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Outlook for U.S. Agricultural Trade: November 2022

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U.S. Agricultural Exports in Fiscal Year 2023 Forecast at \$190.0 Billion; Imports at \$199.0 Billion

U.S. agricultural exports in fiscal year (FY) 2023 are projected at \$190.0 billion, down \$3.5 billion from the August forecast. This decrease is primarily driven by reductions in soybeans, cotton, and corn exports that are partially offset by gains in beef, poultry, and wheat. Soybean exports are forecast down \$2.4 billion to \$32.8 billion due to smaller production and increased competition from South America. Cotton exports are forecast down \$1.0 billion to \$6.0 billion based on lower unit values and subdued demand. Grain and feed exports are projected to decrease by \$300 million to \$46.2 billion, with declines in corn, sorghum, and rice exports partially offset by higher exports of wheat and feeds and fodders. The forecast for corn is down \$600 million to \$18.5 billion on lower volumes. Livestock, poultry, and dairy exports are forecast to increase by \$300 million to \$41.4 billion, as increases in beef, poultry, and variety meat exports more than offset declines in pork and the value of dairy exports. Beef exports are up \$500 million to \$10.3 billion, driven by higher prices. Ethanol exports are unchanged at \$4.2 billion from the August forecast and remain a record if realized. Horticultural product exports are unchanged at \$39.5 billion.

Agricultural exports to China are forecast at \$34.0 billion, down \$2.0 billion from the August projection, due to lower export prospects for soybeans, cotton, sorghum, and pork. China is expected to remain the largest market for U.S. agricultural exports.

U.S. agricultural imports in FY 2023 are forecast at \$199.0 billion, up \$2.0 billion from the August forecast, largely driven by higher imports of horticultural products, sugar and tropical products, and grain and feed products. A strong dollar, while a headwind to the export forecast, is partially responsible for the higher import demand.

The forecasts in this report are based on policies in effect at the time of the November 9, 2022, *World Agricultural Supply and Demand Estimates (WASDE)* release, and the U.S. production forecasts thereof.

Table 1—U.S. agricultural trade, fiscal years 2016–23 1/

Item	2017	2018	2019	2020	2021	2022	Forecast fiscal year	
							2023	
							August	November
<i>Billion dollars</i>								
Exports	144.8	148.6	140.1	139.7	171.7	196.4	193.5	190.0
Imports	127.2	136.5	141.4	143.4	163.3	194.0	197.0	199.0
Balance	17.6	12.1	-1.3	-3.7	8.4	2.4	-3.5	-9.0

Note: Due to rounding, balance may not agree with import and export data.

1/ Fiscal year is defined as October 1 of previous year through September 30 of current year.

Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service analysis and forecasts using data from U.S. Department of Commerce, Bureau of the Census.

Economic Outlook

Economic Growth Challenges in 2023

The global economic outlook for calendar year (CY) 2023 remains uncertain due to inflation, changing monetary policy conditions, and trade disruptions caused by the Russian invasion of Ukraine. Previous growth projections are moderated due to tempered economic growth in Europe and North America. World real gross domestic product (GDP) is projected to increase by 3.2 percent in 2022, unchanged from the previous forecast. Global GDP growth for 2023 is lowered to 2.7 percent growth from 2.9 percent previously. The humanitarian grain corridor in Ukraine formally known as the *Black Sea Grain Initiative* remains open as it was extended for 120 days beyond its original end date of November 19, 2022. Supply chain pressures have largely abated, and spot shipping rates have declined substantially from their highs in September 2021. Inflation continues to be a global concern and central banks around the world are continuing their monetary tightening cycles to combat rising inflation rates, with the notable exception of China which has maintained a loose monetary policy.

Projected growth for the United States' real GDP in 2022 is lowered to 1.7 percent from the previous estimate of 2.3 percent. The forecast for 2023 real U.S. GDP growth remains unchanged at 1.0 percent, as above-target inflation remains a significant concern. The October 2022 Consumer Price Index (CPI) showed prices had increased by 7.7 percent over the past 12 months, down from the previous year-over-year mark of 8.2 percent in September. The year-over-year core inflation rate also slowed from 6.6 percent to 6.3 percent. The Federal Reserve has reaffirmed its intention to continue benchmark interest rate hikes to bring down inflation to its 2 percent target, while considering the cumulative tightening of monetary policy and the lags with which monetary policy affects inflation and economic activity. The unemployment rate was last measured at 3.7 percent in October by the U.S. Department of Labor's Bureau of Labor Statistics.

Real GDP in North America is expected to grow by a projected 1.8 percent in 2022. The real GDP forecast for Canada in 2022 is tempered to 3.3 from 3.4 percent. Monetary policy tightening is expected to present additional growth challenges and the forecast for Mexico in 2022 is lowered to 2.1 percent from 2.4 percent. Mexico's economy has continued to recover from the Coronavirus (COVID-19) pandemic downturn in the first half of 2022, but tighter monetary policy will limit growth in investment and consumption.

The Eurozone economic growth projection remains at 3.1 percent for 2022 and is lowered from 1.2 to 0.7 percent for 2023. Moderate weather has led to a temporary improvement in the energy outlook, but elevated energy prices and declining real household income resulting from high inflation remain significant growth headwinds. The annual producer price index (PPI) in the Eurozone was 41.9 percent in October, down from 43.4 percent in September. Despite the favorable minor decline, producers are still facing historic cost increases. The Eurozone consumer price index (CPI) reached a new high of 10.7 percent in October, up from 9.9 percent in September. The energy outlook for Europe remains uncertain given the ongoing disruptions caused by the Russian invasion of Ukraine and the disruption of the Nord Stream pipelines.

South America's real GDP is projected to grow by 3.6 percent in 2022 and 1.6 percent in 2023. Brazil's is expected to grow 2.8 percent in 2022 and 1.0 percent in 2023, facing higher energy costs and persistent inflation. Argentina is expected to grow by 4.0 percent in 2022, unchanged from the previous forecast.

China's real GDP is expected to grow by 3.1 percent in 2022 and 4.4 percent in 2023. The 2023 forecast is lowered from 4.6 percent previously due to ongoing economic disruptions from restrictions to contain COVID-19 outbreaks and downturns in the real estate investment sector. Japan's real GDP growth for 2022 is unchanged at 1.7 percent, and the 2023 forecast is lowered to 1.6 percent from 1.7 percent previously. The Japanese yen has been under sustained downward pressure so far in 2022, despite central bank interventions. High energy costs also remain a limiting factor for growth prospects in Japan. South Korea's real GDP growth in 2022 is raised to 2.6 from 2.5 percent, and the 2023 growth forecast is lowered to 2.0 from 2.1 percent.

The Nominal Broad U.S. Dollar Index published by the Federal Reserve Bank of St. Louis, which uses a weighted index to track the value of the dollar against other major world currencies, continues to show strength in the U.S. dollar. The index has risen more than 10 percent since January 2022. A stronger U.S. dollar generally increases the affordability of imports and presents challenges for exports as real costs increase for foreign buyers who must first convert currencies into U.S. dollars before purchasing U.S. goods.

Table 2—Macroeconomic variables affecting U.S. agricultural exports for calendar years 2022 and 2023 1/

Region/Country	Exchange rate 2/		Real GDP per capita growth rate			Share of world		Share of U.S.
	2022	2023	2022	2023	2023 Previous forecast	GDP	Population	agricultural exports
	Percent change					2019–21 average		
World 3/	4.5	1.3	3.2	2.7	2.9			
North America	1.5	0.9	1.8	1.0	1.1	26.3	6.3	28.4
United States 4/	--	--	1.7	1.0	1.0	24.3	4.2	--
Canada	2.6	-0.3	3.3	1.5	1.8	2.0	0.5	14.9
Mexico	0.4	2.2	2.1	1.1	1.2	1.4	1.6	13.5
Emerging markets 5/	2.8	1.3	3.7	3.6	3.9	25.6	44.1	19.4
Brazil	-3.6	-4.6	2.8	1.0	1.1	1.8	2.7	0.7
Russia	-5.2	5.6	-4.9	-2.7	-3.5	1.9	1.9	0.1
India	6.0	4.4	7.0	6.0	6.1	3.2	17.8	1.2
Indonesia	3.1	5.8	5.4	5.0	5.2	1.3	3.5	1.8
China	2.6	0.6	3.1	4.4	4.6	17.4	18.2	15.6
Europe and Central Asia	5.6	4.6	2.3	1.3	2.1	26.1	7.4	7.9
Eurozone	11.6	1.5	3.1	0.7	1.2	15.2	5.7	6.9
Ukraine	17.1	9.5	-38.0	16.0	26.4	0.2	0.6	0.1
Turkey	86.1	27.3	5.0	3.0	3.5	0.9	1.1	0.9
Asia and Oceania	5.3	0.2	2.9	2.7	2.9	39.1	54.3	45.9
Japan	18.1	2.1	1.7	1.6	1.7	5.6	1.6	8.1
South Korea	10.2	-3.1	2.6	2.0	2.1	1.9	0.7	5.3
Australia	6.9	6.6	3.8	1.9	2.2	1.6	0.3	1.0
Other Southeast Asia 6/	5.6	0.5	4.2	4.8	5.0	1.8	4.0	6.2
South America	5.0	0.3	3.6	1.6	1.4	3.4	5.6	4.7
Argentina	41.0	55.4	4.0	2.0	3.0	0.5	0.6	0.1
Other South America 7/	3.9	-0.8	3.9	1.5	1.3	2.9	5.0	4.6
Middle East and North Africa	6.8	4.6	5.0	3.6	3.4	3.8	6.0	5.4
Sub-Saharan Africa	6.0	6.4	3.6	3.7	4.0	2.0	14.6	1.3

1/ Gross Domestic Product (GDP) is the total value of finished goods and services produced in a country in a given period. 2/ Exchange rate is the nominal annual change in percentage terms. Local currency per U.S. dollar. A negative growth rate indicates a depreciation of the dollar. 3/ World and other bolded regional aggregated exchange rates are nominal U.S. agricultural exports-weighted indexes. 4/ "--" indicates that percentage change or share does not apply. 5/ Countries listed under "emerging markets" are also included under other listed regions. 6/ Includes Malaysia, Philippines, Thailand, and Vietnam. 7/ Includes Chile, Colombia, Peru, Bolivia, Paraguay, and Uruguay.

Sources: Calculations and compilation by USDA, Economic Research Service using data and forecasts from S&P Global Market Intelligence; the International Monetary Fund; and Oxford Economics.

Export Products

FY 2023 U.S. grain and feed exports are forecast at \$46.2 billion, down \$300 million from the August forecast, as lower corn, sorghum, and rice more than offset modestly higher wheat and feeds and fodders. Corn exports are forecast at \$18.5 billion, down \$600 million from the August forecast on lower volumes despite higher unit values. With remaining uncertainty on the continuation of the *Black Sea Grain Initiative* despite its recent extension and reduced exportable supplies in the United States, U.S. corn prices are expected to remain high relative to other exporters. Low water levels in the Mississippi River have disrupted grain deliveries to the Gulf, further hampering shipments and supporting prices. Sorghum exports are forecast at \$1.6 billion, down \$400 million from the August forecast on lower volumes due to sharply reduced production. Early season outstanding sales of both corn and sorghum are far below last year. Feeds and fodders exports are forecast at \$10.6 billion, up \$100 million from the August forecast. Wheat exports are forecast at \$8.1 billion, up \$300 million from the previous forecast on higher unit values more than offsetting smaller export volumes. U.S. wheat export prices continue at multi-year highs making exports uncompetitive relative to other major exporters. Rice exports are forecast down \$200 million to \$2.0 billion on weaker sales to top markets in the Western Hemisphere due to high prices compared with South American exporters. Unit values are forecast higher due to a smaller crop.

FY 2023 U.S. oilseeds and products exports are forecast at \$44.3 billion, down \$2.3 billion from the August forecast and down \$1.4 billion from the FY 2022 record. Values are down almost entirely on a \$2.4-billion reduction in soybeans. Soybean volumes are down due to smaller production offsetting higher carry in, record U.S. crush, and increased competition from South America. Soybean meal is left unchanged at \$5.7 billion as lower volumes are offset by higher unit values. Soybean oil values are reduced \$100 million to \$900 million on lower volumes; however, unit values remain near record highs. High U.S. premiums compared with South America will continue to limit shipments.

FY 2023 U.S. cotton exports are forecast down \$1.0 billion from the August forecast to \$6.0 billion on lower unit values. Cotton prices have fallen significantly and reflect concerns regarding lower global consumption. Consumers' post-pandemic rebalancing from goods to services purchases, coupled with prospects for lower global economic growth, is pressuring demand for cotton apparel and home textiles.

FY 2023 livestock, poultry, and dairy exports are forecast \$300 million higher to \$41.4 billion as gains in beef, variety meats, and poultry offset a decline in pork and dairy. Beef is up \$500 million to \$10.3 billion driven by higher unit values as domestic beef production is expected to fall. Poultry and products are up \$300 million to \$7.2 billion on slightly higher broiler and turkey meat volumes as global demand remains firm bolstering prices. Beef and pork variety meats are raised \$100 million to \$2.2 billion on greater volumes of pork variety meats and higher prices for beef variety meats. The forecast for hides and skins is unchanged at \$1.1 billion. Pork exports are forecast \$300 million lower to \$6.2 billion on tighter exportable supplies and weaker global demand, particularly from China. Dairy is forecast down \$100 million to \$8.9 billion on lower volumes of skim milk powder, cheese, and several other products.

FY 2023 U.S. horticultural products are unchanged from the August forecast at \$39.5 billion. Whole and processed tree nuts are unchanged at \$9.5 billion, with most shipments destined for Europe and Asia. Processed fruits and vegetables are unchanged at \$7.3 billion on steady shipments to Canada. Fresh fruits and vegetables are unchanged at \$7.1 billion on stable shipments to top markets in Canada and Mexico.

FY 2023 U.S. ethanol exports are forecast at a record \$4.2 billion, unchanged from the August forecast and slightly higher than FY 2022. Ethanol export unit value is expected to remain near a historic high level supported by persistently elevated corn and gasoline prices. Despite high export value, a strong U.S. dollar, and the threat of recession in many markets, U.S. ethanol export volume may climb modestly higher. Canada remains the top market by a wide margin with continued good prospects for fuel-grade ethanol holding near one-third of total U.S. ethanol export volume. Also a record last year, industrial grade ethanol shipments to South Korea—the United States' second largest market—could climb further. Sharply higher gasoline prices have created strong demand for relatively inexpensive U.S. ethanol in Europe despite high duties at the border. Competitive pricing keeps U.S. industrial-grade ethanol sales strong to other top markets, most importantly Mexico and India. U.S. sales recovery to Brazil appears constrained given the International Energy Agency's expectation for reduced Brazil gasoline-ethanol use in 2023, and Brazil's real remains weak against the dollar.

Table 3—U.S. agricultural exports: Value and volume by commodity, fiscal years 2019–23 1/ 2/

Commodity	Fiscal year				Forecast	
	2019	2020	2021	2022	Fiscal year 2023	
					August	November
VALUE						
	–Billion dollars–					
Grains and feeds 3/	29.968	29.940	42.599	48.029	46.5	46.2
Wheat 4/	6.231	6.260	7.251	8.324	7.8	8.1
Rice	1.841	1.798	2.043	1.835	2.2	2.0
Corn	9.013	8.232	17.397	19.468	19.1	18.5
Sorghum	0.442	1.032	1.938	2.506	2.0	1.6
Feeds and fodders	7.783	7.949	9.063	10.585	10.5	10.6
Oilseeds and products	26.271	27.563	37.700	45.622	46.6	44.3
Soybeans	17.018	17.879	26.417	33.341	35.2	32.8
Soybean meal 5/	4.399	4.381	5.619	6.005	5.7	5.7
Soybean oil	0.676	0.980	0.843	1.245	1.0	0.9
Livestock, poultry, and dairy	30.394	31.596	36.925	41.845	41.1	41.4
Livestock products	19.604	20.068	23.667	25.829	25.2	25.3
Beef and veal 6/	7.283	6.639	8.659	10.818	9.8	10.3
Pork 6/	5.517	6.717	7.014	6.257	6.5	6.2
Beef and pork variety meats 6/	1.562	1.609	1.933	2.213	2.1	2.2
Hides, skins, and furs	1.108	0.857	1.072	1.146	1.1	1.1
Poultry and products	5.137	5.072	5.982	6.945	6.9	7.2
Broiler meat 6/ 7/	3.172	3.098	3.562	4.182	4.2	4.3
Dairy products	5.653	6.455	7.276	9.071	9.0	8.9
Tobacco and products	0.958	0.894	1.065	0.781	0.8	0.8
Cotton 8/	6.147	5.649	6.228	8.859	7.0	6.0
Seeds	1.883	1.646	1.658	1.712	1.7	1.7
Horticultural products 9/	36.263	34.773	37.455	39.298	39.5	39.5
Fruits and vegetables, fresh	7.065	6.961	7.146	7.010	7.1	7.1
Fruits and vegetables, processed	6.861	6.538	7.030	7.328	7.3	7.3
Tree nuts, whole and processed	9.000	8.537	8.824	9.761	9.5	9.5
Sugar and tropical products 10/	5.817	5.404	5.686	6.215	6.0	6.0
Ethanol 10/	2.393	2.261	2.424	4.050	4.2	4.2
Total	140.094	139.725	171.740	196.410	193.5	190.0
Major bulk products 12/	41.727	41.778	62.482	75.176	73.3	69.0
– Million metric tons –						
VOLUME						
Wheat 2/	26.569	26.832	25.568	20.928	22.3	21.0
Rice	3.617	3.127	3.753	2.798	2.9	2.5
Corn	49.223	46.970	68.225	62.901	61.5	57.0
Sorghum	2.373	5.386	6.906	7.328	5.8	4.5
Feeds and fodders	21.574	20.776	21.866	21.895	21.9	21.5
Soybeans	48.297	49.080	56.572	58.745	58.6	55.7
Soybean meal 4/	12.141	12.549	12.406	12.269	12.7	12.4
Soybean oil	0.880	1.287	0.785	0.804	0.6	0.6
Beef and veal 5/	1.015	0.952	1.121	1.178	1.0	1.1
Pork 5/	2.056	2.507	2.474	2.135	2.3	2.2
Beef and pork variety meats 5/	0.728	0.702	0.770	0.747	0.7	0.7
Broiler meat 5/ 6/	3.214	3.310	3.362	3.293	3.3	3.3
Cotton 7/	3.466	3.625	3.489	3.426	2.7	2.7
Major bulk products 11/	134.207	135.634	165.436	156.629	153.8	143.4

Note: Totals may not add up due to rounding.

1/ Fiscal year is defined as October 1 of previous year through September 30 of current year. 2/ FY = fiscal year. 3/ Includes barley, oats, rye, corn gluten feed and meal, and processed grain products. 4/ Excludes wheat flour. 5/ Includes soy flours made from protein meals. 6/ Includes chilled, frozen, and processed meats. 7/ Includes only federally inspected products. 8/ Includes linters and waste. 9/ Includes food preparations, essential oils, and wine. 10/ Includes coffee and cocoa. 11/ Non-beverage ethanol. 12/ Includes wheat, rice, coarse grains, soybeans, and cotton.

Sources: Compilation, analysis, and forecasts by USDA, Economic Research Service and USDA, Foreign Agricultural Service; U.S. Department of Commerce, Bureau of the Census data.

Regional Exports

Asia

The export forecast for China is down \$2.0 billion from August to \$34.0 billion, primarily due to reduced soybean export prospects on resurgent competition from South America. In addition, lower cotton unit values, sharply reduced U.S. sorghum production, and weak pork demand further constrain the trade outlook. Despite the downward revision, China is projected to remain the largest market for U.S. agricultural exports.

Forecast exports to Japan are unchanged at \$15.2 billion. Higher beef export values are expected to offset reduced corn sales.

The export forecast for Vietnam is down \$100 million, mostly because of reduced cotton prospects.

Forecast exports to South Asia are down \$100 million on lower cotton unit values to Pakistan.

Western Hemisphere

The export forecast for Canada is down \$200 million to \$28.3 billion, largely driven by reduced corn prospects. The export forecast to Mexico is down \$500 million to \$28.0 billion, due to lower soybean, corn, and pork trade expectations.

The export forecasts for the Caribbean, Central, and South America are unchanged.

Europe, Africa, the Middle East, and Oceania

Exports to the European Union (EU) are forecast at \$12.0 billion, a \$200-million decrease from the previous projection, largely due to lower soybean prospect.

Exports to the United Kingdom are forecast \$100 million lower to \$1.8 billion, which is on par with recorded FY 2022 exports. An unfavorable exchange rate and a threat of recession make it unlikely that U.S. sales would surpass last year's levels.

The export forecast for the Former Soviet Union is reduced by \$100 million as geopolitical and economic turmoil cloud the trade outlook.

The export forecast for the Middle East is down \$100 million on lowered expectations for cotton sales to Turkey.

The export forecasts for Africa and Oceania are unchanged at \$6.2 billion and \$2.1 billion, respectively.

Table 4—U.S. agricultural exports: Value by region, fiscal years 2019–23

Region and country 1/	Fiscal year				Share of	Forecast	
	2019	2020	2021	2022	2022 total	Fiscal year 2023	
	–Billion dollars–				Percent	–Billion dollars–	
						August	November
VALUE							
Asia	55.837	59.747	80.099	87.407	44.5	85.6	83.4
East Asia	37.693	41.862	61.387	66.993	34.1	66.4	64.4
Japan	12.408	11.660	13.509	15.218	7.7	15.2	15.2
China	10.110	16.973	33.351	36.380	18.5	36.0	34.0
Hong Kong	3.528	2.311	1.768	1.547	0.8	1.5	1.5
Taiwan	3.625	3.267	3.713	4.261	2.2	4.2	4.2
South Korea	8.010	7.638	9.034	9.554	4.9	9.5	9.5
Southeast Asia	13.795	13.469	14.531	15.271	7.8	14.5	14.4
Indonesia	2.892	2.706	3.068	3.221	1.6	2.8	2.8
Philippines	2.993	3.205	3.575	3.932	2.0	3.8	3.8
Malaysia	1.149	1.082	1.160	1.163	0.6	1.2	1.2
Thailand	1.881	1.734	1.700	1.732	0.9	1.7	1.7
Vietnam	3.672	3.437	3.565	3.470	1.8	3.2	3.1
South Asia	4.349	4.416	4.181	5.143	2.6	4.7	4.6
India	2.112	1.738	1.645	2.474	1.3	2.5	2.5
Western Hemisphere	57.205	55.040	65.480	78.096	39.8	78.5	77.8
North America	41.267	40.317	48.121	56.396	28.7	57.0	56.3
Canada	22.048	22.016	24.263	28.362	14.4	28.5	28.3
Mexico	19.218	18.297	23.858	28.034	14.3	28.5	28.0
Caribbean	3.862	3.552	4.239	5.145	2.6	5.2	5.2
Dominican Republic	1.392	1.387	1.733	1.963	1.0	1.9	1.9
Central America 2/	4.372	4.218	5.500	7.085	3.6	7.1	7.1
South America	7.705	6.953	7.621	9.470	4.8	9.2	9.2
Brazil	1.126	1.054	0.745	1.009	0.5	0.9	0.9
Colombia	2.749	2.907	3.013	4.216	2.1	4.1	4.1
Peru	1.104	0.880	1.022	1.034	0.5	1.0	1.0
Venezuela	0.173	0.340	0.655	0.742	0.4	0.7	0.7
Europe/Eurasia	14.654	12.949	13.374	15.394	7.8	14.9	14.5
European Union	11.544	10.238	10.592	12.643	6.4	12.2	12.0
United Kingdom	1.924	1.728	1.729	1.822	0.9	1.9	1.8
FSU-12 3/	0.628	0.465	0.497	0.431	0.2	0.5	0.4
Russia	0.230	0.195	0.237	0.172	0.1	0.2	0.2
Middle East	5.990	5.395	5.524	6.615	3.4	6.2	6.1
Turkey	1.192	1.212	1.202	1.998	1.0	1.8	1.7
Saudi Arabia	1.371	1.243	1.365	1.449	0.7	1.3	1.3
Africa	4.112	4.386	5.119	6.770	3.4	6.2	6.2
North Africa	2.131	2.619	2.905	4.182	2.1	3.6	3.6
Egypt	1.479	1.757	1.845	2.972	1.5	2.7	2.7
Sub-Saharan Africa	1.980	1.767	2.214	2.588	1.3	2.6	2.6
Nigeria	0.577	0.478	0.626	0.735	0.4	0.8	0.8
Oceania	2.297	2.208	2.143	2.127	1.1	2.1	2.1
Total	140.094	139.725	171.740	196.410	100.0	193.5	190.0

Notes: Totals may not add up due to rounding. Fiscal year is defined as October 1 of previous year through September 30 of current year.

1/ Projections are based primarily on trend or recent average growth analysis. 2/ Central America includes the Republics of Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama. 3/ The 15 Republics of the Former Soviet Union (FSU), not including the 3 Baltic Republics: Estonia, Latvia, and Lithuania.

Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service analysis and forecasts using data from U.S. Department of Commerce, Bureau of the Census.

Import Products

Agricultural imports in FY 2023 are forecast at \$199.0 billion—\$5.0 billion more than the \$194.0 billion recorded for FY 2022 and \$2.0 billion above the August forecast. Other than the livestock, dairy, and poultry product group, the forecast for all other major product groups is increased for FY 2023 from the previous forecast.

The strong U.S. dollar makes foreign agricultural goods comparatively affordable for the U.S. domestic market and partially accounts for moderate upward pressure on import volumes. However, the upward pressures on U.S. imports are expected to be tempered by a slowing economy coupled with continuing inflation, which would slow domestic demand for consumer goods as well as agricultural products. Though agricultural products would be less impacted by these ebbing factors as consumers prioritize consumption of food and other necessities over more non-essential goods, some impact on agricultural import demand is still likely.

These competing economic forces help frame much of what is driving the modest forecast for FY 2023 total U.S. agricultural imports which, if realized, would represent a 3-percent increase over the previous year's recorded imports. Though a stark difference from the year-over-year import growth in FYs 2021 and 2022—measured at 14 and 19 percent, respectively—the FY 2023 forecast would be a return to the patterns seen in the 8 years from 2013 to 2020 when annual agricultural import growth rates ranged between 0 and 7 percent.

The largest component of growth for FY 2023 is expected to be horticultural products. The forecast for horticultural product imports is adjusted upward by \$1.0 billion over the August forecast to \$100.3 billion—a new record over the FY-2022 total of \$97.2 billion. The largest change within the horticultural products group from the previous forecast is a \$300-million increase for fresh fruit imports due in part to ongoing droughts in key fruit-producing areas of the United States, high production costs, and an ongoing decline in citrus production. In contrast, favorable production is expected in major exporting countries in South and Central America. The fresh-vegetable-import forecast is increased \$200 million due to the same market factors affecting fresh fruit imports. Imports of processed vegetables in FY 2023 are expected to be \$100 million greater than the previous forecast due to the continued unit value increases and strong purchasing power of the U.S. dollar discussed previously. Similarly, forecasts for distilled spirits imports are raised \$200 million, and malt beer and wine import forecasts are each raised \$100 million from previous forecasts due to the continued rise of unit values. Fruit juices, nuts, essential oils, and cut flower and nursery stock are unchanged.

U.S. imports of sugar and tropical products are forecast to reach \$30.7 billion in FY 2023, a \$500-million upward adjustment from the previous forecast and \$1.6 billion above FY 2022. Sweeteners and product imports are expected to be valued at \$7.2 billion—\$100 million above the last forecast. Imports of coffee and products are increased by \$200 million as both values and volumes increase for those commodities due to strong exports from major South American exporters. Cocoa and products are also expected to increase \$100 million on stronger imports from the Ivory Coast and South America.

Fiscal year 2023 livestock, poultry, and dairy imports are forecast down \$100 million to \$26.2 billion as declines in pork and live swine are not offset by gains in beef and poultry. Pork imports are forecast \$100 million lower at \$2.6 billion primarily on volume reductions as tighter Canada and EU supplies constrain trade. Live swine imports are \$100 million lower due to a reduction in volumes and prices as a slower expected expansion of the U.S. pork sector weakens demand for Canadian piglets. Beef is up \$200 million to \$8.7 billion on higher volumes from an anticipated fall in domestically produced processing beef. Poultry and products are forecast \$100 million higher to \$1.4 billion as U.S. outbreaks of highly pathogenic avian influenza (HPAI) have negatively impacted domestic turkey meat production, spurring imports. Dairy imports are unchanged.

The forecast for grains and feed product imports is increased \$400 million from the previous forecast as reduced yields, rising production costs, and tight inventories keep pressure on prices across coarse grains and feed products globally. Rice, wheat, and processed grain products face similar challenges also leading to increased import values. The forecast for total oilseeds and oilseed-product imports are adjusted upward by \$200 million, alongside expected increases in unit values due to moderate decreases in domestic soybean production in addition to strong imports of canola from Canada. The forecast for other imports, which contain cotton, tobacco, planting seeds, and ethanol, is unchanged from the previous forecast.

Table 5--U.S. agricultural imports: Value and volume by commodity, fiscal years 2019–2023

Commodity	Fiscal year				Forecast	
	2019	2020	2021	2022	Fiscal year 2023	
					August	November
VALUE						
	<i>–Billion dollars –</i>					
Livestock, dairy, and poultry	17.616	18.242	20.956	26.042	26.3	26.2
Livestock and meats	13.481	14.189	16.352	20.110	20.7	20.5
Cattle and calves	1.750	1.793	1.555	1.701	2.2	2.1
Swine	0.311	0.249	0.532	0.567	0.6	0.5
Beef and veal	5.797	6.809	7.422	8.819	8.5	8.7
Pork	1.560	1.472	1.968	2.600	2.7	2.6
Poultry	0.812	0.765	0.893	1.326	1.3	1.4
Dairy products	3.323	3.287	3.711	4.605	4.3	4.3
Cheese	1.346	1.173	1.430	1.534	1.6	1.6
Grains and feed	13.377	14.321	15.776	19.763	20.0	20.4
Grain products	9.370	9.816	11.194	13.728	13.4	13.7
Oilseeds and products	9.336	9.823	12.638	17.909	17.3	17.5
Vegetable oils	5.545	5.714	7.636	10.886	10.0	10.2
Horticulture products	75.767	75.833	86.144	97.203	99.3	100.3
Fruits, fresh	13.956	14.046	15.512	17.933	18.3	18.6
Fruits, processed	5.746	5.547	6.449	8.221	8.2	8.2
Fruit juices	2.193	1.819	2.141	2.907	2.7	2.7
Nuts, whole and processed	3.140	2.774	2.856	3.018	2.8	2.8
Vegetables, fresh	8.892	9.887	10.511	11.090	11.6	11.8
Vegetables, processed	5.426	5.779	6.504	7.463	7.7	7.8
Wine	6.570	6.189	7.481	7.835	8.1	8.2
Malt beer	5.499	5.443	6.376	6.716	6.9	7.0
Distilled spirits	9.056	8.447	9.794	12.040	12.1	12.3
Essential oils	4.198	4.061	4.416	5.166	5.3	5.3
Cut flowers and nursery stock	2.171	2.129	2.822	3.286	3.7	3.7
Sugar and tropical products	21.510	21.685	23.925	29.092	30.2	30.7
Sweeteners and products	4.514	5.124	5.378	6.757	7.1	7.2
Confections	1.922	1.907	2.213	2.701	2.6	2.7
Cocoa and products	4.808	4.950	5.355	5.961	6.0	6.1
Coffee and products	6.163	5.985	6.729	9.747	10.0	10.2
Other imports 1/	3.831	3.500	3.902	3.969	3.9	3.9
Total agricultural imports	141.437	143.404	163.341	193.977	197.0	199.0
VOLUME						
	<i>–Million metric tons –</i>					
Cattle and calves 2/	2.031	2.131	1.824	1.671	1.9	1.9
Swine 2/	5.077	5.110	6.515	6.556	6.7	6.6
Beef and veal	1.020	1.138	1.073	1.182	1.1	1.1
Pork	0.422	0.377	0.457	0.607	0.7	0.6
Fruits, fresh	12.517	12.516	12.926	13.422	13.4	13.5
Fruits, processed	1.896	1.940	2.060	2.312	2.3	2.3
Fruit juices 3/	4.832	4.109	4.495	5.512	5.0	5.0
Vegetables, fresh	7.977	8.180	8.908	9.082	9.6	9.7
Vegetables, processed	4.123	4.328	4.752	5.190	5.8	5.7
Vegetable oils 3/	4.897	5.108	5.191	5.552	5.6	5.6
Wine 3/	1.329	1.459	1.726	1.639	1.7	1.7
Malt beer 3/	4.202	4.048	4.657	4.781	4.8	4.8
Distilled spirits 4/	0.827	0.863	0.931	0.994	1.0	1.0
Cocoa and products	1.381	1.369	1.489	1.510	1.6	1.6
Coffee and products	1.788	1.596	1.631	1.709	1.7	1.7

Notes: Totals may not add due to rounding. Fiscal year is defined as October 1 of previous year through September 30 of current year.

1/Largely unmanufactured tobacco, planting seeds, mineral and aerated waters, and ethanol. 2/Million head. 3/Billion liters. 4/ Proof gallon equivalent liters.

Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service analysis and forecasts using data from U.S. Department of Commerce, Bureau of the Census.

Regional Imports

Western Hemisphere

Regional imports from the Western Hemisphere are forecast to increase by \$1.7 billion from the previous forecast to \$116.7 billion. Mexico is expected to remain the largest foreign supplier of agricultural goods to the United States with \$46.9 billion in imports forecast for FY 2023.

Canada is expected to be the second largest supplier at \$37.3 billion. The forecast for imports from Mexico is unchanged from the August forecast as reductions in the expected imports of cattle and calves are canceled out by the expected increases in distilled spirits. The forecast value of Canada's agricultural products sold to the United States is boosted \$1.1 billion to \$37.3 billion on upward adjustments to U.S. imports of grains, processed grain products, oilseeds and their products, and fresh and processed vegetables.

In FY 2023, the forecast for imports from Central America is unchanged from the August forecast at \$7.9 billion.

Imports from South America in FY 2023 are forecast \$600 million higher than the previous forecast at \$22.8 billion. Imports from Chile, Peru, and other South American countries are expected to increase \$200 million, \$100 million, and \$100 million, respectively, from the previous forecast largely due to a good production forecast for fresh fruits and vegetables for the region. The forecast for Brazil is likewise adjusted up \$200 million on increased imports of sugar, coffee, and coffee products.

Europe

Imports from the EU for FY 2023 are forecast to be \$36.0 billion, unchanged from the August forecast as expected decreases of pork imports are equaled by expected increases of beer, distilled spirits, and grain products such as baked goods. Imports from the United Kingdom (UK) are unchanged from the previous FY 2023 forecast.

Asia

The forecast for imports from Asia is up \$100 million from the previous forecast to \$30.7 billion in FY 2023. The increase comes mainly from Southeast Asia bringing the region's imports up \$100 million to \$18.9 billion. Rice from Thailand as well as palm oil and coconut products from the region are the main sources of import growth. The forecast for East and South Asia are unchanged from last quarter.

Oceania

The forecast for imports from Oceania is raised by \$100 million from the previous forecast to \$6.9 billion in FY 2023 on expected increases in the imports of wine from New Zealand where solid production is expected this year.

Africa and Middle East

Imports from Africa in FY 2023 are raised \$100 million, to \$4.2 billion, due, in part, to continued expectations of higher cocoa production in the Côte d'Ivoire. Imports from the Middle East in FY 2023 are unchanged from the previous forecast.

Table 6—U.S. agricultural imports: Value by region, fiscal years 2019–23

Region and country	Fiscal year				Forecast	
	2019	2020	2021	2022	Fiscal year 2023 August	November
VALUE						
	<i>-Billion dollars -</i>					
Western Hemisphere	76.222	79.517	91.534	109.743	115.0	116.7
Canada	24.135	24.821	29.530	35.890	36.2	37.3
Mexico	29.688	31.844	36.468	42.755	46.9	46.9
Central America	5.761	6.076	6.497	7.590	7.9	7.9
Costa Rica	1.518	1.587	1.707	1.855	1.7	1.7
Guatemala	2.146	2.232	2.353	2.781	3.0	3.0
Other Central America	2.098	2.257	2.437	2.955	3.3	3.3
Caribbean	1.502	1.468	1.880	1.899	1.8	1.8
South America	15.136	15.308	17.159	21.609	22.2	22.8
Argentina	1.351	1.433	1.533	1.875	1.7	1.7
Brazil	4.049	3.871	4.529	5.964	6.3	6.5
Chile	2.882	2.758	2.958	3.524	3.6	3.6
Colombia	2.704	2.692	3.140	4.086	3.9	4.1
Peru	2.443	2.702	2.922	3.771	4.0	4.1
Other South America	1.707	1.853	2.076	2.389	2.7	2.8
Europe and Eurasia	31.326	29.322	33.161	37.487	38.2	38.2
European Union-27	28.539	27.146	31.143	35.122	36.0	36.0
United Kingdom	2.787	2.175	2.019	2.365	2.1	2.1
Asia	21.316	21.602	24.406	29.369	30.6	30.7
East Asia	6.297	6.115	6.986	8.038	7.9	7.9
China	4.166	3.717	3.992	4.831	4.3	4.3
Other East Asia	2.131	2.398	2.994	3.207	3.6	3.6
Southeast Asia	11.986	12.523	13.968	17.488	18.8	18.9
Indonesia	2.298	2.459	3.054	4.858	6.0	6.0
Malaysia	1.061	1.086	0.949	1.162	1.1	1.1
Thailand	2.490	2.785	2.745	3.475	3.4	3.5
Vietnam	1.989	2.064	2.349	2.605	2.5	2.5
Other Southeast Asia	4.148	4.129	4.871	5.388	5.8	5.8
South Asia	3.034	2.964	3.452	3.844	3.9	3.9
India	2.686	2.599	3.044	3.376	3.4	3.4
Oceania	6.043	6.237	6.327	7.930	6.8	6.9
Australia	3.428	3.464	3.284	4.281	3.5	3.5
New Zealand	2.388	2.578	2.805	3.380	3.3	3.4
Africa	3.054	3.135	3.597	4.043	4.1	4.2
Sub-Saharan Africa	2.565	2.516	2.860	3.129	3.2	3.2
Côte d'Ivoire	0.666	0.791	1.037	0.830	1.2	1.3
Middle East	1.525	1.518	1.870	2.428	2.3	2.3
Turkey	1.000	0.968	1.211	1.736	1.7	1.7
World total	141.437	143.404	163.341	193.977	197.0	199.0

Notes: Totals may not add due to rounding. Fiscal year is defined as October 1 of previous year through September 30 of current year.

Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service analysis and forecasts using data from U.S. Department of Commerce, Bureau of the Census.

Reliability Tables

Table 7—Reliability of quarterly U.S. export projections, by commodity and quarter 1/

Commodity	Root mean squared error (RMSE) 2/ Fiscal years 2018–2022					Forecast errors Fiscal year 2022				
	Aug.	Nov.	Feb.	May	Aug.	Aug.	Nov.	Feb.	May	Aug.
Export value	<i>RMSE</i>					<i>Percent</i>				
Grains and feeds	6.3	4.8	3.8	1.2	0.4	-13	-14	-11	-3	0
Wheat	1.1	1.1	0.7	0.4	0.3	-15	-15	-6	1	-3
Rice	0.1	0.2	0.2	0.2	0.1	9	4	9	9	9
Corn	4.3	2.9	2.5	0.8	0.3	-12	-13	-13	-2	-1
Sorghum 3/	NA	NA	NA	NA	NA	0	-4	0	4	8
Feeds and fodder	1.2	1.1	0.9	0.6	0.2	-21	-22	-17	-8	-1
Oilseeds and products	4.6	3.3	1.3	1.6	1.4	-5	-15	-4	-3	-1
Soybeans	3.5	2.6	1.2	1.3	1.4	-3	-15	-6	-3	-1
Soybean meal	0.8	0.7	0.5	0.3	0.2	-5	-18	3	0	2
Soybean oil	0.2	0.2	0.3	0.2	0.0	-20	-28	-20	-4	-4
Livestock, poultry, and dairy	3.1	2.6	2.3	1.5	0.5	-12	-8	-6	-3	2
Livestock products	1.8	1.6	1.4	1.0	0.3	-9	-5	-4	-2	1
Beef and veal	1.6	1.2	1.0	0.7	0.2	-23	-16	-12	-6	1
Pork	0.5	0.3	0.1	0.2	0.2	13	5	1	-1	1
Beef and pork variety meats	0.3	0.2	0.2	0.1	0.1	-19	-14	-14	-5	-1
Hides, skins, and furs	0.3	0.3	0.2	0.2	0.1	-13	-4	-4	5	5
Poultry and products	0.6	0.4	0.4	0.3	0.1	-15	-5	-5	-2	1
Broiler meat	0.4	0.2	0.3	0.3	0.1	-19	-4	-4	0	0
Dairy products	0.9	0.8	0.7	0.4	0.2	-17	-15	-14	-7	5
Tobacco, unmanufactured	0.2	0.2	0.3	0.2	0.1	15	15	15	2	2
Cotton 4/	1.5	1.2	0.7	0.3	0.2	-23	-18	-10	2	-1
Planting seeds	0.2	0.2	0.2	0.1	0.1	-7	-7	-7	-7	-1
Horticultural products 4/	1.6	1.8	1.7	1.8	0.4	-4	-4	-2	-2	-1
Fruits and vegetables, fresh	0.3	0.3	0.3	0.3	0.1	4	4	4	4	-2
Fruits & veget., processed	0.4	0.4	0.4	0.4	0.1	-3	-3	-3	-3	-2
Tree nuts, whole/processed	0.4	0.4	0.3	0.3	0.1	-8	-8	-4	-4	0
Sugar and tropical products	0.3	0.3	0.3	0.3	0.2	-5	-5	-5	-5	-5
Ethanol 3/	NA	NA	NA	NA	NA	-41	-28	-28	-6	4
Total agricultural exports 4/	17.1	13.4	9.6	4.5	0.9	-10	-11	-7	-3	0
Major bulk products 4/	10.9	8.0	6.6	3.4	2.7	-10	-15	-11	-1	-2
Export volume										
Wheat	2.4	3.1	2.3	1.3	1.3	15	7	2	-3	-3
Rice	0.6	0.5	0.4	0.4	0.1	29	18	14	11	7
Corn	10.8	9.0	8.1	6.6	2.2	-3	0	-2	1	-1
Sorghum 3/	NA	NA	NA	NA	NA	13	13	9	6	4
Feeds and fodder	0.5	0.6	0.5	0.7	0.4	0	0	0	-2	0
Soybeans	4.2	3.3	2.8	3.0	3.1	-5	-5	-5	-1	0
Soybean meal	1.1	1.1	1.2	1.0	0.4	5	5	7	4	1
Soybean oil	0.3	0.3	0.3	0.1	0.0	-13	-25	-25	-1	-1
Beef and veal	0.1	0.1	0.1	0.0	0.0	-7	-7	-7	-7	2
Pork	0.2	0.1	0.1	0.0	0.1	17	12	3	3	3
Beef and pork variety meats	0.1	0.1	0.1	0.1	0.0	-6	-6	-6	7	-6
Broiler meat	0.1	0.1	0.0	0.1	0.0	3	3	0	3	0
Cotton	0.3	0.2	0.2	0.2	0.1	-4	-1	-4	-4	-1
Major bulk products 4/	11.6	9.5	9.2	5.4	4.1	0	0	-2	0	-1

1/ Fiscal year is defined as October 1 of previous year through September 30 of current year. 2/ Root mean squared error (RMSE) is the squared root of the average squared difference between the forecast and actual values. 3/ "NA" indicates that statistics were not able to be calculated because forecasts were not made for these commodities prior to the March 2021 change to USDA's definition of "Agricultural Products" for the purposes of international trade—the first forecast using this definition was made in August 2021. 4/ Due to the change in agricultural trade product definition adopted by USDA in March of 2021, the RMSEs and percent forecast errors for these categories combine errors of forecasts and actual trade values and volumes using both definitions.

Source: USDA, Economic Research Service and USDA, Foreign Agricultural Service.

Table 8—Reliability of quarterly U.S. export projections, by country and quarter 1/

Region and country	Root mean squared error (RMSE) 2/ Fiscal years 2018–2022					Forecast errors Fiscal year 2022				
	Aug.	Nov.	Feb.	May	Aug.	Aug.	Nov.	Feb.	May	Aug.
Export value	<i>RMSE</i>					<i>Percent</i>				
Asia	5.1	4.5	2.8	1.6	2.2	0	-4	-3	-3	0
East Asia	4.7	4.0	2.2	2.1	2.2	1	-3	-1	-1	0
Japan	1.4	1.2	0.8	0.7	0.4	-13	-11	-3	-1	1
China	6.1	4.9	2.9	3.5	2.8	7	-1	-1	-1	-1
Hong Kong	0.9	0.9	0.6	0.3	0.1	23	23	10	10	3
Taiwan	0.4	0.4	0.4	0.3	0.2	-11	-11	-11	-11	1
South Korea	0.9	0.8	0.8	0.6	0.3	0	0	3	3	3
Southeast Asia	1.6	1.5	1.5	1.1	0.4	-1	-5	-8	-6	-2
Indonesia	0.3	0.3	0.3	0.2	0.2	9	2	-7	-7	-10
Philippines	0.2	0.3	0.3	0.2	0.1	-6	-8	-8	2	2
Malaysia	0.2	0.1	0.1	0.1	0.1	-5	-5	-5	3	3
Thailand	0.4	0.4	0.3	0.2	0.1	10	4	4	4	-2
Vietnam	0.8	0.6	0.6	0.5	0.2	15	10	4	-2	-5
South Asia	0.6	0.6	0.6	0.5	0.1	-16	-14	-14	-14	-3
India	0.4	0.4	0.4	0.3	0.2	-35	-35	-27	-11	9
Western Hemisphere	8.0	7.5	5.4	3.8	1.4	-19	-17	-9	-1	1
North America	5.8	5.3	3.9	3.4	1.3	-18	-16	-6	3	1
Canada	2.5	2.4	1.8	1.2	0.4	-16	-15	-8	0	0
Mexico	3.3	2.9	2.2	2.2	1.0	-20	-16	-4	5	2
Caribbean	0.6	0.5	0.4	0.2	0.2	-22	-18	-14	-3	1
Dominican Republic	0.2	0.2	0.2	0.1	0.0	-13	-13	-8	-3	-3
Central America	0.9	0.9	0.8	0.5	0.2	-25	-25	-21	-8	2
South America	0.8	0.9	0.8	0.8	0.3	-17	-18	-14	-14	-3
Brazil	0.2	0.2	0.1	0.1	0.1	-1	-1	-1	-11	-11
Colombia	0.5	0.5	0.4	0.3	0.1	-24	-26	-17	-15	-3
Peru	0.2	0.2	0.2	0.2	0.1	6	6	-3	-3	-3
Venezuela	0.2	0.2	0.2	0.1	0.0	-19	-19	-19	-19	-6
Europe and Eurasia	1.5	1.5	1.0	0.8	0.4	-9	-10	-7	-6	-1
European Union-27 3/	1.5	1.5	1.0	0.8	0.4	-11	-13	-9	-9	-1
United Kingdom 4/	NA	NA	NA	NA	NA	-1	-1	-1	10	4
FSU-12 5/	0.1	0.1	0.1	0.0	0.0	16	16	16	16	16
Russia	0.1	0.1	0.1	0.0	0.0	75	75	75	17	17
Middle East	0.6	0.6	0.5	0.4	0.2	-17	-15	-12	-9	-3
Turkey	0.5	0.4	0.4	0.3	0.1	-45	-40	-30	-20	0
Saudi Arabia	0.1	0.1	0.1	0.1	0.1	-10	-10	-10	-10	-10
Africa	1.0	1.1	0.9	0.7	0.3	-22	-25	-17	-17	-4
North Africa	0.9	0.9	0.9	0.8	0.3	-21	-26	-21	-23	-7
Egypt	0.7	0.8	0.7	0.7	0.1	-33	-39	-33	-33	1
Sub-Saharan Africa	0.4	0.4	0.3	0.3	0.1	-23	-23	-11	-7	0
Nigeria	0.2	0.2	0.2	0.2	0.1	-32	-32	-5	9	9
Oceania	0.1	0.1	0.1	0.1	0.0	3	3	-1	-1	-1

1/ Fiscal year is defined as October 1 of previous year through September 30 of current year. 2/ Root mean squared error (RMSE) is the squared root of the average squared difference between the forecast and actual values. 3/ The RMSEs and percent forecast errors for these categories combine errors of forecasts and actual trade values for the European Union (EU) before and after the United Kingdom (UK) separated from the union in 2021—the first forecast for the EU without the UK was August 2021. 4/ "NA" indicates that statistics were not able to be calculated because forecasts were not made for these trade partners/groups prior to the UK separating from the EU in 2021—the first forecast using this definition was made in August 2021. 5/ The 15 Republics of the Former Soviet Union (FSU) minus the 3 Baltic Republics: Latvia, Estonia, and Lithuania.

Source: USDA, Economic Research Service and USDA, Foreign Agricultural Service.

Table 9—Reliability of quarterly U.S. import projections, by commodity and quarter 1/

Commodity	Root mean squared error (RMSE) 2/ Fiscal years 2018–2022					Forecast errors Fiscal year 2022				
	Aug.	Nov.	Feb.	May	Aug.	Aug.	Nov.	Feb.	May	Aug.
Import value	<i>RMSE</i>					<i>Percent</i>				
Livestock, dairy, and poultry	3.2	2.8	1.8	1.2	0.8	-23	-20	-9	-2	3
Livestock and meats	2.5	2.1	1.4	1.1	0.6	-21	-17	-7	1	3
Cattle and calves	0.2	0.1	0.1	0.1	0.1	0	6	18	6	6
Swine	0.1	0.1	0.1	0.0	0.0	-29	-29	-12	6	6
Beef and veal	1.0	0.9	0.7	0.7	0.2	-16	-13	-1	8	2
Pork	0.4	0.3	0.2	0.1	0.1	-31	-19	-12	-4	8
Poultry 3/	NA	NA	NA	NA	NA	-32	-32	-32	-10	-2
Dairy products	0.6	0.6	0.3	0.3	0.2	-28	-28	-13	-11	0
Cheese	0.1	0.1	0.1	0.1	0.1	-2	-2	-2	11	4
Grains and feed	2.2	1.9	1.6	1.0	0.4	-22	-18	-16	-10	-3
Grain products	1.5	1.2	1.0	0.7	0.4	-20	-15	-13	-8	-4
Oilseeds and products	3.0	2.6	2.5	2.0	0.4	-31	-26	-25	-19	-2
Vegetable oils	1.9	1.5	1.4	1.0	0.5	-33	-26	-23	-9	-4
Horticulture products 4/	10.3	9.5	8.7	6.8	2.0	-14	-12	-8	-5	-1
Fruits, fresh	1.3	1.2	1.0	0.5	0.2	-14	-12	-9	-2	1
Fruits, preserved	1.0	1.0	0.9	0.4	0.2	-26	-26	-21	-9	-1
Fruit juices	0.5	0.5	0.4	0.2	0.1	-31	-31	-28	-17	-4
Nuts, whole and processed	0.4	0.4	0.3	0.3	0.2	-14	-11	-4	-4	3
Vegetables, fresh	0.9	0.9	0.7	0.8	0.5	-7	-7	-4	-4	0
Vegetables, processed	0.5	0.5	0.4	0.3	0.1	-12	-12	-9	-6	-2
Wine	0.8	0.7	0.7	0.5	0.3	-12	-4	-2	-2	-2
Malt beer	0.4	0.4	0.4	0.3	0.2	-5	-5	-5	-5	-2
Distilled spirits 3/	NA	NA	NA	NA	NA	-24	-17	-14	-11	-4
Essential oils	0.5	0.5	0.5	0.4	0.1	-15	-15	-15	-15	-3
Cut flowers and nursery stock	0.4	0.4	0.4	0.2	0.1	-18	-18	-12	-6	3
Sugar and tropical products 4/	2.2	1.9	1.5	1.2	0.3	-17	-14	-11	-9	-2
Sweeteners and products	0.8	0.8	0.6	0.4	0.2	-25	-22	-19	-13	-4
Confections	0.4	0.4	0.3	0.1	0.1	-26	-26	-19	-7	-4
Cocoa and products	0.6	0.5	0.4	0.3	0.2	-13	-13	-8	-8	-3
Coffee beans and products	1.6	1.4	1.2	0.9	0.4	-36	-30	-25	-18	-8
Other imports	1.0	1.0	1.0	1.1	0.2	-12	-2	-2	-2	-2
Total agricultural imports	20.6	18.2	15.6	11.8	3.2	-18	-15	-11	-7	-1
Import volume										
Cattle and calves	0.2	0.2	0.2	0.1	0.1	20	20	20	8	10
Swine	0.9	0.7	0.5	0.3	0.4	-13	-8	-10	1	1
Beef and veal	0.1	0.1	0.1	0.1	0.0	-7	-7	1	1	2
Pork	0.1	0.1	0.0	0.0	0.0	-34	-18	-1	-1	4
Fruits, fresh	0.5	0.3	0.3	0.1	0.2	-8	-4	-2	-1	0
Fruits, processed	0.1	0.1	0.1	0.1	0.1	-5	-9	-5	-5	-1
Fruit juices	0.9	0.7	0.7	0.4	0.4	-31	-15	-15	-9	-4
Vegetables, fresh	0.3	0.3	0.2	0.2	0.1	-4	2	2	-2	0
Vegetables, processed	0.2	0.2	0.2	0.2	0.1	-8	-6	-4	-4	2
Vegetable oils	0.5	0.3	0.4	0.5	0.3	-14	-6	-3	-3	1
Wine	0.2	0.2	0.2	0.1	0.1	-2	4	4	4	4
Malt beer	0.3	0.3	0.3	0.2	0.2	-8	-6	-6	-2	0
Distilled spirits 3/	NA	NA	NA	NA	NA	2	11	11	1	1
Cocoa and products	0.1	0.1	0.1	0.1	0.1	-1	-1	-1	-7	-1
Coffee and products	0.1	0.1	0.1	0.1	0.1	-6	-1	-1	-6	-1

1/ Fiscal year is defined as October 1 of previous year through September 30 of current year. 2/ Root mean squared error (RMSE) is the squared root of the average squared difference between the forecast and actual value. 3/ "NA" indicates that statistics were not able to be calculated because forecasts were not made for these commodities prior to the March 2021 change to USDA's definition of "Agricultural Products" for the purposes of international trade—the first forecast using this definition was made in August 2021. 4/ Due to the change in agricultural trade product definition adopted by USDA in March of 2021, the RMSEs and percent forecast errors for these categories combine errors of forecasts and actual trade values and volumes using both definitions.

Source: USDA, Economic Research Service and USDA, Foreign Agricultural Service.

Table 10—Reliability of quarterly U.S. import projections, by country and quarter 1/

Region and country	Root mean squared error (RMSE) 2/ Fiscal years 2018–2022					Forecast errors Fiscal year 2022				
	Aug.	Nov.	Feb.	May	Aug.	Aug.	Nov.	Feb.	May	Aug.
Import value	<i>RMSE</i>					<i>Percent</i>				
Western Hemisphere	12.5	10.9	8.6	6.2	2.4	-19	-16	-10	-3	1
Canada	3.9	3.3	2.5	1.9	0.7	-19	-15	-7	-3	2
Mexico	4.8	4.3	3.7	2.6	1.0	-16	-13	-8	0	4
Central America	0.9	0.5	0.4	0.5	0.4	-25	-13	-9	-9	-1
Costa Rica	0.2	0.1	0.1	0.1	0.1	-8	-8	-8	-8	-7
Guatemala	0.3	0.2	0.2	0.1	0.1	-21	-6	-6	-6	1
Other Central America	1.9	1.8	1.8	1.8	1.8	-39	-22	-9	-9	5
Caribbean	0.7	0.6	0.5	0.5	0.4	-53	-32	-5	-5	-3
South America	2.5	2.5	2.0	1.0	0.4	-23	-23	-17	-7	-3
Argentina	0.3	0.3	0.1	0.2	0.1	-31	-31	-15	-15	-9
Brazil	0.9	0.9	0.6	0.4	0.1	-25	-25	-14	1	-1
Chile	0.3	0.3	0.2	0.2	0.1	-18	-18	-9	-4	5
Colombia	0.6	0.6	0.4	0.2	0.1	-27	-27	-14	-7	-5
Peru	0.4	0.4	0.4	0.2	0.1	-20	-20	-20	-5	1
Other South America	0.3	0.3	0.3	0.3	0.2	-20	-20	-20	-29	-16
Europe and Eurasia	3.5	3.4	3.4	2.7	0.9	-7	-4	-7	-6	-1
European Union-27 3/	2.2	1.8	1.6	1.3	0.5	-10	-7	-7	-6	-1
United Kingdom 4/	NA	NA	NA	NA	NA	40	40	-11	-11	-10
Asia	2.7	2.4	2.0	1.5	0.8	-16	-13	-9	-7	4
East Asia	0.8	0.9	0.6	0.6	0.3	-19	-19	-12	-12	-3
China	0.6	0.6	0.6	0.6	0.2	-17	-17	-17	-17	-7
Other East Asia	0.6	0.6	0.5	0.3	0.3	-22	-22	-3	-3	3
Southeast Asia	1.8	1.7	1.4	1.0	0.9	-15	-11	-8	-5	9
Indonesia	0.7	0.6	0.3	0.3	0.5	-28	-22	-3	7	23
Malaysia	0.1	0.1	0.1	0.1	0.1	-14	-14	-14	-14	-10
Thailand	0.4	0.3	0.4	0.3	0.2	-11	-11	-14	-14	-4
Vietnam	0.5	0.4	0.4	0.3	0.2	-23	-12	-12	-12	0
Other Southeast Asia	1.3	1.3	1.3	0.9	0.5	-2	-2	-5	-3	11
South Asia	0.4	0.3	0.3	0.2	0.1	-12	-6	-6	-6	-1
India	0.3	0.3	0.3	0.2	0.1	-14	-8	-8	-8	-2
Oceania	0.8	0.8	0.7	0.8	0.5	-22	-22	-21	-21	-13
Australia	0.5	0.5	0.6	0.5	0.3	-25	-25	-25	-25	-16
New Zealand	0.4	0.4	0.2	0.2	0.2	-26	-26	-8	-8	-2
Africa	0.5	0.5	0.4	0.3	0.3	-18	-18	-8	-8	-4
Sub-Saharan Africa	0.2	0.2	0.2	0.2	0.2	-14	-14	-11	-11	-4
Côte d'Ivoire	0.3	0.3	0.2	0.1	0.1	45	45	20	20	20
Middle East	0.4	0.4	0.3	0.3	0.1	-30	-30	-22	-22	-5
Turkey	0.3	0.3	0.2	0.2	0.1	-42	-42	-25	-25	-2

1/ Fiscal year is defined as October 1 of previous year through September 30 of current year. 2/ Root mean squared error (RMSE) is the squared root of the average squared difference between the forecast and actual value. 3/ The RMSEs and percent forecast errors for these categories combine errors of forecasts and actual trade values for the European Union (EU) before and after the United Kingdom (UK) separated from the union in 2021—the first forecast for the EU without the UK was August 2021. 4/ "NA" indicates that statistics were not able to be calculated because forecasts were not made for these trade partners/groups prior to the UK separating from the EU in 2021—the first forecast using this definition was made in August 2021.

Source: USDA, Economic Research Service and USDA, Foreign Agricultural Service.

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