What's New in Census' Economic Directorate

Moderator: Carol Aristone – Economic Indicator Division

Introduction of Presenters:

- Aidan Smith – Building Permits Survey

- Rebecca Hutchinson - Blended Data in Monthly State Retail Sales Data Product

- Stephen Owens – Monthly Selected State Tax

- Amanda Rosengarth - Annual Survey of Manufactures: Industrial Robotic Equipment

- Valerie Mastalski - Measures of Robotic Expenditures

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U.S. Census Bureau's Building Permits Survey

Aidan Smith, Assistant Division Chief, Construction Indicator Programs, U.S. Census Bureau
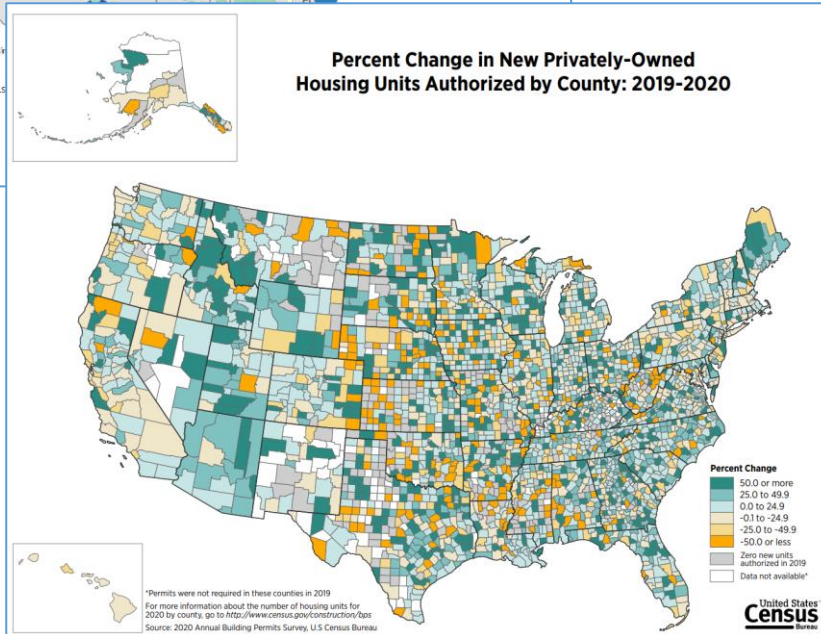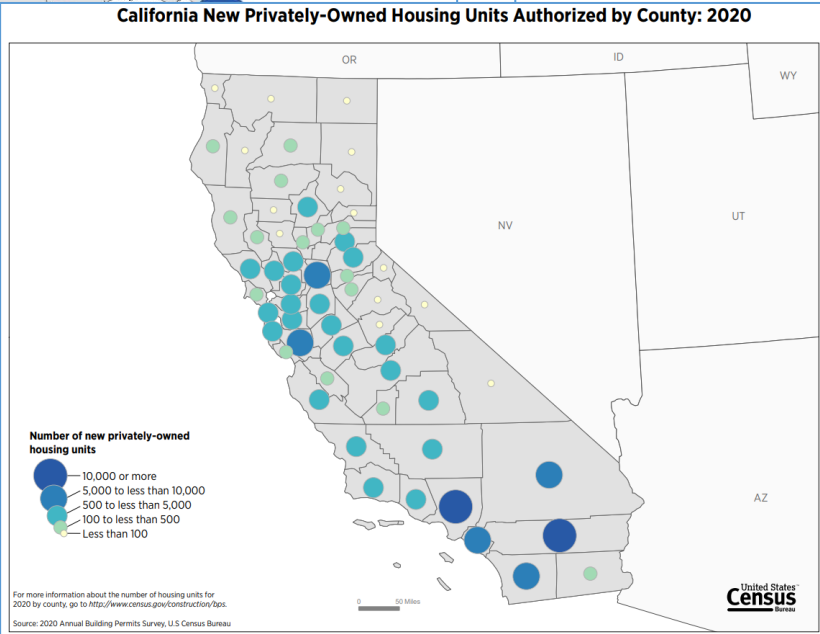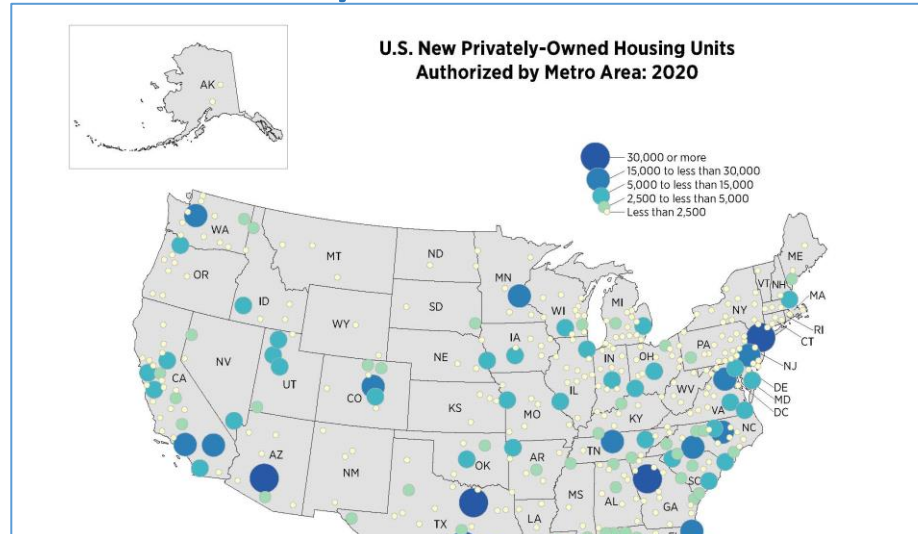
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BPS: The Foundation Of Our Construction Indicators

- Measures the number and valuation of new housing units authorized by permit

- Key input to our construction indicators
  - New Residential Construction
  - New Residential Sales
  - Construction Spending

- Estimates released monthly and annually for U.S. total and:
  - 4 Census Regions and 9 Census Divisions
  - All metropolitan areas
  - All states
  - All permit-issuing counties
  - All permit-issuing jurisdictions

BPS: Strengths

- Leading
  - Permit is issued before construction begins
  - Component of the Conference Board's U.S. Leading Economic Index
- Large
  - Monthly survey targets local governments, so a large sample is affordable and response rates are high
  - Annual survey is a census covering all permit-issuing jurisdictions
  - Permits are public information – not subject to confidentiality restrictions
- Local
  - Detailed local data are available both monthly and annually

BPS: Geographic Granularity

U.S. New Privately-Owned Housing Units Authorized by State: 2020

U.S. New Privately-Owned Housing Units Authorized by Metro Area: 2020

California New Privately-Owned Housing Units Authorized by County: 2020

Percent Change in New Privately-Owned Housing Units Authorized by County: 2019-2020
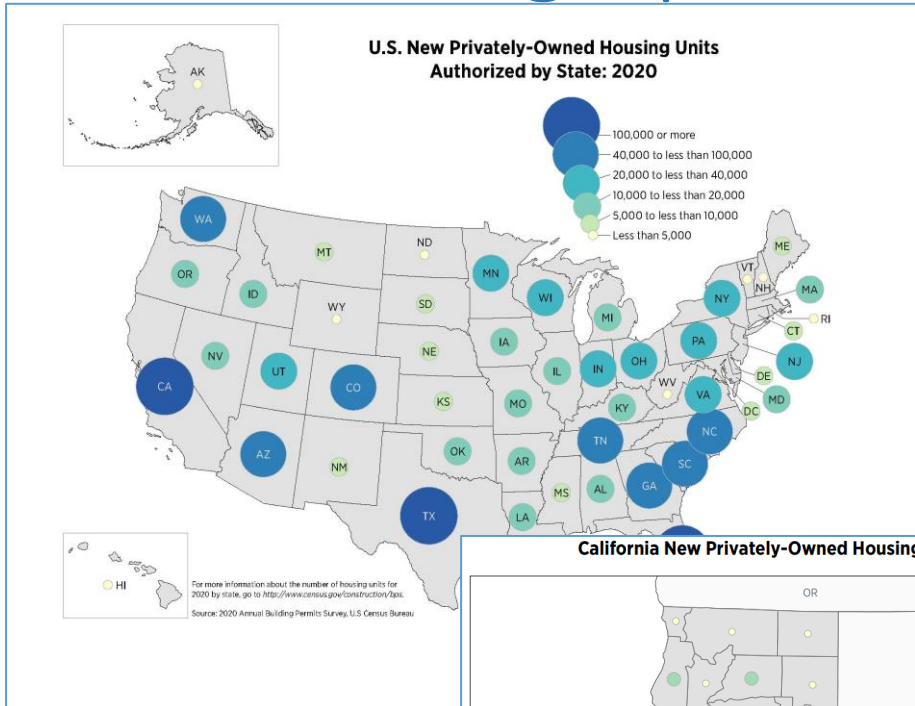
BPS: Methodology

- Voluntary survey of the 20,000 permit-issuing jurisdictions in the U.S.

- Cutoff sample of jurisdictions surveyed monthly
  - Target collection to places that issue 6 or more permits annually based on previous three years
  - These 8,400 places account for roughly 99% of all units authorized
  - Rely on modeling for remaining low-activity places

- All places not collected monthly are surveyed annually

- Place level estimates are summed to create all higher-level aggregates

BPS: Data Products

- Measures
  - number and valuation of permitted housing units
- Granularity
  - Monthly, year-to-date, and annual
  - U.S., Region, Division, MSA, State, County, Jurisdiction
  - Total, 1-unit, 2-unit, 3/4-unit, 5+ units
- Available on-line - *https://www.census.gov/construction/bps/*
  - Excel
  - ASCII
  - Tableau Visualization
  - Complete .CSV file (coming soon)
- Timing
  - Preliminary Monthly – 12th workday of following month @ 8:30am
  - Revised Monthly – 17th workday of following month @ 8:00am
  - Annual – 1st workday in May of following year

BPS: Modernization Efforts

- Redesigning the BPS sample
  - Completed in February 2022
  - Transitioned from probability sample to cutoff sample
  - Now provides complete local estimates on a monthly basis
  - Positions program to maximize use of alternative data sources
- Alternative permit data sources
  - Reduce reliance on traditional collection and voluntary reporting
  - Leveraging data science methods for permit classification and geolocation
- Expanding data visualization products

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BPS: Visualization

BPS Time Series and Table Tool:

https://www.census.gov/construction/bps/data_visualizations/

Contact

Aidan Smith, Assistant Division Chief, Construction Indicator Programs, U.S. Census Bureau

aidan.d.smith@census.gov

Blended Data in the Census Bureau's Monthly State Retail Sales Data Product

Rebecca Hutchinson, US Census Bureau, rebecca.j.hutchinson@census.gov

Delivering on data users' requests

- More timely state-level retail sales are among the most requested data by our data users.

- In September 2020, the Census Bureau released the new blended Monthly State Retail Sales (MSRS) data product.

- First version of these experimental data.

- MSRS was created using existing survey data, administrative data, and third-party/alternative data sources as its inputs. No new data were collected.

What MSRS data are available?

- Year-over-year percentage changes by month back to January 2019 for:
  - Total Retail Sales excluding Nonstore Retailers
  - 11 Retail Subsectors
    - Motor vehicle and parts dealers (NAICS 441
    - Furniture and Home Furnishing (NAICS 442)
    - Electronics and Appliances (NAICS 443)
    - Building Materials and Supplies Dealers (NAICS 444)
    - Food and Beverage (NAICS 445)
    - Health and Personal Care (NAICS 446)
    - Gasoline Stations (NAICS 447)
    - Clothing and Clothing Accessories (NAICS 448)
    - Sporting Goods and Hobby (NAICS 451)
    - General Merchandise (NAICS 452)
    - Miscellaneous Store Retailers (NAICS 453)

- The state-level data is not adjusted for seasonal variation, trading-day differences, moving holidays or price changes.

- Published quality metrics include standard errors and coverage measures

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Total Retail Sales Excluding Nonstore Retailers by State

April 2020 Y/Y % Change

July 2020 Y/Y % Change

April 2021 Y/Y % Change

July 2021 Y/Y % Change

Source: July 2021 MSRS Report
S = Estimate suppressed due to quality concerns
* The 90 percent confidence interval includes zero. There is insufficient statistical evidence to conclude that the actual change is different from zero.
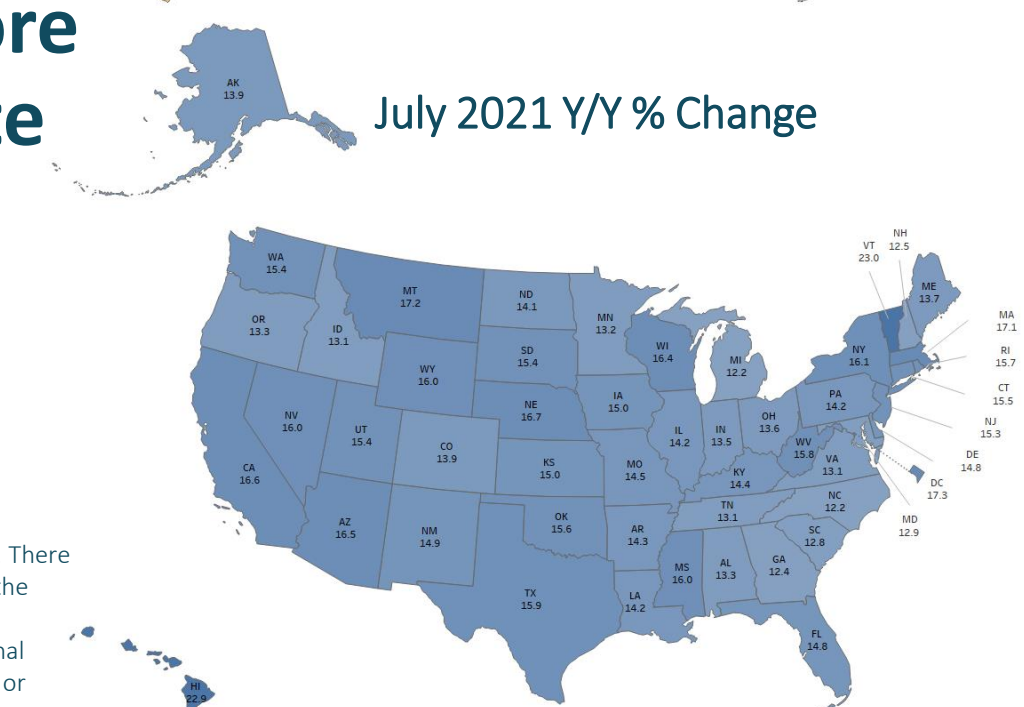Note: State retail sales data not adjusted for seasonal variation, trading-day differences, moving holidays or price changes.

Food & Beverage Stores (NAICS 445) by State

April 2020 Y/Y % Change

AK 24.3
WA 16.7
MT 25.0
ND 17.7
MN 18.8
ME 13.3
NH 11.8
VT (S)
MA 9.9
OR 23.2
ID 20.6*
WI 14.8
MI 14.7
NY 18.0
RI 19.7
CT 16.6
WY 25.1
SD 18.5*
IA 17.5
PA (S)
NJ 5.4
NV 14.3
UT 12.2
NE 16.9
IL 15.7
IN 11.7
OH 10.5
WV 11.1*
VA 20.6
DE 11.7*
DC 21.2*
CA 15.6
CO 15.6
KS 16.5
MO 14.4
KY 1.1*
NC 14.1
MD 22.0
AZ 12.7
NM 14.0
OK 21.4
AR 18.4
TN 10.6
SC 17.1
TX 12.4
LA 20.6
MS 13.2
AL 19.5
GA 16.0
FL 19.4
HI -10.6

July 2020 Y/Y % Change

AK 22.3
WA 14.5
MT 18.3
ND 12.0*
MN 15.4
NH 6.5*
VT -4.2*
ME 11.5
MA 10.9
OR 19.8
ID 9.2*
WI 12.0
MI 7.1
NY 17.8
RI 9.3*
CT 12.4
WY 20.5
SD 13.6*
IA 12.3
PA 8.2
NJ 12.8
NV 7.1*
UT 7.9
NE 7.9*
IL 13.4
IN 8.2
OH 9.9
WV 11.0
VA 14.0
DE 10.9*
DC 11.8*
CA 14.2
CO 12.8
KS 14.3
MO 12.3
KY 12.5
NC 11.1
MD 16.5
AZ 11.1
NM 9.9
OK 13.7
AR 21.1
TN 12.5
SC 13.5
TX 13.8
LA 18.6
MS 19.9
AL 16.6
GA 12.2
FL 15.7
HI -6.8*

April 2021 Y/Y % Change

AK 2.2*
WA -0.6*
MT 0.4*
ND 4.2*
MN -9.9
NH -6.5*
VT -16.8
ME -3.5*
MA 5.9
OR -2.6*
ID -12.2*
WI 0.0*
MI -2.2*
NY 4.7
RI 11.2*
CT 5.4*
WY 0.6*
SD 2.2*
IA -5.0*
PA 39.5
NJ 11.8
NV -0.1*
UT -3.7*
NE -0.3*
IL -4.6
IN -2.8*
OH -4.1*
WV 0.0*
VA -5.7
DE 4.2*
DC -10.8*
CA 0.5*
CO -1.0*
KS -1.7*
MO -5.4*
KY 12.4
NC -6.3
MD 1.0*
AZ -0.7*
NM -2.0*
OK -2.7*
AR 4.6*
TN 2.8*
SC -4.7*
TX 3.6
LA -0.6*
MS 5.2*
AL -1.8*
GA -4.0*
FL -5.1
HI 5.8*

July 2021 Y/Y % Change

AK 0.8*
WA 2.7*
MT 6.1*
ND 6.1*
MN -6.5
NH 0.8*
VT 4.2*
ME -2.7*
MA 10.1
OR -1.0*
ID 0.0*
WI 4.4*
MI 3.8*
NY 5.3
RI 17.4
CT 11.8
WY 3.6*
SD 4.1*
IA 1.5*
PA 7.4
NJ 8.4
NV 6.1*
UT 2.6*
NE 5.8*
IL 1.0*
IN 1.5*
OH 1.4*
WV 2.0*
VA 1.8*
DE 7.0*
DC 2.9*
CA 0.9*
CO 1.6*
KS 1.2*
MO -1.5*
KY 2.2*
NC 0.6*
MD 5.5*
AZ 2.4*
NM 3.2*
OK 1.4*
AR 3.9*
TN 1.7*
SC 0.5*
TX 5.9
LA 4.6*
MS 2.7*
AL 2.5*
GA 2.2*
FL 1.5*
HI 23.9

Source: July 2021 MSRS Report
S = Estimate suppressed due to quality concerns
* The 90 percent confidence interval includes zero. There is insufficient statistical evidence to conclude that the actual change is different from zero.
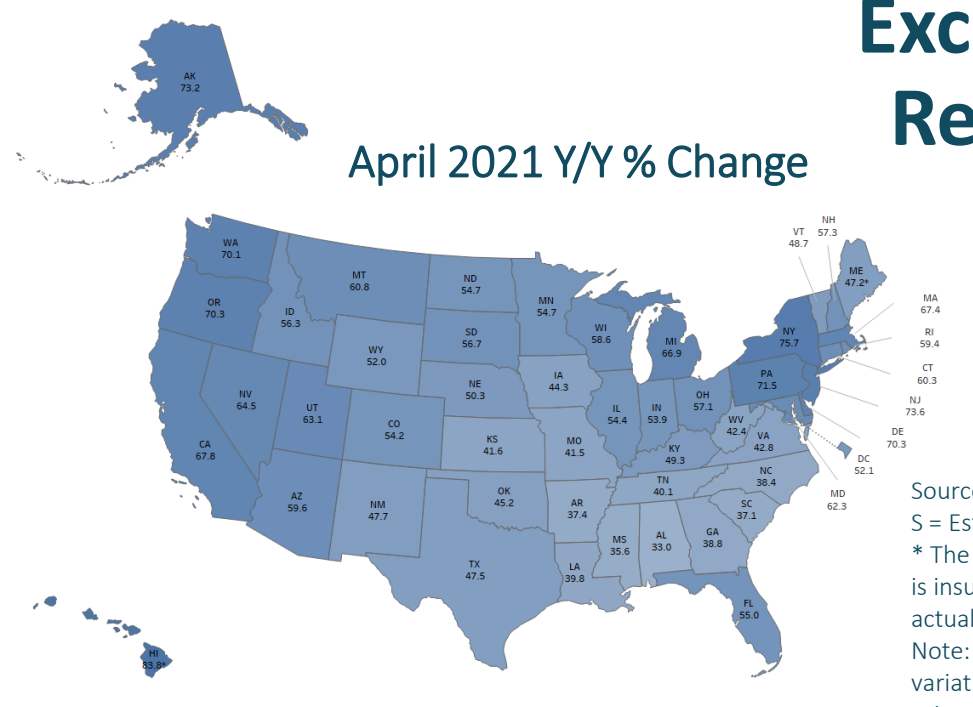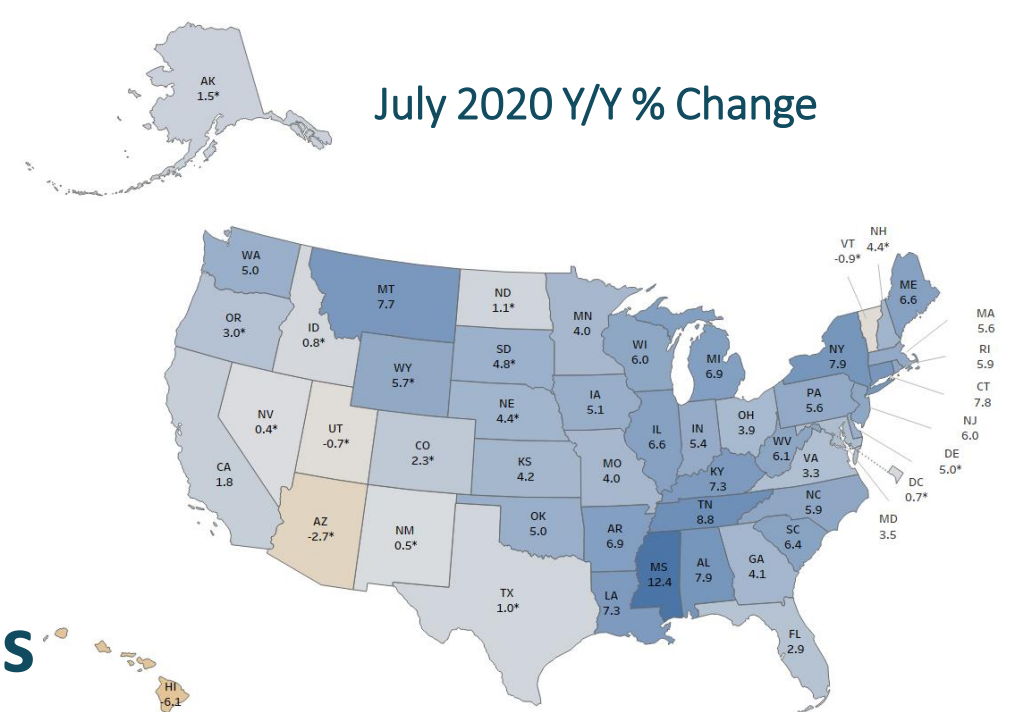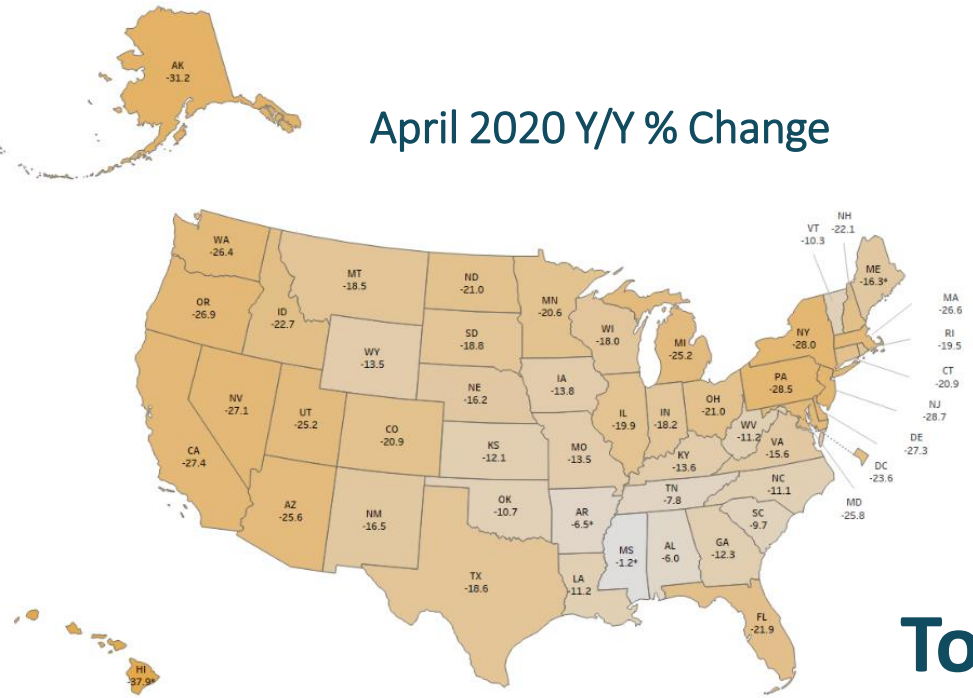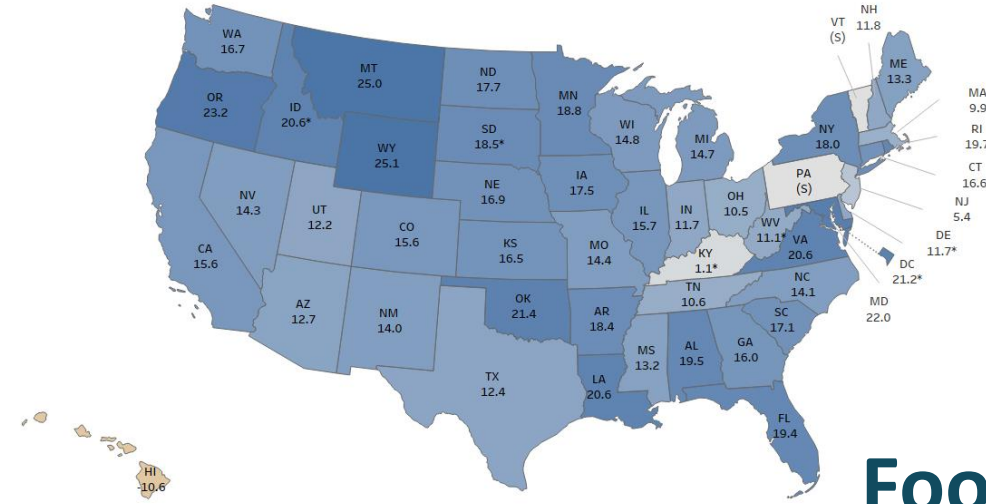Note: State retail sales data not adjusted for seasonal variation, trading-day differences, moving holidays or price changes.

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Blended data approach

Admin

Administrative Data:
- **Gross payroll for retailers**

Survey

Monthly Retail Trade Survey (MRTS) Data:
- **Monthly retail sales data**

3P

Third-Party Point-of-Sale Retail Sales Data
- **Monthly sales by store location for a set of retailers**
- **Monthly sales by state for curated groupings of retailers**

How are the data modeled?

- Created using a composite model that is a weighted average of synthetic estimates and hybrid estimates.

- Weight is based on the ratio of the variance of the synthetic estimator to the total variance of both estimators.

Synthetic State Estimates

National MRTS Sales for NAICS

X

$$\frac{\textbf{Payroll for State \& NAICS}}{\textbf{National Payroll for NAICS}}$$

Hybrid State Estimates

Survey sales data
- MRTS retailers with more than one store location but all store locations are in the same state.
- MRTS retailers with only one store location.

+

Third-party sales data
- Retailer with more than one store location whose store-location or state-level data is available through a third-party

+

Imputed sales data
- Third-party store-level data, MRTS data, and payroll are used to impute for retailers who operate in multiple states and are not included in third-party data sales.

+

Adjustment
- Retailers with only one location that are not in MRTS or in the third-party data

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Ongoing work

- **More data sources**: How can we incorporate other data sources? Can the ratio in the synthetic estimator be improved by including other data sources in addition to payroll: payment processor data, state sales tax data, etc?

- **E-commerce**: How do we allocate e-commerce sales to a geography?

- **New sectors:** Can this methodology be expanded to other sectors of the economy?

For more information

- **Monthly State Retail Sales website:** https://www.census.gov/retail/state_retail_sales.html
- rebecca.j.hutchinson@census.gov

Selected Monthly State Tax Collections

Stephen Owens, US Census Bureau, stephen.d.owens@census.gov

Selected Monthly State Tax Collections

- Originated at the start of the pandemic

- Originally included only general and select sales taxes, but was expanded to include income taxes due to popular demand

- Consists of state government monthly tax collection data for seven taxes and all 50 states

- Specific taxes are general sales, individual income, corporate income, alcoholic beverage, motor fuel, tobacco and lodging

Methodology

- Data definitions primarily taken from the existing Quarterly Tax Survey

- National totals are not available due to the difficulty of obtaining records from some state governments

- All data are derived from publicly available sources

- Data are on a "cash" basis

- No imputation

Collection Methods

- All data derived from administrative records

- Initial data capture done manually

- Subsequent data capture performed through web scraping and a variety of extraction techniques

- Future collection using APIs

Data Collection Challenges

- Irregular posting intervals

- Dynamic URLs

- Multiple formats

- Reporting structure changes

- Tax collection cycle anomalies

Data Utility

- Measure of tax policy changes
- Proxy for other data collections (e.g. monthly retail sales)
- Economic impact of specific events
- Municipal bond rating and analytics
- State government budgeting and analytics

Monthly Comparisons for Selected State Tax Collections

FEBRUARY 17, 2022

2020 to 2019 Monthly Comparisons for Selected State Tax Collections

Select Tax Type
General Sales ▼

Select Comparison Years
2020 to 2019 ▼

Select Accrual Month
‹ April ▼ ›

◄ ■ ►

Percent Change
- Greater than 20%
- 10.01 to 20%
- 5.01 to 10%
- 0.01 to 5%
- -5 to -0%
- -10 to -5.01%
- -20 to -10.01%
- Less than -20%
- NR or NA

NR Not reported.
NA Not applicable.

Note: Sales taxes are generally collected in the month following actual sales.

Source: Selected Monthly State Tax Collections
<www.census.gov/data/experimental-data-products/selected-monthly-sales-tax-collections>

Monthly Comparisons for Selected State Tax Collections

FEBRUARY 17, 2022

2020 to 2019 Monthly Comparisons for Selected State Tax Collections

Select Tax Type
Motor Fuel

Select Comparison Years
2020 to 2019

Select Accrual Month
April

Percent Change
- Greater than 20%
- 10.01 to 20%
- 5.01 to 10%
- 0.01 to 5%
- -5 to -0%
- -10 to -5.01%
- -20 to -10.01%
- Less than -20%
- NR or NA

NR Not reported.
NA Not applicable.

Note: Sales taxes are generally collected in the month following actual sales.

Source: Selected Monthly State Tax Collections
<www.census.gov/data/experimental-data-products/selected-monthly-sales-tax-collections>

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Monthly Comparisons for Selected State Tax Collections

FEBRUARY 17, 2022

2020 to 2019 Monthly Comparisons for Selected State Tax Collections
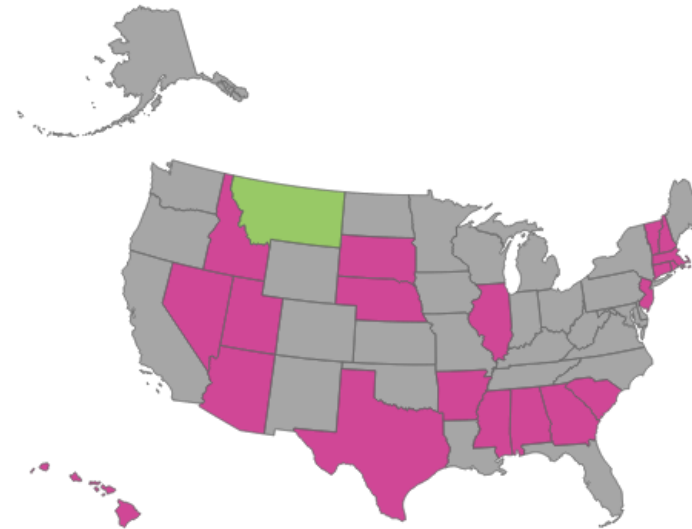
Select Tax Type
Lodging

Select Comparison Years
2020 to 2019

Select Accrual Month
< April >

Percent Change
- Greater than 20%
- 10.01 to 20%
- 5.01 to 10%
- 0.01 to 5%
- -5 to -0%
- -10 to -5.01%
- -20 to -10.01%
- Less than -20%
- NR or NA

NR Not reported.
NA Not applicable.

Note: Sales taxes are generally collected in the month following actual sales.

Source: Selected Monthly State Tax Collections
<www.census.gov/data/experimental-data-products/selected-monthly-sales-tax-collections>

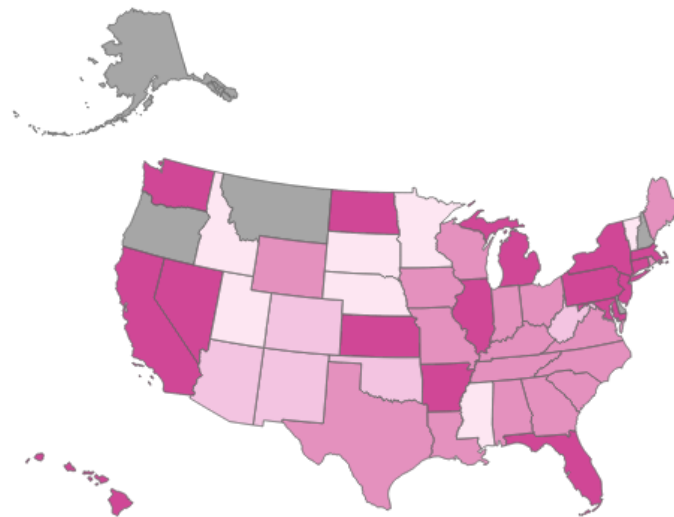# Monthly Comparisons for Selected State Tax Collections

FEBRUARY 17, 2022

2021 to 2019 Monthly Comparisons for Selected State Tax Collections
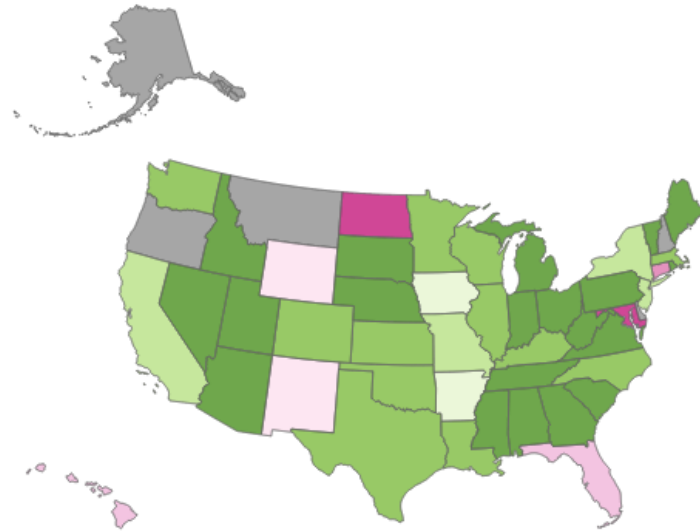
Select Tax Type
General Sales ▼

Select Comparison Years
2021 to 2019 ▼

Select Accrual Month
‹ April ▼ ›

◀ ■ ▶

Percent Change
■ Greater than 20%
■ 10.01 to 20%
■ 5.01 to 10%
□ 0.01 to 5%
□ -5 to -0%
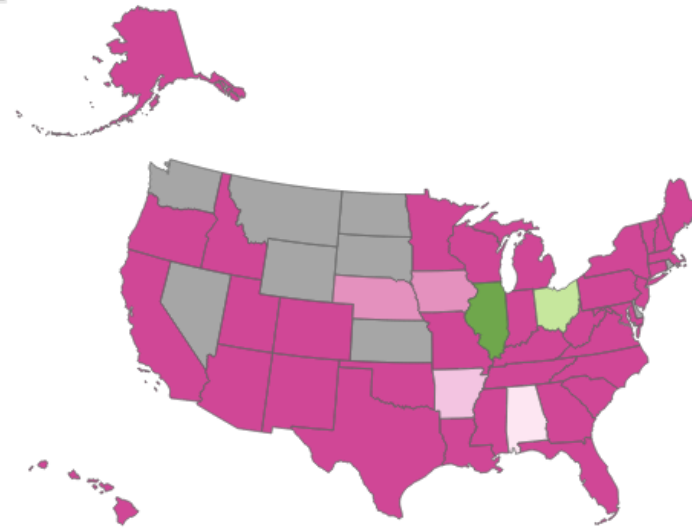■ -10 to -5.01%
■ -20 to -10.01%
■ Less than -20%
■ NR or NA

NR Not reported.
NA Not applicable.

Note: Sales taxes are generally collected in the month following actual sales.

Source: Selected Monthly State Tax Collections
<www.census.gov/data/experimental-data-products/selected-monthly-sales-tax-collections>

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Additional Tax Collection Data

- Annual State Government Tax Collections

- Quarterly Tax Revenues

- State and Local Government Finances

- https://www.census.gov/topics/public-sector/taxes.html

- https://www.census.gov/topics/public-sector/government-finances.html

Selected Monthly State Tax Collections

https://www.census.gov/data/experimental-data-products/selected-monthly-state-sales-tax-collections.html

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Annual Survey of Manufactures: Industrial Robotic Equipment

Amanda Rosengarth, US Census Bureau, amanda.rosengarth@census.gov

- National and State level statistics

- Frequency
  - Annual releases
  - Most recent data available – 2020
  - Collected annually except Economic Census years, years ending in '2' and '7'

- NAICS:
  - 2 through 6 digits level NAICS
  - Includes – NAICS 31 through 33

- Accessing the data:
  - https://www.census.gov/programs-surveys/asm.html
  - data.census.gov

Additional Resources:

About this Survey:
https://www.census.gov/programs-surveys/asm/about.html

Access to Technical Documents:
https://www.census.gov/programs-surveys/asm/technical-documentation.html

- Industrial Robots and Robotics Equipment question collected for the first time in 2018

- Consists of 3 data items:
  - Capital expenditures on industrial robotic equipment
  - Number of industrial robots present
  - Number of industrial robots purchased

- First experimental data product published March 11, 2021 provides data on the 'presence of robots'

- Accessing the data:
  - https://www.census.gov/library/publications/2019/econ/2018-asm-robotic-equipment.html
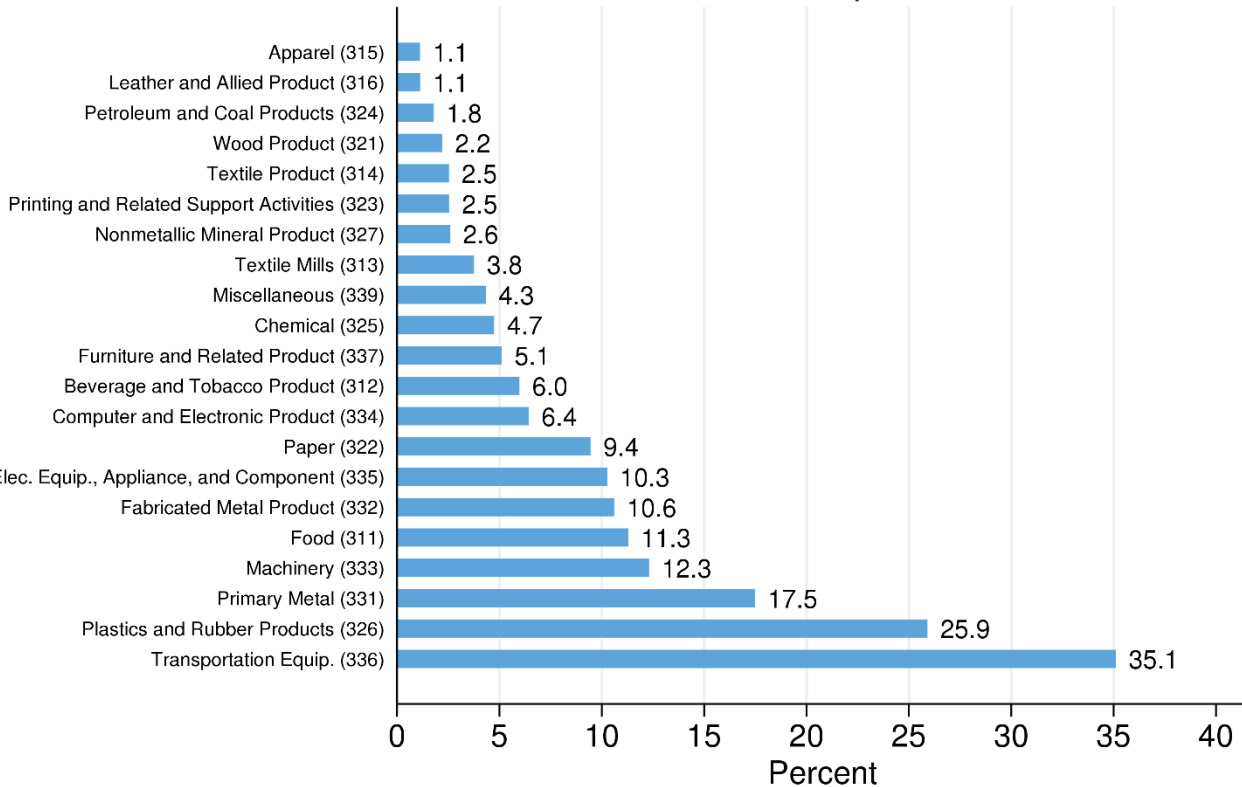
Additional Resources:

Access to Experimental Data Products:
https://www.census.gov/data/experimental-data-products/manufacturing-industrial-robotic-equipment.html
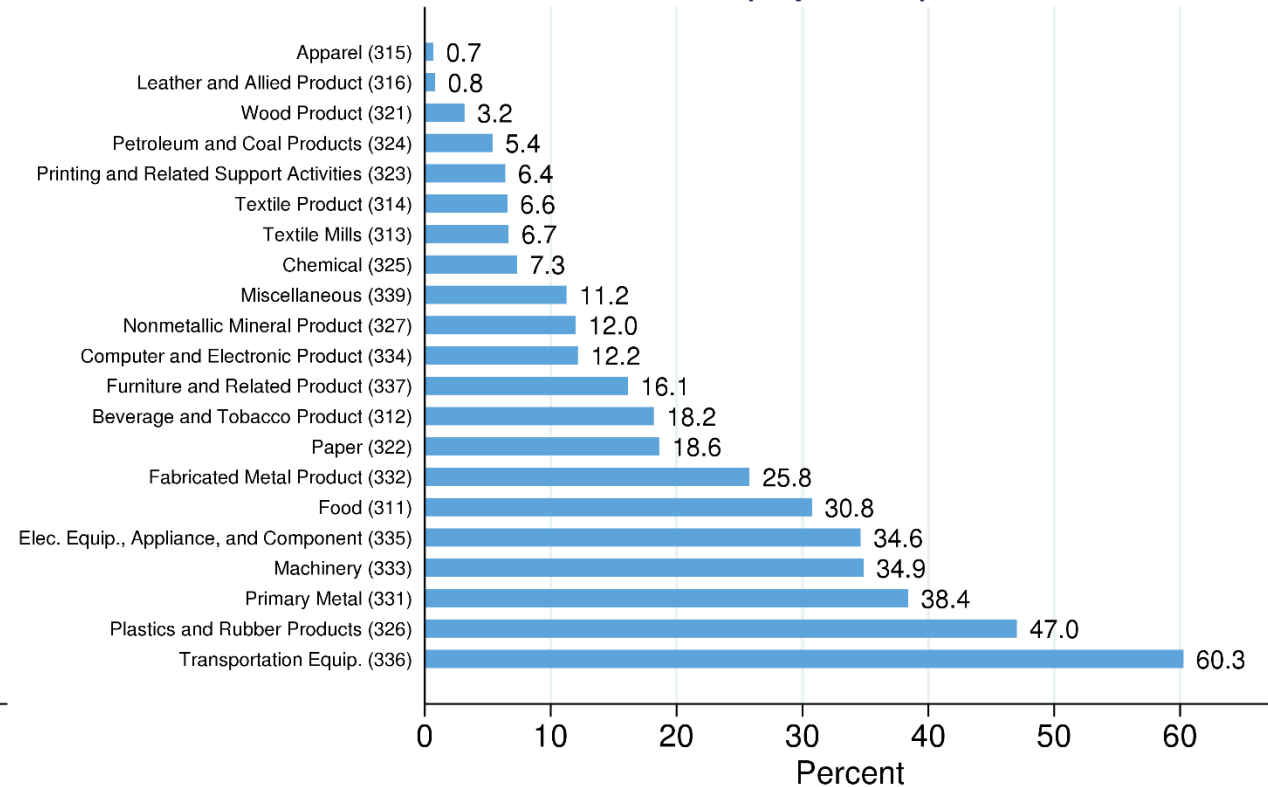
Methodology:
https://www2.census.gov/programs-surveys/asm/technical-documentation/methodology/asm-short-methodology.pdf

Percent of Plants Exposed to Robots

Industry	Percent
Apparel (315)	1.1
Leather and Allied Product (316)	1.1
Petroleum and Coal Products (324)	1.8
Wood Product (321)	2.2
Textile Product (314)	2.5
Printing and Related Support Activities (323)	2.5
Nonmetallic Mineral Product (327)	2.6
Textile Mills (313)	3.8
Miscellaneous (339)	4.3
Chemical (325)	4.7
Furniture and Related Product (337)	5.1
Beverage and Tobacco Product (312)	6.0
Computer and Electronic Product (334)	6.4
Paper (322)	9.4
Elec. Equip., Appliance, and Component (335)	10.3
Fabricated Metal Product (332)	10.6
Food (311)	11.3
Machinery (333)	12.3
Primary Metal (331)	17.5
Plastics and Rubber Products (326)	25.9
Transportation Equip. (336)	35.1

Percent

Source: U.S. Census Bureau. 2018 Annual Survey of Manufacturers, Experimental Data Product. 2017 NAICS codes. Ordering of selected industries has not been tested for statistical significance.

Percent of Employees Exposed to Robots

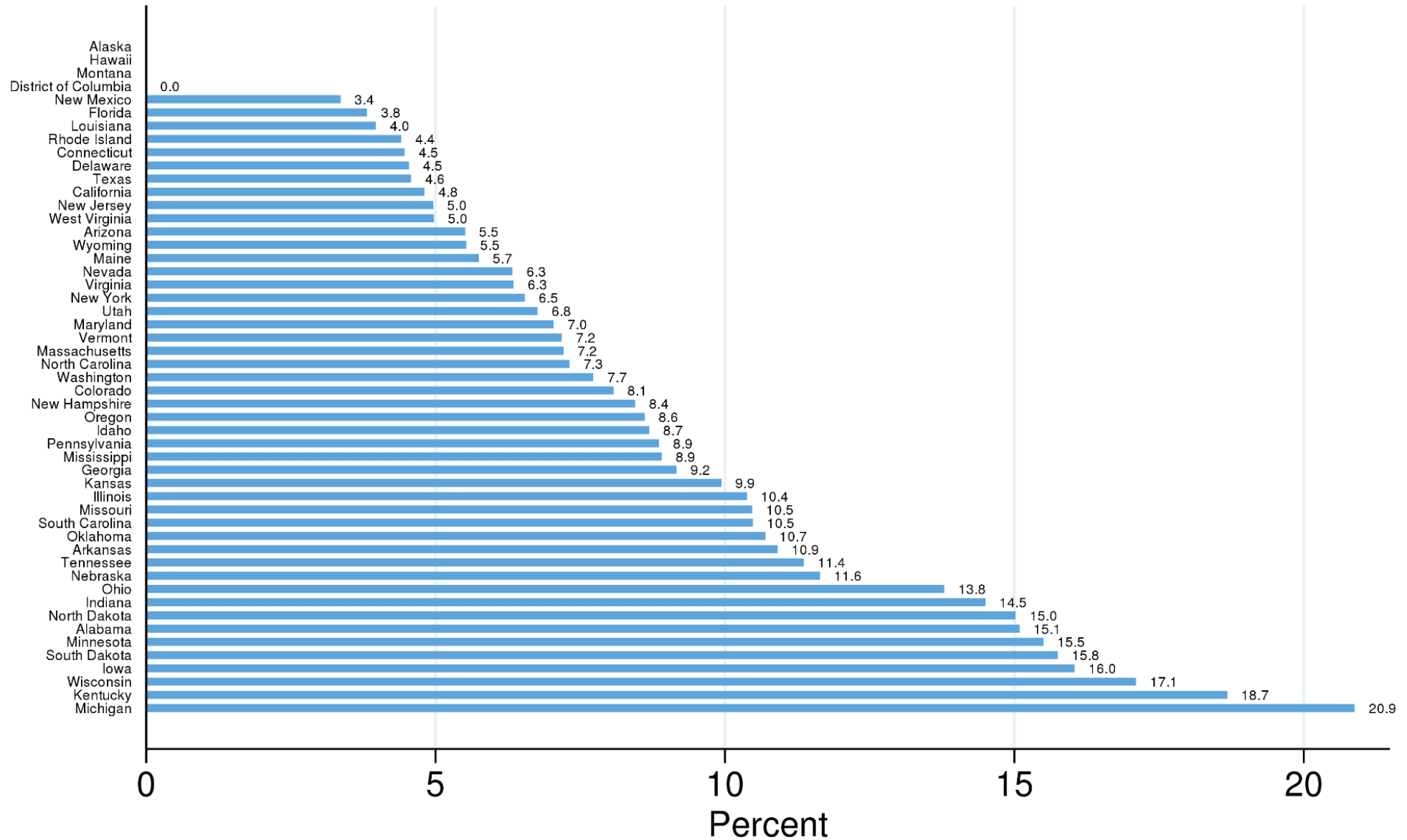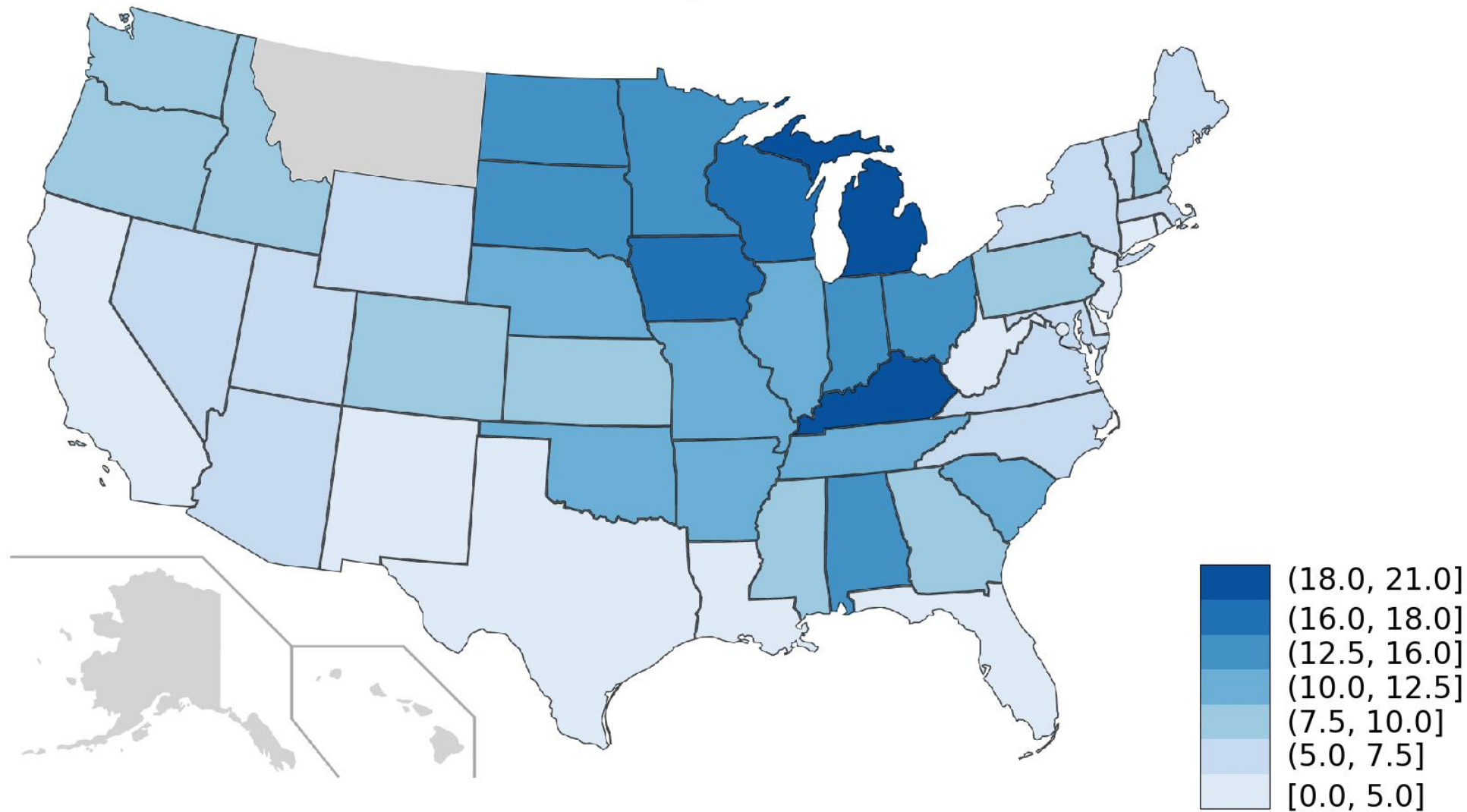| Industry	Percent
Apparel (315)	0.7
Leather and Allied Product (316)	0.8
Wood Product (321)	3.2
Petroleum and Coal Products (324)	5.4
Printing and Related Support Activities (323)	6.4
Textile Product (314)	6.6
Textile Mills (313)	6.7
Chemical (325)	7.3
Miscellaneous (339)	11.2
Nonmetallic Mineral Product (327)	12.0
Computer and Electronic Product (334)	12.2
Furniture and Related Product (337)	16.1
Beverage and Tobacco Product (312)	18.2
Paper (322)	18.6
Fabricated Metal Product (332)	25.8
Food (311)	30.8
Elec. Equip., Appliance, and Component (335)	34.6
Machinery (333)	34.9
Primary Metal (331)	38.4
Plastics and Rubber Products (326)	47.0
Transportation Equip. (336)	60.3

Percent

Source: U.S. Census Bureau. 2018 Annual Survey of Manufacturers, Experimental Data Product. 2017 NAICS codes. Ordering of selected industries has not been tested for statistical significance.

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Percent of Plants Exposed to Robots

| State	Percent
Alaska	
Hawaii	
Montana	
District of Columbia	0.0
New Mexico	3.4
Florida	3.8
Louisiana	4.0
Rhode Island	4.4
Connecticut	4.5
Delaware	4.5
Texas	4.6
California	4.8
New Jersey	5.0
West Virginia	5.0
Arizona	5.5
Wyoming	5.5
Maine	5.7
Nevada	6.3
Virginia	6.3
New York	6.5
Utah	6.8
Maryland	7.0
Vermont	7.2
Massachusetts	7.2
North Carolina	7.3
Washington	7.7
Colorado	8.1
New Hampshire	8.4
Oregon	8.6
Idaho	8.7
Pennsylvania	8.9
Mississippi	8.9
Georgia	9.2
Kansas	9.9
Illinois	10.4
Missouri	10.5
South Carolina	10.5
Oklahoma	10.7
Arkansas	10.9
Tennessee	11.4
Nebraska	11.6
Ohio	13.8
Indiana	14.5
North Dakota	15.0
Alabama	15.1
Minnesota	15.5
South Dakota	15.8
Iowa	16.0
Wisconsin	17.1
Kentucky	18.7
Michigan	20.9

Percent

Source: U.S. Census Bureau. 2018 Annual Survey of Manufacturers, Experimental Data Product.
Some states excluded to avoid the disclosure of sensitive information.
Ordering of selected states has not been tested for statistical significance.

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Percent of Plants Exposed to Robots

Legend:
(18.0, 21.0]
(16.0, 18.0]
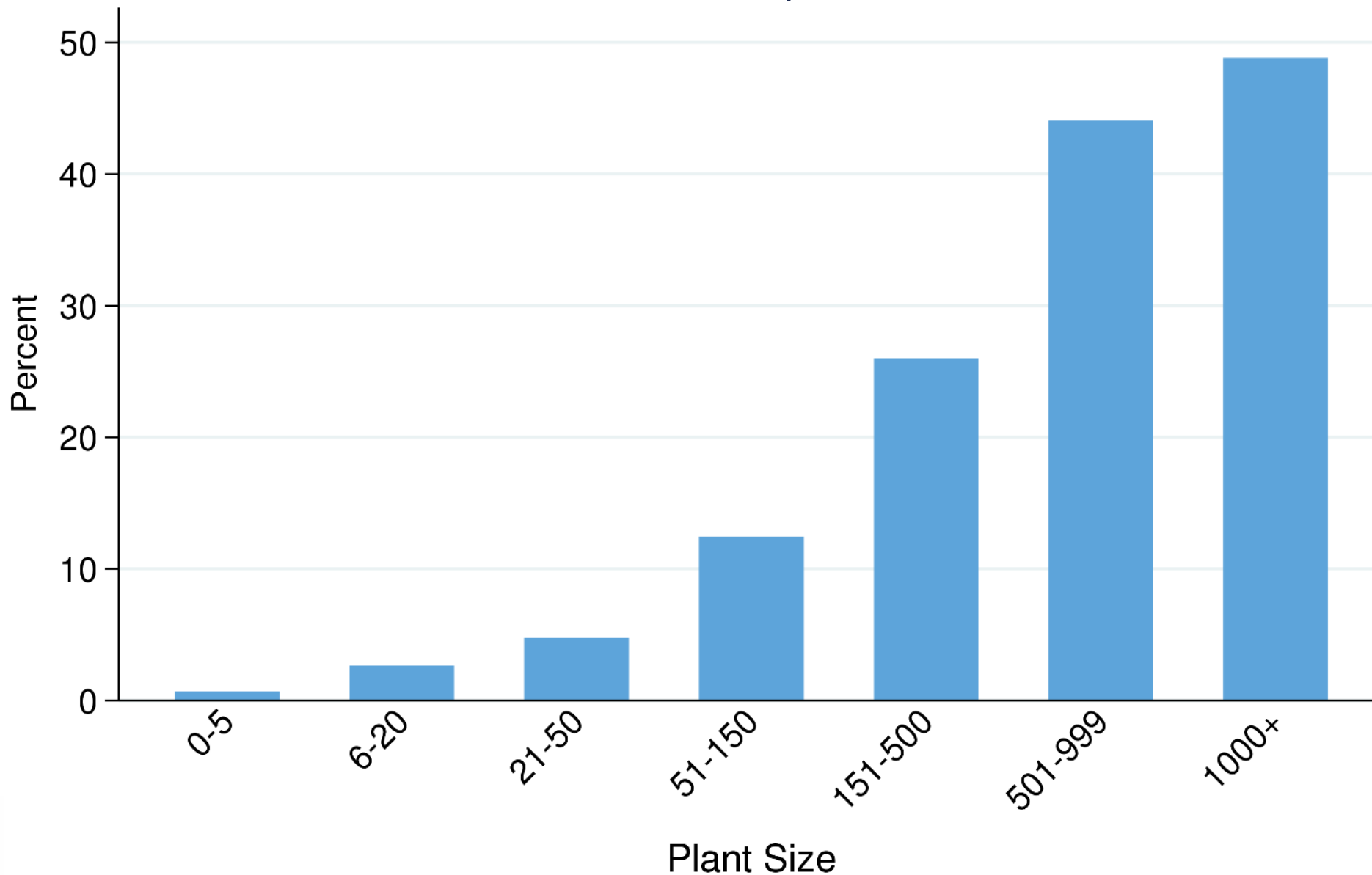(12.5, 16.0]
(10.0, 12.5]
(7.5, 10.0]
(5.0, 7.5]
[0.0, 5.0]

Note: Imputed for Delinquents and Non Response.
Source: U.S. Census Bureau. 2018 Annual Survey of Manufacturers, Experimental Data Product. Some states excluded to avoid the disclosure of sensitive information.

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Share of Plants by Size Groups
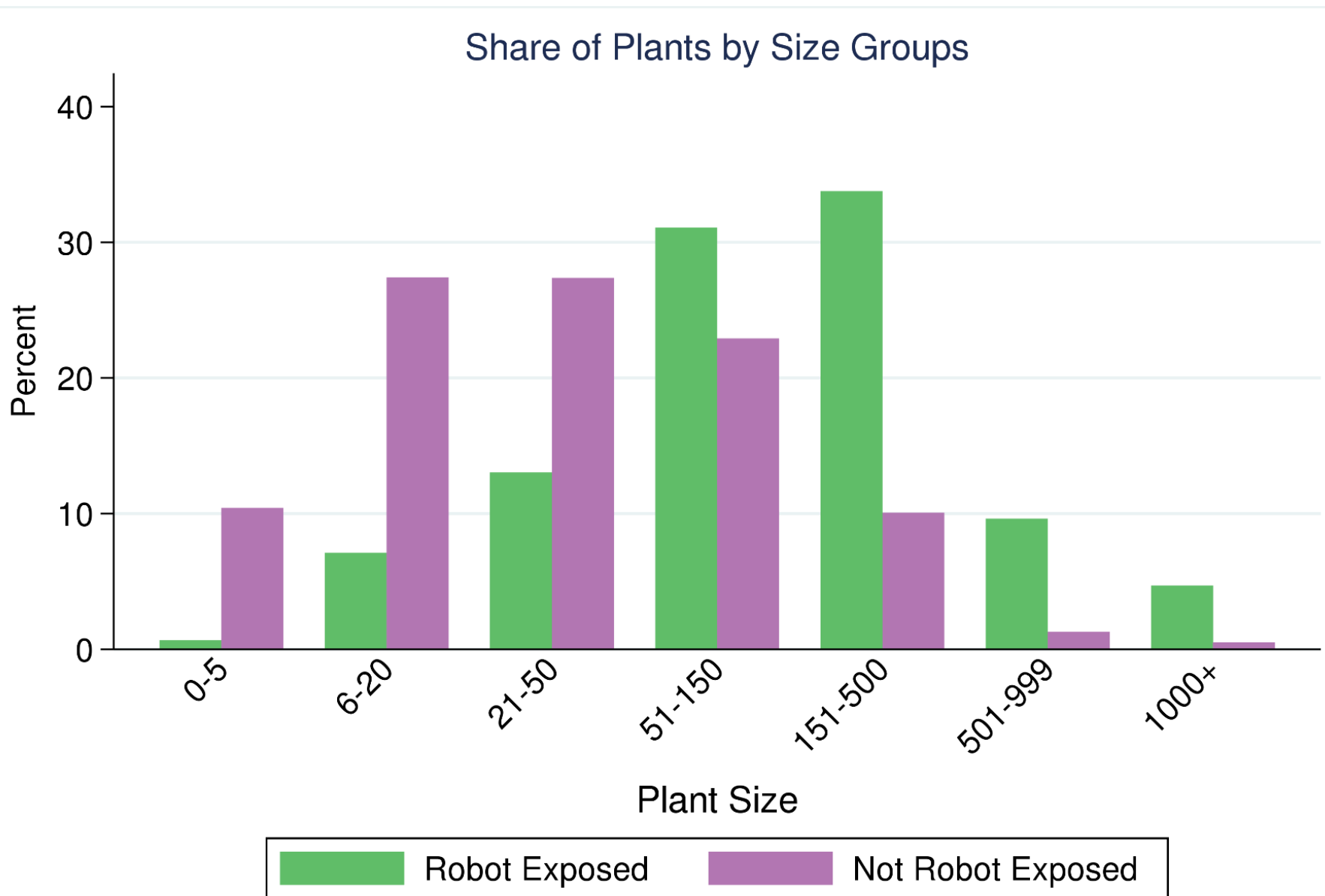
Source: U.S. Census Bureau. 2018 Annual Survey of Manufacturers, Experimental Data Product.

Percent of Plants Exposed to Robots

Source: U.S. Census Bureau. 2018 Annual Survey of Manufacturers, Experimental Data Product.

Next Steps

- Same robotics questions collected for the 2020 and 2021 reference years

- Upcoming experimental product release
    - 2019 Presence of Robots
    - 2018 and 2019 Capital Expenditures for Industrial Robotic Equipment

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Annual Capital Expenditures Survey (ACES)
Measures of Robotic Expenditures

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The Census Bureau has reviewed this data product for unauthorized disclosure of confidential information and has approved the disclosure avoidance practices applied. Approval ID: CBDRB-FY22-158

Motivation/Strategy for Adding the Expenditures for Robotic Equipment Question to the ACES

- Data Gap

  - Growing interest and high demand by researchers, congress, and other stakeholders to measure robotics as part of official government statistics
    - Measures of robot adoption intensity
    - Impact on employment and productivity

- Strategy

  - Collect capital expenditures for both industrial and service robots
  - Ask businesses to provide a description of the types of robotic equipment the company purchased

Data Collection and Tabulation

- Capital expenditures for robotic equipment were collected for the first time on the 2018 survey.

- The robotic equipment expenditures were collected at the company level and not at the industry level on the 2018 and 2019 survey.
  - Therefore, robotic estimates were tabulated based on the NAICS industry assigned to the company at the time of sampling (defined as the primary business activity based on their payroll).

Data Collection and Tabulation for 2020

- Beginning with the 2020 survey, we collected robotic equipment expenditures and the presence of robotic equipment by industry segment.

- Companies were asked to report robotic equipment expenditures for the industries that they had reported capital expenditures for equipment

- Collecting and publishing expenditures at the industry level allows the Census Bureau to provide estimates that reflect the NAICS industries the robotic investments are made in for large companies whose establishments span multiple NAICS codes.

2020 ACES – Question added to Collect Robotic Equipment Expenditures by Industry

ITEM 6B **CAPITAL EXPENDITURES FOR ROBOTIC EQUIPMENT BY INDUSTRY**

Complete Item 6B for each industry in which the company reported capital expenditures for equipment in 2020 in Item 6A .

(Estimates are acceptable).

If "None", enter '0'.

Industry Category Code	ROBOTIC EQUIPMENT EXPENDITURES								
	New Robotic Equipment (1)			Used Robotic Equipment (2)			TOTAL CAPITAL EXPENDITURES FOR ROBOTIC EQUIPMENT (0)		
	Bil	Mil	Thou	Bil	Mil	Thou	Bil	Mil	Thou
Column Totals									

Robotic Expenditures Responses for Companies Reporting Equipment Expenditures

- Of 31,138 total respondents:
  - 24,677 (79.2 percent) reported equipment expenditures

	Percent of Responses
Robotic equipment expenditures > '0'	4.8
Robotic equipment expenditures = '0'	95.2
Total respondents	100.0

Robotic Expenditures Responses by Industry

- 24,677 companies reported equipment expenditures
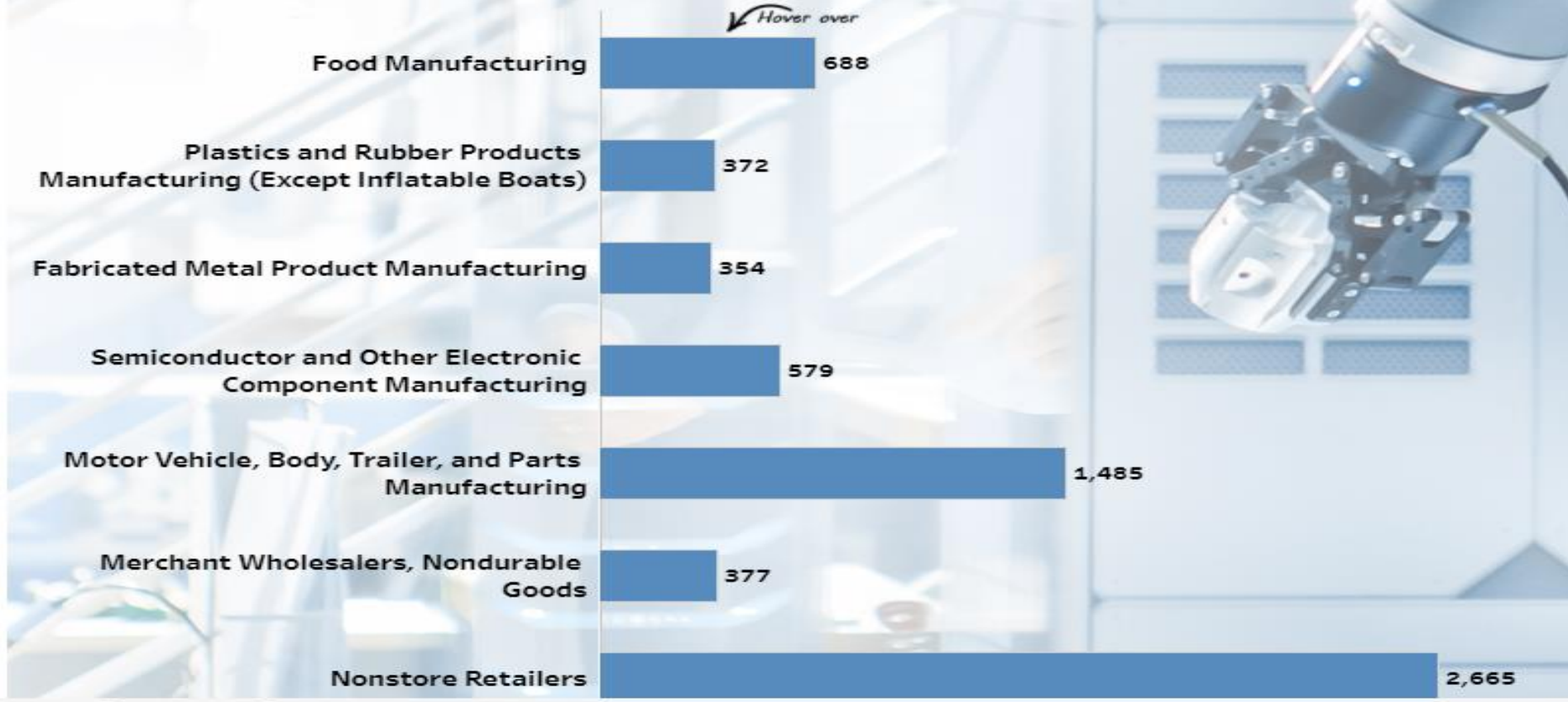- Of those, 1,181 reported robotic equipment expenditures

Number of Industries reported	Percent of Responses
1 – sampled industry	81.1
1 – not sampled industry	11.7
2 or more (included sampled industry)	6.0
2 or more (excluded sampled industry)	1.3
Total	100.0

Capital Expenditures for Robotic Equipment: 2020

- Robotic equipment expenditures in 2020 totaled $9,853 million and accounted for 1.0 percent of total equipment expenditures.

- Three sectors (manufacturing, retail trade, and healthcare and social assistance) accounted for $8,840 (89.7 percent) of total robotic equipment expenditures.

- The Manufacturing sector was the leading investor with $4,944 million and accounted for 50.2 percent of all robotic equipment expenditures.

- The Retail trade sector spent $3,383 million for robotic equipment and accounted for 34.3 percent of all robotic equipment expenditures.

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Robotics Capital Expenditures for Selected Industries: 2020

(In millions of dollars)

Industry	Expenditures
Food Manufacturing	688
Plastics and Rubber Products Manufacturing (Except Inflatable Boats)	372
Fabricated Metal Product Manufacturing	354
Semiconductor and Other Electronic Component Manufacturing	579
Motor Vehicle, Body, Trailer, and Parts Manufacturing	1,485
Merchant Wholesalers, Nondurable Goods	377
Nonstore Retailers	2,665

Source: U.S. Census Bureau, 2020 Annual Capital Expenditures Survey.
Estimates are subject to sampling and non-sampling errors. Order does not imply statistical differences.

CBDRB-FY22-158

Capital Expenditures for Robotic Equipment: 2020

- Five industries invested a total of $3,478 million in robotic equipment and accounted for 70.3 percent of overall spending for robotics in the manufacturing sector.

  - Food manufacturing ($688 million)
  - Plastics and rubber products manufacturing ($372 million)
  - Fabricated metal product manufacturing ($354 million)
  - Semiconductor and other electronic component manufacturing ($579 million)
  - Motor vehicle, body trailer, and parts manufacturing ($1,485 million)

- General medical and surgical hospitals invested $424 million in robotic equipment and accounted for 82.6 percent of overall spending for robotic equipment in the healthcare and social assistance sector.

Annual published estimates

https://www.census.gov/programs-surveys/aces.html

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Questions