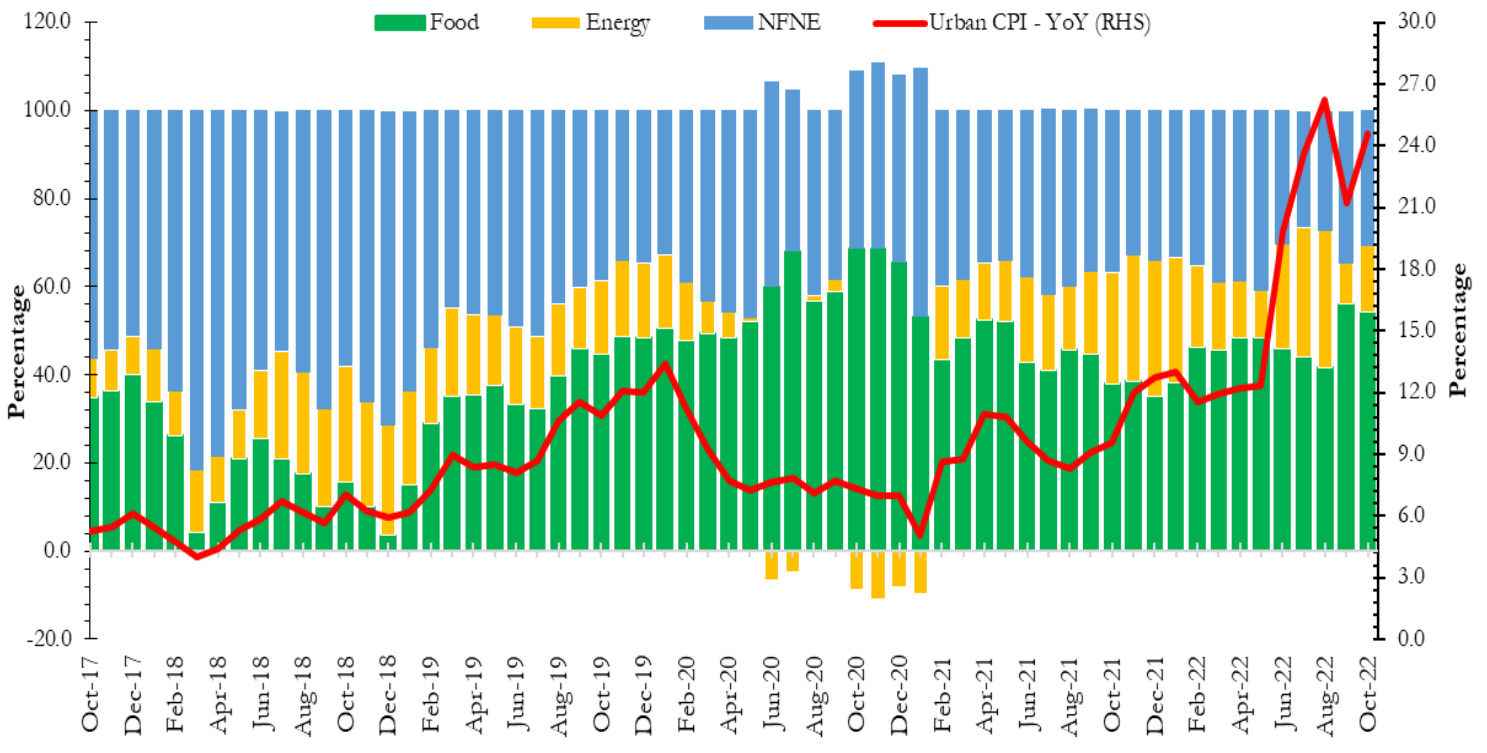




Inflation Monitor

October 2022

Historical Perspective of Weighted Contributions (in %) in Urban CPI (YoY)



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 26.6 percent in October 2022 from 23.2 percent in previous month. It stood at 9.2 percent in the corresponding month of last year. On month-on-month (MoM) basis, an inflation of 4.7 percent is observed in October 2022 as compared to a deflation of 1.2 percent in previous month. It stood at 1.9 percent during corresponding month of last year.
- ii. Urban CPI Inflation (YOY) increased to 24.6 percent in October 2022 from 21.2 percent in previous month. It stood at 9.6 percent during the corresponding month of last year. On MoM basis, an inflation of 4.5% is observed in October 2022 as compared to a deflation of 2.1% in the previous month. It stood at 1.7 percent during corresponding month of last year. Seasonally adjusted MoM CPI showed an inflation of 4.1 percent in October 2022 compared to a deflation of 2.1 percent in the previous month.
- iii. Rural CPI Inflation (YoY) increased to 29.5 percent in October 2022 from 26.1 percent in previous month. It was recorded 8.7 percent during the corresponding month of last year. Rural CPI Inflation (on MoM basis) increased to 5.0 percent in October 2022 from 0.2 percent in the previous month. It stood at 2.2 percent during corresponding month of last year. Seasonally adjusted (MoM) CPI showed an inflation of 3.8 percent in October 2022 as compared to a deflation of 0.5 percent in previous month.
- iv. Urban Core (Non-food, Non-energy (NFNE)) Inflation on YoY basis increased to 14.9 percent in October 2022 from 14.4 percent in previous month. It stood at 6.7 percent during corresponding month of last year. On MoM basis, Urban Core (NFNE) Inflation increased to 1.3 percent in October 2022 from 0.9 percent in previous month. It stood at 0.9 percent during the corresponding month of last year.
- v. Rural Core (Non-food, Non-energy (NFNE)) Inflation on YOY basis increased to 18.2 percent in October 2022 from 17.6 percent in previous month. It stood at 6.7 percent during the corresponding month of last year. On MoM basis, it increased to 1.5 percent in October 2022 from 1.4 percent in previous month. It was recorded 1.0 percent during the corresponding month of last year.
- vi. Urban Core Inflation (trimmed) on YoY basis increased to 22.0 percent in October 2022 from 19.5 percent in previous month. It stood at 8.7 percent during the corresponding month of last year. On MoM basis, Urban Core Inflation (trimmed) increased to 1.9 percent in October 2022 from 1.6 percent in previous month. It stood at 1.1 percent during the corresponding month of last year.
- vii. Rural Core Inflation (trimmed) on YoY basis increased to 26.7 percent in October 2022 from 24.4 percent in previous month. It was recorded 8.2 percent during the corresponding month of last year. On MoM basis, Rural Core Inflation (trimmed) increased to 2.7 percent in October 2022 from 2.5 percent in previous month. It stood at 1.6 percent during corresponding month of last year.

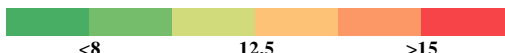
- viii. WPI Inflation on YoY basis decreased to 32.6 percent in October 2022 from 38.9 percent in previous month. It stood at 21.2 percent during the corresponding month of last year. On MoM basis, a deflation of 0.5 percent is observed in October 2022 as compared to an inflation of 1.4 percent in previous month. It was recorded 4.2 percent during the corresponding month of last year.

- ix. SPI Inflation on YoY basis decreased to 28.6 percent in October 2022 from 35.9 percent in previous month. During corresponding month of last year, SPI Inflation stood at 14.0 percent. On MoM basis, SPI showed a deflation of 2.4 percent in October 2022 as compared to a deflation of 0.6 percent in previous month. It stood at 3.1 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.

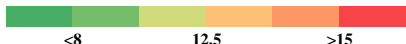
		Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
Headline	National	9.2	11.5	12.3	13.0	12.2	12.7	13.4	13.8	21.3	24.9	27.3	23.2	26.6
	Urban	9.6	12.0	12.7	13.0	11.5	11.9	12.2	12.4	19.8	23.6	26.2	21.2	24.6
	Rural	8.7	10.9	11.6	12.9	13.3	13.9	15.1	15.9	23.6	26.9	28.8	26.1	29.5
Food	Urban	9.4	11.9	11.7	13.3	14.3	14.5	15.6	15.5	24.0	27.4	28.8	30.8	34.7
	Rural	7.2	8.6	9.0	11.8	14.6	15.5	17.7	19.0	27.0	29.6	30.2	32.7	37.2
Core	Urban	6.7	7.6	8.3	8.2	7.8	8.9	9.1	9.7	11.5	12.0	13.8	14.4	14.9
	Rural	6.7	8.2	8.9	9.0	9.4	10.3	10.9	11.5	13.6	14.6	16.5	17.6	18.2

Key  Source: Pakistan Bureau of Statistics

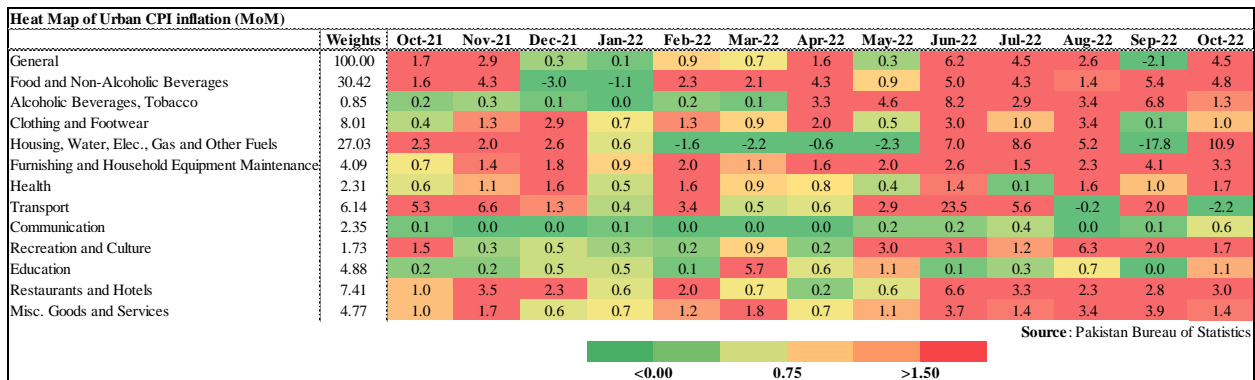
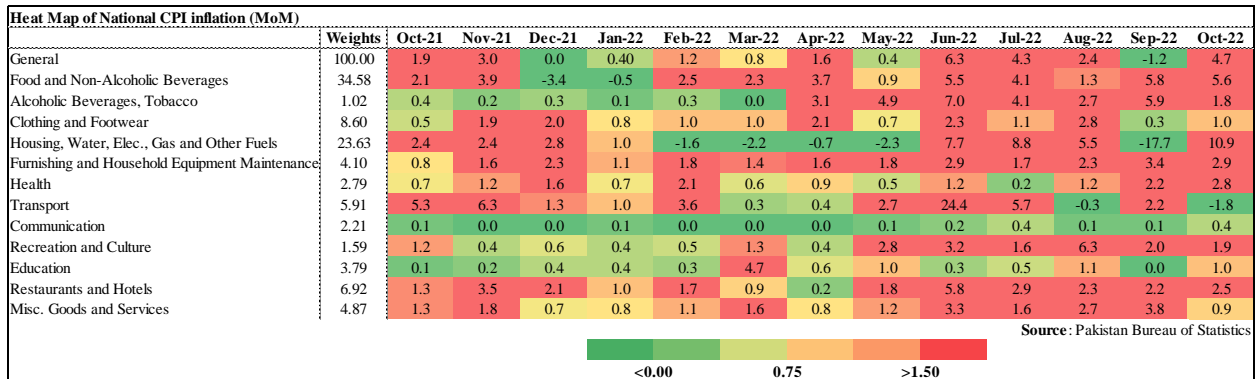
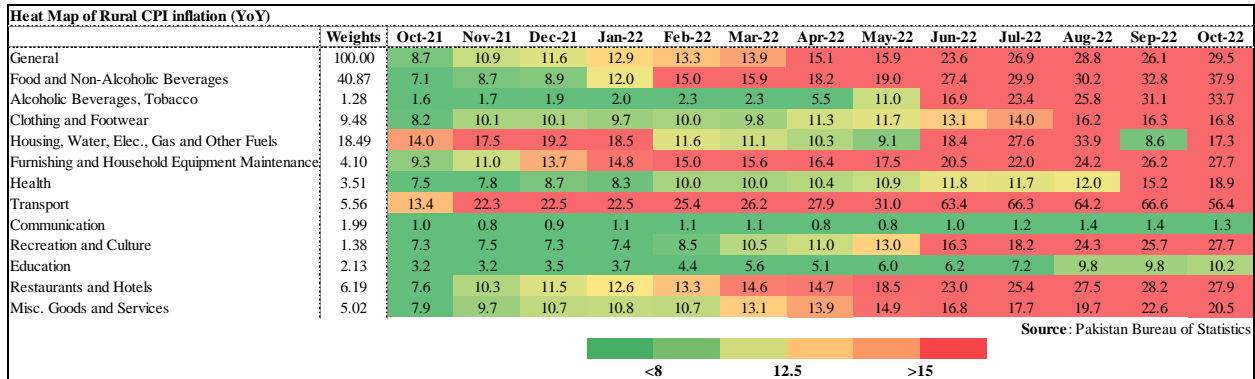
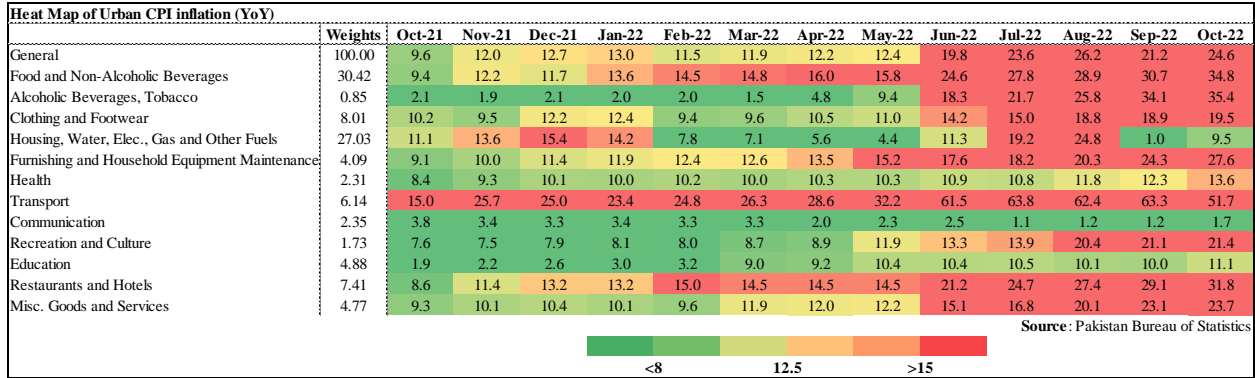
		Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
Headline	National	1.9	3.0	-0.02	0.4	1.2	0.8	1.6	0.4	6.3	4.3	2.4	-1.2	4.7
	Urban	1.7	2.9	0.3	0.1	0.9	0.7	1.6	0.3	6.2	4.5	2.6	-2.1	4.5
	Rural	2.2	3.1	-0.5	0.9	1.5	1.0	1.6	0.6	6.6	4.2	2.2	0.2	5.0
Food	Urban	1.5	3.9	-2.3	-0.8	2.2	1.8	3.7	1.0	5.3	4.3	1.6	5.2	4.6
	Rural	2.6	3.3	-3.1	0.4	2.6	2.3	2.8	1.3	6.0	3.7	1.2	5.7	6.1
Core	Urban	0.9	1.1	1.1	0.8	0.8	1.2	1.1	0.7	2.0	1.2	1.8	0.9	1.3
	Rural	1.0	1.8	1.1	1.2	0.9	1.1	1.2	0.9	2.3	1.6	1.8	1.4	1.5

Key  Source: Pakistan Bureau of Statistics

	Weights	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
General	100.00	9.2	11.5	12.3	13.0	12.2	12.7	13.4	13.8	21.3	24.9	27.3	23.2	26.6
Food and Non-Alcoholic Beverages	34.58	8.3	10.5	10.3	12.8	14.7	15.3	17.0	17.3	25.9	28.8	29.5	31.7	36.2
Alcoholic Beverages, Tobacco	1.02	1.9	1.8	2.0	2.0	2.1	1.8	5.1	10.1	17.6	22.5	25.8	32.7	34.6
Clothing and Footwear	8.60	9.3	9.8	11.2	11.2	9.7	9.7	10.8	11.3	13.7	14.6	17.6	17.7	18.3
Housing, Water, Elec., Gas and Other Fuels	23.63	12.0	14.8	16.6	15.5	9.0	8.3	7.1	5.8	13.5	21.8	27.6	3.4	11.9
Furnishing and Household Equipment Maintenance	4.10	9.2	10.4	12.3	13.0	13.4	13.8	14.7	16.1	18.8	19.7	21.9	25.1	27.6
Health	2.79	8.0	8.5	9.4	9.2	10.1	10.0	10.4	10.6	11.3	11.2	11.9	13.8	16.2
Transport	5.91	14.4	24.4	24.1	23.1	25.0	26.3	28.3	31.8	62.2	64.7	63.1	64.5	53.4
Communication	2.21	2.8	2.5	2.5	2.6	2.5	2.6	1.6	1.8	2.0	1.2	1.2	1.3	1.6
Recreation and Culture	1.59	7.5	7.5	7.7	7.8	8.2	9.3	9.7	12.3	14.4	15.4	21.8	22.8	23.7
Education	3.79	2.2	2.4	2.8	3.2	3.4	8.3	8.4	9.5	9.5	9.8	10.0	10.0	10.9
Restaurants and Hotels	6.92	8.3	11.0	12.6	13.0	14.4	14.6	14.6	16.0	21.9	25.0	27.4	28.8	30.4
Misc. Goods and Services	4.87	8.7	10.0	10.6	10.3	10.1	12.4	12.8	13.3	15.8	17.2	20.0	22.9	22.4

Key  Source: Pakistan Bureau of Statistics

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



Heat Map of Rural CPI inflation (MoM)														
	Weights	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
General	100.00	2.2	3.1	-0.5	0.9	1.5	1.0	1.6	0.6	6.6	4.2	2.2	0.2	5.0
Food and Non-Alcoholic Beverages	40.87	2.7	3.6	-3.7	0.2	2.8	2.5	3.1	0.8	6.1	3.8	1.2	6.2	6.6
Alcoholic Beverages, Tobacco	1.28	0.5	0.1	0.5	0.3	0.3	0.0	2.8	5.3	5.6	5.5	1.9	4.8	2.5
Clothing and Footwear	9.48	0.6	2.6	0.9	0.8	0.6	1.1	2.3	0.9	1.6	1.2	2.0	0.5	1.0
Housing, Water, Elec., Gas and Other Fuels	18.49	2.7	3.3	3.2	1.9	-1.4	-2.3	-0.8	-2.5	9.2	9.4	6.0	-17.5	10.9
Furnishing and Household Equipment Maintenance	4.10	1.0	2.0	3.1	1.3	1.3	1.7	1.6	1.5	3.3	2.0	2.4	2.4	2.2
Health	3.51	0.7	1.3	1.7	0.9	2.5	0.2	0.9	0.6	1.1	0.3	0.8	3.4	3.9
Transport	5.56	5.2	5.8	1.3	2.0	3.9	0.0	0.2	2.5	25.9	5.7	-0.5	2.5	-1.3
Communication	1.99	0.2	0.0	0.0	0.2	0.0	0.1	0.1	0.0	0.2	0.4	0.2	0.1	0.0
Recreation and Culture	1.38	0.7	0.5	0.6	0.7	1.2	2.0	0.8	2.5	3.4	2.2	6.4	2.2	2.4
Education	2.13	0.1	0.0	0.3	0.2	0.8	1.1	1.0	0.8	0.9	1.4	2.8	0.0	0.5
Restaurants and Hotels	6.19	1.9	3.5	1.6	1.6	1.0	1.2	0.3	3.9	4.4	2.2	2.4	1.2	1.7
Misc. Goods and Services	5.02	1.9	2.0	0.9	1.0	0.8	1.4	1.0	1.3	2.8	2.0	1.9	3.7	0.2

Source: Pakistan Bureau of Statistics

<0.00 0.75 >1.50

Heat Map of Rural CPI inflation (YoY)														
	Weights	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
Rural	100.00	8.7	10.9	11.6	12.9	13.3	13.9	15.1	15.9	23.6	26.9	28.8	26.1	29.5
Food	45.95	7.2	8.6	9.0	11.8	14.6	15.5	17.7	19.0	27.0	29.6	30.2	32.7	37.2
Non-perishable	40.16	11.2	11.7	12.8	12.8	12.4	13.7	15.8	17.0	25.5	29.3	29.6	29.7	31.9
Perishable	5.79	-12.5	-5.5	-12.0	6.6	35.8	32.8	34.4	33.7	41.2	33.5	34.3	52.6	74.2
Non Food	54.05	10.0	13.0	14.0	13.9	12.2	12.5	12.8	13.1	20.4	24.5	27.5	20.1	22.4
Energy	11.41	23.2	32.0	34.0	32.7	21.9	20.4	19.8	19.3	46.6	61.2	67.8	28.8	36.9
NFNE (Core)	42.64	6.7	8.2	8.9	9.0	9.4	10.3	10.9	11.5	13.6	14.6	16.5	17.6	18.2
HRI	8.61	6.6	6.6	6.6	5.9	5.9	5.9	5.7	5.7	5.7	5.9	5.9	5.9	5.9
Core Excl HRI	34.03	6.7	8.6	9.5	9.7	10.3	11.4	12.2	12.9	15.5	16.8	19.1	20.4	21.2

Source: Pakistan Bureau of Statistics

<8 12.5 >15

Heat Map of Urban CPI inflation (YoY)														
	Weights	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
Urban	100.00	9.6	12.0	12.7	13.0	11.5	11.9	12.2	12.4	19.8	23.6	26.2	21.2	24.6
Food	36.80	9.4	11.9	11.7	13.3	14.3	14.5	15.6	15.5	24.0	27.4	28.8	30.8	34.7
Non-perishable	32.34	13.2	15.3	15.5	14.7	11.8	13.0	14.4	15.0	23.5	27.1	28.2	27.9	29.4
Perishable	4.46	-8.9	-1.9	-8.7	6.3	34.1	28.0	25.6	20.6	32.4	32.4	33.5	48.3	67.2
Non Food	63.20	9.7	12.0	13.4	12.8	9.9	10.4	10.2	10.4	17.3	21.3	24.7	15.2	18.2
Energy	9.47	25.9	37.2	41.3	38.1	20.2	18.0	15.7	14.1	48.8	70.2	80.7	18.9	34.1
NFNE (Core)	53.73	6.7	7.6	8.3	8.2	7.8	8.9	9.1	9.7	11.5	12.0	13.8	14.4	14.9
HRI	19.26	6.6	6.6	6.6	6.1	6.1	6.1	5.6	5.6	5.6	5.6	5.6	5.6	5.3
Core Excl HRI	34.47	6.8	8.1	9.2	9.3	8.7	10.5	11.0	11.9	14.7	15.5	18.2	19.2	20.1

Source: Pakistan Bureau of Statistics

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Heat Map of Rural CPI inflation (MoM)														
	Weights	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
Rural	100.00	2.2	3.1	-0.5	0.9	1.5	1.0	1.6	0.6	6.6	4.2	2.2	0.2	5.0
Food	45.95	2.6	3.3	-3.1	0.4	2.6	2.3	2.8	1.3	6.0	3.7	1.2	5.7	6.1
Non-perishable	40.16	2.0	1.8	-0.4	1.0	1.4	2.8	0.6	2.8	6.2	3.5	0.7	4.2	3.7
Perishable	5.79	7.1	14.5	-21.8	-5.1	13.3	0.5	20.0	-10.7	5.2	6.0	3.9	18.4	22.2
Non Food	54.05	1.9	3.0	1.9	1.4	0.4	-0.2	0.5	0.0	7.1	4.6	3.1	-4.9	3.9
Energy	11.41	5.2	7.0	4.4	1.9	-0.9	-4.0	-1.8	-2.8	24.3	13.4	6.4	-21.0	11.8
NFNE (Core)	42.64	1.0	1.8	1.1	1.2	0.9	1.1	1.2	0.9	2.3	1.6	1.8	1.4	1.5
HRI	8.61	1.3	0.0	0.0	2.1	0.0	0.0	1.0	0.0	0.0	1.4	0.0	0.0	1.3
Core Excl HRI	34.03	1.0	2.2	1.4	1.0	1.1	1.3	1.3	1.0	2.9	1.7	2.2	1.7	1.6

Source: Pakistan Bureau of Statistics

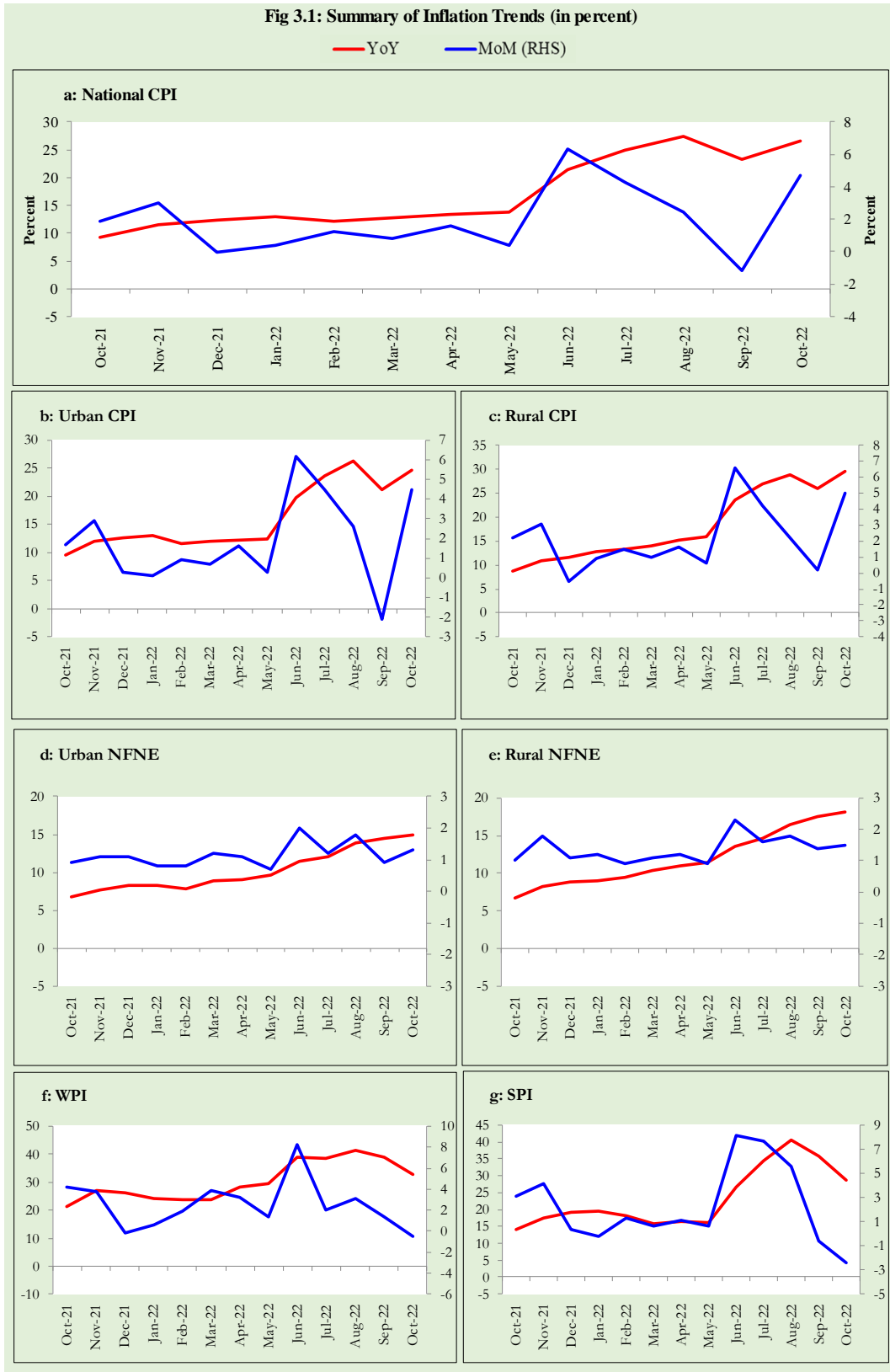
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Heat Map of Urban CPI inflation (MoM)														
	Weights	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
Urban	100.00	1.7	2.9	0.3	0.1	0.9	0.7	1.6	0.3	6.2	4.5	2.6	-2.1	4.5
Food	36.80	1.5	3.9	-2.3	-0.8	2.2	1.8	3.7	1.0	5.3	4.3	1.6	5.2	4.6
<i>Non-perishable</i>	32.34	1.0	2.4	0.2	-0.4	0.5	2.6	1.7	3.1	4.9	3.8	1.2	4.0	2.2
<i>Perishable</i>	4.46	5.2	15.1	-20.2	-5.4	14.7	-1.1	20.8	-10.8	5.5	7.3	2.8	14.0	18.6
Non Food	63.20	1.8	2.2	2.0	0.6	0.2	-0.1	0.3	-0.1	6.8	4.6	3.3	-6.6	4.5
<i>Energy</i>	9.47	6.0	7.6	5.8	-0.4	-2.3	-5.9	-3.4	-4.6	32.2	18.3	8.4	-31.1	19.5
<i>NFNE (Core)</i>	53.73	0.9	1.1	1.1	0.8	0.8	1.2	1.1	0.7	2.0	1.2	1.8	0.9	1.3
<i>HRI</i>	19.26	1.4	0.0	0.0	1.5	0.0	0.0	1.1	0.0	0.0	1.5	0.0	0.0	1.1
<i>Core Excl HRI</i>	34.47	0.6	1.7	1.7	0.4	1.1	1.9	1.0	1.1	3.0	1.1	2.7	1.4	1.4

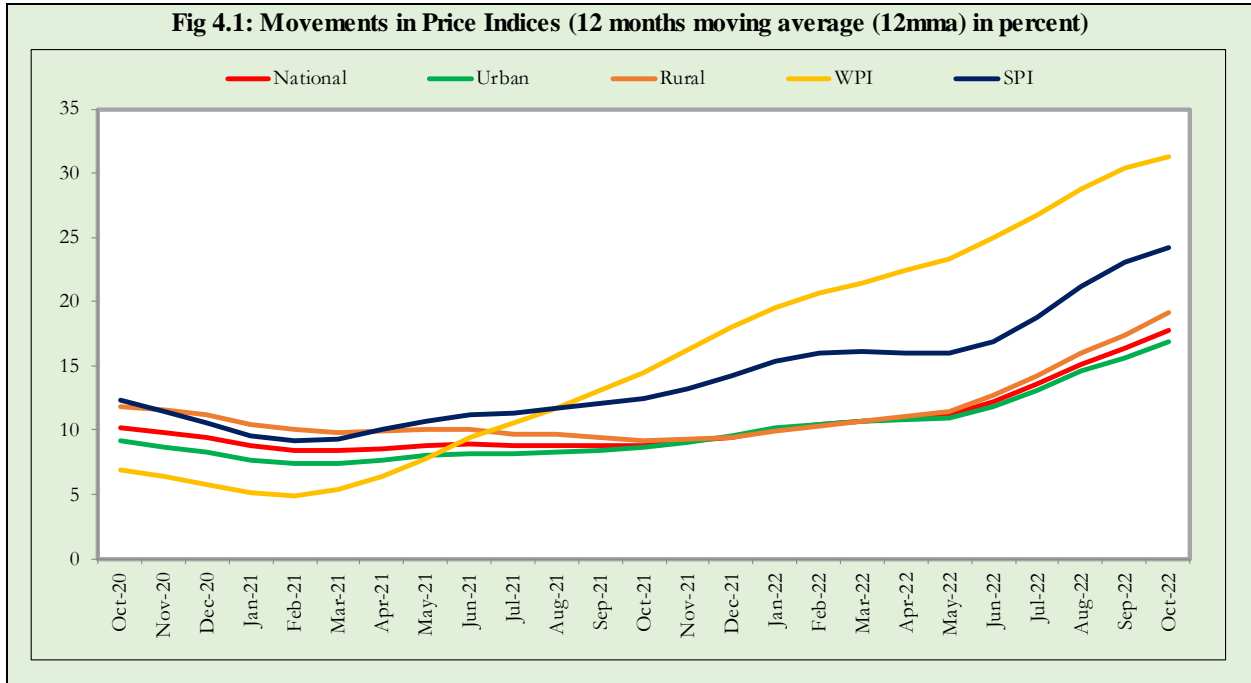
Source: Pakistan Bureau of Statistics

<0.00 0.75 >1.50

3. Trends in Inflation



4. Movement in Price Indices (Moving Averages)



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

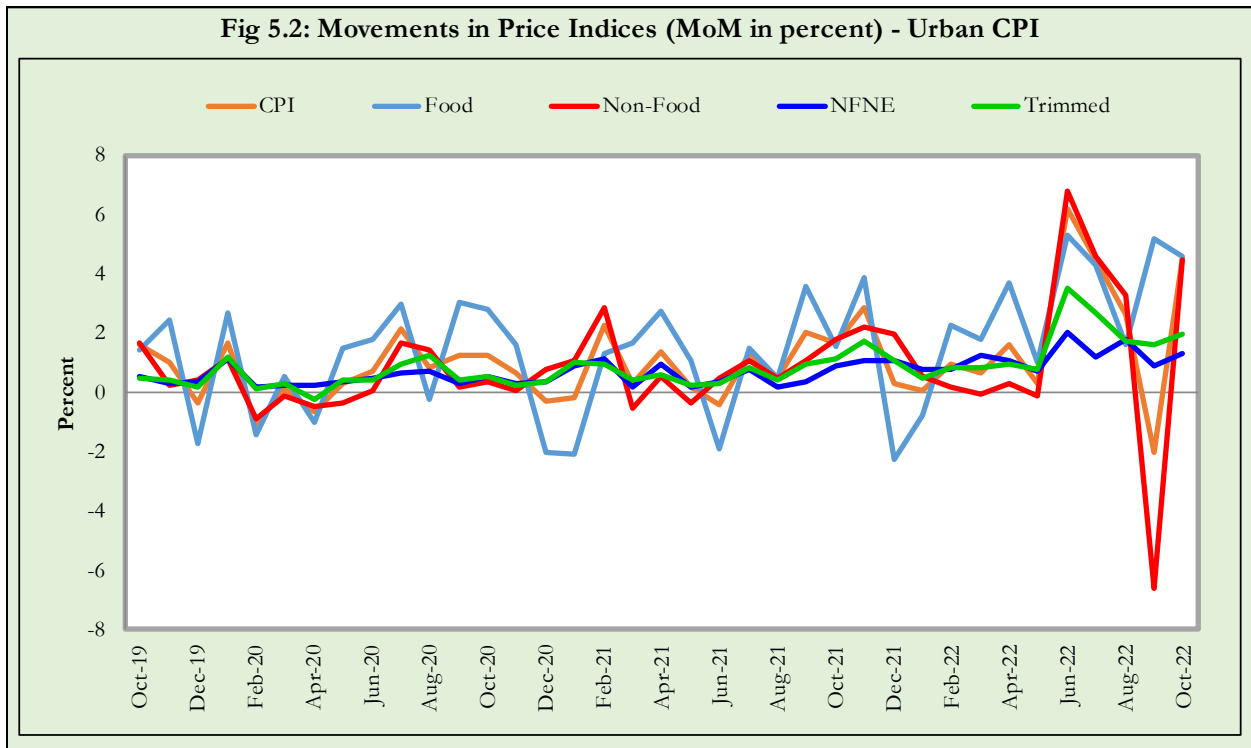
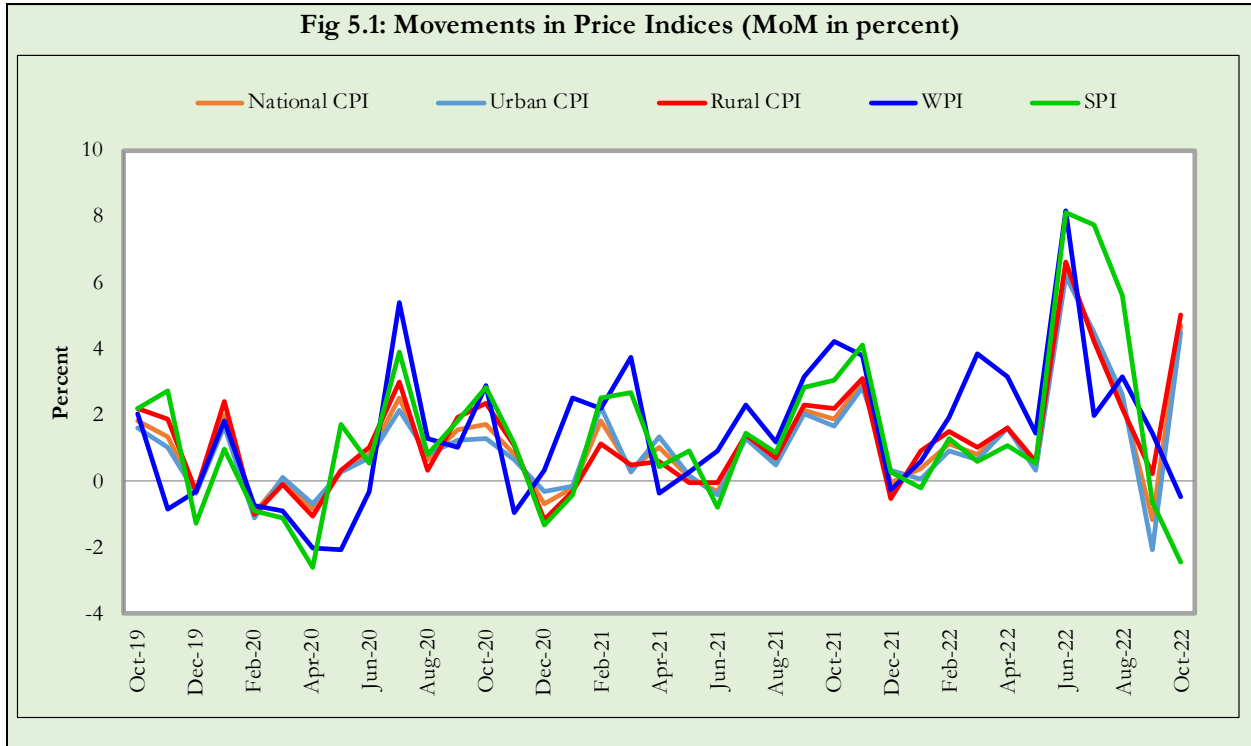
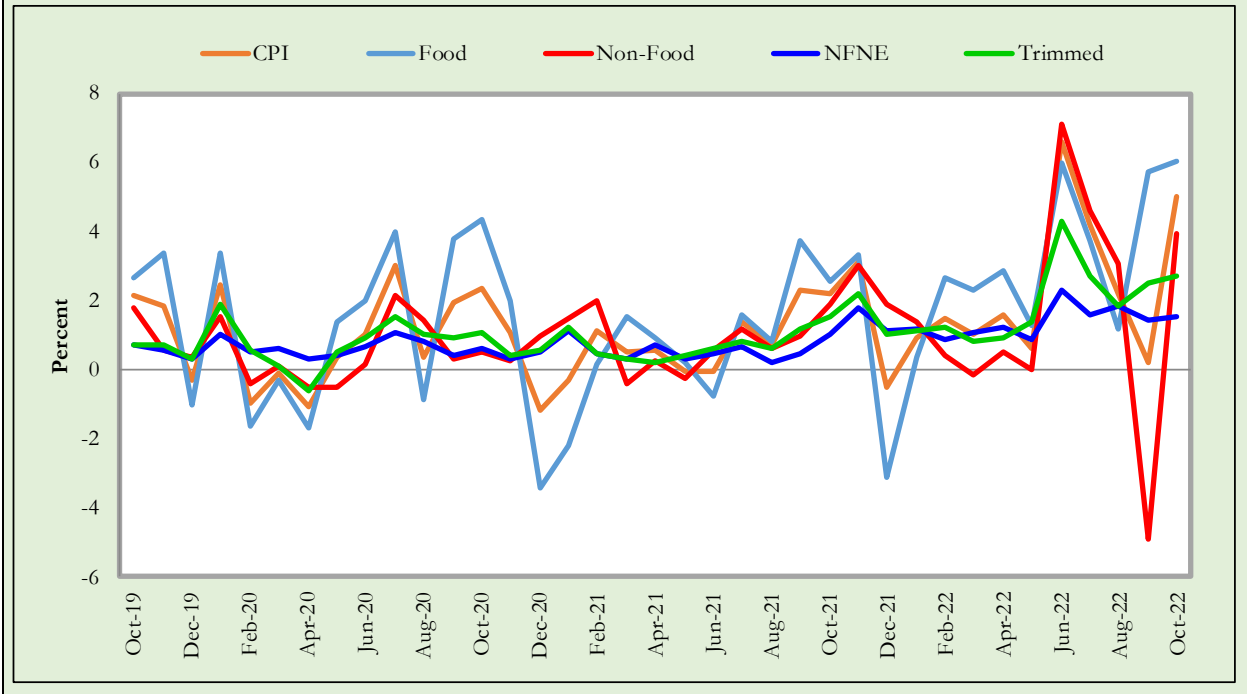
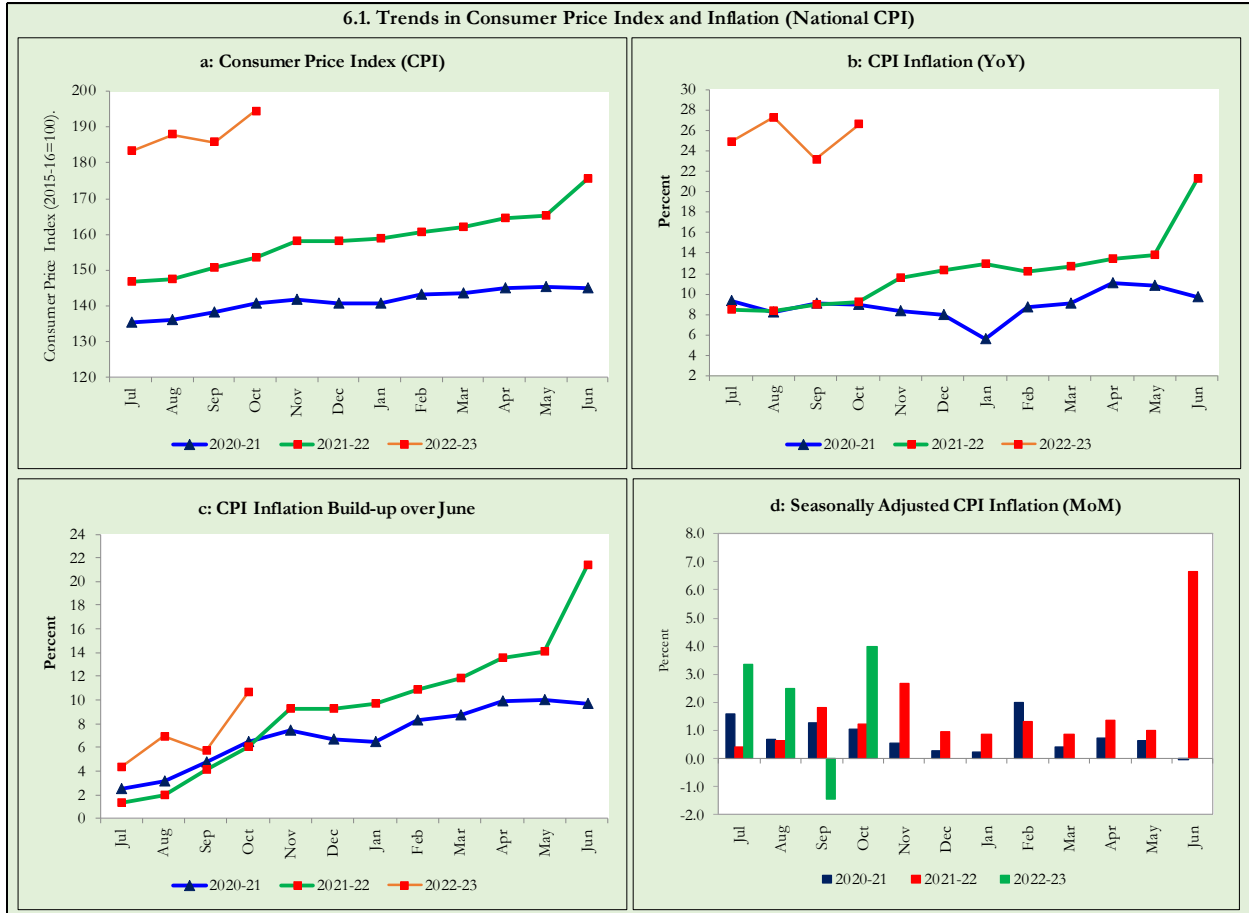


Fig 5.3: Movements in Price Indices (MoM in percent) - Rural CPI

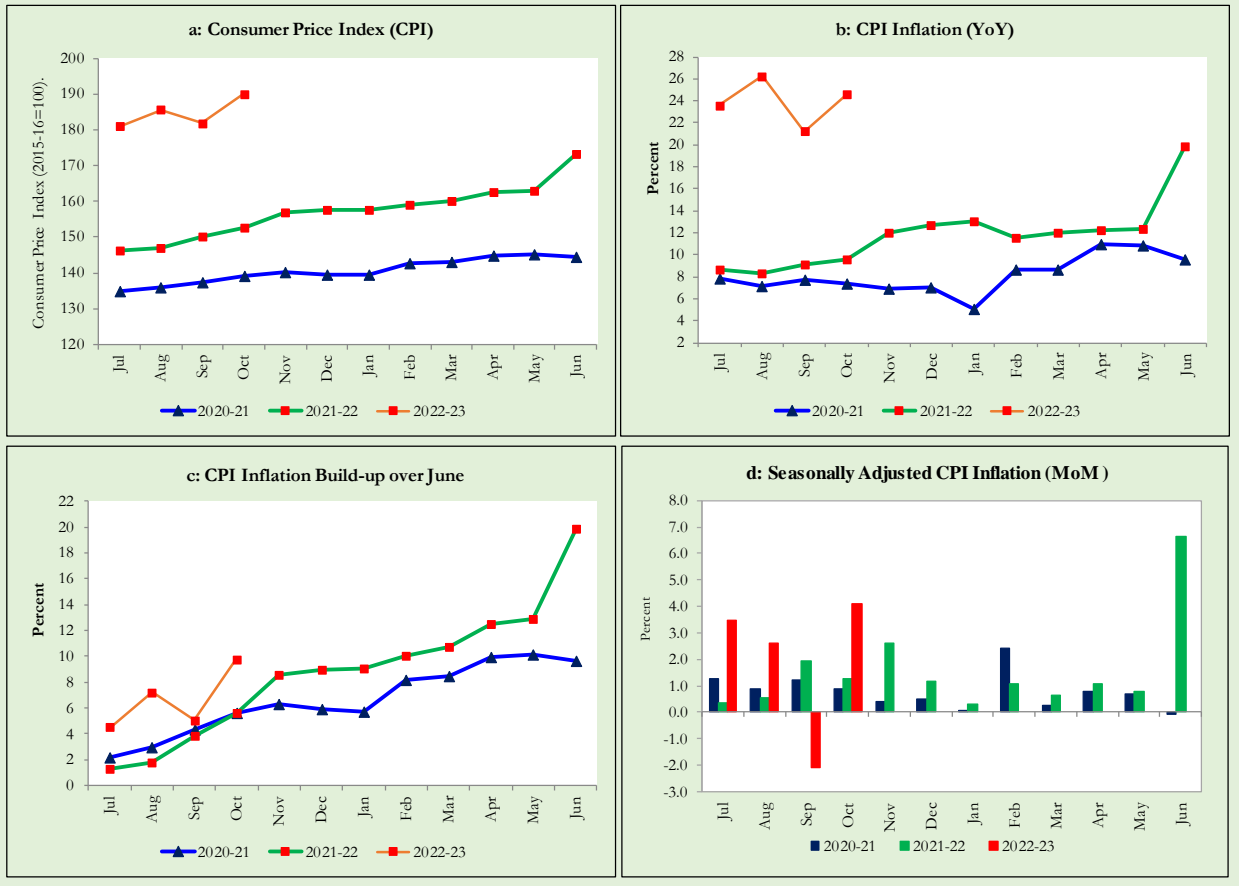


6. Trends in Consumer Price Indices and Inflation

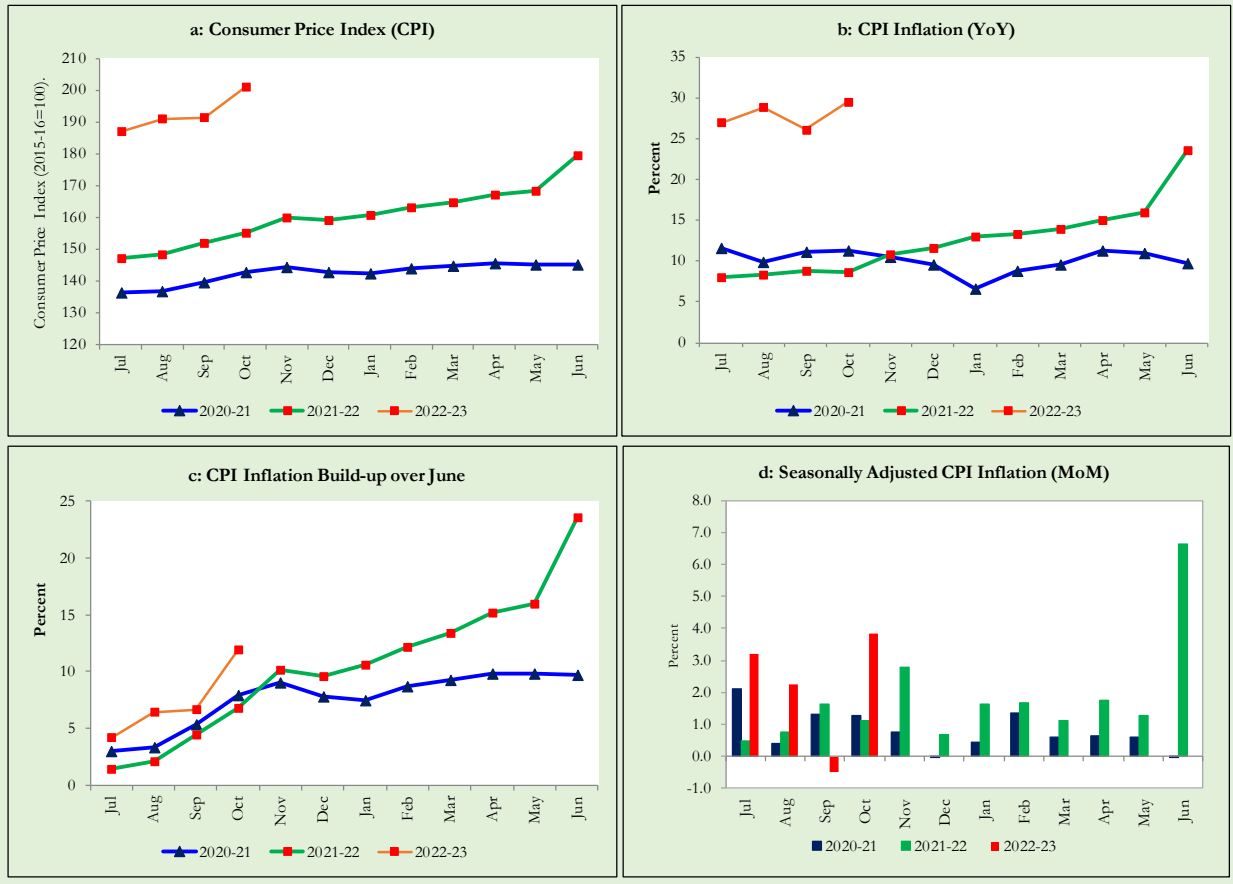
Monthly Consumer Price Indices, YoY growth rates and inflation build up over October along with seasonally adjusted (MoM) growth rates in CPI (National, Urban and Rural) is summarized in the following graphs (Figure 6.1 to 6.3).



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



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



7. Weighted Contribution

The weighted contribution of food group in the overall urban CPI inflation decreased to 54.3 percent during October 2022 from 56.0 percent in previous month. It was 37.9 percent during corresponding month of last year. The weighted contribution of non-food group increased to 45.7 percent in October 2022 from 44.0 percent in previous month. Weighted Contribution of non-food was 62.1 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.

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
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
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

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 increased to 60.7 percent during October 2022 from 60.1 percent in previous month. It was 40.8 percent during corresponding month of last year. The weighted contribution of non-food group decreased to 39.3 percent in October 2022 from 39.9 percent in previous month. Weighted contribution of non-food group was 59.2 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
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
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

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.

Groups	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
General	60.1	70.2	63.2	57.6	60.1	60.1	57.3	61.2	75.3	71.1	70.8	62.4	64.0
Food & Non-Alcoholic Beverages	41.1	42.2	34.4	40.0	46.7	34.4	44.4	37.8	57.8	66.7	54.4	56.7	43.3
Alcoholic Beverages & Tobacco	33.3	33.3	33.3	66.7	33.3	33.3	66.7	100.0	100.0	100.0	100.0	100.0	100.0
Clothing & Footwear	55.0	80.0	85.0	77.5	77.5	70.0	67.5	72.5	82.5	62.5	70.0	62.5	72.5
Housing, Water, Elect, Gas & other Fuels	72.4	72.4	69.0	13.8	3.4	10.3	17.2	20.7	72.4	75.9	58.6	3.4	51.7
Furnishing & Household Equip. Maintenance etc.	88.1	90.5	88.1	88.1	90.5	90.5	90.5	97.6	100.0	97.6	95.2	97.6	100.0
Health	51.6	64.5	90.3	71.0	87.1	77.4	74.2	61.3	90.3	61.3	77.4	87.1	80.6
Transport	50.0	93.8	53.1	62.5	62.5	59.4	40.6	53.1	93.8	81.3	50.0	37.5	46.9
Communication	20.0	0.0	20.0	40.0	20.0	20.0	20.0	20.0	40.0	40.0	20.0	40.0	40.0
Recreation & Culture	72.0	68.0	24.0	36.0	36.0	68.0	44.0	76.0	44.0	52.0	80.0	72.0	80.0
Education	56.3	81.3	68.8	31.3	37.5	75.0	43.8	50.0	25.0	31.3	75.0	12.5	37.5
Restaurant & Hotels	85.7	85.7	100.0	78.6	92.9	78.6	78.6	92.9	92.9	85.7	100.0	92.9	100.0
Miscellaneous	82.8	96.6	86.2	89.7	86.2	100.0	89.7	96.6	100.0	86.2	96.6	93.1	89.7
NFNE	66.0	80.9	75.3	67.2	69.4	76.6	67.2	72.8	81.3	71.5	77.4	67.2	76.6

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

Groups	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
General	66.8	61.9	56.1	57.4	59.4	52.0	54.9	59.0	74.2	76.6	72.5	67.2	64.6
Food & Non-Alcoholic Beverages	49.4	29.1	21.5	44.3	45.6	41.8	32.9	40.5	53.2	64.6	53.2	62.0	55.7
Alcoholic Beverages & Tobacco	80.0	40.0	80.0	60.0	100.0	0.0	80.0	100.0	100.0	100.0	100.0	100.0	60.0
Clothing & Footwear	81.5	96.3	96.3	70.4	92.6	74.1	92.6	88.9	81.5	81.5	88.9	66.7	81.5
Housing, Water, Elect, Gas & other Fuels	91.3	87.0	73.9	17.4	4.3	0.0	26.1	26.1	82.6	95.7	78.3	30.4	56.5
Furnishing & Household Equip. Maintenance etc.	84.6	88.5	96.2	92.3	92.3	84.6	80.8	84.6	92.3	92.3	100.0	88.5	100.0
Health	57.1	71.4	78.6	64.3	78.6	42.9	71.4	42.9	100.0	64.3	71.4	92.9	64.3
Transport	68.8	81.3	43.8	62.5	62.5	37.5	50.0	68.8	87.5	75.0	43.8	68.8	31.3
Communication	20.0	0.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	40.0	20.0	20.0	20.0
Recreation & Culture	61.5	53.8	15.4	38.5	53.8	69.2	30.8	76.9	53.8	53.8	84.6	69.2	84.6
Education	20.0	0.0	20.0	60.0	80.0	80.0	100.0	80.0	80.0	100.0	80.0	0.0	100.0
Restaurant & Hotels	78.6	85.7	85.7	78.6	57.1	78.6	57.1	71.4	92.9	85.7	92.9	85.7	85.7
Miscellaneous	88.2	88.2	82.4	94.1	76.5	88.2	94.1	76.5	94.1	94.1	94.1	94.1	88.2
NFNE	71.3	75.0	72.1	67.6	71.3	66.9	74.3	69.9	82.4	78.7	80.9	72.1	76.5

9. Domestic Commodity Prices (Growth)

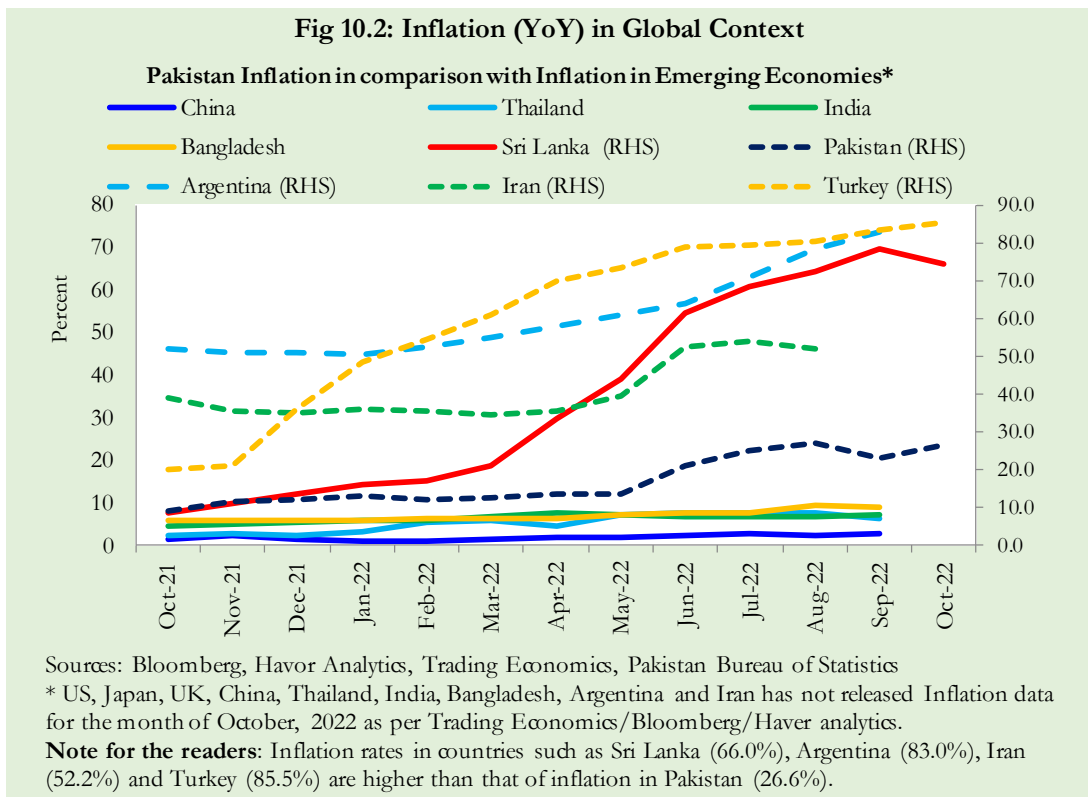
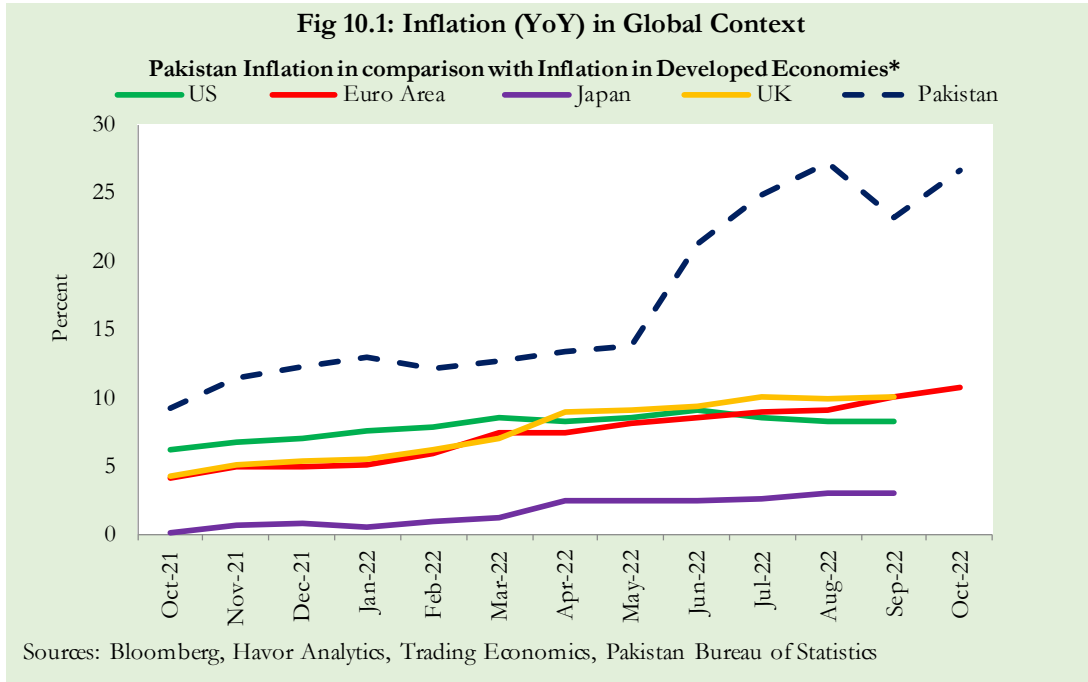
Growth of domestic food commodities (YoY and MoM in percent) for selected essential food items covering both urban and rural CPI baskets is given in table 9.1.

S. No	Item	Unit	Urban CPI		Rural CPI	
			YoY	MoM	YoY	MoM
1	Wheat	10 Kg	45.8	0.7	50.1	10.1
2	Wheat Flour Bag	20 Kg	28.8	15.4	34.1	15.8
3	Rice Basmati Broken (Superior/Average Quality)*	1 Kg	62.6	1.7	37.0	2.2
4	Beef With Bone (Average Quality)	1 Kg	22.4	2.7	26.1	0.5
5	Mutton (Average Quality)	1 Kg	29.5	1.4	24.3	0.2
6	Chicken Farm Broiler (Live)	1 Kg	12.2	4.0	11.7	3.8
7	Milk Fresh (Un-Boiled)	1 Litre	28.9	0.6	26.2	1.1
8	Eggs Farm	Dozen	42.7	-0.5	42.0	0.8
9	Vegetable Ghee Dalda/Habib Or Other Superior Quality 1 Kg Pouch	Each	51.4	-0.6	53.6	-2.2
10	Pulse Masoor (Washed)	1 Kg	61.1	-10.3	72.9	-4.6
11	Pulse Moong (Washed)	1 Kg	49.8	1.3	47.1	1.8
12	Pulse Mash (Washed)	1 Kg	55.3	-2.7	55.8	1.1
13	Pulse Gram	1 Kg	65.1	-1.8	67.2	2.0
14	Potatoes	1 Kg	22.8	-1.5	26.1	4.4
15	Onions	1 Kg	165.7	67.7	166.0	59.5
16	Tomatoes	1 Kg	219.3	40.7	277.0	38.4
17	Sugar Refined	1 Kg	-11.8	0.4	-16.7	0.3
18	Garlic (Lehsun)	1 Kg	25.2	-3.2	27.6	0.1
19	Ginger (Adrak)	500 Gm	-2.1	-4.1	-4.2	-6.3
20	Tea Lipton Yellow Label 190 Gm Packet	Each	41.9	9.8	44.2	14.8

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

10. Inflation in Global Context

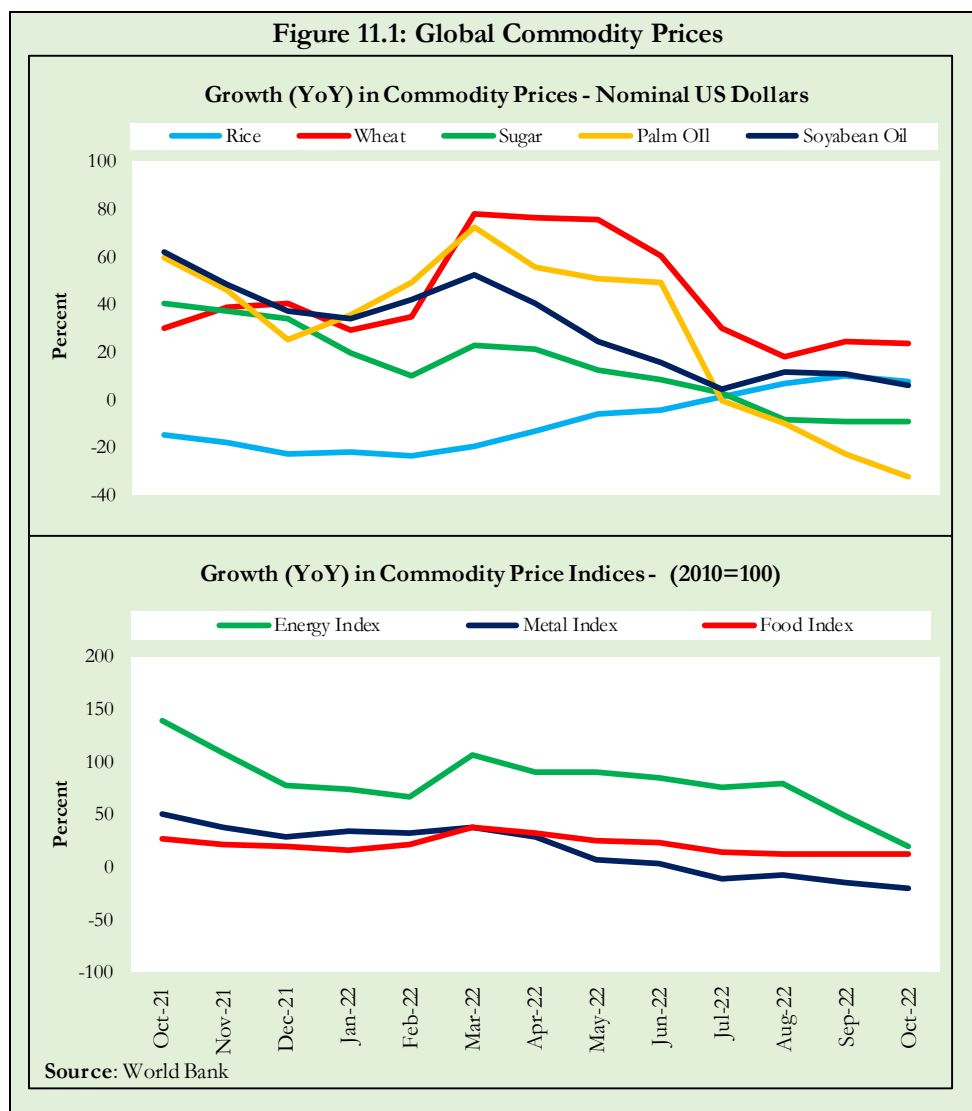
In global context, Pakistan’s inflation in comparison with inflation in selected developed and emerging economies is given in figure 10.1 and 10.2.



11. Global Commodity Prices (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	Oct-21		Sep-22		Oct-22	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	25.6	1.8	12.1	0.1	11.0	0.8
Metals	50.7	4.7	-15.7	-5.4	-20.3	-0.9
Energy	139.0	15.1	47.6	-8.4	18.6	-7.5
Agricultural	21.2	2.2	7.3	-0.9	4.3	-0.7
Cotton	56.9	13.2	13.4	-5.5	-15.1	-15.2



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 October 2008 to October 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

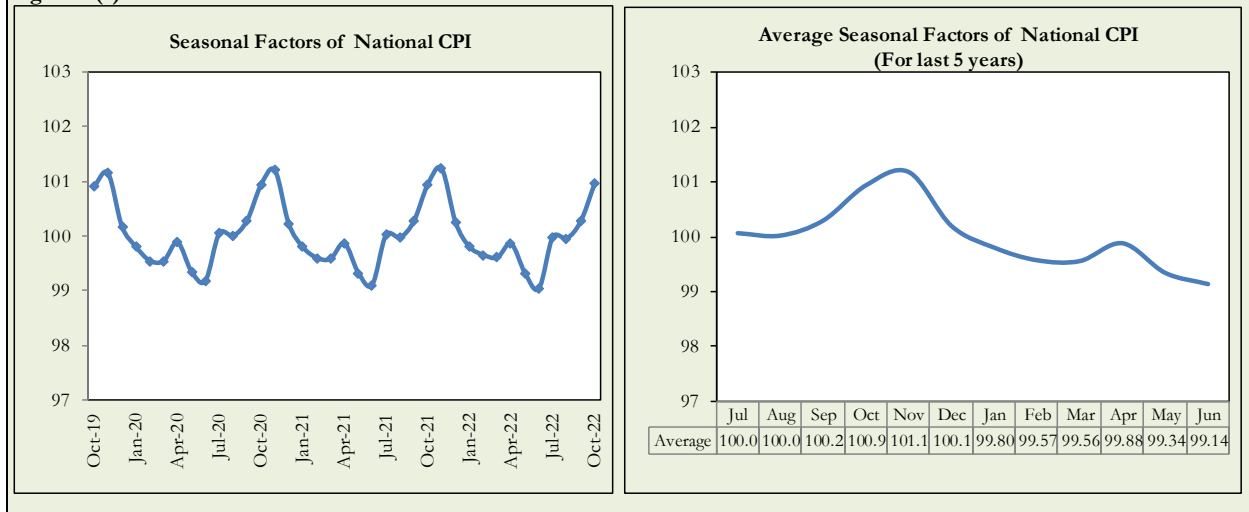


Fig. 12.1 (b): Seasonal Factor of Urban CPI

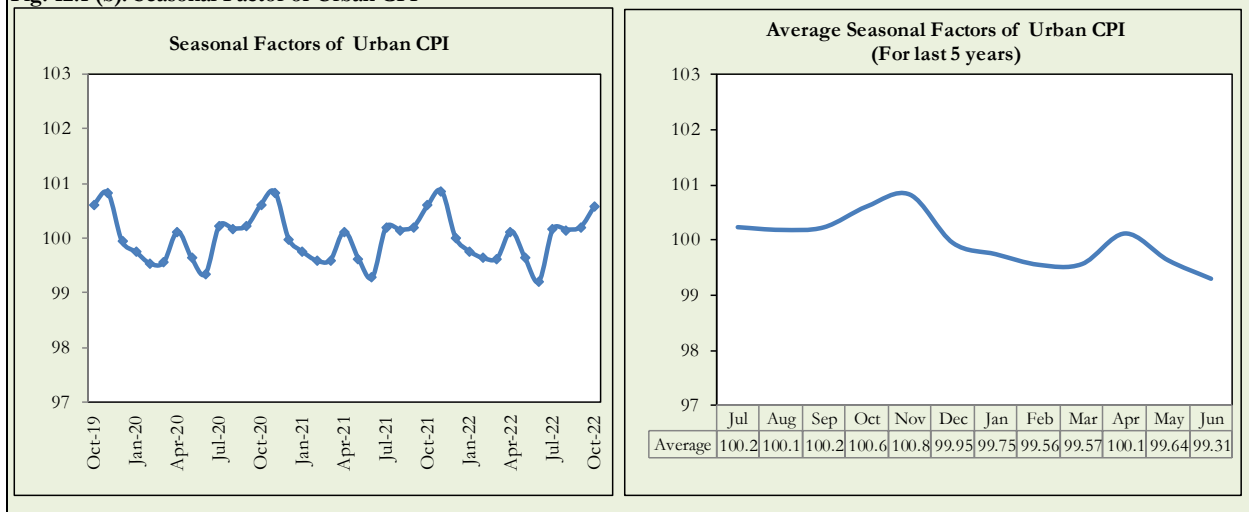
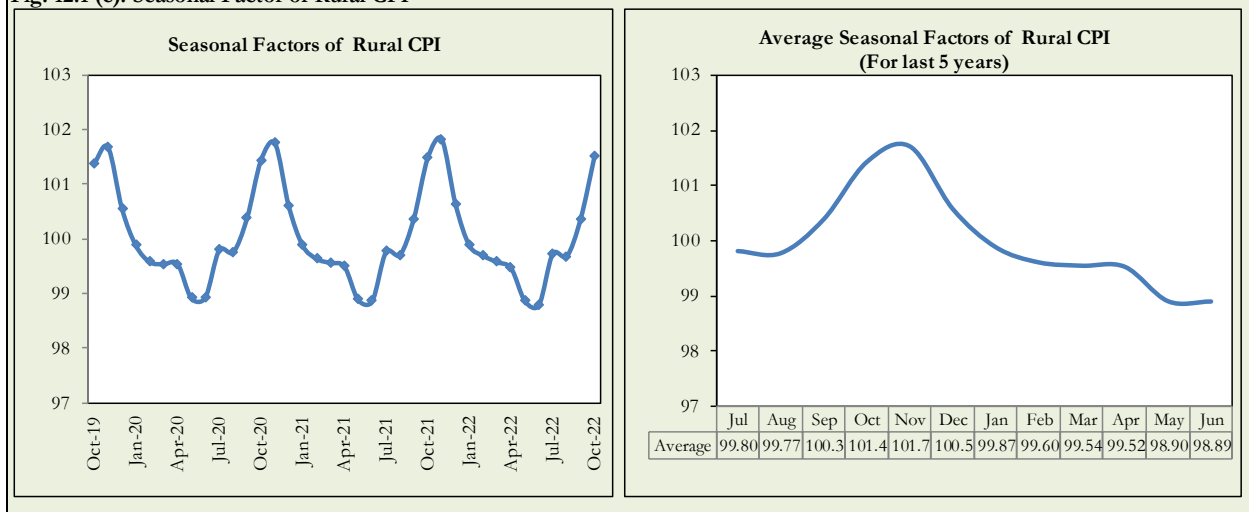


Fig. 12.1 (c): Seasonal Factor of Rural CPI



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

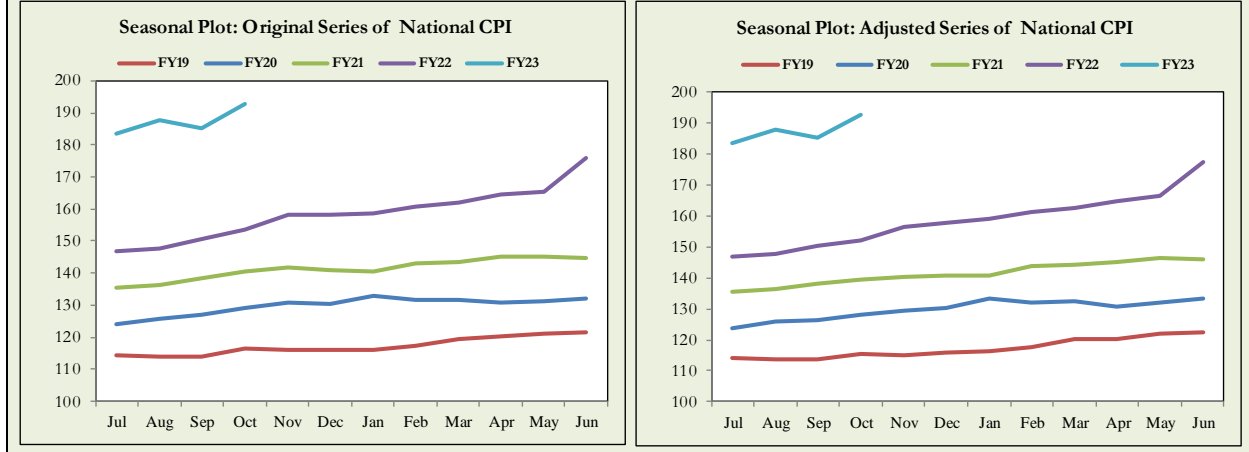


Fig. 12.2 (b): Seasonal Plot of Urban CPI

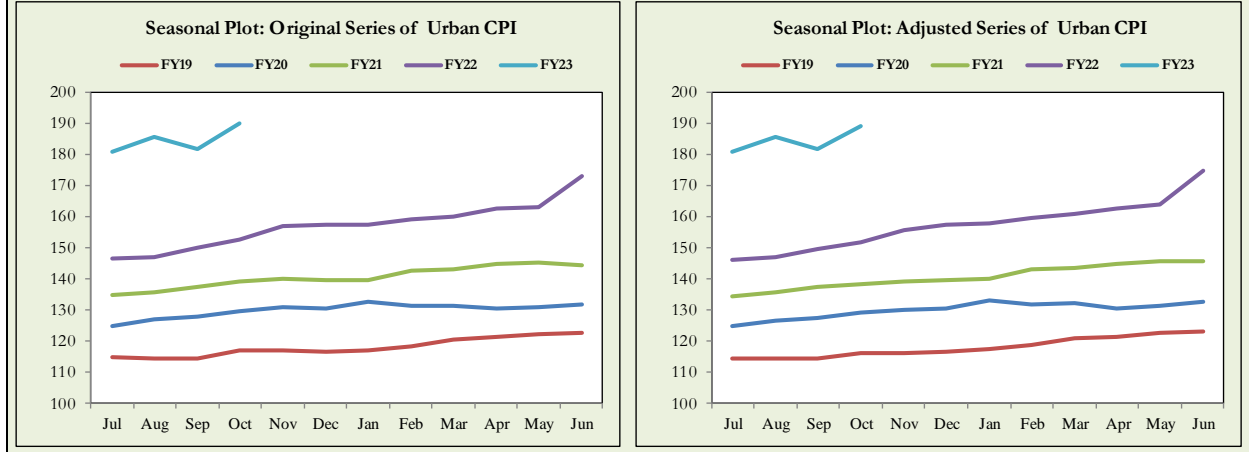
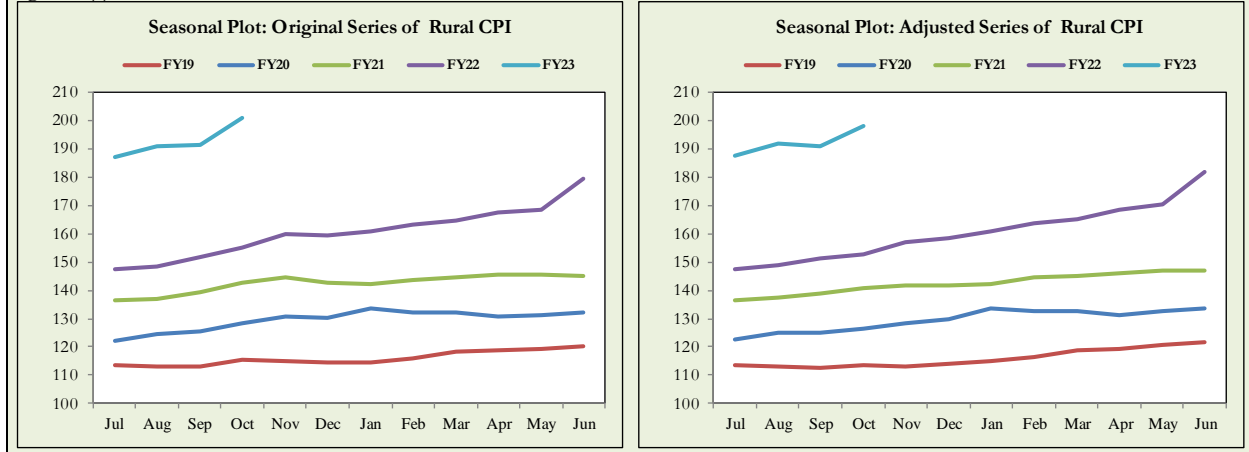


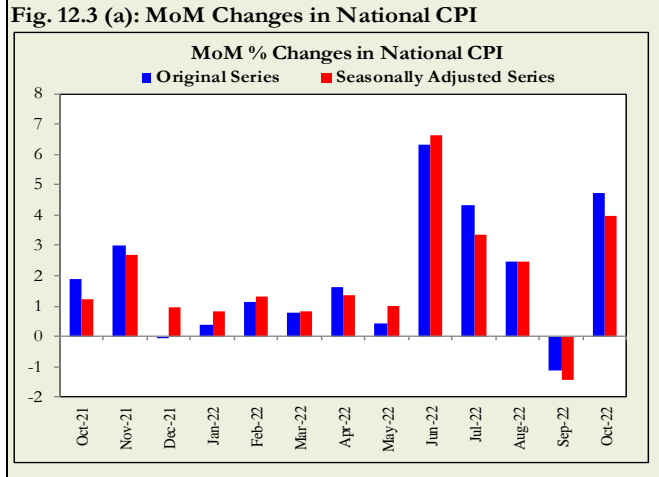
Fig. 12.2 (c): Seasonal Plot of Rural CPI



Seasonally adjusted Index of National CPI for October 2022 stood at 192.57 against 194.42 in original series showing a decrease of 1.85 because of seasonal adjustment.

Seasonally adjusted Index of Urban CPI for October 2022 stood at 188.98 against 190.08 in original series showing a decrease of 1.10 on account of seasonal adjustment.

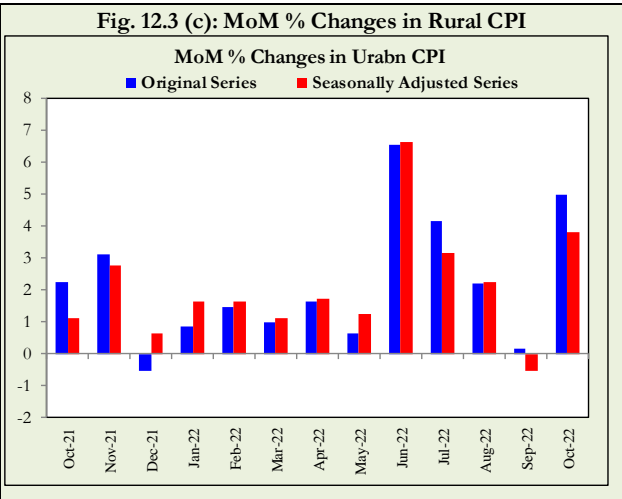
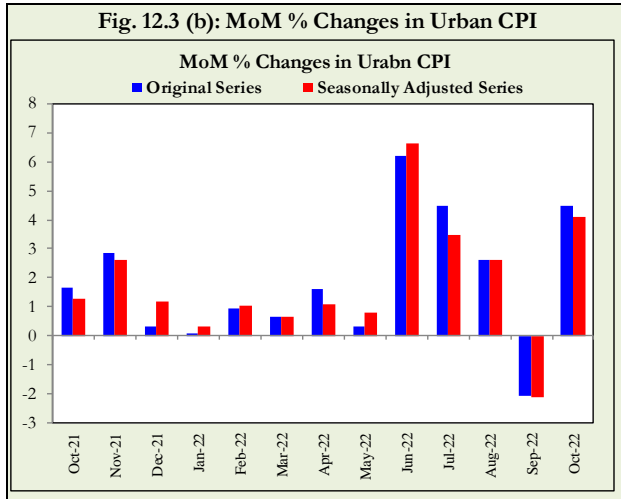
Seasonally adjusted Index of Rural CPI for October 2022 stood at 197.99 against 200.96 in original series showing a decrease of 2.97 on account of seasonal adjustment.



Month-on-month change of seasonally adjusted National CPI series showed an inflation of 3.99% during October 2022 over previous month and an inflation of 4.71% in original series.

Month-on-month change of seasonally adjusted Urban CPI series showed an inflation of 4.10% during October 2022 over previous month and an inflation of 4.50% in original series.

Month-on-month change of seasonally adjusted Rural CPI series showed an inflation of 3.83% during October 2022 over previous month and an inflation of 5.01% in original series.



List of Tables

Table A0: Inflation – Summary

Period	CPI							WPI			SPI**	Core Inflation			
	General			Food		Non-Food		General	Food	Non Food		NFNE*		Trimmed	
	National	Urban	Rural	Urban	Food	Non Food	Rural					Urban	Rural	Urban	Rural
Year-on-Year															
Oct-21	9.2	9.6	8.7	9.4	7.2	9.7	10.0	21.2	8.8	29.0	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	11.3	36.9	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	11.7	35.2	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	12.5	30.7	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	12.5	30.1	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	14.3	29.1	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	15.3	35.6	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	13.9	38.9	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	23.6	47.8	26.4	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	24.2	46.7	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	26.4	49.6	40.6	13.8	16.5	21.4	23.8
Sep-22	23.2	21.2	26.1	30.8	32.7	15.2	20.1	38.9	29.6	44.0	35.9	14.4	17.6	19.5	24.4
Oct-22	26.6	24.6	29.5	34.7	37.2	18.2	22.4	32.6	32.0	32.9	28.6	14.9	18.2	22.0	26.7
Month-on-Month															
Oct-21	1.9	1.7	2.2	1.5	2.6	1.8	1.9	4.2	1.5	5.7	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	1.9	4.8	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	-1.0	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	0.5	0.7	-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	1.4	2.2	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	3.0	4.3	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	2.8	3.4	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	0.1	2.1	0.5	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	7.6	8.4	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	1.7	2.1	7.7	1.2	1.6	2.7	2.7
Aug-22	2.4	2.6	2.2	1.6	1.2	3.3	3.1	3.1	2.2	3.6	5.6	1.8	1.8	1.7	1.8
Sep-22	-1.2	-2.1	0.2	5.2	5.7	-6.6	-4.9	1.4	5.0	-0.2	-0.6	0.9	1.4	1.6	2.5
Oct-22	4.7	4.5	5.0	4.6	6.1	4.5	3.9	-0.5	3.4	-2.4	-2.4	1.3	1.5	1.9	2.7

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

Table A1: Inflation – 12 Month Moving Average and Period Average

Period	CPI							WPI			SPI**	Core Inflation			
	General			Food		Non-Food		General	Food	Non Food		NFNE*		Trimmed	
	National	Urban	Rural	Urban	Rural	Urban	Rural					Urban	Rural	Urban	Rural
12- Month Moving Average															
Oct-21	8.9	8.6	9.2	11.3	10.4	7.0	8.1	14.4	12.8	15.4	12.5	6.3	7.2	8.4	9.1
Nov-21	9.1	9.1	9.3	11.2	9.8	7.7	8.7	16.3	12.6	18.5	13.3	6.5	7.3	8.8	9.2
Dec-21	9.5	9.5	9.4	11.2	9.5	8.5	9.4	18.0	12.4	21.4	14.2	6.7	7.4	9.2	9.3
Jan-22	10.1	10.2	10.0	11.7	9.9	9.3	10.1	19.5	12.5	23.8	15.3	7.0	7.5	9.5	9.4
Feb-22	10.4	10.4	10.4	12.0	10.3	9.5	10.4	20.7	12.4	25.8	16.0	7.1	7.6	9.6	9.6
Mar-22	10.7	10.7	10.7	12.3	10.7	9.8	10.7	21.5	12.4	27.0	16.1	7.3	7.9	9.6	9.8
Apr-22	10.9	10.8	11.1	12.3	11.1	9.9	11.1	22.5	12.4	28.6	16.0	7.5	8.2	9.7	9.9
May-22	11.2	11.0	11.5	12.3	11.6	10.1	11.4	23.3	12.2	30.1	16.0	7.7	8.5	9.7	10.3
Jun-22	12.2	11.8	12.6	13.4	13.0	10.8	12.3	24.9	13.1	32.0	16.9	8.1	9.0	10.4	11.2
Jul-22	13.6	13.1	14.2	15.0	14.9	11.9	13.6	26.7	14.2	34.2	18.8	8.6	9.7	11.4	12.5
Aug-22	15.1	14.6	15.9	16.5	16.6	13.4	15.3	28.8	15.5	36.6	21.1	9.2	10.5	12.4	13.9
Sep-22	16.3	15.6	17.4	18.2	18.7	14.0	16.3	30.4	17.2	38.1	23.0	9.9	11.5	13.7	15.4
Oct-22	17.8	16.9	19.2	20.4	21.3	14.7	17.3	31.3	19.1	38.3	24.2	10.5	12.4	15.4	17.0
Period Average (Since July)															
Oct-21	8.7	8.9	8.5	9.9	8.2	8.3	8.7	18.8	10.4	24.1	13.3	6.6	6.5	8.6	8.0
Nov-21	9.3	9.6	9.0	10.4	8.3	9.1	9.6	20.5	10.6	26.7	14.1	6.8	6.9	8.7	8.3
Dec-21	9.8	10.1	9.4	10.6	8.4	9.8	10.3	21.5	10.8	28.1	15.0	7.0	7.2	9.0	8.5
Jan-22	10.3	10.5	9.9	11.0	8.9	10.2	10.9	21.8	11.0	28.5	15.7	7.2	7.5	9.1	8.8
Feb-22	10.5	10.6	10.4	11.4	9.6	10.2	11.0	22.1	11.2	28.7	16.0	7.3	7.7	9.2	9.2
Mar-22	10.8	10.8	10.8	11.7	10.3	10.2	11.2	22.3	11.6	28.8	15.9	7.5	8.0	9.4	9.5
Apr-22	11.0	10.9	11.2	12.1	11.0	10.2	11.4	22.9	11.9	29.5	16.0	7.6	8.3	9.7	9.9
May-22	11.3	11.1	11.6	12.5	11.7	10.2	11.5	23.5	12.1	30.4	16.0	7.8	8.6	9.8	10.4
Jun-22	12.2	11.8	12.7	13.4	13.0	10.8	12.3	24.9	13.1	32.0	16.9	8.1	9.0	10.4	11.2
Jul-22	24.9	23.6	26.9	27.4	29.6	21.3	24.5	38.5	24.2	46.7	34.3	12.0	14.6	19.1	21.7
Aug-22	26.1	24.9	27.9	28.1	29.9	23.0	26.0	39.9	25.3	48.1	37.5	12.9	15.6	20.5	23.2
Sep-22	25.1	23.7	27.3	29.0	30.9	20.4	24.0	39.6	26.7	46.7	36.9	13.4	16.2	21.4	24.6
Oct-22	25.5	23.9	27.9	30.5	32.5	19.8	23.6	37.7	28.1	43.1	34.8	13.7	16.7	21.9	25.0

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

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

Groups	Weights	MoM change			YoY change		
		Oct-21	Sep-22	Oct-22	Oct-21	Sep-22	Oct-22
Food & Non-Alcoholic	34.6	2.1	5.8	5.6	8.3	31.7	36.2
Alcoholic Beverages & Tobacco	1.0	0.4	5.9	1.8	1.9	32.7	34.6
Clothing & Footwear	8.6	0.5	0.3	1.0	9.3	17.7	18.3
Housing, Water, Elec, Gas & other Fuels	23.6	2.4	-17.7	10.9	12.0	3.4	11.9
Furnishing & Household Equip. Maintenance etc	4.1	0.8	3.4	2.9	9.2	25.1	27.6
Health	2.8	0.7	2.2	2.8	8.0	13.8	16.2
Transport	5.9	5.3	2.2	-1.8	14.4	64.5	53.4
Communication	2.2	0.1	0.1	0.4	2.8	1.3	1.6
Recreation & Culture	1.6	1.2	2.0	1.9	7.5	22.8	23.7
Education	3.8	0.1	0.0	1.0	2.2	10.0	10.9
Restaurants & Hotels	6.9	1.3	2.2	2.5	8.3	28.8	30.4
Miscellaneous	4.9	1.3	3.8	0.9	8.7	22.9	22.4
Overall National CPI	100.0	1.9	-1.2	4.7	9.2	23.2	26.6

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

Groups	Weights	MoM change			YoY change		
		Oct-21	Sep-22	Oct-22	Oct-21	Sep-22	Oct-22
I. Food Group	36.8	1.5	5.2	4.6	9.4	30.8	34.7
Food & Non-Alcoholic Beverages	30.4	1.6	5.4	4.8	9.4	30.7	34.8
Alcoholic Beverages & Tobacco	0.9	0.2	6.8	1.3	2.1	34.1	35.4
Restaurant & Hotels (Food)	5.5	1.2	3.6	3.8	10.7	31.0	34.4
II. Non-Food Group	63.2	1.8	-6.6	4.5	9.7	15.2	18.2
Clothing & Footwear	8.0	0.4	0.1	1.0	10.2	18.9	19.5
Housing, Water, Elec, Gas & other Fuels	27.0	2.3	-17.8	10.9	11.1	1.0	9.5
Furnishing & Household Equip. Maintenance etc	4.1	0.7	4.1	3.3	9.1	24.3	27.6
Health	2.3	0.6	1.0	1.7	8.4	12.3	13.6
Transport	6.1	5.3	2.0	-2.2	15.0	63.3	51.7
Communication	2.4	0.1	0.1	0.6	3.8	1.2	1.7
Recreation & Culture	1.7	1.5	2.0	1.7	7.6	21.1	21.4
Education	4.9	0.2	0.0	1.1	1.9	10.0	11.1
Restaurants & Hotels (Non-food Component)	1.9	0.1	0.2	0.3	2.3	23.2	23.4
Miscellaneous	4.8	1.0	3.9	1.4	9.3	23.1	23.7
Overall Urban CPI	100.0	1.7	-2.1	4.5	9.6	21.2	24.6

Table A4: Rural CPI Inflation by Groups (YoY and MoM in percent)

Groups	Weights	MoM Change			YoY Change		
		Oct-21	Sep-22	Oct-22	Oct-21	Sep-22	Oct-22
I. Food Group	45.9	2.6	5.7	6.1	7.2	32.7	37.2
Food and Non-Alcoholic Beverages	40.9	2.7	6.2	6.6	7.1	32.8	37.9
Alcoholic Beverages, Tobacco	1.3	0.5	4.8	2.5	1.6	31.1	33.7
Restaurants and Hotels (Food Component)	3.8	2.0	1.7	1.4	10.2	32.0	31.1
II. Non-Food Group	54.1	1.9	-4.9	3.9	10.0	20.1	22.4
Clothing and Footwear	9.5	0.6	0.5	1.0	8.2	16.3	16.8
Housing, Water, Elec., Gas and Other Fuels	18.5	2.7	-17.5	10.9	14.0	8.6	17.3
Furnishing and Household Equip. Maintenance	4.1	1.0	2.4	2.2	9.3	26.2	27.7
Health	3.5	0.7	3.4	3.9	7.5	15.2	18.9
Transport	5.6	5.2	2.5	-1.3	13.4	66.6	56.4
Communication	2.0	0.2	0.1	0.0	1.0	1.4	1.3
Recreation and Culture	1.4	0.7	2.2	2.4	7.3	25.7	27.7
Education	2.1	0.1	0.0	0.5	3.2	9.8	10.2
Restaurants and Hotels (Non-Food Component)	2.4	1.6	0.2	2.3	2.9	20.7	21.6
Miscellaneous	5.0	1.9	3.7	0.2	7.9	22.6	20.5
Rural CPI	100.0	2.2	0.2	5.0	8.7	26.1	29.5

Table A5: Top Ten Contributors to Urban CPI Inflation (YoY) – October 2022

Items/Contributors	Weights	YoY Change		Weighted Contribution (%)	
		Oct-21	Oct-22		
A. Ranked by Weighted Contribution					
1	Motor Fuel	2.91	27.60	64.81	9.39
2	Milk Fresh	7.11	9.45	29.61	8.20
3	Readymade Food	5.52	10.71	34.35	7.61
4	Wheat Flour	3.01	12.97	37.38	4.80
5	Electricity Charges	4.56	32.14	24.95	4.69
6	Fresh Vegetables	1.53	6.10	58.87	4.34
7	House Rent	19.26	6.62	5.27	3.84
8	Cooking Oil	1.10	40.02	58.06	3.42
9	Onions	0.59	-28.35	165.66	3.22
10	Vegetable Ghee	1.03	43.03	52.50	3.08
Total		46.62			52.59
B. Ranked by Percentage Change					
1	Tomatoes	0.35	-48.52	219.34	3.01
2	Onions	0.59	-28.35	165.66	3.22
3	Gram Whole	0.09	12.44	69.80	0.24
4	Pulse Gram	0.17	2.87	65.08	0.36
5	Motor Fuel	2.91	27.60	64.81	9.39
6	Besan	0.08	3.76	62.25	0.17
7	Mustard Oil	0.01	41.92	61.14	0.04
8	Pulse Masoor	0.16	17.62	61.07	0.33
9	Fresh Vegetables	1.53	6.10	58.87	4.34
10	Cooking Oil	1.10	40.02	58.06	3.42
Total		6.99			24.52
C. Ranked by Weights					
1	House Rent	19.26	6.62	5.27	3.84
2	Milk Fresh	7.11	9.45	29.61	8.20
3	Readymade Food	5.52	10.71	34.35	7.61
4	Education	4.88	1.94	11.07	2.15
5	Electricity Charges	4.56	32.14	24.95	4.69
6	Wheat Flour	3.01	12.97	37.38	4.80
7	Appliances/Articles/Products for Personal	2.98	12.53	23.82	2.82
8	Motor Fuel	2.91	27.60	64.81	9.39
9	Cotton Cloth	2.22	9.81	24.16	2.16
10	Meat	2.04	17.11	25.34	2.51
Total		54.49			48.17

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 24.6 percent in October 2022.

Table A6: Top Ten Contributors to Urban CPI Inflation (MoM) in October 2022

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Sep-22	Oct-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	4.56	-65.33	89.59	50.86
2	Onions	0.59	-3.86	67.73	9.56
3	Wheat Flour	3.01	9.71	8.90	6.60
4	Tomatoes	0.35	33.86	40.73	5.80
5	Readymade Food	5.52	3.58	3.82	5.02
6	Fresh Vegetables	1.53	22.70	9.55	4.68
7	House Rent	19.26	0.00	1.08	3.77
8	Fresh Fruits	1.44	0.02	10.98	2.80
9	Tea	0.84	11.59	9.82	1.99
10	Milk Fresh	7.11	2.96	1.21	1.97
Total		44.21			93.05
B. Ranked by Percentage Change					
1	Electricity Charges	4.56	-65.33	89.59	50.86
2	Onions	0.59	-3.86	67.73	9.56
3	Tomatoes	0.35	33.86	40.73	5.80
4	Fresh Fruits	1.44	0.02	10.98	2.80
5	Tea	0.84	11.59	9.82	1.99
6	Fresh Vegetables	1.53	22.70	9.55	4.68
7	Wheat Flour	3.01	9.71	8.90	6.60
8	Fish	0.39	1.13	6.37	0.38
9	Bakery And Confectionary	0.48	4.22	6.19	0.71
10	Woolen Cloth	0.84	0.13	6.15	1.02
Total		14.03			84.40
C. Ranked by Weights					
1	House Rent	19.26	0.00	1.08	3.77
2	Milk Fresh	7.11	2.96	1.21	1.97
3	Readymade Food	5.52	3.58	3.82	5.02
4	Education	4.88	0.01	1.10	1.07
5	Electricity Charges	4.56	-65.33	89.59	50.86
6	Wheat Flour	3.01	9.71	8.90	6.60
7	Appliances/Articles/Products for Personal	2.98	3.19	2.39	1.56
8	Motor Fuel	2.91	3.19	-4.22	-4.83
9	Cotton Cloth	2.22	0.13	0.42	0.21
10	Meat	2.04	0.65	2.09	1.16
Total		54.49			67.39

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 4.5 percent in October 2022.

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

Items/Contributors	Weights	YoY Change		Weighted Contribution (%)	
		Oct-21	Oct-22		
A. Ranked by Weighted Contribution					
1	Motor Fuel	2.91	27.60	64.81	9.39
2	Milk Fresh	7.11	9.45	29.61	8.20
3	Readymade Food	5.52	10.71	34.35	7.61
4	Wheat Flour	3.01	12.97	37.38	4.80
5	Electricity Charges	4.56	32.14	24.95	4.69
6	Fresh Vegetables	1.53	6.10	58.87	4.34
7	House Rent	19.26	6.62	5.27	3.84
8	Cooking Oil	1.10	40.02	58.06	3.42
9	Onions	0.59	-28.35	165.66	3.22
10	Vegetable Ghee	1.03	43.03	52.50	3.08
11	Tomatoes	0.35	-48.52	219.34	3.01
12	Appliances/Articles/Products for Personal	2.98	12.53	23.82	2.82
13	Transport Services	1.75	0.76	41.27	2.52
14	Meat	2.04	17.11	25.34	2.51
15	Washing Soap/Detergents/Match Box	1.41	12.45	41.49	2.34
Total		55.15			65.79
Bottom 15 Contributors					
1	Condiments And Spices	1.33	6.53	-10.97	-0.81
2	Sugar	1.11	1.70	-11.84	-0.56
3	Gas Charges	1.08	0.00	0.00	0.00
4	Gur	0.04	8.62	0.39	0.00
5	Therapeutic Appliances and Equipments	0.01	1.94	6.72	0.00
6	Dental Services	0.02	6.12	12.93	0.01
7	Major Tools & Equipments	0.01	8.39	24.44	0.01
8	Postal Services	0.02	10.87	13.79	0.01
9	Newspapers	0.07	0.00	4.21	0.01
10	Carpets	0.03	1.28	13.40	0.01
11	Motor Vehicle Tax	0.05	7.62	8.92	0.02
12	Accommodation Services	0.13	4.02	5.94	0.02
13	Communication Services	1.88	2.54	0.52	0.03
14	Electrical Appliances for Personal	0.05	1.46	19.13	0.03
15	Mustard Oil	0.01	41.92	61.14	0.04
Total		5.84			-1.18

Table A8: Top and Bottom Fifteen Contributors to Urban CPI Inflation (MoM) in October 2022

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Sep-22	Oct-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	4.56	-65.33	89.59	50.86
2	Onions	0.59	-3.86	67.73	9.56
3	Wheat Flour	3.01	9.71	8.90	6.60
4	Tomatoes	0.35	33.86	40.73	5.80
5	Readymade Food	5.52	3.58	3.82	5.02
6	Fresh Vegetables	1.53	22.70	9.55	4.68
7	House Rent	19.26	0.00	1.08	3.77
8	Fresh Fruits	1.44	0.02	10.98	2.80
9	Tea	0.84	11.59	9.82	1.99
10	Milk Fresh	7.11	2.96	1.21	1.97
11	Appliances/Articles/Products for Personal	2.98	3.19	2.39	1.56
12	Washing Soap/Detergents/Match Box	1.41	8.30	3.72	1.31
13	Chicken	1.36	13.05	3.98	1.30
14	Meat	2.04	0.65	2.09	1.16
15	Education	4.88	0.01	1.10	1.07
Total		56.88			99.45
Bottom 15 Contributors					
1	Motor Fuel	2.91	3.19	-4.22	-4.83
2	Liquefied Hydrocarbons	0.51	6.34	-11.37	-2.12
3	Cooking Oil	1.10	-1.89	-2.70	-1.18
4	Pulse Masoor	0.16	-3.08	-10.29	-0.45
5	Personal Effects N.E.C.	0.94	3.87	-1.55	-0.44
6	Potatoes	0.45	17.43	-1.46	-0.22
7	Vegetable Ghee	1.03	-4.50	-0.33	-0.14
8	Condiments And Spices	1.33	4.14	-0.35	-0.11
9	Eggs	0.51	14.20	-0.55	-0.09
10	Pulse Gram	0.17	6.90	-1.77	-0.07
11	Pulse Mash	0.12	6.25	-2.73	-0.07
12	Gram Whole	0.09	4.34	-1.48	-0.04
13	Mustard Oil	0.01	-0.81	-1.84	-0.01
14	Water Supply	0.53	2.25	0.00	0.00
15	Gas Charges	1.08	0.00	0.00	0.00
Total		10.94			-9.77

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

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Sep-22	Oct-22		
A. Ranked by Weighted Contribution					
1	Onions	0.59	-3.86	67.73	9.56
2	Wheat flour	3.01	9.71	8.90	6.60
3	Tomatoes	0.35	33.86	40.73	5.80
4	Readymade food	5.52	3.58	3.82	5.02
5	Fresh vegetables	1.53	22.70	9.55	4.68
6	Fresh fruits	1.44	0.02	10.98	2.80
7	Tea	0.84	11.59	9.82	1.99
8	Milk fresh	7.11	2.96	1.21	1.97
9	Chicken	1.36	13.05	3.98	1.30
10	Meat	2.04	0.65	2.09	1.16
11	Bakery and confectionary	0.48	4.22	6.19	0.71
12	Rice	1.18	2.66	1.56	0.46
13	Dry fruits	0.33	0.52	6.04	0.38
14	Fish	0.39	1.13	6.37	0.38
15	Cigarettes	0.72	8.21	1.23	0.21
Total		26.88			43.03
Bottom 15 Contributors					
1	Cooking oil	1.10	-1.89	-2.70	-1.18
2	Pulse masoor	0.16	-3.08	-10.29	-0.45
3	Potatoes	0.45	17.43	-1.46	-0.22
4	Vegetable ghee	1.03	-4.50	-0.33	-0.14
5	Condiments and Spices	1.33	4.14	-0.35	-0.11
6	Eggs	0.51	14.20	-0.55	-0.09
7	Pulse gram	0.17	6.90	-1.77	-0.07
8	Pulse mash	0.12	6.25	-2.73	-0.07
9	Gram whole	0.09	4.34	-1.48	-0.04
10	Mustard oil	0.01	-0.81	-1.84	-0.01
11	Gur	0.04	1.22	0.62	0.00
12	Honey	0.10	0.00	0.30	0.01
13	Beans	0.04	3.21	1.02	0.01
14	Pulse moong	0.17	19.53	1.28	0.04
15	Besan	0.08	9.74	2.14	0.04
Total		5.41			-2.28

Table A10: Top and Bottom Fifteen Contributors to MoM Urban CPI Non-Food Inflation in Oct 2022

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Sep-22	Oct-22		
A. Ranked by Weighted Contribution					
1	Electricity charges	4.56	-65.33	89.59	50.86
2	House rent	19.26	0.00	1.08	3.77
3	Appliances/Articles/Products for Personal	2.98	3.19	2.39	1.56
4	Washing soap/detergents/match Box	1.41	8.30	3.72	1.31
5	Education	4.88	0.01	1.10	1.07
6	Woolen cloth	0.84	0.13	6.15	1.02
7	Household servant	0.77	0.89	5.01	0.74
8	Drugs and medicines	1.07	1.42	2.51	0.58
9	Personal Grooming Services	0.80	6.89	2.72	0.48
10	Text books	0.67	0.80	3.43	0.44
11	Household equipments	1.00	2.02	1.96	0.43
12	Transport services	1.75	0.87	1.07	0.42
13	Furniture and furnishing	0.48	2.22	3.13	0.31
14	Readymade garments	1.32	0.17	1.15	0.30
15	Construction input items	0.38	1.71	2.72	0.26
Total		42.15			63.55
Bottom 15 Contributors					
1	Motor fuel	2.91	3.19	-4.22	-4.83
2	Liquefied Hydrocarbons	0.51	6.34	-11.37	-2.12
3	Personal Effects n.e.c.	0.94	3.87	-1.55	-0.44
4	Water supply	0.53	2.25	0.00	0.00
5	Gas charges	1.08	0.00	0.00	0.00
6	Newspapers	0.07	0.00	0.00	0.00
7	Communication Services	1.88	0.00	0.00	0.00
8	Motor vehicle tax	0.05	0.00	0.00	0.00
9	Garbage collection	0.11	0.00	0.00	0.00
10	Carpets	0.03	0.40	0.09	0.00
11	Therapeutic Appliances and Equipments	0.01	0.46	0.65	0.00
12	Postal services	0.02	0.62	0.24	0.00
13	Dental services	0.02	0.28	0.52	0.00
14	Major tools & equipments	0.01	0.96	1.13	0.00
15	Plastic products	0.05	5.14	0.21	0.00
Total		8.21			-7.38

Table A11: Top Ten Contributors to Rural CPI Inflation (YoY) in October 2022

Items/Contributors	Weights	YoY Change		Weighted Contribution (%)	
		Oct-21	Oct-22		
A. Ranked by Weighted Contribution					
1	Milk Fresh	10.38	8.59	26.23	8.44
2	Motor Fuels	2.49	26.30	67.22	6.70
3	Wheat	3.47	2.93	50.05	6.57
4	Vegetable Ghee	2.38	43.37	54.73	6.51
5	Fresh Vegetables	2.09	6.50	56.98	4.91
6	Wheat Flour	3.43	13.06	36.21	4.52
7	Readymade Food	3.80	10.18	31.09	4.19
8	Tomatoes	0.51	-54.61	276.96	3.98
9	Onions	0.90	-28.79	166.05	3.86
10	Solid Fuel	4.48	8.77	26.86	3.77
Total		33.93			53.45
B. Ranked by Percentage Change					
1	Tomatoes	0.51	-54.61	276.96	3.98
2	Onions	0.90	-28.79	166.05	3.86
3	Gram Whole	0.11	18.23	79.99	0.27
4	Pulse Masoor	0.21	16.30	72.91	0.43
5	Motor Fuels	2.49	26.30	67.22	6.70
6	Pulse Gram	0.28	5.43	67.18	0.51
7	Transport Services	1.80	-0.98	66.52	3.36
8	Besan	0.07	6.60	60.43	0.13
9	Mustard Oil	0.01	44.86	57.00	0.03
10	Fresh Vegetables	2.09	6.50	56.98	4.91
Total		8.47			24.18
C. Ranked by Weights					
1	Milk Fresh	10.38	8.59	26.23	8.44
2	House Rent	8.61	6.64	5.86	1.57
3	Solid Fuel	4.48	8.77	26.86	3.77
4	Readymade Food	3.80	10.18	31.09	4.19
5	Wheat	3.47	2.93	50.05	6.57
6	Electricity Charges	3.44	32.14	24.95	2.90
7	Wheat Flour	3.43	13.06	36.21	4.52
8	Cotton Cloth	2.84	8.04	16.65	1.76
9	Motor Fuels	2.49	26.30	67.22	6.70
10	Vegetable Ghee	2.38	43.37	54.73	6.51
Total		45.32			46.93

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 Rural CPI, which is 29.5 percent in October 2022.

Table A12: Top Ten Contributors to Rural CPI Inflation (MoM) in October 2022

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Sep-22	Oct-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	3.44	-65.33	89.59	32.82
2	Onions	0.90	0.85	59.54	11.05
3	Wheat Flour	3.43	6.49	15.21	10.73
4	Fresh Vegetables	2.09	26.31	16.45	9.13
5	Wheat	3.47	9.66	10.14	8.67
6	Tomatoes	0.51	72.34	38.40	7.19
7	Tea	1.26	7.52	14.77	3.52
8	Fresh Fruits	1.45	-3.40	13.05	2.84
9	Milk Fresh	10.38	4.45	1.12	2.15
10	Drugs And Medicines	1.58	4.15	6.89	2.12
Total		28.51			90.22
B. Ranked by Percentage Change					
1	Electricity Charges	3.44	-65.33	89.59	32.82
2	Onions	0.90	0.85	59.54	11.05
3	Tomatoes	0.51	72.34	38.40	7.19
4	Fresh Vegetables	2.09	26.31	16.45	9.13
5	Wheat Flour	3.43	6.49	15.21	10.73
6	Tea	1.26	7.52	14.77	3.52
7	Fresh Fruits	1.45	-3.40	13.05	2.84
8	Wheat	3.47	9.66	10.14	8.67
9	Milk Powder	0.11	4.47	8.35	0.14
10	Drugs And Medicines	1.58	4.15	6.89	2.12
Total		18.24			88.21
C. Ranked by Weights					
1	Milk Fresh	10.38	4.45	1.12	2.15
2	House Rent	8.61	0.00	1.29	1.73
3	Solid Fuel	4.48	2.27	2.27	1.89
4	Readymade Food	3.80	1.74	1.35	1.12
5	Wheat	3.47	9.66	10.14	8.67
6	Electricity Charges	3.44	-65.33	89.59	32.82
7	Wheat Flour	3.43	6.49	15.21	10.73
8	Cotton Cloth	2.84	0.21	1.19	0.69
9	Motor Fuels	2.49	2.86	-4.32	-3.60
10	Vegetable Ghee	2.38	-1.60	-1.62	-1.45
Total		45.32			54.75

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 5.0 percent in October 2022.

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

Items/Contributors	Weights	YoY Change		Weighted Contribution (%)	
		Oct-21	Oct-22		
A. Ranked by Weighted Contribution					
1	Milk Fresh	10.38	8.59	26.23	8.44
2	Motor Fuels	2.49	26.30	67.22	6.70
3	Wheat	3.47	2.93	50.05	6.57
4	Vegetable Ghee	2.38	43.37	54.73	6.51
5	Fresh Vegetables	2.09	6.50	56.98	4.91
6	Wheat Flour	3.43	13.06	36.21	4.52
7	Readymade Food	3.80	10.18	31.09	4.19
8	Tomatoes	0.51	-54.61	276.96	3.98
9	Onions	0.90	-28.79	166.05	3.86
10	Solid Fuel	4.48	8.77	26.86	3.77
11	Transport Services	1.80	-0.98	66.52	3.36
12	Electricity Charges	3.44	32.14	24.95	2.90
13	Rice	1.55	3.82	38.70	2.49
14	Washing Soaps, Detergents and Match Box	1.70	11.02	35.95	1.92
15	Cotton Cloth	2.84	8.04	16.65	1.76
Total		45.26			65.88
Bottom 15 Contributors					
1	Sugar	2.03	5.76	-16.70	-1.26
2	Gur	0.15	8.13	-1.75	-0.01
3	Postal Services	0.01	0.00	0.00	0.00
4	Newspapers	0.02	0.00	0.10	0.00
5	Garbage Collection	0.01	8.74	9.60	0.00
6	Water Supply	0.06	2.26	1.63	0.01
7	Communication Services	1.65	0.78	0.16	0.01
8	Dessert Preparation	0.01	7.34	29.64	0.01
9	Motor Vehicle Tax	0.02	-5.56	24.88	0.01
10	Dental Services	0.02	6.05	22.57	0.01
11	Honey	0.03	12.12	14.65	0.01
12	Cleaning And Laundering	0.02	6.41	26.43	0.02
13	Ice Cream	0.06	7.38	11.75	0.02
14	Accommodation Services	0.14	0.00	7.08	0.02
15	Major Tools and Equipments	0.03	8.67	27.43	0.03
Total		4.26			-1.12

Table A14: Top and Bottom Fifteen Contributors to Rural CPI (MoM) Inflation in October 2022

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Sep-22	Oct-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	3.44	-65.33	89.59	32.82
2	Onions	0.90	0.85	59.54	11.05
3	Wheat Flour	3.43	6.49	15.21	10.73
4	Fresh Vegetables	2.09	26.31	16.45	9.13
5	Wheat	3.47	9.66	10.14	8.67
6	Tomatoes	0.51	72.34	38.40	7.19
7	Tea	1.26	7.52	14.77	3.52
8	Fresh Fruits	1.45	-3.40	13.05	2.84
9	Milk Fresh	10.38	4.45	1.12	2.15
10	Drugs And Medicines	1.58	4.15	6.89	2.12
11	Solid Fuel	4.48	2.27	2.27	1.89
12	House Rent	8.61	0.00	1.29	1.73
13	Transport Services	1.80	2.74	4.41	1.70
14	Washing Soaps, Detergents And Match Box	1.70	4.26	3.81	1.28
15	Chicken	1.46	10.92	3.80	1.18
Total		46.56			98.00
Bottom 15 Contributors					
1	Liquefied Hydrocarbons	1.00	11.40	-12.72	-3.74
2	Motor Fuels	2.49	2.86	-4.32	-3.60
3	Vegetable Ghee	2.38	-1.60	-1.62	-1.45
4	Personal Effects N.E.C.	1.21	5.84	-3.12	-0.97
5	Cooking Oil	0.60	-0.65	-2.28	-0.51
6	Pulse Masoor	0.21	-3.07	-4.65	-0.24
7	Postal Services	0.01	0.00	0.00	0.00
8	Newspapers	0.02	0.00	0.00	0.00
9	Garbage Collection	0.01	0.00	0.00	0.00
10	Communication Services	1.65	0.00	0.00	0.00
11	Accommodation Services	0.14	0.00	0.00	0.00
12	Motor Vehicle Tax	0.02	0.00	0.00	0.00
13	Cleaning And Laundering	0.02	1.22	0.00	0.00
14	Water Supply	0.06	0.90	0.00	0.00
15	Honey	0.03	0.33	0.41	0.00
Total		9.85			-10.51

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

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Sep-22	Oct-22		
A. Ranked by Weighted Contribution					
1	Onions	0.90	0.85	59.54	11.05
2	Wheat Flour	3.43	6.49	15.21	10.73
3	Fresh Vegetables	2.09	26.31	16.45	9.13
4	Wheat	3.47	9.66	10.14	8.67
5	Tomatoes	0.51	72.34	38.40	7.19
6	Tea	1.26	7.52	14.77	3.52
7	Fresh fruits	1.45	-3.40	13.05	2.84
8	Milk fresh	10.38	4.45	1.12	2.15
9	Chicken	1.46	10.92	3.80	1.18
10	Condiments and Spices	1.49	6.60	3.85	1.16
11	Readymade Food	3.80	1.74	1.35	1.12
12	Potatoes	0.74	12.67	4.38	1.00
13	Rice	1.55	2.14	1.44	0.61
14	Cigarettes	1.24	4.82	2.56	0.58
15	Milk products	0.96	2.74	1.99	0.33
Total		34.74			61.26
Bottom 15 Contributors					
1	Vegetable ghee	2.38	-1.60	-1.62	-1.45
2	Cooking oil	0.60	-0.65	-2.28	-0.51
3	Pulse Masoor	0.21	-3.07	-4.65	-0.24
4	Honey	0.03	0.33	0.41	0.00
5	Dessert Preparation	0.01	7.74	1.48	0.00
6	Ice Cream	0.06	6.72	0.57	0.01
7	Mustard oil	0.01	0.77	1.71	0.01
8	Pan Prepared	0.04	4.93	1.56	0.02
9	Pulse Mash	0.15	4.87	1.12	0.03
10	Beans	0.09	2.88	1.37	0.03
11	Gram Whole	0.11	3.88	1.07	0.03
12	Nimco	0.08	4.91	2.77	0.05
13	Gur	0.15	0.80	2.23	0.06
14	Besan	0.07	7.86	4.71	0.07
15	Pulse Moong	0.25	14.47	1.83	0.08
Total		4.24			-1.83

Table A16: Top and Bottom Fifteen Contributors to MoM Rural CPI Non-Food Inflation in October 2022

Items/Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Sep-22	Oct-22		
A. Ranked by Weighted Contribution					
1	Electricity Charges	3.44	-65.33	89.59	32.82
2	Drugs and Medicines	1.58	4.15	6.89	2.12
3	Solid Fuel	4.48	2.27	2.27	1.89
4	House Rent	8.61	0.00	1.29	1.73
5	Transport Services	1.80	2.74	4.41	1.70
6	Washing Soaps, Detergents and Match Box	1.70	4.26	3.81	1.28
7	Marriage Hall Charges	2.25	0.19	2.42	0.89
8	Appliances/Articles/Products for Personal	2.27	1.49	2.14	0.79
9	Cotton Cloth	2.84	0.21	1.19	0.69
10	Textbooks	0.50	1.87	4.39	0.35
11	Personal Grooming Services	1.54	4.12	1.03	0.34
12	Medical Tests	0.40	1.47	4.56	0.32
13	Woolen Cloth	1.10	0.30	1.54	0.30
14	Tailoring	1.30	0.39	1.19	0.29
15	Household Equipments	1.28	0.93	1.08	0.27
Total		35.08			45.78
Bottom 15 Contributors					
1	Liquefied Hydrocarbons	1.00	11.40	-12.72	-3.74
2	Motor Fuels	2.49	2.86	-4.32	-3.60
3	Personal Effects n.e.c.	1.21	5.84	-3.12	-0.97
4	Postal Services	0.01	0.00	0.00	0.00
5	Newspapers	0.02	0.00	0.00	0.00
6	Garbage Collection	0.01	0.00	0.00	0.00
7	Communication Services	1.65	0.00	0.00	0.00
8	Accommodation Services	0.14	0.00	0.00	0.00
9	Motor Vehicle Tax	0.02	0.00	0.00	0.00
10	Cleaning and Laundering	0.02	1.22	0.00	0.00
11	Water Supply	0.06	0.90	0.00	0.00
12	Communication Apparatus	0.34	0.35	0.08	0.00
13	Motor Vehicles	0.73	0.11	0.03	0.00
14	Major Tools and Equipments	0.03	3.00	0.91	0.01
15	Dental Services	0.02	7.10	3.11	0.01
Total		7.74			-8.29

Table A17: Distribution of Price Changes (YoY) - Selected Urban CPI Items: October 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, Sugar Refined, Cardamom Small (Average Quality), Ginger (Adrak), Kinnu (Average Quality), Peach (Average Quality), Grapes (Angoor)	Gur (Average Quality), Coriander Seed Powder National 200 Gm Packet, Jam-E-Shireen Standard Size (800 MI),	Cardamom Large (Loose) (Average Quality),	Turmeric Powder National 50 Gm Packet, Almonds (Badam) Kaghazi With Shell (Average Quality), Cumin Seed (Zeera) White National 50 Gm Packet, Chicken Farm Broiler (Live), Fish Rahu (Medium)
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, Dopatta Cotton (Average Quality), Dopatta Georgette (Average Quality),	Shirt Boy Length 24"/26", Women Shalwar Kameez (Average Quality), Tailoring Charges Pant (Men), Vest "Baniyan" For Men Average Quality, Pullover Ladies Oxford/Bonanza, Brassier (Average Quality), Awami Suit Gents Wash & Wear (Average Quality), Pant Cloth Wash & Wear (Average Quality), Linen, Ladies (Average Quality), Full Pant Boy Length
Housing, Water, Elec, Gas & other Fuels	Electricity Charges Upto 50 Units, 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,	Electricity Charges 51-100 Units, Water Charges Per House,	House Rent Combined,	Electrician Charges, Painter Wage Rate, Mason Wage Rate, Plumber Wage Rate, Unskilled Labor Wage Rate, Bricks New 1St Class, Charges For Refuse/Waste Collection, Lpg 11.67 Kg Cylinder, Firewood Whole, Iron Bars (M.S. Bar) 1/2 " 40 Grade, Electricity Charges Combined,
Furnishing & Household Equip. Maintenance etc			Bed Sheet Double With Two Pillow Covers (Superior Quality), Blanket Single (Sn), Water Set (Omroc) 6 Glasses + Jug, Dining Table Wit Glass Top And Six Chairs (Average Quality), Sewing Machine (Sn) Without Cover,	Bed Sheet Single (Superior Quality), Dinner Set Plastic 72 Pieces Super Quality, Bucket (Balti) Plastic Medium Size, Plain Carpet, Cleanser Powder Vim 900 Gm Polybag, Cot Iron (Charpai), Towel Medium Size (3' X 2'), Frying Pan Non-Stick Medium Size Sonex, Sofa Set Five Seater, Air Cooler
Health		Sugar Test (Random/Fasting) Charges Of Both, Ventolin Tablets 2 Mg, Blood Test (Cp) Charges, Gynecologist Fee Per Visit, Cost Of Surgery (C-Section),	Hydrillin Syrup 120 Ml Bottle, Electronic Bp Checking Apparatus, Glucometer, Septran Tablets, Lederplex Syrup Bottle, Phenergan Syrup 120 Ml Bottle, Cac 1000 Tablets Sandoz Bottle, Amoxil Capsule 250 Mg, Physiotherapist	Daonil Tablets 5 Mg, Inderal Tablets 10 Mg, Dental Surgeon Fee Per Visit, Ecg Charges, Glaxose-D 400 Gm Packet, Dental Extraction Fee, Ultrasound Abdominal, Urine Test (Dr) Charges, Johar Joshanda Instant (Sachet) Packet, Entox Tablets, Doctor (Mbbs) Clinic Fee, Calpol Syrup
Transport	Car Suzuki 800 Cc Without Ac,		Car Tax 800 Cc To 1500 Cc,	Motorcycle Service Charges, Car Service Charges, Tire Car Puncture Charges, Car Toyota 1300 Cc Xli, Motorcycle Honda Cd 70, Tire Motorcycle Cd 70 (Back Wheel), Suzuki Fare Minimum Within City, Mini Bus Fare Minimum Within City, Bus Fare Maximum Within City, Mini Bus Fare
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, Pen Ink Dollar 57 MI Bottle, Laptop Dell/Hp/Acer Core I5, Display (14'-15'), Newspaper Daily Dawn, Urdu Book Class Xi/Inter, Mathematics Book Class Xi (Text Book Board), English
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	Private College Fee First Year, 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,		Private Hostel Accommodation Fee For Intermediate College Per Student, Marriage Hall Charges With Furniture, Marriage Hall Service Charges With Food (Average Meal), Seekh Kabab (Beef) (Average Quality), Burger With Shami Kabab
Miscellaneous			Purse Ladies Medium Size (Average Quality), Shampoo Sun Silk/Pantene 90 Ml Bottle, Tissue Paper Perfumed Box 100 Napkins, Silver Tezabi 24 Carett,	Hair Style Charges (At Average Beauty Parlor), Tooth Brush (Shield), Artificial Jewelry (Locket Set) (Average Quality), Nail Polish Swiss Miss/Medora (Medium), Talcum Powder Viceroy/Black Cat Large Size, Blade Treet Ordinary (10 No. Packet), Perfume Medium Size Broche/Medora,

Table A18: Distribution of Price Changes (YoY) - Selected Rural CPI Items: October 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	Sugar Refined, Ginger (Adrak), Gur (Average Quality),	Jam-E-Shreen Standard Size (800 MI),		Chicken Farm Broiler (Live), Ice Cream Walls Cup (Large Size), Chillies Powder Loose, Honey Marhaba Bottle 500 Gm, Cold Drink (Pepsi/Coca-Cola) 1.5 Liter Bottle, Fish Fresh, Almonds (Badam) Kaghazi With Shell (Average Quality), Fruit Juice Small Packet 250 MI, Karela,
Alcoholic Beverages & Tobacco				Tobacco Hukka Twisted, Chewing Tobacco (Niswar), Cigarettes Capstan 20'S Packet, Cigarettes Gold Leaf 20'S Packet, Pan Prepared (Sweet With Beetle Nuts),
Clothing & Footwear			Footware Gents Local (Average Quality),	Chaddar (Wash-N-Wear) (2X2.5 Meter), Footware Children Local (Average Quality), Dopatta Georgette (Average Quality), Pullover Gents (Average Quality), Shirting (Average Quality), Lawn Printed (Average Quality), Footware Ladies Local (Average Quality), School Uniform Boys (Pant & Shirt) 24"/26", Long Cloth, Linen, Ladies (Average Quality), Vest "Baniyan"
Housing, Water, Elec, Gas & other Fuels	Electricity Charges Upto 50 Units,	Electricity Charges 51-100 Units, Water Charges Per House,	House Rent Combined, Charges For Refuse/Waste Collection,	Carpenter Wage Rate, Painter Wage Rate, Plumber Wage Rate, Mason Wage Rate, Unskilled Labor Wage Rate, Electrician Charges, Lpg 11.67 Kg Cylinder, Bricks New 1St Class, Electricity Charges Combined, Electricity Charges 101-300
Furnishing & Household Equip. Maintenance etc			Cleanser Powder Vim 900 Gm Polybag,	Finis 400 MI Bottle, Water Set (Omroc) 6 Glass, Blanket Single (Sn), Dinner Set Plastic 72 Pieces Super Quality, Readymade Quilt (3 Kg), Towel Medium Size (2' X 3'), Bucket (Balti) Plastic Medium Size, Cot Iron (Charpai), Refrigerator Dawlance/Pel
Health		Hydryllin Syrup 120 MI Bottle,	Cost Of Surgery (C-Section), Physiotherapist Fee Per Visit, Daonil Tablets 5 Mg, Cac 1000 Tablets Sandoz Bottle,	Inderal Tablets 10 Mg, Blood Test (Cp) Charges, Amoxil Capsule 250 Mg, X-Ray (Chest) Charges, Johar Joshanda Instant (Sachet) Packet, Doctor (Mbbs) Clinic Fee, Dental Surgeon Fee Per Visit, Dettol
Transport	Car Suzuki 800 Cc Without Ac,			Motorcycle Service Charges, Car Tax 800 Cc To 1500 Cc, Tire Cycle, Cng, Tire Motorcycle Cd 70 (Back Wheel), Motorcycle Honda Cd 70, Tire Car Mehran Tubeless (General), Air Fare Economy Class Per Kilometer, Bicycle, Bus Fare
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, Urdu Books Class Ix And X (Text Book Board), English Books Class Ix And X, English Books Class Vi, English Books Class Xi Complete Set, Exercise Book (With Lines) 80 To 100 Pages, Urdu Books Class V/(Text Book Board), Coaching Fee For Class Ix/X Science Group,
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	
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, Tea Prepared Ordinary, Seekh Kabab (Beef) (Average Quality), Private
Miscellaneous				Shampoo Sun Silk/Pantene 90 MI Bottle, Talcum Powder Viceroy/Black Cat, Tooth Paste Colgate 75 Gm, Tooth Brush (Shield), Blade Treet Ordinary (10 No. Packet), Shaving Charges, Purse Ladies Medium Size (Average Quality), Shaving Cream (Touchme Large/Admiral), Hair Cut Charges For Men, Hair Color (Kala Kola),

Table A19: Distribution of Price Changes (YoY) - WPI Items: October 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	Millet / Bajra,	Raw Animal Materials / Wool, Fish Live Fresh or Chilled,	Fuel Wood in Logs, Cotton Seeds,	Poultry, Unmanufactured Tobacco, Sorghum / Jowar, Dry Fruits, Fiber Crops, Other Oil Seeds, Rice, Edible Roots / Potatoes, Stimulant & Spice Crops, Raw Milk from Bovine Animals, Sugar Crops, Maize, Hides, Skins & Fur Skins, Raw,
ores/Minerals, Elec., Gas & Water		Natural Gas Liquefied,		Salt & Pure Sodium Chloride, Electrical Energy, Coal not Agglomerated,
Food, Beverages, Tobacco, Textile, Apparel and Leather Product	Spices, Sugar Refined, Nylon Yarn, Cotton Yarn, Blended Yarn,	Blankets, Bed Sheets,	Woolen Carpets, Sugar Confectionary, Chocolate,	Synthetic Carpets, Ice Cream, Woven Fabrics, Hosiery Products, Other Food Products, Beverages, Cotton Fabrics, Towels, Meat of Animals, Leather Without Hair, Dairy Products N.E.C, Fruit Juices, Mineral Water,
Other Transportable Goods except Metal Products, Machinery and Equipments	Hard Board, Dyeing Material, Insecticides,	Other Glass Articles,	Pesticides,	Plastic Products, Ceramics & Sanitary Fixture, Matches, Bricks, Blocks & Tiles, Timber, Soaps & Detergents, Furnace Oil, Auto Tyres, Paints & Varnishes, Printing Paper, Cement, Medicines, Bed Foam,
Metal Product, Machinery & Equipments	Vacuum Pumps,		Steel Products, Engines & Motors,	Radio & Television, Fridge, WashM, SewM, Fans, Iron, Steel Bar & Sheets, Electric Wires, Motor Vehicles, Motorcycles, Bicycles, Air Conditioners, Lathe Machines, Tractors, Pipe Fittings, Cultivators, Lighting Equipments,

Table A20: International Commodity Prices/Indices

Commodity/Indices	Jun-21	Oct-21	Sep-22	Oct-22
Energy				
Crude Oil (US\$ per barrel)*	71.8	82.1	88.2	90.3
Energy Index (2010 = 100)	93.9	123.4	158.2	146.3
Food				
Rice (\$/MT)	466.0	401.0	439.0	431.0
Wheat (\$/MT)##	285.6	354.7	419.1	438.0
Sugar, World (\$/KG)	0.4	0.4	0.4	0.4
Palm Oil (\$/MT)	1,004.4	1,310.3	909.3	889.0
Soybean Oil (\$/MT)	1,518.2	1,483.5	1,548.3	1,575.9
Non-Food Non-Energy				
Cotton Outlook 'A' Index (\$/KG) #	2.1	2.6	2.6	2.2
Metal Price Index (2010 = 100)	119.0	130.0	104.6	103.7
Copper (\$/MT)	9,631.5	9,829.2	7,746.0	7,651.1
Aluminum (\$/MT)	2,446.7	2,934.4	2,224.8	2,255.5
Iron Ore (\$ cents/dry MT)	214.4	122.9	99.8	92.6
Tin (\$/MT)	32,502.6	37,722.9	21,124.0	19,391.2
Nickel (\$/MT)	17,979.6	19,362.4	22,774.0	22,032.9
Zinc (\$/MT)	2,951.9	3,359.9	3,125.0	2,967.2
Lead (\$/MT)	2,191.0	2,344.8	1,870.1	1,999.9
Uranium (\$/MT)@	32.3	45.2	48.4	52.3
DAP (\$/MT)	604.8	672.9	752.0	725.0
Urea (\$/MT)	393.3	695.0	678.0	636.3

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

* 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 October 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 A21: 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	185.68
Oct	116.32	129.16	140.67	153.61	192.42
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	114.12	123.74	135.31	146.72	183.37
Aug	113.81	125.83	136.22	147.65	187.92
Sep	113.52	126.47	137.93	150.33	185.19
Oct	115.28	127.99	139.36	152.17	192.57
Nov	114.93	129.41	140.14	156.24	
Dec	115.68	130.22	140.54	157.76	
Jan	116.36	133.30	140.84	159.09	
Feb	117.73	132.24	143.66	161.16	
Mar	120.06	132.29	144.22	162.52	
Apr	120.44	130.74	145.28	164.73	
May	121.81	131.87	146.22	166.36	
Jun	122.56	133.18	146.13	177.42	

Table A22: 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	181.90
Oct	117.04	129.75	139.27	152.59	190.08
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	114.58	124.61	134.42	146.12	180.67
Aug	114.30	126.51	135.58	146.90	185.44
Sep	114.17	127.41	137.22	149.77	181.54
Oct	116.30	128.95	138.43	151.68	188.98
Nov	116.03	129.99	138.99	155.63	
Dec	116.69	130.65	139.71	157.46	
Jan	117.38	133.11	139.80	157.94	
Feb	118.71	131.93	143.20	159.62	
Mar	120.90	132.08	143.57	160.66	
Apr	121.14	130.45	144.74	162.42	
May	122.53	131.46	145.73	163.73	
Jun	123.26	132.77	145.61	174.61	

Table A23: 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	191.38
Oct	115.23	128.28	142.79	155.15	200.96
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	113.42	122.41	136.64	147.63	187.44
Aug	113.08	124.79	137.18	148.78	191.66
Sep	112.54	125.07	138.99	151.19	190.69
Oct	113.74	126.55	140.78	152.90	197.99
Nov	113.26	128.53	141.86	157.17	
Dec	114.14	129.57	141.81	158.22	
Jan	114.82	133.59	142.41	160.83	
Feb	116.25	132.69	144.35	163.50	
Mar	118.80	132.62	145.19	165.33	
Apr	119.38	131.19	146.11	168.22	
May	120.72	132.47	146.97	170.33	
Jun	121.50	133.80	146.92	181.65	

Table A24: National CPI Monthly & Average Seasonal Factors						
Period	FY19	FY20	FY21	FY22	FY23	Average
Jul	100.15	100.10	100.05	100.03	99.99	100.06
Aug	100.11	100.05	100.01	99.97	99.96	100.02
Sep	100.34	100.31	100.28	100.27	100.27	100.29
Oct	100.90	100.91	100.94	100.95	100.96	100.93
Nov	101.09	101.15	101.21	101.24		101.17
Dec	100.12	100.17	100.22	100.25		100.19
Jan	99.79	99.81	99.80	99.80		99.80
Feb	99.48	99.55	99.60	99.66		99.57
Mar	99.50	99.54	99.58	99.61		99.56
Apr	99.91	99.88	99.87	99.86		99.88
May	99.37	99.35	99.33	99.32		99.34
Jun	99.24	99.18	99.10	99.04		99.14

Table A25: Urban CPI Monthly & Average Seasonal Factors						
Period	FY19	FY20	FY21	FY22	FY23	Average
Jul	100.31	100.27	100.23	100.20	100.17	100.24
Aug	100.25	100.20	100.17	100.15	100.15	100.19
Sep	100.28	100.25	100.22	100.21	100.20	100.23
Oct	100.64	100.62	100.61	100.60	100.58	100.61
Nov	100.78	100.82	100.84	100.86		100.82
Dec	99.89	99.94	99.97	100.00		99.95
Jan	99.74	99.75	99.75	99.76		99.75
Feb	99.47	99.54	99.59	99.63		99.56
Mar	99.50	99.55	99.60	99.63		99.57
Apr	100.12	100.12	100.12	100.13		100.12
May	99.65	99.64	99.63	99.63		99.64
Jun	99.40	99.34	99.28	99.21		99.31

Period	FY19	FY20	FY21	FY22	FY23	Average
Jul	99.90	99.84	99.80	99.76	99.73	99.80
Aug	99.90	99.81	99.75	99.70	99.67	99.77
Sep	100.42	100.39	100.37	100.36	100.36	100.38
Oct	101.31	101.37	101.43	101.47	101.50	101.42
Nov	101.56	101.66	101.75	101.82		101.70
Dec	100.49	100.55	100.59	100.62		100.56
Jan	99.88	99.88	99.87	99.87		99.87
Feb	99.51	99.57	99.63	99.69		99.60
Mar	99.50	99.53	99.56	99.57		99.54
Apr	99.59	99.54	99.49	99.46		99.52
May	98.95	98.91	98.88	98.86		98.90
Jun	99.00	98.93	98.86	98.79		98.89

Table A27: 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	-1.15
Oct	2.12	1.81	1.70	1.90	4.71
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	0.66	0.96	1.60	0.41	3.35
Aug	-0.27	1.69	0.68	0.63	2.48
Sep	-0.26	0.52	1.25	1.82	-1.45
Oct	1.55	1.20	1.04	1.22	3.99
Nov	-0.30	1.11	0.55	2.68	
Dec	0.65	0.63	0.29	0.97	
Jan	0.59	2.36	0.21	0.84	
Feb	1.18	-0.80	2.00	1.30	
Mar	1.98	0.04	0.39	0.84	
Apr	0.31	-1.17	0.74	1.36	
May	1.14	0.86	0.65	0.99	
Jun	0.61	0.99	-0.06	6.65	

Table A28: 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	-2.06
Oct	2.23	1.59	1.27	1.67	4.50
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	0.54	1.10	1.25	0.35	3.47
Aug	-0.25	1.52	0.86	0.53	2.64
Sep	-0.11	0.71	1.21	1.95	-2.10
Oct	1.86	1.21	0.88	1.28	4.10
Nov	-0.23	0.80	0.41	2.60	
Dec	0.57	0.51	0.51	1.17	
Jan	0.59	1.88	0.07	0.31	
Feb	1.14	-0.88	2.43	1.06	
Mar	1.84	0.11	0.26	0.65	
Apr	0.20	-1.24	0.81	1.10	
May	1.15	0.78	0.69	0.80	
Jun	0.59	0.99	-0.08	6.65	

Table A29: 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	0.18
Oct	1.96	2.17	2.35	2.25	5.01
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	0.83	0.75	2.13	0.49	3.19
Aug	-0.30	1.94	0.40	0.78	2.25
Sep	-0.48	0.22	1.32	1.62	-0.51
Oct	1.07	1.18	1.29	1.13	3.83
Nov	-0.42	1.57	0.77	2.79	
Dec	0.78	0.81	-0.04	0.67	
Jan	0.60	3.10	0.42	1.65	
Feb	1.25	-0.67	1.36	1.66	
Mar	2.19	-0.06	0.58	1.12	
Apr	0.49	-1.08	0.63	1.75	
May	1.12	0.98	0.59	1.26	
Jun	0.65	1.00	-0.03	6.64	

List of Figures

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

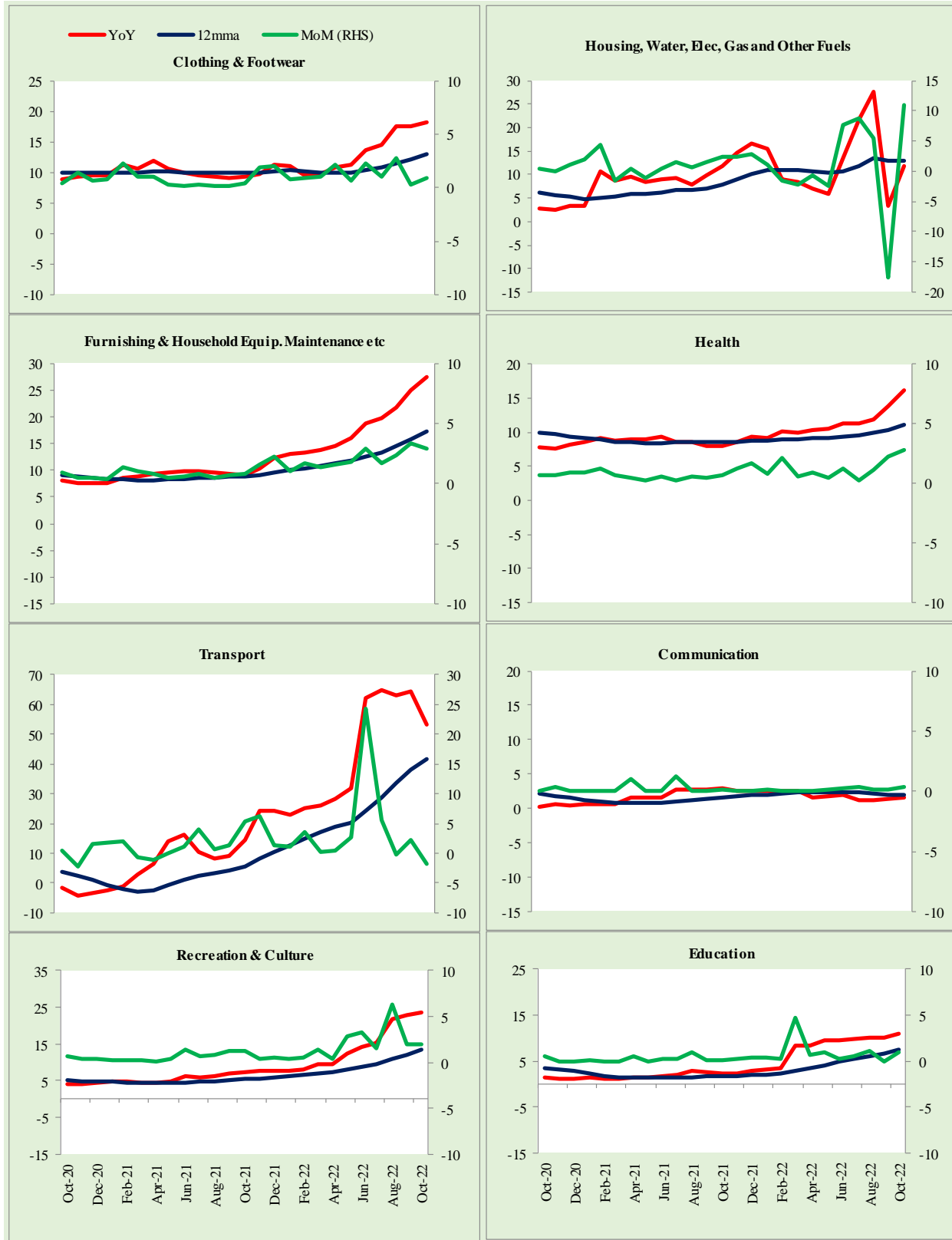


Figure A2: Urban CPI Non-food Inflation (YoY, 12MMA, MoM in percent)

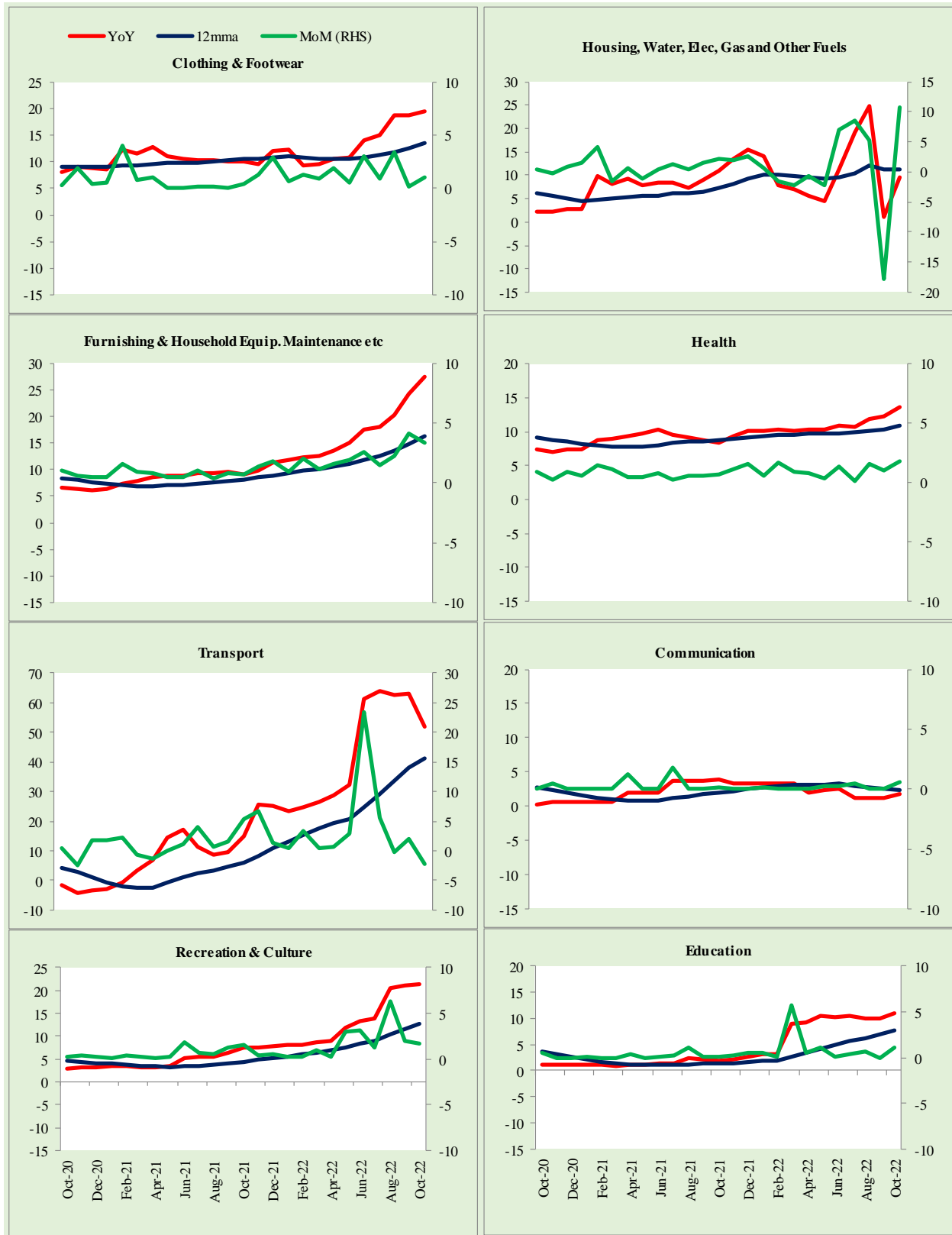


Figure A3: Rural CPI Non-food Inflation (YoY, 12MMA, MoM in percent)

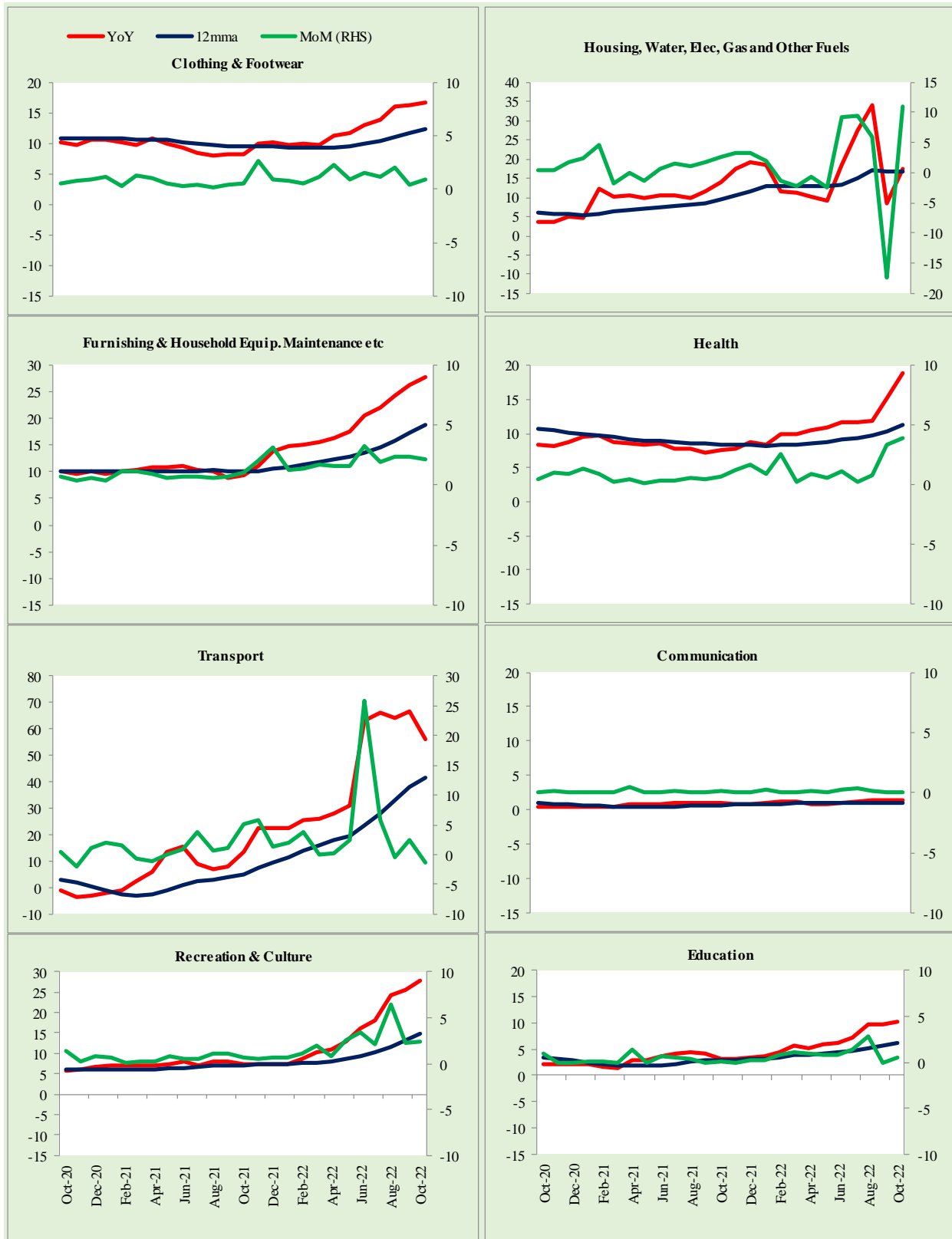
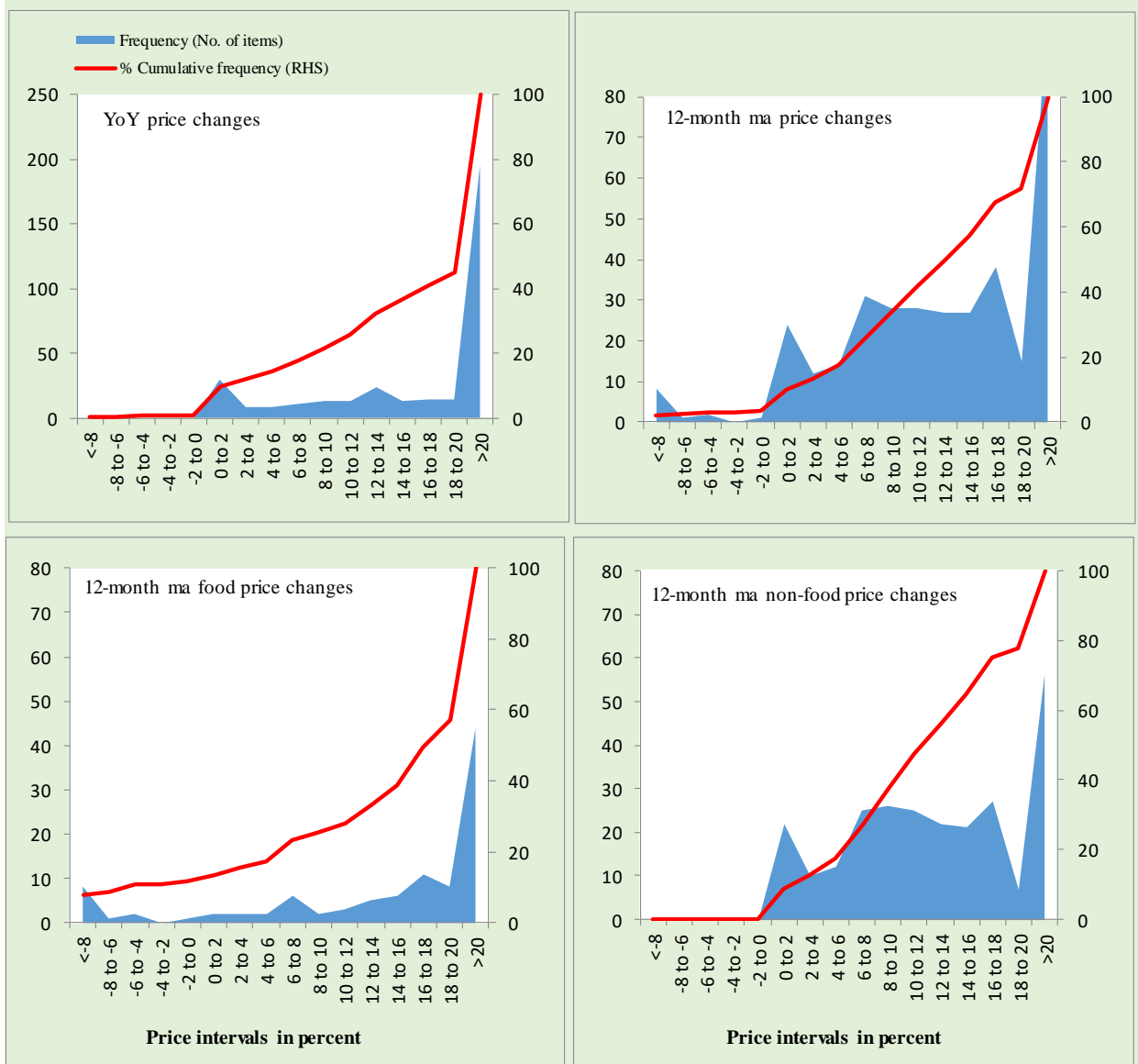
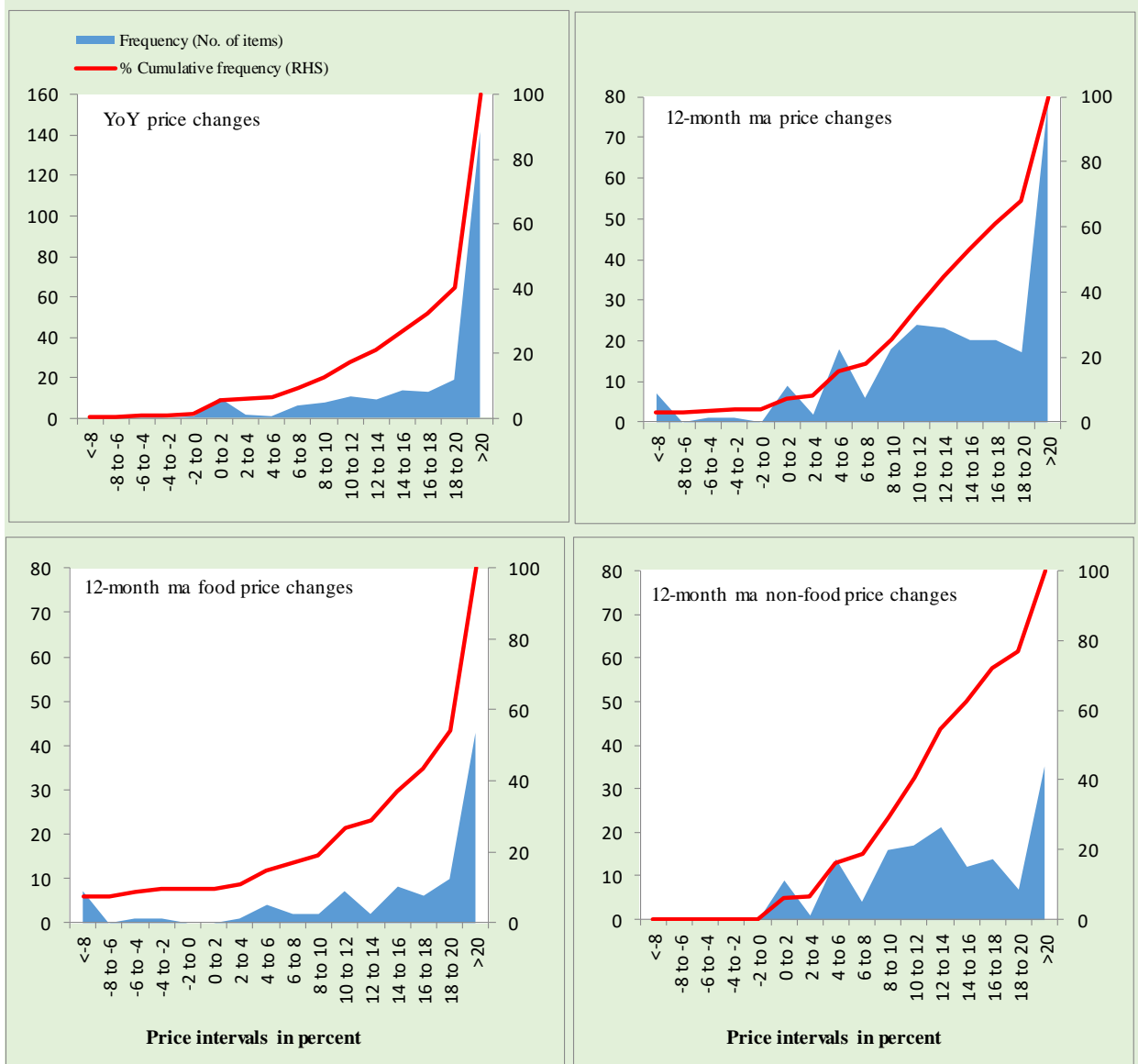


Figure A4: Frequency Distribution of Price Changes of Urban CPI Items (YoY)



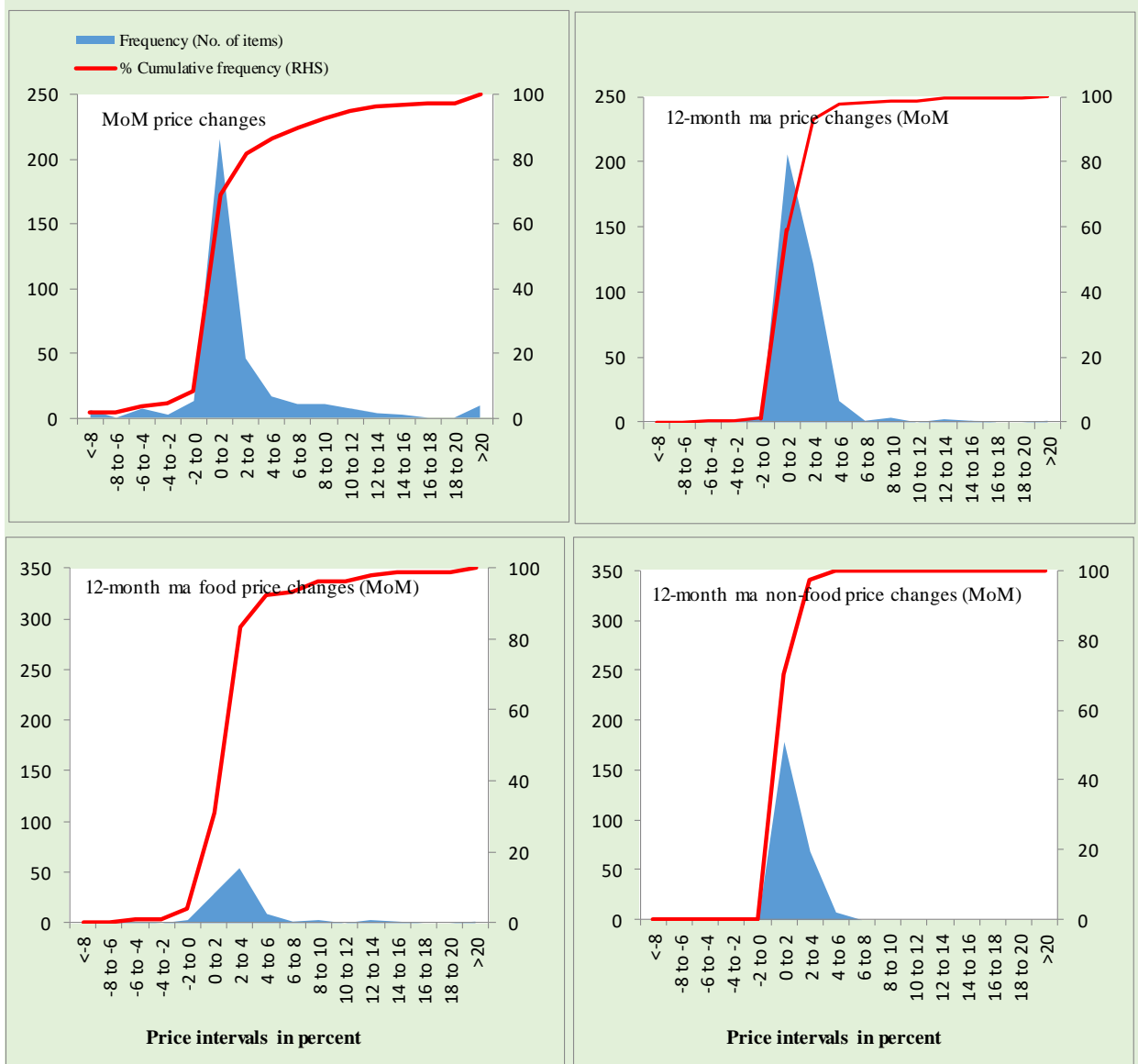
Total Items in CPI Basket (356), Food Items (103) and non-Food Items (253).

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



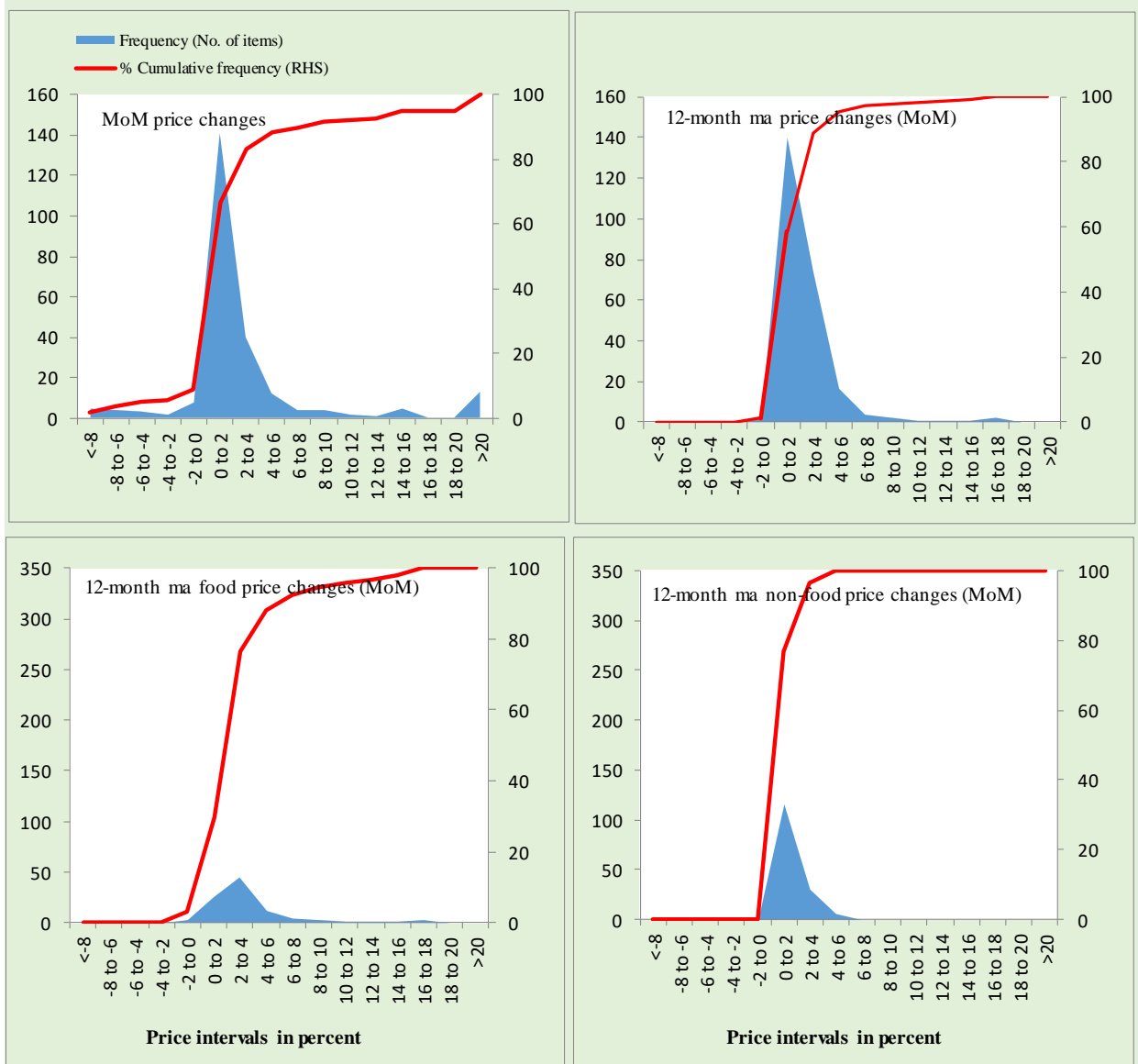
Total Items in CPI Basket (244), Food Items (94) and non-Food Items (150).

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



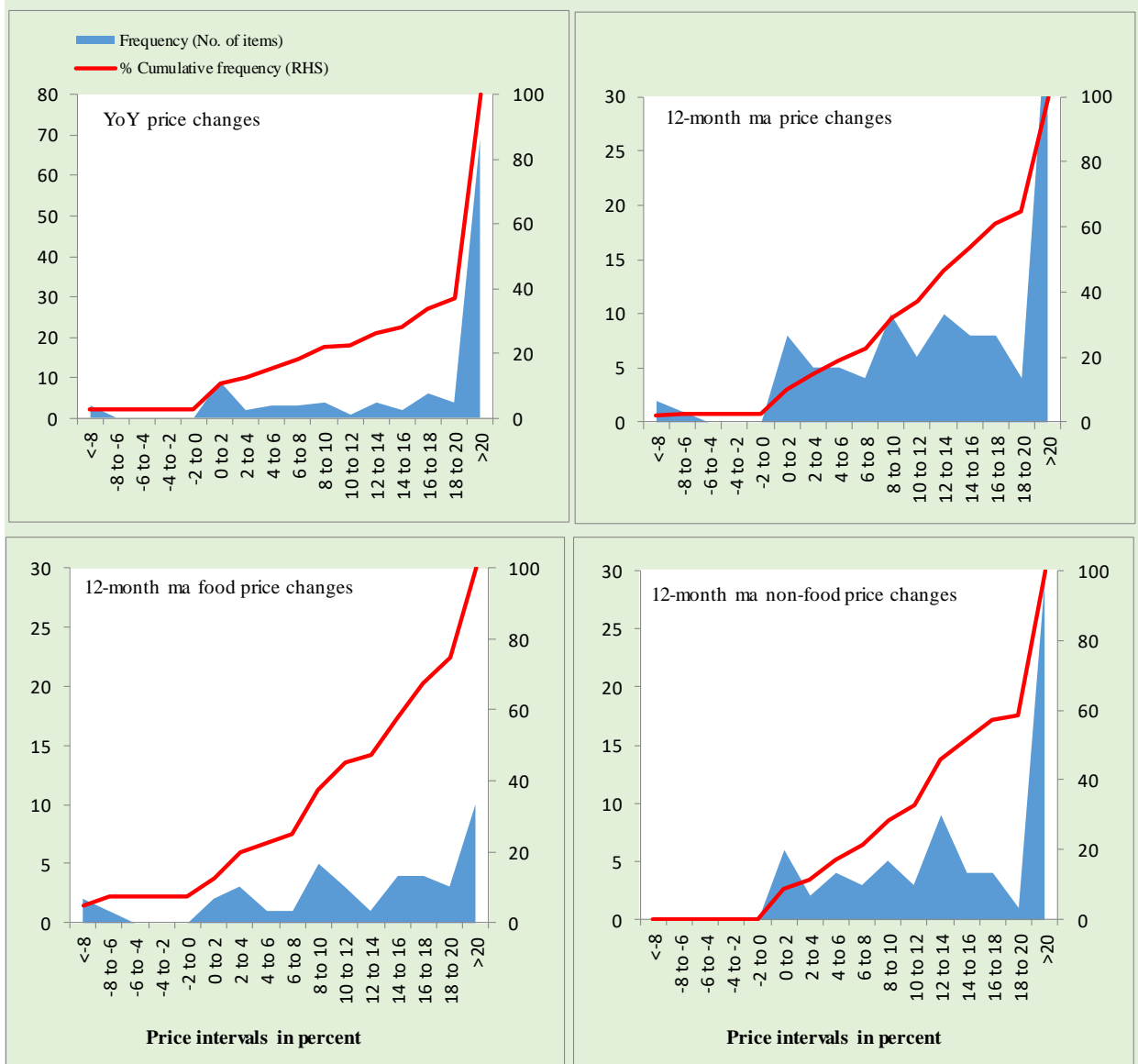
Total Items in CPI Basket (356), Food Items (103) and non-Food Items (253).

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



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 October 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 October 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 October 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.