

Inflation Monitor

February 2019



State Bank of Pakistan

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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

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Review

Inflation in Brief

1. Headline CPI inflation (2007-08=100) is recorded at level of 8.2 percent on year-on-year basis in February 2019 as compared to 7.2 percent in the previous month and 3.8 percent during corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at level of 0.6 percent in February 2019 as compared to 1.0 percent in the previous month and -0.3 percent during corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 1.06 percent in February 2019 compared to 1.08 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis is recorded at 7.7 percent in February 2019, and was at level in the previous month and 4.3 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is recorded at 0.2 percent in February 2019, as compared to 1.0 percent in the previous month and 0.1 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 8.7 percent in February 2019, as was at level in the previous month and 5.2 percent during corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.2 percent in February 2019 as compared to 1.1 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 recorded at 11.0 percent in February 2019 as compared to 9.9 percent in the previous month and 4.1 percent during the corresponding month of last year.

8. WPI inflation on month-on-month basis recorded at 0.9 percent in February 2019 as compared to -0.2 percent in the previous month. It was -0.1 percent in the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 10.0 percent in February 2019 as compared to 6.7 percent in the previous month. It was 1.3 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at 2.2 percent in February 2019 as compared to 0.4 percent in the previous month. It was -0.9 percent in 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 February 2019 are described below:

11. Core RSC inflation on year-on-year basis is recorded at 9.4 percent in February 2019 and was at level in the previous month and 4.1 percent during the corresponding month of last year.
12. Core RSC inflation on month-on-month basis is recorded at 0.2 percent in February 2019 compared to 1.0 percent in the previous month and 0.2 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		
Feb-18	3.8	-0.3	2.2	-1.1	4.9	0.2	5.2	0.2	4.3	0.1	4.1	0.2	4.1	-0.1	1.3	-0.9
Mar-18	3.2	0.3	0.1	-0.3	5.4	0.7	5.8	0.7	4.1	0.2	4.4	0.6	3.6	0.2	-0.9	-0.2
Apr-18	3.7	1.8	-0.2	1.5	6.4	2.1	6.9	2.4	5.0	1.7	5.3	2.0	4.0	1.3	0.5	0.7
May-18	4.2	0.5	1.0	1.0	6.4	0.2	6.9	0.2	5.1	0.3	5.3	0.3	5.6	1.3	1.8	0.6
Jun-18	5.2	0.6	3.0	0.8	6.7	0.4	7.1	0.3	5.4	0.2	6.0	0.3	7.6	1.5	3.3	1.6
Jul-18	5.8	0.9	3.5	0.6	7.4	1.2	7.6	1.1	5.9	0.9	6.6	1.0	10.5	2.4	4.5	0.5
Aug-18	5.8	0.2	3.3	0.2	7.6	0.2	7.6	0.2	5.9	0.2	6.7	0.3	11.0	0.8	4.0	-0.2
Sep-18	5.1	-0.1	1.3	-0.7	7.7	0.3	8.0	0.4	5.8	0.1	7.0	0.3	9.2	-1.5	2.2	-0.2
Oct-18	6.8	2.3	2.7	1.9	9.6	2.6	8.2	1.1	6.7	0.8	8.7	2.4	13.1	4.2	4.5	3.0
Nov-18	6.5	0.1	1.8	-0.5	9.8	0.5	8.2	0.4	6.7	0.3	8.9	0.4	13.5	0.7	5.3	1.3
Dec-18	6.2	-0.4	0.9	-1.4	9.8	0.2	8.3	0.3	6.9	0.3	9.0	0.2	12.1	-0.9	5.5	-0.1
Jan-19	7.2	1.0	2.4	0.3	10.4	1.4	8.7	1.1	7.7	1.0	9.4	1.0	9.9	-0.2	6.7	0.4
Feb-19	8.2	0.6	5.0	1.4	10.3	0.1	8.7	0.2	7.7	0.2	9.4	0.2	11.0	0.9	10.0	2.2

* NFNE is Non-food non-energy ** Relatively Stable Component of CPI *** SPI for all income groups combined

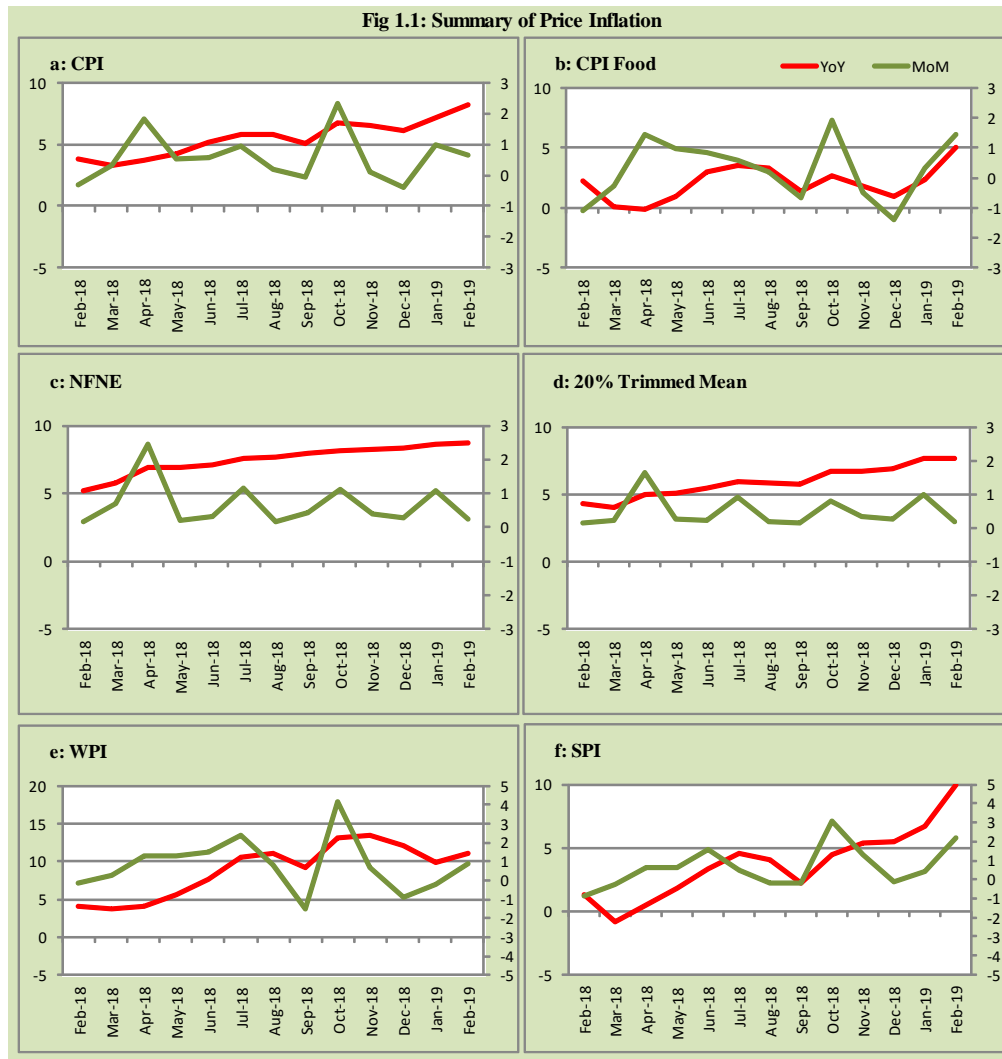


Fig 1.2: Movements in Price Indices (percent)

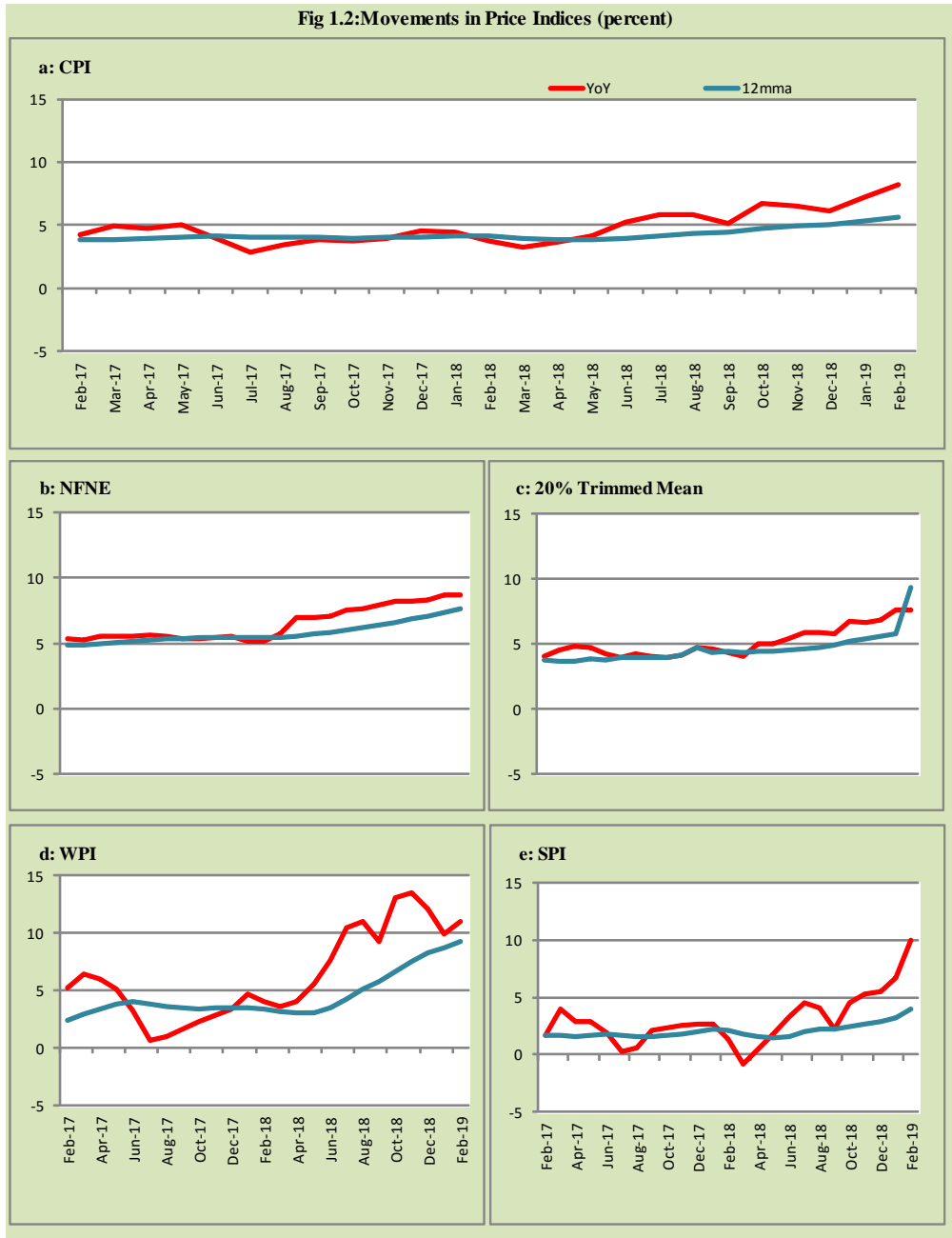
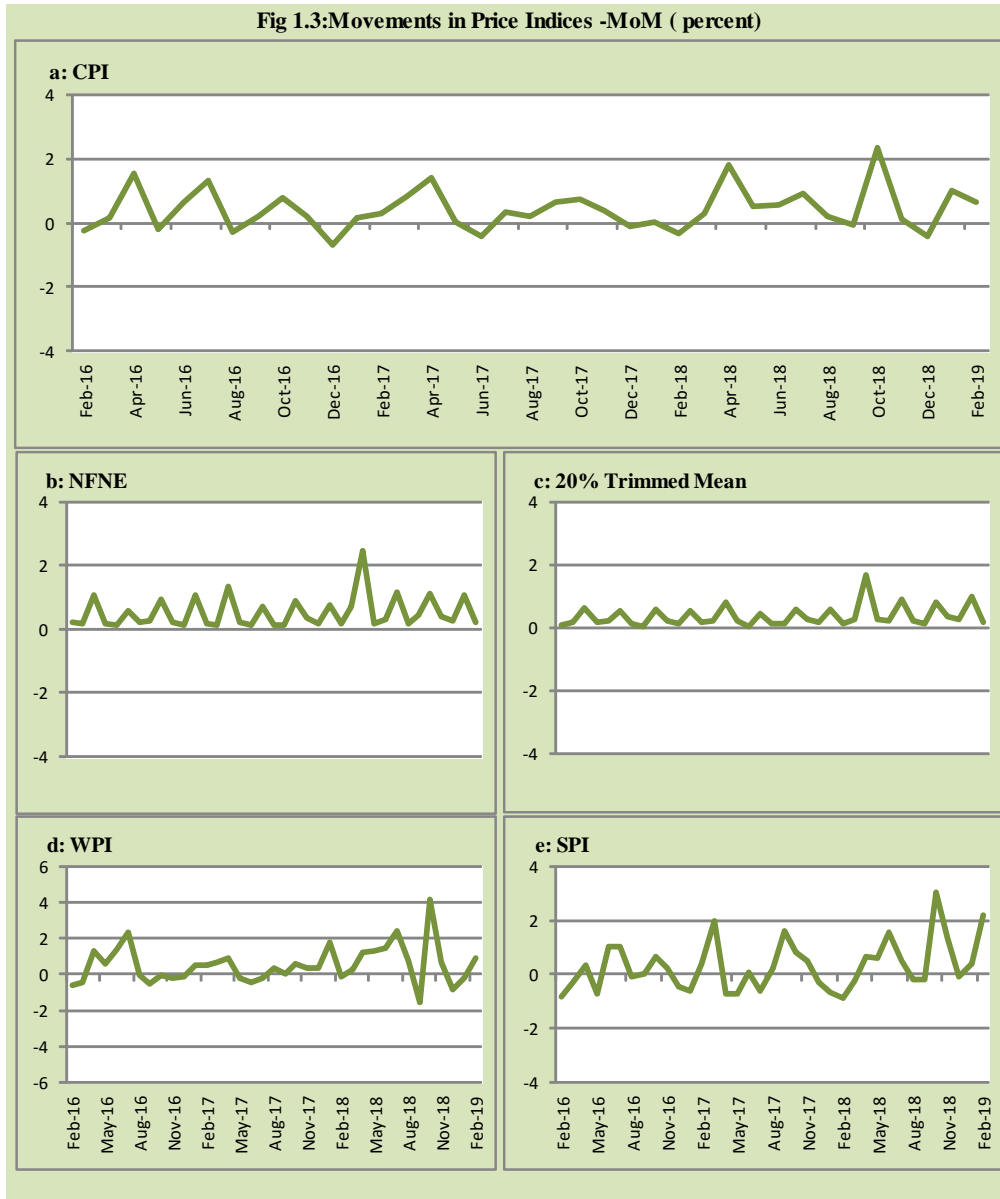
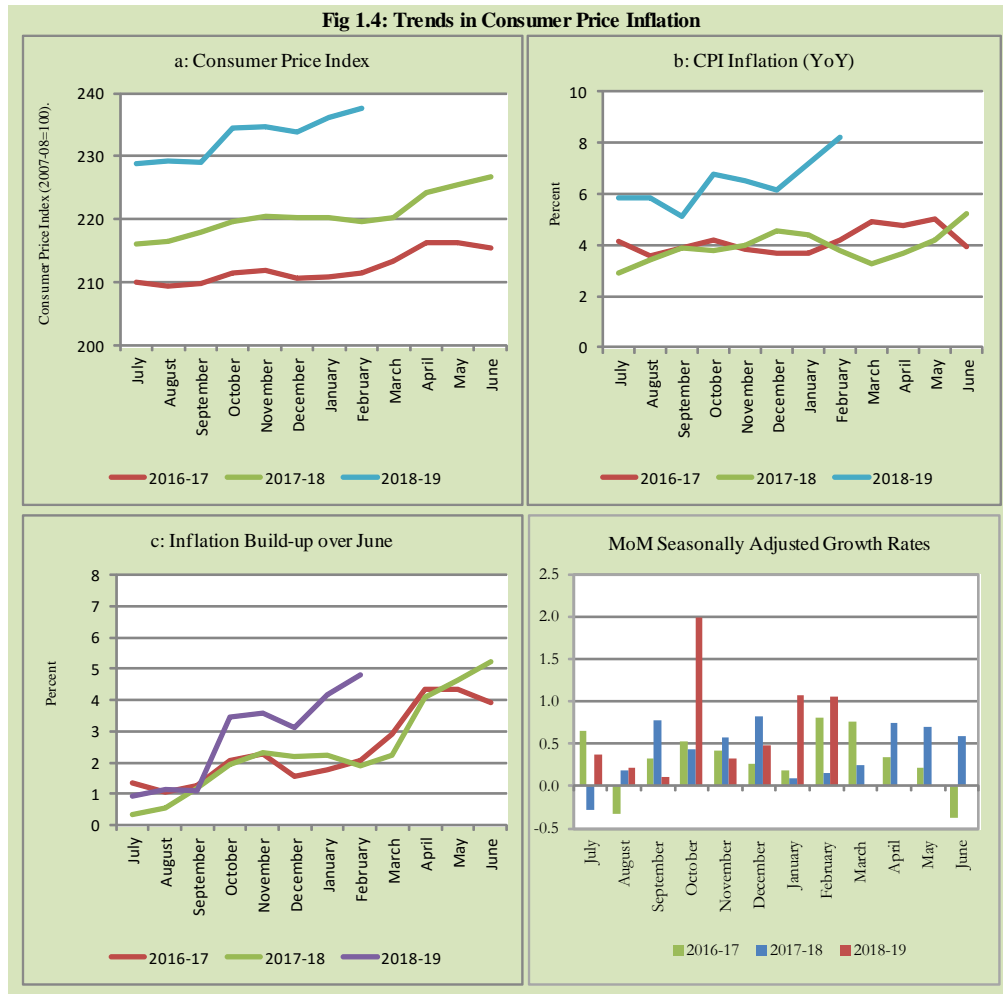


Fig 1.3: Movements in Price Indices -MoM (percent)





2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan showed mixed trend during February 2019. Among these five cities, the lowest inflation was observed in Lahore at 5.0 percent while the highest inflation was observed in Quetta at 11.2 percent (Table A6 of annexure-A).

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

	Feb-18		Jan-19		Feb-19	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	-0.3	3.8	1.0	7.2	0.6	8.2
Islamabad	-0.1	4.4	0.8	5.7	0.8	6.6
Karachi	0.1	2.9	0.6	7.2	0.3	7.4
Lahore	-0.4	4.4	-0.2	4.2	0.4	5.0
Peshawar	-0.3	3.2	1.0	8.9	1.0	10.2
Quetta	-1.2	5.0	1.7	9.2	0.6	11.2

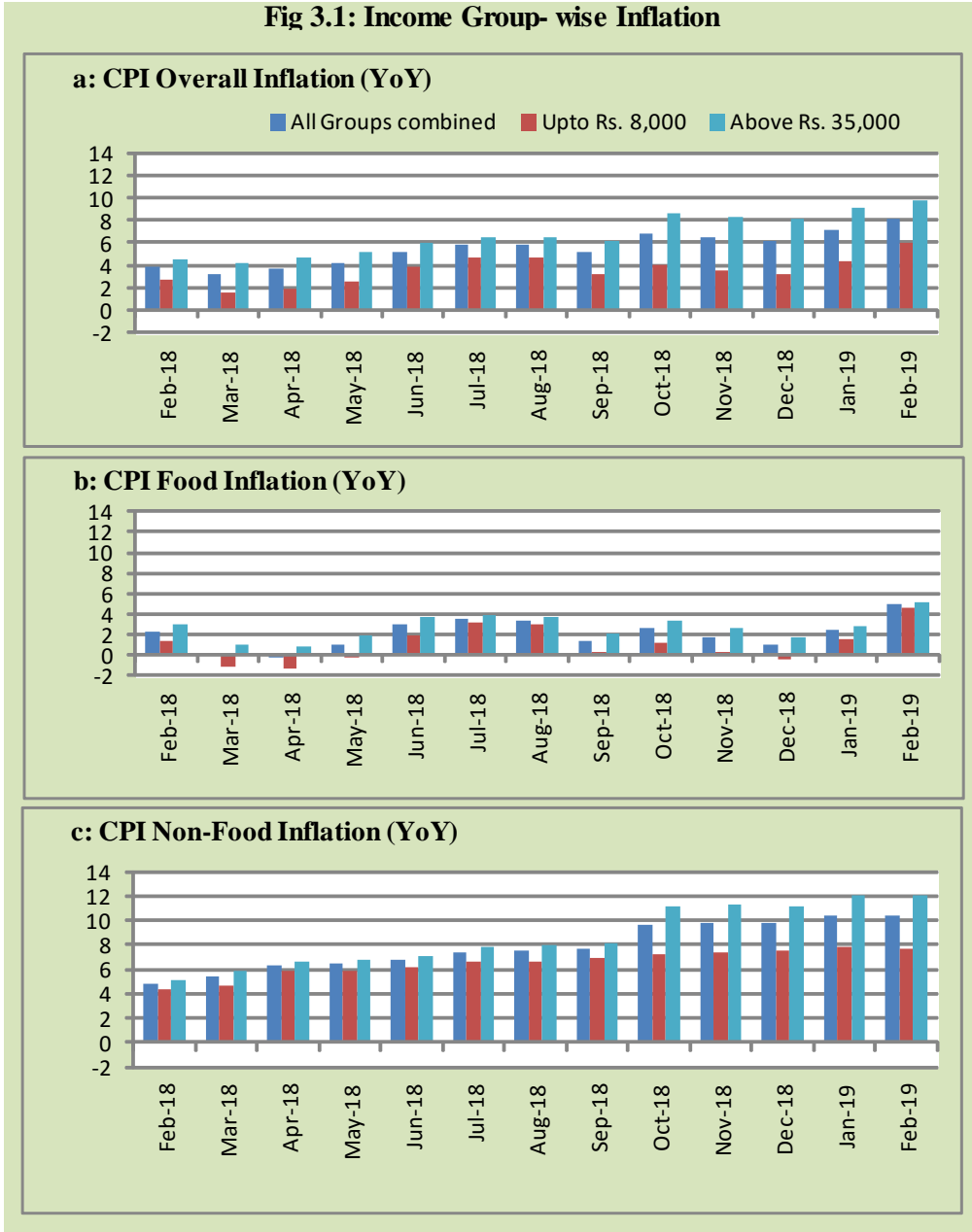
3. Income Group wise Inflation

Income group-wise data shows that income group above Rs. 35,000 witnessed higher inflation as compared to other quintiles as well as overall CPI during February 2019 in General, Food and Non-food groups. The income groups (Up to Rs. 8, 000) observed lowest inflation in general CPI, food groups; and non-food groups among income groups during the month of February 2019 (Table A7 of annexure-A).

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

Income Groups	General			Food			Non-food		
	Feb-18	Jan-19	Feb-19	Feb-18	Jan-19	Feb-19	Feb-18	Jan-19	Feb-19
All Groups Combined	3.8	7.2	8.2	2.2	2.4	5.0	4.9	10.4	10.3
Up to Rs. 8,000	2.7	4.4	6.0	1.3	1.5	4.6	4.3	7.8	7.7
Rs. 8,001- 12,000	2.9	4.9	6.3	1.6	1.8	4.7	4.3	8.0	7.9
Rs. 12,001- 18,000	3.1	5.2	6.5	1.7	2.1	4.9	4.4	8.0	7.9
Rs. 18,001- 35,000	3.4	7.1	8.3	1.8	2.3	5.0	4.6	11.0	10.8
Above Rs. 35,000	4.5	9.1	9.8	3.1	2.8	5.2	5.2	12.1	12.0

Fig 3.1: Income Group- wise Inflation



4. Weighted Contribution

The weighted contribution of food group in the overall inflation increased to 24.38 percent during February 2019 from 13.26 percent in previous month. It was 23.85 percent during corresponding month of last year.

The weighted contribution of non-food group decreased to 75.62 percent in February 2019 from 86.74 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
Feb-18	23.85	10.07	29.89	8.71	13.92	13.56
Mar-18	1.07	12.39	35.10	11.73	23.44	16.27
Apr-18	-2.00	15.67	39.70	10.10	16.06	20.47
May-18	9.73	13.25	35.28	10.11	14.19	17.43
Jun-18	23.35	10.45	28.60	12.04	11.46	14.10
Jul-18	24.57	9.29	27.60	15.72	10.12	12.70
Aug-18	23.30	9.26	27.58	17.14	10.05	12.67
Sep-18	10.81	10.75	31.29	19.01	13.36	14.80
Oct-18	16.06	8.22	35.92	15.95	7.92	15.94
Nov-18	11.22	9.54	37.56	17.74	7.23	16.70
Dec-18	6.27	10.43	39.55	17.35	7.89	18.50
Jan-19	13.26	8.36	43.58	12.43	6.55	15.81
Feb-19	24.38	7.05	38.18	9.82	5.86	14.72

5. Inflation Diffusion Index

Table 5.1 Inflation Diffusion Index - based on MoM change

	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19
General	32.5	40.2	63.8	40.6	31.5	47.8	47.7	45.9	62.4	52.7	53.1	51.3	43.6
Food & Non-Alcoholic Beverages	19.3	20.4	50.0	46.3	30.1	60.9	46.5	32.2	54.3	35.0	49.6	62.3	51.8
Alcoholic Beverages & Tobacco	33.3	66.7	100.0	-16.7	33.3	-16.7	0.0	33.3	100.0	66.7	0.0	66.7	66.7
Clothing & Footwear	44.1	47.5	84.7	32.2	50.8	35.6	45.8	67.8	61.0	79.7	81.4	61.0	42.4
Housing, Water, Elect, Gas & other Fuels	30.6	41.7	52.8	27.8	36.1	47.2	44.4	16.7	75.0	38.9	16.7	41.7	13.9
Furnishing & Household Equip. Maintenance etc	62.3	69.6	100.0	69.6	37.7	63.8	79.7	76.8	91.3	91.3	84.1	79.7	84.1
Health	33.3	30.8	48.7	33.3	25.6	41.0	51.3	48.7	69.2	53.8	53.8	48.7	42.1
Transport	23.3	27.9	25.6	34.9	30.2	55.8	39.5	25.6	41.9	39.5	48.8	20.9	9.3
Communication	41.7	25.0	33.3	0.0	0.0	8.3	16.7	8.3	41.7	41.7	0.0	8.3	8.3
Recreation & Culture	23.1	30.8	64.1	15.4	5.1	28.2	23.1	20.5	35.9	28.2	12.8	17.9	12.8
Education	0.0	25.0	37.5	18.8	6.3	0.0	0.0	68.8	31.3	0.0	25.0	-25.0	0.0
Restaurant & Hotels	33.3	50.0	100.0	66.7	50.0	33.3	100.0	50.0	66.7	66.7	100.0	66.7	66.7
Miscellaneous	31.4	74.3	85.7	65.7	42.9	62.9	60.0	77.1	82.9	71.4	74.3	74.3	71.4
NFNE	36.7	46.2	69.2	39.3	31.4	45.0	48.8	52.7	66.9	58.9	56.5	47.6	42.1

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	Feb-18		Jan-19		Feb-19	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-1.05	-0.17	1.58	0.69	3.21	1.43
2	Wheat Flour Bag	10 Kg	-0.86	0.17	3.27	0.15	3.44	0.33
3	Rice Basmati Sup. Qty.	Kg	15.52	1.06	8.42	0.03	7.16	-0.11
4	Pulse Masoor (Washed)	Kg.	-16.36	-1.31	1.02	0.68	2.97	0.60
5	Pulse Moong (Washed)	Kg.	-13.87	0.41	8.31	2.73	7.89	0.02
6	Pulse Mash (Washed)	Kg.	-23.47	-3.30	-3.57	1.34	-0.46	-0.19
7	Pulse Gram	Kg.	-17.22	-0.65	6.15	2.22	6.92	0.06
8	Vegetable Ghee (Loose)	Kg.	0.98	0.02	7.93	0.44	8.30	0.36
9	Sugar Refined	Kg.	-17.80	-3.44	10.02	6.15	13.86	-0.07
10	Milk Fresh (Unboiled)	Ltr	4.11	0.16	4.13	0.81	4.04	0.07
11	Tapal Danedar Tea 200 Gm	Pkt	10.24	1.73	12.08	0.29	10.23	0.06
12	Beef With Bone Av.Qlty.	Kg	7.01	0.43	14.26	1.19	14.42	0.57
13	Mutton Av.Qlty.	Kg	11.09	0.37	12.40	1.20	12.79	0.72
14	Chicken Farm Broiler (Live)	Kg	20.15	-5.02	-18.85	-18.06	-11.00	4.17
15	Eggs Farm	Doz	-6.99	-10.01	0.57	-1.27	7.21	-4.08
16	Potatoes	Kg	7.49	-18.76	-27.44	-15.01	-18.71	-8.98
17	Onion	Kg	45.59	-25.29	-51.42	-5.50	-32.76	3.42
18	Tomatoes	Kg	-3.77	-20.52	-11.19	27.55	179.40	150.04
19	Ginger	Kg	18.71	-2.55	14.07	-0.02	16.21	-0.72
20	Garlic	Kg	-43.95	-0.09	-2.91	22.83	-5.71	-2.97

7. Global Commodity Prices

Table 7.1 Changes in Major Global Indices (percent)

Item/ Group	Feb-18		Jan-19		Feb-19	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	-0.2	2.5	-4.0	1.0	-5.9	0.6
Metals	18.4	-0.1	-16.2	-1.8	-12.6	4.2
Energy	16.0	-5.3	-13.2	1.6	-3.9	4.9
Agricultural	-1.6	1.9	-3.9	1.2	-5.4	0.3
Cotton	3.7	-3.1	-9.6	-4.2	-8.1	-1.5

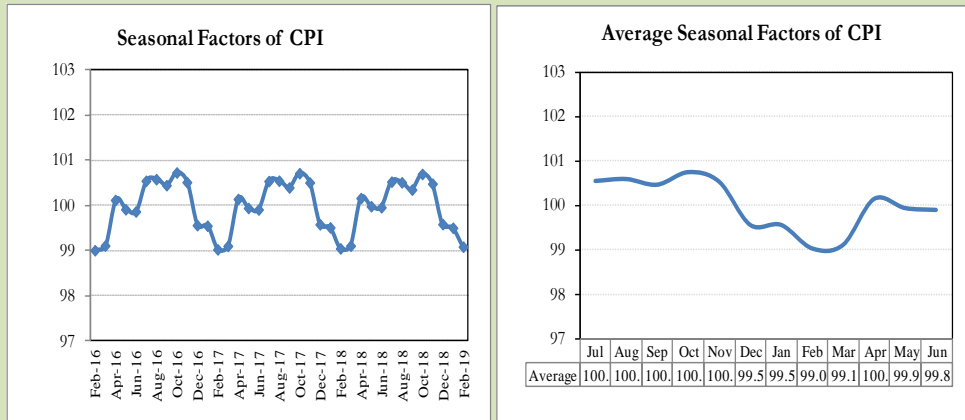
8. Seasonal Adjustment in CPI

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 February 2019 has been used for seasonal adjustment analysis. The seasonal analysis is carried out without taking trading-day or Islamic calendar month's effects.

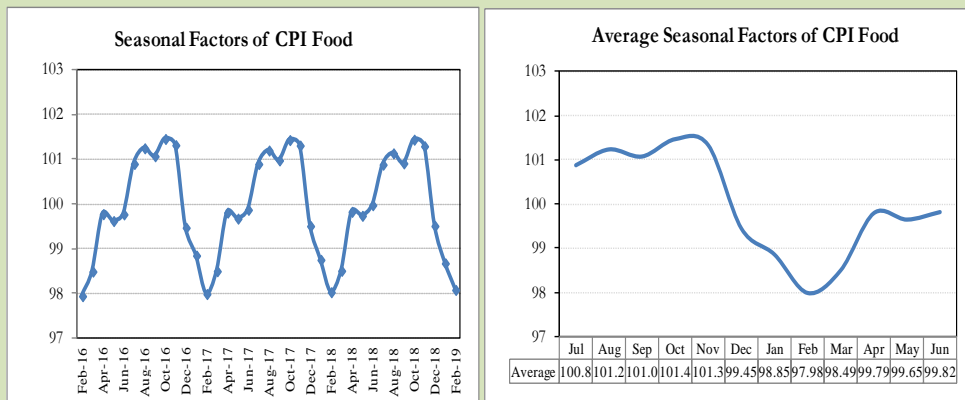
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to December and downward seasonality in the remaining months of the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



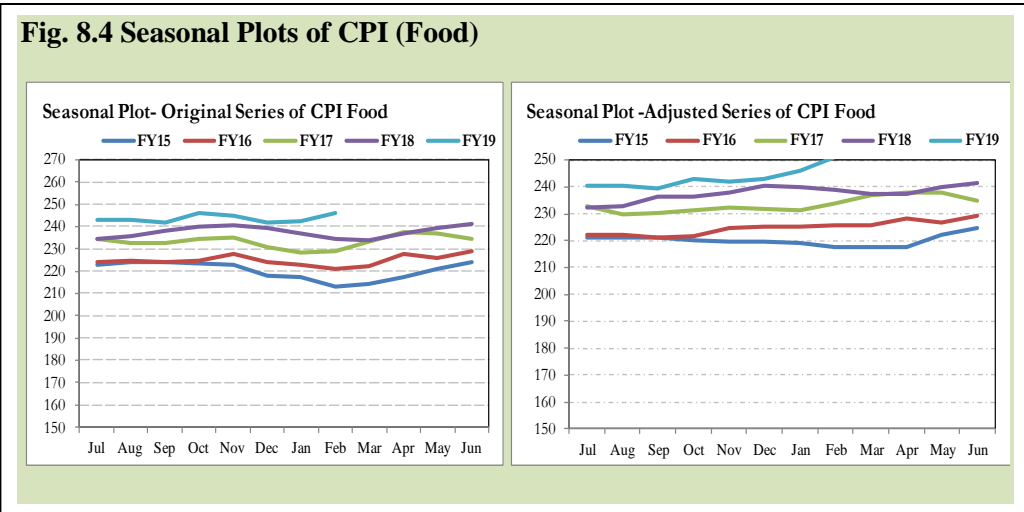
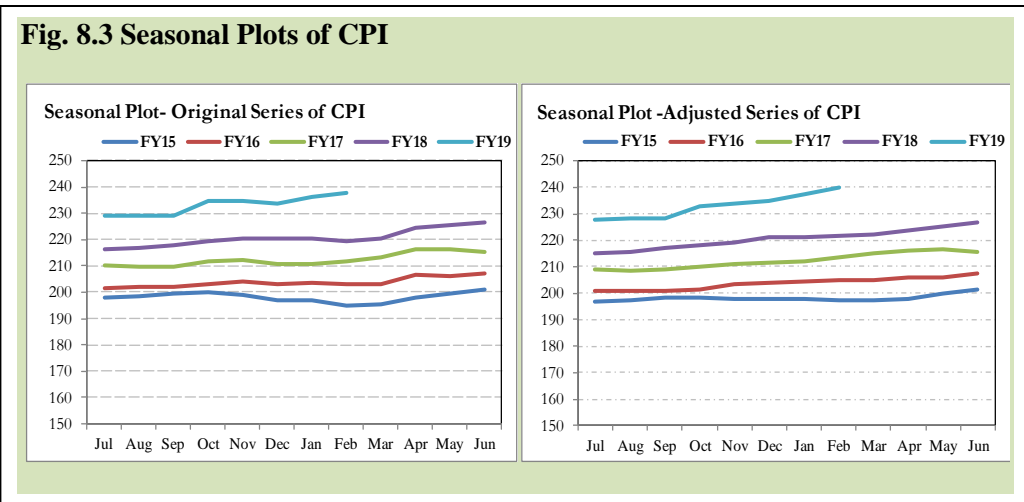
Note: Data Available in Annex Table 16.

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.



Seasonally adjusted CPI for February 2019 stood at 239.80 against 237.61 in original series showing an increase of 2.19 on account of adjustment of downward seasonality in February 2019.

Seasonally adjusted CPI food group for February 2019 stood at 250.85 against 246.03 in original series showing an increase of 4.82 on account of adjustment of downward seasonality in February 2019.

Month-on-month change of seasonally adjusted CPI series stood at 1.06% reflecting an increase during February 2019 over previous month and an increase of 0.64% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at 2.06% reflecting an increase during February 2019 over previous month and an increase of 1.44% 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 February 2019 (corresponding to the seasonally adjusted month-on-month rate) is 13.50 percent.

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

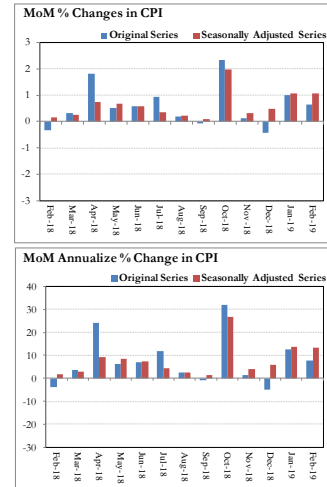
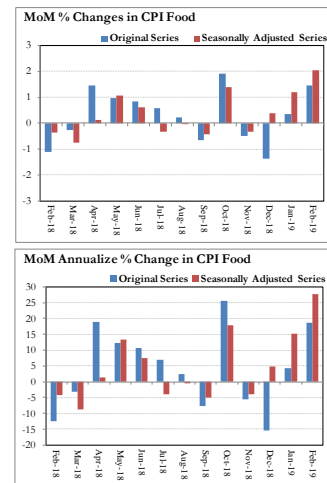


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



Annexure A

	Weight	MoM change			YoY change		
		Feb-18	Jan-19	Feb-19	Feb-18	Jan-19	Feb-19
I. Food Group	37.5	-1.1	0.3	1.4	2.2	2.4	5.0
Food & Non-Alcoholic Beverages	34.8	-1.3	0.3	1.6	3.4	1.6	4.5
Alcoholic Beverages & Tobacco	1.4	1.4	1.1	0.5	-17.4	14.2	13.2
Restaurant & Hotels	1.2	0.1	0.5	0.2	6.5	5.6	5.7
II. Non-Food Group	62.5	0.2	1.4	0.1	4.9	10.4	10.3
Clothing & Housing, Water, Elect, Gas & Furnishing & Household Equip. Health	7.6	0.4	0.3	0.1	4.6	7.2	6.9
Housing, Water, Elect, Gas & Furnishing & Household Equip. Health	29.4	0.0	3.1	0.0	4.2	11.6	11.5
Furnishing & Household Equip. Health	4.2	0.2	0.7	1.2	4.1	8.2	9.2
Health	2.2	1.1	0.4	0.5	5.0	8.4	7.8
Transport	7.2	1.0	-1.1	-0.4	5.6	15.0	13.3
Communication	3.2	0.1	0.0	0.0	1.3	7.8	7.8
Recreation & Education	2.0	0.1	0.4	0.2	0.9	8.5	8.6
Education	3.9	0.0	-0.3	0.2	12.1	10.0	10.2
Miscellaneous	2.8	-0.2	1.0	0.6	5.9	9.0	9.9
Headline	100.0	-0.3	1.0	0.6	3.8	7.2	8.2

Groups	% changes	Total number of items	No. of items in each inflation range								
			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)		
			Feb-18	Feb-19	Feb-18	Feb-19	Feb-18	Feb-19	Feb-18	Feb-19	
I. Food Group	5.0	126	126	30	24	46	38	24	31	26	33
Food & Non-Alcoholic Beverages	4.5	114	114	27	23	43	35	22	29	22	27
Alcoholic Beverages & Tobacco	13.2	6	6	3	1	1	0	0	0	2	5
Restaurant & Hotels	5.7	6	6	0	0	2	3	2	2	2	1
II. Non-Food Group	10.3	348	347	75	24	163	74	84	131	26	118
Clothing & Footwear	6.9	59	59	9	3	27	14	21	34	2	8
Housing, Water, Elect, Gas & other Fuels	11.5	36	36	14	1	4	5	15	15	3	15
Furnishing & Household Equip. Maintenance etc	9.2	69	69	2	0	46	8	19	30	2	31
Health	7.8	39	38	7	4	24	16	6	8	2	10
Transport	13.3	43	43	23	7	13	5	3	11	4	20
Communication	7.8	12	12	4	1	4	7	2	1	2	3
Recreation & Culture	8.6	39	39	14	4	21	14	2	8	2	13
Education	10.2	16	16	0	3	3	2	5	5	8	6
Miscellaneous	9.9	35	35	2	1	21	3	11	19	1	12
Overall	8.2	474	473	105	48	209	112	108	162	52	151

Note: Prices of 14 seasonal items were not reported during the month.

Table A3: Top and Bottom 15 Contributors to CPI Inflation (YoY) in February, 2019					
Top 15 Contributors		Weights	YoY Change		Weighted Contribution
Items/ Contributors	Feb-18		Feb-19		
Ranked by Weighted Contribution					
1	House Rent	21.81	5.43	8.20	19.43
2	Gas	1.58	0.00	85.31	11.79
3	Education	3.94	12.13	10.21	5.86
4	Meat	2.43	8.42	13.84	5.43
5	Tomatoes	0.42	-3.77	179.40	5.06
6	Electricity	4.40	0.00	8.48	4.92
7	Transport Services	2.70	1.30	14.77	4.34
8	Milk Fresh	6.68	4.16	4.04	4.19
9	Motor Fuel	3.03	12.22	13.79	3.79
10	Cigarettes	1.39	-19.82	14.61	3.45
11	Personal Equipments	0.84	8.23	12.70	1.89
12	Communication & Apparatus	3.15	1.19	7.82	1.79
13	Cotton Cloth	1.73	4.46	7.18	1.63
14	Sugar	1.04	-17.80	13.86	1.50
15	Tea	0.84	6.47	11.05	1.48
Total		55.99			76.53
Bottom 15 Contributors					
1	Onion	0.51	45.59	-32.76	-2.34
2	Fresh Fruits	1.86	10.77	-6.52	-1.68
3	Chicken	1.36	20.15	-11.00	-1.65
4	Fresh Vegetables	1.75	-1.31	-4.54	-0.97
5	Potatoes	0.45	7.49	-18.71	-0.81
6	Betel Leaves & Nuts	0.02	210.13	-21.37	-0.20
7	Gram Whole	0.16	-2.54	-6.83	-0.18
8	Pulse Mash (Washed)	0.21	-23.46	-0.46	-0.01
9	Motor Vehicle Tax	0.11	0.00	0.00	0.00
10	Medical Equipments	0.01	2.42	5.83	0.01
11	Kerosene Oil	0.01	24.06	11.33	0.01
12	Wheat Product	0.10	-0.97	1.96	0.02
13	Mustard Oil	0.10	3.02	2.73	0.02
14	Besan	0.15	-12.43	1.16	0.03
15	Blades	0.03	2.39	7.93	0.03
Total		6.82			-7.72

Table A3.1: Top and Bottom 15 Contributors to CPI Inflation (MoM) in February, 2019					
Top 15 Contributors					
Items/ Contributors	Weights	MoM Change		Weighted Contribution	
		Jan-19	Feb-19		
Ranked by Weighted Contribution					
1	Tomatoes	0.42	27.56	150.03	56.84
2	Chicken	1.36	-18.06	4.17	6.44
3	Fresh Fruits	1.86	3.50	2.02	5.74
4	Household Servent	1.04	0.86	2.47	4.81
5	Fresh Vegetables	1.75	1.62	1.82	4.37
6	Meat	2.43	1.20	0.62	3.31
7	Onion	0.51	-5.50	3.42	1.90
8	Cigarettes	1.39	1.18	0.49	1.59
9	Personal Equipments	0.84	1.36	0.76	1.51
10	Personal Care	1.49	0.71	0.59	1.45
11	Washing Soap & Detergent	0.79	0.53	1.03	1.39
12	Milk Fresh	6.68	0.80	0.10	1.29
13	Education	3.94	-0.30	0.16	1.18
14	Spices	0.54	0.82	1.16	1.16
15	Utensils	0.32	1.09	1.69	0.97
Total		25.38			93.98
Bottom 15 Contributors					
1	Motor Fuel	3.03	-3.06	-1.59	-6.07
2	Potatoes	0.45	-15.01	-8.98	-4.17
3	Eggs	0.46	-1.27	-4.08	-2.96
4	Rice	1.58	0.10	-0.08	-0.17
5	Besan	0.15	2.11	-0.53	-0.15
6	Sugar	1.04	6.15	-0.07	-0.10
7	Betel Leaves & Nuts	0.02	-1.81	-0.72	-0.07
8	Pulse Mash (Washed)	0.21	1.34	-0.19	-0.06
9	Wheat Product	0.10	0.65	-0.12	-0.02
10	Kerosene Oil	0.01	0.09	-0.55	-0.01
11	Motor Vehicle Tax	0.11	0.00	0.00	0.00
12	Water Supply	0.50	0.00	0.00	0.00
13	News Papers	0.19	0.00	0.00	0.00
14	Gas	1.58	0.00	0.00	0.00
15	Postal Services	0.07	0.00	0.00	0.00
Total		9.48			-13.76

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in February, 2019					
Items/ Contributors	Weights	YoY Change		Weighted Contribution	
		Feb-18	Feb-19		
A. Ranked by Percentage Change					
1	Tomatoes	0.42	-3.77	179.40	5.06
2	Gas	1.58	0.00	85.31	11.79
3	News Papers	0.19	3.70	26.30	0.53
4	Spices	0.54	0.40	16.57	1.20
5	Transport Services	2.70	1.30	14.77	4.34
6	Cigarettes	1.39	-19.82	14.61	3.45
7	Honey	0.04	5.84	14.24	0.12
8	Sugar	1.04	-17.80	13.86	1.50
9	Meat	2.43	8.42	13.84	5.43
10	Motor Vehicle	0.66	4.68	13.80	0.91
11	Motor Fuel	3.03	12.22	13.79	3.79
12	Cosmetics	0.39	1.63	13.16	0.58
13	Personal Equipments	0.84	8.23	12.70	1.89
14	Utensils	0.32	6.30	12.55	0.54
15	Water Supply	0.50	5.51	12.16	0.58
Total		16.08			41.70
B. Ranked by Weights					
1	House Rent	21.81	5.43	8.20	19.43
2	Milk Fresh	6.68	4.16	4.04	4.19
3	Electricity	4.40	0.00	8.48	4.92
4	Wheat Flour	4.16	-0.15	1.91	0.94
5	Education	3.94	12.13	10.21	5.86
6	Communication & Apparatus	3.15	1.19	7.82	1.79
7	Motor Fuel	3.03	12.22	13.79	3.79
8	Transport Services	2.70	1.30	14.77	4.34
9	Meat	2.43	8.42	13.84	5.43
10	Vegetable Ghee	2.07	1.43	6.74	1.11
11	Fresh Fruits	1.86	10.77	-6.52	-1.68
12	Fresh Vegetables	1.75	-1.31	-4.54	-0.97
13	Cooking Oil	1.75	1.92	6.95	0.94
14	Cotton Cloth	1.73	4.46	7.18	1.63
15	Rice	1.58	14.01	5.14	0.86
Total		63.07			52.57
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 8.2 percent in February, 2019.					

Table A3.3: Top Ten Contributors to CPI Food Inflation (YoY) in February, 2019					
Items/ Contributors	Weights	YoY Change		Weighted Contribution	
		Feb-18	Feb-19		
A. Ranked by Weighted Contribution					
1	Meat	2.43	8.42	13.84	5.43
2	Tomatoes	0.42	-3.77	179.40	5.06
3	Milk Fresh	6.68	4.16	4.04	4.19
4	Cigarettes	1.39	-19.82	14.61	3.45
5	Sugar	1.04	-17.80	13.86	1.50
6	Tea	0.84	6.47	11.05	1.48
7	Spices	0.54	0.40	16.57	1.20
8	Ready Made Food	1.23	6.52	5.70	1.11
9	Vegetable Ghee	2.07	1.43	6.74	1.11
10	Wheat Flour	4.16	-0.15	1.91	0.94
Total		20.81			25.46
B. Ranked by Percentage Change					
1	Tomatoes	0.42	-3.77	179.40	5.06
2	Spices	0.54	0.40	16.57	1.20
3	Cigarettes	1.39	-19.82	14.61	3.45
4	Honey	0.04	5.84	14.24	0.12
5	Sugar	1.04	-17.80	13.86	1.50
6	Meat	2.43	8.42	13.84	5.43
7	Dry Fruits	0.25	5.14	11.75	0.46
8	Tea	0.84	6.47	11.05	1.48
9	Gur	0.02	-8.24	10.82	0.03
10	Beans	0.03	4.90	9.55	0.03
Total		7.01			18.76
C. Ranked by Weights					
1	Milk Fresh	6.68	4.16	4.04	4.19
2	Wheat Flour	4.16	-0.15	1.91	0.94
3	Meat	2.43	8.42	13.84	5.43
4	Vegetable Ghee	2.07	1.43	6.74	1.11
5	Fresh Fruits	1.86	10.77	-6.52	-1.68
6	Fresh Vegetables	1.75	-1.31	-4.54	-0.97
7	Cooking Oil	1.75	1.92	6.95	0.94
8	Rice	1.58	14.01	5.14	0.86
9	Cigarettes	1.39	-19.82	14.61	3.45
10	Chicken	1.36	20.15	-11.00	-1.65
Total		25.05			12.61
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 5.0 percent in February, 2019.					

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in February, 2019					
Items/ Contributors	Weights	YoY Change		Weighted Contribution	
		Feb-18	Feb-19		
A. Ranked by Weighted Contribution					
1	House Rent	21.81	5.43	8.20	19.43
2	Gas	1.58	0.00	85.31	11.79
3	Education	3.94	12.13	10.21	5.86
4	Electricity	4.40	0.00	8.48	4.92
5	Transport Services	2.70	1.30	14.77	4.34
6	Motor Fuel	3.03	12.22	13.79	3.79
7	Personal Equipments	0.84	8.23	12.70	1.89
8	Communication & Apparatus	3.15	1.19	7.82	1.79
9	Cotton Cloth	1.73	4.46	7.18	1.63
10	Household Servent	1.04	5.15	9.08	1.38
Total		44.23			56.81
B. Ranked by Percentage Change					
1	Gas	1.58	0.00	85.31	11.79
2	News Papers	0.19	3.70	26.30	0.53
3	Transport Services	2.70	1.30	14.77	4.34
4	Motor Vehicle	0.66	4.68	13.80	0.91
5	Motor Fuel	3.03	12.22	13.79	3.79
6	Cosmetics	0.39	1.63	13.16	0.58
7	Personal Equipments	0.84	8.23	12.70	1.89
8	Utensils	0.32	6.30	12.55	0.54
9	Water Supply	0.50	5.51	12.16	0.58
10	Construction Input Items	0.56	4.86	11.88	0.97
Total		10.77			25.92
C. Ranked by Weights					
1	House Rent	21.81	5.43	8.20	19.43
2	Electricity	4.40	0.00	8.48	4.92
3	Education	3.94	12.13	10.21	5.86
4	Communication & Apparatus	3.15	1.19	7.82	1.79
5	Motor Fuel	3.03	12.22	13.79	3.79
6	Transport Services	2.70	1.30	14.77	4.34
7	Cotton Cloth	1.73	4.46	7.18	1.63
8	Gas	1.58	0.00	85.31	11.79
9	Footware	1.55	0.55	7.91	1.14
10	Personal Care	1.49	5.17	6.98	1.35
Total		45.39			56.03
<p>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 10.3 percent in February, 2019.</p>					

Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: February, 2019

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, Potatoes, Turnip, Brinjal, Cabbage, Gram Whole Yellow Av.Qlty, Cauliflower.	Rice Basmati 385/386, Gram Whole Black Av Qlty., Cloves Loose Av.Qlty, Curd, Corriander Seed (Loose).	Cuminseed White National, Beans (Lal Lobia), Tea Loose Kenya Av.Qlty 250 Gm, Rice Irri-6/9 (Sindh/Punj).	Tomatoes, Cardamom Small Av.Qlty, Pistachio Av.Qlty., Chillies Powder Loose, Chillies Powd.National 200 Gm, Milo 200 Gm., Salt Powdered (National/Shan).
Alcoholic Beverages & Tobacco	Betel Nuts.			Cigarettes Capstan 20,S, Betel Leaves, Cigarettes Morven Gold 20,S, Cigarettes K-20,S, Cigarettes Gold Leaf 20,S.
Clothing & Footwear	Gents Shoe, Art 1109 Servis, Gents Sandal Bata, Gents Shoes Paul Bata.	Tailoring Awami-Suit (Male), Washing Charges Paint & Shirt, Tailoring Coat-Pant Suit, Brassier Av.Qlty, Secondhand Winter Jacket.	Pullover Gents Oxford/Bon, Pullover Ladies Oxford/Bon, Secondhand Sweater For Men, Pullover (Gents) Others Av.Qlty, School Uni. Pant,Shirt Boys.	Ladies Sandal Bata, Child Shoe Power Lite Bata, Shoe Polish Charges Avg, Tailoring Shirt, Heavy Wt Suiting Law.Pur Av. Qlty, Ladies Spoung Chappal Bata, Tropical Suiting Law.Pur, Long Cloth 57" Gul Ahmed/Al Karam.
Housing, Water, Elect, Gas & other Fuels	Elect.Charges Upto 50 Units.	Cement Blocks (6"X8"X12"), Sand (Black Pit Sand), Firewood Whole, Elect.Charges 01 - 100 Units, Elect.Charges 101 - 300 Units.	Carpenter Wage Rate, Unskilled Labour Wage Rat, Timber Shesham Log. Elect. Charges Overall/ Combined, House Rent For Q-iii, House Rent For Q-iv.	Gas Chrg All Over 500 Mmbtu, Gas Chrg Over 300 - 500 Mmbtu, Gas Chrg Overall/ Combined, Gas Chrg Over 200 - 300 Mmbtu, Gas Chrg Over 100 - 200 Mmbtu, Iron Bar (M.S. Bar) 1/2", Cement (Local), Elect.Charges Above 1000 Units, Synthetic Enemal Ici.
Furnishing & Household Equip. Maintenance etc		Finis 500 ML, Electric Blub Energy Saver 14 Watt, Washing Powder (Wheel/Bonus), Carpet Plain Av. Qlty, Electric Blubs "0" Watt.	Gizer Large Size 30 Gallon, Bucket(Balti) Plastic Med, Gas Burner Double, Air Cooler Super Asia, Water Cooler 9/10 Ltr., Dinning Table 6 Chairs.	Tube Light Philips 40 Watt, Non Stick Cooking Pan, Harpic, Tea Set Pak. China Wear 21 Pcs, Sewing Machine (Singer), Frying Pan Steel Avg. Qlty, Boot Polish Cherry/Kiwi 50 ML, Elect. Iron Philips, Hotpot Set Plastic 3 Pcs.
Health	Bumol Cream 30 Gm, Vicks Vaporub/ Balm, Calcium Syrup Sandoz, Hydryllin Syrup 120 ML.	Entox Tab., Polyfax Eye Ointment, Sugar Test (Random/Fasting), Cotton Bandage 2" - 4".	Glycerine Small Bottle, Ecg Charges, Doctor (Mbbs) Clinic Fee, Phenergan Syrup 120 ML, Cac. 1000 Tab.	Betnovate-N Ointment 5 Gm, Dettol (Medium), Sancos Syrup (50 ML), Calpol Syrup 60 ML, Flagyl Tab. 200 Mg., Brufen Tabs 200-Mg., Thermometer China, Urine Test (Dr) Charges.
Transport	Air Fare Economy Class., Train Fare 1st Slp. > 500, Train Fare A/C Slp > 500K, Platform Ticket, Car Tax For 800 Cc To 1300 Cc.	Cycle Overhauling Charges, Car Service Charges, Motor Cycle Hero 70 Cc, Train Fare Eco. > 500 Km., Train Fare A/C Slp. 1-100.	Bicycle With Tyres & Tube, Motorcycle Honda Cd-70, Minibus Fare Min.Within City, Tyre Car With Tube General, Petrol Super.	Train Fare Eco. 1-100 Km., Train Fare 1st Slp. 1-100, Bus Fare Outside City (Non A/C), Cng, Bus Fare Max (Within City), Bus Fare Min (Within City), Car Honda Civic 1500 Cc, Bus Fare Outside City (A/C).
Communication	Mobile Cell Charges.	Fax Charges (Local), Mobile Set Nokia/Sony/Ericsson Av.Qlty, Internet Charges.	Telephone Set Av. Qlty.	T.C.S. Ch. Min.Within Zone, Telephone Charges Local Call, Telephone Charges Outside City.
Recreation & Culture	Maths Book Class IX Or X, V.C.P. Panasonic/Lg/National, Tv Licence Fee Domestic, Video Cassette Blank. Tdk/Sony.	English Book Class V1, Weekly "Akhbar-E-Jahan", Cable Charges, T.V. 20" Colored Sony, Urdu Book Class V (T.B.Board), Computer Cd (Tdk/Imation).	English Book Class IX Or X, Urdu Book 1st Year/ Inter, Paper Fool Scape (27"X17"), Eng. Book 1st.Yr Complete Set, Daily "Dawn", Personnel Computer (Branded).	Daily "Nawa-E-Waqt", Daily "Jang", Cinema A/C High Class, Cinema Non-A/C High Class, English Book Ba/B.Sc, Photostate Paper 70 Gm, Pakistan Studies Book Ba/B.Sc, Urdu Book Class IX/X (T.B.Board), Fountain Pen Hero/Wings/China, Pen Ink Dollor 57 ML Bottle.
Education	Coaching Charges For Class Xi/ Xii Commerce Group, Coaching Fee For Class IX/ X.	Coaching Charges For Class Xi/ Xii Science Group, Govt. College Fee 4Th. Year.	Pvt School Fee Eng.Med (Class-Vi), Pvt School Fee Eng.Med (Class-X), I.T. Tuition Fees.	Mba Tuition Fee, Pvt Eng.Colege Fee (1st Year), Govt. University Fee Msc/ Ma, Pvt School Fee Eng.Med (Class-I), Pvt School Fee Eng.Med (Class-V).
Restaurant & Hotels		Tea Prepared (Ordinary), Chicken Biryani Full/Double, Bread Tandoori St. Size.	Cooked Beef (Av. Hotel), Cooked Dal (Av. Hotel).	Cooked Mutton (Av. Hotel).
Miscellaneous	Toothpaste Macleans 70 Gms.	Toilet Soap Lifebouy 140 Gms, Hair Colour (Kala Kola), Shampoo Sunsilk/Pantene 100 ML.	Nail Polish S.Miss/Medora, Gel Medium Size, Blade Treet Ordinary (10), Shaving Cream Touch-Me/Admiral.	Perfume Med.Size Medora/Broche, Toothpowder Dentonic 90 Gms, Gold Tezabi 24 Ct, Purse Ladies (Leather) Av. Qlty, Beauty Cream (Fair & Lovely), Wrist Watch Gents Citizen.

Table A5: City- wise CPI Inflation by Income Groups, February, 2019

	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	6.8	6.8	5.6	5.6	8.1	8.1	7.0	7.0	5.2	5.2	8.6	8.6
2 Islamabad	4.5	4.5	3.5	3.5	5.6	5.6	5.1	5.1	4.4	4.4	5.7	5.7
3 Lahore	3.4	3.4	1.8	1.8	5.5	5.5	3.7	3.7	1.8	1.8	5.9	5.9
4 Gujranwala	6.7	6.7	7.3	7.3	6.0	6.0	7.3	7.3	7.7	7.7	6.8	6.8
5 Sialkot	6.1	6.1	4.8	4.8	7.7	7.7	5.9	5.9	4.8	4.8	7.1	7.1
6 Faisalabad	7.6	7.6	7.0	7.0	8.2	8.2	8.0	8.0	7.3	7.3	8.7	8.7
7 Multan	4.9	4.9	4.2	4.2	5.8	5.8	5.2	5.2	4.1	4.1	6.3	6.3
8 Sargodha	5.8	5.8	4.4	4.4	7.2	7.2	6.0	6.0	4.1	4.1	7.8	7.8
9 Bahawalpur	4.1	4.1	4.2	4.2	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1
10 Karachi	5.7	5.7	5.8	5.8	5.7	5.7	6.3	6.3	6.1	6.1	6.6	6.6
11 Hyderabad	8.2	8.2	8.6	8.6	7.7	7.7	9.1	9.1	9.0	9.0	9.2	9.2
12 Sukkur	6.3	6.3	3.4	3.4	9.6	9.6	6.4	6.4	3.5	3.5	9.2	9.2
13 Larkana	5.7	5.7	5.4	5.4	5.9	5.9	5.4	5.4	4.7	4.7	6.1	6.1
14 Peshawar	8.0	8.0	7.5	7.5	8.6	8.6	8.5	8.5	7.3	7.3	9.7	9.7
15 Bannu	5.5	5.5	5.4	5.4	5.6	5.6	6.0	6.0	5.1	5.1	6.8	6.8
16 Quetta	9.4	9.4	8.6	8.6	10.2	10.2	9.9	9.9	8.3	8.3	11.4	11.4
17 Khuzdar	5.1	5.1	4.5	4.5	5.8	5.8	4.7	4.7	4.5	4.5	4.9	4.9
	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	7.7	7.7	5.5	5.5	9.6	9.6	8.0	8.0	5.8	5.8	9.6	9.6
2 Islamabad	5.5	5.5	4.4	4.4	6.5	6.5	6.1	6.1	5.0	5.0	6.9	6.9
3 Lahore	4.3	4.3	1.9	1.9	6.7	6.7	4.6	4.6	2.1	2.1	6.9	6.9
4 Gujranwala	8.1	8.1	8.1	8.1	8.1	8.1	8.5	8.5	8.2	8.2	8.7	8.7
5 Sialkot	6.3	6.3	4.9	4.9	7.6	7.6	6.4	6.4	5.3	5.3	7.4	7.4
6 Faisalabad	8.8	8.8	7.6	7.6	9.9	9.9	8.8	8.8	7.9	7.9	9.5	9.5
7 Multan	5.7	5.7	4.3	4.3	7.0	7.0	5.7	5.7	4.1	4.1	7.0	7.0
8 Sargodha	6.5	6.5	4.4	4.4	8.2	8.2	6.6	6.6	4.3	4.3	8.3	8.3
9 Bahawalpur	4.8	4.8	4.3	4.3	5.2	5.2	4.7	4.7	4.2	4.2	5.0	5.0
10 Karachi	6.9	6.9	6.0	6.0	7.8	7.8	7.2	7.2	5.7	5.7	8.4	8.4
11 Hyderabad	10.1	10.1	9.4	9.4	10.8	10.8	10.2	10.2	9.6	9.6	10.7	10.7
12 Sukkur	6.4	6.4	3.0	3.0	9.4	9.4	6.1	6.1	3.3	3.3	8.3	8.3
13 Larkana	5.8	5.8	4.8	4.8	6.6	6.6	5.7	5.7	4.3	4.3	6.6	6.6
14 Peshawar	9.6	9.6	7.0	7.0	11.8	11.8	9.8	9.8	7.0	7.0	11.9	11.9
15 Bannu	5.9	5.9	5.1	5.1	6.7	6.7	6.1	6.1	5.6	5.6	6.5	6.5
16 Quetta	11.0	11.0	8.4	8.4	13.3	13.3	11.1	11.1	8.3	8.3	13.3	13.3
17 Khuzdar	4.2	4.2	3.9	3.9	4.5	4.5	4.3	4.3	3.7	3.7	4.8	4.8
	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	8.5	8.5	6.0	6.0	9.7	9.7	8.1	8.1	5.8	5.8	9.6	9.6
2 Islamabad	7.0	7.0	5.4	5.4	7.8	7.8	6.6	6.6	5.1	5.1	7.6	7.6
3 Lahore	5.7	5.7	2.3	2.3	7.6	7.6	5.0	5.0	2.1	2.1	7.3	7.3
4 Gujranwala	9.1	9.1	8.8	8.8	9.3	9.3	8.4	8.4	8.2	8.2	8.6	8.6
5 Sialkot	7.6	7.6	6.3	6.3	8.3	8.3	6.9	6.9	5.5	5.5	7.8	7.8
6 Faisalabad	9.5	9.5	8.1	8.1	10.2	10.2	9.0	9.0	7.6	7.6	9.8	9.8
7 Multan	6.3	6.3	4.6	4.6	7.2	7.2	6.0	6.0	4.3	4.3	7.1	7.1
8 Sargodha	7.2	7.2	4.7	4.7	8.3	8.3	6.8	6.8	4.5	4.5	8.1	8.1
9 Bahawalpur	5.1	5.1	3.7	3.7	5.7	5.7	4.9	4.9	4.1	4.1	5.3	5.3
10 Karachi	7.9	7.9	5.2	5.2	9.2	9.2	7.4	7.4	5.5	5.5	8.8	8.8
11 Hyderabad	11.4	11.4	10.2	10.2	12.1	12.1	10.4	10.4	9.7	9.7	11.0	11.0
12 Sukkur	7.3	7.3	3.3	3.3	9.2	9.2	6.7	6.7	3.4	3.4	8.9	8.9
13 Larkana	6.3	6.3	4.1	4.1	7.3	7.3	5.9	5.9	4.7	4.7	6.7	6.7
14 Peshawar	11.3	11.3	6.4	6.4	13.5	13.5	10.2	10.2	7.0	7.0	12.3	12.3
15 Bannu	7.1	7.1	4.0	4.0	8.6	8.6	6.2	6.2	5.1	5.1	6.9	6.9
16 Quetta	11.7	11.7	7.7	7.7	13.5	13.5	11.2	11.2	8.2	8.2	13.1	13.1
17 Khuzdar	5.4	5.4	4.7	4.7	5.8	5.8	4.8	4.8	4.2	4.2	5.3	5.3

Table A6: City- wise CPI Inflation (YoY) February, 2019

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
D. I. Khan	13.5	5.7	18.6	Rawalpindi	8.1	5.8	9.6
Turbat	12.8	1.2	19.1	Attock	8.1	7.3	8.6
Dadu	11.3	4.2	16.4	Mianwali	7.7	5.5	9.0
Quetta	11.2	8.2	13.1	Karachi	7.4	5.5	8.8
Abbottabad	11.0	12.2	10.2	Sialkot	6.9	5.5	7.8
Wazirabad	10.9	7.6	13.2	Sargodha	6.8	4.5	8.1
Hyderabad	10.4	9.7	11.0	Sukkur	6.7	3.4	8.9
Peshawar	10.2	7.0	12.3	Sahiwal	6.7	3.6	8.5
Jhelum	9.1	9.7	8.8	Islamabad	6.6	5.1	7.6
Mardan	9.0	5.5	10.9	Loralai	6.2	4.0	7.6
Faisalabad	9.0	7.6	9.8	Muzaffargarh	6.2	4.4	7.4
Bahawalnagar	8.8	2.6	12.6	Bannu	6.2	5.1	6.9
Mirpukhas	8.5	8.4	8.5	Multan	6.0	4.3	7.1
Gujranwala	8.4	8.2	8.6	Larkana	5.9	4.7	6.7
				D. M. Jamali	5.7	2.8	7.7
				Mingora	5.6	4.7	6.1
				Jhang	5.6	2.1	7.7
				Lahore	5.0	2.1	7.3
				D. G. Khan	5.0	3.2	6.1
				Bahawalpur	4.9	4.1	5.3
				Khuzdar	4.8	4.2	5.3
				R. Y. Khan	4.7	3.2	5.6
				Gawadar	4.5	-2.1	8.8
				Nawabshah	4.3	0.6	6.7
				Vehari	3.7	1.9	4.9
				Mithi	2.0	0.5	2.9

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		
	Feb-18	Jan-19	Feb-19	Feb-18	Jan-19	Feb-19
<u>Up to Rs. 8000</u>						
General	-0.7	0.6	0.8	2.7	4.4	6.0
Food	-1.5	0.3	1.5	1.3	1.5	4.6
Non-food	0.2	1.0	0.1	4.3	7.8	7.7
<u>Rs. 8001- 12000</u>						
General	-0.6	0.7	0.8	2.9	4.9	6.3
Food	-1.3	0.3	1.5	1.6	1.8	4.7
Non-food	0.2	1.0	0.1	4.3	8.0	7.9
<u>Rs. 12001- 18000</u>						
General	-0.5	0.6	0.7	3.1	5.2	6.5
Food	-1.3	0.3	1.5	1.7	2.1	4.9
Non-food	0.2	0.9	0.1	4.4	8.0	7.9
<u>Rs. 18001- 35000</u>						
General	-0.4	1.1	0.7	3.4	7.1	8.3
Food	-1.1	0.3	1.5	1.8	2.3	5.0
Non-food	0.2	1.6	0.1	4.6	11.0	10.8
<u>Above Rs. 35000</u>						
General	-0.1	1.3	0.5	4.5	9.1	9.8
Food	-0.9	0.4	1.4	3.1	2.8	5.2
Non-food	0.2	1.7	0.2	5.2	12.1	12.0
<u>All income groups</u>						
General	-0.3	1.0	0.6	3.8	7.2	8.2
Food	-1.1	0.3	1.4	2.2	2.4	5.0
Non-food	0.2	1.4	0.1	4.9	10.4	10.3

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices		Percentage change	
			Feb-19		YoY	MoM
1	Wheat	10Kg.	355.1		4.0	0.7
2	Wheat Flour Bag	10Kg.	395.2		2.4	0.1
3	Rice Basmati Broken	Kg.	78.1		6.3	-0.3
4	Rice Irri-6/9	Kg.	56.5		8.1	1.5
5	Bread Plain Med.Size (340-400 Gm.)	Each	43.6		2.4	0.3
6	Beef	Kg.	400.2		14.8	0.7
7	Mutton	Kg.	819.3		10.7	0.4
8	Chicken Live (Farm)	Kg.	151.7		-8.2	12.3
9	Milk Fresh	Litr	87.1		5.6	0.3
10	Curd	Kg.	103.0		4.2	0.1
11	Milk Powdered Nido	500G	406.0		6.0	0.1
12	Egg Hen (Farm)	Doz.	111.7		10.6	-4.0
13	Mustard Oil	Kg.	191.4		4.0	0.8
14	Cooking Oil (Tin)	2.5Ltr	512.8		9.3	0.2
15	Veg. Ghee (Tin)	2.5Kg.	490.9		6.2	-0.1
16	Veg.Ghee Loose	Kg.	159.0		9.2	0.8
17	Bananas	Doz.	74.5		-3.6	8.0
18	Masoor Pulse Washed	Kg.	121.7		2.9	0.3
19	Moong Pulse Washed	Kg.	125.3		6.1	-0.2
20	Mash Pulse Washed	Kg.	153.0		-1.3	0.0
21	Gram Pulse Washed	Kg.	126.0		7.7	-0.1
22	Potatoes	Kg.	21.5		-20.3	-5.7
23	Onions	Kg.	28.6		-33.5	1.3
24	Tomatoes	Kg.	108.5		195.6	108.6
25	Sugar	Kg.	59.1		14.8	1.1
26	Gur	Kg.	87.1		10.9	2.3
27	Salt Powdered Loose (Lahori)	Kg.	12.4		11.1	0.0
28	Red Chillies Powder Loose	Kg.	347.7		34.9	0.0
29	Garlic	Kg.	165.8		-3.6	-1.1
30	Tea (Yellow Lable 200 Gm.)	200Gm.	219.5		19.2	0.1
31	Cooked Beef Plate	Each	115.3		11.4	0.0
32	Cooked Dal Plate	Each	62.9		7.9	0.5
33	Tea Prepared (Sada)	Cup	22.6		6.8	0.2
34	Cigarettes K-2 (20'S)	20'S	59.7		17.6	0.0
35	Long Cloth (Coarse Latha)	Mtr.	240.6		12.4	0.0
36	Shirting	Mtr.	180.8		5.7	0.1
37	Lawn	Mtr.	288.6		12.8	0.0
38	Georgette (Voil Printed)	Mtr.	133.3		5.2	0.0
39	Sandal Gents Bata	Pair	699.0		0.0	0.0
40	Chappal Spng.Bata (Gents)	Pair	199.0		11.1	0.0
41	Sandal Ladies Bata	Pair	599.0		19.2	0.0
42	Electric Charges 1-50	Unit	2.0		0.0	0.0
43	Gas Charges Upto 3.3719	Mmbtu	145.1		12.7	0.0
44	Kerosene	Litr	120.8		10.7	-0.6
45	Firewood	40Kg	647.2		2.2	0.1
46	Energy Savor 14 Watt	Each	171.2		1.0	0.0
47	Washing Soap (200-250 Gm.)	Cake	29.8		14.9	1.7
48	Match Box	Each	2.5		10.3	0.0
49	Petrol	Litr	91.4		6.9	-0.7
50	Diesel	Litr	107.7		11.2	0.0
51	L.P.G.(11 Kg Cylander.)	Each	1371.7		4.8	-11.5
52	Tele. Local Call	Call	4.7		18.0	0.0
53	Bath Soap Lifebouy (Standard)	Cake	40.5		2.1	0.0
Maximum					195.6	108.6
Median					6.9	0.0
Minimum					-33.5	-11.5

Table A9: Distribution of Price Changes (YoY) - WPI Items: February, 2019				
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	Edible Roots/Potatos, Hides And Fur Skins,Raw, Poultry, Fish Live Fresh Or Chilled, Vegetables, Pulses.	Fuel Wood In Logs, Milk From Bovine Animals, Cotton Seeds, Wheat, Fresh Fruits, Other Oil Seeds.	Raw Animal Material/Wool, Sugar Crops, Unmanufactured Tobacco, Dry Fruits.	Sorghum/Jowar, Fibre Crops, Stimulant And Spice Crops, Maize, Millet/Bajra, Rice, Eggs.
Ores & Minerals, Electricity Gas & Water	Electrical Energy, Coal Not Agglomerated.	Salt & Pure Sodium Chloride.		Natural Gas Liquefied.
Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products	Sugar Confectionary, Nylon Yarn, Woolen Carpets, Chocolate.	Bed Sheets, Blankets, Vegetable Oil Refined, Silk And Reyon Fabrics, Processed Liquid Milk, Fruit Juices, Quilts, Other Fabrics, Beverages, Vegetables & Fruit Juices, Wheat Flour, Mineral Water, Synthetic Carpets.	Coffee And Tea, Ready Made Garments, Hosiery Products, Oil Cakes, Blended Yarn, Ice Cream, Dairy Products N.E.C, Vegetable Ghee, Leather With Out Hairs, Woven Fabrics, Milk And Cream In Solid Form, Other Food Products.	Other Leather N.E.C, Tobbaco Products, Spices, Sugar Refined, Cotton Yarn, Footwears, Meat Of Animals, Towels, Dried Fruits & Nuts.
Other Transportable Goods except Metal Products, Machinery and Equipments	Coke.	Insecticised, Soaps & Detergent, Other Glass Articles, Printing Paper, Timber, Dying Materials, Medicines, Bricks Blocks And Tiles, Pesticides, Matches.	Plastic Products, Motor Sprit, Ceramics And Sanitary, Mobil Oil, Bed Foams.	Hard Board, Furnace Oil, Paints & Varnishes, Fertilizers, Chemicals, Kerosine Oil, Auto Tyres, Diesel Oil, Cement, Glass Sheets.
Metal Product Machinery & Equipment	Engines And Motors, Vacuum Pumps, Pig Iron, Concrate Mixer, Radio And Television, Cultivators, Chuff Cutter.	Bicycles, Lighting Equipments, Electrical Wires.	Steel Products, Air Conditioners.	Motor Cycles, Lathe Machines, Steel Bars & Sheets, Motor Vehicales, Tractors, Refrige,Wash& Sew Mach,Iron,Fan, Pipe Fittings.

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

Items and specification	Weights	Index		
		Feb-18	Jan-19	Feb-19
General	100.00	219.58	236.11	237.61
Food & Non-Alcoholic Beverages.	34.83	229.23	235.91	239.59
1 Wheat	0.35	205.66	209.26	212.26
2 Wheat Flour	4.16	212.84	216.59	216.91
3 Wheat Product	0.10	214.30	218.78	218.51
4 Besan	0.15	271.63	276.26	274.79
5 Rice	1.58	191.61	201.61	201.45
6 Cereals	0.16	259.02	269.22	269.41
7 Bakery & Confectionary	1.16	224.55	232.52	233.60
8 Nimco	0.46	257.41	261.98	263.41
9 Meat	2.43	290.84	329.05	331.09
10 Chicken	1.36	199.06	170.06	177.16
11 Fish	0.30	221.93	234.73	239.46
12 Milk Fresh	6.68	279.48	290.49	290.78
13 Milk Product	0.63	271.59	282.97	284.16
14 Milk Powder	0.11	238.41	256.37	257.66
15 Eggs	0.46	213.54	238.67	228.93
16 Mustard Oil	0.10	162.81	167.11	167.25
17 Cooking Oil	1.75	138.56	147.98	148.19
18 Vegetable Ghee	2.07	143.55	152.96	153.22
19 Dry Fruits	0.25	278.60	308.91	311.34
20 Fresh Fruits	1.86	249.68	228.77	233.39
21 Pulse Masoor	0.27	161.17	164.88	165.53
22 Pulse Moong	0.23	220.84	238.23	238.26
23 Pulse Mash (Washed)	0.21	221.64	221.02	220.61
24 Pulse Gram	0.24	264.85	282.99	283.17
25 Gram Whole	0.16	287.97	267.54	268.30
26 Beans	0.03	243.43	258.59	266.68
27 Potatoes	0.45	175.00	156.30	142.26
28 Onion	0.51	252.59	164.24	169.85
29 Tomatoes	0.42	121.90	136.22	340.59
30 Fresh Vegetables	1.75	218.60	204.94	208.68
31 Sugar	1.04	186.44	212.42	212.28
32 Gur	0.02	245.06	265.55	271.58
33 Honey	0.04	341.03	383.26	389.58
34 Sweet Meet	0.25	256.66	275.93	277.48
35 Beverages	1.20	226.80	233.73	234.18
36 Jam, Tomato Ketchup & Pickle	0.25	224.88	238.45	239.50
37 Condiments	0.27	277.53	294.79	297.84
38 Spices	0.54	239.80	276.34	279.54
39 Tea	0.84	287.65	318.33	319.43
Alcoholic Beverages, Tobacco	1.41	313.39	353.17	354.79
40 Cigarettes	1.39	306.13	349.14	350.86
41 Betel Leaves & Nuts	0.02	754.58	597.65	593.36
Clothing & Footwear	7.57	245.03	261.58	261.82
42 Cotton Cloth	1.73	236.48	253.16	253.46
43 Woolen Cloth	0.88	263.65	280.30	280.51
44 Ready Made Garments	0.97	254.72	269.28	269.46
45 Woolen Readymade Garments	0.40	266.71	289.31	289.31
46 Hosiery	0.51	258.30	274.69	275.19
47 Dopatta	0.44	254.12	271.72	272.04
48 Cleaning & Laundering	0.21	284.23	300.26	300.26

Table A10: Consumer Price Index Numbers by Major Groups and Composite Commodities				
Items and specification	Weights	Index		
		Feb-18	Jan-19	Feb-19
49 Tailoring	0.88	336.77	358.21	358.48
50 Footware	1.55	167.82	180.90	181.10
Housing, Water, Elect, Gas & Other Fuel	29.41	202.62	226.00	226.02
51 House Rent	21.81	195.96	212.02	212.02
52 Construction Input Item	0.56	261.97	292.42	293.08
53 Construction Wage Rate	0.33	255.15	277.46	278.16
54 Water Supply	0.50	173.82	194.95	194.95
55 Electricity	4.40	238.10	258.28	258.28
56 Gas	1.58	158.08	292.94	292.94
57 Kerosene Oil	0.01	246.23	275.63	274.12
58 Fire Wood Whole	0.23	301.93	305.94	305.94
Furnished H.Hold Equip.& Maint. Etc	4.21	233.50	252.03	255.07
59 Furniture	0.33	227.53	250.86	251.62
60 Household Textile	0.65	235.96	251.22	251.59
61 Household Equipment	0.59	184.74	197.60	198.07
62 Utensils	0.32	242.26	268.14	272.66
63 Plastic Products	0.25	218.40	239.16	242.52
64 Washing Soap & Detergent	0.79	235.23	257.38	260.03
65 Sewing Needle & Dry Cell	0.15	210.07	229.39	230.38
66 Household Servant	1.04	262.86	279.81	286.73
67 Marriage Hall Charges	0.08	257.76	272.06	275.23
Health	2.19	220.58	236.58	237.67
68 Drug Medicine	1.27	187.75	200.93	201.80
69 Medical Equipment	0.01	256.26	268.30	271.19
70 Doctor (MBBS) Clinic Fee	0.59	298.32	320.01	321.75
71 Medical Test	0.32	206.26	223.06	223.77
Transport	7.20	184.47	209.96	209.05
72 Motor Vehicle	0.66	180.19	204.71	205.06
73 Motor Vehicle Accessories	0.24	215.18	236.56	237.99
74 Motor Fuel	3.03	163.92	189.53	186.52
75 Mechanical Service	0.46	237.06	252.53	255.38
76 Motor Vehicle Tax	0.11	210.18	210.18	210.18
77 Transport Services	2.70	195.86	224.55	224.79
Communication	3.22	133.28	143.57	143.63
78 Postal Services	0.07	255.80	272.63	272.63
79 Communication & Apparatus	3.15	130.71	140.86	140.93
Recreation & Culture	2.02	198.62	215.30	215.79
80 Recreation & Culture	0.86	131.62	137.61	137.68
81 Text Books	0.57	287.98	304.92	304.92
82 News Papers	0.19	186.23	235.21	235.21
83 Stationery	0.40	222.00	245.87	248.25
Education	3.94	262.35	288.68	289.13
84 Education	3.94	262.35	288.68	289.13
Restaurants And Hotels	1.23	287.21	302.94	303.57
85 Ready Made Food	1.23	287.21	302.94	303.57
Miscellaneous Goods And Services	2.76	255.21	278.60	280.40
86 Personal Care	1.49	233.45	248.28	249.74
87 Cosmetics	0.39	206.60	232.50	233.79
88 Blades	0.03	201.62	217.60	217.60
89 Personal Equipments	0.84	317.95	355.64	358.33

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

Items and Specifications	Index		
	Feb-18	Jan-19	Feb-19
General	224.66	247.21	249.44
Agriculture Forestry & Fishery	252.97	267.58	269.34
1 Wheat	210.64	214.48	215.86
2 Maize	199.27	229.91	234.21
3 Rice	174.06	190.79	194.20
4 Sorghum/Jowar	242.65	304.58	309.61
5 Millet/Bajra	183.60	209.51	214.73
6 Vegetables	219.44	195.27	213.58
7 Fresh Fruits	265.01	254.18	268.34
8 Dry Fruits	267.56	281.40	282.99
9 Cotton Seeds	256.23	263.05	262.82
10 Other Oil Seeds	187.75	192.04	188.20
11 Edible Roots/ Potatoes	167.22	134.45	130.41
12 Stimulant And Spice Crops	269.38	326.03	322.69
13 Pulses	249.60	242.62	243.61
14 Sugar Crops	257.62	275.85	275.85
15 Fibre Crops	226.99	280.99	278.10
16 Unmanufactured Tobacco	305.98	325.00	325.00
17 Poultry	211.05	173.65	188.94
18 Milk From Bovine Animals	275.47	286.63	286.63
19 Eggs	212.43	240.31	234.20
20 Raw Animal Material/Wool	173.81	190.16	190.42
21 Hides And Fur Skins, Raw	105.02	92.92	92.90
22 Fuel Wood In Logs	283.56	295.14	295.14
23 Fishes Live Fresh Or Chilled	477.80	462.20	462.20
Ores/Minerals, Gas & Elect.	243.39	292.15	291.06
24 Coal Not Agglomerated	155.29	155.29	155.29
25 Natural Gas Liquefied	212.02	318.12	315.82
26 Salt & Pure Sodium Chloride	264.37	275.23	275.23
27 Electrical Energy	288.00	283.90	283.90
Food, Beverages, Tobacco, Textiles	231.40	253.40	256.00
28 Meat Of Animals	311.27	349.94	350.63
29 Vegetables & Fruit Juices	224.97	228.62	228.62
30 Dried Fruits & Nuts	297.11	315.47	329.84
31 Fruit Juices	182.60	188.88	188.98
32 Vegetable Oil Refined	156.36	161.93	163.26
33 Vegetable Ghee	126.69	136.37	136.85
34 Oil Cakes	231.54	245.98	250.97
35 Processed Liquid Milk	286.83	296.92	296.92
36 Milk And Cream In Solid Form	223.55	237.78	238.50
37 Ice Cream	266.02	286.26	287.85
38 Dairy Products N.E.C	267.61	295.19	289.39
39 Wheat Flour	195.72	197.43	198.07
40 Other Cereal Flour	218.04	235.02	231.67
41 Sugar Refined	189.16	223.07	222.13
42 Chocolate	100.00	100.00	100.00
43 Sugar Confectionary	127.85	127.25	127.25
44 Coffee And Tea	261.80	288.73	287.23
45 Spices	202.23	240.50	241.32
46 Other Food Products	294.50	312.04	314.10
47 Mineral Water	208.14	210.16	210.16
48 Beverages	172.85	176.55	176.55
49 Tobacco Products	318.37	393.80	393.80
50 Cotton Yarn	227.49	259.02	263.36
51 Nylon Yarn	143.99	143.99	143.99
52 Blended Yarn	188.55	194.81	204.12
53 Woven Fabrics	321.49	344.94	344.94
54 Cotton Fabrics	213.18	223.30	223.85
55 Other Fabrics	227.16	231.49	232.79

Inflation Monitor, February 2019

Table A11: Wholesale Price Index Numbers by Major Groups and Composite Commodities				
Items and Specifications		Index		
		Feb-18	Jan-19	Feb-19
56	Silk And Rayon Fabrics	188.14	194.26	194.81
57	Towels	276.14	308.50	308.50
58	Blankets	265.03	277.52	277.52
59	Bed Sheets	256.87	268.60	269.00
60	Quilts	222.32	229.26	229.26
61	Woolen Carpets	196.43	196.43	196.43
62	Synthetic Carpets	130.95	131.80	131.80
63	Hosiery Products	244.11	254.53	266.64
64	Ready Made Garments	201.37	220.45	220.45
65	Leather With Out Hairs	212.68	228.93	228.93
66	Other Leather N.E.C	207.02	372.02	496.90
67	Footwear's	145.51	168.09	168.09
Other Transportable Goods		190.61	212.67	217.51
68	Timber	237.00	244.62	244.62
69	Printing Paper	168.59	174.76	174.76
70	Hard Board	225.00	291.67	291.67
71	Coke	163.45	163.45	163.45
72	Motor Sprit	142.75	153.67	152.67
73	Diesel Oil	201.27	229.53	229.16
74	Kerosene Oil	187.24	221.58	219.79
75	Furnace Oil	130.29	135.85	167.71
76	Mobil Oil	200.85	213.34	213.34
77	Chemicals	188.23	221.33	222.04
78	Dying Materials	146.55	150.72	150.72
79	Fertilizers	225.55	267.64	267.89
80	Pesticides	310.16	316.64	316.64
81	Insecticides	140.56	151.37	147.58
82	Paints & Varnishes	301.12	361.10	364.40
83	Medicines	177.01	181.04	181.30
84	Soaps & Detergent	191.35	200.31	200.46
85	Auto Tyres	177.07	202.83	204.20
86	Plastic Products	226.00	245.58	246.23
87	Glass Sheets	302.27	320.54	337.30
88	Other Glass Articles	318.10	318.10	331.31
89	Ceramics And Sanitary	234.76	246.05	249.92
90	Bricks Blocks And Tiles	223.59	232.13	228.34
91	Cement	209.70	238.47	238.29
92	Bed Foams	173.00	182.67	182.67
93	Matches	171.36	172.57	172.57
Metal Product Machinery & Equip		178.47	191.48	191.60
94	Pig Iron	128.97	128.97	128.97
95	Steel Bars & Sheets	144.61	172.96	173.56
96	Pipe Fittings	215.66	238.51	238.51
97	Steel Products	176.70	189.08	189.08
98	Engines And Motors	116.98	116.98	116.98
99	Vacuum Pumps	123.69	123.69	123.69
100	Air Conditioners	200.10	211.33	211.33
101	Cultivators	190.66	190.66	190.66
102	Chuff Cutter	153.46	153.46	153.46
103	Tractors	201.75	226.93	226.93
104	Lathe Machines	241.06	299.21	299.21
105	Concrete Mixer	138.83	138.83	138.83
106	Refrige,Wash& Sew Mach, Iron,Fan	217.87	242.23	242.23
107	Electrical Wires	205.92	208.22	208.22
108	Lighting Equipments	171.39	174.13	174.13
109	Radio And Television	140.42	140.42	140.42
110	Motor Vehicles	195.36	223.94	227.69
111	Motor Cycles	126.05	158.63	159.20
112	Bicycles	187.65	194.31	194.31

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

Period	CPI			WPI			SPI *	
	Overall	Food	Non-food	Overall	Food	Non-Food		
2008-09	117.03	123.11	113.37	118.93	119.68	118.45	123.26	
2009-10	128.85	139.05	122.73	135.40	136.85	134.48	139.84	
2010-11	146.45	164.10	135.87	164.17	159.26	167.27	164.02	
2011-12	162.57	182.20	150.80	181.28	181.32	181.26	178.67	
2012-13	174.53	195.18	162.16	194.61	197.21	192.95	189.64	
2013-14	189.58	212.74	175.69	210.48	213.04	208.85	208.66	
2014-15	198.16	220.20	184.95	209.85	226.22	199.47	212.61	
2015-16	203.82	224.78	191.25	207.64	234.69	190.47	216.23	
2016-17	212.29	226.59	233.37	216.02	248.74	195.27	220.10	
2017-18	220.62	232.95	237.59	223.52	253.34	204.61	223.60	
2016	Nov	212.01	235.17	198.13	214.07	247.89	192.62	220.68
	Dec	210.57	230.69	198.51	213.76	244.40	194.32	219.73
2017	Jan	210.94	228.45	200.44	214.84	244.73	195.87	218.35
	Feb	211.54	229.19	200.96	215.86	244.91	197.42	219.25
	Mar	213.32	233.47	201.24	217.29	247.53	198.10	223.62
	Apr	216.30	237.50	203.59	219.22	252.45	198.13	222.07
	May	216.33	237.01	203.94	218.78	251.10	198.26	220.51
	Jun	215.45	234.37	204.11	217.77	248.90	198.02	220.68
	Jul	216.19	234.47	205.23	217.24	249.95	196.63	219.28
	Aug	216.61	235.38	205.36	217.96	251.05	196.96	219.82
	Sep	217.98	238.43	205.72	218.08	252.27	196.39	223.38
	Oct	219.61	239.89	207.45	219.41	254.40	197.22	225.15
	Nov	220.42	240.79	208.21	220.20	252.83	199.49	226.29
	Dec	220.20	239.43	208.67	221.00	253.31	200.49	225.66
2018	Jan	220.27	236.92	210.29	224.99	252.74	207.38	224.13
	Feb	219.58	234.31	210.75	224.66	250.56	208.23	222.19
	Mar	220.25	233.67	212.21	225.22	251.00	208.52	221.67
	Apr	224.25	237.08	216.56	228.07	254.52	211.28	223.13
	May	225.40	239.36	217.03	230.98	257.57	214.11	224.51
	Jun	226.68	241.37	217.87	234.40	259.86	218.25	228.00
	Jul	228.80	242.74	220.45	240.04	263.23	225.32	229.18
	Aug	229.27	243.25	220.89	241.93	262.42	228.93	228.72
	Sep	229.14	241.65	221.64	238.25	260.81	223.95	228.27
	Oct	234.49	246.27	227.43	248.19	266.83	236.36	235.22
	Nov	234.75	245.08	228.56	249.92	264.02	240.97	238.35
	Dec	233.78	241.70	229.03	247.72	261.58	238.93	238.12
2019	Jan	236.11	242.53	232.26	247.21	263.50	236.87	239.07
	Feb	237.61	246.03	232.56	249.44	265.38	239.32	244.35

*: all groups combined

Table A13: International Commodity Prices/Indices				
	Nov-18	Dec-18	Jan-19	Feb-19
Energy				
Crude Oil (US\$ per barrel) *	62.3	54.0	56.6	61.1
Energy Index (2010 = 100)	81.9	72.6	73.8	77.4
Food				
Rice (\$/MT)	401.0	404.0	410.0	408.0
Wheat (\$/MT)	203.6	211.3	209.8	219.0
Sugar (US cent/ pound)^	0.3	0.3	0.3	0.3
Palm Oil (\$/MT)	539.1	535.0	584.6	603.0
Soybean Oil (\$/MT)	729.2	727.9	747.8	772.8
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	1.9	1.9	1.8	1.8
Metal Price Index (2010 = 100)	83.8	82.7	81.3	84.7
Copper (\$/MT)	6,195.9	6,075.3	5,939.1	6,300.5
Aluminum (\$/MT)	1,938.5	1,920.4	1,853.7	1,863.0
Iron Ore (\$ cents/dry MT)	73.3	69.2	76.2	88.2
Tin (\$/MT)	19,064.9	19,259.6	20,457.8	21,264.0
Nickel (\$/MT)	11,239.7	10,835.1	11,523.1	12,685.2
Zinc (\$/MT)	2,595.7	2,616.3	2,569.7	2,707.2
Lead (\$/MT)	1,937.1	1,972.3	1,997.1	2,062.8
Uranium (\$/MT)@	29.1	27.8	28.9	28.0
DAP (\$/MT)	410.2	389.7	382.1	357.4
Urea (\$/MT)	305.6	276.7	260.0	250.6
Source: World Bank for all variables / indices except Uranium which is taken from Cameco (World Largest Uranium Producer)				
@ Data has been taken from Cameco website as it is not available in World Bank dataset.				
^ The measurement unit for sugar and Cotton is US cent/ pound in IMF data source, whereas it is US dollar / kg in World bank dataset. The result of two datasets can be reconciled using conversion formula: 1 US \$ / kilogram = 45.359237 U.S. \$/MT = US\$ per metric tonne.				
* 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				

Table 14: CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY15	FY16	FY17	FY18	FY19
Jul	198.05	201.76	210.08	216.19	228.80
Aug	198.70	202.25	209.46	216.61	229.27
Sep	199.40	202.04	209.88	217.98	229.14
Oct	199.81	203.03	211.57	219.61	234.49
Nov	198.79	204.22	212.01	220.42	234.75
Dec	196.79	203.06	210.57	220.20	233.78
Jan	196.95	203.49	210.94	220.27	236.11
Feb	195.13	202.98	211.54	219.58	237.61
Mar	195.57	203.28	213.32	220.25	
Apr	198.16	206.43	216.30	224.25	
May	199.66	205.99	216.33	225.40	
Jun	200.89	207.30	215.45	226.68	
Seasonally Adjusted Series					
Jul	197.02	200.69	208.94	215.03	227.60
Aug	197.43	201.05	208.25	215.43	228.10
Sep	198.29	201.03	208.94	217.11	228.34
Oct	198.30	201.52	210.04	218.05	232.87
Nov	197.70	203.15	210.92	219.30	233.62
Dec	197.76	204.00	211.49	221.12	234.75
Jan	197.70	204.34	211.89	221.34	237.28
Feb	197.12	205.01	213.62	221.69	239.80
Mar	197.30	205.10	215.25	222.23	
Apr	197.94	206.18	215.99	223.88	
May	199.90	206.16	216.45	225.43	
Jun	201.25	207.58	215.64	226.77	

Table 15: CPI Food Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY15	FY16	FY17	FY18	FY19
Jul	222.80	224.14	234.69	234.47	242.74
Aug	224.05	224.86	232.48	235.38	243.25
Sep	224.12	223.87	232.80	238.43	241.65
Oct	223.74	224.86	234.68	239.89	246.27
Nov	222.74	227.55	235.17	240.79	245.08
Dec	218.08	223.90	230.69	239.43	241.70
Jan	217.10	222.58	228.45	236.92	242.53
Feb	213.15	221.07	229.19	234.31	246.03
Mar	214.25	222.25	233.47	233.67	
Apr	217.26	227.53	237.50	237.08	
May	221.22	225.84	237.01	239.36	
Jun	223.84	228.95	234.37	241.37	
Seasonally Adjusted Series					
Jul	220.92	222.19	232.60	232.39	240.62
Aug	221.08	222.02	229.62	232.60	240.52
Sep	221.30	221.28	230.34	236.13	239.47
Oct	220.37	221.52	231.31	236.51	242.78
Nov	219.62	224.53	232.11	237.68	241.95
Dec	219.53	225.25	231.92	240.62	242.89
Jan	219.19	224.94	231.12	239.92	245.79
Feb	217.78	225.72	233.90	239.03	250.85
Mar	217.54	225.66	237.03	237.22	
Apr	217.78	228.05	237.96	237.50	
May	222.20	226.70	237.79	239.99	
Jun	224.61	229.48	234.67	241.43	

Period	FY15	FY16	FY17	FY18	FY19	Average
Jul	100.52	100.53	100.55	100.54	100.53	100.53
Aug	100.64	100.60	100.58	100.55	100.51	100.58
Sep	100.56	100.50	100.45	100.40	100.35	100.45
Oct	100.76	100.75	100.73	100.72	100.70	100.73
Nov	100.55	100.53	100.52	100.51	100.48	100.52
Dec	99.51	99.54	99.57	99.58	99.59	99.56
Jan	99.62	99.59	99.55	99.52	99.51	99.56
Feb	98.99	99.01	99.03	99.05	99.09	99.03
Mar	99.12	99.11	99.11	99.11		99.11
Apr	100.11	100.12	100.14	100.16		100.13
May	99.88	99.92	99.94	99.98		99.93
Jun	99.82	99.87	99.91	99.96		99.89

Period	FY15	FY16	FY17	FY18	FY19	Average
Jul	100.85	100.88	100.90	100.90	100.88	100.88
Aug	101.35	101.28	101.25	101.20	101.13	101.24
Sep	101.27	101.17	101.07	100.98	100.91	101.08
Oct	101.53	101.51	101.46	101.43	101.44	101.47
Nov	101.42	101.35	101.32	101.31	101.29	101.34
Dec	99.34	99.40	99.47	99.51	99.51	99.45
Jan	99.05	98.95	98.85	98.75	98.67	98.85
Feb	97.87	97.94	97.99	98.03	98.08	97.98
Mar	98.49	98.49	98.50	98.51		98.49
Apr	99.76	99.77	99.81	99.83		99.79
May	99.56	99.62	99.67	99.74		99.65
Jun	99.66	99.77	99.87	99.97		99.82

Table 18: CPI Month-on-Month % Change Original & Seasonally Adjusted					
Original Series					
Period	FY15	FY16	FY17	FY18	FY19
Jul	1.70	0.43	1.34	0.34	0.94
Aug	0.33	0.24	-0.30	0.19	0.21
Sep	0.35	-0.10	0.20	0.63	-0.06
Oct	0.21	0.49	0.81	0.75	2.33
Nov	-0.51	0.59	0.21	0.37	0.11
Dec	-1.01	-0.57	-0.68	-0.10	-0.41
Jan	0.08	0.21	0.18	0.03	1.00
Feb	-0.92	-0.25	0.28	-0.31	0.64
Mar	0.23	0.15	0.84	0.31	
Apr	1.32	1.55	1.40	1.82	
May	0.76	-0.21	0.01	0.51	
Jun	0.62	0.64	-0.41	0.57	
Seasonally Adjusted Series					
Jul	0.92	-0.28	0.66	-0.28	0.37
Aug	0.21	0.18	-0.33	0.19	0.22
Sep	0.44	-0.01	0.33	0.78	0.10
Oct	0.00	0.24	0.52	0.43	1.98
Nov	-0.30	0.81	0.42	0.57	0.33
Dec	0.03	0.42	0.27	0.83	0.48
Jan	-0.03	0.16	0.19	0.10	1.08
Feb	-0.29	0.33	0.81	0.15	1.06
Mar	0.09	0.04	0.76	0.24	
Apr	0.33	0.53	0.35	0.75	
May	0.99	-0.01	0.21	0.69	
Jun	0.68	0.69	-0.37	0.59	

Table 19: CPI Food Month-on-Month % Change Original & Seasonally Adjusted					
Original Series					
Period	FY15	FY16	FY17	FY18	FY19
Jul	2.68	0.13	2.50	0.04	0.57
Aug	0.56	0.32	-0.94	0.39	0.21
Sep	0.03	-0.44	0.14	1.29	-0.66
Oct	-0.17	0.44	0.81	0.61	1.91
Nov	-0.45	1.20	0.21	0.37	-0.48
Dec	-2.09	-1.61	-1.90	-0.56	-1.38
Jan	-0.45	-0.59	-0.97	-1.05	0.34
Feb	-1.82	-0.68	0.32	-1.11	1.44
Mar	0.52	0.54	1.87	-0.27	
Apr	1.41	2.38	1.73	1.46	
May	1.82	-0.74	-0.21	0.96	
Jun	1.18	1.38	-1.11	0.84	
Seasonally Adjusted Series					
Jul	1.31	-1.08	1.36	-0.97	-0.34
Aug	0.07	-0.07	-1.28	0.09	-0.04
Sep	0.10	-0.33	0.31	1.52	-0.44
Oct	-0.42	0.11	0.42	0.16	1.38
Nov	-0.34	1.36	0.35	0.50	-0.34
Dec	-0.04	0.32	-0.08	1.24	0.39
Jan	-0.16	-0.14	-0.35	-0.29	1.19
Feb	-0.64	0.35	1.21	-0.37	2.06
Mar	-0.11	-0.03	1.34	-0.76	
Apr	0.11	1.06	0.39	0.12	
May	2.03	-0.59	-0.07	1.05	
Jun	1.08	1.23	-1.31	0.60	

Inflation Monitor, February 2019

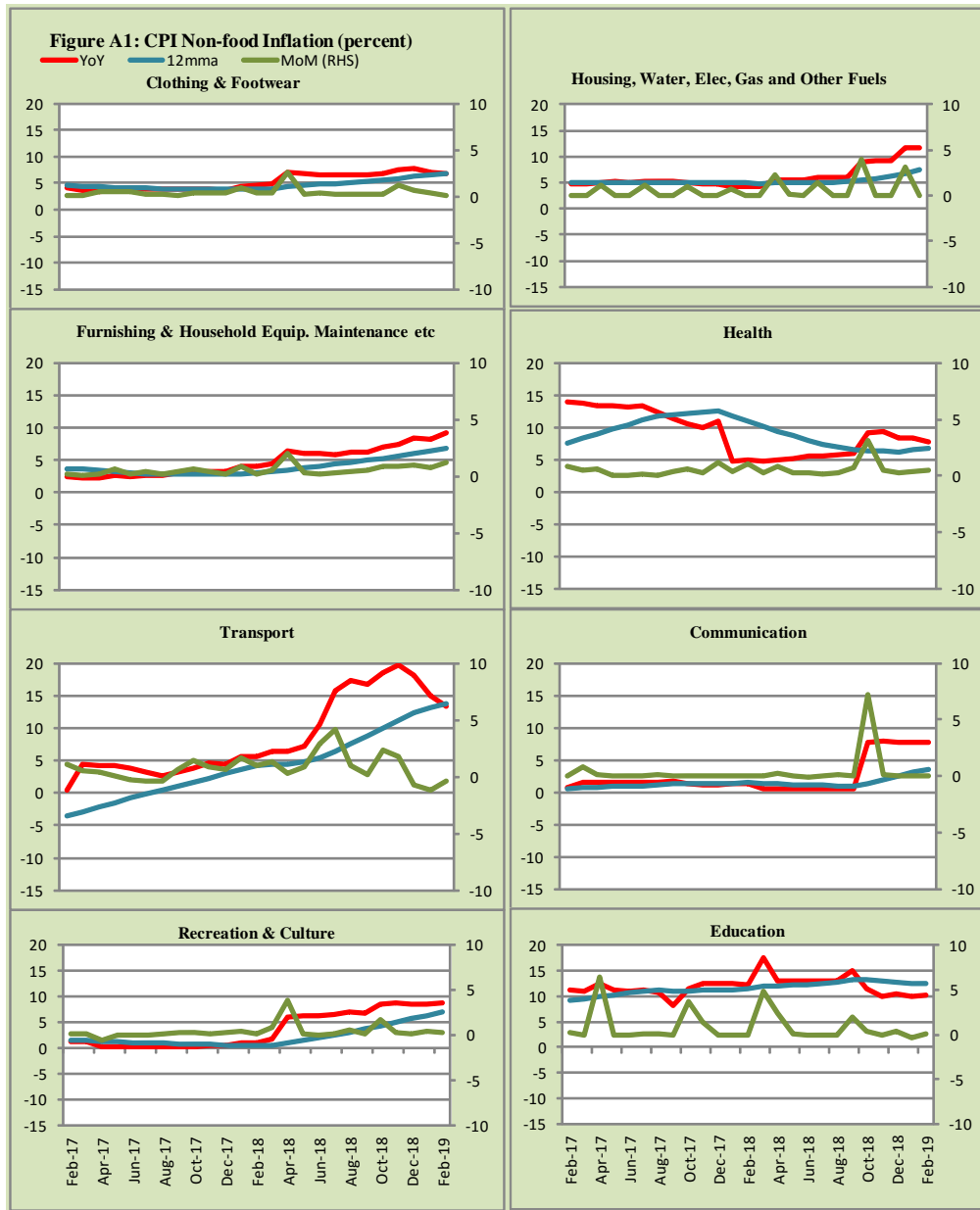


Figure A2: Frequency Distribution of Price Changes of CPI Items, February 2019

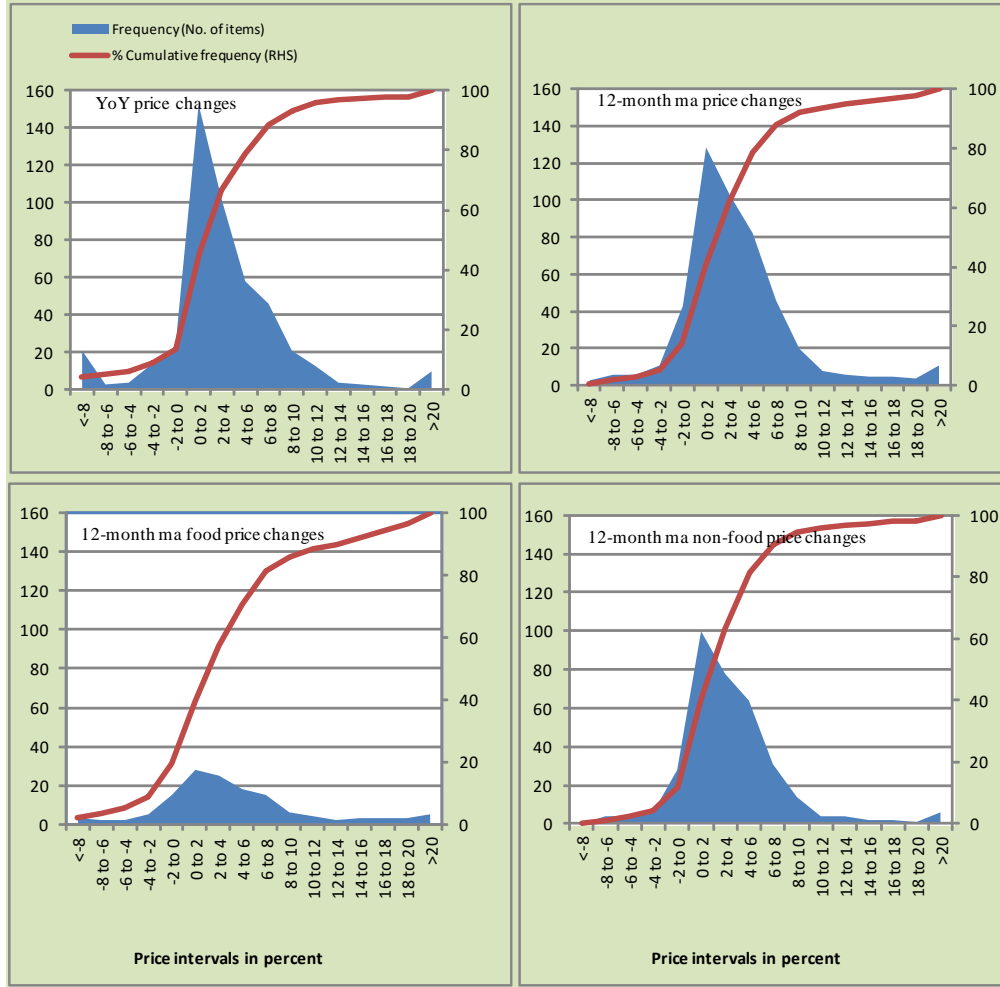


Figure A3: Frequency Distribution of Price Changes of WPI Commodities, February 2019

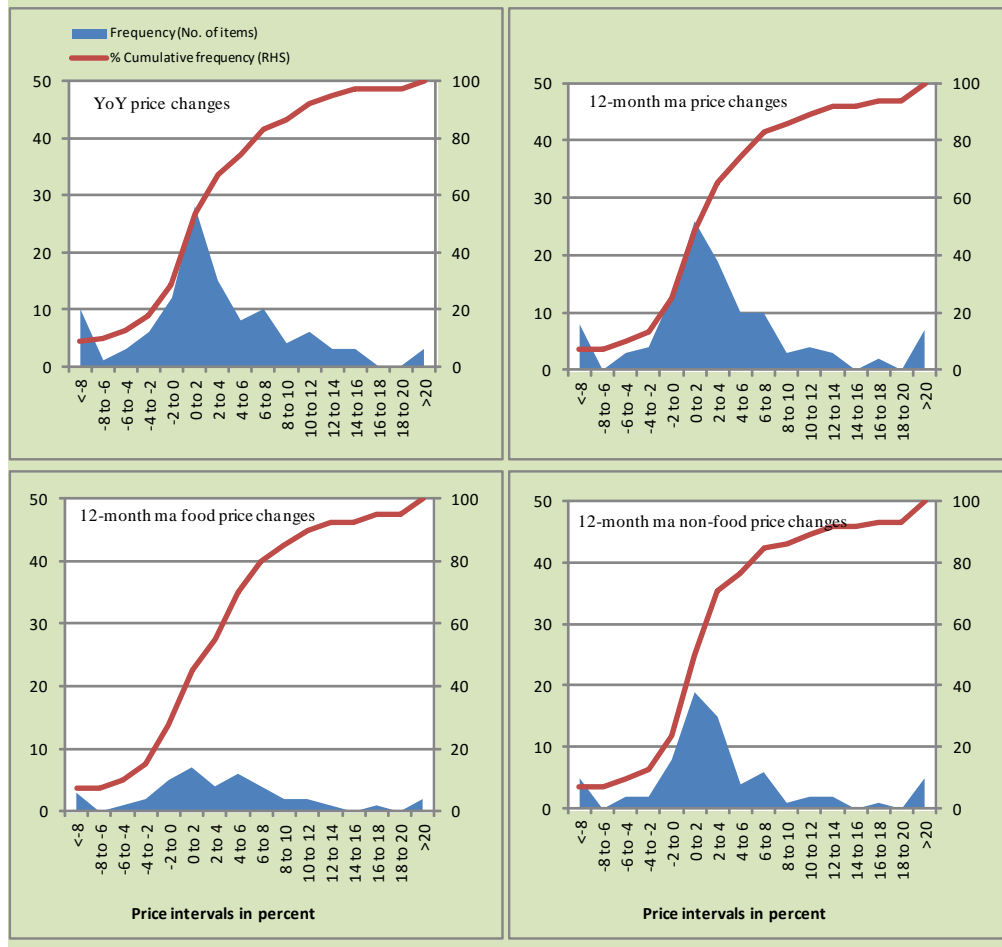
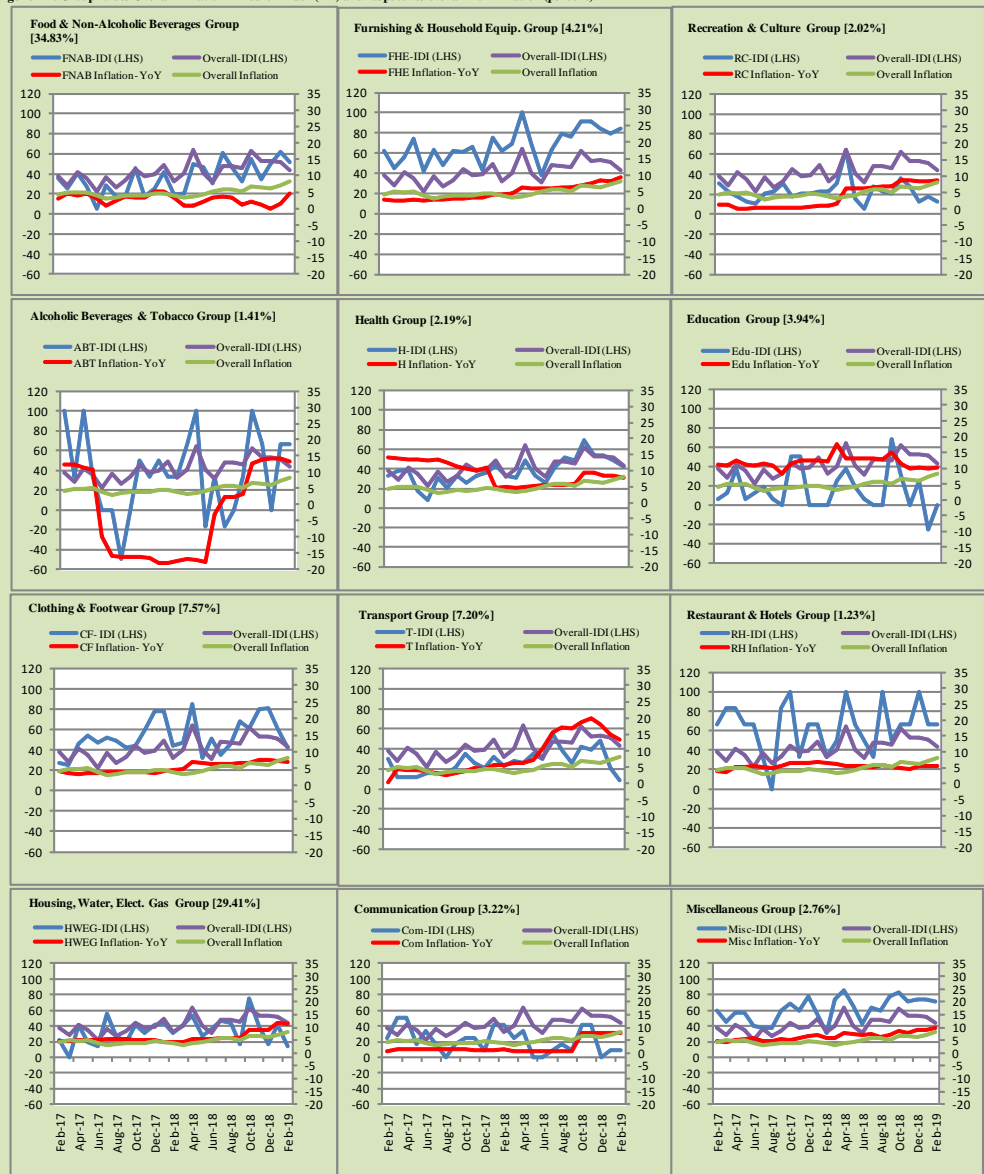


Figure A4: Group-wise/Overall Inflation Diffusion Index (IDI) and respective/overall YoY Inflation (percent)



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

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

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:

$$IDI = \frac{\text{No. of items with positive MoM change in price} - \text{No. of items with negative MoM change in price}}{\text{No. of items for which prices are reported}}$$

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.