

# **Inflation Monitor**

**(Revamped Version)**

**November 2019**

**(New Base: 2015-16)**



**State Bank of Pakistan**

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## Contents

1.	Inflation in Brief.....	1
2.	Heat-maps of CPI inflation.....	3
3.	Trends in Inflation.....	7
4.	Movement in Price Indices (Moving Averages).....	8
5.	Movement in Price Indices (Month-on-Month).....	8
6.	Trends in Consumer Price Indices and Inflation.....	10
7.	Weighted Contribution.....	12
8.	Inflation Diffusion Index.....	15
9.	Domestic Commodity Prices.....	18
10.	Inflation in Global Context.....	18
11.	Global Commodity Prices.....	20
12.	Seasonal Adjustment in CPI.....	21
	<b>Annexure A.....</b>	<b>26</b>
	Table A1: National CPI Inflation by Groups (YoY and MoM in percent).....	26
	Table A2: Urban CPI Inflation by Groups (YoY and MoM in percent).....	26
	Table A3: Rural CPI Inflation by Groups (YoY and MoM in percent).....	27
	Table A4: Top Ten Contributors to Urban CPI Inflation (YoY) in November 2019.....	28
	Table A5: Top Ten Contributors to Urban CPI Inflation (MoM) in November 2019.....	29
	Table A6: Top and Bottom Fifteen Contributors to Urban CPI Inflation (YoY) in November 2019.....	30
	Table A7: Top and Bottom Fifteen Contributors to Urban CPI Inflation (MoM) in November 2019.....	31
	Table A8: Top and Bottom Fifteen Contributors to MoM Urban CPI Food Inflation in November 2019.....	32
	Table A9: Top and Bottom Fifteen Contributors to MoM Urban CPI Non-food Inflation in November 2019.....	33
	Table A10: Top Ten Contributors to Rural CPI Inflation (YoY) in November 2019.....	34
	Table A11: Top Ten Contributors to Rural CPI Inflation (MoM) in November 2019.....	35
	Table A12: Top and Bottom Fifteen Contributors to Rural CPI Inflation (YoY) in November 2019.....	36
	Table A13: Top and Bottom Fifteen Contributors to Rural CPI Inflation (MoM) in November 2019.....	37
	Table A14: Top and Bottom Fifteen Contributors to MoM Rural CPI Food Inflation in November 2019.....	38
	Table A15: Top and Bottom Fifteen Contributors to MoM Rural CPI Non-food Inflation in November 2019.....	39
	Table A16: Distribution of Price Changes (YoY) - Selected Urban CPI Items: November 2019.....	40
	Table A17: Distribution of Price Changes (YoY) - Selected Rural CPI Items: November 2019.....	41
	Table A18: Distribution of Price Changes (YoY) - WPI Items: November 2019.....	42

*Inflation Monitor (Revamped Version), November 2019*

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Table A19: International Commodity Prices/Indices .....	43
Table A20: National CPI Data Series Original and Seasonally Adjusted.....	44
Table A21: Urban CPI Data Series Original and Seasonally Adjusted .....	45
Table A22: Rural CPI Data Series Original and Seasonally Adjusted .....	46
Table A23: National CPI Monthly & Average Seasonal Factors .....	47
Table A24: Urban CPI Monthly & Average Seasonal Factors.....	47
Table A25: Rural CPI Monthly & Average Seasonal Factors .....	48
Table A26: National CPI (Month-on-Month) Original & Seasonally Adjusted .....	49
Table A27: Urban CPI (Month-on-Month) Original & Seasonally Adjusted Series .....	50
Table A28: Rural CPI (Month-on-Month) Original & Seasonally Adjusted.....	51
Figure A1: National CPI Non-food Inflation (YoY, 12mma, MoM in percent).....	52
Figure A2: Urban CPI Non-food Inflation (YoY, 12mma, MoM in percent).....	53
Figure A3: Rural CPI Non-food Inflation (YoY, 12mma, MoM in percent).....	54
Figure A4: Frequency Distribution of Price Changes of Urban CPI Items (YoY) .....	55
Figure A5: Frequency Distribution of Price Changes of Rural CPI Items (YoY) .....	56
Figure A6: Frequency Distribution of Price Changes of Urban CPI Items (MoM) .....	57
Figure A7: Frequency Distribution of Price Changes of Rural CPI Items (MoM) .....	58
Figure A8: Frequency Distribution of Price Changes of WPI Commodities (YoY).....	59
<b>Annexure B</b> .....	<b>60</b>
Technical Notes, Definitions and Methodologies .....	60
a) Technical Notes .....	60
b) Methodology for Estimating Inflation Diffusion Index for Pakistan .....	63

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## **Review**

### **1. Inflation in Brief**

- a) National CPI inflation (2015-16=100) is recorded at 12.7 percent on year-on-year basis in November 2019 as compared to 11.0 percent in the previous month and 5.7 percent during the corresponding month of last year.
- b) National CPI inflation on month-on-month basis is recorded at 1.3 percent in November 2019 as compared to 1.8 percent in the previous month and -0.1 percent during the corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 1.30 percent in November 2019 compared to 1.29 percent in the previous month.
- c) Urban CPI inflation (2015-16=100) is recorded at 12.1 percent on year-on-year basis in November 2019 as compared to 10.9 percent in the previous month and 6.3 percent during the corresponding month of last year.
- d) Urban CPI inflation on month-on-month basis is recorded at 1.0 percent in November 2019 as compared to 1.6 percent in the previous month and -0.1 percent during the corresponding month of last year. Seasonally adjusted month-on-month Urban CPI inflation is recorded at 1.02 percent in November 2019 compared to 1.20 percent in the previous month.
- e) Rural CPI inflation (2015-16=100) is recorded at 13.6 percent on year-on-year basis in November 2019 as compared to 11.3 percent in the previous month and 4.7 percent during the corresponding month of last year.
- f) Rural CPI inflation on month-on-month basis is recorded at 1.9 percent in November 2019 as compared to 2.2 percent in the previous month and -0.2 percent during the corresponding month of last year. Seasonally adjusted month-on-month Rural CPI inflation is recorded at 1.73 percent in November 2019 compared to 1.42 percent in the previous month.

- g) Urban Core inflation (trimmed) on year-on-year basis is recorded at 9.5 percent in November 2019 as compared to 8.9 percent in the previous month and 6.7 percent during the corresponding month of last year.
- h) On month-on-month basis, the Urban Core inflation (trimmed) is recorded at 0.4 percent in November 2019 as compared to 0.5 percent in the previous month and 0.3 percent during the corresponding month of last year.
- i) Rural Core inflation (trimmed) on year-on-year basis is recorded at 10.7 percent in November 2019 as compared to 9.4 percent in the previous month and 6.3 percent during the corresponding month of last year.
- j) On month-on-month basis, the Rural Core inflation (trimmed) is recorded at 0.7 percent in November 2019 and was at the same level in the previous month and 0.5 percent during the corresponding month of last year.
- k) Urban Core (Non-food, non-energy (NFNE)) inflation on year-on-year basis is recorded at 7.5 percent in November 2019 as compared to 7.7 percent in the previous month and during the corresponding month of last year.
- l) Urban Core (NFNE) inflation on month-on-month basis recorded at 0.3 percent in November 2019 as compared to 0.5 percent in the previous month. It was 0.4 percent during the corresponding month of last year.
- m) Rural Core (NFNE) inflation on year-on-year basis is recorded at 8.4 percent in November 2019 as compared to 8.6 percent in the previous month and 7.1 percent during the corresponding month of last year.
- n) Rural Core (NFNE) inflation on month-on-month basis recorded at 0.5 percent in November 2019 as compared to 0.7 percent in the previous month and during the corresponding month of last year.

- o) WPI inflation on year-on-year basis recorded at 11.2 percent in November 2019 as compared to 13.2 percent in the previous month and 18.6 percent during the corresponding month of last year.
- p) WPI inflation on month-on-month basis recorded at -0.8 percent in November 2019 as compared to 2.0 percent in the previous month. It was 1.0 percent in the corresponding month of last year.
- q) SPI inflation on year-on-year basis recorded at 19.5 percent in November 2019 as compared to 16.3 percent in the previous month. It was 5.8 percent in the corresponding month of last year.
- r) SPI inflation on month-on-month basis recorded at 2.7 percent in November 2019 as compared to 2.2 percent in the previous month. It was around zero percent in the corresponding month of last year.

## 2. Heat-maps of CPI inflation

The heat map visually elaborates the evolution of inflation. A heat-map for National, Urban and Rural CPI inflation (YoY) and their important sub-indexes for the time span of last thirteen months is presented. The inflation is compared with the benchmark of medium term inflation target of 6 percent and 0.75 percent on YoY and MoM basis respectively. Greener areas indicates low inflation pressures and increasing order of red (light to dark color spectrum i.e. light green to orange to brown to red) represents higher and higher inflationary pressures.

Key Inflation Indicators	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	
Headline	National	5.7	5.4	5.6	6.8	8.6	8.3	8.4	8.0	8.4	10.5	11.4	11.0	12.7
	Urban	6.3	5.9	6.2	7.2	8.9	8.4	8.5	8.1	8.7	10.6	11.6	10.9	12.1
	Rural	4.7	4.6	4.6	6.0	8.2	8.1	8.3	7.9	7.9	10.3	11.1	11.3	13.6
Food	Urban	1.7	0.6	2.6	5.9	8.8	8.3	9.0	7.5	7.9	11.9	15.0	13.7	16.6
	Rural	0.9	0.5	1.8	5.2	9.3	9.3	9.7	9.1	9.3	12.6	15.0	14.6	19.3
Core	Urban	7.7	7.8	7.1	7.1	7.2	7.0	7.2	7.3	8.2	8.5	8.4	7.7	7.5
	Rural	7.1	7.4	6.6	6.4	6.5	6.8	6.8	6.7	7.8	8.8	8.9	8.6	8.4

Source: Pakistan Bureau of Statistics and SBP staff estimates

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## Inflation Monitor (Revamped Version), November 2019

**Heat-map of National, Urban and Rural CPI inflation (MoM)**

Key Inflation Indicators		Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
Headline	National	-0.1	-0.3	0.3	0.9	2.0	0.7	0.6	0.5	1.8	1.6	0.8	1.8	1.3
	Urban	-0.1	-0.3	0.4	0.9	1.9	0.8	0.7	0.3	2.0	1.5	0.7	1.6	1.0
	Rural	-0.2	-0.3	0.0	0.9	2.2	0.6	0.5	0.7	1.6	1.9	0.8	2.2	1.9
Food	Urban	-0.2	-1.8	0.3	2.3	2.5	1.3	1.3	-0.3	1.0	3.1	2.0	1.4	2.4
	Rural	-0.7	-1.4	0.0	1.7	3.3	0.6	0.6	0.7	1.7	2.9	1.8	2.6	3.4
Core	Urban	0.4	0.4	0.7	0.2	0.8	1.1	0.5	0.2	1.8	0.4	0.4	0.5	0.3
	Rural	0.7	0.5	0.2	0.2	0.6	1.2	0.4	0.3	2.0	1.0	0.3	0.7	0.5

Source: Pakistan Bureau of Statistics and SBP staff estimates

**Heat-map of National CPI inflation (YoY)**

National and sub-groups	Weights	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
National	100.00	5.7	5.4	5.6	6.8	8.6	8.3	8.4	8.0	8.4	10.5	11.4	11.0	12.7
Food and non-alcoholic Beverages	34.58	0.4	-0.6	1.4	5.4	9.4	9.1	9.9	8.4	8.3	12.6	15.8	15.0	19.4
Alcoholic Beverages, Tobacco	1.02	15.4	15.7	15.6	14.3	12.7	11.7	11.9	17.3	29.3	29.8	30.0	20.3	18.7
Clothing and footwear	8.60	6.7	6.3	6.6	6.4	6.7	6.4	6.9	6.4	7.5	8.9	8.9	9.3	9.4
Housing, water, Elec., Gas and other fuels	23.63	7.9	8.1	7.8	7.9	10.1	8.1	6.5	6.9	6.1	7.1	6.6	7.2	8.8
Furnishing and household equipment maintenance	4.10	7.4	8.1	8.4	8.6	8.8	9.1	9.1	9.3	11.0	11.6	11.7	11.3	10.8
Health	2.79	7.1	7.1	6.8	6.1	6.3	8.1	8.7	9.4	11.6	11.9	11.7	12.2	11.4
Transport	5.91	19.0	18.4	12.6	10.4	9.6	13.7	17.8	17.2	16.8	18.5	17.8	16.5	14.0
Communication	2.21	2.3	2.4	2.0	2.0	2.0	4.1	4.0	4.1	4.3	4.3	4.3	4.0	4.0
Recreation and culture	1.59	7.2	6.9	6.8	6.7	7.3	5.7	5.5	5.5	7.1	7.7	7.8	7.4	6.8
Education	3.79	10.0	9.8	6.9	6.4	6.9	5.4	5.9	5.8	6.8	6.9	6.2	6.0	6.1
Restaurants and hotels	6.92	5.7	5.8	5.2	4.8	5.0	5.0	4.2	4.0	5.8	6.2	6.1	6.0	6.4
Misc. goods and services	4.87	8.3	8.5	8.4	9.0	9.2	8.9	8.6	9.4	10.8	13.2	13.4	12.5	11.8

Source: Pakistan Bureau of Statistics and SBP staff estimates

**Heat-map of Urban CPI inflation (YoY)**

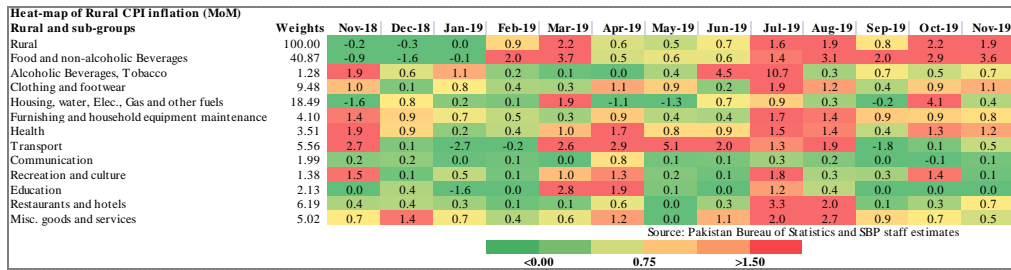
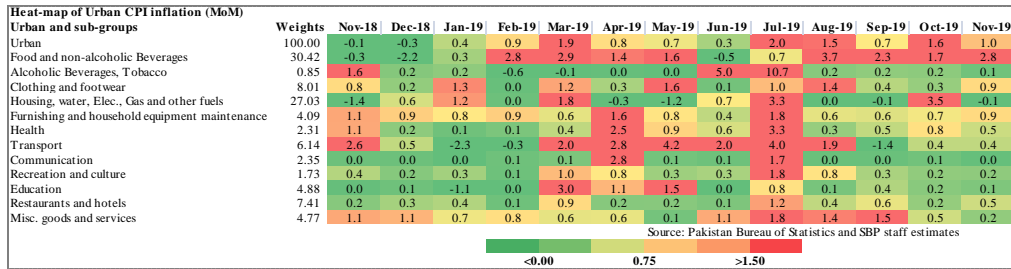
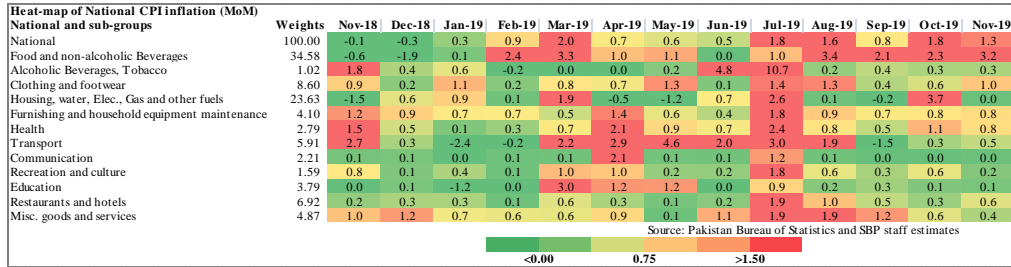
Urban and sub-groups	Weights	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
Urban	100.00	6.3	5.9	6.2	7.2	8.9	8.4	8.5	8.1	8.7	10.6	11.6	10.9	12.1
Food and non-alcoholic Beverages	30.42	0.7	-0.7	1.8	5.9	9.4	8.7	9.7	7.7	7.7	12.6	16.3	15.0	18.6
Alcoholic Beverages, Tobacco	0.85	17.9	18.0	17.2	14.6	11.4	10.9	10.8	16.3	28.4	28.5	28.7	18.5	16.7
Clothing and footwear	8.01	5.6	5.3	6.2	5.9	6.5	5.8	7.0	6.8	7.5	9.1	9.0	9.0	9.1
Housing, water, Elec., Gas and other fuels	27.03	8.2	8.4	8.4	8.5	10.7	8.8	7.2	7.6	7.9	8.6	8.4	8.2	9.6
Furnishing and household equipment maintenance	4.09	7.6	8.3	8.6	9.2	9.4	9.8	10.2	10.5	12.3	12.4	12.5	11.6	11.2
Health	2.31	6.9	6.2	6.1	5.8	5.7	7.7	8.5	9.0	12.1	11.7	11.1	11.2	10.5
Transport	6.14	19.6	19.1	13.2	11.0	10.3	14.5	18.2	17.4	17.5	19.0	18.6	17.5	15.0
Communication	2.35	2.3	2.4	2.4	2.4	2.5	5.3	5.2	5.2	5.7	5.5	5.6	5.2	5.1
Recreation and culture	1.73	6.8	6.4	6.7	6.5	7.2	5.1	5.1	5.3	6.8	7.5	7.7	6.7	6.5
Education	4.88	10.7	10.8	7.5	7.0	7.2	5.7	6.4	6.4	7.3	7.4	6.4	6.2	6.3
Restaurants and hotels	7.41	6.2	6.3	5.3	5.0	5.4	5.2	4.5	4.5	5.4	5.0	5.0	4.9	5.2
Misc. goods and services	4.77	9.2	8.7	8.7	9.8	10.0	9.3	8.8	9.7	10.8	12.6	13.1	12.0	11.0

Source: Pakistan Bureau of Statistics and SBP staff estimates

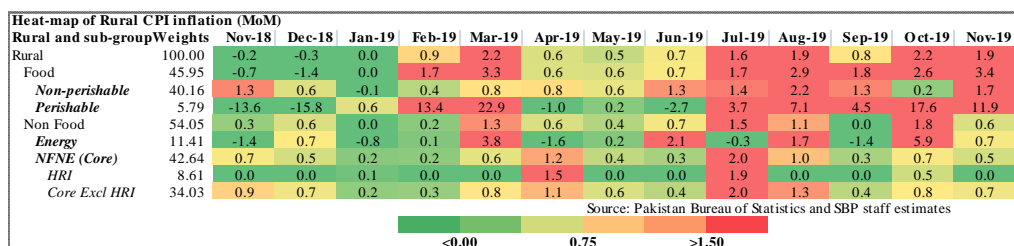
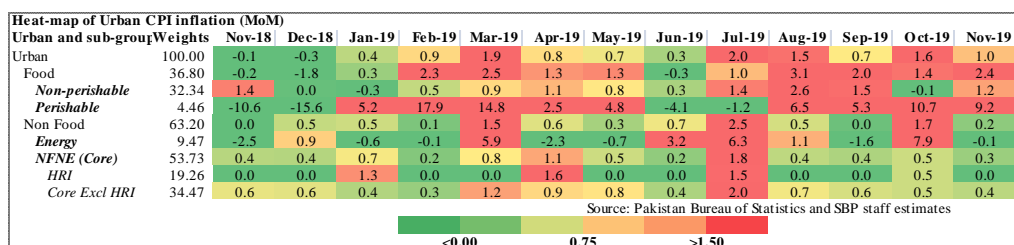
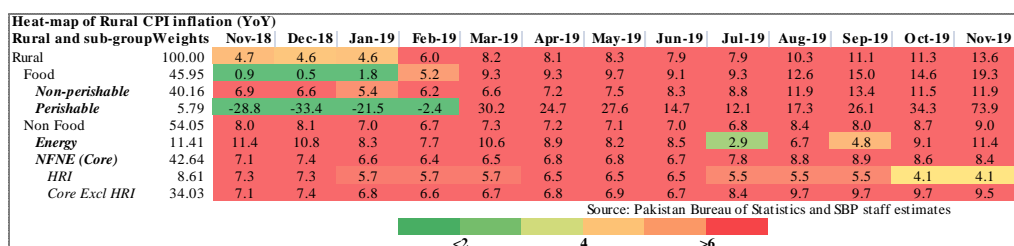
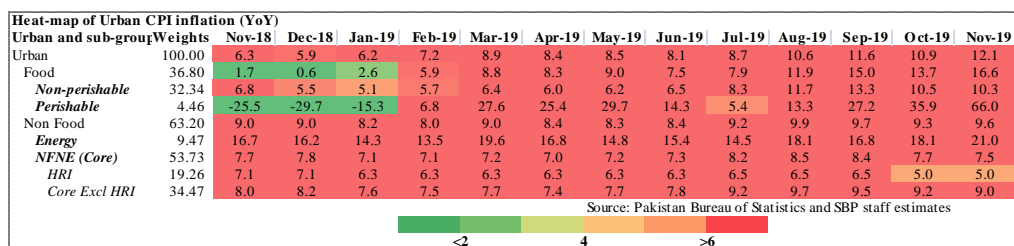
**Heat-map of Rural CPI inflation (YoY)**

Rural and sub-groups	Weights	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
Rural	100.00	4.7	4.6	4.6	6.0	8.2	8.1	8.3	7.9	7.9	10.3	11.1	11.3	13.6
Food and non-alcoholic Beverages	40.87	0.0	-0.5	1.0	4.8	9.5	9.5	10.1	9.3	8.9	12.6	15.3	15.1	20.3
Alcoholic Beverages, Tobacco	1.28	12.6	13.1	13.8	14.0	14.2	12.6	13.3	18.4	30.4	31.3	31.4	22.4	21.0
Clothing and footwear	9.48	7.9	7.4	7.2	7.0	6.9	7.1	6.9	6.0	7.5	8.7	8.9	9.7	9.8
Housing, water, Elec., Gas and other fuels	18.49	7.2	7.4	6.5	6.7	8.6	6.6	5.0	5.3	2.0	3.7	2.8	4.9	6.9
Furnishing and household equipment maintenance	4.10	7.2	7.8	8.0	7.8	7.8	8.0	7.4	7.6	9.1	10.2	10.5	10.9	10.2
Health	3.51	7.3	8.0	7.5	6.4	6.9	8.5	8.9	9.8	11.1	12.2	12.2	13.1	12.3
Transport	5.56	18.2	17.3	11.5	9.5	8.3	12.5	17.2	16.9	15.7	17.6	16.4	14.7	12.2
Communication	1.99	2.3	2.5	1.3	1.4	1.2	2.0	2.1	2.1	2.0	2.1	2.0	2.0	1.9
Recreation and culture	1.38	8.0	7.7	7.0	6.9	7.5	6.7	6.4	5.9	7.7	8.0	8.0	8.9	7.4
Education	2.13	7.5	6.4	4.7	4.5	5.9	4.1	3.9	3.6	4.9	5.3	5.3	5.3	5.3
Restaurants and hotels	6.19	4.9	5.0	5.0	4.6	4.3	4.4	3.6	2.9	6.4	8.1	8.1	8.0	8.5
Misc. goods and services	5.02	6.9	8.2	7.9	7.8	8.0	8.4	8.3	9.0	10.7	14.1	13.9	13.2	12.9

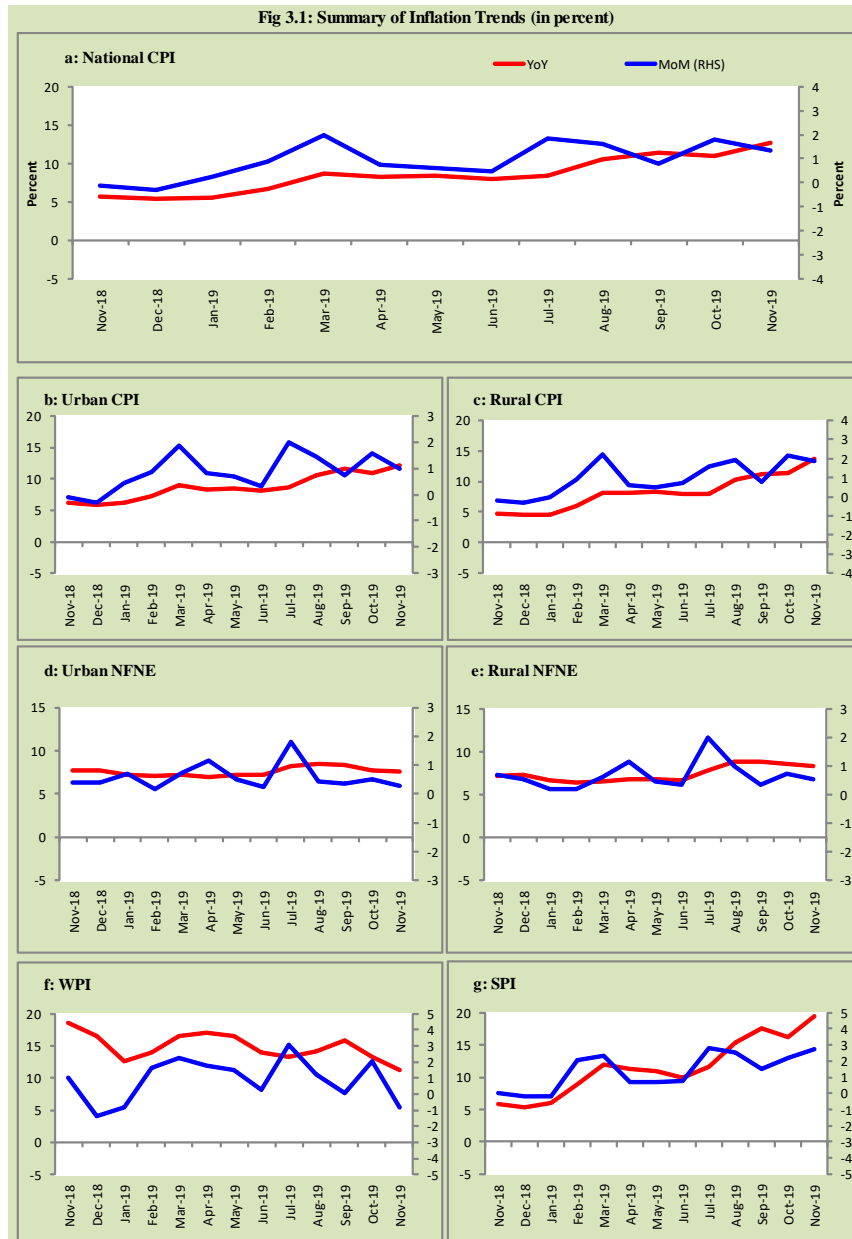
Source: Pakistan Bureau of Statistics and SBP staff estimates



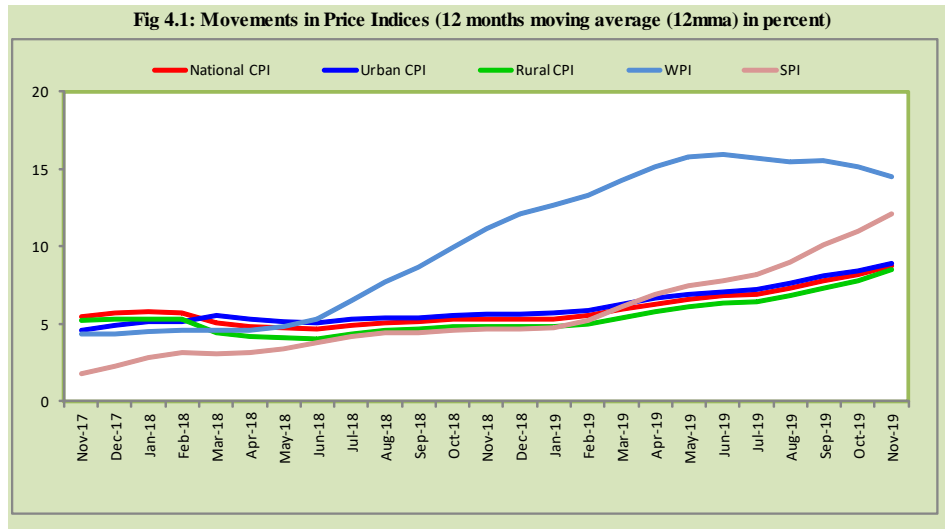
## Inflation Monitor (Revamped Version), November 2019



### 3. Trends in Inflation



#### 4. Movement in Price Indices (Moving Averages)



#### 5. Movement in Price Indices (Month-on-Month)

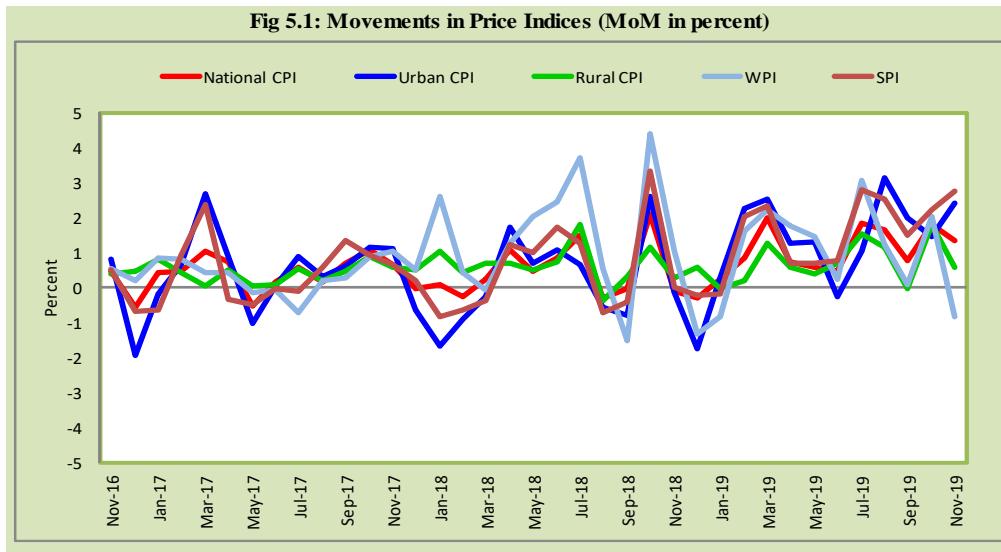


Fig 5.2: Movements in Price Indices (MoM in percent) - Urban CPI Basket

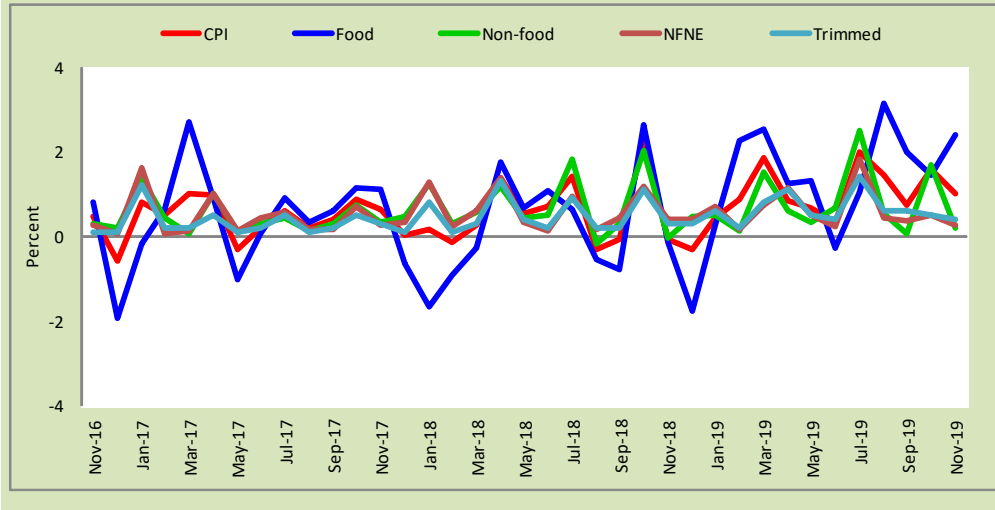
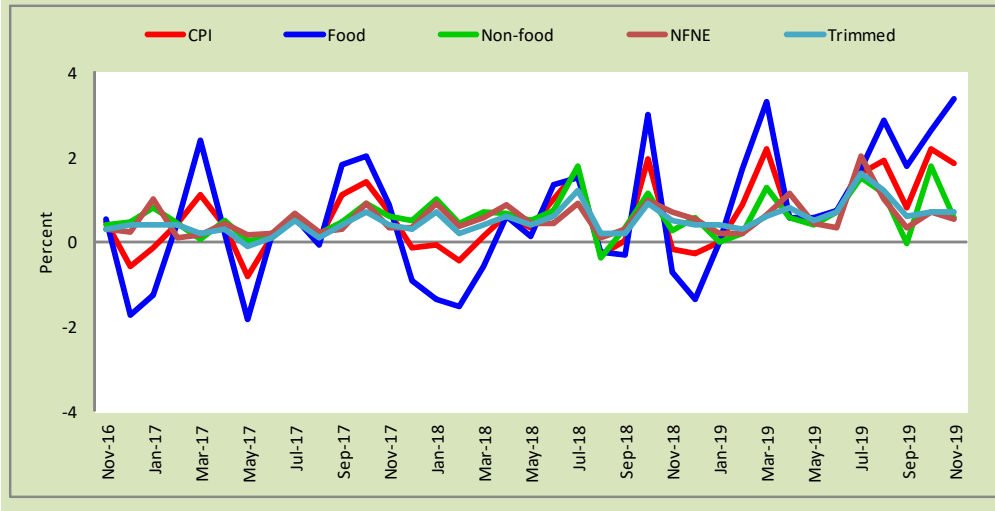
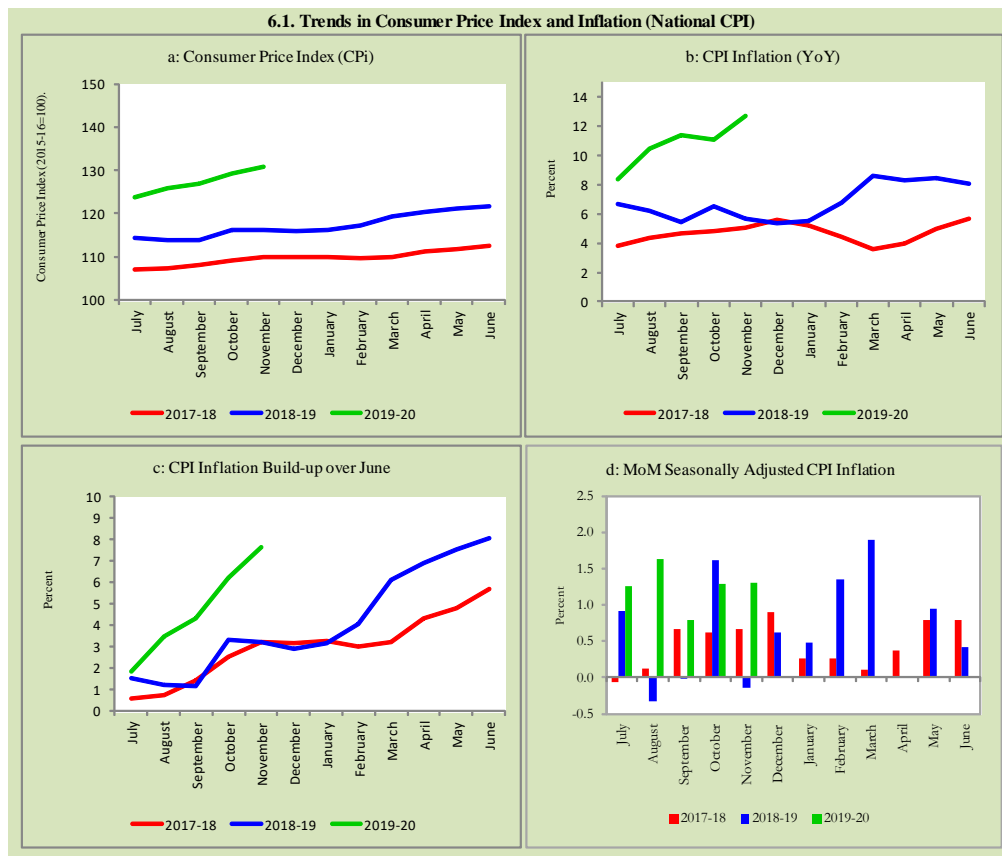


Fig 5.3: Movements in Price Indices (MoM in percent) - Rural CPI Basket

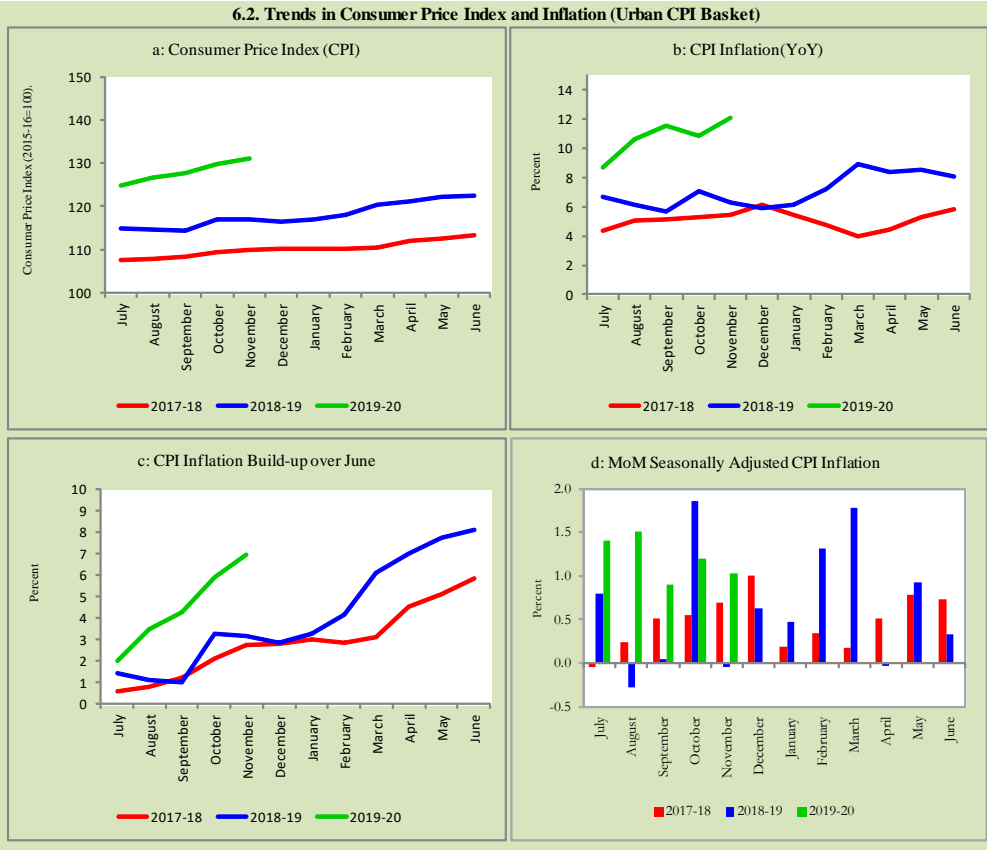


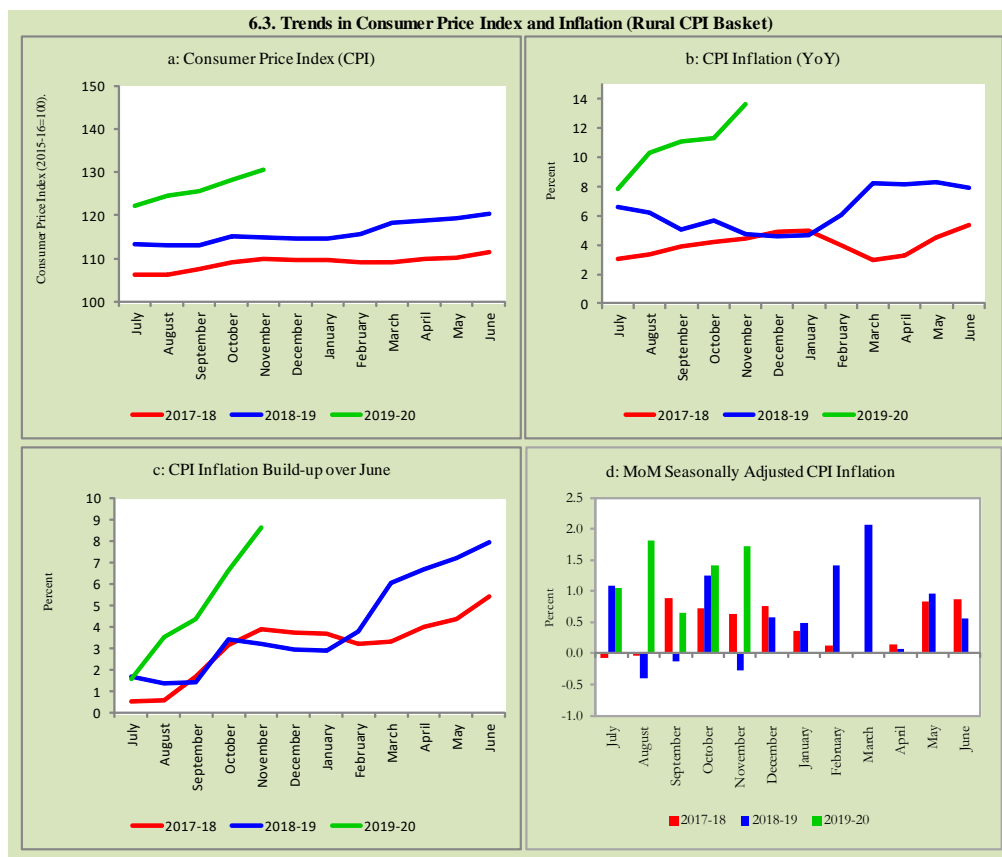
## 6. Trends in Consumer Price Indices and Inflation

Monthly Consumer Price Indices, YoY growth rates and inflation build up over June along with seasonally adjusted (MoM) growth rates in CPI (National, Urban and Rural) is summarized in the following graphs (Figure 6.1 to 6.3).



6.2. Trends in Consumer Price Index and Inflation (Urban CPI Basket)





## 7. Weighted Contribution

The weighted contribution of food group in the overall inflation (Urban Basket) increased to 48.7 percent during November 2019 from 44.7 percent in previous month. It was 10.0 percent during corresponding month of last year. The weighted contribution of non-food group decreased to 51.3 percent in November 2019 from 55.4 percent in previous month. Non-food group was 90.0 percent during corresponding month of last year. Table 7.1 provide the historical perspective of weighted contribution of food group and non-food group and their respective sub-indexes (Perishable food, Non-Perishable food, Energy, Core Inflation (NFNE),

NFNE excluding HRI and HRI) in the overall inflation for urban basket. Figure 7.1 provides a graphical presentation of composition of YoY urban CPI inflation cascaded in food group and non-food groups and their respective sub-indexes.

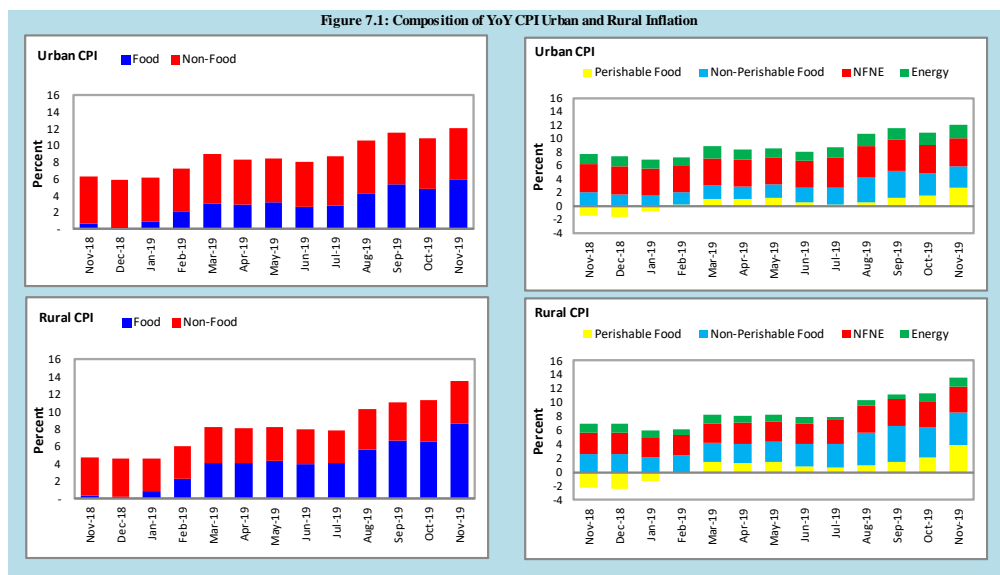
**Table 7.1 Weighted Contribution (in percent) to Urban CPI Inflation (YoY)**

Period	Overall CPI	Food Group			Non-Food Group				
		Food	Perishable food	Non-Perishable food	Non-food	Energy	Core Inflation (NFNE)	NFNE excl HRI	HRI
		a=(b+e)	b=(c+d)	c	d	e=(f+g)	f	g=(h+i)	h
18-Nov	100	10.0	-23.4	33.5	90.0	23.8	66.2	44.0	22.3
18-Dec	100	3.6	-26.0	29.6	96.3	24.9	71.4	47.7	23.7
19-Jan	100	15.0	-11.2	26.2	84.9	21.2	63.6	42.9	20.8
19-Feb	100	29.0	3.9	25.0	71.1	17.2	53.9	36.2	17.7
19-Mar	100	35.0	12.5	22.6	65.0	20.2	44.8	30.5	14.3
19-Apr	100	35.3	12.6	22.7	64.6	18.4	46.3	31.0	15.2
19-May	100	37.6	14.6	23.0	62.4	15.9	46.4	31.6	14.8
19-Jun	100	33.2	8.0	25.2	66.8	17.7	49.1	33.6	15.5
19-Jul	100	32.3	3.0	29.3	67.7	16.4	51.3	36.5	14.8
19-Aug	100	39.7	6.0	33.7	60.3	16.5	43.8	31.6	12.2
19-Sep	100	45.8	10.5	35.3	54.2	14.1	40.1	28.9	11.2
19-Oct	100	44.7	14.9	29.7	55.4	16.8	38.6	29.3	9.2
19-Nov	100	48.7	22.1	26.6	51.3	17.1	34.2	25.9	8.3

Also, for rural basket, the weighted contribution of food group in the overall inflation increased from 57.8 percent in October 2019 to 63.3 percent during November 2019. It was 9.0 percent during corresponding month of last year. On the other hand, the weighted contribution of non-food group decreased to 36.7 percent in November 2019 from 42.2 percent in previous month. Non-food group was 90.9 percent during corresponding month of last year. Table 7.2 provide the historical perspective of weighted contribution of food group (Perishable food, Non-Perishable food) and non-food group (Energy, Core Inflation (NFNE), NFNE excluding HRI and HRI) in the overall inflation for rural basket. Figure 7.1 provides a graphical display of composition of YoY rural CPI inflation distributed in food group and non-food groups and their respective sub-indexes.

Table 7.2 Weighted Contribution (in percent) to Rural CPI Inflation (YoY)									
Period	Overall CPI	Food Group			Non-Food Group				
		Food	Perishable food	Non-Perishable food	Non-food	Energy	Core Inflation (NFNE)	NFNE excl HRI	HRI
		a=(b+e)	b=(c+d)	c	d	e=(f+g)	f	g=(h+i)	h
18-Nov	100	4.6	-51.2	55.8	95.4	26.4	69.0	54.8	14.2
18-Dec	100	17.9	-27.7	45.6	82.1	20.3	61.8	50.6	11.2
19-Jan	100	38.6	-2.2	40.8	61.4	14.7	46.7	38.1	8.7
19-Feb	100	50.4	18.6	31.8	49.6	14.9	34.7	28.4	6.3
19-Mar	100	50.7	15.7	35.0	49.2	12.6	36.6	29.4	7.3
19-Apr	100	52.4	16.9	35.5	47.6	11.5	36.2	29.0	7.1
19-May	100	50.9	10.0	40.9	49.2	12.4	36.7	29.4	7.3
19-Jun	100	52.4	8.7	43.7	47.6	4.4	43.2	36.9	6.4
19-Jul	100	54.8	9.8	45.1	45.2	7.7	37.5	32.6	4.9
19-Aug	100	60.0	13.3	46.7	40.0	5.1	34.9	30.4	4.5
19-Sep	100	57.8	18.5	39.3	42.2	9.5	32.7	29.5	3.3
19-Oct	100	63.3	28.7	34.5	36.7	9.8	26.9	24.2	2.7
19-Nov	100	63.9	29.4	34.5	36.1	9.8	26.3	23.6	2.8

Figure 7.1: Composition of YoY CPI Urban and Rural Inflation



The group wise weighted contribution of CPI (National, Urban and Rural) is also presented to examine the shift of inflationary movements in each group over the period of time.

Weighted Contribution (in percent) to National CPI Inflation (YoY)														
National and sub-groups	Weights	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
National	100.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Food and non-alcoholic Beverages	34.58	2.5	-3.9	8.6	26.6	36.2	36.4	39.0	35.0	32.7	39.9	45.8	45.2	50.6
Alcoholic Beverages, Tobacco	1.02	2.5	2.7	2.6	2.0	1.4	1.3	1.3	2.0	3.2	2.6	2.4	1.8	1.5
Clothing and footwear	8.60	10.1	10.1	10.4	8.3	6.8	6.8	7.2	7.0	7.8	7.4	6.9	7.2	6.4
Housing, water, Elec., Gas and other fuels	23.63	32.8	35.9	33.7	28.3	28.0	23.6	18.7	20.4	17.6	16.3	14.1	15.9	16.8
Furnishing and household equipment maintenance	4.10	5.1	5.9	5.9	5.1	4.0	4.4	4.3	4.6	5.1	4.3	4.1	4.0	3.4
Health	2.79	3.6	3.8	3.6	2.7	2.2	2.9	3.0	3.4	4.0	3.3	3.0	3.2	2.6
Transport	5.91	19.0	19.6	13.2	9.2	6.8	10.0	12.8	13.1	12.5	11.1	9.7	9.2	7.0
Communication	2.21	0.8	0.9	0.7	0.6	0.5	1.0	1.0	1.0	1.0	0.8	0.8	0.7	0.6
Recreation and culture	1.59	1.9	1.9	1.9	1.5	1.3	1.1	1.0	1.1	1.3	1.1	1.0	1.0	0.8
Education	3.79	7.4	7.7	5.3	4.1	3.5	2.9	3.1	3.2	3.5	2.9	2.4	2.4	2.1
Restaurants and hotels	6.92	7.2	7.7	6.6	5.2	4.2	4.3	3.6	3.5	4.9	4.2	3.9	3.8	3.6
Misc. goods and services	4.87	7.0	7.7	7.4	6.5	5.2	5.3	5.0	5.7	6.2	6.1	5.8	5.5	4.6

Source: Pakistan Bureau of Statistics and SBP staff estimates

Weighted Contribution (in percent) to Urban CPI Inflation (YoY)														
Urban and sub-groups	Weights	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
Urban	100.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Food and non-alcoholic Beverages	30.42	3.5	-3.4	8.6	23.8	30.5	30.5	33.2	27.9	25.7	34.4	40.7	40.0	44.5
Alcoholic Beverages, Tobacco	0.85	2.3	2.5	2.3	1.7	1.1	1.1	1.1	1.7	2.7	2.2	2.0	1.5	1.2
Clothing and footwear	8.01	7.1	7.2	8.0	6.5	5.8	5.6	6.6	6.7	6.8	6.7	6.2	6.5	5.9
Housing, water, Elec., Gas and other fuels	27.03	35.3	38.9	37.4	32.3	33.0	28.8	23.3	25.6	25.1	22.3	20.0	21.2	22.1
Furnishing and household equipment maintenance	4.09	4.7	5.5	5.5	5.0	4.2	4.6	4.7	5.1	5.5	4.6	4.3	4.2	3.7
Health	2.31	2.7	2.6	2.4	2.0	1.6	2.2	2.4	2.7	3.3	2.7	2.3	2.5	2.1
Transport	6.14	18.1	19.0	13.0	9.4	7.3	10.6	13.2	13.5	12.9	11.6	10.4	10.3	8.1
Communication	2.35	0.8	0.9	0.8	0.7	0.6	1.3	1.3	1.3	1.4	1.1	1.0	1.0	0.9
Recreation and culture	1.73	1.8	1.8	1.8	1.5	1.3	1.0	1.0	1.1	1.3	1.1	1.1	1.0	0.9
Education	4.88	9.3	10.0	6.7	5.4	4.6	4.0	4.4	4.5	4.7	4.0	3.2	3.2	3.0
Restaurants and hotels	7.41	7.4	8.1	6.5	5.3	4.7	4.8	4.0	4.3	4.7	3.6	3.3	3.4	3.3
Misc. goods and services	4.77	6.9	7.0	6.8	6.5	5.4	5.4	5.0	5.7	5.9	5.6	5.5	5.3	4.4

Source: Pakistan Bureau of Statistics and SBP staff estimates

Weighted Contribution (in percent) to Rural CPI Inflation (YoY)														
Rural and sub-groups	Weights	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
Rural	100.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Food and non-alcoholic Beverages	40.87	0.3	-4.7	8.4	31.7	45.5	45.8	48.1	46.0	44.7	48.5	54.0	52.8	59.0
Alcoholic Beverages, Tobacco	1.28	2.9	3.1	3.3	2.6	1.9	1.7	1.8	2.5	4.2	3.3	3.1	2.3	1.8
Clothing and footwear	9.48	16.0	15.7	15.2	11.5	8.3	8.7	8.3	7.5	9.4	8.4	8.0	8.3	7.1
Housing, water, Elec., Gas and other fuels	18.49	27.9	29.9	26.3	20.9	19.8	15.4	11.4	12.4	5.0	6.8	4.8	8.2	9.6
Furnishing and household equipment maintenance	4.10	5.9	6.7	6.8	5.2	3.8	3.9	3.6	3.8	4.6	4.0	3.8	3.8	3.0
Health	3.51	5.5	6.3	5.9	4.0	3.1	3.9	4.0	4.5	5.1	4.3	4.0	4.2	3.3
Transport	5.56	20.6	20.5	13.8	8.9	6.0	8.9	12.1	12.5	11.8	10.2	8.7	7.7	5.4
Communication	1.99	0.9	1.0	0.5	0.4	0.3	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.2
Recreation and culture	1.38	2.2	2.2	2.0	1.5	1.2	1.1	1.1	1.0	1.3	1.0	1.0	1.0	0.7
Education	2.13	3.6	3.2	2.4	1.8	1.7	1.2	1.2	1.1	1.5	1.2	1.1	1.1	0.9
Restaurants and hotels	6.19	6.6	7.0	6.9	4.9	3.4	3.5	2.9	2.4	5.2	5.1	4.7	4.5	4.0
Misc. goods and services	5.02	7.2	8.9	8.6	6.6	5.0	5.2	5.1	5.7	6.8	6.8	6.3	5.8	4.8

Source: Pakistan Bureau of Statistics and SBP staff estimates

## 8. Inflation Diffusion Index

Inflation diffusion index (IDI) is the difference (MoM change) 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 basket for which prices have reported. IDI for urban and rural baskets (CPI, Core and twelve groups) is presented in Table 8.1(a & b) for the last thirteen months.

**Table 8.1(a) Inflation Diffusion Index for Urban CPI Basket - based on MoM change**

	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
General	45.5	48.3	44.7	40.2	55.6	31.7	39.3	52.5	61.5	65.2	52.8	61.8	55.3
Food & Non-Alcoholic Beverages	24.4	28.9	50.0	37.8	46.7	24.4	47.8	43.3	50.0	65.6	50.0	67.8	45.6
Alcoholic Beverages & Tobacco	100.0	33.3	66.7	33.3	-33.3	0.0	0.0	100.0	100.0	66.7	100.0	100.0	100.0
Clothing & Footwear	62.5	62.5	75.0	35.0	60.0	27.5	40.0	60.0	70.0	80.0	57.5	72.5	80.0
Housing, Water, Elect, Gas & other Fuels	13.8	37.9	3.4	41.4	51.7	-24.1	3.4	65.5	44.8	37.9	10.3	55.2	24.1
Furnishing & Household Equip. Maintenance etc	95.2	83.3	88.1	78.6	76.2	64.3	54.8	90.5	76.2	88.1	97.6	88.1	95.2
Health	100.0	50.0	0.0	25.0	50.0	100.0	50.0	75.0	0.0	100.0	0.0	100.0	50.0
Transport	100.0	50.0	0.0	25.0	50.0	100.0	50.0	75.0	0.0	100.0	0.0	100.0	50.0
Communication	20.0	20.0	0.0	20.0	20.0	40.0	20.0	20.0	40.0	20.0	20.0	20.0	20.0
Recreation & Culture	32.0	24.0	28.0	24.0	64.0	60.0	44.0	36.0	56.0	60.0	32.0	24.0	32.0
Education	12.5	18.8	-43.8	-18.8	43.8	50.0	56.3	0.0	56.3	56.3	62.5	6.3	25.0
Restaurant & Hotels	57.1	64.3	35.7	35.7	50.0	28.6	35.7	50.0	78.6	85.7	78.6	78.6	71.4
Miscellaneous	58.6	72.4	69.0	72.4	41.4	55.2	48.3	82.8	69.0	79.3	96.6	79.3	65.5
NFNE	55.7	55.3	46.4	42.1	60.0	38.3	40.4	55.7	68.1	68.1	59.1	58.3	63.0

**Table 8.1(b) Inflation Diffusion Index (CPI Rural Basket) - based on MoM change**

	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
General	51.2	43.4	38.9	45.1	49.2	49.2	41.4	46.7	73.0	60.7	34.4	64.3	50.8
Food & Non-Alcoholic Beverages	30.4	20.3	34.2	54.4	44.3	30.4	30.4	36.7	65.8	55.7	22.8	69.6	46.8
Alcoholic Beverages & Tobacco	60.0	80.0	80.0	40.0	20.0	0.0	20.0	100.0	100.0	100.0	80.0	100.0	80.0
Clothing & Footwear	88.9	40.7	70.4	48.1	55.6	81.5	77.8	63.0	85.2	81.5	66.7	77.8	59.3
Housing, Water, Elect, Gas & other Fuels	8.7	56.5	4.3	21.7	43.5	0.0	-4.3	60.9	39.1	52.2	-4.3	82.6	34.8
Furnishing & Household Equip. Maintenance etc	92.3	80.8	84.6	84.6	61.5	88.5	65.4	42.3	84.6	88.5	73.1	84.6	80.8
Health	71.4	71.4	35.7	35.7	50.0	71.4	64.3	57.1	78.6	57.1	35.7	50.0	78.6
Transport	68.8	50.0	12.5	31.3	87.5	56.3	56.3	56.3	75.0	50.0	12.5	37.5	43.8
Communication	20.0	20.0	20.0	20.0	0.0	40.0	40.0	20.0	40.0	20.0	0.0	-20.0	20.0
Recreation & Culture	27.8	22.2	11.1	11.1	55.6	66.7	27.8	11.1	72.2	11.1	22.2	27.8	11.1
Education	0.0	40.0	-60.0	0.0	80.0	80.0	60.0	0.0	80.0	20.0	0.0	0.0	0.0
Restaurant & Hotels	64.3	50.0	35.7	7.1	28.6	50.0	21.4	35.7	85.7	57.1	21.4	42.9	42.9
Miscellaneous	70.6	64.7	41.2	64.7	47.1	64.7	64.7	76.5	100.0	88.2	70.6	70.6	64.7
NFNE	66.2	52.9	47.8	43.4	50.7	67.6	55.9	47.8	81.6	63.2	49.3	58.1	55.1

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

## 9. Domestic Commodity Prices

Inflation in domestic food commodities (YoY and MoM in percent) for selected essential food items covering both urban and rural CPI baskets is given in table 9.1.

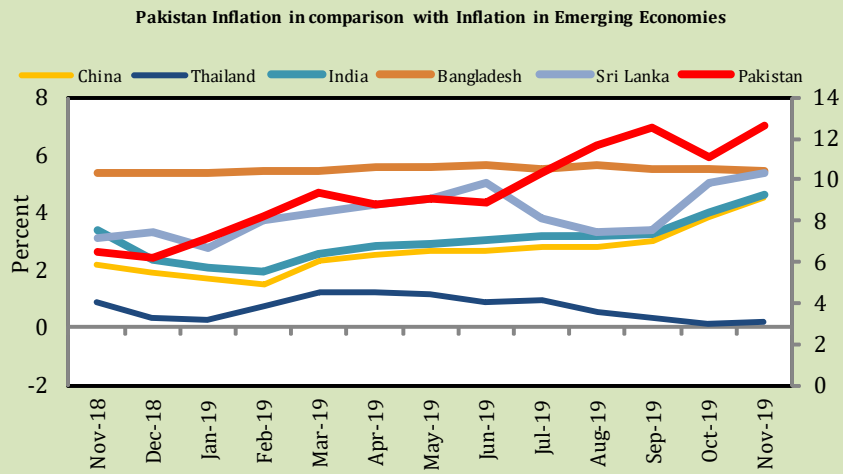
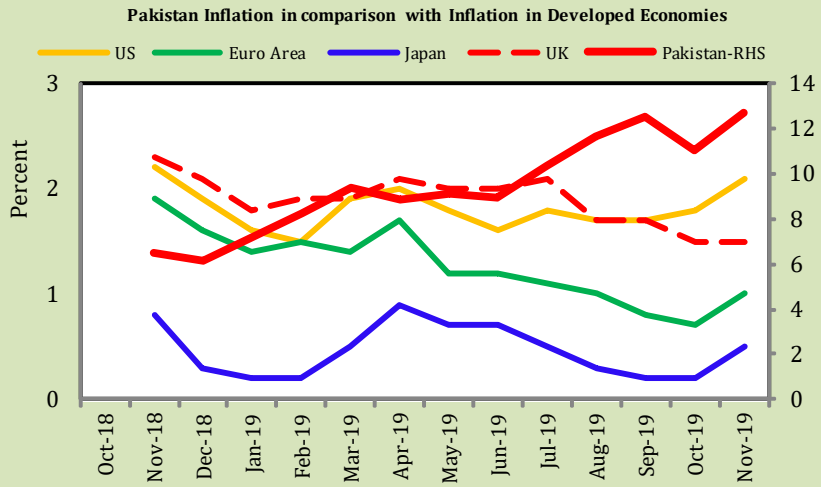
S. No	Item	Unit	Urban CPI		Rural CPI	
			YoY	MoM	YoY	MoM
1	Wheat	10 Kg	15.3	6.9	20.1	10.8
2	Wheat Flour Bag	20 Kg	15.6	4.4	18.0	5.5
3	Rice Basmati Broken (Superior/Average Quality)*	1 Kg	6.3	0.6	8.2	0.9
4	Beef With Bone (Average Quality)	1 Kg	15.2	1.0	10.6	0.5
5	Mutton (Average Quality)	1 Kg	11.0	0.3	14.2	0.2
6	Chicken Farm Broiler (Live)	1 Kg	-15.0	-2.3	-12.4	-1.0
7	Milk Fresh (Un-Boiled)	1 Litre	9.6	1.5	7.6	0.1
8	Eggs Farm	Dozen	-7.9	-0.9	-5.6	1.3
9	Vegetable Ghee Dalda/Habib Or Other Superior Quality 1 Kg Pouch	Each	19.4	0.8	17.5	0.5
10	Pulse Masoor (Washed)	1 Kg	15.5	2.7	15.4	3.9
11	Pulse Moong (Washed)	1 Kg	54.0	7.8	60.3	8.6
12	Pulse Mash (Washed)	1 Kg	41.6	11.7	37.7	8.2
13	Pulse Gram	1 Kg	12.1	1.9	12.1	1.0
14	Potatoes	1 Kg	44.0	6.9	45.4	4.5
15	Onions	1 Kg	156.1	3.8	166.5	13.8
16	Tomatoes	1 Kg	436.9	149.4	388.9	189.7
17	Sugar Refined	1 Kg	33.5	-1.2	154.7	12.6
18	Garlic (Lehsun)	1 Kg	132.8	9.9	33.3	-1.4
19	Ginger (Adrak)	500 Gm	65.5	7.5	68.7	8.4
20	Tea Lipton Yellow Label 190 Gm Packet	Each	17.0	0.2	15.9	0.6

\*Superior Quality for Urban CPI Basket and Average Quality for Rural CPI Basket

## 10. Inflation in Global Context

In global context, Pakistan witnessed highest inflation not only in comparison with developed economies but also with emerging economies (See figure 10.1).

**Fig 10.1: Inflation in Global Context**

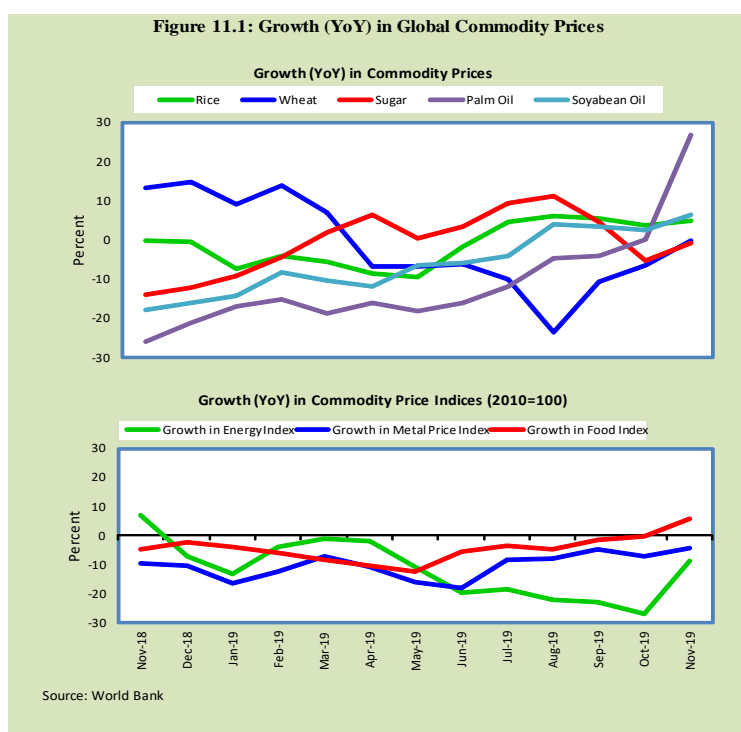


Sources: Bloomberg Havor, PBS

## 11. Global Commodity Prices

Global commodity prices and indexes have a relation with domestic inflation. In this context, changes in major global commodity prices and indexes along with price trends are given in table 11.1 and figure 11.1.

Item/ Group	Nov-18		Oct-19		Nov-19	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	-2.5	0.9	-0.1	2.5	6.0	4.1
Metals	-7.4	1.8	-6.9	-0.4	-4.1	0.3
Energy	36.7	1.3	-26.8	-3.7	-8.9	5.3
Agricultural	-2.3	0.9	-0.9	2.0	4.2	3.7
Cotton	10.4	-3.9	-14.9	3.6	-13.7	1.3



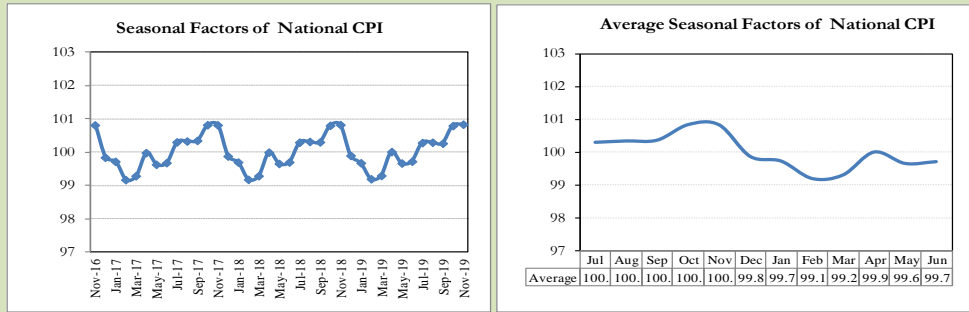
## **12. Seasonal Adjustment in CPI**

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.

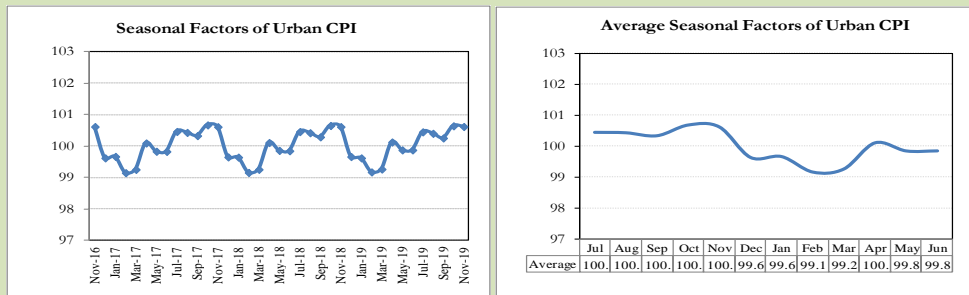
The changes in consumer prices are normally reported in terms of year-on-year and month-on-month basis. Seasonal adjustment is particularly useful for analyzing month-on-month changes. The monthly data series of Consumer Price Indices (National CPI, Urban CPI and Rural CPI) from July 2008 to November 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 12.1 reveals that seasonality in all CPI series has been increasing over the period. 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 on historical data and that the future data may not necessarily show the same pattern of seasonal factors.

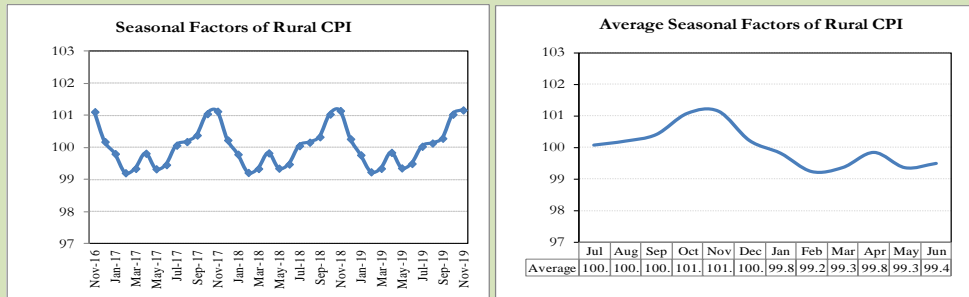
**Fig. 12.1 (a) Seasonal Factors of National CPI**



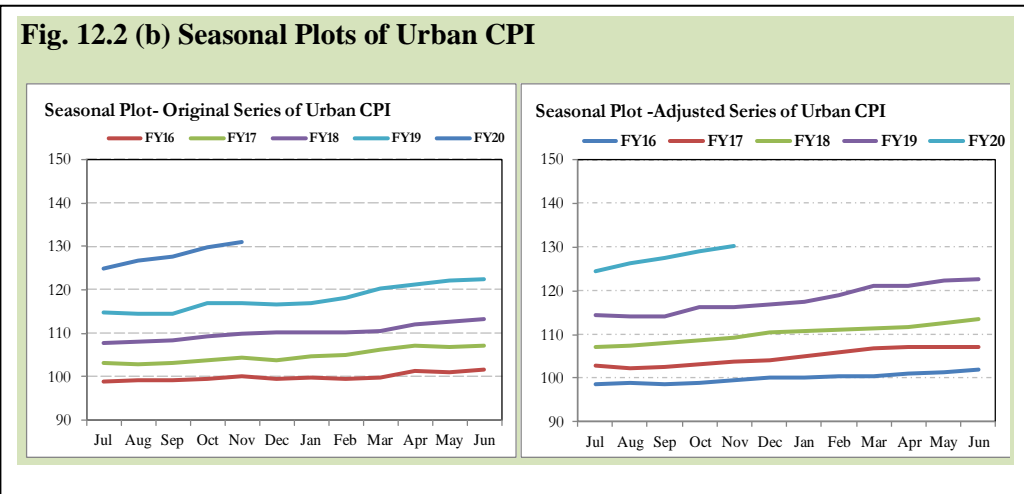
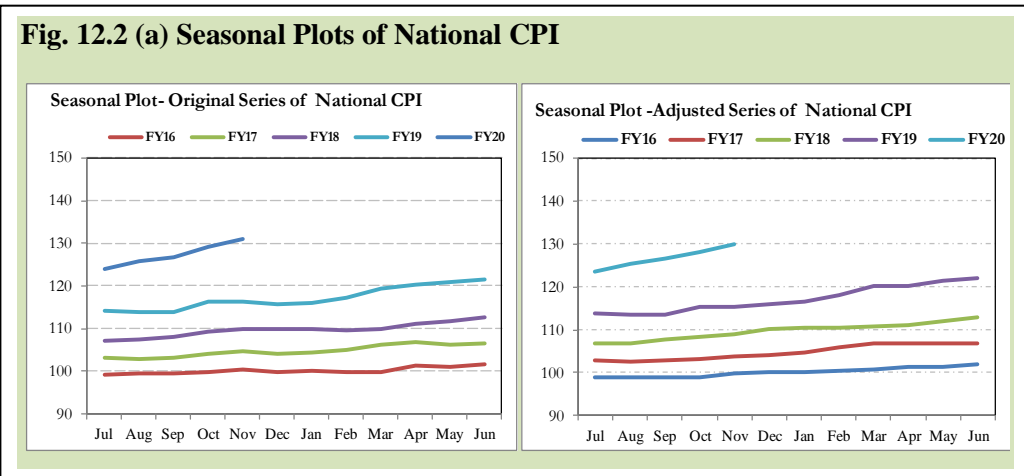
**Fig. 12.1 (b) Seasonal Factors of Urban CPI**



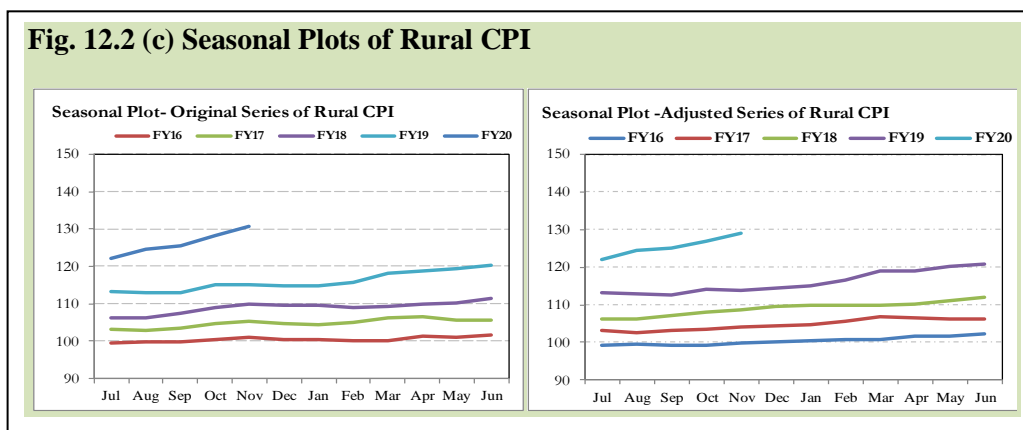
**Fig. 12.1 (c) Seasonal Factors of Rural CPI**



Figures 12.2 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. 12.2 (c) Seasonal Plots of Rural CPI**



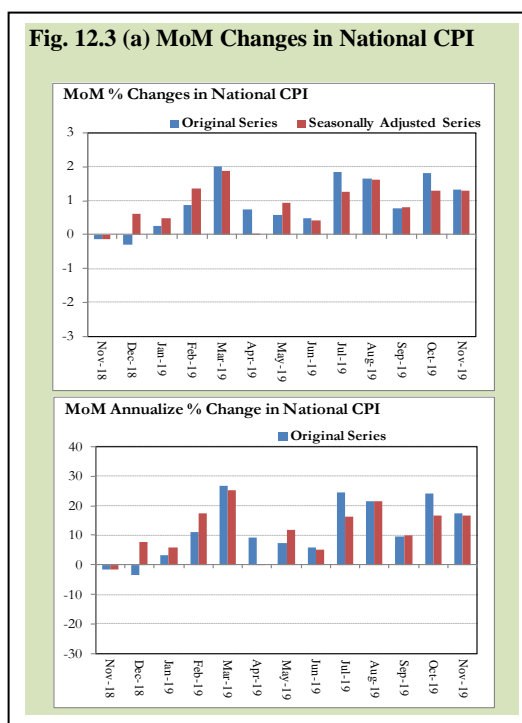
Seasonally adjusted National CPI for November 2019 stood at 129.81 against 130.90 in original series showing a decrease of 1.09 on account of adjustment of upward seasonality in November 2019.

Seasonally adjusted Urban CPI for November 2019 stood at 130.24 against 131.05 in original series showing decrease of 0.81 on account of adjustment of upward seasonality in November 2019.

Seasonally adjusted Rural CPI for November 2019 stood at 129.16 against 130.67 in original series showing decrease of 1.51 on account of adjustment of upward seasonality in November 2019.

Month-on-month change of seasonally adjusted National CPI series stood at 1.30% reflecting an increase during November 2019 over previous month and an increase of 1.35% in original series.

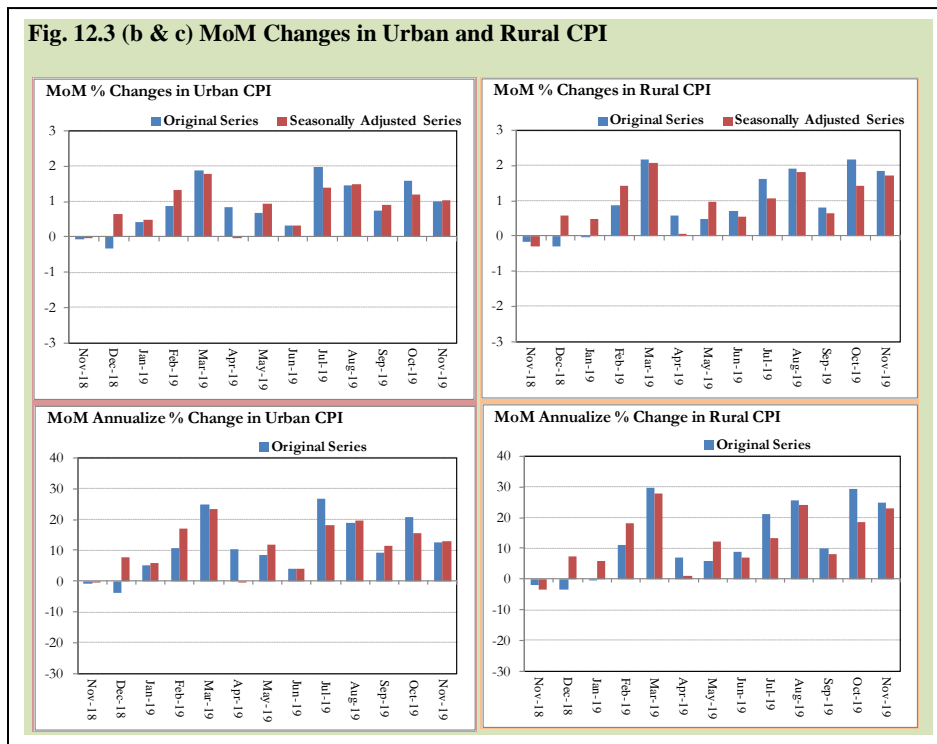
**Fig. 12.3 (a) MoM Changes in National CPI**



Month-on-month change of seasonally adjusted Urban CPI series stood at 1.02% reflecting an increase during November 2019 over previous month and an increase of 1.00% in original series.

Month-on-month change of seasonally adjusted Rural CPI series stood at 1.73% reflecting an increase during November 2019 over previous month and an increase of 1.86% in original series.

It is important to note that for MoM inflation, seasonally adjusted rates should be considered.



The most recent annual rate of inflation is usually indicated by annualizing the seasonally adjusted month-on-month rate. Annualized rate of National CPI inflation in November 2019 (corresponding to the seasonally adjusted month-on-month rate) is 16.80 percent.

**Annexure A**

<b>Table A1: National CPI Inflation by Groups (YoY and MoM in percent)</b>							
	<b>Weights</b>	<b>MoM change</b>			<b>YoY change</b>		
		<b>Nov-18</b>	<b>Oct-19</b>	<b>Nov-19</b>	<b>Nov-18</b>	<b>Oct-19</b>	<b>Nov-19</b>
Food & Non-Alcoholic Beverages	34.6	-0.6	2.3	3.2	0.4	15.0	19.4
Alcoholic Beverages & Tobacco	1.0	1.8	0.3	0.3	15.4	20.3	18.7
Clothing & Footwear	8.6	0.9	0.6	1.0	6.7	9.3	9.4
Housing, Water, Elec, Gas & other Fuels	23.6	-1.5	3.7	0.0	7.9	7.2	8.8
Furnishing & Household Equip. Maintenance	4.1	1.2	0.8	0.8	7.4	11.3	10.8
Health	2.8	1.5	1.1	0.8	7.1	12.2	11.4
Transport	5.9	2.7	0.3	0.5	19.0	16.5	14.0
Communication	2.2	0.1	0.0	0.0	2.3	4.0	4.0
Recreation & Culture	1.6	0.8	0.6	0.2	7.2	7.4	6.8
Education	3.8	0.0	0.1	0.1	10.0	6.0	6.1
Restaurants & Hotels	6.9	0.2	0.3	0.6	5.7	6.0	6.4
Miscellaneous	4.9	1.0	0.6	0.4	8.3	12.5	11.8
<b>Overall National CPI</b>	<b>100.0</b>	<b>-0.1</b>	<b>1.8</b>	<b>1.3</b>	<b>5.7</b>	<b>11.0</b>	<b>12.7</b>

<b>Table A2: Urban CPI Inflation by Groups (YoY and MoM in percent)</b>							
	<b>Weights</b>	<b>MoM change</b>			<b>YoY change</b>		
		<b>Nov-18</b>	<b>Oct-19</b>	<b>Nov-19</b>	<b>Nov-18</b>	<b>Oct-19</b>	<b>Nov-19</b>
<b>I. Food Group</b>	<b>36.8</b>	<b>-0.2</b>	<b>1.4</b>	<b>2.4</b>	<b>1.7</b>	<b>13.7</b>	<b>16.6</b>
Food & Non-Alcoholic Beverages	30.4	-0.3	1.7	2.8	0.7	15.0	18.6
Alcoholic Beverages & Tobacco	0.9	1.6	0.2	0.1	17.9	18.5	16.7
Restaurant & Hotels (Food Component)	5.5	0.2	0.3	0.6	4.7	6.2	6.6
<b>II. Non-Food Group</b>	<b>63.2</b>	<b>0.0</b>	<b>1.7</b>	<b>0.2</b>	<b>9.0</b>	<b>9.3</b>	<b>9.6</b>
Clothing & Footwear	8.0	0.8	0.3	0.9	5.6	9.0	9.1
Housing, Water, Elec, Gas & other Fuels	27.0	-1.4	3.5	-0.1	8.2	8.2	9.6
Furnishing & Household Equip. Maintenance	4.1	1.1	0.7	0.9	7.6	11.6	11.2
Health	2.3	1.1	0.8	0.5	6.9	11.2	10.5
Transport	6.1	2.6	0.4	0.4	19.6	17.5	15.0
Communication	2.4	0.0	0.1	0.0	2.3	5.2	5.1
Recreation & Culture	1.7	0.4	0.2	0.2	6.8	6.7	6.5
Education	4.9	0.0	0.2	0.1	10.7	6.2	6.3
Restaurants & Hotels (Non-food Component)	1.9	0.0	0.0	0.2	10.6	1.3	1.5
Miscellaneous	4.8	1.1	0.5	0.2	9.2	12.0	11.0
<b>Overall Urban CPI</b>	<b>100.0</b>	<b>-0.1</b>	<b>1.6</b>	<b>1.0</b>	<b>6.3</b>	<b>10.9</b>	<b>12.1</b>

	Weights	MoM change			YoY change		
		Nov-18	Oct-19	Nov-19	Nov-18	Oct-19	Nov-19
<b>I. Food Group</b>	<b>45.9</b>	<b>-0.7</b>	<b>2.6</b>	<b>3.4</b>	<b>0.9</b>	<b>14.6</b>	<b>19.3</b>
Food & Non-Alcoholic Beverages	40.9	-0.9	2.9	3.6	0.0	15.1	20.3
Alcoholic Beverages & Tobacco	1.3	1.9	0.5	0.7	12.6	22.4	21.0
Restaurant & Hotels (Food Component)	3.8	0.6	0.5	1.2	7.0	7.7	8.4
<b>II. Non-Food Group</b>	<b>54.1</b>	<b>0.3</b>	<b>1.8</b>	<b>0.6</b>	<b>8.0</b>	<b>8.7</b>	<b>9.0</b>
Clothing & Footwear	9.5	1.0	0.9	1.1	7.9	9.7	9.8
Housing, Water, Elec, Gas & other Fuels	18.5	-1.6	4.1	0.4	7.2	4.9	6.9
Furnishing & Household Equip. Maintenance etc	4.1	1.4	0.9	0.8	7.2	10.9	10.2
Health	3.5	1.9	1.3	1.2	7.3	13.1	12.3
Transport	5.6	2.7	0.1	0.5	18.2	14.7	12.2
Communication	2.0	0.2	-0.1	0.1	2.3	2.0	1.9
Recreation & Culture	1.4	1.5	1.4	0.1	8.0	8.9	7.4
Education	2.1	0.0	0.0	0.0	7.5	5.3	5.3
Restaurants & Hotels (Non-food Component)	2.4	0.0	0.0	0.0	1.6	8.6	8.6
Miscellaneous	5.0	0.7	0.7	0.5	6.9	13.2	12.9
<b>Overall Rural CPI</b>		<b>-0.2</b>	<b>2.2</b>	<b>1.9</b>	<b>4.7</b>	<b>11.3</b>	<b>13.6</b>

<b>Table A4: Top Ten Contributors to Urban CPI Inflation (YoY) in November 2019</b>					
<b>Items/ Contributors</b>	<b>Weights</b>	<b>YoY Change</b>		<b>Weighted Contribution (%)</b>	
		<b>Nov-18</b>	<b>Nov-19</b>		
<b>A. Ranked by Weighted Contribution</b>					
1	Tomatoes	0.35	-64.84	436.88	8.60
2	House Rent	19.26	7.06	5.02	8.30
3	Electricity Charges	4.56	5.54	18.48	6.33
4	Gas Charges	1.08	38.63	54.84	5.88
5	Fresh Vegetables	1.53	-18.24	40.36	5.17
6	Milk Fresh	7.11	4.23	9.10	5.05
7	Onions	0.59	-55.31	156.06	4.98
8	Motor Fuel	2.91	27.91	16.23	4.57
9	Wheat Flour	3.01	1.64	16.19	3.53
10	Readymade Food	5.52	4.70	6.60	3.03
<b>Total</b>		<b>45.91</b>			<b>55.44</b>
<b>B. Ranked by Percentage Change</b>					
1	Tomatoes	0.35	-64.84	436.88	8.60
2	Onions	0.59	-55.31	156.06	4.98
3	Gas Charges	1.08	38.63	54.84	5.88
4	Pulse Moong	0.17	5.39	54.03	0.49
5	Potatoes	0.45	-19.08	42.40	1.81
6	Pulse Mash	0.12	-13.44	41.60	0.20
7	Fresh Vegetables	1.53	-18.24	40.36	5.17
8	Sugar	1.11	0.64	33.46	2.32
9	Butter	0.09	4.58	31.65	0.24
10	Gur	0.04	1.35	30.12	0.08
<b>Total</b>		<b>5.53</b>			<b>29.76</b>
<b>C. Ranked by Weights</b>					
1	House Rent	19.26	7.06	5.02	8.30
2	Milk Fresh	7.11	4.23	9.10	5.05
3	Readymade Food	5.52	4.70	6.60	3.03
4	Education	4.88	10.75	6.34	2.98
5	Electricity Charges	4.56	5.54	18.48	6.33
6	Wheat Flour	3.01	1.64	16.19	3.53
7	Appliances/Articles/Products For P	2.98	8.10	8.64	2.09
8	Motor Fuel	2.91	27.91	16.23	4.57
9	Cotton Cloth	2.22	5.96	12.73	2.25
10	Meat	2.04	8.53	13.40	2.40
<b>Total</b>		<b>54.48</b>			<b>40.53</b>
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 Urban CPI, which is 12.1 percent in November 2019.					

<b>Table A5: Top Ten Contributors to Urban CPI Inflation (MoM) in November 2019</b>					
<b>Items/ Contributors</b>	<b>Weights</b>	<b>MoM Change</b>		<b>Weighted Contribution (%)</b>	
		<b>Oct-19</b>	<b>Nov-19</b>		
<b>A. Ranked by Weighted Contribution</b>					
1	Tomatoes	0.35	34.97	149.41	68.71
2	Wheat Flour	3.01	0.35	4.74	12.45
3	Milk Fresh	7.11	0.75	1.42	9.18
4	Potatoes	0.45	10.08	6.72	4.15
5	Wheat	0.61	1.22	6.86	3.60
6	Readymade Food	5.52	0.32	0.62	3.27
7	Onions	0.59	4.98	3.82	3.26
8	Motor Fuel	2.91	0.15	0.84	2.98
9	Condiments And Spices	1.33	0.68	1.86	2.72
10	Woolen Cloth	0.84	0.49	3.15	2.35
					<b>22.72</b>
					<b>112.67</b>
<b>B. Ranked by Percentage Change</b>					
1	Tomatoes	0.35	34.97	149.41	68.71
2	Pulse Mash	0.12	0.45	11.72	0.79
3	Pulse Moong	0.17	0.51	7.79	1.09
4	Wheat	0.61	1.22	6.86	3.60
5	Potatoes	0.45	10.08	6.72	4.15
6	Butter	0.09	1.35	5.20	0.53
7	Wheat Flour	3.01	0.35	4.74	12.45
8	Beans	0.04	2.53	4.53	0.16
9	Wheat Products	0.09	1.63	4.12	0.34
10	Onions	0.59	4.98	3.82	3.26
					<b>5.52</b>
					<b>95.08</b>
<b>C. Ranked by Weights</b>					
1	House Rent	19.26	0.51	0.00	0.00
2	Milk Fresh	7.11	0.75	1.42	9.18
3	Readymade Food	5.52	0.32	0.62	3.27
4	Education	4.88	0.19	0.14	0.75
5	Electricity Charges	4.56	18.40	-0.93	-4.14
6	Wheat Flour	3.01	0.35	4.74	12.45
7	Appliances/Articles/Products For P	2.98	0.85	0.37	1.05
8	Motor Fuel	2.91	0.15	0.84	2.98
9	Cotton Cloth	2.22	0.16	0.31	0.67
10	Meat	2.04	1.17	0.70	1.52
					<b>54.48</b>
					<b>27.74</b>
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in MoM change in Urban CPI, which is 1.0 percent in November 2019.					

<b>Table A6: Top and Bottom Fifteen Contributors to Urban CPI Inflation (YoY) in November 2019</b>					
<b>Top 15 Contributors</b>					
<b>Items/ Contributors</b>	<b>Weights</b>	<b>YoY Change</b>		<b>Weighted Contribution (%)</b>	
		<b>Nov-18</b>	<b>Nov-19</b>		
<b>Ranked by Weighted Contribution</b>					
1	Tomatoes	0.35	-64.84	436.88	8.60
2	House Rent	19.26	7.06	5.02	8.30
3	Electricity Charges	4.56	5.54	18.48	6.33
4	Gas Charges	1.08	38.63	54.84	5.88
5	Fresh Vegetables	1.53	-18.24	40.36	5.17
6	Milk Fresh	7.11	4.23	9.10	5.05
7	Onions	0.59	-55.31	156.06	4.98
8	Motor Fuel	2.91	27.91	16.23	4.57
9	Wheat Flour	3.01	1.64	16.19	3.53
10	Readymade Food	5.52	4.70	6.60	3.03
11	Education	4.88	10.75	6.34	2.98
12	Meat	2.04	8.53	13.40	2.40
13	Sugar	1.11	0.64	33.46	2.32
14	Cotton Cloth	2.22	5.96	12.73	2.25
15	Condiments And Spices	1.33	12.04	19.24	2.22
<b>Total</b>		<b>57.50</b>			<b>67.61</b>
<b>Bottom 15 Contributors</b>					
1	Chicken	1.36	53.10	-15.00	-1.90
2	Eggs	0.51	-9.50	-7.91	-0.40
3	Dental Services	0.02	9.93	-1.21	0.00
4	Postal Services	0.02	18.66	0.00	0.00
5	Therapeutic Appliances And	0.01	1.61	0.47	0.00
6	Major Tools & Equipments	0.01	7.85	5.17	0.00
7	Pan Prepared	0.14	32.26	0.20	0.00
8	Accommodation Services	0.13	4.68	0.47	0.00
9	Carpets	0.03	2.76	2.80	0.01
10	Mustard Oil	0.01	1.55	8.83	0.01
11	Electrical Appliances For Personal	0.05	2.96	2.30	0.01
12	Garbage Collection	0.11	2.47	1.88	0.02
13	Plastic Products	0.05	4.06	4.83	0.02
14	Gram Whole	0.09	-8.04	2.78	0.02
15	Newspapers	0.07	36.73	3.88	0.03
<b>Total</b>		<b>2.60</b>			<b>-2.18</b>

<b>Table A7: Top and Bottom Fifteen Contributors to Urban CPI Inflation (MoM) in November 2019</b>					
<b>Top 15 Contributors</b>		<b>MoM Change</b>		<b>Weighted Contribution (%)</b>	
<b>Items/ Contributors</b>	<b>Weights</b>	<b>Oct-19</b>	<b>Nov-19</b>		
<b>Ranked by Weighted Contribution</b>					
1	Tomatoes	0.35	34.97	149.41	68.71
2	Wheat Flour	3.01	0.35	4.74	12.45
3	Milk Fresh	7.11	0.75	1.42	9.18
4	Potatoes	0.45	10.08	6.72	4.15
5	Wheat	0.61	1.22	6.86	3.60
6	Readymade Food	5.52	0.32	0.62	3.27
7	Onions	0.59	4.98	3.82	3.26
8	Motor Fuel	2.91	0.15	0.84	2.98
9	Condiments And Spices	1.33	0.68	1.86	2.72
10	Woolen Cloth	0.84	0.49	3.15	2.35
11	Washing Soap/Detergents/Match Box	1.41	1.08	1.13	1.53
12	Meat	2.04	1.17	0.70	1.52
13	Woolen Readymade Garments	0.43	0.27	3.62	1.39
14	Cooking Oil	1.10	0.32	1.20	1.30
15	Pulse Moong	0.17	0.51	7.79	1.09
<b>Total</b>		<b>27.87</b>			<b>119.51</b>
<b>Bottom 15 Contributors</b>					
1	Fresh Vegetables	1.53	17.69	-11.52	-25.40
2	Electricity Charges	4.56	18.40	-0.93	-4.14
3	Chicken	1.36	-18.17	-2.28	-2.73
4	Sugar	1.11	-1.37	-1.18	-1.20
5	Fresh Fruits	1.44	-1.39	-0.90	-1.09
6	Eggs	0.51	19.74	-0.87	-0.45
7	Milk Products	0.64	0.73	-0.45	-0.27
8	Liquefied Hydrocarbons	0.51	16.65	-0.47	-0.27
9	Transport Services	1.75	1.42	-0.06	-0.11
10	Gur	0.04	1.00	-0.29	-0.01
11	Postal Services	0.02	0.00	0.00	0.00
12	Motor Vehicle Tax	0.05	0.00	0.00	0.00
13	Newspapers	0.07	0.00	0.00	0.00
14	Communication Services	1.88	0.00	0.00	0.00
15	Gas Charges	1.08	0.00	0.00	0.00
<b>Total</b>		<b>16.54</b>			<b>-35.66</b>

<b>Table A8: Top and Bottom Fifteen Contributors to MoM Urban CPI Food Inflation in November 2019</b>					
<b>Top 15 Contributors</b>		<b>Weights</b>	<b>MoM Change</b>		<b>Weighted Contribution (%)</b>
<b>Items/ Contributors</b>	<b>Oct-19</b>		<b>Nov-19</b>		
<b>Ranked by Weighted Contribution</b>					
1	Tomatoes	0.35	34.97	149.41	68.71
2	Wheat Flour	3.01	0.35	4.74	12.45
3	Milk Fresh	7.11	0.75	1.42	9.18
4	Potatoes	0.45	10.08	6.72	4.15
5	Wheat	0.61	1.22	6.86	3.60
6	Readymade Food	5.52	0.32	0.62	3.27
7	Onions	0.59	4.98	3.82	3.26
8	Condiments And Spices	1.33	0.68	1.86	2.72
9	Meat	2.04	1.17	0.70	1.52
10	Cooking Oil	1.10	0.32	1.20	1.30
11	Pulse Moong	0.17	0.51	7.79	1.09
12	Vegetable Ghee	1.03	0.28	1.00	1.02
13	Dry Fruits	0.33	1.86	3.22	0.98
14	Pulse Mash	0.12	0.45	11.72	0.79
15	Bakery And Confectionary	0.48	0.38	1.52	0.67
<b>Total</b>		<b>24.24</b>			<b>114.72</b>
<b>Bottom 15 Contributors</b>					
1	Fresh Vegetables	1.53	17.69	-11.52	-25.40
2	Chicken	1.36	-18.17	-2.28	-2.73
3	Sugar	1.11	-1.37	-1.18	-1.20
4	Fresh Fruits	1.44	-1.39	-0.90	-1.09
5	Eggs	0.51	19.74	-0.87	-0.45
6	Milk Products	0.64	0.73	-0.45	-0.27
7	Gur	0.04	1.00	-0.29	-0.01
8	Honey	0.10	0.34	0.03	0.00
9	Ice Cream	0.10	0.83	0.08	0.01
10	Mustard Oil	0.01	0.63	2.49	0.03
11	Dessert Preparation	0.04	2.00	0.73	0.03
12	Pan Prepared	0.14	0.51	0.16	0.03
13	Cigarettes	0.72	0.13	0.04	0.03
14	Sweet Meat	0.35	0.15	0.14	0.05
15	Beverages	0.89	0.69	0.08	0.07
<b>Total</b>		<b>8.99</b>			<b>-30.90</b>

**Table A9: Top and Bottom Fifteen Contributors to MoM Urban CPI Non-food Inflation in November 2019**

<b>Top 15 Contributors</b>					
<b>Items/ Contributors</b>	<b>Weights</b>	<b>MoM Change</b>		<b>Weighted Contribution (%)</b>	
		<b>Oct-19</b>	<b>Nov-19</b>		
<b>Ranked by Weighted Contribution</b>					
1	Motor Fuel	2.91	0.15	0.84	2.98
2	Woolen Cloth	0.84	0.49	3.15	2.35
3	Washing Soap/Detergents/Match Box	1.41	1.08	1.13	1.53
4	Woolen Readymade Garments	0.43	0.27	3.62	1.39
5	Personal Grooming Services	2.98	0.85	0.37	1.05
6	Drugs And Medicines	1.07	1.42	0.93	1.03
7	Household Servant	0.77	0.09	1.32	1.01
8	Tailoring	1.07	0.33	0.78	0.84
9	Education	4.88	0.19	0.14	0.75
10	Cotton Cloth	2.22	0.16	0.31	0.67
11	Dopatta	0.17	0.19	3.47	0.53
12	Construction Input Items	0.38	0.65	0.99	0.40
13	Household Equipments	1.00	0.24	0.37	0.35
14	Footwear	1.48	0.02	0.23	0.32
15	Solid Fuel	0.42	0.41	0.83	0.30
<b>Total</b>		<b>22.04</b>			<b>15.50</b>
<b>Bottom 15 Contributors</b>					
1	Electricity Charges	4.56	18.40	-0.93	-4.14
2	Liquefied Hydrocarbons	0.51	16.65	-0.47	-0.27
3	Transport Services	1.75	1.42	-0.06	-0.11
4	Personal Effects N.E.C.	0.00	0.00	0.00	0.00
5	Appliances/Articles/Products For P	0.00	0.00	0.00	0.00
6	Postal Services	0.02	0.00	0.00	0.00
7	Motor Vehicle Tax	0.05	0.00	0.00	0.00
8	Newspapers	0.07	0.00	0.00	0.00
9	Communication Services	1.88	0.00	0.00	0.00
10	Gas Charges	1.08	0.00	0.00	0.00
11	Carpets	0.03	0.23	0.00	0.00
12	Hospitals Services	0.57	0.16	0.00	0.00
13	Water Supply	0.53	7.34	0.00	0.00
14	House Rent	19.26	0.51	0.00	0.00
15	Therapeutic Appliances And	0.01	0.18	0.19	0.00
<b>Total</b>		<b>30.30</b>			<b>-4.51</b>

<b>Table A10: Top Ten Contributors to Rural CPI Inflation (YoY) in November 2019</b>					
<b>Items/ Contributors</b>		<b>Weights</b>	<b>YoY Change</b>		<b>Weighted Contribution (%)</b>
			<b>Nov-18</b>	<b>Nov-19</b>	
<b>A. Ranked by Weighted Contribution</b>					
1	Tomatoes	0.51	-64.10	388.89	10.48
2	Onions	0.90	-59.53	166.53	6.99
3	Fresh Vegetables	2.09	-13.56	42.18	6.65
4	Milk Fresh	10.38	4.90	7.64	5.72
5	Motor Vehicles	1.01	7.36	15.21	5.45
6	Wheat	3.47	2.16	20.11	4.59
7	Electricity Charges	3.44	5.54	18.48	4.32
8	Wheat Flour	3.43	2.36	19.03	4.24
9	Marriage Hall Charges	6.19	1.70	9.07	3.97
10	Sugar	2.03	1.23	33.30	3.85
<b>Total</b>		<b>33.45</b>			<b>56.24</b>
<b>B. Ranked by Percentage Change</b>					
1	Tomatoes	0.51	-64.10	388.89	10.48
2	Onions	0.90	-59.53	166.53	6.99
3	Pulse Moong	0.25	0.34	60.31	0.74
4	Potatoes	0.74	-26.73	44.87	2.82
5	Fresh Vegetables	2.09	-13.56	42.18	6.65
6	Pulse Mash	0.15	-11.10	37.71	0.22
7	Sugar	2.03	1.23	33.30	3.85
8	Gur	0.15	2.53	33.24	0.31
9	Postal Services	1.80	0.08	31.47	0.24
10	Water Supply	0.06	0.00	27.17	0.14
<b>Total</b>		<b>8.68</b>			<b>32.43</b>
<b>C. Ranked by Weights</b>					
1	Milk Fresh	10.38	4.90	7.64	5.72
2	House Rent	8.61	7.30	4.10	2.75
3	Marriage Hall Charges	6.19	1.70	9.07	3.97
4	Solid Fuel	4.48	5.04	5.29	1.73
5	Furniture And Furnishing	4.10	6.50	8.72	3.02
6	Accommodation Services	3.80	0.00	0.00	2.45
7	Drugs And Medicines	3.51	6.23	15.65	3.33
8	Wheat	3.47	2.16	20.11	4.59
9	Electricity Charges	3.44	5.54	18.48	4.32
10	Wheat Flour	3.43	2.36	19.03	4.24
<b>Total</b>		<b>51.42</b>			<b>36.11</b>
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 Rural CPI, which is 13.6 percent in November 2019.					

<b>Table A11: Top Ten Contributors to Rural CPI Inflation (MoM) in November 2019</b>						
Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)		
		Oct-19	Nov-19			
<b>A. Ranked by Weighted Contribution</b>						
1	Tomatoes	0.51	27.07	189.67	56.43	
2	Wheat	3.47	1.35	10.85	17.54	
3	Wheat Flour	3.43	1.13	6.15	10.06	
4	Onions	0.90	3.63	13.83	8.89	
5	Solid Fuel	4.48	0.38	2.02	4.46	
6	Cotton Cloth	2.84	1.37	2.58	4.25	
7	Fresh Fruits	1.45	-1.06	4.68	3.03	
8	Potatoes	0.74	9.62	4.43	2.53	
9	Marriage Hall Charges	6.19	0.00	0.00	2.46	
10	Accommodation Services	3.80	0.00	0.00	2.45	
					<b>27.80</b>	<b>112.11</b>
<b>B. Ranked by Percentage Change</b>						
1	Tomatoes	0.51	27.07	189.67	56.43	
2	Onions	0.90	3.63	13.83	8.89	
3	Wheat	3.47	1.35	10.85	17.54	
4	Pulse Moong	0.25	0.86	8.55	1.01	
5	Pulse Mash	0.15	3.13	8.18	0.39	
6	Beans	0.09	2.60	6.24	0.30	
7	Wheat Flour	3.43	1.13	6.15	10.06	
8	Fresh Fruits	1.45	-1.06	4.68	3.03	
9	Potatoes	0.74	9.62	4.43	2.53	
10	Pulse Masoor	0.21	0.41	3.89	0.29	
					<b>11.20</b>	<b>100.48</b>
<b>C. Ranked by Weights</b>						
1	Milk Fresh	10.38	0.34	0.07	0.35	
2	House Rent	8.61	0.52	0.00	0.00	
3	Marriage Hall Charges	6.19	0.00	0.00	2.46	
4	Solid Fuel	4.48	0.38	2.02	4.46	
5	Furniture And Furnishing	4.10	0.72	0.44	1.75	
6	Accommodation Services	3.80	0.00	0.00	2.45	
7	Drugs And Medicines	3.51	2.21	1.24	2.28	
8	Wheat	3.47	1.35	10.85	17.54	
9	Electricity Charges	3.44	18.40	-0.93	-1.70	
10	Wheat Flour	3.43	1.13	6.15	10.06	
					<b>51.42</b>	<b>39.65</b>
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in MoM change in Rural CPI, which is 1.9 percent in November 2019.						

<b>Table A12: Top and Bottom Fifteen Contributors to Rural CPI Inflation (YoY) in November 2019</b>					
<b>Top 15 Contributors</b>					
<b>Items/ Contributors</b>	<b>Weights</b>	<b>YoY Change</b>		<b>Weighted Contribution (%)</b>	
		<b>Nov-18</b>	<b>Nov-19</b>		
<b>Ranked by Weighted Contribution</b>					
1	Tomatoes	0.51	-64.10	388.89	10.48
2	Onions	0.90	-59.53	166.53	6.99
3	Fresh Vegetables	2.09	-13.56	42.18	6.65
4	Milk Fresh	10.38	4.90	7.64	5.72
5	Motor Vehicles	1.01	7.36	15.21	5.45
6	Wheat	3.47	2.16	20.11	4.59
7	Electricity Charges	3.44	5.54	18.48	4.32
8	Wheat Flour	3.43	2.36	19.03	4.24
9	Marriage Hall Charges	6.19	1.70	9.07	3.97
10	Sugar	2.03	1.23	33.30	3.85
11	Mechanical Services	2.49	7.58	2.31	3.53
12	Drugs And Medicines	3.51	6.23	15.65	3.33
13	Cotton Cloth	2.84	11.31	13.48	3.07
14	Vegetable Ghee	2.38	8.90	17.07	3.04
15	Furniture And Furnishing	4.10	6.50	8.72	3.02
<b>Total</b>		<b>48.78</b>			<b>72.23</b>
<b>Bottom 15 Contributors</b>					
1	Chicken	1.46	47.10	-12.35	-1.55
2	Eggs	0.57	-9.48	-5.62	-0.28
3	Personal Grooming Services	0.14	7.23	10.87	0.00
4	Stationery	0.02	8.14	6.36	0.00
5	Garbage Collection	0.01	0.00	1.15	0.00
6	Major Tools And Equipments	0.03	5.42	2.35	0.01
7	Dessert Preparation	0.01	0.40	8.24	0.01
8	Mustard Oil	0.01	5.90	8.57	0.01
9	Cleaning And Laundering	0.02	4.42	6.98	0.01
10	Honey	0.03	4.04	4.39	0.01
11	Gram Whole	0.11	-9.17	1.66	0.01
12	Communication Apparatus	0.01	11.11	4.35	0.02
13	Motor Vehicle Tax	0.36	8.58	17.87	0.02
14	Pan Prepared	0.04	19.93	6.59	0.03
15	Ice Cream	0.06	4.69	6.95	0.03
<b>Total</b>		<b>2.89</b>			<b>-1.68</b>

<b>Table A13: Top and Bottom Fifteen Contributors to Rural CPI Inflation (MoM) in November 2019</b>					
<b>Top 15 Contributors</b>		<b>Weights</b>	<b>MoM Change</b>		<b>Weighted Contribution (%)</b>
<b>Items/ Contributors</b>	<b>Oct-19</b>		<b>Nov-19</b>		
<b>Ranked by Weighted Contribution</b>					
1	Tomatoes	0.51	27.07	189.67	56.43
2	Wheat	3.47	1.35	10.85	17.54
3	Wheat Flour	3.43	1.13	6.15	10.06
4	Onions	0.90	3.63	13.83	8.89
5	Solid Fuel	4.48	0.38	2.02	4.46
6	Cotton Cloth	2.84	1.37	2.58	4.25
7	Fresh Fruits	1.45	-1.06	4.68	3.03
8	Potatoes	0.74	9.62	4.43	2.53
9	Marriage Hall Charges	6.19	0.00	0.00	2.46
10	Accommodation Services	3.80	0.00	0.00	2.45
11	Condiments And Spices	1.49	0.78	3.01	2.35
12	Drugs And Medicines	3.51	2.21	1.24	2.28
13	Furniture And Furnishing	4.10	0.72	0.44	1.75
14	Motor Vehicles	1.01	0.20	0.27	1.56
15	Mechanical Services	2.49	0.31	0.00	1.47
<b>Total</b>		<b>40.41</b>			<b>121.52</b>
<b>Bottom 15 Contributors</b>					
1	Fresh Vegetables	2.09	36.73	-14.33	-24.54
2	Electricity Charges	3.44	18.40	-0.93	-1.70
3	Sugar	2.03	-1.47	-1.37	-1.40
4	Chicken	1.46	-14.14	-0.98	-0.71
5	Gur	0.15	2.21	-6.71	-0.58
6	Transport Services	0.02	-0.02	-0.04	-0.04
7	Personal Grooming Services	0.14	2.10	0.49	0.00
8	Readymade Food	2.13	0.52	1.19	0.00
9	Education	2.13	0.00	0.00	0.00
10	Stationery	0.02	1.43	0.02	0.00
11	Recreation And Culture	1.65	2.84	0.15	0.00
12	Communication Apparatus	0.01	-0.38	0.53	0.00
13	Motor Vehicle Tax	0.36	0.00	0.00	0.00
14	Water Supply	0.06	0.00	0.00	0.00
15	Garbage Collection	0.01	0.00	0.00	0.00
<b>Total</b>		<b>15.72</b>			<b>-28.97</b>

<b>Table A14: Top and Bottom Fifteen Contributors to MoM Rural CPI Food Inflation in November 2019</b>					
<b>Top 15 Contributors</b>		<b>Weights</b>	<b>MoM Change</b>		<b>Weighted Contribution (%)</b>
<b>Items/ Contributors</b>	<b>Oct-19</b>		<b>Nov-19</b>		
<b>Ranked by Weighted Contribution</b>					
1	Tomatoes	0.51	27.07	189.67	56.43
2	Wheat	3.47	1.35	10.85	17.54
3	Wheat Flour	3.43	1.13	6.15	10.06
4	Onions	0.90	3.63	13.83	8.89
5	Fresh Fruits	1.45	-1.06	4.68	3.03
6	Potatoes	0.74	9.62	4.43	2.53
7	Marriage Hall Charges	6.19	0.00	0.00	2.46
8	Condiments And Spices	1.49	0.78	3.01	2.35
9	Rice	1.55	1.03	1.02	1.02
10	Pulse Moong	0.25	0.86	8.55	1.01
11	Vegetable Ghee	2.38	1.19	0.45	0.62
12	Cigarettes	1.24	0.47	0.66	0.43
13	Tea	1.26	1.15	0.59	0.42
14	Dry Fruits	0.25	1.55	3.05	0.41
15	Pulse Mash	0.15	3.13	8.18	0.39
<b>Total</b>		<b>25.25</b>			<b>107.61</b>
<b>Bottom 15 Contributors</b>					
1	Fresh Vegetables	2.09	36.73	-14.33	-24.54
2	Sugar	2.03	-1.47	-1.37	-1.40
3	Chicken	1.46	-14.14	-0.98	-0.71
4	Gur	0.15	2.21	-6.71	-0.58
5	Readymade Food	2.13	0.52	1.19	0.00
6	Ice Cream	0.06	0.29	0.00	0.00
7	Honey	0.03	0.57	0.00	0.00
8	Milk Products	0.96	0.51	0.00	0.00
9	Mustard Oil	0.01	0.94	0.20	0.00
10	Milk Powder	0.11	1.35	0.07	0.00
11	Dessert Preparation	0.01	0.75	1.39	0.01
12	Nimco	0.08	0.52	0.63	0.02
13	Pan Prepared	0.04	1.03	1.18	0.03
14	Beverages	0.55	0.28	0.13	0.04
15	Sweet Meat	0.40	1.01	0.19	0.04
<b>Total</b>		<b>10.13</b>			<b>-27.09</b>

<b>Table A15: Top and Bottom Fifteen Contributors to MoM Rural CPI Non-food Inflation in November 2019</b>					
<b>Top 15 Contributors</b>		<b>Weights</b>	<b>MoM Change</b>		<b>Weighted Contribution (%)</b>
<b>Items/ Contributors</b>	<b>Oct-19</b>		<b>Nov-19</b>		
<b>Ranked by Weighted Contribution</b>					
1	Solid Fuel	4.48	0.38	2.02	4.46
2	Cotton Cloth	2.84	1.37	2.58	4.25
3	Accommodation Services	3.80	0.00	0.00	2.45
4	Drugs And Medicines	3.51	2.21	1.24	2.28
5	Furniture And Furnishing	4.10	0.72	0.44	1.75
6	Motor Vehicles	1.01	0.20	0.27	1.56
7	Mechanical Services	2.49	0.31	0.00	1.47
8	Doctor (Mbbs) Clinic Fee	1.58	1.91	1.21	1.11
9	Washing Soaps, Detergents And	1.70	1.28	1.27	1.07
10	Woolen Readymade Garments	0.54	0.00	2.52	0.68
11	Construction Input Items	0.63	3.27	2.13	0.66
12	Personal Effects N.E.C.	2.27	-0.32	0.58	0.60
13	Appliances/Articles/Products For	1.54	0.48	0.54	0.42
14	Hospitals Services	0.40	0.00	0.76	0.39
15	Dental Services	0.51	0.00	0.77	0.39
<b>Total</b>		<b>31.40</b>			<b>23.54</b>
<b>Bottom 15 Contributors</b>					
1	Electricity Charges	3.44	18.40	-0.93	-1.70
2	Transport Services	0.02	-0.02	-0.04	-0.04
3	Personal Grooming Services	0.14	2.10	0.49	0.00
4	Education	2.13	0.00	0.00	0.00
5	Stationery	0.02	1.43	0.02	0.00
6	Newspapers	0.50	0.00	0.00	0.00
7	Recreation And Culture	1.65	2.84	0.15	0.00
8	Communication Apparatus	0.01	-0.38	0.53	0.00
9	Motor Vehicle Tax	0.36	0.00	0.00	0.00
10	Major Tools And Equipments	0.03	0.18	0.00	0.00
11	Garbage Collection	0.01	0.00	0.00	0.00
12	Water Supply	0.06	0.00	0.00	0.00
13	House Rent	8.61	0.52	0.00	0.00
14	Tailoring	1.30	0.21	0.01	0.01
15	Plastic Products	0.08	0.68	0.14	0.01
<b>Total</b>		<b>18.38</b>			<b>-1.73</b>

**Table A16: Distribution of Price Changes (YoY) - Selected Urban CPI Items: November 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	Chicken Farm Broiler (Live), Lemon, Eggs Farm, Gram Whole Yellow (Average Quality).	Rice Basmati 385/386, Milk Tetra Pack 1 Litre (Milk Pak/Haleeb/Olpers).	Lactogen 400 Gm Packet, Milk Fresh (Un-Boiled), Custard Powder Rafhan 300 Gm Packet.	Tomatoes, Onions, Garlic (Lehsun), Chilies (Green), Ginger (Adrak), Cardamom Small (Average Quality), Cucumber (Kheera), Pulse Moong (Washed), Cauliflower (Phool Gobhi).
Alcoholic Beverages & Tobacco		Pan Prepared (Sweet With Beetle Nuts).		Cigarettes Capstan 20'S Packet, Cigarettes Gold Leaf 20'S Packet.
Clothing & Footwear	Gents Shoes Paul Bata, Gents Sponge Chappal Bata, Ladies Sandal Bata, Ladies Sponge Chappal Bata, Gents Shoes Service.	Pullover Gents (Average Quality), School Uniform Boys (Pant & Shirt) 24"/26", Vest "Baniyan" For Men Average Quality.	Underwear Medium Size (Average Quality), Lawn Printed Gul Ahmed/Al Karam, Shirt Boy Length 24"/26", Washing Charges Shalwar Kameez.	Gents Sandal Bata, Children Shoes Power Lite Bata, Heavy Weight Suiting Lawrance Pur (Average Quality), Long Cloth 57" Gul Ahmed/Al Karam, Cheetah 50 Size 3-5 Servis, Shoe Repair Full Sole, Dopatta Cotton (Average Quality), Linen, Ladies (Average Quality).
Housing, Water, Elect, Gas & other Fuels	Cement (Local) 50 Kg Bag, Gas Charges Upto 3.3719 Mmbtu.	Lpg 11.67 Kg Cylinder, Cement Blocks (6"X8"X12"), Firewood Whole, Charges For Refuse/Waste Collection.	Painter Wage Rate, Mason Wage Rate, Unskilled Labor Wage Rate, Bajri, House Rent Combined.	Gas Charges 6.7438 - 10.1157 Mmbtu , Gas Charges 10.1157 - 13.4876 Mmbtu , Gas Charges Combined, Gas Charges Above 13.4876 Mmbtu, Synthetic Enamel Ici Balti 3.64 Litre, Electricity Charges 51-100 Units, Electricity Charges Above 700 Units.
Furnishing & Household Equip. Maintenance etc		Water Set (Omroc) 6 Glasses + Jug, Sofa Set Five Seater, Lota Plastic Medium Size (Average Quality).	Central Table Set With Glass Top, Air Cooler Super Asia Ecm-4000/Jc-1000, Sewing Machine (Sn) Without Cover.	Tube Light Philips 40 Watt, Robin Blue Liquid 75 Ml Bottle, Phenyl Tyfon/Finis 2.75 Litre Bottle, Geysar Super Asia Large Size 30 Gallons (Gas), Boot Polish Cherry/Kiwi 42 Ml, Finis 400 Ml Bottle, Household Servant Female Part Time.
Health	Dental Extraction Fee, Physiotherapist Fee Per Visit, Hydriyllin Syrup 120 Ml Bottle.	Dental Surgeon Fee Per Visit, Ventolin Tablets 2 Mg, Glaxose-D 400 Gm Packet.	Entox Tablets, Panadol Tablets Plain, Urine Test (Dr) Charges, Blood Test (Cp) Charges, Ecg Charges.	Dettol Medium Bottle, Daonil Tablets 5 Mg, Calpol Syrup 100 Ml Bottle, Inderal Tablets 10 Mg, Cac 1000 Tablets Sandoz Bottle, Phenergan Syrup 120 Ml Bottle, Septran Tablets.
Transport	Bus Fare Outside City (Non Ac).	Air Fare Economy Class Per Kilometer (National Average).	Car Tax 800 Cc To 1500 Cc, Bicycle, Bus Fare Outside City (Ac), Motorcycle United/Unique 70 Cc, Auto Rickshaw Fare.	Suzuki Fare Maximum Within City, Train Fare Business Class Per Person, Car Honda Civic Turbo 1.5 Vtec, Train Fare Ac Sleeper Per Person, Car Suzuki 1000 Cc, Car Toyota 1300 Cc Xii, Mini Bus Fare Maximum Within City.
Communication	Courier Charges Minimum Within Zone Outside City (Tcs), Telephone Call Charges.		Mobile Set With Rear Camera And Without Touch Screen.	Internet Charges (Dsl) 1 Mb (Unlimited).
Recreation & Culture	Cable Charges, Newspaper Daily Jang, Mag The Weekly (Magazine).	English Book Class Xi Complete Set, Recreational Park Charges (Minimum Playland Ticket).	Pen Ink Dollar 57 Ml Bottle, English Book Ba/B.Sc, Led Sony/Samsung 32" Colored, Mathematics Book Class Xi (Text Book Board), Urdu Book Ba/B.Sc.	English Book Class Ix And X, Ballpoint Pen Local, Akhbar-E-Jehan Weekly, Photostat Paper 70 Gm, Newspaper Daily Dawn, Urdu Book Class Xi/Inter, English Book Class Vi, Mathematics Book Class Ix And X (Text Book Board), Lead Pencil Goldfish.
Education		Government College Fee First Year, Coaching Fee For Class Ix/X Science Group.	Government University Fee M.S.C / M.A., Private School Fee English Medium Average Standard (Class I).	Government Medical College/University Tuition Fee For Mbbs (1St Year), Private Engineering University Tuition Fee For Be (1St Year).
Restaurant & Hotels		Chicken Biryani Full/Double, Cooked Chicken At Average Hotel.		Tea Prepared Ordinary, Cooked Daal At Average Hotel, Cooked Beef At Average Hotel, Bread Tandoori Standard Size.
Miscellaneous		Trunk Medium Size (Average Quality), Toilet Soap Lux 75 Gm, Purse Ladies Medium Size (Average Quality).	Suitcase Ragzine (24"X16"X6") (Average Quality), Shaving Charges.	Gold Tezabi 24 Carett, Silver Tezabi 24 Carett, Pampers (Medium Size), Tooth Paste Colgate 75 Gm, Tooth Brush (Shield), Blade Treet Ordinary (10 No. Packet).

**Table A17: Distribution of Price Changes (YoY) - Selected Rural CPI Items: November 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	Chicken Farm Broiler (Live), Lemon, Eggs Farm, Gram Whole Yellow (Average Quality).	Vermicelli (Packet), Rusk (Papay) (Average Quality), Honey Marhaba Bottle 500 Gm, Carrot (Gajar).	Gram Whole Black (Average Quality), Jam-E-Shireen Standard Size (800 ML), Turmeric Powder Loose.	Tomatoes, Onions, Garlic (Lehsun), Arvi, Chilies (Green), Ginger (Adrak), Pulse Moong (Washed), Turnip (Shalgham), Cauliflower (Phool Gobhi), Cucumber (Kheera), Potatoes.
Alcoholic Beverages & Tobacco			Tobacco Hukka Twisted, Pan Prepared (Sweet With Beetle Nuts).	Cigarettes Capstan 20'S Packet, Cigarettes Gold Leaf 20'S Packet, Chewing Tobacco (Niswar).
Clothing & Footwear		Lungi/Dhoti Cotton (Average Quality), Tailoring Charges Simple Suit (Female), Pullover Gents (Average Quality), Chaddar (Wash-N-Wear) (2X2.5 Meter).	Georgette (Average Quality), Footware Gents Local (Average Quality), School Uniform Boys (Pant & Shirt) 24"/26", Washing Charges Shalwar Kameez.	Brassier (Average Quality), Shirt Boy Length 24"/26", Dopatta Cotton (Average Quality), Full Pant Boy Length 24"/26", Lawn Printed (Average Quality), Long Cloth, Shoe Repair Full Sole, Dopatta Georgette (Average Quality), Shoe Polish Charges, Shirting (Average Quality).
Housing, Water, Elect, Gas & other Fuels	Cement (Local) 50 Kg Bag.	Bajri, House Rent Combined, Coal, Charges For Refuse/Waste Collection, Lpg 11.67 Kg Cylinder.	Kerosene Oil, Firewood Whole, Plumber Wage Rate, Electrician Charges.	Water Charges Per House, Electricity Charges 51-100 Units, Electricity Charges Above 1000 Units, Electricity Charges Combined, Electricity Charges 101-300 Units, Sand (Black Pit), Unskilled Labor Wage Rate, Electricity Charges 301-1000 Units.
Furnishing & Household Equip, Maintenance etc		Readymade Quilt (3 Kg), Water Pump Golden Monoblock/Donkey 0.5 H.P.	Towel Medium Size (2' X 3'), Sewing Machine (Sn) Without Cover, Bucket (Balti) Plastic Medium Size.	Tube Light Philips 40 Watt, Robin Blue Liquid 75 Ml Bottle, Aluminium Cooking Pan (Degchi), Boot Polish Cherry/Kiwi 42 Ml, Express Washing Powder 1 Kg Polybag, Washing Soap 250 Gm Cake (Specify Name).
Health	Hydryllin Syrup 120 Ml Bottle.	Dental Surgeon Fee Per Visit, Cost Of Surgery (C-Section), Johar Joshanda Instant (Sachet) Packet.		Dettol Medium Bottle, Daonil Tablets 5 Mg, Cac 1000 Tablets Sandoz Bottle, Inderal Tablets 10 Mg, Doctor (Mbbs) Clinic Fee, Amoxil Capsule 250 Mg, Blood Test (Cp) Charges.
Transport		Tire Cycle, Air Fare Economy Class Per Kilometer, Chingchi Rickshaw Charges, Minimum, Motorcycle Service Charges.		Train Fare Economy Per Person, Car Tax 800 Cc To 1500 Cc, Tire Motorcycle Cd 70 (Back Wheel), Petrol Super, Car Suzuki 800 Cc Without Ac, Tire Car Mehran Tubeless (General), Motorcycle Honda Cd 70, Cng.
Communication	Telephone Call Charges, Mobile Call Charges.	Mobile Set With Rear Camera And Without Touch Screen.		Postal Registration Charges, Internet Charges (Dsl) 1 Mb (Unlimited).
Recreation & Culture	Newspaper Daily Jang.	English Books Class Xi Complete Set, Led Sony/Samsung 32" Colored, Cable Charges, Personal Computer With Led Monitor (17") Dell/Hp/Acer Core I5.	Lead Pencil Goldfish, Ballpoint Pen Local, Urdu Books Class Ix And X (Text Book Board), Urdu Books Class V (Text Book Board).	Pets Feed, English Books Class Vi, English Books Class Ix And X.
Education		Coaching Fee For Class Ix/X Science Group, Vocational Training Basic Computer Short Course Fee (3 Months).	Private School Fee English Medium Average Standard (Class Vi).	
Restaurant & Hotels		Cooked Beef At Average Hotel, Pizza Chicken Medium Size (Average Quality).	Bread Tandoori Standard Size, Chicken Biryani Full/Double.	Tea Prepared Ordinary, Cooked Daal At Average Hotel.
Miscellaneous		Suitcase Ragzine (24"X16"X6") (Average Quality), Shampoo Sun Silk/Pantene 90 Ml Bottle.	Hair Color (Kala Kola), Toilet Soap Lux 75 Gm, Disposable Razor Gillette Blue Ii.	Gold Tezabi 24 Carett, Blade Treet Ordinary (10 No. Packet), Shaving Charges, Hair Cut Charges For Men, Artificial Jewelry (Locket Set) (Average Quality).

<b>Table A18: Distribution of Price Changes (YoY) - WPI Items: November 2019</b>				
<b>Groups</b>	<b>Decrease or no change</b>	<b>Subdued increase (Greater than 0% but less than 5%)</b>	<b>Moderate increase (5% but less than 10%)</b>	<b>Double digit increase (10% or more)</b>
<b>Agriculture Forestry &amp; Fishery Products</b>	Hides, Skins & Fur Skins, Raw, Poultry, Millet / Bajra, Eggs	Fibre Crops, Raw Animal Materials / Wool, Fuel Wood In Logs	Unmanufactured Tobacco, Raw Milk From Bovine Animals, Dry Fruits	Vegetables, Stimulant & Spice Crops, Edible Roots / Potatoes, Sugar Crops, Sorghum / Jowar, Cotton Seeds, Maize, Pulses, Wheat, Fish Live Fresh Or Chilled, Rice, Other Oil Seeds, Fresh Fruits
<b>Ores &amp; Minerals, Electricity Gas &amp; Water</b>	Coal Not Agglomerated			Electrical Energy, Natural Gas Liquified, Salt & Pure Sodium Chloride
<b>Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products</b>	Vegetables & Fruit Juice, Nylon Yarn, Footwears, Tobacco Products	Other Fabrics, Other Food Products, Quilts, Blankets, Leather Without Hair	Blended Yarn, Other Leather N.E.C, Processed Liquid Milk, Fruit Juices, Beverages, Towels, Hosiery Products, Sugar Confectionary, Bed Sheets	Sugar Refined, Spices, Chocolate, Readymade Garments, Wheat Flour, Vegetable Ghee, Dairy Products N.E.C, Milk & Cream In Solid Form, Oil Cakes, Synthetic Carpets, Silk & Reyon Fabrics, Vegetable Oils Refined, Cotton Yarn, Other Cereal Flour, Cotton Fabrics, Coffee & Tea, Woolen Carpets, Meat Of Animals, Woven Fabrics, Dried Fruits & Nuts, Mineral Water, Ice Cream
<b>Other Transportable Goods except Metal Products, Machinery and Equipments</b>	Furnace Oil, Cement, Hard Board	Matches, Plastic Products, Soaps & Detergents, Insecticides, Timber	Ceramics & Sanitary Fixture, Mobil Oil, Bricks, Blocks & Tiles, Diesel Oil, Pesticides, Glass Sheets, Paints & Varnishes, Chemicals	Dyeing Material, Auto Tyres, Steel Bar & Sheets, Motor Spirit, Medicines, Fertilizers, Bed Foam, Printing Paper, Kerosine Oil, Other Glass Articles
<b>Metal Product Machinery &amp; Equipment</b>	Vacuum Pumps, Engines & Motors, Concrete Mixture, Tractors	Radio & Television, Lighting Equipments, Chuff Cutter	Motorcycles, Air Conditioners, Bicycles, Electric Wires	Lathe Machines, Motor Vehicles, Pipe Fittings, Cultivators, Fridge, Washm, Sewm, Fans, Iron, Steel Products

<b>Table A19: International Commodity Prices/Indices</b>				
	<b>Aug-19</b>	<b>Sep-19</b>	<b>Oct-19</b>	<b>Nov-19</b>
<b>Energy</b>				
Crude Oil (US\$ per barrel) *	57.7	60.0	57.3	60.4
Energy Index (2010 = 100)	70.4	73.6	70.9	74.6
<b>Food</b>				
Rice (\$/MT)	430.0	427.0	424.0	421.0
Wheat (\$/MT)	181.1	189.6	199.5	203.2
Sugar (US cent/ pound)^	12.32	11.88	12.57	12.80
Palm Oil (\$/MT)	586.1	580.3	591.4	683.4
Soybean Oil (\$/MT)	793.2	779.3	770.8	774.9
<b>Non-Food Non-Energy</b>				
Cotton Outlook 'A' Index #^	70.78	71.31	73.88	74.86
Metal Price Index (2010 = 100)	78.9	80.5	80.1	80.4
Copper (\$/MT)	5,709.4	5,759.3	5,757.3	5,860.0
Aluminum (\$/MT)	1,740.7	1,753.5	1,726.0	1,774.8
Iron Ore (\$ cents/dry MT)	93.1	93.1	88.5	85.0
Tin (\$/MT)	16,609.0	16,830.6	16,603.4	16,335.5
Nickel (\$/MT)	15,748.6	17,656.9	17,046.2	15,171.8
Zinc (\$/MT)	2,273.0	2,331.6	2,451.7	2,425.5
Lead (\$/MT)	2,044.6	2,071.9	2,184.1	2,021.2
Uranium (\$/MT)@	25.3	25.7	24.3	26.1
DAP (\$/MT)	292.9	285.8	277.4	248.0
Urea (\$/MT)	262.5	237.8	237.0	224.5

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. cents / pound. Both the variables have been converted to the measurement unit US cent/ pound.

\$/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

<b>Table A20: National CPI Data Series Original and Seasonally Adjusted</b>				
<b>Original Series</b>				
<b>Period</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>
Jul	103.17	107.15	114.29	123.86
Aug	102.80	107.31	113.93	125.89
Sep	103.23	108.05	113.90	126.86
Oct	104.19	109.22	116.32	129.16
Nov	104.69	109.95	116.18	130.90
Dec	104.08	109.92	115.82	
Jan	104.53	110.01	116.12	
Feb	105.04	109.72	117.12	
Mar	106.14	109.96	119.46	
Apr	106.91	111.15	120.33	
May	106.36	111.65	121.05	
Jun	106.54	112.58	121.63	
<b>Seasonally Adjusted Series</b>				
Jul	102.87	106.82	113.95	123.51
Aug	102.44	106.95	113.57	125.52
Sep	102.82	107.67	113.55	126.52
Oct	103.32	108.33	115.39	128.14
Nov	103.84	109.06	115.23	129.81
Dec	104.24	110.05	115.94	
Jan	104.82	110.34	116.49	
Feb	105.91	110.62	118.07	
Mar	106.90	110.74	120.30	
Apr	106.92	111.15	120.31	
May	106.75	112.03	121.45	
Jun	106.88	112.92	121.96	

**Table A21: Urban CPI Data Series Original and Seasonally Adjusted**

<b>Original Series</b>				
<b>Period</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>
Jul	103.20	107.71	114.94	124.95
Aug	102.73	107.93	114.58	126.77
Sep	103.06	108.38	114.49	127.72
Oct	103.87	109.34	117.04	129.75
Nov	104.36	110.03	116.94	131.05
Dec	103.74	110.08	116.57	
Jan	104.59	110.28	117.07	
Feb	105.12	110.12	118.08	
Mar	106.18	110.43	120.29	
Apr	107.20	111.94	121.29	
May	106.86	112.53	122.11	
Jun	107.08	113.34	122.52	
<b>Seasonally Adjusted Series</b>				
Jul	102.74	107.22	114.42	124.39
Aug	102.28	107.47	114.10	126.26
Sep	102.68	108.02	114.16	127.39
Oct	103.15	108.61	116.28	128.92
Nov	103.72	109.36	116.23	130.24
Dec	104.13	110.46	116.96	
Jan	104.94	110.67	117.51	
Feb	106.02	111.05	119.06	
Mar	106.98	111.25	121.18	
Apr	107.10	111.82	121.14	
May	107.04	112.69	122.26	
Jun	107.26	113.51	122.67	

<b>Table A22: Rural CPI Data Series Original and Seasonally Adjusted</b>				
<b>Original Series</b>				
<b>Period</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>
Jul	103.12	106.30	113.30	122.22
Aug	102.90	106.37	112.96	124.56
Sep	103.49	107.54	113.01	125.55
Oct	104.68	109.05	115.23	128.28
Nov	105.18	109.83	115.03	130.67
Dec	104.59	109.68	114.70	
Jan	104.44	109.60	114.68	
Feb	104.91	109.11	115.68	
Mar	106.09	109.25	118.21	
Apr	106.47	109.95	118.89	
May	105.60	110.33	119.45	
Jun	105.73	111.44	120.29	
<b>Seasonally Adjusted Series</b>				
Jul	103.05	106.23	113.24	122.18
Aug	102.69	106.18	112.78	124.39
Sep	103.04	107.13	112.64	125.19
Oct	103.57	107.92	114.05	126.97
Nov	104.02	108.61	113.73	129.16
Dec	104.40	109.43	114.40	
Jan	104.65	109.83	114.95	
Feb	105.75	109.97	116.57	
Mar	106.79	109.97	118.99	
Apr	106.67	110.14	119.08	
May	106.31	111.05	120.22	
Jun	106.30	112.02	120.90	

<b>Table A23: National CPI Monthly &amp; Average Seasonal Factors</b>					
<b>Period</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>Average</b>
Jul	100.29	100.31	100.30	100.29	100.29
Aug	100.35	100.33	100.32	100.30	100.33
Sep	100.40	100.35	100.31	100.27	100.36
Oct	100.85	100.82	100.80	100.80	100.83
Nov	100.81	100.82	100.82	100.84	100.82
Dec	99.84	99.88	99.90		99.86
Jan	99.72	99.70	99.68		99.71
Feb	99.17	99.18	99.20		99.18
Mar	99.29	99.29	99.30		99.29
Apr	99.99	100.00	100.02		99.99
May	99.63	99.66	99.67		99.64
Jun	99.68	99.70	99.73		99.70

<b>Table A24: Urban CPI Monthly &amp; Average Seasonal Factors</b>					
<b>Period</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>Average</b>
Jul	100.44	100.46	100.46	100.45	100.44
Aug	100.44	100.43	100.42	100.40	100.43
Sep	100.37	100.33	100.29	100.26	100.33
Oct	100.70	100.67	100.65	100.64	100.68
Nov	100.62	100.61	100.62	100.62	100.62
Dec	99.62	99.65	99.66		99.63
Jan	99.67	99.65	99.62		99.66
Feb	99.15	99.16	99.18		99.16
Mar	99.26	99.26	99.27		99.26
Apr	100.10	100.11	100.13		100.10
May	99.83	99.86	99.88		99.84
Jun	99.83	99.85	99.88		99.84

<b>Table A25: Rural CPI Monthly &amp; Average Seasonal Factors</b>					
<b>Period</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>Average</b>
Jul	100.07	100.07	100.05	100.03	100.06
Aug	100.20	100.18	100.16	100.14	100.18
Sep	100.44	100.38	100.33	100.29	100.39
Oct	101.07	101.05	101.04	101.03	101.06
Nov	101.11	101.13	101.15	101.17	101.13
Dec	100.18	100.23	100.27		100.20
Jan	99.80	99.79	99.77		99.80
Feb	99.21	99.22	99.24		99.22
Mar	99.34	99.34	99.35		99.34
Apr	99.82	99.83	99.84		99.82
May	99.33	99.35	99.36		99.34
Jun	99.46	99.48	99.50		99.47

<b>Table A26: National CPI (Month-on-Month) Original &amp; Seasonally Adjusted</b>				
<b>Original Series</b>				
<b>Period</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>
Jul	1.44	0.57	1.51	1.83
Aug	-0.36	0.15	-0.31	1.64
Sep	0.42	0.69	-0.03	0.77
Oct	0.93	1.09	2.12	1.81
Nov	0.47	0.66	-0.12	1.35
Dec	-0.58	-0.03	-0.30	
Jan	0.43	0.08	0.25	
Feb	0.48	-0.26	0.87	
Mar	1.05	0.22	2.00	
Apr	0.72	1.08	0.73	
May	-0.52	0.46	0.60	
Jun	0.17	0.83	0.48	
<b>Seasonally Adjusted Series</b>				
Jul	0.81	-0.05	0.91	1.27
Aug	-0.41	0.12	-0.33	1.63
Sep	0.37	0.67	-0.02	0.80
Oct	0.48	0.62	1.62	1.29
Nov	0.51	0.67	-0.14	1.30
Dec	0.39	0.91	0.62	
Jan	0.56	0.26	0.48	
Feb	1.04	0.26	1.35	
Mar	0.93	0.11	1.89	
Apr	0.02	0.37	0.01	
May	-0.16	0.80	0.94	
Jun	0.12	0.79	0.43	

<b>Table A27: Urban CPI (Month-on-Month) Original &amp; Seasonally Adjusted Series</b>				
<b>Original Series</b>				
<b>Period</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>
Jul	1.47	0.59	1.41	1.98
Aug	-0.46	0.20	-0.31	1.46
Sep	0.32	0.42	-0.08	0.75
Oct	0.79	0.89	2.23	1.59
Nov	0.47	0.63	-0.09	1.00
Dec	-0.59	0.05	-0.32	
Jan	0.82	0.18	0.43	
Feb	0.51	-0.15	0.86	
Mar	1.01	0.28	1.87	
Apr	0.96	1.37	0.83	
May	-0.32	0.53	0.68	
Jun	0.21	0.72	0.34	
<b>Seasonally Adjusted Series</b>				
Jul	0.83	-0.04	0.80	1.40
Aug	-0.45	0.23	-0.28	1.50
Sep	0.39	0.52	0.05	0.90
Oct	0.46	0.55	1.86	1.20
Nov	0.55	0.69	-0.05	1.02
Dec	0.40	1.01	0.63	
Jan	0.77	0.19	0.47	
Feb	1.03	0.35	1.32	
Mar	0.90	0.18	1.78	
Apr	0.11	0.51	-0.03	
May	-0.05	0.78	0.93	
Jun	0.21	0.73	0.34	

<b>Table A28: Rural CPI (Month-on-Month) Original &amp; Seasonally Adjusted</b>				
<b>Original Series</b>				
<b>Period</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>
Jul	1.39	0.54	1.67	1.60
Aug	-0.21	0.07	-0.30	1.91
Sep	0.57	1.10	0.04	0.79
Oct	1.15	1.40	1.96	2.17
Nov	0.48	0.72	-0.17	1.86
Dec	-0.56	-0.14	-0.29	
Jan	-0.14	-0.07	-0.02	
Feb	0.45	-0.45	0.87	
Mar	1.12	0.13	2.19	
Apr	0.36	0.64	0.58	
May	-0.82	0.35	0.47	
Jun	0.12	1.01	0.70	
<b>Seasonally Adjusted Series</b>				
Jul	0.77	-0.07	1.09	1.06
Aug	-0.35	-0.05	-0.41	1.81
Sep	0.34	0.90	-0.12	0.64
Oct	0.51	0.73	1.25	1.42
Nov	0.44	0.64	-0.28	1.73
Dec	0.36	0.76	0.59	
Jan	0.23	0.37	0.48	
Feb	1.05	0.12	1.41	
Mar	0.99	0.00	2.08	
Apr	-0.12	0.15	0.07	
May	-0.33	0.83	0.96	
Jun	-0.01	0.88	0.56	

**Figure A1: National CPI Non-food Inflation (YoY, 12mma, MoM in percent)**



Figure A2: Urban CPI Non-food Inflation (YoY, 12mma, MoM in percent)

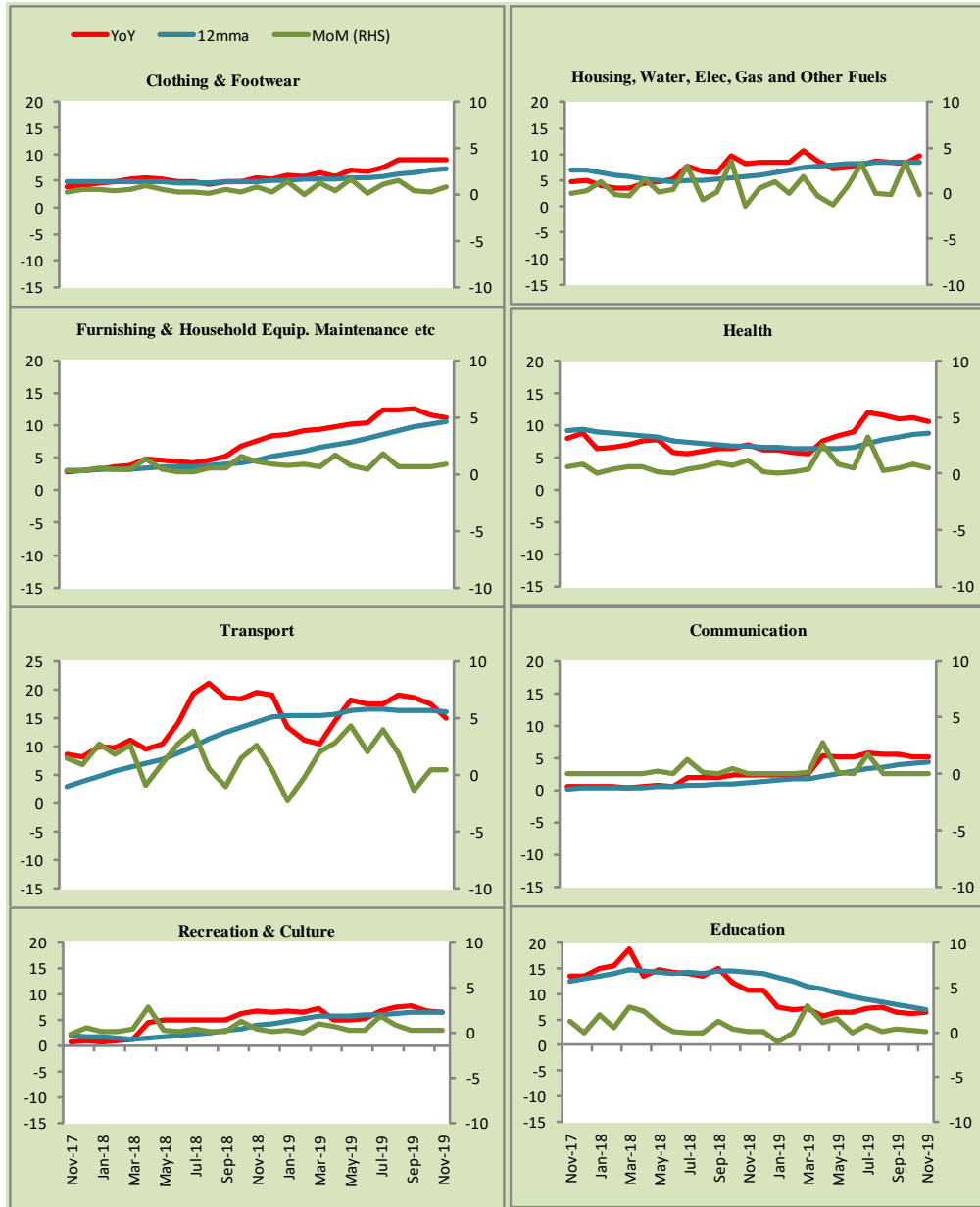


Figure A3: Rural CPI Non-food Inflation (YoY, 12mma, MoM in percent)



Figure A4: Frequency Distribution of Price Changes of Urban CPI Items (YoY)

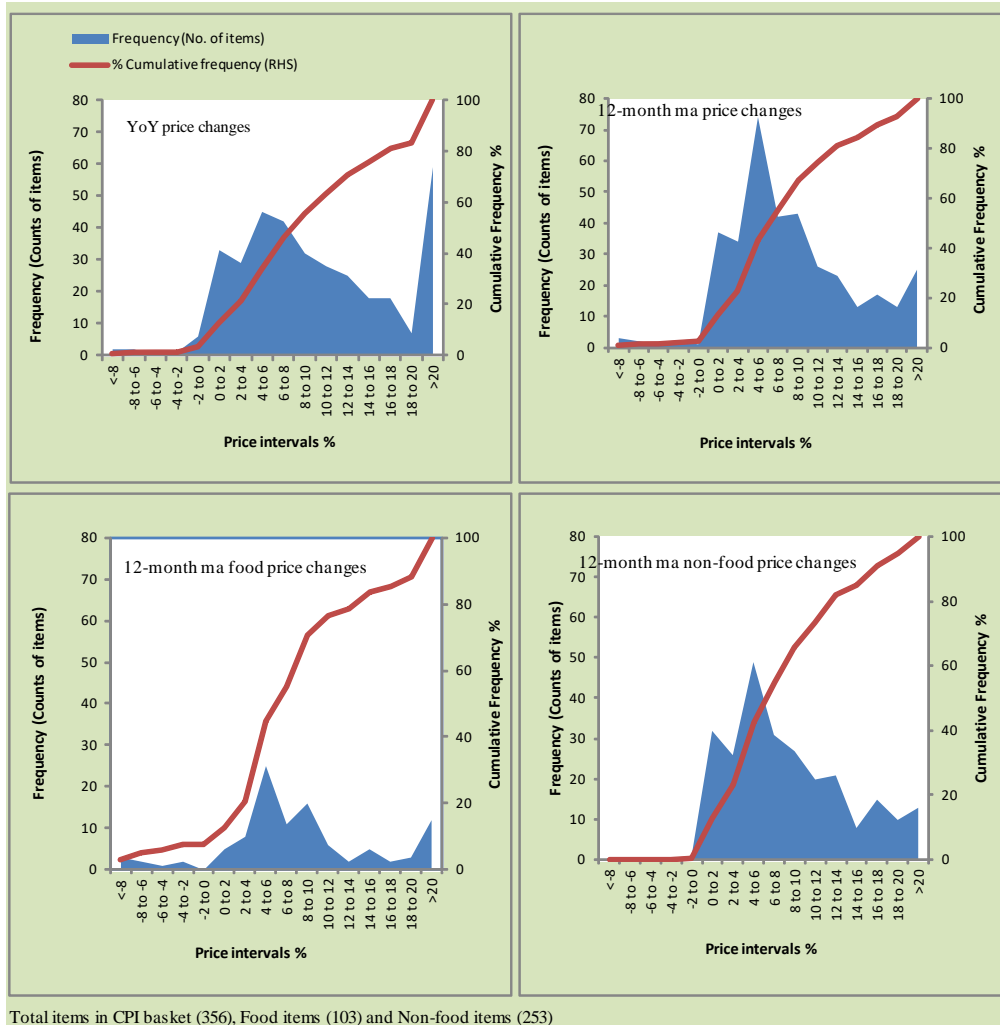


Figure A5: Frequency Distribution of Price Changes of Rural CPI Items (YoY)

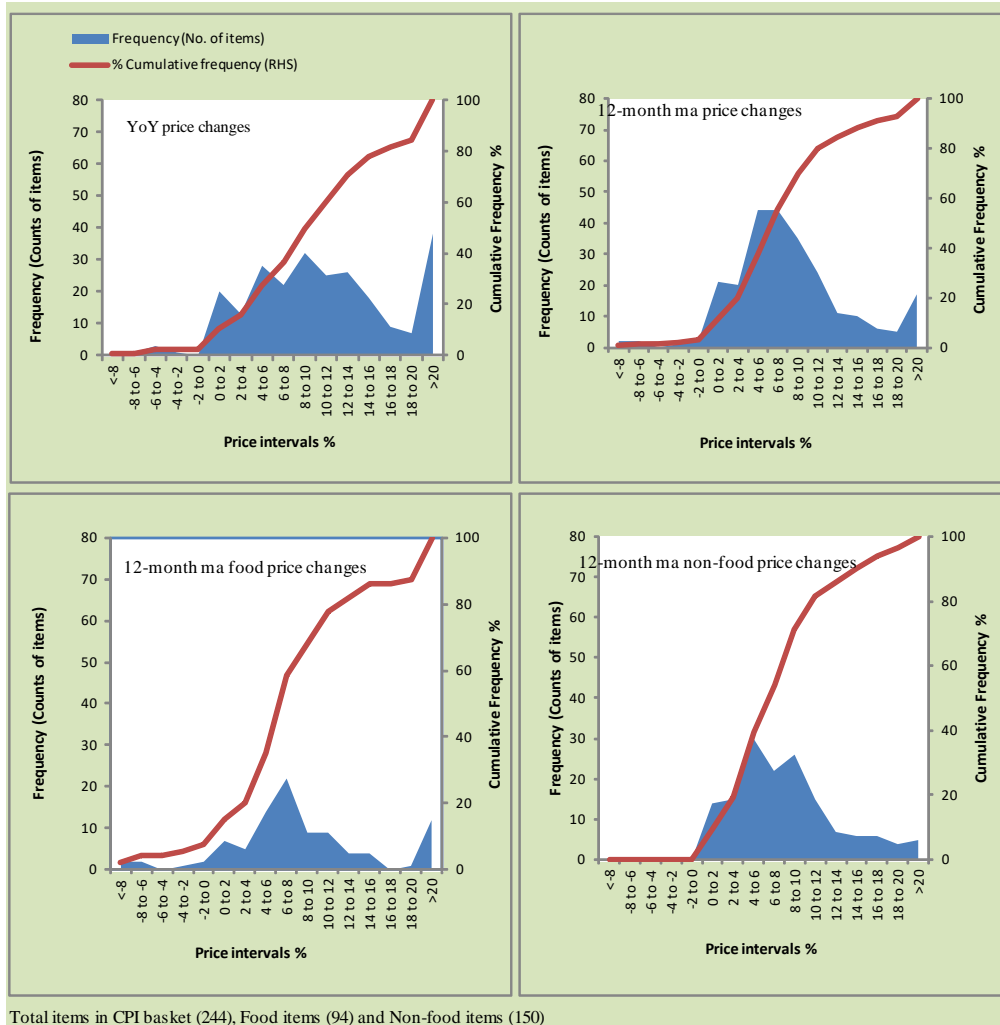
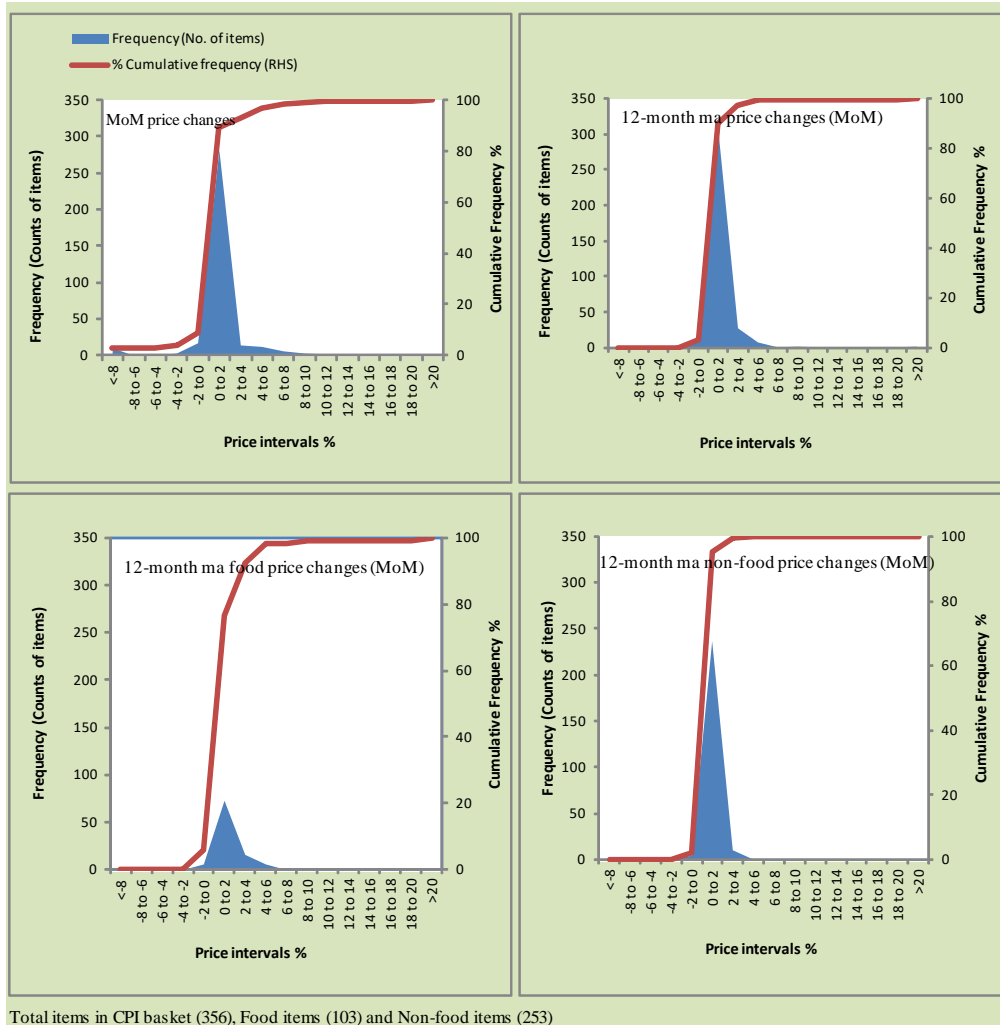
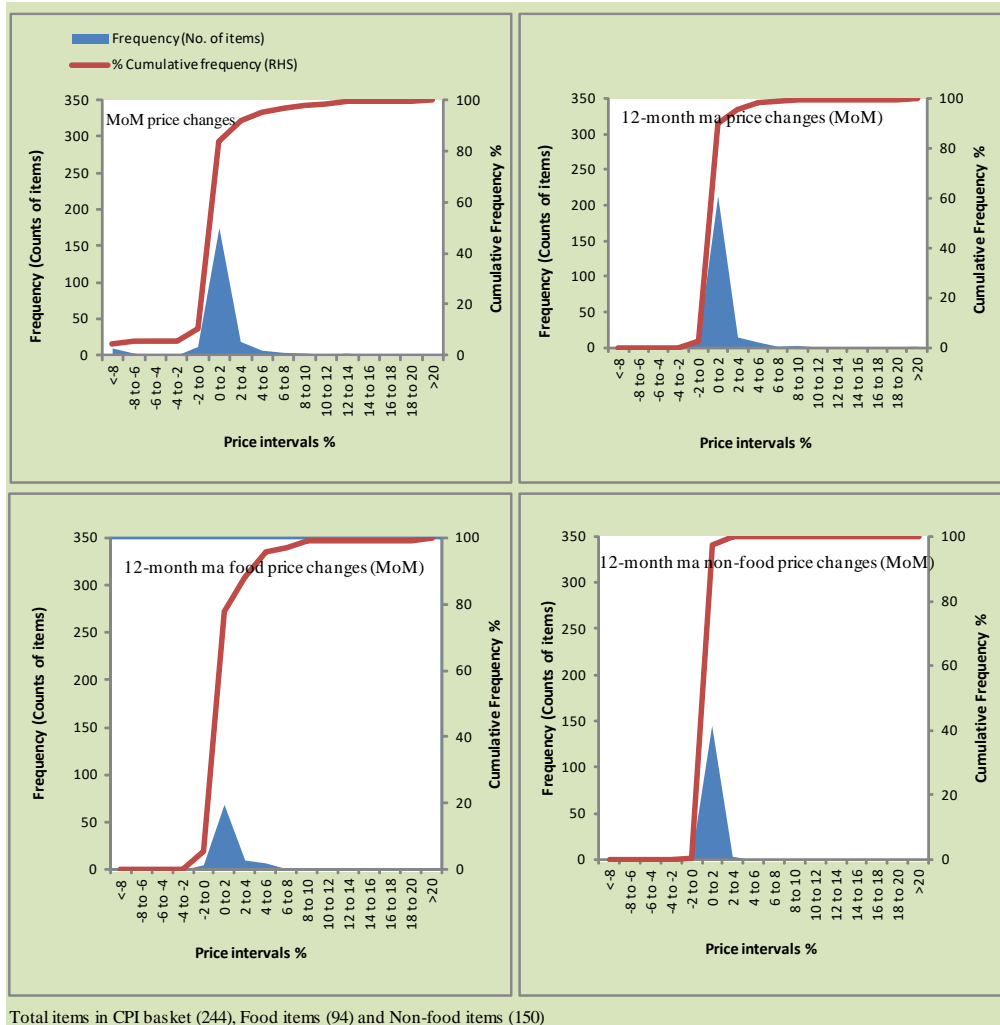


Figure A6: Frequency Distribution of Price Changes of Urban CPI Items (MoM)

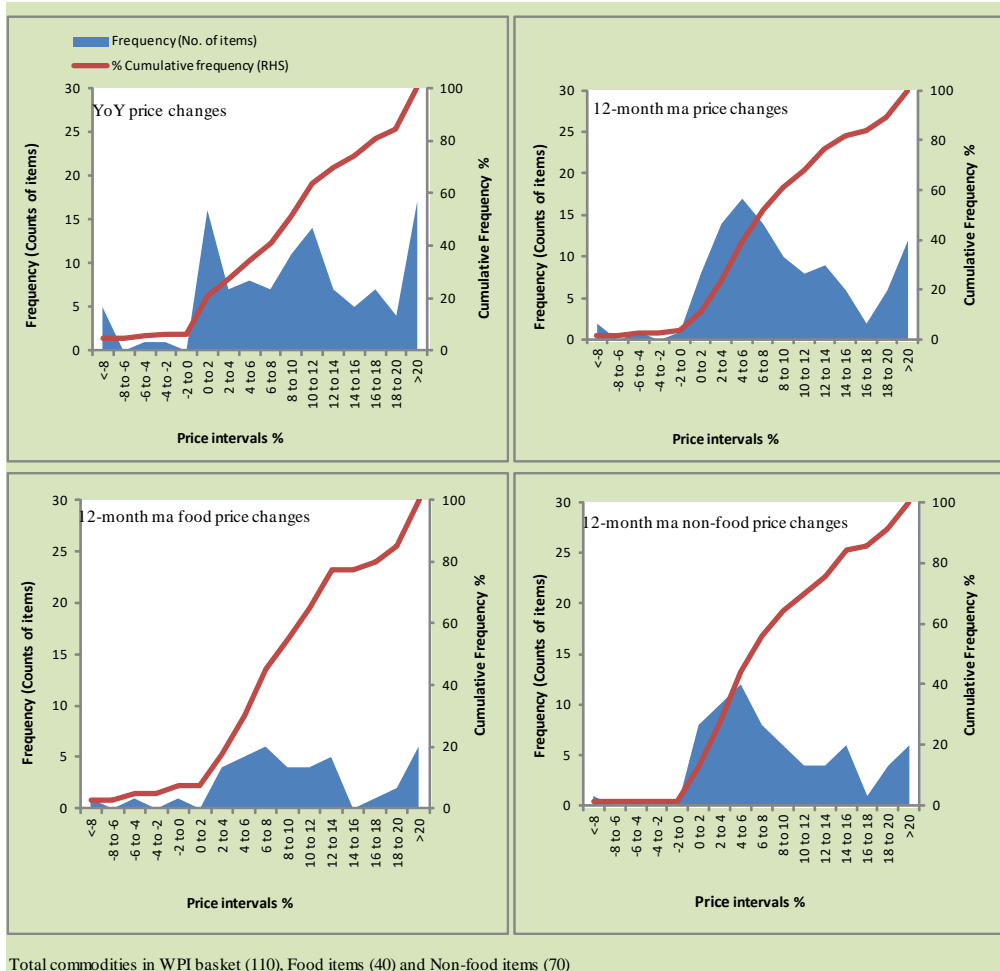


Total items in CPI basket (356), Food items (103) and Non-food items (253)

**Figure A7: Frequency Distribution of Price Changes of Rural CPI Items (MoM)**



**Figure A8: Frequency Distribution of Price Changes of WPI Commodities (YoY)**



## **Annexure B**

### **Technical Notes, Definitions and Methodologies**

#### **a) 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  $i^{\text{th}}$  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  $i^{\text{th}}$  item

$\pi_{it}$  : Inflation of  $i^{\text{th}}$  item

$\pi_t$  : Overall inflation

10. Annualized rate of inflation (based on a month-on-month rate  $\pi$ ) is computed as follows

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

**b) Methodology for Estimating Inflation Diffusion Index for Pakistan**

We constructed an index to measure the spread of inflation in the 487 items of the CPI basket. It is based on month-on-month (MoM) change in the prices of these items and can be obtained by estimating what is known as an ‘inflation diffusion index’ (IDI) as below:

$$IDI = \frac{\text{No. of items with positive MoM change in price} - \text{No. of items with negative MoM change in price}}{\text{No. of items for which prices are reported}} * 100$$

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 items for which prices have altered or remained constant<sup>1</sup>.

Based upon item level prices 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 analysis<sup>2</sup> suggests that IDI is a leading indicator for Pakistan’s YoY inflation.

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<sup>1</sup> We do not observe the prices of certain items (like the seasonal items) during certain periods of time. To calculate the inflation diffusion index we consider the items for which prices have been reported (irrespective of changed or not) during the month under review.

<sup>2</sup> Formal test shows one way ‘Granger’ causality from IDI to YoY inflation.