

Inflation Monitor

August 2021

(Base Year: 2015-16)



State Bank of Pakistan

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- Provided by Pakistan Bureau of Statistics (PBS), for domestic inflation analysis
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Review

1. Inflation in Brief

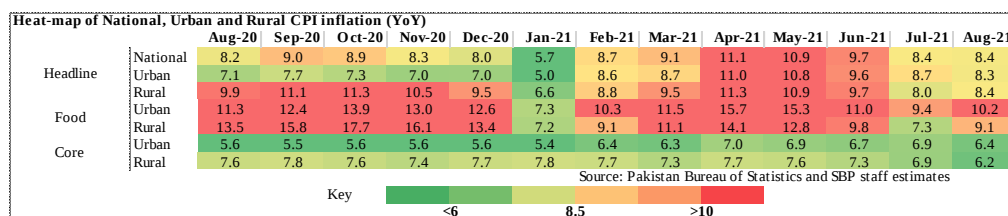
1. National CPI inflation is recorded at 8.4 percent on year-on-year basis in August 2021 and was at same level in the previous month and 8.2 percent during the corresponding month of last year.
2. National CPI inflation on month-on-month basis is recorded at 0.6 percent in August 2021 as compared to 1.3 percent in the previous month and was at same level during corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.57 percent in August 2021 compared to 0.47 percent in the previous month.
3. Urban CPI inflation is recorded at 8.3 percent on year-on-year basis in August 2021 as compared to 8.7 percent in the previous month and 7.1 percent during the corresponding month of last year.
4. Urban CPI inflation on month-on-month basis is recorded at 0.5 percent in August 2021 as compared to 1.3 percent in the previous month and 0.8 percent during corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.57 percent in August 2021 compared to 0.39 percent in the previous month.
5. Rural CPI inflation is recorded at 8.4 percent on year-on year basis in August 2021 as compared to 8.0 percent during the previous month and 9.9 percent during the corresponding month of last year.
6. Rural CPI inflation on month-on-month basis is recorded at 0.7 percent in August 2021 as compared to 1.4 percent in the previous month and 0.4 percent during the corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.58 percent in August 2021 compared to 0.59 percent in the previous month.

7. Urban Core inflation (trimmed) on year-on-year basis is recorded at 7.8 percent in August 2021 as compared to 9.0 percent in the previous month and 7.0 percent during the corresponding month of last year.
8. On month-on-month basis, the urban core inflation (trimmed) is recorded at 0.4 percent in August 2021 as compared to 0.8 percent in the previous month and 1.3 percent during the corresponding month of last year.
9. Rural Core Inflation (trimmed) on year-on-year basis is recorded at 7.8 percent in August 2021 as compared to 8.4 percent in the previous month and 9.3 percent during the corresponding month of last year.
10. On month-on-month basis, the Rural Core Inflation (trimmed) is recorded at 0.6 percent in August 2021 as compared to 0.8 percent in the previous month and 1.0 percent during corresponding month of last year.
11. Urban Core (Non-food, Non-energy (NFNE)) inflation on year-on-year basis is recorded at 6.3 percent in August 2021 as compared to 6.9 percent in the previous month and 5.6 percent during the corresponding month of last year.
12. Urban Core (NFNE) inflation on month-on-month basis is recorded at 0.2 percent in August 2021 as compared to 0.8 percent in the previous month and 0.7 percent during the corresponding month of last year.
13. Rural Core (NFNE) inflation on year-on-year basis is recorded at 6.2 percent in August 2021 as compared to 6.9 percent in the previous month and 7.6 percent during the corresponding month of last year.
14. Rural Core (NFNE) inflation on month-on-month basis is recorded at 0.2 percent in August 2021 as compared to 0.7 percent in the previous month and 0.8 percent during the corresponding month of last year.

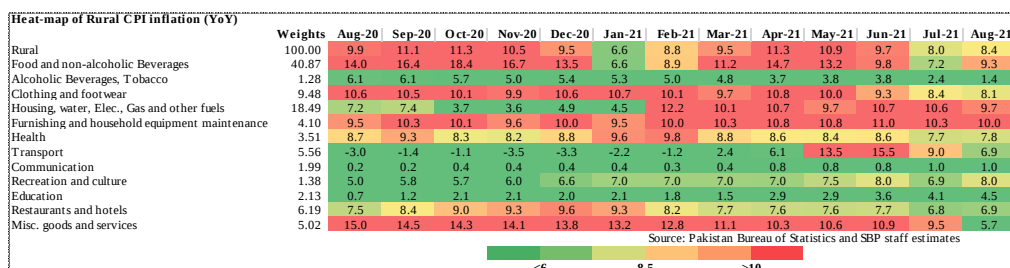
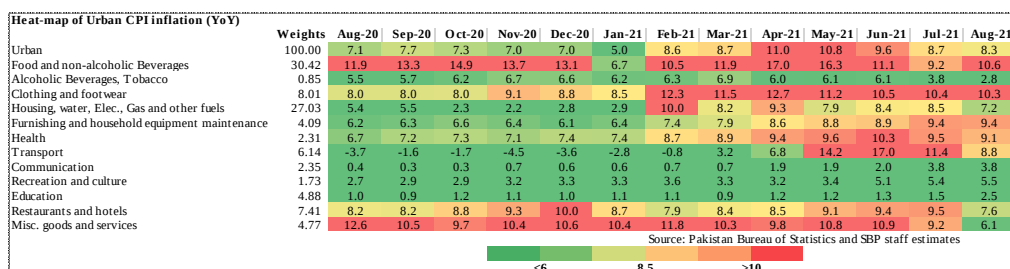
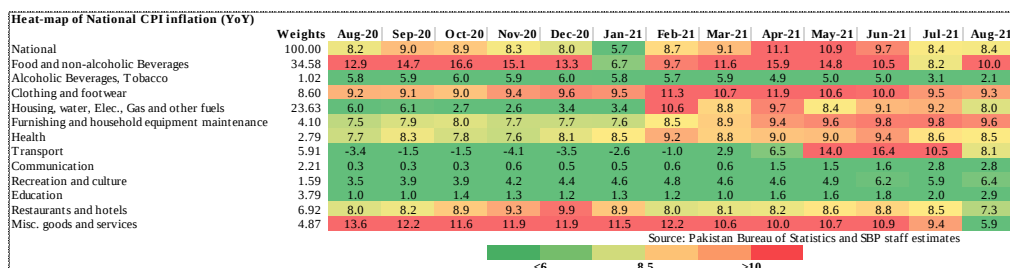
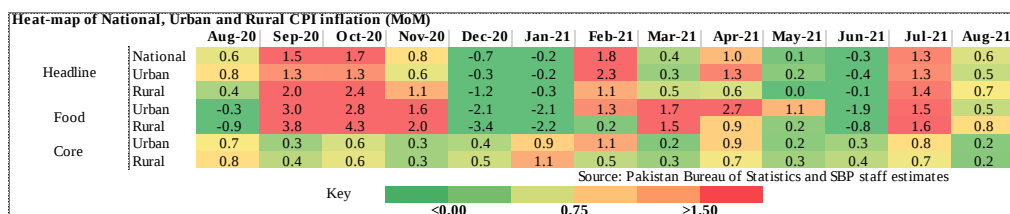
15. WPI inflation on year-on-year basis is recorded at 17.1 percent in August 2021 as compared to 17.3 percent in the previous month and 3.3 percent during the corresponding month of last year.
16. WPI inflation on month-on-month basis is recorded at 1.2 percent in August 2021 as compared to 2.3 percent in the previous month. It was 1.3 percent in the corresponding month of last year.
17. SPI inflation on year-on-year basis is recorded at 12.7 percent in August 2021 as compared to 12.6 percent in the previous month. It was 8.7 percent in the corresponding month of last year.
18. SPI inflation on month-on-month basis is recorded at 0.9 percent in August 2021 as compared to 1.4 percent in the previous month. It was 0.8 percent in the corresponding month of last year.

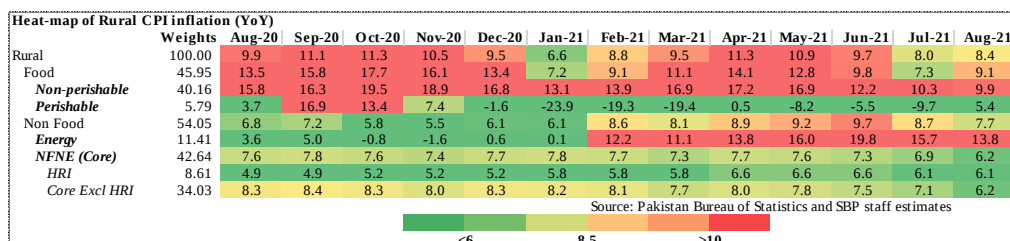
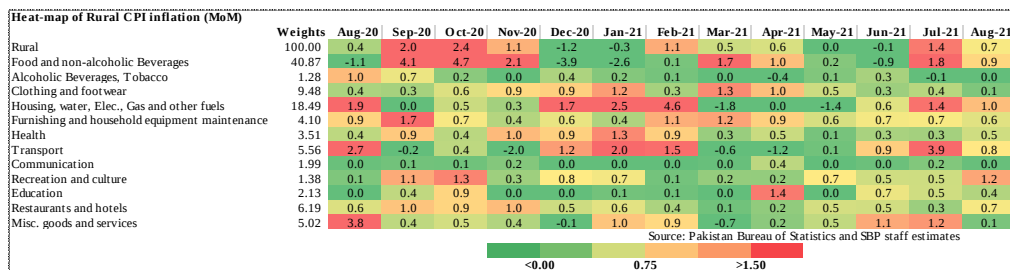
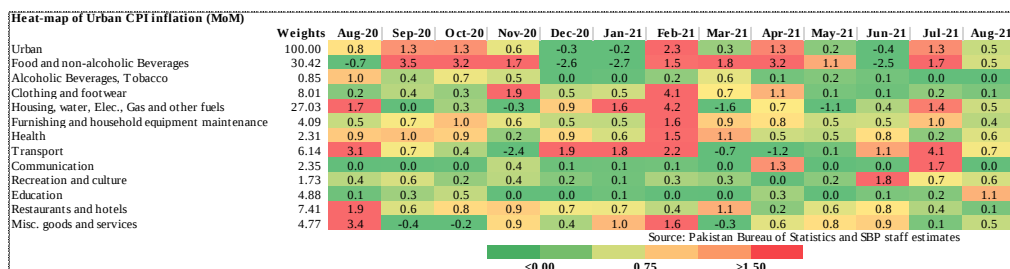
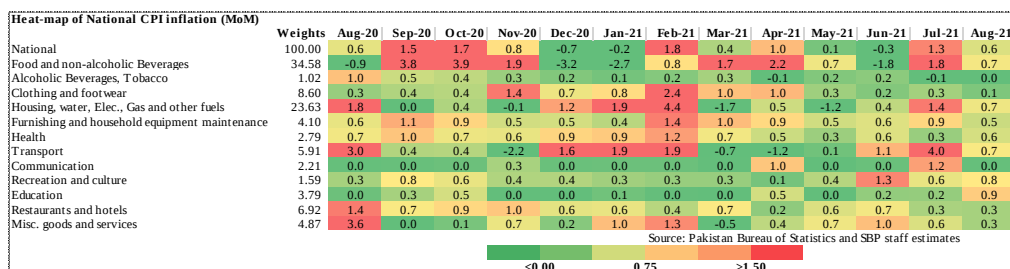
2. Heat-maps of CPI inflation

The heat map visually elaborates the evolution of inflation. A heat-map for National, Urban and Rural CPI inflation (YoY/MoM) and their important sub-indexes for the time span of last thirteen months is presented. The inflation is compared with the benchmark of medium-term inflation target of 8.5 percent and 0.75 percent on YoY and MoM basis, respectively. Greener areas indicate low inflation pressures and increasing order of red (light to dark color spectrum i.e. light green to orange to brown to red) represents higher and higher inflationary pressures.

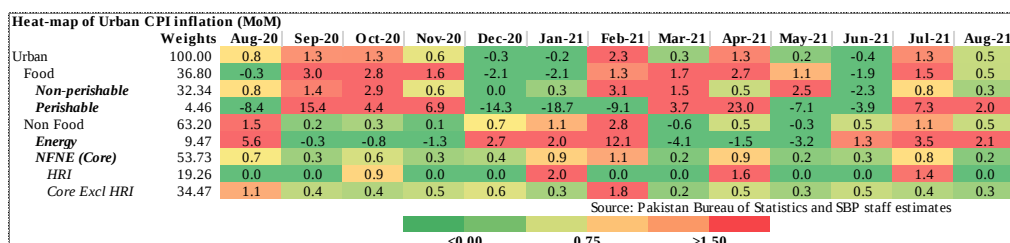
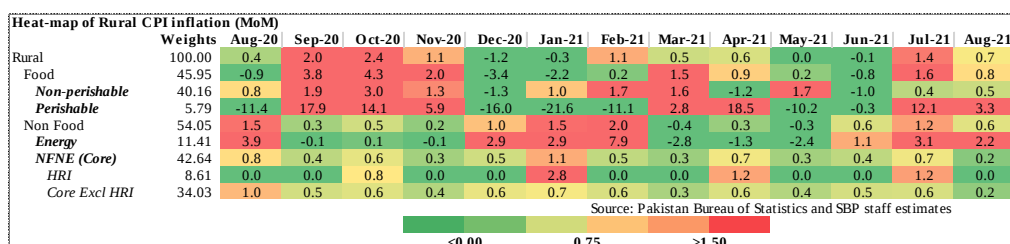
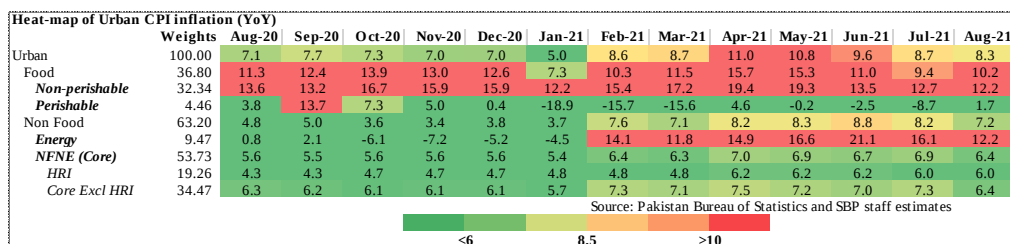


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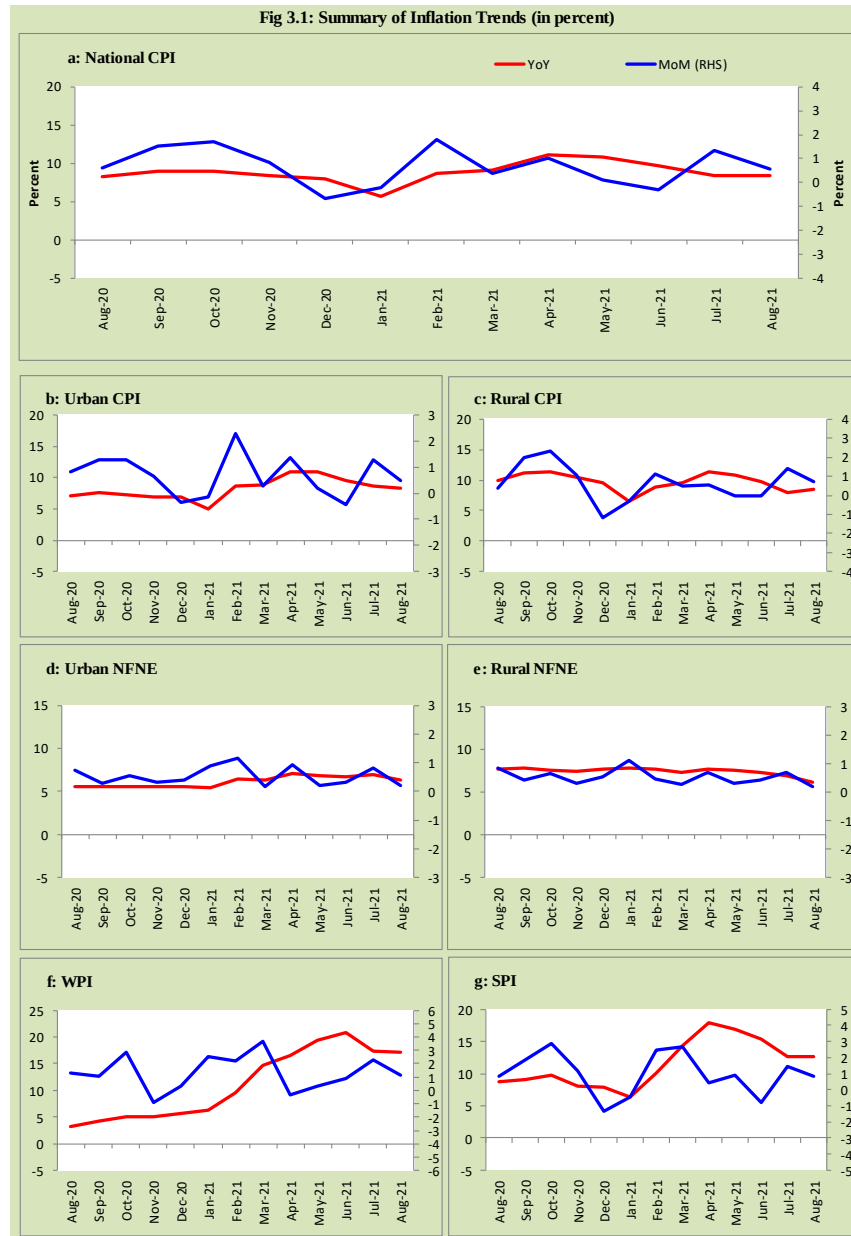




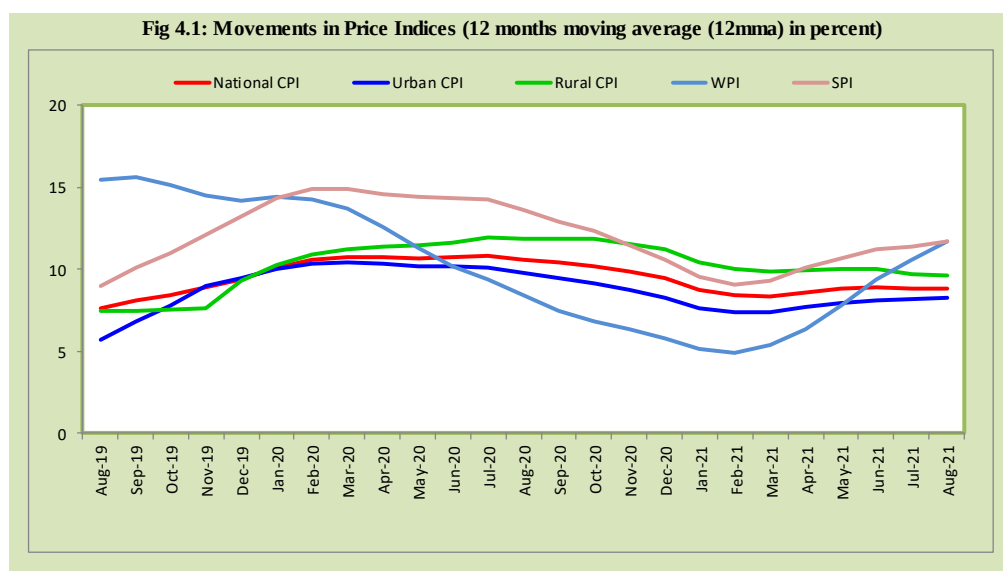
Inflation Monitor, August 2021



3. Trends in Inflation



4. Movement in Price Indices (Moving Averages)



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

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

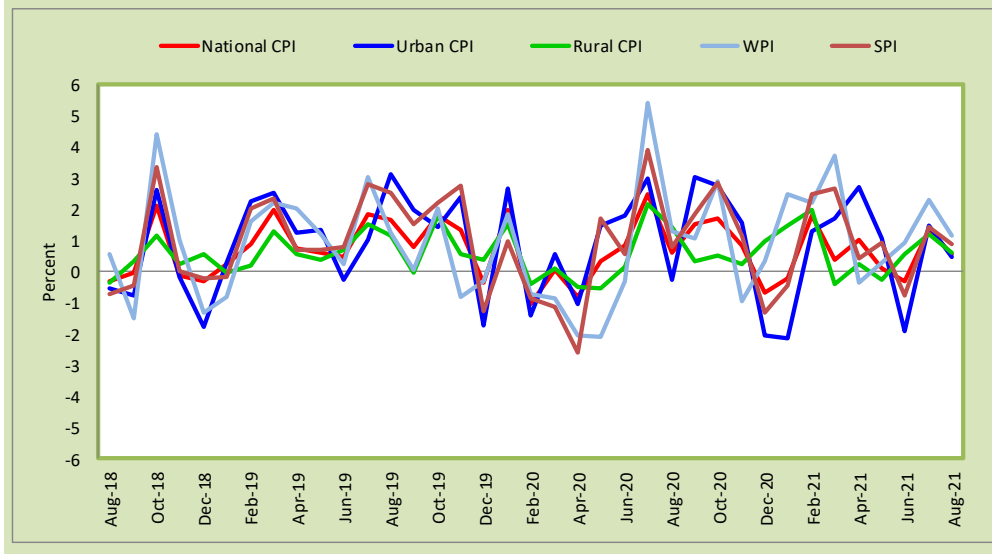
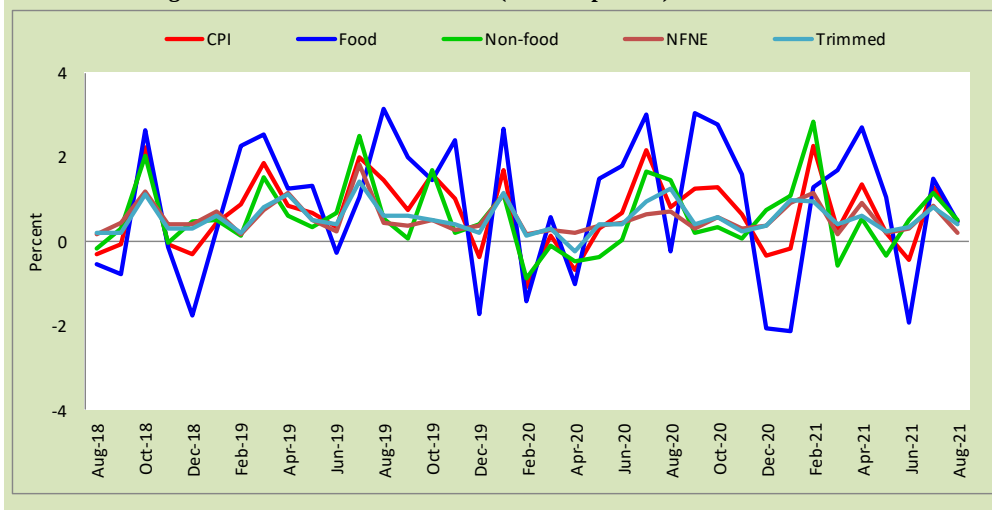
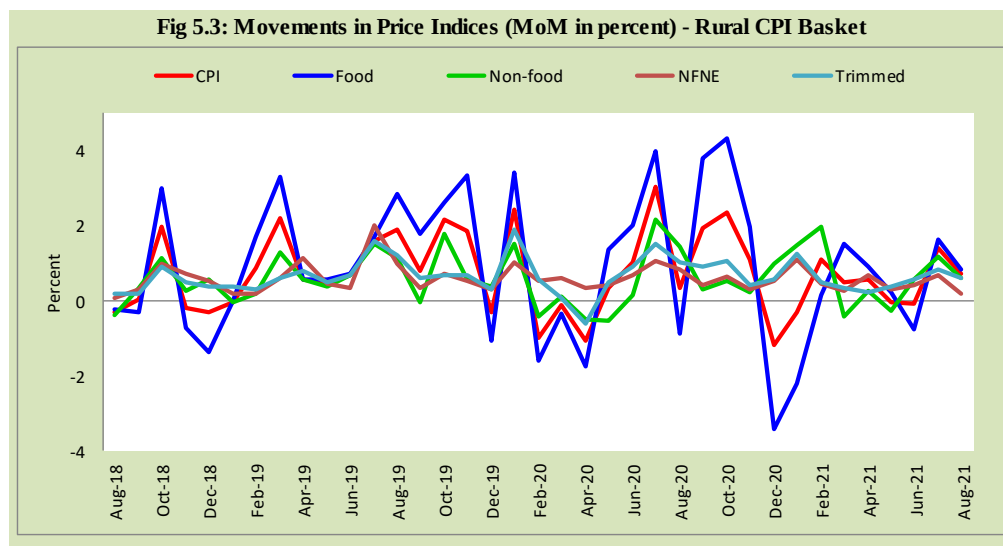


Fig 5.2: Movements in Price Indices (MoM in percent) - Urban CPI Basket

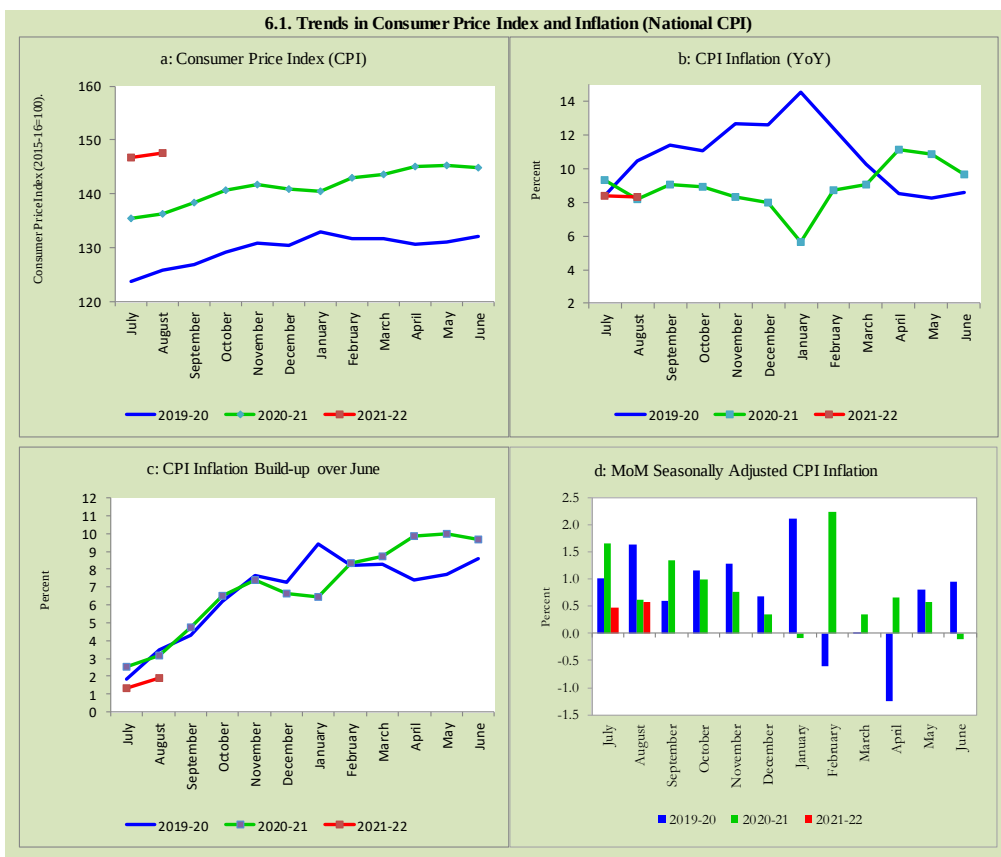




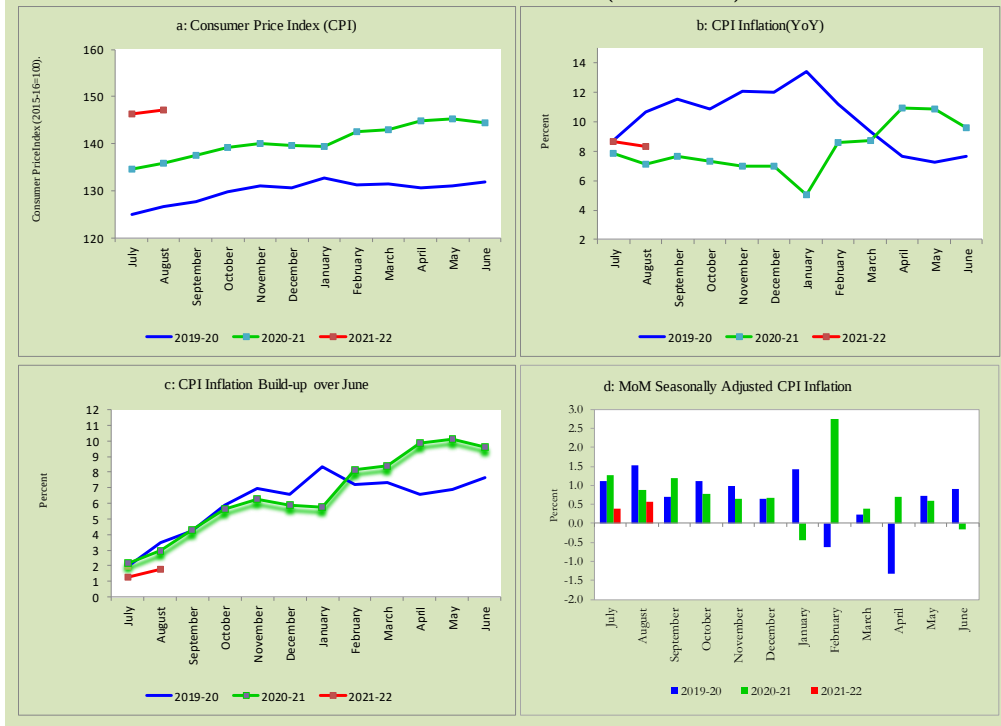
6. Trends in Consumer Price Indices and Inflation

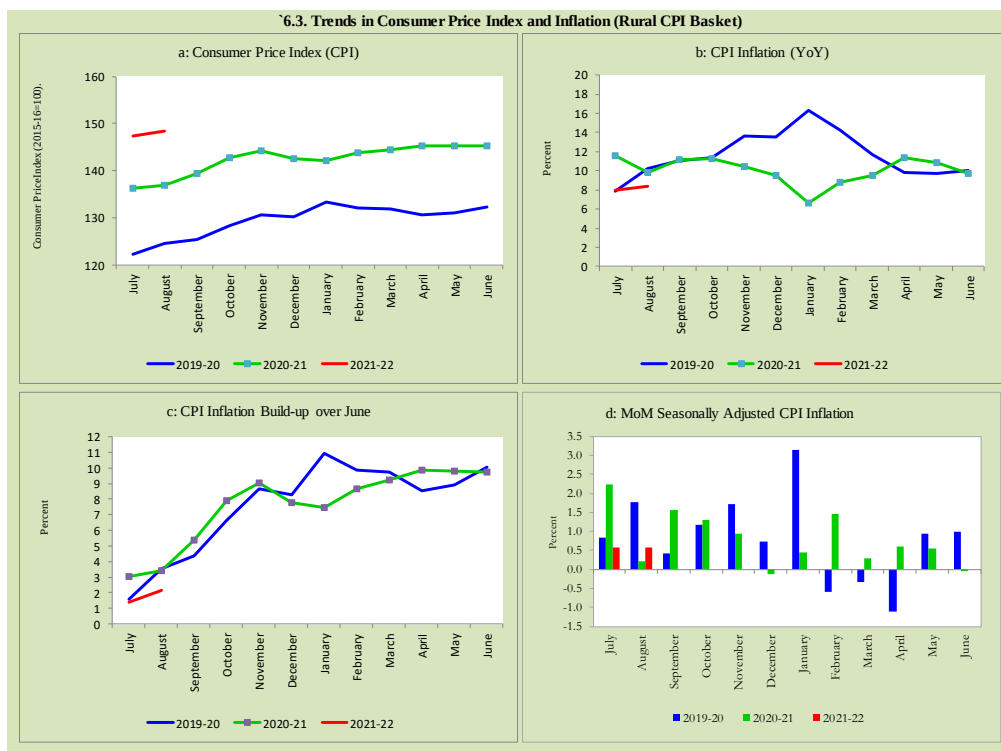
Monthly Consumer Price Indices, YoY growth rates and inflation build up over June along with seasonally adjusted (MoM) growth rates in CPI (National, Urban and Rural) is summarized in the following graphs (Figure 6.1 to 6.3).

6.1. Trends in Consumer Price Index and Inflation (National CPI)



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





7. Weighted Contribution

The weighted contribution of food group in the overall urban CPI inflation increased to 45.7 percent during August 2021 from 40.8 percent in previous month. It was 56.8 percent during corresponding month of last year. The weighted contribution of non-food group decreased to 54.3 percent in August 2021 from 59.2 percent in previous month. It was 43.2 percent during corresponding month of last year. Table 7.1 provide the historical perspective of weighted contribution of food group and non-food group and their respective sub-indexes (Perishable food, Non-Perishable food, Energy, Core Inflation (NFNE), NFNE excluding HRI and HRI) in the overall inflation for urban basket. Figure 7.1 provides a graphical presentation of

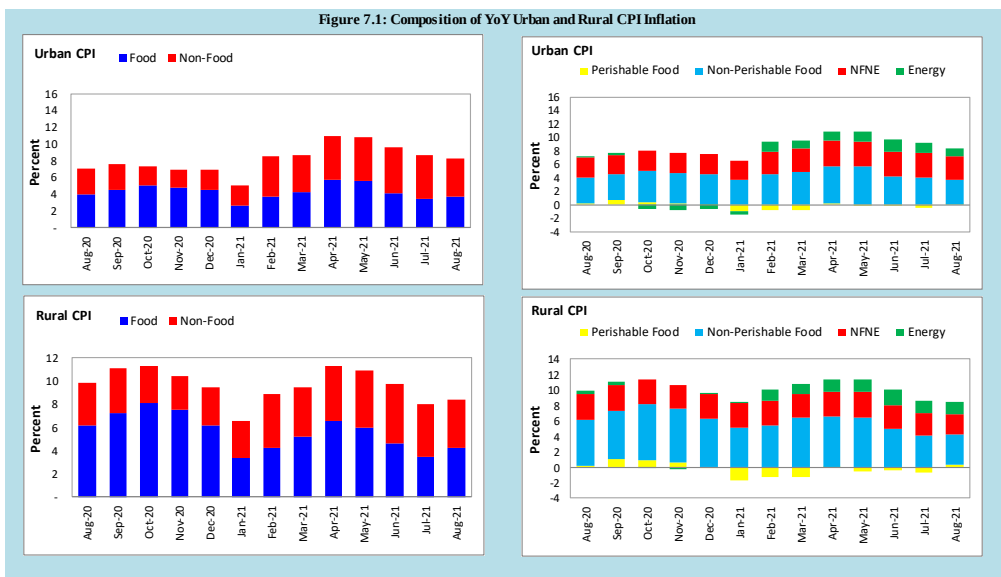
composition of YoY urban CPI inflation cascaded in food group and non-food groups and their respective sub-indexes.

Table 7.1 Weighted Contribution (in percent) to Urban CPI Inflation (YoY)									
Period	Overall CPI	Food Group			Non-Food Group				
		Food	Perishable food	Non-Perishable food	Non-food	Energy	Core Inflation (NFNE)	NFNE excl HRI	HRI
	a=(b+e)	b=(c+d)	c	d	e=(f+g)	f	g=(h+i)	h	i
Aug-20	100	56.8	2.6	54.2	43.2	1.2	42.0	30.5	11.6
Sep-20	100	58.8	9.1	49.7	41.2	2.8	38.4	27.8	10.7
Oct-20	100	68.7	5.5	63.2	31.3	-8.9	40.2	28.1	12.0
Nov-20	100	68.7	4.3	64.3	31.3	-11.0	42.4	29.8	12.6
Dec-20	100	65.5	0.3	65.2	34.5	-8.1	42.6	30.0	12.6
Jan-21	100	53.2	-20.1	73.2	46.9	-9.6	56.5	38.7	17.8
Feb-21	100	43.6	-8.6	52.2	56.4	16.6	39.8	29.2	10.5
Mar-21	100	48.2	-8.7	56.9	51.7	13.3	38.4	28.1	10.4
Apr-21	100	52.4	2.1	50.4	47.6	13.0	34.6	23.7	10.9
May-21	100	52.0	-0.1	52.1	48.0	13.9	34.1	23.2	10.9
Jun-21	100	43.0	-1.2	44.2	57.3	19.3	37.7	25.4	12.3
Jul-21	100	40.8	-5.2	46.0	59.2	17.3	42.4	28.7	13.2
Aug-21	100	45.7	1.0	44.7	54.3	14.3	40.5	26.4	13.6

Note: The weighted contribution of sub-indexes 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 also increased to 51.1 percent during August 2021 from 43.4 percent in previous month. It was 62.4 percent during corresponding month of last year. The weighted contribution of non-food group decreased to 48.8 percent in August 2021 from 56.6 percent in previous month. Non-food group was 37.6 percent during corresponding month of last year. Table 7.2 provide the historical perspective of weighted contribution of food group (Perishable food, Non-Perishable food) and non-food group (Energy, Core Inflation (NFNE), NFNE excluding HRI and HRI) in the overall inflation for rural basket. Figure 7.1 provides a graphical display of composition of YoY rural CPI inflation distributed in food group and non-food groups and their respective sub-indexes.

Period	Overall CPI	Food Group			Non-Food Group				
		Food	Perishable food	Non-Perishable food	Non-food	Energy	Core Inflation (NFNE)	NFNE excl HRI	HRI
	a=(b+e)	b=(c+d)	c	d	e=(f+g)	f	g=(h+i)	h	i
Aug-20	100	62.4	2.3	60.1	37.6	4.2	33.4	29.0	4.4
Sep-20	100	65.2	9.7	55.5	34.8	5.0	29.9	26.0	3.8
Oct-20	100	72.2	8.8	63.4	27.8	-0.8	28.4	24.7	3.9
Nov-20	100	72.2	5.7	66.5	27.8	-1.8	29.5	25.4	4.1
Dec-20	100	65.5	-1.2	66.7	34.5	0.7	33.8	29.2	4.6
Jan-21	100	51.3	-26.7	78.0	48.9	0.3	48.7	41.3	7.4
Feb-21	100	47.9	-13.6	61.6	52.1	15.7	36.4	30.8	5.6
Mar-21	100	54.4	-13.1	67.5	45.5	13.0	32.5	27.3	5.2
Apr-21	100	57.6	0.3	57.4	42.3	13.2	29.1	24.1	5.0
May-21	100	55.0	-4.6	59.5	45.1	15.2	29.8	24.7	5.2
Jun-21	100	47.4	-3.3	50.7	52.6	20.4	32.2	26.5	5.7
Jul-21	100	43.4	-8.0	51.4	56.6	20.4	36.2	29.9	6.3
Aug-21	100	51.1	3.7	47.4	48.8	17.7	31.2	25.2	6.0
Note: The weighted contribution of sub-indexes 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

	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
General	55.3	63.2	57.0	50.8	41.9	53.4	59.8	56.2	43.3	42.1	47.2	52.2	51.7
Food & Non-Alcoholic Beverages	22.2	62.2	51.1	28.9	-1.1	44.4	47.8	54.4	24.4	28.9	30.0	38.9	40.0
Alcoholic Beverages & Tobacco	100.0	66.7	33.3	66.7	-33.3	33.3	66.7	33.3	33.3	66.7	33.3	0.0	0.0
Clothing & Footwear	65.0	72.5	75.0	75.0	72.5	65.0	85.0	70.0	67.5	55.0	47.5	47.5	45.0
Housing, Water, Elect, Gas & other Fuels	41.4	6.9	6.9	6.9	51.7	6.9	31.0	17.2	20.7	-6.9	27.6	58.6	41.4
Furnishing & Household Equip. Maintenance etc.	95.2	88.1	85.7	85.7	81.0	92.9	90.5	92.9	73.8	81.0	71.4	83.3	78.6
Health	83.9	77.4	64.5	67.7	54.8	71.0	90.3	87.1	77.4	61.3	64.5	54.8	74.2
Transport	50.0	40.6	40.6	31.3	40.6	43.8	50.0	28.1	18.8	25.0	31.3	37.5	46.9
Communication	0.0	20.0	40.0	40.0	20.0	40.0	20.0	20.0	40.0	0.0	20.0	60.0	20.0
Recreation & Culture	52.0	68.0	48.0	64.0	48.0	32.0	36.0	28.0	12.0	24.0	64.0	68.0	56.0
Education	18.8	68.8	43.8	12.5	0.0	18.8	6.3	0.0	31.3	0.0	25.0	25.0	25.0
Restaurant & Hotels	78.6	78.6	85.7	85.7	78.6	71.4	71.4	85.7	57.1	85.7	71.4	71.4	57.1
Miscellaneous	93.1	75.9	75.9	75.9	65.5	79.3	75.9	75.9	65.5	79.3	75.9	58.6	69.0
NFNE	66.4	68.5	63.8	62.6	55.3	59.1	63.8	63.0	57.0	51.1	54.9	57.4	56.2

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

	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
General	49.2	55.3	58.2	37.7	34.8	39.3	45.5	46.7	35.2	32.0	43.9	44.3	41.0
Food & Non-Alcoholic Beverages	15.2	51.9	54.4	10.1	1.3	29.1	24.1	54.4	15.2	13.9	20.3	29.1	27.8
Alcoholic Beverages & Tobacco	100.0	80.0	60.0	20.0	20.0	40.0	40.0	-20.0	40.0	60.0	60.0	-20.0	0.0
Clothing & Footwear	66.7	59.3	66.7	85.2	77.8	59.3	59.3	81.5	55.6	74.1	44.4	55.6	25.9
Housing, Water, Elect, Gas & other Fuels	65.2	26.1	26.1	17.4	39.1	30.4	56.5	-17.4	17.4	-13.0	39.1	73.9	60.9
Furnishing & Household Equip. Maintenance etc.	88.5	69.2	84.6	42.3	69.2	46.2	88.5	88.5	61.5	61.5	76.9	80.8	61.5
Health	50.0	85.7	42.9	64.3	42.9	57.1	78.6	57.1	64.3	42.9	78.6	14.3	64.3
Transport	62.5	31.3	43.8	18.8	37.5	31.3	50.0	31.3	18.8	37.5	68.8	62.5	43.8
Communication	20.0	20.0	20.0	40.0	0.0	0.0	0.0	20.0	20.0	0.0	20.0	40.0	20.0
Recreation & Culture	33.3	61.1	72.2	33.3	44.4	22.2	22.2	16.7	44.4	16.7	44.4	44.4	55.6
Education	0.0	60.0	100.0	0.0	0.0	20.0	20.0	0.0	80.0	0.0	60.0	80.0	60.0
Restaurant & Hotels	57.1	50.0	71.4	78.6	64.3	42.9	42.9	21.4	42.9	57.1	28.6	28.6	28.6
Miscellaneous	88.2	82.4	76.5	82.4	35.3	76.5	52.9	64.7	58.8	47.1	70.6	41.2	58.8
NFNE	62.5	64.0	64.7	55.9	47.1	47.8	54.4	53.7	55.9	46.3	59.6	53.7	47.8

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

9. Domestic Commodity Prices

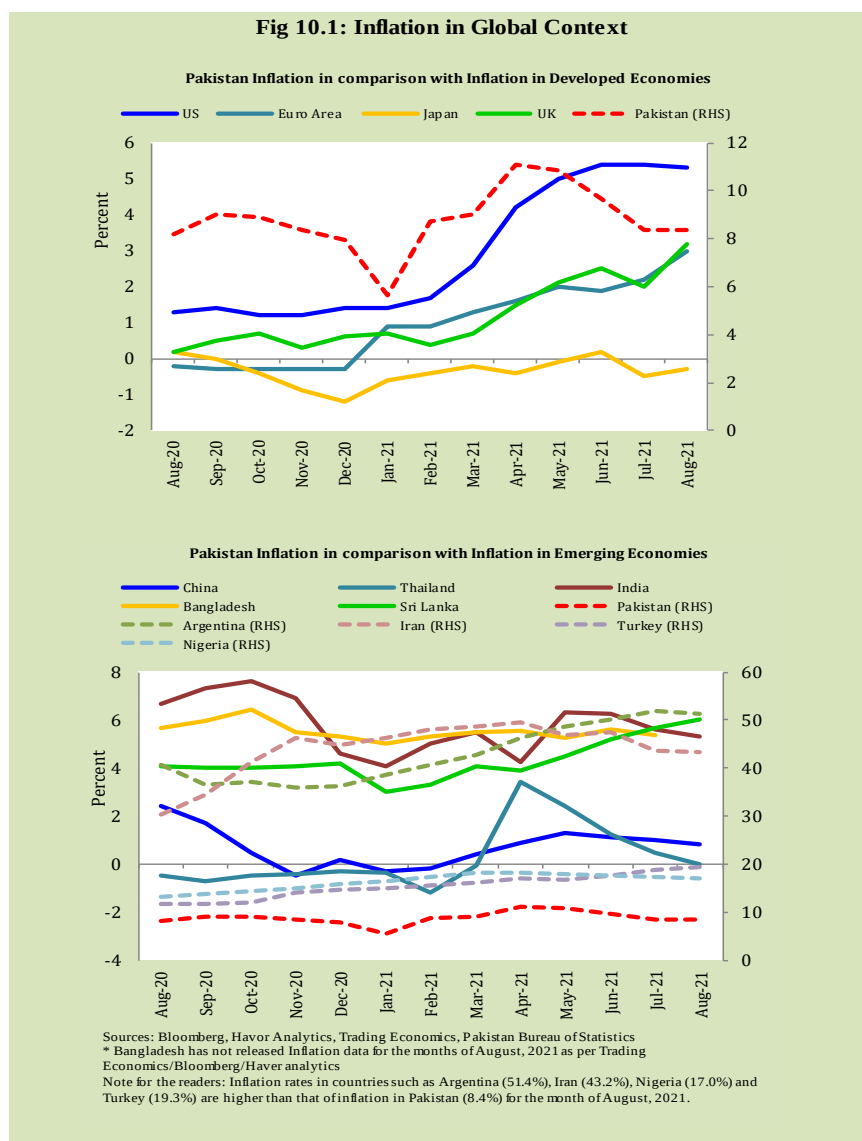
Inflation in domestic food commodities (YoY and MoM in percent) for selected essential food items covering both urban and rural CPI baskets is given in table 9.1.

Table 9.1 Inflation in Domestic Urban and Rural CPI Food Commodities (in percent) - August 2021						
S. No	Item	Unit	Urban CPI		Rural CPI	
			YoY	MoM	YoY	MoM
1	Wheat	10 Kg	-1.0	0.2	1.4	0.1
2	Wheat Flour Bag	20 Kg	10.7	0.4	9.8	0.3
3	Rice Basmati Broken (Superior/Average Quality) *	1 Kg	0.3	0.1	9.6	0.6
4	Beef with Bone (Average Quality)	1 Kg	11.9	0.4	15.4	1.1
5	Mutton (Average Quality)	1 Kg	16.2	0.3	18.0	2.8
6	Chicken Farm Broiler (Live)	1 Kg	20.5	-12.0	10.5	-14.9
7	Milk Fresh (Un-Boiled)	1 Litre	10.9	2.1	8.6	1.1
8	Eggs Farm	Dozen	23.7	-1.6	19.6	-0.9
9	Vegetable Ghee Dalda/Habib Or Other Superior Quality 1 Kg Pouch	Each	37.0	1.9	39.1	5.2
10	Pulse Masoor (Washed)	1 Kg	4.2	0.3	2.2	-1.0
11	Pulse Moong (Washed)	1 Kg	-17.2	-2.4	-19.9	-6.9
12	Pulse Mash (Washed)	1 Kg	5.7	-0.1	5.6	-1.3
13	Pulse Gram	1 Kg	6.3	-5.2	6.4	-2.5
14	Potatoes	1 Kg	-20.1	1.9	-15.6	1.9
15	Onions	1 Kg	-1.3	-0.7	9.2	6.0
16	Tomatoes	1 Kg	35.2	17.8	18.9	7.4
17	Sugar Refined	1 Kg	9.8	1.4	10.1	2.7
18	Garlic (Lehsun)	1 Kg	-4.2	7.8	9.9	15.5
19	Ginger (Adrak)	500 Gm	-13.2	-23.3	-8.9	-24.5
20	Tea Lipton Yellow Label 190 Gm Packet	Each	0.1	0.0	0.2	0.0

*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.

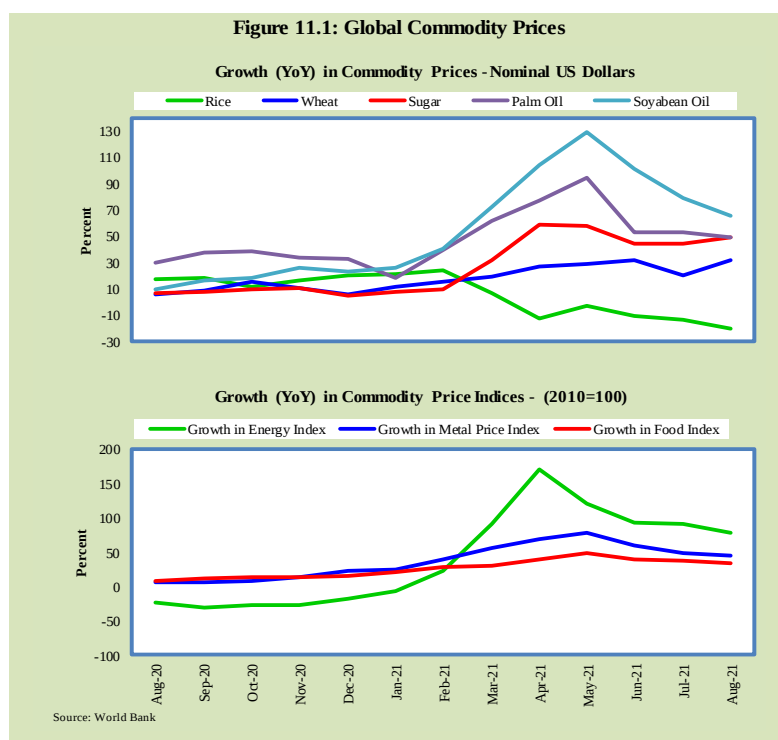


11. Global Commodity Prices

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

Table 11.1 Changes in Major Global Indices (percent)

Item/ Group	Aug-20		Jul-21		Aug-21	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	7.1	2.5	36.9	-1.2	33.4	-0.1
Metals	6.0	4.3	48.8	0.3	44.6	1.3
Energy	-23.6	5.0	90.8	4.9	77.8	-2.1
Agricultural	7.5	3.6	28.6	-0.8	25.0	0.6
Cotton	-1.2	2.1	42.6	3.4	44.8	3.7



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 July 2008 to August 2021 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 may not necessarily show the same seasonal pattern.

Fig. 12.1 (a) Seasonal Factors of National CPI

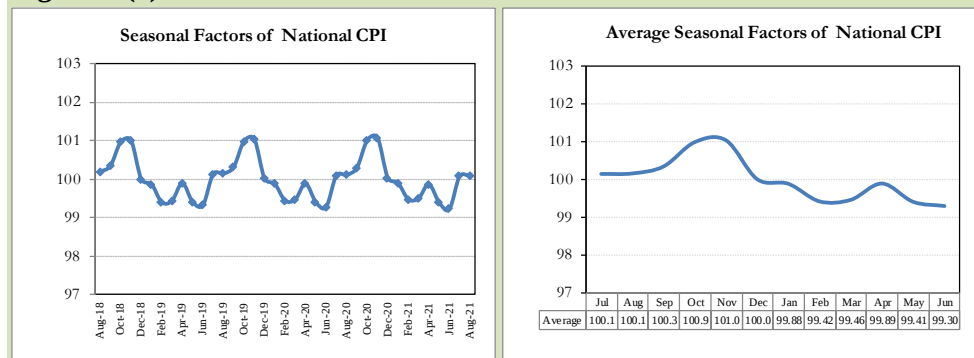


Fig. 12.1 (b) Seasonal Factors of Urban CPI

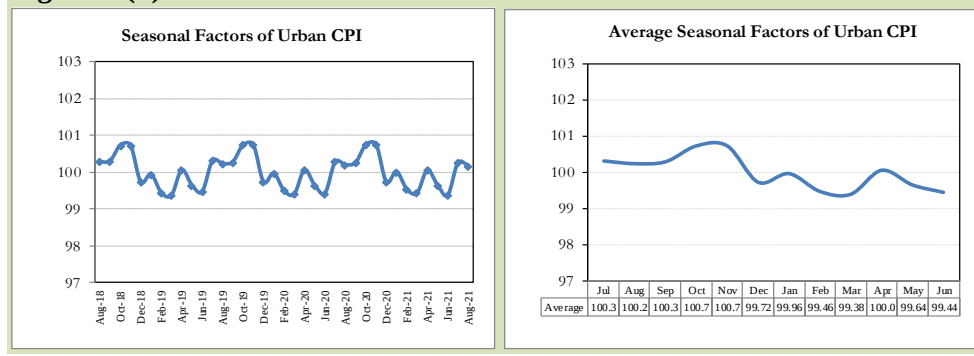
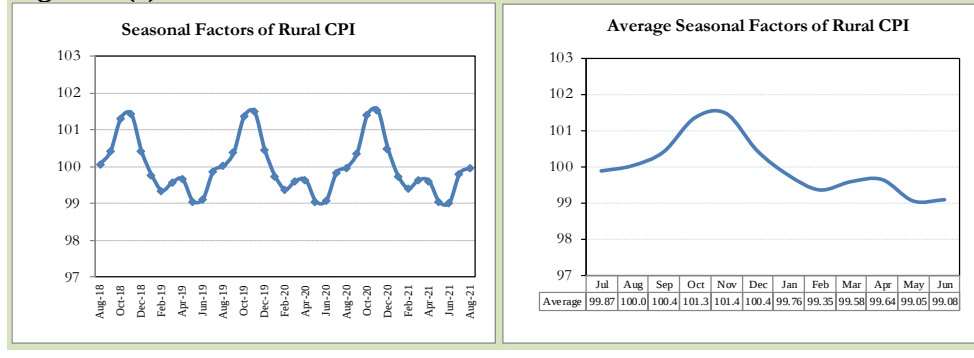


Fig. 12.1 (c) Seasonal Factors of Rural CPI



Figures 12.2 show that seasonally adjusted series are relatively smoother than the original series due to the removal of the seasonal variations. The trend follows the long-term movement in original series, and is smoother than the original series because some irregular fluctuations have been removed.

Fig. 12.2 (a) Seasonal Plots of National CPI

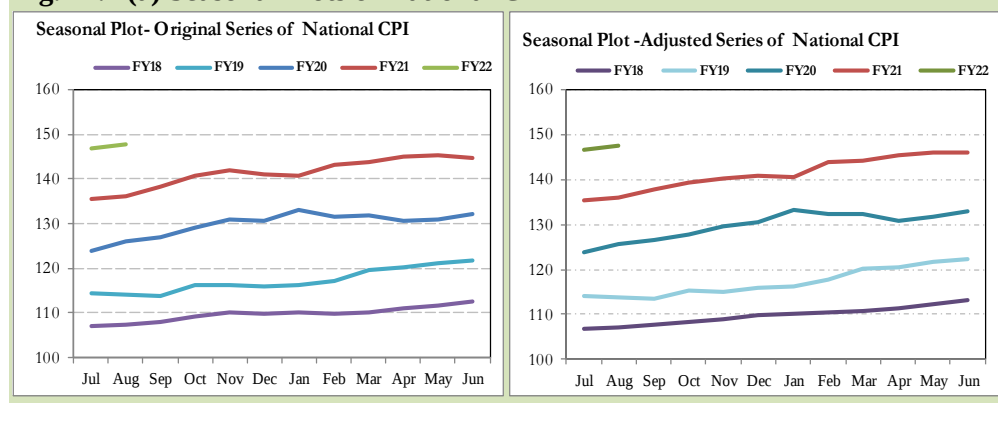


Fig. 12.2 (b) Seasonal Plots of Urban CPI

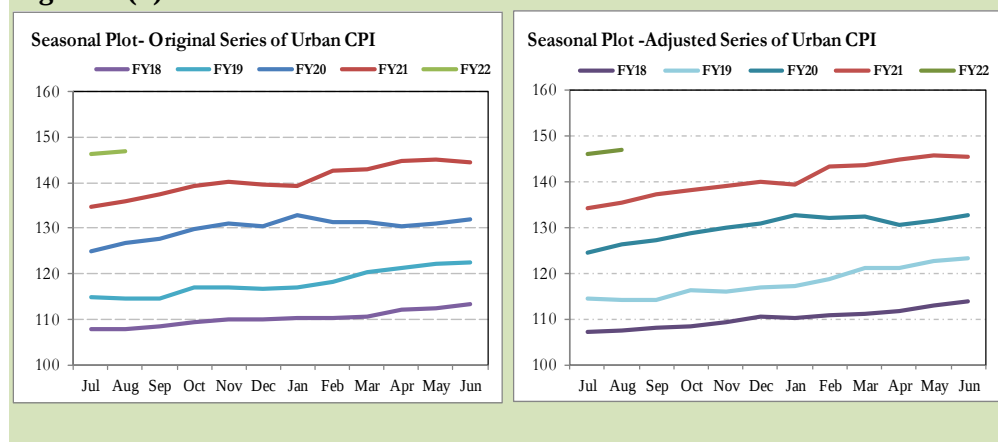
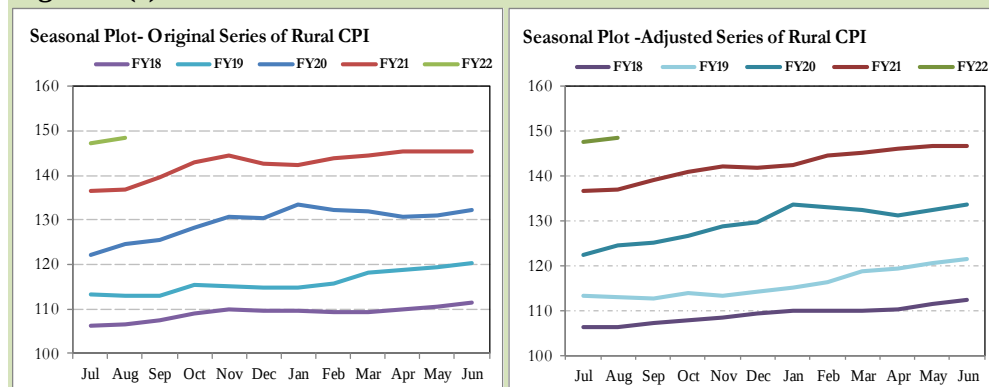


Fig. 12.2 (c) Seasonal Plots of Rural CPI



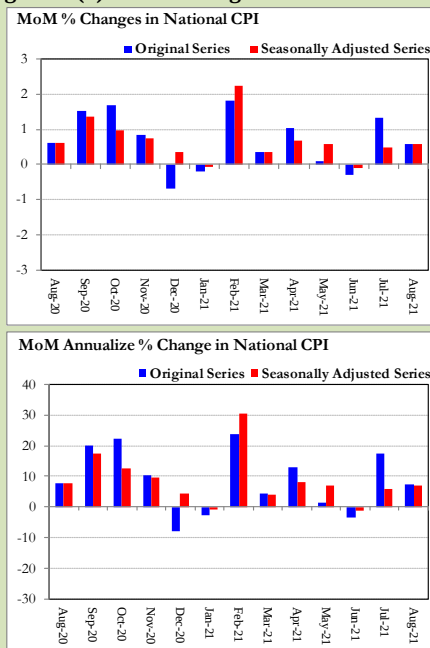
Seasonally adjusted National CPI for August 2021 stood at 147.48 against 147.61 in original series showing a decrease of 0.13 on account of adjustment of upward seasonality in August 2021.

Seasonally adjusted Urban CPI for August 2021 stood at 147.12 against 146.86 in original series showing a decrease of 0.26 on account of adjustment of upward seasonality in August 2021.

Seasonally adjusted Rural CPI for August 2021 stood at 148.42 against 148.34 in original series showing an increase of 0.08 on account of adjustment of downward seasonality in August 2021.

Month-on-month change of seasonally adjusted National CPI series stood at 0.57% reflecting an increase during August 2021 over previous month and an

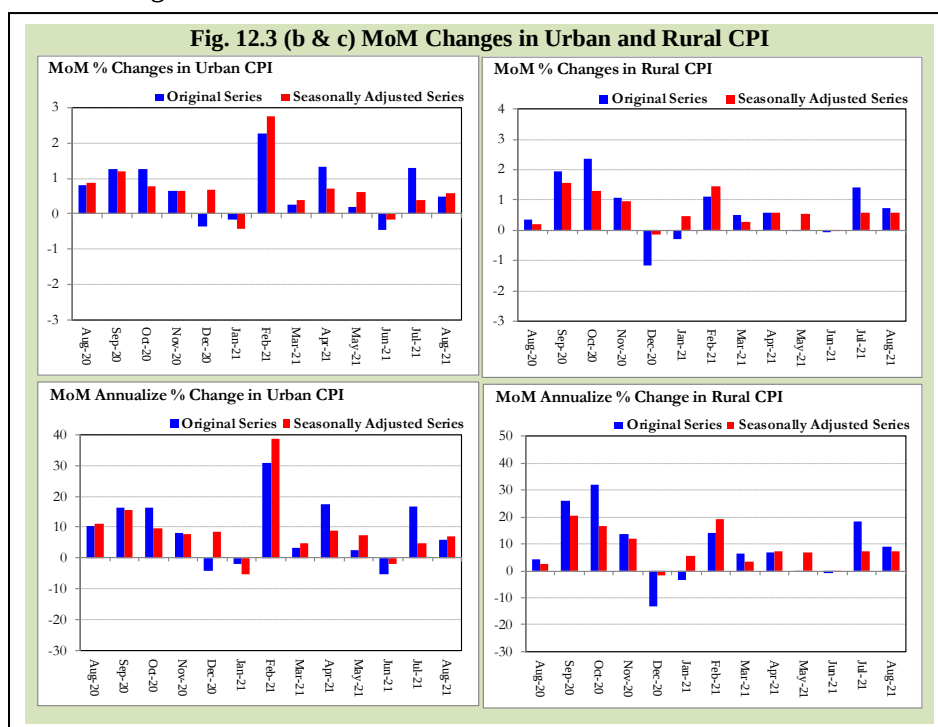
Fig. 12.3 (a) MoM Changes in National CPI



increase of 0.58% in original series.

Month-on-month change of seasonally adjusted Urban CPI series stood at 0.57% reflecting an increase during August 2021 over previous month and an increase of 0.48% in original series.

Month-on-month change of seasonally adjusted Rural CPI series stood at 0.58% reflecting an increase during August 2021 over previous month and an increase of 0.72% in original series.



It is pertinent to note that in case of MoM inflation, seasonally adjusted rates provide important information. The most recent annual rate of inflation is usually indicated by annualizing the seasonally adjusted month-on-month rate. Annualized rate of National CPI inflation in August 2021 (corresponding to the seasonally adjusted month-on-month rate) is 7.07 percent.

Annexure A

Table A1: National CPI Inflation by Groups (YoY and MoM in percent)							
	Weights	MoM change			YoY change		
		Aug-20	Jul-21	Aug-21	Aug-20	Jul-21	Aug-21
Food & Non-Alcoholic Beverages	34.6	-0.9	1.8	0.7	12.9	8.2	10.0
Alcoholic Beverages & Tobacco	1.0	1.0	-0.1	0.0	5.8	3.1	2.1
Clothing & Footwear	8.6	0.3	0.3	0.1	9.2	9.5	9.3
Housing, Water, Elec, Gas & other Fuels	23.6	1.8	1.4	0.7	6.0	9.2	8.0
Furnishing & Household Equip. Maintenance etc	4.1	0.6	0.9	0.5	7.5	9.8	9.6
Health	2.8	0.7	0.3	0.6	7.7	8.6	8.5
Transport	5.9	3.0	4.0	0.7	-3.4	10.5	8.1
Communication	2.2	0.0	1.2	0.0	0.3	2.8	2.8
Recreation & Culture	1.6	0.3	0.6	0.8	3.5	5.9	6.4
Education	3.8	0.0	0.2	0.9	1.0	2.0	2.9
Restaurants & Hotels	6.9	1.4	0.3	0.3	8.0	8.5	7.3
Miscellaneous	4.9	3.6	0.6	0.3	13.6	9.4	5.9
Overall National CPI	100.0	0.6	1.3	0.6	8.2	8.4	8.4

Table A2: Urban CPI Inflation by Groups (YoY and MoM in percent)							
	Weights	MoM change			YoY change		
		Aug-20	Jul-21	Aug-21	Aug-20	Jul-21	Aug-21
I. Food Group	36.8	-0.3	1.5	0.5	11.3	9.4	10.2
Food & Non-Alcoholic Beverages	30.4	-0.7	1.7	0.5	11.9	9.2	10.6
Alcoholic Beverages & Tobacco	0.9	1.0	0.0	0.0	5.5	3.8	2.8
Restaurant & Hotels (Food Component)	5.5	2.2	0.5	0.1	8.8	11.6	9.3
II. Non-Food Group	63.2	1.5	1.1	0.5	4.8	8.2	7.2
Clothing & Footwear	8.0	0.2	0.2	0.1	8.0	10.4	10.3
Housing, Water, Elec, Gas & other Fuels	27.0	1.7	1.4	0.5	5.4	8.5	7.2
Furnishing & Household Equip. Maintenance etc	4.1	0.5	1.0	0.4	6.2	9.4	9.4
Health	2.3	0.9	0.2	0.6	6.7	9.5	9.1
Transport	6.1	3.1	4.1	0.7	-3.7	11.4	8.8
Communication	2.4	0.0	1.7	0.0	0.4	3.8	3.8
Recreation & Culture	1.7	0.4	0.7	0.6	2.7	5.4	5.5
Education	4.9	0.1	0.2	1.1	1.0	1.5	2.5
Restaurants & Hotels (Non-food Component)	1.9	0.9	0.0	0.0	6.6	3.3	2.4
Miscellaneous	4.8	3.4	0.1	0.5	12.6	9.2	6.1
Overall Urban CPI	100.0	0.8	1.3	0.5	7.1	8.7	8.3

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

	Weights	MoM change			YoY change		
		Aug-20	Jul-21	Aug-21	Aug-20	Jul-21	Aug-21
I. Food Group	45.9	-0.9	1.6	0.8	13.5	7.3	9.1
Food & Non-Alcoholic Beverages	40.9	-1.1	1.8	0.9	14.0	7.2	9.3
Alcoholic Beverages & Tobacco	1.3	1.0	-0.1	0.0	6.1	2.4	1.4
Restaurant & Hotels (Food Component)	3.8	0.9	0.4	0.7	11.6	10.2	10.0
II. Non-Food Group	54.1	1.5	1.2	0.6	6.8	8.7	7.7
Clothing & Footwear	9.5	0.4	0.4	0.1	10.6	8.4	8.1
Housing, Water, Elec, Gas & other Fuels	18.5	1.9	1.4	1.0	7.2	10.6	9.7
Furnishing & Household Equip. Maintenance etc.	4.1	0.9	0.7	0.6	9.5	10.3	10.0
Health	3.5	0.4	0.3	0.5	8.7	7.7	7.8
Transport	5.6	2.7	3.9	0.8	-3.0	9.0	6.9
Communication	2.0	0.0	0.2	0.0	0.2	1.0	1.0
Recreation & Culture	1.4	0.1	0.5	1.2	5.0	6.9	8.0
Education	2.1	0.0	0.5	0.4	0.7	4.1	4.5
Restaurants & Hotels (Non-food Component)	2.4	0.0	0.0	0.6	0.8	0.6	1.3
Miscellaneous	5.0	3.8	1.2	0.1	15.0	9.5	5.7
Overall Rural CPI	100.0	0.4	1.4	0.7	9.9	8.0	8.4

Table A4: Top Ten Contributors to Urban CPI Inflation (YoY) in August 2021					
Items/ Contributors		Weights	YoY Change		Weighted Contribution (%)
			Aug-20	Aug-21	
A. Ranked by Weighted Contribution					
1	House Rent	19.26	4.29	6.05	13.62
2	Milk Fresh	7.11	14.86	10.64	8.79
3	Readymade Food	5.52	8.80	9.33	6.09
4	Motor Fuel	2.91	-10.25	15.82	5.94
5	Vegetable Ghee	1.03	16.38	36.34	4.89
6	Cooking Oil	1.10	11.37	33.96	4.70
7	Electricity Charges	4.56	11.39	9.16	4.45
8	Appliances/Articles/Products For P	2.98	8.15	11.56	3.98
9	Meat	2.04	12.24	13.71	3.81
10	Liquefied Hydrocarbons	0.51	0.93	63.79	3.69
Total		47.01			59.96
B. Ranked by Percentage Change					
1	Liquefied Hydrocarbons	0.51	0.93	63.79	3.69
2	Vegetable Ghee	1.03	16.38	36.34	4.89
3	Tomatoes	0.35	-0.74	35.15	1.45
4	Cooking Oil	1.10	11.37	33.96	4.70
5	Mustard Oil	0.01	14.59	33.11	0.04
6	Eggs	0.51	28.65	23.68	1.55
7	Chicken	1.36	-38.28	20.47	2.22
8	Wheat Products	0.09	22.83	16.46	0.19
9	Footwear	1.48	6.30	16.20	2.76
10	Motor Fuel	2.91	-10.25	15.82	5.94
Total		9.35			27.44
C. Ranked by Weights					
1	House Rent	19.26	4.29	6.05	13.62
2	Milk Fresh	7.11	14.86	10.64	8.79
3	Readymade Food	5.52	8.80	9.33	6.09
4	Education	4.88	1.01	2.52	1.58
5	Electricity Charges	4.56	11.39	9.16	4.45
6	Wheat Flour	3.01	23.38	9.36	3.37
7	Appliances/Articles/Products For P	2.98	8.15	11.56	3.98
8	Motor Fuel	2.91	-10.25	15.82	5.94
9	Cotton Cloth	2.22	9.93	9.77	2.64
10	Meat	2.04	12.24	13.71	3.81
Total		54.48			54.26
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 8.3 percent in August 2021.					

Table A5: Top Ten Contributors to Urban CPI Inflation (MoM) in August 2021					
Items/ Contributors		Weights	MoM Change		Weighted Contribution (%)
			Jul-21	Aug-21	
A. Ranked by Weighted Contribution			Jul-21	Aug-21	
1	Fresh Vegetables	1.53	3.69	12.52	36.15
2	Milk Fresh	7.11	0.96	1.94	27.73
3	Liquefied Hydrocarbons	0.51	12.73	18.23	23.28
4	Motor Fuel	2.91	8.08	2.80	18.85
5	Tomatoes	0.35	82.40	17.84	13.46
6	Education	4.88	0.16	1.08	10.93
7	Appliances/Articles/Products For P	2.98	0.52	1.00	6.05
8	Vegetable Ghee	1.03	6.70	1.75	5.02
9	Sugar	1.11	5.08	1.36	3.56
10	Cooking Oil	1.10	6.56	1.11	3.24
		23.51			148.25
B. Ranked by Percentage Change					
1	Liquefied Hydrocarbons	0.51	12.73	18.23	23.28
2	Tomatoes	0.35	82.40	17.84	13.46
3	Fresh Vegetables	1.53	3.69	12.52	36.15
4	Beans	0.04	0.31	5.09	0.47
5	Motor Fuel	2.91	8.08	2.80	18.85
6	Water Supply	0.53	0.08	2.42	2.85
7	Milk Fresh	7.11	0.96	1.94	27.73
8	Potatoes	0.45	4.89	1.84	2.36
9	Milk Products	0.64	0.82	1.77	2.35
10	Vegetable Ghee	1.03	6.70	1.75	5.02
		15.09			132.50
C. Ranked by Weights					
1	House Rent	19.26	1.43	0.00	0.00
2	Milk Fresh	7.11	0.96	1.94	27.73
3	Readymade Food	5.52	0.49	0.15	1.71
4	Education	4.88	0.16	1.08	10.93
5	Electricity Charges	4.56	0.49	0.08	0.71
6	Wheat Flour	3.01	-0.22	0.35	2.16
7	Appliances/Articles/Products For P	2.98	0.52	1.00	6.05
8	Motor Fuel	2.91	8.08	2.80	18.85
9	Cotton Cloth	2.22	0.10	0.11	0.53
10	Meat	2.04	0.97	0.37	1.87
		54.48			70.53
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 0.5 percent in August 2021.					

Table A6: Top and Bottom Fifteen Contributors to Urban CPI Inflation (YoY) in August 2021					
Top 15 Contributors			YoY Change		Weighted Contribution (%)
Items/ Contributors	Weights	Aug-20	Aug-21		
Ranked by Weighted Contribution					
1	House Rent	19.26	4.29	6.05	13.62
2	Milk Fresh	7.11	14.86	10.64	8.79
3	Readymade Food	5.52	8.80	9.33	6.09
4	Motor Fuel	2.91	-10.25	15.82	5.94
5	Vegetable Ghee	1.03	16.38	36.34	4.89
6	Cooking Oil	1.10	11.37	33.96	4.70
7	Electricity Charges	4.56	11.39	9.16	4.45
8	Appliances/Articles/Products For P	2.98	8.15	11.56	3.98
9	Meat	2.04	12.24	13.71	3.81
10	Liquefied Hydrocarbons	0.51	0.93	63.79	3.69
11	Wheat Flour	3.01	23.38	9.36	3.37
12	Footwear	1.48	6.30	16.20	2.76
13	Cotton Cloth	2.22	9.93	9.77	2.64
14	Condiments And Spices	1.33	38.87	11.28	2.58
15	Chicken	1.36	-38.28	20.47	2.22
Total		56.42			73.53
Bottom 15 Contributors					
1	Potatoes	0.45	62.44	-19.35	-1.97
2	Personal Effects N.E.C.	0.94	27.03	-4.82	-0.83
3	Pulse Moong	0.17	35.67	-17.23	-0.37
4	Transport Services	1.75	3.07	-0.80	-0.16
5	Wheat	0.61	44.30	-1.03	-0.09
6	Onions	0.59	-33.02	-1.36	-0.08
7	Newspapers	0.07	0.00	0.00	0.00
8	Gas Charges	1.08	0.00	0.00	0.00
9	Therapeutic Appliances And	0.01	6.08	3.19	0.00
10	Carpets	0.03	4.44	1.43	0.00
11	Electrical Appliances For Personal	0.05	2.56	1.13	0.01
12	Accommodation Services	0.13	0.58	0.51	0.01
13	Tea	0.84	9.62	0.07	0.01
14	Major Tools & Equipments	0.01	8.62	8.54	0.01
15	Dental Services	0.02	4.45	7.10	0.01
Total		6.75			-3.44

Table A7: Top and Bottom Fifteen Contributors to Urban CPI Inflation (MoM) in August 2021

<u>Top 15 Contributors</u>		Weights	<u>MoM Change</u>		Weighted Contribution (%)
Items/ Contributors			Jul-21	Aug-21	
Ranked by Weighted Contribution					
1	Fresh Vegetables	1.53	3.69	12.52	36.15
2	Milk Fresh	7.11	0.96	1.94	27.73
3	Liquefied Hydrocarbons	0.51	12.73	18.23	23.28
4	Motor Fuel	2.91	8.08	2.80	18.85
5	Tomatoes	0.35	82.40	17.84	13.46
6	Education	4.88	0.16	1.08	10.93
7	Appliances/Articles/Products For P	2.98	0.52	1.00	6.05
8	Vegetable Ghee	1.03	6.70	1.75	5.02
9	Sugar	1.11	5.08	1.36	3.56
10	Cooking Oil	1.10	6.56	1.11	3.24
11	Water Supply	0.53	0.08	2.42	2.85
12	Potatoes	0.45	4.89	1.84	2.36
13	Milk Products	0.64	0.82	1.77	2.35
14	Wheat Flour	3.01	-0.22	0.35	2.16
15	Meat	2.04	0.97	0.37	1.87
Total		30.17			159.84
<u>Bottom 15 Contributors</u>					
1	Chicken	1.36	-10.07	-11.98	-28.30
2	Fresh Fruits	1.44	-7.51	-7.75	-20.45
3	Transport Services	1.75	0.89	-3.63	-11.61
4	Condiments And Spices	1.33	2.65	-2.75	-11.48
5	Eggs	0.51	3.48	-1.64	-2.15
6	Personal Effects N.E.C.	0.94	-1.26	-0.75	-1.96
7	Pulse Gram	0.17	4.89	-5.18	-1.55
8	Pulse Moong	0.17	-11.36	-2.35	-0.68
9	Onions	0.59	34.53	-0.73	-0.65
10	Besan	0.08	-0.04	-0.93	-0.14
11	Dry Fruits	0.33	0.00	-0.09	-0.06
12	Gram Whole	0.09	-0.92	-0.15	-0.02
13	Pulse Mash	0.12	-5.18	-0.08	-0.01
14	Pan Prepared	0.14	0.00	0.00	0.00
15	Footwear	1.48	0.00	0.00	0.00
Total		10.50			-79.07

Table A8: Top and Bottom Fifteen Contributors to MoM Urban CPI Food Inflation in August 2021					
Top 15 Contributors			MoM Change		Weighted Contribution (%)
Items/ Contributors	Weights	Jul-21	Aug-21		
Ranked by Weighted Contribution					
1	Fresh Vegetables	1.53	3.69	12.52	36.15
2	Milk Fresh	7.11	0.96	1.94	27.73
3	Tomatoes	0.35	82.40	17.84	13.46
4	Vegetable Ghee	1.03	6.70	1.75	5.02
5	Sugar	1.11	5.08	1.36	3.56
6	Cooking Oil	1.10	6.56	1.11	3.24
7	Potatoes	0.45	4.89	1.84	2.36
8	Milk Products	0.64	0.82	1.77	2.35
9	Wheat Flour	3.01	-0.22	0.35	2.16
10	Meat	2.04	0.97	0.37	1.87
11	Readymade Food	5.52	0.49	0.15	1.71
12	Milk Powder	0.31	0.38	1.08	0.66
13	Beverages	0.89	0.30	0.37	0.60
14	Beans	0.04	0.31	5.09	0.47
15	Sweet Meat	0.35	1.92	0.56	0.43
Total		25.49			101.76
Bottom 15 Contributors					
1	Chicken	1.36	-10.07	-11.98	-28.30
2	Fresh Fruits	1.44	-7.51	-7.75	-20.45
3	Condiments And Spices	1.33	2.65	-2.75	-11.48
4	Eggs	0.51	3.48	-1.64	-2.15
5	Pulse Gram	0.17	4.89	-5.18	-1.55
6	Pulse Moong	0.17	-11.36	-2.35	-0.68
7	Onions	0.59	34.53	-0.73	-0.65
8	Besan	0.08	-0.04	-0.93	-0.14
9	Dry Fruits	0.33	0.00	-0.09	-0.06
10	Gram Whole	0.09	-0.92	-0.15	-0.02
11	Pulse Mash	0.12	-5.18	-0.08	-0.01
12	Pan Prepared	0.14	0.00	0.00	0.00
13	Tea	0.84	0.00	0.00	0.00
14	Cigarettes	0.72	0.00	0.00	0.00
15	Marriage Hall Charges	1.75	0.00	0.00	0.00
Total		9.64			-65.50

Table A9: Top and Bottom Fifteen Contributors to MoM Urban CPI Non-food Inflation in August 2021

<u>Top 15 Contributors</u>		Weights	<u>MoM Change</u>		Weighted Contribution (%)
Items/ Contributors			Jul-21	Aug-21	
Ranked by Weighted Contribution					
1	Liquefied Hydrocarbons	0.51	12.73	18.23	23.28
2	Motor Fuel	2.91	8.08	2.80	18.85
3	Education	4.88	0.16	1.08	10.93
4	Personal Grooming Services	2.98	0.52	1.00	6.05
5	Water Supply	0.53	0.08	2.42	2.85
6	Washing Soap/Detergents/Match Box	1.41	0.73	0.55	1.59
7	Drugs And Medicines	1.07	0.08	0.67	1.57
8	Text Books	0.67	1.08	0.92	1.11
9	Household Equipments	1.00	2.14	0.49	1.00
10	Tailoring	1.07	1.15	0.40	0.92
11	Motor Vehicles	0.81	-1.72	0.48	0.83
12	Construction Input Items	0.38	1.77	0.98	0.82
13	Doctor (Mbbs) Clinic Fee	0.40	0.23	0.69	0.76
14	Electricity Charges	4.56	0.49	0.08	0.71
15	Mechanical Services	0.43	0.25	0.72	0.60
Total		23.61			71.86
<u>Bottom 15 Contributors</u>					
1	Transport Services	1.75	0.89	-3.63	-11.61
2	Electrical Appliances For Personal	0.94	-1.26	-0.75	-1.96
3	Footwear	1.48	0.00	0.00	0.00
4	Dental Services	0.02	0.00	0.00	0.00
5	Dopatta	0.17	0.00	0.00	0.00
6	Personal Effects N.E.C.	0.00	0.00	0.00	0.00
7	Appliances/Articles/Products For P	0.00	0.00	0.00	0.00
8	Newspapers	0.07	0.00	0.00	0.00
9	Gas Charges	1.08	0.00	0.00	0.00
10	Woolen Readymade Garments	0.43	0.00	0.00	0.00
11	Cleaning And Laundering	0.07	0.05	0.00	0.00
12	Postal Services	0.02	0.70	0.00	0.00
13	Household Textiles	0.34	0.20	0.00	0.00
14	Motor Vehicle Tax	0.05	7.62	0.00	0.00
15	Communication Services	1.88	0.33	0.00	0.00
Total		8.30			-13.57

Table A10: Top Ten Contributors to Rural CPI Inflation (YoY) in August 2021					
Items/ Contributors		Weights	YoY Change		Weighted Contribution (%)
			Aug-20	Aug-21	
A. Ranked by Weighted Contribution					
1	Vegetable Ghee	2.38	20.00	36.91	12.11
2	Milk Fresh	10.38	8.17	8.57	9.93
3	House Rent	8.61	4.94	6.05	5.99
4	Liquefied Hydrocarbons	1.00	-5.47	48.36	4.97
5	Solid Fuel	4.48	11.22	9.51	4.81
6	Readymade Food	3.80	11.60	10.03	4.75
7	Motor Fuels	2.49	-10.55	14.62	4.59
8	Fresh Vegetables	2.09	-4.79	21.27	4.53
9	Wheat Flour	3.43	26.22	9.06	3.74
10	Meat	1.71	10.46	16.13	3.64
Total		40.38			59.07
B. Ranked by Percentage Change					
1	Liquefied Hydrocarbons	1.00	-5.47	48.36	4.97
2	Cooking Oil	0.60	13.99	40.04	3.16
3	Vegetable Ghee	2.38	20.00	36.91	12.11
4	Mustard Oil	0.01	10.92	36.18	0.06
5	Fresh Vegetables	2.09	-4.79	21.27	4.53
6	Eggs	0.57	30.36	19.59	1.39
7	Tomatoes	0.51	11.87	18.93	1.11
8	Meat	1.71	10.46	16.13	3.64
9	Motor Fuels	2.49	-10.55	14.62	4.59
10	Personal Grooming Services	1.54	9.66	14.48	2.75
Total		12.90			38.32
C. Ranked by Weights					
1	Milk Fresh	10.38	8.17	8.57	9.93
2	House Rent	8.61	4.94	6.05	5.99
3	Solid Fuel	4.48	11.22	9.51	4.81
4	Readymade Food	3.80	11.60	10.03	4.75
5	Wheat	3.47	41.14	1.38	0.63
6	Electricity Charges	3.44	11.39	9.16	3.31
7	Wheat Flour	3.43	26.22	9.06	3.74
8	Cotton Cloth	2.84	15.31	7.56	2.93
9	Motor Fuels	2.49	-10.55	14.62	4.59
10	Vegetable Ghee	2.38	20.00	36.91	12.11
Total		45.32			52.80
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 8.4 percent in August 2021.					

Table A11: Top Ten Contributors to Rural CPI Inflation (MoM) in August 2021					
Items/ Contributors		Weights	MoM Change		Weighted Contribution (%)
			Jul-21	Aug-21	
A. Ranked by Weighted Contribution					
1	Fresh Vegetables	2.09	5.16	17.35	41.46
2	Vegetable Ghee	2.38	3.16	4.94	22.96
3	Liquefied Hydrocarbons	1.00	12.56	12.94	18.96
4	Milk Fresh	10.38	1.19	1.05	14.20
5	Motor Fuels	2.49	7.71	2.97	11.27
6	Sugar	2.03	4.33	2.68	8.46
7	Cooking Oil	0.60	2.27	4.99	5.70
8	Tomatoes	0.51	101.63	7.40	5.21
9	Onions	0.90	47.62	6.02	4.80
10	Meat	1.71	0.93	1.57	4.38
		24.09			137.40
B. Ranked by Percentage Change					
1	Fresh Vegetables	2.09	5.16	17.35	41.46
2	Liquefied Hydrocarbons	1.00	12.56	12.94	18.96
3	Tomatoes	0.51	101.63	7.40	5.21
4	Onions	0.90	47.62	6.02	4.80
5	Cooking Oil	0.60	2.27	4.99	5.70
6	Vegetable Ghee	2.38	3.16	4.94	22.96
7	Motor Fuels	2.49	7.71	2.97	11.27
8	Sugar	2.03	4.33	2.68	8.46
9	Mustard Oil	0.01	1.30	2.63	0.06
10	Construction Input Items	0.63	1.44	2.37	1.87
		12.64			120.75
C. Ranked by Weights					
1	Milk Fresh	10.38	1.19	1.05	14.20
2	House Rent	8.61	1.19	0.00	0.00
3	Solid Fuel	4.48	0.23	0.59	3.50
4	Readymade Food	3.80	0.42	0.74	4.16
5	Wheat	3.47	0.81	0.15	0.75
6	Electricity Charges	3.44	0.49	0.08	0.36
7	Wheat Flour	3.43	0.70	0.46	2.23
8	Cotton Cloth	2.84	0.43	0.00	0.00
9	Motor Fuels	2.49	7.71	2.97	11.27
10	Vegetable Ghee	2.38	3.16	4.94	22.96
		45.32			59.43
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 0.7 percent in August 2021.					

Table A12: Top and Bottom Fifteen Contributors to Rural CPI Inflation (YoY) in August 2021					
Top 15 Contributors					
Items/ Contributors		Weights	YoY Change		Weighted Contribution (%)
			Aug-20	Aug-21	
Ranked by Weighted Contribution					
1	Vegetable Ghee	2.38	20.00	36.91	12.11
2	Milk Fresh	10.38	8.17	8.57	9.93
3	House Rent	8.61	4.94	6.05	5.99
4	Liquefied Hydrocarbons	1.00	-5.47	48.36	4.97
5	Solid Fuel	4.48	11.22	9.51	4.81
6	Readymade Food	3.80	11.60	10.03	4.75
7	Motor Fuels	2.49	-10.55	14.62	4.59
8	Fresh Vegetables	2.09	-4.79	21.27	4.53
9	Wheat Flour	3.43	26.22	9.06	3.74
10	Meat	1.71	10.46	16.13	3.64
11	Electricity Charges	3.44	11.39	9.16	3.31
12	Cooking Oil	0.60	13.99	40.04	3.16
13	Cotton Cloth	2.84	15.31	7.56	2.93
14	Personal Grooming Services	1.54	9.66	14.48	2.75
15	Sugar	2.03	25.53	10.06	2.73
Total		50.82			73.96
Bottom 15 Contributors					
1	Potatoes	0.74	65.14	-15.29	-2.74
2	Condiments And Spices	1.49	48.79	-5.52	-1.33
3	Personal Effects N.E.C.	1.21	30.58	-6.24	-1.30
4	Pulse Moong	0.25	33.34	-19.92	-0.65
5	Transport Services	1.80	5.67	-3.17	-0.64
6	Motor Vehicle Tax	0.02	0.00	-5.56	-0.01
7	Postal Services	0.01	0.00	0.00	0.00
8	Accommodation Services	0.14	0.00	0.03	0.00
9	Newspapers	0.02	0.00	2.40	0.01
10	Cleaning And Laundering	0.02	17.77	4.01	0.01
11	Garbage Collection	0.01	7.77	8.74	0.01
12	Dessert Preparation	0.01	10.25	8.01	0.01
13	Dental Services	0.02	8.87	7.84	0.02
14	Tea	1.26	9.18	0.17	0.03
15	Honey	0.03	5.85	9.52	0.03
Total		7.02			-6.57

Table A13: Top and Bottom Fifteen Contributors to Rural CPI Inflation (MoM) in August 2021

<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution (%)	
Items/ Contributors	Weights	Jul-21	Aug-21		
Ranked by Weighted Contribution					
1	Fresh Vegetables	2.09	5.16	17.35	41.46
2	Vegetable Ghee	2.38	3.16	4.94	22.96
3	Liquefied Hydrocarbons	1.00	12.56	12.94	18.96
4	Milk Fresh	10.38	1.19	1.05	14.20
5	Motor Fuels	2.49	7.71	2.97	11.27
6	Sugar	2.03	4.33	2.68	8.46
7	Cooking Oil	0.60	2.27	4.99	5.70
8	Tomatoes	0.51	101.63	7.40	5.21
9	Onions	0.90	47.62	6.02	4.80
10	Meat	1.71	0.93	1.57	4.38
11	Readymade Food	3.80	0.42	0.74	4.16
12	Solid Fuel	4.48	0.23	0.59	3.50
13	Personal Grooming Services	1.54	1.70	1.39	3.23
14	Potatoes	0.74	12.66	1.91	3.09
15	Wheat Flour	3.43	0.70	0.46	2.23
Total		38.08			153.63
Bottom 15 Contributors					
1	Chicken	1.46	-12.95	-14.90	-27.17
2	Fresh Fruits	1.45	-8.40	-11.14	-20.51
3	Condiments And Spices	1.49	-0.09	-5.61	-14.67
4	Transport Services	1.80	0.45	-2.96	-6.49
5	Personal Effects N.E.C.	1.21	1.73	-2.10	-4.54
6	Pulse Moong	0.25	-10.06	-6.85	-2.08
7	Eggs	0.57	0.97	-0.87	-0.80
8	Pulse Gram	0.28	-1.83	-2.45	-0.78
9	Gram Whole	0.11	0.01	-1.81	-0.24
10	Pulse Masoor	0.21	0.09	-0.97	-0.21
11	Motor Vehicle Tax	0.02	3.86	-9.07	-0.20
12	Pulse Mash	0.15	-2.41	-1.30	-0.19
13	Besan	0.07	0.05	-0.95	-0.08
14	Wheat Products	0.11	0.62	-0.32	-0.05
15	Dry Fruits	0.25	-0.24	-0.02	-0.01
Total		9.41			-78.02

Table A14: Top and Bottom Fifteen Contributors to MoM Rural CPI Food Inflation in August 2021					
Top 15 Contributors			MoM Change		Weighted Contribution (%)
Items/ Contributors	Weights	Jul-21	Aug-21		
Ranked by Weighted Contribution					
1	Fresh Vegetables	2.09	5.16	17.35	41.46
2	Vegetable Ghee	2.38	3.16	4.94	22.96
3	Milk Fresh	10.38	1.19	1.05	14.20
4	Sugar	2.03	4.33	2.68	8.46
5	Cooking Oil	0.60	2.27	4.99	5.70
6	Tomatoes	0.51	101.63	7.40	5.21
7	Onions	0.90	47.62	6.02	4.80
8	Meat	1.71	0.93	1.57	4.38
9	Readymade Food	3.80	0.42	0.74	4.16
10	Potatoes	0.74	12.66	1.91	3.09
11	Wheat Flour	3.43	0.70	0.46	2.23
12	Marriage Hall Charges	2.25	0.00	0.68	1.85
13	Rice	1.55	1.05	0.35	0.97
14	Milk Products	0.96	0.75	0.78	0.95
15	Wheat	3.47	0.81	0.15	0.75
Total		36.81			121.18
Bottom 15 Contributors					
1	Chicken	1.46	-12.95	-14.90	-27.17
2	Fresh Fruits	1.45	-8.40	-11.14	-20.51
3	Condiments And Spices	1.49	-0.09	-5.61	-14.67
4	Pulse Moong	0.25	-10.06	-6.85	-2.08
5	Eggs	0.57	0.97	-0.87	-0.80
6	Pulse Gram	0.28	-1.83	-2.45	-0.78
7	Gram Whole	0.11	0.01	-1.81	-0.24
8	Pulse Masoor	0.21	0.09	-0.97	-0.21
9	Pulse Mash	0.15	-2.41	-1.30	-0.19
10	Besan	0.07	0.05	-0.95	-0.08
11	Wheat Products	0.11	0.62	-0.32	-0.05
12	Dry Fruits	0.25	-0.24	-0.02	-0.01
13	Cigarettes	1.24	-0.15	0.00	0.00
14	Pan Prepared	0.04	0.00	0.00	0.00
15	Dessert Preparation	0.01	0.00	0.00	0.00
Total		7.69			-66.80

Table A15: Top and Bottom Fifteen Contributors to MoM Rural CPI Non-food Inflation in August 2021

<u>Top 15 Contributors</u>		Weights	<u>MoM Change</u>		Weighted Contribution (%)
Items/ Contributors			Jul-21	Aug-21	
Ranked by Weighted Contribution					
1	Liquefied Hydrocarbons	1.00	12.56	12.94	18.96
2	Motor Fuels	2.49	7.71	2.97	11.27
3	Solid Fuel	4.48	0.23	0.59	3.50
4	Personal Grooming Services	1.54	1.70	1.39	3.23
5	Appliances/Articles/Products For	2.27	0.49	0.75	2.17
6	Construction Input Items	0.63	1.44	2.37	1.87
7	Hospitals Services	1.01	0.00	1.41	1.79
8	Washing Soaps, Detergents And	1.70	0.72	0.61	1.38
9	Motor Vehicles	0.73	0.01	1.39	1.29
10	Text Books	0.50	1.58	2.08	1.20
11	Furniture And Furnishing	0.58	0.75	1.45	1.16
12	Education	2.13	0.52	0.38	1.07
13	Tailoring	1.30	0.54	0.48	0.90
14	Household Equipments	1.28	0.79	0.43	0.78
15	Drugs And Medicines	1.58	0.13	0.28	0.64
Total		23.22			51.20
<u>Bottom 15 Contributors</u>					
1	Transport Services	1.80	0.45	-2.96	-6.49
2	Personal Effects N.E.C.	1.21	1.73	-2.10	-4.54
3	Motor Vehicle Tax	0.02	3.86	-9.07	-0.20
4	Postal Services	0.01	0.00	0.00	0.00
5	Dental Services	0.02	0.00	0.00	0.00
6	Newspapers	0.02	0.00	0.00	0.00
7	Accommodation Services	0.14	0.00	0.00	0.00
8	Mechanical Services	0.36	0.00	0.00	0.00
9	Woolen Readymade Garments	0.54	0.00	0.00	0.00
10	Garbage Collection	0.01	3.00	0.00	0.00
11	Cleaning And Laundering	0.02	1.73	0.00	0.00
12	Communication Services	1.65	0.09	0.00	0.00
13	Household Textiles	0.44	0.29	0.00	0.00
14	Woolen Cloth	1.10	0.11	0.00	0.00
15	Doctor (Mbbs) Clinic Fee	0.51	1.46	0.00	0.00
Total		7.83			-11.23

Table A16: Distribution of Price Changes (YoY) - Selected Urban CPI Items: August 2021

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-Beverages	Potatoes, Pulse Moong (Washed), Lemon, Ginger (Adrak), Garlic (Lehsun), Chilies (Green).	Coriander Seed Powder National 200 Gm Packet, Pulse Masoor (Washed).	Sugar Refined, Pickle Mitchells/National Bottle (340 Gm-400 Gm), Gur (Average Quality).	Chilies Powder National 200 Gm Packet, Vegetable Ghee Dalda/Habib Or Other Superior Quality 1 Kg Pouch, Vegetable Ghee Dalda/Habib 2.5 Kg Tin, Tomatoes.
Alcoholic Beverages & Tobacco	Cigarettes Capstan 20'S Packet.	Cigarettes Gold Leaf 20'S Packet.	Pan Prepared (Sweet With Beetle Nuts).	
Clothing & Footwear	Ladies Sandal Bata, Gents Sandal Bata, Cheetah 50 Size 3-5 Servis.	Shoe Repair Full Sole, Full Pant Boy Length 24"/26", Women Shalwar Kameez (Average Quality), Chaddar (Wash-N-Wear) (2X2.5 Meter).	Vest "Baniyan" For Men Average Quality, Pullover Gents (Average Quality), Tailoring Charges Simple Suit (Female), Linen, Ladies (Average Quality).	Gents Shoes Paul Bata, Heavy Weight Suiting Lawrance Pur (Average Quality), Gents Sponge Chappal Bata, Pullover Gents Oxford/Bonanza, Children Shoes Power Lite Bata, Shirting (Average Quality), Brassier (Average Quality), Pullover Ladies Oxford/Bonanza.
Housing, Water, Elect, Gas & other Fuels	Gas Charges Upto 3.3719 Mmbtu, Gas Charges 3.3719 - 6.7438 Mmbtu.	Unskilled Labor Wage Rate, Electricity Charges Above 700 Units, Electrician Charges, Charges For Refuse/Waste Collection, Mason Wage Rate, Painter Wage Rate.	Electricity Charges Combined, Electricity Charges 51-100 Units, Synthetic Enamel Ici Balti 3.64 Litre, Bricks New 1St Class, Bajri, Electricity Charges 101-300 Units.	Lpg 11.67 Kg Cylinder, Electricity Charges Upto 50 Units, Iron Bars (M.S. Bar) 1/2 " 40 Grade, Cement (Local) 50 Kg Bag.
Furnishing & Household Equip. Maintenance etc		Blanket Single (Sn), Lota Plastic Medium Size (Average Quality), Chair Plastic (Chairman) (Average Quality).	Sewing Machine (Sn) Without Cover, Finis 400 Ml Bottle, Bucket (Balti) Plastic Medium Size, Towel Medium Size (3' X 2).	Boot Polish Cherry/Kiwi 42 Ml, Sufi Washing Soap 250 Gm Cake, Mattress Foam Single Bed Molty/Diamond (4" Thick) , Frying Pan Non-Stick Medium Size Sonex, Harpic 500 Ml Bottle, Sofa Set Five Seater.
Health		Dental Surgeon Fee Per Visit, Ultrasound Abdominal, Daonil Tablets 5 Mg, X-Ray (Chest) Charges.	Phenergan Syrup 120 Ml Bottle, Cac 1000 Tablets Sandoz Bottle, Calpol Syrup 100 Ml Bottle.	Lederplex Syrup Bottle, Septran Tablets, Johar Joshanda Instant (Sachet) Packet, Doctor (Mbbs) Clinic Fee, Inderal Tablets 10 Mg, Dettol Medium Bottle, Cost Of Surgery (C-Section).
Transport	Air Fare Economy Class Per Kilometer (National Average), Car Suzuki 1000 Cc, Train Fare Business Class Per Person.	Car Suzuki 800 Cc Without Ac, Taxi Four Seater Fare, Car Honda Civic Turbo 1.5 Vtec, Motorcycle Service Charges, Car Service Charges.	Hi-Speed Diesel, Suzuki Fare Minimum Within City, Car Tax 800 Cc To 1500 Cc, Tire Motorcycle Cd 70 (Back Wheel).	Cng, Bicycle, Bus Fare Maximum Within City, Petrol Super, Suzuki Fare Maximum Within City, Tire Car Puncture Charges, Mini Bus Fare Maximum Within City, Tire Car Mehran Tubeless (General), Motorcycle Honda Cd 70.
Communication	Mobile Call Charges.	Internet Charges (Dsl) 1 Mb (Unlimited).	Mobile Set With Rear Camera And Without Touch Screen.	Telephone Call Charges, Courier Charges Minimum Within Zone Outside City (Tcs).
Recreation & Culture	Newspaper Daily Jang, Mag The Weekly (Magazine), Newspaper Daily Dawn, Akhbar-E-Jehan Weekly.	Led Sony/Samsung 32" Colored, Ballpoint Pen Local, Urdu Book Ba/B.Sc, Personal Computer With Led Monitor (17") Dell/Hp/Acer Core I5, English Book Ba/B.Sc.	English Book Class Ix And X, English Book Class Xi Complete Set, Mathematics Book Class Xi (Text Book Board), English Book Class Vi, Urdu Book Class Xi/Inter.	Urdu Book Class V (Text Book Board), Lead Pencil Goldfish, Laptop Dell/Hp/Acer Core I5, Display (14"-15"), Mathematics Book Class V (Text Book Board).
Education	Coaching Fee For Class Xi/Xii Science Group.	Private School Fee English Medium Average Standard (Class Vi).	Private School Fee English Medium Average Standard (Class I).	
Restaurant & Hotels		Chicken Biryani Full/Double.	Cooked Chicken At Average Hotel, Cooked Daal At Average Hotel.	Cooked Beef At Average Hotel, Bread Tandoori Standard Size, Tea Prepared Ordinary.
Miscellaneous	Gold Tezabi 24 Carett, Silver Tezabi 24 Carett.	Purse Ladies Medium Size (Average Quality), Face Cream Ponds Medium Size (Cold).	Toilet Soap Lux 75 Gm, Blade Treet Ordinary (10 No. Packet), Hair Oil (Kala Kola Hair Tonic).	Pampers (Medium Size), Perfume Medium Size Broche/Medora, Artificial Jewelry (Locket Set) (Average Quality), Talcum Powder Viceroy/Black Cat Large Size.

Table A17: Distribution of Price Changes (YoY) - Selected Rural CPI Items: August 2021

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	Arvi, Lemon, Pulse Moong (Washed), Chilies (Green), Potatoes, Mango Kalmi (Average Quality).	Powdered Milk Nido 390 Gm Polybag, Beans Red/White (Lobia).	Garlic (Lehsun), Wheat Flour Bag, Rice Basmati Broken (Average Quality), Honey Marhaba Bottle 500 Gm.	Karela, Brinjal, Cooking Oil (Pouch), Guava (Amrood) (Average Quality), Vegetable Ghee Dalda/Habib Or Other Superior Quality 1 Kg Pouch, Lady Finger (Bhindi).
Alcoholic Beverages & Tobacco	Tobacco Hukka Twisted.	Cigarettes Capstan 20'S Packet, Chewing Tobacco (Niswar).	Pan Prepared (Sweet With Beetle Nuts).	
Clothing & Footwear		Footware Gents Local (Average Quality), Washing Charges Shalwar Kameez, Footware Ladies Local (Average Quality).	Pullover Gents (Average Quality), Underwear Medium Size (Average Quality), Tailoring Charges Simple Suit (Female), Full Pant Boy Length 24"/26".	Shoe Repair Full Sole, Vest "Baniyan" For Men Average Quality, Shirt Boy Length 24"/26", Shirting (Average Quality), Brassier (Average Quality), Georgette (Average Quality), Dopatta Cotton (Average Quality), Lawn Printed (Average Quality), Shoe Polish Charges, Linen.
Housing, Water, Elect, Gas & other Fuels		Electricity Charges Above 1000 Units, Mason Wage Rate, Water Charges Per House.	Firewood Whole, Coal, Electricity Charges Combined, Electricity Charges 51-100 Units, Charges For Refuse/Waste Collection, Electrician Charges, Bajri.	Lpg 11.67 Kg Cylinder, Electricity Charges Upto 50 Units, Cement (Local) 50 Kg Bag, Kerosene Oil.
Furnishing & Household Equip. Maintenance etc.		Express Washing Powder 1 Kg Polybag, Plates Steel Medium Size (Average Quality), Cleanser Powder Vim 900 Gm Polybag.	Water Cooler 9/10 Litre Plastic Super Quality, Cot Iron (Charpai), Sewing Machine (Sn) Without Cover.	Boot Polish Cherry/Kiwi 42 Ml, Match Box, Washing Soap 250 Gm Cake (Specify Name), Ceiling Fan 56" Pak/Younas/Millat, Washing Machine With Spinner (Super Asia Or Similar Brand) (Sn), Bucket (Balti) Plastic Medium Size.
Health	Hydriyllin Syrup 120 Ml Bottle.	Blood Test (Cp) Charges, Daonil Tablets 5 Mg.	Cac 1000 Tablets Sandoz Bottle, X-Ray (Chest) Charges, Dettol Medium Bottle, Panadol Tablets Plain.	Johar Joshanda Instant (Sachet) Packet, Doctor (Mbbs) Clinic Fee, Inderal Tablets 10 Mg.
Transport	Air Fare Economy Class Per Kilometer, Car Tax 800 Cc To 1500 Cc, Car Suzuki 800 Cc Without Ac, Bus Fare Outside City (Non Ac).	Tire Motorcycle Cd 70 (Back Wheel), Motorcycle Service Charges, Chingchi Rickshaw Charges, Minimum, Train Fare Economy Per Person.	Hi-Speed Diesel, Mobil Oil (Havoline 20W-50).	Cng, Petrol Super, Tire Car Mehran Tubeless (General), Bicycle, Motorcycle Honda Cd 70.
Communication	Mobile Call Charges, Postal Registration Charges.	Internet Charges (Dsl) 1 Mb (Unlimited), Mobile Set With Rear Camera And Without Touch Screen.		Telephone Call Charges.
Recreation & Culture		English Books Class Vi, Led Sony/Samsung 32" Colored, Urdu Books Class Ix And X (Text Book Board), Newspaper Daily Jang, Cable Charges.	Personal Computer With Led Monitor (17") Dell/Hp/Acer Core I5, English Books Class Xi Complete Set, Pets Feed, English Books Class Ix And X, Ballpoint Pen Local.	Urdu Books Class V (Text Book Board), Exercise Book (With Lines) 80 To 100 Pages, Lead Pencil Goldfish.
Education		Private School Fee English Medium Average Standard (Class V), Coaching Fee For Class Ix/X Science Group.	Private School Fee English Medium Average Standard (Class I).	
Restaurant & Hotels		Pizza Chicken Medium Size (Average Quality), Marriage Hall Charges With Furniture.	Tea Prepared Ordinary, Bread Tandoori Standard Size.	Cooked Beef At Average Hotel, Cooked Chicken At Average Hotel, Seekh Kabab (Beef) (Average Quality).
Miscellaneous	Gold Tezabi 24 Carett.	Blade Treet Ordinary (10 No. Packet), Suitcase Ragzine (24"X16"X6") (Average Quality).	Hair Removing Cream (Eu-Cream) 30Ml Tube, Toilet Soap Lux 75 Gm.	Hair Cut Charges For Men, Talcum Powder Viceroy/Black Cat, Shaving Charges, Shampoo Sun Silk/Pantene 90 Ml Bottle, Disposable Razor Gillette Blue Ii, Tooth Paste Colgate 75 Gm.

Table A18: Distribution of Price Changes (YoY) - WPI Items: August 2021				
Groups	Decrease or no change	Subdued increase (Greater than 0% but less than 5%)	Moderate increase (5% but less than 10%)	Double digit increase (10% or more)
Agriculture Forestry & Fishery Products	Edible Roots / Potatoes, Poultry, Hides, Skins & Fur Skins, Raw, Vegetables.	Pulses, Fresh Fruits, Fish Live Fresh Or Chilled, Raw Animal Materials / Wool, Sorghum / Jowar.	Wheat, Raw Milk From Bovine Animals, Dry Fruits, Cotton Seeds.	Millet / Bajra, Fibre Crops, Other Oil Seeds, Unmanufactured Tobacco, Eggs, Stimulant & Spice Crops, Rice, Sugar Crops, Maize, Fuel Wood In Logs.
Ores & Minerals, Electricity Gas & Water	Coal Not Agglomerated.	Natural Gas Liquified, Salt & Pure Sodium Chloride, Electrical Energy.		
Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products	Nylon Yarn, Tobacco Products, Woolen Carpets, Other Leather N.E.C.	Dairy Products N.E.C, Blankets, Beverages, Other Food Products, Leather Without Hair, Synthetic Carpets, Coffee & Tea, Footwears, Mineral Water.	Chocolate, Blended Yarn, Other Cereal Flour, Bed Sheets, Processed Liquid Milk, Readymade Garments, Oil Cakes, Milk & Cream In Solid Form, Fruit Juices.	Spices, Vegetable Ghee, Vegetable Oils Refined, Silk & Reyon Fabrics, Cotton Yarn, Sugar Refined, Woven Fabrics, Ice Cream, Meat Of Animals, Sugar Confectionary, Towels, Cotton Fabrics, Wheat Flour, Hosiery Products, Other Fabrics, Quilts, Dried Fruits & Nuts, Vegetables & Fruit Juice.
Other Transportable Goods except Metal Products, Machinery and Equipments	Glass Sheets, Hard Board, Printing Paper, Dyeing Material, Insecticides.	Other Glass Articles, Soaps & Detergents, Medicines, Ceramics & Sanitary Fixture, Plastic Products, Auto Tyres, Pesticides, Matches.	Bed Foam, Mobil Oil, Bricks, Blocks & Tiles, Paints & Varnishes.	Furnace Oil, Kerosine Oil, Steel Bar & Sheets, Diesel Oil, Fertilizers, Motor Spirit, Chemicals, Timber, Cement.
Metal Product Machinery & Equipment	Vacuum Pumps, Engines & Motors, Concrete Mixture, Cultivators.	Radio & Television, Steel Products, Motor Vehicles.	Fridge, Washm, Sewm, Fans, Iron, Electric Wires.	Pipe Fittings, Lathe Machines, Bicycles, Lighting Equipments, Motorcycles, Air Conditioners, Tractors, Chuff Cutter.

Table A19: International Commodity Prices/Indices

	May-21	Jun-21	Jul-21	Aug-21
Energy				
Crude Oil (US\$ per barrel)*	66.4	71.8	73.3	68.9
Energy Index (2010 = 100)	85.1	93.2	97.7	95.6
Food				
Rice (\$/MT)	493.0	466.0	414.0	403.0
Wheat (\$/MT)##	271.0	263.5	254.7	276.2
Sugar (US cent/ pound)^	17.3	17.4	17.7	19.5
Palm Oil (\$/MT)	1,120.4	1,004.4	1,063.0	1,135.8
Soybean Oil (\$/MT)	1,568.7	1,518.2	1,468.3	1,436.5
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	90.9	94.5	97.7	101.3
Metal Price Index (2010 = 100)	121.9	119.0	119.3	120.9
Copper (\$/MT)	10,162.0	9,631.5	9,450.8	9,370.1
Aluminum (\$/MT)	2,433.5	2,446.7	2,497.6	2,603.0
Iron Ore (\$ cents/dry MT)	207.7	214.4	214.1	162.2
Tin (\$/MT)	32,246.2	32,502.6	34,020.2	35,024.0
Nickel (\$/MT)	17,577.1	17,979.6	18,818.5	19,141.3
Zinc (\$/MT)	2,965.7	2,951.9	2,947.5	2,988.0
Lead (\$/MT)	2,181.8	2,191.0	2,337.5	2,414.5
Uranium (\$/MT)@	31.4	32.3	32.4	32.3
DAP (\$/MT)	574.6	604.8	613.0	603.1
Urea (\$/MT)	331.6	393.3	441.5	446.9

Source: World Bank for all variables / indices except Uranium which is taken from Cameco (World Largest Uranium Producer)

@ Data has been taken from Cameco website as it is not available in World Bank dataset.

^ The measurement unit for sugar and Cotton is US cent/ pound in IMF data source, whereas it is US dollar / kg in World bank dataset.

The result of two datasets can be reconciled using conversion formula: 1US \$ / kilogram = 45.359237 U.S. cents / pound. Both the variables have been converted to the measurement unit US cent/ pound.

\$/MT = US\$ per metric tonne.

* Crude Oil (Petroleum), simple average of three spot prices; Dated Brent, West Texas Intermediate, and the Dubai fateh

Middling 1-3/32 inch staple, Liverpool Index "A", average of the cheapest Cts/lb five of fourteen styles, CIF Liverpool (Cotton Outlook, Liverpool). From January 1968 to June 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: Diammonium Phosphate

Table A20: National CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY18	FY19	FY20	FY21	FY22
Jul	107.15	114.29	123.86	135.38	146.76
Aug	107.31	113.93	125.89	136.23	147.61
Sep	108.05	113.90	126.86	138.32	
Oct	109.22	116.32	129.16	140.67	
Nov	109.95	116.18	130.90	141.83	
Dec	109.92	115.82	130.45	140.86	
Jan	110.01	116.12	133.03	140.56	
Feb	109.72	117.12	131.64	143.09	
Mar	109.96	119.46	131.69	143.61	
Apr	111.15	120.33	131.59	145.09	
May	111.65	121.05	131.01	145.24	
Jun	112.58	121.63	132.08	144.82	
Seasonally Adjusted Series					
Jul	106.92	114.09	123.69	135.24	146.64
Aug	107.06	113.72	125.71	136.08	147.48
Sep	107.63	113.51	126.46	137.91	
Oct	108.20	115.21	127.91	139.26	
Nov	108.89	115.02	129.55	140.32	
Dec	109.97	115.83	130.43	140.81	
Jan	110.15	116.27	133.19	140.70	
Feb	110.44	117.83	132.38	143.84	
Mar	110.61	120.13	132.38	144.32	
Apr	111.26	120.46	130.74	145.28	
May	112.31	121.77	131.80	146.12	
Jun	113.31	122.46	133.04	145.95	

Table A21: Urban CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY18	FY19	FY20	FY21	FY22
Jul	107.71	114.94	124.95	134.73	146.41
Aug	107.93	114.58	126.77	135.82	147.12
Sep	108.38	114.49	127.72	137.53	
Oct	109.34	117.04	129.75	139.27	
Nov	110.03	116.94	131.05	140.16	
Dec	110.08	116.57	130.57	139.67	
Jan	110.28	117.07	132.77	139.45	
Feb	110.12	118.08	131.32	142.61	
Mar	110.43	120.29	131.49	142.99	
Apr	111.94	121.29	130.60	144.91	
May	112.53	122.11	130.99	145.19	
Jun	113.34	122.52	131.89	144.54	
Seasonally Adjusted Series					
Jul	107.30	114.54	124.56	134.35	146.04
Aug	107.59	114.26	126.48	135.55	146.86
Sep	108.01	114.14	127.37	137.18	
Oct	108.54	116.19	128.80	138.23	
Nov	109.25	116.09	130.08	139.11	
Dec	110.41	116.89	130.93	140.05	
Jan	110.36	117.14	132.81	139.44	
Feb	110.80	118.75	131.99	143.28	
Mar	111.17	121.05	132.28	143.81	
Apr	111.88	121.22	130.53	144.84	
May	112.93	122.55	131.46	145.70	
Jun	113.91	123.18	132.66	145.46	

Table A22: Rural CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY18	FY19	FY20	FY21	FY22
Jul	106.30	113.30	122.22	136.36	147.28
Aug	106.37	112.96	124.56	136.84	148.34
Sep	107.54	113.01	125.55	139.51	
Oct	109.05	115.23	128.28	142.79	
Nov	109.83	115.03	130.67	144.34	
Dec	109.68	114.70	130.28	142.65	
Jan	109.60	114.68	133.42	142.23	
Feb	109.11	115.68	132.13	143.82	
Mar	109.25	118.21	132.00	144.55	
Apr	109.95	118.89	130.58	145.37	
May	110.33	119.45	131.03	145.32	
Jun	111.44	120.29	132.36	145.24	
Seasonally Adjusted Series					
Jul	106.35	113.41	122.38	136.59	147.56
Aug	106.25	112.89	124.55	136.88	148.42
Sep	107.05	112.55	125.08	139.02	
Oct	107.68	113.73	126.56	140.82	
Nov	108.36	113.41	128.75	142.14	
Dec	109.29	114.23	129.69	141.96	
Jan	109.84	114.96	133.76	142.60	
Feb	109.88	116.45	132.97	144.69	
Mar	109.77	118.73	132.53	145.10	
Apr	110.32	119.31	131.07	145.95	
May	111.36	120.60	132.31	146.75	
Jun	112.39	121.37	133.62	146.70	

Table A23: National CPI Monthly & Average Seasonal Factors						
Period	FY18	FY19	FY20	FY21	FY22	Average
Jul	100.21	100.17	100.14	100.10	100.08	100.14
Aug	100.23	100.19	100.14	100.11	100.09	100.15
Sep	100.39	100.35	100.32	100.30		100.34
Oct	100.95	100.96	100.98	101.01		100.98
Nov	100.97	101.01	101.04	101.08		101.02
Dec	99.96	100.00	100.02	100.04		100.00
Jan	99.87	99.87	99.88	99.90		99.88
Feb	99.35	99.40	99.44	99.48		99.42
Mar	99.41	99.44	99.48	99.50		99.46
Apr	99.90	99.90	99.88	99.87		99.89
May	99.42	99.41	99.40	99.40		99.41
Jun	99.36	99.33	99.28	99.22		99.30

Table A24: Urban CPI Monthly & Average Seasonal Factors						
Period	FY18	FY19	FY20	FY21	FY22	Average
Jul	100.39	100.35	100.31	100.28	100.26	100.32
Aug	100.32	100.28	100.23	100.20	100.18	100.24
Sep	100.34	100.30	100.28	100.26		100.30
Oct	100.74	100.73	100.74	100.75		100.74
Nov	100.71	100.73	100.75	100.75		100.74
Dec	99.70	99.72	99.73	99.73		99.72
Jan	99.92	99.94	99.97	100.01		99.96
Feb	99.38	99.44	99.49	99.54		99.46
Mar	99.34	99.37	99.40	99.43		99.38
Apr	100.06	100.06	100.06	100.05		100.06
May	99.64	99.64	99.64	99.65		99.64
Jun	99.50	99.47	99.42	99.37		99.44

Table A25: Rural CPI Monthly & Average Seasonal Factors						
Period	FY18	FY19	FY20	FY21	FY22	Average
Jul	99.95	99.91	99.87	99.83	99.81	99.87
Aug	100.11	100.06	100.01	99.97	99.95	100.02
Sep	100.46	100.41	100.38	100.35		100.40
Oct	101.28	101.32	101.36	101.40		101.34
Nov	101.36	101.43	101.50	101.55		101.46
Dec	100.36	100.42	100.46	100.49		100.43
Jan	99.78	99.76	99.74	99.74		99.76
Feb	99.30	99.34	99.37	99.40		99.35
Mar	99.52	99.56	99.60	99.62		99.58
Apr	99.67	99.65	99.63	99.60		99.64
May	99.07	99.05	99.03	99.03		99.05
Jun	99.15	99.11	99.06	99.01		99.08

Table A26: National CPI (Month-on-Month) Original & Seasonally Adjusted					
Original Series					
Period	FY18	FY19	FY20	FY21	FY22
Jul	0.57	1.51	1.83	2.50	1.34
Aug	0.15	-0.31	1.64	0.63	0.58
Sep	0.69	-0.03	0.77	1.53	
Oct	1.09	2.12	1.82	1.70	
Nov	0.66	-0.12	1.34	0.82	
Dec	-0.03	-0.30	-0.34	-0.68	
Jan	0.08	0.25	1.97	-0.21	
Feb	-0.26	0.87	-1.04	1.80	
Mar	0.22	2.00	0.04	0.36	
Apr	1.08	0.73	-0.84	1.03	
May	0.46	0.60	0.32	0.10	
Jun	0.83	0.48	0.82	-0.29	
Seasonally Adjusted Series					
Jul	-0.24	0.69	1.01	1.66	0.47
Aug	0.13	-0.33	1.63	0.62	0.57
Sep	0.53	-0.18	0.59	1.35	
Oct	0.53	1.50	1.15	0.98	
Nov	0.64	-0.16	1.28	0.76	
Dec	0.98	0.70	0.68	0.35	
Jan	0.17	0.38	2.11	-0.08	
Feb	0.26	1.35	-0.61	2.23	
Mar	0.16	1.95	0.00	0.34	
Apr	0.58	0.27	-1.24	0.66	
May	0.94	1.09	0.81	0.58	
Jun	0.89	0.56	0.94	-0.11	

Table A27: Urban CPI (Month-on-Month) Original & Seasonally Adjusted Series					
Original Series					
Period	FY18	FY19	FY20	FY21	FY22
Jul	0.59	1.41	1.98	2.15	1.29
Aug	0.20	-0.31	1.46	0.81	0.48
Sep	0.42	-0.08	0.75	1.26	
Oct	0.89	2.23	1.59	1.27	
Nov	0.63	-0.09	1.00	0.64	
Dec	0.05	-0.32	-0.37	-0.35	
Jan	0.18	0.43	1.68	-0.16	
Feb	-0.15	0.86	-1.09	2.27	
Mar	0.28	1.87	0.13	0.27	
Apr	1.37	0.83	-0.68	1.34	
May	0.53	0.68	0.30	0.19	
Jun	0.72	0.34	0.69	-0.45	
Seasonally Adjusted Series					
Jul	-0.26	0.56	1.12	1.28	0.39
Aug	0.27	-0.25	1.54	0.89	0.57
Sep	0.39	-0.11	0.71	1.20	
Oct	0.49	1.79	1.12	0.77	
Nov	0.65	-0.08	1.00	0.63	
Dec	1.06	0.69	0.65	0.68	
Jan	-0.04	0.21	1.44	-0.44	
Feb	0.40	1.37	-0.62	2.75	
Mar	0.33	1.94	0.22	0.38	
Apr	0.64	0.14	-1.33	0.71	
May	0.94	1.10	0.72	0.60	
Jun	0.87	0.51	0.91	-0.16	

Table A28: Rural CPI (Month-on-Month) Original & Seasonally Adjusted					
Original Series					
Period	FY18	FY19	FY20	FY21	FY22
Jul	0.54	1.67	1.60	3.02	1.40
Aug	0.07	-0.30	1.91	0.35	0.72
Sep	1.10	0.04	0.79	1.95	
Oct	1.40	1.96	2.17	2.35	
Nov	0.72	-0.17	1.86	1.09	
Dec	-0.14	-0.29	-0.30	-1.17	
Jan	-0.07	-0.02	2.41	-0.29	
Feb	-0.45	0.87	-0.97	1.12	
Mar	0.13	2.19	-0.10	0.51	
Apr	0.64	0.58	-1.08	0.57	
May	0.35	0.47	0.34	-0.03	
Jun	1.01	0.70	1.02	-0.06	
Seasonally Adjusted Series					
	FY18	FY19	FY20	FY21	FY22
Jul					
Aug	-0.21	0.90	0.83	2.22	0.59
Sep	-0.09	-0.45	1.77	0.22	0.58
Oct	0.75	-0.30	0.42	1.56	
Nov	0.58	1.05	1.18	1.29	
Dec	0.63	-0.29	1.73	0.94	
Jan	0.86	0.72	0.73	-0.13	
Feb	0.50	0.64	3.14	0.46	
Mar	0.04	1.30	-0.60	1.46	
Apr	-0.10	1.96	-0.33	0.28	
May	0.50	0.48	-1.11	0.59	
Jun	0.95	1.08	0.95	0.55	

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



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

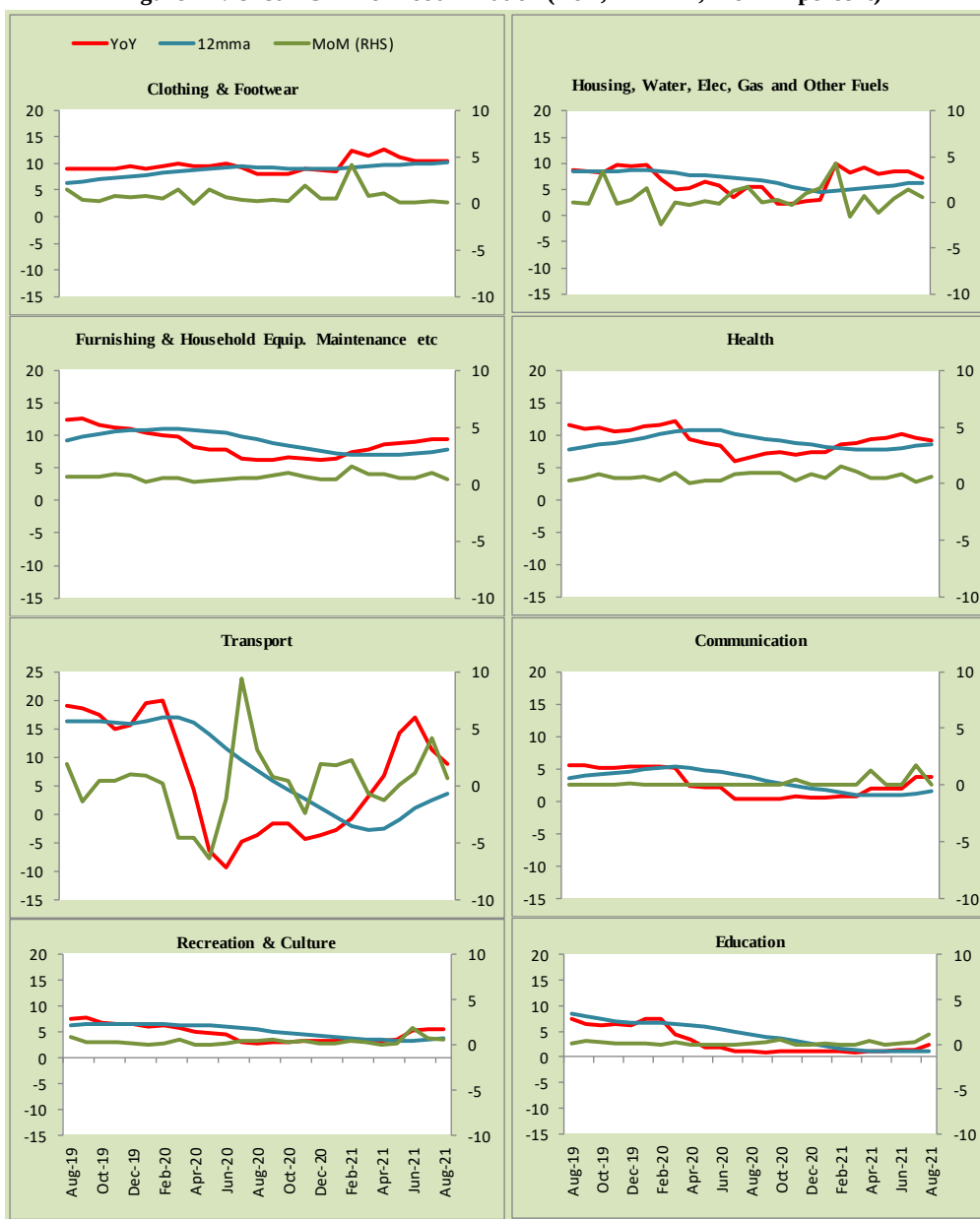


Figure A3: Rural CPI Non-food Inflation (YoY, 12MMA, MoM in percent)

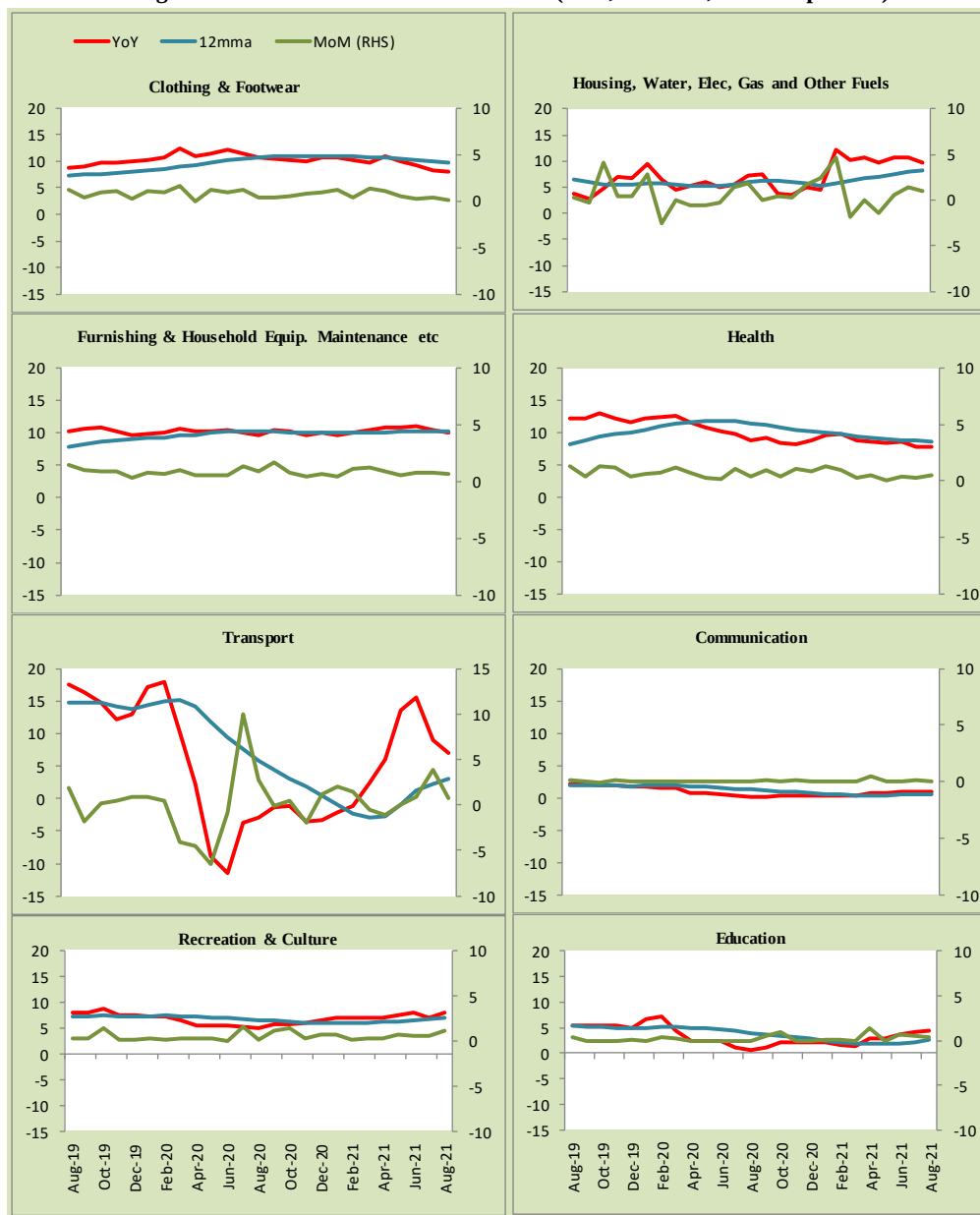
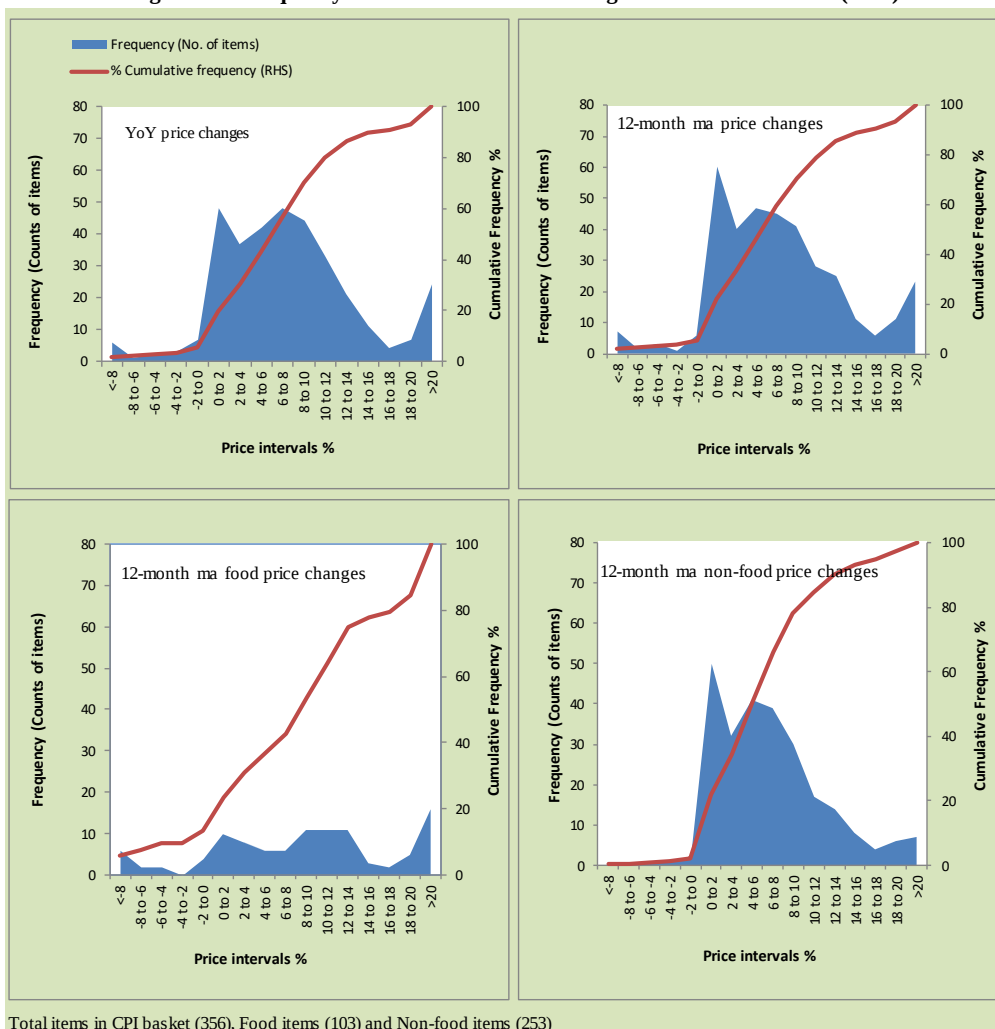


Figure A4: Frequency Distribution of Price Changes of Urban CPI Items (YoY)



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)

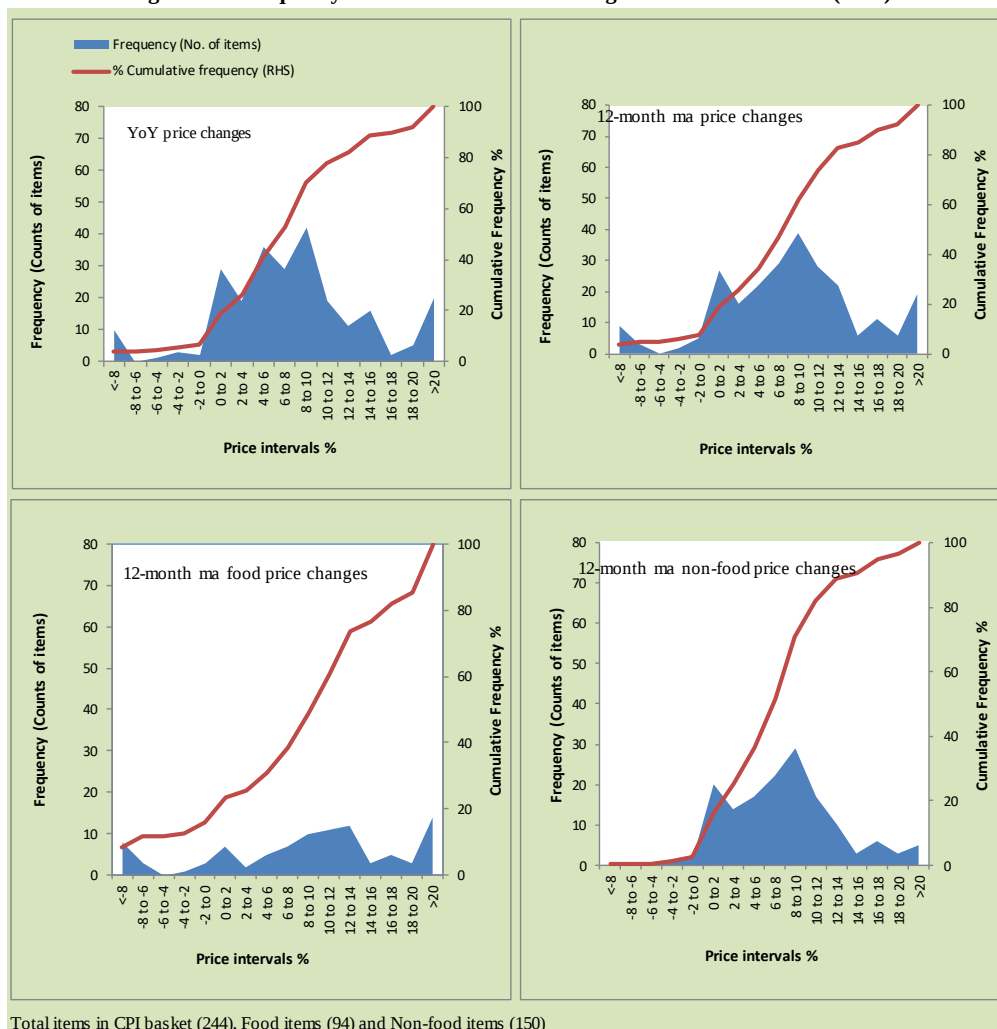
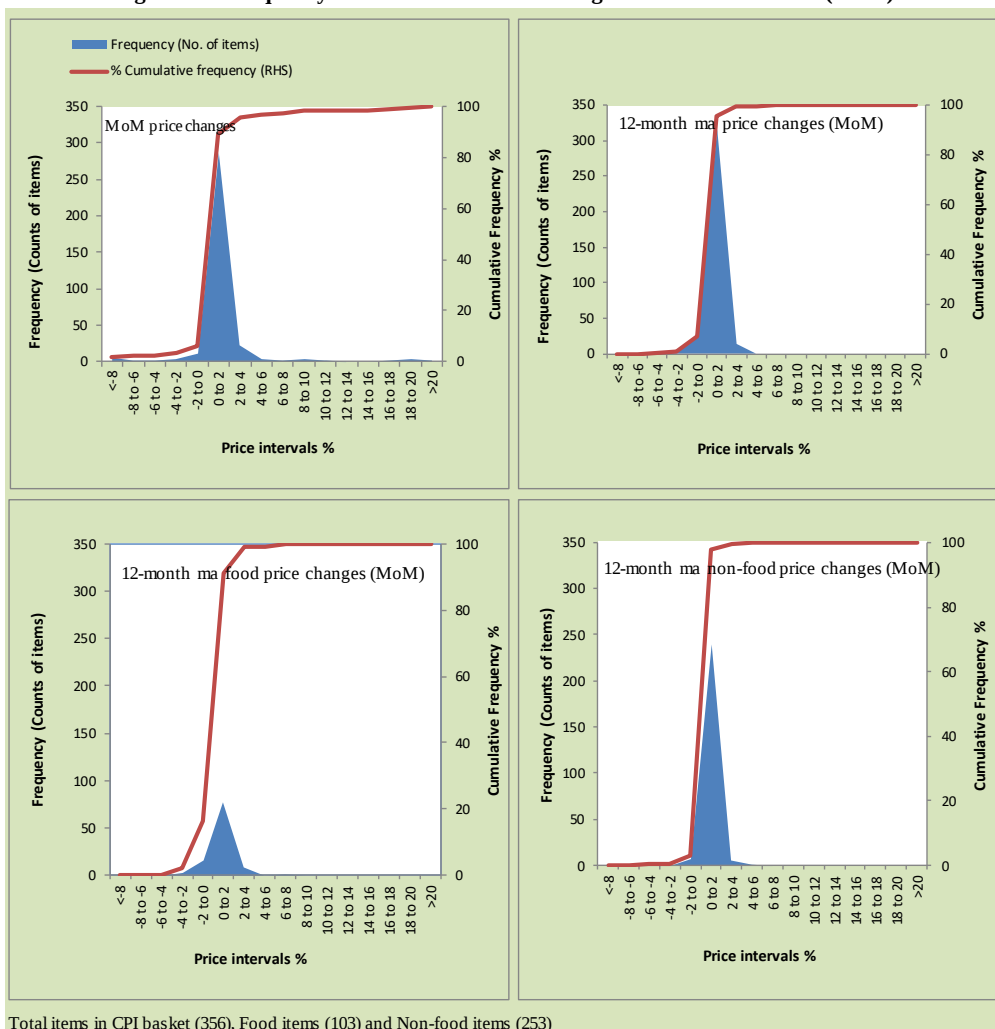


Figure A6: Frequency Distribution of Price Changes of Urban CPI Items (MoM)



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

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

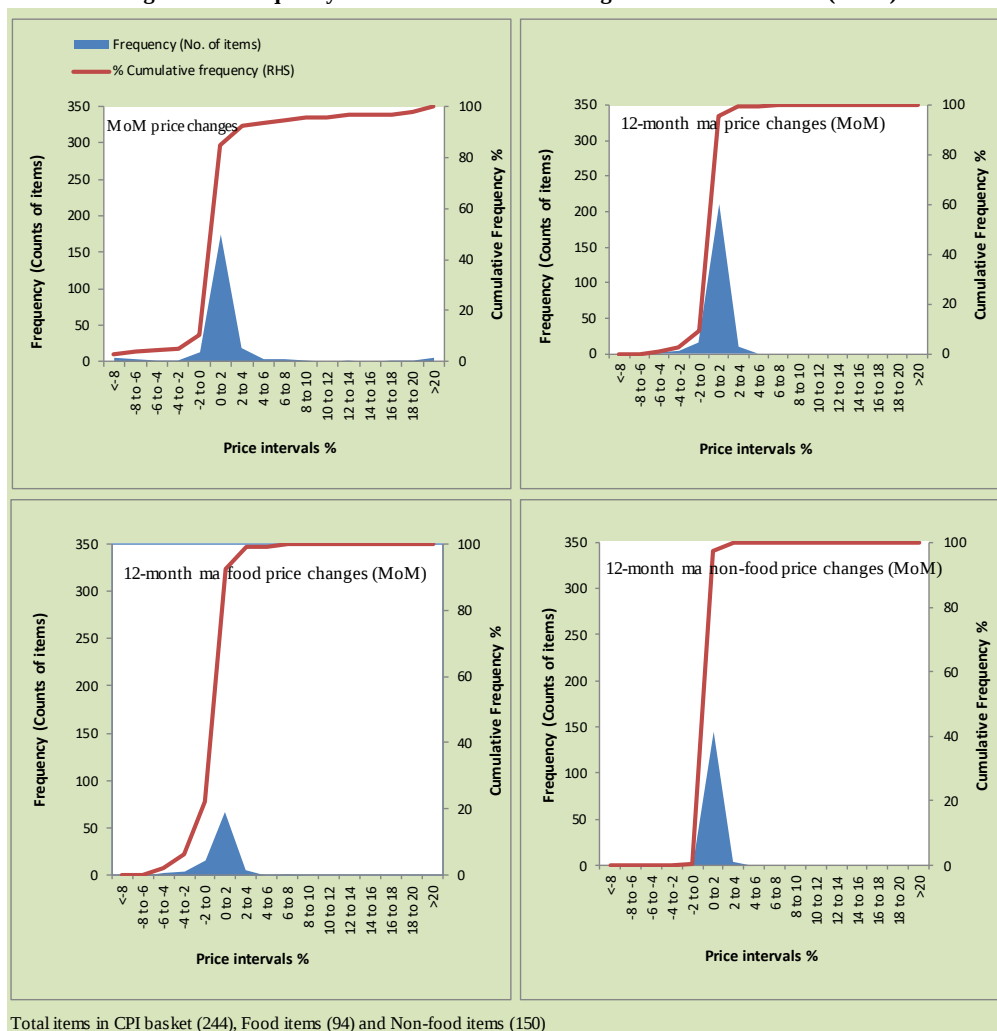
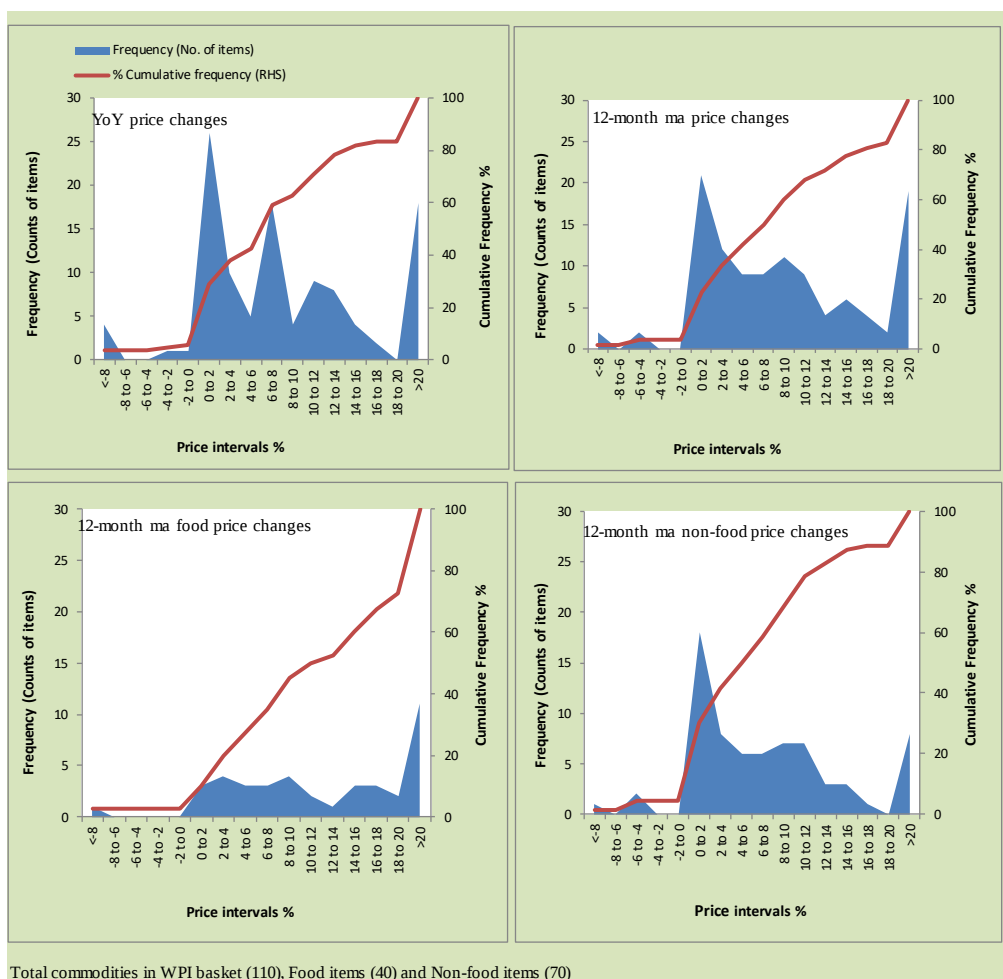


Figure A8: Frequency Distribution of Price Changes of WPI Commodities (YoY)



Annexure B

Technical Notes, Definitions and Methodologies

a) Technical Notes

1. All the three measures of inflation, viz. CPI (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 July to the given month of a fiscal year over the average index during the corresponding period of the last year. It is computed as follows:

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

Where v is the serial number of the month of July of current fiscal year in a given time series.

6. Monthly inflation is the percent change of an index in a given month over the index in the preceding month. It is computed as follows:

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

7. 12-month moving average inflation (Long-run trend inflation) is the percent change of 12-month moving average of a price index; it is computed as follows:

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

8. Core Inflation is defined as the persistent component of measured inflation that excludes volatile and controlled prices. It reflects the normal supply and demand conditions in the economy. Core inflation is computed by the following 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 indexes of individual items or sub-groups (I_{it}), i.e.

$$I_t = \sum_i w_i \cdot I_{it}$$

The weighted contribution of a single item (or a sub-group) to overall inflation is defined as below:

$$C_{it} = \alpha_{it-12} \cdot w_i \cdot \left(\frac{\pi_{it}}{\pi_t} \right)$$

Where C_{it} : Contribution of i^{th} item to the overall inflation

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

reference month

w_i : Weights of i^{th} item

π_{it} : Inflation of i^{th} item

π_t : Overall inflation

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

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

b) 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 constant¹.

Based upon item level prices data from July 2001 to February 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 analysis² suggests that IDI was a leading indicator for Pakistan's YoY inflation.

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

² Formal test shows one way 'Granger' causality from IDI to YoY inflation.