

Inflation Monitor

September 2019

(Old Base: 2007-08)



State Bank of Pakistan

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Review

Inflation in Brief

1. Headline CPI inflation (2007-08=100) is recorded at level of 12.5 percent on year-on-year basis in September 2019 as compared to 11.6 percent in the previous month and 5.1 percent during corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at level of 0.8 percent in September 2019 as compared to 1.4 percent in the previous month and -0.1 percent during corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.78 percent in September 2019 compared to 1.34 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis is recorded at 9.2 percent in September 2019 as compared to 8.5 percent in the previous month and 5.8 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is recorded at 0.5 percent in September 2019 as compared to 0.6 percent in the previous month and 0.1 percent during corresponding month of last year.
5. CPI Core inflation, Non-food, non-energy (NFNE), on year-on-year basis is recorded at 8.2 percent in September 2019 and was at same level in the previous month and 8.0 percent during corresponding month of last year.
6. Core inflation (NFNE) on month-on-month basis recorded at 0.4 percent in September 2019 as compared to 0.5 percent in the previous month. Core NFNE inflation was at same level during the corresponding month of last year.
7. WPI inflation on year-on-year basis recorded at 15.6 percent in September 2019 as compared to 13.6 percent in the previous month and 9.2 percent during the corresponding month of last year.

8. WPI inflation on month-on-month basis recorded at 0.3 percent in September 2019 as compared to 0.9 percent in the previous month. It was -1.5 percent in the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 19.8 percent in September 2019 as compared to 18.3 percent in the previous month. It was 2.2 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at 1.1 percent in September 2019 as compared to 2.9 percent in the previous month. It was -0.2 percent in the corresponding month of last year.

1.1 Another Measure of Core Inflation

A new method of permanently excluding the relatively volatile commodities from CPI basket in Pakistan has been developed by SBP. This is achieved by making use of trimming approach on historical data of monthly CPI changes to compute 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 September 2019 are described below:

11. Core RSC inflation on year-on-year basis is recorded at 10.7 percent in September 2019 as compared to 10.5 percent in the previous month and 7.0 percent during the corresponding month of last year.
12. Core RSC inflation on month-on-month basis is recorded at 0.5 percent in September 2019 as compared to 0.6 percent in the previous month and 0.3 percent during the corresponding month of last year.

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

Table 1.1 Inflation Trends (percent) (Base 2007- 08 = 100)																
Period	CPI Inflation						Core Inflation						WPI Inflation	SPI*** Inflation		
	General		Food		Non-food		NFNE*		Trimmed		RSC**					
	100.00		37.48		62.52		53.52		80.00		67.69		100.00			
	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM		
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	2.2	-0.2
Oct-18	6.8	2.3	2.7	1.9	9.6	2.6	8.2	1.1	6.7	0.8	8.7	2.4	13.1	4.2	4.5	3.0
Nov-18	6.5	0.1	1.8	-0.5	9.8	0.5	8.3	0.4	6.7	0.3	8.9	0.4	13.5	0.7	5.3	1.3
Dec-18	6.2	-0.4	0.9	-1.4	9.8	0.2	8.4	0.3	6.9	0.3	9.0	0.2	12.1	-0.9	5.5	-0.1
Jan-19	7.2	1.0	2.4	0.3	10.4	1.4	8.7	1.1	7.7	1.0	9.4	1.0	9.9	-0.2	6.7	0.4
Feb-19	8.2	0.6	5.0	1.4	10.3	0.1	8.8	0.2	7.7	0.2	9.4	0.2	11.0	0.9	10.0	2.2
Mar-19	9.4	1.4	8.4	2.9	10.1	0.5	8.5	0.5	7.9	0.4	9.2	0.4	12.6	1.7	12.0	1.6
Apr-19	8.8	1.3	8.6	1.7	9.0	1.0	7.0	1.0	7.2	0.9	8.0	0.9	13.8	2.3	12.4	1.0
May-19	9.1	0.8	8.7	1.1	9.4	0.6	7.2	0.4	7.5	0.4	8.1	0.4	14.0	1.4	13.1	1.2
Jun-19	8.9	0.4	8.2	0.4	9.3	0.4	7.2	0.3	7.3	0.4	8.4	0.6	12.7	0.3	12.9	1.4
Jul-19	10.3	2.3	9.2	1.5	11.1	2.8	7.8	1.7	8.0	1.7	10.3	2.7	13.5	3.1	14.8	2.2
Aug-19	11.6	1.4	11.9	2.6	11.5	0.6	8.2	0.5	8.5	0.6	10.5	0.6	13.6	0.9	18.3	2.9
Sep-19	12.5	0.8	14.3	1.5	11.4	0.2	8.2	0.4	9.2	0.5	10.7	0.5	15.6	0.3	19.8	1.1
* NFNE is Non-food non-energy ** Relatively Stable Component of CPI *** SPI for all income groups combined																

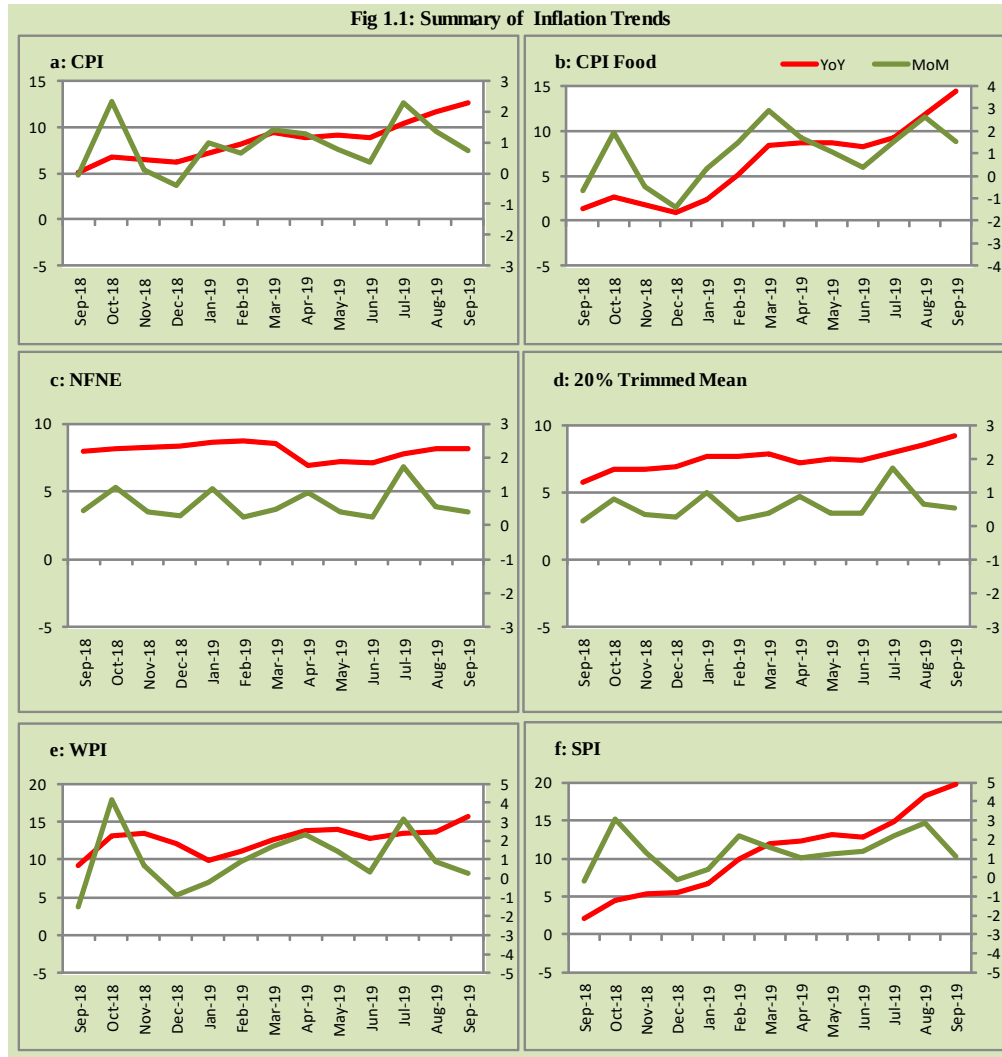
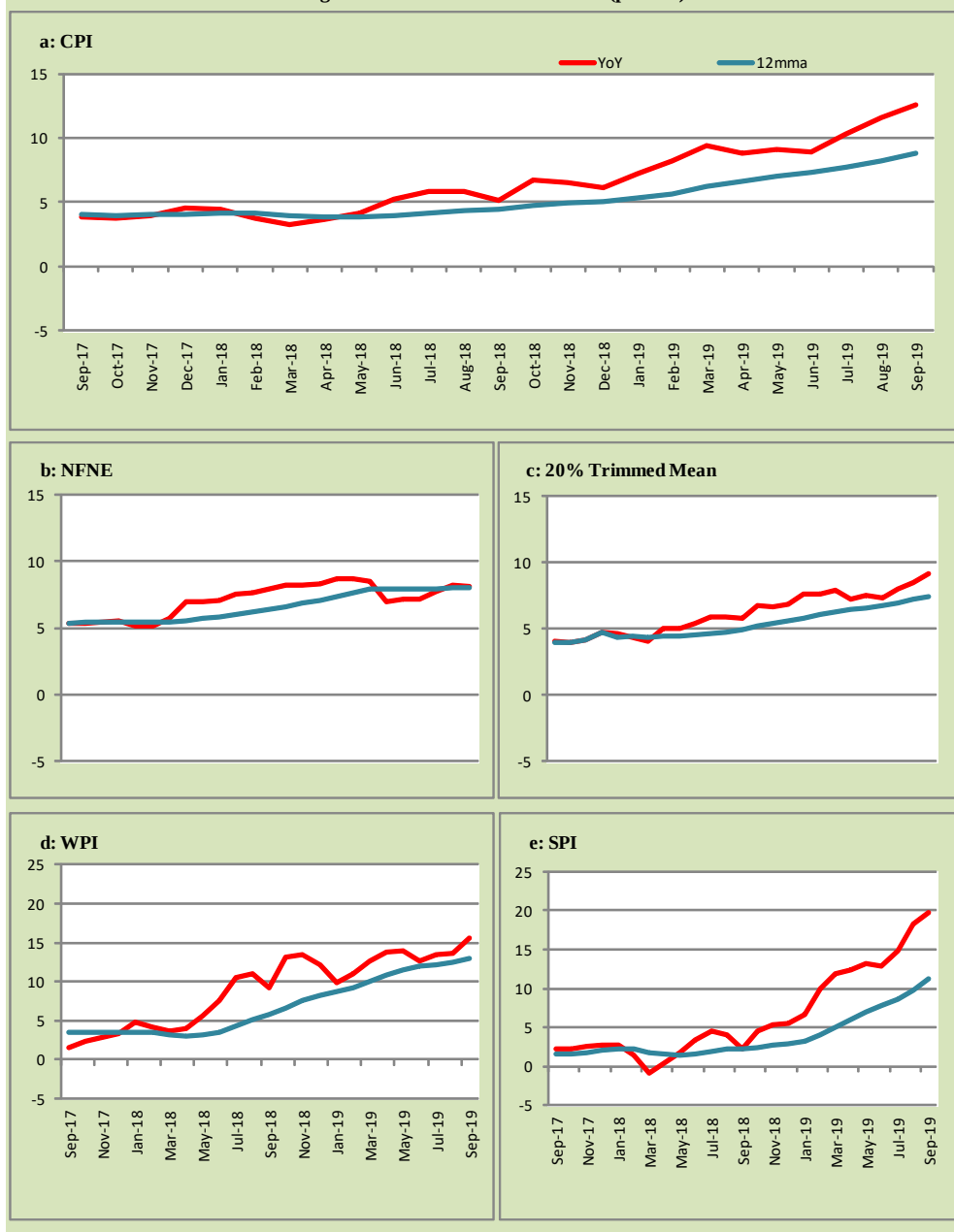
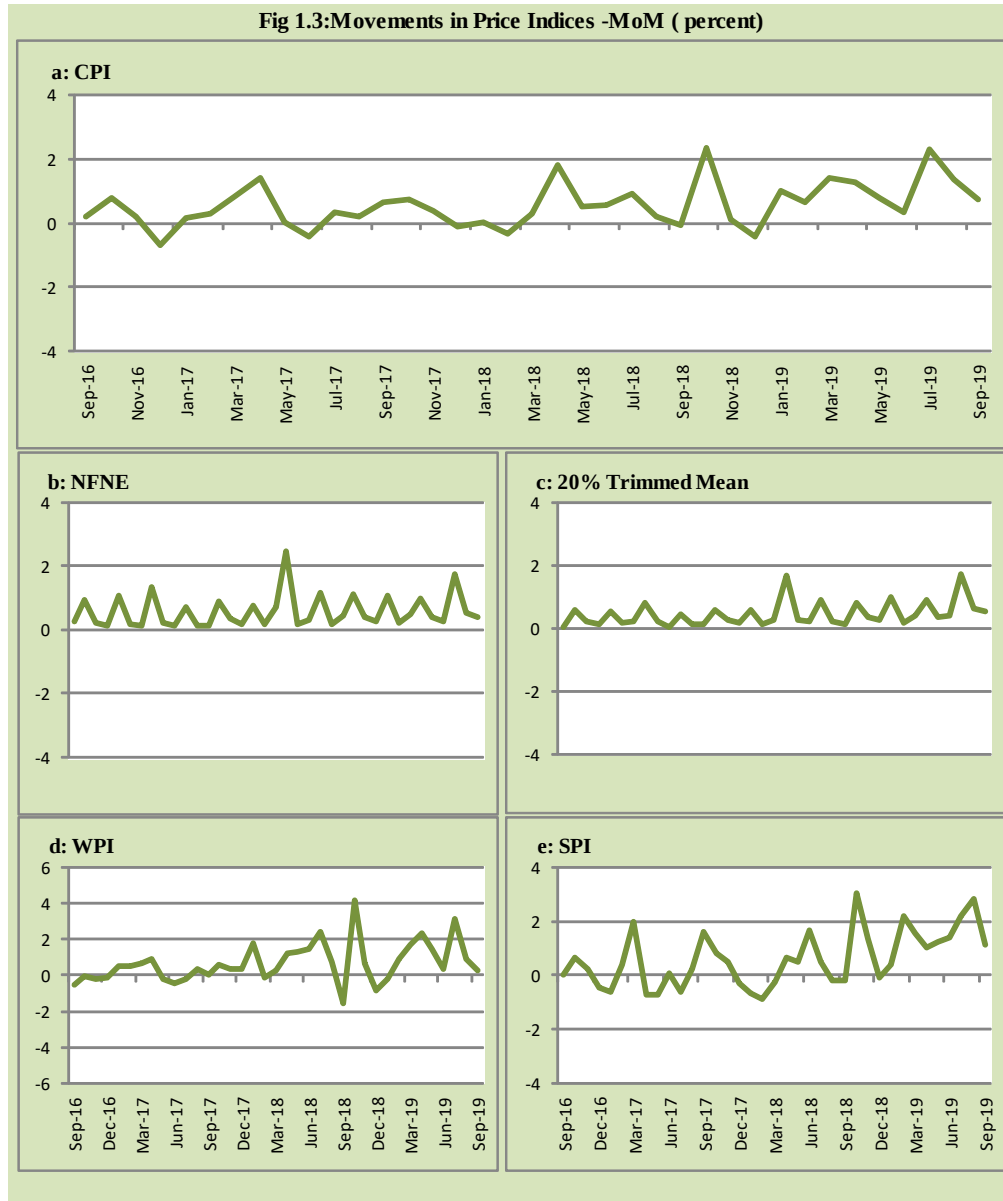
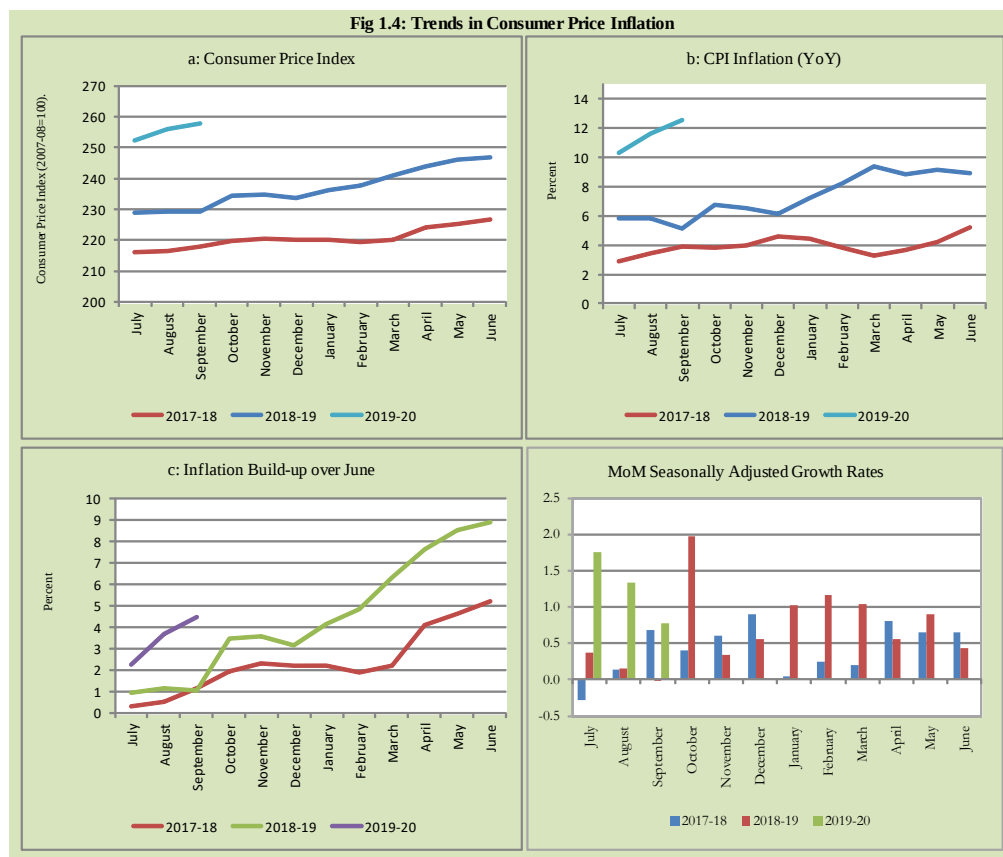


Fig 1.2: Movements in Price Indices (percent)







2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan showed mixed trend during September 2019. Among these five cities, the lowest inflation was observed in Lahore at 9.9 percent while the highest inflation was observed in Karachi at 15.7 percent (Table A6 of annexure-A).

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

	Sep-18		Aug-19		Sep-19	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	-0.1	5.1	1.4	11.6	0.8	12.5
Islamabad	0.2	4.9	1.6	11.2	0.7	11.7
Karachi	-0.7	3.8	1.2	12.8	1.9	15.7
Lahore	-0.3	4.1	1.7	9.4	0.2	9.9
Peshawar	-0.1	6.6	1.6	12.0	0.9	13.1
Quetta	-0.3	7.1	1.3	13.7	0.1	14.2

3. Income Group wise Inflation

Income group-wise data shows that the highest income group (above Rs. 35,000) witnessed higher inflation as compared to other quintiles in non-food group and income group (Rs. 18,001- 35,000) witnessed higher inflation as compared to other quintiles in overall CPI during September 2019. The lowest income group (Up to Rs. 8,000) observed lowest inflation in CPI during the month of September 2019 and the income group (above Rs. 35,000) witnessed lower inflation as compared to other quintiles in food group during September 2019 (Table A7 of annexure-A).

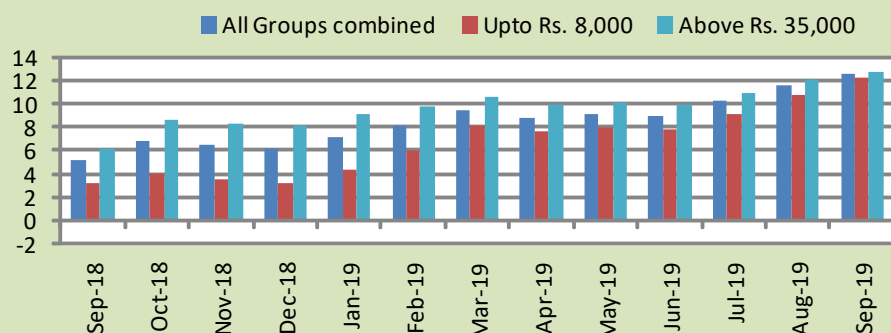
Table 3.1 Income Group- wise Inflation (YoY) (percent)

Income Groups	General			Food			Non-food		
	Sep-18	Aug-19	Sep-19	Sep-18	Aug-19	Sep-19	Sep-18	Aug-19	Sep-19
All Groups Combined	5.1	11.6	12.5	1.3	11.9	14.3	7.7	11.5	11.4
Up to Rs. 8,000	3.2	10.7	12.2	0.3	12.3	15.1	6.9	8.9	8.9
Rs. 8,001- 12,000	3.7	11.2	12.5	0.6	12.1	14.8	6.9	10.4	10.3
Rs. 12,001- 18,000	4.1	11.2	12.4	0.9	12.1	14.7	7.1	10.3	10.2
Rs. 18,001- 35,000	4.7	11.8	12.8	1.2	12.2	14.7	7.6	11.5	11.4
Above Rs. 35,000	6.1	12.1	12.7	2.0	11.4	13.7	8.1	12.4	12.2

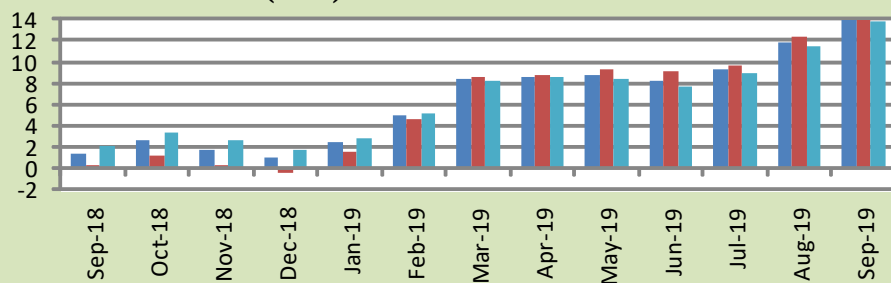
Note: Computed based on CPI indices of five Income Quintiles released by Pakistan Bureau of Statistics (PBS)

Fig 3.1: Income Group- wise Inflation

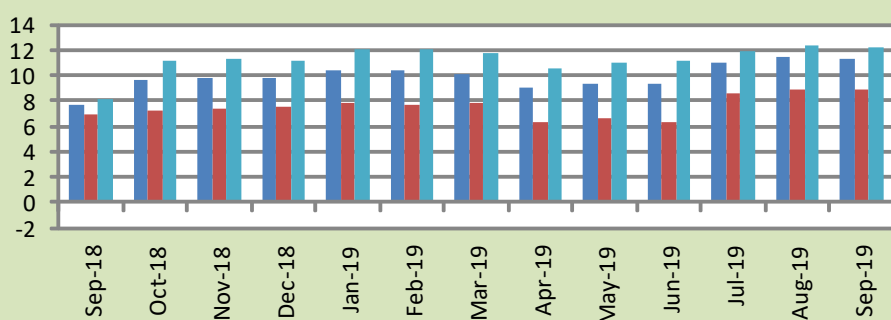
a: CPI Overall Inflation (YoY)



b: CPI Food Inflation (YoY)



c: CPI Non-Food Inflation (YoY)



4. Weighted Contribution

The weighted contribution of food group in the overall inflation increased to 45.19 percent during September 2019 from 40.54 percent in previous month. It was 10.82 percent during corresponding month of last year.

The weighted contribution of non-food group decreased to 54.81 percent in September 2019 from 59.46 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
Sep-18	10.82	10.76	31.34	18.88	13.38	14.81
Oct-18	16.06	8.22	35.92	15.95	7.92	15.94
Nov-18	11.22	9.54	37.56	17.74	7.23	16.70
Dec-18	6.27	10.43	39.55	17.35	7.89	18.50
Jan-19	13.26	8.36	43.58	12.43	6.55	15.81
Feb-19	24.38	7.05	38.18	9.82	5.86	14.72
Mar-19	35.31	6.48	33.22	8.45	3.21	13.33
Apr-19	38.58	5.09	31.02	9.88	3.13	12.30
May-19	38.04	6.04	29.60	11.06	2.95	12.30
Jun-19	36.81	5.91	30.28	10.40	3.01	13.58
Jul-19	35.52	6.02	33.37	9.05	3.24	12.80
Aug-19	40.54	6.15	29.53	8.44	2.94	12.40
Sep-19	45.19	5.84	27.51	7.33	2.06	12.07

5. Inflation Diffusion Index

Table 5.1 Inflation Diffusion Index - based on MoM change

	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
General	45.9	62.4	52.7	53.1	51.3	43.6	58.3	53.2	55.3	47.7	68.2	63.1	59.2
Food & Non-Alcoholic Beverages	32.2	54.3	35.0	49.6	62.3	51.8	71.7	44.5	50.0	48.2	65.2	75.0	69.0
Alcoholic Beverages & Tobacco	33.3	100.0	66.7	0.0	66.7	66.7	50.0	50.0	16.7	33.3	66.7	100.0	83.3
Clothing & Footwear	67.8	61.0	79.7	81.4	61.0	42.4	62.7	61.0	74.6	44.1	67.8	62.7	59.3
Housing, Water, Elect, Gas & other Fuels	16.7	75.0	38.9	16.7	41.7	13.9	19.4	44.4	25.0	41.7	88.9	30.6	30.6
Furnishing & Household Equip. Maintenance etc	76.8	91.3	91.3	84.1	79.7	84.1	71.0	82.6	82.6	82.6	94.2	87.0	82.6
Health	48.7	69.2	53.8	53.8	48.7	42.1	47.4	61.5	69.2	51.3	64.1	61.5	76.9
Transport	25.6	41.9	39.5	48.8	20.9	9.3	48.8	34.9	46.5	23.3	74.4	41.9	27.9
Communication	8.3	41.7	41.7	0.0	8.3	8.3	16.7	8.3	8.3	8.3	8.3	16.7	8.3
Recreation & Culture	20.5	35.9	28.2	12.8	17.9	12.8	51.3	51.3	38.5	15.4	17.9	48.7	17.9
Education	68.8	31.3	0.0	25.0	-25.0	0.0	62.5	43.8	0.0	0.0	43.8	62.5	31.3
Restaurant & Hotels	50.0	66.7	66.7	100.0	66.7	66.7	100.0	83.3	66.7	83.3	100.0	66.7	100.0
Miscellaneous	77.1	82.9	71.4	74.3	74.3	71.4	60.0	48.6	77.1	82.9	85.7	65.7	94.3
NFNE	52.7	66.9	58.9	56.5	47.6	42.1	54.3	55.9	58.0	47.3	69.2	60.1	57.1

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	Sep-18		Aug-19		Sep-19	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	2.93	0.77	10.70	0.17	11.61	1.61
2	Wheat Flour Bag	10 Kg	4.34	0.37	10.54	0.27	12.34	2.00
3	Rice Basmati Sup. Qlty.	Kg	12.01	0.39	6.88	0.20	7.40	0.87
4	Pulse Masoor (Washed)	Kg.	-9.15	-0.19	12.81	0.99	13.54	0.46
5	Pulse Moong (Washed)	Kg.	-8.19	-0.18	48.42	0.40	49.30	0.42
6	Pulse Mash (Washed)	Kg.	-22.86	0.69	23.81	1.16	23.21	0.20
7	Pulse Gram	Kg.	-3.69	2.87	13.41	1.20	13.34	2.81
8	Vegetable Ghee (Loose)	Kg.	4.05	0.17	16.81	4.23	19.44	2.43
9	Sugar Refined	Kg.	-1.27	-1.04	34.29	3.67	35.37	-0.24
10	Milk Fresh (Unboiled)	Ltr	4.00	0.00	5.78	0.85	7.29	1.43
11	Tapal Danedar Tea 200 Gm	Pkt	11.54	0.59	3.36	0.47	6.42	3.57
12	Beef With Bone Av.Qlty.	Kg	10.00	0.14	11.63	1.25	11.90	0.38
13	Mutton Av.Qlty.	Kg	12.34	0.22	11.09	0.36	11.40	0.49
14	Chicken Farm Broiler (Live)	Kg	-4.77	-6.15	53.88	26.62	63.79	-0.10
15	Eggs Farm	Doz	-5.40	-2.81	-2.46	7.51	-0.37	-0.72
16	Potatoes	Kg	-19.58	-1.32	22.08	7.73	30.39	5.40
17	Onion	Kg	-53.05	-10.47	62.54	28.89	95.89	7.90
18	Tomatoes	Kg	-9.83	-12.03	-18.91	46.07	-20.63	-13.90
19	Ginger	Kg	12.50	3.82	50.15	22.13	48.33	2.56
20	Garlic	Kg	-32.46	-2.08	86.05	8.33	101.51	6.06

7. Global Commodity Prices

Table 7.1 Changes in Major Global Indices (percent)

Item/ Group	Sep-18		Aug-19		Sep-19	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	0.2	-1.4	-4.5	-2.5	-1.7	-0.6
Metals	-3.2	-2.8	-7.8	-2.2	-4.8	2.0
Energy	38.4	-1.4	-22.1	-6.0	-23.0	4.7
Agricultural	-0.9	-1.8	-4.5	-2.7	-1.9	0.0
Cotton	19.2	-1.7	-25.1	-6.3	-21.1	0.7

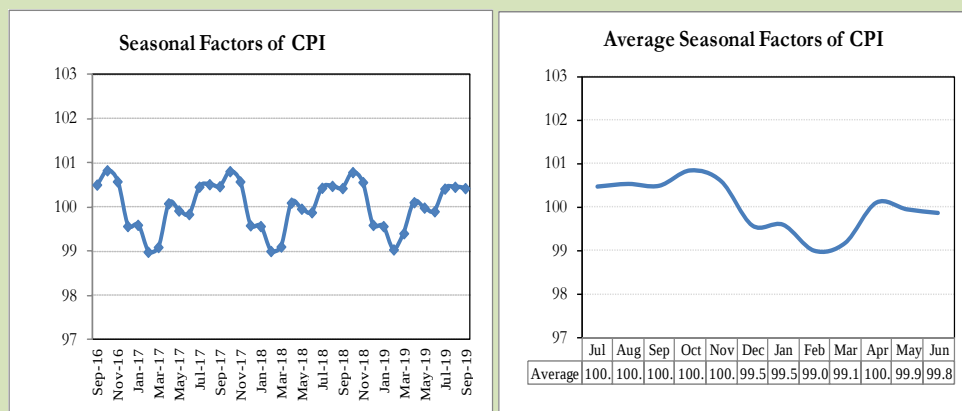
8. Seasonal Adjustment in CPI

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

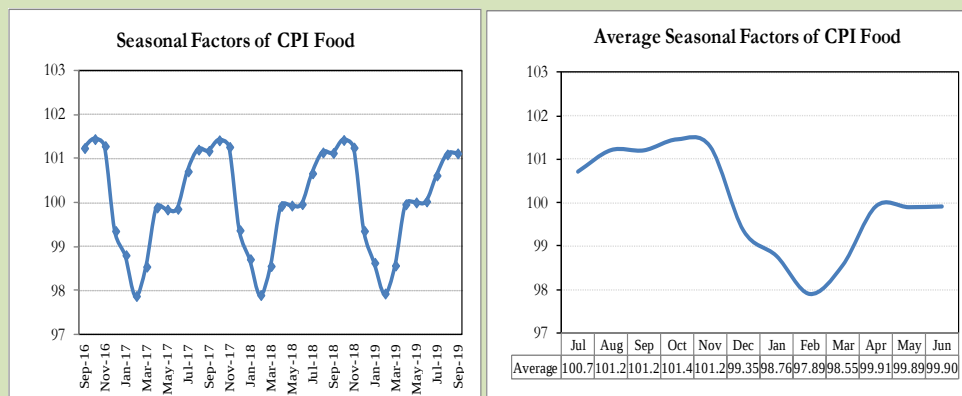
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to December and downward seasonality in the remaining months of the year. Upward and downward seasonality is above and below the trend line respectively. It is important to note that seasonal factors are estimates on historical data and that the future data may not necessarily show the same pattern of seasonal factors.

Fig. 8.1 Seasonal Factors of CPI



Note: Data Available in Annex Table 16.

Fig. 8.2 Seasonal Factors of CPI Food



Note: Data Available in Annex Table 17.

Figures 8.3 & 8.4 show that seasonally adjusted series are relatively smoother than the original series due to the removal of the seasonal variations. The trend follows the long-term movement in original series, and is smoother than the original series because some irregular fluctuations have been removed.

Fig. 8.3 Seasonal Plots of CPI

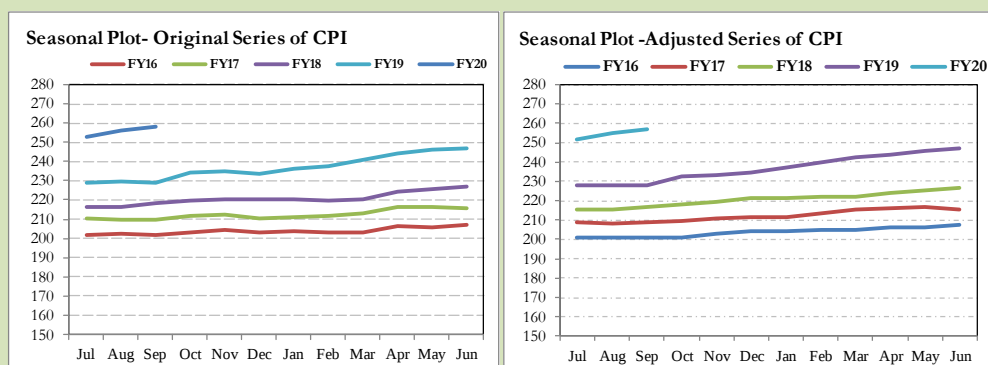
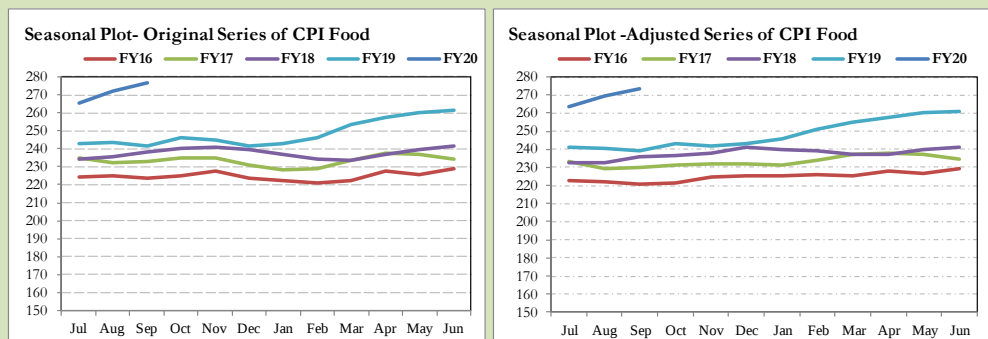


Fig. 8.4 Seasonal Plots of CPI (Food)



Seasonally adjusted CPI for September 2019 stood at 256.77 against 257.87 in original series showing a decrease of 1.10 on account of adjustment of upward seasonality in September 2019.

Seasonally adjusted CPI food group for September 2019 stood at 273.26 against 276.32 in original series showing decrease of 3.07 on account of adjustment of upward seasonality in September 2019.

Month-on-month change of seasonally adjusted CPI series stood at 1.52% reflecting an increase during September 2019 over previous month and an increase of 1.55% in original series. Month-on-month change of seasonally adjusted CPI food group series stood at 0.78% reflecting an increase during September 2019 over previous month and an increase of 0.75% in original series.

It is important to note that for MoM inflation, seasonally adjusted rates should be considered.

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 September 2019 (corresponding to the seasonally adjusted month-on-month rate) is 9.82 percent.

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

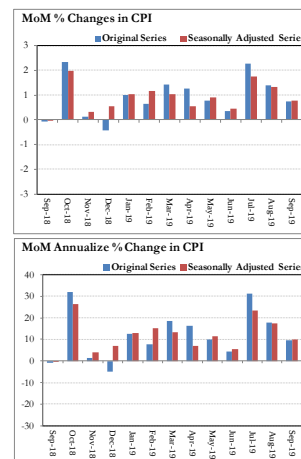
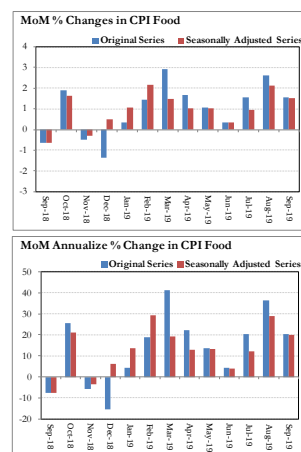


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



Annexure A

Table A1: CPI Inflation by Groups (percent)							
	Weight	MoM change			YoY change		
		Sep-18	Aug-19	Sep-19	Sep-18	Aug-19	Sep-19
I. Food Group	37.5	-0.7	2.6	1.5	1.3	11.9	14.3
Food & Non-Alcoholic Beverages	34.8	-0.8	2.8	1.6	1.1	10.7	13.4
Alcoholic Beverages & Tobacco	1.4	0.3	0.7	0.3	3.2	36.8	36.9
Restaurant & Hotels	1.2	0.3	1.0	1.2	5.3	8.3	9.3
II. Non-Food Group	62.5	0.3	0.6	0.2	7.7	11.5	11.4
Clothing & Footwear	7.6	0.3	1.2	0.4	6.6	8.5	8.7
Housing, Water, Elect, Gas & other	29.4	0.0	0.0	0.1	6.0	12.7	12.8
Fuels							
Furnishing & Household Equip.	4.2	0.5	0.9	1.1	6.2	10.7	11.3
Health	2.2	0.7	0.2	1.9	6.0	8.9	10.2
Transport	7.2	0.1	1.5	-0.8	16.6	15.3	14.3
Communication	3.2	0.0	0.3	0.0	0.6	9.0	9.0
Recreation & Culture	2.0	0.1	1.0	0.2	6.8	8.2	8.2
Education	3.9	2.0	0.1	0.2	15.1	7.0	5.2
Miscellaneous	2.8	1.1	2.2	1.2	6.9	14.4	14.5
Headline	100.0	-0.1	1.4	0.8	5.1	11.6	12.5

Table A2: Distribution of Price changes (YoY) of CPI basket											
Groups	% changes	No. of items in each inflation range									
		Total number of items		Decrease or no change (0% or less)		Subdued increase (>0% but <5%)		Moderate increase (5% but less than 10%)		Double digit increase (10% or more)	
		Sep-19	Sep-18	Sep-19	Sep-18	Sep-19	Sep-18	Sep-19	Sep-18	Sep-19	Sep-19
I. Food Group	14.3	129	129	26	10	52	22	25	41	26	56
Food & Non-Alcoholic Beverages	13.4	117	117	26	9	45	21	24	39	22	48
Alcoholic Beverages & Tobacco	36.9	6	6	0	1	4	0	0	0	2	5
Restaurant & Hotels	9.3	6	6	0	0	3	1	1	2	2	3
II. Non-Food Group	11.4	348	348	40	31	101	45	136	129	71	143
Clothing & Footwear	8.7	59	59	3	6	18	5	30	34	8	14
Housing, Water, Elect, Gas & other	12.8	36	36	12	2	6	4	11	14	7	16
Fuels											
Furnishing & Household Equip. Maintenance etc	11.3	69	69	0	1	16	5	45	23	8	40
Health	10.2	39	39	4	2	25	10	5	11	5	16
Transport	14.3	43	43	9	5	9	1	8	11	17	26
Communication	9.0	12	12	5	4	5	2	1	2	1	4
Recreation & Culture	8.2	39	39	5	7	13	11	12	8	9	13
Education	5.2	16	16	0	3	0	5	6	4	10	4
Miscellaneous	14.5	35	35	2	1	9	2	18	22	6	10
Overall	12.5	477	477	66	41	153	67	161	170	97	199

Note: Prices of 10 seasonal items were not reported during the month.

Table A3: Top and Bottom Fifteen Contributors to CPI Inflation (YoY) in September 2019					
Top 15 Contributors			YoY Change		Weighted Contribution
Items/ Contributors		Weights	Sep-18	Sep-19	
Ranked by Weighted Contribution					
1	Gas	1.58	0.00	142.57	12.35
2	House Rent	21.81	7.58	6.20	9.69
3	Cigarettes	1.39	1.25	38.10	5.70
4	Milk Fresh	6.68	4.02	7.08	4.73
5	Chicken	1.36	-4.77	63.79	4.33
6	Motor Fuel	3.03	24.39	22.46	4.32
7	Fresh Vegetables	1.75	-3.71	24.80	4.25
8	Electricity	4.40	0.00	11.33	4.13
9	Onion	0.51	-53.05	95.90	3.85
10	Wheat Flour	4.16	3.78	11.28	3.47
11	Meat	2.43	10.82	11.72	3.12
12	Sugar	1.04	-1.27	35.37	2.54
13	Personal Equipments	0.84	8.42	24.81	2.43
14	Education	3.94	15.14	5.22	2.06
15	Cotton Cloth	1.73	6.98	12.75	1.91
Total		56.67			68.86
Bottom 15 Contributors					
1	Tomatoes	0.42	-9.83	-20.63	-0.69
2	Eggs	0.46	-5.40	-0.37	-0.01
3	Gram Whole	0.16	-9.14	-0.52	-0.01
4	Betel Leaves & Nuts	0.02	143.33	-0.48	0.00
5	Kerosene Oil	0.01	37.35	9.63	0.01
6	Medical Equipments	0.01	4.09	11.10	0.01
7	Beans	0.03	1.06	12.85	0.03
8	Marriage Hall Charges	0.08	8.42	4.14	0.03
9	Blades	0.03	4.34	13.63	0.03
10	Mustard Oil	0.10	2.86	7.30	0.04
11	Wheat Product	0.10	0.15	7.45	0.05
12	Gur	0.02	-0.72	34.01	0.07
13	Recreation & Culture	0.86	5.97	1.90	0.08
14	Cereals	0.16	3.45	6.11	0.09
15	Honey	0.04	6.18	18.56	0.10
Total		2.48			-0.18

Table A3.1: Top and Bottom Fifteen Contributors to CPI Inflation (MoM) in September

<u>Top 15 Contributors</u>		Weights	<u>MoM Change</u>		Weighted Contribution
Items/ Contributors			Aug -19	Sep-19	
Ranked by Weighted Contribution					
1	Fresh Vegetables	1.75	7.08	13.40	37.67
2	Milk Fresh	6.68	0.86	1.38	14.54
3	Wheat Flour	4.16	0.75	2.06	10.31
4	Onion	0.51	28.89	7.90	8.57
5	Tea	0.84	0.57	3.08	4.34
6	Doctor (Mbbs) Clinic Fee	0.59	0.00	4.10	4.08
7	Vegetable Ghee	2.07	3.86	1.99	3.58
8	Potatoes	0.45	7.73	5.41	3.32
9	Household Servent	1.04	0.00	1.72	2.79
10	Ready Made Food	1.23	1.04	1.22	2.48
11	Bakery & Confectionary	1.16	0.35	1.66	2.45
12	Cooking Oil	1.75	3.69	1.66	2.39
13	Cotton Cloth	1.73	0.69	0.94	2.35
14	Personal Care	1.49	0.51	1.15	2.29
15	Personal Equipments	0.84	4.62	1.21	2.18
Total		26.30			103.35
<u>Bottom 15 Contributors</u>					
1	Fresh Fruits	1.86	-4.89	-4.84	-12.77
2	Motor Fuel	3.03	2.76	-2.56	-9.21
3	Tomatoes	0.42	46.07	-13.90	-6.42
4	Fish	0.30	0.56	-1.51	-0.56
5	Sugar	1.04	3.67	-0.24	-0.35
6	Eggs	0.46	7.51	-0.72	-0.33
7	Chicken	1.36	26.62	-0.10	-0.17
8	Woolen Readymade Garments	0.40	0.00	0.00	0.00
9	News Papers	0.19	0.00	0.00	0.00
10	Postal Services	0.07	0.00	0.00	0.00
11	Electricity	4.40	0.00	0.00	0.00
12	House Rent	21.81	0.00	0.00	0.00
13	Gas	1.58	0.00	0.00	0.00
14	Communication & Apparatus	3.15	0.28	0.00	0.00
15	Recreation & Culture	0.86	1.18	0.00	0.00
Total		40.93			-29.81

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in September 2019					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Sep-18	Sep-19	
A. Ranked by Percentage Change					
1	Gas	1.58	0.00	142.57	12.35
2	Onion	0.51	-53.05	95.90	3.85
3	Chicken	1.36	-4.77	63.79	4.33
4	Pulse Moong	0.23	-8.19	49.30	0.87
5	Cigarettes	1.39	1.25	38.10	5.70
6	Sugar	1.04	-1.27	35.37	2.54
7	Gur	0.02	-0.72	34.01	0.07
8	Potatoes	0.45	-19.58	30.39	1.01
9	Postal Services	0.07	8.68	27.61	0.17
10	Personal Equipments	0.84	8.42	24.81	2.43
11	Fresh Vegetables	1.75	-3.71	24.80	4.25
12	Pulse Mash (Washed)	0.21	-22.86	23.20	0.35
13	Motor Fuel	3.03	24.39	22.46	4.32
14	Motor Vehicle	0.66	11.44	19.74	0.90
15	News Papers	0.19	10.44	19.63	0.27
Total		13.34			43.41
B. Ranked by Weights					
1	House Rent	21.81	7.58	6.20	9.69
2	Milk Fresh	6.68	4.02	7.08	4.73
3	Electricity	4.40	0.00	11.33	4.13
4	Wheat Flour	4.16	3.78	11.28	3.47
5	Education	3.94	15.14	5.22	2.06
6	Communication & Apparatus	3.15	0.23	8.15	1.17
7	Motor Fuel	3.03	24.39	22.46	4.32
8	Transport Services	2.70	15.39	6.60	1.39
9	Meat	2.43	10.82	11.72	3.12
10	Vegetable Ghee	2.07	3.20	16.25	1.73
11	Fresh Fruits	1.86	2.38	6.56	1.04
12	Fresh Vegetables	1.75	-3.71	24.80	4.25
13	Cooking Oil	1.75	2.55	13.87	1.20
14	Cotton Cloth	1.73	6.98	12.75	1.91
15	Rice	1.58	8.84	6.51	0.71
Total		63.07			44.90
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 12.5 percent in September 2019.					

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

Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Sep-18	Sep-19	
A. Ranked by Weighted Contribution					
1	Cigarettes	1.39	1.25	38.10	5.70
2	Milk Fresh	6.68	4.02	7.08	4.73
3	Chicken	1.36	-4.77	63.79	4.33
4	Fresh Vegetables	1.75	-3.71	24.80	4.25
5	Onion	0.51	-53.05	95.90	3.85
6	Wheat Flour	4.16	3.78	11.28	3.47
7	Meat	2.43	10.82	11.72	3.12
8	Sugar	1.04	-1.27	35.37	2.54
9	Vegetable Ghee	2.07	3.20	16.25	1.73
10	Cooking Oil	1.75	2.55	13.87	1.20
Total		23.16			34.91
B. Ranked by Percentage Change					
1	Onion	0.51	-53.05	95.90	3.85
2	Chicken	1.36	-4.77	63.79	4.33
3	Pulse Moong	0.23	-8.19	49.30	0.87
4	Cigarettes	1.39	1.25	38.10	5.70
5	Sugar	1.04	-1.27	35.37	2.54
6	Gur	0.02	-0.72	34.01	0.07
7	Potatoes	0.45	-19.58	30.39	1.01
8	Fresh Vegetables	1.75	-3.71	24.80	4.25
9	Pulse Mash (Washed)	0.21	-22.86	23.20	0.35
10	Honey	0.04	6.18	18.56	0.10
Total		7.01			23.07
C. Ranked by Weights					
1	Milk Fresh	6.68	4.02	7.08	4.73
2	Wheat Flour	4.16	3.78	11.28	3.47
3	Meat	2.43	10.82	11.72	3.12
4	Vegetable Ghee	2.07	3.20	16.25	1.73
5	Fresh Fruits	1.86	2.38	6.56	1.04
6	Fresh Vegetables	1.75	-3.71	24.80	4.25
7	Cooking Oil	1.75	2.55	13.87	1.20
8	Rice	1.58	8.84	6.51	0.71
9	Cigarettes	1.39	1.25	38.10	5.70
10	Chicken	1.36	-4.77	63.79	4.33
Total		25.05			30.27
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 14.3 percent in September 2019.					

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in September 2019					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Sep-18	Sep-19	
A. Ranked by Weighted Contribution					
1	Gas	1.58	0.00	142.57	12.35
2	House Rent	21.81	7.58	6.20	9.69
3	Motor Fuel	3.03	24.39	22.46	4.32
4	Electricity	4.40	0.00	11.33	4.13
5	Personal Equipments	0.84	8.42	24.81	2.43
6	Education	3.94	15.14	5.22	2.06
7	Cotton Cloth	1.73	6.98	12.75	1.91
8	Transport Services	2.70	15.39	6.60	1.39
9	Household Servent	1.04	5.55	12.35	1.22
10	Communication & Apparatus	3.15	0.23	8.15	1.17
Total		44.23			40.65
B. Ranked by Percentage Change					
1	Gas	1.58	0.00	142.57	12.35
2	Postal Services	0.07	8.68	27.61	0.17
3	Personal Equipments	0.84	8.42	24.81	2.43
4	Motor Fuel	3.03	24.39	22.46	4.32
5	Motor Vehicle	0.66	11.44	19.74	0.90
6	News Papers	0.19	10.44	19.63	0.27
7	Motor Vehicle Tax	0.11	0.00	17.56	0.14
8	Plastic Products	0.25	7.61	15.43	0.31
9	Construction Input Items	0.56	9.75	13.99	0.77
10	Blades	0.03	4.34	13.63	0.03
Total		7.33			21.69
C. Ranked by Weights					
1	House Rent	21.81	7.58	6.20	9.69
2	Electricity	4.40	0.00	11.33	4.13
3	Education	3.94	15.14	5.22	2.06
4	Communication & Apparatus	3.15	0.23	8.15	1.17
5	Motor Fuel	3.03	24.39	22.46	4.32
6	Transport Services	2.70	15.39	6.60	1.39
7	Cotton Cloth	1.73	6.98	12.75	1.91
8	Gas	1.58	0.00	142.57	12.35
9	Footware	1.55	7.54	5.50	0.53
10	Personal Care	1.49	5.11	7.65	0.96
Total		45.39			38.50
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 11.4 percent in September 2019.					

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

Groups	Decrease or no change	Subdued increase (Greater than 0% but less than 5%)	Moderate increase (5% but less than 10%)	Double digit increase (10% or more)
Food & Non-Alcoholic Beverages	Tomatoes, Mango Kalmi, Gram Whole Yellow Av.Qlty, Lemon, Sweetmelon (Garma)	Cold Drink (Standard Size), Salt-Powdered (Lahori) Loose, Lady Finger, Rice Basmati 385/386	Ice Cream Walls, Wheat Flour Fine/Superior, Chillies Green, Gram Whole Black Av.Qlty., Pickles Ahmed/Mitchelles	Garlic, Onion, Arvi, Cardamom Small Av.Qlty, Chicken Farm Broiler (Live), Pulse Moong (Washed), Ginger, Spinach, Sugar Refined, Cinamon Loose Av. Qlty, Gur Av.Qlty, Potatoes
Alcoholic Beverages & Tobacco	Betel Nuts			Cigarettes Capstan 20,S, Cigarettes Morven Gold 20,S, Cigarettes K-20,S, Cigarettes Gold Leaf 20,S, Betel Leaves
Clothing & Footwear	Gents Shoe, Art 1109 Servis, Gents Sandal Bata, Ladies Spoung Chappal Bata, Ladies Sandal Bata, Gents Spoung Chappal Bata, Sports Shoes	Socks Nylon (Pakistani), School Uni. Kameez,Shal.Girls, Tailoring Shirt, Shoe Repair Half Sole, Tailoring Coat-Pant Suit	Brassier Sup.Qlty, Pullover Gents Oxford/Bon, Dopatta Georgette Av.Qlty, Pullover Ladies Oxford/Bon, Shirt Boy 24"/26" Length, Foot Wear Local (Male)	Child Shoe Power Lite Bata, Gents Shoes Paul Bata, Long Cloth 57" Gul Ahmed/Al Karam, Shirting Av.Qlty., Underwear Av.Qlty Medium Size, Tropical Suiting Law.Pur, Heavy Wt Suiting Law.Pur Av. Qlty, Georgette Av.Qlty, Pant Cloth Wash & Wear Av.Qlty
Housing, Water, Elect, Gas & other Fuels	Cement (Local), Elect.Charges Upto 50 Units	Firewood Whole, Cement Blocks (6"X8"X12"), Elect.Charges 01 - 100 Units, Elect.Charges 101 - 300 Units	Kerosene Oil, Mason (Raj) Wage Rate, Plumber Wage Rate, Carpanter Wage Rate, Timber Shesham Log, Electrician Wage Rate(P/Day), House Rent For Q-V	Gas Chrg Over 200 - 300 Mmbtu, Gas Chrg Over 100 - 200 Mmbtu, Gas Chrg All Over 500 Mmbtu, Gas Chrg Overall/ Combined, Gas Chrg Over 300 - 500 Mmbtu, Gas Chrg Up To 100 Cub Mmbtu, Iron Bar (M.S. Bar) 1/2", Synthetic Enemal Ici, Elect.Charges Above 1000 Units
Furnishing & Household Equip. Maintenance etc	Washing Machine (Singer)	D-Freezer Waves 8 Cft., Electric Blub Energy Saver 14 Watt, Farshi Dari 12'X9' Av.Qlty, Marriage Hall Charges Without Refreshment	Dry Cell 1.5 Volt (Local), Refg. Dawlence 10 Cft., Gizer Large Size 30 Gallon, Phnyle Typhone/Finis/Carr 3 Ltr, Mattress Single(4"Thick)	Tube Light Philips 40 Watt, Tea Set Pak. China Wear 21 Pcs, Harpic, Chair Shesham Wood, Boot Polish Cherry/Kiwi 50 ML, Non Stick Cooking Pan, Frying Pan Steel Avg. Qlty, Thermos Starvac 1 Ltr, Washing Soap 250 Gm
Health	Hydryllin Syrup 120 ML., Vicks Vaporub/ Balm	Ventolin Tab. 2Mg., Sugar Test (Random/Fasting), Saniplast (1 Putty), Ear Drops (Cardisporine), Lederplex	Doctor (Mbbs) Clinic Fee, Glycerine Small Bottle, Ecg Charges, Urine Test (Dr) Charges, Panadol Tab.	Betnovate-N Ointment 5 Gm, Calpol Syrup 60 ML., Dettol (Medium), Sancoes Syrup (50 ML.), Flagyl Tab. 200 Mg., Trisil Tab., Phenergan Syrup 120 ML, Brufen Tabs 200-Mg.
Transport	Air Fare Economy Class., Gas Cylinder S.Size (L.P.G), Plateform Ticket, Motorcycle Yamaha 100 Cc, Full Tonga Charges	Motor Cycle Service Charges	Bus Fare Min (Within City), Car Suzuki 800 Cc (W/O. Ac), Cycle Overhauling Charges, Bus Fare Max (Within City), Bus Fare Outside City (A/C)	Car Honda Civic 1500 Cc, Train Fare 1st Slp.101-500, Cng, Train Fare 1st Slp. > 500, Train Fare A/C Slp > 500K, Train Fare A/C Slp. 1-100, Train Fare A/C Slp.101-500, Car Suzuki 1000 Cc, Train Fare Eco. 1-100 Km.
Communication	Postal Envelope For Saudi Arabia, U.M.S. Reg Charges Min., Mobile Cell Charges, T.C.S. Ch. Min.	Fax Charges (Local), Internet Charges	Mobile Set Nokia/Sony/Ericsson Av.Qlty, Telephone Set Av. Qlty	Postal Envelope Domestic, Postal Registration Charges, Telephone Charges Local Call, Telephone Charges Outside City
Recreation & Culture	Weekly "Mag", V.C.P., Panasonic/Lg/National, Tv Licence Fee Domestic, Video Cassette Blank, Tdk/Sony, T.V. 20" Colored Sony	Urdu Book 1st Year/ Inter, English Book Ba/B.Sc, Eng. Book 1st.Yr Complete Set, Cinema A/C High Class, Cable Charges, Video Game Sega 16 Byte	Maths Book Calss V (T.B.Board), Pakistan Studies Book Ba/B.Sc, Paper Fool Scape (27"X17"), English Book Class Ix Or X, Urdu Book Class V (T.B.Board)	Daily "Nawa-E-Waqt", Daily "Jang", Photostate Paper 70 Gm, Weekly "Akhbar-E-Jahan", Pen Ink Dollor 57 MI Bottle, Pencil Goldfish/Deer, Daily "Dawn", Ball Pen (Local), Urdu Book Ba/B.Sc, Fountain Pen Hero/Wings/China, Exercise Book Lined 80/10
Education	Coaching Fee For Class Ix/X, Coaching Charges For Class Xi/ Xii Commerce Group, Coaching Charges	Pvt School Fee Eng.Med (Class-Vi), Govt. College Fee 1st. Year, Govt. College Fee 4Th. Year	Pvt School Fee Eng.Med (Class-X), Pvt School Fee Eng.Med (Class-I), Pvt School Fee Eng.Med (Class-V)	Mba Tuition Fee, Pvt Eng.Colege Fee (1st Year), Govt. Med. College Fee Mbbs 1st Year, Pvt Med.College Fee Mbbs(1st Year)
Restaurant & Hotels		Chicken Biryani Full/Double	Cooked Mutton (Av. Hotel), Bread Tandoori St. Size	Cooked Dal (Av. Hotel), Tea Prepared (Ordinary), Cooked Beef (Av. Hotel)
Miscellaneous	Toothpaste Macleans 70 Gms	Shampoo Sunsilk/Pantene 100 ML, Beauty Parlour Hair Style Charges	Toothpast Med Size Colgate 70Gms, Wall Clock Quartz Av.Qlty, Blade 7-O-Clock Steel (5)	Gold Tezabi 24 Ct, Silver Tezabi 24 Ct, Toothpowder Dentonic 90 Gms, Blade Treet Ordinary (10), Perfume Med.Size Medora/Broche, Wrist Watch Ladies Citizen

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

	Up to Rs: 8000						Rs 8001- 12000					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	0.4	11.9	0.3	14.3	0.5	9.4	0.5	11.8	0.3	14.0	0.6	9.6
2 Islamabad	1.7	12.7	1.5	14.6	2.0	10.6	1.1	12.0	0.8	13.5	1.4	10.5
3 Lahore	0.3	10.5	0.3	13.3	0.4	6.8	0.3	10.4	0.2	13.3	0.4	7.0
4 Gujranwala	1.0	11.5	1.8	17.4	0.0	4.8	0.8	11.8	1.4	17.4	0.1	6.1
5 Sialkot	0.5	11.9	1.0	13.7	0.0	9.7	0.3	11.8	0.7	13.4	0.0	10.2
6 Faisalabad	0.4	11.4	0.6	14.4	0.1	8.2	0.3	11.0	0.5	14.1	0.1	8.1
7 Multan	1.0	12.6	1.7	15.7	0.2	9.0	1.0	12.4	1.8	15.5	0.1	9.2
8 Sargodha	0.6	12.7	0.9	15.8	0.3	9.4	0.5	12.5	0.7	15.6	0.3	9.6
9 Bahawalpur	0.9	11.5	1.4	15.3	0.4	7.7	0.6	11.0	0.9	14.6	0.2	7.7
10 Karachi	2.6	15.9	4.9	20.7	-0.3	10.0	2.5	16.3	4.7	20.4	0.0	11.9
11 Hyderabad	2.8	18.0	4.2	19.7	1.0	15.8	2.4	17.7	3.8	18.9	0.8	16.3
12 Sukkur	2.0	15.0	3.4	21.3	0.3	8.3	1.5	14.0	2.8	20.2	0.3	8.2
13 Larkana	3.1	15.2	5.6	21.5	0.4	8.7	2.9	14.7	5.5	21.3	0.5	8.8
14 Peshawar	1.4	13.0	1.5	15.2	1.3	10.7	1.2	12.8	1.4	15.1	1.1	10.8
15 Bannu	0.3	9.1	0.2	10.3	0.4	7.8	0.4	9.0	0.3	10.3	0.4	7.9
16 Quetta	0.1	13.5	0.0	14.6	0.2	12.2	0.2	13.5	0.1	14.3	0.3	12.6
17 Khuzdar	1.5	7.7	1.6	9.5	1.4	5.8	1.3	7.5	1.4	9.8	1.2	5.3
	Rs 12001-18000						Rs 18001-35000					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	0.6	12.3	0.5	13.9	0.7	11.0	0.6	11.9	0.5	13.5	0.7	10.8
2 Islamabad	1.0	12.2	0.6	13.5	1.3	11.1	1.1	11.9	0.7	13.6	1.3	10.6
3 Lahore	0.3	10.5	0.2	13.0	0.3	8.0	0.2	10.0	0.1	12.8	0.2	7.5
4 Gujranwala	0.7	12.2	1.2	17.2	0.1	7.6	0.6	12.1	1.1	17.2	0.1	7.9
5 Sialkot	0.4	12.1	0.8	13.2	0.0	11.0	0.2	11.8	0.5	13.3	-0.1	10.6
6 Faisalabad	0.2	11.2	0.4	13.8	0.1	8.9	0.1	10.7	0.2	13.8	0.0	8.4
7 Multan	1.0	12.5	1.8	15.5	0.3	9.7	0.9	12.4	1.9	16.1	0.1	9.5
8 Sargodha	0.5	12.2	0.8	15.2	0.2	9.7	0.4	11.6	0.8	15.3	0.1	9.0
9 Bahawalpur	0.4	11.5	0.8	14.8	0.2	8.9	0.2	10.5	0.5	14.8	0.0	7.6
10 Karachi	2.5	17.2	4.6	20.5	0.4	14.1	2.2	16.9	4.4	20.5	0.3	13.8
11 Hyderabad	2.2	18.2	3.5	18.9	0.9	17.4	1.7	17.7	3.0	18.5	0.6	17.0
12 Sukkur	1.3	13.5	2.4	19.8	0.3	8.2	0.9	12.3	1.7	18.1	0.2	7.9
13 Larkana	2.7	14.8	5.1	21.0	0.6	9.9	2.6	13.9	5.3	20.0	0.5	9.4
14 Peshawar	1.1	13.2	1.1	15.0	1.1	11.8	0.9	12.7	0.9	14.9	0.9	11.2
15 Bannu	0.5	9.3	0.6	10.4	0.4	8.3	0.3	9.1	0.2	10.5	0.4	8.1
16 Quetta	0.1	14.6	0.1	14.7	0.2	14.5	0.1	14.4	0.0	15.0	0.1	13.9
17 Khuzdar	1.1	6.7	1.4	8.5	0.9	5.2	1.1	7.0	1.4	7.9	0.9	6.2
	Above Rs 35000						Combined					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	0.5	11.5	0.4	12.1	0.5	11.2	0.5	11.5	0.4	12.8	0.6	10.7
2 Islamabad	0.7	11.9	0.4	12.0	0.8	11.9	0.7	11.7	0.4	12.3	0.9	11.4
3 Lahore	0.1	9.8	-0.1	11.1	0.2	9.1	0.2	9.9	0.1	12.2	0.2	8.2
4 Gujranwala	0.5	11.7	1.0	17.0	0.3	9.2	0.6	11.9	1.2	17.3	0.2	8.3
5 Sialkot	-0.1	11.7	0.1	12.8	-0.1	11.2	0.1	11.7	0.4	13.1	-0.1	10.7
6 Faisalabad	0.0	10.3	0.1	12.2	-0.1	9.5	0.1	10.8	0.3	13.6	0.0	9.0
7 Multan	0.6	11.3	1.8	15.5	0.0	9.3	0.8	11.9	1.8	15.6	0.1	9.4
8 Sargodha	0.2	11.2	0.9	14.0	-0.1	10.1	0.4	11.9	0.8	15.1	0.1	9.9
9 Bahawalpur	0.0	9.6	0.4	12.9	-0.1	8.2	0.3	10.5	0.8	14.4	0.1	8.3
10 Karachi	1.6	15.2	4.0	18.9	0.4	13.3	1.9	15.7	4.3	19.6	0.2	12.9
11 Hyderabad	1.0	18.2	2.3	17.4	0.4	18.6	1.7	17.9	3.1	18.5	0.7	17.4
12 Sukkur	0.4	12.2	1.0	16.0	0.1	10.4	1.1	13.1	2.1	18.6	0.4	9.6
13 Larkana	2.2	13.3	5.1	18.2	0.9	11.2	2.7	14.4	5.3	20.6	1.1	10.7
14 Peshawar	0.6	13.3	0.3	13.5	0.8	13.2	0.9	13.1	0.9	14.6	0.9	12.1
15 Bannu	0.5	9.6	1.1	10.0	0.3	9.4	0.4	9.3	0.4	10.3	0.4	8.7
16 Quetta	0.2	14.5	0.0	14.5	0.2	14.6	0.1	14.2	0.0	14.6	0.2	13.9
17 Khuzdar	0.7	9.2	1.2	8.5	0.4	9.6	1.2	7.6	1.4	8.9	1.1	6.8

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

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Hyderabad	17.9	18.5	17.4	Jhang	12.2	14.2	11.1
Bahawalnagar	17.4	20.9	15.3	Multan	11.9	15.6	9.4
Mardan	16.8	13.1	18.7	Sargodha	11.9	15.1	9.9
Abbottabad	16.7	15.4	17.5	Gujranwala	11.9	17.3	8.3
Karachi	15.7	19.6	12.9	Islamabad	11.7	12.3	11.4
Dadu	15.5	21.2	11.7	Sialkot	11.7	13.1	10.7
D. I. Khan	15.4	14.4	16.0	Sahiwal	11.5	15.0	9.6
Wazirabad	14.9	20.3	11.3	Rawalpindi	11.5	12.8	10.7
Larkana	14.4	20.6	10.7	Turbat	11.1	8.1	12.6
Quetta	14.2	14.6	13.9	Faisalabad	10.8	13.6	9.0
Mianwali	13.8	19.8	10.5	Bahawalpur	10.5	14.4	8.3
Mingora	13.8	17.9	11.4	D. G. Khan	10.3	11.5	9.6
Mirpukhas	13.5	15.8	11.9	Lahore	9.9	12.2	8.2
Attock	13.3	13.6	13.2	Bannu	9.3	10.3	8.7
Sukkur	13.1	18.6	9.6	D. M. Jamali	9.0	10.2	8.2
Peshawar	13.1	14.6	12.1	Loralai	8.9	12.0	7.1
R. Y. Khan	13.0	20.1	8.6	Mithi	8.6	13.6	5.6
Muzaffargarh	12.9	15.8	11.1	Khuzdar	7.6	8.9	6.8
Jhelum	12.6	13.3	12.2	Gawadar	7.5	4.8	9.1
				Nawabshah	6.4	5.2	7.1
				Vehari	5.0	8.7	2.6

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		
	Sep-18	Aug-19	Sep-19	Sep-18	Aug-19	Sep-19
<u>Up to Rs. 8000</u>						
General	-0.2	1.8	1.2	3.2	10.7	12.2
Food	-0.6	2.9	1.9	0.3	12.3	15.1
Non-food	0.3	0.5	0.3	6.9	8.9	8.9
<u>Rs. 8001- 12000</u>						
General	-0.2	1.7	1.0	3.7	11.2	12.5
Food	-0.6	2.8	1.7	0.6	12.1	14.8
Non-food	0.3	0.5	0.3	6.9	10.4	10.3
<u>Rs. 12001- 18000</u>						
General	-0.1	1.6	0.9	4.1	11.2	12.4
Food	-0.6	2.8	1.7	0.9	12.1	14.7
Non-food	0.3	0.6	0.2	7.1	10.3	10.2
<u>Rs. 18001- 35000</u>						
General	-0.1	1.5	0.8	4.7	11.8	12.8
Food	-0.7	2.7	1.6	1.2	12.2	14.7
Non-food	0.3	0.6	0.2	7.6	11.5	11.4
<u>Above Rs. 35000</u>						
General	0.0	1.2	0.6	6.1	12.1	12.7
Food	-0.7	2.4	1.4	2.0	11.4	13.7
Non-food	0.4	0.6	0.2	8.1	12.4	12.2
<u>All income groups</u>						
General	-0.1	1.4	0.8	5.1	11.6	12.5
Food	-0.7	2.6	1.5	1.3	11.9	14.3
Non-food	0.3	0.6	0.2	7.7	11.5	11.4
Note: Computed based on CPI Numbers by Income Quintiles and Commodity Groups released by Pakistan Bureau of Statistics (PBS)						

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices Sep-19	Percentage change	
				YoY	MoM
1	Wheat	10Kg.	370.2	10.6	2.4
2	Wheat Flour Bag	10Kg.	436.3	12.5	2.7
3	Rice Basmati Broken	Kg.	81.6	6.4	0.3
4	Rice Irri-6/9	Kg.	60.5	11.5	0.2
5	Bread Plain Med.Size (340-400 Gm.)	Each	49.0	14.4	3.1
6	Beef	Kg.	419.8	11.8	0.1
7	Mutton	Kg.	873.6	10.9	0.8
8	Chicken Live (Farm)	Kg.	203.0	71.6	10.9
9	Milk Fresh	Litr	93.5	9.3	0.8
10	Curd	Kg.	109.5	7.2	1.1
11	Milk Powdered Nido	500G	444.9	15.5	0.4
12	Egg Hen (Farm)	Doz.	97.9	2.3	0.5
13	Mustard Oil	Kg.	201.1	7.0	1.0
14	Cooking Oil (Tin)	2.5Ltr	569.8	18.6	1.6
15	Veg. Ghee (Tin)	2.5Kg.	544.9	14.7	1.6
16	Veg.Ghee Loose	Kg.	183.4	21.7	3.0
17	Bananas	Doz.	66.9	0.8	-14.0
18	Masoor Pulse Washed	Kg.	126.4	11.1	0.5
19	Moong Pulse Washed	Kg.	170.5	49.1	0.1
20	Mash Pulse Washed	Kg.	181.8	25.8	0.8
21	Gram Pulse Washed	Kg.	132.1	11.0	1.3
22	Potatoes	Kg.	41.2	27.8	2.8
23	Onions	Kg.	72.0	89.5	12.3
24	Tomatoes	Kg.	50.9	-29.7	-8.0
25	Sugar	Kg.	75.0	36.4	-0.5
26	Gur	Kg.	113.7	32.6	2.6
27	Salt Powdered Loose (Lahori)	Kg.	12.5	4.3	0.6
28	Red Chillies Powder Loose	Kg.	347.0	2.0	0.5
29	Garlic	Kg.	258.1	110.0	0.8
30	Tea (Yellow Lable 200 Gm.)	200Gm.	236.9	16.1	7.9
31	Cooked Beef Plate	Each	128.4	12.1	0.8
32	Cooked Dal Plate	Each	67.0	8.5	1.1
33	Tea Prepared (Sada)	Cup	24.6	13.0	0.5
34	Cigarettes K-2 (20'S)	20'S	76.2	47.3	0.0
35	Long Cloth (Coarse Latha)	Mtr.	309.9	32.3	1.2
36	Shirting	Mtr.	204.3	14.4	0.1
37	Lawn	Mtr.	348.9	21.1	0.1
38	Georgette (Voil Printed)	Mtr.	144.8	9.6	0.4
39	Sandal Gents Bata	Pair	699.0	0.0	0.0
40	Chappal Spng.Bata (Gents)	Pair	199.0	0.0	0.0
41	Sandal Ladies Bata	Pair	599.0	0.0	0.0
42	Electric Charges 1-50	Unit	2.0	0.0	0.0
43	Gas Charges Upto 3.3719	Mmbtu	246.3	91.4	0.0
44	Kerosene	Litr	131.8	8.6	-1.7
45	Firewood	40Kg	654.8	4.3	0.4
46	Energy Savor 14 Watt	Each	177.1	3.4	0.0
47	Washing Soap (200-250 Gm.)	Cake	33.2	16.8	1.9
48	Match Box	Each	2.6	11.5	1.2
49	Petrol	Litr	114.2	21.6	-4.0
50	Diesel	Litr	128.1	19.1	-4.0
51	L.P.G.(11 Kg Cylander.)	Each	1285.1	-18.5	2.8
52	Tele. Local Call	Call	4.7	18.0	0.0
53	Bath Soap Lifebouy (Standard)	Cake	43.9	7.9	2.4
Maximum				110.0	12.3
Median				11.8	0.5
Minimum				-29.7	-14.0

Table A9: Distribution of Price Changes (YoY) - WPI Items: September 2019				
Groups	Decrease or no change	Subdued increase (Greater than 0% but less than 5%)	Moderate increase (5% but less than 10%)	Double digit increase (10% or more)
Agriculture Forestry & Fishery Products	Hides And Fur Skins,Raw, Eggs, Millet/Bajra	Dry Fruits, Raw Animal Material/Wool, Other Oil Seeds, Milk From Bovine Animals, Fibre Crops	Maize, Unmanufactured Tobacco, Fresh Fruits, Fuel Wood In Logs	Poultry, Stimulant And Spice Crops, Edible Roots/Potatos, Sorghum/Jowar, Vegetables, Sugar Crops, Rice, Cotton Seeds, Pulses, Wheat, Fish Live Fresh Or Chilled
Ores & Minerals, Electricity Gas & Water	Coal Not Agglomerated			Natural Gas Liquefied, Electrical Energy, Salt & Pure Sodium Chloride
Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products	Towels, Nylon Yarn, Footwears	Quilts, Mineral Water, Processed Liquid Milk, Blankets, Beverages, Woolen Carpets, Sugar Confectionary	Cotton Yarn, Coffee And Tea, Chocolate, Fruit Juices, Meat Of Animals, Other Cereal Flour, Hosiery Products, Leather With Out Hairs, Bed Sheets, Other Food Products, Oil Cakes, Silk And Reyon Fabrics, Ice Cream, Synthetic Carpets, Blended Yarn	Other Leather N.E.C, Sugar Refined, Tobacco Products, Spices, Milk And Cream In Solid Form, Vegetable Ghee, Woven Fabrics, Dried Fruits & Nuts, Wheat Flour, Other Fabrics, Vegetables & Fruit Juices, Ready Made Garments, Dairy Products N.E.C, Cotton Fabrics, Vegetable Oil Refined
Other Transportable Goods except Metal Products, Machinery and Equipments	Coke, Hard Board	Insecticised, Timber, Plastic Products, Matches, Cement, Printing Paper, Furnace Oil	Ceramics And Sanitary, Soaps & Detergent, Pesticides	Dying Materials, Auto Tyres, Motor Sprit, Diesel Oil, Kerosine Oil, Fertilizers, Glass Sheets, Bed Foams, Mobil Oil, Chemicals, Paints & Varnishes, Bricks Blocks And Tiles, Medicines, Other Glass Articles
Metal Product Machinery & Equipment	Engines And Motors, Vacuum Pumps, Pig Iron, Concrate Mixer, Cultivators, Chuff Cutter	Tractors, Lighting Equipments, Bicycles	Air Conditioners	Lathe Machines, Steel Bars & Sheets, Motor Cycles, Motor Vehicales, Refrige,Wash& Sew Mach,Iron,Fan, Electrical Wires, Pipe Fittings, Radio And Television, Steel Products

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

Items and specification	Weights	Index		
		Sep-18	Aug-19	Sep-19
General	100.00	229.12	255.94	257.87
Food & Non-Alcoholic Beverages.	34.83	236.78	264.07	268.40
1 Wheat	0.35	200.51	220.26	223.80
2 Wheat Flour	4.16	212.55	231.75	236.53
3 Wheat Product	0.10	213.99	226.28	229.94
4 Besan	0.15	266.82	284.44	287.21
5 Rice	1.58	199.02	210.49	211.97
6 Cereals	0.16	264.45	278.08	280.60
7 Bakery & Confectionary	1.16	229.45	246.26	250.36
8 Nimco	0.46	261.61	269.64	270.22
9 Meat	2.43	314.34	349.72	351.19
10 Chicken	1.36	143.44	235.18	234.94
11 Fish	0.30	223.09	242.55	238.89
12 Milk Fresh	6.68	287.14	303.28	307.48
13 Milk Product	0.63	278.55	295.45	299.75
14 Milk Powder	0.11	247.39	273.83	276.83
15 Eggs	0.46	194.28	194.97	193.57
16 Mustard Oil	0.10	164.80	175.81	176.83
17 Cooking Oil	1.75	141.62	158.63	161.26
18 Vegetable Ghee	2.07	147.60	168.25	171.59
19 Dry Fruits	0.25	291.02	312.97	315.54
20 Fresh Fruits	1.86	243.78	272.98	259.76
21 Pulse Masoor	0.27	156.97	176.58	178.17
22 Pulse Moong	0.23	217.37	323.18	324.54
23 Pulse Mash (Washed)	0.21	207.73	255.42	255.93
24 Pulse Gram	0.24	265.30	292.48	300.69
25 Gram Whole	0.16	265.65	262.42	264.28
26 Beans	0.03	245.51	275.37	277.06
27 Potatoes	0.47	215.21	266.23	280.62
28 Onion	0.53	226.63	411.47	443.96
29 Tomatoes	0.44	231.71	213.59	183.90
30 Fresh Vegetables	1.68	280.93	309.15	350.59
31 Sugar	1.04	197.47	267.95	267.31
32 Gur	0.02	259.35	337.51	347.56
33 Honey	0.04	352.68	415.24	418.15
34 Sweet Meet	0.25	273.01	291.72	293.35
35 Beverages	1.20	233.14	244.03	246.59
36 Jam, Tomato Ketchup & Pickle	0.25	233.20	250.53	252.16
37 Condiments	0.27	286.64	311.21	314.61
38 Spices	0.54	264.25	294.48	299.46
39 Tea	0.84	307.50	324.56	334.55
Alcoholic Beverages, Tobacco	1.41	314.42	428.89	430.39
40 Cigarettes	1.39	309.50	426.03	427.43
41 Betel Leaves & Nuts	0.02	613.03	602.78	610.07
Clothing & Footwear	7.57	255.36	276.34	277.52
42 Cotton Cloth	1.73	248.90	278.02	280.64
43 Woolen Cloth	0.88	268.05	295.21	296.75
44 Ready Made Garments	0.97	264.55	281.45	281.91
45 Woolen Readymade Garments	0.40	267.54	289.82	289.82
46 Hosiery	0.51	267.72	288.98	290.85
47 Dopatta	0.44	266.54	290.24	290.81

Cont'd

Table A10: Consumer Price Index by Major Groups and Composite Commodities					
Items and specification	Weights	Index			
		Sep-18	Aug-19	Sep-19	
48 Cleaning & Laundering	0.21	292.02	314.95	318.39	
49 Tailoring	0.88	350.43	370.77	371.43	
50 Footware	1.55	180.09	189.92	189.99	
Housing,Water,Elect,Gas & Other Fuel	29.41	210.82	237.57	237.71	
51 House Rent	21.81	206.00	218.77	218.77	
52 Construction Input Item	0.56	280.39	318.92	319.63	
53 Construction Wage Rate	0.33	268.44	290.23	292.53	
54 Water Supply	0.50	189.82	196.05	200.56	
55 Electricity	4.40	238.10	265.08	265.08	
56 Gas	1.58	158.08	383.45	383.45	
57 Kerosene Oil	0.01	272.49	241.67	298.74	
58 Fire Wood Whole	0.23	299.07	310.93	312.72	
Furnished H.Hold Equip.& Maint. Etc	4.21	243.36	268.03	270.94	
59 Furniture	0.33	238.44	265.29	268.82	
60 Household Textile	0.65	243.85	260.48	263.35	
61 Household Equipment	0.59	193.22	208.88	209.66	
62 Utensils	0.32	257.08	289.15	291.41	
63 Plastic Products	0.25	229.26	260.59	264.63	
64 Washing Soap & Detergent	0.79	245.92	275.08	276.87	
65 Sewing Needle & Dry Cell	0.15	221.76	242.52	243.55	
66 Household Servant	1.04	271.59	299.97	305.13	
67 Marriage Hall Charges	0.08	270.18	280.41	281.37	
Health	2.19	226.78	245.21	249.96	
68 Drug Medicine	1.27	191.25	211.05	212.51	
69 Medical Equipment	0.01	263.71	287.38	292.99	
70 Doctor (MBBS) Clinic Fee	0.59	307.89	325.23	338.58	
71 Medical Test	0.32	216.89	231.83	233.72	
Transport	7.20	204.94	235.99	234.20	
72 Motor Vehicle	0.66	197.12	234.27	236.04	
73 Motor Vehicle Accessories	0.24	220.60	247.82	249.94	
74 Motor Fuel	3.03	182.56	229.44	223.57	
75 Mechanical Service	0.46	245.90	262.54	267.28	
76 Motor Vehicle Tax	0.11	210.18	247.08	247.08	
77 Transport Services	2.70	223.39	237.75	238.13	
Communication	3.22	133.78	145.77	145.78	
78 Postal Services	0.07	272.45	347.68	347.68	
79 Communication & Apparatus	3.15	130.87	141.54	141.54	
Recreation & Culture	2.02	210.12	227.00	227.37	
80 Recreation & Culture	0.86	137.22	139.83	139.83	
81 Text Books	0.57	304.43	327.76	327.83	
82 News Papers	0.19	202.94	242.78	242.78	
83 Stationery	0.40	236.70	264.24	266.01	
Education	3.94	287.41	301.75	302.40	
84 Education	3.94	287.41	301.75	302.40	
Restaurants And Hotels	1.23	295.86	319.62	323.51	
85 Ready Made Food	1.23	295.86	319.62	323.51	
Miscellaneous Goods And Services	2.76	267.30	302.58	306.08	
86 Personal Care	1.49	242.09	257.64	260.60	
87 Cosmetics	0.39	225.61	245.40	247.72	
88 Blades	0.03	206.54	230.54	234.70	
89 Personal Equipments	0.84	333.26	410.95	415.94	

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

Items and Specifications	Index		
	Sep-18	Aug-19	Sep-19
General	238.25	274.74	275.49
Agriculture Forestry & Fishery	267.67	291.11	298.77
1 Wheat	205.17	223.19	229.50
2 Maize	228.81	244.68	251.57
3 Rice	181.31	209.04	211.58
4 Sorghum/Jowar	285.95	408.41	422.26
5 Millet/Bajra	261.64	272.95	260.20
6 Vegetables	338.79	387.89	479.03
7 Fresh Fruits	266.54	312.34	291.16
8 Dry Fruits	278.85	291.70	292.20
9 Cotton Seeds	265.99	303.71	307.26
10 Other Oil Seeds	195.43	204.45	204.62
11 Edible Roots/ Potatoes	199.17	306.66	313.46
12 Stimulant And Spice Crops	319.25	481.15	541.61
13 Pulses	231.62	263.87	265.79
14 Sugar Crops	257.62	349.69	349.69
15 Fibre Crops	262.70	258.56	268.80
16 Unmanufactured Tobacco	318.02	347.72	349.31
17 Poultry	143.93	245.06	259.96
18 Milk From Bovine Animals	285.13	292.99	296.45
19 Eggs	201.16	196.46	198.65
20 Raw Animal Material/Wool	176.92	185.60	185.35
21 Hides And Fur Skins, Raw	93.47	59.92	57.49
22 Fuel Wood In Logs	284.65	300.39	300.39
23 Fishes Live Fresh Or Chilled	453.67	506.11	504.65
Ores/Minerals, Gas & Elect.	244.76	352.11	352.17
24 Coal Not Agglomerated	155.29	155.29	155.29
25 Natural Gas Liquefied	214.80	407.52	407.60
26 Salt & Pure Sodium Chloride	271.87	295.35	299.39
27 Electrical Energy	288.00	321.72	321.72
Food, Beverages, Tobacco, Textiles	243.64	272.22	272.15
28 Meat Of Animals	339.60	368.83	369.69
29 Vegetables & Fruit Juices	228.62	257.55	257.55
30 Dried Fruits & Nuts	302.02	344.42	344.42
31 Fruit Juices	188.55	202.70	205.36
32 Vegetable Oil Refined	159.08	175.96	176.84
33 Vegetable Ghee	130.88	149.40	152.14
34 Oil Cakes	240.72	265.98	257.04
35 Processed Liquid Milk	296.67	305.39	308.07
36 Milk And Cream In Solid Form	225.53	261.29	265.87
37 Ice Cream	286.26	300.49	302.60
38 Dairy Products N.E.C	282.17	303.63	314.70
39 Wheat Flour	194.82	213.96	221.49
40 Other Cereal Flour	218.82	235.55	237.39
41 Sugar Refined	207.69	287.15	288.17
42 Chocolate	100.00	109.63	109.63
43 Sugar Confectionary	127.25	128.15	128.15
44 Coffee And Tea	278.46	295.14	305.30
45 Spices	213.13	252.81	253.78
46 Other Food Products	300.74	323.23	323.23
47 Mineral Water	210.16	219.67	219.67
48 Beverages	176.55	181.25	181.25
49 Tobacco Products	319.65	393.80	393.80
50 Cotton Yarn	253.93	287.52	278.41
51 Nylon Yarn	143.99	143.99	143.99
52 Blended Yarn	201.84	214.02	212.52
53 Woven Fabrics	321.49	367.78	367.78
54 Cotton Fabrics	219.87	244.57	244.71
55 Other Fabrics	227.85	253.96	257.38

Cont'd

Table A11: Wholesale Price Index by Major Groups and Composite Commodities				
Items and Specifications		Index		
		Sep-18	Aug-19	Sep-19
56	Silk And Rayon Fabrics	188.81	199.83	199.83
57	Towels	305.52	298.17	298.17
58	Blankets	267.72	277.52	277.52
59	Bed Sheets	256.87	277.23	277.23
60	Quilts	222.32	232.74	232.74
61	Woolen Carpets	196.43	199.40	199.40
62	Synthetic Carpets	131.80	138.98	138.98
63	Hosiery Products	253.68	272.90	274.83
64	Ready Made Garments	204.85	230.61	230.61
65	Leather With Out Hairs	212.68	229.55	229.55
66	Other Leather N.E.C	207.02	443.31	443.31
67	Footwear's	168.09	168.09	168.09
Other Transportable Goods		213.10	245.25	239.28
68	Timber	240.62	250.12	250.12
69	Printing Paper	172.70	174.76	174.76
70	Hard Board	291.67	291.67	291.67
71	Coke	163.45	163.45	163.45
72	Motor Sprit	156.81	199.07	191.31
73	Diesel Oil	230.43	291.12	276.84
74	Kerosene Oil	222.78	277.28	265.87
75	Furnace Oil	172.10	200.72	173.84
76	Mobil Oil	209.31	235.42	235.42
77	Chemicals	213.09	235.21	238.88
78	Dying Materials	150.72	194.38	194.38
79	Fertilizers	242.31	272.67	280.95
80	Pesticides	312.32	325.56	335.98
81	Insecticides	145.02	150.84	150.84
82	Paints & Varnishes	354.53	391.52	396.48
83	Medicines	180.06	196.75	199.77
84	Soaps & Detergent	193.52	204.45	208.29
85	Auto Tyres	184.52	228.82	229.12
86	Plastic Products	243.75	251.41	251.64
87	Glass Sheets	304.55	351.28	351.28
88	Other Glass Articles	318.10	351.41	351.41
89	Ceramics And Sanitary	243.24	263.26	264.94
90	Bricks Blocks And Tiles	225.43	249.76	250.28
91	Cement	234.41	235.70	237.31
92	Bed Foams	176.50	198.17	199.00
93	Matches	171.36	174.27	174.27
Metal Product Machinery & Equip		187.64	204.16	205.60
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	168.49	206.94	208.35
96	Pipe Fittings	234.48	276.22	276.22
97	Steel Products	183.35	207.30	207.30
98	Engines And Motors	116.98	116.98	116.98
99	Vacuum Pumps	123.69	123.69	123.69
100	Air Conditioners	203.80	223.39	223.39
101	Cultivators	190.66	190.66	190.66
102	Chuff Cutter	153.46	153.46	153.46
103	Tractors	216.82	226.93	226.93
104	Lathe Machines	241.06	348.09	348.09
105	Concrete Mixer	138.83	138.83	138.83
106	Fridge,Wash& Sew Mach, Iron,Fan	229.31	266.02	274.56
107	Electrical Wires	208.22	240.96	245.55
108	Lighting Equipments	174.04	179.06	179.06
109	Radio And Television	140.42	164.81	164.81
110	Motor Vehicles	218.11	262.69	262.69
111	Motor Cycles	134.21	161.98	162.53
112	Bicycles	194.31	196.16	196.16

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

Period		CPI			WPI			SPI *
		Overall	Food	Non-food	Overall	Food	Non-Food	
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
2018-19		236.81	242.61	248.44	250.28	269.48	238.10	240.94
2017	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	226.67	241.35	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	229.12	241.65	221.61	238.25	260.81	223.95	228.27
	Oct	234.49	246.27	227.43	248.19	266.83	236.36	235.22
	Nov	234.75	245.08	228.56	249.92	264.02	240.97	238.35
	Dec	233.78	241.70	229.03	247.72	261.58	238.93	238.12
2019	Jan	236.11	242.53	232.26	247.21	263.50	236.87	239.07
	Feb	237.61	246.03	232.56	249.44	265.38	239.32	244.35
	Mar	240.98	253.20	233.66	253.67	272.71	241.59	248.19
	Apr	244.03	257.44	235.99	259.57	280.77	246.11	250.70
	May	245.94	260.21	237.39	263.29	285.88	248.95	253.78
	Jun	246.82	261.13	238.24	264.15	286.61	249.89	257.34
	Jul	252.46	265.16	244.85	272.34	287.18	262.93	263.01
	Aug	255.94	272.11	246.25	274.74	290.27	264.89	270.51
	Sep	257.87	276.32	246.81	275.49	294.92	263.17	273.54

*: all groups combined

Table A13: International Commodity Prices/Indices

	Jun-19	Jul-19	Aug-19	Sep-19
Energy				
Crude Oil (US\$ per barrel) *	59.8	61.5	57.7	60.0
Energy Index (2010 = 100)	73.1	74.9	70.4	73.7
Food				
Rice (\$/MT)	420.0	416.0	430.0	427.0
Wheat (\$/MT)	206.1	196.2	181.1	189.6
Sugar (US cent/ pound)^	0.28	0.28	0.27	0.26
Palm Oil (\$/MT)	552.2	543.9	586.1	580.3
Soybean Oil (\$/MT)	742.9	748.2	793.2	779.3
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	1.7	1.7	1.6	1.6
Metal Price Index (2010 = 100)	79.4	80.7	78.9	80.5
Copper (\$/MT)	5,882.2	5,941.2	5,709.4	5,759.3
Aluminum (\$/MT)	1,756.0	1,797.0	1,740.7	1,753.5
Iron Ore (\$ cents/dry MT)	108.9	120.2	93.1	93.1
Tin (\$/MT)	19,193.2	17,977.9	16,609.0	16,830.6
Nickel (\$/MT)	11,943.9	13,546.3	15,748.6	17,656.9
Zinc (\$/MT)	2,601.2	2,446.5	2,273.0	2,331.6
Lead (\$/MT)	1,899.7	1,975.6	2,044.6	2,071.9
Uranium (\$/MT)@	24.6	25.4	25.3	25.7
DAP (\$/MT)	314.9	307.5	292.9	285.8
Urea (\$/MT)	247.5	263.5	262.5	237.8

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. cents / \$/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	FY16	FY17	FY18	FY19	FY20
Jul	201.76	210.08	216.19	228.80	252.46
Aug	202.25	209.46	216.61	229.27	255.94
Sep	202.04	209.88	217.98	229.12	257.87
Oct	203.03	211.57	219.61	234.49	
Nov	204.22	212.01	220.42	234.75	
Dec	203.06	210.57	220.20	233.78	
Jan	203.49	210.94	220.27	236.11	
Feb	202.98	211.54	219.58	237.61	
Mar	203.28	213.32	220.25	240.98	
Apr	206.43	216.30	224.25	244.03	
May	205.99	216.33	225.40	245.94	
Jun	207.30	215.45	226.68	246.82	
Seasonally Adjusted Series					
Jul	200.77	209.07	215.19	227.80	251.41
Aug	201.09	208.30	215.49	228.17	254.77
Sep	200.95	208.82	216.95	228.14	256.77
Oct	201.30	209.82	217.84	232.65	
Nov	203.03	210.78	219.15	233.43	
Dec	203.98	211.47	221.11	234.72	
Jan	204.26	211.79	221.22	237.13	
Feb	205.08	213.70	221.78	239.91	
Mar	205.13	215.26	222.23	242.41	
Apr	206.29	216.11	224.02	243.76	
May	206.22	216.49	225.48	245.97	
Jun	207.70	215.79	226.94	247.05	

Table 15: CPI Food Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY16	FY17	FY18	FY19	FY19
Jul	224.14	234.69	234.47	242.74	265.16
Aug	224.86	232.48	235.38	243.25	272.11
Sep	223.87	232.80	238.43	241.65	276.32
Oct	224.86	234.68	239.89	246.27	
Nov	227.55	235.17	240.79	245.08	
Dec	223.90	230.69	239.43	241.70	
Jan	222.58	228.45	236.92	242.53	
Feb	221.07	229.19	234.31	246.03	
Mar	222.25	233.47	233.67	253.20	
Apr	227.53	237.50	237.08	257.44	
May	225.84	237.01	239.36	260.21	
Jun	228.95	234.37	241.37	261.13	
Seasonally Adjusted Series					
Jul	222.41	232.95	232.81	241.13	263.53
Aug	221.98	229.59	232.57	240.50	269.16
Sep	220.98	229.94	235.65	238.95	273.26
Oct	221.52	231.33	236.53	242.81	
Nov	224.59	232.18	237.77	242.05	
Dec	225.44	232.19	240.94	243.26	
Jan	225.04	231.22	240.01	245.90	
Feb	225.93	234.17	239.34	251.23	
Mar	225.58	236.92	237.09	254.96	
Apr	227.89	237.76	237.26	257.54	
May	226.38	237.38	239.52	260.20	
Jun	229.51	234.70	241.45	261.05	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY16	FY17	FY18	FY19	FY20	Average
Jul	100.49	100.48	100.46	100.44	100.42	100.46
Aug	100.58	100.56	100.52	100.48	100.46	100.52
Sep	100.54	100.51	100.47	100.43	100.43	100.48
Oct	100.86	100.83	100.81	100.79		100.82
Nov	100.59	100.58	100.58	100.57		100.58
Dec	99.55	99.57	99.59	99.60		99.58
Jan	99.62	99.60	99.57	99.57		99.59
Feb	98.98	98.99	99.01	99.04		99.00
Mar	99.10	99.10	99.11	99.41		99.18
Apr	100.07	100.09	100.10	100.11		100.09
May	99.89	99.92	99.96	99.99		99.94
Jun	99.81	99.84	99.88	99.91		99.86

Table 17: CPI Food Monthly & Average Seasonal Factors

Period	FY16	FY17	FY18	FY19	FY20	Average
Jul	100.78	100.75	100.71	100.67	100.62	100.70
Aug	101.30	101.26	101.21	101.14	101.10	101.20
Sep	101.31	101.24	101.18	101.13	101.12	101.20
Oct	101.51	101.45	101.42	101.43		101.45
Nov	101.32	101.29	101.27	101.25		101.28
Dec	99.32	99.36	99.37	99.36		99.35
Jan	98.91	98.80	98.71	98.63		98.76
Feb	97.85	97.88	97.90	97.93		97.89
Mar	98.52	98.54	98.56	98.57		98.55
Apr	99.84	99.89	99.93	99.96		99.91
May	99.76	99.84	99.93	100.01		99.89
Jun	99.76	99.86	99.97	100.03		99.90

Table 18: CPI (Month-on-Month) Original & Seasonally Adjusted					
Original Series					
Period	FY16	FY17	FY18	FY19	FY20
Jul	0.43	1.34	0.34	0.94	2.29
Aug	0.24	-0.30	0.19	0.21	1.38
Sep	-0.10	0.20	0.63	-0.06	0.75
Oct	0.49	0.81	0.75	2.33	
Nov	0.59	0.21	0.37	0.11	
Dec	-0.57	-0.68	-0.10	-0.41	
Jan	0.21	0.18	0.03	1.00	
Feb	-0.25	0.28	-0.31	0.64	
Mar	0.15	0.84	0.31	1.42	
Apr	1.55	1.40	1.82	1.27	
May	-0.21	0.01	0.51	0.78	
Jun	0.64	-0.41	0.57	0.36	
Seasonally Adjusted Series					
Jul	-0.29	0.66	-0.28	0.38	1.76
Aug	0.16	-0.37	0.14	0.16	1.34
Sep	-0.07	0.25	0.68	-0.02	0.78
Oct	0.17	0.48	0.41	1.98	
Nov	0.86	0.46	0.60	0.34	
Dec	0.47	0.33	0.89	0.56	
Jan	0.14	0.15	0.05	1.02	
Feb	0.40	0.90	0.26	1.17	
Mar	0.03	0.73	0.20	1.04	
Apr	0.57	0.40	0.81	0.56	
May	-0.04	0.18	0.65	0.91	
Jun	0.72	-0.33	0.65	0.44	

Table 19: CPI Food (Month-on-Month) Original & Seasonally Adjusted Series					
Original Series					
Period	FY16	FY17	FY18	FY19	FY20
Jul	0.13	2.50	0.04	0.57	1.54
Aug	0.32	-0.94	0.39	0.21	2.62
Sep	-0.44	0.14	1.29	-0.66	1.55
Oct	0.44	0.81	0.61	1.91	
Nov	1.20	0.21	0.37	-0.48	
Dec	-1.61	-1.90	-0.56	-1.38	
Jan	-0.59	-0.97	-1.05	0.34	
Feb	-0.68	0.32	-1.11	1.44	
Mar	0.54	1.87	-0.27	2.91	
Apr	2.38	1.73	1.46	1.67	
May	-0.74	-0.21	0.96	1.08	
Jun	1.38	-1.11	0.84	0.35	
Seasonally Adjusted Series					
Jul	-0.99	1.50	-0.80	-0.13	0.95
Aug	-0.19	-1.44	-0.10	-0.26	2.14
Sep	-0.45	0.15	1.32	-0.65	1.52
Oct	0.25	0.61	0.37	1.61	
Nov	1.38	0.37	0.52	-0.31	
Dec	0.38	0.00	1.33	0.50	
Jan	-0.18	-0.42	-0.39	1.08	
Feb	0.40	1.28	-0.28	2.17	
Mar	-0.15	1.18	-0.94	1.49	
Apr	1.02	0.35	0.07	1.01	
May	-0.66	-0.16	0.95	1.03	
Jun	1.38	-1.13	0.81	0.33	

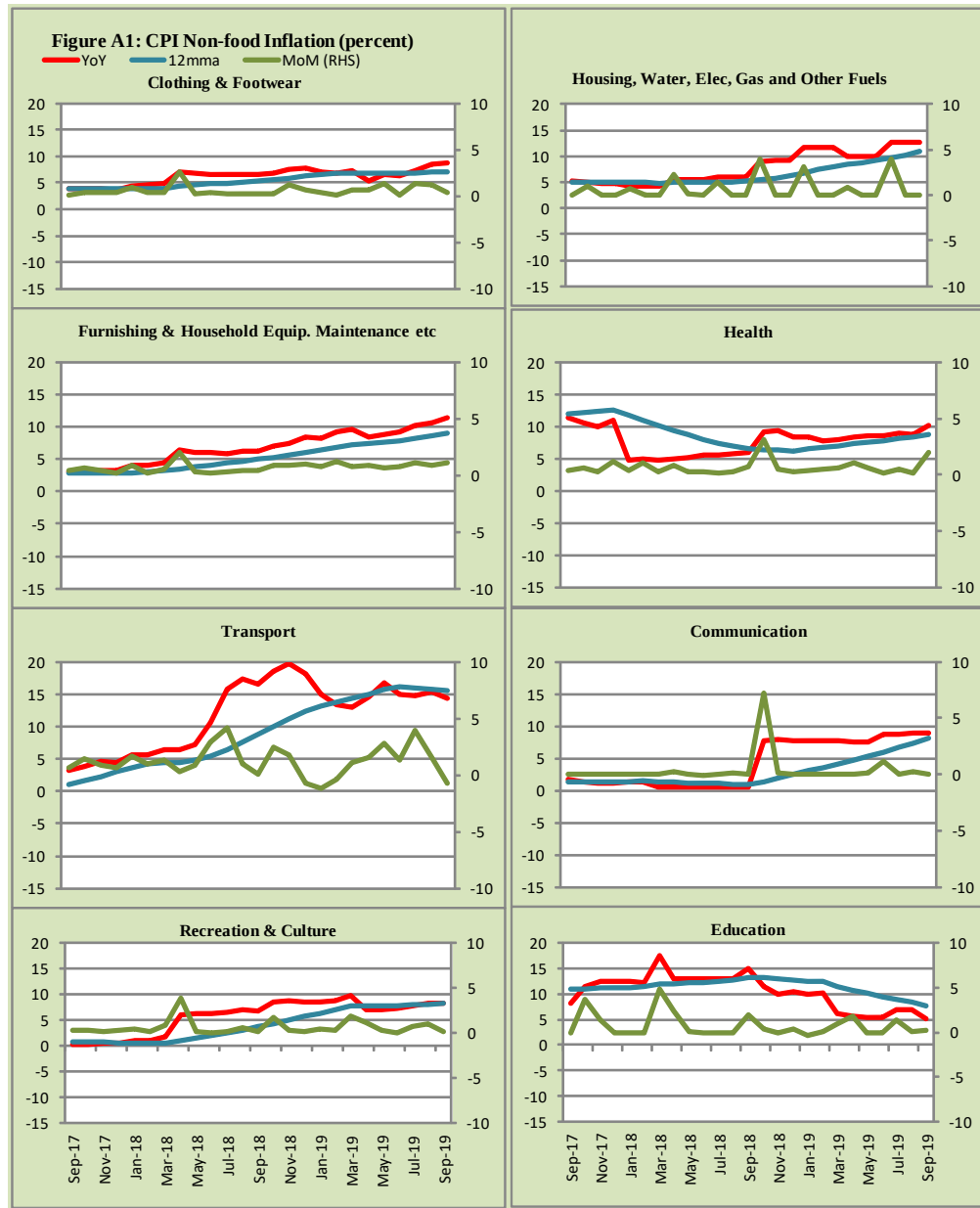
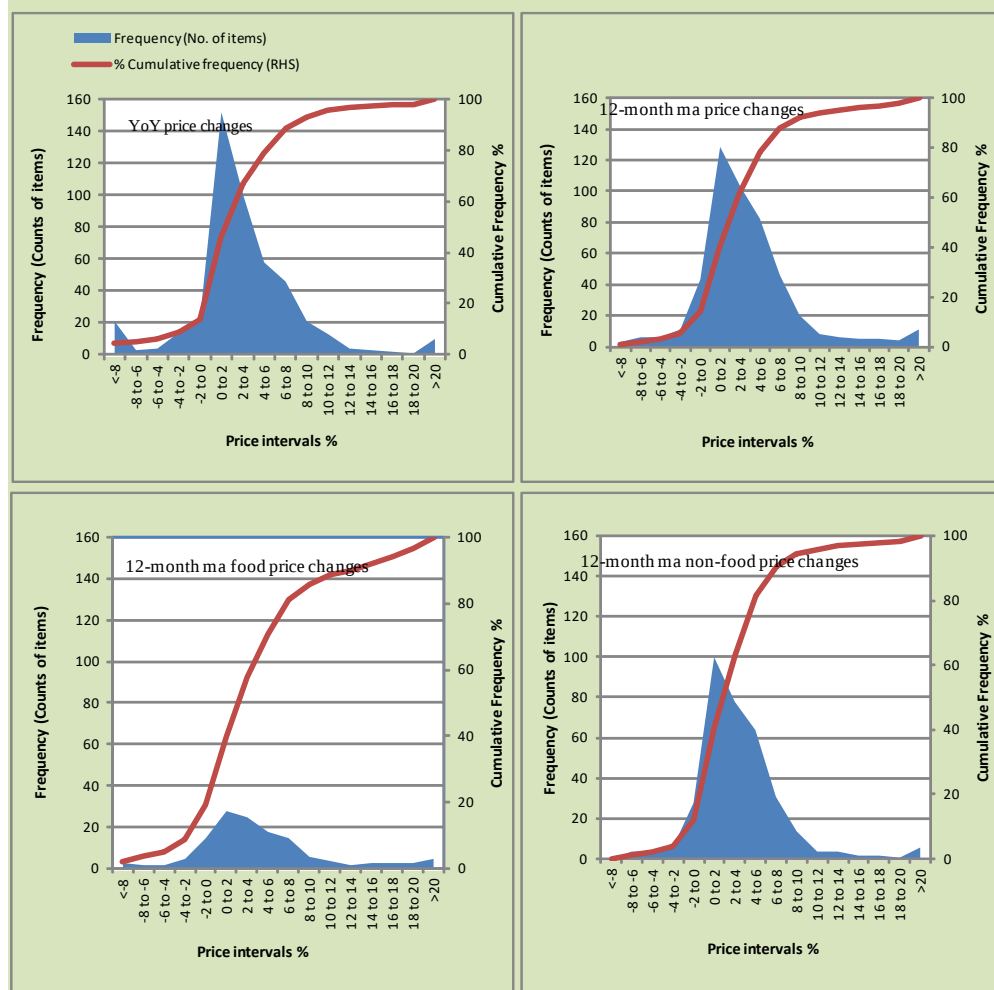
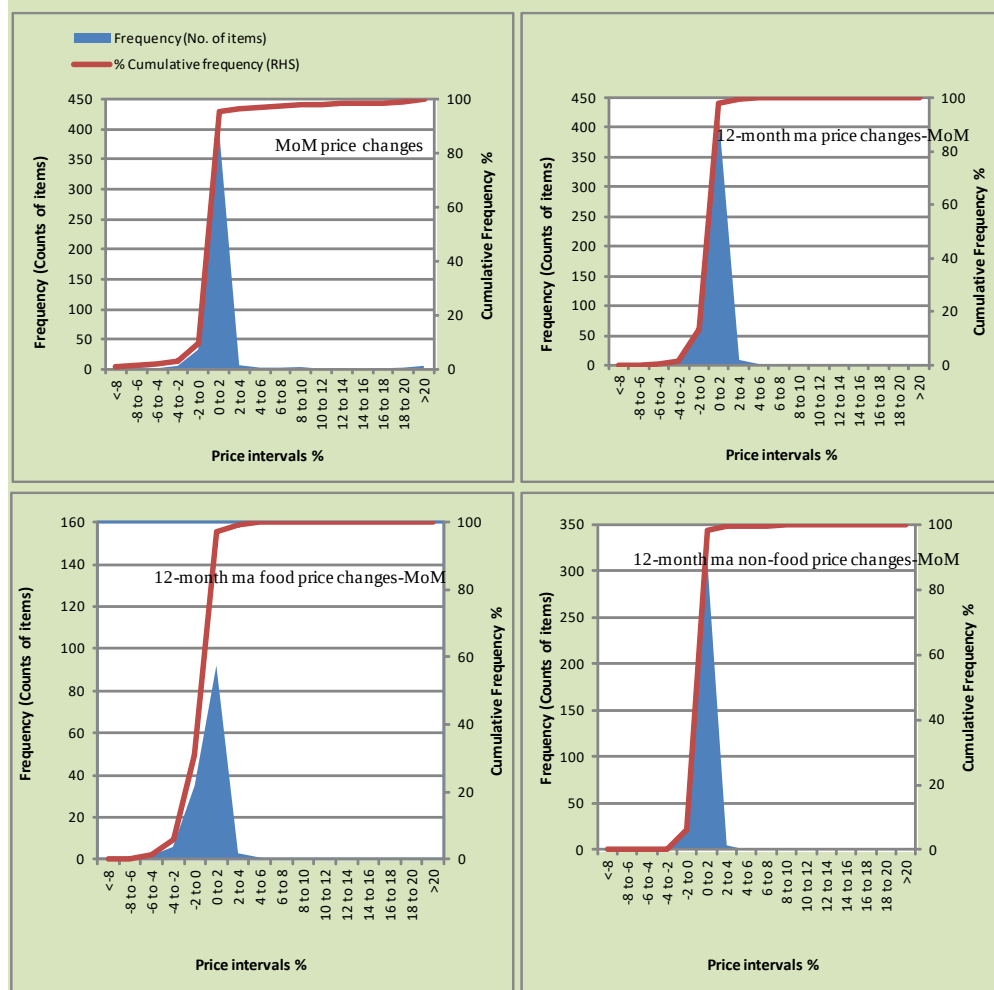


Figure A2: Frequency Distribution of Price Changes of CPI Items, September 2019 - YoY



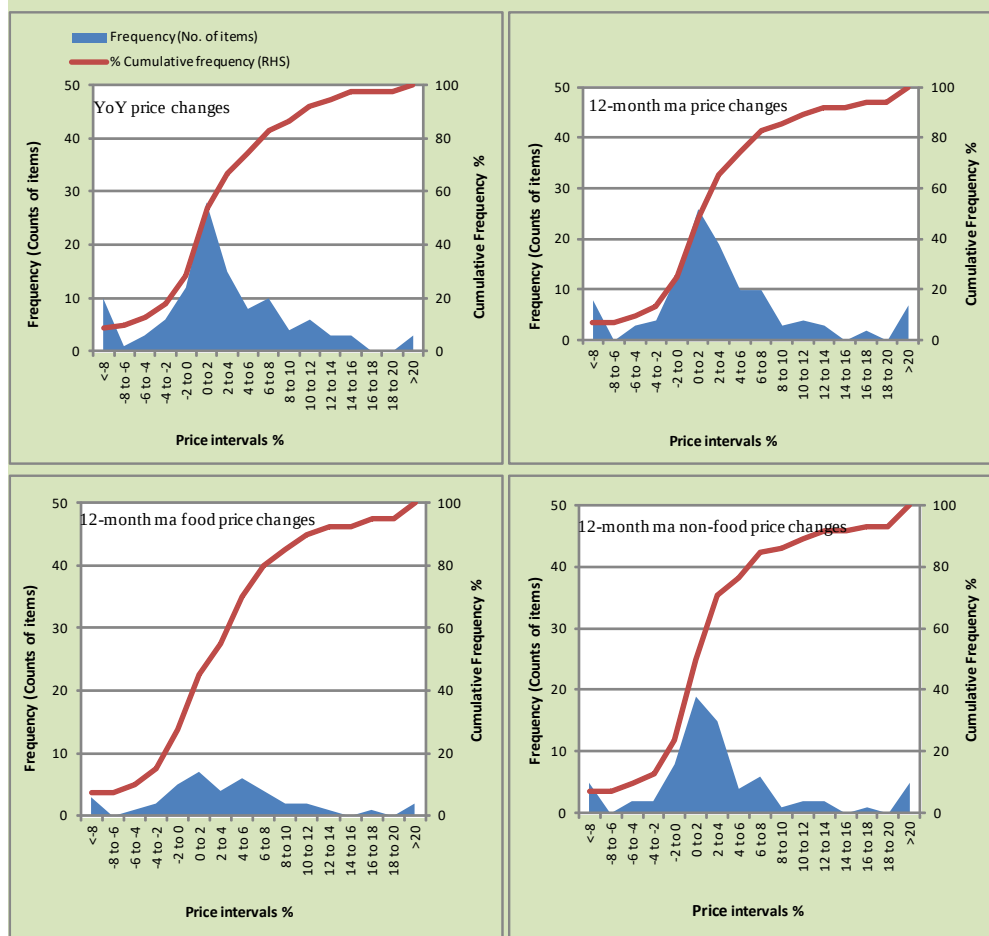
Total items in CPI basket (487), Food items (139) and Non-food items (348)

Figure A2.1: Frequency Distribution of Price Changes of CPI Items, September 2019 - MoM



Total items in CPI basket (487), Food items (139) and Non-food items (348)

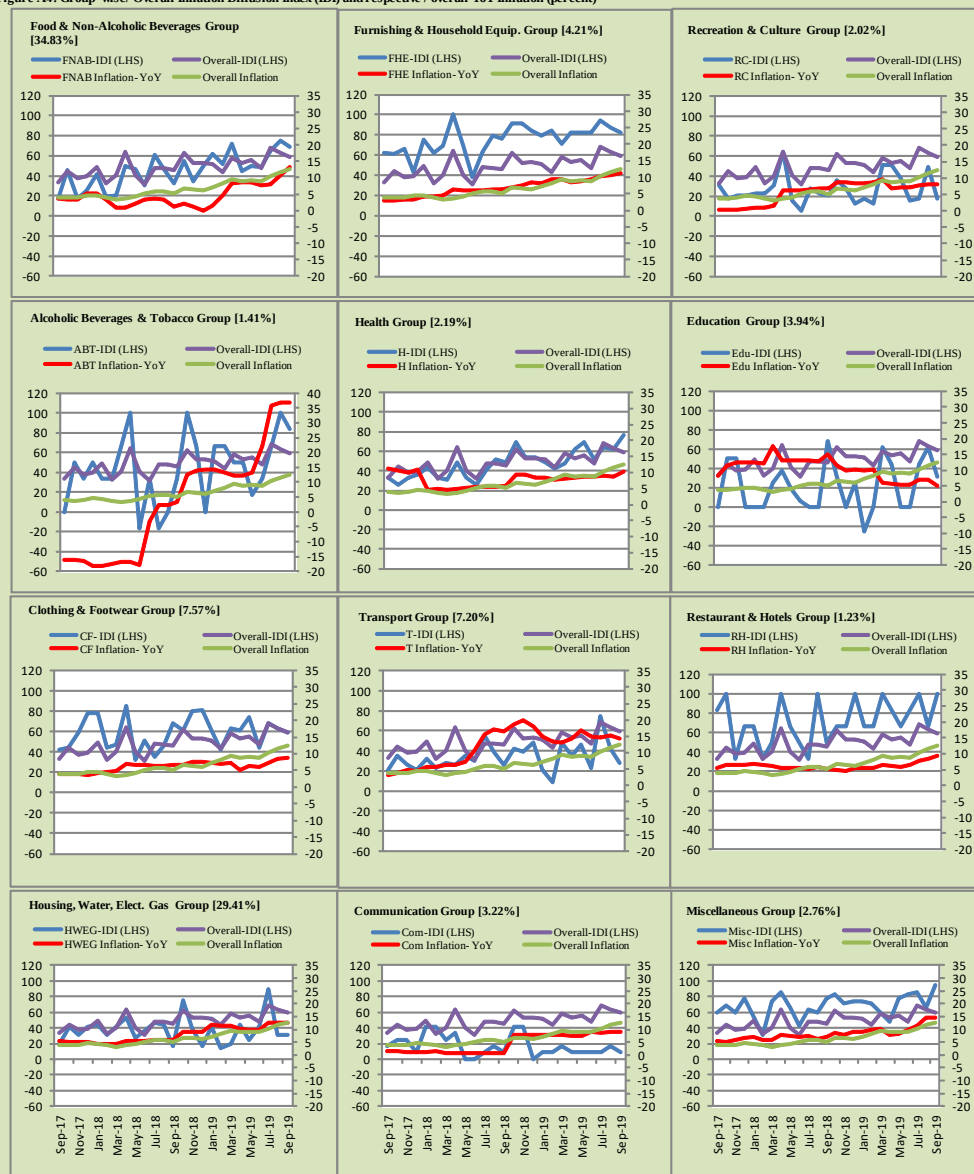
Figure A3: Frequency Distribution of Price Changes of WPI Commodities, September 2019 - YoY



Total commodities in WPI basket (112), Food items (40) and Non-food items (72)

Inflation Monitor, September 2019

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



Numbers in square brackets show the weights of respective groups in the CPI baskets.

Annexure B

Technical Notes

1. All the three measures of inflation, viz. CPI, WPI and SPI are computed by the following Laspeyres Index formula:

$$I_t = \sum_j w_0^j \left(\frac{P_t^j}{P_0^j} \right)$$

Where I_t is price index, w_0^j is weight of commodity j in the overall basket, P_t^j is price of commodity j in period t and P_0^j is its price in the base year.

2. Base year for all the indices is the year 2007-08.
3. CPI basket contains 487 consumers' goods; WPI basket contains 463 items; SPI contains 53 items.
4. YoY inflation is the percent change of an index in a given month over the index in the same month of the last year. It is computed as follows:

$$\pi_t = \left(\frac{I_t}{I_{t-12}} - 1 \right) \times 100$$

5. Period average inflation is the percent change of the average index during the period from July to the given month of a fiscal year over the average index during the corresponding period of the last year. It is computed as follows:

$$\bar{\pi}_t = \left(\frac{\sum_{i=0}^{t-v} I_{t-i}}{\sum_{i=0}^{t-12-v} I_{t-12-i}} - 1 \right) \times 100$$

Where v is the serial number of the month of July of current fiscal year in a given time series.

6. Monthly inflation is the percent change of an index in a given month over the index in the preceding month. It is computed as follows:

$$\pi_t = \left(\frac{I_t}{I_{t-1}} - 1 \right) \times 100$$

7. 12-month moving average inflation (Long-run trend inflation) is the percent change of 12-month moving average of a price index; it is computed as follows:

$$\tilde{\pi}_t = \left(\frac{\sum_{i=0}^{11} I_{t-i}}{\sum_{i=0}^{11} I_{t-12-i}} - 1 \right) \times 100$$

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

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

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

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

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

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

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

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

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

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

reference month

w_i : Weights of i^{th} item

π_{it} : Inflation of i^{th} item

π_t : Overall inflation

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

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

Methodology for Estimating Inflation Diffusion Index for Pakistan

We constructed an index to measure the spread of inflation in the 487 commodities of the CPI basket. It is based on month-on-month (MoM) change in the prices of these commodities and can be obtained by estimating what is known as an ‘inflation diffusion index’ (IDI) as below:

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

Thus, it is the difference between the share of items with increasing prices (i.e. depicting inflation) and the share of items with falling prices (i.e. depicting deflation) in CPI amongst the commodities for which prices have altered or remained constant¹.

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

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

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