

Inflation Monitor

September 2021

(Base Year: 2015-16)



State Bank of Pakistan

Statistics & DWH Department

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1. Inflation in Brief

1. National CPI inflation is recorded at 9.0 percent on year-on-year basis in September 2021 as compared to 8.4 percent in the previous month and remained steady at 9.0 percent in comparison to the corresponding month of last year.
2. National CPI inflation on month-on-month basis is recorded at 2.1 percent in September 2021 as compared to 0.6 percent in previous month and 1.5 percent during corresponding month of last year.
3. Urban CPI inflation is recorded at 9.1 percent on year-on-year basis in September 2021 as compared to 8.3 percent in the previous month and 7.7 percent during the corresponding month of last year.
4. Urban CPI inflation on month-on-month basis is recorded at 2.0 percent in September 2021 as compared to 0.5 percent in the previous month and 1.3 percent during corresponding month of last year.
5. Rural CPI inflation is recorded at 8.8 percent on year-on year basis in September 2021 as compared to 8.4 percent during the previous month and 11.1 percent during the corresponding month of last year.
6. Rural CPI inflation on month-on-month basis is recorded at 2.3 percent in September 2021 as compared to 0.7 percent in the previous month and 2.0 percent during the corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 1.6 percent in September 2021 compared to 1.0 percent in the previous month.
7. Urban Core (trimmed) inflation on year-on-year basis is recorded at 8.7 percent in September 2021 as compared to 7.8 percent in the previous month and 7.1 percent during the corresponding month of last year.

8. On month-on-month basis, the Urban Core (trimmed) inflation is recorded at 0.9 percent in September 2021 as compared to 0.4 percent both in previous and corresponding month of last year.
9. Rural Core (trimmed) Inflation on year-on-year basis is recorded at 8.2 percent in September 2021 as compared to 7.8 percent in previous month and 10.0 percent during the corresponding month of last year.
10. On month-on-month basis, the Rural Core (trimmed) Inflation is recorded at 1.2 percent in September 2021 as compared to 0.6 percent in previous month and 0.9 percent during corresponding month of last year.
11. Urban Core (Non-food, Non-energy (NFNE)) inflation on year-on-year basis is recorded at 6.4 percent in September 2021 as compared to 6.3 percent in previous month and 5.5 percent during corresponding month of last year.
12. Urban Core (NFNE) inflation on month-on-month basis is recorded at 0.4 percent in September 2021 as compared to 0.2 percent in the previous month and 0.3 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 September 2021 as compared to same level in the previous month and 7.8 percent during the corresponding month of last year.
14. Rural Core (NFNE) inflation on month-on-month basis is recorded at 0.5 percent in September 2021 as compared to 0.2 percent in the previous month and 0.4 percent during the corresponding month of last year.
15. WPI inflation on year-on-year basis is recorded at 19.6 percent in September 2021 as compared to 17.1 percent in the previous month and 4.3 percent during the corresponding month of last year.

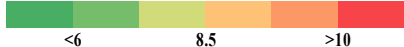
16. WPI inflation on month-on-month basis is recorded at 3.2 percent in September 2021 as compared to 1.2 percent in the previous month. It stood at 1.0 percent in the corresponding month of last year.
17. SPI inflation on year-on-year basis is recorded at 13.8 percent in September 2021 as compared to 12.7 percent in the previous month. During corresponding month of last year, SPI stood at 9.0 percent.
18. SPI inflation on month-on-month basis is recorded at 2.9 percent in September 2021 as compared to 0.9 percent in the previous month. It stood at 1.8 percent in the 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/MoM) and their important sub-indices 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. Green 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.


		Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
Headline	National	9.0	8.9	8.3	8.0	5.7	8.7	9.1	11.1	10.9	9.7	8.4	8.4	9.0
	Urban	7.7	7.3	7.0	7.0	5.0	8.6	8.7	11.0	10.8	9.6	8.7	8.3	9.1
	Rural	11.1	11.3	10.5	9.5	6.6	8.8	9.5	11.3	10.9	9.7	8.0	8.4	8.8
Food	Urban	12.4	13.9	13.0	12.6	7.3	10.3	11.5	15.7	15.3	11.0	9.4	10.2	10.8
	Rural	15.8	17.7	16.1	13.4	7.2	9.1	11.1	14.1	12.8	9.8	7.3	9.1	9.1
Core	Urban	5.5	5.6	5.6	5.6	5.4	6.4	6.3	7.0	6.8	6.7	6.9	6.3	6.4
	Rural	7.8	7.6	7.4	7.7	7.8	7.7	7.3	7.7	7.6	7.3	6.9	6.2	6.2

Source: Pakistan Bureau of Statistics and SBP staff estimates

Key 

		Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
Headline	National	1.5	1.7	0.8	-0.7	-0.2	1.8	0.4	1.0	0.1	-0.3	1.3	0.6	2.1
	Urban	1.3	1.3	0.6	-0.3	-0.2	2.3	0.3	1.3	0.2	-0.4	1.3	0.5	2.0
	Rural	2.0	2.4	1.1	-1.2	-0.3	1.1	0.5	0.6	0.0	-0.1	1.4	0.7	2.3
Food	Urban	3.0	2.8	1.6	-2.1	-2.1	1.3	1.7	2.7	1.1	-1.9	1.5	0.5	3.6
	Rural	3.8	4.3	2.0	-3.4	-2.2	0.2	1.5	0.9	0.2	-0.8	1.6	0.8	3.7
Core	Urban	0.3	0.6	0.3	0.4	0.9	1.1	0.2	0.9	0.2	0.3	0.8	0.2	0.4
	Rural	0.4	0.6	0.3	0.5	1.1	0.5	0.3	0.7	0.3	0.4	0.7	0.2	0.5

Source: Pakistan Bureau of Statistics and SBP staff estimates

Key 

Heat-map of National CPI inflation (YoY)

	Weights	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
National	100.00	9.0	8.9	8.3	8.0	5.7	8.7	9.1	11.1	10.9	9.7	8.4	8.4	9.0
Food and Non-Alcoholic Beverages	34.58	14.7	16.6	15.1	13.3	6.7	9.7	11.6	15.9	14.8	10.5	8.2	10.0	10.2
Alcoholic Beverages, Tobacco	1.02	5.9	6.0	5.9	6.0	5.8	5.7	5.9	4.9	5.0	5.0	3.1	2.1	2.0
Clothing and Footwear	8.60	9.1	9.0	9.4	9.6	9.5	11.3	10.7	11.9	10.6	10.0	9.5	9.3	9.2
Housing, Water, Elec., Gas and Other Fuels	23.63	6.1	2.7	2.6	3.4	3.4	10.6	8.8	9.7	8.4	9.1	9.2	8.0	9.7
Furnishing and Household Equipment Maintenance	4.10	7.9	8.0	7.7	7.7	7.6	8.5	8.9	9.4	9.6	9.8	9.8	9.6	9.3
Health	2.79	8.3	7.8	7.6	8.1	8.5	9.2	8.8	9.0	9.0	9.4	8.6	8.5	8.0
Transport	5.91	-1.5	-1.5	-4.1	-3.5	-2.6	-1.0	2.9	6.5	14.0	16.4	10.5	8.1	9.1
Communication	2.21	0.3	0.3	0.6	0.5	0.5	0.6	0.6	1.5	1.5	1.6	2.8	2.8	2.8
Recreation and Culture	1.59	3.9	3.9	4.2	4.4	4.6	4.8	4.6	4.6	4.9	6.2	5.9	6.4	6.9
Education	3.79	1.0	1.4	1.3	1.2	1.3	1.2	1.0	1.6	1.6	1.8	2.0	2.9	2.6
Restaurants and Hotels	6.92	8.2	8.9	9.3	9.9	8.9	8.0	8.1	8.2	8.6	8.8	8.5	7.3	7.8
Misc. Goods and Services	4.87	12.2	11.6	11.9	11.9	11.5	12.2	10.6	10.0	10.7	10.9	9.4	5.9	7.4

Source: Pakistan Bureau of Statistics and SBP staff estimates

Heat-map of Urban CPI inflation (YoY)

	Weights	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
National	100.00	7.7	7.3	7.0	7.0	5.0	8.6	8.7	11.0	10.8	9.6	8.7	8.3	9.1
Food and Non-Alcoholic Beverages	30.42	13.3	14.9	13.7	13.1	6.7	10.5	11.9	17.0	16.3	11.1	9.2	10.6	11.1
Alcoholic Beverages, Tobacco	0.85	5.7	6.2	6.7	6.6	6.2	6.3	6.9	6.0	6.1	6.1	3.8	2.8	2.6
Clothing and Footwear	8.01	8.0	8.0	9.1	8.8	8.5	12.3	11.5	12.7	11.2	10.5	10.4	10.3	10.0
Housing, Water, Elec., Gas and Other Fuels	27.03	5.5	2.3	2.2	2.8	2.9	10.0	8.2	9.3	7.9	8.4	8.5	7.2	8.9
Furnishing and Household Equipment Maintenance	4.09	6.3	6.6	6.4	6.1	6.4	7.4	7.9	8.6	8.8	8.9	9.4	9.4	9.5
Health	2.31	7.2	7.3	7.1	7.4	7.4	8.7	8.9	9.4	9.6	10.3	9.5	9.1	8.7
Transport	6.14	-1.6	-1.7	-4.5	-3.6	-2.8	-0.8	3.2	6.8	14.2	17.0	11.4	8.8	9.7
Communication	2.35	0.3	0.3	0.7	0.6	0.6	0.7	0.7	1.9	1.9	2.0	3.8	3.8	3.8
Recreation and Culture	1.73	2.9	2.9	3.2	3.3	3.3	3.6	3.3	3.2	3.4	5.1	5.4	5.5	6.3
Education	4.88	0.9	1.2	1.1	1.0	1.1	1.1	0.9	1.2	1.2	1.3	1.5	2.5	2.3
Restaurants and Hotels	7.41	8.2	8.8	9.3	10.0	8.7	7.9	8.4	8.5	9.1	9.4	9.5	7.6	8.5
Misc. Goods and Services	4.77	10.5	9.7	10.4	10.6	10.4	11.8	10.3	9.8	10.8	10.9	9.2	6.1	8.0

Source: Pakistan Bureau of Statistics and SBP staff estimates

Heat-map of Rural CPI inflation (YoY)

	Weights	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
National	100.00	11.1	11.3	10.5	9.5	6.6	8.8	9.5	11.3	10.9	9.7	8.0	8.4	8.8
Food and Non-Alcoholic Beverages	40.87	16.4	18.4	16.7	13.5	6.6	8.9	11.2	14.7	13.2	9.8	7.2	9.3	9.3
Alcoholic Beverages, Tobacco	1.28	6.1	5.7	5.0	5.4	5.3	5.0	4.8	3.7	3.8	3.8	2.4	1.4	1.3
Clothing and Footwear	9.48	10.5	10.1	9.9	10.6	10.7	10.1	9.7	10.8	10.0	9.3	8.4	8.1	8.2
Housing, Water, Elec., Gas and Other Fuels	18.49	7.4	3.7	3.6	4.9	4.5	12.2	10.1	10.7	9.7	10.7	10.6	9.7	11.6
Furnishing and Household Equipment Maintenance	4.10	10.3	10.1	9.6	10.0	9.5	10.0	10.3	10.8	10.8	11.0	10.3	10.0	8.9
Health	3.51	9.3	8.3	8.2	8.8	9.6	9.8	8.8	8.6	8.4	8.6	7.7	7.8	7.3
Transport	5.56	-1.4	-1.1	-3.5	-3.3	-2.2	-1.2	2.4	6.1	13.5	15.5	9.0	6.9	8.2
Communication	1.99	0.2	0.4	0.4	0.4	0.4	0.3	0.4	0.8	0.8	0.8	1.0	1.0	0.9
Recreation and Culture	1.38	5.8	5.7	6.0	6.6	7.0	7.0	7.0	7.0	7.5	8.0	6.9	8.0	7.9
Education	2.13	1.2	2.1	2.1	2.0	2.1	1.8	1.5	2.9	2.9	3.6	4.1	4.5	4.1
Restaurants and Hotels	6.19	8.4	9.0	9.3	9.6	9.3	8.2	7.7	7.6	7.6	7.7	6.8	6.9	6.6
Misc. Goods and Services	5.02	14.5	14.3	14.1	13.8	13.2	12.8	11.1	10.3	10.6	10.9	9.5	5.7	6.5

Source: Pakistan Bureau of Statistics and SBP staff estimates

Inflation Monitor, September 2021

Heat-map of National CPI inflation (MoM)														
	Weights	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
National	100.00	1.5	1.7	0.8	-0.7	-0.2	1.8	0.4	1.0	0.1	-0.3	1.3	0.6	2.1
Food and Non-Alcoholic Beverages	34.58	3.8	3.9	1.9	-3.2	-2.7	0.8	1.7	2.2	0.7	-1.8	1.8	0.7	4.0
Alcoholic Beverages, Tobacco	1.02	0.5	0.4	0.3	0.2	0.1	0.2	0.3	-0.1	0.2	0.2	-0.1	0.0	0.4
Clothing and Footwear	8.60	0.4	0.4	1.4	0.7	0.8	2.4	1.0	1.0	0.3	0.2	0.3	0.1	0.2
Housing, Water, Elec., Gas and Other Fuels	23.63	0.0	0.4	-0.1	1.2	1.9	4.4	-1.7	0.5	-1.2	0.4	1.4	0.7	1.6
Furnishing and Household Equipment Maintenance	4.10	1.1	0.9	0.5	0.5	0.4	1.4	1.0	0.9	0.5	0.6	0.9	0.5	0.8
Health	2.79	1.0	0.7	0.6	0.9	0.9	1.2	0.7	0.5	0.3	0.6	0.3	0.6	0.5
Transport	5.91	0.4	0.4	-2.2	1.6	1.9	1.9	-0.7	-1.2	0.1	1.1	4.0	0.7	1.3
Communication	2.21	0.0	0.0	0.3	0.0	0.0	0.0	1.0	0.0	0.0	1.2	0.0	0.0	0.0
Recreation and Culture	1.59	0.8	0.6	0.4	0.4	0.3	0.3	0.3	0.1	0.4	1.3	0.6	0.8	1.2
Education	3.79	0.3	0.5	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.2	0.2	0.9	0.0
Restaurants and Hotels	6.92	0.7	0.9	1.0	0.6	0.6	0.4	0.7	0.2	0.6	0.7	0.3	0.3	1.1
Misc. Goods and Services	4.87	0.0	0.1	0.7	0.2	1.0	1.3	-0.5	0.4	0.7	1.0	0.6	0.3	1.4

Source: Pakistan Bureau of Statistics and SBP staff estimates

<0.00 0.75 >1.50

Heat-map of Urban CPI inflation (MoM)														
	Weights	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
National	100.00	1.3	1.3	0.6	-0.3	-0.2	2.3	0.3	1.3	0.2	-0.4	1.3	0.5	2.0
Food and Non-Alcoholic Beverages	30.42	3.5	3.2	1.7	-2.6	-2.7	1.5	1.8	3.2	1.1	-2.5	1.7	0.5	4.0
Alcoholic Beverages, Tobacco	0.85	0.4	0.7	0.5	0.0	0.0	0.2	0.6	0.1	0.2	0.1	0.0	0.0	0.2
Clothing and Footwear	8.01	0.4	0.3	1.9	0.5	0.5	4.1	0.7	1.1	0.1	0.1	0.2	0.1	0.1
Housing, Water, Elec., Gas and Other Fuels	27.03	0.0	0.3	-0.3	0.9	1.6	4.2	-1.6	0.7	-1.1	0.4	1.4	0.5	1.6
Furnishing and Household Equipment Maintenance	4.09	0.7	1.0	0.6	0.5	0.5	1.6	0.9	0.8	0.5	0.5	1.0	0.4	0.8
Health	2.31	1.0	0.9	0.2	0.9	0.6	1.5	1.1	0.5	0.5	0.8	0.2	0.6	0.6
Transport	6.14	0.7	0.4	-2.4	1.9	1.8	2.2	-0.7	-1.2	0.1	1.1	4.1	0.7	1.5
Communication	2.35	0.0	0.0	0.4	0.1	0.1	0.0	1.3	0.0	0.0	1.7	0.0	0.0	0.0
Recreation and Culture	1.73	0.6	0.2	0.4	0.2	0.1	0.3	0.3	0.0	0.2	1.8	0.7	0.6	1.3
Education	4.88	0.3	0.5	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.1	0.2	1.1	0.0
Restaurants and Hotels	7.41	0.6	0.8	0.9	0.7	0.7	0.4	1.1	0.2	0.6	0.8	0.4	0.1	1.4
Misc. Goods and Services	4.77	-0.4	-0.2	0.9	0.4	1.0	1.6	-0.3	0.6	0.8	0.9	0.1	0.5	1.4

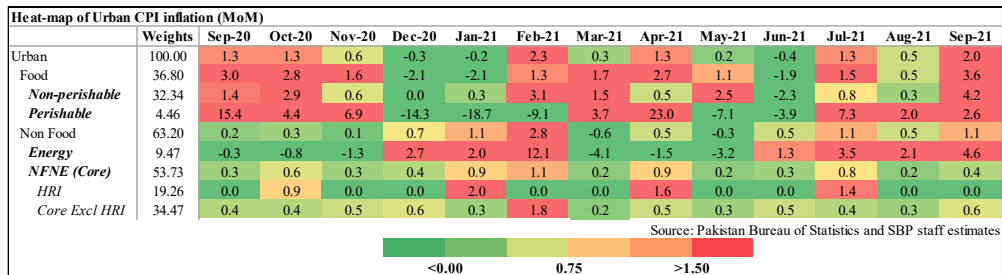
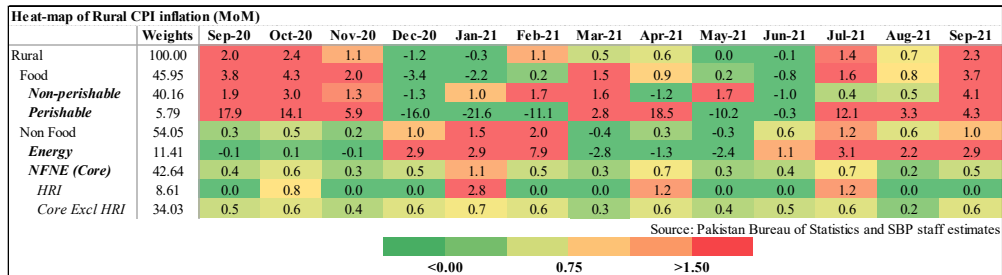
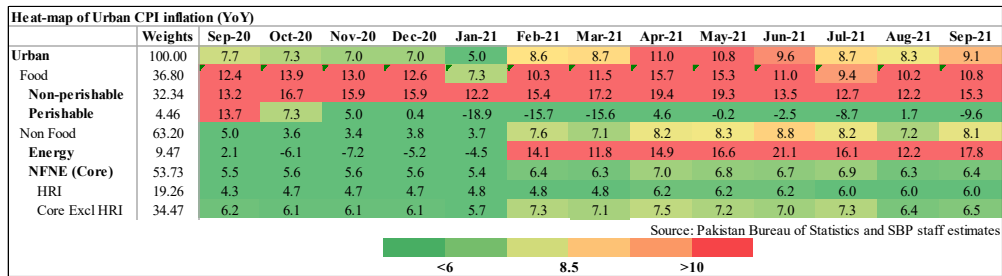
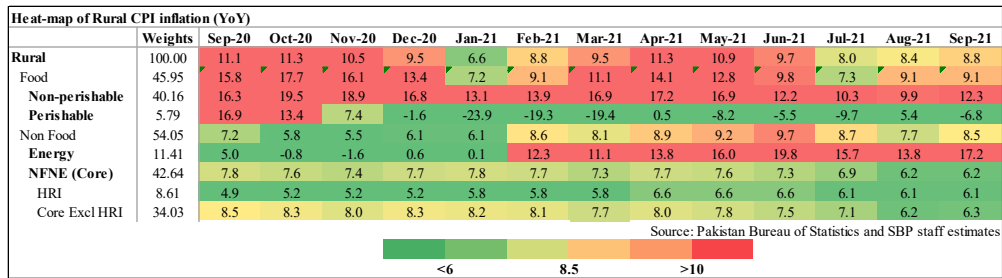
Source: Pakistan Bureau of Statistics and SBP staff estimates

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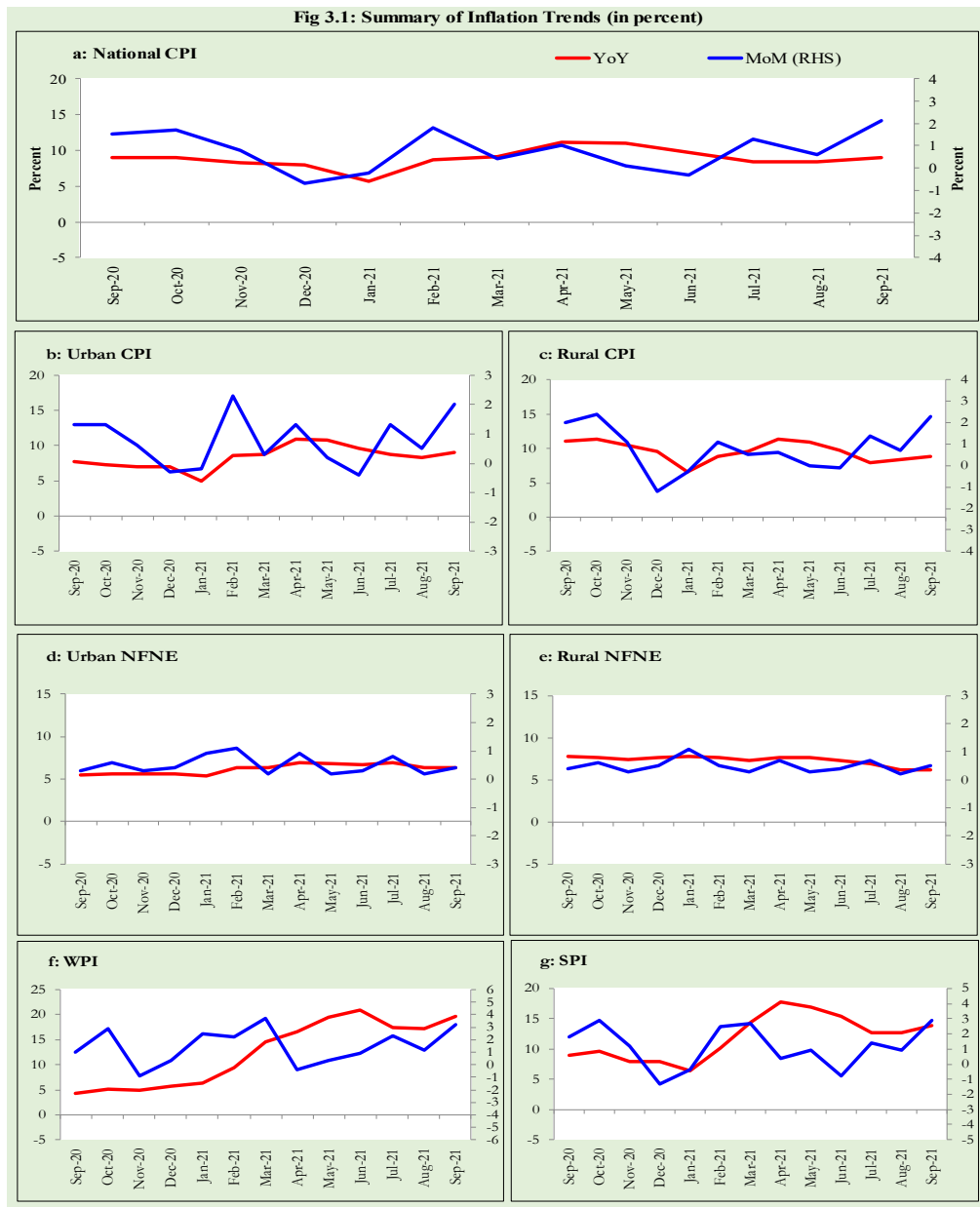
Heat-map of Rural CPI inflation (MoM)														
	Weights	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
National	100.00	2.0	2.4	1.1	-1.2	-0.3	1.1	0.5	0.6	0.0	-0.1	1.4	0.7	2.3
Food and Non-Alcoholic Beverages	40.87	4.1	4.7	2.1	-3.9	-2.6	0.1	1.7	1.0	0.2	-0.9	1.8	0.9	4.1
Alcoholic Beverages, Tobacco	1.28	0.7	0.2	0.0	0.4	0.2	0.1	0.0	-0.4	0.1	0.3	-0.1	0.0	0.6
Clothing and Footwear	9.48	0.3	0.6	0.9	0.9	1.2	0.3	1.3	1.0	0.5	0.3	0.4	0.1	0.4
Housing, Water, Elec., Gas and Other Fuels	18.49	0.0	0.5	0.3	1.7	2.5	4.6	-1.8	0.0	-1.4	0.6	1.4	1.0	1.7
Furnishing and Household Equipment Maintenance	4.10	1.7	0.7	0.4	0.6	0.4	1.1	1.2	0.9	0.6	0.7	0.7	0.6	0.7
Health	3.51	0.9	0.4	1.0	0.9	1.3	0.9	0.3	0.5	0.1	0.3	0.3	0.5	0.4
Transport	5.56	-0.2	0.4	-2.0	1.2	2.0	1.5	-0.6	-1.2	0.1	0.9	3.9	0.8	1.0
Communication	1.99	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.2	0.0	0.0
Recreation and Culture	1.38	1.1	1.3	0.3	0.8	0.7	0.1	0.2	0.2	0.7	0.5	0.5	1.2	1.1
Education	2.13	0.4	0.9	0.0	0.0	0.1	0.1	0.0	1.4	0.0	0.7	0.5	0.4	0.0
Restaurants and Hotels	6.19	1.0	0.9	1.0	0.5	0.6	0.4	0.1	0.2	0.5	0.5	0.3	0.7	0.6
Misc. Goods and Services	5.02	0.4	0.5	0.4	-0.1	1.0	0.9	-0.7	0.2	0.5	1.1	1.2	0.1	1.3

Source: Pakistan Bureau of Statistics and SBP staff estimates

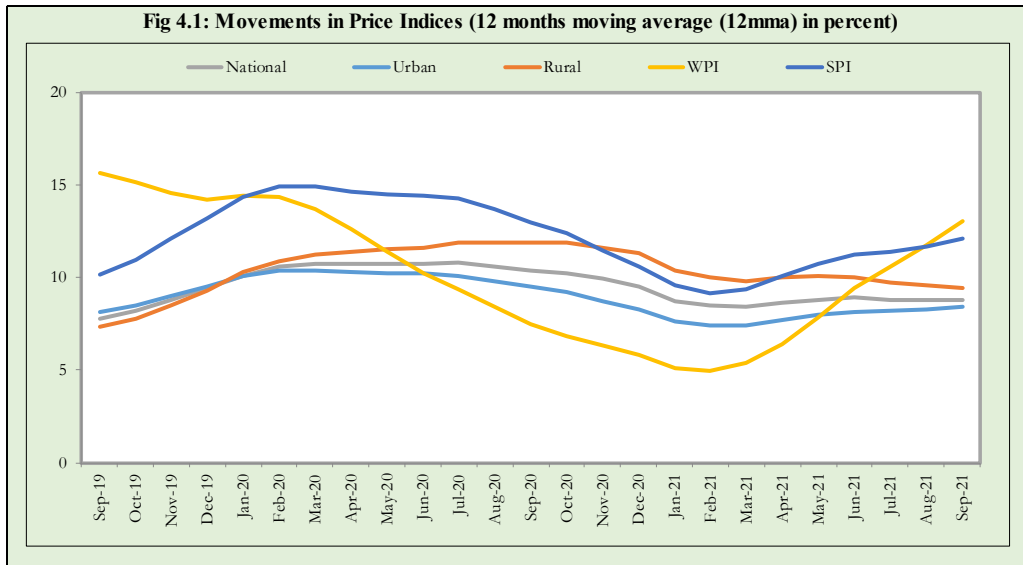
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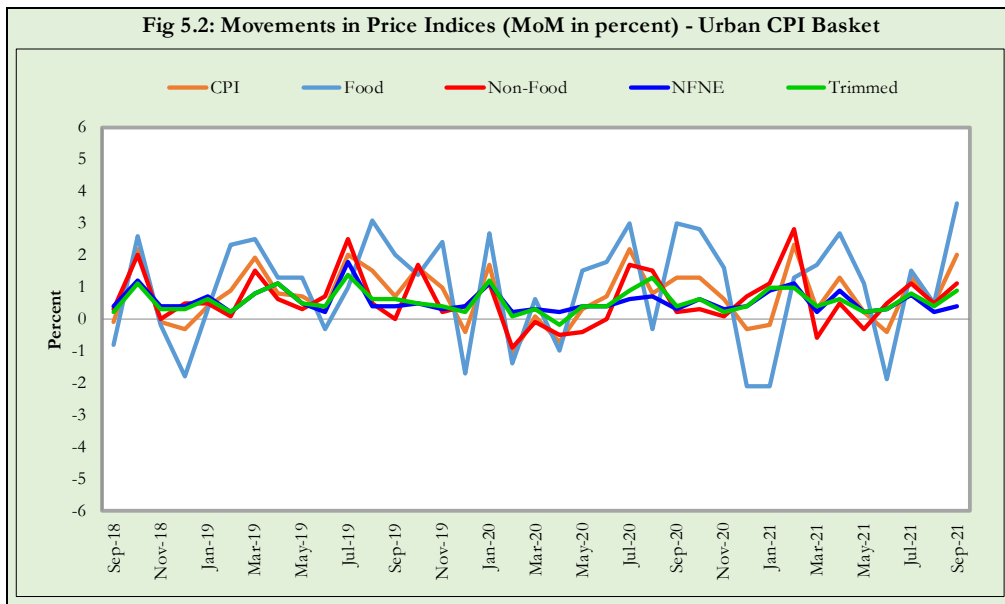
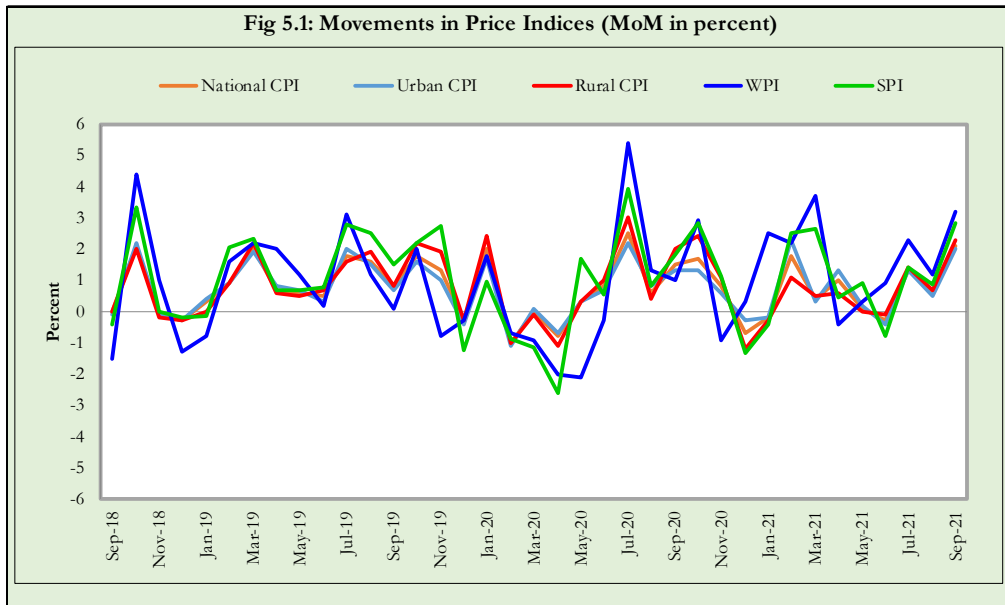
3. Trends in Inflation

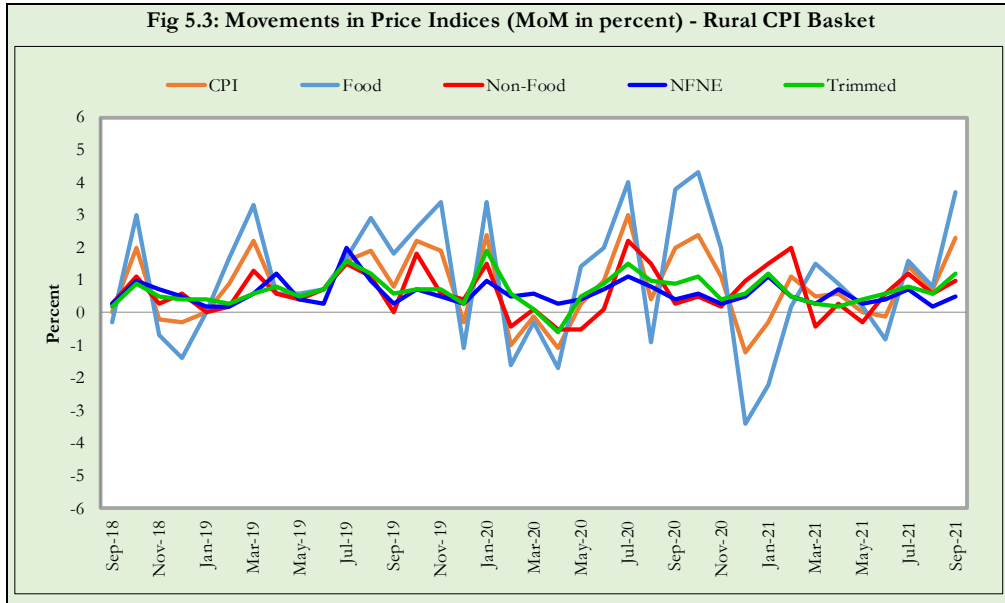


4. Movement in Price Indices (Moving Averages)



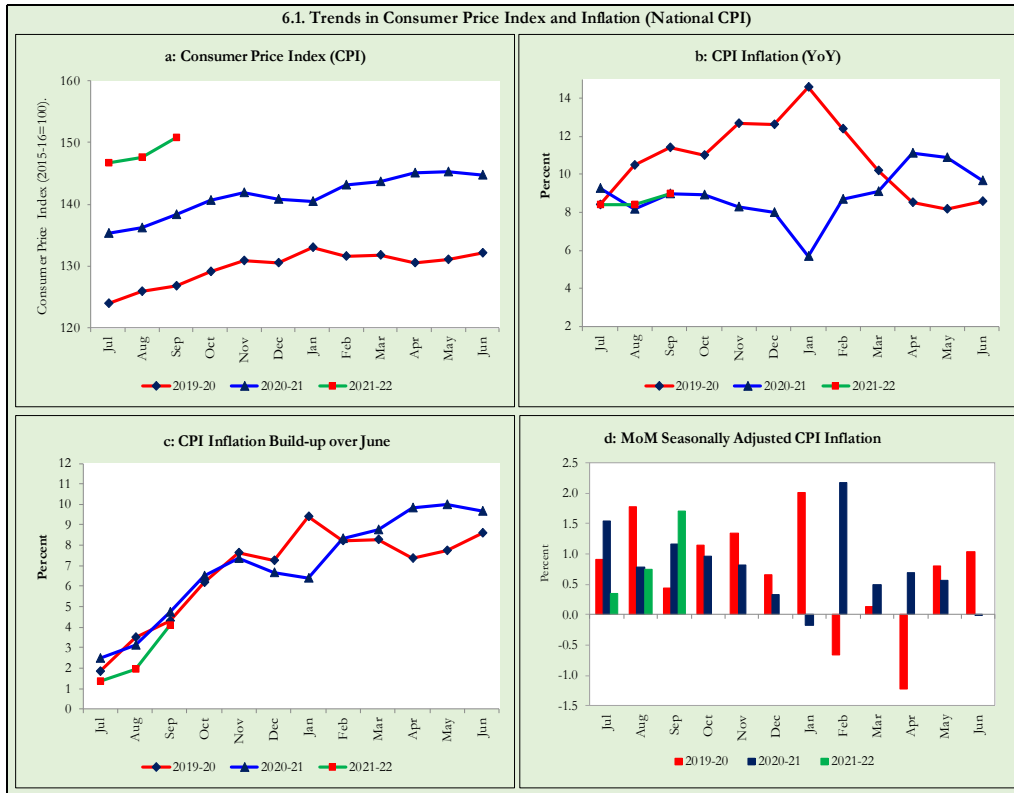
5. Movement in Price Indices (Month-on-Month)



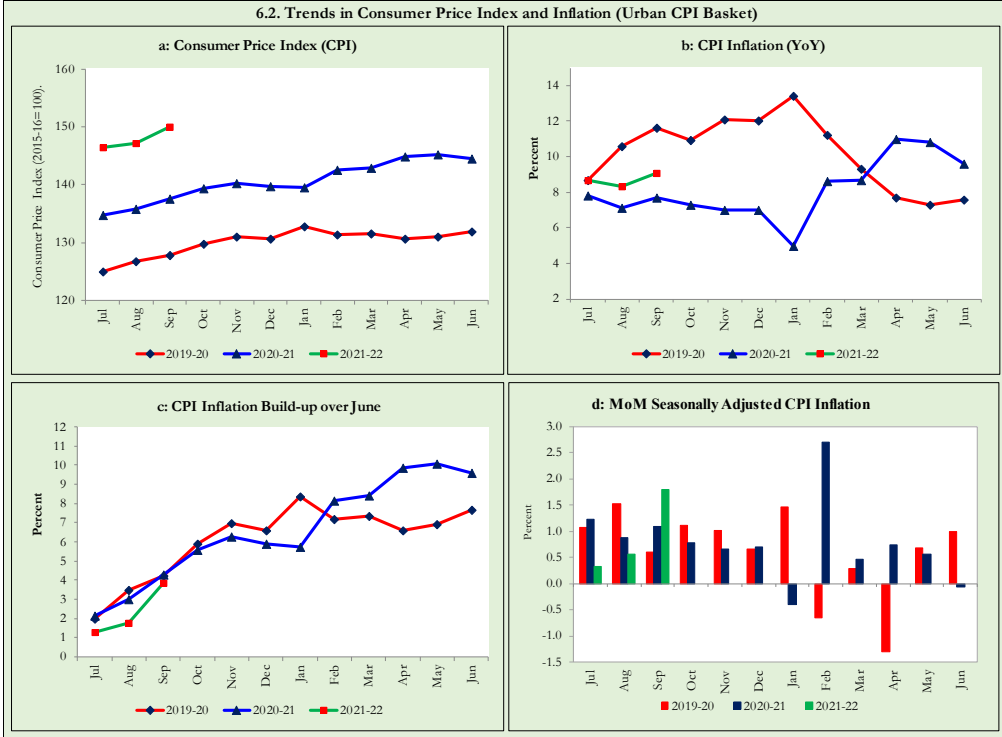


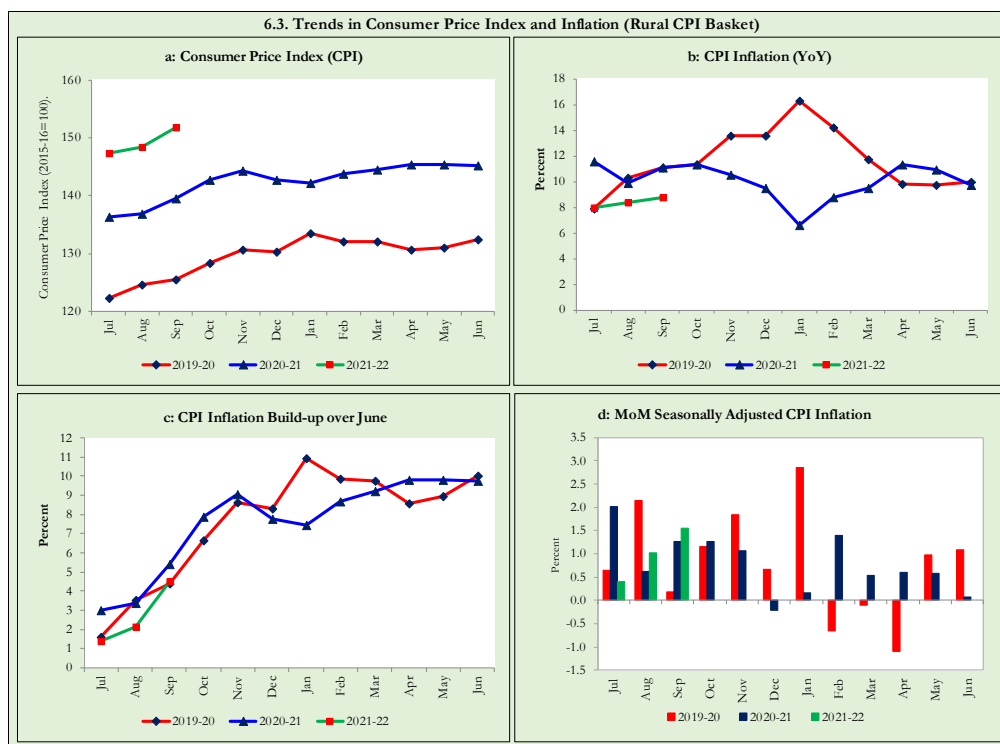
6. Trends in Consumer Price Indices and Inflation

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



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





7. Weighted Contribution

The weighted contribution of food group in the overall urban CPI inflation slightly decreased to 44.7 percent during September 2021 from 45.7 percent in previous month. It was 58.8 percent during corresponding month of last year. The weighted contribution of non-food group increased to 55.3 percent in September 2021 from 54.3 percent in previous month. Weighted Contribution of non-food was 41.2 percent during corresponding month of last year. Table 7.1 provide the historical perspective of weighted contribution of food and non-food group and their respective sub-indices (Perishable food, Non-Perishable food, Energy, Core Inflation (NFNE), NFNE excluding HRI and HRI) in the overall inflation for urban basket.

Period	Overall CPI	Food Group			Non-Food Group				
		Food	Perishable food	Non- Perishable food	Non-food	Energy	Core Inflation (NFNE)	NFNE excl HRI	HRI
		a=(b+e)	b=(c+d)	c	d	e=(f+g)	f	g=(h+i)	h
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	46.8	-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	10.3
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	57.1	19.4	37.8	25.5	12.3
Jul-21	100	40.8	-5.2	46.0	59.2	17.3	41.9	28.7	13.2
Aug-21	100	45.7	1.0	44.7	54.3	14.3	40.0	26.4	13.6
Sep-21	100	44.7	-5.6	50.4	55.3	18.7	36.7	24.4	12.3

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 also decreased to 49.5 percent during September 2021 from 51.1 percent in previous month. It was 65.2 percent during corresponding month of last year. The weighted contribution of non-food group increased to 50.4 percent in September 2021 from 48.8 percent in previous month. Weighted contribution of non-food group was 34.8 percent during corresponding month of last year. Table 7.2 provide the historical perspective of weighted contribution of food (Perishable food, Non-Perishable food) and non-food group (Energy, Core Inflation (NFNE), NFNE excluding HRI and HRI) in the overall inflation for rural basket.

Table 7.2 Weighted Contribution (in percent) to Rural CPI Inflation (YoY)

Period	Overall CPI	Food Group			Non-Food Group				
		Food	Perishable food	Non-Perishable food	Non-food	Energy	Core Inflation (NFNE)	NFNE excl HRI	HRI
		a=(b+c)	b=(c+d)	c	d	e=(f+g)	f	g=(h+i)	h
Sep-20	100	65.2	9.7	55.5	34.8	5.0	29.8	26.0	3.8
Oct-20	100	72.2	8.8	63.4	27.8	-0.8	28.6	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	51.1	-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	57.7	0.3	57.4	42.3	13.2	29.1	24.1	5.0
May-21	100	54.9	-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
Sep-21	100	49.5	-5.2	54.8	50.4	20.8	29.6	24.0	5.6

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.

Table 8.1(a) Inflation Diffusion Index for Urban CPI Basket - based on MoM change													
	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
General	63.2	57.0	50.8	41.9	53.4	59.8	56.2	43.3	42.1	47.2	52.2	51.7	57.6
Food & Non-Alcoholic Beverages	62.2	51.1	28.9	-1.1	44.4	47.8	54.4	24.4	28.9	30.0	38.9	40.0	55.6
Alcoholic Beverages & Tobacco	66.7	33.3	66.7	-33.3	33.3	66.7	33.3	33.3	66.7	33.3	0.0	0.0	33.3
Clothing & Footwear	72.5	75.0	75.0	72.5	65.0	85.0	70.0	67.5	55.0	47.5	47.5	45.0	50.0
Housing, Water, Elect, Gas & other Fuels	6.9	6.9	6.9	51.7	6.9	31.0	17.2	20.7	-6.9	27.6	58.6	41.4	58.6
Furnishing & Household Equip. Maintenance etc.	88.1	85.7	85.7	81.0	92.9	90.5	92.9	73.8	81.0	71.4	83.3	78.6	83.3
Health	77.4	64.5	67.7	54.8	71.0	90.3	87.1	77.4	61.3	64.5	54.8	74.2	54.8
Transport	40.6	40.6	31.3	40.6	43.8	50.0	28.1	18.8	25.0	31.3	37.5	46.9	40.6
Communication	20.0	40.0	40.0	20.0	40.0	20.0	20.0	40.0	0.0	20.0	60.0	20.0	20.0
Recreation & Culture	68.0	48.0	64.0	48.0	32.0	36.0	28.0	12.0	24.0	64.0	68.0	56.0	48.0
Education	68.8	43.8	12.5	0.0	18.8	6.3	0.0	31.3	0.0	25.0	25.0	25.0	25.0
Restaurant & Hotels	78.6	85.7	85.7	78.6	71.4	71.4	85.7	57.1	85.7	71.4	71.4	57.1	64.3
Miscellaneous	75.9	75.9	75.9	65.5	79.3	75.9	75.9	65.5	79.3	75.9	58.6	69.0	89.7
NFNE	68.5	63.8	62.6	55.3	59.1	63.8	63.0	57.0	51.1	54.9	57.4	56.2	59.1

Table 8.1(b) Inflation Diffusion Index for Rural CPI Basket - based on MoM change													
	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
General	55.3	58.2	37.7	34.8	39.3	45.5	46.7	35.2	32.0	43.9	44.3	41.0	54.1
Food & Non-Alcoholic Beverages	51.9	54.4	10.1	1.3	29.1	24.1	54.4	15.2	13.9	20.3	29.1	27.8	41.8
Alcoholic Beverages & Tobacco	80.0	60.0	20.0	20.0	40.0	40.0	-20.0	40.0	60.0	60.0	-20.0	0.0	40.0
Clothing & Footwear	59.3	66.7	85.2	77.8	59.3	59.3	81.5	55.6	74.1	44.4	55.6	25.9	74.1
Housing, Water, Elect, Gas & other Fuels	26.1	26.1	17.4	39.1	30.4	56.5	-17.4	17.4	-13.0	39.1	73.9	60.9	65.2
Furnishing & Household Equip. Maintenance etc.	69.2	84.6	42.3	69.2	46.2	88.5	88.5	61.5	61.5	76.9	80.8	61.5	57.7
Health	85.7	42.9	64.3	42.9	57.1	78.6	57.1	64.3	42.9	78.6	14.3	64.3	42.9
Transport	31.3	43.8	18.8	37.5	31.3	50.0	31.3	18.8	37.5	68.8	62.5	43.8	62.5
Communication	20.0	20.0	40.0	0.0	0.0	0.0	20.0	20.0	0.0	20.0	40.0	20.0	0.0
Recreation & Culture	61.5	61.5	46.2	61.5	23.1	23.1	23.1	30.8	23.1	38.5	30.8	53.8	53.8
Education	60.0	100.0	0.0	0.0	20.0	20.0	0.0	80.0	0.0	60.0	80.0	60.0	0.0
Restaurant & Hotels	50.0	71.4	78.6	64.3	42.9	42.9	21.4	42.9	57.1	28.6	28.6	28.6	64.3
Miscellaneous	82.4	76.5	82.4	35.3	76.5	52.9	64.7	58.8	47.1	70.6	41.2	58.8	88.2
NFNE	64.0	64.7	55.9	47.1	47.8	54.4	53.7	55.9	46.3	59.6	53.7	47.8	57.4

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

9. Domestic Commodity Prices

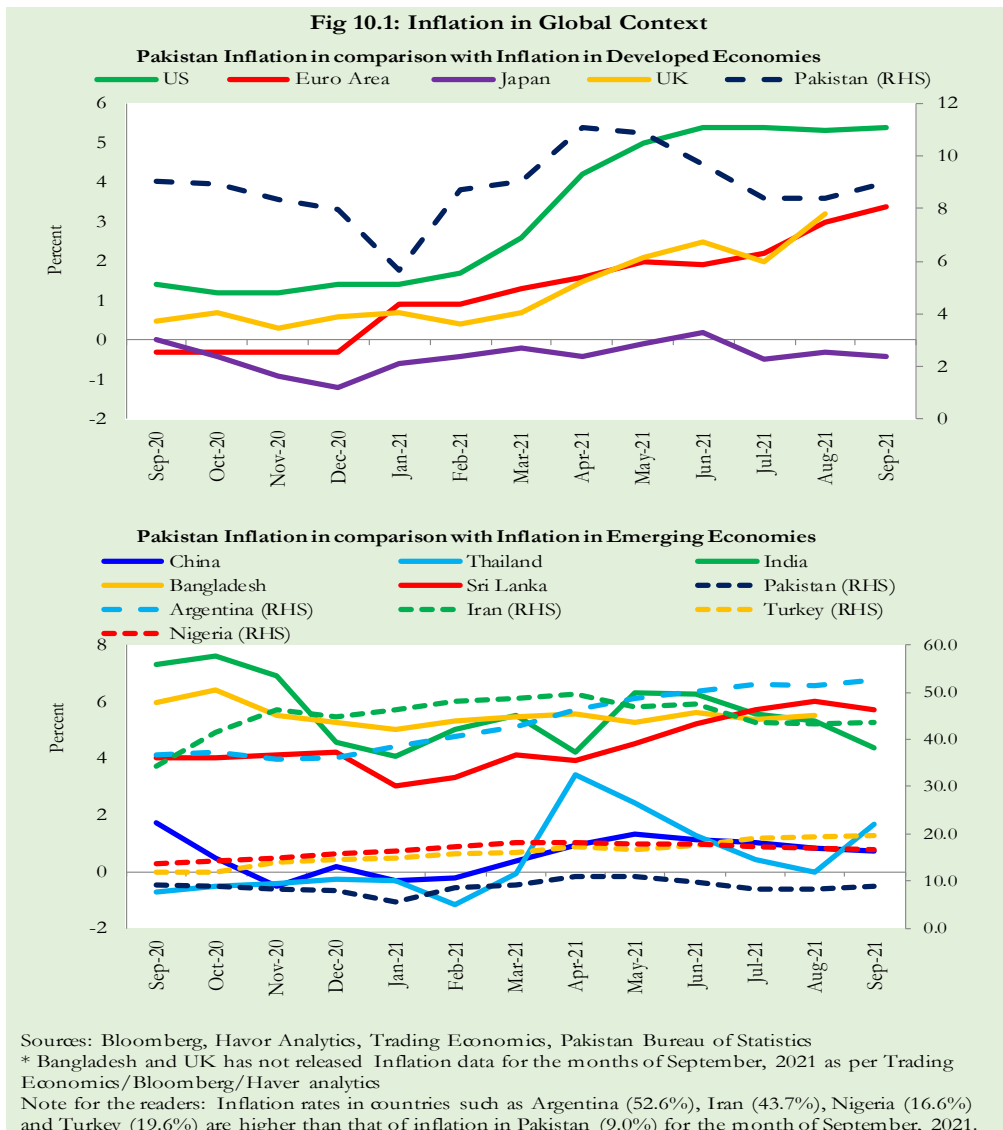
Inflation in domestic food commodities (YoY and MoM in percent) for selected essential food items covering both urban and rural CPI baskets is given in table 9.1.

S. No	Item	Unit	Urban CPI		Rural CPI	
			YoY	MoM	YoY	MoM
1	Wheat	10 Kg	5.8	7.3	3.3	7.0
2	Wheat Flour Bag	20 Kg	22.0	9.5	18.3	10.0
3	Rice Basmati Broken (Superior/Average Quality) *	1 Kg	-0.1	-0.1	9.0	0.4
4	Beef with Bone (Average Quality)	1 Kg	15.8	3.6	17.8	2.3
5	Mutton (Average Quality)	1 Kg	15.8	0.3	18.3	0.3
6	Chicken Farm Broiler (Live)	1 Kg	44.6	42.0	49.4	47.9
7	Milk Fresh (Un-Boiled)	1 Liter	9.8	0.1	7.3	0.0
8	Eggs Farm	Dozen	34.5	14.4	32.5	11.8
9	Vegetable Ghee Dalda/Habib Or Other Superior Quality 1 Kg Pouch	Each	41.0	3.6	43.0	3.0
10	Pulse Masoor (Washed)	1 Kg	18.6	15.7	21.4	18.5
11	Pulse Moong (Washed)	1 Kg	-23.2	-4.0	-27.8	-2.8
12	Pulse Mash (Washed)	1 Kg	6.8	3.8	3.0	1.5
13	Pulse Gram	1 Kg	6.1	4.3	7.2	5.4
14	Potatoes	1 Kg	-26.9	-2.7	-23.0	-5.7
15	Onions	1 Kg	14.1	32.5	32.3	39.6
16	Tomatoes	1 Kg	-23.9	-18.9	-16.6	-8.6
17	Sugar Refined	1 Kg	15.3	3.0	13.9	2.8
18	Garlic (Lehsun)	1 Kg	3.6	10.0	19.8	9.8
19	Ginger (Adrak)	500 Gm	-26.5	1.6	-28.0	4.4
20	Tea Lipton Yellow Label 190 Gm Packet	Each	2.8	2.8	1.4	1.3

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

10. Inflation in Global Context

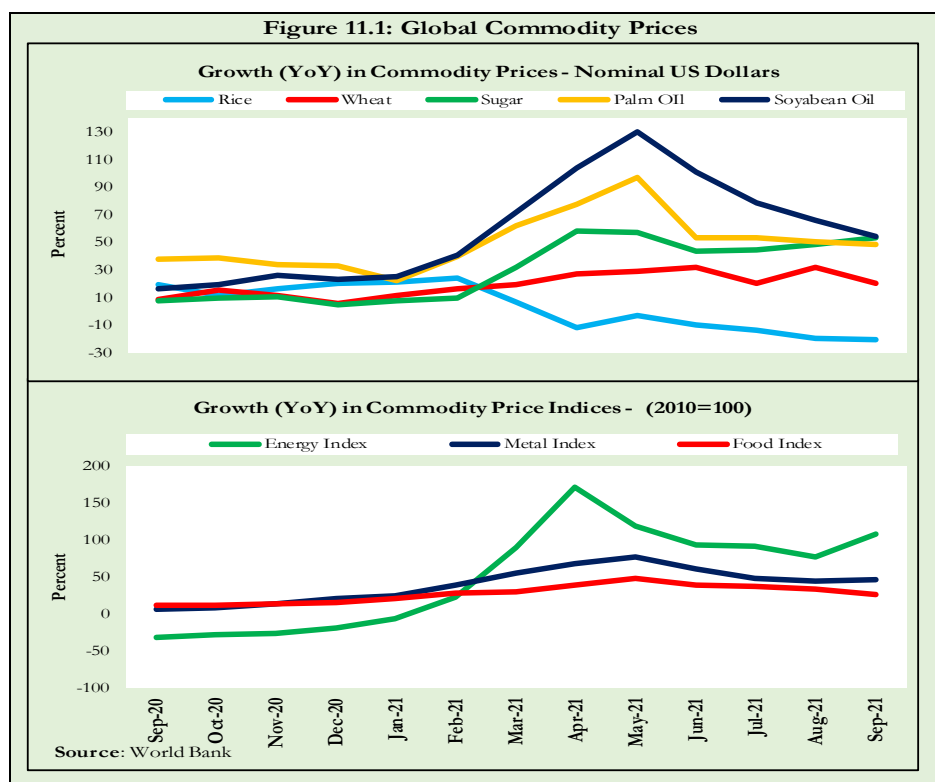
In global context, Pakistan’s inflation in comparison with inflation in selected developed and emerging economies is given in figure 10.1.



11. Global Commodity Prices

Global commodity prices and various group 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	Sep-20		Aug-21		Sep-21	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	11.4	3.5	33.3	-0.2	26.9	-1.5
Metals	5.9	1.9	44.6	1.3	45.7	2.7
Energy	-30.7	-5.2	77.9	-2.1	108.0	10.9
Agricultural	10.2	2.5	24.9	0.7	21.0	-0.7
Cotton	-0.7	1.2	44.8	3.7	46.4	2.3



12. Seasonal Adjustment in CPI

Seasonal adjustment is the process of estimating and removing the seasonal effects from a time series after decomposing it into seasonal, trend, cycle and irregular components. The purpose is to identify the different components of the time series and thus provide a better understanding of its underlying behavior. Seasonally adjusted changes are usually preferred for analyzing general price trends in the economy because 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 September 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 Factor of National CPI

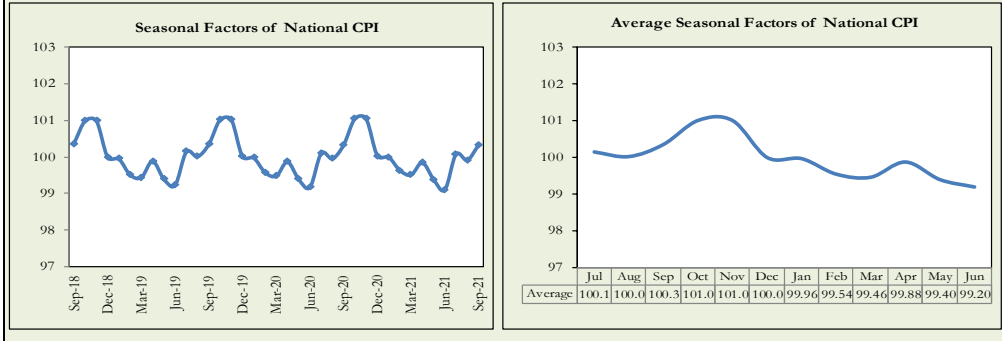


Fig. 12.1 (b): Seasonal Factor of Urban CPI

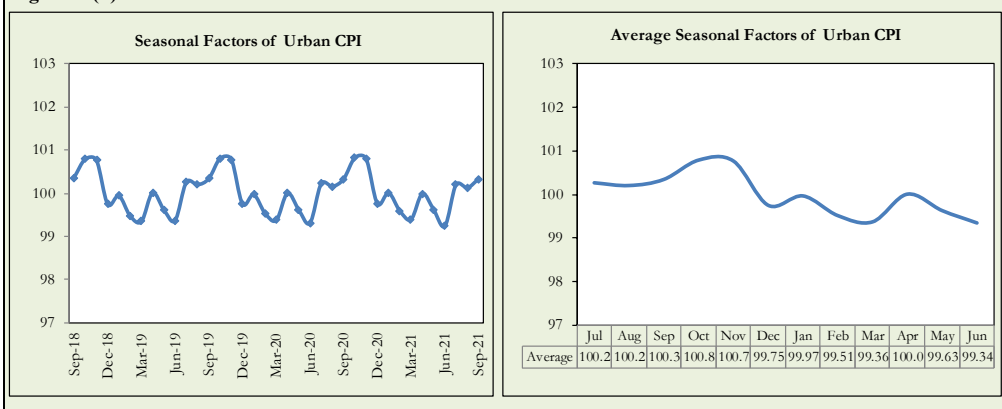
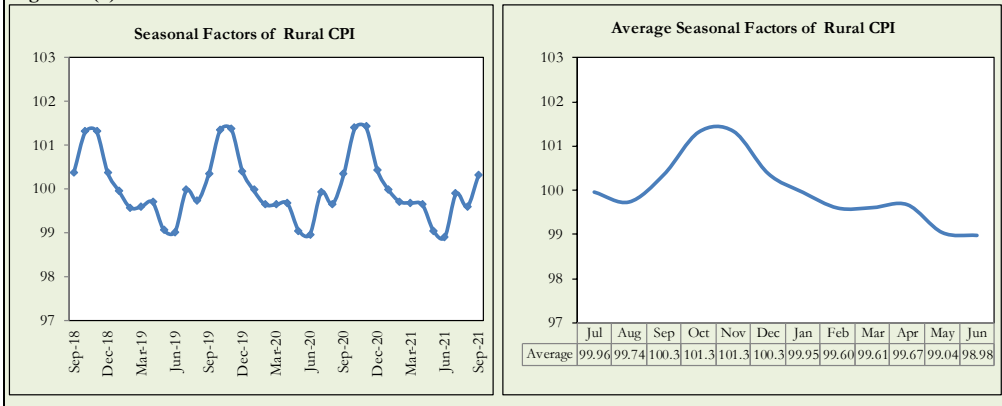


Fig. 12.1 (c): Seasonal Factor of Rural CPI



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.

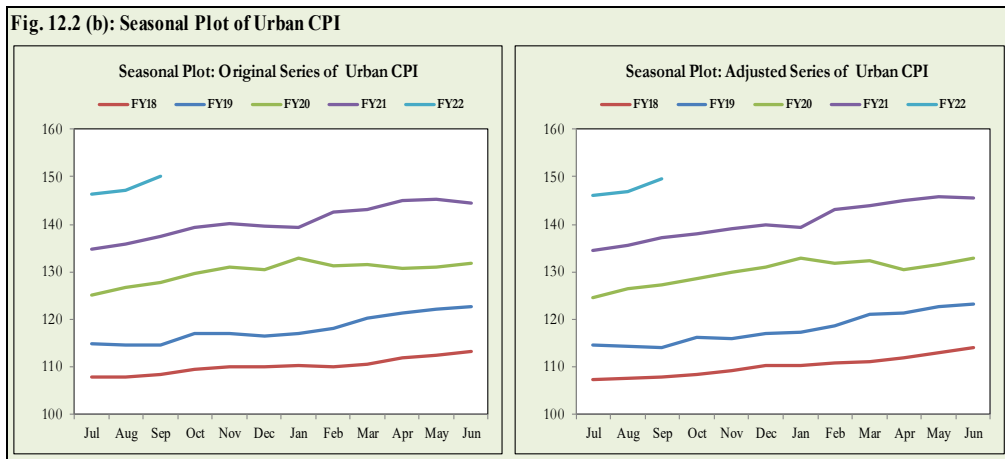
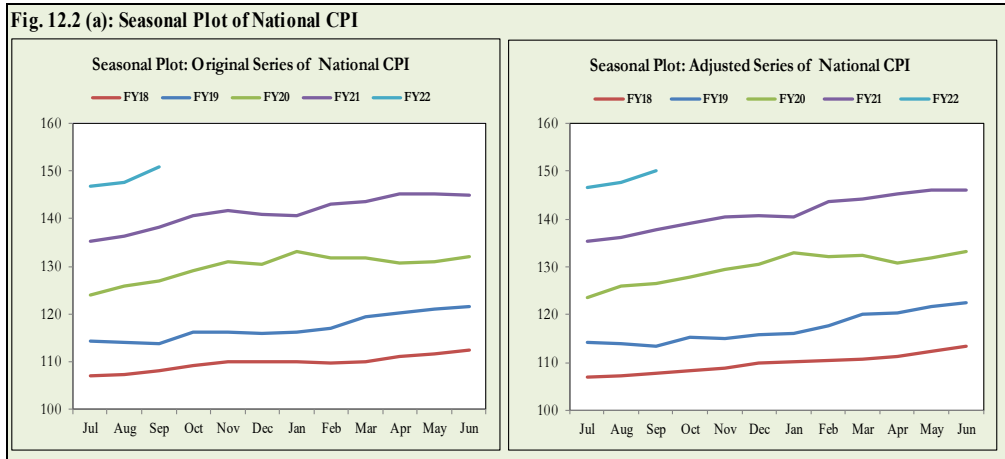
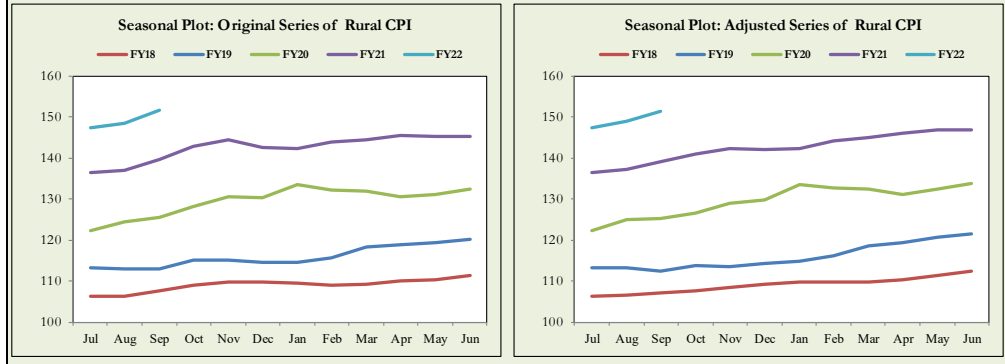


Fig. 12.2 (c): Seasonal Plot of Rural CPI



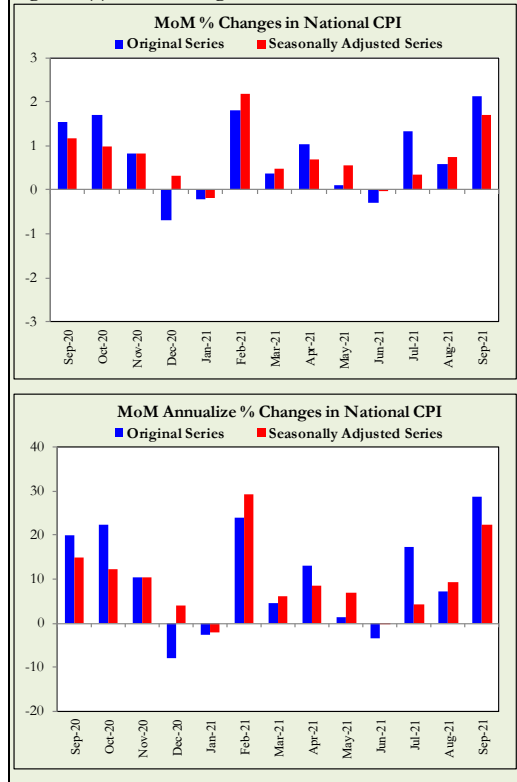
Seasonally adjusted National CPI for September 2021 stood at 150.25 against 150.74 in original series showing a decrease of 0.49 on account of adjustment of upward seasonality in September 2021.

Seasonally adjusted Urban CPI for September 2021 stood at 149.58 against 150.08 in original series showing a decrease of 0.50 on account of adjustment of upward seasonality in September 2021.

Seasonally adjusted Rural CPI for September 2021 stood at 151.27 against 151.74 in original series showing an decreased of 0.47 on account of adjustment of downward seasonality in September 2021.

Month-on-month change of seasonally adjusted National CPI series stood at 1.7% reflecting an increase during September 2021 over previous month and an

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

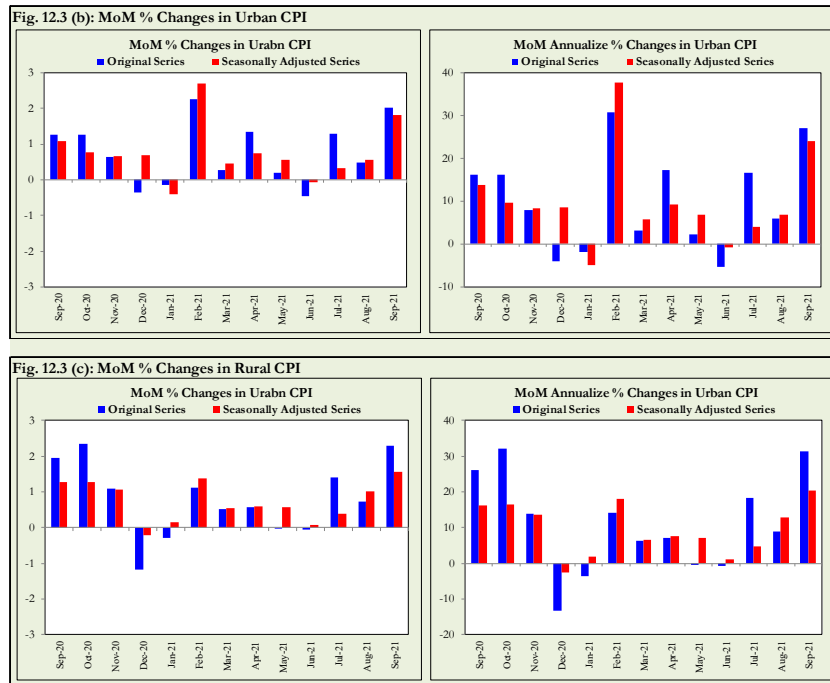


increase of 2.1% in original series.

Month-on-month change of seasonally adjusted Urban CPI series stood at 1.8% reflecting an increase during September 2021 over previous month and an increase of 2.0% in original series.

Month-on-month change of seasonally adjusted Rural CPI series stood at 1.6% reflecting an increase during September 2021 over previous month and an increase of 2.3% 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 September 2021 (corresponding to the seasonally adjusted month-on-month rate) is 9.29 percent.



Annexure A

Table A1: National CPI Inflation by Groups (YoY and MoM in percent)							
Groups	Weights	MoM change			YoY change		
		Sep-20	Aug-21	Sep-21	Sep-20	Aug-21	Sep-21
Food & Non-Alcoholic Beverages	34.6	3.8	0.7	4.0	14.7	10.0	10.2
Alcoholic Beverages & Tobacco	1.0	0.5	0.0	0.4	5.9	2.1	2.0
Clothing & Footwear	8.6	0.4	0.1	0.2	9.1	9.3	9.2
Housing, Water, Elec, Gas & other Fuels	23.6	0.0	0.7	1.6	6.1	8.0	9.7
Furnishing & Household Equip. Maintenance	4.1	1.1	0.5	0.8	7.9	9.6	9.3
Health	2.8	1.0	0.6	0.5	8.3	8.5	8.0
Transport	5.9	0.4	0.7	1.3	-1.5	8.1	9.1
Communication	2.2	0.0	0.0	0.0	0.3	2.8	2.8
Recreation & Culture	1.6	0.8	0.8	1.2	3.9	6.4	6.9
Education	3.8	0.3	0.9	0.0	1.0	2.9	2.6
Restaurants & Hotels	6.9	0.7	0.3	1.1	8.2	7.3	7.8
Miscellaneous	4.9	0.0	0.3	1.4	12.2	5.9	7.4
Overall National CPI	100.0	1.5	0.6	2.1	9.0	8.4	9.0

Table A2: Urban CPI Inflation by Groups (YoY and MoM in percent)							
Groups	Weights	MoM change			YoY change		
		Sep-20	Aug-21	Sep-21	Sep-20	Aug-21	Sep-21
I. Food Group	36.8	3.0	0.5	3.6	12.4	10.2	10.8
Food & Non-Alcoholic Beverages	30.4	3.5	0.5	4.0	13.3	10.6	11.1
Alcoholic Beverages & Tobacco	0.9	0.4	0.0	0.2	5.7	2.8	2.6
Restaurant & Hotels (Food Component)	5.5	0.8	0.2	1.8	8.7	9.3	10.4
II. Non-Food Group	63.2	0.2	0.5	1.1	5.0	7.2	8.1
Clothing & Footwear	8.0	0.4	0.1	0.1	8.0	10.3	10.0
Housing, Water, Elec, Gas & other Fuels	27.0	0.0	0.5	1.6	5.5	7.2	8.9
Furnishing & Household Equip. Maintenance	4.1	0.7	0.4	0.8	6.3	9.4	9.5
Health	2.3	1.0	0.6	0.6	7.2	9.1	8.7
Transport	6.1	0.7	0.7	1.5	-1.6	8.8	9.6
Communication	2.4	0.0	0.0	0.0	0.3	3.8	3.8
Recreation & Culture	1.7	0.6	0.6	1.3	2.9	5.5	6.3
Education	4.9	0.3	1.1	0.0	0.9	2.5	2.3
Restaurants & Hotels (Non-food Component)	1.9	0.0	0.0	0.3	6.6	2.4	2.7
Miscellaneous	4.8	-0.4	0.5	1.4	10.5	6.1	8.0
Overall Urban CPI	100.0	1.3	0.5	2.0	7.7	8.3	9.1

Table A3: Rural CPI Inflation by Groups (YoY and MoM in percent)							
Groups	Weights	MoM Change			YoY Change		
		Sep-20	Aug-21	Sep-21	Sep-20	Aug-21	Sep-21
I. Food Group	45.9	3.8	0.8	3.7	15.8	9.1	9.1
Food and Non-Alcoholic Beverages	40.9	4.1	0.9	4.1	16.4	9.3	9.3
Alcoholic Beverages, Tobacco	1.3	0.7	0.0	0.6	6.1	1.4	1.3
Restaurants and Hotels (Food Component)	3.8	1.5	0.7	1.0	13.1	10.0	9.4
II. Non-Food Group	54.1	0.3	0.7	1.1	6.7	7.9	8.7
Clothing and Footwear	9.5	0.3	0.1	0.4	10.5	8.1	8.2
Housing, Water, Elec., Gas and Other Fuels	18.5	0.0	1.0	1.7	7.4	9.7	11.6
Furnishing and Household Equip. Maintenance	4.1	1.7	0.6	0.7	10.3	10.0	8.9
Health	3.5	0.9	0.5	0.4	9.3	7.8	7.3
Transport	5.6	-0.2	0.8	1.0	-1.4	6.9	8.2
Communication	2.0	0.1	0.0	0.0	0.2	1.0	0.9
Recreation and Culture	1.4	1.1	1.2	1.1	5.8	8.0	7.9
Education	2.1	0.4	0.4	0.0	1.2	4.5	4.1
Restaurants and Hotels (Non-Food Component)	2.4	0.0	0.6	0.0	0.8	1.3	1.3
Miscellaneous	5.0	0.4	0.1	1.3	14.5	5.7	6.5
Rural CPI	100.0	2.0	0.7	2.3	11.1	8.4	8.8

Table A4: Top Ten Contributors to Urban CPI Inflation (YoY) - September-2021

Items/Contributors	Weights	YoY Change		Weighted Contribution (%)	
		Sep-20	Sep-21		
A. Ranked by Weighted Contribution					
1	House Rent	19.26	4.29	6.05	12.26
2	Electricity Charges	4.56	11.80	22.36	9.73
3	Milk Fresh	7.11	13.00	9.48	7.14
4	Wheat Flour	3.01	20.18	19.32	6.30
5	Readymade Food	5.52	8.70	10.43	6.17
6	Motor Fuel	2.91	-7.10	17.55	5.95
7	Chicken	1.36	-23.60	44.63	5.16
8	Vegetable Ghee	1.03	15.82	39.57	4.83
9	Cooking Oil	1.10	11.14	38.34	4.80
10	Meat	2.04	11.97	15.79	3.96
Total		47.90			66.30
B. Ranked by Percentage Change					
1	Liquefied Hydrocarbons	0.51	0.17	54.29	2.79
2	Chicken	1.36	-23.60	44.63	5.16
3	Vegetable Ghee	1.03	15.82	39.57	4.83
4	Cooking Oil	1.10	11.14	38.34	4.80
5	Mustard Oil	0.01	15.84	37.70	0.05
6	Eggs	0.51	38.61	34.52	2.13
7	Electricity Charges	4.56	11.80	22.36	9.73
8	Wheat Flour	3.01	20.18	19.32	6.30
9	Pulse Masoor	0.16	20.11	18.63	0.25
10	Motor Fuel	2.91	-7.10	17.55	5.95
Total		15.16			41.99
C. Ranked by Weights					
1	House Rent	19.26	4.29	6.05	12.26
2	Milk Fresh	7.11	13.00	9.48	7.14
3	Readymade Food	5.52	8.70	10.43	6.17
4	Education	4.88	0.92	2.25	1.27
5	Electricity Charges	4.56	11.80	22.36	9.73
6	Wheat Flour	3.01	20.18	19.32	6.30
7	Appliances/Articles/Products for Personal	2.98	6.82	12.07	3.76
8	Motor Fuel	2.91	-7.10	17.55	5.95
9	Cotton Cloth	2.22	8.92	9.78	2.38
10	Meat	2.04	11.97	15.79	3.96
Total		54.49			58.92
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 9.1 percent in September-2021.					

Table A5: Top Ten Contributors to Urban CPI Inflation (MoM) in September 2021					
Items/ Contributors		Weights	MoM Change		Weighted Contribution (%)
			Aug-21	Sep-21	
A. Ranked by Weighted Contribution					
1	Electricity Charges	4.56	0.08	11.40	23.09
2	Chicken	1.36	-11.98	42.04	20.98
3	Wheat Flour	3.01	0.35	9.69	14.57
4	Onions	0.59	-0.73	32.49	6.92
5	Readymade Food	5.52	0.15	1.77	4.83
6	Eggs	0.51	-1.64	14.43	4.45
7	Fresh Vegetables	1.53	12.52	3.95	3.08
8	Motor Fuel	2.91	2.80	1.67	2.78
9	Meat	2.04	0.37	2.20	2.65
10	Cooking Oil	1.10	1.11	3.64	2.58
Total		23.13			85.93
B. Ranked by Percentage Change					
1	Chicken	1.36	-11.98	42.04	20.98
2	Onions	0.59	-0.73	32.49	6.92
3	Pulse Masoor	0.16	0.33	15.70	0.92
4	Eggs	0.51	-1.64	14.43	4.45
5	Electricity Charges	4.56	0.08	11.40	23.09
6	Wheat Flour	3.01	0.35	9.69	14.57
7	Wheat	0.61	0.23	7.31	2.33
8	Gram Whole	0.09	-0.15	5.98	0.24
9	Mustard Oil	0.01	0.58	4.56	0.03
10	Pulse Gram	0.17	-5.18	4.33	0.29
Total		11.07			73.82
C. Ranked by Weights					
1	House Rent	19.26	0.00	0.00	0.00
2	Milk Fresh	7.11	1.94	0.10	0.36
3	Readymade Food	5.52	0.15	1.77	4.83
4	Education	4.88	1.08	0.03	0.07
5	Electricity Charges	4.56	0.08	11.40	23.09
6	Wheat Flour	3.01	0.35	9.69	14.57
7	Appliances/Articles/Products for	2.98	1.00	1.04	1.53
8	Motor Fuel	2.91	2.80	1.67	2.78
9	Cotton Cloth	2.22	0.11	0.01	0.01
10	Meat	2.04	0.37	2.20	2.65
Total		54.49			49.89
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in MoM change in Rural CPI, which is 2.0 percent in September 2021.					

Table A6: Top and Bottom Fifteen Contributors to Urban CPI Inflation (YoY) in September 2021

Top 15 Contributors					
Items/ Contributors	Weights	YoY Change		Weighted Contribution (%)	
		Sep-20	Sep-21		
Ranked by Weighted Contribution					
1	House Rent	19.26	4.29	6.05	12.26
2	Electricity Charges	4.56	11.80	22.36	9.73
3	Milk Fresh	7.11	13.00	9.48	7.14
4	Wheat Flour	3.01	20.18	19.32	6.30
5	Readymade Food	5.52	8.70	10.43	6.17
6	Motor Fuel	2.91	-7.10	17.55	5.95
7	Chicken	1.36	-23.60	44.63	5.16
8	Vegetable Ghee	1.03	15.82	39.57	4.83
9	Cooking Oil	1.10	11.14	38.34	4.80
10	Meat	2.04	11.97	15.79	3.96
11	Appliances/Articles/Products For	2.98	6.82	12.07	3.76
12	Liquefied Hydrocarbons	0.51	0.17	54.29	2.79
13	Footwear	1.48	6.32	16.18	2.48
14	Cotton Cloth	2.22	8.92	9.78	2.38
15	Eggs	0.51	38.61	34.52	2.13
Total		55.60			79.84
Bottom 15 Contributors					
1	Fresh Vegetables	1.53	14.27	-13.80	-3.06
2	Potatoes	0.45	67.20	-26.03	-2.53
3	Tomatoes	0.35	51.86	-23.92	-1.28
4	Pulse Moong	0.17	39.31	-23.21	-0.47
5	Transport Services	1.75	5.09	-0.26	-0.05
6	Newspapers	0.07	0.00	0.00	0.00
7	Gas Charges	1.08	0.00	0.00	0.00
8	Therapeutic Appliances and	0.01	6.35	2.99	0.00
9	Carpets	0.03	4.45	1.61	0.00
10	Electrical Appliances for Personal	0.05	2.21	1.25	0.01
11	Major Tools & Equipments	0.01	8.55	8.19	0.01
12	Dental Services	0.02	5.13	6.29	0.01
13	Dessert Preparation	0.04	11.73	5.78	0.02
14	Postal Services	0.02	0.00	11.13	0.02
15	Cleaning And Laundering	0.07	12.16	4.59	0.03
Total		5.65			-7.29

Table A7: Top and Bottom Fifteen Contributors to Urban CPI Inflation (MoM) in September 2021					
Top 15 Contributors		Weights	MoM Change		Weighted Contribution (%)
Items/ Contributors			Aug-21	Sep-21	
Ranked by Weighted Contribution					
1	Electricity Charges	4.56	0.08	11.40	23.09
2	Chicken	1.36	-11.98	42.04	20.98
3	Wheat Flour	3.01	0.35	9.69	14.57
4	Onions	0.59	-0.73	32.49	6.92
5	Readymade Food	5.52	0.15	1.77	4.83
6	Eggs	0.51	-1.64	14.43	4.45
7	Fresh Vegetables	1.53	12.52	3.95	3.08
8	Motor Fuel	2.91	2.80	1.67	2.78
9	Meat	2.04	0.37	2.20	2.65
10	Cooking Oil	1.10	1.11	3.64	2.58
11	Wheat	0.61	0.23	7.31	2.33
12	Vegetable Ghee	1.03	1.75	3.20	2.24
13	Sugar	1.11	1.36	3.04	1.93
14	Transport Services	1.75	-3.63	2.42	1.79
15	Personal Effects N.E.C.	0.94	-0.75	2.54	1.58
Total		28.57			95.80
Bottom 15 Contributors					
1	Tomatoes	0.35	17.84	-18.90	-4.03
2	Liquefied Hydrocarbons	0.51	18.23	-7.22	-2.61
3	Potatoes	0.45	1.84	-2.62	-0.82
4	Pulse Moong	0.17	-2.35	-4.02	-0.27
5	Solid Fuel	0.42	0.05	-0.01	0.00
6	Newspapers	0.07	0.00	0.00	0.00
7	Communication Services	1.88	0.00	0.00	0.00
8	Postal Services	0.02	0.00	0.00	0.00
9	Motor Vehicle Tax	0.05	0.00	0.00	0.00
10	Dental Services	0.02	0.00	0.00	0.00
11	Major Tools & Equipments	0.01	0.17	0.00	0.00
12	Gas Charges	1.08	0.00	0.00	0.00
13	Water Supply	0.53	2.42	0.00	0.00
14	House Rent	19.26	0.00	0.00	0.00
15	Tailoring	1.07	0.40	0.00	0.00
Total		25.89			-7.73

Table A8: Top and Bottom Fifteen Contributors to MoM Urban CPI Food Inflation in September 2021

Top 15 Contributors					
Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Aug-21	Sep-21		
Ranked by Weighted Contribution					
1	Chicken	1.36	-11.98	42.04	20.98
2	Wheat flour	3.01	0.35	9.69	14.57
3	Onions	0.59	-0.73	32.49	6.92
4	Readymade food	5.52	0.15	1.77	4.83
5	Eggs	0.51	-1.64	14.43	4.45
6	Fresh vegetables	1.53	12.52	3.95	3.08
7	Meat	2.04	0.37	2.20	2.65
8	Cooking oil	1.10	1.11	3.64	2.58
9	Wheat	0.61	0.23	7.31	2.33
10	Vegetable ghee	1.03	1.75	3.20	2.24
11	Sugar	1.11	1.36	3.04	1.93
12	Tea	0.84	0.00	2.78	1.11
13	Pulse masoor	0.16	0.33	15.70	0.92
14	Beverages	0.89	0.37	1.47	0.58
15	Milk fresh	7.11	1.94	0.10	0.36
Total		27.43			69.53
Bottom 15 Contributors					
1	Tomatoes	0.35	17.84	-18.90	-4.03
2	Potatoes	0.45	1.84	-2.62	-0.82
3	Pulse moong	0.17	-2.35	-4.02	-0.27
4	Cigarettes	0.72	0.00	0.00	0.00
5	Dessert preparation	0.04	0.00	0.05	0.00
6	Ice cream	0.10	0.05	0.07	0.00
7	Butter	0.09	0.00	0.31	0.02
8	Mustard oil	0.01	0.58	4.56	0.03
9	Gur	0.04	1.23	1.80	0.04
10	Rice	1.18	0.08	0.06	0.04
11	Dry fruits	0.33	-0.09	0.28	0.04
12	Fish	0.39	0.04	0.37	0.05
13	Sweetmeat	0.35	0.56	0.34	0.06
14	Milk products	0.64	1.77	0.22	0.07
15	Beans	0.04	5.09	3.35	0.08
Total		4.90			-4.68

Table A9: Top and Bottom Fifteen Contributors to MoM Urban CPI Non-food Inflation in September 2021					
Top 15 Contributors		Weights	MoM Change		Weighted Contribution (%)
Items/ Contributors	Aug-21		Sep-21		
Ranked by Weighted Contribution					
1	Electricity charges	4.56	0.08	11.40	23.09
2	Motor fuel	2.91	2.80	1.67	2.78
3	Transport services	1.75	-3.63	2.42	1.79
4	Personal Effects n.e.c.	0.94	-0.75	2.54	1.58
5	Appliances/Articles/Products for	2.98	1.00	1.04	1.53
6	Washing soap/detergents/match	1.41	0.55	1.38	0.97
7	Textbooks	0.67	0.92	3.18	0.92
8	Personal Grooming Services	0.80	0.43	1.10	0.41
9	Household equipments	1.00	0.49	0.76	0.38
10	Hospitals services	0.57	0.53	0.99	0.27
11	Doctor (MBBS) clinic fee	0.40	0.69	1.00	0.27
12	Accommodation Services	0.13	0.00	3.87	0.19
13	Drugs and medicines	1.07	0.67	0.34	0.19
14	Woolen cloth	0.84	0.30	0.47	0.19
15	Readymade garments	1.32	0.05	0.22	0.13
Total		21.36			34.69
Bottom 15 Contributors					
1	Liquefied Hydrocarbons	0.51	18.23	-7.22	-2.61
2	Solid Fuel	0.42	0.05	-0.01	0.00
3	Newspapers	0.07	0.00	0.00	0.00
4	Communication Services	1.88	0.00	0.00	0.00
5	Postal services	0.02	0.00	0.00	0.00
6	Motor vehicle tax	0.05	0.00	0.00	0.00
7	Dental services	0.02	0.00	0.00	0.00
8	Gas charges	1.08	0.00	0.00	0.00
9	House rent	19.26	0.00	0.00	0.00
10	Woolen readymade garments	0.43	0.00	0.00	0.00
11	Major tools & equipments	0.01	0.17	0.00	0.00
12	Tailoring	1.07	0.40	0.00	0.00
13	Water supply	0.53	2.42	0.00	0.00
14	Therapeutic Appliances and	0.01	0.01	0.09	0.00
15	Medical tests	0.24	0.07	0.01	0.00
Total		25.58			-2.61

Table A10: Top Ten Contributors to Rural CPI Inflation (YoY) - September-2021

Items/Contributors	Weights	YoY Change		Weighted Contribution (%)	
		Sep-20	Sep-21		
A. Ranked by Weighted Contribution					
1	Vegetable Ghee	2.38	17.37	41.87	12.87
2	Milk Fresh	10.38	7.39	7.32	8.07
3	Electricity Charges	3.44	11.80	22.36	7.54
4	Chicken	1.46	-19.37	49.36	6.58
5	Wheat Flour	3.43	26.74	15.68	6.28
6	House Rent	8.61	4.94	6.05	5.63
7	Motor Fuels	2.49	-7.21	15.91	4.70
8	Solid Fuel	4.48	11.26	9.37	4.47
9	Readymade Food	3.80	13.05	9.44	4.27
10	Liquefied Hydrocarbons	1.00	-3.96	42.09	4.06
Total		41.47			64.47
B. Ranked by Percentage Change					
1	Chicken	1.46	-19.37	49.36	6.58
2	Cooking Oil	0.60	13.54	44.95	3.35
3	Liquefied Hydrocarbons	1.00	-3.96	42.09	4.06
4	Vegetable Ghee	2.38	17.37	41.87	12.87
5	Mustard Oil	0.01	10.50	37.24	0.05
6	Eggs	0.57	33.22	32.51	2.18
7	Onions	0.90	-36.25	32.33	2.50
8	Electricity Charges	3.44	11.80	22.36	7.54
9	Pulse Masoor	0.21	27.26	21.37	0.40
10	Gram Whole	0.11	-1.26	18.39	0.19
Total		10.68			39.72
C. Ranked by Weights					
1	Milk Fresh	10.38	7.39	7.32	8.07
2	House Rent	8.61	4.94	6.05	5.63
3	Solid Fuel	4.48	11.26	9.37	4.47
4	Readymade Food	3.80	13.05	9.44	4.27
5	Wheat	3.47	45.12	3.29	1.49
6	Electricity Charges	3.44	11.80	22.36	7.54
7	Wheat Flour	3.43	26.74	15.68	6.28
8	Cotton Cloth	2.84	14.82	8.15	2.98
9	Motor Fuels	2.49	-7.21	15.91	4.70
10	Vegetable Ghee	2.38	17.37	41.87	12.87
Total		45.32			58.30
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 8.8 percent in September-2021.					

Table A11: Top Ten Contributors to Rural CPI Inflation (MoM) in September 2021					
Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)	
		Aug-21	Sep-21		
A. Ranked by Weighted Contribution					
1	Chicken	1.46	-14.90	47.95	23.20
2	Electricity Charges	3.44	0.08	11.40	15.19
3	Wheat Flour	3.43	0.46	9.40	14.31
4	Wheat	3.47	0.15	7.01	11.01
5	Onions	0.90	6.02	39.56	10.43
6	Fresh Vegetables	2.09	17.35	6.07	5.30
7	Vegetable Ghee	2.38	4.94	3.26	4.95
8	Eggs	0.57	-0.87	11.82	3.38
9	Sugar	2.03	2.68	2.83	2.86
10	Readymade Food	3.80	0.74	0.96	1.69
Total		23.57			92.32
B. Ranked by Percentage Change					
1	Chicken	1.46	-14.90	47.95	23.20
2	Onions	0.90	6.02	39.56	10.43
3	Pulse Masoor	0.21	-0.97	18.45	1.26
4	Eggs	0.57	-0.87	11.82	3.38
5	Electricity Charges	3.44	0.08	11.40	15.19
6	Wheat Flour	3.43	0.46	9.40	14.31
7	Gram Whole	0.11	-1.81	8.78	0.36
8	Wheat	3.47	0.15	7.01	11.01
9	Fresh Vegetables	2.09	17.35	6.07	5.30
10	Pulse Gram	0.28	-2.45	5.39	0.52
Total		15.96			84.96
C. Ranked by Weights					
1	Milk Fresh	10.38	1.05	0.00	0.00
2	House Rent	8.61	0.00	0.00	0.00
3	Solid Fuel	4.48	0.59	0.02	0.04
4	Readymade Food	3.80	0.74	0.96	1.69
5	Wheat	3.47	0.15	7.01	11.01
6	Electricity Charges	3.44	0.08	11.40	15.19
7	Wheat Flour	3.43	0.46	9.40	14.31
8	Cotton Cloth	2.84	0.00	0.56	0.78
9	Motor Fuels	2.49	2.97	1.16	1.42
10	Vegetable Ghee	2.38	4.94	3.26	4.95
Total		45.32			49.39
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 Rural CPI, which is 2.3 percent in September 2021.					

Table A12: Top and Bottom Fifteen Contributors to Rural CPI Inflation (YoY) in September 2021

Top 15 Contributors					
Items/ Contributors		Weights	YoY Change		Weighted Contribution (%)
			Sep-20	Sep-21	
Ranked by Weighted Contribution					
1	Vegetable Ghee	2.38	17.37	41.87	12.87
2	Milk Fresh	10.38	7.39	7.32	8.07
3	Electricity Charges	3.44	11.80	22.36	7.54
4	Chicken	1.46	-19.37	49.36	6.58
5	Wheat Flour	3.43	26.74	15.68	6.28
6	House Rent	8.61	4.94	6.05	5.63
7	Motor Fuels	2.49	-7.21	15.91	4.70
8	Solid Fuel	4.48	11.26	9.37	4.47
9	Readymade Food	3.80	13.05	9.44	4.27
10	Liquefied Hydrocarbons	1.00	-3.96	42.09	4.06
11	Meat	1.71	9.40	17.97	3.82
12	Sugar	2.03	25.28	13.89	3.53
13	Cooking Oil	0.60	13.54	44.95	3.35
14	Cotton Cloth	2.84	14.82	8.15	2.98
15	Onions	0.90	-36.25	32.33	2.50
Total		49.55			80.65
Bottom 15 Contributors					
1	Potatoes	0.74	71.28	-22.67	-3.96
2	Fresh Vegetables	2.09	18.87	-11.41	-3.32
3	Condiments And Spices	1.49	57.81	-12.43	-2.97
4	Tomatoes	0.51	57.12	-16.56	-1.19
5	Pulse Moong	0.25	44.40	-27.79	-0.92
6	Transport Services	1.80	4.98	-1.01	-0.19
7	Motor Vehicle Tax	0.02	0.00	-5.56	-0.01
8	Postal Services	0.01	0.00	0.00	0.00
9	Accommodation Services	0.14	0.00	0.03	0.00
10	Cleaning And Laundering	0.02	18.54	2.88	0.01
11	Newspapers	0.02	0.00	2.40	0.01
12	Garbage Collection	0.01	7.64	8.74	0.01
13	Dental Services	0.02	12.13	4.71	0.01
14	Dessert Preparation	0.01	10.17	8.38	0.01
15	Pan Prepared	0.04	17.33	1.96	0.01
Total		7.17			-12.50

Table A13: Top and Bottom Fifteen Contributors to Rural CPI Inflation (MoM) in September 2021					
Top 15 Contributors		Weights	MoM Change		Weighted Contribution (%)
Items/ Contributors			Aug-21	Sep-21	
Ranked by Weighted Contribution					
1	Chicken	1.46	-14.90	47.95	23.20
2	Electricity Charges	3.44	0.08	11.40	15.19
3	Wheat Flour	3.43	0.46	9.40	14.31
4	Wheat	3.47	0.15	7.01	11.01
5	Onions	0.90	6.02	39.56	10.43
6	Fresh Vegetables	2.09	17.35	6.07	5.30
7	Vegetable Ghee	2.38	4.94	3.26	4.95
8	Eggs	0.57	-0.87	11.82	3.38
9	Sugar	2.03	2.68	2.83	2.86
10	Readymade Food	3.80	0.74	0.96	1.69
11	Personal Effects N.E.C.	1.21	-2.10	2.44	1.61
12	Meat	1.71	1.57	1.75	1.55
13	Cooking Oil	0.60	4.99	3.93	1.47
14	Motor Fuels	2.49	2.97	1.16	1.42
15	Pulse Masoor	0.21	-0.97	18.45	1.26
Total		29.79			99.63
Bottom 15 Contributors					
1	Potatoes	0.74	1.91	-5.65	-2.91
2	Liquefied Hydrocarbons	1.00	12.94	-4.56	-2.35
3	Tomatoes	0.51	7.40	-8.56	-2.02
4	Condiments And Spices	1.49	-5.61	-2.09	-1.61
5	Fresh Fruits	1.45	-11.14	-1.26	-0.64
6	Pulse Moong	0.25	-6.85	-2.80	-0.25
7	Beans	0.09	1.58	-0.10	0.00
8	Motor Vehicle Tax	0.02	-9.07	0.00	0.00
9	Accommodation Services	0.14	0.00	0.00	0.00
10	Newspapers	0.02	0.00	0.00	0.00
11	Postal Services	0.01	0.00	0.00	0.00
12	Mechanical Services	0.36	0.00	0.00	0.00
13	Dental Services	0.02	0.00	0.00	0.00
14	Woolen Readymade Garments	0.54	0.00	0.00	0.00
15	Pan Prepared	0.04	0.00	0.00	0.00
Total		6.68			-9.78

Table A14: Top and Bottom Fifteen Contributors to MoM Rural CPI Food Inflation in September 2021					
Top 15 Contributors		Weights	MoM Change		Weighted Contribution (%)
Items/ Contributors	Aug-21		Sep-21		
Ranked by Weighted Contribution					
1	Chicken	1.46	-14.90	47.95	23.20
2	Wheat Flour	3.43	0.46	9.40	14.31
3	Wheat	3.47	0.15	7.01	11.01
4	Onions	0.90	6.02	39.56	10.43
5	Fresh Vegetables	2.09	17.35	6.07	5.30
6	Vegetable ghee	2.38	4.94	3.26	4.95
7	Eggs	0.57	-0.87	11.82	3.38
8	Sugar	2.03	2.68	2.83	2.86
9	Readymade Food	3.80	0.74	0.96	1.69
10	Meat	1.71	1.57	1.75	1.55
11	Cooking oil	0.60	4.99	3.93	1.47
12	Pulse Masoor	0.21	-0.97	18.45	1.26
13	Tea	1.26	0.00	1.29	0.66
14	Pulse Gram	0.28	-2.45	5.39	0.52
15	Gram Whole	0.11	-1.81	8.78	0.36
Total		24.30			82.96
Bottom 15 Contributors					
1	Potatoes	0.74	1.91	-5.65	-2.91
2	Tomatoes	0.51	7.40	-8.56	-2.02
3	Condiments and Spices	1.49	-5.61	-2.09	-1.61
4	Fresh fruits	1.45	-11.14	-1.26	-0.64
5	Pulse Moong	0.25	-6.85	-2.80	-0.25
6	Beans	0.09	1.58	-0.10	0.00
7	Pan Prepared	0.04	0.00	0.00	0.00
8	Ice Cream	0.06	0.57	0.00	0.00
9	Honey	0.03	0.00	0.00	0.00
10	Milk products	0.96	0.78	0.00	0.00
11	Milk fresh	10.38	1.05	0.00	0.00
12	Dessert Preparation	0.01	0.00	0.46	0.00
13	Mustard oil	0.01	2.63	2.17	0.02
14	Nimco	0.08	1.90	0.60	0.02
15	Milk powder	0.11	0.41	0.68	0.03
Total		16.22			-7.37

Table A15: Top and Bottom Fifteen Contributors to MoM Rural CPI Non-food Inflation in September 2021					
Top 15 Contributors		Weights	MoM Change		Weighted Contribution (%)
Items/ Contributors	Aug-21		Sep-21		
Ranked by Weighted Contribution					
1	Electricity Charges	3.44	0.08	11.40	15.19
2	Personal Effects n.e.c.	1.21	-2.10	2.44	1.61
3	Motor Fuels	2.49	2.97	1.16	1.42
4	Appliances/Articles/Products for	2.27	0.75	1.27	1.14
5	Transport Services	1.80	-2.96	1.50	0.99
6	Cotton Cloth	2.84	0.00	0.56	0.78
7	Washing Soaps, Detergents and	1.70	0.61	0.86	0.60
8	Household Equipments	1.28	0.43	0.95	0.54
9	Woolen Cloth	1.10	0.00	1.17	0.54
10	Recreation and Culture	0.48	0.43	2.12	0.40
11	Doctor Clinic Fee	0.51	0.00	0.98	0.28
12	Hospitals Services	1.01	1.41	0.70	0.28
13	Construction Input Items	0.63	2.37	0.74	0.19
14	Hosiry	0.43	0.77	0.73	0.17
15	Personal Grooming Services	1.54	1.39	0.23	0.17
Total		22.72			24.33
Bottom 15 Contributors					
1	Liquefied Hydrocarbons	1.00	12.94	-4.56	-2.35
2	Accommodation Services	0.14	0.00	0.00	0.00
3	Marriage Hall Charges	2.25	0.68	0.00	0.00
4	Education	2.13	0.38	0.00	0.00
5	Newspapers	0.02	0.00	0.00	0.00
6	Communication Services	1.65	0.00	0.00	0.00
7	Communication Apparatus	0.34	0.11	0.00	0.00
8	Postal Services	0.01	0.00	0.00	0.00
9	Motor Vehicle Tax	0.02	-9.07	0.00	0.00
10	Mechanical Services	0.36	0.00	0.00	0.00
11	Medical Tests	0.40	0.34	0.00	0.00
12	Dental Services	0.02	0.00	0.00	0.00
13	Major Tools and Equipments	0.03	1.17	0.00	0.00
14	Household Textiles	0.44	0.00	0.00	0.00
15	Garbage Collection	0.01	0.00	0.00	0.00
Total		8.82			-2.35

Table A16: Distribution of Price Changes (YoY) - Selected Urban CPI Items: September 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	Spinach (Paalak), Potatoes, Ginger (Adrak), Tomatoes, Pulse Moong (Washed), Bottlegourd (Loki)	Cardamom Large (Loose) (Average Quality), Salt Powdered (National/Shan) 800 Gm Packet,	Rice Basmati 385/386, Powdered Milk Nido 390 Gm Polybag, Custard Powder Rafhan 300 Gm Packet, Wheat	Wheat Flour (Fine/Superior Quality), Tomato Ketchup Mitchells/National 1 Kg Polybag, Beans Red/White (Lobia), Nimko (Lower Average Quality), Jowar
Alcoholic Beverages & Tobacco	Cigarettes Capstan 20'S Packet,	Cigarettes Gold Leaf 20'S Packet,	Pan Prepared (Sweet with Beetle Nuts),	
Clothing & Footwear	Gents Sandal Bata, Ladies Sandal Bata, Cheeta 50 Size 3-5 Servis,	Chaddar (Wash-N-Wear) (2X2.5 Meter), Women Shalwar Kameez (Average Quality), Georgette (Average Quality), Washing Charges Shalwar Kameez, Dopatta	Pant Cloth Wash & Wear (Average Quality), Dupatta Cotton (Average Quality), Lawn Printed Gul Ahmed/Al Karam, Gents Shoes Servis, Tailoring Charges Awami Suit (Male)	Awami Suit Gents Wash & Wear (Average Quality), School Uniform Girls (Kameez & Shalwar) 24"/26", Ladies Sponge Chappal Bata, Long Cloth 57" Gul Ahmed/Al Karam, Pullover Ladies Oxford/Bonanza, Socks Nylon Local (Average)
Housing, Water, Elect, Gas & other Fuels	Gas Charges Upto 3.3719 Mmbtu, Gas Charges 3.3719 - 6.7438 Mmbtu, Gas Charges 6.7438 - 10.1157 Mmbtu	Sand (Black Pit), Cement Blocks (6"X8"X12"), Painter Wage Rate, Mason Wage Rate, Electrician Charges, Unskilled Labor Wage Rate, Water Charges Per House	Firewood Whole, Bricks New 1St Class, House Rent Combined, Plumber Wage Rate, Bajri,	Electricity Charges Above 700 Units, Cement (Local) 50 Kg Bag, Electricity Charges 301-700 Units, Electricity Charges Combined, Electricity Charges 101-300 Units, Electricity Charges 51-100 Units,
Furnishing & Household Equip. Maintenance etc		Tube Light Philips 40 Watt, Plain Carpet, Household Servant Female Part Time, Energy Saver Philips 14 Watt, Phenyl Tyfon/Finis 2.75 Litre Bottle	Geyser Super Asia Large Size 30 Gallons (Gas), Chair Plastic (Chairman) (Average Quality), Dining Table Wit Glass Top And Six Chairs (Average Quality), Surf Excel 500 GM	Washing Machine With Spinner (Super Asia Or Similar Brand) (Sn), Bucket (Balti) Plastic Medium Size, Harpic 500 Ml Bottle, Steel Almirah, Chair Sheesham Wood With Arm, Ceiling Fan 56"
Health		Hydriilin Syrup 120 Ml Bottle, Glaxose-D 400 Gm Packet, Glucometer, Sugar Test (Random/Fasting)	Urine Test (Dr) Charges, Electronic Bp Checking Apparatus, Ventolin Tablets 2 Mg, Amoxil Capsule 250 Mg	Dettol Medium Bottle, Doctor (Mbbs) Clinic Fee, Inderal Tablets 10 Mg, Cost Of Surgery (C-Section), Lederplex Syrup Bottle, Johar Jashanda Instant (Sachet)
Transport	Air Fare Economy Class Per Kilometer (National Average), Car Suzuki 1000 Cc, Car Toyota 1300 Cc Xli, Train Fare Economy	Mini Bus Fare Minimum Within City, Car Service Charges, Bus Fare Minimum Within City, Mini Bus Fare Maximum Within City	Tire Motorcycle Cd 70 (Back Wheel), Car Tax 800 Cc To 1500 Cc, Bus Fare Maximum Within City, Suzuki Fare Minimum Within City	Auto Rickshaw Fare, Hi-Speed Diesel, Motorcycle Honda Cd 70, Motorcycle United/Unique 70 Cc, Tire Car Puncture Charges, Mobil Oil (Havoline 20W-50), Tire Car
Communication	Mobile 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), Telephone Call Charges,
Recreation & Culture	Newspaper Daily Dawn, Newspaper Daily Jang, Akhbar-E-Jehan Weekly, Mag The Weekly (Magazine),	Cable Charges, Mathematics Book Class Ix And X (Text Book Board), Exercise Book (With Lines) 80 To 100 Pages, English Book Ba/B.Sc	Lead Pencil Goldfish, Recreational Park Charges (Minimum Playland Ticket), English Book Class Vi,	Urdu Book Class Ix And X (Text Book Board), English Book Class Xi Complete Set, Mathematics Book Class Xi (Text Book Board), Laptop Dell/Hp/Acer Core I5,
Education	Coaching Fee For Class Xi/Xii Science Group, Government College Fee First Year, Government University Fee	Coaching Fee For Class Ix/X Science Group, Government Engineering University Tuition Fee (1st Year)	Private School Fee English Medium Average Standard (Class I),	
Restaurant & Hotels	Government Hostel Accommodation Fee For Intermediate College Per	Marriage Hall Service Charges With Food (Average Meal),	Pizza Chicken Medium Size (Average Quality), Marriage Hall Charges With Furniture,	Bread Tandoori Standard Size, Burger With Shami Kabab (Average Quality), Chicken Roast
Miscellaneous	Silver Tezabi 24 Carett, Gold Tezabi 24 Carett,	Electric Hair Straightener (Philips), Hair Style Charges (At Average Beauty Parlor), Shaving Cream	Tissue Paper Perfumed Box 100 Napkins, Suitcase Ragzine (24"X16"X6") (Average Quality), Hair Cut Charges For	Hair Oil (Kala Kola Hair Tonic), Tooth Paste Colgate 75 Gm, Lipstick Swiss Miss/Medora (Medium), Shampoo Sun

Table A17: Distribution of Price Changes (YoY) - Selected Rural CPI Items: September 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, Brinjal, Bottlegourd (Loki), Ginger (Adrak), Pulse Moong (Washed)	Rice Basmati 385/386, Tea Lipton Yellow Label 190 Gm Packet, Fruit Juice Small Packet 250 Ml	Gur (Average Quality), Curd, Pulse Gram, Milk Fresh (Un-Boiled), Ice Cream Walls Cup (Large Size), Grapes (Angoor)	Cucumber (Kheera), Desi Ghee, Nimko (Loose, Average Quality), Bread Plain (Medium Size), Biscuit Bakery (Loose, Average Quality), Jam-E-Shireen Standard Size (800 Ml), Wheat Flour
Alcoholic Beverages & Tobacco		Cigarettes Capstan 20'S Packet	Chewing Tobacco (Niswar)	
Clothing & Footwear		School Uniform Girls (Kameez & Shalwar) 24"/26", Washing Charges Shalwar Kameez	Dopatta Geogette (Average Quality), Chaddar (Wash-N-Wear) (2X2.5 Meter)	Pullover Ladies (Average Quality), Lungi/Dhoti Cotton (Average Quality), Dopatta Cotton (Average Quality), Shoe Polish Charges, Lawn Printed
Housing, Water, Elect, Gas & other Fuels		Water Charges Per House, Mason Wage Rate,	Carpenter Wage Rate, Sand (Black Pit), House Rent Combined	Electricity Charges Above 1000 Units, Kerosene Oil, Electricity Charges 301-1000 Units,
Furnishing & Household Equip. Maintenance etc.		Readymade Quilt (3 Kg), Towel Medium Size (2' X 3')	Energy Saver Philips 14 Watt, Express Washing Powder 1 Kg Polybag	Washing Machine With Spinner (Super Asia Or Similar Brand) (Sn), Washing Soap 250 Gm Cake (Specify Name)
Health	Hydriyllin Syrup 120 Ml Bottle,	Blood Test (Cp) Charges, Daonil Tablets 5 Mg, Dental Surgeon Fee Per Visit, Physiotherapist Fee Per Visit,	Cost Of Surgery (C-Section), Amoxil Capsule 250 Mg, Dettol Medium Bottle, Panadol Tablets Plain, X-Ray (Chest)	Doctor (Mbbs) Clinic Fee, Johar Joshanda Instant (Sachet) Packet,
Transport	Air Fare Economy Class Per Kilometer, Car Tax 800 Cc To 1500 Cc, Car Suzuki 800 Cc Without Ac, Train Fare Economy Per Person, Bus Fare	Tire Cycle, Chingchi Rickshaw Charges, Minimum, Motorcycle Service Charges, Tire Motorcycle Cd 70 (Back Wheel),	Mobil Oil (Havoline 20W-50),	Hi-Speed Diesel, Motorcycle Honda Cd 70, Tire Car Mehran Tubeless (General), Bicycle, Petrol Super, CNG,
Communication	Postal Registration Charges, Mobile Call Charges,	Mobile Set With Rear Camera And Without Touch Screen,		Telephone Call Charges,
Recreation & Culture		Personal Computer With Led Monitor (17") Dell/Hp/Acer Core I5, Newspaper Daily Jang, Urdu Books Class Ix And X (Text Book Board), Led Sony/Samsung 32" Colored, English Books Class Vi, Cable Charges,	Ballpoint Pen Local, Lead Pencil Goldfish, English Books Class Xi Complete Set, English Books Class Ix And X,	Pets Feed, Exercise Book (With Lines) 80 To 100 Pages, Urdu Books Class V (Text Book Board),
Education		Vocational Training Basic Computer Short Course Fee (3 Months)	Private School Fee English Medium Average Standard (Class I)	
Restaurant & Hotels	Government Hostel Accommodation Fee For Intermediate College Per	Private Hostel Accommodation Fee For Intermediate College Per Student, Marriage Hall Service	Chicken Roast (Full) (Average Quality), Cooked Daal At Average Hotel, Bread Tandoori	Tea Prepared Ordinary, Seekh Kabab (Beef) (Average Quality), Cooked Chicken At Average Hotel,
Miscellaneous	Gold Tezabi 24 Carett,	Shaving Cream (Touchme Large/Admiral), Blade Treet Ordinary (10 No. Packet), Suitcase Razzino (24"X16"X6") (Average	Purse Ladies Medium Size (Average Quality), Toilet Soap Lux 75 Gm, Hair Color (Kala Kola), Shaving Charges, Tooth	Disposable Razor Gillette Blue II, Shampoo Sun Silk/Pantene 90 Ml Bottle, Hair Removing Cream (Eucraem) 30Ml Tube, Trunk Medium

Table A18: Distribution of Price Changes (YoY) - WPI Items: September 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, Stimulant & Spice Crops, Vegetables,	Fish Live Fresh or Chilled, Raw Animal Materials / Wool, Wheat,	Cotton Seeds, Fuel Wood in Logs, Sugar Crops, Sorghum / Jowar, Dry Fruits, Rice, Raw Milk from Bovine Animals, Fresh Fruits,	Hides, Skins & Fur Skins, Raw, Pulses, Unmanufactured Tobacco, Maize, Eggs, Poultry, Other Oil Seeds, Fiber Crops, Millet / Bajra,
Ores & Minerals, Electricity Gas & Water	Coal not Agglomerated,	Salt & Pure Sodium Chloride,	Natural Gas Liquefied, Electrical Energy,	
Food Products, Beverages and Tobacco, Textiles, Apparel and Leather Products	Mineral Water, Tobacco Products, Nylon Yarn, Woolen Carpets,	Blankets, Footwears, Coffee & Tea, Synthetic Carpets, Other Food Products, Other Leather N.E.C, Beverages, Dairy Products N.E.C, Fruit Juices, Leather Without Hair, Milk & Cream in Solid Form,	Processed Liquid Milk, Readymade Garments, Bed Sheets, Ice Cream, Other Cereal Flour, Chocolate, Sugar Confectionary,	Dried Fruits & Nuts, Vegetables & Fruit Juice, Quilts, Oil Cakes, Other Fabrics, Towels, Hosiery Products, Wheat Flour, Cotton Fabrics, Sugar Refined, Woven Fabrics, Blended Yarn, Meat of Animals,
Other Transportable Goods except Metal Products, Machinery and Equipments	Printing Paper, Hard Board, Dyeing Material, Insecticides,	Other Glass Articles, Plastic Products, Auto Tyres, Matches, Timber, Ceramics & Sanitary Fixture, Pesticides, Paints & Varnishes, Medicines,	Bricks, Blocks & Tiles, Glass sheets, Bed Foam, Soaps & Detergents,	Mobil Oil, Cement, Motor Spirit, Chemicals, Diesel Oil, Fertilizers, Kerosene Oil, Furnace Oil,
Metal Product Machinery & Equipment	Engines & Motors, Vacuum Pumps, Cultivators, Concrete Mixture,	Motor Vehicles, Steel Products, Radio & Television, Tractors,	Fridge, Washing Machine, Sewing M, Fans, Iron, Electric Wires,	Lighting Equipments, Air Conditioners, Motorcycles, Bicycles, Lathe Machines, Chuff Cutter, Pipe Fittings, Steel Bar & Sheets,

Table A19: International Commodity Prices/Indices				
Commodity/Indices	Jun-21	Sep-20	Aug-21	Sep-21
Energy				
Crude Oil (US\$ per barrel)*	71.8	40.6	68.9	72.8
Energy Index (2010 = 100)	93.2	51.0	95.7	106.0
Food				
Rice (\$/MT)	466.0	507.0	403.0	400.0
Wheat (\$/MT)##	263.5	219.7	276.2	263.6
Sugar (US cent/ pound)^	17.4	12.8	19.5	19.6
Palm Oil (\$/MT)	1,004.4	796.2	1,141.8	1,181.4
Soybean Oil (\$/MT)	1,518.2	905.9	1,433.9	1,398.8
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	94.5	70.8	101.3	103.7
Metal Price Index (2010 = 100)	119.0	85.2	120.9	124.1
Copper (\$/MT)	9,631.5	6,704.9	9,370.1	9,324.7
Aluminum (\$/MT)	2,446.7	1,743.8	2,603.0	2,834.6
Iron Ore (\$ cents/dry MT)	214.4	123.8	162.2	124.5
Tin (\$/MT)	32,502.6	17,951.3	35,024.0	34,887.3
Nickel (\$/MT)	17,979.6	14,857.5	19,141.3	19,376.9
Zinc (\$/MT)	2,951.9	2,442.5	2,988.0	3,036.0
Lead (\$/MT)	2,191.0	1,872.9	2,414.5	2,248.3
Uranium (\$/MT)@	32.3	29.9	34.3	42.6
DAP (\$/MT)	604.8	358.4	603.1	643.8
Urea (\$/MT)	393.3	250.5	446.9	418.8

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 fatch

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	150.74
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	133.04	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	130.59	145.09	
May	111.65	121.05	131.01	145.24	
Jun	112.58	121.63	132.08	144.82	
Seasonally Adjusted Series					
Jul	106.91	114.07	123.68	135.24	146.64
Aug	107.16	113.85	125.87	136.29	147.73
Sep	107.61	113.49	126.42	137.87	150.25
Oct	108.18	115.18	127.86	139.21	
Nov	108.91	115.05	129.58	140.36	
Dec	109.97	115.83	130.44	140.82	
Jan	110.08	116.18	133.07	140.56	
Feb	110.32	117.69	132.19	143.61	
Mar	110.61	120.13	132.38	144.32	
Apr	111.26	120.47	130.76	145.31	
May	112.32	121.79	131.81	146.14	
Jun	113.40	122.57	133.18	146.13	

Table A21: Urban CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY18	FY19	FY20	FY21	FY22
Jul	107.7	114.9	125.0	134.7	146.4
Aug	107.9	114.6	126.8	135.8	147.1
Sep	108.4	114.5	127.7	137.5	150.1
Oct	109.3	117.0	129.8	139.3	
Nov	110.0	116.9	131.1	140.2	
Dec	110.1	116.6	130.6	139.7	
Jan	110.3	117.1	132.8	139.5	
Feb	110.1	118.1	131.3	142.6	
Mar	110.4	120.3	131.5	143.0	
Apr	111.9	121.3	130.6	144.9	
May	112.5	122.1	131.0	145.2	
Jun	113.3	122.5	131.9	144.5	
Seasonally Adjusted Series					
Jul	107.33	114.59	124.62	134.42	146.11
Aug	107.61	114.29	126.52	135.60	146.93
Sep	107.97	114.08	127.28	137.07	149.58
Oct	108.50	116.12	128.71	138.13	
Nov	109.22	116.05	130.02	139.04	
Dec	110.38	116.86	130.89	140.00	
Jan	110.36	117.13	132.80	139.43	
Feb	110.76	118.69	131.92	143.19	
Mar	111.18	121.07	132.31	143.85	
Apr	111.92	121.27	130.59	144.92	
May	112.95	122.57	131.48	145.73	
Jun	114.00	123.29	132.80	145.64	

Table A22: Rural CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	FY18	FY19	FY20	FY21	FY22
Jul	106.3	113.3	122.2	136.4	147.3
Aug	106.4	113.0	124.6	136.8	148.3
Sep	107.5	113.0	125.6	139.5	151.7
Oct	109.1	115.2	128.3	142.8	
Nov	109.8	115.0	130.7	144.3	
Dec	109.7	114.7	130.3	142.7	
Jan	109.6	114.7	133.4	142.2	
Feb	109.1	115.7	132.1	143.8	
Mar	109.3	118.2	132.0	144.6	
Apr	110.0	118.9	130.6	145.4	
May	110.3	119.5	131.0	145.3	
Jun	111.4	120.3	132.4	145.2	
Seasonally Adjusted Series					
Jul	106.26	113.30	122.27	136.47	147.45
Aug	106.47	113.17	124.90	137.32	148.95
Sep	107.08	112.59	125.12	139.06	151.27
Oct	107.70	113.76	126.58	140.83	
Nov	108.46	113.53	128.90	142.34	
Dec	109.34	114.28	129.76	142.05	
Jan	109.67	114.74	133.47	142.27	
Feb	109.66	116.18	132.61	144.25	
Mar	109.75	118.70	132.48	145.02	
Apr	110.27	119.26	131.03	145.90	
May	111.37	120.60	132.31	146.75	
Jun	112.49	121.49	133.76	146.87	

Table A23: National CPI Monthly & Average Seasonal Factors						
Period	FY18	FY19	FY20	FY21	FY22	Average
Jul	100.23	100.19	100.14	100.11	100.08	100.15
Aug	100.14	100.08	100.01	99.96	99.92	100.02
Sep	100.40	100.37	100.35	100.33	100.32	100.35
Oct	100.97	100.99	101.01	101.05		101.01
Nov	100.95	100.99	101.02	101.05		101.00
Dec	99.96	99.99	100.01	100.03		100.00
Jan	99.93	99.95	99.98	100.00		99.96
Feb	99.45	99.51	99.58	99.64		99.54
Mar	99.41	99.44	99.48	99.51		99.46
Apr	99.90	99.89	99.87	99.85		99.88
May	99.41	99.40	99.39	99.39		99.40
Jun	99.28	99.23	99.17	99.10		99.20

Table A24: Urban CPI Monthly & Average Seasonal Factors						
Period	FY18	FY19	FY20	FY21	FY22	Average
Jul	100.35	100.31	100.27	100.23	100.20	100.27
Aug	100.30	100.25	100.20	100.16	100.13	100.21
Sep	100.38	100.36	100.34	100.33	100.33	100.35
Oct	100.78	100.79	100.81	100.83		100.80
Nov	100.75	100.77	100.79	100.80		100.78
Dec	99.72	99.75	99.76	99.76		99.75
Jan	99.93	99.95	99.98	100.01		99.97
Feb	99.42	99.48	99.55	99.60		99.51
Mar	99.32	99.35	99.38	99.40		99.36
Apr	100.02	100.02	100.01	100.00		100.01
May	99.63	99.62	99.62	99.63		99.63
Jun	99.42	99.38	99.32	99.25		99.34

Period	FY18	FY19	FY20	FY21	FY22	Average
Jul	100.04	100.00	99.96	99.92	99.88	99.96
Aug	99.90	99.81	99.72	99.65	99.59	99.74
Sep	100.43	100.38	100.34	100.32	100.31	100.36
Oct	101.25	101.30	101.34	101.39		101.32
Nov	101.26	101.32	101.37	101.41		101.34
Dec	100.32	100.37	100.40	100.43		100.38
Jan	99.94	99.95	99.96	99.97		99.95
Feb	99.50	99.57	99.64	99.70		99.60
Mar	99.54	99.59	99.64	99.67		99.61
Apr	99.71	99.69	99.66	99.63		99.67
May	99.07	99.05	99.03	99.03		99.04
Jun	99.07	99.01	98.95	98.89		98.98

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	2.12
Oct	1.09	2.12	1.81	1.70	
Nov	0.66	-0.12	1.35	0.82	
Dec	-0.03	-0.31	-0.34	-0.68	
Jan	0.08	0.26	1.99	-0.21	
Feb	-0.26	0.86	-1.05	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	-0.32	0.60	0.90	1.54	0.35
Aug	0.23	-0.20	1.77	0.78	0.74
Sep	0.43	-0.32	0.44	1.16	1.70
Oct	0.52	1.49	1.14	0.97	
Nov	0.68	-0.12	1.34	0.83	
Dec	0.97	0.68	0.66	0.33	
Jan	0.11	0.30	2.02	-0.18	
Feb	0.22	1.30	-0.66	2.17	
Mar	0.26	2.07	0.14	0.49	
Apr	0.58	0.28	-1.22	0.69	
May	0.95	1.09	0.80	0.57	
Jun	0.96	0.65	1.04	0.00	

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	2.01
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	-0.28	0.52	1.08	1.22	0.32
Aug	0.26	-0.26	1.52	0.88	0.56
Sep	0.33	-0.18	0.61	1.08	1.81
Oct	0.49	1.79	1.12	0.77	
Nov	0.66	-0.06	1.02	0.66	
Dec	1.07	0.70	0.67	0.69	
Jan	-0.02	0.23	1.46	-0.41	
Feb	0.36	1.33	-0.66	2.70	
Mar	0.38	2.01	0.30	0.46	
Apr	0.66	0.16	-1.30	0.74	
May	0.92	1.07	0.68	0.56	
Jun	0.93	0.59	1.00	-0.06	

Table A28: Rural CPI (Month-on-Month) Original & Seasonally Adjusted Series					
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	2.29
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	2.43	-0.29	
Feb	-0.45	0.87	-0.98	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					
Jul	-0.38	0.72	0.64	2.02	0.40
Aug	0.20	-0.11	2.16	0.63	1.02
Sep	0.57	-0.52	0.17	1.27	1.56
Oct	0.58	1.04	1.17	1.27	
Nov	0.70	-0.20	1.83	1.07	
Dec	0.81	0.66	0.66	-0.21	
Jan	0.30	0.40	2.86	0.16	
Feb	-0.01	1.26	-0.65	1.39	
Mar	0.08	2.17	-0.10	0.53	
Apr	0.47	0.47	-1.10	0.61	
May	1.00	1.12	0.98	0.58	
Jun	1.01	0.74	1.10	0.08	

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



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

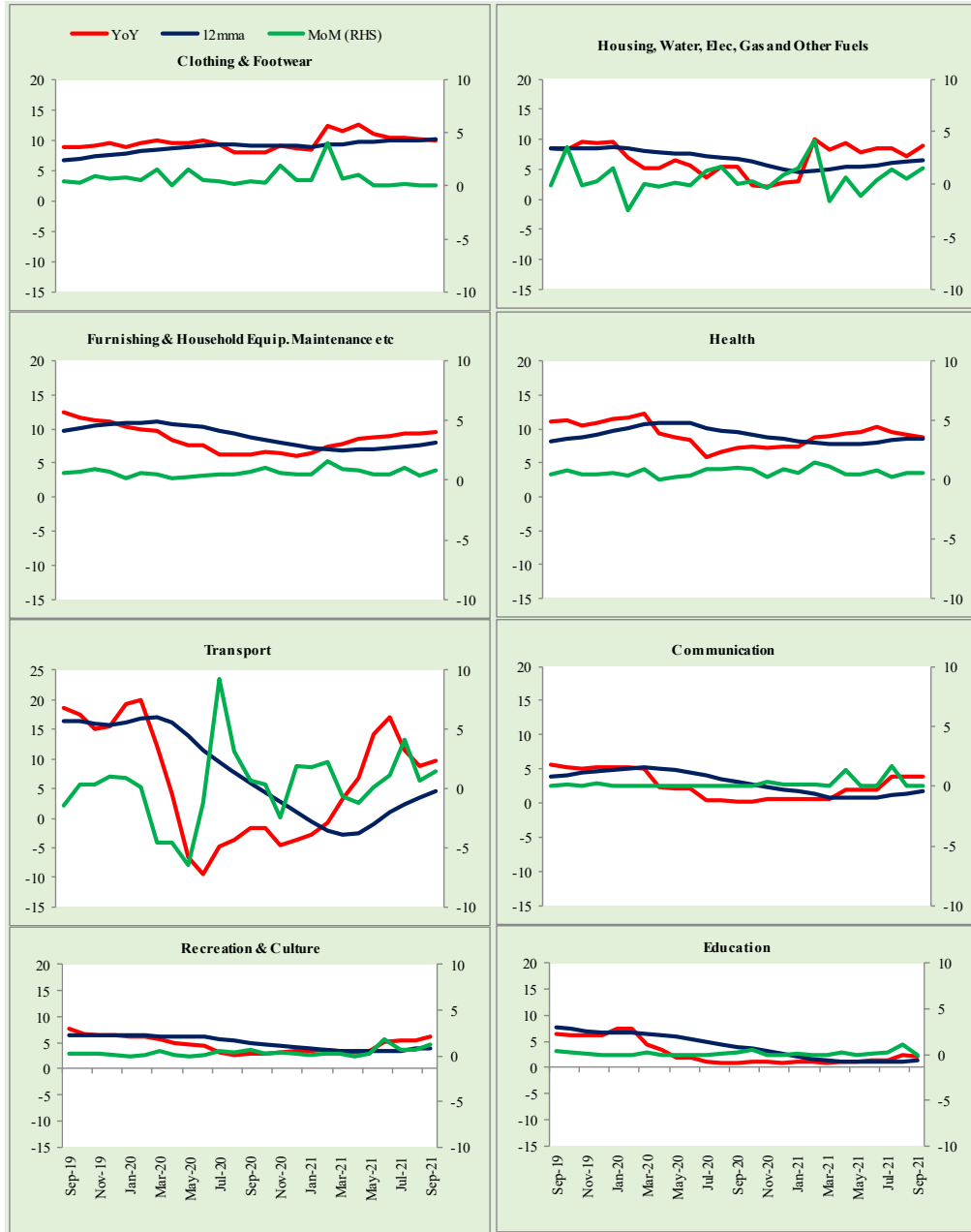


Figure A3: Rural CPI Non-food Inflation (YoY, 12MMA, MoM in percent)



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

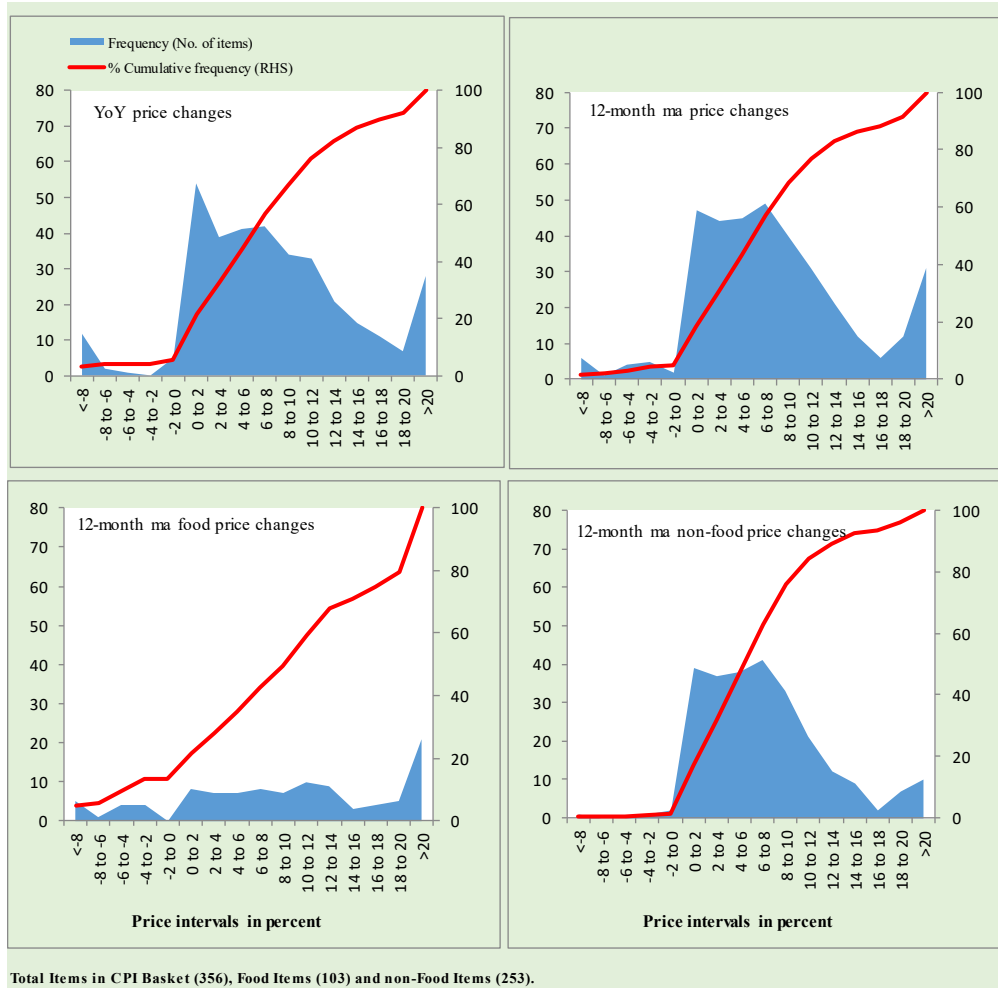


Figure A5: Frequency Distribution of Price Changes of Rural CPI Items (YoY)

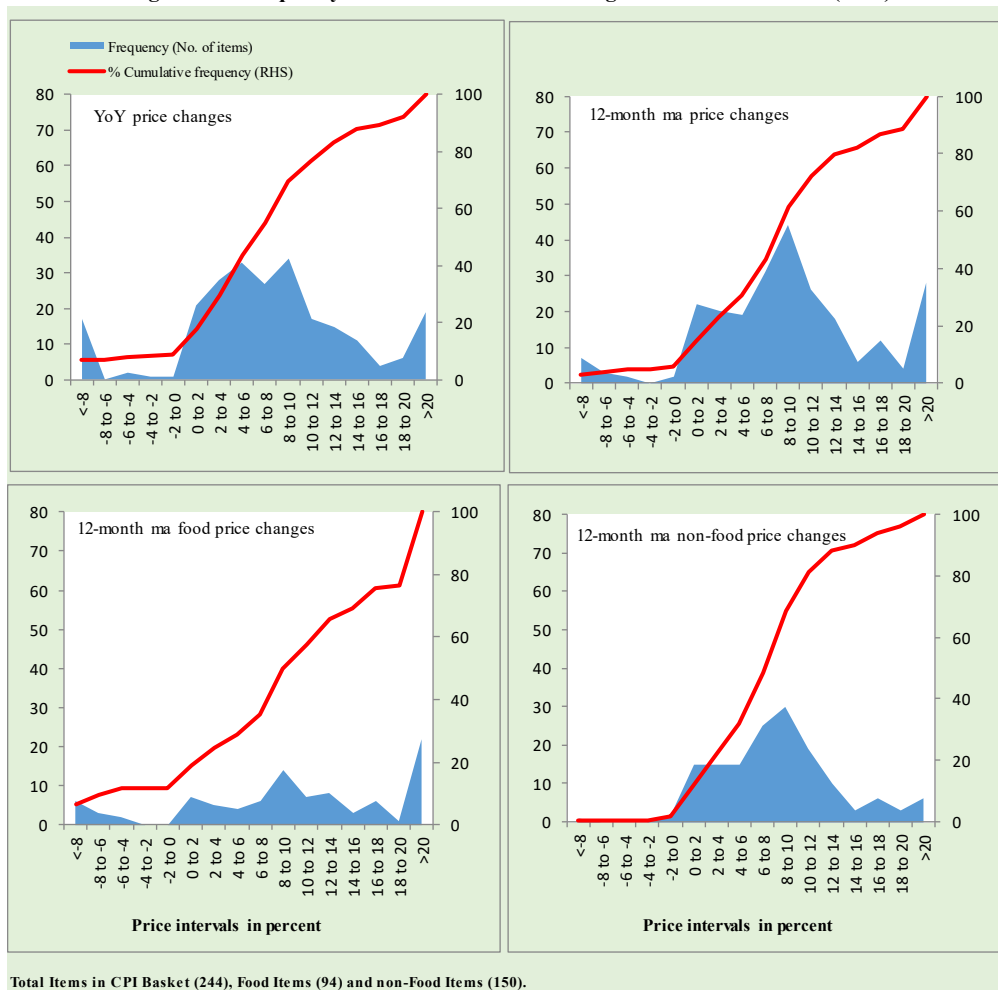


Figure A6: Frequency Distribution of Price Changes of Urban CPI Items (MoM)

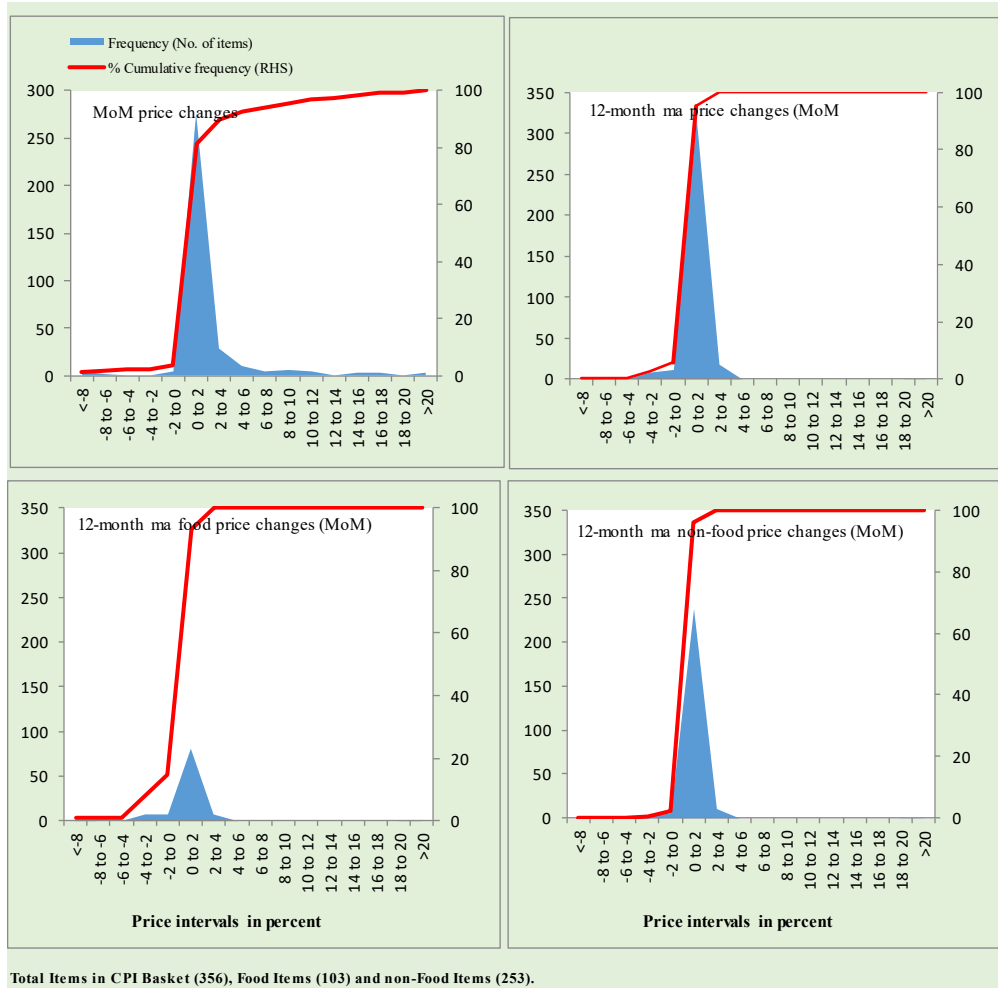


Figure A7: Frequency Distribution of Price Changes of Rural CPI Items (MoM)

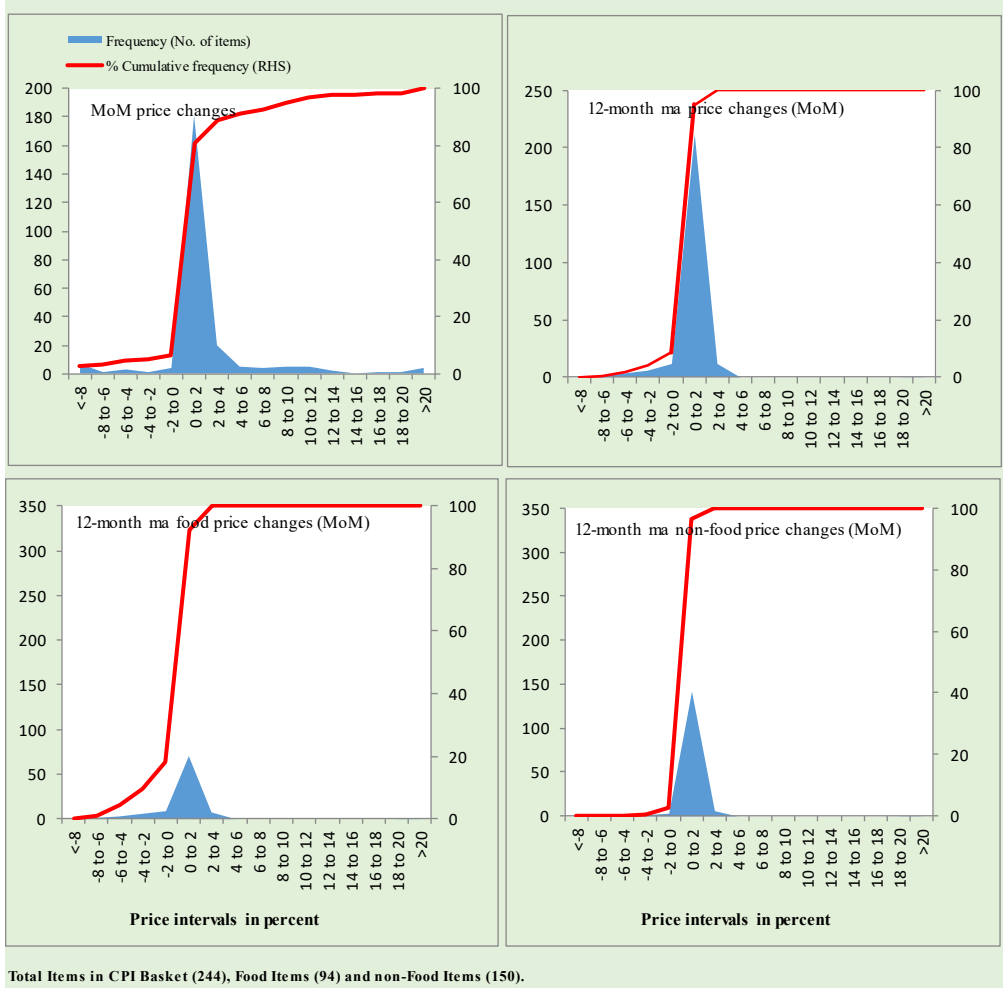
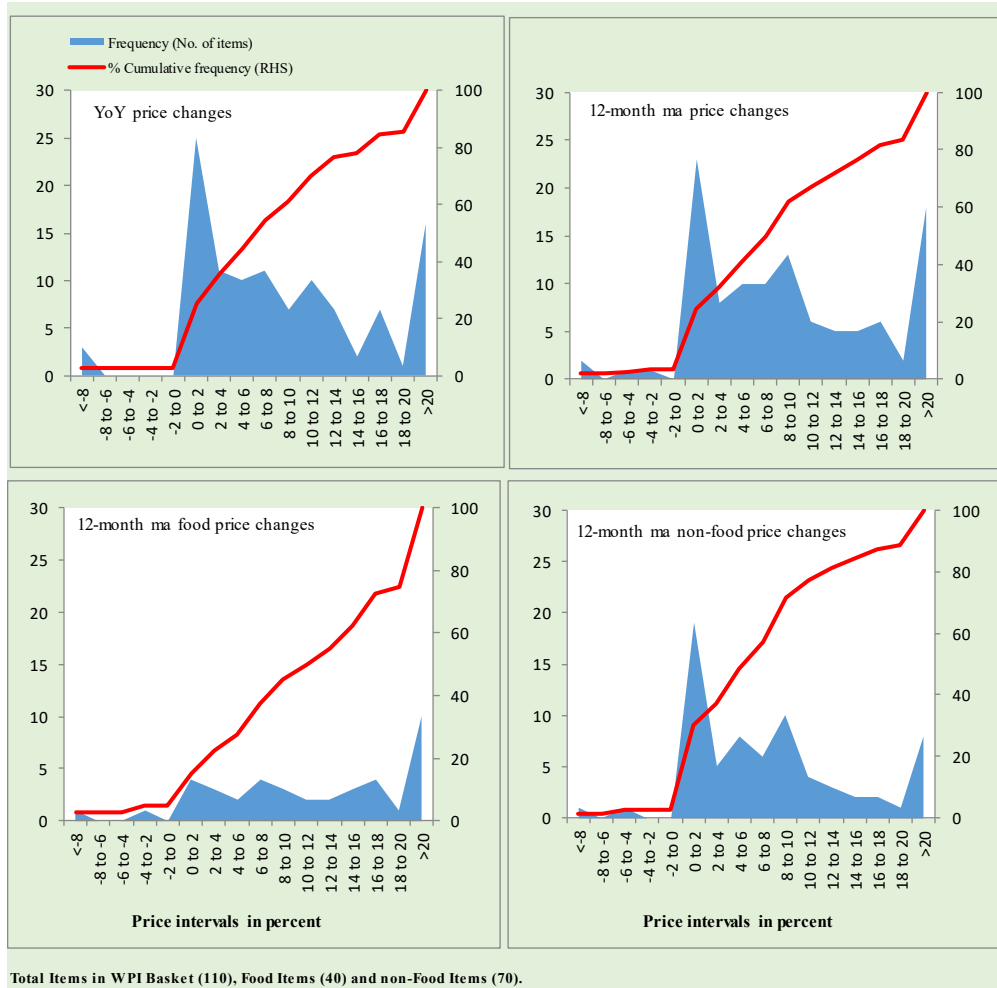


Figure A8: Frequency Distribution of Price Changes of WPI Commodities (YoY)



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 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

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.