

Inflation Monitor

October 2018



State Bank of Pakistan

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Review

Inflation in Brief

1. Headline CPI inflation (2007-08=100) is recorded at level of 6.8 percent on year-on-year basis in October 2018 as compared to 5.1 percent in the previous month and 3.8 percent during corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at level of 2.3 percent in October 2018 as compared to -0.1 percent in the previous month and 0.7 percent during corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 1.99 percent in October 2018 compared to 0.05 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis is recorded at 6.7 percent in October 2018 as compared to 5.8 percent in the previous month and 4.0 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is recorded at 0.8 percent in October 2018 as compared to 0.1 percent in the previous month and 0.6 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 8.2 percent in October 2018 as compared to 8.0 percent 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 1.1 percent in October 2018 as compared to 0.4 percent in the previous month. Core NFNE inflation was 0.9 percent in the corresponding month of last year.
7. WPI inflation on year-on-year basis recorded at 13.1 percent in October 2018 as compared to 9.2 percent in the previous month and 2.3 percent during the corresponding month of last year.

8. WPI inflation on month-on-month basis recorded at 4.2 percent in October 2018 as compared to -1.5 percent in the previous month. It was 0.6 percent in the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 4.5 percent in October 2018 as compared to 2.2 percent in the previous month. It was 2.3 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at 3.0 percent in October 2018 as compared to -0.2 percent in the previous month. It was 0.8 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 October 2018 are described below:

11. Core RSC inflation on year-on-year basis is recorded at 8.7 percent in October 2018 compared to 7.0 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 2.4 percent in October 2018 compared to 0.3 percent in the previous month and 0.8 percent during the corresponding month of last year.

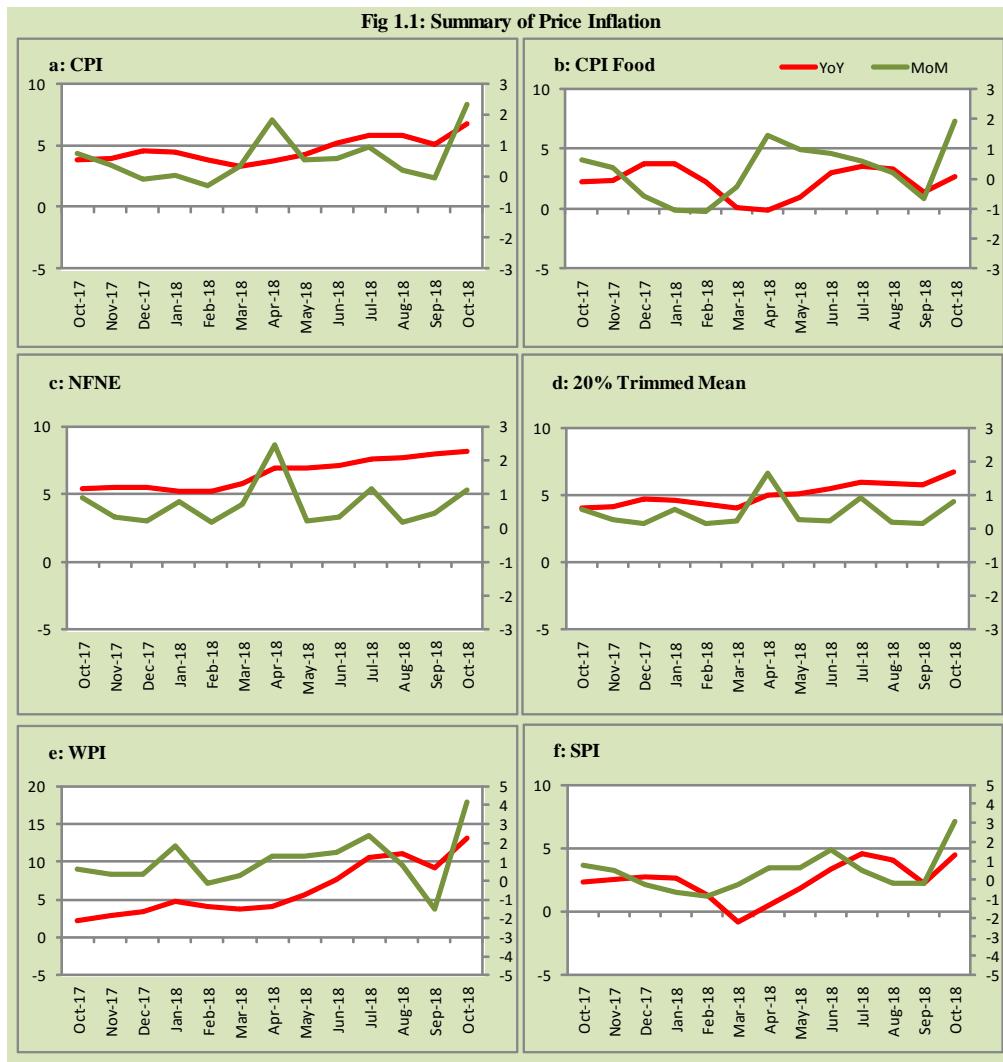
Monthly CPI, WPI and SPI data is summarized in the following table.

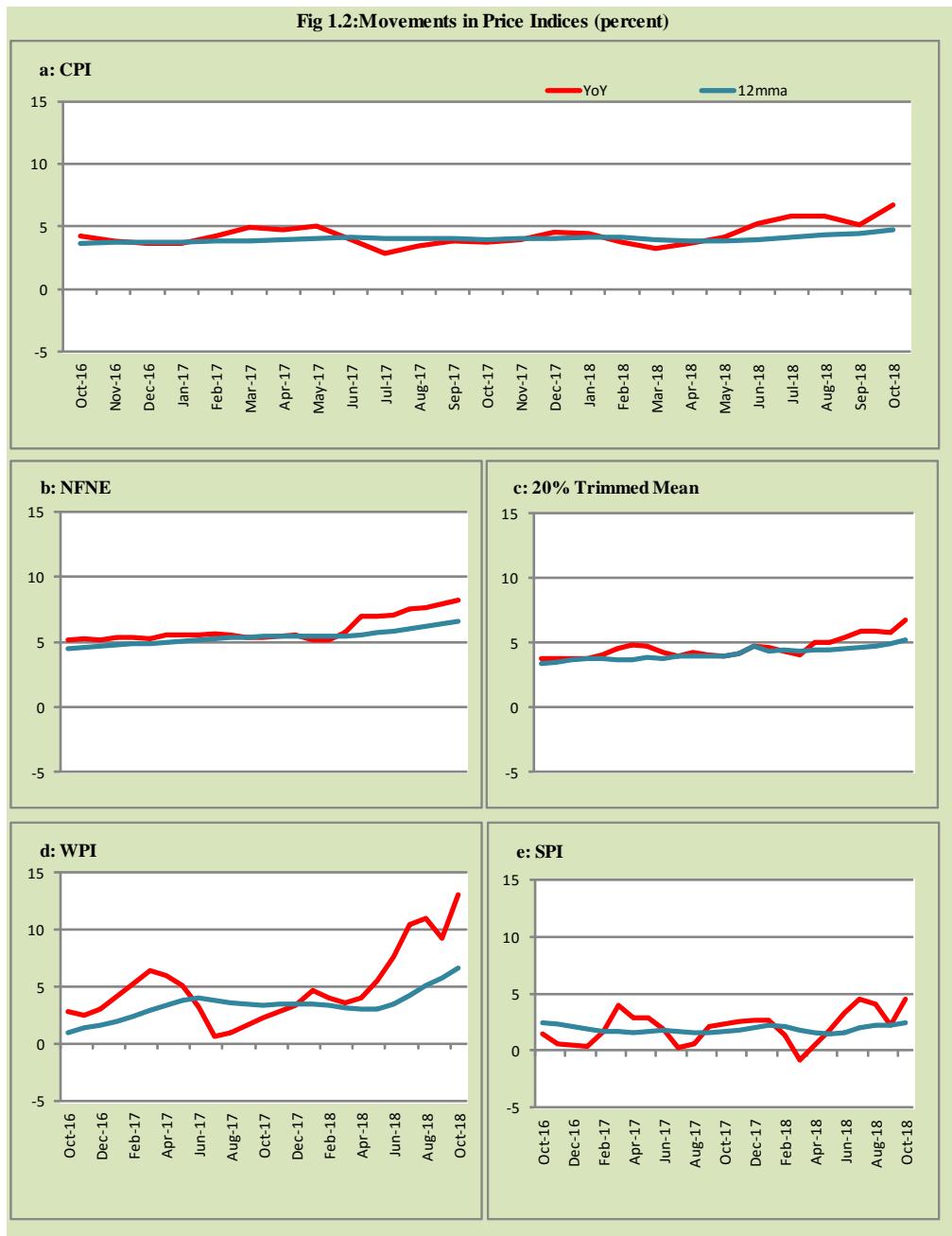
Period	CPI Inflation						Core Inflation						WPI Inflation	SPI*** Inflation
	General		Food		Non-food		NFNE*		Trimmed		RSC**			
	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM
Oct-17	3.8	0.7	2.2	0.6	4.9	0.8	5.3	0.9	4.0	0.6	4.3	0.8	2.3	0.6
Nov-17	4.0	0.4	2.4	0.4	5.1	0.4	5.4	0.3	4.2	0.3	4.3	0.2	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

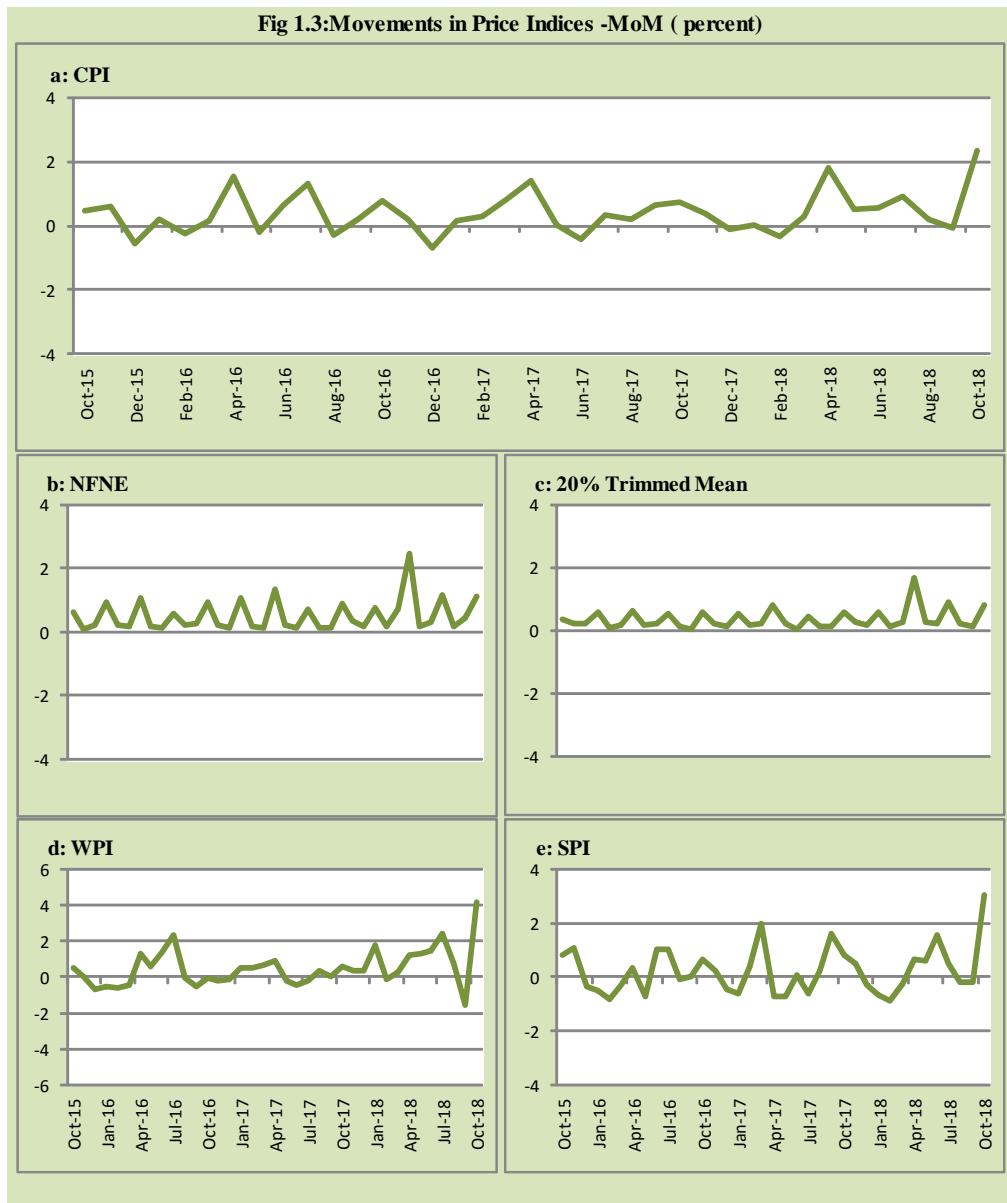
* NFNE is Non-food non-energy

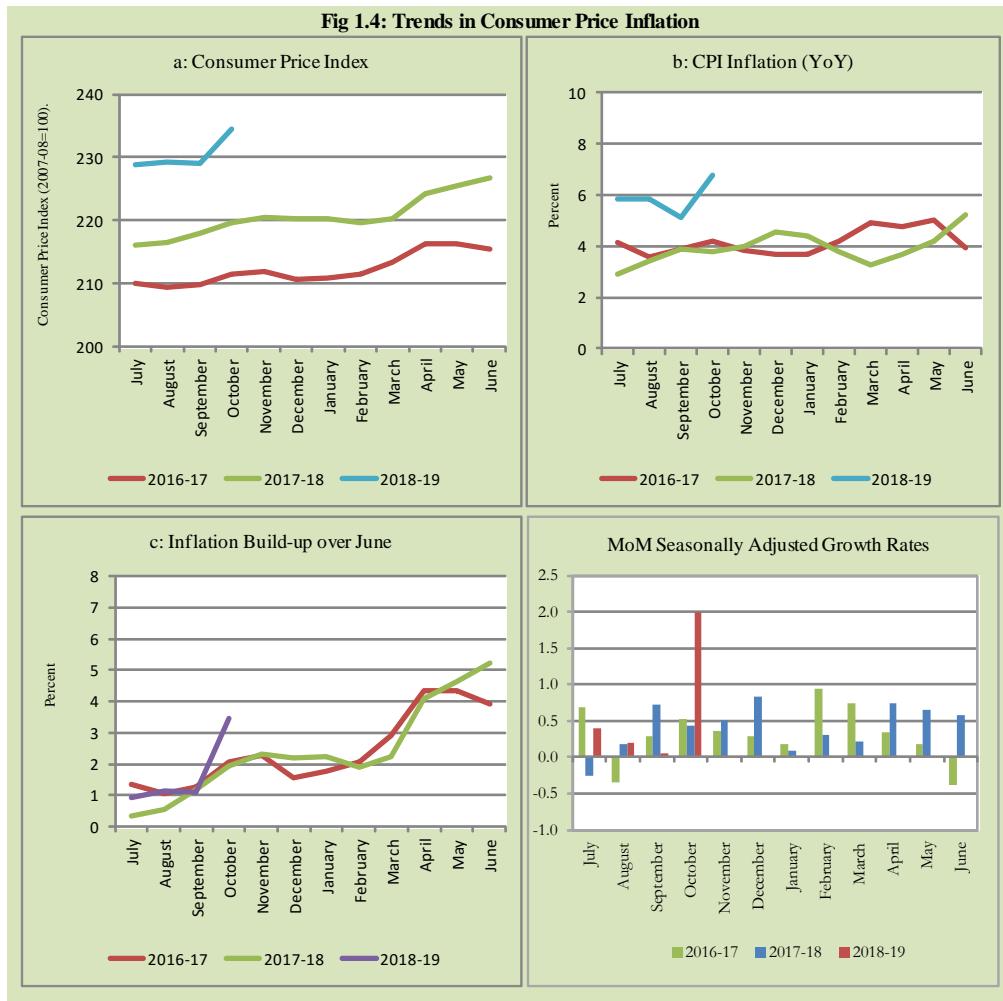
** Relatively Stable Component of CPI

*** SPI for all income groups combined









2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan showed mixed trend during October 2018. Among these five cities, the lowest inflation was observed in Islamabad at 5.2 percent while the highest inflation was observed in Quetta at 9.2 percent (Table A6 of annexure-A).

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

	Oct-17		Sep-18		Oct-18	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	0.7	3.8	-0.1	5.1	2.3	6.8
Islamabad	1.6	4.8	0.2	4.9	1.9	5.2
Karachi	0.1	2.5	-0.7	3.8	3.0	6.8
Lahore	1.2	5.3	-0.3	4.1	2.5	5.5
Peshawar	1.6	3.6	-0.1	6.6	2.8	7.8
Quetta	0.6	3.1	-0.3	7.1	2.6	9.2

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 October 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 October 2018 (Table A7 of annexure-A).

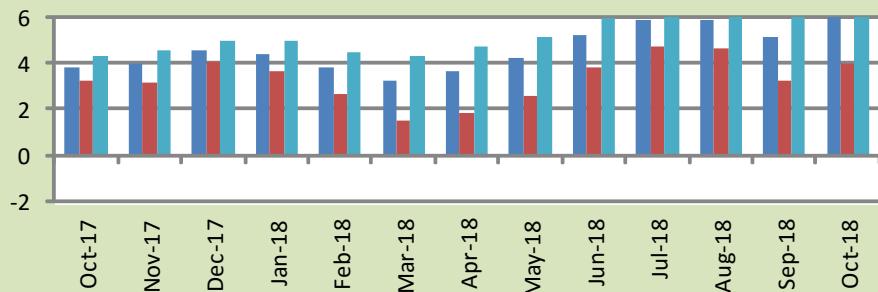
Table 3.1 Income Group- wise Inflation (YoY) (percent)

Income Groups	General			Food			Non-food		
	Oct-17	Sep-18	Oct-18	Oct-17	Sep-18	Oct-18	Oct-17	Sep-18	Oct-18
All Groups Combined	3.8	5.1	6.8	2.2	1.3	2.7	4.9	7.7	9.6
Up to Rs. 8,000	3.2	3.2	3.9	1.9	0.3	1.3	4.8	6.9	7.2
Rs. 8,001- 12,000	3.3	3.7	4.5	2.0	0.6	1.7	4.7	6.9	7.4
Rs. 12,001- 18,000	3.3	4.1	4.9	1.9	0.9	2.1	4.7	7.1	7.6
Rs. 18,001- 35,000	3.4	4.7	6.6	1.9	1.2	2.6	4.7	7.6	9.9
Above Rs. 35,000	4.3	6.1	8.6	2.7	2.0	3.4	5.1	8.1	11.1

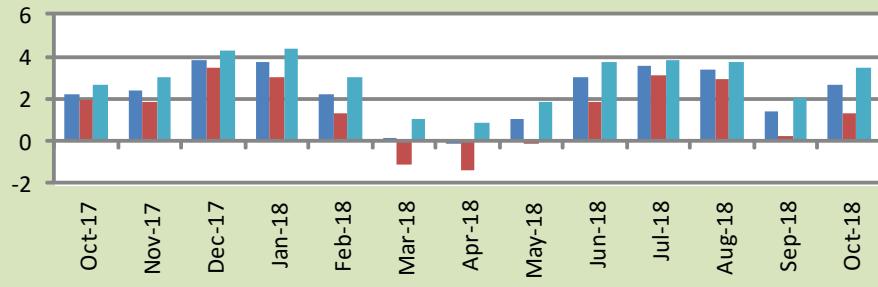
Fig 3.1: Income Group- wise Inflation

a: CPI Overall Inflation (YoY)

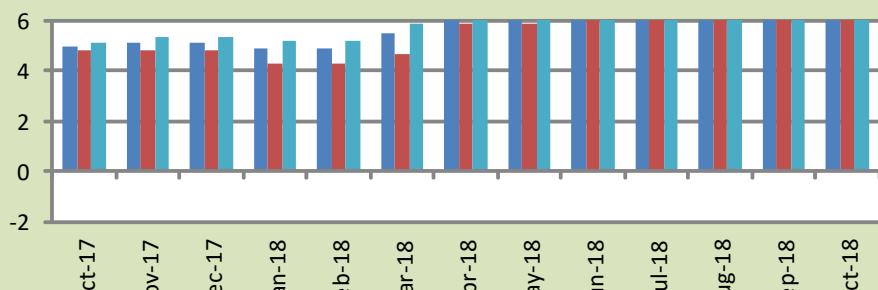
■ All Groups combined ■ Upto Rs. 8,000 ■ Above Rs. 35,000



b: CPI Food Inflation (YoY)



c: CPI Non-Food Inflation (YoY)



4. Weighted Contribution

The weighted contribution of food group in the overall inflation increased to 16.06 percent during October 2018 from 10.81 percent in previous month. It was 24.31 percent in October 2017.

The weighted contribution of non-food group increased to 83.96 percent in October 2018 from 89.19 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
Oct-17	24.31	8.25	34.17	5.96	13.05	14.27
Nov-17	25.04	7.95	32.53	6.73	13.57	14.18
Dec-17	34.01	6.68	28.47	5.73	11.85	13.26
Jan-18	34.02	8.17	25.57	7.58	12.23	12.43
Feb-18	23.85	10.07	29.89	8.71	13.92	13.56
Mar-18	1.07	12.39	35.10	11.73	23.44	16.27
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

5. Inflation Diffusion Index

Table 5.1 Inflation Diffusion Index - based on MoM change

	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18
General	44.6	37.7	39.2	48.9	32.5	40.2	63.8	40.6	31.5	47.8	47.7	45.9	62.4
Food & Non-Alcoholic Beverages	46.1	17.1	25.0	42.1	19.3	20.4	50.0	46.3	30.1	60.9	46.5	32.2	54.3
Alcoholic Beverages & Tobacco	50.0	33.3	50.0	33.3	33.3	66.7	100.0	-16.7	33.3	-16.7	0.0	33.3	100.0
Clothing & Footwear	44.1	59.3	78.0	78.0	44.1	47.5	84.7	32.2	50.8	35.6	45.8	67.8	61.0
Housing, Water, Elect, Gas & other Fuels	41.7	30.6	41.7	44.4	30.6	41.7	52.8	27.8	36.1	47.2	44.4	16.7	75.0
Furnishing & Household Equip. Maintenance etc	60.9	66.7	43.5	75.4	62.3	69.6	100.0	69.6	37.7	63.8	79.7	76.8	91.3
Health	25.6	33.3	35.9	43.6	33.3	30.8	48.7	33.3	25.6	41.0	51.3	48.7	69.2
Transport	34.9	25.6	20.9	32.6	23.3	27.9	25.6	34.9	30.2	55.8	39.5	25.6	41.9
Communication	25.0	25.0	8.3	41.7	41.7	25.0	33.3	0.0	0.0	8.3	16.7	8.3	41.7
Recreation & Culture	17.9	20.5	20.5	23.1	23.1	30.8	64.1	15.4	5.1	28.2	23.1	20.5	35.9
Education	50.0	50.0	0.0	0.0	0.0	25.0	37.5	18.8	6.3	0.0	0.0	68.8	31.3
Restaurant & Hotels	100.0	33.3	66.7	66.7	33.3	50.0	100.0	66.7	50.0	33.3	100.0	50.0	66.7
Miscellaneous	68.6	60.0	77.1	54.3	31.4	74.3	85.7	65.7	42.9	62.9	60.0	77.1	82.9
NFNE	43.2	45.0	43.2	51.5	36.7	46.2	69.2	39.3	31.4	45.0	48.8	52.7	66.9

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	Oct-17		Sep-18		Oct-18	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-2.40	1.51	2.93	0.77	2.99	1.56
2	Wheat Flour Bag	10 Kg	-1.98	1.45	4.34	0.37	3.87	1.00
3	Rice Basmati Sup. Qlty.	Kg	13.06	0.57	12.01	0.39	12.51	1.02
4	Pulse Masoor (Washed)	Kg.	-18.59	0.08	-9.15	-0.19	-8.17	1.16
5	Pulse Moong (Washed)	Kg.	-18.02	-2.04	-8.19	-0.18	-5.80	0.52
6	Pulse Mash (Washed)	Kg.	-26.82	-5.11	-22.86	0.69	-19.66	-1.18
7	Pulse Gram	Kg.	-21.58	0.06	-3.69	2.87	-3.28	0.49
8	Vegetable Ghee (Loose)	Kg.	3.76	0.30	4.05	0.17	4.74	0.97
9	Sugar Refined	Kg.	-21.17	-1.11	-1.27	-1.04	0.09	0.25
10	Milk Fresh (Unboiled)	Ltr	3.95	0.38	4.00	0.00	3.61	0.00
11	Tapal Danedar Tea 200 Gm	Pkt	10.42	0.89	11.54	0.59	11.31	0.68
12	Beef With Bone Av.Qlty.	Kg	6.68	0.38	10.00	0.14	11.14	1.42
13	Mutton Av.Qlty.	Kg	9.05	0.38	12.34	0.22	12.75	0.74
14	Chicken Farm Broiler (Live)	Kg	-16.68	0.38	-4.77	-6.15	28.31	35.25
15	Eggs Farm	Doz	6.72	2.03	-5.40	-2.81	6.08	14.41
16	Potatoes	Kg	12.16	2.25	-19.58	-1.32	-21.25	0.13
17	Onion	Kg	178.60	1.90	-53.05	-10.47	-55.97	-4.43
18	Tomatoes	Kg	70.98	31.42	-9.83	-12.03	-28.75	3.85
19	Ginger	Kg	25.38	2.39	12.50	3.82	12.67	2.55
20	Garlic	Kg	-39.01	-6.29	-32.46	-2.08	-27.92	0.02

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

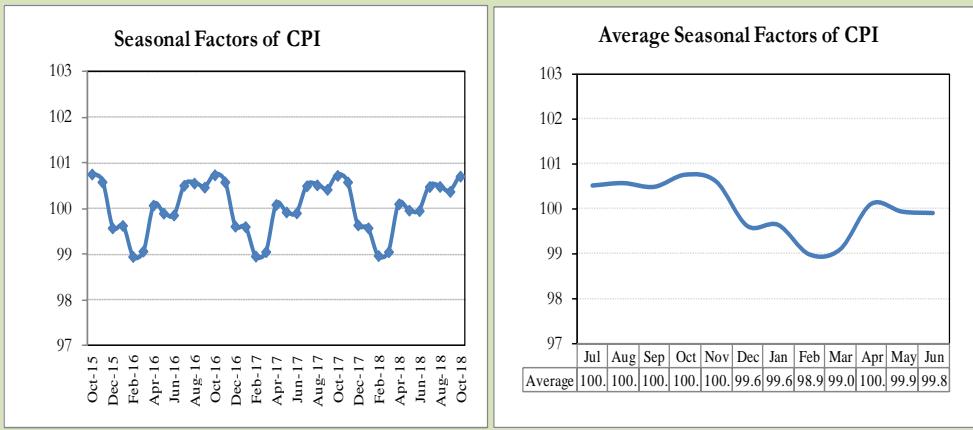
8. Seasonal Adjustment in CPI

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

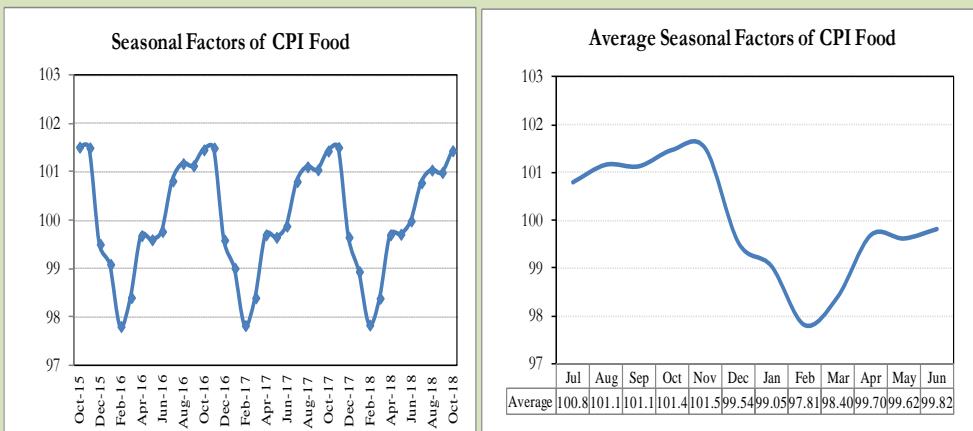
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the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

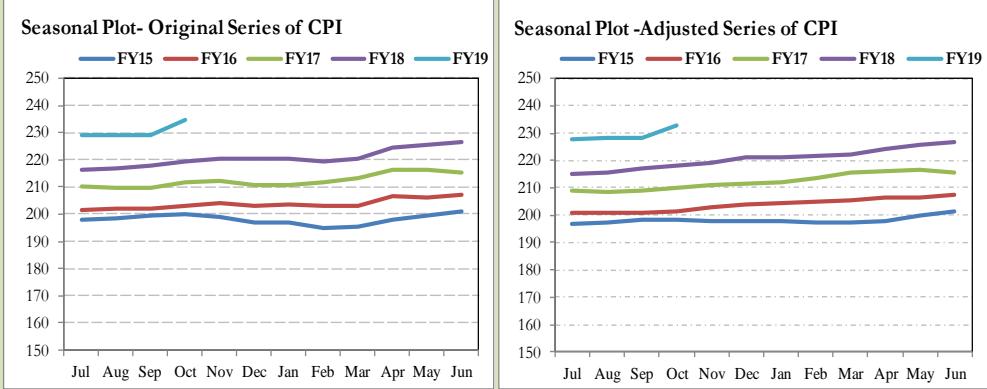
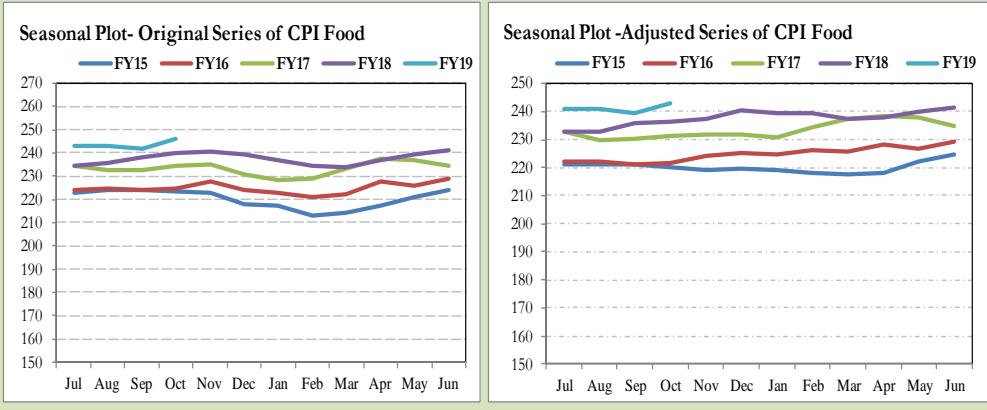


Fig. 8.4 Seasonal Plots of CPI (Food)



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Seasonally adjusted CPI for October 2018 stood at 232.83 against 234.49 in original series showing decrease of 1.66 on account of adjustment of upward seasonality in October 2018.

Seasonally adjusted CPI food group for October 2018 stood at 242.77 against 246.27 in original series showing decrease of 3.50 on account of adjustment of upward seasonality in October 2018.

Month-on-month change of seasonally adjusted CPI series stood at 1.99% reflecting an increase during October 2018 over previous month and an increase of 2.33% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at 1.46% reflecting an increase during October 2018 over previous month and an increase of 1.91% in original series.

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

The most recent annual rate of inflation is usually indicated by annualizing the seasonally adjusted month-on-month rate. Annualized rate of CPI inflation in October 2018 (corresponding to the seasonally adjusted month-on-month rate) is 26.74 percent.

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

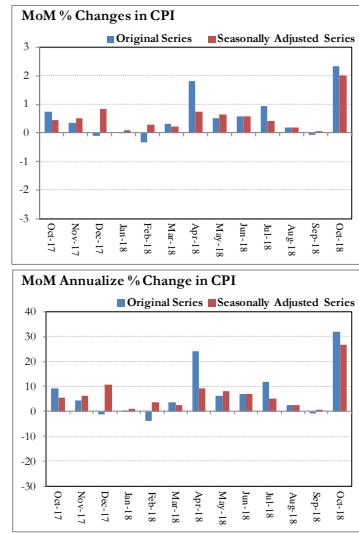
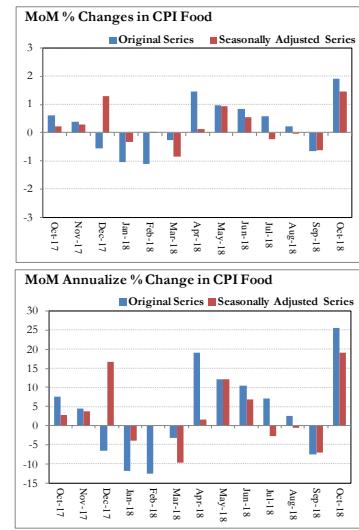


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



Annexure A

Table A1: CPI Inflation by Groups (percent)

	Weight	MoM change			YoY change		
		Oct-17	Sep-18	Oct-18	Oct-17	Sep-18	Oct-18
I. Food Group	37.5	0.6	-0.7	1.9	2.2	1.3	2.7
Food & Non-Alcoholic Beverages	34.8	0.6	-0.8	1.6	3.2	1.1	2.0
Alcoholic Beverages & Tobacco	1.4	-0.3	0.3	9.4	-16.2	3.2	12.7
Restaurant & Hotels	1.2	1.9	0.3	0.5	6.6	5.3	4.8
II. Non-Food Group	62.5	0.8	0.3	2.6	4.9	7.7	9.6
Clothing & Footwear	7.6	0.3	0.3	0.3	3.8	6.6	6.7
Housing, Water, Elect, Gas &c.	29.4	1.0	0.0	3.9	4.9	6.0	9.0
Furnishing & Household Equip.	4.2	0.6	0.5	0.9	3.1	6.2	7.0
Health	2.2	0.6	0.7	3.2	10.6	6.0	9.2
Transport	7.2	1.4	0.2	2.3	3.9	16.8	18.6
Communication	3.2	0.1	0.0	7.2	1.4	0.6	7.8
Recreation & Culture	2.0	0.3	0.1	1.7	0.3	6.8	8.6
Education	3.9	3.7	2.0	0.4	11.5	15.1	11.5
Miscellaneous	2.8	0.4	1.1	1.5	5.2	6.9	8.7
Headline	100.0	0.7	-0.1	2.3	3.8	5.1	6.8

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

Groups	% changes Oct-18	Total number of items Oct-17 Oct-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)	
			Oct-17	Oct-18	Oct-17	Oct-18	Oct-17	Oct-18	Oct-17	Oct-18
I. Food Group	2.7	130 130	40	24	43	48	32	29	15	29
Food & Non-Alcoholic Beverages	2.0	118 118	37	24	40	45	26	26	15	23
Alcoholic Beverages & Tobacco	12.7	6 6	3	0	2	0	1	2	0	4
Restaurant & Hotels	4.8	6 6	0	0	1	3	5	1	0	2
II. Non-Food Group	9.6	348 348	80	26	170	88	82	137	16	97
Clothing & Footwear	6.7	59 59	8	3	33	17	18	28	0	11
Housing, Water, Elect, Gas & other Fuels	9.0	36 36	14	6	6	3	15	12	1	15
Furnishing & Household Equip. Maintenance etc	7.0	69 69	4	0	51	12	14	43	0	14
Health	9.2	39 39	8	1	22	21	6	7	3	10
Transport	18.6	43 43	24	9	15	6	2	9	2	19
Communication	7.8	12 12	4	1	3	7	3	1	2	3
Recreation & Culture	8.6	39 39	15	4	18	12	5	12	1	11
Education	11.5	16 16	1	0	3	2	7	4	5	10
Miscellaneous	8.7	35 35	2	2	19	8	12	21	2	4
Overall	6.8	478 478	120	50	213	136	114	166	31	126

Note: Prices of 9 seasonal items were not reported during the month.

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

Top 15 Contributors		Weights	YoY Change		Weighted Contribution
Items/ Contributors			Oct-17	Oct-18	
Ranked by Weighted Contribution					
1	House Rent	21.81	6.49	6.72	19.12
2	Gas	1.58	0.00	85.31	14.28
3	Motor Fuel	3.03	9.69	26.41	8.04
4	Education	3.94	11.46	11.54	7.92
5	Transport Services	2.70	0.16	17.74	6.24
6	Meat	2.43	7.49	11.70	5.44
7	Milk Fresh	6.68	3.99	3.58	4.46
8	Chicken	1.36	-16.68	28.31	3.91
9	Cigarettes	1.39	-16.46	10.89	3.11
10	Communication & Apparatus	3.15	1.32	7.76	2.15
11	Personal Equipments	0.84	5.36	12.38	2.14
12	Rice	1.58	13.80	9.73	1.89
13	Wheat Flour	4.16	-1.81	3.26	1.89
14	Cotton Cloth	1.73	3.59	6.76	1.83
15	Tailoring	0.88	7.10	8.08	1.56
Total		57.28			83.98
Bottom 15 Contributors					
1	Onion	0.51	178.60	-55.97	-9.42
2	Tomatoes	0.42	70.98	-28.75	-2.72
3	Potatoes	0.45	12.16	-21.25	-1.74
4	Pulse Mash (Washed)	0.21	-26.82	-19.66	-0.71
5	Gram Whole	0.16	-2.66	-10.75	-0.35
6	Pulse Masoor	0.27	-18.54	-7.95	-0.25
7	Pulse Moong	0.23	-18.02	-5.79	-0.21
8	Pulse Gram	0.24	-21.58	-3.28	-0.14
9	Besan	0.15	-14.28	-4.86	-0.14
10	Gur	0.02	-9.71	-0.25	0.00
11	Motor Vehicle Tax	0.11	0.00	0.00	0.00
12	Electricity	4.40	0.00	0.00	0.00
13	Beans	0.03	5.10	1.16	0.01
14	Medical Equipments	0.01	3.38	4.08	0.01
15	Wheat Product	0.10	-1.92	0.67	0.01
Total		7.30			-15.66

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

Top 15 Contributors Items/ Contributors	Weights	MoM Change		Weighted Contribution
		Sep-18	Oct-18	
Ranked by Weighted Contribution				
1 Gas	1.58	0.00	85.31	39.72
2 Chicken	1.36	-6.14	35.25	12.85
3 Cigarettes	1.39	0.41	9.67	7.78
4 Communication & Apparatus	3.15	0.01	7.54	5.82
5 House Rent	21.81	0.00	0.53	4.44
6 Fresh Vegetables	1.75	0.19	3.70	3.41
7 Motor Fuel	3.03	-0.77	3.23	3.34
8 Eggs	0.46	-2.81	14.41	2.38
9 Transport Services	2.70	1.08	2.04	2.30
10 Meat	2.43	0.17	1.18	1.68
11 Drug Medicine	1.27	0.35	3.32	1.50
12 Personal Equipments	0.84	2.00	2.62	1.38
13 Wheat Flour	4.16	0.20	0.77	1.28
14 News Papers	0.19	0.00	15.90	1.17
15 Doctor (Mbbs) Clinic Fee	0.59	1.14	3.39	1.15
Total	46.72			90.20
Bottom 15 Contributors				
1 Onion	0.51	-10.47	-4.43	-0.96
2 Milk Fresh	6.68	0.04	-0.06	-0.21
3 Fish	0.30	-2.54	-1.38	-0.17
4 Pulse Mash (Washed)	0.21	0.69	-1.18	-0.10
5 Bakery & Confectionary	1.16	0.23	-0.18	-0.09
6 Fresh Fruits	1.86	-6.09	-0.09	-0.07
7 Nimco	0.46	0.30	-0.32	-0.07
8 Gram Whole	0.16	-0.67	-0.20	-0.02
9 Kerosene Oil	0.01	-0.57	-0.22	0.00
10 Motor Vehicle Tax	0.11	0.00	0.00	0.00
11 Electricity	4.40	0.00	0.00	0.00
12 Fire Wood Whole	0.23	0.12	0.00	0.00
13 Medical Equipments	0.01	0.67	0.11	0.00
14 Cereals	0.16	-0.05	0.01	0.00
15 Woolen Readymade Garments	0.40	0.35	0.01	0.00
Total	16.64			-1.68

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

Items/ Contributors	Weights	YoY Change		Weighted Contribution
		Oct-17	Oct-18	
A. Ranked by Percentage Change				
1	Betel Leaves & Nuts	0.02	6.94	141.44
2	Gas	1.58	0.00	85.31
3	Kerosene Oil	0.01	5.42	31.81
4	Chicken	1.36	-16.68	28.31
5	News Papers	0.19	4.85	27.82
6	Motor Fuel	3.03	9.69	26.41
7	Transport Services	2.70	0.16	17.74
8	Water Supply	0.50	5.02	13.62
9	Motor Vehicle	0.66	3.87	12.94
10	Doctor (Mbbs) Clinic Fee	0.59	5.74	12.80
11	Spices	0.54	-0.28	12.61
12	Personal Equipments	0.84	5.36	12.38
13	Meat	2.43	7.49	11.70
14	Education	3.94	11.46	11.54
15	Construction Input Items	0.56	3.72	11.07
Total		18.96		54.63
B. Ranked by Weights				
1	House Rent	21.81	6.49	6.72
2	Milk Fresh	6.68	3.99	3.58
3	Electricity	4.40	0.00	0.00
4	Wheat Flour	4.16	-1.81	3.26
5	Education	3.94	11.46	11.54
6	Communication & Apparatus	3.15	1.32	7.76
7	Motor Fuel	3.03	9.69	26.41
8	Transport Services	2.70	0.16	17.74
9	Meat	2.43	7.49	11.70
10	Vegetable Ghee	2.07	3.75	3.64
11	Fresh Fruits	1.86	2.71	3.40
12	Fresh Vegetables	1.75	-7.09	1.16
13	Cooking Oil	1.75	3.47	2.80
14	Cotton Cloth	1.73	3.59	6.76
15	Rice	1.58	13.80	9.73
Total		63.07		61.56
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 6.8 percent in October, 2018.				

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

Items/ Contributors	Weights	<u>YoY Change</u>		Weighted Contribution
		Oct-17	Oct-18	
A. Ranked by Weighted Contribution				
1 Meat	2.43	7.49	11.70	5.44
2 Milk Fresh	6.68	3.99	3.58	4.46
3 Chicken	1.36	-16.68	28.31	3.91
4 Cigarettes	1.39	-16.46	10.89	3.11
5 Rice	1.58	13.80	9.73	1.89
6 Wheat Flour	4.16	-1.81	3.26	1.89
7 Tea	0.84	11.08	8.82	1.41
8 Ready Made Food	1.23	6.57	4.77	1.12
9 Spices	0.54	-0.28	12.61	1.10
10 Fresh Fruits	1.86	2.71	3.40	1.00
Total	22.08			25.34
B. Ranked by Percentage Change				
1 Betel Leaves & Nuts	0.02	6.94	141.44	0.56
2 Chicken	1.36	-16.68	28.31	3.91
3 Spices	0.54	-0.28	12.61	1.10
4 Meat	2.43	7.49	11.70	5.44
5 Cigarettes	1.39	-16.46	10.89	3.11
6 Dry Fruits	0.25	1.62	10.29	0.47
7 Rice	1.58	13.80	9.73	1.89
8 Tea	0.84	11.08	8.82	1.41
9 Sweet Meet	0.25	3.50	7.74	0.33
10 Honey	0.04	6.29	6.67	0.07
Total	8.71			18.30
C. Ranked by Weights				
1 Milk Fresh	6.68	3.99	3.58	4.46
2 Wheat Flour	4.16	-1.81	3.26	1.89
3 Meat	2.43	7.49	11.70	5.44
4 Vegetable Ghee	2.07	3.75	3.64	0.73
5 Fresh Fruits	1.86	2.71	3.40	1.00
6 Fresh Vegetables	1.75	-7.09	1.16	0.39
7 Cooking Oil	1.75	3.47	2.80	0.46
8 Rice	1.58	13.80	9.73	1.89
9 Cigarettes	1.39	-16.46	10.89	3.11
10 Chicken	1.36	-16.68	28.31	3.91
Total	25.05			23.29

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 2.7 percent in October, 2018.

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

Items/ Contributors	Weights	<u>YoY Change</u>		Weighted Contribution
		Oct-17	Oct-18	
A. Ranked by Weighted Contribution				
1 House Rent	21.81	6.49	6.72	19.12
2 Gas	1.58	0.00	85.31	14.28
3 Motor Fuel	3.03	9.69	26.41	8.04
4 Education	3.94	11.46	11.54	7.92
5 Transport Services	2.70	0.16	17.74	6.24
6 Communication & Apparatus	3.15	1.32	7.76	2.15
7 Personal Equipments	0.84	5.36	12.38	2.14
8 Cotton Cloth	1.73	3.59	6.76	1.83
9 Tailoring	0.88	7.10	8.08	1.56
10 Doctor (Mbbs) Clinic Fee	0.59	5.74	12.80	1.43
Total	40.26			64.70
B. Ranked by Percentage Change				
1 Gas	1.58	0.00	85.31	14.28
2 Kerosene Oil	0.01	5.42	31.81	0.03
3 News Papers	0.19	4.85	27.82	0.67
4 Motor Fuel	3.03	9.69	26.41	8.04
5 Transport Services	2.70	0.16	17.74	6.24
6 Water Supply	0.50	5.02	13.62	0.78
7 Motor Vehicle	0.66	3.87	12.94	1.02
8 Doctor (Mbbs) Clinic Fee	0.59	5.74	12.80	1.43
9 Personal Equipments	0.84	5.36	12.38	2.14
10 Education	3.94	11.46	11.54	7.92
Total	14.04			42.54
C. Ranked by Weights				
1 House Rent	21.81	6.49	6.72	19.12
2 Electricity	4.40	0.00	0.00	0.00
3 Education	3.94	11.46	11.54	7.92
4 Communication & Apparatus	3.15	1.32	7.76	2.15
5 Motor Fuel	3.03	9.69	26.41	8.04
6 Transport Services	2.70	0.16	17.74	6.24
7 Cotton Cloth	1.73	3.59	6.76	1.83
8 Gas	1.58	0.00	85.31	14.28
9 Footware	1.55	0.55	7.55	1.32
10 Personal Care	1.49	5.73	5.67	1.32
Total	45.39			62.20

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 9.6 percent in October, 2018.

Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: October, 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	Onion, Tomatoes, Garlic, Potatoes, Pulse Mash (Washed), Gram Whole Yellow Av.Qlty.	Pickles Ahmed/Mitchelles, Lemon, Vegetable Ghee (Loose), Butter Local Packed, Fruit Juice Tetra Pack.	Lactogen 400 Grams, Chillies Green, Lady Finger, Rice Basmati 385/386, Tinda, Rice Irri-6/9 (Sindh/Punj).	Chicken Farm Broiler (Live), Chillies Powder Loose, Coconut Dry Av.Qlty., Cauliflower, Salt Powdered (National/Shan), Chillies Powd.National 200 Gm, Raisins Av.Qlty.
Alcoholic Beverages & Tobacco			Cigarettes Morven Gold 20,S, Cigarettes Gold Leaf 20,S.	Cigarettes Capstan 20,S, Betel Nuts, Betel Leaves, Cigarettes K-20,S.
Clothing & Footwear	Gents Shoe, Art 1109 Servis, Gents Sandal Bata, Gents Shoes Paul Bata.	Sewing Thread/Reel, Shoe Repair Half Sole, Socks Nylon (Pakistani), Pullover Gents Oxford/Bon, Lawn Printed Gul Mtr, Vest/Shameez (Women) Ahmed/AI Karam, Pullover (Gents) Others Av.Qlty.	Shirt Boy 24"/26" Length, Dopatta Cotton Av. Qlty, Chaddar (W/Wear) (2X2.5 Avg.Qlty, Brassier Sup.Qlty, Shirting Av.Qlty.	Ladies Sandal Bata, Child Shoe Power Lite Bata, Frock W/Wear Girls, Tailoring Shirt, Shoe Polish Charges Avg, Ladies Spoung Chappal Bata, Gloves Av.Qlty, School Uni. Pant, Shirt Boys, Handkerchief Sup. Qlty Pak, Tailoring Charges Pant (Men).
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"), Sand (Black Pit Sand), Firewood Whole.	Electrician Wage Rate(P/Day), Unskilled Labour Wage Rat, Timber Sheesham Log, Mason (Raj) Wage Rate, Electrician Wage Rate(P/Pnt), Bajree.	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, Water Charges Per House.
Furnishing & Household Equip. Maintenance etc.		D-Freezer Waves 8 Cft., Carpet Plain Av. Qlty, Gizer Large Size 30 Gallon, Phnyle Typhone/Finis/Carr 3 Ltr, Washing Machine (Singer).	Aluminium Cooking Pan, Robin Blue (35 Gms), Mattress Single(4"Thick), Bulb Philips 100-Watt, Marriage Hall Charges Without Refreshment.	Single Bed Without Foam, Non Stick Cooking Pan, Tea Set Pak, China Wear 21 Pcs, Thermos Starvac 1 Ltr, Frying Pan Steel Avg. Qlty, Elect. Iron Philips, Water Set Jug+6 Glasses, Toilet Paper Roll (R.Petal).
Health	Vicks Vaporub/ Balm.	Disprin Tab., Gripe-Water Woodwards, Brufen Tabs 200- Mg., Polyfax Eye Ointment, Cotton Bandage 2" - 4", Phenergan Syrup 120 Ml.	Trisol Tab., Ecg Charges, Thermometer China, Entox Tab., Cac. 1000 Tab, Sugar Test (Random/Fasting), Panadol Tab. Extra/Plain.	Betnovate-N Ointment 5 Gm, Dettol (Medium), Calpol Syrup 60 ML, Sancos Syrup (50 ML), Flagyl Tab. 200 Mg., Urine Test (Dr) Charges, Doctor (Mbbs) Clinic Fee, 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, Tyre Cycle, Taxi 4 Seater Fare, Motorcycle Honda Cd-70, Tyre Car W/O Tube, Motor Cycle Hero 70 Cc.	Train Fare A/C Slp.101-500, Tyre Motor Cycle Without Tube, Minibus Fare Min.Within City, Tyre Puncture Charges.	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, Train Fare Eco. 101-500 K, Gas Cylinder S.Size (L.P.G), Petrol Super, Cng.
Communication	Mobile Cell Charges.	Internet Charges, Fax Charges (Local), Mobile Set Nokia/Sony/Ericsson Av.Qlty, Postal Envelope Domestic.	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, Maths Book Ist.Year (T.B. Board), V.C.P., Panasonic/Lg/National, Tv Licence Fee Domestic.	English Book Class VI, Computer Cd (Tdk/Imation), Personnel Computer (Branded), T.V. 20" Colored Sony, Dvd/Vcd Player Panasonic/Lg.	Exercise Book Lined 80/10, English Book Class Ix Or X, Urdu Book 1st Year/ Inter, Eng. Book Ist.Yr Complete Set, Paper Fool Scape (27"X17"), Weekly "Mag".	Cinema A/C High Class, Daily "Nawa-E-Waqt", Daily "Jang", Cinema Non-A/C High Class, English Book Ba/B.Sc, Pakistan Studies Book Ba/B.Sc, Photostate Paper 70 Gm, Urdu Book Class Ix/X (T.B.Board), Daily "Dawn", Fountain Pen Hero/Wings/China, Pencil Goldfish/Deer.
Education		I.T. Tuition Fees, Pvt Eng.Colege Fee (Ist Year).	Pvt School Fee Eng.Med (Class-Vi), Govt. College Fee 47th. Year, Govt. University Fee Ist Year, Pvt School Fee Eng.Med (Class-X).	Mba Tuition Fee, Govt. College Fee Ist. Year, Govt. College Fee 47th. Year, Govt. University Fee Msc/ Ma, Coaching Charges For Class Xi/ XII Commerce Group.
Restaurant & Hotels		Cooked Dal (Av. Hotel), Bread Tandoori St. Size, Tea Prepared (Ordinary).	Chicken Biryani Full/Double.	Cooked Mutton (Av. Hotel), Cooked Beef (Av. Hotel).
Miscellaneous	Toilet Soap Lifebouy 140 Gms, Toothpaste Macleans 70 Gms.	Toilet Soap Safeguard Bath Size, Blade Trete Ordinary (10), Artificial Jewellery Set, Blade 7-O-Clock Steel (5).	Trunk Medium Size, Hair Colour Bigen, Shaving Charges, Beauty Parlour Hair Style Charges.	Gold Tezabi 24 Ct, Perfume Med.Size Medora/Broche, Purse Ladies (Leather) Av. Qlty, Wrist Watch Gents Citizen.

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

Up to Rs: 8000												Rs 8001- 12000							
General				Food				Non-Food				General				Food			
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	5.1	5.1	3.0	3.0	7.4	7.4	5.4	5.4	3.2	3.2	7.7	7.7							
2 Islamabad	2.6	2.6	0.6	0.6	4.9	4.9	3.2	3.2	1.6	1.6	4.8	4.8							
3 Lahore	3.2	3.2	1.1	1.1	6.2	6.2	3.8	3.8	1.4	1.4	6.6	6.6							
4 Gujranwala	3.7	3.7	2.7	2.7	5.0	5.0	4.1	4.1	2.8	2.8	5.4	5.4							
5 Sialkot	5.4	5.4	3.4	3.4	8.0	8.0	5.1	5.1	3.1	3.1	7.2	7.2							
6 Faisalabad	5.5	5.5	1.9	1.9	9.8	9.8	6.5	6.5	2.7	2.7	10.4	10.4							
7 Multan	3.3	3.3	1.5	1.5	5.6	5.6	3.6	3.6	1.5	1.5	5.9	5.9							
8 Sargodha	3.8	3.8	1.6	1.6	6.2	6.2	4.3	4.3	1.8	1.8	6.8	6.8							
9 Bahawalpur	4.4	4.4	4.6	4.6	4.0	4.0	4.5	4.5	4.9	4.9	4.2	4.2							
10 Karachi	4.0	4.0	3.5	3.5	4.7	4.7	4.6	4.6	3.9	3.9	5.4	5.4							
11 Hyderabad	5.0	5.0	3.8	3.8	6.5	6.5	5.7	5.7	4.3	4.3	7.3	7.3							
12 Sukkur	3.6	3.6	-0.8	-0.8	8.9	8.9	4.5	4.5	0.1	0.1	9.0	9.0							
13 Larkana	1.7	1.7	-0.3	-0.3	3.9	3.9	1.8	1.8	-0.8	-0.8	4.2	4.2							
14 Peshawar	5.2	5.2	2.4	2.4	8.3	8.3	6.1	6.1	3.0	3.0	9.1	9.1							
15 Bannu	4.0	4.0	2.6	2.6	5.7	5.7	4.8	4.8	2.4	2.4	7.0	7.0							
16 Quetta	6.1	6.1	3.1	3.1	9.8	9.8	7.1	7.1	3.3	3.3	11.1	11.1							
17 Khuzdar	1.5	1.5	-2.0	-2.0	5.8	5.8	2.0	2.0	-1.7	-1.7	6.1	6.1							
Rs 12001-18000												Rs 18001-35000							
General				Food				Non-Food				General				Food			
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	6.3	6.3	3.5	3.5	8.8	8.8	6.6	6.6	4.1	4.1	8.5	8.5							
2 Islamabad	3.9	3.9	2.2	2.2	5.5	5.5	4.3	4.3	2.4	2.4	5.8	5.8							
3 Lahore	4.5	4.5	1.7	1.7	7.5	7.5	4.9	4.9	2.0	2.0	7.5	7.5							
4 Gujranwala	4.9	4.9	3.2	3.2	6.5	6.5	5.3	5.3	3.4	3.4	6.9	6.9							
5 Sialkot	5.4	5.4	2.9	2.9	7.8	7.8	5.2	5.2	2.9	2.9	7.1	7.1							
6 Faisalabad	7.3	7.3	3.2	3.2	11.2	11.2	7.9	7.9	3.9	3.9	11.1	11.1							
7 Multan	4.4	4.4	1.9	1.9	6.8	6.8	4.4	4.4	1.9	1.9	6.5	6.5							
8 Sargodha	5.3	5.3	2.8	2.8	7.5	7.5	5.6	5.6	3.1	3.1	7.5	7.5							
9 Bahawalpur	5.4	5.4	5.2	5.2	5.6	5.6	5.3	5.3	5.4	5.4	5.2	5.2							
10 Karachi	5.4	5.4	4.1	4.1	6.8	6.8	6.0	6.0	4.7	4.7	7.2	7.2							
11 Hyderabad	6.5	6.5	4.4	4.4	8.7	8.7	6.9	6.9	5.1	5.1	8.6	8.6							
12 Sukkur	5.9	5.9	0.5	0.5	10.9	10.9	6.4	6.4	1.0	1.0	10.9	10.9							
13 Larkana	2.5	2.5	-0.4	-0.4	5.0	5.0	2.8	2.8	-0.2	-0.2	5.1	5.1							
14 Peshawar	7.4	7.4	2.9	2.9	11.3	11.3	7.4	7.4	2.9	2.9	10.9	10.9							
15 Bannu	4.7	4.7	2.3	2.3	7.0	7.0	4.6	4.6	2.2	2.2	6.5	6.5							
16 Quetta	8.8	8.8	3.7	3.7	13.7	13.7	9.3	9.3	4.0	4.0	13.7	13.7							
17 Khuzdar	2.5	2.5	-1.6	-1.6	6.5	6.5	2.3	2.3	-2.0	-2.0	6.0	6.0							
Above Rs 35000												Combined							
General				Food				Non-Food				General				Food			
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	7.5	7.5	5.3	5.3	8.6	8.6	7.0	7.0	4.6	4.6	8.6	8.6							
2 Islamabad	5.5	5.5	4.0	4.0	6.3	6.3	5.2	5.2	3.6	3.6	6.3	6.3							
3 Lahore	6.4	6.4	2.4	2.4	8.7	8.7	5.5	5.5	2.0	2.0	8.1	8.1							
4 Gujranwala	6.1	6.1	3.6	3.6	7.4	7.4	5.3	5.3	3.3	3.3	6.6	6.6							
5 Sialkot	6.2	6.2	3.2	3.2	7.7	7.7	5.6	5.6	3.1	3.1	7.4	7.4							
6 Faisalabad	8.5	8.5	5.2	5.2	10.1	10.1	7.6	7.6	3.6	3.6	10.3	10.3							
7 Multan	5.8	5.8	2.8	2.8	7.2	7.2	4.9	4.9	2.1	2.1	6.8	6.8							
8 Sargodha	6.7	6.7	4.2	4.2	7.8	7.8	5.5	5.5	2.9	2.9	7.1	7.1							
9 Bahawalpur	6.3	6.3	6.2	6.2	6.4	6.4	5.5	5.5	5.4	5.4	5.6	5.6							
10 Karachi	7.7	7.7	5.4	5.4	8.9	8.9	6.8	6.8	4.8	4.8	8.3	8.3							
11 Hyderabad	8.6	8.6	5.9	5.9	10.2	10.2	7.2	7.2	5.0	5.0	8.9	8.9							
12 Sukkur	7.0	7.0	1.7	1.7	9.6	9.6	6.0	6.0	0.8	0.8	9.5	9.5							
13 Larkana	4.1	4.1	0.5	0.5	5.8	5.8	2.7	2.7	-0.2	-0.2	4.5	4.5							
14 Peshawar	9.0	9.0	3.1	3.1	11.8	11.8	7.8	7.8	3.0	3.0	11.0	11.0							
15 Bannu	6.4	6.4	2.3	2.3	8.3	8.3	4.8	4.8	2.3	2.3	6.5	6.5							
16 Quetta	10.5	10.5	4.3	4.3	13.6	13.6	9.2	9.2	3.8	3.8	12.9	12.9							
17 Khuzdar	4.7	4.7	-0.6	-0.6	7.4	7.4	2.3	2.3	-1.7	-1.7	5.0	5.0							

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

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
D. I. Khan	10.9	1.8	17.0	Attock	6.5	4.3	8.0
Mithi	10.0	6.4	12.3	Sahiwal	6.3	1.6	9.3
Quetta	9.2	3.8	12.9	Sukkur	6.0	0.8	9.5
Peshawar	7.8	3.0	11.0	Sialkot	5.6	3.1	7.4
Wazirabad	7.7	2.8	11.2	Sargodha	5.5	2.9	7.1
Faisalabad	7.6	3.6	10.3	Bahawalpur	5.5	5.4	5.6
Turbat	7.6	1.9	10.7	Mianwali	5.5	1.8	7.6
Dadu	7.5	-1.3	14.0	Lahore	5.5	2.0	8.1
Mardan	7.5	4.7	9.0	Gujranwala	5.3	3.3	6.6
Abbottabad	7.2	5.1	8.6	Islamabad	5.2	3.6	6.3
Hyderabad	7.2	5.0	8.9	Nawabshah	5.1	2.5	6.7
Bahawalnagar	7.2	0.8	11.3	Jhang	5.0	1.5	7.2
Rawalpindi	7.0	4.6	8.6	Mirpukhlas	5.0	2.7	6.7
Karachi	6.8	4.8	8.3	Multan	4.9	2.1	6.8
Jhelum	6.8	5.2	8.0	Bannu	4.8	2.3	6.5
				Muzaffargarh	4.2	1.1	6.2
				D. G. Khan	4.1	2.4	5.2
				Gawadar	4.0	0.5	6.3
				Mingora	3.9	0.5	5.9
				Vehari	3.6	2.0	4.8
				R. Y. Khan	3.3	-0.3	5.7
				Larkana	2.7	-0.2	4.5
				Loralai	2.6	-3.0	6.2
				Khuzdar	2.3	-1.7	5.0
				D. M. Jamali	2.0	-3.5	6.0

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		
	Oct-17	Sep-18	Oct-18	Oct-17	Sep-18	Oct-18
<u>Up to Rs. 8000</u>						
General	0.7	-0.2	1.4	3.2	3.2	3.9
Food	0.7	-0.6	1.7	1.9	0.3	1.3
Non-food	0.7	0.3	1.0	4.8	6.9	7.2
<u>Rs. 8001- 12000</u>						
General	0.7	-0.2	1.5	3.3	3.7	4.5
Food	0.7	-0.6	1.8	2.0	0.6	1.7
Non-food	0.7	0.3	1.2	4.7	6.9	7.4
<u>Rs. 12001- 18000</u>						
General	0.7	-0.1	1.5	3.3	4.1	4.9
Food	0.6	-0.6	1.9	1.9	0.9	2.1
Non-food	0.7	0.3	1.1	4.7	7.1	7.6
<u>Rs. 18001- 35000</u>						
General	0.8	-0.1	2.6	3.4	4.7	6.6
Food	0.6	-0.7	2.0	1.9	1.2	2.6
Non-food	0.9	0.3	3.1	4.7	7.6	9.9
<u>Above Rs. 35000</u>						
General	0.8	0.0	3.1	4.3	6.1	8.6
Food	0.6	-0.7	1.9	2.7	2.0	3.4
Non-food	0.9	0.4	3.7	5.1	8.1	11.1
<u>All income groups</u>						
General	0.7	-0.1	2.3	3.8	5.1	6.8
Food	0.6	-0.7	1.9	2.2	1.3	2.7
Non-food	0.8	0.3	2.6	4.9	7.7	9.6

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices	Percentage change	
			Oct-18	YoY	MoM
1	Wheat	10Kg.	340.1	3.8	1.6
2	Wheat Flour Bag	10Kg.	393.4	4.9	1.4
3	Rice Basmati Broken	Kg.	77.1	9.7	0.5
4	Rice Irri-6/9	Kg.	54.4	7.3	0.2
5	Bread Plain Med.Size (340-400 Gm.)	Each	42.9	4.2	0.0
6	Beef	Kg.	379.7	10.6	1.1
7	Mutton	Kg.	794.1	10.9	0.8
8	Chicken Live (Farm)	Kg.	155.8	24.4	31.7
9	Milk Fresh	Litr	85.5	3.6	0.0
10	Curd	Kg.	102.3	3.7	0.1
11	Milk Powdered Nido	500G	387.3	3.1	0.6
12	Egg Hen (Farm)	Doz.	111.0	4.5	16.0
13	Mustard Oil	Kg.	187.9	2.1	0.0
14	Cooking Oil (Tin)	2.5Ltr	483.3	3.2	0.5
15	Veg. Ghee (Tin)	2.5Kg.	476.3	3.6	0.2
16	Veg.Ghee Loose	Kg.	152.3	4.4	1.1
17	Bananas	Doz.	62.2	-0.1	-6.3
18	Masoor Pulse Washed	Kg.	114.7	-5.8	0.8
19	Moong Pulse Washed	Kg.	115.3	-4.2	0.8
20	Mash Pulse Washed	Kg.	141.8	-20.6	-1.9
21	Gram Pulse Washed	Kg.	119.4	-3.0	0.3
22	Potatoes	Kg.	32.3	-20.1	0.2
23	Onions	Kg.	35.6	-55.0	-6.4
24	Tomatoes	Kg.	69.5	-38.4	-4.1
25	Sugar	Kg.	54.8	0.9	-0.4
26	Gur	Kg.	86.2	1.3	0.6
27	Salt Powdered Loose (Lahori)	Kg.	12.1	10.3	1.2
28	Red Chillies Powder Loose	Kg.	342.8	33.5	0.8
29	Garlic	Kg.	127.2	-25.3	3.5
30	Tea (Yellow Lable 200 Gm.)	200Gm.	204.4	13.2	0.2
31	Cooked Beef Plate	Each	115.1	20.0	0.5
32	Cooked Dal Plate	Each	61.9	6.3	0.3
33	Tea Prepared (Sada)	Cup	21.8	2.9	0.0
34	Cigarettes K-2 (20'S)	20'S	57.7	13.6	11.4
35	Long Cloth (Coarse Latha)	Mtr.	236.1	11.2	0.8
36	Shirting	Mtr.	178.6	5.4	0.0
37	Lawn	Mtr.	288.7	12.9	0.2
38	Georgette (Voil Printed)	Mtr.	132.1	5.1	0.0
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	141.0	9.5	9.5
44	Kerosene	Litr	121.4	45.8	0.0
45	Firewood	40Kg	628.1	2.5	0.0
46	Energy Savor 14 Watt	Each	171.2	1.4	0.0
47	Washing Soap (200-250 Gm.)	Cake	28.4	9.5	0.0
48	Match Box	Each	2.4	6.3	0.0
49	Petrol	Litr	93.9	26.4	0.0
50	Diesel	Litr	107.6	34.0	0.0
51	L.P.G.(11 Kg Cylender.)	Each	1543.1	26.1	-2.1
52	Tele. Local Call	Call	3.9	0.0	0.0
53	Bath Soap Lifebouy (Standard)	Cake	40.6	-2.8	-0.3
Maximum			45.8	31.7	
Median			4.4	0.2	
Minimum			-55.0	-6.4	

Table A9: Distribution of Price Changes (YoY) - WPI Items: October, 2018

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

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

Items and specification	Weights	Index		
		Oct-17	Sep-18	Oct-18
General	100.00	219.61	229.14	234.49
Food & Non-Alcoholic Beverages.	34.83	235.69	236.78	240.50
1 Wheat	0.35	197.74	200.51	203.64
2 Wheat Flour	4.16	207.43	212.55	214.19
3 Wheat Product	0.10	213.11	213.99	214.54
4 Besan	0.15	280.66	266.82	267.01
5 Rice	1.58	182.85	199.02	200.65
6 Cereals	0.16	257.39	264.45	264.48
7 Bakery & Confectionary	1.16	219.29	229.45	229.04
8 Nimco	0.46	256.68	261.61	260.78
9 Meat	2.43	284.72	314.34	318.04
10 Chicken	1.36	151.20	143.44	194.00
11 Fish	0.30	214.23	223.09	220.02
12 Milk Fresh	6.68	277.04	287.14	286.97
13 Milk Product	0.63	268.10	278.55	278.92
14 Milk Powder	0.11	235.75	247.39	248.64
15 Eggs	0.46	209.55	194.28	222.28
16 Mustard Oil	0.10	161.44	164.80	164.90
17 Cooking Oil	1.75	138.35	141.62	142.23
18 Vegetable Ghee	2.07	143.26	147.60	148.48
19 Dry Fruits	0.25	265.47	291.02	292.79
20 Fresh Fruits	1.86	235.56	243.78	243.57
21 Pulse Masoor	0.27	172.34	156.97	158.64
22 Pulse Moong	0.23	231.93	217.37	218.49
23 Pulse Mash (Washed)	0.21	255.52	207.73	205.28
24 Pulse Gram	0.24	275.63	265.30	266.59
25 Gram Whole	0.16	297.03	265.65	265.11
26 Beans	0.03	244.14	245.51	246.97
27 Potatoes	0.45	273.63	215.21	215.48
28 Onion	0.51	491.92	226.63	216.58
29 Tomatoes	0.42	337.71	231.71	240.62
30 Fresh Vegetables	1.75	287.98	280.93	291.33
31 Sugar	1.04	197.79	197.47	197.97
32 Gur	0.02	263.15	259.35	262.49
33 Honey	0.04	334.28	352.68	356.59
34 Sweet Meet	0.25	253.94	273.01	273.59
35 Beverages	1.20	226.52	233.14	235.01
36 Jam, Tomato Ketchup & Pickle	0.25	221.97	233.20	235.37
37 Condiments	0.27	273.37	286.64	288.04
38 Spices	0.54	239.11	264.25	269.25
39 Tea	0.84	283.79	307.50	308.83
Alcoholic Beverages, Tobacco	1.41	305.31	314.42	344.03
40 Cigarettes	1.39	306.09	309.50	339.42
41 Betel Leaves & Nuts	0.02	258.40	613.03	623.88
Clothing & Footwear	7.57	239.94	255.36	256.10
42 Cotton Cloth	1.73	233.43	248.90	249.22
43 Woolen Cloth	0.88	258.28	268.05	268.51
44 Ready Made Garments	0.97	248.07	264.55	266.32
45 Woolen Readymade Garments	0.40	259.47	267.54	267.56
46 Hosiery	0.51	252.12	267.72	269.25
47 Dopatta	0.44	246.72	266.54	267.69
48 Cleaning & Laundering	0.21	272.90	292.02	293.09

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

Items and specification	Weights	Index		
		Oct-17	Sep-18	Oct-18
49 Tailoring	0.88	325.55	350.43	351.86
50 Footware	1.55	167.50	180.09	180.14
Housing,Water,Elect,Gas & Other Fuel	29.41	200.90	210.82	219.07
51 House Rent	21.81	194.05	206.00	207.09
52 Construction Input Item	0.56	257.07	280.39	285.53
53 Construction Wage Rate	0.33	246.85	268.44	271.55
54 Water Supply	0.50	171.58	189.82	194.95
55 Electricity	4.40	238.10	238.10	238.10
56 Gas	1.58	158.08	158.08	292.94
57 Kerosene Oil	0.01	206.26	272.49	271.88
58 Fire Wood Whole	0.23	293.20	299.07	299.07
Furnished H.Hold Equip.& Maint. Etc	4.21	229.47	243.36	245.50
59 Furniture	0.33	221.60	238.44	242.25
60 Household Textile	0.65	232.05	243.85	245.96
61 Household Equipment	0.59	183.44	193.22	194.50
62 Utensils	0.32	235.07	257.08	259.94
63 Plastic Products	0.25	213.86	229.26	231.09
64 Washing Soap & Detergent	0.79	233.12	245.92	248.45
65 Sewing Needle & Dry Cell	0.15	209.49	221.76	223.03
66 Household Servant	1.04	257.30	271.59	273.41
67 Marriage Hall Charges	0.08	249.20	270.18	271.76
Health	2.19	214.27	226.78	234.03
68 Drug Medicine	1.27	185.84	191.25	197.59
69 Medical Equipment	0.01	253.63	263.71	263.99
70 Doctor (MBBS) Clinic Fee	0.59	282.22	307.89	318.34
71 Medical Test	0.32	200.53	216.89	222.03
Transport	7.20	177.05	205.19	210.00
72 Motor Vehicle	0.66	177.56	197.12	200.53
73 Motor Vehicle Accessories	0.24	214.38	220.60	224.74
74 Motor Fuel	3.03	149.58	183.18	189.09
75 Mechanical Service	0.46	232.74	245.90	248.46
76 Motor Vehicle Tax	0.11	210.18	210.18	210.18
77 Transport Services	2.70	193.59	223.38	227.93
Communication	3.22	133.10	133.78	143.45
78 Postal Services	0.07	251.59	272.45	272.57
79 Communication & Apparatus	3.15	130.61	130.87	140.74
Recreation & Culture	2.02	196.83	210.12	213.73
80 Recreation & Culture	0.86	129.49	137.22	137.39
81 Text Books	0.57	287.98	304.43	304.61
82 News Papers	0.19	184.01	202.94	235.21
83 Stationery	0.40	218.60	236.70	238.80
Education	3.94	258.75	287.41	288.62
84 Education	3.94	258.75	287.41	288.62
Restaurants And Hotels	1.23	283.85	295.86	297.39
85 Ready Made Food	1.23	283.85	295.86	297.39
Miscellaneous Goods And Services	2.76	249.67	267.30	271.44
86 Personal Care	1.49	231.11	242.09	244.22
87 Cosmetics	0.39	206.22	225.61	227.83
88 Blades	0.03	197.94	206.54	206.96
89 Personal Equipments	0.84	304.32	333.26	341.98

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

Items and Specifications	Index		
	Oct-17	Sep-18	Oct-18
General	219.41	238.25	248.19
Agriculture Forestry & Fishery	254.45	267.67	272.57
1 Wheat	200.05	205.17	207.42
2 Maize	191.03	228.81	214.53
3 Rice	169.62	181.31	182.76
4 Sorghum/Jowar	216.04	285.95	275.88
5 Millet/Bajra	160.38	261.64	244.40
6 Vegetables	431.44	338.79	356.04
7 Fresh Fruits	257.11	266.54	277.92
8 Dry Fruits	243.99	278.85	276.70
9 Cotton Seeds	260.64	265.99	266.98
10 Other Oil Seeds	190.07	195.43	197.75
11 Edible Roots/ Potatoes	266.89	199.17	214.22
12 Stimulant And Spice Crops	292.37	319.25	333.36
13 Pulses	263.60	231.62	231.09
14 Sugar Crops	268.94	257.62	257.62
15 Fibre Crops	198.59	262.70	266.15
16 Unmanufactured Tobacco	296.90	318.02	318.02
17 Poultry	178.79	143.93	203.44
18 Milk From Bovine Animals	272.70	285.13	285.82
19 Eggs	213.03	201.16	233.62
20 Raw Animal Material/Wool	173.18	176.92	177.28
21 Hides And Fur Skins, Raw	103.25	93.47	92.70
22 Fuel Wood In Logs	282.69	284.65	284.65
23 Fishes Live Fresh Or Chilled	450.77	453.67	461.53
Ores/Minerals, Gas & Elect.	242.97	244.76	293.55
24 Coal Not Agglomerated	155.29	155.29	155.29
25 Natural Gas Liquefied	211.29	214.80	317.16
26 Salt & Pure Sodium Chloride	248.46	271.87	271.87
27 Electrical Energy	288.00	288.00	288.00
Food, Beverages, Tobacco, Textiles	226.01	243.64	248.54
28 Meat Of Animals	306.11	339.60	343.65
29 Vegetables & Fruit Juices	224.22	228.62	228.62
30 Dried Fruits & Nuts	269.70	302.02	302.31
31 Fruit Juices	182.53	188.55	188.73
32 Vegetable Oil Refined	155.12	159.08	160.00
33 Vegetable Ghee	125.78	130.88	131.73
34 Oil Cakes	222.38	240.72	246.07
35 Processed Liquid Milk	284.79	296.67	296.92
36 Milk And Cream In Solid Form	224.08	225.53	226.06
37 Ice Cream	266.02	286.26	286.26
38 Dairy Products N.E.C	264.15	282.17	283.94
39 Wheat Flour	189.87	194.82	196.77
40 Other Cereal Flour	226.42	218.82	216.08
41 Sugar Refined	204.64	207.69	207.95
42 Chocolate	100.00	100.00	100.00
43 Sugar Confectionary	128.44	127.25	127.25
44 Coffee And Tea	253.21	278.46	279.59
45 Spices	202.06	213.13	222.23
46 Other Food Products	294.50	300.74	308.13
47 Mineral Water	208.51	210.16	210.16
48 Beverages	172.85	176.55	176.55
49 Tobacco Products	318.37	319.65	393.80
50 Cotton Yarn	202.18	253.93	252.78
51 Nylon Yarn	143.99	143.99	143.99
52 Blended Yarn	184.65	201.84	199.05
53 Woven Fabrics	316.28	321.49	324.76
54 Cotton Fabrics	211.50	219.87	220.63
55 Other Fabrics	227.16	227.85	227.85

Inflation Monitor, October 2018

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

Items and Specifications	Index		
	Oct-17	Sep-18	Oct-18
56 Silk And Rayon Fabrics	188.14	188.81	188.81
57 Towels	276.14	305.52	305.52
58 Blankets	247.38	267.72	267.72
59 Bed Sheets	256.87	256.87	257.39
60 Quilts	222.32	222.32	222.32
61 Woolen Carpets	196.43	196.43	196.43
62 Synthetic Carpets	130.95	131.80	131.80
63 Hosiery Products	244.11	253.68	254.07
64 Ready Made Garments	201.37	204.85	204.85
65 Leather With Out Hairs	221.97	212.68	225.53
66 Other Leather N.E.C	207.31	207.02	313.42
67 Footwear's	145.51	168.09	168.09
Other Transportable Goods	173.59	213.10	217.85
68 Timber	231.53	240.62	241.03
69 Printing Paper	166.31	172.70	174.76
70 Hard Board	225.00	291.67	291.67
71 Coke	163.45	163.45	163.45
72 Motor Sprit	124.14	156.81	156.81
73 Diesel Oil	155.86	230.43	230.43
74 Kerosene Oil	127.80	222.78	222.78
75 Furnace Oil	110.73	172.10	193.09
76 Mobil Oil	200.23	209.31	209.31
77 Chemicals	177.12	213.09	215.90
78 Dying Materials	146.55	150.72	150.72
79 Fertilizers	216.49	242.31	252.46
80 Pesticides	306.92	312.32	312.32
81 Insecticides	138.62	145.02	144.97
82 Paints & Varnishes	299.42	354.53	354.53
83 Medicines	176.89	180.06	180.22
84 Soaps & Detergent	191.45	193.52	195.41
85 Auto Tyres	177.07	184.52	184.52
86 Plastic Products	225.88	243.75	243.75
87 Glass Sheets	298.97	304.55	304.55
88 Other Glass Articles	317.24	318.10	318.10
89 Ceramics And Sanitary	232.65	243.24	243.24
90 Bricks Blocks And Tiles	222.47	225.43	231.36
91 Cement	217.15	234.41	234.54
92 Bed Foams	170.33	176.50	182.50
93 Matches	171.36	171.36	171.36
Metal Product Machinery & Equip	177.34	187.64	190.04
94 Pig Iron	128.97	128.97	128.97
95 Steel Bars & Sheets	139.70	168.49	174.08
96 Pipe Fittings	215.66	234.48	238.51
97 Steel Products	179.41	183.35	183.86
98 Engines And Motors	116.98	116.98	116.98
99 Vacuum Pumps	123.69	123.69	123.69
100 Air Conditioners	200.10	203.80	208.65
101 Cultivators	190.66	190.66	190.66
102 Chuff Cutter	153.46	153.46	153.46
103 Tractors	201.75	216.82	216.82
104 Lathe Machines	241.06	241.06	268.38
105 Concrete Mixer	138.83	138.83	138.83
106 Refrige,Wash& Sew Mach, Iron,Fan	214.97	229.31	238.78
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	218.11	221.80
111 Motor Cycles	125.89	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	Jun	207.30	228.95	194.32	210.88	244.68	189.44	216.58
	Jul	210.08	234.69	195.33	215.81	251.76	192.99	218.81
	Aug	209.46	232.48	195.66	215.75	250.12	193.95	218.66
	Sep	209.88	232.80	196.14	214.61	250.41	191.89	218.67
	Oct	211.57	234.68	197.72	214.53	250.63	191.64	220.11
	Nov	212.01	235.17	198.13	214.07	247.89	192.62	220.68
	Dec	210.57	230.69	198.51	213.76	244.40	194.32	219.73
2017	Jan	210.94	228.45	200.44	214.84	244.73	195.87	218.35
	Feb	211.54	229.19	200.96	215.86	244.91	197.42	219.25
	Mar	213.32	233.47	201.24	217.29	247.53	198.10	223.62
	Apr	216.30	237.50	203.59	219.22	252.45	198.13	222.07
	May	216.33	237.01	203.94	218.78	251.10	198.26	220.51
	Jun	215.45	234.37	204.11	217.77	248.90	198.02	220.68
	Jul	216.19	234.47	205.23	217.24	249.95	196.63	219.28
	Aug	216.61	235.38	205.36	217.96	251.05	196.96	219.82
	Sep	217.98	238.43	205.72	218.08	252.27	196.39	223.38
	Oct	219.61	239.89	207.45	219.41	254.40	197.22	225.15
	Nov	220.42	240.79	208.21	220.20	252.83	199.49	226.29
	Dec	220.20	239.43	208.67	221.00	253.31	200.49	225.66
2018	Jan	220.27	236.92	210.29	224.99	252.74	207.38	224.13
	Feb	219.58	234.31	210.75	224.66	250.56	208.23	222.19
	Mar	220.25	233.67	212.21	225.22	251.00	208.52	221.67
	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

*: all groups combined

Table A13: International Commodity Prices/Indices

	18-Jul	18-Aug	18-Sep	18-Oct
Energy				
Crude Oil (US\$ per barrel) *	72.7	71.1	75.4	76.7
Energy Index (2010 = 100)	91.7	90.4	95.6	96.8
Food				
Rice (\$/MT)	398.0	405.0	405.0	409.0
Wheat (\$/MT)	218.3	236.6	212.4	213.5
Sugar (US cent/ pound) [^]	0.3	0.2	0.3	0.3
Palm Oil (\$/MT)	544.5	533.9	523.6	499.2
Soybean Oil (\$/MT)	665.4	654.0	651.0	680.7
Non-Food Non-Energy				
Cotton Outlook 'A' Index # [^]	2.1	2.1	2.0	1.9
Metal Price Index (2010 = 100)	88.0	85.6	84.5	86.1
Copper (\$/MT)	6,250.8	6,051.1	6,050.8	6,219.6
Aluminum (\$/MT)	2,082.2	2,051.5	2,026.5	2,029.9
Iron Ore (\$ cents/dry MT)	64.6	67.2	68.4	73.4
Tin (\$/MT)	19,729.8	19,228.8	18,967.1	19,121.5
Nickel (\$/MT)	13,793.9	13,411.4	12,510.4	12,314.9
Zinc (\$/MT)	2,656.1	2,512.0	2,434.7	2,673.7
Lead (\$/MT)	2,207.0	2,053.5	2,022.9	1,987.6
Uranium (\$/MT)@	25.8	26.3	27.5	28.0
DAP (\$/MT)	400.8	409.0	421.6	420.8
Urea (\$/MT)	252.5	260.0	267.5	270.0

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 \$ / 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	
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	209.01	215.11	227.69
Aug	197.46	201.08	208.29	215.48	228.15
Sep	198.26	201.00	208.89	217.06	228.27
Oct	198.27	201.50	210.01	218.02	232.83
Nov	197.60	203.02	210.77	219.13	
Dec	197.69	203.91	211.38	220.98	
Jan	197.63	204.23	211.77	221.19	
Feb	197.20	205.12	213.76	221.85	
Mar	197.36	205.18	215.34	222.34	
Apr	198.01	206.26	216.10	224.01	
May	199.93	206.19	216.48	225.47	
Jun	201.27	207.58	215.64	226.77	

Table 15: CPI Food Data Series Original and Seasonally Adjusted

Period	Original Series				
	FY15	FY16	FY17	FY18	FY19
Jul	222.80	224.14	234.69	234.47	242.74
Aug	224.05	224.86	232.48	235.38	243.25
Sep	224.12	223.87	232.80	238.43	241.65
Oct	223.74	224.86	234.68	239.89	246.27
Nov	222.74	227.55	235.17	240.79	
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	
Seasonally Adjusted Series					
Jul	221.04	222.34	232.79	232.60	240.86
Aug	221.17	222.14	229.78	232.80	240.74
Sep	221.23	221.18	230.20	235.96	239.28
Oct	220.33	221.51	231.30	236.50	242.77
Nov	219.36	224.18	231.70	237.21	
Dec	219.37	225.02	231.64	240.27	
Jan	218.97	224.63	230.74	239.46	
Feb	217.98	226.03	234.29	239.49	
Mar	217.69	225.86	237.27	237.50	
Apr	217.92	228.25	238.21	237.79	
May	222.25	226.75	237.84	240.05	
Jun	224.63	229.48	234.65	241.40	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY15	FY16	FY17	FY18	FY19	Average
Jul	100.50	100.51	100.51	100.50	100.49	100.50
Aug	100.63	100.58	100.56	100.52	100.49	100.56
Sep	100.57	100.52	100.47	100.43	100.38	100.47
Oct	100.78	100.76	100.74	100.73	100.71	100.75
Nov	100.60	100.59	100.59	100.59		100.59
Dec	99.54	99.58	99.62	99.65		99.60
Jan	99.65	99.64	99.61	99.58		99.62
Feb	98.95	98.96	98.96	98.98		98.96
Mar	99.09	99.07	99.06	99.06		99.07
Apr	100.08	100.08	100.09	100.11		100.09
May	99.87	99.90	99.93	99.97		99.92
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	100.80	100.81	100.82	100.80	100.78	100.80
Aug	101.30	101.22	101.17	101.11	101.04	101.17
Sep	101.31	101.22	101.13	101.05	100.99	101.14
Oct	101.55	101.51	101.46	101.44	101.44	101.48
Nov	101.54	101.50	101.50	101.51		101.51
Dec	99.41	99.50	99.59	99.65		99.54
Jan	99.15	99.09	99.01	98.94		99.05
Feb	97.79	97.81	97.82	97.84		97.81
Mar	98.42	98.40	98.40	98.39		98.40
Apr	99.70	99.68	99.70	99.70		99.70
May	99.54	99.60	99.65	99.71		99.62
Jun	99.65	99.77	99.88	99.99		99.82

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

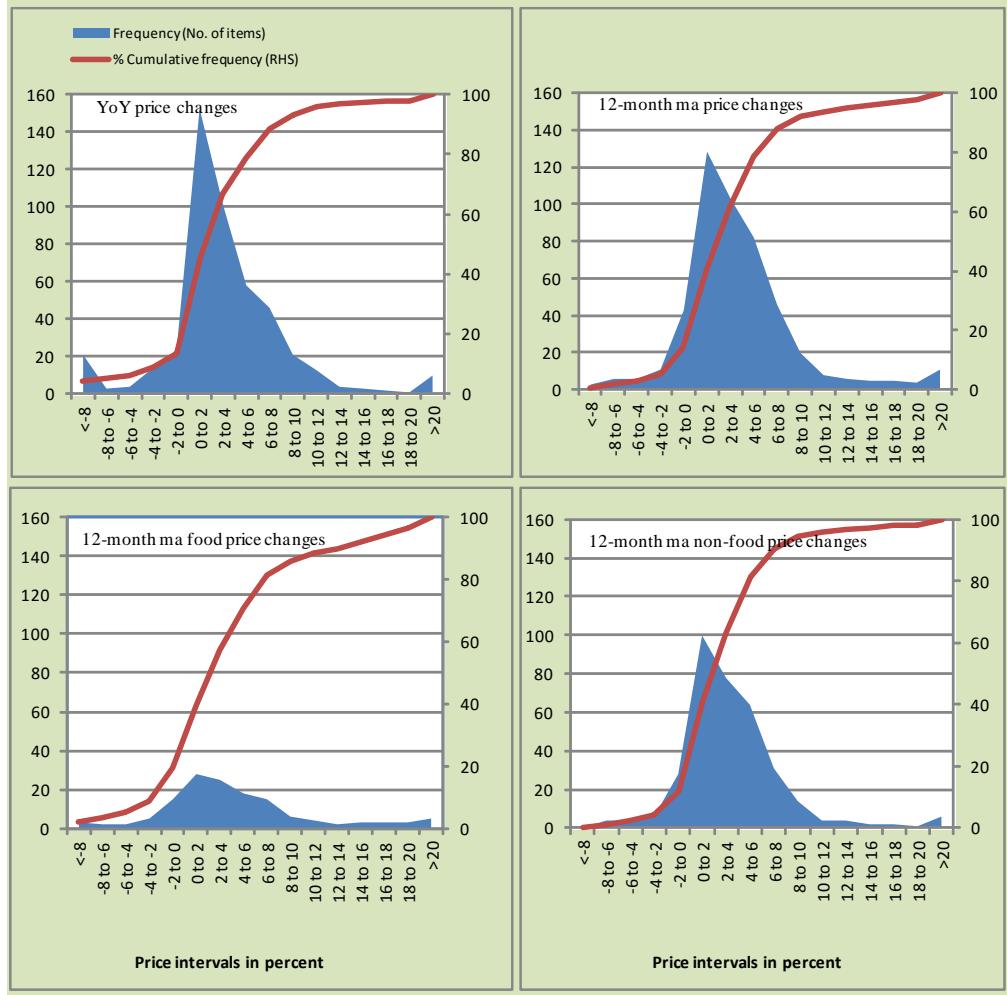
Period	Original Series				
	FY15	FY16	FY17	FY18	FY19
Jul	1.70	0.43	1.34	0.34	0.94
Aug	0.33	0.24	-0.30	0.19	0.21
Sep	0.35	-0.10	0.20	0.63	-0.06
Oct	0.21	0.49	0.81	0.75	2.33
Nov	-0.51	0.59	0.21	0.37	
Dec	-1.01	-0.57	-0.68	-0.10	
Jan	0.08	0.21	0.18	0.03	
Feb	-0.92	-0.25	0.28	-0.31	
Mar	0.23	0.15	0.84	0.31	
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	0.69	-0.25	0.40
Aug	0.20	0.17	-0.34	0.17	0.20
Sep	0.41	-0.04	0.29	0.73	0.05
Oct	0.00	0.25	0.53	0.44	1.99
Nov	-0.34	0.76	0.36	0.51	
Dec	0.05	0.44	0.29	0.84	
Jan	-0.03	0.16	0.18	0.10	
Feb	-0.22	0.43	0.94	0.30	
Mar	0.08	0.03	0.74	0.22	
Apr	0.33	0.53	0.35	0.75	
May	0.97	-0.04	0.18	0.65	
Jun	0.67	0.68	-0.39	0.58	

Table 19: CPI Food Month-on-Month % Change Original & Seasonally Adjusted

Period	Original Series				
	FY15	FY16	FY17	FY18	FY19
Jul	2.68	0.13	2.50	0.04	0.57
Aug	0.56	0.32	-0.94	0.39	0.21
Sep	0.03	-0.44	0.14	1.29	-0.66
Oct	-0.17	0.44	0.81	0.61	1.91
Nov	-0.45	1.20	0.21	0.37	
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	
Seasonally Adjusted Series					
Jul	1.36	-1.02	1.44	-0.87	-0.22
Aug	0.06	-0.09	-1.29	0.08	-0.05
Sep	0.03	-0.44	0.18	1.36	-0.61
Oct	-0.41	0.15	0.48	0.23	1.46
Nov	-0.44	1.21	0.17	0.30	
Dec	0.01	0.37	-0.03	1.29	
Jan	-0.18	-0.17	-0.39	-0.34	
Feb	-0.45	0.63	1.54	0.01	
Mar	-0.13	-0.08	1.27	-0.83	
Apr	0.11	1.06	0.40	0.12	
May	1.98	-0.66	-0.15	0.95	
Jun	1.07	1.20	-1.34	0.56	

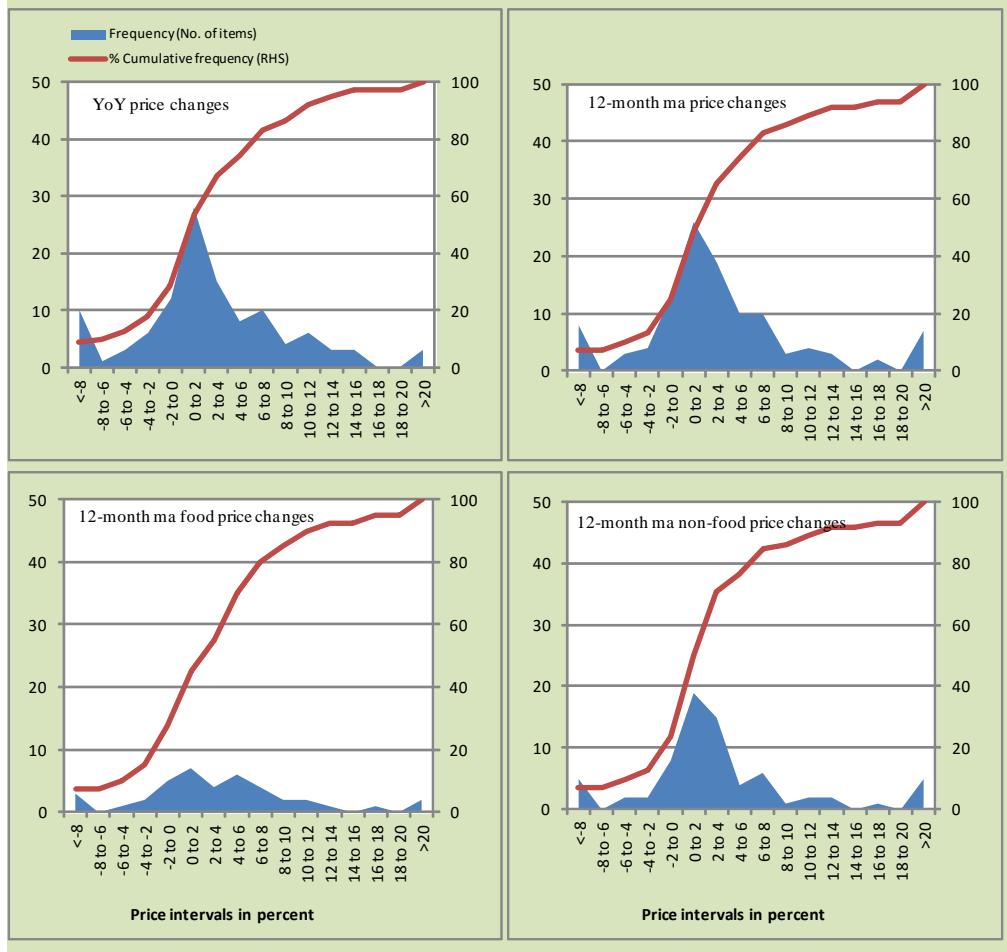


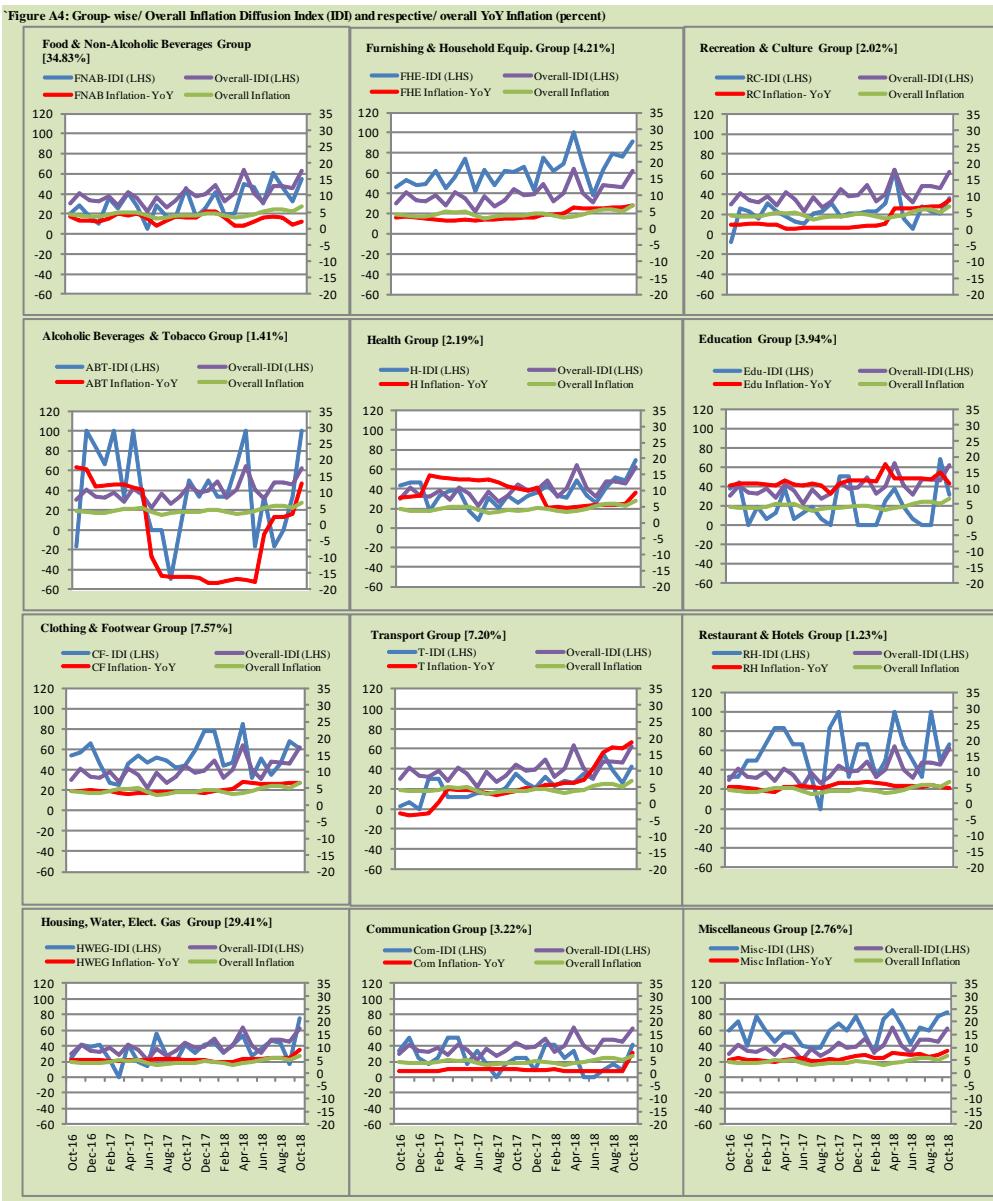
Figure A2: Frequency Distribution of Price Changes of CPI Items, October 2018



Inflation Monitor, October 2018

Figure A3: Frequency Distribution of Price Changes of WPI Commodities, October 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:
- a) Non-food, Non-energy inflation (NFNE inflation); it is computed by excluding food group and energy items (kerosene oil, petrol, diesel, CNG, electricity and natural gas) from the CPI basket.
 - b) 20% trimmed-mean inflation; it is computed through the following steps:
 - i. All CPI items are arranged in ascending order according to YoY/12-month moving average/monthly/period average changes in their price indices in a given month.
 - ii. 20 percent of the items showing extreme changes are excluded with 10 percent of the items at the top of the list (corresponding to cumulative weight of 90% or more) and 10 percent of the items at the bottom of the list (corresponding to cumulative weight of 10 percent or less).
 - iii. The weighted mean of the changes in price indices of the rest of the items is core inflation.
 - c) Relatively Stable Component of CPI (RSC-CPI) developed by State Bank of Pakistan is a hybrid method based on permanent exclusion criteria. Volatile price items, to be excluded in the newly proposed measure RSC-CPI, are identified by analyzing the list and frequency of commodities that have been trimmed frequently in the past while computing monthly weighted trimmed mean measure. Commodities

that were trimmed out 13 and above times since July 2008 to February 2013 are selected for permanently excluding from the CPI basket. This newly developed component includes a mix of both food and non-food commodities that show persistent price behavior. Fifty Commodities included comprise relatively stable component (RSC-CPI) with a weight of 67.69. The detailed methodology of RSC-CPI and group wise items along their weights can be viewed at the following link;

<http://www.sbp.org.pk/publications/wpapers/2013/wp66.pdf>

9. Weighted contribution of different items (or sub-groups) to total inflation is worked out as below:

Let the overall index (I_t) is the weighted average of price indexes of individual items or sub-groups (I_{it}), i.e.

$$I_t = \sum_i w_i \cdot I_{it}$$

The weighted contribution of a single item (or a sub-group) to overall inflation is defined as below:

$$C_{it} = \alpha_{it-12} \cdot w_i \cdot \left(\frac{\pi_{it}}{\pi_t} \right)$$

Where C_{it} : Contribution of i^{th} item to the overall inflation

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

reference month

w_i : Weights of i^{th} item

π_{it} : Inflation of i^{th} item

π_t : Overall inflation

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

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

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 constant¹.

Based upon commodity level price data from July 2001 to February 2011 we computed inflation diffusion indices overall (general) CPI basket and for all groups in CPI basket (except House Rent Index being single item). A simple analysis² suggests that IDI is a leading indicator for Pakistan’s YoY inflation.

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

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