

Inflation Monitor

November 2016



State Bank of Pakistan

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Review

Inflation in Brief

1. Headline CPI inflation (2007-08=100) is recorded at level of 3.8 percent on year-on-year basis in November 2016 compared to 4.2 percent in the previous and 2.7 percent in the corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at 0.2 percent in November 2016 compared to 0.8 percent in the previous month and 0.6 percent during the corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.42 percent in November 2016 compared to 0.54 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis was at level of 3.8 percent in November 2016 as in the previous month and 2.9 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is 0.2 percent in November 2016 as compared to 0.6 percent in the previous and 0.2 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 5.3 percent in November 2016 compared to 5.1 percent in the previous month. It was 4.0 percent in the corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.2 percent in November 2016 compared to 0.9 percent in the previous month. Core NFNE inflation was 0.1 percent in the corresponding month of last year.

7. WPI inflation on year-on-year basis decreased to 2.6 percent in November 2016 as compared to 2.8 percent in the previous month. During November 2015, WPI inflation was recorded at -1.7 percent.
8. WPI inflation on month-on-month basis recorded at -0.2 percent in November 2016 compared to zero percent in the previous and corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 0.6 percent in November 2016 compared to 1.4 percent in the previous month. It was 2.3 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at 0.3 percent in November 2016 compared to 0.7 percent in the previous month and 1.1 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 November 2016 are described below:

- Core RSC inflation on year-on-year basis is recorded at 5.0 percent in November 2016 compared to 4.9 percent in the previous month and 4.5 percent in the corresponding month of last year.

- Core RSC inflation on month-on-month basis is recorded at 0.2 percent in November 2016 compared to 0.7 percent in the previous month and was at 0.1 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
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
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
* NFNE is Non-food non-energy ** Relatively Stable Component of CPI *** SPI for all income groups combined																

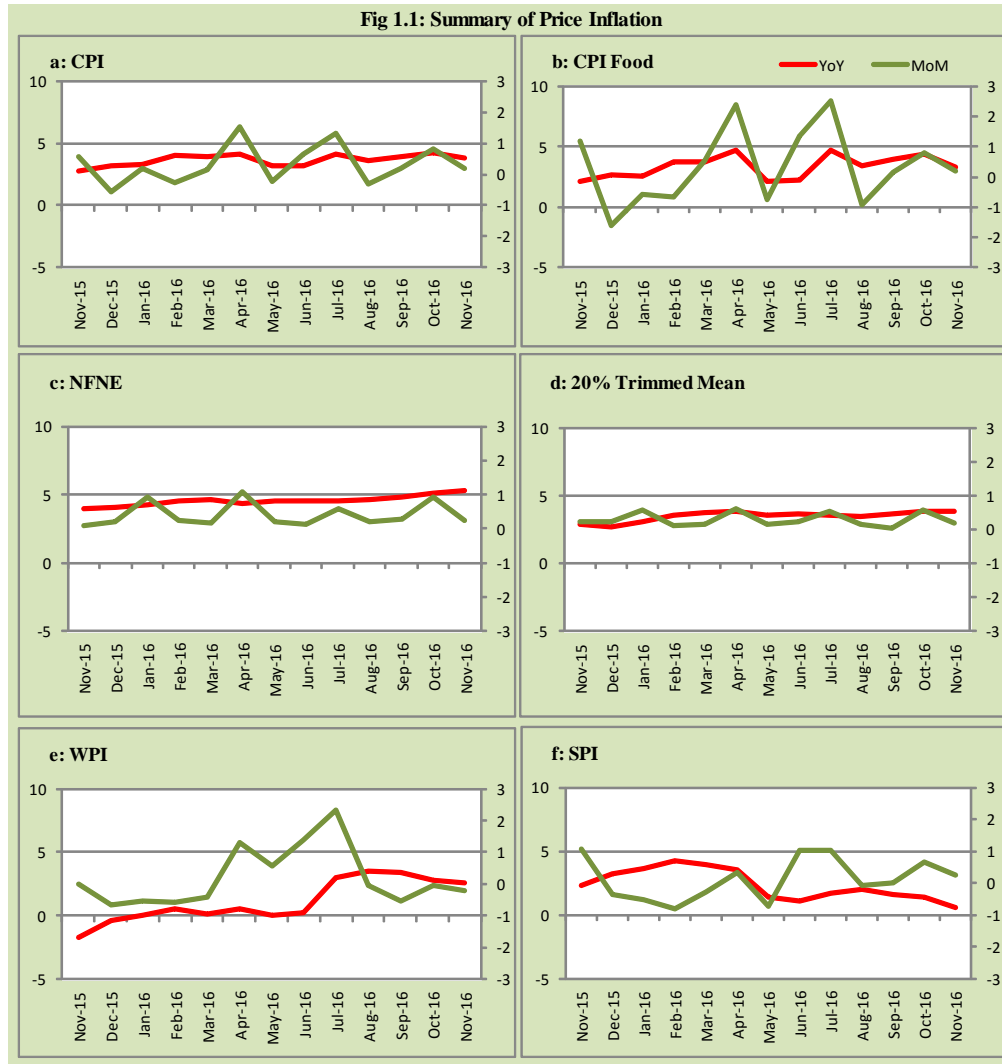


Fig 1.2: Movements in Price Indices (percent)

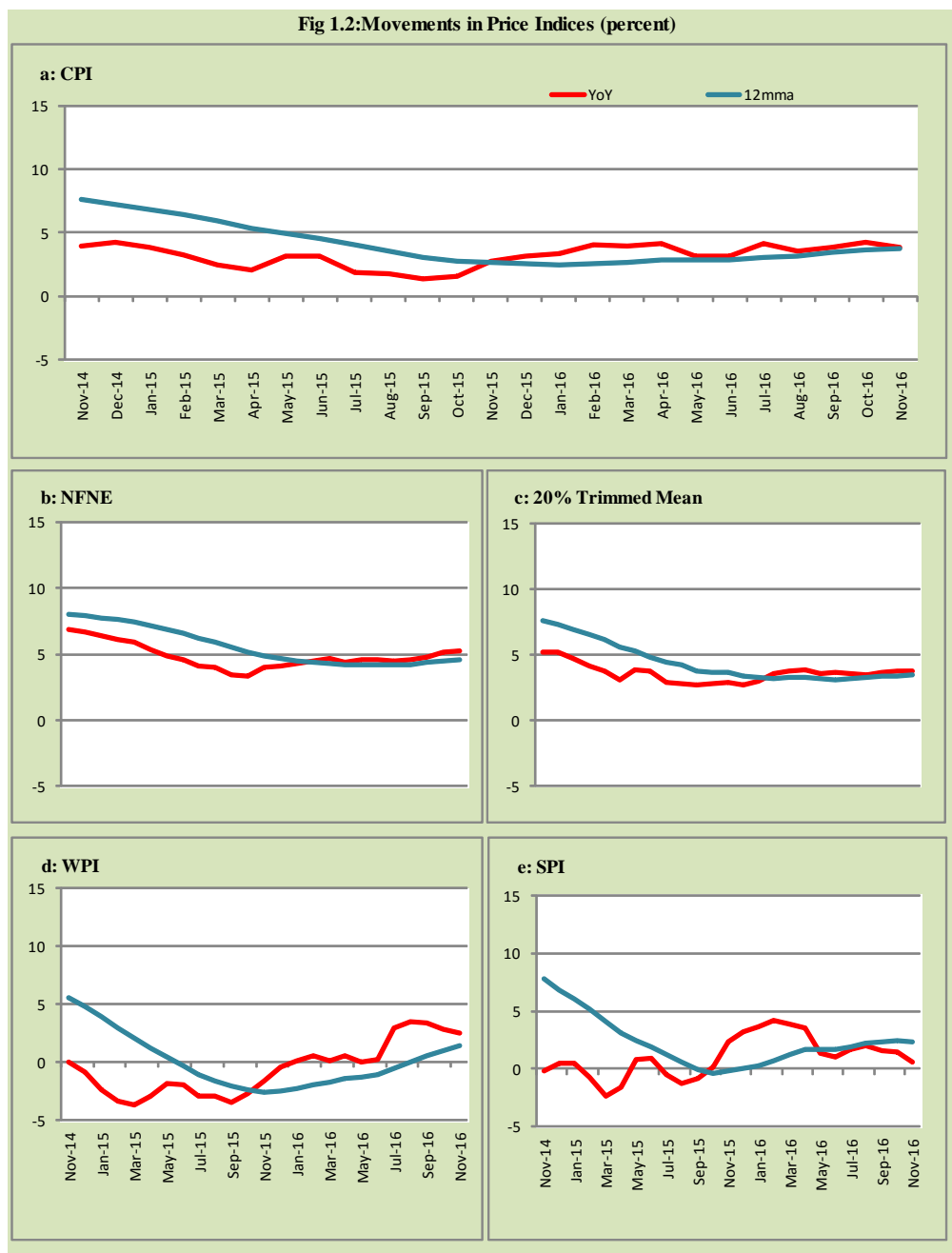


Fig 1.3: Movements in Price Indices -MoM (percent)

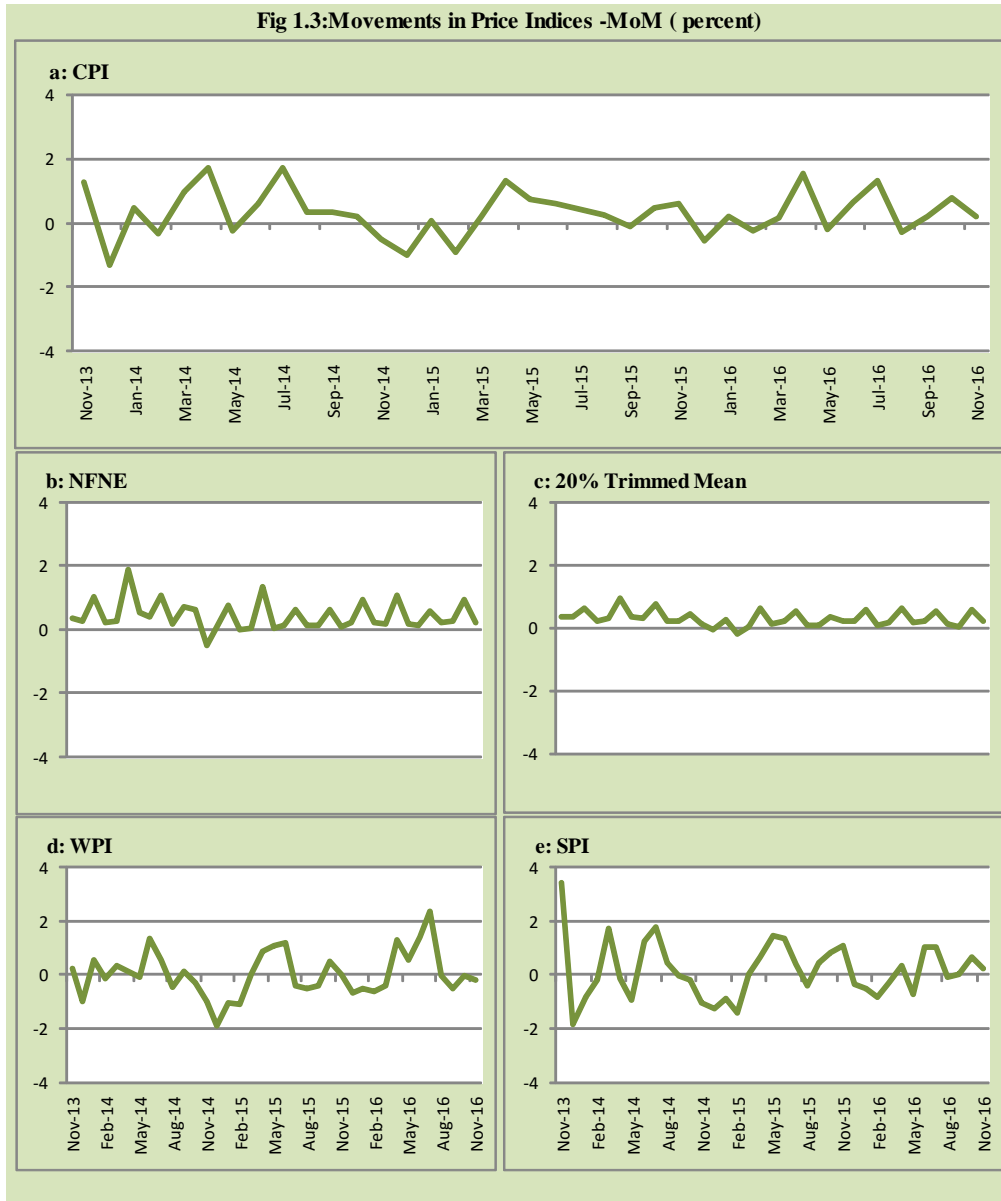
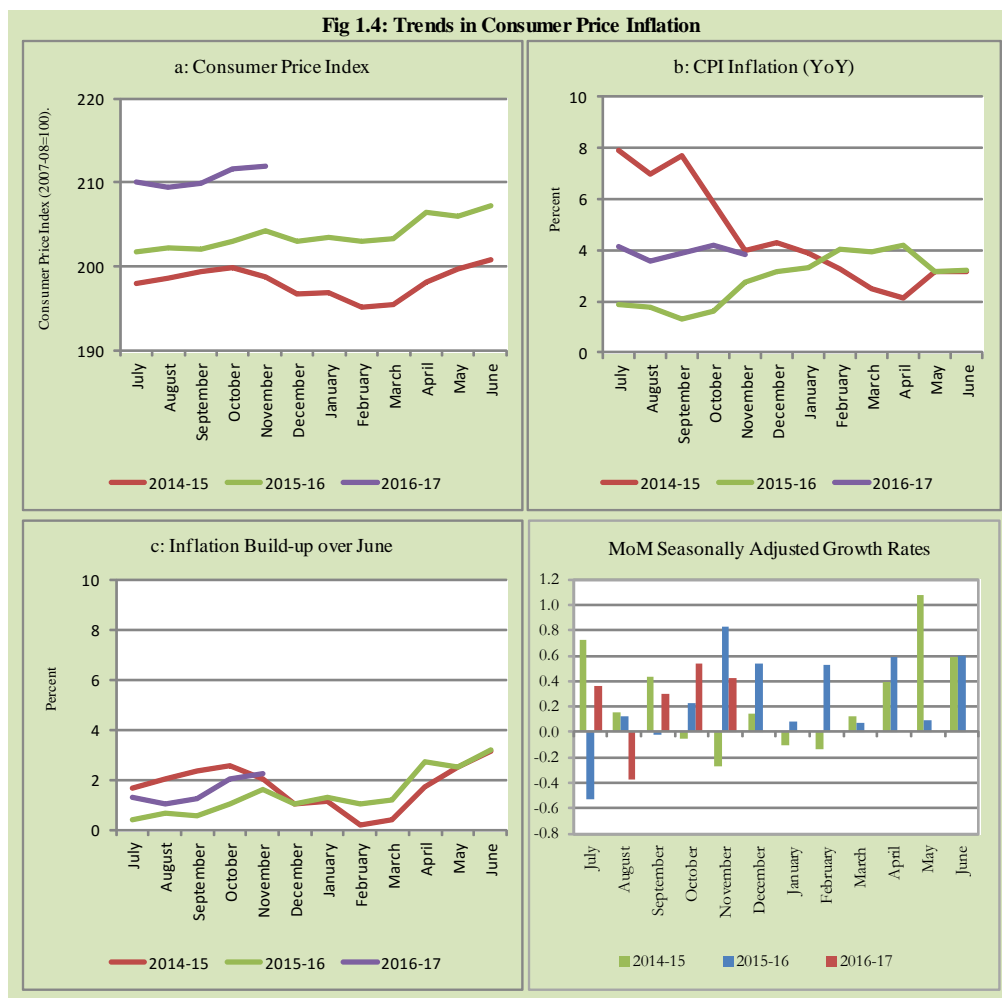


Fig 1.4: Trends in Consumer Price Inflation



2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan remained lower than overall inflation during November 2016 except Islamabad. Among these five cities, the lowest inflation was observed in Peshawar at 0.9 percent while the highest inflation was observed in Islamabad at 3.9 percent (Table A6 of annexure-A).

Table 2.1 City-wise Inflation of Selected Cities (percent)						
	Nov-15		Oct-16		Nov-16	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	0.6	2.7	0.8	4.2	0.2	3.8
Islamabad	0.4	3.1	0.8	4.4	-0.1	3.9
Karachi	0.5	4.9	0.3	3.0	0.5	2.9
Lahore	0.5	0.4	0.3	2.4	0.1	2.0
Peshawar	0.7	4.2	0.4	1.6	0.0	0.9
Quetta	0.4	2.0	1.7	3.3	0.1	3.0

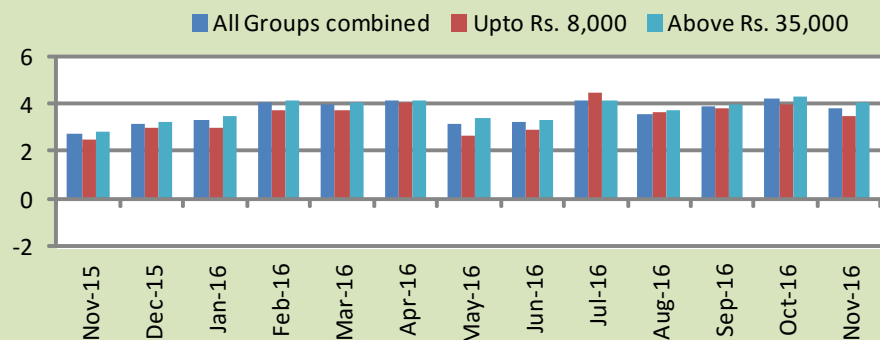
3. Income Group wise Inflation

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

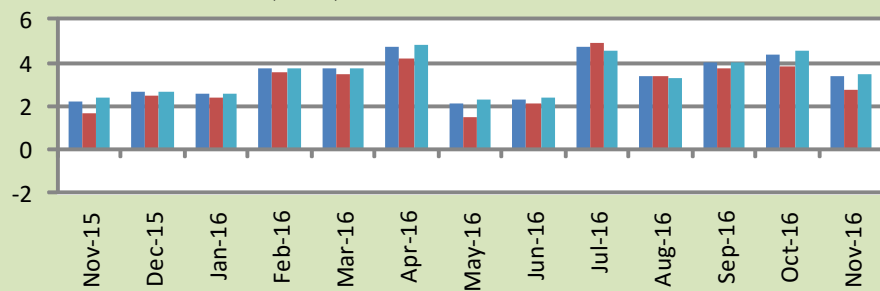
Table 3.1 Income Group- wise Inflation (YoY)									
Income Groups	General			Food			Non-food		
	Nov-15	Oct-16	Nov-16	Nov-15	Oct-16	Nov-16	Nov-15	Oct-16	Nov-16
All Groups Combined	2.7	4.2	3.8	2.2	4.4	3.3	3.1	4.1	4.1
Up to Rs. 8,000	2.5	4.0	3.4	1.7	3.8	2.8	3.5	4.2	4.3
Rs. 8,001- 12,000	2.8	4.0	3.5	1.8	4.0	3.0	3.9	4.0	4.1
Rs. 12,001- 18,000	2.3	4.1	3.6	2.0	4.3	3.2	2.5	3.9	4.0
Rs. 18,001- 35,000	2.9	4.1	3.7	2.3	4.5	3.5	3.5	3.8	3.8
Above Rs. 35,000	2.8	4.3	4.0	2.4	4.5	3.5	3.1	4.2	4.3

Fig 3.1: Income Group- wise Inflation

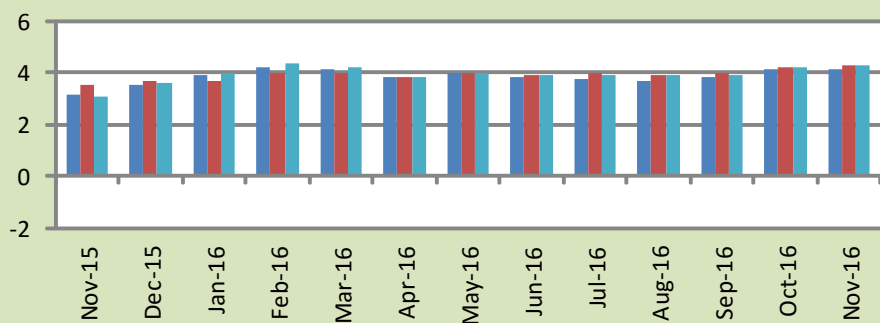
a: CPI Overall Inflation (YoY)



b: CPI Food Inflation (YoY)



c: CPI Non-Food Inflation (YoY)



4. Weighted Contribution

The weighted contribution of food group in the overall inflation decreased to 36.64 percent during November 2016 from 43.11 percent in previous month. It was 33.23 percent in November 2015.

The weighted contribution of non-food group increased to 63.36 percent in November 2016 from 56.89 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
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
Nov-16	36.64	9.16	33.91	-5.95	12.22	14.02

5. Inflation Diffusion Index

Table 5.1 Inflation Diffusion Index - based on MoM change

	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16
General	34.7	36.4	37.0	26.2	30.7	29.4	32.0	23.7	32.7	39.7	10.3	30.1	41.1
Food & Non-Alcoholic Beverages	30.4	22.3	29.2	22.1	5.3	27.5	20.2	32.7	51.8	34.2	6.1	20.0	28.2
Alcoholic Beverages & Tobacco	66.7	100.0	100.0	100.0	83.3	66.7	100.0	100.0	100.0	33.3	-16.7	-16.7	100.0
Clothing & Footwear	66.1	64.4	59.3	59.3	55.9	22.0	59.3	37.3	42.4	37.3	5.1	54.2	57.6
Housing, Water, Elect, Gas & other Fuels	33.3	16.7	36.1	0.0	-2.8	41.7	13.9	33.3	52.8	22.2	5.6	25.0	41.7
Furnishing & Household Equip. Maintenance etc	58.0	71.0	55.1	39.1	62.3	42.0	52.2	8.7	20.3	60.9	11.6	46.4	53.6
Health	15.4	7.7	12.8	17.9	25.6	33.3	25.6	25.6	20.5	46.2	33.3	43.6	46.2
Transport	18.6	16.3	30.2	-23.3	-7.0	7.0	-2.3	-7.0	4.7	27.9	9.3	2.3	7.0
Communication	16.7	41.7	25.0	-33.3	41.7	8.3	8.3	25.0	25.0	16.7	8.3	33.3	50.0
Recreation & Culture	20.5	7.7	17.9	17.9	30.8	5.1	7.7	-17.9	-2.6	7.7	10.3	-7.7	25.6
Education	0.0	18.8	12.5	31.3	50.0	68.8	50.0	31.3	-6.3	50.0	37.5	37.5	43.8
Restaurant & Hotels	66.7	66.7	50.0	100.0	100.0	33.3	66.7	50.0	66.7	83.3	50.0	33.3	33.3
Miscellaneous	20.0	65.7	48.6	57.1	60.0	42.9	60.0	51.4	48.6	77.1	-2.9	60.0	71.4
NFNE	35.2	40.8	39.9	26.6	38.5	29.3	34.6	19.8	24.9	42.3	11.5	34.6	45.6

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	Nov-15		Oct-16		Nov-16	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-4.17	1.46	1.27	4.42	0.39	0.58
2	Wheat Flour Bag	10 Kg	-3.53	1.71	-1.32	1.34	-2.09	0.91
3	Rice Basmati Sup. Qlty.	Kg	-18.77	-3.93	-2.79	0.30	1.07	-0.11
4	Pulse Masoor (Washed)	Kg	7.12	0.67	5.40	-0.45	4.40	-0.29
5	Pulse Moong (Washed)	Kg	1.57	-0.20	-5.99	-1.71	-7.19	-1.48
6	Pulse Mash (Washed)	Kg	38.30	2.90	13.27	-2.76	5.70	-3.98
7	Pulse Gram	Kg	56.35	2.50	33.72	2.73	39.95	7.28
8	Vegetable Ghee (Loose)	Kg	-13.38	-0.90	2.66	0.27	4.02	0.41
9	Sugar Refined	Kg	3.43	-3.73	13.39	-0.96	22.32	3.85
10	Milk Fresh (Unboiled)	Ltr	3.85	0.05	3.83	0.00	4.06	0.28
11	Tea- Tapal Danedar	200 Gm	31.86	2.32	-0.15	-0.04	-2.22	0.20
12	Beef With Bone Av. Qlty.	Kg	4.02	0.01	3.17	0.46	3.74	0.56
13	Mutton Av. Qlty.	Kg	6.71	0.74	5.00	0.00	4.97	0.71
14	Chicken Farm Broiler (Live)	Kg	0.52	21.13	26.04	20.04	0.12	-3.77
15	Eggs Farm	Doz	-14.17	10.67	7.90	-3.27	20.12	23.21
16	Potatoes	Kg	-45.59	12.82	17.40	-0.64	26.06	21.14
17	Onion	Kg	83.90	14.61	-45.88	-7.28	-55.45	-5.66
18	Tomatoes	Kg	95.45	18.12	-15.43	2.67	-38.88	-14.63
19	Ginger	Kg	-23.21	-7.04	-16.36	-9.06	-10.26	-0.26
20	Garlic	Kg	30.79	3.87	73.48	1.73	69.66	1.58

7. Global Commodity Prices

Table 7.1 Changes in Major Global Indices (percent)

Item/ Group	Nov-15		Oct-16		Nov-16	
	YoY	MoM	YoY	MoM	YoY	MoM
Overall	-34.3	-5.8	4.4	5.7	9.5	-1.2
Food	-17.5	-2.6	6.7	0.9	9.8	0.1
Metals	-30.2	-7.5	2.6	1.6	24.3	12.1
Energy	-42.8	-7.4	4.9	10.1	7.2	-5.4
Agricultural Raw Material	-18.7	-3.0	-0.1	0.1	7.2	4.1
Cotton	2.5	0.3	13.7	0.8	14.0	0.5

Source: IMF

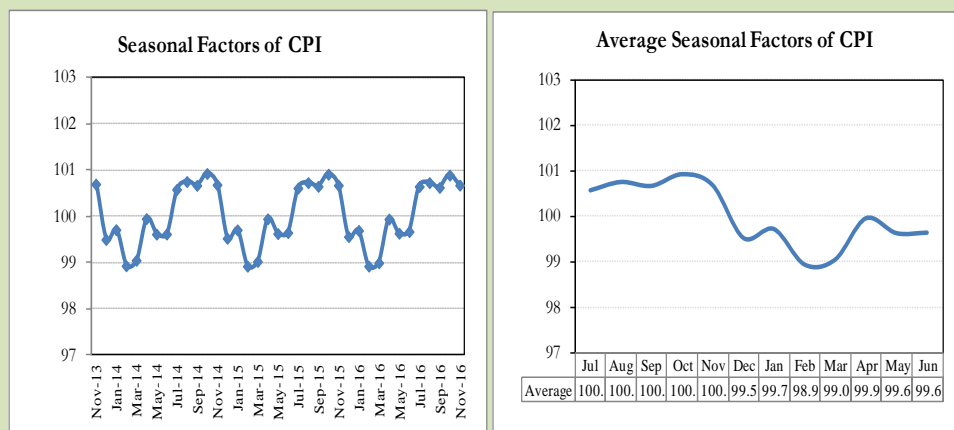
8. Seasonal Adjustment in CPI

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

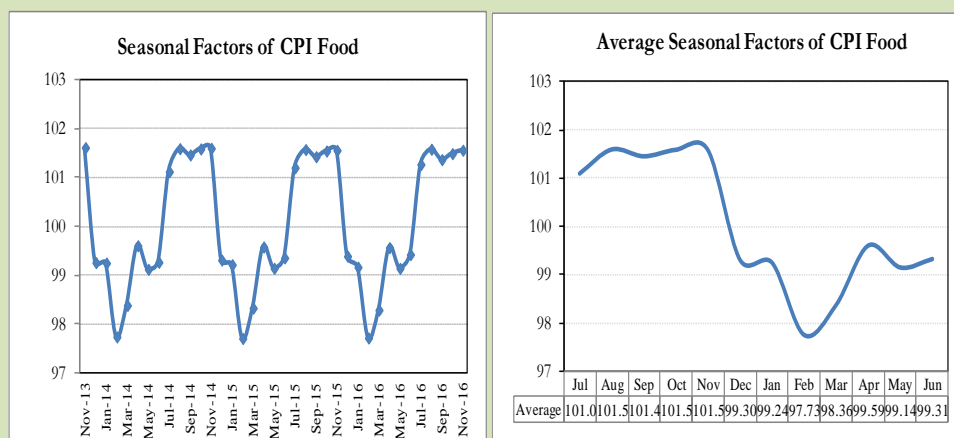
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the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

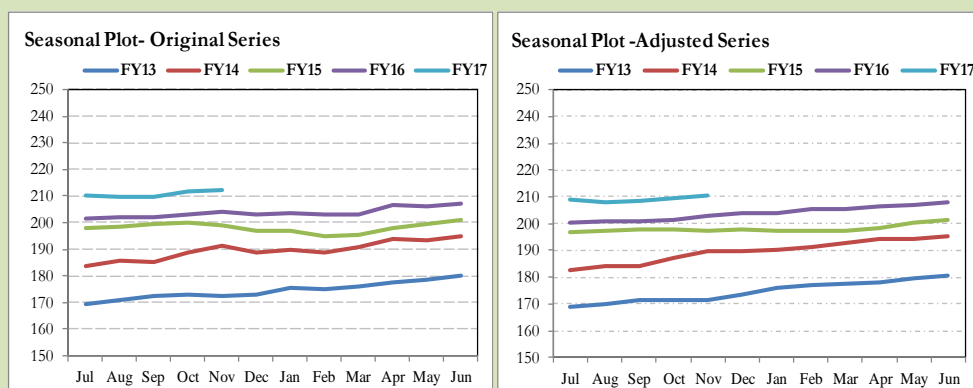
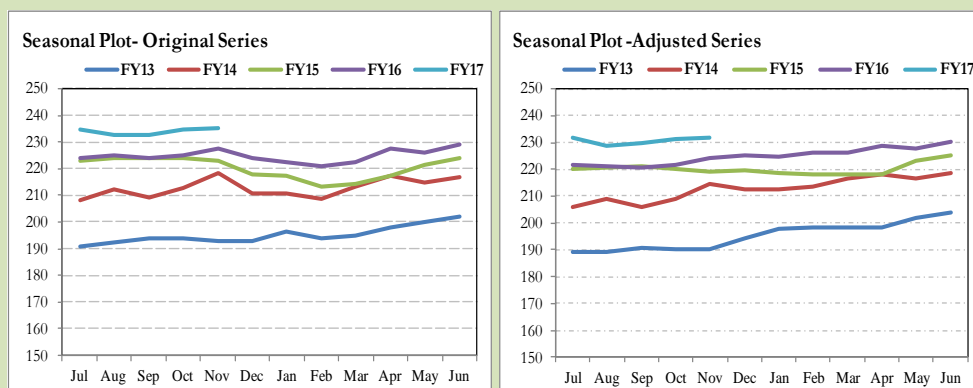


Fig. 8.4 Seasonal Plots of CPI (Food)



Seasonally adjusted CPI for November 2016 stood at 210.59 against 212.01 in original series showing a decrease of 1.42 on account of adjustment of upward seasonality in November 2016.

Seasonally adjusted CPI food group for November 2016 stood at 231.55 against 235.17 in original series showing a decrease of 3.61 on account of adjustment of upward seasonality in November 2016.

Month-on-month change of seasonally adjusted CPI series stood at 0.42% reflecting decrease during November 2016 over previous month and an increase of 0.21% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at 0.14% reflecting decrease during November 2016 over previous month and an increase of 0.21% 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 November 2016 (corresponding to the seasonally adjusted month-on-month rate) is 5.20 percent.

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

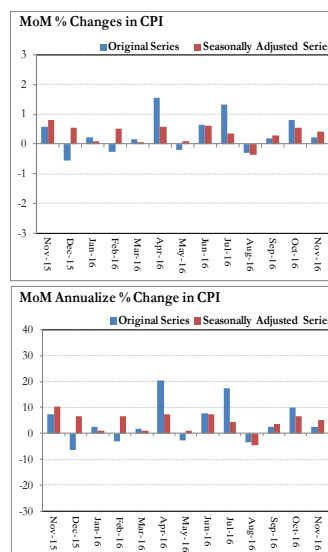
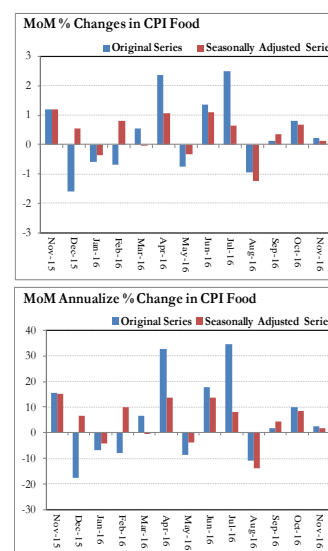


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



Annexure A

Table A1: CPI Inflation by Groups (percent)							
	Weight	MoM change			YoY change		
		Nov-15	Oct-16	Nov-16	Nov-15	Oct-16	Nov-16
I. Food Group	37.5	1.2	0.8	0.2	2.2	4.4	3.3
Food & Non-Alcoholic Beverages	34.8	1.3	0.9	0.2	1.3	3.6	2.5
Alcoholic Beverages & Tobacco	1.4	0.7	0.1	0.3	17.1	17.6	17.0
Restaurant & Hotels	1.2	0.4	0.1	0.5	4.8	5.2	5.2
II. Non-Food Group	62.5	0.2	0.8	0.2	3.1	4.1	4.1
Clothing & Footwear	7.6	0.4	0.3	0.4	4.6	4.2	4.2
Housing, Water, Elect, Gas & other Fuels	29.4	0.0	1.4	0.0	5.0	4.9	4.9
Furnishing & Household Equip. Maintenance etc	4.2	0.1	0.2	0.2	3.6	3.3	3.4
Health	2.2	0.5	0.9	0.8	3.0	7.9	8.1
Transport	7.2	0.7	0.1	0.1	-7.1	-3.1	-3.6
Communication	3.2	0.0	0.3	0.2	0.3	0.7	0.9
Recreation & Culture	2.0	0.1	0.0	0.1	2.2	1.4	1.4
Education	3.9	0.0	0.7	0.5	8.8	10.9	11.5
Miscellaneous	2.8	-0.3	0.1	0.5	2.1	5.1	5.9
Headline	100.0	0.6	0.8	0.2	2.7	4.2	3.8

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)	
		Nov-15	Nov-16	Nov-15	Nov-16	Nov-15	Nov-16	Nov-15	Nov-16	Nov-15	Nov-16
I. Food Group	3.3	129	129	41	25	44	61	22	20	22	23
Food & Non-Alcoholic Beverages	2.5	117	117	41	25	42	58	16	15	18	19
Alcoholic Beverages & Tobacco	17.0	6	6	0	0	0	0	2	2	4	4
Restaurant & Hotels	5.2	6	6	0	0	2	3	4	3	0	0
II. Non-Food Group	4.1	348	348	113	95	149	149	71	79	15	25
Clothing & Footwear	4.2	59	59	8	7	29	32	22	19	0	1
Housing, Water, Elect, Gas & other Fuels	4.9	36	36	6	14	13	9	12	12	5	1
Furnishing & Household Equip. Maintenance etc	3.4	69	69	4	7	45	51	19	11	1	0
Health	8.1	39	39	22	9	12	13	5	9	0	8
Transport	-3.6	43	43	36	28	6	10	1	4	0	1
Communication	0.9	12	12	6	3	4	5	1	3	1	1
Recreation & Culture	1.4	39	39	17	23	15	10	5	2	2	4
Education	11.5	16	16	9	1	3	4	0	8	4	3
Miscellaneous	5.9	35	35	5	3	22	15	6	11	2	6
Overall	3.8	477	477	154	120	193	210	93	99	37	48

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

Table A3: Top and Bottom 15 Contributors to CPI Inflation (YoY) in November 2016					
Top 15 Contributors		YoY Change		Weighted Contribution	
Items/ Contributors	Weights	Nov-15	Nov-16		
Ranked by Weighted Contribution					
1	House Rent	21.81	5.42	6.65	31.84
2	Education	3.94	8.75	11.54	12.22
3	Cigarette	1.39	17.23	17.08	9.57
4	Fresh Vegetable	1.77	4.96	15.78	9.49
5	Milk Fresh	6.68	3.75	3.94	8.69
6	Sugar	1.04	3.43	22.31	6.37
7	Potatoes	0.44	-45.59	26.06	3.46
8	Meat	2.43	4.93	4.16	3.32
9	Pulse Gram	0.24	56.35	39.95	3.26
10	Personal Equipments	0.84	1.01	8.51	2.48
11	Fresh Fruits	1.86	-8.04	5.05	2.43
12	Egg	0.46	-14.17	20.12	2.37
13	Cotton Cloth	1.73	3.92	4.62	2.21
14	Tailoring	0.88	8.83	6.57	2.13
15	Ready Made Food	1.23	4.77	5.24	2.10
Total		46.75			101.95
Bottom 15 Contributors					
1	Onion	0.51	83.90	-55.45	-13.46
2	Tomatoes	0.41	95.45	-38.88	-5.69
3	Motor Fuel	3.03	-14.38	-9.09	-5.32
4	Wheat Flour	4.16	-3.00	-1.84	-2.13
5	Tea	0.84	27.35	-6.21	-1.83
6	Transport Services	2.70	-4.35	-2.08	-1.42
7	Pulse Moong	0.23	1.57	-7.19	-0.65
8	Motor Vehicle Accessories	0.24	-0.95	-5.93	-0.42
9	Fish	0.30	0.86	-1.76	-0.15
10	Kerosene Oil	0.01	-18.93	-7.16	-0.01
11	Sewing Needle & Dry Cell	0.15	9.96	-0.27	-0.01
12	Beans	0.03	-4.72	-1.11	-0.01
13	Motor Vehicle Tax	0.11	0.00	0.00	0.00
14	Electricity	4.40	2.84	0.00	0.00
15	Gas	1.58	9.92	0.00	0.00
Total		18.69			-31.10

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

<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution	
Items/ Contributors	Weights	Oct-16	Nov-16		
Ranked by Weighted Contribution					
1	Potatoes	0.44	-0.64	21.14	51.77
2	Egg	0.46	-3.27	23.21	47.19
3	Sugar	1.04	-0.96	3.85	22.96
4	Pulse Gram	0.24	2.72	7.28	13.73
5	Milk Fresh	6.68	0.00	0.28	11.39
6	Education	3.94	0.70	0.54	11.20
7	Wheat Flour	4.16	1.06	0.50	9.94
8	Meat	2.43	0.30	0.61	8.89
9	Besan	0.15	3.68	5.85	6.53
10	Woolen Readymade Garments	0.40	0.04	2.78	6.34
11	Woolen Cloth	0.88	0.59	1.22	5.99
12	Personal Equipments	0.84	-0.26	0.83	4.62
13	Ready Made Food	1.23	0.09	0.50	3.71
14	Doctor (MBBS) Clinic Fee	0.59	0.99	0.98	3.50
15	Drug Medicine	1.27	1.04	0.75	3.48
Total		24.75			211.24
Bottom 15 Contributors					
1	Fresh Fruits	1.86	-1.96	-7.95	-77.31
2	Tomatoes	0.41	2.67	-14.63	-27.16
3	Chicken	1.36	20.04	-3.77	-21.14
4	Onion	0.51	-7.28	-5.66	-11.48
5	Fresh Vegetable	1.77	6.09	-0.79	-9.87
6	Pulse Mash (Washed)	0.21	-2.76	-3.98	-6.62
7	Pulse Moong	0.23	-1.71	-1.48	-2.22
8	Rice	1.58	0.09	-0.27	-1.58
9	Spices	0.54	-0.68	-0.20	-0.58
10	Gur	0.02	-0.08	-3.42	-0.50
11	Fish	0.30	-0.31	-0.18	-0.26
12	Pulse Masoor	0.27	-0.25	-0.13	-0.17
13	Beans	0.03	-0.42	-0.50	-0.07
14	Household Equipment	0.59	0.04	-0.03	-0.07
15	Sewing Needle & Dry Cell	0.15	-2.41	0.00	0.00
Total		9.84			-159.03

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in November 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Nov-15	Nov-16	
A. Ranked by Percentage Change					
1	Gram Whole	0.16	21.32	44.06	1.99
2	Pulse Gram	0.24	56.35	39.95	3.26
3	Besan	0.15	50.50	33.36	1.67
4	Potatoes	0.44	-45.59	26.06	3.46
5	Sugar	1.04	3.43	22.31	6.37
6	Egg	0.46	-14.17	20.12	2.37
7	Cigarette	1.39	17.23	17.08	9.57
8	Fresh Vegetable	1.77	4.96	15.78	9.49
9	Education	3.94	8.75	11.54	12.22
10	Water Supply	0.50	0.00	9.89	0.95
11	Betel Leaves & Nuts	0.02	7.21	9.23	0.06
12	Doctor (MBBS) Clinic Fee	0.59	4.50	8.93	1.67
13	Medical Equipment	0.01	2.42	8.53	0.02
14	Drug Medicine	1.27	1.28	8.53	2.07
15	Personal Equipments	0.84	1.01	8.51	2.48
Total		12.82			57.66
B. Ranked by Weights					
1	House Rent	21.81	5.42	6.65	31.84
2	Milk Fresh	6.68	3.75	3.94	8.69
3	Electricity	4.40	2.84	0.00	0.00
4	Wheat Flour	4.16	-3.00	-1.84	-2.13
5	Education	3.94	8.75	11.54	12.22
6	Communication & Apparatus	3.15	0.19	0.65	0.34
7	Motor Fuel	3.03	-14.38	-9.09	-5.32
8	Transport Services	2.70	-4.35	-2.08	-1.42
9	Meat	2.43	4.93	4.16	3.32
10	Vegetable Ghee	2.07	-12.41	1.79	0.65
11	Fresh Fruits	1.86	-8.04	5.05	2.43
12	Fresh Vegetable	1.77	4.96	15.78	9.49
13	Cooking Oil	1.75	-16.57	0.42	0.13
14	Cotton Cloth	1.73	3.92	4.62	2.21
15	Rice	1.58	-19.15	1.06	0.34
Total		63.08			62.79
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 3.8 percent in November, 2016.					

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

Top 10 Contributors to Weighted Contribution (2015/16) in November 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Nov-15	Nov-16	
A. Ranked by Weighted Contribution					
1	Cigarette	1.39	17.23	17.08	9.57
2	Fresh Vegetable	1.77	4.96	15.78	9.49
3	Milk Fresh	6.68	3.75	3.94	8.69
4	Sugar	1.04	3.43	22.31	6.37
5	Potatoes	0.44	-45.59	26.06	3.46
6	Meat	2.43	4.93	4.16	3.32
7	Pulse Gram	0.24	56.35	39.95	3.26
8	Fresh Fruits	1.86	-8.04	5.05	2.43
9	Egg	0.46	-14.17	20.12	2.37
10	Ready Made Food	1.23	4.77	5.24	2.10
Total		17.54			51.07
B. Ranked by Percentage Change					
1	Gram Whole	0.16	21.32	44.06	1.99
2	Pulse Gram	0.24	56.35	39.95	3.26
3	Besan	0.15	50.50	33.36	1.67
4	Potatoes	0.44	-45.59	26.06	3.46
5	Sugar	1.04	3.43	22.31	6.37
6	Egg	0.46	-14.17	20.12	2.37
7	Cigarette	1.39	17.23	17.08	9.57
8	Fresh Vegetable	1.77	4.96	15.78	9.49
9	Betel Leaves & Nuts	0.02	7.21	9.23	0.06
10	Pulse Mash (Washed)	0.21	38.30	5.70	0.49
Total		5.88			38.73
C. Ranked by Weights					
1	Milk Fresh	6.68	3.75	3.94	8.69
2	Wheat Flour	4.16	-3.00	-1.84	-2.13
3	Meat	2.43	4.93	4.16	3.32
4	Vegetable Ghee	2.07	-12.41	1.79	0.65
5	Fresh Fruits	1.86	-8.04	5.05	2.43
6	Fresh Vegetable	1.77	4.96	15.78	9.49
7	Cooking Oil	1.75	-16.57	0.42	0.13
8	Rice	1.58	-19.15	1.06	0.34
9	Cigarette	1.39	17.23	17.08	9.57
10	Chicken	1.36	0.52	0.13	0.04
Total		25.06			32.52

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 3.3 percent in November, 2016.

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in November 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Nov-15	Nov-16	
A. Ranked by Weighted Contribution					
1	House Rent	21.81	5.42	6.65	31.84
2	Education	3.94	8.75	11.54	12.22
3	Personal Equipments	0.84	1.01	8.51	2.48
4	Cotton Cloth	1.73	3.92	4.62	2.21
5	Tailoring	0.88	8.83	6.57	2.13
6	Drug Medicine	1.27	1.28	8.53	2.07
7	Personal Care	1.49	2.49	4.53	1.82
8	Household Servant	1.04	4.95	5.39	1.71
9	Doctor (MBBS) Clinic Fee	0.59	4.50	8.93	1.67
10	Ready Made Garment	0.97	6.78	5.02	1.43
Total		34.58			59.58
B. Ranked by Percentage Change					
1	Education	3.94	8.75	11.54	12.22
2	Water Supply	0.50	0.00	9.89	0.95
3	Doctor (MBBS) Clinic Fee	0.59	4.50	8.93	1.67
4	Medical Equipment	0.01	2.42	8.53	0.02
5	Drug Medicine	1.27	1.28	8.53	2.07
6	Personal Equipments	0.84	1.01	8.51	2.48
7	House Rent	21.81	5.42	6.65	31.84
8	Tailoring	0.88	8.83	6.57	2.13
9	Postal Services	0.07	3.87	6.42	0.13
10	Household Servant	1.04	4.95	5.39	1.71
Total		30.96			55.22
C. Ranked by Weights					
1	House Rent	21.81	5.42	6.65	31.84
2	Electricity	4.40	2.84	0.00	0.00
3	Education	3.94	8.75	11.54	12.22
4	Communication & Apparatus	3.15	0.19	0.65	0.34
5	Motor Fuel	3.03	-14.38	-9.09	-5.32
6	Transport Services	2.70	-4.35	-2.08	-1.42
7	Cotton Cloth	1.73	3.92	4.62	2.21
8	Gas	1.58	9.92	0.00	0.00
9	Footwear	1.55	0.52	0.97	0.32
10	Personal Care	1.49	2.49	4.53	1.82
Total		45.39			42.01
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 November, 2016.					

Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: November 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, Tomatoes, Tea Lipton Yellow Label 200 Gm, Ginger, Cucumber (Kheera), Pulse Moong (Washed), Arvi, Ice	Mutton Av.Qlty., Rice Irri-6/9 (Sindh/Punj), Biscuits-Packed, Spinach, Malta/Mosambi, Pulse Masoor (Washed), Butter Local Packed, Bananas	Groundnuts (With Shell), Chocolate Candy (Small Size), Pepper Black National, Pomegranate (Annar), Almonds Whole Av.Qlty.	Garlic, Gram Whole Yellow Av.Qlty, Pulse Gram, Gram Whole Black Av Qlty., Besan Av. Qlty., Potatoes, Turnip, Sugar Refined, Eggs Farm, Peas, Chillies Green, Tinda, Carrot, Karaila, Turai
Alcoholic Beverages & Tobacco			Betel Leaves, Betel Nuts,	Cigarettes Capstan 20,S, Cigarettes Morven Gold 20,S, Cigarettes K-20,S, Cigarettes Gold Leaf 20,S
Clothing & Footwear	Sewing Thread/Reel, Gents Shoe, Art 1109 Servis, Child Shoe Power Lite Bata, Sports Shoes, Ladies Spoung Chappal Bata, Ladies Sandal Bata	Foot Wear Local (Children), Pullover Ladies Oxford/Bon, Long Cloth 57" Gul Ahmed/Al Karam, Linen Av.Qlty, Azarband Cotton Avg.Qlty, Shirting Av.Qlty.	Frock W/Wear Girls, School Uni. Kameez-Shal Girls, Tailoring Shirt, Georgette Av.Qlty, School Uni. Kameez-Shal Boys, Brassier Sup.Qlty	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	Cement (Local), Electrician Wage Rate(P/Pnt), Carpenter Wage Rate, Firewood Whole, Electrician Wage Rate(P/Day), Plumber Wage Rate	Water Charges Per House, Mason (Raj) Wage Rate, Bajree, 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), Tube Light Philips 40 Watt	Towel(3'X2') Av. Qlty, Single Bed Without Foam, Chair Shesham Wood, Dinner Set Plastic 72 Pcs, Thermos Starvac 1 Ltr	Carpet Plain Av. Qlty, Elect. Iron Philips, Dining Table 6 Chairs, Non Stick Cooking Pan, Robin Blue (35 Gms), Gas Burner Double	
Health	Galxos-D (450 Gm), Saniplast (1 Putty), Sancos Syrup (50 ML), Renitec Tab. 5 Mg., Daonil Tab. 5 Mg., Betnesol Eye Drops	Sugar Test (Random/Fasting), Glycerin Small Bottle, Trisil Tab., Betnovate-N Ointment 5 Gm, Flagyl Tab. 200 Mg., Brufen Tabs 200-Mg.	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, Jouhar Joshanda, Septran Tablets, Ventolin Tab. 2Mg.
Transport	Petrol Super, High Speed Diesel HSD, Bus Fare Min (Within City), Tyre Motor Cycle Without Tube	Suzuki Fare Min.Within City, Car Suzuki 1000 CC, Cycle Overhauling Charges, Car Suzuki 800 CC (W/O. Ac), Full Tonga Charges	Car Honda Civic 1500 CC, Taxi 4 Seater Fare, Tyre Puncture Charges, Suzuki Fare Maximum Within City	Car Toyota 1300 CC
Communication	Postal Envelope Domestic, Telephone Charges Local Call, Telephone Charges Outside City	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), Internet Charges	Postal Registration Charges
Recreation & Culture	Urdu Book Class V (T.B.Board), Computer CD (Tdk/Imation), T.V. 20" Colored Sony, English Book Class IX or X	Fountain Pen Hero/Wings/China, Exercise Book Lined 80/10, Personnel Computer (Branded), Maths Book Class IX Or X, Paper Fool Scape (27"X17")	Pencil Goldfish/Deer, Ball Pen (Local)	Cinema A/C High Class, Video Game Sega 16 Byte, Maths Book Class V (T.B.Board), Cinema Non-A/C High Class
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. Engg. Coll. Fee 1st Year, Govt. University Fee M.Sc/ Ma, I.T. Tuition Fees
Restaurant & Hotels		Tea Prepared (Ordinary), Chicken Biryani Full/Double, Bread Tandoori St. Size	Cooked Dal (Av. Hotel), Cooked Mutton (Av. Hotel), Cooked Beef (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	Face Cream Ponds (Medium), Beauty Parlor Hair Style Charges, Gel Medium Size, Toilet Soap Lux 95 Gms	Gold Tezabi 24 Ct, Suitcase Rixin (24"X16"X6"), Toothpowder Dentonic 90 Gms, Toothpaste Med Size Colgate 70Gms, Beauty Cream (Fair & Lovely), Silver Tezabi 24 Ct

Table A5: City- wise CPI Inflation by Income Groups, November 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	4.4	-0.9	2.2	0.3	7.1	-0.3	5.1	-0.9	2.5	0.3	7.9
2 Islamabad	-0.2	2.9	-0.5	1.7	0.2	4.5	-0.2	2.8	-0.6	2.0	0.3	3.7
3 Lahore	0.2	2.2	0.3	1.6	0.1	3.2	0.1	2.0	0.1	1.4	0.1	2.8
4 Gujranwala	-0.7	2.4	-1.4	1.5	0.2	3.5	-0.7	2.3	-1.4	1.8	0.1	2.9
5 Sialkot	0.4	2.6	0.7	2.3	-0.1	3.1	0.3	2.6	0.5	2.3	0.0	3.0
6 Faisalabad	-0.4	6.1	-1.0	5.8	0.3	6.4	-0.5	6.3	-1.1	6.5	0.3	6.1
7 Multan	0.4	3.0	0.6	2.6	0.1	3.4	0.5	3.0	0.8	2.9	0.1	3.2
8 Sargodha	0.1	2.6	0.0	3.2	0.2	1.9	0.0	2.7	-0.1	3.6	0.2	1.9
9 Bahawalpur	0.2	5.0	-0.4	4.2	0.8	5.8	0.1	5.7	-0.3	4.5	0.6	6.8
10 Karachi	0.5	3.2	0.5	2.3	0.5	4.4	0.5	3.2	0.6	2.4	0.4	4.1
11 Hyderabad	0.6	3.1	0.2	2.3	1.0	4.3	0.7	3.2	0.4	2.4	1.1	4.1
12 Sukkur	0.4	1.3	0.7	0.0	0.1	3.0	0.5	1.6	0.8	0.3	0.1	2.9
13 Larkana	0.3	5.4	0.2	4.0	0.4	7.0	0.2	5.5	0.2	4.0	0.3	7.0
14 Peshawar	0.2	0.7	0.0	0.9	0.4	0.5	0.2	0.9	-0.1	1.2	0.5	0.6
15 Bannu	0.1	3.5	-0.2	2.3	0.4	4.9	0.2	4.2	0.0	2.3	0.5	6.2
16 Quetta	0.0	2.7	-0.1	1.3	0.0	4.3	0.1	2.7	0.2	1.8	0.0	3.7
17 Khuzdar	0.4	4.9	0.4	5.1	0.4	4.5	0.4	4.5	0.4	5.0	0.4	3.8

	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	-0.3	5.2	-0.9	3.1	0.3	7.3	-0.3	5.2	-1.0	3.6	0.3	6.6
2 Islamabad	-0.2	2.7	-0.7	2.2	0.3	3.2	-0.1	3.0	-0.6	2.6	0.3	3.4
3 Lahore	0.2	2.1	0.2	1.5	0.2	2.7	0.1	1.9	0.1	1.7	0.1	2.1
4 Gujranwala	-0.8	2.4	-1.4	1.9	-0.1	3.0	-0.7	2.0	-1.3	1.8	-0.1	2.2
5 Sialkot	0.2	2.4	0.4	2.0	0.0	2.8	0.1	2.1	0.3	2.1	0.0	2.1
6 Faisalabad	-0.4	7.0	-1.2	7.1	0.3	6.9	-0.1	7.3	-1.1	7.7	0.8	6.9
7 Multan	0.5	3.3	0.9	2.9	0.1	3.6	0.5	3.3	0.9	3.2	0.1	3.4
8 Sargodha	0.1	3.5	-0.1	4.5	0.2	2.6	0.0	4.3	-0.2	4.9	0.2	4.0
9 Bahawalpur	0.1	5.8	-0.5	4.7	0.6	6.8	0.2	6.4	-0.4	5.0	0.6	7.6
10 Karachi	0.5	3.4	0.7	2.6	0.4	4.2	0.5	3.2	0.8	2.8	0.3	3.5
11 Hyderabad	0.8	3.2	0.4	2.4	1.2	4.0	0.7	2.8	0.3	2.4	1.1	3.2
12 Sukkur	0.5	1.7	0.9	0.6	0.1	2.8	0.4	1.7	0.7	1.1	0.1	2.2
13 Larkana	0.3	6.1	0.4	4.5	0.2	7.5	0.3	6.1	0.4	4.7	0.2	7.1
14 Peshawar	0.1	1.0	-0.2	1.5	0.4	0.5	0.0	0.9	-0.3	1.6	0.3	0.4
15 Bannu	0.1	3.7	-0.2	2.2	0.4	5.3	0.2	4.4	0.0	3.0	0.4	5.5
16 Quetta	0.2	2.7	0.3	2.1	0.1	3.2	0.1	3.1	0.2	3.0	0.1	3.1
17 Khuzdar	0.5	4.7	0.5	5.4	0.5	4.0	0.7	4.9	0.8	5.8	0.6	4.1

	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	5.8	-1.2	3.8	0.4	6.8	-0.2	5.6	-1.1	3.5	0.4	7.0
2 Islamabad	-0.1	4.1	-1.0	3.4	0.4	4.4	-0.1	3.9	-1.0	3.0	0.6	4.6
3 Lahore	0.1	2.1	0.0	1.8	0.2	2.2	0.1	2.0	0.1	1.7	0.2	2.3
4 Gujranwala	-0.5	2.3	-1.5	1.4	0.0	2.7	-0.6	2.2	-1.4	1.7	-0.1	2.6
5 Sialkot	0.1	2.1	0.3	1.7	0.0	2.2	0.2	2.2	0.4	2.0	0.0	2.3
6 Faisalabad	0.0	7.6	-1.1	8.1	0.5	7.3	-0.2	7.0	-1.1	7.2	0.4	6.8
7 Multan	0.4	4.2	0.8	3.2	0.2	4.7	0.4	3.6	0.8	3.1	0.1	4.0
8 Sargodha	0.0	5.3	-0.6	5.3	0.2	5.2	0.0	3.9	-0.2	4.6	0.2	3.5
9 Bahawalpur	0.3	8.0	-0.1	4.5	0.4	9.6	0.2	6.5	-0.3	4.6	0.5	7.8
10 Karachi	0.4	2.7	0.8	2.8	0.3	2.7	0.5	2.9	0.8	2.7	0.3	3.1
11 Hyderabad	0.8	3.1	0.3	1.9	1.1	3.7	0.8	3.0	0.3	2.3	1.1	3.6
12 Sukkur	0.3	2.6	0.6	1.7	0.2	3.1	0.4	1.9	0.7	0.9	0.2	2.5
13 Larkana	0.4	6.8	0.6	5.1	0.3	7.6	0.3	5.9	0.4	4.6	0.2	6.8
14 Peshawar	-0.1	0.8	-0.7	1.4	0.2	0.6	0.0	0.9	-0.3	1.4	0.3	0.5
15 Bannu	0.1	6.1	-0.5	3.2	0.4	7.6	0.2	4.3	-0.2	2.7	0.4	5.5
16 Quetta	0.1	3.5	0.1	3.9	0.1	3.3	0.1	3.0	0.2	2.8	0.1	3.2
17 Khuzdar	0.6	4.8	0.4	5.2	0.6	4.6	0.5	4.7	0.5	5.9	0.5	3.8

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

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Abbotabad	9.9	6.4	12.3	Muzaffargarh	3.6	3.2	3.9
Mianwali	9.4	8.0	10.4	Multan	3.6	3.1	4.0
Faisalabad	7.0	7.2	6.8	Nawabshah	3.3	4.4	2.7
Bahawalpur	6.5	4.6	7.8	Bahawalnagar	3.2	3.5	2.9
Loralai & Cantt	6.2	6.4	6.0	D. I. Khan	3.1	0.1	5.3
Larkana	5.9	4.6	6.8	Dadu	3.1	4.4	2.1
Rawalpindi	5.6	3.5	7.0	Quetta	3.0	2.8	3.2
Sahiwal	5.5	6.8	4.7	Hyderabad	3.0	2.3	3.6
Vehari	5.2	5.1	5.3	Karachi	2.9	2.7	3.1
Turbat	5.1	1.1	7.7	Wazirabad	2.8	3.4	2.3
Rahim Yar Khan	4.8	2.6	6.3	Dera Mrd.Jamali	2.7	1.0	3.9
Attock	4.7	5.6	4.0	D. G. Khan	2.6	2.5	2.6
Khuzdar	4.7	5.9	3.8	Jhang	2.4	1.9	2.7
Gawadar	4.5	4.8	4.4	Mirpur Khas	2.2	2.6	2.0
Bannu	4.3	2.7	5.5	Gujranwala	2.2	1.7	2.6
Sargodha	3.9	4.6	3.5	Sialkot	2.2	2.0	2.3
Islamabad	3.9	3.0	4.6	Lahore	2.0	1.7	2.3
Jhelum	3.8	4.9	3.0	Mithi	2.0	1.8	2.0
				Sukkur	1.9	0.9	2.5
				Mingora	1.6	1.0	2.0
				Peshawar	0.9	1.4	0.5
				Mardan	0.6	0.4	0.8

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		
	Nov-15	Oct-16	Nov-16	Nov-15	Oct-16	Nov-16
<u>Up to Rs. 8000</u>						
General	0.7	0.8	0.2	2.5	4.0	3.4
Food	1.2	0.9	0.2	1.7	3.8	2.8
Non-food	0.1	0.8	0.2	3.5	4.2	4.3
<u>Rs. 8001- 12000</u>						
General	0.7	0.8	0.2	2.8	4.0	3.5
Food	1.2	0.9	0.2	1.8	4.0	3.0
Non-food	0.1	0.8	0.2	3.9	4.0	4.1
<u>Rs. 12001- 18000</u>						
General	0.7	0.8	0.2	2.3	4.1	3.6
Food	1.2	0.8	0.2	2.0	4.3	3.2
Non-food	0.2	0.8	0.2	2.5	3.9	4.0
<u>Rs. 18001- 35000</u>						
General	0.7	0.8	0.2	2.9	4.1	3.7
Food	1.2	0.8	0.2	2.3	4.5	3.5
Non-food	0.2	0.8	0.2	3.5	3.8	3.8
<u>Above Rs. 35000</u>						
General	0.5	0.8	0.2	2.8	4.3	4.0
Food	1.1	0.7	0.2	2.4	4.5	3.5
Non-food	0.2	0.8	0.2	3.1	4.2	4.3
<u>All income groups</u>						
General	0.6	0.8	0.2	2.7	4.2	3.8
Food	1.2	0.8	0.2	2.2	4.4	3.3
Non-food	0.2	0.8	0.2	3.1	4.1	4.1

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices Nov-16	Percentage change	
				YoY	MoM
1	Wheat	10Kg.	342.8	-1.4	1.1
2	Wheat Flour Bag	10Kg.	385.8	-2.7	0.6
3	Rice Basmati Broken	Kg.	62.0	-1.2	0.0
4	Rice Irri-6	Kg.	47.9	4.0	-0.6
5	Bread Plain Med. Size (340-400 Gm.)	Each	41.1	0.7	0.0
6	Beef	Kg.	324.3	2.6	0.0
7	Mutton	Kg.	653.9	4.7	0.1
8	Chicken Live (Farm)	Kg.	145.0	6.6	-7.0
9	Milk Fresh	Litr	80.4	3.1	0.0
10	Curd	Kg.	94.1	2.2	0.0
11	Milk Powdered Nido	500G	388.6	2.9	0.0
12	Egg Hen (Farm)	Doz.	121.8	23.7	23.7
13	Mustard Oil	Kg.	181.5	0.7	0.4
14	Cooking Oil (Tin)	2.5Ltr	454.7	-0.1	0.0
15	Veg. Ghee (Tin)	2.5Kg.	445.7	-0.3	0.1
16	Veg. Ghee Loose	Kg.	142.4	3.8	-0.3
17	Bananas	Doz.	62.7	5.8	-1.1
18	Masoor Pulse Washed	Kg.	148.6	2.1	0.0
19	Moong Pulse Washed	Kg.	145.6	-9.1	-0.7
20	Mash Pulse Washed	Kg.	239.4	0.8	-4.2
21	Gram Pulse Washed	Kg.	175.2	42.9	5.8
22	Potatoes	Kg.	42.4	27.2	9.6
23	Onions	Kg.	29.1	-52.4	-4.0
24	Tomatoes	Kg.	51.4	-36.5	-2.9
25	Sugar	Kg.	71.8	20.6	1.1
26	Gur	Kg.	91.7	2.5	-3.9
27	Salt Powdered Loose (Lahori)	Kg.	10.6	1.7	0.0
28	Red Chillies Powder Loose	Kg.	276.9	2.2	-0.8
29	Garlic	Kg.	293.9	58.4	0.3
30	Tea (Yellow Label)	200Gm.	158.2	-16.4	0.2
31	Cooked Beef Plate	Each	92.4	7.9	0.5
32	Cooked Dal Plate	Each	56.9	8.9	0.4
33	Tea Prepared (Sada)	Cup	19.9	2.3	0.4
34	Cigarettes K-2 (20'S)	20'S	64.5	17.7	0.5
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.	124.0	0.8	0.4
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	-8.6	0.0
45	Firewood	40Kg	600.9	1.8	0.5
46	Energy Savor 14 Watts	Each	167.8	0.7	0.0
47	Washing Soap (200-250 Gm.)	Cake	25.9	4.7	0.0
48	Match Box	Each	2.1	6.6	0.0
49	Petrol	Litr	65.1	-15.6	0.0
50	Diesel	Litr	73.5	-13.3	0.0
51	L.P.G.(11 Kg Cylinder.)	Each	1169.1	5.8	8.6
52	Tele. Local Call	Call	3.9	0.0	0.0
53	Bath Soap Lifebuoy (Standard)	Cake	36.8	0.3	0.0
Maximum				58.4	23.7
Median				1.7	0.0
Minimum				-52.4	-7.0

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

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

Items and specification	Weights	Index		
		Nov-15	Oct-16	Nov-16
General	100.00	204.22	211.57	212.01
Food & Non-Alcoholic Beverages.	34.83	223.17	228.30	228.74
1 Wheat	0.35	202.99	202.60	203.78
2 Wheat Flour	4.16	216.28	211.25	212.30
3 Wheat Product	0.10	216.05	217.29	217.35
4 Besan	0.15	259.87	327.42	346.57
5 Rice	1.58	158.55	160.67	160.23
6 Cereals	0.16	244.41	250.57	251.74
7 Bakery & Confectionary	1.16	210.04	215.50	216.46
8 Nimco	0.46	242.93	249.01	250.65
9 Meat	2.43	255.84	264.87	266.48
10 Chicken	1.36	174.41	181.47	174.63
11 Fish	0.30	219.78	216.30	215.91
12 Milk Fresh	6.68	257.02	266.40	267.15
13 Milk Product	0.63	249.39	256.84	257.33
14 Milk Powder	0.11	231.58	237.25	237.27
15 Egg	0.46	201.40	196.35	241.93
16 Mustard Oil	0.10	155.03	153.72	155.96
17 Cooking Oil	1.75	133.44	133.71	134.00
18 Vegetable Ghee	2.07	135.99	138.08	138.42
19 Dry Fruits	0.25	255.10	261.23	265.00
20 Fresh Fruits	1.86	200.95	229.34	211.10
21 Pulse Masoor	0.27	201.38	211.56	211.28
22 Pulse Moong	0.23	300.34	282.92	278.74
23 Pulse Mash (Washed)	0.21	317.19	349.16	335.28
24 Pulse Gram	0.24	269.43	351.48	377.06
25 Gram Whole	0.16	217.36	305.15	313.13
26 Beans	0.03	233.73	232.30	231.13
27 Potatoes	0.44	234.45	243.97	295.55
28 Onion	0.51	373.92	176.57	166.58
29 Tomatoes	0.41	275.88	197.51	168.62
30 Fresh Vegetable	1.77	265.60	309.96	307.50
31 Sugar	1.04	213.03	250.89	260.56
32 Gur	0.02	278.99	291.45	281.47
33 Honey	0.04	305.40	314.49	316.04
34 Sweet Meet	0.25	238.79	245.36	245.39
35 Beverages	1.20	217.39	219.47	219.50
36 Jam, Tomato Ketchup & Pickle	0.25	211.59	215.72	216.26
37 Condiments	0.27	259.27	263.47	265.31
38 Spices	0.54	237.23	239.79	239.32
39 Tea	0.84	273.45	255.49	256.46
Alcoholic Beverages, Tobacco	1.41	312.26	364.39	365.33
40 Cigarette	1.39	313.74	366.41	367.34
41 Betel Leaves & Nuts	0.02	222.55	241.62	243.10
Clothing & Footwear	7.57	222.75	231.18	232.18
42 Cotton Cloth	1.73	215.40	225.34	225.35
43 Woolen Cloth	0.88	237.76	247.41	250.42
44 Ready Made Garment	0.97	227.22	237.88	238.62
45 Woolen Readymade Garments	0.40	252.19	253.35	260.39
46 Hosiery	0.51	236.08	243.74	244.86
47 Dopatta	0.44	235.00	241.74	241.74
48 Cleaning & Laundering	0.21	246.39	256.52	257.02

Table A10: Consumer Price Index Numbers by Major Groups and Composite Commodities				
Items and specification	Weights	Index		
		Nov-15	Oct-16	Nov-16
49 Tailoring	0.88	285.69	303.96	304.47
50 Footwear	1.55	165.14	166.58	166.74
Housing,Water,Elect,Gas & Other Fuel	29.41	182.66	191.56	191.64
51 House Rent	21.81	170.85	182.22	182.22
52 Construction Input Item	0.56	241.85	247.86	248.60
53 Construction Wage Rate	0.33	223.39	230.48	232.60
54 Water Supply	0.50	149.92	163.38	164.74
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	211.04	195.65	195.93
58 Fire Wood Whole	0.23	279.21	284.35	286.97
Furnished H.Hold Equip.& Maint. Etc	4.21	215.78	222.66	223.21
59 Furniture	0.33	207.09	212.40	214.48
60 Household Textile	0.65	214.08	223.69	224.66
61 Household Equipment	0.59	175.89	179.23	179.18
62 Utensils	0.32	218.40	224.01	225.32
63 Plastic Products	0.25	204.88	207.19	207.64
64 Washing Soap & Detergent	0.79	225.85	229.21	229.75
65 Sewing Needle & Dry Cell	0.15	201.89	201.34	201.34
66 Household Servant	1.04	237.20	249.98	249.98
67 Marriage Hall Charges	0.08	234.20	243.15	243.87
Health	2.19	180.59	193.78	195.28
68 Drug Medicine	1.27	149.14	160.65	161.86
69 Medical Equipment	0.01	226.66	245.33	246.00
70 Doctor (MBBS) Clinic Fee	0.59	247.40	266.89	269.50
71 Medical Test	0.32	180.65	188.77	189.39
Transport	7.20	177.09	170.40	170.65
72 Motor Vehicle	0.66	163.03	170.94	171.44
73 Motor Vehicle Accessories	0.24	227.45	213.17	213.96
74 Motor Fuel	3.03	150.43	136.36	136.75
75 Mechanical Service	0.46	219.41	227.63	227.84
76 Motor Vehicle Tax	0.11	210.18	210.18	210.18
77 Transport Services	2.70	197.38	193.28	193.28
Communication	3.22	130.39	131.26	131.52
78 Postal Services	0.07	229.93	243.32	244.70
79 Communication & Apparatus	3.15	128.31	128.91	129.15
Recreation & Culture	2.02	193.66	196.21	196.40
80 Recreation & Culture	0.86	128.29	129.89	129.92
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	205.39	212.35	213.25
Education	3.94	209.25	232.15	233.40
84 Education	3.94	209.25	232.15	233.40
Restaurants And Hotels	1.23	254.36	266.35	267.68
85 Ready Made Food	1.23	254.36	266.35	267.68
Miscellaneous Goods And Services	2.76	225.02	237.26	238.33
86 Personal Care	1.49	209.48	218.58	218.97
87 Cosmetics	0.39	193.11	200.19	201.04
88 Blades	0.03	190.75	195.43	195.66
89 Personal Equipments	0.84	268.39	288.83	291.24

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

Items and Specifications	Index		
	Nov-15	Oct-16	Nov-16
General	208.72	214.53	214.07
Agriculture Forestry & Fishery	226.06	247.04	242.47
1 Wheat	215.84	209.05	211.20
2 Maize	185.64	190.54	191.32
3 Rice	143.04	147.78	148.65
4 Sorghum/Jowar	271.60	258.01	242.91
5 Millet/Bajra	188.77	182.73	171.85
6 Vegetables	320.31	348.51	295.08
7 Fresh Fruits	206.96	248.10	202.51
8 Dry Fruits	243.32	244.62	244.77
9 Cotton Seeds	251.49	255.71	260.78
10 Other Oil Seeds	164.88	174.88	177.55
11 Edible Roots/ Potatoes	204.98	250.44	281.67
12 Stimulant And Spice Crops	269.27	235.64	216.85
13 Pulses	245.62	309.70	312.67
14 Sugar Crops	286.29	293.89	266.42
15 Fibre Crops	173.76	195.52	197.33
16 Unmanufactured Tobacco	229.69	260.21	265.84
17 Poultry	181.52	190.04	178.62
18 Milk From Bovine Animals	254.04	265.22	267.02
19 Eggs	205.67	196.73	251.78
20 Raw Animal Material/Wool	179.16	173.89	173.89
21 Hides And Fur Skins, Raw	153.62	122.45	122.98
22 Fuel Wood In Logs	263.57	264.77	269.14
23 Fishes Live Fresh Or Chilled	339.32	455.08	447.65
Ores/Minerals, Gas & Elect.	246.98	242.01	242.44
24 Coal Not Agglomerated	192.16	152.94	155.29
25 Natural Gas Liquefied	209.99	209.52	210.34
26 Salt & Pure Sodium Chloride	252.31	254.33	231.97
27 Electrical Energy	293.09	288.00	288.00
Food, Beverages, Tobacco, Textiles	212.98	224.34	225.93
28 Meat Of Animals	266.98	279.82	279.82
29 Vegetables & Fruit Juices	201.03	209.83	211.47
30 Dried Fruits & Nuts	232.47	240.98	250.67
31 Fruit Juices	177.53	183.53	184.03
32 Vegetable Oil Refined	149.09	151.00	151.24
33 Vegetable Ghee	118.02	123.35	123.44
34 Oil Cakes	212.90	226.38	227.22
35 Processed Liquid Milk	247.18	257.57	257.57
36 Milk And Cream In Solid Form	216.50	220.59	220.54
37 Ice Cream	219.91	238.04	238.04
38 Dairy Products N.E.C	244.60	249.21	252.52
39 Wheat Flour	202.06	194.90	196.86
40 Other Cereal Flour	224.57	307.94	327.54
41 Sugar Refined	224.95	262.43	272.80
42 Chocolate	101.06	99.45	99.45
43 Sugar Confectionary	118.83	128.15	128.15
44 Coffee And Tea	259.94	230.56	232.40
45 Spices	188.29	190.17	190.38
46 Other Food Products	292.02	293.85	293.85
47 Mineral Water	188.35	197.57	197.57
48 Beverages	171.95	172.33	172.33
49 Tobacco Products	356.45	435.03	435.03
50 Cotton Yarn	178.19	191.17	191.63
51 Nylon Yarn	147.08	143.99	143.99
52 Blended Yarn	183.29	179.64	179.94
53 Woven Fabrics	265.37	286.46	286.46
54 Cotton Fabrics	201.65	209.09	209.09
55 Other Fabrics	217.81	224.29	224.94

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Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities				
Items and Specifications		Index		
		Nov-15	Oct-16	Nov-16
56	Silk And Rayon Fabrics	186.80	190.96	191.76
57	Towels	267.20	267.20	271.17
58	Blankets	243.93	247.38	247.52
59	Bed Sheets	256.29	257.96	257.96
60	Quilts	196.84	199.16	203.79
61	Woolen Carpets	142.86	196.43	196.43
62	Synthetic Carpets	129.25	129.25	129.25
63	Hosiery Products	222.88	225.43	241.05
64	Ready Made Garments	193.27	200.44	200.44
65	Leather With Out Hairs	221.97	221.97	229.40
66	Other Leather N.E.C	206.27	207.31	207.31
67	Footwear's	137.38	145.51	145.51
Other Transportable Goods		176.87	165.08	165.19
68	Timber	214.43	224.68	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	128.80	108.54	108.54
73	Diesel Oil	172.03	144.34	144.34
74	Kerosene Oil	152.12	115.11	115.11
75	Furnace Oil	75.72	85.40	92.32
76	Mobil Oil	199.78	195.35	195.35
77	Chemicals	185.92	177.41	175.41
78	Dying Materials	146.55	146.55	146.55
79	Fertilizers	273.25	221.56	216.35
80	Pesticides	312.37	308.79	308.75
81	Insecticides	134.66	135.58	135.98
82	Paints & Varnishes	295.36	295.36	295.36
83	Medicines	146.67	168.17	168.53
84	Soaps & Detergent	181.33	187.54	187.81
85	Auto Tyres	192.83	181.83	177.38
86	Plastic Products	231.05	228.35	225.73
87	Glass Sheets	231.30	282.43	283.21
88	Other Glass Articles	243.63	299.07	299.07
89	Ceramics And Sanitary	227.13	233.48	234.18
90	Bricks Blocks And Tiles	217.09	218.83	219.15
91	Cement	206.79	212.72	212.63
92	Bed Foams	156.67	160.50	164.33
93	Matches	162.62	162.62	162.62
Metal Product Machinery & Equip		171.09	172.38	174.10
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	127.63	120.20	126.37
96	Pipe Fittings	195.10	193.63	193.63
97	Steel Products	173.54	177.06	177.38
98	Engines And Motors	109.07	109.24	128.30
99	Vacuum Pumps	115.39	114.95	133.32
100	Air Conditioners	200.18	201.18	201.18
101	Cultivators	219.76	190.66	190.66
102	Chuff Cutter	149.20	149.20	153.46
103	Tractors	205.43	201.75	201.75
104	Lathe Machines	208.81	241.06	241.06
105	Concrete Mixer	138.83	138.83	138.83
106	Refrige,Wash& Sew Mach, Iron,Fan	200.43	204.00	204.01
107	Electrical Wires	195.19	195.19	200.83
108	Lighting Equipments	167.30	171.92	172.50
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	188.81

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	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
	Nov	212.01	235.17	198.13	214.07	247.89	192.62	220.68

*: all groups combined

Table A13: International Commodity Prices/ Indices				
	Aug-16	Sep-16	Oct-16	Nov-16
Energy				
Crude Oil (US\$ per barrel) *	44.8	45.1	49.3	45.3
IMF Energy Index (2005 = 100)	84.9	85.6	94.2	89.1
WB Energy Index (2010 = 100) @	57.6	58.2	63.7	59.4
Food				
Rice (\$/MT)	414.2	384.0	367.7	360.8
Wheat (\$/MT)	127.9	123.2	122.5	122.5
Sugar (US cent/ pound)	20.0	21.9	22.9	20.9
Palm Oil (\$/MT)	664.4	692.4	651.4	670.0
Soybean Oil (\$/MT)	711.7	722.6	757.3	772.4
Non-Food Non-Energy				
Cotton Outlook 'A' Index #	80.3	77.9	78.5	78.9
IMF Metal Price Index (2005 = 100)	121.7	119.1	121.0	135.7
Copper (\$/MT)	4,751.7	4,722.2	4,731.3	5,450.9
Aluminum (\$/MT)	1,639.3	1,592.4	1,665.9	1,737.1
Iron Ore (\$ cents/dry MT)	60.5	56.7	58.0	72.3
Tin (\$/MT)	18,427.0	19,499.5	20,099.8	21,126.1
Nickel (\$/MT)	10,336.0	10,191.8	10,259.7	11,128.9
Zinc (\$/MT)	2,279.1	2,292.3	2,311.5	2,566.2
Lead (\$/MT)	1,835.5	1,947.6	2,024.5	2,180.6
Uranium (\$/MT)	25.9	24.7	21.2	18.5
DAP (\$/MT)	340.0	339.0	333.0	323.0
Urea (\$/MT)	182.0	191.0	193.0	211.0
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	212.01
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	182.61	196.90	200.54	208.73
Aug	169.79	184.28	197.22	200.79	207.94
Sep	171.25	183.93	198.07	200.74	208.58
Oct	171.48	187.07	197.98	201.20	209.70
Nov	171.29	189.89	197.44	202.85	210.59
Dec	173.71	189.63	197.73	203.95	
Jan	176.17	190.15	197.53	204.11	
Feb	176.97	191.04	197.26	205.19	
Mar	177.44	192.65	197.50	205.34	
Apr	177.82	194.16	198.26	206.55	
May	179.34	194.30	200.41	206.74	
Jun	180.67	195.49	201.60	207.98	

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	235.17
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	189.12	206.11	220.33	221.47	231.74
Aug	189.44	208.89	220.53	221.37	228.86
Sep	190.91	206.05	220.89	220.72	229.65
Oct	190.45	209.22	220.24	221.44	231.23
Nov	190.04	214.69	219.23	224.06	231.55
Dec	194.47	212.46	219.59	225.27	
Jan	197.94	212.40	218.81	224.45	
Feb	198.48	213.57	218.15	226.24	
Mar	198.18	216.61	217.89	226.12	
Apr	198.49	218.19	218.18	228.52	
May	201.74	216.65	223.13	227.80	
Jun	203.73	218.58	225.29	230.27	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY13	FY14	FY15	FY16	FY17	Average
Jul	100.46	100.53	100.58	100.61	100.65	100.57
Aug	100.76	100.78	100.75	100.73	100.73	100.75
Sep	100.70	100.68	100.67	100.65	100.63	100.66
Oct	100.94	100.93	100.93	100.91	100.89	100.92
Nov	100.66	100.70	100.68	100.67	100.67	100.68
Dec	99.49	99.50	99.53	99.56		99.52
Jan	99.73	99.71	99.71	99.70		99.71
Feb	98.95	98.93	98.92	98.92		98.93
Mar	99.09	99.05	99.03	99.00		99.04
Apr	99.96	99.95	99.95	99.94		99.95
May	99.61	99.62	99.63	99.64		99.62
Jun	99.60	99.62	99.65	99.67		99.63

Table 17: CPI Food Monthly & Average Seasonal Factors

Period	FY13	FY14	FY15	FY16	FY17	Average
Jul	100.85	101.01	101.12	101.20	101.27	101.09
Aug	101.60	101.62	101.59	101.58	101.58	101.59
Sep	101.52	101.48	101.47	101.43	101.37	101.45
Oct	101.69	101.62	101.59	101.55	101.49	101.59
Nov	101.58	101.62	101.60	101.56	101.56	101.58
Dec	99.23	99.26	99.31	99.39		99.30
Jan	99.31	99.25	99.22	99.17		99.24
Feb	97.77	97.74	97.71	97.72		97.73
Mar	98.43	98.38	98.33	98.29		98.36
Apr	99.62	99.61	99.58	99.57		99.59
May	99.14	99.12	99.14	99.14		99.14
Jun	99.20	99.27	99.36	99.43		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	0.21
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	-1.11	1.07	0.72	-0.53	0.36
Aug	0.59	0.92	0.16	0.13	-0.38
Sep	0.86	-0.19	0.43	-0.03	0.30
Oct	0.14	1.71	-0.05	0.23	0.54
Nov	-0.11	1.50	-0.27	0.82	0.42
Dec	1.42	-0.14	0.15	0.54	
Jan	1.41	0.27	-0.10	0.08	
Feb	0.46	0.47	-0.14	0.53	
Mar	0.26	0.84	0.12	0.07	
Apr	0.21	0.78	0.39	0.59	
May	0.86	0.07	1.08	0.09	
Jun	0.74	0.61	0.59	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	0.21
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	0.80	-1.69	0.64
Aug	0.17	1.35	0.09	-0.05	-1.24
Sep	0.77	-1.36	0.16	-0.30	0.35
Oct	-0.24	1.54	-0.29	0.33	0.69
Nov	-0.21	2.62	-0.46	1.18	0.14
Dec	2.33	-1.04	0.16	0.54	
Jan	1.78	-0.03	-0.35	-0.37	
Feb	0.27	0.55	-0.30	0.80	
Mar	-0.15	1.42	-0.12	-0.05	
Apr	0.16	0.73	0.13	1.06	
May	1.64	-0.71	2.27	-0.32	
Jun	0.99	0.89	0.97	1.09	

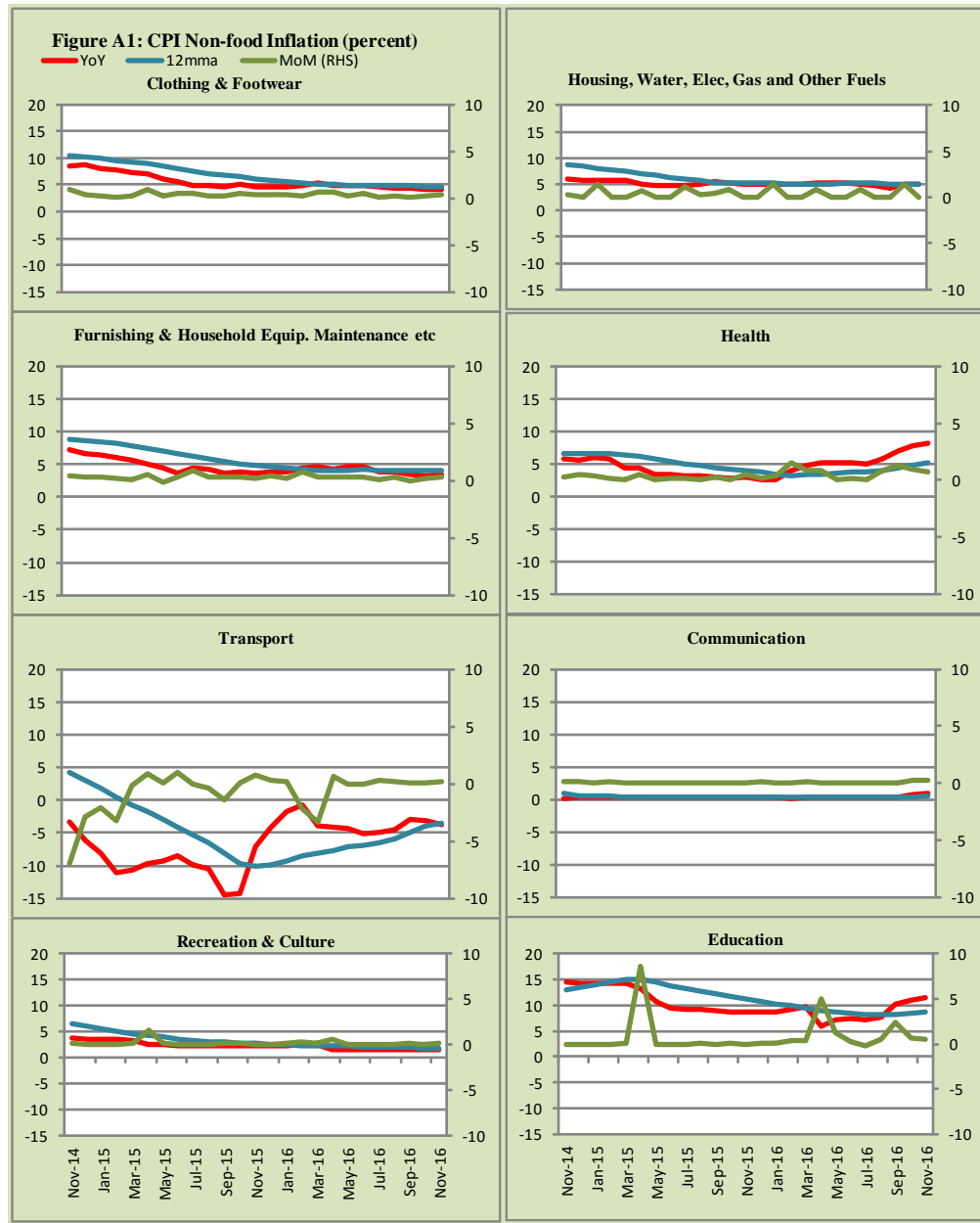


Figure A2: Frequency Distribution of Price Changes of CPI Items, November 2016

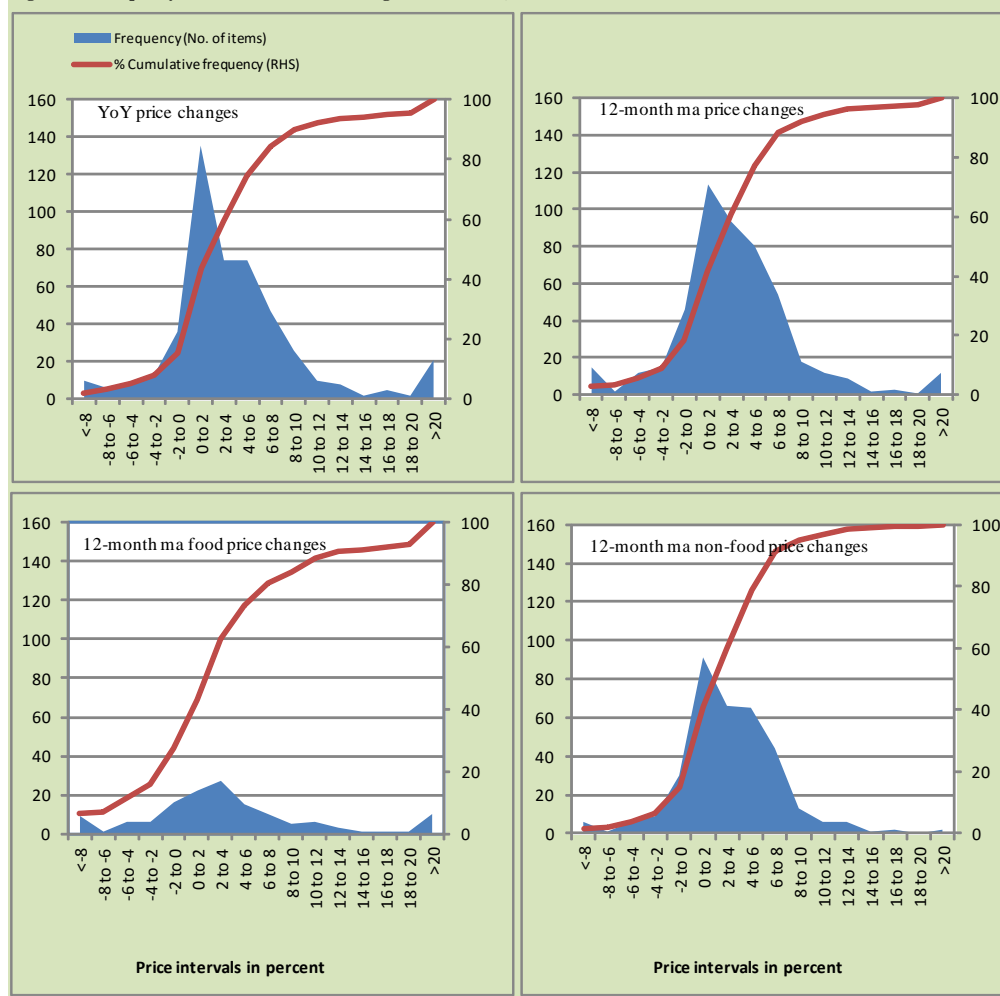


Figure A3: Frequency Distribution of Price Changes of WPI Commodities, November 2016

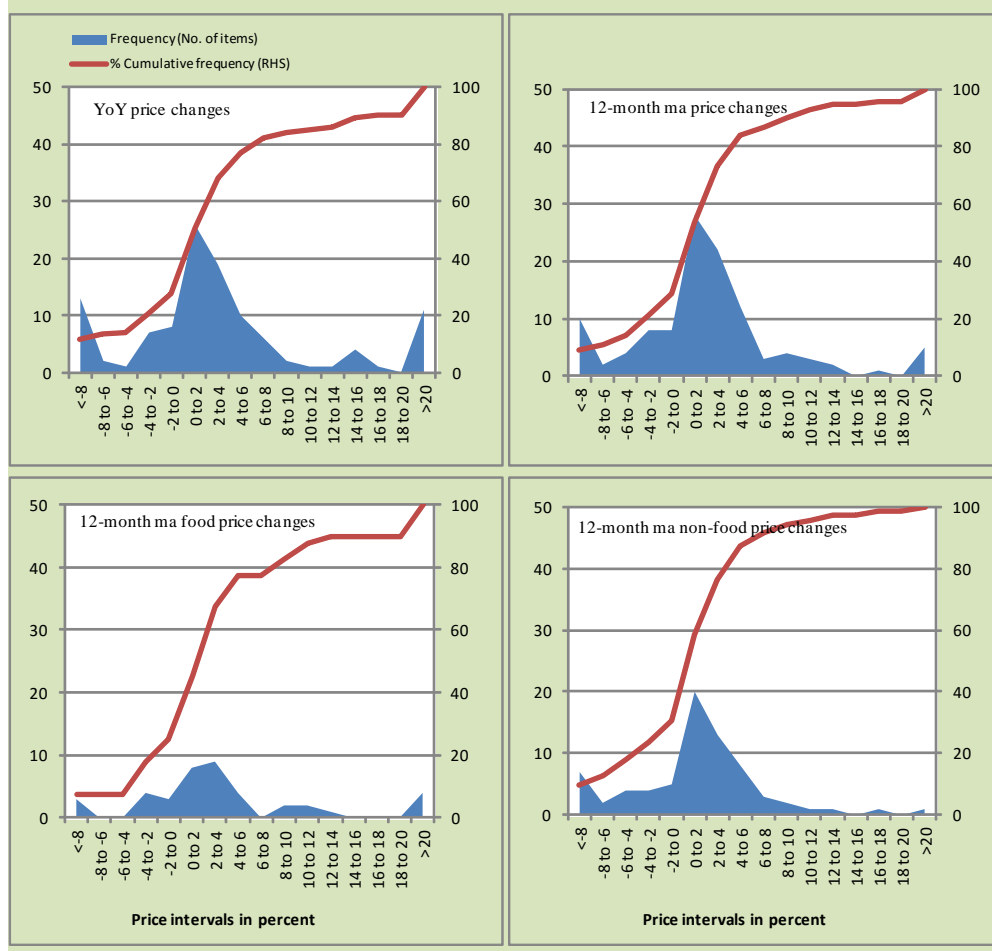
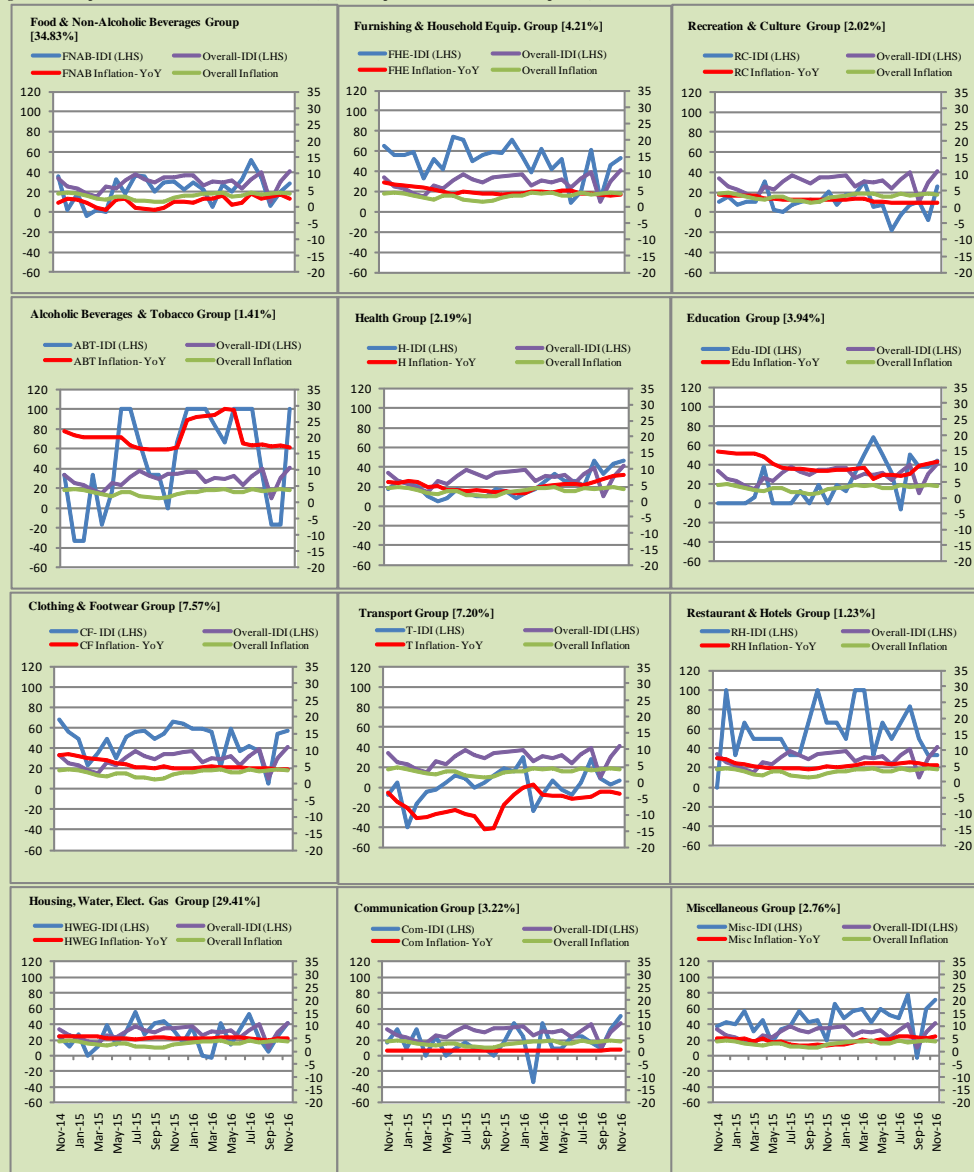


Figure A4: Group-wise/Overall Inflation Diffusion Index (IDI) and respective/overall YoY Inflation (percent)



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:
 - 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.