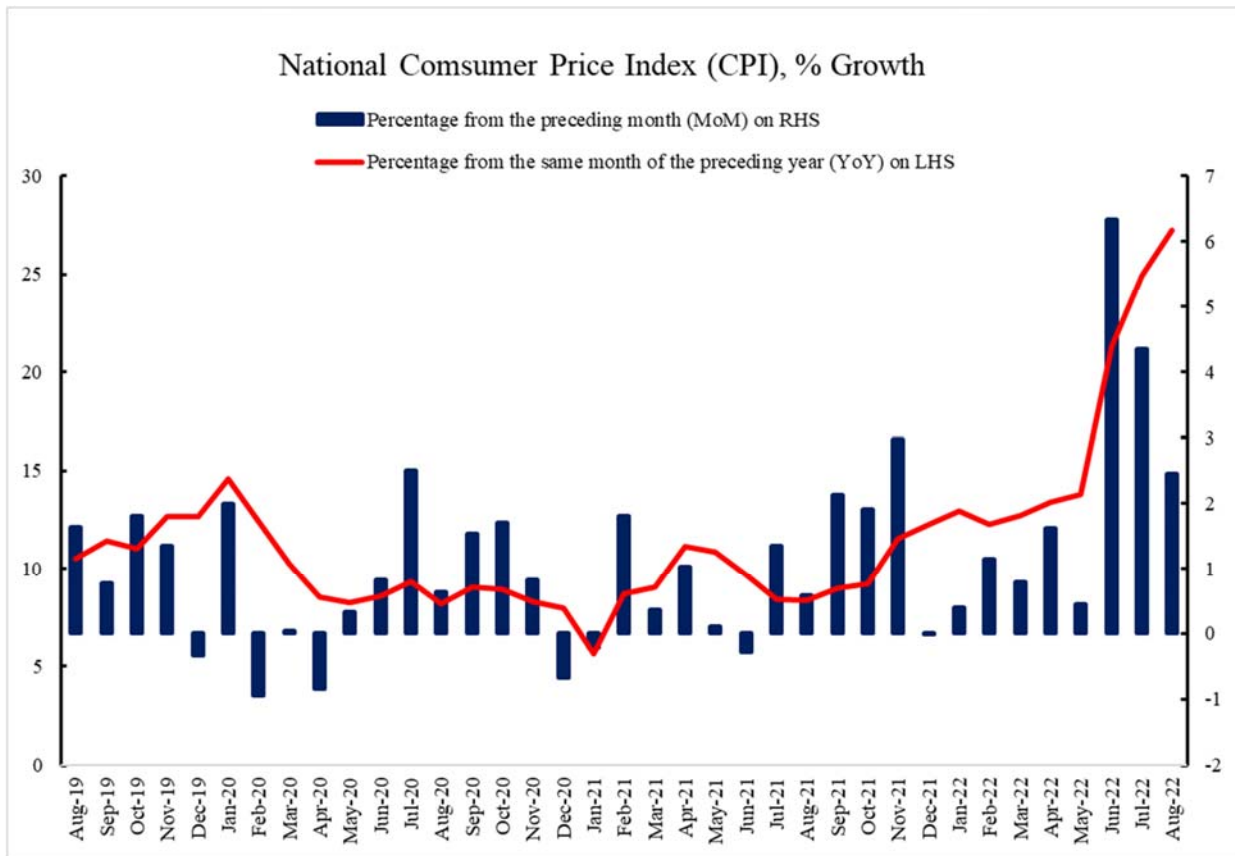




Inflation Monitor

August 2022



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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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1. Inflation in Brief

1. National CPI Inflation on year-on-year (YoY) basis increased to 27.3 percent in August 2022 from 24.9 percent in previous month. It stood at 8.4 percent in the corresponding month of last year. However, on month-on-month (MoM) basis, National CPI Inflation decreased to 2.5 percent in August 2022 from 4.3 percent in previous month. It stood at 0.6 percent during corresponding month of last year.
2. Urban CPI Inflation (on YOY basis) increased to 26.2 percent in August 2022 from 23.6 percent in previous month. It stood at 8.3 percent during the corresponding month of last year. Urban CPI Inflation (on MoM basis) decreased to 2.6 percent in August 2022 from 4.5 percent in previous month. It stood at 0.5 percent during corresponding month of last year. Seasonally adjusted MoM CPI Inflation recorded at 2.7 percent in August 2022 compared to 3.6 percent in the previous month.
3. Rural CPI Inflation (on YoY basis) increased to 28.8 percent in August 2022 from 26.9 percent in previous month. It was recorded 8.4 percent during the corresponding month of last year. Rural CPI Inflation (on MoM basis) decreased to 2.2 percent in August 2022 from 4.2 percent in the previous month. It stood at 0.7 percent during corresponding month of last year. Seasonally adjusted (MoM) CPI Inflation recorded at 2.2 percent in August 2022 compared to 3.2 percent in previous month.
4. Urban Core Inflation (trimmed) on YoY basis increased to 21.4 percent in August 2022 from 19.1 percent in previous month. It stood at 7.8 percent during the corresponding month of last year. On MoM basis, Urban Core Inflation (trimmed) decreased to 1.7 percent in August 2022 from 2.7 percent in previous month. It stood at 0.4 percent during the corresponding month of last year.
5. Rural Core Inflation (trimmed) on YoY basis increased to 23.8 percent in August 2022 from 21.7 percent in previous month. It was recorded 7.8 percent during the corresponding month of last year. On MoM basis, Rural Core Inflation (trimmed) decreased to 1.8 percent in August 2022 from 2.7 percent in previous month. It stood at 0.6 percent during corresponding month of last year.
6. Urban Core (Non-food, Non-energy (NFNE)) Inflation on YoY basis increased to 13.8 percent in August 2022 from 12.0 percent in previous month. It stood at 6.3 percent during corresponding month of last year. On MoM basis, Urban Core (NFNE) Inflation increased to 1.8 percent in August 2022 from 1.2 percent in previous month. It stood at 0.2 percent during the corresponding month of last year.
7. Rural Core (Non-food, Non-energy (NFNE)) Inflation on YOY basis increased to 16.5 percent in August 2022 from 14.6 percent in previous month. It stood at 6.2 percent during the corresponding month of last year. On MoM basis, it increased to 1.8 percent in August 2022 from 1.6 percent in previous month. It was recorded 0.2 percent during the corresponding month of last year.
8. WPI Inflation on YoY basis increased to 41.2 percent in August 2022 from 38.5 percent in previous month. It stood at 17.1 percent during the corresponding month of last year. On MoM basis, it increased to 3.1 percent in August 2022 from 2.0 percent in previous month. It was recorded 1.2 percent during the corresponding month of last year.


9. SPI Inflation on YoY basis increased to 40.6 percent in August 2022 from 34.3 percent in previous month. During corresponding month of last year, SPI Inflation stood at 12.7 percent. On MoM basis, SPI Inflation decreased to 5.6 percent in August 2022 from 7.7 percent in previous month. It stood at 0.9 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 of inflation target of 11.5 percent¹ for FY23. Green areas indicate low inflation pressures whereas red areas indicate higher inflationary pressures.


Heat map of National, Urban and Rural CPI inflation (YoY)														
		Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
Headline	National	8.4	9.0	9.2	11.5	12.3	13.0	12.2	12.7	13.4	13.8	21.3	24.9	27.3
	Urban	8.3	9.1	9.6	12.0	12.7	13.0	11.5	11.9	12.2	12.4	19.8	23.6	26.2
	Rural	8.4	8.8	8.7	10.9	11.6	12.9	13.3	13.9	15.1	15.9	23.6	26.9	28.8
Food	Urban	10.2	10.8	9.4	11.9	11.7	13.3	14.3	14.5	15.6	15.5	24.0	27.4	28.8
	Rural	9.1	9.1	7.2	8.6	9.0	11.8	14.6	15.5	17.7	19.0	27.0	29.6	30.2
Core	Urban	6.3	6.4	6.7	7.6	8.3	8.2	7.8	8.9	9.1	9.7	11.5	12.0	13.8
	Rural	6.2	6.2	6.7	8.2	8.9	9.0	9.4	10.3	10.9	11.5	13.6	14.6	16.5

Source: Pakistan Bureau of Statistics and SBP staff estimates

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Heat map of National, Urban and Rural CPI inflation (MoM)														
		Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
Headline	National	0.6	2.1	1.9	3.0	0.0	0.4	1.2	0.80	1.6	0.4	6.3	4.3	2.5
	Urban	0.5	2.0	1.7	2.9	0.3	0.1	0.9	0.7	1.6	0.3	6.2	4.5	2.6
	Rural	0.70	2.3	2.2	3.1	-0.5	0.9	1.5	1.0	1.6	0.6	6.6	4.2	2.2
Food	Urban	0.5	3.6	1.5	3.9	-2.3	-0.8	2.2	1.8	3.7	1.0	5.3	4.3	1.6
	Rural	0.8	3.7	2.6	3.3	-3.1	0.4	2.6	2.3	2.8	1.3	6.0	3.7	1.2
Core	Urban	0.2	0.4	0.9	1.1	1.1	0.8	0.8	1.2	1.1	0.7	2.0	1.2	1.8
	Rural	0.2	0.5	1.0	1.8	1.1	1.2	0.9	1.1	1.2	0.9	2.3	1.6	1.8

Source: Pakistan Bureau of Statistics and SBP staff estimates

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Heat map of National CPI inflation (YoY)														
	Weights	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
General	100.00	8.4	9.0	9.2	11.5	12.3	13.0	12.2	12.7	13.4	13.8	21.3	24.9	27.3
Food and Non-Alcoholic Beverages	34.58	10.0	10.2	8.3	10.5	10.3	12.8	14.7	15.3	17.0	17.3	25.9	28.8	29.5
Alcoholic Beverages, Tobacco	1.02	2.1	2.0	1.9	1.8	2.0	2.0	2.1	1.8	5.1	10.1	17.6	22.5	25.8
Clothing and Footwear	8.60	9.3	9.2	9.3	9.8	11.2	11.2	9.7	9.7	10.8	11.3	13.7	14.6	17.6
Housing, Water, Elec., Gas and Other Fuels	23.63	8.0	9.8	12.0	14.8	16.6	15.5	9.0	8.3	7.1	5.8	13.5	21.8	27.6
Furnishing and Household Equipment Maintenance	4.10	9.6	9.3	9.2	10.4	12.3	13.0	13.4	13.8	14.7	16.1	18.8	19.7	21.9
Health	2.79	8.5	8.0	8.0	8.5	9.4	9.2	10.1	10.0	10.4	10.6	11.3	11.2	11.9
Transport	5.91	8.1	9.1	14.4	24.4	24.1	23.1	25.0	26.3	28.3	31.8	62.2	64.7	63.1
Communication	2.21	2.8	2.8	2.8	2.5	2.5	2.6	2.5	2.6	1.6	1.8	2.0	1.2	1.2
Recreation and Culture	1.59	6.4	6.9	7.5	7.5	7.7	7.8	8.2	9.3	9.7	12.3	14.4	15.4	21.8
Education	3.79	2.9	2.6	2.2	2.4	2.8	3.2	3.4	8.3	8.4	9.5	9.5	9.8	10.0
Restaurants and Hotels	6.92	7.3	7.8	8.3	11.0	12.6	13.0	14.4	14.6	14.6	16.0	21.9	25.0	27.4
Misc. Goods and Services	4.87	5.9	7.4	8.7	10.0	10.6	10.3	10.1	12.4	12.8	13.3	15.8	17.2	20.0

Source: Pakistan Bureau of Statistics and SBP staff estimates

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¹ Annual Plan 2022-23 published by Planning Commission of Pakistan.

Heat map of Rural CPI inflation (MoM)														
	Weights	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
General	100.00	0.7	2.3	2.2	3.1	-0.5	0.9	1.5	1.0	1.6	0.6	6.6	4.2	2.2
Food and Non-Alcoholic Beverages	40.87	0.9	4.1	2.7	3.6	-3.7	0.2	2.8	2.5	3.1	0.8	6.1	3.8	1.2
Alcoholic Beverages, Tobacco	1.28	0.0	0.6	0.5	0.1	0.5	0.3	0.3	0.0	2.8	5.3	5.6	5.5	1.9
Clothing and Footwear	9.48	0.1	0.4	0.6	2.6	0.9	0.8	0.6	1.1	2.3	0.9	1.6	1.2	2.0
Housing, Water, Elec., Gas and Other Fuels	18.49	1.0	1.7	2.7	3.3	3.2	1.9	-1.4	-2.3	-0.8	-2.5	9.2	9.4	6.0
Furnishing and Household Equipment Maintenance	4.10	0.6	0.7	1.0	2.0	3.1	1.3	1.7	1.6	1.5	3.3	2.0	2.4	
Health	3.51	0.5	0.4	0.7	1.3	1.7	0.9	2.5	0.2	0.9	0.6	1.1	0.3	0.8
Transport	5.56	0.8	1.0	5.2	5.8	1.3	2.0	3.9	0.0	0.2	2.5	25.9	5.7	-0.5
Communication	1.99	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.1	0.1	0.0	0.2	0.4	0.2
Recreation and Culture	1.38	1.2	1.1	0.7	0.5	0.6	0.7	1.2	2.0	0.8	2.5	3.4	2.2	6.4
Education	2.13	0.4	0.0	0.1	0.0	0.3	0.2	0.8	1.1	1.0	0.8	0.9	1.4	2.8
Restaurants and Hotels	6.19	0.7	0.6	1.9	3.5	1.6	1.6	1.0	1.2	0.3	3.9	4.4	2.2	2.4
Misc. Goods and Services	5.02	0.1	1.3	1.9	2.0	0.9	1.0	0.8	1.4	1.0	1.3	2.8	2.0	1.9

Source: Pakistan Bureau of Statistics and SBP staff estimates

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Heat map of Rural CPI inflation (YoY)														
	Weights	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
Rural	100.00	8.4	8.8	8.7	10.9	11.6	12.9	13.3	13.9	15.1	15.9	23.6	26.9	28.8
Food	45.95	9.1	9.1	7.2	8.6	9.0	11.8	14.6	15.5	17.7	19.0	27.0	29.6	30.2
Non-perishable	40.16	9.9	12.3	11.2	11.7	12.8	12.8	12.4	13.7	15.8	17.0	25.5	29.3	29.6
Perishable	5.79	5.4	-6.8	-12.5	-5.5	-12.0	6.6	35.8	32.8	34.4	33.7	41.2	33.5	34.3
Non Food	54.05	7.7	8.5	10.0	13.0	14.0	13.9	12.2	12.5	12.8	13.1	20.4	24.5	27.5
Energy	11.41	13.8	17.2	23.2	32.0	34.0	32.7	21.9	20.4	19.8	19.3	46.6	61.2	67.8
NFNE (Core)	42.64	6.2	6.2	6.7	8.2	8.9	9.0	9.4	10.3	10.9	11.5	13.6	14.6	16.5
HRI	8.61	6.1	6.1	6.6	6.6	6.6	5.9	5.9	5.9	5.7	5.7	5.7	5.9	5.9
Core Excl HRI	34.03	6.3	6.3	6.7	8.6	9.5	9.7	10.3	11.4	12.2	12.9	15.5	16.8	19.1

Source: Pakistan Bureau of Statistics and SBP staff estimates

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Heat map of Urban CPI inflation (YoY)														
	Weights	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
Urban	100.00	8.3	9.1	9.6	12.0	12.7	13.0	11.5	11.9	12.2	12.4	19.8	23.6	26.2
Food	36.80	10.2	10.8	9.4	11.9	11.7	13.3	14.3	14.5	15.6	15.5	24.0	27.4	28.8
Non-perishable	32.34	12.2	15.3	13.2	15.3	15.5	14.7	11.8	13.0	14.4	15.0	23.5	27.1	28.2
Perishable	4.46	1.7	-9.6	-8.9	-1.9	-8.7	6.3	34.1	28.0	25.6	20.6	32.4	32.4	33.5
Non Food	63.20	7.2	8.1	9.7	12.0	13.4	12.8	9.9	10.4	10.2	10.4	17.3	21.3	24.7
Energy	9.47	12.2	17.8	25.9	37.2	41.3	38.1	20.2	18.0	15.7	14.1	48.8	70.2	80.7
NFNE (Core)	53.73	6.3	6.4	6.7	7.6	8.3	8.2	7.8	8.9	9.1	9.7	11.5	12.0	13.8
HRI	19.26	6.1	6.1	6.6	6.6	6.6	6.1	6.1	6.1	5.6	5.6	5.6	5.6	5.6
Core Excl HRI	34.47	6.4	6.5	6.8	8.1	9.2	9.3	8.7	10.5	11.0	11.9	14.7	15.5	18.2

Source: Pakistan Bureau of Statistics and SBP staff estimates

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Heat map of Rural CPI inflation (MoM)														
	Weights	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
Rural	100.00	0.7	2.3	2.2	3.1	-0.5	0.9	1.5	1.0	1.6	0.6	6.6	4.2	2.2
Food	45.95	0.8	3.7	2.6	3.3	-3.1	0.4	2.6	2.3	2.8	1.3	6.0	3.7	1.2
Non-perishable	40.16	0.5	4.1	2.0	1.8	-0.4	1.0	1.4	2.8	0.6	2.8	6.2	3.5	0.7
Perishable	5.79	3.3	4.3	7.1	14.5	-21.8	-5.1	13.3	0.5	20.0	-10.7	5.2	6.0	3.9
Non Food	54.05	0.6	1.0	1.9	3.0	1.9	1.4	0.4	-0.2	0.5	0.0	7.1	4.6	3.1
Energy	11.41	2.2	2.9	5.2	7.0	4.4	1.9	-0.9	-4.0	-1.8	-2.8	24.3	13.4	6.4
NFNE (Core)	42.64	0.2	0.5	1.0	1.8	1.1	1.2	0.9	1.1	1.2	0.9	2.3	1.6	1.8
HRI	8.61	0.0	0.0	1.3	0.0	0.0	2.1	0.0	0.0	1.0	0.0	0.0	1.4	0.0
Core Excl HRI	34.03	0.2	0.6	1.0	2.2	1.4	1.0	1.1	1.3	1.3	1.0	2.9	1.7	2.2

Source: Pakistan Bureau of Statistics and SBP staff estimates

<0.00 0.75 >1.50

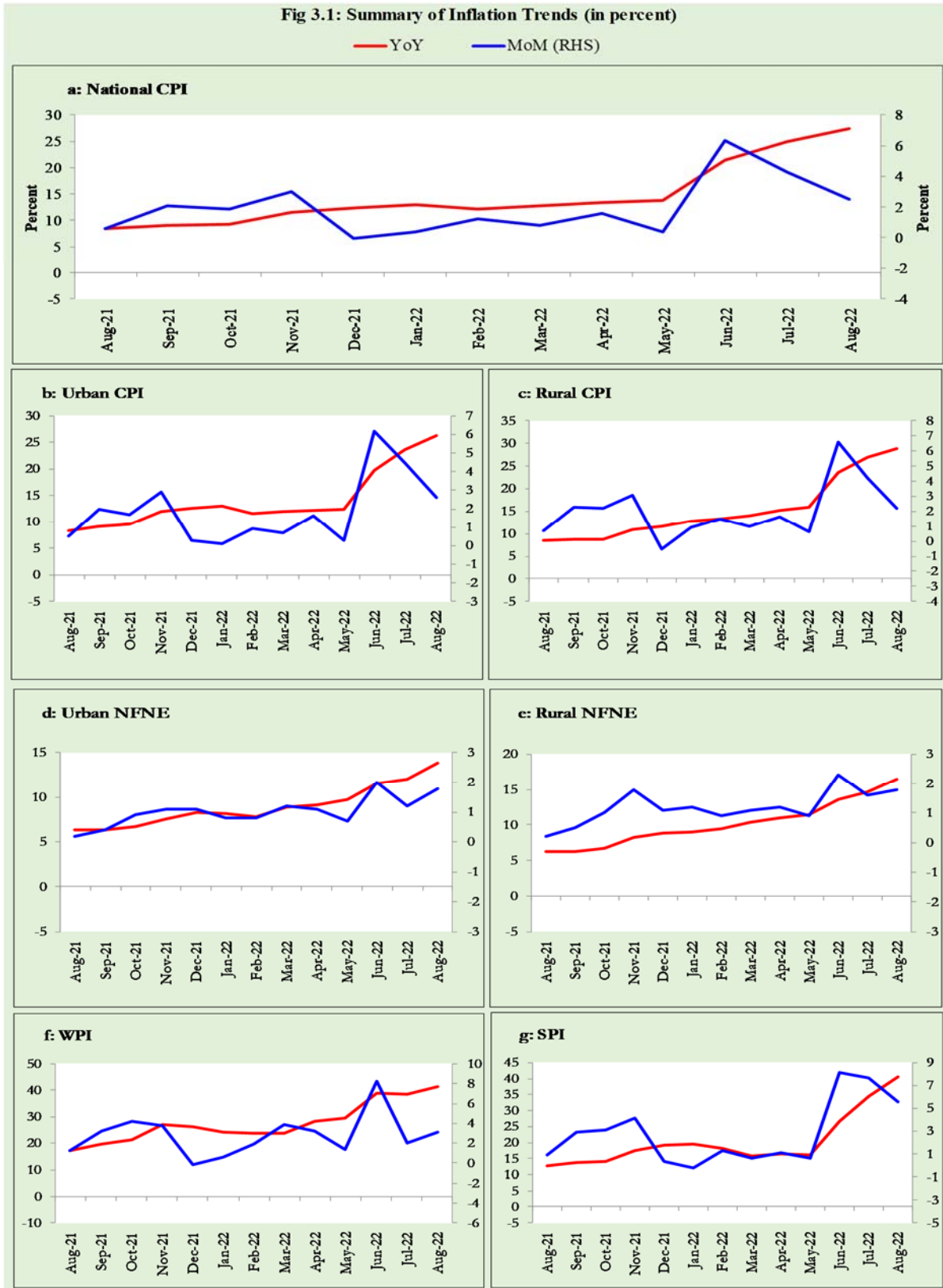
Heat map of Urban CPI inflation (MoM)														
	Weights	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
Urban	100.00	0.5	2.0	1.7	2.9	0.3	0.1	0.9	0.7	1.6	0.3	6.2	4.5	2.6
Food	36.80	0.5	3.6	1.5	3.9	-2.3	-0.8	2.2	1.8	3.7	1.0	5.3	4.3	1.6
<i>Non-perishable</i>	32.34	0.3	4.2	1.0	2.4	0.2	-0.4	0.5	2.6	1.7	3.1	4.9	3.8	1.2
<i>Perishable</i>	4.46	2.0	2.6	5.2	15.1	-20.2	-5.4	14.7	-1.1	20.8	-10.8	5.5	7.3	2.8
Non Food	63.20	0.5	1.1	1.8	2.2	2.0	0.6	0.2	-0.1	0.3	-0.1	6.8	4.6	3.3
<i>Energy</i>	9.47	2.1	4.6	6.0	7.6	5.8	-0.4	-2.3	-5.9	-3.4	-4.6	32.2	18.3	8.4
<i>NFNE (Core)</i>	53.73	0.2	0.4	0.9	1.1	1.1	0.8	0.8	1.2	1.1	0.7	2.0	1.2	1.8
<i>HRI</i>	19.26	0.0	0.0	1.4	0.0	0.0	1.5	0.0	0.0	1.1	0.0	0.0	1.5	0.0
<i>Core Excl HRI</i>	34.47	0.3	0.6	0.6	1.7	1.7	0.4	1.1	1.9	1.0	1.1	3.0	1.1	2.7

Source: Pakistan Bureau of Statistics and SBP staff estimates

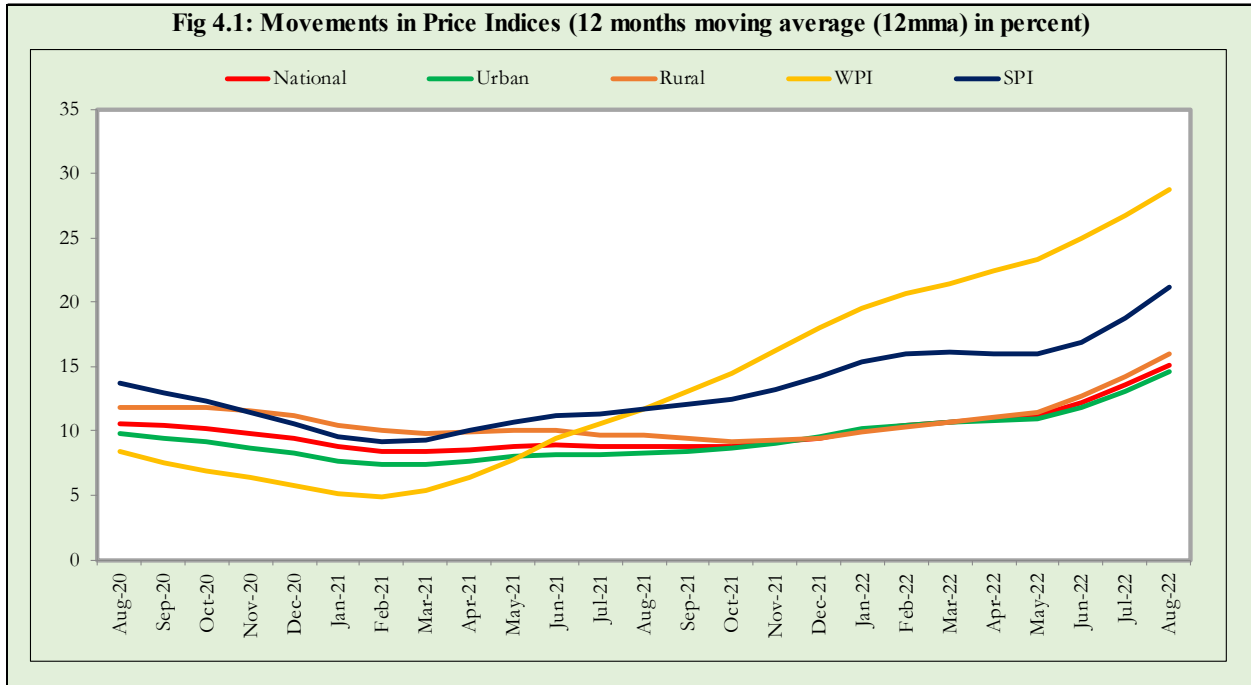
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3. Trends in Inflation

Fig 3.1: Summary of Inflation Trends (in percent)



4. Movement in Price Indices (Moving Averages)



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

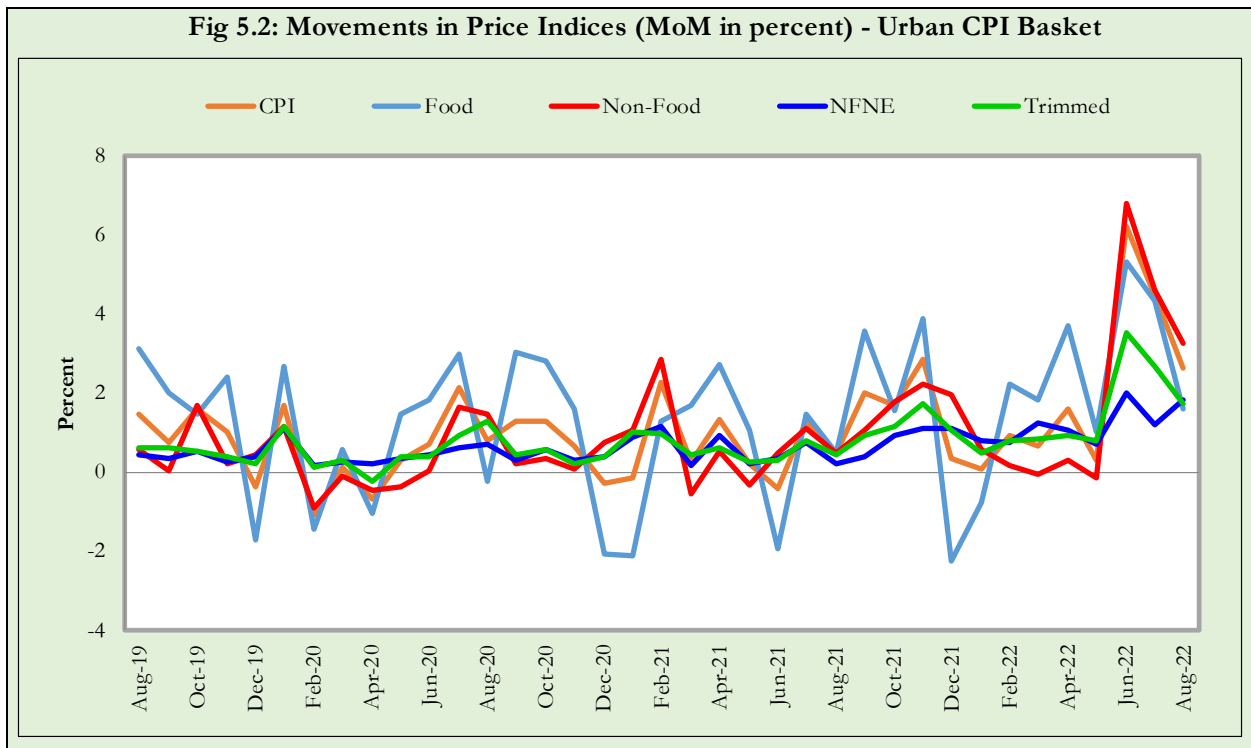
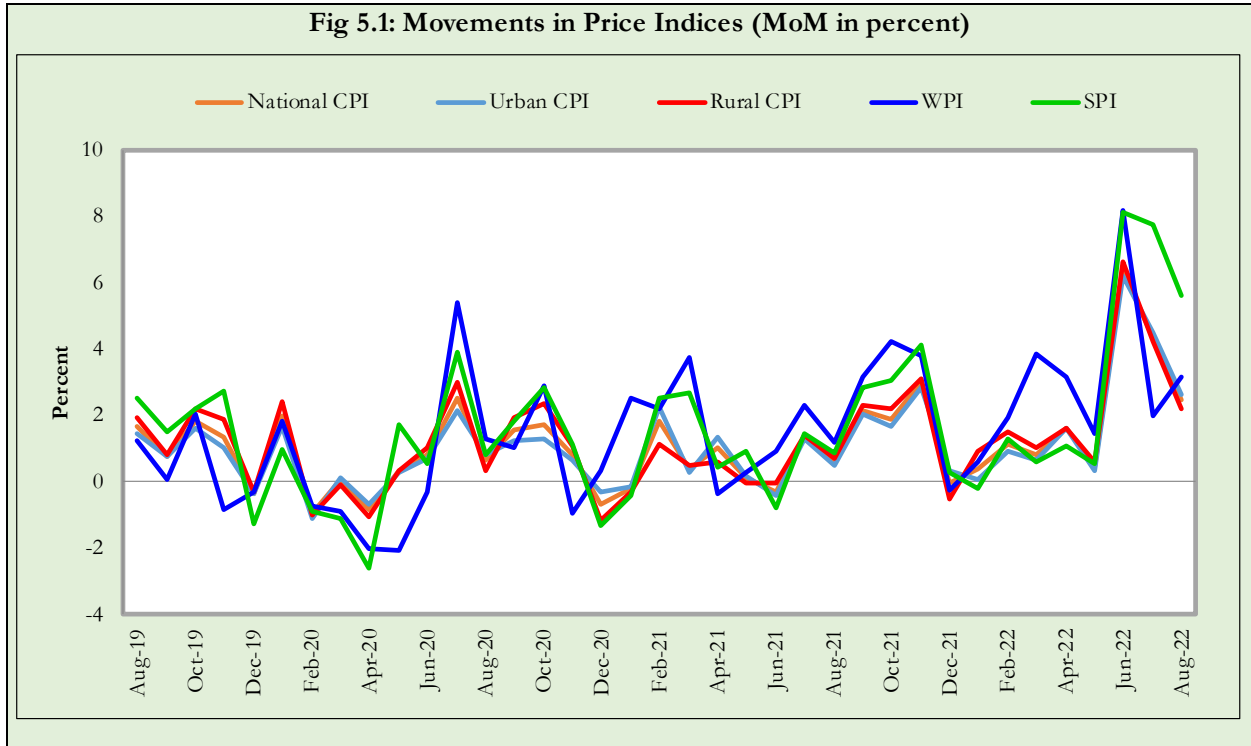
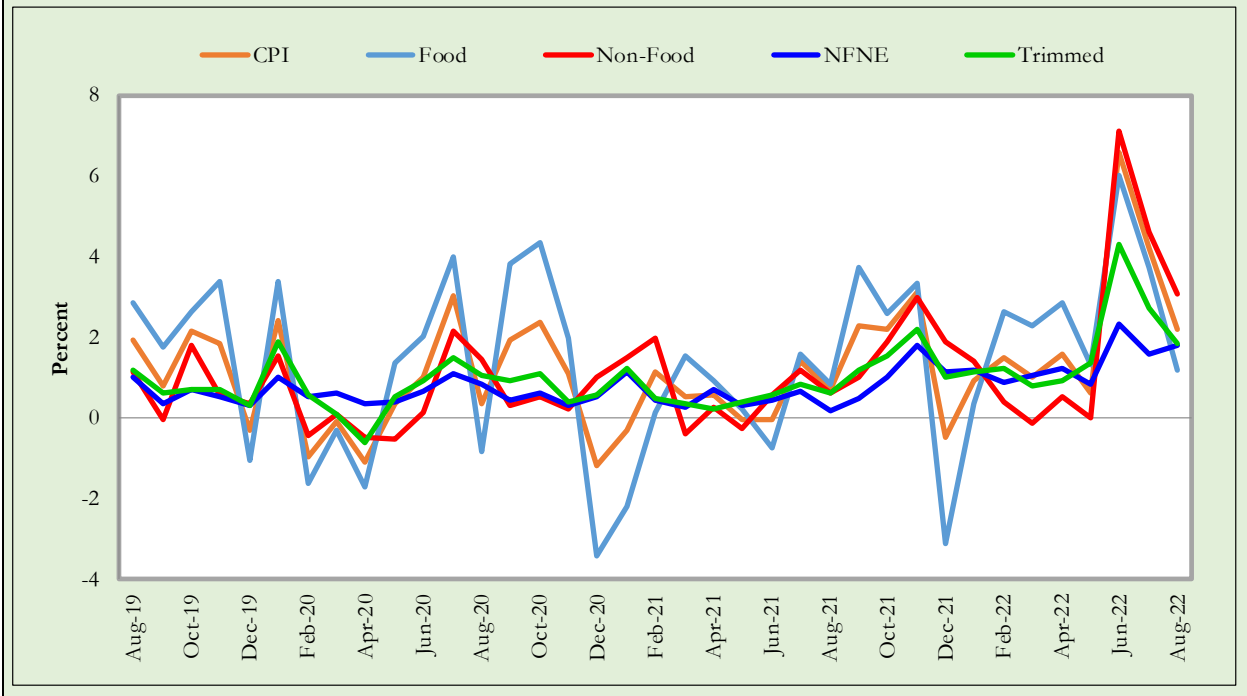
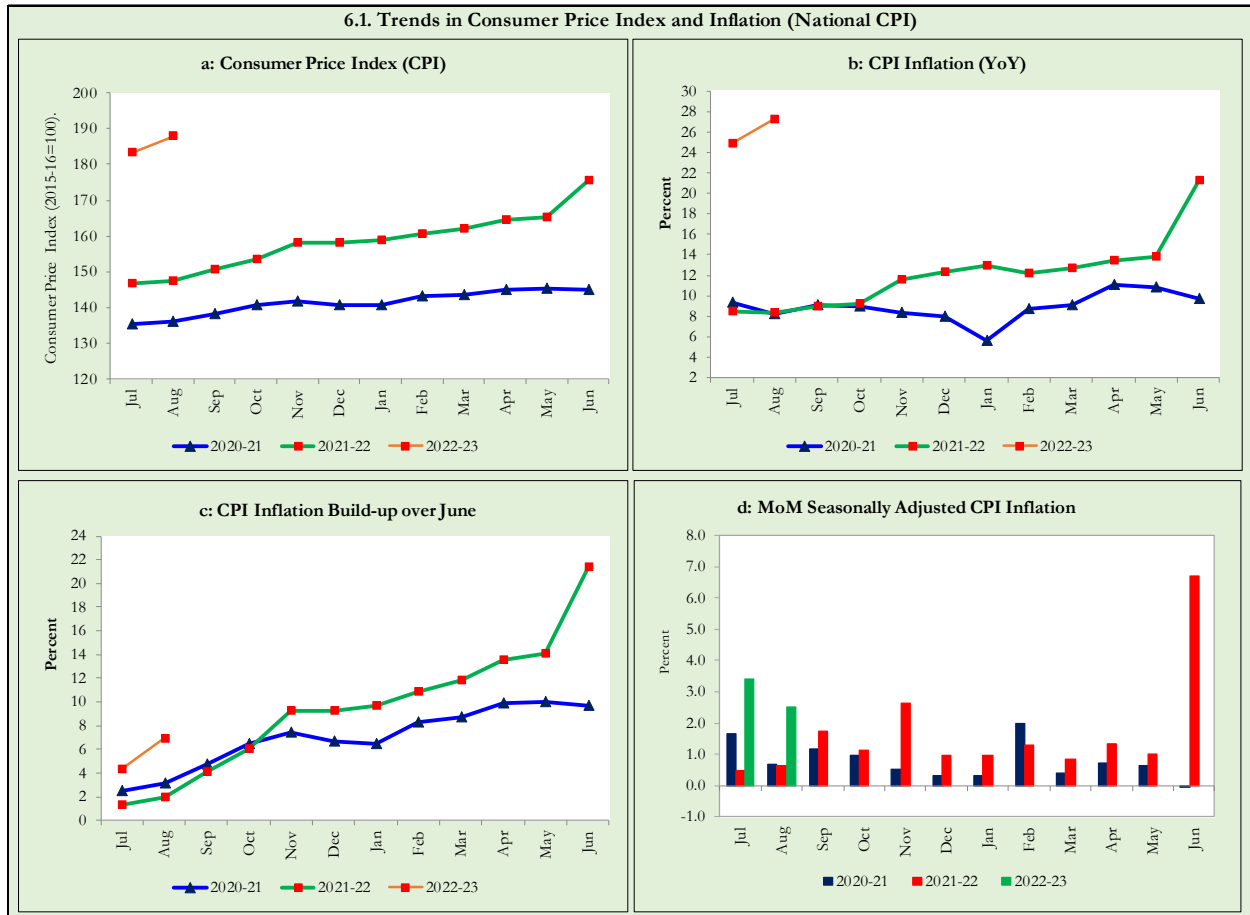


Fig 5.3: Movements in Price Indices (MoM in percent) - Rural CPI Basket

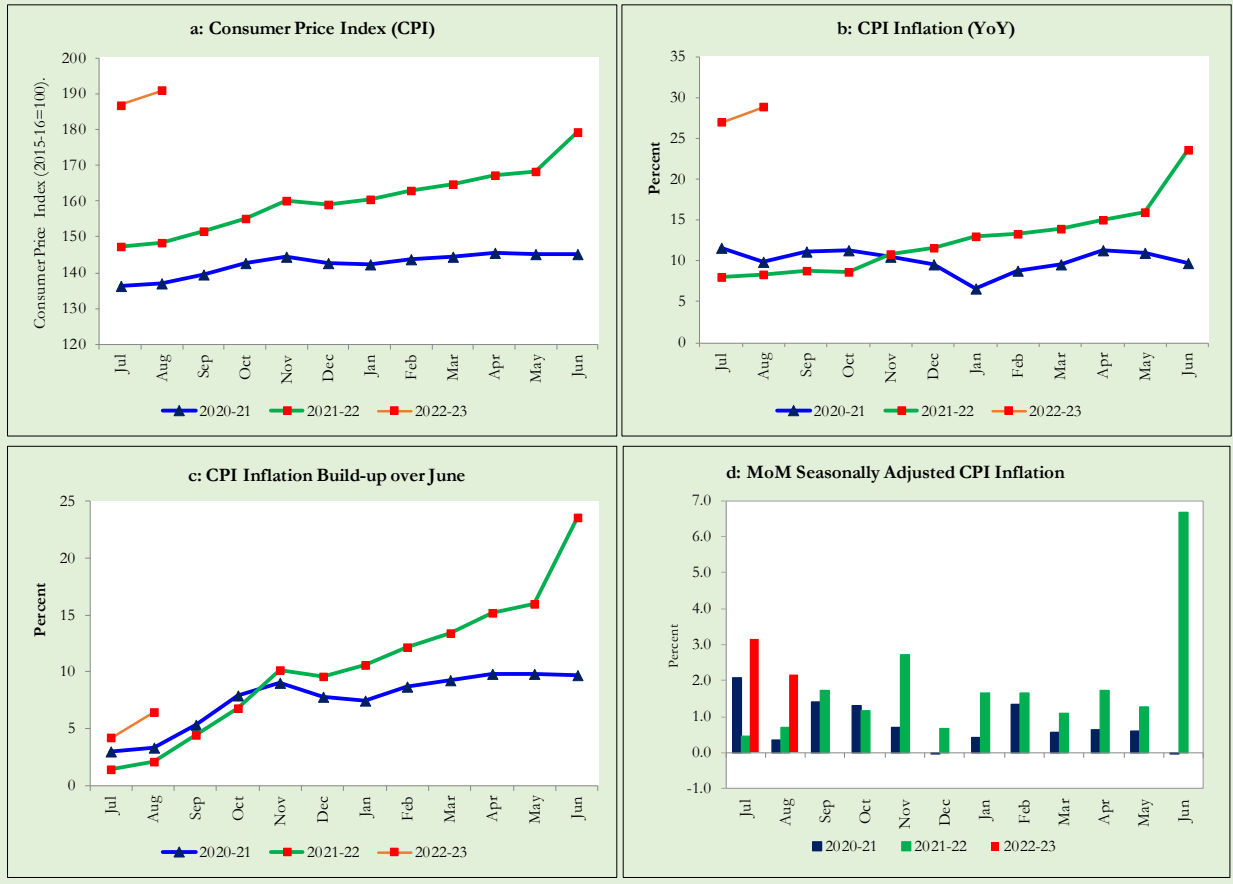


6. Trends in Consumer Price Indices and Inflation

Monthly Consumer Price Indices, YoY growth rates and inflation build up over August 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).



6.3. Trends in Consumer Price Index and Inflation (Rural CPI Basket)



7. Weighted Contribution

The weighted contribution of food group in the overall urban CPI inflation decreased to 41.6 percent during August 2022 from 44.0 percent in previous month. It was 45.7 percent during corresponding month of last year. The weighted contribution of non-food group increased to 58.4 percent in August 2022 from 56.0 percent in previous month. Weighted Contribution of non-food was 54.3 percent during corresponding month of last year. Table 7.1 provide 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.

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
Aug-21	100.0	45.7	1.0	44.7	54.3	14.3	40.0	26.4	13.6
Sep-21	100.0	44.7	-5.6	50.4	55.3	18.7	36.7	24.4	12.3
Oct-21	100.0	37.9	-5.1	43.0	62.1	25.4	36.7	24.0	12.8
Nov-21	100.0	38.6	-0.9	39.5	61.4	28.6	32.8	22.7	10.1
Dec-21	100.0	35.0	-3.4	38.5	65.0	30.8	34.2	24.6	9.5
Jan-22	100.0	38.2	2.0	36.2	61.8	28.4	33.4	24.5	8.9
Feb-22	100.0	46.1	10.9	35.2	54.0	18.7	35.3	25.5	9.8
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

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 49.6 percent during August 2022 from 52.1 percent in previous month. It was 51.1 percent during corresponding month of last year. The weighted contribution of non-food group increased to 50.4 percent in August 2022 from 47.9 percent in previous month. Weighted contribution of non-food group was 48.8 percent during corresponding month of last year. Table 7.2 provide 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
Aug-21	100.0	51.1	3.7	47.4	48.8	17.7	31.2	25.2	6.0
Sep-21	100.0	49.5	-5.2	54.8	50.4	20.8	29.6	24.0	5.6
Oct-21	100.0	40.8	-10.9	51.7	59.2	27.7	31.5	25.3	6.2
Nov-21	100.0	39.2	-4.0	43.2	60.8	30.1	30.8	25.9	4.9
Dec-21	100.0	37.2	-6.9	44.1	62.8	31.2	31.6	27.0	4.6
Jan-22	100.0	43.2	2.7	40.5	56.8	27.7	29.1	25.3	3.8
Feb-22	100.0	51.3	12.4	38.9	48.7	19.2	29.5	25.8	3.6
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

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 (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													
Groups	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
General	51.7	57.6	60.1	70.2	63.2	57.6	60.1	60.1	57.3	61.2	75.3	71.1	70.8
Food & Non-Alcoholic Beverages	40.0	55.6	41.1	42.2	34.4	40.0	46.7	34.4	44.4	37.8	57.8	66.7	54.4
Alcoholic Beverages & Tobacco	0.0	33.3	33.3	33.3	33.3	66.7	33.3	33.3	66.7	100.0	100.0	100.0	100.0
Clothing & Footwear	45.0	50.0	55.0	80.0	85.0	77.5	77.5	70.0	67.5	72.5	82.5	62.5	70.0
Housing, Water, Elect, Gas & other Fuels	41.4	58.6	72.4	72.4	69.0	13.8	3.4	10.3	17.2	20.7	72.4	75.9	58.6
Furnishing & Household Equip. Maintenance etc.	78.6	83.3	88.1	90.5	88.1	88.1	90.5	90.5	90.5	97.6	100.0	97.6	95.2
Health	74.2	54.8	51.6	64.5	90.3	71.0	87.1	77.4	74.2	61.3	90.3	61.3	77.4
Transport	46.9	40.6	50.0	93.8	53.1	62.5	62.5	59.4	40.6	53.1	93.8	81.3	50.0
Communication	20.0	20.0	20.0	0.0	20.0	40.0	20.0	20.0	20.0	20.0	40.0	40.0	20.0
Recreation & Culture	56.0	48.0	72.0	68.0	24.0	36.0	36.0	68.0	44.0	76.0	44.0	52.0	80.0
Education	25.0	25.0	56.3	81.3	68.8	31.3	37.5	75.0	43.8	50.0	25.0	31.3	75.0
Restaurant & Hotels	57.1	64.3	85.7	85.7	100.0	78.6	92.9	78.6	78.6	92.9	92.9	85.7	100.0
Miscellaneous	69.0	89.7	82.8	96.6	86.2	89.7	86.2	100.0	89.7	96.6	100.0	86.2	96.6
NFNE	56.2	59.1	66.0	80.9	75.3	67.2	69.4	76.6	67.2	72.8	81.3	71.5	77.4

Groups	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
General	41.0	54.1	66.8	61.9	56.1	57.4	59.4	52.0	54.9	59.0	74.2	76.6	72.5
Food & Non-Alcoholic Beverages	27.8	41.8	49.4	29.1	21.5	44.3	45.6	41.8	32.9	40.5	53.2	64.6	53.2
Alcoholic Beverages & Tobacco	0.0	40.0	80.0	40.0	80.0	60.0	100.0	0.0	80.0	100.0	100.0	100.0	100.0
Clothing & Footwear	25.9	74.1	81.5	96.3	96.3	70.4	92.6	74.1	92.6	88.9	81.5	81.5	88.9
Housing, Water, Elect, Gas & other Fuels	60.9	65.2	91.3	87.0	73.9	17.4	4.3	0.0	26.1	26.1	82.6	95.7	78.3
Furnishing & Household Equip. Maintenance etc.	61.5	57.7	84.6	88.5	96.2	92.3	92.3	84.6	80.8	84.6	92.3	92.3	100.0
Health	64.3	42.9	57.1	71.4	78.6	64.3	78.6	42.9	71.4	42.9	100.0	64.3	71.4
Transport	43.8	62.5	68.8	81.3	43.8	62.5	62.5	37.5	50.0	68.8	87.5	75.0	43.8
Communication	20.0	0.0	20.0	0.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	40.0	20.0
Recreation & Culture	53.8	53.8	61.5	53.8	15.4	38.5	53.8	69.2	30.8	76.9	53.8	53.8	84.6
Education	60.0	0.0	20.0	0.0	20.0	60.0	80.0	80.0	100.0	80.0	80.0	100.0	80.0
Restaurant & Hotels	28.6	64.3	78.6	85.7	85.7	78.6	57.1	78.6	57.1	71.4	92.9	85.7	92.9
Miscellaneous	58.8	88.2	88.2	88.2	82.4	94.1	76.5	88.2	94.1	76.5	94.1	94.1	94.1
NFNE	47.8	57.4	71.3	75.0	72.1	67.6	71.3	66.9	74.3	69.9	82.4	78.7	80.9

9. Domestic Commodity Prices (Growth)

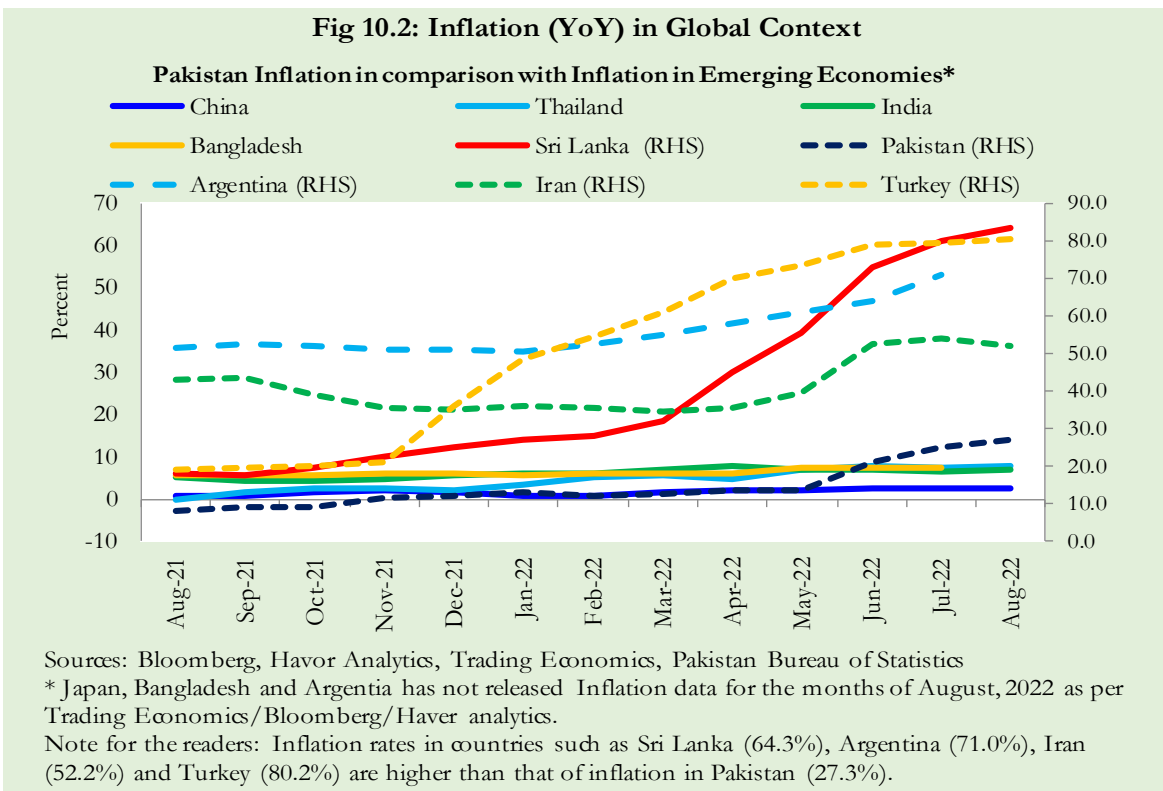
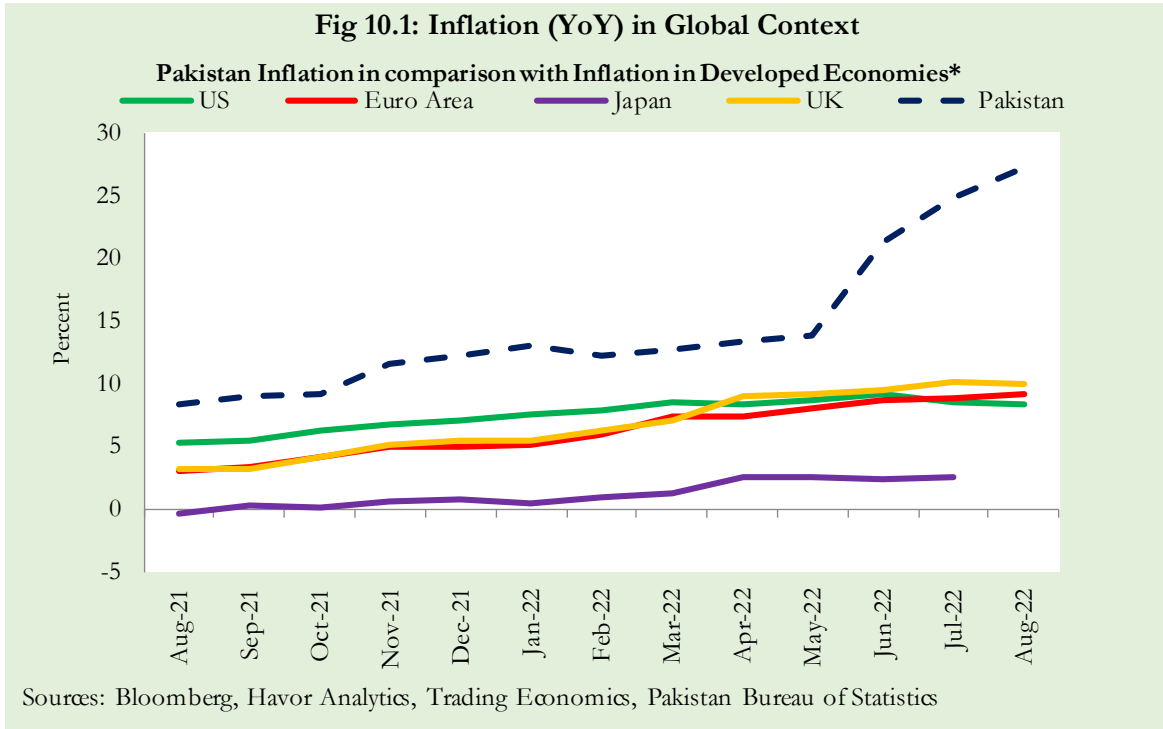
Growth of domestic food commodities (YoY and MoM in percent) for selected essential food items covering both urban and rural CPI baskets is given in table 9.1.

S. No	Item	Unit	Urban CPI		Rural CPI	
			YoY	MoM	YoY	MoM
1	Wheat	10 Kg	44.5	-0.1	39.8	1.2
2	Wheat Flour Bag	20 Kg	10.6	-0.4	22.0	1.0
3	Rice Basmati Broken (Superior/Average Quality)*	1 Kg	57.0	7.0	33.3	3.7
4	Beef With Bone (Average Quality)	1 Kg	24.5	0.7	27.4	2.2
5	Mutton (Average Quality)	1 Kg	30.0	1.5	22.8	1.1
6	Chicken Farm Broiler (Live)	1 Kg	59.9	-11.5	63.3	-13.6
7	Milk Fresh (Un-Boiled)	1 Litre	25.1	1.5	21.7	1.2
8	Eggs Farm	Dozen	35.3	7.5	34.5	6.6
9	Vegetable Ghee Dalda/Habib Or Other Superior Quality 1 Kg Pouch	Each	70.4	-2.1	68.2	-3.5
10	Pulse Masoor (Washed)	1 Kg	114.3	11.8	118.6	13.7
11	Pulse Moong (Washed)	1 Kg	11.5	15.3	20.3	12.7
12	Pulse Mash (Washed)	1 Kg	52.7	12.5	52.4	15.1
13	Pulse Gram	1 Kg	60.2	6.1	65.7	8.9
14	Potatoes	1 Kg	13.5	5.1	10.2	5.6
15	Onions	1 Kg	90.5	-0.2	96.7	4.3
16	Tomatoes	1 Kg	38.0	52.9	29.7	30.0
17	Sugar Refined	1 Kg	-15.7	0.0	-16.3	-0.3
18	Garlic (Lehsun)	1 Kg	40.9	9.0	36.0	4.3
19	Ginger (Adrak)	500 Gm	-23.6	8.8	-21.3	7.1
20	Tea Lipton Yellow Label 190 Gm Packet	Each	24.9	1.4	22.5	1.7

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

10. Inflation in Global Context

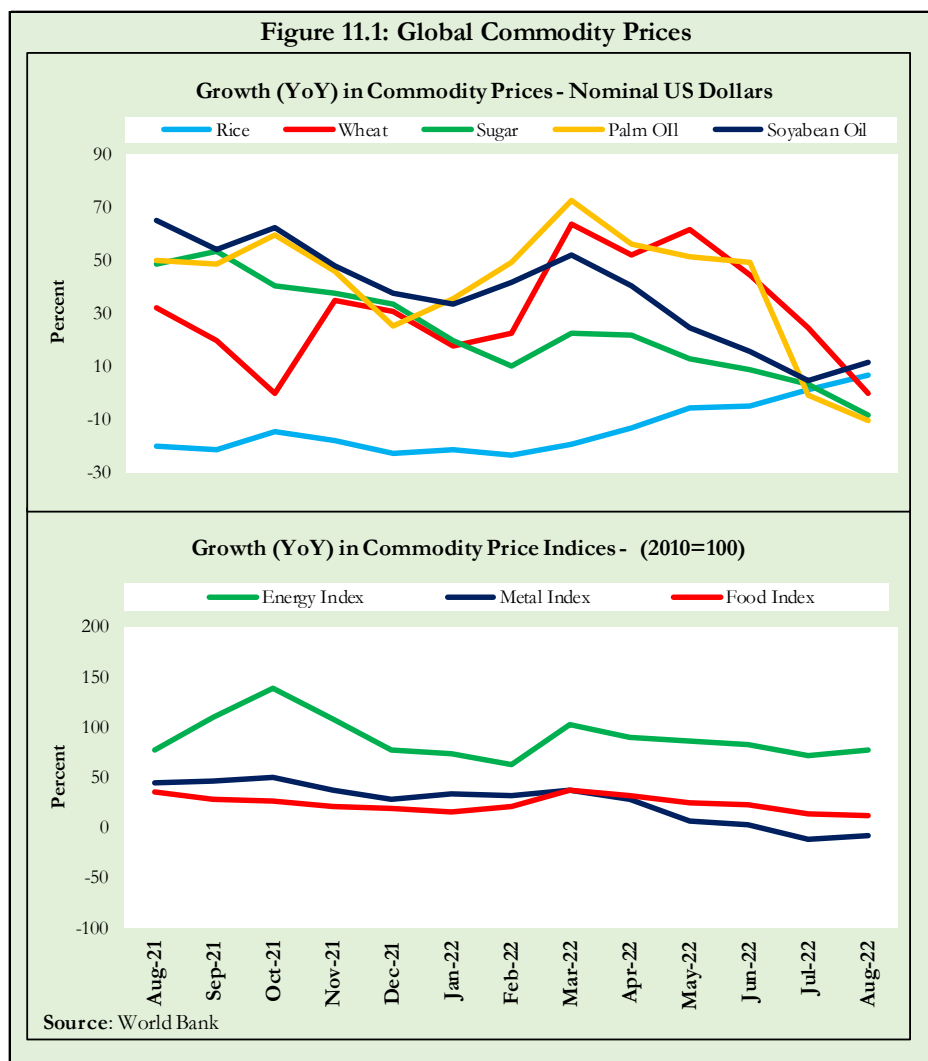
In global context, Pakistan’s inflation in comparison with inflation in selected developed and emerging economies is given in figure 10.1 and 10.2.



11. Global Commodity Prices

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	Aug-21		Jul-22		Aug-22	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	34.8	0.5	13.4	-8.5	11.0	-1.6
Metals	44.6	1.3	-11.1	-12.8	-8.5	4.2
Energy	77.4	-2.0	71.7	-1.1	77.5	1.3
Agricultural	25.6	1.0	10.1	-7.5	7.9	-1.0
Cotton	44.8	3.7	34.1	-15.0	22.8	-5.0



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 August 2008 to August 2022 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 estimate on historical data and that the future data Jun not necessarily show the same seasonal pattern.

Fig. 12.1 (a): Seasonal Factor of National CPI

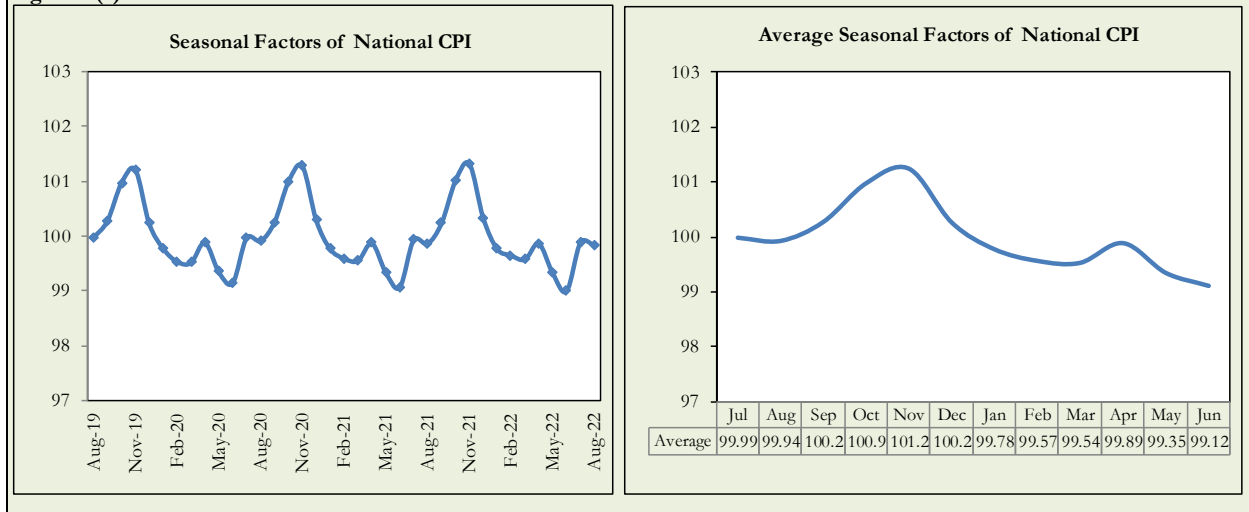


Fig. 12.1 (b): Seasonal Factor of Urban CPI

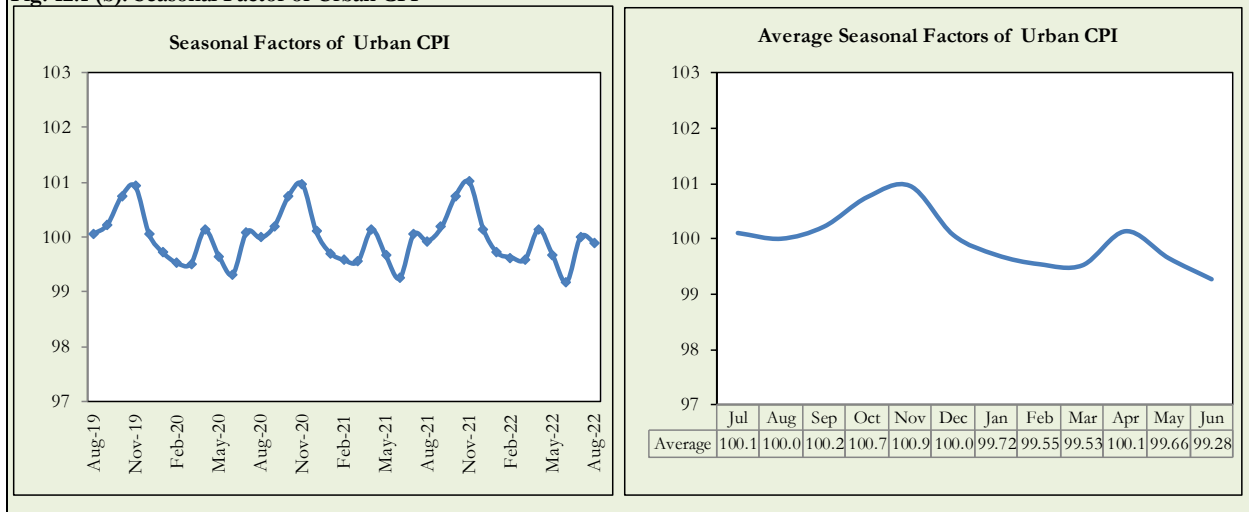
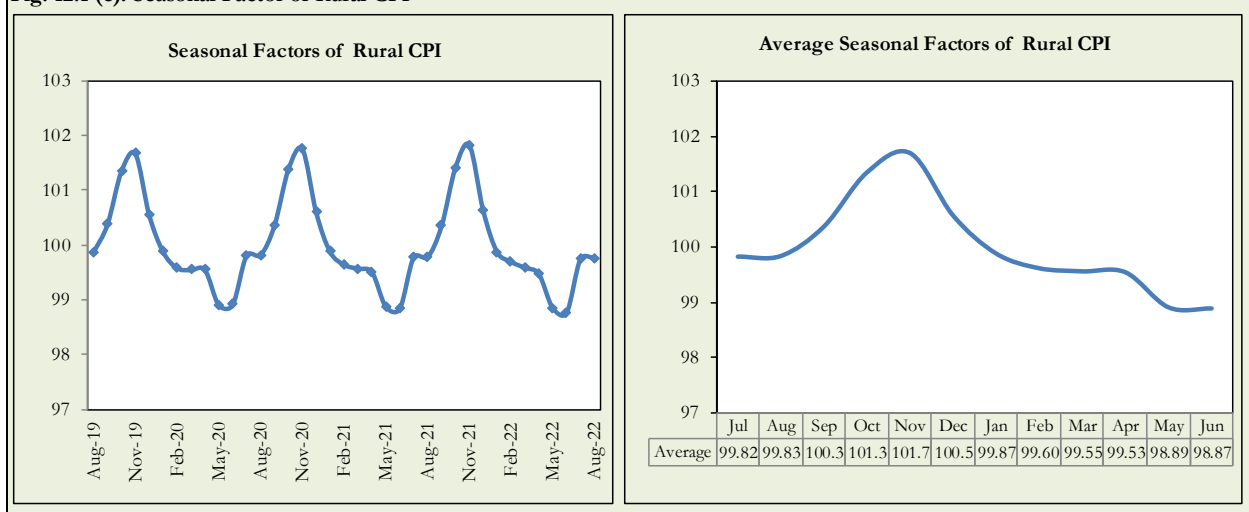


Fig. 12.1 (c): Seasonal Factor of Rural CPI



Figures 12.2 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 (a): Seasonal Plot of National CPI

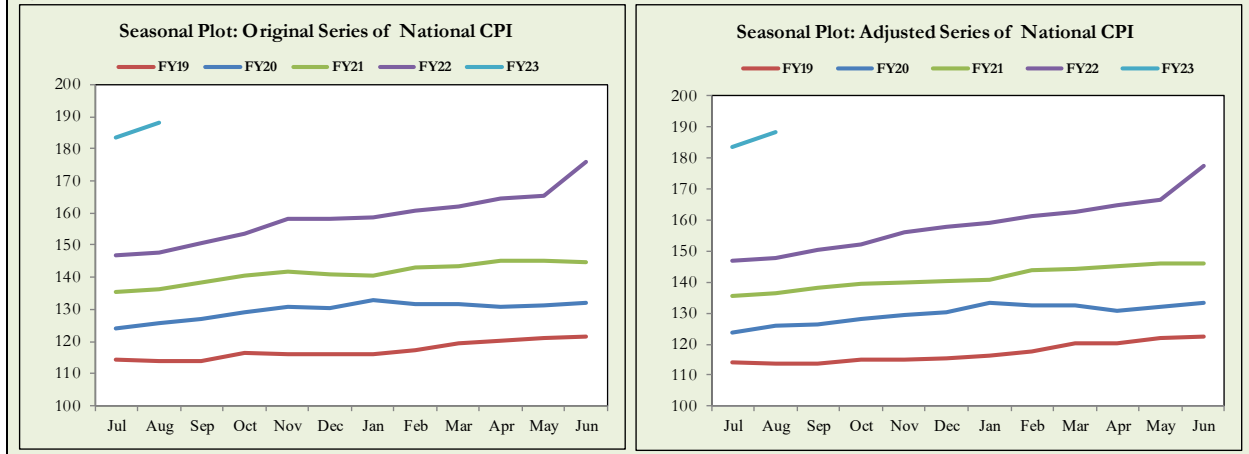


Fig. 12.2 (b): Seasonal Plot of Urban CPI

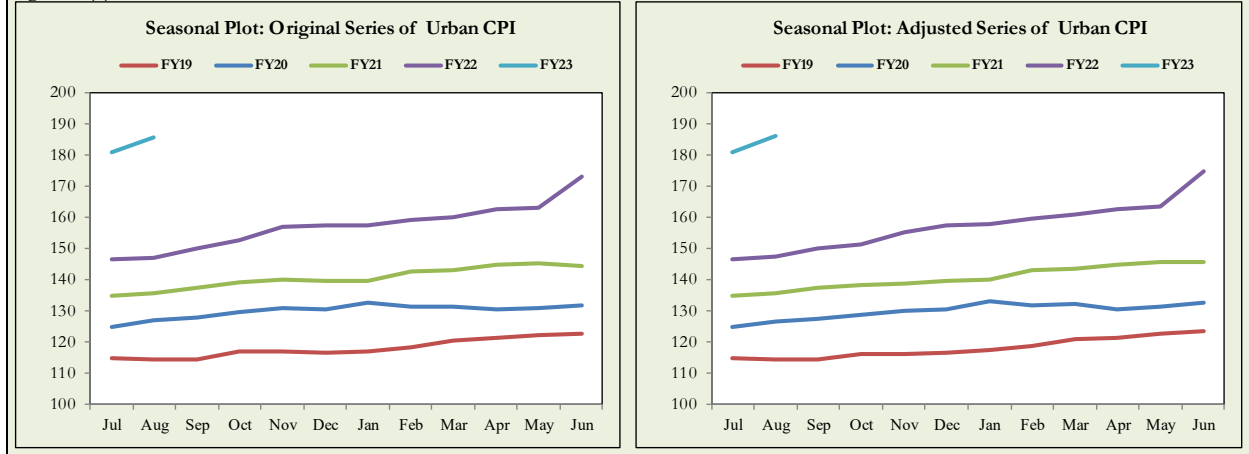
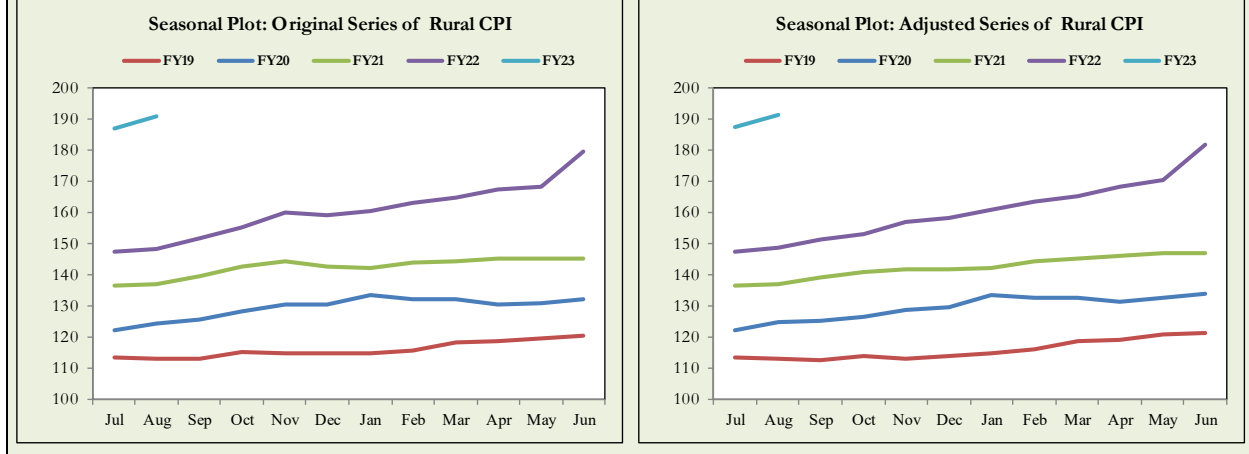


Fig. 12.2 (c): Seasonal Plot of Rural CPI

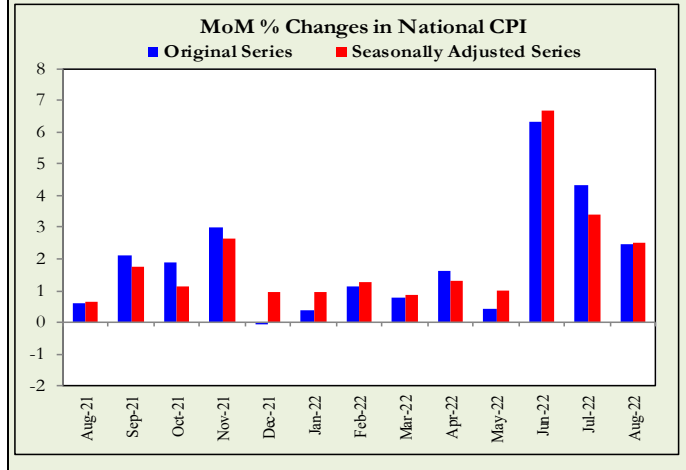


Seasonally adjusted Index of National CPI for August 2022 stood at 188.14 against 187.84 in original series showing an increase of 0.30 because of seasonal adjustment.

Seasonally adjusted Index of Urban CPI for August 2022 stood at 185.91 against 185.72 in original series showing an increase of 0.19 on account of seasonal adjustment.

Seasonally adjusted Index of Rural CPI for August 2022 stood at 191.50 against 191.04 in original series showing an increase of 0.46 on account of seasonal adjustment.

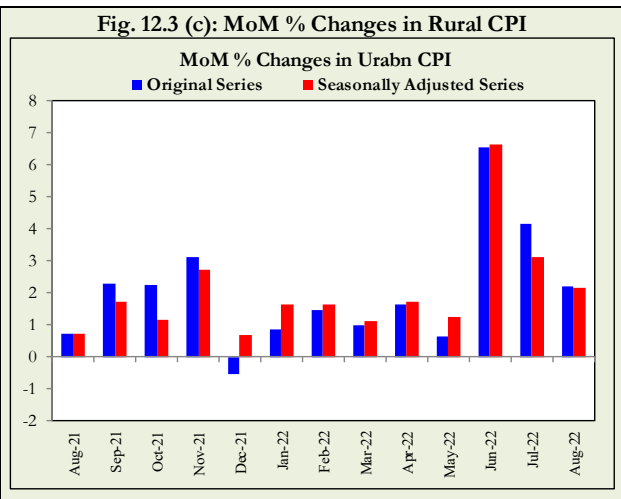
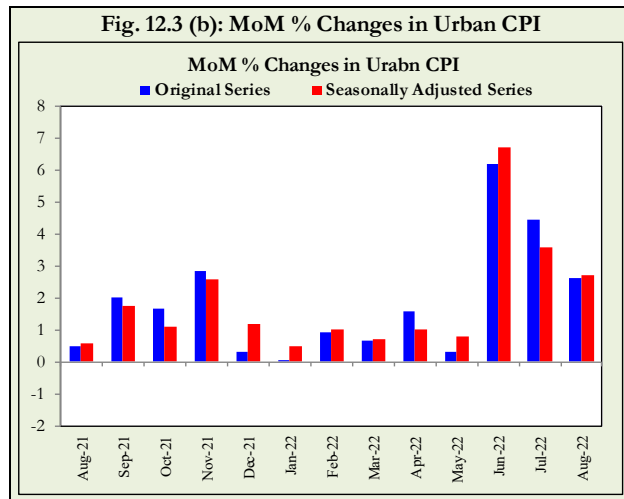
Fig. 12.3 (a): MoM Changes in National CPI



Month-on-month change of seasonally adjusted National CPI series stood at 2.51% reflecting a decrease during August 2022 over previous month and a decrease of 2.45% in original series.

Month-on-month change of seasonally adjusted Urban CPI series stood at 2.73% reflecting a decrease during August 2022 over previous month and a decrease of 2.62% in original series.

Month-on-month change of seasonally adjusted Rural CPI series stood at 2.18% reflecting a decrease during August 2022 over previous month and a decrease of 2.19% in original series.



List of Tables

Table A0: Inflation – Summary

Period	CPI							WPI	SPI**	Core Inflation			
	General			Food		Non-Food				NFNE*		Trimmed	
	National	Urban	Rural	Urban	Rural	Urban	Rural			Urban	Rural	Urban	Rural
Year-on-Year													
Aug-21	8.4	8.3	8.4	10.2	9.1	7.2	7.7	17.1	12.7	6.3	6.2	7.8	7.8
Sep-21	9.0	9.1	8.8	10.8	9.1	8.1	8.5	19.6	13.8	6.4	6.2	8.7	8.2
Oct-21	9.2	9.6	8.7	9.4	7.2	9.7	10.0	21.2	14.0	6.7	6.7	8.7	8.2
Nov-21	11.5	12.0	10.9	11.9	8.6	12.0	13.0	27.0	17.4	7.6	8.2	9.8	9.5
Dec-21	12.3	12.7	11.6	11.7	9.0	13.4	14.0	26.2	19.3	8.3	8.9	10.8	10.3
Jan-22	13.0	13.0	12.9	13.3	11.8	12.8	13.9	24.0	19.5	8.2	9.0	10.6	10.9
Feb-22	12.2	11.5	13.3	14.3	14.6	9.9	12.2	23.6	18.1	7.8	9.4	9.8	11.3
Mar-22	12.7	11.9	13.9	14.5	15.5	10.4	12.5	23.8	15.8	8.9	10.3	10.5	11.7
Apr-22	13.4	12.2	15.1	15.6	17.7	10.2	12.8	28.1	16.5	9.1	10.9	10.5	12.8
May-22	13.8	12.4	15.9	15.5	19.0	10.4	13.1	29.6	16.1	9.7	11.5	10.7	14.1
Jun-22	21.3	19.8	23.6	24.0	27.0	17.3	20.4	38.9	26.5	11.5	13.6	16.7	19.1
Jul-22	24.9	23.6	26.9	27.4	29.6	21.3	24.5	38.5	34.3	12.0	14.6	19.1	21.7
Aug-22	27.3	26.2	28.8	28.8	30.2	24.7	27.5	41.2	40.6	13.8	16.5	21.4	23.8
Month-on-Month													
Aug-21	0.6	0.5	0.7	0.5	0.8	0.5	0.6	1.2	0.9	0.2	0.2	0.4	0.6
Sep-21	2.1	2.0	2.3	3.6	3.7	1.1	1.0	3.2	2.9	0.4	0.5	0.9	1.2
Oct-21	1.9	1.7	2.2	1.5	2.6	1.8	1.9	4.2	3.1	0.9	1.0	1.1	1.6
Nov-21	3.0	2.9	3.1	3.9	3.3	2.2	3.0	3.8	4.1	1.1	1.8	1.7	2.2
Dec-21	-0.02	0.3	-0.5	-2.3	-3.1	2.0	1.9	-0.2	0.3	1.1	1.1	1.1	1.0
Jan-22	0.4	0.1	0.9	-0.8	0.4	0.6	1.4	0.6	-0.2	0.8	1.2	0.5	1.1
Feb-22	1.2	0.9	1.5	2.2	2.6	0.2	0.4	1.9	1.3	0.8	0.9	0.8	1.2
Mar-22	0.8	0.7	1.0	1.8	2.3	-0.1	-0.2	3.9	0.6	1.2	1.1	0.8	0.8
Apr-22	1.6	1.6	1.6	3.7	2.8	0.3	0.5	3.2	1.1	1.1	1.2	0.9	0.9
May-22	0.4	0.3	0.6	1.0	1.3	-0.1	0.0	1.4	0.6	0.7	0.9	0.8	1.4
Jun-22	6.3	6.2	6.6	5.3	6.0	6.8	7.1	8.2	8.1	2.0	2.3	3.5	4.3
Jul-22	4.3	4.5	4.2	4.3	3.7	4.6	4.6	2.0	7.7	1.2	1.6	2.7	2.7
Aug-22	2.5	2.6	2.2	1.6	1.2	3.3	3.1	3.1	5.6	1.8	1.8	1.7	1.8

* Non-Food Non-Energy, ** SPI for all expenditure groups combined

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

Groups	Weights	MoM change			YoY change		
		Aug-21	Jul-22	Aug-22	Aug-21	Jul-22	Aug-22
Food & Non-Alcoholic	34.6	0.7	4.1	1.3	10.0	28.8	29.5
Alcoholic Beverages & Tobacco	1.0	0.0	4.1	2.7	2.1	22.5	25.8
Clothing & Footwear	8.6	0.1	1.1	2.8	9.3	14.6	17.6
Housing, Water, Elec, Gas & other Fuels	23.6	0.7	8.8	5.5	8.0	21.8	27.6
Furnishing & Household Equip. Maintenance etc	4.1	0.5	1.7	2.3	9.6	19.7	21.9
Health	2.8	0.6	0.2	1.2	8.5	11.2	11.9
Transport	5.9	0.7	5.7	-0.3	8.1	64.7	63.1
Communication	2.2	0.0	0.4	0.1	2.8	1.2	1.2
Recreation & Culture	1.6	0.8	1.6	6.3	6.4	15.4	21.8
Education	3.8	0.9	0.5	1.1	2.9	9.8	10.0
Restaurants & Hotels	6.9	0.3	2.9	2.3	7.3	25.0	27.4
Miscellaneous	4.9	0.3	1.6	2.7	5.9	17.2	20.0
Overall National CPI	100.0	0.6	4.3	2.5	8.4	24.9	27.3

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

Groups	Weights	MoM change			YoY change		
		Aug-21	Jul-22	Aug-22	Aug-21	Jul-22	Aug-22
I. Food Group	36.8	0.5	4.3	1.6	10.2	27.4	28.8
Food & Non-Alcoholic Beverages	30.4	0.6	4.3	1.4	10.6	27.8	28.9
Alcoholic Beverages & Tobacco	0.9	0.0	2.9	3.4	2.8	21.7	25.8
Restaurant & Hotels (Food)	5.5	0.2	4.3	2.4	9.3	26.0	28.7
II. Non-Food Group	63.2	0.5	4.6	3.3	7.2	21.3	24.7
Clothing & Footwear	8.0	0.1	1.0	3.4	10.3	15.0	18.8
Housing, Water, Elec, Gas & other Fuels	27.0	0.5	8.6	5.2	7.2	19.2	24.8
Furnishing & Household Equip. Maintenance etc	4.1	0.4	1.5	2.3	9.4	18.2	20.3
Health	2.3	0.6	0.1	1.6	9.1	10.8	11.8
Transport	6.1	0.7	5.6	-0.2	8.8	63.8	62.4
Communication	2.4	0.0	0.4	0.0	3.8	1.1	1.2
Recreation & Culture	1.7	0.6	1.2	6.3	5.5	13.9	20.4
Education	4.9	1.1	0.3	0.7	2.5	10.5	10.1
Restaurants & Hotels (Non-food Component)	1.9	0.0	0.1	2.0	2.4	20.9	23.3
Miscellaneous	4.8	0.5	1.4	3.4	6.1	16.8	20.1
Overall Urban CPI	100.0	0.5	4.5	2.6	8.3	23.6	26.2

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

Groups	Weights	MoM Change			YoY Change		
		Aug-21	Jul-22	Aug-22	Aug-21	Jul-22	Aug-22
I. Food Group	45.9	0.8	3.7	1.2	9.1	29.6	30.2
Food and Non-Alcoholic Beverages	40.9	0.9	3.8	1.2	9.3	29.9	30.2
Alcoholic Beverages, Tobacco	1.3	0.0	5.5	1.9	1.4	23.4	25.8
Restaurants and Hotels (Food Component)	3.8	0.7	2.6	2.1	10.0	29.3	31.0
II. Non-Food Group	54.1	0.6	4.6	3.1	7.7	24.5	27.5
Clothing and Footwear	9.5	0.1	1.2	2.0	8.1	14.0	16.2
Housing, Water, Elec., Gas and Other Fuels	18.5	1.0	9.4	6.0	9.7	27.6	33.9
Furnishing and Household Equip. Maintenance	4.1	0.6	2.0	2.4	10.0	22.0	24.2
Health	3.5	0.5	0.3	0.8	7.8	11.7	12.0
Transport	5.6	0.8	5.7	-0.5	6.9	66.3	64.2
Communication	2.0	0.0	0.4	0.2	1.0	1.2	1.4
Recreation and Culture	1.4	1.2	2.2	6.4	8.0	18.2	24.3
Education	2.1	0.4	1.4	2.8	4.5	7.2	9.8
Restaurants and Hotels (Non-Food Component)	2.4	0.7	1.4	2.9	1.3	17.8	20.5
Miscellaneous	5.0	0.1	2.0	1.9	5.7	17.7	19.7
Rural CPI	100.0	0.7	4.2	2.2	8.4	26.9	28.8

Table A4: Top Ten Contributors to Urban CPI Inflation (YoY) – August 2022

Items/Contributors	Weights	YoY Change		Weighted Contribution (%)	
		Aug-21	Aug-22		
<u>A. Ranked by Weighted Contribution</u>					
1	Electricity Charges	4.56	9.16	123.37	19.17
2	Motor Fuel	2.91	15.82	84.21	10.73
3	Milk Fresh	7.11	10.64	25.01	6.69
4	Readymade Food	5.52	9.33	28.72	6.00
5	Cooking Oil	1.10	33.96	74.66	4.05
6	House Rent	19.26	6.05	5.62	3.93
7	Vegetable Ghee	1.03	36.34	69.82	3.75
8	Wheat Flour	3.01	9.36	24.31	2.80
9	Transport Services	1.75	-0.80	44.59	2.53
10	Fresh Vegetables	1.53	8.06	41.62	2.49
Total		47.78			62.14
<u>B. Ranked by Percentage Change</u>					
1	Electricity Charges	4.56	9.16	123.37	19.17
2	Pulse Masoor	0.16	4.16	114.34	0.51
3	Onions	0.59	-1.36	90.54	1.48
4	Motor Fuel	2.91	15.82	84.21	10.73
5	Mustard Oil	0.01	33.11	81.16	0.04
6	Gram Whole	0.09	5.18	77.23	0.24
7	Cooking Oil	1.10	33.96	74.66	4.05
8	Vegetable Ghee	1.03	36.34	69.82	3.75
9	Pulse Gram	0.17	6.32	60.25	0.31
10	Chicken	1.36	20.47	59.89	2.29
Total		11.98			42.57
<u>C. Ranked by Weights</u>					
1	House Rent	19.26	6.05	5.62	3.93
2	Milk Fresh	7.11	10.64	25.01	6.69
3	Readymade Food	5.52	9.33	28.72	6.00
4	Education	4.88	2.52	10.06	1.89
5	Electricity Charges	4.56	9.16	123.37	19.17
6	Wheat Flour	3.01	9.36	24.31	2.80
7	Appliances/Articles/Products	2.98	11.56	19.58	2.20
8	Motor Fuel	2.91	15.82	84.21	10.73
9	Cotton Cloth	2.22	9.77	23.53	2.04
10	Meat	2.04	13.71	26.81	2.48
Total		54.49			57.93

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 26.2 percent in August 2022.

Table A5: Top Ten Contributors to Urban CPI Inflation (MoM) in August 2022

Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Jul-22	Aug-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	4.56	39.35	19.73	46.47
2	Fresh Vegetables	1.53	25.14	13.44	8.15
3	Tomatoes	0.35	-12.46	52.85	6.34
4	Milk Fresh	7.11	3.84	2.16	5.75
5	Readymade Food	5.52	4.33	2.35	5.02
6	Appliances/Articles/Products	2.98	1.75	4.30	4.51
7	Cotton Cloth	2.22	2.21	4.67	3.88
8	Motor Vehicles	0.81	0.79	12.09	3.88
9	Readymade Garments	1.32	0.21	7.85	3.30
10	Liquefied Hydrocarbons	0.51	1.99	8.53	2.37
Total		26.91			89.67
B. Ranked by Percentage Change					
1	Tomatoes	0.35	-12.46	52.85	6.34
2	Electricity Charges	4.56	39.35	19.73	46.47
3	Pulse Moong	0.17	2.67	15.27	0.63
4	Fresh Vegetables	1.53	25.14	13.44	8.15
5	Pulse Mash	0.12	9.73	12.47	0.43
6	Motor Vehicles	0.81	0.79	12.09	3.88
7	Pulse Masoor	0.16	9.01	11.76	0.82
8	Textbooks	0.67	0.71	11.33	2.21
9	Motor Vehicle Tax	0.05	0.00	8.92	0.12
10	Liquefied Hydrocarbons	0.51	1.99	8.53	2.37
Total		8.93			71.42
C. Ranked by Weights					
1	House Rent	19.26	1.47	0.00	0.00
2	Milk Fresh	7.11	3.84	2.16	5.75
3	Readymade Food	5.52	4.33	2.35	5.02
4	Education	4.88	0.31	0.66	1.11
5	Electricity Charges	4.56	39.35	19.73	46.47
6	Wheat Flour	3.01	6.34	0.79	0.92
7	Appliances/Articles/Products	2.98	1.75	4.30	4.51
8	Motor Fuel	2.91	7.35	-2.60	-5.09
9	Cotton Cloth	2.22	2.21	4.67	3.88
10	Meat	2.04	0.89	1.04	0.98
Total		54.49			63.55

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 2.6 percent in August 2022.

Table A6: Top and Bottom Fifteen Contributors to Urban CPI Inflation (YoY) in August 2022

Items/ Contributors	Weights	YoY Change		Weighted Contribution (%)	
		Aug-21	Aug-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	4.56	9.16	123.37	19.17
2	Motor Fuel	2.91	15.82	84.21	10.73
3	Milk Fresh	7.11	10.64	25.01	6.69
4	Readymade Food	5.52	9.33	28.72	6.00
5	Cooking Oil	1.10	33.96	74.66	4.05
6	House Rent	19.26	6.05	5.62	3.93
7	Vegetable Ghee	1.03	36.34	69.82	3.75
8	Wheat Flour	3.01	9.36	24.31	2.80
9	Transport Services	1.75	-0.80	44.59	2.53
10	Fresh Vegetables	1.53	8.06	41.62	2.49
11	Meat	2.04	13.71	26.81	2.48
12	Chicken	1.36	20.47	59.89	2.29
13	Appliances/Articles/Products	2.98	11.56	19.58	2.20
14	Cotton Cloth	2.22	9.77	23.53	2.04
15	Education	4.88	2.52	10.06	1.89
Total		61.26			73.04
Bottom 15 Contributors					
1	Condiments And Spices	1.33	11.28	-17.43	-1.30
2	Sugar	1.11	9.83	-15.69	-0.76
3	Gas Charges	1.08	0.00	0.00	0.00
4	Therapeutic Appliances	0.01	3.19	5.75	0.00
5	Gur	0.04	9.64	3.04	0.00
6	Dental Services	0.02	7.10	12.15	0.01
7	Major Tools & Equipments	0.01	8.54	22.42	0.01
8	Postal Services	0.02	11.13	12.81	0.01
9	Newspapers	0.07	0.00	4.21	0.01
10	Carpets	0.03	1.43	13.13	0.01
11	Motor Vehicle Tax	0.05	7.62	8.92	0.02
12	Ice Cream	0.10	7.40	5.82	0.02
13	Electrical Appliances	0.05	1.13	16.61	0.02
14	Communication Services	1.88	2.54	0.52	0.03
15	Dessert Preparation	0.04	5.85	21.68	0.03
Total		5.84			-1.89

Table A7: Top and Bottom Fifteen Contributors to Urban CPI Inflation (MoM) in August 2022

Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Jul-22	Aug-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	4.56	39.35	19.73	46.47
2	Fresh Vegetables	1.53	25.14	13.44	8.15
3	Tomatoes	0.35	-12.46	52.85	6.34
4	Milk Fresh	7.11	3.84	2.16	5.75
5	Readymade Food	5.52	4.33	2.35	5.02
6	Appliances/Articles/Products	2.98	1.75	4.30	4.51
7	Cotton Cloth	2.22	2.21	4.67	3.88
8	Motor Vehicles	0.81	0.79	12.09	3.88
9	Readymade Garments	1.32	0.21	7.85	3.30
10	Liquefied Hydrocarbons	0.51	1.99	8.53	2.37
11	Textbooks	0.67	0.71	11.33	2.21
12	Washing Soap/Detergents/Match	1.41	2.45	3.88	2.10
13	Rice	1.18	5.16	3.94	1.88
14	Eggs	0.51	8.09	7.53	1.82
15	Tailoring	1.07	0.44	4.60	1.78
Total		31.75			99.46
Bottom 15 Contributors					
1	Fresh Fruits	1.44	-7.11	-19.98	-10.97
2	Chicken	1.36	-3.02	-11.54	-6.48
3	Motor Fuel	2.91	7.35	-2.60	-5.09
4	Vegetable Ghee	1.03	5.11	-0.74	-0.55
5	Transport Services	1.75	4.53	-0.23	-0.15
6	Onions	0.59	13.65	-0.17	-0.04
7	Wheat	0.61	9.76	-0.14	-0.04
8	Fish	0.39	0.00	-0.22	-0.02
9	Sugar	1.11	1.26	-0.04	-0.01
10	Woolen Readymade Garments	0.43	0.00	0.00	0.00
11	Gas Charges	1.08	0.00	0.00	0.00
12	Water Supply	0.53	0.00	0.00	0.00
13	Newspapers	0.07	0.00	0.00	0.00
14	Postal Services	0.02	0.00	0.00	0.00
15	Communication Services	1.88	0.52	0.00	0.00
Total		15.20			-23.35

Table A8: Top and Bottom Fifteen Contributors to MoM Urban CPI Food Inflation in August 2022

Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Jul-22	Aug-22		
A. Ranked by Weighted Contribution					
1	Fresh vegetables	1.53	25.14	13.44	8.15
2	Tomatoes	0.35	-12.46	52.85	6.34
3	Milk fresh	7.11	3.84	2.16	5.75
4	Readymade food	5.52	4.33	2.35	5.02
5	Rice	1.18	5.16	3.94	1.88
6	Eggs	0.51	8.09	7.53	1.82
7	Cooking oil	1.10	7.66	2.34	1.76
8	Potatoes	0.45	10.87	4.99	1.06
9	Meat	2.04	0.89	1.04	0.98
10	Condiments and Spices	1.33	1.22	1.94	0.95
11	Wheat flour	3.01	6.34	0.79	0.92
12	Pulse masoor	0.16	9.01	11.76	0.82
13	Beverages	0.89	1.38	2.78	0.79
14	Cigarettes	0.72	2.63	2.97	0.77
15	Pulse moong	0.17	2.67	15.27	0.63
Total		26.07			37.64
Bottom 15 Contributors					
1	Fresh fruits	1.44	-7.11	-19.98	-10.97
2	Chicken	1.36	-3.02	-11.54	-6.48
3	Vegetable ghee	1.03	5.11	-0.74	-0.55
4	Onions	0.59	13.65	-0.17	-0.04
5	Wheat	0.61	9.76	-0.14	-0.04
6	Fish	0.39	0.00	-0.22	-0.02
7	Sugar	1.11	1.26	-0.04	-0.01
8	Mustard oil	0.01	1.61	0.15	0.00
9	Gur	0.04	0.91	0.61	0.01
10	Dessert preparation	0.04	2.86	3.76	0.05
11	Beans	0.04	0.92	3.07	0.05
12	Dry fruits	0.33	1.02	0.62	0.07
13	Wheat products	0.09	2.49	3.03	0.12
14	Ice cream	0.10	0.32	3.86	0.13
15	Nimco	0.12	4.59	2.94	0.15
Total		7.32			-17.55

Table A9: Top and Bottom Fifteen Contributors to MoM Urban CPI Non-Food Inflation in August 2022

Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Jul-22	Aug-22		
A. Ranked by Weighted Contribution					
1	Electricity charges	4.56	39.35	19.73	46.47
2	Appliances/Articles/Products for	2.98	1.75	4.30	4.51
3	Cotton cloth	2.22	2.21	4.67	3.88
4	Motor vehicles	0.81	0.79	12.09	3.88
5	Readymade garments	1.32	0.21	7.85	3.30
6	Liquefied Hydrocarbons	0.51	1.99	8.53	2.37
7	Textbooks	0.67	0.71	11.33	2.21
8	Washing soap/detergents/match	1.41	2.45	3.88	2.10
9	Tailoring	1.07	0.44	4.60	1.78
10	Marriage Hall Charges	1.75	0.14	2.04	1.26
11	Construction input items	0.38	3.18	7.53	1.12
12	Education	4.88	0.31	0.66	1.11
13	Doctor (MBBS) clinic fee	0.40	0.02	5.94	1.08
14	stationery	0.35	3.32	7.29	0.96
15	Personal Effects n.e.c.	0.94	-0.53	1.77	0.82
Total		24.25			76.86
Bottom 15 Contributors					
1	Motor fuel	2.91	7.35	-2.60	-5.09
2	Transport services	1.75	4.53	-0.23	-0.15
3	Gas charges	1.08	0.00	0.00	0.00
4	Woolen readymade garments	0.43	0.00	0.00	0.00
5	Water supply	0.53	0.00	0.00	0.00
6	Newspapers	0.07	0.00	0.00	0.00
7	Postal services	0.02	0.00	0.00	0.00
8	Communication Services	1.88	0.52	0.00	0.00
9	House rent	19.26	1.47	0.00	0.00
10	Therapeutic Appliances	0.01	0.00	0.20	0.00
11	Major tools & equipments	0.01	0.92	0.34	0.00
12	Plastic products	0.05	1.40	0.33	0.01
13	Medical tests	0.24	0.15	0.16	0.01
14	Household textiles	0.34	0.32	0.12	0.01
15	Carpets	0.03	0.21	2.09	0.02
Total		28.60			-5.19

Table A10: Top Ten Contributors to Rural CPI Inflation (YoY) in August 2022

Items/ Contributors	Weights	YoY Change		Weighted Contribution (%)	
		Aug-21	Aug-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	3.44	9.16	123.37	13.09
2	Motor Fuels	2.49	14.62	87.34	8.47
3	Vegetable Ghee	2.38	36.91	68.67	8.31
4	Milk Fresh	10.38	8.57	21.67	7.34
5	Wheat	3.47	1.38	39.80	4.98
6	Readymade Food	3.80	10.03	30.98	4.35
7	Solid Fuel	4.48	9.51	22.25	3.32
8	Transport Services	1.80	-3.17	59.30	3.13
9	Fresh Vegetables	2.09	21.27	41.61	2.90
10	Wheat Flour	3.43	9.06	22.60	2.74
Total		37.76			58.63
B. Ranked by Percentage Change					
1	Electricity Charges	3.44	9.16	123.37	13.09
2	Pulse Masoor	0.21	2.24	118.64	0.64
3	Onions	0.90	9.21	96.70	2.03
4	Gram Whole	0.11	8.67	88.82	0.29
5	Motor Fuels	2.49	14.62	87.34	8.47
6	Cooking Oil	0.60	40.04	69.61	2.07
7	Mustard Oil	0.01	36.18	69.19	0.04
8	Vegetable Ghee	2.38	36.91	68.67	8.31
9	Pulse Gram	0.28	6.41	65.65	0.51
10	Chicken	1.46	10.52	63.26	2.44
Total		11.88			37.89
C. Ranked by Weights					
1	Milk Fresh	10.38	8.57	21.67	7.34
2	House Rent	8.61	6.05	5.90	1.67
3	Solid Fuel	4.48	9.51	22.25	3.32
4	Readymade Food	3.80	10.03	30.98	4.35
5	Wheat	3.47	1.38	39.80	4.98
6	Electricity Charges	3.44	9.16	123.37	13.09
7	Wheat Flour	3.43	9.06	22.60	2.74
8	Cotton Cloth	2.84	7.56	15.88	1.79
9	Motor Fuels	2.49	14.62	87.34	8.47
10	Vegetable Ghee	2.38	36.91	68.67	8.31
Total		45.32			56.06

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 28.8 percent in August 2022.

Table A11: Top Ten Contributors to Rural CPI Inflation (MoM) in August 2022

Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Jul-22	Aug-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	3.44	39.35	19.73	40.69
2	Fresh Vegetables	2.09	14.78	19.62	16.84
3	Tomatoes	0.51	-13.44	30.02	5.86
4	Milk Fresh	10.38	2.75	1.19	5.04
5	Condiments And Spices	1.49	2.33	7.73	4.73
6	Liquefied Hydrocarbons	1.00	4.62	6.97	4.01
7	Readymade Food	3.80	2.57	2.09	3.92
8	Rice	1.55	6.12	3.57	3.32
9	Transport Services	1.80	3.71	3.68	3.11
10	Solid Fuel	4.48	1.08	1.44	2.71
Total		30.54			90.23
B. Ranked by Percentage Change					
1	Tomatoes	0.51	-13.44	30.02	5.86
2	Motor Vehicle Tax	0.02	0.00	24.88	0.13
3	Electricity Charges	3.44	39.35	19.73	40.69
4	Fresh Vegetables	2.09	14.78	19.62	16.84
5	Pulse Mash	0.15	8.23	15.15	0.75
6	Pulse Masoor	0.21	9.60	13.69	1.49
7	Pulse Moong	0.25	4.79	12.71	0.99
8	Besan	0.07	6.14	9.71	0.30
9	Textbooks	0.50	0.00	9.69	1.62
10	Pulse Gram	0.28	14.59	8.92	1.09
Total		7.52			69.76
C. Ranked by Weights					
1	Milk Fresh	10.38	2.75	1.19	5.04
2	House Rent	8.61	1.35	0.00	0.00
3	Solid Fuel	4.48	1.08	1.44	2.71
4	Readymade Food	3.80	2.57	2.09	3.92
5	Wheat	3.47	7.06	1.24	2.23
6	Electricity Charges	3.44	39.35	19.73	40.69
7	Wheat Flour	3.43	6.40	1.36	2.08
8	Cotton Cloth	2.84	1.11	1.88	2.51
9	Motor Fuels	2.49	7.57	-3.16	-6.17
10	Vegetable Ghee	2.38	0.88	-2.86	-6.27
Total		45.32			46.74

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 2.2 percent in August 2022.

Table A12: Top and Bottom Fifteen Contributors to Rural CPI Inflation (YoY) in August 2022

Items/ Contributors	Weights	YoY Change		Weighted Contribution (%)	
		Aug-21	Aug-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	3.44	9.16	123.37	13.09
2	Motor Fuels	2.49	14.62	87.34	8.47
3	Vegetable Ghee	2.38	36.91	68.67	8.31
4	Milk Fresh	10.38	8.57	21.67	7.34
5	Wheat	3.47	1.38	39.80	4.98
6	Readymade Food	3.80	10.03	30.98	4.35
7	Solid Fuel	4.48	9.51	22.25	3.32
8	Transport Services	1.80	-3.17	59.30	3.13
9	Fresh Vegetables	2.09	21.27	41.61	2.90
10	Wheat Flour	3.43	9.06	22.60	2.74
11	Chicken	1.46	10.52	63.26	2.44
12	Rice	1.55	6.44	35.29	2.41
13	Cooking Oil	0.60	40.04	69.61	2.07
14	Onions	0.90	9.21	96.70	2.03
15	Meat	1.71	16.13	26.08	1.84
Total		43.98			69.42
Bottom 15 Contributors					
1	Sugar	2.03	10.06	-16.29	-1.31
2	Postal Services	0.01	0.00	0.00	0.00
3	Newspapers	0.02	2.40	0.10	0.00
4	Gur	0.15	8.10	0.17	0.00
5	Water Supply	0.06	3.14	0.73	0.00
6	Garbage Collection	0.01	8.74	9.60	0.00
7	Communication Services	1.65	0.78	0.16	0.01
8	Dental Services	0.02	7.84	12.40	0.01
9	Ice Cream	0.06	7.41	4.12	0.01
10	Dessert Preparation	0.01	8.01	19.11	0.01
11	Motor Vehicle Tax	0.02	-5.56	24.88	0.01
12	Cleaning And Laundering	0.02	4.01	30.49	0.02
13	Honey	0.03	9.52	19.42	0.02
14	Major Tools and Equipments	0.03	9.55	22.72	0.02
15	Accommodation Services	0.14	0.03	7.08	0.02
Total		4.26			-1.18

Table A13: Top and Bottom Fifteen Contributors to Rural CPI (MoM) Inflation in August 2022

Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Jul-22	Aug-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	3.44	39.35	19.73	40.69
2	Fresh Vegetables	2.09	14.78	19.62	16.84
3	Tomatoes	0.51	-13.44	30.02	5.86
4	Milk Fresh	10.38	2.75	1.19	5.04
5	Condiments And Spices	1.49	2.33	7.73	4.73
6	Liquefied Hydrocarbons	1.00	4.62	6.97	4.01
7	Readymade Food	3.80	2.57	2.09	3.92
8	Rice	1.55	6.12	3.57	3.32
9	Transport Services	1.80	3.71	3.68	3.11
10	Solid Fuel	4.48	1.08	1.44	2.71
11	Cotton Cloth	2.84	1.11	1.88	2.51
12	Potatoes	0.74	19.94	5.51	2.46
13	Marriage Hall Charges	2.25	1.49	2.91	2.42
14	Footware	1.92	0.69	3.30	2.30
15	Personal Grooming Services	1.54	3.30	3.10	2.24
Total		39.83			102.16
Bottom 15 Contributors					
1	Fresh Fruits	1.45	-5.11	-24.28	-16.87
2	Chicken	1.46	4.82	-13.64	-10.35
3	Vegetable Ghee	2.38	0.88	-2.86	-6.27
4	Motor Fuels	2.49	7.57	-3.16	-6.17
5	Cooking Oil	0.60	-0.77	-2.54	-1.37
6	Sugar	2.03	0.28	-0.31	-0.22
7	Mustard Oil	0.01	-0.04	-1.18	-0.01
8	Woolen Readymade Garments	0.54	0.00	0.00	0.00
9	Water Supply	0.06	0.00	0.00	0.00
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	2.48	0.00	0.00
13	Communication Services	1.65	0.16	0.00	0.00
14	Fish	0.26	1.81	0.00	0.00
15	House Rent	8.61	1.35	0.00	0.00
Total		21.58			-41.26

Table A14: Top and Bottom Fifteen Contributors to MoM Rural CPI Food Inflation in August 2022

Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Jul-22	Aug-22		
A. Ranked by Weighted Contribution					
1	Fresh Vegetables	2.09	14.78	19.62	16.84
2	Tomatoes	0.51	-13.44	30.02	5.86
3	Milk fresh	10.38	2.75	1.19	5.04
4	Condiments and Spices	1.49	2.33	7.73	4.73
5	Readymade Food	3.80	2.57	2.09	3.92
6	Rice	1.55	6.12	3.57	3.32
7	Potatoes	0.74	19.94	5.51	2.46
8	Wheat	3.47	7.06	1.24	2.23
9	Wheat Flour	3.43	6.40	1.36	2.08
10	Eggs	0.57	9.05	6.55	1.96
11	Onions	0.90	7.15	4.26	1.76
12	Meat	1.71	0.38	1.88	1.71
13	Pulse Masoor	0.21	9.60	13.69	1.49
14	Pulse Gram	0.28	14.59	8.92	1.09
15	Pulse Moong	0.25	4.79	12.71	0.99
Total		31.38			55.49
Bottom 15 Contributors					
1	Fresh fruits	1.45	-5.11	-24.28	-16.87
2	Chicken	1.46	4.82	-13.64	-10.35
3	Vegetable ghee	2.38	0.88	-2.86	-6.27
4	Cooking oil	0.60	-0.77	-2.54	-1.37
5	Sugar	2.03	0.28	-0.31	-0.22
6	Mustard oil	0.01	-0.04	-1.18	-0.01
7	Fish	0.26	1.81	0.00	0.00
8	Ice Cream	0.06	0.00	0.32	0.01
9	Dessert Preparation	0.01	5.10	2.31	0.01
10	Pan Prepared	0.04	5.86	0.50	0.01
11	Honey	0.03	0.73	1.56	0.02
12	Milk powder	0.11	0.82	3.28	0.12
13	Butter	0.33	0.97	0.82	0.12
14	Wheat Products	0.11	5.04	3.31	0.16
15	Beans	0.09	1.88	3.57	0.17
Total		8.98			-34.46

Table A15: Top and Bottom Fifteen Contributors to MoM Rural CPI Non-Food Inflation in August 2022

Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Jul-22	Aug-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	3.44	39.35	19.73	40.69
2	Liquefied Hydrocarbons	1.00	4.62	6.97	4.01
3	Transport Services	1.80	3.71	3.68	3.11
4	Solid Fuel	4.48	1.08	1.44	2.71
5	Cotton Cloth	2.84	1.11	1.88	2.51
6	Marriage Hall Charges	2.25	1.49	2.91	2.42
7	Footwear	1.92	0.69	3.30	2.30
8	Personal Grooming Services	1.54	3.30	3.10	2.24
9	Education	2.13	1.43	2.81	2.18
10	Washing Soaps, Detergents and	1.70	1.72	2.52	1.84
11	Textbooks	0.50	0.00	9.69	1.62
12	Household Equipments	1.28	2.38	2.64	1.50
13	Tailoring	1.30	2.03	2.32	1.29
14	Recreation and Culture	0.48	3.76	6.75	1.27
15	Readymade Garments	1.13	0.26	2.40	1.10
Total		27.78			70.79
Bottom 15 Contributors					
1	Motor Fuels	2.49	7.57	-3.16	-6.17
2	Postal Services	0.01	0.00	0.00	0.00
3	Woolen Readymade Garments	0.54	0.00	0.00	0.00
4	Water Supply	0.06	0.00	0.00	0.00
5	Newspapers	0.02	0.00	0.00	0.00
6	Garbage Collection	0.01	2.48	0.00	0.00
7	Communication Services	1.65	0.16	0.00	0.00
8	House Rent	8.61	1.35	0.00	0.00
9	Dental Services	0.02	0.85	2.55	0.02
10	Cleaning and Laundering	0.02	0.00	3.42	0.03
11	Major Tools and Equipments	0.03	1.35	3.25	0.04
12	Plastic Products	0.08	3.62	1.44	0.05
13	Dopatta	0.21	0.88	0.96	0.08
14	Medical Tests	0.40	0.07	0.53	0.08
15	Communication Apparatus	0.34	1.14	0.86	0.09
Total		14.48			-5.78

Table A16: Distribution of Price Changes (YoY) - Selected Urban CPI Items: August 2022

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	Chilies Powder National 200 Gm Packet, Ginger (Adrak), Sugar Refined, Cardamom Small (Average Quality), Cumin Seed (Zeera) White National 50 Gm Packet, Kinnu (Average Quality),	Turmeric Powder National 50 Gm Packet, Coriander Seed Powder National 200 Gm Packet, Gur (Average Quality), Jam-E-Shireen Standard Size (800 ML), Pepper Black National 50 Gm Packet,	Ice Cream Walls Cup (Large Size), Tomato Ketchup Mitchells/National 1 Kg Polybag,	Fish Rahu (Medium Size), Almonds (Badam) Kaghazi With Shell (Average Quality), Wheat Flour Bag, Pulse Moong (Washed), Potatoes, Powdered Milk Nido 390 Gm Polybag, Cardamom Large (Loose)
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,		Pullover Gents Oxford/Bonanza, Linen, Ladies (Average Quality), Dopatta Cotton (Average Quality), Shirt Boy Length 24"/26", Dopatta Georgette (Average Quality),	Tailoring Charges Pant (Men), Women Shalwar Kameez (Average Quality), Vest "Baniyan" For Men Average Quality, Pullover Ladies Oxford/Bonanza, Brassier (Average Quality), Pant Cloth Wash & Wear (Average Quality), Awami Suit Gents Wash & Wear (Average Quality), Full Pant Boy Length 24"/26", Heavy Weight Suiting Lawrance Pur (Average Quality), Pullover
Housing, Water, Elec, Gas & other Fuels	Gas Charges Upto 3.3719 Mmbtu , Gas Charges 3.3719 - 6.7438 Mmbtu , Gas Charges 6.7438 - 10.1157 Mmbtu , Gas Charges 10.1157 - 13.4876 Mmbtu , Gas Charges Above 13.4876 Mmbtu, Gas Charges Combined,	Water Charges Per House,	House Rent Combined,	Bricks New 1st Class, Painter Wage Rate, Firewood Whole, Mason Wage Rate, Electrician Charges, Plumber Wage Rate, Charges For Refuse/Waste Collection, Unskilled Labor Wage Rate, Cement Blocks (6"X8"X12"), Synthetic Enamel Ici Balti 3.64 Litre, Sand (Black Pit), Iron Bars (M.S.
Furnishing & Household Equip. Maintenance etc		Bed Sheet Double With Two Pillow Covers (Superior Quality),	Water Set (Omroc) 6 Glasses + Jug, Finis 400 Ml Bottle, Blanket Single (Sn), Bed Sheet Single (Superior Quality), Sewing Machine (Sn) Without Cover, Towel Medium Size (3' X 2'), Dining Table Wit Glass Top And Six Chairs (Average	Readymade Quilt (3 Kg), Cot Iron (Charpai), Central Table Set With Glass Top, Dinner Set Plastic 72 Pieces Super Quality, Plain Carpet, Cleanser Powder Vim 900 Gm Polybag, Match Box, Phenyl Tyfon/Finis 2.75 Litre Bottle, Chair Plastic (Chairman) (Average Quality), Household
Health	Hydrollin Syrup 120 Ml Bottle,	Sugar Test (Random/Fasting) Charges Of Both, Ventolin Tablets 2 Mg, Blood Test (Cp) Charges,	Electronic Bp Checking Apparatus, Gynecologist Fee Per Visit, Cost Of Surgery (C-Section), Septran Tablets, Glucometer, Amoxil Capsule 250 Mg, Lederplex Syrup Bottle, Phenergan Syrup 120 Ml Bottle, Physiotherapist Fee Per Visit,	Dental Surgeon Fee Per Visit, Inderal Tablets 10 Mg, Glaxose-D 400 Gm Packet, Dental Extraction Fee, Entox Tablets, Betnovate-N Ointment 10 Gm Tube, Urine Test (Dr) Charges, Johar Joshanda Instant (Sachet) Packet, Ultrasound Abdominal, Dettol Medium Bottle, Doctor (Mbbs)
Transport	Car Suzuki 800 Cc Without Ac,		Car Tax 800 Cc To 1500 Cc,	Motorcycle Service Charges, Car Service Charges, Train Fare Business Class Per Person, Tire Car Puncture Charges, Tire Motorcycle Cd 70 (Back Wheel), Train Fare Ac Sleeper Per Person, Tire Car Mehran Tubeless (General), Train Fare Ac Lower Per Person, Car Toyota 1300 Cc Xii, Suzuki
Communication	Mobile Call Charges, Telephone Call Charges,	Internet Charges (Dsl) 1 Mb (Unlimited), Mobile Set With Rear Camera And Without Touch Screen,		Courier Charges Minimum Within Zone Outside City (Tcs),
Recreation & Culture	Newspaper Daily Jang, Mag The Weekly (Magazine),	English Book Ba/B.Sc, Urdu Book Ba/B.Sc, Cable Charges,	Akhbar-E-Jehan Weekly,	Led Sony/Samsung 32" Colored, Personal Computer With Led Monitor (17") Dell/Hp/Acer Core I5, Laptop Dell/Hp/Acer Core I5, Display (14"-15"), Mathematics Book Class Xi (Text Book Board), English Book Class Vi, Newspaper Daily Dawn, Mathematics Book Class Ix And X (Text
Education		Government College Fee First Year, Government University Fee M.S.C / M.A., Coaching Fee For Class Xi/Xii Science Group, Coaching Fee For Class Xi/Xii Commerce Group, Coaching Fee	Tuition Fee Private University M.Sc./M.A, Government Medical College/University Tuition Fee For Mbbs (1st Year),	Private School Fee English Medium Average Standard (Class Vi), Private School Fee English Medium Average Standard (Class I), Private School Fee English Medium Average Standard (Class
Restaurant & Hotels		Government Hostel Accommodation Fee For Intermediate College Per Student,		Marriage Hall Charges With Furniture, Cooked Chicken At Average Hotel, Marriage Hall Service Charges With Food (Average Meal), Seekh Kabab (Beef) (Average Quality), Chicken Roast (Full) (Average Quality), Pizza Chicken Medium
Miscellaneous		Purse Ladies Medium Size (Average Quality), Wall Clock Quartz (Average Quality),	Shampoo Sun Silk/Pantene 90 Ml Bottle, Lipstick Swiss Miss/Medora (Medium), Blade Treet Ordinary (10 No. Packet), Nail Polish Swiss Miss/Medora (Medium), Tissue Paper Perfumed Box 100 Napkins, Artificial Jewelry (Locket Set)	Hair Style Charges (At Average Beauty Parlor), Disposable Razor Gillette Blue II, Suitcase Ragzine (24"X16"X6") (Average Quality), Silver Tezabi 24 Carett, Talcum Powder Viceroy/Black Cat Large Size, Hair Removing Cream (Eu-Cream) 30Ml Tube, Tooth Paste Colgate 75 Gm, Electric Hair

Table A17: Distribution of Price Changes (YoY) - Selected Rural CPI Items: August 2022

Groups	Decrease or no change	Subdued increase (Greater than 0% but less than 5%)	Moderate increase (5% but less than 10%)	Double digit increase (10% or more)
Food & Non-Alcoholic Beverages	Ginger (Adrak), Sugar Refined, Chilies Powder Loose,	Gur (Average Quality), Jam-E-Shireen Standard Size (800 ML), Ice Cream Walls Cup (Large Size),		Potatoes, Grapes (Angoor) (Average Quality), Powdered Milk Nido 390 Gm Polybag, Fish Fresh, Cold Drink (Pepsi/Coca-Cola) 1.5 Liter Bottle, Fruit Juice Small Packet 250 ML, Almonds (Badam) Kaghazi With Shell (Average Quality), Groundnuts (Moong Phali) With
Alcoholic Beverages & Tobacco				Cigarettes Gold Leaf 20'S Packet, Tobacco Hukka Twisted, Cigarettes Capstan 20'S Packet, Pan Prepared (Sweet With Beetle Nuts), Chewing Tobacco (Niswar),
Clothing & Footwear			Footwear Gents Local (Average Quality), Chaddar (Wash-N-Wear) (2X2.5 Meter),	Full Pant Boy Length 24"/26", Pullover Gents (Average Quality), Footwear Children Local (Average Quality), Dopatta Georgette (Average Quality), Lawn Printed (Average Quality), Shirting (Average Quality), Shirt Boy Length 24"/26", Footwear Ladies Local (Average Quality), Long Cloth, School Uniform Boys (Pant & Shirt) 24"/26", Linen, Ladies (Average
Housing, Water, Elec, Gas & other Fuels		Water Charges Per House,	House Rent Combined, Charges For Refuse/Waste Collection,	Painter Wage Rate, Plumber Wage Rate, Carpenter Wage Rate, Mason Wage Rate, Electrician Charges, Unskilled Labor Wage Rate, Bricks New 1st Class, Firewood Whole, Coal, Lpg 11.67 Kg Cylinder, Sand (Black Pit), Bajri, Cement (Local) 50 Kg
Furnishing & Household Equip. Maintenance etc			Cleanser Powder Vim 900 Gm Polybag, Finis 400 ML Bottle, Boot Polish Cherry/Kiwi 42 ML,	Water Set (Omroc) 6 Glass, Blanket Single (Sn), Robin Blue Liquid 75 ML Bottle, Refrigerator Dawlance/Pel 10 Cubic Feet Double Door, Bucket (Balti) Plastic Medium Size, Washing Machine With Spinner (Super Asia Or Similar Brand)
Health		Hydryllin Syrup 120 ML Bottle, Blood Test (Cp) Charges,	Cost Of Surgery (C-Section), Inderal Tablets 10 Mg, Physiotherapist Fee Per Visit, Daonil Tablets 5 Mg, X-Ray (Chest) Charges, Cac 1000 Tablets Sandoz Bottle,	Amoxil Capsule 250 Mg, Dental Surgeon Fee Per Visit, Dettol Medium Bottle, Doctor (Mbbbs) Clinic Fee, Johar Joshanda Instant (Sachet) Packet, Panadol Tablets Plain,
Transport	Car Suzuki 800 Cc Without Ac,			Motorcycle Service Charges, Tire Cycle, Car Tax 800 Cc To 1500 Cc, Tire Motorcycle Cd 70 (Back Wheel), Motorcycle Honda Cd 70, Tire Car Mehran Tubeless (General), Bicycle, Mobil Oil (Havoline 20W-50), Train Fare Economy
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,	Personal Computer With Led Monitor (17") Dell/HP/Acer Core I5, Cable Charges, Led Sony/Samsung 32" Colored,	Urdu Books Class Ix And X (Text Book Board), English Books Class Vi, English Books Class Xi Complete Set, Exercise Book (With Lines) 80 To 100 Pages, English Books Class Ix And X, Ballpoint Pen Local, Urdu Books Class V (Text Book Board), Lead Pencil Goldfish, Date Book
Education			Private School Fee English Medium Average Standard (Class I), Private School Fee English Medium Average Standard (Class Vi), Private School Fee English Medium Average Standard (Class V), Vocational Training Basic Computer	Coaching Fee For Class Ix/X Science Group,
Restaurant & Hotels	Government Hostel Accommodation Fee For Intermediate College Per Student,			Marriage Hall Charges With Furniture, Marriage Hall Service Charges With Food (Average Meal), Chicken Roast (Full) (Average Quality), Chicken Biryani Full/Double, Pizza Chicken Medium Size (Average Quality), Private Hostel
Miscellaneous			Blade Treet Ordinary (10 No. Packet), Tooth Paste Colgate 75 Gm,	Shampoo Sun Silk/Pantene 90 ML Bottle, Purse Ladies Medium Size (Average Quality), Disposable Razor Gillette Blue II, Talcum Powder Viceroy/Black Cat, Shaving Cream (Touchme Large/Admiral), Tooth Brush (Shield), Hair Color (Kala Kola), Suitcase Ragzine (24"X16"X6")

Table A18: Distribution of Price Changes (YoY) - WPI Items: August 2022

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	Stimulant & Spice Crops, Millet / Bajra,	Fish Live Fresh or Chilled, Raw Animal Materials / Wool, Fuel Wood in Logs,		Dry Fruits, Cotton Seeds, Unmanufactured Tobacco, Edible Roots / Potatoes, Sugar Crops, Rice, Fresh Fruits, Sorghum / Jowar, Raw Milk from Bovine Animals, Maize, Hides, Skins & Fur Skins, Raw, Fiber Crops, Other Oil Seeds,
Ores/Minerals, Elec, Gas & Water		Natural Gas Liquefied,		Salt & Pure Sodium Chloride, Coal not Agglomerated, Electrical Energy,
Food, Beverages, Tobacco, Textile, Apparel and Leather Product	Spices, Sugar Refined, Nylon Yarn,	Blankets, Other Food Products, Other Leather N.E.C, Bed Sheets,	Woolen Carpets, Ice Cream, Sugar Confectionary, Chocolate, Quilts,	Fruit Juices, Towels, Leather Without Hair, Synthetic Carpets, Dried Fruits & Nuts, Beverages, Cotton Fabrics, Blended Yarn, Woven Fabrics, Dairy Products N.E.C, Hosiery Products, Vegetables & Fruit Juice, Cotton Yarn,
Other Transportable Goods except Metal Products, Machinery, and Equipments	Hard Board, Dyeing Material, Insecticides,	Pesticides,	Other Glass Articles, Plastic Products,	Medicines, Bricks, Blocks & Tiles, Timber, Matches, Printing Paper, Ceramics & Sanitary Fixture, Soaps & Detergents, Paints & Varnishes, Mobil Oil, Auto Tyres, Cement, Glass sheets, Bed Foam,
Metal Product, Machinery & Equipments	Vacuum Pumps,		Steel Products, Engines & Motors,	Fridge, WashM, SewM, Fans, Iron, Radio & Television, Electric Wires, Steel Bar & Sheets, Bicycles, Motor Vehicles, Motorcycles, Lighting Equipments, Air Conditioners, Tractors, Lathe Machines, Pipe Fittings, Cultivators,

Table A19: International Commodity Prices/Indices				
Commodity/Indices	Jun-21	Aug-21	Jul-22	Aug-22
Energy				
Crude Oil (US\$ per barrel)*	71.8	68.9	105.1	96.0
Energy Index (2010 = 100)	93.9	96.3	168.8	171.0
Food				
Rice (\$/MT)	466.0	403.0	418.0	431.0
Wheat (\$/MT)##	263.5	276.2	316.7	..
Sugar (US cent/ pound)^	17.4	19.5	18.3	17.8
Palm Oil (\$/MT)	1,004.4	1,141.8	1,056.6	1,026.0
Soybean Oil (\$/MT)	1,518.2	1,433.9	1,533.4	1,598.8
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	94.5	101.3	131.0	124.4
Metal Price Index (2010 =	119.0	120.9	106.1	110.6
Copper (\$/MT)	9,631.5	9,370.1	7,544.8	7,981.8
Aluminum (\$/MT)	2,446.7	2,603.0	2,408.4	2,430.8
Iron Ore (\$ cents/dry MT)	214.4	162.2	108.6	108.9
Tin (\$/MT)	32,502.6	35,024.0	25,395.8	24,647.5
Nickel (\$/MT)	17,979.6	19,141.3	21,481.9	22,057.4
Zinc (\$/MT)	2,951.9	2,988.0	3,105.4	3,587.6
Lead (\$/MT)	2,191.0	2,414.5	1,985.2	2,072.7
Uranium (\$/MT)@	32.3	34.3	47.8	51.3
DAP (\$/MT)	604.8	603.1	784.0	749.4
Urea (\$/MT)	393.3	446.9	601.0	591.3

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.

.. Not Available by source

^ 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 = \$/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 Jun 1968 to August 1981 strict middling 1-1/16 inch staple. Prior to 1968, Mexican 1-1/16.2/

Wheat, US HRW (Hard Red Winter) is not being reported by World Bank. Hence, it has been replaced with Wheat, US SRW (Soft Red Winter).

DAP: Di-ammonium Phosphate

Table A20: National CPI Data Series Original and Seasonally Adjusted

Original Series					
Period	FY19	FY20	FY21	FY22	FY23
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	
Oct	116.32	129.16	140.67	153.61	
Nov	116.18	130.90	141.83	158.18	
Dec	115.82	130.45	140.86	158.16	
Jan	116.12	133.04	140.56	158.78	
Feb	117.12	131.64	143.09	160.61	
Mar	119.46	131.69	143.61	161.88	
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	
Seasonally Adjusted Series					
Jul	114.17	123.81	135.40	146.84	183.53
Aug	113.86	125.91	136.34	147.80	188.14
Sep	113.53	126.49	137.96	150.37	
Oct	115.22	127.91	139.28	152.06	
Nov	114.86	129.32	140.02	156.10	
Dec	115.61	130.14	140.44	157.62	
Jan	116.37	133.32	140.87	159.13	
Feb	117.74	132.24	143.66	161.16	
Mar	120.09	132.32	144.24	162.55	
Apr	120.43	130.72	145.26	164.70	
May	121.81	131.86	146.20	166.33	
Jun	122.58	133.20	146.17	177.47	

Table A21: Urban CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY19	FY20	FY21	FY22	FY23
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	
Oct	117.04	129.75	139.27	152.59	
Nov	116.94	131.05	140.16	156.96	
Dec	116.57	130.57	139.67	157.46	
Jan	117.07	132.77	139.45	157.56	
Feb	118.08	131.32	142.61	159.03	
Mar	120.29	131.49	142.99	160.07	
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	
Seasonally Adjusted Series					
Jul	114.68	124.75	134.60	146.33	180.96
Aug	114.41	126.69	135.83	147.22	185.91
Sep	114.18	127.42	137.25	149.81	
Oct	116.18	128.79	138.23	151.44	
Nov	115.92	129.84	138.81	155.39	
Dec	116.59	130.51	139.52	157.22	
Jan	117.40	133.15	139.85	158.01	
Feb	118.73	131.94	143.21	159.62	
Mar	120.94	132.13	143.63	160.73	
Apr	121.12	130.43	144.71	162.39	
May	122.53	131.44	145.68	163.67	
Jun	123.28	132.80	145.65	174.67	

Table A22: Rural CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY19	FY20	FY21	FY22	FY23
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	
Oct	115.23	128.28	142.79	155.15	
Nov	115.03	130.67	144.34	160.03	
Dec	114.70	130.28	142.65	159.21	
Jan	114.68	133.44	142.23	160.62	
Feb	115.68	132.13	143.82	162.99	
Mar	118.21	132.00	144.55	164.62	
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	
Seasonally Adjusted Series					
Jul	113.41	122.40	136.62	147.61	187.41
Aug	113.04	124.73	137.10	148.67	191.50
Sep	112.56	125.09	139.02	151.23	
Oct	113.76	126.59	140.85	153.00	
Nov	113.26	128.53	141.86	157.17	
Dec	114.14	129.58	141.82	158.23	
Jan	114.82	133.59	142.41	160.83	
Feb	116.25	132.69	144.34	163.49	
Mar	118.80	132.61	145.18	165.31	
Apr	119.38	131.17	146.09	168.20	
May	120.73	132.48	146.97	170.35	
Jun	121.52	133.82	146.95	181.70	

Table A23: National CPI Monthly & Average Seasonal Factors						
Period	FY19	FY20	FY21	FY22	FY23	Average
Jul	100.10	100.04	99.98	99.94	99.90	99.99
Aug	100.06	99.98	99.92	99.87	99.84	99.94
Sep	100.32	100.29	100.26	100.24		100.28
Oct	100.96	100.97	101.00	101.02		100.99
Nov	101.15	101.22	101.29	101.33		101.25
Dec	100.18	100.24	100.30	100.34		100.27
Jan	99.78	99.79	99.78	99.78		99.78
Feb	99.47	99.55	99.60	99.66		99.57
Mar	99.48	99.52	99.56	99.59		99.54
Apr	99.92	99.90	99.88	99.88		99.89
May	99.37	99.36	99.34	99.34		99.35
Jun	99.23	99.16	99.08	99.01		99.12

Table A24: Urban CPI Monthly & Average Seasonal Factors						
Period	FY19	FY20	FY21	FY22	FY23	Average
Jul	100.23	100.16	100.10	100.05	100.01	100.11
Aug	100.15	100.06	99.99	99.93	99.90	100.01
Sep	100.27	100.23	100.21	100.18		100.22
Oct	100.74	100.75	100.75	100.76		100.75
Nov	100.88	100.93	100.98	101.01		100.95
Dec	99.99	100.05	100.10	100.15		100.07
Jan	99.72	99.72	99.71	99.72		99.72
Feb	99.45	99.53	99.58	99.63		99.55
Mar	99.46	99.51	99.56	99.59		99.53
Apr	100.14	100.13	100.14	100.15		100.14
May	99.65	99.66	99.66	99.67		99.66
Jun	99.38	99.32	99.25	99.18		99.28

Table A25: Rural CPI Monthly & Average Seasonal Factors						
Period	FY19	FY20	FY21	FY22	FY23	Average
Jul	99.90	99.85	99.81	99.77	99.75	99.82
Aug	99.93	99.86	99.81	99.78	99.76	99.83
Sep	100.40	100.37	100.35	100.34		100.37
Oct	101.29	101.33	101.37	101.41		101.35
Nov	101.56	101.67	101.75	101.82		101.70
Dec	100.49	100.54	100.59	100.62		100.56
Jan	99.88	99.87	99.87	99.87		99.87
Feb	99.51	99.58	99.64	99.69		99.60
Mar	99.50	99.54	99.57	99.58		99.55
Apr	99.59	99.55	99.51	99.47		99.53
May	98.94	98.90	98.87	98.85		98.89
Jun	98.99	98.91	98.83	98.76		98.87

Table A26: National CPI (Month-on-Month) Original & Seasonally Adjusted					
Original Series					
Period	FY19	FY20	FY21	FY22	FY23
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	
Oct	2.12	1.81	1.70	1.90	
Nov	-0.12	1.35	0.82	2.98	
Dec	-0.31	-0.34	-0.68	-0.02	
Jan	0.26	1.99	-0.21	0.39	
Feb	0.86	-1.05	1.80	1.15	
Mar	2.00	0.04	0.36	0.79	
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	
Seasonally Adjusted Series					
Jul	0.69	1.01	1.65	0.46	3.42
Aug	-0.27	1.69	0.69	0.65	2.51
Sep	-0.29	0.46	1.19	1.74	
Oct	1.48	1.12	0.96	1.12	
Nov	-0.31	1.10	0.54	2.65	
Dec	0.65	0.63	0.30	0.98	
Jan	0.66	2.45	0.31	0.96	
Feb	1.18	-0.81	1.98	1.27	
Mar	1.99	0.06	0.41	0.86	
Apr	0.28	-1.21	0.70	1.32	
May	1.15	0.87	0.65	0.99	
Jun	0.63	1.02	-0.02	6.70	

Table A27: Urban CPI (Month-on-Month) Original & Seasonally Adjusted Series					
Original Series					
Period	FY19	FY20	FY21	FY22	FY23
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	
Oct	2.23	1.59	1.27	1.67	
Nov	-0.09	1.00	0.64	2.86	
Dec	-0.32	-0.37	-0.35	0.32	
Jan	0.43	1.68	-0.16	0.06	
Feb	0.86	-1.09	2.27	0.93	
Mar	1.87	0.13	0.27	0.65	
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	
Seasonally Adjusted Series					
Jul	0.61	1.19	1.36	0.47	3.60
Aug	-0.23	1.56	0.92	0.61	2.73
Sep	-0.20	0.58	1.04	1.76	
Oct	1.75	1.07	0.72	1.09	
Nov	-0.22	0.81	0.42	2.61	
Dec	0.57	0.52	0.52	1.18	
Jan	0.70	2.02	0.23	0.50	
Feb	1.14	-0.91	2.40	1.02	
Mar	1.86	0.14	0.29	0.70	
Apr	0.15	-1.29	0.75	1.03	
May	1.17	0.78	0.67	0.79	
Jun	0.61	1.03	-0.03	6.72	

Table A28: Rural CPI (Month-on-Month) Original & Seasonally Adjusted Series					
Original Series					
Period	FY19	FY20	FY21	FY22	FY23
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	
Oct	1.96	2.17	2.35	2.25	
Nov	-0.17	1.86	1.09	3.15	
Dec	-0.29	-0.30	-1.17	-0.51	
Jan	-0.02	2.43	-0.29	0.89	
Feb	0.87	-0.98	1.12	1.48	
Mar	2.19	-0.10	0.51	1.00	
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	
Seasonally Adjusted Series					
Jul	0.81	0.73	2.09	0.45	3.15
Aug	-0.33	1.90	0.35	0.72	2.18
Sep	-0.43	0.29	1.40	1.72	
Oct	1.07	1.20	1.32	1.17	
Nov	-0.44	1.53	0.71	2.73	
Dec	0.78	0.81	-0.03	0.67	
Jan	0.60	3.10	0.42	1.65	
Feb	1.24	-0.67	1.35	1.65	
Mar	2.19	-0.06	0.58	1.11	
Apr	0.49	-1.08	0.63	1.75	
May	1.13	1.00	0.60	1.28	
Jun	0.66	1.01	-0.01	6.66	

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

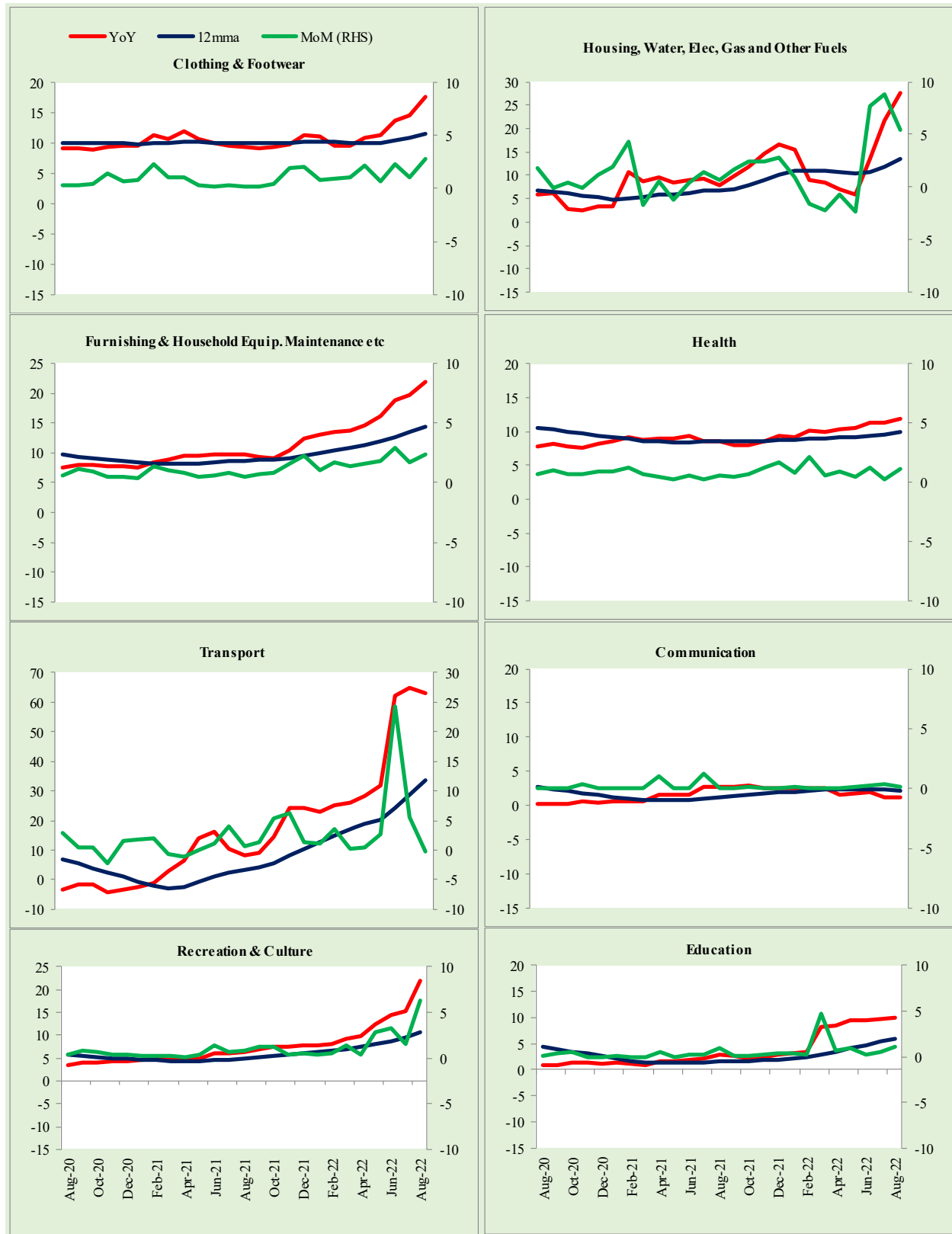


Figure A2: Urban CPI Non-food Inflation (YoY, 12MMA, MoM in percent)

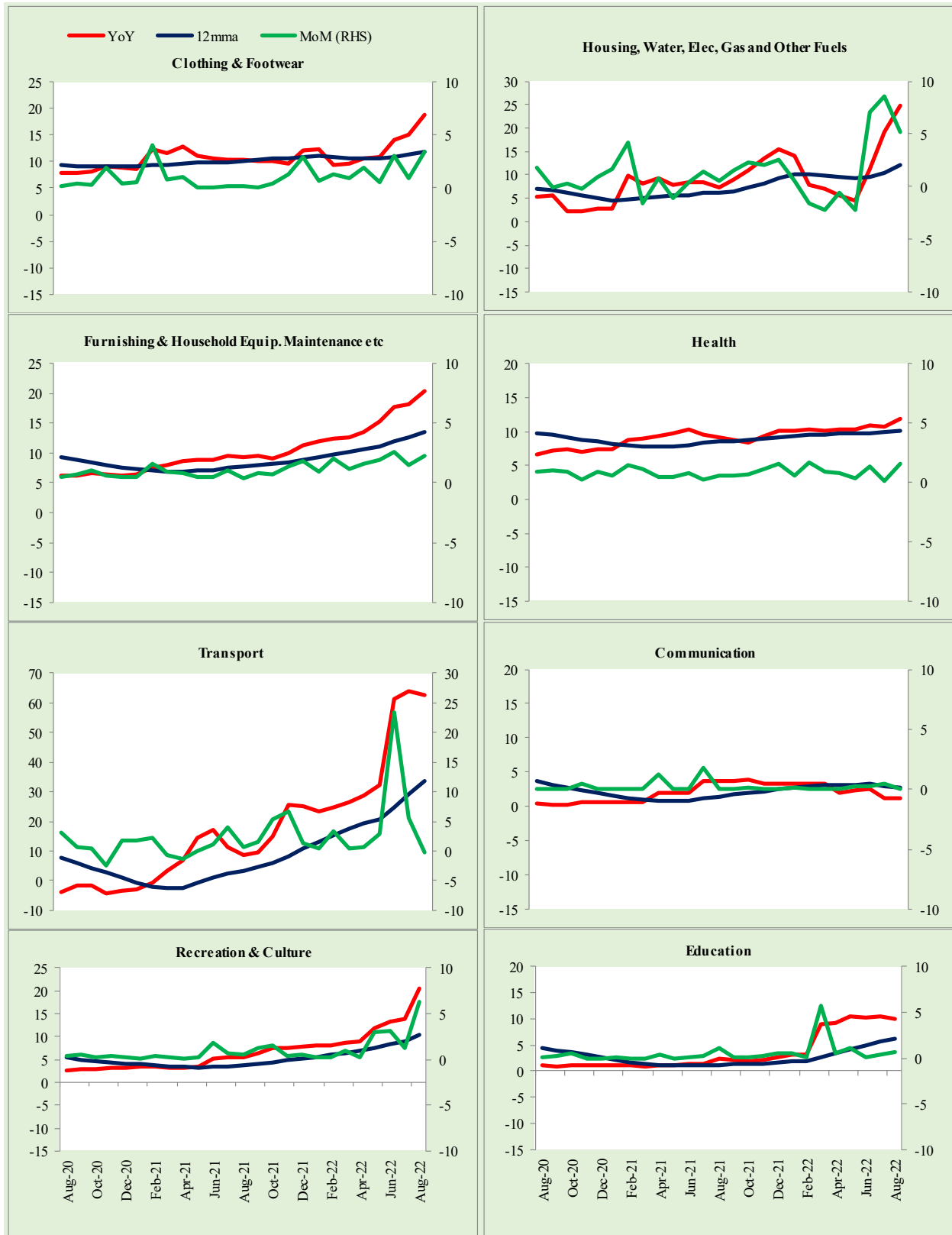
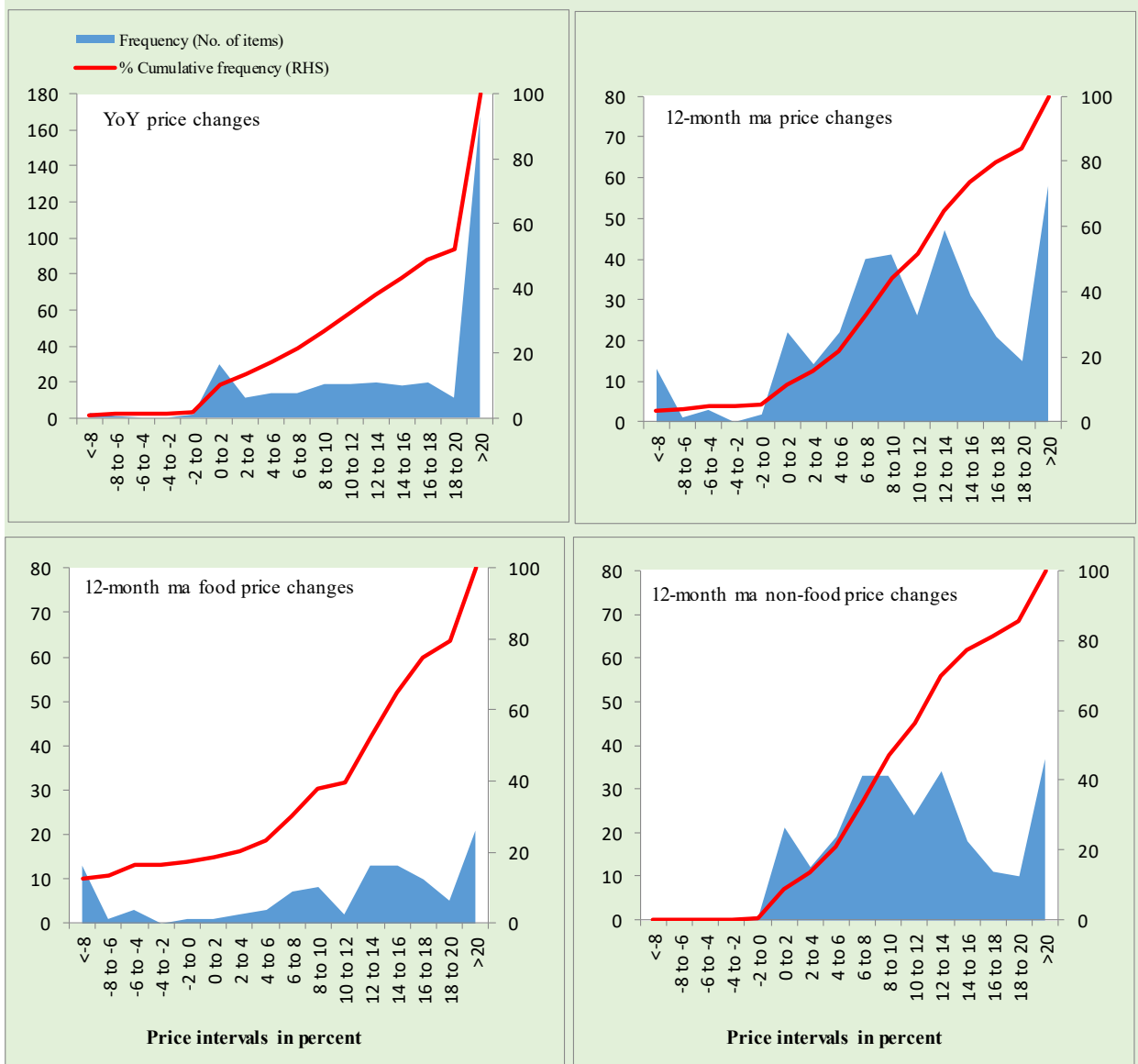


Figure A3: Rural CPI Non-food Inflation (YoY, 12MMA, MoM in percent)

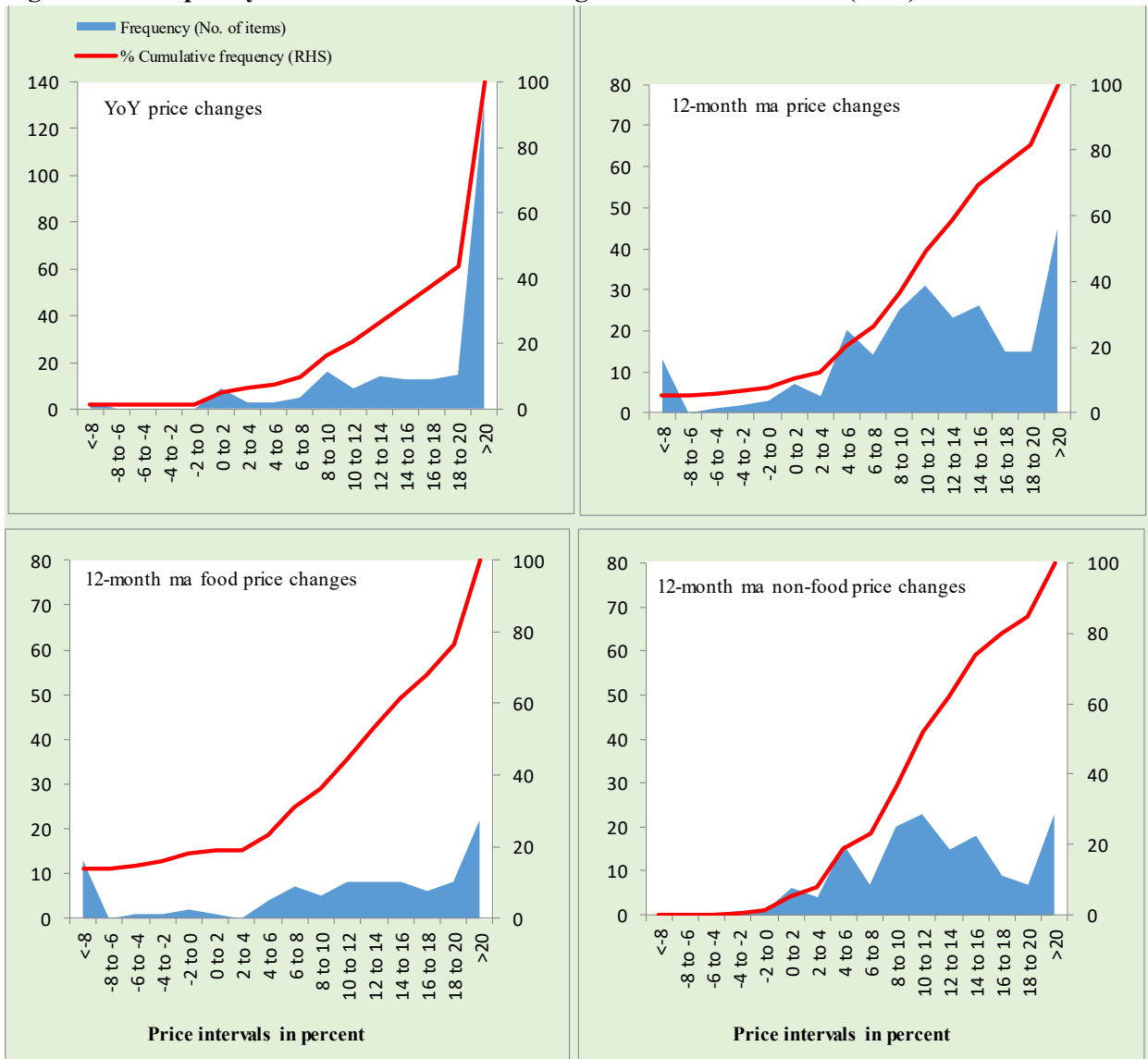


Figure A4: Frequency Distribution of Price Changes of Urban CPI Items (YoY)



Total Items in CPI Basket (356), Food Items (103) and non-Food Items (253).

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



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

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

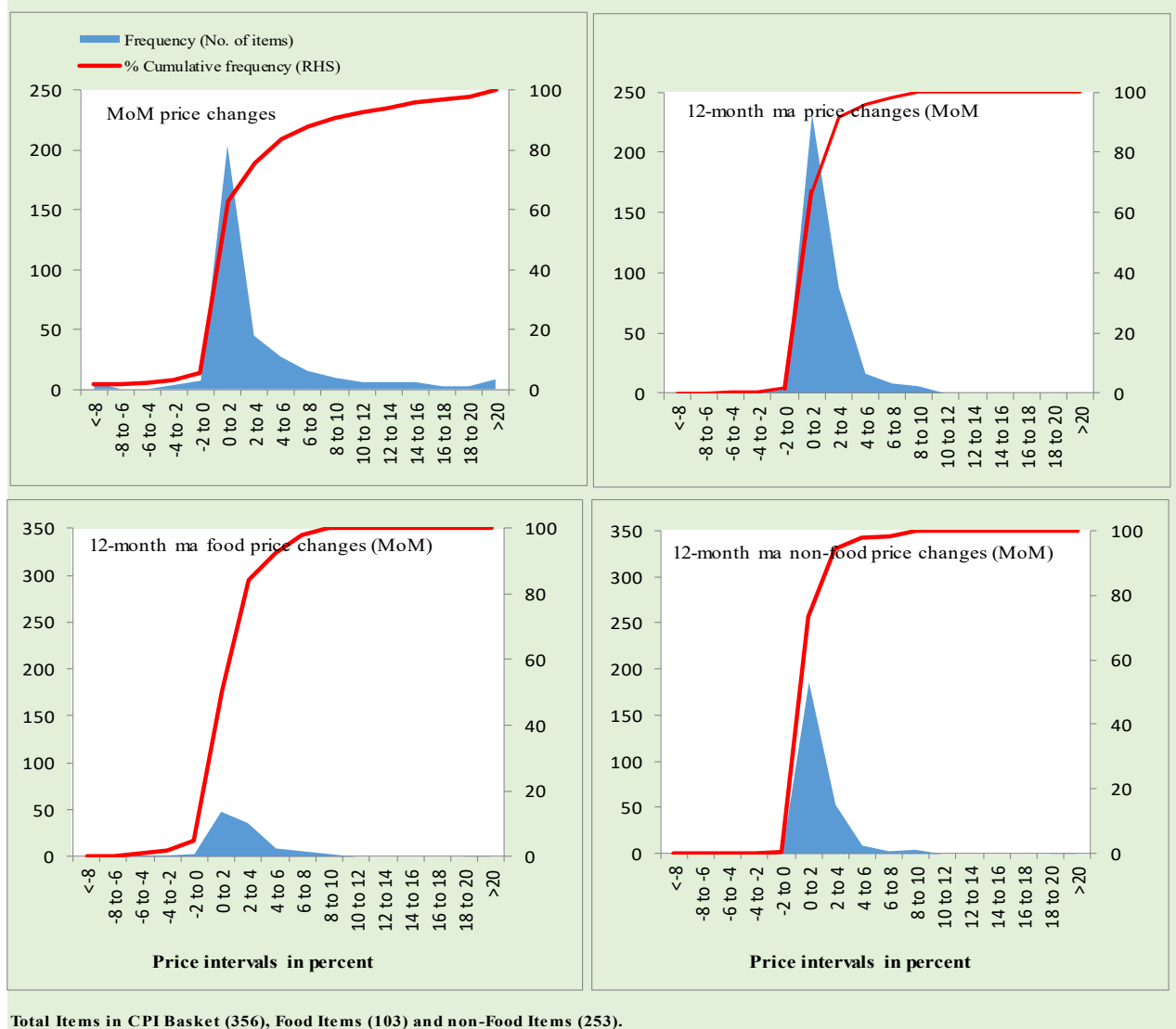
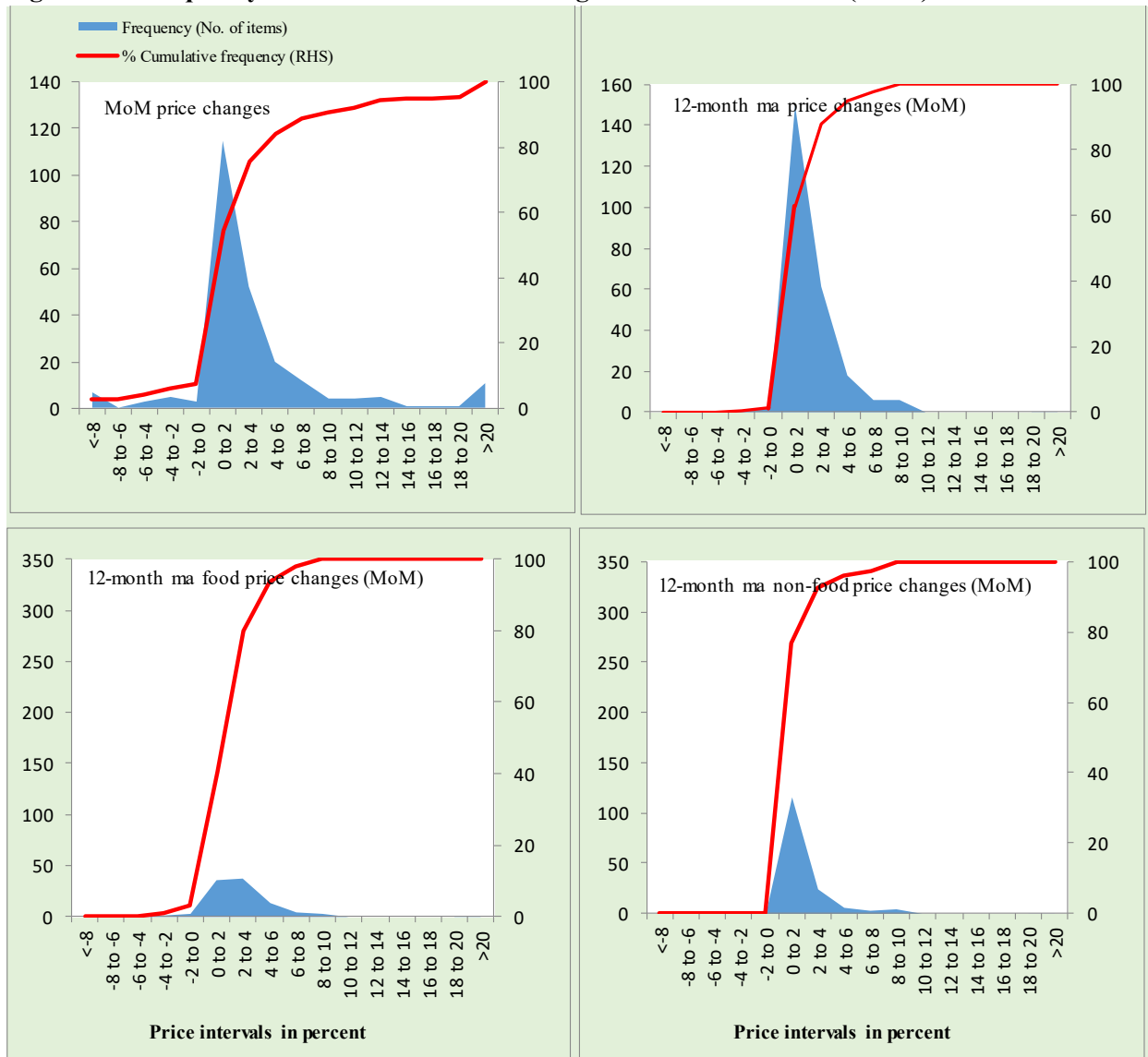
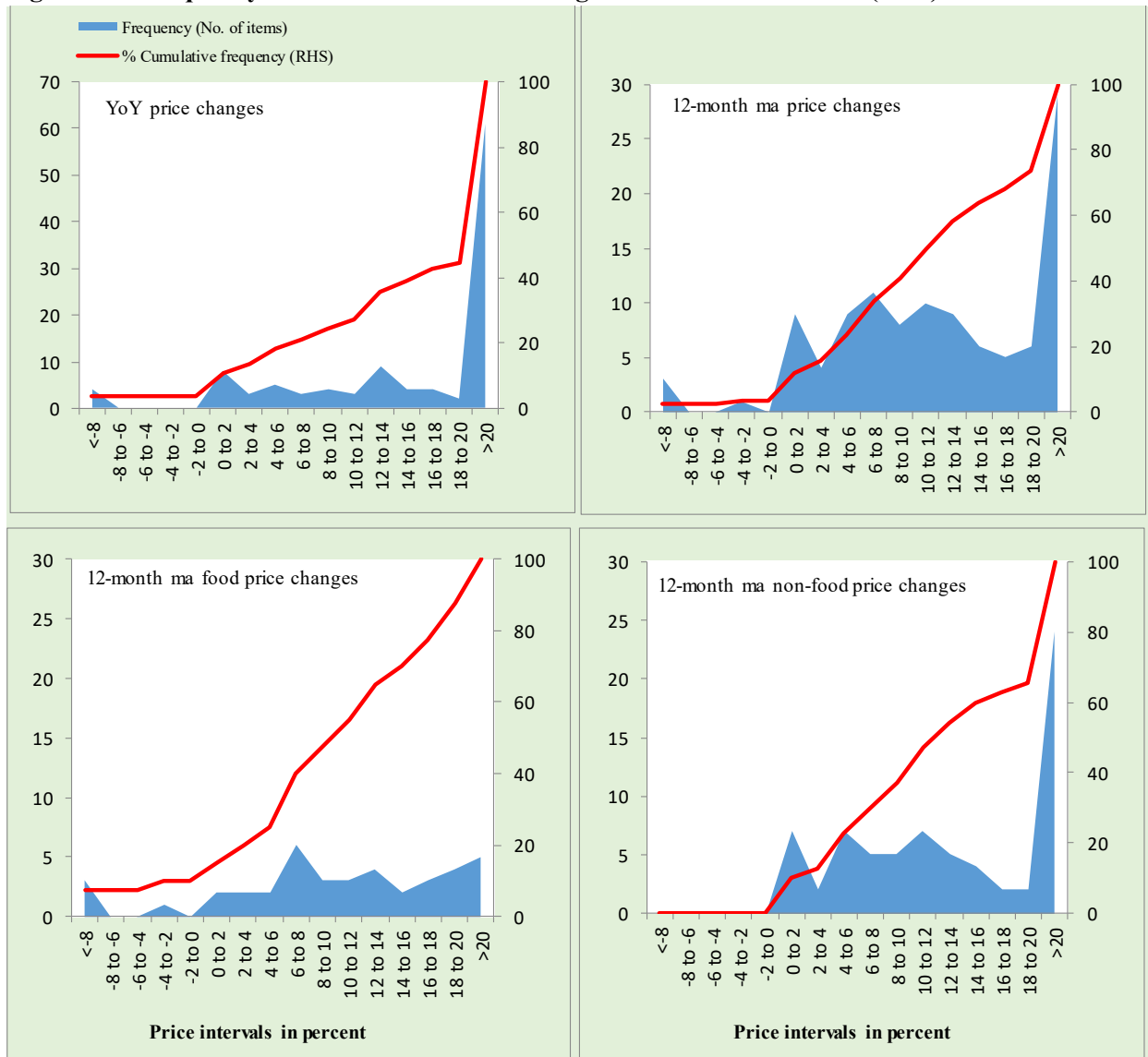


Figure A7: Frequency Distribution of Price Changes of Rural CPI Items (MoM)



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)



Total Items in WPI Basket (110), Food Items (40) and non-Food Items (70).

Technical Notes, Definitions and Methodologies

Technical Notes

1. 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.

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

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

Where v is the serial number of the month of August 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:

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

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

- 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.
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^{th} item to the overall inflation

$$\alpha_{it-12} = \frac{I_{it-12}}{I_{t-12}}; \text{ i.e. ratio of item's index to overall index in the}$$

reference month

w_i : Weights of i^{th} item

π_{it} : Inflation of i^{th} item

π_t : Overall inflation

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 constant².

Based upon item level prices data from August 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 analysis³ suggests that IDI was a leading indicator for Pakistan’s YoY inflation.

² 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.

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