



CHMURA

Reopening the Post-COVID Economy

Webinar

May 8, 2020

Meet Our Speakers



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Who is Chmura?

Nationally renowned economic consultant and provider of software and data solutions

Offices in Richmond and Cleveland

We are driven by client satisfaction and success

Founded in 1998 by Christine Chmura, PhD.



We are economists, data scientists, statisticians, and business professionals



We focus on quality, innovation, and customer service

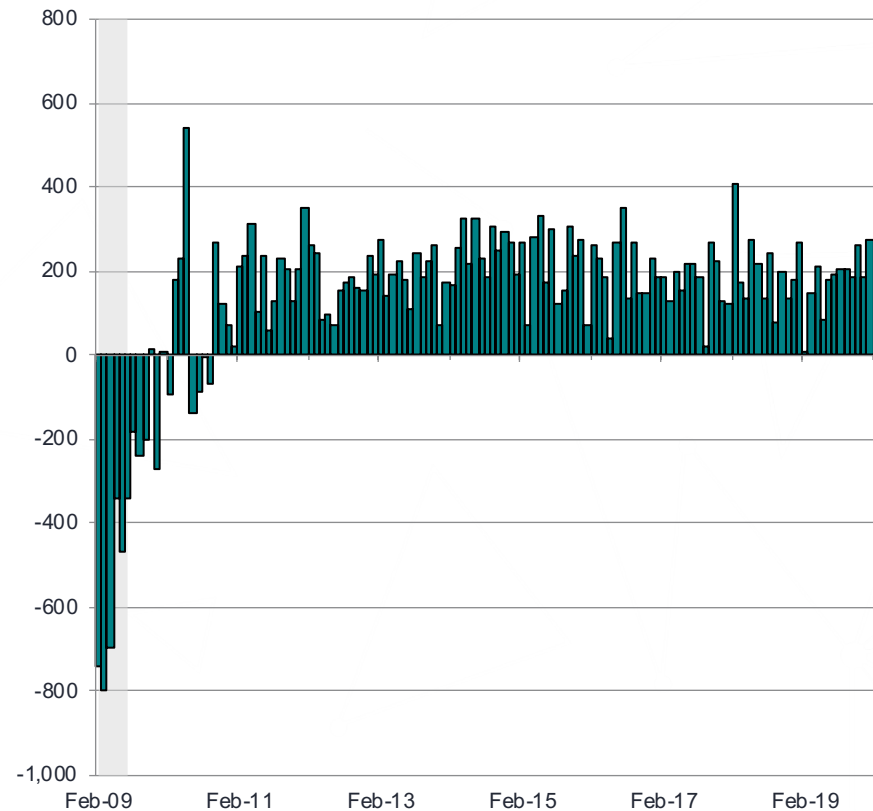
The COVID-19 Crisis

- COVID-19 Crisis in the United States
 - Stage 1: Supply shock
 - Nonessential businesses close
 - Citizens asked to stay at home
 - Stage 2: Demand shock
 - States lift restrictions
 - Not all industries fully operational
 - Vaccine
 - Regional Issues Vary Depending on
 - Spread of COVID-19
 - Type of industries in the region
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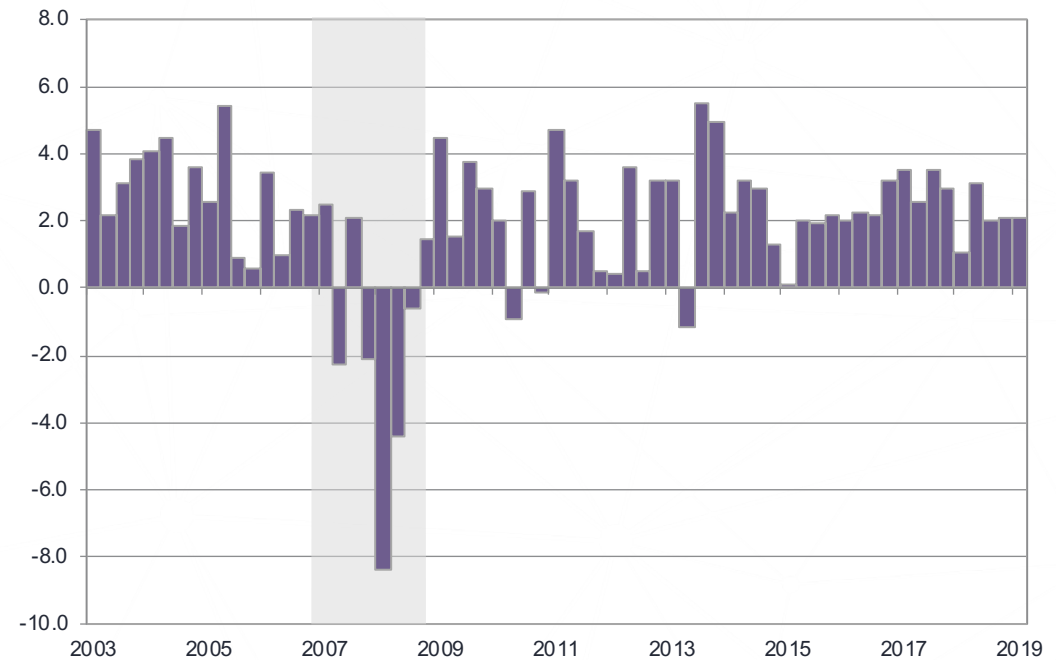
National Economy As COVID-19 Unfolds

We Entered the Crisis with a Strong Economy

Employment Growth
Monthly Change in Thousands



Real Gross Domestic Product
Quarterly Annualized Percent Change



WEEKLY
ECONOMIC
UPDATE

Fed Speeches

Federal Reserve Bank of St. Louis President and CEO James Bullard was interviewed by Fox Business' Maria Bartiromo last week. During the interview, President Bullard stressed the uniqueness of the current economic environment.

It's going to be a special quarter in macroeconomic history for the United States. We have a pandemic adjustment period. Instead of maximizing output is

"...by the time we get to the fourth quarter, I think that will be a boom quarter for the U.S. economy."

Federal Reserve Bank of St. Louis President and CEO James Bullard

what we usually do, we are actually trying to minimize output...we're not going to be producing a lot of things during the second quarter and the numbers are all going to look very funny compared to normal quarters where we are trying to produce as many goods and services as we can. And so, everything is upside down in terms of interpreting the numbers. But I think there are plenty of resources. I think we can get through this. I like the

bill that was passed. I like the actions that the Fed has taken. So, I think this is all very doable but it's a one-time situation. Very unusual. And we have to work hard to get through it here.

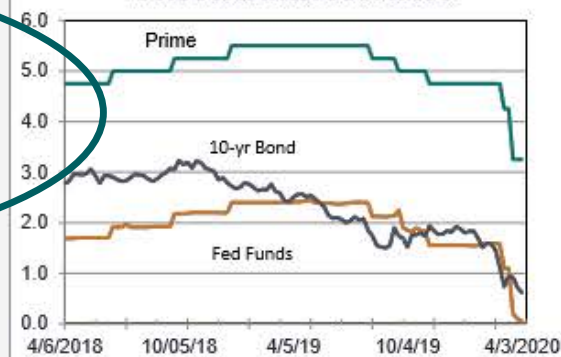
President Bullard also said that by the fourth quarter he expects the U.S. economy to be expanding at a healthy pace.

...they [the U.S. government] are going to try to keep all of these households whole and able to pay their bills in the second quarter and then we'll come into the third quarter. We'll transition into something that it will take a little while to turn everything back on and then by the time we get to the fourth quarter, I think that will be a boom quarter for the U.S. economy. Everything will be back on and we'll be in full throttle again.

Financial Markets

The three major U.S. stock indexes ended last week lower with the Dow Jones Industrial Average falling 2.7%, the S&P 500 decreasing 2.1%, and the NASDAQ declining 1.7%. Treasury yields fell across the long-end of the curve with the 10-year yield dropping 10 basis points (bps) to 0.62% and the 30-year yield decreasing 5 bps to 1.24%. Oil prices surged 31.5% and ended the week at \$28.71 per barrel. The U.S. dollar increased 0.5% against the Japanese yen and the euro was down 3.0% against the greenback last week.

Selected Interest Rates



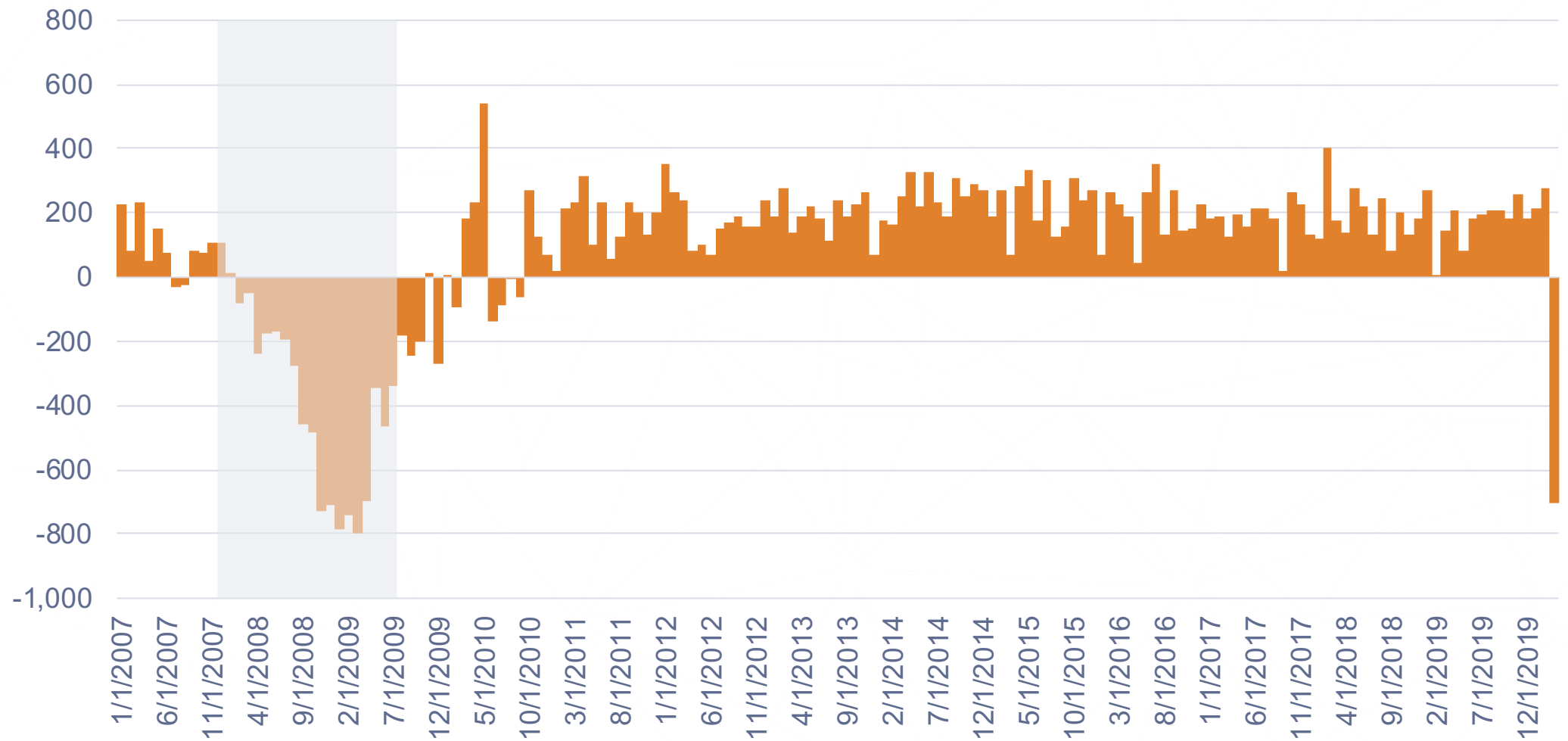
Stage 1: Supply Shock

- Challenges of COVID-19
 - People are infectious before symptoms show up
 - Exponential spread of virus
 - Stage 1: Supply shock
 - Nonessential businesses close
 - Citizens asked to stay at home
-

Stage 1: Supply Shock 3 Scenarios

- Scenario 1
 - COVID-19 lasts 3 months through May
- Scenario 2
 - COVID-19 lasts 6 months through August
- Scenario 3
 - COVID-19 last 3 months through May but includes shelter in place or temporary shutdown of some businesses. This will vary by state and metropolitan area.

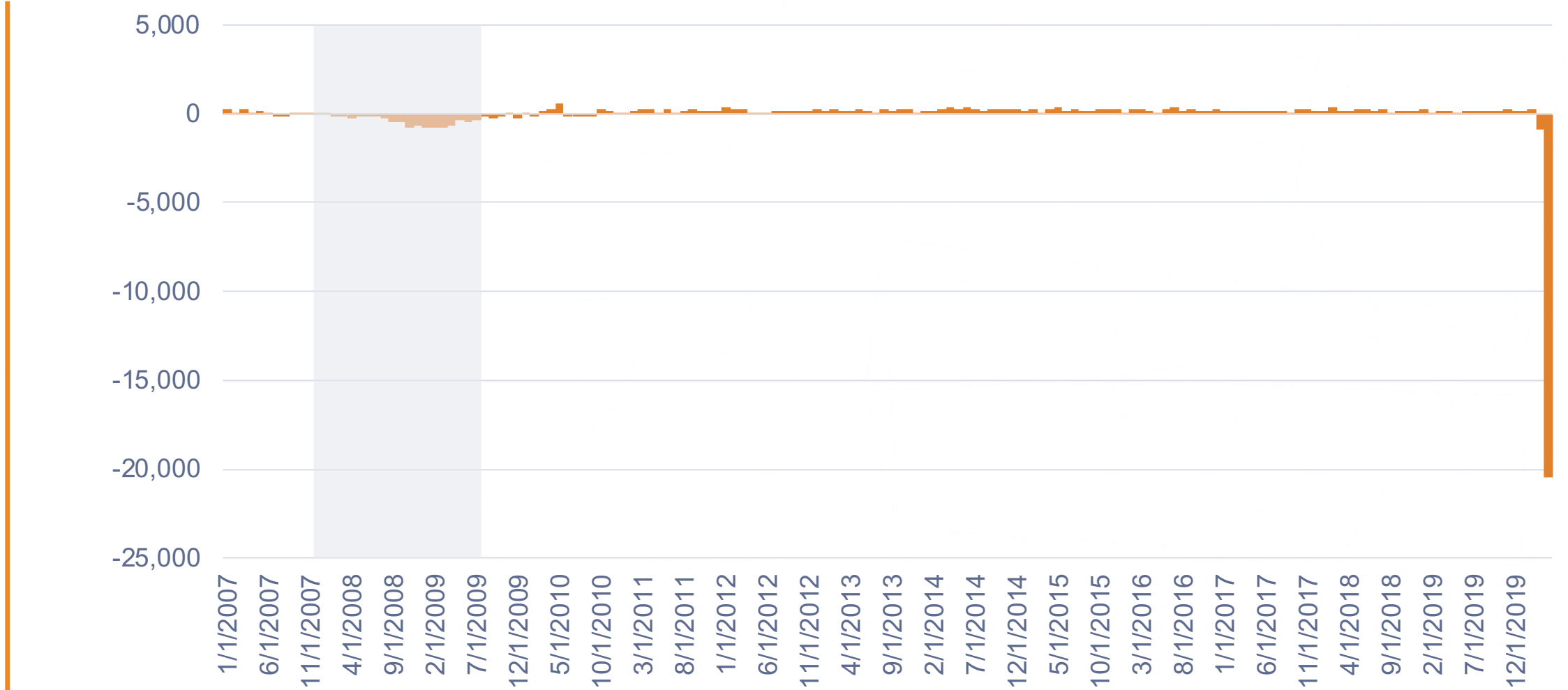
Employment Growth (Monthly Change in Thousands) Through March 2020



Source: Bureau of Labor Statistics

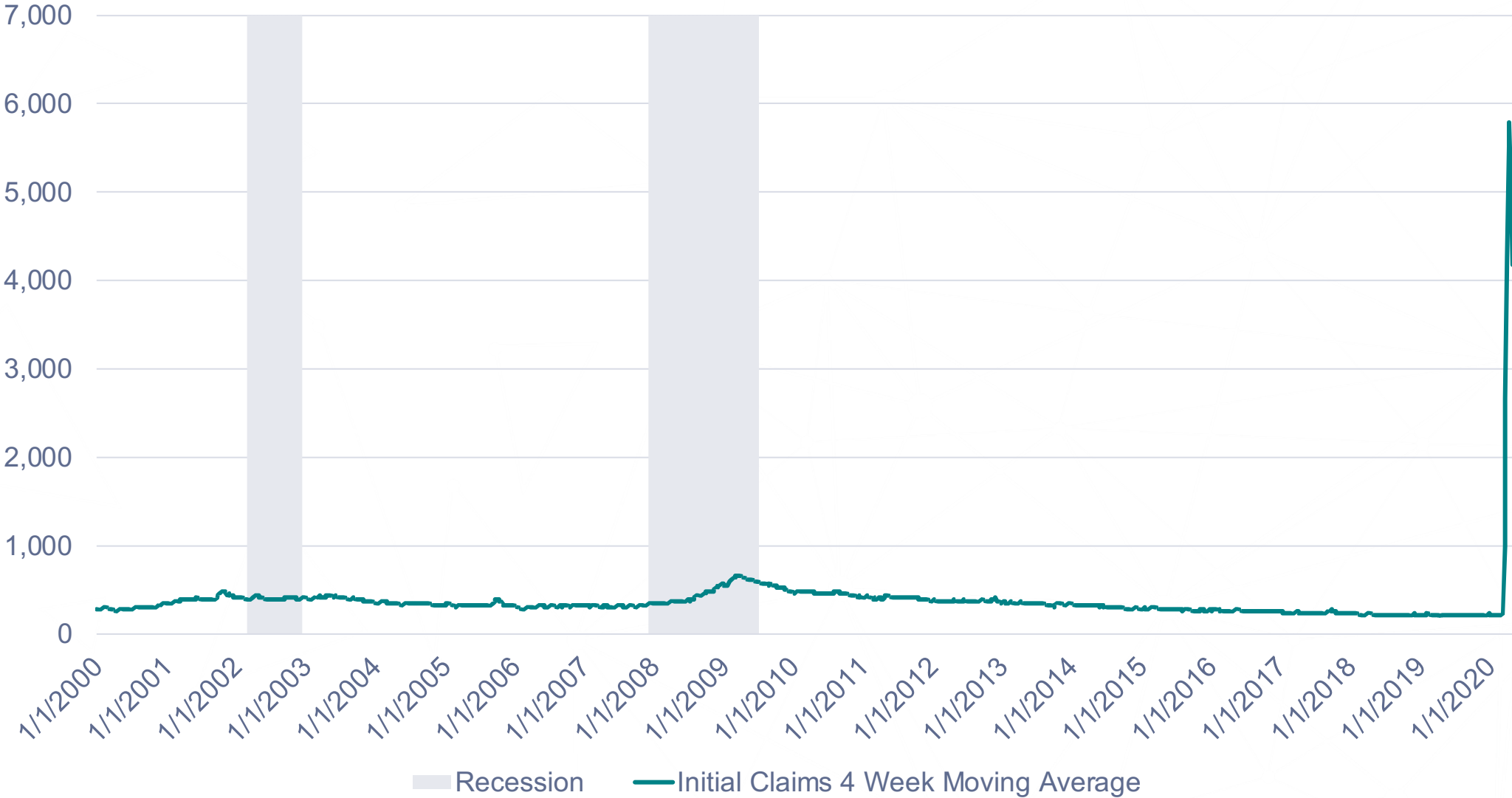
■ Employment (Monthly Change) ■ Recession

Employment Growth (Monthly Change in Thousands) Through April 2020



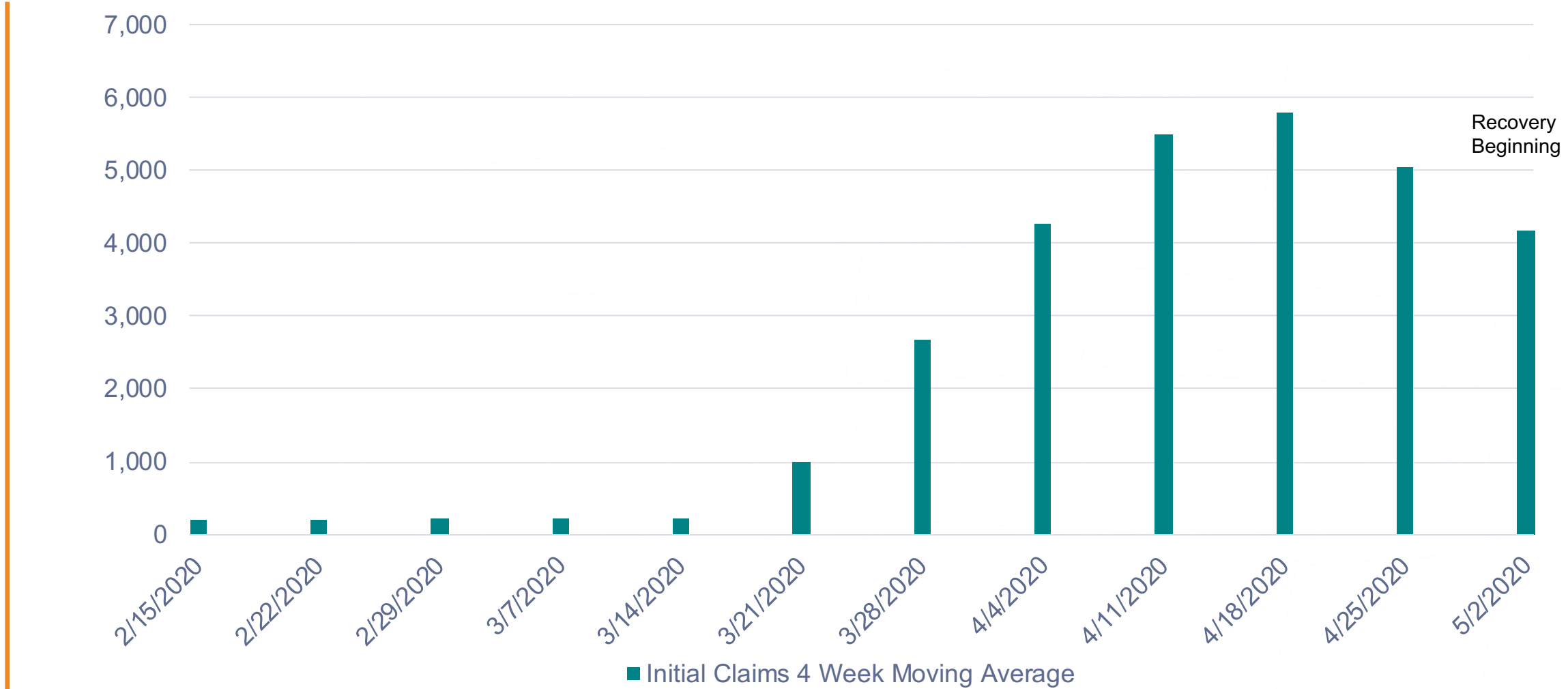
Source: Bureau of Labor Statistics

Initial Unemployment Claims (in Thousands)

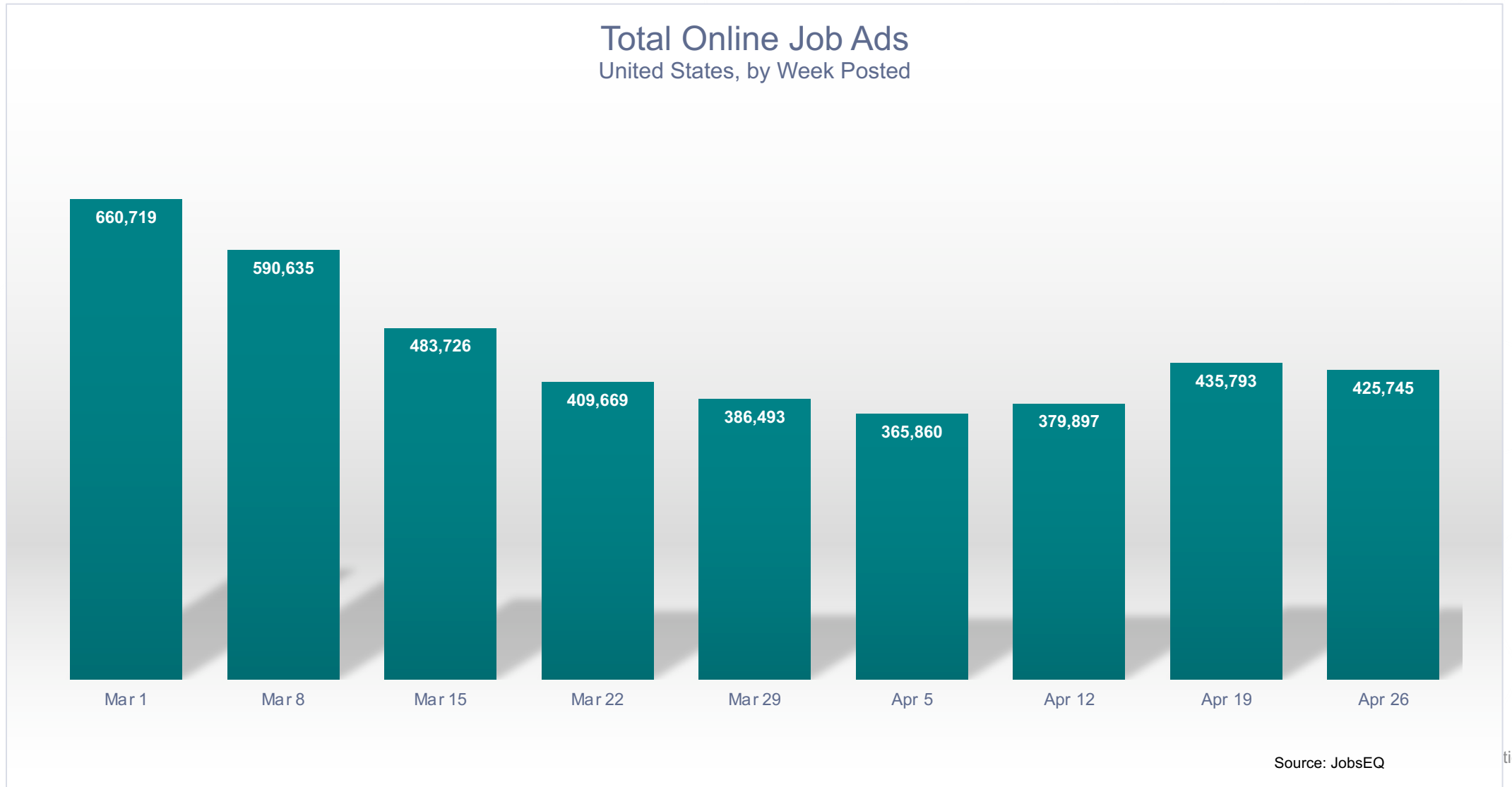


Source: Bureau of Labor Statistics

Last 3 Months Initial Unemployment Claims (In Thousands)



Job Postings Are a Leading Indicator of Jobs Lost



Stage 2: Recovery

COVID-19 Crisis: Stage 2 Demand Shock

- The Public Needs to Feel Safe
 - Testing and tracing virus will help
 - More effective treatments can reduce fears and need to social distance
 - Vaccine will be a game changer
- Vaccine assumptions
 - Typically takes years to develop
 - Most experts expect vaccine becomes available mid-2021
 - **We assume it is widely available in U.S. economy by 1st quarter 2022**
- Stage 2: Demand Shock
 - Recovery starts in June 2020 but massive April and May contractions swamp modest June growth
 - States lift restriction
 - Social distancing continues
 - Recovery varies greatly by industry and region

Outcome of Scenarios 1 and 2

Scenario 1

Real GDP Q1 = annualized -4.8%

Real GDP Q2 = annualized -18.4%

Real GDP Q3 = annualized -1.0%

Real GDP Q4 = annualized +4.4%

Unemployment rates peaks at 17.6% in Q3 2020

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Unemployment rates peaks at 17.6% in Q3 2020

Scenario 2

Real GDP Q2 = annualized -24.7%

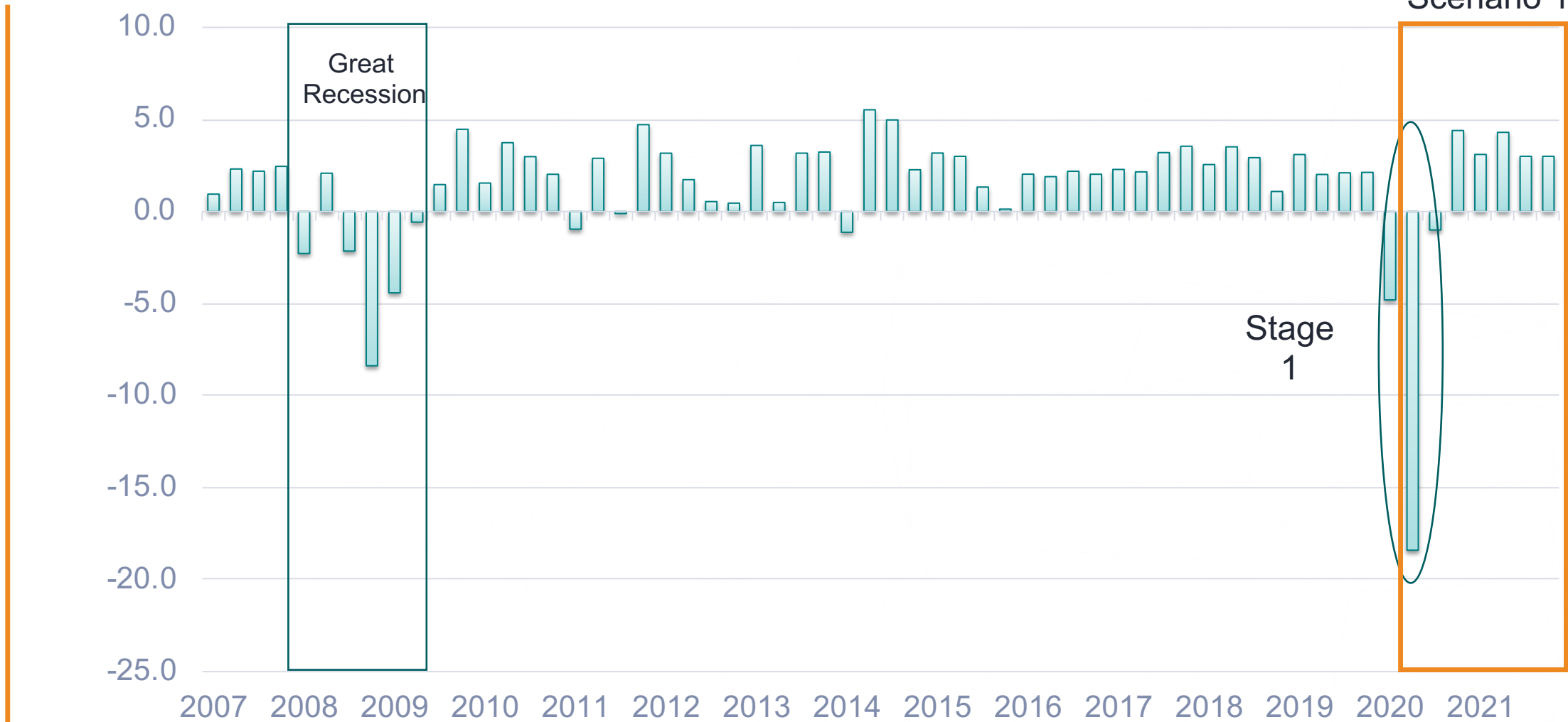
Real GDP Q3 = annualized -12.7%

Real GDP Q4 = annualized -5.1%

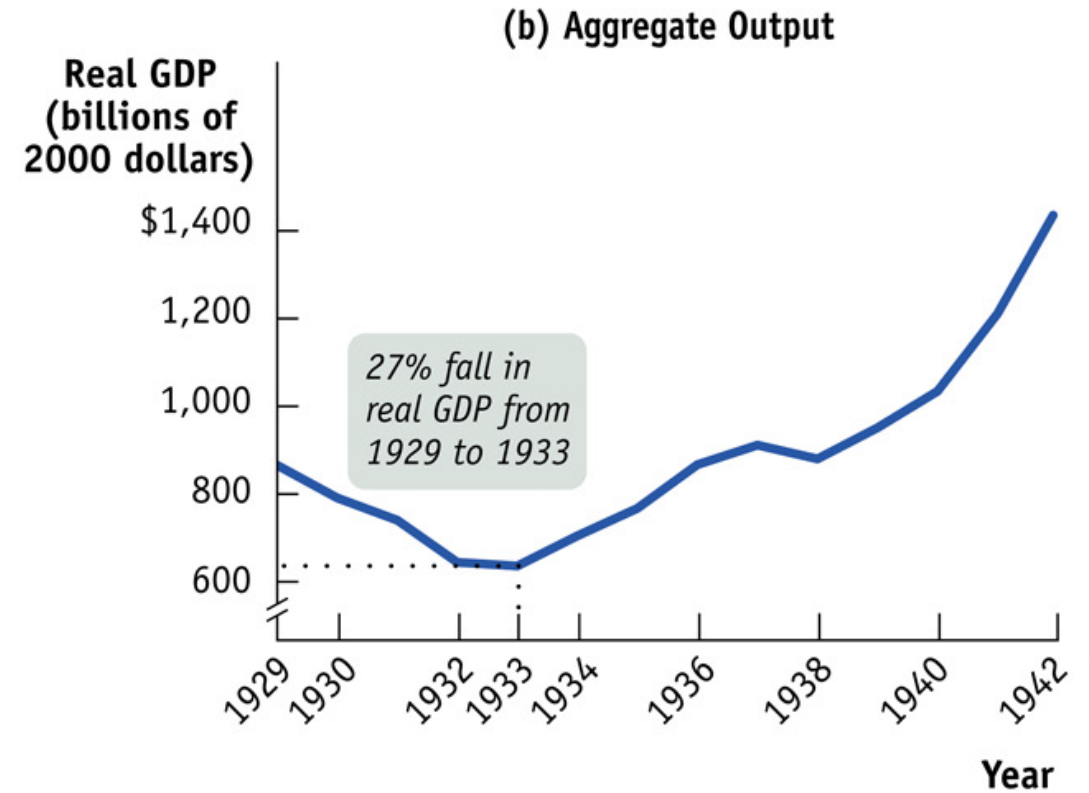
Real GDP Q1 2021 = annualized +3.5%

Unemployment rates peaks at 23.3% in Q4 2020

COVID-19 Economic Impact: Sharp and Short; Not Sustained (Real GDP)



Not a Depression



Employment Recovery Varies by Industry

- Restaurants, Retail, Entertainment, Lodging
 - Slow recovery
 - Employment remains half pre-COVID throughout year
 - Utilities, Professional Services, Company HQ
 - Employment back to 90% pre-COVID by fourth quarter 2020
 - Economic shutdown to reduce virus spread already caused some bankruptcies
 - Reach pre-COVID employment levels in 3rd quarter of 2022
 - Payroll Protection Program playing important role in recovery
-

Paycheck Protection Program (PPP)

Helping Small Businesses

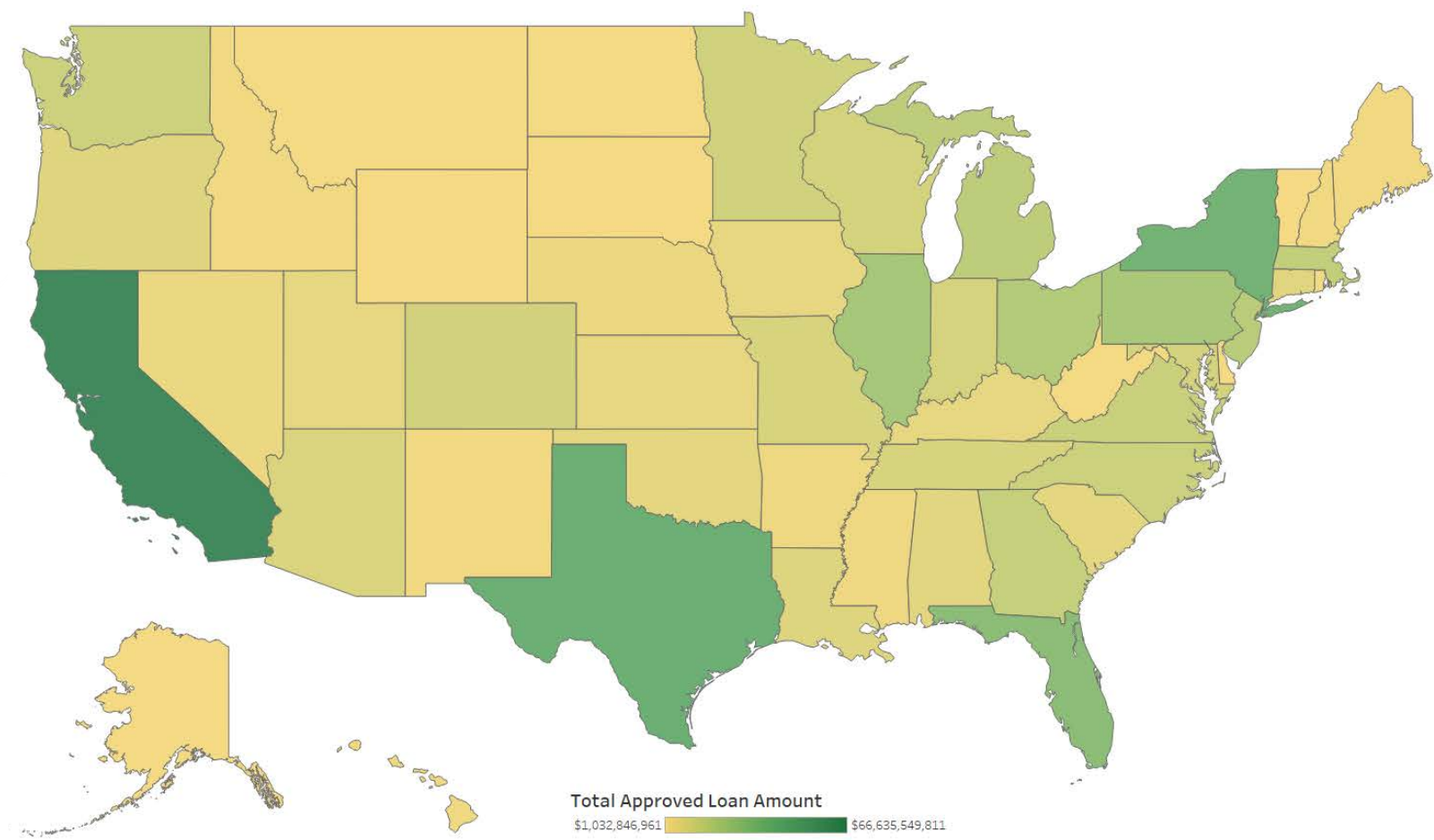
- Small business loans are for 2.5 times monthly payroll
- Loans can be forgiven if 75%+ of loan goes towards payroll
- Round 1: **\$349 billion** awarded through April 16
 - 1,661,367 loans awarded
 - Average loan size: \$206,000
 - 74% of awarded loans are under \$150,000
- Round 2: **\$310 billion** allocated
 - \$176 billion awarded from April 27 through May 1
 - Remaining \$134 billion likely awarded this week
 - 2,211,791 loans awarded (so far)
 - Average loan size: \$79,000
 - 71% of awarded loans are under \$50,000 (90% under \$150,000)

Construction, Professional Services, Manufacturing, and Health Care Are Largest Beneficiaries of **PPP Round 1**

NAICS Subsector Description	Approved Loans	Approved Dollars	% of Amount
Construction	177,905	\$44,906,538,010	13.12%
Professional, Scientific, and Technical Services	208,360	\$43,294,713,938	12.65%
Manufacturing	108,863	\$40,922,240,021	11.96%
Health Care and Social Assistance	183,542	\$39,892,493,481	11.65%
Accommodation and Food Services	161,876	\$30,500,417,573	8.91%
Retail Trade	186,429	\$29,418,369,063	8.59%
Wholesale Trade	65,078	\$19,489,410,472	5.69%
Other Services (except Public Administration)	155,319	\$17,707,077,167	5.17%
Administrative and Support and Waste Management and Remediation Services	72,439	\$15,285,814,286	4.47%
Real Estate and Rental and Leasing	79,784	\$10,743,430,227	3.14%
Transportation and Warehousing	44,415	\$10,598,076,231	3.10%
Finance and Insurance	60,134	\$8,177,041,995	2.39%
Educational Services	25,198	\$8,062,652,288	2.36%
Information	22,825	\$6,675,630,276	1.95%
Arts, Entertainment, and Recreation	39,670	\$4,939,280,138	1.44%
Agriculture, Forestry, Fishing and Hunting	46,334	\$4,374,343,877	1.28%
Mining	11,168	\$3,894,793,207	1.14%
Public Administration	5,570	\$1,197,353,586	0.35%
Management of Companies and Enterprises	3,211	\$1,170,748,130	0.34%
Utilities	3,247	\$1,027,575,137	0.30%

California, Texas, New York, and Florida Small Businesses Receive One-Third of All PPP Loans & Funding

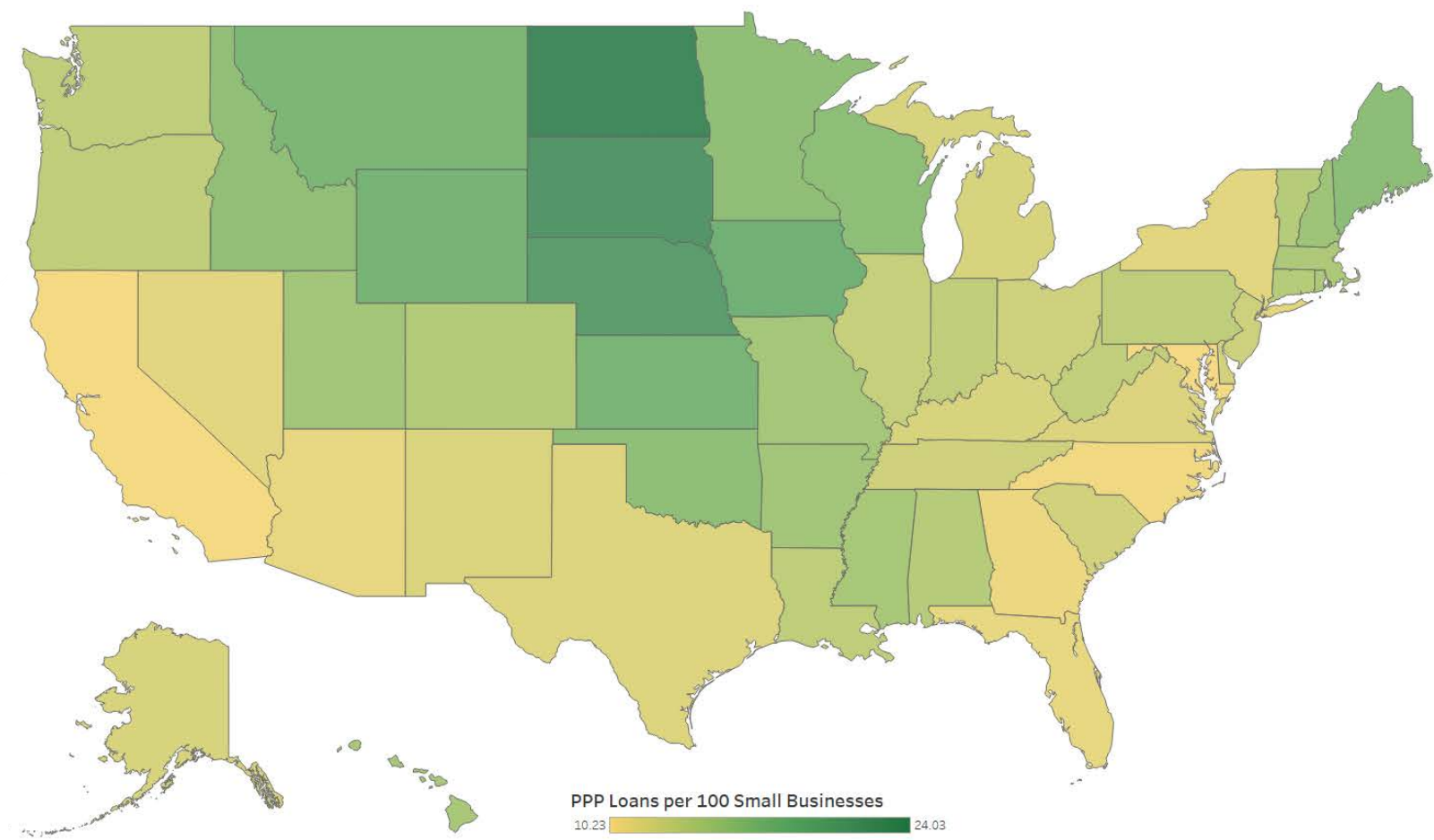
Loan Award Amounts by State



Source: Small Business Administration
Note: Data on PPP loans awarded through May 1

Midwestern States Receive More Loans per Small Business

Number of Loan Awards per Small Business in Each State

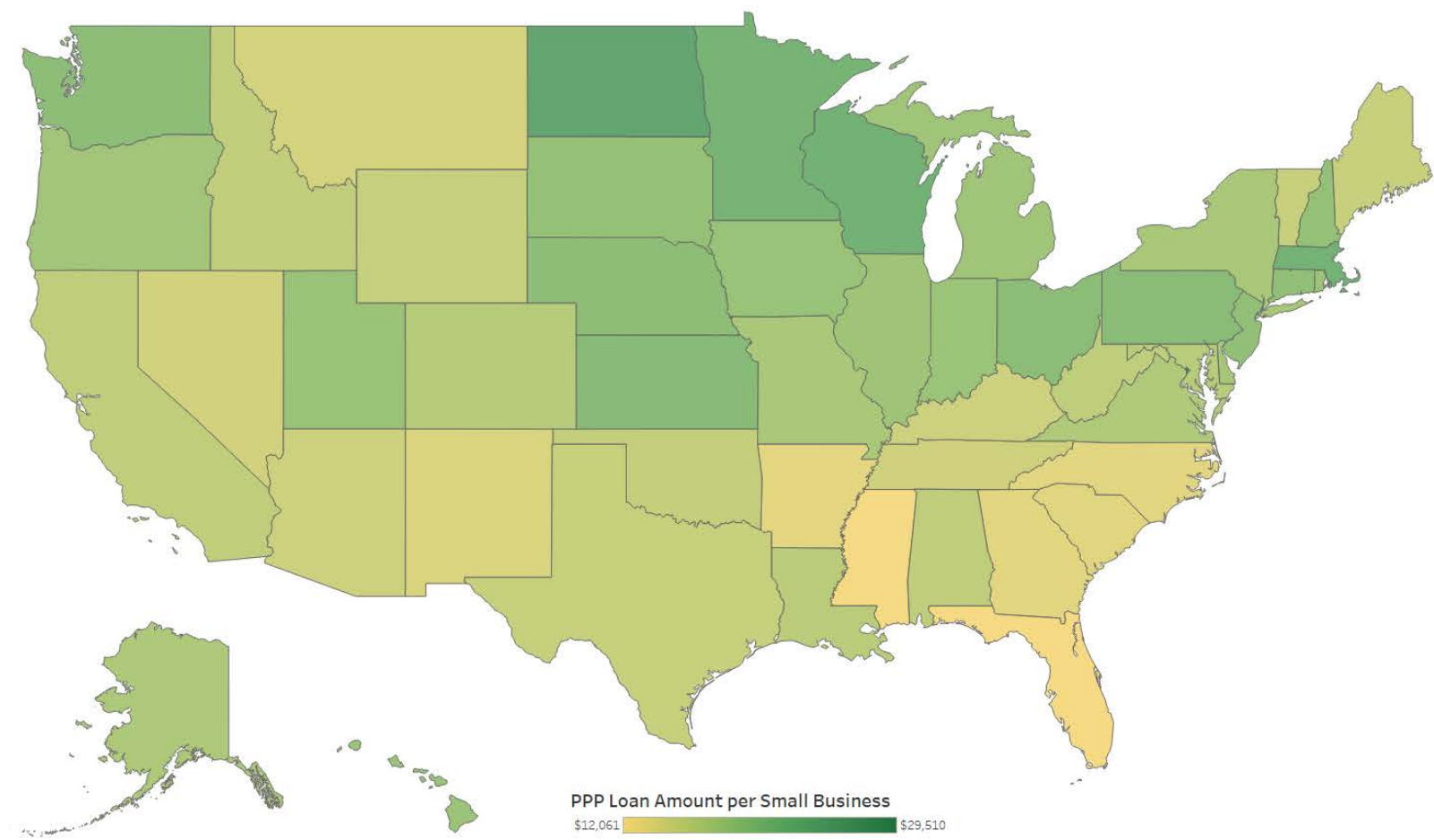


Source: Small Business Administration
Note: Data on PPP loans awarded through May 1

Loan Amounts per Small Business in Each State

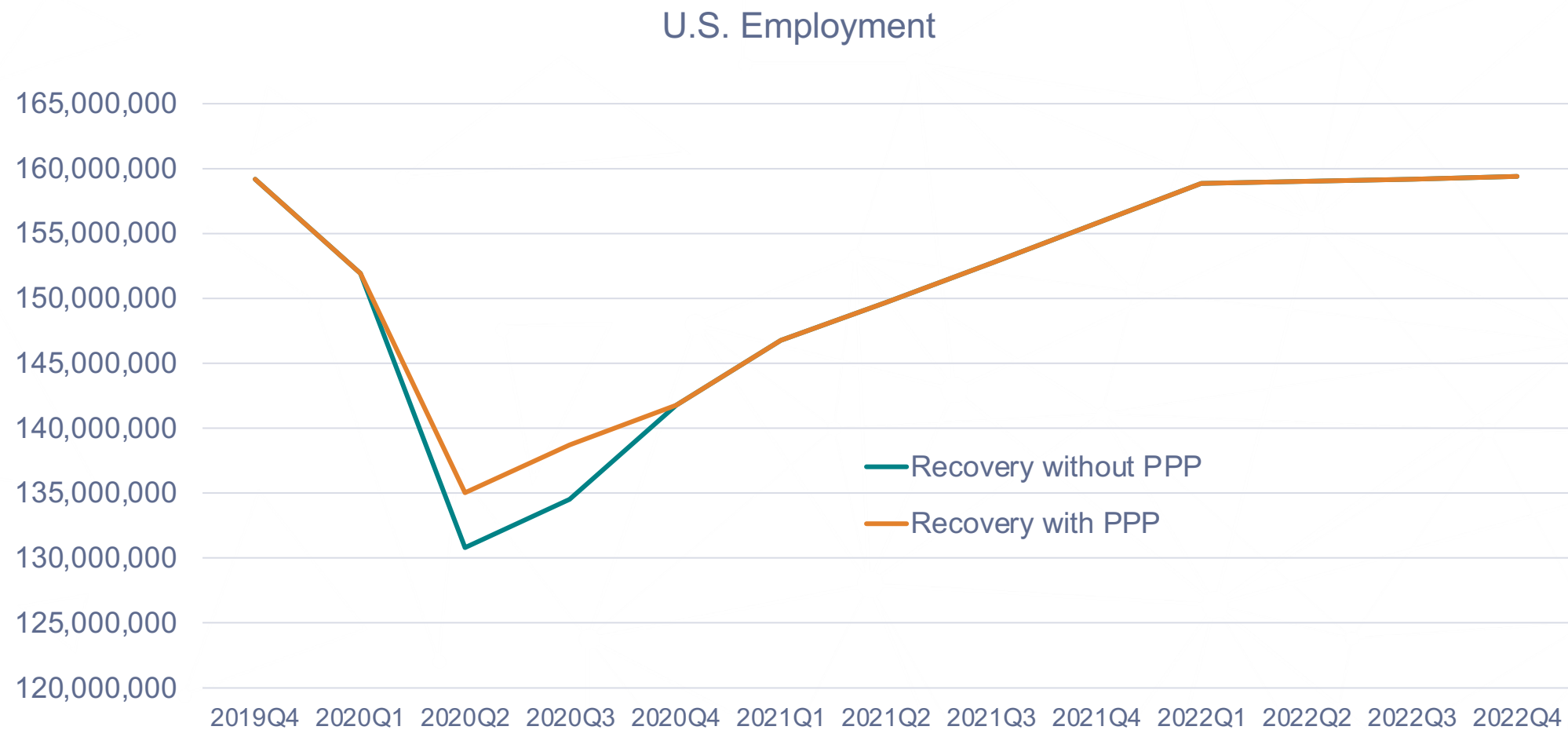
Distributed More Evenly

Loan Award Amounts per Small Business in Each State

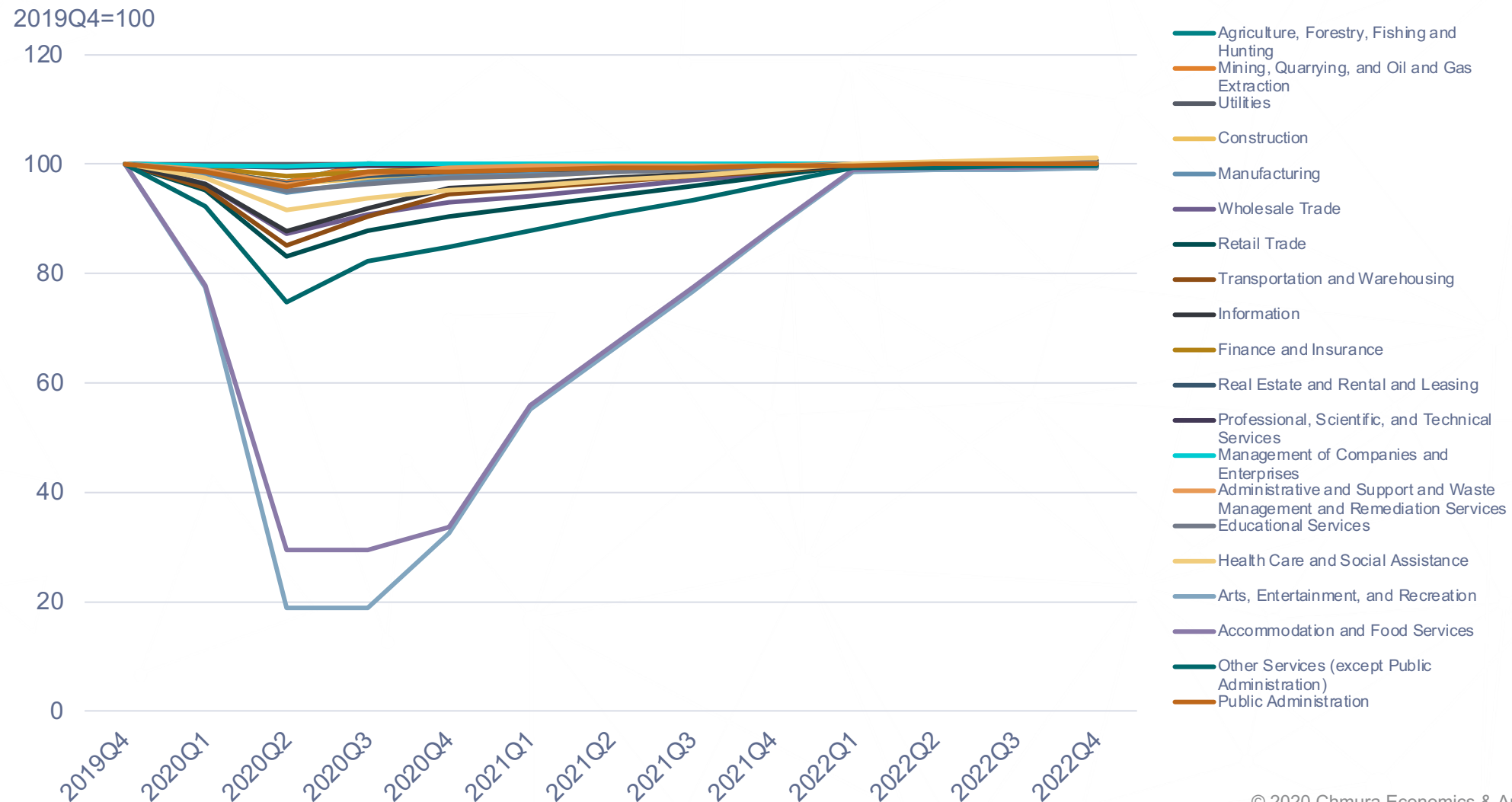


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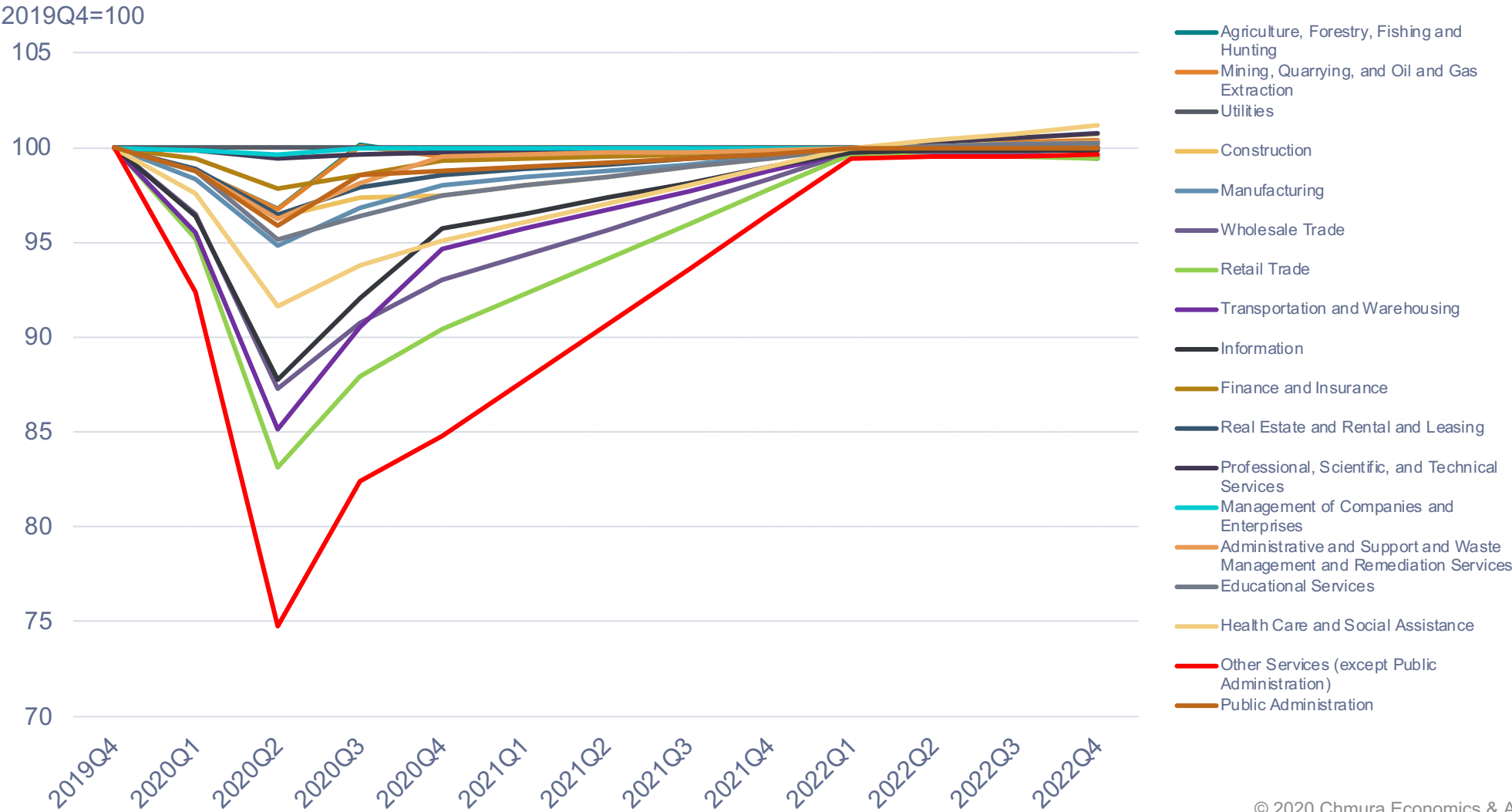
Impact of Payroll Protection Program



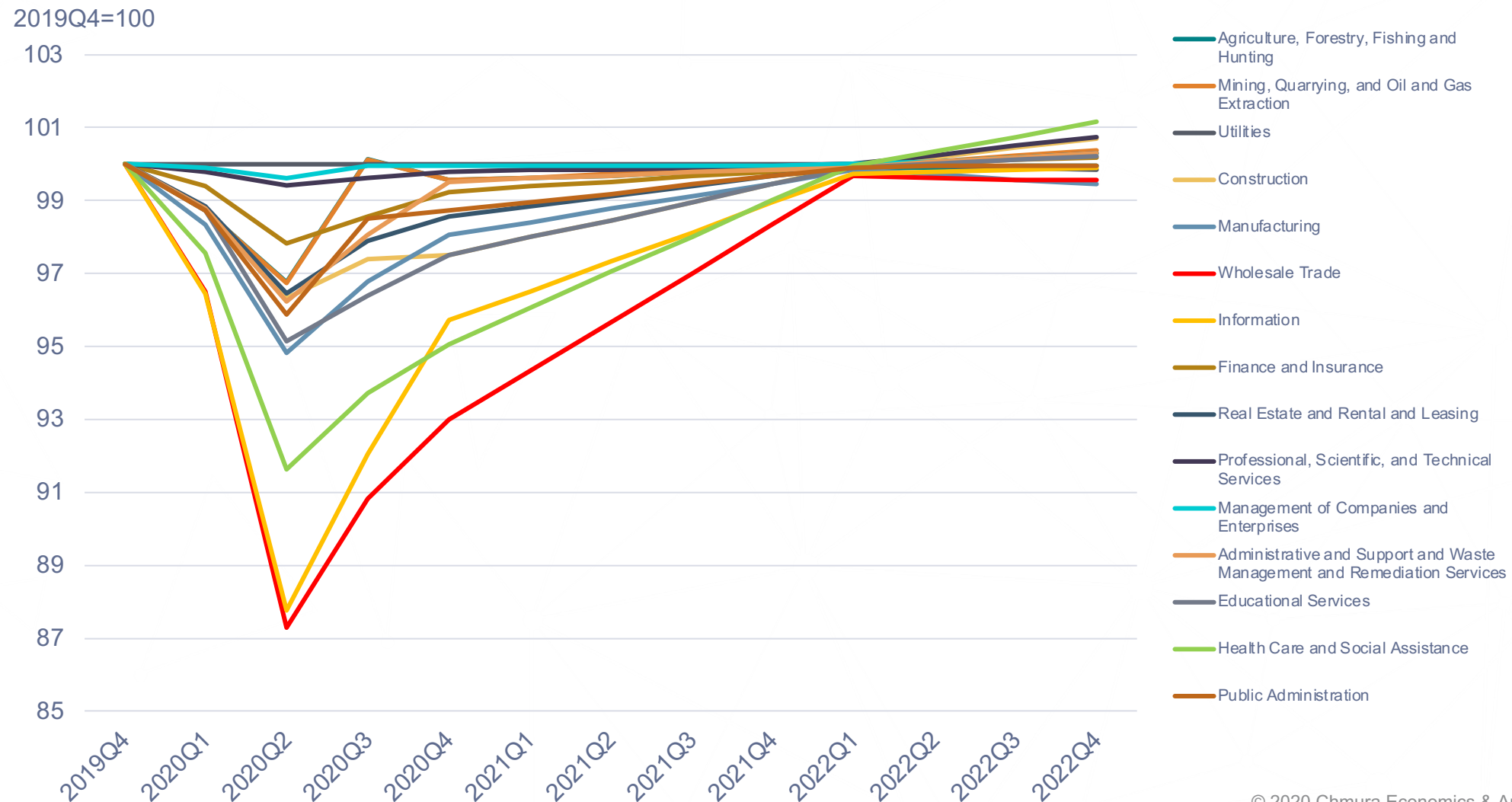
Indexed Employment Recovery Path By Industry



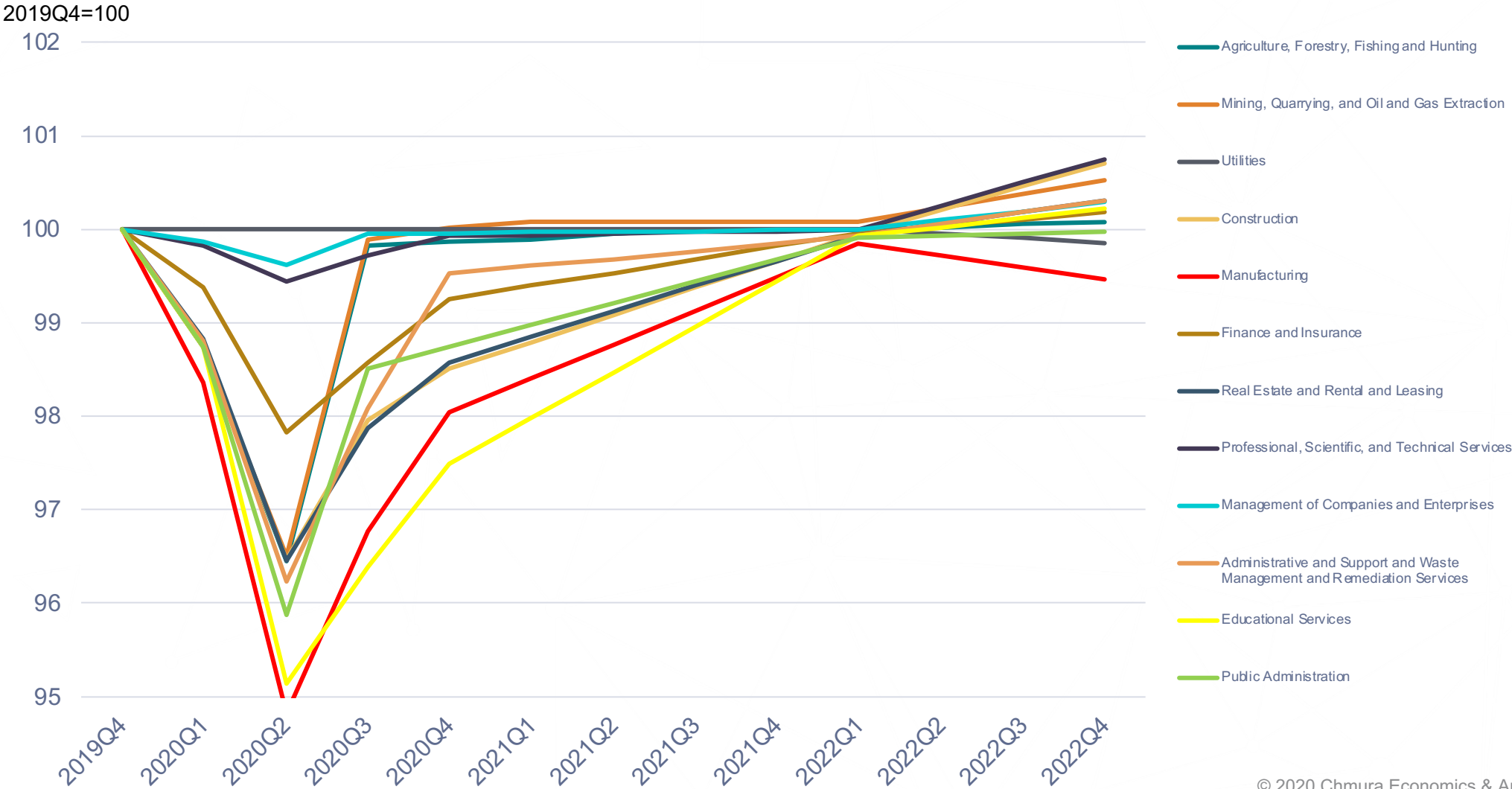
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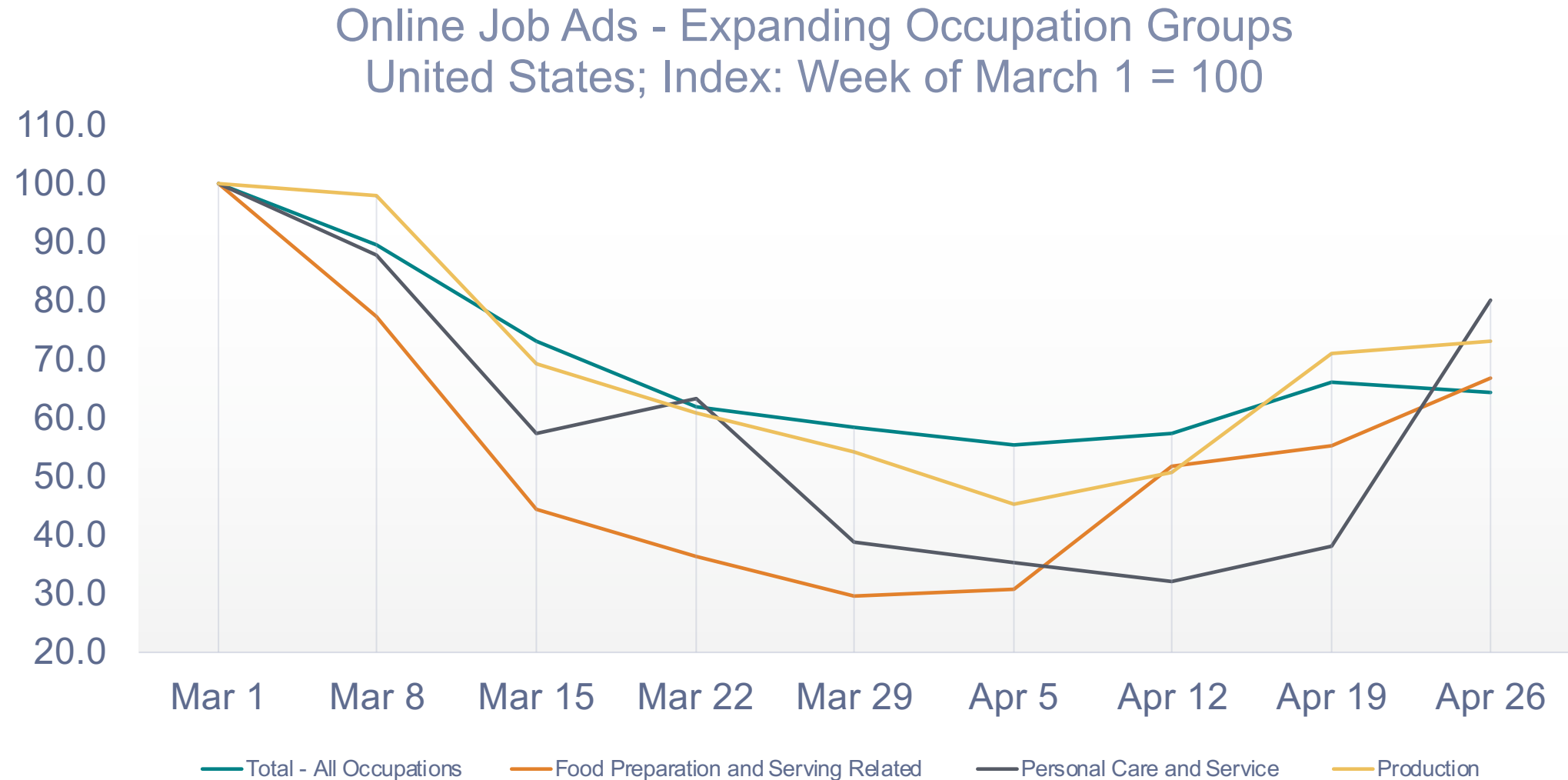
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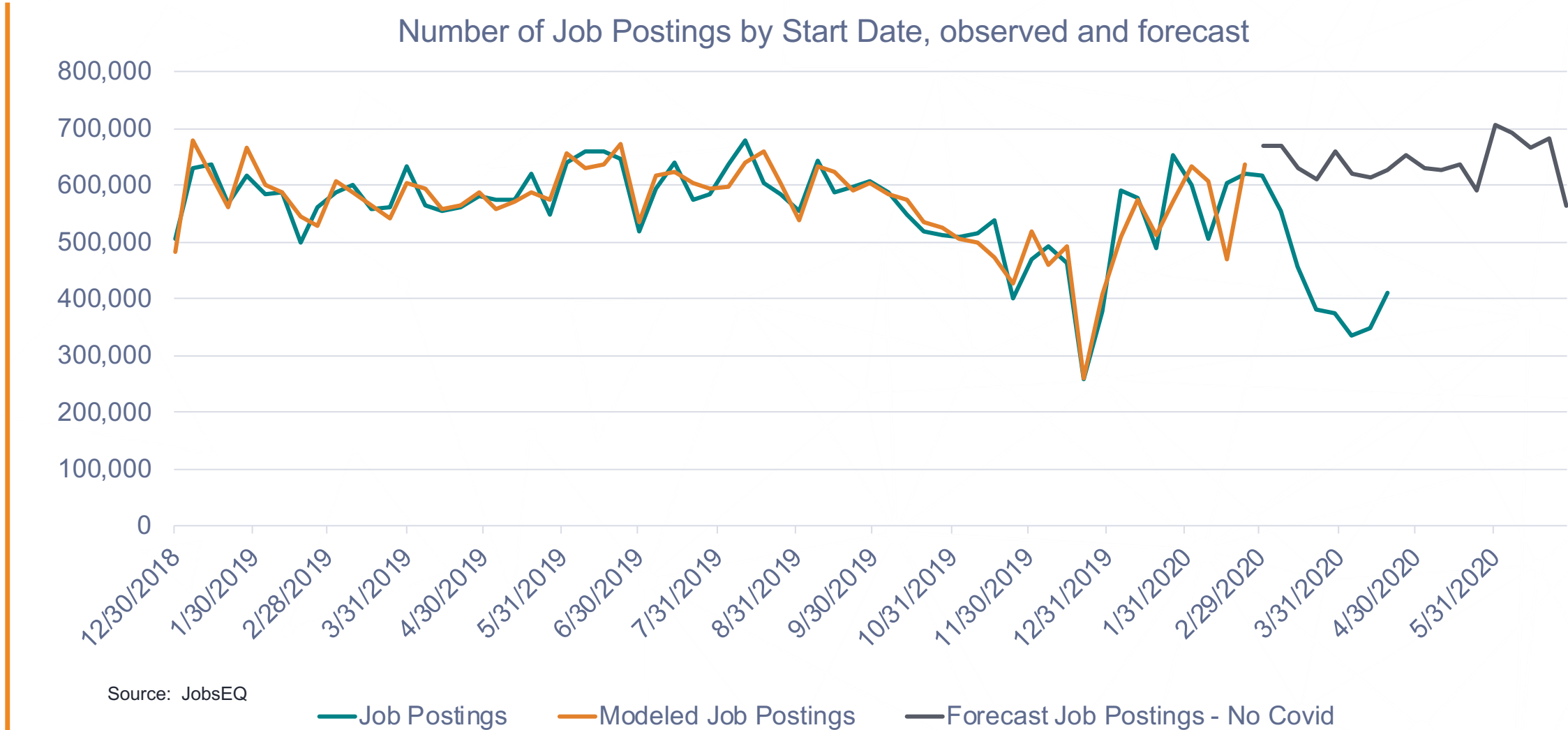
Indexed Employment Recovery Path By Industry



Job Postings: Leading Indicator Showing Signs of Recovery

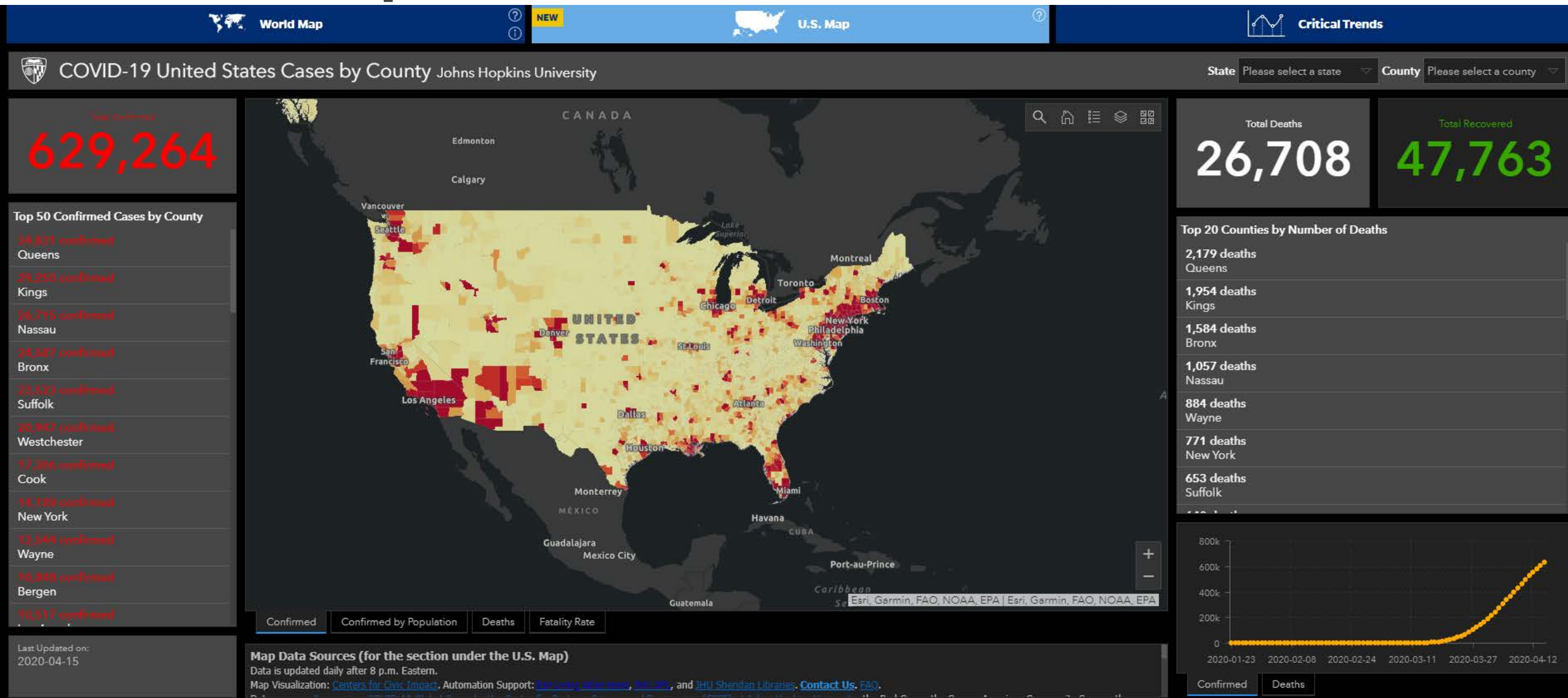


Experimenting with Job Postings to Track Economic Recovery



Great Variation by Region

Johns Hopkins Coronavirus Research Center



University of Washington (Available By State)

Ohio



Deaths per day ⓘ

9 days

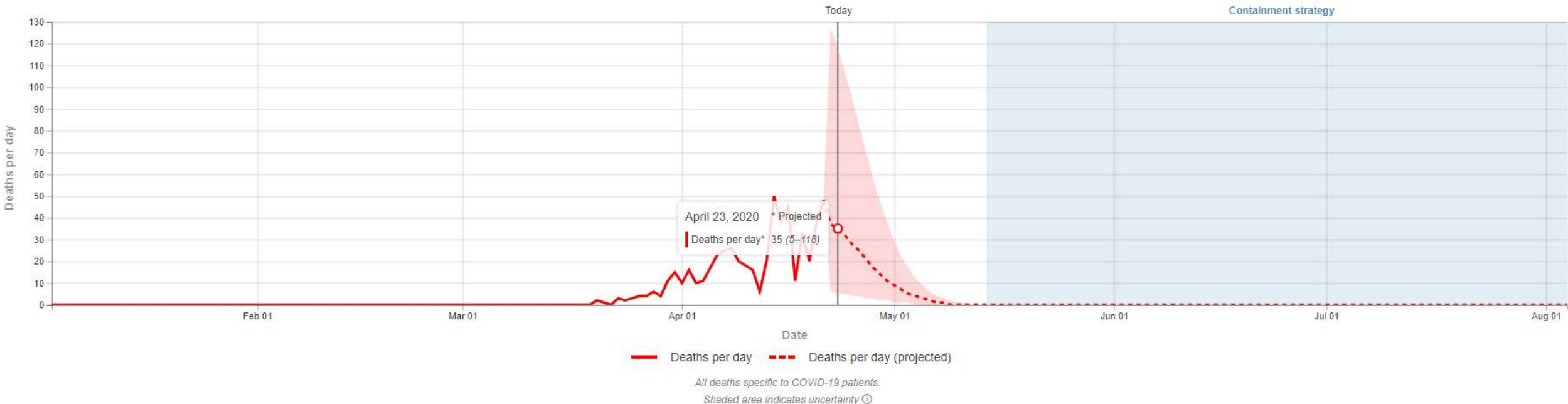
since projected peak in daily deaths

50 COVID-19 deaths

projected on April 14, 2020

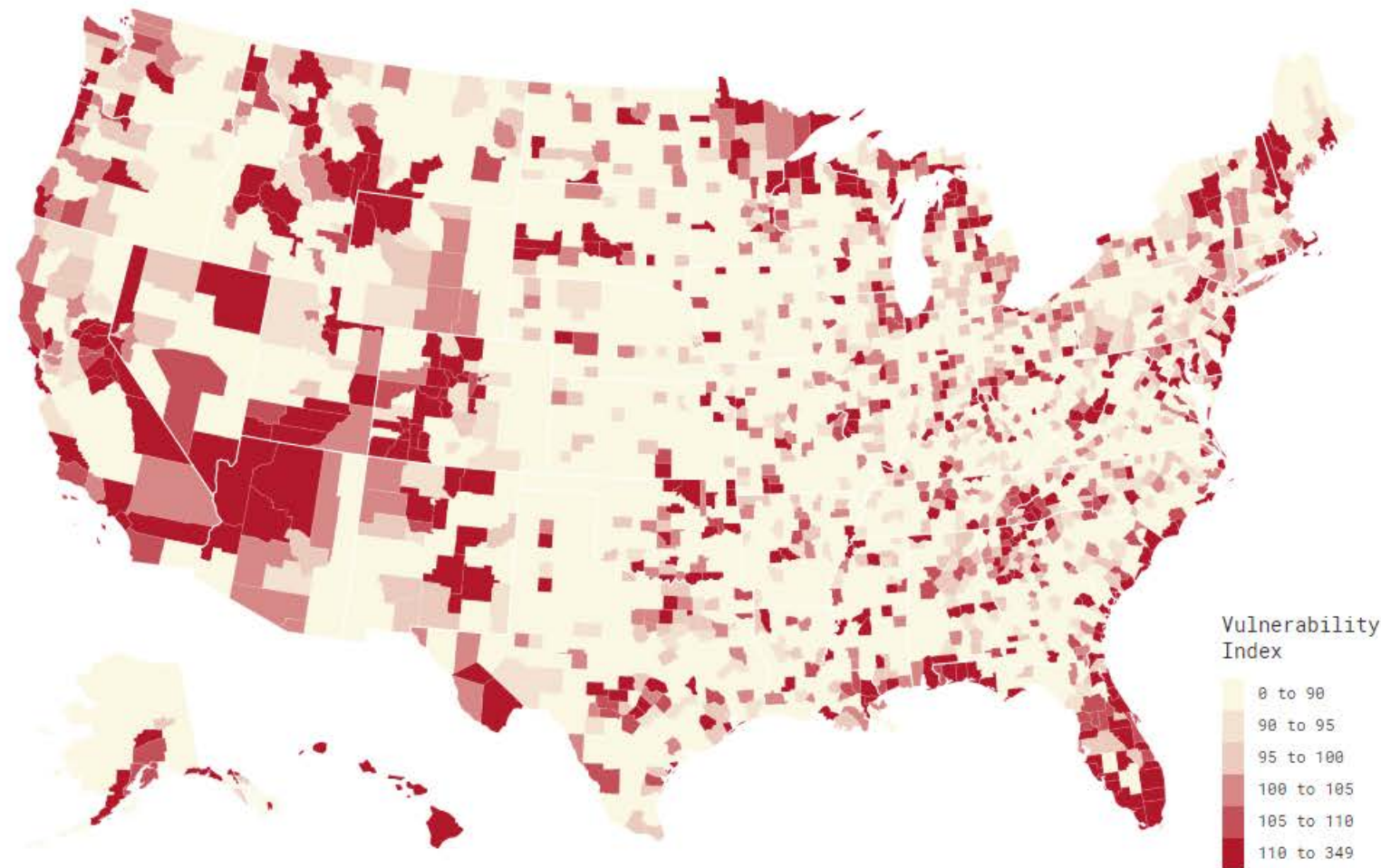
Containment strategy ⓘ

After May 14, 2020, relaxing social distancing may be possible with containment strategies that include testing, contact tracing, isolation, and limiting gathering size.



<https://covid19.healthdata.org/projections>

How Vulnerable Is My Region to COVID-19?

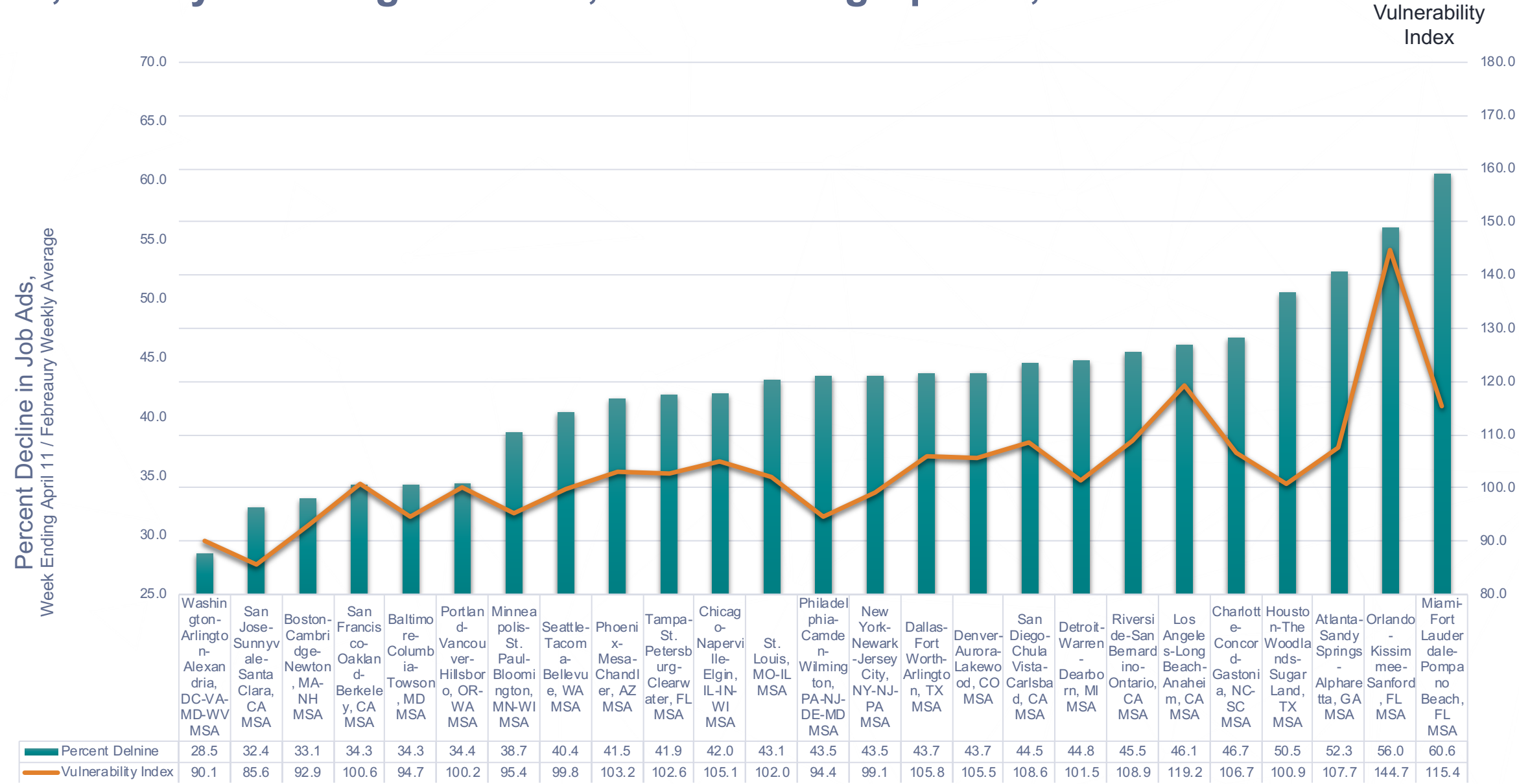


Source: Chmura Economics & Analytics, JobsEQ

Impact of Coronavirus Average Projected Job Losses, United States	
Accommodation and Food Services	> 60%
Arts, Entertainment, and Recreation	> 60%
Other Services (except Public Administration)	10-25%
Transportation and Warehousing	10-25%
Retail Trade	10-25%
Wholesale Trade	10-25%
Information	10-25%
Manufacturing	5-10%
Construction	5-10%
Mining, Quarrying, and Oil and Gas Extraction	5-10%
Real Estate and Rental and Leasing	< 5%
Health Care and Social Assistance	< 5%
Finance and Insurance	< 5%
Educational Services	< 5%
Administrative and Support and Waste Management and Remediation Services	< 5%
Agriculture, Forestry, Fishing and Hunting	< 5%
Public Administration	< 5%
Professional, Scientific, and Technical Services	< 5%
Management of Companies and Enterprises	< 5%
Utilities	< 5%
Active Military	< 5%

Source: Chmura Economics & Analytics

Percent Decline in Online Job Ad Volume Compared to Vulnerability Index, Twenty-five Largest MSAs, Week Ending April 11, 2020



The COVID-19 Crisis

- This Crisis Will End!
 - National Economic Outlook
 - Sharp and short; not sustained
 - Stage 1: Supply Shock
 - Nonessential businesses close
 - Citizens asked to stay at home
 - Stage 2: Demand Shock
 - States lift restrictions
 - Not all industries fully operational
 - Vaccine available mid-2021
 - Widely available in U.S. by 1st quarter 2022
 - Employment reaches pre-COVID levels in 3rd quarter 2022
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