

# FOOD FLOWS

Potential Post-Pandemic Patterns  
Relevant to the National Capital Region

## SO WHAT?

## NOW WHAT?

MAP: SNAP Certified Retailers including Farmers Markets according to USDA

# FOOD FLOWS



## Principal Finding:

### **Post-Pandemic looks like more of the same, just faster and bigger**

Retail consolidation (and intense competition) will continue, especially among top 4 to 8.

Sourcing will continue to be concentrated in NY-NJ-PA, Great Lakes, and California.

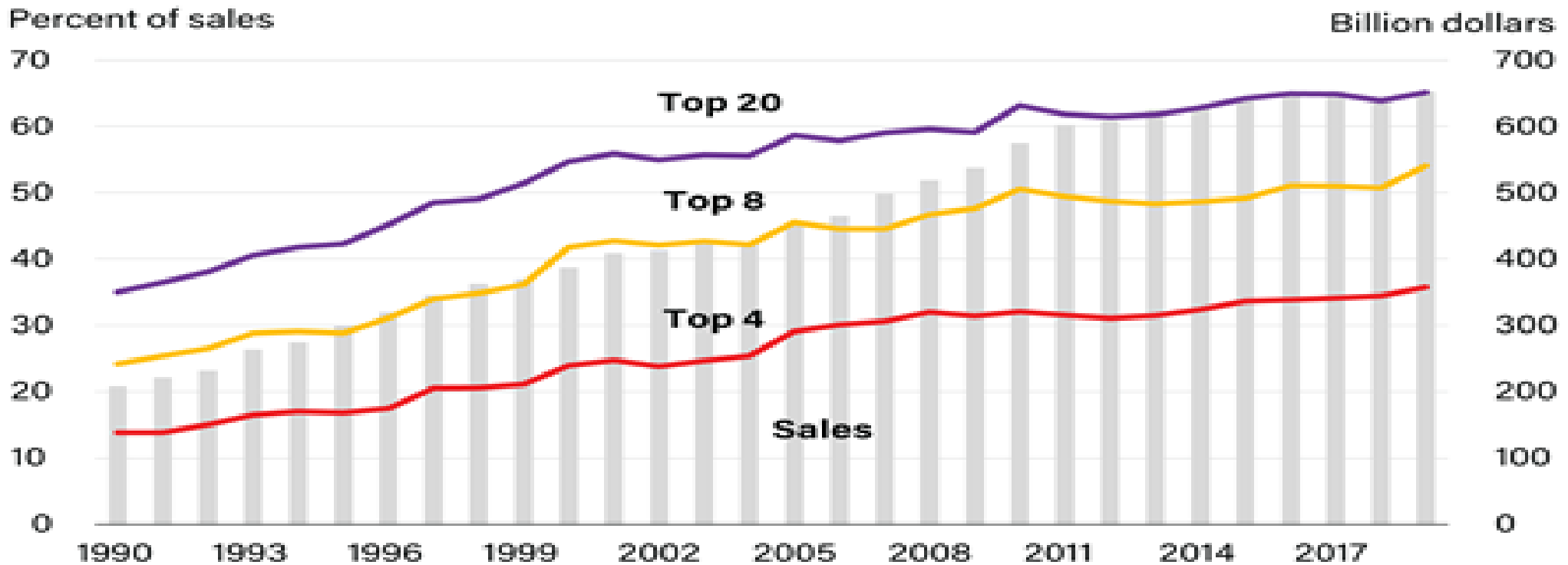
Distribution flows will continue to be concentrated on the I-95 (I-83) corridor, especially from Eastern Pennsylvania.

E-commerce methods will increase expectations for supply velocity resulting in restructuring of distribution network.

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## Top 4, 8, and 20 firms' share of U.S. food sales, 1990-2019

The share of food sales at supermarkets, other grocery stores, warehouse clubs, and supercenters of the top 4, 8, and 20 retailers trended upwards for the last three decades



Notes: Sales are estimated based on the sales per employee ratio calculated by firm size and North American Industry Classification System (NAICS) code. NAICS codes included: 445110 (supermarkets and other grocery (except convenience) stores) and 452311 (warehouse clubs and supercenters). Food sales are calculated using the Economic Census product lines statistics on the percentage of sales on food (on and off premises).

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, and National Establishment Time Series.

# FOOD FLOWS

**National Capital Region  
grocery supermarket  
leaders according to  
[2021 Food World  
Market Study](#)**

		2021	2021 Sales	% of 2021	2020	2020 Sales	% of 2020
Rank	Company	Stores	(in millions)	Market	Stores	(in millions)	Market
1	Giant Food	113	\$4,143.33	32.00%	112	\$3,902.72	33.38%
2	Albertsons (Balducci's/Safeway)	86	\$2,048.93	15.82%	82	\$1,703.90	14.58%
3	International Markets	101	\$1,517.80	11.72%	101	\$1,402.30	12.00%
4	Harris Teeter	43	\$1,427.60	11.02%	44	\$1,278.30	10.93%
5	Wegmans	12	\$1,134.90	8.76%	11	\$978.10	8.37%
6	Whole Foods	22	\$902.60	6.97%	21	\$798.50	6.83%
7	Trader Joe's	18	\$489.60	3.78%	18	\$433.20	3.71%
8	Food Lion	32	\$424.30	3.28%	32	\$376.60	3.22%
9	Aldi	48	\$412.60	3.19%	44	\$344.50	2.95%
10	Shoppers	13	\$383.00	2.96%	14	\$390.90	3.34%
		<b>488</b>	<b>\$12,884.66</b>	<b>99.50%</b>	<b>479</b>	<b>\$11,609.02</b>	<b>99.31%</b>

**Potential Post-Pandemic Patterns Relevant to the National Capital Region**

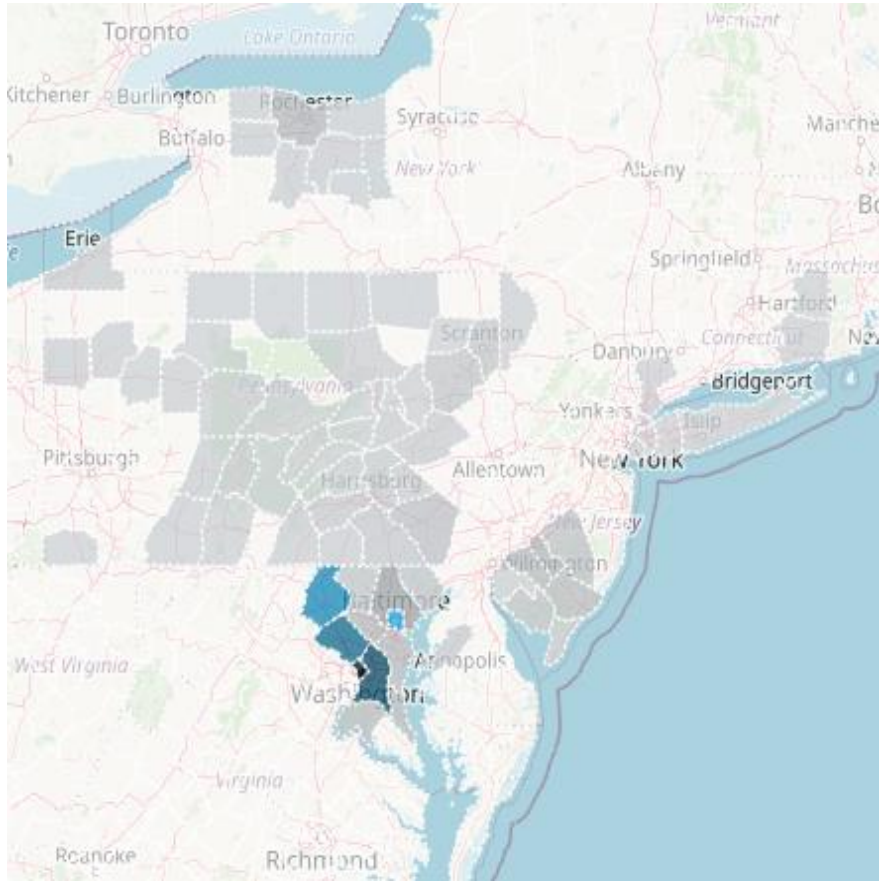
# FOOD FLOWS

National Capital Region  
grocery supermarket,  
“club”, and alternative  
leaders according to  
[2021 Food World  
Market Study](#)

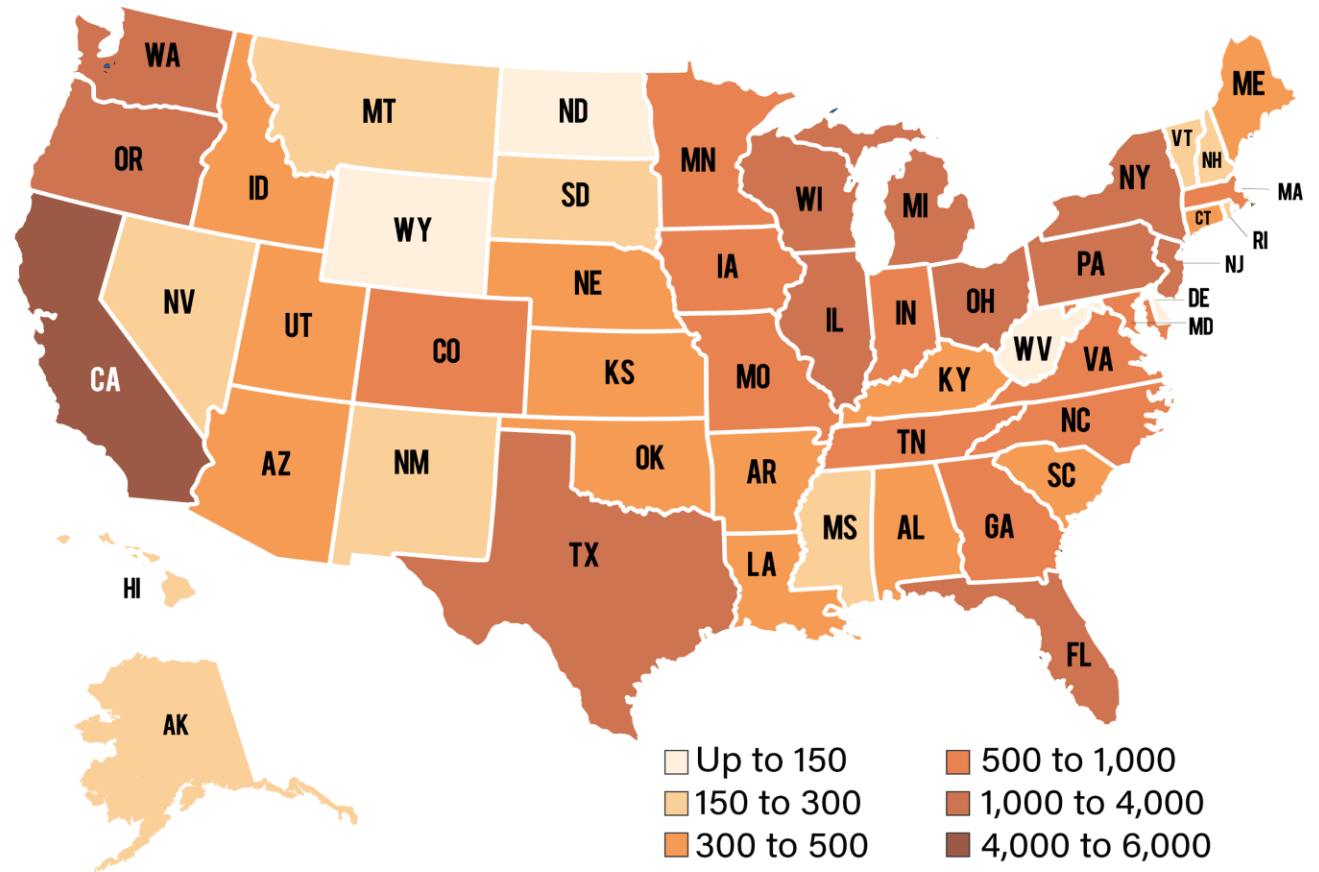
Rank	Company	2021 Stores	2021 Sales (in millions)	% of 2021 Market	2020 Stores	2020 Sales (in millions)	% of 2020 Market
1	Giant Food	113	\$4,143.33	18.81%	112	\$3,902.72	19.38%
2	Albertsons (Balducci's/S-way)	86	\$2,048.93	9.30%	82	\$1,703.90	8.46%
3	International Markets	101	\$1,517.80	6.89%	101	\$1,402.30	6.96%
4	CVS	259	\$1,514.60	6.88%	254	\$1,426.40	7.08%
5	Harris Teeter	43	\$1,427.60	6.48%	44	\$1,278.30	6.35%
6	Walmart	40	\$1,232.40	5.59%	40	\$1,134.90	5.64%
7	Wegmans	12	\$1,134.90	5.15%	11	\$978.10	4.86%
8	Costco	17	\$1,116.20	5.07%	17	\$1,023.60	5.08%
9	7-Eleven	527	\$974.90	4.43%	519	\$921.60	4.58%
10	Target (Super Target)	49	\$918.90	4.17%	48	\$780.10	3.87%
11	Whole Foods	22	\$902.60	4.10%	21	\$798.50	3.97%
12	Walgreens	98	\$551.00	2.50%	96	\$515.70	2.56%
13	Trader Joe's	18	\$489.60	2.22%	18	\$433.20	2.15%
14	Food Lion	32	\$424.30	1.93%	32	\$376.60	1.87%
15	Aldi	48	\$412.60	1.87%	44	\$344.50	1.71%
16	Shoppers	13	\$383.00	1.74%	14	\$390.90	1.94%
17	Weis Markets	24	\$353.13	1.60%	25	\$307.20	1.53%
18	BJ's Wholesale Club	9	\$339.40	1.54%	9	\$302.70	1.50%
19	Wawa	41	\$291.26	1.32%	39	\$275.49	1.37%
20	Military Commissaries	8	\$256.51	1.16%	8	\$250.84	1.25%
		<b>1,560</b>	<b>\$20,432.96</b>	<b>92.76%</b>	<b>1,534</b>	<b>\$18,547.55</b>	<b>92.11%</b>

Potential Post-Pandemic Patterns Relevant to the National Capital Region

# FOOD FLOWS



Food and beverage manufacturing establishments, 2019

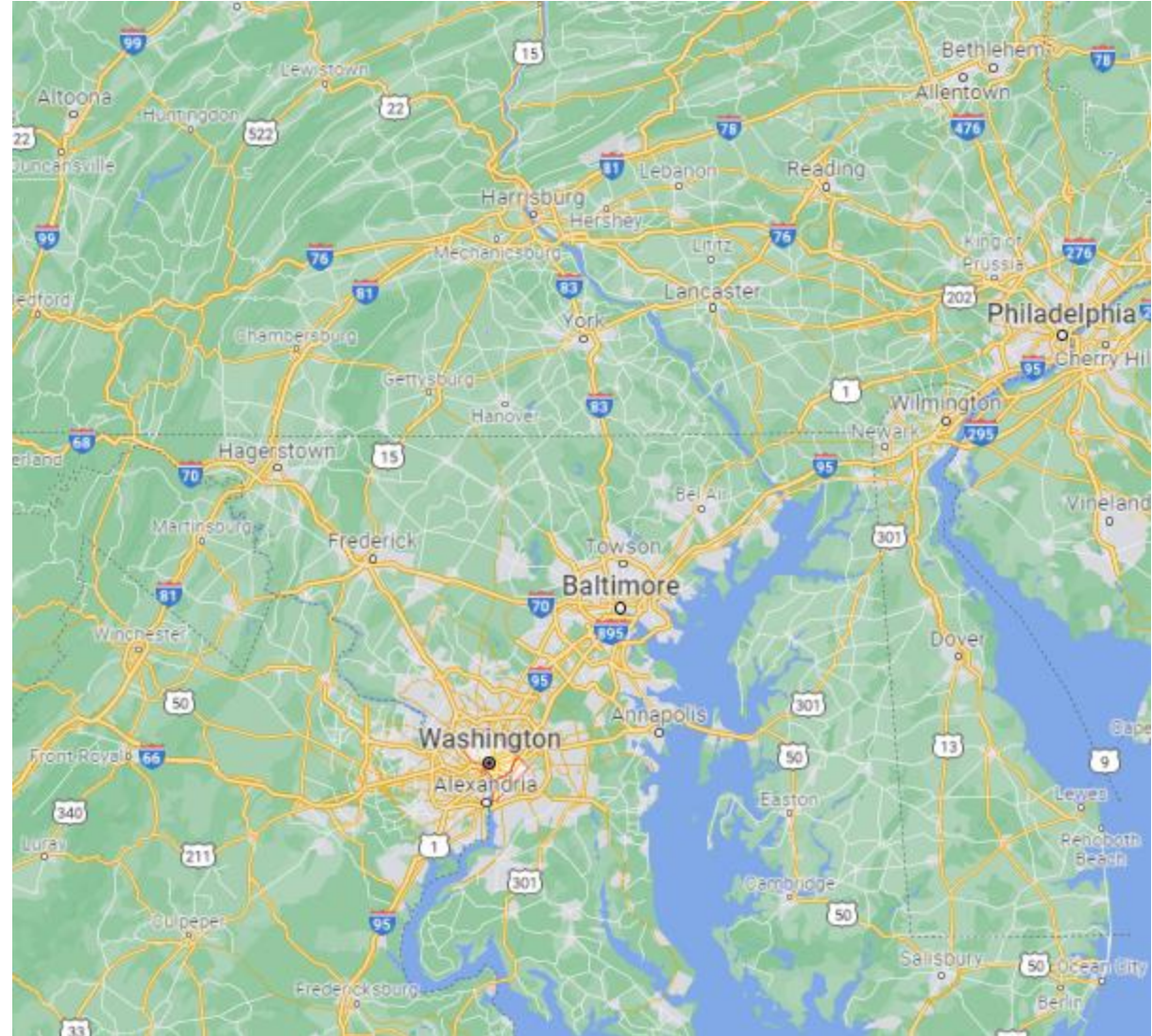
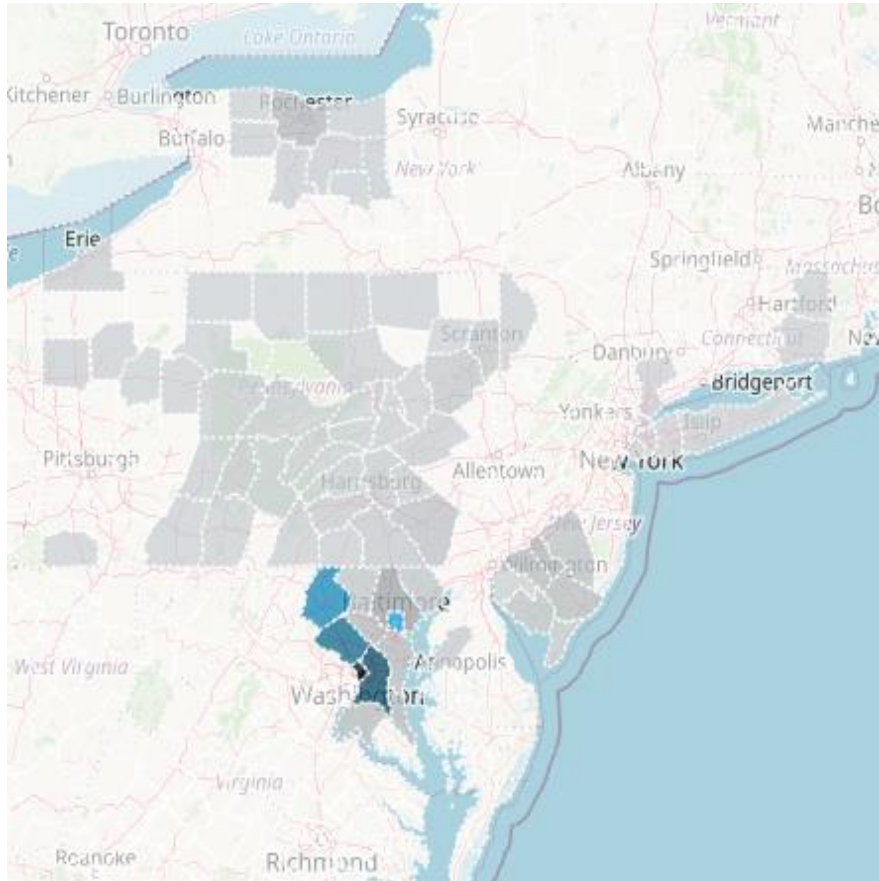


**Above:** Source inflows according to FEWSION

**Right:** Food and Beverage Manufacturers according to USDA

Source: Prepared by USDA, Economic Research Service, using data from U.S. Bureau of the Census, 2019 County Business Patterns; data as of May 2021.

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**Above:** Source inflows according to FEWSION  
**Right:** Principal Transportation Channels



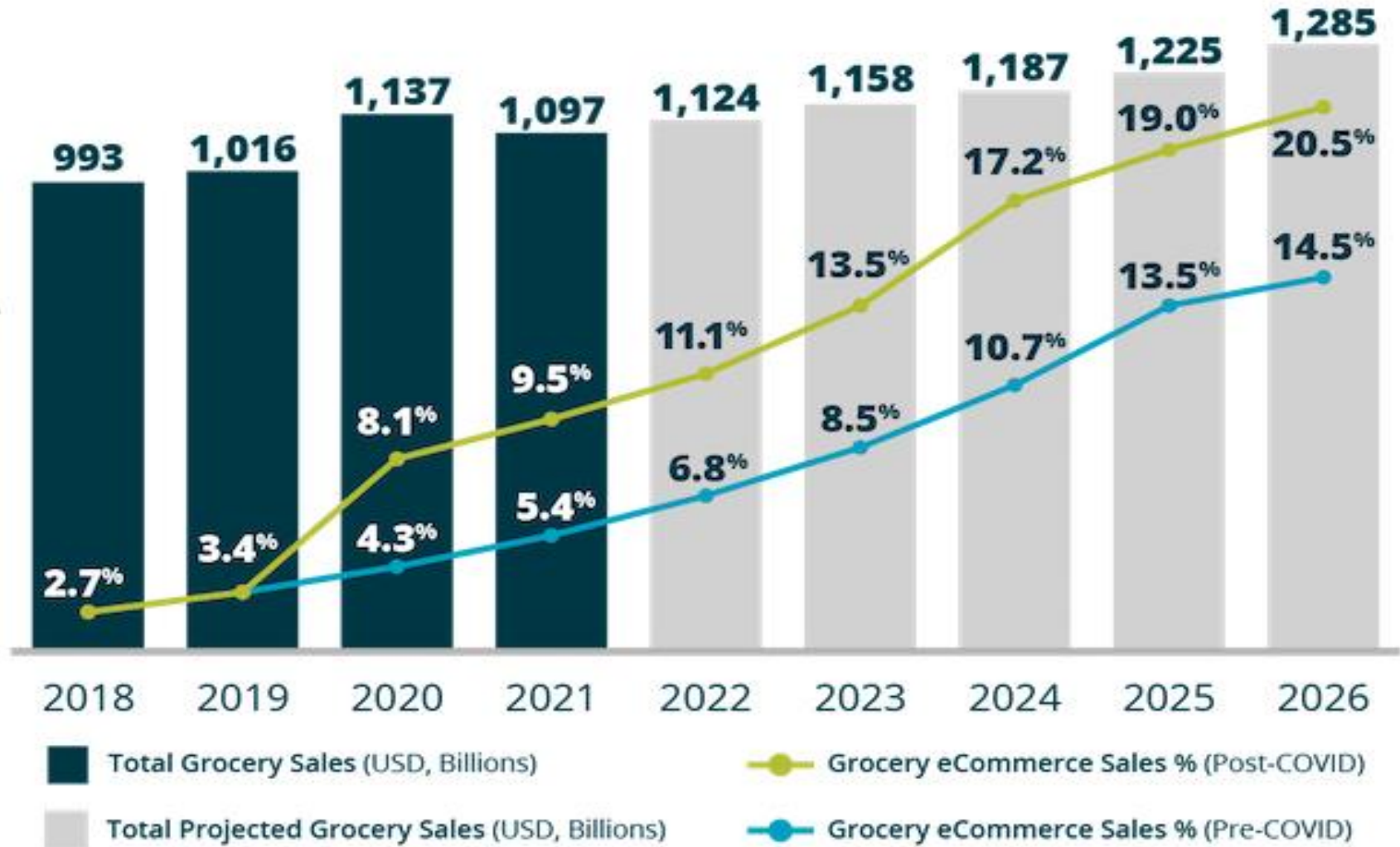
Potential Post-Pandemic Patterns Relevant to the National Capital Region

# FOOD FLOWS

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[Autumn 2021 Findings](#)

Potential Post-Pandemic Patterns Relevant to the National Capital Region



# FOOD FLOWS



## Sources: So What?

Most food processing and distribution originates north of the NCR, with significant dependence on Eastern Pennsylvania, New Jersey, and New York.

## Sources: Now What?

Develop resources and relationships to effectively monitor and mitigate risks (e.g., weather, health conditions, economic patterns, and upstream raw materials movement) that could constrain the food processing and distribution capacity on which the NCR depends. Make meaningful connections with PEMA, MEMA, SFPA, ES3, and others. Research upstream sources for food processing.

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## **Demand: So What?**

Continued retail consolidation of grocery market share is expected, with an advantage likely accruing overtime to the most effective digital retailers.

## **Demand: Now What?**

Develop meaningful relationships with NCR market leaders, including Giant (Ahold Delhaize), Safeway (Albertsons), Harris Teeter (Kroger), and Walmart. Amazon and Lidl have unique local as well as broader influence.

The C&S factor...

# FOOD FLOWS



## **Distribution: So What?**

Trucking on the I-95 corridor (including I-83), both north and south, is fundamental to food flows.

## **Distribution: Now What?**

In case of a long-term impediment to existing transportation routes, identify the most promising alternative routes and what functional (physical, regulatory and enforcement) adaptations will be needed to maximize new flows. Coordinate with MEMA, PEMA, and others as necessary, including the private sector.

# FOOD FLOWS



## **Distribution: So What?**

NCR demand velocity is requiring structural and functional changes in the distribution network (e.g., MFCs and related) to improve both speed and targeting of flows.

## **Distribution: Now What?**

Work with major distributors to ensure resilience of these structural elements in case of long-term grid failure or other threats (e.g., flooding, road loss). Work with local jurisdictions to ensure awareness of important role these new structures play in overall food flows. If one or more of these sources of velocity are lost, can public sector help mitigate the impact?

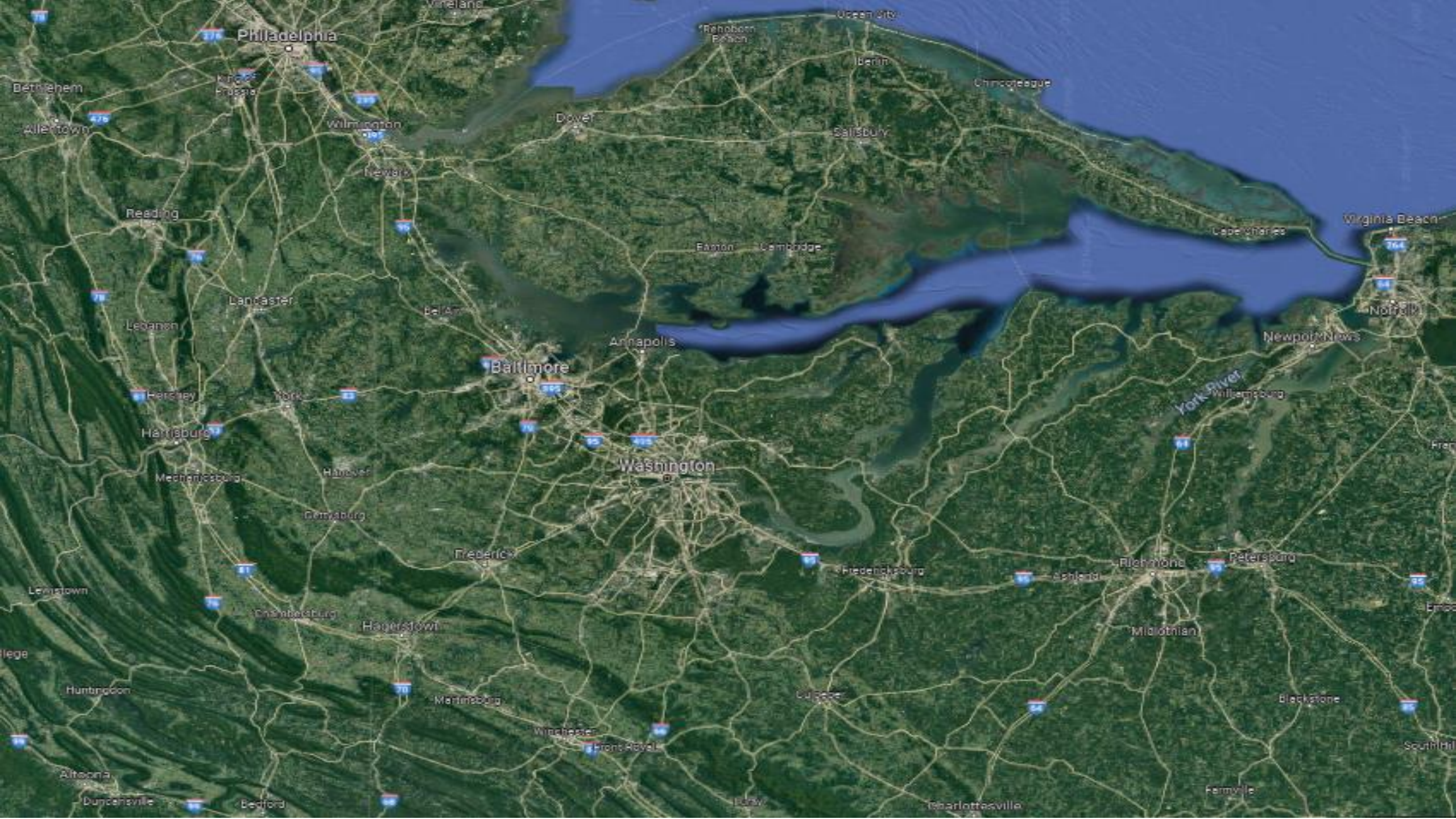
# FOOD FLOWS



## **Questions & Answers: Discussion**

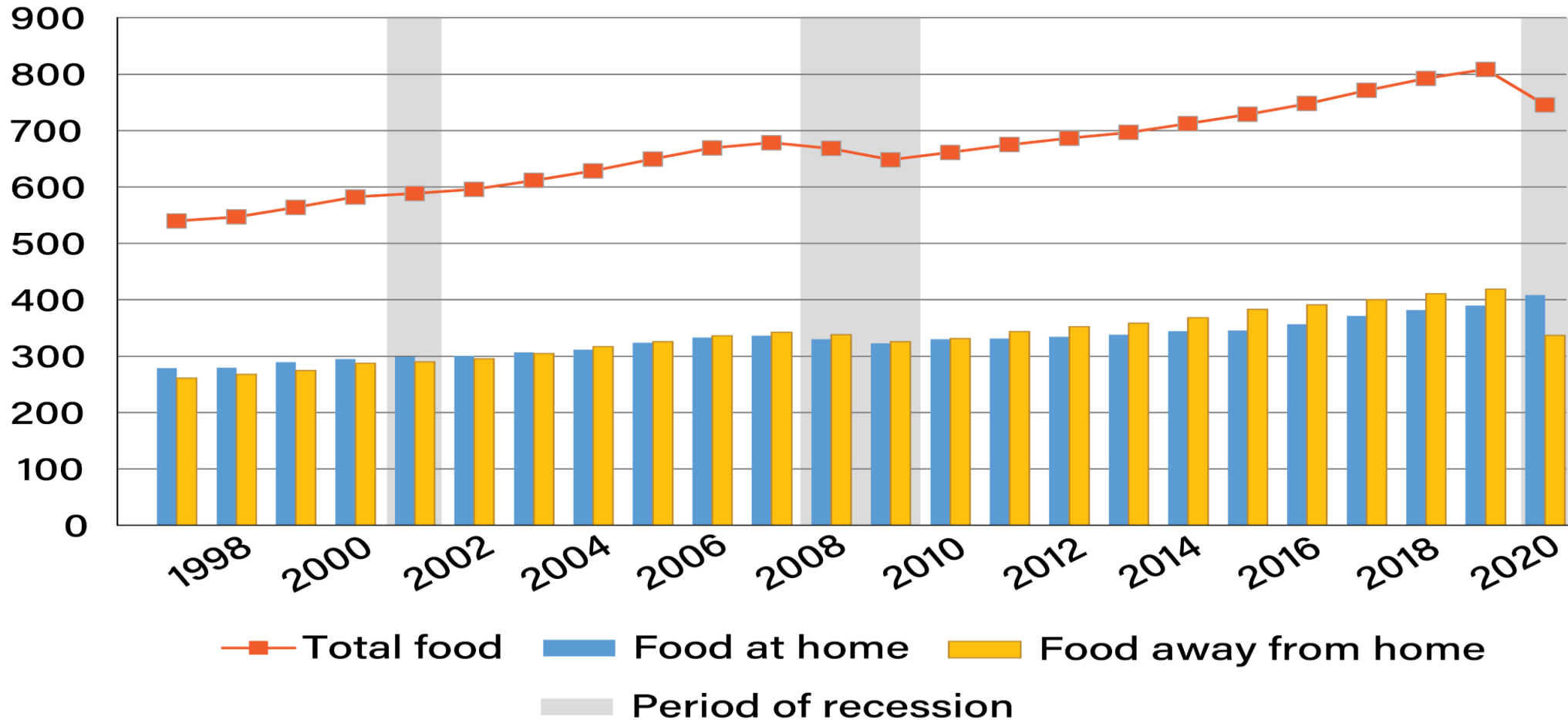
**philipjpalin@gmail.com**

**This is a February 11, 2022, update  
to a strategic summary originally  
undertaken in Spring 2021**



# U.S. consumers reversed trend by spending more on food at home than on food away from home in 2020

Real spending, billion \$



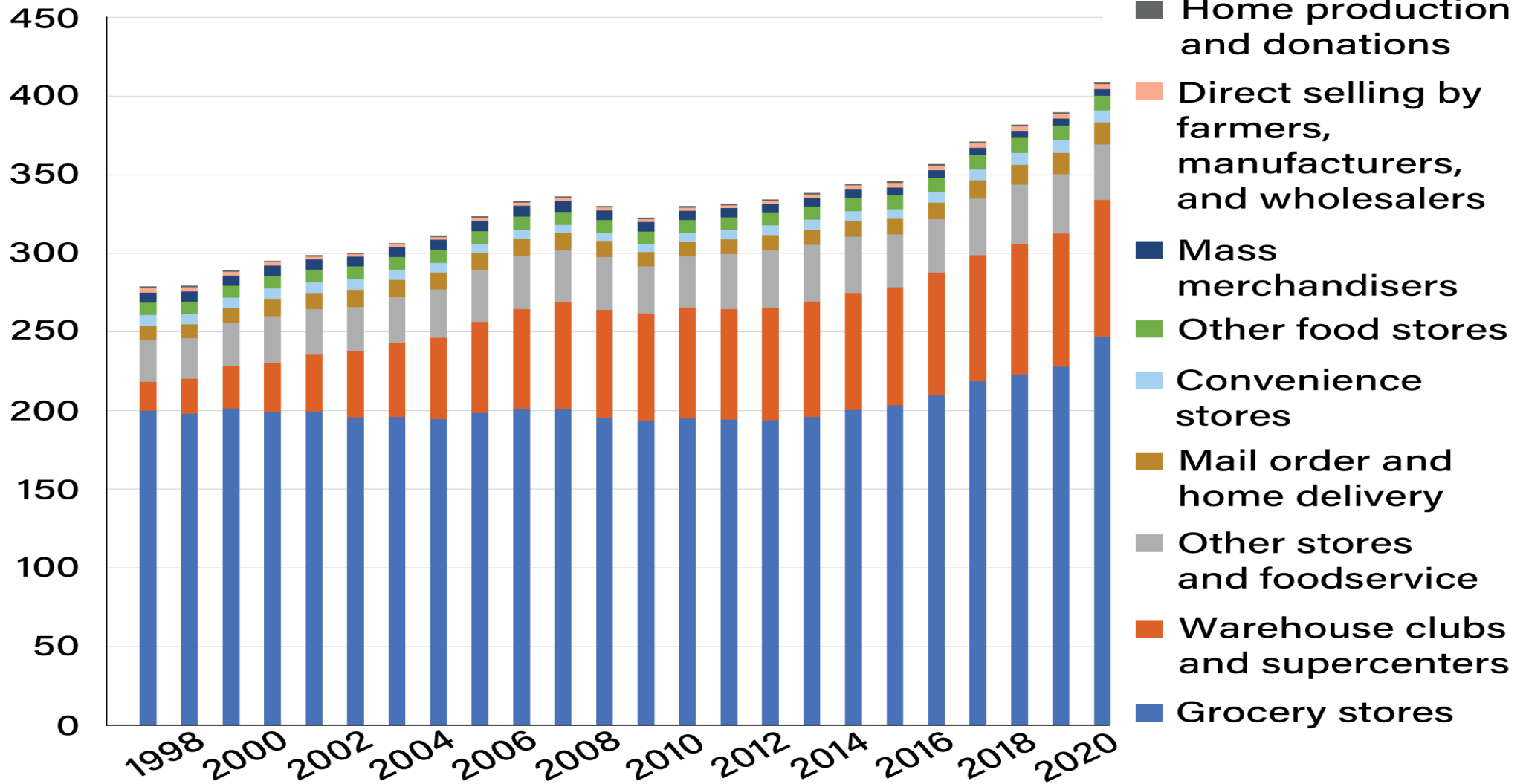
Notes: Real, or inflation-adjusted, prices are corrected for changes in prices in relation to 1988 as the baseline. Recession periods represented by gray bars: March 2001–November 2001; December 2007–June 2009; February 2020–April 2020.

Source: USDA, Economic Research Service (ERS), using data from ERS's Food Expenditure Series.

# Food-at-home spending levels varied by type of outlet, 1997-2020

Real spending, billion \$

Type of establishment

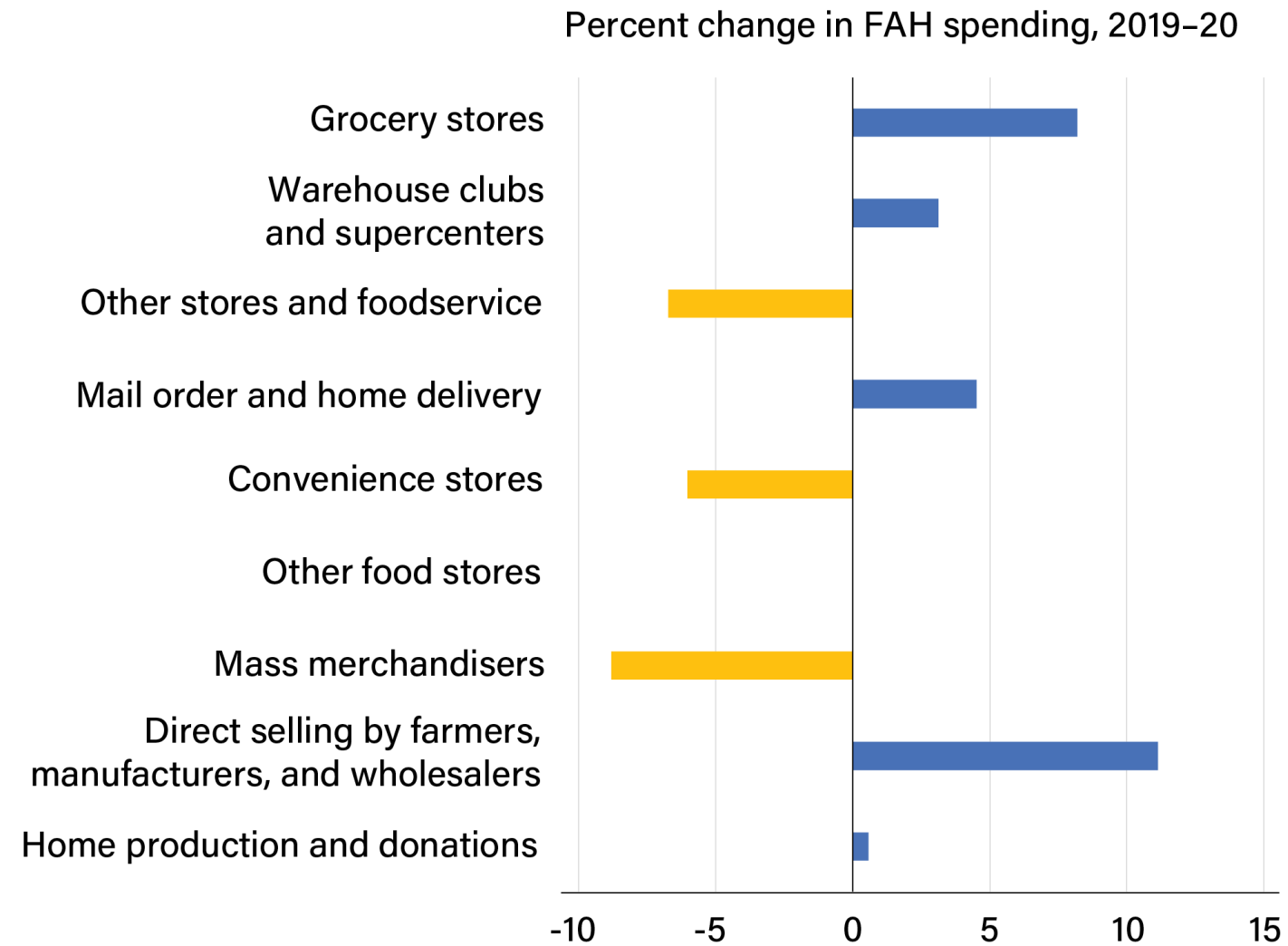


Note: Real, or inflation-adjusted, prices are corrected for changes in prices in relation to 1988 as the baseline.

Source: USDA, Economic Research Service (ERS), using data from ERS's Food Expenditure Series.



## Food-at-home (FAH) spending increased for some outlets and decreased for others, 2019-20



Notes: Percent changes reflect real, or inflation-adjusted, prices that are corrected for changes in prices in relation to 1988 as the baseline. Spending for **Other food stores** was essentially unchanged in 2020.

Source: USDA, Economic Research Service (ERS), using data from ERS's Food Expenditure Series.

Observation:  
2022-01-03: **21,844.7** (+ more)  
Updated: Jan 25, 2022

Units:  
Billions of Dollars,  
Not Seasonally Adjusted

Frequency:  
Weekly,  
Ending Monday

1Y | 5Y | 10Y | Max

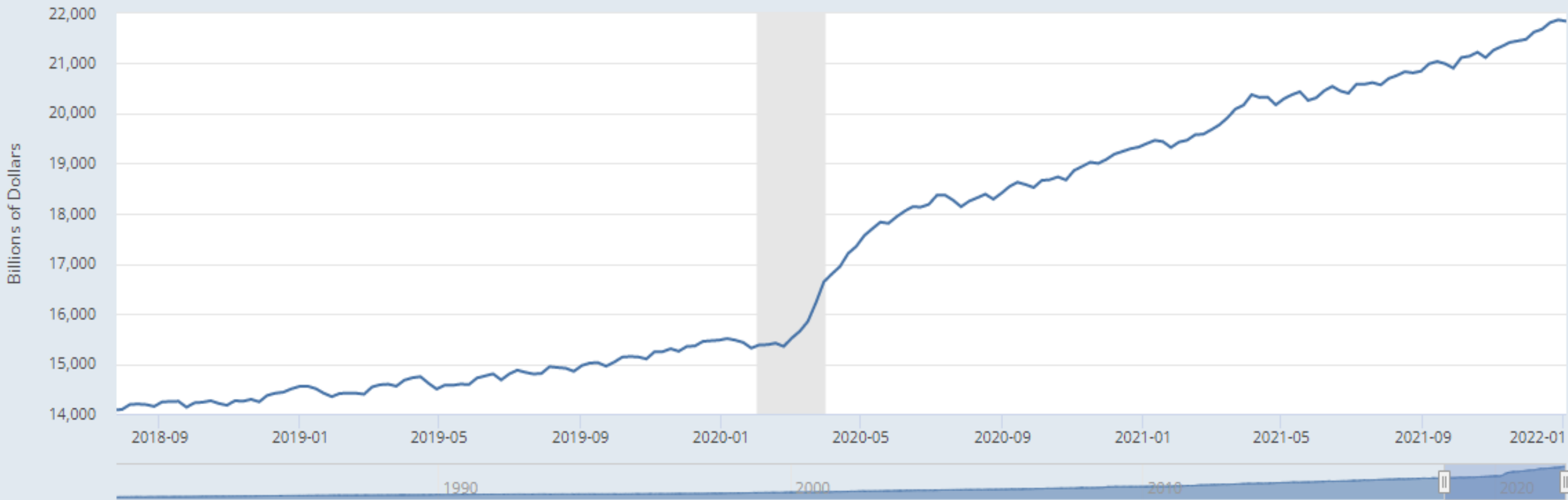
2018-07-25

to

2022-01-03

EDIT GRAPH 

**FRED**  — M2



Shaded areas indicate U.S. recessions.

Source: Board of Governors of the Federal Reserve System (US)

fred.stlouisfed.org



Observation:  
Dec 2021: **15,367.3** (+ more)  
Updated: Jan 28, 2022

Units:  
Billions of Chained 2012 Dollars,  
Seasonally Adjusted Annual Rate

Frequency:  
Monthly


1Y | 5Y | 10Y | Max

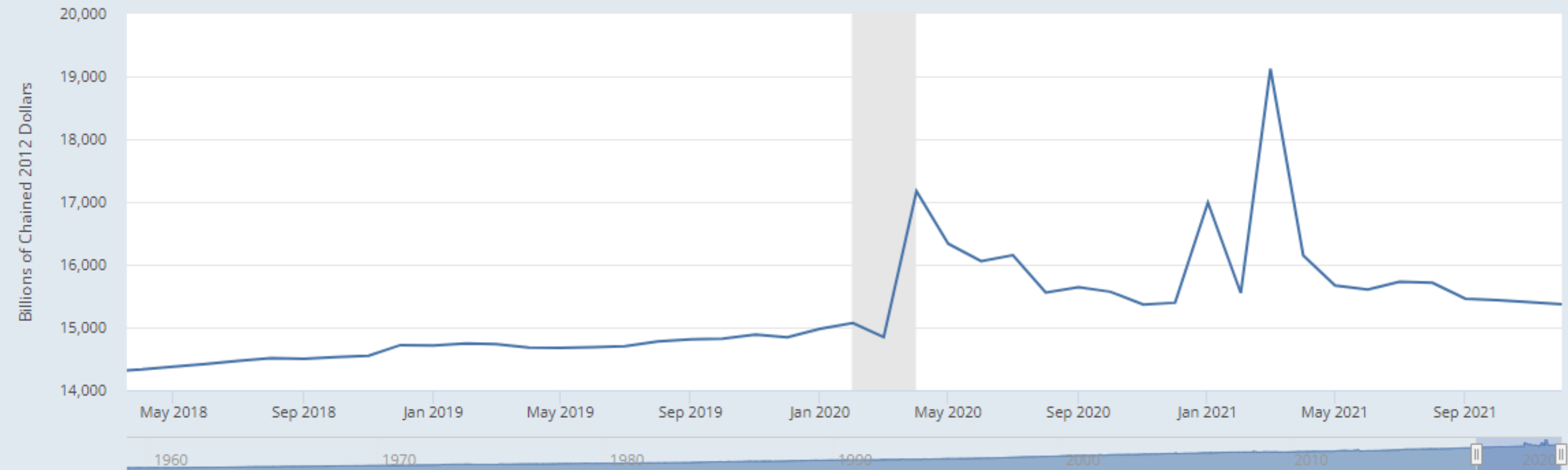
2018-03-17

to

2021-12-01

EDIT GRAPH 

**FRED**  — Real Disposable Personal Income



Shaded areas indicate U.S. recessions.

Source: U.S. Bureau of Economic Analysis

fred.stlouisfed.org



**IRI CPG Supply Index**

Week Ending

01.16.2022

01.23.2022

01.30.2022

**Total CPG**

89%

89%

88%

**Total Edible**

87%

86%

85%

Beverages

86%

86%

85%

Frozen

88%

87%

86%

General Food

86%

86%

85%

Beverage Alcohol

84%

84%

84%

Refrigerated

88%

87%

85%

**IRI CPG Supply Index**

Week Ending

01.23.2022

01.30.2022

02.06.2022

**Total CPG**

89%

86%

78%

**Total Edible**

86%

85%

81%

Beverages

86%

84%

81%

Frozen

87%

86%

85%

General Food

86%

84%

80%

Beverage Alcohol

84%

83%

79%

Refrigerated

87%

86%

86%

# IRI CPG Demand Index

Week Ending	11.14.21	11.21.21	11.28.21	12.05.21	12.12.21	12.19.21	12.26.21	01.02.22	01.09.22	01.16.22	01.23.22	01.30.22
<b>Total CPG</b>	104	101	106	105	105	105	114	104	103	107	104	106
<b>Total Edible</b>	105	103	107	105	105	105	114	103	104	107	105	107
Beverage Alcohol	98	97	100	98	97	97	102	94	90	94	93	97
<u>Beverages</u>	109	108	113	112	111	114	118	108	106	109	107	110
<u>Frozen</u>	104	101	106	104	105	104	115	103	104	109	106	107
<u>General Food</u>	106	102	107	105	106	105	115	103	104	108	107	108
<b>Perishables *</b>	106	103	108	105	105	103	114	104	105	109	105	108
<u>Bakery</u>	108	108	110	108	109	108	116	107	109	113	110	112
<u>Deli</u>	113	112	116	114	114	112	120	110	110	111	108	112
<u>Meat</u>	106	100	105	104	104	101	117	105	106	109	107	109
<u>Produce</u>	104	103	108	105	105	103	113	104	103	106	103	106
<u>Refrigerated</u>	101	100	105	100	101	99	111	101	104	108	104	104
<u>Seafood</u>	100	99	104	99	97	89	96	91	95	94	91	93

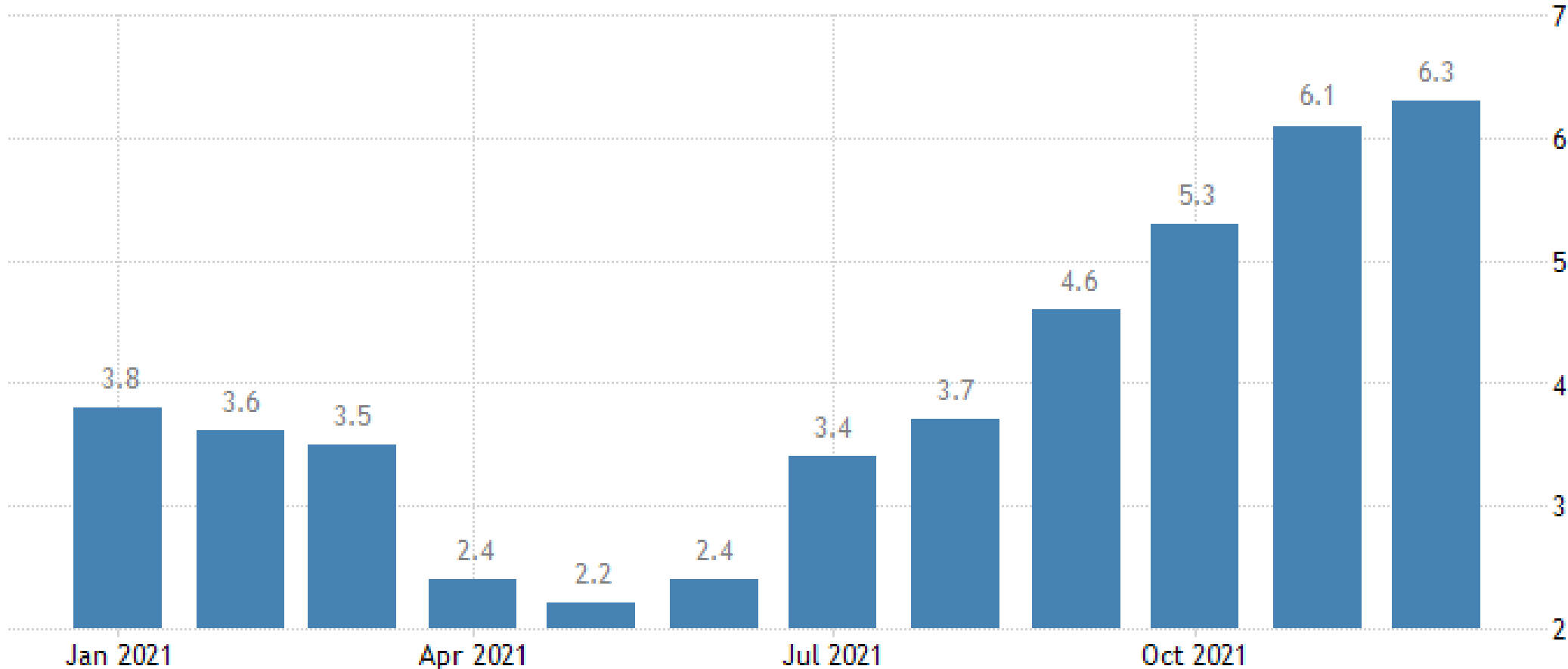
# United States Food Inflation

Summary

Forecast

Stats

Download ▾



SOURCE: TRADINGECONOMICS.COM | U.S. BUREAU OF LABOR STATISTICS

Observation:  
Jan 2022: **281.933** (+ more)  
Updated: Feb 10, 2022

Units:  
Index 1982-1984=100,  
Seasonally Adjusted

Frequency:  
Monthly

1Y | 5Y | 10Y | Max

2019-06-21

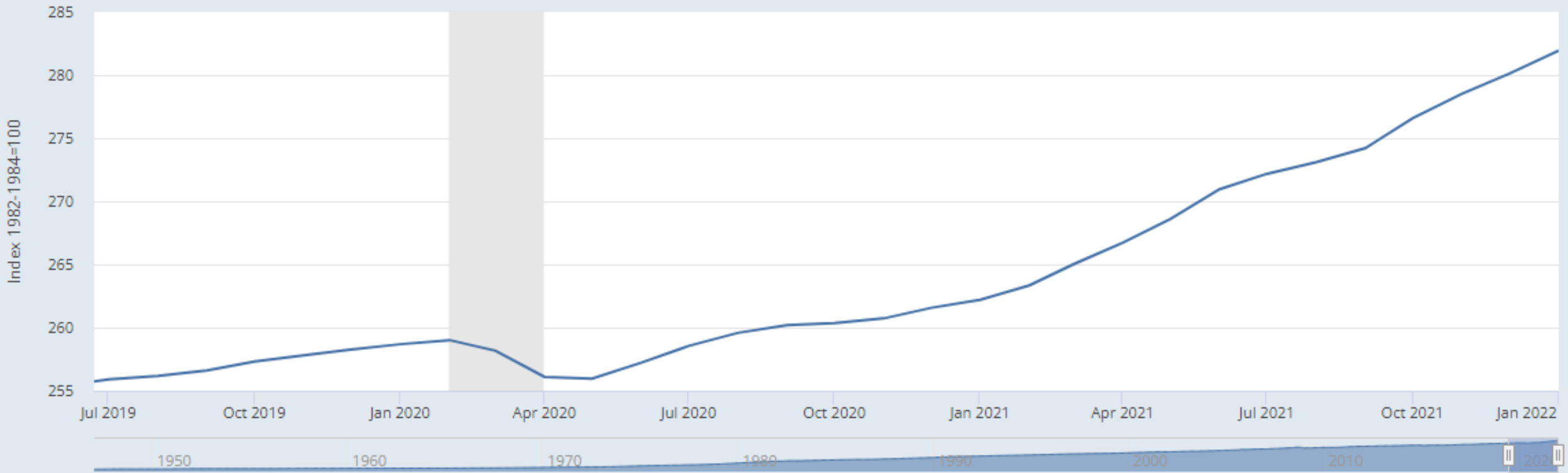
to

2022-01-01

EDIT GRAPH 

**FRED** 

— Consumer Price Index for All Urban Consumers: All Items in U.S. City Average



Shaded areas indicate U.S. recessions.

Source: U.S. Bureau of Labor Statistics

fred.stlouisfed.org





**Table A. Percent changes in CPI for All Urban Consumers (CPI-U): U.S. city average**

	Seasonally adjusted changes from preceding month							Un- adjusted 12-mos. ended Jan. 2022
	Jul. 2021	Aug. 2021	Sep. 2021	Oct. 2021	Nov. 2021	Dec. 2021	Jan. 2022	
All items.....	0.5	0.3	0.4	0.9	0.7	0.6	0.6	7.5
Food.....	0.7	0.4	0.9	0.9	0.8	0.5	0.9	7.0
Food at home.....	0.6	0.4	1.2	0.9	0.9	0.4	1.0	7.4
Food away from home <sup>1</sup> .....	0.8	0.4	0.5	0.8	0.6	0.6	0.7	6.4
Energy.....	1.6	1.9	1.2	3.7	2.4	0.9	0.9	27.0
Energy commodities.....	2.4	2.5	1.2	4.7	4.2	1.3	-0.6	39.9
Gasoline (all types).....	2.5	2.5	1.1	4.6	4.5	1.3	-0.8	40.0
Fuel oil <sup>1</sup> .....	0.6	-2.1	3.9	12.3	3.5	-2.4	9.5	46.5
Energy services.....	0.7	1.2	1.2	2.4	0.2	0.3	2.9	13.6
Electricity.....	0.2	1.0	0.6	1.4	0.2	0.5	4.2	10.7
Utility (piped) gas service.....	2.2	1.6	2.9	5.9	0.3	-0.3	-0.5	23.9
All items less food and energy.....	0.3	0.2	0.3	0.6	0.5	0.6	0.6	6.0

<https://www.bls.gov/news.release/pdf/cpi.pdf>

**According to the Bureau of Economic Analysis** (January 10, 2022)

**The food index** increased 0.9 percent in January. The **food at home** index increased 1.0 percent over the month after rising 0.4 percent in December. Five of the six major grocery store food group indexes increased in January. The index for cereals and bakery products increased the most, rising 1.8 percent over the month. The index for other food at home increased 1.6 percent in January, while the index for dairy and related products rose 1.1 percent. The fruits and vegetables index rose 0.9 percent over the month ([more](#)), and the meats, poultry, fish, and eggs index increased 0.3 percent. The only grocery store group index not to increase in January was the index for nonalcoholic beverages, which was unchanged.

The **food away from home** index rose 0.7 percent in January following an increase of 0.6 percent in December. The index for full service meals and the index for limited service meals both also rose 0.7 percent over the month.

The food at home index rose 7.4 percent over the last 12 months. All of the six major grocery store food group indexes increased over the period. *By far the largest increase was that of the index for meats, poultry, fish, and eggs, which rose 12.2 percent over the year.* The index for dairy and related products increased 3.1 percent, the smallest 12-month increase among the groups.

The index for food away from home rose 6.4 percent over the last year, the largest 12-month increase since January 1982. The index for limited service meals rose 8.0 percent over the last 12 months, and the index for full service meals rose 7.1 percent. The index for food at employee sites and schools, in contrast, declined 46.9 percent over the past 12 months, reflecting widespread free lunch programs.

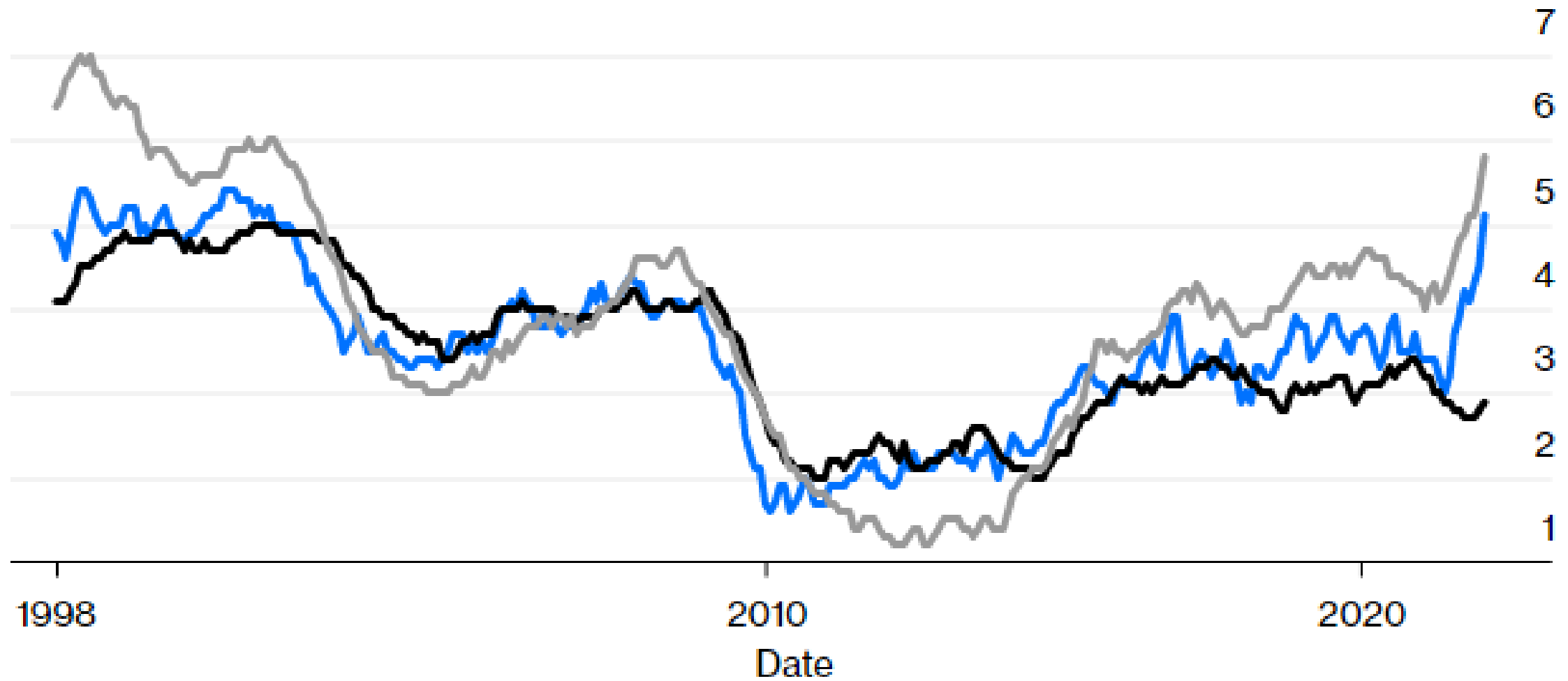
## **Preliminary personal thoughts on food price trends in 2021**

**Meat price increases** have been a major contributor to overall increases in the food index (12.2 percent January to January for the meats, poultry, fish category). But there is considerable variation in the category. For example, uncooked beef roasts have increased 19.2 percent while frankfurters have increased 2.1 percent. Fresh fish and seafood have increased 12.7 percent while shelf-stable (usually canned) seafood has increased 0.8 percent. As I scan the variation within several categories, I wonder – hypothesize – about the cost differentiation in terms of “industrial” versus “craft” processing and merchandising. More craft-oriented approaches require more workforce investment at a time when covid-related absenteeism has been disruptive and labor markets have been volatile.

# The Robin Hood Labor Market

Atlanta Fed shows overall wage growth tops 5% for first time in 20 years

Overall Wage Growth (%) 4th Quartile 1st Quartile



Source: Bloomberg, Federal Reserve Bank of Atlanta

# FOOD FLOWS



## Strategic Predisposition and Operational Principle

Once achieving significant volume and velocity, preexisting patterns of demand and supply tend to persist. In a crisis, the network's preferential attachments are, when possible, usually amplified. When preexisting patterns or possibilities have not survived, developing replacements that mimic the prior patterns will serve to reduce friction and enhance flows.

# FOOD FLOWS



## Sources: So What?

Most food processing and distribution originates north of the NCR, with significant dependence on Eastern Pennsylvania, New Jersey, and New York.

## Sources: Now What?

If there is a long-term disruption of food flows from sources north of the NCR, identify the best existing alternatives.

What local or distant sources could help fill the gap in the most meaningful way?

California and the Great Lakes States are the next largest concentrations of food processing capacity.

# FOOD FLOWS



## **Demand: So What?**

Sudden onset food insecurity – resulting from lack of demand fulfillment, inability to express demand, or other causes – involving a large proportion of the population over more than a few days is one typical aspect of a “catastrophic event”.

## **Demand: Now What?**

If production and transportation capacity has survived, determine how demand pull can be most quickly and effectively reestablished. Confirm and exercise with distribution players.

# FOOD FLOWS



## **Demand: So What?**

NCR demand is increasingly focused on fresh (perimeter) products that are often less responsive to needs in case of a long-duration, wide-area catastrophe.

## **Demand: Now What?**

Explore and potentially develop Virtual Managed Inventory of center-store, products to surge shelf-stable flows.

ES3 (etc.) factor...



<https://www.ers.usda.gov/amber-waves/2021/october/food-spending-by-u-s-consumers-fell-almost-8-percent-in-2020>

<https://www.foodtradenews.com/2021/12/17/wakefern-cs-unfi-bozzutos-pace-all-mid-atlantic-wholesalers/>

<https://www.foodtradenews.com/2021/06/20/food-world-2021-market-study-issue/>

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