

Inflation Monitor

December 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 3.7 percent on year-on-year basis in December 2016 compared to the 3.8 percent in the previous and 3.2 percent in the corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at -0.7 percent in December 2016 compared to 0.2 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 0.39 percent in December 2016 compared to 0.42 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis was at level of 3.7 percent in December 2016 as compared to 3.8 percent in the previous month and 2.7 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is 0.1 percent in December 2016 as compared to 0.2 percent in the previous and corresponding month of last year.
5. Non-food, non-energy inflation measured by CPI Core (NFNE) on year-on-year basis is recorded at 5.2 percent in December 2016 compared to 5.3 percent in the previous month. It was 4.1 percent in the corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.1 percent in December 2016 compared to 0.2 percent in the previous month. Core NFNE inflation was 0.2 percent in the corresponding month of last year.

7. WPI inflation on year-on-year basis increased to 3.1 percent in December 2016 as compared to 2.6 percent in the previous month. During December 2015, WPI inflation was recorded at -0.4 percent.
8. WPI inflation on month-on-month basis recorded at -0.1 percent in December 2016 compared to -0.2 percent in the previous and -0.6 percent in the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 0.5 percent in December 2016 compared to 0.6 percent in the previous month. It was 3.2 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at -0.4 percent in December 2016 compared to 0.3 percent in the previous month and -0.4 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 December 2016 are described below:

- Core RSC inflation on year-on-year basis is recorded at 4.7 percent in December 2016 compared to 5.0 percent in the previous month and 4.8 percent in the corresponding month of last year.

- Core RSC inflation on month-on-month basis is recorded at 0.2 percent in December 2016 as 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
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
Dec-16	3.7	-0.7	3.0	-1.9	4.2	0.2	5.2	0.1	3.7	0.1	4.7	0.2	3.1	-0.1	0.5	-0.4
* NFNE is Non-food non-energy ** Relatively Stable Component of CPI *** SPI for all income groups combined																

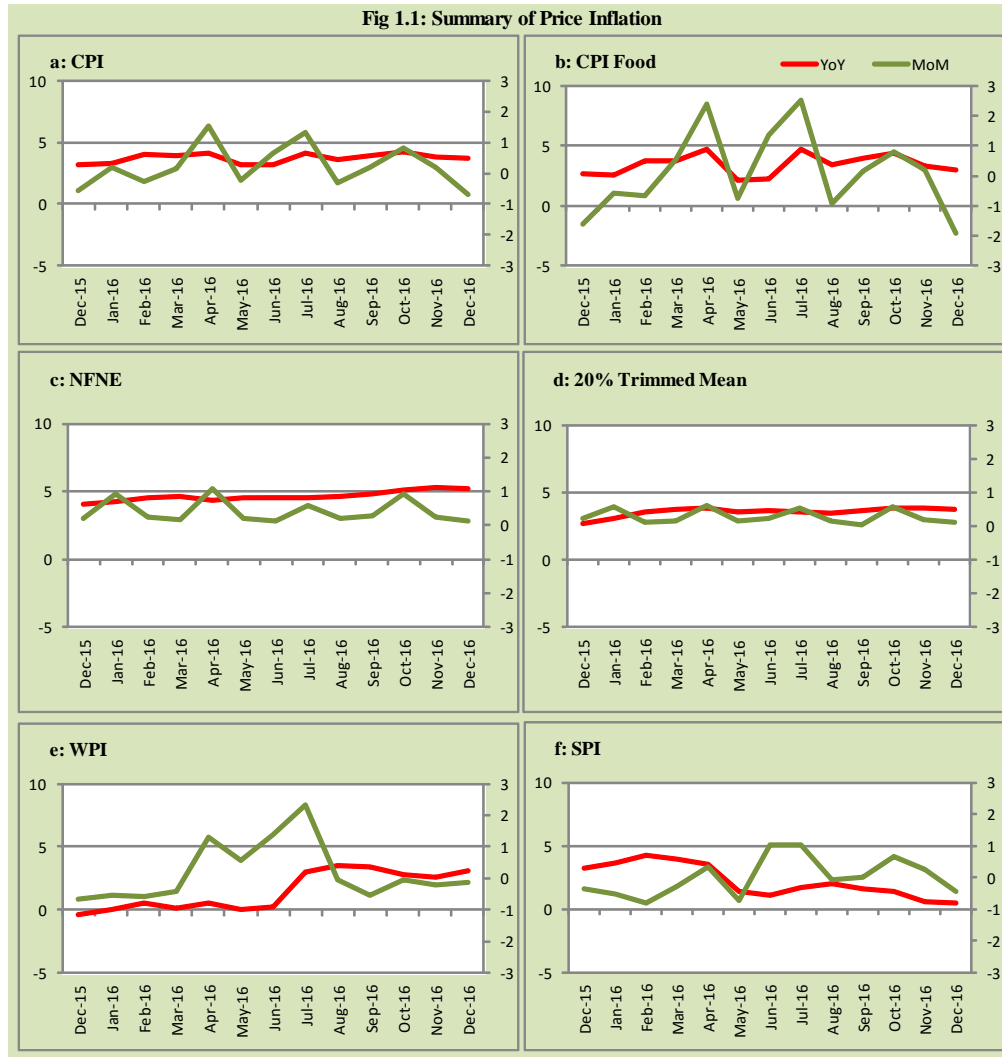


Fig 1.2: Movements in Price Indices (percent)

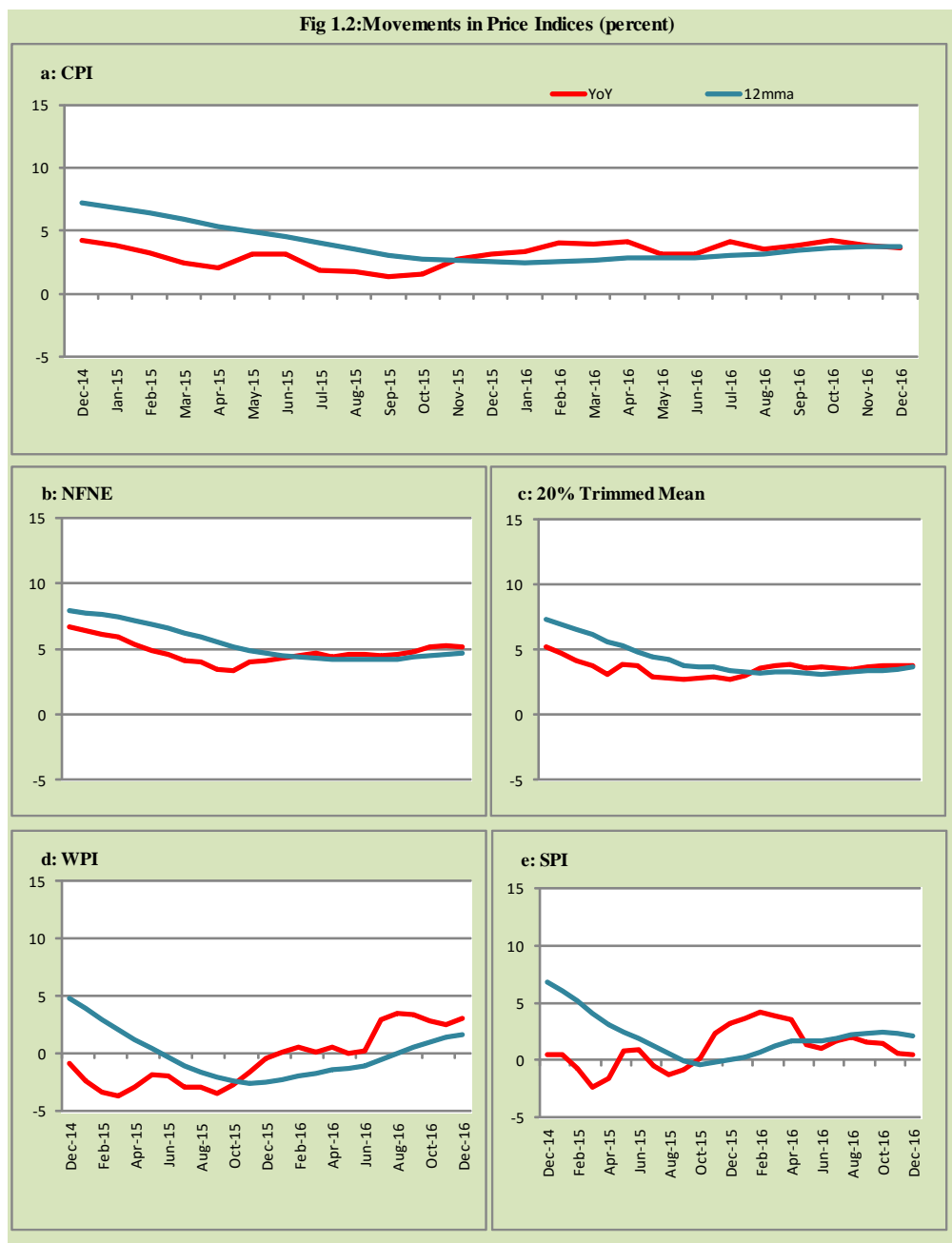


Fig 1.3: Movements in Price Indices -MoM (percent)

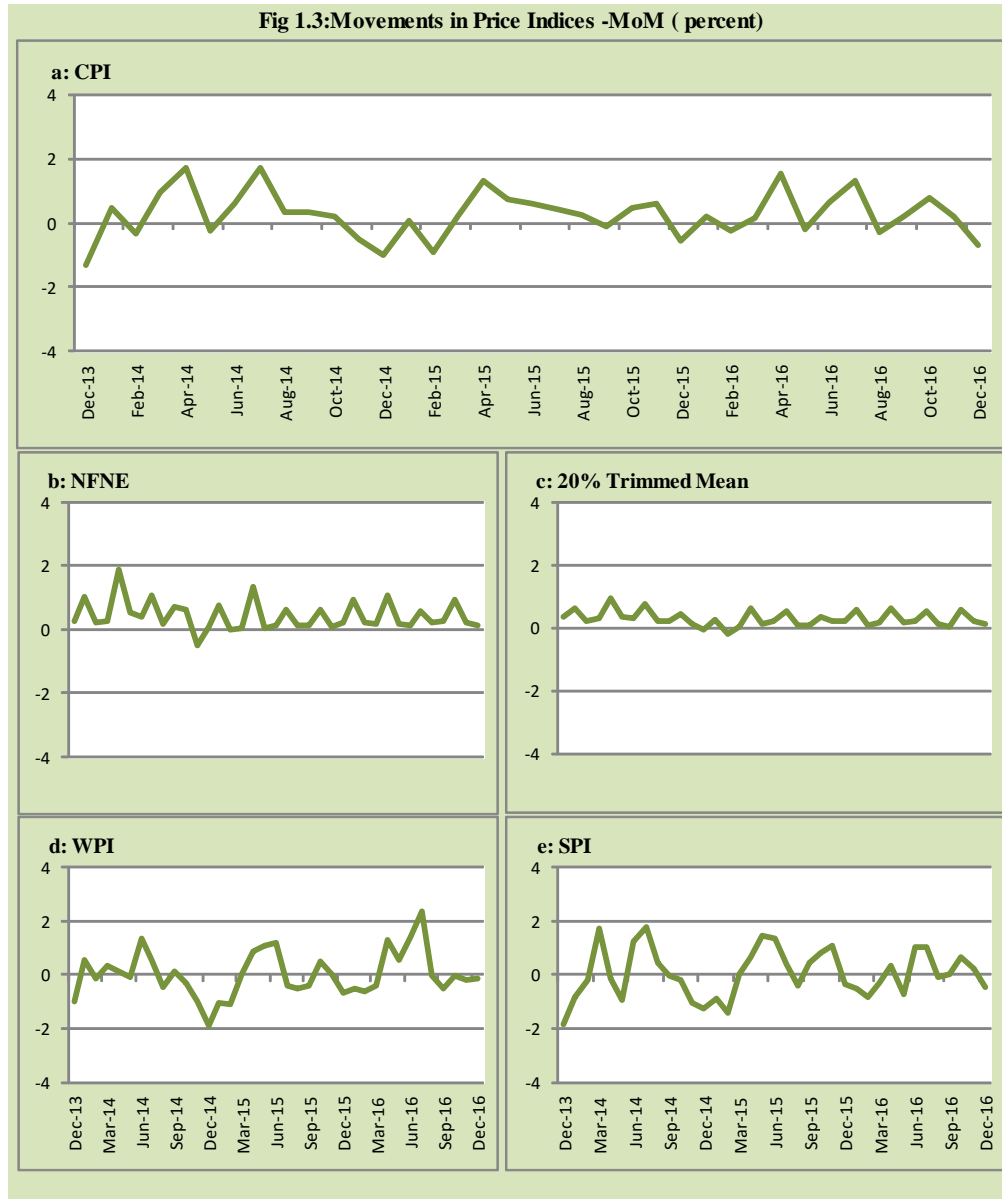
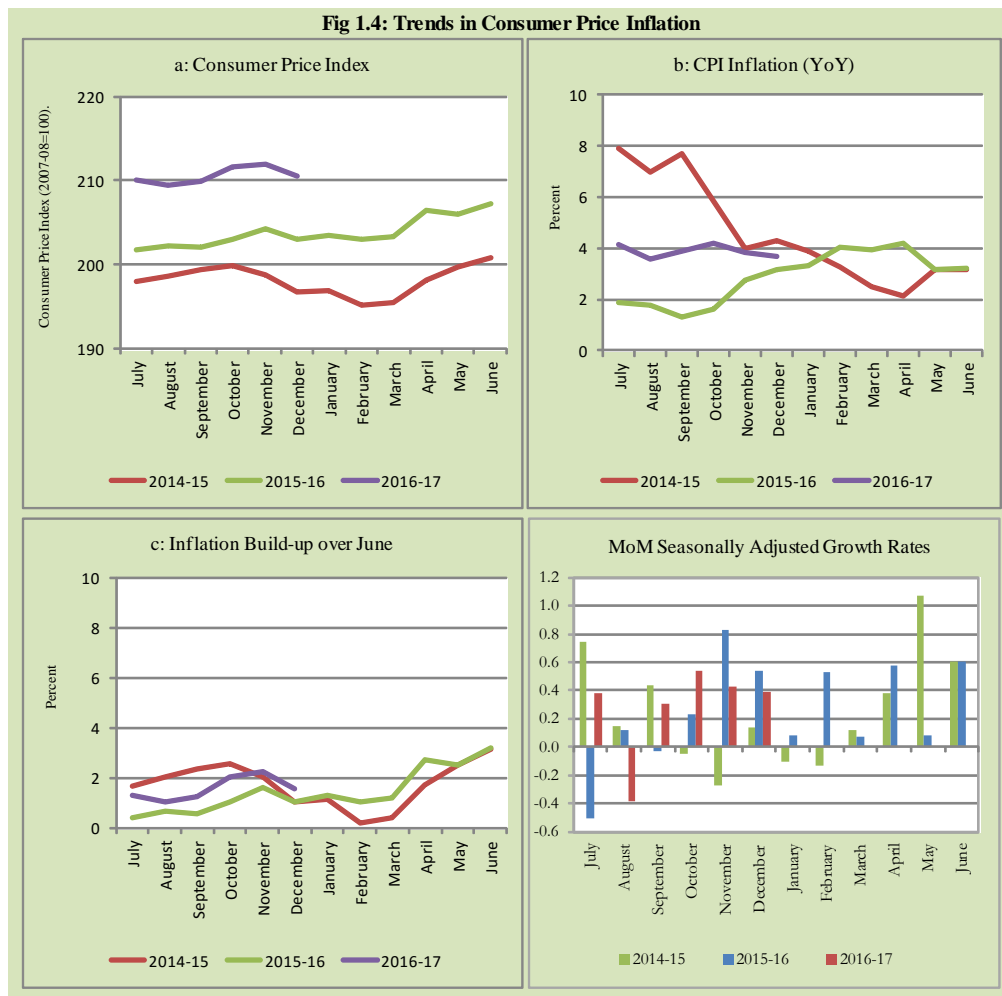


Fig 1.4: Trends in Consumer Price Inflation



2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan remained lower than overall inflation during December 2016 except Islamabad. Among these five cities, the lowest inflation was observed in Peshawar at 0.7 percent while the highest inflation was observed in Islamabad at 4.1 percent (Table A6 of annexure-A).

Table 2.1 City-wise Inflation of Selected Cities (percent)						
	Dec-15		Nov-16		Dec-16	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	-0.6	3.2	0.2	3.8	-0.7	3.7
Islamabad	-0.4	3.0	-0.1	3.9	-0.2	4.1
Karachi	-0.1	6.3	0.5	2.9	-0.4	2.6
Lahore	-0.7	1.2	0.1	2.0	-0.9	1.8
Peshawar	-0.6	4.8	0.0	0.9	-0.8	0.7
Quetta	-0.2	2.4	0.1	3.0	-0.7	2.6

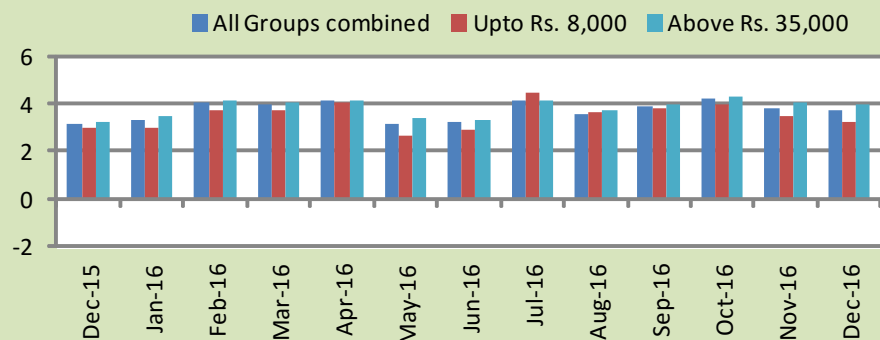
3. Income Group wise Inflation

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

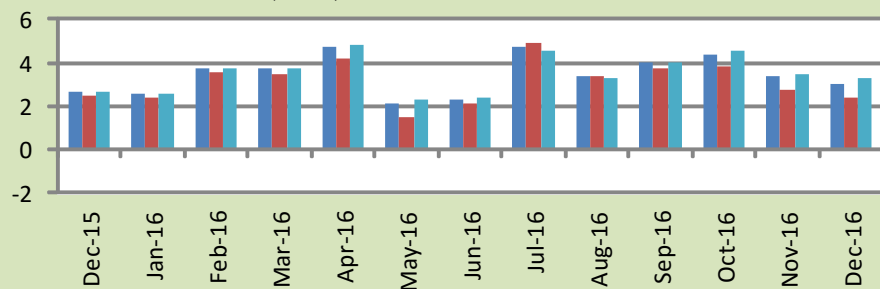
Table 3.1 Income Group- wise Inflation (YoY) (percent)									
Income Groups	General			Food			Non-food		
	Dec-15	Nov-16	Dec-16	Dec-15	Nov-16	Dec-16	Dec-15	Nov-16	Dec-16
All Groups Combined	3.2	3.8	3.7	2.7	3.3	3.0	3.6	4.1	4.2
Up to Rs. 8,000	3.0	3.4	3.3	2.5	2.8	2.4	3.7	4.3	4.3
Rs. 8,001- 12,000	3.3	3.5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

Fig 3.1: Income Group- wise Inflation

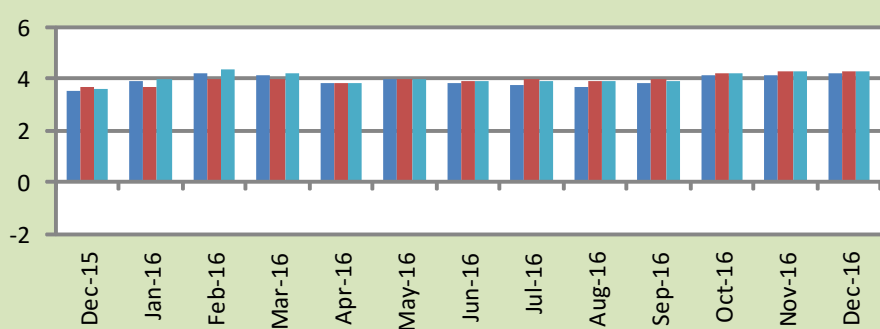
a: CPI Overall Inflation (YoY)



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 33.90 percent during December 2016 from 36.64 percent in previous month. It was 34.75 percent in December 2015.

The weighted contribution of non-food group increased to 66.10 percent in December 2016 from 63.36 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
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
Dec-16	33.90	9.91	35.29	-5.45	12.65	13.70

5. Inflation Diffusion Index

Table 5.1 Inflation Diffusion Index - based on MoM change

	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
General	36.4	37.0	26.2	30.7	29.4	32.0	23.7	32.7	39.7	10.3	30.1	41.1	33.5
Food & Non-Alcoholic Beverages	22.3	29.2	22.1	5.3	27.5	20.2	32.7	51.8	34.2	6.1	20.0	28.2	17.9
Alcoholic Beverages & Tobacco	100.0	100.0	100.0	83.3	66.7	100.0	100.0	100.0	33.3	-16.7	-16.7	100.0	83.3
Clothing & Footwear	64.4	59.3	59.3	55.9	22.0	59.3	37.3	42.4	37.3	5.1	54.2	57.6	66.1
Housing, Water, Elect, Gas & other Fuels	16.7	36.1	0.0	-2.8	41.7	13.9	33.3	52.8	22.2	5.6	25.0	41.7	38.9
Furnishing & Household Equip. Maintenance etc	71.0	55.1	39.1	62.3	42.0	52.2	8.7	20.3	60.9	11.6	46.4	53.6	47.8
Health	7.7	12.8	17.9	25.6	33.3	25.6	25.6	20.5	46.2	33.3	43.6	46.2	46.2
Transport	16.3	30.2	-23.3	-7.0	7.0	-2.3	-7.0	4.7	27.9	9.3	2.3	7.0	0.0
Communication	41.7	25.0	-33.3	41.7	8.3	8.3	25.0	25.0	16.7	8.3	33.3	50.0	25.0
Recreation & Culture	7.7	17.9	17.9	30.8	5.1	7.7	-17.9	-2.6	7.7	10.3	-7.7	25.6	23.1
Education	18.8	12.5	31.3	50.0	68.8	50.0	31.3	-6.3	50.0	37.5	37.5	43.8	0.0
Restaurant & Hotels	66.7	50.0	100.0	100.0	33.3	66.7	50.0	66.7	83.3	50.0	33.3	33.3	50.0
Miscellaneous	65.7	48.6	57.1	60.0	42.9	60.0	51.4	48.6	77.1	-2.9	60.0	71.4	40.0
NFNE	40.8	39.9	26.6	38.5	29.3	34.6	19.8	24.9	42.3	11.5	34.6	45.6	37.6

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 (percent)

Sr. No	Item	Unit	Dec-15		Nov-16		Dec-16	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-0.51	1.91	0.39	0.58	-0.64	0.87
2	Wheat Flour Bag	10 Kg	-2.42	0.34	-2.09	0.91	-2.11	0.33
3	Rice Basmati Sup. Qlty.	Kg	-15.44	-0.03	1.07	-0.11	1.76	0.65
4	Pulse Masoor (Washed)	Kg	6.92	0.96	4.40	-0.29	1.08	-2.26
5	Pulse Moong (Washed)	Kg	-1.19	0.99	-7.19	-1.48	-10.04	-2.11
6	Pulse Mash (Washed)	Kg	48.09	6.08	5.70	-3.98	-4.68	-4.34
7	Pulse Gram	Kg	56.76	0.70	39.95	7.28	37.51	-1.05
8	Vegetable Ghee (Loose)	Kg	-12.11	-0.39	4.02	0.41	5.20	0.74
9	Sugar Refined	Kg	2.81	-5.08	22.32	3.85	11.54	-13.44
10	Milk Fresh (Unboiled)	Ltr	3.77	0.65	4.06	0.28	3.56	0.16
11	Tea- Tapal Danedar	200 Gm	35.27	3.48	-2.22	0.20	-4.74	0.82
12	Beef With Bone Av. Qlty.	Kg	5.06	1.00	3.74	0.56	2.84	0.13
13	Mutton Av. Qlty.	Kg	6.62	0.24	4.97	0.71	4.72	0.00
14	Chicken Farm Broiler (Live)	Kg	-7.44	2.91	0.12	-3.77	-12.38	-9.93
15	Eggs Farm	Doz	-8.97	3.75	20.12	23.21	23.73	6.86
16	Potatoes	Kg	-25.06	-15.43	26.06	21.14	19.41	-19.88
17	Onion	Kg	112.29	-16.55	-55.45	-5.66	-48.05	-2.70
18	Tomatoes	Kg	26.13	-27.42	-38.88	-14.63	-18.29	-2.97
19	Ginger	Kg	-20.97	-6.70	-10.26	-0.26	0.59	4.57
20	Garlic	Kg	40.62	9.81	69.66	1.58	57.45	1.90

7. Global Commodity Prices

Table 7.1 Changes in Major Global Indices (percent)

Item/ Group	Dec-15		Nov-16		Dec-16	
	YoY	MoM	YoY	MoM	YoY	MoM
Overall	-30.7	-6.9	9.5	-1.2	26.4	7.5
Food	-16.3	1.5	9.8	0.1	9.8	1.5
Metals	-29.3	-3.7	24.3	12.1	34.1	3.8
Energy	-39.1	-12.6	7.2	-5.4	38.6	13.0
Agricultural Raw Material	-17.0	-0.1	7.2	4.1	7.1	-0.2
Cotton	3.1	1.7	14.0	0.5	12.9	0.7

Source: IMF

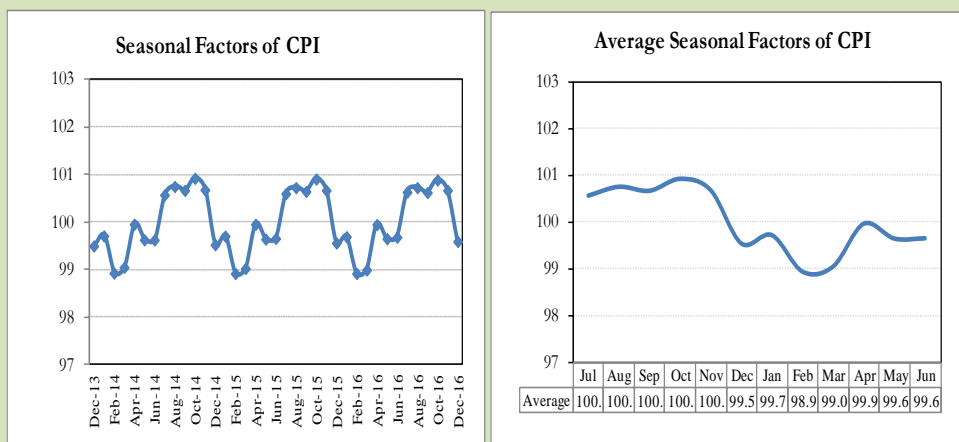
8. Seasonal Adjustment in CPI

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

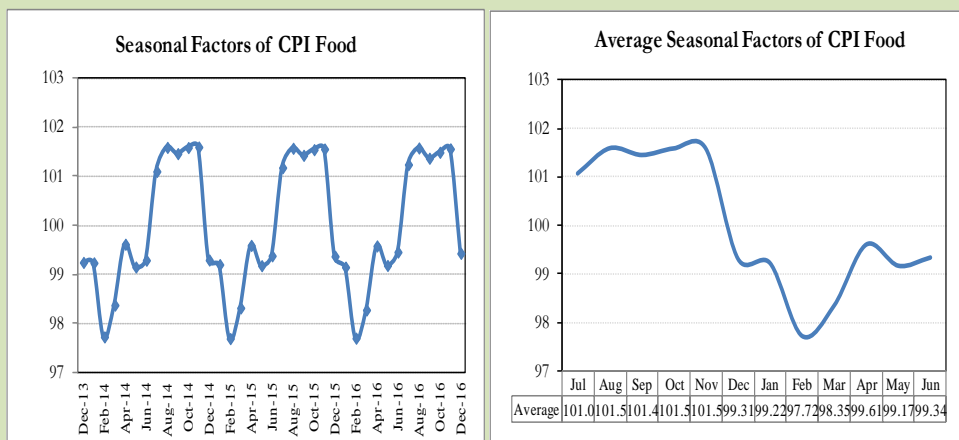
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the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

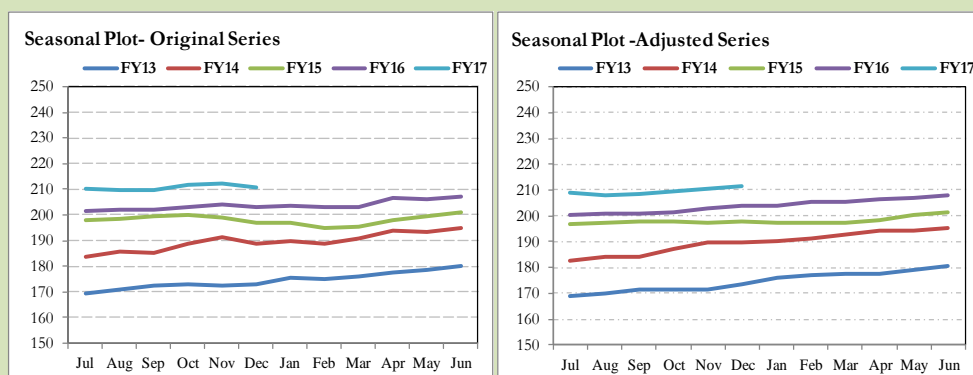
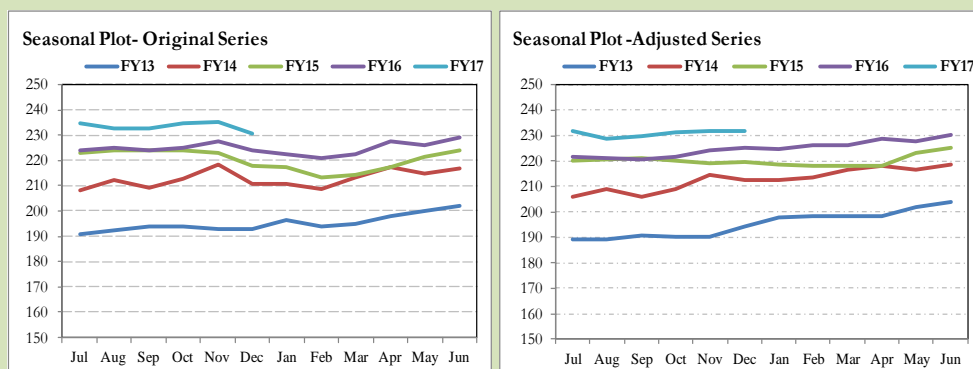


Fig. 8.4 Seasonal Plots of CPI (Food)



Seasonally adjusted CPI for December 2016 stood at 211.43 against 210.57 in original series showing increase of 0.86 on account of adjustment of downward seasonality in December 2016.

Seasonally adjusted CPI food group for December 2016 stood at 232.01 against 230.69 in original series showing increase of 1.32 on account of adjustment of downward seasonality in December 2016.

Month-on-month change of seasonally adjusted CPI series stood at 0.39% reflecting decrease during December 2016 over previous month and a decrease of 0.68% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at 0.20% reflecting increase during December 2016 over previous month and a decrease of 1.90% 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 December 2016 (corresponding to the seasonally adjusted month-on-month rate) is 4.82 percent.

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

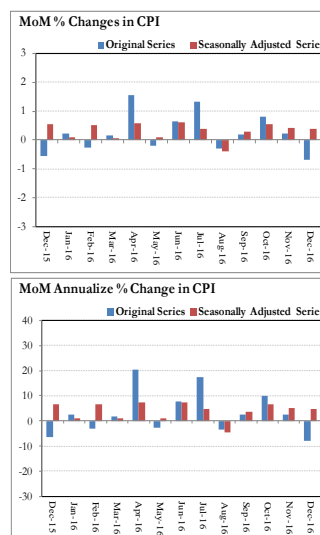
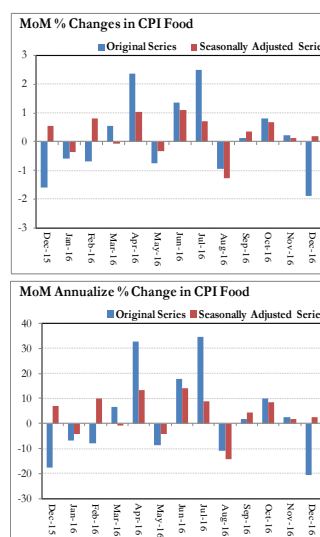


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



Annexure A

Table A1: CPI Inflation by Groups (percent)							
	Weight	MoM change			YoY change		
		Dec-15	Nov-16	Dec-16	Dec-15	Nov-16	Dec-16
I. Food Group	37.5	-1.6	0.2	-1.9	2.7	3.3	3.0
Food & Non-Alcoholic Beverages	34.8	-2.2	0.2	-2.3	1.4	2.5	2.4
Alcoholic Beverages & Tobacco	1.4	7.2	0.3	2.2	25.5	17.0	11.6
Restaurant & Hotels	1.2	0.6	0.5	0.2	4.6	5.2	4.9
II. Non-Food Group	62.5	0.2	0.2	0.2	3.6	4.1	4.2
Clothing & Footwear	7.6	0.4	0.4	0.6	4.6	4.2	4.4
Housing, Water, Elect, Gas & other Fuels	29.4	0.0	0.0	0.0	5.0	4.9	4.9
Furnishing & Household Equip. Maintenance etc	4.2	0.5	0.2	0.2	3.8	3.4	3.2
Health	2.2	0.1	0.8	0.3	2.6	8.1	8.4
Transport	7.2	0.3	0.1	0.8	-4.0	-3.6	-3.2
Communication	3.2	0.1	0.2	0.0	0.3	0.9	0.7
Recreation & Culture	2.0	0.0	0.1	0.1	2.1	1.4	1.5
Education	3.9	0.0	0.5	0.0	8.8	11.5	11.5
Miscellaneous	2.8	0.6	0.5	-0.2	2.5	5.9	5.1
Headline	100.0	-0.6	0.2	-0.7	3.2	3.8	3.7

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)	
		Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16
I. Food Group	3.0	126	126	46	25	44	60	17	20	19	21
Food & Non-Alcoholic Beverages	2.4	114	114	46	25	41	57	13	14	14	18
Alcoholic Beverages & Tobacco	11.6	6	6	0	0	0	0	1	3	5	3
Restaurant & Hotels	4.9	6	6	0	0	3	3	3	3	0	0
II. Non-Food Group	4.2	348	348	111	89	148	162	73	76	16	21
Clothing & Footwear	4.4	59	59	8	7	25	33	25	18	1	1
Housing, Water, Elect, Gas & other Fuels	4.9	36	36	6	13	12	10	13	12	5	1
Furnishing & Household Equip. Maintenance etc	3.2	69	69	3	7	47	51	18	11	1	0
Health	8.4	39	39	22	7	16	15	1	8	0	9
Transport	-3.2	43	43	35	29	7	11	1	2	0	1
Communication	0.7	12	12	5	3	5	6	1	3	1	0
Recreation & Culture	1.5	39	39	19	20	13	14	5	2	2	3
Education	11.5	16	16	8	1	4	4	0	8	4	3
Miscellaneous	5.1	35	35	5	2	19	18	9	12	2	3
Overall	3.7	474	474	157	114	192	222	90	96	35	42

Note: Prices of 13 seasonal items were not reported during the month.

Table A3: Top and Bottom 15 Contributors to CPI Inflation (YoY) in December 2016					
Top 15 Contributors		Weights	YoY Change		Weighted Contribution
Items/ Contributors			Dec-15	Dec-16	
Ranked by Weighted Contribution					
1	House Rent	21.81	5.42	6.65	33.03
2	Education	3.94	8.78	11.51	12.65
3	Fresh Vegetable	1.69	-6.45	22.04	10.01
4	Milk Fresh	6.68	3.67	3.45	7.94
5	Cigarette	1.39	25.71	11.60	7.23
6	Fresh Fruits	1.86	-5.93	9.50	4.56
7	Sugar	1.04	2.81	11.54	3.25
8	Pulse Gram	0.24	56.75	37.52	3.20
9	Egg	0.46	-8.97	23.73	3.01
10	Meat	2.43	5.59	3.48	2.91
11	Tailoring	0.88	8.69	7.82	2.64
12	Potatoes	0.47	-25.06	19.41	2.39
13	Cotton Cloth	1.73	3.79	4.64	2.30
14	Personal Equipments	0.84	1.25	7.40	2.24
15	Drug Medicine	1.27	1.01	8.83	2.22
Total		46.74			99.56
Bottom 15 Contributors					
1	Onion	0.53	112.29	-48.05	-10.61
2	Motor Fuel	3.03	-8.09	-7.15	-4.34
3	Chicken	1.36	-7.44	-12.37	-4.02
4	Tomatoes	0.44	26.13	-18.28	-2.14
5	Wheat Flour	4.16	-1.91	-1.72	-2.07
6	Transport Services	2.70	-3.13	-2.54	-1.81
7	Tea	0.84	29.70	-5.44	-1.69
8	Pulse Moong	0.23	-1.19	-10.05	-0.95
9	Motor Vehicle Accessories	0.24	-1.16	-6.19	-0.46
10	Pulse Mash (Washed)	0.21	48.09	-4.68	-0.44
11	Fish	0.30	-0.62	-1.13	-0.10
12	Wheat	0.35	-0.51	-0.64	-0.06
13	Beans	0.03	-3.78	-1.31	-0.01
14	Kerosene Oil	0.01	-13.32	-5.82	-0.01
15	Motor Vehicle Tax	0.11	0.00	0.00	0.00
Total		14.54			-28.72

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

<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution	
Items/ Contributors	Weights	Nov-16	Dec-16		
Ranked by Weighted Contribution					
1	Cigarette	1.39	0.25	2.21	7.85
2	Motor Fuel	3.03	0.29	2.37	6.81
3	Egg	0.46	23.21	6.86	5.25
4	Tea	0.84	0.38	3.00	4.48
5	Wheat Flour	4.16	0.50	0.49	3.04
6	Tailoring	0.88	0.17	1.37	2.56
7	Vegetable Ghee	2.07	0.25	1.02	2.03
8	Milk Fresh	6.68	0.28	0.16	1.95
9	Woolen Cloth	0.88	1.22	1.27	1.94
10	Cooking Oil	1.75	0.22	0.68	1.11
11	Household Textile	0.65	0.43	0.63	0.64
12	Fresh Fruits	1.86	-7.95	0.23	0.63
13	Woolen Readymade Garments	0.40	2.78	0.85	0.61
14	Gram Whole	0.16	2.62	1.69	0.59
15	Fish	0.30	-0.18	1.32	0.59
Total		25.51			40.07
Bottom 15 Contributors					
1	Fresh Vegetable	1.69	-0.79	-19.80	-71.41
2	Sugar	1.04	3.85	-13.44	-25.39
3	Potatoes	0.47	21.14	-19.88	-19.06
4	Chicken	1.36	-3.77	-9.94	-16.38
5	Pulse Mash (Washed)	0.21	-3.98	-4.34	-2.12
6	Onion	0.53	-5.66	-2.70	-1.66
7	Tomatoes	0.44	-14.63	-2.97	-1.52
8	Personal Equipments	0.84	0.83	-0.79	-1.35
9	Pulse Moong	0.23	-1.48	-2.11	-0.96
10	Pulse Masoor	0.27	-0.13	-2.24	-0.89
11	Beverages	1.20	0.01	-0.46	-0.84
12	Pulse Gram	0.24	7.28	-1.05	-0.65
13	Recreation & Culture	0.86	0.02	-0.39	-0.31
14	Spices	0.54	-0.20	-0.29	-0.26
15	Gur	0.02	-3.42	-4.74	-0.20
Total		9.95			-143.01

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in December 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Dec-15	Dec-16	
A. Ranked by Percentage Change					
1	Gram Whole	0.16	23.88	43.75	2.09
2	Pulse Gram	0.24	56.75	37.52	3.20
3	Besan	0.15	52.16	33.08	1.74
4	Egg	0.46	-8.97	23.73	3.01
5	Fresh Vegetable	1.69	-6.45	22.04	10.01
6	Potatoes	0.47	-25.06	19.41	2.39
7	Cigarette	1.39	25.71	11.60	7.23
8	Sugar	1.04	2.81	11.54	3.25
9	Education	3.94	8.78	11.51	12.65
10	Water Supply	0.50	0.00	9.89	0.98
11	Medical Equipment	0.01	1.89	9.72	0.02
12	Fresh Fruits	1.86	-5.93	9.50	4.56
13	Doctor (MBBS) Clinic Fee	0.59	4.10	8.90	1.74
14	Drug Medicine	1.27	1.01	8.83	2.22
15	Tailoring	0.88	8.69	7.82	2.64
Total		14.65			57.72
B. Ranked by Weights					
1	House Rent	21.81	5.42	6.65	33.03
2	Milk Fresh	6.68	3.67	3.45	7.94
3	Electricity	4.40	2.84	0.00	0.00
4	Wheat Flour	4.16	-1.91	-1.72	-2.07
5	Education	3.94	8.78	11.51	12.65
6	Communication & Apparatus	3.15	0.21	0.60	0.32
7	Motor Fuel	3.03	-8.09	-7.15	-4.34
8	Transport Services	2.70	-3.13	-2.54	-1.81
9	Meat	2.43	5.59	3.48	2.91
10	Vegetable Ghee	2.07	-11.37	2.76	1.04
11	Fresh Fruits	1.86	-5.93	9.50	4.56
12	Cooking Oil	1.75	-15.69	1.02	0.32
13	Cotton Cloth	1.73	3.79	4.64	2.30
14	Fresh Vegetable	1.69	-6.45	22.04	10.01
15	Rice	1.58	-17.45	2.44	0.81
Total		63.00			67.65
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 3.7 percent in December, 2016.					

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

Table 1: Weighted Contribution to CPI Food Inflation (2017) in December 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Dec-15	Dec-16	
A. Ranked by Weighted Contribution					
1	Fresh Vegetable	1.69	-6.45	22.04	10.01
2	Milk Fresh	6.68	3.67	3.45	7.94
3	Cigarette	1.39	25.71	11.60	7.23
4	Fresh Fruits	1.86	-5.93	9.50	4.56
5	Sugar	1.04	2.81	11.54	3.25
6	Pulse Gram	0.24	56.75	37.52	3.20
7	Egg	0.46	-8.97	23.73	3.01
8	Meat	2.43	5.59	3.48	2.91
9	Potatoes	0.47	-25.06	19.41	2.39
10	Gram Whole	0.16	23.88	43.75	2.09
Total		16.42			46.58
B. Ranked by Percentage Change					
1	Gram Whole	0.16	23.88	43.75	2.09
2	Pulse Gram	0.24	56.75	37.52	3.20
3	Besan	0.15	52.16	33.08	1.74
4	Egg	0.46	-8.97	23.73	3.01
5	Fresh Vegetable	1.69	-6.45	22.04	10.01
6	Potatoes	0.47	-25.06	19.41	2.39
7	Cigarette	1.39	25.71	11.60	7.23
8	Sugar	1.04	2.81	11.54	3.25
9	Fresh Fruits	1.86	-5.93	9.50	4.56
10	Betel Leaves & Nuts	0.02	10.09	7.53	0.05
Total		7.48			37.52
C. Ranked by Weights					
1	Milk Fresh	6.68	3.67	3.45	7.94
2	Wheat Flour	4.16	-1.91	-1.72	-2.07
3	Meat	2.43	5.59	3.48	2.91
4	Vegetable Ghee	2.07	-11.37	2.76	1.04
5	Fresh Fruits	1.86	-5.93	9.50	4.56
6	Cooking Oil	1.75	-15.69	1.02	0.32
7	Fresh Vegetable	1.69	-6.45	22.04	10.01
8	Rice	1.58	-17.45	2.44	0.81
9	Cigarette	1.39	25.71	11.60	7.23
10	Chicken	1.36	-7.44	-12.37	-4.02
Total		24.99			28.71
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 3.0 percent in December, 2016.					

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in December 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Dec-15	Dec-16	
A. Ranked by Weighted Contribution					
1	House Rent	21.81	5.42	6.65	33.03
2	Education	3.94	8.78	11.51	12.65
3	Tailoring	0.88	8.69	7.82	2.64
4	Cotton Cloth	1.73	3.79	4.64	2.30
5	Personal Equipments	0.84	1.25	7.40	2.24
6	Drug Medicine	1.27	1.01	8.83	2.22
7	Doctor (MBBS) Clinic Fee	0.59	4.10	8.90	1.74
8	Personal Care	1.49	2.83	4.11	1.72
9	Woolen Cloth	0.88	3.00	5.82	1.63
10	Household Servant	1.04	5.58	4.69	1.55
Total		34.48			61.71
B. Ranked by Percentage Change					
1	Education	3.94	8.78	11.51	12.65
2	Water Supply	0.50	0.00	9.89	0.98
3	Medical Equipment	0.01	1.89	9.72	0.02
4	Doctor (MBBS) Clinic Fee	0.59	4.10	8.90	1.74
5	Drug Medicine	1.27	1.01	8.83	2.22
6	Tailoring	0.88	8.69	7.82	2.64
7	Personal Equipments	0.84	1.25	7.40	2.24
8	House Rent	21.81	5.42	6.65	33.03
9	Woolen Cloth	0.88	3.00	5.82	1.63
10	Medical Test	0.32	3.93	5.35	0.41
Total		31.05			57.55
C. Ranked by Weights					
1	House Rent	21.81	5.42	6.65	33.03
2	Electricity	4.40	2.84	0.00	0.00
3	Education	3.94	8.78	11.51	12.65
4	Communication & Apparatus	3.15	0.21	0.60	0.32
5	Motor Fuel	3.03	-8.09	-7.15	-4.34
6	Transport Services	2.70	-3.13	-2.54	-1.81
7	Cotton Cloth	1.73	3.79	4.64	2.30
8	Gas	1.58	9.92	0.00	0.00
9	Footwear	1.55	0.58	0.96	0.33
10	Personal Care	1.49	2.83	4.11	1.72
Total		45.39			44.19
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 4.2 percent in December, 2016.					

Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: December 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, Chicken Farm Broiler (Live), Pulse Moong (Washed), Cucumber (Kheera), Ice	Biscuits-Packed, Cinnamon Loose Av. Qty, Mutton Av.Qlty., Spinach, Butter Local Packed, Cornflakes Fauji 225 Gm.	Coriander Seed Powd. National., Groundnuts (With Shell), Chocolate Candy (Small Size, Cauliflower, Pepper Black National	Garlic, Gram Whole Yellow Av.Qlty, Peas, Pulse Gram, Cabbage, Gram Whole Black Av Qty., Carrot, Besan Av. Qty., Turnip, Eggs Farm, Potatoes, Malta/Mosambi, Chillies Green, Kinu, Apple
Alcoholic Beverages & Tobacco			Cigarettes Gold Leaf 20,S, Betel Nuts, Betel Leaves	Cigarettes Capstan 20,S, Cigarettes Morven Gold 20,S, Cigarettes K-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	Tropical Suiting Law.Pur, Foot Wear Local (Children), Shoe Repair Half Sole, Brassier Av.Qlty, Long Cloth 57" Gul Ahmed/Al Karam, Shirting Av.Qlty.	Tailoring Shirt, Frock W/Wear Girls, School Uni. Kameez-Shal Girls, Tailoring Suit (Female), Georgette Av.Qlty, School Uni. Kameez,Shal.Boys	Tailoring Charges Pant (Men)
Housing, Water, Elect, Gas & other Fuels	Kerosene Oil, Elect. Charges 101 - 300 Units, Elect. Charges Upto 50 Units, Elect. Charges 01 - 100 Units	Bricks (New) 1st Class, Carpenter Wage Rate, Firewood Whole, Iron Bar (M.S. Bar) 1/2", Electrician Wage Rate(P/Pnt)	Water Charges Per House, Mason (Raj) Wage Rate, House Rent For Q-I, House Rent For Q-IV, House Rent For Q-II, House Rent For Q-III	Cement Blocks (6"X8"X12")
Furnishing & Household Equip. Maintenance etc	Washing Powder 1000 Grm (Express), Match Box (Small), Bucket(Balti) Plastic Med, Sewing Machine Needle (Singer)	Lota Plastic (Med Size) Avg. Qty, Boot Polish Cherry/Kiwi 50 Ml, Dinner Set Plastic 72 Pcs, Single Bed Without Foam	Carpet Plain Av. Qty, Dining Table 6 Chairs, Robin Blue (35 Gms), Farshi Dari 12'X9' Av.Qlty, Non Stick Cooking Pan, Elect. Iron Philips	
Health	Glaxos-D (450 Gm), Saniplast (1 Putty), Sancos Syrup (50 Ml.), Renitec Tab. 5 Mg., Betnesol Eye Drops	Sugar Test (Random/Fasting), Glycerin Small Bottle, Trisil Tab., Betnovate-N Ointment 5 Gm, Flagyl Tab. 200 Mg., ECG Charges	Doctor (MBBS) Clinic Fee. X-Ray (Chest) Charges, O.R.S. (Nimcol), Urine Test (Dr) Charges, Thermometer China, Blood Test (Cp) Charges	Lederplex Syrup, Entox Tab., Dettol (Medium), Disprin Tab., Panadol Tab. Extra/Plain, Jouhar Joshanda, Septran Tablets, Ventolin Tab. 2Mg., Cotton Bandage 2" - 4"
Transport	Bus Fare Min (Within City), Petrol Super, Tyre Motor Cycle Without Tube, High Speed Diesel HSD	Tyre Puncture Charges, Car Suzuki 1000 Cc, Suzuki Fare Maximum Within City, Car Suzuki 800 CC (W/O. Ac), Cycle Overhauling Charges	Car Honda Civic 1500 CC, Taxi 4 Seater Fare	Car Toyota 1300 CC
Communication	Postal Envelope Domestic, Telephone Charges Local Call, Telephone Charges Outside City	Telephone Set Av. Qty, Fax Charges (Local), Mobile Set Nokia/Sony/Ericsson Av.Qlty, U.M.S. Reg Charges Min.	T.C.S. Ch. Min.Within Zone, Postal Registration Charges, Internet 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, Daily "Jang", Personnel Computer (Branded), Maths Book Class IX or X	Pencil Goldfish/Deer, Ball Pen (Local)	Cinema A/C High Class, 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), Bread Tandoori St. Size, Chicken Biryani Full/Double	Cooked Mutton (Av. Hotel), Cooked Dal (Av. Hotel), Cooked Beef (Av. Hotel)	
Miscellaneous	Shampoo Sunsilk/Pantene 100 Ml, Toothpaste Macleans 70 Gms	Purse Ladies (Leather) Av. Qty, Nail Polish S. Miss/Medora, Toothpaste Med Size Colgate 70Gms	Silver Tezabi 24 Ct, Gel Medium Size, Beauty Parlor Hair Style Charges, Toilet Soap Lux 95 Gms	Toothpowder Dentonic 90 Gms, Gold Tezabi 24 Ct, Suitcase Rexin (24"X16"X6")

Table A5: City- wise CPI Inflation by Income Groups, December 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	-1.0	4.5	-2.0	2.4	0.2	7.1	-0.9	5.1	-2.0	2.6	0.2	7.9
2 Islamabad	-0.6	3.0	-1.5	1.7	0.5	4.6	-0.4	3.0	-1.0	2.1	0.2	3.9
3 Lahore	-1.7	1.5	-3.4	0.2	0.8	3.4	-1.5	1.4	-3.1	0.2	0.6	3.0
4 Gujranwala	-1.9	2.9	-3.7	2.1	0.3	3.8	-1.9	2.6	-3.6	2.1	0.0	3.2
5 Sialkot	-2.9	1.9	-5.6	0.6	0.9	3.6	-2.4	2.0	-4.8	0.8	0.5	3.5
6 Faisalabad	-1.4	6.6	-3.0	6.6	0.5	6.6	-1.2	6.8	-2.8	7.0	0.5	6.5
7 Multan	-1.5	2.8	-2.8	2.2	0.2	3.5	-1.5	2.9	-3.0	2.4	0.1	3.4
8 Sargodha	-3.5	1.3	-6.2	0.8	-0.4	1.7	-2.9	1.6	-5.5	1.4	-0.3	1.7
9 Bahawalpur	-1.2	4.7	-2.5	4.0	0.3	5.6	-0.9	5.7	-2.1	4.4	0.2	6.9
10 Karachi	-0.6	2.7	-1.2	1.7	0.2	4.1	-0.6	2.8	-1.2	2.0	0.1	3.8
11 Hyderabad	-1.3	2.2	-2.3	0.9	0.1	4.1	-1.2	2.5	-2.3	1.2	0.1	4.0
12 Sukkur	-0.9	1.8	-1.5	1.0	-0.1	2.8	-0.8	2.3	-1.4	1.7	-0.1	2.8
13 Larkana	0.5	5.8	0.5	4.4	0.5	7.3	0.4	5.7	0.3	4.0	0.4	7.3
14 Peshawar	-1.1	0.6	-2.0	0.8	-0.1	0.3	-1.0	0.6	-1.9	0.9	0.0	0.4
15 Bannu	-1.4	2.2	-2.3	0.1	-0.3	4.6	-1.0	3.1	-1.9	0.4	0.0	6.0
16 Quetta	-0.9	2.4	-1.7	0.7	0.0	4.5	-0.8	2.4	-1.7	0.9	0.1	3.9
17 Khuzdar	0.3	2.8	0.5	2.3	0.0	3.4	0.3	2.3	0.4	1.9	0.2	2.7
	Rs 12001-18000						Rs 18001-35000					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	-1.0	5.2	-2.2	3.0	0.1	7.3	-1.1	5.2	-2.6	3.6	0.1	6.6
2 Islamabad	-0.6	2.9	-1.3	2.3	0.1	3.4	-0.7	3.2	-1.7	2.7	0.2	3.7
3 Lahore	-1.4	1.6	-2.9	0.3	0.3	3.0	-1.1	1.6	-2.6	0.6	0.4	2.5
4 Gujranwala	-1.8	2.7	-3.0	2.3	-0.5	3.2	-1.5	2.4	-2.7	2.2	-0.5	2.5
5 Sialkot	-2.3	1.9	-4.5	0.5	0.1	3.2	-1.7	1.8	-3.9	0.8	0.2	2.7
6 Faisalabad	-1.1	7.4	-2.6	7.4	0.4	7.4	-0.9	7.6	-2.5	7.7	0.6	7.5
7 Multan	-1.5	3.2	-2.9	2.3	-0.1	4.0	-1.5	3.1	-3.2	2.3	-0.1	3.8
8 Sargodha	-2.8	2.4	-5.4	2.4	-0.5	2.4	-2.5	3.2	-5.1	2.8	-0.4	3.6
9 Bahawalpur	-0.8	5.8	-1.9	4.6	0.1	6.8	-0.7	6.5	-1.7	4.8	0.0	7.8
10 Karachi	-0.6	2.9	-1.3	2.1	0.1	3.7	-0.5	2.8	-1.3	2.3	0.1	3.1
11 Hyderabad	-1.2	2.6	-2.3	1.4	-0.1	4.0	-1.0	2.4	-2.1	1.4	0.0	3.3
12 Sukkur	-0.9	2.4	-1.6	2.0	-0.2	2.8	-0.7	2.4	-1.3	2.5	-0.1	2.3
13 Larkana	0.2	6.0	0.1	4.1	0.3	7.6	0.0	5.8	-0.1	4.0	0.1	7.1
14 Peshawar	-1.0	0.6	-2.1	1.0	-0.1	0.3	-0.9	0.7	-2.0	1.2	0.0	0.2
15 Bannu	-1.0	2.7	-1.8	0.3	-0.3	5.1	-0.8	3.4	-1.6	1.1	-0.2	5.3
16 Quetta	-0.7	2.4	-1.6	1.3	0.1	3.5	-0.7	2.6	-1.7	1.7	0.1	3.4
17 Khuzdar	0.3	2.7	0.4	2.6	0.2	2.8	0.2	2.8	0.4	2.9	0.1	2.7
	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	-0.7	5.8	-2.3	3.7	0.1	6.8	-0.8	5.6	-2.3	3.4	0.2	7.0
2 Islamabad	-0.2	4.2	-1.2	3.6	0.3	4.5	-0.2	4.1	-1.3	3.2	0.5	4.7
3 Lahore	-0.6	2.1	-1.9	1.5	0.1	2.4	-0.9	1.8	-2.4	0.9	0.3	2.5
4 Gujranwala	-1.0	2.6	-2.2	2.0	-0.4	2.9	-1.5	2.6	-2.8	2.2	-0.5	2.9
5 Sialkot	-1.3	1.9	-3.5	0.6	-0.1	2.5	-1.7	1.9	-4.0	0.7	0.0	2.7
6 Faisalabad	-0.4	7.8	-2.0	8.0	0.4	7.8	-0.9	7.3	-2.5	7.4	0.3	7.3
7 Multan	-0.9	4.0	-2.7	2.1	0.0	5.0	-1.2	3.4	-2.9	2.2	-0.1	4.3
8 Sargodha	-1.6	4.6	-4.3	3.7	-0.4	5.0	-2.4	2.9	-5.1	2.6	-0.7	3.2
9 Bahawalpur	-0.3	8.2	-1.7	4.5	0.3	9.8	-0.7	6.6	-1.9	4.4	0.1	7.9
10 Karachi	-0.3	2.5	-1.2	2.2	0.1	2.6	-0.4	2.6	-1.3	2.2	0.2	2.9
11 Hyderabad	-0.7	2.9	-1.8	1.3	-0.1	3.7	-1.0	2.6	-2.1	1.3	-0.1	3.6
12 Sukkur	-0.4	3.1	-0.9	2.8	-0.1	3.3	-0.7	2.5	-1.3	2.2	-0.2	2.7
13 Larkana	0.0	6.6	-0.2	4.5	0.1	7.6	0.2	5.9	0.1	4.2	0.3	7.0
14 Peshawar	-0.5	0.7	-1.9	1.0	0.2	0.6	-0.8	0.7	-2.0	1.1	0.0	0.4
15 Bannu	-0.5	5.7	-1.1	1.8	-0.2	7.7	-0.9	3.4	-1.7	0.8	-0.4	5.2
16 Quetta	-0.6	2.9	-1.6	2.1	-0.1	3.3	-0.7	2.6	-1.6	1.5	0.0	3.3
17 Khuzdar	0.1	2.9	0.4	2.9	0.0	2.9	0.3	2.6	0.5	3.0	0.1	2.4

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

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Abbotabad	9.3	4.5	12.6	Bahawalnagar	3.6	4.8	2.8
Mianwali	7.4	4.4	9.3	Nawabshah	3.5	4.8	2.7
Faisalabad	7.3	7.4	7.3	Jhelum	3.5	4.2	2.9
Loralai & Cantt	6.7	7.3	6.4	Multan	3.4	2.2	4.3
Bahawalpur	6.6	4.4	7.9	Bannu	3.4	0.8	5.2
Turbat	6.4	2.5	8.8	Dera Mrd.Jamali	3.2	2.1	3.9
Larkana	5.9	4.2	7.0	Muzaffargarh	3.0	2.1	3.7
Rawalpindi	5.6	3.4	7.0	Sargodha	2.9	2.6	3.2
Sahiwal	5.5	6.5	4.9	D. I. Khan	2.7	-0.9	5.2
Gawadar	5.4	5.7	5.2	Khuzdar	2.6	3.0	2.4
Vehari	5.1	5.5	4.9	Karachi	2.6	2.2	2.9
Attock	5.1	6.6	4.0	Quetta	2.6	1.5	3.3
Rahim Yar Khan	4.6	1.9	6.5	Hyderabad	2.6	1.3	3.6
Islamabad	4.1	3.2	4.7	Gujranwala	2.6	2.2	2.9
Dadu	3.8	5.7	2.4	Sukkur	2.5	2.2	2.7
				Wazirabad	2.5	2.7	2.3
				Mingora	2.5	1.8	2.9
				Mirpur Khas	2.3	2.6	2.1
				Jhang	2.3	1.6	2.7
				D. G. Khan	2.2	1.0	2.9
				Sialkot	1.9	0.7	2.7
				Lahore	1.8	0.9	2.5
				Mithi	1.2	0.3	1.7
				Mardan	0.9	1.7	0.4
				Peshawar	0.7	1.1	0.4

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

Table A7: Income Group-wise Inflation (percent)						
	MoM			YoY		
	Dec-15	Nov-16	Dec-16	Dec-15	Nov-16	Dec-16
<u>Up to Rs. 8000</u>						
General	-1.0	0.2	-1.2	3.0	3.4	3.3
Food	-1.9	0.2	-2.3	2.5	2.8	2.4
Non-food	0.2	0.2	0.2	3.7	4.3	4.3
<u>Rs. 8001- 12000</u>						
General	-0.9	0.2	-1.0	3.3	3.5	3.4
Food	-1.8	0.2	-2.2	2.5	3.0	2.7
Non-food	0.2	0.2	0.2	4.2	4.1	4.1
<u>Rs. 12001- 18000</u>						
General	-0.8	0.2	-0.9	2.7	3.6	3.5
Food	-1.7	0.2	-2.0	2.7	3.2	2.9
Non-food	0.2	0.2	0.2	2.8	4.0	4.0
<u>Rs. 18001- 35000</u>						
General	-0.6	0.2	-0.8	3.4	3.7	3.5
Food	-1.6	0.2	-2.0	2.8	3.5	3.1
Non-food	0.2	0.2	0.2	3.9	3.8	3.9
<u>Above Rs. 35000</u>						
General	-0.4	0.2	-0.4	3.3	4.0	3.9
Food	-1.4	0.2	-1.7	2.7	3.5	3.3
Non-food	0.2	0.2	0.2	3.6	4.3	4.3
<u>All income groups</u>						
General	-0.6	0.2	-0.7	3.2	3.8	3.7
Food	-1.6	0.2	-1.9	2.7	3.3	3.0
Non-food	0.2	0.2	0.2	3.6	4.1	4.2

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices Dec-16	Percentage change	
				YoY	MoM
1	Wheat	10Kg.	345.4	-2.4	0.7
2	Wheat Flour Bag	10Kg.	385.4	-3.4	-0.1
3	Rice Basmati Broken	Kg.	62.1	2.1	0.2
4	Rice Irri-6	Kg.	47.8	4.5	-0.1
5	Bread Plain Med. Size (340-400 Gm.)	Each	41.1	0.7	0.0
6	Beef	Kg.	324.9	2.5	0.2
7	Mutton	Kg.	654.4	4.3	0.1
8	Chicken Live (Farm)	Kg.	133.3	-8.6	-8.1
9	Milk Fresh	Litr	80.4	2.8	0.0
10	Curd	Kg.	94.1	1.9	0.0
11	Milk Powdered Nido	500G	380.1	0.6	-2.2
12	Egg Hen (Farm)	Doz.	127.3	23.9	4.5
13	Mustard Oil	Kg.	181.2	0.4	-0.2
14	Cooking Oil (Tin)	2.5Ltr	460.5	0.9	1.3
15	Veg. Ghee (Tin)	2.5Kg.	452.1	1.0	1.4
16	Veg. Ghee Loose	Kg.	144.0	5.2	1.1
17	Bananas	Doz.	66.5	7.7	6.1
18	Masoor Pulse Washed	Kg.	145.2	-1.1	-2.3
19	Moong Pulse Washed	Kg.	141.2	-12.7	-3.0
20	Mash Pulse Washed	Kg.	223.4	-10.2	-6.7
21	Gram Pulse Washed	Kg.	170.4	38.1	-2.7
22	Potatoes	Kg.	34.5	19.3	-18.8
23	Onions	Kg.	27.5	-44.4	-5.4
24	Tomatoes	Kg.	51.4	-17.6	0.0
25	Sugar	Kg.	63.7	11.4	-11.3
26	Gur	Kg.	86.5	0.0	-5.7
27	Salt Powdered Loose (Lahori)	Kg.	10.6	1.3	0.0
28	Red Chilies Powder Loose	Kg.	274.0	0.8	-1.1
29	Garlic	Kg.	302.3	47.3	2.9
30	Tea (Yellow Label)	200Gm.	175.8	-7.2	11.1
31	Cooked Beef Plate	Each	92.6	7.8	0.2
32	Cooked Dal Plate	Each	56.9	7.5	0.0
33	Tea Prepared (Sada)	Cup	20.3	3.6	1.7
34	Cigarettes K-2 (20'S)	20'S	65.5	12.6	1.7
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.	124.1	0.8	0.1
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	0.6	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	77.6	-7.7	0.7
45	Firewood	40Kg	607.4	2.3	1.1
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	7.0	1.9
49	Petrol	Litr	67.0	-13.1	2.9
50	Diesel	Litr	76.1	-10.2	3.6
51	L.P.G.(11 Kg Cylinder.)	Each	1150.1	-5.4	-1.6
52	Tele. Local Call	Call	3.9	0.0	0.0
53	Bath Soap Lifebuoy (Standard)	Cake	37.0	2.2	0.5
Maximum				47.3	11.1
Median				0.9	0.0
Minimum				-44.4	-18.8

Table A9: Distribution of Price Changes (YoY) - WPI Items: December 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, Poultry, Stimulant and Spice Crops, Sorghum/Jowar, Millet/Bajra, Sugar Crops, Wheat, Raw Animal Material/Wool	Milk from Bovine Animals, Fuel Wood in Logs, Rice, Vegetables, Dry Fruits, Maize, Fresh Fruits	Cotton Seeds	Fish Live Fresh or Chilled, Eggs, Edible Roots/Potatoes, Pulses, Fibre Crops, Unmanufactured Tobacco, Other Oil Seeds
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, Chocolate, Blended Yarn, Other Leather N.E.C, Synthetic Carpets	Ready Made Garments, Processed Liquid Milk, Cotton Fabrics, Dairy Products N.E.C, Other Fabrics, Quilts, Leather Without Hairs, Vegetable Oil Refined, Towels, Blankets, Silk and Reyon Fabrics, Spices, Fruit Juices, Bed Sheets, Other Food Products, Milk and Cream in Solid Form, Beverages	Cotton Yarn, Dried Fruits & Nuts, Hosiery Products, Ice Cream, Sugar Confectionary, Vegetable Ghee, Vegetables & Fruit Juices, Footwear, Mineral Water, Oil Cakes, Meat of Animals	Other Cereal Flour, Woolen Carpets, Woven Fabrics, Tobacco Products, Sugar Refined
Other Transportable Goods except Metal Products, Machinery and Equipments	Kerosene Oil, Fertilizers, Diesel Oil, Motor Sprit, Auto Tyres, Chemicals, Pesticides, Plastic Products, Mobil Oil, Coke, Dying Materials, Matches	Soaps & Detergent, Cement, Ceramics and Sanitary, Insecticides, Printing Paper, Bricks Blocks and Tiles, Paints & Varnishes	Bed Foams, Timber	Furnace Oil, Glass Sheets, Other Glass Articles, Medicines, Hard Board
Metal Product Machinery & Equipment	Cultivators, Tractors, Air Conditioners, Motor Cycles, Pig Iron, Concrete Mixer	Electrical Wires, Motor Vehicles, Pipe Fittings, Refrige,Wash& Sew Mach,Iron,Fan, Lighting Equipments, Chuff Cutter, Bicycles, Steel Products, Steel Bars & Sheets	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		
		Dec-15	Nov-16	Dec-16
General	100.00	203.06	212.01	210.57
Food & Non-Alcoholic Beverages.	34.83	218.28	228.74	223.58
1 Wheat	0.35	206.87	203.78	205.54
2 Wheat Flour	4.16	217.09	212.30	213.35
3 Wheat Product	0.10	216.90	217.35	217.16
4 Besan	0.15	263.29	346.57	350.39
5 Rice	1.58	156.85	160.23	160.68
6 Cereals	0.16	244.30	251.74	253.48
7 Bakery & Confectionary	1.16	210.23	216.46	216.31
8 Nimco	0.46	243.73	250.65	250.57
9 Meat	2.43	257.73	266.48	266.71
10 Chicken	1.36	179.49	174.63	157.28
11 Fish	0.30	221.24	215.91	218.75
12 Milk Fresh	6.68	258.64	267.15	267.57
13 Milk Product	0.63	250.23	257.33	257.72
14 Milk Powder	0.11	232.01	237.27	236.55
15 Egg	0.46	208.94	241.93	258.52
16 Mustard Oil	0.10	154.57	155.96	156.65
17 Cooking Oil	1.75	133.55	134.00	134.91
18 Vegetable Ghee	2.07	136.07	138.42	139.83
19 Dry Fruits	0.25	258.78	265.00	265.05
20 Fresh Fruits	1.86	193.24	211.10	211.59
21 Pulse Masoor	0.27	203.16	211.28	206.54
22 Pulse Moong	0.23	303.32	278.74	272.85
23 Pulse Mash (Washed)	0.21	336.48	335.28	320.74
24 Pulse Gram	0.24	271.32	377.06	373.11
25 Gram Whole	0.16	221.50	313.13	318.41
26 Beans	0.03	233.87	231.13	230.80
27 Potatoes	0.47	198.29	295.55	236.78
28 Onion	0.53	312.02	166.58	162.08
29 Tomatoes	0.44	200.23	168.62	163.62
30 Fresh Vegetable	1.69	202.07	307.50	246.60
31 Sugar	1.04	202.21	260.56	225.55
32 Gur	0.02	266.16	281.47	268.12
33 Honey	0.04	306.28	316.04	317.30
34 Sweet Meet	0.25	239.13	245.39	245.95
35 Beverages	1.20	217.44	219.50	218.49
36 Jam, Tomato Ketchup & Pickle	0.25	211.62	216.26	216.60
37 Condiments	0.27	260.42	265.31	265.42
38 Spices	0.54	238.38	239.32	238.63
39 Tea	0.84	279.35	256.46	264.16
Alcoholic Beverages, Tobacco	1.41	334.66	365.33	373.34
40 Cigarette	1.39	336.44	367.34	375.47
41 Betel Leaves & Nuts	0.02	226.79	243.10	243.86
Clothing & Footwear	7.57	223.65	232.18	233.48
42 Cotton Cloth	1.73	215.47	225.35	225.47
43 Woolen Cloth	0.88	239.67	250.42	253.61
44 Ready Made Garment	0.97	227.80	238.62	239.41
45 Woolen Readymade Garments	0.40	258.26	260.39	262.60
46 Hosiery	0.51	237.01	244.86	245.88
47 Dopatta	0.44	235.93	241.74	243.24
48 Cleaning & Laundering	0.21	248.98	257.02	257.94

Table A10: Consumer Price Index Numbers by Major Groups and Composite Commodities				
Items and specification	Weights	Index		
		Dec-15	Nov-16	Dec-16
49 Tailoring	0.88	286.25	304.47	308.64
50 Footwear	1.55	165.24	166.74	166.82
Housing,Water,Elect,Gas & Other Fuel	29.41	182.69	191.64	191.70
51 House Rent	21.81	170.85	182.22	182.22
52 Construction Input Item	0.56	242.37	248.60	249.23
53 Construction Wage Rate	0.33	223.74	232.60	234.08
54 Water Supply	0.50	149.92	164.74	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	210.91	195.93	198.63
58 Fire Wood Whole	0.23	281.03	286.97	290.35
Furnished H.Hold Equip.& Maint. Etc	4.21	216.78	223.21	223.65
59 Furniture	0.33	207.57	214.48	215.42
60 Household Textile	0.65	215.47	224.66	226.07
61 Household Equipment	0.59	176.33	179.18	179.28
62 Utensils	0.32	219.05	225.32	225.53
63 Plastic Products	0.25	205.82	207.64	208.70
64 Washing Soap & Detergent	0.79	226.72	229.75	229.76
65 Sewing Needle & Dry Cell	0.15	202.24	201.34	202.74
66 Household Servant	1.04	238.79	249.98	249.98
67 Marriage Hall Charges	0.08	234.48	243.87	243.95
Health	2.19	180.83	195.28	195.93
68 Drug Medicine	1.27	149.14	161.86	162.31
69 Medical Equipment	0.01	226.66	246.00	248.70
70 Doctor (MBBS) Clinic Fee	0.59	248.27	269.50	270.37
71 Medical Test	0.32	180.72	189.39	190.38
Transport	7.20	177.69	170.65	172.01
72 Motor Vehicle	0.66	163.01	171.44	171.60
73 Motor Vehicle Accessories	0.24	227.45	213.96	213.37
74 Motor Fuel	3.03	150.77	136.75	139.99
75 Mechanical Service	0.46	221.05	227.84	227.84
76 Motor Vehicle Tax	0.11	210.18	210.18	210.18
77 Transport Services	2.70	198.32	193.28	193.28
Communication	3.22	130.56	131.52	131.53
78 Postal Services	0.07	234.78	244.70	244.89
79 Communication & Apparatus	3.15	128.38	129.15	129.15
Recreation & Culture	2.02	193.66	196.40	196.50
80 Recreation & Culture	0.86	128.29	129.92	129.41
81 Text Books	0.57	290.62	292.41	292.41
82 News Papers	0.19	175.42	175.49	177.62
83 Stationery	0.40	205.42	213.25	213.85
Education	3.94	209.31	233.40	233.40
84 Education	3.94	209.31	233.40	233.40
Restaurants And Hotels	1.23	255.77	267.68	268.22
85 Ready Made Food	1.23	255.77	267.68	268.22
Miscellaneous Goods And Services	2.76	226.28	238.33	237.77
86 Personal Care	1.49	210.48	218.97	219.13
87 Cosmetics	0.39	196.47	201.04	201.47
88 Blades	0.03	194.65	195.66	195.66
89 Personal Equipments	0.84	269.04	291.24	288.94

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

Items and Specifications	Index		
	Dec-15	Nov-16	Dec-16
General	207.37	214.07	213.76
Agriculture Forestry & Fishery	221.68	242.47	240.83
1 Wheat	218.20	211.20	212.55
2 Maize	182.47	191.32	186.79
3 Rice	142.70	148.65	148.27
4 Sorghum/Jowar	258.26	242.91	236.86
5 Millet/Bajra	181.34	171.85	168.85
6 Vegetables	219.72	295.08	228.09
7 Fresh Fruits	207.01	202.51	209.13
8 Dry Fruits	242.59	244.77	249.28
9 Cotton Seeds	253.39	260.78	267.33
10 Other Oil Seeds	162.29	177.55	182.29
11 Edible Roots/ Potatoes	193.69	281.67	237.47
12 Stimulant And Spice Crops	258.33	216.85	226.70
13 Pulses	250.31	312.67	306.52
14 Sugar Crops	286.29	266.42	268.94
15 Fibre Crops	172.25	197.33	204.48
16 Unmanufactured Tobacco	229.69	265.84	271.72
17 Poultry	192.50	178.62	160.36
18 Milk From Bovine Animals	255.42	267.02	267.02
19 Eggs	214.79	251.78	272.03
20 Raw Animal Material/Wool	179.16	173.89	175.58
21 Hides And Fur Skins, Raw	153.22	122.98	116.10
22 Fuel Wood In Logs	263.57	269.14	274.82
23 Fishes Live Fresh Or Chilled	340.91	447.65	447.84
Ores/Minerals, Gas & Elect.	247.36	242.44	242.61
24 Coal Not Agglomerated	192.16	155.29	155.29
25 Natural Gas Liquefied	210.78	210.34	210.67
26 Salt & Pure Sodium Chloride	252.31	231.97	235.45
27 Electrical Energy	293.09	288.00	288.00
Food, Beverages, Tobacco, Textiles	213.69	225.93	224.74
28 Meat Of Animals	267.04	279.82	280.41
29 Vegetables & Fruit Juices	201.36	211.47	214.03
30 Dried Fruits & Nuts	240.13	250.67	261.81
31 Fruit Juices	177.53	184.03	179.33
32 Vegetable Oil Refined	149.34	151.24	152.35
33 Vegetable Ghee	118.09	123.44	125.82
34 Oil Cakes	218.03	227.22	229.61
35 Processed Liquid Milk	247.57	257.57	257.57
36 Milk And Cream In Solid Form	217.97	220.54	218.90
37 Ice Cream	219.91	238.04	238.04
38 Dairy Products N.E.C	244.60	252.52	252.95
39 Wheat Flour	202.13	196.86	196.85
40 Other Cereal Flour	229.87	327.54	328.97
41 Sugar Refined	210.55	272.80	235.83
42 Chocolate	101.06	99.45	100.00
43 Sugar Confectionary	118.83	128.15	128.44
44 Coffee And Tea	261.86	232.40	240.04
45 Spices	188.33	190.38	190.44
46 Other Food Products	292.02	293.85	293.85
47 Mineral Water	188.35	197.57	198.57
48 Beverages	171.95	172.33	172.33
49 Tobacco Products	387.30	435.03	435.03
50 Cotton Yarn	177.62	191.63	194.35
51 Nylon Yarn	147.08	143.99	143.99
52 Blended Yarn	180.89	179.94	180.58
53 Woven Fabrics	275.66	286.46	310.72
54 Cotton Fabrics	201.65	209.09	209.34
55 Other Fabrics	217.81	224.94	224.40

Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities				
Items and Specifications		Index		
		Dec-15	Nov-16	Dec-16
56	Silk And Rayon Fabrics	186.80	191.76	189.21
57	Towels	267.20	271.17	271.17
58	Blankets	243.93	247.52	247.52
59	Bed Sheets	256.29	257.96	257.96
60	Quilts	198.00	203.79	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	241.05	241.83
64	Ready Made Garments	193.27	200.44	201.70
65	Leather With Out Hairs	221.97	229.40	226.61
66	Other Leather N.E.C	207.64	207.31	207.31
67	Footwear's	137.38	145.51	145.51
Other Transportable Goods		174.69	165.19	167.14
68	Timber	214.43	224.68	225.41
69	Printing Paper	161.82	164.90	165.63
70	Hard Board	197.92	197.92	220.83
71	Coke	163.45	163.45	163.45
72	Motor Sprit	128.80	108.54	111.92
73	Diesel Oil	171.49	144.34	147.31
74	Kerosene Oil	150.01	115.11	115.11
75	Furnace Oil	65.28	92.32	96.87
76	Mobil Oil	199.78	195.35	196.91
77	Chemicals	182.83	175.41	175.83
78	Dying Materials	146.55	146.55	146.55
79	Fertilizers	271.62	216.35	215.07
80	Pesticides	312.37	308.75	304.43
81	Insecticides	134.66	135.98	138.00
82	Paints & Varnishes	295.36	295.36	296.43
83	Medicines	146.89	168.53	168.57
84	Soaps & Detergent	181.28	187.81	190.20
85	Auto Tyres	192.83	177.38	176.87
86	Plastic Products	231.05	225.73	225.73
87	Glass Sheets	231.30	283.21	297.20
88	Other Glass Articles	243.63	299.07	305.47
89	Ceramics And Sanitary	227.13	234.18	234.18
90	Bricks Blocks And Tiles	217.47	219.15	219.02
91	Cement	206.53	212.63	213.07
92	Bed Foams	157.17	164.33	167.17
93	Matches	162.62	162.62	162.62
Metal Product Machinery & Equip		171.11	174.10	174.28
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	127.00	126.37	127.05
96	Pipe Fittings	194.96	193.63	203.49
97	Steel Products	176.27	177.38	177.38
98	Engines And Motors	109.07	128.30	116.98
99	Vacuum Pumps	115.39	133.32	123.69
100	Air Conditioners	200.18	201.18	199.33
101	Cultivators	219.76	190.66	190.66
102	Chuff Cutter	149.20	153.46	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	204.01	207.15
107	Electrical Wires	195.19	200.83	204.51
108	Lighting Equipments	167.30	172.50	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	188.81	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	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
	Dec	210.57	230.69	198.51	213.76	244.40	194.32	219.73

*: all groups combined

Table A13: International Commodity Prices/ Indices				
	Sep-16	Oct-16	Nov-16	Dec-16
Energy				
Crude Oil (US\$ per barrel) *	45.1	49.3	45.3	52.6
IMF Energy Index (2005 = 100)	85.6	94.2	89.1	100.6
WB Energy Index (2010 = 100) @	58.2	63.7	59.4	68.4
Food				
Rice (\$/MT)	384.0	367.7	360.8	367.5
Wheat (\$/MT)	123.2	122.5	122.5	122.8
Sugar (US cent/ pound)	21.9	22.9	20.9	18.8
Palm Oil (\$/MT)	692.4	651.4	670.0	711.8
Soybean Oil (\$/MT)	722.6	757.3	772.4	800.3
Non-Food Non-Energy				
Cotton Outlook 'A' Index #	77.9	78.5	78.9	79.5
IMF Metal Price Index (2005 = 100)	119.1	121.0	135.7	140.9
Copper (\$/MT)	4,722.2	4,731.3	5,450.9	5,660.4
Aluminum (\$/MT)	1,592.4	1,665.9	1,737.1	1,727.7
Iron Ore (\$ cents/dry MT)	56.7	58.0	72.3	79.7
Tin (\$/MT)	19,499.5	20,099.8	21,126.1	21,204.4
Nickel (\$/MT)	10,191.8	10,259.7	11,128.9	10,972.3
Zinc (\$/MT)	2,292.3	2,311.5	2,566.2	2,664.8
Lead (\$/MT)	1,947.6	2,024.5	2,180.6	2,209.8
Uranium (\$/MT)	24.7	21.2	18.5	19.1
DAP (\$/MT)	339.0	333.0	323.0	315.0
Urea (\$/MT)	191.0	193.0	211.0	216.0
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	210.57
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	168.80	182.62	196.92	200.56	208.76
Aug	169.79	184.28	197.22	200.79	207.95
Sep	171.25	183.94	198.08	200.74	208.58
Oct	171.49	187.08	197.98	201.20	209.71
Nov	171.29	189.89	197.45	202.87	210.60
Dec	173.71	189.63	197.73	203.96	211.43
Jan	176.17	190.15	197.53	204.12	
Feb	176.98	191.05	197.26	205.20	
Mar	177.44	192.65	197.50	205.34	
Apr	177.81	194.14	198.25	206.53	
May	179.33	194.27	200.38	206.71	
Jun	180.66	195.47	201.58	207.96	

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	230.69
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	189.14	206.14	220.37	221.53	231.81
Aug	189.44	208.89	220.54	221.38	228.86
Sep	190.90	206.04	220.88	220.72	229.65
Oct	190.44	209.21	220.24	221.44	231.23
Nov	190.04	214.69	219.23	224.06	231.55
Dec	194.49	212.49	219.63	225.31	232.01
Jan	197.96	212.43	218.84	224.49	
Feb	198.49	213.59	218.18	226.27	
Mar	198.19	216.63	217.91	226.15	
Apr	198.48	218.17	218.15	228.48	
May	201.70	216.59	223.05	227.70	
Jun	203.70	218.53	225.23	230.20	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY13	FY14	FY15	FY16	FY17	Average
Jul	100.46	100.53	100.57	100.60	100.63	100.56
Aug	100.76	100.77	100.75	100.73	100.73	100.75
Sep	100.69	100.68	100.67	100.65	100.62	100.66
Oct	100.94	100.93	100.92	100.91	100.89	100.92
Nov	100.66	100.69	100.68	100.67	100.67	100.67
Dec	99.49	99.50	99.52	99.56	99.59	99.53
Jan	99.73	99.71	99.71	99.69		99.71
Feb	98.95	98.93	98.92	98.92		98.93
Mar	99.09	99.05	99.02	99.00		99.04
Apr	99.96	99.96	99.95	99.95		99.96
May	99.62	99.63	99.64	99.65		99.64
Jun	99.60	99.63	99.66	99.68		99.64

Table 17: CPI Food Monthly & Average Seasonal Factors

Period	FY13	FY14	FY15	FY16	FY17	Average
Jul	100.84	100.99	101.10	101.18	101.24	101.07
Aug	101.60	101.62	101.59	101.57	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	99.22	99.25	99.30	99.37	99.43	99.31
Jan	99.30	99.24	99.20	99.15		99.22
Feb	97.76	97.73	97.69	97.70		97.72
Mar	98.42	98.38	98.32	98.28		98.35
Apr	99.63	99.62	99.59	99.58		99.61
May	99.16	99.15	99.18	99.19		99.17
Jun	99.22	99.29	99.38	99.46		99.34

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	-0.68
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	-1.10	1.09	0.74	-0.51	0.38
Aug	0.59	0.91	0.15	0.12	-0.39
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	0.83	0.42
Dec	1.41	-0.14	0.14	0.54	0.39
Jan	1.41	0.28	-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	0.77	0.38	0.58	
May	0.85	0.07	1.07	0.08	
Jun	0.74	0.62	0.60	0.61	

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	-1.90
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	0.10	1.20	0.84	-1.65	0.70
Aug	0.16	1.34	0.08	-0.07	-1.27
Sep	0.77	-1.36	0.16	-0.30	0.34
Oct	-0.24	1.54	-0.29	0.33	0.69
Nov	-0.21	2.62	-0.46	1.18	0.14
Dec	2.34	-1.03	0.18	0.56	0.20
Jan	1.79	-0.03	-0.36	-0.37	
Feb	0.27	0.55	-0.30	0.80	
Mar	-0.15	1.42	-0.12	-0.06	
Apr	0.15	0.71	0.11	1.03	
May	1.62	-0.72	2.25	-0.34	
Jun	0.99	0.90	0.98	1.10	

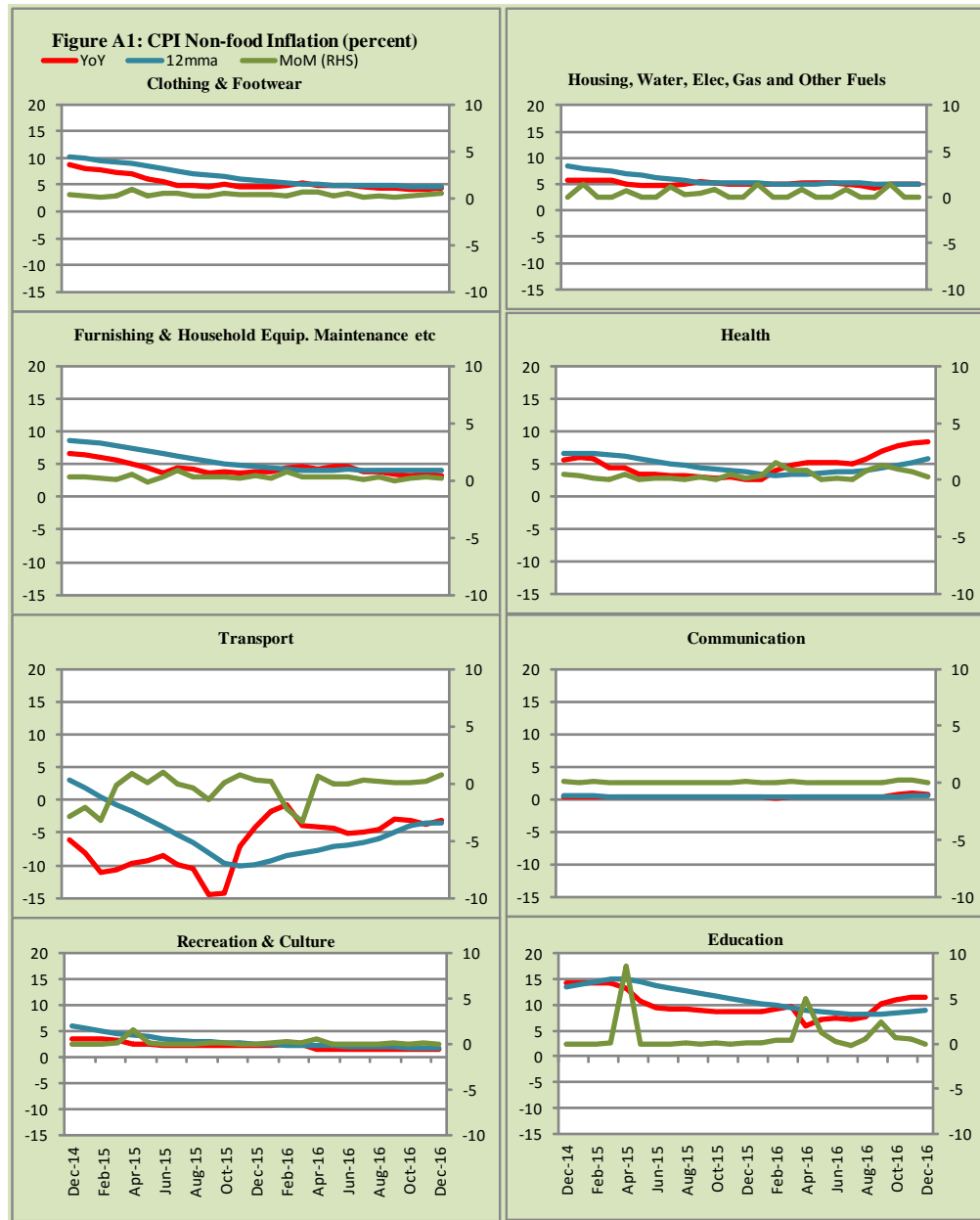


Figure A2: Frequency Distribution of Price Changes of CPI Items, December 2016

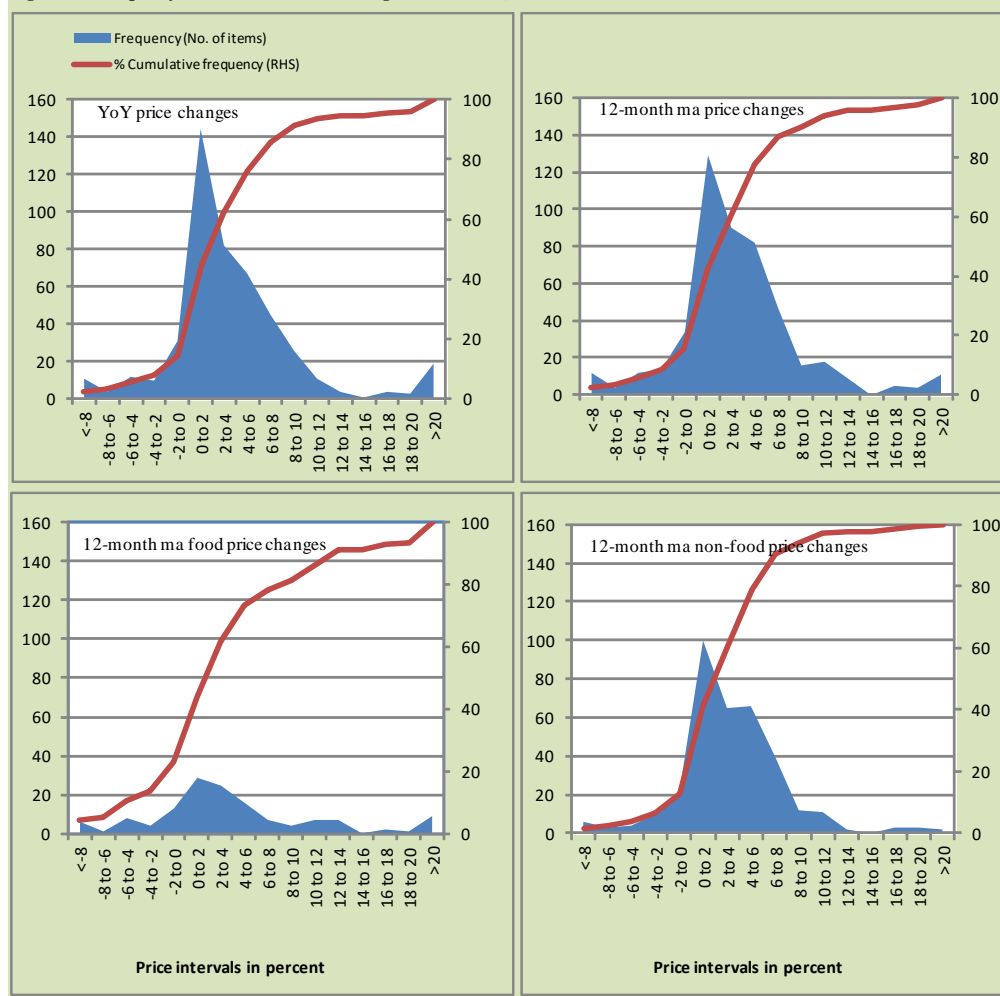


Figure A3: Frequency Distribution of Price Changes of WPI Commodities, December 2016

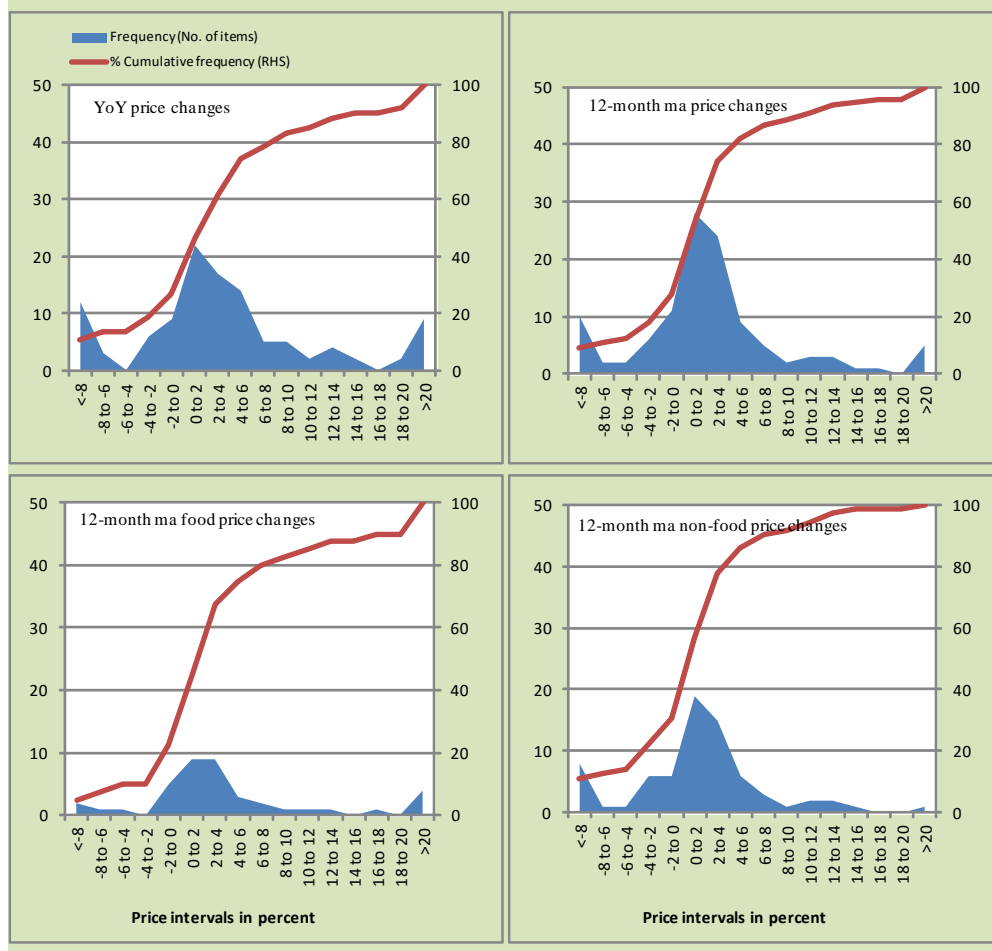
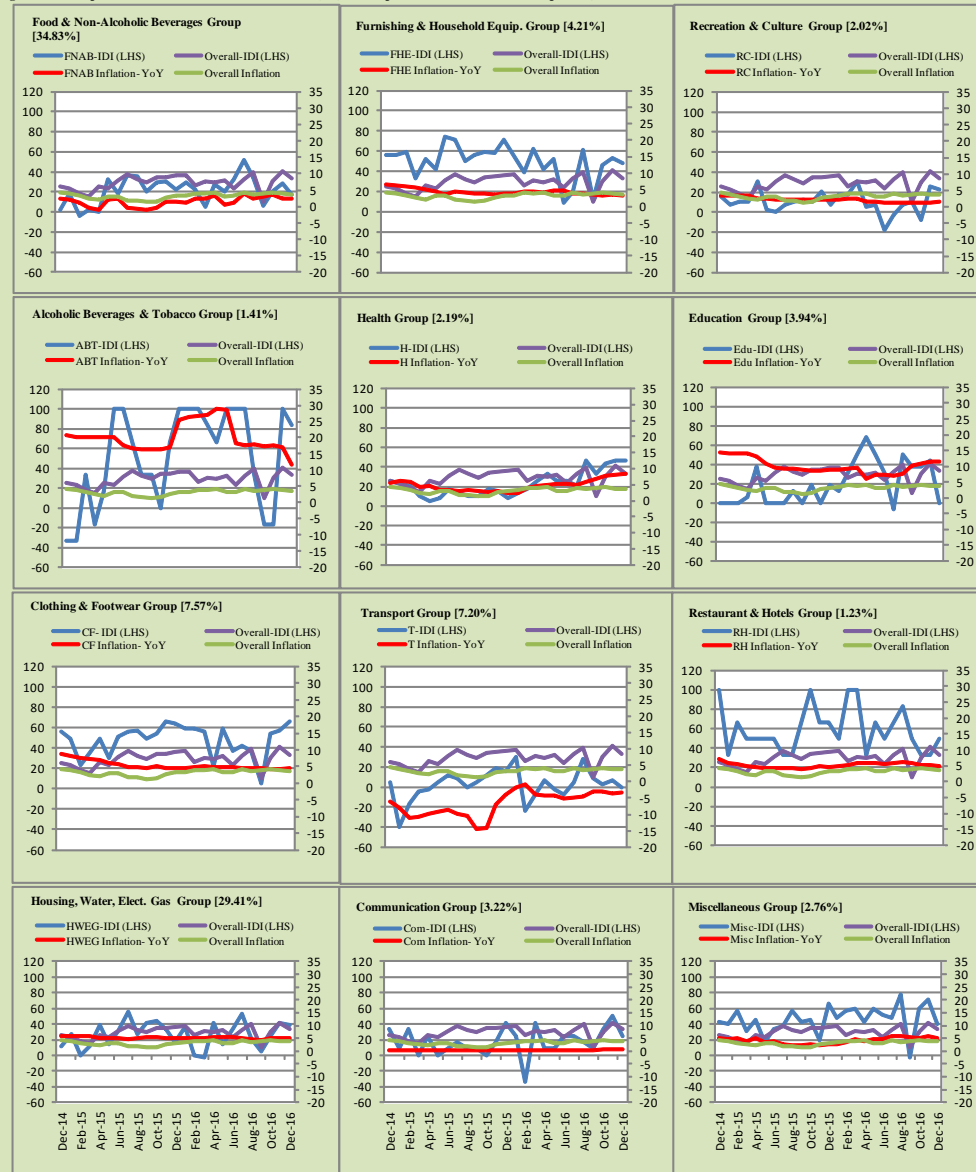


Figure A4: Group-wise/ Overall Inflation Diffusion Index (IDI) and respective/ overall YoY Inflation (percent)



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.