Food import bills

World food import bill set to reach new heights in 2021

The provisional forecast for the world food import bill in 2021 points to a record USD 1.715 trillion, which would suggest a rise of 12 percent from the previous year. The economic impacts of COVID-19 are not expected to hinder global demand for foodstuffs in 2021, nor did the pandemic curtail growth in the bill in 2020, the level of which stood as the previous record. Indeed, the year-on-year expansion of the bill in 2020 was mainly on account of a steadfast increase in imported volumes, especially those of staples; while in 2021, volumes are anticipated to remain robust, increased unit costs (international quotations and freight rates) are set to underpin overall growth in the world bill compared with last year (see Box).[1] The sustained demand for imported foodstuffs during the pandemic years also masks supply chain disruptions within countries that turned, and continue to turn, to the international marketplace to fulfil domestic requirements. For instance, when EU supply chains for citrus were disrupted at the beginning of the pandemic, Egypt was able to fill the supply gap and make major inroads into the EU market. Likewise, Kenya managed to step up exports of vegetables to the EU, when problems occurred due to COVID-19-related labour shortages in the vegetable sector.

[1] Unlike trade in non-essential merchandise products, imports of food have largely been unaffected by the pandemic, hence leaving less pent-up demand to further boost food import volumes.

Trends in import bills of food groups

The COVID-19 pandemic has exerted a pronounced income shock on the global economy, with negative growth rates experienced across all regions, albeit at different depths of decline and expected speeds and shapes of recovery. These income swings have left characteristic imprints on import demand across different food groups. The realized and foreseen changes in food import bills mainly reflect the diverging responsiveness of import demand to changes in income.

Table 1. Import bills of total food and food products by region (USD billion)

	World			Developed			Developing		
	2019	2020	2021*	2019	2020	2021*	2019	2020	2021*
Animal and vegetable oils, fats and waxes	90	103	136	42	47	52	48	56	84
Beverages	123	116	125	94	91	96	29	24	29
Cereals and cereal preparations	196	210	248	90	92	100	106	118	147
Coffee, tea, cocoa, spices and products	111	114	124	82	85	90	28	29	33
Dairy products and eggs	99	99	108	63	62	66	36	37	43
Fish, crustaceans, molluscs and products	175	162	174	122	116	125	53	46	48
Meat and meat preparations	163	170	177	106	101	102	57	69	75
Miscellaneous products and preparations	98	103	112	58	61	66	40	42	46
Oilseeds and oleaginous fruits	97	108	140	30	34	36	67	75	103
Sugar, sugar preparations and honey	46	50	52	25	26	27	21	24	26
Fruits and vegetables	286	297	321	207	214	225	80	83	96
Total	**1 483**	**1 530**	**1 715**	**920**	**927**	**986**	**564**	**603**	**730**
	LDC			LIFDC			SSA		
	2019	2020	2021*	2019	2020	2021*	2019	2020	2021*
Animal and vegetable oils, fats and waxes	6	8	8	18	20	25	5	6	7
Beverages	2	2	2	5	4	5	3	2	2
Cereals and cereal preparations	12	13	15	15	14	16	12	12	14
Coffee, tea, cocoa, spices and products	2	2	2	4	4	6	1	1	1
Dairy products and eggs	2	3	3	4	4	5	2	2	3
Fish, crustaceans, molluscs and products	1	1	1	9	9	10	3	3	4
Meat and meat preparations	2	2	2	9	9	9	3	3	3
Miscellaneous products and preparations	3	4	4	6	6	6	4	4	4
Oilseeds and oleaginous fruits	2	2	1	6	7	7	0	0	0
Sugar, sugar preparations and honey	3	4	3	3	4	5	3	3	3
Fruits and vegetables	4	4	4	12	12	18	3	3	3
Total	**39**	**44**	**46**	**89**	**93**	**111**	**39**	**39**	**44**

Source: Trade Data Monitor (TDM), authors' calculations.

Box. Food for thought? the evolution of global food import unit values

With yet another bout of rising international food prices, which has marked the past nine months and shows no sign of abating, an opportunity is presented to reflect on the widely regarded yardstick metric – the FAO Food Price Index (FFPI) – that is often used as an indicator for potential crises, for food security or simply as a barometer of food market sentiment. The FFPI can be contrasted with the development of a supplementary metric, one that is based on a monthly index of food import unit values (IUVs) - the Import Unit Value (IUV) index. This Box looks at the relevance of both indices with respect to objectives and usage.

Launched in 1996, the FAO Food Price Index is built on monthly indices of benchmark export prices for five intermediate basic food groups (cereals, vegetable oils, dairy, meat and sugar), which are weighted by share in export value for the base period, currently set at the average of 2014–2016, meaning that the composition of trade is assumed to be fixed and does not change from the base period (i.e., Laspeyres in construct). While these five commodities have strategic importance for global, food security, however, when combined, their share in the global value of food exports currently amounts to just over 30 percent.

The IUV index constitutes a considerable departure from the FFPI in virtually all areas – from index methodology, to commodity coverage, to information content and ultimately to interpretation and objective. As the name suggests, the IUV index incorporates import unit values, which are simply the US dollar value of transactions divided by the quantities transacted for food commodities by the importing country, and are aggregated by (current) weight to arrive at a global index. Importantly, IUVs are indicative of the prices of foodstuffs that importing countries actually pay at their border (excluding tariffs). Needless to say, IUVs are different from the benchmark export prices (free-on-board or FOB) used in the FFPI construct, in that IUVs reflect the export price of the commodity plus the cost of freight in delivering the commodity (carriage, insurance and freight or CIF), as well as premia or discounts that may reflect quality differentials in the imported product or the degree of bargaining power of the importer. The IUV index does not suffer from incompleteness, since all foodstuffs are covered.

Fundamentally, the availability of near contemporaneous monthly trade data allows the IUV index to exploit current trade weightings (i.e. permitting a Paasche construct), and importantly, allows changes in import preferences (i.e. the composition of food trade) to be captured. For example, consumers/importers will tend to purchase less (more) of an imported food item whose current price has risen (fallen) relative to another foodstuff. In other words, the IUV index does not suffer from substitution bias. On the contrary, the IUV index fully captures the current substitution that could take place between and within food groups. This is especially the case when consumers suffer a loss in income, such as during the COVID-19 pandemic, e.g, faced with lower incomes, consumers may shift from meat to cereals, from beef to poultry and from fragrant rice (like Basmati) rice to a cheaper imported rice variant (like regular long-grain).

Figure 1 plots the (all-food) IUV index against the FFPI, and for further comparability, a subset of the IUV index is included in the figure, which limits food coverage to the food groups of the FFPI (FFPI-foodstuffs). All indices are depicted in nominal terms. While the indices positively track one another, it can be seen in the figure that the IUV index of all food reached its highest level in March 2021, exceeding the peaks of the prior food (price) crises of 2006–2008 and 2010–2012, as so markedly depicted by the FFPI (February 2011 was its highest level). In terms of the IUV index of FFPI-foodstuffs, the figure also suggests that the most recent bout of increasing food prices that began in the second half of 2020 was less steep than the FFPI would suggest. In addition, the IUV index of FFPI foodstuffs correlates more closely with the FFPI, suggesting the importance of commodity coverage in index level and change. Indeed, the difference in levels and changes between the FFPI and the IUV indices is a reflection of commodity inclusion, evolving commodity weights and price conveyance (FOB versus CIF). In recent months, index convergence has been observed, which, in the context of the IUV index, can be attributed to the fact that prices have risen across the board, exhausting substitution possibilities between foodstuffs. Indeed, it can be shown that when substitution is no longer possible, price and quantity changes become positively correlated, leading to convergence from the Paasche (IUV) index to the Laspeyres (FPI) index.

Figures 2 and **3** show the same sets of indices, but in real terms. Figure 2 uses the world consumer price index (CPI) published by the World Bank, thereby taking into account the effects of **inflation**, so that the indices are expressed in terms of purchasing power in the base year. On the other hand, Figure 3 employs the manufactures unit value (MUV) index, again from the World Bank. The rationale for Figure 3 is that the nominal FFPI is in tandem published as a MUV-deflated series. The MUV deflator is a composite index of prices for manufactured exports from the five major (G5) industrial countries to low- and middle-income economies, valued in US dollars. Traditionally, it is viewed as the **terms-of-trade** of commodity-dependent developing countries, owing to the assumption that their economies are strongly delineated by exports of primary commodities and imports of manufactured goods. It is duly noted that this is a potentially outdated assumption, given the evolving current import/export structure of many developing economies, especially those in East and Southeast Asia.

Without dwelling on the merits of each deflator, it must be noted that the choice of deflator yields different trajectories. This is not surprising given the different meaning of each. For instance, the CPI-deflated indices show a marked long-term downward path, while the MUV-deflated series show a more upward trajectory. In contrast to the nominal series, when adjusted for inflation, March/April 2008 constitutes the peak for all three indices, while deflating via the MUV, the three peaks at different intervals (December 2010 for the FFPI, August 2008 for the IUV FFPI food index, and March 2021 for the IUV all-food index). However, both deflators capture the upturn in the price of internationally traded food that began in the latter half of 2020, especially the MUV deflator, which adds credence to the closing discussion in Section 1 of this special feature.

The takeaway message here is that prices expressed in real terms provide the basis for decision-making and resource allocation, especially in investment decisions, so that 'money illusion' is discounted. This is certainly true when applying the CPI deflator, while application of the MUV deflator simply casts commodities in terms of the degree to which they can be exchanged for manufactured goods. Clearly, the choice of deflator depends ultimately on what is most appropriate for the objective.

Figure 1. Nominal: IUV index versus the FAO Food Price Index, FPI (Jan 2005 to Mar 2021)

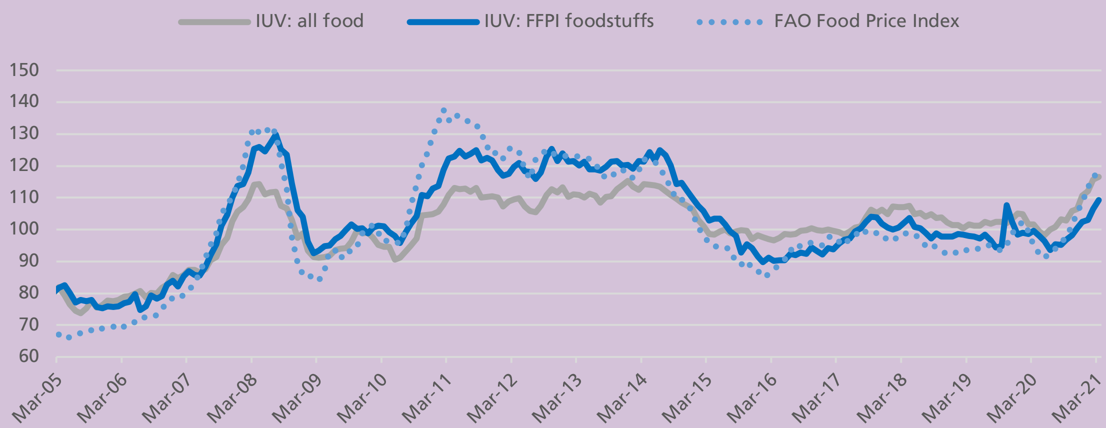


Figure 2. Real (CPI-deflated): IUV index versus the FAO Food Price Index, FPI (Jan 2005 to Mar 2021)

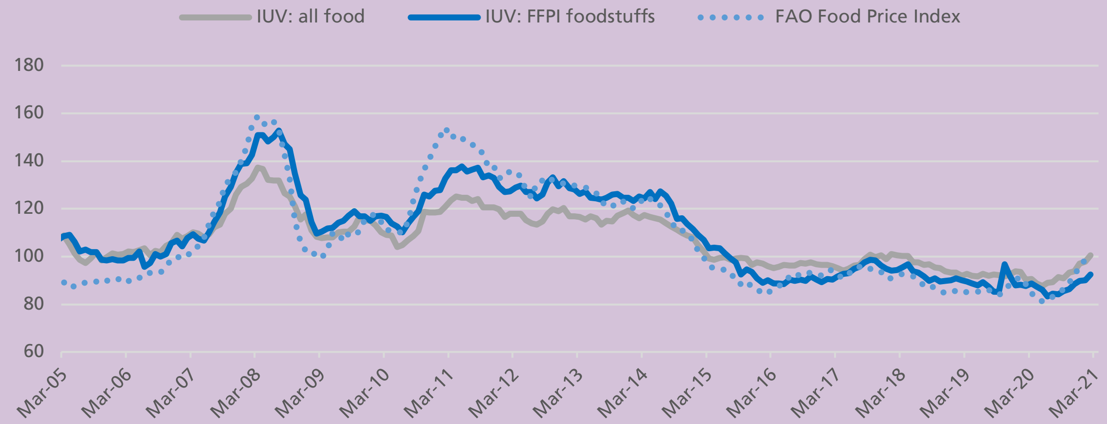
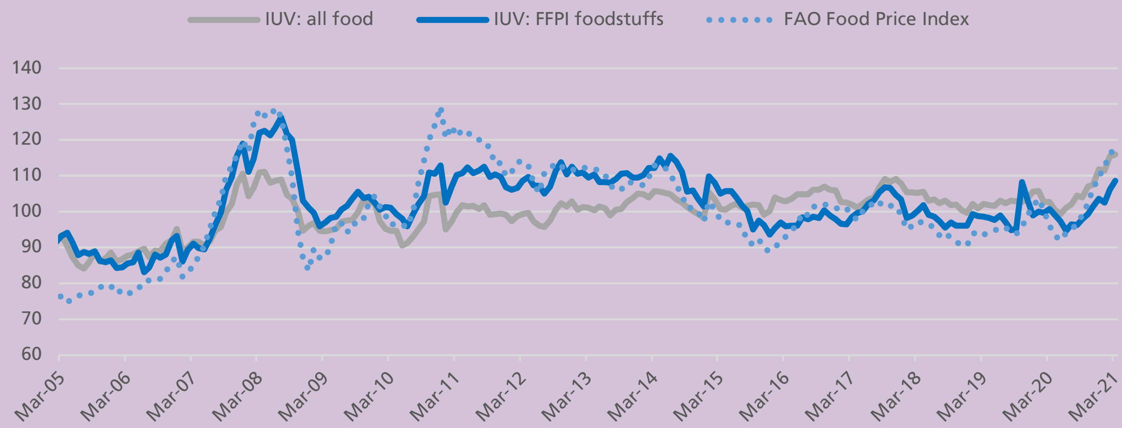


Figure 3. Real (MUV-deflated): IUV index versus the FAO Food Price Index, FPI (Jan 2005 to Mar 2021)



Source: FAO Food Price Index (FFPI), World Bank, Trade Data Monitor (TDM), authors' calculations.

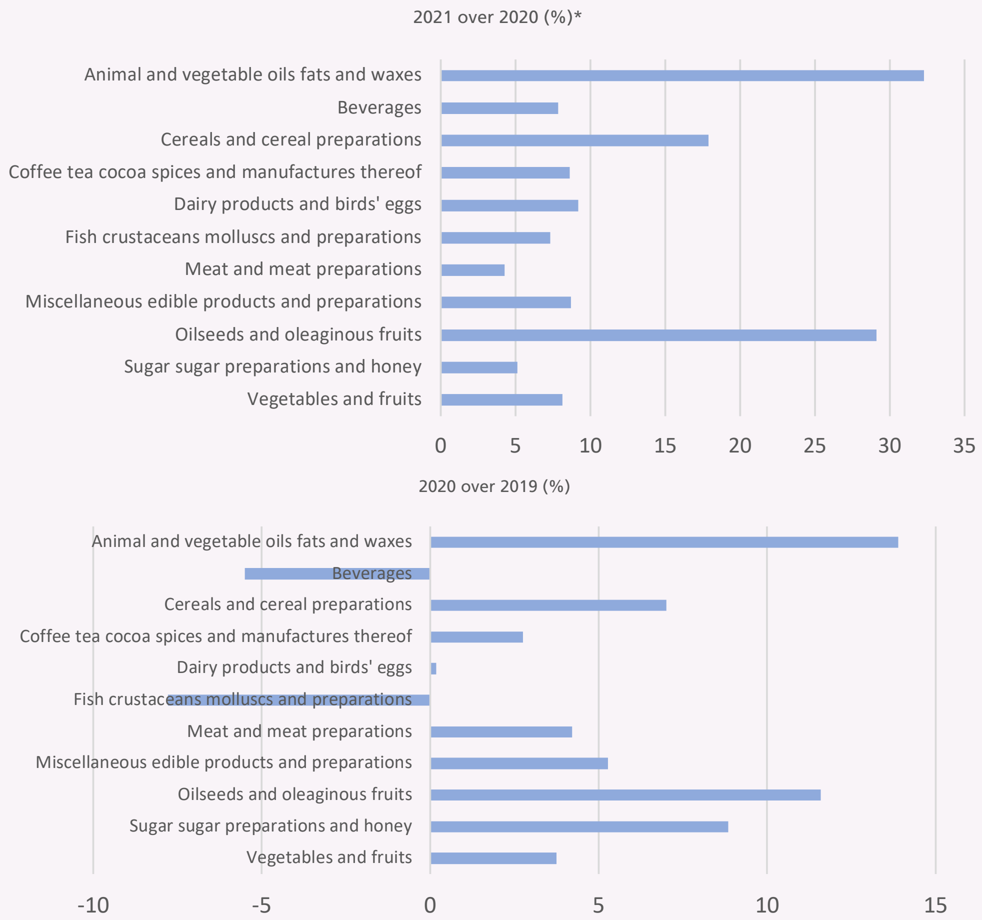
Against the backdrop of much higher international quotations predicted for 2021, as well as a strong upturn in world gross domestic product (GDP) growth, virtually all product bills are expected to increase in 2021. The largest *absolute* increases in the year are those foreseen for cereals (USD 37 billion), followed by vegetable oils (USD 33 billion), oilseeds (USD 31 billion) and fruits and vegetables (USD 24 billion). Combined, they would account for almost USD 126 billion of the USD 185 billion foreseen rise in the global bill in 2021 from last year. Again in 2020, these product groups dominated the dollar increase in the world bill of USD 48 billion from 2019, and were also supported by a substantial increase in international purchases of oilseeds. Such developments were to be expected, given the low-income responsiveness of staple foodstuffs. By contrast, purchases of fish products as well as beverages, which are typically sensitive to income changes, fell a collective USD 20 billion compared with 2019.

On a percentage basis, vegetable oils, cereals and oilseeds are noteworthy food groups that are set to be the most vibrant in terms of growth in 2021 (Figure 1). The consistency in the rise for most product bills at the global level was not shared in 2020. Changes in the bill of last year were diffuse, with percentage changes varying widely. At the extreme were vegetable oils and fish products, with import bills of the former rising by almost 14 percent, compared with a near 8 percent contraction in global fish purchases.

Do higher bills translate to more food delivered?

The aforementioned trends are not expected to be uniform across economic and geographical regions. With few exceptions over all food categories, developed regions, which dominate global food inflows, are expected to

Figure 1. Changes in global food import bills by product



*forecast

Source: Trade Data Monitor (TDM), authors' calculations.

import less food in 2021 at a greater cost than in 2020, such that prices (and freight costs) are expected to fuel a net increase in the food import bill to the tune of USD 58 billion in 2021.

By contrast, and in spite of higher global quotations, developing countries are anticipated to purchase more food in all categories. Rising demand for cereals, vegetable oils, oilseeds, and fruits and vegetables are by far the greatest within-drivers of the predicted increase in the food import bill of developing regions in 2021, with volumes accounting for almost 60 percent of the USD 127 billion increase. Such demand by developing regions is expected to underpin the overall increase in the global food bill in 2021. The decomposition of food import bill changes for 2021 into volume and price effects is provided in Table 2a while the decomposition for 2020 is provided in Table 2b[2].

[2] Factor decomposition of changes in Food Import Bills (FIB_{us}) in USD is calculated as follows:

$$\Delta FIB_{us} = \Delta Q \times P_{us,o} \quad \text{(volume effect)}$$
$$+Q_o \times \Delta P_{us} \quad \text{(price effect)}$$
$$+ [\, \Delta Q \times \Delta P_{us} \,] \quad \text{(mixed effect)}$$

Likewise in 2020, the growth in demand for imported foodstuffs by developing countries contributed an overwhelming 80 percent of the annual rise in the world food import bill. Only a decline in purchases of fish products and beverages and a stagnation of coffee, tea, cocoa and spice inflows were registered in 2020. Growth in the developed region food import bill was again dominated by price effects, with across-the-board declines in volumes.

Vulnerable countries pay the price

Food import bills of economically disadvantaged groups of countries, such as Least Developed Countries (LDCs), Low-Income Food-Deficit Countries (LIFDCs) and countries situated in sub-Saharan Africa (SSA) are expected to rise in 2021 by varying degrees. The bills of LDCs are forecast to increase with 4 percent, while those of SSA and LIFDCs could increase by 11 and 20 percent, in tandem with the global increase. However, growth in these aggregate bills is dominated by increases in the unit costs of importing food. Worryingly, as shown in Table 2b, LDCs are foreseen

Table 2a. Decomposition of changes in food product bills for global aggregates

2021 over 2020												
	World				Developed				Developing			
Food group	Price effect	Volume Effect	Mixed effect	Observed change	Price effect	Volume Effect	Mixed effect	Observed change	Price effect	Volume Effect	Mixed effect	Observed change
	<------------ USD billion------------>											
Animal and vegetable oils, fats and waxes	19.1	11.7	2.3	**33.1**	5.2	-0.4	-0.1	**4.7**	13.2	12.1	3.2	**28.4**
Beverages	11.2	-2.0	-0.1	**9.1**	9.3	-4.1	-0.4	**4.8**	2.0	2.0	0.2	**4.3**
Cereals and cereal preparations	17.1	18.8	1.7	**37.6**	8.6	-0.6	0.0	**7.9**	8.9	19.1	1.6	**29.6**
Coffee, tea, cocoa, spices and products	7.3	2.4	0.2	**9.8**	5.6	0.2	0.0	**5.8**	1.6	2.3	0.1	**4.0**
Dairy products and eggs	7.9	1.1	0.1	**9.1**	4.8	-1.0	-0.1	**3.7**	3.1	2.1	0.2	**5.4**
Fish, crustaceans, molluscs and products	4.8	6.7	0.3	**11.8**	4.2	5.4	0.3	**9.9**	0.6	1.4	0.0	**2.0**
Meat and meat preparations	1.4	5.7	0.1	**7.3**	3.4	-2.5	0.0	**0.9**	-1.5	8.1	-0.2	**6.4**
Miscellaneous products and preparations	6.8	2.0	0.1	**9.0**	4.2	1.1	0.1	**5.4**	2.6	0.9	0.1	**3.6**
Oilseeds and oleaginous fruits	15.0	14.4	2.1	**31.5**	3.4	-0.6	-0.1	**2.7**	11.8	14.6	2.4	**28.8**
Sugar, sugar preparations and honey	3.0	-0.4	0.0	**2.6**	1.8	-0.5	0.0	**1.2**	1.2	0.1	0.0	**1.3**
Fruits and vegetables	12.4	11.3	0.5	**24.2**	9.8	1.5	0.0	**11.3**	2.8	9.7	0.4	**12.8**
Total	**105.8**	**71.7**	**7.4**	**184.9**	**60.1**	**-1.5**	**-0.4**	**58.2**	**46.3**	**72.4**	**8.0**	**126.7**

2020 over 2019												
	World				Developed				Developing			
Food group	Price effect	Volume Effect	Mixed effect	Observed change	Price effect	Volume Effect	Mixed effect	Observed change	Price effect	Volume Effect	Mixed effect	Observed change
	<------------ USD billion ------------>											
Animal and vegetable oils, fats and waxes	8.5	3.7	0.4	**12.5**	2.8	1.7	0.1	**4.6**	5.7	2.0	0.3	**7.9**
Beverages	-1.1	-5.8	0.2	**-6.7**	-0.6	-2.2	0.1	**-2.7**	-0.6	-3.6	0.1	**-4.1**
Cereals and cereal preparations	-0.1	13.8	0.1	**13.7**	0.5	2.1	0.0	**2.6**	-0.4	11.5	0.0	**11.2**
Coffee, tea, cocoa, spices and products	4.6	-1.5	-0.1	**3.1**	3.6	-1.5	-0.1	**2.1**	0.9	0.0	0.0	**0.9**
Dairy products and eggs	0.7	-0.5	-0.1	**0.2**	0.6	-1.3	0.0	**-0.7**	0.1	0.8	0.0	**0.9**
Fish, crustaceans, molluscs and products	-4.3	-9.6	0.3	**-13.6**	-3.2	-3.9	0.2	**-6.8**	-1.3	-5.5	0.0	**-6.8**
Meat and meat preparations	1.4	5.2	0.2	**6.9**	1.2	-5.9	0.0	**-4.8**	0.3	11.1	0.3	**11.7**
Miscellaneous products and preparations	-3.4	9.1	-0.5	**5.1**	-2.3	5.2	-0.3	**2.5**	-1.1	3.9	-0.2	**2.6**
Oilseeds and oleaginous fruits	0.8	10.4	0.0	**11.2**	0.5	2.7	0.0	**3.2**	0.4	7.6	0.0	**8.0**
Sugar, sugar preparations and honey	1.0	3.0	0.0	**4.0**	0.7	-0.2	0.0	**0.5**	0.3	3.2	0.0	**3.5**
Fruits and vegetables	6.4	4.2	0.0	**10.7**	5.0	2.2	0.0	**7.3**	1.4	2.0	0.0	**3.4**
Total	**14.5**	**32.1**	**0.6**	**47.2**	**8.8**	**-1.1**	**0.0**	**7.8**	**5.9**	**33.0**	**0.5**	**39.4**

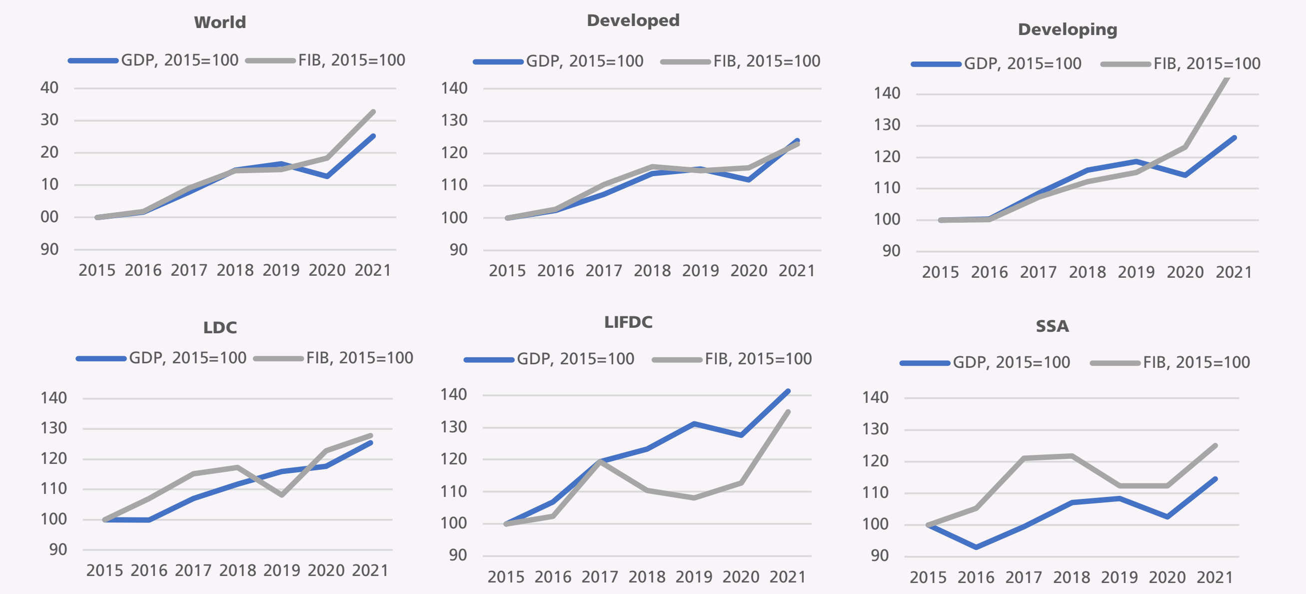
Table 2b. Decomposition of changes in food product bills for vulnerable countries

2021 over 2020												
	LDCs				LIFDCs				SSA			
Food group	Price effect	Volume Effect	Mixed effect	Observed change	Price effect	Volume Effect	Mixed effect	Observed change	Price effect	Volume Effect	Mixed effect	Observed change
	<------------ USD million ------------>											
Animal and vegetable oils, fats and waxes	942	-825	-115	**1**	3 706	1 271	335	**5 312**	1 014	-313	-113	**588**
Beverages	149	202	31	**382**	263	589	35	**886**	141	159	21	**322**
Cereals and cereal preparations	141	1 626	-4	**1 763**	197	1 723	3	**1 923**	278	1 507	16	**1 801**
Coffee, tea, cocoa, spices and products	107	93	-2	**197**	684	980	176	**1 840**	55	9	2	**66**
Dairy products and eggs	115	38	4	**157**	503	261	38	**802**	149	80	8	**236**
Fish, crustaceans, molluscs and products	13	40	-5	**49**	-57	1 367	-10	**1 301**	41	486	4	**531**
Meat and meat preparations	12	65	1	**78**	213	-365	-6	**-158**	58	154	12	**224**
Miscellaneous products and preparations	88	36	1	**125**	291	196	10	**497**	185	72	5	**261**
Oilseeds and oleaginous fruits	59	-384	-28	**-353**	623	-1 152	-132	**-661**	14	73	-5	**83**
Sugar, sugar preparations and honey	127	-635	-130	**-638**	331	283	36	**651**	199	-2	-32	**165**
Fruits and vegetables	93	-77	8	**25**	591	4 968	315	**5 874**	97	84	6	**187**
Total	**1 847**	**180**	**-240**	**1 787**	**7 345**	**10 121**	**801**	**18 267**	**2 232**	**2 308**	**-76**	**4 464**

2020 over 2019												
	LDCs				LIFDCs				SSA			
Food group	Price effect	Volume Effect	Mixed effect	Observed change	Price effect	Volume Effect	Mixed effect	Observed change	Price effect	Volume Effect	Mixed effect	Observed change
	<------------ USD million ------------>											
Animal and vegetable oils, fats and waxes	814	1 529	154	**2 497**	2 736	-573	-33	**2 131**	774	636	84	**1 494**
Beverages	17	-443	-1	**-427**	-49	-873	12	**-910**	-15	-687	16	**-686**
Cereals and cereal preparations	350	715	-76	**989**	327	-755	-86	**-513**	249	-398	-61	**-210**
Coffee, tea, cocoa, spices and products	19	-138	-5	**-123**	34	82	-13	**103**	22	-17	-1	**4**
Dairy products and eggs	-1	299	-5	**294**	101	-100	-3	**-2**	53	-118	-4	**-69**
Fish, crustaceans, molluscs and products	-32	628	-37	**559**	-102	426	3	**327**	-29	22	2	**-5**
Meat and meat preparations	-40	292	-4	**247**	4	32	32	**69**	-60	-338	12	**-386**
Miscellaneous products and preparations	67	323	-6	**383**	-32	58	-12	**15**	-14	99	-12	**73**
Oilseeds and oleaginous fruits	43	-141	-55	**-152**	-331	2 069	-110	**1 628**	5	39	-14	**30**
Sugar, sugar preparations and honey	70	1 160	-260	**970**	55	777	-14	**818**	25	-154	-41	**-170**
Fruits and vegetables	76	-71	-10	**-6**	376	-286	23	**113**	71	-139	-6	**-74**
Total	**1 383**	**4 153**	**-305**	**5 231**	**3 120**	**858**	**-200**	**3 778**	**1 082**	**-1 055**	**-26**	**2**

Source: Trade Data Monitor (TDM), authors' calculations.

Figure 2. GDP versus food import bills, 2015–2021*



*forecast

Source: World Bank, Trade Data Monitor (TDM), authors' calculations.

to purchase barely the same total volumes of food but at a higher cost in 2021. Bills of cereals constitute one of the few product groups in which economically disadvantaged countries could benefit from greater import volumes at a lower unit cost. Purchases of vegetable oils – commodities that habitually rank second in terms of import dependency – are expected to decline considerably in volume terms for LDCs and SSA. A cursory examination of trends in GDP and food import bills (see Figure 2) reveals that bills have stagnated for LIFDCs and SSA during 2020. This is expected to explain lower demand by these country groups for livestock and sugar products, which are sensitive to changes in income.

A further worrying feature is that to the extent changes in import demand reflect changes in overall demand, the COVID-19 pandemic would have resulted in a shift from high- to low-value food products and most likely to a deterioration in the quality of diets. Indeed, the growth in international purchases of cereals by LDCS, LIFDCs and SSA, at the expense of more nutritionally diverse foodstuffs, bears testimony to this outcome.

With worsening macroeconomic fundamentals, the fiscal capacity of already vulnerable countries to import is becoming critical. Figures 4 to 6 highlight dimensions of selected LIFDCs, LDCs and countries in SSA, as well as other developing net food-importing countries, in their ability to import food. The selection of countries was based on criteria relating to exposure, such as high food import dependency ratios, large shares of food expenditure in GDP and large economic distances below median per capita world GDP.

As an example of these criteria, Figures 3a and 3b contrast food expenditure shares in GDP with per capita food import bills of countries in vulnerable regions, as well as those for developed countries. It is seen that food accounts for a relatively high percentage of GDP in vulnerable countries, averaging around one-third, but per capita food import bills reveal no tendency to correlate with the degree of food expenditure share, implying a high reliance on the ability of domestic production systems to deliver food.[3] With production shocks, or a lack of resource endowments to produce food, such countries will be exposed to the encumbrances of buying food from the international arena. By contrast, food expenditure shares in developed countries average about 10 percent, and it can be deduced from the figure that the lower the share, the higher the county's per capita food import bill – or higher dependence on imported food vis-à-vis domestic food systems.

Turning to the dimensions of affordability, Figure 4a shows changes in international purchasing power of currencies, as measured by real exchange rates. It is seen that numerous net food importers have experienced sharp depreciations of their real exchange rates, undermining their ability to buy food from the international arena. At the

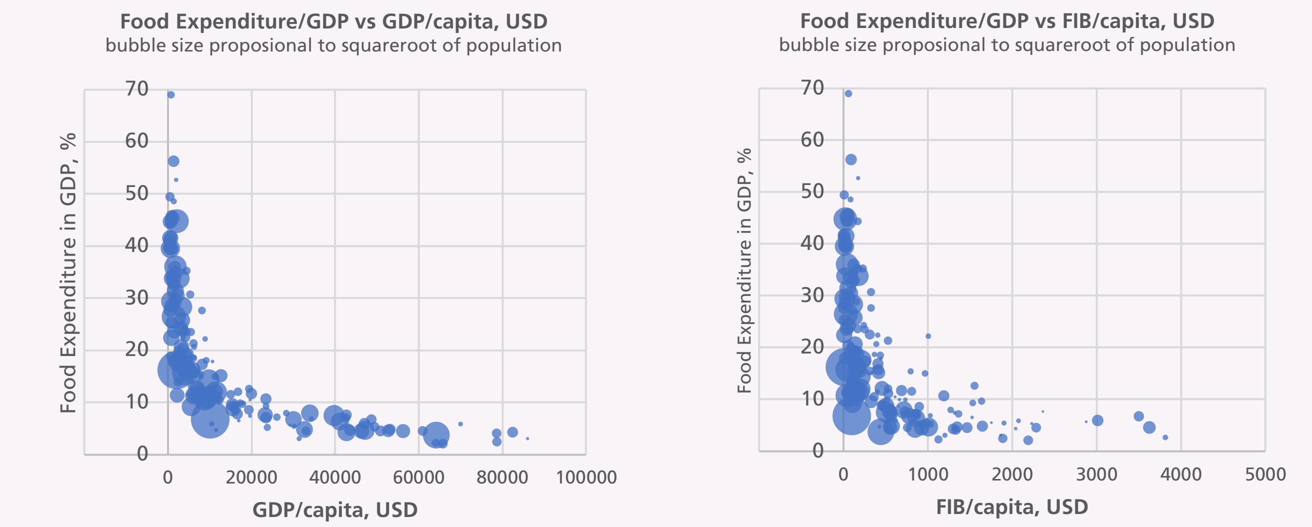
[3] While per capita levels of food import bills appear low in vulnerable countries, compared with median per capita GDP, import bills may assume a share as high as 16 percent.

same time, some agricultural exporters enjoyed even larger depreciations of their real exchange rates, making their produce more competitive internationally (Figure 4b). The well-established agricultural exporters from Latin America (Brazil, Chile or Uruguay) have particularly benefited from the decline in value of their valuta in 2020. While these countries also experienced higher inflation rates and therefore higher production costs, the depreciation of their nominal exchange rates exceeded the cost increase and boosted the competitiveness of their exports.

Figure 5 depicts the burden of importing food with respect to domestic foreign exchange reserves. Since international procurement is transacted in major convertible currencies, often the US dollar, sufficient foreign exchange reserves are a necessary prerequisite for countries to participate in trade. It is seen that for many vulnerable countries, food import bills consume a significant percentage of their foreign exchange earnings, as much as 90 percent of foreign exchange reserves in a particular instance. Such high shares expose countries to a potential failure to meet the cost of importing other necessities, such as energy and medical products.

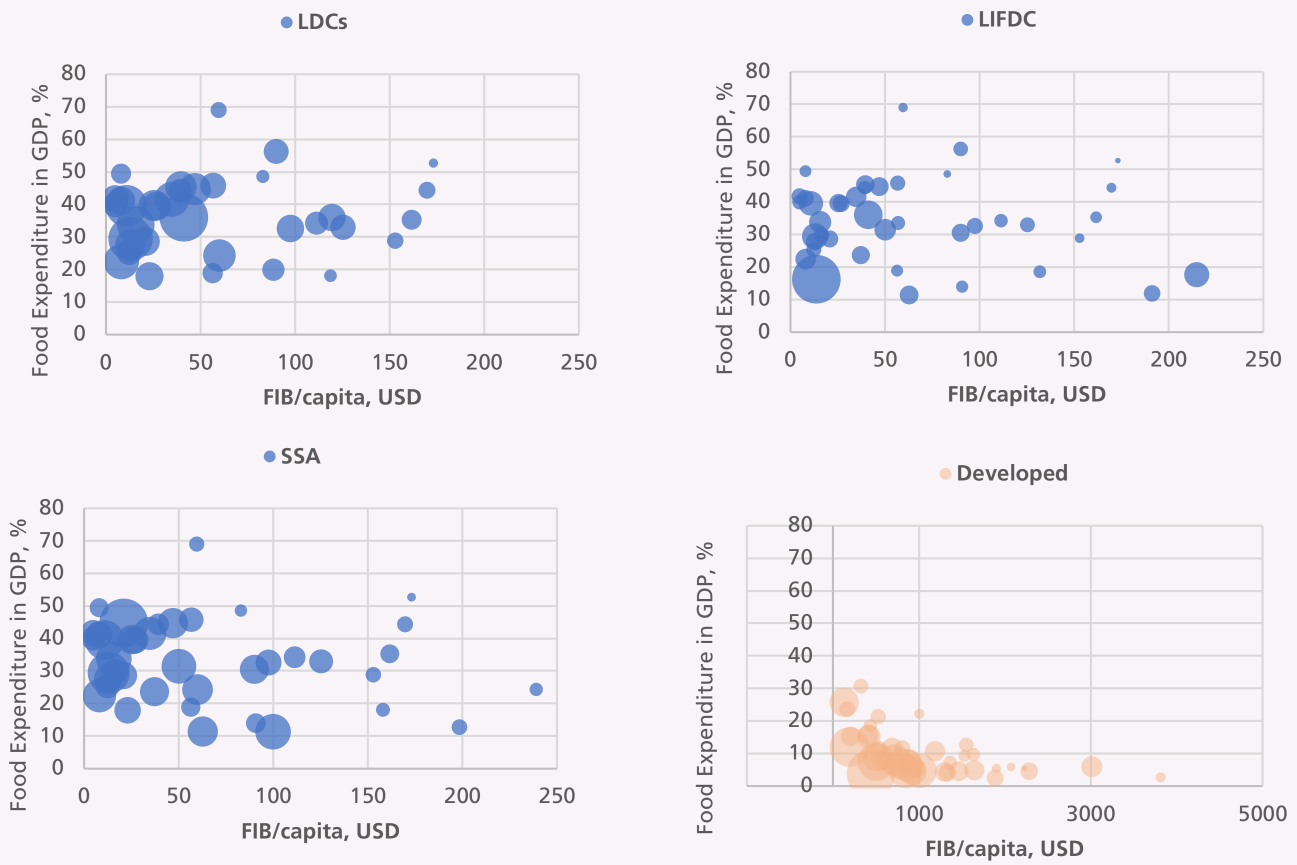
In a similar vein, Figure 6 measures the share of a country's food import bill in its total merchandise export earnings. In many cases, foreign exchange earnings from exports merely cover imported food needs, and in other instances, the cost of imported food far exceeds earnings from merchandise exports. In *normal times*, countries with a strong revenue stream from exporting services, notably tourism, are able to compensate for low proceeds from exporting merchandise goods. In *times of COVID-19*, however, many of these countries have been deprived of revenues from service exports, which puts them at an added risk of depleting their foreign exchange reserves. Among the most exposed countries are the Maldives, Cabo Verde and Sao Tome and Principe; in all three countries, the food import bill in 2020 exceeded revenues from total merchandise exports.

Figure 3a. Food expenditure in GDP vs per capita food import bills, globally



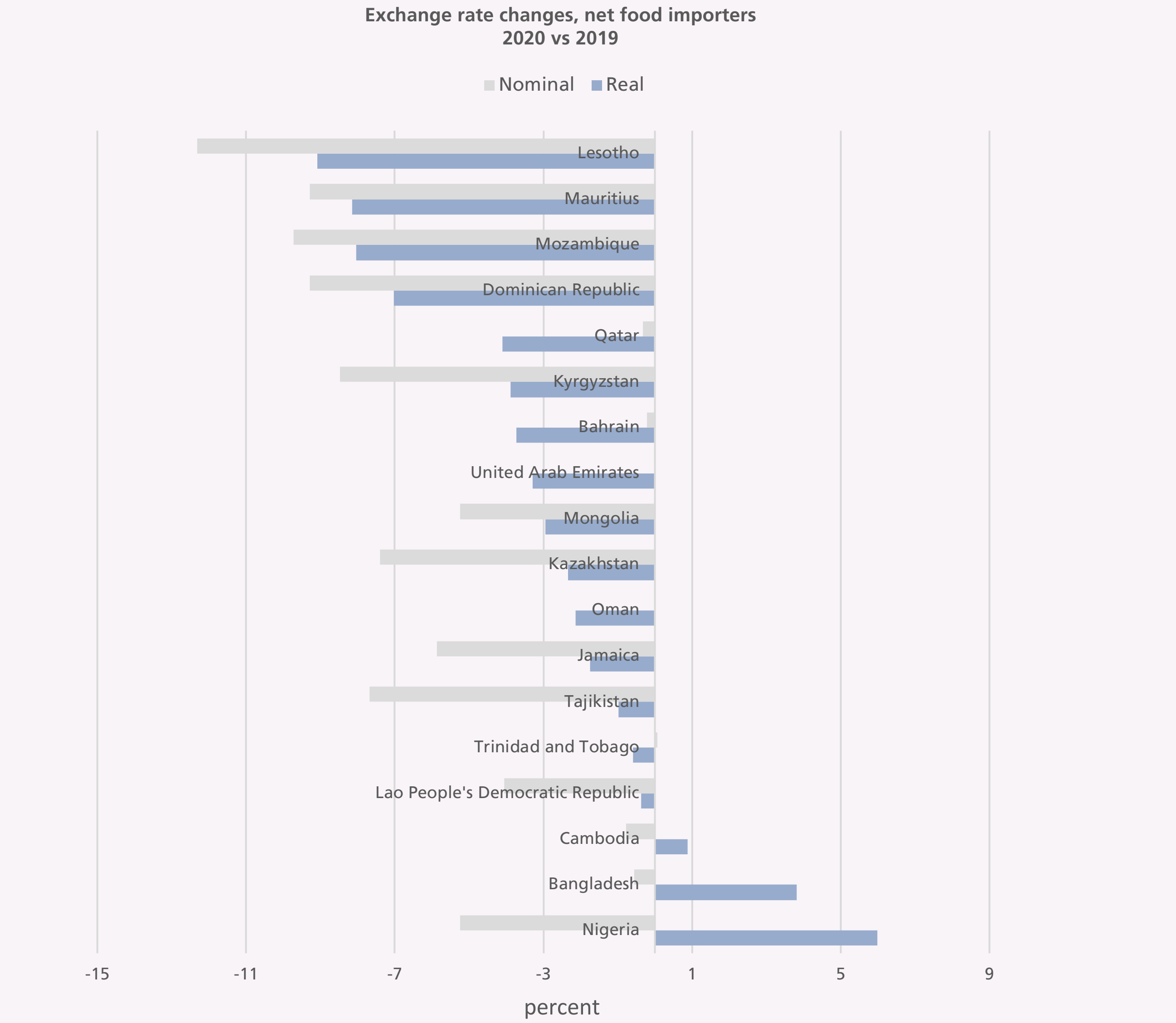
Source: World Bank, Trade Data Monitor (TDM), authors' calculations.

Figure 3b. Food expenditure in GDP vs per capita food import bills, by country group



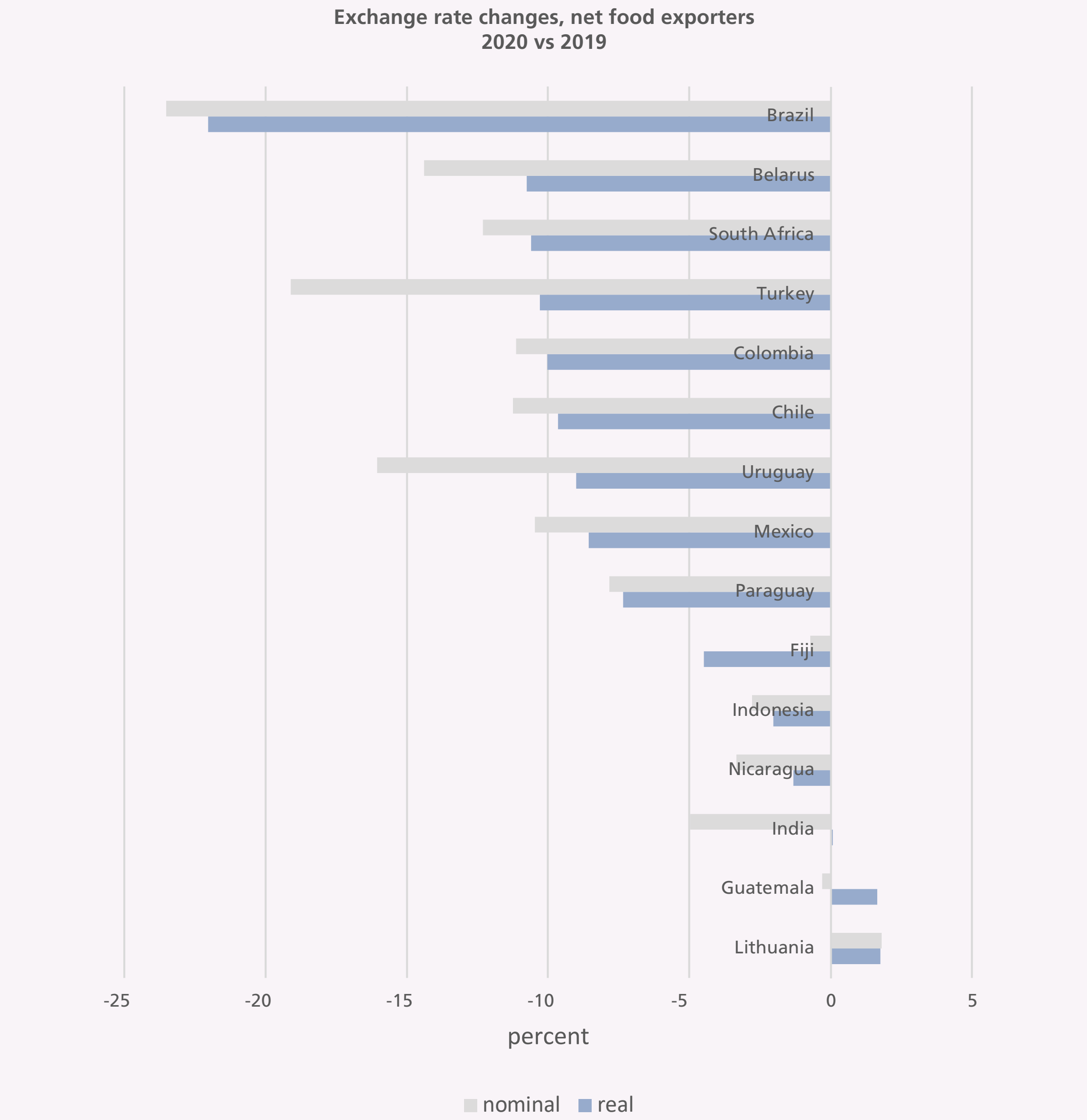
Source: World Bank, Trade Data Monitor (TDM), authors' calculations.

Figure 4a. Percentage changes in real exchange rates against the USD of food-importing and other vulnerable countries (2020/2019)



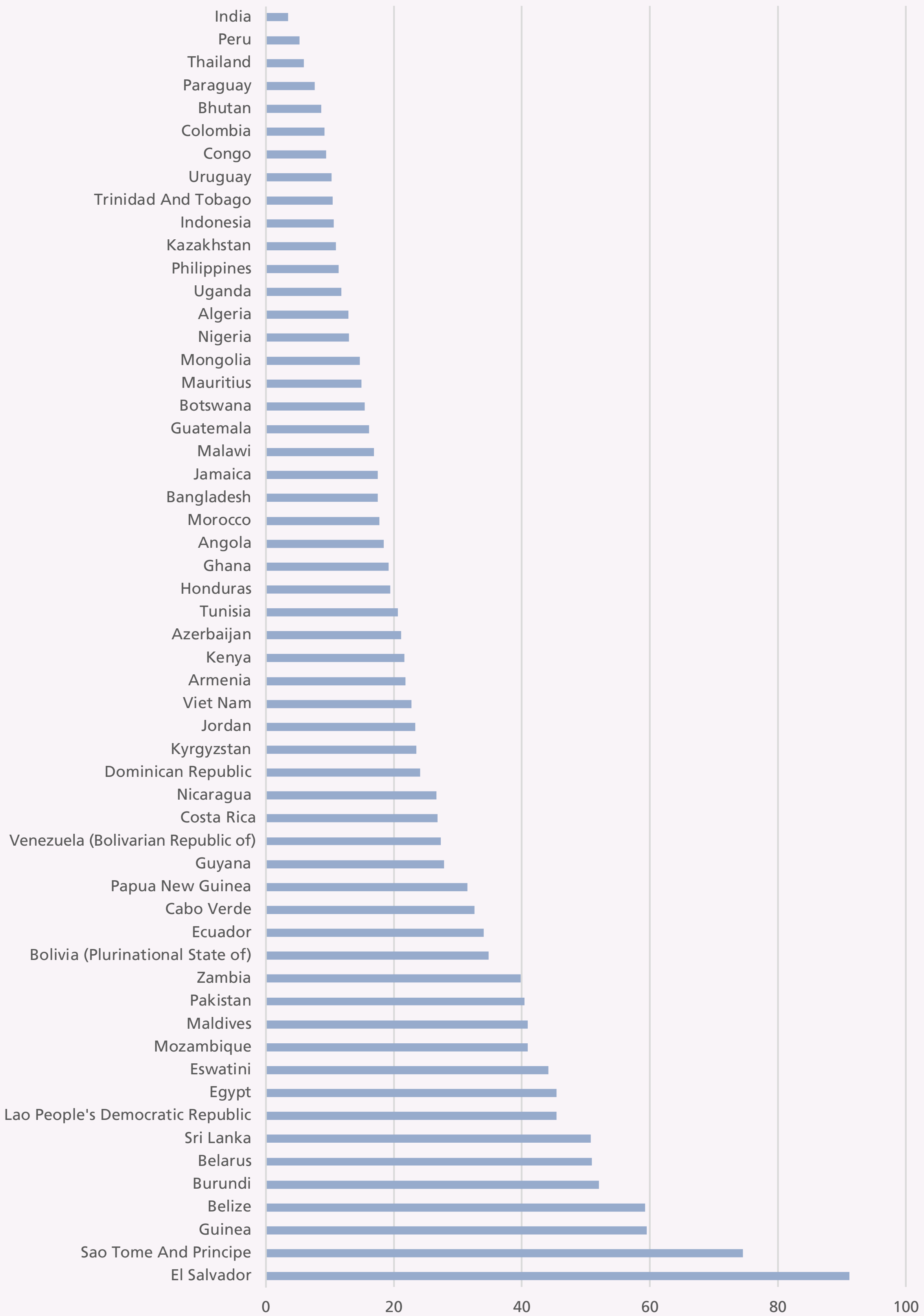
Source: World Bank, authors' calculations.

Figure 4b. Percentage changes in real exchange rates against the USD of food-exporting countries (2020/2019)



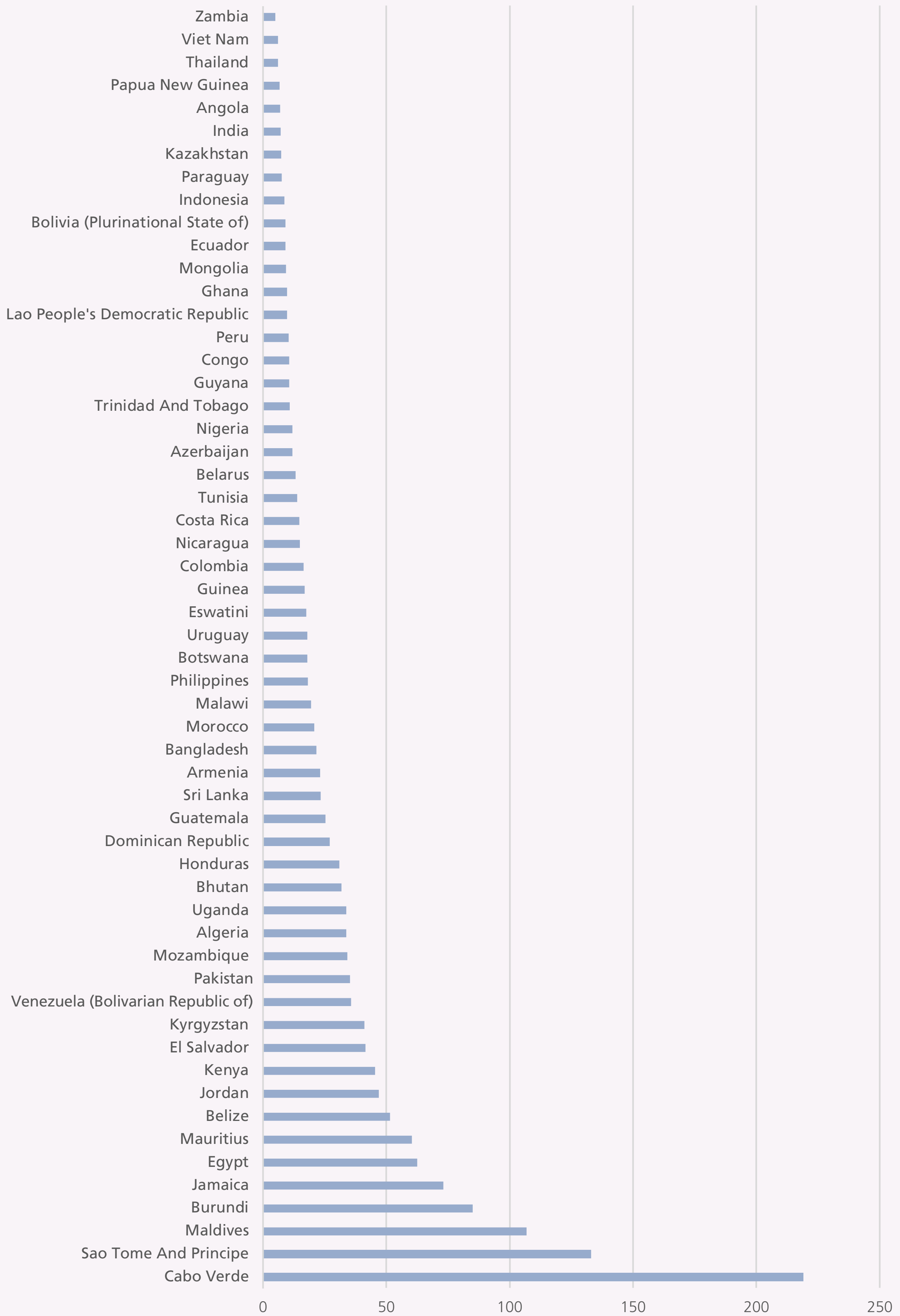
Source: World Bank, authors' calculations.

Figure 5. Food import bills as a ratio of foreign exchange reserves in food-importing and other vulnerable countries (percent, 2020)



Source: World Bank, Trade Data Monitor (TDM), authors' calculations.

Figure 6. Food import bills as a ratio of total merchandise exports in food-importing and other vulnerable countries (percentage, 2020)



Source: TDM, authors' calculations.