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Report

Explaining the economic impact of COVID-19: Core industries and the Hispanic workforce

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Abstract

As the United States prepares for a COVID-19 recovery, policymakers need to understand why some cities and communities were more vulnerable to the pandemic's economic consequences than others. In this paper, we consider the association between a city's core industry, its economic susceptibility to the pandemic, and the recession's racially disparate impact across six select metropolitan areas. We find that areas with economies that rely on the movement of people—like Las Vegas with tourism—faced substantially higher unemployment at the end of 2020 than cities with core industries based on the movement of information. Further, we find the hardest-hit areas have larger Hispanic or Latino communities, reflecting the demographic composition of workers in heavily impacted industries and susceptible areas. We conclude by recommending targeted federal policy to address the regions and communities most impacted by the COVID-19 recession.
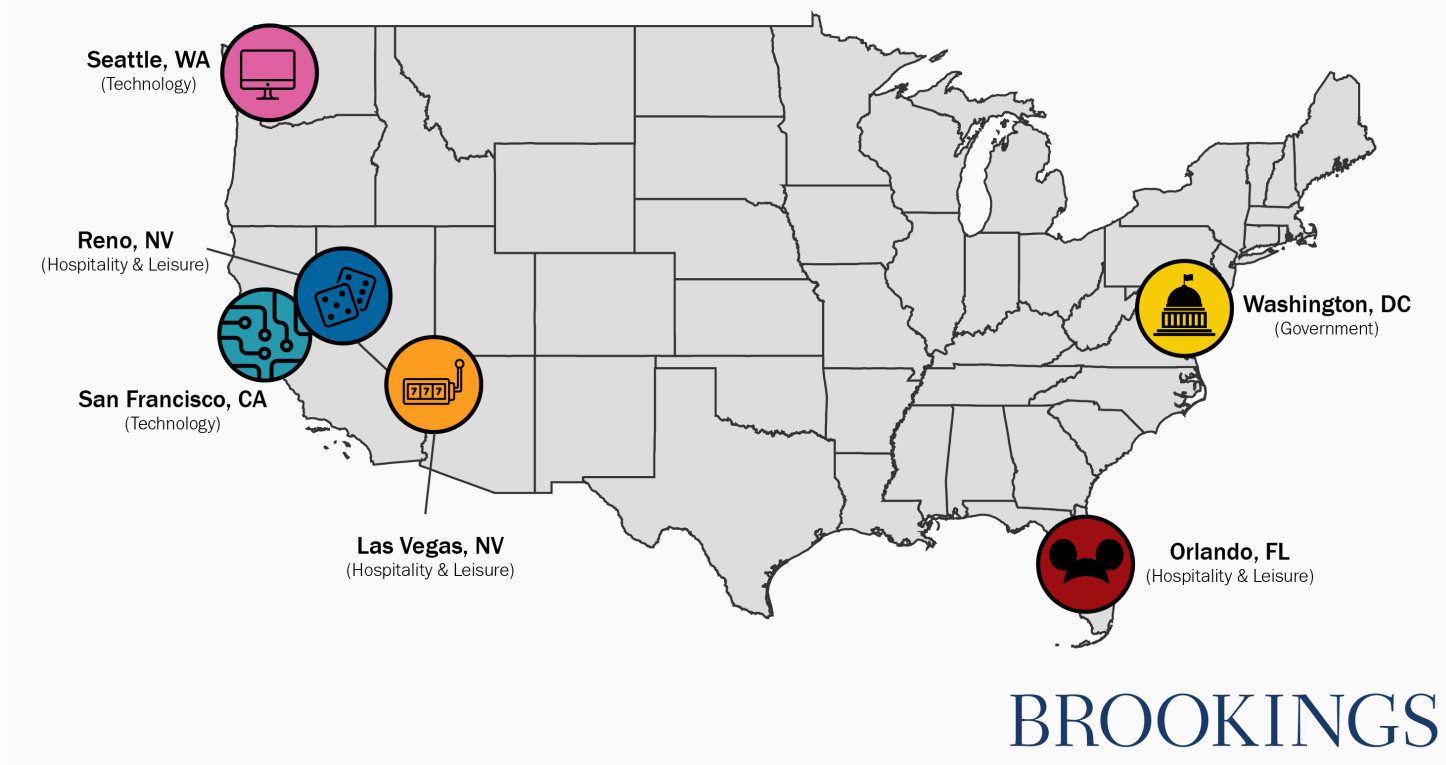
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Introduction

More so than any prior economic downturn, the COVID-19 recession has crushed certain industries—those that depend on the movement of people—while leaving others relatively unscathed—those that depend on the movement of information. City economies are concentrated in different industries: Las Vegas and Orlando in travel and tourism, Seattle and San Francisco in technology, and Washington D.C. in government. Thus, the COVID-19 recession's economic geography is uniquely impacted by the pandemic's effect on a city's primary industry. Overlaying geography with race reveals another under-appreciated impact of this recession: an increase in the economic hardship faced by Hispanic or Latino communities.

This piece explores the economic implications of the COVID-19 recession using select metropolitan areas (often referred to by the name of the metro's primary city), identifying problems and offering policy responses. We examine six metropolitan areas: three with heavy concentration in industries negatively impacted by COVID-19 (Las Vegas, Orlando, and Reno) and three with economies heavily concentrated in industries less negatively, or even positively, impacted by COVID-19 (Seattle, San Francisco, and Washington, D.C.). We find that the cities with industries more acutely impacted have a higher concentration of Hispanic or Latino residents.

Figure 1. Core industries in select cities

Seattle, WA
(Technology)

Reno, NV
(Hospitality & Leisure)

San Francisco, CA
(Technology)

Las Vegas, NV
(Hospitality & Leisure)

Washington, DC
(Government)

Orlando, FL
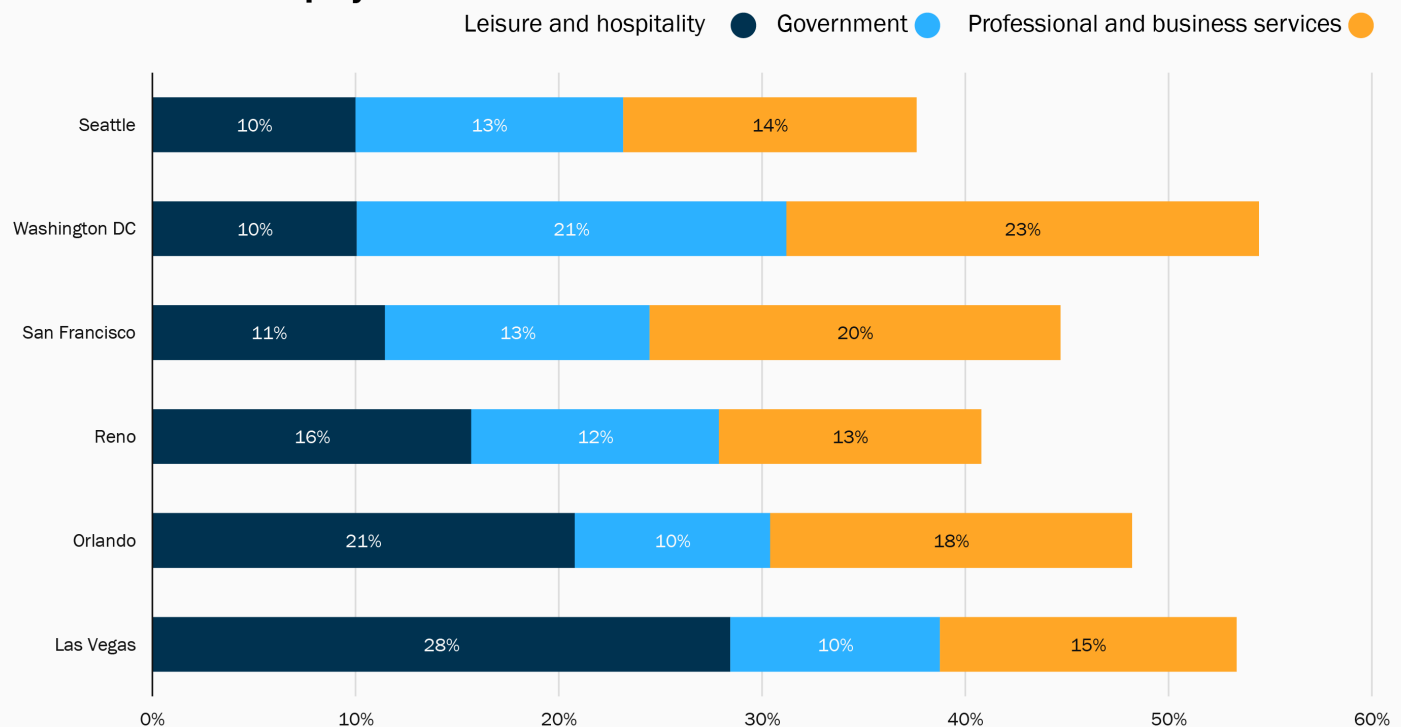(Hospitality & Leisure)

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City and metro economies before Covid-19

Cities and metropolitan areas often specialize in select industries, creating agglomeration economies. Put simply, there is an economic benefit when firms producing similar goods are located near each other. For example, the auto industry is headquartered in Detroit, finance in New York, entertainment in Los Angeles, information technology in Seattle, and so on. The performance of core industries spills over to supporting industries and affects the entire regional economy; restaurants and retail stores do better when the core industry is booming and struggle when it is not. In this section, we discuss the primary industries in each metropolitan area of interest prior to COVID-19.

Before COVID-19, Orlando had the largest tourism industry in the nation, producing $26 billion per year, while Las Vegas came in second at over $19 billion.[1] However, Las Vegas' total GDP is smaller than Orlando's, so the impact of tourism is relatively larger—

hospitality and leisure employed more than a quarter of Las Vegas workers in 2019.[2] There are a larger share of leisure and hospitality workers in Las Vegas than government workers in D.C. Orlando and Reno have similarly high employment concentrations in hospitality and leisure, although production as a portion of their economy is sizably smaller than in Las Vegas. Figure 2 shows that roughly one in five workers in Orlando (21%) worked directly in hospitality and leisure in 2019, as did 16% (roughly one in seven) of Reno's workforce.[3] In these cities, many secondary industries—like the professional or business sector—are driven by their primary economic engines.

Figure 2. Select metropolitan area industry employment
Portion of total employment

Leisure and hospitality ●   Government ●   Professional and business services ●

City	Leisure and hospitality	Government	Professional and business services
Seattle	10%	13%	14%
Washington DC	10%	21%	23%
San Francisco	11%	13%	20%
Reno	16%	12%	13%
Orlando	21%	10%	18%
Las Vegas	28%	10%	15%

Source: U.S. Bureau of Labor Statistics, "Metropolitan Statistical Areas at a Glance," 2019 average nonfarm employee counts, not seasonally adjusted.

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Seattle and San Francisco, on the other hand, specialize in technology, an industry that may have benefitted from COVID-19. Seattle is the well-known birthplace of Microsoft and the home of Amazon. San Francisco is the modern-day home of enormous tech conglomerates like Salesforce and Adobe and features major corporate offices for many of the Silicon Valley giants located nearby. Anchor industries employ different types of workers; employment in Seattle and San Francisco are both over two times (2.36 and 2.14

respectively) more concentrated in their largest occupational group, computer and mathematical occupations, than the national average.[4] Orlando, by contrast, has slightly less than the national rate of employment in computer and mathematical occupations, while that figure plummets in Las Vegas (50%) and Reno (54%).[5] Put another way, San Francisco and Seattle have more than four times as many employees in computers and math than Las Vegas and Reno, proportionate to the total number of workers in each metro.

Moving beyond the technology versus tourism binary, we add the nation's capital and government hotspot, Washington, D.C., where one in five workers are employed directly by the government. The corresponding army of lawyers is a good indicator of how the primary industry of a city drives secondary workforces; D.C. has almost three times (2.76) as many legal service workers per capita as the national average. With governing also comes a demand for research (military and civilian) and, as a result, D.C. has an even greater share of employees in computer and mathematics than Seattle or San Francisco (2.46 times the national average), approaching five times as many as Las Vegas and Reno, as a proportion of each metro's workers.[6]

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The economic impact of Covid-19

COVID-19, which devastated some industries like leisure and hospitality, barely impacted others. Table 1 shows the change in the unemployment rate among our comparison metros; Las Vegas' unemployment increased by nearly eight percentage points from November 2019 to November 2020—almost five percentage points more than the nation as a whole. Las Vegas and Orlando are among the metros with the current highest unemployment rates in the country; Las Vegas had the fourth highest unemployment rate of all metropolitan areas, over five points higher than the national rate in November 2020.
[7] Las Vegas and Orlando also had among the top 10% highest employment declines of all metro areas from November 2019 to November 2020 (the most recent data available at the

metro level).8 Meanwhile, the technology- and government-based metros tend to have lower unemployment than the national average, even if they started with rates similar to (or even slightly higher than) Orlando.

In this section, we examine the impact of the coronavirus pandemic on the leisure and hospitality sector (the hardest-hit industry and core sector of Las Vegas, Reno, and Orlando), the pandemic's effect on COVID-19-resilient industries (like technology in Seattle and San Francisco or government in Washington, D.C.), and discuss economic outcomes for the Hispanic or Latino population in each city.

Table 1: Metropolitan area unemployment, November 2019-20

Metropolitan area	Rate (Nov 19)	Rate (Nov 20)	Over-the-year change
Las Vegas-Henderson-Paradise, NV	3.6	11.5	7.9
Orlando-Kissimmee-Sanford, FL	2.7	7.7	5
San Francisco-Oakland-Hayward, CA	2.4	6.1	3.7
United States	*3.3*	*6.4*	*3.1*
Washington-Arlington-Alexandria, DC-VA-MD-WV	2.8	5.8	3
Reno, NV	2.7	5.4	2.7
Seattle-Tacoma-Bellevue, WA	3	5.1	2.1

## The Most COVID-19-vulnerable Industry: Leisure and Hospitality

Cities with core industries that have been negatively impacted by the COVID-19 recession have broader spillover effects (e.g., an unemployed casino worker in Las Vegas is less likely to buy new clothes). In the aggregate, the devastation of a core industry can mean the decline of others nearby, like with manufacturing in the Rust Belt in the second half of the twentieth century. As a result, metropolitan areas concentrated in hard-hit industries are likely to see negative ripple effects throughout their economy (lower tax revenue, less spending, etc.). As we will explore, the metropolitan areas concentrated in industries susceptible to COVID-19 tend to have larger Hispanic or Latino populations as well. Thus,

the pandemic's economic geography magnifies existing disparities, exacerbating the racial wealth gap for Hispanic or Latino families. This is particularly concerning given that the federal government's initial COVID-19 relief policies failed to appreciate the economic and geographic realities of this recession and were implemented in a way that reduced benefits for many Hispanic or Latino families.[9]

Ten months since the initial wave of closures due to COVID-19, leisure and hospitality workers continue to face the highest unemployment rate amidst the pandemic; over 16% of the sector's labor force is unemployed.[10] While every metropolitan area has hotels, only a few stake their economies on them. Being a destination city for travel includes the economic benefit of both personal tourism and corporate conferences; COVID-19 devastated both as people stopped travelling altogether. The $100 billion a year U.S. conference industry, which fills hotels during the week for conferences in cities that become hotspots for vacationers on the weekends, is at a near standstill.[11] In November 2019, 88% of Las Vegas's hotel or motel rooms were occupied; in November 2020, that figure was just 47%.[12] Similarly, 59% fewer passengers passed through Las Vegas' McCarran International Airport in November 2020 than a year earlier, and 52% fewer tourists visited the city. Orlando is suffering a similar fate; 44% fewer flights were serviced at Orlando's airport in October 2020 compared to a year before.[13]

To demonstrate the broader impact COVID-19 is having on economies like Las Vegas' or Orlando's, we compare a metro area's employment concentration in hospitality and leisure before the pandemic with its change in unemployment. Figure 3 shows the portion of nonfarm workers employed by the leisure and hospitality sector in a metro area in 2019, the change in the total unemployment rate (percentage points) from November 2019 to November 2020, and the proportion of the metro area that is Hispanic or Latino for areas with data for each metric.[14]

Figure 3. Hospitality, unemployment, and the Hispanic or Latino population
by metropolitan area
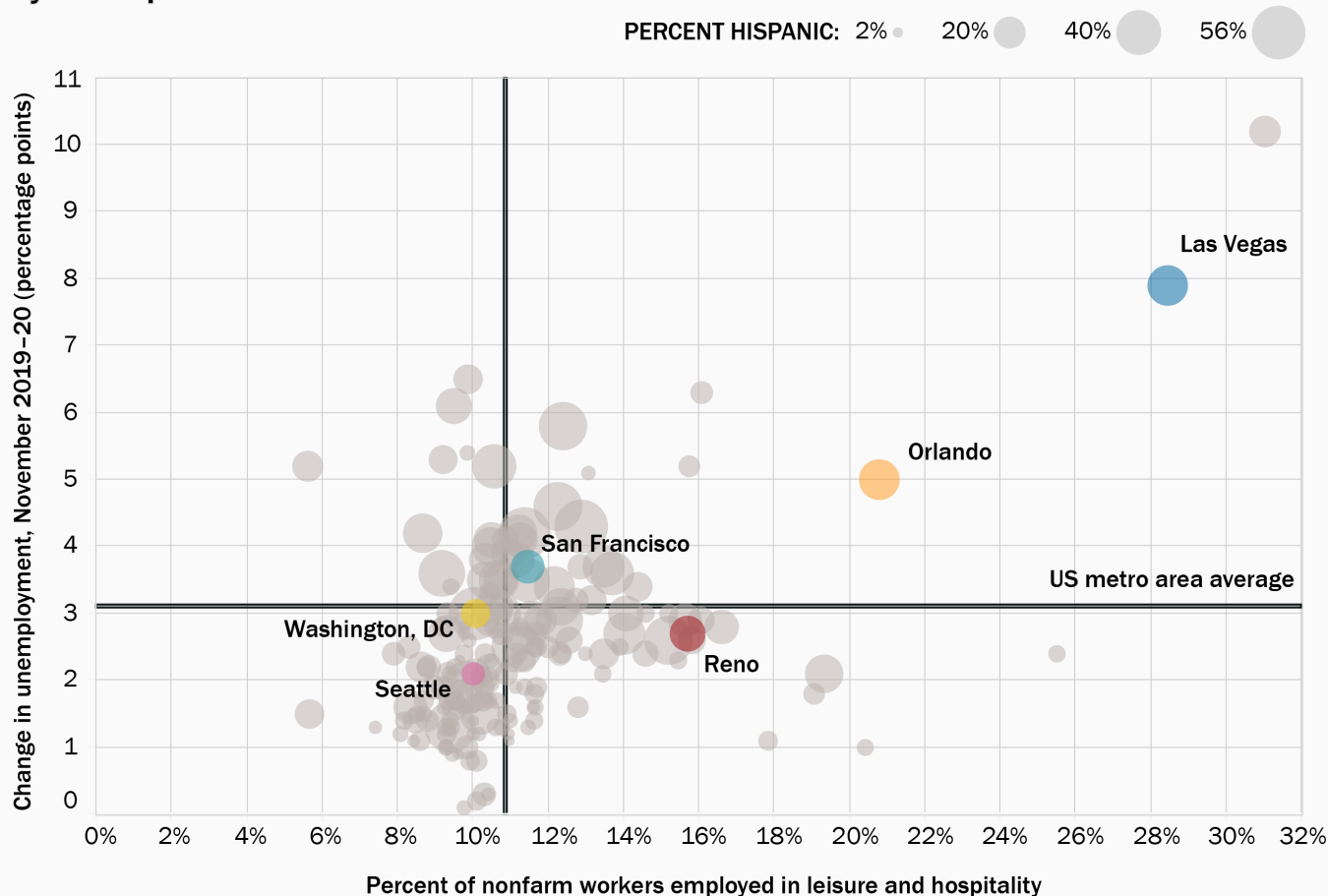
PERCENT HISPANIC: 2%   20%   40%   56%

Source: U.S. Bureau of Labor Statistics, "Over-the-Year Change in Unemployment Rates for Metropolitan Areas," November 2020; American Community Survey 2019 1-year estimates; State of Nevada Department of Employment, Training & Rehabilitation, "Current Payroll Employment Estimates," 2019.

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We see the spillover effect in force; cities that depend on hospitality and leisure also had higher *overall* unemployment, suggesting that the performance of the core industry impacted the performance of a metro area's overall economy. Las Vegas, for example, has the second highest concentration of jobs in hospitality and faced the second largest increase in unemployment (behind Atlantic City). Orlando also stands out with a particularly large hospitality workforce and substantial increase in overall unemployment; both rank among the top 50 metros in November 2020 unemployment. Seattle and Washington D.C., by contrast, are below average in both concentration in hospitality and leisure and change in unemployment, demonstrating again how COVID-19-resilient industry concentrations have helped temper overall job loss.

Figure 3 also overlays the size of a metro's Hispanic or Latino population: the bigger the circle, the larger the Hispanic or Latino share of the metro's population. Tourism-dependent cities like Las Vegas and Orlando also tend to have larger Hispanic or Latino populations, while cities with below-average changes in unemployment like Seattle and Washington D.C. tend to have smaller Hispanic or Latino populations.

The decline in travel and hospitality employment was similar across the cities we analyze. The leisure and hospitality industry in Las Vegas suffered a 21.4 percentage point decline in employment since November 2019, but the leisure and hospitality industry in Orlando, D.C., San Francisco, and Seattle all declined by 30 percent or more.[15] Reno is the only city in our sample that faced a smaller unemployment decline in the sector (16%) than Las Vegas (21%).[16] In other words, there was nothing unique about working in the hospitality industry in Las Vegas, Orlando, or Reno as compared to Seattle, San Francisco, or Washington, D.C. except the portion of employment in the sector. If anything, employment held up better in cities' core industries. However, the employment effects in non-core industries seemed to have been compounded or mitigated by core industry performance. Over a quarter of Las Vegas workers are in the hard-hit leisure and hospitality industry, and the metro's information, financial activities, and professional business service industries also fared the worst of our comparison metros. Unsurprisingly, Las Vegas' overall unemployment is also the highest among this group. By contrast, almost a quarter of Washington, D.C.'s employment is in government, a sector that performed better in November 2020 in the metro than in 2019; D.C. also faced the second smallest increase in unemployment among our comparison metropolitan areas.

COVID-19-Resilient Industries: Information and Government

While COVID-19 wreaked havoc on industries that depend on in-person contact, distancing restrictions caused a sharp increase in the usage of technology for remote work and business transactions. Businesses of all types invested more in technology, with one survey by McKinsey finding that, "about the impact of the crisis on a range of measures, [executives] say that funding for digital initiatives has increased more than anything else

—more than increases in costs, the number of people in technology roles, and the number of customers."[17] That survey also found a sharp increase in the share of North American consumers who interact digitally, rising by over 58% as a result of the crisis.

Relative to other industries, information technology and government have done well. Between February and April 2020, sales for non-store retailers (i.e., online shopping) increased by 15%—Amazon added 400,000 jobs this year, nearly doubling its workforce in response to the pandemic.[18] While these jobs are spread throughout the nation, Amazon's corporate headquarter(s) will likely see disproportionate economic gain from the company's growth. Facebook also announced plans to hire 10,000 additional workers in April 2020.[19] Meanwhile, the 12-month change in information and government industry unemployment is less than half that of leisure and hospitality.[20]

As Table 2 indicates, job losses in information and technology were generally in-line with or slightly below total job loss rates for technology hub cities like Seattle and San Francisco, as well as for D.C., Orlando, and Reno. Interestingly, only in Las Vegas and D.C. were the proportion of job losses greater in information than overall job losses. This could be the result of classification, where information industry jobs that are part of hospitality and leisure or government are classified differently, although one might expect similar impacts in Orlando and Reno.

Table 2: 12-month percent change in employment by industry, November 2019-20

Industry	Las Vegas	Reno	Orlando	Washington, D.C.	San Francisco	Seattle
Total Nonfarm	-10.1	-5.2	-9.3	-6.1	-9.3	-6.7
Leisure and Hospitality	-21.4	-15.9	-30.5	-38.1	-29.7	-30.2
Information	-17.2	0	-5.4	-6.9	-9.1	-2.1
Financial Activities	1.1	1.8	-1.5	-3.7	1.3	1.6
Professional and Business Services	-13.8	0.6	-3.1	-4.7	-2.8	1.4

Industry	Las Vegas	Reno	Orlando	Washington, D.C.	San Francisco	Seattle
Other Services	-12.9	-9.4	-7.2	-1.7	-17.8	-12.8
Government	-4.5	-7.6	-7.4	2.2	-9.7	-6.4

Acceleration of long-run trends towards increased technology use benefits technology firms and, consequently, the communities where technology firms are located. When Amazon and Facebook grow in both employment and value (see Amazon, Facebook stock prices), wealth is disproportionately created in their headquarter cities. As the growth of the auto industry powered Detroit's rise in the 20th century, growth in technology is powering Seattle and San Francisco's rise in the 21st century. COVID-19, while a net loser for all of society, is a relative winner for technology firms and correspondingly, on a relative basis, for their main cities.

Likewise, COVID-19 has put the federal government to the test and Washington responded with money and new jobs. The federal government grew by over 50,000 jobs from the end of 2019 to the end of 2020 and the D.C. metro's government employment grew by over two percent, one of the few positive figures in Table 2.[21] The old Washington adage that "the most secure job is a federal government job" held and, during the COVID-19 pandemic, secure employment is incredibly valuable. One caveat to our analysis is that while federal government hiring has remained strong, state and local government has not. State and local governments across the country lost over 1.1 million jobs during over the same period, more than offsetting the federal employment boost.[22] Thus, state capitals may not be experiencing similar government booms to Washington D.C.

Perhaps over the long run, structural changes allowing for increased remote work started by the response to COVID-19 will weaken the link between cities and their major industry. If so, this will likely be stronger in the IT sector, where a greater share of remote work is possible than in service sectors such as hospitality, leisure, and gaming. Put simply, the amenities that Las Vegas and Orlando offer cannot be as easily substituted by people sitting behind a computer a thousand miles away as may be the case for technology or government jobs.

The Impact on Hispanic or Latino Workers

Hispanic or Latino workers are particularly negatively impacted by the COVID-19 recession, as has been found in prior studies. In December 2020, the Hispanic or Latino unemployment rate was 9.3%, over three points higher than the white unemployment rate.[23] When COVID-19 initially struck, the Hispanic or Latino unemployment rate skyrocketed, surpassing the Black unemployment rate. By the end of 2020, the gap between Hispanic or Latino and white workers was still larger than when COVID-19 unemployment first struck around March.

Our metro-level analysis confirms the race gap in unemployment; metropolitan areas with above-average unemployment at the end of 2020 are 31% Hispanic or Latino, compared to 10.9% Hispanic or Latino in metro areas with below-average unemployment. Thus, the geographic spillovers in industry performance likely drive the increase in the racial disparity between the Hispanic or Latino and white unemployment rates.
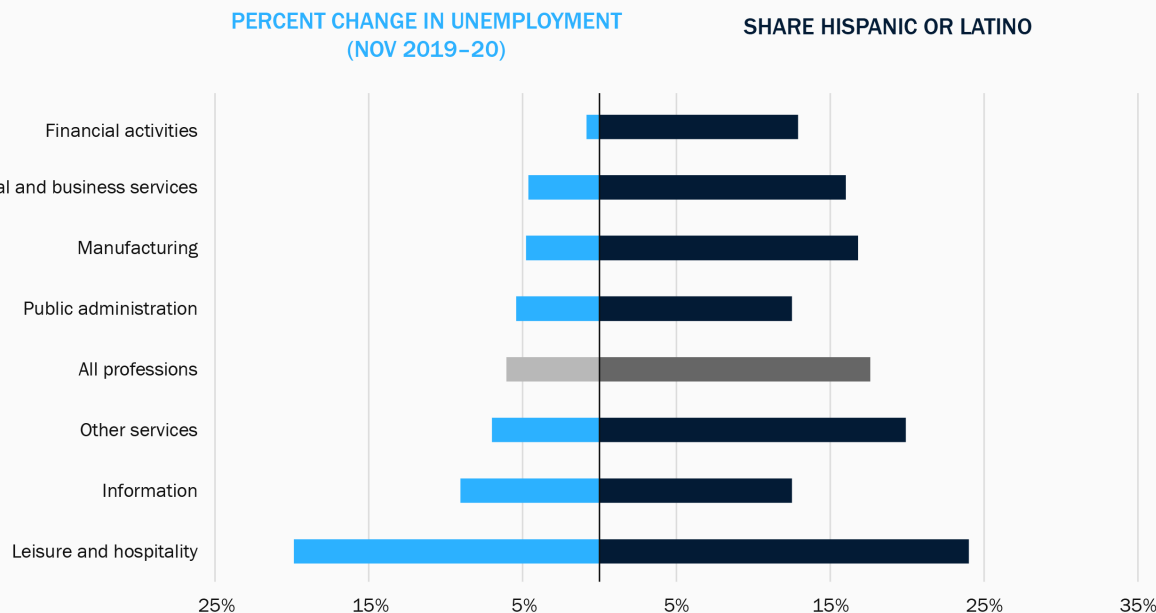
Figure 4. Unemployment by race or ethnicity
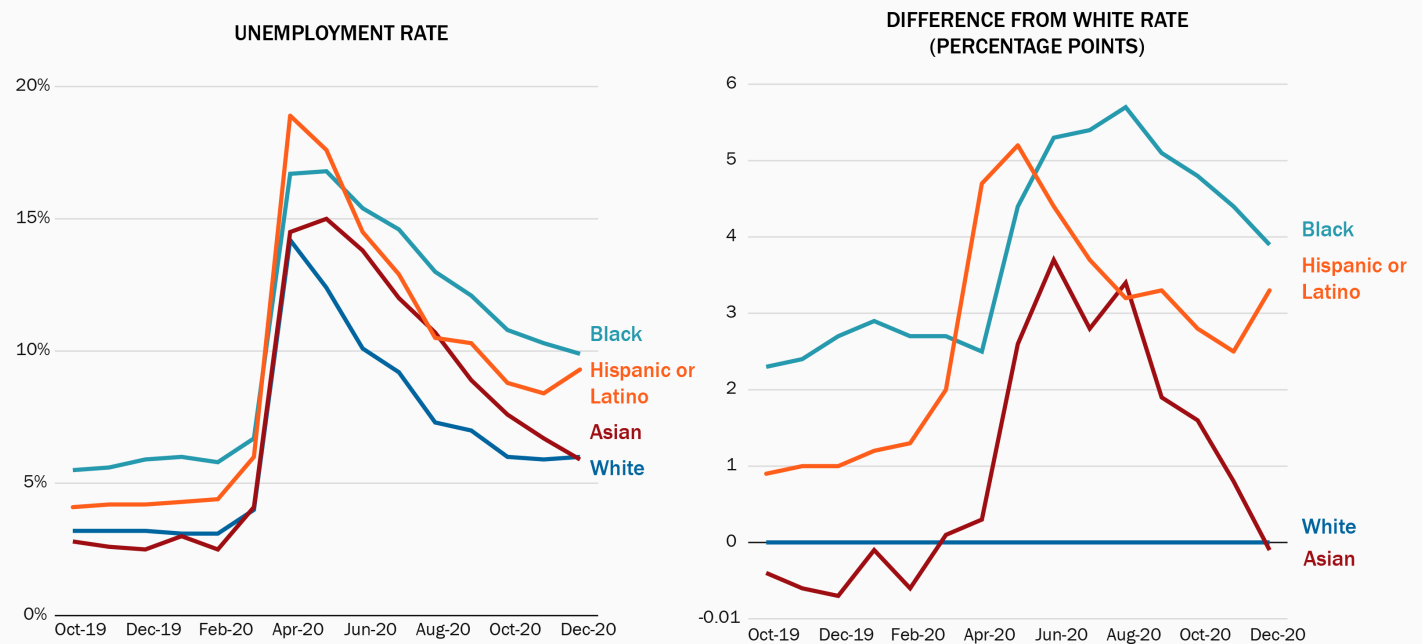
UNEMPLOYMENT RATE

DIFFERENCE FROM WHITE RATE (PERCENTAGE POINTS)

Source: U.S. Bureau of Labor Statistics, "Labor Force Statistics from the Current Population Survey," December 2020.
Note: Unemployment rate based on seasonally adjusted employment status of the civilian noninstitutional population.

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Compounding the geographic effects are industrial concentration differences between racial or ethnic groups. Prior to COVID-19, nearly a quarter of the hospitality sector's labor force was Hispanic or Latino. COVID-19 has decimated tourism, driving the hospitality and leisure industry to the highest unemployment rate among major industries.[24] Figure 5 shows select industries' change in employment from November 2019 to November 2020 and the portion of Hispanic or Latino workers in each industry in 2019.

Figure 5. Unemployment change and share of workers who are Hispanic or Latino
Select industries

PERCENT CHANGE IN UNEMPLOYMENT (NOV 2019–20) / SHARE HISPANIC OR LATINO

Industries (top to bottom): Financial activities, Professional and business services, Manufacturing, Public administration, All professions, Other services, Information, Leisure and hospitality

X-axis: 25% 15% 5% | 5% 15% 25% 35%

Source: U.S. Bureau of Labor Statistics, "Labor Force Statistics from the Current Population Survey: Employed persons by detailed industry, sex, race, and Hispanic or Latino ethnicity," household annual 2019 averages and U.S. Bureau of Labor Statistics, Employees by Industry, Federal Reserve Bank of St. Louis (fred.stlouisfed.org/series/PAYEMS).

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With unemployment also comes a number of other issues; employees often receive health benefits from their employer and losing a job may mean losing affordable health care. These impacts compound existing racial inequity in health care access as the Hispanic or Latino population is also disproportionately likely to contract COVID-19. Las Vegas coronavirus rates per 1,000 residents are much higher among Hispanic or Latino people than white people. This helps explain why data through mid-January 2021 indicate that one out of twelve Hispanic or Latino Las Vegans have had COVID-19, while only one in twenty white residents have.[25] On an age-adjusted basis, death rates for Hispanic residents in Nevada are nearly three times as great as that of white residents.[26]

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policy implications

Federal aid has so far been suboptimal in allocating economic assistance to those who need it the most. Over half of coronavirus aid went directly to businesses, many of which were not compelled to keep their employees or prove that they were negatively impacted by the pandemic.[27] By contrast, only about a fifth went directly to workers and families, and the aid that did was not always well-targeted. For example, initial direct payments (stimulus checks) excluded children if they had one parent who was an undocumented immigrant.[28] Direct stimulus payments were also administered slowly, with millions of American families waiting months to receive their funds.

For the purpose of this analysis, the most well-targeted program was supplemental unemployment insurance. By tracking unemployment and incorporating a broader definition of unemployed workers, enhanced unemployment benefits should have flown disproportionately to those in more impacted industries such as leisure and hospitality. As a result, enhanced benefits did more to support the economies of Las Vegas and Orlando than their relative impact in San Francisco, Seattle, and Washington, D.C. Likewise, we would expect Hispanic or Latino workers to make up a disproportionate number of claims given that they faced disproportionately high unemployment. Herein lies one serious potential problem. Many states continue to struggle with significant difficulty in administering the new unemployment insurance aid.

Multiple factors are at play, including specific states' difficulty modernizing their systems to accommodate the new federal rules and the sudden spike in demand. Florida, for example, had an archaic system that made it difficult for newly eligible workers to qualify.[29] Nevada's difficulty in expanding eligibility and processing record levels of unemployment claims were also well-documented, leading to a class-action lawsuit against the state's employment department.[30] Delays in processing claims and providing payments are particularly harmful for people with little savings and difficulty accessing short-term credit at a reasonable cost, burdens that apply disproportionately to Hispanic or Latino Nevadans. This could be one reason why enhanced unemployment insurance benefits were not equitably taken up by those who need it; about the same proportion of

workers who filed for unemployment benefits are Hispanic or Latino as are in the workforce, even though Hispanic or Latino workers were disproportionately unemployed (see Figure 4).[31]

The heralded Paycheck Protection Program (PPP), which offered affected businesses and workers forgivable loans (in effect grants), saved many fewer jobs than the lofty anticipated 30 million; in the first two months of the program, researchers estimate that only 2.3 million jobs were saved, at a price of $286,000 each.[32] The PPP grants that were distributed seemed mismatched with the unemployment rate in those sectors. According to a Washington Post analysis, 32% of jobs lost were in the lodging, restaurants, and bar industry (a core component of hospitality and leisure), but the industry only received 8% of PPP grants. Similarly, the arts, entertainment & recreation industry had a job loss rate three times higher than the portion of PPP grants it received. Correspondingly, finance and insurance companies that relatively prospered throughout the pandemic received over $8 billion in PPP funds. Put another way, finance and insurance received over $350,000 in PPP funding per job lost from February to April as compared to about $8,000 in arts, entertainment, and recreation, and $7,800 in accommodation and food services.[33]

Table 3: Paycheck Protection Program (PPP) spending, by industry[34]

Industry	Jobs lost	Spending	Grants
Finance & Insurance	0.2%	$8.2	2.3%
Real Estate, rental & leasing	1.1	10.7	3.0
Information	1.2	6.7	1.8
Professional, scientific & technical Services	2.5	43.3	12.7
Construction	4.7	44.9	12.4
Arts, Entertainment, & Recreation	6.3	4.9	1.6
Manufacturing	6.4	40.9	10.3
Accommodation & food services	31.8	30.5	8.1

Much of the Coronavirus Aid, Relief and Economic Security (CARES) Act money allocated directly to state and local governments was allocated by population, despite the demonstrated disparate geographic and economic effects of COVID-19.[35] Allocating by population rather than economic impact results in too little money going to states and local government suffering larger economic consequences. Because the economic geography of COVID-19 fell disproportionately Hispanic or Latino workers, this error will have consequences for racial equity; funding misallocation exacerbates existing racial income and wealth gaps.

Even if all unemployment benefits, PPP loans, and other COVID-19 aid were distributed in the most equitable way possible, people of color—especially Hispanic or Latino workers—are more likely to be unemployed in general and because of COVID-19, more likely to live in the key metro areas disproportionately hit by the recession, and are more likely to contract COVID-19. The impacts of the recession will also not disappear in the years to come. Hispanic or Latino workers who lost their job over the course of the pandemic may not be able to find work for months or years after the final COVID-19 aid has been distributed. There will also be a long lag in tourism's recovery. Even if most Americans who want to be have been vaccinated, international tourism and close contact among people may take months or years to recover. Stimulus spending and temporary aid are a great starting point, but policymakers should pay attention to the industries and people who will face an uphill battle in the foreseeable future.

For government aid to maximize its assistance to vulnerable Americans, increased attention to actual need is necessary. Specific improvements include:

1. Focus support to businesses in more impacted industries, such as hospitality and leisure as opposed to blanket first-come, first-served funding for all industries.
2. Increase assistance to metro areas that depend on the hardest-hit industries such as Las Vegas, Orlando, and Reno.
3. Reverse discriminatory rules that reduce access for negatively impacted populations, such as precluding parents from receiving child benefits based on one parent's nationality. This is one area where the COVID-19 legislation passed by Congress in December showed improvement.

4. Realize that geography interacts with economics and race as the nation turns to the aftermath of the COVID-19 recession, and that the recession's impact will be larger and longer for some communities.

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Report Produced by **Future of the Middle Class Initiative**

The goal of the Future of the Middle Class Initiative is to improve the quality of life of America's middle class and to increase the number of people rising to join its ranks. Through independent, non-partisan analysis and policy development, we seek to advance public understanding of challenges facing the middle class and barriers to upward mobility.

Footnotes

1. 1 World Travel and Tourism Council, "Cities Economic Impact Report," 2019 (https://wttc.org/Research/Economic-Impact/Cities/)
2. 2 U.S. Bureau of Labor Statistics, "Economy at a Glance: Las Vegas-Paradise, NV," 2019 annual (*https://www.bls.gov/eag/eag.nv_lasvegas_msa.htm*)
3. 3 U.S. Bureau of Labor Statistics, "Economy at a Glance: Orlando-Kissimmee-Sanford,FL," 2019 (*https://www.bls.gov/eag/eag.fl_orlando_msa.htm*);U.S. Bureau of Labor Statistics, "Economy at a glance: Reno-Sparks," 2019 (*https://www.bls.gov/eag/eag.nv_reno_msa.htm*)
4. 4 U.S. Bureau of Labor Statistics, "Occupation Employment Statistics Seattle," May 2019 (*https://www.bls.gov/oes/current/oes_42660.htm*); U.S. Bureau of Labor Statistics, "Occupational Employment Statistics San Francisco," May 2019 (*https://www.bls.gov/oes/current/oes_41860.htm*)
5. 5 U.S. Bureau of Labor Statistics, "Occupational Employment Statistics Orlando," May 2019 (*https://www.bls.gov/oes/current/oes_36740.htm*); U.S. Bureau of Labor Statistics, "Occupational Employment Statistics Las Vegas," May 2019 (*https://www.bls.gov/oes/current/oes_29820.htm*); U.S. Bureau of Labor Statistics, "Occupational Employment Statistics Reno," May 2019 (*https://www.bls.gov/oes/current/oes_39900.htm#otherlinks*)
6. 6 U.S. Bureau of Labor Statistics, "Occupational Employment Statistics Orlando," May 2019 (*https://www.bls.gov/oes/current/oes_36740.htm*); U.S. Bureau of Labor Statistics, "Occupational Employment Statistics Las Vegas," May 2019 (*https://www.bls.gov/oes/current/oes_29820.htm*); U.S. Bureau of Labor Statistics, "Occupational Employment Statistics Reno," May 2019 (https://www.bls.gov/oes/current/oes_39900.htm)
7. 7 U.S. Bureau of Labor Statistics, "Over-the-Year Change in Unemployment Rates for Metropolitan Areas," November 2020 (*https://www.bls.gov/web/metro/laummtch.htm*)
8. 8 U.S. Bureau of Labor Statistics, "Over-the-Year Change in Unemployment Rates for Metropolitan Areas," November 2020 (*https://www.bls.gov/web/metro/laummtch.htm*)
9. 9 Aaron Klein and Ariel Gelrud Shiro, "The Covid-19 recession hit Latino workers hard. Here's what we need to do.," October 2020 (*https://www.brookings.edu/blog/how-we-rise/2020/10/01/the-covid-19-recession-hit-latino-workers-hard-heres-what-we-need-to-do/*)
10. 10 U.S. Bureau of Labor Statistics, "Labor Force Statistics from the Current Population Survey," December 2020 (*https://www.bls.gov/web/empsit/cpseea31.htm*)
11. 11 Ben Popken, "America's $100 billion convention industry is back, but changed forever'" June 2020 (*https://www.nbcnews.com/business/business-news/america-s-100-billion-convention-industry-back-changed-forever-n1231228*)
12. 12 UNLV Lee Business School, "Economic Data – Las Vegas/Clark County," December 2020 (*https://cber.unlv.edu/CCEconData.html*)

13. 13 Federal Aviation Administration, "Air Traffic Activity System" (*https://aspm.faa.gov/opsnet/sys/Main.asp?force=atads*)

14. 14 U.S. Bureau of Labor Statistics, "Over-the-Year Change in Unemployment Rates for Metropolitan Areas," November 2020 (*https://www.bls.gov/web/metro/laummtch.htm*); Nevada Department of Employment, Training & Rehabilitation, "Current Payroll Employment Estimates," 2019 (*http://nevadaworkforce.com/Home/DS-Results-CES2*)

15. 15 U.S. Bureau of Labor Statistics, "Economy at a Glance," November 2020. For Las Vegas-Paradise, Washington, D.C., Reno, San Francisco-Oakland-Hayward, Seattle-Tacoma-Bellevue, and Orlando-Kissimmee-Sanford. (*https://www.bls.gov/regions/home.htm*)

16. 16 U.S. Bureau of Labor Statistics, "Economy at a Glance," November 2020. For Las Vegas-Paradise, Washington, D.C., Reno, San Francisco-Oakland-Hayward, Seattle-Tacoma-Bellevue, and Orlando-Kissimmee-Sanford. (https://www.bls.gov/regions/home.htm)

17. 17 McKinsey and Company, "How COVID-19 has pushed companies over the technology tipping point—and transformed business forever," October 2020 (*https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever*)

18. 18 U.S. Bureau of Labor Statistics, "Employment by industry, monthly changes," December 2020 (*https://www.bls.gov/charts/employment-situation/employment-by-industry-monthly-changes.htm*) ; OCED, "E-Commerce in the time of Covid-19," October 2020, (*http://www.oecd.org/coronavirus/policy-responses/e-commerce-in-the-time-of-covid-19-3a2b78e8/*) ; Jay Greene (The Washington Post), "Amazon now employs more than 1 million people," October 2020 (*https://www.washingtonpost.com/technology/2020/10/29/amazon-hiring-pandemic-holidays/*)

19. 19 Todd Spangler (Variety), "Facebook to Hire 10,000 Workers this Year, Sets Plans for Doling out $100M in Aid to Small Businesses," April 2020 (*https://variety.com/2020/digital/news/facebook-hiring-10000-workers-small-business-grants-1234570018/*)

20. 20 U.S. Bureau of Labor Statistics, "Employment by industry, monthly changes," December 2020 (*https://www.bls.gov/charts/employment-situation/employment-by-industry-monthly-changes.htm*)

21. 21 U.S. Bureau of Labor Statistics, "Employment by Industry, monthly changes," (*https://www.bls.gov/charts/employment-situation/employment-by-industry-monthly-changes.htm*)

22. 22 U.S. Bureau of Labor Statistics, "Employment by Industry, monthly changes," 2020 (*https://www.bls.gov/charts/employment-situation/employment-by-industry-monthly-changes.htm*)

23. 23 U.S. Bureau of Labor Statistics, "Labor Force Statistics from the Current Population Survey," December 2020 (*https://www.bls.gov/web/empsit/cpseea04.htm*)

24. 24 U.S. Bureau of Labor Statistics, "Labor Force Statistics from the Current Population Survey," January 2021 (*https://www.bls.gov/cps/cpsaat18.htm*)

25. 25 Southern Nevada Health District, "COVID-19 Maps, Reports, and Trends," January 2021 (*https://covid.southernnevadahealthdistrict.org/cases/reports/*)

26. 26 Centers for Disease Control and Prevention, "COVID Data Tracker," 2021 (*https://covid.cdc.gov/covid-data-tracker/index.html#datatracker-home*)

27. 27 Peter Whoriskey, Douglas MacMillan, and Jonathan O'Connell (Washington Post), "'Doomed to fail': Why a $4 trillion bailout couldn't revive the American Economy," October 2020 (*https://www.washingtonpost.com/graphics/2020/business/coronavirus-bailout-spending/*)

28. 28 Aaron Klein and Ariel Gelrud Shiro, "The Covid-19 recession hit Latino workers hard. Here's what we need to do.," October 2020 (*https://www.brookings.edu/blog/how-we-rise/2020/10/01/the-covid-19-recession-hit-latino-workers-hard-heres-what-we-need-to-do/*)

29. 29 Lauren Wamsley (NPR), "Gov. Says Florida's Unemployment System Was Designed To Create 'Pointless Roadblocks," August 2020 (*https://www.npr.org/sections/coronavirus-live-updates/2020/08/06/899893368/gov-says-floridas-unemployment-system-was-designed-to-create-pointless-roadblock*)

30. 30 Joyce Lupiani and Angelina Baray (KTNV), "TIMELINE: Nevada Dept. of Employment and handling of pandemic unemployment claims," January 2021 (*https://www.ktnv.com/news/timeline-nevada-dept-of-employment-and-handling-of-pandemic-unemployment-claims*); Darcy Spears (KNTV), "Class-action lawsuit seeks to force Nevada's unemployment office to do its job," July 2020 (*https://www.ktnv.com/13-investigates/class-action-lawsuit-seeks-to-force-nevadas-unemployment-office-to-do-its-job*)

31. 31 The Century Foundation, "Who is Receiving Unemployment Insurance, and Who Just Lost $600 Per Week?," August 2020, (*https://tcf.org/content/commentary/receiving-unemployment-insurance-just-lost-600-per-week/?session=1&session=1*)

32. 32 Stephanie Ruhle, Leticia Miranda, and Michael Cappetta (NBC News), "PPP likely saved 35 million jobs, says JPMorgan Chase CEO Jamie Dimon," August 2020 (*https://www.nbcnews.com/business/economy/ppp-likely-saved-35-million-jobs-says-jpmorgan-chase-ceo-n1236341*); David Autor, David Cho, Leland D. Crane, Mita Goladar, Byron Lutz, Joshua Montes, William B. Peterman, David Ratner, Daniel Villar, Ahu Yildirmaz (National Bureau of Economic Research), "An Evaluation of the Paycheck Protection Program Using Administrative Payroll Microdata," July 2020 (*https://economics.mit.edu/files/20094*)

33. 33 Authors' calculations based on: Bureau of Labor Statistics, "Employment, Hours, and Earnings from the Current Employment Statistics survey (National)," for the 'Arts, entertainment, and recreation,' 'Accommodation and Food Services," and 'Finance and Insurance' subsectors, February and April 2020 (*https://www.bls.gov/iag/*); Peter Whoriskey, Douglas MacMillan, and Jonathan O'Connell (Washington Post), " 'Doomed to fail': Why a $4 trillion bailout couldn't revive the American Economy," October 2020 (*https://www.washingtonpost.com/graphics/2020/business/coronavirus-bailout-spending/*)

34. 34 Peter Whoriskey, Douglas MacMillan, and Jonathan O'Connell (Washington Post), "'Doomed to fail': Why a $4 trillion bailout couldn't revive the American Economy," October 2020 (*https://www.washingtonpost.com/graphics/2020/business/coronavirus-bailout-spending/*)

35. 35 Jared Walczack (Tax Foundation), "State and Local Funding Totals Under the CARES Act," April 2020 (*https://taxfoundation.org/federal-coronavirus-aid-to-states-under-cares-act/*)

Acknowledgments: