

The Impact of Additional Unemployment Insurance Benefits on Employment and Economic Recovery: How the \$600-per-Week Bonus Could Backfire

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KEY TAKEAWAYS

Much of the CARES Act attempts to keep workers connected to employers during the crisis—but the \$600 unemployment bonus is incentivizing job losses.

The extra \$600 per-week benefit could increase unemployment by 13.9 million, and reduce GDP by up to \$1.49 trillion.

To help Americans stay employed, and to mitigate the economic downturn, lawmakers should cap unemployment benefits at no more than 100 percent of wages.

In response to the COVID-19 pandemic, Congress has now passed four bills aimed at mitigating the public health crisis and subsequently minimizing the economic consequences of containment measures. The largest package, the Coronavirus Aid, Relief, and Economic Security (CARES) Act, includes sweeping measures estimated to provide at least \$1.8 trillion in new spending and tax relief, with a grand total, thus far, of about \$2.7 trillion.¹

Many of the CARES Act's provisions, such as the Paycheck Protection Program's forgivable loans to small businesses and employee-retention tax credits, will help with the primary economic goal of keeping workers connected to their employers during this health crisis. But other provisions are less beneficial, work against keeping workers connected to employers,² and could even harm the economic recovery. Most problematic is the additional \$600 per week in

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unemployment benefits to all unemployed workers, regardless of whether they were making \$100 a week or \$2,000 a week prior to becoming unemployed. This bonus benefit—which means that more than half of workers could make more from unemployment than from remaining employed—could dampen or even derail the chances for a quick economic recovery.

This *Backgrounders* examines the effects of higher unemployment insurance (UI) benefits on the level and duration of unemployment. We use evidence from economic studies to model the potential impact of the additional \$600 federal UI benefit on unemployment levels and economic output across the U.S. amid the COVID-19-induced downturn. We find that this additional benefit could increase unemployment by 13.9 million and result in between \$955 billion and \$1.49 trillion in lost gross domestic product (GDP).

CARES Act: Expanded Eligibility, Extended Benefits, Increased Payments

Unemployment insurance is a state-based system whereby employers pay into a UI program, and workers who are laid off from their jobs can collect benefits, typically equal to about 50 percent of their previous earnings, up to a cap. These benefits are usually available for about 13 weeks, and they often are not available to self-employed workers, contractors, individuals with limited work history, and some part-time workers.

The CARES Act created new federal pandemic unemployment provisions to:

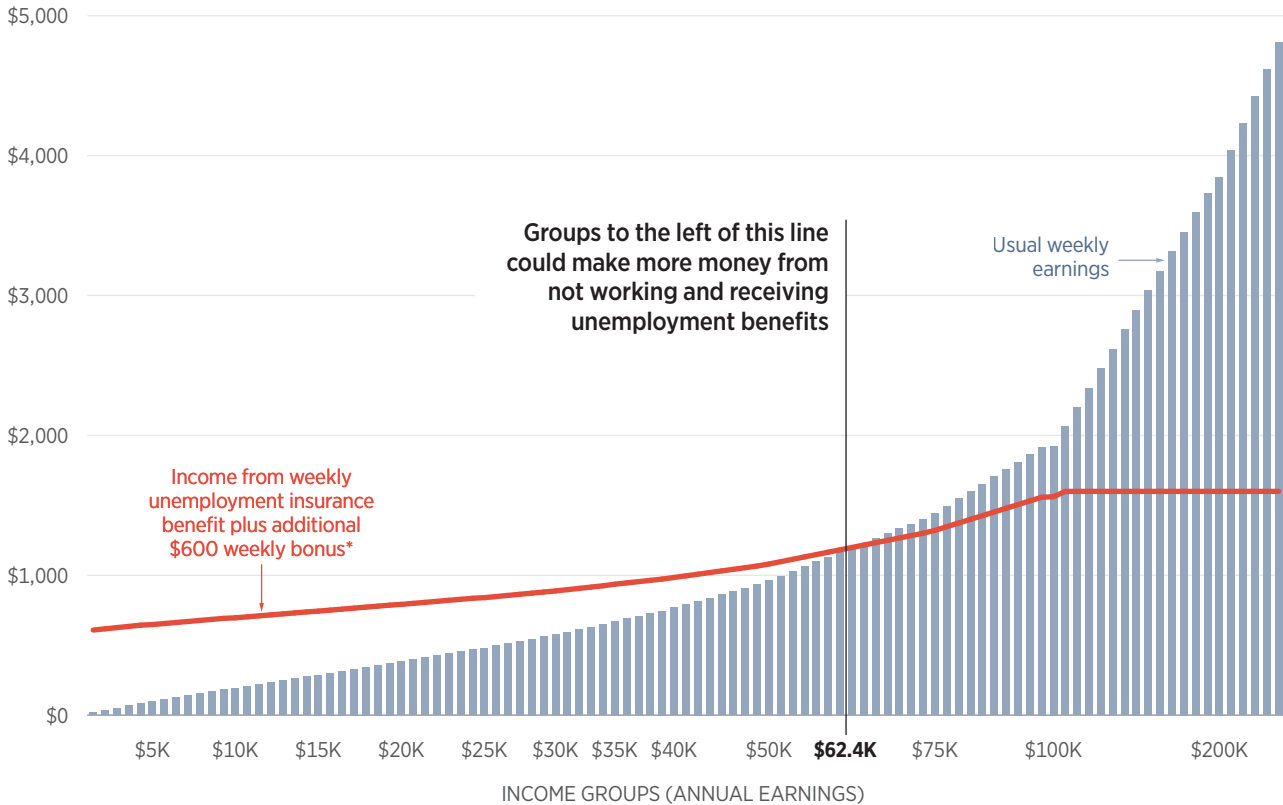
- Extend eligibility to workers who are not eligible for traditional UI benefits;
- Extend the eligible reasons for claiming benefits beyond being laid off to include 11 new reasons, the broadest of which is quitting a job “as a direct result of COVID-19”;³
- Make benefits available through December 31, 2020; and
- Increase benefit levels by \$600 per week on top of existing state-based or new pandemic insurance benefits through July 31, 2020.

The CARES Act provides federal funding for states to make these additional benefits available.

CHART 1

Unemployment Insurance Bonus May Incentivize Job Losses

WEEKLY EARNINGS



* Unemployment insurance benefits vary by state, but the most common benefit is equal to about half of workers' previous earnings, up to a cap. This chart assumes a 50 percent unemployment insurance benefit, with a \$1,000 weekly cap.

NOTE: Figures are from 2017 and are most recent available data.

SOURCE: Authors' calculations based on data from Internal Revenue Service, "SOI Tax Stats—Individual Statistical Tables by Size of Adjusted Gross Income," 2017 data, Table 1.4, <https://www.irs.gov/statistics/soi-tax-stats-individual-statistical-tables-by-size-of-adjusted-gross-income> (accessed April 5, 2020).

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Consequences of the \$600 UI Bonus

While the economic goal is to keep as many people employed as possible, the bonus UI benefit will have the opposite effect.

What Is the \$600 Bonus UI Payment? In an effort to increase unemployment benefits beyond the usual 50 percent rate, with the goal of keeping workers whole who lose their jobs because of COVID-19, Congress created a \$600 additional benefit. This means that someone who makes \$1,200 per

week (\$62,400/year) would receive both a \$600 state-based UI benefit *and* a \$600 added federal benefit, thus maintaining 100 percent of their previous earnings.

Unemployment Benefits Would Exceed Wages for Most Workers.

The problem with providing the same \$600 additional benefit to all workers regardless of their previous earnings is that more than half of workers would receive more money from UI benefits than from their usual wages.

The median full-time worker in America (who earns \$933 per week, or \$48,500 per year) would earn about 15 percent more from unemployment insurance—an additional \$2,300 over the course of four months of unemployment—than if he had remained employed.

The lower that workers' earnings are, the greater financial incentive they will have to collect UI instead of staying employed. A full-time minimum-wage worker would receive 157 percent more from unemployment—a total of \$7,900 more over four months—than from employment.⁴ Part-time and low-wage workers would benefit the most. Someone working 10 hours per week at the minimum wage—perhaps a high school student with a part-time job—would receive 778 percent more, or a total of \$9,800 extra, over four months of unemployment than she would remaining employed.

Workers Can Opt for Unemployment. Typically, employers have to lay off workers in order for them to receive unemployment benefits. The CARES Act creates 11 new provisions through which workers can receive UI benefits, including without being laid off. Many of these provisions make sense in light of the COVID-19 crisis. However, expanding benefits to individuals who have “to quit his or her job as a direct result of COVID-19” without requiring any verification (other than self-assertion) could allow almost anyone to choose unemployment benefits over employment.⁵

This is problematic because the goal, during this temporary public health crisis, is to keep workers employed and ready to return to work once it is safe to do so. Maintaining employment would prevent people from losing health insurance and other employment-based benefits and would allow businesses to resume activities more quickly, minimizing the breadth and depth of the COVID-19-induced economic downturn.

Excessive Benefits Will Discourage Unemployed Workers from Coming Back to Work. The added UI benefits function as an increase in workers' reservation wages (the lowest wage at which a worker is willing to accept a particular type of job) because many workers will not be willing to come back to work unless they can make as much from employment as they do from unemployment. Restaurateur and *Top Chef* judge Tom Colicchio described the problem: “They're not going to come back to work because

unemployment is too attractive.”⁶ Moreover, this benefit makes it harder for businesses that have experienced a surge in business because of the health pandemic, such as medical suppliers, big-box retailers, and grocery stores, to be able to find workers to meet their increased demand.

For lower-wage jobs, which are more common in some of the hardest-hit industries, like food services, hotels, and retail, the unemployment insurance benefit is even more of an employment deterrent. For example, employers would have to increase the pay of workers at the bottom quartile of earners (those currently earning \$15.58 per hour) by \$7.21 per hour in order to make them at least as financially well-off from employment as from unemployment.⁷ Even median workers would require an additional \$3.33 per hour to be made better off being employed (an increase from \$23.33 to \$26.66 per hour).

Such cost increases—the equivalent of \$7,000 more per year for median-wage workers and \$15,000 more per year for lower-wage workers—will impose a huge toll on businesses, particularly as they emerge from massive COVID-19 disruptions. Some businesses will not be able to recruit enough workers to open back up once it is safe to do so and will suffer further revenue losses; some will eliminate some jobs entirely, potentially shifting to automation; and others will end up shutting their doors forever.

Employers More Likely to Lay Off Workers, as Bonus Creates Win-Win. Employers recognize the financial hardship that unemployment causes for workers, and they also know that it is costly to hire and train new workers. Thus, it is often in employers’ best interest to keep workers employed during temporary slowdowns or shutdowns, assuming they have the financial means to do so. But the added benefits under the CARES Act eliminate the altruistic incentive to keep workers employed (because they can receive more money unemployed), and it allows workers to make the choice—absent their employers’ desires—to terminate their employment and still collect unemployment insurance benefits. These factors are almost certainly making unemployment higher than it otherwise would be.

In the four weeks since Congress passed the CARES Act, initial unemployment claims have surged by almost 6 million per week.⁸ It is impossible to parse out how much of this was a direct result of the bonus UI provision, but multiple anecdotes suggest that it contributed to higher unemployment.

A Nissan plant in Canton, Mississippi, for example, temporarily laid off about 4,000 employees in the week of April 6 after Congress passed the CARES Act. Previously, the plant had been paying employees their full salaries despite a production shutdown. A Nissan spokesperson said, “The enhanced benefits through the CARES Act—that gave us some solace

in terms of making that decision.”⁹ Moreover, businesses have reported employees walking off the job—choosing UI instead of paychecks—and not being able to get workers to come back to work, even for short-term projects.

Similarly, Steve Anthony, CEO of Anthony Timberland’s pine mills in Arkansas, said of the \$600 additional benefit: “As soon as I saw that, I immediately knew it was going to be a major problem.”¹⁰ He noted that the fact that workers could make more money unemployed than employed led to “an uncommitted, unhappy workforce” that was less productive. After polling workers about whether they wanted to work or collect unemployment, the company plans to lay off 200 workers and cut production by half at one location.

While the provision may seem mutually beneficial to both workers and employers in the short term, it could have some unintended consequences.

Consequences of Unemployment. The most immediate consequence of unemployment amid temporary COVID-19 closures and disruptions is that many unemployed workers will lose their health insurance. This is problematic in normal times, but especially so amid a global health pandemic. Moreover, the fact that some workers will not be willing to come back to work until their unemployment benefits run out and the potential that employers may eliminate or automate some jobs in the meantime could have significant consequences for workers. Economic studies show that even short-term unemployment can lead to a decline in physical and mental well-being¹¹ and reduced fertility,¹² and that long-term unemployment can lead to fewer opportunities,¹³ lower incomes, and higher numbers of disability insurance beneficiaries.¹⁴

Bonus Benefits Undermine Congress’s Efforts to Keep Workers Employed. The Families First Coronavirus Response Act and the CARES Act provide ways to help keep more workers employed, even if they are temporarily not working or working limited hours and perhaps remotely. Some of these measures include:

- Advance refundable tax credits for small business employers to provide mandated paid sick and family leave for workers who get sick and those who are caring for sick family members, or for children who are home from school and child care programs;
- Forgivable loans to small businesses to cover approximately two months of their payroll and other fixed costs; and
- Up to \$5,000 per worker in employee retention tax credits for employers who maintain their employees amid revenue losses.

In many cases, the bonus \$600 UI benefit competes with—and will win over—superior alternatives that would keep workers employed. In some cases, it will be easier for business owners to lay off their workers than to wait for and incur the administrative trouble and uncertainty of applying for loans and tax credits. In cases where small business owners do apply for and receive loans, the amount of loan forgiveness they receive depends on how many workers they keep on their payrolls. Workers quitting and choosing unemployment benefits over employment will result in employers having to pay back more of their loans.

Effects of \$600 UI Bonus on Economic Recovery

It is known anecdotally that the universal \$600-per-week increase in UI benefits that Congress passed in the CARES Act has increased unemployment, both as companies lay off workers they otherwise would have kept employed, and as workers quit jobs in order to obtain UI benefits instead of wages.¹⁵ We provide evidence from economic studies below, under “Evidence Behind the Estimates: Economic Effects of Higher Unemployment Rates,” explaining why this is the case.

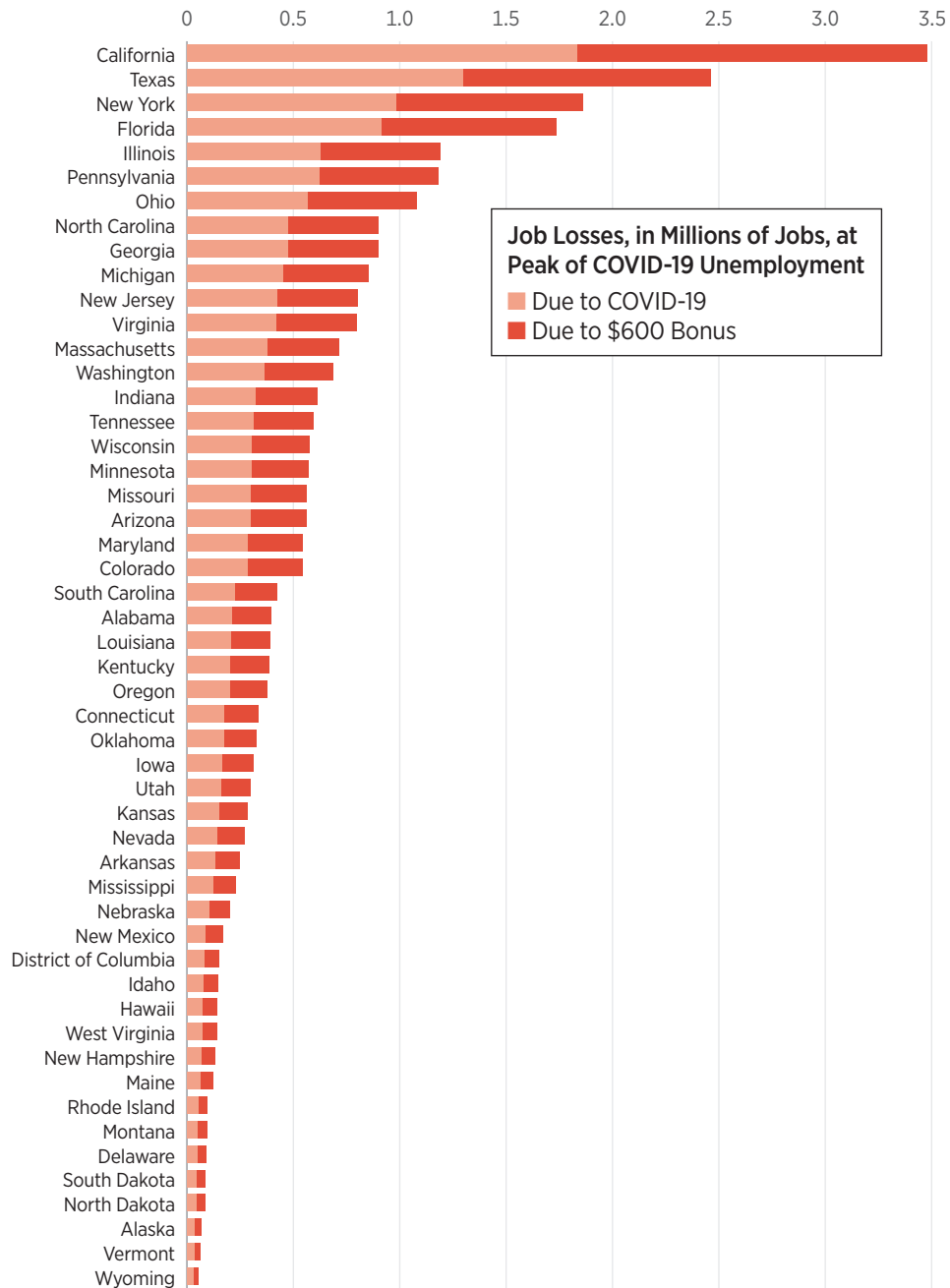
Policymakers, including state governors, should understand the potential consequences of increased unemployment on their economies and budgets. Thus, we have implemented an illustrative model to provide rough estimates of the impact of the additional \$600 federal UI benefit on the number of people who become unemployed and the subsequent loss in economic output. This model applies elasticities on the relationship of benefit levels to the duration someone takes unemployment.¹⁶ Additionally, we utilize a textbook Mortenson Pissarides model to provide insight on level increases in unemployment.¹⁷ Once estimating the unemployment levels over time, we convert those levels to GDP impacts using “Okun’s law.” While this modelling exercise will be imperfect due to not knowing the true makeup of initial claims, it provides a useful framework to estimate macroeconomic effects of changing levels of unemployment benefits.

Increase in UI Claims by 90 Percent. We estimate that the additional \$600 benefit will increase the number of people who become unemployed and collect unemployment benefits by 90 percent at the peak of the COVID-19 economic slowdown.¹⁸ This translates to an additional 13.9 million unemployment claims than would have occurred absent the extra \$600 payments.

Reduction in GDP by \$1 Trillion. We estimate that the \$600 benefit’s effect on unemployment will lead to an additional loss in GDP between

CHART 2

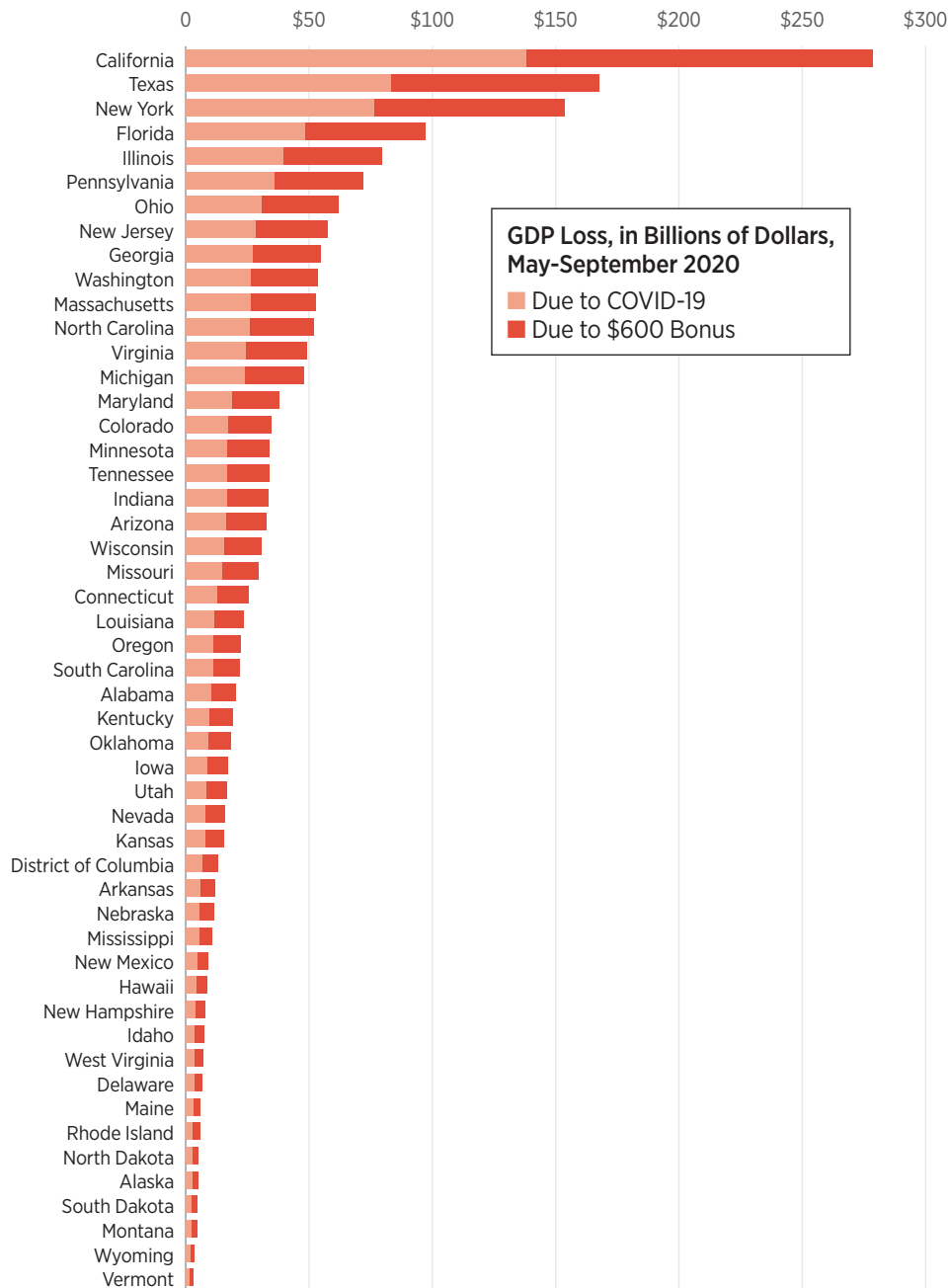
Bonus \$600 Unemployment Benefit Will Increase Unemployment



SOURCE: Authors' calculations based on data from Bureau of Economic Analysis, "Employment by State," <https://www.bea.gov/data/employment/employment-by-state> (accessed April 20, 2020).

CHART 3

Bonus \$600 Unemployment Benefit Will Reduce Output During Recovery



NOTE: Output results based upon Okun's Law and two alternate employment paths over the estimated primary recovery period of May to September 2020, with the additional \$600 unemployment benefit causing people to remain unemployed for longer durations.

SOURCE: Authors' calculations based on data from Bureau of Economic Analysis, "Gross Domestic Product by State: 4th Quarter and Annual 2019," <https://www.bea.gov/data/gdp/gdp-state> (accessed April 20, 2020).

\$955 billion and \$1.49 trillion as additional workers who receive UI benefits also take longer to return to productive work.¹⁹ Consequently, we estimate that GDP will decline by more than twice as much as it would absent the additional \$600 benefit.

Evidence Behind the Estimates: Economic Effects of Higher Unemployment Rates

More people working creates more economic output, increased tax revenues, and reduced government spending (primarily welfare costs), while more people unemployed has the opposite effect of lowering output, reducing tax revenues, and increasing government spending. Thus, maximum productive employment is a shared goal. Yet, in an attempt to help alleviate hardships, particularly amid economic downturns, policymakers' actions can actually exacerbate unemployment levels. As the economic literature shows, higher unemployment benefit levels and longer maximum benefit durations lead to increased unemployment levels.

Unemployment Reduces Output. The fewer people who are working and producing goods and services of value, the lower an economy's output. Economist Arthur Okun put a value to this relationship with his 1962 paper that established Okun's law, which said that each one-percentage-point increase in the unemployment rate translates into a roughly three-percentage-point decline in the growth rate of real GDP. Some more recent economic studies suggest that the associated decline in GDP growth may be closer to two percentage points for each percentage-point increase in the unemployment rate.²⁰ Thus, we include a range of a two-to-three-percentage-point decline in GDP per each percentage-point increase in the unemployment rate.

Starting from a projected 2.5 percent real annual growth rate in GDP for the second quarter of 2020,²¹ and a rough estimate of a 10-percentage-point increase in the unemployment rate for the second quarter of 2020 (from 3.5 percent to 13.5 percent),²² Okun's law suggests that the real annual rate of GDP growth would drop by 20 percentage points to 30 percentage points in the second quarter, to between -17.5 percent and -27.5 percent. That would amount to a loss of between \$1.111 trillion and \$1.666 trillion in output during just the second quarter of 2020.²³ If the increased size and availability of UI benefits causes unemployment to rise further than it otherwise would, each additional percentage-point increase in the unemployment rate can be expected to reduce second-quarter GDP by between \$111 billion and \$167 billion.

Higher Unemployment Benefits Increase Unemployment Duration.

When workers receive a higher percentage of their income while unemployed, they tend to take longer to find or accept a new job.

The elasticity of unemployment duration is a term for the percentage increase in the length of unemployment for a given percentage change in unemployment benefit. A recent study in the U.S. found an elasticity of 0.35 prior to the 2009 recession, and an increased elasticity of between 0.65 and 0.90 during and after the recession.²⁴ An elasticity of 0.65 percent implies that a 150 percent increase in benefit levels (from an average of roughly \$400 per week to \$1,000 per week) would increase the average duration of benefits by 97.5 percent. That corresponds to an increase in the average duration of unemployment benefits from 21.3 weeks²⁵ to 42.1 weeks, which exceeds the new maximum of 39 weeks. That is, the increased benefits would entice the majority of unemployed workers to claim the maximum allowable benefits before returning to work. Longer durations of unemployment translate into larger losses in output, or GDP.

Additionally, an increase in the duration of unemployment benefits can have the perverse effect of making open positions harder to come by. The standard model that economists use to study employment assumes that employers post a vacancy when they need labor and that both employees and employers spend time and effort looking for a match to fill the vacancy. When more generous unemployment benefits raise wages (because workers are more selective in their search for employment), the value to employers of filling a vacancy goes down, so they post fewer positions. With fewer vacancies in the market, workers have to search longer to match with an employer.

Researchers at the New York Federal Reserve estimated the effect that this mechanism had on the unemployment rate during the Great Recession. They found that the unprecedented extensions in unemployment benefits—allowing for up to 99 weeks of benefits—likely accounted for a significant share of the persistently high unemployment levels after the Great Recession.²⁶ They estimated that the unemployment rate would have been 3.0 percentage points lower in 2010 (6.6 percent instead of 9.6 percent) and 2.2 percentage points lower in 2011 (6.8 percent²⁷ instead of 8.9 percent) had the extended unemployment benefits not been available. In total jobs, this is equivalent to a difference of about 4.6 million more people unemployed in 2010, and 3.3 million more unemployed in 2011.²⁸

Higher Benefits Increase Unemployment Claims. Although states vary in their provision of unemployment benefits, most states provide unemployed workers with unemployment benefits equal to about 50

percent of their previous earnings, up to a cap that is often tied to the median wage in the state. For example, Mississippi provides the lowest maximum benefit at \$235 per week, while Massachusetts provides the highest maximum at \$1,234 per week.²⁹ In the current context, the \$600 added federal benefit raises the maximum benefit in Mississippi by 255 percent, and the maximum in Massachusetts by 49 percent. Across the U.S., average total UI benefits have risen from about \$400 per week to about \$1,000 per week, representing a 150 percent increase.

Economic studies find that higher benefit levels can significantly increase take-up rates. One study found an elasticity of 0.46 to 0.78 with respect to benefit levels on the number of unemployment claims.³⁰ This implies an increase in the number of unemployment claims by 69 percent to 117 percent beyond what it would have been absent the additional \$600 benefit. This estimate only incorporates the increase in the percentage of people who file for UI benefits conditional on already having become unemployed. It does not include the effects of a significant increase in eligibility for unemployment insurance under the CARES Act, including allowing workers who have not actually been laid off by their employers to qualify for benefits.

Unemployment Delivers Double-Blow to Government Budgets.

Unemployment leads to increased government spending on social-safety-net programs like UI, Medicaid, and food stamps, but it also reduces government revenues. When fewer people are employed, incomes and income-tax revenues decline; consumer spending and sales taxes fall, and business profits and taxes deteriorate. It is a bit like a family facing an increase in their rent and utility bills at the same time that their income drops by a third. That is why states have rainy day funds and why they build up their UI trust funds to try to balance business cycles. Fortunately, prior to the COVID-19 pandemic, states' rainy day funds were at all-time highs. In fact, states had set aside more than twice as much at the end of 2019 as they did going into the Great Recession.³¹ The longer that unemployment stays elevated, however, the more quickly rainy day funds will deteriorate and potentially run dry.

Conclusion

The primary economic goal in helping to bridge the gap between the previously strong economy and labor market and the forced COVID-19 downturn should be to help keep workers connected to their employers. The additional \$600-per-week unemployment benefit regardless of income level does the opposite. We estimate that this additional benefit will increase

employment by 13.9 million and lead to an additional \$955 billion to \$1.49 trillion in lost output. This evidence suggests that federal policymakers would be wise to cap the additional federal unemployment insurance benefit at no more than 100 percent of workers' previous wages, and to preserve the integrity of the system by tightening the eligibility requirements to prevent misuse and abuse. Absent these changes that require Congress to act, governors should enforce, to the maximum extent possible, their own rules and requirements to prevent individuals from prolonging the downturn and further burdening taxpayers with the future costs of repaying all the COVID-19-related measures.

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Endnotes

1. Congressional Budget Office, "Re: Preliminary Estimates of the Effects of H.R. 748, the CARES Act, Public Law 116-136, Revised, with a Correction to the Revenue Effect of the Employee Retention Credit," letter to the Honorable Mike Enzi, Chairman of the Committee on the Budget, U.S. Senate, April 23, 2020, <https://www.cbo.gov/system/files/2020-04/hr748.pdf> (accessed April 23, 2020).
2. Romina Boccia et al., "Congress Should Focus on Pandemic Control and Fix the Cares Act for an Economic Rebound," Heritage Foundation *Background* No. 3484, April 2, 2020, <https://www.heritage.org/budget-and-spending/report/congress-should-focus-pandemic-control-and-fix-the-cares-act-economic>.
3. Some additional reasons include caring for one's self or a family member with the virus, staying home with children who are out of school and day care, or not being able to reach one's place of employment.
4. Relatively few Americans work for minimum wage. Bureau of Labor Statistics data shows that, as of 2018, 82 million U.S. workers (16 and older) were paid hourly rates; of this group, 1.7 million workers were paid at or below the federal minimum wage of \$7.25 per hour, a total that represents 2.1 percent of all hourly paid workers and just barely 1 percent of the overall labor force. Bureau of Labor Statistics, "Characteristics of Minimum Wage Workers, 2018," *BLS Report* No. 1078, March 2019, <https://www.bls.gov/opub/reports/minimum-wage/2018/home.htm> (accessed April 20, 2020).
5. CARES Act, Section 2102(a).
6. Ian Kuhlgrn, "Restaurants Bailout Problem: Unemployment Pays More," *Politico*, April 20, 2020, <https://www.politico.com/news/2020/04/20/restaurant-bailout-unemployment-coronavirus-197326> (accessed April 22, 2020).
7. Authors' estimates based on BLS data for the fourth quarter of 2019, which show median earnings of \$936 per week, and first quartile, or bottom 25th percent—of workers earning \$623 per week (or \$15.58 per hour, assuming a 40-hour work week). The bottom quartile translates into a 50 percent UI benefit equal to \$312 per week plus the \$600 bonus federal benefit, for total weekly earnings of \$912. On an hourly basis, UI benefits equal \$22.79 per week, or a \$7.21 increase from usual hourly wages of \$15.58. For the BLS data, see news release, "Usual Weekly Earnings of Wage and Salary Workers, First Quarter 2020," Bureau of Labor Statistics, April 15, 2020, <https://www.bls.gov/news.release/pdf/wkyeng.pdf> (accessed April 23, 2020).
8. Federal Reserve Bank of St. Louis, "Initial Claims," Federal Reserve Economic Data, updated April 16, 2020, <https://fred.stlouisfed.org/series/ICSA> (accessed April 20, 2020).
9. Ann Wolfe, "Nissan Plant Lays Off 4,000 Workers to Slow Coronavirus Spread," *Mississippi Today*, April 6, 2020, <https://mississippitoday.org/2020/04/06/nissan-canton-plant-lays-off-4000-workers-to-slow-coronavirus-spread/> (accessed April 22, 2020).
10. Stephen Steed, "Workers at Arkansas Mill Pick Aid Over Pay; 200 Jobs Going on Hiatus, CEO Says," *Arkansas Democrat & Gazette*, April 4, 2020, <https://www.arkansasonline.com/news/2020/apr/04/workers-at-mills-pick-aid-over-pay-2020/> (accessed April 19, 2020).
11. Richard Maier et al., "Effects of Short- and Long-Term Unemployment on Physical Work Capacity and on Serum Cortisol," *International Archives of Occupational and Environmental Health*, Vol. 79, No. 3 (2006), pp. 193–198, https://www.researchgate.net/publication/7485781_Effects_of_short-_and_long-term_unemployment_on_physical_work_capacity_and_on_serum_cortisol (accessed April 23, 2020).
12. Janet Currie and Hannes Schwandt, "Short- and Long-Term Effects of Unemployment on Fertility," Proceedings of the National Academy of Sciences of the United States of America, September 29, 2014, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4205620/> (accessed April 20, 2020).
13. Katharine G. Abraham et al., "The Consequences of Long-Term Unemployment: Evidence from Linked Survey and Administrative Data," National Bureau of Economics *Working Paper* No. 22665, revised February 2018, <https://www.nber.org/papers/w22665> (accessed April 20, 2020).
14. Nicole Maestas, Kathleen J. Mullen, and Alexander Strand, "The Effect of Economic Conditions on the Disability Insurance Program: Evidence from the Great Recession," National Bureau of Economic Research *Working Paper* No. 25338, December 2018, <https://www.nber.org/papers/w25338> (accessed April 20, 2020).
15. See, for example Scott Horsley, "Bitter Taste for Coffee Shop Owner, As New \$600 Jobless Benefit Drove Her To Close," NPR, April 21, 2020, https://www.npr.org/2020/04/21/838879361/bitter-taste-for-coffee-shop-owner-as-new-600-jobless-benefit-closed-her-busines?utm_source=facebook.com&utm_medium=social&utm_term=nprnews&utm_campaign=npr&fbclid=IwAR1gJNwK9W2VmQFJnD7Q9cLqktdt_gp-jCf88AVF7ZvHJiG7T6426FKMVA&fbclid=IwAR2eu-JHfUSosbYdgseFahLX8mLNoivhtyigcfcJ5OQ3pTpt2YiGP_4PaFA&fbclid=IwAR3rNV970pv8nPwqzxfjC1LoReL1kBJ81tRgor51b1hbdhcwq3i_fnLpk8 (accessed April 22, 2020), and Patrick Thomas and Chip Cutter, "Companies Cite New Government Benefits in Cutting Workers," *The Wall Street Journal*, April 7, 2020, <https://www.wsj.com/articles/companies-cite-new-government-benefits-in-cutting-workers-11586264075> (accessed April 22, 2020).
16. David Card et al., "The Impact of Unemployment Benefits on the Duration of Unemployment Insurance Receipt: New Evidence from a Regression Kink Design in Missouri, 2003–2013," NBER *Working Paper* No. 20869, January 2015, <https://www.nber.org/papers/w20869.pdf> (accessed April 23, 2020).
17. For an example of this model, see Lutz Hendricks, "Mortenson Pissarides Model," November 22, 2017, Power Point presentation, https://lhendricks.org/econ720/search/MortensonPissarides_SL.pdf (accessed April 23, 2020).
18. Our 90 percent finding is consistent with the literature cited above that suggests an increase between 69 percent and 117 percent. We model the peak in unemployment to occur in the middle of May 2020. The actual peak is highly uncertain, but the precise timing is not crucial to our estimates because we focus on the difference in unemployment with and without the additional \$600 benefit.

19. This range includes a two- to three-percentage-point decline in the growth rate of real GDP per each percentage-point increase in the unemployment rate.
20. Michael T. Owyang and Tatevik Sekhposyan, "Okun's Law Over the Business Cycle: Was the Great Recession All That Different?" *Federal Reserve Bank of St. Louis Review*, Vol. 94, No. 5 (September/October 2012), pp. 399–418, https://files.stlouisfed.org/files/htdocs/publications/review/12/09/399-418Owyang_rev.pdf (accessed April 19, 2020).
21. GDP was projected to grow at a real annual rate of 2.5 percent in the second quarter of 2020, and by 2.2 percent in 2020. Congressional Budget Office, "Budget and Economic Data—Economic: 10-Year Economic Projections," from January 2020, <https://www.cbo.gov/about/products/budget-economic-data#4> (accessed April 16, 2020).
22. A 10-percentage-point increase in unemployment is a rough estimate for the three-month period from March 15 to June 15, based on initial unemployment filings through April 4, indicating unemployment close to 14 percent. This rate will rise in the short term, and then decline, hence our estimate of average unemployment of 13.5 percent over the period.
23. Estimates based on the Congressional Budget Office's January 2020 projections for second-quarter GDP to be \$22.218 trillion at an annual rate, or \$5.555 trillion for the second quarter. Congressional Budget Office, "Budget and Economic Data—Economic: 10-Year Economic Projections," from January 2020.
24. Card et al., "The Impact of Unemployment Benefits on the Duration of Unemployment Insurance Receipt: Evidence from a Regression Kink Design in Missouri, 2003–2013."
25. Unemployment duration averaged 21.3 weeks over the past year, from February 2019 to March 2020. Similarly, unemployment duration averaged 21.4 weeks over the past three decades, since 1990. Federal Reserve Bank of St. Louis, Economic Research, "Economic Data—Duration of Unemployment—Average Weeks Unemployed," <https://fred.stlouisfed.org/series/UEMPMEAN> (accessed April 16, 2020).
26. Marcus Hagedorn et al., "Unemployment Benefits and Unemployment in the Great Recession: The Role of Equilibrium Effects," The Federal Reserve Bank of New York, *Staff Report* No. 646, revised September 2019, https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr646.pdf (accessed April 13, 2020).
27. Figures do not add due to rounding: The precise estimate was that the unemployment rate would have been 2.15 percentage points lower in 2011, which would have been 6.75 percent (rounded up to 6.8 percent) instead of 8.9 percent.
28. Authors' calculations based on unemployment and labor force data from 2010 and 2011. See Bureau of Labor Statistics, "Databases, Tables & Calculators by Subject," <https://www.bls.gov/data/> (accessed April 13, 2020).
29. Saving to Invest, "2020 Maximum Weekly Unemployment Benefits by State," <https://www.savingtoinvest.com/maximum-weekly-unemployment-benefits-by-state/> (accessed April 13, 2020).
30. Patricia M. Anderson and Bruce D. Meyer, "Unemployment Insurance Benefits and Takeup Rates," National Bureau of Economic Research *Working Paper* No. 4787, June 1994, <https://www.nber.org/papers/w4787.pdf> (accessed April 16, 2020). This study also provides a review of other studies which, using slightly different methods and data, find elasticities ranging between about 0.2 and 0.6.
31. Reid Wilson, "Rainy Day Funds at Record Highs as States Prepare for a Downturn," *The Hill*, December 18, 2019, <https://thehill.com/homenews/state-watch/475081-rainy-day-funds-at-record-highs-as-states-prepare-for-a-downturn> (accessed April 13, 2020).