

Inflation Monitor

(Revamped Version)

October 2019

(Old Base: 2007-08)



State Bank of Pakistan

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Review

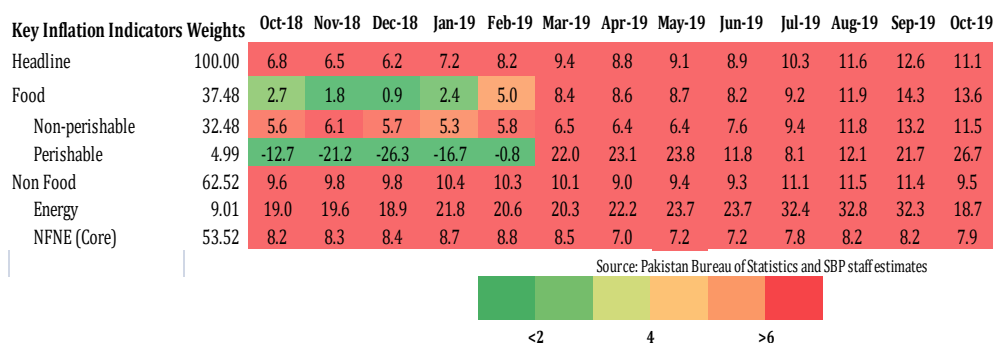
1. Inflation in Brief

- a) Headline CPI inflation (2007-08=100) is recorded at level of 11.1 percent on year-on-year basis in October 2019 as compared to 12.6 percent in the previous month and 6.8 percent during corresponding month of last year.
- b) CPI inflation on month-on-month basis is recorded at level of 1.0 percent in October 2019 as compared to 0.8 percent in the previous month and 2.3 percent during corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.70 percent in October 2019 compared to 0.86 percent in the previous month.
- c) Core inflation (trimmed) on year-on-year basis is recorded at 9.1 percent in October 2019 as compared to 9.2 percent in the previous month and 6.7 percent during corresponding month of last year.
- d) On month-on-month basis, the Core inflation (trimmed) is recorded at 0.8 percent in October 2019 as compared to 0.5 percent in the previous month and was at same level during corresponding month of last year.
- e) CPI Core inflation, Non-food, non-energy (NFNE), on year-on-year basis is recorded at 7.9 percent in October 2019 as compared to 8.2 percent in the previous month and during corresponding month of last year.
- f) Core inflation (NFNE) on month-on-month basis recorded at 0.8 percent in October 2019 as compared to 0.4 percent in the previous month. Core NFNE inflation was 1.1 percent during the corresponding month of last year.
- g) WPI inflation on year-on-year basis recorded at 12.5 percent in October 2019 as compared to 15.6 percent in the previous month and 13.1 percent during the corresponding month of last year.

- h) WPI inflation on month-on-month basis recorded at 1.4 percent in October 2019 as compared to 0.3 percent in the previous month. It was 4.2 percent in the corresponding month of last year.
- i) SPI inflation on year-on-year basis recorded at 17.9 percent in October 2019 as compared to 19.8 percent in the previous month. It was 4.5 percent in the corresponding month of last year.
- j) SPI inflation on month-on-month basis recorded at 1.3 percent in October 2019 as compared to 1.1 percent in the previous month. It was 3.0 percent in the corresponding month of last year.

1.1. Heat-map of CPI inflation

The heat map visually elaborates the evolution of inflation. A heat-map type of analysis for CPI inflation and its sub-indexes (YoY) for the time span of last thirteen months has been carried out. The headline inflation (YoY) has been compared with the bench mark of medium term inflation forecast of 6 percent. Greener areas indicate low inflation pressures and increasing order of red (light to dark color spectrum i.e. light green to orange to brown to red) represents higher and higher inflationary episodes.



- k) The perishable sub-index entered into high inflation zone when it witnessed deflationary episode till February, 2019. The same is the case with food group inflation which entered into high inflation region in March, 2019.
- l) The non-food group and core (NFNE) inflation has shown high inflationary pressures on consistent basis during the last twelve months in a band of 9.0 to 11.5 and 7.2 to 8.2 respectively.

1.2. 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 October 2019 are described below :

- m) Core RSC inflation on year-on-year basis is recorded at 8.9 percent in October 2019 as compared to 10.7 percent in the previous month and 8.7 percent during the corresponding month of last year.
- n) Core RSC inflation on month-on-month basis is recorded at 0.7 percent in October 2019 as compared to 0.5 percent in the previous month and 2.4 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		100.00	
	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM
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	12.6	0.8	14.3	1.5	11.4	0.2	8.2	0.4	9.1	0.8	10.7	0.5	15.6	0.3	19.8	1.1
Oct-19	11.1	1.0	13.6	1.2	9.5	0.9	7.9	0.8	9.1	0.8	8.9	0.7	12.5	1.4	17.9	1.3

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

Fig 1.1: Summary of Inflation Trends

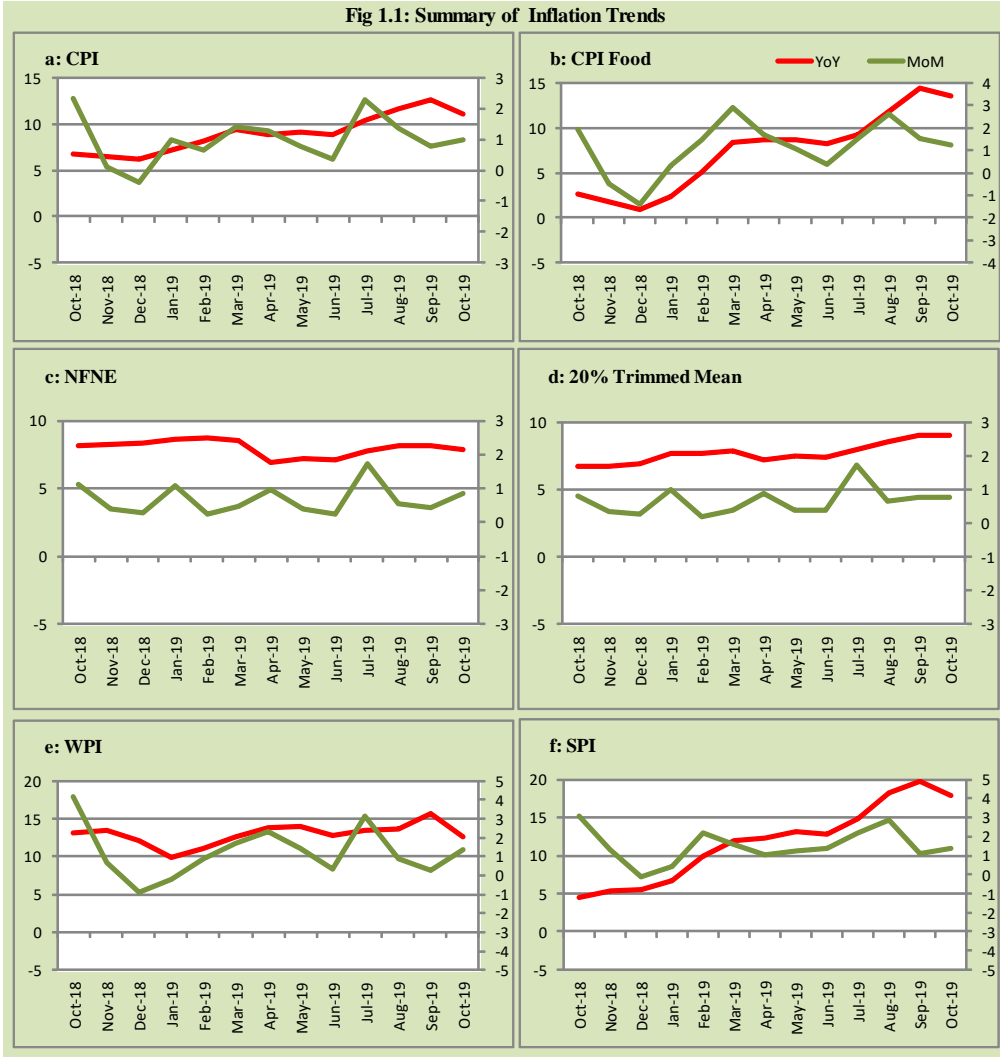


Fig 1.2: Movements in Price Indices (percent)

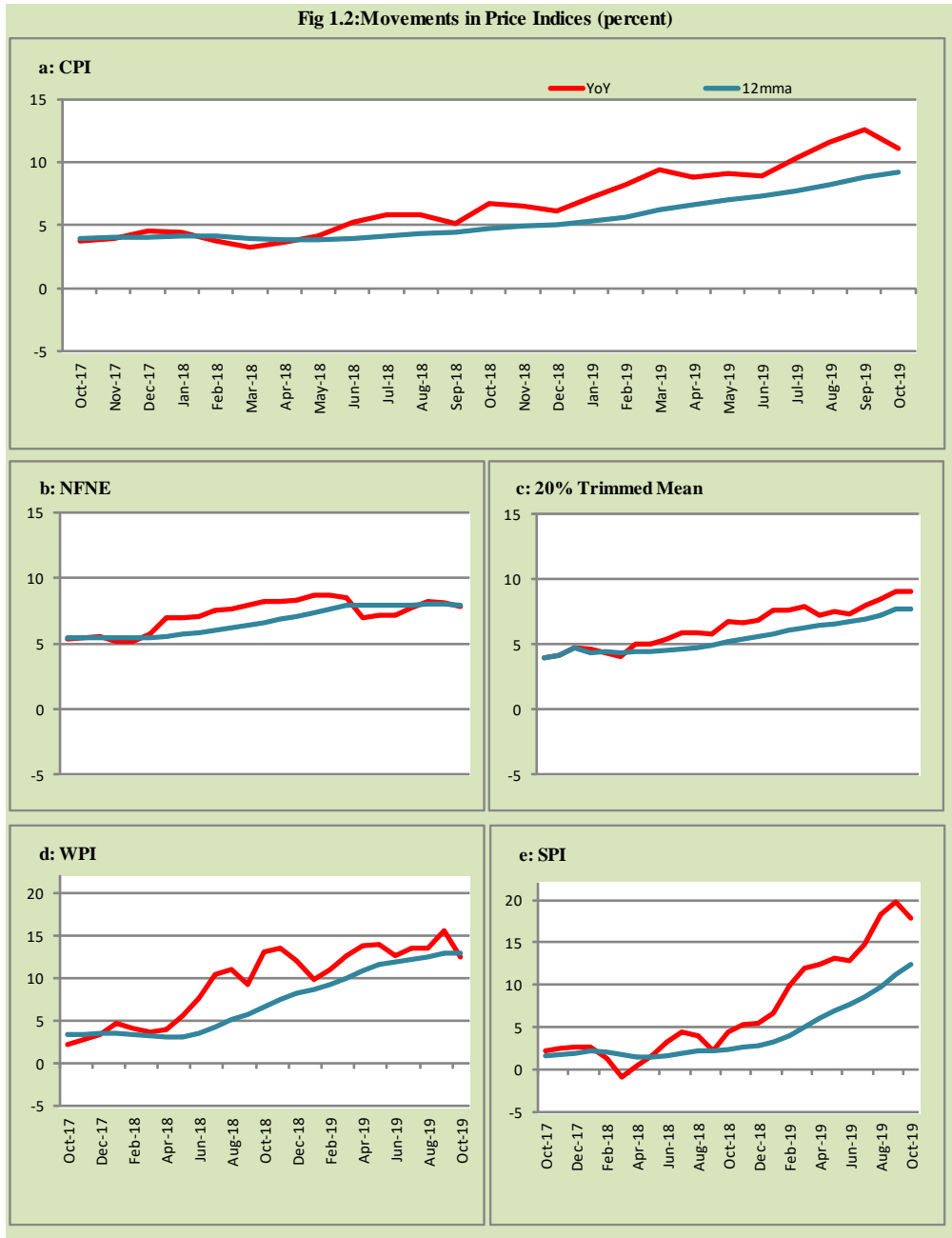
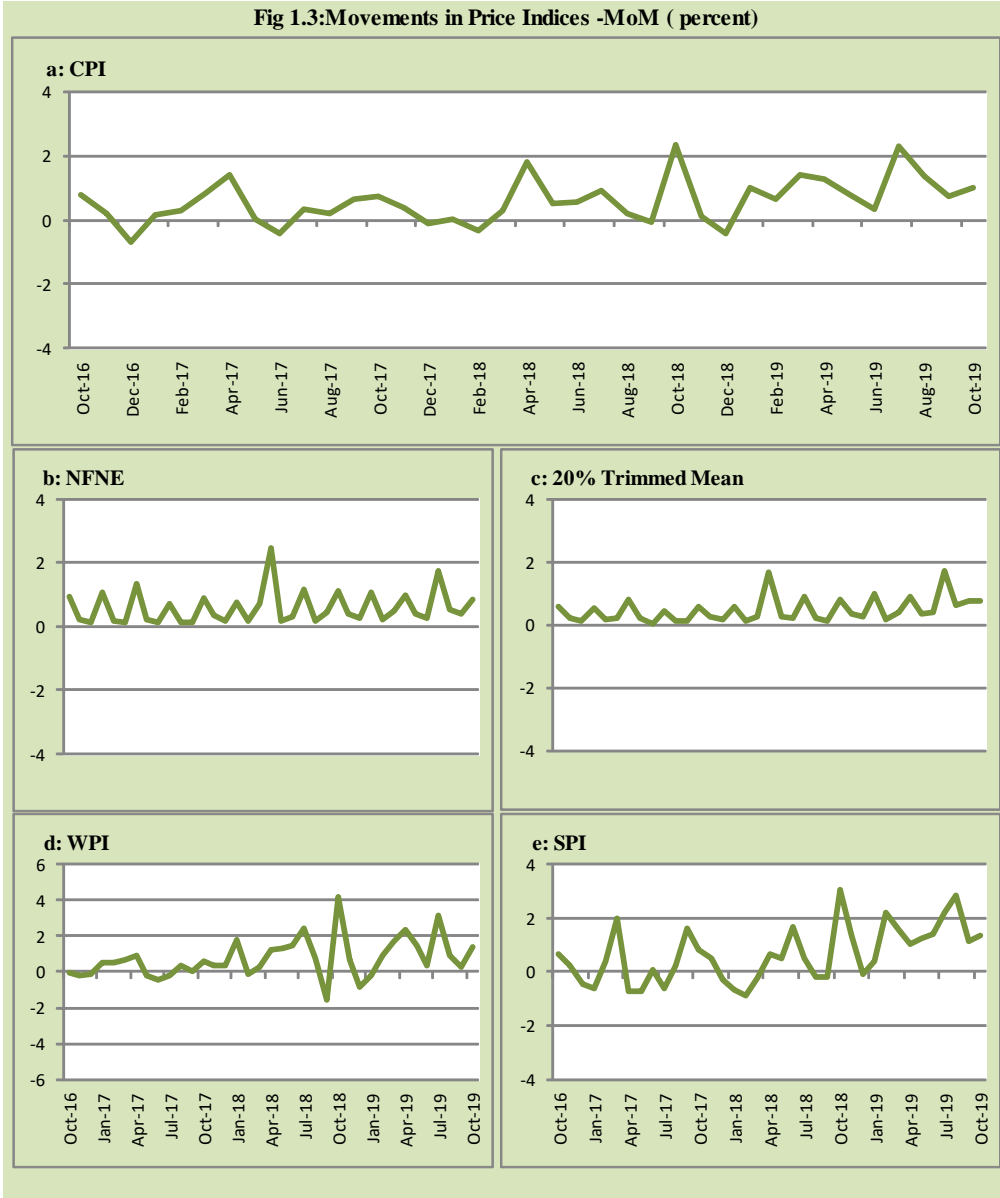
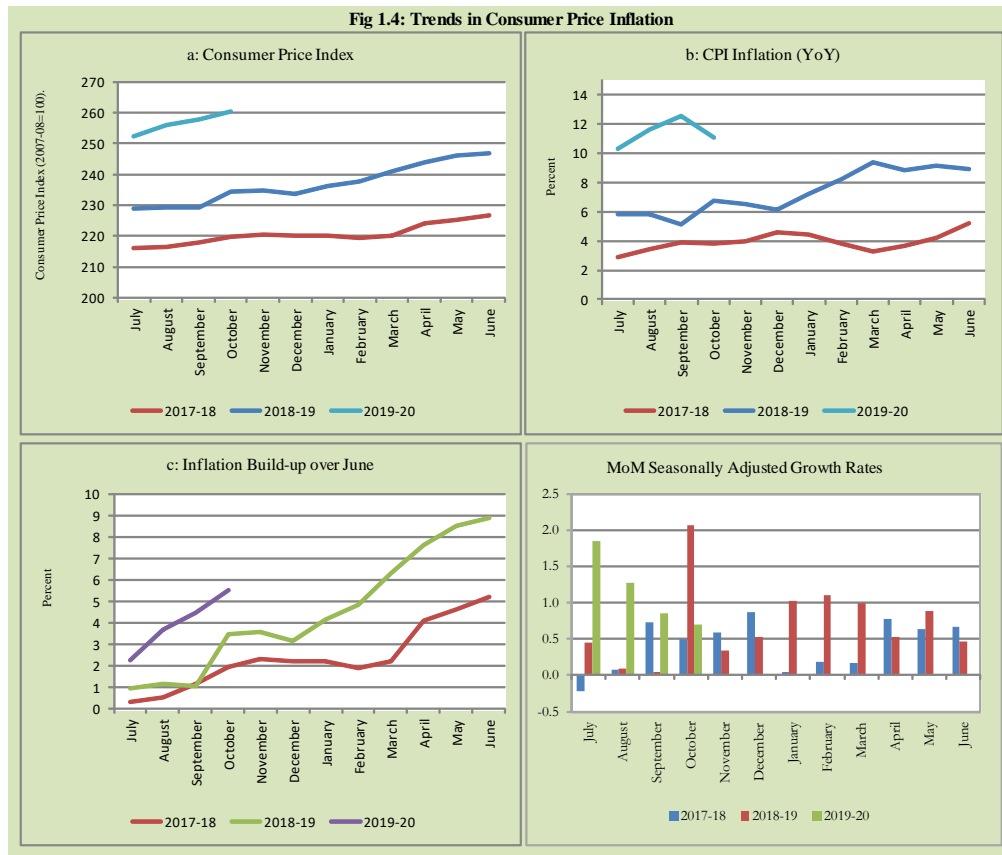


Fig 1.3: Movements in Price Indices -MoM (percent)





2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan showed mixed trend during October 2019. Among these five cities, the lowest inflation was observed in Lahore at 8.2 percent while the highest inflation was observed in Karachi at 13.6 percent (Table A6 and Figure A6 of annexure-A).

3. Income Group wise Inflation

Income group-wise data shows that the income groups (Rs. 8,001- 12,000 and Rs. 12,001- 18,000) witnessed higher inflation as compared to other quintiles in non-food group; and income group (Up to Rs. 8,000 and Rs. 8,001- 12,000) witnessed higher inflation as compared to other quintiles in overall CPI during October 2019.

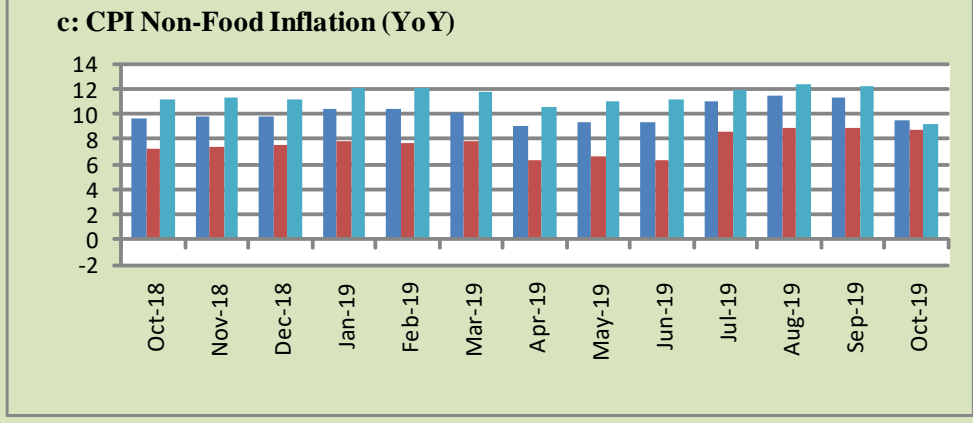
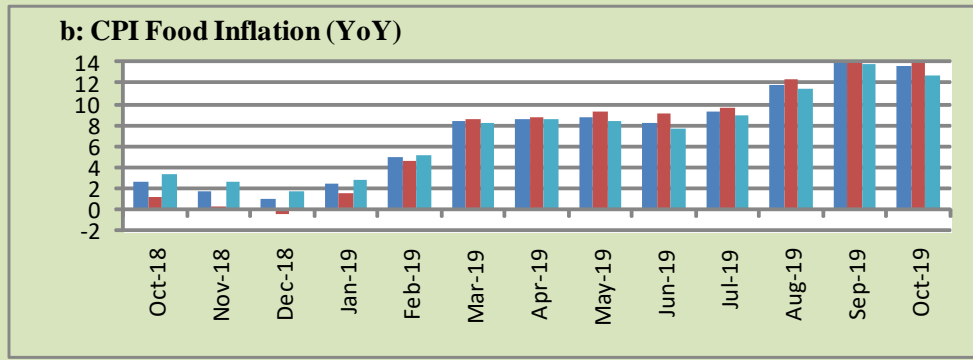
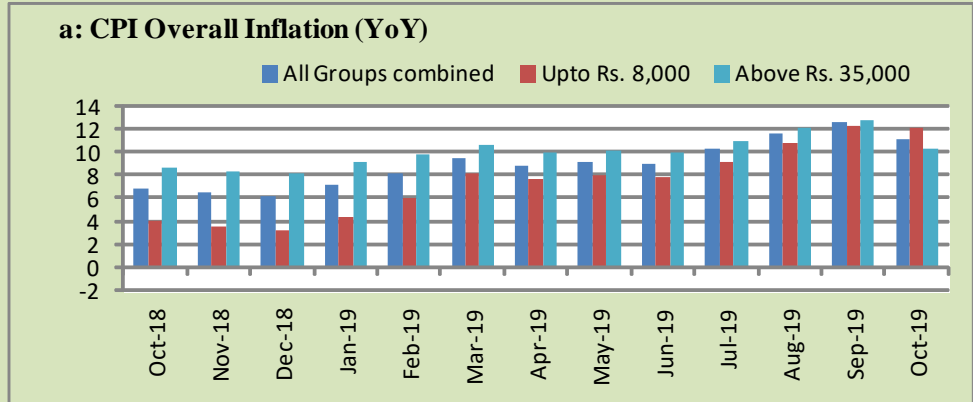
The lowest income group (Up to Rs. 8,000) observed higher inflation in food group during the month of October 2019 and the income group (above Rs. 35,000) witnessed lower inflation as compared to other quintiles in food group during October 2019 (Table A7 and Figure A5 of annexure-A).

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

Income Groups	General			Food			Non-food		
	Oct-18	Sep-19	Oct-19	Oct-18	Sep-19	Oct-19	Oct-18	Sep-19	Oct-19
All Groups Combined	6.8	12.5	11.1	2.7	14.3	13.6	9.6	11.4	9.5
Up to Rs. 8,000	3.9	12.2	12.1	1.3	15.1	14.9	7.2	8.9	8.7
Rs. 8,001- 12,000	4.5	12.5	12.1	1.7	14.8	14.4	7.4	10.3	9.8
Rs. 12,001- 18,000	4.9	12.4	11.8	2.1	14.7	14.1	7.6	10.2	9.8
Rs. 18,001- 35,000	6.6	12.8	11.1	2.6	14.7	13.8	9.9	11.4	9.1
Above Rs. 35,000	8.6	12.7	10.3	3.4	13.7	12.7	11.1	12.2	9.2

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

Fig 3.1: Income Group- wise Inflation



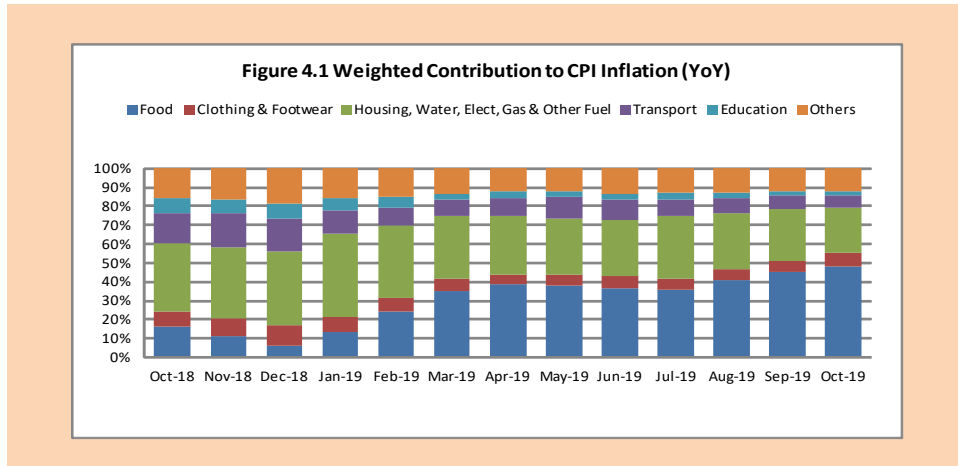
4. Weighted Contribution

The weighted contribution of food group in the overall inflation increased to 48.23 percent during October 2019 from 45.18 percent in previous month. It was 16.06 percent during corresponding month of last year.

The weighted contribution of non-food group decreased to 51.77 percent in October 2019 from 54.82 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-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	45.18	5.83	27.50	7.33	2.06	12.10
Oct-19	48.23	6.85	24.10	6.92	2.12	11.78



5. Inflation Diffusion Index

Inflation diffusion index (IDI) is the difference (MoM change) 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 basket for which prices have reported. Figure 5.1 provides graphical display of IDI for current, previous and corresponding month of last year.

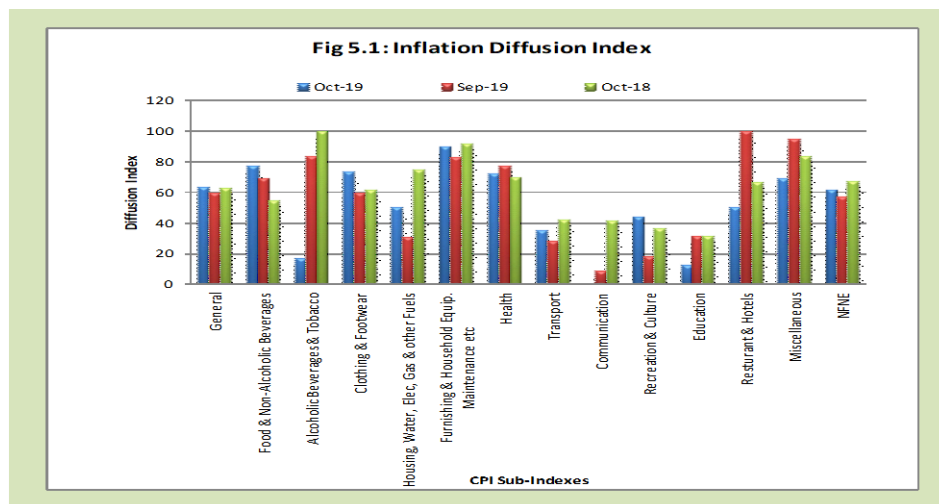


Table 5.1 Inflation Diffusion Index - based on MoM change													
	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19
General	62.4	52.7	53.1	51.3	43.6	58.3	53.2	55.3	47.7	68.2	63.1	59.2	63.5
Food & Non-Alcoholic Beverages	54.3	35.0	49.6	62.3	51.8	71.7	44.5	50.0	48.2	65.2	75.0	69.0	77.2
Alcoholic Beverages & Tobacco	100.0	66.7	0.0	66.7	66.7	50.0	50.0	16.7	33.3	66.7	100.0	83.3	16.7
Clothing & Footwear	61.0	79.7	81.4	61.0	42.4	62.7	61.0	74.6	44.1	67.8	62.7	59.3	72.9
Housing, Water, Elect, Gas & other Fuels	75.0	38.9	16.7	41.7	13.9	19.4	44.4	25.0	41.7	88.9	30.6	30.6	50.0
Furnishing & Household Equip. Maintenance etc	91.3	91.3	84.1	79.7	84.1	71.0	82.6	82.6	82.6	94.2	87.0	82.6	89.9
Health	69.2	53.8	53.8	48.7	42.1	47.4	61.5	69.2	51.3	64.1	61.5	76.9	71.8
Transport	41.9	39.5	48.8	20.9	9.3	48.8	34.9	46.5	23.3	74.4	41.9	27.9	34.9
Communication	41.7	41.7	0.0	8.3	8.3	16.7	8.3	8.3	8.3	8.3	16.7	8.3	0.0
Recreation & Culture	35.9	28.2	12.8	17.9	12.8	51.3	51.3	38.5	15.4	17.9	48.7	17.9	43.6
Education	31.3	0.0	25.0	-25.0	0.0	62.5	43.8	0.0	0.0	43.8	62.5	31.3	12.5
Restaurant & Hotels	66.7	66.7	100.0	66.7	66.7	100.0	83.3	66.7	83.3	100.0	66.7	100.0	50.0
Miscellaneous	82.9	71.4	74.3	74.3	71.4	60.0	48.6	77.1	82.9	85.7	65.7	94.3	68.6
NFNE	66.9	58.9	56.5	47.6	42.1	54.3	55.9	58.0	47.3	69.2	60.1	57.1	60.9

See annexure B (Technical Notes) for the methodology of Inflation Diffusion Index.

6. Domestic Commodity Prices

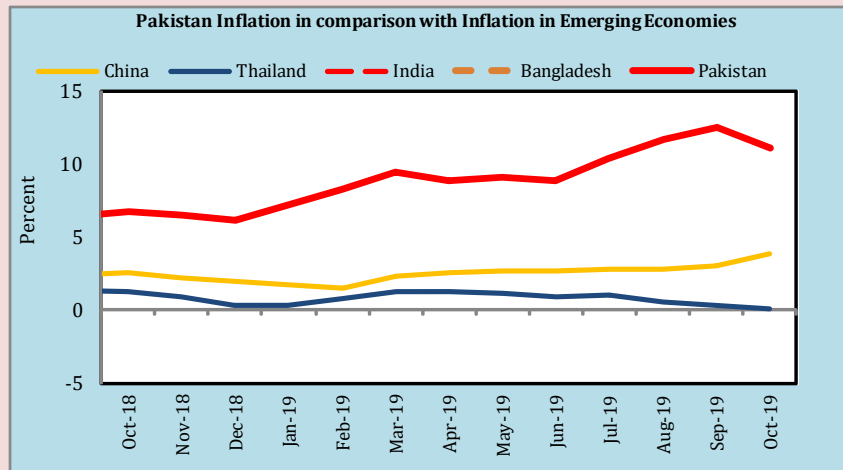
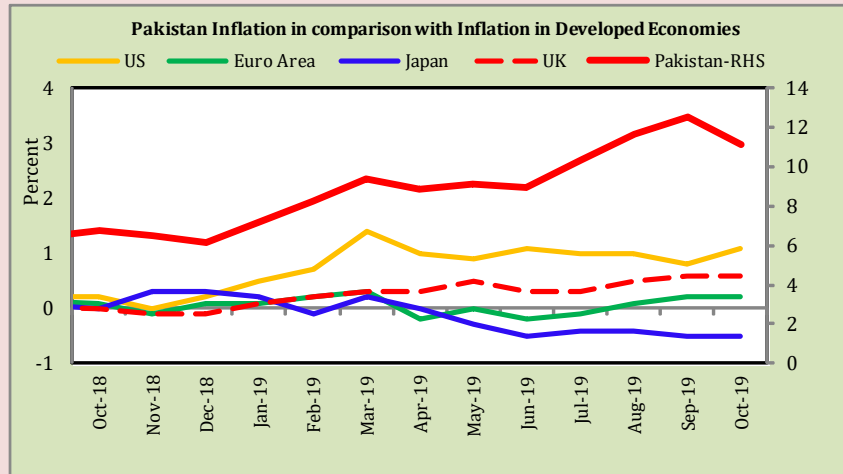
Table 6.1 Inflation in Domestic CPI Food Commodities (percent)

Sr. No	Item	Unit	Oct-18		Sep-19		Oct-19	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	2.99	1.56	11.61	1.61	12.40	2.28
2	Wheat Flour Bag	10 Kg	3.87	1.00	12.34	2.00	12.90	1.50
3	Rice Basmati Sup. Qty.	Kg	12.51	1.02	7.40	0.87	6.60	0.27
4	Pulse Masoor (Washed)	Kg.	-8.17	1.16	13.54	0.46	13.96	1.54
5	Pulse Moong (Washed)	Kg.	-5.80	0.52	49.30	0.42	49.55	0.69
6	Pulse Mash (Washed)	Kg.	-19.66	-1.18	23.21	0.20	25.73	0.85
7	Pulse Gram	Kg.	-3.28	0.49	13.34	2.81	14.69	1.68
8	Vegetable Ghee (Loose)	Kg.	4.74	0.97	19.44	2.43	19.81	1.27
9	Sugar Refined	Kg.	0.09	0.25	35.37	-0.24	34.02	-0.75
10	Milk Fresh (Unboiled)	Ltr	3.61	0.00	7.29	1.43	8.48	1.11
11	Tapal Danedar Tea 200 Gm	Pkt	11.31	0.68	6.42	3.57	7.59	1.78
12	Beef With Bone Av.Qlty.	Kg	11.14	1.42	11.90	0.38	11.13	0.72
13	Mutton Av.Qlty.	Kg	12.75	0.74	11.40	0.49	11.05	0.43
14	Chicken Farm Broiler (Live)	Kg	28.31	35.25	63.79	-0.10	5.13	-13.19
15	Eggs Farm	Doz	6.08	14.41	-0.37	-0.72	1.71	16.79
16	Potatoes	Kg	-21.25	0.13	30.39	5.40	36.08	4.49
17	Onion	Kg	-55.97	-4.43	95.89	7.90	114.40	4.60
18	Tomatoes	Kg	-28.75	3.85	-20.63	-13.90	-12.59	14.38
19	Ginger	Kg	12.67	2.55	48.33	2.56	51.16	4.51
20	Garlic	Kg	-27.92	0.02	101.51	6.06	101.95	0.25

7. Inflation in Global Context

In global context, Pakistan witnessed highest inflation not only in comparison with developed economies but also with emerging economies (See figure 7.1).

Fig 7.1: Inflation in Global Context



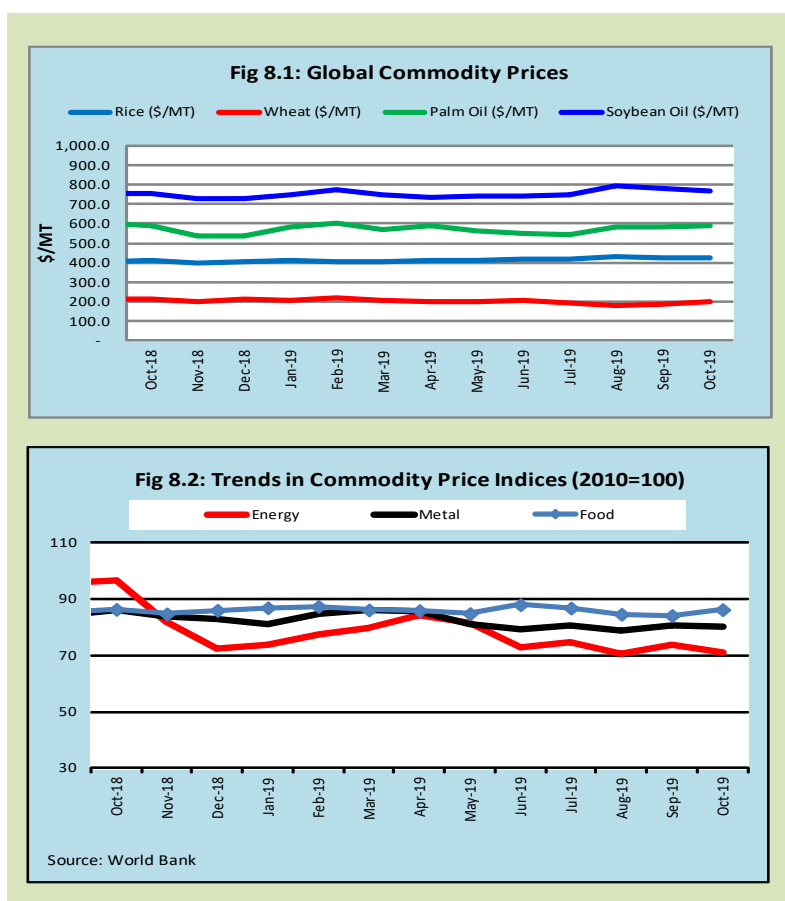
Sources: Bloomberg, Havor, PBS

8. Global Commodity Prices

Global commodity prices and indexes have a relation with domestic inflation. In this context, changes in major global commodity prices and indexes along with price trends are given in table 7.1 and figure 8.1 & 8.2.

Table 8.1 Changes in Major Global Indices (percent)

Item/ Group	Oct-18		Sep-19		Oct-19	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	-4.0	-3.5	-1.7	-0.6	-0.1	2.5
Metals	-6.6	-1.2	-4.8	2.0	-6.9	-0.4
Energy	39.0	5.8	-23.0	4.6	-26.8	-3.7
Agricultural	-4.1	-2.6	-2.0	0.3	-0.9	2.0
Cotton	12.1	-4.4	-21.1	0.7	-14.9	3.6



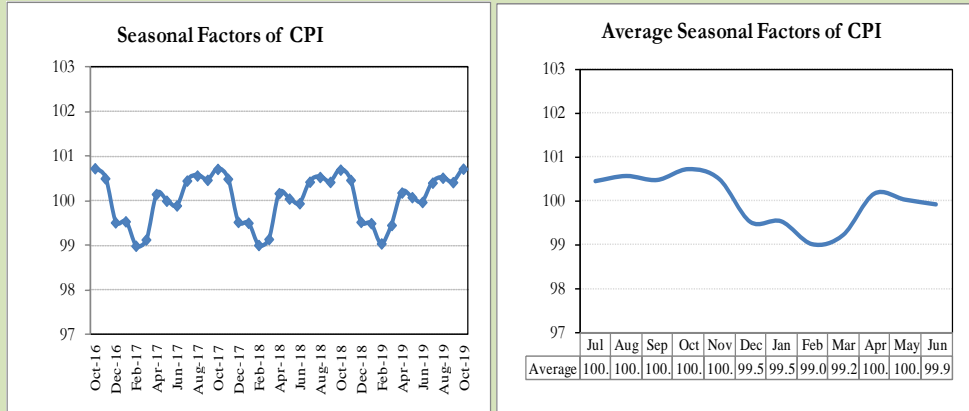
9. Seasonal Adjustment in CPI

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

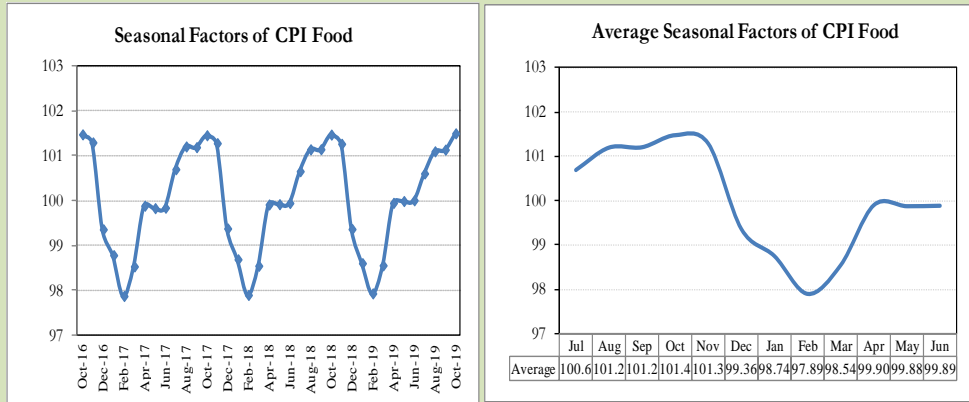
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to December and downward seasonality in the remaining months of the 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. 9.1 Seasonal Factors of CPI



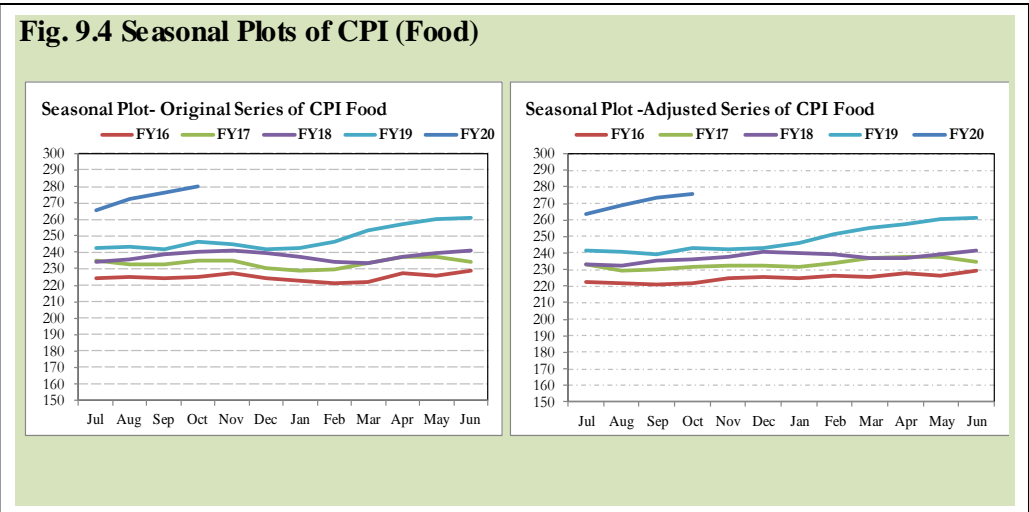
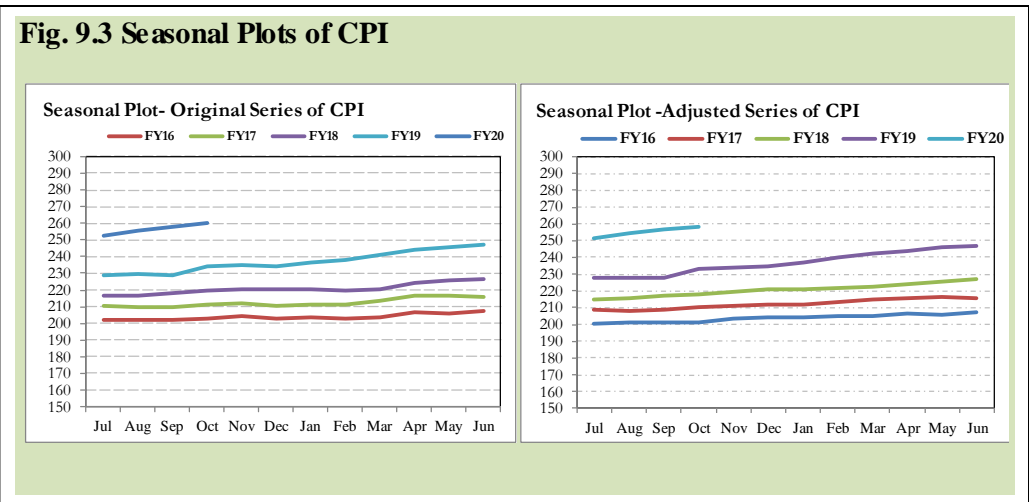
Note: Data Available in Annex Table 16.

Fig. 9.2 Seasonal Factors of CPI Food



Note: Data Available in Annex Table 17.

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



Seasonally adjusted CPI for October 2019 stood at 258.59 against 260.46 in original series showing a decrease of 1.87 on account of adjustment of upward seasonality in October 2019.

Seasonally adjusted CPI food group for October 2019 stood at 275.55 against 279.69 in original series showing decrease of 4.14 on account of adjustment of upward seasonality in October 2019.

Month-on-month change of seasonally adjusted CPI series stood at 0.70% reflecting an increase during October 2019 over previous month and an increase of 1.00% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at 0.86% reflecting an increase during October 2019 over previous month and an increase of 1.22% 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 October 2019 (corresponding to the seasonally adjusted month-on-month rate) is 8.70 percent.

Fig. 9.5 Month-on-Month Percent Changes in CPI

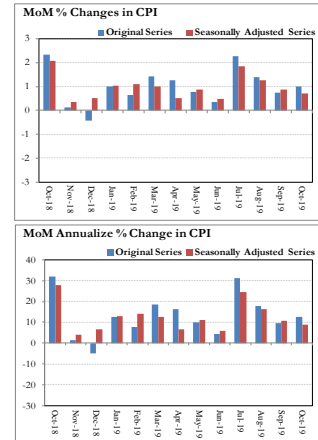
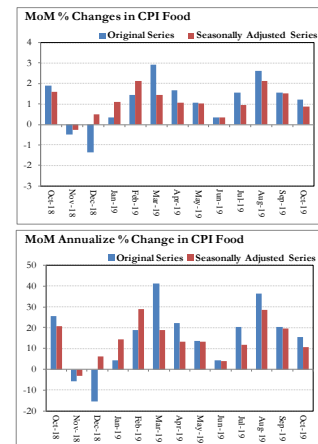


Fig. 9.6 Month-on-Month Percent Changes in CPI Food



Annexure A

Table A1: CPI Inflation by Groups (percent)

	Weight	MoM change			YoY change		
		Oct-18	Sep-19	Oct-19	Oct-18	Sep-19	Oct-19
I. Food Group	37.5	1.9	1.5	1.2	2.7	14.3	13.6
Food & Non-Alcoholic Beverages	34.8	1.6	1.6	1.3	2.0	13.4	13.1
Alcoholic Beverages & Tobacco	1.4	9.4	0.3	0.0	12.7	36.9	25.2
Restaurant & Hotels	1.2	0.5	1.2	0.2	4.8	9.3	9.0
II. Non-Food Group	62.5	2.6	0.2	0.9	9.6	11.4	9.5
Clothing & Housing, Water, Elect, Gas & other Fuels	7.6	0.3	0.4	0.7	6.7	8.7	9.2
Furnishing & Household Equip.	29.4	3.9	0.1	1.1	9.0	12.8	9.7
Health	4.2	0.9	1.1	1.6	7.0	11.3	12.1
Transport	2.2	3.2	1.9	1.2	9.2	10.2	8.1
Communication	7.2	2.5	-0.8	0.3	18.6	14.3	11.9
Recreation & Culture	3.2	7.2	0.0	0.0	7.8	9.0	1.6
Education	2.0	1.7	0.2	1.0	8.6	8.2	7.4
Miscellaneous	3.9	0.4	0.2	0.1	11.5	5.2	4.8
	2.8	1.5	1.3	0.4	8.7	14.6	13.3
Headline	100.0	2.3	0.8	1.0	6.8	12.6	11.1

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

Groups	% changes	Total number of items	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-18	Oct-19	Oct-18	Oct-19	Oct-18	Oct-19	Oct-18	Oct-19	
I. Food Group	13.6	130	134	24	10	48	21	29	41	29	62
Food & Non-Alcoholic Beverages	13.1	118	122	24	9	45	20	26	39	23	54
Alcoholic Beverages & Tobacco	25.2	6	6	0	1	0	0	2	0	4	5
Restaurant & Hotels	9.0	6	6	0	0	3	1	1	2	2	3
II. Non-Food Group	9.5	348	348	26	39	88	45	137	132	97	132
Clothing & Footwear	9.2	59	59	3	6	17	5	28	34	11	14
Housing, Water, Elect, Gas & other Fuels	9.7	36	36	6	3	3	5	12	16	15	12
Furnishing & Household Equip. Maintenance etc	12.1	69	69	0	1	12	4	43	26	14	38
Health	8.1	39	39	1	2	21	9	7	10	10	18
Transport	11.9	43	43	9	5	6	5	9	10	19	23
Communication	1.6	12	12	1	6	7	2	1	2	3	2
Recreation & Culture	7.4	39	39	4	11	12	7	12	9	11	12
Education	4.8	16	16	0	4	2	5	4	4	10	3
Miscellaneous	13.3	35	35	2	1	8	3	21	21	4	10
Overall	11.1	478	482	50	49	136	66	166	173	126	194

Note: Prices of 5 seasonal items were not reported during the month.

Table A3: Top and Bottom Fifteen Contributors to CPI Inflation (YoY) in October 2019

Top 15 Contributors		Weights	YoY Change		Weighted Contribution
Items/ Contributors			Oct-18	Oct-19	
Ranked by Weighted Contribution					
1	House Rent	21.81	6.72	6.81	11.84
2	Fresh Vegetables	1.75	1.16	34.13	6.72
3	Milk Fresh	6.68	3.58	8.36	6.17
4	Gas	1.58	85.31	30.90	5.49
5	Electricity	4.40	0.00	13.43	5.41
6	Onion	0.51	-55.97	114.41	4.86
7	Cigarettes	1.39	10.89	25.95	4.72
8	Motor Fuel	3.03	26.41	18.56	4.09
9	Wheat Flour	4.16	3.26	11.76	4.04
10	Meat	2.43	11.70	11.10	3.30
11	Sugar	1.04	0.09	34.02	2.71
12	Personal Equipments	0.84	12.38	22.01	2.45
13	Cotton Cloth	1.73	6.76	13.62	2.26
14	Education	3.94	11.54	4.84	2.12
15	Vegetable Ghee	2.07	3.64	16.79	1.99
Total		57.38			68.17
Bottom 15 Contributors					
1	Tomatoes	0.42	-28.75	-12.58	-0.49
2	Betel Leaves & Nuts	0.02	141.44	-1.00	-0.01
3	Gram Whole	0.16	-10.75	-0.06	0.00
4	Kerosene Oil	0.01	31.81	9.88	0.01
5	Medical Equipments	0.01	4.08	12.88	0.01
6	Marriage Hall Charges	0.08	9.05	3.80	0.03
7	Blades	0.03	4.56	13.61	0.03
8	Beans	0.03	1.16	17.33	0.04
9	Mustard Oil	0.10	2.14	7.84	0.05
10	Wheat Product	0.10	0.67	8.30	0.07
11	Eggs	0.46	6.07	1.71	0.07
12	Gur	0.02	-0.25	33.86	0.08
13	News Papers	0.19	27.82	4.57	0.08
14	Recreation & Culture	0.86	6.10	1.78	0.08
15	Communication & Apparatus	3.15	7.76	0.57	0.10
Total		5.63			0.15

Table A3.1: Top and Bottom Fifteen Contributors to CPI Inflation (MoM) in October 2019

Top 15 Contributors		Weights	MoM Change		Weighted Contribution
Items/ Contributors	Sep-19		Oct-19		
Ranked by Weighted Contribution					
1	Fresh Vegetables	1.75	13.40	11.46	27.31
2	House Rent	21.81	0.00	1.11	20.46
3	Milk Fresh	6.68	1.38	1.13	8.98
4	Electricity	4.40	0.00	1.88	8.51
5	Eggs	0.46	-0.72	16.79	5.74
6	Household Servent	1.04	1.72	3.99	4.92
7	Wheat Flour	4.16	2.06	1.20	4.60
8	Tomatoes	0.42	-13.90	14.38	4.28
9	Onion	0.51	7.90	4.60	4.03
10	Potatoes	0.45	5.41	4.49	2.17
11	Meat	2.43	0.42	0.61	2.03
12	Cotton Cloth	1.73	0.94	0.90	1.70
13	Vegetable Ghee	2.07	1.99	1.06	1.46
14	Woolen Cloth	0.88	0.52	1.40	1.41
15	Tea	0.84	3.08	1.24	1.34
Total		49.63			98.94
Bottom 15 Contributors					
1	Chicken	1.36	-0.10	-13.19	-16.33
2	Fresh Fruits	1.86	-4.84	-2.63	-4.94
3	Sugar	1.04	-0.24	-0.75	-0.81
4	Postal Services	0.07	0.00	0.00	0.00
5	Gas	1.58	0.00	0.00	0.00
6	Communication & Apparatus	3.15	0.00	0.00	0.00
7	Recreation & Culture	0.86	0.00	0.00	0.00
8	Motor Vehicle Tax	0.11	0.00	0.00	0.00
9	Kerosene Oil	0.01	23.61	0.00	0.00
10	Blades	0.03	1.80	0.18	0.01
11	Medical Equipments	0.01	1.95	1.71	0.02
12	Marriage Hall Charges	0.08	0.34	0.26	0.02
13	Gur	0.02	2.98	1.09	0.03
14	Mustard Oil	0.10	0.58	0.57	0.04
15	Cigarettes	1.39	0.33	0.02	0.04
Total		11.67			-21.93

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in October 2019

Items/ Contributors	Weights	YoY Change		Weighted Contribution	
		Oct-18	Oct-19		
A. Ranked by Percentage Change					
1	Onion	0.51	-55.97	114.41	4.86
2	Pulse Moong	0.23	-5.79	49.56	0.97
3	Potatoes	0.45	-21.25	36.08	1.33
4	Fresh Vegetables	1.75	1.16	34.13	6.72
5	Sugar	1.04	0.09	34.02	2.71
6	Gur	0.02	-0.25	33.86	0.08
7	Gas	1.58	85.31	30.90	5.49
8	Postal Services	0.07	8.34	27.56	0.19
9	Cigarettes	1.39	10.89	25.95	4.72
10	Pulse Mash (Washed)	0.21	-19.66	25.74	0.43
11	Personal Equipments	0.84	12.38	22.01	2.45
12	Honey	0.04	6.67	18.70	0.11
13	Motor Fuel	3.03	26.41	18.56	4.09
14	Motor Vehicle	0.66	12.94	17.81	0.91
15	Motor Vehicle Tax	0.11	0.00	17.56	0.16
Total		11.94			35.21
B. Ranked by Weights					
1	House Rent	21.81	6.72	6.81	11.84
2	Milk Fresh	6.68	3.58	8.36	6.17
3	Electricity	4.40	0.00	13.43	5.41
4	Wheat Flour	4.16	3.26	11.76	4.04
5	Education	3.94	11.54	4.84	2.12
6	Communication & Apparatus	3.15	7.76	0.57	0.10
7	Motor Fuel	3.03	26.41	18.56	4.09
8	Transport Services	2.70	17.74	4.75	1.13
9	Meat	2.43	11.70	11.10	3.30
10	Vegetable Ghee	2.07	3.64	16.79	1.99
11	Fresh Fruits	1.86	3.40	3.84	0.67
12	Fresh Vegetables	1.75	1.16	34.13	6.72
13	Cooking Oil	1.75	2.80	14.51	1.39
14	Cotton Cloth	1.73	6.76	13.62	2.26
15	Rice	1.58	9.73	6.07	0.74
Total		63.07			51.98
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 11.1 percent in October 2019.					

Table A3.2(b): Top Fifteen Contributors to CPI Inflation (MoM) in October 2019						
Items/ Contributors	Weights	MoM Change		Weighted Contribution		
		Sep-18	Oct-19			
A. Ranked by Percentage Change						
1	Eggs	0.46	-0.72	16.79	5.74	
2	Tomatoes	0.42	-13.90	14.38	4.28	
3	Fresh Vegetables	1.75	13.40	11.46	27.31	
4	Onion	0.51	7.90	4.60	4.03	
5	Beans	0.03	0.61	4.58	0.13	
6	Potatoes	0.45	5.41	4.49	2.17	
7	Household Servent	1.04	1.72	3.99	4.92	
8	Fish	0.30	-1.51	2.74	0.75	
9	Stationery	0.40	0.67	2.65	1.08	
10	Wheat	0.35	1.61	2.28	0.34	
11	Electricity	4.40	0.00	1.88	8.51	
12	Cleaning & Laundering	0.21	1.09	1.81	0.47	
13	Medical Equipments	0.01	1.95	1.71	0.02	
14	Pulse Gram	0.24	2.81	1.69	0.46	
15	Doctor (Mbbs) Clinic Fee	0.59	4.10	1.63	1.26	
					11.14	61.48
B. Ranked by Weights						
1	House Rent	21.81	0.00	1.11	20.46	
2	Milk Fresh	6.68	1.38	1.13	8.98	
3	Electricity	4.40	0.00	1.88	8.51	
4	Wheat Flour	4.16	2.06	1.20	4.60	
5	Education	3.94	0.22	0.06	0.28	
6	Communication & Apparatus	3.15	0.00	0.00	0.00	
7	Motor Fuel	3.03	-2.56	0.27	0.72	
8	Transport Services	2.70	0.16	0.26	0.65	
9	Meat	2.43	0.42	0.61	2.03	
10	Vegetable Ghee	2.07	1.99	1.06	1.46	
11	Fresh Fruits	1.86	-4.84	-2.63	-4.94	
12	Fresh Vegetables	1.75	13.40	11.46	27.31	
13	Cooking Oil	1.75	1.66	1.00	1.09	
14	Cotton Cloth	1.73	0.94	0.90	1.70	
15	Rice	1.58	0.70	0.41	0.53	
					63.07	73.37
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in MoM change in CPI, which is 1.0 percent in October 2019.						

Table A3.3: Top Ten Contributors to CPI Food Inflation (YoY) in October 2019					
Items/ Contributors	Weights	YoY Change		Weighted Contribution	
		Oct-18	Oct-19		
A. Ranked by Weighted Contribution					
1	Fresh Vegetables	1.75	1.16	34.13	6.72
2	Milk Fresh	6.68	3.58	8.36	6.17
3	Onion	0.51	-55.97	114.41	4.86
4	Cigarettes	1.39	10.89	25.95	4.72
5	Wheat Flour	4.16	3.26	11.76	4.04
6	Meat	2.43	11.70	11.10	3.30
7	Sugar	1.04	0.09	34.02	2.71
8	Vegetable Ghee	2.07	3.64	16.79	1.99
9	Cooking Oil	1.75	2.80	14.51	1.39
10	Potatoes	0.45	-21.25	36.08	1.33
Total		22.24			37.23
B. Ranked by Percentage Change					
1	Onion	0.51	-55.97	114.41	4.86
2	Pulse Moong	0.23	-5.79	49.56	0.97
3	Potatoes	0.45	-21.25	36.08	1.33
4	Fresh Vegetables	1.75	1.16	34.13	6.72
5	Sugar	1.04	0.09	34.02	2.71
6	Gur	0.02	-0.25	33.86	0.08
7	Cigarettes	1.39	10.89	25.95	4.72
8	Pulse Mash (Washed)	0.21	-19.66	25.74	0.43
9	Honey	0.04	6.67	18.70	0.11
10	Beans	0.03	1.16	17.33	0.04
Total		5.68			21.97
C. Ranked by Weights					
1	Milk Fresh	6.68	3.58	8.36	6.17
2	Wheat Flour	4.16	3.26	11.76	4.04
3	Meat	2.43	11.70	11.10	3.30
4	Vegetable Ghee	2.07	3.64	16.79	1.99
5	Fresh Fruits	1.86	3.40	3.84	0.67
6	Fresh Vegetables	1.75	1.16	34.13	6.72
7	Cooking Oil	1.75	2.80	14.51	1.39
8	Rice	1.58	9.73	6.07	0.74
9	Cigarettes	1.39	10.89	25.95	4.72
10	Chicken	1.36	28.31	5.13	0.52
Total		25.05			30.26
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 13.6 percent in October 2019.					

Table A3.3(b): Top Ten Contributors to CPI Food Inflation (MoM) in October 2019					
Items/ Contributors	Weights	MoM Change		Weighted Contribution	
		Sep-18	Oct-19		
A. Ranked by Weighted Contribution					
1	Fresh Vegetables	1.75	13.40	11.46	27.31
2	Milk Fresh	6.68	1.38	1.13	8.98
3	Eggs	0.46	-0.72	16.79	5.74
4	Wheat Flour	4.16	2.06	1.20	4.60
5	Tomatoes	0.42	-13.90	14.38	4.28
6	Onion	0.51	7.90	4.60	4.03
7	Potatoes	0.45	5.41	4.49	2.17
8	Meat	2.43	0.42	0.61	2.03
9	Vegetable Ghee	2.07	1.99	1.06	1.46
10	Tea	0.84	3.08	1.24	1.34
Total		19.77			61.95
B. Ranked by Percentage Change					
1	Eggs	0.46	-0.72	16.79	5.74
2	Tomatoes	0.42	-13.90	14.38	4.28
3	Fresh Vegetables	1.75	13.40	11.46	27.31
4	Onion	0.51	7.90	4.60	4.03
5	Beans	0.03	0.61	4.58	0.13
6	Potatoes	0.45	5.41	4.49	2.17
7	Fish	0.30	-1.51	2.74	0.75
8	Wheat	0.35	1.61	2.28	0.34
9	Pulse Gram	0.24	2.81	1.69	0.46
10	Pulse Masoor	0.27	0.90	1.28	0.24
Total		4.76			45.46
C. Ranked by Weights					
1	Milk Fresh	6.68	1.38	1.13	8.98
2	Wheat Flour	4.16	2.06	1.20	4.60
3	Meat	2.43	0.42	0.61	2.03
4	Vegetable Ghee	2.07	1.99	1.06	1.46
5	Fresh Fruits	1.86	-4.84	-2.63	-4.94
6	Fresh Vegetables	1.75	13.40	11.46	27.31
7	Cooking Oil	1.75	1.66	1.00	1.09
8	Rice	1.58	0.70	0.41	0.53
9	Cigarettes	1.39	0.33	0.02	0.04
10	Chicken	1.36	-0.10	-13.19	-16.33
Total		25.05			24.78
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in MoM change in CPI Food, which is 1.2 percent in October 2019.					

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in October 2019

Items/ Contributors	Weights	YoY Change		Weighted Contribution	
		Oct-18	Oct-19		
A. Ranked by Weighted Contribution					
1	House Rent	21.81	6.72	6.81	11.84
2	Gas	1.58	85.31	30.90	5.49
3	Electricity	4.40	0.00	13.43	5.41
4	Motor Fuel	3.03	26.41	18.56	4.09
5	Personal Equipments	0.84	12.38	22.01	2.45
6	Cotton Cloth	1.73	6.76	13.62	2.26
7	Education	3.94	11.54	4.84	2.12
8	Household Servent	1.04	6.26	16.06	1.76
9	Transport Services	2.70	17.74	4.75	1.13
10	Woolen Cloth	0.88	3.96	12.06	1.09
Total		41.95			37.65
B. Ranked by Percentage Change					
1	Gas	1.58	85.31	30.90	5.49
2	Postal Services	0.07	8.34	27.56	0.19
3	Personal Equipments	0.84	12.38	22.01	2.45
4	Motor Fuel	3.03	26.41	18.56	4.09
5	Motor Vehicle	0.66	12.94	17.81	0.91
6	Motor Vehicle Tax	0.11	0.00	17.56	0.16
7	Household Servent	1.04	6.26	16.06	1.76
8	Plastic Products	0.25	8.06	15.37	0.35
9	Stationery	0.40	9.24	14.35	0.52
10	Cotton Cloth	1.73	6.76	13.62	2.26
Total		9.71			18.18
C. Ranked by Weights					
1	House Rent	21.81	6.72	6.81	11.84
2	Electricity	4.40	0.00	13.43	5.41
3	Education	3.94	11.54	4.84	2.12
4	Communication & Apparatus	3.15	7.76	0.57	0.10
5	Motor Fuel	3.03	26.41	18.56	4.09
6	Transport Services	2.70	17.74	4.75	1.13
7	Cotton Cloth	1.73	6.76	13.62	2.26
8	Gas	1.58	85.31	30.90	5.49
9	Footware	1.55	7.55	5.51	0.59
10	Personal Care	1.49	5.67	7.38	1.04
Total		45.39			34.07

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 9.5 percent in October 2019.

Table A3.4(b): Top Ten Contributors to CPI Non-food Inflation (MoM) in October 2019					
Items/ Contributors	Weights	MoM Change		Weighted Contribution	
		Sep-18	Oct-19		
A. Ranked by Weighted Contribution					
1	House Rent	21.81	0.00	1.11	20.46
2	Electricity	4.40	0.00	1.88	8.51
3	Household Servent	1.04	1.72	3.99	4.92
4	Cotton Cloth	1.73	0.94	0.90	1.70
5	Woolen Cloth	0.88	0.52	1.40	1.41
6	Doctor (Mbbs) Clinic Fee	0.59	4.10	1.63	1.26
7	Drug Medicine	1.27	0.69	1.08	1.13
8	Stationery	0.40	0.67	2.65	1.08
9	Personal Care	1.49	1.15	0.63	0.96
10	Washing Soap & Detergent	0.79	0.65	1.04	0.88
Total		34.40			42.30
B. Ranked by Percentage Change					
1	Household Servent	1.04	1.72	3.99	4.92
2	Stationery	0.40	0.67	2.65	1.08
3	Electricity	4.40	0.00	1.88	8.51
4	Cleaning & Laundering	0.21	1.09	1.81	0.47
5	Medical Equipments	0.01	1.95	1.71	0.02
6	Doctor (Mbbs) Clinic Fee	0.59	4.10	1.63	1.26
7	Woolen Cloth	0.88	0.52	1.40	1.41
8	News Papers	0.19	0.00	1.31	0.24
9	Mechanical Service	0.46	1.81	1.15	0.54
10	House Rent	21.81	0.00	1.11	20.46
Total		29.99			38.91
C. Ranked by Weights					
1	House Rent	21.81	0.00	1.11	20.46
2	Electricity	4.40	0.00	1.88	8.51
3	Education	3.94	0.22	0.06	0.28
4	Communication & Apparatus	3.15	0.00	0.00	0.00
5	Motor Fuel	3.03	-2.56	0.27	0.72
6	Transport Services	2.70	0.16	0.26	0.65
7	Cotton Cloth	1.73	0.94	0.90	1.70
8	Gas	1.58	0.00	0.00	0.00
9	Foot ware	1.55	0.04	0.04	0.05
10	Personal Care	1.49	1.15	0.63	0.96
		45.39			33.31
<p>Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in YoY change in CPI Non-food, which is 0.9 percent in October 2019.</p>					

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

Groups	Decrease or no change	Subdued in crease (Greater than 0% but less than 5%)	Moderate in crease (5% but less than 10%)	Double digit increase (10% or more)
Food & Non-Alcoholic Beverages	Lemon, Tomatoes, Gram Whole Yellow Av.Qlty, Sweetmelon (Gamma), Guava, Malta/Mosambi, Banana, Tinda, Chocolate	Milk Tetra Pack 1/2 Ltr., Jam Ahmed/Mitchelles, Cornflaks Fauji 225 Gm., Rice Basmati 385/386, Samosa (Vegetable), Cloves, Loose Av.Qlty, Dates	Pastry Av.Qlty., Lactogen 400 Grams, Milk Powder Loose/Packed, Rooh Afza, Maida, Milk Fresh (Unboiled), Marmicalli, Patties	Chillies Green, Onion, Garlic, Arvi, Cardamom Small Av.Qlty, Ginger, Pulse Moong (Washed), Brinjal, Potatoes, Sugar Refined, Gur Av.Qlty, Cinamon Loose Av.Qlty, Spinach, Cocumber (Khaza), Bolognoul, Pulae Mach (Washed)
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), Gloves Av.Qlty, Shoe Repair Half Sole, Tailoring Shirt, Tailoring Coat-Pant Suit,	Shoe Polish Charges Avg, Vest For Men Av.Qlty., Pullover Gents Oxford/Bon, Brassier Sup.Qlty, Pullover Ladies Oxford/Bon, Pullover (Gents) Others Av.Qlty, Dry	Child Shoe Power Lite Bata, Heavy Wt Suiting Law.Pur Av. Qlty., Long Cloth 57" Gul Ahmed/Al Karam, Gents Shoes Paul Bata, Tropical Suiting Law.Pur, Shirting Av.Qlty., Underwear Av.Qlty Medium Size, Pant Cloth Wash & Wear Av.Qlty, Georgette Av.Qlty,
Housing, Water, Elect, Gas & other Fuels	Cement (Local), Elect.Charges Upto 50 Units, Gas Chrg All Over 500 Mmbtu,	Firewood Whole, Water Charges Per House, Cement Blocks (6"X8"X12"), Elect.Charges 01- 100 Units, Elect.Charges 101- 300 Units,	Kerosene Oil, Sand (Black Pit Sand), Bajree, Plumber Wage Rate, Mason (Raj) Wage Rate, Electrician Wage Rate(P/Pnt), House Rent For Q-V, House Rent For Q-Iii, House Rent	Gas Chrg Over 200 - 300 Mmbtu, Gas Chrg Over 100 - 200 Mmbtu, Gas Chrg Up To 100 Cub Mmbtu, Gas Chrg Overall/ Combined, Elect.Charges Above 1000 Units, Synthetic Enemal Ici, Elect.Charges 301 - 1000 Units, Synthetic Enemal Robialac, Gas Chrg Over 300-
Furnishing & Household Equip. Maintenance etc	Washing Machine (Singer),	Electric Blub Energy Saver 14 Watt, Farshi Dari 12X9 Av.Qlty, Marriage Hall Charges Without Refreshment, Airconditioner 1.5 Ton Pel,	Sewing Machine Needle (Singer), Dry Cell 1.5 Volt (Local), Air Cooler Super Asia, S.Steel Deghchi Medium Size, Gizer Large Size 30	Tube Light Philips 40 Watt, Tea Set Pak. China Wear 21 Pcs, Boot Polish Cherry/Kiwi 50 Ml, Chair Shesham Wood, Robin Blue (35 Gms), Non Stick Cooking Pan, Frying Pan Steel Avg. Qlty., Household Servant Female (Part Time),
Health	Hydilyn Syrup 120 ML, Vicks Vaporub/ Balm,	Ear Drops (Cardisporine), Saniplast (1 Putty), Ventolin Tab. 2Mg., O.R.S. (Nimcol), Sugar Test (Random/Fasting),	Cotton Bandage 2" - 4", Entox Tab., Doctor (Mbbs) Clinic Fee, Ecg Charges, X-Ray (Chest) Charges, Lederplex	Dettol (Medium), Calpol Syrup 60 ML, Thermometer China, Pherergan Syrup 120 ML., Trisil Tab., Daonil Tab. 5 Mg., Cac. 1000 Tab, Septran Tablets, Brufen Tabs 200-Mg., Disprin
Transport	Air Fare Economy Class., Gas Cylinder S.Size (L.P.G), Plateform Ticket, Motorcycle Yamaha 100 Cc, Full Tonga Charges,	Bus Fare Max (Within City), Bus Fare Outside City (Non A/C), Cycle Overhauling Charges, Motor Cycle Service Charges, Car Suzuki 800 Cc	Suzuki Fare Min.Within City, Suzuki Fare Maximum Wityin City, Bus Fare Outside City (A/C), Bus Fare Min (Within City), Taxi 4 Seater Fare,	Car Honda Civic 1500 Cc, Train Fare Ist Slp.101-500, Train Fare Ist Slp. > 500, Train Fare A/C Slp > 500K, Train Fare A/C Slp. 1-100, Train Fare A/C Slp.101-500, Train Fare Eco. 1-100 Km., Car Toyota 1300 Cc, Train Fare Ist Slp. 1-
Communication	Postal Envelope For Saudi Arabia, U.M.S. Reg Charges, Min., Mobile Cell Charges, T.C.S. Ch. Min.Within	Fax Charges (Local), Internet Charges,	Mobile Set Nokia/Sony/Ericsson Av.Qlty, Telephone Set Av. Qlty,	Postal Envelope Domestic, Postal Registration Charges,
Recreation & Culture	Weekly "Mag", V.C.P. Panasonic/Lg/National, Tv Licence Fee Domestic, Video Cassette Blank, Tdk/Sony, T.V. 20" Colored Sony, Dvd/Vcd Player	Personel Computer (Branded), Eng. Book Ist.Yr Complete Set, Cinema A/C High Class, Cable Charges, Cinema Non-A/C High Class, Computer Cd (Tdk/Imation),	Pakistan Studies Book Ba/B.Sc, Maths Book Calss V (T.B.Board), Paper Fool Scape (27"X17"), English Book Class Ix Or X, English Book Ba/B.Sc, Urdu Book Class V	Weekly "Akhbar-E-Jahan", Photostate Paper 70 Gm, Pen Ink Dollor 57 Ml Bottle, Pencil Goldfish/Deer, Exercise Book Lined 80/10, Daily "Dawn", Ball Pen (Local), Urdu Book Ba/B.Sc, Maths Book Class Ix Or X, Fountain Pen Hero/Wings/China, Monthly "Naurehal Digest",
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 Ist. Year, Govt. University Fee Msc/ Ma, Govt. College Fee Eng.Med (Class-V),	Pvt School Fee Eng.Med (Class-X), Pvt School Fee Eng.Med (Class-I), Pvt School Fee Eng.Med (Class-V),	Pvt Eng.Colege Fee (Ist Year), Govt. Med. College Fee Mbbs Ist Year, Pvt Med.College Fee Mbbs(Ist 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,	Gel Medium Size, Shampoo Sunsilk/Pantene 100 Ml, Beauty Parlour Hair Style Charges,	Toothbrush Sheild, Wall Clock Quartz Av.Qlty, Blade 7-O-Clock Steel (5), Artificial Jewellery Set, Lipstick	Gold Tezabi 24 Ct, Silver Tezabi 24 Ct, Toothpowder Dentonic 90 Gms, Blade Treet Ordinary (10), Wrist Watch Ladies Citizen, Perfume Med.Size Medora/Broche, Toothpast

Inflation Monitor (Revamped Version), October 2019

Table A5: City- wise CPI Inflation by Income Groups, October 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	1.3	12.2	0.8	13.1	2.0	11.2	1.4	11.8	0.9	12.9	1.9	10.8
2 Islamabad	0.7	11.6	1.0	13.1	0.4	9.9	0.7	10.9	0.7	11.4	0.7	10.4
3 Lahore	1.1	9.6	1.8	12.1	0.2	6.3	1.1	9.3	1.7	12.0	0.3	6.2
4 Gujranwah	1.1	12.6	1.8	17.1	0.2	7.2	0.9	12.3	1.5	16.6	0.3	7.8
5 Sialkot	1.4	11.4	2.1	13.1	0.6	9.3	1.2	10.9	1.7	12.3	0.7	9.5
6 Faisalabad	1.5	12.2	2.2	15.9	0.6	8.1	1.3	11.3	1.9	15.2	0.6	7.6
7 Multan	1.4	12.3	1.1	14.3	1.8	9.9	1.5	12.0	1.2	14.1	1.9	9.8
8 Sargodha	1.4	12.6	2.2	16.6	0.5	8.4	1.2	12.1	1.9	16.0	0.6	8.4
9 Bahawalpur	1.5	10.3	2.3	12.8	0.6	7.7	1.3	9.6	2.0	11.9	0.7	7.5
10 Karachi	1.4	16.0	1.2	20.1	1.7	10.8	1.4	15.9	1.3	19.7	1.5	11.7
11 Hyderabad	1.8	18.4	2.8	21.2	0.4	14.7	1.8	17.8	3.0	20.6	0.5	14.7
12 Sukkur	0.2	14.1	0.2	19.8	0.2	8.0	0.4	13.0	0.4	18.7	0.3	7.6
13 Larkana	0.5	15.8	0.5	20.6	0.4	10.8	0.5	15.2	0.5	20.4	0.5	10.6
14 Peshawar	2.3	13.4	2.6	15.7	1.9	11.0	2.1	12.8	2.2	15.0	2.1	10.8
15 Bannu	1.2	9.6	1.4	11.0	1.0	8.1	1.0	9.3	1.2	10.7	0.9	8.0
16 Quetta	1.6	13.6	2.4	15.1	0.6	11.8	1.4	13.1	2.3	14.7	0.5	11.4
17 Khuzdar	1.0	8.4	1.2	10.4	0.9	6.2	1.0	8.2	1.2	10.9	0.7	5.6
	Rs 12001-18000						Rs 18001-35000					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	1.5	11.9	1.0	12.7	1.9	11.3	1.5	11.6	1.2	12.3	1.8	11.0
2 Islamabad	0.6	10.6	0.6	11.0	0.7	10.3	0.6	10.3	0.6	11.1	0.7	9.6
3 Lahore	1.1	9.1	1.7	11.8	0.4	6.4	1.0	8.6	1.7	11.5	0.4	6.0
4 Gujranwah	0.8	12.2	1.2	16.0	0.3	8.6	0.6	11.6	0.9	15.5	0.3	8.4
5 Sialkot	1.1	10.6	1.4	11.8	0.8	9.5	0.9	10.0	1.1	11.4	0.8	9.0
6 Faisalabad	1.1	11.0	1.7	14.7	0.6	7.7	0.9	10.2	1.4	14.3	0.6	7.1
7 Multan	1.5	11.6	1.0	13.8	2.0	9.5	1.4	11.3	0.9	13.9	1.8	9.1
8 Sargodha	1.3	11.5	1.8	15.3	0.8	8.3	1.2	10.8	1.5	14.8	1.0	7.9
9 Bahawalpur	1.4	9.7	2.1	11.8	0.8	8.0	1.2	8.9	1.9	11.7	0.7	6.9
10 Karachi	1.4	16.1	1.3	19.4	1.5	12.8	1.3	15.2	1.2	18.9	1.4	12.1
11 Hyderabad	2.1	18.0	3.4	20.7	0.7	15.3	2.0	17.3	3.5	20.2	0.7	14.7
12 Sukkur	0.3	12.2	0.3	18.3	0.3	7.0	0.4	11.1	0.3	17.0	0.4	6.8
13 Larkana	0.5	15.1	0.5	20.0	0.5	11.0	0.5	14.0	0.3	19.2	0.6	10.2
14 Peshawar	2.1	12.5	2.2	14.8	1.9	10.6	2.0	12.0	2.0	14.5	1.9	10.1
15 Bannu	1.2	9.6	1.2	10.7	1.1	8.7	1.0	9.1	0.8	10.1	1.1	8.3
16 Quetta	1.3	13.4	2.2	15.0	0.4	11.9	1.1	12.8	2.0	15.1	0.4	11.1
17 Khuzdar	0.9	7.6	1.1	9.9	0.7	5.5	0.8	7.7	1.1	9.4	0.6	6.4
	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	1.5	11.1	1.0	11.0	1.7	11.1	1.5	11.2	1.0	11.7	1.8	11.0
2 Islamabad	0.4	10.1	0.3	9.7	0.5	10.3	0.5	10.2	0.4	10.0	0.5	10.3
3 Lahore	0.9	7.8	1.8	10.4	0.4	6.5	1.0	8.2	1.7	11.1	0.4	6.1
4 Gujranwah	0.3	11.0	0.5	15.2	0.3	8.9	0.7	11.5	1.0	15.9	0.4	8.6
5 Sialkot	0.7	9.4	0.6	10.5	0.8	8.8	0.9	9.9	1.1	11.3	0.8	8.9
6 Faisalabad	0.7	9.5	1.1	12.6	0.5	8.1	1.0	10.4	1.6	14.4	0.6	7.8
7 Multan	1.3	9.9	0.5	12.5	1.7	8.7	1.4	10.8	0.8	13.5	1.8	9.0
8 Sargodha	1.2	10.0	1.4	13.5	1.1	8.6	1.2	11.0	1.7	15.0	1.0	8.6
9 Bahawalpur	0.9	7.7	1.7	10.0	0.6	6.7	1.2	8.8	2.0	11.5	0.8	7.2
10 Karachi	1.0	12.4	1.1	17.0	0.9	10.1	1.1	13.6	1.2	18.1	1.1	10.4
11 Hyderabad	1.6	16.5	3.2	18.3	0.8	15.6	1.9	17.1	3.2	19.9	0.8	15.1
12 Sukkur	0.3	10.6	0.1	15.0	0.4	8.6	0.3	11.7	0.3	17.3	0.4	8.2
13 Larkana	0.5	12.7	0.2	17.2	0.6	10.8	0.5	14.5	0.4	19.7	0.5	11.3
14 Peshawar	1.6	11.7	1.7	12.6	1.5	11.4	1.8	12.1	2.1	14.1	1.7	10.8
15 Bannu	0.9	9.4	0.9	9.9	0.9	9.2	1.1	9.5	1.1	10.4	1.1	8.9
16 Quetta	1.0	12.4	1.8	14.6	0.6	11.4	1.2	12.6	2.0	14.8	0.6	11.2
17 Khuzdar	0.7	9.3	1.0	9.7	0.5	9.1	0.9	8.3	1.1	10.0	0.8	7.2

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Hyderabad	17.1	19.9	15.1	Sargodha	11.0	15.0	8.6
Bahawalnagar	16.3	18.6	15.0	Jhang	11.0	12.5	10.1
Wazirabad	14.8	21.2	10.6	Attock	10.9	10.8	11.0
Abbottabad	14.6	14.4	14.7	Multan	10.8	13.5	9.0
Larkana	14.5	19.7	11.3	Faisalabad	10.4	14.4	7.8
Mardan	14.2	13.5	14.5	Islamabad	10.2	10.0	10.3
Dadu	14.1	20.7	9.9	Sialkot	9.9	11.3	8.9
Karachi	13.6	18.1	10.4	Gawadar	9.7	7.5	11.1
D. I. Khan	13.0	17.0	10.7	Bannu	9.5	10.4	8.9
Mingora	12.7	18.6	9.3	Sahiwal	9.5	12.3	7.8
Turbat	12.7	10.3	13.9	D. G. Khan	9.4	9.1	9.5
Quetta	12.6	14.8	11.2	Bahawalpur	8.8	11.5	7.2
R. Y. Khan	12.2	19.5	7.8	D. M. Jamali	8.8	11.5	7.0
Jhelum	12.1	13.9	11.0	Khuzdar	8.3	10.0	7.2
Peshawar	12.1	14.1	10.8	Lahore	8.2	11.1	6.1
Mianwali	12.1	17.0	9.3	Mithi	8.1	12.4	5.5
Sukkur	11.7	17.3	8.2	Vehari	7.2	8.0	6.7
Gujranwala	11.5	15.9	8.6	Nawabshah	5.4	5.0	5.7
Muzaffargarh	11.3	13.4	9.8				
Rawalpindi	11.2	11.7	11.0				
Loralai	11.2	13.3	10.0				
Mirpukhas	11.1	13.5	9.5				

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-18	Sep-19	Oct-19	Oct-18	Sep-19	Oct-19
<u>Up to Rs. 8000</u>						
General	1.4	1.2	1.2	3.9	12.2	12.1
Food	1.7	1.9	1.6	1.3	15.1	14.9
Non-food	1.0	0.3	0.8	7.2	8.9	8.7
<u>Rs. 8001- 12000</u>						
General	1.5	1.0	1.1	4.5	12.5	12.1
Food	1.8	1.7	1.4	1.7	14.8	14.4
Non-food	1.2	0.3	0.7	7.4	10.3	9.8
<u>Rs. 12001- 18000</u>						
General	1.5	0.9	1.0	4.9	12.4	11.8
Food	1.9	1.7	1.3	2.1	14.7	14.1
Non-food	1.1	0.2	0.7	7.6	10.2	9.8
<u>Rs. 18001- 35000</u>						
General	2.6	0.8	1.1	6.6	12.8	11.1
Food	2.0	1.6	1.2	2.6	14.7	13.8
Non-food	3.1	0.2	0.9	9.9	11.4	9.1
<u>Above Rs. 35000</u>						
General	3.1	0.6	0.9	8.6	12.7	10.3
Food	1.9	1.4	1.0	3.4	13.7	12.7
Non-food	3.7	0.2	0.9	11.1	12.2	9.2
<u>All income groups</u>						
General	2.3	0.8	1.0	6.8	12.5	11.1
Food	1.9	1.5	1.2	2.7	14.3	13.6
Non-food	2.6	0.2	0.9	9.6	11.4	9.5
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	Percentage change	
			Oct-19	YoY	MoM
1	Wheat	10Kg.	380.0	11.7	2.6
2	Wheat Flour Bag	10Kg.	453.3	15.2	3.9
3	Rice Basmati Broken	Kg.	82.2	6.6	0.7
4	Rice Irri-6/9	Kg.	60.8	11.7	0.4
5	Bread Phin Med.Size (340-400 Gm.)	Each	49.6	15.7	1.1
6	Beef	Kg.	424.2	11.7	1.0
7	Mutton	Kg.	877.0	10.4	0.4
8	Chicken Live (Farm)	Kg.	172.1	10.5	-15.2
9	Milk Fresh	Litr	94.1	10.0	0.6
10	Curd	Kg.	109.4	7.0	0.0
11	Milk Powdered Nido	500G	448.4	15.8	0.8
12	Egg Hen (Farm)	Doz.	112.8	1.6	15.3
13	Mustard Oil	Kg.	202.5	7.7	0.7
14	Cooking Oil (Tin)	2.5Ltr	570.9	18.1	0.2
15	Veg. Ghee (Tin)	2.5Kg.	548.1	15.1	0.6
16	Veg.Ghee Loose	Kg.	183.9	20.7	0.3
17	Bananas	Doz.	59.7	-4.0	-10.8
18	Masoor Pulse Washed	Kg.	129.4	12.8	2.4
19	Moong Pulse Washed	Kg.	177.0	53.6	3.8
20	Mash Pulse Washed	Kg.	187.3	32.1	3.0
21	Gram Pulse Washed	Kg.	135.0	13.1	2.2
22	Potatoes	Kg.	44.5	37.7	8.0
23	Onions	Kg.	76.2	114.3	5.8
24	Tomatoes	Kg.	86.2	24.0	69.3
25	Sugar	Kg.	73.8	34.7	-1.7
26	Gur	Kg.	113.5	31.6	-0.2
27	Salt Powdered Loose (Lahori)	Kg.	12.8	5.4	2.3
28	Red Chillies Powder Loose	Kg.	350.3	2.2	0.9
29	Garlic	Kg.	265.0	108.3	2.7
30	Tea (Yellow Labl 200 Gm.)	200Gm.	241.8	18.3	2.1
31	Cooked Beef Plate	Each	129.7	12.7	1.0
32	Cooked Dal Plate	Each	67.3	8.6	0.4
33	Tea Prepared (Sada)	Cup	24.9	14.4	1.2
34	Cigarettes K-2 (20S)	20'S	76.7	33.1	0.6
35	Long Cloth (Coarse Latha)	Mtr.	311.4	31.9	0.5
36	Shirting	Mtr.	205.1	14.8	0.4
37	Lawn	Mtr.	348.9	20.9	0.0
38	Georgette (Voil Printed)	Mtr.	145.4	10.0	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	604.9	1.0	1.0
42	Electric Charges 1-50	Unit	2.0	0.0	0.0
43	Gas Charges Upto 3.3719	Mmbtu	246.3	74.7	0.0
44	Kerosene	Litr	131.8	8.6	0.0
45	Firewood	40Kg	657.9	4.7	0.5
46	Energy Savor 14 Watt	Each	178.9	4.5	1.0
47	Washing Soap (200-250 Gm.)	Cake	33.6	18.5	1.4
48	Match Box	Each	2.7	13.2	1.5
49	Petrol	Litr	114.2	21.6	0.0
50	Diesel	Litr	128.1	19.1	0.0
51	L.P.G.(11 Kg Cylinder.)	Each	1435.5	-7.0	11.7
52	Tele. Local Call	Call	4.7	18.0	0.0
53	Bath Soap Lifebouy (Standard)	Cake	44.7	10.2	1.9
Maximum				114.3	69.3
Median				13.1	0.7
Minimum				-7.0	-15.2

Table A9: Distribution of Price Changes (YoY) - WPI Items: October 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,	Raw Animal Material/Wool, Poultry, Millet/Bajra, Eggs,	Fresh Fruits, Fibre Crops, Other Oil Seeds, Fuel Wood In Logs, Dry Fruits, Milk From Bovine Animals,	Stimulant And Spice Crops, Sorghum/Jowar, Edible Roots/Potatos, Vegetables, Sugar Crops, Pulses, Maize, Rice, Cotton Seeds, Fish Live Fresh Or Chilled, Wheat, Unmanufactured Tobacco,
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, Tobacco Products,	Oil Cakes, Beverages, Leather With Out Hairs, Sugar Confectionary,	Chocolate, Blankets, Fruit Juices, Bed Sheets, Hosiery Products, Woolen Carpets, Silk And Rayon Fabrics, Ice Cream, Meat Of Animals, Quilts, Other Food Products, Mineral Water, Blended Yarn, Processed Liquid Milk,	Other Leather N.E.C, Sugar Refined, Vegetables & Fruit Juices, Milk And Cream In Solid Form, Dried Fruits & Nuts, Vegetable Ghee, Other Fabrics, Spices, Woven Fabrics, Wheat Flour, Synthetic Carpets, Ready Made Garments, Other Cereal Flour, Dairy Products N.E.C, Vegetable Oil Refined, Cotton Fabrics, Coffee And Tea, Cotton Yarn,
Other Transportable Goods except Metal Products, Machinery and Equipments	Furnace Oil, Coke, Hard Board, Printing Paper,	Timber, Plastic Products, Insecticised, Matches, Cement,	Bricks Blocks And Tiles, Chemicals, Pesticides, Ceramics And Sanitary, Soaps & Detergent,	Dying Materials, Auto Tyres, Motor Sprit, Glass Sheets, Diesel Oil, Kerosine Oil, Bed Foams, Other Glass Articles, Fertilizers, Medicines, Paints & Varnishes, Mobil Oil,
Metal Product Machinery & Equipment	Engines And Motors, Vacuum Pumps, Pig Iron, Concrete Mixer, Cultivators,	Lighting Equipments, Tractors, Chuff Cutter, Bicycles,	Air Conditioners,	Lathe Machines, Motor Cycles, Pipe Fittings, Motor Vehicals, Electrical Wires, Radio And Television, Steel Bars & Sheets, Refrige, Wash & Sew Mach, Iron, Fan, Steel Products,

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

Items and specification	Weights	Index		
		Oct-18	Sep-19	Oct-19
General	100.00	234.49	257.88	260.46
Food & Non-Alcoholic Beverages.	34.83	240.50	268.40	272.00
1 Wheat	0.35	203.64	223.80	228.90
2 Wheat Flour	4.16	214.19	236.53	239.38
3 Wheat Product	0.10	214.54	229.94	232.34
4 Besan	0.15	267.01	287.21	289.12
5 Rice	1.58	200.65	211.97	212.83
6 Cereals	0.16	264.48	280.60	282.07
7 Bakery & Confectionary	1.16	229.04	250.36	251.21
8 Nimco	0.46	260.78	270.22	271.47
9 Meat	2.43	318.04	351.19	353.34
10 Chicken	1.36	194.00	234.94	203.96
11 Fish	0.30	220.02	238.89	245.43
12 Milk Fresh	6.68	286.97	307.48	310.95
13 Milk Product	0.63	278.92	299.75	301.25
14 Milk Powder	0.11	248.64	276.83	279.18
15 Eggs	0.46	222.28	193.57	226.07
16 Mustard Oil	0.10	164.90	176.83	177.83
17 Cooking Oil	1.75	142.23	161.26	162.87
18 Vegetable Ghee	2.07	148.48	171.59	173.41
19 Dry Fruits	0.25	292.79	315.54	319.07
20 Fresh Fruits	1.86	243.57	259.76	252.92
21 Pulse Masoor	0.27	158.64	178.17	180.45
22 Pulse Moong	0.23	218.49	324.54	326.77
23 Pulse Mash (Washed)	0.21	205.28	255.93	258.11
24 Pulse Gram	0.24	266.59	300.69	305.76
25 Gram Whole	0.16	265.11	264.28	264.94
26 Beans	0.03	246.97	277.06	289.76
27 Potatoes	0.47	215.48	280.62	293.22
28 Onion	0.53	216.58	443.96	464.37
29 Tomatoes	0.44	240.62	183.90	210.34
30 Fresh Vegetables	1.68	291.33	350.59	390.76
31 Sugar	1.04	197.97	267.31	265.31
32 Gur	0.02	262.49	347.56	351.36
33 Honey	0.04	356.59	418.15	423.27
34 Sweet Meet	0.25	273.59	293.35	294.14
35 Beverages	1.20	235.01	246.59	248.51
36 Jam, Tomato Ketchup & Pickle	0.25	235.37	252.16	252.88
37 Condiments	0.27	288.04	314.61	315.44
38 Spices	0.54	269.25	299.46	302.62
39 Tea	0.84	308.83	334.55	338.69
Alcoholic Beverages, Tobacco	1.41	344.03	430.39	430.58
40 Cigarettes	1.39	339.42	427.43	427.50
41 Betel Leaves & Nuts	0.02	623.88	610.07	617.62
Clothing & Footwear	7.57	256.10	277.52	279.59
42 Cotton Cloth	1.73	249.22	280.64	283.17
43 Woolen Cloth	0.88	268.51	296.75	300.90
44 Ready Made Garments	0.97	266.32	281.91	283.79
45 Woolen Readymade Garments	0.40	267.56	289.82	290.69
46 Hosiery	0.51	269.25	290.85	292.88
47 Dopatta	0.44	267.69	290.81	293.77

Cont'd

Table A10: Consumer Price Index by Major Groups and Composite Commodities					
Items and specification		Weights	Index		
			Oct-18	Sep-19	Oct-19
48	Cleaning & Laundering	0.21	293.09	318.39	324.14
49	Tailoring	0.88	351.86	371.43	373.52
50	Footware	1.55	180.14	189.99	190.07
Housing,Water,Elect,Gas & Other Fuel		29.41	219.07	237.71	240.35
51	House Rent	21.81	207.09	218.77	221.19
52	Construction Input Item	0.56	285.53	319.63	321.96
53	Construction Wage Rate	0.33	271.55	292.53	293.60
54	Water Supply	0.50	194.95	200.56	202.13
55	Electricity	4.40	238.10	265.08	270.07
56	Gas	1.58	292.94	383.45	383.45
57	Kerosene Oil	0.01	271.88	298.74	298.74
58	Fire Wood Whole	0.23	299.07	312.72	313.92
Furnished H.Hold Equip.& Maint. Etc		4.21	245.50	270.94	275.31
59	Furniture	0.33	242.25	268.82	270.41
60	Household Textile	0.65	245.96	263.35	265.25
61	Household Equipment	0.59	194.50	209.66	210.57
62	Utensils	0.32	259.94	291.41	292.08
63	Plastic Products	0.25	231.09	264.63	266.62
64	Washing Soap & Detergent	0.79	248.45	276.87	279.74
65	Sewing Needle & Dry Cell	0.15	223.03	243.55	245.91
66	Household Servant	1.04	273.41	305.13	317.31
67	Marriage Hall Charges	0.08	271.76	281.37	282.09
Health		2.19	234.03	249.96	252.99
68	Drug Medicine	1.27	197.59	212.51	214.81
69	Medical Equipment	0.01	263.99	292.99	298.00
70	Doctor (MBBS) Clinic Fee	0.59	318.34	338.58	344.09
71	Medical Test	0.32	222.03	233.72	235.00
Transport		7.20	210.00	234.20	234.96
72	Motor Vehicle	0.66	200.53	236.08	236.24
73	Motor Vehicle Accessories	0.24	224.74	249.94	251.66
74	Motor Fuel	3.03	189.09	223.57	224.18
75	Mechanical Service	0.46	248.46	267.28	270.35
76	Motor Vehicle Tax	0.11	210.18	247.08	247.08
77	Transport Services	2.70	227.93	238.13	238.75
Communication		3.22	143.45	145.78	145.78
78	Postal Services	0.07	272.57	347.68	347.68
79	Communication & Apparatus	3.15	140.74	141.54	141.54
Recreation & Culture		2.02	213.73	227.37	229.55
80	Recreation & Culture	0.86	137.39	139.83	139.83
81	Text Books	0.57	304.61	327.83	329.62
82	News Papers	0.19	235.21	242.78	245.97
83	Stationery	0.40	238.80	266.01	273.06
Education		3.94	288.62	302.40	302.58
84	Education	3.94	288.62	302.40	302.58
Restaurants And Hotels		1.23	297.39	323.51	324.08
85	Ready Made Food	1.23	297.39	323.51	324.08
Miscellaneous Goods And Services		2.76	271.44	306.41	307.57
86	Personal Care	1.49	244.22	260.60	262.25
87	Cosmetics	0.39	227.83	247.72	249.04
88	Blades	0.03	206.96	234.70	235.12
89	Personal Equipments	0.84	341.98	417.01	417.25

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

Items and Specifications	Index		
	Oct-18	Sep-19	Oct-19
General	248.19	275.49	279.31
Agriculture Forestry & Fishery	272.57	298.77	307.31
1 Wheat	207.42	229.50	233.07
2 Maize	214.53	251.57	252.30
3 Rice	182.76	211.58	213.60
4 Sorghum/Jowar	275.88	422.26	433.58
5 Millet/Bajra	244.40	260.20	248.78
6 Vegetables	356.04	479.03	517.09
7 Fresh Fruits	277.92	291.16	298.45
8 Dry Fruits	276.70	292.20	291.14
9 Cotton Seeds	266.98	307.26	310.10
10 Other Oil Seeds	197.75	204.62	211.00
11 Edible Roots/ Potatoes	214.22	313.46	323.81
12 Stimulant And Spice Crops	333.36	541.61	549.83
13 Pulses	231.09	265.79	273.62
14 Sugar Crops	257.62	349.69	349.69
15 Fibre Crops	266.15	268.80	284.70
16 Unmanufactured Tobacco	318.02	349.31	354.34
17 Poultry	203.44	259.96	211.00
18 Milk From Bovine Animals	285.82	296.45	300.36
19 Eggs	233.62	198.65	237.38
20 Raw Animal Material/Wool	177.28	185.35	185.62
21 Hides And Fur Skins, Raw	92.70	57.49	60.46
22 Fuel Wood In Logs	284.65	300.39	301.25
23 Fishes Live Fresh Or Chilled	461.53	504.65	526.12
Ores/Minerals, Gas & Elect.	293.55	352.17	358.17
24 Coal Not Agglomerated	155.29	155.29	155.29
25 Natural Gas Liquefied	317.16	407.60	409.04
26 Salt & Pure Sodium Chloride	271.87	299.39	299.39
27 Electrical Energy	288.00	321.72	333.37
Food, Beverages, Tobacco, Textiles	248.54	272.15	273.89
28 Meat Of Animals	343.65	369.69	373.37
29 Vegetables & Fruit Juices	228.62	257.55	269.93
30 Dried Fruits & Nuts	302.31	344.42	351.26
31 Fruit Juices	188.73	205.36	206.69
32 Vegetable Oil Refined	160.00	176.84	177.59
33 Vegetable Ghee	131.73	152.14	152.53
34 Oil Cakes	246.07	257.04	258.24
35 Processed Liquid Milk	296.92	308.07	312.02
36 Milk And Cream In Solid Form	226.06	265.87	266.79
37 Ice Cream	286.26	302.60	311.02
38 Dairy Products N.E.C	283.94	314.70	317.74
39 Wheat Flour	196.77	221.49	223.66
40 Other Cereal Flour	216.08	237.39	243.37
41 Sugar Refined	207.95	288.17	283.32
42 Chocolate	100.00	109.63	109.63
43 Sugar Confectionary	127.25	128.15	128.15
44 Coffee And Tea	279.59	305.30	309.05
45 Spices	222.23	253.78	253.81
46 Other Food Products	308.13	323.23	326.59
47 Mineral Water	210.16	219.67	222.29
48 Beverages	176.55	181.25	182.57
49 Tobacco Products	393.80	393.80	393.80
50 Cotton Yarn	252.78	278.41	279.30
51 Nylon Yarn	143.99	143.99	143.99
52 Blended Yarn	199.05	212.52	209.86
53 Woven Fabrics	324.76	367.78	369.42
54 Cotton Fabrics	220.63	244.71	244.71
55 Other Fabrics	227.85	257.38	261.71
			Cont'd

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Items and Specifications		Index		
		Oct-18	Sep-19	Oct-19
56	Silk And Rayon Fabrics	188.81	199.83	205.21
57	Towels	305.52	298.17	302.94
58	Blankets	267.72	277.52	293.24
59	Bed Sheets	257.39	277.23	281.82
60	Quilts	222.32	232.74	237.37
61	Woolen Carpets	196.43	199.40	214.28
62	Synthetic Carpets	131.80	138.98	149.59
63	Hosiery Products	254.07	274.83	277.40
64	Ready Made Garments	204.85	230.61	231.34
65	Leather With Out Hairs	225.53	229.55	229.55
66	Other Leather N.E.C	313.42	443.31	443.31
67	Footwear's	168.09	168.09	168.09
Other Transportable Goods		217.85	239.28	241.02
68	Timber	241.03	250.12	250.12
69	Printing Paper	174.76	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	191.31	191.31
73	Diesel Oil	230.43	276.84	276.84
74	Kerosene Oil	222.78	265.87	265.87
75	Furnace Oil	193.09	173.84	179.64
76	Mobil Oil	209.31	235.42	235.42
77	Chemicals	215.90	238.88	235.82
78	Dying Materials	150.72	194.38	206.61
79	Fertilizers	252.46	280.95	285.25
80	Pesticides	312.32	335.98	340.20
81	Insecticides	144.97	150.84	149.52
82	Paints & Varnishes	354.53	396.48	398.86
83	Medicines	180.22	199.77	203.41
84	Soaps & Detergent	195.41	208.29	208.29
85	Auto Tyres	184.52	229.12	229.12
86	Plastic Products	243.75	251.64	251.64
87	Glass Sheets	304.55	351.28	368.34
88	Other Glass Articles	318.10	351.41	361.70
89	Ceramics And Sanitary	243.24	264.94	264.94
90	Bricks Blocks And Tiles	231.36	250.28	253.63
91	Cement	234.54	237.31	237.18
92	Bed Foams	182.50	199.00	207.83
93	Matches	171.36	174.27	174.27
Metal Product Machinery & Equip		190.04	205.60	205.22
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	174.08	208.35	201.64
96	Pipe Fittings	238.51	276.22	283.88
97	Steel Products	183.86	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	208.65	223.39	223.39
101	Cultivators	190.66	190.66	190.66
102	Chuff Cutter	153.46	153.46	155.59
103	Tractors	216.82	226.93	226.93
104	Lathe Machines	268.38	348.09	348.09
105	Concrete Mixer	138.83	138.83	138.83
106	Fridge, Wash & Sew Mach, Iron, Fan	238.78	274.56	274.78
107	Electrical Wires	208.22	245.55	245.55
108	Lighting Equipments	174.04	179.06	182.52
109	Radio And Television	140.42	164.81	164.81
110	Motor Vehicles	221.80	262.69	262.69
111	Motor Cycles	134.21	162.53	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	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	257.88	276.32	246.83	275.49	294.92	263.17	273.54
	Oct	260.46	279.69	248.93	279.31	299.20	266.69	277.23

*: all groups combined

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Table A13: International Commodity Prices/Indices				
	Jul-19	Aug-19	Sep-19	Oct-19
Energy				
Crude Oil (US\$ per barrel) *	61.5	57.7	60.0	57.3
Energy Index (2010 = 100)	74.9	70.4	73.6	70.9
Food				
Rice (\$/MT)	416.0	430.0	427.0	424.0
Wheat (\$/MT)	196.2	181.1	189.6	199.5
Sugar (US cent/ pound)^	0.28	0.27	0.26	0.28
Palm Oil (\$/MT)	543.9	586.1	580.3	591.4
Soybean Oil (\$/MT)	748.2	793.2	779.3	770.8
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	1.7	1.6	1.6	1.6
Metal Price Index (2010 = 100)	80.7	78.9	80.5	80.1
Copper (\$/MT)	5,941.2	5,709.4	5,759.3	5,757.3
Aluminum (\$/MT)	1,797.0	1,740.7	1,753.5	1,726.0
Iron Ore (\$ cents/dry MT)	120.2	93.1	93.1	88.5
Tin (\$/MT)	17,977.9	16,609.0	16,830.6	16,603.4
Nickel (\$/MT)	13,546.3	15,748.6	17,656.9	17,046.2
Zinc (\$/MT)	2,446.5	2,273.0	2,331.6	2,451.7
Lead (\$/MT)	1,975.6	2,044.6	2,071.9	2,184.1
Uranium (\$/MT)@	25.4	25.3	25.7	24.3
DAP (\$/MT)	307.5	292.9	285.8	277.4
Urea (\$/MT)	263.5	262.5	237.8	237.0

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: 1 US \$ / kilogram = 45.359237 U.S. cents / pound \$/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	257.88
Oct	203.03	211.57	219.61	234.49	260.46
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	200.78	209.09	215.21	227.82	251.43
Aug	201.01	208.21	215.38	228.05	254.61
Sep	200.93	208.80	216.95	228.15	256.80
Oct	201.51	210.03	218.04	232.86	258.59
Nov	203.16	210.94	219.33	233.65	
Dec	204.08	211.59	221.24	234.88	
Jan	204.36	211.91	221.36	237.29	
Feb	205.07	213.69	221.77	239.90	
Mar	205.06	215.18	222.15	242.29	
Apr	206.16	215.96	223.86	243.57	
May	206.06	216.32	225.28	245.73	
Jun	207.60	215.67	226.80	246.88	

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	279.69
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	222.43	232.98	232.84	241.15	263.56
Aug	221.98	229.58	232.57	240.49	269.15
Sep	220.95	229.91	235.62	238.91	273.21
Oct	221.47	231.26	236.44	242.69	275.55
Nov	224.56	232.15	237.74	242.01	
Dec	225.43	232.17	240.92	243.24	
Jan	225.07	231.26	240.06	245.96	
Feb	225.94	234.17	239.34	251.22	
Mar	225.60	236.94	237.11	254.89	
Apr	227.90	237.77	237.28	257.57	
May	226.40	237.41	239.55	260.23	
Jun	229.54	234.74	241.50	261.11	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY16	FY17	FY18	FY19	FY20	Average
Jul	100.49	100.47	100.46	100.43	100.41	100.45
Aug	100.62	100.60	100.57	100.54	100.52	100.57
Sep	100.55	100.51	100.47	100.43	100.42	100.48
Oct	100.75	100.73	100.72	100.70	100.72	100.73
Nov	100.52	100.51	100.50	100.47		100.50
Dec	99.50	99.52	99.53	99.53		99.52
Jan	99.57	99.54	99.51	99.50		99.53
Feb	98.98	99.00	99.01	99.05		99.01
Mar	99.13	99.14	99.15	99.46		99.22
Apr	100.13	100.16	100.17	100.19		100.16
May	99.97	100.00	100.05	100.08		100.03
Jun	99.85	99.90	99.95	99.98		99.92

Table 17: CPI Food Monthly & Average Seasonal Factors

Period	FY16	FY17	FY18	FY19	FY20	Average
Jul	100.77	100.74	100.70	100.66	100.61	100.69
Aug	101.30	101.26	101.21	101.15	101.10	101.20
Sep	101.32	101.26	101.19	101.15	101.14	101.21
Oct	101.53	101.48	101.46	101.47	101.50	101.49
Nov	101.33	101.30	101.28	101.27		101.30
Dec	99.32	99.36	99.38	99.37		99.36
Jan	98.89	98.79	98.69	98.61		98.74
Feb	97.85	97.87	97.90	97.93		97.89
Mar	98.51	98.53	98.55	98.56		98.54
Apr	99.84	99.89	99.92	99.95		99.90
May	99.75	99.83	99.92	99.99		99.88
Jun	99.74	99.84	99.95	100.01		99.89

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	0.76
Oct	0.49	0.81	0.75	2.33	1.00
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	-0.25	0.72	-0.21	0.45	1.84
Aug	0.11	-0.42	0.08	0.10	1.27
Sep	-0.04	0.29	0.73	0.04	0.86
Oct	0.29	0.59	0.50	2.06	0.70
Nov	0.82	0.43	0.59	0.34	
Dec	0.45	0.31	0.87	0.53	
Jan	0.14	0.15	0.05	1.02	
Feb	0.35	0.84	0.19	1.10	
Mar	-0.01	0.70	0.17	1.00	
Apr	0.54	0.36	0.77	0.53	
May	-0.05	0.16	0.64	0.89	
Jun	0.75	-0.30	0.67	0.47	

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	1.22
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	-1.00	1.50	-0.81	-0.14	0.94
Aug	-0.20	-1.46	-0.11	-0.27	2.12
Sep	-0.46	0.14	1.31	-0.66	1.51
Oct	0.24	0.59	0.35	1.58	0.86
Nov	1.39	0.39	0.55	-0.28	
Dec	0.39	0.01	1.34	0.51	
Jan	-0.16	-0.39	-0.36	1.12	
Feb	0.38	1.26	-0.30	2.14	
Mar	-0.15	1.18	-0.93	1.46	
Apr	1.02	0.35	0.07	1.05	
May	-0.66	-0.15	0.95	1.03	
Jun	1.39	-1.12	0.81	0.34	

Figure A1: CPI Non-food Inflation

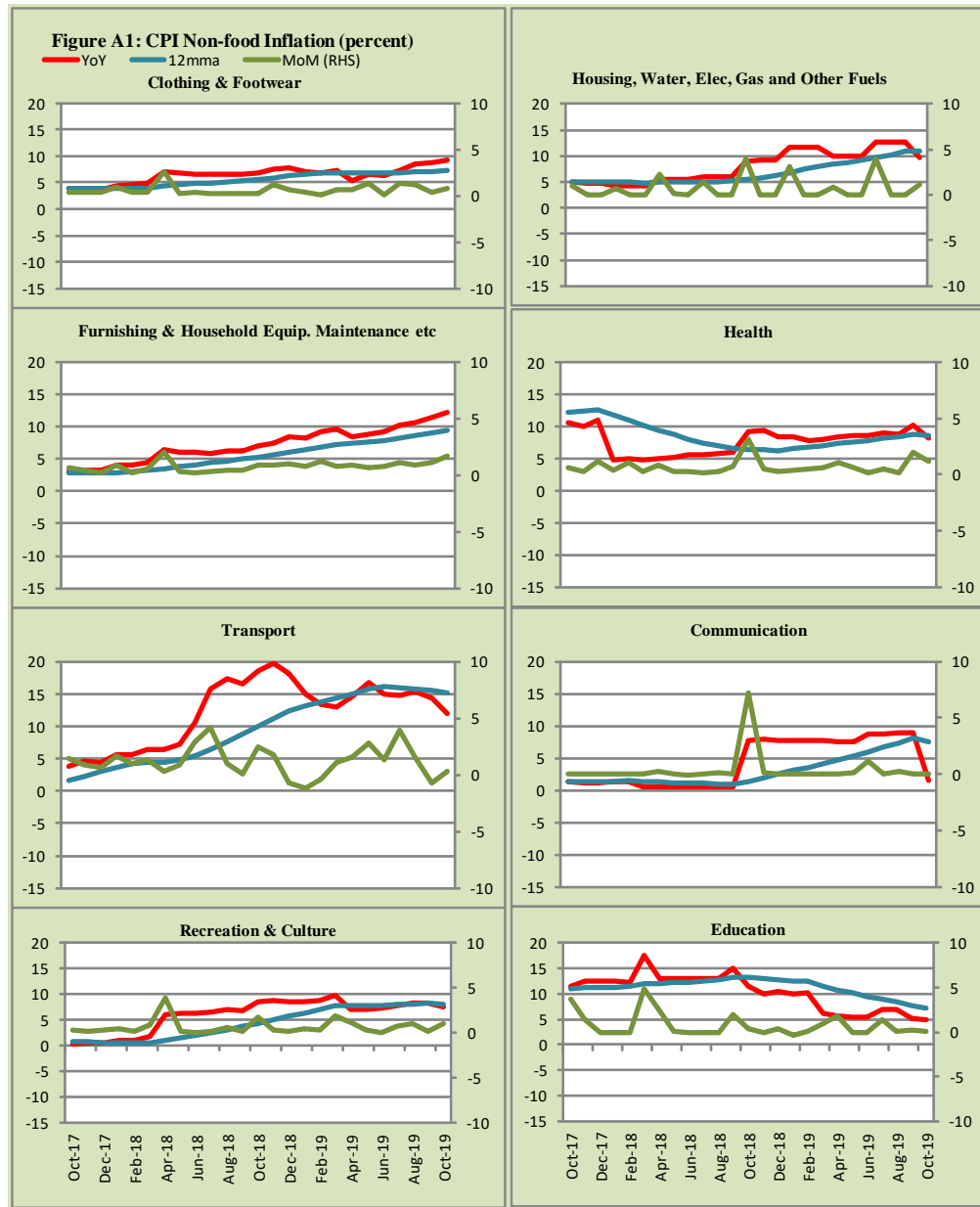
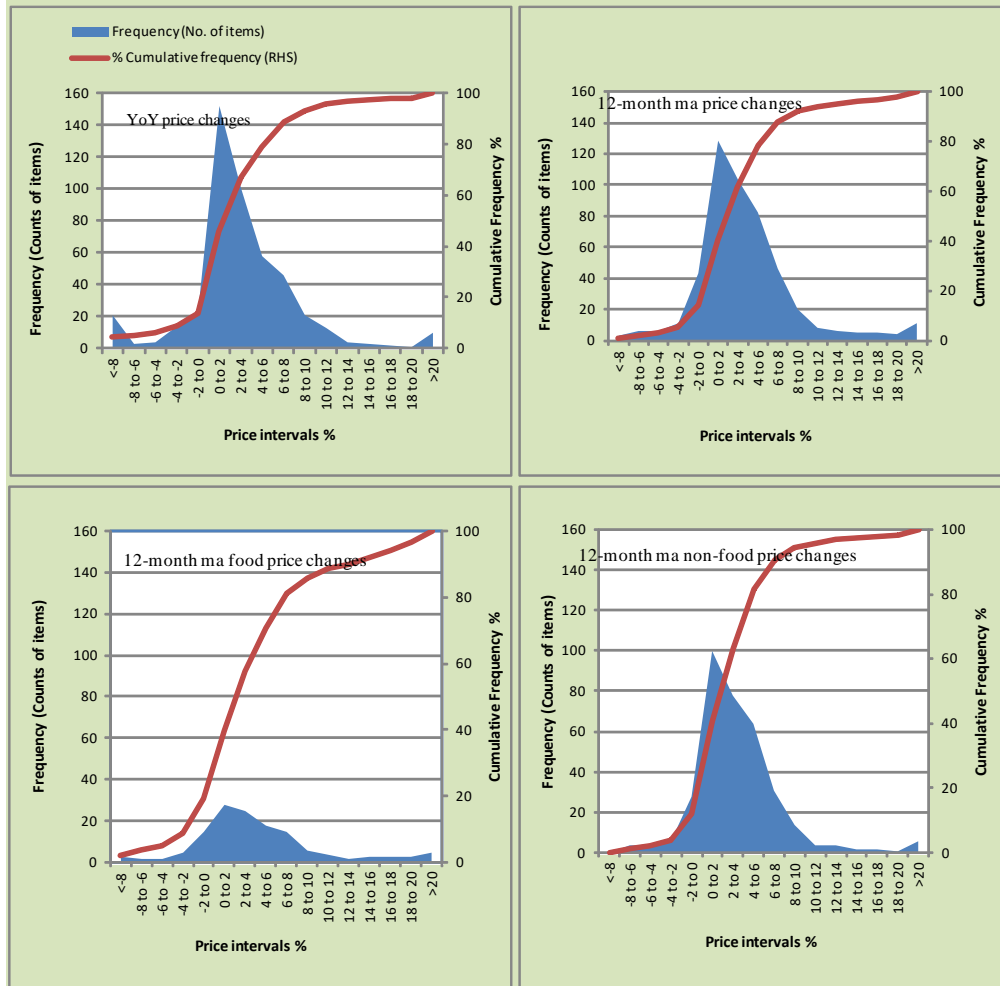


Figure A2: Frequency Distribution of Price Changes of CPI Items - YoY

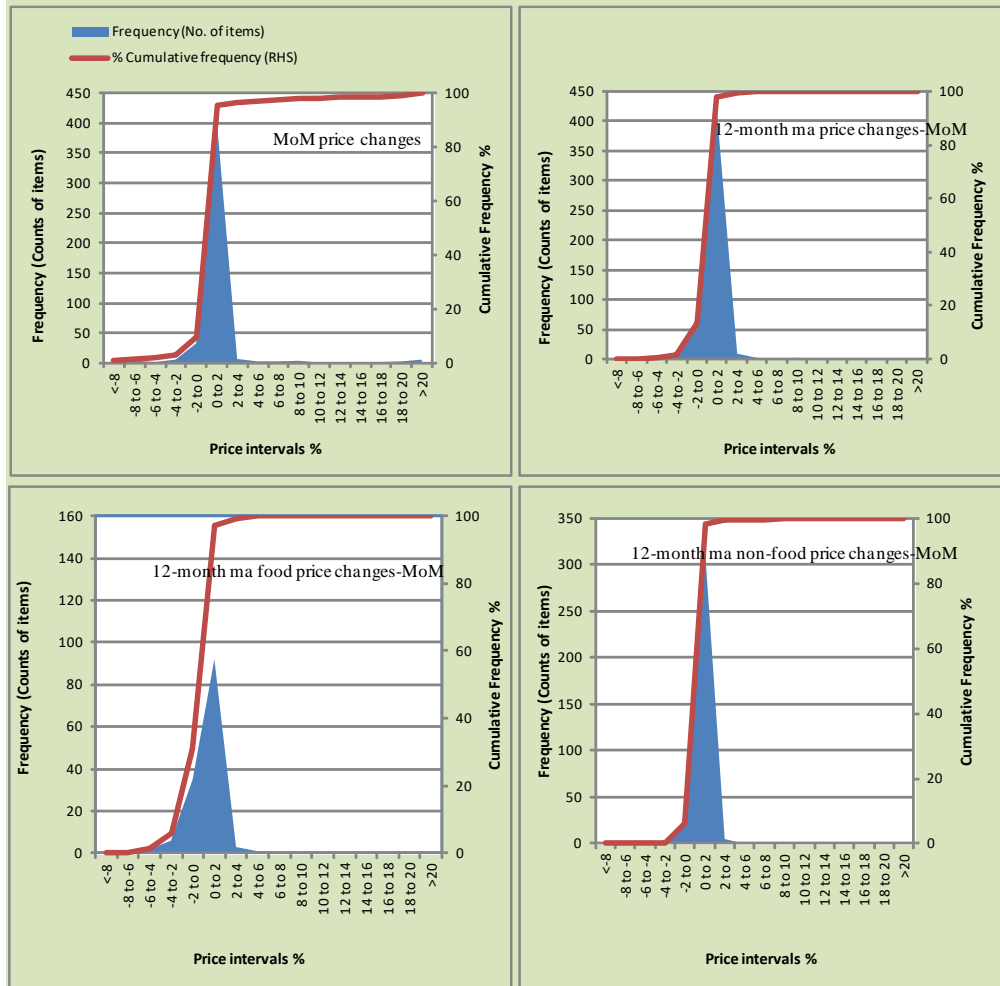
Figure A2: Frequency Distribution of Price Changes of CPI Items, October 2019 - YoY



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

Figure A3: Frequency Distribution of Price Changes of CPI Items - MoM

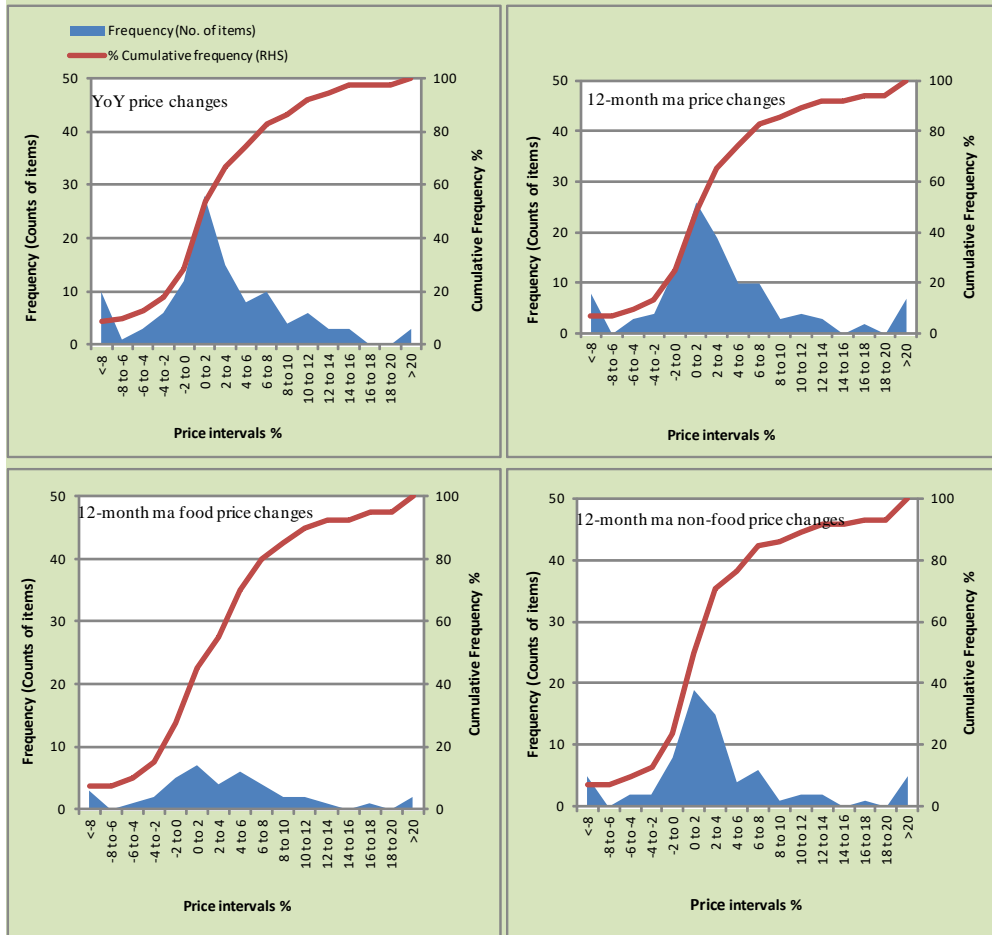
Figure A2.1: Frequency Distribution of Price Changes of CPI Items, October 2019 - MoM



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

Figure A4: Frequency Distribution of Price Changes of WPI Commodities - YoY

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



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

Figure A5: Group-wise/overall Inflation Diffusion Index and Respective/ Overall YoY Inflation

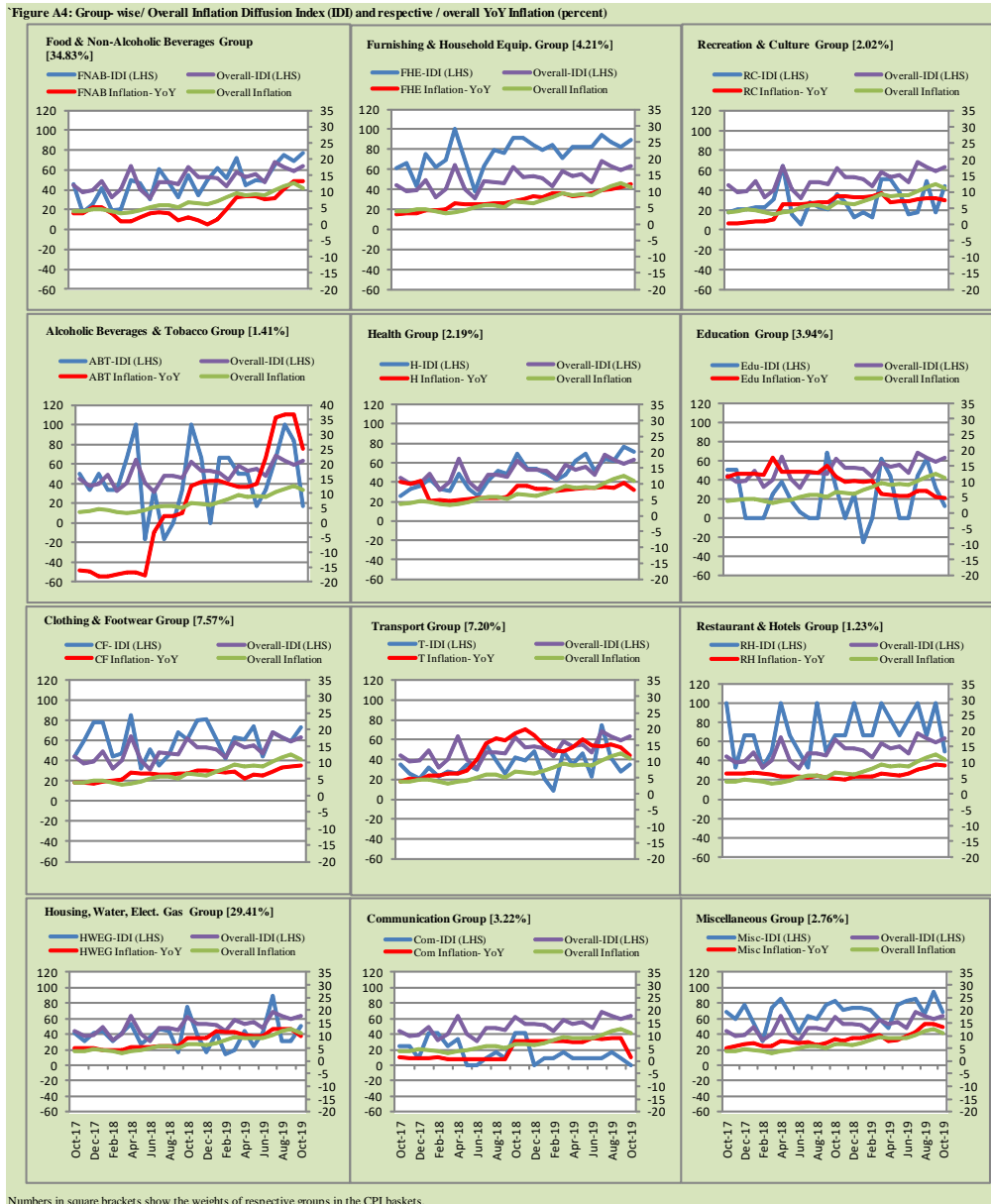


Figure A6: City- wise CPI Inflation (YoY) by Income Groups, October 2019



Figure A7: Spatial Analysis of Headline Inflation (YoY), October 2019

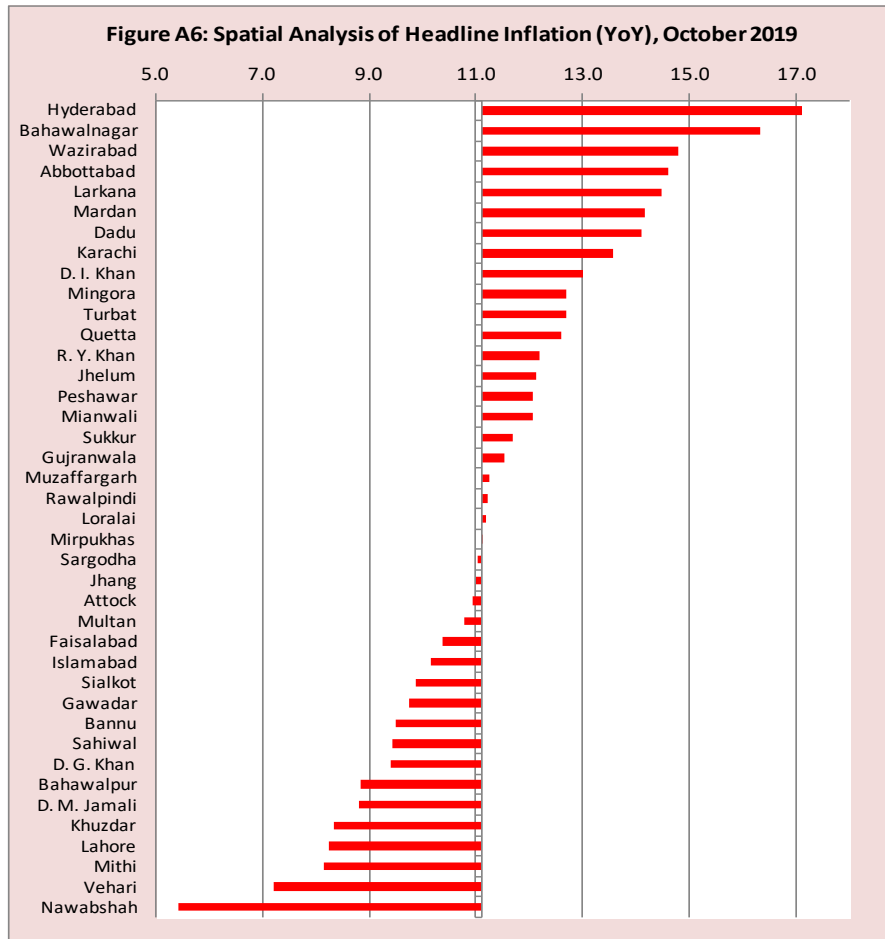
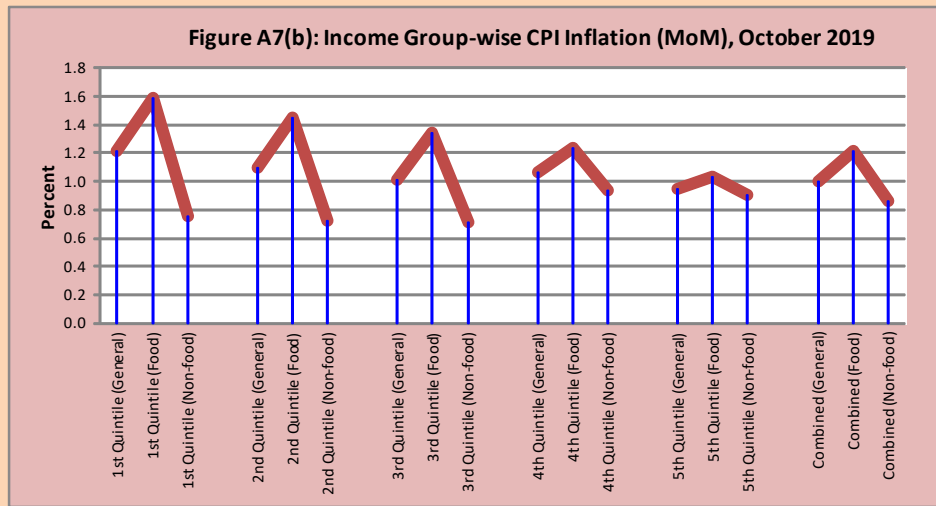
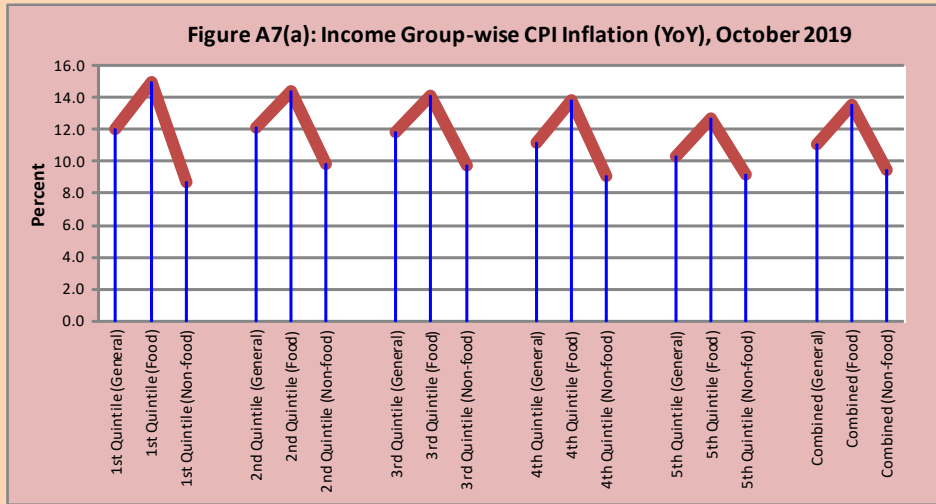


Figure A8: Quintile wise CPI Inflation (YoY & MoM), October 2019

Figure A7: Quintile wise CPI Inflation (YoY & MoM), October 2019



Annexure B

Technical Notes, Definitions and Methodologies

a) 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

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

b) Methodology for Estimating Inflation Diffusion Index for Pakistan

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

$$IDI = \frac{\text{No. of items with positive MoM change in price} - \text{No. of items with negative MoM change in price}}{\text{No. of items for which prices are reported}} * 100$$

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 items for which prices have altered or remained constant¹.

Based upon item level prices 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 items (like the seasonal items) during certain periods of time. To calculate the inflation diffusion index we consider the items 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.