component of CPI

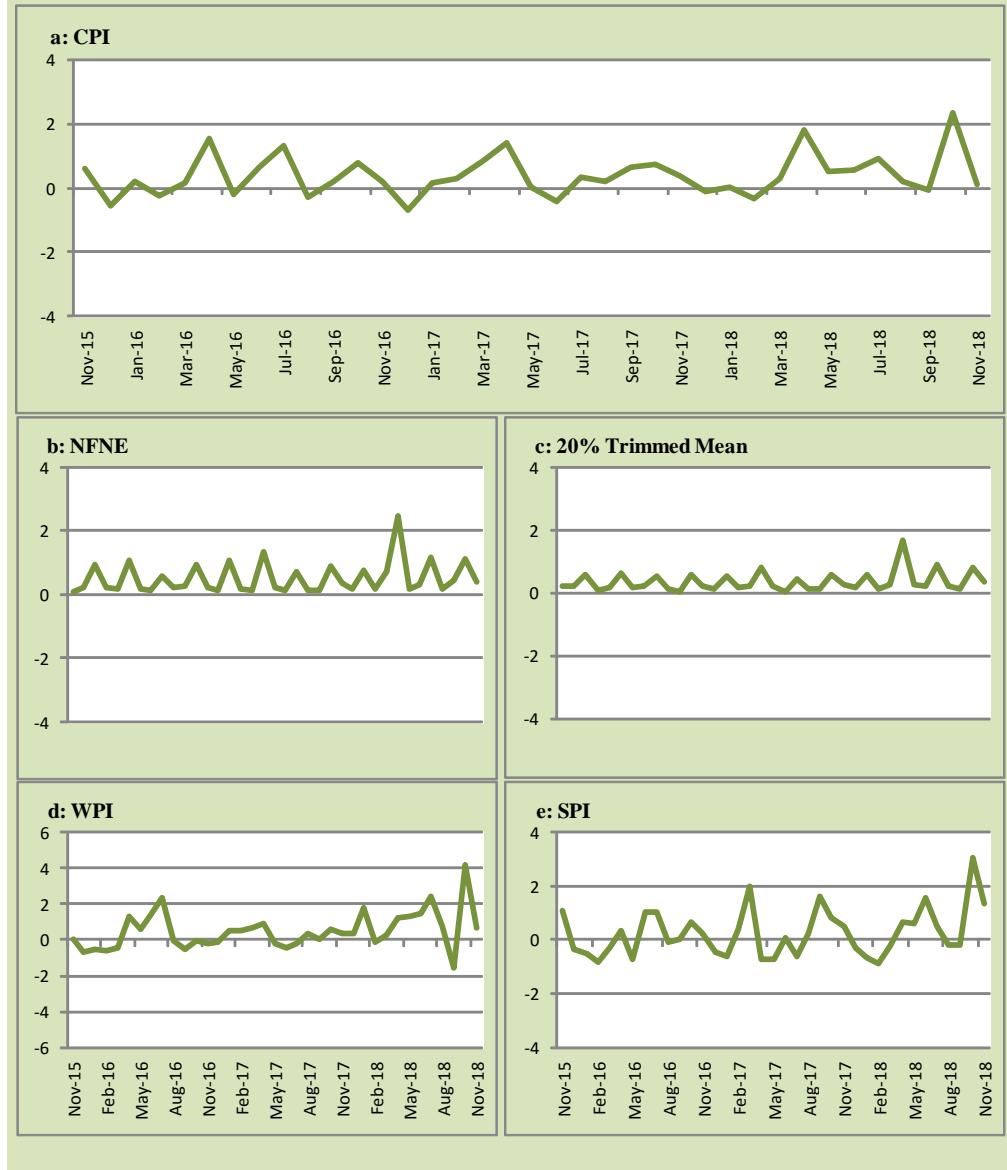
\*\*\* SPI for all income groups combined

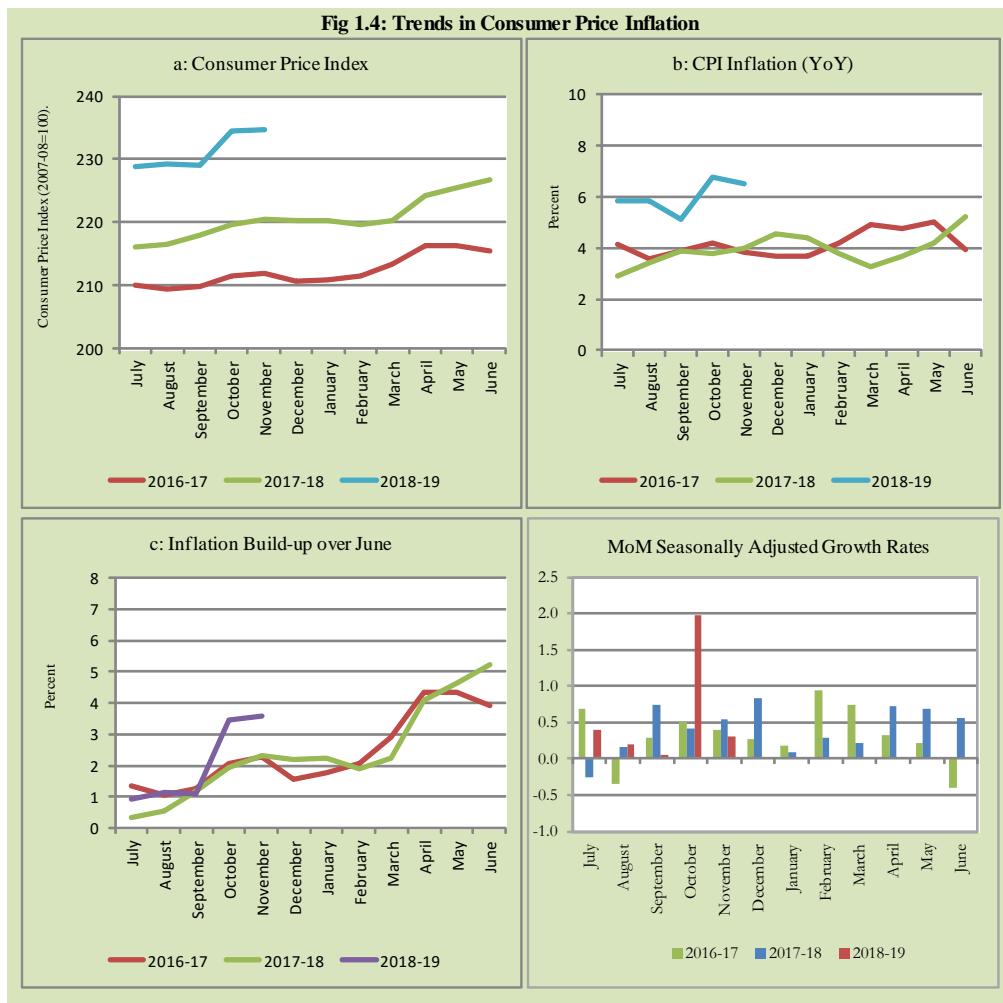
*Inflation Monitor, November 2018*





**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 November 2018. Among these five cities, the lowest inflation was observed in Lahore at 4.6 percent while the highest inflation was observed in Quetta at 8.0 percent (Table A6 of annexure-A).

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

	Nov-17		Oct-18		Nov-18	
	MoM	YoY	MoM	YoY	MoM	YoY
<b>Overall CPI</b>	0.4	4.0	2.3	6.8	0.1	6.5
Islamabad	0.5	5.4	1.9	5.2	0.1	4.7
Karachi	0.4	2.4	3.0	6.8	0.4	6.8
Lahore	1.0	6.2	2.5	5.5	0.2	4.6
Peshawar	0.7	4.3	2.8	7.8	0.3	7.4
Quetta	0.9	3.9	2.6	9.2	-0.2	8.0

### 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 November 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 November 2018 (Table A7 of annexure-A).

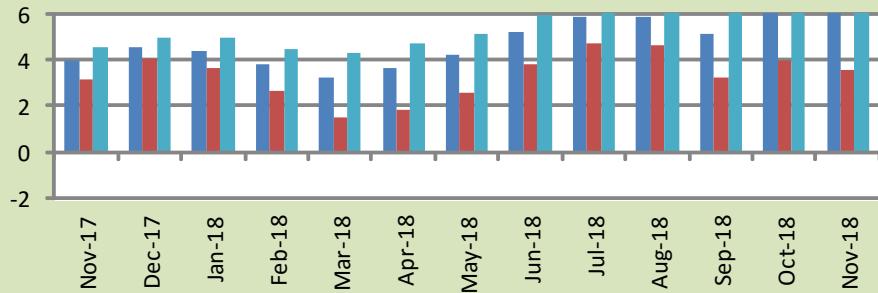
**Table 3.1 Income Group- wise Inflation (YoY) (percent)**

<b>Income Groups</b>	General			Food			Non-food		
	Nov-17	Oct-18	Nov-18	Nov-17	Oct-18	Nov-18	Nov-17	Oct-18	Nov-18
<b>All Groups Combined</b>	4.0	6.8	6.5	2.4	2.7	1.8	5.1	9.6	9.8
Up to Rs. 8,000	3.2	3.9	3.5	1.9	1.3	0.3	4.8	7.2	7.4
Rs. 8,001- 12,000	3.3	4.5	4.2	2.0	1.7	0.9	4.7	7.4	7.6
Rs. 12,001- 18,000	3.4	4.9	4.6	2.0	2.1	1.3	4.8	7.6	7.8
Rs. 18,001- 35,000	3.6	6.6	6.3	2.0	2.6	1.7	4.8	9.9	10.0
Above Rs. 35,000	4.5	8.6	8.4	3.0	3.4	2.6	5.3	11.1	11.2

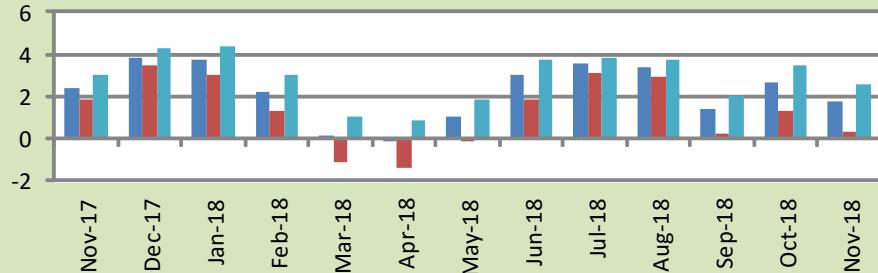
**Fig 3.1: Income Group- wise Inflation**

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

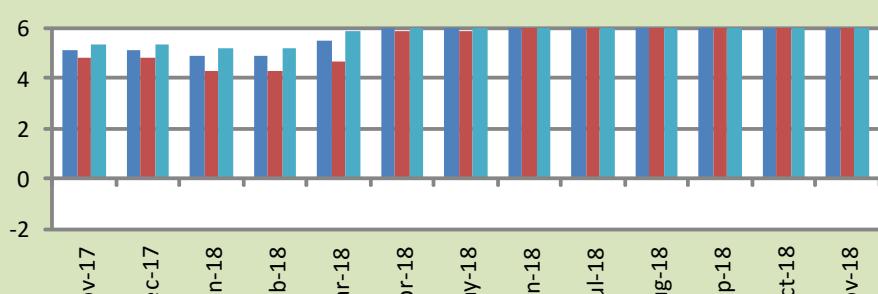
■ All Groups combined ■ Upto Rs. 8,000 ■ Above Rs. 35,000



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



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



#### 4. Weighted Contribution

The weighted contribution of food group in the overall inflation decreased to 11.22 percent during November 2018 from 16.06 percent in previous month. It was 25.04 percent in November 2017.

The weighted contribution of non-food group increased to 88.78 percent in November 2018 from 83.94 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
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
Apr-18	-2.00	15.67	39.70	10.10	16.06	20.47
May-18	9.73	13.25	35.28	10.11	14.19	17.43
Jun-18	23.35	10.45	28.60	12.04	11.46	14.10
Jul-18	24.57	9.29	27.60	15.72	10.12	12.70
Aug-18	23.30	9.26	27.58	17.14	10.05	12.67
Sep-18	10.81	10.75	31.29	19.01	13.36	14.80
Oct-18	16.06	8.22	35.92	15.95	7.92	15.94
Nov-18	11.22	9.54	37.56	17.74	7.23	16.70

## 5. Inflation Diffusion Index

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

	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18
General	37.7	39.2	48.9	32.5	40.2	63.8	40.6	31.5	47.8	47.7	45.9	62.4	52.7
Food & Non-Alcoholic Beverages	17.1	25.0	42.1	19.3	20.4	50.0	46.3	30.1	60.9	46.5	32.2	54.3	35.0
Alcoholic Beverages & Tobacco	33.3	50.0	33.3	33.3	66.7	100.0	-16.7	33.3	-16.7	0.0	33.3	100.0	66.7
Clothing & Footwear	59.3	78.0	78.0	44.1	47.5	84.7	32.2	50.8	35.6	45.8	67.8	61.0	79.7
Housing, Water, Elect, Gas & other Fuels	30.6	41.7	44.4	30.6	41.7	52.8	27.8	36.1	47.2	44.4	16.7	75.0	38.9
Furnishing & Household Equip. Maintenance etc	66.7	43.5	75.4	62.3	69.6	100.0	69.6	37.7	63.8	79.7	76.8	91.3	91.3
Health	33.3	35.9	43.6	33.3	30.8	48.7	33.3	25.6	41.0	51.3	48.7	69.2	53.8
Transport	25.6	20.9	32.6	23.3	27.9	25.6	34.9	30.2	55.8	39.5	25.6	41.9	39.5
Communication	25.0	8.3	41.7	41.7	25.0	33.3	0.0	0.0	8.3	16.7	8.3	41.7	41.7
Recreation & Culture	20.5	20.5	23.1	23.1	30.8	64.1	15.4	5.1	28.2	23.1	20.5	35.9	28.2
Education	50.0	0.0	0.0	0.0	25.0	37.5	18.8	6.3	0.0	0.0	68.8	31.3	0.0
Restaurant & Hotels	33.3	66.7	66.7	33.3	50.0	100.0	66.7	50.0	33.3	100.0	50.0	66.7	66.7
Miscellaneous	60.0	77.1	54.3	31.4	74.3	85.7	65.7	42.9	62.9	60.0	77.1	82.9	71.4
NFNE	45.0	43.2	51.5	36.7	46.2	69.2	39.3	31.4	45.0	48.8	52.7	66.9	58.9

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	Nov-17		Oct-18		Nov-18	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-1.38	1.64	2.99	1.56	2.71	1.36
2	Wheat Flour Bag	10 Kg	-0.53	2.40	3.87	1.00	2.15	0.70
3	Rice Basmati Sup. Qlty.	Kg	13.77	0.51	12.51	1.02	11.81	-0.11
4	Pulse Masoor (Washed)	Kg.	-20.49	-2.62	-8.17	1.16	-4.80	0.96
5	Pulse Moong (Washed)	Kg.	-20.28	-4.19	-5.80	0.52	0.29	2.00
6	Pulse Mash (Washed)	Kg.	-27.79	-5.25	-19.66	-1.18	-12.15	3.60
7	Pulse Gram	Kg.	-28.40	-2.06	-3.28	0.49	-0.41	0.85
8	Vegetable Ghee (Loose)	Kg.	3.43	0.08	4.74	0.97	5.98	1.27
9	Sugar Refined	Kg.	-25.60	-1.98	0.09	0.25	2.06	-0.05
10	Milk Fresh (Unboiled)	Ltr	3.66	0.00	3.61	0.00	3.88	0.27
11	Tapal Danedar Tea 200 Gm	Pkt	10.20	0.00	11.31	0.68	11.70	0.35
12	Beef With Bone Av.Qlty.	Kg	6.23	0.14	11.14	1.42	12.50	1.36
13	Mutton Av.Qlty.	Kg	9.23	0.86	12.75	0.74	13.02	1.11
14	Chicken Farm Broiler (Live)	Kg	-11.72	1.96	28.31	35.25	44.45	14.78
15	Eggs Farm	Doz	12.94	30.39	6.08	14.41	-10.35	10.20
16	Potatoes	Kg	-2.18	5.66	-21.25	0.13	-20.26	6.99
17	Onion	Kg	187.01	-2.81	-55.97	-4.43	-58.10	-7.51
18	Tomatoes	Kg	107.51	3.61	-28.75	3.85	-61.30	-43.72
19	Ginger	Kg	19.65	-4.82	12.67	2.55	13.97	-3.72
20	Garlic	Kg	-44.38	-7.36	-27.92	0.02	-20.05	2.76

## 7. Global Commodity Prices

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

Item/ Group	Oct-17		Sep-18		Oct-18	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	-1.9	0.3	-2.9	-3.6	-2.6	0.5
Metals	33.5	2.7	-6.6	-1.2	-7.4	1.8
Energy	11.2	3.0	38.9	5.8	36.7	1.3
Agricultural	-3.0	-0.4	-3.4	-2.7	-2.4	0.6
Cotton	0.1	-2.5	12.1	-4.4	10.4	-3.9

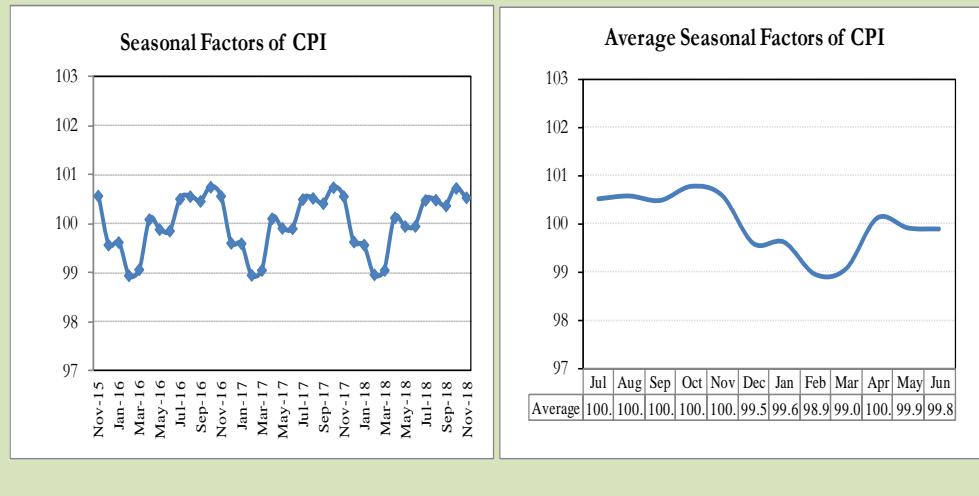
## **8. Seasonal Adjustment in CPI**

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

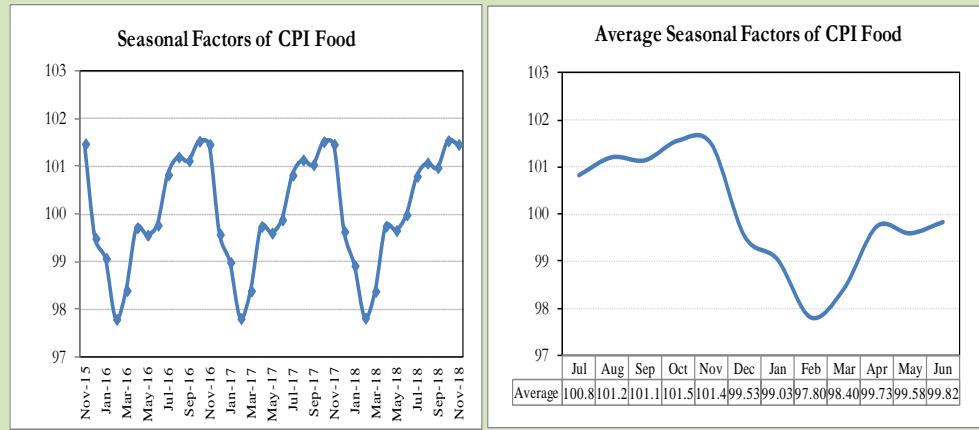
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the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

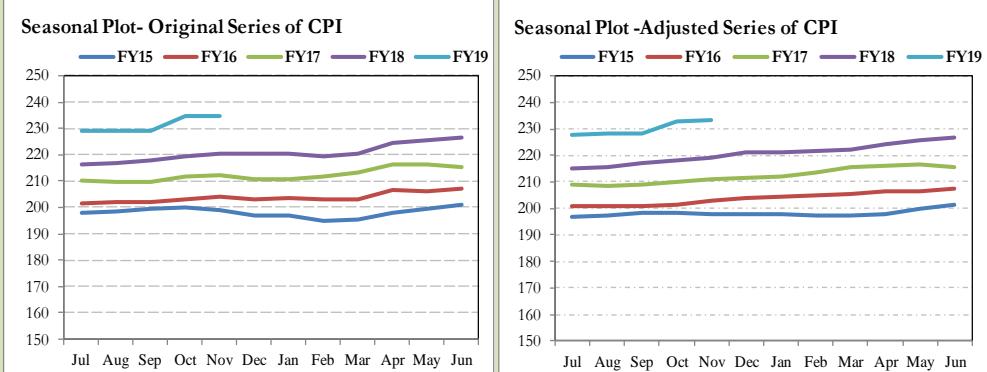
**Fig. 8.2 Seasonal Factors of CPI Food**



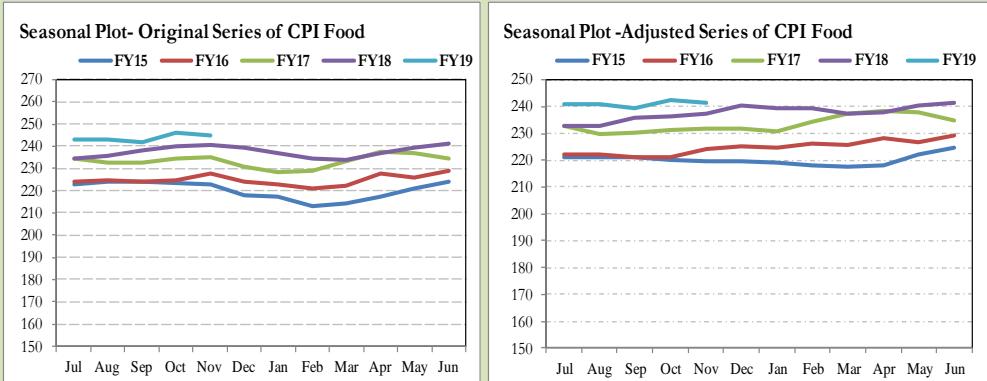
Note: Data Available in Annex Table 17.

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)**



## *Inflation Monitor, November 2018*

Seasonally adjusted CPI for November 2018 stood at 233.48 against 234.75 in original series showing decrease of 1.27 on account of adjustment of upward seasonality in November 2018.

Seasonally adjusted CPI food group for November 2018 stood at 241.55 against 245.08 in original series showing decrease of 3.54 on account of adjustment of upward seasonality in November 2018.

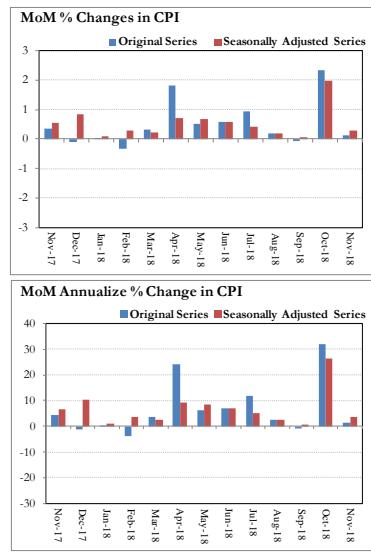
Month-on-month change of seasonally adjusted CPI series stood at 0.30% reflecting an increase during November 2018 over previous month and an increase of 0.11% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at -0.41% reflecting a decrease during November 2018 over previous month and a decrease of -0.48% in original series.

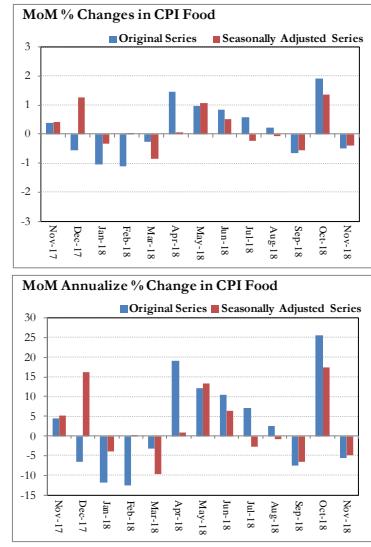
It is important to note that inflation rates should be analyzed on the basis of seasonally adjusted rates. This is especially needed for inflation rates on month-on-month basis.

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 November 2018 (corresponding to the seasonally adjusted month-on-month rate) is 3.67 percent.

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



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



## Annexure A

**Table A1: CPI Inflation by Groups (percent)**

Weight	MoM change			YoY change		
	Nov-17	Oct-18	Nov-18	Nov-17	Oct-18	Nov-18
<b>I. Food Group</b>	<b>37.5</b>	<b>0.4</b>	<b>1.9</b>	<b>-0.5</b>	<b>2.4</b>	<b>2.7</b>
Food & Non-Alcoholic Beverages	34.8	0.4	1.6	-0.6	3.4	2.0
Alcoholic Beverages & Tobacco	1.4	0.1	9.4	1.2	-16.4	12.7
Restaurant & Hotels	1.2	0.3	0.5	0.3	6.4	4.8
<b>II. Non-Food Group</b>	<b>62.5</b>	<b>0.4</b>	<b>2.6</b>	<b>0.5</b>	<b>5.1</b>	<b>9.6</b>
Clothing & Footwear	7.6	0.4	0.3	1.2	3.8	6.7
Housing, Water, Elect, Gas &c.	29.4	0.0	3.9	0.1	4.9	9.0
Furnishing & Household Equip.	4.2	0.5	0.9	0.9	3.3	7.0
Health	2.2	0.2	3.2	0.5	10.0	9.2
Transport	7.2	0.8	2.3	1.8	4.6	18.6
Communication	3.2	0.0	7.2	0.1	1.2	7.8
Recreation & Culture	2.0	0.2	1.7	0.3	0.4	8.6
Education	3.9	1.4	0.4	0.0	12.4	11.5
Miscellaneous	2.8	1.0	1.5	0.3	5.8	8.7
<b>Headline</b>	<b>100.0</b>	<b>0.4</b>	<b>2.3</b>	<b>0.1</b>	<b>4.0</b>	<b>6.8</b>
						<b>6.5</b>

**Table A2: Distribution of Price changes (YoY) of CPI basket**

Groups	% changes Nov-18	Total number of items Nov-17 Nov-18	No. of items in each inflation range								
			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)		
			Nov-17	Nov-18	Nov-17	Nov-18	Nov-17	Nov-18	Nov-17	Nov-18	Nov-17
<b>I. Food Group</b>	<b>1.8</b>	<b>132 132</b>	39	32	47	44	30	30	16	26	
Food & Non-Alcoholic Beverages	1.0	120 120	36	32	45	41	25	28	14	19	
Alcoholic Beverages & Tobacco	13.9	6 6	3	0	1	0	1	1	1	5	
Restaurant & Hotels	4.7	6 6	0	0	1	3	4	1	1	2	
<b>II. Non-Food Group</b>	<b>9.8</b>	<b>348 348</b>	<b>77</b>	<b>26</b>	<b>175</b>	<b>68</b>	<b>76</b>	<b>149</b>	<b>20</b>	<b>105</b>	
Clothing & Footwear	7.5	59 59	8	3	35	8	16	35	0	13	
Housing, Water, Elect, Gas & other Fuels	9.1	36 36	14	6	7	3	13	11	2	16	
Furnishing & Household Equip. Maintenance etc	7.5	69 69	2	0	51	6	16	44	0	19	
Health	9.4	39 39	8	1	22	20	7	9	2	9	
Transport	19.8	43 43	24	9	15	5	2	9	2	20	
Communication	7.8	12 12	4	1	4	7	3	1	1	3	
Recreation & Culture	8.7	39 39	16	3	17	12	4	12	2	12	
Education	10.0	16 16	0	1	2	2	5	8	9	5	
Miscellaneous	7.9	35 35	1	2	22	5	10	20	2	8	
<b>Overall</b>	<b>6.5</b>	<b>480 480</b>	<b>116</b>	<b>58</b>	<b>222</b>	<b>112</b>	<b>106</b>	<b>179</b>	<b>36</b>	<b>131</b>	

Note: Prices of 7 seasonal items were not reported during the month.

**Table A3: Top and Bottom 15 Contributors to CPI Inflation (YoY) in November, 2018**

<b>Top 15 Contributors</b>		Weights	<u>YoY Change</u>		Weighted Contribution
Items/ Contributors			Nov-17	Nov-18	
<b>Ranked by Weighted Contribution</b>					
1	House Rent	21.81	6.49	6.72	19.85
2	Gas	1.58	0.00	85.31	14.83
3	Motor Fuel	3.03	11.81	28.73	9.28
4	Education	3.94	12.40	10.01	7.23
5	Transport Services	2.70	0.16	17.87	6.53
6	Chicken	1.36	-11.73	44.46	6.50
7	Meat	2.43	7.26	12.69	6.15
8	Milk Fresh	6.68	3.72	3.84	4.96
9	Cigarettes	1.39	-16.67	12.26	3.64
10	Communication & Apparatus	3.15	1.14	7.84	2.25
11	Cotton Cloth	1.73	3.96	7.03	1.99
12	Rice	1.58	14.10	9.28	1.87
13	Personal Equipments	0.84	6.77	9.88	1.81
14	Doctor (Mbbs) Clinic Fee	0.59	4.72	13.39	1.56
15	Tailoring	0.88	7.89	7.66	1.55
<b>Total</b>		<b>53.71</b>			<b>90.00</b>
<b>Bottom 15 Contributors</b>					
1	Onion	0.51	187.02	-58.10	-9.87
2	Tomatoes	0.42	107.51	-61.30	-6.24
3	Fresh Vegetables	1.75	-6.57	-10.26	-3.61
4	Potatoes	0.45	-2.18	-20.26	-1.82
5	Eggs	0.46	12.94	-10.35	-0.90
6	Pulse Mash (Washed)	0.21	-27.79	-12.15	-0.43
7	Gram Whole	0.16	-5.35	-10.56	-0.35
8	Pulse Masoor	0.27	-20.27	-5.04	-0.16
9	Besan	0.15	-19.13	-4.92	-0.14
10	Pulse Gram	0.24	-28.40	-0.40	-0.02
11	Motor Vehicle Tax	0.11	0.00	0.00	0.00
12	Electricity	4.40	0.00	0.00	0.00
13	Gur	0.02	-7.96	0.75	0.00
14	Medical Equipments	0.01	3.13	5.09	0.01
15	Pulse Moong	0.23	-20.28	0.29	0.01
<b>Total</b>		<b>9.38</b>			<b>-23.53</b>

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

<b>Top 15 Contributors</b> Items/ Contributors	Weights	<b>MoM Change</b>		<b>Weighted Contribution</b>
		Oct-18	Nov-18	
<b>Ranked by Weighted Contribution</b>				
1 Chicken	1.36	35.25	14.78	149.97
2 Motor Fuel	3.03	3.23	4.09	90.11
3 Eggs	0.46	14.41	10.20	39.72
4 Meat	2.43	1.18	1.27	37.86
5 Woolen Cloth	0.88	0.17	3.37	30.49
6 Potatoes	0.45	0.13	6.99	25.80
7 Cigarettes	1.39	9.67	1.24	22.46
8 Milk Fresh	6.68	-0.06	0.26	19.53
9 Woolen Readymade Garments	0.40	0.01	4.69	19.12
10 Wheat Flour	4.16	0.77	0.55	18.74
11 Washing Soap & Detergent	0.79	1.03	1.59	11.96
12 Vegetable Ghee	2.07	0.60	1.01	11.95
13 Fish	0.30	-1.38	4.03	10.13
14 Cotton Cloth	1.73	0.13	0.61	10.11
15 Construction Input Items	0.56	1.83	1.30	8.00
<b>Total</b>	<b>26.67</b>			<b>505.95</b>
<b>Bottom 15 Contributors</b>				
1 Fresh Vegetables	1.75	3.70	-11.50	-226.03
2 Tomatoes	0.42	3.85	-43.72	-168.81
3 Fresh Fruits	1.86	-0.09	-7.56	-132.05
4 Onion	0.51	-4.43	-7.51	-31.87
5 Rice	1.58	0.82	-0.43	-5.29
6 Beverages	1.20	0.80	-0.24	-2.63
7 Personal Equipments	0.84	2.62	-0.09	-0.97
8 Betel Leaves & Nuts	0.02	1.77	-1.55	-0.85
9 Sugar	1.04	0.25	-0.06	-0.44
10 Besan	0.15	0.07	-0.20	-0.31
11 Gur	0.02	1.21	-0.57	-0.13
12 Gram Whole	0.16	-0.20	-0.01	-0.02
13 Motor Vehicle Tax	0.11	0.00	0.00	0.00
14 Electricity	4.40	0.00	0.00	0.00
15 Water Supply	0.50	2.70	0.00	0.00
<b>Total</b>	<b>14.58</b>			<b>-569.40</b>

**Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in November, 2018**

Items/ Contributors	Weights	YoY Change		Weighted Contribution
		Nov-17	Nov-18	
<b>A. Ranked by Percentage Change</b>				
1	Betel Leaves & Nuts	0.02	11.34	126.92
2	Gas	1.58	0.00	85.31
3	Chicken	1.36	-11.73	44.46
4	Kerosene Oil	0.01	10.23	28.81
5	Motor Fuel	3.03	11.81	28.73
6	News Papers	0.19	5.08	27.55
7	Transport Services	2.70	0.16	17.87
8	Motor Vehicle	0.66	3.73	14.44
9	Spices	0.54	-0.13	13.95
10	Water Supply	0.50	4.15	13.62
11	Doctor (Mbbs) Clinic Fee	0.59	4.72	13.39
12	Meat	2.43	7.26	12.69
13	Construction Input Items	0.56	3.44	12.47
14	Cigarettes	1.39	-16.67	12.26
15	Cosmetics	0.39	2.79	11.40
<b>Total</b>		<b>15.95</b>		<b>54.90</b>
<b>B. Ranked by Weights</b>				
1	House Rent	21.81	6.49	6.72
2	Milk Fresh	6.68	3.72	3.84
3	Electricity	4.40	0.00	0.00
4	Wheat Flour	4.16	-0.35	1.80
5	Education	3.94	12.40	10.01
6	Communication & Apparatus	3.15	1.14	7.84
7	Motor Fuel	3.03	11.81	28.73
8	Transport Services	2.70	0.16	17.87
9	Meat	2.43	7.26	12.69
10	Vegetable Ghee	2.07	3.80	4.38
11	Fresh Fruits	1.86	6.27	0.37
12	Fresh Vegetables	1.75	-6.57	-10.26
13	Cooking Oil	1.75	3.42	3.46
14	Cotton Cloth	1.73	3.96	7.03
15	Rice	1.58	14.10	9.28
<b>Total</b>		<b>63.07</b>		<b>59.21</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 6.5 percent in November, 2018.				

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

Items/ Contributors	Weights	YoY Change		Weighted Contribution
		Nov-17	Nov-18	
<b>A. Ranked by Weighted Contribution</b>				
1	Chicken	1.36	-11.73	44.46
2	Meat	2.43	7.26	6.15
3	Milk Fresh	6.68	3.72	4.96
4	Cigarettes	1.39	-16.67	3.64
5	Rice	1.58	14.10	1.87
6	Tea	0.84	10.73	1.55
7	Spices	0.54	-0.13	1.27
8	Ready Made Food	1.23	6.38	1.15
9	Wheat Flour	4.16	-0.35	1.11
10	Vegetable Ghee	2.07	3.80	0.91
<b>Total</b>		<b>22.29</b>		<b>29.12</b>
<b>B. Ranked by Percentage Change</b>				
1	Betel Leaves & Nuts	0.02	11.34	126.92
2	Chicken	1.36	-11.73	44.46
3	Spices	0.54	-0.13	13.95
4	Meat	2.43	7.26	12.69
5	Cigarettes	1.39	-16.67	12.26
6	Dry Fruits	0.25	1.76	10.45
7	Tea	0.84	10.73	9.35
8	Rice	1.58	14.10	9.28
9	Sweet Meet	0.25	3.80	7.96
10	Honey	0.04	7.24	6.55
<b>Total</b>		<b>8.71</b>		<b>22.45</b>
<b>C. Ranked by Weights</b>				
1	Milk Fresh	6.68	3.72	3.84
2	Wheat Flour	4.16	-0.35	1.80
3	Meat	2.43	7.26	12.69
4	Vegetable Ghee	2.07	3.80	4.38
5	Fresh Fruits	1.86	6.27	0.37
6	Fresh Vegetables	1.75	-6.57	-10.26
7	Cooking Oil	1.75	3.42	3.46
8	Rice	1.58	14.10	9.28
9	Cigarettes	1.39	-16.67	12.26
10	Chicken	1.36	-11.73	44.46
<b>Total</b>		<b>25.05</b>		<b>22.23</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 1.8 percent in November, 2018.				

**Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in November, 2018**

Items/ Contributors	Weights	<u>YoY Change</u>		Weighted Contribution
		Nov-17	Nov-18	
<b>A. Ranked by Weighted Contribution</b>				
1 House Rent	21.81	6.49	6.72	19.85
2 Gas	1.58	0.00	85.31	14.83
3 Motor Fuel	3.03	11.81	28.73	9.28
4 Education	3.94	12.40	10.01	7.23
5 Transport Services	2.70	0.16	17.87	6.53
6 Communication & Apparatus	3.15	1.14	7.84	2.25
7 Cotton Cloth	1.73	3.96	7.03	1.99
8 Personal Equipments	0.84	6.77	9.88	1.81
9 Doctor (Mbbs) Clinic Fee	0.59	4.72	13.39	1.56
10 Tailoring	0.88	7.89	7.66	1.55
<b>Total</b>	<b>40.26</b>			<b>66.87</b>
<b>B. Ranked by Percentage Change</b>				
1 Gas	1.58	0.00	85.31	14.83
2 Kerosene Oil	0.01	10.23	28.81	0.02
3 Motor Fuel	3.03	11.81	28.73	9.28
4 News Papers	0.19	5.08	27.55	0.69
5 Transport Services	2.70	0.16	17.87	6.53
6 Motor Vehicle	0.66	3.73	14.44	1.19
7 Water Supply	0.50	4.15	13.62	0.81
8 Doctor (Mbbs) Clinic Fee	0.59	4.72	13.39	1.56
9 Construction Input Items	0.56	3.44	12.47	1.26
10 Cosmetics	0.39	2.79	11.40	0.63
<b>Total</b>	<b>10.20</b>			<b>36.79</b>
<b>C. Ranked by Weights</b>				
1 House Rent	21.81	6.49	6.72	19.85
2 Electricity	4.40	0.00	0.00	0.00
3 Education	3.94	12.40	10.01	7.23
4 Communication & Apparatus	3.15	1.14	7.84	2.25
5 Motor Fuel	3.03	11.81	28.73	9.28
6 Transport Services	2.70	0.16	17.87	6.53
7 Cotton Cloth	1.73	3.96	7.03	1.99
8 Gas	1.58	0.00	85.31	14.83
9 Footware	1.55	0.46	7.75	1.40
10 Personal Care	1.49	5.94	5.65	1.37
<b>Total</b>	<b>45.39</b>			<b>64.72</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 Non-food, which is 9.8 percent in November, 2018.

**Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: November, 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, Onion, Chillies Green, Peas, Potatoes, Garlic, Cucumber (Kheera), Radish, Turnip.	Fruit Juice Tetra Pack, Lady Finger, Rusk (Papay), Pickles Ahmed/Mitchelles, Cloves Loose Av.Qlty.	Milo 200 Gm., Lactogen 400 Grams, Vinegar Synthetic (Sirkha), Almonds Whole Av.Qlty.	Chicken Farm Broiler (Live), Chillies Powder Loose, Guava, Coconut Dry Av.Qlty., Salt Powdered (National/Shan), Chillies Powd.National 200 Gm, Raisins Av.Qlty.
Alcoholic Beverages & Tobacco			Cigarettes Gold Leaf 20.S.	Cigarettes Capstan 20.S, Betel Nuts, Betel Leaves, Cigarettes Morven Gold 20.S, Cigarettes K-20.S.
Clothing & Footwear	Gents Shoe, Art 1109 Servis, Gents Sandal Bata, Gents Shoes Paul Bata.	Shoe Repair Half Sole, Socks Nylon (Pakistani), Lawn Printed Gul Ahmed/Al Karam, Pant Cloth Wash & Wear Av.Qlty, Lungi/Dhoti(Cotton) Avg.Qlty, Linen Av.Qlty.	Vest/Shameez (Women) Avg.Qlty, Heavy Wt Suiting Law.Pur Sup. Qlty, Tropical Suiting Law.Pur, Tailoring Charges Pant (Men), Brassier Sup.Qlty.	Ladies Sandal Bata, Child Shoe Power Lite Bata, Frock W/Wear Girls, Tailoring Shirt, Shoe Polish Charges Avg, Chaddar (W/Wear) (2X2.5 Mtr), Ladies Spoung Chappal Bata, School Uni. Pant,Shirt Boys, Heavy Wt Suiting Law.Pur Av.Qlty, Gloves Av.Qlty, Handkerchief Sup. Qlty.
Housing, Water, Elect. Gas & other Fuels	Elect.Charges Upto 50 Units, Elect.Charges 01 - 100 Units, Elect.Charges Above 1000 Units, Elect.Charges 301 - 1000 Units.	Cement Blocks (6"X8"X12"), Firewood Whole, Sand (Black Pit Sand).	Electrician Wage Rate(P/Day), Timber Shesham Log, Mason (Raj) Wage Rate, Electrician Wage Rate(P/Pnt), Bajree, House Rent For Q-III, House Rent For Q-IV.	Gas Chrg All Over 500 Mmbtu, Gas Chrg Over 300 - 500 Mmbtu, Gas Chrg Overall/ Combined, Kerosene Oil, Iron Bar (M.S. Bar) 1/2", Gas Chrg Over 200 - 300 Mmbtu, Gas Chrg Over 100 - 200 Mmbtu, Carpenter Wage Rate, Plumber Wage Rate, Bricks (New) 1st Class.
Furnishing & Household Equip. Maintenance etc		Electric Blubs "0" Watt, Bed Sheet Double With Two Pillow Cover, Washing Powder (Wheel/ Bonus), Hand Stiching Needle.	Presure Cooker 4 Ltr, Hotpot Set Plasta 3 Pcs, Air Cooler Super Asia, Towel(3'X2') Av. Qty, S.Steel Deguchi Medium Size, Table Shesham Wood.	Tea Set Pak, China Wear 21 Pcs, Non Stick Cooking Pan, Sewing Machine (Singer), Single Bed Without Foam, Elect. Iron Philips, Frying Pan Steel Avg. Qlty, Thermos Starvac 1 Ltr, Harpic, Tawa Iorn (Medium Size) Avg. Qlty.
Health	Vicks Vaporub/ Balm.	Phenergan Syrup 120 ML, Brufen Tabs 200-Mg., Cotton Bandage 2" - 4", Gripe-Water Woodwards, Polypax Eye Ointment, Ventolin Tab. 2Mg.	X-Ray (Chest) Charges, Trisol Tab., Ecg Charges, Thermometer China, Cac. 1000 Tab, Panadol Tab. Extra/Plain, Disprin	Dettol (Medium), Betnovate-N Ointment 5 Gm, Sanco Syrup (50 ML), Calpol Syrup 60 ML, Flagyl Tab. 200 Mg., Doctor (Mbbs) Clinic Fee, Urine Test (Dr) Charges, Blood Test (Cp) Charges, Glycerine Small Bottle.
Transport	Train Fare Ist Slp. > 500, Train Fare Ist Slp.101-500, Train Fare A/C Slp > 500K, Train Fare A/C Slp. 1-100, Train Fare Eco. > 500 Km.	Tyre Car With Tube General, Motorcycle Honda Cd-70, Taxi 4 Seater Fare, Tyre Car W/O Tube, Motor Cycle Hero 70 Cc.	Train Fare A/C Slp.101-500, Minibus Fare Min.Within City, Tyre Puncture Charges, Tyre Cycle, Minibus Fare Max.Within City.	Train Fare Eco. 1-100 Km., Bus Fare Outside City (Non A/C), Bus Fare Outside City (A/C), Train Fare Ist Slp. 1-100, High Speed Diesel Hsd, Cng, Petrol Super, Train Fare Eco. 101-500 K, Car Honda Civic 1500 Cc.
Communication	Mobile Cell Charges.	Fax Charges (Local), Mobile Set Nokia/Sony/Ericsson Av.Qlty, Internet Charges.	Telephone Set Av. Qlty.	T.C.S. Ch. Min.Within Zone, Telephone Charges Local Call, Telephone Charges Outside City.
Recreation & Culture	Maths Book Class Ix Or X, V.C.P. Panasonic/Lg/National, Tv Licence Fee Domestic.	English Book Class V1, Computer Cd (Tdk/Imation), T.V. 20" Colored Sony, Dvd/Vcd Player Panasonic/Lg, Urdu Book Class V	Paper Fool Scape (27"X17"), English Book Class Ix Or X, Urdu Book 1st Year/ Inter, Eng. Book 1st.Yr Complete Set, Pen Ink Dollor 57 MI (T.B.Board).	Daily "Nawa-E-Waqt", Daily "Jang", Cinema A/C High Class, Cinema Non-A/C High Class, English Book Ba/B.Sc, Photostate Paper 70 Gm, Pakistan Studies Book Ba/B.Sc, Urdu Book Class Ix/X (T.B.Board), Daily "Dawn", Fountain Pen Hero/Wings/China, Pencil Goldfish/Deer.
Education	Govt. College Fee Ist. Year.	Pvt Eng.Colege Fee (Ist Year), Govt. College Fee 4Th. Year.	Pvt School Fee Eng.Med (Class-Vi), Coaching Charges For Class X/ XII Science Group.	Mba Tuition Fee, Govt. University Fee Msc/ Ma, Pvt School Fee Eng.Med (Class-I), Pvt School Fee Eng.Med (Class-V), Govt. Med. College Fee Mbbs Ist Year.
Restaura nt & Hotels		Cooked Dal (Av. Hotel), Bread Tandoori St. Size, Tea Prepared (Ordinary).	Chicken Biryani Full/Double.	Cooked Mutton (Av. Hotel), Cooked Beef (Av. Hotel).

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Miscellaneous	Toilet Soap Lifebouy 140 Gms, Toothpaste Macleans 70 Gms,	Blade Treet Ordinary (10), Face Cream Ponds (Medium), Hair Removing Cream (Eu-Cream), Hair Colour (Kala)	Shaving Charges, Nail Polish S.Miss/Medora, Toothpast Med Size Colgate 70Gms, Gel Medium Size, Beauty Parlour	Perfume Med.Size Medora/Broche, Gold Tezabi 24 Ct, Toothpowder Dentonic 90 Gms, Purse Ladies (Leather) Av. Qlty, Wrist Watch Gents Citizen, Beauty Cream (Fair & Lovely), Trunk
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**Table A5: City- wise CPI Inflation by Income Groups, November, 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	4.1	4.1	0.8	0.8	8.0	8.0	4.6	4.6	1.0	1.0	8.3	8.3
2 Islamabad	1.6	1.6	-1.6	-1.6	5.4	5.4	2.2	2.2	-1.0	-1.0	5.5	5.5
3 Lahore	1.8	1.8	-2.1	-2.1	7.4	7.4	2.4	2.4	-1.7	-1.7	7.6	7.6
4 Gujranwala	2.2	2.2	0.0	0.0	4.9	4.9	2.9	2.9	0.7	0.7	5.3	5.3
5 Sialkot	4.2	4.2	1.3	1.3	7.9	7.9	4.2	4.2	1.5	1.5	7.2	7.2
6 Faisalabad	3.3	3.3	-1.1	-1.1	8.5	8.5	4.3	4.3	0.0	0.0	8.7	8.7
7 Multan	2.9	2.9	0.3	0.3	5.9	5.9	3.2	3.2	0.3	0.3	6.2	6.2
8 Sargodha	2.9	2.9	0.4	0.4	5.5	5.5	3.5	3.5	0.8	0.8	6.1	6.1
9 Bahawalpur	2.7	2.7	0.7	0.7	4.7	4.7	3.1	3.1	1.4	1.4	4.6	4.6
10 Karachi	4.2	4.2	3.0	3.0	5.7	5.7	4.8	4.8	3.2	3.2	6.5	6.5
11 Hyderabad	5.4	5.4	4.4	4.4	6.7	6.7	5.9	5.9	4.6	4.6	7.5	7.5
12 Sukkur	3.2	3.2	-1.4	-1.4	8.7	8.7	4.0	4.0	-0.4	-0.4	8.5	8.5
13 Larkana	1.1	1.1	-1.1	-1.1	3.7	3.7	1.3	1.3	-1.3	-1.3	3.7	3.7
14 Peshawar	4.3	4.3	0.7	0.7	8.4	8.4	5.4	5.4	1.6	1.6	9.2	9.2
15 Bannu	2.7	2.7	0.5	0.5	5.1	5.1	3.4	3.4	0.5	0.5	6.3	6.3
16 Quetta	4.5	4.5	0.5	0.5	9.4	9.4	5.7	5.7	0.9	0.9	11.0	11.0
17 Khuzdar	1.6	1.6	-1.6	-1.6	5.4	5.4	2.0	2.0	-1.5	-1.5	5.7	5.7
Rs 12001-18000												
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
	5.4	5.4	1.2	1.2	9.3	9.3	5.6	5.6	1.2	1.2	9.0	9.0
1 Rawalpindi	2.8	2.8	-0.5	-0.5	5.9	5.9	3.3	3.3	-0.4	-0.4	6.3	6.3
2 Islamabad	3.3	3.3	-1.2	-1.2	8.4	8.4	3.9	3.9	-0.7	-0.7	8.4	8.4
3 Lahore	3.9	3.9	1.5	1.5	6.3	6.3	4.6	4.6	2.1	2.1	6.8	6.8
4 Gujranwala	4.6	4.6	1.5	1.5	7.6	7.6	4.7	4.7	1.9	1.9	7.2	7.2
5 Sialkot	5.2	5.2	0.7	0.7	9.5	9.5	5.9	5.9	1.5	1.5	9.5	9.5
6 Faisalabad	4.0	4.0	0.8	0.8	7.0	7.0	4.2	4.2	1.0	1.0	6.8	6.8
7 Multan	4.3	4.3	1.4	1.4	6.8	6.8	4.7	4.7	1.9	1.9	6.8	6.8
8 Sargodha	4.0	4.0	1.8	1.8	5.9	5.9	4.3	4.3	2.3	2.3	5.7	5.7
9 Bahawalpur	5.6	5.6	3.2	3.2	7.9	7.9	6.2	6.2	3.6	3.6	8.4	8.4
10 Karachi	6.6	6.6	4.5	4.5	8.9	8.9	7.0	7.0	5.2	5.2	8.6	8.6
11 Hyderabad	5.0	5.0	0.1	0.1	9.6	9.6	5.4	5.4	0.9	0.9	9.0	9.0
12 Sukkur	2.0	2.0	-0.6	-0.6	4.3	4.3	2.3	2.3	-0.3	-0.3	4.3	4.3
13 Larkana	6.6	6.6	1.3	1.3	11.4	11.4	6.8	6.8	1.4	1.4	11.1	11.1
14 Peshawar	3.4	3.4	0.4	0.4	6.2	6.2	3.6	3.6	0.8	0.8	5.8	5.8
15 Bannu	7.4	7.4	1.5	1.5	13.3	13.3	8.1	8.1	2.0	2.0	13.3	13.3
16 Quetta	1.9	1.9	-1.8	-1.8	5.6	5.6	1.5	1.5	-2.4	-2.4	4.8	4.8
Above Rs 35000												
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
	6.9	6.9	2.4	2.4	9.0	9.0	6.3	6.3	1.8	1.8	9.2	9.2
1 Rawalpindi	5.2	5.2	1.7	1.7	6.9	6.9	4.7	4.7	1.2	1.2	7.3	7.3
2 Islamabad	5.9	5.9	-0.3	-0.3	9.4	9.4	4.6	4.6	-0.8	-0.8	9.0	9.0
3 Lahore	5.9	5.9	2.8	2.8	7.5	7.5	4.5	4.5	1.8	1.8	6.5	6.5
4 Gujranwala	6.0	6.0	2.7	2.7	7.8	7.8	5.2	5.2	2.1	2.1	7.4	7.4
5 Sialkot	7.0	7.0	2.4	2.4	9.3	9.3	5.7	5.7	1.0	1.0	8.9	8.9
6 Faisalabad	5.7	5.7	2.2	2.2	7.4	7.4	4.7	4.7	1.3	1.3	7.0	7.0
7 Multan	6.2	6.2	2.7	2.7	7.7	7.7	4.7	4.7	1.7	1.7	6.6	6.6
8 Sargodha	5.3	5.3	2.9	2.9	6.4	6.4	4.3	4.3	2.0	2.0	5.6	5.6
9 Bahawalpur	7.6	7.6	3.9	3.9	9.6	9.6	6.8	6.8	3.6	3.6	9.2	9.2
10 Karachi	8.5	8.5	5.9	5.9	10.0	10.0	7.3	7.3	5.2	5.2	8.9	8.9
11 Hyderabad	6.6	6.6	2.0	2.0	8.8	8.8	5.3	5.3	0.5	0.5	8.4	8.4
12 Sukkur	3.7	3.7	0.5	0.5	5.2	5.2	2.2	2.2	-0.5	-0.5	3.9	3.9
13 Larkana	8.9	8.9	1.8	1.8	12.2	12.2	7.4	7.4	1.5	1.5	11.2	11.2
14 Peshawar	5.7	5.7	1.4	1.4	7.8	7.8	3.7	3.7	0.7	0.7	5.7	5.7
15 Bannu	9.6	9.6	2.8	2.8	12.9	12.9	8.0	8.0	1.8	1.8	12.3	12.3

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17 Khuzdar	3.4	3.4	-0.8	-0.8	5.5	5.5	1.9	1.9	-1.7	-1.7	4.3	4.3
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**Table A6: City- wise CPI Inflation (YoY) November, 2018**

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Mithi	11.3	8.9	12.8	Rawalpindi	6.3	1.8	9.2
D. I. Khan	10.5	0.3	17.3	Faisalabad	5.7	1.0	8.9
Turbat	8.8	2.9	12.1	Attock	5.7	0.8	9.1
Quetta	8.0	1.8	12.3	Sahiwal	5.5	0.4	8.6
Dadu	7.6	-1.4	14.2	Mianwali	5.5	1.6	7.8
Peshawar	7.4	1.5	11.2	Sukkur	5.3	0.5	8.4
Mirpukhlas	7.3	6.6	7.8	Sialkot	5.2	2.1	7.4
Hyderabad	7.3	5.2	8.9	Bahawalnagar	5.2	-1.3	9.3
Mardan	7.1	3.7	8.9	Nawabshah	4.9	1.4	7.0
Jhelum	6.9	4.4	8.6	Islamabad	4.7	1.2	7.3
Karachi	6.8	3.6	9.2	Sargodha	4.7	1.7	6.6
Abbottabad	6.7	3.3	9.0	Multan	4.7	1.3	7.0
Wazirabad	6.7	1.3	10.6	Lahore	4.6	-0.8	9.0
				Gujranwala	4.5	1.8	6.5
				Bahawalpur	4.3	2.0	5.6
				Jhang	4.2	-1.6	8.0
				D. G. Khan	3.9	1.8	5.3
				Gawadar	3.8	-0.5	6.7
				Mingora	3.8	0.4	5.9
				Bannu	3.7	0.7	5.7
				Muzaffargarh	3.5	-0.3	6.1
				R. Y. Khan	3.2	-0.8	5.9
				D. M. Jamali	2.6	-2.1	6.0
				Vehari	2.6	0.1	4.4
				Loralai	2.3	-3.3	5.9
				Larkana	2.2	-0.5	3.9
				Khuzdar	1.9	-1.7	4.3

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		
	Nov-17	Oct-18	Nov-18	Nov-17	Oct-18	Nov-18
<b><u>Up to Rs. 8000</u></b>						
General	0.2	1.4	-0.2	3.2	3.9	3.5
Food	0.2	1.7	-0.7	1.9	1.3	0.3
Non-food	0.2	1.0	0.5	4.8	7.2	7.4
<b><u>Rs. 8001- 12000</u></b>						
General	0.3	1.5	-0.1	3.3	4.5	4.2
Food	0.2	1.8	-0.6	2.0	1.7	0.9
Non-food	0.3	1.2	0.4	4.7	7.4	7.6
<b><u>Rs. 12001- 18000</u></b>						
General	0.3	1.5	0.0	3.4	4.9	4.6
Food	0.3	1.9	-0.6	2.0	2.1	1.3
Non-food	0.3	1.1	0.4	4.8	7.6	7.8
<b><u>Rs. 18001- 35000</u></b>						
General	0.3	2.6	0.1	3.6	6.6	6.3
Food	0.4	2.0	-0.5	2.0	2.6	1.7
Non-food	0.3	3.1	0.5	4.8	9.9	10.0
<b><u>Above Rs. 35000</u></b>						
General	0.4	3.1	0.2	4.5	8.6	8.4
Food	0.5	1.9	-0.4	3.0	3.4	2.6
Non-food	0.4	3.7	0.5	5.3	11.1	11.2
<b><u>All income groups</u></b>						
General	0.4	2.3	0.1	4.0	6.8	6.5
Food	0.4	1.9	-0.5	2.4	2.7	1.8
Non-food	0.4	2.6	0.5	5.1	9.6	9.8

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

Sr.No.	Items	Unit	Prices		Percentage change
			Nov-18	YoY	MoM
1	Wheat	10Kg.	348.4	3.8	2.5
2	Wheat Flour Bag	10Kg.	394.1	2.2	0.2
3	Rice Basmati Broken	Kg.	77.7	10.0	0.8
4	Rice Irri-6/9	Kg.	54.6	7.2	0.3
5	Bread Plain Med.Size (340-400 Gm.)	Each	43.0	1.2	0.3
6	Beef	Kg.	383.0	11.4	0.9
7	Mutton	Kg.	801.7	10.2	1.0
8	Chicken Live (Farm)	Kg.	187.4	43.8	20.2
9	Milk Fresh	Litr	85.5	3.6	0.0
10	Curd	Kg.	102.3	3.7	0.0
11	Milk Powdered Nido	500G	397.5	4.8	2.6
12	Egg Hen (Farm)	Doz.	120.8	-8.6	8.8
13	Mustard Oil	Kg.	188.0	1.7	0.1
14	Cooking Oil (Tin)	2.5Ltr	490.9	4.6	1.6
15	Veg. Ghee (Tin)	2.5Kg.	480.9	3.9	1.0
16	Veg.Ghee Loose	Kg.	154.1	5.9	1.2
17	Bananas	Doz.	61.6	-0.5	-0.9
18	Masoor Pulse Washed	Kg.	115.9	-4.0	1.0
19	Moong Pulse Washed	Kg.	117.9	0.8	2.3
20	Mash Pulse Washed	Kg.	144.0	-15.0	1.6
21	Gram Pulse Washed	Kg.	120.0	-0.7	0.5
22	Potatoes	Kg.	33.3	-20.9	3.0
23	Onions	Kg.	31.6	-56.9	-11.2
24	Tomatoes	Kg.	39.1	-62.9	-43.8
25	Sugar	Kg.	54.9	2.2	0.2
26	Gur	Kg.	84.9	1.1	-1.6
27	Salt Powdered Loose (Lahori)	Kg.	12.4	12.3	1.8
28	Red Chillies Powder Loose	Kg.	349.2	35.1	1.9
29	Garlic	Kg.	130.9	-19.8	2.8
30	Tea (Yellow Lable 200 Gm.)	200Gm.	207.6	15.0	1.6
31	Cooked Beef Plate	Each	115.3	16.7	0.2
32	Cooked Dal Plate	Each	62.2	6.7	0.4
33	Tea Prepared (Sada)	Cup	22.1	4.1	1.1
34	Cigarettes K-2 (20'S)	20'S	59.1	16.5	2.5
35	Long Cloth (Coarse Latha)	Mtr.	236.8	11.6	0.3
36	Shirting	Mtr.	178.9	5.5	0.1
37	Lawn	Mtr.	288.7	12.9	0.0
38	Georgette (Voil Printed)	Mtr.	132.9	5.7	0.6
39	Sandal Gents Bata	Pair	699.0	0.0	0.0
40	Chappal Spng.Bata (Gents)	Pair	199.0	11.1	0.0
41	Sandal Ladies Bata	Pair	599.0	19.2	0.0
42	Electric Charges 1-50	Unit	2.0	0.0	0.0
43	Gas Charges Upto 3.3719	Mmbtu	145.1	12.7	2.9
44	Kerosene	Litr	123.4	36.5	1.7
45	Firewood	40Kg	633.3	2.3	0.8
46	Energy Savor 14 Watt	Each	171.2	1.1	0.0
47	Washing Soap (200-250 Gm.)	Cake	28.4	9.5	0.0
48	Match Box	Each	2.4	8.6	2.1
49	Petrol	Litr	98.6	28.4	5.0
50	Diesel	Litr	113.6	32.8	5.6
51	L.P.G.( 11 Kg Cylander.)	Each	1392.6	12.1	-9.8
52	Tele. Local Call	Call	4.7	18.0	18.0
53	Bath Soap Lifebouy (Standard)	Cake	40.5	-3.1	-0.3
<b>Maximum</b>			<b>43.8</b>	<b>20.2</b>	
<b>Median</b>			<b>4.8</b>	<b>0.8</b>	
<b>Minimum</b>			<b>-62.9</b>	<b>-43.8</b>	

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

*Inflation Monitor, November 2018*

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

Items and specification	Weights	Index		
		Nov-17	Oct-18	Nov-18
<b>General</b>	<b>100.00</b>	<b>220.42</b>	<b>234.49</b>	<b>234.75</b>
<b>Food &amp; Non-Alcoholic Beverages.</b>	<b>34.83</b>	<b>236.61</b>	<b>240.50</b>	<b>239.03</b>
1 Wheat	0.35	200.97	203.64	206.42
2 Wheat Flour	4.16	211.55	214.19	215.36
3 Wheat Product	0.10	213.19	214.54	215.82
4 Besan	0.15	280.28	267.01	266.48
5 Rice	1.58	182.82	200.65	199.78
6 Cereals	0.16	257.56	264.48	265.77
7 Bakery & Confectionary	1.16	221.90	229.04	229.76
8 Nimco	0.46	256.90	260.78	261.15
9 Meat	2.43	285.83	318.04	322.09
10 Chicken	1.36	154.15	194.00	222.68
11 Fish	0.30	217.74	220.02	228.89
12 Milk Fresh	6.68	277.08	286.97	287.73
13 Milk Product	0.63	268.37	278.92	279.73
14 Milk Powder	0.11	236.83	248.64	251.43
15 Eggs	0.46	273.24	222.28	244.95
16 Mustard Oil	0.10	161.96	164.90	165.01
17 Cooking Oil	1.75	138.58	142.23	143.37
18 Vegetable Ghee	2.07	143.68	148.48	149.98
19 Dry Fruits	0.25	269.66	292.79	297.85
20 Fresh Fruits	1.86	224.34	243.57	225.16
21 Pulse Masoor	0.27	168.46	158.64	159.97
22 Pulse Moong	0.23	222.21	218.49	222.86
23 Pulse Mash (Washed)	0.21	242.09	205.28	212.68
24 Pulse Gram	0.24	269.96	266.59	268.87
25 Gram Whole	0.16	296.37	265.11	265.08
26 Beans	0.03	242.81	246.97	250.39
27 Potatoes	0.45	289.11	215.48	230.55
28 Onion	0.51	478.11	216.58	200.31
29 Tomatoes	0.42	349.90	240.62	135.42
30 Fresh Vegetables	1.75	287.30	291.33	257.83
31 Sugar	1.04	193.86	197.97	197.86
32 Gur	0.02	259.06	262.49	260.99
33 Honey	0.04	338.91	356.59	361.11
34 Sweet Meet	0.25	254.71	273.59	274.99
35 Beverages	1.20	226.48	235.01	234.44
36 Jam, Tomato Ketchup & Pickle	0.25	223.06	235.37	236.33
37 Condiments	0.27	273.73	288.04	289.66
38 Spices	0.54	239.01	269.25	272.35
39 Tea	0.84	283.98	308.83	310.54
<b>Alcoholic Beverages, Tobacco</b>	<b>1.41</b>	<b>305.51</b>	<b>344.03</b>	<b>348.00</b>
40 Cigarettes	1.39	306.09	339.42	343.62
41 Betel Leaves & Nuts	0.02	270.67	623.88	614.21
<b>Clothing &amp; Footwear</b>	<b>7.57</b>	<b>241.01</b>	<b>256.10</b>	<b>259.07</b>
42 Cotton Cloth	1.73	234.28	249.22	250.74
43 Woolen Cloth	0.88	259.17	268.51	277.56
44 Ready Made Garments	0.97	248.53	266.32	267.64
45 Woolen Readymade Garments	0.40	263.43	267.56	280.10
46 Hosiery	0.51	252.67	269.25	272.44
47 Dopatta	0.44	248.38	267.69	271.05
48 Cleaning & Laundering	0.21	273.92	293.09	295.39

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

Items and specification	Weights	Index		
		Nov-17	Oct-18	Nov-18
49 Tailoring	0.88	328.50	351.86	353.67
50 Footware	1.55	167.51	180.14	180.49
<b>Housing,Water,Elect,Gas &amp; Other Fuel</b>	<b>29.41</b>	<b>200.94</b>	<b>219.07</b>	<b>219.24</b>
51 House Rent	21.81	194.05	207.09	207.09
52 Construction Input Item	0.56	257.16	285.53	289.23
53 Construction Wage Rate	0.33	248.82	271.55	276.45
54 Water Supply	0.50	171.58	194.95	194.95
55 Electricity	4.40	238.10	238.10	238.10
56 Gas	1.58	158.08	292.94	292.94
57 Kerosene Oil	0.01	215.98	271.88	278.21
58 Fire Wood Whole	0.23	295.15	299.07	303.78
<b>Furnished H.Hold Equip.&amp; Maint. Etc</b>	<b>4.21</b>	<b>230.52</b>	<b>245.50</b>	<b>247.76</b>
59 Furniture	0.33	223.87	242.25	244.56
60 Household Textile	0.65	233.22	245.96	248.54
61 Household Equipment	0.59	183.57	194.50	196.96
62 Utensils	0.32	236.75	259.94	262.52
63 Plastic Products	0.25	215.02	231.09	233.84
64 Washing Soap & Detergent	0.79	233.40	248.45	252.39
65 Sewing Needle & Dry Cell	0.15	209.80	223.03	223.94
66 Household Servant	1.04	258.89	273.41	274.20
67 Marriage Hall Charges	0.08	249.98	271.76	272.04
<b>Health</b>	<b>2.19</b>	<b>214.79</b>	<b>234.03</b>	<b>235.09</b>
68 Drug Medicine	1.27	186.14	197.59	198.54
69 Medical Equipment	0.01	253.69	263.99	266.60
70 Doctor (MBBS) Clinic Fee	0.59	282.22	318.34	320.01
71 Medical Test	0.32	202.91	222.03	222.39
<b>Transport</b>	<b>7.20</b>	<b>178.51</b>	<b>210.00</b>	<b>213.81</b>
72 Motor Vehicle	0.66	177.84	200.53	203.52
73 Motor Vehicle Accessories	0.24	214.98	224.74	229.64
74 Motor Fuel	3.03	152.90	189.09	196.83
75 Mechanical Service	0.46	233.00	248.46	248.80
76 Motor Vehicle Tax	0.11	210.18	210.18	210.18
77 Transport Services	2.70	193.59	227.93	228.18
<b>Communication</b>	<b>3.22</b>	<b>133.14</b>	<b>143.45</b>	<b>143.57</b>
78 Postal Services	0.07	253.38	272.57	272.63
79 Communication & Apparatus	3.15	130.62	140.74	140.86
<b>Recreation &amp; Culture</b>	<b>2.02</b>	<b>197.14</b>	<b>213.73</b>	<b>214.34</b>
80 Recreation & Culture	0.86	130.03	137.39	137.58
81 Text Books	0.57	287.98	304.61	304.92
82 News Papers	0.19	184.40	235.21	235.21
83 Stationery	0.40	218.82	238.80	241.07
<b>Education</b>	<b>3.94</b>	<b>262.35</b>	<b>288.62</b>	<b>288.62</b>
84 Education	3.94	262.35	288.62	288.62
<b>Restaurants And Hotels</b>	<b>1.23</b>	<b>284.76</b>	<b>297.39</b>	<b>298.18</b>
85 Ready Made Food	1.23	284.76	297.39	298.18
<b>Miscellaneous Goods And Services</b>	<b>2.76</b>	<b>252.27</b>	<b>271.44</b>	<b>272.19</b>
86 Personal Care	1.49	231.98	244.22	245.08
87 Cosmetics	0.39	206.64	227.83	230.19
88 Blades	0.03	200.95	206.96	210.38
89 Personal Equipments	0.84	310.95	341.98	341.68

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

Items and Specifications	Index		
	Nov-17	Oct-18	Nov-18
<b>General</b>	<b>220.20</b>	<b>248.19</b>	<b>249.92</b>
<b>Agriculture Forestry &amp; Fishery</b>	<b>252.96</b>	<b>272.57</b>	<b>271.62</b>
1 Wheat	205.94	207.42	211.76
2 Maize	192.98	214.53	219.23
3 Rice	167.04	182.76	183.58
4 Sorghum/Jowar	216.66	275.88	279.91
5 Millet/Bajra	169.49	244.40	239.29
6 Vegetables	382.44	356.04	255.52
7 Fresh Fruits	215.99	277.92	249.64
8 Dry Fruits	248.97	276.70	275.15
9 Cotton Seeds	254.01	266.98	265.86
10 Other Oil Seeds	194.39	197.75	194.00
11 Edible Roots/ Potatoes	271.08	214.22	232.25
12 Stimulant And Spice Crops	281.17	333.36	331.71
13 Pulses	260.73	231.09	233.92
14 Sugar Crops	268.94	257.62	257.62
15 Fibre Crops	208.95	266.15	284.57
16 Unmanufactured Tobacco	297.10	318.02	322.03
17 Poultry	157.76	203.44	241.45
18 Milk From Bovine Animals	272.70	285.82	285.82
19 Eggs	288.96	233.62	254.37
20 Raw Animal Material/Wool	173.53	177.28	180.75
21 Hides And Fur Skins, Raw	103.77	92.70	92.92
22 Fuel Wood In Logs	282.69	284.65	289.68
23 Fishes Live Fresh Or Chilled	457.89	461.53	462.45
<b>Ores/Minerals, Gas &amp; Elect.</b>	<b>243.05</b>	<b>293.55</b>	<b>293.14</b>
24 Coal Not Agglomerated	155.29	155.29	155.29
25 Natural Gas Liquefied	211.46	317.16	316.26
26 Salt & Pure Sodium Chloride	248.46	271.87	275.23
27 Electrical Energy	288.00	288.00	288.00
<b>Food, Beverages, Tobacco, Textiles</b>	<b>227.21</b>	<b>248.54</b>	<b>249.98</b>
28 Meat Of Animals	306.11	343.65	346.05
29 Vegetables & Fruit Juices	224.22	228.62	228.62
30 Dried Fruits & Nuts	281.80	302.31	306.71
31 Fruit Juices	182.53	188.73	188.81
32 Vegetable Oil Refined	154.34	160.00	161.51
33 Vegetable Ghee	126.25	131.73	132.81
34 Oil Cakes	228.88	246.07	244.02
35 Processed Liquid Milk	286.83	296.92	296.92
36 Milk And Cream In Solid Form	223.74	226.06	232.69
37 Ice Cream	266.02	286.26	286.26
38 Dairy Products N.E.C	264.68	283.94	290.96
39 Wheat Flour	195.25	196.77	196.58
40 Other Cereal Flour	226.05	216.08	220.56
41 Sugar Refined	202.58	207.95	207.53
42 Chocolate	100.00	100.00	100.00
43 Sugar Confectionary	128.44	127.25	127.25
44 Coffee And Tea	253.35	279.59	281.25
45 Spices	201.96	222.23	222.28
46 Other Food Products	294.50	308.13	308.63
47 Mineral Water	207.93	210.16	207.20
48 Beverages	172.85	176.55	176.55
49 Tobacco Products	318.37	393.80	393.80
50 Cotton Yarn	204.94	252.78	256.44
51 Nylon Yarn	143.99	143.99	143.99
52 Blended Yarn	186.96	199.05	195.65
53 Woven Fabrics	316.28	324.76	338.53
54 Cotton Fabrics	211.50	220.63	221.14
55 Other Fabrics	227.16	227.85	227.85

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

Items and Specifications	Index		
	Nov-17	Oct-18	Nov-18
56 Silk And Rayon Fabrics	188.14	188.81	188.81
57 Towels	276.14	305.52	308.50
58 Blankets	257.93	267.72	273.59
59 Bed Sheets	256.87	257.39	268.60
60 Quilts	222.32	222.32	224.63
61 Woolen Carpets	196.43	196.43	196.43
62 Synthetic Carpets	130.95	131.80	131.80
63 Hosiery Products	244.11	254.07	254.53
64 Ready Made Garments	201.37	204.85	213.16
65 Leather With Out Hairs	212.68	225.53	228.93
66 Other Leather N.E.C	207.02	313.42	320.16
67 Footwear's	145.51	168.09	168.09
<b>Other Transportable Goods</b>	<b>176.98</b>	<b>217.85</b>	<b>224.71</b>
68 Timber	231.53	241.03	244.62
69 Printing Paper	166.45	174.76	174.76
70 Hard Board	225.00	291.67	291.67
71 Coke	163.45	163.45	163.45
72 Motor Sprit	128.35	156.81	165.26
73 Diesel Oil	166.05	230.43	247.11
74 Kerosene Oil	141.66	222.78	230.97
75 Furnace Oil	112.15	193.09	198.68
76 Mobil Oil	200.62	209.31	211.03
77 Chemicals	179.89	215.90	215.33
78 Dying Materials	146.55	150.72	150.72
79 Fertilizers	220.00	252.46	257.79
80 Pesticides	307.23	312.32	316.64
81 Insecticides	137.12	144.97	147.06
82 Paints & Varnishes	299.42	354.53	358.49
83 Medicines	176.89	180.22	180.99
84 Soaps & Detergent	191.45	195.41	198.71
85 Auto Tyres	177.07	184.52	184.52
86 Plastic Products	226.00	243.75	244.35
87 Glass Sheets	302.27	304.55	312.41
88 Other Glass Articles	318.10	318.10	318.10
89 Ceramics And Sanitary	232.65	243.24	246.05
90 Bricks Blocks And Tiles	223.21	231.36	233.23
91 Cement	212.69	234.54	239.43
92 Bed Foams	170.33	182.50	182.50
93 Matches	171.36	171.36	171.36
<b>Metal Product Machinery &amp; Equip</b>	<b>177.63</b>	<b>190.04</b>	<b>190.55</b>
94 Pig Iron	128.97	128.97	128.97
95 Steel Bars & Sheets	140.75	174.08	177.11
96 Pipe Fittings	215.66	238.51	238.51
97 Steel Products	176.70	183.86	184.01
98 Engines And Motors	116.98	116.98	116.98
99 Vacuum Pumps	123.69	123.69	123.69
100 Air Conditioners	200.10	208.65	211.33
101 Cultivators	190.66	190.66	190.66
102 Chuff Cutter	153.46	153.46	153.46
103 Tractors	201.75	216.82	226.93
104 Lathe Machines	241.06	268.38	268.38
105 Concrete Mixer	138.83	138.83	138.83
106 Refrige,Wash& Sew Mach, Iron,Fan	216.72	238.78	238.82
107 Electrical Wires	205.92	208.22	208.22
108 Lighting Equipments	170.98	174.04	174.04
109 Radio And Television	140.42	140.42	140.42
110 Motor Vehicles	195.36	221.80	223.94
111 Motor Cycles	126.05	134.21	134.21
112 Bicycles	187.65	194.31	194.31

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

Period	CPI			WPI			SPI *	
	Overall	Food	Non-food	Overall	Food	Non-Food		
2008-09	117.03	123.11	113.37	118.93	119.68	118.45	123.26	
2009-10	128.85	139.05	122.73	135.40	136.85	134.48	139.84	
2010-11	146.45	164.10	135.87	164.17	159.26	167.27	164.02	
2011-12	162.57	182.20	150.80	181.28	181.32	181.26	178.67	
2012-13	174.53	195.18	162.16	194.61	197.21	192.95	189.64	
2013-14	189.58	212.74	175.69	210.48	213.04	208.85	208.66	
2014-15	198.16	220.20	184.95	209.85	226.22	199.47	212.61	
2015-16	203.82	224.78	191.25	207.64	234.69	190.47	216.23	
2016-17	212.29	226.59	233.37	216.02	248.74	195.27	220.10	
2017-18	220.62	232.95	237.59	223.52	253.34	204.61	223.60	
2016	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
	Apr	224.25	237.08	216.56	228.07	254.52	211.28	223.13
	May	225.40	239.36	217.03	230.98	257.57	214.11	224.51
	Jun	226.68	241.37	217.87	234.40	259.86	218.25	228.00
	Jul	228.80	242.74	220.45	240.04	263.23	225.32	229.18
	Aug	229.27	243.25	220.89	241.93	262.42	228.93	228.72
	Sep	229.14	241.65	221.64	238.25	260.81	223.95	228.27
	Oct	234.49	246.27	227.43	248.19	266.83	236.36	235.22
	Nov	234.75	245.08	228.56	249.92	264.02	240.97	238.35

\*: all groups combined

**Table A13: International Commodity Prices/Indices**

	18-Aug	18-Sep	18-Oct	18-Nov
<b>Energy</b>				
Crude Oil (US\$ per barrel) *	71.1	75.4	76.7	62.3
Energy Index (2010 = 100)	90.4	95.6	96.9	81.9
<b>Food</b>				
Rice (\$/MT)	405.0	405.0	409.0	401.0
Wheat (\$/MT)	236.6	212.4	213.5	203.6
Sugar (US cent/ pound)^	0.2	0.3	0.3	0.3
Palm Oil (\$/MT)	614.1	605.2	590.3	539.8
Soybean Oil (\$/MT)	761.8	754.1	752.4	729.3
<b>Non-Food Non-Energy</b>				
Cotton Outlook 'A' Index #^	2.1	2.0	1.9	1.9
Metal Price Index (2010 = 100)	85.6	84.5	86.1	83.8
Copper (\$/MT)	6,051.1	6,050.8	6,219.6	6,195.9
Aluminum (\$/MT)	2,051.5	2,026.5	2,029.9	1,938.5
Iron Ore (\$ cents/dry MT)	67.2	68.4	73.4	73.3
Tin (\$/MT)	19,228.8	18,967.1	19,121.5	19,064.9
Nickel (\$/MT)	13,411.4	12,510.4	12,314.9	11,239.7
Zinc (\$/MT)	2,512.0	2,434.7	2,673.7	2,595.7
Lead (\$/MT)	2,053.5	2,022.9	1,987.6	1,937.1
Uranium (\$/MT)@	26.3	27.5	28.0	29.1
DAP (\$/MT)	409.0	421.6	420.8	410.2
Urea (\$/MT)	260.0	267.5	270.0	305.6

Source: World Bank for all variables / indices except Uranium which is taken from Cameco (World Largest Uranium Producer)

@ Data has been taken from Cameco website as it is not available in World Bank dataset.

^ The measurement unit for sugar and Cotton is US cent/ pound in IMF data source, whereas it is US dollar / kg in World bank dataset. The result of two datasets can be reconciled using conversion formula: 1US \$ / kilogram = 45.359237 U.S. \$/MT = US\$ per metric tonne.

\* Crude Oil (Petroleum), simple average of three spot prices; Dated Brent, West Texas Intermediate, and the Dubai fateh # Middling 1-3/32 inch staple, liverpool Index "A", average of the cheapest Cts/lb five of fourteen styles, CIF Liverpool (Cotton Outlook, Liverpool). From January 1968 to May 1981 strict middling 1-1/16 inch staple. Prior to 1968, Mexican 1-1/16.2/

DAP: Diammonium Phosphate

**Table 14: CPI Data Series Original and Seasonally Adjusted**

Original Series					
Period	FY15	FY16	FY17	FY18	FY19
Jul	198.05	201.76	210.08	216.19	228.80
Aug	198.70	202.25	209.46	216.61	229.27
Sep	199.40	202.04	209.88	217.98	229.14
Oct	199.81	203.03	211.57	219.61	234.49
Nov	198.79	204.22	212.01	220.42	234.75
Dec	196.79	203.06	210.57	220.20	
Jan	196.95	203.49	210.94	220.27	
Feb	195.13	202.98	211.54	219.58	
Mar	195.57	203.28	213.32	220.25	
Apr	198.16	206.43	216.30	224.25	
May	199.66	205.99	216.33	225.40	
Jun	200.89	207.30	215.45	226.68	
Seasonally Adjusted Series					
Jul	197.06	200.74	209.00	215.10	227.69
Aug	197.45	201.07	208.28	215.47	228.14
Sep	198.27	201.00	208.90	217.07	228.28
Oct	198.26	201.47	209.98	217.98	232.78
Nov	197.61	203.05	210.80	219.17	233.48
Dec	197.70	203.92	211.39	220.99	
Jan	197.64	204.24	211.78	221.20	
Feb	197.20	205.13	213.76	221.86	
Mar	197.36	205.18	215.34	222.34	
Apr	197.98	206.23	216.05	223.95	
May	199.94	206.21	216.51	225.50	
Jun	201.27	207.58	215.64	226.77	

**Table 15: CPI Food Data Series Original and Seasonally Adjusted**

<b>Period</b>	<b>Original Series</b>				
	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>
Jul	222.80	224.14	234.69	234.47	242.74
Aug	224.05	224.86	232.48	235.38	243.25
Sep	224.12	223.87	232.80	238.43	241.65
Oct	223.74	224.86	234.68	239.89	246.27
Nov	222.74	227.55	235.17	240.79	245.08
Dec	218.08	223.90	230.69	239.43	
Jan	217.10	222.58	228.45	236.92	
Feb	213.15	221.07	229.19	234.31	
Mar	214.25	222.25	233.47	233.67	
Apr	217.26	227.53	237.50	237.08	
May	221.22	225.84	237.01	239.36	
Jun	223.84	228.95	234.37	241.37	
<b>Seasonally Adjusted Series</b>					
Jul	221.02	222.31	232.76	232.57	240.83
Aug	221.13	222.10	229.72	232.73	240.67
Sep	221.23	221.19	230.22	235.98	239.31
Oct	220.25	221.38	231.14	236.30	242.53
Nov	219.39	224.24	231.78	237.31	241.55
Dec	219.39	225.05	231.68	240.31	
Jan	219.00	224.67	230.79	239.52	
Feb	218.00	226.06	234.33	239.54	
Mar	217.70	225.87	237.29	237.52	
Apr	217.89	228.18	238.12	237.68	
May	222.31	226.84	237.96	240.19	
Jun	224.63	229.48	234.65	241.41	

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

Period	FY15	FY16	FY17	FY18	FY19	Average
Jul	100.50	100.51	100.51	100.51	100.49	100.50
Aug	100.63	100.59	100.57	100.53	100.49	100.56
Sep	100.57	100.52	100.47	100.42	100.38	100.47
Oct	100.78	100.77	100.76	100.75	100.73	100.76
Nov	100.60	100.58	100.57	100.57	100.54	100.57
Dec	99.54	99.58	99.61	99.64		99.59
Jan	99.65	99.63	99.61	99.58		99.62
Feb	98.95	98.95	98.96	98.97		98.96
Mar	99.09	99.08	99.06	99.06		99.07
Apr	100.09	100.10	100.12	100.13		100.11
May	99.86	99.89	99.92	99.96		99.91
Jun	99.81	99.86	99.91	99.96		99.89

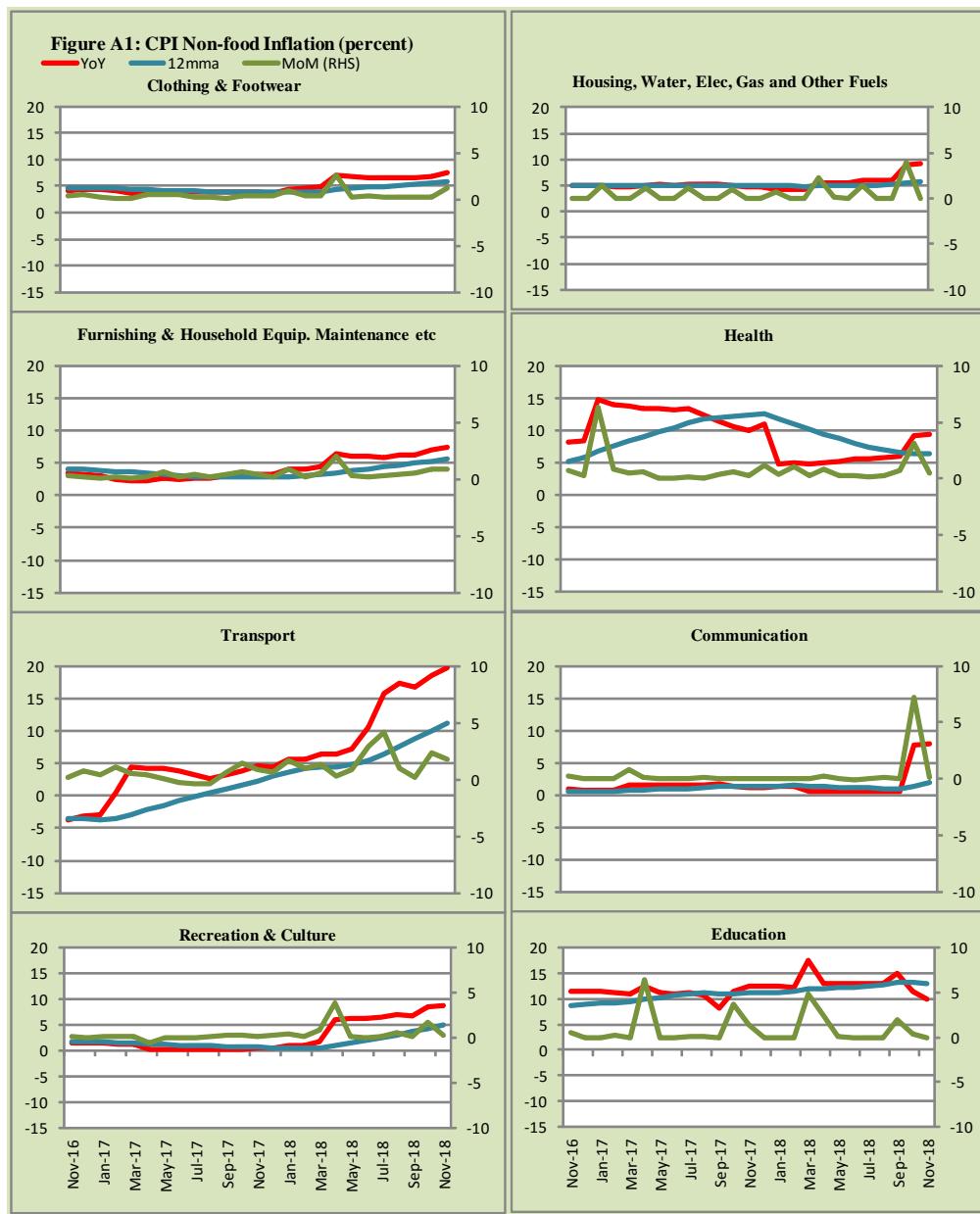
**Table 17: CPI Food Monthly & Average Seasonal Factors**

Period	FY15	FY16	FY17	FY18	FY19	Average
Jul	100.81	100.82	100.83	100.82	100.79	100.81
Aug	101.32	101.25	101.20	101.14	101.07	101.20
Sep	101.31	101.21	101.12	101.04	100.98	101.13
Oct	101.58	101.57	101.53	101.52	101.54	101.55
Nov	101.53	101.48	101.46	101.47	101.46	101.48
Dec	99.40	99.49	99.58	99.63		99.53
Jan	99.13	99.07	98.99	98.92		99.03
Feb	97.77	97.79	97.81	97.82		97.80
Mar	98.42	98.40	98.39	98.38		98.40
Apr	99.71	99.71	99.74	99.75		99.73
May	99.51	99.56	99.60	99.66		99.58
Jun	99.65	99.77	99.88	99.99		99.82

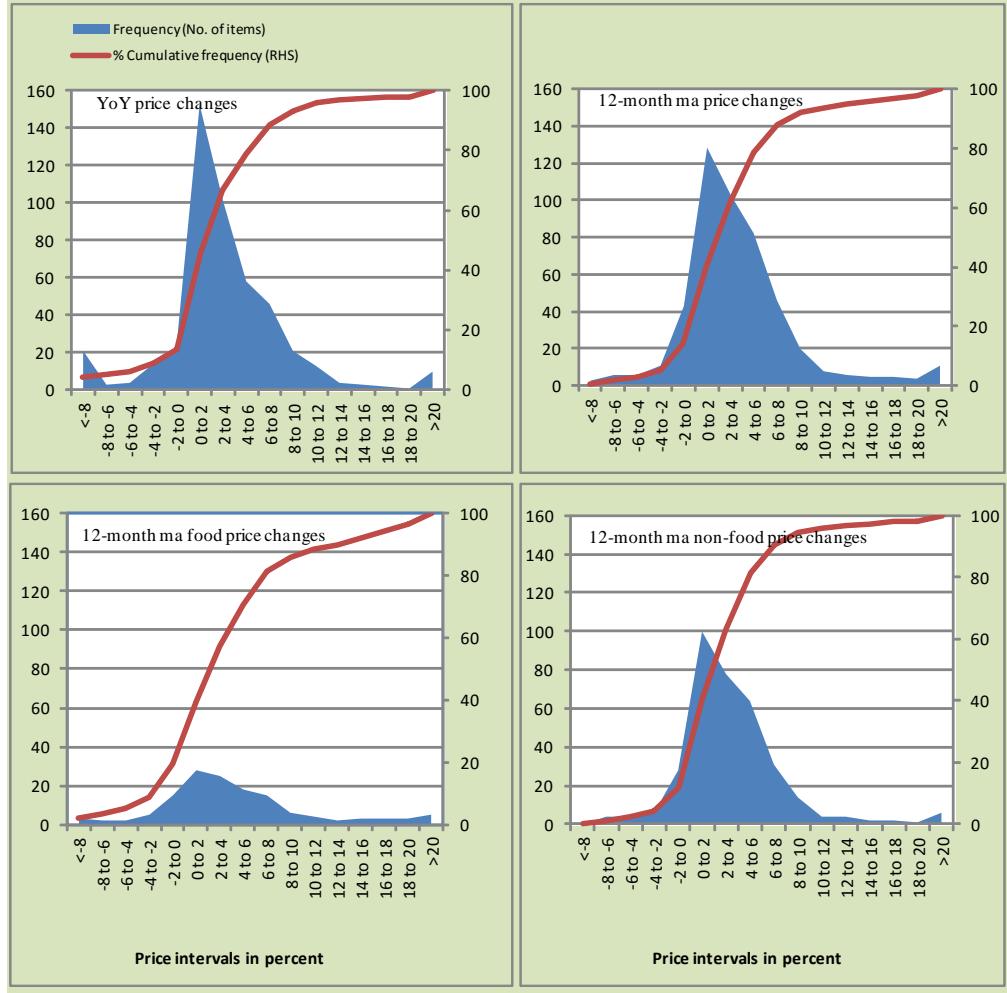
**Table 18: CPI Month-on-Month % Change Original & Seasonally Adjusted**

Period	Original Series				
	FY15	FY16	FY17	FY18	FY19
Jul	1.70	0.43	1.34	0.34	0.94
Aug	0.33	0.24	-0.30	0.19	0.21
Sep	0.35	-0.10	0.20	0.63	-0.06
Oct	0.21	0.49	0.81	0.75	2.33
Nov	-0.51	0.59	0.21	0.37	0.11
Dec	-1.01	-0.57	-0.68	-0.10	
Jan	0.08	0.21	0.18	0.03	
Feb	-0.92	-0.25	0.28	-0.31	
Mar	0.23	0.15	0.84	0.31	
Apr	1.32	1.55	1.40	1.82	
May	0.76	-0.21	0.01	0.51	
Jun	0.62	0.64	-0.41	0.57	
Seasonally Adjusted Series					
Jul	0.94	-0.26	0.68	-0.25	0.40
Aug	0.20	0.16	-0.35	0.17	0.20
Sep	0.41	-0.03	0.30	0.74	0.06
Oct	-0.01	0.23	0.52	0.42	1.97
Nov	-0.33	0.78	0.39	0.55	0.30
Dec	0.04	0.43	0.28	0.83	
Jan	-0.03	0.16	0.18	0.10	
Feb	-0.22	0.43	0.94	0.30	
Mar	0.08	0.02	0.74	0.21	
Apr	0.32	0.51	0.33	0.73	
May	0.99	-0.01	0.21	0.69	
Jun	0.66	0.67	-0.40	0.57	

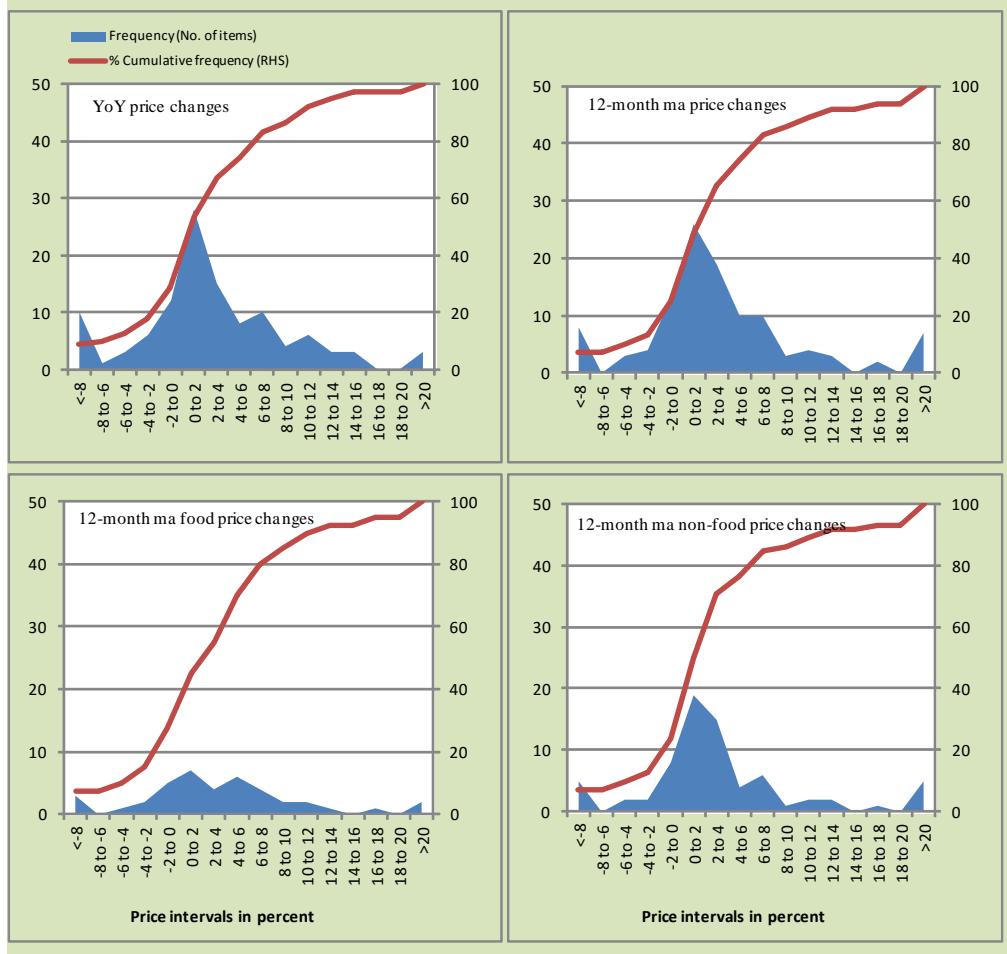
<b>Table 19: CPI Food Month-on-Month % Change Original &amp; Seasonally Adjusted</b>					
	<b>Original Series</b>				
<b>Period</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>
Jul	2.68	0.13	2.50	0.04	0.57
Aug	0.56	0.32	-0.94	0.39	0.21
Sep	0.03	-0.44	0.14	1.29	-0.66
Oct	-0.17	0.44	0.81	0.61	1.91
Nov	-0.45	1.20	0.21	0.37	-0.48
Dec	-2.09	-1.61	-1.90	-0.56	
Jan	-0.45	-0.59	-0.97	-1.05	
Feb	-1.82	-0.68	0.32	-1.11	
Mar	0.52	0.54	1.87	-0.27	
Apr	1.41	2.38	1.73	1.46	
May	1.82	-0.74	-0.21	0.96	
Jun	1.18	1.38	-1.11	0.84	
<b>Seasonally Adjusted Series</b>					
Jul	1.35	-1.03	1.43	-0.89	-0.24
Aug	0.05	-0.10	-1.31	0.07	-0.07
Sep	0.05	-0.41	0.21	1.40	-0.56
Oct	-0.44	0.09	0.40	0.13	1.35
Nov	-0.39	1.29	0.28	0.43	-0.41
Dec	0.00	0.36	-0.04	1.27	
Jan	-0.18	-0.17	-0.38	-0.33	
Feb	-0.45	0.62	1.53	0.01	
Mar	-0.14	-0.08	1.26	-0.84	
Apr	0.09	1.02	0.35	0.07	
May	2.03	-0.59	-0.07	1.05	
Jun	1.04	1.16	-1.39	0.51	



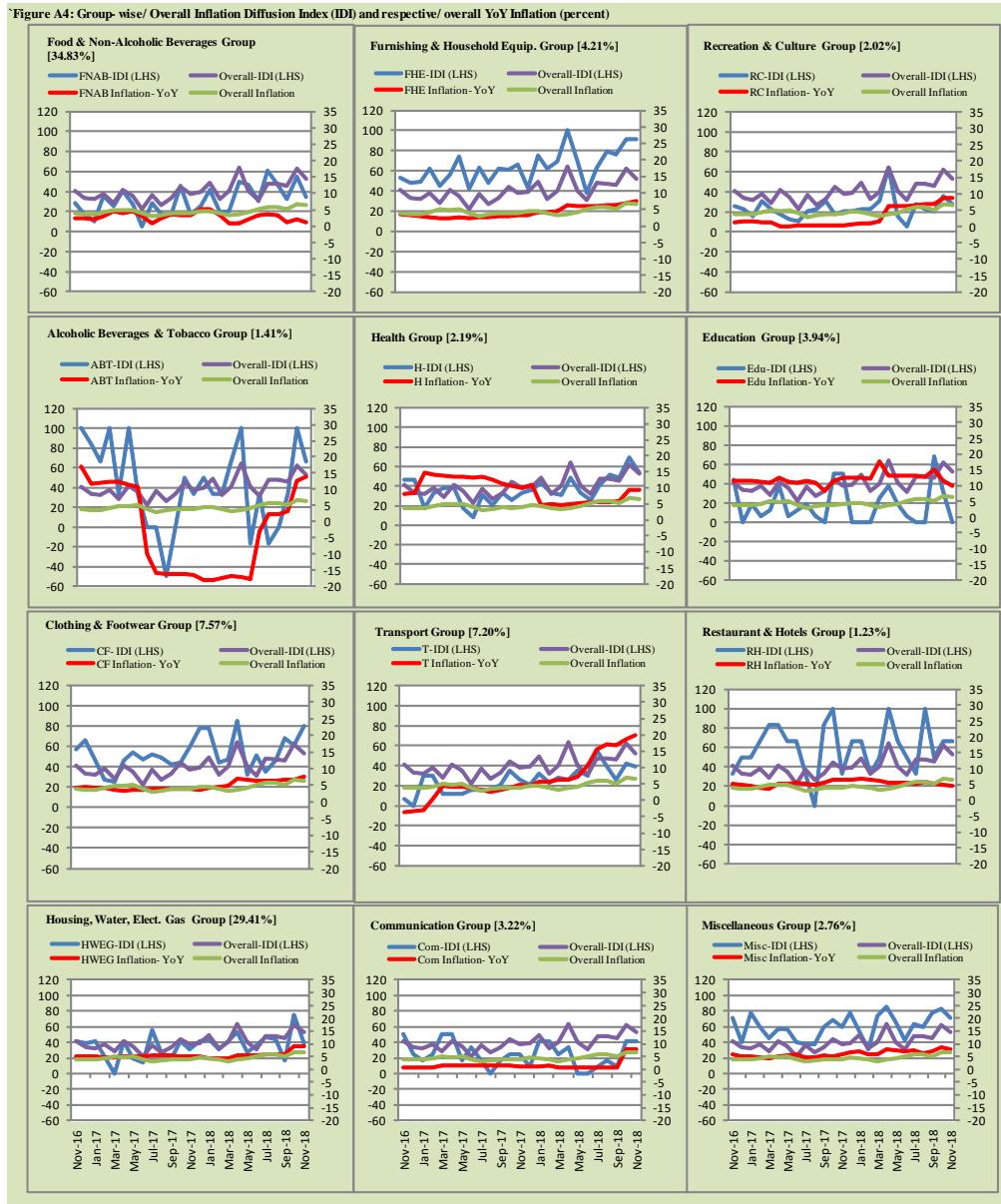
**Figure A2: Frequency Distribution of Price Changes of CPI Items, November 2018**



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



## Inflation Monitor, November 2018



## **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:
- 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.
  - 20% trimmed-mean inflation; it is computed through the following steps:
    - 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.
    - 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).
    - The weighted mean of the changes in price indices of the rest of the items is core inflation.
  - 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

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

### **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.