

Inflation Monitor

September 2017



State Bank of Pakistan

Statistics & DWH Department

ISSN 1992-8327 (print)

ISSN 1992-8335 (online)

The analysis in this document is based on data

- Provided by Pakistan Bureau of Statistics (PBS), for domestic inflation analysis
- Retrieved from IMF & World Bank websites for global inflation analysis

http://www.sbp.org.pk/publications/inflation_Monitor

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Review

Inflation in Brief

1. Headline CPI inflation (2007-08=100) is recorded at level of 3.9 percent on year-on-year basis in September 2017 as compared to 3.4 percent in the previous month and at level in the corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at level of 0.6 percent in September 2017 as compared to 0.2 percent in the previous month and corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.63 percent in September 2017 compared to 0.12 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis is recorded at 4.1 percent in September 2017 as compared to 4.2 percent in the previous month and 3.7 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 2017 and remained at level in previous month and corresponding month of last year.
5. Non-food, non-energy inflation measured by CPI Core (NFNE) on year-on-year basis is recorded at 5.4 percent in September 2017 as compared to 5.5 percent in the previous month. It was 4.8 percent in the corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.1 percent in September 2017 and remained at level in the previous month. Core NFNE inflation was 0.3 percent in the corresponding month of last year.

7. WPI inflation on year-on-year basis recorded at 1.6 percent in September 2017 as compared to 1.0 percent in the previous month and 3.4 percent during the corresponding month of last year.
8. WPI inflation on month-on-month basis recorded at 0.1 percent in September 2017 as compared to 0.3 percent in the previous month and -0.5 percent during the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 2.2 percent in September 2017 as compared to 0.5 percent in the previous month. It was 1.6 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at 1.6 percent in September 2017 as compared to 0.2 percent in the previous month. It was at zero level during 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 2017 are described below:

- Core RSC inflation on year-on-year basis is recorded at 4.2 percent in September 2017 as compared to 4.3 percent in the previous month and 4.7 percent during the corresponding month of last year.

11. Core RSC inflation on month-on-month basis is recorded at 0.1 percent in September 2017 compared to 0.2 percent in the previous month and 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**					
	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM		
Sep-16	3.9	0.2	4.0	0.1	3.8	0.2	4.8	0.3	3.7	0.1	4.7	0.2	3.4	-0.5	1.6	0.0
Oct-16	4.2	0.8	4.4	0.8	4.1	0.8	5.1	0.9	3.8	0.6	4.9	0.7	2.8	0.0	1.4	0.7
Nov-16	3.8	0.2	3.3	0.2	4.1	0.2	5.3	0.2	3.8	0.2	5.0	0.2	2.6	-0.2	0.6	0.3
Dec-16	3.7	-0.7	3.0	-1.9	4.2	0.2	5.2	0.1	3.7	0.1	4.7	0.2	3.1	-0.1	0.5	-0.4
Jan-17	3.7	0.2	2.6	-1.0	4.4	1.0	5.4	1.1	3.8	0.6	4.9	0.9	4.2	0.5	0.4	-0.6
Feb-17	4.2	0.3	3.7	0.3	4.6	0.3	5.3	0.2	4.1	0.2	4.9	0.2	5.3	0.5	1.6	0.4
Mar-17	4.9	0.8	5.0	1.9	4.9	0.1	5.2	0.1	4.5	0.2	5.0	0.2	6.4	0.7	3.9	2.0
Apr-17	4.8	1.4	4.4	1.7	5.1	1.2	5.5	1.3	4.8	0.8	5.3	1.1	6.0	0.9	2.9	-0.7
May-17	5.0	0.0	4.9	-0.2	5.1	0.2	5.5	0.2	4.8	0.2	5.3	0.3	5.2	-0.2	2.9	-0.7
Jun-17	3.9	-0.4	2.4	-1.1	5.0	0.1	5.5	0.1	4.2	0.0	4.5	-0.4	3.3	-0.5	1.9	0.1
Jul-17	2.9	0.3	-0.1	0.0	5.1	0.6	5.6	0.7	4.0	0.4	4.4	0.4	0.7	-0.2	0.2	-0.6
Aug-17	3.4	0.2	1.2	0.4	5.0	0.1	5.5	0.1	4.2	0.1	4.3	0.2	1.0	0.3	0.5	0.2
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
* NFNE is Non-food non-energy ** Relatively Stable Component of CPI *** SPI for all income groups combined																

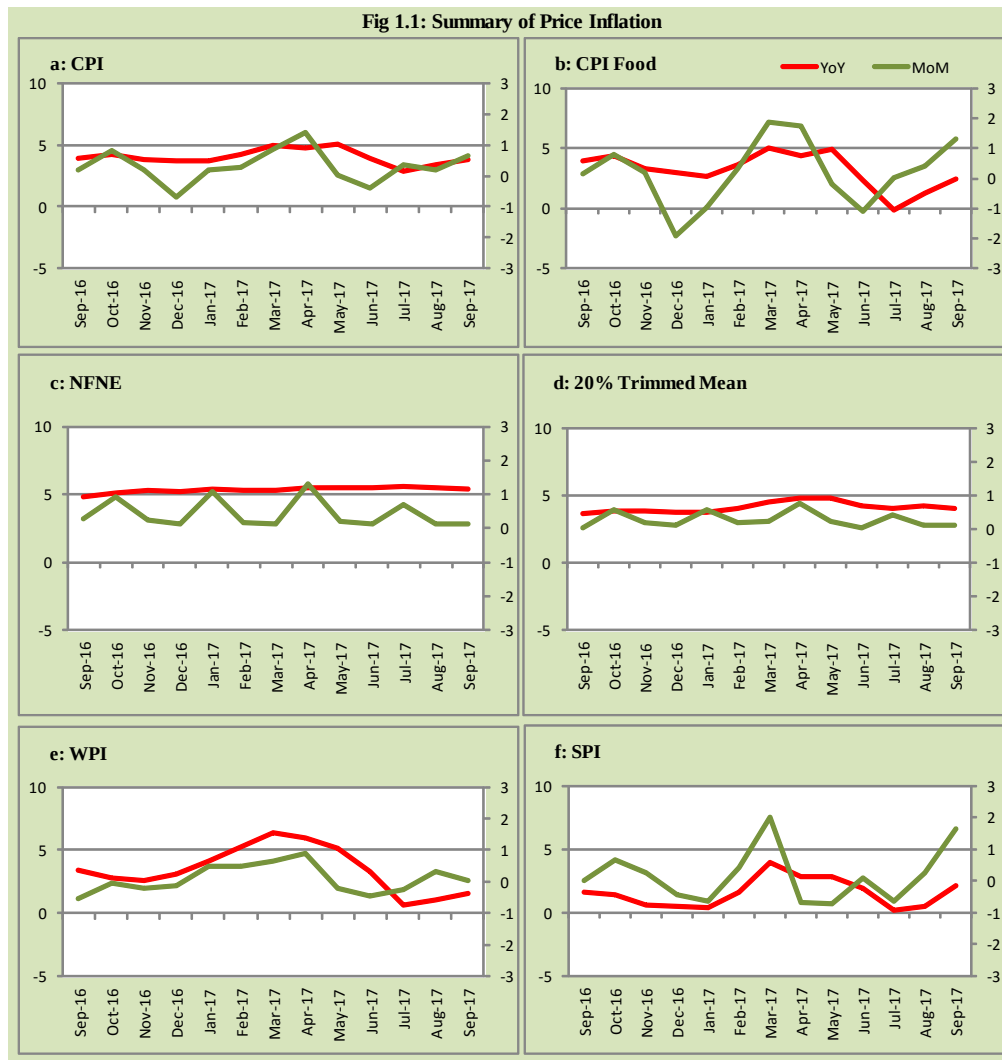
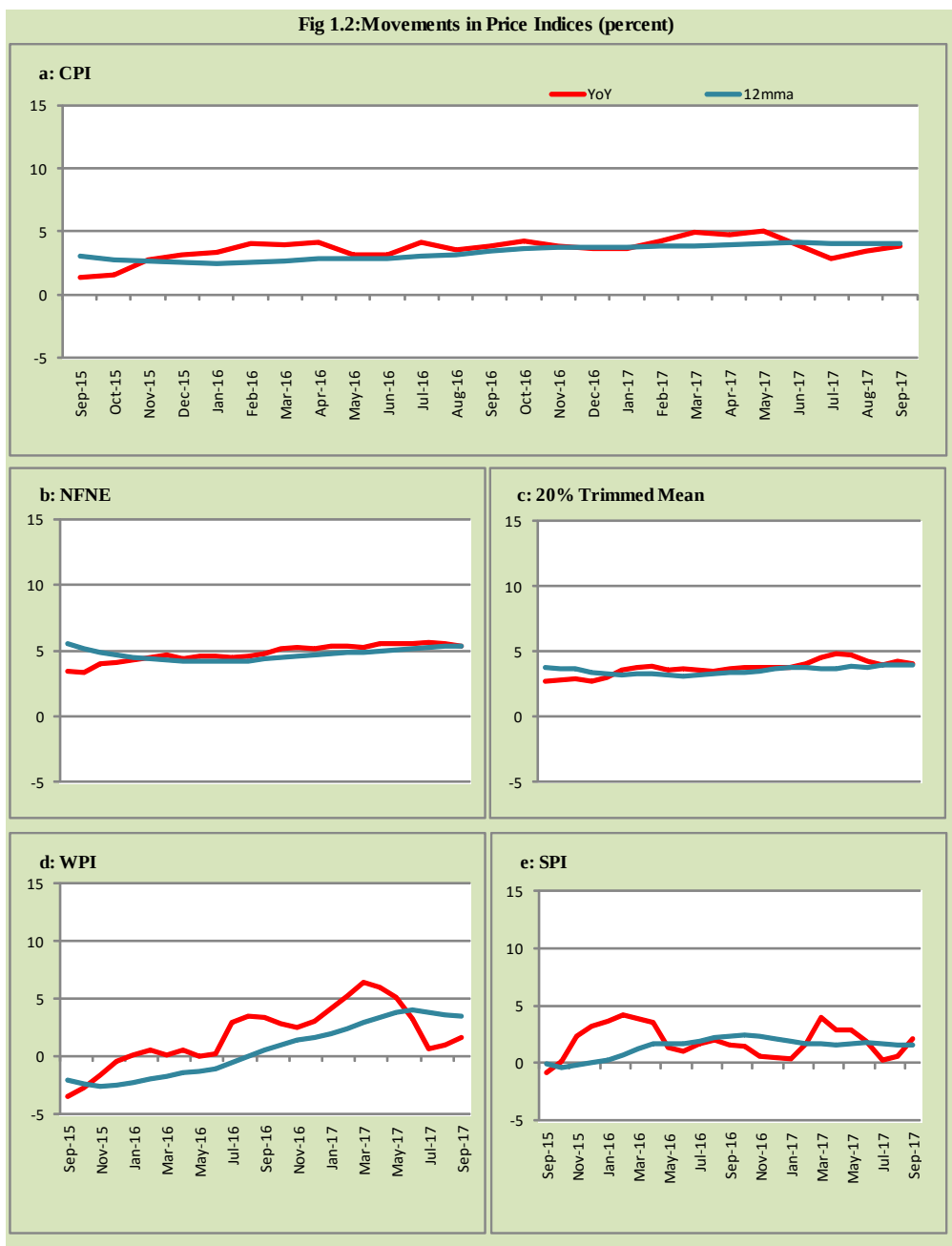


Fig 1.2: Movements in Price Indices (percent)



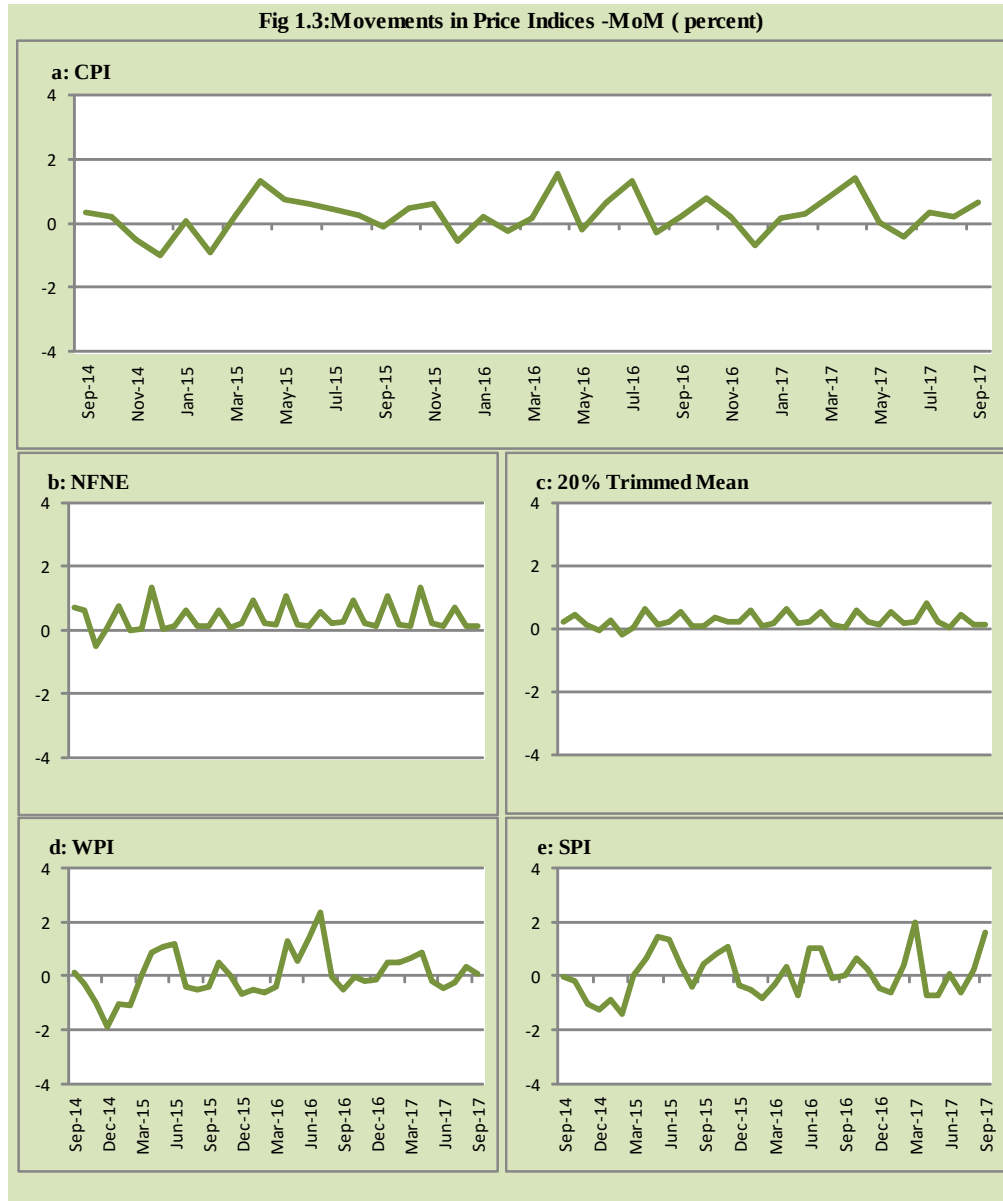
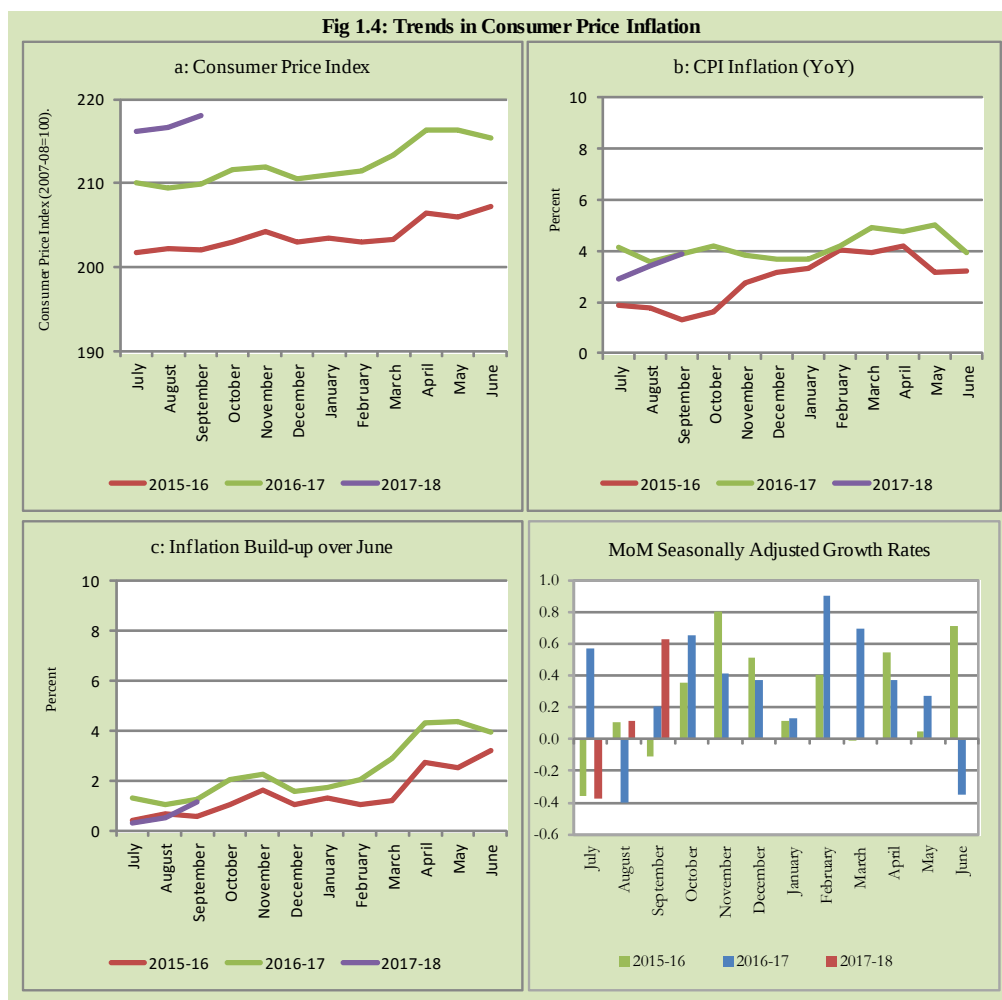


Fig 1.4: Trends in Consumer Price Inflation



2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan showed mixed trend during September 2017. Among these five cities, the lowest inflation was observed in Peshawar at 2.4 percent while the highest inflation was observed in Lahore at 4.3 percent (Table A6 of annexure-A).

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

	Sep-16		Aug-17		Sep-17	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	0.2	3.9	0.2	3.4	0.6	3.9
Islamabad	1.4	3.8	0.0	5.0	0.4	3.9
Karachi	-0.1	3.4	0.0	1.7	0.9	2.7
Lahore	0.7	2.0	0.6	5.1	0.0	4.3
Peshawar	0.0	2.0	0.3	2.1	0.3	2.4
Quetta	-0.8	4.1	0.1	2.9	0.4	4.2

3. Income Group wise Inflation

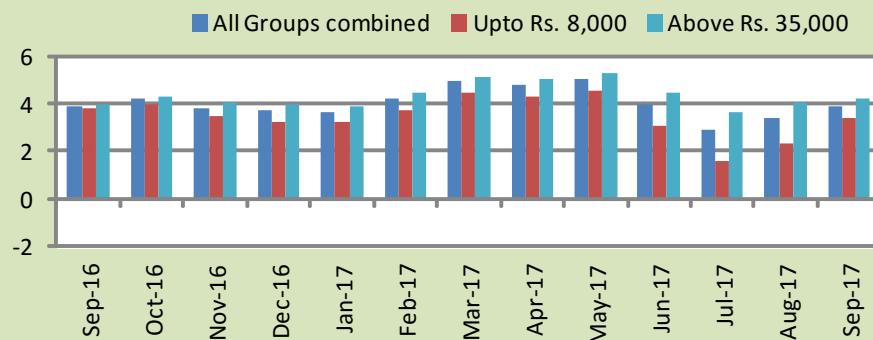
Income group-wise data shows that income group above Rs. 35,000 witnessed higher inflation as compared to other quintiles as well as overall CPI during September 2017 in General, Food and Non-food groups. The income groups (Up to Rs. 8, 000) and (Rs. 8,001- 12,000) observed lowest inflation in general CPI and income groups (Up to Rs. 8, 000), (Rs. 12,001- 18,000) and (Rs. 18,001- 35,000) observed lowest inflation in food groups among income groups during the month of September 2017 (Table A7 of annexure-A).

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

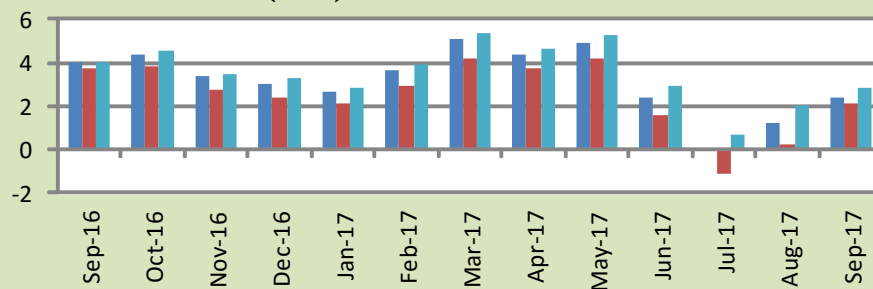
Income Groups	General			Food			Non-food		
	Sep-16	Aug-17	Sep-17	Sep-16	Aug-17	Sep-17	Sep-16	Aug-17	Sep-17
All Groups Combined	3.9	3.4	3.9	4.0	1.2	2.4	3.8	5.0	4.9
Up to Rs. 8,000	3.8	2.4	3.4	3.8	0.2	2.1	3.9	5.0	5.0
Rs. 8,001- 12,000	3.8	2.7	3.4	3.8	0.6	2.2	3.8	4.9	4.8
Rs. 12,001- 18,000	3.8	2.8	3.5	4.0	0.7	2.1	3.6	4.9	4.8
Rs. 18,001- 35,000	3.8	2.9	3.5	4.1	0.9	2.1	3.5	4.6	4.6
Above Rs. 35,000	3.9	4.0	4.2	4.0	2.0	2.8	3.9	5.0	5.0

Fig 3.1: Income Group- wise Inflation

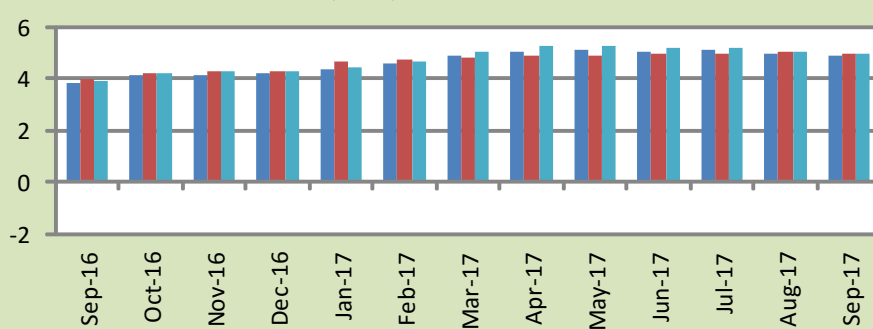
a: CPI Overall Inflation (YoY)



b: CPI Food Inflation (YoY)



c: CPI Non-Food Inflation (YoY)



4. Weighted Contribution

The weighted contribution of food group in the overall inflation increased to 26.03 percent during September 2017 from 15.23 percent in previous month. It was 42.70 percent in September 2016.

The weighted contribution of non-food group decreased to 73.98 percent in September 2017 from 84.77 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-16	42.70	9.45	29.26	-4.86	10.72	12.72
Oct-16	43.11	8.24	30.79	-4.55	10.57	11.84
Nov-16	36.64	9.16	33.91	-5.95	12.22	14.02
Dec-16	33.90	9.91	35.29	-5.45	12.65	13.70
Jan-17	29.56	9.82	35.77	-4.98	12.73	17.10
Feb-17	35.54	8.29	30.79	0.59	10.97	13.82
Mar-17	41.86	6.08	26.25	5.34	9.03	11.44
Apr-17	37.84	5.94	28.43	5.11	11.07	11.60
May-17	40.46	6.15	27.25	4.96	9.55	11.63
Jun-17	24.92	8.04	34.43	5.77	11.93	14.92
Jul-17	-1.32	11.08	48.14	6.37	16.42	19.31
Aug-17	15.23	9.58	41.22	4.54	13.48	15.94
Sep-17	26.02	8.46	36.50	4.83	9.28	14.91

5. Inflation Diffusion Index

Table 5.1 Inflation Diffusion Index - based on MoM change

	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
General	10.3	30.1	41.1	33.5	32.3	38.0	28.5	41.6	35.3	22.4	36.8	26.8	33.1
Food & Non-Alcoholic Beverages	6.1	20.0	28.2	17.9	10.5	35.1	25.7	40.4	27.1	5.3	28.7	17.5	17.4
Alcoholic Beverages & Tobacco	-16.7	-16.7	100.0	83.3	66.7	100.0	33.3	100.0	33.3	0.0	0.0	-50.0	0.0
Clothing & Footwear	5.1	54.2	57.6	66.1	45.8	27.1	25.4	45.8	54.2	47.5	52.5	49.2	42.4
Housing, Water, Elect, Gas & other Fuels	5.6	25.0	41.7	38.9	41.7	22.2	0.0	41.7	19.4	13.9	55.6	27.8	19.4
Furnishing & Household Equip. Maintenance etc	11.6	46.4	53.6	47.8	49.3	62.3	44.9	56.5	73.9	42.0	63.8	47.8	62.3
Health	33.3	43.6	46.2	46.2	17.9	33.3	38.5	38.5	17.9	7.7	30.8	20.5	33.3
Transport	9.3	2.3	7.0	0.0	30.2	30.2	11.6	11.6	11.6	16.3	16.3	16.3	20.9
Communication	8.3	33.3	50.0	25.0	16.7	25.0	50.0	50.0	16.7	33.3	16.7	0.0	16.7
Recreation & Culture	10.3	-7.7	25.6	23.1	15.4	30.8	23.1	17.9	12.8	10.3	20.5	23.1	30.8
Education	37.5	37.5	43.8	0.0	18.8	6.3	12.5	37.5	6.3	12.5	18.8	6.3	0.0
Restaurant & Hotels	50.0	33.3	33.3	50.0	50.0	66.7	83.3	83.3	66.7	66.7	33.3	0.0	83.3
Miscellaneous	-2.9	60.0	71.4	40.0	77.1	60.0	45.7	57.1	57.1	40.0	37.1	37.1	60.0
NFNE	11.5	34.6	45.6	37.6	39.1	37.6	28.1	40.2	38.5	28.4	42.3	33.4	38.2

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-16		Aug-17		Sep-17	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	0.07	0.27	-1.40	-0.19	0.40	2.10
2	Wheat Flour Bag	10 Kg	-0.82	-0.05	-3.01	-0.68	-2.09	0.90
3	Rice Basmati Sup. Qlty.	Kg	-5.68	0.06	12.10	0.48	12.75	0.65
4	Pulse Masoor (Washed)	Kg	7.22	-1.14	-18.10	-1.71	-19.03	-2.27
5	Pulse Moong (Washed)	Kg	-2.56	-1.55	-18.21	-1.84	-17.75	-0.98
6	Pulse Mash (Washed)	Kg	34.58	-3.91	-27.13	-2.66	-25.01	-1.11
7	Pulse Gram	Kg	37.24	-0.82	-19.87	-1.96	-19.49	-0.35
8	Vegetable Ghee (Loose)	Kg	2.19	1.65	5.09	-0.05	3.73	0.34
9	Sugar Refined	Kg	10.22	-0.21	-15.56	6.93	-21.05	-6.69
10	Milk Fresh (Unboiled)	Ltr	3.92	0.00	3.56	0.10	3.56	0.00
11	Tea- Tapal Danedar	200 Gm	0.66	0.54	9.97	-0.55	9.40	0.02
12	Beef With Bone Av. Qlty.	Kg	2.83	0.03	7.10	1.96	6.77	-0.28
13	Mutton Av. Qlty.	Kg	5.11	0.18	8.70	1.83	8.64	0.13
14	Chicken Farm Broiler (Live)	Kg	-4.01	-3.99	14.15	-5.58	-0.36	-16.19
15	Eggs Farm	Doz	7.16	5.39	2.53	2.21	1.18	4.00
16	Potatoes	Kg	29.80	1.19	9.74	1.91	8.98	0.49
17	Onion	Kg	-38.47	12.74	44.09	33.88	153.48	98.33
18	Tomatoes	Kg	10.34	-4.91	-19.85	25.75	33.57	58.46
19	Ginger	Kg	-15.96	20.65	31.00	12.79	11.35	2.56
20	Garlic	Kg	80.01	9.50	-25.55	-1.82	-33.79	-2.62

7. Global Commodity Prices

Table 7.1 Changes in Major Global Indices (percent)*

Item/ Group	Jun-16		May-17		Jun-17	
	YoY	MoM	YoY	MoM	YoY	MoM
Overall	-18.1	6.0	17.4	-0.1	8.2	-2.3
Food	4.7	3.8	1.1	-1.6	1.2	3.9
Metals	-18.1	-3.5	18.1	-6.4	17.5	-3.9
Energy	-27.2	10.9	28.9	2.5	11.0	-4.4
Agricultural Raw Material	-10.3	-0.1	5.8	-1.4	3.5	-2.3
Cotton	-3.5	1.4	25.6	0.3	26.1	1.8

*The latest prices for the month of July, 2017 onwards are not available till date

Source: IMF

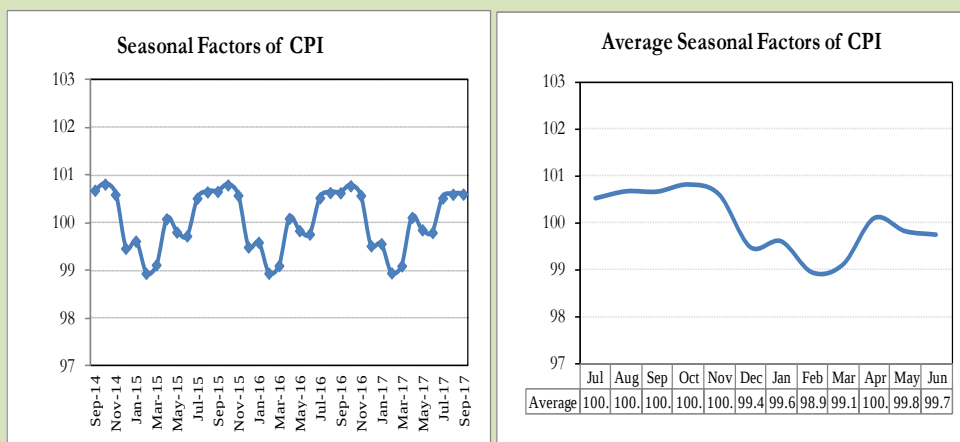
8. Seasonal Adjustment in CPI

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 2017 has been used for seasonal adjustment analysis. The seasonal analysis is carried out without taking trading-day or Islamic calendar month's effects.

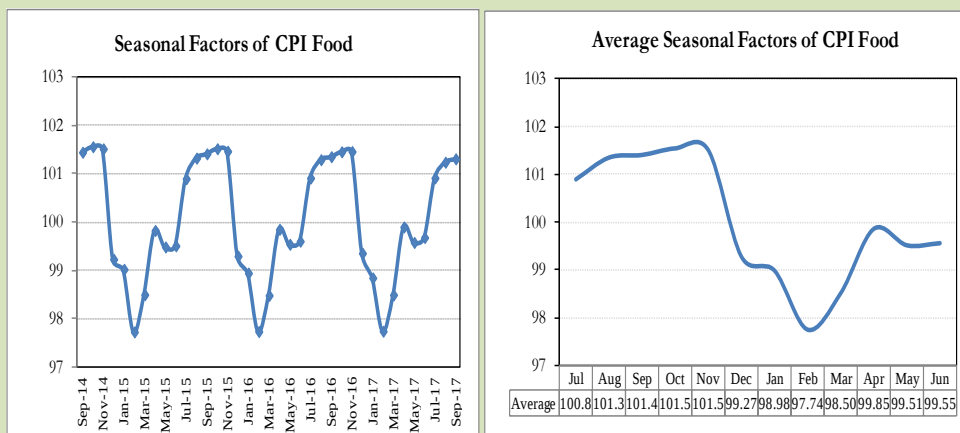
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the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

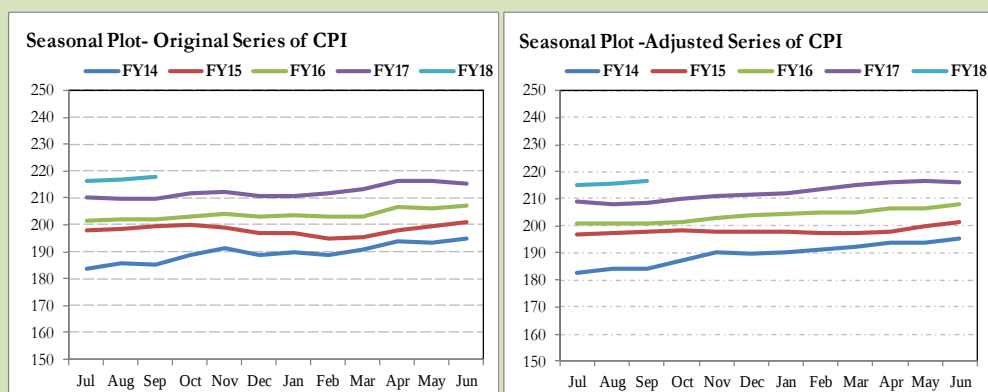
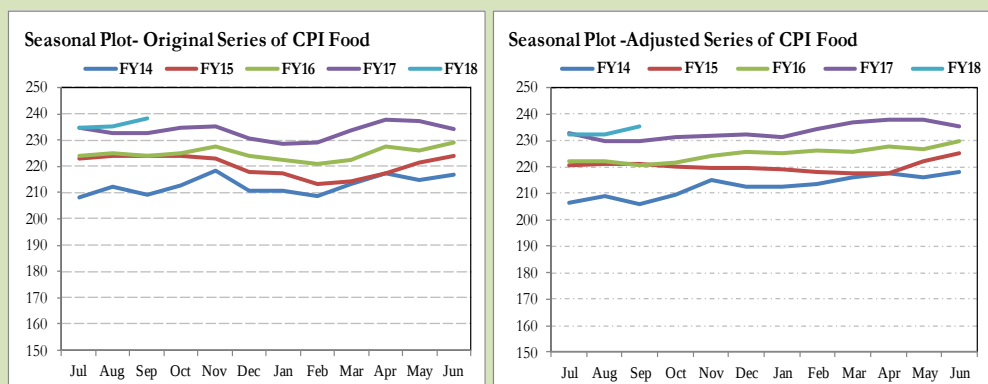


Fig. 8.4 Seasonal Plots of CPI (Food)



Seasonally adjusted CPI for September 2017 stood at 216.67 against 217.98 in original series showing a decrease of 1.31 on account of adjustment of upward seasonality in September 2017.

Seasonally adjusted CPI food group for September 2017 stood at 235.34 against 238.43 in original series showing a decrease of 3.09 on account of adjustment of upward seasonality in September 2017.

Month-on-month change of seasonally adjusted CPI series stood at 0.63% reflecting an increase during September 2017 over previous month and an increase of 0.63% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at 1.22% reflecting an increase during September 2017 over previous month and an increase of 1.29% 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 2017 (corresponding to the seasonally adjusted month-on-month rate) is 7.82 percent.

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

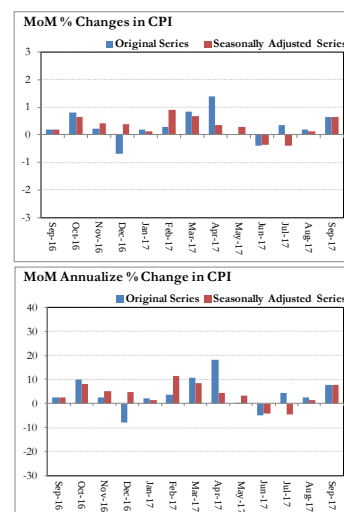
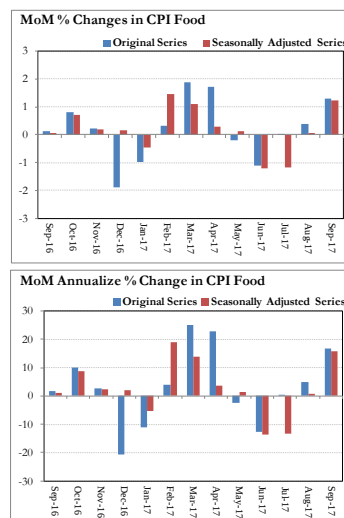


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



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

	Weights	MoM change			YoY change		
		Sep-16	Aug-17	Sep-17	Sep-16	Aug-17	Sep-17
I. Food Group	37.5	0.1	0.4	1.3	4.0	1.2	2.4
Food & Non-Alcoholic	34.8	0.2	0.4	1.4	3.1	2.2	3.5
Alcoholic Beverages & Tobacco	1.4	-0.4	-0.1	-0.5	17.5	-16.2	-16.3
Restaurant & Hotels	1.2	0.1	0.0	0.9	5.9	4.8	5.6
II. Non-Food Group	62.5	0.2	0.1	0.2	3.8	5.0	4.9
Clothing & Footwear	7.6	0.1	0.2	0.1	4.4	3.9	3.9
Housing, Water, Elect, Gas & other Fuels	29.4	0.0	0.0	0.0	4.3	5.3	5.3
Furnishing & Household Equip. Maintenance etc	4.2	0.0	0.1	0.5	3.4	2.6	3.1
Health	2.2	1.4	0.1	0.4	7.0	12.5	11.4
Transport	7.2	0.1	-0.3	0.6	-3.0	2.7	3.2
Communication	3.2	0.0	0.1	0.0	0.4	1.6	1.7
Recreation & Culture	2.0	0.2	0.1	0.2	1.4	0.3	0.3
Education	3.9	2.4	0.0	0.0	10.2	10.9	8.3
Miscellaneous	2.8	-0.2	0.6	0.6	5.5	4.8	5.5
Headline	100.0	0.2	0.2	0.6	3.9	3.4	3.9

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

Groups	% changes	No. of items in each inflation range									
		Total number of items		Decrease or no change (0% or less)		Subdued increase (>0% but <5%)		Moderate increase (5% but less than 10%)		Double digit increase (10% or more)	
		Sep-17	Sep-16	Sep-17	Sep-16	Sep-17	Sep-16	Sep-17	Sep-16	Sep-17	Sep-16
I. Food Group	2.4	128	129	27	40	59	48	18	27	24	14
Food & Non-Alcoholic Beverages	3.5	116	117	27	37	57	45	15	21	17	14
Alcoholic Beverages & Tobacco	-16.3	6	6	0	3	0	2	0	1	6	0
Restaurant & Hotels	5.6	6	6	0	0	2	1	3	5	1	0
II. Non-Food Group	4.9	348	348	102	74	148	177	73	84	25	13
Clothing & Footwear	3.9	59	59	6	8	33	31	18	20	2	0
Housing, Water, Elect, Gas & other Fuels	5.3	36	36	14	11	7	11	14	13	1	1
Furnishing & Household Equip. Maintenance etc	3.1	69	69	6	4	54	51	9	14	0	0
Health	11.4	39	39	11	6	15	22	6	8	7	3
Transport	3.2	43	43	29	25	8	13	5	3	1	2
Communication	1.7	12	12	5	3	4	4	2	3	1	2
Recreation & Culture	0.3	39	39	24	15	9	18	2	5	4	1
Education	8.3	16	16	3	1	3	4	7	8	3	3
Miscellaneous	5.5	35	35	4	1	15	23	10	10	6	1
Overall	3.9	476	477	129	114	207	225	91	111	49	27
Note: Prices of 11 seasonal items were not reported during the month.											

Note: Prices of 11 seasonal items were not reported during the month.

Table A3: Top and Bottom 15 Contributors to CPI Inflation (YoY) in September 2017					
Top 15 Contributors		Weights	YoY Change		Weighted Contribution
Items/ Contributors			Sep-16	Sep-17	
Ranked by Weighted Contribution					
1	House Rent	21.81	5.79	7.19	34.61
2	Education	0.52	-38.47	153.49	18.91
3	Milk Fresh	3.94	10.19	8.27	9.28
4	Fresh Fruits	6.68	3.79	3.62	7.96
5	Meat	2.43	3.61	7.41	5.87
6	Onion	1.58	-5.89	13.92	4.36
7	Drug Medicine	1.27	6.70	16.82	4.18
8	Rice	3.03	-7.63	7.91	4.02
9	Chicken	0.43	10.34	33.57	3.44
10	Tea	0.84	-2.51	11.10	2.94
11	Motor Fuel	0.88	8.43	7.35	2.42
12	Tailoring	1.49	4.22	5.70	2.29
13	Personal Care	1.23	5.90	5.63	2.27
14	Ready Made Food	0.84	8.01	6.15	1.85
15	Vegetable Ghee	1.73	4.55	3.39	1.63
Total		48.72			106.04
Bottom 15 Contributors					
1	Cigarettes	1.39	17.54	-16.51	-10.38
2	Sugar	1.04	10.22	-21.05	-6.88
3	Fresh Vegetables	0.21	34.58	-25.01	-2.33
4	Wheat Flour	4.16	0.25	-2.02	-2.17
5	Pulse Mash (Washed)	0.24	37.24	-19.49	-1.94
6	Tomatoes	0.23	-2.56	-17.75	-1.47
7	Pulse Gram	0.27	7.32	-19.11	-1.36
8	Pulse Moong	0.15	31.54	-12.57	-0.74
9	Pulse Masoor	0.57	0.62	-1.51	-0.31
10	Besan	0.16	45.33	-3.04	-0.18
11	Gram Whole	0.54	1.26	-1.09	-0.18
12	Text Books	1.36	-4.01	-0.36	-0.09
13	Spices	1.71	13.06	-0.14	-0.09
14	Wheat	0.02	0.42	-10.44	-0.08
15	Fish	0.30	1.99	-0.76	-0.06
Total		12.37			-28.25

Table A3.1: Top and Bottom 15 Contributors to CPI Inflation (MoM) in September 2017

<u>Top 15 Contributors</u>		Weights	<u>MoM Change</u>		Weighted Contribution
Items/ Contributors			Aug-17	Sep-17	
Ranked by Weighted Contribution					
1	Onion	0.52	-38.47	153.49	18.91
2	Tomatoes	0.43	10.34	33.57	3.44
3	Sugar	1.27	6.70	16.82	4.18
4	Meat	1.58	-5.89	13.92	4.36
5	Rice	0.84	-2.51	11.10	2.94
6	Fresh Vegetables	0.46	29.80	8.98	1.25
7	Milk Fresh	3.94	10.19	8.27	9.28
8	Personal Care	3.03	-7.63	7.91	4.02
9	Potatoes	2.43	3.61	7.41	5.87
10	Eggs	0.88	8.43	7.35	2.42
11	Tailoring	21.81	5.79	7.19	34.61
12	Spices	0.59	8.12	6.79	1.31
13	Woolen Cloth	0.33	5.53	6.75	0.64
14	Construction Wage Rate	0.21	5.44	6.63	0.44
15	Personal Equipments	0.84	8.01	6.15	1.85
Total		39.18			95.54
Bottom 15 Contributors					
1	Fresh Fruits	21.81	5.79	7.19	34.61
2	Chicken	6.68	3.79	3.62	7.96
3	Wheat Flour	4.40	0.00	0.00	0.00
4	Motor Fuel	4.16	0.25	-2.02	-2.17
5	Tea	3.94	10.19	8.27	9.28
6	Pulse Mash (Washed)	3.15	0.20	1.59	0.79
7	Pulse Gram	3.03	-7.63	7.91	4.02
8	Pulse Moong	2.70	-2.00	0.10	0.06
9	Pulse Masoor	2.43	3.61	7.41	5.87
10	Besan	2.07	-0.22	3.73	1.31
11	Cigarettes	1.86	6.42	1.79	0.96
12	Cooking Oil	1.75	-3.06	3.30	0.95
13	Dry Fruits	1.73	4.55	3.39	1.63
14	Wheat Product	1.71	13.06	-0.14	-0.09
15	Wheat	1.58	-5.89	13.92	4.36
Total		63.03			69.56

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in September 2017					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Sep-16	Sep-17	
A. Ranked by Percentage Change					
1	Onion	0.52	-38.47	153.49	18.91
2	Drug Medicine	0.43	10.34	33.57	3.44
3	Chicken	1.27	6.70	16.82	4.18
4	Rice	1.58	-5.89	13.92	4.36
5	Fresh Fruits	0.84	-2.51	11.10	2.94
6	Tea	0.46	29.80	8.98	1.25
7	Education	3.94	10.19	8.27	9.28
8	Potatoes	3.03	-7.63	7.91	4.02
9	Tailoring	2.43	3.61	7.41	5.87
10	Doctor (Mbbs) Clinic Fee	0.88	8.43	7.35	2.42
11	Meat	21.81	5.79	7.19	34.61
12	House Rent	0.59	8.12	6.79	1.31
13	Cleaning & Laundering	0.33	5.53	6.75	0.64
14	Medical Equipments	0.21	5.44	6.63	0.44
15	Construction Wage Rate	0.84	8.01	6.15	1.85
Total		39.18			95.54
B. Ranked by Weights					
1	House Rent	21.81	5.79	7.19	34.61
2	Milk Fresh	6.68	3.79	3.62	7.96
3	Electricity	4.40	0.00	0.00	0.00
4	Wheat Flour	4.16	0.25	-2.02	-2.17
5	Education	3.94	10.19	8.27	9.28
6	Communication & Apparatus	3.15	0.20	1.59	0.79
7	Motor Fuel	3.03	-7.63	7.91	4.02
8	Transport Services	2.70	-2.00	0.10	0.06
9	Meat	2.43	3.61	7.41	5.87
10	Vegetable Ghee	2.07	-0.22	3.73	1.31
11	Fresh Fruits	1.86	6.42	1.79	0.96
12	Cooking Oil	1.75	-3.06	3.30	0.95
13	Cotton Cloth	1.73	4.55	3.39	1.63
14	Fresh Vegetables	1.68	13.06	-0.14	-0.09
15	Rice	1.58	-5.89	13.92	4.36
Total		63.00			69.56
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in YoY change in CPI, which is 3.9 percent in September, 2017.					

Table A3.3: Top Ten Contributors to CPI Food Inflation (YoY) in September 2017

Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Sep-16	Sep-17	
A. Ranked by Weighted Contribution					
1	Milk Fresh	0.52	-38.47	153.49	18.91
2	Fresh Fruits	6.68	3.79	3.62	7.96
3	Meat	2.43	3.61	7.41	5.87
4	Onion	1.58	-5.89	13.92	4.36
5	Rice	0.43	10.34	33.57	3.44
6	Chicken	0.84	-2.51	11.10	2.94
7	Tea	1.23	5.90	5.63	2.27
8	Ready Made Food	2.07	-0.22	3.73	1.31
9	Vegetable Ghee	0.46	29.80	8.98	1.25
10	Potatoes	1.86	6.42	1.79	0.96
Total		18.11			49.28
B. Ranked by Percentage Change					
1	Onion	0.52	-38.47	153.49	18.91
2	Chicken	0.43	10.34	33.57	3.44
3	Rice	1.58	-5.89	13.92	4.36
4	Fresh Fruits	0.84	-2.51	11.10	2.94
5	Tea	0.46	29.80	8.98	1.25
6	Potatoes	2.43	3.61	7.41	5.87
7	Meat	1.23	5.90	5.63	2.27
8	Honey	0.04	4.12	4.81	0.08
9	Ready Made Food	0.10	0.03	4.15	0.07
10	Vegetable Ghee	0.03	0.46	4.14	0.03
Total		7.66			39.24
C. Ranked by Weights					
1	Milk Fresh	6.68	3.79	3.62	7.96
2	Wheat Flour	4.16	0.25	-2.02	-2.17
3	Meat	2.43	3.61	7.41	5.87
4	Vegetable Ghee	2.07	-0.22	3.73	1.31
5	Fresh Fruits	1.86	6.42	1.79	0.96
6	Cooking Oil	1.75	-3.06	3.30	0.95
7	Fresh Vegetables	1.71	13.06	-0.14	-0.09
8	Rice	1.58	-5.89	13.92	4.36
9	Cigarettes	1.39	17.54	-16.51	-10.38
10	Chicken	1.36	-4.01	-0.36	-0.09
Total		25.01			8.70
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in YoY change in CPI Food, which is 2.4 percent in September, 2017.					

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in September 2017					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Sep-16	Sep-17	
A. Ranked by Weighted Contribution					
1	House Rent	21.81	5.79	7.19	34.61
2	Education	3.94	10.19	8.27	9.28
3	Drug Medicine	1.27	6.70	16.82	4.18
4	Motor Fuel	3.03	-7.63	7.91	4.02
5	Tailoring	0.88	8.43	7.35	2.42
6	Personal Care	1.49	4.22	5.70	2.29
7	Cotton Cloth	0.84	8.01	6.15	1.85
8	Doctor (Mbbs) Clinic Fee	1.73	4.55	3.39	1.63
9	Woolen Cloth	0.97	4.74	4.77	1.36
10	Ready Made Garments	0.59	8.12	6.79	1.31
Total		36.57			62.96
B. Ranked by Percentage Change					
1	Drug Medicine	1.27	6.70	16.82	4.18
2	Education	3.94	10.19	8.27	9.28
3	Tailoring	3.03	-7.63	7.91	4.02
4	Doctor (Mbbs) Clinic Fee	0.88	8.43	7.35	2.42
5	House Rent	21.81	5.79	7.19	34.61
6	Cleaning & Laundering	0.59	8.12	6.79	1.31
7	Medical Equipments	0.33	5.53	6.75	0.64
8	Construction Wage Rate	0.21	5.44	6.63	0.44
9	Motor Fuel	0.84	8.01	6.15	1.85
10	Personal Care	1.49	4.22	5.70	2.29
Total		34.41			61.05
C. Ranked by Weights					
1	House Rent	21.81	5.79	7.19	34.61
2	Electricity	4.40	0.00	0.00	0.00
3	Education	3.94	10.19	8.27	9.28
4	Communication & Apparatus	3.15	0.20	1.59	0.79
5	Motor Fuel	3.03	-7.63	7.91	4.02
6	Transport Services	2.70	-2.00	0.10	0.06
7	Cotton Cloth	1.73	4.55	3.39	1.63
8	Gas	1.58	0.00	0.00	0.00
9	Footware	1.55	0.92	0.58	0.19
10	Personal Care	1.49	4.22	5.70	2.29
Total		45.39			52.87
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 4.9 percent in September, 2017.					

Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: September 2017

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	Garlic, Pulse Mash (Washed), Sugar Refined, Arvi, Pulse Gram, Pulse Masoor (Whole).	Honey Langanese 500 Gm., Ice Cream Walls, Gram Whole Yellow Av.Qlty, Sweetmelon (Garma).	Cardamom Small Av.Qlty, Tapal Danedar Tea 200 Gm, Potatoes, Mutton Av.Qlty., Groundnuts (With Shell).	Onion, Spinach, Mango Kalmi, Tomatoes, Tea Lipton Yellow Label 200 Gm, Coconut Dry Av.Qlty., Rice Basmati Broken Av.Ql, Turai, Rice Basmati 385/386, Rice Basmati Sup. Qlty.
Alcoholic Beverages & Tobacco	Cigarettes Capstan 20,S, Cigarettes Morven Gold 20,S, Cigarettes K-20,S.	Cigarettes Gold Leaf 20,S, Betel Leaves.	Betel Nuts.	
Clothing & Footwear	Gents Shoe, Art 1109 Servis, Child Shoe Power Lite Bata, Sports Shoes, Ladies Spoung Chappal Bata, Ladies Sandal Bata, Gents Sandal Bata.	Handkerchief Sup. Qlty Pak, Pullover Gents Oxford/Bon, Brassier Sup.Qlty, Azarband Cotton Avg.Qlty, Secondhand Winter Jacket, Shoe Repair Half Sole.	Brassier Av.Qlty, Dry Cleaning Suit Coat Pant, Tailoring Charges Pant (Men), Heavy Wt Suiting Law.Pur Sup. Qlty, Heavy Wt Suiting Law.Pur Av. Qlty.	
Housing, Water, Elect, Gas & other Fuels	Elect.Charges Upto 50 Units, Elect.Charges 01 - 100 Units, Elect.Charges Above 1000 Units, Elect.Charges 301 - 1000 Units.	Electrician Wage Rate(P/Day), Bricks (New) 1st Class, Plumber Wage Rate, Timber Shesham Log, Firewood Whole, Synthetic Enemal Robialac.	Unskilled Labour Wage Rat, Electrician Wage Rate(P/Pnt), House Rent For Q-Iv, House Rent For Q-Ii, House Rent For Q-V, House Rent (Combined).	Iron Bar (M.S. Bar) 1/2",
Furnishing & Household Equip. Maintenance etc	Washing Powder 1000 Grm (Express), Match Box (Small), Washing Powder (Wheel/ Bonus), Airconditioner 1.5 Ton Pel	Sofa Set Wooden With Foam, Farshi Dari 12'X9' Av.Qlty, Non Stick Cooking Pan, Towel(3'X2') Av. Qlty, Bulb Philips 100-Watt.	Boot Polish Cherry/Kiwi 50 Ml, Tea Set Pak. China Wear 21 Pcs, Sewing Machine (Singer), Chair Shesham Wood, Thermos Starvac 1 Ltr.	
Health	Brufen Tabs 200-Mg., Calcium Syrup Sandoz, Betnesol Eye Drops, Sancos Syrup (50 Ml.).	Gripe-Water Woodward's, Glycine Small Bottle, Cotton Bandage 2" - 4", Thermometer China, Ear Drops (Cardisporine), Ecg Charges.	Entox Tab., Lederplex Syrup, Urine Test (Dr) Charges, Doctor (Mbbs) Clinic Fee, Septran Tablets, Blood Test (Cp) Charges.	Burnol Cream 30 Gm, Dettol (Medium), Jouhar Joshanda,
Transport	Tyre Motor Cycle Without Tube, Tyre Car With Tube General, Plateform Ticket, Bus Fare Outside City (Non A/C).	Cng, Car Suzuki 800 Cc (W/O. Ac), Cycle Overhauling Charges, Motor Cycle Service Charges, Car Toyota 1300 Cc, Tyre Puncture Charges.	Car Suzuki 1000 Cc, High Speed Diesel Hsd, Car Honda Civic 1500 Cc.	Gas Cylinder S.Size (L.P.G), Petrol Super.
Communication	Postal Envelope Domestic, Telephone Charges Local Call, Telephone Charges Outside City.	Mobile Set Nokia/Sony/Ericsson Av.Qlty, Mobile Cell Charges, Postal Envelope For Saudi Arabia.	T.C.S. Ch. Min.Within Zone, Postal Registration Charges, Fax Charges (Local).	Telephone Set Av. Qlty, Internet Charges.
Recreation & Culture	Video Game Sega 16 Byte, Urdu Book Class Ix/X (T.B.Board), Urdu Book Class V (T.B.Board), English Book Class V1, Maths Book Class Ix Or X.	Radio With C.Player National, Daily "Dawn", Weekly "Mag", Computer Cd (Tdk/Imation), Weekly "Akhbar-E-Jahan", T.V 20" Color China/Koria.	Cinema A/C High Class, Ball Pen (Local), Pencil Goldfish/Deer, Daily "Jang", Daily "Nawa-E-Waqf".	Cinema Non-A/C High Class,
Education	Govt. College Fee 4Th. Year.	Pvt Med.College Fee Mbbs(1st Year), Coaching Fee For Class Ix/ X, Coaching Charges For Class Xi/ Xii Commerce.	Pvt School Fee Eng.Med (Classs-V), Pvt School Fee Eng.Med (Class-X).	Govt. Engg. Coll. Fee 1st Year, Govt. University Fee Msc/ Ma, Pvt School Fee Eng.Med (Class-Vi).
Restaurant & Hotels		Bread Tandoori St. Size.	Chicken Biryani Full/Double, Cooked Dal (Av. Hotel), Cooked Mutton (Av. Hotel).	
Miscellaneous	Shampoo Sunsilk/Pantene 100 Ml.	Shaving Charges, Silver Tezabi 24 Ct, Hair Removing Cream (Eu-Cream), Shaving Cream Touch-Me/Admiral.	Artificial Jewellery Set, Toothpowder Dentonic 90 Gms, Purse Ladies (Leather) Av. Qlty.	Toilet Soap Lifebouy 140 Gms.

Table A5: City- wise CPI Inflation by Income Groups, September 2017

	Up to Rs: 8000						Rs 8001- 12000					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	0.7	1.2	1.3	-1.5	0.0	4.6	0.7	1.4	1.3	-1.5	0.0	4.3
2 Islamabad	1.1	2.1	2.1	-0.2	-0.1	5.0	0.8	2.8	1.5	-1.1	0.0	7.2
3 Lahore	0.4	2.6	0.6	0.6	0.0	5.4	0.2	3.2	0.3	0.9	0.1	6.0
4 Gujranwala	1.3	2.7	2.3	-0.3	0.1	6.6	1.0	2.6	1.8	-0.5	0.2	6.2
5 Sialkot	1.3	1.3	2.3	-3.5	0.0	8.0	0.8	1.6	1.6	-4.0	0.1	8.4
6 Faisalabad	-0.9	3.2	-1.7	0.4	0.1	6.7	-1.0	3.3	-1.9	-0.1	0.0	7.2
7 Multan	0.6	1.6	0.9	-0.6	0.2	4.4	0.6	2.3	0.9	-0.1	0.2	4.9
8 Sargodha	0.8	0.8	1.5	-0.5	0.1	2.2	0.6	1.1	1.2	-0.1	0.1	2.3
9 Bahawalpur	1.3	3.2	2.6	0.3	0.0	6.2	1.0	3.3	2.1	0.3	0.0	6.2
10 Karachi	1.0	2.4	1.4	1.8	0.5	3.3	1.1	2.5	1.5	2.2	0.6	2.8
11 Hyderabad	-0.5	2.5	-1.2	1.1	0.4	4.4	-0.6	2.4	-1.4	1.1	0.5	3.9
12 Sukkur	4.7	6.0	7.8	8.1	1.0	3.4	4.1	5.7	7.1	7.3	1.0	4.0
13 Larkana	1.7	3.3	2.9	3.4	0.4	3.1	1.6	4.0	2.9	4.4	0.4	3.5
14 Peshawar	0.9	1.5	1.6	-0.5	0.1	3.8	0.6	1.6	1.1	-0.9	0.1	4.2
15 Bannu	0.9	3.8	1.5	1.8	0.2	6.1	0.9	4.6	1.7	2.9	0.2	6.3
16 Quetta	0.6	4.3	1.0	2.8	0.1	6.1	0.4	4.1	0.7	2.8	0.1	5.5
17 Khuzdar	0.2	5.0	0.3	2.9	0.1	7.5	0.2	5.5	0.4	3.1	0.1	8.1
	Rs 12001-18000						Rs 18001-35000					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	0.6	1.3	1.2	-1.8	0.1	4.2	0.5	1.2	1.0	-2.3	0.1	4.1
2 Islamabad	0.6	2.7	1.2	-1.4	0.1	6.8	0.6	3.0	1.3	-1.3	0.1	6.6
3 Lahore	0.2	3.6	0.2	1.2	0.2	6.2	0.0	4.0	-0.1	1.6	0.2	6.4
4 Gujranwala	0.7	3.1	1.2	-0.4	0.3	6.7	0.5	3.2	0.9	0.0	0.2	6.0
5 Sialkot	0.8	1.6	1.5	-3.9	0.3	7.6	0.6	1.5	1.1	-4.5	0.2	7.1
6 Faisalabad	-1.0	3.7	-1.9	-0.3	-0.2	7.8	-0.9	4.3	-1.9	-0.6	0.0	8.7
7 Multan	0.5	2.7	0.8	0.2	0.3	5.2	0.4	2.8	0.5	0.4	0.3	4.9
8 Sargodha	0.5	2.0	0.9	-0.2	0.1	4.0	0.4	3.0	0.8	0.0	0.1	5.4
9 Bahawalpur	1.0	3.7	2.2	0.3	0.1	6.8	0.7	4.0	1.8	0.0	0.0	7.1
10 Karachi	1.1	2.4	1.6	2.2	0.7	2.6	1.0	2.3	1.3	2.1	0.7	2.5
11 Hyderabad	-0.8	2.6	-1.8	0.9	0.3	4.5	-0.9	3.0	-2.2	1.0	0.4	4.8
12 Sukkur	3.7	6.1	6.3	6.9	1.2	5.2	2.8	6.0	5.0	7.1	1.0	5.1
13 Larkana	1.6	4.3	2.9	4.4	0.6	4.1	1.4	4.6	2.7	5.2	0.5	4.2
14 Peshawar	0.5	2.0	0.9	-1.1	0.1	4.9	0.3	2.1	0.7	-0.9	0.1	4.6
15 Bannu	1.1	5.1	2.0	3.2	0.3	6.9	0.8	5.3	1.4	3.1	0.2	7.1
16 Quetta	0.4	4.2	0.7	2.7	0.2	5.6	0.4	4.2	0.6	2.5	0.2	5.6
17 Khuzdar	0.3	6.2	0.4	3.7	0.1	8.8	0.4	6.2	0.7	3.5	0.2	8.5
	Above Rs 35000						Combined					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	0.2	1.8	0.5	-1.7	0.1	3.5	0.4	1.6	0.7	-1.8	0.1	4.0
2 Islamabad	0.3	4.0	0.9	-0.4	0.1	6.4	0.4	3.9	1.0	-0.5	-0.1	7.2
3 Lahore	-0.1	5.1	-0.7	3.2	0.2	6.1	0.0	4.3	-0.3	2.1	0.2	6.2
4 Gujranwala	0.2	3.9	0.3	1.1	0.2	5.3	0.6	3.3	1.0	0.1	0.3	5.6
5 Sialkot	0.4	2.0	0.8	-4.6	0.2	5.6	0.6	1.7	1.2	-4.4	0.2	6.4
6 Faisalabad	-0.6	5.5	-1.8	0.2	0.0	8.3	-0.8	4.3	-1.8	-0.1	-0.2	7.6
7 Multan	0.3	3.6	0.2	1.5	0.3	4.7	0.4	3.0	0.5	0.5	0.3	4.7
8 Sargodha	0.4	5.4	0.7	0.2	0.2	7.8	0.5	2.9	0.9	-0.1	0.2	4.8
9 Bahawalpur	0.5	4.5	1.4	1.7	0.1	5.8	0.8	3.9	2.0	0.6	0.1	6.0
10 Karachi	0.8	2.9	1.1	2.9	0.6	2.9	0.9	2.7	1.2	2.6	0.6	2.8
11 Hyderabad	-1.0	3.7	-3.1	2.6	0.2	4.3	-0.8	2.9	-2.2	1.4	0.2	4.1
12 Sukkur	1.6	5.1	3.1	6.6	0.9	4.4	3.1	5.7	5.5	7.1	1.4	4.7
13 Larkana	1.1	4.6	2.4	6.5	0.5	3.7	1.5	4.1	2.7	4.6	0.7	3.8
14 Peshawar	0.1	3.1	0.0	0.3	0.1	4.5	0.3	2.4	0.7	-0.6	0.1	4.5
15 Bannu	0.3	4.5	0.5	2.7	0.2	5.3	0.8	4.7	1.5	2.8	0.4	6.0
16 Quetta	0.3	4.4	0.5	3.2	0.2	5.0	0.4	4.2	0.7	2.9	0.2	5.1
17 Khuzdar	0.0	6.0	-0.1	5.2	0.0	6.4	0.2	5.6	0.4	3.1	0.2	7.4

Table A6: City- wise CPI Inflation (YoY) September, 2017

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Turbat	9.3	4.5	12.0	Attock	3.6	2.6	4.3
Gawadar	9.0	6.2	10.9	Abbottabad	3.3	4.0	2.8
Vehari	6.1	-0.1	10.7	Gujranwala	3.3	0.1	5.6
Sukkur	5.7	7.1	4.7	Jhang	3.1	0.1	5.1
Khuzdar	5.6	3.1	7.4	Jhelum	3.0	0.7	4.7
Bahawalnagar	5.6	1.6	8.4	Multan	3.0	0.5	4.7
Loralai	5.6	3.6	6.9	Hyderabad	2.9	1.4	4.1
Mianwali	5.1	-0.9	8.9	Sargodha	2.9	-0.1	4.8
D. M. Jamali	4.7	5.9	3.9	R. Y. Khan	2.8	1.3	3.9
Bannu	4.7	2.8	6.0	Karachi	2.7	2.6	2.8
D. I. Khan	4.7	3.6	5.4	D. G. Khan	2.7	1.8	3.2
Mingora	4.6	1.0	6.9	Mirpukhas	2.6	2.9	2.3
Lahore	4.3	2.1	6.2	Peshawar	2.4	-0.6	4.5
Faisalabad	4.3	-0.1	7.6	Muzaffargarh	2.0	1.1	2.6
Quetta	4.2	2.9	5.1	Mardan	1.8	1.7	1.9
Larkana	4.1	4.6	3.8	Sialkot	1.7	-4.4	6.4
Sahiwal	4.1	2.1	5.3	Wazirabad	1.7	-0.5	3.3
Islamabad	3.9	-0.5	7.2	Rawalpindi	1.6	-1.8	4.0
Bahawalpur	3.9	0.6	6.0	Mithi	1.5	1.4	1.6
Dadu	3.9	4.7	3.3	Nawabshah	0.2	-0.2	0.4

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-16	Aug-17	Sep-17	Sep-16	Aug-17	Sep-17
<u>Up to Rs. 8000</u>						
General	0.2	0.4	1.2	3.8	2.4	3.4
Food	0.2	0.7	2.1	3.8	0.2	2.1
Non-food	0.2	0.1	0.1	3.9	5.0	5.0
<u>Rs. 8001- 12000</u>						
General	0.2	0.3	0.9	3.8	2.7	3.4
Food	0.2	0.6	1.7	3.8	0.6	2.2
Non-food	0.2	0.1	0.1	3.8	4.9	4.8
<u>Rs. 12001- 18000</u>						
General	0.2	0.3	0.8	3.8	2.8	3.5
Food	0.1	0.5	1.5	4.0	0.7	2.1
Non-food	0.2	0.1	0.1	3.6	4.9	4.8
<u>Rs. 18001- 35000</u>						
General	0.2	0.2	0.7	3.8	2.9	3.5
Food	0.1	0.4	1.3	4.1	0.9	2.1
Non-food	0.2	0.1	0.2	3.5	4.6	4.6
<u>Above Rs. 35000</u>						
General	0.2	0.1	0.4	3.9	4.0	4.2
Food	0.1	0.3	0.9	4.0	2.0	2.8
Non-food	0.3	0.0	0.2	3.9	5.0	5.0
<u>All income groups</u>						
General	0.2	0.2	0.6	3.9	3.4	3.9
Food	0.1	0.4	1.3	4.0	1.2	2.4
Non-food	0.2	0.1	0.2	3.8	5.0	4.9

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices	Percentage change	
			Sep-17	YoY	MoM
1	Wheat	10Kg.	322.9	-3.2	1.3
2	Wheat Flour Bag	10Kg.	367.9	-2.4	2.0
3	Rice Basmati Broken	Kg.	70.2	12.5	0.1
4	Rice Irri-6	Kg.	50.7	4.4	1.1
5	Bread Plain Med. Size (340-400 Gm.)	Each	41.1	0.0	0.0
6	Beef	Kg.	342.5	5.6	0.4
7	Mutton	Kg.	711.6	9.1	0.7
8	Chicken Live (Farm)	Kg.	121.3	-4.4	-11.5
9	Milk Fresh	Litr	81.9	1.9	0.0
10	Curd	Kg.	98.1	4.3	0.1
11	Milk Powdered Nido	500G	373.3	-3.4	0.1
12	Egg Hen (Farm)	Doz.	98.4	-0.3	1.4
13	Mustard Oil	Kg.	182.4	1.4	-0.1
14	Cooking Oil (Tin)	2.5Ltr	468.4	3.0	-0.5
15	Veg. Ghee (Tin)	2.5Kg.	461.0	3.5	-0.5
16	Veg. Ghee Loose	Kg.	145.9	2.8	0.4
17	Bananas	Doz.	68.4	-0.8	-10.1
18	Masoor Pulse Washed	Kg.	121.6	-19.1	-0.4
19	Moong Pulse Washed	Kg.	123.0	-17.2	-0.7
20	Mash Pulse Washed	Kg.	185.1	-28.1	-1.0
21	Gram Pulse Washed	Kg.	123.1	-21.3	0.9
22	Potatoes	Kg.	40.6	3.8	4.8
23	Onions	Kg.	72.8	132.8	56.9
24	Tomatoes	Kg.	102.6	93.6	77.4
25	Sugar	Kg.	55.5	-21.9	-2.5
26	Gur	Kg.	85.2	-10.2	0.7
27	Salt Powdered Loose (Lahori)	Kg.	10.9	3.2	2.1
28	Red Chillies Powder Loose	Kg.	258.5	-8.0	-0.7
29	Garlic	Kg.	187.4	-35.5	-2.9
30	Tea (Yellow Label)	200Gm.	182.4	15.5	-5.9
31	Cooked Beef Plate	Each	95.6	4.0	2.2
32	Cooked Dal Plate	Each	58.3	2.9	1.9
33	Tea Prepared (Sada)	Cup	21.2	6.6	0.4
34	Cigarettes K-2 (20'S)	20'S	50.8	-20.9	0.0
35	Long Cloth (Coarse Latha)	Mtr.	212.3	3.3	0.0
36	Shirting	Mtr.	169.6	3.2	0.1
37	Lawn	Mtr.	255.8	1.8	0.0
38	Georgette (Voil Printed)	Mtr.	125.7	1.7	0.1
39	Sandal Gents Bata	Pair	699.0	0.0	0.0
40	Chappal Spong. Bata (Gents)	Pair	179.1	0.0	0.0
41	Sandal Ladies Bata	Pair	502.4	0.0	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	78.9	2.4	0.0
45	Firewood	40Kg	609.1	1.9	0.0
46	Energy Savor 14 Watts	Each	168.2	0.3	0.3
47	Washing Soap (200-250 Gm.)	Cake	25.9	1.1	0.0
48	Match Box	Each	2.2	5.7	0.0
49	Petrol	Litr	72.2	10.9	2.3
50	Diesel	Litr	78.3	6.6	-0.6
51	L.P.G.(11 Kg Cylinder.)	Each	1181.1	18.6	4.8
52	Tele. Local Call	Call	3.9	0.0	0.0
53	Bath Soap Lifebuoy (Standard)	Cake	41.8	13.4	0.3
Maximum				132.8	77.4
Median				1.8	0.0
Minimum				-35.5	-11.5

Table A9: Distribution of Price Changes (YoY) - WPI Items: September 2017				
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, Millet/Bajra, Sorghum/Jowar, Pulses, Sugar Crops, Wheat, Eggs, Fish Live Fresh Or Chilled, Dry Fruits, Maize, Raw Animal Material/Wool, Cotton Seeds.	Milk From Bovine Animals, Fresh Fruits, Fibre Crops.	Other Oil Seeds, Edible Roots/Potatos, Fuel Wood In Logs.	Poultry, Unmanufactured Tobacco, Vegetables, Stimulant And Spice Crops, Rice.
Ores & Minerals, Electricity Gas & Water	Salt & Pure Sodium Chloride, Electrical Energy.	Coal Not Agglomerated, Natural Gas Liquefied.		
Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products	Tobacco Products, Other Cereal Flour, Sugar Refined, Oil Cakes, Wheat Flour, Nylon Yarn, Silk And Reyon Fabrics, Fruit Juices, Other Leather N.E.C, Leather With Out Hairs, Woolen Carpets.	Mineral Water, Cotton Yarn, Towels, Blended Yarn, Vegetable Oil Refined, Vegetable Ghee, Blankets, Synthetic Carpets, Other Fabrics, Milk And Cream In Solid Form, Cotton Fabrics, Footwears, Chocolate, Ready Made Garments, Beverages, Bed Sheets, Other Food Products.	Processed Liquid Milk, Meat Of Animals, Hosiery Products, Sugar Confectionary, Dairy Products N.E.C, Quilts, Vegetables & Fruit Juices, Spices.	Woven Fabrics, Dried Fruits & Nuts, Ice Cream, Coffee And Tea.
Other Transportable Goods except Metal Products, Machinery and Equipments	Fertilizers, Auto Tyres, Plastic Products, Pesticides, Ceramics And Sanitary, Coke, Dying Materials.	Insecticised, Diesel Oil, Cement, Soaps & Detergent, Mobil Oil, Kerosine Oil, Bricks Blocks And Tiles, Chemicals, Paints & Varnishes, Printing Paper.	Bed Foams, Other Glass Articles, Matches, Medicines, Timber.	Furnace Oil, Glass Sheets, Hard Board, Motor Sprit.
Metal Product Machinery & Equipment	Bicycles, Motor Cycles, Pig Iron, Concrate Mixer, Radio And Television, Air Conditioners, Lighting Equipments, Tractors, Cultivators.	Chuff Cutter, Motor Vehicales, Steel Products.	Lathe Machines, Vacuum Pumps, Engines And Motors, Electrical Wires, Refrige,Wash& Sew Mach,Iron,Fan.	Steel Bars & Sheets, Pipe Fittings.

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

Items and specification	Weights	Index		
		Sep-16	Aug-17	Sep-17
General	100.00	209.88	216.61	217.98
Food & Non-Alcoholic Beverages.	34.83	226.30	230.99	234.23
1 Wheat	0.35	194.03	190.80	194.80
2 Wheat Flour	4.16	209.04	203.10	204.81
3 Wheat Product	0.10	216.37	212.62	213.67
4 Besan	0.15	315.81	279.13	276.11
5 Rice	1.58	160.52	182.03	182.86
6 Cereals	0.16	250.17	255.72	255.64
7 Bakery & Confectionary	1.16	215.16	218.89	218.99
8 Nimco	0.46	248.88	255.83	255.84
9 Meat	2.43	264.07	284.04	283.65
10 Chicken	1.36	151.17	179.73	150.63
11 Fish	0.30	216.97	216.37	215.33
12 Milk Fresh	6.68	266.39	276.02	276.04
13 Milk Product	0.63	256.76	265.43	267.30
14 Milk Powder	0.11	237.04	234.41	234.64
15 Egg	0.46	202.98	197.47	205.37
16 Mustard Oil	0.10	153.83	160.10	160.21
17 Cooking Oil	1.75	133.69	138.09	138.10
18 Vegetable Ghee	2.07	137.89	143.05	143.03
19 Dry Fruits	0.25	258.62	263.32	263.91
20 Fresh Fruits	1.86	233.93	267.92	238.11
21 Pulse Masoor	0.27	212.10	174.98	171.56
22 Pulse Moong	0.23	287.84	239.10	236.76
23 Pulse Mash (Washed)	0.21	359.08	272.32	269.29
24 Pulse Gram	0.24	342.16	276.43	275.47
25 Gram Whole	0.16	301.53	287.53	292.37
26 Beans	0.03	233.29	244.13	242.94
27 Potatoes	0.47	245.55	266.30	267.60
28 Onion	0.53	190.44	243.40	482.74
29 Tomatoes	0.44	192.38	162.16	256.96
30 Fresh Vegetable	1.68	292.17	264.85	291.76
31 Sugar	1.04	253.32	214.35	200.00
32 Gur	0.02	291.67	259.38	261.22
33 Honey	0.04	316.91	332.15	332.15
34 Sweet Meet	0.25	244.89	252.57	253.51
35 Beverages	1.20	221.86	226.10	226.34
36 Jam, Tomato Ketchup & Pickle	0.25	215.46	219.51	220.13
37 Condiments	0.27	262.69	270.57	271.56
38 Spices	0.54	241.44	238.53	238.80
39 Tea	0.84	255.71	289.16	284.10
Alcoholic Beverages, Tobacco	1.41	364.13	306.25	304.80
40 Cigarette	1.39	366.11	307.18	305.67
41 Betel Leaves & Nuts	0.02	244.31	250.15	251.93
Clothing & Footwear	7.57	230.47	239.19	239.52
42 Cotton Cloth	1.73	225.04	232.48	232.67
43 Woolen Cloth	0.88	245.97	257.77	257.77
44 Ready Made Garment	0.97	236.67	247.56	247.97
45 Woolen Readymade Garments	0.40	253.26	258.31	259.27
46 Hosiery	0.51	242.93	249.96	251.70
47 Dopatta	0.44	241.02	246.66	246.66
48 Cleaning & Laundering	0.21	255.44	271.61	272.37

Table A10: Consumer Price Index Numbers by Major Groups and Composite Commodities					
Items and specification		Weights	Index		
			Sep-16	Aug-17	Sep-17
49	Tailoring	0.88	302.43	324.27	324.65
50	Footwear	1.55	166.49	167.45	167.46
	Housing, Water, Elect, Gas & Other Fuel	29.41	188.90	198.93	198.95
51	House Rent	21.81	178.64	191.49	191.49
52	Construction Input Item	0.56	247.89	254.56	255.47
53	Construction Wage Rate	0.33	230.40	245.58	245.96
54	Water Supply	0.50	163.32	171.58	171.58
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	195.07	197.81	198.39
58	Fire Wood Whole	0.23	283.60	291.56	291.34
	Furnished H.Hold Equip.& Maint. Etc	4.21	222.27	228.05	229.10
59	Furniture	0.33	212.26	220.16	220.81
60	Household Textile	0.65	221.14	230.07	231.08
61	Household Equipment	0.59	179.16	183.18	183.36
62	Utensils	0.32	223.08	233.80	234.34
63	Plastic Products	0.25	207.17	211.37	213.05
64	Washing Soap & Detergent	0.79	228.76	232.80	232.92
65	Sewing Needle & Dry Cell	0.15	206.32	207.74	209.49
66	Household Servant	1.04	249.98	254.90	257.30
67	Marriage Hall Charges	0.08	242.89	249.20	249.20
	Health	2.19	192.00	213.05	213.90
68	Drug Medicine	1.27	159.00	185.27	185.75
69	Medical Equipment	0.01	242.29	251.81	253.35
70	Doctor (MBBS) Clinic Fee	0.59	264.28	280.95	282.22
71	Medical Test	0.32	188.05	196.81	198.38
	Transport	7.20	170.31	174.61	175.74
72	Motor Vehicle	0.66	171.00	176.59	176.88
73	Motor Vehicle Accessories	0.24	213.67	211.91	213.57
74	Motor Fuel	3.03	136.01	144.27	146.77
75	Mechanical Service	0.46	227.40	232.07	232.07
76	Motor Vehicle Tax	0.11	210.18	210.18	210.18
77	Transport Services	2.70	193.40	193.59	193.59
	Communication	3.22	130.88	133.03	133.04
78	Postal Services	0.07	242.74	250.44	250.69
79	Communication & Apparatus	3.15	128.53	130.56	130.57
	Recreation & Culture	2.02	196.15	196.33	196.78
80	Recreation & Culture	0.86	129.68	129.38	129.49
81	Text Books	0.57	292.41	287.98	287.98
82	News Papers	0.19	175.49	182.90	183.76
83	Stationery	0.40	212.50	216.82	218.46
	Education	3.94	230.54	249.61	249.61
84	Education	3.94	230.54	249.61	249.61
	Restaurants And Hotels	1.23	266.11	278.44	281.08
85	Ready Made Food	1.23	266.11	278.44	281.08
	Miscellaneous Goods And Services	2.76	236.99	248.46	250.12
86	Personal Care	1.49	217.90	229.77	230.31
87	Cosmetics	0.39	199.36	205.72	205.83
88	Blades	0.03	195.16	197.80	197.94
89	Personal Equipments	0.84	289.57	302.99	307.37

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

Items and Specifications	Index		
	Sep-16	Aug-17	Sep-17
General	214.61	217.96	218.08
Agriculture Forestry & Fishery	246.87	250.96	252.05
1 Wheat	205.26	194.17	196.01
2 Maize	196.67	189.41	191.42
3 Rice	149.55	168.81	168.67
4 Sorghum/Jowar	264.05	209.74	211.96
5 Millet/Bajra	210.05	157.16	160.05
6 Vegetables	354.30	296.47	400.21
7 Fresh Fruits	248.15	284.12	253.92
8 Dry Fruits	241.88	233.30	235.18
9 Cotton Seeds	260.92	278.51	260.12
10 Other Oil Seeds	170.86	182.82	185.96
11 Edible Roots/ Potatoes	256.45	256.16	271.48
12 Stimulant And Spice Crops	260.56	269.90	294.09
13 Pulses	304.53	263.31	263.85
14 Sugar Crops	286.34	268.94	268.94
15 Fibre Crops	195.33	204.58	199.67
16 Unmanufactured Tobacco	255.73	290.62	293.30
17 Poultry	160.06	190.18	226.19
18 Milk From Bovine Animals	262.97	269.94	269.94
19 Eggs	211.44	199.48	204.41
20 Raw Animal Material/Wool	173.89	172.91	172.91
21 Hides And Fur Skins, Raw	142.47	100.98	98.57
22 Fuel Wood In Logs	264.77	279.63	279.63
23 Fishes Live Fresh Or Chilled	453.85	463.98	440.36
Ores/Minerals, Gas & Elect.	241.64	242.53	242.68
24 Coal Not Agglomerated	152.94	155.29	155.29
25 Natural Gas Liquefied	208.75	210.37	210.69
26 Salt & Pure Sodium Chloride	254.33	248.46	248.46
27 Electrical Energy	288.00	288.00	288.00
Food, Beverages, Tobacco, Textiles	225.26	226.39	225.30
28 Meat Of Animals	279.82	303.71	304.31
29 Vegetables & Fruit Juices	209.83	223.38	224.22
30 Dried Fruits & Nuts	238.61	263.87	268.09
31 Fruit Juices	183.49	182.38	182.36
32 Vegetable Oil Refined	151.63	155.87	154.86
33 Vegetable Ghee	123.32	126.04	125.89
34 Oil Cakes	231.01	228.42	218.98
35 Processed Liquid Milk	257.57	282.01	282.01
36 Milk And Cream In Solid Form	221.24	222.44	224.00
37 Ice Cream	238.04	266.02	266.02
38 Dairy Products N.E.C	248.76	268.85	268.85
39 Wheat Flour	192.40	186.18	187.13
40 Other Cereal Flour	299.87	226.59	227.95
41 Sugar Refined	269.18	221.26	209.70
42 Chocolate	99.45	100.00	100.00
43 Sugar Confectionary	118.83	128.44	128.44
44 Coffee And Tea	230.56	258.68	255.28
45 Spices	190.12	199.08	201.92
46 Other Food Products	293.85	294.50	294.50
47 Mineral Water	197.57	199.51	206.35
48 Beverages	172.44	172.85	172.85
49 Tobacco Products	435.03	318.37	318.37
50 Cotton Yarn	194.81	202.49	201.61
51 Nylon Yarn	147.08	143.99	143.99
52 Blended Yarn	179.64	183.38	183.55
53 Woven Fabrics	279.69	316.28	316.28
54 Cotton Fabrics	209.09	211.33	211.47
55 Other Fabrics	224.29	227.16	227.16

Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities				
Items and Specifications		Index		
		Sep-16	Aug-17	Sep-17
56	Silk And Rayon Fabrics	190.96	188.89	188.14
57	Towels	267.20	276.14	276.14
58	Blankets	243.93	247.52	247.52
59	Bed Sheets	256.29	256.87	256.87
60	Quilts	198.00	208.42	213.05
61	Woolen Carpets	196.43	196.43	196.43
62	Synthetic Carpets	129.25	130.95	130.95
63	Hosiery Products	224.11	243.31	243.31
64	Ready Made Garments	200.55	201.37	201.37
65	Leather With Out Hairs	221.97	221.97	221.97
66	Other Leather N.E.C	207.31	207.31	207.31
67	Footwear's	143.97	145.51	145.51
Other Transportable Goods		164.47	170.93	171.64
68	Timber	220.36	231.53	231.53
69	Printing Paper	164.90	166.40	166.60
70	Hard Board	197.92	225.00	225.00
71	Coke	163.45	163.45	163.45
72	Motor Sprit	108.54	117.38	120.76
73	Diesel Oil	144.34	150.68	150.68
74	Kerosene Oil	115.11	117.12	117.12
75	Furnace Oil	80.68	101.72	103.94
76	Mobil Oil	196.00	201.29	201.29
77	Chemicals	177.38	180.49	180.05
78	Dying Materials	146.55	146.55	146.55
79	Fertilizers	224.61	215.94	216.26
80	Pesticides	308.79	306.06	306.92
81	Insecticides	135.58	142.41	141.98
82	Paints & Varnishes	295.36	294.56	298.67
83	Medicines	168.09	174.94	176.72
84	Soaps & Detergent	186.25	191.20	191.45
85	Auto Tyres	181.25	177.07	177.07
86	Plastic Products	228.35	225.88	225.88
87	Glass Sheets	247.94	298.97	298.97
88	Other Glass Articles	299.07	317.24	317.24
89	Ceramics And Sanitary	233.48	232.65	232.65
90	Bricks Blocks And Tiles	218.21	221.50	221.69
91	Cement	213.44	221.52	221.52
92	Bed Foams	160.50	170.33	170.33
93	Matches	162.62	171.36	171.36
Metal Product Machinery & Equip		172.51	177.02	177.12
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	120.46	138.48	138.84
96	Pipe Fittings	193.63	215.66	215.66
97	Steel Products	176.99	177.56	177.56
98	Engines And Motors	109.24	116.98	116.98
99	Vacuum Pumps	114.95	123.69	123.69
100	Air Conditioners	201.18	200.10	200.10
101	Cultivators	219.76	190.66	190.66
102	Chuff Cutter	149.20	153.46	153.46
103	Tractors	203.68	201.75	201.75
104	Lathe Machines	221.65	241.06	241.06
105	Concrete Mixer	138.83	138.83	138.83
106	Refrige,Wash& Sew Mach, Iron,Fan	204.03	214.97	214.97
107	Electrical Wires	195.19	205.92	205.92
108	Lighting Equipments	172.03	170.73	170.98
109	Radio And Television	140.42	140.42	140.42
110	Motor Vehicles	191.39	195.36	195.36
111	Motor Cycles	125.89	125.89	125.89
112	Bicycles	187.65	187.65	187.65

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	233.37	199.65	216.02	248.74	195.27	220.10
2015	May	199.66	221.22	186.74	207.92	228.09	195.12	211.48
	Jun	200.89	223.84	187.13	210.37	232.39	196.40	214.29
	Jul	201.76	224.14	188.35	209.53	233.68	194.20	215.13
	Aug	202.25	224.86	188.70	208.42	236.00	190.92	214.33
	Sep	202.04	223.87	188.95	207.60	234.37	190.61	215.23
	Oct	203.03	224.86	189.95	208.69	234.47	192.34	217.02
	Nov	204.22	227.55	190.23	208.72	232.83	193.43	219.37
	Dec	203.06	223.90	190.57	207.37	230.72	192.55	218.60
2016	Jan	203.49	222.58	192.05	206.27	231.14	190.48	217.47
	Feb	202.98	221.07	192.14	205.05	231.26	188.42	215.73
	Mar	203.28	222.25	191.91	204.22	231.43	186.95	215.13
	Apr	206.43	227.53	193.78	206.87	237.05	187.72	215.88
	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

*: all groups combined

Table A13: International Commodity Prices/ Indices				
	Mar-17	Apr-17	May-17	Jun-17
Energy				
Crude Oil (US\$ per barrel) *	50.9	52.2	49.9	46.1
IMF Energy Index (2005 = 100)	96.0	98.4	94.0	88.2
WB Energy Index (2010 = 100) @	65.3	67.1	64.3	60.4
Food				
Rice (\$/MT)	367.8	374.5	402.9	444.7
Wheat (\$/MT)	146.4	138.4	146.5	157.2
Sugar (US cent/ pound)	18.1	16.4	15.7	13.7
Palm Oil (\$/MT)	663.3	623.2	655.5	621.2
Soybean Oil (\$/MT)	723.4	695.3	714.1	704.8
Non-Food Non-Energy				
Cotton Outlook 'A' Index #	86.8	87.0	88.6	84.8
IMF Metal Price Index (2005 = 100)	149.4	139.9	134.4	132.4
Copper (\$/MT)	5,824.6	5,683.9	5,599.6	5,719.8
Aluminum (\$/MT)	1,901.5	1,921.2	1,913.0	1,885.3
Iron Ore (\$ cents/dry MT)	87.2	70.4	61.6	57.9
Tin (\$/MT)	19,875.2	19,910.3	20,200.3	19,658.8
Nickel (\$/MT)	10,204.7	9,609.3	9,155.1	8,931.8
Zinc (\$/MT)	2,776.9	2,614.9	2,590.2	2,573.4
Lead (\$/MT)	2,280.9	2,220.6	2,125.1	2,132.9
Uranium (\$/MT)	24.6	23.2	21.6	19.7
DAP (\$/MT)	375.0	366.0	357.0	350.0
Urea (\$/MT)	234.0	205.0	180.0	185.0
Source: IMF and World Bank (The latest prices for the month of July, 2017 onwards are not available till date)				
\$ /MT = US\$ per metric ton.				
* 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				
@ World Bank commodity index for low and middle income countries				

Table 14: CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY14	FY15	FY16	FY17	FY18
Jul	183.58	198.05	201.76	210.08	216.19
Aug	185.71	198.70	202.25	209.46	216.61
Sep	185.18	199.40	202.04	209.88	217.98
Oct	188.82	199.81	203.03	211.57	
Nov	191.21	198.79	204.22	212.01	
Dec	188.68	196.79	203.06	210.57	
Jan	189.60	196.95	203.49	210.94	
Feb	189.00	195.13	202.98	211.54	
Mar	190.82	195.57	203.28	213.32	
Apr	194.06	198.16	206.43	216.30	
May	193.55	199.66	205.99	216.33	
Jun	194.74	200.89	207.30	215.45	
Seasonally Adjusted Series					
Jul	182.69	197.05	200.72	208.98	215.07
Aug	184.37	197.34	200.94	208.14	215.32
Sep	183.91	198.05	200.72	208.57	216.67
Oct	187.28	198.20	201.42	209.93	
Nov	190.04	197.61	203.04	210.80	
Dec	189.72	197.84	204.09	211.59	
Jan	190.29	197.70	204.32	211.86	
Feb	191.01	197.22	205.14	213.78	
Mar	192.48	197.30	205.11	215.26	
Apr	193.92	197.99	206.23	216.05	
May	194.00	200.04	206.32	216.64	
Jun	195.36	201.44	207.79	215.88	

Table 15: CPI Food Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY14	FY15	FY16	FY17	FY18
Jul	208.19	222.80	224.14	234.69	234.47
Aug	212.27	224.05	224.86	232.48	235.38
Sep	209.09	224.12	223.87	232.80	238.43
Oct	212.61	223.74	224.86	234.68	
Nov	218.16	222.74	227.55	235.17	
Dec	210.89	218.08	223.90	230.69	
Jan	210.81	217.10	222.58	228.45	
Feb	208.74	213.15	221.07	229.19	
Mar	213.11	214.25	222.25	233.47	
Apr	217.33	217.26	227.53	237.50	
May	214.75	221.22	225.84	237.01	
Jun	216.98	223.84	228.95	234.37	
Seasonally Adjusted Series					
Jul	206.49	220.87	222.14	232.56	232.34
Aug	209.22	220.99	221.92	229.51	232.50
Sep	206.09	220.92	220.75	229.69	235.34
Oct	209.27	220.30	221.49	231.31	
Nov	214.84	219.41	224.26	231.78	
Dec	212.60	219.77	225.48	232.18	
Jan	212.74	219.24	224.95	231.11	
Feb	213.54	218.10	226.19	234.48	
Mar	216.29	217.51	225.67	237.04	
Apr	217.73	217.63	227.87	237.73	
May	216.02	222.36	226.88	238.01	
Jun	218.29	224.94	229.85	235.11	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY14	FY15	FY16	FY17	FY18	Average
Jul	100.49	100.51	100.52	100.53	100.52	100.51
Aug	100.73	100.69	100.65	100.63	100.60	100.66
Sep	100.69	100.68	100.66	100.63	100.60	100.65
Oct	100.82	100.81	100.80	100.78		100.80
Nov	100.62	100.60	100.58	100.57		100.59
Dec	99.45	99.47	99.49	99.52		99.48
Jan	99.64	99.62	99.59	99.56		99.60
Feb	98.95	98.94	98.95	98.95		98.95
Mar	99.14	99.12	99.11	99.10		99.12
Apr	100.07	100.09	100.10	100.12		100.09
May	99.77	99.81	99.84	99.86		99.82
Jun	99.68	99.73	99.77	99.80		99.74

Table 17: CPI Food Monthly & Average Seasonal Factors

Period	FY14	FY15	FY16	FY17	FY18	Average
Jul	100.82	100.87	100.90	100.92	100.92	100.89
Aug	101.46	101.39	101.33	101.29	101.24	101.34
Sep	101.45	101.45	101.42	101.36	101.31	101.40
Oct	101.60	101.56	101.52	101.46		101.53
Nov	101.55	101.52	101.47	101.46		101.50
Dec	99.19	99.23	99.30	99.36		99.27
Jan	99.09	99.03	98.95	98.85		98.98
Feb	97.75	97.73	97.74	97.74		97.74
Mar	98.53	98.50	98.49	98.50		98.50
Apr	99.82	99.83	99.85	99.90		99.85
May	99.41	99.49	99.54	99.58		99.51
Jun	99.40	99.51	99.61	99.68		99.55

Table 18: CPI Month-on-Month % Change Original & Seasonally Adjusted					
Original Series					
Period	FY14	FY15	FY16	FY17	FY18
Jul	2.02	1.70	0.43	1.34	0.34
Aug	1.16	0.33	0.24	-0.30	0.19
Sep	-0.29	0.35	-0.10	0.20	0.63
Oct	1.97	0.21	0.49	0.81	
Nov	1.27	-0.51	0.59	0.21	
Dec	-1.32	-1.01	-0.57	-0.68	
Jan	0.49	0.08	0.21	0.18	
Feb	-0.32	-0.92	-0.25	0.28	
Mar	0.96	0.23	0.15	0.84	
Apr	1.70	1.32	1.55	1.40	
May	-0.26	0.76	-0.21	0.01	
Jun	0.61	0.62	0.64	-0.41	
Seasonally Adjusted Series					
Jul	1.17	0.86	-0.36	0.57	-0.38
Aug	0.92	0.15	0.11	-0.40	0.12
Sep	-0.25	0.36	-0.11	0.20	0.63
Oct	1.83	0.08	0.35	0.66	
Nov	1.47	-0.29	0.80	0.41	
Dec	-0.17	0.12	0.52	0.37	
Jan	0.30	-0.07	0.11	0.13	
Feb	0.38	-0.25	0.40	0.91	
Mar	0.77	0.04	-0.01	0.69	
Apr	0.75	0.35	0.54	0.37	
May	0.04	1.04	0.04	0.27	
Jun	0.70	0.70	0.71	-0.35	

Table 19: CPI Food Month-on-Month % Change Original & Seasonally Adjusted					
Original Series					
Period	FY14	FY15	FY16	FY17	FY18
Jul	3.01	2.68	0.13	2.50	0.04
Aug	1.96	0.56	0.32	-0.94	0.39
Sep	-1.50	0.03	-0.44	0.14	1.29
Oct	1.68	-0.17	0.44	0.81	
Nov	2.61	-0.45	1.20	0.21	
Dec	-3.33	-2.09	-1.61	-1.90	
Jan	-0.04	-0.45	-0.59	-0.97	
Feb	-0.98	-1.82	-0.68	0.32	
Mar	2.10	0.52	0.54	1.87	
Apr	1.98	1.41	2.38	1.73	
May	-1.19	1.82	-0.74	-0.21	
Jun	1.04	1.18	1.38	-1.11	
Seasonally Adjusted Series					
Jul	1.46	1.18	-1.24	1.18	-1.18
Aug	1.32	0.05	-0.10	-1.31	0.07
Sep	-1.49	-0.03	-0.53	0.08	1.22
Oct	1.54	-0.28	0.34	0.71	
Nov	2.66	-0.40	1.25	0.20	
Dec	-1.04	0.16	0.55	0.17	
Jan	0.07	-0.24	-0.24	-0.46	
Feb	0.37	-0.52	0.55	1.46	
Mar	1.29	-0.27	-0.23	1.09	
Apr	0.67	0.05	0.97	0.29	
May	-0.78	2.17	-0.43	0.12	
Jun	1.05	1.16	1.31	-1.22	



Figure A2: Frequency Distribution of Price Changes of CPI Items, September 2017

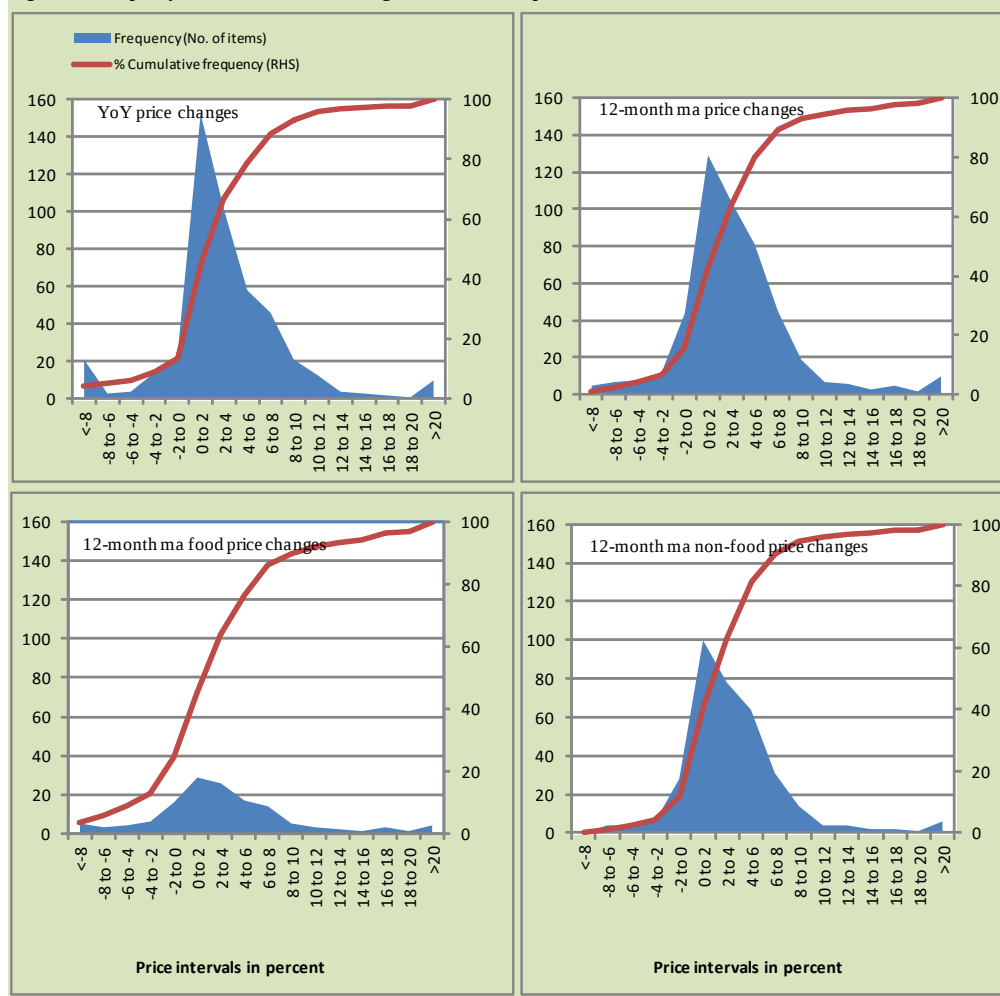


Figure A3: Frequency Distribution of Price Changes of WPI Commodities, September 2017

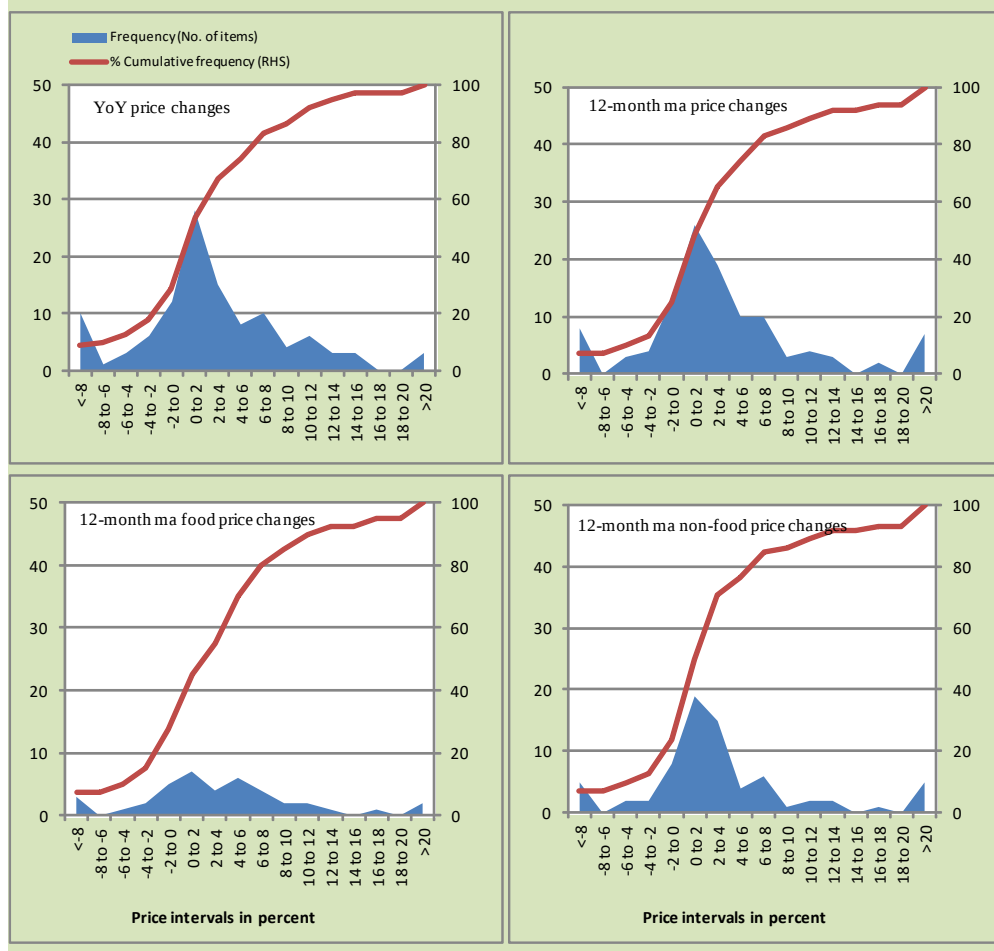
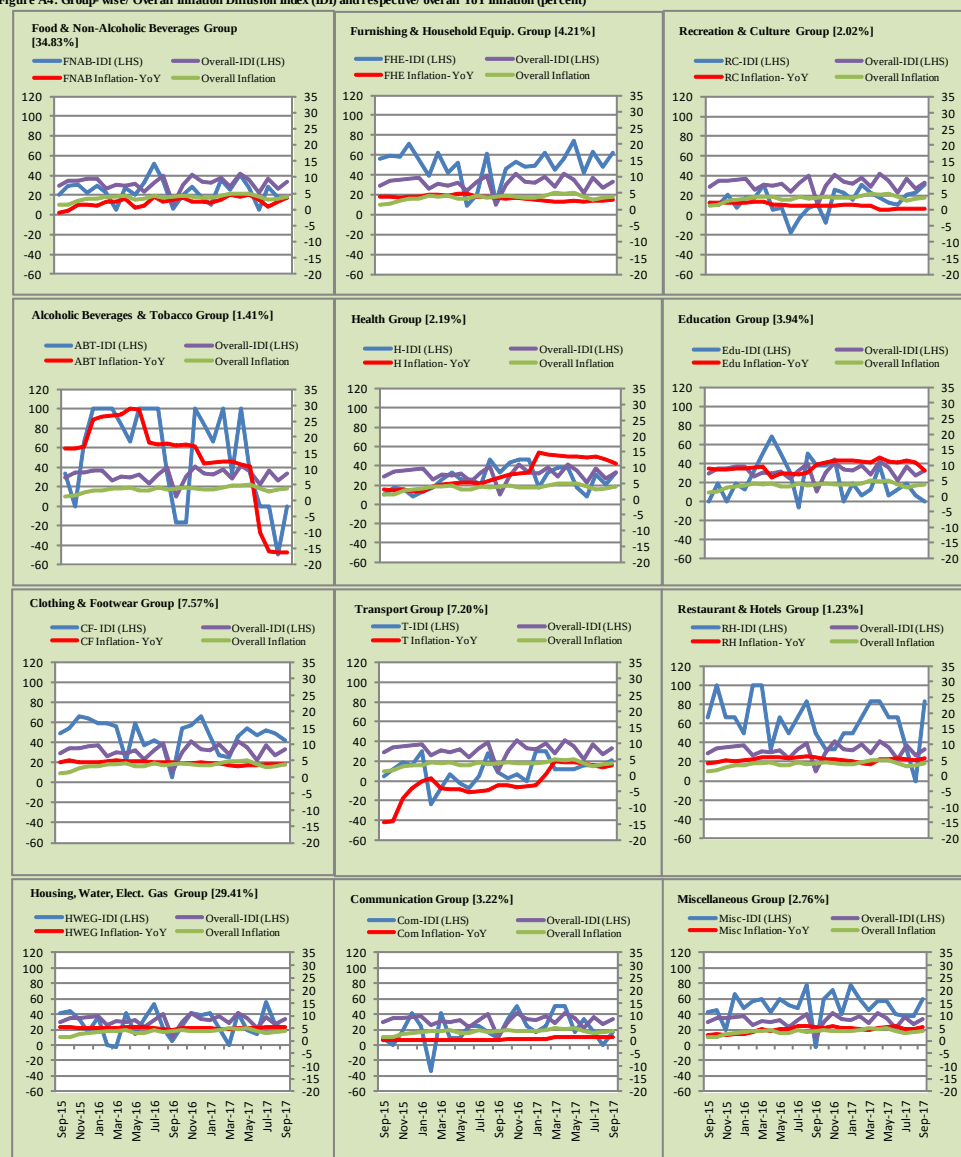


Figure A4: Group-wise/ Overall Inflation Diffusion Index (IDI) and respective/ overall YoY Inflation (percent)



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

Annexure B

Technical Notes

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

w_i : Weights of i^{th} item

π_{it} : Inflation of i^{th} item

π_t : Overall inflation

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

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

Methodology for Estimating Inflation Diffusion Index for Pakistan

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

$$\frac{\text{Number of Commodities with } \uparrow \text{ in MoM change} - \text{Number of Commodities with } \downarrow \text{ in MoM change}}{\text{Number of Commodities for which prices are reported}}$$

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.