

Inflation Monitor

September 2018



State Bank of Pakistan

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Review

Inflation in Brief

1. Headline CPI inflation (2007-08=100) is recorded at level of 5.1 percent on year-on-year basis in September 2018 as compared to 5.8 percent in the previous month and 3.9 percent during corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at level of -0.1 percent in September 2018 as compared to 0.2 percent in the previous month and 0.6 percent during corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.06 percent in September 2018 compared to 0.21 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis is recorded at 5.8 percent in September 2018 as compared to 5.9 percent in the previous month and 4.1 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is recorded at 0.1 percent in September 2018 as compared to 0.2 percent in the previous month and was at level during corresponding month of last year.
5. Non-food, non-energy inflation measured by CPI Core (NFNE) on year-on-year basis is recorded at 8.0 percent in September 2018 as compared to 7.6 percent in the previous month and 5.4 percent during corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.4 percent in September 2018 as compared to 0.2 percent in the previous month. Core NFNE inflation was 0.1 percent in the corresponding month of last year.
7. WPI inflation on year-on-year basis recorded at 9.2 percent in September 2018 as compared to 11.0 percent in the previous month and 1.6 percent during the corresponding month of last year.

8. WPI inflation on month-on-month basis recorded at -1.5 percent in September 2018 as compared to 0.8 percent in the previous month. It was 0.1 percent in the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 2.2 percent in September 2018 as compared to 4.0 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 -0.2 percent in September 2018 and was at level in the previous month. It was 1.6 percent in the corresponding month of last year.

1.1 A New Measure of Core Inflation

A new method of permanently excluding relatively volatile commodities from CPI basket in Pakistan has been developed by SBP. This is achieved by making use of trimming approach on past data on monthly CPI changes to isolate a Relatively Stable Component of CPI (RSC-CPI) as a new measure of core inflation. This method ensures inclusion of both food and non-food commodities that show persistent price behavior in Pakistan (see technical notes for details). Developments in core inflation measured by RSC- CPI for the month of September 2018 are described below:

11. Core RSC inflation on year-on-year basis is recorded at 7.0 percent in September 2018 compared to 6.7 percent in the previous month and 4.2 percent during the corresponding month of last year.
12. Core RSC inflation on month-on-month basis is recorded at 0.3 percent in September 2018 and was at level in the previous month and 0.1 percent during the corresponding month of last year.

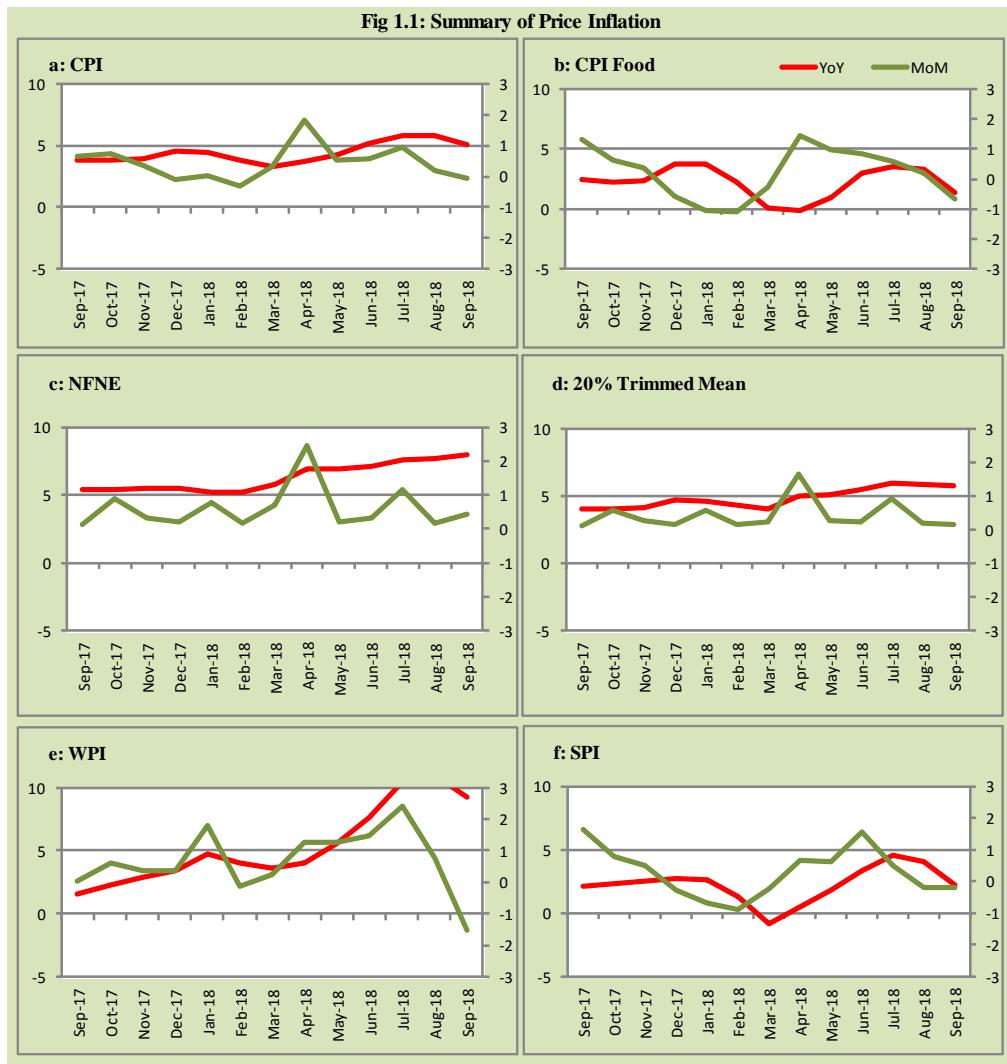
Monthly CPI, WPI and SPI data is summarized in the following table.

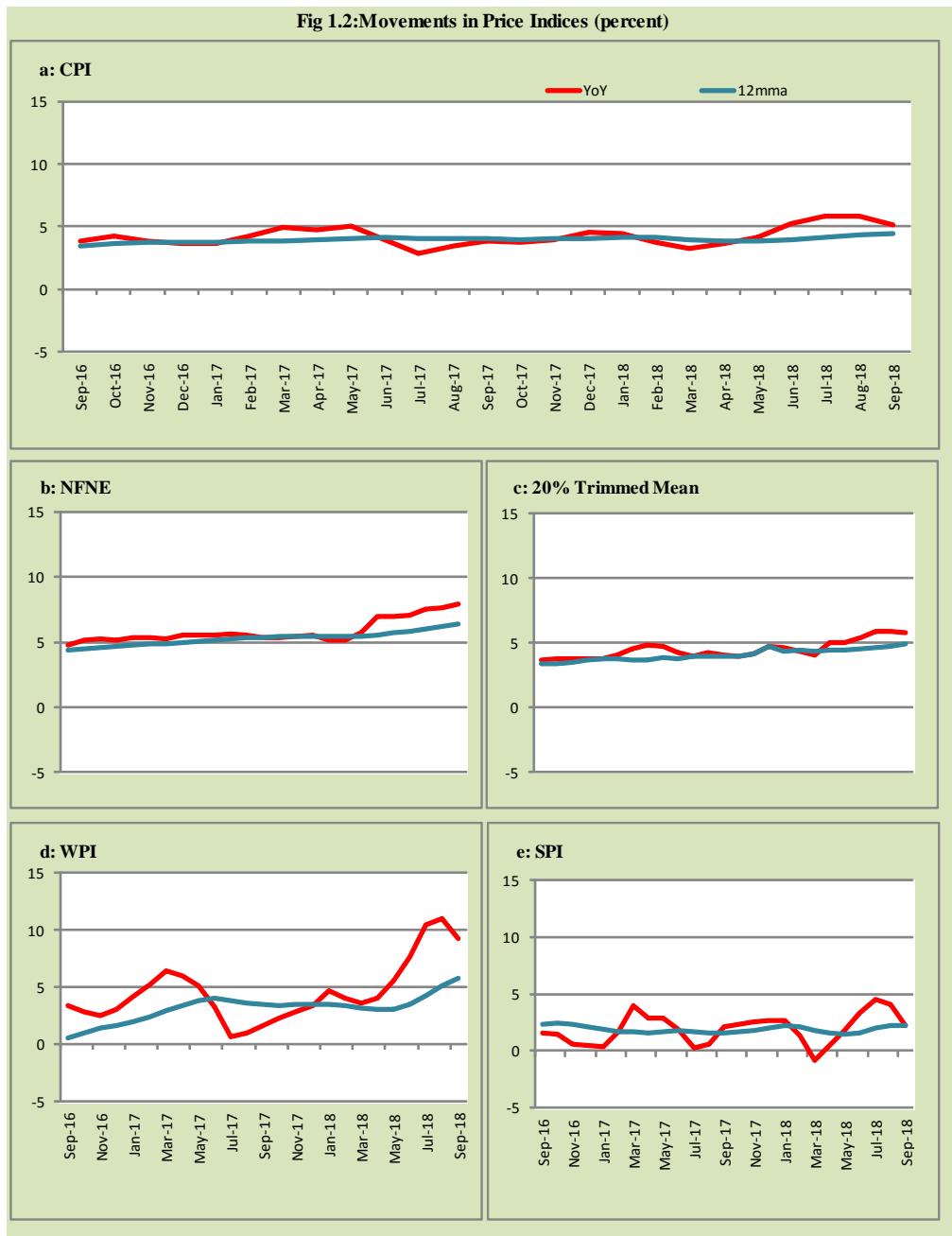
Period	CPI Inflation						Core Inflation						WPI Inflation	SPI*** Inflation		
	General		Food		Non-food		NFNE*		Trimmed		RSC**					
	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM		
Sep-17	3.9	0.6	2.4	1.3	4.9	0.2	5.4	0.1	4.1	0.1	4.2	0.1	1.6	0.1	2.2	1.6
Oct-17	3.8	0.7	2.2	0.6	4.9	0.8	5.3	0.9	4.0	0.6	4.3	0.8	2.3	0.6	2.3	0.8
Nov-17	4.0	0.4	2.4	0.4	5.1	0.4	5.4	0.3	4.2	0.3	4.3	0.2	2.9	0.4	2.5	0.5
Dec-17	4.6	-0.1	3.8	-0.6	5.1	0.2	5.5	0.2	4.7	0.2	4.3	0.1	3.4	0.4	2.7	-0.3
Jan-18	4.4	0.0	3.7	-1.0	4.9	0.8	5.2	0.8	4.6	0.6	4.0	0.6	4.7	1.8	2.6	-0.7
Feb-18	3.8	-0.3	2.2	-1.1	4.9	0.2	5.2	0.2	4.3	0.1	4.1	0.2	4.1	-0.1	1.3	-0.9
Mar-18	3.2	0.3	0.1	-0.3	5.4	0.7	5.8	0.7	4.1	0.2	4.4	0.6	3.6	0.2	-0.9	-0.2
Apr-18	3.7	1.8	-0.2	1.5	6.4	2.1	6.9	2.4	5.0	1.7	5.3	2.0	4.0	1.3	0.5	0.7
May-18	4.2	0.5	1.0	1.0	6.4	0.2	6.9	0.2	5.1	0.3	5.3	0.3	5.6	1.3	1.8	0.6
Jun-18	5.2	0.6	3.0	0.8	6.7	0.4	7.1	0.3	5.4	0.2	6.0	0.3	7.6	1.5	3.3	1.6
Jul-18	5.8	0.9	3.5	0.6	7.4	1.2	7.6	1.1	5.9	0.9	6.6	1.0	10.5	2.4	4.5	0.5
Aug-18	5.8	0.2	3.3	0.2	7.6	0.2	7.6	0.2	5.9	0.2	6.7	0.3	11.0	0.8	4.0	-0.2
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

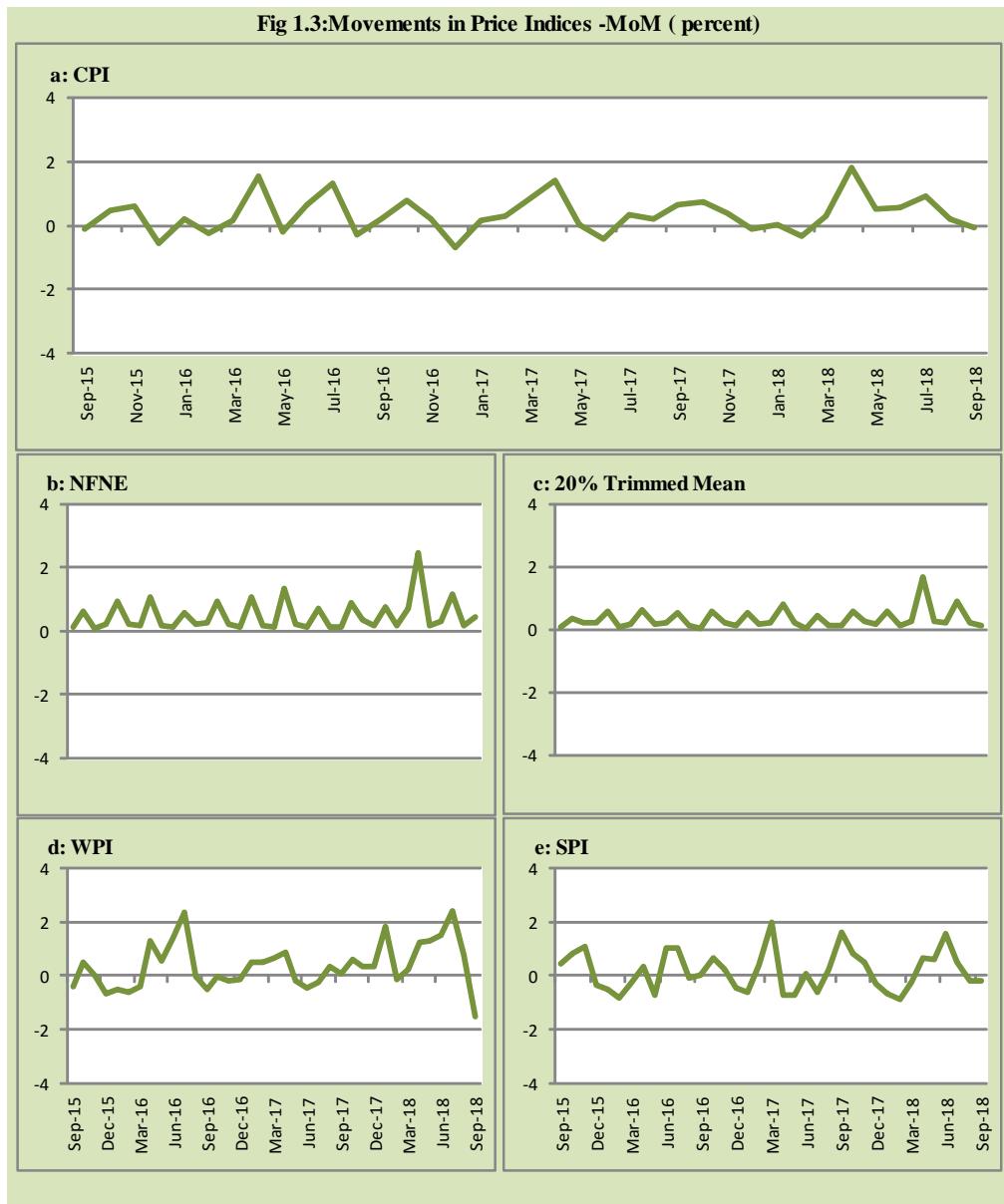
* NFNE is Non-food non-energy

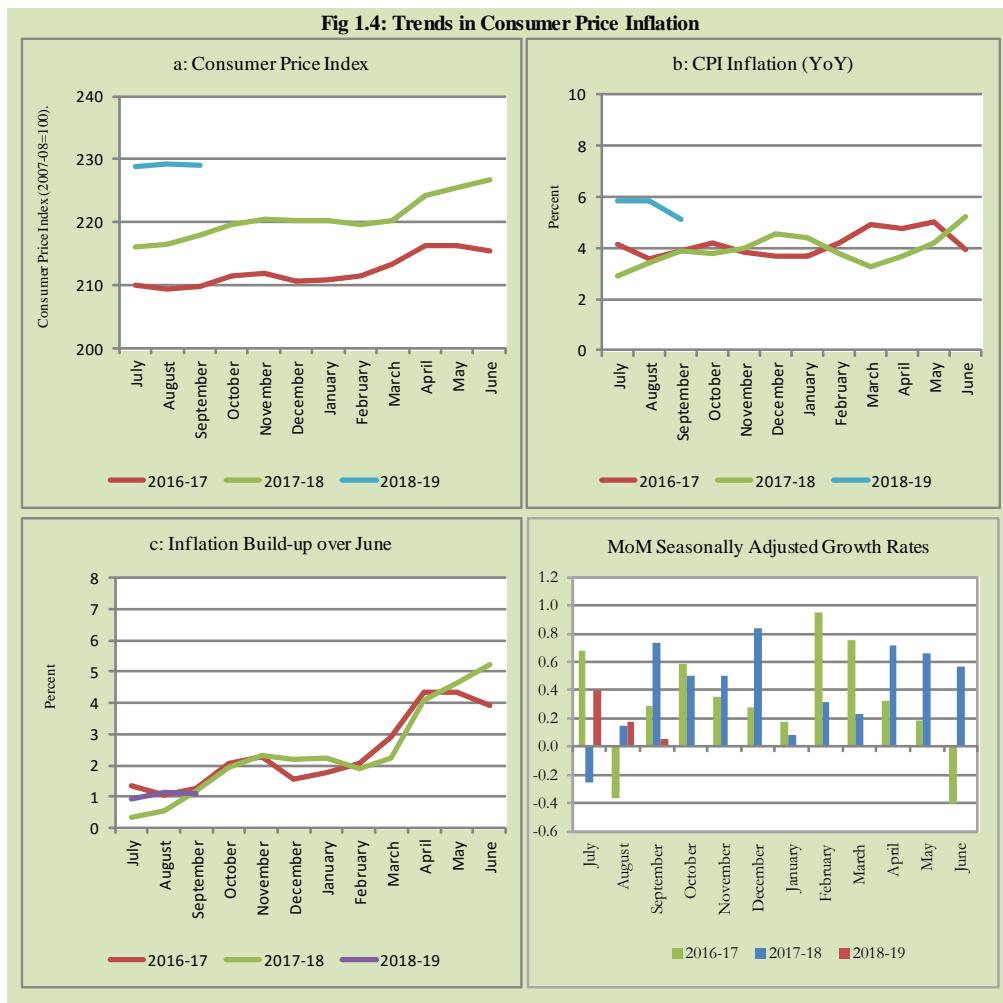
** Relatively Stable Component of CPI

*** SPI for all income groups combined









2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan showed mixed trend during September 2018. Among these five cities, the lowest inflation was observed in Karachi at 3.8 percent while the highest inflation was observed in Quetta at 7.1 percent (Table A6 of annexure-A).

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

	Sep-17		Aug-18		Sep-18	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	0.6	3.9	0.2	5.8	-0.1	5.1
Islamabad	0.4	3.9	0.2	5.0	0.2	4.9
Karachi	0.9	2.7	0.1	5.4	-0.7	3.8
Lahore	0.0	4.3	-0.3	4.4	-0.3	4.1
Peshawar	0.3	2.4	0.6	7.0	-0.1	6.6
Quetta	0.4	4.2	0.3	7.9	-0.3	7.1

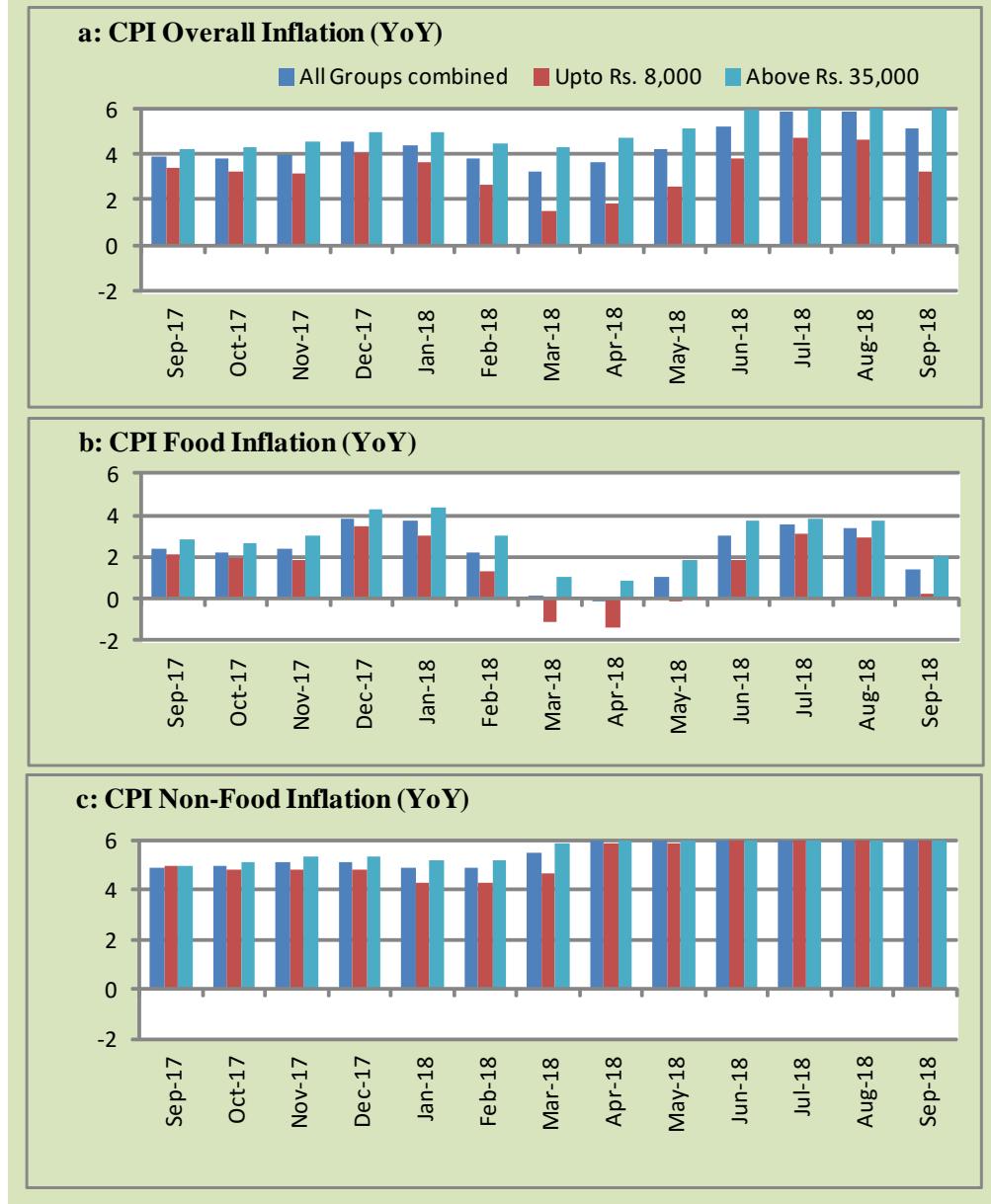
3. Income Group wise Inflation

Income group-wise data shows that income group above Rs. 35,000 witnessed higher inflation as compared to other quintiles as well as overall CPI during September 2018 in General, Food and Non-food groups. The income groups (Up to Rs. 8,000) observed lowest inflation in general CPI, food groups; and income groups (Up to Rs. 8,000) and (Rs. 8,001- 12,000) observed lowest inflation in non-food groups among income groups during the month of September 2018 (Table A7 of annexure-A).

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

Income Groups	General			Food			Non-food		
	Sep-17	Aug-18	Sep-18	Sep-17	Aug-18	Sep-18	Sep-17	Aug-18	Sep-18
All Groups Combined	3.9	5.8	5.1	2.4	3.3	1.3	4.9	7.6	7.7
Up to Rs. 8,000	3.4	4.6	3.2	2.1	2.9	0.3	5.0	6.7	6.9
Rs. 8,001- 12,000	3.4	4.8	3.7	2.2	3.0	0.6	4.8	6.7	6.9
Rs. 12,001- 18,000	3.5	5.1	4.1	2.1	3.1	0.9	4.8	6.9	7.1
Rs. 18,001- 35,000	3.5	5.5	4.7	2.1	3.2	1.2	4.6	7.4	7.6
Above Rs. 35,000	4.2	6.6	6.1	2.8	3.7	2.0	5.0	8.0	8.1

Fig 3.1: Income Group- wise Inflation



4. Weighted Contribution

The weighted contribution of food group in the overall inflation decreased to 10.81 percent during September 2018 from 23.30 percent in previous month. It was 26.02 percent in September 2017.

The weighted contribution of non-food group increased to 89.19 percent in September 2018 from 76.70 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-17	26.02	8.46	36.50	4.83	9.28	14.91
Oct-17	24.31	8.25	34.17	5.96	13.05	14.27
Nov-17	25.04	7.95	32.53	6.73	13.57	14.18
Dec-17	34.01	6.68	28.47	5.73	11.85	13.26
Jan-18	34.02	8.17	25.57	7.58	12.23	12.43
Feb-18	23.85	10.07	29.89	8.71	13.92	13.56
Mar-18	1.07	12.39	35.10	11.73	23.44	16.27
Apr-18	-2.00	15.67	39.70	10.10	16.06	20.47
May-18	9.73	13.25	35.28	10.11	14.19	17.43
Jun-18	23.35	10.45	28.60	12.04	11.46	14.10
Jul-18	24.57	9.29	27.60	15.72	10.12	12.70
Aug-18	23.30	9.26	27.58	17.14	10.05	12.67
Sep-18	10.81	10.75	31.29	19.01	13.36	14.80

5. Inflation Diffusion Index

Table 5.1 Inflation Diffusion Index - based on MoM change

	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18
General	33.1	44.6	37.7	39.2	48.9	32.5	40.2	63.8	40.6	31.5	47.8	47.7	45.9
Food & Non-Alcoholic Beverages	17.4	46.1	17.1	25.0	42.1	19.3	20.4	50.0	46.3	30.1	60.9	46.5	32.2
Alcoholic Beverages & Tobacco	0.0	50.0	33.3	50.0	33.3	33.3	66.7	100.0	-16.7	33.3	-16.7	0.0	33.3
Clothing & Footwear	42.4	44.1	59.3	78.0	78.0	44.1	47.5	84.7	32.2	50.8	35.6	45.8	67.8
Housing, Water, Elect, Gas & other Fuels	19.4	41.7	30.6	41.7	44.4	30.6	41.7	52.8	27.8	36.1	47.2	44.4	16.7
Furnishing & Household Equip. Maintenance etc	62.3	60.9	66.7	43.5	75.4	62.3	69.6	100.0	69.6	37.7	63.8	79.7	76.8
Health	33.3	25.6	33.3	35.9	43.6	33.3	30.8	48.7	33.3	25.6	41.0	51.3	48.7
Transport	20.9	34.9	25.6	20.9	32.6	23.3	27.9	25.6	34.9	30.2	55.8	39.5	25.6
Communication	16.7	25.0	25.0	8.3	41.7	41.7	25.0	33.3	0.0	0.0	8.3	16.7	8.3
Recreation & Culture	30.8	17.9	20.5	20.5	23.1	23.1	30.8	64.1	15.4	5.1	28.2	23.1	20.5
Education	0.0	50.0	50.0	0.0	0.0	0.0	25.0	37.5	18.8	6.3	0.0	0.0	68.8
Restaurant & Hotels	83.3	100.0	33.3	66.7	66.7	33.3	50.0	100.0	66.7	50.0	33.3	100.0	50.0
Miscellaneous	60.0	68.6	60.0	77.1	54.3	31.4	74.3	85.7	65.7	42.9	62.9	60.0	77.1
NFNE	38.2	43.2	45.0	43.2	51.5	36.7	46.2	69.2	39.3	31.4	45.0	48.8	52.7

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

6. Domestic Commodity Prices

Table 6.1 Inflation in Domestic CPI Food Commodities (percent)

Sr. No	Item	Unit	Sep-17		Aug-18		Sep-18	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	0.40	2.10	4.29	0.24	2.93	0.77
2	Wheat Flour Bag	10 Kg	-2.09	0.90	4.90	0.17	4.34	0.37
3	Rice Basmati Sup. Qlty.	Kg	12.75	0.65	12.29	0.92	12.01	0.39
4	Pulse Masoor (Washed)	Kg.	-19.03	-2.27	-11.04	0.00	-9.15	-0.19
5	Pulse Moong (Washed)	Kg.	-17.75	-0.98	-8.93	-0.14	-8.19	-0.18
6	Pulse Mash (Washed)	Kg.	-25.01	-1.11	-24.24	-0.10	-22.86	0.69
7	Pulse Gram	Kg.	-19.49	-0.35	-6.71	0.20	-3.69	2.87
8	Vegetable Ghee (Loose)	Kg.	3.73	0.34	4.22	0.51	4.05	0.17
9	Sugar Refined	Kg.	-21.05	-6.69	-6.91	0.92	-1.27	-1.04
10	Milk Fresh (Unboiled)	Ltr	3.56	0.00	4.00	0.44	4.00	0.00
11	Tapal Danedar Tea 200 Gm	Pkt	9.40	0.02	10.91	0.28	11.54	0.59
12	Beef With Bone Av.Qlty.	Kg	6.77	-0.28	9.54	1.62	10.00	0.14
13	Mutton Av.Qlty.	Kg	8.64	0.13	12.24	1.04	12.34	0.22
14	Chicken Farm Broiler (Live)	Kg	-0.36	-16.19	-14.96	-20.11	-4.77	-6.15
15	Eggs Farm	Doz	1.18	4.00	1.23	-2.39	-5.40	-2.81
16	Potatoes	Kg	8.98	0.49	-18.11	6.85	-19.58	-1.32
17	Onion	Kg	153.48	98.33	4.00	25.95	-53.05	-10.47
18	Tomatoes	Kg	33.57	58.46	62.42	47.59	-9.83	-12.03
19	Ginger	Kg	11.35	2.56	11.14	0.80	12.50	3.82
20	Garlic	Kg	-33.79	-2.62	-32.84	1.82	-32.46	-2.08

7. Global Commodity Prices

Table 7.1 Changes in Major Global Indices (percent)

Item/ Group	Sep-17		Aug-18		Sep-18	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	-3.3	1.4	2.1	-1.4	-2.9	-3.7
Metals	32.6	2.4	-3.2	-2.8	-6.6	-1.2
Energy	17.9	5.2	38.5	-1.6	38.3	5.0
Agricultural	-3.9	1.0	0.2	-1.8	-3.4	-2.7
Cotton	3.5	1.6	19.2	-1.7	12.1	-4.4

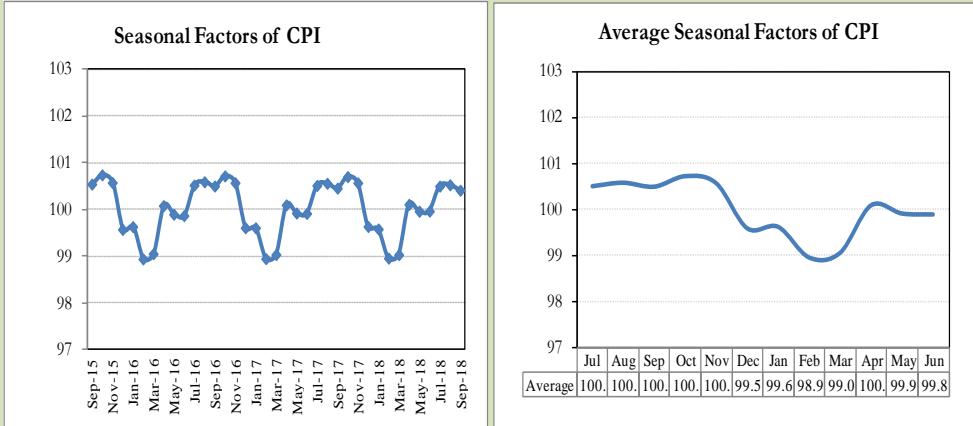
8. Seasonal Adjustment in CPI

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

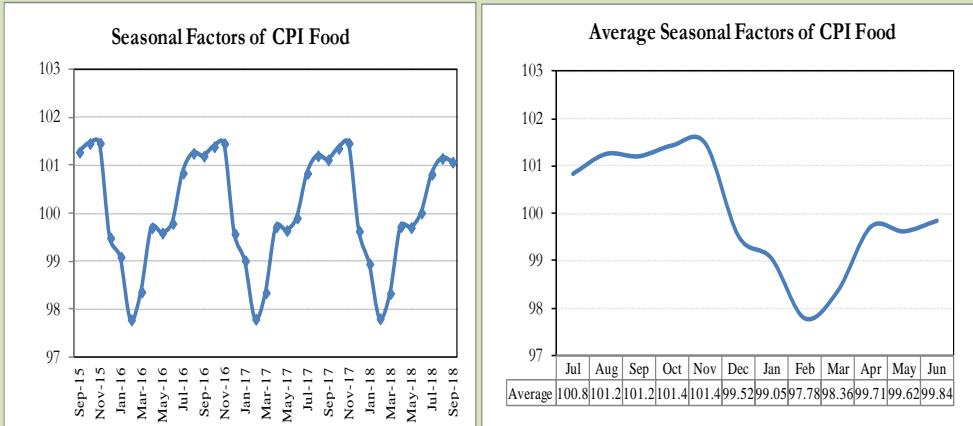
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the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

Fig. 8.1 Seasonal Factors of CPI



Note: Data Available in Annex Table 16.

Fig. 8.2 Seasonal Factors of CPI Food



Note: Data Available in Annex Table 17.

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

Fig. 8.3 Seasonal Plots of CPI

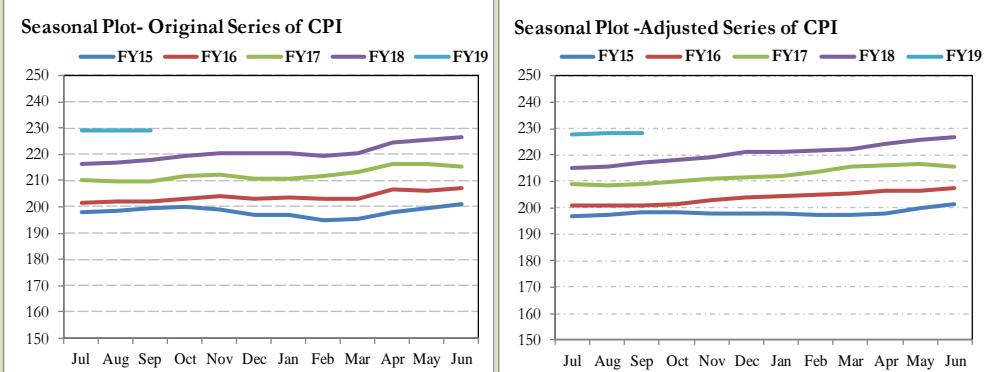
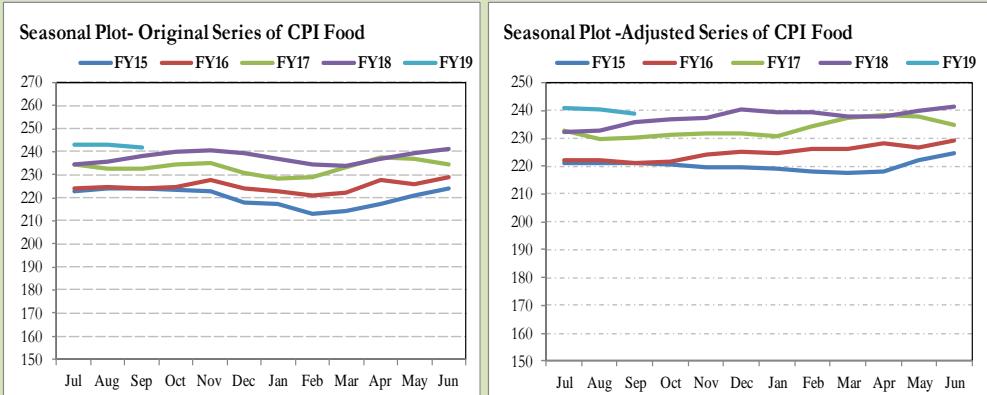


Fig. 8.4 Seasonal Plots of CPI (Food)



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Seasonally adjusted CPI for September 2018 stood at 228.19 against 229.14 in original series showing decrease of 0.95 on account of adjustment of upward seasonality in September 2018.

Seasonally adjusted CPI food group for September 2018 stood at 239.09 against 241.65 in original series showing decrease of 2.56 on account of adjustment of upward seasonality in September 2018.

Month-on-month change of seasonally adjusted CPI series stood at 0.06% reflecting an increase during September 2018 over previous month and a decrease of 0.06% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at -0.58% reflecting decrease during September 2018 over previous month and a decrease of 0.66% in original series.

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

The most recent annual rate of inflation is usually indicated by annualizing the seasonally adjusted month-on-month rate. Annualized rate of CPI inflation in September 2018 (corresponding to the seasonally adjusted month-on-month rate) is 0.70 percent.

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

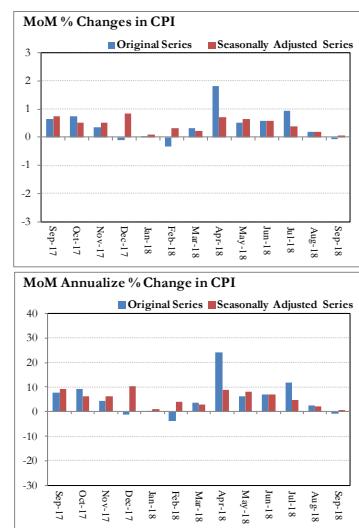
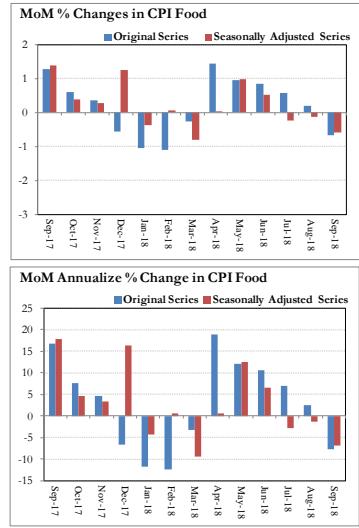


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



Annexure A

Table A1: CPI Inflation by Groups (percent)

	Weight	MoM change			YoY change		
		Sep-17	Aug-18	Sep-18	Sep-17	Aug-18	Sep-18
I. Food Group	37.5	1.3	0.2	-0.7	2.4	3.3	1.3
Food & Non-Alcoholic Beverages	34.8	1.4	0.2	-0.8	3.5	3.3	1.1
Alcoholic Beverages & Tobacco	1.4	-0.5	-0.1	0.3	-16.3	2.4	3.2
Restaurant & Hotels	1.2	0.9	0.6	0.3	5.6	6.0	5.3
II. Non-Food Group	62.5	0.2	0.2	0.3	4.9	7.6	7.7
Clothing & Footwear	7.6	0.1	0.2	0.3	3.9	6.5	6.6
Housing, Water, Elect, Gas &	29.4	0.0	0.0	0.0	5.3	6.0	6.0
Furnishing & Household Equip.	4.2	0.5	0.4	0.5	3.1	6.2	6.2
Health	2.2	0.4	0.2	0.7	11.4	5.7	6.0
Transport	7.2	0.6	1.0	0.2	3.2	17.3	16.8
Communication	3.2	0.0	0.1	0.0	1.7	0.6	0.6
Recreation & Culture	2.0	0.2	0.6	0.1	0.3	6.9	6.8
Education	3.9	0.0	0.0	2.0	8.3	12.9	15.1
Miscellaneous	2.8	0.6	-0.4	1.1	5.5	6.3	6.9
Headline	100.0	0.6	0.2	-0.1	3.9	5.8	5.1

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

Groups	% changes Sep-18	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-17	Sep-18	Sep-17	Sep-18	Sep-17	Sep-18	Sep-17	Sep-18	Sep-17	Sep-18
I. Food Group	1.3	129	129	40	26	48	52	27	25	14	26
Food & Non-Alcoholic Beverages	1.1	117	117	37	26	45	45	21	24	14	22
Alcoholic Beverages & Tobacco	3.2	6	6	3	0	2	4	1	0	0	2
Restaurant & Hotels	5.3	6	6	0	0	1	3	5	1	0	2
II. Non-Food Group	7.7	348	348	74	40	177	101	84	136	13	71
Clothing & Footwear	6.6	59	59	8	3	31	18	20	30	0	8
Housing, Water, Elect, Gas & other Fuels	6.0	36	36	11	12	11	6	13	11	1	7
Furnishing & Household Equip. Maintenance etc	6.2	69	69	4	0	51	16	14	45	0	8
Health	6.0	39	39	6	4	22	25	8	5	3	5
Transport	16.8	43	43	25	9	13	9	3	8	2	17
Communication	0.6	12	12	3	5	4	5	3	1	2	1
Recreation & Culture	6.8	39	39	15	5	18	13	5	12	1	9
Education	15.1	16	16	1	0	4	0	8	6	3	10
Miscellaneous	6.9	35	35	1	2	23	9	10	18	1	6
Overall	5.1	477	477	114	66	225	153	111	161	27	97

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

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

Top 15 Contributors		Weights	<u>YoY Change</u>		Weighted Contribution
Items/ Contributors			Sep-17	Sep-18	
Ranked by Weighted Contribution					
1	House Rent	21.81	7.19	7.58	28.36
2	Education	3.94	8.27	15.14	13.36
3	Motor Fuel	3.03	7.91	24.81	9.88
4	Transport Services	2.70	0.10	15.39	7.22
5	Meat	2.43	7.41	10.82	6.68
6	Milk Fresh	6.68	3.62	4.02	6.64
7	Wheat Flour	4.16	-2.02	3.78	2.89
8	Cotton Cloth	1.73	3.39	6.98	2.51
9	Rice	1.58	13.92	8.84	2.29
10	Tailoring	0.88	7.35	7.94	2.04
11	Personal Equipments	0.84	6.15	8.42	1.96
12	Tea	0.84	11.10	8.24	1.76
13	Footware	1.55	0.58	7.54	1.75
14	Ready Made Food	1.23	5.63	5.26	1.63
15	Personal Care	1.49	5.70	5.11	1.58
Total		54.91			90.55
Bottom 15 Contributors					
1	Onion	0.52	153.49	-53.05	-12.02
2	Potatoes	0.46	8.98	-19.58	-2.16
3	Fresh Vegetables	1.71	-0.14	-3.71	-1.66
4	Pulse Mash (Washed)	0.21	-25.01	-22.86	-1.16
5	Tomatoes	0.43	33.57	-9.83	-0.98
6	Chicken	1.36	-0.36	-4.77	-0.88
7	Eggs	0.46	1.18	-5.40	-0.45
8	Pulse Moong	0.23	-17.75	-8.19	-0.41
9	Gram Whole	0.16	-3.04	-9.14	-0.39
10	Pulse Masoor	0.27	-19.11	-8.50	-0.35
11	Sugar	1.04	-21.05	-1.27	-0.24
12	Pulse Gram	0.24	-19.49	-3.69	-0.22
13	Besan	0.15	-12.57	-3.36	-0.12
14	Gur	0.02	-10.44	-0.72	0.00
15	Motor Vehicle Tax	0.11	0.00	0.00	0.00
Total		7.38			-21.03

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

Top 15 Contributors Items/ Contributors	Weights	MoM Change		Weighted Contribution
		Aug-18	Sep-18	
Ranked by Weighted Contribution				
1 Education	3.94	0.00	1.96	167.43
2 Transport Services	2.70	0.53	1.08	49.49
3 Personal Equipments	0.84	-1.71	2.00	42.39
4 Washing Soap & Detergent	0.79	0.60	1.40	20.58
5 Doctor (Mbbs) Clinic Fee	0.59	0.00	1.14	15.80
6 Rice	1.58	0.91	0.65	15.58
7 Cotton Cloth	1.73	0.21	0.46	15.03
8 Spices	0.54	0.53	1.32	14.36
9 Personal Care	1.49	0.40	0.49	13.56
10 Cigarettes	1.39	0.10	0.41	13.48
11 Pulse Gram	0.24	0.20	2.87	13.46
12 Wheat Flour	4.16	0.18	0.20	13.46
13 Meat	2.43	1.42	0.17	9.91
14 Ready Made Food	1.23	0.60	0.29	8.03
15 Fresh Vegetables	1.71	-3.46	0.19	7.11
Total	25.38			419.66
Bottom 15 Contributors				
1 Fresh Fruits	1.86	-3.02	-6.09	-226.66
2 Onion	0.52	25.95	-10.47	-106.84
3 Tomatoes	0.43	47.59	-12.03	-105.23
4 Chicken	1.36	-20.11	-6.14	-98.20
5 Motor Fuel	3.03	1.43	-0.77	-33.06
6 Eggs	0.46	-2.39	-2.81	-19.69
7 Sugar	1.04	0.92	-1.04	-16.63
8 Fish	0.30	0.00	-2.54	-13.30
9 Potatoes	0.46	6.84	-1.32	-10.15
10 Dry Fruits	0.25	0.02	-0.74	-4.24
11 Betel Leaves & Nuts	0.02	-4.59	-2.83	-3.14
12 Beverages	1.20	0.03	-0.12	-2.58
13 Gram Whole	0.16	-0.82	-0.67	-2.23
14 Pulse Masoor	0.27	0.03	-0.48	-1.56
15 Pulse Moong	0.23	-0.14	-0.17	-0.68
Total	11.61			-644.20

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

Items/ Contributors	Weights	YoY Change		Weighted Contribution
		Sep-17	Sep-18	
A. Ranked by Percentage Change				
1	Betel Leaves & Nuts	0.02	3.12	143.33
2	Kerosene Oil	0.01	1.70	37.35
3	Motor Fuel	3.03	7.91	24.81
4	Transport Services	2.70	0.10	15.39
5	Education	3.94	8.27	15.14
6	Motor Vehicle	0.66	3.44	11.44
7	Meat	2.43	7.41	10.82
8	Spices	0.54	-1.09	10.66
9	Water Supply	0.50	5.06	10.63
10	News Papers	0.19	4.71	10.44
11	Dry Fruits	0.25	2.05	10.27
12	Construction Input Items	0.56	3.06	9.75
13	Utensils	0.32	5.05	9.70
14	Cosmetics	0.39	3.25	9.61
15	Medical Test	0.32	5.49	9.33
Total		15.87		45.24
B. Ranked by Weights				
1	House Rent	21.81	7.19	7.58
2	Milk Fresh	6.68	3.62	4.02
3	Electricity	4.40	0.00	0.00
4	Wheat Flour	4.16	-2.02	3.78
5	Education	3.94	8.27	15.14
6	Communication & Apparatus	3.15	1.59	0.23
7	Motor Fuel	3.03	7.91	24.81
8	Transport Services	2.70	0.10	15.39
9	Meat	2.43	7.41	10.82
10	Vegetable Ghee	2.07	3.73	3.20
11	Fresh Fruits	1.86	1.79	2.38
12	Cooking Oil	1.75	3.30	2.55
13	Cotton Cloth	1.73	3.39	6.98
14	Fresh Vegetables	1.71	-0.14	-3.71
15	Rice	1.58	13.92	8.84
Total		63.03		80.61
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 5.1 percent in September, 2018.				

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

Items/ Contributors	Weights	<u>YoY Change</u>		Weighted Contribution
		Sep-17	Sep-18	
A. Ranked by Weighted Contribution				
1 Meat	2.43	7.41	10.82	6.68
2 Milk Fresh	6.68	3.62	4.02	6.64
3 Wheat Flour	4.16	-2.02	3.78	2.89
4 Rice	1.58	13.92	8.84	2.29
5 Tea	0.84	11.10	8.24	1.76
6 Ready Made Food	1.23	5.63	5.26	1.63
7 Spices	0.54	-1.09	10.66	1.24
8 Bakery & Confectionary	1.16	1.78	4.78	1.08
9 Fresh Fruits	1.86	1.79	2.38	0.95
10 Vegetable Ghee	2.07	3.73	3.20	0.85
Total	22.56			26.01
B. Ranked by Percentage Change				
1 Betel Leaves & Nuts	0.02	3.12	143.33	0.74
2 Meat	2.43	7.41	10.82	6.68
3 Spices	0.54	-1.09	10.66	1.24
4 Dry Fruits	0.25	2.05	10.27	0.62
5 Rice	1.58	13.92	8.84	2.29
6 Tea	0.84	11.10	8.24	1.76
7 Sweet Meet	0.25	3.52	7.69	0.43
8 Honey	0.04	4.81	6.18	0.08
9 Jam, Tomato Ketchup & Pickle	0.25	2.17	5.94	0.29
10 Condiments	0.27	3.38	5.55	0.36
Total	6.48			14.49
C. Ranked by Weights				
1 Milk Fresh	6.68	3.62	4.02	6.64
2 Wheat Flour	4.16	-2.02	3.78	2.89
3 Meat	2.43	7.41	10.82	6.68
4 Vegetable Ghee	2.07	3.73	3.20	0.85
5 Fresh Fruits	1.86	1.79	2.38	0.95
6 Cooking Oil	1.75	3.30	2.55	0.55
7 Fresh Vegetables	1.71	-0.14	-3.71	-1.66
8 Rice	1.58	13.92	8.84	2.29
9 Cigarettes	1.39	-16.51	1.25	0.48
10 Chicken	1.36	-0.36	-4.77	-0.88
Total	25.01			18.80

Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in YoY change in CPI Food, which is 1.3 percent in September, 2018.

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

Items/ Contributors	Weights	<u>YoY Change</u>		Weighted Contribution
		Sep-17	Sep-18	
A. Ranked by Weighted Contribution				
1 House Rent	21.81	7.19	7.58	28.36
2 Education	3.94	8.27	15.14	13.36
3 Motor Fuel	3.03	7.91	24.81	9.88
4 Transport Services	2.70	0.10	15.39	7.22
5 Cotton Cloth	1.73	3.39	6.98	2.51
6 Tailoring	0.88	7.35	7.94	2.04
7 Personal Equipments	0.84	6.15	8.42	1.96
8 Footware	1.55	0.58	7.54	1.75
9 Personal Care	1.49	5.70	5.11	1.58
10 Ready Made Garments	0.97	4.77	6.69	1.45
Total	38.96			70.10
B. Ranked by Percentage Change				
1 Kerosene Oil	0.01	1.70	37.35	0.04
2 Motor Fuel	3.03	7.91	24.81	9.88
3 Transport Services	2.70	0.10	15.39	7.22
4 Education	3.94	8.27	15.14	13.36
5 Motor Vehicle	0.66	3.44	11.44	1.20
6 Water Supply	0.50	5.06	10.63	0.81
7 News Papers	0.19	4.71	10.44	0.33
8 Construction Input Items	0.56	3.06	9.75	1.26
9 Utensils	0.32	5.05	9.70	0.65
10 Cosmetics	0.39	3.25	9.61	0.68
Total	12.30			35.43
C. Ranked by Weights				
1 House Rent	21.81	7.19	7.58	28.36
2 Electricity	4.40	0.00	0.00	0.00
3 Education	3.94	8.27	15.14	13.36
4 Communication & Apparatus	3.15	1.59	0.23	0.08
5 Motor Fuel	3.03	7.91	24.81	9.88
6 Transport Services	2.70	0.10	15.39	7.22
7 Cotton Cloth	1.73	3.39	6.98	2.51
8 Gas	1.58	0.00	0.00	0.00
9 Footware	1.55	0.58	7.54	1.75
10 Personal Care	1.49	5.70	5.11	1.58
Total	45.39			64.74

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 7.7 percent in September, 2018.

Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: September, 2018

Groups	Decrease or no change	Subdued increase (Greater than 0% but less than 5%)	Moderate increase (5% but less than 10%)	Double digit increase (10% or more)
Food & Non-Alcoholic Beverages	Onion, Spinach, Garlic, Mango Kalmi, Pulse Mash (Washed), Potatoes, Gram Whole Yellow Av.Qlty.	Mineral Water Nestle 1.5 Litre, Milk Tetra Pack 1/2 Ltr., Lactogen 400 Grams, Tea Tea Loose Kenya Av.Qlty 250 Gm, Fruit Juice Tetra Pack.	Rice Basmati 385/386, Lipton Yellow Label 200 Gm.	Coconut Dry Av.Qlty., Chillies Powder Loose, Lady Finger, Salt Powdered (National/Shan), Chillies Green, Tinda, Cuminseed White National, Chillies Powd.National 200 Gm.
Alcoholic Beverages & Tobacco		Cigarettes Gold Leaf 20,S, Cigarettes K-20,S, Cigarettes Capstan 20,S.		Betel Nuts, Betel Leaves.
Clothing & Footwear	Gents Shoe, Art 1109 Servis, Gents Sandal Bata, Gents Shoes Paul Bata.	Awami-Suit W & W (Boys) 24"/26", Vest For Men Av.Qlty., Pullover Gents Oxford/Bon, Socks Nylon (Pakistani), Sewing Thread/Reel.	Tailoring Charges Pant (Men), Tailoring Shirt, Frock W/Wear Girls, Shoe Polish School Uni. Pant,Shirt Boys, Charges Avg, Ladies Spoung Chappal Bata, Long Chaddar (W/Wear) (2X2.5 Mtr), Dopatta Cotton Av. Qlty.	Ladies Sandal Bata, Child Shoe Power Lite Bata, Handkerchief Sup. Qlty Pak, Tailoring Shirt, Frock W/Wear Girls, Shoe Polish Charges Avg, Ladies Spoung Chappal Bata, Long Cloth 57" Gul Ahmed/AI Karam, Gloves Thread/Reel.
Housing, Water, Elect. Gas & other Fuels	Elect.Charges Upto 50 Units, Elect.Charges 01 - 100 Units, Elect.Charges Above 1000 Units, Elect.Charges 301 - 1000 Units.	Bricks (New) Ist Class, Bajree, Cement (Local), Cement Blocks (6"X8"X12"), Firewood Whole, Sand (Black Pit Sand).	Electrician Wage Rate(P/Day), Timber Shesham Log, House Rent For Q-III, Unskilled Labour Wage Rat, House Rent For Q-IV.	Kerosene Oil, Iron Bar (M.S. Bar) 1/2", Synthetic Enemal Ici, Plumber Wage Rate, Carpenter Wage Rate, Synthetic Enemal Robialac, Water Charges Per House.
Furnishing & Household Equip. Maintenance etc.		S.Steel Plate Avg. Qlty, Carpet Mattress Single(4"Thick), Plain Av. Qlty, D-Freezer Waves 8 Cft., Blanket (90" X 54"), Phnyle Typhone/Finis/Carr 3 Ltr.	Chair Shesham Wood, Sewing Machine (Singer), Aluminium Cooking Pan, Pressure Cooker 4 Ltr., Almirah (Steel).	Thermos Starvac 1 Ltr, Non Stick Cooking Pan, Single Bed Without Foam, Tea Set Pak. China Wear 21 Pcs, Frying Pan Steel Avg. Qlty, Elect. Iron Philips, Toilet Paper Roll (R.Petal), Water Set Jug+6 Glasses.
Health	Sancos Syrup (50 MI.), Burnol Cream 30 Gm, Vicks Vaporub/ Balm, Flagyl Tab. 200 Mg.	Gripe-Water Woodwards, Cac. 1000 Tab, Panadol Tab. Extra/Plain, Cotton Bandage 2" - 4", Sugar Test (Random/Fasting).	Doctor (Mbbs) Clinic Fee, Trisil Tab., Ecg Charges, Entox Tab., Thermometer China.	Dettol (Medium), Blood Test (Cp) Charges, Urine Test (Dr) Charges, X-Ray (Chest) Charges, Glycrine Small Bottle.
Transport	Train Fare Ist Slp. > 500, Train Fare Ist Slp.101-500, Train Fare A/C Slp > 500K, Train Fare A/C Slp. 1-100, Train Fare Eco. > 500 Km.	Bicycle With Tyres & Tube, Tyr Car With Tube General, Taxi 4 Seater Fare, Motorcycle Honda Cd-70, Cycle Overhauling Charges.	Suzuki Fare Min.Within City, Train Fare A/C Slp.101-500, Minibus Fare Min.Within City, Suzuki Fare Maximum Wityin City.	Train Fare Eco. 1-100 Km., Bus Fare Outside City (Non A/C), Bus Fare Outside City (A/C), High Speed Diesel Hsd, Train Fare Ist Slp. 1-100, Gas Cylinder S.Size (L.P.G), Petrol Super, Train Fare Eco. 101-500 K.
Communication	Telephone Charges Local Call, Telephone Charges Outside City, U.M.S. Reg Charges Min.	Internet Charges, Fax Charges (Local), Mobile Set Nokia/Sony/Ericsson Av.Qlty, Postal Envelope Domestic.	Telephone Set Av. Qlty.	T.C.S. Ch. Min.Within Zone.
Recreation & Culture	Maths Book Class Ix Or X, Maths Book Ist. Year (T.B. Board), V.C.P., Panasonic/Lg/National, Tv Licence Fee Domestic.	English Book Class VI, Pen Ink Dollor 57 MI Bottle, Computer Cd (Tdk/Imation), Urdu Book Ba/B.Sc, T.V. 20" Colored Sony, Personnel Computer (Branded).	Fountain Pen Hero/Wings/China, Pencil Goldfish/Deer, English Book Class Ix Or X, Exercise Book Lined 80/10, Urdu Book Ist Year/ Inter.	Cinema A/C High Class, Cinema Non-A/C High Class, English Book Ba/B.Sc, Pakistan Studies Book Ba/B.Sc, Photostate Paper 70 Gm, Urdu Book Class Ix/X (T.B.Board), Daily "Nawa-E-Waqf", Daily "Jang", Daily "Dawn".
Education			Pvt School Fee Eng.Med (Class-Vi), Pvt Eng.College Fee (Ist Year).	Govt. University Fee Msc/ Ma, Govt. Engg. Coll. Fee 1st Year, Govt. Med. College Fee Mbbs Ist Year, Govt. College Fee 1st. Year, Pvt Med. College Fee Mbbs(Ist Year).
Restaurant & Hotels		Tea Prepared (Ordinary), Cooked Dal (Av. Hotel), Bread Tandoori St. Size.	Chicken Biryani Full/Double.	Cooked Mutton (Av. Hotel), Cooked Beef (Av. Hotel).
Miscellaneous	Toilet Soap Lifebouy 140 Gms, Toothpaste Macleans 70 Gms.	Toilet Soap Safeguard Bath Size, Blade Trete Ordinary (10), Blade 7-O-Clock Steel (5), Hair Oil Amla/Chambeli.	Hair Colour Bigen, Toothpast Med Size Colgate 70Gms, Shaving Charges, Beauty Parlour Hair Style Charges.	Wrist Watch Gents Citizen, Perfume Med.Size Medora/Broche, Purse Ladies (Leather) Av. Qlty, Gold Tezabi 24 Ct, Wrist Watch Ladies Citizen, Trunk Medium Size.

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

Up to Rs: 8000												Rs 8001- 12000											
General				Food				Non-Food				General				Food				Non-Food			
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY				
1 Rawalpindi	4.6	4.6	2.0	2.0	7.7	7.7	4.7	4.7	2.0	2.0	7.4	7.4	4.7	4.7	2.0	2.0	7.4	7.4					
2 Islamabad	2.3	2.3	-0.2	-0.2	5.3	5.3	3.0	3.0	0.4	0.4	5.6	5.6	2.7	2.7	-0.2	-0.2	6.1	6.1					
3 Lahore	2.5	2.5	-0.2	-0.2	6.3	6.3	3.7	3.7	0.8	0.8	6.9	6.9	5.6	5.6	4.3	4.3	6.6	6.6					
4 Gujranwala	3.6	3.6	0.7	0.7	7.2	7.2	5.4	5.4	4.3	4.3	6.6	6.6	3.7	3.7	0.8	0.8	6.9	6.9					
5 Sialkot	5.6	5.6	3.9	3.9	7.6	7.6	4.4	4.4	2.8	2.8	5.9	5.9	5.6	5.6	4.3	4.3	6.6	6.6					
6 Faisalabad	6.8	6.8	2.8	2.8	11.6	11.6	7.4	7.4	3.3	3.3	11.7	11.7	7.4	7.4	1.9	1.9	-0.1	-0.1					
7 Multan	3.0	3.0	1.4	1.4	4.9	4.9	3.0	3.0	1.2	1.2	4.8	4.8	2.8	2.8	5.9	5.9	4.0	4.0					
8 Sargodha	4.3	4.3	2.9	2.9	5.9	5.9	4.4	4.4	2.8	2.8	5.9	5.9	3.7	3.7	0.8	0.8	6.9	6.9					
9 Bahawalpur	1.5	1.5	-0.5	-0.5	3.7	3.7	1.9	1.9	-0.1	-0.1	3.8	3.8	1.9	1.9	-0.1	-0.1	3.8	3.8					
10 Karachi	2.6	2.6	1.6	1.6	3.9	3.9	2.8	2.8	1.9	1.9	3.8	3.8	2.6	2.6	5.6	5.6	4.0	4.0					
11 Hyderabad	4.3	4.3	3.5	3.5	5.4	5.4	4.8	4.8	4.0	4.0	5.6	5.6	4.0	4.0	2.3	2.3	7.4	7.4					
12 Sukkur	-1.4	-1.4	-8.4	-8.4	7.5	7.5	-0.1	-0.1	-6.9	-6.9	7.3	7.3	1.5	1.5	1.5	1.5	7.2	7.2					
13 Larkana	2.6	2.6	-0.2	-0.2	5.7	5.7	2.5	2.5	-0.6	-0.6	5.6	5.6	2.5	2.5	1.4	1.4	5.6	5.6					
14 Peshawar	4.5	4.5	1.9	1.9	7.3	7.3	4.9	4.9	2.3	2.3	7.4	7.4	4.0	4.0	1.4	1.4	6.5	6.5					
15 Bannu	3.3	3.3	1.7	1.7	5.2	5.2	3.9	3.9	1.4	1.4	6.5	6.5	3.9	3.9	1.4	1.4	9.5	9.5					
16 Quetta	5.8	5.8	3.3	3.3	8.8	8.8	6.2	6.2	3.2	3.2	9.5	9.5	6.2	6.2	-0.4	-0.4	6.3	6.3					
17 Khuzdar	2.4	2.4	-0.5	-0.5	5.7	5.7	2.8	2.8	-0.4	-0.4	6.3	6.3	2.8	2.8	0.2	0.2	6.3	6.3					
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	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY				
1 Rawalpindi	5.8	5.8	3.6	3.6	7.7	7.7	5.9	5.9	4.0	4.0	7.3	7.3	4.2	4.2	2.6	2.6	5.5	5.5					
2 Islamabad	3.9	3.9	2.2	2.2	5.6	5.6	4.1	4.1	1.4	1.4	6.7	6.7	4.6	4.6	1.5	1.5	7.2	7.2					
3 Lahore	3.7	3.7	1.5	1.5	6.1	6.1	5.4	5.4	4.9	4.9	5.8	5.8	4.1	4.1	1.4	1.4	6.7	6.7					
4 Gujranwala	4.6	4.6	1.7	1.7	7.4	7.4	5.7	5.7	4.2	4.2	6.8	6.8	4.6	4.6	1.5	1.5	7.2	7.2					
5 Sialkot	5.9	5.9	5.0	5.0	6.8	6.8	4.3	4.3	3.5	3.5	5.0	5.0	5.9	5.9	4.9	4.9	5.8	5.8					
6 Faisalabad	7.0	7.0	2.5	2.5	11.4	11.4	7.6	7.6	2.9	2.9	11.5	11.5	7.6	7.6	2.9	2.9	11.5	11.5					
7 Multan	3.7	3.7	2.0	2.0	5.3	5.3	3.4	3.4	1.6	1.6	5.0	5.0	5.7	5.7	4.2	4.2	6.8	6.8					
8 Sargodha	5.5	5.5	4.6	4.6	6.3	6.3	5.5	5.5	4.6	4.6	6.1	6.1	5.1	5.1	1.6	1.6	8.6	8.6					
9 Bahawalpur	4.2	4.2	3.7	3.7	4.7	4.7	6.1	6.1	3.3	3.3	8.2	8.2	4.2	4.2	1.6	1.6	6.1	6.1					
10 Karachi	5.2	5.2	5.7	5.7	4.8	4.8	5.2	5.2	5.5	5.5	4.9	4.9	5.3	5.3	4.6	4.6	6.1	6.1					
11 Hyderabad	5.3	5.3	4.3	4.3	6.3	6.3	5.3	5.3	4.6	4.6	6.1	6.1	5.1	5.1	4.6	4.6	6.1	6.1					
12 Sukkur	5.1	5.1	1.6	1.6	8.4	8.4	5.4	5.4	1.6	1.6	8.6	8.6	5.1	5.1	1.6	1.6	6.1	6.1					
13 Larkana	5.7	5.7	4.6	4.6	6.6	6.6	5.5	5.5	4.6	4.6	6.1	6.1	5.5	5.5	4.6	4.6	6.1	6.1					
14 Peshawar	6.1	6.1	3.6	3.6	8.4	8.4	6.1	6.1	3.3	3.3	8.2	8.2	4.6	4.6	2.2	2.2	5.3	5.3					
15 Bannu	4.6	4.6	2.8	2.8	6.2	6.2	3.9	3.9	2.2	2.2	10.5	10.5	8.0	8.0	5.0	5.0	10.5	10.5					
16 Quetta	7.9	7.9	4.8	4.8	10.8	10.8	3.2	3.2	0.2	0.2	5.7	5.7	3.2	3.2	0.2	0.2	5.7	5.7					
17 Khuzdar	3.1	3.1	0.1	0.1	6.2	6.2	3.0	3.0	-0.3	-0.3	5.3	5.3	3.0	3.0	-0.3	-0.3	5.3	5.3					
Above Rs 35000												Combined											
General				Food				Non-Food				General				Food				Non-Food			
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY				
1 Rawalpindi	6.4	6.4	4.4	4.4	7.4	7.4	6.0	6.0	3.6	3.6	7.6	7.6	4.9	4.9	2.3	2.3	6.7	6.7					
2 Islamabad	5.0	5.0	2.7	2.7	6.2	6.2	4.1	4.1	0.5	0.5	6.9	6.9	4.4	4.4	1.2	1.2	6.6	6.6					
3 Lahore	4.8	4.8	1.1	1.1	6.9	6.9	4.4	4.4	1.2	1.2	6.6	6.6	5.6	5.6	0.5	0.5	6.9	6.9					
4 Gujranwala	5.1	5.1	1.6	1.6	6.9	6.9	5.4	5.4	4.7	4.7	5.9	5.9	5.1	5.1	1.2	1.2	6.6	6.6					
5 Sialkot	5.6	5.6	5.0	5.0	5.9	5.9	8.4	8.4	4.0	4.0	11.3	11.3	5.6	5.6	1.5	1.5	5.9	5.9					
6 Faisalabad	9.6	9.6	5.4	5.4	11.7	11.7	3.6	3.6	1.4	1.4	5.2	5.2	4.0	4.0	4.0	4.0	11.3	11.3					
7 Multan	4.2	4.2	1.5	1.5	5.6	5.6	5.2	5.2	3.2	3.2	6.4	6.4	3.0	3.0	0.6	0.6	4.4	4.4					
8 Sargodha	6.2	6.2	4.0	4.0	7.1	7.1	5.5	5.5	4.6	4.6	6.2	6.2	4.3	4.3	1.2	1.2	6.4	6.4					
9 Bahawalpur	4.3	4.3	2.0	2.0	5.3	5.3	3.0	3.0	0.6	0.6	4.4	4.4	3.0	3.0	0.6	0.6	4.4	4.4					
10 Karachi	4.3	4.3	2.3	2.3	5.3	5.3	3.8	3.8	2.0	2.0	5.1	5.1	3.0	3.0	0.6	0.6	5.1	5.1					
11 Hyderabad	6.3	6.3	5.2	5.2	6.9	6.9	5.5	5.5	4.6	4.6	6.2	6.2	4.3	4.3	1.2	1.2	6.2	6.2					
12 Sukkur	3.7	3.7	-2.5	-2.5	6.8	6.8	1.6	1.6	-5.4	-5.4	6.6	6.6	1.6	1.6	-5.4	-5.4	6.6	6.6					
13 Larkana	3.7	3.7	0.8	0.8	5.1	5.1	2.9	2.9	-0.1	-0.1	4.8	4.8	2.9	2.9	-0.1	-0.1	4.8	4.8					
14 Peshawar	8.2	8.2	2.2	2.2	11.0	11.0	6.6	6.6	2.1	2.1	9.5	9.5	4.0	4.0	1.2	1.2	5.8	5.8					
15 Bannu	5.6	5.6	1.4	1.4	7.6	7.6	4.0	4.0	1.2	1.2	5.8	5.8	3.0	3.0	-0.3	-0.3	9.8	9.8					
16 Quetta	7.8	7.8	3.4	3.4	10.0	10.0	7.1	7.1	3.3	3.3	9.8	9.8	3.0	3.0	-0.3	-0.3	5.3	5.3					
17 Khuzdar	4.9	4.9	0.6	0.6	7.2	7.2	3.0	3.0	-0.3	-0.3	5.3	5.3	3.0	3.0	-0.3	-0.3	5.3	5.3					

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

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Mithi	9.5	5.9	11.9	Loralai	5.0	-1.3	9.0
D. I. Khan	9.3	3.3	13.2	Islamabad	4.9	2.3	6.7
Faisalabad	8.4	4.0	11.3	Attock	4.7	2.0	6.6
Turbat	7.5	2.1	10.5	Wazirabad	4.4	-0.8	8.1
Quetta	7.1	3.3	9.8	Gujranwala	4.4	1.2	6.6
Peshawar	6.6	2.1	9.5	Mardan	4.1	2.8	4.8
Vehari	6.4	3.9	8.1	Lahore	4.1	0.5	6.9
Jhelum	6.1	5.1	6.8	Gawadar	4.0	-0.4	7.0
Rawalpindi	6.0	3.6	7.6	Bannu	4.0	1.2	5.8
Bahawalnagar	5.9	-0.6	10.2	Karachi	3.8	2.0	5.1
Mianwali	5.8	2.4	7.7	Mingora	3.6	2.5	4.3
Hyderabad	5.5	4.6	6.2	Sahiwal	3.6	-2.1	7.2
Nawabshah	5.5	4.9	5.9	Multan	3.6	1.4	5.2
Sialkot	5.4	4.7	5.9	D. G. Khan	3.6	0.5	5.5
Dadu	5.3	-2.9	11.4	Jhang	3.5	-0.6	6.0
Sargodha	5.2	3.2	6.4	R. Y. Khan	3.4	-0.3	5.8
				Abbottabad	3.3	2.1	4.1
				Mirpukhlas	3.3	1.6	4.5
				Khuzdar	3.0	-0.3	5.3
				Bahawalpur	3.0	0.6	4.4
				Larkana	2.9	-0.1	4.8
				Muzaffargarh	2.0	-1.3	4.3
				D. M. Jamali	1.8	-2.5	4.8
				Sukkur	1.6	-5.4	6.6

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-17	Aug-18	Sep-18	Sep-17	Aug-18	Sep-18
<u>Up to Rs. 8000</u>						
General	1.2	0.4	-0.2	3.4	4.6	3.2
Food	2.1	0.5	-0.6	2.1	2.9	0.3
Non-food	0.1	0.2	0.3	5.0	6.7	6.9
<u>Rs. 8001- 12000</u>						
General	0.9	0.3	-0.2	3.4	4.8	3.7
Food	1.7	0.4	-0.6	2.2	3.0	0.6
Non-food	0.1	0.2	0.3	4.8	6.7	6.9
<u>Rs. 12001- 18000</u>						
General	0.8	0.2	-0.1	3.5	5.1	4.1
Food	1.5	0.3	-0.6	2.1	3.1	0.9
Non-food	0.1	0.2	0.3	4.8	6.9	7.1
<u>Rs. 18001- 35000</u>						
General	0.7	0.2	-0.1	3.5	5.5	4.7
Food	1.3	0.2	-0.7	2.1	3.2	1.2
Non-food	0.2	0.2	0.3	4.6	7.4	7.6
<u>Above Rs. 35000</u>						
General	0.4	0.2	0.0	4.2	6.6	6.1
Food	0.9	0.1	-0.7	2.8	3.7	2.0
Non-food	0.2	0.2	0.4	5.0	8.0	8.1
<u>All income groups</u>						
General	0.6	0.2	-0.1	3.9	5.8	5.1
Food	1.3	0.2	-0.7	2.4	3.3	1.3
Non-food	0.2	0.2	0.3	4.9	7.6	7.7

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices	Percentage change	
			Sep-18	YoY	MoM
1	Wheat	10Kg.	334.6	3.6	0.6
2	Wheat Flour Bag	10Kg.	387.9	5.4	0.6
3	Rice Basmati Broken	Kg.	76.7	9.4	1.1
4	Rice Irri-6/9	Kg.	54.3	7.1	0.6
5	Bread Plain Med.Size (340-400 Gm.)	Each	42.9	4.2	0.5
6	Beef	Kg.	375.6	9.6	0.3
7	Mutton	Kg.	788.1	10.8	0.7
8	Chicken Live (Farm)	Kg.	118.3	-2.4	-3.7
9	Milk Fresh	Litr	85.5	4.4	0.1
10	Curd	Kg.	102.1	4.1	0.1
11	Milk Powdered Nido	500G	385.1	3.2	0.0
12	Egg Hen (Farm)	Doz.	95.7	-2.7	-0.8
13	Mustard Oil	Kg.	187.9	3.0	0.1
14	Cooking Oil (Tin)	2.5Ltr	480.7	2.6	0.2
15	Veg. Ghee (Tin)	2.5Kg.	475.1	3.1	0.3
16	Veg.Ghee Loose	Kg.	150.7	3.2	0.3
17	Bananas	Doz.	66.4	-2.9	-10.7
18	Masoor Pulse Washed	Kg.	113.8	-6.4	0.5
19	Moong Pulse Washed	Kg.	114.3	-7.1	0.3
20	Mash Pulse Washed	Kg.	144.5	-21.9	-1.2
21	Gram Pulse Washed	Kg.	119.0	-3.4	1.6
22	Potatoes	Kg.	32.3	-20.5	-3.1
23	Onions	Kg.	38.0	-47.8	-9.4
24	Tomatoes	Kg.	72.5	-29.4	6.9
25	Sugar	Kg.	55.0	-0.8	-1.1
26	Gur	Kg.	85.7	0.6	3.4
27	Salt Powdered Loose (Lahori)	Kg.	12.0	9.7	2.7
28	Red Chillies Powder Loose	Kg.	340.2	31.6	0.0
29	Garlic	Kg.	122.9	-34.4	-0.7
30	Tea (Yellow Lable 200 Gm.)	200Gm.	204.1	11.9	0.2
31	Cooked Beef Plate	Each	114.6	19.8	0.8
32	Cooked Dal Plate	Each	61.8	6.0	0.2
33	Tea Prepared (Sada)	Cup	21.8	2.9	1.0
34	Cigarettes K-2 (20'S)	20'S	51.8	2.0	1.3
35	Long Cloth (Coarse Latha)	Mtr.	234.2	10.3	1.0
36	Shirting	Mtr.	178.6	5.4	0.0
37	Lawn	Mtr.	288.1	12.6	0.2
38	Georgette (Voil Printed)	Mtr.	132.1	5.1	0.0
39	Sandal Gents Bata	Pair	699.0	0.0	0.0
40	Chappal Spng.Bata (Gents)	Pair	199.0	11.1	0.0
41	Sandal Ladies Bata	Pair	599.0	19.2	0.0
42	Electric Charges 1-50	Unit	2.0	0.0	0.0
43	Gas Charges Upto 3.3719	Mmbtu	128.7	0.0	0.0
44	Kerosene	Litr	121.4	53.9	-0.8
45	Firewood	40Kg	627.9	3.1	0.3
46	Energy Savor 14 Watt	Each	171.2	1.7	0.0
47	Washing Soap (200-250 Gm.)	Cake	28.4	9.5	1.0
48	Match Box	Each	2.4	6.3	0.0
49	Petrol	Litr	93.9	30.0	-2.4
50	Diesel	Litr	107.6	37.4	-5.6
51	L.P.G.(11 Kg Cylender.)	Each	1576.5	33.5	5.3
52	Tele. Local Call	Call	3.9	0.0	0.0
53	Bath Soap Lifebouy (Standard)	Cake	40.7	-2.5	1.1
Maximum			53.9	6.9	
Median			3.2	0.2	
Minimum			-47.8	-10.7	

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

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

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

Items and specification	Weights	Index		
		Sep-17	Aug-18	Sep-18
General	100.00	217.98	229.27	229.14
Food & Non-Alcoholic Beverages.	34.83	234.23	238.58	236.78
1 Wheat	0.35	194.80	198.97	200.51
2 Wheat Flour	4.16	204.81	212.13	212.55
3 Wheat Product	0.10	213.67	213.31	213.99
4 Besan	0.15	276.11	265.36	266.82
5 Rice	1.58	182.86	197.74	199.02
6 Cereals	0.16	255.64	264.58	264.45
7 Bakery & Confectionary	1.16	218.99	228.93	229.45
8 Nimco	0.46	255.84	260.84	261.61
9 Meat	2.43	283.65	313.81	314.34
10 Chicken	1.36	150.63	152.83	143.44
11 Fish	0.30	215.33	228.91	223.09
12 Milk Fresh	6.68	276.04	287.03	287.14
13 Milk Product	0.63	267.30	277.39	278.55
14 Milk Powder	0.11	234.64	245.56	247.39
15 Eggs	0.46	205.37	199.90	194.28
16 Mustard Oil	0.10	160.21	164.27	164.80
17 Cooking Oil	1.75	138.10	141.32	141.62
18 Vegetable Ghee	2.07	143.03	147.39	147.60
19 Dry Fruits	0.25	263.91	293.19	291.02
20 Fresh Fruits	1.86	238.11	259.58	243.78
21 Pulse Masoor	0.27	171.56	157.72	156.97
22 Pulse Moong	0.23	236.76	217.75	217.37
23 Pulse Mash (Washed)	0.21	269.29	206.30	207.73
24 Pulse Gram	0.24	275.47	257.89	265.30
25 Gram Whole	0.16	292.37	267.44	265.65
26 Beans	0.03	242.94	245.51	245.51
27 Potatoes	0.46	267.60	218.08	215.21
28 Onion	0.52	482.74	253.14	226.63
29 Tomatoes	0.43	256.96	263.39	231.71
30 Fresh Vegetables	1.71	291.76	280.39	280.93
31 Sugar	1.04	200.00	199.54	197.47
32 Gur	0.02	261.22	252.43	259.35
33 Honey	0.04	332.15	351.07	352.68
34 Sweet Meet	0.25	253.51	271.54	273.01
35 Beverages	1.20	226.34	233.42	233.14
36 Jam, Tomato Ketchup & Pickle	0.25	220.13	232.81	233.20
37 Condiments	0.27	271.56	286.39	286.64
38 Spices	0.54	238.80	260.82	264.25
39 Tea	0.84	284.10	306.97	307.50
Alcoholic Beverages, Tobacco	1.41	304.80	313.47	314.42
40 Cigarettes	1.39	305.67	308.24	309.50
41 Betel Leaves & Nuts	0.02	251.93	630.86	613.03
Clothing & Footwear	7.57	239.52	254.67	255.36
42 Cotton Cloth	1.73	232.67	247.77	248.90
43 Woolen Cloth	0.88	257.77	267.11	268.05
44 Ready Made Garments	0.97	247.97	264.49	264.55
45 Woolen Readymade Garments	0.40	259.27	266.61	267.54
46 Hosiery	0.51	251.70	266.49	267.72
47 Dopatta	0.44	246.66	265.73	266.54
48 Cleaning & Laundering	0.21	272.37	291.30	292.02

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

Items and specification	Weights	Index		
		Sep-17	Aug-18	Sep-18
49 Tailoring	0.88	324.65	349.60	350.43
50 Footware	1.55	167.46	179.97	180.09
Housing,Water,Elect,Gas & Other Fuel	29.41	198.95	210.80	210.82
51 House Rent	21.81	191.49	206.00	206.00
52 Construction Input Item	0.56	255.47	280.01	280.39
53 Construction Wage Rate	0.33	245.96	267.25	268.44
54 Water Supply	0.50	171.58	189.82	189.82
55 Electricity	4.40	238.10	238.10	238.10
56 Gas	1.58	158.08	158.08	158.08
57 Kerosene Oil	0.01	198.39	274.04	272.49
58 Fire Wood Whole	0.23	291.34	298.70	299.07
Furnished H.Hold Equip.& Maint. Etc	4.21	229.10	242.20	243.36
59 Furniture	0.33	220.81	237.77	238.44
60 Household Textile	0.65	231.08	243.45	243.85
61 Household Equipment	0.59	183.36	192.31	193.22
62 Utensils	0.32	234.34	255.56	257.08
63 Plastic Products	0.25	213.05	227.91	229.26
64 Washing Soap & Detergent	0.79	232.92	242.53	245.92
65 Sewing Needle & Dry Cell	0.15	209.49	221.16	221.76
66 Household Servant	1.04	257.30	271.59	271.59
67 Marriage Hall Charges	0.08	249.20	266.62	270.18
Health	2.19	213.90	225.20	226.78
68 Drug Medicine	1.27	185.75	190.58	191.25
69 Medical Equipment	0.01	253.35	261.95	263.71
70 Doctor (MBBS) Clinic Fee	0.59	282.22	304.41	307.89
71 Medical Test	0.32	198.38	215.21	216.89
Transport	7.20	175.74	204.74	205.19
72 Motor Vehicle	0.66	176.88	196.91	197.12
73 Motor Vehicle Accessories	0.24	213.57	218.65	220.60
74 Motor Fuel	3.03	146.77	184.60	183.18
75 Mechanical Service	0.46	232.07	244.82	245.90
76 Motor Vehicle Tax	0.11	210.18	210.18	210.18
77 Transport Services	2.70	193.59	221.00	223.38
Communication	3.22	133.04	133.78	133.78
78 Postal Services	0.07	250.69	272.45	272.45
79 Communication & Apparatus	3.15	130.57	130.86	130.87
Recreation & Culture	2.02	196.78	209.89	210.12
80 Recreation & Culture	0.86	129.49	137.22	137.22
81 Text Books	0.57	287.98	304.43	304.43
82 News Papers	0.19	183.76	202.94	202.94
83 Stationery	0.40	218.46	235.55	236.70
Education	3.94	249.61	281.89	287.41
84 Education	3.94	249.61	281.89	287.41
Restaurants And Hotels	1.23	281.08	295.01	295.86
85 Ready Made Food	1.23	281.08	295.01	295.86
Miscellaneous Goods And Services	2.76	250.12	264.45	267.30
86 Personal Care	1.49	230.31	240.91	242.09
87 Cosmetics	0.39	205.83	224.25	225.61
88 Blades	0.03	197.94	205.13	206.54
89 Personal Equipments	0.84	307.37	326.73	333.26

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

Items and Specifications	Index		
	Sep-17	Aug-18	Sep-18
General	218.08	241.93	238.25
Agriculture Forestry & Fishery	252.05	274.04	267.67
1 Wheat	196.01	204.53	205.17
2 Maize	191.42	222.24	228.81
3 Rice	168.67	181.28	181.31
4 Sorghum/Jowar	211.96	293.20	285.95
5 Millet/Bajra	160.05	249.84	261.64
6 Vegetables	400.21	346.19	338.79
7 Fresh Fruits	253.92	298.81	266.54
8 Dry Fruits	235.18	275.54	278.85
9 Cotton Seeds	260.12	268.41	265.99
10 Other Oil Seeds	185.96	196.32	195.43
11 Edible Roots/ Potatoes	271.48	207.46	199.17
12 Stimulant And Spice Crops	294.09	322.59	319.25
13 Pulses	263.85	232.09	231.62
14 Sugar Crops	268.94	257.62	257.62
15 Fibre Crops	199.67	281.00	262.70
16 Unmanufactured Tobacco	293.30	316.51	318.02
17 Poultry	226.19	159.15	143.93
18 Milk From Bovine Animals	269.94	285.13	285.13
19 Eggs	204.41	206.97	201.16
20 Raw Animal Material/Wool	172.91	176.92	176.92
21 Hides And Fur Skins, Raw	98.57	97.22	93.47
22 Fuel Wood In Logs	279.63	283.56	284.65
23 Fishes Live Fresh Or Chilled	440.36	451.22	453.67
Ores/Minerals, Gas & Elect.	242.68	244.14	244.76
24 Coal Not Agglomerated	155.29	155.29	155.29
25 Natural Gas Liquefied	210.69	213.53	214.80
26 Salt & Pure Sodium Chloride	248.46	269.74	271.87
27 Electrical Energy	288.00	288.00	288.00
Food, Beverages, Tobacco, Textiles	225.30	247.95	243.64
28 Meat Of Animals	304.31	339.60	339.60
29 Vegetables & Fruit Juices	224.22	228.62	228.62
30 Dried Fruits & Nuts	268.09	299.69	302.02
31 Fruit Juices	182.36	188.66	188.55
32 Vegetable Oil Refined	154.86	158.54	159.08
33 Vegetable Ghee	125.89	130.77	130.88
34 Oil Cakes	218.98	244.38	240.72
35 Processed Liquid Milk	282.01	296.67	296.67
36 Milk And Cream In Solid Form	224.00	225.34	225.53
37 Ice Cream	266.02	286.26	286.26
38 Dairy Products N.E.C	268.85	279.65	282.17
39 Wheat Flour	187.13	193.24	194.82
40 Other Cereal Flour	227.95	217.45	218.82
41 Sugar Refined	209.70	210.94	207.69
42 Chocolate	100.00	100.00	100.00
43 Sugar Confectionary	128.44	127.25	127.25
44 Coffee And Tea	255.28	279.34	278.46
45 Spices	201.92	202.35	213.13
46 Other Food Products	294.50	294.50	300.74
47 Mineral Water	206.35	211.50	210.16
48 Beverages	172.85	172.63	176.55
49 Tobacco Products	318.37	319.65	319.65
50 Cotton Yarn	201.61	280.03	253.93
51 Nylon Yarn	143.99	143.99	143.99
52 Blended Yarn	183.55	200.05	201.84
53 Woven Fabrics	316.28	321.49	321.49
54 Cotton Fabrics	211.47	219.87	219.87
55 Other Fabrics	227.16	227.85	227.85

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

Items and Specifications	Index		
	Sep-17	Aug-18	Sep-18
56 Silk And Rayon Fabrics	188.14	188.81	188.81
57 Towels	276.14	305.52	305.52
58 Blankets	247.52	265.03	267.72
59 Bed Sheets	256.87	256.87	256.87
60 Quilts	213.05	222.32	222.32
61 Woolen Carpets	196.43	196.43	196.43
62 Synthetic Carpets	130.95	131.80	131.80
63 Hosiery Products	243.31	250.36	253.68
64 Ready Made Garments	201.37	204.85	204.85
65 Leather With Out Hairs	221.97	212.68	212.68
66 Other Leather N.E.C	207.31	207.02	207.02
67 Footwear's	145.51	168.09	168.09
Other Transportable Goods	171.64	216.87	213.10
68 Timber	231.53	239.89	240.62
69 Printing Paper	166.60	172.70	172.70
70 Hard Board	225.00	291.67	291.67
71 Coke	163.45	163.45	163.45
72 Motor Sprit	120.76	164.49	156.81
73 Diesel Oil	150.68	244.20	230.43
74 Kerosene Oil	117.12	229.00	222.78
75 Furnace Oil	103.94	175.33	172.10
76 Mobil Oil	201.29	209.31	209.31
77 Chemicals	180.05	206.63	213.09
78 Dying Materials	146.55	150.72	150.72
79 Fertilizers	216.26	241.32	242.31
80 Pesticides	306.92	312.32	312.32
81 Insecticides	141.98	145.90	145.02
82 Paints & Varnishes	298.67	354.53	354.53
83 Medicines	176.72	178.61	180.06
84 Soaps & Detergent	191.45	193.00	193.52
85 Auto Tyres	177.07	178.97	184.52
86 Plastic Products	225.88	240.38	243.75
87 Glass Sheets	298.97	304.55	304.55
88 Other Glass Articles	317.24	318.10	318.10
89 Ceramics And Sanitary	232.65	243.24	243.24
90 Bricks Blocks And Tiles	221.69	223.76	225.43
91 Cement	221.52	238.70	234.41
92 Bed Foams	170.33	176.50	176.50
93 Matches	171.36	171.36	171.36
Metal Product Machinery & Equip	177.12	186.72	187.64
94 Pig Iron	128.97	128.97	128.97
95 Steel Bars & Sheets	138.84	170.86	168.49
96 Pipe Fittings	215.66	234.48	234.48
97 Steel Products	177.56	182.68	183.35
98 Engines And Motors	116.98	116.98	116.98
99 Vacuum Pumps	123.69	123.69	123.69
100 Air Conditioners	200.10	203.80	203.80
101 Cultivators	190.66	190.66	190.66
102 Chuff Cutter	153.46	153.46	153.46
103 Tractors	201.75	216.82	216.82
104 Lathe Machines	241.06	241.06	241.06
105 Concrete Mixer	138.83	138.83	138.83
106 Refrige,Wash& Sew Mach, Iron,Fan	214.97	228.73	229.31
107 Electrical Wires	205.92	208.22	208.22
108 Lighting Equipments	170.98	174.04	174.04
109 Radio And Television	140.42	140.42	140.42
110 Motor Vehicles	195.36	218.11	218.11
111 Motor Cycles	125.89	134.21	134.21
112 Bicycles	187.65	191.22	194.31

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

Period	CPI			WPI			SPI *	
	Overall	Food	Non-food	Overall	Food	Non-Food		
2008-09	117.03	123.11	113.37	118.93	119.68	118.45	123.26	
2009-10	128.85	139.05	122.73	135.40	136.85	134.48	139.84	
2010-11	146.45	164.10	135.87	164.17	159.26	167.27	164.02	
2011-12	162.57	182.20	150.80	181.28	181.32	181.26	178.67	
2012-13	174.53	195.18	162.16	194.61	197.21	192.95	189.64	
2013-14	189.58	212.74	175.69	210.48	213.04	208.85	208.66	
2014-15	198.16	220.20	184.95	209.85	226.22	199.47	212.61	
2015-16	203.82	224.78	191.25	207.64	234.69	190.47	216.23	
2016-17	212.29	226.59	233.37	216.02	248.74	195.27	220.10	
2017-18	220.62	232.95	237.59	223.52	253.34	204.61	223.60	
2016	May	205.99	225.84	194.09	208.01	238.62	188.59	214.35
	Jun	207.30	228.95	194.32	210.88	244.68	189.44	216.58
	Jul	210.08	234.69	195.33	215.81	251.76	192.99	218.81
	Aug	209.46	232.48	195.66	215.75	250.12	193.95	218.66
	Sep	209.88	232.80	196.14	214.61	250.41	191.89	218.67
	Oct	211.57	234.68	197.72	214.53	250.63	191.64	220.11
	Nov	212.01	235.17	198.13	214.07	247.89	192.62	220.68
	Dec	210.57	230.69	198.51	213.76	244.40	194.32	219.73
2017	Jan	210.94	228.45	200.44	214.84	244.73	195.87	218.35
	Feb	211.54	229.19	200.96	215.86	244.91	197.42	219.25
	Mar	213.32	233.47	201.24	217.29	247.53	198.10	223.62
	Apr	216.30	237.50	203.59	219.22	252.45	198.13	222.07
	May	216.33	237.01	203.94	218.78	251.10	198.26	220.51
	Jun	215.45	234.37	204.11	217.77	248.90	198.02	220.68
	Jul	216.19	234.47	205.23	217.24	249.95	196.63	219.28
	Aug	216.61	235.38	205.36	217.96	251.05	196.96	219.82
	Sep	217.98	238.43	205.72	218.08	252.27	196.39	223.38
	Oct	219.61	239.89	207.45	219.41	254.40	197.22	225.15
	Nov	220.42	240.79	208.21	220.20	252.83	199.49	226.29
	Dec	220.20	239.43	208.67	221.00	253.31	200.49	225.66
2018	Jan	220.27	236.92	210.29	224.99	252.74	207.38	224.13
	Feb	219.58	234.31	210.75	224.66	250.56	208.23	222.19
	Mar	220.25	233.67	212.21	225.22	251.00	208.52	221.67
	Apr	224.25	237.08	216.56	228.07	254.52	211.28	223.13
	May	225.40	239.36	217.03	230.98	257.57	214.11	224.51
	Jun	226.68	241.37	217.87	234.40	259.86	218.25	228.00
	Jul	228.80	242.74	220.45	240.04	263.23	225.32	229.18
	Aug	229.27	243.25	220.89	241.93	262.42	228.93	228.72
	Sep	229.14	241.65	221.64	238.25	260.81	223.95	228.27

*: all groups combined

Table A13: International Commodity Prices/Indices

	18-Jun	18-Jul	18-Aug	18-Sep
Energy				
Crude Oil (US\$ per barrel) *	72.0	72.7	71.1	75.4
Energy Index (2010 = 100)	90.9	91.8	90.3	94.8
Food				
Rice (\$/MT)	427.0	398.0	405.0	402.0
Wheat (\$/MT)	219.4	218.3	236.6	212.4
Sugar (US cent/ pound) [^]	0.3	0.3	0.2	0.3
Palm Oil (\$/MT)	579.7	544.5	533.9	523.6
Soybean Oil (\$/MT)	685.3	665.4	654.0	651.0
Non-Food Non-Energy				
Cotton Outlook 'A' Index # [^]	2.2	2.1	2.1	2.0
Metal Price Index (2010 = 100)	96.8	88.0	85.6	84.5
Copper (\$/MT)	6,965.9	6,250.8	6,051.1	6,050.8
Aluminum (\$/MT)	2,237.6	2,082.2	2,051.5	2,026.5
Iron Ore (\$ cents/dry MT)	65.0	64.6	67.2	68.4
Tin (\$/MT)	20,660.5	19,729.8	19,228.8	18,967.1
Nickel (\$/MT)	15,105.7	13,793.9	13,411.4	12,510.4
Zinc (\$/MT)	3,088.6	2,656.1	2,512.0	2,434.7
Lead (\$/MT)	2,436.3	2,207.0	2,053.5	2,022.9
Uranium (\$/MT)@	22.7	25.8	26.3	27.5
DAP (\$/MT)	391.6	400.8	409.0	421.6
Urea (\$/MT)	224.0	252.5	260.0	267.5

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

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

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

* Crude Oil (Petroleum), simple average of three spot prices; Dated Brent, West Texas Intermediate, and the Dubai fateh

Middling 1-3/32 inch staple, liverpool Index "A", average of the cheapest Cts/lb five of fourteen styles, CIF Liverpool (Cotton Outlook, Liverpool). From January 1968 to May 1981 strict middling 1-1/16 inch staple. Prior to 1968, Mexican 1-1/16.2/

DAP: Diammonium Phosphate

Table 14: CPI Data Series Original and Seasonally Adjusted

Original Series					
Period	FY15	FY16	FY17	FY18	FY19
Jul	198.05	201.76	210.08	216.19	228.80
Aug	198.70	202.25	209.46	216.61	229.27
Sep	199.40	202.04	209.88	217.98	229.14
Oct	199.81	203.03	211.57	219.61	
Nov	198.79	204.22	212.01	220.42	
Dec	196.79	203.06	210.57	220.20	
Jan	196.95	203.49	210.94	220.27	
Feb	195.13	202.98	211.54	219.58	
Mar	195.57	203.28	213.32	220.25	
Apr	198.16	206.43	216.30	224.25	
May	199.66	205.99	216.33	225.40	
Jun	200.89	207.30	215.45	226.68	
Seasonally Adjusted Series					
Jul	197.04	200.72	208.99	215.08	227.66
Aug	197.42	201.02	208.22	215.40	228.06
Sep	198.23	200.94	208.83	216.99	228.19
Oct	198.29	201.53	210.06	218.07	
Nov	197.62	203.05	210.80	219.17	
Dec	197.71	203.93	211.39	221.00	
Jan	197.63	204.24	211.77	221.19	
Feb	197.22	205.15	213.79	221.89	
Mar	197.39	205.22	215.39	222.40	
Apr	198.00	206.26	216.08	224.00	
May	199.93	206.20	216.49	225.48	
Jun	201.26	207.57	215.63	226.76	

Table 15: CPI Food Data Series Original and Seasonally Adjusted

Period	Original Series				
	FY15	FY16	FY17	FY18	FY19
Jul	222.80	224.14	234.69	234.47	242.74
Aug	224.05	224.86	232.48	235.38	243.25
Sep	224.12	223.87	232.80	238.43	241.65
Oct	223.74	224.86	234.68	239.89	
Nov	222.74	227.55	235.17	240.79	
Dec	218.08	223.90	230.69	239.43	
Jan	217.10	222.58	228.45	236.92	
Feb	213.15	221.07	229.19	234.31	
Mar	214.25	222.25	233.47	233.67	
Apr	217.26	227.53	237.50	237.08	
May	221.22	225.84	237.01	239.36	
Jun	223.84	228.95	234.37	241.37	
Seasonally Adjusted Series					
Jul	221.00	222.29	232.73	232.53	240.77
Aug	221.06	222.00	229.60	232.58	240.49
Sep	221.14	221.05	230.05	235.79	239.09
Oct	220.41	221.63	231.46	236.68	
Nov	219.42	224.27	231.80	237.32	
Dec	219.41	225.06	231.69	240.33	
Jan	218.97	224.63	230.74	239.45	
Feb	218.03	226.10	234.37	239.58	
Mar	217.76	225.96	237.40	237.64	
Apr	217.91	228.21	238.16	237.74	
May	222.26	226.77	237.87	240.07	
Jun	224.60	229.44	234.60	241.34	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY15	FY16	FY17	FY18	FY19	Average
Jul	100.51	100.52	100.52	100.52	100.50	100.51
Aug	100.65	100.61	100.59	100.56	100.53	100.59
Sep	100.59	100.54	100.50	100.46	100.41	100.50
Oct	100.76	100.74	100.72	100.70		100.73
Nov	100.59	100.58	100.57	100.57		100.58
Dec	99.54	99.57	99.61	99.64		99.59
Jan	99.65	99.64	99.61	99.58		99.62
Feb	98.94	98.94	98.95	98.96		98.95
Mar	99.08	99.05	99.04	99.04		99.05
Apr	100.08	100.08	100.10	100.11		100.09
May	99.86	99.90	99.93	99.96		99.91
Jun	99.82	99.87	99.92	99.97		99.89

Table 17: CPI Food Monthly & Average Seasonal Factors

Period	FY15	FY16	FY17	FY18	FY19	Average
Jul	100.82	100.83	100.84	100.84	100.82	100.83
Aug	101.36	101.29	101.25	101.20	101.15	101.25
Sep	101.35	101.28	101.20	101.12	101.07	101.20
Oct	101.51	101.46	101.39	101.36		101.43
Nov	101.51	101.47	101.46	101.46		101.47
Dec	99.40	99.49	99.57	99.63		99.52
Jan	99.15	99.09	99.01	98.94		99.05
Feb	97.76	97.78	97.79	97.80		97.78
Mar	98.39	98.36	98.35	98.33		98.36
Apr	99.70	99.70	99.72	99.72		99.71
May	99.53	99.59	99.64	99.70		99.62
Jun	99.66	99.79	99.90	100.01		99.84

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

Period	Original Series				
	FY15	FY16	FY17	FY18	FY19
Jul	1.70	0.43	1.34	0.34	0.94
Aug	0.33	0.24	-0.30	0.19	0.21
Sep	0.35	-0.10	0.20	0.63	-0.06
Oct	0.21	0.49	0.81	0.75	
Nov	-0.51	0.59	0.21	0.37	
Dec	-1.01	-0.57	-0.68	-0.10	
Jan	0.08	0.21	0.18	0.03	
Feb	-0.92	-0.25	0.28	-0.31	
Mar	0.23	0.15	0.84	0.31	
Apr	1.32	1.55	1.40	1.82	
May	0.76	-0.21	0.01	0.51	
Jun	0.62	0.64	-0.41	0.57	
Seasonally Adjusted Series					
Jul	0.93	-0.26	0.68	-0.25	0.40
Aug	0.19	0.15	-0.37	0.15	0.18
Sep	0.41	-0.04	0.29	0.74	0.06
Oct	0.03	0.29	0.59	0.50	
Nov	-0.34	0.75	0.35	0.50	
Dec	0.04	0.43	0.28	0.84	
Jan	-0.04	0.15	0.18	0.09	
Feb	-0.21	0.45	0.95	0.32	
Mar	0.09	0.04	0.75	0.23	
Apr	0.31	0.51	0.32	0.72	
May	0.98	-0.03	0.19	0.66	
Jun	0.66	0.67	-0.40	0.57	

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

Period	Original Series				
	FY15	FY16	FY17	FY18	FY19
Jul	2.68	0.13	2.50	0.04	0.57
Aug	0.56	0.32	-0.94	0.39	0.21
Sep	0.03	-0.44	0.14	1.29	-0.66
Oct	-0.17	0.44	0.81	0.61	
Nov	-0.45	1.20	0.21	0.37	
Dec	-2.09	-1.61	-1.90	-0.56	
Jan	-0.45	-0.59	-0.97	-1.05	
Feb	-1.82	-0.68	0.32	-1.11	
Mar	0.52	0.54	1.87	-0.27	
Apr	1.41	2.38	1.73	1.46	
May	1.82	-0.74	-0.21	0.96	
Jun	1.18	1.38	-1.11	0.84	
Seasonally Adjusted Series					
Jul	1.35	-1.03	1.44	-0.88	-0.24
Aug	0.03	-0.13	-1.34	0.02	-0.12
Sep	0.04	-0.43	0.20	1.38	-0.58
Oct	-0.33	0.26	0.61	0.38	
Nov	-0.45	1.19	0.15	0.27	
Dec	-0.01	0.35	-0.05	1.27	
Jan	-0.20	-0.19	-0.41	-0.36	
Feb	-0.43	0.65	1.57	0.05	
Mar	-0.13	-0.06	1.29	-0.81	
Apr	0.07	1.00	0.32	0.04	
May	2.00	-0.63	-0.12	0.98	
Jun	1.05	1.18	-1.37	0.53	



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

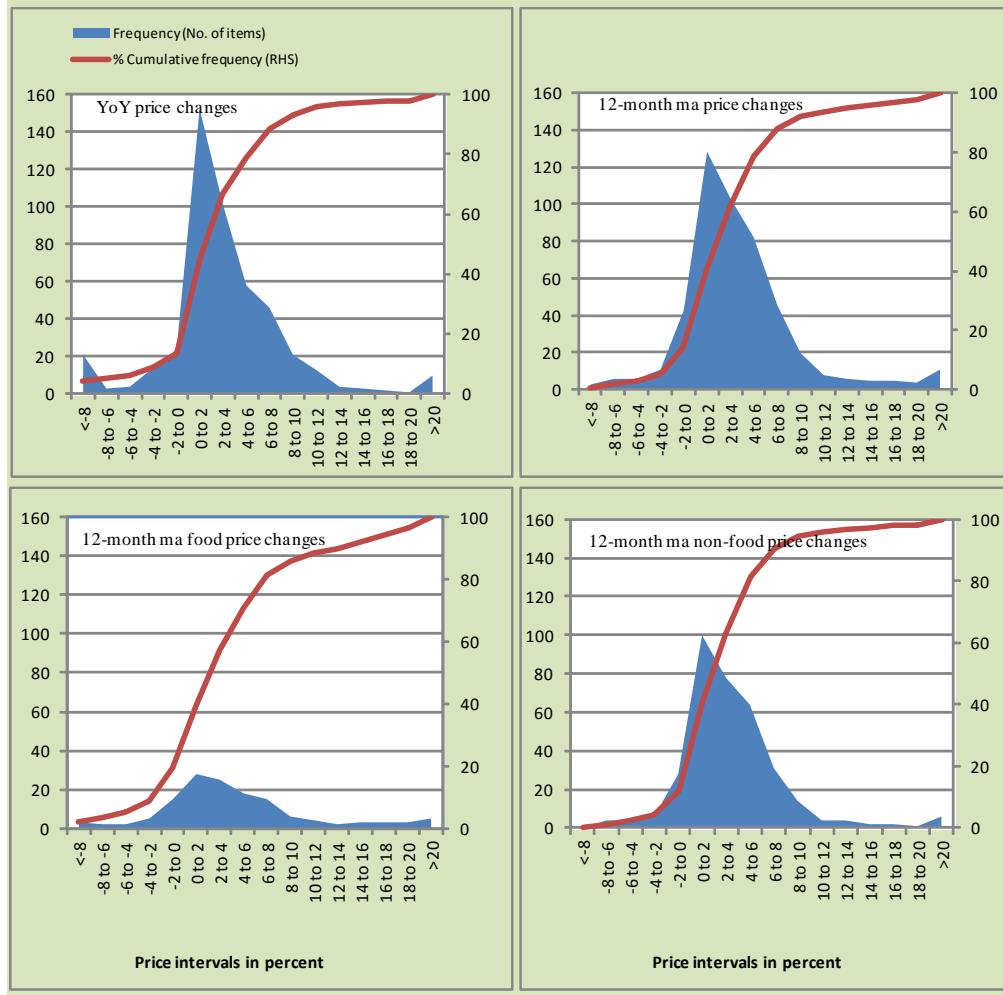
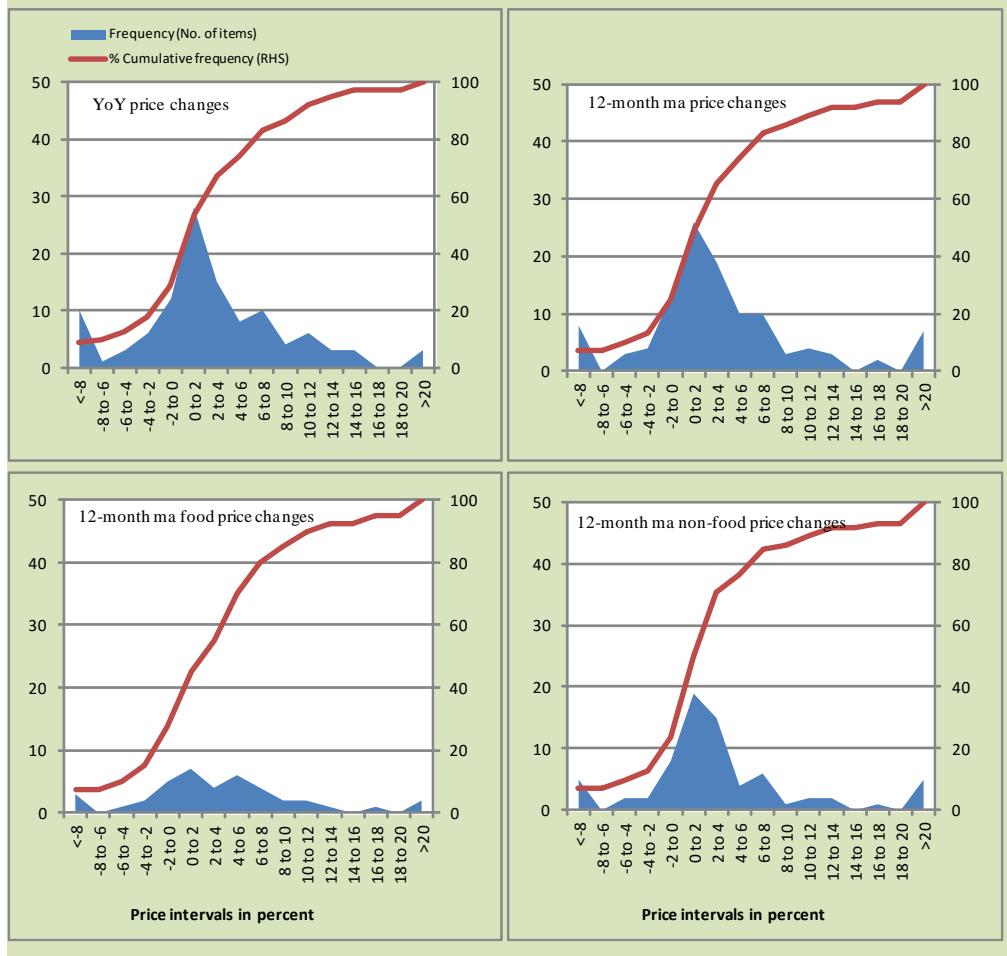
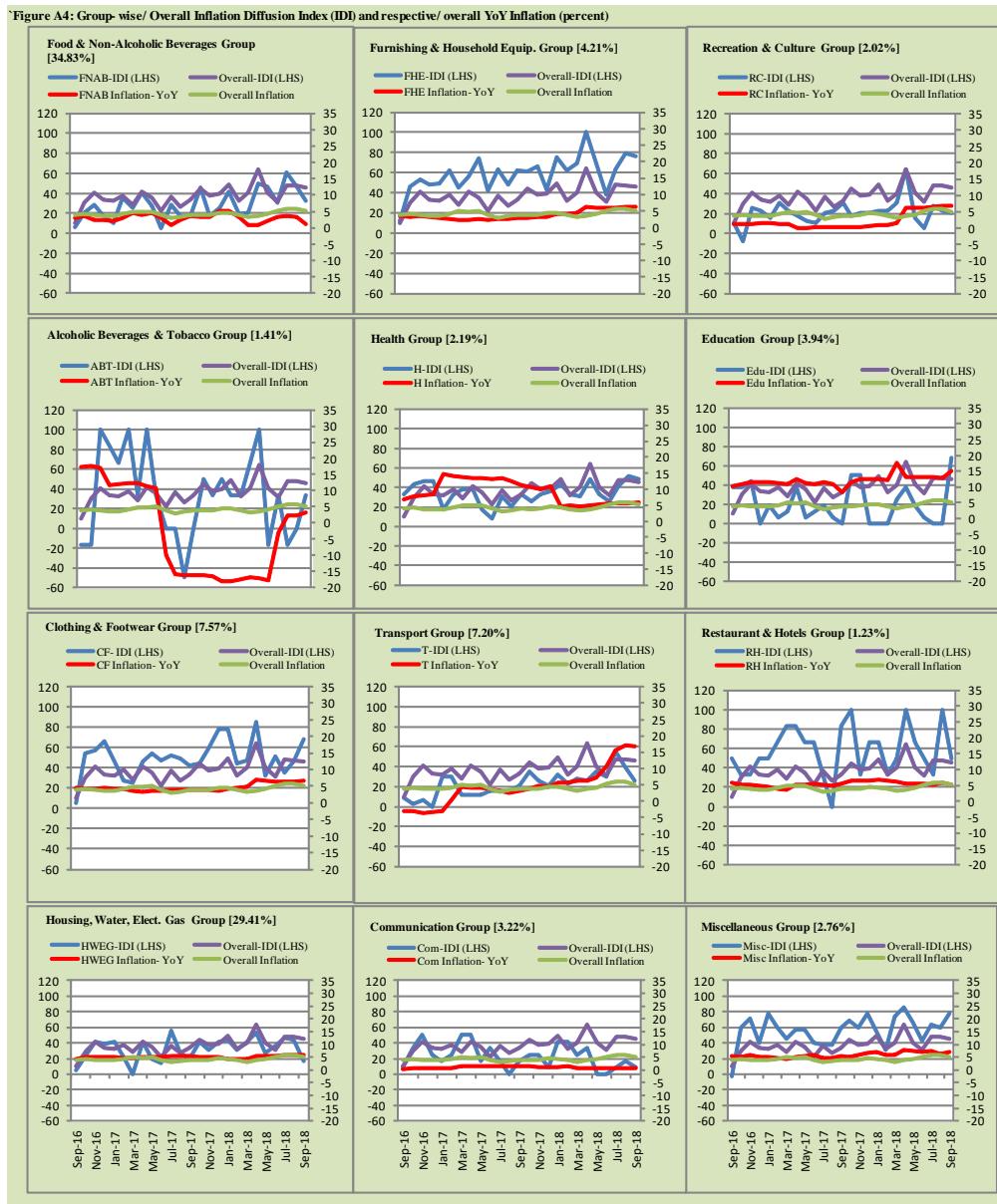


Figure A3: Frequency Distribution of Price Changes of WPI Commodities, September 2018





Annexure B

Technical Notes

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

reference month

w_i : Weights of i^{th} item

π_{it} : Inflation of i^{th} item

π_t : Overall inflation

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

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

Methodology for Estimating Inflation Diffusion Index for Pakistan

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

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

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

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

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

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