Inflation Monitor

September 2020

(New Base: 2015-16)

State Bank of Pakistan

Statistics & DWH Department

The analysis in this document is based on data

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

  http://www.sbp.org.pk/publications/inflation_Monitor

Contents

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Review

1. **Inflation in Brief**

a) National CPI inflation (2015-16=100) is recorded at 9.0 percent on year-on-year basis in September 2020 as compared to 8.2 percent in the previous month and 11.4 percent during the corresponding month of last year.

b) National CPI inflation on month-on-month basis is recorded at 1.5 percent in September 2020 as compared to 0.6 percent in the previous month and 0.8 percent during the corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 1.32 percent in September 2020 compared to 0.84 percent in the previous month.

c) Urban CPI inflation (2015-16=100) is recorded at 7.7 percent on year-on-year basis in September 2020 as compared to 7.1 percent in the previous month and 11.6 percent during the corresponding month of last year.

d) Urban CPI inflation on month-on-month basis is recorded at 1.3 percent in September 2020 as compared to 0.8 percent in the previous month and 0.7 percent during corresponding month of last year. Seasonally adjusted month-on-month Urban CPI inflation is recorded at 1.20 percent in September 2020 compared to 0.91 percent in the previous month.

e) Rural CPI inflation (2015-16=100) is recorded at 11.1 percent on year-on-year basis in September 2020 as compared to 9.9 percent during the previous month. It was at same level during the corresponding month of last year.

f) Rural CPI inflation on month-on-month basis is recorded at 2.0 percent in September 2020 as compared to 0.4 percent in the previous month and 0.8 percent during the corresponding month of last year. Seasonally adjusted month-on-month Rural CPI inflation is recorded at 1.49 percent in September 2020 compared to 0.75 percent in the previous month.

g) Urban Core inflation (trimmed) on year-on-year basis is recorded at 7.1 percent in September 2020 as compared to 7.0 percent in the previous month and 9.3 percent during the corresponding month of last year.

h) On month-on-month basis, the Urban Core inflation (trimmed) is recorded at 0.4 percent in September 2020 as compared to 1.3 percent in the previous month and 0.6 percent during the corresponding month of last year.

i) Rural Core inflation (trimmed) on year-on-year basis is recorded at 10.0 percent in September 2020 as compared to 9.3 percent in the previous month and 9.6 percent during the corresponding month of last year.

j) On month-on-month basis, the Rural Core inflation (trimmed) is recorded at 0.9 percent in September 2020 as compared to 1.0 percent in the previous month and 0.6 percent during the corresponding month of last year.

k) Urban Core (Non-food, non-energy (NFNE)) inflation on year-on-year basis is recorded at 5.5 percent in September 2020 as compared to 5.6 percent in the previous month. It was 8.4 percent during the corresponding month of last year.

l) Urban Core (NFNE) inflation on month-on-month basis recorded at 0.3 percent in September 2020 as compared to 0.7 percent in the previous month and 0.4 percent during the corresponding month of last year.

m) Rural Core (NFNE) inflation on year-on-year basis is recorded at 7.8 percent in September 2020 as compared to 7.6 percent in the previous month and 8.8 percent during the corresponding month of last year.

n) Rural Core (NFNE) inflation on month-on-month basis recorded at 0.4 percent in September 2020 as compared to 0.8 percent in the previous month and 0.3 percent during the corresponding month of last year.

o) WPI inflation on year-on-year basis recorded at 4.3 percent in September 2020 as compared to 3.3 percent in the previous month and 15.9 percent during the corresponding month of last year.

p) WPI inflation on month-on-month basis recorded at 1.0 percent in September 2020 as compared to 1.3 percent in the previous month. It was 0.1 percent in the corresponding month of last year.

q) SPI inflation on year-on-year basis recorded at 9.0 percent in September 2020 as compared to 8.7 percent in the previous month. It was 17.5 percent in the corresponding month of last year.

r) SPI inflation on month-on-month basis recorded at 1.8 percent in September 2020 as compared to 0.8 percent in the previous month. It was 1.5 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.

Heat-map of National, Urban and Rural CPI inflation (YoY)

		Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Headline	National	11.4	11.0	12.7	12.6	14.6	12.4	10.2	8.5	8.2	8.6	9.3	8.2	9.0
	Urban	11.6	10.9	12.1	12.0	13.4	11.2	9.3	7.7	7.3	7.6	7.8	7.1	7.7
	Rural	11.1	11.3	13.6	13.6	16.3	14.2	11.7	9.8	9.7	10.0	11.6	9.9	11.1
Food	Urban	15.0	13.7	16.6	16.7	19.5	15.2	13.0	10.4	10.6	12.9	15.1	11.3	12.4
	Rural	15.0	14.6	19.3	19.7	23.8	19.7	15.5	12.9	13.7	15.2	17.8	13.5	15.8
Core	Urban	8.4	7.7	7.5	7.5	7.9	8.0	7.4	6.4	6.3	6.5	5.3	5.6	5.5
	Rural	8.9	8.6	8.4	8.1	9.0	9.4	9.4	8.5	8.4	8.8	7.8	7.6	7.7

Source: Pakistan Bureau of Statistics and SBP staff estimates

Key			
	<6	8.5	>10

Heat-map of National, Urban and Rural CPI inflation (MoM)

		Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Headline	National	0.8	1.8	1.3	-0.3	2.0	-1.0	0.0	-0.8	0.3	0.8	2.5	0.6	1.5
	Urban	0.7	1.6	1.0	-0.4	1.7	-1.1	0.1	-0.7	0.3	0.7	2.2	0.8	1.3
	Rural	0.8	2.2	1.9	-0.3	2.4	-1.0	-0.1	-1.1	0.3	1.0	3.0	0.4	2.0
Food	Urban	2.0	1.4	2.4	-1.7	2.7	-1.4	0.6	-1.0	1.5	1.8	3.0	-0.3	3.0
	Rural	1.8	2.6	3.4	-1.1	3.4	-1.6	-0.3	-1.7	1.4	2.0	4.0	-0.9	3.8
Core	Urban	0.4	0.5	0.3	0.4	1.1	0.2	0.3	0.2	0.4	0.4	0.6	0.7	0.3
	Rural	0.3	0.7	0.5	0.3	1.0	0.5	0.6	0.3	0.4	0.7	1.1	0.8	0.4

Source: Pakistan Bureau of Statistics and SBP staff estimates

Key   <0.00   0.75   >1.50

Heat-map of National CPI inflation (YoY)

	Weights	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
National	100.00	11.4	11.0	12.7	12.6	14.6	12.4	10.2	8.5	8.2	8.6	9.3	8.2	9.0
Food and non-alcoholic Beverages	34.58	15.8	15.0	19.4	19.7	23.7	18.4	14.7	11.7	12.2	14.6	17.8	12.9	14.7
Alcoholic Beverages, Tobacco	1.02	30.0	20.3	18.7	18.3	17.9	18.5	18.6	19.6	19.5	14.2	5.0	5.8	5.9
Clothing and footwear	8.60	8.9	9.3	9.4	9.7	9.6	10.1	11.0	10.2	10.3	11.0	10.3	9.2	9.1
Housing, water, Elec., Gas and other fuels	23.63	6.6	7.2	8.8	8.5	9.6	6.8	4.9	5.1	6.4	5.4	4.2	6.0	6.1
Furnishing and household equipment maintenance	4.10	11.7	11.3	10.8	10.4	10.1	10.0	10.1	9.0	8.7	8.8	7.8	7.5	7.9
Health	2.79	11.7	12.2	11.4	11.3	11.8	12.0	12.4	10.5	9.8	9.3	7.8	7.7	8.3
Transport	5.91	17.8	16.5	14.0	14.7	18.6	19.2	11.5	3.4	-7.5	-10.2	-4.5	-3.4	-1.5
Communication	2.21	4.3	4.0	4.0	4.0	4.0	3.9	3.9	1.7	1.6	1.6	0.3	0.3	0.3
Recreation and culture	1.59	7.8	7.4	6.8	6.8	6.5	6.6	5.9	5.1	4.9	4.8	3.8	3.5	3.9
Education	3.79	6.2	6.0	6.1	6.0	7.3	7.4	4.5	3.2	2.0	2.0	1.1	1.0	1.0
Restaurants and hotels	6.92	6.1	6.0	6.4	6.1	7.4	8.7	8.7	8.5	8.6	9.0	7.5	8.0	8.2
Misc. goods and services	4.87	13.4	12.5	11.8	10.7	11.4	11.4	11.8	11.9	11.9	11.6	11.7	13.6	12.2

Source: Pakistan Bureau of Statistics and SBP staff estimates

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Heat-map of Urban CPI inflation (YoY)

	Weights	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Urban	100.00	11.6	10.9	12.1	12.0	13.4	11.2	9.3	7.7	7.3	7.6	7.8	7.1	7.7
Food and non-alcoholic Beverages	30.42	16.3	15.0	18.6	18.8	22.0	16.4	13.7	10.7	13.9	13.8	16.9	11.9	13.3
Alcoholic Beverages, Tobacco	0.85	28.7	18.5	16.7	16.6	16.8	17.7	17.8	18.8	19.0	13.3	4.7	5.5	5.7
Clothing and footwear	8.01	9.0	9.0	9.1	9.6	9.0	9.6	9.4	9.5	9.5	10.1	9.4	8.0	8.0
Housing, water, Elec., Gas and other fuels	27.03	8.4	8.2	9.6	9.4	9.7	6.9	5.1	5.1	6.5	5.6	3.6	5.4	5.5
Furnishing and household equipment maintenance	4.09	12.5	11.6	11.2	11.0	10.4	10.0	9.8	8.3	7.7	7.7	6.3	6.2	6.3
Health	2.31	11.1	11.2	10.5	10.9	11.5	11.7	12.2	9.4	8.7	8.4	5.9	6.7	7.2
Transport	6.14	18.6	17.5	15.0	15.6	19.4	19.9	12.2	4.1	-6.5	-9.5	-4.8	-3.7	-1.6
Communication	2.35	5.6	5.2	5.1	5.3	5.3	5.3	5.1	2.3	2.2	2.1	0.4	0.4	0.3
Recreation and culture	1.73	7.7	6.7	6.5	6.4	6.1	6.1	5.6	4.9	4.6	4.4	3.1	2.7	2.9
Education	4.88	6.4	6.2	6.3	6.3	7.5	7.5	4.5	3.4	1.9	1.9	1.1	1.0	0.9
Restaurants and hotels	7.41	5.0	4.9	5.2	4.9	6.5	7.7	7.7	7.5	7.4	7.2	6.7	8.2	8.2
Misc. goods and services	4.77	13.1	12.0	11.0	10.1	10.7	10.1	10.6	11.0	10.9	10.6	10.4	12.6	10.5

Source: Pakistan Bureau of Statistics and SBP staff estimates

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Heat-map of Rural CPI inflation (YoY)

	Weights	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Rural	100.00	11.1	11.3	13.6	13.6	16.3	14.2	11.7	9.8	9.7	10.0	11.6	9.9	11.1
Food and non-alcoholic Beverages	40.87	15.3	15.1	20.3	20.8	25.5	20.6	15.8	12.8	13.7	15.5	18.7	14.0	16.4
Alcoholic Beverages, Tobacco	1.28	31.4	22.4	21.0	20.2	19.2	19.4	19.5	20.4	20.1	15.3	5.4	6.1	6.1
Clothing and footwear	9.48	8.9	9.7	9.8	9.9	10.2	10.8	12.3	11.0	11.4	12.2	11.5	10.6	10.5
Housing, water, Elec., Gas and other fuels	18.49	2.8	4.9	6.9	6.6	9.4	6.6	4.6	5.2	6.0	4.9	5.5	7.2	7.4
Furnishing and household equipment maintenance	4.10	10.5	10.9	10.2	9.6	9.7	9.9	10.6	10.1	10.2	10.4	10.1	9.5	10.3
Health	3.51	12.2	13.1	12.3	11.7	12.1	12.4	12.6	11.6	10.9	10.1	9.7	8.7	9.3
Transport	5.56	16.4	14.7	12.2	13.1	17.2	18.0	10.2	2.3	-9.0	-11.5	-3.8	-3.0	-1.4
Communication	1.99	2.0	2.0	1.9	1.7	1.7	1.6	1.6	0.8	0.7	0.6	0.3	0.2	0.2
Recreation and culture	1.38	8.0	8.9	7.4	7.5	7.3	7.3	6.5	5.4	5.5	5.5	5.2	5.0	5.8
Education	2.13	5.3	5.3	5.3	5.0	6.7	7.1	4.5	2.5	2.4	2.4	1.2	0.7	1.2
Restaurants and hotels	6.19	8.1	8.0	8.5	8.3	8.9	10.3	10.8	10.4	11.1	11.3	9.0	7.5	8.4
Misc. goods and services	5.02	13.9	13.2	12.9	11.6	12.5	13.4	13.6	13.2	13.5	13.2	13.8	15.0	14.5

Source: Pakistan Bureau of Statistics and SBP staff estimates

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Heat-map of National CPI inflation (MoM)

	Weights	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
National	100.00	0.8	1.8	1.3	-0.3	2.0	-1.0	0.0	-0.8	0.3	0.8	2.5	0.6	1.5
Food and non-alcoholic Beverages	34.58	2.1	2.3	3.2	-1.7	3.4	-2.0	0.1	-1.6	1.6	2.1	3.9	-0.9	3.8
Alcoholic Beverages, Tobacco	1.02	0.4	0.3	0.3	0.0	0.3	0.3	0.1	0.8	0.1	0.2	1.7	1.0	0.5
Clothing and footwear	8.60	0.4	0.6	1.0	0.5	0.9	0.7	1.6	0.0	1.4	0.8	0.8	0.3	0.4
Housing, water, Elec., Gas and other fuels	23.63	-0.2	3.7	0.0	0.4	1.9	-2.5	0.0	-0.3	-0.1	-0.2	1.3	1.8	0.0
Furnishing and household equipment maintenance	4.10	0.7	0.8	0.8	0.5	0.4	0.6	0.7	0.3	0.4	0.5	0.9	0.6	1.1
Health	2.79	0.5	1.1	0.8	0.4	0.6	0.5	1.1	0.4	0.2	0.2	1.0	0.7	1.0
Transport	5.91	-1.5	0.3	0.5	1.0	0.9	0.3	-4.4	-4.5	-6.5	-1.1	9.6	3.0	0.4
Communication	2.21	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recreation and culture	1.59	0.3	0.6	0.2	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.9	0.3	0.8
Education	3.79	0.3	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.3
Restaurants and hotels	6.92	0.4	0.3	0.6	0.1	1.5	1.3	0.6	0.1	0.2	0.5	0.6	1.4	0.7
Misc. goods and services	4.87	1.2	0.6	0.4	0.2	1.4	0.7	1.0	1.0	0.1	0.8	2.0	3.6	0.0

Source: Pakistan Bureau of Statistics and SBP staff estimates

	<0.00	0.75	>1.50

Heat-map of Urban CPI inflation (MoM)

	Weights	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Urban	100.00	0.7	1.6	1.0	-0.4	1.7	-1.1	0.1	-0.7	0.3	0.7	2.2	0.8	1.3
Food and non-alcoholic Beverages	30.42	2.3	1.7	2.8	-2.1	3.1	-2.0	0.5	-1.3	1.8	2.0	3.5	-0.7	3.5
Alcoholic Beverages, Tobacco	0.85	0.2	0.2	0.1	0.0	0.4	0.2	0.0	0.9	0.1	0.0	2.2	1.0	0.4
Clothing and footwear	8.01	0.4	0.3	0.9	0.7	0.8	0.5	1.5	0.0	1.5	0.6	0.4	0.2	0.4
Housing, water, Elec., Gas and other fuels	27.03	-0.1	3.5	-0.1	0.3	1.5	-2.5	0.0	-0.2	0.1	-0.1	1.3	1.7	0.0
Furnishing and household equipment maintenance	4.09	0.6	0.7	0.9	0.7	0.2	0.6	0.5	0.2	0.3	0.4	0.5	0.5	0.7
Health	2.31	0.5	0.8	0.5	0.5	0.6	0.3	0.9	0.2	0.3	0.2	0.9	0.9	1.0
Transport	6.14	-1.4	0.4	0.4	1.0	0.9	0.1	-4.6	-4.5	-6.4	-1.2	9.3	3.1	0.7
Communication	2.35	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recreation and culture	1.73	0.3	0.2	0.2	0.1	0.0	0.1	0.5	0.1	0.0	0.1	0.5	0.4	0.6
Education	4.88	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
Restaurants and hotels	7.41	0.6	0.2	0.5	0.0	1.9	1.2	0.6	0.0	0.0	0.6	0.3	1.9	0.6
Misc. goods and services	4.77	1.5	0.5	0.2	0.2	1.2	0.3	1.1	1.0	0.0	0.8	1.6	3.4	-0.4

Source: Pakistan Bureau of Statistics and SBP staff estimates

	<0.00	0.75	>1.50

Heat-map of Rural CPI inflation (MoM)

	Weights	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Rural	100.00	0.8	2.2	1.9	-0.3	2.4	-1.0	-0.1	-1.1	0.3	1.0	3.0	0.4	2.0
Food and non-alcoholic Beverages	40.87	2.0	2.9	3.6	-1.2	3.7	-2.0	-0.4	-2.0	1.5	2.2	4.3	-1.1	4.1
Alcoholic Beverages, Tobacco	1.28	0.7	0.5	0.7	0.0	0.2	0.4	0.2	0.7	0.0	0.3	1.1	1.0	0.7
Clothing and footwear	9.48	0.4	0.9	1.1	0.2	1.1	0.9	1.7	0.0	1.3	1.0	1.2	0.4	0.3
Housing, water, Elec., Gas and other fuels	18.49	-0.2	4.1	0.4	0.5	2.8	-2.5	0.0	-0.5	-0.5	-0.3	1.5	1.9	0.0
Furnishing and household equipment maintenance	4.10	0.9	0.9	0.8	0.3	0.8	0.6	0.9	0.5	0.5	0.5	1.4	0.9	1.7
Health	3.51	0.4	1.3	1.2	0.4	0.6	0.7	1.2	0.7	0.2	0.2	1.1	0.4	0.9
Transport	5.56	-1.8	0.1	0.5	0.9	0.9	0.5	-4.1	-4.5	-6.5	-0.8	10.0	2.7	-0.2
Communication	1.99	0.0	-0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Recreation and culture	1.38	0.3	1.4	0.1	0.2	0.3	0.1	0.2	0.3	0.3	0.0	1.6	0.1	1.1
Education	2.13	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.4
Restaurants and hotels	6.19	0.1	0.3	0.7	0.2	0.9	1.4	0.6	0.3	0.6	0.5	1.1	0.6	1.0
Misc. goods and services	5.02	0.9	0.7	0.5	0.2	1.5	1.2	0.9	0.9	0.2	0.9	2.5	3.8	0.4

Source: Pakistan Bureau of Statistics and SBP staff estimates

	<0.00	0.75	>1.50

Heat-map of Rural CPI inflation (YoY)

	Weights	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Rural	100.00	11.1	11.3	13.6	13.6	16.3	14.2	11.7	9.8	9.7	10.0	11.6	9.9	11.1
Food	45.95	15.0	14.6	19.3	19.7	23.8	19.7	15.5	12.9	13.7	15.2	17.8	13.5	15.8
Non-perishable	40.16	13.4	11.5	11.9	11.8	16.2	17.0	15.1	12.8	14.1	15.8	16.6	15.1	15.6
Perishable	5.79	26.1	34.3	73.9	89.3	90.3	41.2	18.2	13.5	11.4	10.9	25.4	3.7	16.9
Non Food	54.05	8.0	8.7	9.0	8.8	10.5	9.8	8.5	7.4	6.4	5.8	6.5	6.8	7.2
Energy	11.41	4.8	9.1	11.4	11.3	15.9	11.4	5.4	3.2	-1.3	-5.3	1.4	3.6	5.0
NFNE (Core)	42.64	8.9	8.6	8.4	8.1	9.0	9.4	9.4	8.5	8.4	8.8	7.8	7.6	7.7
HRI	8.61	5.5	4.1	4.1	4.1	6.3	6.3	6.3	5.1	5.1	5.1	4.9	4.9	4.9
Core Excl HRI	34.03	9.7	9.7	9.5	9.2	9.7	10.2	10.2	9.3	9.3	9.7	8.6	8.3	8.4

Source: Pakistan Bureau of Statistics and SBP staff estimates

	<6	8.5	>10

Heat-map of Urban CPI inflation (YoY)

	Weights	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Urban	100.00	11.6	10.9	12.1	12.0	13.4	11.2	9.3	7.7	7.3	7.6	7.8	7.1	7.7
Food	36.80	15.0	13.7	16.6	16.7	19.5	15.2	13.0	10.4	10.6	12.9	15.1	11.3	12.4
Non-perishable	32.34	13.3	10.5	10.3	10.2	13.8	13.8	13.0	10.6	12.1	14.2	14.2	12.5	12.2
Perishable	4.46	27.2	35.9	66.0	76.4	68.8	25.2	12.9	9.2	1.5	4.2	20.7	3.8	13.7
Non Food	63.20	9.7	9.3	9.6	9.5	10.2	9.1	7.3	6.2	5.4	4.7	3.9	4.8	5.0
Energy	9.47	16.8	18.1	21.0	20.6	22.8	15.3	6.6	4.6	0.5	-5.0	-3.5	0.8	2.1
NFNE (Core)	53.73	8.4	7.7	7.5	7.5	7.9	8.0	7.4	6.4	6.3	6.5	5.3	5.6	5.5
HRI	19.26	6.5	5.0	5.0	5.0	5.6	5.6	5.6	4.2	4.2	4.2	4.3	4.3	4.3
Core Excl HRI	34.47	9.5	9.2	9.0	8.9	9.3	9.3	8.5	7.7	7.5	7.8	5.8	6.3	6.2

Source: Pakistan Bureau of Statistics and SBP staff estimates

<6	8.5	>10

Heat-map of Rural CPI inflation (MoM)

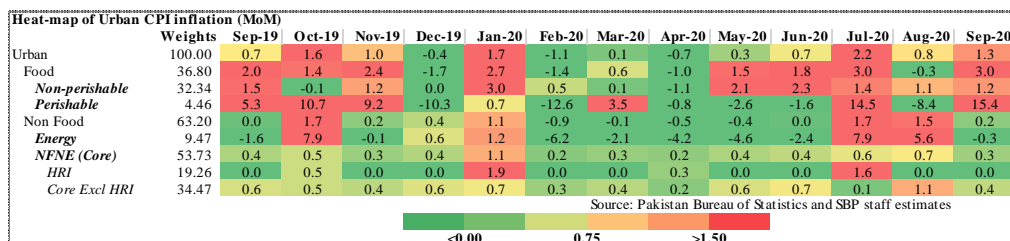|	Weights	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Rural	100.00	0.8	2.2	1.9	-0.3	2.4	-1.0	-0.1	-1.1	0.3	1.0	3.0	0.4	2.0
Food	45.95	1.8	2.6	3.4	-1.1	3.4	-1.6	-0.3	-1.7	1.4	2.0	4.0	-0.9	3.8
Non-perishable	40.16	1.3	0.2	1.7	0.5	3.9	1.1	-0.1	-1.2	1.8	2.8	2.1	0.9	1.8
Perishable	5.79	4.5	17.6	11.9	-8.3	1.1	-15.9	2.9	-4.9	-1.7	-3.2	17.3	-11.4	17.9
Non Food	54.05	0.0	1.8	0.6	0.4	1.5	-0.4	0.1	-0.5	-0.5	0.1	2.2	1.5	0.3
Energy	11.41	-1.4	5.9	0.7	0.6	3.3	-3.8	-0.1	-3.6	-4.2	-2.0	6.7	3.9	-0.1
NFNE (Core)	42.64	0.3	0.7	0.5	0.3	1.0	0.5	0.6	0.3	0.4	0.7	1.1	0.8	0.4
HRI	8.61	0.0	0.5	0.0	0.0	2.2	0.0	0.0	0.4	0.0	0.0	1.7	0.0	0.0
Core Excl HRI	34.03	0.4	0.8	0.7	0.4	0.7	0.7	0.8	0.3	0.5	0.8	0.9	1.0	0.5

Source: Pakistan Bureau of Statistics and SBP staff estimates

<0.00	0.75	>1.50

Heat-map of Urban CPI inflation (MoM)

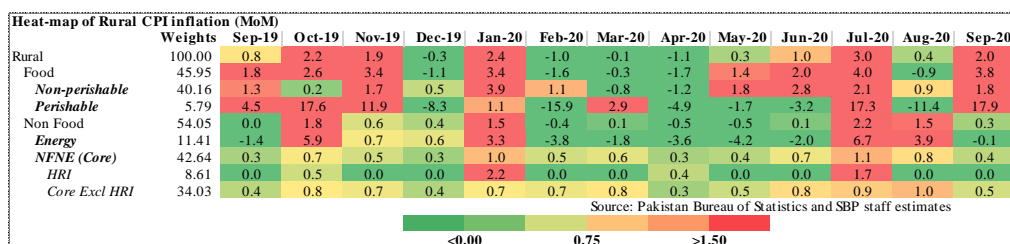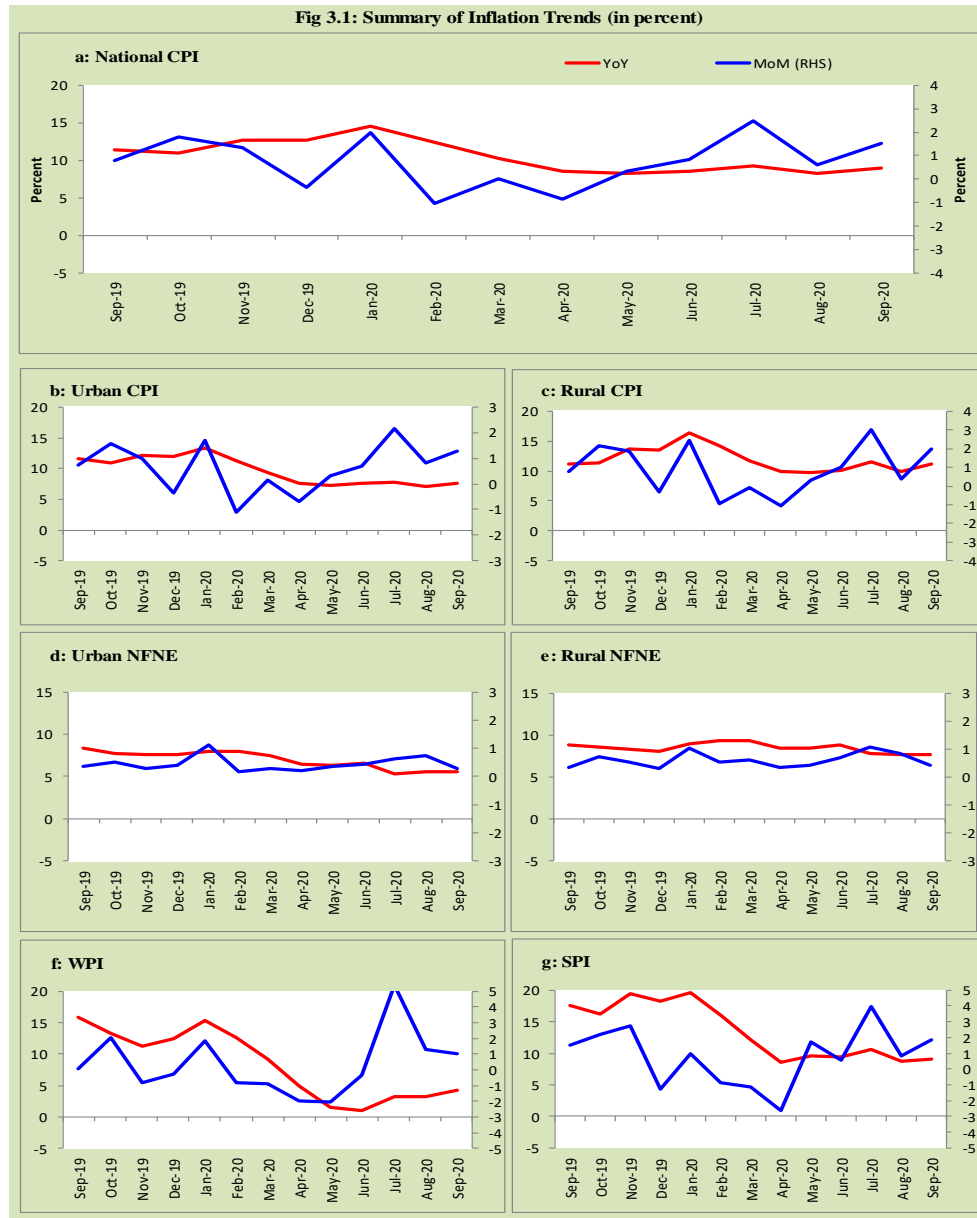|	Weights	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Urban	100.00	0.7	1.6	1.0	-0.4	1.7	-1.1	0.1	-0.7	0.3	0.7	2.2	0.8	1.3
Food	36.80	2.0	1.4	2.4	-1.7	2.7	-1.4	0.6	-1.0	1.5	1.8	3.0	-0.3	3.0
Non-perishable	32.34	1.5	-0.1	1.2	0.0	3.0	0.5	0.1	-1.1	2.1	2.3	1.4	1.1	1.2
Perishable	4.46	5.3	10.7	9.2	-10.3	0.7	-12.6	3.5	-0.8	-2.6	-1.6	14.5	-8.4	15.4
Non Food	63.20	0.0	1.7	0.2	0.4	1.1	-0.9	-0.1	-0.5	-0.4	0.0	1.7	1.5	0.2
Energy	9.47	-1.6	7.9	-0.1	0.6	1.2	-6.2	-2.1	-4.2	-4.6	-2.4	7.9	5.6	-0.3
NFNE (Core)	53.73	0.4	0.5	0.3	0.4	1.1	0.2	0.3	0.2	0.4	0.4	0.6	0.7	0.3
HRI	19.26	0.0	0.5	0.0	0.0	1.9	0.0	0.0	0.3	0.0	0.0	1.6	0.0	0.0
Core Excl HRI	34.47	0.6	0.5	0.4	0.6	0.7	0.3	0.4	0.2	0.6	0.7	0.1	1.1	0.4

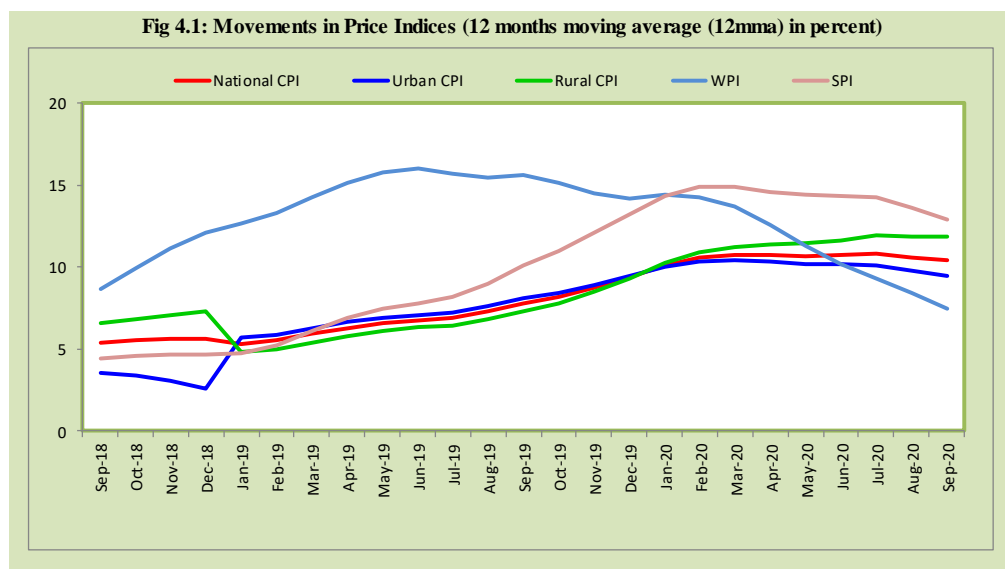Source: Pakistan Bureau of Statistics and SBP staff estimates

<0.00	0.75	>1.50

3. Trends in Inflation

Fig 3.1: Summary of Inflation Trends (in percent)

4. Movement in Price Indices (Moving Averages)

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

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

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

National CPI — Urban CPI — Rural CPI — WPI — SPI

Fig 5.2: Movements in Price Indices (MoM in percent) - Urban CPI Basket
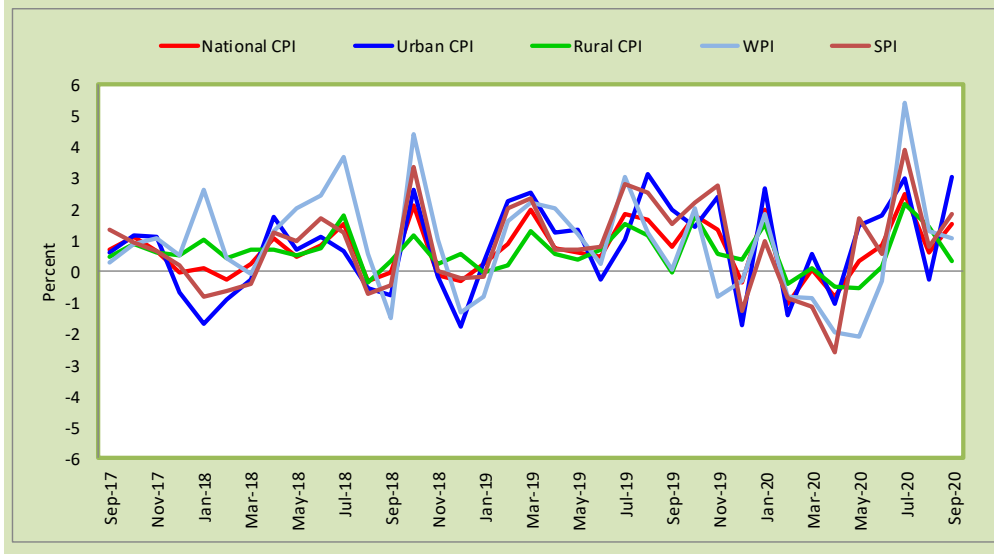
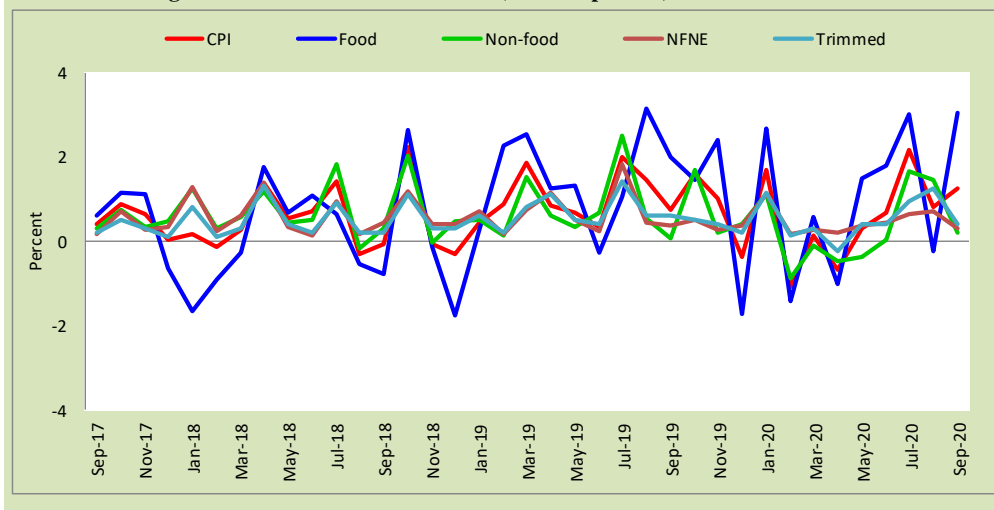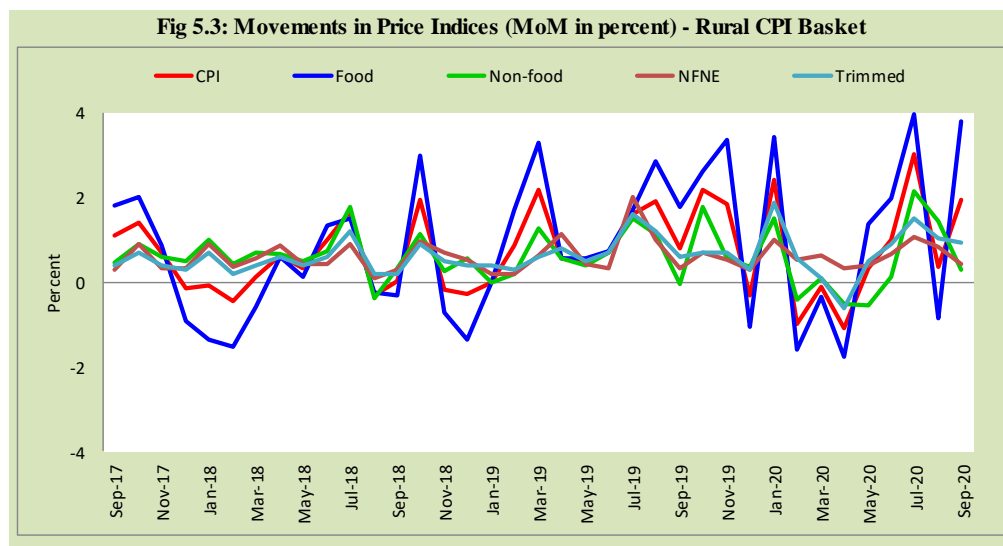CPI — Food — Non-food — NFNE — Trimmed

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

6. Trends in Consumer Price Indices and Inflation

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

a: Consumer Price Index (CPI)

b: CPI Inflation (YoY)

c: CPI Inflation Build-up over June

d: MoM Seasonally Adjusted CPI Inflation
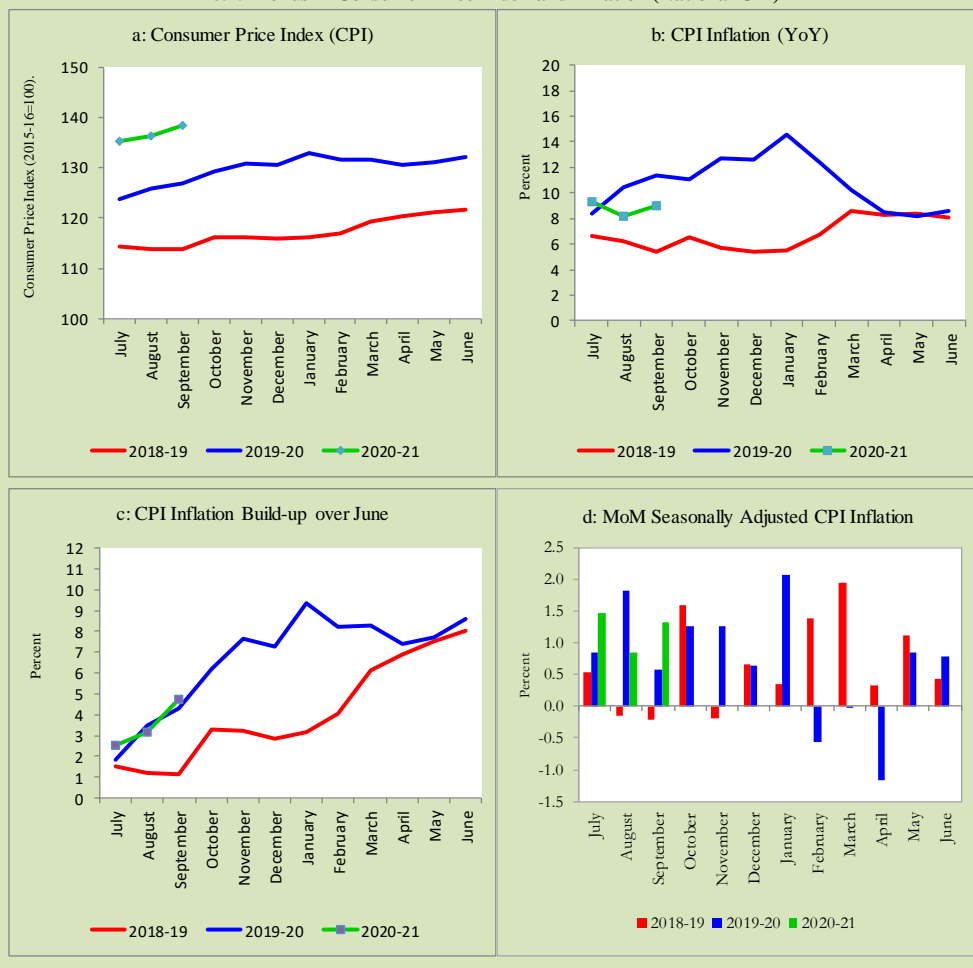
6.2. Trends in Consumer Price Index and Inflation (Urban CPI Basket)

a: Consumer Price Index (CPI)

b: CPI Inflation(YoY)

c: CPI Inflation Build-up over June

d: MoM Seasonally Adjusted CPI Inflation
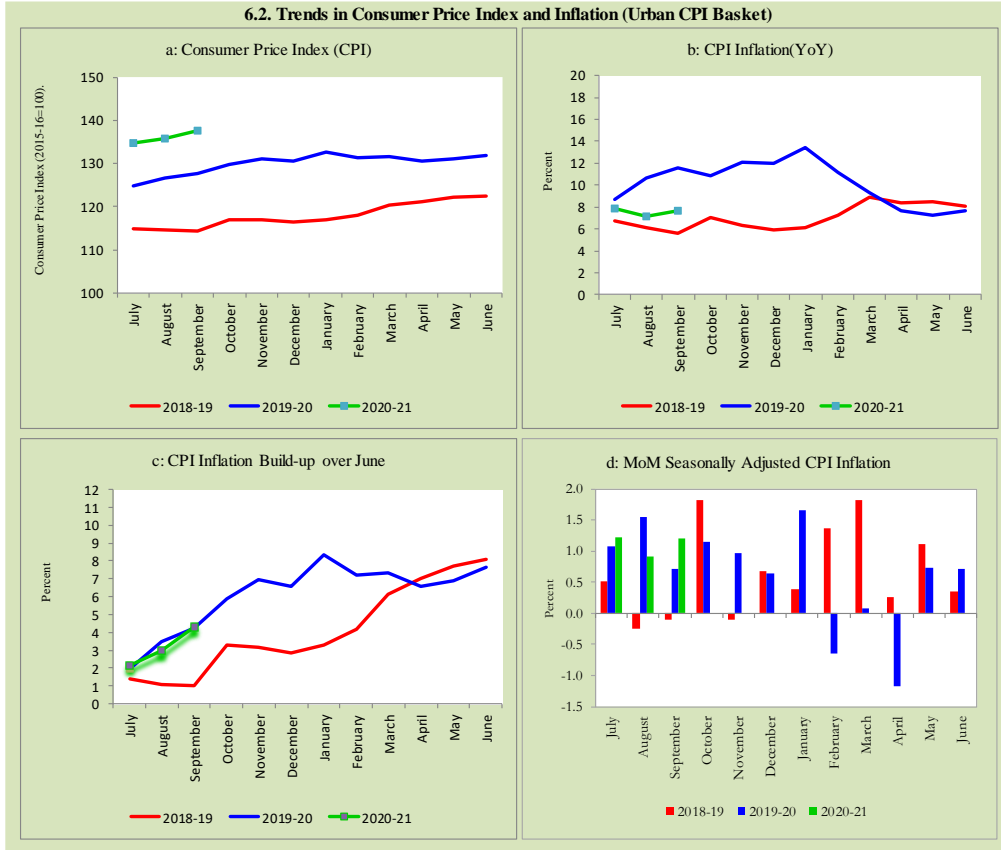
`6.3. Trends in Consumer Price Index and Inflation (Rural CPI Basket)

a: Consumer Price Index (CPI)

b: CPI Inflation (YoY)

c: CPI Inflation Build-up over June

d: MoM Seasonally Adjusted CPI Inflation
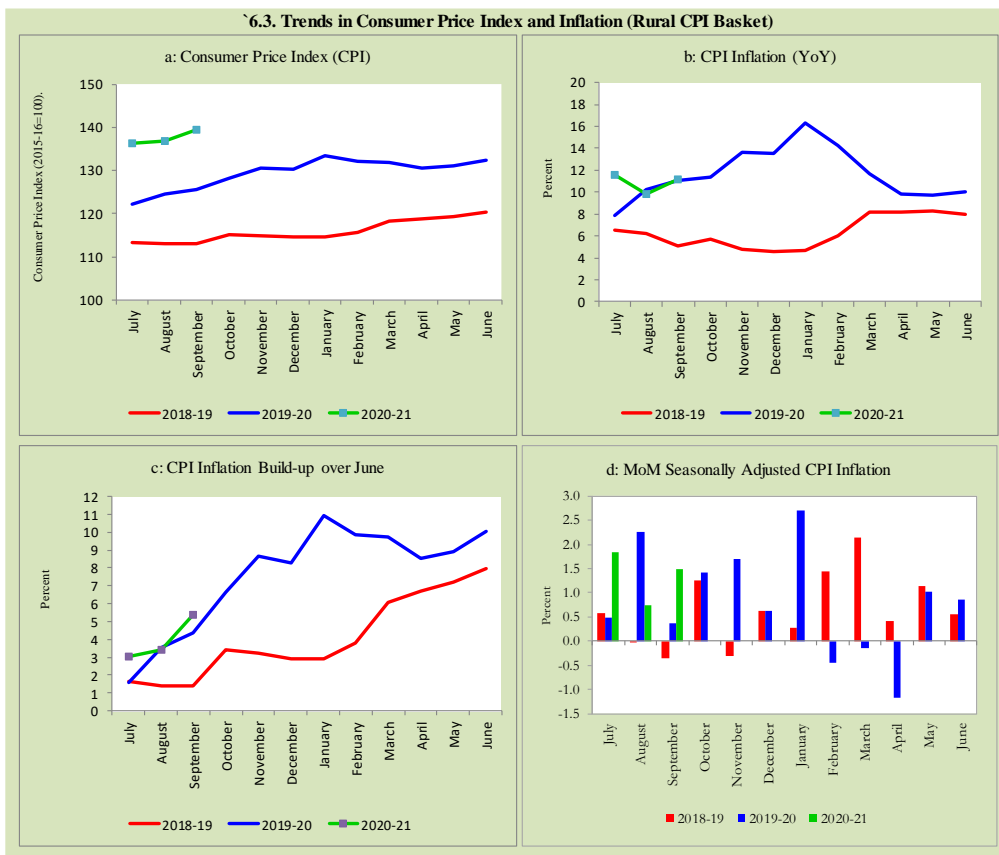
7. Weighted Contribution

The weighted contribution of food group in the overall urban CPI inflation increased to 58.8 percent during September 2020 from 56.8 percent in previous month. It was 45.8 percent during corresponding month of last year. The weighted contribution of non-food group decreased to 41.2 percent in September 2020 from 43.2 percent in previous month. Non-food group was 54.2 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)								
		Food Group			Non-Food Group				
Period	Overall CPI	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
Sep-19	100	45.8	10.5	35.3	54.2	14.1	40.1	28.9	11.2
Oct-19	100	44.7	14.9	29.7	55.4	16.8	38.6	29.3	9.2
Nov-19	100	48.7	22.1	26.6	51.3	17.1	34.2	25.9	8.3
Dec-19	100	48.4	21.8	26.6	51.7	17.1	34.6	26.2	8.4
Jan-20	100	50.5	18.4	32.1	49.6	16.8	32.8	24.3	8.5
Feb-20	100	47.7	9.4	38.3	52.3	13.3	39.0	29.0	10.1
Mar-20	100	49.4	6.5	42.8	50.7	7.2	43.4	31.5	11.9
Apr-20	100	48.3	5.8	42.5	51.7	5.9	45.8	35.0	10.8
May-20	100	52.2	1.0	51.1	47.8	0.7	47.1	35.8	11.4
Jun-20	100	60.0	2.6	57.4	40.0	-6.5	46.4	35.7	10.8
Jul-20	100	68.0	12.3	55.7	32.1	-4.7	36.7	26.0	10.7
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

Also, for rural basket, the weighted contribution of food group in the overall rural CPI inflation increased to 65.2 percent during September 2020 from 62.4 percent in previous month. It was 60.0 percent during corresponding month of last year. On the other hand, the weighted contribution of non-food group decreased to 34.8 percent in September 2020 from 37.6 percent in previous month. Non-food group was 40.0 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.

Table 7.2 Weighted Contribution (in percent) to Rural CPI Inflation (YoY)								
		Food Group			Non-Food Group			
Period	Overall CPI	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
Sep-19	100	60.0	13.3	46.7	40.0	5.1	34.9	30.4	4.5
Oct-19	100	57.8	18.5	39.3	42.2	9.5	32.7	29.5	3.3
Nov-19	100	63.3	28.7	34.5	36.7	9.8	26.9	24.2	2.7
Dec-19	100	63.9	29.4	34.5	36.1	9.8	26.3	23.6	2.8
Jan-20	100	64.2	24.8	39.3	35.8	11.4	24.4	20.9	3.5
Feb-20	100	61.7	14.6	47.1	38.2	9.3	28.9	24.9	4.0
Mar-20	100	59.9	9.5	50.4	40.2	5.5	34.7	29.9	4.8
Apr-20	100	58.8	8.2	50.6	41.2	3.8	37.5	32.8	4.7
May-20	100	63.8	7.0	56.9	36.2	-1.6	37.8	33.0	4.7
Jun-20	100	68.2	6.3	61.9	31.8	-6.2	38.0	33.4	4.5
Jul-20	100	69.3	12.9	56.4	30.7	1.4	29.3	25.5	3.8
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	29.8	26.0	3.8

Figure 7.1: Composition of YoY Urban and Rural CPI Inflation
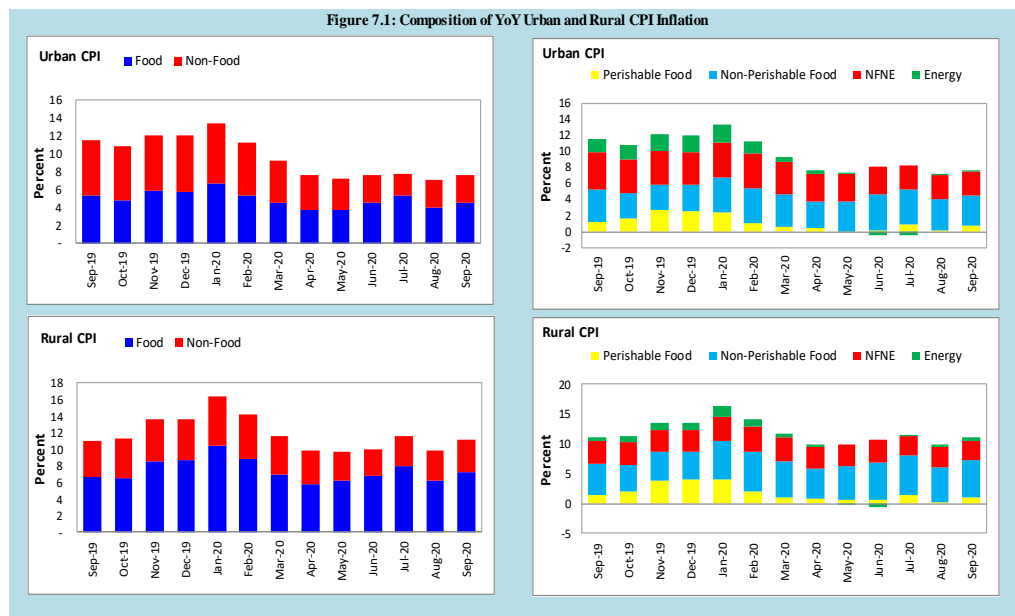
8. Inflation Diffusion Index

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-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
General	52.8	61.8	55.3	43.5	56.2	52.5	45.8	19.9	30.1	41.0	55.3	55.3	63.2
Food & Non-Alcoholic Beverages	50.0	67.8	45.6	35.6	66.7	35.6	31.1	26.7	4.4	34.4	42.2	22.2	62.2
Alcoholic Beverages & Tobacco	100.0	100.0	100.0	66.7	100.0	66.7	66.7	100.0	66.7	66.7	66.7	100.0	66.7
Clothing & Footwear	57.5	72.5	80.0	72.5	75.0	75.0	67.5	10.0	67.5	57.5	67.5	65.0	72.5
Housing, Water, Elect, Gas & other Fuels	10.3	55.2	24.1	20.7	3.4	6.9	27.6	24.1	17.2	10.3	27.6	41.4	6.9
Furnishing & Household Equip. Maintenance etc.	97.6	88.1	95.2	76.2	71.4	92.9	64.3	19.0	61.9	90.5	81.0	95.2	88.1
Health	32.3	64.5	64.5	54.8	71.0	77.4	67.7	35.5	38.7	38.7	74.2	83.9	77.4
Transport	15.6	37.5	37.5	46.9	40.6	50.0	31.3	-6.3	15.6	3.1	46.9	50.0	40.6
Communication	20.0	20.0	20.0	20.0	20.0	20.0	20.0	0.0	20.0	-20.0	20.0	0.0	20.0
Recreation & Culture	32.0	24.0	32.0	20.0	20.0	28.0	20.0	12.0	20.0	24.0	60.0	52.0	68.0
Education	62.5	6.3	25.0	12.5	6.3	0.0	31.3	0.0	0.0	0.0	0.0	18.8	68.8
Restaurant & Hotels	78.6	78.6	71.4	28.6	71.4	85.7	64.3	14.3	57.1	71.4	64.3	78.6	78.6
Miscellaneous	96.6	79.3	65.5	34.5	82.8	75.9	69.0	37.9	41.4	72.4	86.2	93.1	75.9
NFNE	59.1	58.3	63.0	48.1	55.3	62.6	53.2	19.6	40.4	43.8	60.9	66.4	68.5

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

	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
General	34.4	64.3	50.8	36.9	56.6	48.0	41.8	23.4	32.4	28.7	60.7	49.2	55.3
Food & Non-Alcoholic Beverages	22.8	69.6	46.8	25.3	67.1	32.9	16.5	25.3	8.9	17.7	48.1	15.2	51.9
Alcoholic Beverages & Tobacco	80.0	100.0	80.0	0.0	60.0	100.0	60.0	60.0	20.0	60.0	100.0	100.0	80.0
Clothing & Footwear	66.7	77.8	59.3	48.1	77.8	85.2	70.4	0.0	85.2	48.1	85.2	66.7	59.3
Housing, Water, Elect, Gas & other Fuels	-4.3	82.6	34.8	39.1	8.7	0.0	39.1	34.8	17.4	0.0	52.2	65.2	26.1
Furnishing & Household Equip. Maintenance etc.	73.1	84.6	80.8	57.7	69.2	73.1	80.8	23.1	53.8	65.4	88.5	88.5	69.2
Health	35.7	50.0	78.6	57.1	42.9	42.9	71.4	42.9	50.0	35.7	57.1	50.0	85.7
Transport	12.5	37.5	43.8	25.0	43.8	43.8	12.5	-6.3	0.0	18.8	43.8	62.5	31.3
Communication	0.0	-20.0	20.0	20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0
Recreation & Culture	22.2	27.8	11.1	27.8	22.2	33.3	27.8	22.2	11.1	5.6	44.4	33.3	61.1
Education	0.0	0.0	0.0	20.0	0.0	80.0	40.0	0.0	0.0	0.0	0.0	0.0	60.0
Restaurant & Hotels	21.4	42.9	42.9	35.7	78.6	71.4	78.6	28.6	64.3	57.1	64.3	57.1	50.0
Miscellaneous	70.6	70.6	64.7	58.8	70.6	82.4	52.9	41.2	70.6	35.3	88.2	88.2	82.4
NFNE	49.3	58.1	55.1	44.9	52.2	58.1	55.9	24.3	50.0	36.0	66.2	62.5	64.0

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.
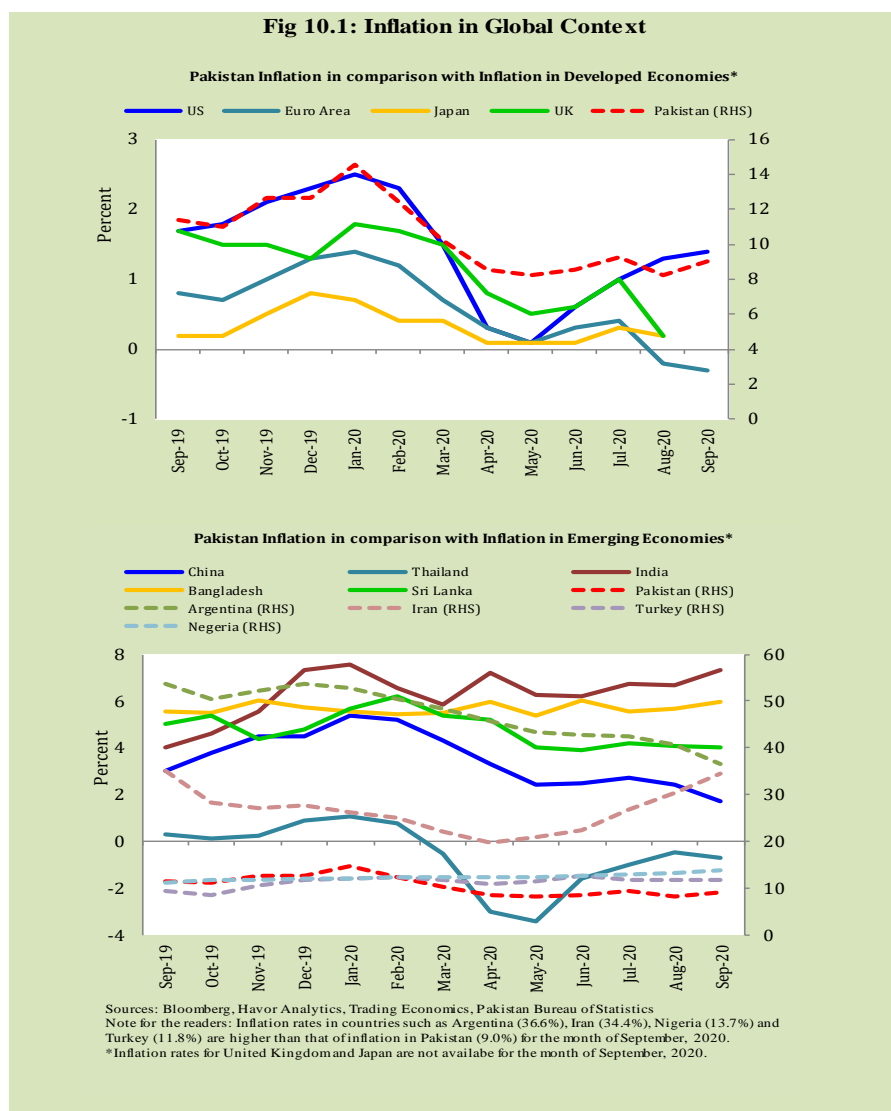
S. No	Item	Unit	Urban CPI		Rural CPI	
			YoY	MoM	YoY	MoM
1	Wheat	10 Kg	42.1	0.4	45.1	5.0
2	Wheat Flour Bag	20 Kg	16.3	-0.7	23.3	2.1
3	Rice Basmati Broken (Superior/Average Quality) *	1 Kg	6.0	0.3	13.6	0.9
4	Beef with Bone (Average Quality)	1 Kg	13.2	0.2	9.7	0.2
5	Mutton (Average Quality)	1 Kg	10.3	0.6	8.6	0.1
6	Chicken Farm Broiler (Live)	1 Kg	-23.6	18.3	-19.4	9.5
7	Milk Fresh (Un-Boiled)	1 Litre	13.1	1.2	7.4	1.2
8	Eggs Farm	Dozen	38.6	5.2	33.2	0.9
9	Vegetable Ghee Dalda/Habib Or Other Superior Quality 1 Kg Pouch	Each	14.4	0.7	17.6	0.2
10	Pulse Masoor (Washed)	1 Kg	20.1	1.6	27.2	-0.2
11	Pulse Moong (Washed)	1 Kg	39.3	3.5	44.4	7.8
12	Pulse Mash (Washed)	1 Kg	34.5	2.8	35.9	4.0
13	Pulse Gram	1 Kg	10.2	4.5	9.3	4.6
14	Potatoes	1 Kg	68.9	6.3	71.8	3.3
15	Onions	1 Kg	-30.8	14.5	-36.2	15.2
16	Tomatoes	1 Kg	51.9	44.1	57.1	30.3
17	Sugar Refined	1 Kg	25.4	-1.8	-14.8	0.7
18	Garlic (Lehsun)	1 Kg	-7.4	1.7	25.3	-0.6
19	Ginger (Adrak)	500 Gm	72.9	20.0	88.9	32.1
20	Tea Lipton Yellow Label 190 Gm Packet	Each	1.4	0.0	2.7	0.1

Table 9.1 Inflation in Domestic Urban and Rural CPI Food Commodities (in percent) - September 2020

*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.

Fig 10.1: Inflation in Global Context

Pakistan Inflation in comparison with Inflation in Developed Economies*

Pakistan Inflation in comparison with Inflation in Emerging Economies*

Sources: Bloomberg, Havor Analytics, Trading Economics, Pakistan Bureau of Statistics
Note for the readers: Inflation rates in countries such as Argentina (36.6%), Iran (34.4%), Nigeria (13.7%) and Turkey (11.8%) are higher than that of inflation in Pakistan (9.0%) for the month of September, 2020.
*Inflation rates for United Kingdom and Japan are not availabe for the month of September, 2020.

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.

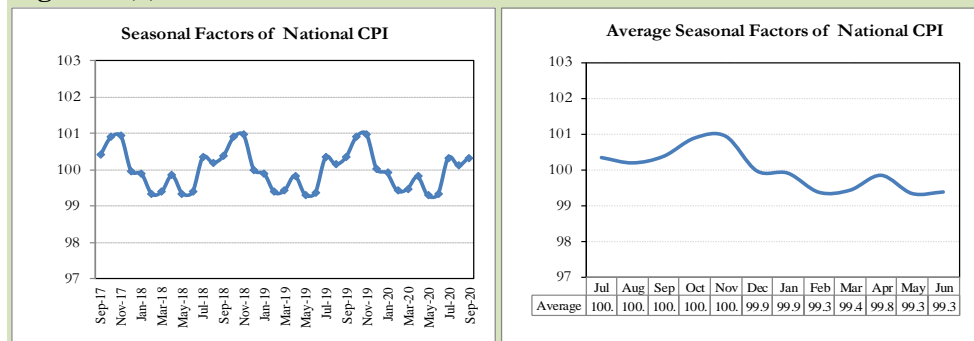| Table 11.1 Changes in Major Global Indices (percent)						
Item/ Group	**Sep-19**		**Aug-20**		**Sep-20**	
	YoY	**MoM**	**YoY**	**MoM**	**YoY**	**MoM**
Food	-1.7	-0.6	6.7	2.2	11.1	3.5
Metals	-4.8	2.0	6.0	4.3	5.9	1.9
Energy	-23.0	4.6	-23.6	5.1	-30.7	-5.1
Agricultural	-2.3	0.0	7.5	3.4	10.4	2.7
Cotton	-21.1	0.7	-1.2	2.1	-0.7	1.2

Source: World Bank
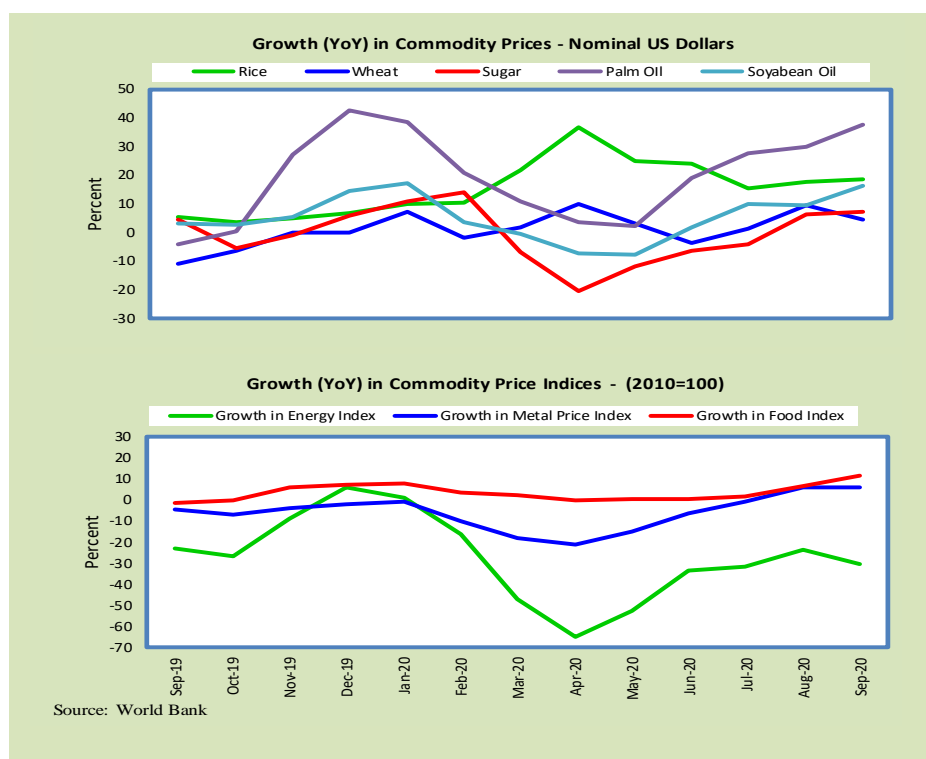
12. Seasonal Adjustment in CPI

Seasonal adjustment is the process of estimating and removing the seasonal effects from a time series after decomposing it into seasonal, trend, cycle and irregular components. The purpose is to identify the different components of the time series and thus provide a better understanding of its underlying behavior. Seasonally adjusted changes are usually preferred for analyzing general price trends in the economy because these eliminate the effect of changes that normally occur at the same time and in about the same magnitude every year. Various statistical methods can be used to decompose a time series into its constituent components. The State Bank of Pakistan uses X-12- ARIMA Seasonal Adjustment Method for this purpose.
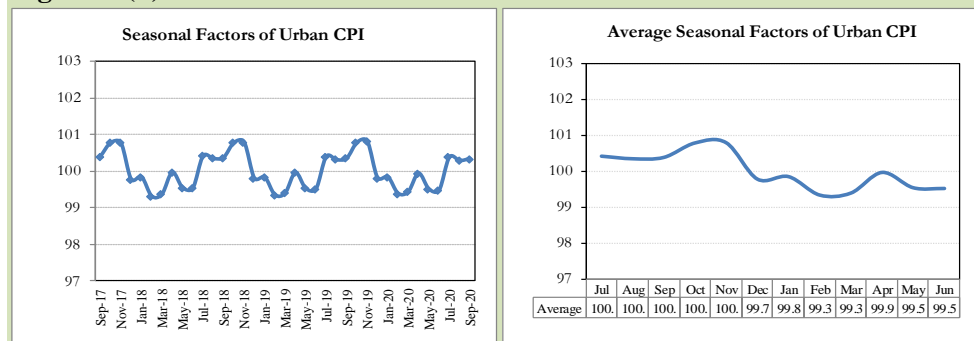
The changes in consumer prices are normally reported in terms of year-on-year and month-on-month basis. Seasonal adjustment is particularly useful for analyzing month-on-month changes. The monthly data series of Consumer Price Indices (National CPI, Urban CPI and Rural CPI) from July 2008 to September 2020 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 historical data and that the future data June not necessarily show the same seasonal pattern.
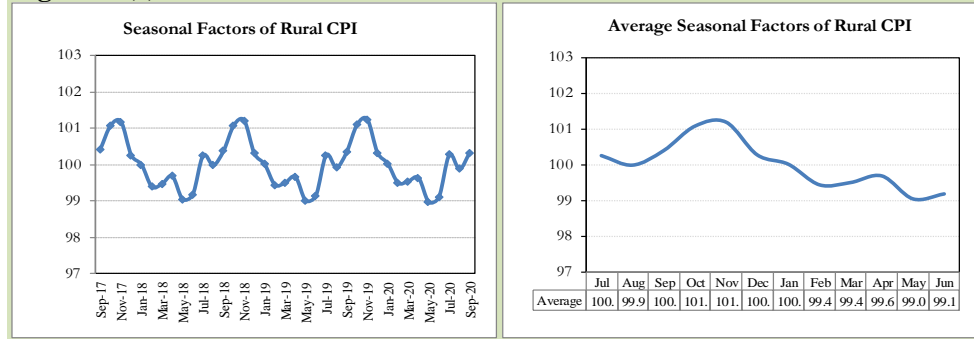
Fig. 12.1 (a) Seasonal Factors of National CPI

Seasonal Factors of National CPI

Average Seasonal Factors of National CPI

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Average	100.	100.	100.	100.	100.	99.9	99.9	99.3	99.4	99.8	99.3	99.3

Fig. 12.1 (b) Seasonal Factors of Urban CPI

Seasonal Factors of Urban CPI

Average Seasonal Factors of Urban CPI

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Average	100.	100.	100.	100.	100.	99.7	99.8	99.3	99.3	99.9	99.5	99.5

Fig. 12.1 (c) Seasonal Factors of Rural CPI

Seasonal Factors of Rural CPI

Average Seasonal Factors of Rural CPI

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Average	100.	99.9	100.	101.	101.	100.	100.	99.4	99.4	99.6	99.0	99.1

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
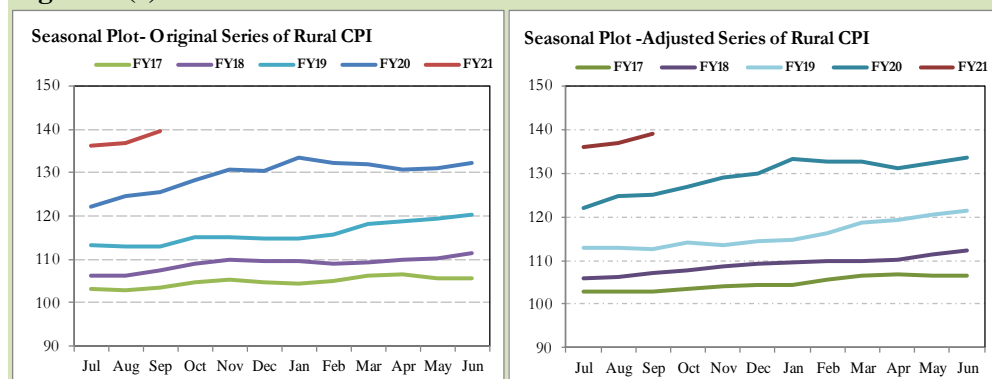

Fig. 12.2 (b) Seasonal Plots of Urban CPI
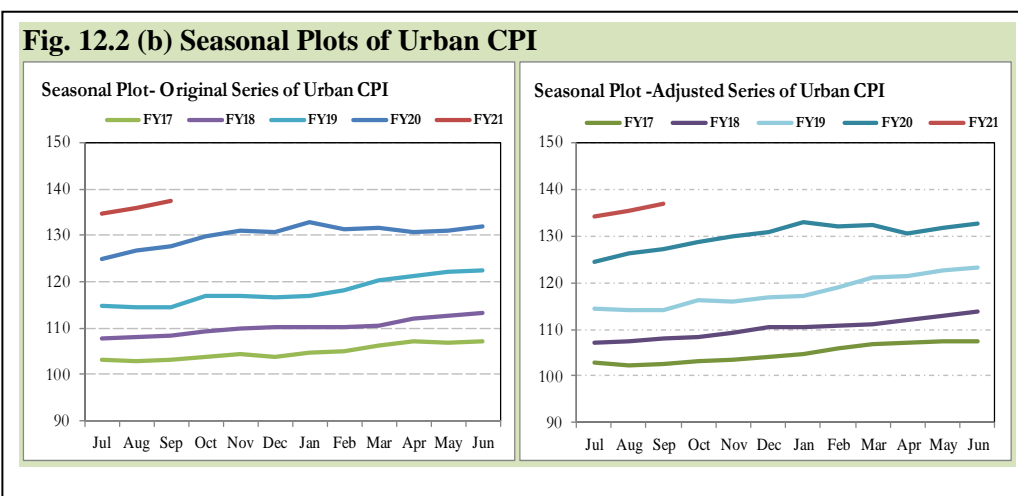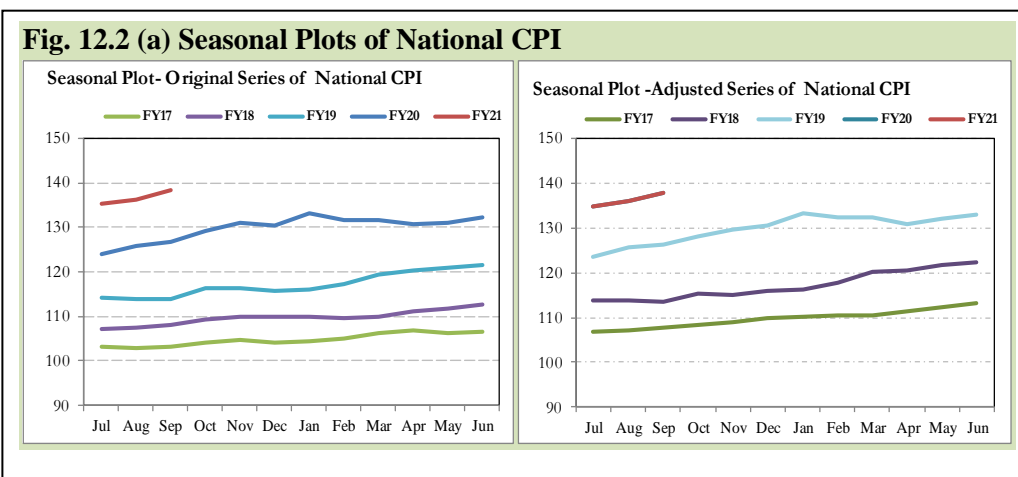
Fig. 12.2 (c) Seasonal Plots of Rural CPI

Seasonally adjusted National CPI for September 2020 stood at 137.86 against 138.32 in original series showing a decrease of 0.46 on account of adjustment of upward seasonality in September 2020.

Seasonally adjusted Urban CPI for September 2020 stood at 137.07 against 137.53 in original series showing a decrease of 0.46 on account of adjustment of upward seasonality in September 2020.

Seasonally adjusted Rural CPI for September 2020 stood at 139.05 against 139.51 in original series showing a decrease of 0.46 on account of adjustment of upward seasonality in September 2020.

Month-on-month change of seasonally adjusted National CPI series stood at 1.32% reflecting an increase during


Fig. 12.3 (a) MoM Changes in National CPI
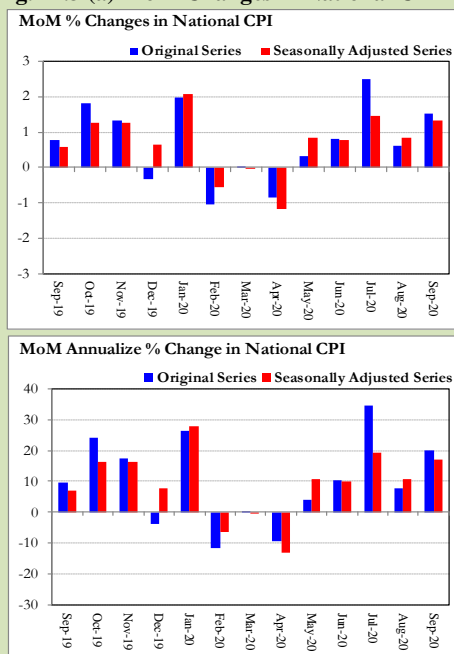
September 2020 over previous month and an increase of 1.53% in original series.

Month-on-month change of seasonally adjusted Urban CPI series stood at 1.20% reflecting an increase during September 2020 over previous month and an increase of 1.26% in original series.

Month-on-month change of seasonally adjusted Rural CPI series stood at 1.49% reflecting an increase during September 2020 over previous month and an increase of 1.95% in original series.

Fig. 12.3 (b & c) MoM Changes in Urban and Rural CPI
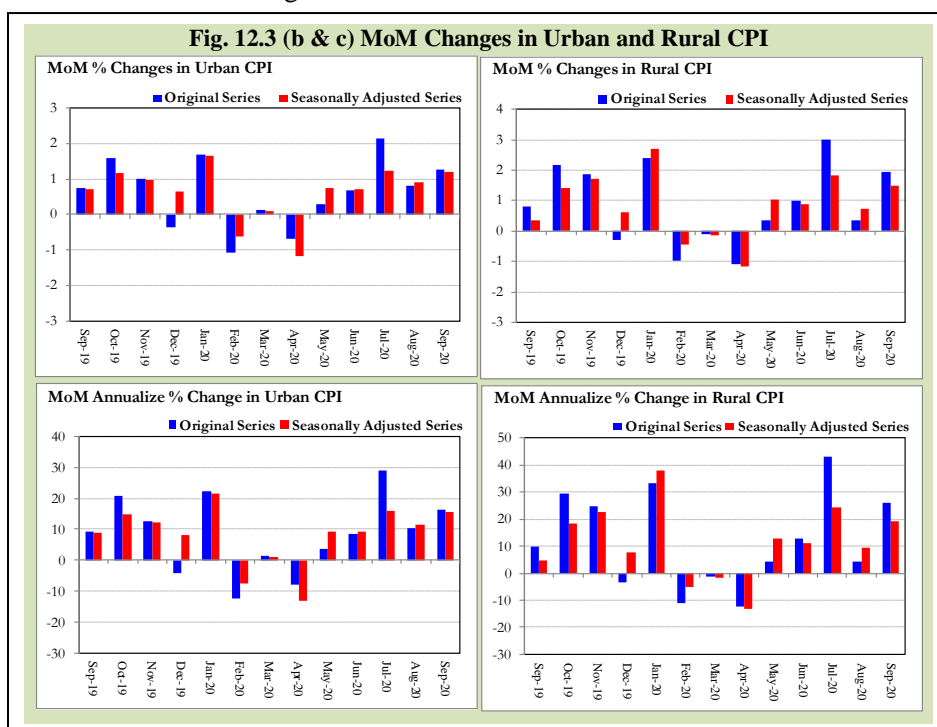
It is pertinent to note that in case of MoM inflation, seasonally adjusted rates provide important information. The most recent annual rate of inflation is usually indicated by annualizing the seasonally adjusted month-on-month rate. Annualized rate of National CPI inflation in September 2020 (corresponding to the seasonally adjusted month-on-month rate) is 17.01 percent.

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Annexure A

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

	Weights	MoM change			YoY change		
		Sep-19	Aug-20	Sep-20	Sep-19	Aug-20	Sep-20
Food & Non-Alcoholic Beverages	34.6	2.1	-0.9	3.8	15.8	12.9	14.7
Alcoholic Beverages & Tobacco	1.0	0.4	1.0	0.5	30.0	5.8	5.9
Clothing & Footwear	8.6	0.4	0.3	0.4	8.9	9.2	9.1
Housing, Water, Elec, Gas & other Fuels	23.6	-0.2	1.8	0.0	6.6	6.0	6.1
Furnishing & Household Equip. Maintenance	4.1	0.7	0.6	1.1	11.7	7.5	7.9
Health	2.8	0.5	0.7	1.0	11.7	7.7	8.3
Transport	5.9	-1.5	3.0	0.4	17.8	-3.4	-1.5
Communication	2.2	0.0	0.0	0.0	4.3	0.3	0.3
Recreation & Culture	1.6	0.3	0.3	0.8	7.8	3.5	3.9
Education	3.8	0.3	0.0	0.3	6.2	1.0	1.0
Restaurants & Hotels	6.9	0.4	1.4	0.7	6.1	8.0	8.2
Miscellaneous	4.9	1.2	3.6	0.0	13.4	13.6	12.2
Overall National CPI	**100.0**	**0.8**	**0.6**	**1.5**	**11.4**	**8.2**	**9.0**

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

	Weights	MoM change			YoY change		
		Sep-19	Aug-20	Sep-20	Sep-19	Aug-20	Sep-20
I. Food Group	**36.8**	**2.0**	**-0.3**	**3.0**	**15.0**	**11.3**	**12.4**
Food & Non-Alcoholic Beverages	30.4	2.3	-0.7	3.5	16.3	11.9	13.3
Alcoholic Beverages & Tobacco	0.9	0.2	1.0	0.4	28.7	5.5	5.7
Restaurant & Hotels (Food Component)	5.5	0.9	2.2	0.8	6.3	8.8	8.7
II. Non-Food Group	**63.2**	**0.0**	**1.5**	**0.2**	**9.7**	**4.8**	**5.0**
Clothing & Footwear	8.0	0.4	0.2	0.4	9.0	8.0	8.0
Housing, Water, Elec, Gas & other Fuels	27.0	-0.1	1.7	0.0	8.4	5.4	5.5
Furnishing & Household Equip. Maintenance	4.1	0.6	0.5	0.7	12.5	6.2	6.3
Health	2.3	0.5	0.9	1.0	11.1	6.7	7.2
Transport	6.1	-1.4	3.1	0.7	18.6	-3.7	-1.6
Communication	2.4	0.0	0.0	0.0	5.6	0.4	0.3
Recreation & Culture	1.7	0.3	0.4	0.6	7.7	2.7	2.9
Education	4.9	0.4	0.1	0.3	6.4	1.0	0.9
Restaurants & Hotels (Non-food Component)	1.9	0.0	0.9	0.0	1.4	6.6	6.6
Miscellaneous	4.8	1.5	3.4	-0.4	13.1	12.6	10.5
Overall Urban CPI	**100.0**	**0.7**	**0.8**	**1.3**	**11.6**	**7.1**	**7.7**

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

	Weights	MoM change			YoY change		
		Sep-19	Aug-20	Sep-20	Sep-19	Aug-20	Sep-20
I. Food Group	**45.9**	**1.8**	**-0.9**	**3.8**	**15.0**	**13.5**	**15.8**
Food & Non-Alcoholic Beverages	40.9	2.0	-1.1	4.1	15.3	14.0	16.4
Alcoholic Beverages & Tobacco	1.3	0.7	1.0	0.7	31.4	6.1	6.1
Restaurant & Hotels (Food Component)	3.8	0.2	0.9	1.5	7.8	11.6	13.0
II. Non-Food Group	**54.1**	**0.0**	**1.5**	**0.3**	**8.0**	**6.8**	**7.2**
Clothing & Footwear	9.5	0.4	0.4	0.3	8.9	10.6	10.5
Housing, Water, Elec, Gas & other Fuels	18.5	-0.2	1.9	0.0	2.8	7.2	7.4
Furnishing & Household Equip. Maintenance etc.	4.1	0.9	0.9	1.7	10.5	9.5	10.3
Health	3.5	0.4	0.4	0.9	12.2	8.7	9.3
Transport	5.6	-1.8	2.7	-0.2	16.4	-3.0	-1.4
Communication	2.0	0.0	0.0	0.1	2.0	0.2	0.2
Recreation & Culture	1.4	0.3	0.1	1.1	8.0	5.0	5.8
Education	2.1	0.0	0.0	0.4	5.3	0.7	1.2
Restaurants & Hotels (Non-food Component)	2.4	0.0	0.0	0.0	8.6	0.8	0.8
Miscellaneous	5.0	0.9	3.8	0.4	13.9	15.0	14.5
Overall Rural CPI		**0.8**	**0.4**	**2.0**	**11.1**	**9.9**	**11.1**

Table A4: Top Ten Contributors to Urban CPI Inflation (YoY) in September 2020

Items/ Contributors		Weights	YoY Change Sep-19	Sep-20	Weighted Contribution (%)
A. Ranked by Weighted Contribution					
1	Milk Fresh	7.11	6.98	13.00	11.08
2	House Rent	19.26	6.46	4.29	10.66
3	Condiments And Spices	1.33	20.46	40.91	7.89
4	Wheat Flour	3.01	12.27	20.18	7.00
5	Readymade Food	5.52	6.33	8.70	6.06
6	Electricity Charges	4.56	-1.19	11.80	5.88
7	Potatoes	0.45	36.32	67.20	5.00
8	Fresh Vegetables	1.53	27.77	14.27	3.54
9	Sugar	1.11	36.93	25.40	3.47
10	Meat	2.04	12.65	11.97	3.43
	Total	**45.92**			**64.00**
B. Ranked by Percentage Change					
1	Potatoes	0.45	36.32	67.20	5.00
2	Tomatoes	0.35	-15.06	51.86	2.34
3	Wheat	0.61	10.12	42.13	2.89
4	Condiments And Spices	1.33	20.46	40.91	7.89
5	Beans	0.04	9.58	40.27	0.19
6	Pulse Moong	0.17	46.77	39.31	0.72
7	Eggs	0.51	0.21	38.61	2.20
8	Pulse Mash	0.12	29.60	34.55	0.31
9	Water Supply	0.53	3.34	27.48	1.81
10	Sugar	1.11	36.93	25.40	3.47
	Total	**5.22**			**26.82**
C. Ranked by Weights					
1	House Rent	19.26	6.46	4.29	10.66
2	Milk Fresh	7.11	6.98	13.00	11.08
3	Readymade Food	5.52	6.33	8.70	6.06
4	Education	4.88	6.41	0.92	0.66
5	Electricity Charges	4.56	-1.19	11.80	5.88
6	Wheat Flour	3.01	12.27	20.18	7.00
7	Appliances/Articles/Products For P	2.98	10.85	6.82	2.55
8	Motor Fuel	2.91	21.98	-7.10	-3.31
9	Cotton Cloth	2.22	13.87	8.92	2.54
10	Meat	2.04	12.65	11.97	3.43
	Total	**54.48**			**46.54**

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 7.7 percent in September 2020.

Table A5: Top Ten Contributors to Urban CPI Inflation (MoM) in September 2020

Items/ Contributors	Weights	MoM Change Aug-20	MoM Change Sep-20	Weighted Contribution (%)
A. Ranked by Weighted Contribution				
1 Fresh Vegetables	1.53	-2.78	30.33	37.87
2 Chicken	1.36	-36.45	18.31	13.13
3 Tomatoes	0.35	-31.83	44.07	12.03
4 Milk Fresh	7.11	4.79	1.16	6.36
5 Onions	0.59	10.40	14.51	5.42
6 Condiments And Spices	1.33	2.81	3.00	4.54
7 Potatoes	0.45	5.85	6.18	4.15
8 Readymade Food	5.52	2.22	0.76	3.26
9 Transport Services	1.75	5.41	1.87	2.42
10 Eggs	0.51	-1.33	5.20	2.24
	20.50			**91.43**
B. Ranked by Percentage Change				
1 Tomatoes	0.35	-31.83	44.07	12.03
2 Fresh Vegetables	1.53	-2.78	30.33	37.87
3 Chicken	1.36	-36.45	18.31	13.13
4 Onions	0.59	10.40	14.51	5.42
5 Potatoes	0.45	5.85	6.18	4.15
6 Eggs	0.51	-1.33	5.20	2.24
7 Pulse Gram	0.17	-1.29	4.51	0.50
8 Pulse Moong	0.17	-6.50	3.46	0.49
9 Cleaning And Laundering	0.07	4.47	3.34	0.18
10 Doctor (Mbbs) Clinic Fee	0.40	1.18	3.28	1.35
	5.60			**77.37**
C. Ranked by Weights				
1 House Rent	19.26	0.00	0.00	0.00
2 Milk Fresh	7.11	4.79	1.16	6.36
3 Readymade Food	5.52	2.22	0.76	3.26
4 Education	4.88	0.06	0.29	1.20
5 Electricity Charges	4.56	11.61	-0.62	-2.00
6 Wheat Flour	3.01	5.44	0.54	1.28
7 Appliances/Articles/Products For P	2.98	1.47	0.59	1.34
8 Motor Fuel	2.91	3.34	0.17	0.43
9 Cotton Cloth	2.22	0.11	0.00	0.00
10 Meat	2.04	0.01	0.36	0.67
	54.48			**12.54**

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 1.3 percent in September 2020.

Table A6: Top and Bottom Fifteen Contributors to Urban CPI Inflation (YoY) in September 2020

Top 15 Contributors			YoY Change		Weighted
Items/ Contributors		Weights	Sep-19	Sep-20	Contribution (%)
Ranked by Weighted Contribution					
1	Milk Fresh	7.11	6.98	13.00	11.08
2	House Rent	19.26	6.46	4.29	10.66
3	Condiments And Spices	1.33	20.46	40.91	7.89
4	Wheat Flour	3.01	12.27	20.18	7.00
5	Readymade Food	5.52	6.33	8.70	6.06
6	Electricity Charges	4.56	-1.19	11.80	5.88
7	Potatoes	0.45	36.32	67.20	5.00
8	Fresh Vegetables	1.53	27.77	14.27	3.54
9	Sugar	1.11	36.93	25.40	3.47
10	Meat	2.04	12.65	11.97	3.43
11	Personal Effects N.E.C.	0.94	23.86	21.56	3.39
12	Wheat	0.61	10.12	42.13	2.89
13	Appliances/Articles/Products For P	2.98	10.85	6.82	2.55
14	Cotton Cloth	2.22	13.87	8.92	2.54
15	Tomatoes	0.35	-15.06	51.86	2.34
	Total	**53.02**			**77.72**
Bottom 15 Contributors					
1	Chicken	1.36	79.39	-23.60	-4.57
2	Onions	0.59	108.71	-30.82	-3.32
3	Motor Fuel	2.91	21.98	-7.10	-3.31
4	Fish	0.39	12.46	-7.55	-0.36
5	Fresh Fruits	1.44	6.67	-1.94	-0.32
6	Postal Services	0.02	0.73	0.00	0.00
7	Newspapers	0.07	26.29	0.00	0.00
8	Motor Vehicle Tax	0.05	19.75	0.00	0.00
9	Communication Services	1.88	4.14	0.00	0.00
10	Gas Charges	1.08	114.64	0.00	0.00
11	Therapeutic Appliances And	0.01	0.31	6.35	0.00
12	Accommodation Services	0.13	0.72	0.54	0.01
13	Major Tools & Equipments	0.01	4.93	8.55	0.01
14	Dental Services	0.02	-1.21	5.13	0.01
15	Liquefied Hydrocarbons	0.51	-21.10	0.17	0.01
	Total	**10.45**			**-11.83**

Table A7: Top and Bottom Fifteen Contributors to Urban CPI Inflation (MoM) in September 2020

| Top 15 Contributors | | | | Weighted |
| Items/ Contributors | Weights | MoM Change | | Contribution (%) |
		Aug-20	Sep-20	
Ranked by Weighted Contribution				
1 Fresh Vegetables	1.53	-2.78	30.33	37.87
2 Chicken	1.36	-36.45	18.31	13.13
3 Tomatoes	0.35	-31.83	44.07	12.03
4 Milk Fresh	7.11	4.79	1.16	6.36
5 Onions	0.59	10.40	14.51	5.42
6 Condiments And Spices	1.33	2.81	3.00	4.54
7 Potatoes	0.45	5.85	6.18	4.15
8 Readymade Food	5.52	2.22	0.76	3.26
9 Transport Services	1.75	5.41	1.87	2.42
10 Eggs	0.51	-1.33	5.20	2.24
11 Washing Soap/Detergents/Match Box	1.41	0.20	1.60	1.72
12 Woolen Cloth	0.84	0.01	2.33	1.46
13 Doctor (Mbbs) Clinic Fee	0.40	1.18	3.28	1.35
14 Appliances/Articles/Products For P	2.98	1.47	0.59	1.34
15 Wheat Flour	3.01	5.44	0.54	1.28
Total	**29.14**			**98.59**
Bottom 15 Contributors				
1 Fresh Fruits	1.44	-23.15	-6.19	-6.06
2 Personal Effects N.E.C.	0.94	8.69	-3.10	-3.51
3 Electricity Charges	4.56	11.61	-0.62	-2.00
4 Sugar	1.11	13.53	-1.82	-1.82
5 Liquefied Hydrocarbons	0.51	-0.68	-1.51	-0.58
6 Gram Whole	0.09	-1.78	-0.48	-0.03
7 Tea	0.84	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 Newspapers	0.07	0.00	0.00	0.00
11 Communication Services	1.88	0.00	0.00	0.00
12 Gas Charges	1.08	0.00	0.00	0.00
13 House Rent	19.26	0.00	0.00	0.00
14 Accommodation Services	0.13	0.28	0.00	0.00
15 Electrical Appliances For Personal	0.05	1.21	0.00	0.00
Total	**32.02**			**-13.99**

Table A8: Top and Bottom Fifteen Contributors to MoM Urban CPI Food Inflation in September 2020

Top 15 Contributors Items/ Contributors	Weights	MoM Change		Weighted Contribution (%)
		Aug-20	Sep-20	
Ranked by Weighted Contribution				
1 Fresh Vegetables	1.53	-2.78	30.33	37.87
2 Chicken	1.36	-36.45	18.31	13.13
3 Tomatoes	0.35	-31.83	44.07	12.03
4 Milk Fresh	7.11	4.79	1.16	6.36
5 Onions	0.59	10.40	14.51	5.42
6 Condiments And Spices	1.33	2.81	3.00	4.54
7 Potatoes	0.45	5.85	6.18	4.15
8 Readymade Food	5.52	2.22	0.76	3.26
9 Eggs	0.51	-1.33	5.20	2.24
10 Wheat Flour	3.01	5.44	0.54	1.28
11 Milk Products	0.64	4.71	1.69	0.85
12 Rice	1.18	0.31	0.84	0.79
13 Bakery And Confectionary	0.48	6.65	2.01	0.76
14 Vegetable Ghee	1.03	-0.86	0.81	0.72
15 Meat	2.04	0.01	0.36	0.67
Total	**27.13**			**94.08**
Bottom 15 Contributors				
1 Fresh Fruits	1.44	-23.15	-6.19	-6.06
2 Sugar	1.11	13.53	-1.82	-1.82
3 Gram Whole	0.09	-1.78	-0.48	-0.03
4 Tea	0.84	0.00	0.00	0.00
5 Ice Cream	0.10	1.89	0.00	0.00
6 Dessert Preparation	0.04	0.44	0.11	0.00
7 Beans	0.04	5.01	0.15	0.01
8 Honey	0.10	3.08	0.09	0.01
9 Mustard Oil	0.01	0.74	1.07	0.01
10 Butter	0.09	0.00	0.33	0.03
11 Marriage Hall Charges	1.75	0.89	0.03	0.04
12 Dry Fruits	0.33	0.27	0.21	0.05
13 Wheat Products	0.09	6.85	1.11	0.08
14 Fish	0.39	-1.87	0.34	0.09
15 Nimco	0.12	1.47	0.98	0.09
Total	**6.56**			**-7.49**

Table A9: Top and Bottom Fifteen Contributors to MoM Urban CPI Non-food Inflation in September 2020

| Top 15 Contributors | | MoM Change | | |
Items/ Contributors	Weights	Aug-20	Sep-20	Weighted Contribution (%)
Ranked by Weighted Contribution				
1 Transport Services	1.75	5.41	1.87	2.42
2 Washing Soap/Detergents/Match Box	1.41	0.20	1.60	1.72
3 Woolen Cloth	0.84	0.01	2.33	1.46
4 Doctor (Mbbs) Clinic Fee	0.40	1.18	3.28	1.35
5 Personal Grooming Services	2.98	1.47	0.59	1.34
6 Education	4.88	0.06	0.29	1.20
7 Water Supply	0.53	6.15	2.37	1.11
8 Construction Input Items	0.38	0.26	2.36	0.75
9 Readymade Garments	1.32	0.05	0.44	0.44
10 Motor Fuel	2.91	3.34	0.17	0.43
11 Stationery	0.35	0.64	1.38	0.36
12 Motor Vehicles	0.81	0.39	0.48	0.34
13 Household Equipments	1.00	1.12	0.41	0.32
14 Medical Tests	0.24	1.29	1.55	0.28
15 Drugs And Medicines	1.07	0.85	0.30	0.27
Total	**20.86**			**13.78**
Bottom 15 Contributors				
1 Electrical Appliances For Personal	0.94	8.69	-3.10	-3.51
2 Electricity Charges	4.56	11.61	-0.62	-2.00
3 Liquefied Hydrocarbons	0.51	-0.68	-1.51	-0.58
4 Personal Effects N.E.C.	0.00	0.00	0.00	0.00
5 Appliances/Articles/Products For P	0.00	0.00	0.00	0.00
6 Postal Services	0.02	0.00	0.00	0.00
7 Motor Vehicle Tax	0.05	0.00	0.00	0.00
8 Newspapers	0.07	0.00	0.00	0.00
9 Communication Services	1.88	0.00	0.00	0.00
10 Gas Charges	1.08	0.00	0.00	0.00
11 House Rent	19.26	0.00	0.00	0.00
12 Accommodation Services	0.05	1.21	0.00	0.00
13 Garbage Collection	0.11	1.14	0.00	0.00
14 Cotton Cloth	2.22	0.11	0.00	0.00
15 Carpets	0.03	0.05	0.03	0.00
Total	**30.77**			**-6.09**

Table A10: Top Ten Contributors to Rural CPI Inflation (YoY) in September 2020

Items/ Contributors		Weights	YoY Change		Weighted Contribution (%)
			Sep-19	Sep-20	
A. Ranked by Weighted Contribution					
1	Wheat	3.47	10.31	45.12	12.33
2	Condiments And Spices	1.49	13.65	57.81	7.67
3	Wheat Flour	3.43	12.85	26.74	7.40
4	Milk Fresh	10.38	7.26	7.39	6.65
5	Potatoes	0.74	34.08	71.28	6.36
6	Readymade Food	3.80	7.83	13.05	4.57
7	Sugar	2.03	38.25	25.28	4.49
8	Solid Fuel	4.48	3.90	11.26	4.23
9	Cotton Cloth	2.84	10.59	14.82	4.13
10	Fresh Vegetables	2.09	20.09	18.87	4.05
	Total	**34.76**			**61.87**
B. Ranked by Percentage Change					
1	Potatoes	0.74	34.08	71.28	6.36
2	Condiments And Spices	1.49	13.65	57.81	7.67
3	Tomatoes	0.51	-18.37	57.12	2.29
4	Wheat	3.47	10.31	45.12	12.33
5	Pulse Moong	0.25	48.54	44.40	0.89
6	Water Supply	0.06	27.17	38.75	0.28
7	Beans	0.09	8.16	36.02	0.28
8	Pulse Mash	0.15	26.11	35.89	0.29
9	Eggs	0.57	-0.09	33.22	1.47
10	Pulse Masoor	0.21	12.77	27.26	0.35
	Total	**7.54**			**32.20**
C. Ranked by Weights					
1	Milk Fresh	10.38	7.26	7.39	6.65
2	House Rent	8.61	5.51	4.94	3.84
3	Solid Fuel	4.48	3.90	11.26	4.23
4	Readymade Food	3.80	7.83	13.05	4.57
5	Wheat	3.47	10.31	45.12	12.33
6	Electricity Charges	3.44	-1.19	11.80	3.12
7	Wheat Flour	3.43	12.85	26.74	7.40
8	Cotton Cloth	2.84	10.59	14.82	4.13
9	Motor Fuels	2.49	21.47	-7.21	-2.01
10	Vegetable Ghee	2.38	17.10	17.37	3.99
	Total	**45.32**			**48.24**

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 11.1 percent in September 2020.

Table A11: Top Ten Contributors to Rural CPI Inflation (MoM) in September 2020

Items/ Contributors		Weights	MoM Change		Weighted Contribution (%)
			Aug-20	**Sep-20**	
A. Ranked by Weighted Contribution					
1	Fresh Vegetables	2.09	-8.66	45.18	41.49
2	Wheat	3.47	7.89	5.03	9.93
3	Tomatoes	0.51	-33.94	30.33	7.66
4	Condiments And Spices	1.49	-3.51	5.63	5.84
5	Milk Fresh	10.38	1.79	1.16	5.79
6	Wheat Flour	3.43	4.36	3.14	5.59
7	Chicken	1.46	-31.90	9.47	5.28
8	Onions	0.90	-0.40	15.17	4.66
9	Personal Grooming Services	1.54	2.11	4.79	3.91
10	Readymade Food	3.80	0.91	1.50	3.06
		29.07			**93.21**
B. Ranked by Percentage Change					
1	Fresh Vegetables	2.09	-8.66	45.18	41.49
2	Tomatoes	0.51	-33.94	30.33	7.66
3	Onions	0.90	-0.40	15.17	4.66
4	Chicken	1.46	-31.90	9.47	5.28
5	Pulse Moong	0.25	-9.66	7.79	1.09
6	Condiments And Spices	1.49	-3.51	5.63	5.84
7	Wheat	3.47	7.89	5.03	9.93
8	Personal Grooming Services	1.54	2.11	4.79	3.91
9	Pulse Gram	0.28	-3.41	4.64	0.54
10	Gur	0.15	3.19	4.57	0.37
		12.14			**80.78**
C. Ranked by Weights					
1	Milk Fresh	10.38	1.79	1.16	5.79
2	House Rent	8.61	0.00	0.00	0.00
3	Solid Fuel	4.48	0.07	0.15	0.32
4	Readymade Food	3.80	0.91	1.50	3.06
5	Wheat	3.47	7.89	5.03	9.93
6	Electricity Charges	3.44	11.61	-0.62	-0.97
7	Wheat Flour	3.43	4.36	3.14	5.59
8	Cotton Cloth	2.84	0.01	0.00	0.00
9	Motor Fuels	2.49	3.55	0.04	0.06
10	Vegetable Ghee	2.38	-0.04	-0.35	-0.50
		45.32			**23.28**

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 2020.

Table A12: Top and Bottom Fifteen Contributors to Rural CPI Inflation (YoY) in September 2020

Top 15 Contributors Items/ Contributors	Weights	YoY Change Sep-19	Sep-20	Weighted Contribution (%)
Ranked by Weighted Contribution				
1 Wheat	3.47	10.31	45.12	12.33
2 Condiments And Spices	1.49	13.65	57.81	7.67
3 Wheat Flour	3.43	12.85	26.74	7.40
4 Milk Fresh	10.38	7.26	7.39	6.65
5 Potatoes	0.74	34.08	71.28	6.36
6 Readymade Food	3.80	7.83	13.05	4.57
7 Sugar	2.03	38.25	25.28	4.49
8 Solid Fuel	4.48	3.90	11.26	4.23
9 Cotton Cloth	2.84	10.59	14.82	4.13
10 Fresh Vegetables	2.09	20.09	18.87	4.05
11 Vegetable Ghee	2.38	17.10	17.37	3.99
12 House Rent	8.61	5.51	4.94	3.84
13 Electricity Charges	3.44	-1.19	11.80	3.12
14 Personal Effects N.E.C.	1.21	29.66	22.79	3.04
15 Rice	1.55	7.95	17.51	2.99
Total	**51.94**			**78.86**
Bottom 15 Contributors				
1 Onions	0.90	102.31	-36.25	-3.85
2 Chicken	1.46	63.47	-19.37	-2.80
3 Motor Fuels	2.49	21.47	-7.21	-2.01
4 Fresh Fruits	1.45	10.74	-3.85	-0.43
5 Liquefied Hydrocarbons	1.00	-14.07	-3.96	-0.35
6 Fish	0.26	15.83	-1.01	-0.02
7 Gram Whole	0.11	-2.25	-1.26	-0.01
8 Motor Vehicle Tax	0.02	17.87	0.00	0.00
9 Newspapers	0.02	33.33	0.00	0.00
10 Accommodation Services	0.14	0.00	0.00	0.00
11 Postal Services	0.01	31.58	0.00	0.00
12 Communication Services	1.65	1.15	0.00	0.00
13 Garbage Collection	0.01	1.15	7.64	0.01
14 Dessert Preparation	0.01	6.05	10.17	0.01
15 Mustard Oil	0.01	8.93	10.50	0.01
Total	**9.55**			**-9.45**

Table A13: Top and Bottom Fifteen Contributors to Rural CPI Inflation (MoM) in September 2020

	Top 15 Contributors		MoM Change		Weighted
	Items/ Contributors	Weights	Aug-20	Sep-20	Contribution (%)
Ranked by Weighted Contribution					
1	Fresh Vegetables	2.09	-8.66	45.18	41.49
2	Wheat	3.47	7.89	5.03	9.93
3	Tomatoes	0.51	-33.94	30.33	7.66
4	Condiments And Spices	1.49	-3.51	5.63	5.84
5	Milk Fresh	10.38	1.79	1.16	5.79
6	Wheat Flour	3.43	4.36	3.14	5.59
7	Chicken	1.46	-31.90	9.47	5.28
8	Onions	0.90	-0.40	15.17	4.66
9	Personal Grooming Services	1.54	2.11	4.79	3.91
10	Readymade Food	3.80	0.91	1.50	3.06
11	Potatoes	0.74	3.73	3.36	2.60
12	Rice	1.55	1.76	2.20	2.26
13	Washing Soaps, Detergents And	1.70	0.76	1.72	1.39
14	Appliances/Articles/Products For	2.27	0.60	1.24	1.31
15	Household Equipments	1.28	0.80	1.95	1.29
	Total	**36.62**			**102.07**
Bottom 15 Contributors					
1	Fresh Fruits	1.45	-25.42	-10.44	-6.58
2	Personal Effects N.E.C.	1.21	9.55	-4.45	-3.99
3	Electricity Charges	3.44	11.61	-0.62	-0.97
4	Sugar	2.03	13.31	-0.63	-0.74
5	Transport Services	1.80	3.17	-0.72	-0.63
6	Vegetable Ghee	2.38	-0.04	-0.35	-0.50
7	Liquefied Hydrocarbons	1.00	-0.18	-0.35	-0.15
8	Pulse Masoor	0.21	-1.57	-0.22	-0.02
9	Gram Whole	0.11	-2.47	-0.15	-0.01
10	Fish	0.26	-0.32	0.00	0.00
11	Mechanical Services	0.36	0.00	0.00	0.00
12	Marriage Hall Charges	2.25	0.00	0.00	0.00
13	Woolen Readymade Garments	0.54	0.00	0.00	0.00
14	Accommodation Services	0.14	0.00	0.00	0.00
15	Postal Services	0.01	0.00	0.00	0.00
	Total	**17.18**			**-13.58**

Table A14: Top and Bottom Fifteen Contributors to MoM Rural CPI Food Inflation in September 2020

| Top 15 Contributors | | MoM Change | | Weighted |
Items/ Contributors	Weights	Aug-20	Sep-20	Contribution (%)
Ranked by Weighted Contribution				
1 Fresh Vegetables	2.09	-8.66	45.18	41.49
2 Wheat	3.47	7.89	5.03	9.93
3 Tomatoes	0.51	-33.94	30.33	7.66
4 Condiments And Spices	1.49	-3.51	5.63	5.84
5 Milk Fresh	10.38	1.79	1.16	5.79
6 Wheat Flour	3.43	4.36	3.14	5.59
7 Chicken	1.46	-31.90	9.47	5.28
8 Onions	0.90	-0.40	15.17	4.66
9 Readymade Food	3.80	0.91	1.50	3.06
10 Potatoes	0.74	3.73	3.36	2.60
11 Rice	1.55	1.76	2.20	2.26
12 Pulse Moong	0.25	-9.66	7.79	1.09
13 Bakery And Confectionary	0.37	1.00	3.13	0.57
14 Pulse Gram	0.28	-3.41	4.64	0.54
15 Milk Products	0.96	1.69	0.90	0.41
Total	**31.69**			**96.77**
Bottom 15 Contributors				
1 Fresh Fruits	1.45	-25.42	-10.44	-6.58
2 Sugar	2.03	13.31	-0.63	-0.74
3 Vegetable Ghee	2.38	-0.04	-0.35	-0.50
4 Pulse Masoor	0.21	-1.57	-0.22	-0.02
5 Gram Whole	0.11	-2.47	-0.15	-0.01
6 Fish	0.26	-0.32	0.00	0.00
7 Marriage Hall Charges	2.25	0.00	0.00	0.00
8 Honey	0.03	0.47	0.00	0.00
9 Ice Cream	0.06	3.25	0.00	0.00
10 Dessert Preparation	0.01	0.96	0.12	0.00
11 Milk Powder	0.11	0.31	0.09	0.00
12 Mustard Oil	0.01	0.40	1.38	0.01
13 Sweet Meat	0.40	2.63	0.11	0.02
14 Beans	0.09	0.45	0.62	0.03
15 Tea	1.26	0.00	0.06	0.04
Total	**10.65**			**-7.73**

Table A15: Top and Bottom Fifteen Contributors to MoM Rural CPI Non-food Inflation in September 2020

Top 15 Contributors		MoM Change		
Items/ Contributors	Weights	Aug-20	Sep-20	Weighted Contribution (%)
Ranked by Weighted Contribution				
1 Personal Grooming Services	1.54	2.11	4.79	3.91
2 Washing Soaps, Detergents And	1.70	0.76	1.72	1.39
3 Appliances/Articles/Products For	2.27	0.60	1.24	1.31
4 Household Equipments	1.28	0.80	1.95	1.29
5 Doctor (Mbbs) Clinic Fee	0.51	0.50	1.78	0.58
6 Hospitals Services	1.01	0.00	1.09	0.53
7 Woolen Cloth	1.10	0.65	0.98	0.52
8 Hosiery	0.43	0.88	1.95	0.51
9 Education	2.13	0.00	0.45	0.48
10 Furniture And Furnishing	0.58	1.82	1.50	0.44
11 Drugs And Medicines	1.58	0.75	0.49	0.42
12 Readymade Garments	1.13	0.20	0.71	0.40
13 Stationery	0.37	0.00	2.00	0.37
14 Solid Fuel	4.48	0.07	0.15	0.32
15 Construction Input Items	0.63	0.86	1.03	0.30
Total	**20.74**			**12.78**
Bottom 15 Contributors				
1 Personal Effects N.E.C.	1.21	9.55	-4.45	-3.99
2 Electricity Charges	3.44	11.61	-0.62	-0.97
3 Transport Services	1.80	3.17	-0.72	-0.63
4 Liquefied Hydrocarbons	1.00	-0.18	-0.35	-0.15
5 Mechanical Services	0.36	0.00	0.00	0.00
6 Woolen Readymade Garments	0.54	0.00	0.00	0.00
7 Accommodation Services	0.14	0.00	0.00	0.00
8 Postal Services	0.01	0.00	0.00	0.00
9 Communication Services	1.65	0.00	0.00	0.00
10 Newspapers	0.02	0.00	0.00	0.00
11 Motor Vehicle Tax	0.02	0.00	0.00	0.00
12 Garbage Collection	0.01	0.00	0.00	0.00
13 House Rent	8.61	0.00	0.00	0.00
14 Cotton Cloth	2.84	0.01	0.00	0.00
15 Major Tools And Equipments	0.03	1.05	0.59	0.01
Total	**21.67**			**-5.73**

Table A16: Distribution of Price Changes (YoY) - Selected Urban CPI Items: September 2020

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	Onions, Chicken Farm Broiler (Live), Apple (Average Quality), Fish Rahu (Medium Size)	Cumin Seed (Zeera) White National 50 Gm Packet, Pepper Black National 50 Gm Packet	Nimko (Loose, Average Quality), Chilies (Green), Rice Basmati 385/386, Besan	Chilies Powder National 200 Gm Packet, Ginger (Adrak), Potatoes, Cardamom Small (Average Quality), Tomatoes, Wheat, Beans Red/White (Lobia), Pulse Moong (Washed), Eggs Farm
Alcoholic Beverages & Tobacco		Cigarettes Gold Leaf 20'S Packet	Cigarettes Capstan 20'S Packet	Pan Prepared (Sweet With Beetle Nuts)
Clothing & Footwear	Gents Sponge Chappal Bata, Ladies Sandal Bata, Ladies Sponge Chappal Bata, Gents Sandal Bata	Brassier (Average Quality), Tailoring Charges Pant (Men), Chaddar (Wash-N-Wear) (2X2.5 Meter), School Uniform Boys (Pant & Shirt) 24"/26"	Shoe Repair Full Sole, Tailoring Charges Awami Suit (Male), Underwear Medium Size (Average Quality), Shirting (Average Quality)	Gents Shoes Servis, Georgette (Average Quality), Washing Charges Shalwar Kameez, Gents Shoes Paul Bata, Dopatta Cotton (Average Quality), Dopatta Geogette (Average Quality), Pullover Ladies Oxford/Bonanza, Cheetah 50 Size 3-5 Servis, Pullover Gents Oxford/Bonanza
Housing, Water, Elect, Gas & other Fuels	Bajri, Iron Bars (M.S. Bar) 1/2 " 40 Grade, Cement (Local) 50 Kg Bag, Gas Charges Upto 3.3719 Mmbtu	House Rent Combined, Plumber Wage Rate, Sand (Black Pit), Cement Blocks (6"X8"X12"), Lpg 11.67 Kg Cylinder	Electricity Charges Above 700 Units, Synthetic Enamel Ici Balti 3.64 Litre, Electricity Charges Upto 50 Units, Unskilled Labor Wage Rate, Mason Wage Rate	Water Charges Per House, Electricity Charges 51-100 Units, Charges For Refuse/Waste Collection, Electrician Charges, Electricity Charges 101-300 Units, Electricity Charges Combined, Electricity Charges 301-700 Units
Furnishing & Household Equip. Maintenance etc		Bed Sheet Single (Superior Quality), Plain Carpet, Mattress Foam Single Bed Molty/Diamond (4" Thick)	Cot Iron (Charpai), Dinner Set Plastic 72 Pieces Super Quality, Chair Sheesham Wood With Arm	Tube Light Philips 40 Watt, Phenyl Tyfon/Finis 2.75 Litre Bottle, Robin Blue Liquid 75 Ml Bottle, Central Table Set With Glass Top, Chair Plastic (Chairman) (Average Quality), Harpic 500 Ml Bottle
Health	Hydryllin Syrup 120 Ml Bottle, Johar Joshanda Instant (Sachet) Packet	Panadol Tablets Plain, Sugar Test (Random/Fasting) Charges Of Both, Ultrasound Abdominal	Betnovate-N Ointment 10 Gm Tube, Blood Test (Cp) Charges, Flagyl Tablets 400 Mg eon Fee Per Visit, Entox	Ventolin Tablets 2 Mg, Septran Tablets, Lederplex Syrup Bottle, Dettol Medium Bottle, Urine Test (Dr) Charges, Doctor (Mbbs) Clinic Fee, Glaxose-D 400 Gm Packet,
Transport	Hi-Speed Diesel, Petrol Super, Cng, Air Fare Economy Class Per Kilometer (National Average), Train Fare	Motorcycle Honda Cd 70, Motorcycle United/Unique 70 Cc, Mobil Oil (Havoline 20W-50), Suzuki Fare Minimum Within City, Tire Motorcycle	Bus Fare Minimum Within City, Car Honda Civic Turbo 1.5 Vtec	Mini Bus Fare Maximum Within City, Bus Fare Maximum Within City, Suzuki Fare Maximum Within City, Tire Car Puncture Charges, Bicycle, Mini Bus Fare Minimum Within City, Taxi Four Seater Fare
Communication	Courier Charges Minimum Within Zone Outside City (Tcs), Telephone Call Charges	Mobile Set With Rear Camera And Without Touch Screen		
Recreation & Culture	Newspaper Daily Jang, Mag The Weekly (Magazine), Newspaper Daily Dawn, Akhbar-E-Jehan Weekly, Recreational Park Charges (Minimum Playland Ticket)	Ballpoint Pen Local, English Book Class Ix And X, Exercise Book (With Lines) 80 To 100 Pages, Urdu Book Class Xi/Inter, English Book Class Vi	Laptop Dell/Hp/Acer Core I5, Display (14'-15'), Led Sony/Samsung 32" Colored, Photostat Paper 70 Gm	Lead Pencil Goldfish
Education	Vocational Training Basic Computer Short Course Fee (3 Months)	Private Engineering University Tuition Fee For Be (1St Year)	Government Engineering University Tuition Fee For Be (1St Year)	
Restaurant & Hotels		Cooked Chicken At Average Hotel, Chicken Biryani Full/Double	Cooked Daal At Average Hotel, Tea Prepared Ordinary	Bread Tandoori Standard Size
Miscellaneous		Toilet Soap Lux 75 Gm, Blade Treet Ordinary (10 No. Packet), Trunk Medium Size (Average Quality)	Face Cream Ponds Medium Size (Cold), Tooth Paste Colgate 75 Gm, Hair Cut Charges For Men	Silver Tezabi 24 Carett, Gold Tezabi 24 Carett, Tooth Brush (Shield), Pampers (Medium Size), Shaving Charges

Table A17: Distribution of Price Changes (YoY) - Selected Rural CPI Items: September 2020

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	Onions, Chicken Farm Broiler (Live), Garlic (Lehsun), Apple (Average Quality)	Curd, Gram Whole Black (Average Quality), Cold Drink (Pepsi/Coca-Cola) 1.5 Liter Bottle	Beef With Bone (Average Quality), Besan, Rusk (Papay) (Average Quality), Pulse Gram	Chilies Powder Loose, Ginger (Adrak), Potatoes, Brinjal, Tomatoes, Radish (Mooli), Wheat,Pulse Moong (Washed), Beans Red/White (Lobia), Suji, Pulse Mash (Washed), Eggs Farm
Alcoholic Beverages & Tobacco		Cigarettes Capstan 20'S Packet	Tobacco Hukka Twisted, Cigarettes Gold Leaf 20'S Packet	Pan Prepared (Sweet With Beetle Nuts), Chewing Tobacco (Niswar)
Clothing & Footwear		School Uniform Girls (Kameez & Shalwar) 24"/26"	Lungi/Dhoti Cotton (Average Quality), Georgette (Average Quality), Socks Nylon Local (Average Quality), Dopatta Geogette (Average Quality)	Vest "Baniyan" For Men Average Quality, Brassier (Average Quality), Shirting (Average Quality), Washing Charges Shalwar Kameez, Long Cloth, Lawn Printed (Average Quality), Chaddar (Wash-N-Wear) (2X2.5 Meter), Underwear Medium Size (Average Quality)
Housing, Water, Elect, Gas & other Fuels	Kerosene Oil, Lpg 11.67 Kg Cylinder	House Rent Combined, Bajri, Cement (Local) 50 Kg Bag	Electricity Charges Above 1000 Units, Firewood Whole, Electricity Charges Upto 50 Units, Charges For Refuse/Waste Collection, Unskilled Labor Wage Rate	Water Charges Per House, Electricity Charges 51-100 Units, Electrician Charges, Coal, Bricks New 1St Class, Electricity Charges 101-300 Units, Painter Wage Rate, Carpenter Wage Rate, Electricity Charges Combined, Electricity Charges 301-1000 Units, Plumber Wage Rate
Furnishing & Household Equip. Maintenance etc.		Aluminium Cooking Pan (Degchi), Express Washing Powder 1 Kg Polybag, Cleanser Powder Vim 900 Gm Polybag	Lota Plastic Medium Size (Average Quality), Tea Set Pakistani (China-Ware) Set Of 21 Pieces, Match Box, Blanket Single (Sn)	Tube Light Philips 40 Watt, Robin Blue Liquid 75 Ml Bottle, Towel Medium Size (2' X 3'), Washing Soap 250 Gm Cake (Specify Name), Ceiling Fan 56" Pak/Younas/Millat, Bucket (Balti) Plastic Medium Size
Health	Johar Joshanda Instant (Sachet) Packet	Hydryllin Syrup 120 Ml Bottle	Amoxil Capsule 250 Mg, X-Ray (Chest) Charges, Cac 1000 Tablets Sandoz Bottle, Panadol Tablets Plain	Dettol Medium Bottle, Doctor (Mbbs) Clinic Fee, Inderal Tablets 10 Mg, Dental Surgeon Fee Per Visit, Daonil Tablets 5 Mg, Blood Test (Cp) Charges
Transport	Hi-Speed Diesel, Petrol Super, Cng, Air Fare Economy Class Per Kilometer, Car Tax 800 Cc To 1500 Cc	Motorcycle Honda Cd 70, Motorcycle Service Charges, Tire Motorcycle Cd 70 (Back Wheel), Train Fare Economy Per Person	Chingchi Rickshaw Charges, Minimum, Tire Cycle, Mobil Oil (Havoline 20W-50)	Tire Car Mehran Tubeless (General), Bicycle,
Communic ation	Telephone Call Charges, Mobile Call Charges, Postal Registration Charges	Mobile Set With Rear Camera And Without Touch Screen		
Recreation & Culture	Newspaper Daily Jang,	Urdu Books Class Ix And X (Text Book Board), Urdu Books Class V (Text Book Board), English Books Class Xi Complete Set, Cable Charges	Personal Computer With Led Monitor (17") Dell/Hp/Acer Core I5, Pets Feed, Ballpoint Pen Local, Lead Pencil Goldfish, Exercise Book (With Lines) 80 To 100 Pages	
Education	Vocational Training Basic Computer Short Course Fee (3 Months)	Private School Fee English Medium Average Standard (Class V)		
Restaura nt & Hotels		Marriage Hall Charges With Furniture	Cooked Beef At Average Hotel, Cooked Chicken At Average Hotel	Cooked Daal At Average Hotel, Bread Tandoori Standard Size, Chicken Biryani Full/Double, Tea Prepared Ordinary
Miscellaneo us		Hair Removing Cream (Eu-Cream) 30Ml Tube, Shampoo Sun Silk/Pantene 90 Ml Bottle	Suitcase Ragzine (24"X16"X6") (Average Quality), Blade Treet Ordinary (10 No. Packet)	Gold Tezabi 24 Carett, Shaving Charges, Hair Cut Charges For Men, Artificial Jewelry (Locket Set) (Average Quality), Tooth Paste Colgate 75 Gm, Disposable Razor Gillette Blue Ii

Table A18: Distribution of Price Changes (YoY) - WPI Items: September 2020

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	Poultry, Fibre Crops, Millet / Bajra, Hides, Skins & Fur Skins, Raw, Maize	Dry Fruits, Fresh Fruits, Raw Animal Materials / Wool	Cotton Seeds, Vegetables, Fish Live Fresh Or Chilled	Stimulant & Spice Crops, Edible Roots / Potatoes, Wheat, Eggs, Unmanufactured Tobacco, Sugar Crops, Raw Milk From Bovine Animals, Rice, Sorghum / Jowar, Other Oil Seeds, Pulses
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	Blended Yarn, Nylon Yarn, Tobacco Products	Other Leather N.E.C, Quilts, Beverages, Coffee & Tea, Leather Without Hair, Cotton Yarn, Other Fabrics, Vegetables & Fruit Juice, Chocolate	Woolen Carpets, Synthetic Carpets, Blankets, Other Cereal Flour, Fruit Juices, Other Food Products, Dried Fruits & Nuts, Milk & Cream In Solid Form, Dairy Products N.E.C, Readymade Garments, Vegetable Oils Refined, Mineral Water	Spices, Sugar Confectionary, Cotton Fabrics, Wheat Flour, Ice Cream, Sugar Refined, Footwears, Towels, Vegetable Ghee, Oil Cakes, Meat Of Animals, Silk & Reyon Fabrics, Bed Sheets, Woven Fabrics, Processed Liquid Milk, Hosiery Products
Other Transportable Goods except Metal Products, Machinery and Equipments	Kerosine Oil, Diesel Oil, Furnace Oil, Fertilizers, Motor Spirit, Glass Sheets, Insecticides, Hard Board, Printing Paper	Chemicals, Auto Tyres, Mobil Oil, Soaps & Detergents, Ceramics & Sanitary Fixture, Steel Bar & Sheets, Matches	Paints & Varnishes, Plastic Products, Bricks, Blocks & Tiles, Medicines, Dyeing Material, Cement	Timber, Pesticides, Bed Foam, Other Glass Articles
Metal Product Machinery & Equipment	Vacuum Pumps, Engines & Motors, Concrete Mixture	Motorcycles, Motor Vehicles, Air Conditioners, Steel Products	Electric Wires, Lighting Equipments, Radio & Television, Fridge,Washm,Sewm,Fans,Iron, Chuff Cutter, Pipe Fittings	Bicycles, Lathe Machines, Cultivators, Tractors

Table A19: International Commodity Prices/Indices

	Jun-20	Jul-20	Aug-20	Sep-20
Energy				
Crude Oil (US$ per barrel) *	39.5	42.1	43.4	40.6
Energy Index (2010 = 100)	48.3	51.2	53.8	51.0
Food				
Rice ($/MT)	520.0	480.0	505.0	507.0
Wheat ($/MT)	198.4	198.4	198.4	198.4
Sugar (US cent/ pound)^	12.1	12.3	13.1	12.8
Palm Oil ($/MT)	656.5	694.2	760.3	798.1
Soybean Oil ($/MT)	755.7	821.1	866.9	906.1
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	67.8	68.5	69.9	70.8
Metal Price Index (2010 = 100)	74.3	80.2	83.6	85.2
Copper ($/MT)	5,754.6	6,372.5	6,498.9	6,704.9
Aluminum ($/MT)	1,568.6	1,643.8	1,737.3	1,743.8
Iron Ore ($ cents/dry MT)	103.3	108.5	121.1	123.8
Tin ($/MT)	16,837.8	17,469.9	17,650.0	17,951.3
Nickel ($/MT)	12,727.2	13,402.3	14,537.8	14,857.5
Zinc ($/MT)	2,025.7	2,177.2	2,410.1	2,442.5
Lead ($/MT)	1,744.8	1,817.9	1,935.7	1,872.9
Uranium ($/MT)@	32.8	32.5	30.9	29.9
DAP ($/MT)	273.0	305.1	341.9	358.4
Urea ($/MT)	202.0	214.4	249.5	250.5

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

@ Data has been taken from Cameco website as it is not available in World Bank dataset.
^ 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/
DAP: Diammonium Phosphate

Table A20: National CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**
Jul	103.17	107.15	114.29	123.86	135.38
Aug	102.80	107.31	113.93	125.89	136.23
Sep	103.23	108.05	113.90	126.86	138.32
Oct	104.19	109.22	116.32	129.16	
Nov	104.69	109.95	116.18	130.90	
Dec	104.08	109.92	115.82	130.45	
Jan	104.53	110.01	116.12	133.03	
Feb	105.04	109.72	117.12	131.64	
Mar	106.14	109.96	119.46	131.69	
Apr	106.91	111.15	120.33	131.59	
May	106.36	111.65	121.05	131.01	
Jun	106.54	112.58	121.63	132.08	
Seasonally Adjusted Series					
Jul	102.82	106.77	113.89	123.44	134.93
Aug	102.52	107.06	113.71	125.70	136.07
Sep	102.77	107.61	113.48	126.42	137.86
Oct	103.26	108.26	115.29	128.01	
Nov	103.74	108.94	115.08	129.62	
Dec	104.17	109.97	115.83	130.44	
Jan	104.64	110.11	116.23	133.14	
Feb	105.78	110.45	117.85	132.40	
Mar	106.81	110.62	120.14	132.39	
Apr	107.05	111.31	120.53	130.83	
May	107.04	112.39	121.88	131.94	
Jun	107.17	113.28	122.41	132.97	

Table A21: Urban CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**
Jul	103.20	107.71	114.94	124.95	134.73
Aug	102.73	107.93	114.58	126.77	135.82
Sep	103.06	108.38	114.49	127.72	137.53
Oct	103.87	109.34	117.04	129.75	
Nov	104.36	110.03	116.94	131.05	
Dec	103.74	110.08	116.57	130.57	
Jan	104.59	110.28	117.07	132.77	
Feb	105.12	110.12	118.08	131.32	
Mar	106.18	110.43	120.29	131.49	
Apr	107.20	111.94	121.29	130.60	
May	106.86	112.53	122.11	130.99	
Jun	107.08	113.34	122.52	131.89	
Seasonally Adjusted Series					
Jul	102.77	107.25	114.47	124.46	134.23
Aug	102.33	107.54	114.20	126.39	135.44
Sep	102.63	107.95	114.07	127.28	137.07
Oct	103.07	108.51	116.15	128.75	
Nov	103.58	109.19	116.02	129.99	
Dec	104.04	110.34	116.81	130.82	
Jan	104.76	110.46	117.26	132.98	
Feb	105.89	110.89	118.86	132.13	
Mar	106.89	111.14	121.03	132.24	
Apr	107.23	111.99	121.35	130.69	
May	107.34	113.05	122.70	131.64	
Jun	107.57	113.88	123.13	132.60	

Table A22: Rural CPI Data Series Original and Seasonally Adjusted					
Original Series					
Period	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**
Jul	103.12	106.30	113.30	122.22	136.36
Aug	102.90	106.37	112.96	124.56	136.84
Sep	103.49	107.54	113.01	125.55	139.51
Oct	104.68	109.05	115.23	128.28	
Nov	105.18	109.83	115.03	130.67	
Dec	104.59	109.68	114.70	130.28	
Jan	104.44	109.60	114.68	133.42	
Feb	104.91	109.11	115.68	132.13	
Mar	106.09	109.25	118.21	132.00	
Apr	106.47	109.95	118.89	130.58	
May	105.60	110.33	119.45	131.03	
Jun	105.73	111.44	120.29	132.36	
Seasonally Adjusted Series					
Jul	102.89	106.04	113.02	121.90	135.99
Aug	102.81	106.34	112.98	124.66	137.01
Sep	103.00	107.08	112.58	125.12	139.05
Oct	103.56	107.88	114.00	126.90	
Nov	103.98	108.55	113.65	129.06	
Dec	104.38	109.40	114.35	129.86	
Jan	104.46	109.60	114.67	133.38	
Feb	105.60	109.77	116.32	132.79	
Mar	106.69	109.83	118.80	132.61	
Apr	106.78	110.30	119.29	131.05	
May	106.59	111.39	120.65	132.40	
Jun	106.57	112.36	121.32	133.54	

Table A23: National CPI Monthly & Average Seasonal Factors						
Period	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**	**Average**
Jul	100.34	100.36	100.35	100.34	100.33	100.34
Aug	100.27	100.23	100.20	100.15	100.12	100.19
Sep	100.44	100.41	100.37	100.35	100.33	100.38
Oct	100.90	100.89	100.89	100.90		100.90
Nov	100.91	100.93	100.96	100.99		100.95
Dec	99.91	99.96	99.99	100.01		99.97
Jan	99.89	99.90	99.90	99.92		99.90
Feb	99.30	99.34	99.38	99.43		99.36
Mar	99.38	99.41	99.43	99.47		99.42
Apr	99.87	99.85	99.84	99.81		99.84
May	99.36	99.34	99.32	99.29		99.33
Jun	99.41	99.39	99.36	99.33		99.37

Table A24: Urban CPI Monthly & Average Seasonal Factors						
Period	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**	**Average**
Jul	100.42	100.43	100.41	100.39	100.38	100.41
Aug	100.39	100.36	100.34	100.30	100.28	100.33
Sep	100.42	100.39	100.37	100.34	100.33	100.37
Oct	100.78	100.77	100.77	100.78		100.77
Nov	100.75	100.77	100.79	100.81		100.78
Dec	99.71	99.76	99.79	99.81		99.77
Jan	99.84	99.84	99.83	99.84		99.84
Feb	99.27	99.30	99.34	99.38		99.33
Mar	99.34	99.36	99.39	99.43		99.38
Apr	99.97	99.96	99.95	99.93		99.96
May	99.56	99.54	99.52	99.50		99.53
Jun	99.54	99.52	99.50	99.47		99.51

Table A25: Rural CPI Monthly & Average Seasonal Factors					
Period	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**	**Average**
Jul	100.22	100.25	100.25	100.26	100.27	100.25
Aug	100.09	100.03	99.98	99.92	99.88	99.98
Sep	100.48	100.43	100.38	100.35	100.33	100.39
Oct	101.09	101.08	101.08	101.09		101.09
Nov	101.15	101.18	101.22	101.25		101.20
Dec	100.20	100.26	100.30	100.33		100.27
Jan	99.98	100.00	100.01	100.03		100.01
Feb	99.35	99.40	99.45	99.50		99.42
Mar	99.44	99.47	99.50	99.54		99.49
Apr	99.71	99.68	99.67	99.64		99.67
May	99.07	99.05	99.01	98.97		99.02
Jun	99.22	99.18	99.15	99.11		99.16

Table A26: National CPI (Month-on-Month) Original & Seasonally Adjusted					
Original Series					
Period	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**
Jul	1.44	0.57	1.51	1.83	2.50
Aug	-0.36	0.15	-0.31	1.64	0.63
Sep	0.42	0.69	-0.03	0.77	1.53
Oct	0.93	1.09	2.12	1.81	
Nov	0.47	0.66	-0.12	1.35	
Dec	-0.58	-0.03	-0.30	-0.34	
Jan	0.43	0.08	0.25	1.97	
Feb	0.48	-0.26	0.87	-1.04	
Mar	1.05	0.22	2.00	0.04	
Apr	0.72	1.08	0.73	-0.84	
May	-0.52	0.46	0.60	0.32	
Jun	0.17	0.83	0.48	0.82	
Seasonally Adjusted Series					
Jul	0.54	-0.38	0.54	0.84	1.47
Aug	-0.29	0.28	-0.16	1.83	0.84
Sep	0.25	0.51	-0.20	0.57	1.32
Oct	0.48	0.61	1.59	1.26	
Nov	0.46	0.63	-0.18	1.26	
Dec	0.42	0.94	0.66	0.63	
Jan	0.45	0.14	0.34	2.07	
Feb	1.08	0.30	1.39	-0.56	
Mar	0.98	0.15	1.94	-0.01	
Apr	0.23	0.63	0.32	-1.18	
May	-0.01	0.97	1.12	0.85	
Jun	0.12	0.79	0.43	0.78	

Table A27: Urban CPI (Month-on-Month) Original & Seasonally Adjusted Series

Period	FY17	FY18	FY19	FY20	FY21
		Original Series			
Jul	1.47	0.59	1.41	1.98	2.15
Aug	-0.46	0.20	-0.31	1.46	0.81
Sep	0.32	0.42	-0.08	0.75	1.26
Oct	0.79	0.89	2.23	1.59	
Nov	0.47	0.63	-0.09	1.00	
Dec	-0.59	0.05	-0.32	-0.37	
Jan	0.82	0.18	0.43	1.68	
Feb	0.51	-0.15	0.86	-1.09	
Mar	1.01	0.28	1.87	0.13	
Apr	0.96	1.37	0.83	-0.68	
May	-0.32	0.53	0.68	0.30	
Jun	0.21	0.72	0.34	0.69	
		Seasonally Adjusted Series			
Jul	0.61	-0.30	0.52	1.08	1.23
Aug	-0.43	0.27	-0.24	1.55	0.91
Sep	0.29	0.38	-0.11	0.71	1.20
Oct	0.43	0.51	1.82	1.15	
Nov	0.50	0.63	-0.10	0.97	
Dec	0.44	1.05	0.68	0.64	
Jan	0.69	0.10	0.39	1.65	
Feb	1.08	0.39	1.36	-0.64	
Mar	0.94	0.22	1.82	0.08	
Apr	0.32	0.76	0.27	-1.18	
May	0.10	0.95	1.11	0.73	
Jun	0.22	0.74	0.35	0.72	

Table A28: Rural CPI (Month-on-Month) Original & Seasonally Adjusted					
Original Series					
Period	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**
Jul	1.39	0.54	1.67	1.60	3.02
Aug	-0.21	0.07	-0.30	1.91	0.35
Sep	0.57	1.10	0.04	0.79	1.95
Oct	1.15	1.40	1.96	2.17	
Nov	0.48	0.72	-0.17	1.86	
Dec	-0.56	-0.14	-0.29	-0.30	
Jan	-0.14	-0.07	-0.02	2.41	
Feb	0.45	-0.45	0.87	-0.97	
Mar	1.12	0.13	2.19	-0.10	
Apr	0.36	0.64	0.58	-1.08	
May	-0.82	0.35	0.47	0.34	
Jun	0.12	1.01	0.70	1.02	
Seasonally Adjusted Series					
Jul	0.44	-0.50	0.58	0.48	1.83
Aug	-0.09	0.28	-0.03	2.26	0.75
Sep	0.19	0.70	-0.35	0.37	1.49
Oct	0.54	0.75	1.26	1.42	
Nov	0.41	0.62	-0.30	1.70	
Dec	0.38	0.78	0.62	0.62	
Jan	0.08	0.18	0.27	2.71	
Feb	1.09	0.16	1.45	-0.44	
Mar	1.03	0.05	2.13	-0.14	
Apr	0.09	0.42	0.41	-1.17	
May	-0.18	0.99	1.14	1.02	
Jun	-0.02	0.87	0.56	0.87	

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

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

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

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

Total items in CPI basket (356), Food items (103) and Non-food items (253)
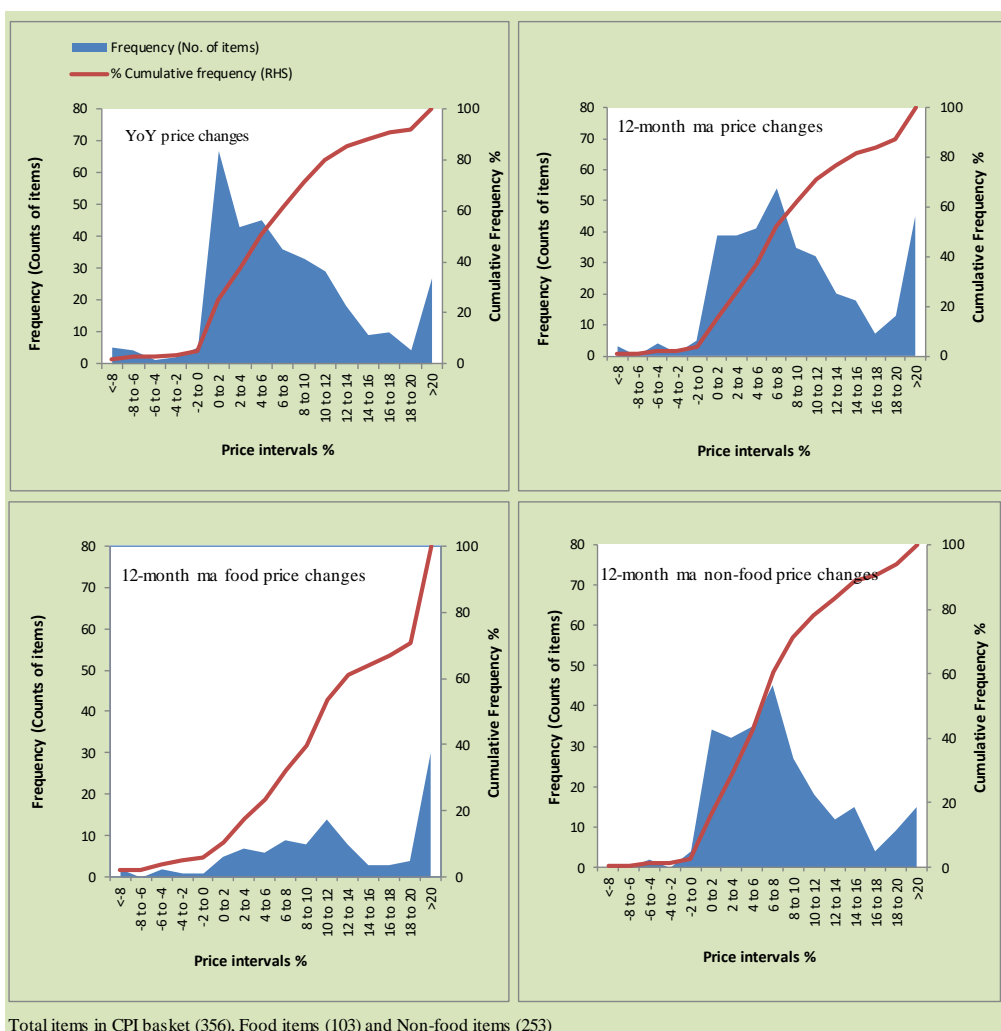
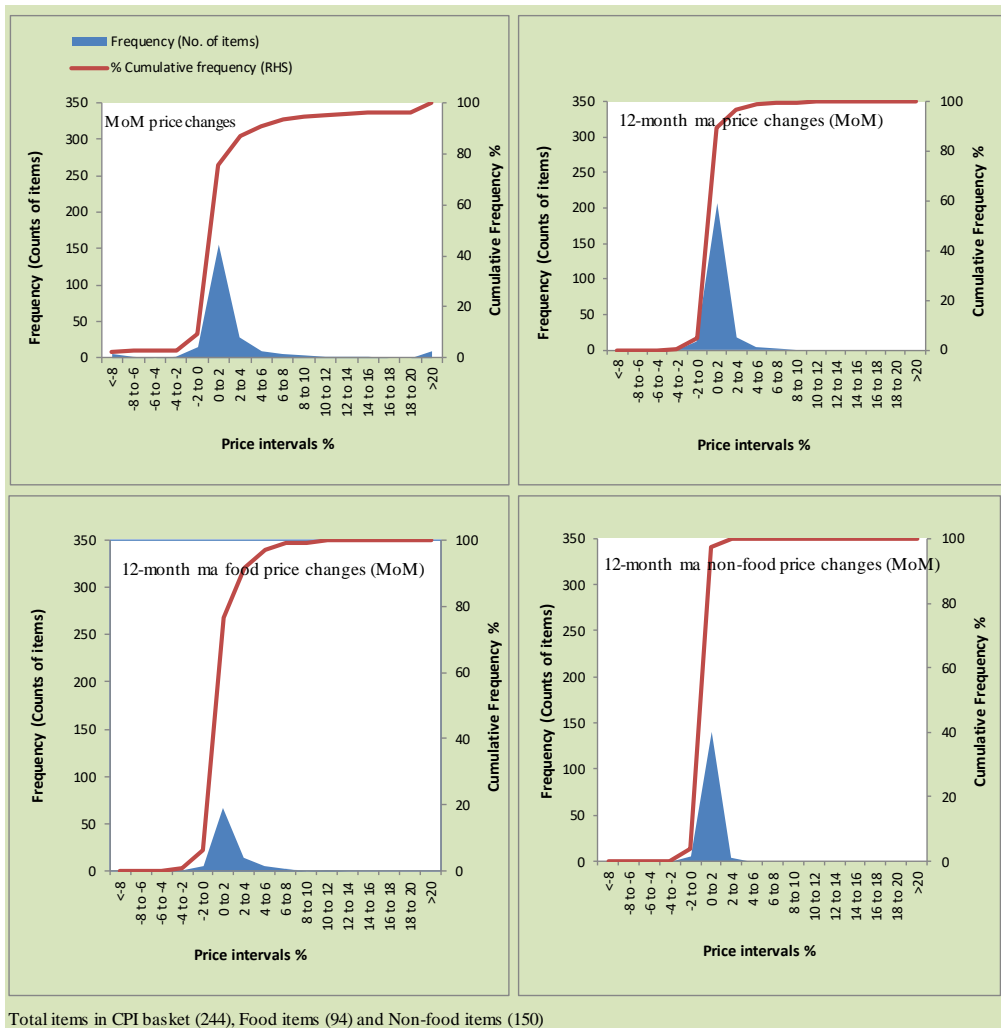**Figure A5: Frequency Distribution of Price Changes of Rural CPI Items (YoY)**

Total items in CPI basket (244), Food items (94) and Non-food items (150)
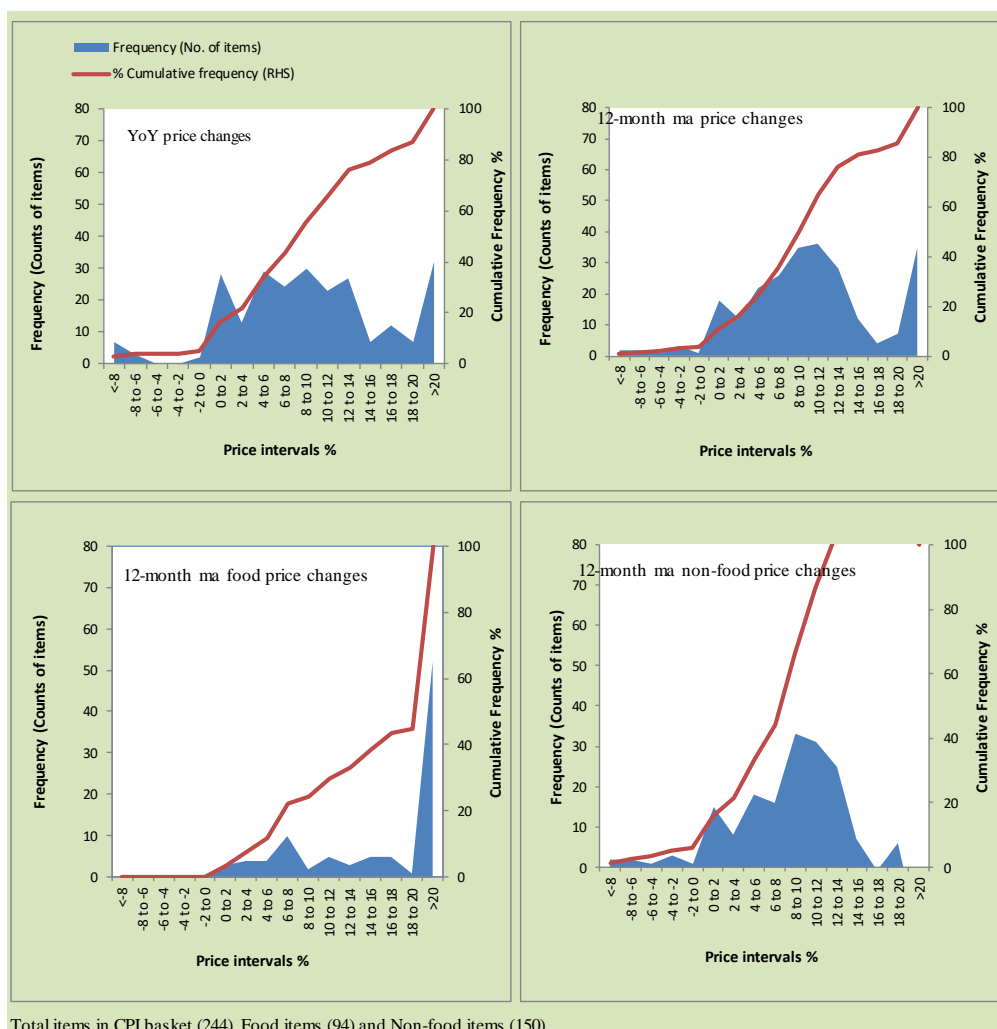
Figure A6: Frequency Distribution of Price Changes of Urban CPI Items (MoM)
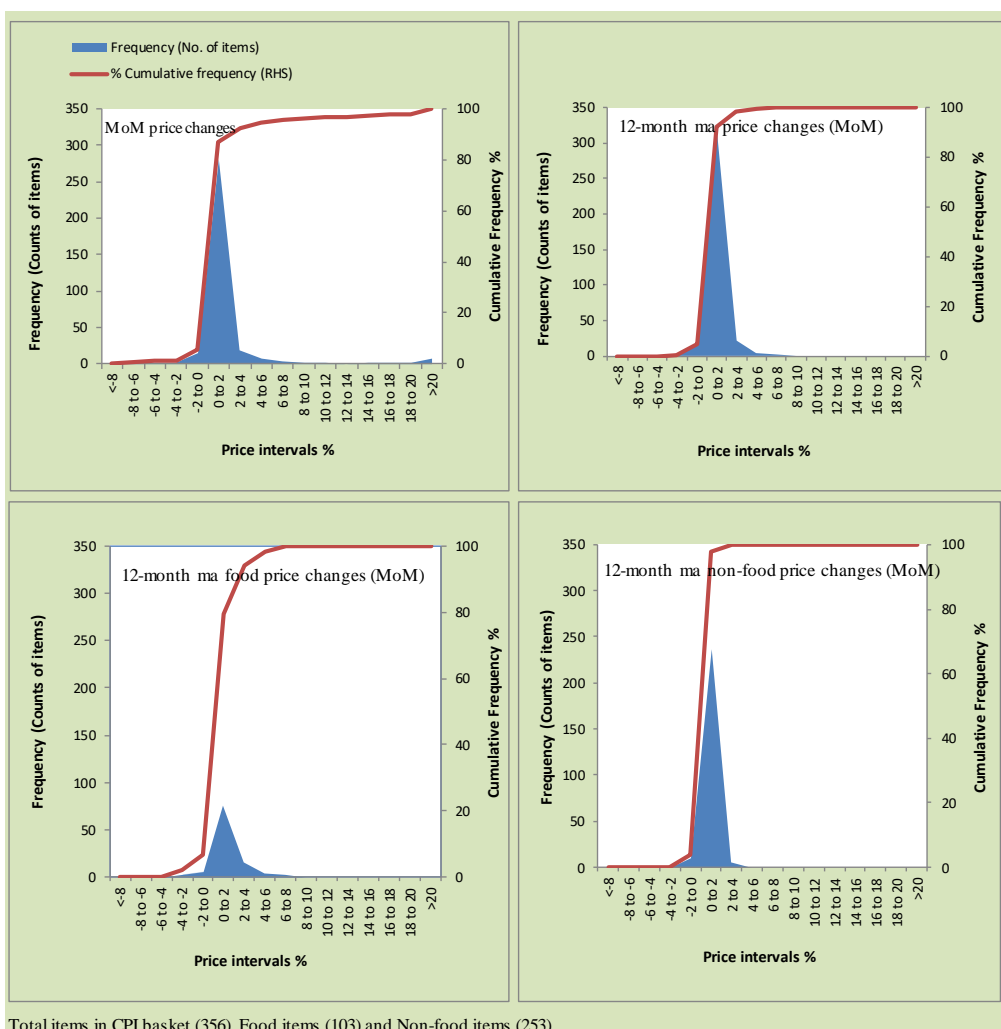
Total items in CPI basket (356), Food items (103) and Non-food items (253)

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

Total items in CPI basket (244), Food items (94) and Non-food items (150)

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

Total commodities in WPI basket (110), Food items (40) and Non-food items (70)
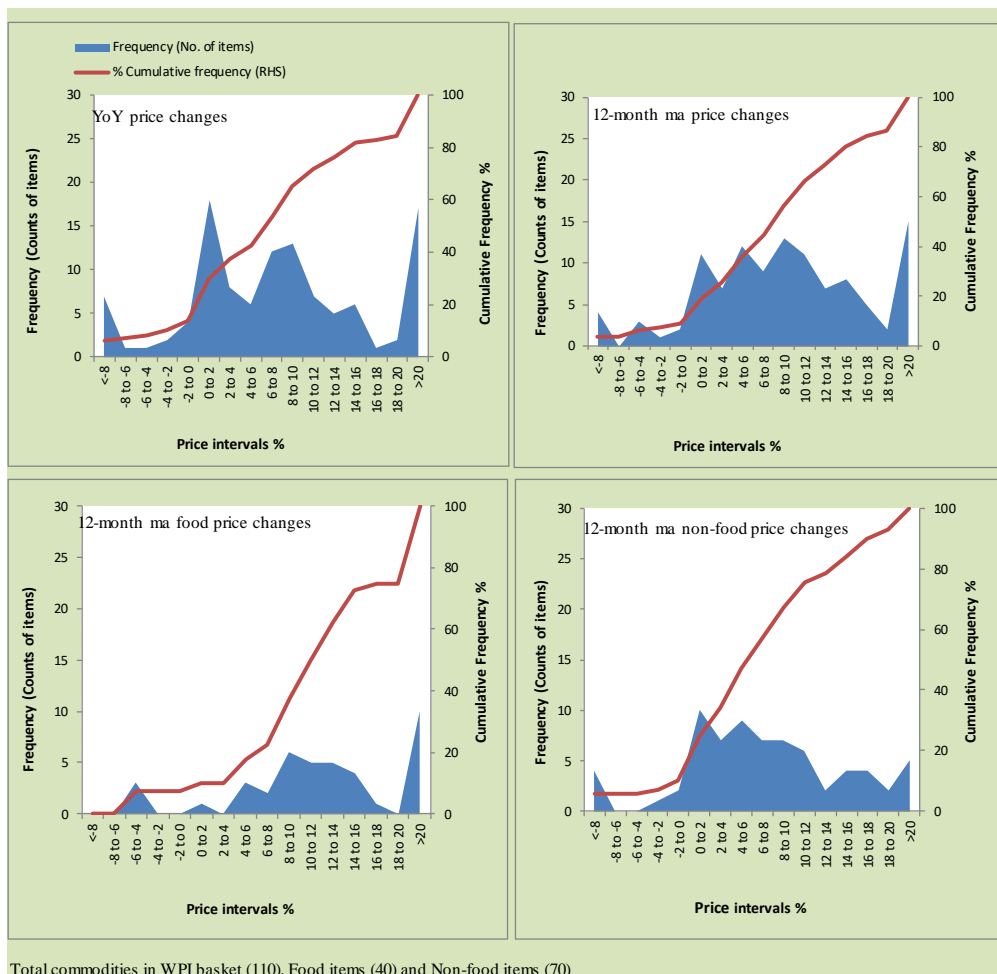
<u>Annexure B</u>

Technical Notes, Definitions and Methodologies

a) **Technical Notes**
   1. All the three measures of inflation, viz. CPI, 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 2007-08.
   3. CPI basket contains 487 consumers' goods; WPI basket contains 463 items; SPI contains 53 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:

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

   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:

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

   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:

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

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 three methods:

    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.

    c) Relatively Stable Component of CPI (RSC-CPI) developed by State Bank of Pakistan is a hybrid method based on permanent exclusion criteria. Volatile price items, to be excluded in the newly proposed measure RSC-CPI, are identified by analyzing the list and frequency

of commodities that have been trimmed frequently in the past while computing monthly weighted trimmed mean measure. Commodities that were trimmed out 13 and above times since July 2008 to February 2013 are selected for permanently excluding from the CPI basket. This newly developed component includes a mix of both food and non-food commodities that show persistent price behavior. Fifty Commodities included comprise relatively stable component (RSC-CPI) with a weight of 67.69. The detailed methodology of RSC-CPI and group wise items along their weights can be viewed at the following link;

http://www.sbp.org.pk/publications/wpapers/2013/wp66.pdf

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 ith 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 ith item

π_{it} : Inflation of ith item

π_t : Overall inflation

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

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

b) Methodology for Estimating Inflation Diffusion Index for Pakistan

We constructed an index to measure the spread of inflation in the 487 items of the CPI basket. 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:

$$IDI = \frac{No.\,of\,items\,with\,postive\,MoM\,change\,in\,price - No.\,of\,items\,with\,negative\,MoM\,change\,in\,price}{No.\,of\,items\,for\,which\,prices\,are\,reported} * 100$$

Thus, it is the difference between the share of items with increasing prices (i.e. depicting inflation) and the share of items with falling prices (i.e. depicting deflation) in CPI amongst the items for which prices have altered or remained constant[1].

Based upon item level prices data from July 2001 to February 2011 we computed inflation diffusion indices overall (general) CPI basket and for all groups in CPI basket (except House Rent Index being single item). A simple analysis[2] suggests that IDI is a leading indicator for Pakistan's YoY inflation.

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[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.