

Inflation Monitor

October 2016



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Review

Inflation in Brief

1. Headline CPI inflation (2007-08=100) is recorded at level of 4.2 percent on year-on-year basis in October 2016 compared to 3.9 percent in the previous and 1.6 percent in the corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at 0.8 percent in October 2016 compared to 0.2 percent in the previous month and 0.5 percent during the corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.51 percent in October 2016 compared to 0.29 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis was at level of 3.8 percent in October 2016 as compared to 3.7 percent in the previous month and 2.8 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is 0.6 percent in October 2016 as compared to 0.1 percent in the previous and 0.4 percent in the corresponding month of last year.
5. Non-food, non-energy inflation measured by CPI Core (NFNE) on year-on-year basis is recorded at 5.1 percent in October 2016 compared to 4.8 percent in the previous month. It was 3.4 percent in the corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.9 percent in October 2016 compared to 0.3 percent in the previous month. Core NFNE inflation was 0.6 percent in the corresponding month of last year.

7. WPI inflation on year-on-year basis decreased to 2.8 percent in October 2016 as compared to 3.4 percent in the previous month. During October 2015, WPI inflation was recorded at -2.7 percent.
8. WPI inflation on month-on-month basis recorded at zero percent in October 2016 compared to -0.5 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 1.4 percent in October 2016 compared to 1.6 percent in the previous month. It was 0.2 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at 0.7 percent in October 2016 compared to zero percent in the previous month and 0.8 percent 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 October 2016 are described below:

- Core RSC inflation on year-on-year basis is recorded at 4.9 percent in October 2016 compared to 4.7 percent in the previous month and 4.0 percent in the corresponding month of last year.

- Core RSC inflation on month-on-month basis is recorded at 0.7 percent in October 2016 compared to 0.2 percent in the previous month and was at 0.5 percent during the corresponding month of last year.

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

Table 1.1 Inflation Trends (percent) (Base 2007- 08 = 100)																
Period	CPI Inflation						Core Inflation						WPI Inflation	SPI*** Inflation		
	General		Food		Non-food		NFNE*		Trimmed		RSC**					
	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM
Oct-15	1.6	0.5	0.5	0.4	2.4	0.5	3.4	0.6	2.8	0.4	4.0	0.5	-2.7	0.5	0.2	0.8
Nov-15	2.7	0.6	2.2	1.2	3.1	0.2	4.0	0.1	2.9	0.2	4.5	0.1	-1.7	0.0	2.3	1.1
Dec-15	3.2	-0.6	2.7	-1.6	3.6	0.2	4.1	0.2	2.7	0.2	4.8	0.5	-0.4	-0.6	3.2	-0.4
Jan-16	3.3	0.2	2.5	-0.6	3.9	0.8	4.3	0.9	3.0	0.6	4.9	0.7	0.1	-0.5	3.6	-0.5
Feb-16	4.0	-0.3	3.7	-0.7	4.2	0.0	4.5	0.2	3.6	0.1	5.1	0.2	0.6	-0.6	4.2	-0.8
Mar-16	3.9	0.1	3.7	0.5	4.1	-0.1	4.7	0.2	3.8	0.2	5.1	0.1	0.2	-0.4	3.9	-0.3
Apr-16	4.2	1.5	4.7	2.4	3.8	1.0	4.4	1.1	3.8	0.6	5.0	0.9	0.6	1.3	3.6	0.3
May-16	3.2	-0.2	2.1	-0.7	3.9	0.2	4.5	0.2	3.6	0.2	5.1	0.3	0.0	0.6	1.4	-0.7
Jun-16	3.2	0.6	2.3	1.4	3.8	0.1	4.6	0.1	3.7	0.2	4.8	0.4	0.2	1.4	1.1	1.0
Jul-16	4.1	1.3	4.7	2.5	3.7	0.5	4.5	0.6	3.6	0.5	4.8	0.6	3.0	2.3	1.7	1.0
Aug-16	3.6	-0.3	3.4	-0.9	3.7	0.2	4.6	0.2	3.5	0.1	4.8	0.2	3.5	0.0	2.0	-0.1
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
* NFNE is Non-food non-energy ** Relatively Stable Component of CPI *** SPI for all income groups combined																

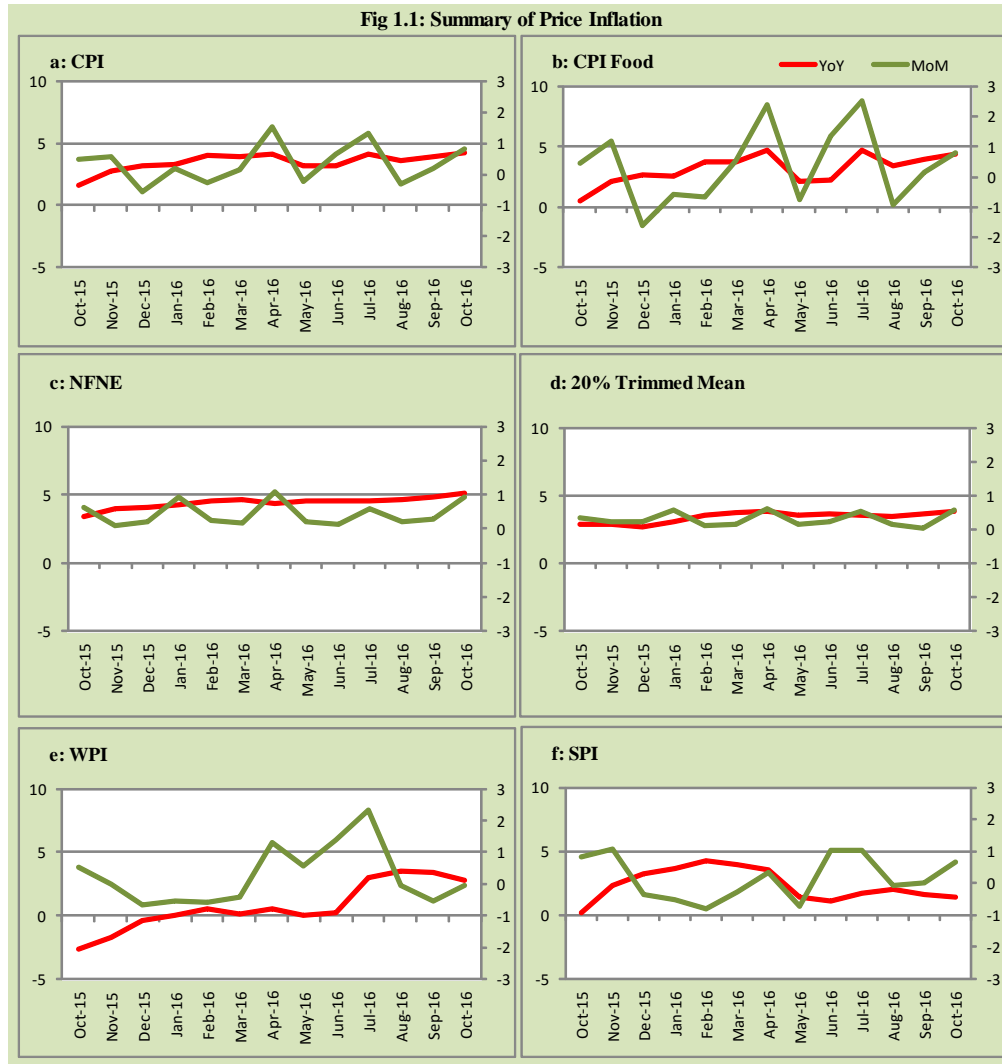


Fig 1.2: Movements in Price Indices (percent)

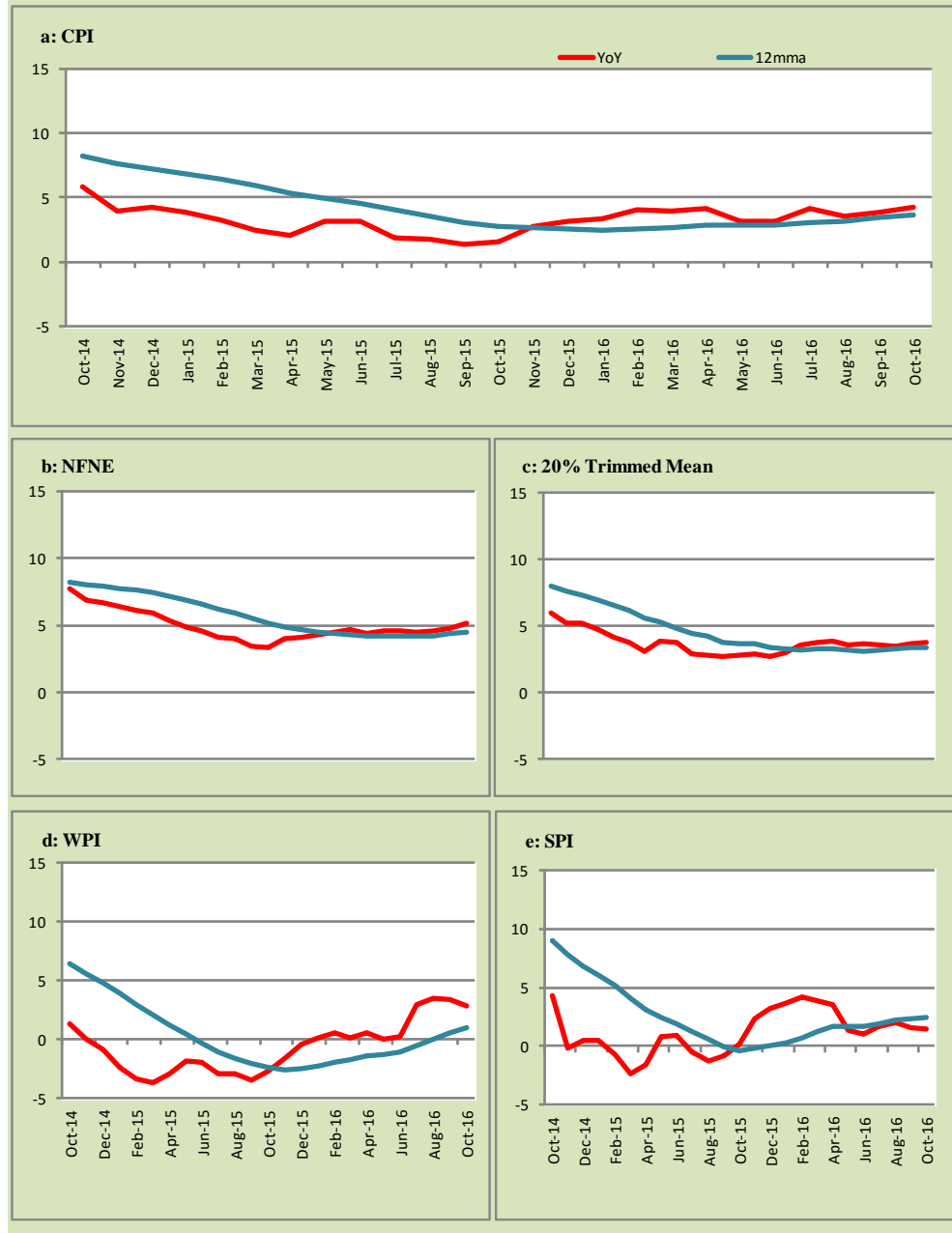


Fig 1.3: Movements in Price Indices -MoM (percent)

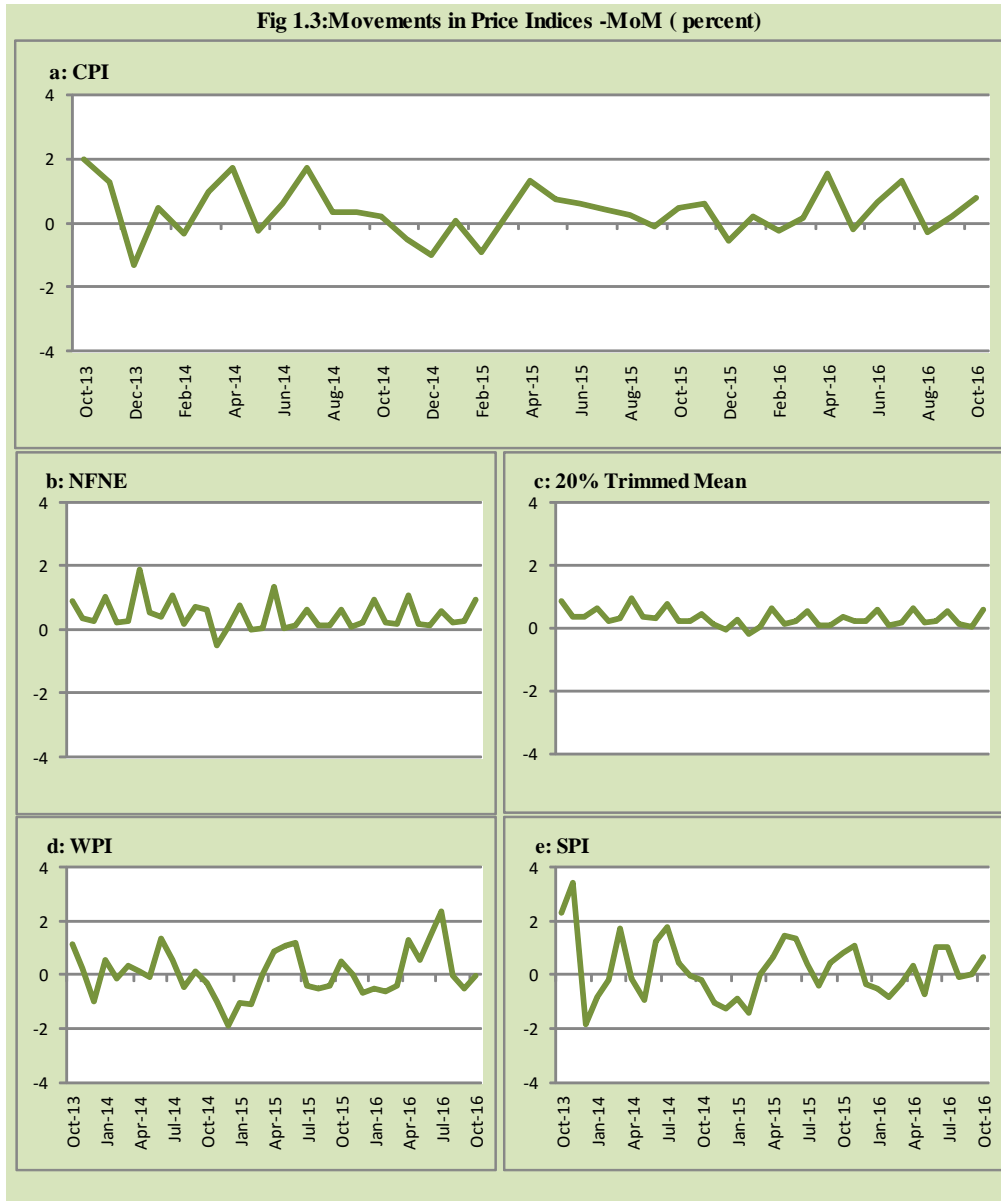
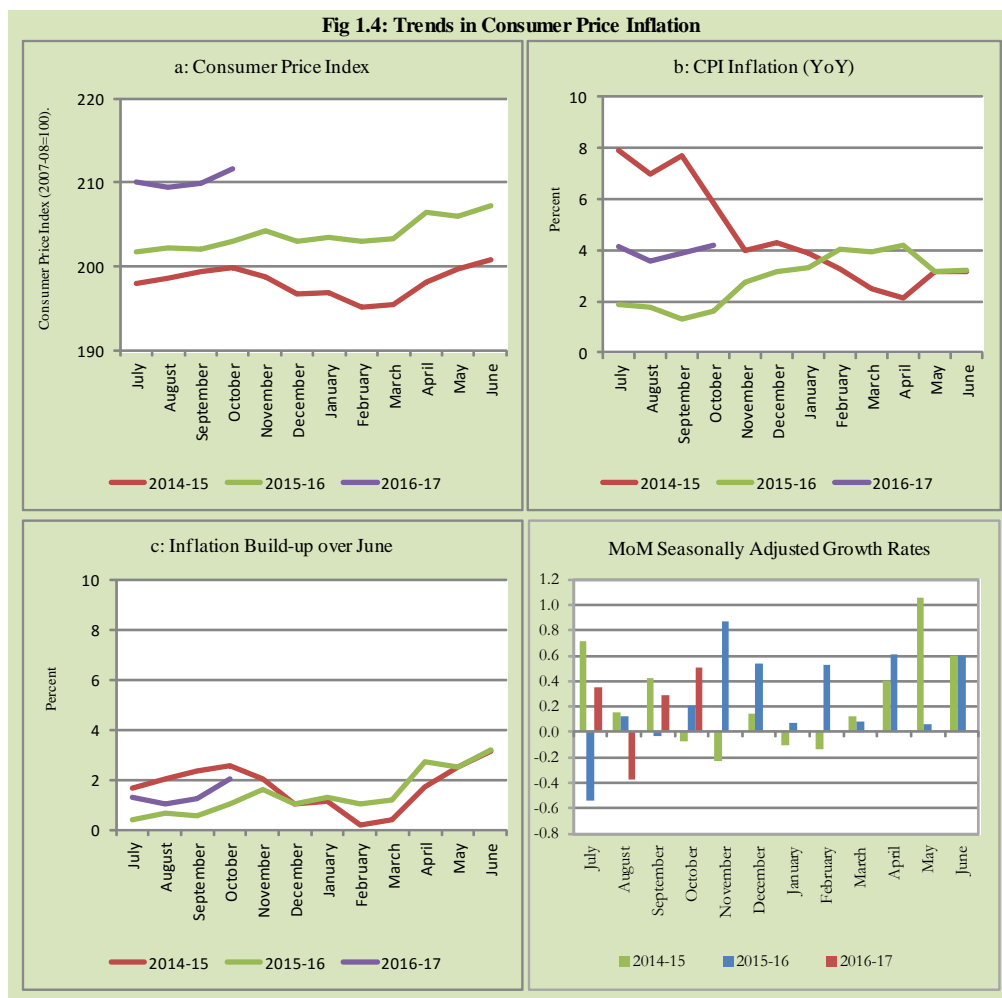


Fig 1.4: Trends in Consumer Price Inflation



2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan remained lower than overall inflation during October 2016 except Islamabad. Among these five cities, the lowest inflation was observed in Peshawar at 1.6 percent while the highest inflation was observed in Islamabad at 4.4 percent (Table A6 of annexure-A).

Table 2.1 City-wise Inflation of Selected Cities (percent)						
	Oct-15		Sep-16		Oct-16	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	0.5	1.6	0.2	3.9	0.8	4.2
Islamabad	0.2	2.5	1.4	3.8	0.8	4.4
Karachi	0.7	4.2	-0.1	3.4	0.3	3.0
Lahore	-0.2	0.2	0.7	2.0	0.3	2.4
Peshawar	0.9	3.6	0.0	2.0	0.4	1.6
Quetta	2.5	1.6	-0.8	4.1	1.7	3.3

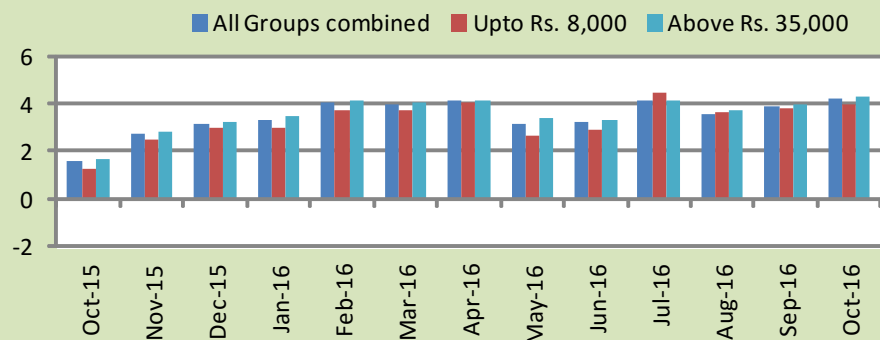
3. Income Group wise Inflation

Income group- wise data shows that income group above Rs. 35,000 witnessed higher inflation as compared to other quintiles during October 2016 in General group. The lowest income group (Up to Rs. 8, 000) showed lowest inflation in food group while comparing income groups during the month of October 2016 (Table A7 of annexure-A).

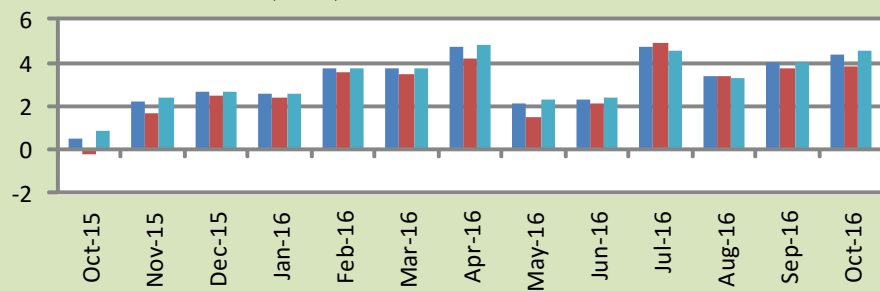
Table 3.1 Income Group- wise Inflation (YoY)									
Income Groups	General			Food			Non-food		
	Oct-15	Sep-16	Oct-16	Oct-15	Sep-16	Oct-16	Oct-15	Sep-16	Oct-16
All Groups Combined	1.6	3.9	4.2	0.5	4.0	4.4	2.4	3.8	4.1
Up to Rs. 8,000	1.3	3.8	4.0	-0.2	3.8	3.8	3.2	3.9	4.2
Rs. 8,001- 12,000	1.6	3.8	4.0	-0.1	3.8	4.0	3.5	3.8	4.0
Rs. 12,001- 18,000	1.2	3.8	4.1	0.3	4.0	4.3	2.2	3.6	3.9
Rs. 18,001- 35,000	1.8	3.8	4.1	0.6	4.1	4.5	2.9	3.5	3.8
Above Rs. 35,000	1.7	3.9	4.3	0.9	4.0	4.5	2.1	3.9	4.2

Fig 3.1: Income Group- wise Inflation

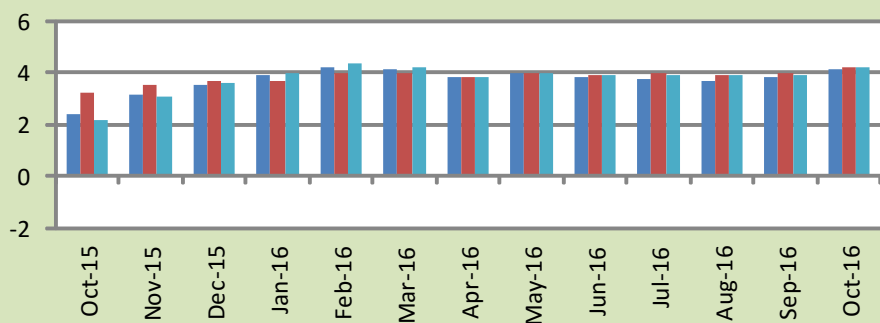
a: CPI Overall Inflation (YoY)



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 43.11 percent during October 2016 from 42.70 percent in previous month. It was 12.98 percent in October 2015.

The weighted contribution of non-food group decreased to 56.89 percent in October 2016 from 57.30 percent in previous month.

Table 4.1 Weighted Contribution to CPI Inflation (YoY)						
Period	Food	Clothing & Footwear	Housing, Water, Elect, Gas & Other Fuel	Transport	Education	Others
Oct-15	12.98	25.37	84.32	-64.95	20.62	21.67
Nov-15	33.23	13.58	46.86	-17.91	12.23	12.01
Dec-15	34.75	11.80	40.58	-8.59	10.63	10.84
Jan-16	31.38	11.62	39.80	-3.59	10.22	10.56
Feb-16	37.82	10.11	33.65	-1.23	8.91	10.74
Mar-16	38.91	11.14	34.22	-6.44	9.46	12.72
Apr-16	46.55	9.80	33.26	-6.42	5.87	10.94
May-16	27.39	12.83	43.54	-8.54	9.36	15.42
Jun-16	29.90	12.73	43.18	-10.39	9.49	15.09
Jul-16	47.51	9.16	32.21	-7.65	7.07	11.70
Aug-16	39.62	10.36	35.09	-7.91	8.72	14.13
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

5. Inflation Diffusion Index

Table 5.1 Inflation Diffusion Index - based on MoM change

	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
General	34.5	34.7	36.4	37.0	26.2	30.7	29.4	32.0	23.7	32.7	39.7	10.3	30.1
Food & Non-Alcoholic Beverages	29.6	30.4	22.3	29.2	22.1	5.3	27.5	20.2	32.7	51.8	34.2	6.1	20.0
Alcoholic Beverages & Tobacco	0.0	66.7	100.0	100.0	100.0	83.3	66.7	100.0	100.0	100.0	33.3	-16.7	-16.7
Clothing & Footwear	54.2	66.1	64.4	59.3	59.3	55.9	22.0	59.3	37.3	42.4	37.3	5.1	54.2
Housing, Water, Elect, Gas & other Fuels	44.4	33.3	16.7	36.1	0.0	-2.8	41.7	13.9	33.3	52.8	22.2	5.6	25.0
Furnishing & Household Equip. Maintenance etc	59.4	58.0	71.0	55.1	39.1	62.3	42.0	52.2	8.7	20.3	60.9	11.6	46.4
Health	17.9	15.4	7.7	12.8	17.9	25.6	33.3	25.6	25.6	20.5	46.2	33.3	43.6
Transport	11.6	18.6	16.3	30.2	-23.3	-7.0	7.0	-2.3	-7.0	4.7	27.9	9.3	2.3
Communication	0.0	16.7	41.7	25.0	-33.3	41.7	8.3	8.3	25.0	25.0	16.7	8.3	33.3
Recreation & Culture	10.3	20.5	7.7	17.9	17.9	30.8	5.1	7.7	-17.9	-2.6	7.7	10.3	-7.7
Education	18.8	0.0	18.8	12.5	31.3	50.0	68.8	50.0	31.3	-6.3	50.0	37.5	37.5
Restaurant & Hotels	100.0	66.7	66.7	50.0	100.0	100.0	33.3	66.7	50.0	66.7	83.3	50.0	33.3
Miscellaneous	45.7	20.0	65.7	48.6	57.1	60.0	42.9	60.0	51.4	48.6	77.1	-2.9	60.0
NFNE	36.4	35.2	40.8	39.9	26.6	38.5	29.3	34.6	19.8	24.9	42.3	11.5	34.6

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

Sr. No	Item	Unit	Oct-15		Sep-16		Oct-16	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-5.01	3.19	0.07	0.27	1.27	4.42
2	Wheat Flour Bag	10 Kg	-5.35	1.84	-0.82	-0.05	-1.32	1.34
3	Rice Basmati Sup. Qlty.	Kg	-15.60	-2.68	-5.68	0.06	-2.79	0.30
4	Pulse Masoor (Washed)	Kg	9.05	1.26	7.22	-1.14	5.40	-0.45
5	Pulse Moong (Washed)	Kg	7.29	1.88	-2.56	-1.55	-5.99	-1.71
6	Pulse Mash (Washed)	Kg	36.08	15.53	34.58	-3.91	13.27	-2.76
7	Pulse Gram	Kg	55.49	5.42	37.24	-0.82	33.72	2.73
8	Vegetable Ghee (Loose)	Kg	-12.98	-0.19	2.19	1.65	2.66	0.27
9	Sugar Refined	Kg	3.89	-3.73	10.22	-0.21	13.39	-0.96
10	Milk Fresh (Unboiled)	Ltr	4.07	0.09	3.92	0.00	3.83	0.00
11	Tea- Tapal Danedar	200 Gm	28.87	0.77	0.66	0.54	-0.15	-0.04
12	Beef With Bone Av. Qlty.	Kg	4.21	0.13	2.83	0.03	3.17	0.46
13	Mutton Av. Qlty.	Kg	6.38	0.11	5.11	0.18	5.00	0.00
14	Chicken Farm Broiler (Live)	Kg	-16.07	-8.58	-4.01	-3.99	26.04	20.04
15	Eggs Farm	Doz	-15.69	-3.93	7.16	5.39	7.90	-3.27
16	Potatoes	Kg	-55.42	9.85	29.80	1.19	17.40	-0.64
17	Onion	Kg	30.38	5.42	-38.47	12.74	-45.88	-7.28
18	Tomatoes	Kg	17.39	33.96	10.34	-4.91	-15.43	2.67
19	Ginger	Kg	-26.68	-8.62	-15.96	20.65	-16.36	-9.06
20	Garlic	Kg	30.16	5.56	80.01	9.50	73.48	1.73

7. Global Commodity Prices

Table 7.1 Changes in Major Global Indices (percent)

Item/ Group	Oct-15		Sep-16		Oct-16	
	YoY	MoM	YoY	MoM	YoY	MoM
Overall	-34.3	0.0	-1.3	-0.4	4.4	5.7
Food	-14.4	-0.5	5.2	-2.0	6.7	0.9
Metals	-24.8	-2.2	-1.2	-2.1	2.6	1.6
Energy	-43.8	0.5	-4.1	0.8	4.9	10.1
Agricultural Raw Material	-17.0	0.6	0.4	-0.7	-0.1	0.1
Cotton	-1.9	0.4	13.3	-3.0	13.7	0.8

Source: IMF

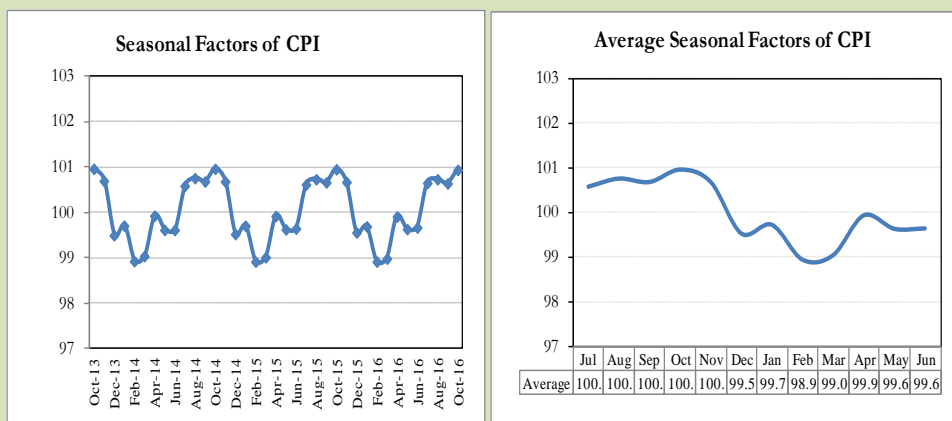
8. Seasonal Adjustment in CPI

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 October 2016 has been used for seasonal adjustment analysis. The seasonal analysis is carried out without taking trading-day or Islamic calendar month's effects.

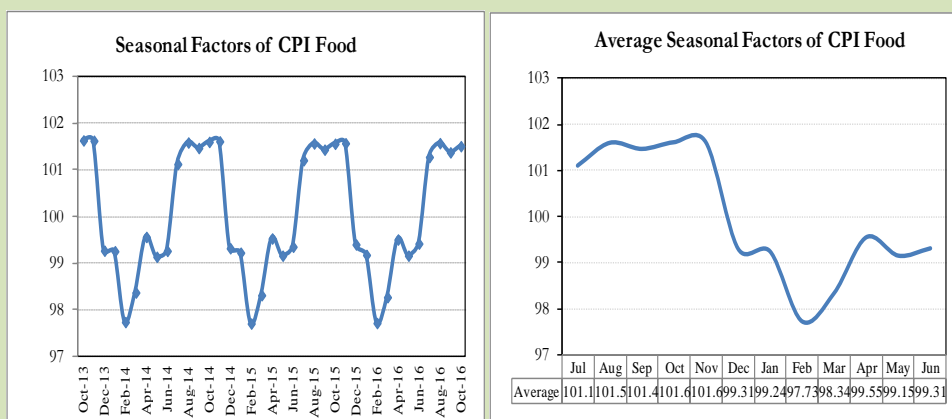
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the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

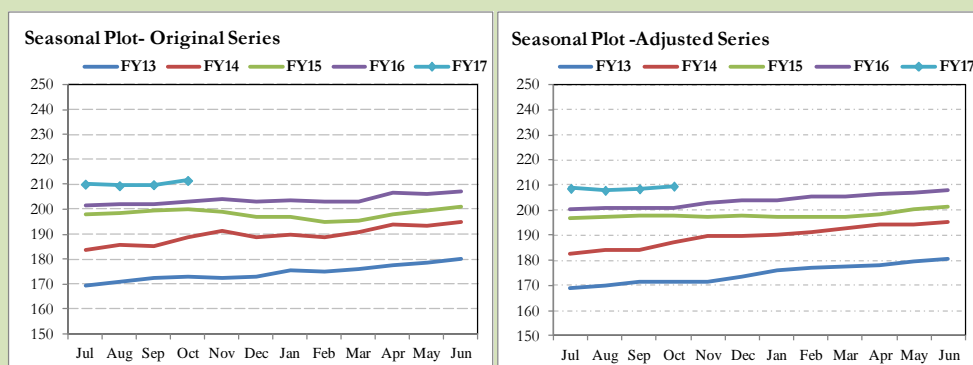
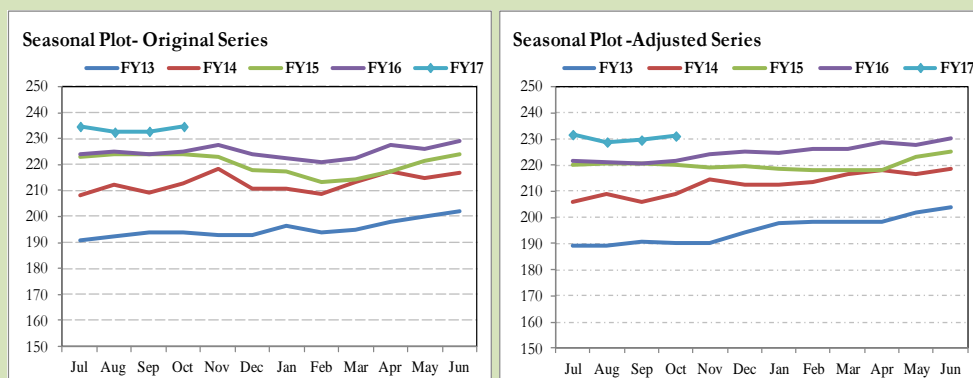


Fig. 8.4 Seasonal Plots of CPI (Food)



Seasonally adjusted CPI for October 2016 stood at 209.61 against 211.57 in original series showing a decrease of 1.96 on account of adjustment of upward seasonality in October 2016.

Seasonally adjusted CPI food group for October 2016 stood at 231.19 against 234.68 in original series showing a decrease of 3.49 on account of adjustment of upward seasonality in October 2016.

Month-on-month change of seasonally adjusted CPI series stood at 0.51% reflecting increase during October 2016 over September 2016 and an increase of 0.81% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at 0.68% reflecting increase during October 2016 over September 2016 and an increase of 0.81% in original series.

It is important to note that inflation rates should be analyzed on the basis of seasonally adjusted rates. This is especially needed for inflation rates on month-on-month basis. The most recent annual rate of inflation is usually indicated by annualizing the seasonally adjusted month-on-month rate. Annualized rate of CPI inflation in October 2016 (corresponding to the seasonally adjusted month-on-month rate) is 6.27 percent.

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

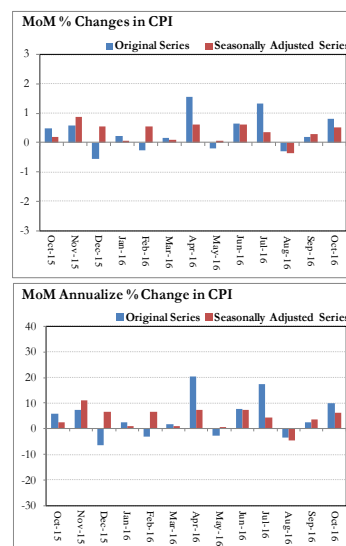
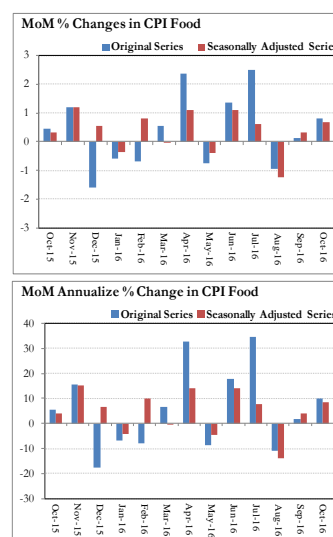


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



Annexure A

Table A1: CPI Inflation by Groups (percent)							
	Weight	MoM change			YoY change		
		Oct-15	Sep-16	Oct-16	Oct-15	Sep-16	Oct-16
I. Food Group	37.5	0.4	0.1	0.8	0.5	4.0	4.4
Food & Non-Alcoholic Beverages	34.8	0.5	0.2	0.9	-0.4	3.1	3.6
Alcoholic Beverages & Tobacco	1.4	0.0	-0.4	0.1	16.3	17.5	17.6
Restaurant & Hotels	1.2	0.8	0.1	0.1	4.3	5.9	5.2
II. Non-Food Group	62.5	0.5	0.2	0.8	2.4	3.8	4.1
Clothing & Footwear	7.6	0.5	0.1	0.3	5.1	4.4	4.2
Housing, Water, Elect, Gas & other Fuels	29.4	0.8	0.0	1.4	5.3	4.3	4.9
Furnishing & Household Equip. Maintenance etc	4.2	0.3	0.0	0.2	3.9	3.4	3.3
Health	2.2	0.1	1.4	0.9	2.7	7.0	7.9
Transport	7.2	0.1	0.1	0.1	-14.2	-3.0	-3.1
Communication	3.2	0.0	0.0	0.3	0.4	0.4	0.7
Recreation & Culture	2.0	0.1	0.2	0.0	2.2	1.4	1.4
Education	3.9	0.0	2.4	0.7	8.8	10.2	10.9
Miscellaneous	2.8	0.5	-0.2	0.1	2.5	5.5	5.1
Headline	100.0	0.5	0.2	0.8	1.6	3.9	4.2

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)	
		Oct-15	Oct-16	Oct-15	Oct-16	Oct-15	Oct-16	Oct-15	Oct-16	Oct-15	Oct-16
I. Food Group	4.4	130	130	37	28	43	53	28	23	22	26
Food & Non-Alcoholic Beverages	3.6	118	118	37	28	39	51	24	18	18	21
Alcoholic Beverages & Tobacco	17.6	6	6	0	0	1	0	1	1	4	5
Restaurant & Hotels	5.2	6	6	0	0	3	2	3	4	0	0
II. Non-Food Group	4.1	348	348	111	97	143	158	78	72	16	21
Clothing & Footwear	4.2	59	59	8	7	24	38	24	13	3	1
Housing, Water, Elect, Gas & other Fuels	4.9	36	36	6	14	12	8	16	13	2	1
Furnishing & Household Equip. Maintenance etc	3.3	69	69	4	6	43	54	21	9	1	0
Health	7.9	39	39	21	11	13	14	4	6	1	8
Transport	-3.1	43	43	36	29	5	8	2	5	0	1
Communication	0.7	12	12	6	3	5	6	0	2	1	1
Recreation & Culture	1.4	39	39	17	23	15	10	5	3	2	3
Education	10.9	16	16	9	1	3	4	0	8	4	3
Miscellaneous	5.1	35	35	4	3	23	16	6	13	2	3
Overall	4.2	478	478	148	125	186	211	106	95	38	47

Note: Prices of 09 seasonal items were not reported during the month.

Table A3: Top and Bottom 15 Contributors to CPI Inflation (YoY) in October 2016					
Top 15 Contributors		YoY Change		Weighted Contribution	
Items/ Contributors	Weights	Oct-15	Oct-16		
Ranked by Weighted Contribution					
1	House Rent	21.81	5.42	6.65	29.04
2	Fresh Vegetable	1.75	6.14	20.50	10.83
3	Education	3.94	8.75	10.94	10.57
4	Cigarette	1.39	16.38	17.64	8.95
5	Milk Fresh	6.68	4.00	3.70	7.44
6	Chicken	1.36	-16.07	26.04	5.97
7	Sugar	1.04	3.89	13.39	3.62
8	Meat	2.43	4.94	3.79	2.75
9	Fresh Fruits	1.86	-2.79	5.25	2.50
10	Pulse Gram	0.24	55.48	33.72	2.45
11	Tailoring	0.88	9.72	7.05	2.07
12	Cotton Cloth	1.73	4.08	4.65	2.03
13	Potatoes	0.45	-55.42	17.40	1.89
14	Ready Made Food	1.23	4.33	5.15	1.88
15	Personal Equipments	0.84	1.49	6.49	1.74
Total		47.65			93.73
Bottom 15 Contributors					
1	Onion	0.51	30.37	-45.88	-8.93
2	Motor Fuel	3.03	-21.18	-7.55	-3.95
3	Tomatoes	0.42	17.38	-15.44	-1.76
4	Transport Services	2.70	-14.90	-2.06	-1.29
5	Tea	0.84	25.02	-3.63	-0.94
6	Wheat Flour	4.16	-4.36	-0.87	-0.90
7	Rice	1.58	-16.11	-2.33	-0.71
8	Pulse Moong	0.23	7.29	-5.99	-0.49
9	Motor Vehicle Accessories	0.24	-0.90	-6.18	-0.40
10	Cooking Oil	1.75	-16.52	-1.11	-0.31
11	Kerosene Oil	0.01	-24.06	-6.26	-0.01
12	Beans	0.03	-4.35	-0.61	0.00
13	Mustard Oil	0.10	-3.05	-0.21	0.00
14	Motor Vehicle Tax	0.11	0.00	0.00	0.00
15	Electricity	4.40	4.69	0.00	0.00
Total		20.11			-19.70

Table A3.1: Top and Bottom 15 Contributors to CPI Inflation (MoM) in October 2016

<u>Top 15 Contributors</u>		Weights	<u>MoM Change</u>		Weighted Contribution
Items/ Contributors			Sep-16	Oct-16	
Ranked by Weighted Contribution					
1	House Rent	21.81	0.00	2.00	46.21
2	Chicken	1.36	-3.99	20.04	24.38
3	Fresh Vegetable	1.75	3.40	6.09	18.47
4	Wheat Flour	4.16	-0.06	1.06	5.45
5	Education	3.94	2.38	0.70	3.76
6	Wheat	0.35	0.27	4.42	1.76
7	Pulse Gram	0.24	-0.82	2.72	1.30
8	Tomatoes	0.42	-4.91	2.67	1.27
9	Drug Medicine	1.27	1.72	1.04	1.24
10	Meat	2.43	0.08	0.30	1.15
11	Besan	0.15	-3.61	3.68	1.03
12	Household Textile	0.65	-0.26	1.15	0.98
13	Doctor (MBBS) Clinic Fee	0.59	1.47	0.99	0.91
14	Tailoring	0.88	1.27	0.51	0.80
15	Woolen Cloth	0.88	0.54	0.59	0.75
Total		40.88			109.44
Bottom 15 Contributors					
1	Fresh Fruits	1.86	-0.77	-1.96	-5.07
2	Onion	0.51	12.73	-7.28	-4.18
3	Egg	0.46	5.39	-3.27	-1.79
4	Beverages	1.20	0.05	-1.08	-1.70
5	Sugar	1.04	-0.21	-0.96	-1.50
6	Pulse Mash (Washed)	0.21	-3.91	-2.76	-1.23
7	Pulse Moong	0.23	-1.54	-1.71	-0.68
8	Spices	0.54	-0.30	-0.68	-0.53
9	Sewing Needle & Dry Cell	0.15	-1.00	-2.41	-0.44
10	Potatoes	0.45	1.19	-0.64	-0.42
11	Personal Equipments	0.84	-1.07	-0.26	-0.37
12	Transport Services	2.70	0.00	-0.06	-0.19
13	Fish	0.30	-0.84	-0.31	-0.12
14	Tea	0.84	0.05	-0.09	-0.11
15	Pulse Masoor	0.27	-1.07	-0.25	-0.09
Total		11.61			-18.40

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in October 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Oct-15	Oct-16	
A. Ranked by Percentage Change					
1	Gram Whole	0.16	19.94	42.35	1.72
2	Pulse Gram	0.24	55.48	33.72	2.45
3	Besan	0.15	46.16	30.65	1.35
4	Chicken	1.36	-16.07	26.04	5.97
5	Fresh Vegetable	1.75	6.14	20.50	10.83
6	Cigarette	1.39	16.38	17.64	8.95
7	Potatoes	0.45	-55.42	17.40	1.89
8	Sugar	1.04	3.89	13.39	3.62
9	Pulse Mash (Washed)	0.21	36.08	13.28	1.01
10	Education	3.94	8.75	10.94	10.57
11	Betel Leaves & Nuts	0.02	6.24	10.61	0.06
12	Doctor (MBBS) Clinic Fee	0.59	3.25	9.18	1.55
13	Water Supply	0.50	0.00	8.98	0.78
14	Medical Equipment	0.01	2.24	8.43	0.02
15	Egg	0.46	-15.69	7.90	0.77
Total		12.27			51.54
B. Ranked by Weights					
1	House Rent	21.81	5.42	6.65	29.04
2	Milk Fresh	6.68	4.00	3.70	7.44
3	Electricity	4.40	4.69	0.00	0.00
4	Wheat Flour	4.16	-4.36	-0.87	-0.90
5	Education	3.94	8.75	10.94	10.57
6	Communication & Apparatus	3.15	0.18	0.50	0.24
7	Motor Fuel	3.03	-21.18	-7.55	-3.95
8	Transport Services	2.70	-14.90	-2.06	-1.29
9	Meat	2.43	4.94	3.79	2.75
10	Vegetable Ghee	2.07	-12.63	0.73	0.24
11	Fresh Fruits	1.86	-2.79	5.25	2.50
12	Fresh Vegetable	1.75	6.14	20.50	10.83
13	Cooking Oil	1.75	-16.52	-1.11	-0.31
14	Cotton Cloth	1.73	4.08	4.65	2.03
15	Rice	1.58	-16.11	-2.33	-0.71
Total		63.07			58.49
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 4.2 percent in October, 2016.					

Table A3.3: Top Ten Contributors to CPI Food Inflation (YoY) in October 2016

Table 1: Weighted Contribution to CPI Food Inflation (2017) in October 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Oct-15	Oct-16	
A. Ranked by Weighted Contribution					
1	Fresh Vegetable	1.75	6.14	20.50	10.83
2	Cigarette	1.39	16.38	17.64	8.95
3	Milk Fresh	6.68	4.00	3.70	7.44
4	Chicken	1.36	-16.07	26.04	5.97
5	Sugar	1.04	3.89	13.39	3.62
6	Meat	2.43	4.94	3.79	2.75
7	Fresh Fruits	1.86	-2.79	5.25	2.50
8	Pulse Gram	0.24	55.48	33.72	2.45
9	Potatoes	0.45	-55.42	17.40	1.89
10	Ready Made Food	1.23	4.33	5.15	1.88
Total		18.43			48.27
B. Ranked by Percentage Change					
1	Gram Whole	0.16	19.94	42.35	1.72
2	Pulse Gram	0.24	55.48	33.72	2.45
3	Besan	0.15	46.16	30.65	1.35
4	Chicken	1.36	-16.07	26.04	5.97
5	Fresh Vegetable	1.75	6.14	20.50	10.83
6	Cigarette	1.39	16.38	17.64	8.95
7	Potatoes	0.45	-55.42	17.40	1.89
8	Sugar	1.04	3.89	13.39	3.62
9	Pulse Mash (Washed)	0.21	36.08	13.28	1.01
10	Betel Leaves & Nuts	0.02	6.24	10.61	0.06
Total		6.77			37.84
C. Ranked by Weights					
1	Milk Fresh	6.68	4.00	3.70	7.44
2	Wheat Flour	4.16	-4.36	-0.87	-0.90
3	Meat	2.43	4.94	3.79	2.75
4	Vegetable Ghee	2.07	-12.63	0.73	0.24
5	Fresh Fruits	1.86	-2.79	5.25	2.50
6	Fresh Vegetable	1.75	6.14	20.50	10.83
7	Cooking Oil	1.75	-16.52	-1.11	-0.31
8	Rice	1.58	-16.11	-2.33	-0.71
9	Cigarette	1.39	16.38	17.64	8.95
10	Chicken	1.36	-16.07	26.04	5.97
Total		25.05			36.76
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 4.4 percent in October, 2016.					

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in October 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Oct-15	Oct-16	
A. Ranked by Weighted Contribution					
1	House Rent	21.81	5.42	6.65	29.04
2	Education	3.94	8.75	10.94	10.57
3	Tailoring	0.88	9.72	7.05	2.07
4	Cotton Cloth	1.73	4.08	4.65	2.03
5	Personal Equipments	0.84	1.49	6.49	1.74
6	Drug Medicine	1.27	1.48	7.80	1.73
7	Personal Care	1.49	2.58	4.44	1.62
8	Household Servant	1.04	5.02	5.39	1.56
9	Doctor (MBBS) Clinic Fee	0.59	3.25	9.18	1.55
10	Ready Made Garment	0.97	6.59	5.08	1.31
Total		34.58			53.23
B. Ranked by Percentage Change					
1	Education	3.94	8.75	10.94	10.57
2	Doctor (MBBS) Clinic Fee	0.59	3.25	9.18	1.55
3	Water Supply	0.50	0.00	8.98	0.78
4	Medical Equipment	0.01	2.24	8.43	0.02
5	Drug Medicine	1.27	1.48	7.80	1.73
6	Tailoring	0.88	9.72	7.05	2.07
7	House Rent	21.81	5.42	6.65	29.04
8	Personal Equipments	0.84	1.49	6.49	1.74
9	Postal Services	0.07	6.32	5.82	0.10
10	Household Servant	1.04	5.02	5.39	1.56
Total		30.96			49.17
C. Ranked by Weights					
1	House Rent	21.81	5.42	6.65	29.04
2	Electricity	4.40	4.69	0.00	0.00
3	Education	3.94	8.75	10.94	10.57
4	Communication & Apparatus	3.15	0.18	0.50	0.24
5	Motor Fuel	3.03	-21.18	-7.55	-3.95
6	Transport Services	2.70	-14.90	-2.06	-1.29
7	Cotton Cloth	1.73	4.08	4.65	2.03
8	Gas	1.58	9.92	0.00	0.00
9	Footwear	1.55	0.56	0.90	0.27
10	Personal Care	1.49	2.58	4.44	1.62
Total		45.39			38.54
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 4.1 percent in October, 2016.					

Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: October 2016

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, Ginger, Tomatoes, Tea Lipton Yellow Label 200 Gm, Ice, Arvi, Rice Basmati 385/386, Pulse Moong (Washed)	Pepper Black National, Powder Milk Nido 400Gm., Biscuits-Packed, Groundnuts (With Shell), Milk Fresh (Unboiled), Toffee (Hilal)	Spinach, Almonds Whole Av.Qlty., Radish, Chocolate Candy (Small Size, Eggs Farm, Pulse Masoor (Whole), Cinnamon Loose Av. Qlty	Garlic, Gram Whole Yellow Av.Qlty, Pulse Gram, Lady Finger, Gram Whole Black Av Qlty., Guava, Besan Av. Qlty., Chicken Farm Broiler (Live), Brinjal, Turai, Cauliflower, Cucumber (Kheera), Turnip, Potatoes, Chillies Green
Alcoholic Beverages & Tobacco			Betel Leaves	Cigarettes Capstan 20,S, Cigarettes Morven Gold 20,S, Cigarettes K-20,S, Cigarettes Gold Leaf 20,S, Betel Nuts
Clothing & Footwear	Second-Hand Coat For Men, Gents Shoe, Art 1109 Servis, Child Shoe Power Lite Bata, Sports Shoes, Ladies Spoung Chappal Bata, Ladies Sandal Bata	Pullover (Gents) Others Av.Qlty, Washing Charges Paint & Shirt, Handkerchief Sup. Qlty Pak, Dry Cleaning Suit Coat Pant, Long Cloth 57" Gul Ahmed/Al Karam	Tailoring Shirt, Frock W/Wear Girls, School Uni. Kameez-Shal.Girls, School Uni. Kameez-Shal.Boys, Brassier Sup. Qlty, Tailoring Suit (Female)	Tailoring Charges Pant (Men)
Housing, Water, Elect, Gas & other Fuels	Kerosene Oil, Iron Bar (M.S. Bar) 1/2", Elect. Charges 101 - 300 Units, Elect. Charges Upto 50 Units	Unskilled Labor Wage Rat, Plumber Wage Rate, Carpenter Wage Rate, Electrician Wage Rate(P/Pnt), Firewood Whole, Synthetic Enemal Robialac	Water Charges Per House, Bajree, Timber Shesham Log, House Rent (Combined), House Rent For Q-I, House Rent For Q-IV	Cement Blocks (6"X8"X12")
Furnishing & Household Equip. Maintenance etc	Washing Powder 1000 Grm (Express), Match Box (Small), Sewing Machine Needle (Singer), Bucket(Balti) Plastic Med	Table Spoon S.Steel Sup.Qlty, Quilt (Lihaf) 3 Kg. Cotton, Boot Polish Cherry/Kiwi 50 MI, Dinner Set Plastic 72 Pcs, Towel(3'X2') Av. Qlty	Elect. Iron Philips, Carpet Plain Av. Qlty, Dining Table 6 Chairs, Gas Burner Double, Robin Blue (35 Gms), Non Stick Cooking Pan	
Health	Glaxos-D (450 Gm), Saniplast (1 Putty), Sancos Syrup (50 ML), Renitec Tab. 5 Mg., Daonil Tab. 5 Mg., Cac. 1000 Tab	Ear Drops (Cardisporine), Blood Test (Cp) Charges, Hydryllin Syrup 120 ML., Sugar Test (Random/Fasting), Glycerin Small Bottle	Cotton Bandage 2" - 4", Doctor (MBBS) Clinic Fee, X-Ray (Chest) Charges, O.R.S. (Nimcol), Urine Test (Dr) Charges, Thermometer China	Lederplex Syrup, Entox Tab., Dettol (Medium), Disprin Tab., Panadol Tab. Extra/Plain, Septran Tablets, Jouhar Joshanda, Ventolin Tab. 2Mg.
Transport	Petrol Super, Bus Fare Min (Within City), High Speed Diesel HSD, Tyre Motor Cycle Without Tube	Suzuki Fare Min.Within City, Car Suzuki 1000 CC, Cycle Overhauling Charges, Car Suzuki 800 CC (W/O. Ac), Motor Cycle Service Charges	Car Honda Civic 1500 CC, Tyre Puncture Charges, Taxi 4 Seater Fare, Full Tonga Charges, Suzuki Fare Maximum Within City	Car Toyota 1300 CC
Communication	Postal Envelope Domestic, Telephone Charges Local Call, Telephone Charges Outside City	Internet Charges, Telephone Set Av. Qlty, Mobile Set Nokia/Sony/Ericsson Av.Qlty, U.M.S. Reg Charges Min.	T.C.S. Ch. Min.Within Zone, Fax Charges (Local)	Postal Registration Charges
Recreation & Culture	Urdu Book Class V (T.B.Board), Computer CD (TDK/Imation), English Book Class IX or X, Urdu Book Class IX/X (T.B. Board)	Fountain Pen Hero/Wings/China, Exercise Book Lined 80/10, Maths Book Class IX or X, Personnel Computer (Branded), Cable Charges	Cinema Non-A/C High Class, Pencil Goldfish/Deer, Ball Pen (Local)	Cinema A/C High Class, Video Game Sega 16 Byte, Maths Book Class V (T.B.Board)
Education	MBA Tuition Fee	Pvt Med. College Fee MBBS (1st Year), Pvt Eng.College Fee (1st Year), Govt. College Fee 1st. Year	Govt. Med. College Fee MBBS 1st Year, Pvt School Fee Eng.Med (Class-X)	Govt. University Fee M.Sc/ MA, Govt. Engg. Coll. Fee 1st Year, I.T. Tuition Fees
Restaurant & Hotels		Chicken Biryani Full/Double, Bread Tandoori St. Size	Cooked Mutton (Av. Hotel), Cooked Beef (Av. Hotel), Cooked Dal (Av. Hotel)	
Miscellaneous	Shampoo Sunsilk/Pantene 100 MI, Toilet Soap Safeguard Bath Size	Wrist Watch Gents Citizen, Artificial Jewellery Set, Purse Ladies (Leather) Av. Qlty	Suitcase Rexin (24"X16"X6"), Gold Tezabi 24 Ct, Face Cream Ponds (Medium), Silver Tezabi 24 Ct	Toothpowder Dentonic 90 Gms, Toothpaste Med Size Colgate 70Gms, Beauty Cream (Fair & Lovely)

Table A5: City- wise CPI Inflation by Income Groups, October 2016

	Up to Rs: 8000						Rs 8001- 12000					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	0.4	7.6	0.0	8.5	0.8	6.5	0.1	8.2	-0.1	9.1	0.4	7.2
2 Islamabad	0.6	3.7	0.2	3.2	1.1	4.2	0.5	3.6	-0.2	3.7	1.3	3.4
3 Lahore	0.3	2.5	0.0	2.2	0.7	2.9	0.3	2.4	0.0	2.3	0.6	2.6
4 Gujranwala	1.4	3.8	1.5	4.0	1.2	3.5	1.3	3.8	1.5	4.3	1.1	3.2
5 Sialkot	0.0	3.8	-0.6	4.3	0.8	3.0	-0.4	3.9	-1.5	4.7	0.8	3.1
6 Faisalabad	1.3	6.6	1.6	6.5	0.9	6.6	1.4	6.9	1.6	7.4	1.1	6.3
7 Multan	1.5	3.1	1.2	2.6	1.9	3.6	1.5	3.0	1.1	2.6	1.9	3.4
8 Sargodha	0.8	3.5	1.2	5.0	0.3	1.9	0.6	3.6	1.0	5.5	0.3	1.9
9 Bahawalpur	1.3	4.9	1.0	4.8	1.6	5.0	1.2	5.8	0.7	5.3	1.6	6.2
10 Karachi	0.4	3.1	0.5	2.5	0.3	3.8	0.4	3.2	0.4	2.7	0.3	3.8
11 Hyderabad	0.5	2.1	0.4	1.3	0.6	3.3	0.4	2.1	0.4	1.4	0.4	3.1
12 Sukkur	0.2	2.3	-0.1	1.5	0.5	3.2	0.3	2.4	0.1	1.7	0.5	3.1
13 Larkana	0.0	4.9	0.1	3.4	0.0	6.7	0.0	4.7	0.1	2.7	0.0	6.7
14 Peshawar	0.6	1.5	0.9	2.6	0.2	0.3	0.5	1.6	0.9	2.8	0.2	0.4
15 Bannu	0.9	4.7	1.2	4.7	0.5	4.6	0.9	5.4	1.2	4.8	0.5	5.9
16 Quetta	1.7	3.3	0.7	2.6	3.0	4.3	1.6	3.3	0.6	2.9	2.6	3.7
17 Khuzdar	0.5	4.2	0.4	4.2	0.6	4.1	0.6	3.8	0.5	4.1	0.8	3.4
	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	0.1	7.8	-0.1	8.7	0.3	7.0	0.1	7.4	-0.1	8.7	0.2	6.3
2 Islamabad	0.6	3.6	-0.1	4.4	1.3	2.9	0.6	3.9	-0.1	4.9	1.3	3.1
3 Lahore	0.3	2.5	-0.1	2.4	0.6	2.6	0.3	2.3	0.0	2.7	0.7	2.0
4 Gujranwala	1.3	4.1	1.4	4.6	1.3	3.5	1.1	3.6	1.2	4.6	1.1	2.8
5 Sialkot	-0.8	3.7	-2.1	4.3	0.5	3.1	-1.0	3.3	-2.5	4.5	0.4	2.3
6 Faisalabad	1.5	7.6	1.5	8.1	1.4	7.1	1.5	7.7	1.4	8.9	1.6	6.6
7 Multan	1.6	3.2	1.1	2.6	2.0	3.9	1.5	3.3	1.2	3.0	1.8	3.6
8 Sargodha	1.3	4.5	1.1	6.6	1.5	2.7	2.0	5.5	1.1	7.4	2.7	4.1
9 Bahawalpur	1.2	5.9	0.5	5.6	1.9	6.2	1.1	6.6	0.3	6.1	1.7	7.0
10 Karachi	0.4	3.4	0.4	2.9	0.3	3.9	0.3	3.2	0.4	3.1	0.2	3.3
11 Hyderabad	0.3	2.0	0.4	1.3	0.2	2.8	0.5	1.8	0.4	1.4	0.6	2.2
12 Sukkur	0.4	2.5	0.2	1.9	0.5	3.0	0.3	2.2	0.2	1.9	0.4	2.4
13 Larkana	0.1	5.3	0.1	3.2	0.0	7.2	0.0	5.2	0.1	3.0	0.0	6.8
14 Peshawar	0.5	1.7	0.9	3.1	0.1	0.3	0.4	1.6	0.8	3.4	0.1	0.2
15 Bannu	0.9	5.1	1.3	5.1	0.6	5.1	0.9	5.6	1.3	5.9	0.5	5.3
16 Quetta	1.6	3.1	0.6	2.9	2.6	3.2	1.7	3.2	0.6	3.3	2.7	3.1
17 Khuzdar	0.6	4.0	0.3	4.6	0.9	3.4	0.6	4.1	0.3	4.7	0.9	3.5
	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	-0.1	7.2	-0.3	8.7	0.0	6.5	0.0	7.3	-0.2	8.7	0.1	6.4
2 Islamabad	0.8	4.5	-0.2	5.7	1.3	3.9	0.8	4.4	-0.2	5.3	1.5	3.8
3 Lahore	0.3	2.5	-0.1	3.1	0.5	2.1	0.3	2.4	-0.1	2.8	0.5	2.2
4 Gujranwala	1.0	3.5	1.0	4.3	0.9	3.1	1.1	3.7	1.2	4.4	1.1	3.1
5 Sialkot	-1.3	3.2	-3.7	4.2	0.0	2.7	-1.0	3.4	-2.7	4.4	0.3	2.7
6 Faisalabad	1.9	7.8	1.1	9.3	2.4	7.0	1.6	7.4	1.4	8.2	1.7	6.8
7 Multan	1.5	4.2	1.0	2.8	1.7	4.8	1.5	3.6	1.1	2.8	1.8	4.2
8 Sargodha	3.7	6.3	1.0	8.3	5.0	5.5	1.9	5.0	1.1	6.9	2.5	3.8
9 Bahawalpur	1.0	8.0	0.0	5.2	1.4	9.2	1.1	6.6	0.4	5.4	1.5	7.3
10 Karachi	0.3	2.8	0.4	3.0	0.3	2.6	0.3	3.0	0.4	2.9	0.2	3.0
11 Hyderabad	0.4	2.0	0.7	1.2	0.3	2.5	0.3	2.0	0.5	1.3	0.2	2.5
12 Sukkur	0.4	2.9	0.3	2.1	0.4	3.2	0.3	2.4	0.2	1.9	0.4	2.8
13 Larkana	0.1	5.6	0.2	2.5	0.1	7.0	0.0	5.1	0.1	3.1	0.0	6.4
14 Peshawar	0.3	1.5	1.0	3.6	-0.1	0.5	0.4	1.6	0.9	3.2	0.0	0.4
15 Bannu	0.9	6.9	1.6	5.6	0.5	7.6	0.9	5.5	1.3	5.3	0.6	5.5
16 Quetta	1.8	3.6	0.6	4.1	2.5	3.3	1.7	3.3	0.6	3.3	2.5	3.3
17 Khuzdar	0.5	4.2	0.5	4.4	0.5	4.1	0.6	4.0	0.4	5.0	0.7	3.2

Table A6: City- wise CPI Inflation (YoY) October, 2016

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Mianwali	10.5	10.8	10.3	Nawabshah	4.1	5.8	3.1
Abbotabad	10.3	7.5	12.2	Attock	4.1	6.2	2.7
Faisalabad	7.4	8.2	6.8	Turbat	4.0	-0.9	7.2
Rawalpindi	7.3	8.7	6.4	Khuzdar	4.0	5.0	3.2
Bahawalpur	6.6	5.4	7.3	Gujranwala	3.7	4.4	3.1
Loralai & Cantt	6.5	7.1	6.1	Mardan	3.7	5.8	2.5
Sahiwal	6.3	8.7	4.9	Multan	3.6	2.8	4.2
Bannu	5.5	5.3	5.5	Dera Mrd.Jamali	3.6	3.0	4.0
Jhang	5.4	7.7	4.0	Sialkot	3.4	4.4	2.7
Rahim Yar Khan	5.1	3.0	6.6	Quetta	3.3	3.3	3.3
Larkana	5.1	3.1	6.4	Muzaffargarh	3.2	2.4	3.8
Sargodha	5.0	6.9	3.8	Bahawalnagar	3.1	5.4	1.5
Vehari	4.6	3.8	5.1	Karachi	3.0	2.9	3.0
Wazirabad	4.5	6.6	3.0	Lahore	2.4	2.8	2.2
Islamabad	4.4	5.3	3.8	Sukkur	2.4	1.9	2.8
Jhelum	4.4	6.5	2.9	D. I. Khan	2.3	-1.3	4.9
Gawadar	4.3	4.5	4.2	D. G. Khan	2.1	1.2	2.7
Dadu	4.3	6.9	2.4	Hyderabad	2.0	1.3	2.5
				Mirpur Khas	1.9	2.0	1.8
				Mingora	1.6	1.0	1.9
				Peshawar	1.6	3.2	0.4
				Mithi	1.3	0.5	1.7

Note: High inflation refers to equal or above average inflation, and low inflation refers to below average

Table A7: Income Group-wise Inflation (percent)						
	MoM			YoY		
	Oct-15	Sep-16	Oct-16	Oct-15	Sep-16	Oct-16
<u>Up to Rs. 8000</u>						
General	0.7	0.2	0.8	1.3	3.8	4.0
Food	0.9	0.2	0.9	-0.2	3.8	3.8
Non-food	0.6	0.2	0.8	3.2	3.9	4.2
<u>Rs. 8001- 12000</u>						
General	0.6	0.2	0.8	1.6	3.8	4.0
Food	0.7	0.2	0.9	-0.1	3.8	4.0
Non-food	0.6	0.2	0.8	3.5	3.8	4.0
<u>Rs. 12001- 18000</u>						
General	0.5	0.2	0.8	1.2	3.8	4.1
Food	0.6	0.1	0.8	0.3	4.0	4.3
Non-food	0.5	0.2	0.8	2.2	3.6	3.9
<u>Rs. 18001- 35000</u>						
General	0.5	0.2	0.8	1.8	3.8	4.1
Food	0.4	0.1	0.8	0.6	4.1	4.5
Non-food	0.5	0.2	0.8	2.9	3.5	3.8
<u>Above Rs. 35000</u>						
General	0.4	0.2	0.8	1.7	3.9	4.3
Food	0.2	0.1	0.7	0.9	4.0	4.5
Non-food	0.5	0.3	0.8	2.1	3.9	4.2
<u>All income groups</u>						
General	0.5	0.2	0.8	1.6	3.9	4.2
Food	0.4	0.1	0.8	0.5	4.0	4.4
Non-food	0.5	0.2	0.8	2.4	3.8	4.1

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices Oct-16	Percentage change	
				YoY	MoM
1	Wheat	10Kg.	339.0	-0.2	1.6
2	Wheat Flour Bag	10Kg.	383.4	-1.8	1.7
3	Rice Basmati Broken	Kg.	62.0	-6.1	-0.5
4	Rice Irri-6	Kg.	48.2	1.2	-0.7
5	Bread Plain Med. Size (340-400 Gm.)	Each	41.1	0.7	0.0
6	Beef	Kg.	324.3	2.9	0.0
7	Mutton	Kg.	653.5	5.1	0.2
8	Chicken Live (Farm)	Kg.	155.9	26.9	22.9
9	Milk Fresh	Litr	80.4	3.3	0.0
10	Curd	Kg.	94.1	2.6	0.0
11	Milk Powdered Nido	500G	388.6	5.4	0.5
12	Egg Hen (Farm)	Doz.	98.5	7.3	-0.1
13	Mustard Oil	Kg.	180.8	0.5	0.5
14	Cooking Oil (Tin)	2.5Ltr	454.7	-0.6	0.0
15	Veg. Ghee (Tin)	2.5Kg.	445.4	-1.0	0.0
16	Veg. Ghee Loose	Kg.	142.8	2.8	0.6
17	Bananas	Doz.	63.4	-2.8	-7.9
18	Masoor Pulse Washed	Kg.	148.6	2.6	-1.1
19	Moong Pulse Washed	Kg.	146.7	-8.6	-1.3
20	Mash Pulse Washed	Kg.	250.0	11.5	-2.9
21	Gram Pulse Washed	Kg.	165.6	38.0	5.8
22	Potatoes	Kg.	38.7	20.2	-0.9
23	Onions	Kg.	30.3	-45.9	-3.2
24	Tomatoes	Kg.	53.0	-24.1	-0.1
25	Sugar	Kg.	71.0	15.4	0.0
26	Gur	Kg.	95.4	0.2	0.6
27	Salt Powdered Loose (Lahori)	Kg.	10.6	1.8	0.0
28	Red Chilies Powder Loose	Kg.	279.2	2.1	-0.6
29	Garlic	Kg.	293.1	63.5	0.9
30	Tea (Yellow Label)	200Gm.	157.9	-12.5	0.0
31	Cooked Beef Plate	Each	91.9	8.4	0.0
32	Cooked Dal Plate	Each	56.7	11.5	0.1
33	Tea Prepared (Sada)	Cup	19.9	4.2	0.0
34	Cigarettes K-2 (20'S)	20'S	64.2	17.2	0.0
35	Long Cloth (Coarse Latha)	Mtr.	205.6	1.4	0.0
36	Shirting	Mtr.	164.3	1.5	0.0
37	Lawn	Mtr.	251.2	3.4	0.0
38	Georgette (Voil Printed)	Mtr.	123.5	0.4	0.0
39	Sandal Gents Bata	Pair	699.0	0.0	0.0
40	Chappal Spong. Bata (Gents)	Pair	179.1	0.1	0.0
41	Sandal Ladies Bata	Pair	502.4	0.7	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	77.1	-7.9	0.0
45	Firewood	40Kg	598.1	1.9	0.1
46	Energy Savor 14 Watts	Each	167.8	0.7	0.0
47	Washing Soap (200-250 Gm.)	Cake	25.9	4.7	1.1
48	Match Box	Each	2.1	7.7	0.0
49	Petrol	Litr	65.1	-12.6	0.0
50	Diesel	Litr	73.5	-11.4	0.0
51	L.P.G.(11 Kg Cylinder.)	Each	1076.5	-1.0	8.1
52	Tele. Local Call	Call	3.9	0.0	0.0
53	Bath Soap Lifebuoy (Standard)	Cake	36.8	0.4	0.0
Maximum				63.5	22.9
Median				1.2	0.0
Minimum				-45.9	-7.9

Table A9: Distribution of Price Changes (YoY) - WPI Items: October 2016				
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	Stimulant and Spice Crops, Hides and Fur Skins-Raw, Sorghum/Jowar, Millet/Bajra, Fresh Fruits, Rice, Maize, Wheat	Milk from Bovine Animals, Sugar Crops, Dry Fruits, Eggs, Fuel Wood in Logs, Raw Animal Material/Wool	Other Oil Seeds, Vegetables, Cotton Seeds	Edible Roots/Potatoes, Fish Live Fresh or Chilled, Poultry, Pulses, Unmanufactured Tobacco, Fibre Crops
Ores & Minerals, Electricity Gas & Water	Coal not Agglomerated, Electrical Energy, Natural Gas Liquefied	Salt & Pure Sodium Chloride		
Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products	Coffee and Tea, Blended Yarn, Nylon Yarn, Chocolate, Wheat Flour, Towels, Leather without Hairs	Mineral Water, Blankets, Meat of Animals, Vegetables & Fruit Juices, Dried Fruits & Nuts, Processed Liquid Milk, Vegetable Ghee, Ready Made Garments, Cotton Fabrics, Fruit Juices, Other Fabrics, Synthetic Carpets, Silk and Reyon Fabrics, Milk and Cream in Solid Form, Dairy Products N.E.C, Quilts, Hosiery Products, Spices, Bed Sheets, Other Food Products, Vegetable Oil Refined, Other Leather N.E.C, Beverages	Footwear, Ice Cream, Woven Fabrics, Sugar Confectionary	Woolen Carpets, Other Cereal Flour, Tobacco Products, Cotton Yarn, Sugar Refined, Oil Cakes
Other Transportable Goods except Metal Products, Machinery and Equipments	Kerosene Oil, Fertilizers, Diesel Oil, Motor Sprit, Auto Tyres, Chemicals, Mobil Oil, Insecticides, Plastic Products, Pesticides, Coke, Dying Materials, Matches, Hard Board, Paints & Varnishes	Soaps & Detergent, Cement, Ceramics and Sanitary, Bed Foams, Bricks Blocks and Tiles, Printing Paper	Furnace Oil, Timber	Other Glass Articles, Glass Sheets, Medicines
Metal Product Machinery & Equipment	Cultivators, Steel Bars & Sheets, Tractors, Vacuum Pumps, Motor Cycles, Pig Iron, Concrete Mixer, Chuff Cutter, Electrical Wires	Motor Vehicles, Lighting Equipments, Steel Products, Refrige,Wash& Sew Mach,Iron,Fan, Bicycles, Pipe Fittings, Air Conditioners, Engines and Motors		Lathe Machines, Radio and Television

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

Items and specification	Weights	Index		
		Oct-15	Sep-16	Oct-16
General	100.00	203.03	209.88	211.57
Food & Non-Alcoholic Beverages.	34.83	220.40	226.30	228.30
1 Wheat	0.35	200.07	194.03	202.60
2 Wheat Flour	4.16	213.10	209.04	211.25
3 Wheat Product	0.10	214.59	216.37	217.29
4 Besan	0.15	250.61	315.81	327.42
5 Rice	1.58	164.50	160.52	160.67
6 Cereals	0.16	244.03	250.17	250.57
7 Bakery & Confectionary	1.16	209.83	215.16	215.50
8 Nimco	0.46	241.54	248.88	249.01
9 Meat	2.43	255.19	264.07	264.87
10 Chicken	1.36	143.98	151.17	181.47
11 Fish	0.30	214.66	216.97	216.30
12 Milk Fresh	6.68	256.89	266.39	266.40
13 Milk Product	0.63	248.48	256.76	256.84
14 Milk Powder	0.11	230.26	237.04	237.25
15 Egg	0.46	181.97	202.98	196.35
16 Mustard Oil	0.10	154.04	153.83	153.72
17 Cooking Oil	1.75	135.21	133.69	133.71
18 Vegetable Ghee	2.07	137.08	137.89	138.08
19 Dry Fruits	0.25	252.42	258.62	261.23
20 Fresh Fruits	1.86	217.91	233.93	229.34
21 Pulse Masoor	0.27	199.45	212.10	211.56
22 Pulse Moong	0.23	300.95	287.84	282.92
23 Pulse Mash (Washed)	0.21	308.24	359.08	349.16
24 Pulse Gram	0.24	262.84	342.16	351.48
25 Gram Whole	0.16	214.37	301.53	305.15
26 Beans	0.03	233.73	233.29	232.30
27 Potatoes	0.45	207.81	245.55	243.97
28 Onion	0.51	326.26	190.44	176.57
29 Tomatoes	0.42	233.56	192.38	197.51
30 Fresh Vegetable	1.75	257.22	292.17	309.96
31 Sugar	1.04	221.27	253.32	250.89
32 Gur	0.02	291.22	291.67	291.45
33 Honey	0.04	304.38	316.91	314.49
34 Sweet Meet	0.25	238.40	244.89	245.36
35 Beverages	1.20	217.86	221.86	219.47
36 Jam, Tomato Ketchup & Pickle	0.25	211.33	215.46	215.72
37 Condiments	0.27	258.82	262.69	263.47
38 Spices	0.54	237.30	241.44	239.79
39 Tea	0.84	265.12	255.71	255.49
Alcoholic Beverages, Tobacco	1.41	309.96	364.13	364.39
40 Cigarette	1.39	311.47	366.11	366.41
41 Betel Leaves & Nuts	0.02	218.45	244.31	241.62
Clothing & Footwear	7.57	221.89	230.47	231.18
42 Cotton Cloth	1.73	215.33	225.04	225.34
43 Woolen Cloth	0.88	236.95	245.97	247.41
44 Ready Made Garment	0.97	226.37	236.67	237.88
45 Woolen Readymade Garments	0.40	245.98	253.26	253.35
46 Hosiery	0.51	235.05	242.93	243.74
47 Dopatta	0.44	234.91	241.02	241.74
48 Cleaning & Laundering	0.21	245.70	255.44	256.52

Table A10: Consumer Price Index Numbers by Major Groups and Composite Commodities				
Items and specification	Weights	Index		
		Oct-15	Sep-16	Oct-16
49 Tailoring	0.88	283.94	302.43	303.96
50 Footwear	1.55	165.10	166.49	166.58
Housing,Water,Elect,Gas & Other Fuel	29.41	182.62	188.90	191.56
51 House Rent	21.81	170.85	178.64	182.22
52 Construction Input Item	0.56	241.36	247.89	247.86
53 Construction Wage Rate	0.33	220.31	230.40	230.48
54 Water Supply	0.50	149.92	163.32	163.38
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	208.72	195.07	195.65
58 Fire Wood Whole	0.23	278.99	283.60	284.35
Furnished H.Hold Equip.& Maint. Etc	4.21	215.49	222.27	222.66
59 Furniture	0.33	206.70	212.26	212.40
60 Household Textile	0.65	213.29	221.14	223.69
61 Household Equipment	0.59	175.73	179.16	179.23
62 Utensils	0.32	218.25	223.08	224.01
63 Plastic Products	0.25	204.85	207.17	207.19
64 Washing Soap & Detergent	0.79	225.68	228.76	229.21
65 Sewing Needle & Dry Cell	0.15	200.81	206.32	201.34
66 Household Servant	1.04	237.20	249.98	249.98
67 Marriage Hall Charges	0.08	232.49	242.89	243.15
Health	2.19	179.67	192.00	193.78
68 Drug Medicine	1.27	149.02	159.00	160.65
69 Medical Equipment	0.01	226.26	242.29	245.33
70 Doctor (MBBS) Clinic Fee	0.59	244.44	264.28	266.89
71 Medical Test	0.32	180.37	188.05	188.77
Transport	7.20	175.80	170.31	170.40
72 Motor Vehicle	0.66	163.02	171.00	170.94
73 Motor Vehicle Accessories	0.24	227.21	213.67	213.17
74 Motor Fuel	3.03	147.50	136.01	136.36
75 Mechanical Service	0.46	218.85	227.40	227.63
76 Motor Vehicle Tax	0.11	210.18	210.18	210.18
77 Transport Services	2.70	197.35	193.40	193.28
Communication	3.22	130.36	130.88	131.26
78 Postal Services	0.07	229.93	242.74	243.32
79 Communication & Apparatus	3.15	128.27	128.53	128.91
Recreation & Culture	2.02	193.55	196.15	196.21
80 Recreation & Culture	0.86	128.26	129.68	129.89
81 Text Books	0.57	290.62	292.41	292.41
82 News Papers	0.19	175.42	175.49	175.49
83 Stationery	0.40	204.88	212.50	212.35
Education	3.94	209.25	230.54	232.15
84 Education	3.94	209.25	230.54	232.15
Restaurants And Hotels	1.23	253.30	266.11	266.35
85 Ready Made Food	1.23	253.30	266.11	266.35
Miscellaneous Goods And Services	2.76	225.79	236.99	237.26
86 Personal Care	1.49	209.29	217.90	218.58
87 Cosmetics	0.39	193.11	199.36	200.19
88 Blades	0.03	190.75	195.16	195.43
89 Personal Equipments	0.84	271.23	289.57	288.83

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

Items and Specifications	Index		
	Oct-15	Sep-16	Oct-16
General	208.69	214.61	214.53
Agriculture Forestry & Fishery	228.36	246.87	247.04
1 Wheat	209.37	205.26	209.05
2 Maize	191.32	196.67	190.54
3 Rice	150.22	149.55	147.78
4 Sorghum/Jowar	293.25	264.05	258.01
5 Millet/Bajra	200.68	210.05	182.73
6 Vegetables	331.56	354.30	348.51
7 Fresh Fruits	253.80	248.15	248.10
8 Dry Fruits	238.92	241.88	244.62
9 Cotton Seeds	243.34	260.92	255.71
10 Other Oil Seeds	162.75	170.86	174.88
11 Edible Roots/ Potatoes	184.04	256.45	250.44
12 Stimulant And Spice Crops	306.38	260.56	235.64
13 Pulses	243.87	304.53	309.70
14 Sugar Crops	286.29	286.34	293.89
15 Fibre Crops	172.23	195.33	195.52
16 Unmanufactured Tobacco	228.38	255.73	260.21
17 Poultry	146.78	160.06	190.04
18 Milk From Bovine Animals	254.04	262.97	265.22
19 Eggs	193.56	211.44	196.73
20 Raw Animal Material/Wool	173.66	173.89	173.89
21 Hides And Fur Skins, Raw	155.85	142.47	122.45
22 Fuel Wood In Logs	263.57	264.77	264.77
23 Fishes Live Fresh Or Chilled	339.32	453.85	455.08
Ores/Minerals, Gas & Elect.	246.91	241.64	242.01
24 Coal Not Agglomerated	192.16	152.94	152.94
25 Natural Gas Liquefied	209.82	208.75	209.52
26 Salt & Pure Sodium Chloride	252.31	254.33	254.33
27 Electrical Energy	293.09	288.00	288.00
Food, Beverages, Tobacco, Textiles	211.04	225.26	224.34
28 Meat Of Animals	266.98	279.82	279.82
29 Vegetables & Fruit Juices	200.95	209.83	209.83
30 Dried Fruits & Nuts	230.84	238.61	240.98
31 Fruit Juices	177.53	183.49	183.53
32 Vegetable Oil Refined	150.19	151.63	151.00
33 Vegetable Ghee	118.43	123.32	123.35
34 Oil Cakes	202.18	231.01	226.38
35 Processed Liquid Milk	247.18	257.57	257.57
36 Milk And Cream In Solid Form	216.39	221.24	220.59
37 Ice Cream	219.91	238.04	238.04
38 Dairy Products N.E.C	244.60	248.76	249.21
39 Wheat Flour	197.66	192.40	194.90
40 Other Cereal Flour	220.69	299.87	307.94
41 Sugar Refined	233.67	269.18	262.43
42 Chocolate	101.06	99.45	99.45
43 Sugar Confectionary	118.83	118.83	128.15
44 Coffee And Tea	246.32	230.56	230.56
45 Spices	188.53	190.12	190.17
46 Other Food Products	292.02	293.85	293.85
47 Mineral Water	188.35	197.57	197.57
48 Beverages	171.95	172.44	172.33
49 Tobacco Products	356.45	435.03	435.03
50 Cotton Yarn	169.21	194.81	191.17
51 Nylon Yarn	147.08	147.08	143.99
52 Blended Yarn	183.55	179.64	179.64
53 Woven Fabrics	265.37	279.69	286.46
54 Cotton Fabrics	201.65	209.09	209.09
55 Other Fabrics	217.95	224.29	224.29

Inflation Monitor, October 2016

Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities				
Items and Specifications		Index		
		Oct-15	Sep-16	Oct-16
56	Silk And Rayon Fabrics	186.80	190.96	190.96
57	Towels	267.20	267.20	267.20
58	Blankets	235.86	243.93	247.38
59	Bed Sheets	256.29	256.29	257.96
60	Quilts	196.84	198.00	199.16
61	Woolen Carpets	132.14	196.43	196.43
62	Synthetic Carpets	126.27	129.25	129.25
63	Hosiery Products	222.88	224.11	225.43
64	Ready Made Garments	193.27	200.55	200.44
65	Leather With Out Hairs	221.97	221.97	221.97
66	Other Leather N.E.C	206.27	207.31	207.31
67	Footwear's	134.22	143.97	145.51
Other Transportable Goods		176.74	164.47	165.08
68	Timber	213.18	220.36	224.68
69	Printing Paper	164.56	164.90	164.90
70	Hard Board	197.92	197.92	197.92
71	Coke	163.45	163.45	163.45
72	Motor Sprit	124.58	108.54	108.54
73	Diesel Oil	170.11	144.34	144.34
74	Kerosene Oil	152.12	115.11	115.11
75	Furnace Oil	79.32	80.68	85.40
76	Mobil Oil	199.78	196.00	195.35
77	Chemicals	186.09	177.38	177.41
78	Dying Materials	146.55	146.55	146.55
79	Fertilizers	274.03	224.61	221.56
80	Pesticides	312.37	308.79	308.79
81	Insecticides	138.59	135.58	135.58
82	Paints & Varnishes	295.36	295.36	295.36
83	Medicines	146.38	168.09	168.17
84	Soaps & Detergent	180.67	186.25	187.54
85	Auto Tyres	192.83	181.25	181.83
86	Plastic Products	231.05	228.35	228.35
87	Glass Sheets	231.30	247.94	282.43
88	Other Glass Articles	243.63	299.07	299.07
89	Ceramics And Sanitary	227.13	233.48	233.48
90	Bricks Blocks And Tiles	216.83	218.21	218.83
91	Cement	206.70	213.44	212.72
92	Bed Foams	156.67	160.50	160.50
93	Matches	162.62	162.62	162.62
Metal Product Machinery & Equip		171.31	172.51	172.38
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	129.32	120.46	120.20
96	Pipe Fittings	192.08	193.63	193.63
97	Steel Products	173.54	176.99	177.06
98	Engines And Motors	109.07	109.24	109.24
99	Vacuum Pumps	115.39	114.95	114.95
100	Air Conditioners	200.18	201.18	201.18
101	Cultivators	219.76	219.76	190.66
102	Chuff Cutter	149.20	149.20	149.20
103	Tractors	205.43	203.68	201.75
104	Lathe Machines	208.81	221.65	241.06
105	Concrete Mixer	138.83	138.83	138.83
106	Refrige,Wash& Sew Mach, Iron,Fan	200.25	204.03	204.00
107	Electrical Wires	195.19	195.19	195.19
108	Lighting Equipments	167.30	172.03	171.92
109	Radio And Television	126.49	140.42	140.42
110	Motor Vehicles	183.03	191.39	191.39
111	Motor Cycles	125.89	125.89	125.89
112	Bicycles	185.63	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	123.12	113.38	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	167.28	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
2014	May	193.55	214.75	180.84	211.71	215.95	209.02	209.80
	Jun	194.74	216.98	181.41	214.60	221.06	210.50	212.40
	Jul	198.05	222.80	183.21	215.76	225.52	209.57	216.14
	Aug	198.70	224.05	183.50	214.73	227.26	206.78	217.08
	Sep	199.40	224.12	184.58	215.06	228.41	206.59	217.06
	Oct	199.81	223.74	185.47	214.39	229.02	205.11	216.67
	Nov	198.79	222.74	184.44	212.26	227.29	202.73	214.45
	Dec	196.79	218.08	184.03	208.25	223.48	198.59	211.76
2015	Jan	196.95	217.10	184.87	206.11	223.48	195.09	209.89
	Feb	195.13	213.15	184.33	203.86	222.26	192.19	206.98
	Mar	195.57	214.25	184.37	203.89	222.11	192.33	207.05
	Apr	198.16	217.26	186.71	205.65	225.38	193.13	208.42
	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

*: all groups combined

Table A13: International Commodity Prices/ Indices				
	Jul-16	Aug-16	Sep-16	Oct-16
Energy				
Crude Oil (US\$ per barrel) *	44.2	44.8	45.1	49.3
IMF Energy Index (2005 = 100)	83.5	84.9	85.6	94.2
WB Energy Index (2010 = 100) @	56.6	57.6	58.1	63.7
Food				
Rice (\$/MT)	456.2	414.2	384.0	367.7
Wheat (\$/MT)	133.6	127.9	123.2	122.5
Sugar (US cent/ pound)	19.7	20.0	21.9	22.9
Palm Oil (\$/MT)	584.2	664.4	692.4	651.4
Soybean Oil (\$/MT)	669.9	711.7	722.6	757.3
Non-Food Non-Energy				
Cotton Outlook 'A' Index #	81.1	80.3	77.9	78.5
IMF Metal Price Index (2005 = 100)	120.0	121.7	119.1	121.0
Copper (\$/MT)	4,864.9	4,751.7	4,722.2	4,731.3
Aluminum (\$/MT)	1,629.0	1,639.3	1,592.4	1,665.9
Iron Ore (\$ cents/dry MT)	56.6	60.5	56.7	58.0
Tin (\$/MT)	17,826.2	18,427.0	19,499.5	20,099.8
Nickel (\$/MT)	10,262.9	10,336.0	10,191.8	10,259.7
Zinc (\$/MT)	2,183.3	2,279.1	2,292.3	2,311.5
Lead (\$/MT)	1,834.8	1,835.5	1,947.6	2,024.5
Uranium (\$/MT)	25.9	25.9	24.7	21.2
DAP (\$/MT)	341.0	340.0	339.0	333.0
Urea (\$/MT)	177.0	182.0	191.0	193.0
Source: IMF and World Bank				
\$/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	FY13	FY14	FY15	FY16	FY17
Jul	169.57	183.58	198.05	201.76	210.08
Aug	171.09	185.71	198.70	202.25	209.46
Sep	172.44	185.18	199.40	202.04	209.88
Oct	173.10	188.82	199.81	203.03	211.57
Nov	172.42	191.21	198.79	204.22	
Dec	172.82	188.68	196.79	203.06	
Jan	175.70	189.60	196.95	203.49	
Feb	175.11	189.00	195.13	202.98	
Mar	175.82	190.82	195.57	203.28	
Apr	177.74	194.06	198.16	206.43	
May	178.65	193.55	199.66	205.99	
Jun	179.94	194.74	200.89	207.30	
Seasonally Adjusted Series					
Jul	168.79	182.60	196.90	200.53	208.72
Aug	169.79	184.28	197.21	200.78	207.94
Sep	171.24	183.91	198.05	200.71	208.55
Oct	171.44	187.02	197.91	201.12	209.61
Nov	171.29	189.89	197.45	202.86	
Dec	173.72	189.63	197.73	203.96	
Jan	176.17	190.15	197.53	204.11	
Feb	176.98	191.05	197.27	205.20	
Mar	177.46	192.67	197.52	205.37	
Apr	177.85	194.20	198.32	206.61	
May	179.35	194.30	200.41	206.75	
Jun	180.67	195.49	201.61	207.99	

Table 15: CPI Food Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY13	FY14	FY15	FY16	FY17
Jul	190.72	208.19	222.80	224.14	234.69
Aug	192.47	212.27	224.05	224.86	232.48
Sep	193.80	209.09	224.12	223.87	232.80
Oct	193.66	212.61	223.74	224.86	234.68
Nov	193.03	218.16	222.74	227.55	
Dec	192.97	210.89	218.08	223.90	
Jan	196.58	210.81	217.10	222.58	
Feb	194.05	208.74	213.15	221.07	
Mar	195.06	213.11	214.25	222.25	
Apr	197.74	217.33	217.26	227.53	
May	200.00	214.75	221.22	225.84	
Jun	202.11	216.98	223.84	228.95	
Seasonally Adjusted Series					
Jul	189.11	206.10	220.32	221.46	231.73
Aug	189.45	208.90	220.55	221.39	228.87
Sep	190.90	206.04	220.87	220.70	229.64
Oct	190.43	209.19	220.21	221.40	231.19
Nov	190.02	214.67	219.20	224.02	
Dec	194.46	212.45	219.57	225.25	
Jan	197.94	212.39	218.80	224.43	
Feb	198.48	213.57	218.16	226.24	
Mar	198.20	216.64	217.93	226.16	
Apr	198.55	218.29	218.29	228.66	
May	201.72	216.62	223.09	227.75	
Jun	203.74	218.59	225.30	230.28	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY13	FY14	FY15	FY16	FY17	Average
Jul	100.46	100.54	100.59	100.62	100.65	100.57
Aug	100.77	100.78	100.76	100.73	100.73	100.75
Sep	100.70	100.69	100.68	100.66	100.64	100.67
Oct	100.97	100.96	100.96	100.95	100.94	100.96
Nov	100.66	100.70	100.68	100.67		100.68
Dec	99.48	99.50	99.52	99.56		99.52
Jan	99.73	99.71	99.71	99.69		99.71
Feb	98.94	98.93	98.92	98.92		98.93
Mar	99.08	99.04	99.01	98.98		99.03
Apr	99.94	99.93	99.92	99.91		99.93
May	99.61	99.61	99.63	99.63		99.62
Jun	99.59	99.61	99.64	99.67		99.63

Table 17: CPI Food Monthly & Average Seasonal Factors

Period	FY13	FY14	FY15	FY16	FY17	Average
Jul	100.85	101.01	101.13	101.21	101.28	101.10
Aug	101.60	101.61	101.59	101.57	101.58	101.59
Sep	101.52	101.48	101.47	101.44	101.38	101.46
Oct	101.70	101.63	101.60	101.56	101.51	101.60
Nov	101.58	101.63	101.61	101.57		101.60
Dec	99.23	99.27	99.32	99.40		99.31
Jan	99.32	99.26	99.23	99.18		99.24
Feb	97.77	97.74	97.71	97.72		97.73
Mar	98.42	98.37	98.31	98.27		98.34
Apr	99.59	99.56	99.53	99.51		99.55
May	99.15	99.14	99.16	99.16		99.15
Jun	99.20	99.26	99.35	99.42		99.31

Table 18: CPI Month-on-Month % Change Original & Seasonally Adjusted					
Original Series					
Period	FY13	FY14	FY15	FY16	FY17
Jul	-0.25	2.02	1.70	0.43	1.34
Aug	0.90	1.16	0.33	0.24	-0.30
Sep	0.79	-0.29	0.35	-0.10	0.20
Oct	0.38	1.97	0.21	0.49	0.81
Nov	-0.39	1.27	-0.51	0.59	
Dec	0.23	-1.32	-1.01	-0.57	
Jan	1.67	0.49	0.08	0.21	
Feb	-0.34	-0.32	-0.92	-0.25	
Mar	0.41	0.96	0.23	0.15	
Apr	1.09	1.70	1.32	1.55	
May	0.51	-0.26	0.76	-0.21	
Jun	0.72	0.61	0.62	0.64	
Seasonally Adjusted Series					
Jul	-1.12	1.07	0.72	-0.54	0.35
Aug	0.59	0.92	0.16	0.13	-0.38
Sep	0.85	-0.20	0.43	-0.04	0.29
Oct	0.12	1.69	-0.07	0.20	0.51
Nov	-0.09	1.53	-0.23	0.87	
Dec	1.42	-0.13	0.15	0.54	
Jan	1.41	0.27	-0.10	0.08	
Feb	0.46	0.47	-0.13	0.53	
Mar	0.27	0.85	0.13	0.08	
Apr	0.22	0.79	0.40	0.61	
May	0.84	0.05	1.06	0.06	
Jun	0.74	0.61	0.60	0.60	

Table 19: CPI Food Month-on-Month % Change Original & Seasonally Adjusted					
Original Series					
Period	FY13	FY14	FY15	FY16	FY17
Jul	1.80	3.01	2.68	0.13	2.50
Aug	0.92	1.96	0.56	0.32	-0.94
Sep	0.69	-1.50	0.03	-0.44	0.14
Oct	-0.07	1.68	-0.17	0.44	0.81
Nov	-0.33	2.61	-0.45	1.20	
Dec	-0.03	-3.33	-2.09	-1.61	
Jan	1.87	-0.04	-0.45	-0.59	
Feb	-1.29	-0.98	-1.82	-0.68	
Mar	0.52	2.10	0.52	0.54	
Apr	1.37	1.98	1.41	2.38	
May	1.15	-1.19	1.82	-0.74	
Jun	1.05	1.04	1.18	1.38	
Seasonally Adjusted Series					
Jul	0.08	1.16	0.79	-1.70	0.63
Aug	0.18	1.36	0.10	-0.03	-1.23
Sep	0.77	-1.37	0.15	-0.31	0.33
Oct	-0.25	1.53	-0.30	0.32	0.68
Nov	-0.21	2.62	-0.46	1.18	
Dec	2.34	-1.04	0.17	0.55	
Jan	1.79	-0.03	-0.35	-0.36	
Feb	0.27	0.56	-0.29	0.81	
Mar	-0.14	1.44	-0.11	-0.03	
Apr	0.18	0.76	0.17	1.10	
May	1.60	-0.76	2.20	-0.40	
Jun	1.00	0.91	0.99	1.11	

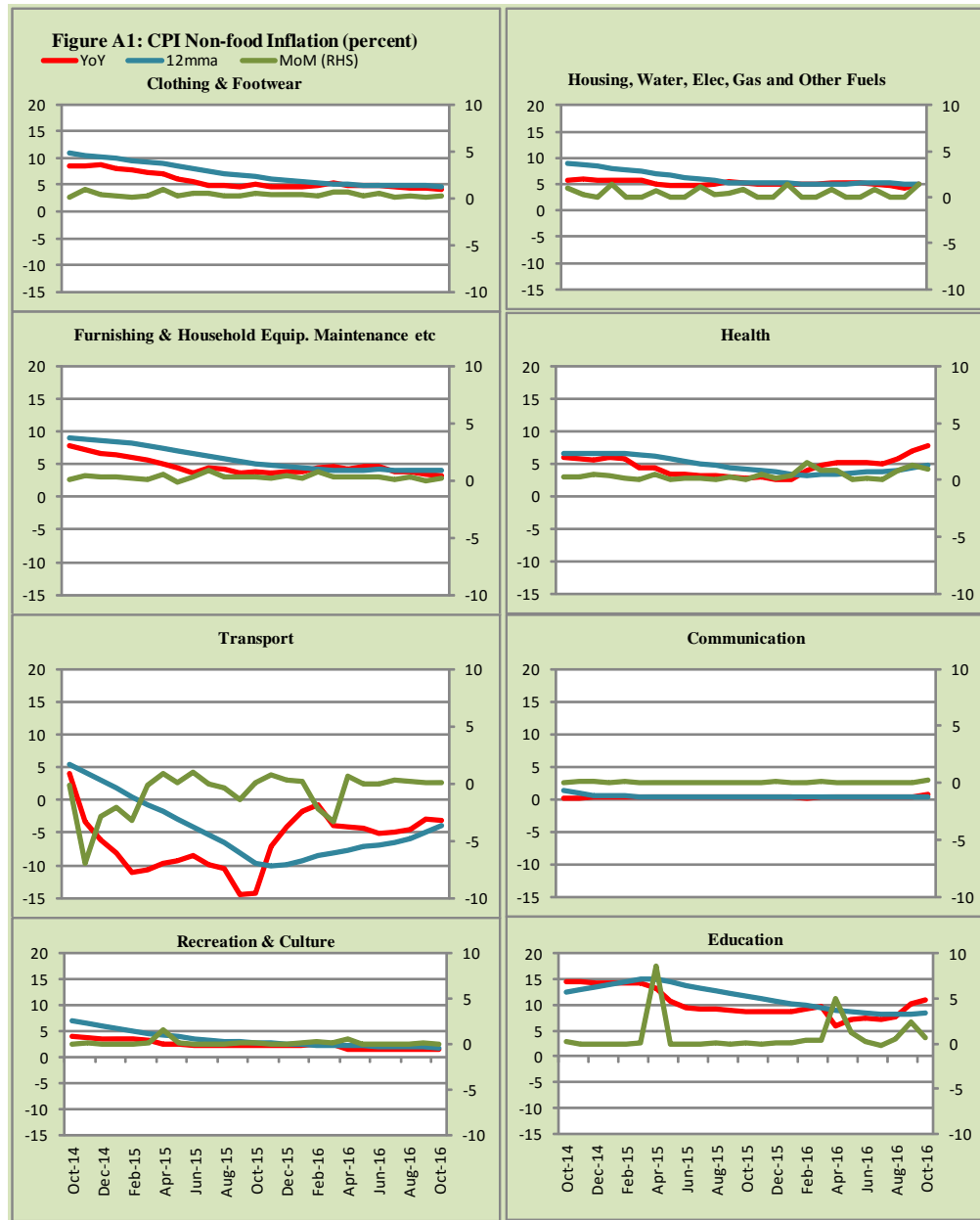


Figure A2: Frequency Distribution of Price Changes of CPI Items, October 2016

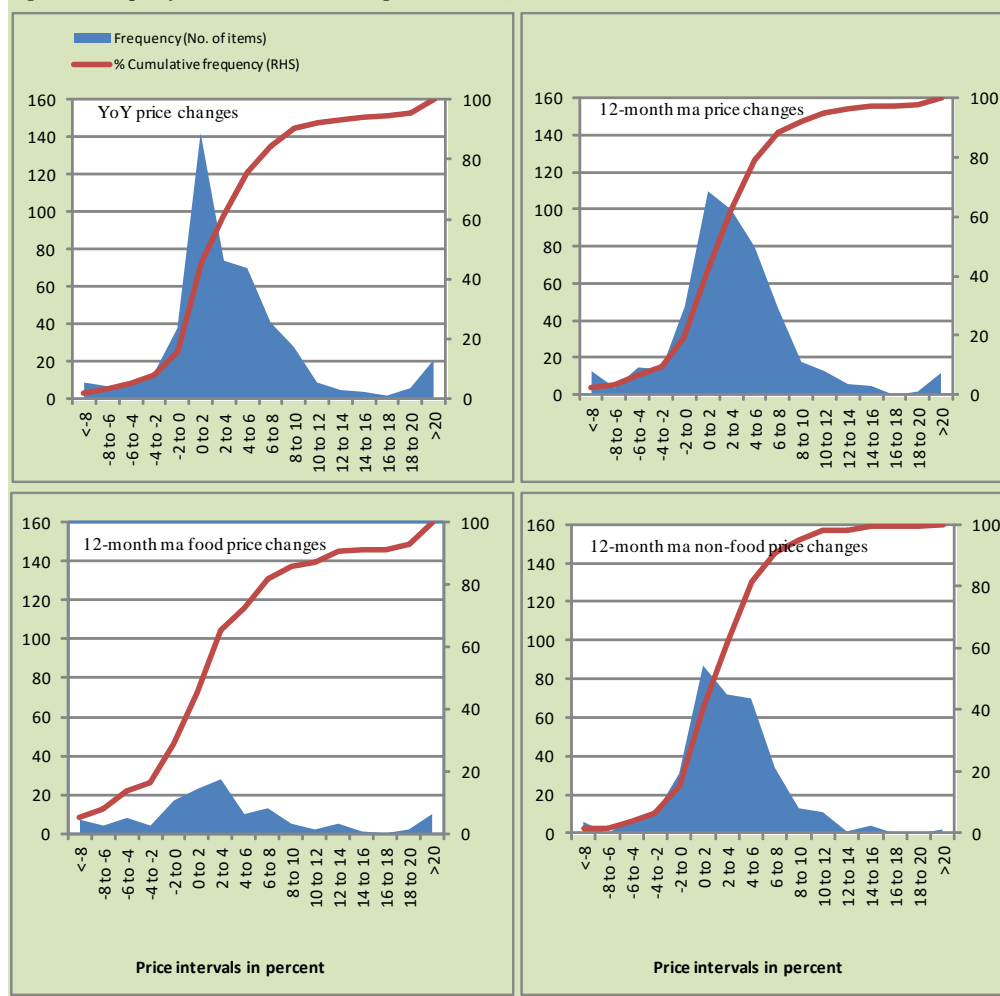


Figure A3: Frequency Distribution of Price Changes of WPI Commodities, October 2016

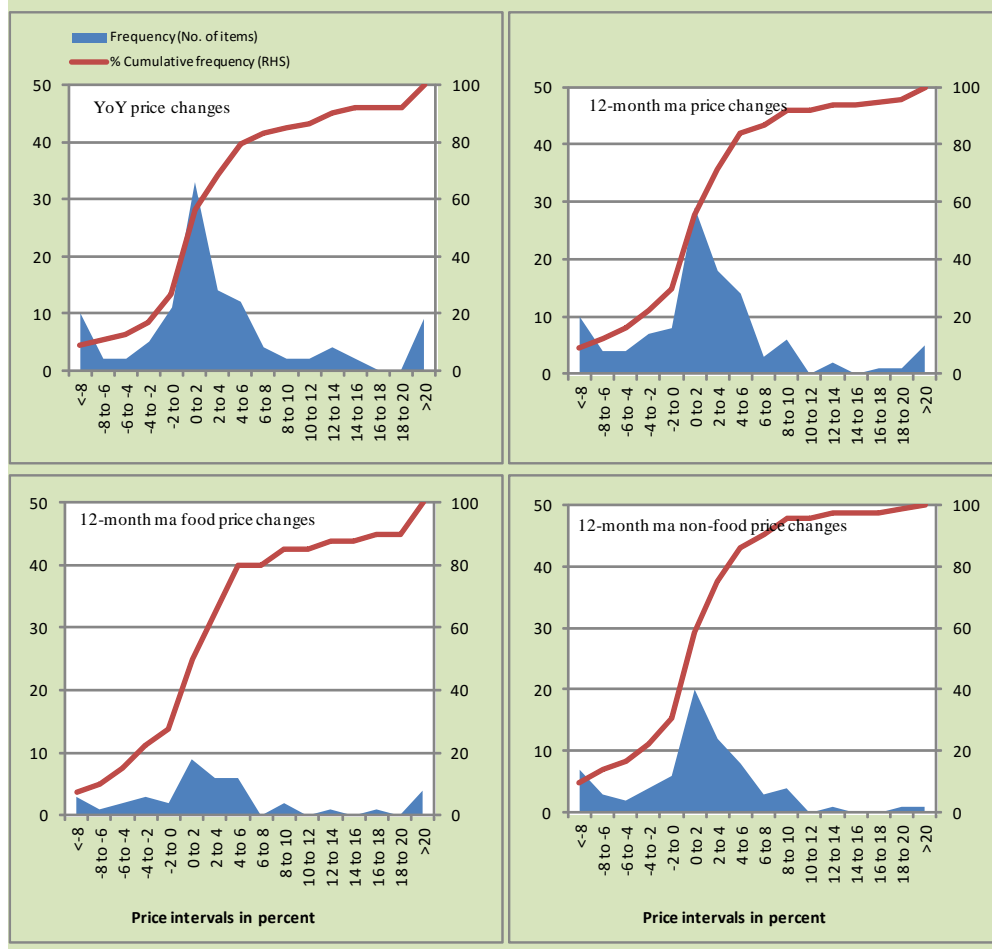
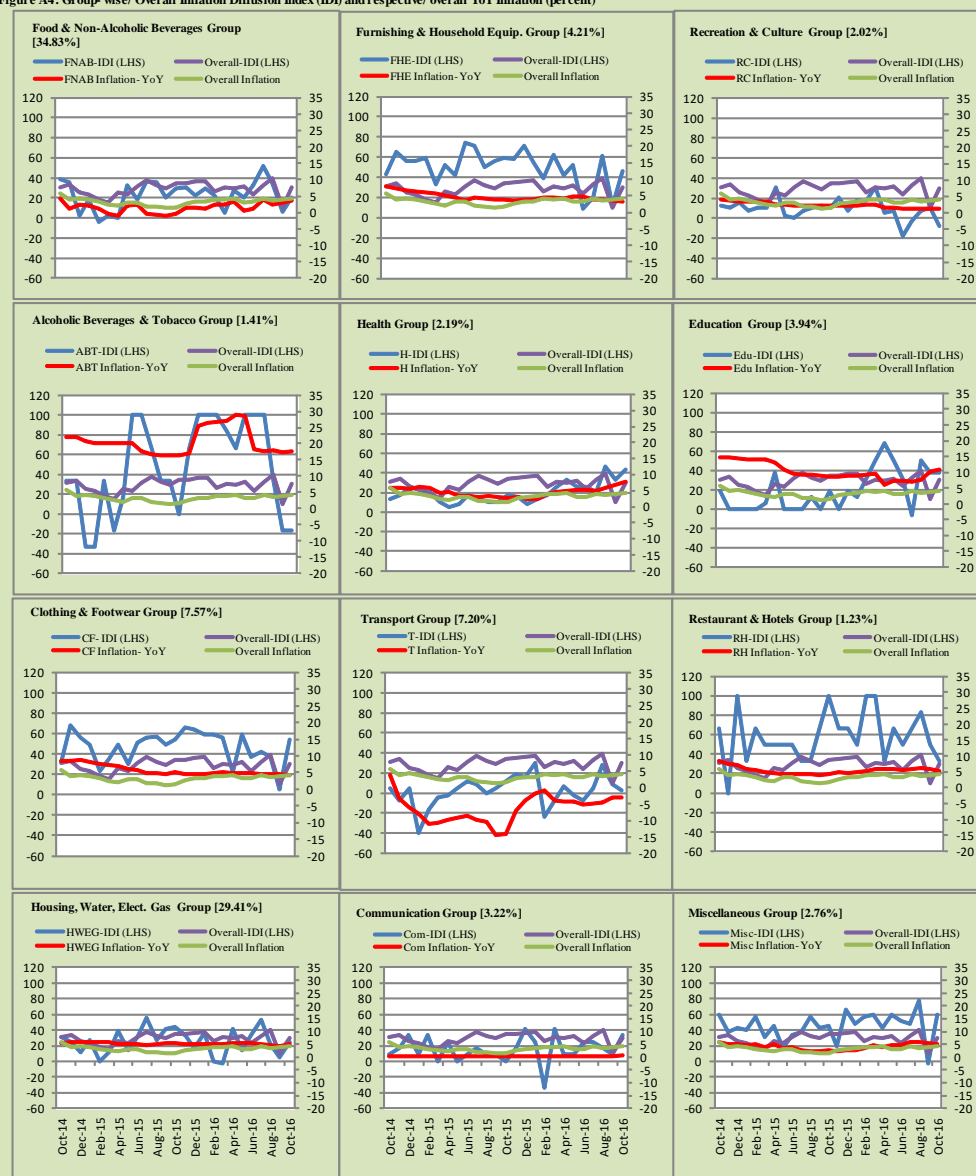


Figure A4: Group-wise/ Overall Inflation Diffusion Index (IDI) and respective/ overall YoY Inflation (percent)



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:

steps:

- i. All CPI items are arranged in ascending order according to YoY/12-month moving average/monthly/period average changes in their price indices in a given month.
- ii. 20 percent of the items showing extreme changes are excluded with 10 percent of the items at the top of the list (corresponding to cumulative weight of 90% or more) and 10 percent of the items at the bottom of the list (corresponding to cumulative weight of 10 percent or less).
- iii. The weighted mean of the changes in price indices of the rest of the items is core inflation.

- c) Relatively Stable Component of CPI (RSC-CPI) developed by State Bank of Pakistan is a hybrid method based on permanent exclusion criteria. Volatile price items, to be excluded in the newly proposed

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

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

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

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

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

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

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

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

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

reference month

w_i : Weights of i^{th} item

π_{it} : Inflation of i^{th} item

π_t : Overall inflation

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

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

Methodology for Estimating Inflation Diffusion Index for Pakistan

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

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

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.