International Journal of
Environmental Research and Public Health

Table S1. ADF and PP tests results, Group 1.

Country	Parameters	Y	X_1	X_2	X_3	X_4
Afghanistan	ADF level	−2.68**	−3.72	−1.98***	−3.81**	−4.13
	ADF first difference	−3.21**	−3.60*	−3.00**	−2.88***	−3.85**
	PP level	−2.53*	−3.69	−2.03***	−3.17**	−4.05*
	PP first difference.	−2.67*	−3.44*	−2.76**	−2.74***	−3.77**
Burkina Faso	ADF level	−0.45***	−2.83**	−0.28*	−2.90**	−4.88***
	ADF first difference	−2.06**	−3.51*	−2.09	−2.72**	−3.95**
	PP level	−0.56***	−2.44**	−0.62**	−2.85**	−4.69***
	PP first difference.	−2.09**	-−3.17*	−2.16	−2.59**	−3.76**
Chad	ADF level	−3.54	−2.88**	−4.17***	−2.44	−3.31
	ADF first difference	−2.86**	−0.74***	−3.85**	−0.95**	−2.49*
	PP level	−3.92	−2.61**	−4.01***	−2.18	−3.17
	PP first difference.	−2.03**	−0.52***	−3.96**	−0.06**	−2.65*
Congo, Democratic Republic	ADF level	−1.05**	−4.13*	−3.33	−2.97***	−3.88***
	ADF first difference	−2.55***	−3.75**	−2.47**	−3.06**	−2.55**
	PP level	−1.42**	−4.01*	−3.52*	−2.44***	−3.53***
	PP first difference.	−2.08***	−3.59**	−2.04**	−3.18**	−2.47**
Ethiopia	ADF level	−3.46**	−1.05***	−2.74*	−5.66*	−4.86***
	ADF first difference	−2.09***	−2.15**	−3.06*	−4.99**	−4.05**
	PP level	−3.52**	−1.11***	−2.67*	−5.05*	−4.09***
	PP first difference.	−2.18***	−2.19**	−2.98*	−4.84**	−3.98**
Guinea	ADF level	−3.55*	−3.17	−4.14**	−3.95***	−2.19*
	ADF first difference	−2.97**	−2.98**	−5.05*	−3.28**	−3.06**
	PP level	−3.42*	−3.05	−4.19**	−3.66***	−2.35*
	PP first difference.	−2.80**	−2.87**	−4.96*	−3.14**	−2.77**
Haiti	ADF level	−5.17	−4.88**	−3.48***	−2.17**	−0.15**
	ADF first difference	−3.19*	−3.10**	−2.87**	−3.42*	−2.34***
	PP level	−4.89	−4.67**	−3.55***	−2.53**	−0.32**
	PP first difference.	−3.54*	−3.14**	−2.80**	−3.18*	−2.30***
Mali	ADF level	−2.18***	−2.15***	−0.88*	−2.16	−1.85*
	ADF first difference	−3.66**	−3.96**	−2.05**	−1.98*	−2.06**
	PP level	−2.01***	−2.12***	−0.96*	−2.19*	−1.82*
	PP first difference.	−3.12**	−3.87**	−2.03**	−1.77*	−2.14**
Mozambique	ADF level	−0.97	−1.54*	−1.09***	−2.55***	−1.87
	ADF first difference	−0.45*	−2.67**	−2.14**	−1.98**	−2.09**
	PP level	−1.20	−1.49*	−1.07***	−2.76***	−1.23
	PP first difference.	−0.91*	−2.06**	−2.19**	−1.85**	−2.34**
Nepal	ADF level	−1.02***	−0.68**	−1.85*	−2.04*	−1.99*
	ADF first difference	−2.28**	−1.84***	−2.09**	−0.16***	−1.55**
	PP level	−1.16***	−0.95**	−1.66*	−1.98*	−1.74*
	PP first difference.	−2.00**	−1.66***	−2.13**	−0.85***	−1.37**
Niger	ADF level	−3.18	−2.63*	−0.86***	−2.95**	−4.32***
	ADF first difference	−2.76*	−1.77**	−0.75***	−1.87**	−3.14**
	PP level	−2.99*	−2.85*	−1.04***	−2.86**	−4.07***
	PP first difference.	−2.84*	−2.05***	−0.69***	−1.84**	−2.96**
Sierra Leone	ADF level	−1.95***	−4.29*	−1.43*	−2.93***	−2.88
	ADF first difference	−1.59**	−3.13**	−2.01**	−1.19**	−3.40*
	PP level	−2.02***	−4.18*	−1.72*	−2.75***	−2.39*
	PP first difference.	−1.44**	−3.17**	−2.16**	−1.63**	−3.16*
Tajikistan	ADF level	−5.40*	−2.29***	−1.08*	−0.99*	−1.37**
	ADF first difference	−4.43*	−1.86**	−2.53**	−1.85**	−0.69***
	PP level	−4.97*	−3.01**	−1.27*	−0.74*	−1.08**
	PP first difference.	−4.50*	−2.35**	−2.59**	−1.90**	−0.70***
Tanzania	ADF level	−0.77***	−1.02*	−0.55***	−2.75**	−1.44*
	ADF first difference	−1.20**	−1.47**	−1.47**	−1.59**	−2.00**
	PP level	−0.93***	−1.24*	−0.68***	−2.50**	−1.46*
	PP first difference.	−1.34**	−1.56**	−1.39**	−1.77**	−2.09**
Yemen	ADF level	−3.46*	−2.55***	−4.94*	−3.18*	−5.33***
	ADF first difference	−4.28**	−1.48**	−3.85**	−2.57	−6.50***
	PP level	−3.09*	−2.39***	−4.28*	−3.03*	−5.47***
	PP first difference.	−4.00**	−1.90**	−3.06**	−2.66	−6.18***

Y = number of people with insufficient food consumption; X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table 2. ADF and PP tests results, Group 2.

Country	Parameters	Y	X_1	X_2	X_3	X_4
Bangladesh	ADF level	−3.86**	−2.25***	−3.93**	−1.49**	−2.06**
	ADF first difference	−2.54*	−1.66**	−4.60**	−2.00**	−1.47**
	PP level	−3.03**	−1.90***	−3.66**	−1.37**	−2.58**
	PP first difference.	−2.38*	−1.73**	−4.39**	−2.14**	−1.45**
Bolivia	ADF level	−0.77***	−1.54*	−1.78*	−1.12***	−1.39***
	ADF first difference	−1.05**	−2.62**	−2.04**	−0.98**	−0.86**
	PP level	−0.49***	−1.39*	−1.70*	−1.17***	−1.27***
	PP first difference.	−1.08**	−2.50**	−1.95**	−0.95**	−0.83**
Cambodia	ADF level	−2.84	−3.06***	−2.18***	−2.68*	−2.74*
	ADF first difference	−3.03**	−3.19**	−2.76**	−1.00*	−2.59
	PP level	−2.88	−3.13***	−2.04***	−2.55*	−2.70*
	PP first difference.	−3.12**	−3.40**	−2.39**	−1.06	−2.68
Cameroon	ADF level	−2.15***	−2.02*	−3.14	−2.75**	−1.84***
	ADF first difference	−1.60**	−1.58**	−2.05**	−1.20**	−2.06**
	PP level	−2.19***	−2.73*	−3.38*	−2.27**	−1.77***
	PP first difference.	−1.54**	−1.42**	−2.19***	−1.49**	−2.18**
Cote d'Ivoire	ADF level	−4.55***	−3.09***	−5.10*	−3.86***	−4.04*
	ADF first difference	−3.16**	−3.88**	−4.07**	−2.85**	−3.80**
	PP level	−4.13***	−3.17***	−6.11**	−3.10***	−4.17*
	PP first difference.	−3.50**	−3.50**	−4.24**	−2.49**	−3.75**
India	ADF level	−0.99***	−1.04***	−0.67**	−1.22**	−1.73**
	ADF first difference	−1.04**	−1.33**	−1.64**	−1.64**	−1.95***
	PP level	−0.75***	−1.48***	−0.70**	−1.48**	−1.70**
	PP first difference.	−1.28**	−1.59**	−1.53**	−1.72**	−1.52***
Indonesia	ADF level	−2.06*	−3.95*	−2.59***	−2.90***	−3.44**
	ADF first difference	−2.77**	−2.27*	−3.06**	−3.08**	−4.03**
	PP level	−2.15*	−3.90*	−2.63***	−2.74***	−3.81**
	PP first difference.	−2.90*	−2.02**	−3.11**	−3.16**	−4.08**
Kenya	ADF level	−5.12***	−4.03***	−6.40*	−5.19	−5.01*
	ADF first difference	−4.40**	−3.17**	−4.13**	−4.05*	−4.55*
	PP level	−6.94***	−3.08***	−6.93*	−4.88	−4.96*
	PP first difference.	−4.00**	−3.54**	−4.19**	−4.16*	−4.97*
Kyrgyzstan	ADF level	−2.14**	−2.05**	−3.17***	−2.09***	−2.15***
	ADF first difference	−2.33**	−3.14*	−2.99**	−2.18**	−2.04**
	PP level	−2.09**	−1.86**	−3.82***	−2.66***	−2.19***
	PP first difference.	−2.85**	−3.18*	−2.70**	−2.47**	−2.08**
Nigeria	ADF level	−0.47***	−1.00***	−0.98***	−1.03***	−0.87***
	ADF first difference	−1.28**	−1.39**	−1.21**	−1.30**	−1.06**
	PP level	−0.96***	−1.21***	−0.75***	−1.09***	−0.95***
	PP first difference.	−1.14**	−1.20**	−1.63**	−1.24**	−1.12**
Pakistan	ADF level	−4.44	−6.02**	−5.92*	−3.00*	−4.83**
	ADF first difference	−5.60*	−4.11**	−4.96**	−2.95*	−5.01**
	PP level	−4.17*	−5.44**	−4.09**	−3.15**	−4.05**
	PP first difference.	−5.05**	−4.08**	−4.00**	−2.88*	−5.14**
Philippines	ADF level	−2.17***	−2.01***	−2.84*	−3.05**	−2.06**
	ADF first difference	−3.03**	−1.45**	−3.07**	−2.57**	−2.55**
	PP level	−2.95***	−2.26***	−2.93**	−2.86**	−2.19**
	PP first difference.	−3.11**	−1.32**	−3.09**	−2.69**	−3.10**
Tunisia	ADF level	−6.55*	−5.64*	−6.58***	−4.11***	−5.66**
	ADF first difference	−5.50**	−6.08**	−4.12*	−5.00**	−4.04**
	PP level	−7.12*	−5.98*	−5.26***	−4.01***	−4.18**
	PP first difference.	−6.02**	−6.15**	−4.19*	−5.17**	−4.09**
Vietnam	ADF level	−3.15***	−2.96***	−3.44*	−4.04*	−3.55*
	ADF first difference	−2.97**	−1.99**	−2.77**	−3.53**	−3.60**
	PP level	−3.01***	−2.80***	−3.86	−3.99	−3.04*
	PP first difference.	−2.88**	−1.75**	−2.70**	−3.07**	−3.11**
Zambia	ADF level	−1.06	−1.22**	−1.43***	−1.50***	−1.94***
	ADF first difference	−1.95**	−2.07***	−2.58**	−2.36**	−2.27**
	PP level	−1.20*	−1.31**	−1.48***	−1.67***	−1.88***
	PP first difference.	−2.02**	−2.16***	−2.47**	−2.04**	−2.40**

Y = number of people with insufficient food consumption; X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table S3. ADF and PP tests results, Group 3.

Country	Parameters	Y	X_1	X_2	X_3	X_4
Algeria	ADF level	−0.55***	−1.24**	−0.98*	−1.35**	−1.01***
	ADF first difference	−1.14***	−1.32***	−1.05**	−0.96***	−1.25**
	PP level	−0.63***	−1.95**	−0.87*	−1.55**	−1.08***
	PP first difference.	−1.30***	−1.40***	−1.23**	−0.70***	−1.34**
Botswana	ADF level	−2.00*	−2.35*	−2.44***	−3.40*	−2.99**
	ADF first difference	−2.88**	−2.02**	−3.35**	−2.96**	−3.43*
	PP level	−2.17*	−2.19*	−2.85***	−3.12*	−2.57**
	PP first difference.	−2.64**	−2.40**	−3.04**	−2.85**	−3.28*
Colombia	ADF level	−5.55**	−4.56***	−3.58*	−5.63***	−6.16**
	ADF first difference	−4.64**	−3.17**	−4.55**	−4.07**	−5.19**
	PP level	−5.03**	−4.14***	−4.00	−4.99***	−5.97**
	PP first difference.	−4.88**	−3.95**	−5.06**	−5.15**	−5.08**
Dominican Republic	ADF level	−3.13***	−2.96*	−3.75**	−1.53*	−2.50*
	ADF first difference	−2.94**	−3.44**	−2.99**	−2.01**	−3.40**
	PP level	−3.05***	−3.17*	−2.50**	−1.66*	−2.54*
	PP first difference.	−2.76**	−3.09**	−3.05**	−2.43**	−2.98**
Ecuador	ADF level	−1.55**	−0.78***	−1.21***	−0.82***	−1.76***
	ADF first difference	−2.73***	−1.22**	−2.07**	−1.34**	−2.02**
	PP level	−1.42**	−0.84***	−1.33***	−0.70***	−1.56***
	PP first difference.	−2.84***	−1.45**	−2.38**	−1.55**	−2.47**
Guatemala	ADF level	−0.15	−0.46*	−1.06*	−1.96**	−1.04*
	ADF first difference	−0.90**	−0.67**	−1.22**	−0.95***	−1.33**
	PP level	−0.34	−0.39**	−1.14*	−1.13**	−1.25*
	PP first difference.	−0.88**	−0.40**	−1.35**	−0.88***	−1.24**
Iran	ADF level	−2.15*	−2.94***	−3.21***	−1.99**	−2.17**
	ADF first difference	−2.19**	−1.95**	−2.76**	−2.06*	−2.00*
	PP level	−2.66*	−2.60***	−2.18***	−1.90**	−2.45**
	PP first difference.	−2.40**	−1.87**	−2.59**	−2.17*	−2.14**
Iraq	ADF level	−5.81***	−4.44***	−6.06*	−4.75**	−4.18**
	ADF first difference	−4.99**	−4.90**	−4.00**	−3.86**	−3.75*
	PP level	−5.36***	−3.58***	−6.12*	−4.70**	−4.73**
	PP first difference.	−4.30**	−4.51**	−4.04**	−3.09**	−3.84*
Jordan	ADF level	−1.15*	−2.53*	−1.08**	−2.39*	−1.90**
	ADF first difference	−2.00**	−1.97**	−1.45**	−1.90***	−1.47*
	PP level	−1.10	−2.92	−1.26**	−2.44**	−1.83**
	PP first difference.	−2.05**	−1.83**	−1.67**	−1.99**	−1.55*
Lebanon	ADF level	−3.07***	−2.59***	−2.06***	−3.05*	−2.18***
	ADF first difference	−2.69**	−2.41**	−1.95**	−2.97**	−2.42**
	PP level	−2.86***	−2.17***	−2.94***	−3.44**	−2.36***
	PP first difference.	−2.50**	−2.60**	−1.50**	−2.40**	−2.59**
Libya	ADF level	−3.28*	−3.33	−3.19	−5.15***	−4.44*
	ADF first difference	−2.99**	−4.21*	−2.28**	−4.40**	−3.60**
	PP level	−3.20*	−3.45*	−3.04*	−5.83***	−4.03**
	PP first difference.	−2.54**	−4.02*	−2.36**	−4.35**	−3.56**
Namibia	ADF level	−0.66***	−1.05***	−0.98*	−1.26*	−0.83*
	ADF first difference	−0.75**	−0.64**	−1.11**	−2.05**	−1.17**
	PP level	−0.84***	−1.23***	−0.54**	−1.29**	−0.44*
	PP first difference.	−0.39**	−0.95**	−1.19**	−2.00**	−1.29**
Peru	ADF level	−1.25	−1.60*	−1.43***	−1.50*	−1.66***
	ADF first difference	−2.06*	−2.83**	−2.04**	−0.67**	−0.95**
	PP level	−1.28*	−1.55**	−1.86***	−1.42*	−1.74***
	PP first difference.	−2.14*	−2.40**	−2.00**	−0.71**	−0.93**
Sri Lanka	ADF level	−6.33***	−4.12	−7.18*	−5.45***	−6.13*
	ADF first difference	−4.74**	−5.38*	−6.15**	−3.18**	−5.83**
	PP level	−5.90**	−5.06*	−6.39*	−4.86***	−5.48**
	PP first difference.	−4.55**	−4.19**	−5.06**	−3.44**	−5.30**
Turkey	ADF level	−2.48***	−1.70***	−2.07***	−1.74*	−2.54**
	ADF first difference	−3.13**	−2.15**	−2.94**	−2.01**	−2.15***
	PP level	−1.49***	−1.99***	−2.15***	−1.85*	−2.73**
	PP first difference.	−3.04**	−2.50**	−2.80**	−2.15**	−2.60***

Y = number of people with insufficient food consumption; X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table S4. ARDL short-run estimates, Group 1.

Country	Parameter	ΔX_1	ΔX_2	ΔX_3	ΔX_4	ECM
Afghanistan	Coefficient	0.0349	−0.1512	0.1270	0.0145	−0.2021
	t-stat	2.1275	−3.1855	2.1187	3.7719	−3.4062
	Prob	0.0116**	0.0184**	0.5048**	0.4034*	0.0001*
Burkina Faso	Coefficient	−0.1371	−0.4077	0.5284	0.1293	−0.3003
	t-stat	1.9773	2.1274	3.2876	2.8821	−1.9920
	Prob	0.0370*	0.0993*	0.1882***	0.0818**	0.0000**
Chad	Coefficient	−0.0152	−0.0812	0.1194	−0.4443	0.7219
	t-stat	2.4138	3.2296	−2.1895	2.2068	2.1726
	Prob	0.0487***	0.1828***	0.0332**	0.0481*	0.0014**
Congo, Democratic Republic	Coefficient	0.1277	0.0319	0.2910	0.0835	−0.5592
	t-stat	1.4005	5.2964	7.1295	4.8023	−1.3443
	Prob	0.0588*	0.1627***	0.0285**	0.0994**	0.0010***
Ethiopia	Coefficient	−0.0313	0.0299	0.3063	−0.9500	−0.0377
	t-stat	−4.8291	−2.3953	−5.0882	4.2910	−1.7738
	Prob	0.0472**	0.1006**	0.0385***	0.1333*	0.0044*
Guinea	Coefficient	0.15721	0.0555	0.4065	0.0913	−0.7954
	t-stat	3.1180	7.0377	3.1196	1.8032	−1.1749
	Prob	0.0187**	0.1978***	0.0582***	0.3966***	0.0153***
Haiti	Coefficient	−0.1148	0.2554	0.1491	0.3083	0.5309
	t-stat	4.1599	3.7043	−1.1937	3.2284	1.0526
	Prob	0.1862***	0.4390***	0.3915***	0.0996***	0.0007**
Mali	Coefficient	0.1334	−0.1799	0.4237	−0.0885	−0.4930
	t-stat	−1.1680	4.9382	2.4920	8.1863	−1.1285
	Prob	0.0828*	0.0054**	0.0455**	0.0499*	0.0004*
Mozambique	Coefficient	0.0482	0.2649	0.8003	0.3915	0.2064
	t-stat	2.1154	−2.4933	4.1801	−4.2901	2.1192
	Prob	0.0933***	0.0491**	0.3338***	0.0522***	0.0046***
Nepal	Coefficient	−0.0338	0.0174	0.1904	0.0505	−0.1883
	t-stat	5.3991	5.3910	−2.8302	6.1000	−2.1142
	Prob	0.0884***	0.0291***	0.2988**	0.3919**	0.0055**
Niger	Coefficient	0.1773	−0.0506	0.2159	0.2703	−0.2390
	t-stat	2.2406	7.2593	4.3491	−2.5099	−2.7048
	Prob	0.5321**	0.0488*	0.0039*	0.0487**	0.0030***
Sierra Leone	Coefficient	0.0538	0.7401	0.5593	−0.5698	0.5554
	t-stat	4.3900	4.4389	3.2115	6.7302	1.1193
	Prob	0.2291***	0.0883**	0.0599***	0.1776**	0.0019*
Tajikistan	Coefficient	0.1399	0.5450	0.7126	0.5520	−0.1984
	t-stat	6.1002	5.1991	3.4553	3.4098	−2.3250
	Prob	0.0058***	0.0046***	0.2964***	0.1865***	0.0009***
Tanzania	Coefficient	0.1391	−0.2553	0.0203	−0.4609	−0.5072
	t-stat	1.1443	−1.1905	−7.1392	6.2004	−3.6084
	Prob	0.0993**	0.1008*	0.0355*	0.0830*	0.0014**
Yemen	Coefficient	−0.0309	0.6921	0.6665	0.0195	−0.1988
	t-stat	−2.1866	3.2077	2.5043	−5.1006	−2.5829
	Prob	0.0554*	0.0973***	0.1115***	0.1863***	0.0110***

X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table S5. ARDL short-run estimates, Group 2.

Country	Parameter	ΔX_1	ΔX_2	ΔX_3	ΔX_4	ECM
Bangladesh	Coefficient	0.3599	0.0582	0.1103	0.0861	0.1472
	t-stat	−3.8921	−1.8298	3.2918	1.0284	1.5590
	Prob	0.0482**	0.1985***	0.0943***	0.0071***	0.0487**
Bolivia	Coefficient	0.5018	0.0345	0.0337	0.0046	0.1876
	t-stat	7.1924	−2.8882	4.4041	2.2965	3.1209
	Prob	0.0386*	0.0496***	0.0182***	0.1283***	0.0938***
Cambodia	Coefficient	−0.0664	−0.5001	−0.4771	−0.0966	−0.4527
	t-stat	−3.3836	5.7830	3.6019	1.4498	−1.8403
	Prob	0.0485***	0.2785**	0.3918*	0.0835***	0.0829**
Cameroon	Coefficient	0.1190	0.1834	0.1493	0.0491	0.3875
	t-stat	5.3903	−3.3439	−1.4811	1.0073	3.4912
	Prob	0.1388***	0.0594**	0.0083**	0.0689***	0.0015***
Cote d'Ivoire	Coefficient	0.0690	0.0841	0.3550	0.2094	−0.3187
	t-stat	2.2702	4.9964	2.4387	−4.3309	−3.1030
	Prob	0.0559***	0.1285***	0.0472***	0.5018**	0.0593**
India	Coefficient	0.5320	0.3401	−0.0400	0.3343	−0.2981
	t-stat	7.5182	6.0003	−6.0909	−3.1286	−3.0844
	Prob	0.0491***	0.0991***	0.0424***	0.0488**	0.0011***
Indonesia	Coefficient	0.3476	0.2918	−0.0309	0.5862	0.4299
	t-stat	3.2777	5.4391	−3.9285	−3.1174	1.9392
	Prob	0.0593**	0.1922***	0.1800***	0.0015**	0.0006*
Kenya	Coefficient	0.2375	0.4291	0.2959	0.4006	0.3918
	t-stat	−2.0086	−2.1314	4.2072	2.2099	2.1773
	Prob	0.0059*	0.0345***	0.1288**	0.2916***	0.0110**
Kyrgyzstan	Coefficient	0.0505	0.1096	0.3829	0.3096	−0.1559
	t-stat	−4.4134	2.0055	6.4012	3.5482	−2.0672
	Prob	0.1729***	0.3921**	0.3023***	0.0926**	0.0018***
Nigeria	Coefficient	0.1006	0.1128	0.4472	0.4814	0.2850
	t-stat	5.0399	−1.5039	1.5286	6.4088	3.1195
	Prob	0.0098**	0.5920**	0.0053***	0.1892*	0.0055**
Pakistan	Coefficient	0.5593	0.2918	−0.4925	0.8863	0.2917
	t-stat	2.0546	2.5503	4.0938	6.0582	3.2001
	Prob	0.0059***	0.0920***	0.4553**	0.0076*	0.0085***
Philippines	Coefficient	0.8265	0.4439	0.1097	0.1294	−0.2983
	t-stat	1.4924	−1.0965	1.2876	2.4006	−2.0945
	Prob	0.0827*	0.0592**	0.4485*	0.3193**	0.0096**
Tunisia	Coefficient	0.1285	0.3900	0.2157	0.1884	0.4285
	t-stat	−2.7038	1.3886	2.7729	2.1009	2.1006
	Prob	0.0487**	0.0093**	0.0900**	0.4981***	0.0007*
Vietnam	Coefficient	−0.3909	0.0184	0.3051	0.2286	−0.0783
	t-stat	3.7544	3.8916	−2.0044	1.5390	−1.9504
	Prob	0.0593***	0.0996***	0.0093**	0.0135**	0.0167**
Zambia	Coefficient	−0.0138	0.5197	0.6290	−0.4499	0.3901
	t-stat	1.2884	4.0091	2.6664	−6.2030	1.8026
	Prob	0.0927***	0.1952*	0.0844**	0.0086*	0.0095**

X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table S6. ARDL short-run estimates, Group 3.

Country	Parameter	ΔX_1	ΔX_2	ΔX_3	ΔX_4	ECM
Algeria	Coefficient	0.0559	0.6302	−0.7728	0.1954	−0.3309
	t-stat	2.5443	1.1095	−1.2887	−1.2099	−1.2875
	Prob	0.0421*	0.0598**	0.0042*	0.0586**	0.0048***
Botswana	Coefficient	−0.4097	0.4154	0.0499	0.0071	0.3977
	t-stat	3.0854	−1.0773	2.0947	−1.8382	3.2114
	Prob	0.0095*	0.0883***	0.0994**	0.2186**	0.0093**
Colombia	Coefficient	0.0392	0.4928	0.1630	0.0449	0.1074
	t-stat	2.4981	2.0392	3.1114	2.4985	2.3029
	Prob	0.0056***	0.0185***	0.0486**	0.1987***	0.0027***
Dominican Republic	Coefficient	0.0882	0.3096	−0.1719	0.1285	−0.3028
	t-stat	2.4895	3.1175	2.1332	2.8850	−3.3926
	Prob	0.0977***	0.1194***	0.0090***	0.0187***	0.0029**
Ecuador	Coefficient	0.4022	0.1135	0.2389	0.5096	0.1975
	t-stat	7.0974	6.2038	−2.5550	−2.3918	1.8443
	Prob	0.0885***	0.2876**	0.0049***	0.0111**	0.0138*
Guatemala	Coefficient	0.1791	0.1990	−0.3388	0.1120	0.4983
	t-stat	4.7367	4.3009	−1.8727	3.2378	2.0987
	Prob	0.0059**	0.0177**	0.1284*	0.0295*	0.0364**
Iran	Coefficient	−0.0509	−0.1845	−0.4003	−0.0862	0.2678
	t-stat	2.1986	1.2209	−5.1767	2.8475	3.2784
	Prob	0.0975*	0.1878*	0.0340**	0.2901*	0.0502**
Iraq	Coefficient	0.0482	0.1190	−0.9498	0.1376	−0.4985
	t-stat	−3.8863	2.0493	−2.1447	1.8309	−1.3873
	Prob	0.0985**	0.0053**	0.1985*	0.0043**	0.0387**
Jordan	Coefficient	−0.1185	0.7392	0.0399	0.4008	−0.2254
	t-stat	3.5007	3.8299	3.0404	−5.1223	−2.0980
	Prob	0.0444*	0.0083***	0.0028**	0.1174***	0.0127***
Lebanon	Coefficient	0.1761	0.5042	0.4094	0.2886	−0.3104
	t-stat	2.4332	4.0939	4.0125	−3.7748	−4.0638
	Prob	0.0054**	0.0118***	0.0137**	0.2864***	0.0019**
Libya	Coefficient	−0.2006	0.3440	0.1876	0.1555	0.1986
	t-stat	7.0287	−3.2264	3.9275	2.2890	3.1183
	Prob	0.0195**	0.0870***	0.0089***	0.0482***	0.0054*
Namibia	Coefficient	−0.5016	0.2928	0.1231	0.3968	−0.2359
	t-stat	−2.4729	3.4433	−1.3918	2.5520	−1.2263
	Prob	0.0192*	0.0042***	0.0303**	0.2666***	0.0149**
Peru	Coefficient	0.5441	0.2856	0.0036	0.0465	0.0585
	t-stat	3.0665	5.3771	2.1098	−2.7743	1.1972
	Prob	0.0490***	0.2885**	0.1974*	0.0283*	0.0013***
Sri Lanka	Coefficient	0.3352	−0.2549	0.5043	−0.1665	0.0064
	t-stat	−1.7776	1.3981	3.0932	6.0554	3.0336
	Prob	0.0554**	0.0043*	0.0012*	0.0590**	0.0222**
Turkey	Coefficient	0.0743	0.0909	0.3553	0.0170	−0.3984
	t-stat	4.1739	3.2030	−2.1126	−2.0337	−3.8711
	Prob	0.0146*	0.0487*	0.0388**	0.0445***	0.0550***

X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table S7. FMOLS and DOLS tests results and ARDL long-run estimates, Group 1.

Country	Parameters	X_1	X_2	X_3	X_4	Constant
Afghanistan	ARDL coefficient	0.0285	−0.1729	0.1284	0.0183	−4.8699
	ARDL t-stat	3.1829**	−4.1294**	3.9012**	4.2019*	−2.1845
	FMOLS coefficient	0.0318	−0.1782	0.2015	0.1836	−3.5097
	FMOLS t-stat	2.9102**	−4.8472**	2.4964*	3.2087*	−2.0836
	DOLS coefficient	0.0279	−0.1543	0.1711	0.1104	−4.5192
	DOLS t-stat	3.1991**	−4.0564**	3.8042**	4.2192*	−2.1739
Burkina Faso	ARDL coefficient	−0.1128	−0.3981	0.5192	0.1038	−5.1938
	ARDL t-stat	1.9942*	2.0994*	4.0006***	1.1022**	−1.5002
	FMOLS coefficient	−0.1764	−0.3927	0.5928	0.1602	−3.9772
	FMOLS t-stat	1.8974**	2.2297*	2.5934**	1.4997**	−2.9598
	DOLS coefficient	−0.1319	−0.5051	0.6189	0.1591	−4.1683
	DOLS t-stat	2.1975*	2.1925*	2.1985**	1.1865**	−1.6187
Chad	ARDL coefficient	−0.0185	−0.0943	0.1067	−0.4902	1.6920
	ARDL t-stat	2.4019***	3.1762***	−3.9058**	3.1987*	2.6825
	FMOLS coefficient	−0.1208	−0.3111	0.1529	−0.3988	1.9882
	FMOLS t-stat	1.5997***	1.9772**	−3.5920**	3.0063*	3.1592
	DOLS coefficient	−0.1182	−0.2875	0.1288	−0.4902	1.7647
	DOLS t-stat	2.5817***	2.1953**	−3.9291**	3.1987*	2.7291
Congo, Democratic Republic	ARDL coefficient	0.1099	0.0211	0.1392	0.0812	−4.4892
	ARDL t-stat	1.3902*	5.3677***	7.0218**	4.7391**	−1.3827
	FMOLS coefficient	0.1197	0.1298	0.2919	0.1397	−2.6999
	FMOLS t-stat	1.8472*	4.9287**	6.0984**	4.6920**	−2.4773
	DOLS coefficient	0.1099	0.0371	0.1997	0.1138	−4.0053
	DOLS t-stat	1.3904*	5.4873***	7.2815**	4.5272**	−1.0957
Ethiopia	ARDL coefficient	−0.0281	0.0172	0.2385	−0.8491	−5.0092
	ARDL t-stat	−5.1220**	−3.1492**	−6.9258***	5.1299*	−2.6935
	FMOLS coefficient	−0.0492	0.0776	0.3058	−0.7991	−5.9711
	FMOLS t-stat	−2.5908***	−3.0988**	−4.8989***	5.0029*	−2.9876
	DOLS coefficient	−0.0328	0.0187	0.2865	−0.8290	−5.0984
	DOLS t-stat	−4.993**	−3.8772**	−5.2988***	5.4832*	−2.0388
Guinea	ARDL coefficient	0.1741	0.0482	0.3212	0.0817	−4.8888
	ARDL t-stat	3.0054**	7.0011***	4.1029***	1.7629***	−1.1457
	FMOLS coefficient	0.1755	0.0692	0.4927	0.1690	−4.9921
	FMOLS t-stat	2.9832**	4.0982***	3.9952**	2.8892**	−1.2780
	DOLS coefficient	0.1835	0.0467	0.5197	0.1518	−4.8726
	DOLS t-stat	2.5672**	5.1382***	4.1593**	2.3082**	−1.1550
Haiti	ARDL coefficient	−0.0995	0.2918	0.1392	0.4987	2.5683
	ARDL t-stat	4.1972***	3.9019***	−1.0289***	3.1987***	1.0046
	FMOLS coefficient	−0.1297	0.2887	0.1289	0.5198	2.5298
	FMOLS t-stat	3.9077***	3.0983**	−1.5928***	2.5929**	2.1395
	DOLS coefficient	−0.1198	0.2278	0.1418	0.5029	2.6589
	DOLS t-stat	4.2901***	2.1995**	−1.3787***	2.8859**	2.0853
Mali	ARDL coefficient	0.1117	−0.1284	0.4020	−0.0928	−3.5833
	ARDL t-stat	−1.1213*	5.2812**	3.1718**	9.2918*	−1.0425
	FMOLS coefficient	0.1290	−0.1897	0.5902	−0.1887	−2.0873
	FMOLS t-stat	−1.3887*	3.9084**	3.9895*	6.8983*	−1.0822
	DOLS coefficient	0.1489	−0.1392	0.4108	−0.1798	−3.5787
	DOLS t-stat	−1.1519*	4.2294**	2.9874**	8.3982*	−1.1182
Mozambique	ARDL coefficient	0.0014	0.2018	0.8624	0.3890	4.1492
	ARDL t-stat	2.0475***	−2.4094**	5.1902***	−5.111***	2.0948
	FMOLS coefficient	0.1192	0.1189	0.6652	0.3882	2.0985
	FMOLS t-stat	3.2877**	2.0935***	4.9887***	−3.9872***	1.5983
	DOLS coefficient	0.0298	0.0982	0.8787	0.3386	3.1589
	DOLS t-stat	3.7795**	3.5972***	5.5983***	−4.6903***	2.4123
Nepal	ARDL coefficient	−0.0281	0.0041	0.1825	0.0488	−5.1947
	ARDL t-stat	6.3018***	4.1975***	−2.8977**	6.1998**	−2.3595
	FMOLS coefficient	−0.1490	0.0275	0.1826	0.0712	−5.0002
	FMOLS t-stat	2.9955**	4.0002**	−2.6981**	5.9921**	−2.5099
	DOLS coefficient	−0.1302	0.0487	0.1792	0.0771	−5.3028
	DOLS t-stat	3.5083**	3.8975**	−2.6778**	5.2915**	−2.4412
Niger	ARDL coefficient	0.1662	−0.0382	0.2017	0.2900	−6.2945
	ARDL t-stat	2.2209**	8.1924*	5.2975*	−2.5002**	−3.6800
	FMOLS coefficient	0.1682	−0.2184	0.2804	0.3398	−5.1284

	FMOLS t-stat	1.9925**	2.0582**	4.8824*	−2.9882**	−3.1898
	DOLS coefficient	0.1730	−0.1985	0.2918	0.2918	−5.7287
	DOLS t-stat	2.3780**	2.5987**	5.0006*	−2.8924**	−3.8824
Sierra Leone	ARDL coefficient	0.0948	0.6281	0.6927	−0.5902	2.5038
	ARDL t-stat	5.3810***	5.5278**	4.2019***	6.8763**	1.0002
	FMOLS coefficient	0.1822	0.5122	0.4894	−0.3982	2.0032
	FMOLS t-stat	4.1989**	4.0828**	3.5019**	5.0285**	1.6729
	DOLS coefficient	0.1759	0.6991	0.5284	−0.4828	1.9943
	DOLS t-stat	3.9981**	5.0376**	3.0107**	5.2787**	1.8811
Tajikistan	ARDL coefficient	0.1114	0.5393	0.7029	0.6592	−3.0592
	ARDL t-stat	8.1988***	5.1782***	3.1314***	3.4918***	−2.3098
	FMOLS coefficient	0.1421	0.4019	0.5872	0.5628	−2.5882
	FMOLS t-stat	6.0982***	3.0066***	3.0881***	2.7299**	−2.0021
	DOLS coefficient	0.1298	0.4280	0.6938	0.5039	−2.7938
	DOLS t-stat	7.2875***	4.8982***	3.1528***	2.5982**	−1.9992
Tanzania	ARDL coefficient	0.1286	−0.2919	0.0176	−0.4718	−5.4957
	ARDL t-stat	1.1904**	−1.1830*	−8.2918*	9.1987*	−3.5956
	FMOLS coefficient	0.1392	−0.4113	0.0518	−0.6024	−4.0997
	FMOLS t-stat	1.3020**	−1.2996*	−6.4202*	6.8993*	−3.9980
	DOLS coefficient	0.1389	−0.3092	0.0188	−0.5982	−4.9821
	DOLS t-stat	1.2994**	−1.1682*	−6.8821*	7.1110*	−3.3336
Yemen	ARDL coefficient	−0.0212	0.7720	0.8021	0.0028	−4.2095
	ARDL t-stat	−3.4881*	3.9901***	2.9413***	−6.1862***	−2.6083
	FMOLS coefficient	−0.0441	0.6600	0.7402	0.0202	−4.0024
	FMOLS t-stat	−3.0022*	4.2019**	3.3193***	−5.0013***	−3.1497
	DOLS coefficient	−0.0384	0.7351	0.7744	0.0198	−4.2392
	DOLS t-stat	−3.6920*	4.5992**	3.5928***	−5.7724***	−3.5590

X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table S8. FMOLS and DOLS tests results and ARDL long-run estimates, Group 2.

Country	Parameters	X_1	X_2	X_3	X_4	Constant
Bangladesh	ARDL coefficient	0.3828	0.0482	0.0993	0.0156	2.4735
	ARDL t-stat	−3.8200**	−1.3928***	3.6928***	1.0054***	1.6732
	FMOLS coefficient	0.4001	0.1993	0.1309	0.0397	2.3392
	FMOLS t-stat	−2.0904**	−1.0035**	2.0686***	1.5904**	1.8883
	DOLS coefficient	0.3590	0.0598	0.1192	0.0200	2.5991
	DOLS t-stat	−3.4983**	−1.3522***	3.2094***	1.0402***	1.6529
Bolivia	ARDL coefficient	0.4913	0.0201	0.0294	0.0182	4.8209
	ARDL t-stat	9.2066*	−2.9483***	4.2877***	2.1985***	3.2555
	FMOLS coefficient	0.5921	0.0628	0.0582	0.0778	3.5026
	FMOLS t-stat	7.9093**	−2.9940**	3.9002***	1.8294***	3.0053
	DOLS coefficient	0.5199	0.0494	0.0400	0.0699	3.7844
	DOLS t-stat	8.3192*	−2.6850***	3.4995***	1.7877***	3.1920
Cambodia	ARDL coefficient	−0.0583	−0.4877	−0.4899	−0.0831	−2.4671
	ARDL t-stat	−4.3921***	5.7092**	3.6948*	1.5937***	−1.9932
	FMOLS coefficient	−0.0992	−0.6043	−0.7277	−0.0891	−2.0694
	FMOLS t-stat	−2.0055**	5.1984**	2.5593**	1.9924***	−1.9902
	DOLS coefficient	−0.0691	−0.5920	−0.5921	−0.0782	−2.5584
	DOLS t-stat	−3.7882***	4.8923**	3.5566*	1.7085***	−2.0043
Cameroon	ARDL coefficient	0.0372	0.1752	0.0948	0.0927	6.2987
	ARDL t-stat	5.3928***	−4.3991**	−1.2583**	1.5274***	4.2076
	FMOLS coefficient	0.1193	0.2190	0.1094	0.1006	5.0909
	FMOLS t-stat	3.0026**	−3.0924**	−1.2283**	1.4928***	3.8892
	DOLS coefficient	0.0829	0.1956	0.0952	0.0994	5.8890
	DOLS t-stat	4.6728***	−4.0482**	−1.1196**	1.5671***	4.9977
Cote d'Ivoire	ARDL coefficient	0.0483	0.0728	0.3295	0.1928	−5.2696
	ARDL t-stat	4.2916***	5.2985***	2.1957***	−6.2918**	−4.1182
	FMOLS coefficient	0.0890	0.0983	0.4287	0.1906	−5.0434
	FMOLS t-stat	4.0915***	4.9289***	2.2286***	5.8921**	−4.8985
	DOLS coefficient	0.0666	0.0834	0.3488	0.1899	−5.5529
	DOLS t-stat	4.8921***	4.8743***	2.1684***	−6.1400**	−4.1592
India	ARDL coefficient	0.4820	0.3863	−0.0823	0.2986	−5.1903
	ARDL t-stat	9.2914***	7.2917***	−9.4182***	−4.2975**	−4.0002
	FMOLS coefficient	0.4029	0.3892	−0.0787	0.3281	−4.9889
	FMOLS t-stat	8.2014***	6.5982***	−8.4985***	−4.9990**	−4.5024
	DOLS coefficient	0.4584	0.3771	−0.0988	0.3044	−5.2993
	DOLS t-stat	8.0778***	6.3335***	−8.6683***	−4.5838**	−4.8195
Indonesia	ARDL coefficient	0.2285	0.2227	−0.0721	0.5724	2.1790
	ARDL t-stat	4.2985**	4.5928***	−4.9289***	−3.2983**	1.9624
	FMOLS coefficient	0.3054	0.2309	−0.0672	0.5548	2.3881
	FMOLS t-stat	4.5220**	4.6083***	−4.6718***	−2.9896**	1.9999
	DOLS coefficient	0.2386	0.2254	−0.0680	0.5655	2.1666
	DOLS t-stat	4.0631**	4.5992***	−4.8843***	−3.0633**	1.8078
Kenya	ARDL coefficient	0.2010	0.4999	0.2784	0.4443	3.2755
	ARDL t-stat	−3.5917*	−3.0288***	5.2903**	2.1985***	3.0585
	FMOLS coefficient	0.2286	0.4492	0.3392	0.5027	3.3386
	FMOLS t-stat	−2.9018*	−1.6987***	4.6029**	1.7692***	3.1295
	DOLS coefficient	0.2133	0.4973	0.2598	0.4559	3.2853
	DOLS t-stat	−3.6005*	−2.0682***	4.5902**	1.8843***	3.1000
Kyrgyzstan	ARDL coefficient	0.0392	0.1562	0.6999	0.3892	−4.1446
	ARDL t-stat	−5.3992***	3.1778**	7.2808***	3.3816**	−3.9836
	FMOLS coefficient	0.0596	0.1567	0.7185	0.4399	−4.3921
	FMOLS t-stat	−4.9928***	2.9830**	6.4929***	3.5938**	−3.5598
	DOLS coefficient	0.0449	0.1481	0.7083	0.3597	−4.2850
	DOLS t-stat	−5.0734***	3.0053**	6.8796***	3.9732**	−3.7043
Nigeria	ARDL coefficient	0.1279	0.1038	0.5026	0.7725	6.1993
	ARDL t-stat	6.2917**	−2.4820**	2.9184***	8.3974*	4.0975
	FMOLS coefficient	0.1592	0.1384	0.5595	0.7594	5.9987
	FMOLS t-stat	5.8921**	−2.7891**	2.8493***	7.9029*	4.1296
	DOLS coefficient	0.1357	0.1198	0.5102	0.7628	6.0042
	DOLS t-stat	6.1183**	−2.4037**	2.9575***	8.3290*	4.1119
Pakistan	ARDL coefficient	0.5826	0.3827	−0.3712	0.9428	5.1987
	ARDL t-stat	3.5938***	3.6826***	5.2877**	7.2973*	4.1907
	FMOLS coefficient	0.5492	0.4024	−0.4582	0.7693	4.7288

	FMOLS t-stat	3.0597***	3.6792***	3.0900**	6.8298*	4.5929
	DOLS coefficient	0.5599	0.3825	−0.3540	0.9020	5.0005
	DOLS t-stat	3.6687***	3.6822***	5.4991**	7.0664*	4.2984
Philippines	ARDL coefficient	0.9858	0.4828	0.1123	0.1147	−7.3875
	ARDL t-stat	1.5932*	−1.3922**	1.5662*	2.4826**	−3.4877
	FMOLS coefficient	0.9029	0.4723	0.1320	0.1418	−7.0983
	FMOLS t-stat	1.6992*	−1.9095**	1.9247*	2.3019**	−3.0664
	DOLS coefficient	0.9576	0.4774	0.1219	0.1295	−7.4929
	DOLS t-stat	1.5983*	−1.3791**	1.5780*	2.4595**	−3.4917
Tunisia	ARDL coefficient	0.0424	0.9382	0.2058	0.1785	3.4906
	ARDL t-stat	−3.9586**	2.4928**	2.9846**	3.2977***	3.0957
	FMOLS coefficient	0.0673	0.9522	0.2391	0.1892	3.9825
	FMOLS t-stat	−3.0010**	2.7907**	2.8299**	3.0090***	3.5050
	DOLS coefficient	0.0552	0.9380	0.2055	0.1761	3.4789
	DOLS t-stat	−3.5829**	2.4926**	2.9847**	3.2960***	3.0888
Vietnam	ARDL coefficient	−0.2975	0.0192	0.3916	0.2988	−5.0700
	ARDL t-stat	4.7003***	4.4987***	−2.3815**	1.5927**	−1.9875
	FMOLS coefficient	−0.4028	0.0478	0.5919	0.3288	−5.0082
	FMOLS t-stat	3.0981**	3.0996***	−2.3985**	1.7720**	1.8445
	DOLS coefficient	−0.3045	0.0156	0.4176	0.3019	−5.1998
	DOLS t-stat	4.7114***	4.4942***	−2.3993**	1.6728**	−1.7193
Zambia	ARDL coefficient	−0.0052	0.5020	0.7122	−0.4826	3.9608
	ARDL t-stat	1.5698***	5.2984*	3.6836**	−7.2815*	2.9996
	FMOLS coefficient	−0.0568	0.5992	0.6988	−0.5074	3.7902
	FMOLS t-stat	2.9996**	4.9900*	3.6093**	−5.9827*	2.9696
	DOLS coefficient	−0.0045	0.5446	0.7309	−0.4988	3.9802
	DOLS t-stat	1.5788***	5.3929*	3.8934**	−6.4999*	2.9007

X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table S9. FMOLS and DOLS tests results and ARDL long-run estimates, Group 3.

Country	Parameters	X_1	X_2	X_3	X_4	Constant
Algeria	ARDL coefficient	0.0486	0.7294	−0.9621	0.1833	−2.4985
	ARDL t-stat	2.6893*	1.0487**	−1.2947*	−1.3028**	−2.0012
	FMOLS coefficient	0.0688	0.7045	−0.9404	0.2291	−2.4056
	FMOLS t-stat	2.4982*	1.2928**	−1.3300*	−1.3098**	−2.0667
	DOLS coefficient	0.0506	0.7377	−0.9501	0.1952	−2.5029
	DOLS t-stat	2.6944*	1.0483**	−1.2892*	−1.3111**	−2.0482
Botswana	ARDL coefficient	−0.3985	0.4937	0.0385	0.3792	6.2875
	ARDL t-stat	4.2970*	−1.9473***	2.6973**	−1.9582**	4.2099
	FMOLS coefficient	−0.4892	0.5044	0.0928	0.4081	6.1103
	FMOLS t-stat	4.3929*	−1.8029***	2.5504**	−1.9772**	4.2468
	DOLS coefficient	−0.4078	0.4985	0.0682	0.3694	6.2901
	DOLS t-stat	4.2444*	−1.9471***	2.7010**	−1.9773**	4.2399
Colombia	ARDL coefficient	0.0284	0.3309	0.1566	0.0462	4.1984
	ARDL t-stat	2.5897***	2.5824***	3.0521**	2.3975***	3.0019
	FMOLS coefficient	0.0344	0.4090	0.1390	0.0628	4.1197
	FMOLS t-stat	2.5883***	2.9688***	3.1178**	2.4199***	3.0666
	DOLS coefficient	0.0267	0.3486	0.1691	0.0591	4.2287
	DOLS t-stat	2.5890***	2.5852***	3.0664**	2.4087***	3.1129
Dominican Republic	ARDL coefficient	0.0931	0.3892	−0.1649	0.1284	−5.3201
	ARDL t-stat	3.5863***	3.2989***	2.0593***	3.9701***	−4.4865
	FMOLS coefficient	0.0882	0.3563	−0.1550	0.1592	−5.0021
	FMOLS t-stat	3.4456***	3.0674***	2.1675***	3.5826***	−4.2354
	DOLS coefficient	0.0970	0.3797	−0.1773	0.1381	−5.3378
	DOLS t-stat	3.5868***	3.2593***	2.0646***	3.9882***	−4.4997
Ecuador	ARDL coefficient	0.3987	0.1237	0.2900	0.5109	2.1995
	ARDL t-stat	9.3866***	7.2000**	−3.0482***	−2.4975**	1.8202
	FMOLS coefficient	0.4285	0.1492	0.3031	0.5582	2.3049
	FMOLS t-stat	8.0590***	7.0693**	−2.9997***	−2.5699**	1.9882
	DOLS coefficient	0.4122	0.1320	0.2906	0.5287	2.2003
	DOLS t-stat	9.0337***	7.3418**	−3.0485***	−2.5086**	1.8347
Guatemala	ARDL coefficient	0.1894	0.1748	−0.3982	0.0473	4.9687
	ARDL t-stat	5.9027**	5.3285**	−1.9467*	4.2999*	3.9198
	FMOLS coefficient	0.2291	0.2390	−0.5029	0.0727	4.7605
	FMOLS t-stat	5.5003**	5.0492**	−1.7895*	4.0052*	3.5977
	DOLS coefficient	0.1929	0.1866	−0.4006	0.0591	4.7992
	DOLS t-stat	5.9167**	5.3263**	−1.9530*	4.3087*	3.8845
Iran	ARDL coefficient	−0.0480	−0.4923	−0.4888	−0.0921	8.2977
	ARDL t-stat	3.0875*	1.0480*	−7.0024**	3.9612*	5.2831
	FMOLS coefficient	−0.0445	−0.4994	−0.5690	−0.0941	8.1167
	FMOLS t-stat	2.9963*	1.1126*	−6.8215**	3.8093*	5.2819
	DOLS coefficient	−0.0592	−0.4829	−0.4874	−0.0884	8.0034
	DOLS t-stat	3.0994*	1.0558*	−7.0020**	3.9519*	5.0582
Iraq	ARDL coefficient	0.0378	0.0372	−0.9387	0.1029	−1.3087
	ARDL t-stat	−5.9076**	3.5559**	−3.0298*	1.9444**	−1.0022
	FMOLS coefficient	0.0492	0.0599	−0.8057	0.1393	−1.4029
	FMOLS t-stat	−5.5020**	3.2918**	−3.2801*	2.0001**	−1.1855
	DOLS coefficient	0.0420	0.0443	−0.9491	0.1149	−1.3192
	DOLS t-stat	−5.9147**	3.5692**	−3.1194*	1.9467**	−1.1793
Jordan	ARDL coefficient	−0.0663	0.9275	0.0019	0.4991	−3.9866
	ARDL t-stat	4.5197*	5.2985***	4.6972**	−7.2974***	−2.3865
	FMOLS coefficient	−0.0672	0.9426	0.0665	0.5591	−3.0187
	FMOLS t-stat	4.3091*	5.4029***	4.6722**	−7.1197***	−2.7023
	DOLS coefficient	−0.0554	0.9392	0.0391	0.5072	−3.7724
	DOLS t-stat	4.5219*	5.3026***	4.7084**	−7.0053***	−2.3502
Lebanon	ARDL coefficient	0.1865	0.7291	0.4195	0.5190	−6.2971
	ARDL t-stat	3.9777**	3.5937***	5.0021**	−5.2741***	−5.1989
	FMOLS coefficient	0.2038	0.7501	0.4928	0.5974	−6.0029
	FMOLS t-stat	3.5026**	3.3929***	5.0929**	−5.2986***	−5.2988
	DOLS coefficient	0.1990	0.7167	0.4290	0.5228	−6.3084
	DOLS t-stat	3.9963**	3.5896***	5.0492**	−5.2894***	−5.2097
Libya	ARDL coefficient	−0.1993	0.7398	0.0417	0.6719	7.1082
	ARDL t-stat	4.0030**	−2.5697***	3.0585***	2.0034***	4.0884
	FMOLS coefficient	−0.2096	0.7585	0.1583	0.5880	6.8201

	FMOLS t-stat	4.1299**	−2.4406***	3.8771***	2.4389***	4.1004
	DOLS coefficient	−0.1974	0.7492	0.1390	0.6756	7.0055
	DOLS t-stat	4.0502**	−2.5550***	3.0663***	2.0592***	4.0619
Namibia	ARDL coefficient	−0.4975	0.2745	0.1116	0.3001	−2.9853
	ARDL t-stat	−3.0052*	4.0032***	−1.0470**	4.2988***	−1.0009
	FMOLS coefficient	−0.5003	0.2890	0.1255	0.3184	−2.7028
	FMOLS t-stat	−2.9794*	4.1199***	−1.2837**	4.0920***	−1.0493
	DOLS coefficient	−0.4840	0.2821	0.1289	0.3053	−2.9685
	DOLS t-stat	−3.0097*	4.0173***	−1.0571**	4.2664***	−1.0377
Peru	ARDL coefficient	0.5030	0.4982	0.4927	0.0287	4.9082
	ARDL t-stat	5.3977***	7.2412**	3.0053*	−2.9695*	1.0886
	FMOLS coefficient	0.5290	0.5945	0.5428	0.0333	4.5297
	FMOLS t-stat	5.4029**	7.0031**	3.1924*	−2.1876*	1.2402
	DOLS coefficient	0.5116	0.4584	0.4499	0.0383	4.9105
	DOLS t-stat	5.3803**	7.2559**	3.0109*	−2.9555*	1.0957
Sri Lanka	ARDL coefficient	0.2548	−0.2655	0.5102	−0.1859	6.0821
	ARDL t-stat	−1.9642**	1.5977*	5.2260*	9.4921**	4.0982
	FMOLS coefficient	0.3384	−0.3000	0.5358	−0.1884	5.5085
	FMOLS t-stat	−2.0985**	1.6547*	5.0485*	8.4928**	4.2256
	DOLS coefficient	0.2749	−0.2694	0.5299	−0.1940	5.7028
	DOLS t-stat	−1.9774**	1.5602*	5.2346*	9.5229**	4.1993
Turkey	ARDL coefficient	0.0861	0.0826	0.3928	0.0182	−5.9809
	ARDL t-stat	6.1864*	4.2909*	−2.0532**	−2.1418***	−4.9997
	FMOLS coefficient	0.0985	0.0662	0.4181	0.0382	−5.0495
	FMOLS t-stat	5.9001	4.5093	−2.1285**	−2.1867***	−4.4009
	DOLS coefficient	0.0873	0.0739	0.4006	0.0286	−5.8846
	DOLS t-stat	6.1965*	4.3088*	−2.0693**	−2.1529***	−4.8201

X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table S10. TY causality test results, Group 1.

Country	Parameters	$Y \rightarrow X_1$	$X_1 \rightarrow Y$	$Y \rightarrow X_2$	$X_2 \rightarrow Y$	$Y \rightarrow X_3$	$X_3 \rightarrow Y$	$Y \rightarrow X_4$	$X_4 \rightarrow Y$
Afghanistan	Test statistics	0.39	1.94	2.09	9.48	0.55	0.18	2.64	3.19
	p value	0.49	0.33	0.31	0.06*	0.47	0.62	0.26	0.20
Burkina Faso	Test statistics	5.40	9.16	4.69	5.10	0.97	2.53	8.18	27.05
	p value	0.31	0.18	0.41	0.33	0.84	0.52	0.23	0.06*
Chad	Test statistics	12.37	4.47	6.01	9.13	8.05	21.04	0.96	2.11
	p value	0.14	0.33	0.26	0.19	0.22	0.00**	0.77	0.42
Congo, Democratic Republic	Test statistics	5.32	1.11	7.15	4.04	3.18	17.28	8.14	10.43
	p value	0.28	0.75	0.16	0.35	0.40	0.00**	0.13	0.07*
Ethiopia	Test statistics	2.07	6.22	0.19	3.08	1.95	10.55	0.66	2.16
	p value	0.45	0.19	0.93	0.38	0.48	0.00***	0.79	0.43
Guinea	Test statistics	3.90	10.00	1.14	15.02	6.41	14.20	0.47	4.08
	p value	0.36	0.15	0.66	0.00**	0.26	0.01*	0.91	0.34
Haiti	Test statistics	2.28	3.11	1.05	8.39	2.02	4.13	1.59	0.72
	p value	0.35	0.23	0.56	0.00**	0.38	0.17	0.41	0.77
Mali	Test statistics	2.18	11.63	0.44	1.17	0.16	5.14	0.98	7.00
	p value	0.13	0.00*	0.41	0.20	0.92	0.06	0.23	0.03*
Mozambique	Test statistics	0.30	3.01	2.12	6.54	0.14	4.13	0.56	1.19
	p value	0.72	0.23	0.30	0.02*	0.91	0.15	0.61	0.47
Nepal	Test statistics	2.01	6.38	0.58	3.12	1.66	0.97	0.14	4.75
	p value	0.18	0.03*	0.69	0.10	0.25	0.41	0.90	0.07*
Niger	Test statistics	1.05	17.20	1.75	5.06	0.58	2.10	0.22	9.12
	p value	0.53	0.00**	0.39	0.15	0.67	0.34	0.88	0.06*
Sierra Leone	Test statistics	0.80	6.64	4.04	11.17	0.44	14.29	1.07	2.63
	p value	0.84	0.11	0.20	0.03*	0.92	0.01**	0.75	0.34
Tajikistan	Test statistics	1.29	3.13	0.18	16.20	1.03	13.84	0.53	8.66
	p value	0.45	0.21	0.82	0.00**	0.48	0.05**	0.76	0.08*
Tanzania	Test statistics	7.17	20.40	0.81	4.05	2.19	37.08	0.44	1.07
	p value	0.22	0.09	0.75	0.34	0.55	0.00**	0.83	0.71
Yemen	Test statistics	1.00	13.17	0.08	8.16	1.98	4.13	0.35	0.86
	p value	0.53	0.00*	0.94	0.02**	0.27	0.11	0.76	0.59

Y = number of people with insufficient food consumption; X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table S11. TY causality test results, Group 2.

Country	Parameters	$Y \rightarrow X_1$	$X_1 \rightarrow Y$	$Y \rightarrow X_2$	$X_2 \rightarrow Y$	$Y \rightarrow X_3$	$X_3 \rightarrow Y$	$Y \rightarrow X_4$	$X_4 \rightarrow Y$
Bangladesh	Test statistics	0.68	8.13	0.99	4.36	0.14	2.01	0.05	1.16
	p value	0.41	0.00**	0.30	0.07	0.70	0.18	0.96	0.27
Bolivia	Test statistics	1.16	7.07	0.75	4.19	2.03	8.55	0.10	0.17
	p value	0.33	0.02*	0.47	0.11	0.25	0.00*	0.84	0.80
Cambodia	Test statistics	0.20	3.00	0.28	2.65	1.04	6.14	0.55	0.96
	p value	0.77	0.08	0.71	0.14	0.32	0.00*	0.46	0.37
Cameroon	Test statistics	0.52	5.15	0.33	13.07	0.96	3.02	0.12	1.44
	p value	0.49	0.11	0.58	0.00**	0.35	0.17	0.79	0.26
Cote d'Ivoire	Test statistics	0.13	4.10	1.19	2.75	0.41	12.43	1.02	7.22
	p value	0.90	0.08	0.30	0.21	0.76	0.00**	0.34	0.01*
India	Test statistics	0.37	23.15	0.55	6.12	1.12	2.08	1.76	15.06
	p value	0.83	0.00***	0.79	0.13	0.47	0.32	0.39	0.01*
Indonesia	Test statistics	0.85	10.28	1.00	1.29	0.22	7.36	0.04	5.15
	p value	0.31	0.00***	0.23	0.16	0.65	0.01*	0.90	0.02*
Kenya	Test statistics	0.67	6.11	0.24	6.88	1.02	6.00	1.31	2.03
	p value	0.46	0.01**	0.72	0.00**	0.29	0.02*	0.24	0.11
Kyrgyzstan	Test statistics	1.13	2.05	1.60	7.17	0.53	8.23	1.02	0.80
	p value	0.34	0.12	0.23	0.00**	0.65	0.00**	0.37	0.41
Nigeria	Test statistics	0.15	9.70	0.41	3.85	1.40	10.05	0.06	0.97
	p value	0.77	0.02**	0.56	0.10	0.22	0.00**	0.81	0.29
Pakistan	Test statistics	0.08	3.19	0.20	1.07	0.85	6.13	0.48	14.63
	p value	0.92	0.25	0.81	0.42	0.49	0.14	0.66	0.00**
Philippines	Test statistics	0.89	4.24	0.74	16.30	1.15	10.47	0.33	2.01
	p value	0.47	0.14	0.55	0.01***	0.42	0.03**	0.78	0.30
Tunisia	Test statistics	0.18	3.03	0.26	12.98	0.09	9.13	0.60	1.24
	p value	0.72	0.11	0.67	0.00***	0.90	0.01**	0.51	0.25
Vietnam	Test statistics	0.44	0.70	0.02	2.01	0.05	5.65	0.14	1.18
	p value	0.56	0.34	0.95	0.13	0.86	0.00**	0.77	0.22
Zambia	Test statistics	0.33	0.52	0.21	3.30	0.97	7.04	0.09	1.24
	p value	0.65	0.57	0.74	0.14	0.41	0.01**	0.88	0.30

Y = number of people with insufficient food consumption; X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table S12. TY causality test results, Group 3.

Country	Parameters	$Y \rightarrow X_1$	$X_1 \rightarrow Y$	$Y \rightarrow X_2$	$X_2 \rightarrow Y$	$Y \rightarrow X_3$	$X_3 \rightarrow Y$	$Y \rightarrow X_4$	$X_4 \rightarrow Y$
Algeria	Test statistics	0.44	12.01	0.98	10.43	1.65	4.04	0.12	2.77
	p value	0.56	0.00**	0.37	0.01***	0.29	0.11	0.87	0.20
Botswana	Test statistics	0.20	3.70	0.49	13.67	0.94	1.99	1.05	9.14
	p value	0.77	0.13	0.58	0.00***	0.39	0.24	0.36	0.01***
Colombia	Test statistics	0.73	32.18	4.01	25.40	2.11	9.13	1.40	19.46
	p value	0.81	0.00***	0.24	0.01***	0.38	0.10	0.66	0.02***
Dominican Republic	Test statistics	0.04	9.74	0.72	2.18	0.13	1.06	0.85	7.03
	p value	0.92	0.00**	0.34	0.11	0.75	0.23	0.29	0.01***
Ecuador	Test statistics	0.85	19.13	0.31	5.25	1.80	11.20	1.03	2.17
	p value	0.46	0.00***	0.69	0.12	0.31	0.02*	0.40	0.25
Guatemala	Test statistics	0.12	0.95	0.44	7.14	1.03	2.19	0.21	1.44
	p value	0.85	0.34	0.47	0.00**	0.31	0.15	0.66	0.26
Iran	Test statistics	0.24	12.07	0.85	6.25	0.40	1.02	1.55	2.07
	p value	0.81	0.00**	0.56	0.13	0.72	0.42	0.36	0.30
Iraq	Test statistics	0.09	1.66	1.05	5.80	0.19	0.81	0.38	0.62
	p value	0.83	0.18	0.23	0.02**	0.65	0.28	0.47	0.34
Jordan	Test statistics	1.04	4.55	0.88	18.25	1.38	12.46	0.20	2.17
	p value	0.37	0.12	0.42	0.00***	0.30	0.01*	0.79	0.21
Lebanon	Test statistics	0.06	1.36	0.99	8.14	0.81	6.09	0.14	0.43
	p value	0.92	0.14	0.25	0.00***	0.28	0.01*	0.75	0.51
Libya	Test statistics	0.11	3.03	0.30	10.02	1.40	1.83	0.62	0.80
	p value	0.84	0.10	0.64	0.01***	0.24	0.19	0.49	0.45
Namibia	Test statistics	0.39	0.67	1.21	9.27	0.97	7.23	0.81	6.08
	p value	0.58	0.41	0.13	0.00***	0.25	0.01*	0.34	0.02***
Peru	Test statistics	0.17	14.19	0.50	10.34	1.04	2.15	0.77	8.40
	p value	0.72	0.00***	0.55	0.01*	0.27	0.13	0.39	0.02***
Sri Lanka	Test statistics	0.15	9.08	0.32	1.13	0.93	5.12	0.55	4.00
	p value	0.80	0.00***	0.67	0.15	0.21	0.01*	0.48	0.02***
Turkey	Test statistics	0.28	15.06	0.44	2.17	1.55	10.41	0.96	9.35
	p value	0.74	0.00***	0.58	0.16	0.24	0.01**	0.31	0.02***

Y = number of people with insufficient food consumption; X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange; *,**,*** = significance at 10% level, 5% level, and 1% level, respectively. Source: authors' development.

Table S13. Variance decomposition of *Y* over a nine periods (three quarters) horizon, Group 1.

Country	Period	Standard error	Y	X_1	X_2	X_3	X_4
Afghanistan	September 2020	0.004726	93.178533	0.310963	4.889038	0.012871	1.608595
	December 2020	0.007688	88.899731	1.902381	5.904815	0.009842	3.283231
	March 2021	0.012864	83.982772	2.159286	8.007200	0.008275	5.842467
Burkina Faso	September 2020	0.003719	95.829400	0.499841	0.994106	0.031578	2.645075
	December 2020	0.005851	89.492855	3.159844	0.752981	0.149811	6.444509
	March 2021	0.010509	84.203371	5.809420	0.707732	0.266082	9.013395
Chad	September 2020	0.006187	92.178925	0.586849	1.568395	5.498254	0.167577
	December 2020	0.008468	82.400067	2.377412	4.189734	10.309615	0.723172
	March 2021	0.011921	76.398555	3.096329	5.095246	13.704832	1.705038
Congo, Democratic	September 2020	0.007164	94.117593	0.042881	0.808432	3.177245	1.853849
Republic	December 2020	0.013877	90.058290	0.061299	0.504914	5.909843	3.465654
	March 2021	0.021955	81.174509	0.078531	0.439886	11.120942	7.186132
Ethiopia	September 2020	0.010297	93.148096	1.309442	0.320833	5.100985	0.120644
	December 2020	0.014958	85.109844	1.580413	1.225821	10.579216	1.504706
	March 2021	0.021870	77.739052	1.690286	3.000632	14.840523	2.729507
Guinea	September 2020	0.009421	92.203361	1.009850	3.172805	2.849863	0.764121
	December 2020	0.015924	84.640840	1.202587	7.404022	6.403445	0.349106
	March 2021	0.020071	73.129065	2.009524	12.511563	11.505621	0.844227
Haiti	September 2020	0.008419	95.148984	0.704533	3.405712	0.498423	0.242348
	December 2020	0.013957	88.350902	2.567071	6.139209	1.309884	1.632934
	March 2021	0.017299	80.772309	3.120067	11.042261	2.522567	2.542796
Mali	September 2020	0.028555	94.909951	2.084932	0.042220	0.438975	2.523922
	December 2020	0.034800	89.048255	5.156625	0.068285	0.707532	5.019303
	March 2021	0.041985	82.455084	9.126083	0.099321	0.598340	7.721172
Mozambique	September 2020	0.005680	98.028851	0.199874	1.117972	0.407162	0.246141
	December 2020	0.007996	96.538923	0.219085	1.248065	0.289875	1.704052
	March 2021	0.010077	93.119874	0.259874	2.802876	0.209876	3.607500
Nepal	September 2020	0.037945	94.894071	3.170932	0.289403	0.049841	1.595753
	December 2020	0.043886	87.095286	6.809884	0.309724	0.059875	5.725231
	March 2021	0.052893	79.479210	10.290955	0.552986	0.069951	9.606898
Niger	September 2020	0.004526	95.001758	2.502111	0.904713	0.147804	1.443614
	December 2020	0.008270	88.358921	6.142203	1.005892	0.170987	4.321997
	March 2021	0.013877	82.086743	9.459286	1.580396	0.225803	6.647772
Sierra Leone	September 2020	0.009884	96.400027	0.189775	1.009974	2.323875	0.076349
	December 2020	0.016872	93.116405	0.540096	1.130843	4.950972	0.261684
	March 2021	0.027881	90.400933	0.833309	1.308875	6.912865	0.544018
Tajikistan	September 2020	0.001873	92.415807	0.084925	4.058277	2.140723	1.300268
	December 2020	0.004920	85.190287	0.113067	9.409287	4.086287	1.201072
	March 2021	0.008344	77.097630	0.140992	14.006000	7.528751	1.226627
Tanzania	September 2020	0.003835	95.230875	0.905298	0.428515	3.258826	0.176486
	December 2020	0.008006	91.360922	1.230954	0.666192	6.003710	0.738222
	March 2021	0.013774	87.110943	1.503985	1.003985	9.294986	1.086101
Yemen	September 2020	0.004217	96.370849	2.029486	1.398412	0.197746	0.003507
	December 2020	0.007399	93.029871	5.391854	1.209864	0.308592	0.059819
	March 2021	0.013985	89.427849	8.298401	1.332875	0.808521	0.132354

Y = number of people with insufficient food consumption; X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange. Source: authors' development

Table S14. Variance decomposition of *Y* over a nine periods (three quarters) horizon, Group 2.

Country	Period	Standard error	Y	X_1	X_2	X_3	X_4
Bangladesh	September 2020	0.007390	95.370145	3.038921	0.835521	0.405194	0.350219
	December 2020	0.009186	88.409283	8.309127	1.492300	0.951096	0.838194
	March 2021	0.013909	82.559531	12.095140	2.649302	1.305821	1.390206
Bolivia	September 2020	0.004008	93.094854	2.179285	0.304875	4.382022	0.038964
	December 2020	0.006927	85.104820	4.539953	1.707328	8.626945	0.020954
	March 2021	0.012815	79.372041	4.629850	1.920584	14.059184	0.018341
Cambodia	September 2020	0.008510	94.072918	0.850211	0.670913	4.297705	0.108253
	December 2020	0.011904	86.349271	1.590932	1.298584	10.110627	0.650586
	March 2021	0.015991	80.230950	1.904863	1.840276	15.270843	0.753068
Cameroon	September 2020	0.004896	96.398705	0.492125	2.509110	0.402782	0.197278
	December 2020	0.008733	94.180437	0.908814	3.622819	0.763986	0.523944
	March 2021	0.013005	91.309665	1.205985	5.389833	1.110321	0.984196
Cote d'Ivoire	September 2020	0.011437	92.148064	0.039844	0.001965	4.297180	3.512947
	December 2020	0.015042	85.002978	0.088301	0.002600	7.603291	7.302830
	March 2021	0.020046	77.169285	0.105932	0.005928	12.437220	10.281635
India	September 2020	0.006281	93.048772	3.793780	0.084725	0.005921	3.066802
	December 2020	0.009942	80.279901	10.841954	0.009486	0.003912	8.864747
	March 2021	0.014244	74.194296	14.498776	0.003910	0.002030	11.300988
Indonesia	September 2020	0.005530	95.117295	1.903875	0.329855	1.527541	1.121434
	December 2020	0.008408	90.930758	3.010410	0.450849	2.819885	2.788098
	March 2021	0.010727	84.503985	5.529514	0.662976	5.028401	4.275124
Kenya	September 2020	0.013166	92.004956	2.270498	3.427501	2.004976	0.292069
	December 2020	0.020574	85.384109	4.389875	6.840035	2.883090	0.502891
	March 2021	0.028218	79.403770	6.147930	10.131840	3.620996	0.695464
Kyrgyzstan	September 2020	0.031096	93.920471	0.505149	2.820951	2.709857	0.043572
	December 2020	0.049194	86.079288	1.301942	6.662188	5.908173	0.048409
	March 2021	0.061702	78.222960	1.839585	10.909382	8.969566	0.058507
Nigeria	September 2020	0.010025	97.481042	0.707928	0.392665	1.336629	0.081736
	December 2020	0.015036	94.120953	1.259744	0.780482	3.703420	0.135401
	March 2021	0.020738	90.893655	1.936021	0.928777	6.059754	0.181793
Pakistan	September 2020	0.002915	96.529501	0.078375	0.038860	0.250285	3.102979
	December 2020	0.004172	91.692750	0.050270	0.025827	0.508822	7.722331
	March 2021	0.005986	87.069273	0.046206	0.022041	0.936606	11.925874
Philippines	September 2020	0.011503	95.850002	0.102985	2.739824	1.269412	0.037777
	December 2020	0.014837	89.104877	0.260387	5.853920	4.503865	0.276951
	March 2021	0.019545	81.329586	0.449286	9.845090	7.971921	0.404117
Tunisia	September 2020	0.002694	96.027573	0.409219	1.960987	1.508863	0.093358
	December 2020	0.004885	88.560498	0.912876	5.340061	4.592095	0.594470
	March 2021	0.006603	82.324409	1.204828	8.328612	7.509287	0.632864
Vietnam	September 2020	0.003047	94.238894	0.008021	0.803267	4.380486	0.569332
	December 2020	0.003819	85.099286	0.010587	2.209864	11.220061	1.460202
	March 2021	0.004500	78.836502	0.013976	3.390510	15.984744	1.774268
Zambia	September 2020	0.012053	96.110253	0.009310	0.802976	2.797056	0.280405
	December 2020	0.017048	90.492870	0.012096	1.740965	7.089942	0.664127
	March 2021	0.022729	84.950397	0.023051	2.498600	11.598730	0.929222

Y = number of people with insufficient food consumption; X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange. Source: authors' development.

Table S15. Variance decomposition of *Y* over a nine periods (three quarters) horizon, Group 3.

Country	Period	Standard error	Y	X_1	X_2	X_3	X_4
Algeria	September 2020	0.005105	93.194765	3.509961	3.029875	0.249287	0.016112
	December 2020	0.006238	87.088402	5.439854	6.798271	0.602855	0.070618
	March 2021	0.008429	80.398771	8.346723	10.459914	0.710592	0.084000
Botswana	September 2020	0.011730	95.459287	0.030952	2.329860	0.004293	2.175608
	December 2020	0.013096	88.500233	0.043976	5.549811	0.006610	5.899370
	March 2021	0.015387	81.003520	0.060293	9.049824	0.007298	9.879065
Colombia	September 2020	0.009473	92.984556	2.498662	2.285527	0.013853	2.217402
	December 2020	0.015905	83.150851	6.339876	5.340298	0.039761	5.129214
	March 2021	0.021376	75.425932	8.930194	7.770392	0.050030	7.823452
Dominican Republic	September 2020	0.006604	96.660496	1.802844	0.009930	0.001976	1.524754
	December 2020	0.011975	94.026822	3.005985	0.012850	0.027887	2.926456
	March 2021	0.025400	92.339524	4.238772	0.016927	0.059364	3.345413
Ecuador	September 2020	0.003167	95.782758	2.347703	0.035723	1.809863	0.023953
	December 2020	0.007341	91.298700	4.063911	0.266540	3.987576	0.383273
	March 2021	0.009938	86.600382	6.909257	0.547101	5.145527	0.797733
Guatemala	September 2020	0.037076	96.212805	0.028660	2.598520	0.795872	0.364143
	December 2020	0.058351	90.829811	0.050999	6.420056	1.903986	0.795148
	March 2021	0.072956	85.628403	0.079375	9.739851	3.597704	0.954667
Iran	September 2020	0.015632	94.000470	3.850294	1.847442	0.008209	0.293585
	December 2020	0.021693	88.198755	8.442958	2.756914	0.012985	0.588388
	March 2021	0.028407	82.410007	12.438750	4.204920	0.017666	0.928657
Iraq	September 2020	0.003791	93.783922	0.108387	6.019842	0.079375	0.008474
	December 2020	0.005839	84.837763	0.940842	13.639843	0.512097	0.069455
	March 2021	0.007230	78.592855	2.375554	16.945677	1.604982	0.480932
Jordan	September 2020	0.017266	95.676044	0.023985	2.294875	1.999503	0.005593
	December 2020	0.023404	89.039486	0.049583	6.259286	4.639504	0.012141
	March 2021	0.030487	83.928051	0.062975	9.502850	6.482753	0.023371
Lebanon	September 2020	0.045509	97.456629	0.400398	1.179387	0.948655	0.014931
	December 2020	0.059172	94.773892	0.689956	3.039866	1.399840	0.096446
	March 2021	0.064096	91.054496	0.779287	6.249302	1.785744	0.131171
Libya	September 2020	0.005303	93.111590	1.029870	5.309978	0.501153	0.047409
	December 2020	0.006092	82.529857	3.703998	12.649664	0.992501	0.123980
	March 2021	0.008839	75.395602	5.123094	18.028750	1.139622	0.312932
Namibia	September 2020	0.015827	96.340698	0.004935	1.592873	1.200980	0.860514
	December 2020	0.038094	85.288095	0.017948	6.660255	3.694053	4.339649
	March 2021	0.057022	73.109873	0.038761	12.197768	6.329755	8.323843
Peru	September 2020	0.002504	92.039890	4.299756	2.019635	0.018720	1.621999
	December 2020	0.003777	80.208444	9.029847	4.130297	0.029453	6.601959
	March 2021	0.004920	71.559215	13.294860	6.200018	0.049841	8.896066
Sri Lanka	September 2020	0.004406	95.386875	1.950200	0.040941	1.597470	1.024514
	December 2020	0.005003	92.454822	2.305974	0.062216	2.500146	2.676842
	March 2021	0.005698	89.967249	3.260016	0.077295	2.809897	3.885543
Turkey	September 2020	0.002906	90.479904	4.110062	0.029873	2.848211	2.531950
	December 2020	0.003351	79.502073	7.019281	0.049286	3.198602	10.230758
	March 2021	0.003855	68.327048	11.309555	0.060337	5.089936	15.213124

Y = number of people with insufficient food consumption; X_1 = number of confirmed COVID-19 cases; X_2 = balance of food trade; X_3 = food inflation; X_4 = currency exchange. Source: authors' development.