United States Department of Agriculture

An Overview of U.S. Fresh Produce Trade

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ERS Outlook Program on Fruit, Vegetables, and Tree Nuts

Fruit and Tree Nut Outlook (March and September)

Webpage: https://www.ers.usda.gov/topics/crops/fruit-and-tree-nuts/

Data: https://www.ers.usda.gov/data-products/fruit-and-tree-nuts-data/

Vegetables and Pulses Outlook (April and December)

Webpage: https://www.ers.usda.gov/topics/crops/vegetables-and-pulses/

Data: https://www.ers.usda.gov/data-products/vegetables-and-pulses-data/

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Why Do Countries Trade?

Textbook (Saylor Academy, 2012)	Connections to Produce Trade
Differences in technology	Protected agricultural techniques widely available across many countries May result in differences in product attributes and quality
Differences in resource endowments	Exporters tend to have climates favorable to growing fruit and vegetables and growing seasons that complement those of importing countries Some climates are more favorable for controlling phytosanitary challenges Water, soil, farm labor
Differences in demand	Many destinations for U.S. produce exports are upper-income or fast-growing economies Many suppliers of U.S. produce imports are middle-income countries U.S. = Upper-income, with GDP per capita of $69K in 2021, compared with $20K for Mexico*
Existence of economies of scale	???
Existence of government policies	Free trade with regulatory cooperation: USMCA, CAFTA-DR, Peru, Chile, Colombia, Panama, South Korea, to name a few Government supports
Not on list	Low transport costs, especially across land borders and by sea
	*Purchasing power parity, 2017 prices

A Quick Snapshot
Of U.S. Produce Trade in 2021





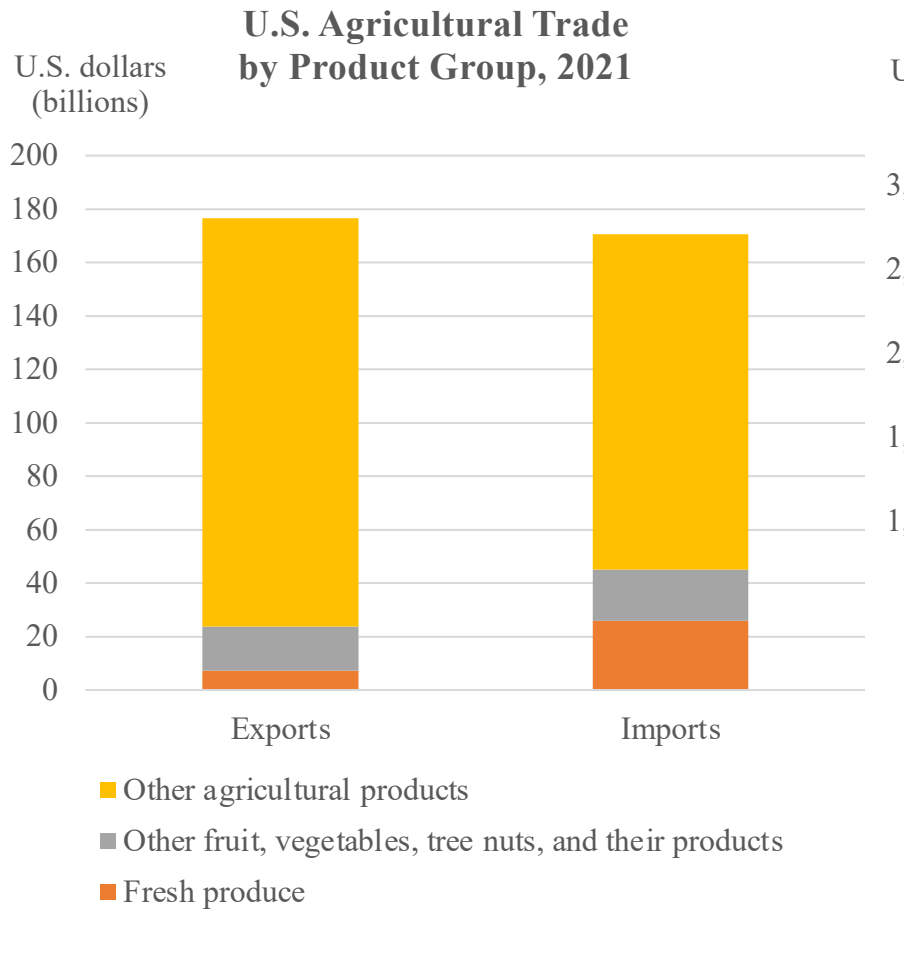
U.S. Fresh Produce Trade: A Large Fish in a Much Bigger Pond

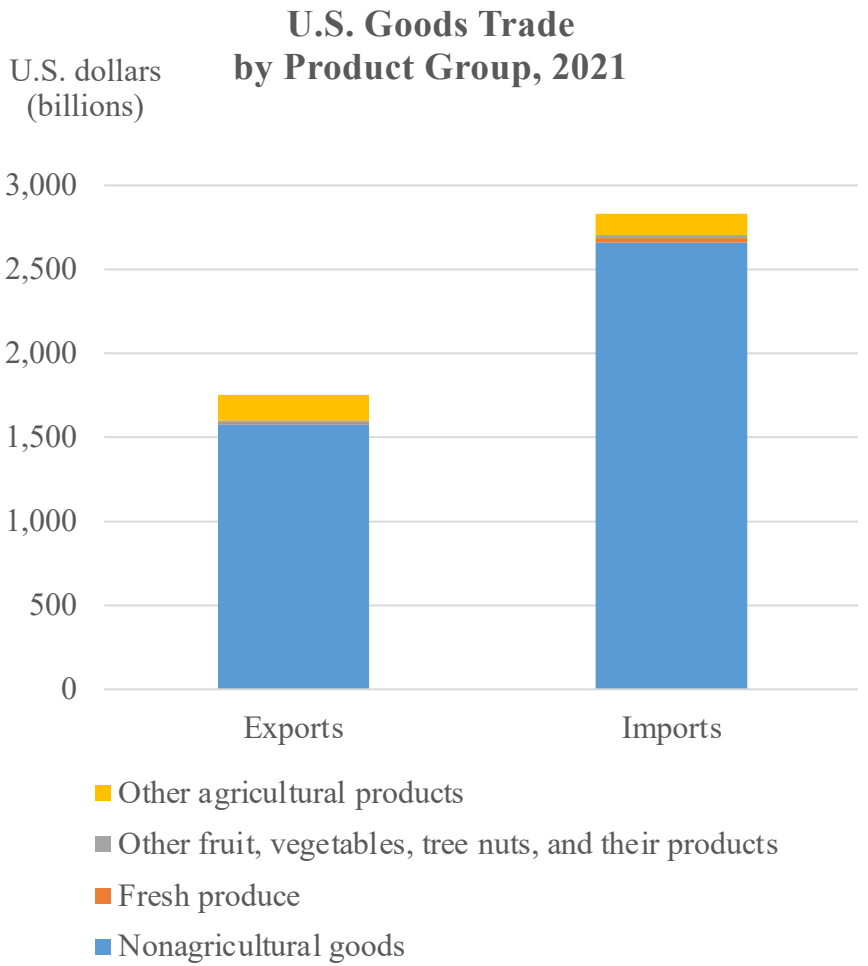
U.S. fresh produce trade, 2021:

- Exports: $7.1 billion
- Imports: $26.0 billion

- 4.0% of total U.S. agricultural exports
- 15.2% of total U.S. agricultural imports

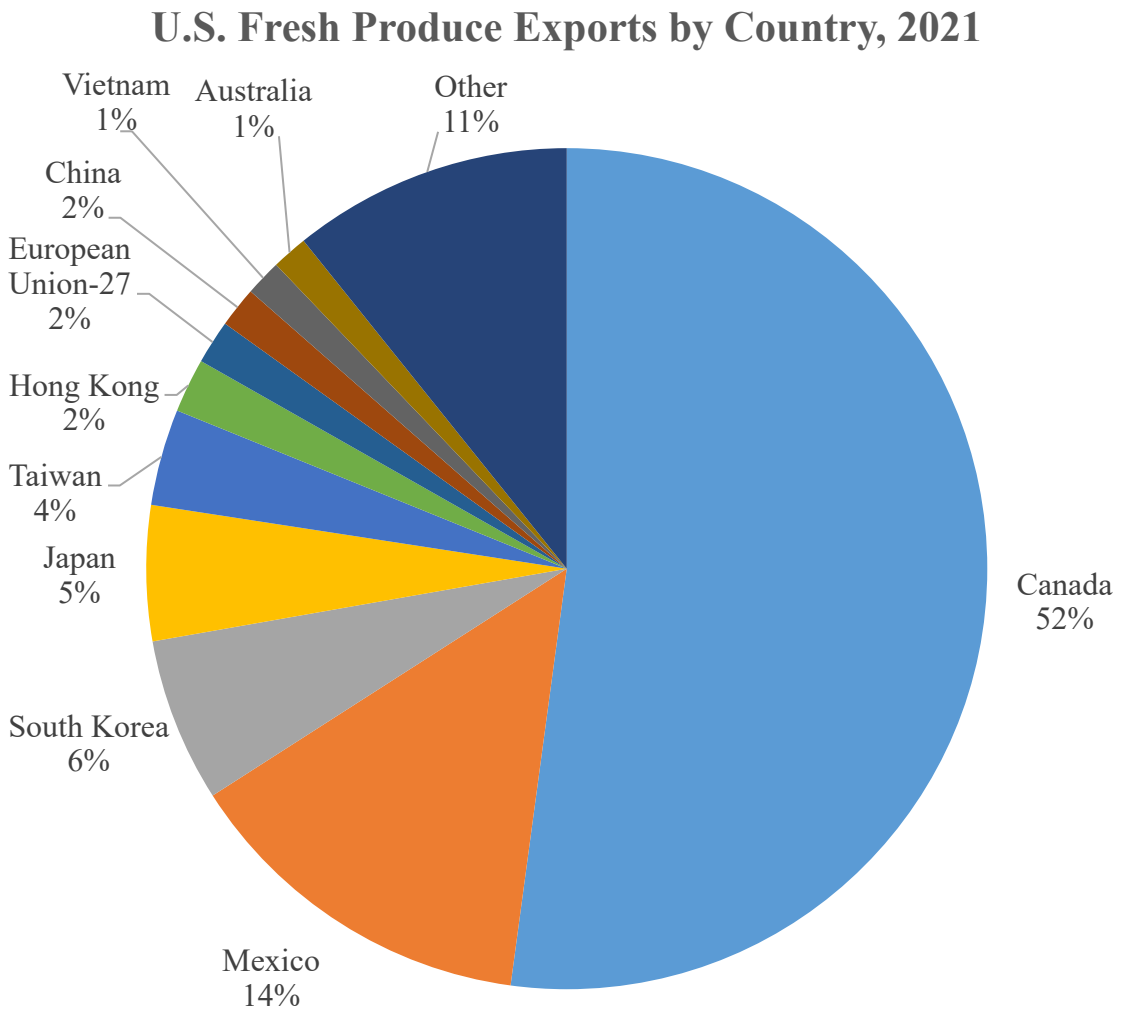
- 0.4% of total U.S. goods exports
- 0.9% of total U.S. goods imports

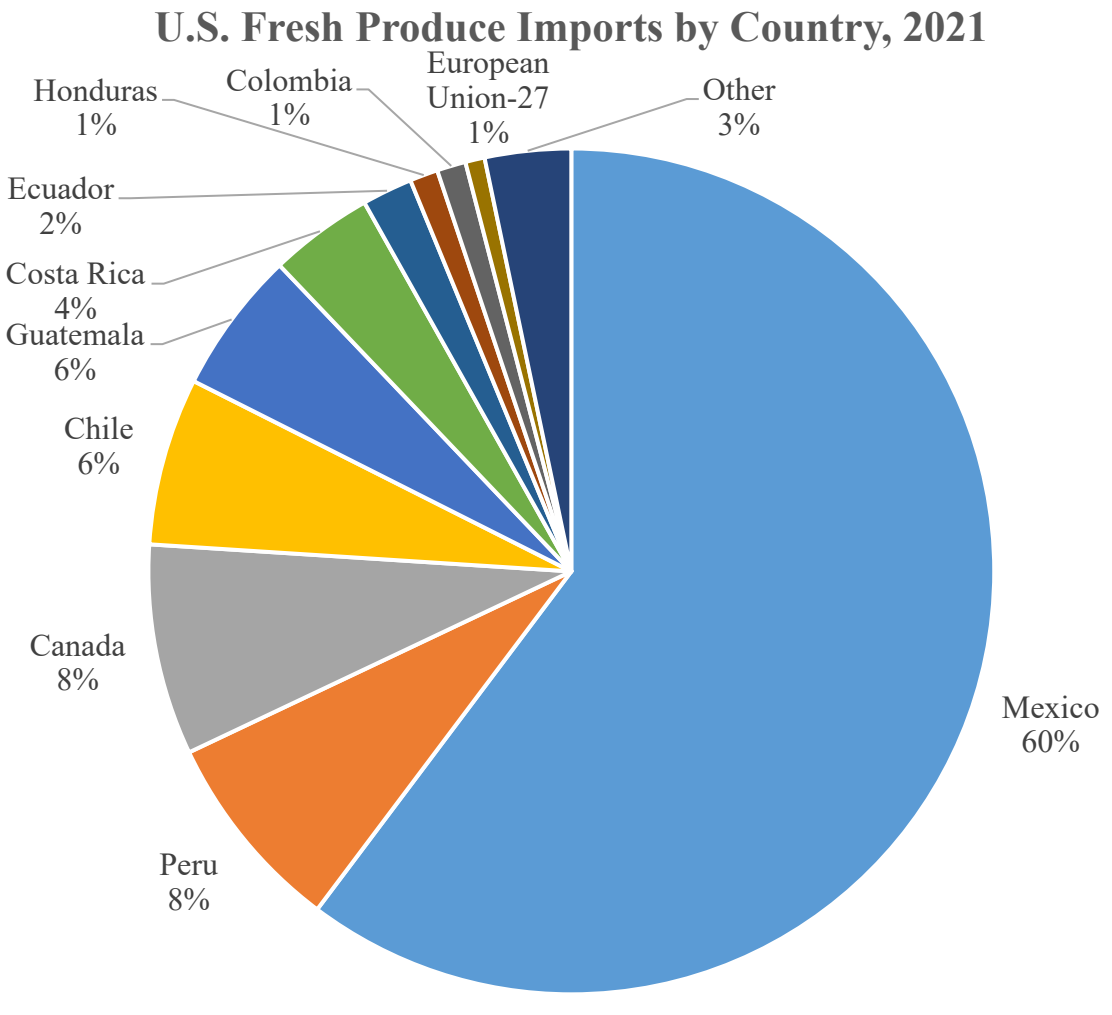




Sources: USDA, Economic Research Service Vegetable and Pulses Data Product & Fruit and Tree Nuts Data Product.

U.S. Fresh Produce Trade Primarily Involves a Small Set of Countries





Sources: USDA, Economic Research Service Vegetable and Pulses Data Product & Fruit and Tree Nuts Data Product.

U.S. Fresh Produce Trade Encompasses an Array of Products

Exports			Imports					
Product	Value	Share	Product	Value	Share	Product	Value	Share
	U.S. dollars (millions)	*Percent*		*U.S. dollars (millions)*	*Percent*		*U.S. dollars (millions)*	*Percent*
Total	**7,148**	**100.0**	**Total**	**25,966**	**100.0**			
Apples	908	12.7	Avocados	3,032	11.7	Watermelon	368	1.4
Grapes	649	9.1	Tomatoes	2,802	10.8	Squash	366	1.4
Lettuce	532	7.4	Bananas	2,203	8.5	Chili peppers	361	1.4
Strawberries	484	6.8	Blueberries	1,595	6.1	Mushrooms of genus Agaricus	337	1.3
Cherries	479	6.7	Peppers, excluding chili peppers	1,583	6.1	Potatoes	268	1.0
Oranges	477	6.7	Raspberries	1,093	4.2	Garlic	229	0.9
Potatoes	276	3.9	Strawberries	1,065	4.1	Oranges	215	0.8
Onions and shallots	217	3.0	Cucumbers	996	3.8	Plantains	204	0.8
Sweet potatoes	185	2.6	Asparagus	691	2.7	Lemons	190	0.7
Spinach	139	1.9	Limes	630	2.4	Fresh beans, excluding Lima beans	189	0.7
Blueberries	135	1.9	Mangos, excluding guavas	553	2.1	and beans of genus *Vigna*		
Lemons	129	1.8	Clementines, mandarins,	538	2.1	Cantaloupe	178	0.7
Temples	120	1.7	and wilkings			Apples	171	0.7
Kohlrabi	103	1.4	Onions and shallots	528	2.0	Papayas	126	0.5
Cauliflower	155	2.2	Blackberries	520	2.0	Carrots	122	0.5
Tomatoes	116	1.6	Lettuce	465	1.8	Pears and quince	105	0.4
Carrots	107	1.5	Cauliflower and broccoli	400	1.5	Other	4,746	18.3
Broccoli	107	1.5						
Cabbage	100	1.4						
Other	1,729	24.2						

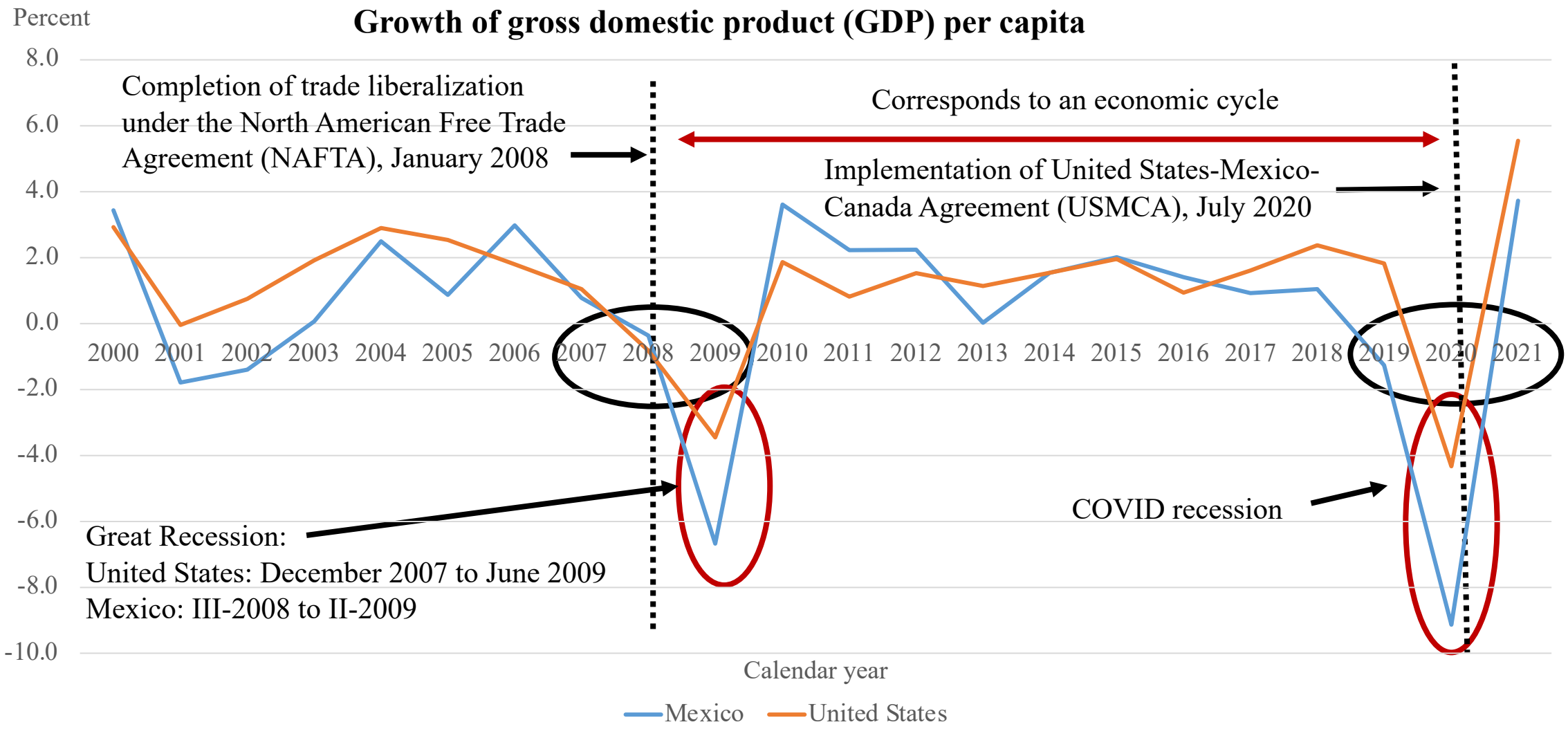
Sources: USDA, Economic Research Service Vegetable and Pulses Data Product & Fruit and Tree Nuts Data Product.

How Did U.S. Produce Trade Change During the Past Economic Cycle?





The Period 2007-09 to 2019-21 Roughly Covers an Entire Economic Cycle



Source: USDA, Economic Research Service International Macroeconomic Data Set.

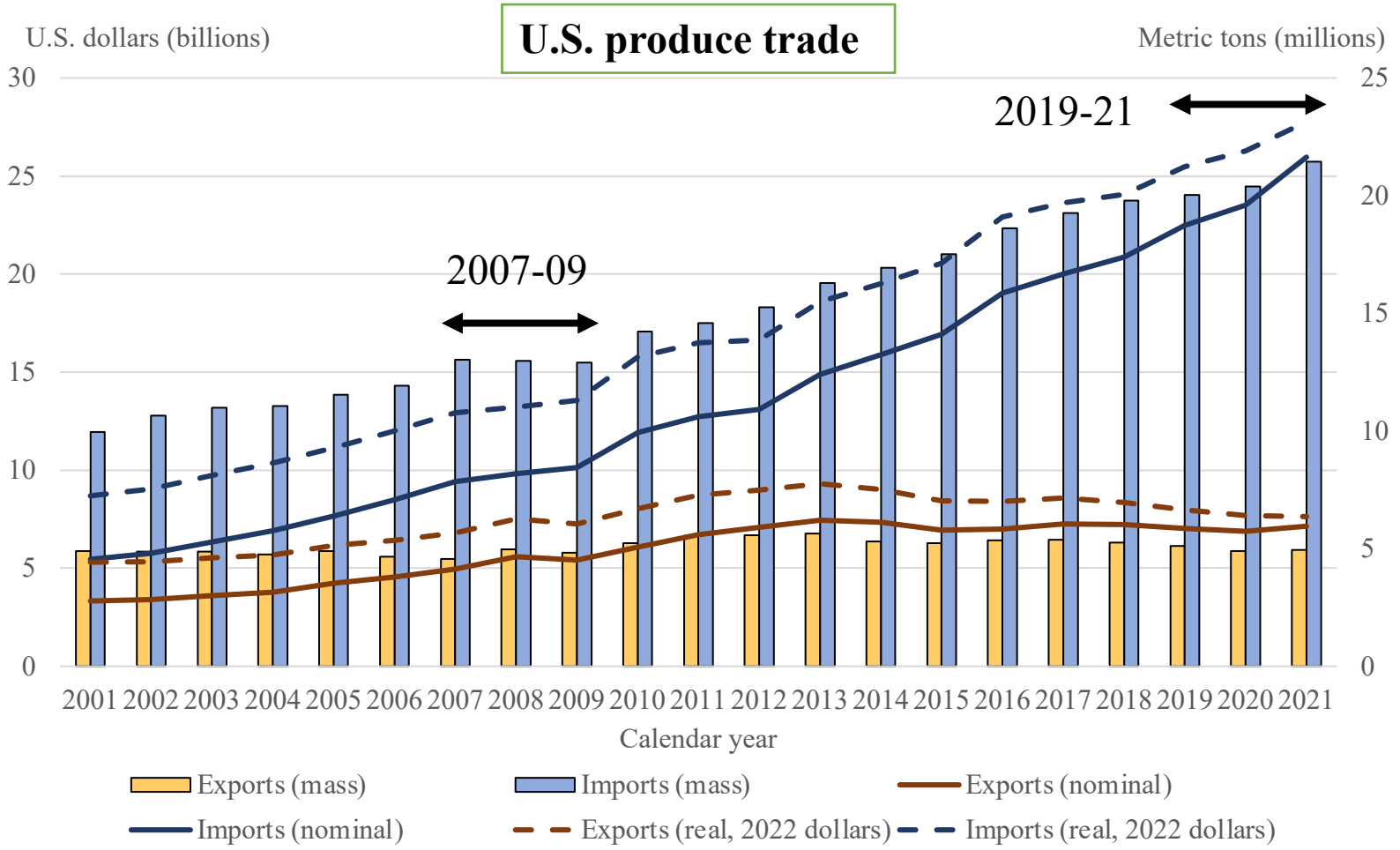
U.S. Fresh Produce Imports Grew Faster Than Corresponding Exports Between 2007-09 and 2019-21

Compound annual growth rate, 2007-09 to 2019-21, imports versus exports:

Produce trade:
- Nominal value: 7.8% vs. 2.3%
- Real value (2022 dollars): 6.0% versus 0.6%
- Mass: 3.9% versus 0.3%

Agricultural trade:
- Nominal value: 5.6% vs. 3.4%

All goods trade:
- Nominal value: 1.1% vs. 2.7%



Sources: USDA, Economic Research Service Vegetable and Pulses Data Product & Fruit and Tree Nuts Data Product; USDA, Economic Research Service Fruit and Tree Nut Outlook-September 2022; USDA, Economic Research Service Vegetable and Pulses Outlook-December 2023.

South Korea, Mexico, and Vietnam Saw Their Shares of U.S. Fresh Produce Exports Increase Between 2007-09 and 2019-21

Destination	U.S. exports			Share		
	2007-09	2019-21	CAGR	2007-09	2019-21	Change
	U.S. dollars (millions)		*Percent*	*Percent*		*Percentage points*
Total	5,321	7,023	2.3	100.0	100.0	0.0
Canada	2,842	3,552	1.9	53.4	50.6	-2.8
Mexico	512	857	4.4	9.6	12.2	2.6
South Korea	146	449	9.8	2.7	6.4	3.6
Japan	434	381	-1.1	8.2	5.4	-2.7
Taiwan	193	283	3.3	3.6	4.0	0.4
Hong Kong	176	181	0.2	3.3	2.6	-0.7
Vietnam	16	126	19.0	0.3	1.8	1.5
European Union-27	102	119	1.3	1.9	1.7	-0.2
China	47	114	7.6	0.9	1.6	0.7
Australia	90	105	1.2	1.7	1.5	-0.2
Other	764	856	1.0	14.3	12.2	-2.2

Sources: USDA, Economic Research Service Vegetable and Pulses Data Product & Fruit and Tree Nuts Data Product. CAGR: Compound Annual Growth Rate.

Mexico and Peru Increased Their Respective Shares of U.S. Fresh Produce Imports Between 2007-09 and 2019-21

Origin	U.S. imports			Share		
	2007-09	2019-21	CAGR	2007-09	2019-21	Change
	U.S. dollars (millions)		*Percent*	*Percent*		*Percentage points*
Total	9,789	23,976	7.8	100.0	100.0	0.0
Mexico	4,551	14,217	10.0	46.5	59.3	12.8
Canada	930	1,930	6.3	9.5	8.1	-1.5
Peru	254	1,801	17.7	2.6	7.5	4.9
Chile	1,219	1,626	2.4	12.4	6.8	-5.7
Guatemala	544	1,350	7.9	5.6	5.6	0.1
Costa Rica	729	996	2.6	7.4	4.2	-3.3
Ecuador	391	480	1.7	4.0	2.0	-2.0
Honduras	209	361	4.7	2.1	1.5	-0.6
Colombia	203	243	1.5	2.1	1.0	-1.1
European Union-27	183	204	0.9	1.9	0.8	-1.0
Other	576	767	2.4	5.9	3.2	-2.7

Sources: USDA, Economic Research Service Vegetable and Pulses Data Product & Fruit and Tree Nuts Data Product. CAGR: Compound Annual Growth Rate.

Cherries, Sweet Potatoes, Spinach, and Potatoes Became More Prominent U.S. Fresh Produce Exports Between 2007-09 and 2019-21

Product	U.S. exports			Share		
	2007-09	2019-21	CAGR	2007-09	2019-21	Change
	U.S. dollars (millions)		*Percent*	*Percent*		*Percentage points*
Total	5,031	7,052	2.9	100.0	100.0	0.0
Apples	642	937	3.2	12.8	13.3	0.5
Grapes	553	743	2.5	11.0	10.5	-0.4
Lettuce	407	512	1.9	8.1	7.3	-0.8
Strawberries	285	411	3.1	5.7	5.8	0.2
Cherries	244	505	6.2	4.9	7.2	2.3
Oranges	344	437	2.0	6.8	6.2	-0.6
Potatoes	140	244	4.8	2.8	3.5	0.7
Onions and shallots	146	210	3.1	2.9	3.0	0.1
Sweet potatoes	40	186	13.6	0.8	2.6	1.8
Spinach	41	132	10.3	0.8	1.9	1.1
Other	2,188	2,734	1.9	43.5	38.8	-4.7

Sources: USDA, Economic Research Service Vegetable and Pulses Data Product & Fruit and Tree Nuts Data Product and USDA, Economic Research Service, Vegetable and Pulses Outlook-December 2022; USDA, Economic Research Service Fruit and Tree Nuts Outlook—September 2022. CAGR: Compound Annual Growth Rate.

Avocados, Raspberries, Blueberries, and Strawberries Became More Prominent U.S. Fresh Produce Imports Between 2007-09 and 2019-21

Product	U.S. imports			Share		
	2007-09	2019-21	CAGR	2007-09	2019-21	Change
	U.S. dollars (millions)		*Percent*	*Percent*		*Percentage points*
Total	9,251	22,294	7.6	100.0	100.0	0.0
Avocados	460	2,517	15.2	5.0	11.3	6.3
Tomatoes	1,295	2,492	5.6	14.0	11.2	-2.8
Bananas	1,161	2,206	5.5	12.5	9.9	-2.7
Blueberries	194	1,194	16.4	2.1	5.4	3.3
Peppers, other than chili peppers	534	1,350	8.0	5.8	6.1	0.3
Raspberries	66	909	24.4	0.7	4.1	3.4
Strawberries	127	758	16.1	1.4	3.4	2.0
Cucumbers	413	833	6.0	4.5	3.7	-0.7
Asparagus	279	659	7.4	3.0	3.0	-0.1
Limes	159	471	9.5	1.7	2.1	0.4
Other	4,563	8,904	5.7	49.3	39.9	-9.4

Sources: USDA, Economic Research Service, Vegetable and Pulses Data Product & Fruit and Tree Nuts Data Product and USDA, Economic Research Service, Vegetable and Pulses Outlook-December 2022; USDA, Economic Research Service Fruit and Tree Nuts Outlook—September 2022. CAGR: Compound Annual Growth Rate.

Linkages to U.S. Food Availability and Crop Production

For Many Types of Fresh Fruit, U.S. Food Availability Per Capita and Net Imports' Share of That Availability Increased Between 2007-09 and 2017-19

Exceptions:

- Per capita availability of oranges and temples, strawberries (perhaps due to Huanglongbing)
- Net imports' share for apples, grapes (crops where the United States is both a prominent importer and a prominent exporter)

Note that most recent availability data are for 2019.

Commodity	Per capita U.S. availability, retail			Net imports divided by U.S. food availability		
	Average, 2007-09	Average, 2017-19	Change	2007-09	2017-19	Change
	Kilograms		*Percent*	*Percent*		*Percentage points*
Selected fresh fruit:						
Apples	7.1	7.7	7.9	-25.6	-28.4	-2.8
Avocados	1.7	3.5	109.5	66.3	87.5	21.2
Bananas	11.0	12.7	15.4	99.7	100.0	0.3
Blueberries	0.3	0.8	158.8	19.7	50.2	30.4
Grapes	3.3	3.4	2.7	24.5	22.6	-2.0
Limes	1.0	1.7	63.2	100.0	100.0	0.0
Mangos	0.9	1.4	54.9	100.0	100.0	0.0
Oranges and temples	3.9	3.6	-6.6	-31.1	-27.6	3.5
Papayas	0.5	0.6	19.5	90.6	97.0	6.4
Raspberries	0.1	0.4	323.9	-53.8	52.4	106.3
Strawberries	2.8	2.6	-4.3	-4.9	4.5	9.4
Watermelon	6.1	6.4	5.4	15.0	25.4	10.4

Sources: USDA, Economic Research Service Vegetable and Pulses Yearbook & Fruit and Tree Nuts Yearbook; USDA, Economic Research Service, Food Availability (Per Capita) Data System.

For Many Fresh Vegetables, U.S. Food Availability Per Capita and Net Imports' Share of That Availability Increased Between 2007-09 and 2017-19

Exceptions:

- Per capita availability of potatoes (perhaps due to reduction in number of States whose potato production is reported by NASS)
- Net imports' share for sweet potatoes, potatoes, and spinach (crops where the United States is a prominent exporter)

Commodity	Per capita U.S. availability, retail			Net imports divided by U.S. food availability		
	Average, 2007-09	Average, 2017-19	Change	2007-09	2017-19	Change
	Kilograms		*Percent*	*Percent*		*Percentage points*
Selected fresh vegetables:						
Asparagus	0.5	0.7	41.1	78.7	88.9	10.3
Bell peppers	4.0	4.7	18.0	43.9	63.5	19.6
Cucumbers	2.7	3.3	19.5	53.3	79.4	26.1
Eggplant	0.3	0.4	9.7	36.4	49.9	13.5
Lettuce, head	5.6	7.2	27.9	-2.7	-0.2	2.5
Lettuce, romaine	4.5	5.6	23.9	-34.3	0.05	34.3
Onions	8.7	9.4	7.5	3.3	7.2	3.9
Potatoes	16.4	14.8	-9.8	3.5	-1.1	-4.6
Spinach	0.7	0.8	16.1	-5.9	-9.1	-3.1
Squash	1.7	2.3	35.9	47.8	59.4	11.6
Sweet potatoes	2.1	2.9	39.5	-6.5	-26.5	-20.0
Tomatoes, fresh	7.4	7.8	6.0	36.3	58.4	22.1

Sources: USDA, Economic Research Service Vegetable and Pulses Yearbook & Fruit and Tree Nuts Yearbook; USDA, Economic Research Service, Food Availability (Per Capita) Data System.

U.S. Growers Shifted Away From Some But Not All Crops For Which Imports Were Rising

Product	U.S. production			Imports			U.S. per capita availability, retail		
	2007-09	2019-21	Change	2007-09	2019-21	Change	2007-09	2017-19	Change
	Metric tons (thousands)		*Percent*	*Metric tons (thousands)*		*Percent*	*Kilograms*		*Percent*
Bananas	9	3	-68	3,860	4,658	21	11.0	12.7	15
Cucumbers	422	239	-43	499	1,006	102	2.7	3.3	20
Tomatoes	1,682	1,250	-26	1,126	1,868	66	7.4	7.8	6
Asparagus	36	28	-21	140	276	97	0.5	0.7	41
Peppers, other than chili peppers	741	610	-18	337	774	130	4.0	4.7	18
Avocados	184	151	-18	365	1,145	214	1.7	3.5	109
Strawberries	960	898	-7	74	208	182	2.8	2.6	-4
Raspberries	42	60	42	14	102	646	0.1	0.4	324
Blueberries	86	149	73	49	231	369	0.3	0.8	159

Sources: USDA, Economic Research Service Vegetable and Pulses Yearbook & Fruit and Tree Nuts Yearbook; USDA, Economic Research Service Vegetable and Pulses Data & Fruit and Tree Nuts Data Products; USDA, Economic Research Service, Food Availability (Per Capita) Data System.

U.S. Production Appears to Have Pivoted Toward Products of Higher Demand at Home and Abroad

Product	U.S. production			Per capita availability			Exports		
	2007-09	2017-19	Change	2007-09	2017-19	Change	2007-09	2019-21	Change
	Metric tons (thousands)		*Percent*	*Kilograms*		*Percent*	*Metric tons (thousands)*		*Percent*
Sweet potatoes	846	1,480	74.8	2.1	2.9	39.5	53	263	393.1
Spinach	262	334	27.8	0.7	0.8	16.1	22	46	113.2
Apples	2,818	3,343	18.6	7.1	7.7	7.9	720	792	10.0
Grapes	836	946	13.2	3.3	3.4	2.7	315	300	-4.9
Onions and shallots	3,990	4,364	9.4	8.7	9.4	7.5	261	340	30.3
Potatoes	5,032	5,104	1.4	16.4	14.8	-9.8	304	549	80.4
Lettuce	4,067	3,944	-3.0	11.7	11.2	-4.3	350	328	-6.4
Oranges	1,608	1,556	-3.3	3.9	3.6	-6.6	426	370	-13.1
Strawberries	960	898	-6.5	2.8	2.6	-4.3	118	118	0.3

Sources: USDA, Economic Research Service Vegetable and Pulses Yearbook & Fruit and Tree Nuts Yearbook; USDA, Economic Research Service Vegetable and Pulses Data & Fruit and Tree Nuts Data Products; USDA, Economic Research Service, Food Availability (Per Capita) Data System.

Conclusions





A Few Takeaway Points

U.S. fresh produce trade in 2021 encompassed $7.1 billion in exports and $26.0 billion in imports.

Between 2007-09 to 2019-21:

- U.S. fresh produce exports grew at a compound annual growth rate of 0.6 percent, compared with 6.0 percent for corresponding imports.
- Cherries, sweet potatoes, spinach, and potatoes were the four products whose share of fresh produce exports increased the most.
- Avocados, raspberries, strawberries, and blueberries were the four products whose share of fresh produce imports increased the most.

Increased produce imports made possible higher (and less variable) levels of U.S. consumption across the year

For some crops, increased imports were accompanied by lower levels of U.S. production and a widening of the market seasons when imports occur.

Thank you

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ERS website: www.ers.usda.gov