
# Promoting Economic Recovery After COVID-19

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## Introduction

The economic crisis caused by the COVID-19 pandemic idled about one-sixth of the U.S. economy and displaced one in four American workers. Although the 2.5 million rise in total non-farm employment from April to May was welcome news, the economy still had 20 million fewer jobs in May relative to February 2020. As business activity resumes, we expect to see continued rapid improvements in employment and output growth over the next few months. However, given the magnitude of economic losses that have taken place, it is unlikely the economy will reach pre-pandemic levels anytime soon as substantial portions of the economy will likely experience significant reallocation with some businesses going bankrupt and others using this as an opportunity to downsize employment.

The path to economic recovery requires containing the spread of the virus and developing better treatments, and ultimately a vaccine. Economic policies, however, can play an important role in protecting people from the suffering associated with the reduction in aggregate demand, limiting "second round" damages that spillover into sectors that were not directly affected by the virus, and putting the economy in a better position to recover more rapidly as the virus-related limits on economic activity lessen and, hopefully, go away entirely.

The federal government's monetary and fiscal responses have been more ambitious than in any previous economic crisis. The Federal Reserve cut interest rates to zero in two emergency meetings, expanded its balance sheet by about $3 trillion, relaunched programs from the financial crisis aimed at stabilizing credit markets, and launched several new programs, including programs to purchase exchange-traded corporate debt funds and to directly lend to Main Street businesses. Congress passed the CARES Act in late March 2020, along with three other pieces of emergency legislation, with outlays totaling $2.2 trillion in FY 2020. That amounts to 10 percent of potential GDP for the year—three times larger than the largest discretionary fiscal stimulus prior to this crisis—and about 30 percent of GDP in fiscal stimulus in its peak months. Although the monetary and fiscal efforts have had missteps and limits, overall, they have succeeded in protecting the disposable personal income of most households and made funds available to get many businesses through the current period.

More is needed moving forward. Many of the fiscal measures to date expire over the next two months. The next wave of fiscal policy should focus on extending, transitioning, or adapting these efforts so that the balance of policy shifts toward safely encouraging and rewarding a return to work and supporting a market-based reallocation of business and jobs.

The highest priority remains the effective handling of the reopening and legislators should provide whatever funding is needed for the health response, including funding for testing, personal protective equipment and other medical supplies, and support for the development, manufacturing, and distribution of treatments and vaccines. Such spending has potentially enormous returns in lives saved and in accelerating the return of economic activity to normal levels. Many other experts and groups are working on these issues, so we do not make any specific proposals on these topics in this report.

This report instead focuses on fiscal policies aimed at bolstering the economic security and productivity of workers, small and mid-sized businesses, and state and local governments through a prolonged recovery from the worst ravages of COVID-19. We consider a timeframe of 12 to 36 months after the onset of the pandemic, when we expect business activity to resume, albeit at less than full capacity, and aggregate employment outcomes to be on an improved trajectory. We premise our recommendations on the expectation that macroeconomic conditions will be weak for some time and that economic life will take place amid sizable uncertainty about the future path of the virus causing COVID-19 and the fact that its economic consequences could outlast the worst of the virus itself.

Specifically, we propose major efforts in four areas:

1. **Income support for the unemployed, underemployed, and most vulnerable:** (a) Continue increased federal Unemployment Insurance (UI) benefits with a phasedown over time based on economic circumstances; (b) Employ automatic triggers for UI extended benefits; (c) Bolster short-time compensation (STC) benefits to preserve viable employment relationships; and (d) Increase automatically benefits provided through the Supplemental Nutrition Assistance Program (SNAP) and suspend SNAP work requirements during periods of high unemployment.

2. **Reward and facilitate work:** Temporary, targeted employment subsidies for workers to reward and incentivize employment and compensate workers who have continued to work during the pandemic in the form of a pandemic Earned Income Tax Credit.

3. **Lending support for small and mid-size businesses**: Monitor the Main Street Lending Program and its effect on small and mid-sized businesses; adjust the program if necessary to increase lender and borrower participation.

4. **Federal support to state and local governments**: (a) Provide a block grant for states and localities that cannot be used for tax cuts or pension increases; (b) Implement expansions in federal matching for state Medicaid and Children's Health Insurance Program (CHIP) that are adjusted automatically based on economic conditions; (c) Provide block grants to state governments for K-12 education spending; and (d) Extend federal block grants to public universities, four-year colleges, and community colleges.

The cost of this effort will be considerable, with the exact amount depending on the highly uncertain trajectory of the economy. Since the output gap is impossible to predict at this stage, we do not scale the size of these fiscal measures to equal a specific percentage of GDP. In addition, we do not believe that there should be any arbitrary cap on the size of the fiscal effort given that real interest rates are currently negative and the United States appears to have substantial fiscal space. Instead we recommend adopting a more "bottom up" approach to the fiscal response with a two-part consideration. First, any expenditure or tax cut of $1 that adds at least $1 to GDP should be pursued because it would generally not raise the ratio of debt to GDP in the short run and depending on the size of the multiplier and the persistence of the effects might improve fiscal sustainability over the longer run. Second, any expenditure or tax cut of $1 that adds less than $1 to GDP may also be necessary and desirable, but should be evaluated

against the broader goals it serves, for example if it meaningfully contributes to public goods or social goals like advancing educational attainment or reducing hunger or poverty, which are considered valuable in their own right. Applying these tests requires substantial judgment calls, which we describe throughout this report.

Many of our proposals are contingent on economic circumstances and as a result their cost depends on how the economy unfolds. If there is a rapid, V-shaped recovery with output and employment returning to trend by the second quarter of 2021, then these proposals would cost nearly $1 trillion. If instead we had a long, slow recovery—despite vigorous fiscal policy—with an unemployment rate of 12 percent at the end of 2020 that fell by 1 percentage point per year thereafter, the total cost would be $2 trillion. The Congressional Budget Office (CBO) would formally "score" these proposals by looking across the probability distribution of all outcomes for this recession as well as future recessions and likely come up with an overall cost estimate around the top of this range. The proposals and their cost are summarized in Appendix Table 1.

Overall, as described in the last section, our proposals would increase GDP and jobs and reduce the unemployment rate. The precise amount depends both on economic circumstances and the size of the policies. Our illustrative analysis, based on a methodology that is broadly consistent with the approach of the Congressional Budget Office (CBO), the Council of Economic Advisers (CEA) and the Federal Reserve, is that the policies would add about 4 percent to the level of GDP over the next six quarters, have a peak impact on employment of just over 4.5 million jobs, and lower the average unemployment rate in 2021 by about 2 percentage points.

In addition, individually or as a group we would support additional measures beyond those included here, especially in further phases of the effort beyond the next period when policymakers will need to vigorously address the many obstacles to economic growth and broad participation in this growth that pre-dated this crisis and have been exacerbated by it. Additional investments, like in infrastructure and education and training, will be desirable and it will also be necessary to put the United States on a sustainable fiscal course. Such additional measures are beyond the scope of this report but will remain a focus for the Economic Strategy Group, building on the proposals we have released to date in these areas.

## 1. Income Support for the Unemployed, Underemployed, and Most Vulnerable

The pandemic-induced recession and its aftermath could last a long time. The Congressional Budget Office (2020) projects that unemployment will average 9.3 percent in 2021, and remain at a very high 8.6 percent at the end of the year (a forecast that assumes no additional fiscal actions by Congress). Although a more rapid, V-shaped recovery is possible, so too is an even more prolonged and painful recovery in which the economy remains well below full employment for many years. In any of these scenarios, additional, expanded support for unemployed and underemployed workers through extended and expanded Unemployment Insurance benefits, Short-Time Compensation (STC) benefits, and nutrition assistance will be essential.

As we move into the next phase of the recession and subsequent recovery, policy should aim to continue providing out-of-work workers with enhanced levels of income and consumption support, while also encouraging a return to work as it becomes safer. In the immediate aftermath of the public health emergency, the policy focus was appropriately on protecting workers from a precipitous drop in income and consumption as businesses were forced to close and workers who were able to stay home were encouraged to do so. The goal of consumption maintenance should be maintained, while shifting to a policy focus on reentry to the workforce. The shock to the economy will likely take on a "stop-start" form in which some businesses temporarily cease activity and then restart. There will also be a substantial "reallocation shock" as some businesses face persistently less demand, weak businesses go bankrupt, and other businesses downsize and offshore (Barrero, Bloom, and Davis 2020).

For these reasons, as the economy reopens, we favor providing benefits directly to individuals or households through unemployment insurance, rather than ongoing support to firms to pay payroll. Unemployment insurance provides economic flexibility, accommodating both temporary interruptions in employment (furloughs) and permanent job losses. The UI system serves two major purposes during a recession. It buffers workers—especially low-wage workers—from the economic shock (Mukoyama and Şahin 2005) and it serves as a macroeconomic stabilizer during economic downturns by providing fiscal stimulus (Chodorow-Reich and Coglianese 2019; Nunn and Ratner 2019).

The U.S. Unemployment Insurance system is made up of two programs. First, UI benefits, also referred to as Unemployment Compensation, pays benefits for up to 26 weeks in most states and is available to eligible workers who are laid off from their jobs through no fault of their own, are actively seeking employment, and are able and available to work. States administer and pay these benefits to workers, which are financed by payroll taxes, while the federal government pays for administrative costs. A second program, UI Extended Benefits, is triggered when a state is experiencing high levels of unemployment. Under the regular Extended Benefits program, individual workers receive an additional 13 to 20 weeks of unemployment benefits after the worker exhausts their state's regular UI benefits. The program is jointly funded by the federal and state governments, with each covering half the cost.

The CARES Act extended and enhanced the UI program through three temporary programs. First, *Pandemic Emergency Unemployment Compensation* (PEUC) provides an additional 13 weeks of unemployment compensation through December 26, 2020 for workers who exhaust state-provided unemployment compensation benefits. Second, *Pandemic Unemployment Assistance* (PUA) provides up to 39 weeks of unemployment benefits to individuals who are not eligible for regular unemployment compensation or extended benefits, including the self-employed, independent contractors, workers for certain religious entities, those seeking part-time employment, and individuals lacking sufficient work history, among others. The PUA program expires December 31, 2020. Third, *Federal Pandemic Unemployment Compensation* (FPUC), set to expire by July 31, 2020, provides an eligible individual with $600 per week on top of the weekly benefit amount he or she receives through regular or pandemic unemployment insurance or short-time compensation.

We also favor increased utilization of "work-sharing" programs, in which employment reductions are spread across workers in the form of hours reductions for *all* workers rather than full lay-offs for some. Traditional UI incentivizes the latter approach. At a minimum, short-time compensation is designed to level the playing field between employment reductions and hours reductions. STC also helps to preserve employment relationships in firms or sectors where a reallocation shock is less likely.

In addition, we propose expanding nutritional assistance for low-income households through Supplemental Nutritional Assistance Program (SNAP). It is critical to offer nutritional support to the millions of people who may not be eligible for unemployment insurance or who might fall through the cracks of other systems. SNAP is a critical source of safety net support.
UI benefits, STC benefits, and SNAP benefits all help participating individuals and households smooth their consumption through a period of income loss, preventing what would otherwise be abrupt reductions in spending. As a result, they are likely to have a high macroeconomic multiplier in a depressed economy. Estimates suggest that each dollar spent on extending UI benefits generates as much as $1.90 in additional economic activity (CBO 2012), while each additional dollar spent on SNAP benefits generates up to $1.79 in additional economic activity (Hanson 2010).

We make four specific recommendations:

***a. Continue expanded federal Unemployment Insurance benefits with a phasedown over time based on economic circumstances***

The termination of the Federal Pandemic Unemployment Compensation program after July 31 would result in hardship for tens of millions of households, along with a large reduction in aggregate spending, given that the unemployment rate will likely remain at the highest level since the Great Depression and the economy will still be operating well below its potential. At the same time, the $600 federal weekly benefit provided through the program currently replaces more than 100 percent of lost wages for about two-thirds of workers (Ganong, Noel, and Vavra 2020). This would be a problematic system going forward, especially as the unemployment rate starts to fall.

Optimal unemployment insurance requires balancing the desire to help households smooth their consumption against the moral hazard of unemployment insurance discouraging work. The higher the unemployment rate, the more generous the optimal benefits because the constraint on employment is weighted toward the availability of jobs versus the intensity of job searching (Baily 1978; Chetty 2006).

Recognizing this tradeoff, we recommend replacing the Federal Pandemic Unemployment Compensation after July 31 with a new system that provides a federal unemployment benefit, in addition to state benefits, of *up to* 40 percent of covered wages with a maximum federal UI benefit of $400. For workers making up to the median wage this would replace about 80 to 90 percent of their wages when combined with regular state replacement rates. The replacement rate would then decline for workers whose lost wages are above the median.

Defining the federal bonus as a replacement rate rather than a flat dollar amount avoids the scenario in which a worker receives more money from unemployment insurance than what they were making on the job. Moreover, defining the benefit as an additive percent, rather than a specified target, of say a 90 percent replacement rate, avoids perversely rewarding states with less generous UI replace rates, or encouraging states to lower their generosity.

Some states will be unable to implement a bonus replacement rate system by August, in which case we propose that they could continue using the flat bonus formula through the end of the year, with the bonus set at half of the maximum federal benefit—equal to a maximum of $200 per week. Note, the sooner an extension is passed, the more time states will have to update their systems for the new benefit formula, a problem when the flat $600 benefit was passed in March with essentially no advance preparation time.

We propose making the parameters of the federal UI benefit program a function of state unemployment rates. We would propose setting triggers based on each state's historic unemployment rates such that the maximum federal benefit would be available when the unemployment rate was above about 15 percent and it would be phased out entirely when the unemployment rate reaches about 7 percent.[2] These triggers for a federal UI benefit should be a permanent feature of the UI program since adjusting replacement rates to match the optimal balance of consumption smoothing and work incentives is not unique to the current period. Not that as a result of this proposed formula, starting in August many states would have their bonus replacement rates set below the maximum 40 percent capped at $400 because their unemployment rates are below the 15 percent threshold for the maximum benefits.

### *b. Federal financing and automatic triggers for the UI Extended Benefit program*

For all the reasons we favor making federal UI benefit enhancements a function of state unemployment rates, we support making UI extended benefit duration an automatic function of economic conditions. An additional reason why a well-functioning Extended Benefits program is so important is to keep jobless workers on unemployment insurance during a period of high unemployment rates rather than having them drop out of the labor force entirely and enroll in the

[2] For example, similar to Fiedler, Furman, and Powell (2019), the benefit could be triggered when a state's unemployment rate surpasses its 25th percentile since 1980 plus 2 percentage points.

federal disability insurance program, which tends to keep people out of the labor force permanently (Mueller, Rothstein, and von Wachter 2016).

The regular UI Extended Benefit program is intended to increase UI benefit duration during times of high unemployment, but because of its current design, it does not function well. Extended Benefit eligibility is based on the *insured* unemployment rate, which has fallen relative to the overall unemployment rate over time because of declining recipiency rates. Furthermore, because states are required to pay half of the cost of Extended Benefits, many states have been reluctant to participate, since economic downturns are precisely the time when their own budgets are very strained. As a result, Congress has passed ad-hoc extensions of UI benefits during this and prior recessions. These extensions, however, have sometimes started too late, ended too early, and created uncertainty.

We recommend that UI Extended Benefits be entirely federally funded to increase state participation, alleviate constrained state government finances during economic downturns, and enhance regional insurance. In addition, we propose basing them on a state's total unemployment rate relative to its historic values. We also favor eliminating the "look-back provisions" that eliminated eligibility for extended benefits in states with persistently elevated unemployment rates during the Great Recession, as has been recommended by Chodorow-Reich and Coglianese (2019) and O'Leary and Wandner (2018).

We estimate the cost of federally funding Extended Benefits would be about $20 billion in a rapid recovery and as high as $230 billion under a prolonged recovery. Our back-of-the-envelope calculation of the cost of federal unemployment benefits contingent upon state unemployment rates would be $60 billion in the rapid recovery scenario and $300 billion under the prolonged recovery scenario.

### *c. Short-Time Compensation programs should be promoted; STC approval processes should be streamlined; and federal funds for STC programs should be tied to macroeconomic conditions*

Short-time compensation programs—also known as part-time compensation agreements or work-sharing arrangements—are effectively equivalent to "pro-rated" unemployment insurance for workers who experience involuntary reductions in hours instead of being laid off. As noted by the U.S. Department of Labor, "STC cushions the adverse effect of the reduction in business activity on workers by averting layoffs and ensures that these workers will be available to resume prior employment levels when business demand increases." Currently 26 states, which contain two-thirds of the U.S. workforce have short-time compensation programs in operation, most of them established after the financial crisis (U.S. Department of Labor).

Typically, STC benefits are financed through employer payroll taxes administered by states. Under the CARES Act (Section 2108) the federal government reimburses states with STC programs for the entire cost of STC benefits (up to the equivalent of 26 weeks of total unemployment benefits per worker) through the end of 2020. In addition, the act provides federal funding to cover up to half of the cost of new programs that are implemented by states by

December 2020 and provides additional grants for implementing new programs. States are able to make individuals receiving STC eligible for the additional $600 FPUC benefit.

Like the payroll protection and employee retention programs mentioned above, STC programs offer income support to workers who experience a reduction in hours but remain employed. This encourages businesses to keep more workers on reduced payroll, rather than fewer workers on full-time payroll. In this sense, STC accomplishes a key goal of the Paycheck Protection Program and Employee Retention Credit. Businesses benefit by avoiding costly recruitment and training when the economy recovers, while workers can retain most of their income and access to health insurance (Abraham and Houseman 2020).

STC payments are paid directly to workers through the UI system, as opposed to being paid directly to firms who continue to pay their workers. Employees whose hours are reduced receive unemployment benefits proportional to their lost work hours.

We recommend policies to mitigate existing barriers to STC take-up by employers:

First, we propose additional federal funding for state STC outreach programs to employers and workers. Survey data reveals that lack of awareness among employers is an issue (Balducchi *et al.* 2020), however, von Wachter (2020) suggests information about STC programs could be shared through small business lending programs to raise awareness among employers.

Second, states should be encouraged to streamline administrative processes. Specific guidance from the Department of Labor would lead to greater STC utilization. Currently, the administration of the program is unduly complex. Employers must file a work-sharing plan that is then reviewed by state agencies, often by hand, and employers have to submit information on the hours that each employee works every week. In addition, employers with establishments in different states have to contend with state-level differences in STC guidelines and requirements. One option would be for the Department of Labor to require that states maintain a certain set of STC program requirements as a condition for participating in the federal-state UI system.

Third, we recommend federal funding for STC benefits to be triggered under the same formula outlined above for the Extended Benefits program. This would make funding available to states that continue to experience elevated rates of unemployment. The replacement rates under STC should match the state's UI replacement rate (plus any additional federal benefits), so that at the extreme case of a 100% reduction in hours, the two policies are equivalent.

The costs associated with STC expansions will depend on take-up of the program. To the extent that STC participation diverts workers from state unemployment compensation, the estimated cost of UI expansions noted above will be offset.

#### *d. Expanded federal safety net support through increased nutrition assistance*

Millions of households face large income losses, even with the expanded Unemployment Insurance. It is critical that support be available for individuals and families to maintain spending

on food. Food insecurity is a perennial problem in the United States, and the current economic situation is likely to make this worse for economically vulnerable households.

SNAP provides qualifying families electronic benefit transfers (EBT) that can be used to make allowable food purchases at participating grocery stores. It is a critical source of income support to low-income families in the United States; seven million individuals (11 percent of the population) received program benefits in February 2020.

In addition to being an important anti-poverty program during "regular" times, SNAP is an important source of income insurance and an automatic stabilizer during economic downturns. SNAP provides consumption insurance during recessions by helping families maintain food purchases during periods of income loss. Because beneficiaries immediately spend their SNAP benefits, it provides a rapid fiscal stimulus to the local economy. And because the number of eligible families expands when joblessness rates rise, program caseloads automatically respond to macroeconomic conditions, increasing during downturns and declining when the economy improves.

Efforts to link SNAP eligibility to work or hours requirements deliberately undercuts both the safety net and automatic stabilizer components of the program. The Families First Coronavirus Response Act enacted March 18 temporarily suspends the program's three-month time limit on benefits for adults under age 50 without children in their home and gives states significant flexibility to administer the program. However, neither the Families First Coronavirus Response Act nor the CARES Act increased the SNAP benefit amount, despite the fact that food insecurity rates have doubled since the onset of COVID-19 and as many as 38 percent of households with children are currently experiencing food insecurity (Schanzenbach and Pitts 2020).

We recommend that during recessions, SNAP work requirements be automatically suspended and the maximum benefit amount be automatically increased by 15 percent, as proposed by Hoynes and Schazenbach (2019). Making these adjustments automatic would remove uncertainty and improve the use of SNAP as both insurance to individuals and as an automatic stabilizer.

Rosenbaum, Dean, and Neuberger (2020) estimate that increasing maximum SNAP benefit levels by 15 percent would increase average benefits per person by about 20 percent. If this temporary increase were enacted beginning in June 2020, a rapid recovery that saw unemployment return to 3.5 percent by the second quarter of 2021 would mean 10 months of increased benefits at a total cost of about $20 billion. A slower recovery that had unemployment rates of 12 percent through the end of 2020 followed by a decline in the unemployment rate of one percentage point per year would mean about $130 billion in increased benefits.

## 2. Support and Facilitate Work

Economic transfers have played a major role in supporting household incomes and consumption in the first months of the COVID-19 crisis. If unemployment rates remain very high, then transfers will continue to play an important role in the recovery. Nevertheless, the balance should and will likely shift toward work. Facilitating that shift will require preventing unnecessary

further job losses (most notably by state and local governments), speeding up the rehiring process by maintaining overall aggregate demand and purchasing power of households, and helping workers match to new jobs. Worker reattachment is the hardest part, requiring that employers offer more jobs and an adequate labor supply for these jobs. There is no quick and easy way for this to happen, but we believe that additional incentives could help speed the process—and at worst would still raise the incomes of workers who need it.

***a. Subsidies for work***

Right now, people who have lost lower-paying jobs are better compensated by unemployment insurance than their peers who kept their jobs. Our proposal to extend unemployment insurance would reduce this distortion but would still keep the replacement rate for unemployment insurance relatively high, at a level that together with the additional leisure could still make unemployment more attractive than working for some people. As federal weekly benefit amounts are reduced, payroll subsidies would provide further incentives for workers to seek reemployment and would rectify perceived inequities for workers who maintained their employment despite generous unemployment benefits.

Two approaches could be considered to help rectify this imbalance and better reward work. The first is broadly supporting workers in lower-paid jobs through an approach similar to the Earned Income Tax Credit. The second is targeted "hiring bonuses" for unemployed workers who get jobs. The broader approach would be more expensive and more equitable because it would mean that similar people were paid in a comparable manner. The "hiring bonus" approach could result in two people working in identical jobs receiving different amounts based on whether they had been unemployed. The "hiring bonus" approach, however, can be tailored in a cost-effective way to neutralize any disincentives associated with unemployment insurance and thus merits consideration.

On equity grounds, a wage subsidy to low-wage workers is also warranted. Many low-wage, less educated workers have taken up the task of conducting essential business without the ability to work from home (Kearney and Pardue 2020). That puts them on the front lines of jobs that involve contact with other people and potential exposure to the virus. In typical times, workers whose jobs involve injury or mortality risk are paid a premium and the market takes care of this wage setting. But this wage setting process does not work as it should during a pandemic and a painful recession. Most workers in these essential jobs do not have the luxury of searching for an alternative job with equal or lower pay and safer conditions. They also are not eligible for UI benefits if they quit. As Anderson and Levine (2020) note, "Working in a grocery store wasn't a high-risk occupation up until a few weeks ago. It is now, though, implying that wage subsidies should at least eliminate the gap between working and collecting UI to at least somewhat compensate for that risk."

For these reasons, we propose a Pandemic Earned Income Tax Credit (PEITC) that doubles a family's refundable EITC tax credit, as based on earnings in the 2020 tax year. Basing the pandemic employment subsidy on the existing EITC has the key advantages of achieving income and family structure targeting and being relatively straightforward to administer. It has the disadvantage of being distributed to families as an annual, lump-sum amount. If it were

administratively feasible, it would be preferable to supplement the earnings of workers on a higher-frequency basis, based on monthly or quarterly earnings.[3] Expanding incentives for work should also be seriously considered for individuals without dependent children, since they face the same imbalance between incentives to work versus remaining unemployed. Thus, the pandemic underscores the longstanding need to augment the direct work incentives of the existing EITC, as several of us have argued before (Furman and Swagel 2018, Hubbard 2014).

The downside of the PEITC approach is that workers would not receive payments until the following year, so its impact as stimulus would be muted. The benefit would still achieve the goal of rebalancing the financial benefits of work versus receiving unemployment insurance.

We do not propose to condition the payroll subsidy on whether a job is deemed essential. As a practical matter, those designations are shifting and are prone to be gamed. As an economic principle, we do not want to distort worker and firm decisions during a period of market reallocation of jobs.

We estimate the costs associated with a pandemic EITC would be about $70 billion per year. To the extent that fewer people will claim the EITC given high rates of nonemployment, the costs could be lower. If instead, the employment subsidy took the form of a hiring bonus, the cost would also be somewhat lower.

## 3. Lending Support for Small and Mid-Size Businesses

The economic toll of the COVID-19 pandemic has been especially acute for small and mid-sized businesses. These firms lack the capital to sustain or restart their businesses. Firms need to replace lost inventories, reorganize office space and production processes to comply with social distancing guidelines, and navigate the process of (re)hiring employees. After months of lost revenue, firms are in an especially weak position to make such investments. Moreover, while Chapter 11 bankruptcy can allow large businesses to operate while restructuring, this process works much less well for small businesses and so costly liquidations would be more likely in many cases.

Widespread permanent closure of small businesses will deepen and lengthen the downturn and impede a healthy recovery. Macroeconomic weakness will continue to suppress consumer spending and constrain small business lending. These forces together have the potential to create an unprecedented wave of avoidable small and mid-sized business failures, which would come at a tremendous economic and political cost. This wave of small and mid-sized business failures would destroy livelihoods and undermine the strength of communities across the country. The

[3] This change would require that employers provide payroll data on individual employees to the IRS on a quarterly basis. This could be done revising Form 941—which employers use each quarter to report income taxes, social security tax, and Medicare tax withheld from employees' paychecks—to include individual-level data. The IRS would then issue payroll subsidies directly to employees based on the information submitted. These changes are likely impractical for administering a one-time credit.

government should provide support in the pandemic's wake to small and mid-sized businesses that do not otherwise have access to sufficient capital.

The goal of government lending programs during the post-pandemic recovery should be to support firms that could be solvent in the post-pandemic economy, but that need new capital to sustain or reopen operations. In any given time period, there is substantial churn in the economy and many small and mid-sized firms go out of business. The pandemic has also led to a substantial reallocation of economic activity, much of which might be lasting. As a result, it is not economically desirable to try to freeze in place the economy of February 2020 or to give unlimited and indefinite grants to businesses.

Government intervention is needed to bolster capital access for small and mid-sized businesses in the wake of this public health pandemic, grounded in the large negative externalities posed by business failures at a moment like this and the possibility of multiple equilibria, with a good outcome in which the success of businesses is mutually reinforcing. Fears about the future trajectory of the pandemic, the speed of the economic recovery, and the balance sheets of potential borrowers mean that even a well-capitalized banking sector is unlikely to provide the necessary capital to help small and mid-sized firms. Although inexpensive liquidity is available to commercial banks through the Federal Reserve facilities that have been set up to backstop the financial sector, this liquidity will not flow to firms if banks believe they are too risky.

Support for small and mid-sized businesses should be provided to businesses that would have been successful had they not experienced the negative shock associated with the public health crisis, and that can be successful when economic conditions improve. In addition, they should be loans that could be repaid if the business succeeds, rather than grants. Doing this will not require Congress to appropriate any additional funds at this time, but rather require the Treasury and Federal Reserve to make much more aggressive use of the $454 billion that Congress has already passed for this purpose.

We do not propose further extensions to the Paycheck Protection Program or the Employee Retention Credit, which were part of the CARES Act passed in March. As discussed above, these programs helped to preserve employment relationships during the sudden shutdown of economic activity. However, extending these programs into the recovery period would create undesirable distortions during a period of economic reallocation. Therefore, we emphasize policies that support out-of-work individuals during this period and encourage continued lending support for small and mid-sized businesses that will continue to be viable going forward.

Many small and mid-size businesses have faced large income declines and financial fragility during the pandemic shutdown, even in the presence of policy initiatives like the Paycheck Protection Program. For this reason, the CARES Act granted the Treasury Department $454 billion in capital to back Federal Reserve lending facilities that pose a risk of loss. One of those facilities, the Main Street Lending Facility, launched yesterday, is an especially good place for this money to be spent. The program received an allocation of $75 billion in capital to back $600 billion in loans to small and mid-size firms, which protects the Federal Reserve up to a loss rate of 13 percent. We think that this initial design suggested by the Treasury Department is too conservative, raising questions about its effectiveness in restarting lending as firms reopen and

adjust to changing conditions in the post-pandemic-shutdown period. This restricts access to the facility to businesses with a fairly low failure risk. Treasury could commit additional funding to the facility with funds that have already been authorized under the CARES Act. Doubling or even tripling the loss rate would make credit available to riskier businesses at more generous terms.

Should the program fail to garner meaningful bank participation or borrower demand relative to the $600 billion objectives, the program could be modified to make the terms more attractive to borrowers or to improve the incentives for banks to participate. [4]

If it turns out to be the case that the Main Street Lending Program does not generate a large amount of lending, there are a number of potential changes that could be made. To attract more lenders, the program could further reduce the portion of the loan that is retained by the bank, increase the fees paid to banks or allow banks to collect interest and fees on the full face value of the loans they hold, and/or provide liability protection to banks in the event that lenders default. If the current program fails to generate widespread participation among borrowers, lending terms could be made more generous. This could be accomplished by further increasing loan maturity or reducing expected borrowing costs through a fixed interest rate, for example.

It is also an open question as to whether even more favorable loan terms will entice sufficient entry into the program. If the risk of future shutdowns proves to be a substantial barrier for firms to seek out financing to restart operations, policymakers could offer loan forgiveness in the event of a shutdown. Policymakers could also consider a general business continuation insurance (BCI) product, such as that proposed by Hanson, Stein, Sunderam, and Zwick (2020), in which the government would provide payment assistance to enable impacted businesses to meet their recurring fixed obligations during a resurgence in the health emergency. Under their proposed program, there would be an expectation that firms would gradually repay most of the benefits over time, and the BCI program would be terminated once the peak health emergency is over.

## 4. Federal Support to State and Local Governments

Despite the $110 billion allocated to states for COVID-related emergency expenses in the CARES Act, state and local governments face severe revenue shortfalls. The Center for Budget and Policy Priorities (2020) estimates that state revenues will decline by 10 percent in fiscal year 2020 alone, which ends June 30 in most states, and by as much as 25 percent in fiscal year 2021. They estimate the total shortfall for states alone—not counting local governments—of $650 billion over fiscal years 2020, 2021, and 2022, an estimate consistent with CBO's projections for unemployment given the historic relationship between unemployment and state revenue reductions (Fiedler, Furman and Powell 2019). This is higher than a mid-April Moody's Analytics (2020) analysis estimating state governments will need at least $300 billion to get through fiscal year 2022 without cutting budgets or increasing revenues. Together with anticipated local government shortfalls, this number increases to at least $500 billion (Zandi 2020) and assumes that states and localities use their entire rainy day funds. Neither analysis appears to account for ways in which this recession could result in additional revenue reductions

[4] These observations are based on the April 30 term sheets available on the Federal Reserve website and subsequent updates made on May 27, 2020 and June 8, 2020.

(e.g., shifting from restaurant meals, which are generally subject to sales taxes, to food at home, which is generally not) and spending increases associated with the emergency itself, which go beyond health costs to include the large costs associated with incorporating social distancing into workplaces.

States face significant financing challenges during recessions due to the combination of procyclical tax revenues, countercyclical spending demand, and balanced budget requirements. This particular downturn has been especially severe because of an extremely high number of unemployment claims, a dramatic shortfall in state tax revenues stemming from business shutdowns, and increased outlays in response to the public health emergency. The Federal Reserve has responded by creating the Municipal Liquidity Facility, which purchases short-term notes from state and local governments to help them manage their cash flow needs, which in turn has helped to stabilize municipal lending markets. Lending, however, does not relieve the constraints of the balanced budget requirements that states operate under.

State fiscal contractions can offset federal fiscal stimulus and result in slower growth, both directly by reducing employment in the state and local sector and indirectly through a multiplier that propagates throughout the economy. Furman (2020) estimates that the average annual growth rate was 0.6 percentage point lower in the five years from the trough of the Great Recession because of the shortfall of state and local spending relative to its historic average. Conversely, state fiscal relief is an effective form of fiscal stimulus. About a half-dozen studies have examined state fiscal relief programs in the American Recovery and Reinvestment Act exploiting quasi-random variations in the amounts that were allocated to states. Chodorow-Reich (2019) reviews these and numerous other papers finding they consistently show a national multiplier of 1.7 or above assuming no offsetting changes in monetary policy, which is a realistic assumption in the current circumstances.

In addition to these large and well-documented macroeconomic benefits, additional federal support to states would have the advantage of reducing the magnitude of budget cuts that states and localities would otherwise need to make to health, education, and other services, while also enabling them to undertake the expenses associated with the response to COVID-19. Without federal support, we can expect to see states cutting spending, raising tax rates, or both, as they have done in past recessions (Gordon 2012), leading to both direct job losses and further propagating economic losses throughout the economy through a multiplier.

We propose increased federal funding in four forms: (a) A block grant for states and localities that cannot be used for tax cuts or pension increases; (b) Increased matching for state Medicaid and CHIP programs; (c) Increased funding to offset shortfalls in state K-12 education funding as a result of the pandemic; (d) Increased funding for public postsecondary education institutions to offset lost revenues and support worker retraining. Together these four approaches should be calibrated to fill the entire budget hole for fiscal years 2020, 2021, and 2022 and a substantial share of the future recessionary shortfalls.

***a. A block grant to support state and local government shortfalls***

States and localities went into the current crisis with balanced budgets, relatively low debt as a share of the economy, and in an era of very low interest rates. Although state and local governments have varying degrees of preparedness for their future pensions, these differences did not play any role in the large shortfalls that have opened up as revenue has fallen dramatically and spending needs have grown due to the economic downturn and the emergency expenses associated with COVID-19.

A block grant of around $500 billion to be split between states and localities and spread out over two years would, together with our other proposals, fill much of their remaining budget holes, enabling them to avoid draconian spending cuts. Effectively, the federal government would be borrowing instead of state and local governments—something it can do more cheaply than states and local governments and without the constraint of a balanced budget. The funding would be allocated through a formula based on a combination of state shares of the population and state shares of the unemployed workers.

Some constraints would need to be applied to the block grant. We propose that it could not be used to fund new tax cuts if states are also cutting spending or new pension increases.

***b. An automatically triggered increase in the Federal Share of Expenditures on Medicaid and CHIP that will automatically phase out as the economy improves***

In addition, we recommend an automatic trigger for increased federal funding for Medicaid and CHIP in times of high unemployment. This will have an immediate impact during the current recession and will better prepare governments for future downturns.

Federal and state governments jointly fund Medicaid and CHIP, while states administer both programs. Because states lack financing flexibility during downturns, Congress has acted to increase the federal share of funding for Medicaid in the last two recessions. Automatically increasing federal expenditures based on state unemployment rates would have many benefits, relative to relying on congressional legislation: First, funding is better targeted to states with the greatest need. Second, funding better corresponds to the timing and magnitude of the need, making federal expenditures more effective as stimulus when it's most needed. Third, automatically triggering federal support based on economic conditions will avoid having critical support withheld due to a partisan impasse.

Although the share of Medicaid paid by the federal government already varies automatically based on economic conditions, it is currently based on a state's income relative to the average state and thus the overall match does not change over the business cycle.

We endorse the Hamilton Project proposal by Fiedler, Furman, and Powell (2019) to increase automatically the federal share of expenditures on Medicaid and CHIP during recessions. Specifically, Federal Medical Assistance Percentage (FMAP) in both programs would increase by 4.8 percentage points for every point increase in the state's unemployment rate above a

certain threshold, with a cap at a 90 percent reimbursement rate.[5] Although FMAPs vary across states, the average rate for Medicaid in fiscal year 2020 (before the passage of the Families First Coronavirus Response Act) was roughly 60 percent, while for CHIP it was around 80 percent.

The Families First Coronavirus Response Act implemented a temporary increase in the federal match rate by 6.2 percentage points, which will remain in effect until the end of the quarter in which the public health emergency ends. We propose that the automatic formula for federal spending increases be enacted immediately and that states receive the greater of the 6.2 percentage point increase or the amount allocated under the formula in Fiedler et al.[6] At the conclusion of the public health emergency, state FMAP formulas would then adjust according to the formula outlined in Fiedler et al. and thus would automatically phase out as unemployment declines.

We estimate this proposal will cost about $80 billion in a V-shaped recovery scenario and up to $670 billion in the prolonged recovery scenario.

#### *c. A K-12 block grant to states*

Without federal intervention, funding for elementary and secondary education will undoubtedly be a casualty of state revenue shortfalls from COVID-19. The average school district receives roughly half of its funding from states, which in turn are funded from various state revenue sources, including state sales taxes. Severe cuts in K-12 funding also highlights equity concerns, as districts that rely more heavily on state funding often have less revenue from local property taxes.

As part of the CARES Act, Congress appropriated $13.2 billion through the Elementary and Secondary School Emergency Relief (ESSER) Fund, which is allocated based on each state's share of Title I funding. CARES also appropriated $3 billion for the Governor's Emergency Education Relief (GEER) Fund, which was allocated to states based on their population's age and poverty characteristics. As Gordon and Reber (2020) note, these amounts fall far short of what was allocated during the Great Recession ($56 billion) and many advocates are calling for 10 times the amount appropriated through the CARES Act. We support additional one-time federal funding for K-12 of about $65 billion, which would aim to offset roughly half of the lost revenue that would be applied to K-12 education among states.

Of equal importance is the formula that is used to allocate funds to states and then in turn to school districts. The American Recovery and Reinvestment Act's State Fiscal Stabilization Fund distributed federal funds to states based on population without regard to poverty or Title I allocations. States then distributed funds through their own state-specific financing formulas. The same approach makes sense here, given the goal is to offset state revenue shortfalls.

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[5] The 4.8 percentage point increase aims to offset two-thirds of the spending cuts that take place during states' fiscal adjustments to economic downturns. If the match increase exceeds the 90 percent cap, the excess could be applied to expenditures in earlier fiscal years.

[6] The threshold established in Fiedler, Furman, and Powell (2019) is set at the 25th percentile of the state's unemployment rate over the past 15 years, plus 1 percentage point. The state's FMAP formula would then increase by 4.8 percentage points for every point increase in the unemployment rate above this threshold.

### *d. Federal support to institutions of higher education*

In the wake of the COVID-19 crisis, state budget shortfalls are going to mean substantially reduced state support to public colleges and universities, including both four-year institutions and community colleges. At a time when higher education and career and technical education are critically important, these institutions will be hard-pressed to serve students with quality programs. In the aftermath of the Great Recession, states decreased funding for public higher education institutions in order to close budget gaps. On average, states cut spending on a per-pupil basis by 16 percent between 2008 and 2017 (Mitchell, Leachman, and Masterson 2017). The consequence of weakened institutional support is worsened student outcomes (see Deming and Walters 2017; Deming 2017; Bound and Turner 2007).

Access to high quality, affordable institutions of higher education will be critical to a sustained economic recovery. The need for a more educated and skilled workforce that was obvious before this crisis has been heightened by the current situation. Furthermore, the impact of COVID-19 on the labor market will result in a significant reallocation of workers across sectors and occupations in the economy. As one of us has argued previously (see Goolsbee, Hubbard, and Ganz 2019), support to community colleges to improve and expand their course offerings and student support services is a productive way to increase rates of college attainment and bolster access to high-quality career and technical training.

The CARES Act established an Educational Stabilization Fund that includes a total of roughly $30 billion in relief across three separate functions: funds to K-12 schools, funds to higher education, and funds to governors. Colleges and universities are eligible for funding under the latter two pools. Roughly 46 percent of the Education Stabilization Fund is allocated to the higher education pool for a total of about $14 billion, almost all of which will be disbursed by the Department of Education. The act requires that at least 50 percent of those funds be used to provide direct emergency aid to students affected by the current pandemic.

First, we propose that the federal government build on the CARES Act Education Stabilization Fund's higher education fund with an additional $10 billion annually for each of the next three years. We recommend allocating funds directly to institutions by the Department of Education.

Second, recognizing the need for many workers to build new skills in response to significant changes in the economy, we will need to make critical new investments in the nation's system of community colleges. These institutions are well situated for providing high quality training with demonstrated labor market outcomes, including career and technical education, flexible online or blended learning formats, and apprenticeship programs with local employers. We recommend an additional $20 billion annual fund for each of the next three years for creating a Community College lifelong learning fund.

Together, these policies would cost $90 billion over three years.

## 5. Simulated Macroeconomic Effects

Our proposals are designed both to advance specific goals—like providing relief for individuals who need it most and supporting education—and have a broader macroeconomic impact that speeds the economy recovery by increasing GDP, creating jobs, and reducing unemployment. The magnitude of the macroeconomic effects is uncertain because of the novel combination of supply and demand shocks that are concurrently hitting the economy. Nevertheless, analysis based on past experience provides a reasonable guide to the likely cost impact of the measures we propose, especially going forward as we move from the deliberate shutdown that has dramatically reduced economic activity in recent months to a more normal economic recovery.

We quantify the effects of our proposals using a methodology similar to that used in the past by the CBO (2014) and the Council of Economic Advisers (2009, 2014), which assumes multipliers for different components of the plan: 0.8 for tax cuts for individuals, 1.1 for state and local fiscal relief, and 1.5 for aid to directly affected individuals, which are roughly the mid-point of the CBO estimates. The multipliers follow a distributed lag that is generally in line with the results in the Federal Reserve Board's FRB-US model. The estimated changes in the level of GDP are translated into changes in employment following the methodology in CEA (2009), which in turn are translated into changes in the unemployment rate. The change in the unemployment rate is solved simultaneously with the change in the labor force participation rate to account for the increase in participation associated with lower unemployment. The economic baseline assumed in these projections is from CBO (2020) and we simulate the average of our two policy scenarios, which is broadly consistent with CBO's economic outlook.

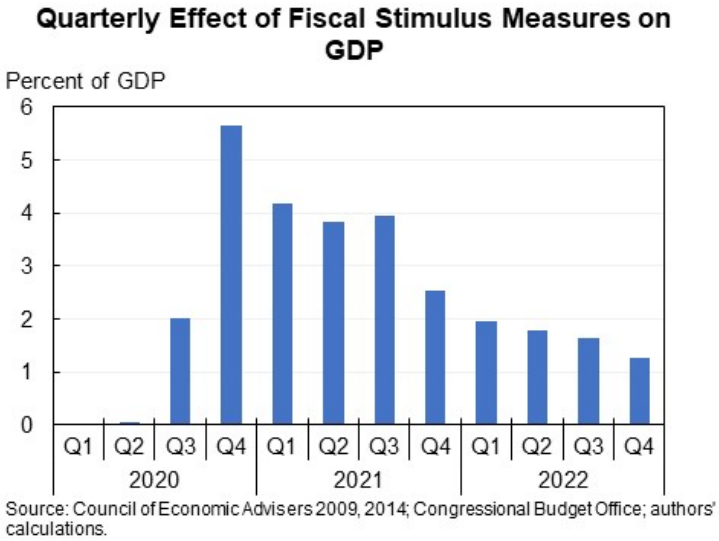
The results of the policies are shown in Figures 1, 2 and 3. At its peak the policy would add 5.7 percent to GDP growth in the fourth quarter of 2020. The policies would also increase the level of GDP by an average of 3.6 percent in 2021 and 1.7 percent in 2022. At its peak, these policies would add 4.7 million jobs to the economy, a number that would come down gradually to 4 million at the end of 2021 and 1.6 million at the end of 2022. Over the two-and-a-half years through the end of 2022 it would add a cumulative total of 7.7 million job years. Finally, at its peak the demand-side effects of the policies would reduce the unemployment rate by nearly 2.5 percentage points with that effect tapering over the course of 2021 and 2022.

These exact effects would depend on how much assistance was needed. If the economy recovers more quickly, along the lines of our V-shaped scenario, then the initial boosts to GDP and jobs in the second half of 2020 would be similar but the additions would taper down faster in 2021 and 2022. Conversely, in the more prolonged recovery scenario the fiscal policies would scale up and their macroeconomic effects would scale up along with them.

Finally, these estimates may be conservative. We used multipliers that were developed a decade ago based on the best information at the time. Numerous studies of multipliers have been done since then. For example, Chodorow-Reich (2019) summarizes the literature on state and local fiscal relief and finds a multiplier of at least 1.7, which is well above the multiplier of 1.1 we used for this analysis. Moreover, our macroeconomic estimates only consider new expenditures

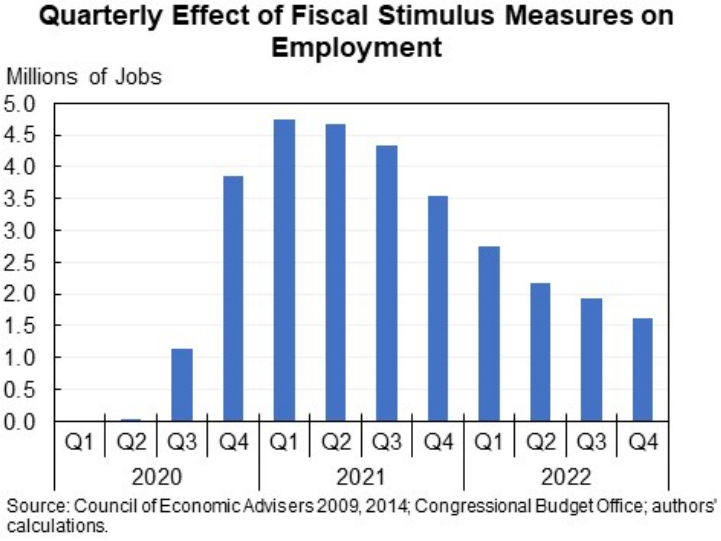
and do not reflect any changes to the Federal Reserve's Main Street Lending Program that would use new resources. On the other hand, to the degree that fiscal policy was pushing against supply constraints associated with COVID or capacity more generally then multipliers would be smaller. We believe this is unlikely to the be the case given the scale and timing of our proposals.

**Figure 1**



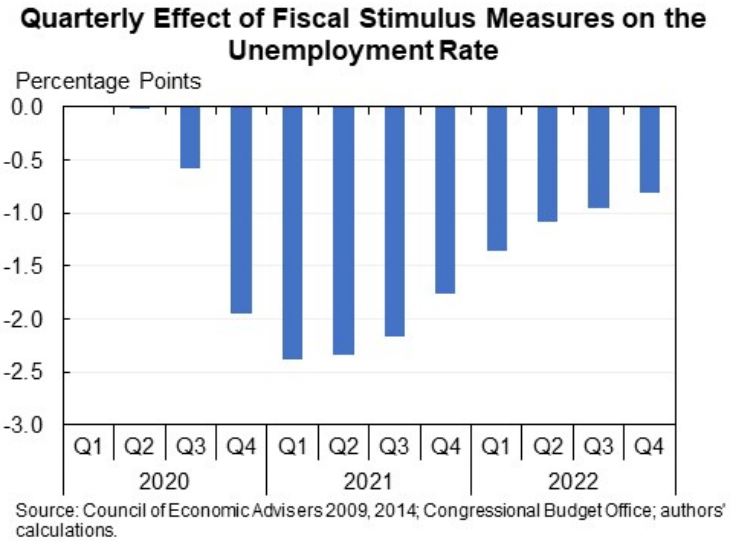

Source: Council of Economic Advisers 2009, 2014; Congressional Budget Office; authors' calculations.

**Figure 2**




Source: Council of Economic Advisers 2009, 2014; Congressional Budget Office; authors' calculations.

**Figure 3**




## Conclusion

The economic crisis caused by the novel coronavirus pandemic highlights and exacerbates many of the policy challenges that existed before its onset. The fiscal policy agenda laid out above focuses on the immediate aftermath of the economic shock caused by the COVID-19 pandemic. We have highlighted four policy priorities in this report: (1) income support to unemployed and underemployed individuals; (2) a means-tested pandemic earnings tax credit; (3) expanded loan support for small and mid-sized businesses; (4) federal support to state and local governments. These policies would help move the economy out of a recession and into a period of sustained recovery, bolstering individuals and viable small and mid-sized businesses.

The steps we propose would cost roughly between $900 billion to $2 trillion, depending on the severity of the recession and the speed of the recovery. Any figure in this range is clearly a large sum of money. This funding, however, is designed to last for many years if necessary. Rather than misleading or pretending the recovery will be cheaper, for example by covering only a few months of unemployment insurance or only a fraction of the ultimate cost of the Paycheck Protection Plan, we believe it is better to be upfront about what the total costs will ultimately be and legislate them today in a contingent fashion that depends on economic circumstances. Overall these costs are still smaller than the $7.9 trillion in lost GDP projected by the Congressional Budget Office.

This effort, however, is focused on the recovery from the pandemic itself. Our nation will also need to make critical infrastructure investments that have long been needed to enhance our nation's economic capacity and productivity. Strengthening the nation's safety net and addressing the widespread level of income inequality and economic insecurity should also be a priority. Most importantly, our country will need to undertake a bold investment in pandemic preparedness so that we avoid a similar future catastrophe.

At the same time, once the economy recovers, reforms will be needed to put the country on a more sustainable fiscal path. The federal government will need to reduce ineffective entitlement and other spending while raising additional revenue in as efficient a manner as possible. The magnitude of this adjustment will depend on the ultimate desired level of debt relative to the economy and the difference between interest rates and growth rates. Such an adjustment, however, is likely manageable by following the broad template of the fiscal deals in the 1990s.

For now, however, the most urgent task for the country is to protect the economy from further damage and speed up the healing from the worst economic crisis since the Great Depression. These ideas are intended to help accomplish that goal.

## Appendix

**Table 1. Estimated Costs of Task Force Recommendations**

| Proposal | Rapid Recovery ($ Billions, over ten years) | Prolonged Recovery ($ Billions, over ten years) |
|---|---|---|
| **Income Support for the Unemployed, Underemployed and Most Vulnerable** | | |
| Expanded Unemployment Benefits | 60 | 300 |
| Extended Unemployment Benefits | 20 | 230 |
| Short-time Compensation | ~ | ~ |
| Increase SNAP Benefits | 20 | 130 |
| **Reward and Facilitate Work** | | |
| Pandemic Earned Income Tax Credit | 70 | 70 |
| **Support for Small and Mid-Size Business Lending** | | |
| Reform implementation of CARES Act Funding | ~ | ~ |
| **Federal Support to State and Local Governments** | | |
| Block grant | 500 | 500 |
| Increase Medicaid matching | 80 | 670 |
| Support K-12 Education | 70 | 70 |
| Public Universities and Community Colleges | 90 | 90 |
| **Total** | $ 910 | $ 2,060 |

*Note: The Rapid Recovery Scenario assumes the unemployment rate falls continuously to 3.5 percent in the second quarter of 2021, consistent with a V-shaped recovery. The Prolonged Recovery Scenario assumes the unemployment rate falls to 12 percent by the end of 2020 and then falls by 1 percentage point per year thereafter until the economy is fully recovered. In both cases, these scenarios are post-policy so the underlying baseline scenario is somewhat worse. The cost estimates do not reflect the probabilistic scoring that CBO would use to assess the cost across a full range of scenarios over the next decade.*

**References**

Abraham, Katharine, and Susan Houseman. 2020. "The Smart Way to Save Jobs in the Time of Coronavirus." POLITICO, March 18, 2020. https://www.politico.com/news/agenda/2020/03/18/smart-way-save-jobs-coronavirus-135544.

Anderson, Patricia M, and Phillip Levine. 2020. "The Unemployed and Essential Low-Wage Workers After the CARES Act." *EconoFact*, April 7, 2020. https://econofact.org/the-unemployed-and-essential-low-wage-workers-after-the-cares-act.

Baily, Martin. 1978. "Some Aspects of Optimal Unemployment Insurance." *Journal of Public Economics*, 10(3): 379-402.

Balducci, David, Stephen Wandner, Annelies Goger, Zachary Miller, Sandeep Shetty, Cassandra Agbayani, and Jasmine Eucogco. 2015. "Employer Views About the Short-Time Compensation Program: A Survey and Analysis in Four States." U.S. Department of Labor, September 30. https://www.impaqint.com/sites/default/files/files/ETAOP-2016-01_Final-Report-Acc.pdf.

Barrero, Jose Maria, Nick Bloom, and Steven J. Davis. 2020. "COVID-19 Is Also a Reallocation Shock." Working Paper No. 2020-59, Becker Friedman Institute, May 5. https://bfi.uchicago.edu/wp-content/uploads/BFI_WP_202059.pdf.

Bound, John, and Sarah Turner. 2007. "Cohort Crowding: How Resources Affect Collegiate Attainment." *Journal of Public Economics* 91(5–6): 877-899. http://doi.org/10.1016/j.jpubeco.2006.07.006.

Chetty, Raj. 2008. "Moral Hazard Versus Liquidity and Optimal Unemployment Insurance." *Journal of Political Economy* 116 (2): 173-234. https://dash.harvard.edu/bitstream/handle/1/9751256/Chetty_MoralHazard.pdf.

Chodorow-Reich, Gabriel. 2019. "Geographic Cross-Sectional Fiscal Spending Multipliers: What Have We Learned?" *American Economic Journal: Economic Policy* 11(2):1-34. https://scholar.harvard.edu/files/chodorow-reich/files/cross_sectional_multipliers.pdf.

Chodorow-Reich, Gabriel, and John Coglianese. 2019. "Unemployment Insurance and Macroeconomic Stabilization." The Hamilton Project. May 16. Accessed May 10, 2020. https://www.hamiltonproject.org/papers/unemployment_insurance_and_macroeconomic_stabilization.

Congressional Budget Office. 2020. "Interim Economic Projections for 2020 and 2021." Congressional Budget Office, Washington, DC, May 19. https://www.cbo.gov/publication/56351.

____. 2014. "Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output in 2013." Congressional Budget Office, Washington DC, February 21. https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/reports/45122-ARRA.pdf

____. 2012."Understanding and Responding to Persistently High Unemployment." Congressional Budget Office, Washington DC, February 16. http://www.cbo.gov/sites/default/files/cbofiles/attachments/02-16-Unemployment.pdf.

*Coronavirus Aid, Relief, and Economic Security Act or the CARES Act.* 2020. Public Law 116-136. https://www.congress.gov/116/bills/hr748/BILLS-116hr748enr.pdf.

Council of Economic Advisers (CEA). 2009. "Estimates of Job Creation from the American Recovery and Reinvestment Act of 2009." Report, May 2009. https://obamawhitehouse.archives.gov/sites/default/files/microsites/Estimate-of-Job-Creation.pdf

———. 2014. "Chapter 3: The Economic Impact of the American Recovery and Reinvestment Act Five Years Later." In 2014 Economic Report of the President. Washington, D.C.: U.S. Government Printing Office. https://obamawhitehouse.archives.gov/sites/default/files/docs/erp_2014_chapter_3.pdf

Davis, Steven J., Till von Wachter, Robert E. Hall, and Richard Rogerson. 2011. "Recessions and the Costs of Job Loss [with Comments and Discussion]." *Brookings Papers on Economic Activity*, 1–72.

Deming, David J. 2017. "Increasing College Completion with a Federal Higher Education Matching Grant." The Hamilton Project, April. https://www.brookings.edu/wp-content/uploads/2017/04/es_20170426_increasing_college_completion_with_federal_higher_education_matching_grant_pp_deming.pdf.

Deming, David J, and Christopher R Walters. 2017. "The Impact of Price Caps and Spending Cuts on U.S. Postsecondary Attainment." Working Paper No. 23736, National Bureau of Economic Research, August. https://doi.org/10.3386/w23736.

*Families First Coronavirus Response Act*. 2020. Public Law 116-127.

Federal Reserve. 2020. "Main Street Lending Program." *Board of Governors of the Federal Reserve System*. Accessed May 15, 2020. https://www.federalreserve.gov/monetarypolicy/mainstreetlending.htm.

Fiedler, Matthew, Jason Furman, and Wilson Powell III. 2019. "Increasing Federal Support for State Medicaid and CHIP Programs in Response to Economic Downturns." The Hamilton Project, May 6. https://www.hamiltonproject.org/assets/files/FFP_web_20190506.pdf.

Furman, Jason. 2020. "The Fiscal Response to the Great Recession: Steps Taken, Paths Rejected, and Lessons for Next Time." In *First Responders: Inside the U.S. Strategy for Fighting the 2007-2009 Global Financial Crisis*, edited by Ben S. Bernanke, Timothy F. Geithner, Henry M. Paulson, with J. Nellie Liang, 451-488. New Haven, CT: Yale University Press. https://doi.org/10.2307/j.ctvwcjfjj.21

Furman, Jason and Phillip Swagel. 2018. "Economic Strategy for Higher Wages and Expanded Labor Participation." In *Expanding Economic Opportunity for More Americans: Bipartisan Policies to Increase Work, Wages, and Skills*. Edited by Melissa Kearney and Amy Ganz. *Washington, DC: Aspen Institute Press. https://economicstrategygroup.org/wp-content/uploads/2019/12/Expanding-Economic-Opportunity-for-More-Americans.pdf*

Ganong, Peter, Pascal Noel, and Joseph S. Vavra. 2020. "US Unemployment Insurance Replacement Rates During the Pandemic." Working Paper No. 2020-62, Becker Friedman Institute, May15. https://bfi.uchicago.edu/wp-content/uploads/BFI_WP_202062-1.pdf.

Goolsbee, Austan, Glenn Hubbard, and Amy Ganz. 2019. "A Policy Agenda to Develop Human Capital for the Modern Economy." Aspen Economic Strategy Group, February 4. https://economicstrategygroup.org/wp-content/uploads/2019/12/Expanding-Economic-Opportunity-for-More-Americans-A-Policy-Agenda-to-Develop-Human-Capital-for-the-Modern-Economy.pdf.

Gordon, Nora, and Sarah Reber. 2020. "Supporting Students and Promoting Economic Recovery in the Time of COVID-19: Options for Federal Aid to Elementary and Secondary Education." Brookings Institution

(blog), Brown Center Chalkboard, May 7, 2020. Accessed June 1, 2020. https://www.brookings.edu/blog/brown-center-chalkboard/2020/05/07/supporting-students-and-promoting-economic-recovery-in-the-time-of-covid-19/.

Gordon, Tracy. 2012. "State and Local Budgets and the Great Recession." Brookings Institution (blog), December 31, 2012. https://www.brookings.edu/articles/state-and-local-budgets-and-the-great-recession/.

Hanson, Kenneth. 2010. "The Food Assistance National Input-Output Multiplier (FANIOM) Model and Stimulus Effects of SNAP." U.S. Department of Agriculture. Economic Research Report No. 103. October 1. https://www.ers.usda.gov/webdocs/publications/44748/7996_err103_1_.pdf.

Hanson, Samuel G, Jeremy C Stein, Adi Sunderam, and Eric Zwick. 2020. "Business Continuity Loans: Keeping America's Lights On During the Pandemic." Becker Friedman Institute, April 7.

Howe, Neil. 2020. "US Poverty Rate May Hit 50-Year High." Hedgeye, April 28, 2020. Accessed May 10, 2020. https://app.hedgeye.com/insights/83807-u-s-poverty-rate-may-hit-50-year-high.

Hoynes, Hilary, and Diane Whitmore Schanzenbach. 2019. "Strengthening SNAP as an Automatic Stabilizer." The Hamilton Project, May 16. https://www.hamiltonproject.org/assets/files/HoynesSchanzenbach_web_20190506.pdf.

Hubbard, Glenn. 2014. "Tax Reform Is the Best Way to Tackle Inequality." *The Washington Post*, January 10. https://www.washingtonpost.com/opinions/tax-reform-is-the-best-way-to-tackle-income-inequality/2014/01/10/112710ea-68ca-11e3-a0b9-249bbb34602c_story.html

Kearney, Melissa, and Luke Pardue. 2020. "Exposure on the Job: Who are the Essential Workers and Who Likely Cannot Work from Home?" Brookings Institution, May 7. https://www.brookings.edu/research/exposure-on-the-job/.

Leachman, Michael. 2020. "New CBO Projections Suggest Even Bigger State Shortfalls." Center on Budget and Policy Priorities (blog), April 28, 2020. https://www.cbpp.org/blog/new-cbo-projections-suggest-even-bigger-state-shortfalls.

Mitchell, Michael, Michael Leachman, and Kathleen Masterson. 2017. "A Lost Decade in Higher Education Funding." Center on Budget and Policy Priorities, August 22. https://www.cbpp.org/research/state-budget-and-tax/a-lost-decade-in-higher-education-funding.

Mukoyama, Toshihiko, and Ayşegül Şahin. 2005. "The Cost of Business Cycles for Unskilled Workers - FEDERAL RESERVE BANK of NEW YORK." Federal Reserve Bank of New York, July. https://www.newyorkfed.org/research/staff_reports/sr214.html.

Mueller, Andreas, Jesse Rothstein, and Till M. von Wachter. 2016. *Journal of Labor Economics*, 34(S1): S445-S475.

Nunn, Ryan, and David Ratner. 2019. "Rethinking Unemployment Insurance Taxes and Benefits." Urban-Brookings Tax Policy Center, October 28.

O'Leary, Christopher J. and Stephen A. Wandner. 2018. "Unemployment Insurance Reform: Evidence-Based Policy Recommendations." In *Unemployment Insurance Reform: Fixing a Broken System*, edited by Stephen A. Wandner, 131-210. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. https://doi.org/10.17848/9780880996532.ch5.

Rosenbaum, Dottie, Stacy Dean, and Zoë Neuberger. 2020. "The Case for Boosting SNAP Benefits in Next Major Economic Response Package." Center on Budget and Policy Priorities, April 22. https://www.cbpp.org/research/food-assistance/the-case-for-boosting-snap-benefits-in-next-major-economic-response-package.

Schanzenbach, Diane, and Abigail Pitts. 2020. "Food Insecurity in the Census Household Pulse Survey Data Tables." Northwestern University Institute for Policy Research, IPR Rapid Research Report, June 1. https://www.ipr.northwestern.edu/documents/reports/ipr-rapid-research-reports-pulse-hh-data-1-june-2020.pdf.

Strain, Michael, and R. Glenn Hubbard. 2020. "A Business Fiscal Response to a COVID-19 Recession." American Enterprise Institute, March 20. https://www.aei.org/wp-content/uploads/2020/03/hubbard-strain.pdf.

U.S. Department of Labor. n.d. "Short Time Compensation." U.S. Department of Labor Fact Sheet. Accessed May 15, 2020. https://oui.doleta.gov/unemploy/docs/stc_fact_sheet.pdf.

U.S. Department of Labor. 2017. "FY 2017 Congressional Budget Justification, Employment and Training Administration, State Unemployment Insurance and Employment Service Operations." U.S. Department of Labor Employment and Training Administration. https://www.dol.gov/sites/dolgov/files/general/budget/2017/CBJ-2017-V1-08.pdf.

von Wachter, Till. 2020. "A Proposal for Scaling Enrollments in Work Sharing (Short-Time Compensation) Programs During the COVID-19 Crisis: The Case of California." April 2. http://www.econ.ucla.edu/tvwachter/covid19/Scaling_STC_memo_vonWachter.pdf.

von Wachter, Till, and Jae Song. "Long-Term Nonemployment and Job Displacement." Federal Reserve Bank of Kansas City, September 2014. http://www.econ.ucla.edu/tvwachter/papers/vonwachtersong_jhfed_sep2014.pdf.

Wandner, Stephen, Walter Corson, David Balducchi, and Jon Messenger. 2010. "Work Sharing." In *Solving the Reemployment Puzzle: From Research to Policy*, 341-390Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. https://doi.org/10.17848/9781441680389.

Whalen, Charles J., and Felix Reichling. 2015. "The Fiscal Multiplier and Economic Policy Analysis in the United States." *Contemporary Economic Policy* 33(4): 735–46. https://doi.org/10.1111/coep.12104.

White, Dan, Sarah Crane and Colin Seitz. 2020. "Stress Testing States: COVID-19." *Moody's Analytics*. April 14, 2020. https://www.economy.com/getlocal?q=37F6F320-EF2A-4806-9AAB-EADE66FA0317&app=download

Zandi, Mark. 2020. "The Entire Economy Will Sink if the Federal Government Doesn't Bail Out States." *CNN Business*. May 19, 2020. https://www.cnn.com/2020/05/19/perspectives/state-government-bailout/index.html