

Inflation Monitor

December 2020

(New Base: 2015-16)



State Bank of Pakistan

Statistics & DWH Department

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Team

- Mazhar Hussain Sr. Joint Director
mazhar.hussain@sbp.org.pk
- Muhammad Abdus Salam Joint Director
muhammad.abdussalam@sbp.org.pk

Review

1. Inflation in Brief

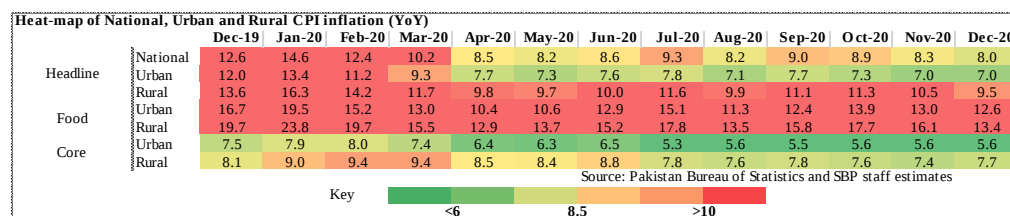
- a) National CPI inflation (2015-16=100) is recorded at 8.0 percent on year-on-year basis in December 2020 as compared to 8.3 percent in the previous month and 12.6 percent during the corresponding month of last year.
- b) National CPI inflation on month-on-month basis is recorded at -0.7 percent in December 2020 as compared to 0.8 percent in the previous month and -0.3 percent during the corresponding month of last year. Seasonally adjusted month-on-month CPI inflation is recorded at 0.31 percent in December 2020 compared to 0.73 percent in the previous month.
- c) Urban CPI inflation (2015-16=100) is recorded at 7.0 percent on year-on-year basis in December 2020 and was at same level compared to previous month and 12.0 percent during the corresponding month of last year.
- d) Urban CPI inflation on month-on-month basis is recorded at -0.3 percent in December 2020 as compared to 0.6 percent in the previous month and -0.4 percent during corresponding month of last year. Seasonally adjusted month-on-month Urban CPI inflation is recorded at 0.62 percent in December 2020 compared to 0.60 percent in the previous month.
- e) Rural CPI inflation (2015-16=100) is recorded at 9.5 percent on year-on-year basis in December 2020 as compared to 10.5 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 -1.2 percent in December 2020 as compared to 1.1 percent in the previous month and -0.3 percent during the corresponding month of last year. Seasonally adjusted month-on-month Rural CPI inflation is recorded at -0.14 percent in December 2020 compared to 0.93 percent in the previous month.

- g) Urban Core inflation (trimmed) on year-on-year basis is recorded at 6.2 percent in December 2020 as compared to 6.3 percent in the previous month and 9.6 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 December 2020 as compared to 0.2 percent in the previous month and corresponding month of last year.
- i) Rural Core inflation (trimmed) on year-on-year basis is recorded at 8.8 percent in December 2020 as compared to 9.1 percent in the previous month and 10.8 percent during the corresponding month of last year.
- j) On month-on-month basis, the Rural Core inflation (trimmed) is recorded at 0.6 percent in December 2020 as compared to 0.4 percent in the previous month and 0.3 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 December 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 0.4 percent in December 2020 as compared to 0.3 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 7.7 percent in December 2020 as compared to 7.4 percent in the previous month and 8.1 percent during the corresponding month of last year.
- n) Rural Core (NFNE) inflation on month-on-month basis recorded at 0.5 percent in December 2020 as compared to 0.3 percent in the previous month and corresponding month of last year.

- o) WPI inflation on year-on-year basis recorded at 5.7 percent in December 2020 as compared to 5.0 percent in the previous month and 12.4 percent during the corresponding month of last year.
- p) WPI inflation on month-on-month basis recorded at 0.3 percent in December 2020 as compared to -0.9 percent in the previous month. It was -0.3 percent in the corresponding month of last year.
- q) SPI inflation on year-on-year basis recorded at 7.9 percent in December 2020 as compared to 8.0 percent in the previous month. It was 18.2 percent in the corresponding month of last year.
- r) SPI inflation on month-on-month basis recorded at -1.3 percent in December 2020 as compared to 1.1 percent in the previous month. It was at same level during 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, December 2020

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

		Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
Headline	National	-0.3	2.0	-1.0	0.0	-0.8	0.3	0.8	2.5	0.6	1.5	1.7	0.8	-0.7
	Urban	-0.4	1.7	-1.1	0.1	-0.7	0.3	0.7	2.2	0.8	1.3	1.3	0.6	-0.3
	Rural	-0.3	2.4	-1.0	-0.1	-1.1	0.3	1.0	3.0	0.4	2.0	2.4	1.1	-1.2
Food	Urban	-1.7	2.7	-1.4	0.6	-1.0	1.5	1.8	3.0	-0.3	3.0	2.8	1.6	-2.1
	Rural	-1.1	3.4	-1.6	-0.3	-1.7	1.4	2.0	4.0	-0.9	3.8	4.3	2.0	-3.4
Core	Urban	0.4	1.1	0.2	0.3	0.2	0.4	0.4	0.6	0.7	0.3	0.6	0.3	0.4
	Rural	0.3	1.0	0.5	0.6	0.3	0.4	0.7	1.1	0.8	0.4	0.6	0.3	0.5

Source: Pakistan Bureau of Statistics and SBP staff estimates

Key: 

Heat-map of National CPI inflation (YoY)

	Weights	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
National	100.00	12.6	14.6	12.4	10.2	8.5	8.2	8.6	9.3	8.2	9.0	8.9	8.3	8.0
Food and non-alcoholic Beverages	34.58	19.7	23.7	18.4	14.7	11.7	12.2	14.6	17.8	12.9	14.7	16.6	15.1	13.3
Alcoholic Beverages, Tobacco	1.02	18.3	17.9	18.5	18.6	19.6	19.5	14.2	5.0	5.8	5.9	6.0	5.9	6.0
Clothing and footwear	8.60	9.7	9.6	10.1	11.0	10.2	10.3	11.0	10.3	9.2	9.1	9.0	9.4	9.6
Housing, water, Elec., Gas and other fuels	23.63	8.5	9.6	6.8	4.9	5.1	6.4	5.4	4.2	6.0	6.1	2.7	2.6	3.4
Furnishing and household equipment maintenance	4.10	10.4	10.1	10.0	10.1	9.0	8.7	8.8	7.8	7.5	7.9	8.0	7.7	7.7
Health	2.79	11.3	11.8	12.0	12.4	10.5	9.8	9.3	7.8	7.7	8.3	7.8	7.6	8.1
Transport	5.91	14.7	18.6	19.2	11.5	3.4	-7.5	-10.2	-4.5	-3.4	-1.5	-1.5	-4.1	-3.5
Communication	2.21	4.0	4.0	3.9	3.9	1.7	1.6	1.6	0.3	0.3	0.3	0.3	0.6	0.5
Recreation and culture	1.59	6.8	6.5	6.6	5.9	5.1	4.9	4.8	3.8	3.5	3.9	3.9	4.2	4.4
Education	3.79	6.0	7.3	7.4	4.5	3.2	2.0	2.0	1.1	1.0	1.0	1.4	1.3	1.2
Restaurants and hotels	6.92	6.1	7.4	8.7	8.7	8.5	8.6	9.0	7.5	8.0	8.2	8.9	9.3	9.9
Misc. goods and services	4.87	10.7	11.4	11.4	11.8	11.9	11.9	11.6	11.7	13.6	12.2	11.6	11.9	11.9

Source: Pakistan Bureau of Statistics and SBP staff estimates

Key: 

Heat-map of Urban CPI inflation (YoY)

	Weights	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
Urban	100.00	12.0	13.4	11.2	9.3	7.7	7.3	7.6	7.8	7.1	7.7	7.3	7.0	7.0
Food and non-alcoholic Beverages	30.42	18.8	22.0	16.4	13.7	10.7	10.9	13.8	16.9	11.9	13.3	14.9	13.7	13.1
Alcoholic Beverages, Tobacco	0.85	16.6	16.8	17.7	17.8	18.8	19.0	13.3	4.7	5.5	5.7	6.2	6.7	6.6
Clothing and footwear	8.01	9.6	9.0	9.6	9.9	9.5	9.5	10.1	9.4	8.0	8.0	8.0	9.1	8.8
Housing, water, Elec., Gas and other fuels	27.03	9.4	9.7	6.9	5.1	5.1	6.5	5.6	3.6	5.4	5.5	2.3	2.2	2.8
Furnishing and household equipment maintenance	4.09	11.0	10.4	10.0	9.8	8.3	7.7	7.7	6.3	6.2	6.3	6.6	6.4	6.1
Health	2.31	10.9	11.5	11.7	12.2	9.4	8.7	8.4	5.9	6.7	7.2	7.3	7.1	7.4
Transport	6.14	15.6	19.4	19.9	12.2	4.1	-6.5	-9.5	-4.8	-3.7	-1.6	-1.7	-4.5	-3.6
Communication	2.35	5.3	5.3	5.3	5.1	2.3	2.2	2.1	0.4	0.4	0.3	0.3	0.7	0.6
Recreation and culture	1.73	6.4	6.1	6.1	5.6	4.9	4.6	4.4	3.1	2.7	2.9	2.9	3.2	3.3
Education	4.88	6.3	7.5	7.5	4.5	3.4	1.9	1.9	1.1	1.0	0.9	1.2	1.1	1.0
Restaurants and hotels	7.41	4.9	6.5	7.7	7.5	7.4	7.2	7.7	6.7	8.2	8.2	8.8	9.3	10.0
Misc. goods and services	4.77	10.1	10.7	10.1	10.6	11.0	10.9	10.6	10.4	12.6	10.5	9.7	10.4	10.6

Source: Pakistan Bureau of Statistics and SBP staff estimates

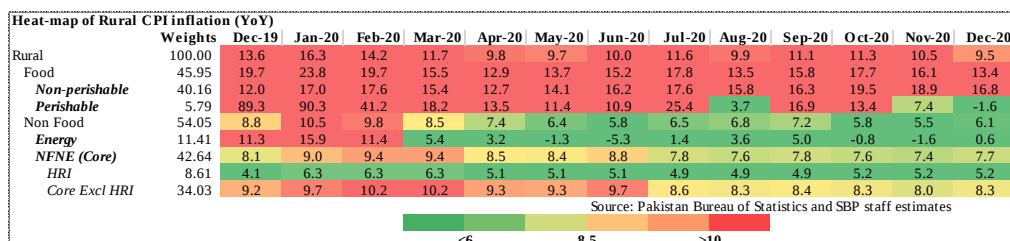
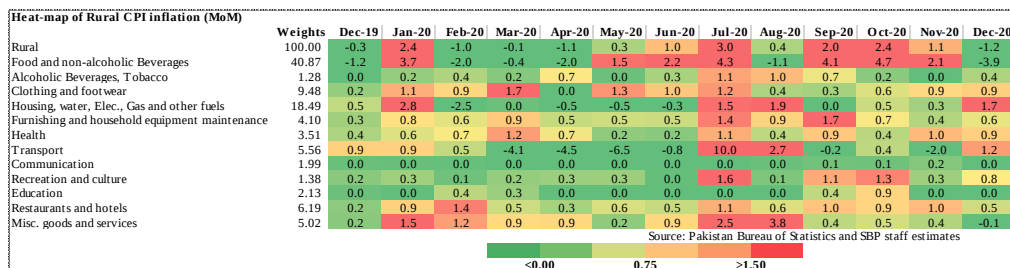
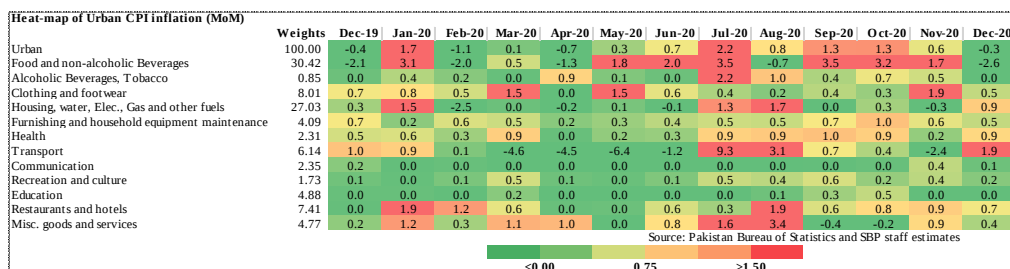
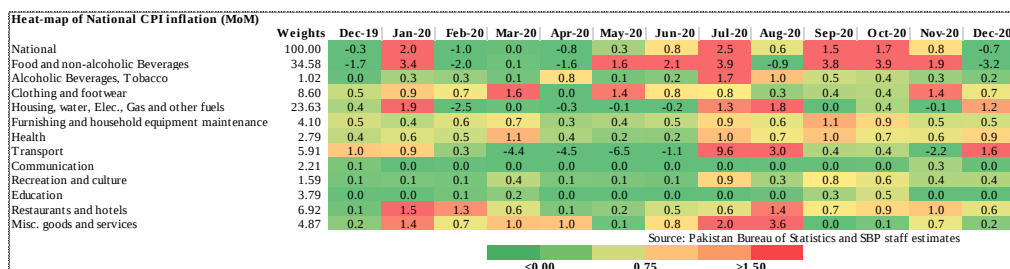
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Heat-map of Rural CPI inflation (YoY)

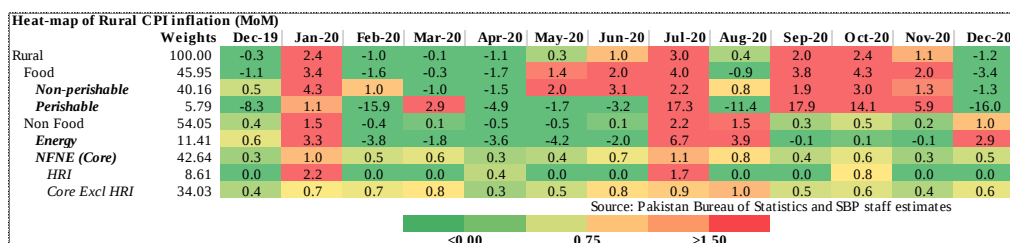
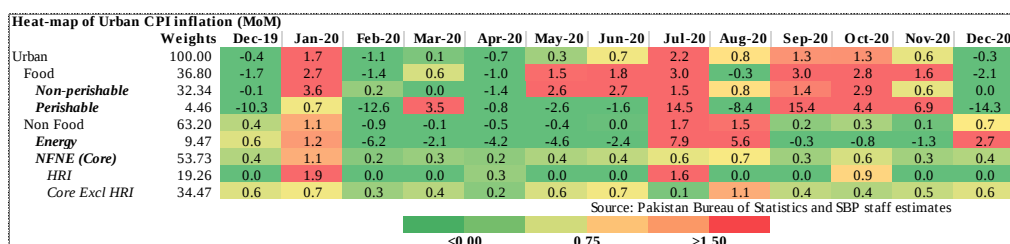
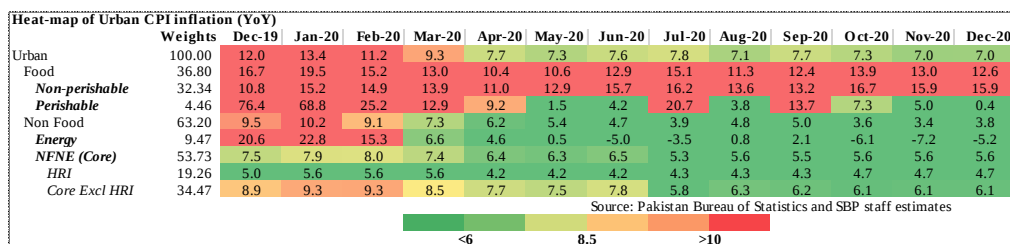
	Weights	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
Rural	100.00	13.6	16.3	14.2	11.7	9.8	9.7	10.0	11.6	9.9	11.1	11.3	10.5	9.5
Food and non-alcoholic Beverages	40.87	20.8	25.5	20.6	15.8	12.8	13.7	15.5	18.7	14.0	16.4	18.4	16.7	13.5
Alcoholic Beverages, Tobacco	1.28	20.2	19.2	19.4	19.5	20.4	20.1	15.3	5.4	6.1	6.1	5.7	5.0	5.4
Clothing and footwear	9.48	9.9	10.2	10.8	12.3	11.0	11.4	12.2	11.5	10.6	10.5	10.1	9.9	10.6
Housing, water, Elec., Gas and other fuels	18.49	6.6	9.4	6.6	4.6	5.2	6.0	4.9	5.5	7.2	7.4	3.7	3.6	4.9
Furnishing and household equipment maintenance	4.10	9.6	9.7	9.9	10.6	10.1	10.2	10.4	10.1	9.5	10.3	10.1	9.6	10.0
Health	3.51	11.7	12.1	12.4	12.6	11.6	10.9	10.1	9.7	8.7	9.3	8.3	8.2	8.8
Transport	5.56	13.1	17.2	18.0	10.2	2.3	-9.0	-11.5	-3.8	-3.0	-1.4	-1.1	-3.5	-3.3
Communication	1.99	1.7	1.7	1.6	1.6	0.8	0.7	0.6	0.3	0.2	0.2	0.4	0.4	0.4
Recreation and culture	1.38	7.5	7.3	7.3	6.5	5.4	5.5	5.5	5.2	5.0	5.8	5.7	6.0	6.6
Education	2.13	5.0	6.7	7.1	4.5	2.5	2.4	2.4	1.2	0.7	1.2	2.1	2.1	2.0
Restaurants and hotels	6.19	8.3	8.9	10.3	10.8	10.4	11.1	11.3	9.0	7.5	8.4	9.0	9.3	9.6
Misc. goods and services	5.02	11.6	12.5	13.4	13.6	13.2	13.5	13.2	13.8	15.0	14.5	14.3	14.1	13.8

Source: Pakistan Bureau of Statistics and SBP staff estimates

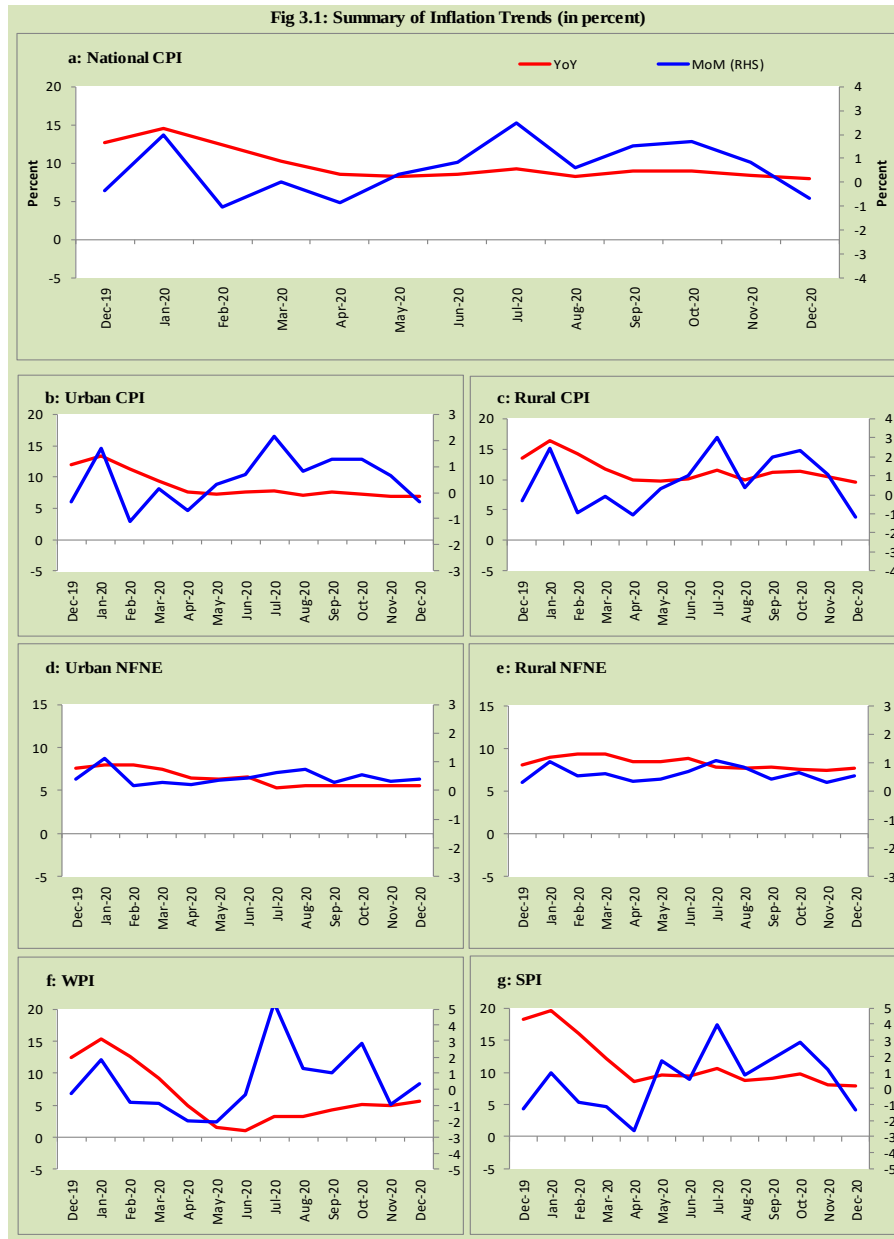
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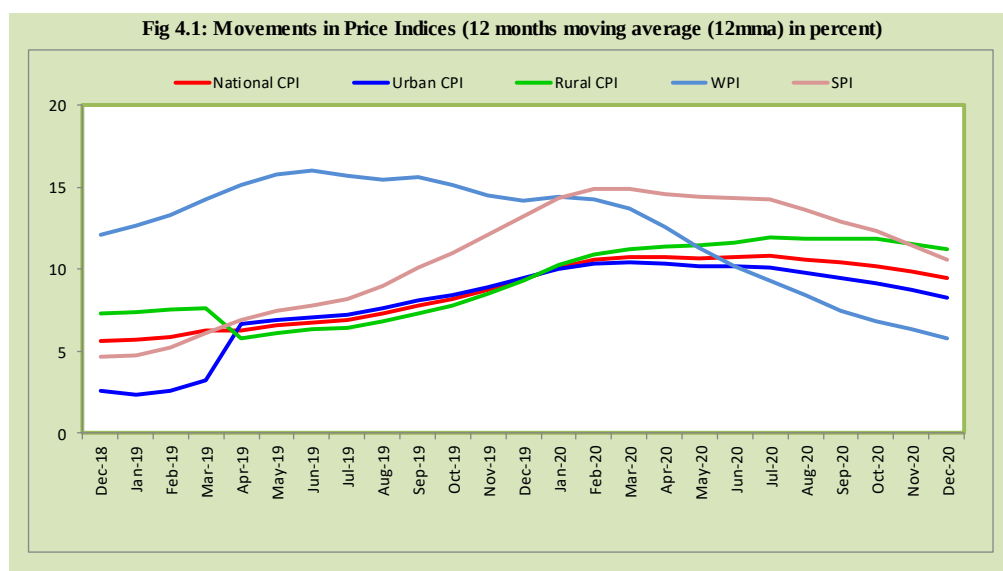
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3. Trends in Inflation



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)

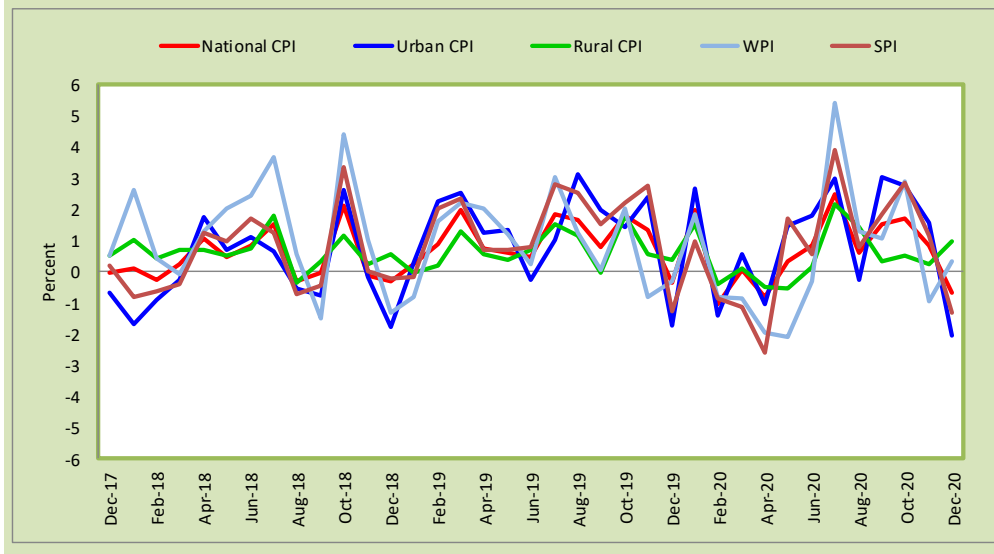
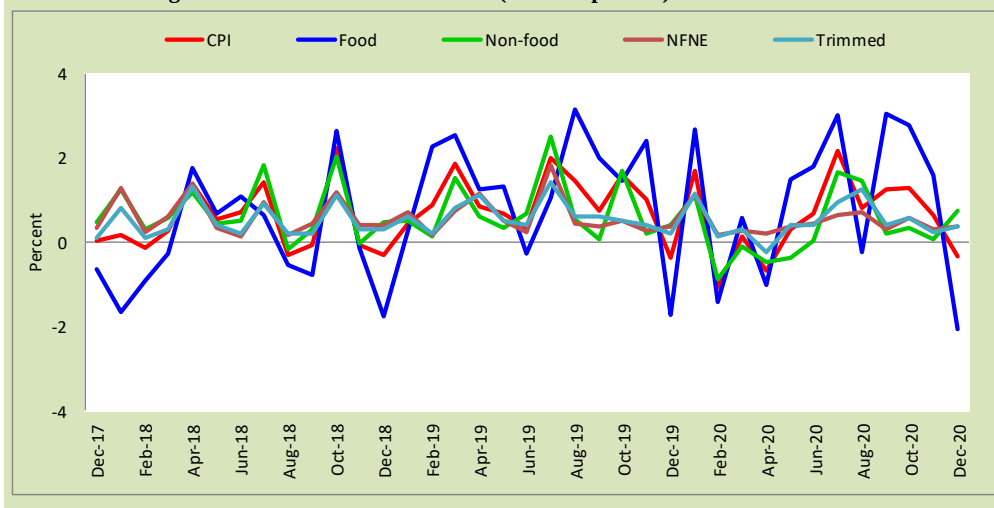
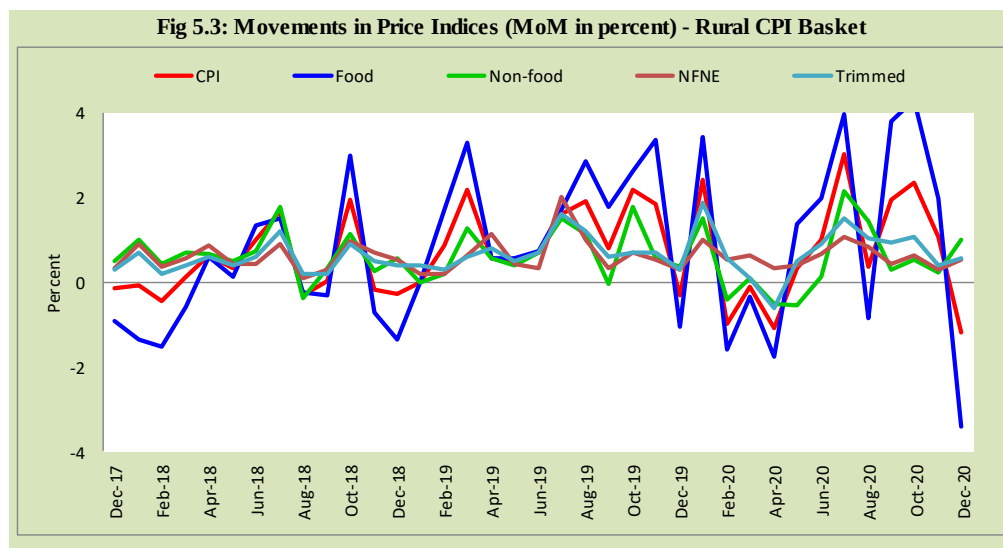


Fig 5.2: Movements in Price Indices (MoM in percent) - Urban CPI Basket

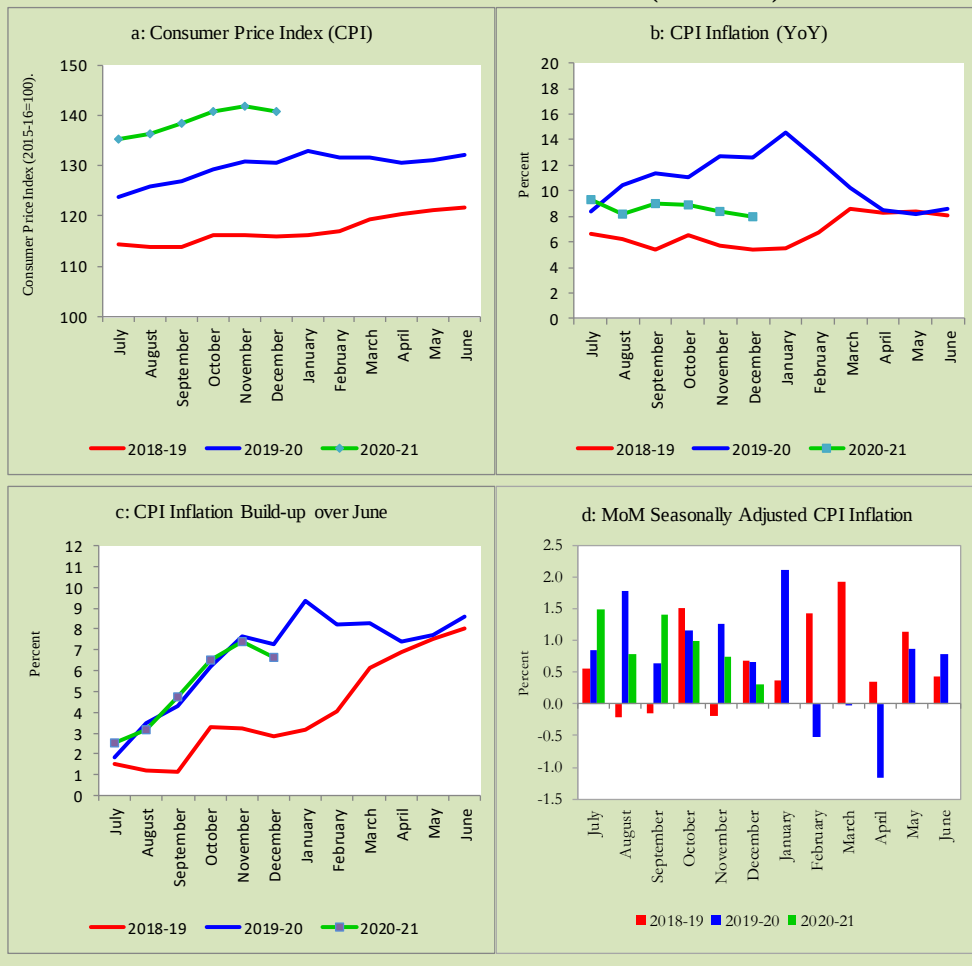




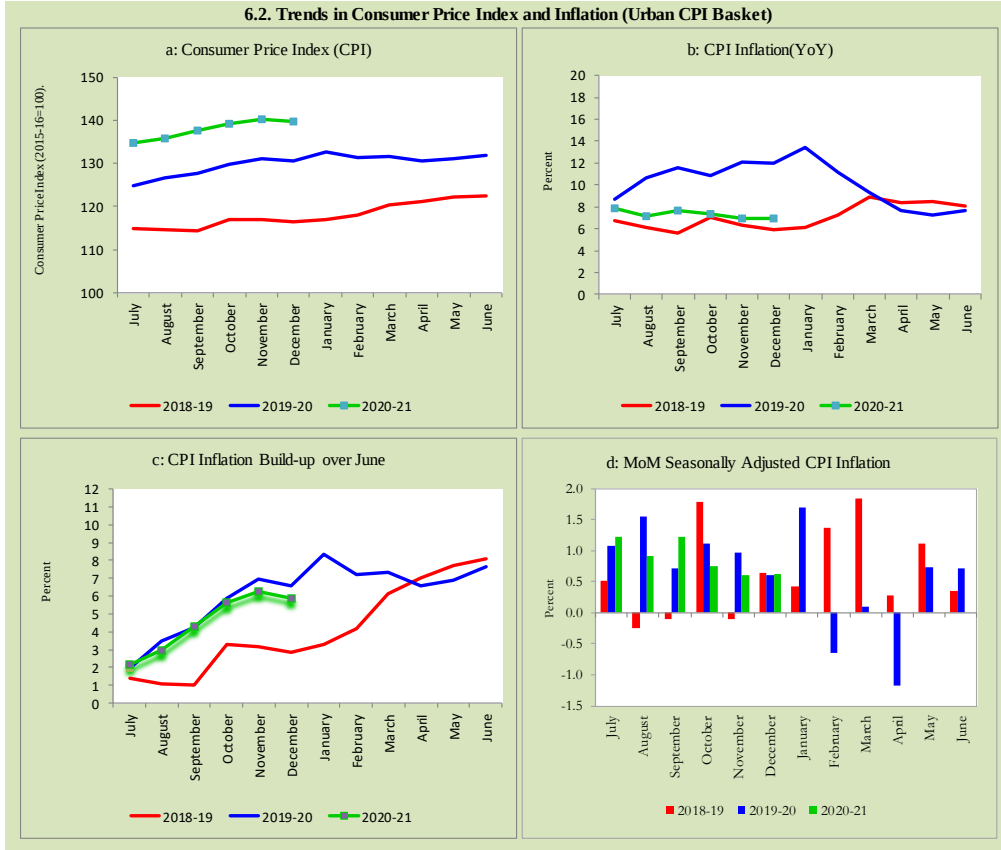
6. Trends in Consumer Price Indices and Inflation

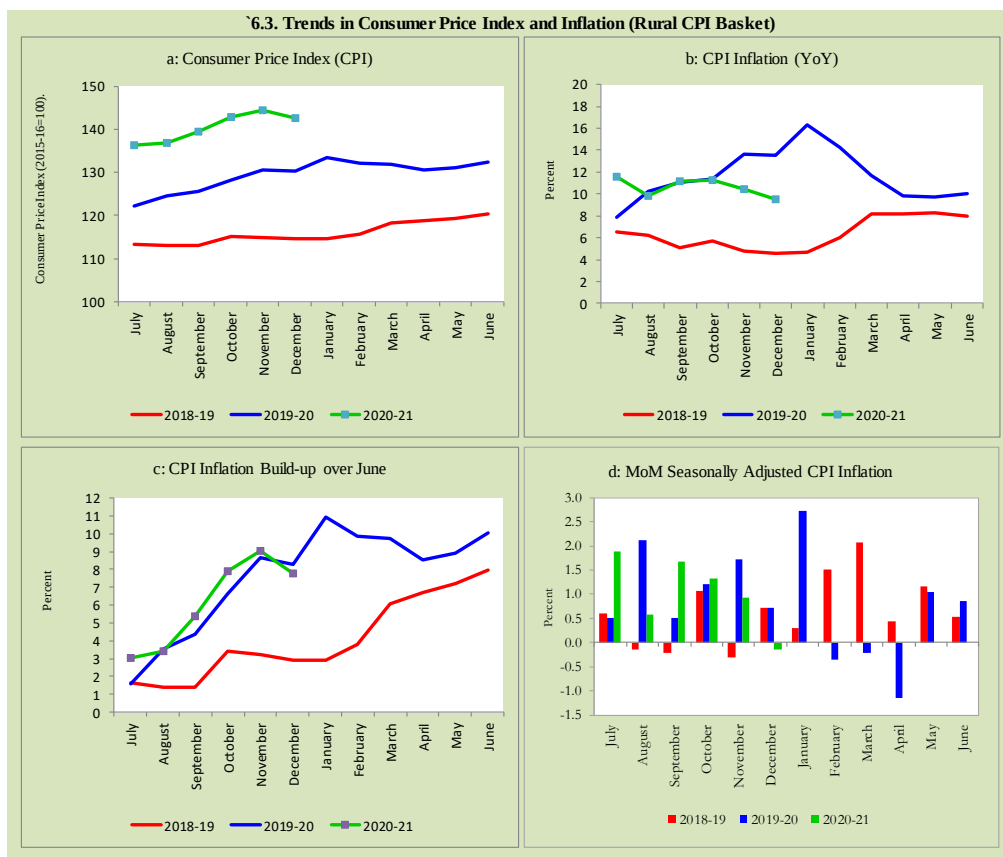
Monthly Consumer Price Indices, YoY growth rates and inflation build up over June along with seasonally adjusted (MoM) growth rates in CPI (National, Urban and Rural) is summarized in the following graphs (Figure 6.1 to 6.3).

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 decreased to 65.5 percent during December 2020 from 68.7 percent in previous month. It was 48.4 percent during corresponding month of last year. The weighted contribution of non-food group increased to 34.5 percent in December 2020 from 31.3 percent in previous month. Non-food group was 51.7 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
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
Oct-20	100	68.7	5.5	63.2	31.3	-8.9	40.2	28.1	12.0
Nov-20	100	68.7	4.3	64.3	31.3	-11.0	42.4	29.8	12.6
Dec-20	100	65.5	0.3	65.2	34.5	-8.1	42.6	30.0	12.6

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

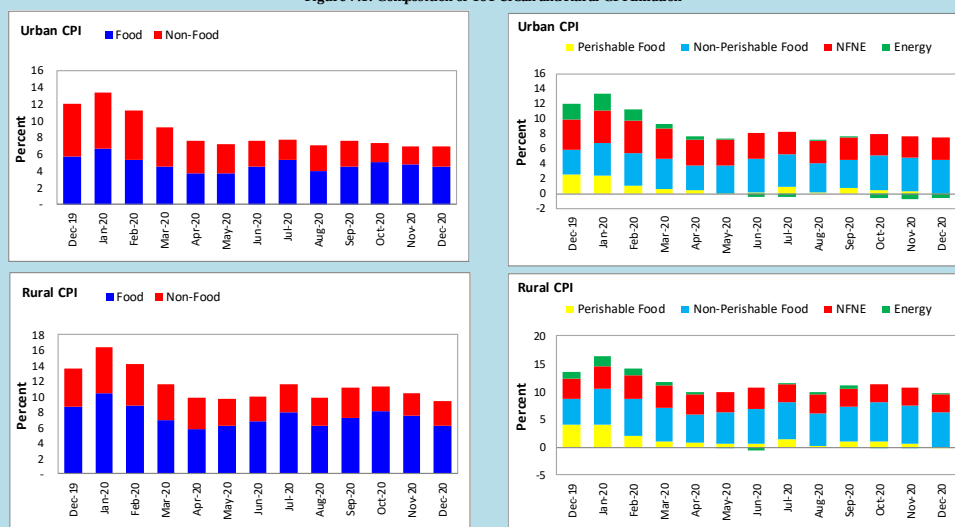
For rural basket, the weighted contribution of food group in the overall rural CPI inflation also decreased to 65.5 percent during December 2020 from 72.2 percent in previous month. It was 63.9 percent during corresponding month of last year. The weighted contribution of non-food group increased to 34.5 percent in December 2020 from 27.7 percent in previous month. Non-food group was 36.1 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	i
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	29.9	26.0	3.8
Oct-20	100	72.2	8.8	63.4	27.8	-0.8	28.4	24.7	3.9
Nov-20	100	72.2	5.7	66.5	27.8	-1.8	29.5	25.4	4.1
Dec-20	100	65.5	-1.2	66.7	34.5	0.7	33.8	29.2	4.6

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

	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
General	43.5	56.2	52.5	45.8	19.9	30.1	41.0	55.3	55.3	63.2	57.0	50.8	41.9
Food & Non-Alcoholic Beverages	35.6	66.7	35.6	31.1	26.7	4.4	34.4	42.2	22.2	62.2	51.1	28.9	-1.1
Alcoholic Beverages & Tobacco	66.7	100.0	66.7	66.7	100.0	66.7	66.7	66.7	100.0	66.7	33.3	66.7	-33.3
Clothing & Footwear	72.5	75.0	75.0	67.5	10.0	67.5	57.5	67.5	65.0	72.5	75.0	75.0	72.5
Housing, Water, Elect, Gas & other Fuels	20.7	3.4	6.9	27.6	24.1	17.2	10.3	27.6	41.4	6.9	6.9	6.9	51.7
Furnishing & Household Equip. Maintenance etc.	76.2	71.4	92.9	64.3	19.0	61.9	90.5	81.0	95.2	88.1	85.7	85.7	81.0
Health	54.8	71.0	77.4	67.7	35.5	38.7	38.7	74.2	83.9	77.4	64.5	67.7	54.8
Transport	46.9	40.6	50.0	31.3	-6.3	15.6	3.1	46.9	50.0	40.6	40.6	31.3	40.6
Communication	20.0	20.0	20.0	20.0	0.0	20.0	-20.0	20.0	0.0	20.0	40.0	40.0	20.0
Recreation & Culture	20.0	20.0	28.0	20.0	12.0	20.0	24.0	60.0	52.0	68.0	48.0	64.0	48.0
Education	12.5	6.3	0.0	31.3	0.0	0.0	0.0	0.0	18.8	68.8	43.8	12.5	0.0
Restaurant & Hotels	28.6	71.4	85.7	64.3	14.3	57.1	71.4	64.3	78.6	78.6	85.7	85.7	78.6
Miscellaneous	34.5	82.8	75.9	69.0	37.9	41.4	72.4	86.2	93.1	75.9	75.9	75.9	65.5
NFNE	48.1	55.3	62.6	53.2	19.6	40.4	43.8	60.9	66.4	68.5	63.8	62.6	55.3

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

	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
General	36.9	56.6	48.0	41.8	23.4	32.4	28.7	60.7	49.2	55.3	58.2	37.7	34.8
Food & Non-Alcoholic Beverages	25.3	67.1	32.9	16.5	25.3	8.9	17.7	48.1	15.2	51.9	54.4	10.1	1.3
Alcoholic Beverages & Tobacco	0.0	60.0	100.0	60.0	60.0	20.0	60.0	100.0	100.0	80.0	60.0	20.0	20.0
Clothing & Footwear	48.1	77.8	85.2	70.4	0.0	85.2	48.1	85.2	66.7	59.3	66.7	85.2	77.8
Housing, Water, Elect, Gas & other Fuels	39.1	8.7	0.0	39.1	34.8	17.4	0.0	52.2	65.2	26.1	26.1	17.4	39.1
Furnishing & Household Equip. Maintenance etc.	57.7	69.2	73.1	80.8	23.1	53.8	65.4	88.5	88.5	69.2	84.6	42.3	69.2
Health	57.1	42.9	42.9	71.4	42.9	50.0	35.7	57.1	50.0	85.7	42.9	64.3	42.9
Transport	25.0	43.8	43.8	12.5	-6.3	0.0	18.8	43.8	62.5	31.3	43.8	18.8	37.5
Communication	20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	40.0	0.0
Recreation & Culture	27.8	22.2	33.3	27.8	22.2	11.1	5.6	44.4	33.3	61.1	72.2	33.3	44.4
Education	20.0	0.0	80.0	40.0	0.0	0.0	0.0	0.0	0.0	60.0	100.0	0.0	0.0
Restaurant & Hotels	35.7	78.6	71.4	78.6	28.6	64.3	57.1	64.3	57.1	50.0	71.4	78.6	64.3
Miscellaneous	58.8	70.6	82.4	52.9	41.2	70.6	35.3	88.2	88.2	82.4	76.5	82.4	35.3
NFNE	44.9	52.2	58.1	55.9	24.3	50.0	36.0	66.2	62.5	64.0	64.7	55.9	47.1

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

9. Domestic Commodity Prices

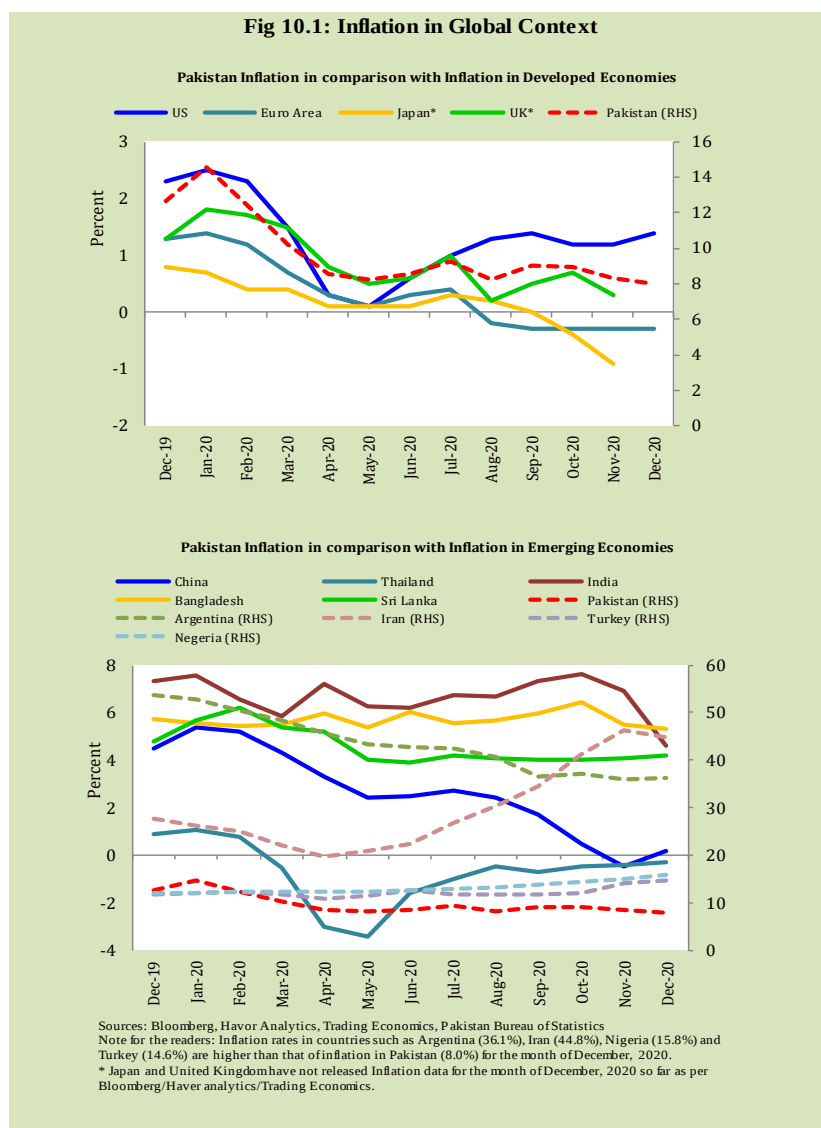
Inflation in domestic food commodities (YoY and MoM in percent) for selected essential food items covering both urban and rural CPI baskets is given in table 9.1.

Table 9.1 Inflation in Domestic Urban and Rural CPI Food Commodities (in percent) - December 2020						
S. No	Item	Unit	Urban CPI		Rural CPI	
			YoY	MoM	YoY	MoM
1	Wheat	10 Kg	24.2	-4.0	28.1	-3.9
2	Wheat Flour Bag	20 Kg	9.0	0.5	12.9	-3.7
3	Rice Basmati Broken (Superior/Average Quality) *	1 Kg	4.4	-0.6	13.2	-0.4
4	Beef with Bone (Average Quality)	1 Kg	11.0	0.4	12.0	0.7
5	Mutton (Average Quality)	1 Kg	10.2	0.5	11.1	1.9
6	Chicken Farm Broiler (Live)	1 Kg	67.4	1.2	63.2	3.2
7	Milk Fresh (Un-Boiled)	1 Litre	11.5	0.4	8.5	0.7
8	Eggs Farm	Dozen	64.4	15.7	65.4	14.1
9	Vegetable Ghee Dalda/Habib Or Other Superior Quality 1 Kg Pouch	Each	17.7	3.1	18.4	2.5
10	Pulse Masoor (Washed)	1 Kg	14.8	-0.4	20.6	-0.4
11	Pulse Moong (Washed)	1 Kg	23.1	-0.6	20.4	-0.7
12	Pulse Mash (Washed)	1 Kg	19.9	-0.4	19.4	2.0
13	Pulse Gram	1 Kg	4.2	-1.2	2.9	0.2
14	Potatoes	1 Kg	38.9	-13.4	47.1	-16.8
15	Onions	1 Kg	-24.4	-29.1	-27.6	-31.5
16	Tomatoes	1 Kg	-11.2	-27.1	-12.9	-19.8
17	Sugar Refined	1 Kg	15.3	-18.1	12.8	-23.0
18	Garlic (Lehsun)	1 Kg	-8.7	2.9	-22.7	5.9
19	Ginger (Adrak)	500 Gm	151.3	40.8	135.9	29.2
20	Tea Lipton Yellow Label 190 Gm Packet	Each	0.2	0.0	0.8	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.

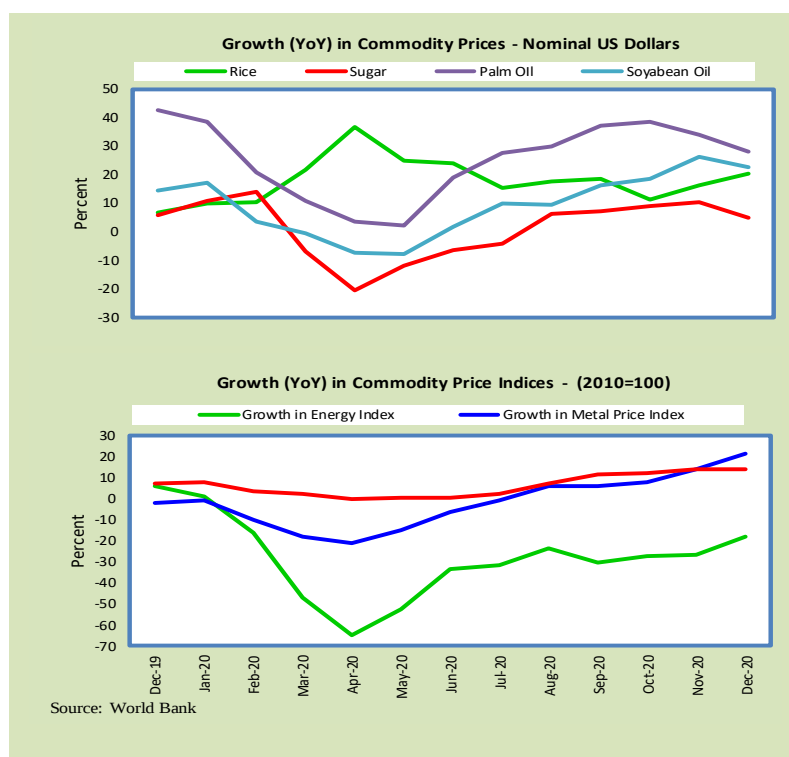


11. Global Commodity Prices

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	Dec-19		Nov-20		Dec-20	
	YoY	MoM	YoY	MoM	YoY	MoM
Food	7.1	2.5	13.8	5.6	13.9	2.6
Metals	-2.4	0.4	13.8	6.0	21.5	7.2
Energy	5.9	3.1	-26.7	6.6	-18.3	15.0
Agricultural	5.6	2.3	11.2	4.3	11.0	2.1
Cotton	-11.8	1.3	3.8	3.9	6.8	4.2



12. Seasonal Adjustment in CPI

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

The changes in consumer prices are normally reported in terms of year-on-year and month-on-month basis. Seasonal adjustment is particularly useful for analyzing month-on-month changes. The monthly data series of Consumer Price Indices (National CPI, Urban CPI and Rural CPI) from July 2008 to December 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

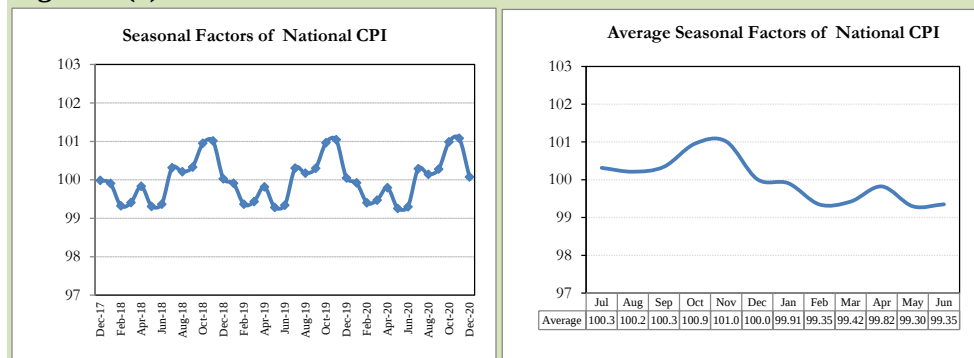


Fig. 12.1 (b) Seasonal Factors of Urban CPI

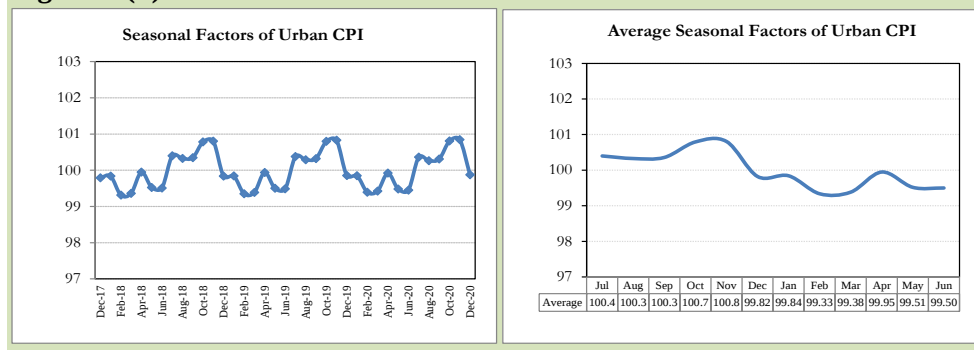
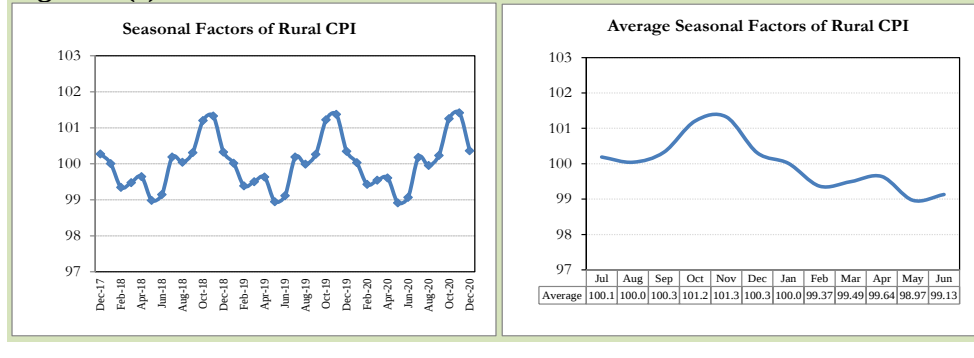


Fig. 12.1 (c) Seasonal Factors of Rural CPI



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.

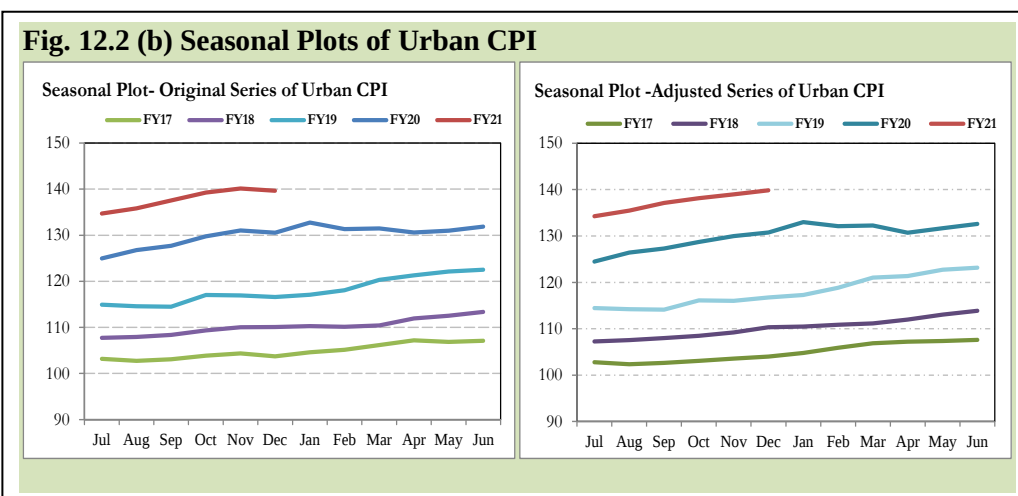
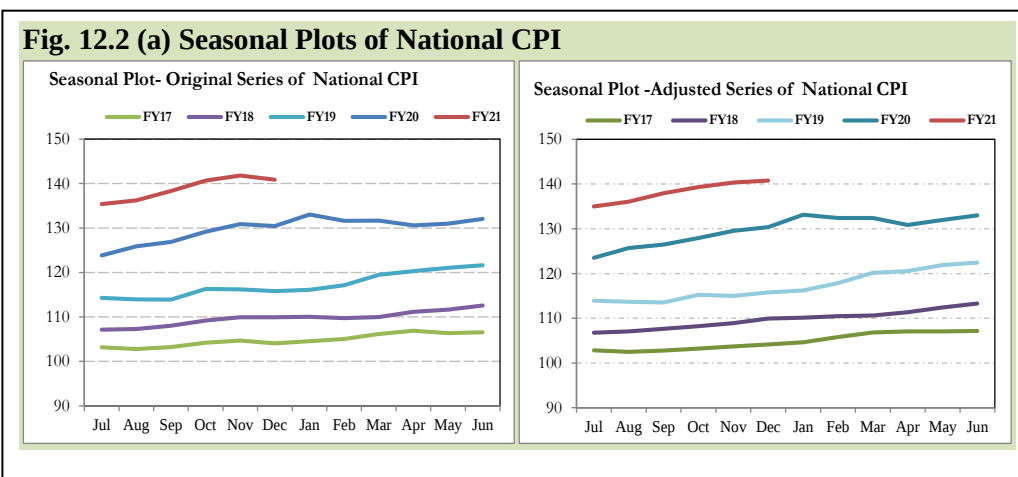
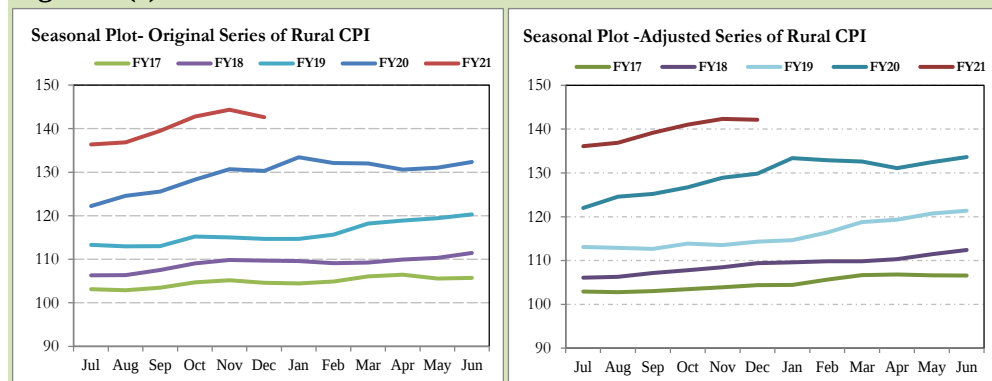


Fig. 12.2 (c) Seasonal Plots of Rural CPI



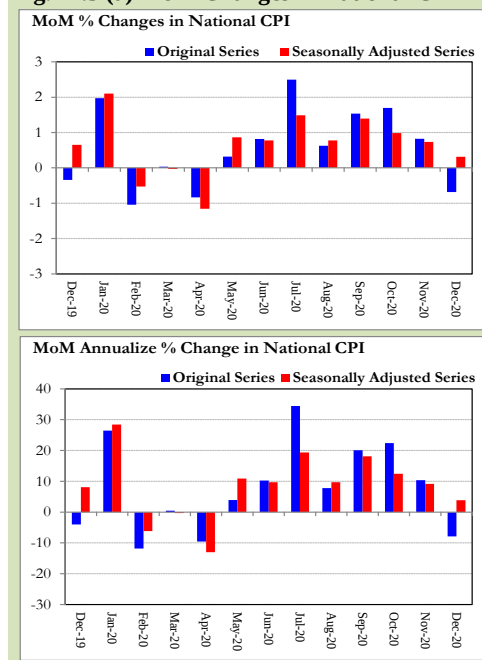
Seasonally adjusted National CPI for December 2020 stood at 140.75 against 140.86 in original series showing a decrease of 0.11 on account of adjustment of upward seasonality in December 2020.

Seasonally adjusted Urban CPI for December 2020 stood at 139.84 against 139.67 in original series showing an increase of 0.17 on account of adjustment of downward seasonality in December 2020.

Seasonally adjusted Rural CPI for December 2020 stood at 142.13 against 142.65 in original series showing a decrease of 0.52 on account of adjustment of upward seasonality in December 2020.

Month-on-month change of seasonally adjusted National CPI series stood at 0.31% reflecting an increase during

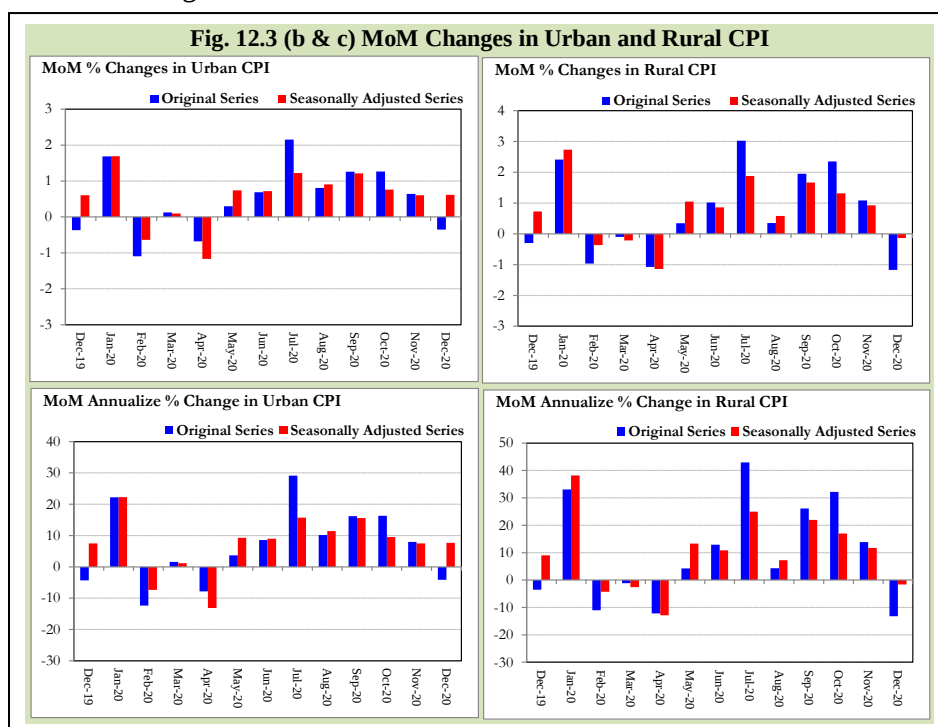
Fig. 12.3 (a) MoM Changes in National CPI



December 2020 over previous month and a decrease of 0.68% in original series.

Month-on-month change of seasonally adjusted Urban CPI series stood at 0.62% reflecting an increase during December 2020 over previous month and a decrease of 0.35% in original series.

Month-on-month change of seasonally adjusted Rural CPI series stood at 0.14% reflecting a decrease during December 2020 over previous month and a decrease of 1.17% 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 December 2020 (corresponding to the seasonally adjusted month-on-month rate) is 3.84 percent.

Annexure A

Table A1: National CPI Inflation by Groups (YoY and MoM in percent)							
	Weights	MoM change			YoY change		
		Dec-19	Nov-20	Dec-20	Dec-19	Nov-20	Dec-20
Food & Non-Alcoholic Beverages	34.6	-1.7	1.9	-3.2	19.7	15.1	13.3
Alcoholic Beverages & Tobacco	1.0	0.0	0.3	0.2	18.3	5.9	6.0
Clothing & Footwear	8.6	0.5	1.4	0.7	9.7	9.4	9.6
Housing, Water, Elec, Gas & other Fuels	23.6	0.4	-0.1	1.2	8.5	2.6	3.4
Furnishing & Household Equip. Maintenance	4.1	0.5	0.5	0.5	10.4	7.7	7.7
Health	2.8	0.4	0.6	0.9	11.3	7.6	8.1
Transport	5.9	1.0	-2.2	1.6	14.7	-4.1	-3.5
Communication	2.2	0.1	0.3	0.0	4.0	0.6	0.5
Recreation & Culture	1.6	0.1	0.4	0.4	6.8	4.2	4.4
Education	3.8	0.0	0.0	0.0	6.0	1.3	1.2
Restaurants & Hotels	6.9	0.1	1.0	0.6	6.1	9.3	9.9
Miscellaneous	4.9	0.2	0.7	0.2	10.7	11.9	11.9
Overall National CPI	100.0	-0.3	0.8	-0.7	12.6	8.3	8.0

Table A2: Urban CPI Inflation by Groups (YoY and MoM in percent)							
	Weights	MoM change			YoY change		
		Dec-19	Nov-20	Dec-20	Dec-19	Nov-20	Dec-20
I. Food Group	36.8	-1.7	1.6	-2.1	16.7	13.0	12.6
Food & Non-Alcoholic Beverages	30.4	-2.1	1.7	-2.6	18.8	13.7	13.1
Alcoholic Beverages & Tobacco	0.9	0.0	0.5	0.0	16.6	6.7	6.6
Restaurant & Hotels (Food Component)	5.5	0.0	0.9	0.9	6.2	9.7	10.6
II. Non-Food Group	63.2	0.4	0.1	0.7	9.5	3.4	3.8
Clothing & Footwear	8.0	0.7	1.9	0.5	9.6	9.1	8.8
Housing, Water, Elec, Gas & other Fuels	27.0	0.3	-0.3	0.9	9.4	2.2	2.8
Furnishing & Household Equip. Maintenance	4.1	0.7	0.6	0.5	11.0	6.4	6.1
Health	2.3	0.5	0.2	0.9	10.9	7.1	7.4
Transport	6.1	1.0	-2.4	1.9	15.6	-4.5	-3.6
Communication	2.4	0.2	0.4	0.1	5.3	0.7	0.6
Recreation & Culture	1.7	0.1	0.4	0.2	6.4	3.2	3.3
Education	4.9	0.0	0.0	0.0	6.3	1.1	1.0
Restaurants & Hotels (Non-food Component)	1.9	0.0	1.1	0.1	1.3	8.0	8.1
Miscellaneous	4.8	0.2	0.9	0.4	10.1	10.4	10.6
Overall Urban CPI	100.0	-0.4	0.6	-0.3	12.0	7.0	7.0

Table A3: Rural CPI Inflation by Groups (YoY and MoM in percent)							
	Weights	MoM change			YoY change		
		Dec-19	Nov-20	Dec-20	Dec-19	Nov-20	Dec-20
I. Food Group	45.9	-1.1	2.0	-3.4	19.7	16.1	13.4
Food & Non-Alcoholic Beverages	40.9	-1.2	2.1	-3.9	20.8	16.7	13.5
Alcoholic Beverages & Tobacco	1.3	0.0	0.0	0.4	20.2	5.0	5.4
Restaurant & Hotels (Food Component)	3.8	0.3	1.2	0.8	8.1	14.1	14.6
II. Non-Food Group	54.1	0.4	0.2	1.0	8.8	5.5	6.1
Clothing & Footwear	9.5	0.2	0.9	0.9	9.9	9.9	10.6
Housing, Water, Elec, Gas & other Fuels	18.5	0.5	0.3	1.7	6.6	3.6	4.9
Furnishing & Household Equip. Maintenance etc.	4.1	0.3	0.4	0.6	9.6	9.6	10.0
Health	3.5	0.4	1.0	0.9	11.7	8.2	8.8
Transport	5.6	0.9	-2.0	1.2	13.1	-3.5	-3.3
Communication	2.0	0.0	0.2	0.0	1.7	0.4	0.4
Recreation & Culture	1.4	0.2	0.3	0.8	7.5	6.0	6.6
Education	2.1	0.0	0.0	0.0	5.0	2.1	2.0
Restaurants & Hotels (Non-food Component)	2.4	0.0	0.6	0.0	8.6	1.4	1.4
Miscellaneous	5.0	0.2	0.4	-0.1	11.6	14.1	13.8
Overall Rural CPI	100.0	-0.3	1.1	-1.2	13.6	10.5	9.5

Table A4: Top Ten Contributors to Urban CPI Inflation (YoY) in December 2020					
Items/ Contributors		Weights	YoY Change		Weighted Contribution (%)
			Dec-19	Dec-20	
A. Ranked by Weighted Contribution					
1	House Rent	19.26	5.02	4.67	12.59
2	Milk Fresh	7.11	8.74	11.70	10.99
3	Condiments And Spices	1.33	17.63	47.45	10.09
4	Chicken	1.36	-17.17	67.35	9.98
5	Readymade Food	5.52	6.22	10.64	8.07
6	Wheat Flour	3.01	15.80	13.45	5.27
7	Eggs	0.51	2.02	64.39	4.92
8	Cotton Cloth	2.22	12.49	12.51	3.87
9	Potatoes	0.45	78.23	38.33	3.54
10	Meat	2.04	13.45	10.66	3.36
Total		42.81			72.68
B. Ranked by Percentage Change					
1	Chicken	1.36	-17.17	67.35	9.98
2	Eggs	0.51	2.02	64.39	4.92
3	Condiments And Spices	1.33	17.63	47.45	10.09
4	Potatoes	0.45	78.23	38.33	3.54
5	Beans	0.04	10.84	29.85	0.16
6	Butter	0.09	31.15	27.80	0.42
7	Wheat Products	0.09	15.90	26.05	0.32
8	Wheat	0.61	21.68	24.15	2.04
9	Pulse Moong	0.17	53.24	23.09	0.51
10	Water Supply	0.53	10.46	20.01	1.52
Total		5.19			33.51
C. Ranked by Weights					
1	House Rent	19.26	5.02	4.67	12.59
2	Milk Fresh	7.11	8.74	11.70	10.99
3	Readymade Food	5.52	6.22	10.64	8.07
4	Education	4.88	6.30	1.03	0.80
5	Electricity Charges	4.56	17.57	-5.96	-3.81
6	Wheat Flour	3.01	15.80	13.45	5.27
7	Appliances/Articles/Products For P	2.98	8.74	7.48	3.07
8	Motor Fuel	2.91	17.95	-8.76	-4.44
9	Cotton Cloth	2.22	12.49	12.51	3.87
10	Meat	2.04	13.45	10.66	3.36
Total		54.48			39.77
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 December 2020.					

Table A5: Top Ten Contributors to Urban CPI Inflation (MoM) in December 2020					
Items/ Contributors		Weights	MoM Change		Weighted Contribution (%)
			Nov-20	Dec-20	
A. Ranked by Weighted Contribution					
1	Fresh Vegetables	1.53	5.63	-19.18	107.77
2	Sugar	1.11	0.91	-18.07	65.35
3	Onions	0.59	5.81	-29.12	63.95
4	Tomatoes	0.35	15.68	-27.12	63.90
5	Potatoes	0.45	8.79	-13.12	35.83
6	Wheat	0.61	-4.10	-4.00	8.13
7	Fresh Fruits	1.44	-0.63	-1.85	5.69
8	Personal Effects N.E.C.	0.94	0.07	-0.66	2.47
9	Wheat Flour	3.01	-4.83	-0.10	0.86
10	Pulse Gram	0.17	-1.94	-1.23	0.49
		10.20			354.43
B. Ranked by Percentage Change					
1	Eggs	0.51	2.83	15.67	-31.60
2	Condiments And Spices	1.33	2.60	6.88	-37.52
3	Butter	0.09	2.61	6.75	-2.29
4	Electricity Charges	4.56	-3.20	5.96	-62.76
5	Transport Services	1.75	-6.41	5.07	-21.96
6	Dry Fruits	0.33	4.38	4.57	-4.23
7	Major Tools & Equipments	0.01	0.41	3.54	-0.08
8	Hosiery	0.41	0.28	3.43	-3.78
9	Solid Fuel	0.42	1.04	3.33	-3.33
10	Vegetable Ghee	1.03	0.18	3.07	-9.65
		10.44			-177.19
C. Ranked by Weights					
1	House Rent	19.26	0.00	0.00	0.00
2	Milk Fresh	7.11	0.26	0.36	-6.96
3	Readymade Food	5.52	0.88	0.88	-13.64
4	Education	4.88	0.00	0.00	0.00
5	Electricity Charges	4.56	-3.20	5.96	-62.76
6	Wheat Flour	3.01	-4.83	-0.10	0.86
7	Appliances/Articles/Products For P	2.98	1.09	0.81	-6.57
8	Motor Fuel	2.91	-1.76	0.68	-5.82
9	Cotton Cloth	2.22	3.75	0.06	-0.36
10	Meat	2.04	-0.01	0.45	-2.92
		54.48			-98.17
Note: Weighted contribution is estimated by multiplying the weights by the price change of an item; this is then reported as a share in MoM change in Urban CPI, which is -0.3 percent in December 2020.					

Table A6: Top and Bottom Fifteen Contributors to Urban CPI Inflation (YoY) in December 2020					
Top 15 Contributors			YoY Change		Weighted Contribution (%)
Items/ Contributors	Weights	Dec-19	Dec-20		
Ranked by Weighted Contribution					
1	House Rent	19.26	5.02	4.67	12.59
2	Milk Fresh	7.11	8.74	11.70	10.99
3	Condiments And Spices	1.33	17.63	47.45	10.09
4	Chicken	1.36	-17.17	67.35	9.98
5	Readymade Food	5.52	6.22	10.64	8.07
6	Wheat Flour	3.01	15.80	13.45	5.27
7	Eggs	0.51	2.02	64.39	4.92
8	Cotton Cloth	2.22	12.49	12.51	3.87
9	Potatoes	0.45	78.23	38.33	3.54
10	Meat	2.04	13.45	10.66	3.36
11	Personal Effects N.E.C.	0.94	16.33	19.62	3.30
12	Appliances/Articles/Products For P	2.98	8.74	7.48	3.07
13	Vegetable Ghee	1.03	16.39	17.25	2.57
14	Sugar	1.11	27.81	15.32	2.12
15	Marriage Hall Charges	1.75	1.41	8.64	2.10
Total		50.63			85.83
Bottom 15 Contributors					
1	Motor Fuel	2.91	17.95	-8.76	-4.44
2	Electricity Charges	4.56	17.57	-5.96	-3.81
3	Onions	0.59	169.45	-24.38	-2.70
4	Fresh Vegetables	1.53	83.59	-8.05	-2.14
5	Fresh Fruits	1.44	9.12	-7.50	-1.32
6	Tomatoes	0.35	321.04	-11.16	-1.16
7	Fish	0.39	13.64	-8.08	-0.43
8	Transport Services	1.75	11.89	-0.92	-0.23
9	Liquefied Hydrocarbons	0.51	-2.83	-2.54	-0.21
10	Newspapers	0.07	3.88	0.00	0.00
11	Motor Vehicle Tax	0.05	9.59	0.00	0.00
12	Gas Charges	1.08	54.84	0.00	0.00
13	Postal Services	0.02	0.00	0.23	0.00
14	Therapeutic Appliances And	0.01	0.29	7.45	0.00
15	Electrical Appliances For Personal	0.05	2.29	1.62	0.01
Total		15.28			-16.43

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

<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution (%)	
Items/ Contributors	Weights	Nov-20	Dec-20		
Ranked by Weighted Contribution					
1	Fresh Vegetables	1.53	5.63	-19.18	107.77
2	Sugar	1.11	0.91	-18.07	65.35
3	Onions	0.59	5.81	-29.12	63.95
4	Tomatoes	0.35	15.68	-27.12	63.90
5	Potatoes	0.45	8.79	-13.12	35.83
6	Wheat	0.61	-4.10	-4.00	8.13
7	Fresh Fruits	1.44	-0.63	-1.85	5.69
8	Personal Effects N.E.C.	0.94	0.07	-0.66	2.47
9	Wheat Flour	3.01	-4.83	-0.10	0.86
10	Pulse Gram	0.17	-1.94	-1.23	0.49
11	Rice	1.18	-0.70	-0.14	0.48
12	Cigarettes	0.72	0.01	-0.17	0.35
13	Gur	0.04	-0.86	-2.85	0.32
14	Pulse Moong	0.17	-3.54	-0.57	0.29
15	Besan	0.08	0.30	-1.33	0.28
Total		12.39			356.15
<u>Bottom 15 Contributors</u>					
1	Electricity Charges	4.56	-3.20	5.96	-62.76
2	Condiments And Spices	1.33	2.60	6.88	-37.52
3	Eggs	0.51	2.83	15.67	-31.60
4	Transport Services	1.75	-6.41	5.07	-21.96
5	Readymade Food	5.52	0.88	0.88	-13.64
6	Vegetable Ghee	1.03	0.18	3.07	-9.65
7	Cooking Oil	1.10	0.01	2.20	-7.08
8	Milk Fresh	7.11	0.26	0.36	-6.96
9	Appliances/Articles/Products For P	2.98	1.09	0.81	-6.57
10	Motor Fuel	2.91	-1.76	0.68	-5.82
11	Chicken	1.36	21.36	1.21	-5.51
12	Dry Fruits	0.33	4.38	4.57	-4.23
13	Drugs And Medicines	1.07	0.43	1.29	-4.07
14	Hosiery	0.41	0.28	3.43	-3.78
15	Washing Soap/Detergents/Match Box	1.41	0.49	0.89	-3.43
Total		33.38			-224.58

Table A8: Top and Bottom Fifteen Contributors to MoM Urban CPI Food Inflation in December 2020					
Top 15 Contributors			MoM Change		Weighted Contribution (%)
Items/ Contributors	Weights	Nov-20	Dec-20		
Ranked by Weighted Contribution					
1	Fresh Vegetables	1.53	5.63	-19.18	107.77
2	Sugar	1.11	0.91	-18.07	65.35
3	Onions	0.59	5.81	-29.12	63.95
4	Tomatoes	0.35	15.68	-27.12	63.90
5	Potatoes	0.45	8.79	-13.12	35.83
6	Wheat	0.61	-4.10	-4.00	8.13
7	Fresh Fruits	1.44	-0.63	-1.85	5.69
8	Wheat Flour	3.01	-4.83	-0.10	0.86
9	Pulse Gram	0.17	-1.94	-1.23	0.49
10	Rice	1.18	-0.70	-0.14	0.48
11	Cigarettes	0.72	0.01	-0.17	0.35
12	Gur	0.04	-0.86	-2.85	0.32
13	Pulse Moong	0.17	-3.54	-0.57	0.29
14	Besan	0.08	0.30	-1.33	0.28
15	Pulse Masoor	0.16	-0.87	-0.45	0.16
Total		11.60			353.84
Bottom 15 Contributors					
1	Condiments And Spices	1.33	2.60	6.88	-37.52
2	Eggs	0.51	2.83	15.67	-31.60
3	Readymade Food	5.52	0.88	0.88	-13.64
4	Vegetable Ghee	1.03	0.18	3.07	-9.65
5	Cooking Oil	1.10	0.01	2.20	-7.08
6	Milk Fresh	7.11	0.26	0.36	-6.96
7	Chicken	1.36	21.36	1.21	-5.51
8	Dry Fruits	0.33	4.38	4.57	-4.23
9	Meat	2.04	-0.01	0.45	-2.92
10	Butter	0.09	2.61	6.75	-2.29
11	Fish	0.39	1.89	1.51	-1.36
12	Sweet Meat	0.35	0.22	0.64	-0.69
13	Marriage Hall Charges	1.75	1.14	0.12	-0.57
14	Bakery And Confectionary	0.48	1.81	0.23	-0.31
15	Pan Prepared	0.14	2.40	0.52	-0.31
Total		23.54			-124.62

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

<u>Top 15 Contributors</u>		Weights	<u>MoM Change</u>		Weighted Contribution (%)
Items/ Contributors			Nov-20	Dec-20	
Ranked by Weighted Contribution					
1	Electrical Appliances For Personal	0.94	0.07	-0.66	2.47
2	Communication Services	1.88	0.56	0.00	0.00
3	Dental Services	0.02	0.12	0.00	0.00
4	House Rent	19.26	0.00	0.00	0.00
5	Education	4.88	0.00	0.00	0.00
6	Postal Services	0.02	0.00	0.00	0.00
7	Gas Charges	1.08	0.00	0.00	0.00
8	Newspapers	0.07	0.00	0.00	0.00
9	Motor Vehicle Tax	0.05	0.00	0.00	0.00
10	Appliances/Articles/Products For P	0.00	0.00	0.00	0.00
11	Personal Effects N.E.C.	0.00	0.00	0.00	0.00
12	Therapeutic Appliances And	0.01	0.24	0.03	0.00
13	Accommodation Services	0.05	0.04	0.01	0.00
14	Carpets	0.03	0.02	0.11	-0.01
15	Tailoring	1.07	0.18	0.01	-0.02
Total		29.36			2.44
<u>Bottom 15 Contributors</u>					
1	Electricity Charges	4.56	-3.20	5.96	-62.76
2	Transport Services	1.75	-6.41	5.07	-21.96
3	Personal Grooming Services	2.98	1.09	0.81	-6.57
4	Motor Fuel	2.91	-1.76	0.68	-5.82
5	Drugs And Medicines	1.07	0.43	1.29	-4.07
6	Hosiery	0.41	0.28	3.43	-3.78
7	Washing Soap/Detergents/Match Box	1.41	0.49	0.89	-3.43
8	Solid Fuel	0.42	1.04	3.33	-3.33
9	Woolen Cloth	0.84	2.33	1.39	-3.19
10	Mechanical Services	0.43	0.19	1.59	-1.86
11	Motor Vehicles	0.81	0.90	0.65	-1.62
12	Water Supply	0.53	0.13	0.78	-1.31
13	Woolen Readymade Garments	0.43	8.85	1.08	-1.31
14	Doctor (Mbbs) Clinic Fee	0.40	0.00	0.82	-1.25
15	Motor Vehicle Accessories	0.19	0.63	2.06	-1.10
Total		19.14			-123.37

Table A10: Top Ten Contributors to Rural CPI Inflation (YoY) in December 2020					
Items/ Contributors		Weights	YoY Change		Weighted Contribution (%)
			Dec-19	Dec-20	
A. Ranked by Weighted Contribution					
1	Wheat	3.47	22.22	28.11	10.07
2	Milk Fresh	10.38	7.43	8.53	8.69
3	Condiments And Spices	1.49	22.06	49.63	8.26
4	Chicken	1.46	-19.00	63.25	7.83
5	Solid Fuel	4.48	6.02	14.03	6.14
6	Readymade Food	3.80	8.06	14.58	5.88
7	Potatoes	0.74	68.04	46.96	5.48
8	Wheat Flour	3.43	18.28	15.79	5.28
9	Vegetable Ghee	2.38	18.38	18.30	4.94
10	House Rent	8.61	4.10	5.20	4.58
Total		40.25			67.16
B. Ranked by Percentage Change					
1	Eggs	0.57	-1.33	65.35	3.93
2	Chicken	1.46	-19.00	63.25	7.83
3	Condiments And Spices	1.49	22.06	49.63	8.26
4	Potatoes	0.74	68.04	46.96	5.48
5	Water Supply	0.06	30.55	35.99	0.30
6	Wheat	3.47	22.22	28.11	10.07
7	Beans	0.09	17.06	21.91	0.21
8	Personal Effects N.E.C.	1.21	20.67	21.89	3.27
9	Wheat Products	0.11	10.16	21.27	0.22
10	Hosiery	0.43	15.57	20.80	1.04
Total		9.64			40.64
C. Ranked by Weights					
1	Milk Fresh	10.38	7.43	8.53	8.69
2	House Rent	8.61	4.10	5.20	4.58
3	Solid Fuel	4.48	6.02	14.03	6.14
4	Readymade Food	3.80	8.06	14.58	5.88
5	Wheat	3.47	22.22	28.11	10.07
6	Electricity Charges	3.44	17.57	-5.96	-2.12
7	Wheat Flour	3.43	18.28	15.79	5.28
8	Cotton Cloth	2.84	13.55	11.33	3.72
9	Motor Fuels	2.49	18.23	-9.18	-2.91
10	Vegetable Ghee	2.38	18.38	18.30	4.94
Total		45.32			44.27
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 9.5 percent in December 2020.					

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

Items/ Contributors		Weights	MoM Change		Weighted Contribution (%)
			Nov-20	Dec-20	
A. Ranked by Weighted Contribution					
1	Sugar	2.03	5.39	-23.04	46.80
2	Fresh Vegetables	2.09	0.62	-18.15	40.02
3	Onions	0.90	6.56	-31.45	29.69
4	Potatoes	0.74	15.80	-16.61	25.02
5	Tomatoes	0.51	9.29	-19.82	18.59
6	Wheat	3.47	1.18	-3.91	13.67
7	Wheat Flour	3.43	-1.92	-3.53	10.35
8	Personal Effects N.E.C.	1.21	-0.43	-1.29	1.75
9	Fresh Fruits	1.45	-2.21	-1.49	1.35
10	Liquefied Hydrocarbons	1.00	8.74	-0.74	0.58
		16.83			187.82
B. Ranked by Percentage Change					
1	Eggs	0.57	5.23	14.08	-8.99
2	Electricity Charges	3.44	-3.20	5.96	-13.75
3	Condiments And Spices	1.49	3.05	4.19	-7.34
4	Woolen Readymade Garments	0.54	3.49	4.14	-1.78
5	Cooking Oil	0.60	1.27	3.71	-2.06
6	Chicken	1.46	20.76	3.21	-4.60
7	Vegetable Ghee	2.38	0.67	3.13	-7.10
8	Transport Services	1.80	-3.45	3.03	-4.05
9	Solid Fuel	4.48	1.39	2.97	-10.54
10	Mustard Oil	0.01	0.73	2.63	-0.03
		16.77			-60.23
C. Ranked by Weights					
1	Milk Fresh	10.38	0.17	0.69	-5.53
2	House Rent	8.61	0.00	0.00	0.00
3	Solid Fuel	4.48	1.39	2.97	-10.54
4	Readymade Food	3.80	1.24	0.79	-2.65
5	Wheat	3.47	1.18	-3.91	13.67
6	Electricity Charges	3.44	-3.20	5.96	-13.75
7	Wheat Flour	3.43	-1.92	-3.53	10.35
8	Cotton Cloth	2.84	0.86	0.04	-0.12
9	Motor Fuels	2.49	-2.03	0.61	-1.28
10	Vegetable Ghee	2.38	0.67	3.13	-7.10
		45.32			-16.96
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 -1.2 percent in December 2020.					

Table A12: Top and Bottom Fifteen Contributors to Rural CPI Inflation (YoY) in December 2020					
Top 15 Contributors		YoY Change		Weighted Contribution (%)	
Items/ Contributors	Weights	Dec-19	Dec-20		
Ranked by Weighted Contribution					
1	Wheat	3.47	22.22	28.11	10.07
2	Milk Fresh	10.38	7.43	8.53	8.69
3	Condiments And Spices	1.49	22.06	49.63	8.26
4	Chicken	1.46	-19.00	63.25	7.83
5	Solid Fuel	4.48	6.02	14.03	6.14
6	Readymade Food	3.80	8.06	14.58	5.88
7	Potatoes	0.74	68.04	46.96	5.48
8	Wheat Flour	3.43	18.28	15.79	5.28
9	Vegetable Ghee	2.38	18.38	18.30	4.94
10	House Rent	8.61	4.10	5.20	4.58
11	Eggs	0.57	-1.33	65.35	3.93
12	Cotton Cloth	2.84	13.55	11.33	3.72
13	Personal Effects N.E.C.	1.21	20.67	21.89	3.27
14	Rice	1.55	10.03	15.65	3.09
15	Sugar	2.03	28.79	12.80	2.42
Total		48.44			83.59
Bottom 15 Contributors					
1	Onions	0.90	174.83	-27.60	-3.37
2	Motor Fuels	2.49	18.23	-9.18	-2.91
3	Fresh Vegetables	2.09	80.19	-10.35	-2.85
4	Electricity Charges	3.44	17.57	-5.96	-2.12
5	Tomatoes	0.51	342.53	-12.86	-1.52
6	Fresh Fruits	1.45	21.54	-10.36	-1.40
7	Liquefied Hydrocarbons	1.00	-2.91	-3.69	-0.40
8	Fish	0.26	14.06	-2.43	-0.07
9	Gram Whole	0.11	3.09	-4.23	-0.05
10	Motor Vehicle Tax	0.02	17.87	0.00	0.00
11	Postal Services	0.01	31.47	0.00	0.00
12	Accommodation Services	0.14	0.00	0.03	0.00
13	Garbage Collection	0.01	1.15	7.64	0.01
14	Newspapers	0.02	0.00	2.40	0.01
15	Dessert Preparation	0.01	6.44	9.18	0.01
Total		12.47			-14.66

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

<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution (%)	
Items/ Contributors	Weights	Nov-20	Dec-20		
Ranked by Weighted Contribution					
1	Sugar	2.03	5.39	-23.04	46.80
2	Fresh Vegetables	2.09	0.62	-18.15	40.02
3	Onions	0.90	6.56	-31.45	29.69
4	Potatoes	0.74	15.80	-16.61	25.02
5	Tomatoes	0.51	9.29	-19.82	18.59
6	Wheat	3.47	1.18	-3.91	13.67
7	Wheat Flour	3.43	-1.92	-3.53	10.35
8	Personal Effects N.E.C.	1.21	-0.43	-1.29	1.75
9	Fresh Fruits	1.45	-2.21	-1.49	1.35
10	Liquefied Hydrocarbons	1.00	8.74	-0.74	0.58
11	Gur	0.15	-5.06	-1.47	0.19
12	Pulse Moong	0.25	-2.26	-0.70	0.16
13	Pulse Masoor	0.21	0.11	-0.38	0.05
14	Besan	0.07	-2.28	-0.72	0.04
15	Gram Whole	0.11	0.41	-0.34	0.03
Total		17.63			188.28
Bottom 15 Contributors					
1	Electricity Charges	3.44	-3.20	5.96	-13.75
2	Solid Fuel	4.48	1.39	2.97	-10.54
3	Eggs	0.57	5.23	14.08	-8.99
4	Condiments And Spices	1.49	3.05	4.19	-7.34
5	Vegetable Ghee	2.38	0.67	3.13	-7.10
6	Milk Fresh	10.38	0.17	0.69	-5.53
7	Chicken	1.46	20.76	3.21	-4.60
8	Transport Services	1.80	-3.45	3.03	-4.05
9	Footwear	1.92	0.16	2.40	-3.62
10	Readymade Food	3.80	1.24	0.79	-2.65
11	Cooking Oil	0.60	1.27	3.71	-2.06
12	Drugs And Medicines	1.58	0.98	1.47	-2.02
13	Woolen Readymade Garments	0.54	3.49	4.14	-1.78
14	Meat	1.71	0.26	1.06	-1.66
15	Motor Fuels	2.49	-2.03	0.61	-1.28
Total		38.64			-76.97

Table A14: Top and Bottom Fifteen Contributors to MoM Rural CPI Food Inflation in December 2020					
Top 15 Contributors		MoM Change		Weighted Contribution (%)	
Items/ Contributors	Weights	Nov-20	Dec-20		
Ranked by Weighted Contribution					
1	Sugar	2.03	5.39	-23.04	46.80
2	Fresh Vegetables	2.09	0.62	-18.15	40.02
3	Onions	0.90	6.56	-31.45	29.69
4	Potatoes	0.74	15.80	-16.61	25.02
5	Tomatoes	0.51	9.29	-19.82	18.59
6	Wheat	3.47	1.18	-3.91	13.67
7	Wheat Flour	3.43	-1.92	-3.53	10.35
8	Fresh Fruits	1.45	-2.21	-1.49	1.35
9	Gur	0.15	-5.06	-1.47	0.19
10	Pulse Moong	0.25	-2.26	-0.70	0.16
11	Pulse Masoor	0.21	0.11	-0.38	0.05
12	Besan	0.07	-2.28	-0.72	0.04
13	Gram Whole	0.11	0.41	-0.34	0.03
14	Wheat Products	0.11	2.09	-0.12	0.01
15	Marriage Hall Charges	2.25	0.63	0.00	0.00
Total		17.78			185.96
Bottom 15 Contributors					
1	Eggs	0.57	5.23	14.08	-8.99
2	Condiments And Spices	1.49	3.05	4.19	-7.34
3	Vegetable Ghee	2.38	0.67	3.13	-7.10
4	Milk Fresh	10.38	0.17	0.69	-5.53
5	Chicken	1.46	20.76	3.21	-4.60
6	Readymade Food	3.80	1.24	0.79	-2.65
7	Cooking Oil	0.60	1.27	3.71	-2.06
8	Meat	1.71	0.26	1.06	-1.66
9	Fish	0.26	-1.12	2.47	-0.47
10	Butter	0.33	1.46	1.62	-0.44
11	Dry Fruits	0.25	2.93	1.95	-0.43
12	Cigarettes	1.24	-0.01	0.37	-0.36
13	Bakery And Confectionary	0.37	1.34	1.12	-0.34
14	Rice	1.55	-0.83	0.11	-0.18
15	Pulse Mash	0.15	-1.82	2.01	-0.18
Total		26.55			-42.33

Table A15: Top and Bottom Fifteen Contributors to MoM Rural CPI Non-food Inflation in December 2020					
<u>Top 15 Contributors</u>		<u>MoM Change</u>		Weighted Contribution (%)	
Items/ Contributors	Weights	Nov-20	Dec-20		
Ranked by Weighted Contribution					
1	Personal Effects N.E.C.	1.21	-0.43	-1.29	1.75
2	Liquefied Hydrocarbons	1.00	8.74	-0.74	0.58
3	Hospitals Services	1.01	0.43	0.00	0.00
4	Medical Tests	0.40	0.64	0.00	0.00
5	Communication Services	1.65	0.16	0.00	0.00
6	Water Supply	0.06	0.61	0.00	0.00
7	Communication Apparatus	0.34	0.14	0.00	0.00
8	Construction Wage Rates	0.25	0.12	0.00	0.00
9	Motor Vehicles	0.73	0.05	0.00	0.00
10	Major Tools And Equipments	0.03	1.10	0.00	0.00
11	House Rent	8.61	0.00	0.00	0.00
12	Education	2.13	0.00	0.00	0.00
13	Mechanical Services	0.36	0.00	0.00	0.00
14	Newspapers	0.02	0.00	0.00	0.00
15	Cleaning And Laundering	0.02	0.00	0.00	0.00
Total		17.83			2.33
<u>Bottom 15 Contributors</u>					
1	Electricity Charges	3.44	-3.20	5.96	-13.75
2	Solid Fuel	4.48	1.39	2.97	-10.54
3	Transport Services	1.80	-3.45	3.03	-4.05
4	Footwear	1.92	0.16	2.40	-3.62
5	Drugs And Medicines	1.58	0.98	1.47	-2.02
6	Woolen Readymade Garments	0.54	3.49	4.14	-1.78
7	Motor Fuels	2.49	-2.03	0.61	-1.28
8	Appliances/Articles/Products For	2.27	0.90	0.74	-1.28
9	Construction Input Items	0.63	1.69	2.52	-1.20
10	Hosiery	0.43	0.61	2.03	-0.88
11	Household Equipments	1.28	0.04	0.78	-0.84
12	Washing Soaps, Detergents And	1.70	0.63	0.60	-0.78
13	Doctor (Mbbs) Clinic Fee	0.51	2.35	1.39	-0.75
14	Stationery	0.37	0.44	2.05	-0.63
15	Readymade Garments	1.13	0.59	0.46	-0.42
Total		24.58			-43.83

Table A16: Distribution of Price Changes (YoY) - Selected Urban CPI Items: December 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	Cucumber (Kheera), Onions, Apple (Average Quality), Cardamom Large (Loose) (Average Quality).	Rice Basmati (Superior Quality), Pulse Gram, Pepper Black National 50 Gm Packet.	Sweetmeat (Mixed Mithai), Ice Cream Walls Cup (Large Size), Nimko (Loose, Average Quality).	Ginger (Adrak), Chilies Powder National 200 Gm Packet, Chicken Farm Broiler (Live), Eggs Farm, Cardamom Small (Average Quality), Potatoes.
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.	School Uniform Girls (Kameez & Shalwar) 24"/26", Full Pant Boy Length 24"/26", Chaddar (Wash-N-Wear) (2X2.5 Meter), Socks Nylon Local (Average Quality).	Shoe Repair Full Sole, Washing Charges Pant And Shirt Both, Children Shoes Power Lite Bata, Underwear Medium Size (Average Quality), Linen.	Gents Shoes Servis, Pullover Gents Oxford/Bonanza, Heavy Weight Suiting Lawrance Pur (Average Quality), Long Cloth 57" Gul Ahmed/Al Karam, Georgette (Average Quality), Pullover Ladies Oxford/Bonanza, Washing Charges Shalwar Kameez.
Housing, Water, Elect, Gas & other Fuels	Electricity Charges 51-100 Units, Electricity Charges 101-300 Units, Electricity Charges 301-700 Units, Electricity Charges Combined.	House Rent Combined, Painter Wage Rate, Synthetic Enamel Ici Balti 3.64 Litre, Iron Bars (M.S. Bar) 1/2 " 40 Grade, Sand (Black Pit), Plumber Wage Rate.	Firewood Whole, Mason Wage Rate, Electrician Charges, Unskilled Labor Wage Rate.	Water Charges Per House, Bricks New 1st Class, Charges For Refuse/Waste Collection.
Furnishing & Household Equip. Maintenance etc		Lota Plastic Medium Size (Average Quality), Plain Carpet, Readymade Quilt (3 Kg), Electric Iron Dry (National/West Point).	Chair Sheesham Wood With Arm, Bed Sheet Single (Superior Quality), Split Air Conditioner Orient/Lg/Dawlance 1.5 Ton.	Boot Polish Cherry/Kiwi 42 Ml, Central Table Set With Glass Top, Mattress Foam Single Bed Molty/Diamond (4" Thick) , Tube Light Philips 40 Watt, Harpic 500 Ml Bottle, Sofa Set Five Seater.
Health		Blood Test (Cp) Charges, Panadol Tablets Plain, Phenergan Syrup 120 Ml Bottle, Dental Extraction Fee.	Electronic Bp Checking Apparatus, Johar Joshanda Instant (Sachet) Packet, Flagyl Tablets 400 Mg.	Doctor (Mbbs) Clinic Fee, Dettol Medium Bottle, Septran Tablets, Urine Test (Dr) Charges, Lederplex Syrup Bottle, Ventolin Tablets 2 Mg, Glaxose-D 400 Gm Packet.
Transport	Air Fare Economy Class Per Kilometer (National Average), Hi-Speed Diesel, Petrol Super, Cng.	Motorcycle United/Unique 70 Cc, Mobil Oil (Havoline 20W-50), Motorcycle Honda Cd 70, Tire Motorcycle Cd 70 (Back Wheel).	Mini Bus Fare Minimum Within City, Bus Fare Minimum Within City, Car Honda Civic Turbo 1.5 Vtec.	Bicycle, Tire Car Puncture Charges, Tire Car Mehran Tubeless (General), Mini Bus Fare Maximum Within City, Taxi Four Seater Fare, Bus Fare Maximum Within City.
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).	Mathematics Book Class Xi (Text Book Board), Personal Computer With Led Monitor (17") Dell/Hp/Acer Core I5, English Book Class Xi Complete Set.	English Book Class Ix And X, Ballpoint Pen Local, Urdu Book Class Xi/Inter.	Laptop Dell/Hp/Acer Core I5, Display (14"-15"), Lead Pencil Goldfish.
Education	Government Medical College/University Tuition Fee For Mbbs (1St Year).	Private School Fee English Medium Average Standard (Class I).		
Restaurant & Hotels			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, Disposable Razor Gillette Blue Ii, Toilet Soap Lifebuoy 115 Gm.	Hair Cut Charges For Men, Tooth Brush (Shield), Talcum Powder Viceroy/Black Cat Large Size.	Gold Tezabi 24 Carett, Silver Tezabi 24 Carett, Shaving Charges, Pampers (Medium Size), Artificial Jewelry (Locket Set) (Average Quality).

Table A17: Distribution of Price Changes (YoY) - Selected Rural CPI Items: December 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	Cauliflower (Phool Gobhi), Onions, Kinnu (Average Quality), Garlic (Lehsun), Cucumber (Kheera).	Curd, Cold Drink (Pepsi/Coca-Cola) 1.5 Liter Bottle, Pulse Gram, Turmeric Powder Loose, Besan.	Salt Powder Loose, Ice Cream Walls Cup (Large Size), Custard Powder Rafhan 300 Gm Packet.	Ginger (Adrak), Chilies Powder Loose, Eggs Farm, Chicken Farm Broiler (Live), Potatoes, Chilies (Green), Chips (Loose), Wheat, Suji, Beans Red/White (Lobia).
Alcoholic Beverages & Tobacco		Cigarettes Capstan 20'S Packet, Cigarettes Gold Leaf 20'S Packet.	Tobacco Hukka Twisted.	Pan Prepared (Sweet With Beetle Nuts), Chewing Tobacco (Niswar).
Clothing & Footwear			Dopatta Geoette (Average Quality), Shoe Polish Charges, Lungi/Dhoti Cotton (Average Quality), Footware Gents Local (Average Quality).	Brassier (Average Quality), Shirting (Average Quality), Vest "Baniyan" For Men Average Quality, Washing Charges Shalwar Kameez, Shoe Repair Full Sole, Footware Children Local (Average Quality), Underwear Medium Size (Average Quality).
Housing, Water, Elect, Gas & other Fuels	Kerosene Oil, Electricity Charges 51-100 Units, Electricity Charges 101-300 Units, Electricity Charges 301-1000 Units, Electricity Charges Combined.	Mason Wage Rate, Unskilled Labor Wage Rate, Cement (Local) 50 Kg Bag.	Plumber Wage Rate, Charges For Refuse/Waste Collection, Bajri, House Rent Combined, Sand (Black Pit).	Water Charges Per House, Coal, Electrician Charges, Bricks New 1St Class, Firewood Whole, 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).	Finis 400 Ml Bottle, Washing Machine With Spinner (Super Asia Or Similar Brand) (Sn), Blanket Single (Sn), Energy Saver Philips 14 Watt.	Tube Light Philips 40 Watt, Boot Polish Cherry/Kiwi 42 Ml, Towel Medium Size (2' X 3'), Bucket (Balti) Plastic Medium Size, Match Box, Ceiling Fan 56" Pak/Younas/Millat, Washing Soap 250 Gm Cake (Specify Name).
Health		Cost Of Surgery (C-Section), Physiotherapist Fee Per Visit, Johar Joshanda Instant (Sachet) Packet.	Daonil Tablets 5 Mg, Cac 1000 Tablets Sandoz Bottle, Panadol Tablets Plain, Amoxil Capsule 250 Mg.	Dettol Medium Bottle, Doctor (Mbbs) Clinic Fee, Dental Surgeon Fee Per Visit, Blood Test (Cp) Charges, Inderal Tablets 10 Mg.
Transport	Air Fare Economy Class Per Kilometer, Hi-Speed Diesel, Petrol Super, Cng, Car Tax 800 Cc To 1500 Cc.	Tire Cycle, Mobil Oil (Havoline 20W-50), Motorcycle Honda Cd 70, Train Fare Economy Per Person.	Bicycle, Chingchi Rickshaw Charges, Minimum, Motorcycle Service Charges.	Tire Car Mehran Tubeless (General).
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.	Personal Computer With Led Monitor (17") Dell/Hp/Acer Core I5, Lead Pencil Goldfish, Ballpoint Pen Local, English Books Class Xi Complete Set.	Exercise Book (With Lines) 80 To 100 Pages.
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, Chicken Biryani Full/Double, Bread Tandoori Standard Size, Cooked Daal At Average Hotel.
Miscellaneous			Tooth Brush (Shield), Blade Treet Ordinary (10 No. Packet), Toilet Soap Lux 75 Gm.	Gold Tezabi 24 Carett, Artificial Jewelry (Locket Set) (Average Quality), Tooth Paste Colgate 75 Gm, Hair Cut Charges For Men, Shaving Charges, Hair Color (Kala Kola).

Table A18: Distribution of Price Changes (YoY) - WPI Items: December 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, Rice.
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

	Sep-20	Oct-20	Nov-20	Dec-20
Energy				
Crude Oil (US\$ per barrel)*	40.6	39.9	42.3	48.7
Energy Index (2010 = 100)	51.0	51.3	54.7	62.9
Food				
Rice (\$/MT)	507.0	471.0	489.0	520.0
Wheat (\$/MT)##	NA	NA	NA	NA
Sugar (US cent/ pound)^	12.8	13.7	14.1	14.1
Palm Oil (\$/MT)	796.2	819.3	917.8	978.6
Soybean Oil (\$/MT)	905.9	914.8	973.9	1,022.8
Non-Food Non-Energy				
Cotton Outlook 'A' Index #^	70.8	74.8	77.7	81.0
Metal Price Index (2010 = 100)	85.2	86.3	91.4	98.0
Copper (\$/MT)	6,704.9	6,713.8	7,068.9	7,772.2
Aluminum (\$/MT)	1,743.8	1,806.1	1,935.3	2,014.7
Iron Ore (\$ cents/dry MT)	123.8	119.8	124.4	155.4
Tin (\$/MT)	17,951.3	18,176.6	18,522.5	19,732.0
Nickel (\$/MT)	14,857.5	15,239.4	15,807.7	16,823.0
Zinc (\$/MT)	2,442.5	2,440.7	2,671.6	2,779.9
Lead (\$/MT)	1,872.9	1,776.3	1,915.6	2,020.5
Uranium (\$/MT)@	29.9	29.7	29.7	30.2
DAP (\$/MT)	358.4	357.1	359.6	388.5
Urea (\$/MT)	250.5	245.0	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	140.86
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	102.83	106.79	113.92	123.48	134.99
Aug	102.50	107.04	113.69	125.67	136.04
Sep	102.79	107.64	113.52	126.48	137.94
Oct	103.23	108.21	115.23	127.93	139.29
Nov	103.71	108.89	115.02	129.54	140.31
Dec	104.16	109.94	115.79	130.39	140.75
Jan	104.65	110.11	116.22	133.13	
Feb	105.79	110.46	117.87	132.43	
Mar	106.80	110.61	120.14	132.39	
Apr	107.07	111.34	120.55	130.86	
May	107.07	112.43	121.92	131.99	
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	139.67
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	107.26	114.48	124.48	134.25
Aug	102.33	107.55	114.21	126.40	135.46
Sep	102.64	107.97	114.09	127.31	137.11
Oct	103.06	108.50	116.13	128.73	138.15
Nov	103.58	109.18	116.01	129.97	138.98
Dec	104.02	110.31	116.76	130.76	139.84
Jan	104.77	110.46	117.26	132.97	
Feb	105.88	110.88	118.85	132.12	
Mar	106.89	111.14	121.03	132.25	
Apr	107.23	112.00	121.36	130.70	
May	107.34	113.07	122.72	131.67	
Jun	107.58	113.90	123.15	132.62	

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	142.65
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	102.93	106.09	113.09	121.99	136.11
Aug	102.76	106.28	112.91	124.57	136.90
Sep	103.03	107.14	112.66	125.22	139.19
Oct	103.48	107.78	113.86	126.73	141.02
Nov	103.91	108.45	113.52	128.90	142.33
Dec	104.37	109.38	114.33	129.83	142.13
Jan	104.46	109.59	114.66	133.38	
Feb	105.64	109.83	116.39	132.89	
Mar	106.68	109.83	118.80	132.61	
Apr	106.82	110.34	119.33	131.09	
May	106.65	111.46	120.72	132.47	
Jun	106.59	112.40	121.37	133.61	

Table A23: National CPI Monthly & Average Seasonal Factors						
Period	FY17	FY18	FY19	FY20	FY21	Average
Jul	100.32	100.33	100.32	100.31	100.29	100.31
Aug	100.29	100.25	100.21	100.17	100.14	100.21
Sep	100.43	100.38	100.33	100.30	100.28	100.34
Oct	100.93	100.94	100.95	100.97	100.99	100.96
Nov	100.94	100.97	101.01	101.05	101.08	101.01
Dec	99.93	99.99	100.03	100.05	100.08	100.01
Jan	99.89	99.91	99.91	99.92		99.91
Feb	99.29	99.33	99.36	99.41		99.35
Mar	99.38	99.41	99.43	99.47		99.42
Apr	99.85	99.83	99.82	99.79		99.82
May	99.34	99.31	99.28	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	100.42	100.40	100.38	100.36	100.40
Aug	100.39	100.35	100.33	100.29	100.27	100.32
Sep	100.41	100.38	100.35	100.32	100.31	100.35
Oct	100.78	100.78	100.79	100.80	100.81	100.79
Nov	100.76	100.78	100.81	100.83	100.85	100.80
Dec	99.73	99.79	99.84	99.86	99.88	99.82
Jan	99.83	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	99.43		99.38
Apr	99.97	99.95	99.94	99.92		99.95
May	99.55	99.53	99.50	99.48		99.51
Jun	99.54	99.51	99.49	99.45		99.50

Table A25: Rural CPI Monthly & Average Seasonal Factors						
Period	FY17	FY18	FY19	FY20	FY21	Average
Jul	100.18	100.20	100.19	100.19	100.18	100.19
Aug	100.14	100.09	100.04	99.99	99.95	100.04
Sep	100.44	100.37	100.31	100.27	100.23	100.33
Oct	101.16	101.18	101.20	101.23	101.26	101.20
Nov	101.22	101.27	101.33	101.38	101.42	101.32
Dec	100.22	100.28	100.33	100.35	100.37	100.31
Jan	99.99	100.01	100.01	100.03		100.01
Feb	99.31	99.35	99.39	99.43		99.37
Mar	99.45	99.48	99.50	99.54		99.49
Apr	99.67	99.65	99.63	99.61		99.64
May	99.02	98.98	98.95	98.92		98.97
Jun	99.20	99.15	99.11	99.07		99.13

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	-0.68
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	0.55	-0.36	0.55	0.85	1.49
Aug	-0.32	0.23	-0.20	1.77	0.78
Sep	0.28	0.56	-0.15	0.64	1.40
Oct	0.42	0.53	1.50	1.15	0.98
Nov	0.47	0.63	-0.18	1.26	0.73
Dec	0.43	0.96	0.67	0.65	0.31
Jan	0.47	0.16	0.37	2.10	
Feb	1.09	0.32	1.42	-0.53	
Mar	0.96	0.14	1.92	-0.03	
Apr	0.25	0.65	0.34	-1.16	
May	0.00	0.98	1.14	0.86	
Jun	0.11	0.78	0.42	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	-0.35
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	1.23
Aug	-0.43	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	0.43	1.03	0.65	0.61	0.62
Jan	0.72	0.14	0.42	1.69	
Feb	1.06	0.38	1.36	-0.64	
Mar	0.95	0.23	1.83	0.09	
Apr	0.32	0.77	0.27	-1.17	
May	0.10	0.96	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	-1.17
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	0.46	-0.47	0.61	0.51	1.88
Aug	-0.17	0.18	-0.15	2.12	0.58
Sep	0.27	0.81	-0.23	0.52	1.67
Oct	0.43	0.60	1.07	1.21	1.32
Nov	0.42	0.62	-0.30	1.71	0.93
Dec	0.43	0.85	0.71	0.72	-0.14
Jan	0.09	0.20	0.29	2.73	
Feb	1.14	0.21	1.51	-0.36	
Mar	0.98	0.00	2.07	-0.21	
Apr	0.13	0.47	0.44	-1.14	
May	-0.16	1.02	1.17	1.05	
Jun	-0.06	0.84	0.54	0.86	

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



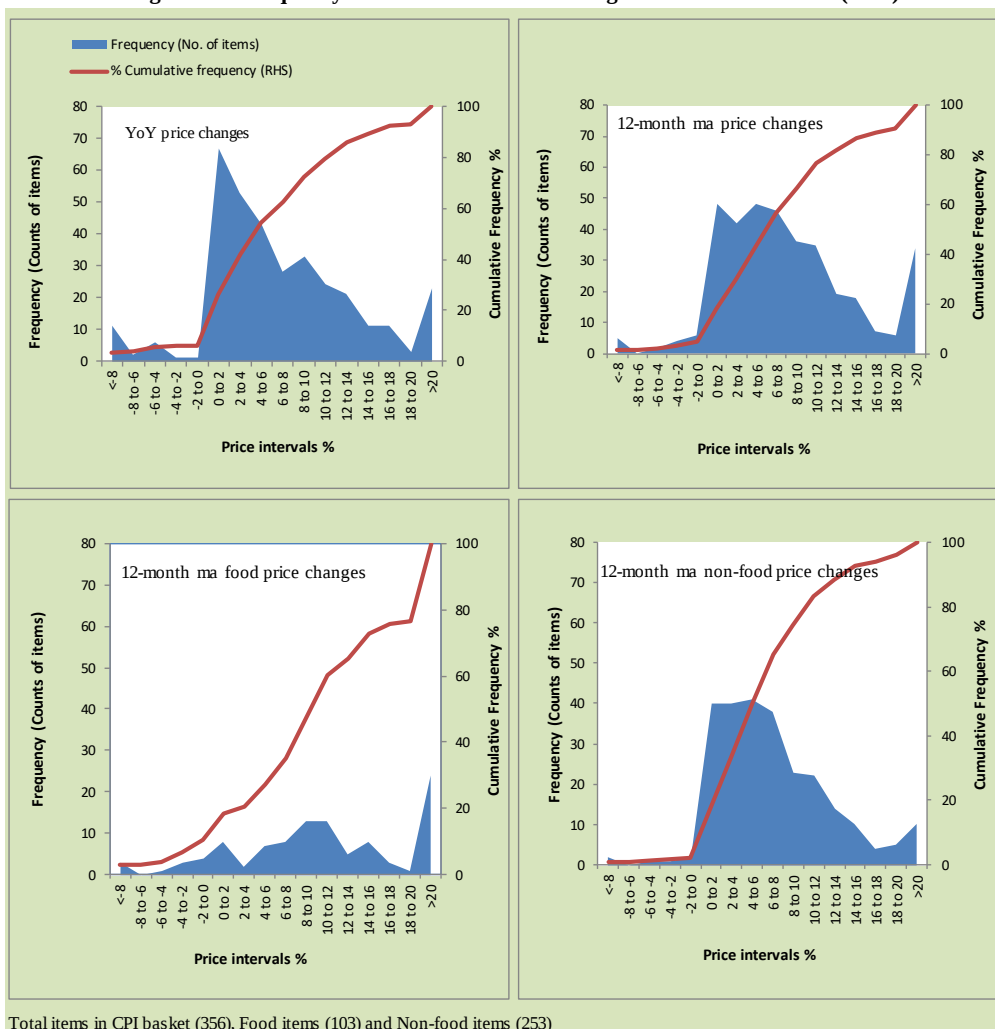
Figure A2: Urban CPI Non-food Inflation (YoY, 12MMA, MoM in percent)



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

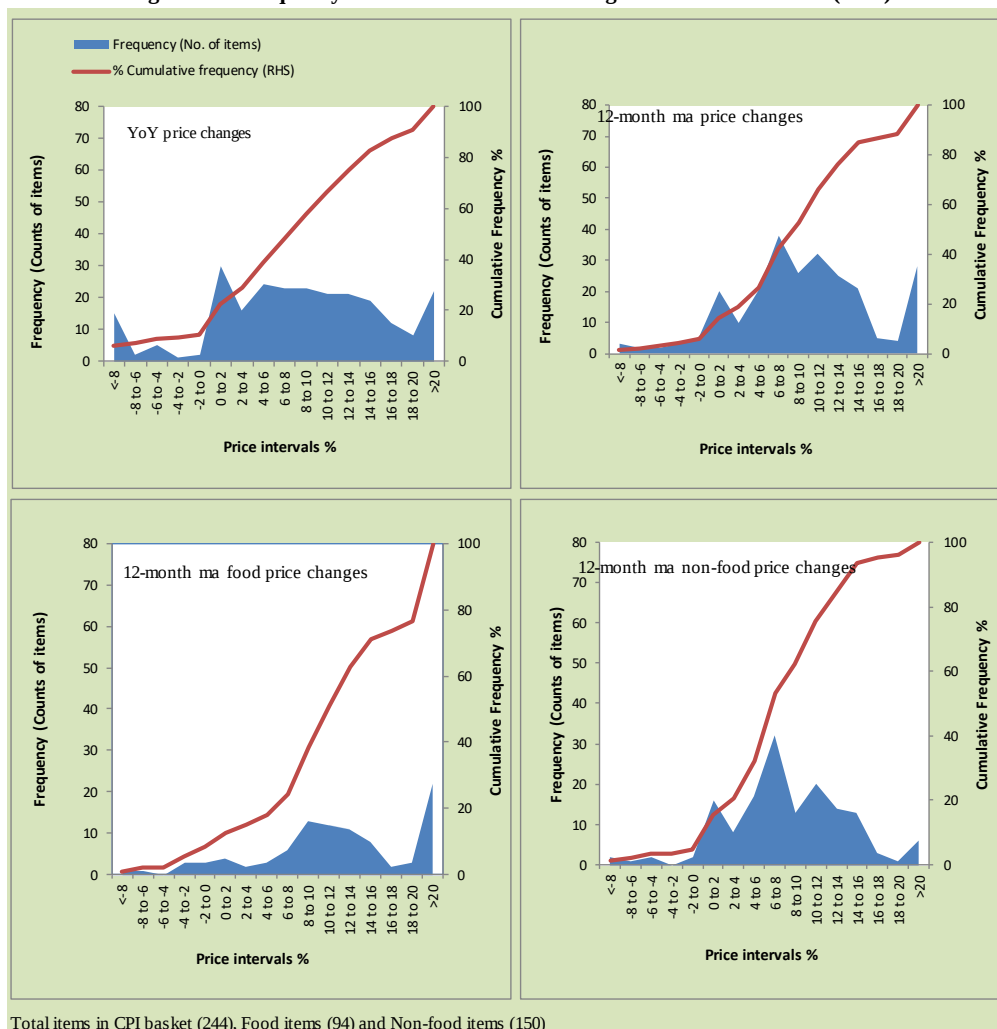


Figure A4: Frequency Distribution of Price Changes of Urban CPI Items (YoY)



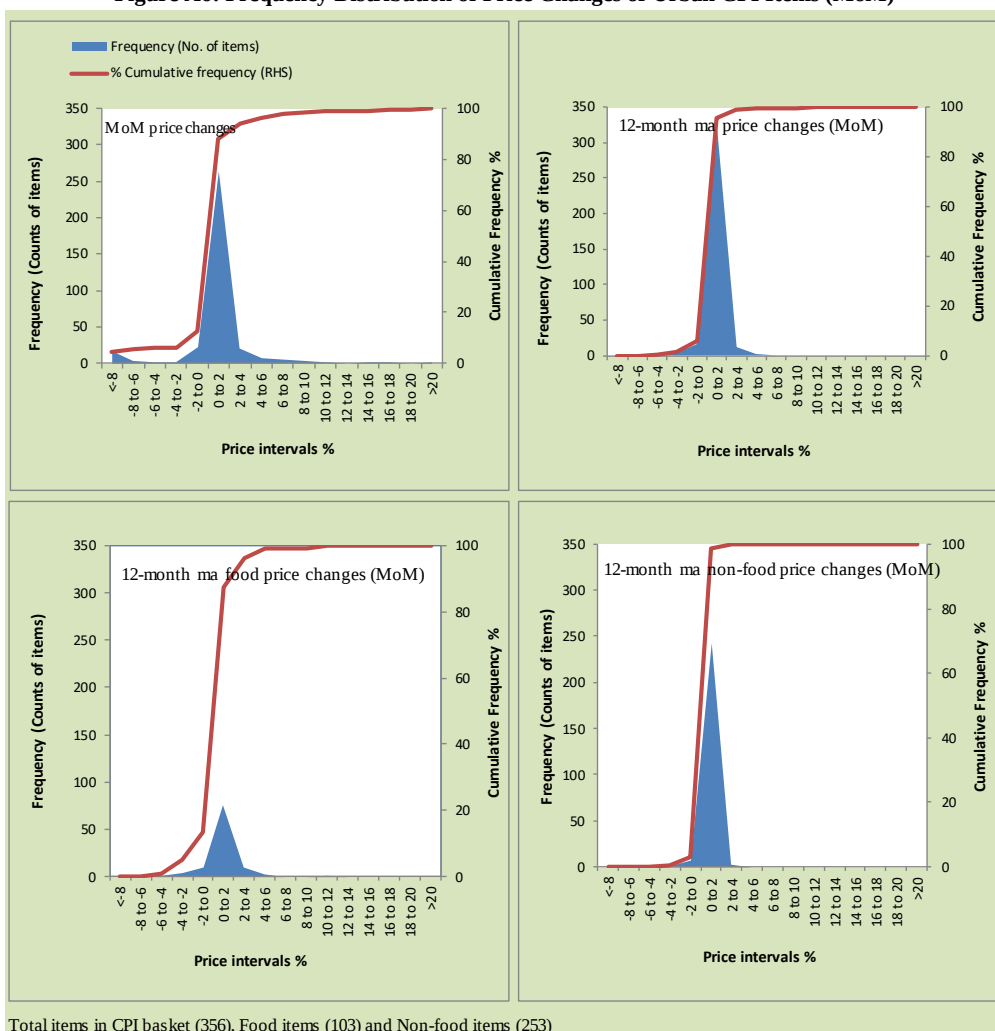
Total items in CPI basket (356), Food items (103) and Non-food items (253)

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)

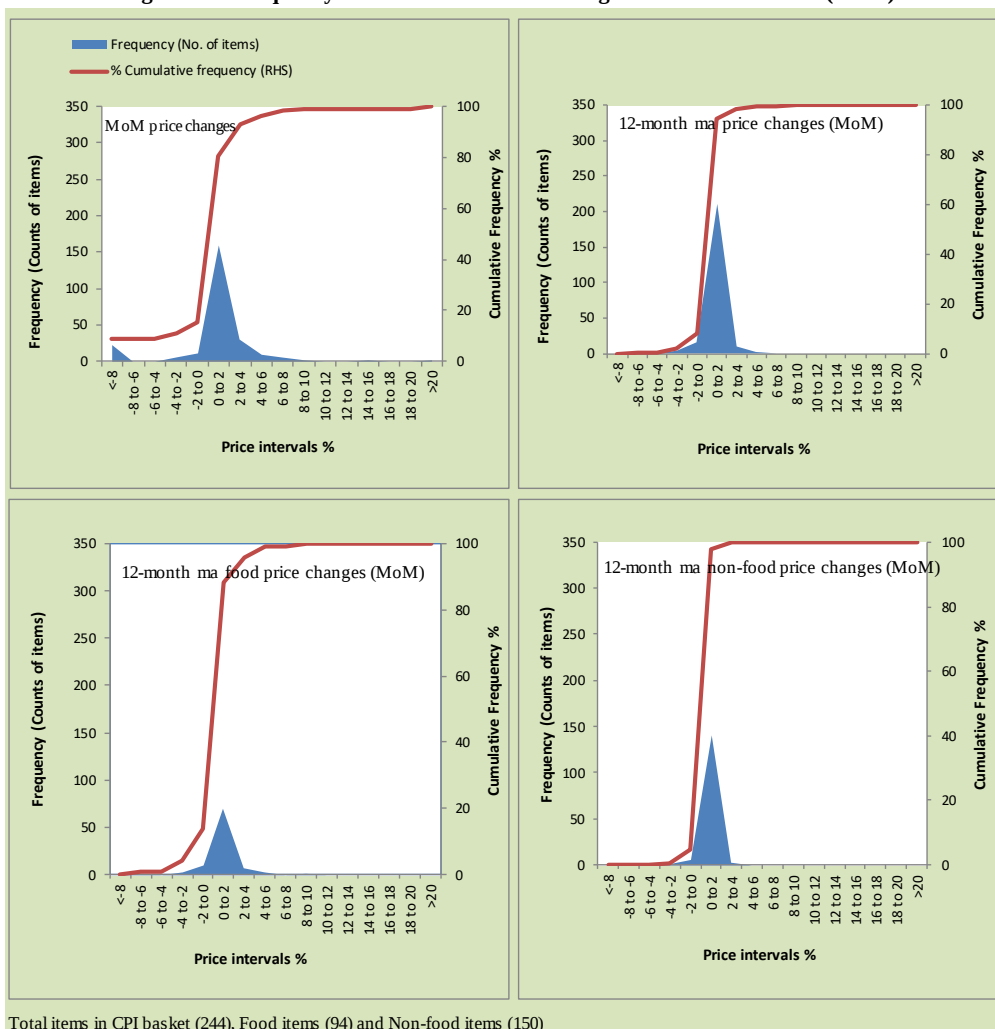
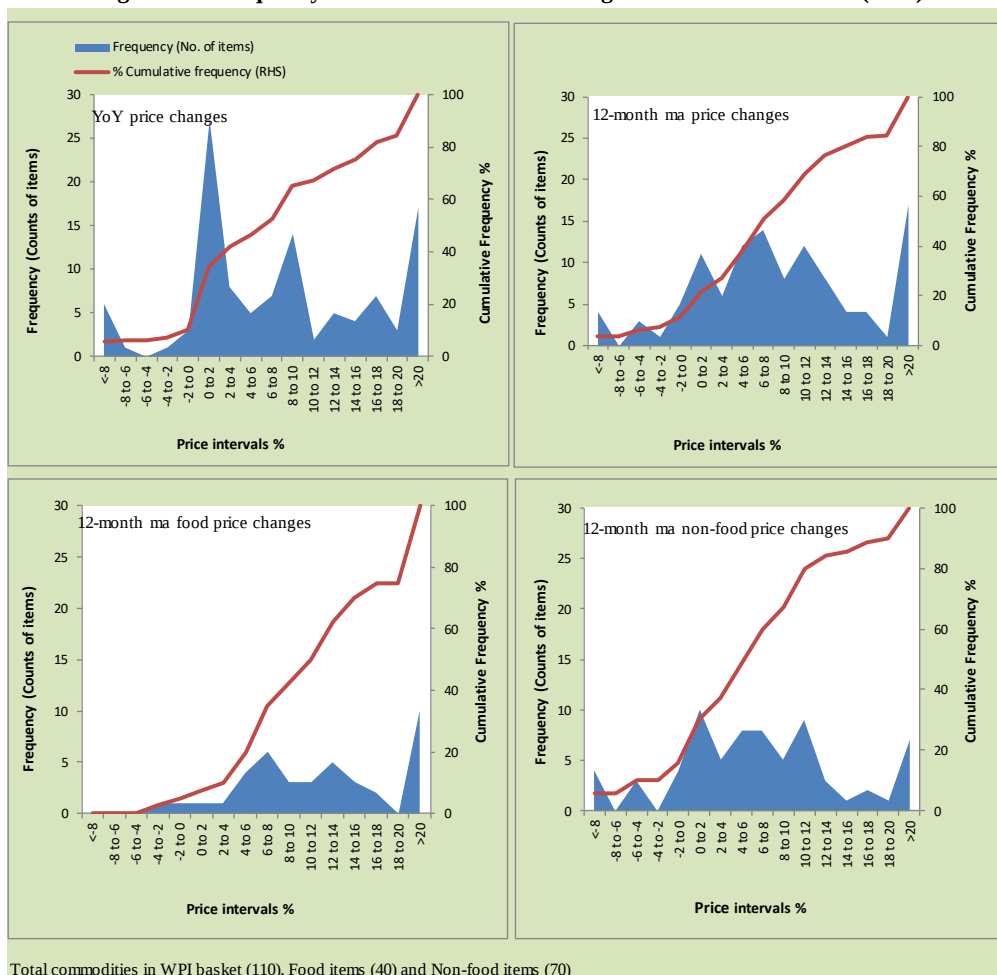


Figure A8: Frequency Distribution of Price Changes of WPI Commodities (YoY)



Total commodities in WPI basket (110), Food items (40) and Non-food items (70)

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.