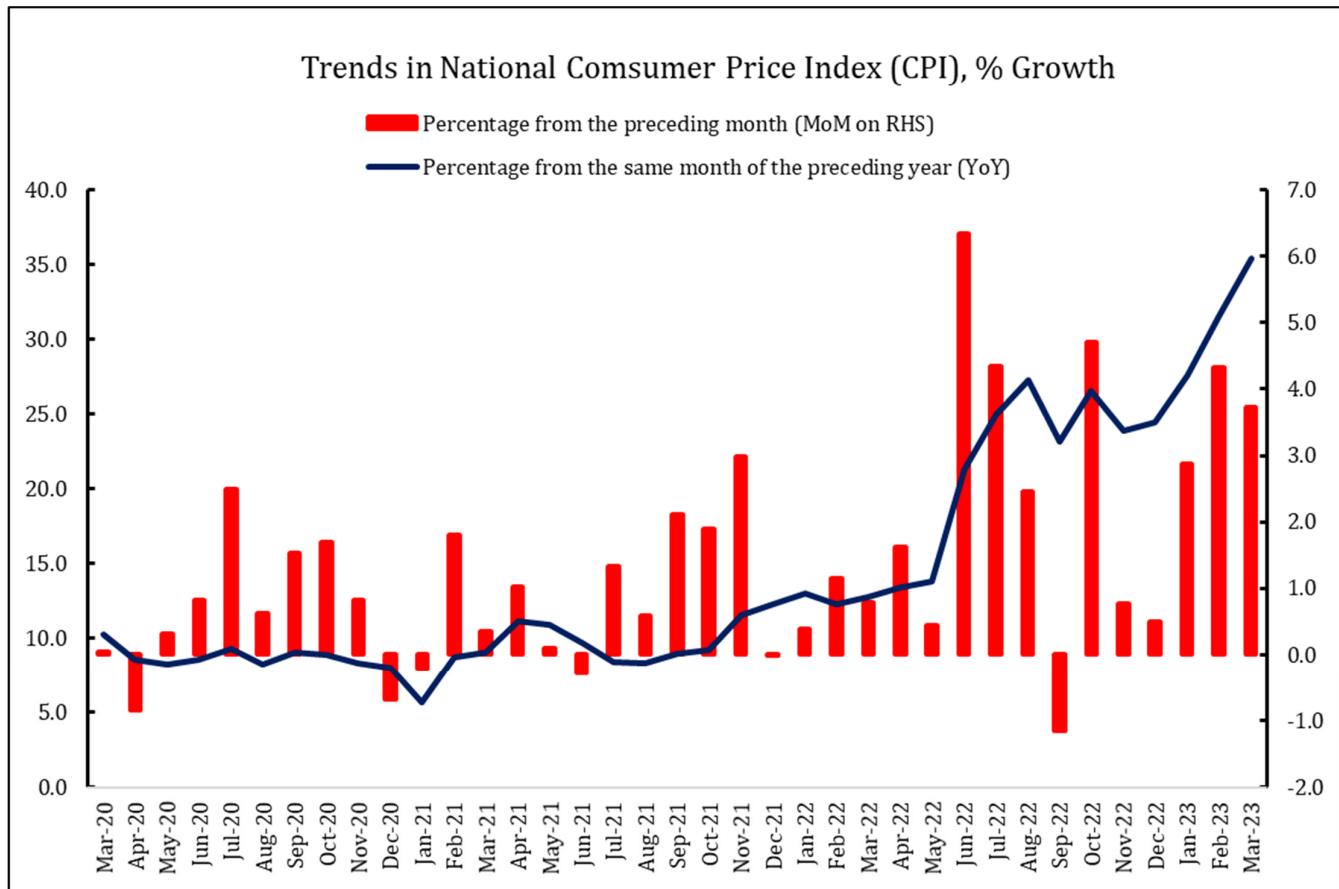




# Inflation Monitor

March 2023



**State Bank of Pakistan**  
*Data Services and Innovations Department*

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The analysis in this document is based on data

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



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**Data Support**

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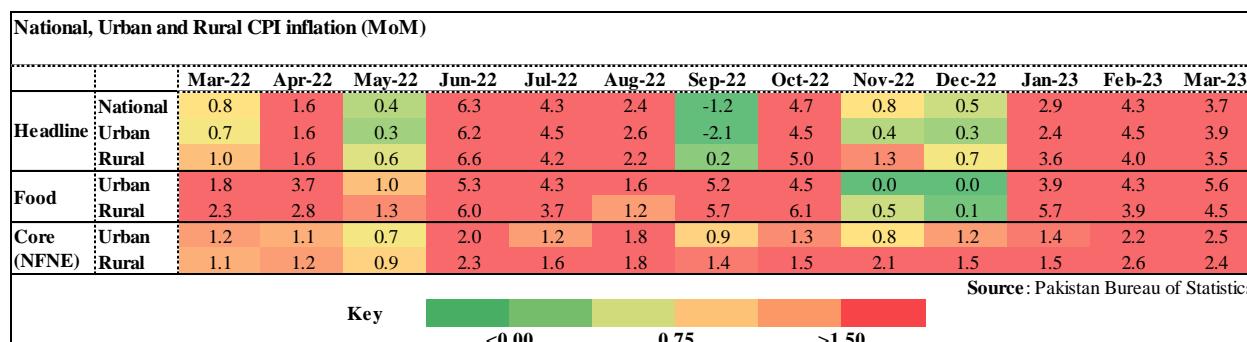
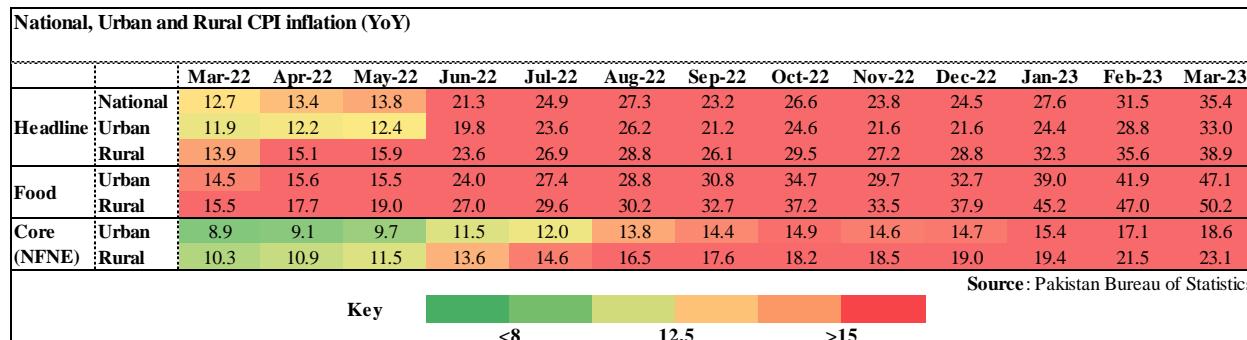
## 1. Inflation in Brief

- I. National CPI Inflation on year-on-year (YoY) basis increased to 35.4 percent in March 2023 from 31.5 percent in previous month. It stood at 12.7 percent in the corresponding month of last year. On month-on-month (MoM) basis, National CPI Inflation decreased to 3.7 percent in March 2023 from 4.3 percent in previous month. It was recorded 0.8 percent during the corresponding month of last year.
- II. Urban CPI Inflation (YOY) increased to 33.0 percent in March 2023 from 28.8 percent in previous month. It stood at 11.9 percent during the corresponding month of last year. On MoM basis, Urban CPI Inflation decreased to 3.9 percent in March 2023 from 4.5 percent in the previous month. It stood at 0.7 percent during corresponding month of last year. Seasonally adjusted MoM CPI showed an inflation of 3.7 percent in March 2023 compared to an inflation of 4.1 percent in the previous month.
- III. Rural CPI Inflation (YoY) increased to 38.9 percent in March 2023 from 35.6 percent in previous month. It was recorded 13.9 percent during the corresponding month of last year. Rural CPI Inflation (on MoM basis) decreased to 3.5 percent in March 2023 from 4.0 percent in the previous month. It stood at 1.0 percent during corresponding month of last year. Seasonally adjusted (MoM) CPI showed an inflation of 3.4 percent in March 2023 as compared to an inflation of 3.9 percent in previous month.
- IV. Urban Core (Non-food, Non-energy (NFNE)) Inflation on YoY basis increased to 18.6 percent in March 2023 from 17.1 percent in previous month. It stood at 8.9 percent during corresponding month of last year. On MoM basis, Urban Core (NFNE) Inflation increased to 2.5 percent in March 2023 from 2.2 percent in previous month. It stood at 1.2 percent during the corresponding month of last year.
- V. Rural Core (Non-food, Non-energy (NFNE)) Inflation on YOY basis increased to 23.1 percent in March 2023 from 21.5 percent in previous month. It stood at 10.3 percent during the corresponding month of last year. On MoM basis, Urban Core (NFNE) Inflation decreased to 2.4 percent in March 2023 from 2.6 percent in previous month. It was recorded 1.1 percent during the corresponding month of last year.
- VI. Urban Core Inflation (trimmed) on YoY basis increased to 28.7 percent in March 2023 from 25.1 percent in previous month. It stood at 10.5 percent during the corresponding month of last year. On MoM basis, Urban Core Inflation (trimmed) decreased to 2.7 percent in March 2023 from 2.9 percent in previous month. It stood at 0.8 percent during the corresponding month of last year.
- VII. Rural Core Inflation (trimmed) on YoY basis increased to 35.0 percent in March 2023 from 31.6 percent in previous month. It was recorded 11.7 percent during the corresponding month of last year. On MoM basis, Rural Core Inflation (trimmed) decreased to 2.9 percent in March 2023 from 3.9 percent in previous month. It stood at 0.8 percent during corresponding month of last year.

- VIII. WPI Inflation on YoY basis increased to 37.5 percent in March 2023 from 36.4 percent in previous month. It stood at 23.8 percent during the corresponding month of last year. On MoM basis, it decreased to 4.7 percent in March 2023 from 8.2 percent in previous month. WPI Inflation stood at 3.9 percent during the corresponding month of last year.
- IX. SPI Inflation on YoY basis increased to 44.0 percent in March 2023 from 37.1 percent in previous month. During corresponding month of last year, SPI Inflation stood at 15.8 percent. On MoM basis, SPI inflation increased to 5.7 percent in March 2023 from 5.4 percent in previous month. SPI Inflation stood at 0.6 percent during corresponding month of last year.

## 2. Heat Maps of CPI inflation

Heat map visually elaborates the evolution of inflation. A heat map for National, Urban and Rural CPI inflation (YoY and MoM) and their important sub-indices for the last thirteen months is presented. The observed inflation is compared with the benchmark inflation target of 11.5 percent<sup>1</sup> for FY23. Green areas indicate low inflation pressures whereas red areas indicate higher inflationary pressures.



**National CPI inflation (YoY)**

	Weights	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
<b>General</b>	<b>100.00</b>	12.7	13.4	13.8	21.3	24.9	27.3	23.2	26.6	23.8	24.5	27.6	31.5	35.4
Food and Non-Alcoholic Beverages	34.58	15.3	17.0	17.3	25.9	28.8	29.5	31.7	36.2	31.2	35.5	42.9	45.1	47.2
Alcoholic Beverages, Tobacco	1.02	1.8	5.1	10.1	17.6	22.5	25.8	32.7	34.6	35.9	36.2	49.2	140.0	
Clothing and Footwear	8.60	9.7	10.8	11.3	13.7	14.6	17.6	17.7	18.3	18.6	17.1	16.8	17.0	21.9
Housing, Water, Elec., Gas and Other Fuels	23.63	8.3	7.1	5.8	13.5	21.8	27.6	3.4	11.9	9.9	7.0	7.8	13.6	17.5
Furnishing and Household Equipment Maintenance	4.10	13.8	14.7	16.1	18.8	19.7	21.9	25.1	27.6	29.1	29.2	29.9	34.0	39.0
Health	2.79	10.0	10.4	10.6	11.3	11.2	11.9	13.8	16.2	17.1	17.5	18.7	18.8	18.5
Transport	5.91	26.3	28.3	31.8	62.2	64.7	63.1	64.5	53.4	44.2	41.2	39.1	50.5	54.9
Communication	2.21	2.6	1.6	1.8	2.0	1.2	1.2	1.3	1.6	1.6	1.7	1.6	3.7	6.6
Recreation and Culture	1.59	9.3	9.7	12.3	14.4	15.4	21.8	22.8	23.7	25.6	38.5	44.1	48.1	50.6
Education	3.79	8.3	8.4	9.5	9.5	9.8	10.0	10.0	10.9	11.1	10.9	10.6	10.8	7.2
Restaurants and Hotels	6.92	14.6	14.6	16.0	21.9	25.0	27.4	28.8	30.4	28.4	27.4	30.1	34.5	38.5
Misc. Goods and Services	4.87	12.4	12.8	13.3	15.8	17.2	20.0	22.9	22.4	23.0	25.8	28.7	33.3	34.4

 Source: Pakistan Bureau of Statistics

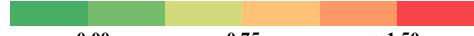
<sup>1</sup> As per Annual Plan 2022-23 published by Planning Commission of Pakistan.



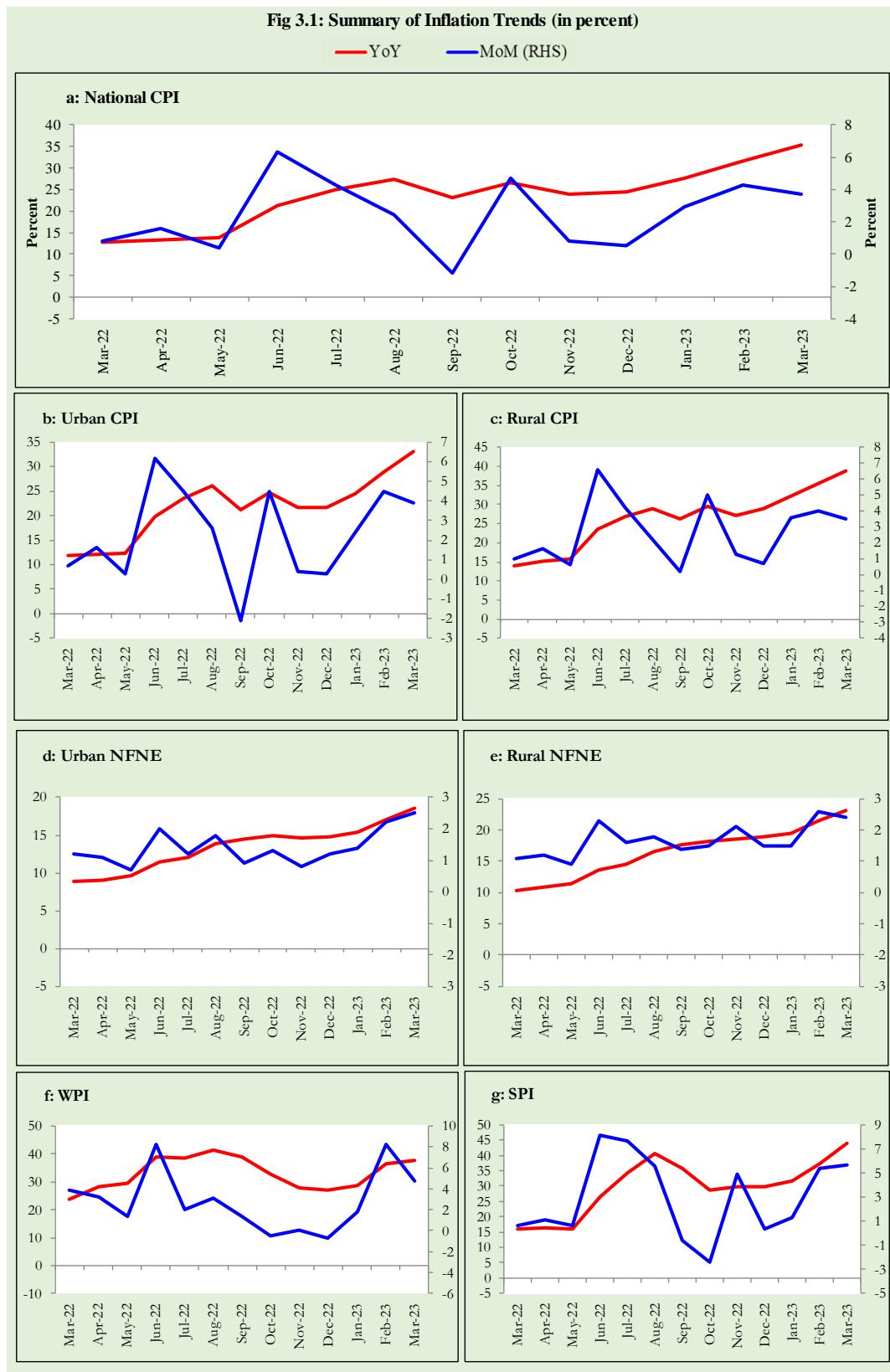


Urban CPI inflation (MoM)														
	Weights	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
<b>Urban</b>	<b>100.00</b>	<b>0.7</b>	<b>1.6</b>	<b>0.3</b>	<b>6.2</b>	<b>4.5</b>	<b>2.6</b>	<b>-2.1</b>	<b>4.5</b>	<b>0.4</b>	<b>0.3</b>	<b>2.4</b>	<b>4.5</b>	<b>3.9</b>
<b>Food</b>	<b>36.80</b>	<b>1.8</b>	<b>3.7</b>	<b>1.0</b>	<b>5.3</b>	<b>4.3</b>	<b>1.6</b>	<b>5.2</b>	<b>4.5</b>	<b>0.0</b>	<b>0.0</b>	<b>3.9</b>	<b>4.3</b>	<b>5.6</b>
<i>Non-perishable</i>	32.34	2.6	1.7	3.1	4.9	3.8	1.2	4.0	2.2	0.7	2.2	5.0	4.4	4.6
<i>Perishable</i>	4.46	-1.1	20.8	-10.8	5.5	7.3	2.8	14.0	18.5	-4.4	-12.0	-1.4	2.9	3.5
<b>Non Food</b>	<b>63.20</b>	<b>-0.1</b>	<b>0.3</b>	<b>-0.1</b>	<b>6.8</b>	<b>4.6</b>	<b>3.3</b>	<b>-6.6</b>	<b>4.5</b>	<b>0.6</b>	<b>0.6</b>	<b>1.2</b>	<b>4.7</b>	<b>2.7</b>
<i>Energy</i>	9.47	-5.9	-3.4	-4.6	32.2	18.3	8.4	-31.1	19.5	-0.2	-1.9	0.4	15.2	3.1
<i>NFNE (Core)</i>	53.73	1.2	1.1	0.7	2.0	1.2	1.8	0.9	1.3	0.8	1.2	1.4	2.2	2.5
<i>HRI</i>	19.26	0.0	1.1	0.0	0.0	1.5	0.0	0.0	1.1	0.0	0.0	1.7	0.0	0.0
<i>Core Excl HRI</i>	34.47	1.9	1.0	1.1	3.0	1.1	2.7	1.4	1.4	1.2	1.7	1.3	3.3	3.7

Source: Pakistan Bureau of Statistics

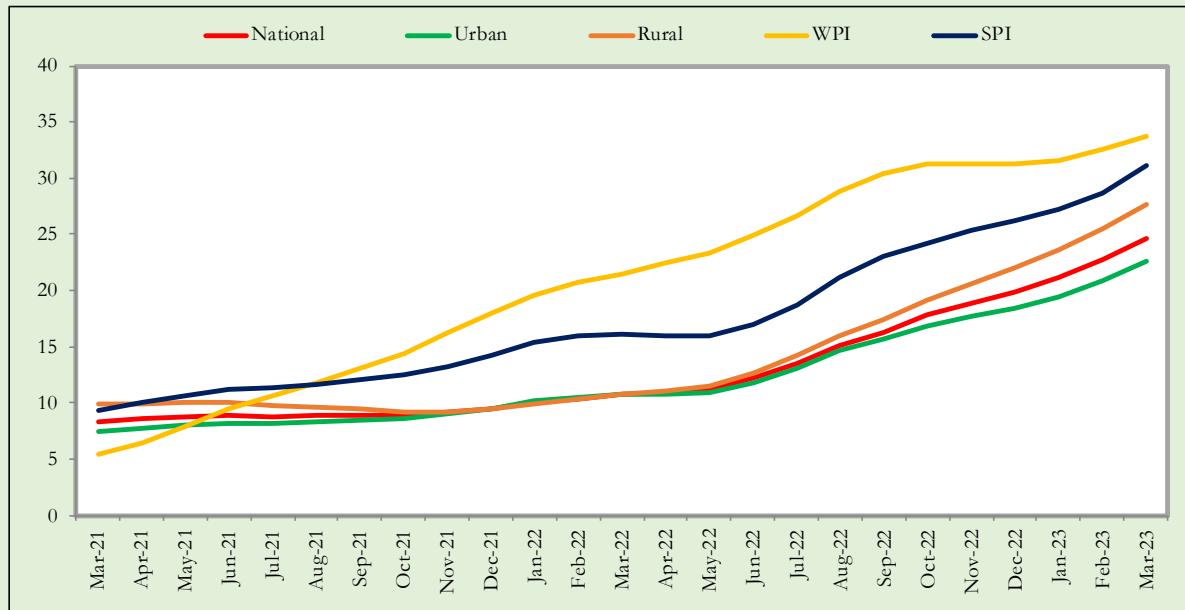


### 3. Trends in Inflation



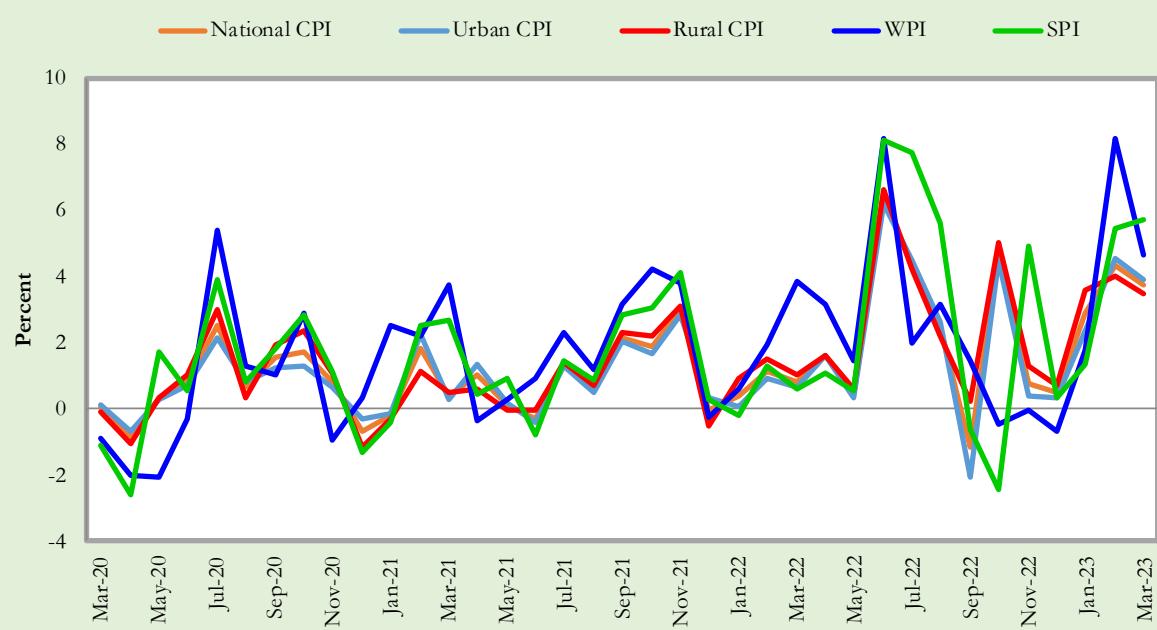
#### 4. Movement in Price Indices (Moving Averages)

Fig 4.1: Movements in Price Indices (12 months moving average (12mma) in percent)

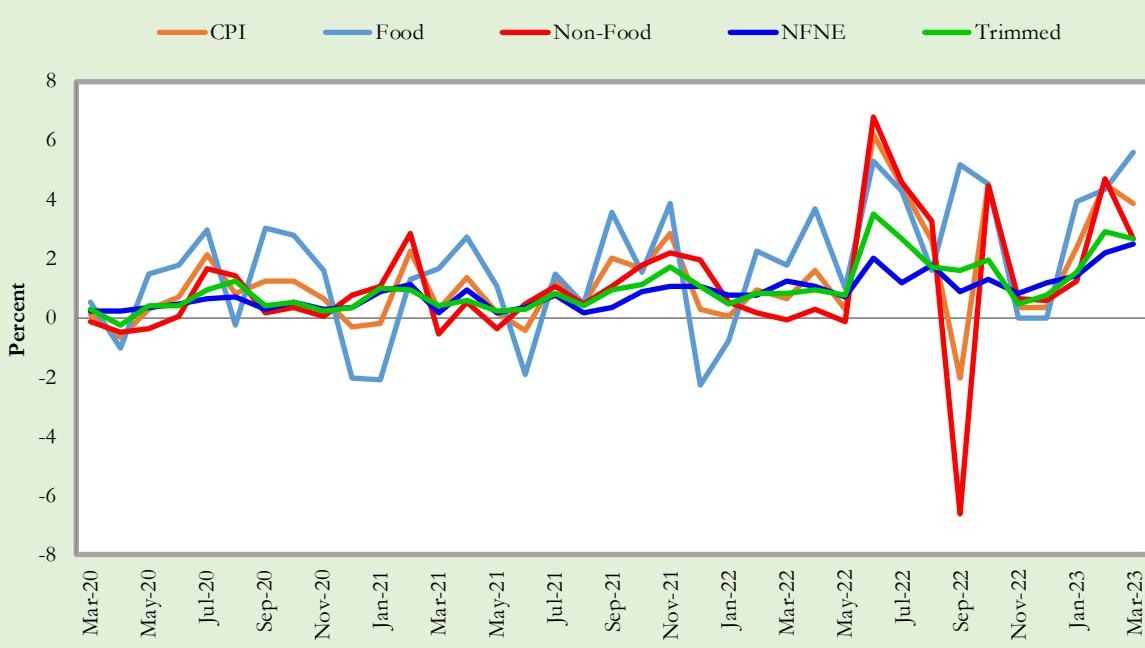


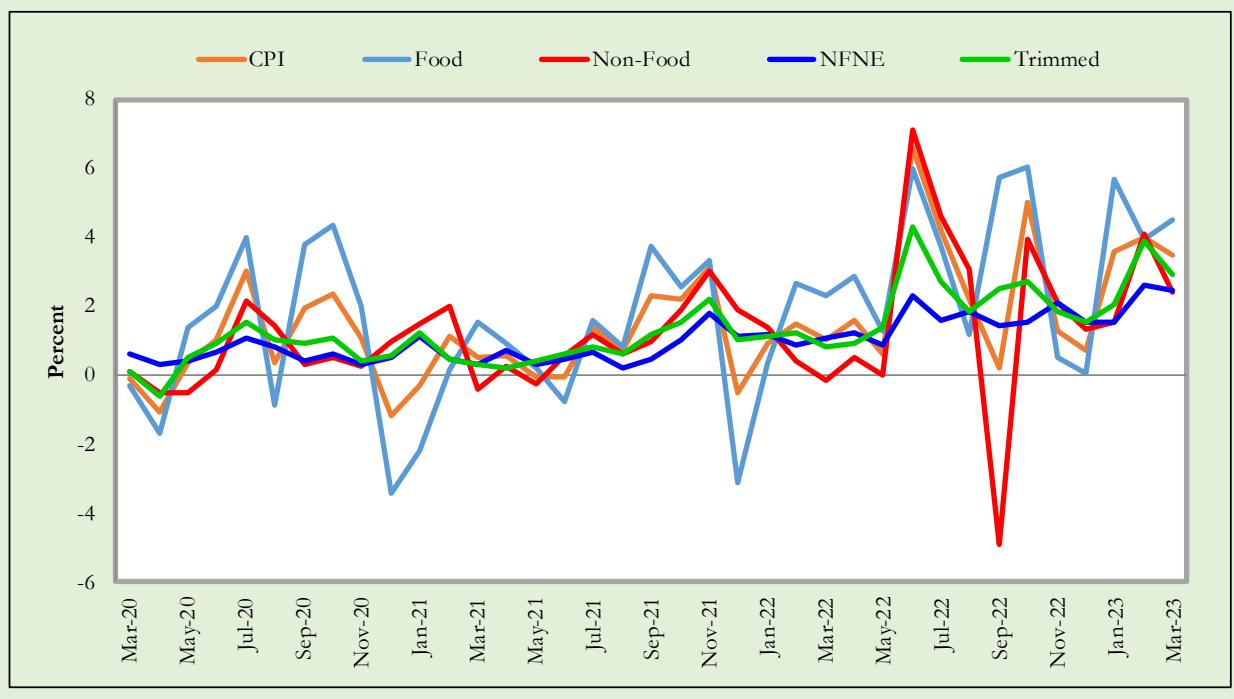
## 5. Movement in Price Indices (Month-on-Month)

**Fig 5.1: Movements in Price Indices (MoM in percent)**



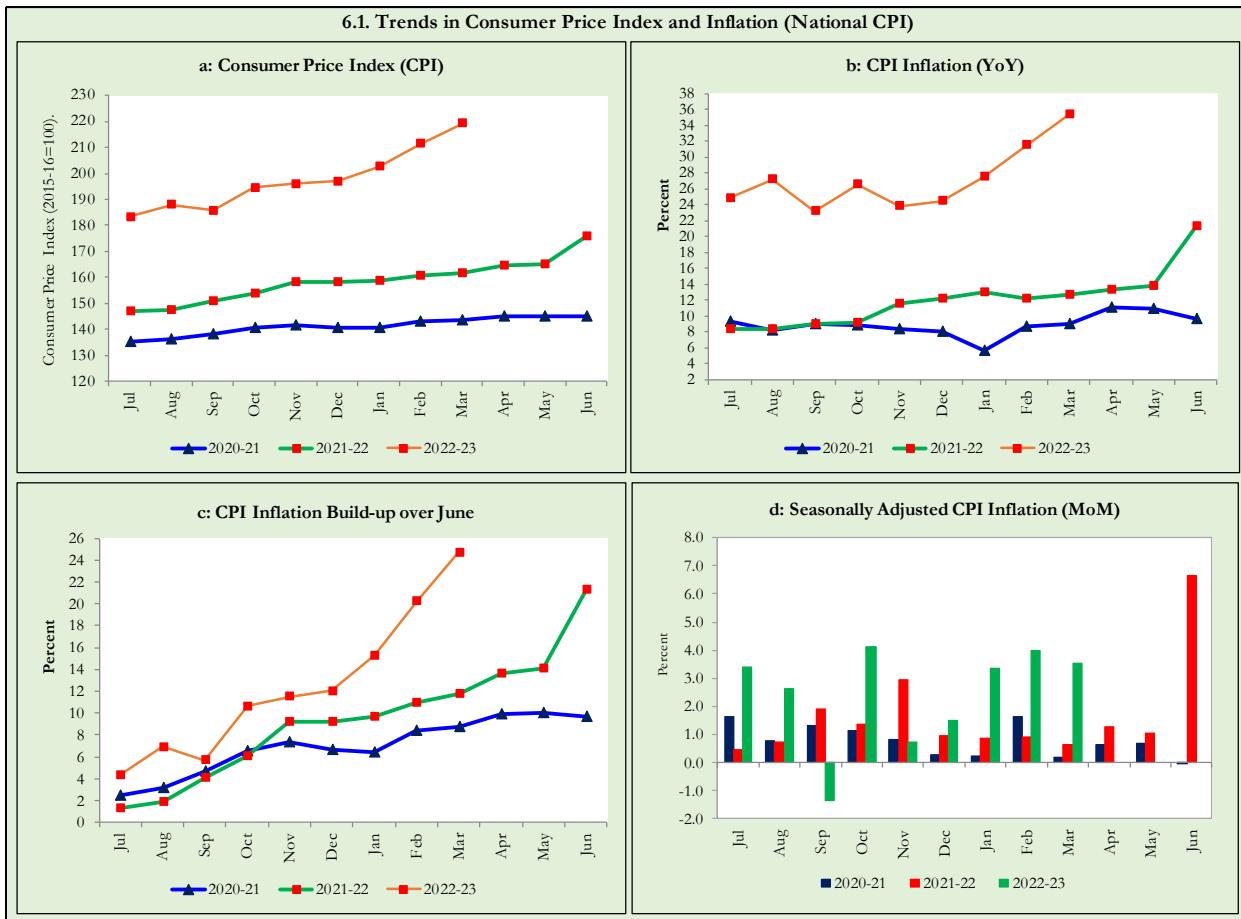
**Fig 5.2: Movements in Price Indices (MoM in percent) - Urban CPI Basket**

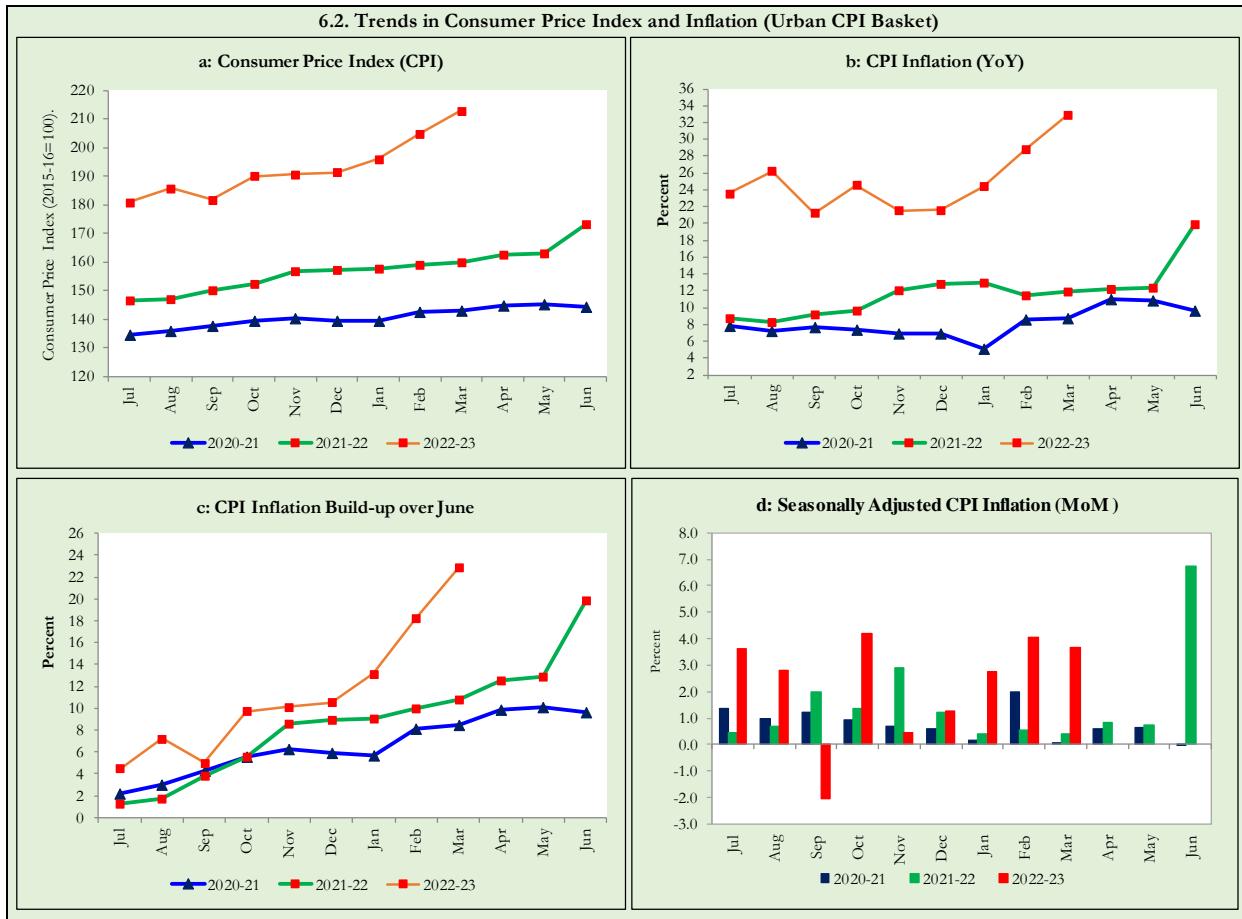


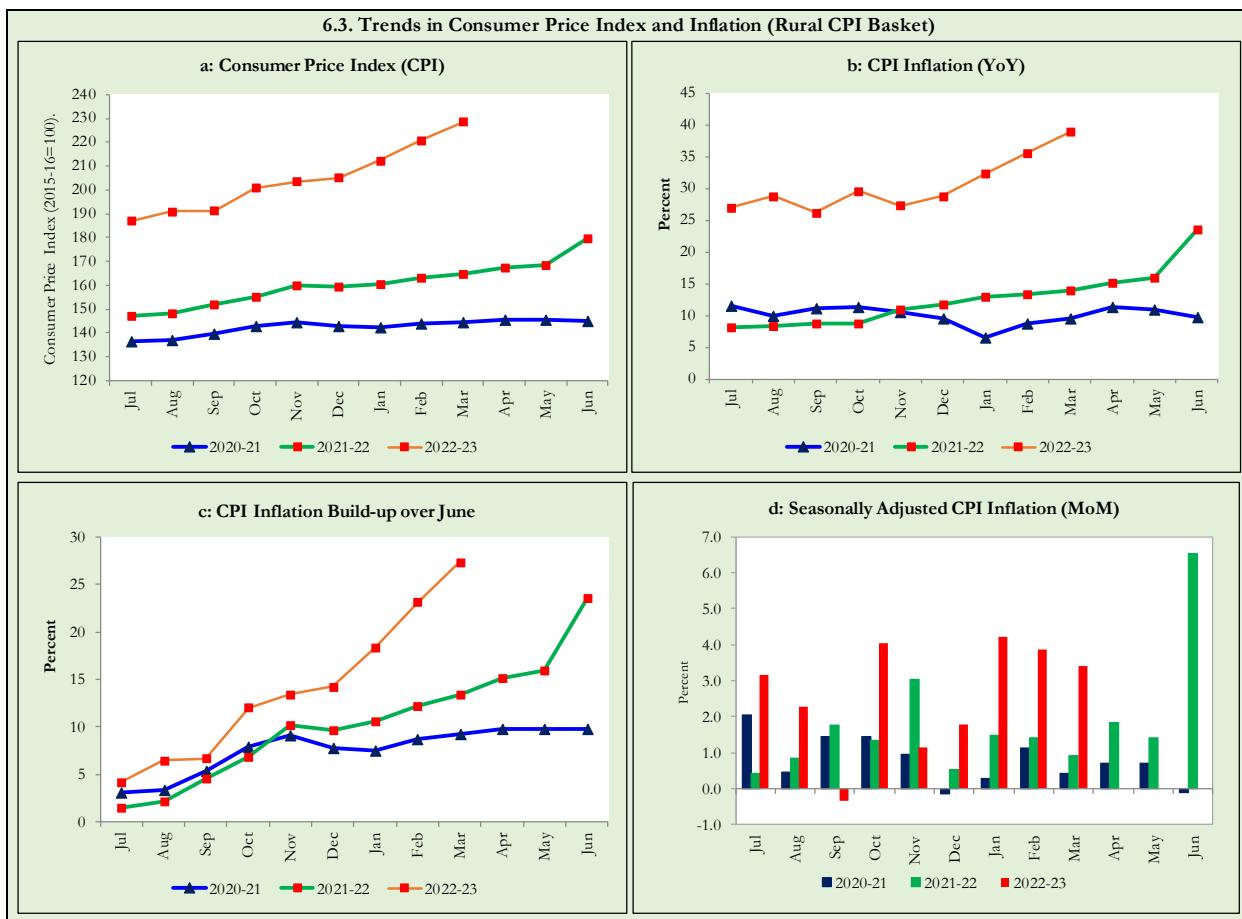
**Fig 5.3: Movements in Price Indices (MoM in percent) - Rural CPI Basket**

## 6. Trends in Consumer Price Indices and Inflation

Monthly Consumer Price Indices, CPI inflation (YoY) 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).







## 7. Weighted Contribution

The weighted contribution of food group in the overall Urban CPI Inflation decreased to 54.9 percent during March 2023 from 55.2 percent in previous month. It was 45.6 percent during corresponding month of last year. The weighted contribution of non-food group increased to 45.0 percent in March 2023 from 44.8 percent in previous month. Weighted Contribution of non-food was 54.4 percent during corresponding month of last year. Table 7.1 provides the historical perspective of weighted contribution of food and non-food group and their respective sub-indices (Perishable food, Non-Perishable food, Energy, Core Inflation (NFNE), NFNE excluding HRI and HRI) in the overall inflation for urban basket.

**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	i
Mar-22	100.0	45.6	8.9	36.7	54.4	15.3	39.1	29.7	9.4
Apr-22	100.0	48.5	9.6	38.9	51.5	12.7	38.7	30.4	8.4
May-22	100.0	48.2	7.1	41.1	51.7	10.9	40.9	32.6	8.3
Jun-22	100.0	45.7	6.7	39.0	54.3	23.9	30.3	25.2	5.2
Jul-22	100.0	44.0	6.0	38.0	56.0	29.5	26.5	22.1	4.4
Aug-22	100.0	41.6	5.6	36.0	58.4	31.0	27.3	23.4	3.9
Sep-22	100.0	56.0	10.1	45.8	44.0	9.2	34.8	30.0	4.8
Oct-22	100.0	54.3	12.6	41.7	45.7	15.0	30.7	26.9	3.8
Nov-22	100.0	53.5	9.2	44.2	46.6	12.8	33.8	29.5	4.3
Dec-22	100.0	57.3	10.0	47.3	42.7	8.5	34.2	30.0	4.2
Jan-23	100.0	60.0	9.4	50.6	40.0	7.9	32.1	28.1	3.9
Feb-23	100.0	55.2	6.6	48.6	44.8	14.8	30.0	26.7	3.3
Mar-23	100.0	54.9	6.5	48.4	45.0	16.3	28.7	25.9	2.9

Note: The weighted contribution of sub-indices may not exactly tally with the weighted contribution of overall CPI index due to rounding off

For rural basket, the weighted contribution of food group in the overall Rural CPI Inflation decreased to 61.8 percent during March 2023 from 62.5 percent in previous month. It was 52.6 percent during corresponding month of last year. The weighted contribution of non-food group increased to 38.2 percent in March 2023 from 37.5 percent in previous month. Weighted contribution of non-food group was 47.4 percent during corresponding month of last year. Table 7.2 provides the historical perspective of weighted contribution of food (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.

**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
Mar-22	100.0	52.6	11.2	41.5	47.4	16.7	30.7	27.2	3.5
Apr-22	100.0	55.5	12.7	42.8	44.5	14.6	29.9	26.8	3.1
May-22	100.0	56.7	10.6	46.1	43.3	13.2	30.1	27.1	3.0
Jun-22	100.0	54.2	8.7	45.4	45.8	21.7	24.1	22.1	2.0
Jul-22	100.0	52.1	6.9	45.2	47.9	25.4	22.6	20.8	1.8
Aug-22	100.0	49.6	6.8	42.9	50.4	26.7	23.7	22.0	1.7
Sep-22	100.0	60.1	11.6	48.5	39.9	12.6	27.3	25.5	1.8
Oct-22	100.0	60.7	15.2	45.5	39.3	14.6	24.7	23.1	1.6
Nov-22	100.0	59.4	10.8	48.6	40.6	13.7	26.9	25.3	1.6
Dec-22	100.0	61.9	10.9	50.9	38.1	11.6	26.5	25.0	1.6
Jan-23	100.0	65.5	9.9	55.6	34.5	10.3	24.2	22.6	1.7
Feb-23	100.0	62.5	8.3	54.3	37.5	13.3	24.2	22.7	1.5
Mar-23	100.0	61.8	7.7	54.1	38.2	14.3	23.9	22.5	1.3

Note: The weighted contribution of sub-indices may not exactly tally with the weighted contribution of overall CPI index due to rounding off

## 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 is presented in Table 8.1(a & b) for the last thirteen months.

Groups	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
<b>General</b>	<b>60.1</b>	<b>57.3</b>	<b>61.2</b>	<b>75.3</b>	<b>71.1</b>	<b>70.8</b>	<b>62.4</b>	<b>66.3</b>	<b>54.5</b>	<b>56.7</b>	<b>68.8</b>	<b>78.9</b>	<b>73.6</b>
Food & Non-Alcoholic Beverages	34.4	44.4	37.8	57.8	66.7	54.4	56.7	43.3	18.9	26.7	55.6	68.9	66.7
Alcoholic Beverages & Tobacco	33.3	66.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	33.3	100.0	100.0
Clothing & Footwear	70.0	67.5	72.5	82.5	62.5	70.0	62.5	72.5	75.0	77.5	77.5	67.5	72.5
Housing, Water, Elect, Gas & other Fuels	10.3	17.2	20.7	72.4	75.9	58.6	3.4	51.7	24.1	10.3	58.6	75.9	48.3
Furnishing & Household Equip. Maintenance etc.	90.5	90.5	97.6	100.0	97.6	95.2	97.6	100.0	100.0	95.2	100.0	100.0	100.0
Health	77.4	74.2	61.3	90.3	61.3	77.4	87.1	80.6	83.9	71.0	80.6	87.1	77.4
Transport	59.4	40.6	53.1	93.8	81.3	50.0	37.5	46.9	34.4	25.0	34.4	90.6	81.3
Communication	20.0	20.0	20.0	40.0	40.0	20.0	40.0	40.0	20.0	40.0	20.0	40.0	40.0
Recreation & Culture	68.0	44.0	76.0	44.0	52.0	80.0	72.0	80.0	24.0	72.0	84.0	80.0	56.0
Education	75.0	43.8	50.0	25.0	31.3	75.0	12.5	37.5	50.0	56.3	31.3	31.3	62.5
Restaurant & Hotels	78.6	78.6	92.9	92.9	85.7	100.0	92.9	100.0	100.0	100.0	85.7	92.9	92.9
Miscellaneous	100.0	89.7	96.6	100.0	86.2	96.6	93.1	89.7	100.0	96.6	100.0	100.0	86.2
NFNE	76.6	67.2	72.8	81.3	71.5	77.4	67.2	76.6	71.5	72.3	76.6	82.6	77.0

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

<b>Groups</b>	<b>Mar-22</b>	<b>Apr-22</b>	<b>May-22</b>	<b>Jun-22</b>	<b>Jul-22</b>	<b>Aug-22</b>	<b>Sep-22</b>	<b>Oct-22</b>	<b>Nov-22</b>	<b>Dec-22</b>	<b>Jan-23</b>	<b>Feb-23</b>	<b>Mar-23</b>
General	52.0	54.9	59.0	74.2	76.6	72.5	67.2	68.0	54.5	48.8	67.6	77.9	72.5
Food & Non-Alcoholic Beverages	41.8	32.9	40.5	53.2	64.6	53.2	62.0	55.7	13.9	12.7	57.0	62.0	53.2
Alcoholic Beverages & Tobacco	0.0	80.0	100.0	100.0	100.0	100.0	100.0	60.0	100.0	80.0	80.0	100.0	100.0
Clothing & Footwear	74.1	92.6	88.9	81.5	81.5	88.9	66.7	81.5	96.3	85.2	81.5	96.3	92.6
Housing, Water, Elect, Gas & other Fuels	0.0	26.1	26.1	82.6	95.7	78.3	30.4	56.5	34.8	0.0	82.6	56.5	69.6
Furnishing & Household Equip. Maintenance etc.	84.6	80.8	84.6	92.3	92.3	100.0	88.5	100.0	100.0	96.2	96.2	100.0	100.0
Health	42.9	71.4	42.9	100.0	64.3	71.4	92.9	64.3	100.0	78.6	35.7	85.7	64.3
Transport	37.5	50.0	68.8	87.5	75.0	43.8	68.8	31.3	18.8	25.0	12.5	81.3	81.3
Communication	20.0	20.0	20.0	20.0	40.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Recreation & Culture	69.2	30.8	76.9	53.8	53.8	84.6	69.2	84.6	46.2	84.6	76.9	92.3	69.2
Education	80.0	100.0	80.0	80.0	100.0	80.0	0.0	100.0	80.0	80.0	80.0	80.0	80.0
Restaurant & Hotels	78.6	57.1	71.4	92.9	85.7	92.9	85.7	85.7	85.7	71.4	85.7	85.7	85.7
Miscellaneous	88.2	94.1	76.5	94.1	94.1	94.1	94.1	88.2	100.0	94.1	94.1	100.0	88.2
NFNE	66.9	74.3	69.9	82.4	78.7	80.9	72.1	76.5	80.9	74.3	72.8	86.8	80.9

## 9. Domestic Food Commodity Prices (Growth)

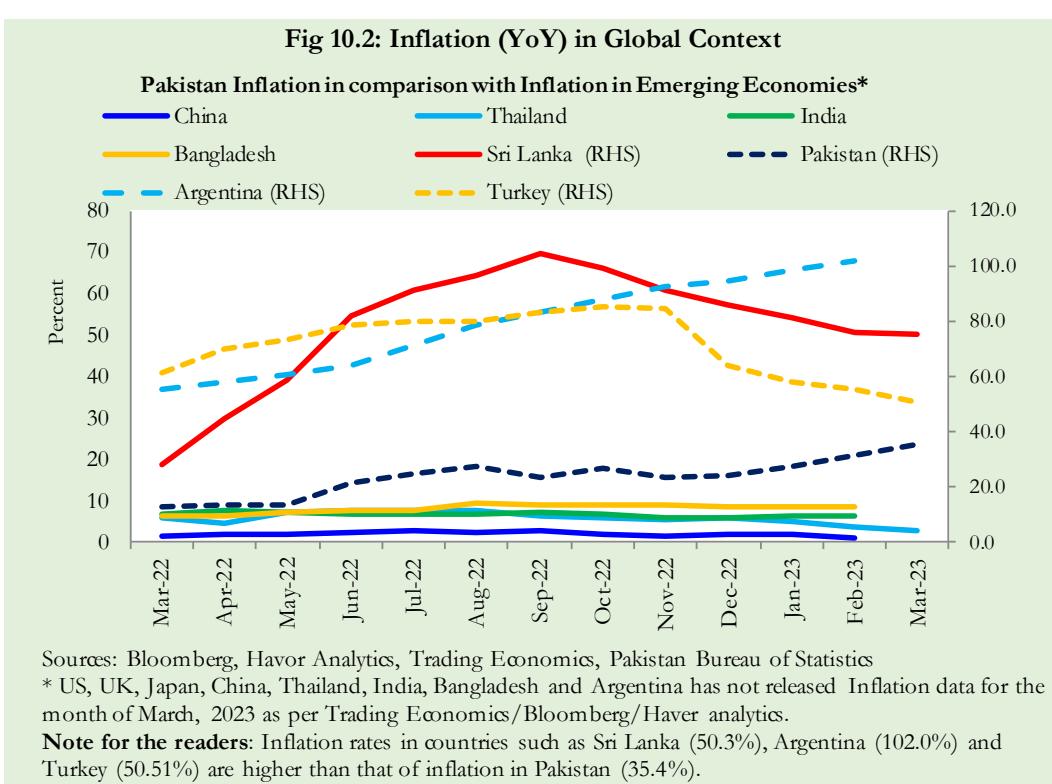
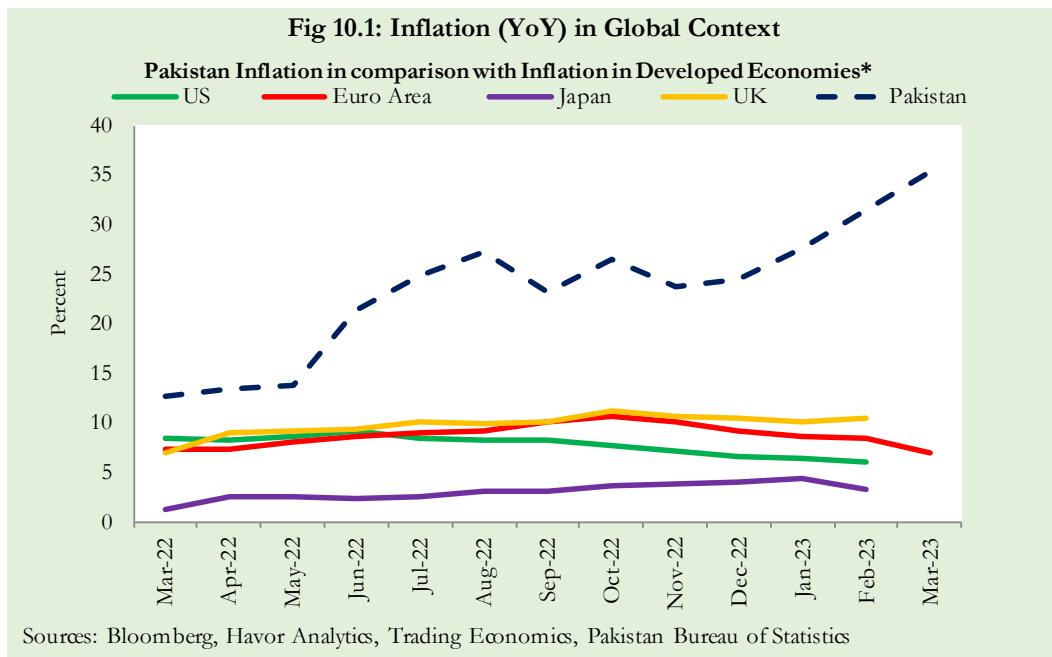
Growth of domestic food commodities (YoY and MoM in percent) for selected essential food items covering both urban and rural CPI baskets is given in table 9.1.

Table 9.1 Growth in Domestic Urban and Rural CPI Food Commodities (in percent) – March 2023						
S. No	Item	Unit	Urban CPI		Rural CPI	
			YoY	MoM	YoY	MoM
1	Wheat	10 Kg	94.3	8.3	88.3	0.8
2	Wheat Flour Bag	20 Kg	63.5	8.2	51.9	2.1
3	Rice Basmati Broken (Superior/Average Quality)*	1 Kg	88.3	0.9	89.5	5.7
4	Beef With Bone (Average Quality)	1 Kg	18.4	0.9	18.2	1.4
5	Mutton (Average Quality)	1 Kg	24.1	0.8	21.8	2.1
6	Chicken Farm Broiler (Live)	1 Kg	41.9	-3.7	47.0	-2.1
7	Milk Fresh (Un-Boiled)	1 Litre	34.6	4.1	39.9	4.0
8	Eggs Farm	Dozen	83.6	-12.4	75.3	-12.2
9	Vegetable Ghee Dalda/Habib Or Other Superior Quality 1 Kg Pouch	Each	40.7	4.6	35.8	5.1
10	Pulse Masoor (Washed)	1 Kg	26.9	-0.2	31.8	-1.9
11	Pulse Moong (Washed)	1 Kg	58.3	0.5	64.2	-0.2
12	Pulse Mash (Washed)	1 Kg	53.5	1.7	63.9	7.1
13	Pulse Gram	1 Kg	53.8	-1.5	56.6	-0.4
14	Potatoes	1 Kg	42.4	11.6	42.7	18.0
15	Onions	1 Kg	257.6	-25.9	302.7	-30.6
16	Tomatoes	1 Kg	-33.5	13.2	-31.1	10.1
17	Sugar Refined	1 Kg	19.4	12.5	15.9	9.6
18	Garlic (Lehsun)	1 Kg	6.9	-17.7	4.5	-14.2
19	Ginger (Adrak)	500 Gm	133.4	20.5	111.5	21.6
20	Tea Lipton Yellow Label 190 Gm Packet	Each	105.2	28.5	80.9	12.7

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

## 10. Inflation in Global Context

In global context, inflation trends in selected developed and emerging economies is given in figure 10.1 and 10.2.

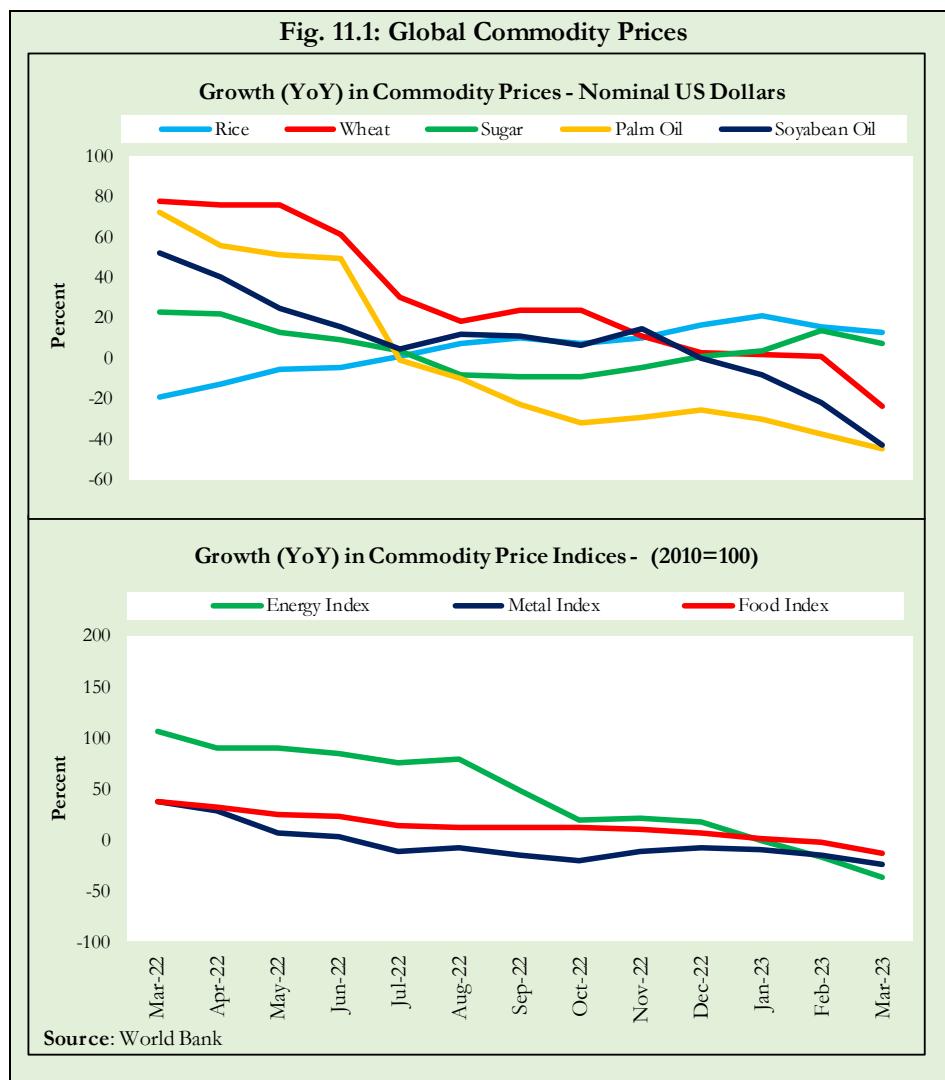


## 11. Global Commodity Prices and Indices (Growth)

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

Item/ Group	Mar-22		Feb-23		Mar-23	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	36.5	11.3	-2.7	1.1	-14.4	-2.0
Metals	37.5	7.9	-15.2	-2.7	-24.5	-3.9
Energy	106.4	25.1	-17.1	-7.3	-37.9	-6.3
Agricultural	28.7	7.0	-5.4	1.0	-13.1	-1.6
Cotton	54.3	2.0	-28.2	-0.9	-32.4	-4.0

Source: World Bank

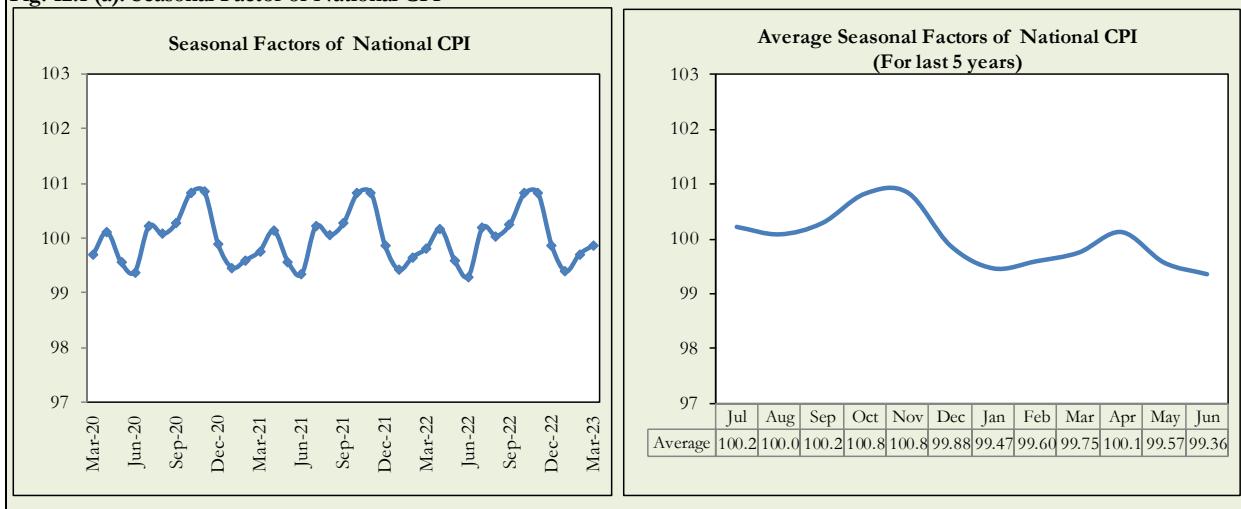
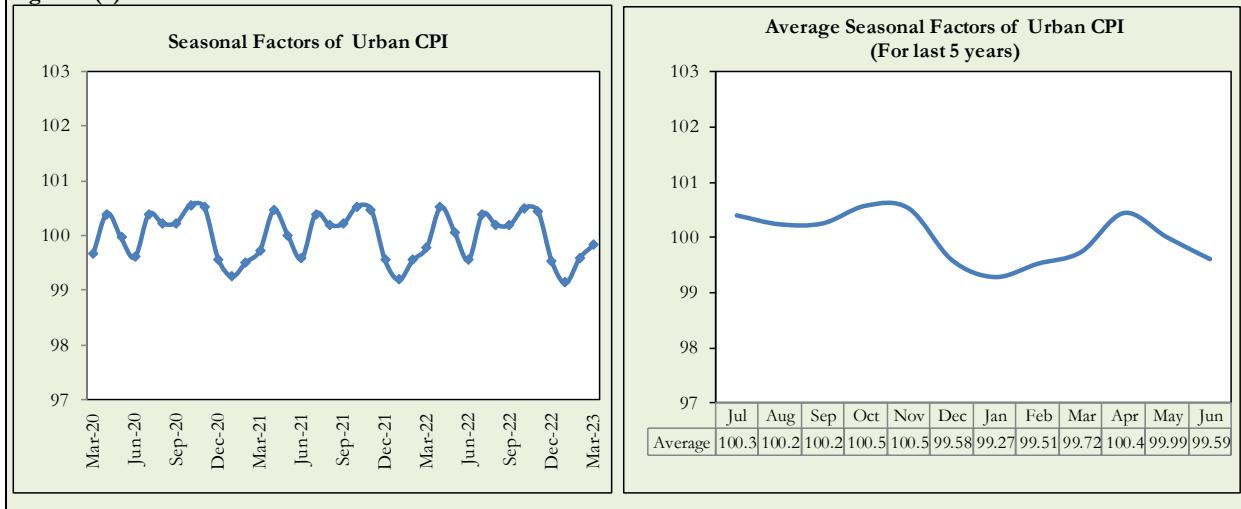
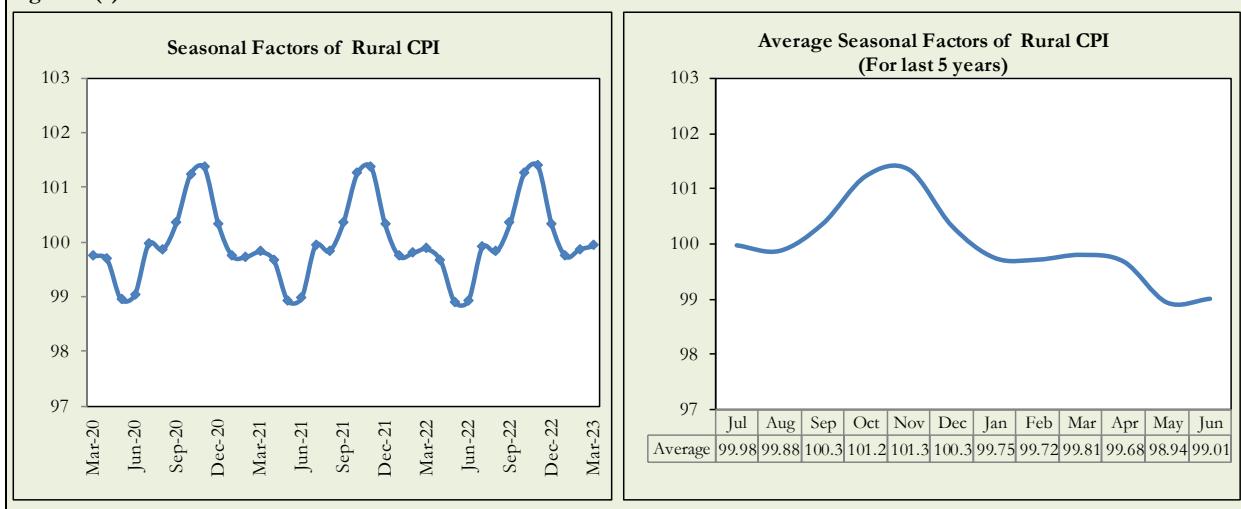


## 12. Seasonal Adjustment in CPI

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 these 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 December 2008 to March 2023 has been used for seasonal adjustment analysis.

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.

**Fig. 12.1 (a): Seasonal Factor of National CPI****Fig. 12.1 (b): Seasonal Factor of Urban CPI****Fig. 12.1 (c): Seasonal Factor of Rural CPI**

Figures 12.2 shows 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 (a): Seasonal Plot of National CPI

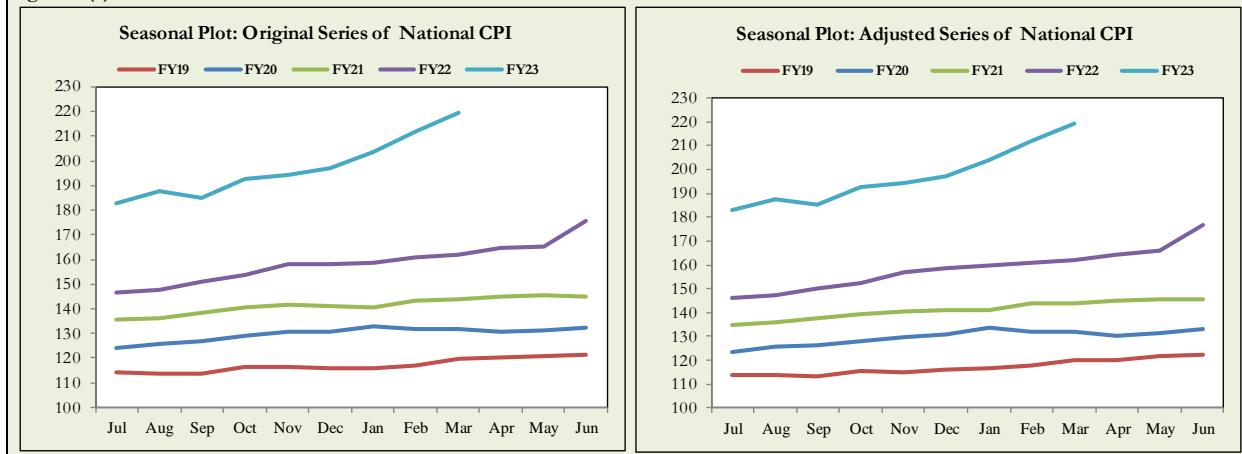


Fig. 12.2 (b): Seasonal Plot of Urban CPI

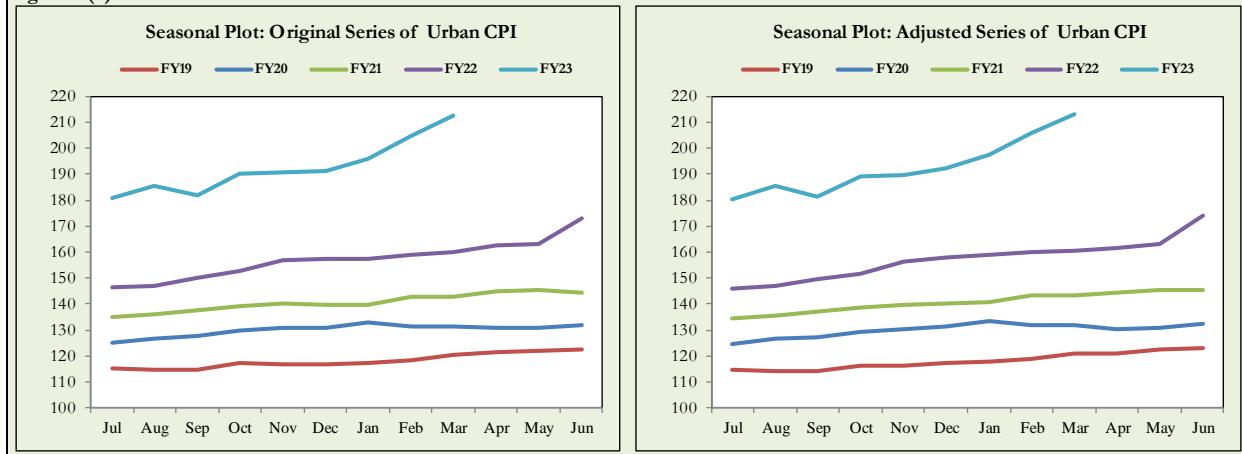
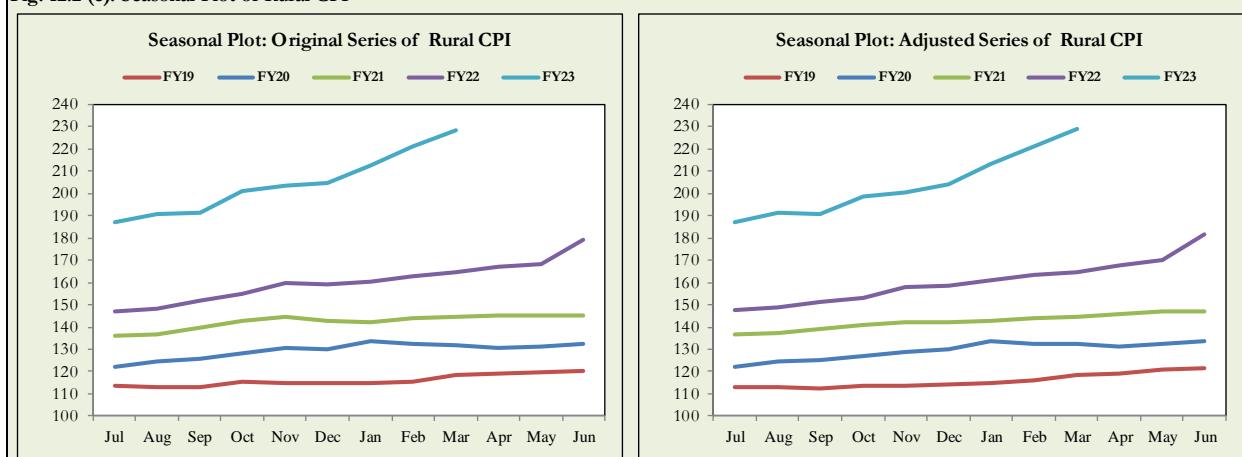


Fig. 12.2 (c): Seasonal Plot of Rural CPI

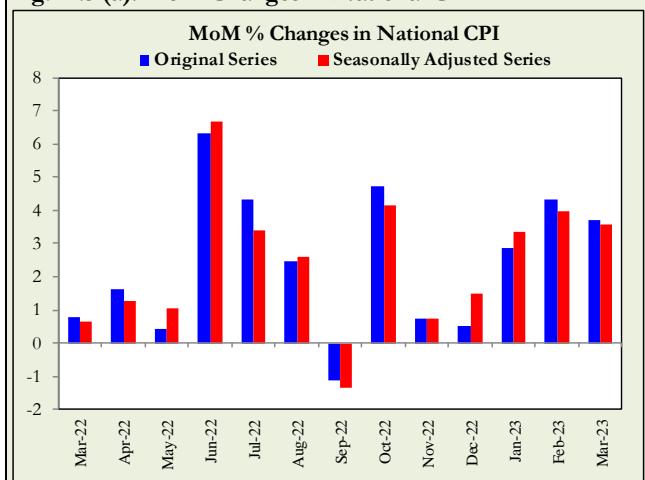


Seasonally adjusted Index of National CPI for March 2023 stood at 219.43 against 219.14 in original series showing an increase of 0.29 because of seasonal adjustment.

Seasonally adjusted Index of Urban CPI for March 2023 stood at 213.22 against 212.85 in original series showing an increase of 0.37 on account of seasonal adjustment.

Seasonally adjusted Index of Rural CPI for March 2023 stood at 228.80 against 228.63 in original series showing an increase of 0.17 on account of seasonal adjustment.

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

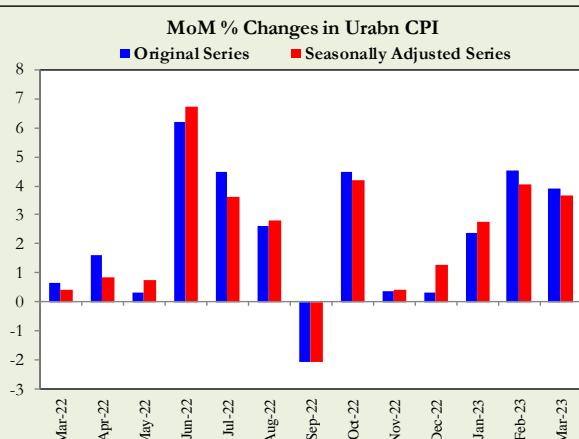


Month-on-month change of seasonally adjusted National CPI series showed an inflation of 3.55% during March 2023 over previous month against an inflation of 3.72% in original series.

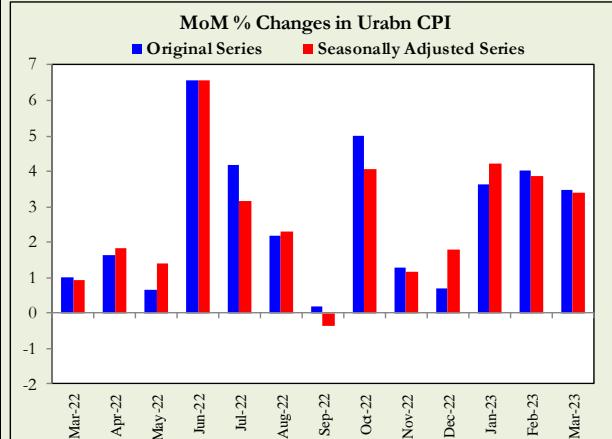
Month-on-month change of seasonally adjusted Urban CPI series showed an inflation of 3.65% during March 2023 over previous month against an inflation of 3.90% in original series.

Month-on-month change of seasonally adjusted Rural CPI series showed an inflation of 3.41% during March 2023 over previous month against an inflation of 3.48% in original series.

**Fig. 12.3 (b): MoM % Changes in Urban CPI**



**Fig. 12.3 (c): MoM % Changes in Rural CPI**





**Table A1: National CPI Inflation by Groups (YoY and MoM in percent)**

Groups	Weights	MoM change			YoY change		
		Mar-22	Feb-23	Mar-23	Mar-22	Feb-23	Mar-23
Food & Non-Alcoholic Beverages	34.6	2.3	4.1	3.7	15.3	45.1	47.2
Alcoholic Beverages & Tobacco	1.0	0.0	9.7	60.9	1.8	49.2	140.0
Clothing & Footwear	8.6	1.0	1.2	5.3	9.7	17.0	21.9
Housing, Water, Elec, Gas & other Fuels	23.6	-2.2	3.7	1.1	8.3	13.6	17.5
Furnishing & Household Equip. Maintenance etc	4.1	1.4	5.0	5.1	13.8	34.0	39.0
Health	2.8	0.6	2.1	0.3	10.0	18.8	18.5
Transport	5.9	0.3	12.0	3.3	26.3	50.5	54.9
Communication	2.2	0.0	2.1	2.9	2.6	3.7	6.6
Recreation & Culture	1.6	1.3	3.3	3.1	9.3	48.1	50.6
Education	3.8	4.7	0.5	1.3	8.3	10.8	7.2
Restaurants & Hotels	6.9	0.9	5.1	3.8	14.6	34.5	38.5
Miscellaneous	4.9	1.6	4.7	2.5	12.4	33.3	34.4
<b>Overall National CPI</b>	<b>100.0</b>	<b>0.8</b>	<b>4.3</b>	<b>3.7</b>	<b>12.7</b>	<b>31.5</b>	<b>35.4</b>

**Table A2: Urban CPI Inflation by Groups (YoY and MoM in percent)**

Groups	Weights	MoM change			YoY change		
		Mar-22	Feb-23	Mar-23	Mar-22	Feb-23	Mar-23
<b>I. Food Group</b>	<b>36.8</b>	<b>1.8</b>	<b>4.3</b>	<b>5.6</b>	<b>14.5</b>	<b>41.9</b>	<b>47.1</b>
Food & Non-Alcoholic Beverages	30.4	2.1	4.2	4.5	14.8	42.1	45.5
Alcoholic Beverages & Tobacco	0.9	0.1	13.0	55.6	1.5	54.9	140.8
Restaurant & Hotels (Food)	5.5	0.8	3.9	3.8	15.0	38.7	42.8
<b>II. Non-Food Group</b>	<b>63.2</b>	<b>-0.1</b>	<b>4.7</b>	<b>2.7</b>	<b>10.4</b>	<b>20.8</b>	<b>24.1</b>
Clothing & Footwear	8.0	0.9	1.3	5.8	9.6	16.8	22.4
Housing, Water, Elec, Gas & other Fuels	27.0	-2.2	4.3	1.1	7.1	11.2	15.0
Furnishing & Household Equip. Maintenance etc	4.1	1.1	5.3	5.2	12.6	34.1	39.6
Health	2.3	0.9	3.2	0.4	10.0	18.5	17.9
Transport	6.1	0.5	12.3	3.6	26.3	49.9	54.6
Communication	2.4	0.0	2.8	3.7	3.3	4.6	8.5
Recreation & Culture	1.7	0.9	3.6	3.0	8.7	48.4	51.4
Education	4.9	5.7	0.1	1.3	9.0	10.4	5.8
Restaurants & Hotels (Non-food Component)	1.9	0.3	5.4	5.3	13.0	24.5	30.7
Miscellaneous	4.8	1.8	4.7	2.6	11.9	33.3	34.3
<b>Overall Urban CPI</b>	<b>100.0</b>	<b>0.7</b>	<b>4.5</b>	<b>3.9</b>	<b>11.9</b>	<b>28.8</b>	<b>33.0</b>

**Table A3: Rural CPI Inflation by Groups (YoY and MoM in percent)**

Groups	Weights	MoM Change			YoY Change		
		Mar-22	Feb-23	Mar-23	Mar-22	Feb-23	Mar-23
<b>I. Food Group</b>	<b>45.9</b>	<b>2.3</b>	<b>3.9</b>	<b>4.5</b>	<b>15.5</b>	<b>47.0</b>	<b>50.2</b>
Food and Non-Alcoholic Beverages	40.9	2.5	3.9	2.9	15.9	48.3	49.0
Alcoholic Beverages, Tobacco	1.3	0.0	5.9	67.5	2.3	42.7	139.1
Restaurants and Hotels (Food Component)	3.8	1.1	4.2	4.4	15.3	34.8	39.1
<b>II. Non-Food Group</b>	<b>54.1</b>	<b>-0.2</b>	<b>4.1</b>	<b>2.4</b>	<b>12.5</b>	<b>25.3</b>	<b>28.5</b>
Clothing and Footwear	9.5	1.1	1.0	4.7	9.8	17.2	21.3
Housing, Water, Elec., Gas and Other Fuels	18.5	-2.3	2.6	1.2	11.1	18.6	22.9
Furnishing and Household Equip. Maintenance	4.1	1.7	4.5	4.9	15.6	33.9	38.1
Health	3.5	0.2	1.1	0.2	10.0	19.1	19.0
Transport	5.6	0.0	11.6	2.7	26.2	51.4	55.5
Communication	2.0	0.1	0.7	1.3	1.1	1.9	3.2
Recreation and Culture	1.4	2.0	2.7	3.3	10.5	47.4	49.2
Education	2.1	1.1	1.7	1.4	5.6	12.2	12.5
Restaurants and Hotels (Non-Food Component)	2.4	1.3	12.9	1.1	13.4	30.6	30.3
Miscellaneous	5.0	1.4	4.6	2.4	13.1	33.3	34.6
<b>Overall Rural CPI</b>	<b>100.0</b>	<b>1.0</b>	<b>4.0</b>	<b>3.5</b>	<b>13.9</b>	<b>35.6</b>	<b>38.9</b>







**Table A7: Top Ten Contributors to Urban CPI Inflation (YoY) – March 2023**

Items/Contributors	Weights	YoY Change		Weighted Contribution (%)
		Mar-22	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1	Motor Fuel	2.91	36.98	71.61
2	Milk Fresh	7.11	11.66	35.86
3	Readymade Food	5.52	15.02	42.78
4	Wheat Flour	3.01	12.18	69.98
5	Electricity Charges	4.56	4.83	31.73
6	Cigarettes	0.72	0.02	171.17
7	Appliances/Articles/Products For Personal	2.98	9.86	34.32
8	Rice	1.18	10.88	82.41
9	House Rent	19.26	6.13	5.43
10	Cooking Oil	1.10	48.05	53.51
<b>Total</b>		<b>48.35</b>		<b>48.26</b>
<b>B. Ranked by Percentage Change</b>				
1	Onions	0.59	3.75	257.62
2	Cigarettes	0.72	0.02	171.17
3	Tea	0.84	12.53	105.19
4	Wheat	0.61	4.47	94.32
5	Eggs	0.51	-20.32	83.60
6	Rice	1.18	10.88	82.41
7	Text Books	0.67	11.89	74.02
8	Dessert Preparation	0.04	7.04	73.25
9	Motor Fuel	2.91	36.98	71.61
10	Wheat Flour	3.01	12.18	69.98
<b>Total</b>		<b>11.08</b>		<b>30.49</b>
<b>C. Ranked by Weights</b>				
1	House Rent	19.26	6.13	5.43
2	Milk Fresh	7.11	11.66	35.86
3	Readymade Food	5.52	15.02	42.78
4	Education	4.88	8.98	5.80
5	Electricity Charges	4.56	4.83	31.73
6	Wheat Flour	3.01	12.18	69.98
7	Appliances/Articles/Products For Personal	2.98	9.86	34.32
8	Motor Fuel	2.91	36.98	71.61
9	Cotton Cloth	2.22	10.90	32.74
10	Meat	2.04	23.68	20.83
<b>Total</b>		<b>54.49</b>		<b>43.98</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 33.0 percent in March 2023.

**Table A8: Top Ten Contributors to Urban CPI Inflation (MoM) in March 2023**

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)
		Feb-23	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1 Cigarettes	0.72	15.64	70.34	14.19
2 Milk Fresh	7.11	2.25	4.50	8.10
3 Fresh Fruits	1.44	15.13	20.04	7.83
4 Tea	0.84	0.33	28.46	7.61
5 Wheat Flour	3.01	-3.69	7.84	7.26
6 Cotton Cloth	2.22	2.03	13.30	7.18
7 Electricity Charges	4.56	-1.60	6.21	6.55
8 Readymade Food	5.52	3.86	3.83	5.96
9 Motor Fuel	2.91	16.53	3.09	3.95
10 Cooking Oil	1.10	17.21	7.04	3.50
<b>Total</b>	<b>29.43</b>			<b>72.13</b>
<b>B. Ranked by Percentage Change</b>				
1 Cigarettes	0.72	15.64	70.34	14.19
2 Tea	0.84	0.33	28.46	7.61
3 Fresh Fruits	1.44	15.13	20.04	7.83
4 Communication Apparatus	0.45	12.20	14.75	1.28
5 Cotton Cloth	2.22	2.03	13.30	7.18
6 Tomatoes	0.35	-11.09	13.17	0.61
7 Sugar	1.11	0.11	12.49	2.61
8 Beverages	0.89	4.44	11.76	2.25
9 Potatoes	0.45	4.13	11.26	1.19
10 Household Equipments	1.00	8.66	10.56	2.66
<b>Total</b>	<b>9.47</b>			<b>47.41</b>
<b>C. Ranked by Weights</b>				
1 House Rent	19.26	0.00	0.00	0.00
2 Milk Fresh	7.11	2.25	4.50	8.10
3 Readymade Food	5.52	3.86	3.83	5.96
4 Education	4.88	0.12	1.25	1.27
5 Electricity Charges	4.56	-1.60	6.21	6.55
6 Wheat Flour	3.01	-3.69	7.84	7.26
7 Appliances/Articles/Products For Personal	2.98	4.97	3.29	2.47
8 Motor Fuel	2.91	16.53	3.09	3.95
9 Cotton Cloth	2.22	2.03	13.30	7.18
10 Meat	2.04	1.93	0.82	0.49
<b>Total</b>	<b>54.49</b>			<b>43.23</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 3.9 percent in March 2023.

**Table A9: Top and Bottom Fifteen Contributors to Urban CPI Inflation (YoY) in March 2023**

Items/Contributors	Weights	YoY Change		Weighted Contribution (%)
		Mar-22	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1 Motor Fuel	2.91	36.98	71.61	8.30
2 Milk Fresh	7.11	11.66	35.86	7.51
3 Readymade Food	5.52	15.02	42.78	7.31
4 Wheat Flour	3.01	12.18	69.98	6.22
5 Electricity Charges	4.56	4.83	31.73	4.08
6 Cigarettes	0.72	0.02	171.17	3.28
7 Appliances/Articles/Products For Personal	2.98	9.86	34.32	2.99
8 Rice	1.18	10.88	82.41	2.91
9 House Rent	19.26	6.13	5.43	2.86
10 Cooking Oil	1.10	48.05	53.51	2.80
11 Gas Charges	1.08	0.00	62.82	2.79
12 Tea	0.84	12.53	105.19	2.66
13 Onions	0.59	3.75	257.62	2.61
14 Washing Soap/Detergents/Match Box	1.41	16.71	57.17	2.53
15 Fresh Fruits	1.44	32.00	51.31	2.40
<b>Total</b>	<b>53.71</b>			<b>61.25</b>
<b>Bottom 15 Contributors</b>				
1 Tomatoes	0.35	148.65	-33.46	-0.40
2 Therapeutic Appliances And Equipme	0.01	5.44	4.97	0.00
3 Gur	0.04	11.03	1.07	0.00
4 Dental Services	0.02	5.65	13.60	0.01
5 Major Tools & Equipments	0.01	10.28	34.27	0.01
6 Newspapers	0.07	0.00	4.21	0.01
7 Postal Services	0.02	2.09	15.46	0.01
8 Carpets	0.03	7.64	14.93	0.01
9 Motor Vehicle Tax	0.05	7.62	8.92	0.01
10 Accommodation Services	0.13	8.38	3.72	0.01
11 Electrical Appliances For Personal	0.05	11.61	12.82	0.01
12 Communication Services	1.88	1.96	0.52	0.02
13 Mustard Oil	0.01	59.91	37.52	0.02
14 Honey	0.10	19.07	9.83	0.03
15 Plastic Products	0.05	11.02	29.06	0.04
<b>Total</b>	<b>2.82</b>			<b>-0.21</b>

**Table A10: Top and Bottom Fifteen Contributors to Urban CPI Inflation (MoM) in March 2023**

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)
		Feb-23	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1 Cigarettes	0.72	15.64	70.34	14.19
2 Milk Fresh	7.11	2.25	4.50	8.10
3 Fresh Fruits	1.44	15.13	20.04	7.83
4 Tea	0.84	0.33	28.46	7.61
5 Wheat Flour	3.01	-3.69	7.84	7.26
6 Cotton Cloth	2.22	2.03	13.30	7.18
7 Electricity Charges	4.56	-1.60	6.21	6.55
8 Readymade Food	5.52	3.86	3.83	5.96
9 Motor Fuel	2.91	16.53	3.09	3.95
10 Cooking Oil	1.10	17.21	7.04	3.50
11 Household Equipments	1.00	8.66	10.56	2.66
12 Sugar	1.11	0.11	12.49	2.61
13 Appliances/Articles/Products For Personal	2.98	4.97	3.29	2.47
14 Marriage Hall Charges	1.75	5.61	5.53	2.38
15 Vegetable Ghee	1.03	16.59	5.05	2.35
<b>Total</b>	<b>37.30</b>			<b>84.60</b>
<b>Bottom 15 Contributors</b>				
1 Onions	0.59	-17.12	-25.94	-8.39
2 Eggs	0.51	-3.28	-12.42	-2.55
3 Chicken	1.36	19.89	-3.66	-1.90
4 Liquefied Hydrocarbons	0.51	35.55	-3.25	-0.74
5 Drugs And Medicines	1.07	4.01	-0.31	-0.08
6 Pulse Gram	0.17	11.03	-1.51	-0.07
7 Pulse Masoor	0.16	5.89	-0.20	-0.01
8 Fish	0.39	2.64	-0.06	0.00
9 Newspapers	0.07	0.00	0.00	0.00
10 Communication Services	1.88	0.00	0.00	0.00
11 Motor Vehicle Tax	0.05	0.00	0.00	0.00
12 House Rent	19.26	0.00	0.00	0.00
13 Woolen Readymade Garments	0.43	0.01	0.00	0.00
14 Gas Charges	1.08	62.82	0.00	0.00
15 Accommodation Services	0.13	0.59	0.02	0.00
<b>Total</b>	<b>27.66</b>			<b>-13.74</b>

**Table A11: Top and Bottom Fifteen Contributors to MoM Urban CPI Food Inflation in March 2023**

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)
		Feb-23	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1 Cigarettes	0.72	15.64	70.34	14.19
2 Milk fresh	7.11	2.25	4.50	8.10
3 Fresh fruits	1.44	15.13	20.04	7.83
4 Tea	0.84	0.33	28.46	7.61
5 Wheat flour	3.01	-3.69	7.84	7.26
6 Readymade food	5.52	3.86	3.83	5.96
7 Cooking oil	1.10	17.21	7.04	3.50
8 Sugar	1.11	0.11	12.49	2.61
9 Vegetable ghee	1.03	16.59	5.05	2.35
10 Beverages	0.89	4.44	11.76	2.25
11 Fresh vegetables	1.53	13.97	6.22	2.15
12 Wheat	0.61	-3.28	8.29	2.02
13 Condiments and Spices	1.33	5.35	4.81	1.65
14 Rice	1.18	9.54	3.30	1.36
15 Potatoes	0.45	4.13	11.26	1.19
<b>Total</b>	<b>27.88</b>			<b>70.04</b>
<b>Bottom 15 Contributors</b>				
1 Onions	0.59	-17.12	-25.94	-8.39
2 Eggs	0.51	-3.28	-12.42	-2.55
3 Chicken	1.36	19.89	-3.66	-1.90
4 Pulse gram	0.17	11.03	-1.51	-0.07
5 Pulse masoor	0.16	5.89	-0.20	-0.01
6 Fish	0.39	2.64	-0.06	0.00
7 Mustard oil	0.01	10.40	0.95	0.00
8 Butter	0.09	1.33	0.29	0.01
9 Gur	0.04	1.06	1.86	0.01
10 Pulse moong	0.17	6.35	0.47	0.02
11 Besan	0.08	10.98	1.11	0.03
12 Dessert preparation	0.04	16.72	2.40	0.03
13 Dry fruits	0.33	6.07	0.35	0.03
14 Honey	0.10	-0.01	1.95	0.04
15 Pulse mash	0.12	10.35	1.73	0.04
<b>Total</b>	<b>4.16</b>			<b>-12.70</b>

**Table A12: Top and Bottom Fifteen Contributors to MoM Urban CPI Non-Food Inflation in March 2023**

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)
		Feb-23	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1 Cotton cloth	2.22	2.03	13.30	7.18
2 Electricity charges	4.56	-1.60	6.21	6.55
3 Motor fuel	2.91	16.53	3.09	3.95
4 Household equipments	1.00	8.66	10.56	2.66
5 Appliances/Articles/Products for Personal	2.98	4.97	3.29	2.47
6 Marriage Hall Charges	1.75	5.61	5.53	2.38
7 Washing soap/detergents/match Box	1.41	5.43	4.70	2.06
8 Motor vehicles	0.81	10.32	6.73	1.58
9 Transport services	1.75	5.12	3.65	1.53
10 Communication apparatus	0.45	12.20	14.75	1.28
11 Readymade garments	1.32	0.19	4.61	1.28
12 Education	4.88	0.12	1.25	1.27
13 Woolen cloth	0.84	0.12	5.94	1.11
14 Personal Effects n.e.c.	0.94	4.75	2.19	0.77
15 Hosiery	0.41	0.43	6.48	0.58
<b>Total</b>	<b>28.23</b>			<b>36.65</b>
<b>Bottom 15 Contributors</b>				
1 Liquefied Hydrocarbons	0.51	35.55	-3.25	-0.74
2 Drugs and medicines	1.07	4.01	-0.31	-0.08
3 Newspapers	0.07	0.00	0.00	0.00
4 Communication Services	1.88	0.00	0.00	0.00
5 Motor vehicle tax	0.05	0.00	0.00	0.00
6 House rent	19.26	0.00	0.00	0.00
7 Woolen readymade garments	0.43	0.01	0.00	0.00
8 Gas charges	1.08	62.82	0.00	0.00
9 Accommodation Services	0.13	0.59	0.02	0.00
10 Therapeutic Appliances and Equipme	0.01	0.61	0.84	0.00
11 Postal services	0.02	1.94	0.22	0.00
12 Dental services	0.02	1.25	1.95	0.01
13 Garbage collection	0.11	0.38	0.31	0.01
14 Cleaning and laundering	0.07	4.32	0.71	0.01
15 Electrical Appliances for Personal	0.05	0.73	1.73	0.01
<b>Total</b>	<b>24.74</b>			<b>-0.78</b>

**Table A13: Top Ten Contributors to Rural CPI Inflation (YoY) in March 2023**

Items/Contributors	Weights	YoY Change		Weighted Contribution (%)
		Mar-22	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1 Milk Fresh	10.38	11.49	39.88	9.56
2 Wheat	3.47	4.98	88.25	8.73
3 Motor Fuels	2.49	35.77	76.09	6.12
4 Wheat Flour	3.43	16.22	53.59	4.84
5 Solid Fuel	4.48	15.07	37.70	4.29
6 Readymade Food	3.80	15.27	39.08	4.09
7 Vegetable Ghee	2.38	56.43	36.34	4.03
8 Rice	1.55	8.73	81.04	3.95
9 Cigarettes	1.24	1.80	144.09	3.80
10 Onions	0.90	1.09	302.69	3.55
<b>Total</b>	<b>34.12</b>			<b>52.96</b>
<b>B. Ranked by Percentage Change</b>				
1 Onions	0.90	1.09	302.69	3.55
2 Cigarettes	1.24	1.80	144.09	3.80
3 Wheat	3.47	4.98	88.25	8.73
4 Rice	1.55	8.73	81.04	3.95
5 Tea	1.26	11.74	80.88	2.45
6 Motor Fuels	2.49	35.77	76.09	6.12
7 Eggs	0.57	-15.05	75.34	1.05
8 Dessert Preparation	0.01	7.36	73.00	0.02
9 Fresh Fruits	1.45	37.80	72.56	2.84
10 Text Books	0.50	8.65	71.28	0.72
<b>Total</b>	<b>13.44</b>			<b>33.23</b>
<b>C. Ranked by Weights</b>				
1 Milk Fresh	10.38	11.49	39.88	9.56
2 House Rent	8.61	5.92	6.90	1.35
3 Solid Fuel	4.48	15.07	37.70	4.29
4 Readymade Food	3.80	15.27	39.08	4.09
5 Wheat	3.47	4.98	88.25	8.73
6 Electricity Charges	3.44	4.83	31.73	2.54
7 Wheat Flour	3.43	16.22	53.59	4.84
8 Cotton Cloth	2.84	9.03	21.18	1.69
9 Motor Fuels	2.49	35.77	76.09	6.12
10 Vegetable Ghee	2.38	56.43	36.34	4.03
<b>Total</b>	<b>45.32</b>			<b>47.24</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 38.9 percent in March 2023.

**Table A14: Top Ten Contributors to Rural CPI Inflation (MoM) in March 2023**

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)
		Feb-23	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1 Cigarettes	1.24	6.12	70.44	22.18
2 Fresh Fruits	1.45	21.19	31.30	13.41
3 Milk Fresh	10.38	4.63	4.01	10.76
4 Vegetable Ghee	2.38	12.35	5.82	6.93
5 Cotton Cloth	2.84	0.68	7.25	5.45
6 Tea	1.26	2.79	12.73	5.16
7 Electricity Charges	3.44	-1.60	6.21	5.14
8 Readymade Food	3.80	4.15	4.37	5.07
9 Sugar	2.03	0.51	9.55	3.82
10 Motor Fuels	2.49	17.99	3.24	3.71
<b>Total</b>	<b>31.31</b>			<b>81.63</b>
<b>B. Ranked by Percentage Change</b>				
1 Cigarettes	1.24	6.12	70.44	22.18
2 Fresh Fruits	1.45	21.19	31.30	13.41
3 Potatoes	0.74	1.04	17.65	3.16
4 Beverages	0.55	2.14	13.63	1.60
5 Tea	1.26	2.79	12.73	5.16
6 Tomatoes	0.51	-15.05	10.13	0.75
7 Sugar	2.03	0.51	9.55	3.82
8 Dessert Preparation	0.01	13.91	8.74	0.03
9 Stationery	0.37	2.11	8.67	0.90
10 Household Equipments	1.28	4.06	7.88	2.70
<b>Total</b>	<b>9.44</b>			<b>53.71</b>
<b>C. Ranked by Weights</b>				
1 Milk Fresh	10.38	4.63	4.01	10.76
2 House Rent	8.61	0.00	0.00	0.00
3 Solid Fuel	4.48	3.59	0.81	1.05
4 Readymade Food	3.80	4.15	4.37	5.07
5 Wheat	3.47	-6.26	0.78	1.21
6 Electricity Charges	3.44	-1.60	6.21	5.14
7 Wheat Flour	3.43	-2.78	1.78	2.03
8 Cotton Cloth	2.84	0.68	7.25	5.45
9 Motor Fuels	2.49	17.99	3.24	3.71
10 Vegetable Ghee	2.38	12.35	5.82	6.93
<b>Total</b>	<b>45.32</b>			<b>41.35</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 3.5 percent in March 2023.

**Table A15: Top and Bottom Fifteen Contributors to Rural CPI Inflation (YoY) in March 2023**

Items/Contributors	Weights	YoY Change		Weighted Contribution (%)
		Mar-22	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1 Milk Fresh	10.38	11.49	39.88	9.56
2 Wheat	3.47	4.98	88.25	8.73
3 Motor Fuels	2.49	35.77	76.09	6.12
4 Wheat Flour	3.43	16.22	53.59	4.84
5 Solid Fuel	4.48	15.07	37.70	4.29
6 Readymade Food	3.80	15.27	39.08	4.09
7 Vegetable Ghee	2.38	56.43	36.34	4.03
8 Rice	1.55	8.73	81.04	3.95
9 Cigarettes	1.24	1.80	144.09	3.80
10 Onions	0.90	1.09	302.69	3.55
11 Fresh Fruits	1.45	37.80	72.56	2.84
12 Electricity Charges	3.44	4.83	31.73	2.54
13 Tea	1.26	11.74	80.88	2.45
14 Chicken	1.46	15.09	47.01	2.29
15 Condiments And Spices	1.49	-14.89	58.33	2.19
<b>Total</b>	<b>43.22</b>			<b>65.27</b>
<b>Bottom 15 Contributors</b>				
1 Tomatoes	0.51	158.82	-31.14	-0.44
2 Postal Services	0.01	0.00	0.00	0.00
3 Newspapers	0.02	0.00	0.10	0.00
4 Garbage Collection	0.01	12.67	5.78	0.00
5 Water Supply	0.06	1.63	1.63	0.00
6 Communication Services	1.65	0.62	0.16	0.00
7 Honey	0.03	18.61	6.45	0.00
8 Motor Vehicle Tax	0.02	-5.56	24.88	0.01
9 Dental Services	0.02	7.92	23.52	0.01
10 Cleaning And Laundering	0.02	19.28	25.95	0.01
11 Accommodation Services	0.14	0.00	7.08	0.02
12 Ice Cream	0.06	6.40	11.99	0.02
13 Mustard Oil	0.01	57.20	38.85	0.02
14 Dessert Preparation	0.01	7.36	73.00	0.02
15 Major Tools And Equipments	0.03	13.20	41.42	0.03
<b>Total</b>	<b>2.60</b>			<b>-0.30</b>

**Table A16: Top and Bottom Fifteen Contributors to Rural CPI (MoM) Inflation in March 2023**

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)
		Feb-23	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1 Cigarettes	1.24	6.12	70.44	22.18
2 Fresh Fruits	1.45	21.19	31.30	13.41
3 Milk Fresh	10.38	4.63	4.01	10.76
4 Vegetable Ghee	2.38	12.35	5.82	6.93
5 Cotton Cloth	2.84	0.68	7.25	5.45
6 Tea	1.26	2.79	12.73	5.16
7 Electricity Charges	3.44	-1.60	6.21	5.14
8 Readymade Food	3.80	4.15	4.37	5.07
9 Sugar	2.03	0.51	9.55	3.82
10 Motor Fuels	2.49	17.99	3.24	3.71
11 Potatoes	0.74	1.04	17.65	3.16
12 Rice	1.55	9.09	3.91	2.76
13 Household Equipments	1.28	4.06	7.88	2.70
14 Condiments And Spices	1.49	10.91	5.09	2.40
15 Washing Soaps, Detergents And Match Box	1.70	5.35	4.41	2.26
<b>Total</b>	<b>38.07</b>			<b>94.91</b>
<b>Bottom 15 Contributors</b>				
1 Onions	0.90	-7.50	-30.58	-17.33
2 Eggs	0.57	-2.09	-12.20	-2.82
3 Chicken	1.46	15.25	-2.06	-1.26
4 Liquefied Hydrocarbons	1.00	23.64	-2.92	-1.19
5 Pulse Masoor	0.21	8.69	-1.95	-0.11
6 Drugs And Medicines	1.58	-0.45	-0.24	-0.11
7 Pulse Gram	0.28	8.85	-0.37	-0.03
8 Mustard Oil	0.01	10.09	-2.31	-0.01
9 Pulse Moong	0.25	8.20	-0.20	-0.01
10 Postal Services	0.01	0.00	0.00	0.00
11 Newspapers	0.02	0.00	0.00	0.00
12 Garbage Collection	0.01	0.00	0.00	0.00
13 Communication Services	1.65	0.00	0.00	0.00
14 Accommodation Services	0.14	0.00	0.00	0.00
15 Motor Vehicle Tax	0.02	0.00	0.00	0.00
<b>Total</b>	<b>8.11</b>			<b>-22.87</b>

**Table A17: Top and Bottom Fifteen Contributors to MoM Rural CPI Food Inflation in March 2023**

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)
		Feb-23	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1 Cigarettes	1.24	6.12	70.44	22.18
2 Fresh fruits	1.45	21.19	31.30	13.41
3 Milk fresh	10.38	4.63	4.01	10.76
4 Vegetable ghee	2.38	12.35	5.82	6.93
5 Tea	1.26	2.79	12.73	5.16
6 Readymade Food	3.80	4.15	4.37	5.07
7 Sugar	2.03	0.51	9.55	3.82
8 Potatoes	0.74	1.04	17.65	3.16
9 Rice	1.55	9.09	3.91	2.76
10 Condiments and Spices	1.49	10.91	5.09	2.40
11 Wheat Flour	3.43	-2.78	1.78	2.03
12 Fresh Vegetables	2.09	14.30	3.42	1.76
13 Cooking oil	0.60	12.94	5.34	1.64
14 Beverages	0.55	2.14	13.63	1.60
15 Wheat	3.47	-6.26	0.78	1.21
<b>Total</b>	<b>36.47</b>			<b>83.88</b>
<b>Bottom 15 Contributors</b>				
1 Onions	0.90	-7.50	-30.58	-17.33
2 Eggs	0.57	-2.09	-12.20	-2.82
3 Chicken	1.46	15.25	-2.06	-1.26
4 Pulse Masoor	0.21	8.69	-1.95	-0.11
5 Pulse Gram	0.28	8.85	-0.37	-0.03
6 Mustard oil	0.01	10.09	-2.31	-0.01
7 Pulse Moong	0.25	8.20	-0.20	-0.01
8 Honey	0.03	-0.05	0.21	0.00
9 Ice Cream	0.06	0.00	0.39	0.00
10 Fish	0.26	2.18	0.15	0.01
11 Milk powder	0.11	3.66	0.83	0.02
12 Besan	0.07	5.69	1.42	0.03
13 Wheat Products	0.11	5.77	0.81	0.03
14 Dessert Preparation	0.01	13.91	8.74	0.03
15 Pan Prepared	0.04	1.90	3.60	0.05
<b>Total</b>	<b>4.37</b>			<b>-21.40</b>

**Table A18: Top and Bottom Fifteen Contributors to MoM Rural CPI Non-Food Inflation in March 2023**

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)
		Feb-23	Mar-23	
<b>A. Ranked by Weighted Contribution</b>				
1 Cotton Cloth	2.84	0.68	7.25	5.45
2 Electricity Charges	3.44	-1.60	6.21	5.14
3 Motor Fuels	2.49	17.99	3.24	3.71
4 Household Equipments	1.28	4.06	7.88	2.70
5 Washing Soaps, Detergents and Match Box	1.70	5.35	4.41	2.26
6 Appliances/Articles/Products for Personal	2.27	4.80	4.36	2.25
7 Footware	1.92	0.90	3.65	1.54
8 Readymade Garments	1.13	0.65	5.17	1.39
9 Woolen Cloth	1.10	1.00	4.35	1.15
10 Solid Fuel	4.48	3.59	0.81	1.05
11 Stationery	0.37	2.11	8.67	0.90
12 Transport Services	1.80	2.23	1.50	0.76
13 Tailoring	1.30	1.51	2.29	0.73
14 Personal Grooming Services	1.54	2.86	1.49	0.70
15 Marriage Hall Charges	2.25	13.38	1.10	0.61
<b>Total</b>	<b>29.90</b>			<b>30.34</b>
<b>Bottom 15 Contributors</b>				
1 Liquefied Hydrocarbons	1.00	23.64	-2.92	-1.19
2 Drugs and Medicines	1.58	-0.45	-0.24	-0.11
3 Postal Services	0.01	0.00	0.00	0.00
4 Newspapers	0.02	0.00	0.00	0.00
5 Garbage Collection	0.01	0.00	0.00	0.00
6 Communication Services	1.65	0.00	0.00	0.00
7 Accommodation Services	0.14	0.00	0.00	0.00
8 Motor Vehicle Tax	0.02	0.00	0.00	0.00
9 Water Supply	0.06	0.00	0.00	0.00
10 House Rent	8.61	0.00	0.00	0.00
11 Dental Services	0.02	5.55	0.00	0.00
12 Woolen Readymade Garments	0.54	1.22	0.00	0.00
13 Cleaning and Laundering	0.02	7.41	0.11	0.00
14 Hospitals Services	1.01	3.10	0.05	0.01
15 Major Tools and Equipments	0.03	3.14	5.35	0.04
<b>Total</b>	<b>14.71</b>			<b>-1.24</b>

**Table A19: Distribution of Price Changes (YoY) - Selected Urban CPI Items: March 2023**

<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>
Food & Non-Alcoholic Beverages	Tomatoes, Cardamom Small (Average Quality), Chilies Powder National 200 Gm Packet, Kinnu (Average Quality), Peach (Average Quality), Grapes (Angoor) (Average Quality), Mango	Gur (Average Quality), Chilies (Green),	Peas (Matar), Garlic (Lehsun), Honey Marhaba Bottle 500 Gim,	Cardamom Large (Loose) (Average Quality), Jam-E-Shireen Standard Size (800 ML), Almonds (Badam) Kaghazi With Shell (Average Quality), Beef With Bone (Average Quality), Sugar Refined,
Alcoholic Beverages & Tobacco				Pan Prepared (Sweet With Beetle Nuts), Cigarettes Capstan 20'S Packet, Cigarettes Gold Leaf 20'S Packet,
Clothing & Footwear	Cheetah 50 Size 3-5 Servis, Gents Shoes Servis, Children Shoes Power Lite Bata, Ladies Sandal Bata,		Pant Cloth Wash & Wear (Average Quality),	Dopatta Georgette (Average Quality), Gents Shoes Paul Bata, Dry Cleaning Charges Pant Coat Both, Shirt Boy Length 24"/26", Socks Nylon Local (Average Quality), Heavy Weight Suiting Lawrence Pur (Average Quality), Vest "Baniyan" For Men Average Quality, Women Shawl Kameez (Average Quality), Gents Sandal Bata, Pullover Gents (Average Quality), Awami
Housing, Water, Elec, Gas & other Fuels		Electricity Charges Upto 50 Units, Water Charges Per House,	House Rent Combined, Electricity Charges 51-100 Units,	Bricks New 1St Class, Charges For Refuse/Waste Collection, Mason Wage Rate, Electrician Charges, Painter Wage Rate, Plumber Wage Rate, Unskilled Labor Wage Rate, Gas Charges 10.1157 - 13.4876 Mmbtu , Gas Charges 6.7438 - 10.1157 Mmbtu ,
Furnishing & Household Equip. etc Maintenance etc			Bed Sheet Double With Two Pillow Covers (Superior Quality),	Bed Sheet Single (Superior Quality), Plain Carpet, Bucket (Balti) Plastic Medium Size, Dinner Set Plastic 72 Pieces Super Quality, Household Servant Female Part Time, Water Set (Omroo) 6 Glasses + Jug, Dining Table Wit Glass Top And Six Chairs (Average Quality), Blanket Single (Sn),
Health		Ventolin Tablets 2 Mg, Phenergan Syrup 120 ML Bottle, Electronic Bp Checking Apparatus, Flagyl Tablets 400 Mg,	Physiotherapy Fee Per Visit, Sugar Test (Random/Fasting) Charges Of Both, Glucometer, Amoxil Capsule 250 Mg, Cost Of Surgery (C-Section), Cac 1000 Tablets Sandoz Bottle, Lederplex Syrup Bottle, Gynecologist Fee Per Visit,	Hydralin Syrup 120 ML Bottle, Inderal Tablets 10 Mg, Dental Extraction Fee, Ecg Charges, Septra Tablets, Urine Test (Dr) Charges, Dental Surgeon Fee Per Visit, Calpol Syrup 100 ML Bottle, Blood Test (Cp) Charges, Ultrasound Abdominal, Johar Jashanda Instant (Sachet) Packet, Entox
Transport	Car Suzuki 800 Cc Without Ac,		Car Tax 800 Cc To 1500 Cc,	Cng, Car Service Charges, Mini Bus Fare Maximum Within City, Mini Bus Fare Minimum Within City, Tire Car Puncture Charges, Bus Fare Outside City (Ac), Bus Fare Maximum Within City, Motorcycle Service Charges, Bus Fare Outside City (Non Ac), Car Toyota 1300 Cc Xli, Bus
Communication	Mobile Call Charges, Telephone Call Charges,	Internet Charges (Dsl) 1 Mb (Unlimited),		Courier Charges Minimum Within Zone Outside City (Tcs), Mobile Set With Rear Camera And Without Touch Screen,
Recreation & Culture	Newspaper Daily Jang, Mag The Weekly (Magazine),		Recreational Park Charges (Minimum Playland Ticket), Akhbar-E-Jehan Weekly, Urdu Book Ba/B.Sc,	Cable Charges, Newspaper Daily Dawn, Personal Computer With Led Monitor (17") Dell/Hp/Acer Core i5, English Book Ba/B.Sc, Laptop Dell/Hp/Acer Core i5, Display (14"-15"), Led Sony/Samsung 32" Colored, Pen Ink Dollar 57 MI Bottle, Ballpoint Pen Local, Lead Pencil Goldfish,
Education	Government College Fee First Year, Government University Fee M.S.C / M.A., Tuition Fee Private University M.Sc./M.A. Private Engineering University Tuition Fee For Be (1St	Government College Fee First Year, Coaching Fee For Class Xi/Xii Science Group, Coaching Fee For Class Xi/Xii Commerce Group, Private School Fee English Medium	Private College Fee First Year, Coaching Fee For Class Xi/Xii Commerce Group,	Coaching Fee For Class Ix/X Science Group,
Restaurant & Hotels		Government Hostel Accommodation Fee For Intermediate College Per Student,		Private Hostel Accommodation Fee For Intermediate College Per Student, Pizza Chicken Medium Size (Average Quality), Marriage Hall Service Charges With Food (Average Meal), Cooked Daal At Average Hotel, Seekh Kabab (Beef) (Average
Miscellaneous			Purse Ladies Medium Size (Average Quality),	Electric Hair Straightener (Philips), Hair Style Charges (At Average Beauty Parlor), Perfume Medium Size Broche/Medora, Shaving Cream (Touchme Large/Admiral), Nail Polish Swiss Miss/Medora (Medium), Tooth Brush (Shield), Wall Clock Quartz (Average Quality), Tissue Paper Perfumed

**Table A20: Distribution of Price Changes (YoY) - Selected Rural CPI Items: March 2023**

<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>
Food & Non-Alcoholic Beverages	Tomatoes, Chilies (Green),	Peas (Matar), Garlic (Lehsun),	Honey Marhaba Bottle 500 Gm, Cauliflower (Phool Gobhi),	Gur (Average Quality), Ice Cream Walls Cup (Large Size), Jam-E-Shireen Standard Size (800 MI), Sugar Refined, Beef With Bone (Average Quality), Fish Fresh, Mutton (Average Quality), Almonds (Badam) Kaghazi With Shell (Average Quality), Turnip (Shalgam), Desi Ghee, Chips
Alcoholic Beverages & Tobacco				Pan Prepared (Sweet With Beetle Nuts), Tobacco Hukka Twisted, Chewing Tobacco (Niswar), Cigarettes Capstan 20'S Packet, Cigarettes Gold Leaf 20'S Packet,
Clothing & Footwear				Chaddar (Wash-N-Wear) (2X2.5 Meter), Doppatta Georgette (Average Quality), Footware Gents Local (Average Quality), Shirting (Average Quality), Pullover Ladies (Average Quality), Shirt Boy Length 24"/26", Full Pant Boy Length 24"/26", Pullover Gents (Average Quality), Lawn Printed (Average Quality), Shoe Repair Full Sole, Footware Ladies Local (Average)
Housing, Water, Elec, Gas & other Fuels		Water Charges Per House, Electricity Charges Upto 50 Units,	Charges For Refuse/Waste Collection, Electricity Charges 51-100 Units, House Rent Combined,	Carpenter Wage Rate, Mason Wage Rate, Unskilled Labor Wage Rate, Painter Wage Rate, Plumber Wage Rate, Electrician Charges, Bricks New 1St Class, Electricity Charges 101-300 Units, Electricity Charges Combined, Lpg 11.67 Kg Cylinder, Coal,
Furnishing & Household Equip. Maintenance etc				Aluminium Cooking Pan (Degchi), Bucket (Bali) Plastic Medium Size, Blanket Single (Sn), Water Set (Omroc) 6 Glass, Readymade Quilt (3 Kg), Cot Iron (Charpai), Dinner Set Plastic 72 Pieces Super Quality, Lota Plastic Medium Size
Health			Cost Of Surgery (C-Section), Hydryllin Syrup 120 MI Bottle, Physiotherapist Fee Per Visit, Cac 1000 Tablets Sandoz Bottle, Daonil Tablets 5 Mg, Amoxil Capsule 250	Inderal Tablets 10 Mg, Blood Test (Cp) Charges, X-Ray (Chest) Charges, Johar Jashanda Instant (Sachet) Packet, Doctor (Mbbs) Clinic Fee, Dental Surgeon Fee Per Visit, Panadol Tablets Plain, Dettol Medium
Transport	Car Suzuki 800 Cc Without Ac,		Bus Fare Outside City (Non Ac),	Motorcycle Service Charges, Cng, Car Tax 800 Cc To 1500 Cc, Tire Cycle, Air Fare Economy Class Per Kilometer, Tire Motorcycle Cd 70 (Back Wheel), Bicycle, Tire Car Mehran Tubeless (General), Mobil Oil (Havoline 20W-50), Motorcycle Honda
Communication	Postal Registration Charges, Mobile Call Charges, Telephone Call Charges,	Internet Charges (Dsl) 1 Mb (Unlimited),		Mobile Set With Rear Camera And Without Touch Screen,
Recreation & Culture		Newspaper Daily Jang,		Cable Charges, Led Sony/Samsung 32" Colored, Personal Computer With Led Monitor (17") Dell/Hp/Acer Core I5, Lead Pencil Goldfish, Ballpoint Pen Local, Exercise Book (With Lines) 80 To 100 Pages, Pets Feed, English Books Class Xi Complete Set English Books Class Vi
Education			Vocational Training Basic Computer Short Course Fee (3 Months) ,	Private School Fee English Medium Average Standard (Class Vi), Private School Fee English Medium Average Standard (Class V), Private School Fee English Medium Average Standard (Class I), Coaching Fee For Class IX/X Science Group,
Restaurant & Hotels	Government Hostel Accommodation Fee For Intermediate College Per Student,			Marriage Hall Charges With Furniture, Private Hostel Accommodation Fee For Intermediate College Per Student, Pizza Chicken Medium Size (Average Quality), Seekh Kabab (Beef) (Average Quality), Marriage Hall Service Charges With Food
Miscellaneous				Tooth Brush (Shield), Shaving Cream (Touchme Large/Admiral), Talcum Powder Viceroy/Black Cat, Hair Color (Kala Kola), Tooth Paste Colgate 75 Gm, Trunk Medium Size (Average Quality), Hair Removing Cream (Eu-Cream) 30MI Tube, Shaving Charges, Hair Cut Charges For Men, Artificial Jewelry (Locket Set) (Average)

**Table A21: Distribution of Price Changes (YoY) - WPI Items: March 2023**

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 & Fisher Product	Fiber Crops,			Unmanufactured Tobacco, Sorghum / Jowar, Fish Live Fresh or Chilled, Raw Animal Materials / Wool, Sugar Crops, Raw Milk from Bovine Animals, Fuel Wood in Logs, Cotton Seeds, Other Oil Seeds, Vegetables, Millet / Bajra, Poultry, Edible Roots / Potatoes,
Ores/Minerals, Elec., Gas & Water				Natural Gas Liquified, Electrical Energy, Salt & Pure Sodium Chloride, Coal not Agglomerated,
Food, Beverages, Tobacco, Textile, Apparel and Leather Product	Spices, Nylon Yarn, Cotton Yarn, Blended Yarn,		Synthetic Carpets, Chocolate,	Sugar Confectionary, Woven Fabrics, Woolen Carpets, Meat of Animals, Towels, Sugar Refined, Bed Sheets, Hosiery Products, Ice Cream, Leather Without Hair, Other Leather N.E.C, Blankets, Mineral Water,
Other Transportable Goods except Metal Products, Machinery and Equipments	Insecticides,	Other Glass Articles,	Furnace Oil, Pesticides,	Dyeing Material, Bricks, Blocks & Tiles, Plastic Products, Timber, Ceramics & Sanitary Fixture, Cement, Fertilizers, Hard Board, Soaps & Detergents, Bed Foam, Mobil Oil, Kerosene Oil, Paints & Varnishes,
Metal Product, Machinery & Equipments	Vacuum Pumps, Engines & Motors,			Steel Bar & Sheets, Fridge, WashM, SewM, Fans, Iron, Bicycles, Tractors, Motor Vehicles, Lathe Machines, Radio & Television, Motorcycles, Electric Wires, Steel Products, Concrete Mixture, Cultivators, Pipe Fittings,

**Table A22: International Commodity Prices/Indices**

<b>Commodity/Indices</b>	<b>Jun-21</b>	<b>Mar-22</b>	<b>Feb-23</b>	<b>Mar-23</b>
<b>Energy</b>				
Crude Oil (US\$ per barrel)*	71.8	112.4	80.3	76.5
Energy Index (2010 = 100)	93.9	166.7	110.5	103.6
<b>Food</b>				
Rice (\$/MT)	466.0	422.0	492.0	476.0
Wheat (\$/MT)##	285.6	486.3	394.8	369.9
Sugar, World (\$/KG)	0.4	0.4	0.4	0.5
Palm Oil (\$/MT)	1,004.4	1,777.0	950.0	972.1
Soybean Oil (\$/MT)	1,518.2	1,956.9	1,243.0	1,113.2
<b>Non-Food Non-Energy</b>				
Cotton Outlook 'A' Index (\$/KG) #	2.1	3.1	2.2	2.1
Metal Price Index (2010 = 100)	119.0	149.9	117.8	113.1
Copper (\$/MT)	9,631.5	10,230.9	8,936.6	8,856.3
Aluminum (\$/MT)	2,446.7	3,498.4	2,416.2	2,296.4
Iron Ore (\$ cents/dry MT)	214.4	152.1	127.6	128.4
Tin (\$/MT)	32,502.6	43,949.7	26,862.9	24,000.0
Nickel (\$/MT)	17,979.6	33,924.2	26,728.0	23,288.6
Zinc (\$/MT)	2,951.9	3,962.2	3,133.8	2,967.5
Lead (\$/MT)	2,191.0	2,344.8	2,093.1	2,115.2
Uranium (\$/MT)@	32.3	58.2	50.9	50.5
DAP (\$/MT)	604.8	938.1	612.5	606.0
Urea (\$/MT)	393.3	872.5	357.5	313.5

**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.

\* 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 Jun 1968 to December 1981 strict middling 1-1/16 inch staple. Prior to 1968, Mexican 1-1/16.2/

## Wheat, US HRW (Hard Red Winter) reported by World Bank.

DAP: Di-ammonium Phosphate

**Table A23: National CPI Data Series Original and Seasonally Adjusted**

<b>Period</b>	<b>Original Series</b>				
	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>
Jul	114.29	123.86	135.38	146.76	183.35
Aug	113.93	125.89	136.23	147.61	187.84
Sep	113.90	126.86	138.32	150.74	185.68
Oct	116.32	129.16	140.67	153.61	194.42
Nov	116.18	130.90	141.83	158.18	195.89
Dec	115.82	130.45	140.86	158.16	196.86
Jan	116.12	133.04	140.56	158.78	202.53
Feb	117.12	131.64	143.09	160.61	211.28
Mar	119.46	131.69	143.61	161.88	219.14
Apr	120.33	130.59	145.09	164.50	
May	121.05	131.01	145.24	165.23	
Jun	121.63	132.08	144.82	175.71	
<b>Seasonally Adjusted Series</b>					
Jul	114.00	123.57	135.08	146.44	182.99
Aug	113.76	125.75	136.12	147.53	187.76
Sep	113.52	126.47	137.92	150.34	185.20
Oct	115.34	128.09	139.51	152.36	192.85
Nov	115.19	129.79	140.62	156.87	194.27
Dec	115.94	130.59	141.02	158.37	197.14
Jan	116.64	133.70	141.33	159.71	203.77
Feb	117.75	132.25	143.66	161.16	211.90
Mar	119.91	132.09	143.95	162.17	219.43
Apr	120.23	130.44	144.88	164.22	
May	121.60	131.59	145.86	165.90	
Jun	122.34	132.90	145.78	176.95	

**Table A24: Urban CPI Data Series Original and Seasonally Adjusted**

<b>Original Series</b>					
<b>Period</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>
Jul	114.94	124.95	134.73	146.41	180.97
Aug	114.58	126.77	135.82	147.12	185.72
Sep	114.49	127.72	137.53	150.08	181.90
Oct	117.04	129.75	139.27	152.59	190.08
Nov	116.94	131.05	140.16	156.96	190.80
Dec	116.57	130.57	139.67	157.46	191.46
Jan	117.07	132.77	139.45	157.56	195.97
Feb	118.08	131.32	142.61	159.03	204.87
Mar	120.29	131.49	142.99	160.07	212.85
Apr	121.29	130.60	144.91	162.63	
May	122.11	130.99	145.19	163.13	
Jun	122.52	131.89	144.55	173.23	
<b>Seasonally Adjusted Series</b>					
Jul	114.51	124.47	134.21	145.83	180.27
Aug	114.27	126.46	135.52	146.83	185.36
Sep	114.16	127.39	137.21	149.76	181.54
Oct	116.32	128.99	138.50	151.78	189.12
Nov	116.27	130.34	139.44	156.21	189.95
Dec	117.01	131.09	140.26	158.16	192.35
Jan	117.76	133.66	140.49	158.83	197.66
Feb	118.78	132.02	143.30	159.73	205.70
Mar	120.78	131.93	143.38	160.42	213.22
Apr	120.88	130.08	144.24	161.79	
May	122.21	131.04	145.17	163.02	
Jun	122.98	132.41	145.16	174.00	

**Table A25: Rural CPI Data Series Original and Seasonally Adjusted**

<b>Original Series</b>					
<b>Period</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>
Jul	113.30	122.22	136.36	147.28	186.94
Aug	112.96	124.56	136.84	148.34	191.04
Sep	113.01	125.55	139.51	151.74	191.38
Oct	115.23	128.28	142.79	155.15	200.96
Nov	115.03	130.67	144.34	160.03	203.57
Dec	114.70	130.28	142.65	159.21	205.00
Jan	114.68	133.44	142.23	160.62	212.43
Feb	115.68	132.13	143.82	162.99	220.95
Mar	118.21	132.00	144.55	164.62	228.63
Apr	118.89	130.58	145.37	167.31	
May	119.45	131.03	145.32	168.39	
Jun	120.29	132.36	145.24	179.45	
<b>Seasonally Adjusted Series</b>					
Jul	113.25	122.20	136.40	147.36	187.10
Aug	112.99	124.67	137.03	148.59	191.38
Sep	112.55	125.08	139.01	151.21	190.72
Oct	113.87	126.74	141.04	153.23	198.46
Nov	113.56	128.96	142.40	157.85	200.77
Dec	114.33	129.84	142.17	158.68	204.36
Jan	114.95	133.75	142.59	161.03	212.99
Feb	116.20	132.59	144.21	163.32	221.24
Mar	118.61	132.33	144.81	164.83	228.80
Apr	119.24	130.99	145.85	167.88	
May	120.67	132.42	146.90	170.25	
Jun	121.38	133.65	146.73	181.40	

**Table A26: National CPI Monthly & Average Seasonal Factors**

<b>Period</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>Average</b>
Jul	100.25	100.24	100.22	100.22	100.20	100.22
Aug	100.15	100.11	100.08	100.05	100.04	100.09
Sep	100.34	100.31	100.29	100.27	100.26	100.29
Oct	100.85	100.83	100.83	100.82	100.82	100.83
Nov	100.86	100.86	100.86	100.84	100.84	100.85
Dec	99.90	99.89	99.88	99.87	99.86	99.88
Jan	99.55	99.51	99.46	99.42	99.39	99.47
Feb	99.47	99.54	99.60	99.66	99.71	99.60
Mar	99.62	99.70	99.77	99.82	99.87	99.75
Apr	100.09	100.11	100.14	100.17		100.13
May	99.55	99.56	99.57	99.59		99.57
Jun	99.42	99.38	99.34	99.30		99.36

**Table A27: Urban CPI Monthly & Average Seasonal Factors**

<b>Period</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>Average</b>
Jul	100.38	100.38	100.39	100.39	100.39	100.39
Aug	100.27	100.24	100.22	100.20	100.19	100.22
Sep	100.29	100.26	100.24	100.22	100.20	100.24
Oct	100.62	100.59	100.56	100.53	100.51	100.56
Nov	100.58	100.55	100.51	100.48	100.45	100.51
Dec	99.62	99.60	99.58	99.56	99.54	99.58
Jan	99.41	99.33	99.26	99.20	99.14	99.27
Feb	99.41	99.47	99.52	99.56	99.59	99.51
Mar	99.60	99.67	99.73	99.78	99.83	99.72
Apr	100.34	100.40	100.46	100.52		100.43
May	99.92	99.96	100.01	100.07		99.99
Jun	99.63	99.61	99.58	99.56		99.59

**Table A28: Rural CPI Monthly & Average Seasonal Factors**

<b>Period</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>Average</b>
Jul	100.05	100.02	99.97	99.94	99.91	99.98
Aug	99.97	99.91	99.86	99.83	99.82	99.88
Sep	100.41	100.38	100.36	100.35	100.35	100.37
Oct	101.19	101.22	101.24	101.26	101.26	101.23
Nov	101.29	101.33	101.36	101.38	101.39	101.35
Dec	100.33	100.34	100.34	100.33	100.32	100.33
Jan	99.77	99.75	99.75	99.74	99.74	99.75
Feb	99.55	99.65	99.73	99.80	99.87	99.72
Mar	99.66	99.75	99.82	99.87	99.93	99.81
Apr	99.71	99.69	99.67	99.66		99.68
May	98.99	98.95	98.93	98.90		98.94
Jun	99.10	99.04	98.98	98.93		99.01

**Table A29: National CPI (Month-on-Month) Original & Seasonally Adjusted**

<b>Original Series</b>					
<b>Period</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>
Jul	1.51	1.83	2.50	1.34	4.35
Aug	-0.31	1.64	0.63	0.58	2.45
Sep	-0.03	0.77	1.53	2.12	-1.15
Oct	2.12	1.81	1.70	1.90	4.71
Nov	-0.12	1.35	0.82	2.98	0.76
Dec	-0.31	-0.34	-0.68	-0.01	0.50
Jan	0.26	1.99	-0.21	0.39	2.88
Feb	0.86	-1.05	1.80	1.15	4.32
Mar	2.00	0.04	0.36	0.79	3.72
Apr	0.73	-0.84	1.03	1.62	
May	0.60	0.32	0.10	0.44	
Jun	0.48	0.82	-0.29	6.34	
<b>Seasonally Adjusted Series</b>					
Jul	0.71	1.00	1.64	0.45	3.41
Aug	-0.21	1.77	0.77	0.74	2.61
Sep	-0.22	0.57	1.32	1.90	-1.36
Oct	1.61	1.29	1.15	1.34	4.13
Nov	-0.13	1.32	0.80	2.96	0.74
Dec	0.65	0.62	0.29	0.96	1.48
Jan	0.60	2.38	0.21	0.84	3.37
Feb	0.95	-1.09	1.65	0.91	3.99
Mar	1.84	-0.12	0.20	0.63	3.55
Apr	0.26	-1.25	0.65	1.26	
May	1.14	0.88	0.67	1.03	
Jun	0.61	1.00	-0.05	6.66	

**Table A30: Urban CPI (Month-on-Month) Original & Seasonally Adjusted Series**

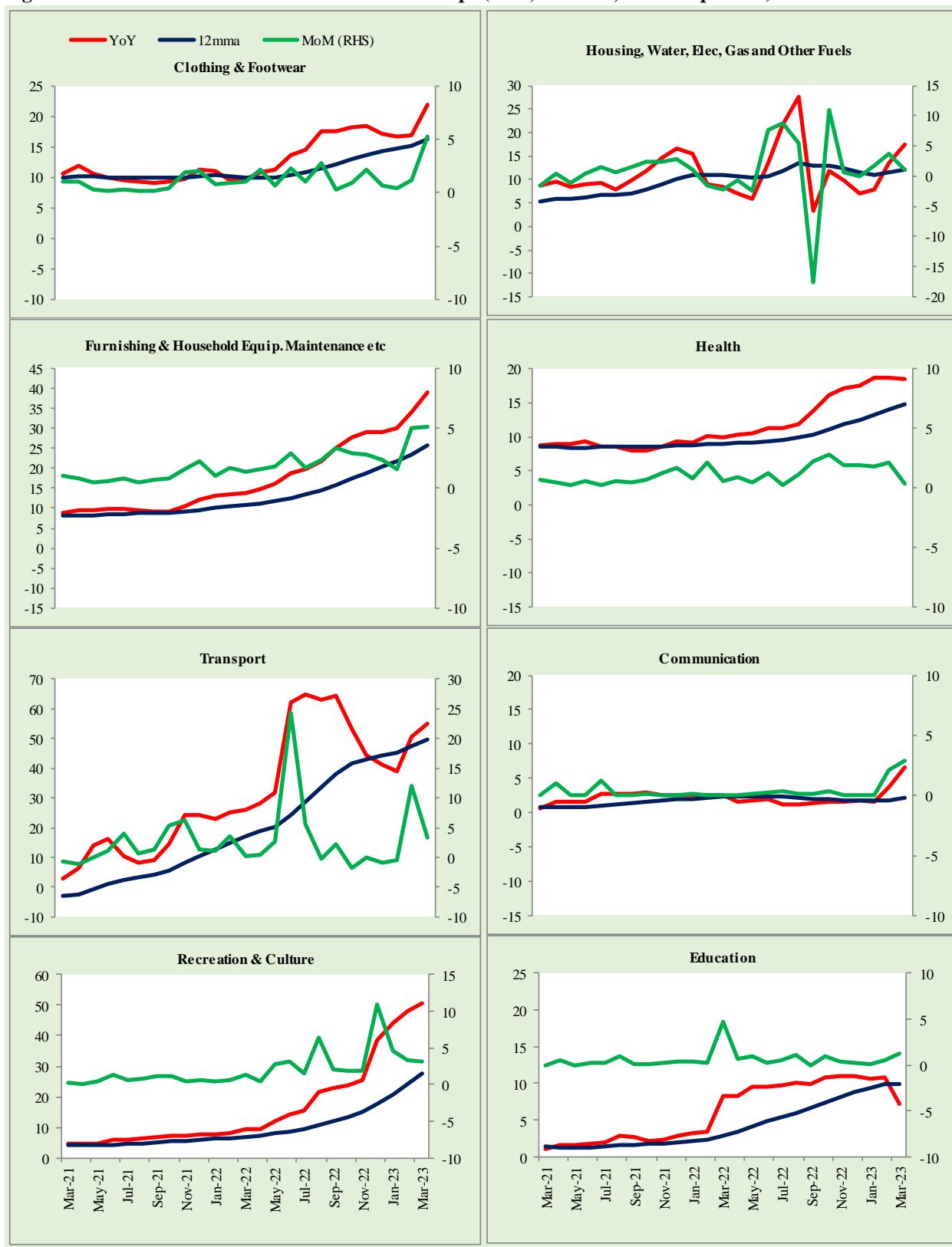
<b>Original Series</b>					
<b>Period</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>
Jul	1.41	1.98	2.15	1.29	4.47
Aug	-0.31	1.46	0.81	0.48	2.62
Sep	-0.08	0.75	1.26	2.01	-2.06
Oct	2.23	1.59	1.27	1.67	4.50
Nov	-0.09	1.00	0.64	2.86	0.38
Dec	-0.32	-0.37	-0.35	0.32	0.35
Jan	0.43	1.68	-0.16	0.06	2.36
Feb	0.86	-1.09	2.27	0.93	4.54
Mar	1.87	0.13	0.27	0.65	3.90
Apr	0.83	-0.68	1.34	1.60	
May	0.68	0.30	0.19	0.31	
Jun	0.34	0.69	-0.44	6.19	
<b>Seasonally Adjusted Series</b>					
Jul	0.67	1.22	1.36	0.47	3.60
Aug	-0.21	1.60	0.98	0.68	2.82
Sep	-0.10	0.73	1.24	1.99	-2.06
Oct	1.89	1.26	0.94	1.35	4.18
Nov	-0.04	1.05	0.68	2.92	0.44
Dec	0.64	0.58	0.59	1.25	1.26
Jan	0.64	1.96	0.16	0.42	2.76
Feb	0.86	-1.23	2.00	0.57	4.07
Mar	1.68	-0.06	0.05	0.43	3.65
Apr	0.09	-1.41	0.61	0.86	
May	1.10	0.74	0.64	0.76	
Jun	0.63	1.05	-0.01	6.73	

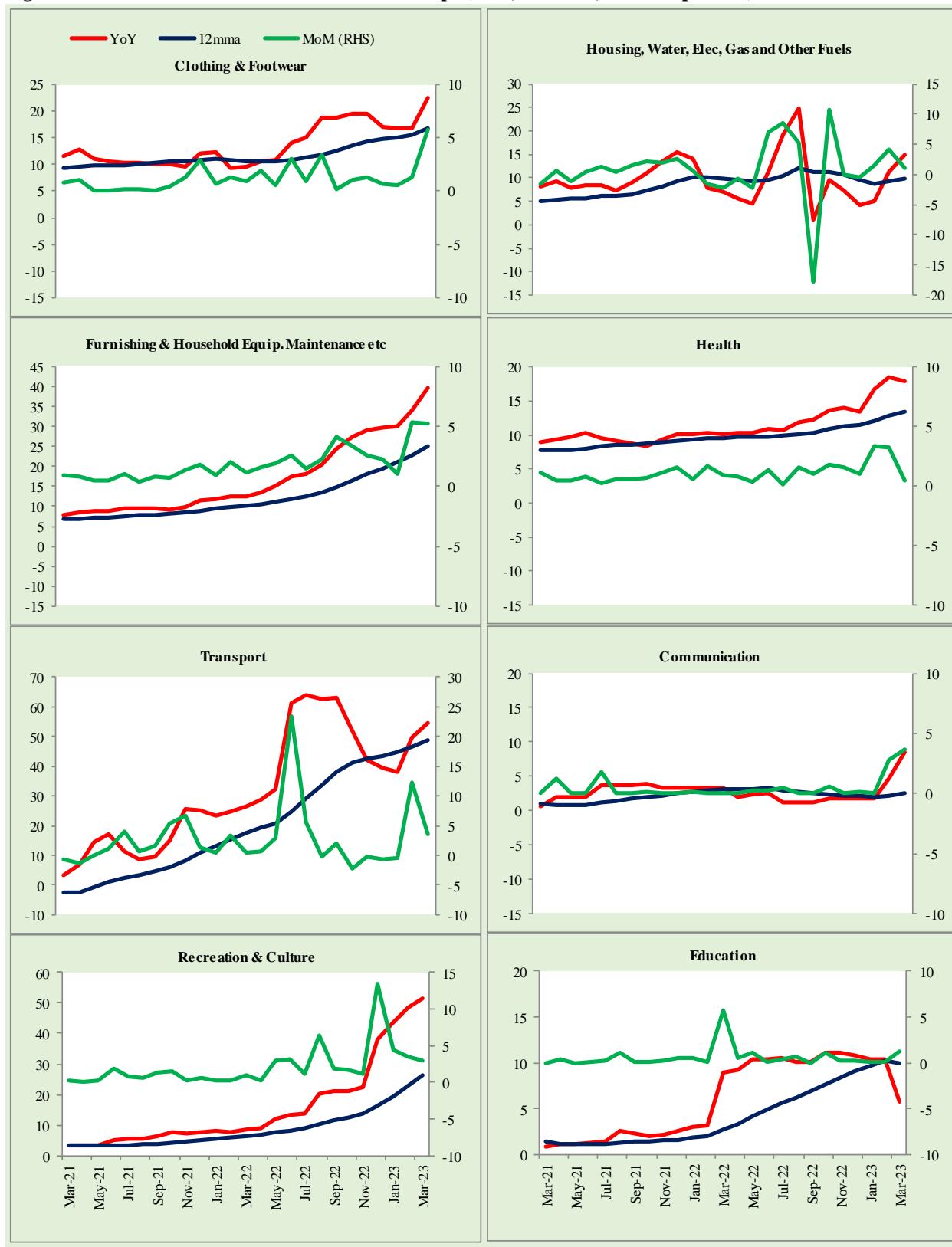
**Table A31: Rural CPI (Month-on-Month) Original & Seasonally Adjusted Series**

<b>Original Series</b>					
<b>Period</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>
Jul	1.67	1.60	3.02	1.40	4.17
Aug	-0.30	1.91	0.35	0.72	2.19
Sep	0.04	0.79	1.95	2.29	0.18
Oct	1.96	2.17	2.35	2.25	5.01
Nov	-0.17	1.86	1.09	3.15	1.30
Dec	-0.29	-0.30	-1.17	-0.51	0.70
Jan	-0.02	2.43	-0.29	0.89	3.62
Feb	0.87	-0.98	1.12	1.48	4.01
Mar	2.19	-0.10	0.51	1.00	3.48
Apr	0.58	-1.08	0.57	1.63	
May	0.47	0.34	-0.03	0.65	
Jun	0.70	1.02	-0.06	6.57	
<b>Seasonally Adjusted Series</b>					
Jul	0.76	0.67	2.06	0.43	3.14
Aug	-0.22	2.02	0.46	0.83	2.29
Sep	-0.39	0.32	1.45	1.76	-0.35
Oct	1.18	1.33	1.46	1.33	4.06
Nov	-0.27	1.75	0.96	3.02	1.16
Dec	0.67	0.69	-0.16	0.53	1.79
Jan	0.54	3.01	0.30	1.48	4.22
Feb	1.09	-0.87	1.14	1.42	3.88
Mar	2.08	-0.20	0.42	0.92	3.41
Apr	0.53	-1.01	0.72	1.85	
May	1.20	1.09	0.72	1.42	
Jun	0.59	0.93	-0.11	6.55	

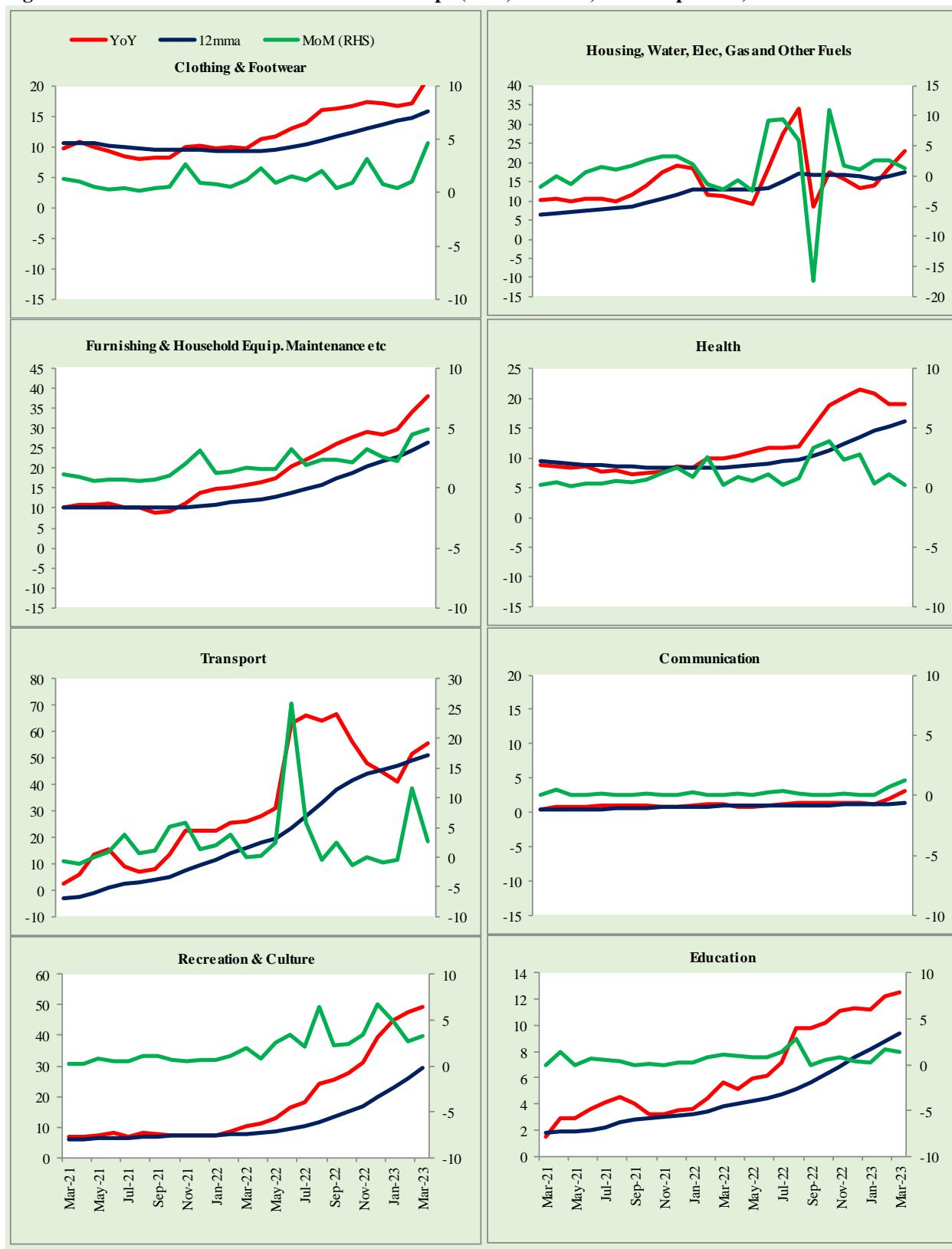
## Figures

**Figure A1: National CPI Inflation – Non Food Groups (YoY, 12MMA, MoM in percent) – March 2023**

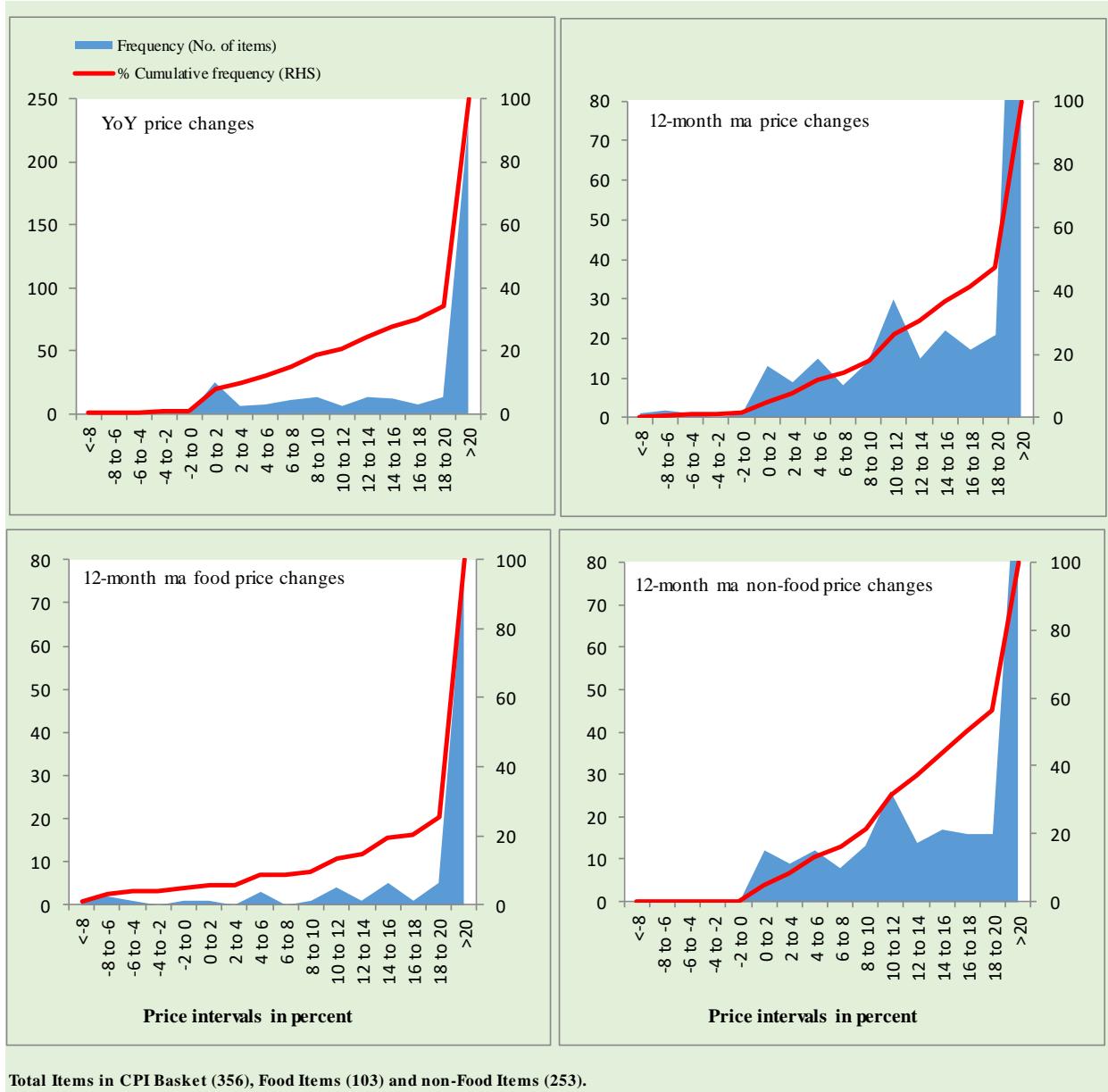


**Figure A2: Urban CPI Inflation – Non Food Groups (YoY, 12MMA, MoM in percent) – March 2023**

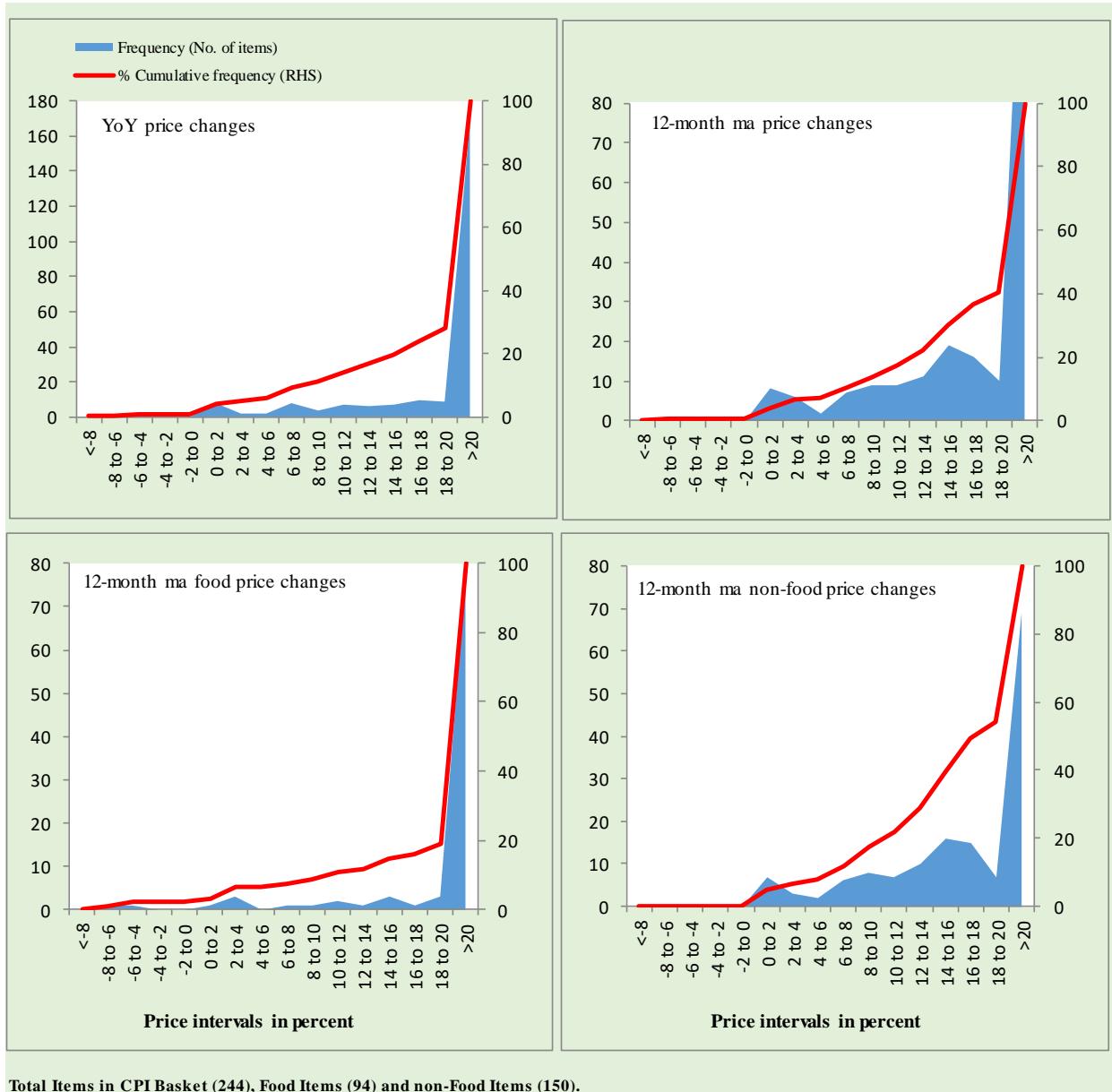
**Figure A3: Rural CPI Inflation – Non Food Groups (YoY, 12MMA, MoM in percent) – March 2023**



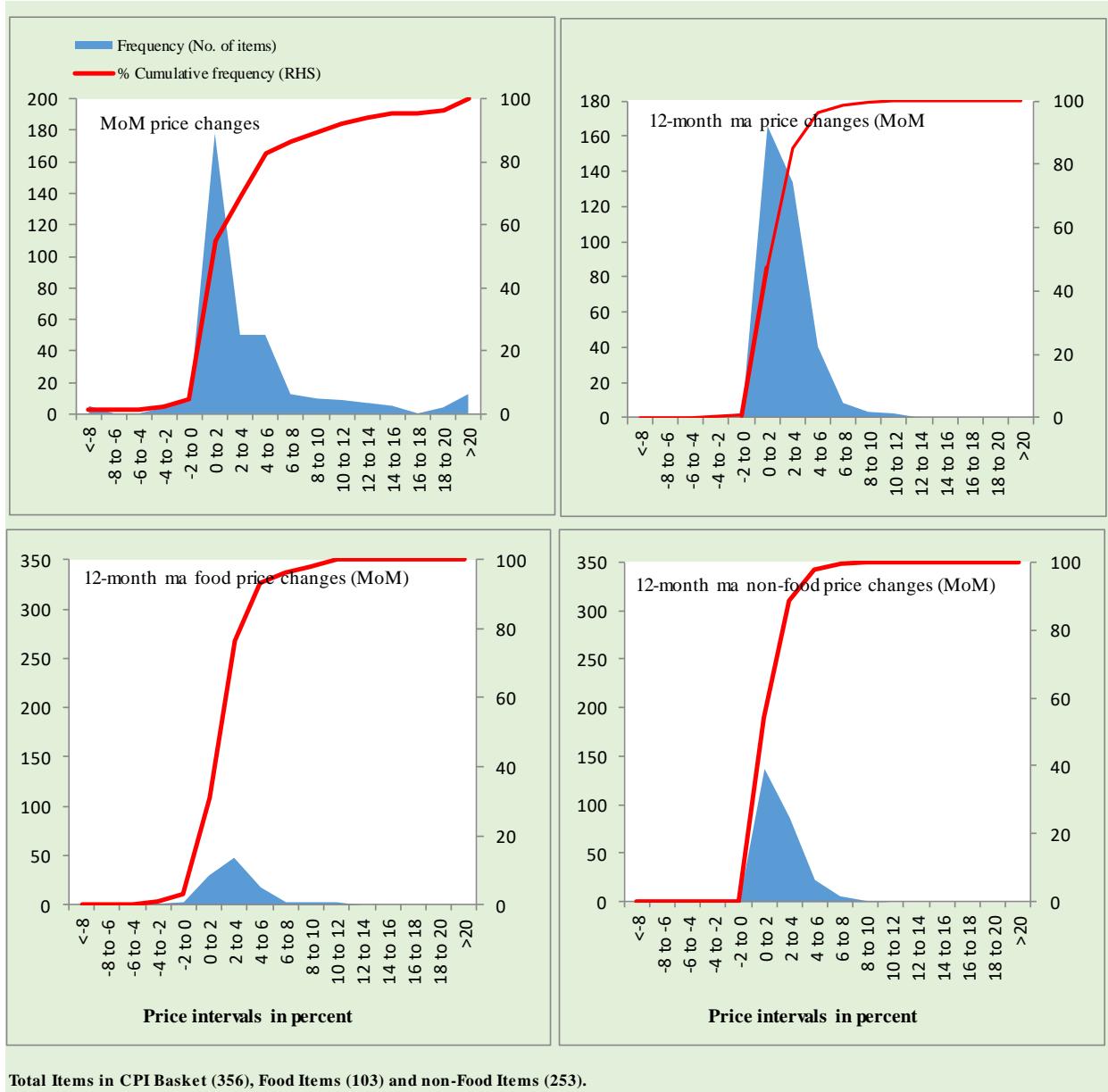
**Figure A4: Frequency Distribution of Price Changes of Urban CPI Items (YoY) – March 2023**



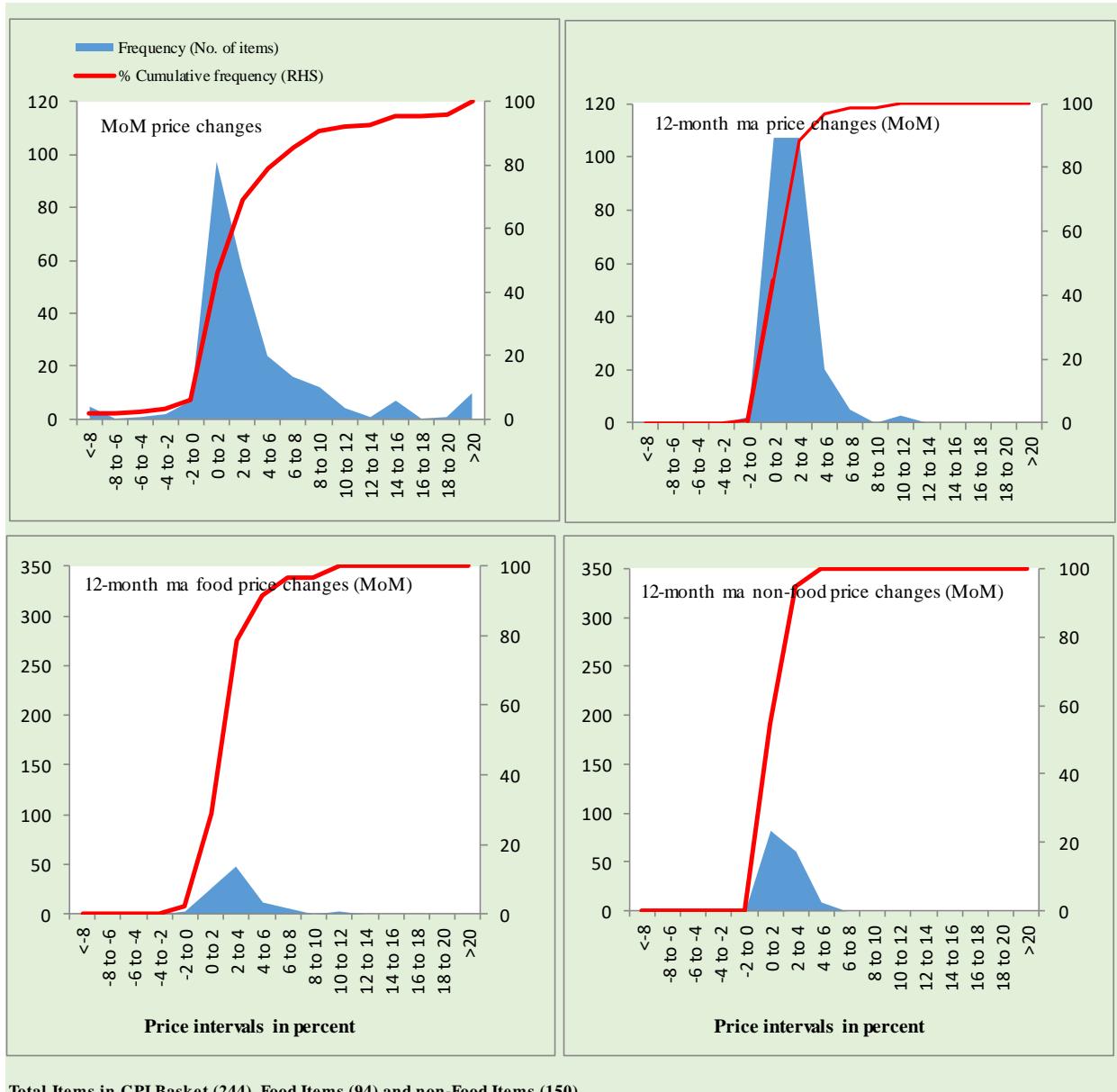
**Figure A5: Frequency Distribution of Price Changes of Rural CPI Items (YoY) – March 2023**



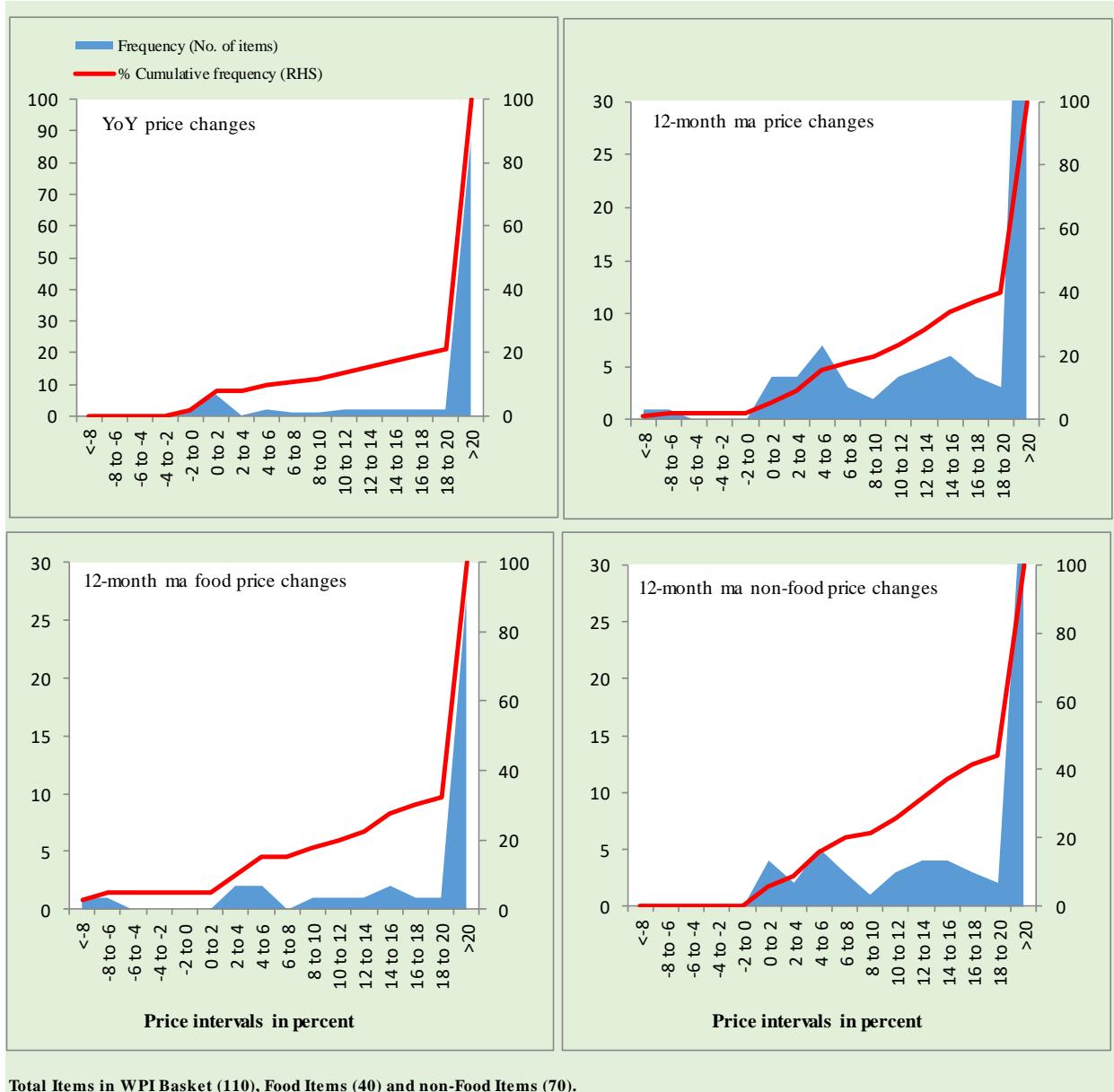
**Figure A6: Frequency Distribution of Price Changes of Urban CPI Items (MoM) – March 2023**



**Figure A7: Frequency Distribution of Price Changes of Rural CPI Items (MoM) – March 2023**



Total Items in CPI Basket (244), Food Items (94) and non-Food Items (150).

**Figure A8: Frequency Distribution of Price Changes of WPI Commodities (YoY) – March 2023**

## Technical Notes

- All the three measures of inflation, viz. CPI (National, Urban and Rural), 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.

- Base year for all the indices is the year 2015-16.
- CPI baskets for urban and rural areas contains 356 and 244 consumers' items respectively; WPI basket contains 419 items; SPI contains 51 items.
- 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:

$$\pi_t = \left( \frac{I_t}{I_{t-12}} - 1 \right) \times 100$$

- Period average inflation is the percent change of the average index during the period from December 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 December of current fiscal year in a given time series.

- 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:

$$\pi_t = \left( \frac{I_t}{I_{t-1}} - 1 \right) \times 100$$

- 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:

$$\tilde{\pi}_t = \left( \frac{\sum_{i=0}^{11} I_{t-i}}{\sum_{i=0}^{11} I_{t-12-i}} - 1 \right) \times 100$$

- 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 two methods i.e. NFNE inflation and trimmed inflation:

- 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.
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 indices 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

## Methodology for Estimating Inflation Diffusion Index for Pakistan

We constructed an index to measure the spread of inflation in the 356 and 244 items of CPI urban and rural baskets respectively. 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>2</sup>.

Based upon item level prices data from December 2001 to Jun 2011, inflation diffusion indices for overall (general) CPI basket and for all groups in CPI basket (except House Rent Index being single item) were computed. A simple analysis<sup>3</sup> suggests that IDI was a leading indicator for Pakistan’s YoY inflation.

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<sup>2</sup> Prices of certain items (like the seasonal items) during certain period may not be observed/available. To calculate the inflation diffusion index, the items for which prices have been reported (irrespective of changed or not) during the month under review are considered.

<sup>3</sup> Formal test shows one way ‘Granger’ causality from IDI to YoY inflation.