### 2022 Ratemaking, Product & Modelling Seminar

# GS-3: Trends in Economic and Demographic Data, and How Could that all Impact Insurance

March 16<sup>th</sup>, 12:30 pm EST

#### **Speakers:**

Kelly Karres, US Census Bureau

Carson Wilson, US Bureau of Labor Statistics

Moderator: Peter Tomopoulos, ACAS, MAAA; Deloitte Consulting



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  or verbal discussions that appear to violate these laws, and to adhere in every respect to the CAS antitrust
  compliance policy.



### Today's Presenters



#### Kelly Karres, Data Dissemination Specialist for NC & SC at the U.S. Census Bureau

- Kelly's current position involves educating the public on the vast array of Census data available on <u>www.census.gov</u>.
- Kelly has worked for the Census Bureau for 14 years.
- University of North Carolina, Bachelor of Arts and a Master of Arts in Sociology.



### Carson Wilson, Economist at the Division of Current Employment Statistics - National, US Bureau of Labor Statistics

- Carson has been with the BLS since 2018
- University of Maryland, BA, Economics
- US Army veteran



#### Peter Tomopoulos, ACAS, MAAA, Senior Manager at Deloitte Consulting

- Peter has 25 years of actuarial experience, with the last 18 years at Deloitte Consulting
- Member, RPM Planning Committee
- The Cooper Union, Bachelor of Science, Mechanical Engineering
- NYU Stern School of Business, Masters of Business Administration, Finance



### Exploring Population and Housing Trends in the U.S.

Casualty Actuarial Society 2022 Ratemaking, Product and Modeling Seminar March 16, 2022

Kelly Karres

U.S. Census Bureau, Data Dissemination and Training Branch

Kelly.karres@census.gov

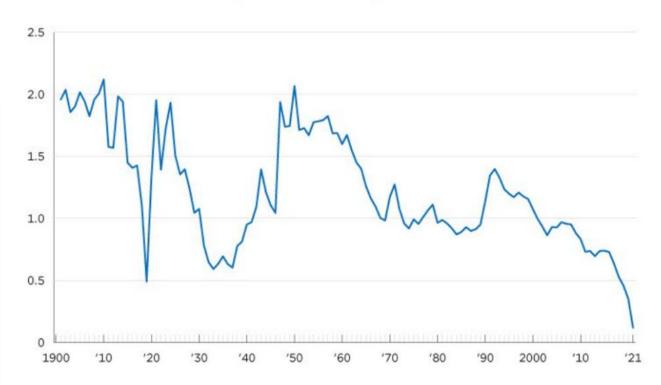




### Outline

- Introduction to the U.S. Census Bureau
- Highlight population and housing trends
- Explore coastline population change







### **Introduction to the U.S. Census Bureau**

- Decennial Census of Population and Housing
- Census of Governments
- Economic Census
- Over 130 ongoing surveys
- Population estimates and projections
- Geographic programs





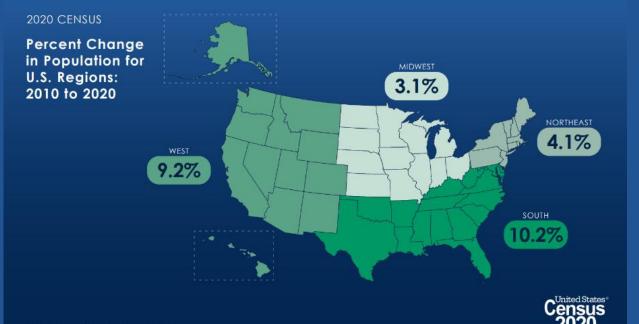
### Population



#### 2020 CENSUS U.S. Population As of April 1, 2020

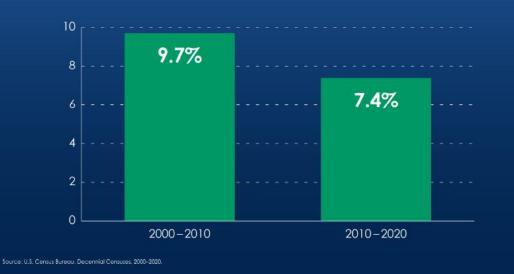
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#### 2020 CENSUS

#### Percent Change in U.S. Population: 2000–2020





10 Most Populous States Ranked Largest to Smallest: 2020

California Texas Florida New York Pennsylvania Illinois Ohio Georgia North Carolina Michigan States in green represent a population between 10 million and 40 million.





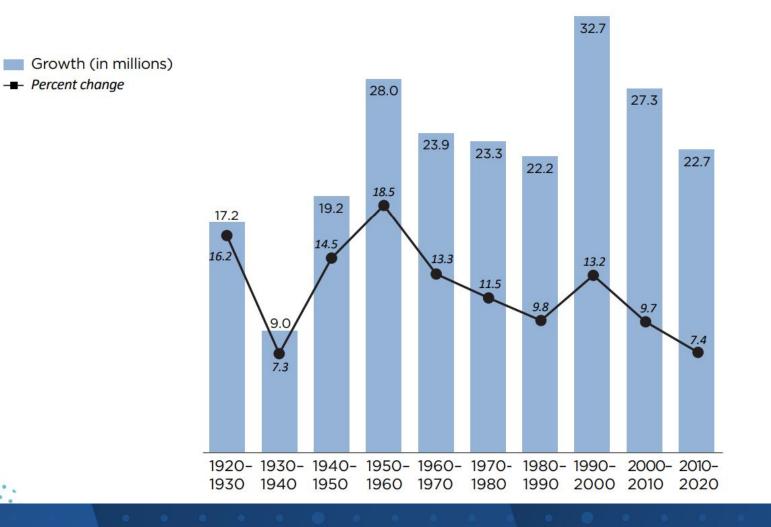
### 2020 Census Interactive Data Visualization



All States	All CBSAs All Counties	View all counties in: Alabama	60			
United States	Total Population (2020): 331,449,281	Numeric Change in Population (2010–2020): 22,703,743		Percent Change in Population (2010–2020): 7.4%		
Click a value to the right to change the map and table.	Housing Units (2020): 140,498,736	Housing Unit Vacancy Rate (20		Percent Change in Housing Units (2010–2020) 6.7%		
-			States and District of Columbia (Ranked by 2020 total population)			
	Population Density in the District of Columbia, and P		1.	California	39,538,223	
			2.	Texas	29,145,505	
		People per square mile           500.0 or more           200.0 to 499.9           100.0 to 199.9           25.0 to 99.9           Less than 25.0	3.	Florida	21,538,187	
				New York	20,201,249	
				Pennsylvania	13,002,700	
			o. 7.	Illinois Ohio	12,812,508	
			8.	Georgia	10,711,908	
			9.	North Carolina	10,439,388	
			10.	Michigan	10,077,331	
			11.	New Jersey	9,288,994	
			12.	Virginia	8,631,393	
			13.	Washington	7,705,281	
				Arizona	7,151,502	
	epartment of Commerce isus BUREAU .gov	Note: Source: U.S. Census But	U.S.	ations and ranking based totals and rankings do n Census Redistricting Da	ot include Puerto Rico.	

Source: U.S. Census Bureau, 2010 Census Redistricting Data (Public Law 94-171) Summary File; 2020 Census Redistricting Data (Public Law 94-171) Summary File;

### U.S. Population Change: 1920–1930 to 2010-2020



Census Bureau

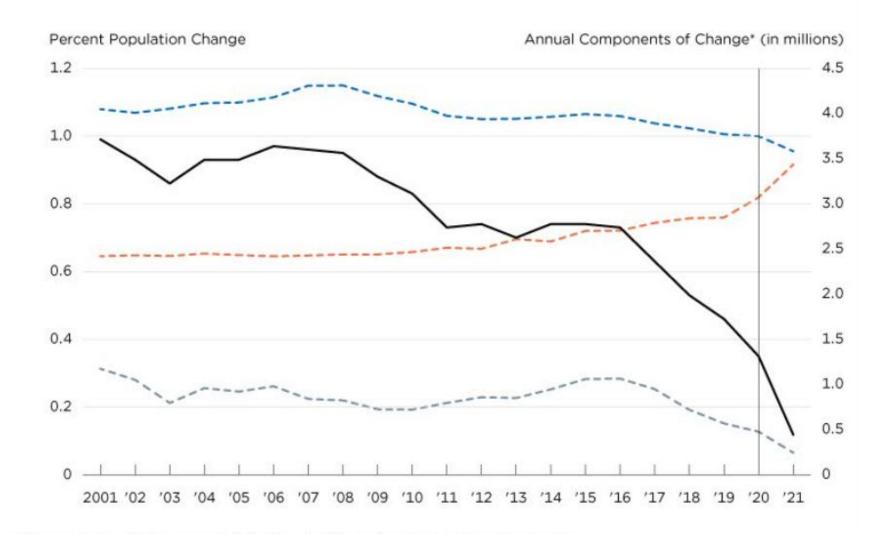


### COVID-19, Declining Birth Rates and International Migration Resulted in Historically Small Population Gains



U.S. Population Grew 0.1% in 2021, Slowest Rate Since Founding of the Nation (census.gov)

#### ----- We Change ---- Births ---- Deaths ---- International Migration



\* Components of change include births, deaths and net international migration. Note: Only data to the right of the line are from Vintage 2021. Source: U.S. Census Bureau, Vintage 2020 Estimates; Vintage 2021 Estimates; 2000-2010 Intercensal Estimates.



**Population Change** 

**Components of** 

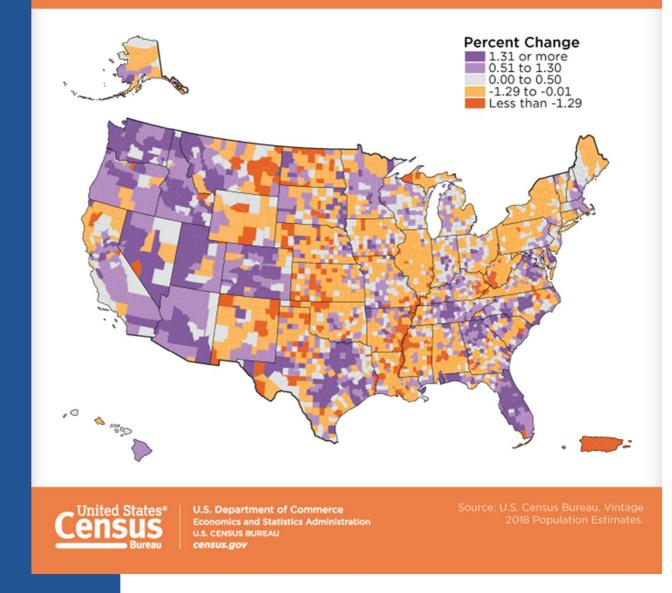
and the

**Change:** 

2001-2020

### Where the Population is Changing

Percent Population Change by County and Municipio, 2017-2018



### Population Change by County: 2017 to 2018



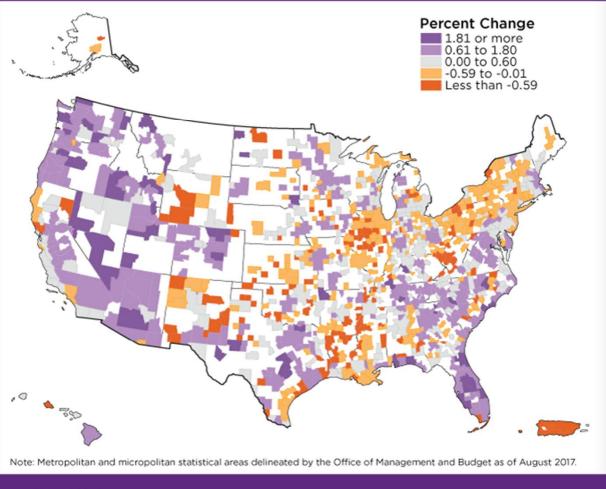
### **Population Change**

by Metro and Micro Areas:

2017 to 2018



Micropolitan Statistical Area, 2017-2018





U.S. Department of Commerce Economics and Statistics Administration U.S. CENSUS BUREAU census.gov Source: U.S. Census Bureau, Vintage 2018 Population Estimates.



Counties in South and West Lead Nation in Population Growth (census.gov)

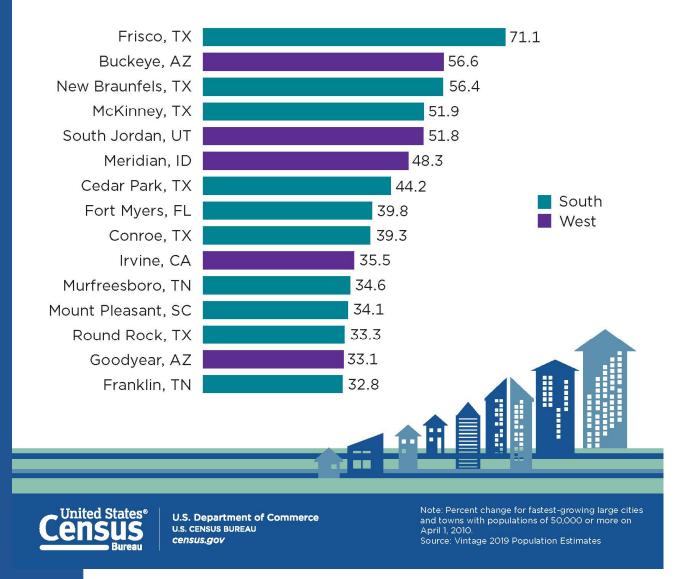
### Fastest-growing cities in

the past decade



### The 15 Fastest-Growing Large Cities

By Percent Change: April 1, 2010-July 1, 2019



North Dakota Colorado District of Columbia Nevada Florida Texas. Utahi Washington Arizona Oregon South Carolina Idaho Georgia **Delaware** North Carolina Montana California Oklahoma







### Population in millions 30 25 20 15 10 5 2000 '01 '05 **'07 '08** '09 '10 '11 12 13 14 2015 '02 '04 ·06 '03

NH White 🔳 NH Black 📕 NH Asian 📕 NH Other 🔳 Hispanic



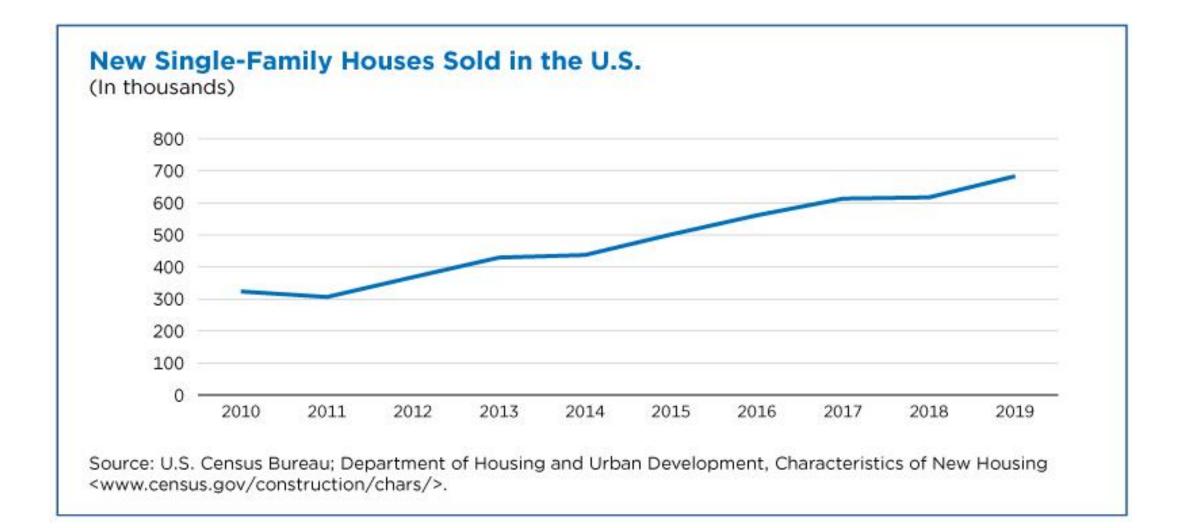
Source: U.S. Census Bureau, 2000-2010 Intercensal Population Estimates and Vintage 2015 Population Estimates.

Year (July 1st)

#### Texas Population, by Race and Hispanic Origin, 2000 to 2015

### Housing



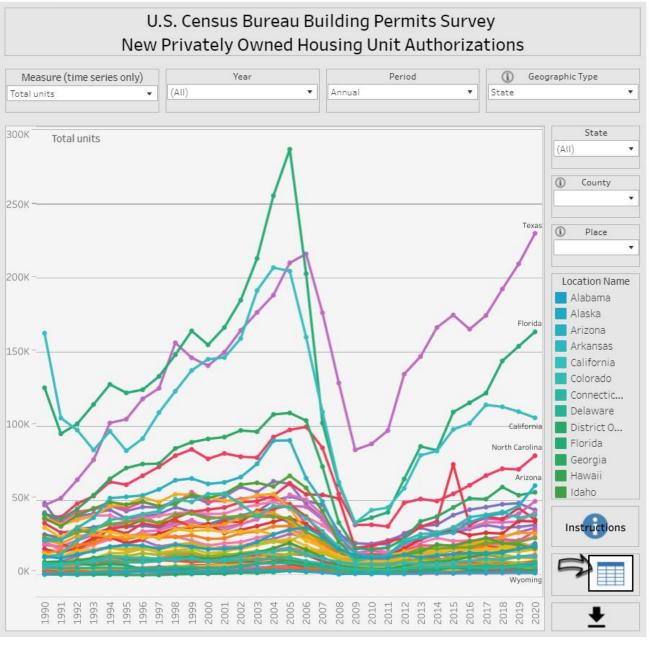




DECEMBER 23, 2021



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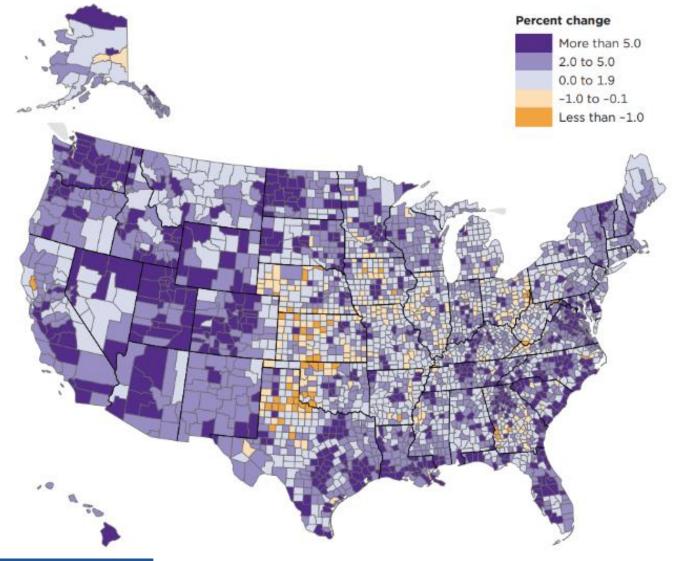


Growing housing units reflect needs of current and new residents



### Where Housing Units Are Changing

Housing Unit Percent Change by County 2010 to 2018



American Housing Survey (AHS) (census.gov)

#### 10 Central Counties of Metropolitan Areas With Largest Percent Growth in Housing Units

County	Core Based Statistical Area (CBSA)	State	2020 Census count of housing units	Net change in housing units (2020-2010)	Percent change (2020-2010)
Hays County	Austin-Round Rock-Georgetown, TX	Texas	93,534	34,117	57.4
Dallas County	Des Moines-West Des Moines, IA	lowa	41,125	13,865	50.9
Comal County	San Antonio-New Braunfels, TX	Texas	69,939	22,831	48.5
Lincoln County	Sioux Falls, SD	South Dakota	26,227	8,352	46.7
Williamson County	Austin-Round Rock-Georgetown, TX	Texas	237,680	74,907	46.0
Sumter County	The Villages, FL	Florida	75,304	22,278	42.0
Fort Bend County	Houston-The Woodlands-Sugar Land, TX	Texas	277,910	80,880	41.0
Bryan County	Savannah, GA	Georgia	16,703	4,861	41.0
Broomfield County	Denver-Aurora-Lakewood, CO	Colorado	31,298	8,652	38.2
Rockwall County	Dallas-Fort Worth-Arlington, TX	Texas	38,219	10,280	36.8

Source: U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171) Summary File.



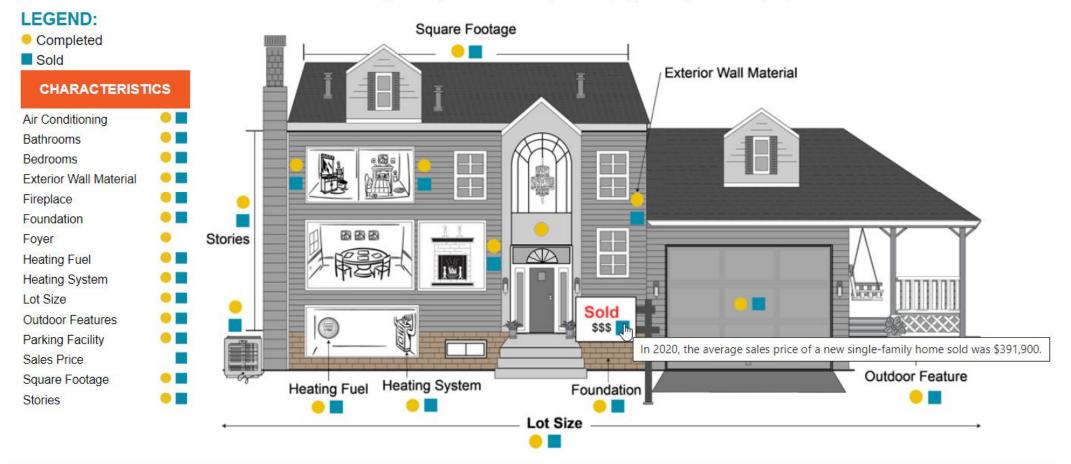


### **New Single-family Homes in 2020**

Do you know how many new homes constructed in 2020 had four bedrooms or more? What about the average price of a new home sold in 2020?

You can discover the answers by exploring the interactive house below, which highlights annual data from the Survey of Construction. All characteristics data, including estimates for new multifamily housing, are on our <u>Characteristics of New Housing</u> page.

All estimates are based on sample surveys and are thus subject to sampling variability and nonsampling error.

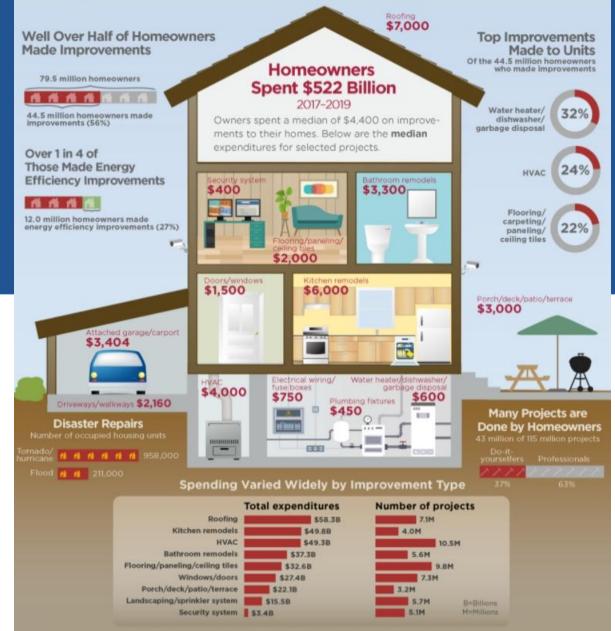


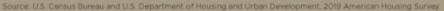


U.S. Department of Commerce U.S. CENSUS BUREAU <u>census.gov</u> U.S. Department of Housing and Urban Development OFFICE OF POLICY DEVELOPMENT AND RESEARCH <u>hud.gov</u>

CENSUS.GOV

### HOME IMPROVEMENTS



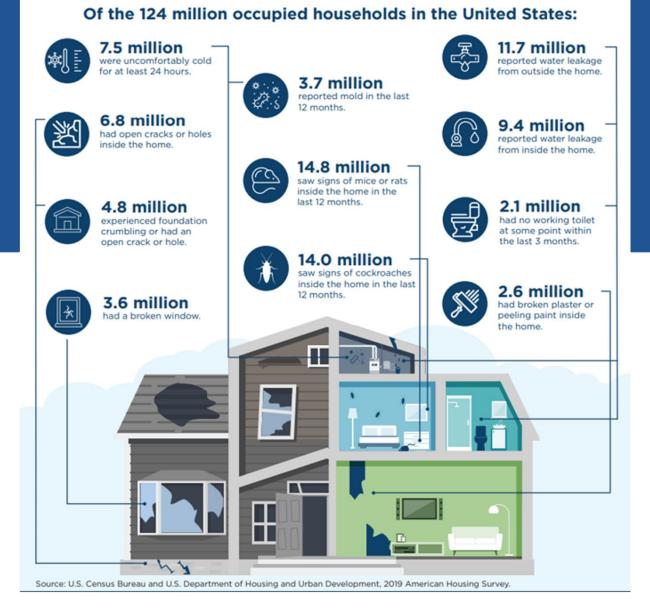


2019 Home Improvements (census.gov)





One primary purpose of the American Housing Survey (AHS), sponsored by the U.S. Department of Housing and Urban Development (HUD), is to track the quality of the housing units that American households call home. Housing quality data from the AHS make it possible for HUD to assess progress towards the national goal of a decent home and a suitable living environment for every American family. The AHS collects more than 100 items related to quality.



AHS-Housing Qualities-FINAL\_pdf (census.gov)



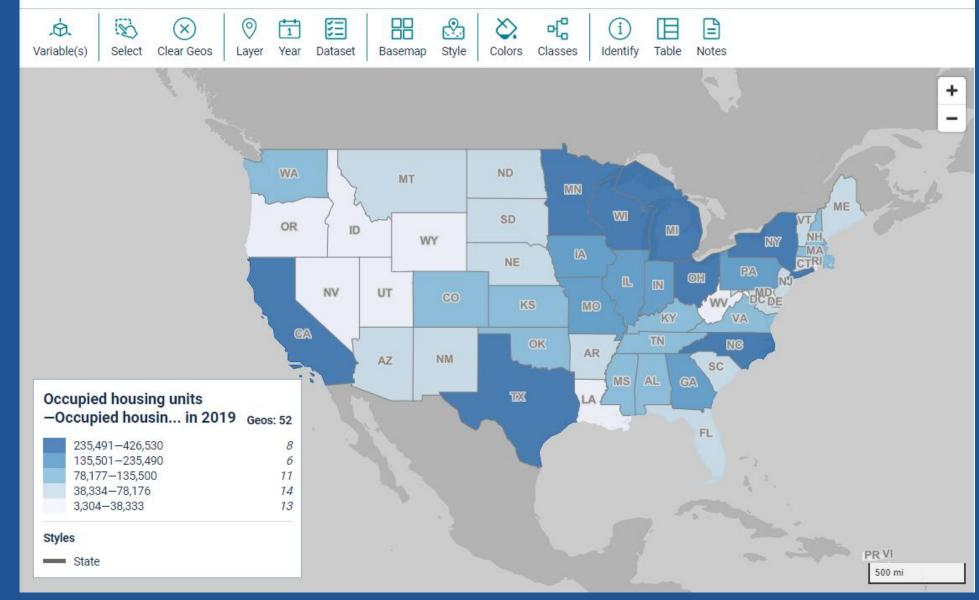
American Community Survey

United States®

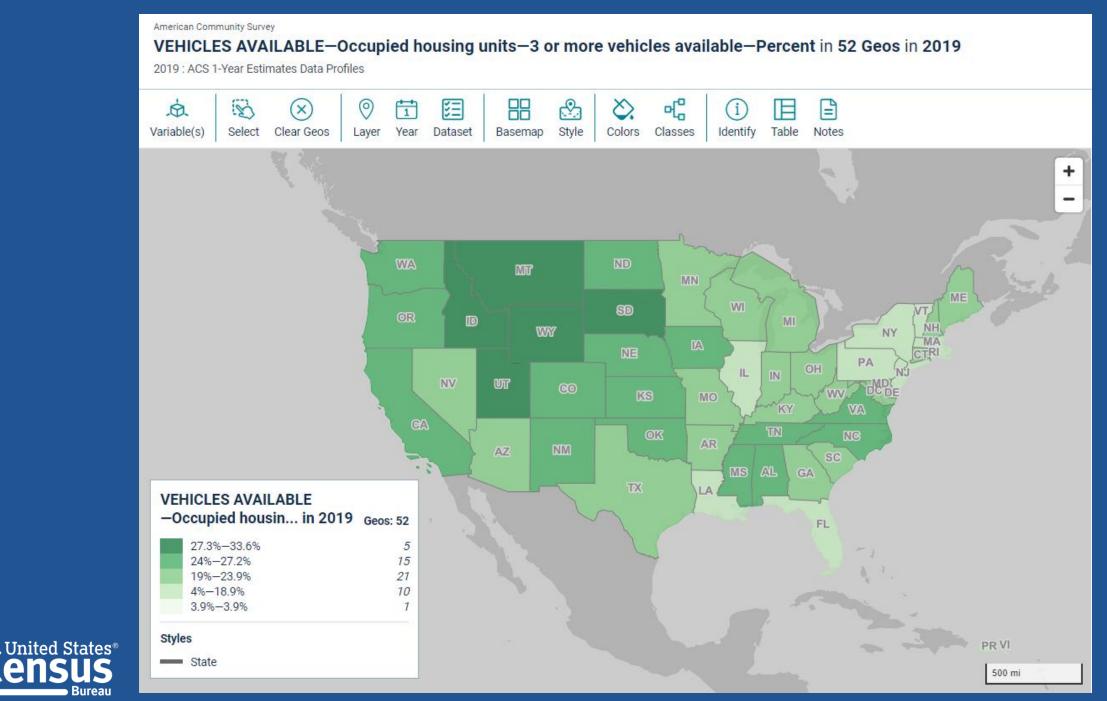
Bureau

Occupied housing units—Occupied housing units—HOUSE HEATING FUEL—Bottled, tank, or LP gas—Estimate in 52 Geos in 2019

2019 : ACS 1-Year Estimates Subject Tables



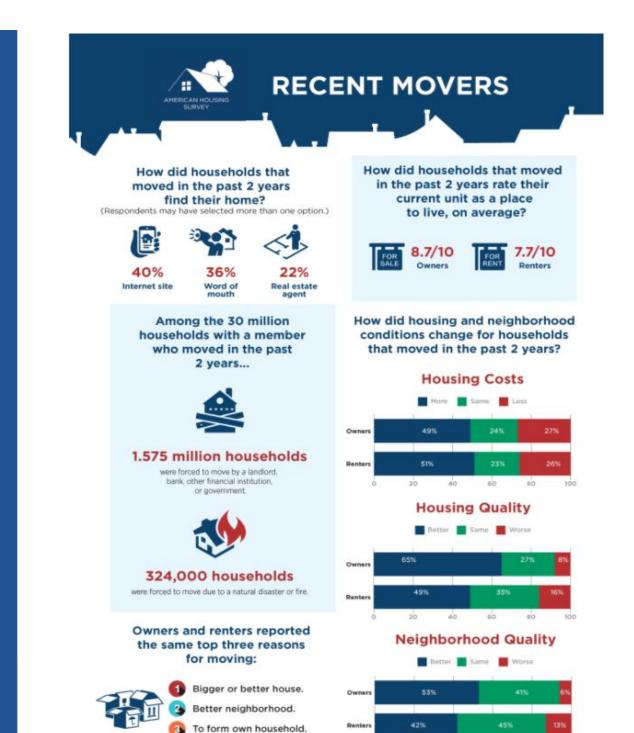




Census - Map Results

### **Statistics from recent movers**





Source: U.S. Census Bureau and U.S. Department of Housing and Urban Development, 2019 American Housing Survey.

### **Growth on the Coast**



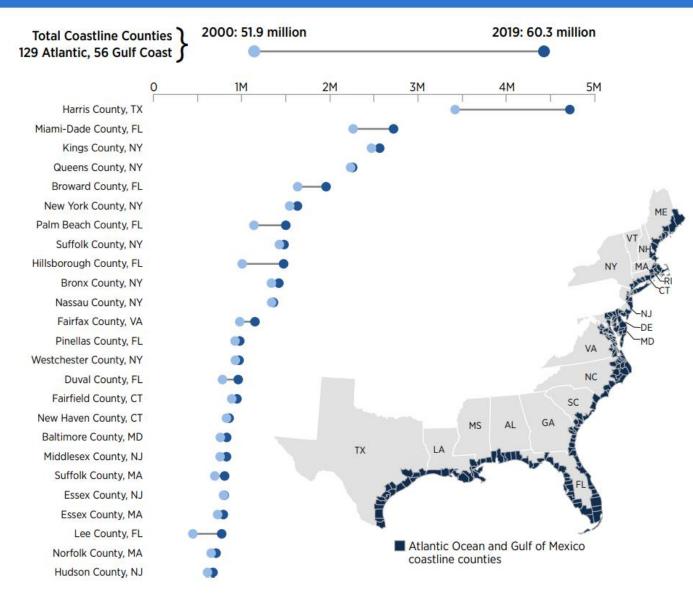


# 60 Million Live in the Path of Hurricanes



### Growth on the Coast

Changes in Population of the 25 Most Populous Atlantic and Gulf Coastline Counties: 2000 to 2019



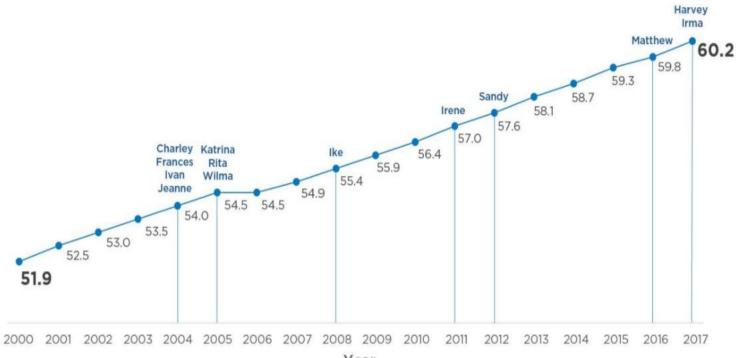


### **Atlantic and Gulf Coast Counties**

The population in the Atlantic and Gulf of Mexico regions—those most vulnerable to hurricanes—increased from 51.9 million in 2000 to 60.2 million in 2017 (8.3 million, or 16.0 percent). The population in these regions grew every year during the period, with the exception of 2005 to 2006, a year marked by an intense hurricane season that included three of the costliest hurricanes on record (Katrina, Rita, and Wilma). Of note, Hurricane Maria caused an estimated \$91.8 billion in damages in Puerto Rico and the U.S. Virgin Islands in 2017, but is not shown on the charts below as it did not make landfall in the continental United States.

#### Atlantic and Gulf of Mexico Coastline County Population: 2000-2017

(In millions. Also shown, by year, are U.S. landfalling hurricanes that caused \$10 billion or more in damages)

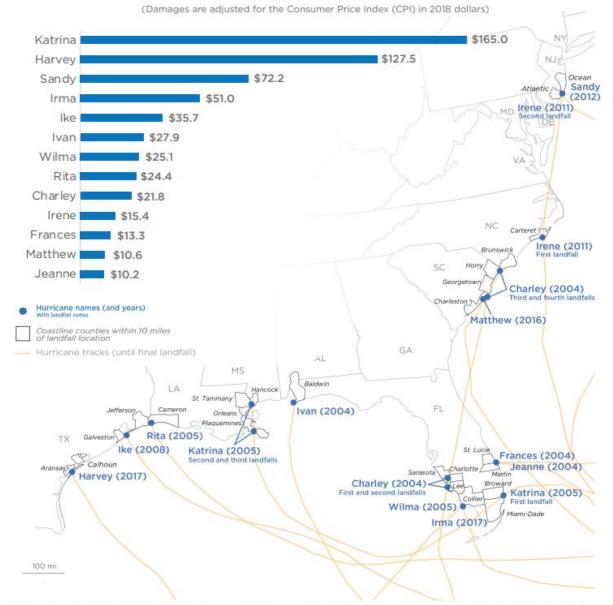




#### **Impact of Atlantic Hurricanes**

From 2000 to 2017, 13 hurricanes that made landfall in Atlantic and Gulf of Mexico coastline counties caused more than \$600 billion in damage in the United States. Seven of those hurricanes occurred in two successive years, 2004 and 2005.

Hurricanes That Caused \$10 Billion or More in Damages



Coastline America (census.gov)



Sources: National Climatic Data Center <www.ncdc.noaa.gov/billions>; National Hurricane Center <www.nhc.noaa.gov/data>.

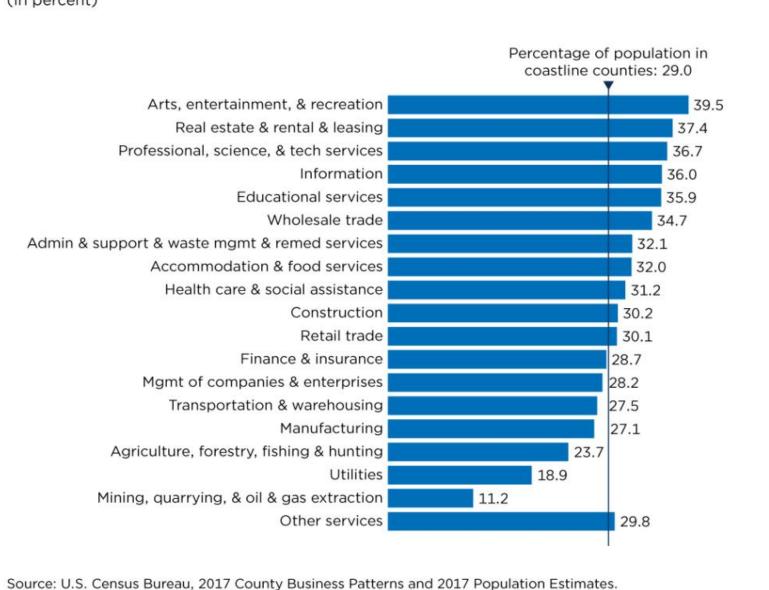
### **About 2.4 Million**

**Businesses are in Areas** 

**Most Vulnerable to** 

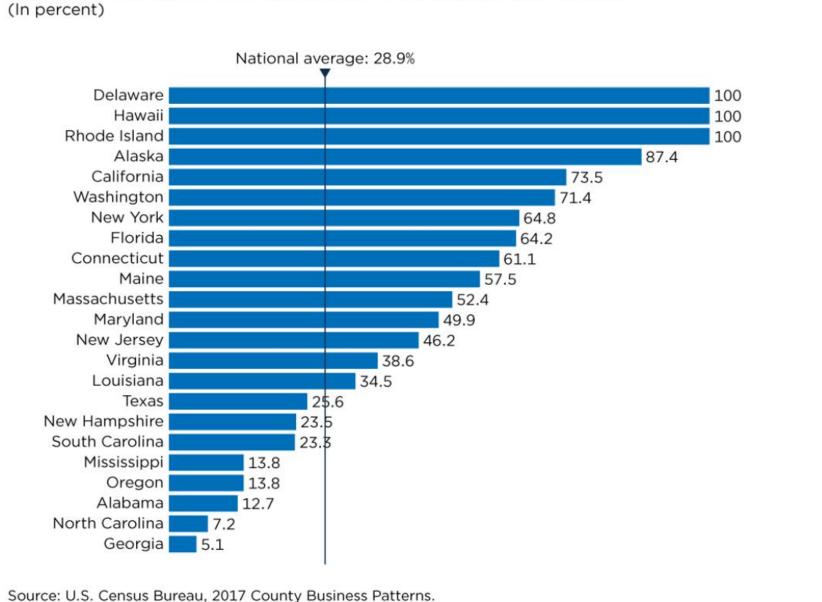
Hurricanes





Share of all Employer Establishments in Coastline Counties by Sector: 2017 (In percent)

A Look at Businesses in Coastline Counties During Hurricane Season (census.gov)



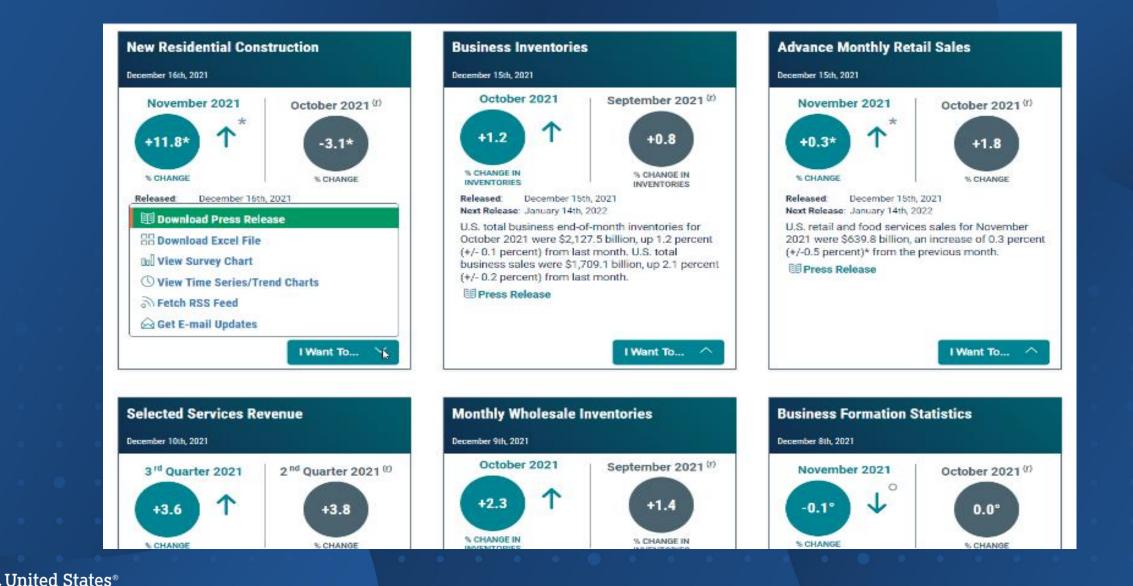
#### Share of Employment in Coastline Counties by State: 2017 (In percent)



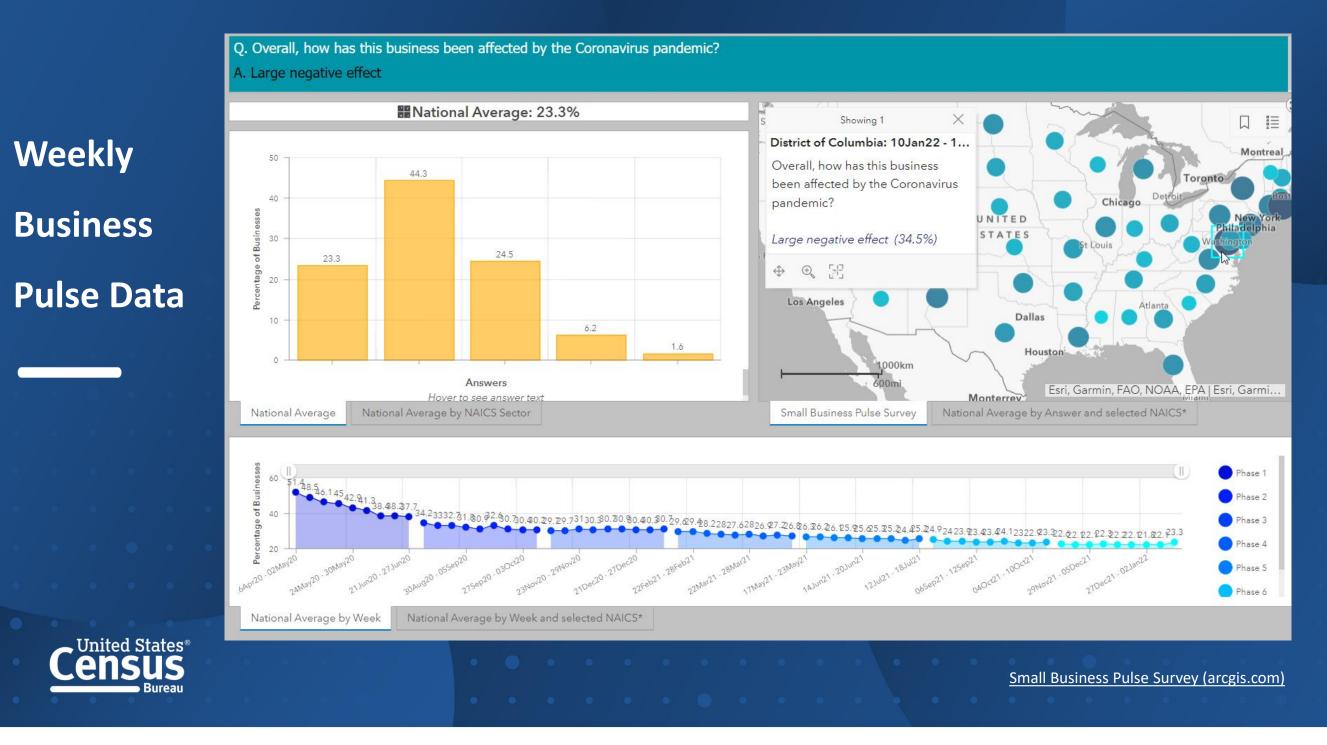
A Look at Businesses in Coastline Counties During Hurricane Season (census.gov)

### **Economic Indicators**

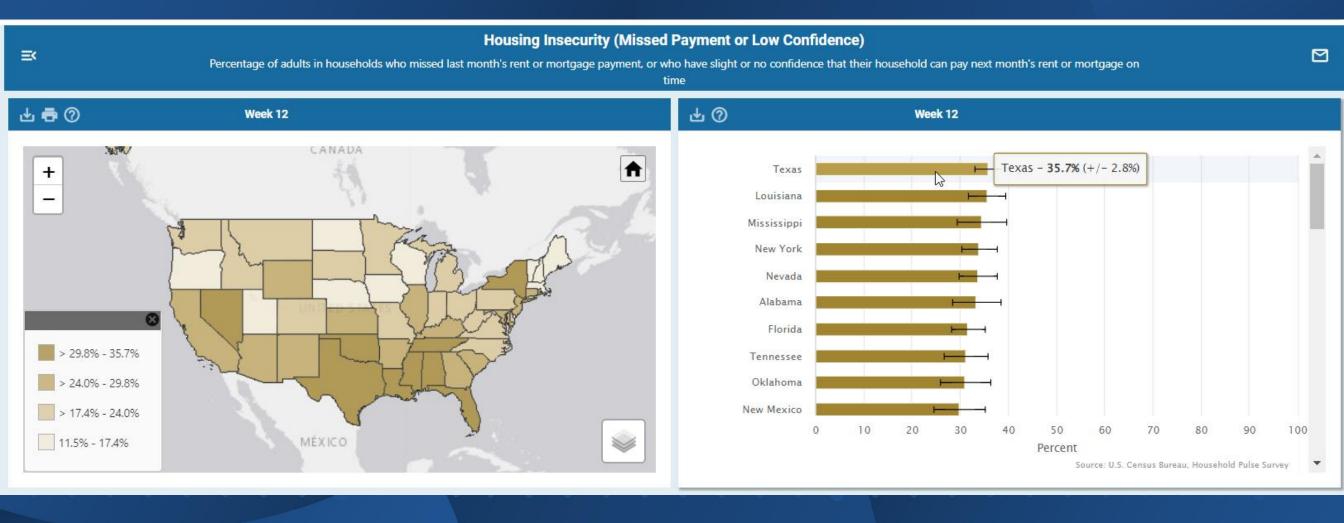
Bureau



U.S. Census Bureau Economic Indicators



### Weekly Household Pulse Data





Household Pulse Survey (census.gov)

### **Resources on Census.gov**

- <u>Population (census.gov)</u>
- Housing (census.gov)
- <u>Migration/Geographic Mobility (census.gov)</u>
- America Counts: Stories Behind the Numbers (census.gov)
- Business and Economy (census.gov)
- Data Tools and Apps (census.gov)
- Explore Census Data
- U.S. Census Bureau QuickFacts: United States
- STATE PROFILES: 2020 Census



### **Data Dissemination and Training**

✓ Bring our data experts to you.
 <u>Request</u> a free data training for your organization.

#### ✓ Receive our <u>Data Gems</u>.

These short "how-to" videos are an easy and quick way to increase your knowledge of Census data. Get them in your inbox!

#### ✓ Get access to our <u>Courses</u>.

You will learn-at-your-own-pace with these video-tutorials designed for different skill levels.

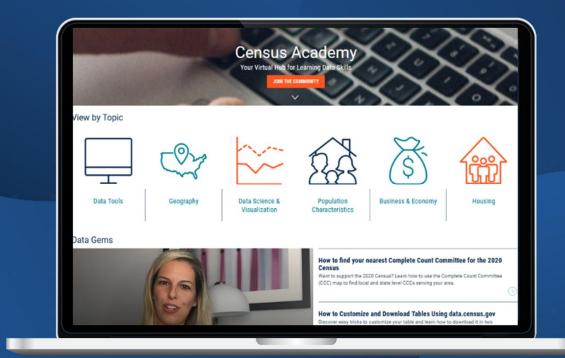
#### ✓ Interact with our instructors via <u>Webinars</u>.

Learn about our data releases and tools while attending these live virtual classes.



Census Bureau

### Census.gov/Academy



Contact us: Census.askdata@census.gov 1-844-ASK-DATA

Share your ideas and feedback at census.academy@census.gov

### Get in Touch with Us

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Current Employment Statistics Survey A Federal-State Cooperative Program

Casualty Actuarial Society 2022 Ratemaking, Product and Modeling Seminar March 16<sup>th</sup> Trends in Economic and Demographic Data

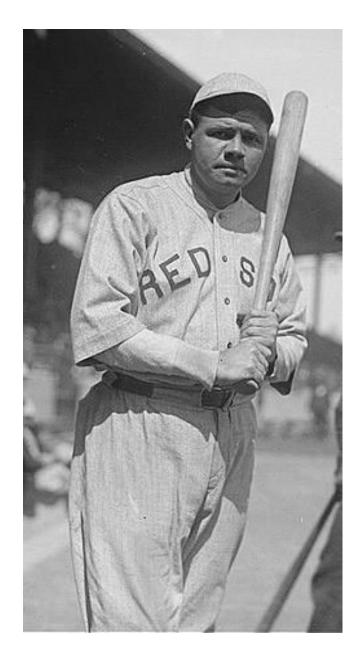
#### **Carson Wilson**

Economist Current Employment Statistics U.S. Bureau of Labor Statistics

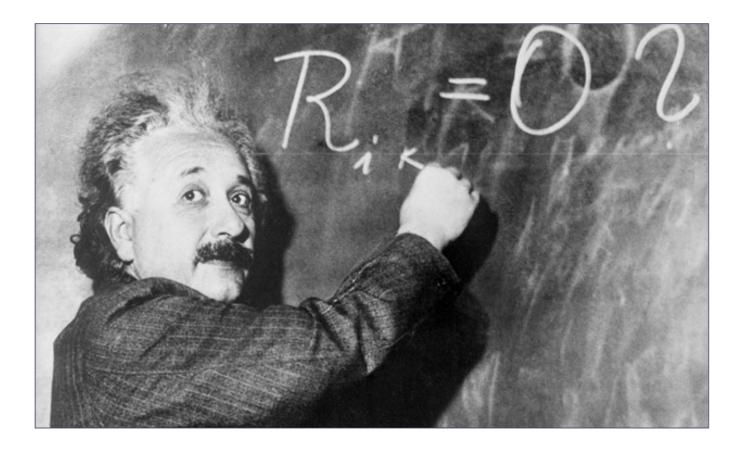














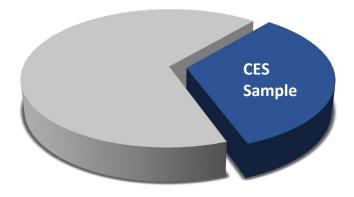
# **Seminar Objectives**

- Overview of the CES program
- CES sampling
- Data collection and flows
- Microdata and estimate review
- Seasonal adjustment
- Benchmarking and birth/death
- News releases



# What is the CES survey?

- Monthly payroll survey
- 131,000 nonfarm businesses and government agencies
- 670,000 worksites
- One-third of all jobs





### **CES** Mission

### Accurate, timely, objective, and relevant data industry employment, hours, and earnings national, state, and metropolitan areas.





### Accuracy

Revised monthly estimates to incorporate additional sample
 Annual benchmarks
 Updating methods to improve accuracy



### **Program Improvements**

- Quarterly sample rotation
- Data collection capacity expanded
- Centralized state and area estimation
- Alternative estimation methods for cells with little sample
- Quarterly net birth/death updates
- Probability sample design



# Timeliness—It's all in the name

- Reference period: Pay period including 12<sup>th</sup> of the month
- Published on the 3<sup>rd</sup>
   Friday after the week of the 12<sup>th</sup>





### **Timeliness—It's all in the Name**

# CES release schedules driven by other programs' schedules

Release	CES Data	Other Program	News Release Timing	
Employment Situation	National	CPS	3rd Friday after the week of the 12 <sup>th</sup>	
Real Earnings	Inflation adjusted national earnings	СРІ	Concurrent with the CPI release	
Regional and State Employment and Unemployment	State	LAUS	5th week after the week of the 12 <sup>th</sup>	
Metropolitan Area Employment and Unemployment	MSA	LAUS	About 7 weeks after the week of the 12th	



### Relevance

Principal Federal Economic Indicators:
 Employment Situation
 Real Earnings

 "The employment situation is the primary monthly indicator of aggregate economic activity because it encompasses all major sectors of the economy..." -Wall Street Journal





# **Origin of Today's CES**

NUMBER OF EMPLOYEES AND AMOUNT OF EARNINGS IN IDENTICAL ESTABLISH-MENTS IN CERTAIN INDUSTRIES DURING ONE WEEK OF OCTOBER AND NOVEM-BER, 1915.

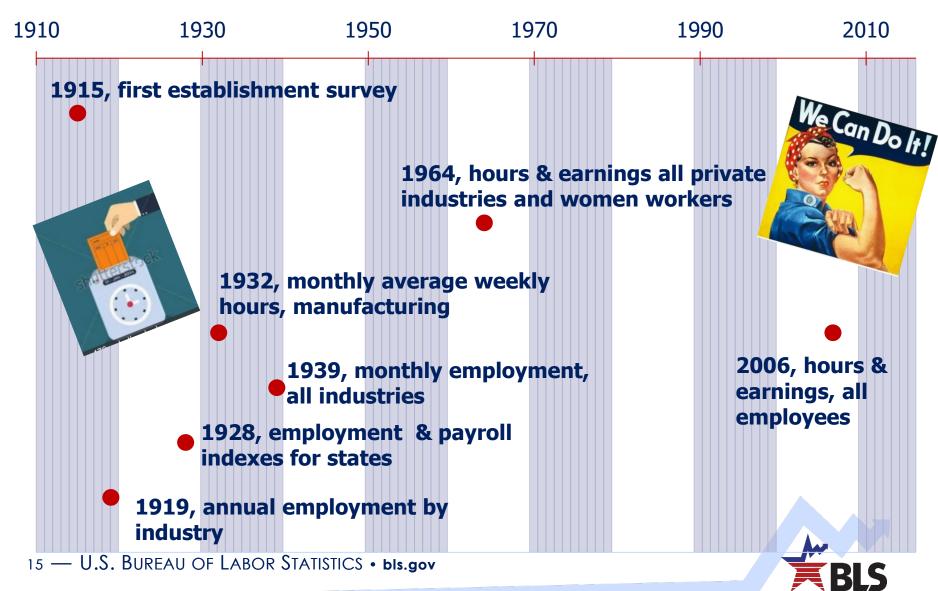
Industry.	Estab- lish- ments report- ing.	Employees.			Earnings.		
		Number on pay roll in-		Per cent	Amount of pay roll in-		Per cent
		October.	November.	crease (+) or de- crease (-).	October.	November.	crease (+) or de- crease (-).
Boots and shoes Cotton goods Cotton finishing Hosiery and underwear Iron and steel	66 56 14 57 65	54, 517 44, 655 12, 422 30, 494	57, 551 44, 518 12, 548 30, 836 104, 782	+5.6 3 +.1 +1.1	\$688, 724 338, 079 136, 349 274, 851	\$752, 578 349, 371 138, 207 278, 690 1, 664, 189	+9.3 +3.3 +1.4 +1.4

# **Employment Series**

- All Employees
- Women employees
- Production and nonsupervisory employees
  - Production workers in goods producing industries
  - Nonsupervisory workers in private serviceproviding industries



# **Expanding Series and Industry Details**



# To inform the Nation

### Four monthly News Releases

- LABSTAT database updates
- CES Highlights
- Analytical tables and interactive charts
- Analytical and technical research papersDocumentation



# Why follow CES data?

- Evaluate current health of the economy
- Fiscal and monetary policy, informed decision making, and revenue forecasting
- Identify inflation trends



# Uses and users of CES data

- Identify business cycle turning points
- Investors and economic forecasters
- Economic research, academic and business

News media

#### Employment in total nonfarm January 2012–January 2022 Seasonally adjusted, in thousands



Bureau of Labor Statistics, Current Employment Statistics survey, February 04, 2022. Shaded area represents recession as denoted by the National Bureau of Economic Research. Most recent 2 months of data are preliminary.

\* denotes significance.



## Input into other economic data

- Industrial production (Federal Reserve)Personal income (BEA)
- Indexes of leading and coincident economic indicators (Conference Board)



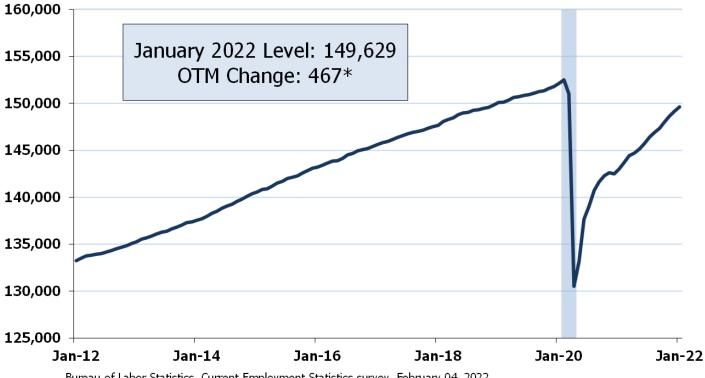
## Input into BLS economic data

- Job Openings and Labor Turnover
- Local Area Unemployment Statistics
- Employment Projections
- Productivity, Labor and Multifactor
- Employer Costs for Employee Compensation



# What does CES tell us today?

# Employment in total nonfarm January 2012–January 2022 Seasonally adjusted, in thousands



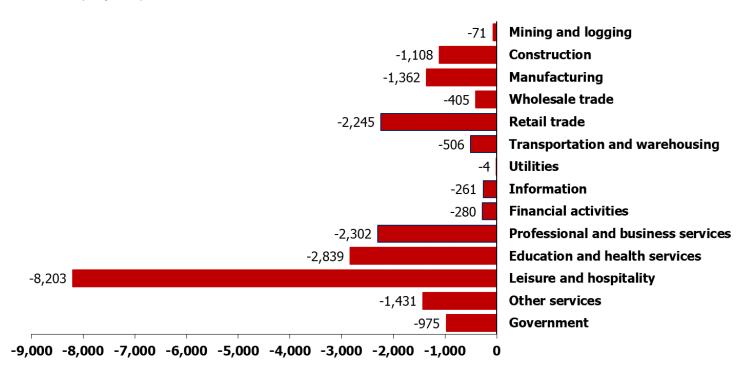
Bureau of Labor Statistics, Current Employment Statistics survey, February 04, 2022. Shaded area represents recession as denoted by the National Bureau of Economic Research. Most recent 2 months of data are preliminary. \* denotes significance.

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## What does CES tell us today?

#### Employment in total nonfarm

Change from February 2020 – April 2020 Seasonally adjusted, in thousands Total nonfarm-21,991Total private-21,016



Bureau of Labor Statistics, Current Employment Statistics survey

# BLS

# What does CES tell us today?

#### Employment in total nonfarm

Change since February 2020 Percent Seasonally adjusted, in thousands rec o vered. No recovery Mining and logging -104 91-101 Construction **Total nonfarm** -2,875 83 **Total private** -2,140 -226 Manufacturing 69 -125 Wholesale trade 103 61 **Retail trade** 207 542 Transportation and warehousing No recovery -9 Utilities 112 31 Information 102 5 Financial activities 511 Professional and business service: 172 -645 Education and health services 77 -1.750 Leisure and hospitality 79 -330 Other services 77 -735 Government 2.5 -2,400 -2,000 -1,600 -1,200 -800 -400 0 400 800

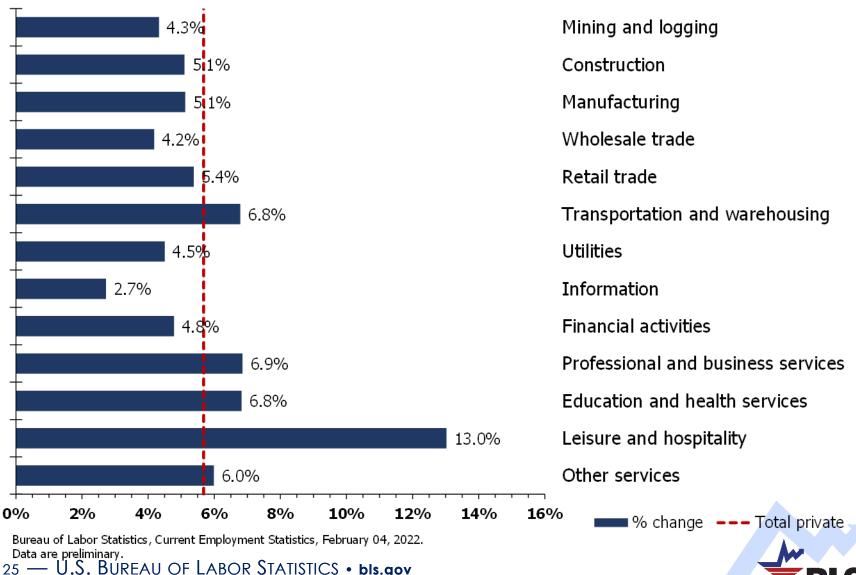
Bureau of Labor Statistics, Current Employment Statistics survey February 04, 2022 Data are preliminary.

# BLS

#### Average hourly earnings, all employees, and CPI–U\* January 2007–January 2022 Seasonally adjusted



#### Average hourly earnings for all employees Over-the-year percent change, January 2021–January 2022 Seasonally adjusted

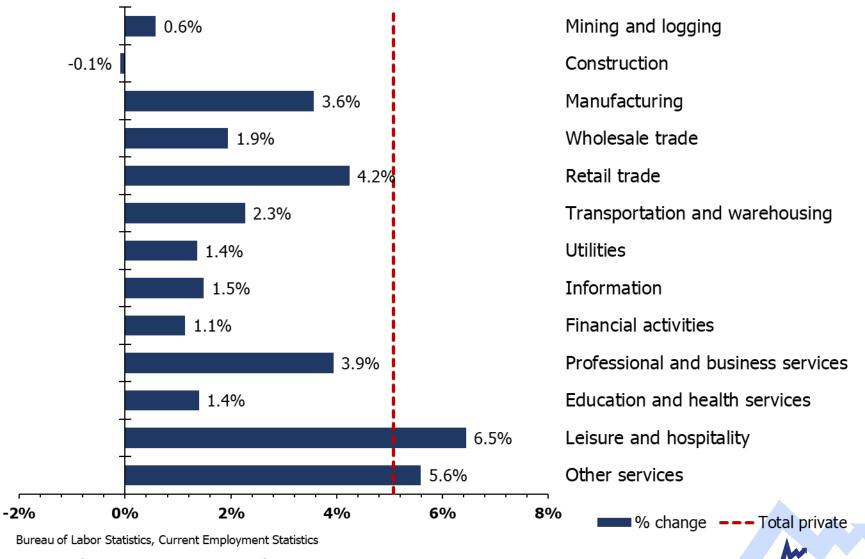


Total private:

5.7%

#### Average hourly earnings for all employees Percent change, February 2020–April 2020

Seasonally adjusted

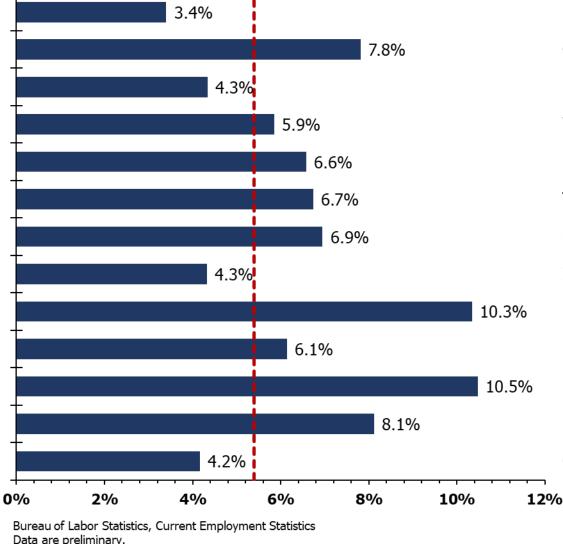


Total private:

5.1%

#### Average hourly earnings for all employees Percent change, April 2020–January 2022

Seasonally adjusted



Data are preliminary. 27 — U.S. BUREAU OF LABOR STATISTICS • bls.gov Mining and logging

Construction

Manufacturing

Wholesale trade

Retail trade

Transportation and warehousing

Utilities

Information

6 Financial activities

Professional and business services

% change --- Total private

6 Education and health services

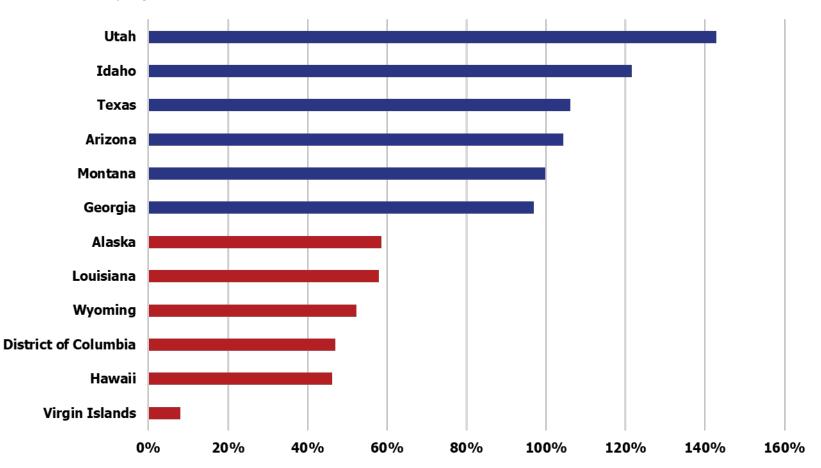
Leisure and hospitality

Other services

### Employment recovery from COVID-19 in selected states

#### Percent recovered since April 2020 Seasonally adjusted

Nationwide: 85%



Bureau of Labor Statistics, Current Employment Statistics Data are preliminary. 100% indicates state's net employment change (recovery) from April 2020 through December 2021

exceeded employment losses from February to April 2020.



### **Current Employment Statistics (CES) Survey**

CES - National bls.gov/ces cesinfo@bls.gov (202) 691-6555

#### CES - State and Metro Area bls.gov/sae sminfo@bls.gov (202) 691-6559

#### **Upcoming releases**

The Employment Situation: April 1<sup>st</sup> Real Earnings: April 12<sup>th</sup>

#### **Upcoming releases**

Metro: March 18<sup>th</sup> State: March 25<sup>th</sup>

#### **Carson Wilson**

Economist Current Employment Statistics - National U.S. Bureau of Labor Statistics

Refer to the right the video presentation of the session,

- → Text chat window with Q&A and Chat.
- ➔ To ask any question, please make sure to enter your name before commenting and asking questions in the Q&A tab.

