

Inflation Monitor

November 2020

(New Base: 2015-16)



State Bank of Pakistan

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

1. Inflation in Brief

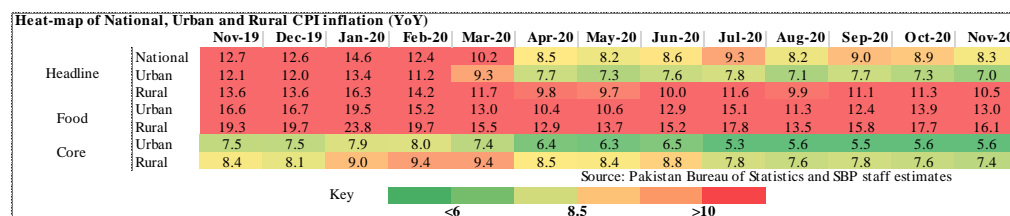
- a) National CPI inflation (2015-16=100) is recorded at 8.3 percent on year-on-year basis in November 2020 as compared to 8.9 percent in the previous month and 12.7 percent during the corresponding month of last year.
- b) National CPI inflation on month-on-month basis is recorded at 0.8 percent in November 2020 as compared to 1.7 percent in the previous month and 1.3 percent during the corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.71 percent in November 2020 compared to 1.00 percent in the previous month.
- c) Urban CPI inflation (2015-16=100) is recorded at 7.0 percent on year-on-year basis in November 2020 as compared to 7.3 percent in the previous month and 12.1 percent during the corresponding month of last year.
- d) Urban CPI inflation on month-on-month basis is recorded at 0.6 percent in November 2020 as compared to 1.3 percent in the previous month and 1.0 percent during corresponding month of last year. Seasonally adjusted month-on-month Urban CPI inflation is recorded at 0.60 percent in November 2020 compared to 0.76 percent in the previous month.
- e) Rural CPI inflation (2015-16=100) is recorded at 10.5 percent on year-on-year basis in November 2020 as compared to 11.3 percent during the previous month and 13.6 percent during the corresponding month of last year.
- f) Rural CPI inflation on month-on-month basis is recorded at 1.1 percent in November 2020 as compared to 2.4 percent in the previous month and 1.9 percent during the corresponding month of last year. Seasonally adjusted month-on-month Rural CPI inflation is recorded at 0.87 percent in November 2020 compared to 1.34 percent in the previous month.

- g) Urban Core inflation (trimmed) on year-on-year basis is recorded at 6.3 percent in November 2020 as compared to 6.5 percent in the previous month and 9.5 percent during the corresponding month of last year.
- h) On month-on-month basis, the Urban Core inflation (trimmed) is recorded at 0.2 percent in November 2020 as compared to 0.6 percent in the previous month and 0.4 percent during the corresponding month of last year.
- i) Rural Core inflation (trimmed) on year-on-year basis is recorded at 9.1 percent in November 2020 as compared to 9.5 percent in the previous month and 10.7 percent during the corresponding month of last year.
- j) On month-on-month basis, the Rural Core inflation (trimmed) is recorded at 0.4 percent in November 2020 as compared to 1.1 percent in the previous month and 0.7 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 5.6 percent in November 2020 and was at same level during the previous month. It was 7.5 percent during the corresponding month of last year.
- l) Urban Core (NFNE) inflation on month-on-month basis recorded at 0.3 percent in November 2020 as compared to 0.6 percent in the previous month and was at same level during the corresponding month of last year.
- m) Rural Core (NFNE) inflation on year-on-year basis is recorded at 7.4 percent in November 2020 as compared to 7.6 percent in the previous month and 8.4 percent during the corresponding month of last year.
- n) Rural Core (NFNE) inflation on month-on-month basis recorded at 0.3 percent in November 2020 as compared to 0.6 percent in the previous month and 0.5 percent during the corresponding month of last year.

- o) WPI inflation on year-on-year basis recorded at 5.0 percent in November 2020 as compared to 5.1 percent in the previous month and 11.2 percent during the corresponding month of last year.
- p) WPI inflation on month-on-month basis recorded at -0.9 percent in November 2020 as compared to 2.9 percent in the previous month. It was -0.8 percent in the corresponding month of last year.
- q) SPI inflation on year-on-year basis recorded at 8.0 percent in November 2020 as compared to 9.7 percent in the previous month. It was 19.5 percent in the corresponding month of last year.
- r) SPI inflation on month-on-month basis recorded at 1.1 percent in November 2020 as compared to 2.8 percent in the previous month. It was 2.7 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.



Inflation Monitor, November 2020

Heat-map of National, Urban and Rural CPI inflation (MoM)														
		Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20
Headline	National	1.3	-0.3	2.0	-1.0	0.0	-0.8	0.3	0.8	2.5	0.6	1.5	1.7	0.8
	Urban	1.0	-0.4	1.7	-1.1	0.1	-0.7	0.3	0.7	2.2	0.8	1.3	1.3	0.6
	Rural	1.9	-0.3	2.4	-1.0	-0.1	-1.1	0.3	1.0	3.0	0.4	2.0	2.4	1.1
Food	Urban	2.4	-1.7	2.7	-1.4	0.6	-1.0	1.5	1.8	3.0	-0.3	3.0	2.8	1.6
	Rural	3.4	-1.1	3.4	-1.6	-0.3	-1.7	1.4	2.0	4.0	-0.9	3.8	4.3	2.0
Core	Urban	0.3	0.4	1.1	0.2	0.3	0.2	0.4	0.4	0.6	0.7	0.3	0.6	0.3
	Rural	0.5	0.3	1.0	0.5	0.6	0.3	0.4	0.7	1.1	0.8	0.4	0.6	0.3

Source: Pakistan Bureau of Statistics and SBP staff estimates

Key

<0.00

0.75

>1.50

Heat-map of National CPI inflation (YoY)														
	Weights	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20
National	100.00	12.7	12.6	14.6	12.4	10.2	8.5	8.2	8.6	9.3	8.2	9.0	8.9	8.3
Food and non-alcoholic Beverages	34.58	19.4	19.7	23.7	18.4	14.7	11.7	12.2	14.6	17.8	12.9	14.7	16.6	15.1
Alcoholic Beverages, Tobacco	1.02	18.7	18.3	17.9	18.5	18.6	19.6	19.5	14.2	5.0	5.8	5.9	6.0	5.9
Clothing and footwear	8.60	9.4	9.7	9.6	10.1	11.0	10.2	10.3	11.0	10.3	9.2	9.1	9.0	9.4
Housing, water, Elec., Gas and other fuels	23.63	8.8	8.5	9.6	6.8	4.9	5.1	6.4	5.4	4.2	6.0	6.1	2.7	2.6
Furnishing and household equipment maintenance	4.10	10.8	10.4	10.1	10.0	10.1	9.0	8.7	8.8	7.8	7.5	7.9	8.0	7.7
Health	2.79	11.4	11.3	11.8	12.0	12.4	10.5	9.8	9.3	7.8	7.7	8.3	7.8	7.6
Transport	5.91	14.0	14.7	18.6	19.2	11.5	3.4	-7.5	-10.2	-4.5	-3.4	-1.5	-1.5	-4.1
Communication	2.21	4.0	4.0	4.0	3.9	3.9	1.7	1.6	1.6	0.3	0.3	0.3	0.3	0.6
Recreation and culture	1.59	6.8	6.8	6.5	6.6	5.9	5.1	4.9	4.8	3.8	3.5	3.9	3.9	4.2
Education	3.79	6.1	6.0	7.3	7.4	4.5	3.2	2.0	2.0	1.1	1.0	1.0	1.4	1.3
Restaurants and hotels	6.92	6.4	6.1	7.4	8.7	8.7	8.5	8.6	9.0	7.5	8.0	8.2	8.9	9.3
Misc. goods and services	4.87	11.8	10.7	11.4	11.4	11.8	11.9	11.9	11.6	11.7	13.6	12.2	11.6	11.9

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Source: Pakistan Bureau of Statistics and SBP staff estimates

Heat-map of Urban CPI Inflation (YoY)														
	Weights	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20
Urban	100.00	12.1	12.0	13.4	11.2	9.3	7.7	7.3	7.6	7.8	7.1	7.7	7.3	7.0
Food and non-alcoholic Beverages	30.42	18.6	18.8	22.0	16.4	13.7	10.7	10.9	13.8	16.9	11.9	13.3	14.9	13.7
Alcoholic Beverages, Tobacco	0.85	16.7	16.6	16.8	17.7	17.8	18.8	19.0	13.3	4.7	5.5	5.7	6.2	6.7
Clothing and footwear	8.01	9.1	9.6	9.0	9.6	9.9	9.5	9.5	10.1	9.4	8.0	8.0	8.0	9.1
Housing, water, Elec., Gas and other fuels	27.03	9.6	9.4	9.7	6.9	5.1	5.1	6.5	5.6	3.6	5.4	5.5	2.3	2.2
Furnishing and household equipment maintenance	4.09	11.2	11.0	10.4	10.0	9.8	8.3	7.7	7.7	6.3	6.2	6.3	6.6	6.4
Health	2.31	10.5	10.9	11.5	11.7	12.2	9.4	8.7	8.4	5.9	6.7	7.2	7.3	7.1
Transport	6.14	15.0	15.6	19.4	19.9	12.2	4.1	-6.5	-9.5	-4.8	-3.7	-1.6	-1.7	-4.5
Communication	2.35	5.1	5.3	5.3	5.3	5.1	2.3	2.2	2.1	0.4	0.4	0.3	0.3	0.7
Recreation and culture	1.73	6.5	6.4	6.1	6.1	5.6	4.9	4.6	4.4	3.1	2.7	2.9	2.9	3.2
Education	4.88	6.3	6.3	7.5	7.5	4.5	3.4	1.9	1.9	1.1	1.0	0.9	1.2	1.1
Restaurants and hotels	7.41	5.2	4.9	6.5	7.7	7.5	7.4	7.2	7.7	6.7	8.2	8.2	8.8	9.3
Misc. goods and services	4.77	11.0	10.1	10.7	10.1	10.6	11.0	10.9	10.6	10.4	12.6	10.5	9.7	10.4

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Source: Pakistan Bureau of Statistics and SBP staff estimates

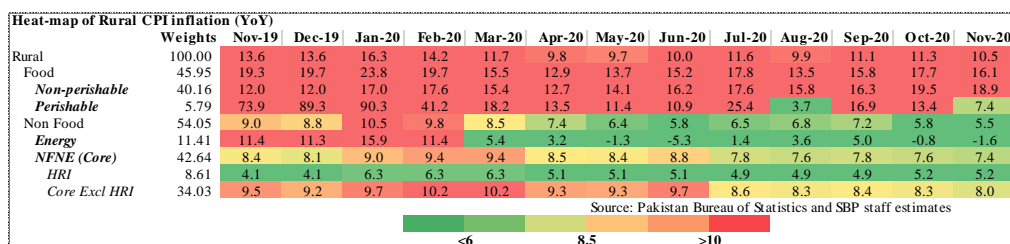
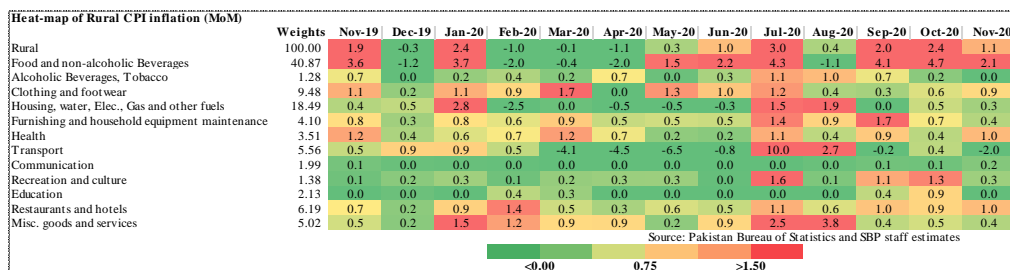
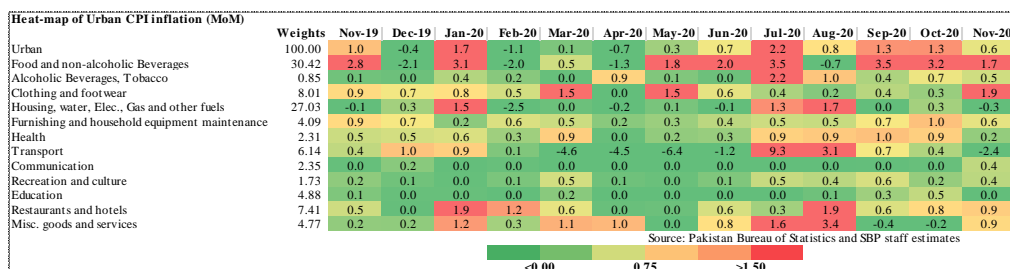
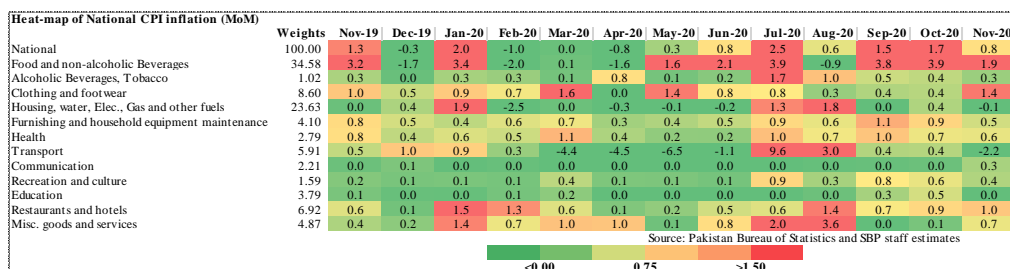
Heat-map of Rural CPI inflation (YoY)														
	Weights	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20
Rural	100.00	13.6	13.6	16.3	14.2	11.7	9.8	9.7	10.0	11.6	9.9	11.1	11.3	10.5
Food and non-alcoholic Beverages	40.87	20.3	20.8	25.5	20.6	15.8	12.8	13.7	15.5	18.7	14.0	16.4	18.4	16.7
Alcoholic Beverages, Tobacco	1.28	21.0	20.2	19.2	19.4	19.5	20.4	20.1	15.3	5.4	6.1	6.1	5.7	5.0
Clothing and footwear	9.48	9.8	9.9	10.2	10.8	12.3	11.0	11.4	12.2	11.5	10.6	10.5	10.1	9.9
Housing, water, Elec., Gas and other fuels	18.49	6.9	6.6	9.4	6.6	4.6	5.2	6.0	4.9	5.5	7.2	7.4	3.7	3.6
Furnishing and household equipment maintenance	4.10	10.2	9.6	9.7	9.9	10.6	10.1	10.2	10.4	10.1	9.5	10.3	10.1	9.6
Health	3.51	12.3	11.7	12.1	12.4	12.6	11.6	10.9	10.1	9.7	8.7	9.3	8.3	8.2
Transport	5.56	12.2	13.1	17.2	18.0	10.2	2.3	-9.0	-11.5	-3.8	-3.0	-1.4	-1.1	-3.5
Communication	1.99	1.9	1.7	1.7	1.6	1.6	0.8	0.7	0.6	0.3	0.2	0.2	0.4	0.4
Recreation and culture	1.38	7.4	7.5	7.3	7.3	6.5	5.4	5.5	5.5	5.2	5.0	5.8	5.7	6.0
Education	2.13	5.3	5.0	6.7	7.1	4.5	2.5	2.4	2.4	1.2	0.7	1.2	2.1	2.1
Restaurants and hotels	6.19	8.5	8.3	8.9	10.3	10.8	10.4	11.1	11.3	9.0	7.5	8.4	9.0	9.3
Misc. goods and services	5.02	12.9	11.6	12.5	13.4	13.6	13.2	13.5	13.2	13.8	15.0	14.5	14.3	14.1

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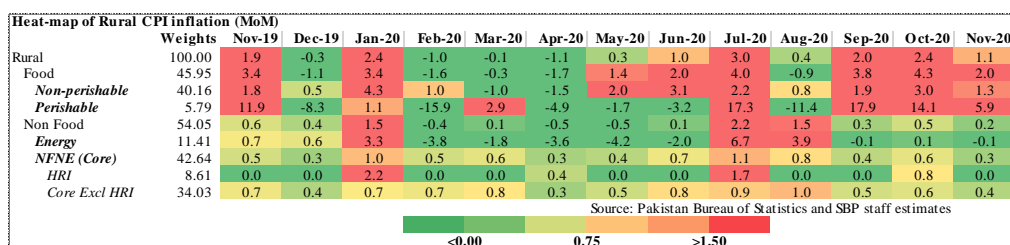
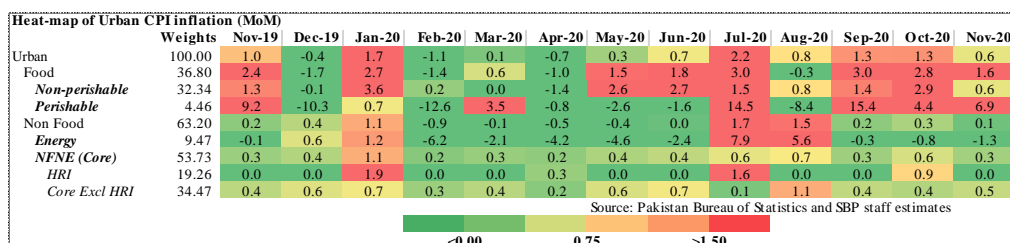
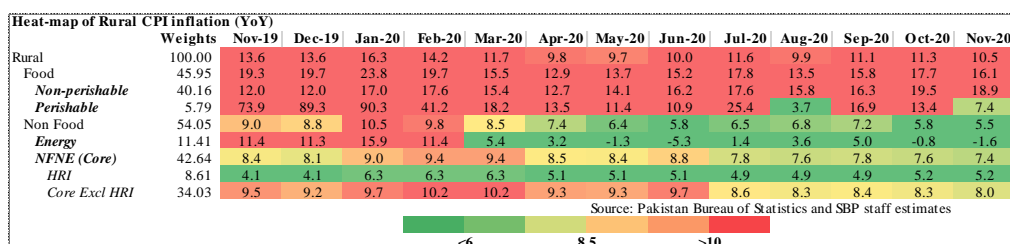
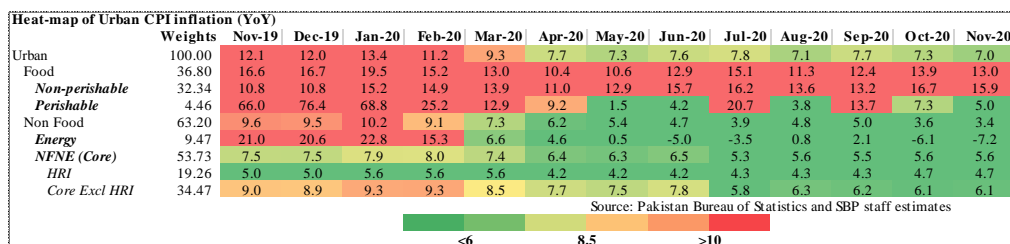
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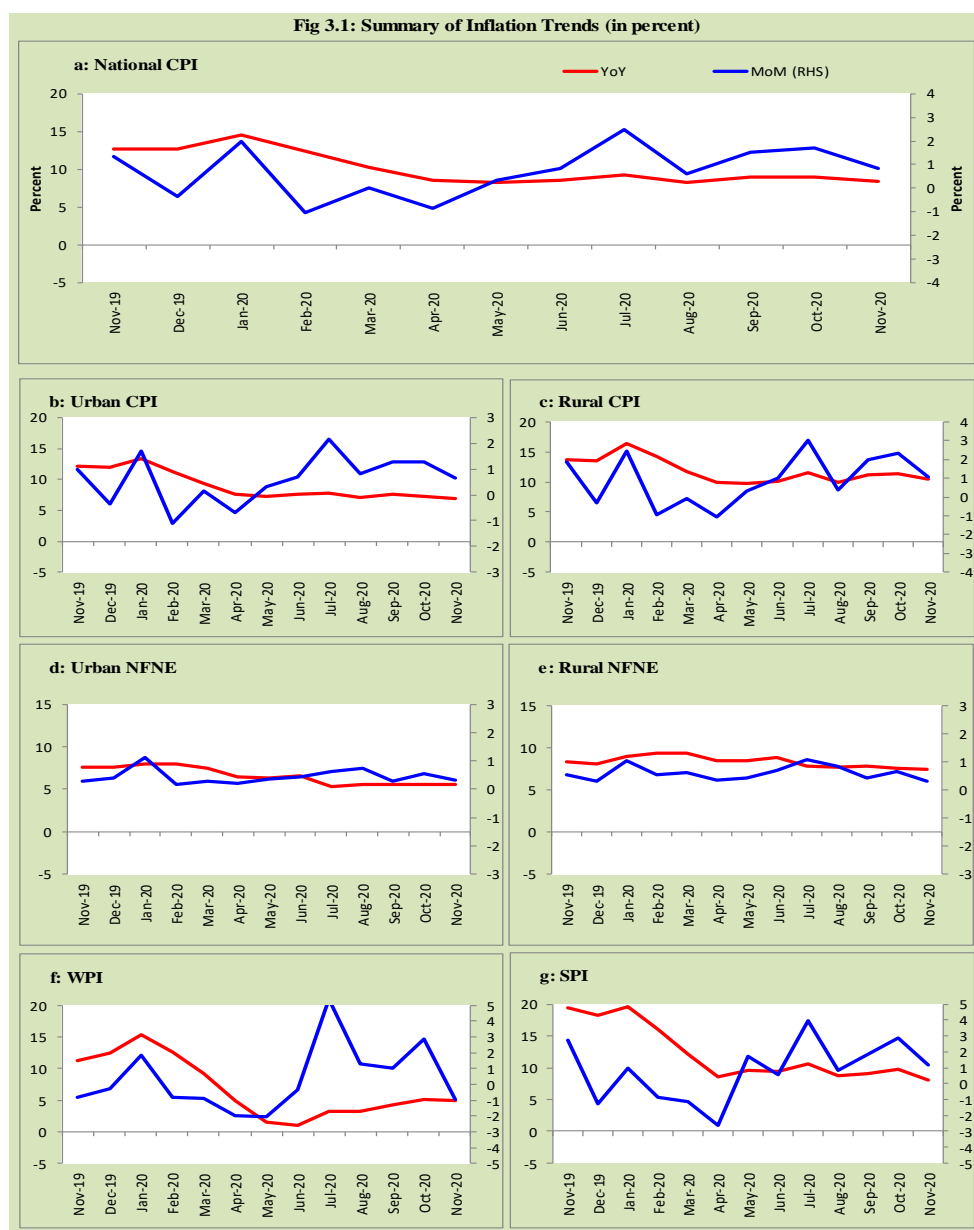
Source: Pakistan Bureau of Statistics and SBP staff estimates



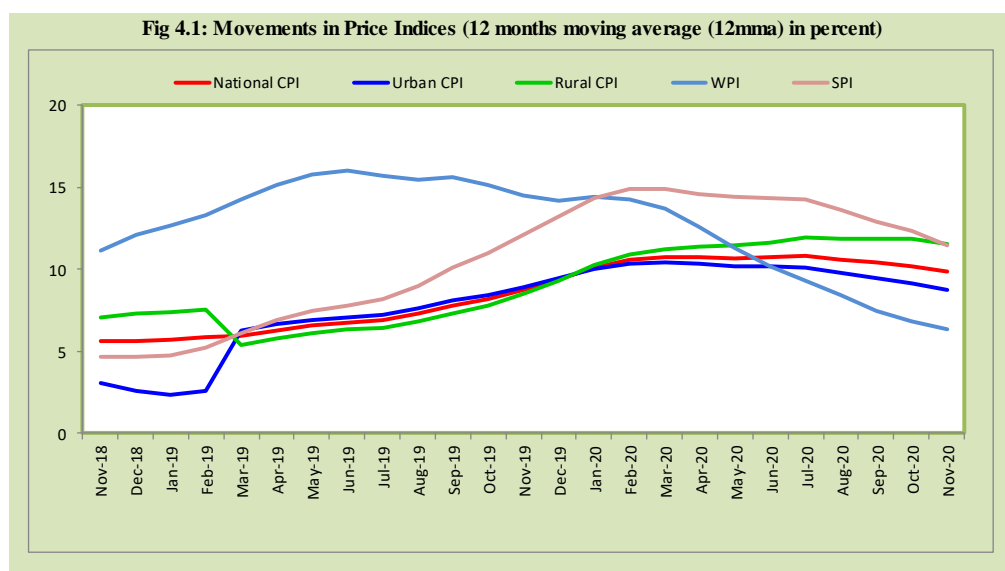
Inflation Monitor, November 2020



3. Trends in Inflation



4. Movement in Price Indices (Moving Averages)



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

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

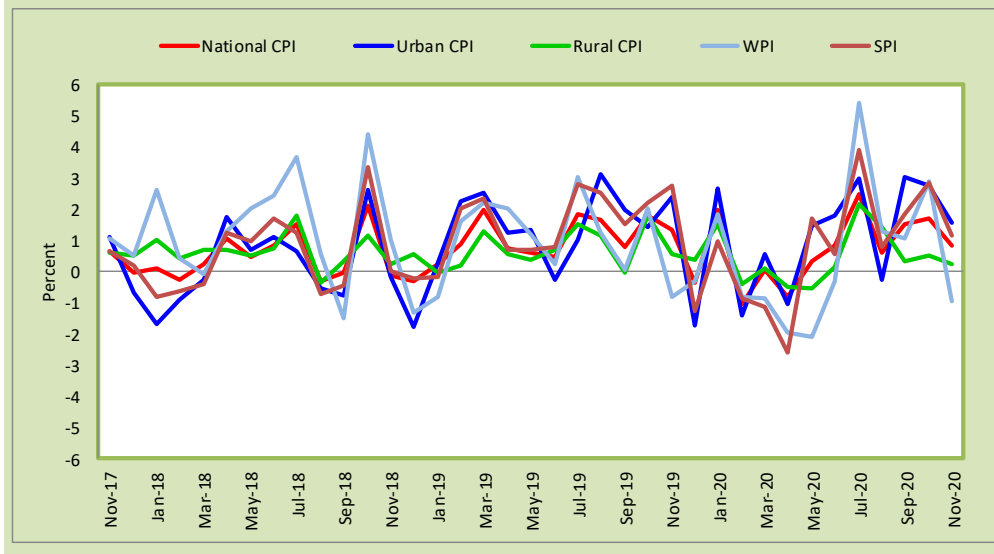
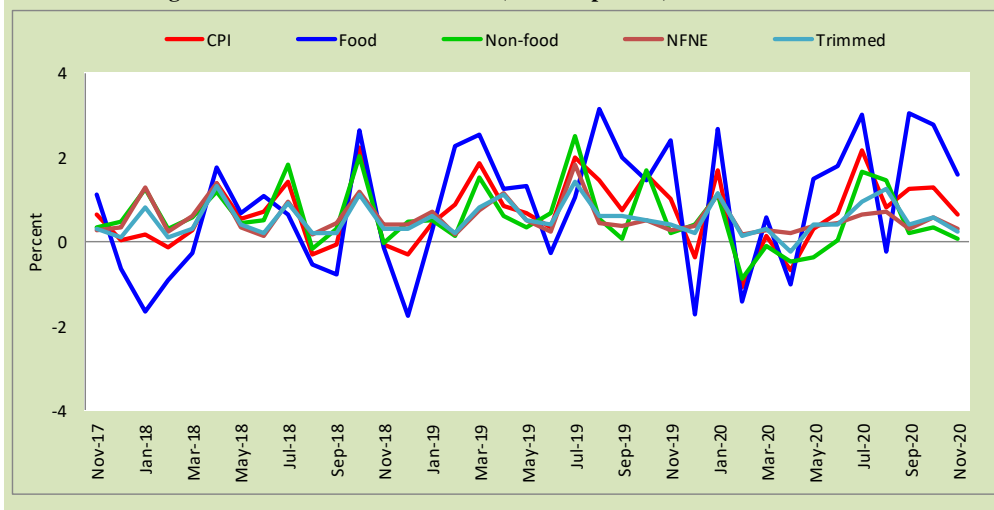
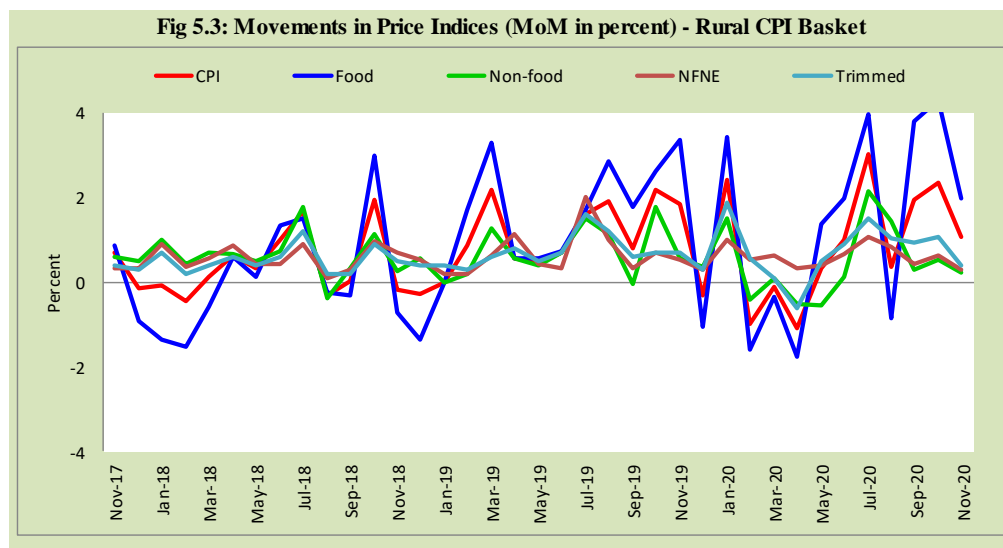


Fig 5.2: Movements in Price Indices (MoM in percent) - Urban CPI Basket

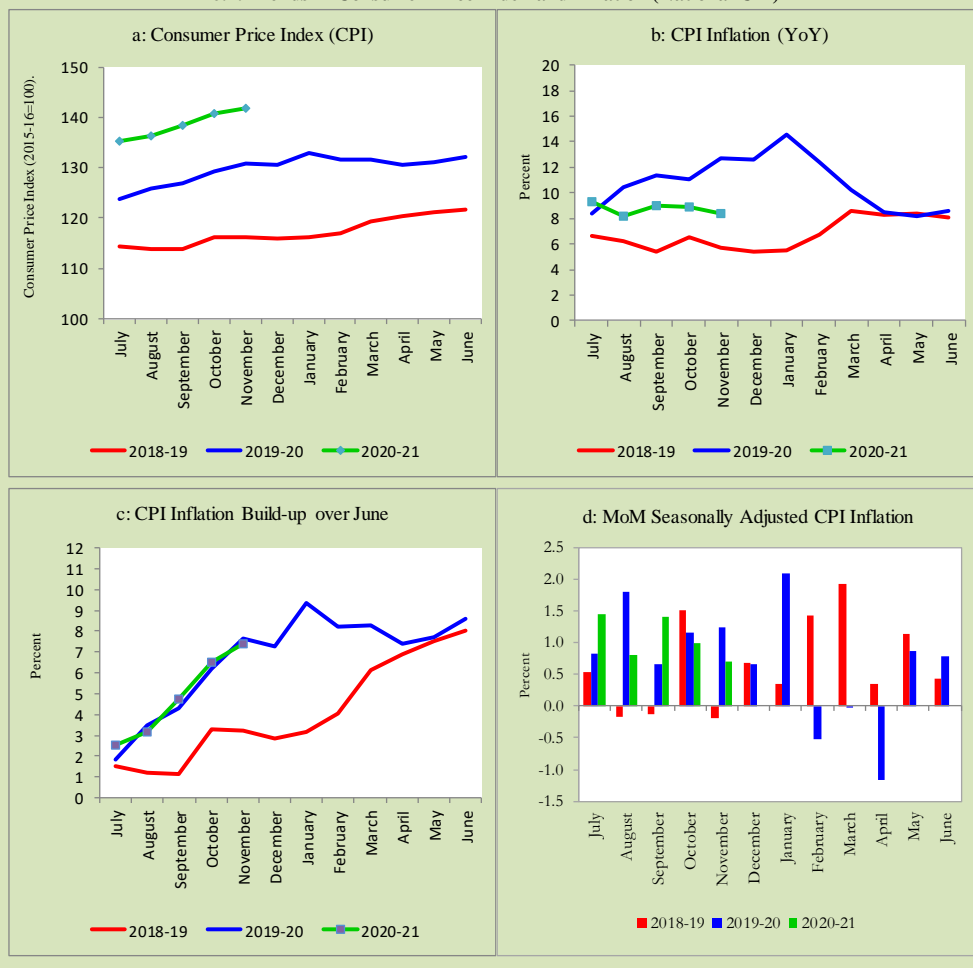




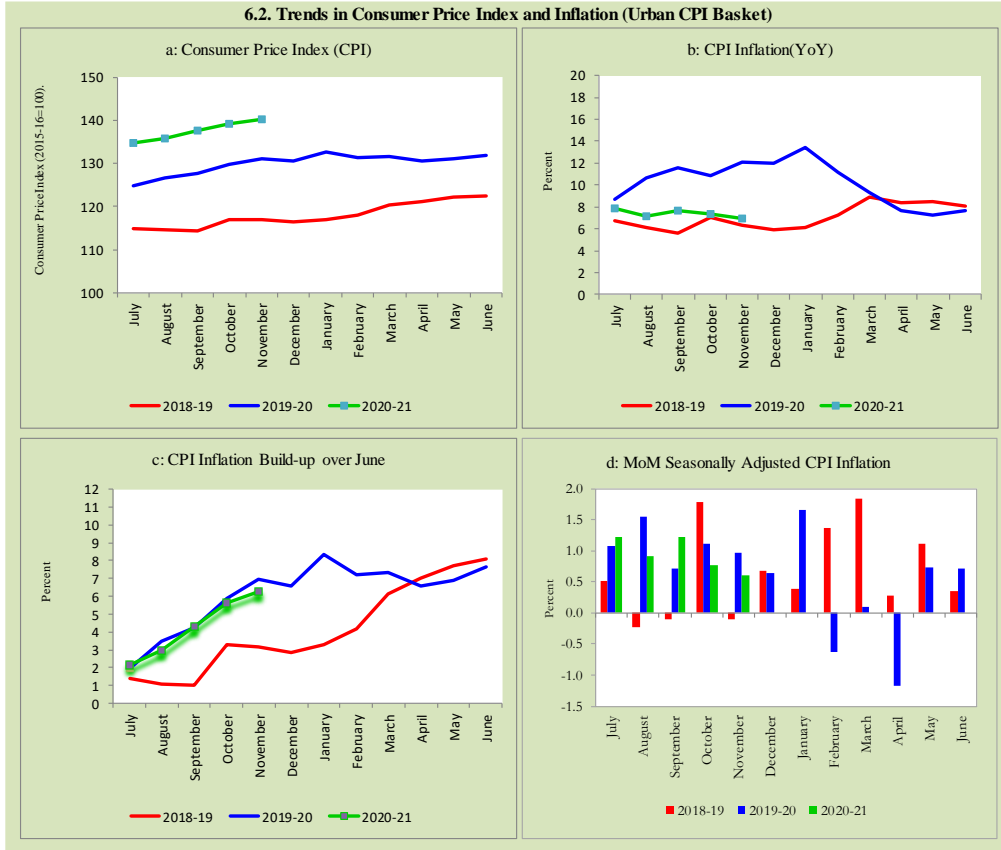
6. Trends in Consumer Price Indices and Inflation

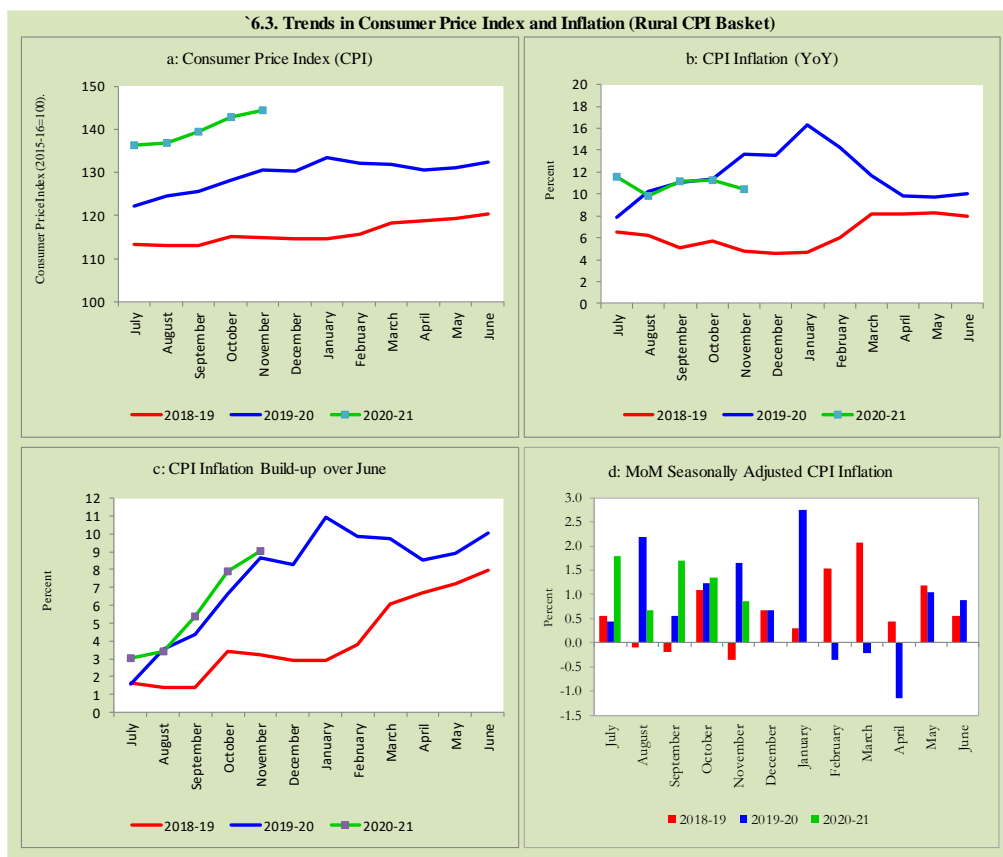
Monthly Consumer Price Indices, YoY growth rates and inflation build up over June along with seasonally adjusted (MoM) growth rates in CPI (National, Urban and Rural) is summarized in the following graphs (Figure 6.1 to 6.3).

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



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





7. Weighted Contribution

The weighted contribution of food group in the overall urban CPI inflation marginally decreased to 68.67 percent during November 2020 from 68.74 percent in previous month. It was 48.71 percent during corresponding month of last year. The weighted contribution of non-food group marginally increased to 31.32 percent in November 2020 from 31.26 percent in previous month. Non-food group was 51.34 percent during corresponding month of last year. Table 7.1 provide the historical perspective of weighted contribution of food group and non-food group and their respective sub-indexes (Perishable food, Non-Perishable food, Energy, Core Inflation

(NFNE), NFNE excluding HRI and HRI) in the overall inflation for urban basket. Figure 7.1 provides a graphical presentation of composition of YoY urban CPI inflation cascaded in food group and non-food groups and their respective sub-indexes.

Table 7.1 Weighted Contribution (in percent) to Urban CPI Inflation (YoY)									
Period	Overall CPI	Food Group			Non-Food Group				
		Food	Perishable food	Non-Perishable food	Non-food	Energy	Core Inflation (NFNE)	NFNE excl HRI	HRI
	a=(b+e)	b=(c+d)	c	d	e=(f+g)	F	g=(h+i)	h	i
Nov-19	100	48.71	22.12	26.59	51.34	17.12	34.21	25.91	8.30
Dec-19	100	48.38	21.77	26.61	51.66	17.09	34.57	26.20	8.37
Jan-20	100	50.47	18.40	32.08	49.56	16.76	32.80	24.32	8.48
Feb-20	100	47.67	9.40	38.26	52.33	13.30	39.03	28.98	10.06
Mar-20	100	49.36	6.52	42.84	50.66	7.22	43.44	31.55	11.89
Apr-20	100	48.31	5.78	42.53	51.69	5.89	45.80	34.97	10.83
May-20	100	52.17	1.02	51.15	47.85	0.71	47.13	35.78	11.36
Jun-20	100	60.01	2.60	57.42	39.96	-6.47	46.43	35.67	10.76
Jul-20	100	67.97	12.27	55.70	32.06	-4.65	36.71	26.02	10.69
Aug-20	100	56.79	2.55	54.24	43.23	1.19	42.04	30.49	11.55
Sep-20	100	58.75	9.06	49.69	41.23	2.81	38.42	27.77	10.66
Oct-20	100	68.74	5.50	63.24	31.26	-8.90	40.16	28.14	12.02
Nov-20	100	68.67	4.34	64.33	31.32	-11.04	42.35	29.79	12.56

Note: The weighted contribution of sub-indexes may not exactly tally with the weighted contribution of overall CPI index due to rounding off

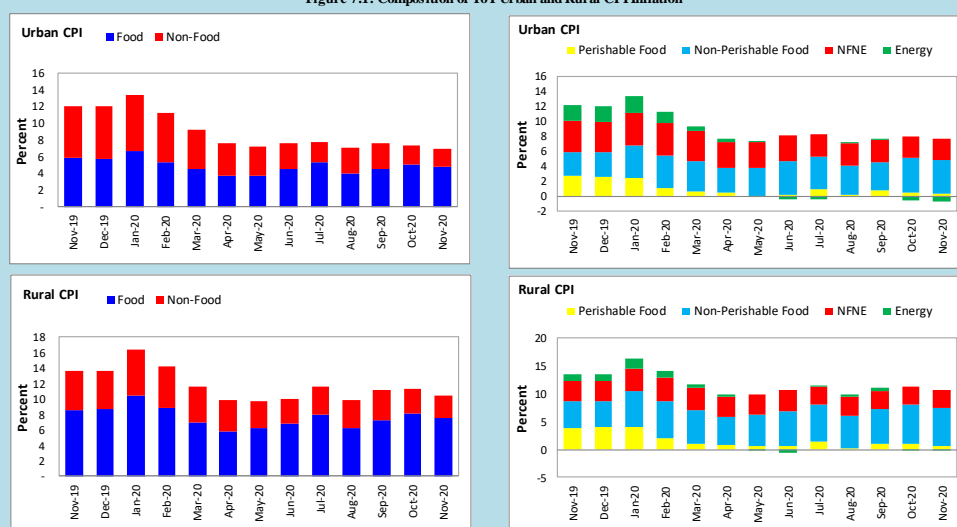
For rural basket, the weighted contribution of food group in the overall rural CPI inflation slightly increased to 72.24 percent during November 2020 from 72.20 percent in previous month. It was 63.28 percent during corresponding month of last year. The weighted contribution of non-food group marginally increased to 27.78 percent in November 2020 from 27.76 percent in previous month. Non-food group was 36.72 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)

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
Nov-19	100	63.28	28.75	34.53	36.72	9.80	26.92	24.18	2.74
Dec-19	100	63.86	29.37	34.49	36.15	9.81	26.34	23.59	2.75
Jan-20	100	64.17	24.83	39.34	35.79	11.42	24.37	20.85	3.52
Feb-20	100	61.74	14.62	47.12	38.23	9.32	28.91	24.90	4.01
Mar-20	100	59.85	9.47	50.38	40.17	5.47	34.70	29.91	4.79
Apr-20	100	58.82	8.23	50.59	41.22	3.76	37.46	32.77	4.69
May-20	100	63.84	6.99	56.85	36.19	-1.58	37.77	33.04	4.73
Jun-20	100	68.17	6.26	61.91	31.78	-6.17	37.95	33.41	4.54
Jul-20	100	69.27	12.88	56.39	30.70	1.37	29.33	25.54	3.78
Aug-20	100	62.43	2.29	60.14	37.56	4.21	33.35	28.99	4.36
Sep-20	100	65.24	9.73	55.51	34.82	4.99	29.91	26.00	3.83
Oct-20	100	72.20	8.76	63.43	27.76	-0.83	28.40	24.69	3.90
Nov-20	100	72.24	5.74	66.51	27.78	-1.76	29.54	25.40	4.14

Note: The weighted contribution of sub-indexes may not exactly tally with the weighted contribution of overall CPI index due to rounding off

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

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20
General	55.3	43.5	56.2	52.5	45.8	19.9	30.1	41.0	55.3	55.3	63.2	57.0	50.8
Food & Non-Alcoholic Beverages	45.6	35.6	66.7	35.6	31.1	26.7	4.4	34.4	42.2	22.2	62.2	51.1	28.9
Alcoholic Beverages & Tobacco	100.0	66.7	100.0	66.7	66.7	100.0	66.7	66.7	66.7	100.0	66.7	33.3	66.7
Clothing & Footwear	80.0	72.5	75.0	75.0	67.5	10.0	67.5	57.5	67.5	65.0	72.5	75.0	75.0
Housing, Water, Elect, Gas & other Fuels	24.1	20.7	3.4	6.9	27.6	24.1	17.2	10.3	27.6	41.4	6.9	6.9	6.9
Furnishing & Household Equip. Maintenance etc.	95.2	76.2	71.4	92.9	64.3	19.0	61.9	90.5	81.0	95.2	88.1	85.7	85.7
Health	64.5	54.8	71.0	77.4	67.7	35.5	38.7	38.7	74.2	83.9	77.4	64.5	67.7
Transport	37.5	46.9	40.6	50.0	31.3	-6.3	15.6	3.1	46.9	50.0	40.6	40.6	31.3
Communication	20.0	20.0	20.0	20.0	20.0	0.0	20.0	-20.0	20.0	0.0	20.0	40.0	40.0
Recreation & Culture	32.0	20.0	20.0	28.0	20.0	12.0	20.0	24.0	60.0	52.0	68.0	48.0	64.0
Education	25.0	12.5	6.3	0.0	31.3	0.0	0.0	0.0	0.0	18.8	68.8	43.8	12.5
Restaurant & Hotels	71.4	28.6	71.4	85.7	64.3	14.3	57.1	71.4	64.3	78.6	78.6	85.7	85.7
Miscellaneous	65.5	34.5	82.8	75.9	69.0	37.9	41.4	72.4	86.2	93.1	75.9	75.9	75.9
NFNE	63.0	48.1	55.3	62.6	53.2	19.6	40.4	43.8	60.9	66.4	68.5	63.8	62.6

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

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20
General	50.8	36.9	56.6	48.0	41.8	23.4	32.4	28.7	60.7	49.2	55.3	58.2	37.7
Food & Non-Alcoholic Beverages	46.8	25.3	67.1	32.9	16.5	25.3	8.9	17.7	48.1	15.2	51.9	54.4	10.1
Alcoholic Beverages & Tobacco	80.0	0.0	60.0	100.0	60.0	60.0	20.0	60.0	100.0	100.0	80.0	60.0	20.0
Clothing & Footwear	59.3	48.1	77.8	85.2	70.4	0.0	85.2	48.1	85.2	66.7	59.3	66.7	85.2
Housing, Water, Elect, Gas & other Fuels	34.8	39.1	8.7	0.0	39.1	34.8	17.4	0.0	52.2	65.2	26.1	26.1	17.4
Furnishing & Household Equip. Maintenance etc.	80.8	57.7	69.2	73.1	80.8	23.1	53.8	65.4	88.5	88.5	69.2	84.6	42.3
Health	78.6	57.1	42.9	42.9	71.4	42.9	50.0	35.7	57.1	50.0	85.7	42.9	64.3
Transport	43.8	25.0	43.8	43.8	12.5	-6.3	0.0	18.8	43.8	62.5	31.3	43.8	18.8
Communication	20.0	20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	40.0
Recreation & Culture	11.1	27.8	22.2	33.3	27.8	22.2	11.1	5.6	44.4	33.3	61.1	72.2	33.3
Education	0.0	20.0	0.0	80.0	40.0	0.0	0.0	0.0	0.0	0.0	60.0	100.0	0.0
Restaurant & Hotels	42.9	35.7	78.6	71.4	78.6	28.6	64.3	57.1	64.3	57.1	50.0	71.4	78.6
Miscellaneous	64.7	58.8	70.6	82.4	52.9	41.2	70.6	35.3	88.2	88.2	82.4	76.5	82.4
NFNE	55.1	44.9	52.2	58.1	55.9	24.3	50.0	36.0	66.2	62.5	64.0	64.7	55.9

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

9. Domestic Commodity Prices

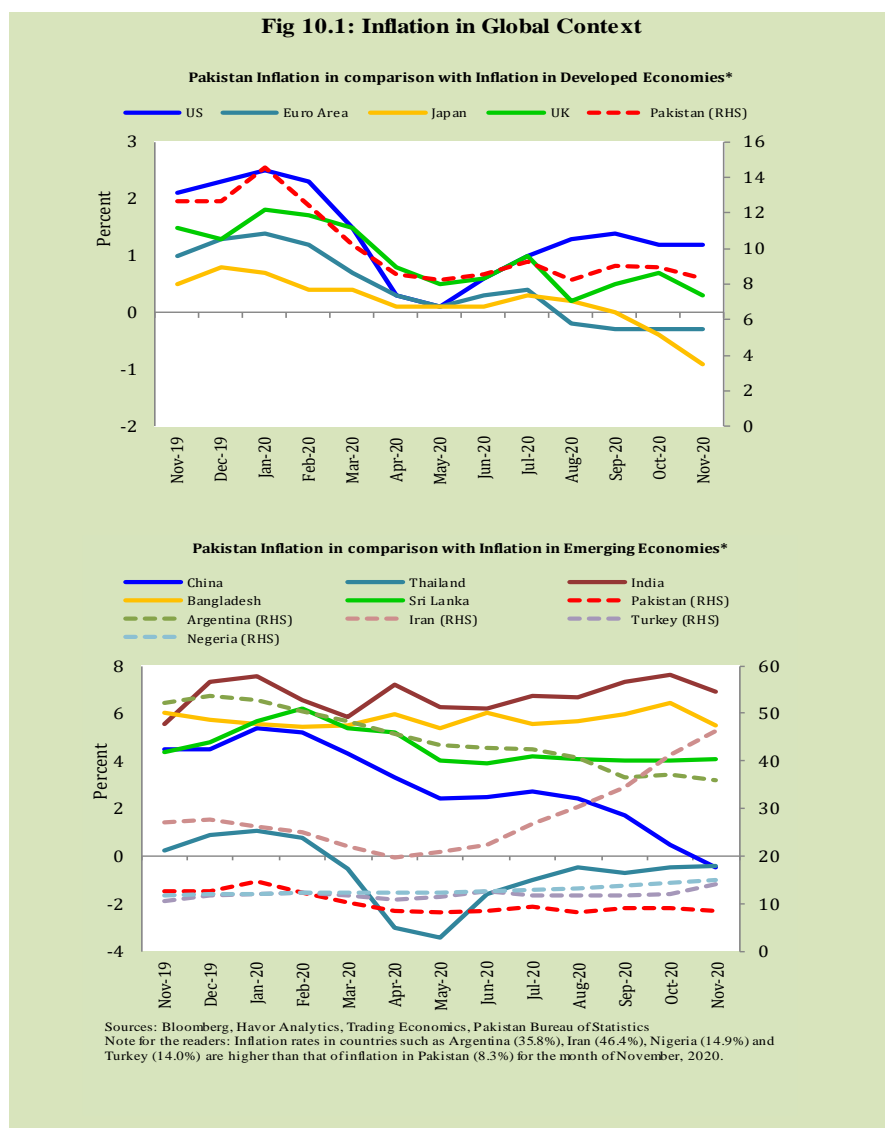
Inflation in domestic food commodities (YoY and MoM in percent) for selected essential food items covering both urban and rural CPI baskets is given in table 9.1.

Table 9.1 Inflation in Domestic Urban and Rural CPI Food Commodities (in percent) - November 2020						
S. No	Item	Unit	Urban CPI		Rural CPI	
			YoY	MoM	YoY	MoM
1	Wheat	10 Kg	36.6	-4.1	37.9	1.2
2	Wheat Flour Bag	20 Kg	7.3	-7.1	16.5	-1.7
3	Rice Basmati Broken (Superior/Average Quality) *	1 Kg	5.3	0.0	13.5	-0.8
4	Beef with Bone (Average Quality)	1 Kg	10.9	-0.3	11.4	0.4
5	Mutton (Average Quality)	1 Kg	10.0	0.4	9.5	0.0
6	Chicken Farm Broiler (Live)	1 Kg	46.8	21.4	41.0	20.8
7	Milk Fresh (Un-Boiled)	1 Litre	11.1	0.2	7.8	0.2
8	Eggs Farm	Dozen	48.7	2.8	49.3	5.2
9	Vegetable Ghee Dalda/Habib Or Other Superior Quality 1 Kg Pouch	Each	14.6	0.2	18.6	0.9
10	Pulse Masoor (Washed)	1 Kg	15.8	-0.9	25.8	0.1
11	Pulse Moong (Washed)	1 Kg	26.1	-3.5	25.1	-2.3
12	Pulse Mash (Washed)	1 Kg	22.6	1.0	21.5	-1.8
13	Pulse Gram	1 Kg	6.2	-1.9	5.5	-1.8
14	Potatoes	1 Kg	57.2	8.9	79.1	15.9
15	Onions	1 Kg	-6.6	5.8	-8.8	6.6
16	Tomatoes	1 Kg	-22.6	15.7	-23.0	9.3
17	Sugar Refined	1 Kg	35.8	0.9	42.5	5.4
18	Garlic (Lehsun)	1 Kg	-10.6	3.4	-27.5	-5.0
19	Ginger (Adrak)	500 Gm	63.2	20.7	75.6	20.6
20	Tea Lipton Yellow Label 190 Gm Packet	Each	0.2	0.0	0.9	0.0

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

10. Inflation in Global Context

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

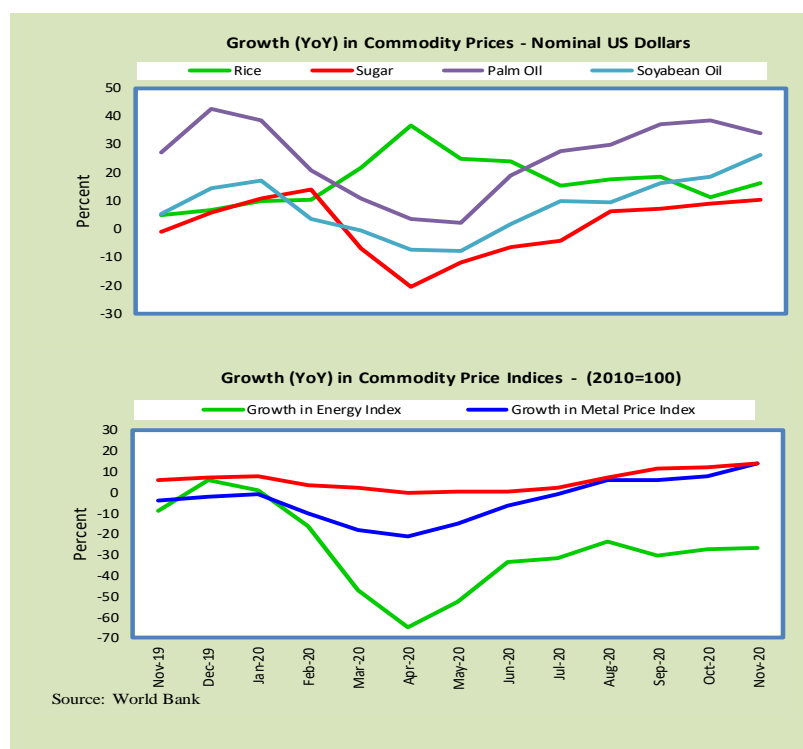


11. Global Commodity Prices

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

Table 11.1 Changes in Major Global Indices (percent)

Item/ Group	Nov-19		Oct-20		Nov-20	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	6.0	4.2	12.3	3.3	13.8	5.6
Metals	-4.1	0.3	7.7	1.3	13.8	6.0
Energy	-8.9	5.2	-27.7	0.6	-26.9	6.4
Agricultural	3.7	3.7	10.8	2.3	11.2	4.1
Cotton	-13.7	1.3	1.3	5.7	3.7	3.7



12. Seasonal Adjustment in CPI

Seasonal adjustment is the process of estimating and removing the seasonal effects from a time series after decomposing it into seasonal, trend, cycle and irregular components. The purpose is to identify the different components of the time series and thus provide a better understanding of its underlying behavior. Seasonally adjusted changes are usually preferred for analyzing general price trends in the economy because these eliminate the effect of changes that normally occur at the same time and in about the same magnitude every year. Various statistical methods can be used to decompose a time series into its constituent components. The State Bank of Pakistan uses X-12- ARIMA Seasonal Adjustment Method for this purpose.

The changes in consumer prices are normally reported in terms of year-on-year and month-on-month basis. Seasonal adjustment is particularly useful for analyzing month-on-month changes. The monthly data series of Consumer Price Indices (National CPI, Urban CPI and Rural CPI) from July 2008 to November 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 on historical data and that the future data may not necessarily show the same seasonal pattern.

Fig. 12.1 (a) Seasonal Factors of National CPI

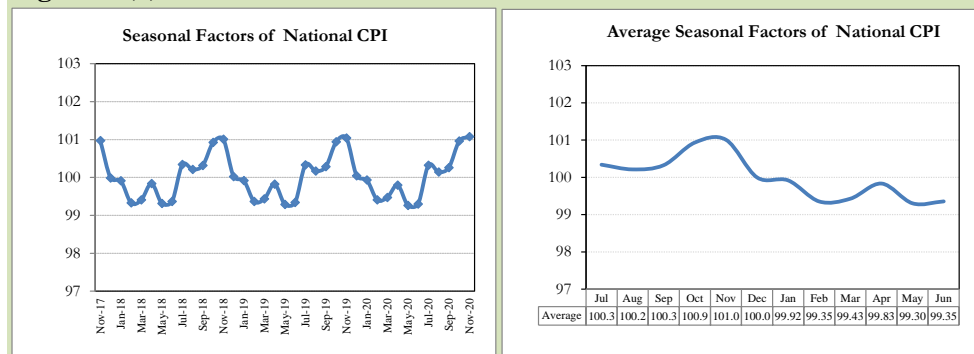


Fig. 12.1 (b) Seasonal Factors of Urban CPI

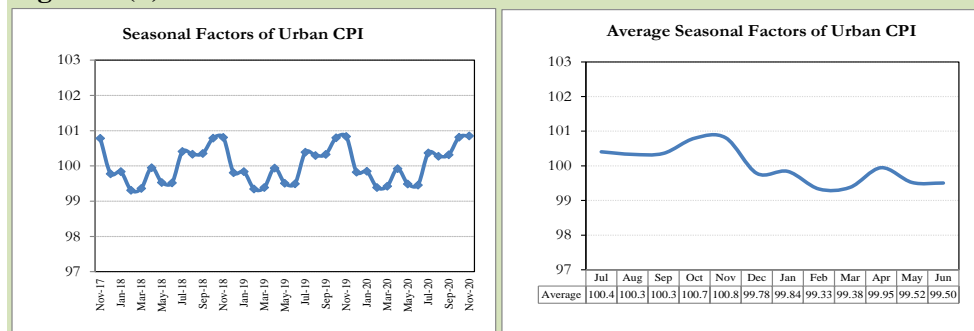
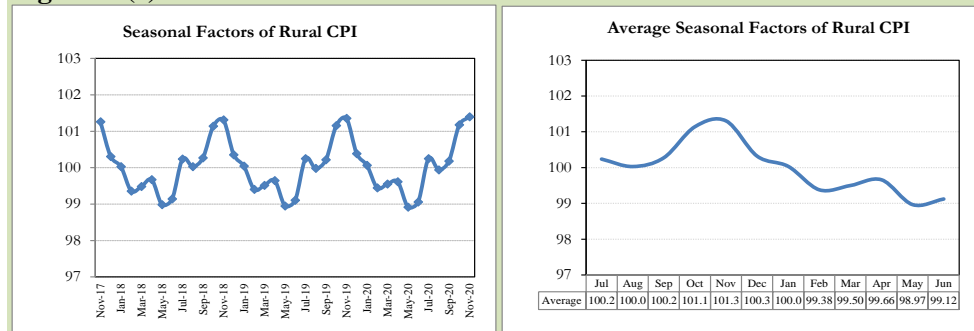


Fig. 12.1 (c) Seasonal Factors of Rural CPI



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

Fig. 12.2 (a) Seasonal Plots of National CPI

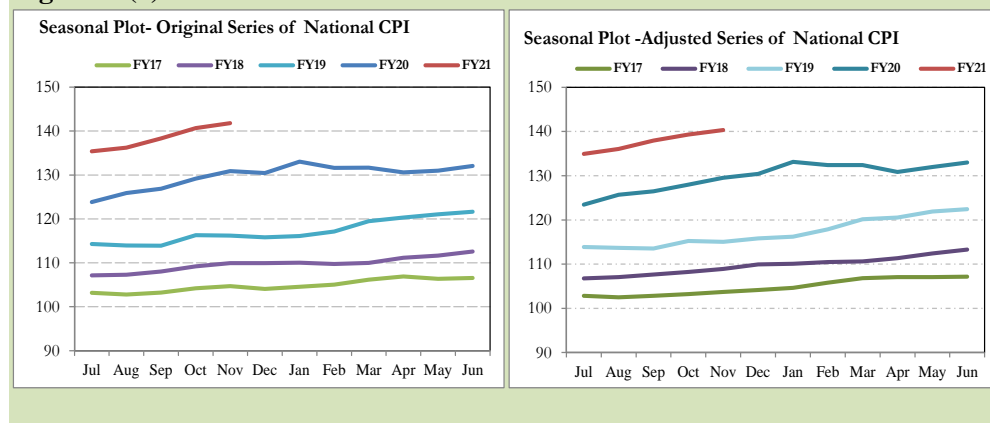


Fig. 12.2 (b) Seasonal Plots of Urban CPI

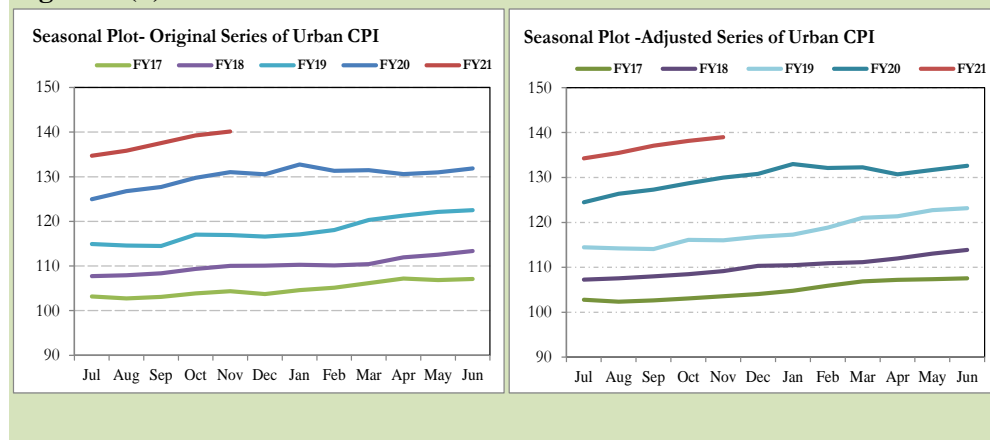
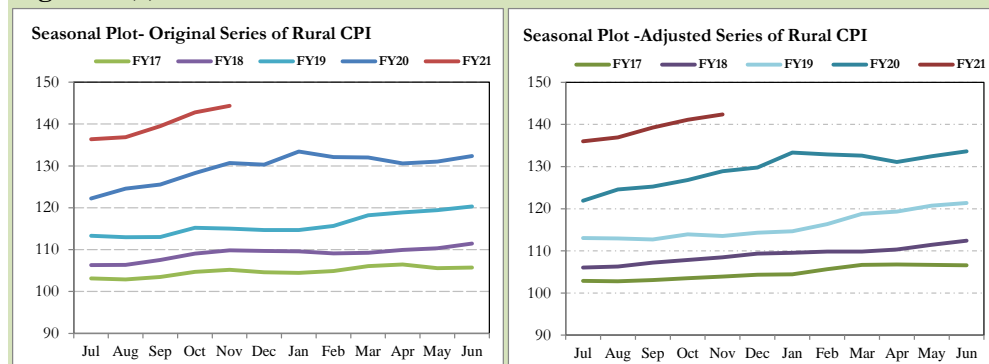


Fig. 12.2 (c) Seasonal Plots of Rural CPI

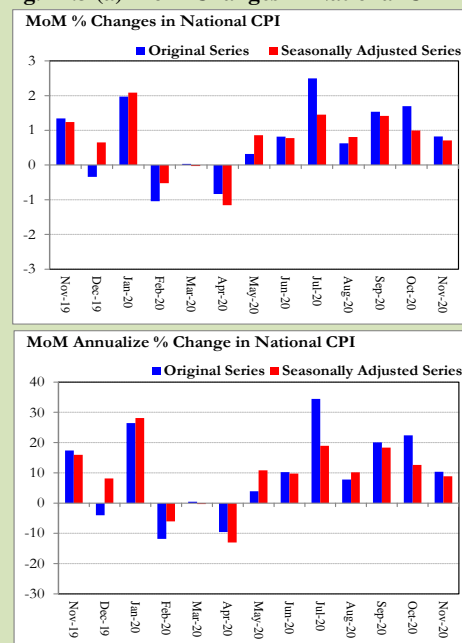


Seasonally adjusted National CPI for November 2020 stood at 140.32 against 141.83 in original series showing a decrease of 1.51 on account of adjustment of upward seasonality in November 2020.

Seasonally adjusted Urban CPI for November 2020 stood at 138.97 against 140.16 in original series showing a decrease of 1.19 on account of adjustment of upward seasonality in November 2020.

Seasonally adjusted Rural CPI for November 2020 stood at 142.36 against 144.34 in original series showing a decrease of 1.98 on account of adjustment of upward seasonality in November 2020.

Fig. 12.3 (a) MoM Changes in National CPI

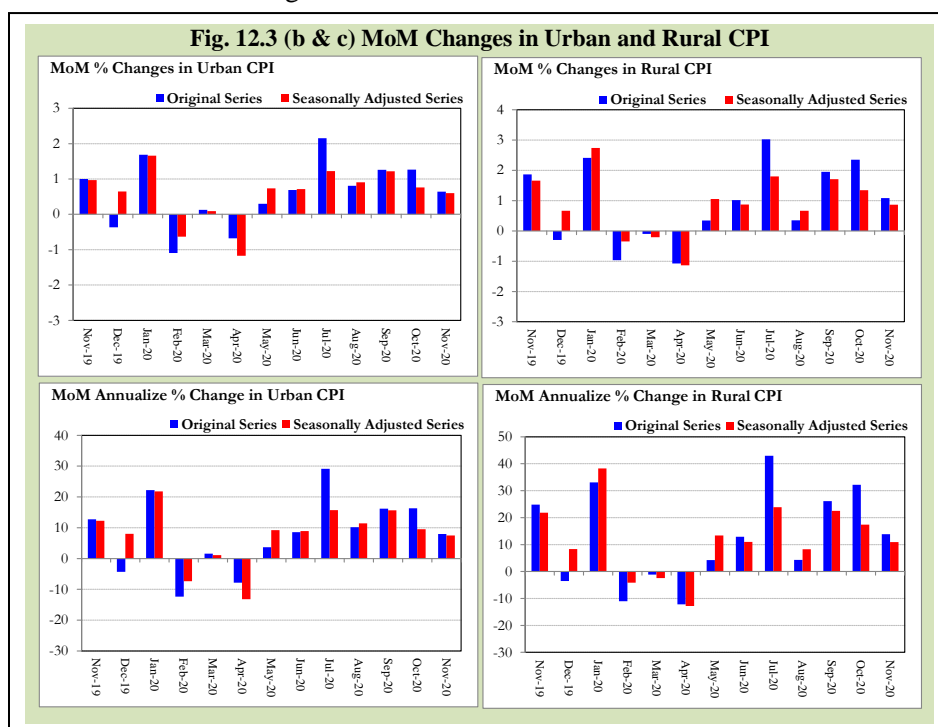


Month-on-month change of seasonally adjusted National CPI series stood at 0.71% reflecting an increase during

November 2020 over previous month and an increase of 0.82% in original series.

Month-on-month change of seasonally adjusted Urban CPI series stood at 0.60% reflecting an increase during November 2020 over previous month and an increase of 0.64% in original series.

Month-on-month change of seasonally adjusted Rural CPI series stood at 0.87% reflecting an increase during November 2020 over previous month and an increase of 1.09% 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 November 2020 (corresponding to the seasonally adjusted month-on-month rate) is 8.85 percent.

Annexure A

Table A1: National CPI Inflation by Groups (YoY and MoM in percent)							
	Weights	MoM change			YoY change		
		Nov-19	Oct-20	Nov-20	Nov-19	Oct-20	Nov-20
Food & Non-Alcoholic Beverages	34.6	3.2	3.9	1.9	19.4	16.6	15.1
Alcoholic Beverages & Tobacco	1.0	0.3	0.4	0.3	18.7	6.0	5.9
Clothing & Footwear	8.6	1.0	0.4	1.4	9.4	9.0	9.4
Housing, Water, Elec, Gas & other Fuels	23.6	0.0	0.4	-0.1	8.8	2.7	2.6
Furnishing & Household Equip. Maintenance	4.1	0.8	0.9	0.5	10.8	8.0	7.7
Health	2.8	0.8	0.7	0.6	11.4	7.8	7.6
Transport	5.9	0.5	0.4	-2.2	14.0	-1.5	-4.1
Communication	2.2	0.0	0.0	0.3	4.0	0.3	0.6
Recreation & Culture	1.6	0.2	0.6	0.4	6.8	3.9	4.2
Education	3.8	0.1	0.5	0.0	6.1	1.4	1.3
Restaurants & Hotels	6.9	0.6	0.9	1.0	6.4	8.9	9.3
Miscellaneous	4.9	0.4	0.1	0.7	11.8	11.6	11.9
Overall National CPI	100.0	1.3	1.7	0.8	12.7	8.9	8.3

Table A2: Urban CPI Inflation by Groups (YoY and MoM in percent)							
	Weights	MoM change			YoY change		
		Nov-19	Oct-20	Nov-20	Nov-19	Oct-20	Nov-20
I. Food Group	36.8	2.4	2.8	1.6	16.6	13.9	13.0
Food & Non-Alcoholic Beverages	30.4	2.8	3.2	1.7	18.6	14.9	13.7
Alcoholic Beverages & Tobacco	0.9	0.1	0.7	0.5	16.7	6.2	6.7
Restaurant & Hotels (Food Component)	5.5	0.6	1.0	0.9	6.6	9.4	9.7
II. Non-Food Group	63.2	0.2	0.3	0.1	9.6	3.6	3.4
Clothing & Footwear	8.0	0.9	0.3	1.9	9.1	8.0	9.1
Housing, Water, Elec, Gas & other Fuels	27.0	-0.1	0.3	-0.3	9.6	2.3	2.2
Furnishing & Household Equip. Maintenance	4.1	0.9	1.0	0.6	11.2	6.6	6.4
Health	2.3	0.5	0.9	0.2	10.5	7.3	7.1
Transport	6.1	0.4	0.4	-2.4	15.0	-1.7	-4.5
Communication	2.4	0.0	0.0	0.4	5.1	0.3	0.7
Recreation & Culture	1.7	0.2	0.2	0.4	6.5	2.9	3.2
Education	4.9	0.1	0.5	0.0	6.3	1.2	1.1
Restaurants & Hotels (Non-food Component)	1.9	0.2	0.5	1.1	1.5	7.1	8.0
Miscellaneous	4.8	0.2	-0.2	0.9	11.0	9.7	10.4
Overall Urban CPI	100.0	1.0	1.3	0.6	12.1	7.3	7.0

Table A3: Rural CPI Inflation by Groups (YoY and MoM in percent)							
	Weights	MoM change			YoY change		
		Nov-19	Oct-20	Nov-20	Nov-19	Oct-20	Nov-20
I. Food Group	45.9	3.4	4.3	2.0	19.3	17.7	16.1
Food & Non-Alcoholic Beverages	40.9	3.6	4.7	2.1	20.3	18.4	16.7
Alcoholic Beverages & Tobacco	1.3	0.7	0.2	0.0	21.0	5.7	5.0
Restaurant & Hotels (Food Component)	3.8	1.2	1.4	1.2	8.4	14.0	14.1
II. Non-Food Group	54.1	0.6	0.5	0.2	9.0	5.8	5.5
Clothing & Footwear	9.5	1.1	0.6	0.9	9.8	10.1	9.9
Housing, Water, Elec, Gas & other Fuels	18.5	0.4	0.5	0.3	6.9	3.7	3.6
Furnishing & Household Equip. Maintenance etc.	4.1	0.8	0.7	0.4	10.2	10.1	9.6
Health	3.5	1.2	0.4	1.0	12.3	8.3	8.2
Transport	5.6	0.5	0.4	-2.0	12.2	-1.1	-3.5
Communication	2.0	0.1	0.1	0.2	1.9	0.4	0.4
Recreation & Culture	1.4	0.1	1.3	0.3	7.4	5.7	6.0
Education	2.1	0.0	0.9	0.0	5.3	2.1	2.1
Restaurants & Hotels (Non-food Component)	2.4	0.0	0.0	0.6	8.6	0.8	1.4
Miscellaneous	5.0	0.5	0.5	0.4	12.9	14.3	14.1
Overall Rural CPI		1.9	2.4	1.1	13.6	11.3	10.5

Table A4: Top Ten Contributors to Urban CPI Inflation (YoY) in November 2020					
Items/ Contributors		Weights	YoY Change		Weighted Contribution (%)
			Nov-19	Nov-20	
A. Ranked by Weighted Contribution					
1	House Rent	19.26	5.02	4.67	12.58
2	Milk Fresh	7.11	9.10	11.37	10.66
3	Condiments And Spices	1.33	19.24	37.60	8.01
4	Chicken	1.36	-15.00	46.82	7.80
5	Readymade Food	5.52	6.60	9.69	7.34
6	Potatoes	0.45	42.40	56.11	5.28
7	Wheat Flour	3.01	16.19	13.28	5.22
8	Sugar	1.11	33.46	35.78	5.13
9	Cotton Cloth	2.22	12.73	12.48	3.85
10	Eggs	0.51	-7.91	48.67	3.55
Total		41.88			69.40
B. Ranked by Percentage Change					
1	Potatoes	0.45	42.40	56.11	5.28
2	Eggs	0.51	-7.91	48.67	3.55
3	Chicken	1.36	-15.00	46.82	7.80
4	Condiments And Spices	1.33	19.24	37.60	8.01
5	Wheat	0.61	15.34	36.60	2.93
6	Sugar	1.11	33.46	35.78	5.13
7	Beans	0.04	12.63	31.81	0.17
8	Wheat Products	0.09	14.78	27.91	0.34
9	Pulse Moong	0.17	54.03	26.12	0.56
10	Pulse Mash	0.12	41.60	22.61	0.24
Total		5.80			34.01
C. Ranked by Weights					
1	House Rent	19.26	5.02	4.67	12.58
2	Milk Fresh	7.11	9.10	11.37	10.66
3	Readymade Food	5.52	6.60	9.69	7.34
4	Education	4.88	6.34	1.06	0.82
5	Electricity Charges	4.56	18.48	-9.89	-6.22
6	Wheat Flour	3.01	16.19	13.28	5.22
7	Appliances/Articles/Products For P	2.98	8.64	7.28	2.96
8	Motor Fuel	2.91	16.23	-9.55	-4.84
9	Cotton Cloth	2.22	12.73	12.48	3.85
10	Meat	2.04	13.40	10.53	3.31
Total		54.48			35.67
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 7.0 percent in November 2020.					

Table A5: Top Ten Contributors to Urban CPI Inflation (MoM) in November 2020					
Items/ Contributors		Weights	MoM Change		Weighted Contribution (%)
			Oct-20	Nov-20	
A. Ranked by Weighted Contribution					
1	Chicken	1.36	26.62	21.36	44.08
2	Tomatoes	0.35	48.36	15.68	17.58
3	Fresh Vegetables	1.53	-6.36	5.63	16.48
4	Cotton Cloth	2.22	0.01	3.75	12.84
5	Potatoes	0.45	0.82	8.79	12.14
6	Liquefied Hydrocarbons	0.51	2.12	10.31	7.62
7	Condiments And Spices	1.33	-2.39	2.60	7.60
8	Readymade Food	5.52	0.98	0.88	7.39
9	Onions	0.59	39.07	5.81	6.63
10	Woolen Readymade Garments	0.43	0.02	8.85	5.45
		14.30			137.81
B. Ranked by Percentage Change					
1	Chicken	1.36	26.62	21.36	44.08
2	Tomatoes	0.35	48.36	15.68	17.58
3	Liquefied Hydrocarbons	0.51	2.12	10.31	7.62
4	Woolen Readymade Garments	0.43	0.02	8.85	5.45
5	Potatoes	0.45	0.82	8.79	12.14
6	Onions	0.59	39.07	5.81	6.63
7	Fresh Vegetables	1.53	-6.36	5.63	16.48
8	Dry Fruits	0.33	0.44	4.38	2.14
9	Cotton Cloth	2.22	0.01	3.75	12.84
10	Eggs	0.51	23.81	2.83	3.05
		8.28			128.01
C. Ranked by Weights					
1	House Rent	19.26	0.88	0.00	0.00
2	Milk Fresh	7.11	0.44	0.26	2.79
3	Readymade Food	5.52	0.98	0.88	7.39
4	Education	4.88	0.46	0.00	0.00
5	Electricity Charges	4.56	-2.33	-3.20	-19.20
6	Wheat Flour	3.01	4.10	-4.83	-23.11
7	Appliances/Articles/Products For P	2.98	0.56	1.09	4.82
8	Motor Fuel	2.91	0.10	-1.76	-8.43
9	Cotton Cloth	2.22	0.01	3.75	12.84
10	Meat	2.04	0.57	-0.01	-0.02
		54.48			-22.93
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in MoM change in Urban CPI, which is 0.6 percent in November 2020.					

Table A6: Top and Bottom Fifteen Contributors to Urban CPI Inflation (YoY) in November 2020					
Top 15 Contributors			YoY Change		Weighted Contribution (%)
Items/ Contributors	Weights	Nov-19	Nov-20		
Ranked by Weighted Contribution					
1	House Rent	19.26	5.02	4.67	12.58
2	Milk Fresh	7.11	9.10	11.37	10.66
3	Condiments And Spices	1.33	19.24	37.60	8.01
4	Chicken	1.36	-15.00	46.82	7.80
5	Readymade Food	5.52	6.60	9.69	7.34
6	Potatoes	0.45	42.40	56.11	5.28
7	Wheat Flour	3.01	16.19	13.28	5.22
8	Sugar	1.11	33.46	35.78	5.13
9	Cotton Cloth	2.22	12.73	12.48	3.85
10	Eggs	0.51	-7.91	48.67	3.55
11	Meat	2.04	13.40	10.53	3.31
12	Personal Effects N.E.C.	0.94	21.19	19.46	3.30
13	Appliances/Articles/Products For P	2.98	8.64	7.28	2.96
14	Wheat	0.61	15.34	36.60	2.93
15	Fresh Vegetables	1.53	40.36	8.53	2.37
Total		49.99			84.27
Bottom 15 Contributors					
1	Electricity Charges	4.56	18.48	-9.89	-6.22
2	Motor Fuel	2.91	16.23	-9.55	-4.84
3	Tomatoes	0.35	436.88	-22.58	-3.70
4	Onions	0.59	156.06	-6.60	-0.83
5	Fresh Fruits	1.44	7.91	-3.59	-0.62
6	Transport Services	1.75	12.12	-2.16	-0.51
7	Fish	0.39	12.35	-8.34	-0.44
8	Liquefied Hydrocarbons	0.51	4.93	-2.82	-0.23
9	Newspapers	0.07	3.88	0.00	0.00
10	Motor Vehicle Tax	0.05	9.59	0.00	0.00
11	Gas Charges	1.08	54.84	0.00	0.00
12	Postal Services	0.02	0.00	0.23	0.00
13	Therapeutic Appliances And	0.01	0.47	7.41	0.00
14	Major Tools & Equipments	0.01	5.17	8.53	0.01
15	Electrical Appliances For Personal	0.05	2.30	1.60	0.01
Total		13.76			-17.37

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

<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution (%)	
Items/ Contributors	Weights	Oct-20	Nov-20		
Ranked by Weighted Contribution					
1	Chicken	1.36	26.62	21.36	44.08
2	Tomatoes	0.35	48.36	15.68	17.58
3	Fresh Vegetables	1.53	-6.36	5.63	16.48
4	Cotton Cloth	2.22	0.01	3.75	12.84
5	Potatoes	0.45	0.82	8.79	12.14
6	Liquefied Hydrocarbons	0.51	2.12	10.31	7.62
7	Condiments And Spices	1.33	-2.39	2.60	7.60
8	Readymade Food	5.52	0.98	0.88	7.39
9	Onions	0.59	39.07	5.81	6.63
10	Woolen Readymade Garments	0.43	0.02	8.85	5.45
11	Appliances/Articles/Products For P	2.98	0.56	1.09	4.82
12	Eggs	0.51	23.81	2.83	3.05
13	Marriage Hall Charges	1.75	0.48	1.14	3.03
14	Woolen Cloth	0.84	0.06	2.33	2.87
15	Milk Fresh	7.11	0.44	0.26	2.79
Total		27.48			154.38
<u>Bottom 15 Contributors</u>					
1	Wheat Flour	3.01	4.10	-4.83	-23.11
2	Electricity Charges	4.56	-2.33	-3.20	-19.20
3	Transport Services	1.75	0.83	-6.41	-16.35
4	Motor Fuel	2.91	0.10	-1.76	-8.43
5	Wheat	0.61	8.39	-4.10	-4.78
6	Rice	1.18	1.45	-0.70	-1.30
7	Fresh Fruits	1.44	-3.31	-0.63	-1.08
8	Pulse Moong	0.17	1.69	-3.54	-1.02
9	Pulse Gram	0.17	0.81	-1.94	-0.43
10	Pulse Masoor	0.16	0.85	-0.87	-0.17
11	Gur	0.04	2.38	-0.86	-0.05
12	Gram Whole	0.09	0.85	-0.22	-0.03
13	Meat	2.04	0.57	-0.01	-0.02
14	Beans	0.04	0.81	-0.10	-0.01
15	Tea	0.84	-0.03	0.00	0.00
Total		19.00			-75.99

Table A8: Top and Bottom Fifteen Contributors to MoM Urban CPI Food Inflation in November 2020					
Top 15 Contributors			MoM Change		Weighted Contribution (%)
Items/ Contributors	Weights	Oct-20	Nov-20		
Ranked by Weighted Contribution					
1	Chicken	1.36	26.62	21.36	44.08
2	Tomatoes	0.35	48.36	15.68	17.58
3	Fresh Vegetables	1.53	-6.36	5.63	16.48
4	Potatoes	0.45	0.82	8.79	12.14
5	Condiments And Spices	1.33	-2.39	2.60	7.60
6	Readymade Food	5.52	0.98	0.88	7.39
7	Onions	0.59	39.07	5.81	6.63
8	Eggs	0.51	23.81	2.83	3.05
9	Marriage Hall Charges	1.75	0.48	1.14	3.03
10	Milk Fresh	7.11	0.44	0.26	2.79
11	Dry Fruits	0.33	0.44	4.38	2.14
12	Sugar	1.11	4.58	0.91	1.79
13	Bakery And Confectionary	0.48	0.39	1.81	1.35
14	Fish	0.39	0.42	1.89	0.92
15	Pan Prepared	0.14	0.53	2.40	0.76
Total		22.95			127.72
Bottom 15 Contributors					
1	Wheat Flour	3.01	4.10	-4.83	-23.11
2	Wheat	0.61	8.39	-4.10	-4.78
3	Rice	1.18	1.45	-0.70	-1.30
4	Fresh Fruits	1.44	-3.31	-0.63	-1.08
5	Pulse Moong	0.17	1.69	-3.54	-1.02
6	Pulse Gram	0.17	0.81	-1.94	-0.43
7	Pulse Masoor	0.16	0.85	-0.87	-0.17
8	Gur	0.04	2.38	-0.86	-0.05
9	Gram Whole	0.09	0.85	-0.22	-0.03
10	Meat	2.04	0.57	-0.01	-0.02
11	Beans	0.04	0.81	-0.10	-0.01
12	Tea	0.84	-0.03	0.00	0.00
13	Ice Cream	0.10	0.02	0.00	0.00
14	Honey	0.10	1.33	0.02	0.00
15	Dessert Preparation	0.04	0.43	0.13	0.01
Total		10.04			-31.99

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

<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution (%)	
Items/ Contributors	Weights	Oct-20	Nov-20		
Ranked by Weighted Contribution					
1	Cotton Cloth	2.22	0.01	3.75	12.84
2	Liquefied Hydrocarbons	0.51	2.12	10.31	7.62
3	Woolen Readymade Garments	0.43	0.02	8.85	5.44
4	Personal Grooming Services	2.98	0.56	1.09	4.82
5	Woolen Cloth	0.84	0.06	2.33	2.87
6	Communication Services	1.88	0.00	0.56	1.25
7	Motor Vehicles	0.81	0.19	0.90	1.23
8	Household Textiles	0.34	1.36	2.42	1.20
9	Furniture And Furnishing	0.48	1.90	1.65	1.19
10	Washing Soap/Detergents/Match Box	1.41	0.79	0.49	1.03
11	Readymade Garments	1.32	0.82	0.45	0.89
12	Drugs And Medicines	1.07	0.35	0.43	0.75
13	Solid Fuel	0.42	0.17	1.04	0.57
14	Text Books	0.67	0.43	0.57	0.51
15	Tailoring	1.07	0.15	0.18	0.30
Total		16.45			42.52
Bottom 15 Contributors					
1	Electricity Charges	4.56	-2.33	-3.20	-19.20
2	Transport Services	1.75	0.83	-6.41	-16.35
3	Motor Fuel	2.91	0.10	-1.76	-8.43
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	Motor Vehicle Tax	0.05	0.00	0.00	0.00
7	Newspapers	0.07	0.00	0.00	0.00
8	Gas Charges	1.08	0.00	0.00	0.00
9	Garbage Collection	0.11	0.00	0.00	0.00
10	Postal Services	0.02	0.23	0.00	0.00
11	Doctor (Mbbs) Clinic Fee	0.40	2.57	0.00	0.00
12	Education	4.88	0.46	0.00	0.00
13	House Rent	19.26	0.88	0.00	0.00
14	Carpets	0.03	0.37	0.02	0.00
15	Therapeutic Appliances And	0.01	1.13	0.24	0.00
Total		35.12			-43.98

Table A10: Top Ten Contributors to Rural CPI Inflation (YoY) in November 2020					
Items/ Contributors		Weights	YoY Change		Weighted Contribution (%)
			Nov-19	Nov-20	
A. Ranked by Weighted Contribution					
1	Wheat	3.47	20.11	37.93	11.89
2	Potatoes	0.74	44.87	78.53	8.19
3	Condiments And Spices	1.49	14.65	53.75	7.56
4	Sugar	2.03	33.30	42.51	7.49
5	Milk Fresh	10.38	7.64	7.79	7.18
6	Wheat Flour	3.43	19.03	19.59	5.94
7	Chicken	1.46	-12.35	41.01	5.15
8	Readymade Food	3.80	8.36	14.05	5.11
9	Solid Fuel	4.48	5.29	11.62	4.56
10	Vegetable Ghee	2.38	17.07	17.56	4.18
Total		33.67			67.28
B. Ranked by Percentage Change					
1	Potatoes	0.74	44.87	78.53	8.19
2	Condiments And Spices	1.49	14.65	53.75	7.56
3	Eggs	0.57	-5.62	49.27	2.60
4	Sugar	2.03	33.30	42.51	7.49
5	Chicken	1.46	-12.35	41.01	5.15
6	Water Supply	0.06	27.17	39.60	0.29
7	Wheat	3.47	20.11	37.93	11.89
8	Pulse Masoor	0.21	15.44	25.75	0.35
9	Pulse Moong	0.25	60.31	25.14	0.56
10	Wheat Products	0.11	8.86	23.16	0.22
Total		10.40			44.32
C. Ranked by Weights					
1	Milk Fresh	10.38	7.64	7.79	7.18
2	House Rent	8.61	4.10	5.20	4.14
3	Solid Fuel	4.48	5.29	11.62	4.56
4	Readymade Food	3.80	8.36	14.05	5.11
5	Wheat	3.47	20.11	37.93	11.89
6	Electricity Charges	3.44	18.48	-9.89	-3.13
7	Wheat Flour	3.43	19.03	19.59	5.94
8	Cotton Cloth	2.84	13.48	11.69	3.46
9	Motor Fuels	2.49	16.36	-9.92	-2.85
10	Vegetable Ghee	2.38	17.07	17.56	4.18
Total		45.32			40.49
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 10.5 percent in November 2020.					

Table A11: Top Ten Contributors to Rural CPI Inflation (MoM) in November 2020					
Items/ Contributors		Weights	MoM Change		Weighted Contribution (%)
			Oct-20	Nov-20	
A. Ranked by Weighted Contribution					
1	Chicken	1.46	23.14	20.76	26.87
2	Potatoes	0.74	3.05	15.80	22.41
3	Sugar	2.03	4.89	5.39	11.33
4	Tomatoes	0.51	64.99	9.29	8.70
5	Liquefied Hydrocarbons	1.00	2.65	8.74	6.82
6	Onions	0.90	58.39	6.56	6.33
7	Condiments And Spices	1.49	-1.85	3.05	5.65
8	Solid Fuel	4.48	1.33	1.39	5.31
9	Readymade Food	3.80	1.36	1.24	4.49
10	Wheat	3.47	5.54	1.18	4.44
		19.88			102.34
B. Ranked by Percentage Change					
1	Chicken	1.46	23.14	20.76	26.87
2	Potatoes	0.74	3.05	15.80	22.41
3	Tomatoes	0.51	64.99	9.29	8.70
4	Liquefied Hydrocarbons	1.00	2.65	8.74	6.82
5	Onions	0.90	58.39	6.56	6.33
6	Sugar	2.03	4.89	5.39	11.33
7	Eggs	0.57	24.88	5.23	3.46
8	Woolen Readymade Garments	0.54	0.00	3.49	1.59
9	Condiments And Spices	1.49	-1.85	3.05	5.65
10	Dry Fruits	0.25	2.73	2.93	0.69
		9.49			93.84
C. Ranked by Weights					
1	Milk Fresh	10.38	0.61	0.17	1.47
2	House Rent	8.61	0.77	0.00	0.00
3	Solid Fuel	4.48	1.33	1.39	5.31
4	Readymade Food	3.80	1.36	1.24	4.49
5	Wheat	3.47	5.54	1.18	4.44
6	Electricity Charges	3.44	-2.33	-3.20	-8.33
7	Wheat Flour	3.43	3.28	-1.92	-6.26
8	Cotton Cloth	2.84	0.29	0.86	2.47
9	Motor Fuels	2.49	0.02	-2.03	-4.75
10	Vegetable Ghee	2.38	1.12	0.67	1.66
		45.32			0.50
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 1.1 percent in November 2020.					

Table A12: Top and Bottom Fifteen Contributors to Rural CPI Inflation (YoY) in November 2020					
Top 15 Contributors		YoY Change		Weighted Contribution (%)	
Items/ Contributors	Weights	Nov-19	Nov-20		
Ranked by Weighted Contribution					
1	Wheat	3.47	20.11	37.93	11.89
2	Potatoes	0.74	44.87	78.53	8.19
3	Condiments And Spices	1.49	14.65	53.75	7.56
4	Sugar	2.03	33.30	42.51	7.49
5	Milk Fresh	10.38	7.64	7.79	7.18
6	Wheat Flour	3.43	19.03	19.59	5.94
7	Chicken	1.46	-12.35	41.01	5.15
8	Readymade Food	3.80	8.36	14.05	5.11
9	Solid Fuel	4.48	5.29	11.62	4.56
10	Vegetable Ghee	2.38	17.07	17.56	4.18
11	House Rent	8.61	4.10	5.20	4.14
12	Cotton Cloth	2.84	13.48	11.69	3.46
13	Personal Effects N.E.C.	1.21	26.04	22.25	3.04
14	Rice	1.55	10.72	15.77	2.81
15	Eggs	0.57	-5.62	49.27	2.60
Total		48.44			83.34
Bottom 15 Contributors					
1	Tomatoes	0.51	388.89	-23.03	-3.47
2	Electricity Charges	3.44	18.48	-9.89	-3.13
3	Motor Fuels	2.49	16.36	-9.92	-2.85
4	Onions	0.90	166.53	-8.79	-1.12
5	Fresh Fruits	1.45	13.20	-6.03	-0.72
6	Liquefied Hydrocarbons	1.00	2.57	-3.38	-0.34
7	Fish	0.26	14.22	-3.66	-0.09
8	Gram Whole	0.11	1.66	-1.72	-0.02
9	Motor Vehicle Tax	0.02	17.87	0.00	0.00
10	Postal Services	0.01	31.47	0.00	0.00
11	Accommodation Services	0.14	0.00	0.03	0.00
12	Garbage Collection	0.01	1.15	7.64	0.01
13	Newspapers	0.02	0.00	2.40	0.01
14	Dessert Preparation	0.01	8.24	9.17	0.01
15	Mustard Oil	0.01	8.57	12.72	0.02
Total		10.38			-11.70

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

<u>Top 15 Contributors</u>		Weights	<u>MoM Change</u>		Weighted Contribution (%)
Items/ Contributors			Oct-20	Nov-20	
Ranked by Weighted Contribution					
1	Chicken	1.46	23.14	20.76	26.87
2	Potatoes	0.74	3.05	15.80	22.41
3	Sugar	2.03	4.89	5.39	11.33
4	Tomatoes	0.51	64.99	9.29	8.70
5	Liquefied Hydrocarbons	1.00	2.65	8.74	6.82
6	Onions	0.90	58.39	6.56	6.33
7	Condiments And Spices	1.49	-1.85	3.05	5.65
8	Solid Fuel	4.48	1.33	1.39	5.31
9	Readymade Food	3.80	1.36	1.24	4.49
10	Wheat	3.47	5.54	1.18	4.44
11	Eggs	0.57	24.88	5.23	3.46
12	Cotton Cloth	2.84	0.29	0.86	2.47
13	Appliances/Articles/Products For	2.27	0.89	0.90	1.67
14	Vegetable Ghee	2.38	1.12	0.67	1.66
15	Woolen Readymade Garments	0.54	0.00	3.49	1.59
Total		28.48			113.19
Bottom 15 Contributors					
1	Electricity Charges	3.44	-2.33	-3.20	-8.33
2	Wheat Flour	3.43	3.28	-1.92	-6.26
3	Transport Services	1.80	1.07	-3.45	-5.20
4	Motor Fuels	2.49	0.02	-2.03	-4.75
5	Fresh Fruits	1.45	3.50	-2.21	-2.22
6	Rice	1.55	1.39	-0.83	-1.52
7	Gur	0.15	0.45	-5.06	-0.75
8	Personal Effects N.E.C.	1.21	0.24	-0.43	-0.63
9	Pulse Moong	0.25	-2.91	-2.26	-0.57
10	Pulse Gram	0.28	1.43	-1.76	-0.37
11	Fish	0.26	2.38	-1.12	-0.24
12	Pulse Mash	0.15	1.60	-1.82	-0.18
13	Besan	0.07	1.24	-2.28	-0.13
14	Beans	0.09	-0.71	-1.17	-0.11
15	Cigarettes	1.24	0.18	-0.01	-0.01
Total		17.86			-31.27

Table A14: Top and Bottom Fifteen Contributors to MoM Rural CPI Food Inflation in November 2020					
Top 15 Contributors		MoM Change			Weighted Contribution (%)
Items/ Contributors	Weights	Oct-20	Nov-20		
Ranked by Weighted Contribution					
1	Chicken	1.46	23.14	20.76	26.87
2	Potatoes	0.74	3.05	15.80	22.41
3	Sugar	2.03	4.89	5.39	11.33
4	Tomatoes	0.51	64.99	9.29	8.70
5	Onions	0.90	58.39	6.56	6.33
6	Condiments And Spices	1.49	-1.85	3.05	5.65
7	Readymade Food	3.80	1.36	1.24	4.49
8	Wheat	3.47	5.54	1.18	4.44
9	Eggs	0.57	24.88	5.23	3.46
10	Vegetable Ghee	2.38	1.12	0.67	1.66
11	Fresh Vegetables	2.09	4.06	0.62	1.49
12	Milk Fresh	10.38	0.61	0.17	1.47
13	Marriage Hall Charges	2.25	0.00	0.63	1.16
14	Cooking Oil	0.60	1.47	1.27	0.76
15	Dry Fruits	0.25	2.73	2.93	0.69
Total		32.93			100.90
Bottom 15 Contributors					
1	Wheat Flour	3.43	3.28	-1.92	-6.26
2	Fresh Fruits	1.45	3.50	-2.21	-2.22
3	Rice	1.55	1.39	-0.83	-1.52
4	Gur	0.15	0.45	-5.06	-0.75
5	Pulse Moong	0.25	-2.91	-2.26	-0.57
6	Pulse Gram	0.28	1.43	-1.76	-0.37
7	Fish	0.26	2.38	-1.12	-0.24
8	Pulse Mash	0.15	1.60	-1.82	-0.18
9	Besan	0.07	1.24	-2.28	-0.13
10	Beans	0.09	-0.71	-1.17	-0.11
11	Cigarettes	1.24	0.18	-0.01	-0.01
12	Tea	1.26	0.00	0.00	0.00
13	Ice Cream	0.06	0.02	0.00	0.00
14	Pan Prepared	0.04	0.42	0.00	0.00
15	Honey	0.03	2.50	0.00	0.00
Total		10.30			-12.36

Table A15: Top and Bottom Fifteen Contributors to MoM Rural CPI Non-food Inflation in November 2020					
Top 15 Contributors		MoM Change			Weighted Contribution (%)
Items/ Contributors	Weights	Oct-20	Nov-20		
Ranked by Weighted Contribution					
1	Liquefied Hydrocarbons	1.00	2.65	8.74	6.82
2	Solid Fuel	4.48	1.33	1.39	5.31
3	Cotton Cloth	2.84	0.29	0.86	2.47
4	Appliances/Articles/Products For	2.27	0.89	0.90	1.67
5	Woolen Readymade Garments	0.54	0.00	3.49	1.59
6	Woolen Cloth	1.10	1.37	1.57	1.48
7	Drugs And Medicines	1.58	0.36	0.98	1.45
8	Doctor (Mbbs) Clinic Fee	0.51	1.02	2.35	1.35
9	Washing Soaps, Detergents And	1.70	0.79	0.63	0.90
10	Construction Input Items	0.63	2.13	1.69	0.87
11	Personal Grooming Services	1.54	0.40	0.54	0.79
12	Tailoring	1.30	0.21	0.59	0.70
13	Readymade Garments	1.13	0.43	0.59	0.59
14	Household Textiles	0.44	1.00	1.00	0.37
15	Hospitals Services	1.01	0.00	0.43	0.36
Total		22.06			26.72
Bottom 15 Contributors					
1	Electricity Charges	3.44	-2.33	-3.20	-8.33
2	Transport Services	1.80	1.07	-3.45	-5.20
3	Motor Fuels	2.49	0.02	-2.03	-4.75
4	Personal Effects N.E.C.	1.21	0.24	-0.43	-0.63
5	Postal Services	0.01	0.00	0.00	0.00
6	Motor Vehicle Tax	0.02	0.00	0.00	0.00
7	Garbage Collection	0.01	0.00	0.00	0.00
8	Dental Services	0.02	0.00	0.00	0.00
9	Accommodation Services	0.14	0.03	0.00	0.00
10	Cleaning And Laundering	0.02	0.88	0.00	0.00
11	Newspapers	0.02	2.40	0.00	0.00
12	Plastic Products	0.08	1.49	0.00	0.00
13	Mechanical Services	0.36	1.18	0.00	0.00
14	Education	2.13	0.88	0.00	0.00
15	House Rent	8.61	0.77	0.00	0.00
Total		20.35			-18.91

Table A16: Distribution of Price Changes (YoY) - Selected Urban CPI Items: November 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	Tomatoes, Apple (Average Quality), Garlic (Lehsun), Fish Rahu (Medium Size) Cardamom Large (Loose)	Lemon, Cumin Seed (Zeera) White National 50 Gm Packet, Pepper Black National 50 Gm Packet	Lactogen 400 Gm Packet, Sweetmeat (Mixed Mithai), Rice Basmati 385/386	Chilies Powder National 200 Gm Packet, Ginger (Adrak), Potatoes, Cardamom Small (Average Quality), Eggs Farm, Chicken Farm Broiler (Live), Wheat, Sugar Refined
Alcoholic Beverages & Tobacco		Cigarettes Capstan 20'S Packet	Cigarettes Gold Leaf 20'S Packet	Pan Prepared (Sweet With Beetle Nuts)
Clothing & Footwear	Ladies Sandal Bata, Gents Sandal Bata	Tailoring Charges Pant (Men), Socks Nylon Local (Average Quality), Chaddar (Wash-N-Wear) (2X2.5 Meter), Shirt Boy Length 24"/26", Tailoring Charges Shirt (Men)	Vest "Baniyan" For Men Average Quality, Dopatta Geogette (Average Quality), Linen, Ladies (Average Quality), Pullover Gents (Average Quality)	Gents Shoes Servis, Pullover Gents Oxford/Bonanza, Pullover Ladies Oxford/Bonanza, Geogette (Average Quality), Long Cloth 57" Gul Ahmed/Al Karam, Washing Charges Shalwar Kameez, Gents Shoes Paul Bata, Shirting (Average Quality)
Housing, Water, Elect, Gas & other Fuels	Electricity Charges 51-100 Units, Electricity Charges 101-300 Units, Electricity Charges 301-700 Units, Electricity Charges Combined	Firewood Whole, House Rent Combined, Painter Wage Rate, Plumber Wage Rate, Sand (Black Pit), Cement Blocks (6"X8"X12"), Iron Bars (M.S. Bar) 1/2 " 40 Grade	Bricks New 1St Class, Synthetic Enamel Ici Balti 3.64 Litre, Mason Wage Rate, Electrician Charges, Unskilled Labor Wage Rate	Water Charges Per House, Charges For Refuse/Waste Collection
Furnishing & Household Equip. Maintenance etc		Steel Almirah, Plain Carpet, Lota Plastic Medium Size (Average Quality), Dining Table Wit Glass Top And Six Chairs (Average Quality)	Chair Sheesham Wood With Arm, Geyser Super Asia Large Size 30 Gallons (Gas), Energy Saver Philips 14 Watt 72 Pakistani (China-Ware) Set Of	Tube Light Philips 40 Watt, Central Table Set With Glass Top, Harpic 500 Ml Bottle, Mattress Foam Single Bed Molty/Diamond (4" Thick) , Phenyl Tyfon/Finis 2.75 Litre Bottle, Ceiling Fan 56" Pak/Younas/Millat, Sofa Set Five Seater
Health	Johar Joshanda Instant (Sachet) Packet	Entox Tablets, Dental Extraction Fee, Gynecologist Fee Per Visit, X-Ray (Chest) Charges, Ultrasound	Electronic Bp Checking Apparatus, Flagyl Tablets 400 Mg, Betnovate-N Ointment 10 Gm Tube	Dettol Medium Bottle, Ventolin Tablets 2 Mg, Doctor (Mbbs) Clinic Fee, Septran Tablets, Urine Test (Dr) Charges, Lederplex Syrup Bottle, Glaxose-D 400 Gm Packet
Transport	Air Fare Economy Class Per Kilometer (National Average), Hi-Speed Diesel, Petrol Super	Motorcycle United/Unique 70 Cc, Car Suzuki 800 Cc Without Ac, Mobil Oil (Havoline 20W-50), Suzuki Fare Minimum Within City	Bus Fare Minimum Within City, Car Honda Civic Turbo 1.5 Vtec,	Tire Car Puncture Charges, Bus Fare Maximum Within City, Tire Car Mehran Tubeless (General), Bicycle, Mini Bus Fare Maximum Within City, Mini Bus Fare Minimum Within City, Taxi Four Seater Fare
Communication	Telephone Call Charges, Mobile Call Charges	Internet Charges (Dsl) 1 Mb (Unlimited), 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)	Urdu Book Class Xi/Inter, Ballpoint Pen Local, Photostat Paper 70 Gm, Mathematics Book Class Xi (Text Book Board), English Book Class Vi	English Book Class Ix And X	Laptop Dell/Hp/Acer Core I5, Display (14"-15"), Lead Pencil Goldfish
Education	Vocational Training Basic Computer Short Course Fee (3 Months)	Private School Fee English Medium Average Standard (Class I)		
Restaurant & Hotels		Chicken Biryani Full/Double	Cooked Beef At Average Hotel, Cooked Chicken At Average Hotel	Bread Tandoori Standard Size, Tea Prepared Ordinary, Cooked Daal At Average Hotel
Miscellaneous		Toilet Soap Lux 75 Gm, Tissue Paper Perfumed Box 100 Napkins, Toilet Soap Lifebuoy 115 Gm	Hair Cut Charges For Men, Face Cream Ponds Medium Size (Cold), Tooth Brush (Shield)	Silver Tezabi 24 Carett, Gold Tezabi 24 Carett, Pampers (Medium Size), Shaving Charges, Artificial Jewelry (Locket Set) (Average Quality), Hair Oil (Kala Kola Hair Tonic)

Table A17: Distribution of Price Changes (YoY) - Selected Rural CPI Items: November 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	Garlic (Lehsun), Tomatoes, Apple (Average Quality), Spinach (Paalak), Radish (Mooli), Turai, Onions	Curd, Gram Whole Black (Average Quality), Samosa (Vegetable, Average Quality)	Salt Powder Loose, Mutton (Average Quality), Lemon, Custard Powder Rafhan 300 Gm Packet	Chilies Powder Loose, Potatoes, Ginger (Adrak), Peas (Matar), Eggs Farm, Sugar Refined, Chicken Farm Broiler (Live), Wheat, Chips (Loose), Suji, Pulse Masoor (Washed)
Alcoholic Beverages & Tobacco		Cigarettes Capstan 20'S Packet, Cigarettes Gold Leaf 20'S Packet	Chewing Tobacco (Niswar), Tobacco Hukka Twisted	Pan Prepared (Sweet With Beetle Nuts)
Clothing & Footwear		School Uniform Girls (Kameez & Shalwar) 24"/26",	Dopatta Cotton (Average Quality), Shoe Polish Charges, Dopatta Georgette (Average Quality), Lungi/Dhoti Cotton (Average Quality), Tailoring Charges Simple Suit (Female)	Vest "Baniyan" For Men Average Quality, Brassier (Average Quality), Shirting (Average Quality), Washing Charges Shalwar Kameez, Shoe Repair Full Sole, Underwear Medium Size (Average Quality), Pullover Gents (Average Quality), Georgette (Average Quality)
Housing, Water, Elect, Gas & other Fuels	Electricity Charges 51-100 Units, Electricity Charges 101-300 Units, Kerosene Oil, Electricity Charges 301-1000 Units, Electricity Charges Combined	Bajri, Mason Wage Rate, Unskilled Labor Wage Rate	Plumber Wage Rate, Firewood Whole, Charges For Refuse/Waste Collection, Sand (Black Pit), House Rent Combined	Water Charges Per House, Coal, Electrician Charges, Bricks New 1St Class, Painter Wage Rate, Carpenter Wage Rate
Furnishing & Household Equip. Maintenance etc.		Cleanser Powder Vim 900 Gm Polybag, Express Washing Powder 1 Kg Polybag, Readymade Quilt (3 Kg)	Energy Saver Philips 14 Watt, Water Pump Golden Monoblock/Donkey 0.5 H.P, Blanket Single (Sn)	Tube Light Philips 40 Watt, Boot Polish Cherry/Kiwi 42 Ml, Towel Medium Size (2' X 3'), Bucket (Balti) Plastic Medium Size, Ceiling Fan 56" Pak/Younas/Millat, Match Box, Washing Soap 250 Gm Cake (Specify Name)
Health		Cost Of Surgery (C-Section), Panadol Tablets Plain, Cac 1000 Tablets Sandoz Bottle	Inderal Tablets 10 Mg, Daonil Tablets 5 Mg, Amoxil Capsule 250 Mg, X-Ray (Chest) Charges	Dettol Medium Bottle, Doctor (Mbbs) Clinic Fee, Blood Test (Cp) Charges, Dental Surgeon Fee Per Visit
Transport	Air Fare Economy Class Per Kilometer, Hi-Speed Diesel, Petrol Super, Cng, Car Tax 800 Cc To 1500 Cc, Bus Fare Outside City (Non Ac)	Tire Cycle, Mobil Oil (Havoline 20W-50), Motorcycle Honda Cd 70, Train Fare Economy Per Person	Bicycle, Motorcycle Service Charges	Tire Car Mehran Tubeless (General), Chingchi Rickshaw Charges, Minimum
Communication	Telephone Call Charges, Mobile Call Charges, Postal Registration Charges	Internet Charges (Dsl) 1 Mb (Unlimited), Mobile Set With Rear Camera And Without Touch Screen		
Recreation & Culture		Pets Feed, Newspaper Daily Jang, Cable Charges	Exercise Book (With Lines) 80 To 100 Pages, Personal Computer With Led Monitor (17") Dell/Hp/Acer Core I5, Lead Pencil Goldfish, English Books Class Ix And X	
Education		Private School Fee English Medium Average Standard (Class V)		
Restaurant & Hotels		Marriage Hall Charges With Furniture	Cooked Chicken At Average Hotel	Cooked Beef At Average Hotel, Cooked Daal At Average Hotel, Bread Tandoori Standard Size, Chicken Biryani Full/Double
Miscellaneous			Tooth Brush (Shield), Talcum Powder Viceroy/Black Cat, Blade Treet Ordinary (10 No. Packet)	Gold Tezabi 24 Carett, Artificial Jewelry (Locket Set) (Average Quality), Shaving Charges, Tooth Paste Colgate 75 Gm, Hair Cut Charges For Men, Hair Color (Kala Kola)

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

Table A19: International Commodity Prices/Indices

	Aug-20	Sep-20	Oct-20	Nov-20
Energy				
Crude Oil (US\$ per barrel)*	43.4	40.6	39.9	42.3
Energy Index (2010 = 100)	53.8	51.0	51.3	54.6
Food				
Rice (\$/MT)	505.0	507.0	471.0	489.0
Wheat (\$/MT)##	N.A	N.A	N.A	N.A
Sugar (US cent/ pound)^	13.1	12.8	13.7	14.1
Palm Oil (\$/MT)	760.3	796.2	819.3	917.8
Soybean Oil (\$/MT)	866.9	905.9	914.8	973.9
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	69.9	70.8	74.8	77.6
Metal Price Index (2010 = 100)	83.6	85.2	86.3	91.4
Copper (\$/MT)	6,498.9	6,704.9	6,713.8	7,068.9
Aluminum (\$/MT)	1,737.3	1,743.8	1,806.1	1,935.3
Iron Ore (\$ cents/dry MT)	121.1	123.8	119.8	124.4
Tin (\$/MT)	17,650.0	17,951.3	18,176.6	18,522.5
Nickel (\$/MT)	14,537.8	14,857.5	15,239.4	15,807.7
Zinc (\$/MT)	2,410.1	2,442.5	2,440.7	2,671.6
Lead (\$/MT)	1,935.7	1,872.9	1,776.3	1,915.6
Uranium (\$/MT)@	30.9	29.9	29.7	29.7
DAP (\$/MT)	341.9	358.4	357.1	359.6
Urea (\$/MT)	249.5	250.5	245.0	245.0

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

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

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

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

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

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

Middling 1-3/32 inch staple, liverpool Index "A", average of the cheapest Cts/lb five of fourteen styles, CIF Liverpool (Cotton Outlook, Liverpool). From January 1968 to June 1981 strict middling 1-1/16 inch staple. Prior to 1968, Mexican 1-1/16.2/

Wheat numbers for the month of July, 2020 onwards have not been provided by the World Bank in their latest release

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	140.67
Nov	104.69	109.95	116.18	130.90	141.83
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	113.90	123.45	134.94
Aug	102.51	107.05	113.69	125.67	136.04
Sep	102.81	107.66	113.54	126.50	137.96
Oct	103.24	108.23	115.25	127.96	139.33
Nov	103.71	108.89	115.02	129.55	140.32
Dec	104.15	109.94	115.80	130.40	
Jan	104.64	110.10	116.21	133.12	
Feb	105.79	110.46	117.87	132.42	
Mar	106.80	110.61	120.14	132.39	
Apr	107.05	111.32	120.54	130.86	
May	107.07	112.43	121.92	131.98	
Jun	107.18	113.30	122.44	133.01	

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	139.27
Nov	104.36	110.03	116.94	131.05	140.16
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	124.47	134.23
Aug	102.33	107.55	114.20	126.39	135.45
Sep	102.63	107.97	114.09	127.30	137.10
Oct	103.06	108.49	116.12	128.72	138.14
Nov	103.57	109.18	116.00	129.97	138.97
Dec	104.03	110.33	116.80	130.80	
Jan	104.77	110.46	117.26	132.97	
Feb	105.89	110.89	118.86	132.13	
Mar	106.89	111.14	121.03	132.25	
Apr	107.23	112.00	121.36	130.70	
May	107.34	113.06	122.72	131.67	
Jun	107.57	113.89	123.14	132.61	

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	142.79
Nov	105.18	109.83	115.03	130.67	144.34
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	102.90	106.05	113.03	121.92	136.02
Aug	102.77	106.29	112.93	124.59	136.92
Sep	103.09	107.19	112.71	125.28	139.26
Oct	103.52	107.84	113.93	126.82	141.13
Nov	103.92	108.46	113.54	128.92	142.36
Dec	104.34	109.35	114.29	129.78	
Jan	104.44	109.57	114.63	133.33	
Feb	105.63	109.81	116.38	132.87	
Mar	106.67	109.82	118.79	132.59	
Apr	106.78	110.31	119.31	131.09	
May	106.65	111.46	120.72	132.46	
Jun	106.60	112.41	121.38	133.62	

Table A23: National CPI Monthly & Average Seasonal Factors						
Period	FY17	FY18	FY19	FY20	FY21	Average
Jul	100.34	100.35	100.34	100.33	100.32	100.34
Aug	100.29	100.24	100.21	100.17	100.14	100.21
Sep	100.41	100.36	100.32	100.28	100.26	100.33
Oct	100.92	100.92	100.93	100.94	100.96	100.93
Nov	100.94	100.97	101.01	101.04	101.07	101.01
Dec	99.93	99.98	100.02	100.04		100.00
Jan	99.89	99.91	99.92	99.93		99.92
Feb	99.29	99.33	99.37	99.41		99.35
Mar	99.38	99.41	99.44	99.47		99.43
Apr	99.86	99.84	99.82	99.80		99.83
May	99.34	99.31	99.29	99.26		99.30
Jun	99.40	99.37	99.34	99.30		99.35

Table A24: Urban CPI Monthly & Average Seasonal Factors						
Period	FY17	FY18	FY19	FY20	FY21	Average
Jul	100.42	100.43	100.41	100.39	100.37	100.40
Aug	100.39	100.36	100.33	100.30	100.27	100.33
Sep	100.42	100.38	100.35	100.33	100.31	100.36
Oct	100.79	100.78	100.79	100.80	100.82	100.79
Nov	100.76	100.78	100.81	100.83	100.85	100.81
Dec	99.72	99.77	99.81	99.82		99.78
Jan	99.82	99.84	99.84	99.85		99.84
Feb	99.28	99.31	99.35	99.39		99.33
Mar	99.34	99.36	99.39	99.42		99.38
Apr	99.97	99.95	99.94	99.92		99.95
May	99.55	99.53	99.51	99.49		99.52
Jun	99.54	99.52	99.49	99.46		99.50

Table A25: Rural CPI Monthly & Average Seasonal Factors						
Period	FY17	FY18	FY19	FY20	FY21	Average
Jul	100.21	100.24	100.24	100.25	100.25	100.24
Aug	100.13	100.08	100.03	99.98	99.94	100.03
Sep	100.39	100.32	100.27	100.22	100.18	100.28
Oct	101.12	101.12	101.14	101.15	101.18	101.14
Nov	101.21	101.26	101.31	101.36	101.39	101.31
Dec	100.24	100.31	100.36	100.38		100.32
Jan	100.00	100.03	100.04	100.06		100.03
Feb	99.32	99.36	99.40	99.44		99.38
Mar	99.45	99.48	99.51	99.55		99.50
Apr	99.71	99.67	99.65	99.61		99.66
May	99.01	98.98	98.95	98.92		98.97
Jun	99.19	99.14	99.11	99.06		99.12

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	1.70
Nov	0.47	0.66	-0.12	1.35	0.82
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	0.53	-0.38	0.53	0.83	1.45
Aug	-0.31	0.26	-0.18	1.80	0.81
Sep	0.30	0.57	-0.14	0.65	1.41
Oct	0.42	0.53	1.51	1.16	1.00
Nov	0.45	0.61	-0.20	1.24	0.71
Dec	0.42	0.96	0.68	0.65	
Jan	0.47	0.15	0.36	2.09	
Feb	1.09	0.32	1.43	-0.52	
Mar	0.96	0.14	1.93	-0.03	
Apr	0.24	0.64	0.34	-1.16	
May	0.01	0.99	1.14	0.86	
Jun	0.11	0.78	0.43	0.78	

Table A27: Urban CPI (Month-on-Month) Original & Seasonally Adjusted Series					
Original Series					
Period	FY17	FY18	FY19	FY20	FY21
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	1.27
Nov	0.47	0.63	-0.09	1.00	0.64
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	0.51	1.07	1.22
Aug	-0.42	0.27	-0.24	1.55	0.91
Sep	0.30	0.39	-0.10	0.72	1.22
Oct	0.42	0.49	1.78	1.11	0.76
Nov	0.50	0.63	-0.11	0.97	0.60
Dec	0.44	1.06	0.68	0.64	
Jan	0.72	0.12	0.40	1.66	
Feb	1.06	0.39	1.36	-0.63	
Mar	0.95	0.23	1.83	0.09	
Apr	0.32	0.77	0.27	-1.17	
May	0.10	0.95	1.12	0.74	
Jun	0.22	0.73	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	2.35
Nov	0.48	0.72	-0.17	1.86	1.09
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	0.42	-0.52	0.55	0.45	1.80
Aug	-0.13	0.23	-0.09	2.19	0.66
Sep	0.31	0.85	-0.19	0.56	1.71
Oct	0.42	0.60	1.09	1.23	1.34
Nov	0.39	0.58	-0.34	1.66	0.87
Dec	0.40	0.81	0.66	0.67	
Jan	0.09	0.20	0.29	2.74	
Feb	1.14	0.23	1.52	-0.35	
Mar	0.98	0.00	2.07	-0.21	
Apr	0.10	0.45	0.44	-1.14	
May	-0.12	1.04	1.18	1.05	
Jun	-0.05	0.85	0.55	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)

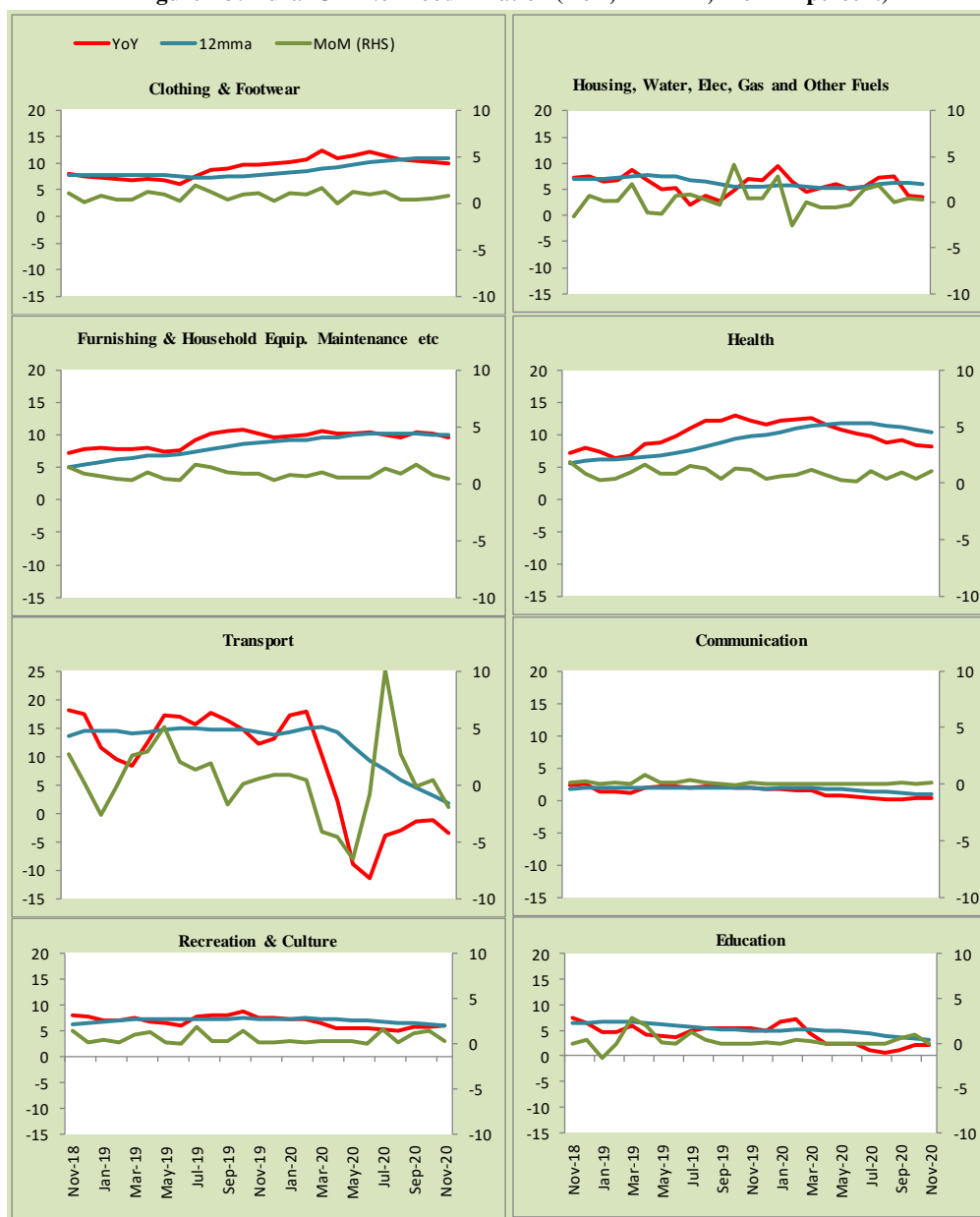
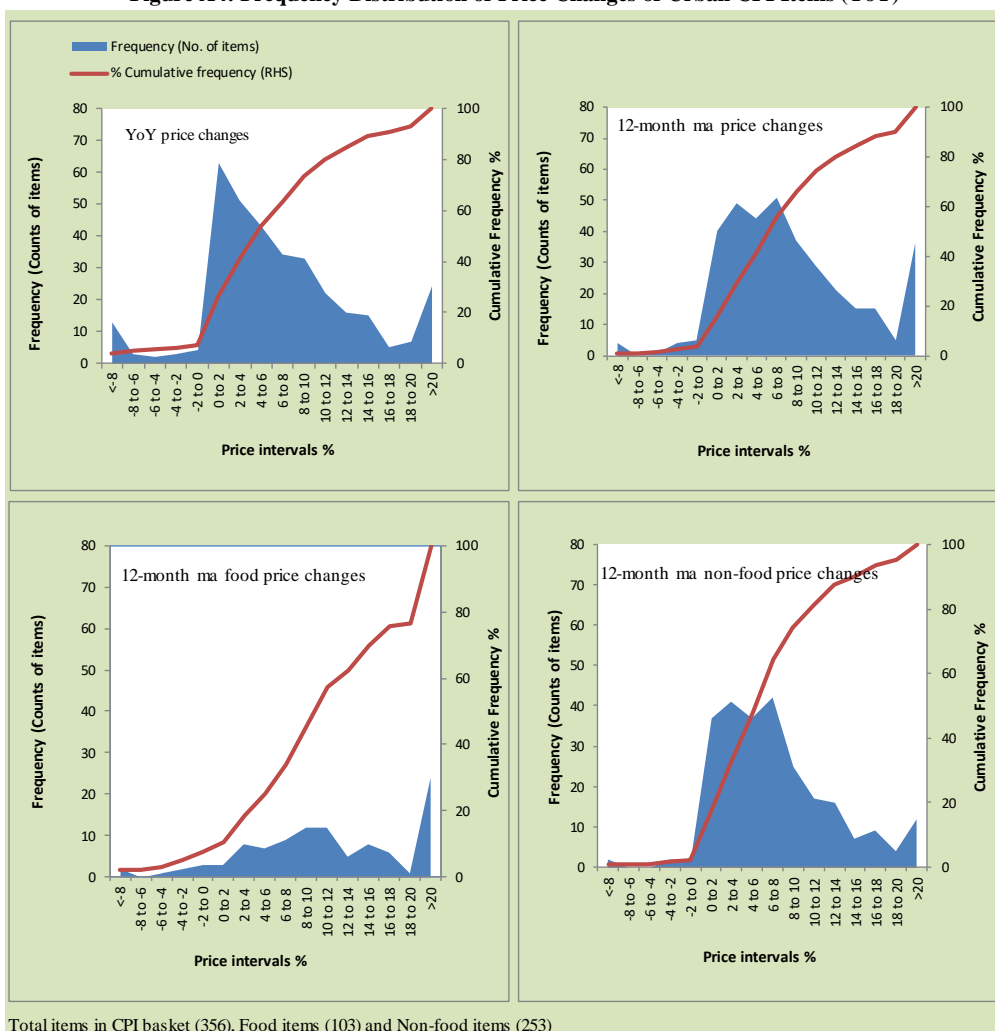


Figure A4: Frequency Distribution of Price Changes of Urban CPI Items (YoY)



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)

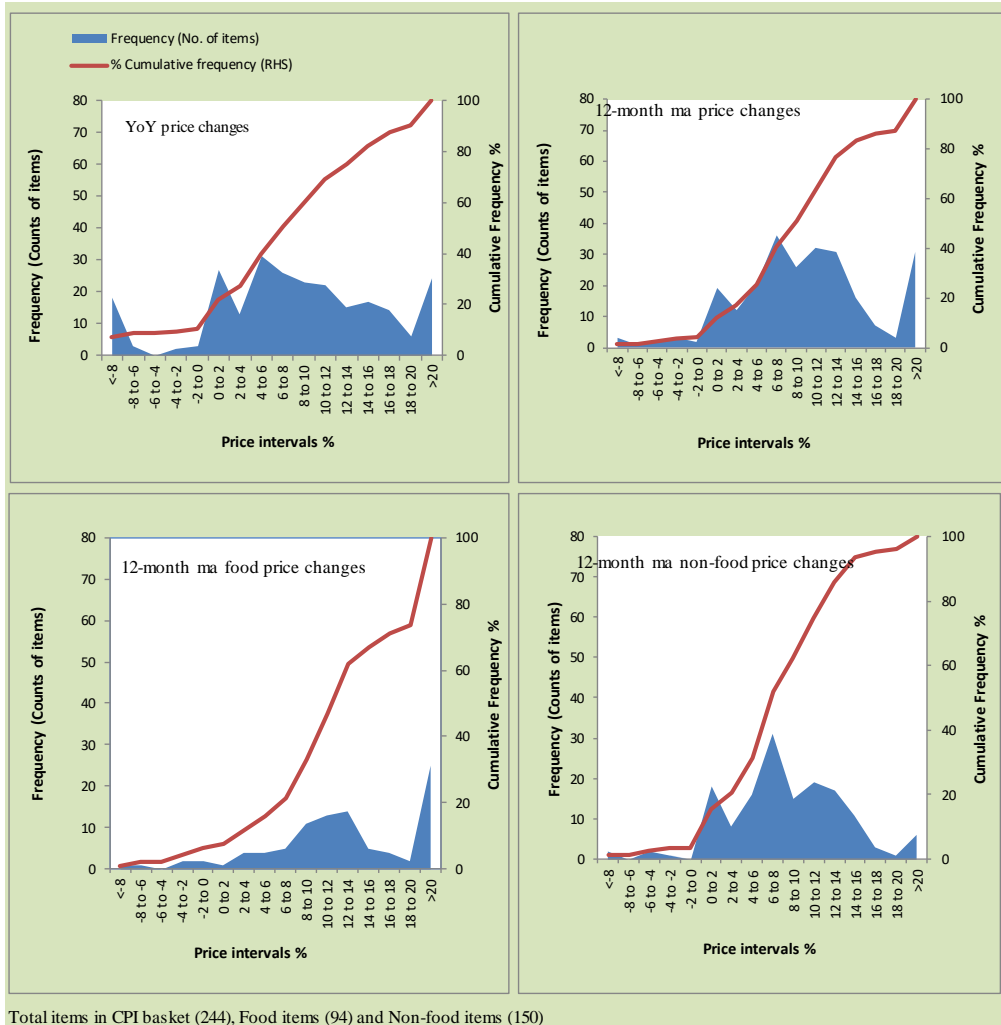
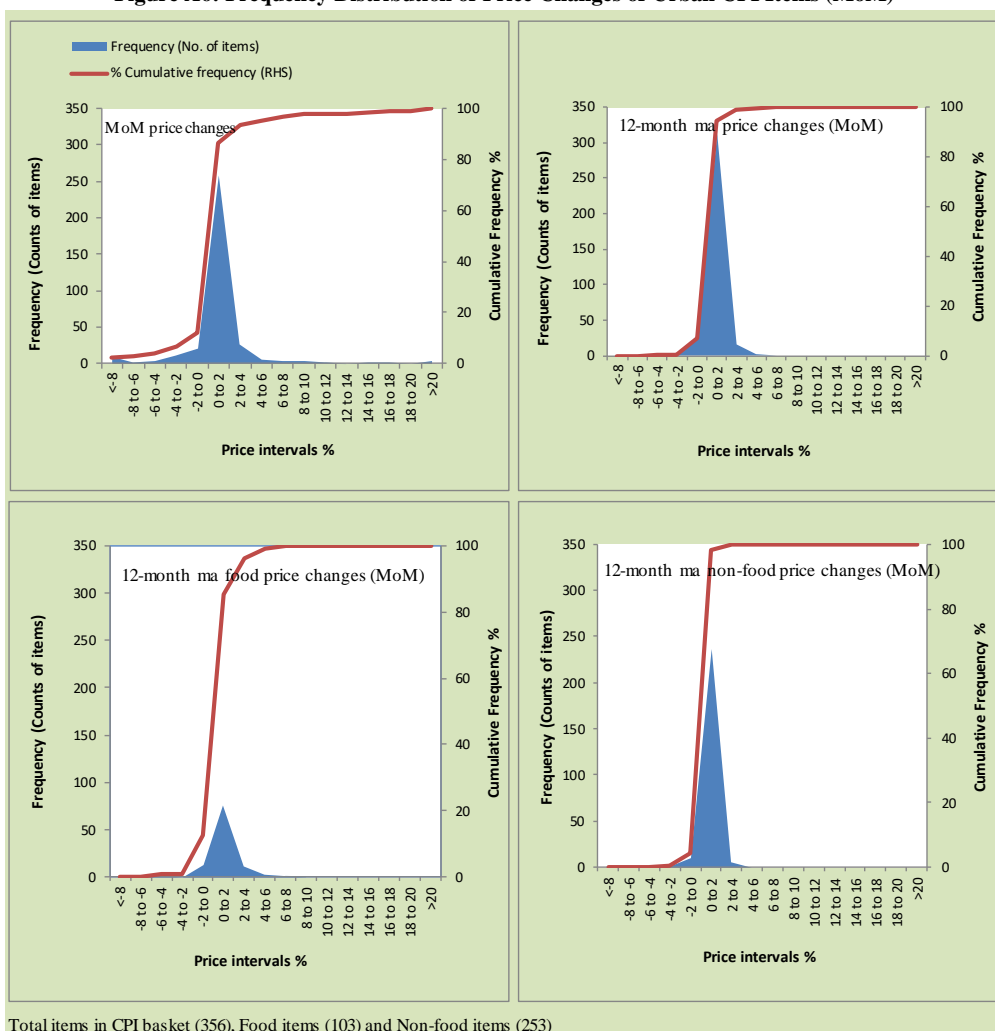


Figure A6: Frequency Distribution of Price Changes of Urban CPI Items (MoM)



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

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

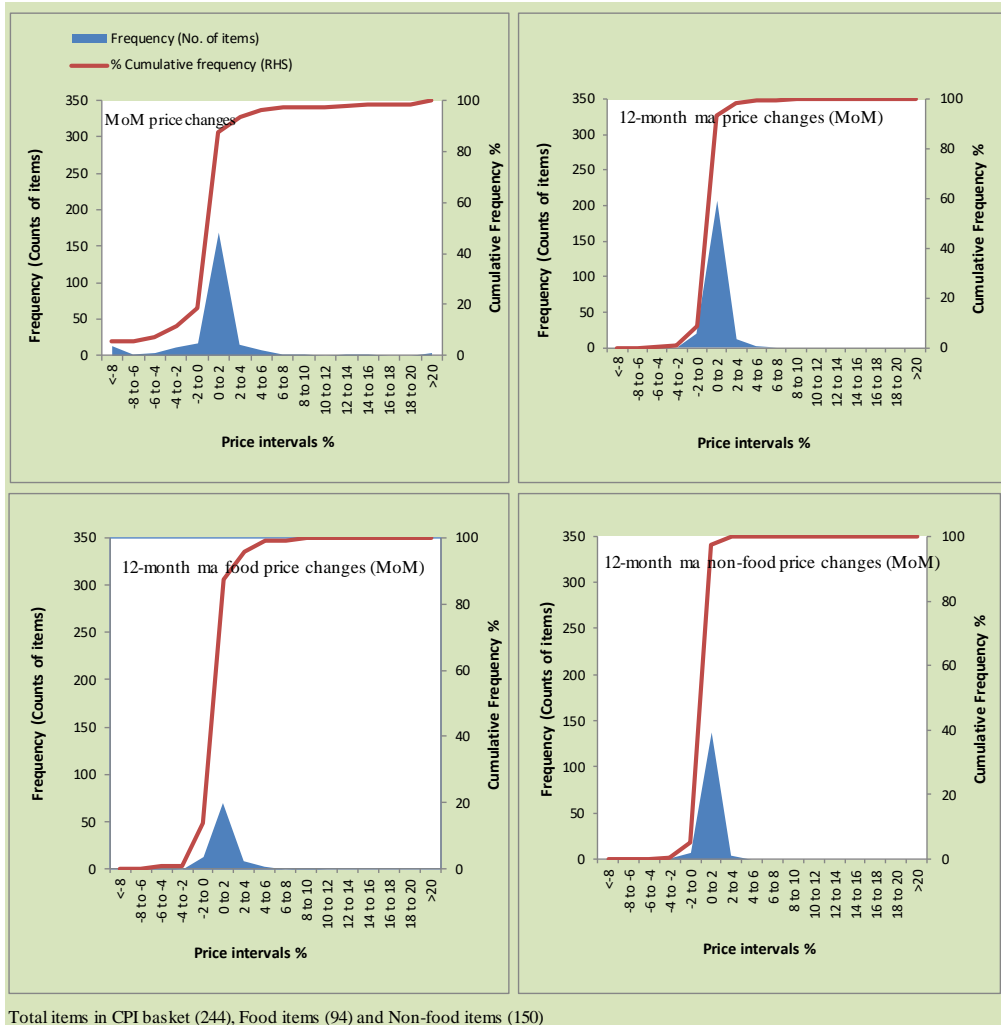
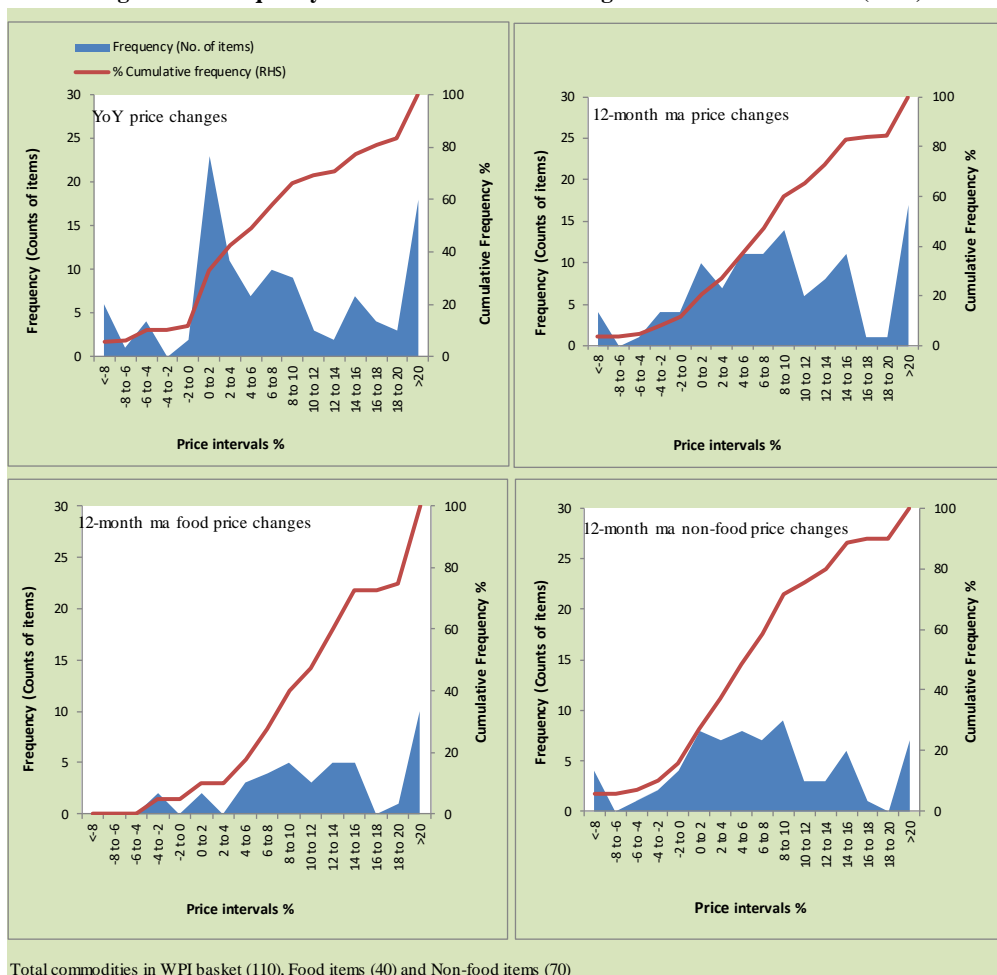


Figure A8: Frequency Distribution of Price Changes of WPI Commodities (YoY)



Annexure B

Technical Notes, Definitions and Methodologies

a) Technical Notes

1. All the three measures of inflation, viz. CPI (National, Urban and Rural), WPI and SPI are computed by the following Laspeyres Index formula:

$$I_t = \sum_j w_0^j \left(\frac{P_t^j}{P_0^j} \right)$$

Where I_t is price index, w_0^j is weight of commodity j in the overall basket, P_t^j is price of commodity j in period t and P_0^j is its price in the base year.

2. Base year for all the indices is the year 2015-16.
3. CPI baskets for urban and rural areas contains 356 and 244 consumers' items respectively; WPI basket contains 419 items; SPI contains 51 items.
4. YoY inflation is the percent change of an index in a given month over the index in the same month of the last year. It is computed as follows:

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

5. Period average inflation is the percent change of the average index during the period from July to the given month of a fiscal year over the average index during the corresponding period of the last year. It is computed as follows:

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

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

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

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

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

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

8. Core Inflation is defined as the persistent component of measured inflation that excludes volatile and controlled prices. It reflects the normal supply and demand conditions in the economy. Core inflation is computed by the following 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.

9. Weighted contribution of different items (or sub-groups) to total inflation is worked out as below:

Let the overall index (I_t) is the weighted average of price indexes of individual items or sub-groups (I_{it}), i.e.

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

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

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

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

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

reference month

w_i : Weights of i^{th} item

π_{it} : Inflation of i^{th} item

π_t : Overall inflation

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

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

b) Methodology for Estimating Inflation Diffusion Index for Pakistan

We constructed an index to measure the spread of inflation in the 356 and 244 items of CPI urban and rural baskets respectively. It is based on month-on-month (MoM) change in the prices of these items and can be obtained by estimating what is known as an 'inflation diffusion index' (IDI) as below:

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

Thus, it is the difference between the share of items with increasing prices (i.e. depicting inflation) and the share of items with falling prices (i.e. depicting deflation) in CPI amongst the items for which prices have altered or remained constant¹.

Based upon item level prices data from July 2001 to February 2011, inflation diffusion indices for overall (general) CPI basket and for all groups in CPI basket (except House Rent Index being single item) were computed. A simple analysis² suggests that IDI was a leading indicator for Pakistan's YoY inflation.

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

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