

Inflation Monitor

December 2018



State Bank of Pakistan

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Review

Inflation in Brief

1. Headline CPI inflation (2007-08=100) is recorded at level of 6.2 percent on year-on-year basis in December 2018 as compared to 6.5 percent in the previous month and 4.6 percent during corresponding month of last year.
2. CPI inflation on month-on-month basis is recorded at level of -0.4 percent in December 2018 as compared to 0.1 percent in the previous month and -0.1 percent during corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.47 percent in December 2018 compared to 0.30 percent in the previous month.
3. Core inflation (trimmed) on year-on-year basis is recorded at 6.9 percent in December 2018, as compared to 6.7 percent in the previous month and 4.7 percent during corresponding month of last year.
4. On month-on-month basis, the Core inflation (trimmed) is recorded at 0.3 percent in December 2018 and was at level in the previous month and 0.2 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 8.3 percent in December 2018, as compared to 8.2 percent in the previous month and 5.5 percent during corresponding month of last year.
6. Core NFNE inflation on month-on-month basis recorded at 0.3 percent in December 2018 as compared to 0.4 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 12.1 percent in December 2018 as compared to 13.5 percent in the previous month and 3.4 percent during the corresponding month of last year.

8. WPI inflation on month-on-month basis recorded at -0.9 percent in December 2018 as compared to 0.7 percent in the previous month. It was 0.4 percent in the corresponding month of last year.
9. SPI inflation on year-on-year basis recorded at 5.5 percent in December 2018 as compared to 5.3 percent in the previous month. It was 2.7 percent in the corresponding month of last year.
10. SPI inflation on month-on-month basis recorded at -0.1 percent in December 2018 as compared to 1.3 percent in the previous month. It was -0.3 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 December 2018 are described below:

11. Core RSC inflation on year-on-year basis is recorded at 9.0 percent in December 2018 compared to 8.9 percent in the previous month and 4.3 percent during the corresponding month of last year.
12. Core RSC inflation on month-on-month basis is recorded at 0.2 percent in December 2018 compared to 0.4 percent in the previous month and 0.1 percent during the corresponding month of last year.

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

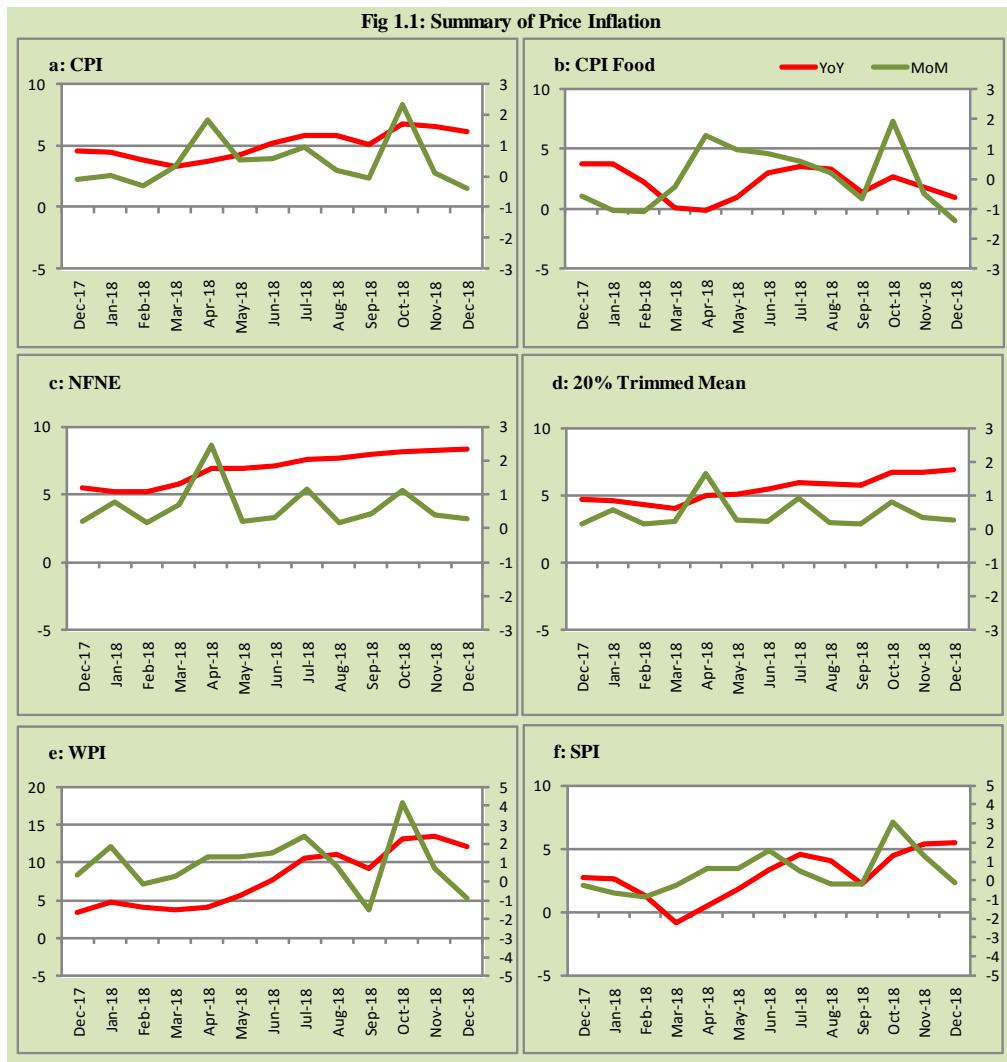
Period	CPI Inflation						Core Inflation						WPI Inflation	SPI*** Inflation		
	General		Food		Non-food		NFNE*		Trimmed		RSC**					
	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM		
Dec-17	4.6	-0.1	3.8	-0.6	5.1	0.2	5.5	0.2	4.7	0.2	4.3	0.1	3.4	0.4	2.7	-0.3
Jan-18	4.4	0.0	3.7	-1.0	4.9	0.8	5.2	0.8	4.6	0.6	4.0	0.6	4.7	1.8	2.6	-0.7
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

* NFNE is Non-food non-energy

** Relatively Stable Component of CPI

*** SPI for all income groups combined

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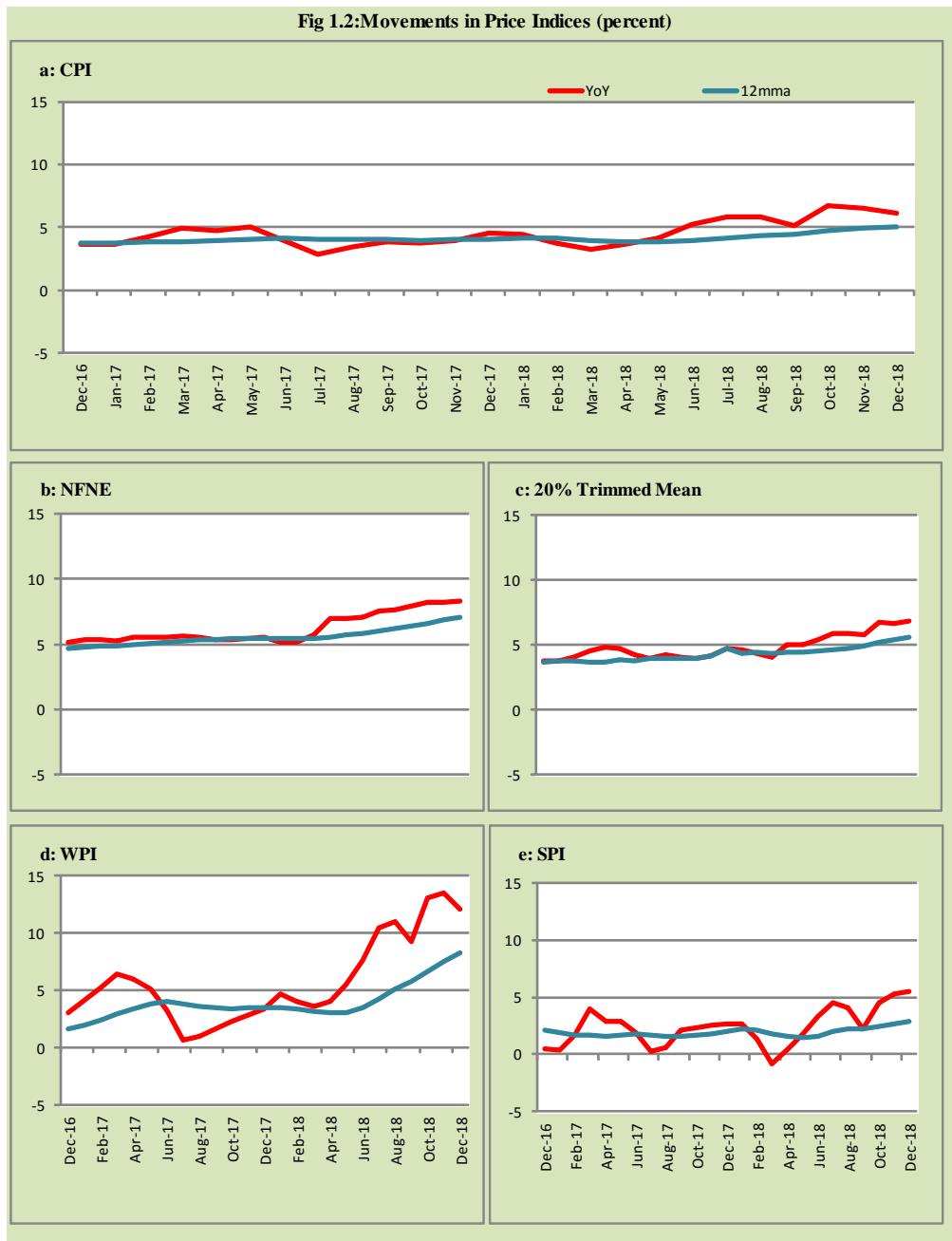
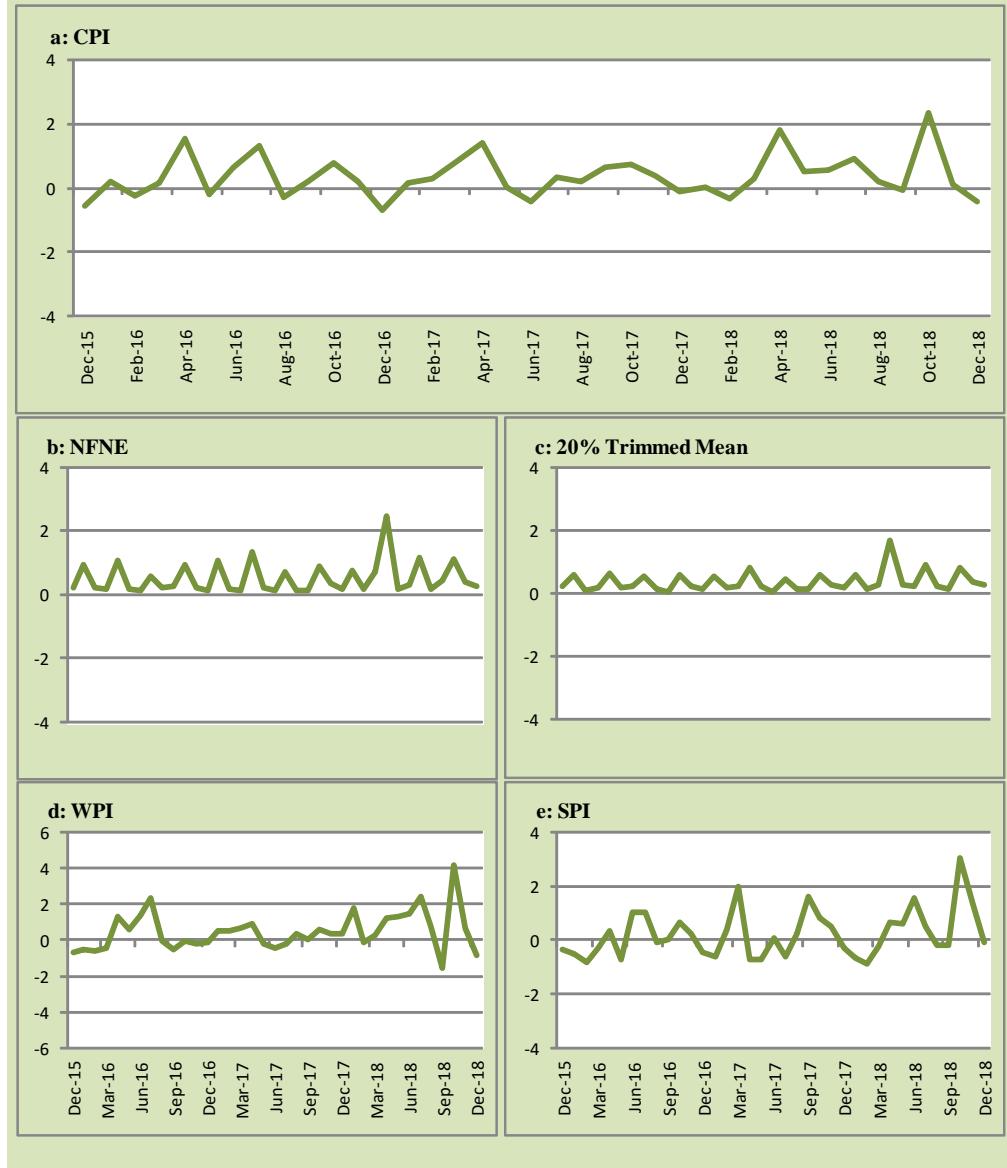
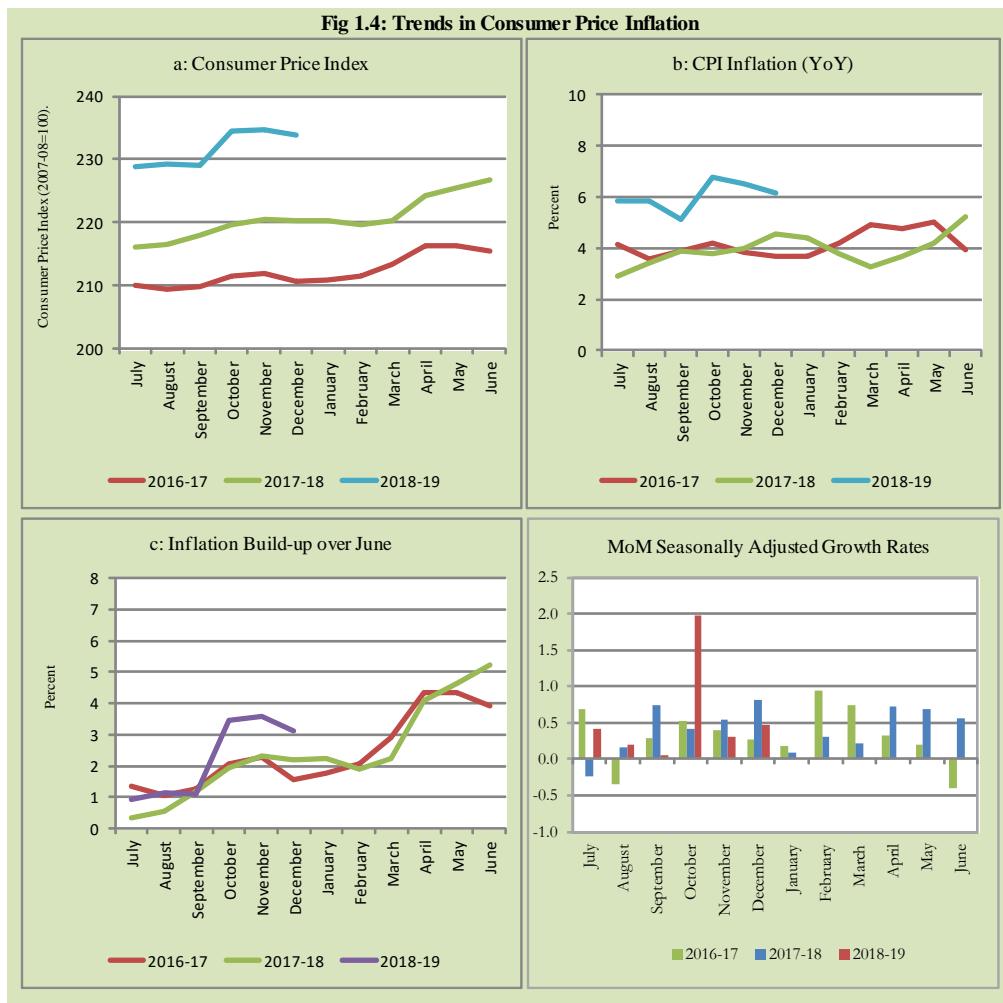


Fig 1.3: Movements in Price Indices -MoM (percent)





2. City wise Inflation

CPI Inflation on year-on-year basis in federal and provincial capitals of Pakistan showed mixed trend during December 2018. Among these five cities, the lowest inflation was observed in Lahore at 3.9 percent while the highest inflation was observed in Quetta at 8.6 percent (Table A6 of annexure-A).

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

	Dec-17		Nov-18		Dec-18	
	MoM	YoY	MoM	YoY	MoM	YoY
Overall CPI	-0.1	4.6	0.1	6.5	-0.4	6.2
Islamabad	-0.1	5.6	0.1	4.7	-0.2	4.6
Karachi	0.3	3.1	0.4	6.8	0.0	6.6
Lahore	-0.5	6.6	0.2	4.6	-1.3	3.9
Peshawar	-0.7	4.4	0.3	7.4	-0.2	7.9
Quetta	0.0	4.6	-0.2	8.0	0.5	8.6

3. Income Group wise Inflation

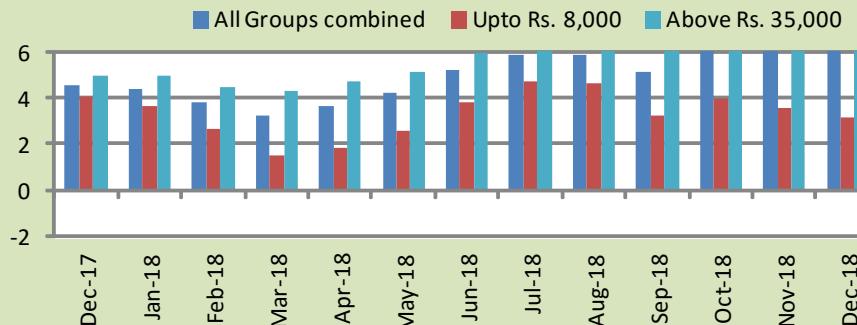
Income group-wise data shows that income group above Rs. 35,000 witnessed higher inflation as compared to other quintiles as well as overall CPI during December 2018 in General, Food and Non-food groups. The income groups (Up to Rs. 8,000) observed lowest inflation in general CPI, food groups; and non-food groups among income groups during the month of December 2018 (Table A7 of annexure-A).

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

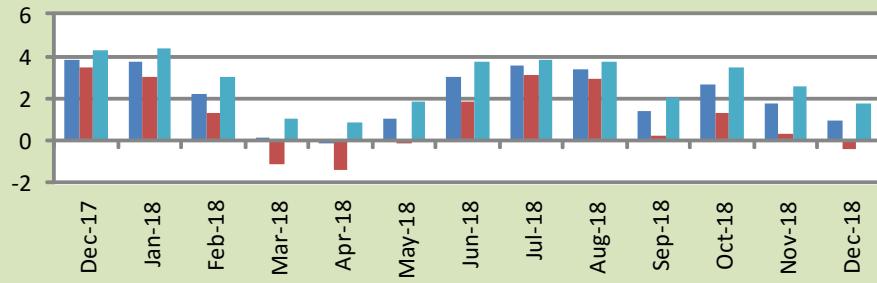
Income Groups	General			Food			Non-food		
	Dec-17	Nov-18	Dec-18	Dec-17	Nov-18	Dec-18	Dec-17	Nov-18	Dec-18
All Groups Combined	4.6	6.5	6.2	3.8	1.8	0.9	5.1	9.8	9.8
Up to Rs. 8,000	4.0	3.5	3.2	3.4	0.3	-0.4	4.8	7.4	7.6
Rs. 8,001- 12,000	4.1	4.2	3.8	3.5	0.9	0.0	4.7	7.6	7.7
Rs. 12,001- 18,000	4.1	4.6	4.2	3.5	1.3	0.4	4.8	7.8	7.8
Rs. 18,001- 35,000	4.2	6.3	5.9	3.5	1.7	0.9	4.9	10.0	10.0
Above Rs. 35,000	5.0	8.4	8.1	4.3	2.6	1.7	5.3	11.2	11.2

Fig 3.1: Income Group- wise Inflation

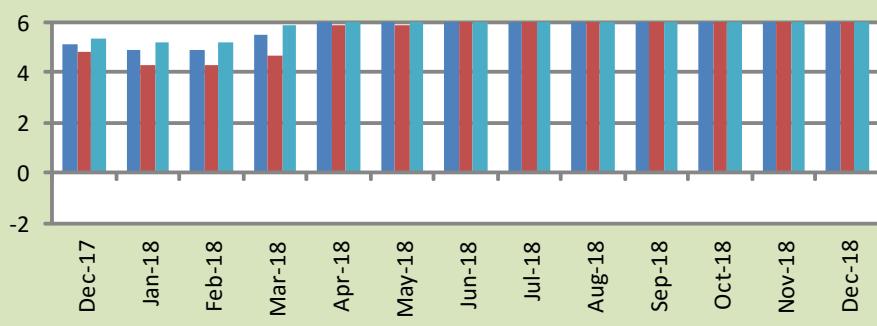
a: CPI Overall Inflation (YoY)



b: CPI Food Inflation (YoY)



c: CPI Non-Food Inflation (YoY)



4. Weighted Contribution

The weighted contribution of food group in the overall inflation decreased to 6.27 percent during December 2018 from 11.22 percent in previous month. It was 34.01 percent in December 2017.

The weighted contribution of non-food group increased to 93.73 percent in December 2018 from 88.78 percent in previous month.

Table 4.1 Weighted Contribution to CPI Inflation (YoY)

Period	Food	Clothing & Footwear	Housing, Water, Elect, Gas & Other Fuel	Transport	Education	Others
Dec-17	34.01	6.68	28.47	5.73	11.85	13.26
Jan-18	34.02	8.17	25.57	7.58	12.23	12.43
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

5. Inflation Diffusion Index

	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
General	39.2	48.9	32.5	40.2	63.8	40.6	31.5	47.8	47.7	45.9	62.4	52.7	53.1
Food & Non-Alcoholic Beverages	25.0	42.1	19.3	20.4	50.0	46.3	30.1	60.9	46.5	32.2	54.3	35.0	49.6
Alcoholic Beverages & Tobacco	50.0	33.3	33.3	66.7	100.0	-16.7	33.3	-16.7	0.0	33.3	100.0	66.7	0.0
Clothing & Footwear	78.0	78.0	44.1	47.5	84.7	32.2	50.8	35.6	45.8	67.8	61.0	79.7	81.4
Housing, Water, Elect, Gas & other Fuels	41.7	44.4	30.6	41.7	52.8	27.8	36.1	47.2	44.4	16.7	75.0	38.9	16.7
Furnishing & Household Equip. Maintenance etc	43.5	75.4	62.3	69.6	100.0	69.6	37.7	63.8	79.7	76.8	91.3	91.3	84.1
Health	35.9	43.6	33.3	30.8	48.7	33.3	25.6	41.0	51.3	48.7	69.2	53.8	53.8
Transport	20.9	32.6	23.3	27.9	25.6	34.9	30.2	55.8	39.5	25.6	41.9	39.5	48.8
Communication	8.3	41.7	41.7	25.0	33.3	0.0	0.0	8.3	16.7	8.3	41.7	41.7	0.0
Recreation & Culture	20.5	23.1	23.1	30.8	64.1	15.4	5.1	28.2	23.1	20.5	35.9	28.2	12.8
Education	0.0	0.0	0.0	25.0	37.5	18.8	6.3	0.0	0.0	68.8	31.3	0.0	25.0
Restaurant & Hotels	66.7	66.7	33.3	50.0	100.0	66.7	50.0	33.3	100.0	50.0	66.7	66.7	100.0
Miscellaneous	77.1	54.3	31.4	74.3	85.7	65.7	42.9	62.9	60.0	77.1	82.9	71.4	74.3
NFNE	43.2	51.5	36.7	46.2	69.2	39.3	31.4	45.0	48.8	52.7	66.9	58.9	56.5

See annexure B (Technical Notes) for the definition of Inflation Diffusion Index.

6. Domestic Commodity Prices

Table 6.1 Inflation in Domestic CPI Food Commodities (percent)

Sr. No	Item	Unit	Dec-17		Nov-18		Dec-18	
			YoY	MoM	YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-1.16	1.09	2.71	1.36	2.29	0.68
2	Wheat Flour Bag	10 Kg	-0.27	0.59	2.15	0.70	2.07	0.51
3	Rice Basmati Sup. Qlty.	Kg	14.09	0.93	11.81	-0.11	11.96	1.07
4	Pulse Masoor (Washed)	Kg.	-20.77	-2.60	-4.80	0.96	0.34	2.65
5	Pulse Moong (Washed)	Kg.	-21.19	-3.23	0.29	2.00	7.85	4.06
6	Pulse Mash (Washed)	Kg.	-27.41	-3.83	-12.15	3.60	-6.32	2.55
7	Pulse Gram	Kg.	-28.85	-1.66	-0.41	0.85	4.28	2.96
8	Vegetable Ghee (Loose)	Kg.	2.44	-0.22	5.98	1.27	7.82	1.51
9	Sugar Refined	Kg.	-13.45	0.70	2.06	-0.05	2.50	1.14
10	Milk Fresh (Unboiled)	Ltr	3.81	0.30	3.88	0.27	3.73	0.15
11	Tapal Danedar Tea 200 Gm	Pkt	9.31	0.00	11.70	0.35	12.21	0.46
12	Beef With Bone Av.Qlty.	Kg	6.54	0.42	12.50	1.36	13.33	1.16
13	Mutton Av.Qlty.	Kg	9.90	0.62	13.02	1.11	12.97	0.57
14	Chicken Farm Broiler (Live)	Kg	21.21	23.67	44.45	14.78	8.86	-6.80
15	Eggs Farm	Doz	2.81	-2.73	-10.35	10.20	-9.05	-1.32
16	Potatoes	Kg	21.52	-0.47	-20.26	6.99	-36.09	-20.23
17	Onion	Kg	130.35	-21.91	-58.10	-7.51	-53.45	-13.23
18	Tomatoes	Kg	49.35	-30.16	-61.30	-43.72	-56.30	-21.14
19	Ginger	Kg	11.14	-2.86	13.97	-3.72	12.37	-4.22
20	Garlic	Kg	-45.46	-0.09	-20.05	2.76	-18.15	2.28

7. Global Commodity Prices

Table 7.1 Changes in Major Global Indices (percent)

Item/ Group	Dec-17		Nov-18		Dec-18	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	-2.8	-1.1	-4.9	-1.8	-2.4	1.5
Metals	18.3	-0.5	-9.5	-2.6	-10.2	-1.3
Energy	14.2	1.9	6.9	-15.4	-7.0	-11.3
Agricultural	-3.5	-0.9	-3.9	-1.3	-2.6	0.5
Cotton	7.4	6.2	7.9	0.0	0.7	-0.9

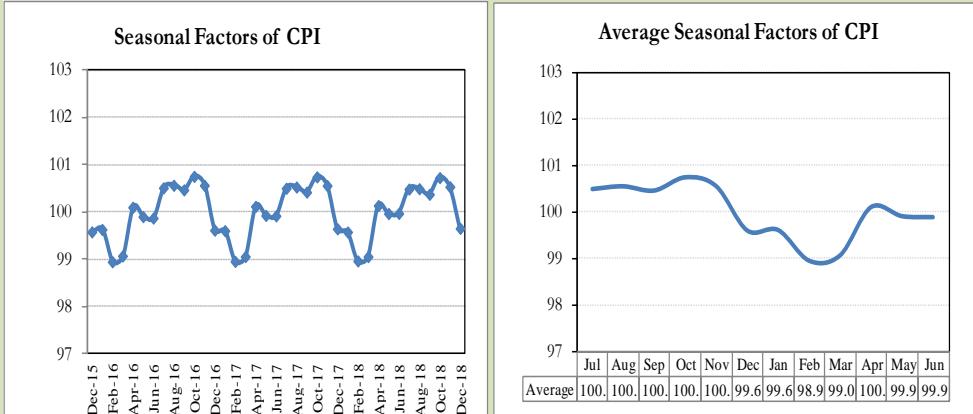
8. Seasonal Adjustment in CPI

Seasonal adjustment is the process of estimating and removing the seasonal effects from a time series after decomposing it into seasonal, trend, cycle and irregular components. The purpose is to identify the different components of the time series and thus provide a better understanding of its underlying behavior. Seasonally adjusted changes are usually preferred for analyzing general price trends in the economy because they eliminate the effect of changes that normally occur at the same time and in about the same magnitude every year. Various statistical methods can be used to decompose a time series into its constituent components. The State Bank of Pakistan uses X-12- ARIMA Seasonal Adjustment Method for this purpose.

The changes in consumer prices are normally reported in terms of year-on-year and month-on-month basis. Seasonal adjustment is particularly useful for analyzing month-on-month changes. The monthly data series of Consumer Price Index (CPI) from July 2008 to December 2018 has been used for seasonal adjustment analysis. The seasonal analysis is carried out without taking trading-day or Islamic calendar month's effects.

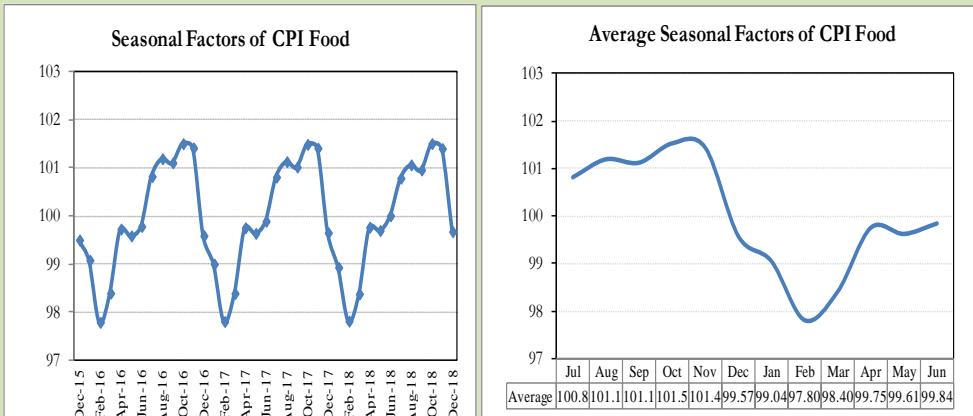
Figure 8.1 reveals that seasonality in CPI has been increasing over the period of last four years. Average seasonal factors reveal strong seasonality during the calendar year. There is an upward seasonality during the months from July to December and downward seasonality in the remaining months of the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

Fig. 8.3 Seasonal Plots of CPI

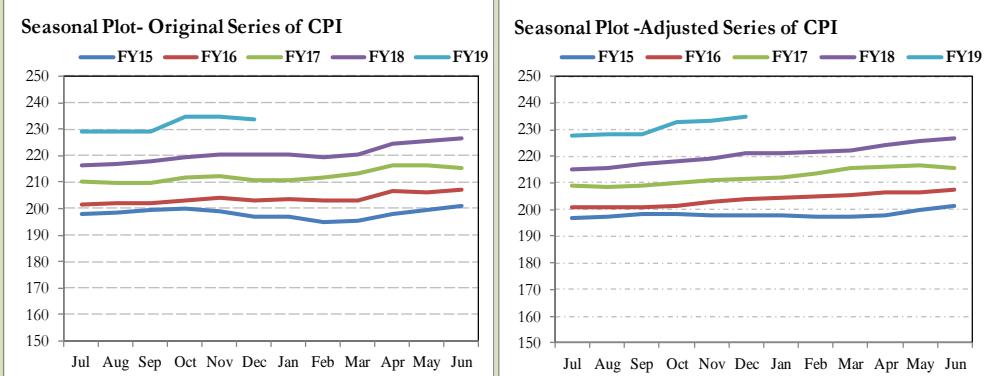
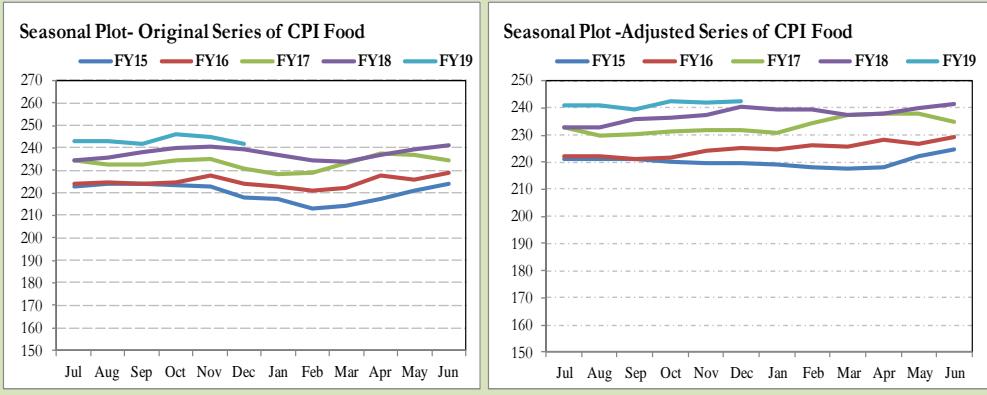


Fig. 8.4 Seasonal Plots of CPI (Food)



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Seasonally adjusted CPI for December 2018 stood at 234.59 against 233.78 in original series showing an increase of 0.81 on account of adjustment of downward seasonality in December 2018.

Seasonally adjusted CPI food group for December 2018 stood at 242.49 against 241.70 in original series showing an increase of 0.79 on account of adjustment of downward seasonality in December 2018.

Month-on-month change of seasonally adjusted CPI series stood at 0.47% reflecting an increase during December 2018 over previous month and a decrease of 0.41% in original series.

Month-on-month change of seasonally adjusted CPI food group series stood at 0.33% reflecting an increase during December 2018 over previous month and a decrease of -0.38% in original series.

It is important to note that inflation rates should be analyzed on the basis of seasonally adjusted rates. This is especially needed for inflation rates on month-on-month basis.

The most recent annual rate of inflation is usually indicated by annualizing the seasonally adjusted month-on-month rate. Annualized rate of CPI inflation in December 2018 (corresponding to the seasonally adjusted month-on-month rate) is 5.73 percent.

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

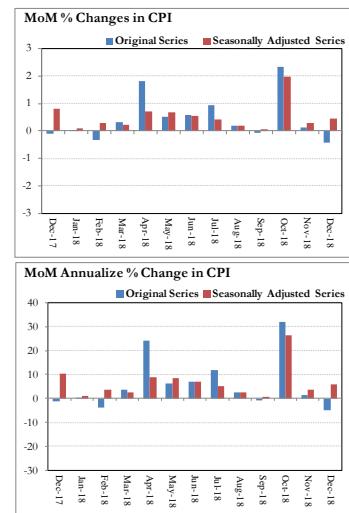
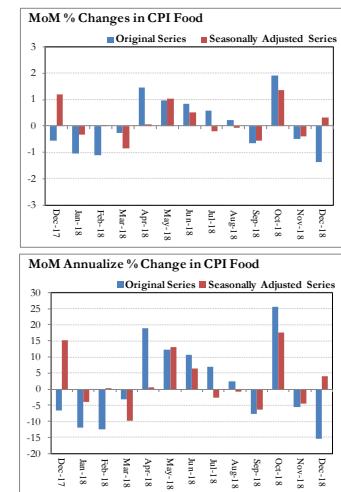


Fig. 8.6 Month-on-Month Percent Changes in CPI Food



Annexure A

Table A1: CPI Inflation by Groups (percent)

Weight	MoM change			YoY change		
	Dec-17	Nov-18	Dec-18	Dec-17	Nov-18	Dec-18
I. Food Group	37.5	-0.6	-0.5	-1.4	3.8	1.8
Food & Non-Alcoholic Beverages	34.8	-0.6	-0.6	-1.6	5.2	1.0
Alcoholic Beverages & Tobacco	1.4	0.1	1.2	0.4	-18.1	13.9
Restaurant & Hotels	1.2	0.2	0.3	1.1	6.4	4.7
II. Non-Food Group	62.5	0.2	0.5	0.2	5.1	9.8
Clothing & Footwear	7.6	0.4	1.2	0.6	3.6	7.5
Housing, Water, Elect, Gas &c.	29.4	0.0	0.1	0.0	4.9	9.1
Furnishing & Household Equip.	4.2	0.2	0.9	1.0	3.3	7.5
Health	2.2	1.2	0.5	0.3	10.9	9.4
Transport	7.2	0.6	1.8	-0.7	4.5	19.8
Communication	3.2	0.0	0.1	0.0	1.2	7.8
Recreation & Culture	2.0	0.3	0.3	0.1	0.6	8.7
Education	3.9	0.0	0.0	0.3	12.4	10.0
Miscellaneous	2.8	0.4	0.3	1.4	6.5	7.9
Headline	100.0	-0.1	0.1	-0.4	4.6	6.5
						6.2

Table A2: Distribution of Price changes (YoY) of CPI basket

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)		
			Dec-18	Dec-17	Dec-17	Dec-18	Dec-17	Dec-18	Dec-17	Dec-18	Dec-17
I. Food Group	0.9	126	126	29	26	46	41	26	30	25	29
Food & Non-Alcoholic Beverages	0.0	114	114	26	26	44	39	21	28	23	21
Alcoholic Beverages & Tobacco	14.3	6	6	3	0	1	0	1	0	1	6
Restaurant & Hotels	5.6	6	6	0	0	1	2	4	2	1	2
II. Non-Food Group	9.8	348	348	74	24	179	65	73	148	22	111
Clothing & Footwear	7.7	59	59	8	3	36	8	15	34	0	14
Housing, Water, Elect, Gas & other Fuels	9.1	36	36	13	6	6	3	15	11	2	16
Furnishing & Household Equip. Maintenance etc	8.3	69	69	2	0	55	6	11	39	1	24
Health	8.5	39	39	8	2	22	18	7	11	2	8
Transport	18.2	43	43	24	7	14	4	2	10	3	22
Communication	7.8	12	12	4	1	4	7	3	1	1	3
Recreation & Culture	8.5	39	39	14	3	21	13	2	12	2	11
Education	10.4	16	16	0	1	2	2	5	8	9	5
Miscellaneous	9.0	35	35	1	1	19	4	13	22	2	8
Overall	6.2	474	474	103	50	225	106	99	178	47	140

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

Table A3: Top and Bottom 15 Contributors to CPI Inflation (YoY) in December, 2018

Top 15 Contributors		Weights	<u>YoY Change</u>		Weighted Contribution
Items/ Contributors			Dec-17	Dec-18	
Ranked by Weighted Contribution					
1	House Rent	21.81	6.49	6.72	20.95
2	Gas	1.58	0.00	85.31	15.65
3	Motor Fuel	3.03	11.07	25.75	8.92
4	Education	3.94	12.40	10.36	7.89
5	Meat	2.43	7.69	13.21	6.79
6	Transport Services	2.70	0.22	15.95	6.15
7	Milk Fresh	6.68	3.86	3.71	5.07
8	Cigarettes	1.39	-18.47	12.72	3.99
9	Communication & Apparatus	3.15	1.14	7.84	2.38
10	Personal Equipments	0.84	8.30	12.13	2.36
11	Cotton Cloth	1.73	4.02	7.79	2.33
12	Tea	0.84	7.59	11.11	1.95
13	Rice	1.58	15.12	8.89	1.92
14	Tailoring	0.88	6.77	8.18	1.75
15	Chicken	1.36	21.21	8.86	1.69
Total		53.95			89.78
Bottom 15 Contributors					
1	Fresh Vegetables	1.75	12.04	-27.00	-9.64
2	Onion	0.51	130.36	-53.45	-7.48
3	Tomatoes	0.42	49.35	-56.30	-4.23
4	Potatoes	0.45	21.52	-36.09	-3.40
5	Eggs	0.46	2.80	-9.05	-0.81
6	Fresh Fruits	1.86	6.58	-1.98	-0.61
7	Gram Whole	0.16	-7.64	-9.35	-0.33
8	Pulse Mash (Washed)	0.21	-27.41	-6.32	-0.23
9	Besan	0.15	-20.25	-3.17	-0.10
10	Pulse Masoor	0.27	-20.68	-0.12	0.00
11	Gur	0.02	-2.93	-0.22	0.00
12	Motor Vehicle Tax	0.11	0.00	0.00	0.00
13	Electricity	4.40	0.00	0.00	0.00
14	Medical Equipments	0.01	2.72	4.81	0.01
15	Wheat Product	0.10	-0.99	1.10	0.02
Total		10.87			-26.81

Table A3.1: Top and Bottom 15 Contributors to CPI Inflation (MoM) in December, 2018

Top 15 Contributors Items/ Contributors	Weights	MoM Change		Weighted Contribution
		Nov-18	Dec-18	
Ranked by Weighted Contribution				
1 Personal Equipments	0.84	-0.09	2.69	8.00
2 Meat	2.43	1.27	0.95	7.69
3 Cooking Oil	1.75	0.80	1.92	4.97
4 Tea	0.84	0.55	1.70	4.55
5 Vegetable Ghee	2.07	1.01	1.37	4.38
6 Ready Made Food	1.23	0.27	1.07	4.05
7 Education	3.94	0.00	0.32	3.74
8 Wheat Flour	4.16	0.55	0.40	3.74
9 Cotton Cloth	1.73	0.61	0.82	3.67
10 Household Servent	1.04	0.29	1.18	3.47
11 Milk Fresh	6.68	0.26	0.16	3.17
12 Washing Soap & Detergent	0.79	1.59	1.44	2.95
13 Rice	1.58	-0.43	0.82	2.66
14 Tailoring	0.88	0.51	0.79	2.55
15 Sugar	1.04	-0.06	1.14	2.42
Total	31.03			62.03
Bottom 15 Contributors				
1 Fresh Vegetables	1.75	-11.50	-21.78	-101.55
2 Potatoes	0.45	6.99	-20.23	-21.41
3 Chicken	1.36	14.78	-6.80	-21.22
4 Onion	0.51	-7.51	-13.23	-13.92
5 Tomatoes	0.42	-43.72	-21.14	-12.31
6 Transport Services	2.70	0.11	-1.57	-9.98
7 Fresh Fruits	1.86	-7.56	-1.83	-7.92
8 Motor Fuel	3.03	4.09	-0.67	-4.09
9 Eggs	0.46	10.20	-1.31	-1.51
10 Beverages	1.20	-0.24	-0.38	-1.11
11 Betel Leaves & Nuts	0.02	-1.55	-0.90	-0.13
12 Gur	0.02	-0.57	-0.50	-0.03
13 Kerosene Oil	0.01	2.33	-1.01	-0.02
14 Sweet Meet	0.25	0.51	-0.01	-0.01
15 Motor Vehicle Tax	0.11	0.00	0.00	0.00
Total	14.14			-195.21

Table A3.2: Top Fifteen Contributors to CPI Inflation (YoY) in December, 2018

Items/ Contributors	Weights	YoY Change		Weighted Contribution
		Nov-17	Nov-18	
A. Ranked by Percentage Change				
1	Betel Leaves & Nuts	0.02	16.18	114.85
2	Gas	1.58	0.00	85.31
3	News Papers	0.19	3.92	27.42
4	Motor Fuel	3.03	11.07	25.75
5	Kerosene Oil	0.01	13.51	22.15
6	Transport Services	2.70	0.22	15.95
7	Spices	0.54	-0.08	14.95
8	Motor Vehicle	0.66	3.70	14.89
9	Water Supply	0.50	4.15	13.62
10	Meat	2.43	7.69	13.21
11	Cigarettes	1.39	-18.47	12.72
12	Honey	0.04	6.90	12.43
13	Personal Equipments	0.84	8.30	12.13
14	Construction Input Items	0.56	4.11	11.94
15	Cosmetics	0.39	2.94	11.52
Total		14.89		50.82
B. Ranked by Weights				
1	House Rent	21.81	6.49	6.72
2	Milk Fresh	6.68	3.86	3.71
3	Electricity	4.40	0.00	0.00
4	Wheat Flour	4.16	-0.38	1.74
5	Education	3.94	12.40	10.36
6	Communication & Apparatus	3.15	1.14	7.84
7	Motor Fuel	3.03	11.07	25.75
8	Transport Services	2.70	0.22	15.95
9	Meat	2.43	7.69	13.21
10	Vegetable Ghee	2.07	2.65	5.92
11	Fresh Fruits	1.86	6.58	-1.98
12	Fresh Vegetables	1.75	12.04	-27.00
13	Cooking Oil	1.75	2.73	5.43
14	Cotton Cloth	1.73	4.02	7.79
15	Rice	1.58	15.12	8.89
Total		63.07		55.54
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in YoY change in CPI, which is 6.2 percent in December, 2018.				

Table A3.3: Top Ten Contributors to CPI Food Inflation (YoY) in December, 2018

Items/ Contributors	Weights	<u>YoY Change</u>		Weighted Contribution
		Dec-17	Dec-18	
A. Ranked by Weighted Contribution				
1 Meat	2.43	7.69	13.21	6.79
2 Milk Fresh	6.68	3.86	3.71	5.07
3 Cigarettes	1.39	-18.47	12.72	3.99
4 Tea	0.84	7.59	11.11	1.95
5 Rice	1.58	15.12	8.89	1.92
6 Chicken	1.36	21.21	8.86	1.69
7 Ready Made Food	1.23	6.38	5.63	1.45
8 Spices	0.54	-0.08	14.95	1.43
9 Vegetable Ghee	2.07	2.65	5.92	1.30
10 Wheat Flour	4.16	-0.38	1.74	1.13
Total	22.29			26.71
B. Ranked by Percentage Change				
1 Betel Leaves & Nuts	0.02	16.18	114.85	0.55
2 Spices	0.54	-0.08	14.95	1.43
3 Meat	2.43	7.69	13.21	6.79
4 Cigarettes	1.39	-18.47	12.72	3.99
5 Honey	0.04	6.90	12.43	0.14
6 Tea	0.84	7.59	11.11	1.95
7 Dry Fruits	0.25	3.53	10.43	0.54
8 Rice	1.58	15.12	8.89	1.92
9 Chicken	1.36	21.21	8.86	1.69
10 Sweet Meet	0.25	3.56	7.95	0.37
Total	8.71			19.35
C. Ranked by Weights				
1 Milk Fresh	6.68	3.86	3.71	5.07
2 Wheat Flour	4.16	-0.38	1.74	1.13
3 Meat	2.43	7.69	13.21	6.79
4 Vegetable Ghee	2.07	2.65	5.92	1.30
5 Fresh Fruits	1.86	6.58	-1.98	-0.61
6 Fresh Vegetables	1.75	12.04	-27.00	-9.64
7 Cooking Oil	1.75	2.73	5.43	0.97
8 Rice	1.58	15.12	8.89	1.92
9 Cigarettes	1.39	-18.47	12.72	3.99
10 Chicken	1.36	21.21	8.86	1.69
Total	25.05			12.60
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 0.9 percent in December, 2018.				

Table A3.4: Top Ten Contributors to CPI Non-food Inflation (YoY) in December, 2018

Items/ Contributors	Weights	<u>YoY Change</u>		Weighted Contribution
		Dec-17	Dec-18	
A. Ranked by Weighted Contribution				
1 House Rent	21.81	6.49	6.72	20.95
2 Gas	1.58	0.00	85.31	15.65
3 Motor Fuel	3.03	11.07	25.75	8.92
4 Education	3.94	12.40	10.36	7.89
5 Transport Services	2.70	0.22	15.95	6.15
6 Communication & Apparatus	3.15	1.14	7.84	2.38
7 Personal Equipments	0.84	8.30	12.13	2.36
8 Cotton Cloth	1.73	4.02	7.79	2.33
9 Tailoring	0.88	6.77	8.18	1.75
10 Personal Care	1.49	6.08	6.06	1.55
Total	41.17			69.93
B. Ranked by Percentage Change				
1 Gas	1.58	0.00	85.31	15.65
2 News Papers	0.19	3.92	27.42	0.72
3 Motor Fuel	3.03	11.07	25.75	8.92
4 Kerosene Oil	0.01	13.51	22.15	0.02
5 Transport Services	2.70	0.22	15.95	6.15
6 Motor Vehicle	0.66	3.70	14.89	1.29
7 Water Supply	0.50	4.15	13.62	0.86
8 Personal Equipments	0.84	8.30	12.13	2.36
9 Construction Input Items	0.56	4.11	11.94	1.28
10 Cosmetics	0.39	2.94	11.52	0.68
Total	10.46			37.93
C. Ranked by Weights				
1 House Rent	21.81	6.49	6.72	20.95
2 Electricity	4.40	0.00	0.00	0.00
3 Education	3.94	12.40	10.36	7.89
4 Communication & Apparatus	3.15	1.14	7.84	2.38
5 Motor Fuel	3.03	11.07	25.75	8.92
6 Transport Services	2.70	0.22	15.95	6.15
7 Cotton Cloth	1.73	4.02	7.79	2.33
8 Gas	1.58	0.00	85.31	15.65
9 Footware	1.55	0.46	7.92	1.52
10 Personal Care	1.49	6.08	6.06	1.55
Total	45.39			67.33

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 9.8 percent in December, 2018.

Table A4: Distribution of Price Changes (YoY) - Selected CPI Items: December, 2018

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	Peas, Tomatoes, Onion, Cauliflower, Potatoes, Turnip, Chillies Green, Cabbage, Carrot, Brinjal, Cucumber (Kheera), Garlic	Fruit Juice Tetra Pack, Fish-Rahu Medium Size, Rusk (Papay), Cloves Loose Av.Qlty, Pulse Gram, Lemon, Vegetable Chae Tin, Curd	Lactogen 400 Grams, Rice Basmati 385/386, Saunf, Rice Irri-6/9 (Sindh/Punj, Chicken Farm Broiler (Live), Salt-Powdered (Labor) Loose	Chillies Powder Loose, Pistachio Powdered (National/Shan), Cardamom Small Av.Qlty, Chillies Powd.National 200 Gm, Raisins Av.Qlty., Cinamon Loose Av. Qlty, Tea Liston Yellow Label 200 Gm, Cocomon Dev Cigarettes Capstan 20,S, Betel Nuts, Betel Leaves, Cigarettes Morven Gold 20,S, Cigarettes K-20,S, Cigarettes Gold Leaf 20,S.
Alcoholic Beverages & Tobacco				
Clothing & Footwear	Gents Shoe, Art 1109 Servis, Gents Sandal Bata, Gents Shoes Paul Bata,	Second-Hand Coat For Men, Foot Wear Local (Female), Lawn Printed Gul Ahmed/Al Karam, Lungi/Dhoti(Cotton) Avg.Qlty, Linen Av.Qlty, Awami-Suit W&W	Shirting Av.Qlty., Vest/Shameem (Women) Avg.Qlty, Pullover Gents Oxford/Bon, Handkerchief Sup. Qlty Pak, Pullover (Gents) Others Av.Qlty,	Ladies Sandal Bata, Child Shoe Power Lite Bata, Shoe Polish Charges Avg, Tailoring Shirt, Frock W/Wear Girls, Heavy Wt Suiting Law.Pur Av. Qlty, Long Cloth 57" Gul Ahmed/Al Karam, Tropical Suiting Law.Pur, Ladies Spoung Chappal Bata, Chaddar (W/Wear) (2X2.5 Mtr),
Housing, Water, Elect, Gas & other Fuels	Elect.Charges Upto 50 Units, Elect.Charges 01 - 100 Units, Elect.Charges Above 1000 Units, Elect.Charges 301 - 1000 Units, Elect. Charges	Cement Blocks (6"X8"X12"), Firewood Whole, Sand (Black Pit Sand),	Timber Shesham Log, Electrician Wage Rate(P/Day), Mason (Raj) Wage Rate, House Rent For Q-II, House Rent For Q-IV, House Rent For Q-V,	Gas Chrg All Over 500 Mmbtu, Gas Chrg Over 300 - 500 Mmbtu, Gas Chrg Overall/Combined, Gas Chrg Over 200 - 300 Mmbtu, Iron Bar (M.S. Bar) 1/2", Kerosene Oil, Gas Chrg Over 100 - 200 Mmbtu, Plumber Wage Rate, Water Charges Per House, Synthetical Enamel Robialac, Cement Philips, Thermos Starvac 1 Ltr, Robin Blue (35
Furnishing & Household Equip. Maintenance etc		Electric Blubs "0" Watt, Bed Sheet Double With Two Pillow Cover, Carpet Plain Av. Qlty, Hand Stiching Needles, Farsh Dari 12X9' Av.Qlty,	Tissu Paper Perfumed 100, Washing Soap 250 Gm, Gizer Large Size 30 Gallon, Dimming Table 6 Chairs, Water Cooler 9/10 Ltr, Air Cooler Super	Non Stick Cooking Pan, Tube Light Philips 40 Watt, Harpic, Tea Set Pak, China Wear 21 Pcs, Sewing Machine (Singer), Single Bed Without Foam, Frying Pan Steel Avg. Qlty, Elect. Iron Philips, Thermos Starvac 1 Ltr, Robin Blue (35
Health	Vicks Vaporub/Balm, Calcium Syrup Sandoz,	Sugar Test (Random/Fasting), Polyfax Eye Ointment, Grip-E Water Woodwards, Cotton Bandage 2" - 4", Renitec Tab.	Doctor (Mbbs) Clinic Fee, Thermometer China, X-Ray (Chest) Charges, Egg Charges, Trisil Tab., Cac. 1000 Tab,	Dettol (Medium), Betnovate-N Ointment 5 Gm, Sancos Syrup (50 ML), Caprol Syrup 60 ML, Flagyl Tab. 200 Mg., Urine Test (Dr) Charges, Glycrine Small Bottle, Blood Test (Cp) Charges,
Transport	Air Fare Economy Class., Train Fare Ist Slp. > 500, Train Fare A/C Slp > 500K, Platform Ticket, Car Tax For 800 Cc Up To 1300 Cc,	Taxi 4 Seater Fare, Train Fare Eco. > 500 Km., Motor Cycle Hero 70 Cc, Train Fare A/C Slp. 1-100,	Minibus Fare Min.Within City, Bicycle With Tyres & Tube, Motorcycle Honda Cd-70, Minibus Fare Max.Within City, Tyre Car With Tube	Train Fare Eco. 1-100 Km., Train Fare Ist Slp. 1-100, Bus Fare Outside City (Non A/C), Bus Fare Outside City (A/C), Cng, High Speed Diesel Hsd, Petrol Super, Car Honda Civic 1500 Cc, Bus Fare Max (Within City), Bus Fare Min (Within City),
Communication	Mobile Cell Charges, Fax Charges (Local), Mobile Set Nokia/Sony/Ericsson Av.Qlty, Internet Charges, Postal Envelope For Saudi		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,	English Book Class V1, Weekly "Akhbar-E-Jahan", Computer Cd (Tdk/Imation), T.V. 20" Colored Sony, Urdu Book Class V (T.B.Board), Dvd/Vcd Player Panasonic/Lg, Eng. Book Ist Yr Complete	Exercise Book Lined 80/10, Paper Fool Scape (27"X17"), Pen Ink Dollar 55 ML Bottle, English Book Class Ix Or X, Urdu Book 1st Year/ Inter,	Daily "Nawa-E-Waqi", 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, Daily "Dawn", Pencil
Education	Govt. College Fee Ist. Year, Govt. College Fee 4Th. Year,	Pvt Eng.Colege Fee (Ist Year), Pvt School Fee Eng.Med (Class-Vi), Coaching Charges For Class X/ XII Science Group, Pvt School Fee For Msc (Class-V) Co-Ed	Pvt School Fee Eng.Med (Class-Vi), Coaching Charges For Class X/ XII Science Group, Pvt School Fee For Msc (Class-V) Co-Ed	Mba Tuition Fee, Govt. University Fee Msc/ Ma, Pvt School Fee Eng.Med (Class-I), Pvt School Fee Eng.Med (Class-V), Govt. Med. College Fee Mbbs Ist Year,
Restaurant & Hotels		Bread Tandoori St. Size, Tea Prepared (Ordinary),	Cooked Dal (Av. Hotel), Chicken Biryani Full/Double,	Cooked Mutton (Av. Hotel), Cooked Beef (Av. Hotel),
Miscellaneous	Toothpaste Macleans 70 Gms,	Blade 7-O-Clock Steel (5), Hair Colour (Kali Kola), Shampoo Sunsilk/Pantene 100 MI, Toilet Soap Lifebouy 140	Silver Tezabi 24 Ct, Toothpast Med Size Colgate 70Gms, Shaving Cream Touch-Me/Admiral, Nail	Gold Tezabi 24 Ct, Toothpowder Dentonic 90 Gms, Perfume Med.Size Medora/Broche, Purse Ladies (Leather) Av. Qlty, Wrist Watch Gents Citizen, Beauty Cream (Fair & Lovely), Trunk

Table A5: City- wise CPI Inflation by Income Groups, December, 2018

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	MoM	YoY	MoM	YoY
1 Rawalpindi	4.0	4.0	0.5	0.5	8.1	8.1		4.4	4.4	0.4	0.4	8.5	8.5				
2 Islamabad	1.4	1.4	-2.0	-2.0	5.4	5.4		2.1	2.1	-1.3	-1.3	5.5	5.5				
3 Lahore	0.8	0.8	-3.9	-3.9	7.3	7.3		1.5	1.5	-3.4	-3.4	7.4	7.4				
4 Gujranwala	1.4	1.4	-1.6	-1.6	5.0	5.0		2.1	2.1	-0.9	-0.9	5.3	5.3				
5 Sialkot	3.1	3.1	-0.8	-0.8	8.1	8.1		3.2	3.2	-0.5	-0.5	7.2	7.2				
6 Faisalabad	3.2	3.2	-0.3	-0.3	7.2	7.2		4.0	4.0	0.5	0.5	7.5	7.5				
7 Multan	1.9	1.9	-1.4	-1.4	5.9	5.9		2.2	2.2	-1.5	-1.5	6.1	6.1				
8 Sargodha	1.7	1.7	-2.2	-2.2	5.9	5.9		2.4	2.4	-1.7	-1.7	6.3	6.3				
9 Bahawalpur	1.5	1.5	-1.5	-1.5	4.7	4.7		2.1	2.1	-0.6	-0.6	4.5	4.5				
10 Karachi	4.2	4.2	3.2	3.2	5.5	5.5		4.7	4.7	3.3	3.3	6.3	6.3				
11 Hyderabad	4.7	4.7	2.6	2.6	7.6	7.6		5.7	5.7	3.0	3.0	8.8	8.8				
12 Sukkur	2.5	2.5	-2.7	-2.7	8.7	8.7		3.2	3.2	-2.0	-2.0	8.5	8.5				
13 Larkana	1.7	1.7	-0.2	-0.2	3.7	3.7		1.9	1.9	-0.1	-0.1	3.8	3.8				
14 Peshawar	5.0	5.0	1.7	1.7	8.8	8.8		5.9	5.9	2.2	2.2	9.6	9.6				
15 Bannu	2.9	2.9	0.5	0.5	5.6	5.6		3.8	3.8	0.6	0.6	6.9	6.9				
16 Quetta	5.2	5.2	1.6	1.6	9.5	9.5		6.4	6.4	2.1	2.1	11.0	11.0				
17 Khuzdar	2.6	2.6	-0.7	-0.7	6.4	6.4		2.5	2.5	-0.4	-0.4	5.6	5.6				
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	MoM	YoY	MoM	YoY
1 Rawalpindi	5.1	5.1	0.3	0.3	9.4	9.4		5.2	5.2	0.2	0.2	9.1	9.1				
2 Islamabad	2.5	2.5	-1.1	-1.1	5.9	5.9		3.0	3.0	-1.0	-1.0	6.2	6.2				
3 Lahore	2.4	2.4	-2.8	-2.8	8.0	8.0		3.1	3.1	-2.2	-2.2	8.1	8.1				
4 Gujranwala	3.2	3.2	0.2	0.2	6.1	6.1		3.9	3.9	0.9	0.9	6.5	6.5				
5 Sialkot	3.6	3.6	-0.3	-0.3	7.4	7.4		3.7	3.7	0.0	0.0	6.9	6.9				
6 Faisalabad	5.0	5.0	1.1	1.1	8.5	8.5		5.5	5.5	1.9	1.9	8.4	8.4				
7 Multan	2.8	2.8	-1.2	-1.2	6.7	6.7		2.9	2.9	-1.5	-1.5	6.4	6.4				
8 Sargodha	3.1	3.1	-1.3	-1.3	6.8	6.8		3.5	3.5	-0.9	-0.9	6.8	6.8				
9 Bahawalpur	3.1	3.1	-0.3	-0.3	5.8	5.8		3.4	3.4	0.2	0.2	5.7	5.7				
10 Karachi	5.4	5.4	3.2	3.2	7.6	7.6		5.9	5.9	3.4	3.4	8.1	8.1				
11 Hyderabad	6.7	6.7	3.2	3.2	10.3	10.3		7.1	7.1	3.9	3.9	10.0	10.0				
12 Sukkur	4.1	4.1	-1.6	-1.6	9.5	9.5		4.6	4.6	-0.8	-0.8	9.0	9.0				
13 Larkana	2.6	2.6	0.5	0.5	4.4	4.4		2.9	2.9	0.8	0.8	4.4	4.4				
14 Peshawar	7.2	7.2	1.9	1.9	11.9	11.9		7.3	7.3	2.0	2.0	11.4	11.4				
15 Bannu	3.7	3.7	0.4	0.4	6.6	6.6		3.9	3.9	0.8	0.8	6.2	6.2				
16 Quetta	8.1	8.1	2.8	2.8	13.3	13.3		8.8	8.8	3.4	3.4	13.2	13.2				
17 Khuzdar	2.4	2.4	-0.7	-0.7	5.5	5.5		2.0	2.0	-1.3	-1.3	4.7	4.7				
Above Rs 35000										Combined							
		General		Food		Non-Food				General		Food		Non-Food			
	MoM	YoY	MoM	YoY	MoM	YoY		MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY	MoM	YoY
1 Rawalpindi	6.7	6.7	1.3	1.3	9.1	9.1		6.0	6.0	0.8	0.8	9.4	9.4				
2 Islamabad	5.0	5.0	0.8	0.8	7.1	7.1		4.6	4.6	0.3	0.3	7.6	7.6				
3 Lahore	5.2	5.2	-1.4	-1.4	8.9	8.9		3.9	3.9	-2.2	-2.2	8.6	8.6				
4 Gujranwala	5.4	5.4	1.8	1.8	7.2	7.2		3.9	3.9	0.6	0.6	6.2	6.2				
5 Sialkot	5.0	5.0	0.3	0.3	7.3	7.3		4.1	4.1	0.0	0.0	7.1	7.1				
6 Faisalabad	6.6	6.6	2.5	2.5	8.5	8.5		5.4	5.4	1.4	1.4	8.0	8.0				
7 Multan	4.6	4.6	-0.1	-0.1	7.0	7.0		3.6	3.6	-0.9	-0.9	6.7	6.7				
8 Sargodha	5.3	5.3	0.2	0.2	7.5	7.5		3.6	3.6	-0.9	-0.9	6.4	6.4				
9 Bahawalpur	4.7	4.7	1.0	1.0	6.3	6.3		3.4	3.4	-0.1	-0.1	5.5	5.5				
10 Karachi	7.3	7.3	3.6	3.6	9.2	9.2		6.6	6.6	3.4	3.4	8.8	8.8				
11 Hyderabad	8.9	8.9	4.4	4.4	11.3	11.3		7.4	7.4	3.7	3.7	10.1	10.1				
12 Sukkur	6.1	6.1	0.4	0.4	8.8	8.8		4.6	4.6	-1.1	-1.1	8.3	8.3				
13 Larkana	4.1	4.1	1.5	1.5	5.3	5.3		2.8	2.8	0.6	0.6	4.1	4.1				
14 Peshawar	9.4	9.4	2.0	2.0	12.9	12.9		7.9	7.9	2.1	2.1	11.7	11.7				
15 Bannu	6.0	6.0	1.3	1.3	8.2	8.2		4.0	4.0	0.7	0.7	6.1	6.1				
16 Quetta	10.1	10.1	4.0	4.0	13.1	13.1		8.6	8.6	3.1	3.1	12.4	12.4				
17 Khuzdar	3.7	3.7	0.5	0.5	5.4	5.4		2.5	2.5	-0.6	-0.6	4.7	4.7				

Table A6: City- wise CPI Inflation (YoY) December, 2018

City	High inflation cities			City	Low inflation cities		
	General	Food	Non-food		General	Food	Non-food
D. I. Khan	11.2	1.4	17.6	Mirpukhass	6.1	4.5	7.2
Mithi	9.0	4.8	11.8	Rawalpindi	6.0	0.8	9.4
Quetta	8.6	3.1	12.4	Mardan	5.9	0.7	8.8
Abbottabad	8.5	7.4	9.2	Jhelum	5.9	2.8	8.0
Turbat	8.4	2.0	11.8	Bahawalnagar	5.7	-2.5	11.0
Peshawar	7.9	2.1	11.7	Wazirabad	5.4	-1.3	10.1
Dadu	7.6	-1.2	14.1	Faisalabad	5.4	1.4	8.0
Hyderabad	7.4	3.7	10.1	Mianwali	5.2	1.1	7.5
Karachi	6.6	3.4	8.8	Attock	5.1	-0.4	8.8
				Nawabshah	4.8	1.4	7.0
				Islamabad	4.6	0.3	7.6
				Sukkur	4.6	-1.1	8.3
				Sahiwal	4.5	-2.3	8.6
				Sialkot	4.1	0.0	7.1
				Bannu	4.0	0.7	6.1
				Gujranwala	3.9	0.6	6.2
				Lahore	3.9	-2.2	8.6
				Sargodha	3.6	-0.9	6.4
				Multan	3.6	-0.9	6.7
				Jhang	3.5	-3.2	7.7
				Gawadar	3.4	-1.0	6.4
				Bahawalpur	3.4	-0.1	5.5
				Mingora	3.4	-0.5	5.7
				R. Y. Khan	3.2	-0.8	5.8
				Vehari	3.1	-0.2	5.2
				Loralai	2.8	-2.1	5.9
				Larkana	2.8	0.6	4.1
				D. G. Khan	2.7	-0.6	4.8
				Khuzdar	2.5	-0.6	4.7
				D. M. Jamali	2.4	-2.6	6.0
				Muzaffargarh	2.3	-2.7	5.8

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

Table A7: Income Group-wise Inflation (percent)

	MoM			YoY		
	Dec-17	Nov-18	Dec-18	Dec-17	Nov-18	Dec-18
<u>Up to Rs. 8000</u>						
General	-0.4	-0.2	-0.7	4.0	3.5	3.2
Food	-0.8	-0.7	-1.6	3.4	0.3	-0.4
Non-food	0.2	0.5	0.3	4.8	7.4	7.6
<u>Rs. 8001- 12000</u>						
General	-0.3	-0.1	-0.6	4.1	4.2	3.8
Food	-0.7	-0.6	-1.5	3.5	0.9	0.0
Non-food	0.2	0.4	0.3	4.7	7.6	7.7
<u>Rs. 12001- 18000</u>						
General	-0.2	0.0	-0.6	4.1	4.6	4.2
Food	-0.7	-0.6	-1.5	3.5	1.3	0.4
Non-food	0.2	0.4	0.3	4.8	7.8	7.8
<u>Rs. 18001- 35000</u>						
General	-0.1	0.1	-0.5	4.2	6.3	5.9
Food	-0.6	-0.5	-1.4	3.5	1.7	0.9
Non-food	0.2	0.5	0.2	4.9	10.0	10.0
<u>Above Rs. 35000</u>						
General	0.0	0.2	-0.3	5.0	8.4	8.1
Food	-0.4	-0.4	-1.2	4.3	2.6	1.7
Non-food	0.2	0.5	0.2	5.3	11.2	11.2
<u>All income groups</u>						
General	-0.1	0.1	-0.4	4.6	6.5	6.2
Food	-0.6	-0.5	-1.4	3.8	1.8	0.9
Non-food	0.2	0.5	0.2	5.1	9.8	9.8

Table A8: SPI Item-wise Price Movements

Sr.No.	Items	Unit	Prices	Percentage change	
			Dec-18	YoY	MoM
1	Wheat	10Kg.	349.6	2.7	0.3
2	Wheat Flour Bag	10Kg.	394.5	1.6	0.1
3	Rice Basmati Broken	Kg.	78.0	10.1	0.4
4	Rice Irri-6'9	Kg.	54.8	6.7	0.3
5	Bread Plain Med.Size (340-400 Gm.)	Each	43.3	1.7	0.7
6	Beef	Kg.	387.6	12.7	1.2
7	Mutton	Kg.	806.2	10.6	0.6
8	Chicken Live (Farm)	Kg.	171.6	2.9	-8.4
9	Milk Fresh	Litr	86.0	4.2	0.5
10	Curd	Kg.	102.3	3.7	0.1
11	Milk Powdered Nido	500G	403.5	6.1	1.5
12	Egg Hen (Farm)	Doz.	117.1	-9.1	-3.1
13	Mustard Oil	Kg.	188.2	1.9	0.1
14	Cooking Oil (Tin)	2.5Ltr	505.1	7.5	2.9
15	Veg. Ghee (Tin)	2.5Kg.	488.0	5.4	1.5
16	Veg.Ghee Loose	Kg.	157.0	7.9	1.9
17	Bananas	Doz.	64.4	-2.3	4.5
18	Masoor Pulse Washed	Kg.	118.3	-0.4	2.0
19	Moong Pulse Washed	Kg.	123.7	8.5	4.9
20	Mash Pulse Washed	Kg.	150.7	-5.9	4.7
21	Gram Pulse Washed	Kg.	123.5	4.2	2.9
22	Potatoes	Kg.	27.0	-34.9	-18.9
23	Onions	Kg.	28.7	-51.0	-9.1
24	Tomatoes	Kg.	34.9	-53.1	-10.8
25	Sugar	Kg.	55.6	3.2	1.4
26	Gur	Kg.	83.9	-0.2	-1.2
27	Salt Powdered Loose (Lahori)	Kg.	12.4	11.4	0.0
28	Red Chillies Powder Loose	Kg.	349.0	34.5	-0.1
29	Garlic	Kg.	132.4	-18.0	1.2
30	Tea (Yellow Lable 200 Gm.)	200Gm.	216.9	20.1	4.5
31	Cooked Beef Plate	Each	115.3	15.4	0.0
32	Cooked Dal Plate	Each	62.5	7.3	0.5
33	Tea Prepared (Sada)	Cup	22.4	5.5	1.4
34	Cigarettes K-2 (20'S)	20'S	59.1	16.5	0.0
35	Long Cloth (Coarse Latha)	Mtr.	238.6	12.4	0.8
36	Shirting	Mtr.	180.2	6.3	0.7
37	Lawn	Mtr.	288.6	12.8	0.0
38	Georgette (Voil Printed)	Mtr.	133.3	6.0	0.3
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	122.3	27.7	-0.9
45	Firewood	40Kg	639.5	2.5	1.0
46	Energy Savor 14 Watt	Each	171.2	1.0	0.0
47	Washing Soap (200-250 Gm.)	Cake	28.7	10.6	1.0
48	Match Box	Each	2.4	9.4	1.7
49	Petrol	Litr	96.9	23.7	-1.7
50	Diesel	Litr	110.5	27.1	-2.7
51	L.P.G.(11 Kg Cylender.)	Each	1564.8	12.6	12.4
52	Tele. Local Call	Call	4.7	18.0	0.0
53	Bath Soap Lifebouy (Standard)	Cake	40.5	-3.1	0.0
Maximum			34.5	12.4	
Median			6.1	0.3	
Minimum			-53.1	-18.9	

Table A9: Distribution of Price Changes (YoY) - WPI Items: December, 2018

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

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

Items and specification	Weights	Index		
		Dec-17	Nov-18	Dec-18
General	100.00	220.20	234.75	233.78
Food & Non-Alcoholic Beverages.	34.83	235.12	239.03	235.23
1 Wheat	0.35	203.16	206.42	207.82
2 Wheat Flour	4.16	212.54	215.36	216.23
3 Wheat Product	0.10	215.00	215.82	217.36
4 Besan	0.15	279.43	266.48	270.56
5 Rice	1.58	184.97	199.78	201.41
6 Cereals	0.16	257.59	265.77	267.98
7 Bakery & Confectionary	1.16	222.54	229.76	230.70
8 Nimco	0.46	257.02	261.15	261.71
9 Meat	2.43	287.23	322.09	325.16
10 Chicken	1.36	190.64	222.68	207.54
11 Fish	0.30	219.86	228.89	230.75
12 Milk Fresh	6.68	277.89	287.73	288.19
13 Milk Product	0.63	268.37	279.73	279.87
14 Milk Powder	0.11	237.44	251.43	253.78
15 Eggs	0.46	265.77	244.95	241.73
16 Mustard Oil	0.10	162.61	165.01	165.01
17 Cooking Oil	1.75	138.59	143.37	146.12
18 Vegetable Ghee	2.07	143.53	149.98	152.03
19 Dry Fruits	0.25	274.40	297.85	303.03
20 Fresh Fruits	1.86	225.51	225.16	221.04
21 Pulse Masoor	0.27	163.83	159.97	163.64
22 Pulse Moong	0.23	215.02	222.86	231.90
23 Pulse Mash (Washed)	0.21	232.82	212.68	218.10
24 Pulse Gram	0.24	265.48	268.87	276.84
25 Gram Whole	0.16	294.07	265.08	266.58
26 Beans	0.03	240.94	250.39	257.17
27 Potatoes	0.45	287.74	230.55	183.90
28 Onion	0.51	373.37	200.31	173.80
29 Tomatoes	0.42	244.37	135.42	106.79
30 Fresh Vegetables	1.75	276.29	257.83	201.68
31 Sugar	1.04	195.22	197.86	200.11
32 Gur	0.02	260.27	260.99	259.69
33 Honey	0.04	339.20	361.11	381.37
34 Sweet Meet	0.25	254.71	274.99	274.96
35 Beverages	1.20	225.93	234.44	233.54
36 Jam, Tomato Ketchup & Pickle	0.25	223.90	236.33	237.94
37 Condiments	0.27	274.69	289.66	290.89
38 Spices	0.54	238.45	272.35	274.09
39 Tea	0.84	284.22	310.54	315.81
Alcoholic Beverages, Tobacco	1.41	305.76	348.00	349.35
40 Cigarettes	1.39	306.13	343.62	345.08
41 Betel Leaves & Nuts	0.02	283.31	614.21	608.69
Clothing & Footwear	7.57	241.98	259.07	260.69
42 Cotton Cloth	1.73	234.53	250.74	252.80
43 Woolen Cloth	0.88	259.82	277.56	279.67
44 Ready Made Garments	0.97	250.26	267.64	268.40
45 Woolen Readymade Garments	0.40	268.48	280.10	285.91
46 Hosiery	0.51	254.53	272.44	273.10
47 Dopatta	0.44	249.21	271.05	271.39
48 Cleaning & Laundering	0.21	275.28	295.39	296.59

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

Items and specification	Weights	Index		
		Dec-17	Nov-18	Dec-18
49 Tailoring	0.88	329.52	353.67	356.47
50 Footware	1.55	167.58	180.49	180.86
Housing,Water,Elect,Gas & Other Fuel	29.41	201.02	219.24	219.28
51 House Rent	21.81	194.05	207.09	207.09
52 Construction Input Item	0.56	259.48	289.23	290.47
53 Construction Wage Rate	0.33	251.20	276.45	277.35
54 Water Supply	0.50	171.58	194.95	194.95
55 Electricity	4.40	238.10	238.10	238.10
56 Gas	1.58	158.08	292.94	292.94
57 Kerosene Oil	0.01	225.46	278.21	275.39
58 Fire Wood Whole	0.23	295.82	303.78	305.35
Furnished H.Hold Equip.& Maint. Etc	4.21	230.93	247.76	250.22
59 Furniture	0.33	224.47	244.56	247.26
60 Household Textile	0.65	234.44	248.54	249.62
61 Household Equipment	0.59	183.53	196.96	197.85
62 Utensils	0.32	238.03	262.52	265.24
63 Plastic Products	0.25	215.30	233.84	237.13
64 Washing Soap & Detergent	0.79	233.55	252.39	256.02
65 Sewing Needle & Dry Cell	0.15	209.80	223.94	225.74
66 Household Servant	1.04	258.89	274.20	277.43
67 Marriage Hall Charges	0.08	252.09	272.04	272.06
Health	2.19	217.33	235.09	235.75
68 Drug Medicine	1.27	186.36	198.54	199.56
69 Medical Equipment	0.01	255.46	266.60	267.75
70 Doctor (MBBS) Clinic Fee	0.59	290.92	320.01	320.01
71 Medical Test	0.32	203.28	222.39	222.85
Transport	7.20	179.67	213.81	212.38
72 Motor Vehicle	0.66	177.95	203.52	204.45
73 Motor Vehicle Accessories	0.24	214.92	229.64	235.16
74 Motor Fuel	3.03	155.48	196.83	195.52
75 Mechanical Service	0.46	233.41	248.80	251.72
76 Motor Vehicle Tax	0.11	210.18	210.18	210.18
77 Transport Services	2.70	193.71	228.18	224.60
Communication	3.22	133.15	143.57	143.57
78 Postal Services	0.07	253.38	272.63	272.63
79 Communication & Apparatus	3.15	130.62	140.86	140.86
Recreation & Culture	2.02	197.65	214.34	214.51
80 Recreation & Culture	0.86	130.44	137.58	137.61
81 Text Books	0.57	287.98	304.92	304.92
82 News Papers	0.19	184.59	235.21	235.21
83 Stationery	0.40	220.48	241.07	241.84
Education	3.94	262.35	288.62	289.54
84 Education	3.94	262.35	288.62	289.54
Restaurants And Hotels	1.23	285.32	298.18	301.38
85 Ready Made Food	1.23	285.32	298.18	301.38
Miscellaneous Goods And Services	2.76	253.23	272.19	275.96
86 Personal Care	1.49	232.45	245.08	246.54
87 Cosmetics	0.39	207.40	230.19	231.29
88 Blades	0.03	201.21	210.38	211.72
89 Personal Equipments	0.84	312.92	341.68	350.88

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

Items and Specifications	Index		
	Dec-17	Nov-18	Dec-18
General	221.00	249.92	247.72
Agriculture Forestry & Fishery	252.94	271.62	266.70
1 Wheat	207.62	211.76	213.18
2 Maize	197.32	219.23	224.19
3 Rice	169.19	183.58	187.06
4 Sorghum/Jowar	226.29	279.91	290.73
5 Millet/Bajra	169.85	239.29	216.39
6 Vegetables	332.34	255.52	178.77
7 Fresh Fruits	231.15	249.64	243.41
8 Dry Fruits	258.63	275.15	280.01
9 Cotton Seeds	255.91	265.86	263.02
10 Other Oil Seeds	194.71	194.00	192.93
11 Edible Roots/ Potatoes	295.50	232.25	195.30
12 Stimulant And Spice Crops	265.09	331.71	315.85
13 Pulses	254.88	233.92	238.94
14 Sugar Crops	257.62	257.62	265.16
15 Fibre Crops	208.95	284.57	282.27
16 Unmanufactured Tobacco	305.98	322.03	325.00
17 Poultry	204.55	241.45	221.45
18 Milk From Bovine Animals	272.70	285.82	285.96
19 Eggs	281.12	254.37	244.82
20 Raw Animal Material/Wool	173.34	180.75	190.00
21 Hides And Fur Skins, Raw	104.78	92.92	92.91
22 Fuel Wood In Logs	283.56	289.68	290.77
23 Fishes Live Fresh Or Chilled	465.17	462.45	460.30
Ores/Minerals, Gas & Elect.	243.79	293.14	293.54
24 Coal Not Agglomerated	155.29	155.29	155.29
25 Natural Gas Liquefied	212.93	316.26	317.10
26 Salt & Pure Sodium Chloride	257.14	275.23	275.23
27 Electrical Energy	288.00	288.00	288.00
Food, Beverages, Tobacco, Textiles	227.93	249.98	251.73
28 Meat Of Animals	309.09	346.05	346.05
29 Vegetables & Fruit Juices	226.05	228.62	228.62
30 Dried Fruits & Nuts	291.10	306.71	310.79
31 Fruit Juices	182.56	188.81	188.84
32 Vegetable Oil Refined	154.77	161.51	161.33
33 Vegetable Ghee	126.41	132.81	134.81
34 Oil Cakes	228.61	244.02	244.38
35 Processed Liquid Milk	286.83	296.92	296.92
36 Milk And Cream In Solid Form	223.69	232.69	236.57
37 Ice Cream	266.02	286.26	286.26
38 Dairy Products N.E.C	266.50	290.96	291.79
39 Wheat Flour	197.14	196.58	197.31
40 Other Cereal Flour	219.79	220.56	219.15
41 Sugar Refined	205.52	207.53	211.56
42 Chocolate	100.00	100.00	100.00
43 Sugar Confectionary	128.44	127.25	127.25
44 Coffee And Tea	253.26	281.25	285.98
45 Spices	202.03	222.28	226.87
46 Other Food Products	294.50	308.63	309.34
47 Mineral Water	208.14	207.20	207.20
48 Beverages	172.85	176.55	176.55
49 Tobacco Products	318.37	393.80	393.80
50 Cotton Yarn	204.94	256.44	260.77
51 Nylon Yarn	143.99	143.99	143.99
52 Blended Yarn	186.96	195.65	193.85
53 Woven Fabrics	321.49	338.53	338.53
54 Cotton Fabrics	212.00	221.14	223.20
55 Other Fabrics	227.16	227.85	231.49

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

Items and Specifications	Index		
	Dec-17	Nov-18	Dec-18
56 Silk And Rayon Fabrics	188.14	188.81	194.26
57 Towels	276.14	308.50	308.50
58 Blankets	265.03	273.59	277.52
59 Bed Sheets	256.87	268.60	268.60
60 Quilts	222.32	224.63	224.63
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	254.53
64 Ready Made Garments	201.37	213.16	218.58
65 Leather With Out Hairs	212.68	228.93	228.93
66 Other Leather N.E.C	207.02	320.16	320.16
67 Footwear's	145.51	168.09	168.09
Other Transportable Goods	179.11	224.71	218.04
68 Timber	231.53	244.62	244.62
69 Printing Paper	166.45	174.76	174.76
70 Hard Board	225.00	291.67	291.67
71 Coke	163.45	163.45	163.45
72 Motor Sprit	130.85	165.26	161.88
73 Diesel Oil	172.21	247.11	237.44
74 Kerosene Oil	153.38	230.97	222.96
75 Furnace Oil	110.34	198.68	167.39
76 Mobil Oil	200.62	211.03	211.03
77 Chemicals	182.27	215.33	215.72
78 Dying Materials	146.55	150.72	150.72
79 Fertilizers	223.94	257.79	260.32
80 Pesticides	305.84	316.64	316.64
81 Insecticides	137.12	147.06	147.58
82 Paints & Varnishes	299.42	358.49	358.85
83 Medicines	177.01	180.99	181.01
84 Soaps & Detergent	191.76	198.71	199.52
85 Auto Tyres	177.07	184.52	186.63
86 Plastic Products	226.00	244.35	244.35
87 Glass Sheets	302.27	312.41	312.41
88 Other Glass Articles	318.10	318.10	318.10
89 Ceramics And Sanitary	234.59	246.05	246.05
90 Bricks Blocks And Tiles	223.47	233.23	232.45
91 Cement	212.17	239.43	240.25
92 Bed Foams	171.50	182.50	182.50
93 Matches	171.36	171.36	172.57
Metal Product Machinery & Equip	177.80	190.55	190.19
94 Pig Iron	128.97	128.97	128.97
95 Steel Bars & Sheets	141.83	177.11	172.86
96 Pipe Fittings	215.66	238.51	238.51
97 Steel Products	176.70	184.01	184.01
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	268.38	299.21
105 Concrete Mixer	138.83	138.83	138.83
106 Refrige,Wash& Sew Mach, Iron,Fan	216.72	238.82	238.82
107 Electrical Wires	205.92	208.22	208.22
108 Lighting Equipments	170.98	174.04	174.13
109 Radio And Television	140.42	140.42	140.42
110 Motor Vehicles	195.36	223.94	223.94
111 Motor Cycles	126.05	134.21	138.37
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	Aug	209.46	232.48	195.66	215.75	250.12	193.95	218.66
	Sep	209.88	232.80	196.14	214.61	250.41	191.89	218.67
	Oct	211.57	234.68	197.72	214.53	250.63	191.64	220.11
	Nov	212.01	235.17	198.13	214.07	247.89	192.62	220.68
	Dec	210.57	230.69	198.51	213.76	244.40	194.32	219.73
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

*: all groups combined

	18-Sep	18-Oct	18-Nov	18-Dec
Energy				
Crude Oil (US\$ per barrel) *	75.4	76.7	62.3	54.0
Energy Index (2010 = 100)	95.6	96.9	81.9	72.7
Food				
Rice (\$/MT)	405.0	409.0	401.0	404.0
Wheat (\$/MT)	212.4	213.5	203.6	211.3
Sugar (US cent/ pound)^	0.3	0.3	0.3	0.3
Palm Oil (\$/MT)	605.2	590.3	539.1	535.0
Soybean Oil (\$/MT)	754.1	752.4	729.2	727.9
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	2.0	1.9	1.9	1.9
Metal Price Index (2010 = 100)	84.5	86.1	83.8	82.7
Copper (\$/MT)	6,050.8	6,219.6	6,195.9	6,075.3
Aluminum (\$/MT)	2,026.5	2,029.9	1,938.5	1,920.4
Iron Ore (\$ cents/dry MT)	68.4	73.4	73.3	69.2
Tin (\$/MT)	18,967.1	19,121.5	19,064.9	19,259.6
Nickel (\$/MT)	12,510.4	12,314.9	11,239.7	10,835.1
Zinc (\$/MT)	2,434.7	2,673.7	2,595.7	2,616.3
Lead (\$/MT)	2,022.9	1,987.6	1,937.1	1,972.3
Uranium (\$/MT)@	27.5	28.0	29.1	27.8
DAP (\$/MT)	421.6	420.8	410.2	389.7
Urea (\$/MT)	267.5	270.0	305.6	276.7

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: 1US \$ / 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	
Feb	195.13	202.98	211.54	219.58	
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	197.06	200.74	209.01	215.11	227.69
Aug	197.45	201.07	208.28	215.47	228.15
Sep	198.27	201.00	208.90	217.07	228.28
Oct	198.26	201.48	209.99	217.99	232.80
Nov	197.62	203.06	210.82	219.19	233.50
Dec	197.70	203.92	211.38	220.99	234.59
Jan	197.64	204.24	211.77	221.20	
Feb	197.21	205.14	213.77	221.87	
Mar	197.36	205.18	215.35	222.34	
Apr	197.98	206.22	216.04	223.94	
May	199.93	206.19	216.48	225.47	
Jun	201.26	207.56	215.62	226.74	

Table 15: CPI Food Data Series Original and Seasonally Adjusted

Period	Original Series				
	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	
Feb	213.15	221.07	229.19	234.31	
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	221.02	222.32	232.77	232.58	240.84
Aug	221.14	222.11	229.74	232.75	240.69
Sep	221.25	221.21	230.25	236.02	239.35
Oct	220.28	221.42	231.20	236.36	242.61
Nov	219.44	224.33	231.88	237.43	241.69
Dec	219.38	225.02	231.64	240.26	242.49
Jan	218.98	224.64	230.76	239.48	
Feb	218.00	226.07	234.33	239.55	
Mar	217.69	225.87	237.29	237.52	
Apr	217.86	228.15	238.08	237.63	
May	222.26	226.77	237.87	240.08	
Jun	224.61	229.45	234.62	241.35	

Table 16: CPI Monthly & Average Seasonal Factors

Period	FY15	FY16	FY17	FY18	FY19	Average
Jul	100.50	100.51	100.51	100.50	100.49	100.50
Aug	100.63	100.59	100.57	100.53	100.49	100.56
Sep	100.57	100.52	100.47	100.42	100.37	100.47
Oct	100.78	100.77	100.75	100.74	100.73	100.76
Nov	100.59	100.57	100.56	100.56	100.53	100.56
Dec	99.54	99.58	99.62	99.64	99.65	99.61
Jan	99.65	99.63	99.61	99.58		99.62
Feb	98.95	98.95	98.96	98.97		98.95
Mar	99.09	99.07	99.06	99.06		99.07
Apr	100.09	100.10	100.12	100.14		100.11
May	99.87	99.90	99.93	99.97		99.92
Jun	99.82	99.87	99.92	99.97		99.90

Table 17: CPI Food Monthly & Average Seasonal Factors

Period	FY15	FY16	FY17	FY18	FY19	Average
Jul	100.80	100.82	100.82	100.81	100.79	100.81
Aug	101.32	101.24	101.19	101.13	101.07	101.19
Sep	101.30	101.20	101.11	101.02	100.96	101.12
Oct	101.57	101.55	101.51	101.49	101.51	101.53
Nov	101.50	101.44	101.42	101.41	101.40	101.44
Dec	99.41	99.50	99.59	99.65	99.68	99.57
Jan	99.14	99.08	99.00	98.93		99.04
Feb	97.77	97.79	97.81	97.81		97.80
Mar	98.42	98.40	98.39	98.38		98.40
Apr	99.73	99.73	99.76	99.77		99.75
May	99.53	99.59	99.64	99.70		99.61
Jun	99.66	99.78	99.89	100.01		99.84

Table 18: CPI Month-on-Month % Change Original & Seasonally Adjusted

Period	Original Series				
	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	
Feb	-0.92	-0.25	0.28	-0.31	
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	0.94	-0.26	0.70	-0.24	0.42
Aug	0.20	0.16	-0.35	0.17	0.20
Sep	0.41	-0.03	0.30	0.74	0.06
Oct	0.00	0.24	0.52	0.42	1.98
Nov	-0.32	0.78	0.40	0.55	0.30
Dec	0.04	0.42	0.27	0.82	0.47
Jan	-0.03	0.16	0.19	0.10	
Feb	-0.22	0.44	0.94	0.30	
Mar	0.08	0.02	0.74	0.21	
Apr	0.31	0.51	0.32	0.72	
May	0.98	-0.01	0.20	0.68	
Jun	0.66	0.67	-0.40	0.56	

Table 19: CPI Food Month-on-Month % Change Original & Seasonally Adjusted

Period	Original Series				
	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	
Feb	-1.82	-0.68	0.32	-1.11	
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	1.35	-1.02	1.45	-0.87	-0.21
Aug	0.05	-0.10	-1.30	0.07	-0.07
Sep	0.05	-0.40	0.22	1.41	-0.55
Oct	-0.44	0.09	0.41	0.14	1.36
Nov	-0.38	1.31	0.30	0.45	-0.38
Dec	-0.03	0.31	-0.11	1.19	0.33
Jan	-0.18	-0.17	-0.38	-0.33	
Feb	-0.45	0.63	1.55	0.03	
Mar	-0.14	-0.09	1.26	-0.85	
Apr	0.08	1.01	0.33	0.05	
May	2.02	-0.60	-0.09	1.03	
Jun	1.05	1.18	-1.37	0.53	

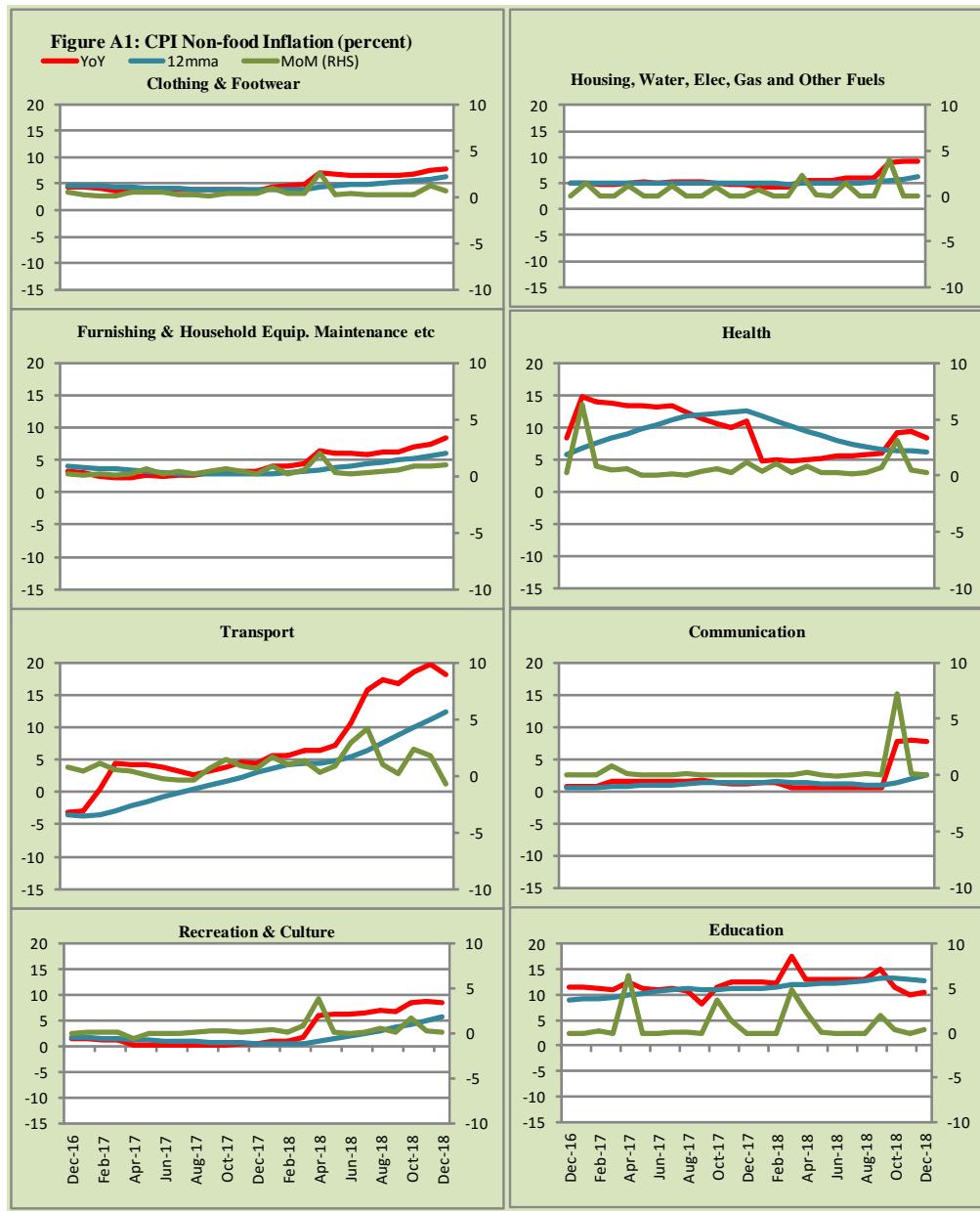
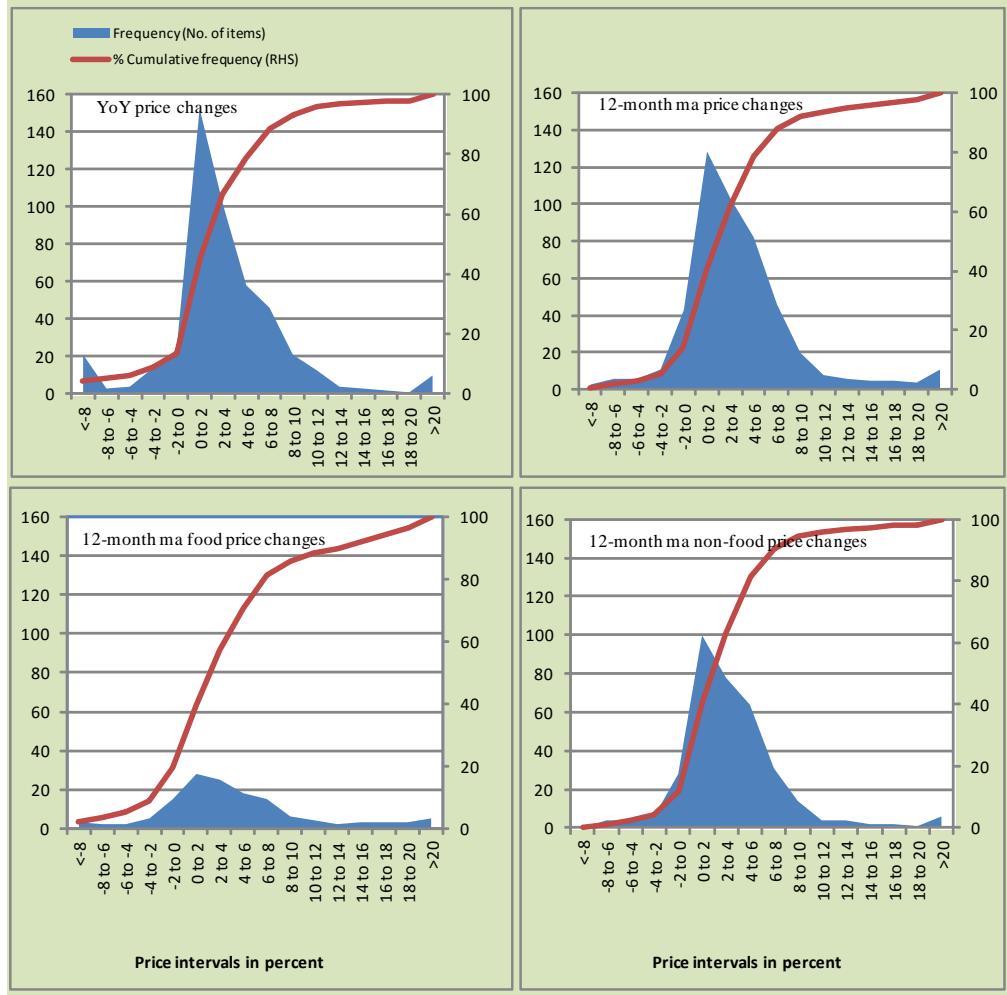
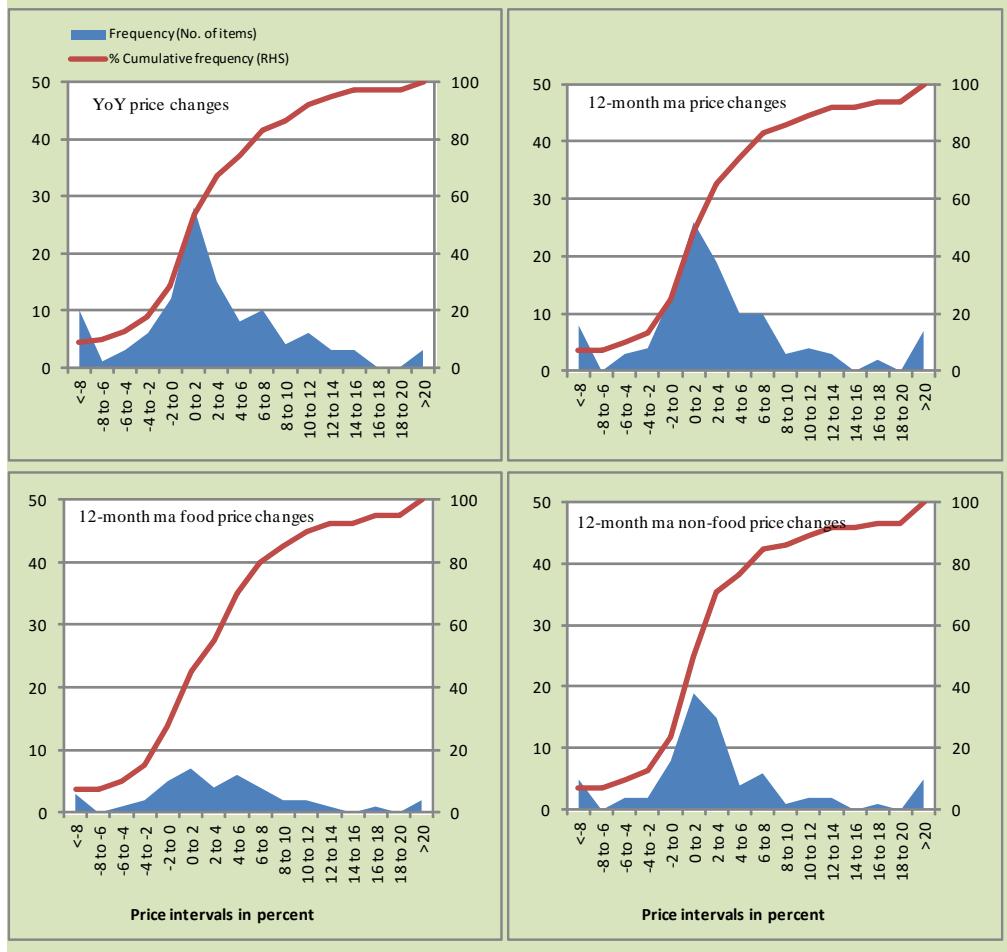


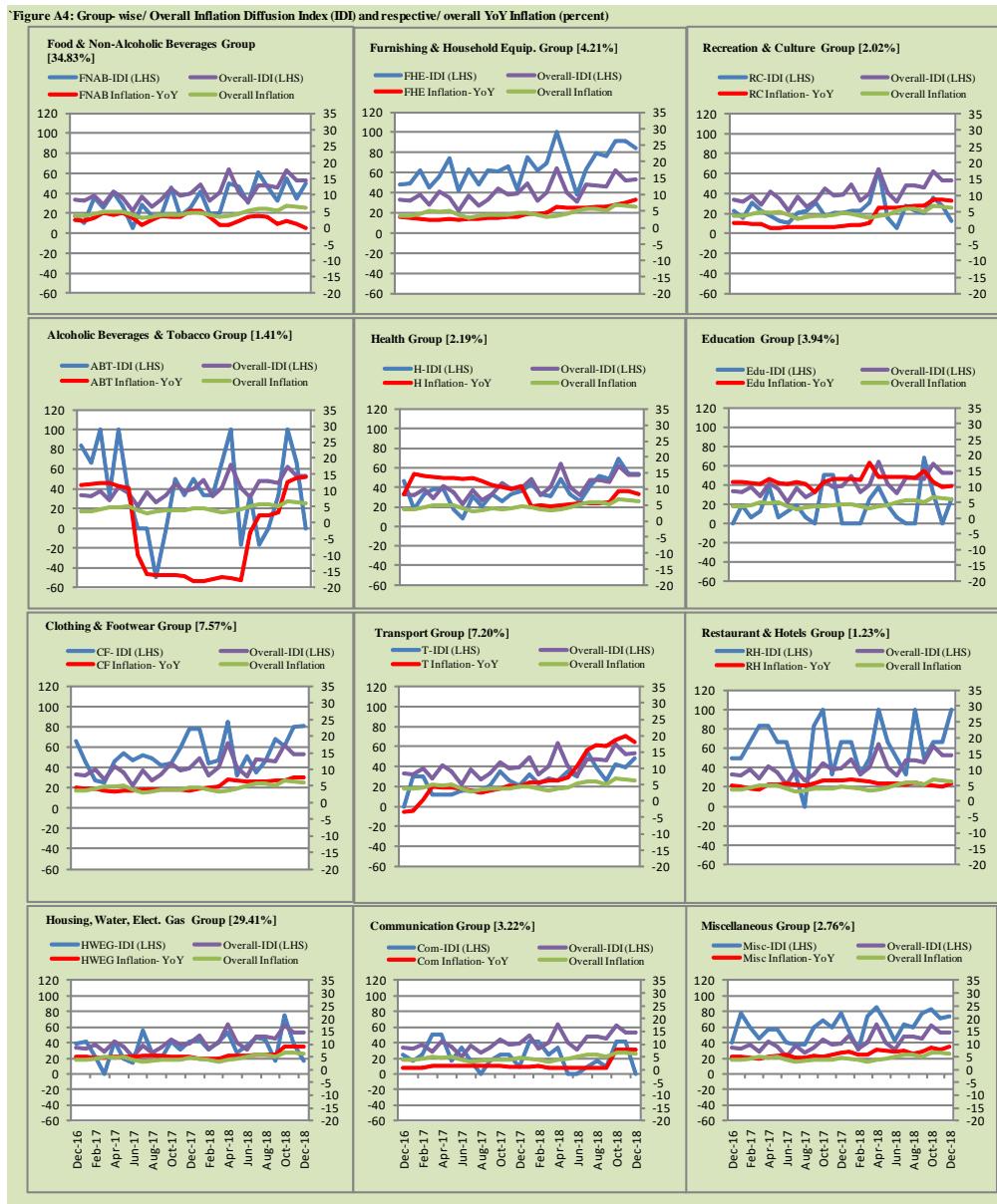
Figure A2: Frequency Distribution of Price Changes of CPI Items, December 2018



Inflation Monitor, December 2018

Figure A3: Frequency Distribution of Price Changes of WPI Commodities, December 2018





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

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

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.