

Inflation Monitor

July 2016



State Bank of Pakistan

Statistics & DWH Department

ISSN 1992-8327 (print)

ISSN 1992-8335 (online)

The analysis in this document is based on data

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

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

Contents		Page
1.	Inflation in Brief	1
2.	City- wise Inflation	7
3.	Income Group- wise Inflation	8
4.	Weighted Contribution	10
5.	Inflation Diffusion Index	11
6.	Domestic Commodity Prices	12
7.	Global Commodity Prices	12
8.	Seasonal Adjustment in CPI	13
Annexure A		
Table A1	CPI Inflation by Groups	17
Table A2	Distribution of Price Changes (YoY) of CPI Basket	17
Table A3	Top and Bottom 15 Contributors to CPI Inflation (YoY)	18
Table A3.1	Top and Bottom 15 Contributors to CPI Inflation (MoM)	19
Table A3.2	Top Fifteen Contributors to CPI Inflation (YoY)	20
Table A3.3	Top Ten Contributors to CPI Food Inflation (YoY)	21
Table A3.4	Top Ten Contributors to CPI Non-Food Inflation (YoY)	22
Table A4	Distribution of Price Changes (YoY) - Selected CPI Items	23
Table A5	City-wise CPI Inflation by Income Groups	24
Table A6	City- wise CPI Inflation (YoY)	25
Table A7	Income Group-wise Inflation	26
Table A8	SPI Item-wise Price Movements	27
Table A9	Distribution of Price Changes (YoY)-WPI Items	28
Table A10	Consumer Price Index Numbers by Major Groups and Composite Commodities	29-30
Table A11	Wholesale Price Index Numbers by Major Groups and Composite Commodities	31-32
Table A12	Price Indices	33
Table A13	International Commodity Prices/ Indices	34
Table A14	CPI Data Series- Original and Seasonally Adjusted	35
Table A15	CPI Food Data Series- Original and Seasonally Adjusted	36
Table A16	CPI Monthly & Average Seasonal Factors	37
Table A17	CPI Food Monthly & Average Seasonal Factors	37
Table A18	CPI Month-on-Month % Change- Original & Seasonally Adjusted	38
Table A19	CPI Food Month-on-Month % Change- Original & Seasonally Adjusted	39
Figure A1	CPI Non-food Inflation	40
Figure A2	Frequency Distribution of Price Changes of CPI Items	41
Figure A3	Frequency Distribution of Price Changes of WPI Commodities	42
Figure A4	Group- wise/ overall Inflation Diffusion Index and Respective/ Overall YoY Inflation	43
Annexure B	Technical Notes	44-47

Team

- Naseer Ahmed
Additional Director
naseer.ahmed@sbp.org.pk
- Muhammad Ashfaq
Deputy Director
muhammad.ashfaqch@sbp.org.pk

Review

Inflation in Brief

1. Headline CPI inflation (2007-08=100) is recorded at level of 4.1 percent on year-on-year basis in July 2016 compared to 3.2 percent in the previous and 1.9 percent in the corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at 1.3 percent in July 2016 compared to 0.6 percent in the previous month and 0.4 percent during the corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.34 percent in July 2016 compared to 0.64 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis was at level of 3.6 percent in July 2016 as compared to 3.7 percent 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 0.5 percent in July 2016 compared to 0.2 percent in the previous and 0.5 percent during corresponding month of last year.
5. Non-food, non-energy inflation measured by CPI Core (NFNE) on year-on-year basis is recorded at 4.5 percent in July 2016 compared to 4.6 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 0.6 percent in July 2016 compared to 0.1 percent in the previous month. Core NFNE inflation was at level of current month in the corresponding month of last year.

7. WPI inflation on year-on-year basis increased to 3.0 percent in July 2016 as compared to 0.2 percent in the previous month. During July 2015, WPI inflation was recorded at -2.9 percent.
8. WPI inflation on month-on-month basis recorded at 2.3 percent in July 2016 compared to 1.4 percent in the previous month and -0.4 percent during the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 1.7 percent in July 2016 compared to 1.1 percent in the previous month. It was -0.5 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at 1.0 percent in July 2016 as 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 July 2016 are described below:

- Core RSC inflation on year-on-year basis is recorded at 4.8 percent in July 2016 as in the previous month and was 4.4 percent in the corresponding month of last year.

- Core RSC inflation on month-on-month basis is recorded at 0.6 percent in July 2016 compared to 0.4 percent in the previous month and was at level of current month in 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
Jul-15	1.9	0.4	0.6	0.1	2.8	0.6	4.1	0.6	2.9	0.5	4.4	0.6	-2.9	-0.4	-0.5	0.4
Aug-15	1.8	0.2	0.4	0.3	2.8	0.2	4.1	0.1	2.8	0.1	4.4	0.2	-2.9	-0.5	-1.3	-0.4
Sep-15	1.3	-0.1	-0.1	-0.4	2.4	0.1	3.4	0.1	2.8	0.1	4.1	0.4	-3.5	-0.4	-0.8	0.4
Oct-15	1.6	0.5	0.5	0.4	2.4	0.5	3.4	0.6	2.8	0.4	4.0	0.5	-2.7	0.5	0.2	0.8
Nov-15	2.7	0.6	2.2	1.2	3.1	0.2	4.0	0.1	2.9	0.2	4.5	0.1	-1.7	0.0	2.3	1.1
Dec-15	3.2	-0.6	2.7	-1.6	3.6	0.2	4.1	0.2	2.7	0.2	4.8	0.5	-0.4	-0.6	3.2	-0.4
Jan-16	3.3	0.2	2.5	-0.6	3.9	0.8	4.3	0.9	3.0	0.6	4.9	0.7	0.1	-0.5	3.6	-0.5
Feb-16	4.0	-0.3	3.7	-0.7	4.2	0.0	4.5	0.2	3.6	0.1	5.1	0.2	0.6	-0.6	4.2	-0.8
Mar-16	3.9	0.1	3.7	0.5	4.1	-0.1	4.7	0.2	3.8	0.2	5.1	0.1	0.2	-0.4	3.9	-0.3
Apr-16	4.2	1.5	4.7	2.4	3.8	1.0	4.4	1.1	3.8	0.6	5.0	0.9	0.6	1.3	3.6	0.3
May-16	3.2	-0.2	2.1	-0.7	3.9	0.2	4.5	0.2	3.6	0.2	5.1	0.3	0.0	0.6	1.4	-0.7
Jun-16	3.2	0.6	2.3	1.4	3.8	0.1	4.6	0.1	3.7	0.2	4.8	0.4	0.2	1.4	1.1	1.0
Jul-16	4.1	1.3	4.7	2.5	3.7	0.5	4.5	0.6	3.6	0.5	4.8	0.6	3.0	2.3	1.7	1.0
* NFNE is Non-food non-energy ** Relatively Stable Component of CPI *** SPI for all income groups combined																

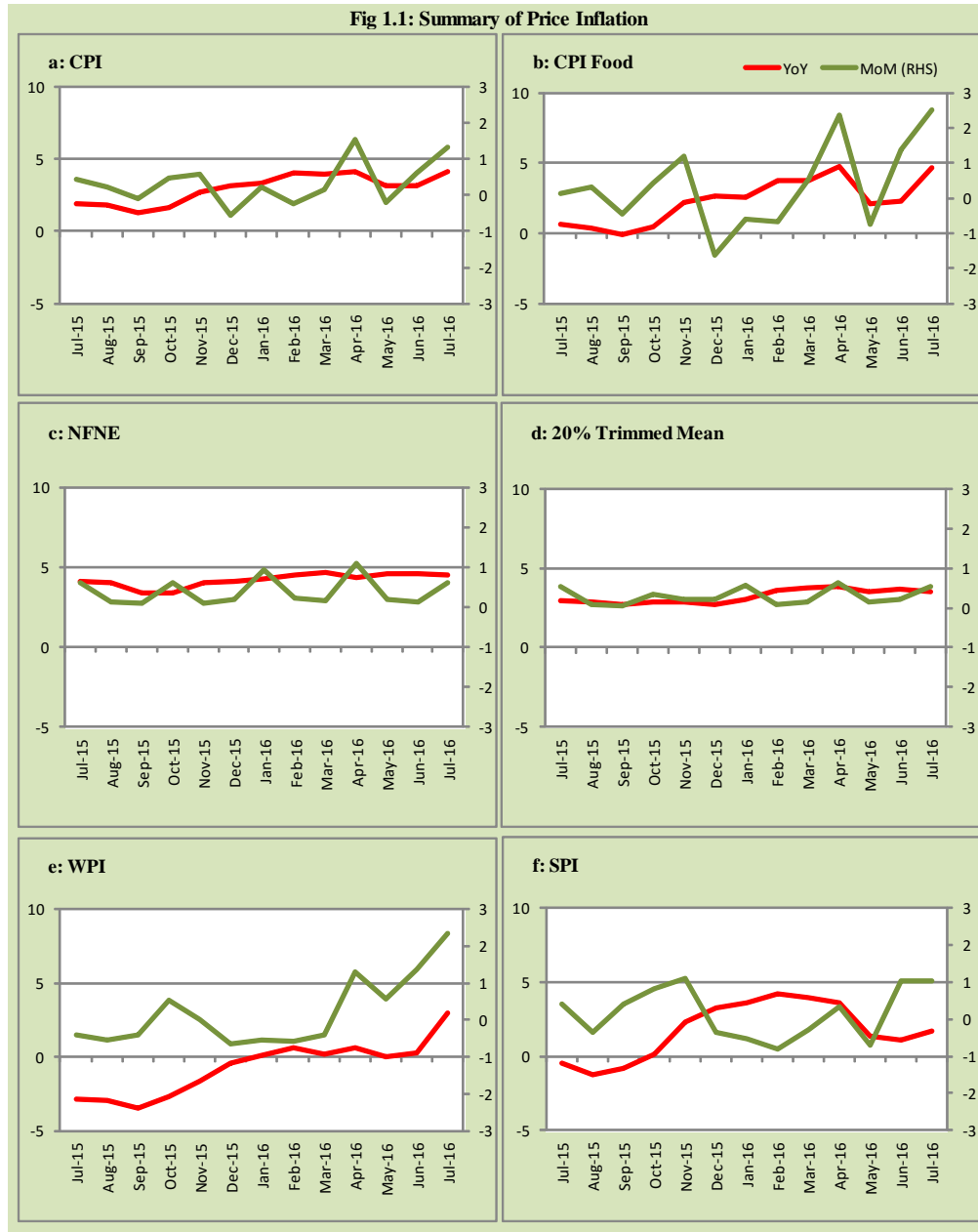
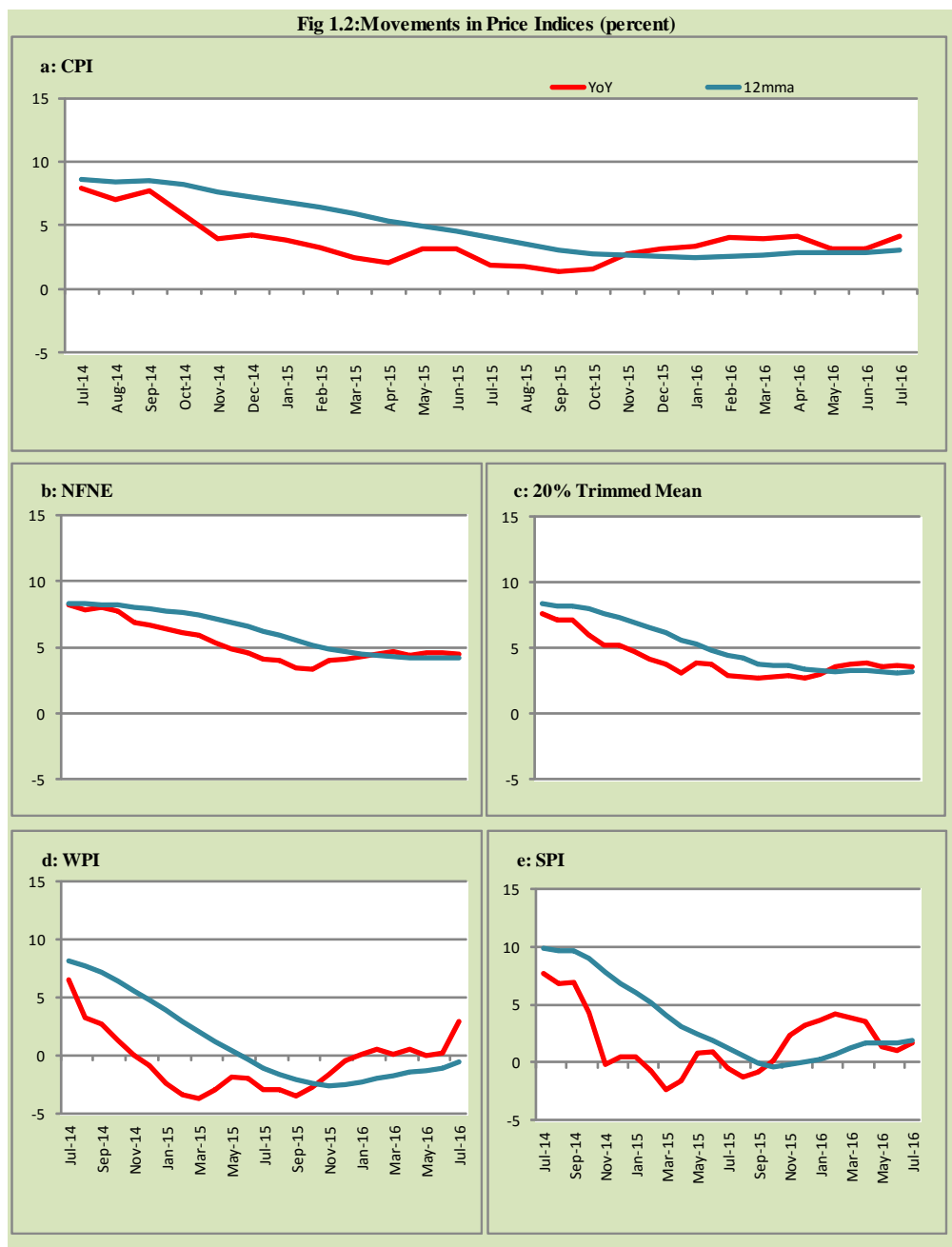


Fig 1.2: Movements in Price Indices (percent)



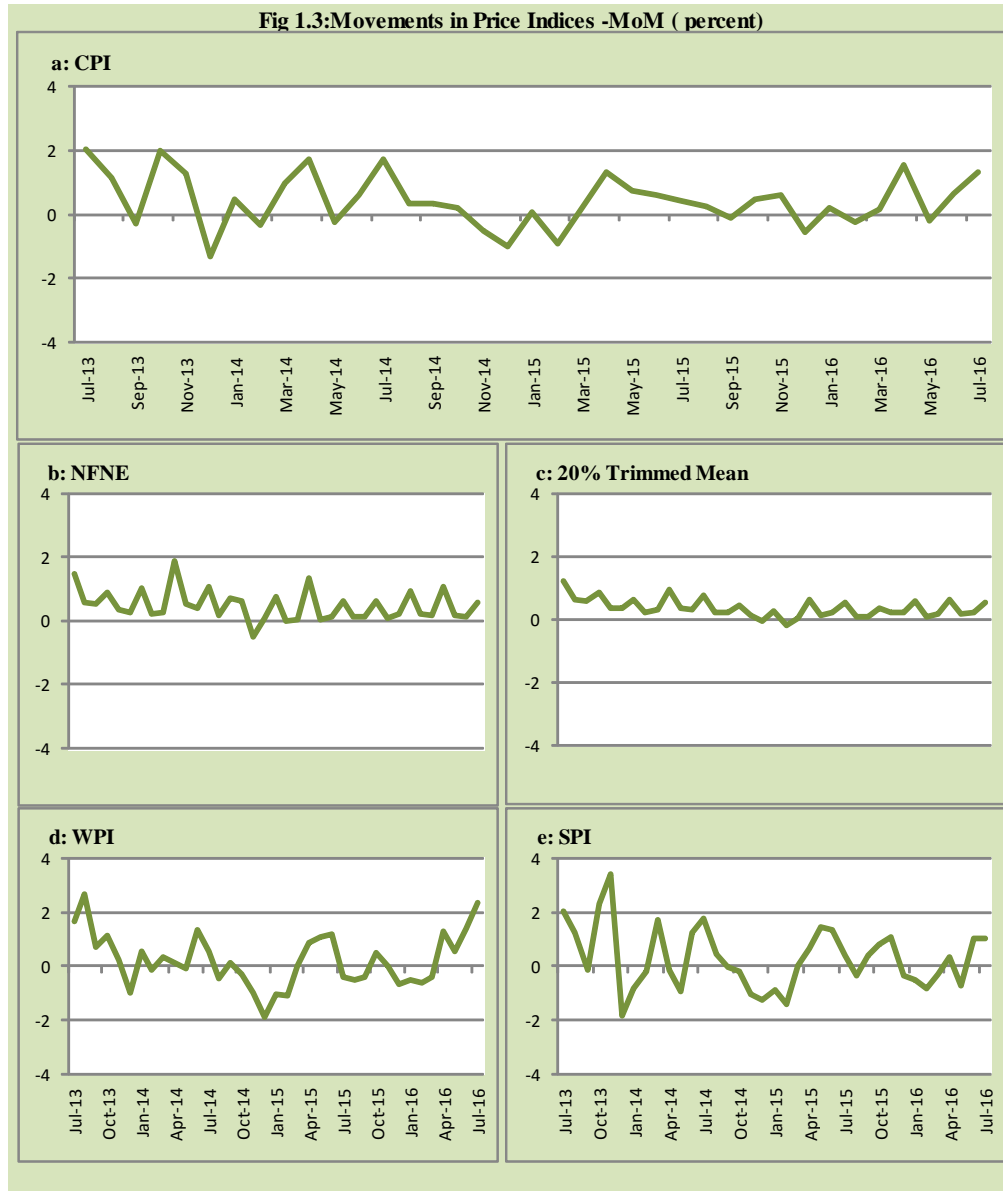
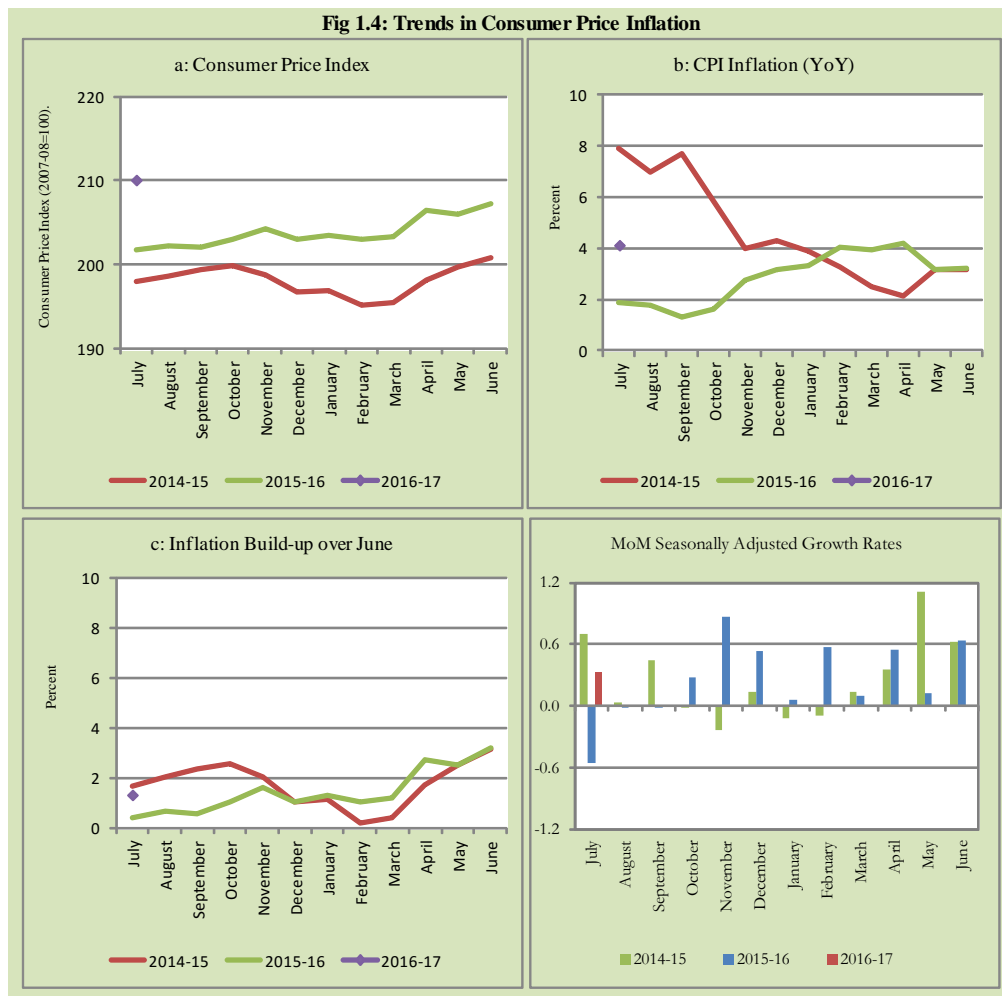


Fig 1.4: Trends in Consumer Price Inflation



2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan remained lower than overall inflation during July 2016 except Karachi. Among these five cities, the lowest inflation was observed in Lahore at 2.5 percent while the highest inflation was observed in Karachi at 4.4 percent (Table A6 of annexure-A).

Table 2.1 City-wise Inflation of Selected Cities (percent)						
	Jul-15		Jun-16		Jul-16	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	0.4	1.9	0.6	3.2	1.3	4.1
Islamabad	0.6	3.5	0.4	2.5	1.2	3.2
Karachi	1.0	2.9	1.6	4.7	0.8	4.4
Lahore	0.1	1.6	-0.2	0.8	1.7	2.5
Peshawar	-0.1	3.0	-0.3	1.2	2.3	3.6
Quetta	0.6	1.0	1.7	2.5	1.4	3.4

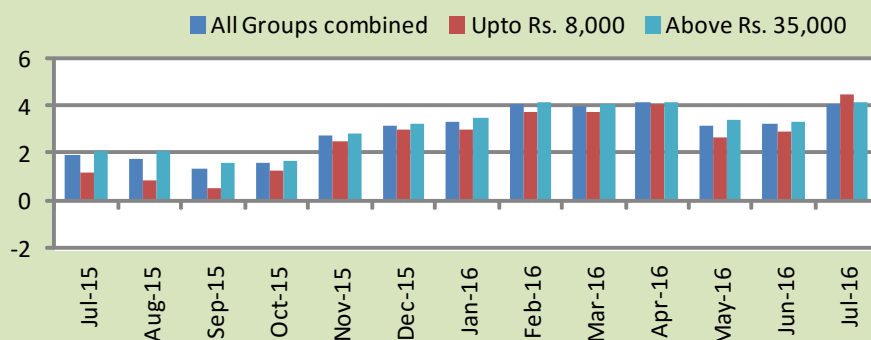
3. Income Group wise Inflation

Income group- wise data shows that income group above Rs. 35,000 witnessed higher inflation as compared to overall inflation during July 2016 in General and non-food groups. The lowest income group (Up to Rs. 8, 000) showed mixed trend among income groups during the month of July 2016 (Table A7 of annexure-A).

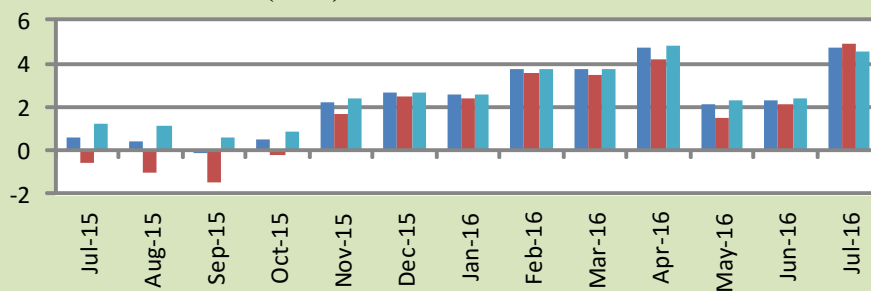
Table 3.1 Income Group- wise Inflation (YoY)									
Income Groups	General			Food			Non-food		
	Jul-15	Jun-16	Jul-16	Jul-15	Jun-16	Jul-16	Jul-15	Jun-16	Jul-16
All Groups Combined	1.9	3.2	4.1	0.6	2.3	4.7	2.9	3.8	3.7
Up to Rs. 8,000	1.1	2.9	4.5	-0.6	2.1	4.9	3.5	3.9	4.0
Rs. 8,001- 12,000	1.3	3.2	4.6	-0.2	2.1	4.7	3.1	4.4	4.4
Rs. 12,001- 18,000	1.6	2.7	3.9	0.2	2.2	4.8	2.9	3.1	3.0
Rs. 18,001- 35,000	1.7	3.3	4.4	0.6	2.3	4.9	2.5	4.1	4.1
Above Rs. 35,000	2.1	3.3	4.1	1.2	2.3	4.5	2.6	3.9	3.9

Fig 3.1: Income Group- wise Inflation

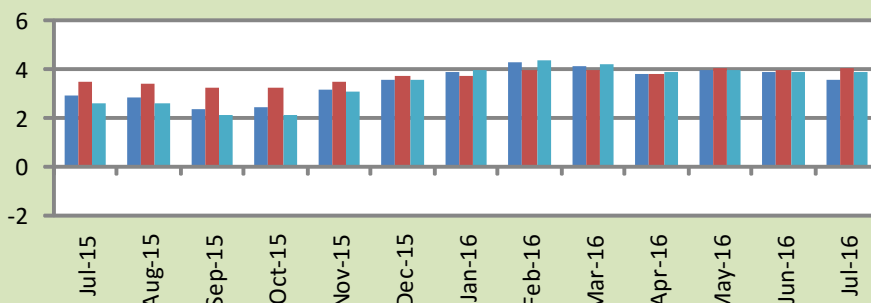
a: CPI Overall Inflation (YoY)



b: CPI Food Inflation (YoY)



c: CPI Non-Food Inflation (YoY)



4. Weighted Contribution

The weighted contribution of food group in the overall inflation increased to 47.51 percent during July 2016 from 29.90 percent in June 2016. It was 13.47 percent in July 2015.

The weighted contribution of non-food group decreased to 52.49 percent in July 2016 from 70.10 percent in June 2016.

Table 4.1 Weighted Contribution to CPI Inflation (YoY)						
Period	Food	Clothing & Footwear	Housing, Water, Elect, Gas & Other Fuel	Transport	Education	Others
Jul-15	13.47	20.69	64.62	-38.36	18.96	20.62
Aug-15	8.48	21.50	71.76	-41.96	19.75	20.47
Sep-15	-3.59	27.85	104.73	-80.48	25.82	25.67
Oct-15	12.98	25.37	84.32	-64.95	20.62	21.67
Nov-15	33.23	13.58	46.86	-17.91	12.23	12.01
Dec-15	34.75	11.80	40.58	-8.59	10.63	10.84
Jan-16	31.38	11.62	39.80	-3.59	10.22	10.56
Feb-16	37.82	10.11	33.65	-1.23	8.91	10.74
Mar-16	38.91	11.14	34.22	-6.44	9.46	12.72
Apr-16	46.55	9.80	33.26	-6.42	5.87	10.94
May-16	27.39	12.83	43.54	-8.54	9.36	15.42
Jun-16	29.90	12.73	43.18	-10.39	9.49	15.09
Jul-16	47.51	9.16	32.21	-7.65	7.07	11.70

5. Inflation Diffusion Index

Table 5.1 Inflation Diffusion Index - based on MoM change

	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16
General	37.3	32.6	29.3	34.5	34.7	36.4	37.0	26.2	30.7	29.4	32.0	23.5	32.7
Food & Non-Alcoholic Beverages	36.8	35.4	20.2	29.6	30.4	22.3	29.2	22.1	5.3	27.5	20.2	32.7	51.8
Alcoholic Beverages & Tobacco	66.7	33.3	33.3	0.0	66.7	100.0	100.0	100.0	83.3	66.7	100.0	100.0	100.0
Clothing & Footwear	55.9	57.6	49.2	54.2	66.1	64.4	59.3	59.3	55.9	22.0	59.3	37.3	42.4
Housing, Water, Elect, Gas & other Fuels	55.6	27.8	41.7	44.4	33.3	16.7	36.1	0.0	-2.8	41.7	13.9	30.6	52.8
Furnishing & Household Equip. Maintenance etc	71.0	50.7	56.5	59.4	58.0	71.0	55.1	39.1	62.3	42.0	52.2	8.7	20.3
Health	12.8	10.3	10.3	17.9	15.4	7.7	12.8	17.9	25.6	33.3	25.6	25.6	20.5
Transport	9.3	0.0	4.7	11.6	18.6	16.3	30.2	-23.3	-7.0	7.0	-2.3	-7.0	4.7
Communication	16.7	8.3	8.3	0.0	16.7	41.7	25.0	-33.3	41.7	8.3	8.3	25.0	25.0
Recreation & Culture	7.7	10.3	12.8	10.3	20.5	7.7	17.9	17.9	30.8	5.1	7.7	-17.9	-2.6
Education	0.0	12.5	0.0	18.8	0.0	18.8	12.5	31.3	50.0	68.8	50.0	31.3	-6.3
Restaurant & Hotels	33.3	33.3	66.7	100.0	66.7	66.7	50.0	100.0	100.0	33.3	66.7	50.0	66.7
Miscellaneous	37.1	57.1	42.9	45.7	20.0	65.7	48.6	57.1	60.0	42.9	60.0	51.4	48.6
NFNE	37.0	33.4	33.7	36.4	35.2	40.8	39.9	26.6	38.5	29.3	34.6	19.5	24.9

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	Jul-15		Jun-16		Jul-16	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-3.83	0.84	-1.58	-0.05	-2.32	0.08
2	Wheat Flour Bag	10 Kg	-2.19	0.55	-2.10	-1.01	-1.35	1.32
3	Rice Basmati Sup. Qlty.	Kg	-10.13	-0.71	-11.02	1.85	-9.00	1.54
4	Pulse Masoor (Washed)	Kg	8.45	-0.32	8.32	0.81	8.88	0.19
5	Pulse Moong (Washed)	Kg	1.51	-1.73	-3.74	0.11	-2.96	-0.93
6	Pulse Mash (Washed)	Kg	21.30	-0.23	48.10	0.31	47.13	-0.88
7	Pulse Gram	Kg	38.10	8.25	49.43	2.20	45.81	5.63
8	Vegetable Ghee (Loose)	Kg	-11.84	0.10	-1.21	-0.21	-2.07	-0.77
9	Sugar Refined	Kg	15.53	5.37	4.12	1.18	2.38	3.60
10	Milk Fresh (Unboiled)	Ltr	4.36	0.08	3.64	0.64	4.37	0.79
11	Tea- Tapal Danedar	200 Gm	15.89	1.83	18.23	0.00	15.54	-0.49
12	Beef With Bone Av. Qlty.	Kg	4.58	1.31	5.07	0.13	3.91	0.20
13	Mutton Av. Qlty.	Kg	5.52	0.79	7.16	0.61	7.01	0.65
14	Chicken Farm Broiler (Live)	Kg	14.04	-5.30	-19.58	-6.74	-18.91	-4.51
15	Eggs Farm	Doz	-1.60	1.26	-4.94	8.50	2.22	8.89
16	Potatoes	Kg	-62.50	6.81	20.13	45.50	32.10	17.45
17	Onion	Kg	10.67	-8.83	-31.20	-2.22	-23.34	1.57
18	Tomatoes	Kg	-11.33	-29.06	-41.53	61.12	58.41	92.22
19	Ginger	Kg	-18.83	-4.42	-40.60	1.80	-38.43	-0.93
20	Garlic	Kg	24.10	1.82	36.68	-6.21	66.10	23.73

7. Global Commodity Prices

Table 7.1 Changes in Major Global Indices (percent)

Item/ Group	Jul-15		Jun-16		Jul-16	
	YoY	MoM	YoY	MoM	YoY	MoM
Overall	-36.7	-6.6	-14.3	3.2	-10.5	-2.4
Food	-15.3	2.2	8.4	4.2	3.4	-2.5
Metals	-27.0	-7.5	-14.7	-0.3	-2.6	5.7
Energy	-46.1	-9.8	-22.7	4.0	-18.6	-5.0
Agricultural Raw Material	-15.5	-5.6	-10.5	0.1	-3.6	1.7
Cotton	-13.7	0.0	2.4	5.4	12.0	9.4

Source: IMF

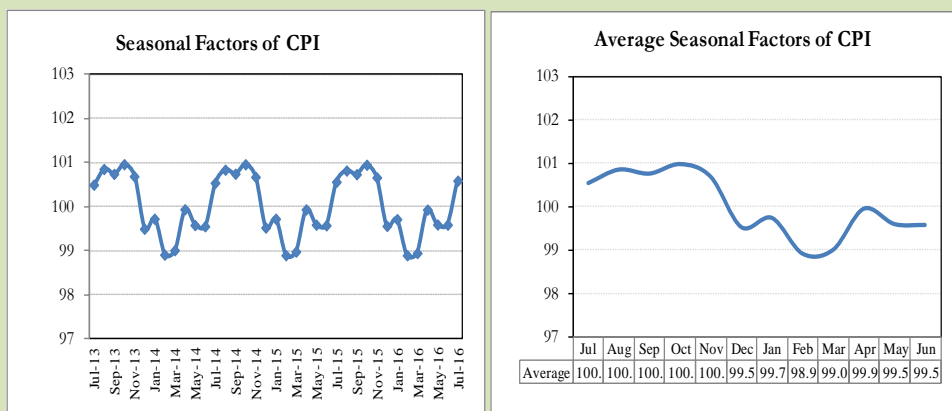
8. Seasonal Adjustment in CPI

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

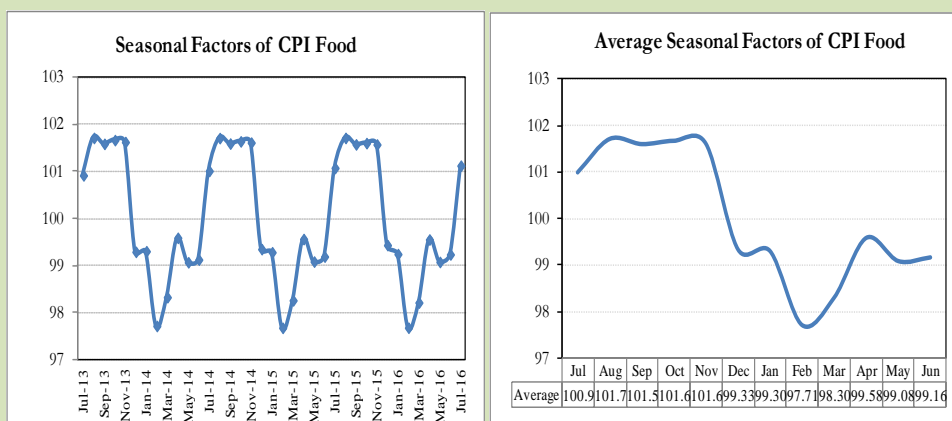
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to November and downward seasonality in the remaining months of the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

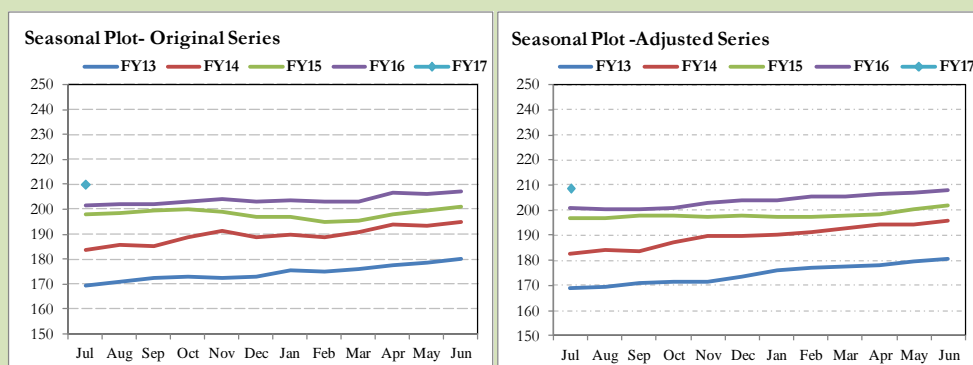
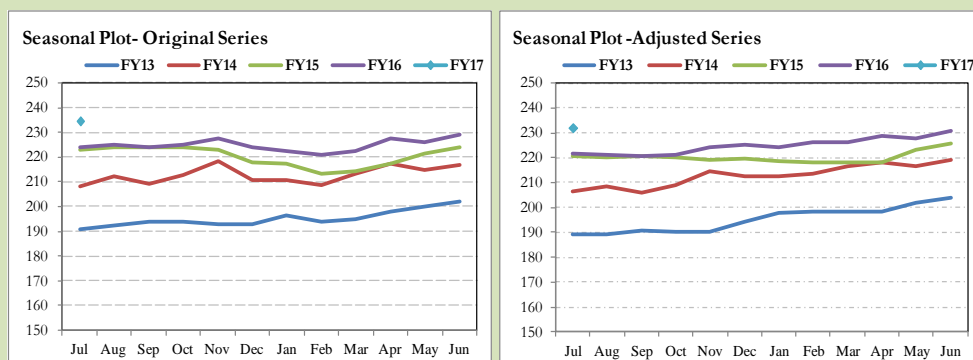


Fig. 8.4 Seasonal Plots of CPI (Food)



Seasonally adjusted CPI for July 2016 stood at 208.85 against 210.08 in original series showing a decrease of 1.23 on account of adjustment of upward seasonality in July 2016.

Seasonally adjusted CPI food group for July 2016 stood at 232.08 against 234.69 in original series showing a decrease of 2.60 on account of adjustment of upward seasonality in July 2016.

Month-on-month change of seasonally adjusted CPI series stood at 0.34% reflecting decrease during July 2016 over June 2016 and an increase of 1.34% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at 0.60% reflecting decrease during July 2016 over June 2016 and an increase of 2.50% 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 July 2016 (corresponding to the seasonally adjusted month-on-month rate) is 4.10 percent.

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

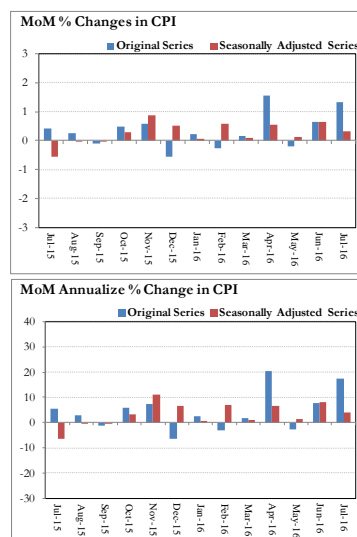
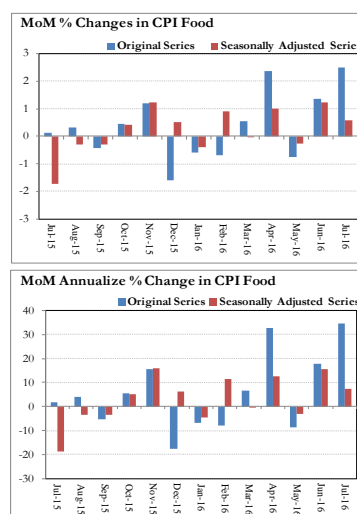


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



Annexure A

Table A1: CPI Inflation by Groups (percent)							
	Weight	MoM change			YoY change		
		Jul-15	Jun-16	Jul-16	Jul-15	Jun-16	Jul-16
I. Food Group	37.5	0.1	1.4	2.5	0.6	2.3	4.7
Food & Non-Alcoholic Beverages	34.8	0.0	1.2	2.7	-0.3	1.2	3.9
Alcoholic Beverages & Tobacco	1.4	1.7	4.2	1.1	16.6	18.4	17.7
Restaurant & Hotels	1.2	0.2	0.1	0.4	4.4	5.7	5.9
II. Non-Food Group	62.5	0.6	0.1	0.5	2.8	3.8	3.7
Clothing & Footwear	7.6	0.5	0.5	0.2	4.8	4.9	4.6
Housing, Water, Elect, Gas & other Fuels	29.4	1.1	0.0	0.9	4.7	5.3	5.1
Furnishing & Household Equip. Maintenance etc	4.2	0.9	0.3	0.1	4.5	4.7	3.8
Health	2.2	0.2	0.1	0.1	3.2	5.1	5.0
Transport	7.2	0.0	0.0	0.3	-10.0	-5.2	-4.9
Communication	3.2	0.0	0.1	0.0	0.4	0.4	0.4
Recreation & Culture	2.0	0.0	0.0	0.0	2.3	1.4	1.4
Education	3.9	0.0	0.2	-0.2	9.3	7.4	7.1
Miscellaneous	2.8	-0.1	0.0	1.0	2.8	4.5	5.7
Headline	100.0	0.4	0.6	1.3	1.9	3.2	4.1

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)	
		Jul-15	Jul-16	Jul-15	Jul-16	Jul-15	Jul-16	Jul-15	Jul-16	Jul-15	Jul-16
I. Food Group	4.7	127	127	42	28	37	55	30	15	18	29
Food & Non-Alcoholic Beverages	3.9	115	115	42	28	34	53	25	12	14	22
Alcoholic Beverages & Tobacco	17.7	6	6	0	0	1	0	1	0	4	6
Restaurant & Hotels	5.9	6	6	0	0	2	2	4	3	0	1
II. Non-Food Group	3.7	348	348	95	101	144	143	94	84	15	20
Clothing & Footwear	4.6	59	59	8	6	25	29	22	23	4	1
Housing, Water, Elect, Gas & other Fuels	5.1	36	36	12	8	10	9	13	15	1	4
Furnishing & Household Equip. Maintenance etc	3.8	69	69	3	4	35	50	30	15	1	0
Health	5.0	39	39	21	16	12	15	4	5	2	3
Transport	-4.9	43	43	23	30	8	8	12	4	0	1
Communication	0.4	12	12	5	5	6	4	0	2	1	1
Recreation & Culture	1.4	39	39	14	23	19	11	6	2	0	3
Education	7.1	16	16	5	6	6	2	1	7	4	1
Miscellaneous	5.7	35	35	4	3	23	15	6	11	2	6
Overall	4.1	475	475	137	129	181	198	124	99	33	49

Note: Prices of 12 seasonal items were not reported during the month.

Table A3: Top and Bottom 15 Contributors to CPI Inflation (YoY) in July 2016					
Top 15 Contributors		Weights	YoY Change		Weighted Contribution
Items/ Contributors			Jul-15	Jul-16	
Ranked by Weighted Contribution					
1	House Rent	21.81	5.66	5.79	25.62
2	Fresh Vegetable	1.68	-4.31	36.84	16.00
3	Cigarette	1.39	16.71	17.75	9.24
4	Milk Fresh	6.68	4.41	4.22	8.62
5	Education	3.94	9.32	7.13	7.07
6	Tomatoes	0.44	-11.33	58.41	4.60
7	Meat	2.43	4.90	4.96	3.63
8	Potatoes	0.47	-62.50	32.11	3.20
9	Pulse Mash (Washed)	0.21	21.30	47.13	3.01
10	Pulse Gram	0.24	38.10	45.81	3.00
11	Gas	1.58	0.00	9.92	2.70
12	Cotton Cloth	1.73	3.54	5.34	2.37
13	Personal Equipments	0.84	1.66	8.29	2.25
14	Ready Made Food	1.23	4.38	5.88	2.17
15	Tailoring	0.88	9.73	7.16	2.12
Total		45.56			95.59
Bottom 15 Contributors					
1	Chicken	1.36	14.04	-18.91	-7.04
2	Motor Fuel	3.03	-18.86	-12.15	-6.83
3	Onion	0.53	10.67	-23.35	-3.82
4	Rice	1.58	-10.57	-9.22	-3.05
5	Cooking Oil	1.75	-12.21	-5.97	-1.79
6	Transport Services	2.70	-6.92	-2.13	-1.36
7	Vegetable Ghee	2.07	-10.81	-2.72	-0.95
8	Fresh Fruits	1.86	-3.75	-1.26	-0.75
9	Motor Vehicle Accessories	0.24	-0.84	-5.73	-0.38
10	Pulse Moong	0.23	1.51	-2.96	-0.25
11	Wheat	0.35	-3.83	-2.32	-0.19
12	Wheat Flour	4.16	-2.48	-0.08	-0.09
13	Kerosene Oil	0.01	-19.66	-12.94	-0.02
14	Motor Vehicle Tax	0.11	0.00	0.00	0.00
15	News Papers	0.19	0.00	0.04	0.00
Total		20.20			-26.53

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

<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution	
Items/ Contributors	Weights	Jun-16	Jul-16		
Ranked by Weighted Contribution					
1	Fresh Vegetable	1.68	5.90	28.59	39.55
2	Tomatoes	0.44	61.11	92.22	17.91
3	House Rent	21.81	0.00	1.25	17.26
4	Potatoes	0.47	45.50	17.45	5.85
5	Milk Fresh	6.68	0.61	0.76	4.83
6	Sugar	1.04	1.18	3.60	3.11
7	Egg	0.46	8.51	8.89	2.39
8	Wheat Flour	4.16	-0.50	0.71	2.20
9	Cigarette	1.39	4.27	1.12	2.03
10	Personal Equipments	0.84	-0.43	2.33	2.00
11	Pulse Gram	0.24	2.20	5.63	1.52
12	Gram Whole	0.16	5.68	9.13	1.45
13	Rice	1.58	1.40	1.22	1.08
14	Besan	0.15	2.39	5.87	0.97
15	Meat	2.43	0.30	0.35	0.80
Total		43.55			102.95
<u>Bottom 15 Contributors</u>					
1	Fresh Fruits	1.86	2.51	-2.51	-4.49
2	Chicken	1.36	-6.74	-4.51	-4.26
3	Education	3.94	0.18	-0.23	-0.72
4	Vegetable Ghee	2.07	-0.12	-0.36	-0.37
5	Pulse Mash (Washed)	0.21	0.31	-0.88	-0.25
6	Pulse Moong	0.23	0.12	-0.94	-0.24
7	Tea	0.84	-0.39	-0.24	-0.19
8	Fire Wood Whole	0.23	0.03	-0.24	-0.05
9	Marriage Hall Charges	0.08	1.90	-0.65	-0.04
10	Household Textile	0.65	0.27	-0.06	-0.03
11	Sewing Needle & Dry Cell	0.15	0.11	-0.25	-0.03
12	Dry Fruits	0.25	0.22	-0.07	-0.02
13	Recreation & Culture	0.86	-0.20	-0.04	-0.02
14	Motor Vehicle Accessories	0.24	-0.63	-0.02	0.00
15	Motor Vehicle Tax	0.11	0.00	0.00	0.00
Total		13.09			-10.71

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in July 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Jul-15	Jul-16	
A. Ranked by Percentage Change					
1	Tomatoes	0.44	-11.33	58.41	4.60
2	Gram Whole	0.16	11.17	49.77	1.93
3	Pulse Mash (Washed)	0.21	21.30	47.13	3.01
4	Pulse Gram	0.24	38.10	45.81	3.00
5	Besan	0.15	32.44	42.19	1.73
6	Fresh Vegetable	1.68	-4.31	36.84	16.00
7	Potatoes	0.47	-62.50	32.11	3.20
8	Cigarette	1.39	16.71	17.75	9.24
9	Betel Leaves & Nuts	0.02	4.07	16.12	0.09
10	Gas	1.58	0.00	9.92	2.70
11	Pulse Masoor	0.27	8.35	9.38	0.60
12	Water Supply	0.50	0.00	8.94	0.80
13	Tea	0.84	13.51	8.59	2.03
14	Personal Equipments	0.84	1.66	8.29	2.25
15	Doctor (MBBS) Clinic Fee	0.59	3.72	7.25	1.25
Total		9.38			52.42
B. Ranked by Weights					
1	House Rent	21.81	5.66	5.79	25.62
2	Milk Fresh	6.68	4.41	4.22	8.62
3	Electricity	4.40	3.19	1.45	1.80
4	Wheat Flour	4.16	-2.48	-0.08	-0.09
5	Education	3.94	9.32	7.13	7.07
6	Communication & Apparatus	3.15	0.17	0.25	0.12
7	Motor Fuel	3.03	-18.86	-12.15	-6.83
8	Transport Services	2.70	-6.92	-2.13	-1.36
9	Meat	2.43	4.90	4.96	3.63
10	Vegetable Ghee	2.07	-10.81	-2.72	-0.95
11	Fresh Fruits	1.86	-3.75	-1.26	-0.75
12	Cooking Oil	1.75	-12.21	-5.97	-1.79
13	Cotton Cloth	1.73	3.54	5.34	2.37
14	Fresh Vegetable	1.68	-4.31	36.84	16.00
15	Rice	1.58	-10.57	-9.22	-3.05
Total		63.00			50.41
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in YoY change in CPI, which is 4.1 percent in July, 2016.					

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

Table 1: Top 10 Contributors to CPI Food Inflation (2017, July 2016)					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Jul-15	Jul-16	
A. Ranked by Weighted Contribution					
1	Fresh Vegetable	1.68	-4.31	36.84	16.00
2	Cigarette	1.39	16.71	17.75	9.24
3	Milk Fresh	6.68	4.41	4.22	8.62
4	Tomatoes	0.44	-11.33	58.41	4.60
5	Meat	2.43	4.90	4.96	3.63
6	Potatoes	0.47	-62.50	32.11	3.20
7	Pulse Mash (Washed)	0.21	21.30	47.13	3.01
8	Pulse Gram	0.24	38.10	45.81	3.00
9	Ready Made Food	1.23	4.38	5.88	2.17
10	Tea	0.84	13.51	8.59	2.03
Total		15.61			55.50
B. Ranked by Percentage Change					
1	Tomatoes	0.44	-11.33	58.41	4.60
2	Gram Whole	0.16	11.17	49.77	1.93
3	Pulse Mash (Washed)	0.21	21.30	47.13	3.01
4	Pulse Gram	0.24	38.10	45.81	3.00
5	Besan	0.15	32.44	42.19	1.73
6	Fresh Vegetable	1.68	-4.31	36.84	16.00
7	Potatoes	0.47	-62.50	32.11	3.20
8	Cigarette	1.39	16.71	17.75	9.24
9	Betel Leaves & Nuts	0.02	4.07	16.12	0.09
10	Pulse Masoor	0.27	8.35	9.38	0.60
Total		5.03			43.39
C. Ranked by Weights					
1	Milk Fresh	6.68	4.41	4.22	8.62
2	Wheat Flour	4.16	-2.48	-0.08	-0.09
3	Meat	2.43	4.90	4.96	3.63
4	Vegetable Ghee	2.07	-10.81	-2.72	-0.95
5	Fresh Fruits	1.86	-3.75	-1.26	-0.75
6	Cooking Oil	1.75	-12.21	-5.97	-1.79
7	Fresh Vegetable	1.68	-4.31	36.84	16.00
8	Rice	1.58	-10.57	-9.22	-3.05
9	Cigarette	1.39	16.71	17.75	9.24
10	Chicken	1.36	14.04	-18.91	-7.04
Total		24.98			23.82
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in YoY change in CPI Food, which is 4.7 percent in July, 2016.					

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in July 2016					
Items/ Contributors		Weights	YoY Change		Weighted Contribution
			Jul-15	Jul-16	
A. Ranked by Weighted Contribution					
1	House Rent	21.81	5.66	5.79	25.62
2	Education	3.94	9.32	7.13	7.07
3	Gas	1.58	0.00	9.92	2.70
4	Cotton Cloth	1.73	3.54	5.34	2.37
5	Personal Equipments	0.84	1.66	8.29	2.25
6	Tailoring	0.88	9.73	7.16	2.12
7	Household Servant	1.04	6.82	6.17	1.82
8	Electricity	4.40	3.19	1.45	1.80
9	Personal Care	1.49	3.37	4.04	1.50
10	Ready Made Garment	0.97	7.28	5.12	1.35
Total		38.70			48.59
B. Ranked by Percentage Change					
1	Gas	1.58	0.00	9.92	2.70
2	Water Supply	0.50	0.00	8.94	0.80
3	Personal Equipments	0.84	1.66	8.29	2.25
4	Doctor (MBBS) Clinic Fee	0.59	3.72	7.25	1.25
5	Tailoring	0.88	9.73	7.16	2.12
6	Education	3.94	9.32	7.13	7.07
7	Construction Wage Rate	0.33	7.56	6.88	0.59
8	Cleaning & Laundering	0.21	3.97	6.30	0.38
9	Household Servant	1.04	6.82	6.17	1.82
10	House Rent	21.81	5.66	5.79	25.62
Total		31.74			44.60
C. Ranked by Weights					
1	House Rent	21.81	5.66	5.79	25.62
2	Electricity	4.40	3.19	1.45	1.80
3	Education	3.94	9.32	7.13	7.07
4	Communication & Apparatus	3.15	0.17	0.25	0.12
5	Motor Fuel	3.03	-18.86	-12.15	-6.83
6	Transport Services	2.70	-6.92	-2.13	-1.36
7	Cotton Cloth	1.73	3.54	5.34	2.37
8	Gas	1.58	0.00	9.92	2.70
9	Footwear	1.55	0.60	1.01	0.31
10	Personal Care	1.49	3.37	4.04	1.50
Total		45.39			33.30
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 3.7 percent in July, 2016.					

Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: July 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	Ginger, Onion, Chicken Farm Broiler (Live), Lemon, Rice Basmati 385/386, Cooking Oil (Pakwan)	Salt-Powdered (Lahori) Loose, Nimco, Pepper Black National, Milk Fresh (Unboiled), Tea Lipton Yellow Label 200 Gm	Aloo Bukhara, Pulse Masoor (Washed), Powder Milk Nido 400Gm., Chocolate Candy (Small Size, Mutton Av.Qlty.	Bottlegourd, Lady Finger, Garlic, Tinda, Tomatoes, Gram Whole Yellow Av.Qlty, Turai, Pulse Mash (Washed), Pulse Gram, Karaila, Cocumber (Kheera), Brinjal, Gram Whole Black Av Qlty., Besan Av. Qlty., Potatoes
Alcoholic Beverages & Tobacco				Cigarettes Capstan 20,S, Cigarettes Morven Gold 20,S, Cigarettes K-20,S, Betel Leaves, Betel Nuts, Cigarettes Gold Leaf 20,S
Clothing & Footwear	Gents Shoe, Art 1109 Servis, Child Shoe Power Lite Bata, Sports Shoes, Ladies Spoung Chappal Bata, Ladies Sandal Bata, Gents Sandal Bata	Shirting Av.Qlty. Dopatta Cotton Av. Qlty, Pant Cloth Wash & Wear Av.Qlty, Handkerchief Sup. Qlty Pak, Shirt Boy 24"/26" Length, Pant Boy 24"/26" Length	Tailoring Shirt, Frock W/Wear Girls, Brassier Sup.Qlty, Brassier Av.Qlty, Azarband Cotton Avg.Qlty, School Uni. Kameez,Shal.Boys, School Uni. Kameez,Shal.Girls	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	Carpenter Wage Rate, Gas Chrg Up To 100 Cub Mmbtu, Gas Chrg Over 200 - 300 Mmbtu, Gas Chrg Over 100 - 200 Mmbtu	Gas Chrg Overall/ Combined, Water Charges Per House, Mason (Raj) Wage Rate, Plumber Wage Rate, Timber Shesham Log, Bajree	Cement Blocks (6"x8"x12"), Gas Chrg All Over 500 Mmbtu, Gas Chrg Over 300 - 500 Mmbtu, Electrician Wage Rate(P/Day)
Furnishing & Household Equip. Maintenance etc	Washing Powder 1000 Gm (Express), Washing Powder (Wheel/ Bonus), Split Air Conditioner 1.5 Ton	Cleanser Powder Vim 1000 Gms, Bed Sheet Single Bed Sup.Qlty, Marriage Hall Charges Without Refreshment, Thermos Starvac 1 Ltr	Dining Table 6 Chairs, Elect. Iron Philips, Non Stick Cooking Pan, Towel(3'X2') Av. Qlty, Carpet Plain Av. Qlty, Gas Burner Double	
Health	Glaxos-D (450 Gm), Brufen Tabs 200-Mg., Renitec Tab. 5 Mg., Sancos Syrup (50 ML), Amoxil Capsole 250 Mg.	Blood Test (Cp) Charges, Sugar Test (Random/Fasting), O.R.S. (Nimcol), Cotton Bandage 2" - 4", Thermometer China, Dettol (Medium)	X-Ray (Chest) Charges, Doctor (MBBS) Clinic Fee, Jouhar Joshanda, Urine Test (Dr) Charges, Septran Tablets	Disprin Tab., Panadol Tab. Extra/Plain, Ventolin Tab. 2Mg.
Transport	Petrol Super, High Speed Diesel HSD, Gas Cylinder S.Size (L.P.G), Bus Fare Min (Within City), Tyre Motor Cycle Without Tube	Suzuki Fare Min.Within City, Motor Cycle Service Charges, Cycle Overhauling Charges, Car Service Charges, Car Suzuki 1000 CC	Tyre Puncture Charges, Taxi 4 Seater Fare, Full Tonga Charges, Suzuki Fare Maximum Within City	Car Toyota 1300 CC
Communication	Postal Envelope Domestic, Mobile Cell Charges, Telephone Charges Local Call	Telephone Set Av. Qlty, Mobile Set Nokia/Sony/Ericsson Av.Qlty, Internet Charges	T.C.S. Ch. Min.Within Zone, Fax Charges (Local)	Postal Registration Charges
Recreation & Culture	Urdu Book Class V (T.B.Board), Computer CD (Tdk/Imation), English Book Class IX or X, Urdu Book Class IX/X (T.B.Board)	Exercise Book Lined 80/10, Maths Book Class IX or X, Photostat Paper 70 Gm, Fountain Pen Hero/Wings/China, Personnel Computer (Branded)	Pencil Goldfish/Deer, Cinema Non-A/C High Class	Cinema A/C High Class, Maths Book Class V (T.B.Board), Ball Pen (Local)
Education	Pvt Eng. College Fee (1st Year), MBA Tuition Fee, Govt. Med. College Fee MBBS 1st Year	Pvt Med. College Fee MBBS (1st Year), Govt. Engg. Coll. Fee 1st Year	Coaching Charges For Class XI/ XII Commerce Group, Pvt School Fee Eng.Med (Class-X)	Pvt School Fee Eng.Med (Class-I)
Restaurant & Hotels		Bread Tandoori St. Size, Chicken Biryani Full/Double	Cooked Beef (Av. Hotel), Cooked Dal (Av. Hotel), Tea Prepared (Ordinary)	Cooked Mutton (Av. Hotel)
Miscellaneous	Toilet Soap Safeguard Bath Size, Shampoo Sunsilk/Pantene 100 MI	Wall Clock Quartz Av. Qlty, Hair Color Bigen, Disposable Razor Gillette-II, Nail Polish S. Miss/Medora	Toilet Soap Lux 95 Gms, Beauty Parlour Hair Style Charges, Silver Tezabi 24 Ct, Gel Medium Size	Beauty Cream (Fair & Lovely), Purse Ladies (Leather) Av. Qlty, Gold Tezabi 24 Ct, Toothpowder Dentonic 90 Gms, Toothpaste Med Size Colgate 70Gms

Table A5: City- wise CPI Inflation by Income Groups, July 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	2.4	6.1	2.8	6.3	2.0	5.8	2.3	6.4	2.8	6.3	1.8	6.6
2 Islamabad	1.6	3.9	2.9	5.9	0.0	1.7	1.6	3.8	3.0	5.8	0.1	1.7
3 Lahore	2.4	2.6	4.6	2.4	-0.5	3.0	2.2	2.5	4.2	2.1	-0.2	3.1
4 Gujranwala	3.8	4.9	3.4	3.7	4.3	6.5	3.5	4.7	3.1	3.5	4.0	6.1
5 Sialkot	1.4	3.6	2.8	4.8	-0.5	2.1	1.0	3.4	2.3	4.3	-0.4	2.2
6 Faisalabad	3.1	8.5	4.5	10.5	1.2	6.0	2.8	8.3	4.3	10.5	1.1	5.9
7 Multan	3.6	4.6	2.8	3.5	4.5	6.0	3.8	4.8	2.9	3.5	4.7	6.2
8 Sargodha	2.9	4.2	6.5	7.9	-1.0	0.3	2.3	3.8	5.9	7.4	-1.0	0.4
9 Bahawalpur	2.3	6.7	4.1	9.4	0.4	3.8	1.8	6.1	3.2	8.7	0.5	3.8
10 Karachi	1.1	5.8	1.8	5.9	0.3	5.7	1.0	5.6	1.7	5.6	0.3	5.6
11 Hyderabad	1.2	1.2	0.1	0.0	2.8	2.8	0.1	1.5	0.1	0.0	0.1	3.3
12 Sukkur	1.4	2.3	2.4	2.2	0.1	2.3	1.1	2.1	2.2	1.8	0.1	2.4
13 Larkana	-1.3	2.6	0.8	2.7	-3.7	2.4	-3.3	0.4	0.8	2.3	-7.3	-1.5
14 Peshawar	3.2	4.6	5.8	6.8	0.4	2.0	2.8	4.3	5.4	6.3	0.3	2.3
15 Bannu	3.2	5.8	5.5	7.0	0.6	4.5	2.7	5.7	5.1	6.5	0.3	4.8
16 Quetta	1.8	3.5	2.2	1.6	1.4	6.0	1.5	3.5	1.9	1.6	1.1	5.6
17 Khuzdar	0.1	2.2	0.2	0.8	0.0	4.0	0.1	2.2	0.2	1.2	0.0	3.4
	Rs 12001-18000						Rs 18001-35000					
	General		Food		Non-Food		General		Food		Non-Food	
	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	2.5	6.7	3.1	6.8	2.0	6.6	2.6	6.7	3.6	7.6	1.8	6.1
2 Islamabad	1.7	3.6	3.1	5.7	0.3	1.6	1.7	3.6	3.5	6.3	0.1	1.4
3 Lahore	2.1	2.4	4.0	2.1	0.1	2.8	1.9	2.2	3.7	2.2	0.1	2.3
4 Gujranwala	3.6	4.7	2.8	3.5	4.4	6.0	3.1	4.3	2.4	3.4	3.7	5.1
5 Sialkot	1.0	3.2	2.1	4.2	-0.1	2.1	0.8	3.1	1.8	4.5	-0.2	1.8
6 Faisalabad	2.8	8.6	4.2	10.7	1.4	6.5	2.4	7.9	3.8	10.5	1.0	5.6
7 Multan	3.9	4.5	2.7	3.2	5.0	5.8	3.6	4.2	2.8	3.2	4.3	5.1
8 Sargodha	2.1	3.3	5.8	7.9	-1.1	-0.5	1.7	3.3	5.5	8.0	-1.1	-0.2
9 Bahawalpur	1.8	6.1	3.1	8.5	0.6	4.1	1.2	5.3	2.4	8.2	0.3	3.0
10 Karachi	1.0	5.5	1.6	5.4	0.3	5.5	0.9	5.0	1.5	5.2	0.3	4.9
11 Hyderabad	0.0	1.2	0.0	-0.2	0.1	2.8	0.1	0.9	0.1	-0.1	0.1	2.0
12 Sukkur	1.1	2.0	2.3	2.0	0.0	1.9	1.0	1.7	2.3	1.9	-0.1	1.5
13 Larkana	-4.7	-0.7	0.5	2.6	-9.3	-3.6	-4.6	-0.5	0.3	2.6	-8.4	-3.0
14 Peshawar	2.8	4.2	5.6	6.4	0.2	2.1	2.5	3.9	5.7	6.3	0.0	2.0
15 Bannu	3.0	6.0	5.5	7.4	0.6	4.7	2.8	6.3	5.6	7.7	0.5	5.2
16 Quetta	1.4	3.1	1.6	1.2	1.2	5.2	1.4	3.1	1.6	1.1	1.2	5.0
17 Khuzdar	0.1	2.7	0.1	2.4	0.0	3.1	0.1	3.4	0.1	3.3	0.1	3.6
	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	2.3	6.6	3.3	7.2	1.8	6.4	2.4	6.6	3.4	7.1	1.7	6.3
2 Islamabad	1.2	3.1	3.3	5.8	0.1	1.7	1.2	3.2	3.3	5.8	-0.3	1.3
3 Lahore	1.5	2.6	3.6	2.6	0.3	2.5	1.7	2.5	3.8	2.3	0.1	2.6
4 Gujranwala	3.0	4.4	1.9	3.0	3.5	5.2	3.2	4.6	2.5	3.4	3.8	5.4
5 Sialkot	0.4	3.0	1.3	4.5	-0.1	2.2	0.7	3.1	1.8	4.5	-0.1	2.2
6 Faisalabad	1.9	7.0	3.6	10.5	0.9	5.3	2.4	7.9	4.0	10.5	1.2	6.0
7 Multan	3.5	4.2	2.3	2.7	4.2	4.9	3.6	4.4	2.6	3.1	4.3	5.3
8 Sargodha	0.8	2.4	5.1	8.1	-1.1	-0.2	1.7	3.3	5.6	7.9	-0.7	0.4
9 Bahawalpur	0.8	4.5	2.4	7.2	0.1	3.2	1.4	5.5	3.0	8.4	0.4	3.6
10 Karachi	0.6	3.8	1.2	4.0	0.3	3.6	0.8	4.4	1.4	4.6	0.3	4.2
11 Hyderabad	0.3	1.1	0.1	-0.9	0.4	2.2	1.5	1.3	0.1	-0.3	2.5	2.5
12 Sukkur	0.8	2.0	1.8	1.6	0.3	2.2	1.0	2.0	2.2	2.0	0.2	2.0
13 Larkana	-4.2	-0.2	0.0	2.0	-6.1	-1.3	-1.5	2.6	0.5	2.6	-2.7	2.6
14 Peshawar	1.7	2.8	5.7	5.4	-0.2	1.5	2.3	3.6	5.6	6.1	0.1	1.9
15 Bannu	2.0	5.2	4.9	7.3	0.6	4.1	2.7	5.9	5.3	7.3	1.0	4.9
16 Quetta	1.3	3.5	1.6	1.7	1.2	4.5	1.4	3.4	1.7	1.4	1.2	4.8
17 Khuzdar	0.5	3.8	0.4	3.9	0.6	3.7	0.1	2.7	0.2	2.5	0.1	2.8

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

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
Abbotabad	9.1	5.2	11.8	Mithi	4.0	4.1	3.9
Faisalabad	7.9	10.5	6.0	Mir Pur Khas	3.7	4.0	3.5
Jhang	7.4	11.4	4.8	Mingora	3.6	4.1	3.3
Turbat	6.7	2.0	9.8	Peshawar	3.6	6.1	1.9
Rawalpindi	6.6	7.1	6.3	Nawabshah	3.6	4.0	3.3
Rahim Yar Khan	6.6	4.8	7.9	Bahawalnagar	3.4	6.8	1.1
Sahiwal	6.6	11.0	3.9	Quetta	3.4	1.4	4.8
Mianwali	6.5	9.4	4.7	Sargodha	3.3	7.9	0.4
Dera Mrd.Jamali	6.3	8.3	4.9	Wazirabad	3.2	3.7	2.8
Bannu	5.9	7.3	4.9	Islamabad	3.2	5.8	1.3
Bahawalpur	5.5	8.4	3.6	Sialkot	3.1	4.5	2.2
Loralai & Cantt	5.3	5.8	5.0	D. I .Khan	3.1	1.9	3.9
Vehari	5.3	5.3	5.2	Khuzdar	2.7	2.5	2.8
Muzaffargarh	4.9	5.4	4.6	Larkana	2.6	2.6	2.6
Gujranwala	4.6	3.4	5.4	Lahore	2.5	2.3	2.6
Multan	4.4	3.1	5.3	Sukkur	2.0	2.0	2.0
Karachi	4.4	4.6	4.2	Dadu	1.5	1.5	1.5
Mardan	4.3	3.6	4.7	Hyderabad	1.3	-0.3	2.5
D.G. Khan	4.2	3.9	4.4	Mithi	4.0	4.1	3.9
Gawadar	4.2	3.8	4.4	Mir Pur Khas	3.7	4.0	3.5
Attock	4.1	6.3	2.6				
Jhelum	4.1	6.1	2.7				

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

Table A7: Income Group-wise Inflation (percent)						
	MoM			YoY		
	Jul-15	Jun-16	Jul-16	Jul-15	Jun-16	Jul-16
<u>Up to Rs. 8000</u>						
General	0.3	0.9	1.9	1.1	2.9	4.5
Food	0.1	1.5	2.9	-0.6	2.1	4.9
Non-food	0.6	0.1	0.6	3.5	3.9	4.0
<u>Rs. 8001- 12000</u>						
General	0.3	0.8	1.6	1.3	3.2	4.6
Food	0.1	1.5	2.7	-0.2	2.1	4.7
Non-food	0.6	0.1	0.5	3.1	4.4	4.4
<u>Rs. 12001- 18000</u>						
General	0.3	0.8	1.6	1.6	2.7	3.9
Food	0.1	1.5	2.7	0.2	2.2	4.8
Non-food	0.5	0.1	0.5	2.9	3.1	3.0
<u>Rs. 18001- 35000</u>						
General	0.3	0.7	1.4	1.7	3.3	4.4
Food	0.1	1.4	2.6	0.6	2.3	4.9
Non-food	0.5	0.1	0.5	2.5	4.1	4.1
<u>Above Rs. 35000</u>						
General	0.4	0.5	1.1	2.1	3.3	4.1
Food	0.2	1.2	2.3	1.2	2.3	4.5
Non-food	0.5	0.1	0.6	2.6	3.9	3.9
<u>All income groups</u>						
General	0.5	0.6	1.3	1.9	3.2	4.1
Food	0.1	1.4	2.5	0.6	2.3	4.7
Non-food	0.8	0.1	0.5	2.9	3.8	3.7

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices Jul-16	Percentage change	
				YoY	MoM
1	Wheat	10Kg.	327.9	0.1	1.2
2	Wheat Flour Bag	10Kg.	374.1	-0.8	0.7
3	Rice Basmati Broken	Kg.	60.3	-12.5	1.3
4	Rice Irri-6	Kg.	47.0	-5.6	1.1
5	Bread Plain Med. Size (340-400 Gm.)	Each	40.9	0.3	0.3
6	Beef	Kg.	323.4	5.2	0.1
7	Mutton	Kg.	644.7	6.3	0.4
8	Chicken Live (Farm)	Kg.	146.3	-22.1	-9.1
9	Milk Fresh	Litr	79.8	3.1	0.2
10	Curd	Kg.	93.4	2.7	0.2
11	Milk Powdered Nido	500G	383.1	7.5	0.2
12	Egg Hen (Farm)	Doz.	87.1	-3.2	11.9
13	Mustard Oil	Kg.	180.5	0.8	0.0
14	Cooking Oil (Tin)	2.5Ltr	454.4	-2.3	0.0
15	Veg. Ghee (Tin)	2.5Kg.	445.1	-2.7	0.0
16	Veg. Ghee Loose	Kg.	138.2	-2.1	-0.4
17	Bananas	Doz.	95.7	-4.9	-5.0
18	Masoor Pulse Washed	Kg.	152.2	7.4	0.1
19	Moong Pulse Washed	Kg.	157.7	-3.9	-0.6
20	Mash Pulse Washed	Kg.	273.1	48.2	0.1
21	Gram Pulse Washed	Kg.	151.6	41.5	5.4
22	Potatoes	Kg.	35.0	28.5	17.1
23	Onions	Kg.	31.3	-26.2	0.3
24	Tomatoes	Kg.	68.8	46.7	70.1
25	Sugar	Kg.	67.3	3.0	4.6
26	Gur	Kg.	90.0	-1.9	0.9
27	Salt Powdered Loose (Lahori)	Kg.	10.5	1.4	0.0
28	Red Chilies Powder Loose	Kg.	279.3	3.4	0.3
29	Garlic	Kg.	227.6	55.5	20.5
30	Tea (Yellow Label)	200Gm.	157.9	0.9	0.0
31	Cooked Beef Plate	Each	91.1	8.4	0.2
32	Cooked Dal Plate	Each	55.5	12.9	0.2
33	Tea Prepared (Sada)	Cup	19.6	3.6	0.3
34	Cigarettes K-2 (20'S)	20'S	63.7	16.6	2.9
35	Long Cloth (Coarse Latha)	Mtr.	205.6	1.5	0.0
36	Shirting	Mtr.	164.3	2.0	0.0
37	Lawn	Mtr.	251.2	3.4	0.0
38	Georgette (Voil Printed)	Mtr.	123.5	0.4	0.0
39	Sandal Gents Bata	Pair	699.0	0.0	0.0
40	Chappal Spong. Bata (Gents)	Pair	179.1	0.1	0.0
41	Sandal Ladies Bata	Pair	502.4	0.7	0.0
42	Electric Charges 1-50	Unit	2.0	0.0	0.0
43	Gas Charges upto 3.3719	Mmbtu	128.3	3.3	0.0
44	Kerosene	Litr	74.9	-17.8	0.0
45	Firewood	40Kg	597.4	3.0	0.1
46	Energy Savor 14 Watts	Each	167.8	1.0	0.0
47	Washing Soap (200-250 Gm.)	Cake	25.0	2.8	0.0
48	Match Box	Each	2.1	8.9	0.0
49	Petrol	Litr	65.1	-17.1	0.0
50	Diesel	Litr	73.4	-16.5	0.0
51	L.P.G.(11 Kg Cylinder.)	Each	913.1	-14.3	-2.2
52	Tele. Local Call	Call	3.9	0.0	0.0
53	Bath Soap Lifebuoy (Standard)	Cake	36.6	0.2	1.2
Maximum				55.5	70.1
Median				0.9	0.1
Minimum				-26.2	-9.1

Table A9: Distribution of Price Changes (YoY) - WPI Items: July 2016				
Groups	Decrease or no change	Subdued increase (Greater than 0% but less than 5%)	Moderate increase (5% but less than 10%)	Double digit increase (10% or more)
Agriculture Forestry & Fishery Products	Stimulant and Spice Crops, Poultry, Sorghum/Jowar, Rice, Hides and Fur Skins- Raw, Fresh Fruits, Raw Animal Material/Wool	Milk from Bovine Animals, Wheat, Dry Fruits, Fuel Wood in Logs, Eggs, Sugar Crops	Millet/Bajra, Other Oil Seeds, Maize	Fish Live Fresh or Chilled, Edible Roots/Potatoes, Vegetables, Pulses, Fibre Crops, Cotton Seeds, Unmanufactured Tobacco
Ores & Minerals, Electricity Gas & Water	Coal not Agglomerated, Electrical Energy	Natural Gas Liquefied, Salt & Pure Sodium Chloride		
Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products	Blended Yarn, Nylon Yarn, Vegetable Ghee, Vegetable Oil Refined, Bed Sheets, Towels	Dried Fruits & Nuts, Vegetables & Fruit Juices, Leather Without Hairs, Mineral Water, Silk and Rayon Fabrics, Other Fabrics, Cotton Fabrics, Blankets, Ready Made Garments, Fruit Juices, Synthetic Carpets, Sugar Refined, Dairy Products N.E.C, Wheat Flour, Processed Liquid Milk, Hosiery Products, Sugar Confectionary, Other Food Products, Quilts, Other Leather N.E.C, Beverages, Chocolate, Spices, Milk and Cream in Solid Form	Coffee and Tea, Ice Cream, Woven Fabrics, Footwear, Meat of Animals	Other Cereal Flour, Woolen Carpets, Tobacco Products, Oil Cakes, Cotton Yarn
Other Transportable Goods except Metal Products, Machinery and Equipments	Kerosene Oil, Furnace Oil, Diesel Oil, Motor Sprit, Fertilizers, Chemicals, Auto Tyres, Insecticides, Mobil Oil, Plastic Products, Coke, Dying Materials, Matches	Ceramics and Sanitary, Bricks Blocks and Tiles, Soaps & Detergent, Cement, Pesticides, Bed Foams, Paints & Varnishes, Glass Sheets, Printing Paper	Timber, Hard Board	Other Glass Articles, Medicines
Metal Product Machinery & Equipment	Steel Bars & Sheets, Tractors, Vacuum Pumps, Motor Cycles, Cultivators, Pig Iron, Concrete Mixer, Lathe Machines, Chuff Cutter	Electrical Wires, Lighting Equipments, Refrige,Wash& Sew Mach,Iron,Fan, Steel Products, Motor Vehicles, Bicycles, Air Conditioners, Engines and Motors, Pipe Fittings	Radio and Television	

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

Items and specification	Weights	Index		
		Jul-15	Jun-16	Jul-16
General	100.00	201.76	207.30	210.08
Food & Non-Alcoholic Beverages.	34.83	219.76	222.39	228.36
1 Wheat	0.35	195.34	190.65	190.81
2 Wheat Flour	4.16	209.15	207.51	208.98
3 Wheat Product	0.10	212.14	213.52	214.98
4 Besan	0.15	226.93	304.78	322.68
5 Rice	1.58	174.19	156.23	158.13
6 Cereals	0.16	242.61	248.23	249.62
7 Bakery & Confectionary	1.16	208.80	213.83	215.31
8 Nimco	0.46	240.02	248.02	248.79
9 Meat	2.43	250.33	261.83	262.75
10 Chicken	1.36	227.83	193.47	184.75
11 Fish	0.30	211.33	218.30	218.77
12 Milk Fresh	6.68	254.76	263.49	265.50
13 Milk Product	0.63	247.17	254.37	256.27
14 Milk Powder	0.11	226.78	236.54	236.84
15 Egg	0.46	174.43	163.75	178.31
16 Mustard Oil	0.10	152.44	153.99	153.99
17 Cooking Oil	1.75	142.10	133.28	133.61
18 Vegetable Ghee	2.07	140.77	137.43	136.94
19 Dry Fruits	0.25	252.84	263.76	263.57
20 Fresh Fruits	1.86	263.31	266.67	259.98
21 Pulse Masoor	0.27	195.25	213.02	213.56
22 Pulse Moong	0.23	306.14	299.89	297.08
23 Pulse Mash (Washed)	0.21	253.39	376.13	372.81
24 Pulse Gram	0.24	230.62	318.34	336.26
25 Gram Whole	0.16	199.27	273.48	298.45
26 Beans	0.03	232.93	234.45	236.29
27 Potatoes	0.47	176.23	198.22	232.81
28 Onion	0.53	255.12	192.54	195.56
29 Tomatoes	0.44	148.28	122.20	234.89
30 Fresh Vegetable	1.68	215.04	228.83	294.26
31 Sugar	1.04	232.55	229.80	238.08
32 Gur	0.02	279.18	274.05	280.90
33 Honey	0.04	304.35	307.78	310.80
34 Sweet Meet	0.25	235.91	241.30	242.45
35 Beverages	1.20	215.67	220.83	221.71
36 Jam, Tomato Ketchup & Pickle	0.25	209.37	215.33	215.61
37 Condiments	0.27	258.03	262.42	263.23
38 Spices	0.54	237.36	241.18	241.62
39 Tea	0.84	235.06	255.87	255.25
Alcoholic Beverages, Tobacco	1.41	309.83	360.75	364.79
40 Cigarette	1.39	311.47	362.72	366.77
41 Betel Leaves & Nuts	0.02	210.25	241.34	244.15
Clothing & Footwear	7.57	219.65	229.34	229.72
42 Cotton Cloth	1.73	213.49	224.62	224.88
43 Woolen Cloth	0.88	234.73	244.55	244.64
44 Ready Made Garment	0.97	225.49	236.72	237.04
45 Woolen Readymade Garments	0.40	240.86	252.98	253.14
46 Hosiery	0.51	232.85	241.98	242.55
47 Dopatta	0.44	232.89	240.75	240.75
48 Cleaning & Laundering	0.21	238.32	253.34	253.34

Table A10: Consumer Price Index Numbers by Major Groups and Composite Commodities				
Items and specification	Weights	Index		
		Jul-15	Jun-16	Jul-16
49 Tailoring	0.88	278.39	296.54	298.33
50 Footwear	1.55	164.77	166.36	166.44
Housing,Water,Elect,Gas & Other Fuel	29.41	179.77	187.17	188.88
51 House Rent	21.81	168.87	176.44	178.64
52 Construction Input Item	0.56	239.75	244.53	247.05
53 Construction Wage Rate	0.33	215.28	228.82	230.10
54 Water Supply	0.50	149.92	161.60	163.32
55 Electricity	4.40	234.69	238.10	238.10
56 Gas	1.58	143.81	158.08	158.08
57 Kerosene Oil	0.01	223.65	193.53	194.70
58 Fire Wood Whole	0.23	275.52	284.87	284.20
Furnished H.Hold Equip.& Maint. Etc	4.21	213.53	221.48	221.70
59 Furniture	0.33	205.94	211.58	211.78
60 Household Textile	0.65	209.69	221.22	221.08
61 Household Equipment	0.59	175.41	178.21	178.43
62 Utensils	0.32	216.41	222.56	222.57
63 Plastic Products	0.25	203.33	207.23	207.38
64 Washing Soap & Detergent	0.79	223.42	226.76	227.15
65 Sewing Needle & Dry Cell	0.15	198.97	208.80	208.27
66 Household Servant	1.04	234.86	248.71	249.34
67 Marriage Hall Charges	0.08	232.28	244.63	243.04
Health	2.19	178.91	187.68	187.84
68 Drug Medicine	1.27	148.93	153.48	153.75
69 Medical Equipment	0.01	226.26	233.55	234.15
70 Doctor (MBBS) Clinic Fee	0.59	242.85	260.45	260.45
71 Medical Test	0.32	178.44	187.65	187.65
Transport	7.20	178.62	169.34	169.78
72 Motor Vehicle	0.66	163.28	165.17	167.27
73 Motor Vehicle Accessories	0.24	226.83	213.88	213.84
74 Motor Fuel	3.03	154.54	135.58	135.77
75 Mechanical Service	0.46	216.37	224.68	227.35
76 Motor Vehicle Tax	0.11	210.18	210.18	210.18
77 Transport Services	2.70	197.35	193.15	193.15
Communication	3.22	130.35	130.85	130.89
78 Postal Services	0.07	229.42	239.48	240.38
79 Communication & Apparatus	3.15	128.27	128.57	128.59
Recreation & Culture	2.02	193.01	195.70	195.67
80 Recreation & Culture	0.86	128.25	128.89	128.84
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	202.14	211.89	211.89
Education	3.94	209.17	224.60	224.09
84 Education	3.94	209.17	224.60	224.09
Restaurants And Hotels	1.23	249.70	263.41	264.37
85 Ready Made Food	1.23	249.70	263.41	264.37
Miscellaneous Goods And Services	2.76	223.13	233.42	235.82
86 Personal Care	1.49	207.30	215.09	215.67
87 Cosmetics	0.39	191.12	199.77	200.22
88 Blades	0.03	187.44	195.16	195.16
89 Personal Equipments	0.84	267.12	282.68	289.27

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

Items and Specifications	Index		
	Jul-15	Jun-16	Jul-16
General	209.53	210.88	215.81
Agriculture Forestry & Fishery	224.93	239.12	253.54
1 Wheat	199.02	202.00	204.39
2 Maize	194.73	204.06	204.55
3 Rice	161.31	146.08	148.12
4 Sorghum/Jowar	336.99	283.56	277.01
5 Millet/Bajra	203.58	198.98	218.25
6 Vegetables	246.36	246.21	361.19
7 Fresh Fruits	313.83	305.11	307.84
8 Dry Fruits	241.48	247.44	247.50
9 Cotton Seeds	236.29	263.29	273.95
10 Other Oil Seeds	160.55	170.50	171.21
11 Edible Roots/ Potatoes	152.85	177.50	226.53
12 Stimulant And Spice Crops	348.00	218.56	209.95
13 Pulses	235.73	293.16	313.08
14 Sugar Crops	286.29	286.34	286.34
15 Fibre Crops	159.33	180.30	203.00
16 Unmanufactured Tobacco	221.18	243.77	251.05
17 Poultry	237.79	203.67	188.40
18 Milk From Bovine Animals	252.90	258.97	261.80
19 Eggs	184.87	165.23	185.05
20 Raw Animal Material/Wool	174.22	174.27	173.89
21 Hides And Fur Skins, Raw	155.92	150.46	150.46
22 Fuel Wood In Logs	259.53	264.77	264.77
23 Fishes Live Fresh Or Chilled	308.06	445.91	469.80
Ores/Minerals, Gas & Elect.	244.93	244.28	241.43
24 Coal Not Agglomerated	223.53	160.78	152.94
25 Natural Gas Liquefied	200.06	208.42	208.30
26 Salt & Pure Sodium Chloride	252.31	252.31	254.33
27 Electrical Energy	294.68	293.09	288.00
Food, Beverages, Tobacco, Textiles	210.44	218.71	223.61
28 Meat Of Animals	262.35	274.34	276.90
29 Vegetables & Fruit Juices	200.07	208.33	208.88
30 Dried Fruits & Nuts	228.54	238.46	239.77
31 Fruit Juices	177.53	181.90	182.12
32 Vegetable Oil Refined	153.56	151.97	152.00
33 Vegetable Ghee	122.09	121.87	120.58
34 Oil Cakes	194.96	232.54	235.62
35 Processed Liquid Milk	248.71	250.18	251.20
36 Milk And Cream In Solid Form	220.46	219.30	220.87
37 Ice Cream	219.91	233.72	238.04
38 Dairy Products N.E.C	243.80	248.26	248.53
39 Wheat Flour	190.27	192.23	193.90
40 Other Cereal Flour	210.16	284.71	309.70
41 Sugar Refined	249.40	245.61	254.89
42 Chocolate	99.19	101.06	99.45
43 Sugar Confectionary	118.04	118.83	118.83
44 Coffee And Tea	210.96	230.07	230.02
45 Spices	189.84	190.22	190.20
46 Other Food Products	292.02	292.52	293.85
47 Mineral Water	188.22	195.81	196.22
48 Beverages	171.95	172.44	172.44
49 Tobacco Products	356.45	435.03	435.03
50 Cotton Yarn	171.27	175.50	197.57
51 Nylon Yarn	150.22	147.08	147.08
52 Blended Yarn	188.86	176.75	177.11
53 Woven Fabrics	258.39	279.69	279.69
54 Cotton Fabrics	201.65	209.07	208.84
55 Other Fabrics	214.27	222.56	222.36

Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities				
		Index		
Items and Specifications		Jul-15	Jun-16	Jul-16
56	Silk And Rayon Fabrics	183.23	191.10	190.96
57	Towels	267.20	267.20	267.20
58	Blankets	235.86	243.93	243.93
59	Bed Sheets	256.29	256.29	256.29
60	Quilts	196.84	195.68	198.00
61	Woolen Carpets	132.14	181.55	181.55
62	Synthetic Carpets	126.27	129.25	129.25
63	Hosiery Products	220.66	222.52	222.52
64	Ready Made Garments	193.27	199.39	199.61
65	Leather With Out Hairs	212.68	221.97	221.97
66	Other Leather N.E.C	206.27	207.31	207.31
67	Footwear's	134.22	142.43	143.05
Other Transportable Goods		185.86	164.46	164.40
68	Timber	204.34	220.36	220.36
69	Printing Paper	164.56	166.34	165.84
70	Hard Board	197.92	212.50	212.50
71	Coke	163.45	163.45	163.45
72	Motor Sprit	131.39	108.54	108.54
73	Diesel Oil	187.52	136.30	144.34
74	Kerosene Oil	178.93	115.11	115.11
75	Furnace Oil	107.57	76.28	80.24
76	Mobil Oil	201.05	196.00	196.00
77	Chemicals	192.95	178.23	178.21
78	Dying Materials	146.55	146.55	146.55
79	Fertilizers	272.80	250.41	227.23
80	Pesticides	306.30	312.37	312.37
81	Insecticides	140.84	135.64	137.30
82	Paints & Varnishes	291.69	295.36	295.36
83	Medicines	145.20	162.48	162.62
84	Soaps & Detergent	180.02	184.58	185.10
85	Auto Tyres	191.78	181.25	181.25
86	Plastic Products	228.67	228.35	228.35
87	Glass Sheets	231.30	231.30	233.11
88	Other Glass Articles	243.63	281.73	299.07
89	Ceramics And Sanitary	221.02	231.59	231.59
90	Bricks Blocks And Tiles	209.47	218.86	218.73
91	Cement	207.29	208.51	211.95
92	Bed Foams	156.67	167.67	158.83
93	Matches	162.62	162.62	162.62
Metal Product Machinery & Equip		172.56	172.48	172.94
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	138.82	125.30	124.34
96	Pipe Fittings	193.53	193.63	193.63
97	Steel Products	173.54	176.99	176.99
98	Engines And Motors	109.07	109.24	109.24
99	Vacuum Pumps	115.39	114.95	114.95
100	Air Conditioners	199.53	201.18	201.18
101	Cultivators	219.76	219.76	219.76
102	Chuff Cutter	149.20	149.20	149.20
103	Tractors	214.54	205.43	203.68
104	Lathe Machines	208.81	208.81	208.81
105	Concrete Mixer	138.83	138.83	138.83
106	Refrige,Wash& Sew Mach, Iron,Fan	198.62	201.88	204.01
107	Electrical Wires	187.86	195.19	195.19
108	Lighting Equipments	167.30	170.34	172.03
109	Radio And Television	126.49	133.46	135.55
110	Motor Vehicles	183.03	185.25	185.25
111	Motor Cycles	125.89	125.89	125.89
112	Bicycles	185.63	187.65	187.65

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

Period		CPI			WPI			SPI *
		Overall	Food	Non-food	Overall	Food	Non-Food	
2008-09		117.03	123.12	113.38	118.93	119.68	118.45	123.26
2009-10		128.85	139.05	122.73	135.40	136.85	134.48	139.84
2010-11		146.45	164.10	135.87	164.17	159.26	167.28	164.02
2011-12		162.57	182.20	150.80	181.28	181.32	181.26	178.67
2012-13		174.53	195.18	162.16	194.61	197.21	192.95	189.64
2013-14		189.58	212.74	175.69	210.48	213.04	208.85	208.66
2014-15		198.16	220.20	184.95	209.85	226.22	199.47	212.61
2015-16		203.83	224.78	191.27	207.64	234.69	190.48	216.24
2014	Feb	189.00	208.74	177.17	210.94	208.67	212.38	208.54
	Mar	190.82	213.11	177.46	211.66	212.89	210.88	212.08
	Apr	194.06	217.33	180.11	211.88	216.70	208.82	211.78
	May	193.55	214.75	180.84	211.71	215.95	209.02	209.80
	Jun	194.74	216.98	181.41	214.60	221.06	210.50	212.40
	Jul	198.05	222.80	183.21	215.76	225.52	209.57	216.14
	Aug	198.70	224.05	183.50	214.73	227.26	206.78	217.08
	Sep	199.40	224.12	184.58	215.06	228.41	206.59	217.06
	Oct	199.81	223.74	185.47	214.39	229.02	205.11	216.67
	Nov	198.79	222.74	184.44	212.26	227.29	202.73	214.45
Dec	196.79	218.08	184.03	208.25	223.48	198.59	211.76	
2015	Jan	196.95	217.10	184.87	206.11	223.48	195.09	209.89
	Feb	195.13	213.15	184.33	203.86	222.26	192.19	206.98
	Mar	195.57	214.25	184.37	203.89	222.11	192.33	207.05
	Apr	198.16	217.26	186.71	205.65	225.38	193.13	208.42
	May	199.66	221.22	186.74	207.92	228.09	195.12	211.48
	Jun	200.89	223.84	187.13	210.37	232.39	196.40	214.29
	Jul	201.76	224.14	188.35	209.53	233.68	194.20	215.13
	Aug	202.25	224.86	188.70	208.42	236.00	190.92	214.33
	Sep	202.04	223.87	188.95	207.60	234.37	190.61	215.23
	Oct	203.03	224.86	189.95	208.69	234.47	192.34	217.02
	Nov	204.22	227.55	190.23	208.72	232.83	193.43	219.37
	Dec	203.06	223.90	190.57	207.37	230.72	192.55	218.60
2016	Jan	203.49	222.58	192.05	206.27	231.14	190.49	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	189.43	216.58
	Jul	210.08	234.69	195.33	215.81	251.76	193.00	218.81

*: all groups combined

Table A13: International Commodity Prices/ Indices				
	Apr-16	May-16	Jun-16	Jul-16
Energy				
Crude Oil (US\$ per barrel) *	40.7	46.0	47.7	44.2
IMF Energy Index (2005 = 100)	76.3	84.7	88.1	83.7
WB Energy Index (2010 = 100) @	51.1	56.6	59.4	56.6
Food				
Rice (\$/MT)	376.0	408.8	420.7	456.2
Wheat (\$/MT)	163.4	157.5	156.6	133.6
Sugar (US cent/ pound)	15.2	16.7	19.4	19.7
Palm Oil (\$/MT)	680.4	644.6	618.5	584.2
Soybean Oil (\$/MT)	748.5	707.0	703.6	669.9
Non-Food Non-Energy				
Cotton Outlook 'A' Index #	69.3	70.3	74.1	81.1
IMF Metal Price Index (2005 = 100)	117.8	113.9	113.6	120.0
Copper (\$/MT)	4,872.7	4,694.5	4,642.0	4,864.9
Aluminum (\$/MT)	1,571.2	1,550.6	1,593.5	1,629.0
Iron Ore (\$ cents/dry MT)	59.6	54.9	51.4	56.6
Tin (\$/MT)	17,032.7	16,707.0	16,966.7	17,826.2
Nickle (\$/MT)	8,878.9	8,660.4	8,928.4	10,262.9
Zinc (\$/MT)	1,855.4	1,869.0	2,026.2	2,183.3
Lead (\$/MT)	1,732.3	1,707.8	1,712.8	1,834.8
Uranium (\$/MT)	27.6	27.8	27.2	25.9
DAP (\$/MT)	358.0	349.0	346.0	341.0
Urea (\$/MT)	204.0	200.0	191.0	177.0
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	
Sep	172.44	185.18	199.40	202.04	
Oct	173.10	188.82	199.81	203.03	
Nov	172.42	191.21	198.79	204.22	
Dec	172.82	188.68	196.79	203.06	
Jan	175.70	189.60	196.95	203.49	
Feb	175.11	189.00	195.13	202.98	
Mar	175.82	190.82	195.57	203.28	
Apr	177.74	194.06	198.16	206.43	
May	178.65	193.55	199.66	205.99	
Jun	179.94	194.74	200.89	207.30	
Seasonally Adjusted Series					
Jul	168.83	182.67	196.98	200.63	208.85
Aug	169.68	184.14	197.05	200.61	
Sep	171.16	183.81	197.92	200.56	
Oct	171.44	187.02	197.91	201.12	
Nov	171.30	189.90	197.46	202.87	
Dec	173.71	189.63	197.73	203.95	
Jan	176.15	190.12	197.49	204.07	
Feb	177.00	191.08	197.30	205.24	
Mar	177.49	192.72	197.58	205.44	
Apr	177.84	194.17	198.28	206.57	
May	179.40	194.36	200.48	206.82	
Jun	180.76	195.61	201.74	208.15	

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	
Sep	193.80	209.09	224.12	223.87	
Oct	193.66	212.61	223.74	224.86	
Nov	193.03	218.16	222.74	227.55	
Dec	192.97	210.89	218.08	223.90	
Jan	196.58	210.81	217.10	222.58	
Feb	194.05	208.74	213.15	221.07	
Mar	195.06	213.11	214.25	222.25	
Apr	197.74	217.33	217.26	227.53	
May	200.00	214.75	221.22	225.84	
Jun	202.11	216.98	223.84	228.95	
Seasonally Adjusted Series					
Jul	189.23	206.30	220.57	221.75	232.08
Aug	189.32	208.69	220.28	221.07	
Sep	190.75	205.82	220.60	220.39	
Oct	190.37	209.12	220.13	221.31	
Nov	190.02	214.67	219.20	224.02	
Dec	194.42	212.39	219.50	225.17	
Jan	197.86	212.28	218.67	224.27	
Feb	198.50	213.62	218.22	226.32	
Mar	198.26	216.73	218.04	226.29	
Apr	198.53	218.22	218.21	228.55	
May	201.84	216.76	223.26	227.94	
Jun	203.98	218.89	225.66	230.71	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY13	FY14	FY15	FY16	FY17	Average
Jul	100.44	100.50	100.54	100.56	100.59	100.53
Aug	100.83	100.85	100.84	100.82		100.84
Sep	100.75	100.74	100.75	100.74		100.74
Oct	100.97	100.96	100.96	100.95		100.96
Nov	100.66	100.69	100.68	100.66		100.67
Dec	99.49	99.50	99.53	99.56		99.52
Jan	99.74	99.73	99.73	99.72		99.73
Feb	98.93	98.91	98.90	98.90		98.91
Mar	99.06	99.01	98.98	98.95		99.00
Apr	99.94	99.94	99.94	99.93		99.94
May	99.58	99.58	99.59	99.60		99.59
Jun	99.55	99.56	99.58	99.59		99.57

Table 17: CPI Food Monthly & Average Seasonal Factors

Period	FY13	FY14	FY15	FY16	FY17	Average
Jul	100.79	100.92	101.01	101.08	101.12	100.98
Aug	101.67	101.71	101.71	101.71		101.70
Sep	101.60	101.59	101.59	101.58		101.59
Oct	101.73	101.67	101.64	101.60		101.66
Nov	101.58	101.63	101.61	101.57		101.60
Dec	99.25	99.29	99.35	99.44		99.33
Jan	99.35	99.31	99.28	99.25		99.30
Feb	97.76	97.72	97.68	97.68		97.71
Mar	98.39	98.33	98.26	98.22		98.30
Apr	99.61	99.59	99.57	99.56		99.58
May	99.09	99.07	99.09	99.08		99.08
Jun	99.09	99.13	99.19	99.24		99.16

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	
Sep	0.79	-0.29	0.35	-0.10	
Oct	0.38	1.97	0.21	0.49	
Nov	-0.39	1.27	-0.51	0.59	
Dec	0.23	-1.32	-1.01	-0.57	
Jan	1.67	0.49	0.08	0.21	
Feb	-0.34	-0.32	-0.92	-0.25	
Mar	0.41	0.96	0.23	0.15	
Apr	1.09	1.70	1.32	1.55	
May	0.51	-0.26	0.76	-0.21	
Jun	0.72	0.61	0.62	0.64	
Seasonally Adjusted Series					
Jul	-1.13	1.06	0.70	-0.55	0.34
Aug	0.51	0.80	0.03	-0.01	
Sep	0.87	-0.18	0.44	-0.02	
Oct	0.16	1.74	-0.01	0.28	
Nov	-0.08	1.54	-0.23	0.87	
Dec	1.41	-0.14	0.14	0.53	
Jan	1.40	0.26	-0.12	0.06	
Feb	0.48	0.50	-0.10	0.58	
Mar	0.28	0.86	0.14	0.10	
Apr	0.20	0.75	0.36	0.55	
May	0.88	0.10	1.11	0.13	
Jun	0.76	0.64	0.63	0.64	

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	
Sep	0.69	-1.50	0.03	-0.44	
Oct	-0.07	1.68	-0.17	0.44	
Nov	-0.33	2.61	-0.45	1.20	
Dec	-0.03	-3.33	-2.09	-1.61	
Jan	1.87	-0.04	-0.45	-0.59	
Feb	-1.29	-0.98	-1.82	-0.68	
Mar	0.52	2.10	0.52	0.54	
Apr	1.37	1.98	1.41	2.38	
May	1.15	-1.19	1.82	-0.74	
Jun	1.05	1.04	1.18	1.38	
Seasonally Adjusted Series					
Jul	0.06	1.14	0.76	-1.73	0.60
Aug	0.05	1.16	-0.13	-0.31	
Sep	0.75	-1.38	0.15	-0.31	
Oct	-0.20	1.60	-0.22	0.42	
Nov	-0.18	2.65	-0.42	1.23	
Dec	2.32	-1.06	0.14	0.51	
Jan	1.77	-0.05	-0.38	-0.40	
Feb	0.32	0.63	-0.21	0.91	
Mar	-0.12	1.46	-0.08	-0.01	
Apr	0.14	0.69	0.08	1.00	
May	1.67	-0.67	2.31	-0.27	
Jun	1.06	0.98	1.08	1.21	

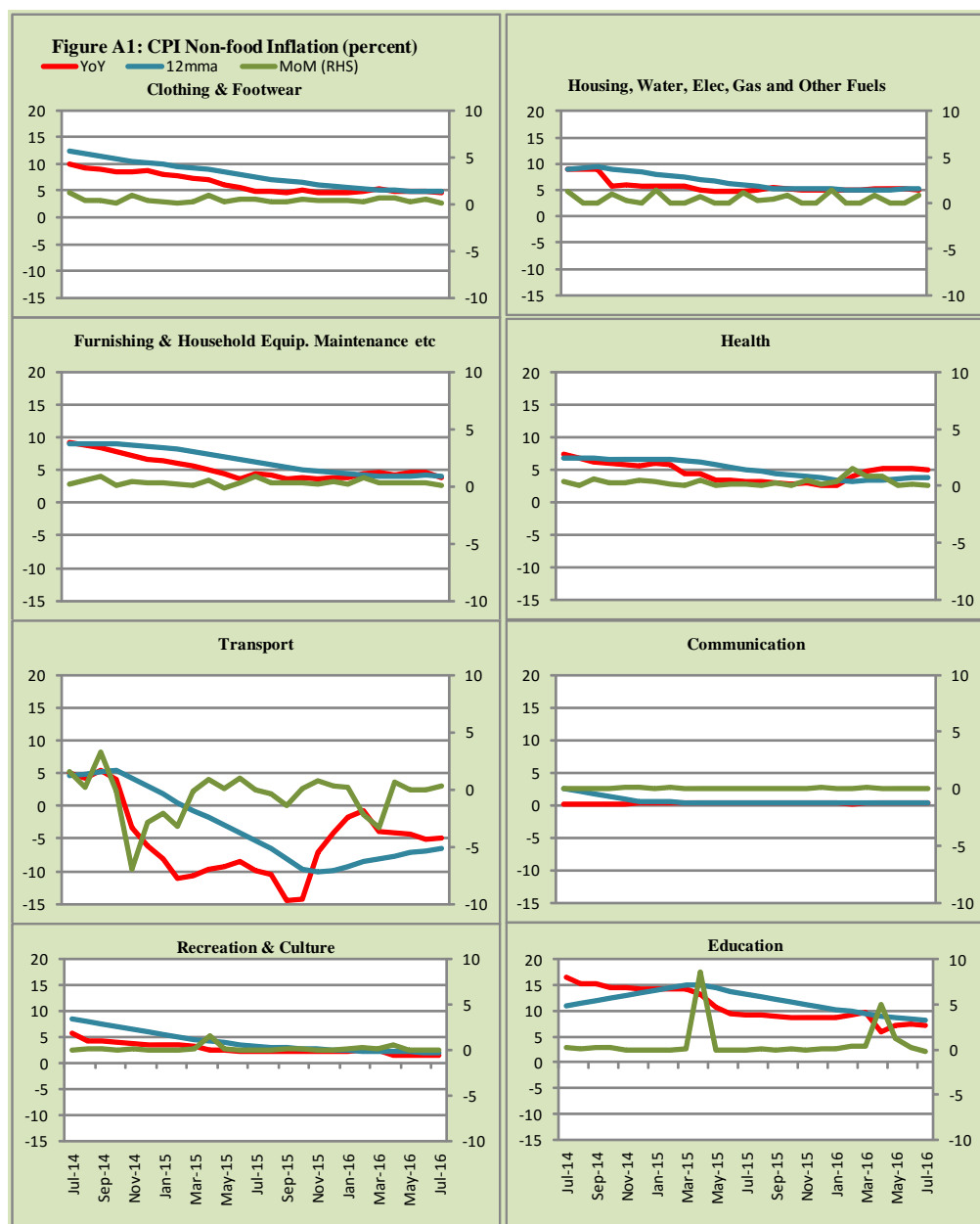


Figure A2: Frequency Distribution of Price Changes of CPI Items, July 2016

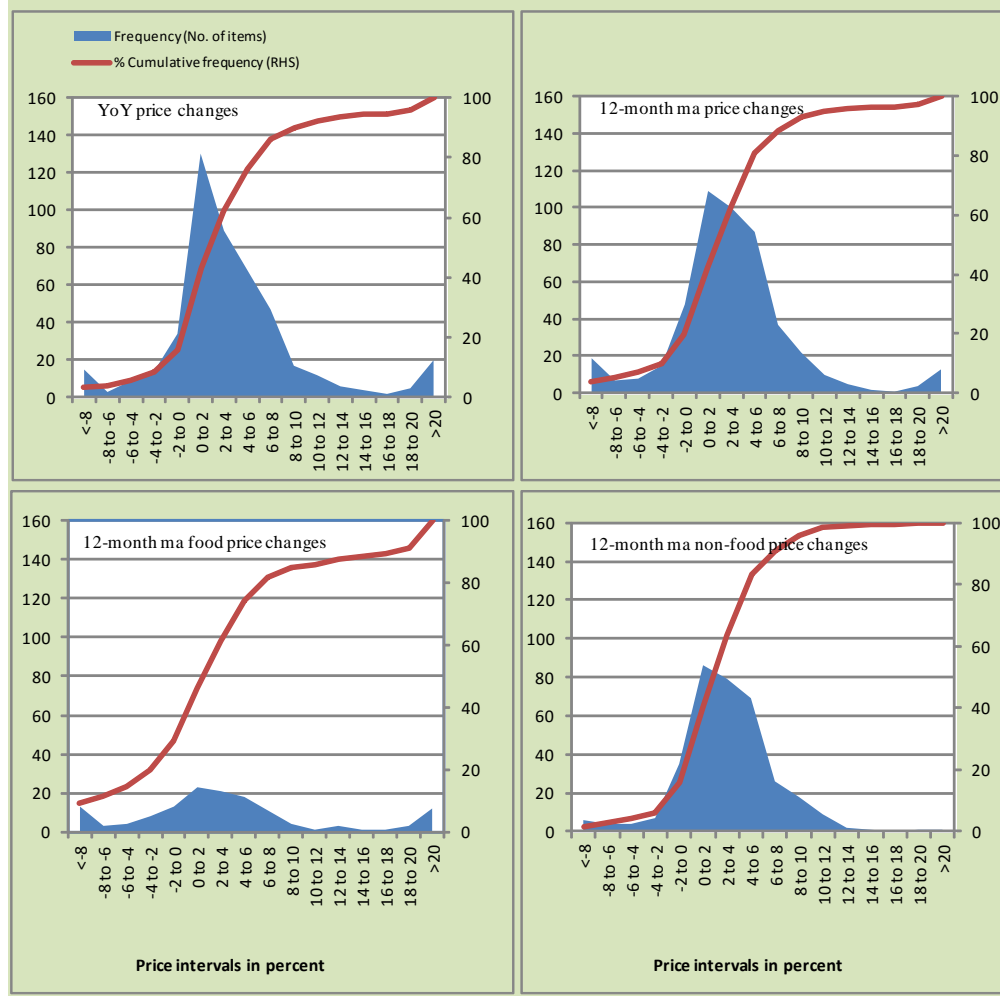


Figure A3: Frequency Distribution of Price Changes of WPI Commodities, July 2016

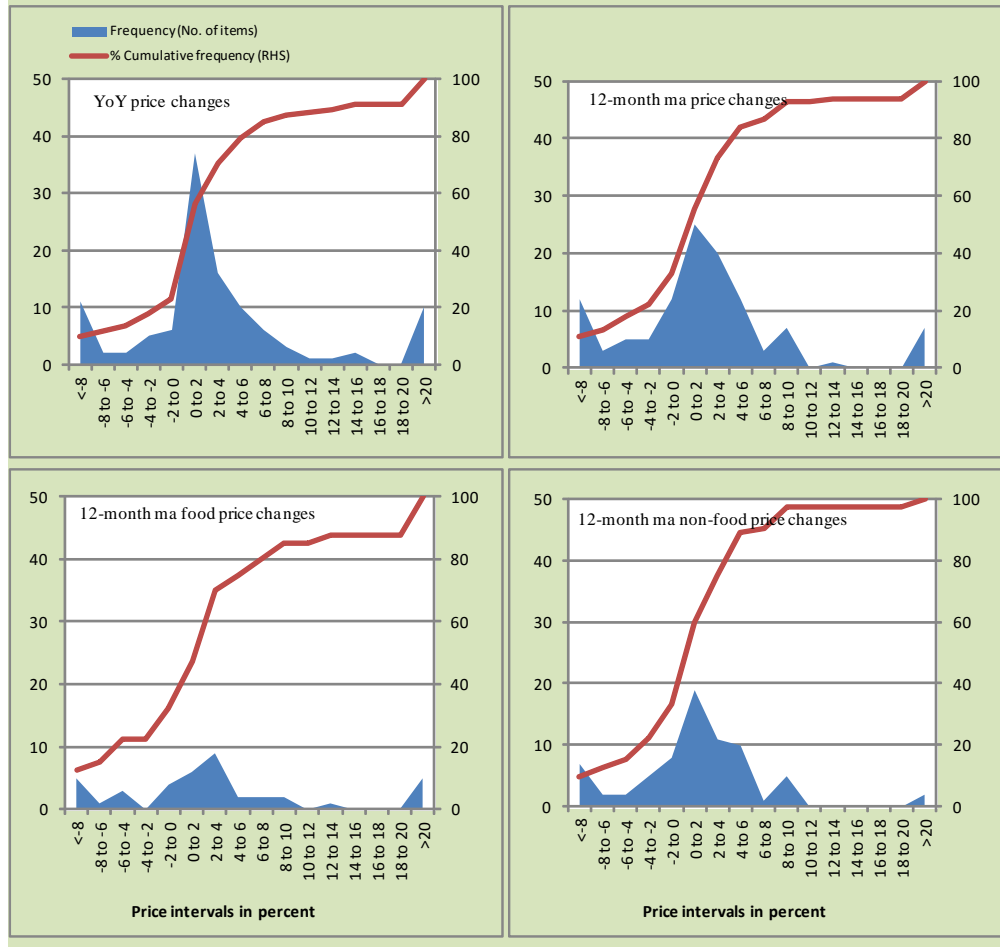
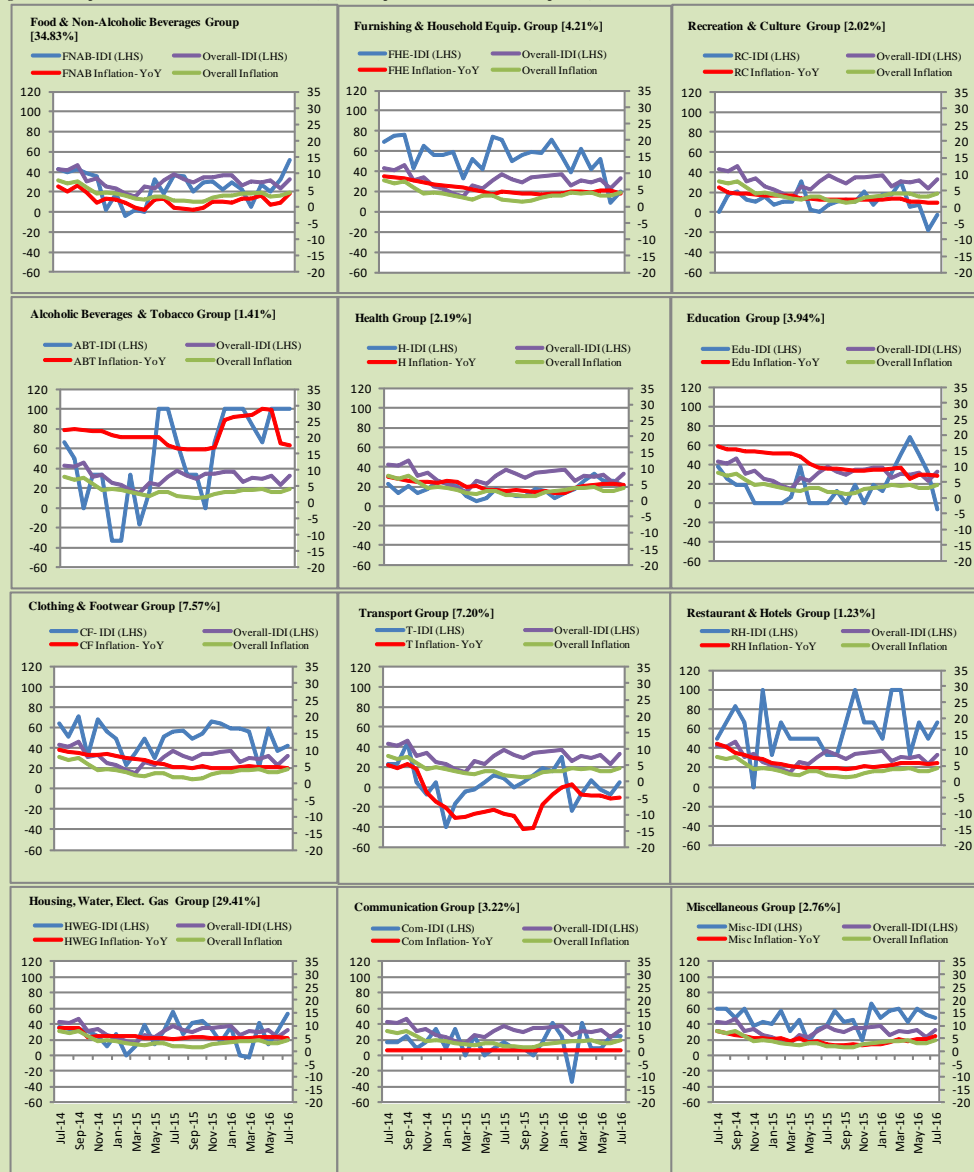


Figure A4: Group-wise/ Overall Inflation Diffusion Index (IDI) and respective/ overall YoY Inflation (percent)



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.