Economic
Policy
Institute

What should we know about the next recession?

Report • By Josh Bivens • April 18, 2019

What this report finds: The U.S. is poorly prepared for the next recession—but not for the reasons most people think (allegedly too-high public debt and too-low interest rates). Instead, we're poorly prepared because we never made a dent in reducing inequality during the current economic expansion, and because too many of our policymakers have not fully grasped the economic fact that *fiscal* policy, particularly increases to public spending, is the most effective tool for ending a recession and aiding recovery. Monetary policy (Federal Reserve action) plays an important supporting role, but it cannot fight a recession by itself.

Why it matters: There is a real possibility that the U.S. economy could slip into a recession sometime in the next 18 months. Unfortunately, for political reasons, policymakers are often resistant to increasing public spending during a recession—especially when the debt-to-GDP ratio is high—even though overwhelming evidence shows that that is the most effective way to put a quick end to a recession.

What can be done about it: Heading into the next recession, policymakers should be ready with proposals that provide an effective fiscal boost to aggregate demand growth. Policies should be constructed not only to be effective economically, but also to be effective politically, in order to ensure broad and engaged popular support.

Introduction

This June will mark 10 years of consistent economic expansion since the end of the Great Recession. That's along the outer edges of how long economic expansions have lasted in the past century, leading many observers to wonder how soon the next recession will strike—and what will precipitate it.

This report briefly discusses these questions and then explores at greater length a much more important question: What can policymakers *do* about the next recession when it does hit?

Key conclusions of this report

When and why will the next recession come? There is a real possibility that the U.S. economy could slip into recession sometime in the next 18 months; this risk is due largely to excessive interest rate increases in recent years and a likely fading of fiscal stimulus.

The Trump administration has proven neither nimble nor smart when it comes to macroeconomic management. In particular, its attempt to dismantle many of the constraints put on financial sector speculation following the Great Recession is clearly a threat to future macroeconomic stability.

What have we learned from the last recession? A key lesson from the Great Recession is that fiscal policy is the most effective tool for aiding recovery. Monetary policy can lay the groundwork for fiscal policy, but really cannot be relied on to play more than a supporting role for fighting recessions.

How well prepared are we for the next recession? We are not well prepared, but not for the reasons some people think.

- Contrary to conventional wisdom, the damaging failure to prepare for another downturn has nothing to do with an absence of fiscal or monetary "space."
- The U.S. economy has plenty of fiscal space to confront the next recession with substantial fiscal stimulus.
- While short-term interest rates remain low in historical terms, the Federal Reserve has other tools it can use to expand monetary policy "space."

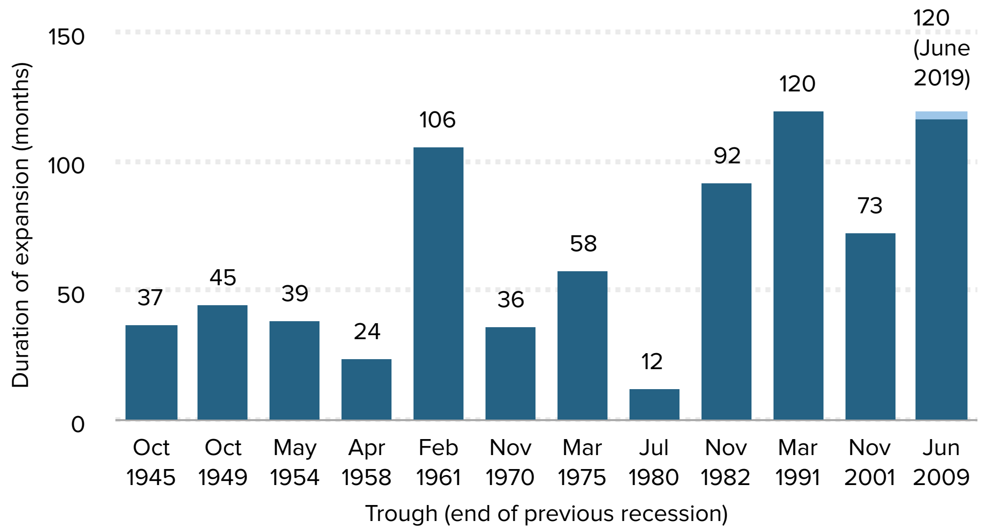
Truly harmful shortcomings in readying the economy for the next recession include failures to:

- Make a dent in high levels of income inequality that drag on aggregate demand growth.
- Adopt a higher inflation target—or even to defend the current too-low inflation target against consistent undershooting.

Figure A

The current economic expansion will soon be the longest in American history

Length of business cycles since 1945, measured in months from trough to peak



Note: The light blue part of the last bar indicates projected future duration of the current expansion through June 2019.

Source: Data from the National Bureau of Economic Research (NBER 2019)

Economic Policy Institute

- Rein in the power of the financial sector, which will muscle its way to the front of the line for prioritizing aid during the recession, and which will define "recovery" in its own too-narrow terms.
- Absorb state-of-the art economic research highlighting the key role of expansionary fiscal policy in fighting recessions and spurring recovery.

What can policymakers do to start preparing? Heading into the next recession, policymakers should be ready with proposals that provide an effective fiscal boost to aggregate demand growth. One key lesson from the Great Recession is that these policies should be constructed not only to be effective economically, but also to be effective politically, in order to ensure broad and engaged popular support.

When and why might the next recession come?

The current economic expansion is nearly a decade old, making it among the longest on record. **Figure A** shows the length of business cycles (measured from business cycle peak to peak) since World War II. As of June 2019, the current recovery will match the 1990s expansion, the longest on record in the post–World War II era.

However, there is little evidence that the risk of recession rises simply as a function of the length of the previous expansion. Given this, nobody really knows when the next recession might come. What we *can* know is what factors have triggered past recessions—and how likely these are to recur in the near future.

The common root cause of each recession is a contraction of economywide spending (or *aggregate demand*) relative to the economy's potential productive capacity. As consumers (households, businesses, or governments) cut back their spending, it doesn't make sense for producers to keep generating as much economic output. As a result, these producers make cuts to their workforce and let their capital stocks fall idle. Think of a hotel in a major city. As economywide spending slows, they receive fewer business and tourist bookings. This leads hotel rooms (their key capital stock) to sit empty, which in turn leads them to lay off cleaning staff.

Recessions are caused *across the board* by a shortfall of aggregate demand relative to the economy's potential. Ending a recession, therefore, requires replenishing aggregate demand.

The most specific causes of aggregate demand contractions, and resulting recessions, in the post–World War II period have been fiscal contractions (often caused by military spending drawdowns), monetary policy tightening (the Federal Reserve overshooting in attempts to fight inflation by raising interest rates too high), and popping asset market bubbles. Below, we examine each of these past causes in turn, to consider whether any of these threaten to derail the expansion in coming years.

The risk of a recession triggered by fiscal contraction seems low right now

Luckily, there seems to be little danger that fiscal contraction will cause a recession in the near future.[1] Ironically, fiscal policy *was* far too contractionary during most of the recovery since the Great Recession, yet it became expansionary in 2018 with the tax cuts and the large increases in discretionary spending (both defense and nondefense) passed at the end of 2017.

It is important to note that, contrary to claims made in fiscal policy discussions in 2018, the boost provided by the increases to spending was clearly larger than the boost provided by the tax cuts. The tax cuts, while expensive in budgetary terms, were terribly designed for providing fiscal support because they provided so much of their benefit to higher-income households whose current spending is not constrained by income.[2] In fact, it is fair to say that one could have provided the same degree of fiscal support as the tax cuts while spending about 70 percent less in fiscal resources if these resources had been dedicated to public investments or safety net spending.[3]

Nevertheless, the tax cuts and increased spending did provide a fiscal boost to the economy. But even with this clear recent evidence of the benefits of expansionary fiscal policy (even poorly designed fiscal policy), the Trump administration continues to parrot evidence-free warnings about the danger of excess federal debt. This debt fearmongering is seen in their annual budget proposals, which call for draconian levels of austerity.[4] It is worth noting that if these budget proposals had ever actually been enacted, they would clearly have caused a recession. But, for the next year, there seems little prospect that the Trump administration's professed desire for more austerity will be fulfilled by a split Congress.

Finally, much of the catastrophic fiscal drag that delayed full recovery from the Great Recession was actually imposed by state and local governments.[5] State and local austerity was worse where Republicans controlled the major levers of state government (think Sam Brownback's Kansas and Scott Walker's Wisconsin). Hopefully, the swing in state government control away from Republicans in the last election will make another wave of state-led austerity less likely in the next few years.

Excessively contractionary monetary policy is a risk right now

Excessively contractionary monetary policy is likely the single most common cause of recessions in the post–World War II period. When the Federal Reserve thinks that growth in aggregate demand threatens to run ahead of growth in the economy's productive capacity and spark accelerating inflation, it raises interest rates to keep the economy from "overheating."[6] These interest rate hikes slow debt-financed spending—which includes much business investment, most home purchases, and many purchases of durable goods (like automobiles). Too often, however, the Fed has raised rates too far and too fast, and the result has been a recession.

Too-rapid interest rate increases clearly played a role in the recessions of the 1970s, 1980s, and 1990s. Worrying about excessively contractionary monetary policy today might strike some as odd given the Fed's key role in fostering recovery from the Great Recession of 2008–2009. The Fed made the earliest decisive policy decisions to support aggregate demand and was willing to undertake historically unprecedented actions to keep the recovery moving forward in the face of fiscal austerity. They also kept monetary policy expansionary for years after the recession's end, even in the face of warnings (baseless, as time has shown) that they were risking an outbreak of uncontrolled inflation.

Despite this admirable record during the recession and the first few years of recovery, the Fed's eventual rate increases (beginning at the end of 2015) still came too soon, and they have followed on too fast since. In 2018, the signature of excessively rapid interest rate increases slowing economic growth was clear. Residential investment contracted in each quarter in 2018, the first time this has happened since 2009. The trade deficit also expanded and weighed on growth, with American exports and import-competing domestic producers hampered by a U.S. dollar whose value was rising as American interest rates attracted capital inflows from around the world. These two drags on growth—contraction of residential investment and a rising trade deficit—are exactly those predicted by those who worry that excessively fast interest rate increases will slow spending. If the drag from more-contractionary monetary policy continues in 2019 with no offsetting new fiscal stimulus, the economy could certainly see a sharp slowdown in growth in the coming year.

Given that Donald Trump has occasionally criticized recent interest rate hikes, should his administration be exempt from blame in terms of the harms of contractionary monetary policy? Not particularly. While he sometimes tweets like a monetary policy dove, Trump's nominations to the Federal Reserve Board of Governors (BOG) have clearly shifted the Fed to a less-expansionary stance. The administration's first two nominations to the BOG—Randal Quarles and Marvin Goodfriend—were both consistently wrong about the need to raise interest rates to avoid inflation in recent years. If the Fed had followed their advice, unemployment would be considerably higher today.[7] While the Goodfriend nomination was eventually allowed to expire without being approved, Randy Quarles sits on the Fed today. Subsequent appointments after Quarles and Goodfriend—Richard Clarida and Michelle Bowman—have been better, but given that they have filled slots previously held by governors with dovish views on monetary policy, they have not moved the center of gravity on the BOG in a more dovish direction.

Trump's most consequential decision on Fed personnel, of course, was the choice to replace Chair Janet Yellen with Jerome Powell. While Powell has been a thoughtful member of the Fed's BOG in recent years, Yellen had an established track record of pushing past evidence-free claims that the Fed had allowed the economy to overheat and needed to hike interest rates. To be sure, Yellen undertook some rate increases that may have been unwarranted. But she also resisted repeated calls to do the wrong thing. Powell deserves much respect for his performance as a Fed BOG member and chair, but the shift from Yellen to Powell is almost surely one to a Fed less committed to expansionary policy in coming years. It also represents a transition to a Fed chair who does not have a strong track record of resisting calls to raise rates.

In recent weeks, the Fed has implicitly acknowledged that recent rate increases may have overshot, indicating strongly in the March 2019 meeting of the Federal Open Market Committee (FOMC) that they may go the rest of this year without raising rates again.[8] This caution is most welcome. Less welcome is Trump's declared intent to nominate two rank partisans to the BOG—Stephen Moore and Herman Cain.[9] While both Moore and Cain, if appointed to the board, would likely keep monetary policy expansionary as long as President Trump was in the White House, they would almost certainly be just as likely to call for sharp rate increases under Democratic presidents. Both criticized the Fed for being too dovish during the Obama administration. As detailed in an earlier section of this report, partisan Republican policymakers throttled recovery from the Great Recession with fiscal policy choices. If policymakers this partisan are allowed onto the Federal Reserve Board, we would see a repeat of this in future recoveries with monetary policy.

Asset market bubbles don't appear to be an imminent threat, but policymakers must still be vigilant

The last two American recessions were unambiguously caused by bursting asset market bubbles: the stock market bubble in 2001 and the housing price bubble after 2006. The clear lesson of these episodes is that policymakers must be vigilant about not letting bubbles inflate to dangerous proportions.

Policymakers—particularly in the regulatory realm—have a number of tools available to keep asset markets from getting dangerously mispriced.[10] For one, they can simply point out when historical relationships between underlying fundamentals and asset prices seem to be diverging in some markets. Janet Yellen did this in a single speech in 2014 about technology stocks and sparked a relatively strong downward response from prices. While she did not follow up this warning and prices soon rebounded, she appeared to be testing a demonstration effect of the power of regulators' talk with her initial speech, and the test went well.

Regulators can also impose quantitative limits on how much debt is taken on to purchase assets. In the case of home prices, for example, the Federal Housing Administration can ratchet down loan-to-value ratios (effectively requiring higher down payments from home buyers) when consumers take out mortgages.

Finally, regulators can ensure that financial institutions are prudently managed and maintain sufficient capital buffers to guard against collapse in the face of small downward movements in asset prices. The housing price bubble bursting would have hurt less (though it certainly would not have been painless) if it had not cascaded through a financial sector whose individual institutions had recklessly loaded up on debt and threatened to topple over like dominoes in the face of the housing price shock.

All approaches to stopping bubbles before they get large enough to harm the American economy have one thing in common: a (rare) willingness to pull the punch bowl away from powerful actors in the financial sector as the bubble inflates.[11] Financial sector profits soared as the home price bubble inflated in the early 2000s, reaching about a quarter of all corporate profits even while they accounted for just 5 percent of private-sector employment.[12] But crossing the financial sector is not the strong suit of most politicians in either party.

The Trump administration's track record on standing up to finance is nonexistent. All of its nominees to Fed BOG positions are softer on financial regulation than the members who preceded them. Randal Quarles, a former Carlyle Group executive who occupies the post of vice chair for financial supervision at the board—is particularly soft on finance. For example, Quarles has opposed the Volcker Rule, a regulation that limits bank risk-taking with depositor money and is essentially *already* a compromise effort to restore some of the safety that the Glass Steagall Act provided the banking sector before it was repealed in 1999.[13] While serving as an official in the George W. Bush Treasury Department in the years immediately preceding the worst financial crisis in a generation, Quarles argued that "markets are always ahead of regulators, and frankly that's how it should be" (Quarles 2005).

Besides Quarles, President Trump's appointments include Mick Mulvaney as head of the Consumer Financial Protection Bureau (CFPB), Gary Cohn as chair of the National Economic Council (NEC), and Steve Mnuchin as treasury secretary. Mulvaney, a long-time advocate of abolishing the CFPB while in Congress, has urged lobbyists to keep pressuring for a more compliant CFPB and wrote a memo to CFPB staff telling them that they work not just for consumers of financial products but for the providers of these products, too: banks.[14] Cohn, a former executive at Goldman Sachs who spearheaded the drive for the 2017 tax cut, told an audience at an event marking the 10th anniversary of the Lehman Brothers collapse that no top financial executive went to jail following the crisis because none of them did anything wrong.[15] Prior to joining the Trump administration, Mnuchin headed an investment group that bought the bank IndyMac in California and then made millions by harvesting fees on thousands of foreclosures the bank subsequently initiated, often fraudulently.[16]

At the moment, there is no glaring, macroeconomically significant asset market bubble that looks guaranteed to burst in coming years. Still, some markets are seeing prices on the high side of historical experience relative to fundamentals, and might require some stiff-backed supervision from financial regulators to avoid becoming a danger to the broader economy before too long. On this front, it is unambiguously clear that the Trump administration is not up to this job and has left the U.S. economy vulnerable.

What should policymakers do when the next recession hits?

Regardless of why or when the next recession hits, policymakers should use every effective tool at their disposal to end it as quickly as possible and pin the economy back at full employment. To be effective, these tools need to boost spending by households, businesses, or governments to relieve the aggregate demand shortfall that is the fundamental cause of recessions. The traditional view of mainstream macroeconomics before the Great Recession was that monetary policy would be sufficient to end recessions quickly and that discretionary fiscal stabilization would be either unnecessary or outright harmful.[17] This conventional wisdom should be one of the most obvious policy casualties of the Great Recession, and nearly all macroeconomic policy analysts would agree that discretionary fiscal policy should take a role in fighting the next recession and spurring a faster recovery.

The Fed should support fiscal policymakers' efforts, but cannot be relied on to end recessions by themselves

A clear lesson from the Great Recession and its aftermath is that the conventional monetary policy response of lowering short-term interest rates—and even the unconventional response of buying long-term assets in order to lower *long-term* rates—will be insufficient to combat the next recession. This is not just a problem of the "zero lower bound" that binds when the Fed's short-term interest rates are moved to zero and cannot be lowered any further to help boost spending.[18] Even in periods where lowering interest rates is possible, these rate cuts tend to provide weaker medicine than the economy needs to quickly end recessions.[19] While raising rates reliably and quickly stems aggregate demand growth, lowering rates does not reliably boost this growth.[20] In this long-recognized asymmetrical relationship, lowering interest rates in an attempt to boost growth is often compared to "pushing on a string."[21]

However, as weak as the mechanical effects of interest rate cuts are in spurring growth in spending, this does not mean the Federal Reserve should not cut rates as aggressively as possible during recessions. For one, even the weak direct effect of interest rate cuts at least *moves the economy in the right direction*.[22] For another, low interest rates should provide a strong signal to fiscal policymakers that efforts to boost aggregate demand are needed and will be cheap in budgetary terms (as low interest rates reduce public debt service payments). Fiscal policymakers, particularly in Congress, do not generally have huge staffs whose job is almost exclusively focused on monitoring the state of the macroeconomy, whereas the Federal Reserve does. Further, this expertise, as well as its political independence, gives the Fed great influence in economic debates. This leads to fiscal policymakers often following the lead of the Fed when it comes to recession-fighting.

It is, for example, well known that Fed Chair Ben Bernanke was instrumental in convincing an otherwise reluctant Congress to allocate funds for a bailout of the nation's largest banks in the fall of 2008.[23] A common criticism of the Fed's crisis response, one with real validity, was that they did not provide as powerful an advocacy for sustained fiscal stimulus to help the nonfinancial side of the economy.

In their defense, the Fed's policy actions during and after the Great Recession—taking unprecedented actions to lower both short- and long-term interest rates—*should* have been interpreted by fiscal policymakers as a clear call to do more. And they did occasionally make loud calls (at least, "loud" by the standards of central bank communication) highlighting the drag that premature fiscal contraction was imposing on the pace of recovery.[24]

But the Fed really should not be graded on the curve of their own often-opaque communications. By the standards of *normal human communication*, that is, by the standards that apply to fiscal policymakers and their staffs and the media who cover them, the linkage between the Fed's unprecedented efforts to keep interest rates low and the need for fiscal policymakers to do more to spur recovery was not made as explicitly as it should have been.

This failure to translate monetary policy actions into obvious signals for fiscal policymakers to do more does not, of course, excuse fiscal policymakers' inaction. The fiscal austerity that hamstrung recovery from the Great Recession was not simply the result of good-faith-but-sadly-mistaken efforts to genuinely assess what the economy needed. Rather, the pull toward fiscal austerity was largely rooted in partisan politics.[25] But the Fed could have raised the political cost of inaction for these policymakers if monetary actions had been more widely interpreted as calling for more aggressive fiscal actions.

In short, the Fed should be much louder in communicating with other policymakers when their judgment is that the economy needs more stimulus than monetary policy can provide. One way to be loud is simply through more blunt communication. There has been much analysis about the efficacy of Fed communication with other economic decision-makers—so-called forward guidance—over the past decade. Forward guidance is simply providing clear communications and strong signals about the likely short-run trajectory of interest rates. But this forward guidance has always been narrowly focused on the likely path of *monetary* policy actions only. A more expansive view of the role of forward guidance would be useful in fighting the next recession. Again, the Fed is the primary watchdog for macroeconomic instability. If they bark loudly about the need for fiscal policy support to end a recession (or spur recovery) more quickly, this would put a lot of pressure on other policymakers to act. There is nothing stopping Fed Chairman Powell and his colleagues from explicitly saying that the fiscal austerity resulting from intentional actions of Congress and the president is keeping them from meeting the Fed's dual legal mandate of maximum employment and price stability.

Another way for the Fed to amplify the need for fiscal policy support for ending recessions and spurring recovery is to adopt even stronger unconventional monetary policy tools. After the Great Recession, the Fed's quantitative easing program largely consisted of them announcing targets for the *value of assets* that they would purchase over a given time frame. The Fed's purchase of these assets pushed down long-term interest rates and helped boost demand, but the degree of interest rate lowering was largely uncertain *ex ante*. An alternative way of undertaking quantitative easing would be to pre-commit to the *interest rate reduction* the Fed was targeting, with the scale of asset purchases being open-ended.

For example, the Fed could have said they were targeting a 2 percent nominal 10-year Treasury interest rate and would buy as many bonds as needed to achieve this target. Any ambitious long-run interest rate target may well have required substantially larger asset purchases than the Fed actually undertook, but in terms of macroeconomic stabilization, this just means monetary policy would have been more expansionary overall—a good thing. Beyond the mechanical boost from more expansionary monetary policy, a long-term interest rate target would have been a dramatic invitation to fiscal policymakers to do more, and could have encouraged them directly to do more by assuring them that long-term debt payments arising from more stimulus would be modest.

The decisions of Congress and the president should lead the recovery effort through expansionary fiscal policy

The most direct way for policymakers to fill the aggregate demand gap that drives recessions is public spending. But public spending following the recession's trough in 2009 was historically slow relative to other business cycles, particularly before 2017. This was the case even as the ability of monetary policy to fight the recession to that point had been severely hamstrung by the zero lower bound on interest rates.[26]

In the wake of the last recession, policymakers chose austerity over expansion—and the results were devastating

Figure B shows the cumulative growth in per capita spending by federal, state, and local governments over the business cycle following the troughs of the 11 recessions since World War II. Astoundingly, per capita government spending in the first quarter of 2016—twenty-seven quarters into the recovery—was nearly 4.9 percent *lower* than at the trough of the Great Recession. By contrast, 27 quarters into the early 1990s recovery, per capita government spending was 3.6 percent higher than at the trough; 24 quarters after the early 2000s recession (a shorter recovery that did not last a full 27 quarters), it was almost 10 percent higher; and 27 quarters into the early 1980s recovery, it was more than 17 percent higher.

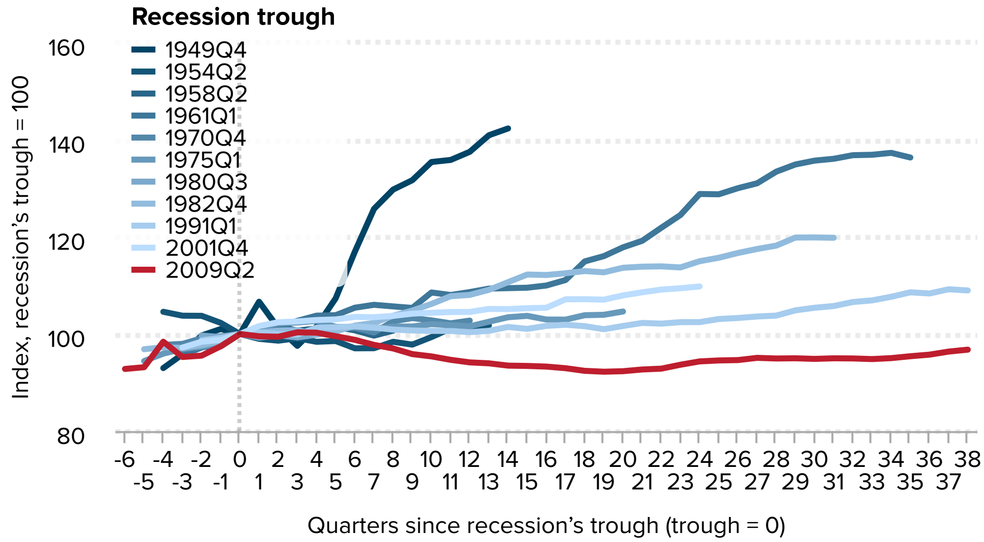
If government spending following the Great Recession's end had tracked the spending that followed the early 1980s recession—the only other postwar recession of similar magnitude—governments in 2016 would have been spending almost a trillion dollars more in that year alone. In turn, this pace of public spending growth would have seen the U.S. economy returned to full employment around 2013, *even if* the Federal Reserve had raised interest rates along the way.[27] In short, the failure to respond to the Great Recession the way we responded to the 1980s recession *entirely* explains why the U.S. economy took so long (at least eight years) to get anywhere near to full recovery after the Great Recession ended.

At the state and local level, slow growth of public spending is even more pronounced than at the federal level, and state and local policymakers certainly deserve much of the blame for the slow recovery. Just one example of austere spending policies at the subfederal level is the decision by 19 states to refuse free fiscal stimulus from the Medicaid expansion under the Affordable Care Act.

Figure B

The 2010s recovery was weighed down by persistent fiscal austerity

Cumulative growth in real government per capita spending across business cycles, by number of quarters since recession's trough



Notes: For total government spending, government consumption and investment expenditures are deflated with the NIPA price deflator. Government transfer payments are deflated with the price deflator for personal consumption expenditures. This figure includes state and local government spending.

Source: EPI analysis of data from Tables 1.1.4, 3.1, and 3.9.4 from the National Income and Product Accounts (NIPA) of the Bureau of Economic Analysis (BEA)

Economic Policy Institute

The biggest challenge to expansionary fiscal policy is that fiscal decisions are political—and too often partisan

Despite the fact that much of the slow growth in total public spending during the recovery could be accounted for by state and local governments, the lion's share of the blame for fiscal austerity during the recovery should still accrue to Republican members of Congress in Washington, D.C.

The reason for this is simple: State and local policymakers face spending constraints that do not apply to federal policymakers. Most specifically, these state and local policymakers by and large have to balance the operating portions of their budgets by law.[28] But apart from the *legal* strictures against running operating deficits (strictures that do not constrain federal action), states also face real *economic* constraints to undertaking fiscal stimulus.

States do not print their own currency. This means that they really do have to be more cautious about running up debt that sometimes erratic financial markets can decide (rightly or wrongly) is unsustainable. In short, states do need to at least keep one eye on the "bond vigilantes" in financial markets that can appear to punish entities that are perceived to be too profligate.[29]

In contrast, the federal government is free to run deficits. And because it can print its own currency, it does not have to ratchet interest rates ever higher if private investors are unwilling to absorb new public debt for a spell of time.

Even during normal times, transfers from the federal government to states account for more than 20 percent of total state and local resources for spending. There is no reason, other than politics, that federal aid to states could not have been more forthcoming in the face of such historically high need.

Even the *timing* of austerity over the current recovery is fairly easy to pinpoint in the actions of Republicans in Congress. The Obama administration championed and signed the American Recovery and Reinvestment Act (ARRA) during the recession in early 2009, and the law led to a jump in government spending that persisted throughout the early stages of the recovery. Through the end of 2010 (when the ARRA had mostly petered out), total government spending per capita was not that different from spending during previous recoveries (and actually rose more rapidly than in previous cycles during the recession phase). But in 2011 Republicans in the House of Representatives demanded spending cuts as a precondition for raising the debt ceiling, a vote that had historically been *pro forma* (the ceiling has been raised 78 times since 1962). The resulting Budget Control Act of 2011 significantly reduced the growth of discretionary spending between 2012 and 2017. Both in word and deed, Republican lawmakers embraced and enforced fiscal austerity, and the result was the most moribund recovery on record until 2017.

Of course, spending is just one prong of fiscal policy; taxes constitute the other. In theory, fiscal policy may not have been as austere as Figure B would indicate if taxes had been cut much more steeply over the recovery from the Great Recession. While tax changes were indeed less contractionary than spending in those years, they were nowhere near expansionary enough to overturn the overall finding that recovery from the Great Recession was severely hampered by overly restrictive fiscal policy.

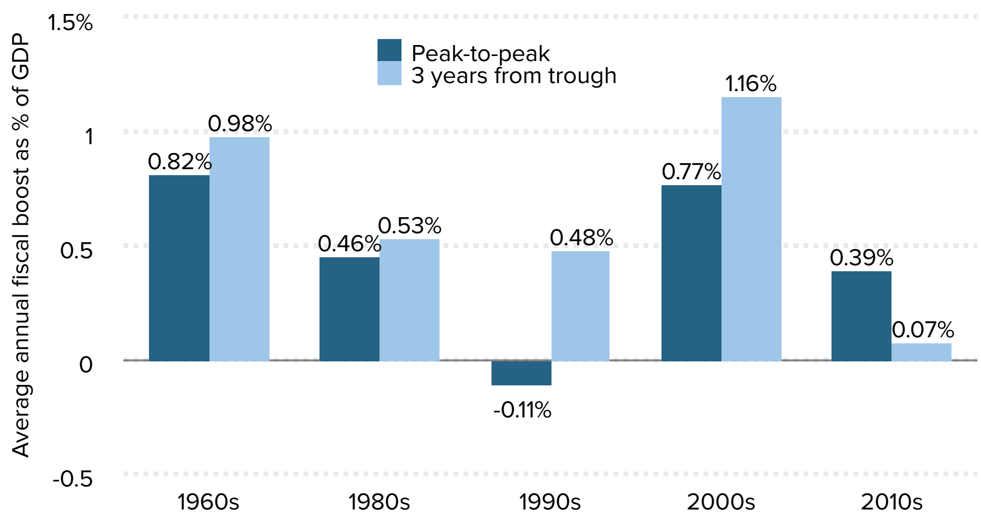
Fiscal spending growth following the Great Recession lagged well behind spending growth in previous recoveries

Figure C provides a summary measure of the total "fiscal impulse" provided by changes in government consumption and investment spending, transfer payments, and taxes during and after recessions.[30] Essentially, fiscal impulse measures how much government consumption and investment spending, transfer payments, and taxes changed as a share of GDP in a given quarter. Figure C compares the business cycles of the 1960s, 1980s,[31] 1990s, early 2000s, and late 2000s. The fiscal impulse stemming from these combined fiscal actions are measured either from peak to peak over the entire business cycle or, more relevantly, from the trough of the recession through the first three years of recovery. The peak-to-peak measure includes the actions undertaken during the actual recession (like the Recovery Act), while the measure from the trough plus three years shows the fiscal impulse aiding *recovery* from the recession.

Figure C

The fiscal boost during the latest expansion has been extraordinarily weak

Average annual fiscal impulse over five business cycles



Note: For each fiscal component (taxes, transfers, and government consumption and investment), the quarterly growth rate is multiplied by its share relative to overall GDP to get a quarterly contribution to growth. For taxes, this calculation is then multiplied by negative one—highlighting that tax cuts boost spending while tax increases slow spending. The figure shows these quarterly contributions expressed as annualized rates. Government consumption and investment spending is adjusted for inflation with the component-specific price deflator available in the NIPA data. For taxes and transfers, the price deflator for personal consumption expenditures (PCE) is used.

Source: EPI analysis of data from Tables 1.1.4, 2.1, 3.1, and 3.9.4 from the National Income and Product Accounts (NIPA) of the Bureau of Economic Analysis (BEA).

Economic Policy Institute

The data from Figure C show that the truly extraordinary policy legacy of the Great Recession was the extent of fiscal austerity's drag on growth soon after the official recession was over—while the economy was still in dire need of policy support. This fiscal impulse in the first three years of recovery was historically weak following the Great Recession—providing less than a tenth the spur to spending provided after the 1960s and early 2000s recessions, and less than a fifth the fiscal boost provided after the 1980s and 1990s recessions. This fiscal austerity is especially striking given that the Fed's conventional recession-fighting tool—lowering short-term interest rates—had little room to aid recovery, and that the depth and breadth of the demand shortfall was by far the largest in American history since the Great Depression. It is exactly this kind of premature swing into austerity that policymakers must avoid at all costs as the economy enters the next recession.

How prepared are we for the next recession?

The short answer is: We are not well prepared for the next recession.

However, it's not for the reasons some people think. Some would say we lack "fiscal space" and "monetary space" to promote economic expansion (see discussion below). The true reasons, however, are political and intellectual: They include the persistent drag on aggregate demand effected by past (often politically motivated) policy decisions, as well as an intellectual failure to reframe the public's understanding of the benefits—and low risks—of federal deficit spending versus austerity during economic downturns and recoveries.

Some say we are poorly prepared because of lack of fiscal or monetary space

A growing conventional wisdom holds that the United States is poorly prepared to face the next recession because it lacks fiscal space to undertake stimulus, and lacks monetary space given short-term interest rates that are not very far above zero (the federal funds rate is currently set to a range between 2.25 percent and 2.5 percent). The broader argument—that we have done a terrible job preparing for the next recession—is fair. The given reasons—a lack of fiscal and monetary space—are not.

The evidence presented to justify claims of little fiscal space is usually just the federal debt as a proportion of GDP. This ratio in 2018 (77.8 percent) sat a bit over twice as high as it was before the Great Recession. But the measure is an extraordinarily imprecise gauge of fiscal space, and is fundamentally backward-looking, picking up the legacy of past decisions regarding spending and taxes. More sensible measures of fiscal space would look at future determinants—for example, projected deficits or projected tax burdens relative to other advanced economies. Using these forward-looking measures, by many respects the fiscal space available to the U.S. appears much larger.[32] This seems to be the judgment of market participants, for example, who currently seem quite willing to hold public debt even with interest rates being very low. This willingness to hold U.S. debt (presumably based at least in part on confidence in the ability of the United States to service this debt in the future) is reflected in current extraordinarily low interest payments on U.S. securities, shown in **Figure D**.

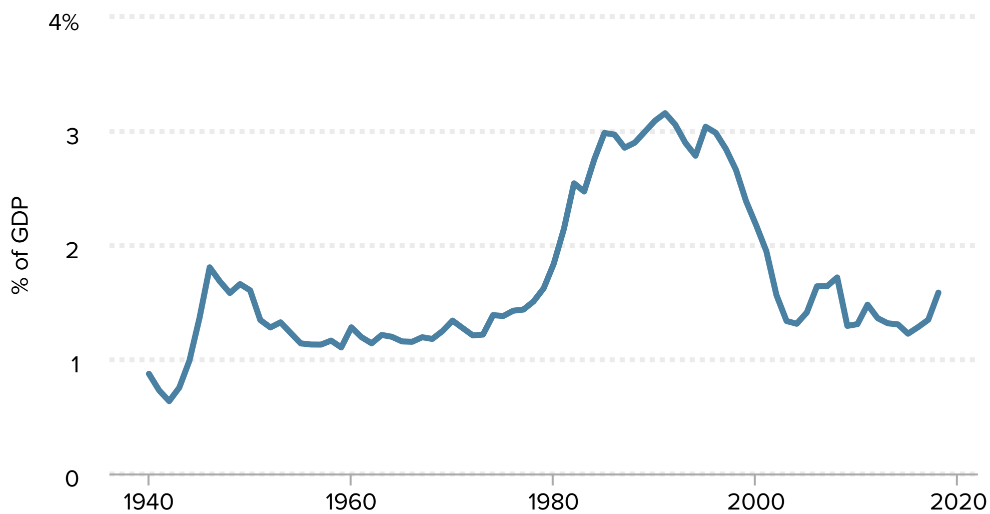
Finally, it is important to note that as a nation's debt-to-GDP ratio climbs, the cost of prolonged slumps that slow the growth of the denominator (namely GDP) rises—even in narrow fiscal terms. This means that effective fiscal stimulus that raises growth from a recession's trough can *reduce* the debt ratio.[33] In all, there is no compelling evidence that the United States lacks the fiscal space it needs to do the right thing in the next recession.

It is clearly true that short-term interest rates will not be able to be cut very far before hitting the zero lower bound in the next recession. But monetary policy, as noted above,

Figure D

Some measures show historically high degrees of 'fiscal space'

Federal debt service as a share of gross domestic product (GDP)



Note: Federal debt service refers to interest paid on federal debts. Here it is shown as a percent of GDP.

Source: Office of Management and Budget, "Table 1.3—Summary of Receipts, Outlays, and Surpluses or Deficits (-) in Current Dollars, Constant (FY 2012) Dollars, and as Percentages of GDP: 1940–2024," in *Historical Tables*, accessed March 2019

Economic Policy Institute

has always been weak tea when it comes to fighting recession and spurring growth. Further, lowering short-term interest rates is not the only potential tool in the Fed's kit (as discussed above). In short, there is little evidence that a lack of monetary space will be particularly constraining for future stimulus efforts either.

The real reasons we're not prepared for the next recession are political and intellectual

The United States will head into the next recession with a number of structural drags on growth in aggregate demand. The largest structural drag is continued high levels of income inequality. Another important obstacle is an inflation target that was set too low and has been insufficiently defended against undershooting for a decade. Besides these mechanical drags stemming from inequality and too-low inflation, the response to the next recovery is likely to be hampered by our failure to properly rein in the power of finance following the Great Recession. Finally, and most importantly, the overwhelming empirical and intellectual case for aggressively using fiscal policy to end the next recession quickly and restore full employment has *not* filtered through sufficiently to policymakers. Instead, ingrained habits of thinking have led far too many policymakers to see budget deficits as nearly always and everywhere bad.

Below we briefly discuss each of these failures to prepare for the next recession.

The U.S. has failed to rein in high levels of inequality—anemic wage growth for low- and middle-income workers has curtailed aggregate demand growth

The rise in American inequality in recent decades is now well-recognized. It is also well-documented that, all else being equal, a redistribution of income from low- and middle-income households toward rich households is likely to sap aggregate demand growth. That's because low- and middle-income households tend to spend a higher share of their income (both average and marginal) than rich households. Low- and middle-income families live paycheck to paycheck, spending nearly all of what they earn, while rich households' spending is not constrained by their current income—so swings in that income will not much affect their spending. Bivens (2017a) finds that the rise in inequality since 1979 reduced aggregate demand by as much as 4 percent in 2016, holding other influences constant. To put that number in context, it represents more of a drag on aggregate demand than the boost provided by the Recovery Act in 2010 (the Act's peak year of effectiveness).

For much of the period from 1979 to 2016, other influences helped counteract this inequality-induced drag on demand. Key influences included a secular decline in interest rates (as excess savings from rich households put downward pressure on rates) and a number of asset market bubbles that sustained consumption growth for a time. But the underlying level of aggregate demand today is far lower than it would be had the post-1979 rise in inequality never happened, and this makes the job of avoiding and exiting recessions harder. While the causes of this rise in inequality are beyond the scope of this paper, the roots are clearly political: Far too often in recent decades policies were enacted that explicitly redistributed bargaining power and leverage in the labor market away from low- and middle-wage workers and toward corporate managers and capital owners.[34]

The Fed's inflation target is too low and has been poorly defended—giving the economy less room to grow

When nominal interest rates hit zero, real (inflation-adjusted) rates will equal zero minus the expected rate of inflation. This is because debt holders will demand a premium for holding nominal-based debt instruments (like Treasury bonds) due to inflation's erosion of the bond's purchasing power.

In recent years, as the zero lower bound (ZLB) on nominal interest rates was reached, higher inflation that drove real interest rates significantly *lower* than zero would have been most welcome. But instead the Fed in 2012 made official what had long been suspected: Their preferred inflation target was just 2 percent. This 2 percent expected inflation made the ZLB bind tightly in the recession, as it meant real rates could only be pushed to negative 2 percent, when even lower real rates were needed. A higher inflation target would provide more room for nominal interest rate cuts to boost the economy in the next recession. Given the growing frequency of advanced economies around the world hitting the ZLB in recent decades, and given that the influences leading to this are generally well-known and unlikely to be reversed soon, the case for the Fed adopting a higher inflation target is strong. (The case for this is summarized in Bivens 2017b.)

Even worse than having an inflation target that is too low is consistently undershooting this too-low target. Yet this is precisely what the Fed did, with the cumulative annualized gap between the target and actual inflation reaching 5 percentage points between 2008 and the end of 2018.[35] If it is widely recognized by households, businesses, and financial market participants that the Fed is undershooting its inflation target, inflation expectations could become "un-anchored" and begin falling. Falling inflation expectations could in turn promote higher real interest rates. (Because real interest rates are nominal rates minus the rate of expected inflation, these rates *rise* as inflation falls.) Going into the next recession, it seems our target inflation rate is not only too low, but it has also been poorly defended against undershooting. This could certainly hurt the next recovery.

We have failed to contain the power of the financial sector

One oft-noted feature of the response to the Great Recession was the asymmetry between policymakers' lack of focus on measures that would relieve pressure on ordinary households versus their strong support for measures that would help the financial sector. Federal Reserve aid explicitly tied to providing support for the financial sector began in August 2007 and continued for years; it included the creation of historically unprecedented programs to provide liquidity to financial institutions.[36]

This finance-directed aid certainly worked to relieve the fallout of the crisis on these institutions and stem financial market stress. By early 2009 measures of this financial market stress (like spreads between Treasury bond interest rates and other rates) had largely returned to normal, and stock market indices began growing again. This early return to near-normality in the finance sector probably sapped the urgency among policymakers to ensure a full recovery for all, not just banks.

In the years since the crisis, regulation has focused almost exclusively on rules to ensure individual banks' solvency. Yet policymakers have largely ignored any measures that might restrain the political power of finance writ large. The recent spate of rollbacks to financial regulations shows the costs from this failure to policymaking priorities and integrity.[37] When the next recession hits, the ongoing dominance of finance threatens to again allow the banks to shove their way to the front of the line of those looking for help. Next time around, we must ensure that the distress of typical families, not the balance sheets of financial firms or asset prices, is the primary concern of policymakers.

We have failed to incorporate state-of-the-art economics into fiscal policymaking

We noted earlier that recovery from the Great Recession began faltering in 2011 with the passage of the Budget Control Act. This stumble occurred, at least in part, because of a premature retreat from touting the need for expansionary fiscal policy and toward genuflecting before the conventional wisdom that we need deficit reduction. A prime example was in the January 2010 State of the Union address—*when the unemployment rate was 9.8 percent*[38]—when President Obama said:

> But families across the country are tightening their belts and making tough decisions. The federal government should do the same. So tonight, I'm proposing specific steps to pay for the trillion dollars that it took to rescue the economy last year…Like any cash-strapped family, we will work within a budget to invest in what we need and sacrifice what we don't. (White House 2010)

Since then, we have seen overwhelming evidence of the benefits of fiscal expansion to end recessions—and no indication that higher budget deficits are harming the U.S. economy. Yet politicians on both sides of the aisle just keep reflexively paying lip service to the perceived need for smaller budget deficits. Most recently, the House of Representatives adopted needlessly stifling PAYGO rule for the next Congress.[39]

Don't misunderstand me—a Democratically controlled House of Representatives would likely waive PAYGO to undertake fiscal stimulus during a recession. But when politicians proclaim the need to restrain deficits and *then* turn around and say larger deficits are fine (precisely at the same moment households are having to "tighten their own belts" under the strain of a recession), it becomes much more difficult to educate the public in the long run about when taking on more debt is damaging and when it is not. And the need for fiscal stimulus in the last decade lasted far, far longer than the official recession did. In short, the large gulf between conventional wisdom and state-of-the-art economics—which now argues strongly for an aggressive fiscal role in restoring full employment even *after* a recession has officially ended—is worrisome.

Conclusion: We need to get the diagnosis right—and then apply a politically feasible fiscal remedy

From an economist's perspective, one of the most dispiriting features of the last recovery was how quickly the real cause of working families' distress was cast aside and forgotten. The unemployment rate jumped from 4.6 percent in 2007 to 9.6 percent by 2010 because of a collapse in aggregate demand (spending by households, businesses, and governments). It did not rise for any other reason, and the pace of the recovery post-2009 was entirely dictated by the pace of spending growth.

Yet implausible alternative explanations were floated and taken seriously by policymakers early on in the recovery. Some claimed high unemployment was caused by "skills mismatches"; the "skills mismatch" theory posits that jobs are plentiful but unemployed workers simply lack the right skills (or ability to learn these skills) to fill available jobs. Others said regulatory overreach was prolonging the labor market slump. The evidence for these alternative explanations was completely lacking, yet even President Obama in 2011 was reported to have demanded that his economic advisers provide solutions to ongoing joblessness *besides* efforts to boost spending.

This failure to understand the real root cause of higher unemployment has not been rectified. As the next recession hits, it is dead certain that many policymakers and economic observers will begin offering reasons for the rise in joblessness besides the real one. Accordingly, a key task for analysts and organizers to accomplish *before* the next recession is to make it harder for policymakers to get distracted by fake explanations. The menu of policy options to fight the next recession needs to be ruthlessly culled down to items that will actually work.

Luckily, the list of specific policy interventions that could work to boost spending in the face of the next recession is long, and includes many popular items (extended unemployment insurance or aid to states to keep public educators from being laid off due to the economic downturn) that would be potentially more salient to the public than the general concept of "fiscal stimulus."[40] Which subset of items on this menu should be chosen? Given that all of them would work to solve the central cause of recessions and slow recoveries, and given the overwhelming importance of just getting fiscal policy oriented in the right direction for a sustained period, the answer to this should be driven in large part by politics. In short, we should construct an expansionary fiscal program that is designed to be effective economically but also durable politically—and that can draw excitement and support from key organized constituencies.

This kind of overtly political analysis is not what normally motivates policy wonks in the macroeconomic sphere. But the failure to make fiscal expansion popular and durable contributed to the disaster that was the economy's pathetic recovery from the Great Recession. Maybe Republican opposition would always have been impossible to overcome and the sharpest political thinking in the world would not have made a difference. But we all owe it to the American people to think harder next time about these issues.

Endnotes

1. Fiscal contractions are policy changes that either reduce public spending or increase taxes, each of which reduces the pace of spending growth.

2. Defenders of the tax cut would argue that they were primarily designed to boost long-run growth of the economy's productive capacity. But, as many have pointed out, they are poorly designed for this prospect as well (see, for example, Bivens and Blair 2017a).

3. See Bivens and Blair 2017a, Table 1, for a comparison of various fiscal policy choices and their effect on aggregate demand.

4. See Bivens and Blair 2017b for an analysis of the first Trump budget proposal.

5. See Bivens 2016 for the interlocking roles of federal and subfederal austerity in hampering growth following the Great Recession.

6. This is often described as "too much money (aggregate demand, or spending) chasing too few goods (productive capacity, or output)."

7. See Kimball 2017 and Krugman 2018.

8. The FOMC is the body that makes interest rate decisions. It is composed of the seven members of the Federal Reserve's Board of Governors and five rotating members drawn from the presidents of the 12 regional Federal Reserve banks.

9. For recent discussions about these intended nominations, see Horsley 2019 and Nicholas 2019.

10. See Baker and Bivens 2016 for a list of ways policymakers can combat asset market bubbles.

11. For a brief history of the punch bowl metaphor, see Stierholz 2016.

12. Author's calculations from Bureau of Economic Analysis (BEA) National Income and Product Accounts (NIPA) tables 1.14 and 6.4D.

13. Quarles' remarks in an interview with Bloomberg news can be heard here (Bloomberg TV 2015).

14. A leaked version of this memo is available here (Mulvaney 2018).

15. See an account of Cohn's speech here (Reuters 2018).

16. See Dayen 2016 for the accounting of Mnuchin's role at IndyMac.

17. See Blanchard, Dell'Arricia, and Mauro 2010 for this recapping of conventional views in macroeconomics.

18. The "zero lower bound" on nominal interest rates binds because these nominal rates cannot be pushed below zero for any significant length of time. If they were pushed beneath zero, nobody would hold bonds; investors would instead keep all liquid wealth in cash, which pays zero (but not negative) interest rates. If the economy needs negative interest rates in order to generate enough spending to spur an economic recovery, the ZLB means that conventional monetary policy is effectively out of ammunition to fight the downturn and other tools (like fiscal stimulus) must be used.

19. Romer (2014) notes the weakness of conventional monetary policy (cutting short-term interest rates), but argues that credible signaling of central bank “regime changes” can be very effective in ending recessions. The clearest example of an expansionary regime change by a central bank is the abandonment of the gold standard announced by a successive group of developed economies during the Great Depression in the 1930s.

20. The fact that raising rates is a reliably effective way to slow economic growth—even if Fed decisions to lower rates are weak in fighting recessions—is why monetary policy decisions are an important factor affecting the well-being of typical American workers. The Fed can determine when the pace of recovery slows, and if they decide to slow it prematurely, the recovery may fail to reach lower-income workers and communities of color, whose labor market outcomes lag behind overall improvement. This point is made by Bivens and Zipperer (2018), as well as by Aaronson et al. (2019).

21. This asymmetry has been confirmed most recently by Angrist, Jordà, and Kuersteiner (2017). See Taylor 2015 for an overview of the intellectual history of the “pushing on a string” metaphor.

22. See Gagnon 2016 on the large body of evidence indicating that large-scale asset purchases pushed down long-term interest rates and provided a spur to economic growth and job creation.

23. See Lawrence 2019 for a recent accounting of this episode.

24. A particularly noteworthy example of this is Yellen 2013.

25. This may seem like a harsh judgment, but it also seems largely inescapable—see Bivens 2018 on this point.

26. For evidence on this, see Bivens 2016.

27. See Shierholz and Bivens 2014 for this calculation.

28. State and local governments can, of course, borrow to finance long-run infrastructure projects. Their unwillingness to do so at much larger scale during the recovery—documented by McNichol (2019)—is one reason why these governments should not escape all blame for the austerity.

29. If a government that cannot print its own currency is seen by private financial markets as being too debt-burdened, speculators might refuse to buy new issuances of debt (acting as “bond vigilantes”). This in turn forces the government to raise interest rates to induce private markets to buy debt, but the higher interest rates in turn increase the burden of existing debt and slow economic growth. This can make speculators’ attacks on countries for taking on excessive debt “self-fulfilling.” De Grauwe (2012) provides perhaps the best overview of this dynamic, in the context of the Euro crisis.

30. The analysis shown in Figure C likely overstates any boost to demand growth stemming from tax changes relative to the drag from spending cuts given that it simply tracks the first-round “fiscal impulse” of each. Tax cuts are generally less stimulative than spending increases, unless the tax cuts are targeted narrowly at low-income and cash-constrained households. While some of the tax cuts passed during the recovery were well-targeted (the Making Work Pay tax credit, expansions to some refundable tax credits like the Earned Income Tax Credit and the Child Tax Credit, and the payroll tax holidays of 2011 and 2012), many others were not. This analysis doesn’t assume anything about the resulting multiplier effect stemming from the initial fiscal impulse; instead, it just measures the size of the fiscal impulse itself.

31. The 1980s business cycle is measured from the 1982Q4 trough.

32. Furman (2016) provides an excellent overview of the broader determinants of fiscal space, and notes the positive movement in recent years in forward-looking measures of fiscal space.

33. This point was noted in Bivens and Fieldhouse 2013, and Blanchard 2019 is the latest forceful restatement of it.

34. For an overview of this, see Bivens et al. 2014.

35. Author's calculation based on taking the price index for personal consumption expenditures minus food and energy (the index the Fed uses for their inflation target) and assuming a counterfactual scenario where this index grew at a 2 percent annualized rate after 2007.

36. A useful timeline of Fed responses to the financial crisis is provided here (Federal Reserve Bank of New York n.d.).

37. Further evidence of the continued political influence of the financial sector can be seen in the bipartisan nature of many of these rollbacks. See Rappeport and Flitter 2018 for a documentation of the bipartisan push to roll back financial regulations.

38. Historical unemployment data are available at U.S. Bureau of Labor Statistics 2019.

39. The PAYGO rule recently adopted by the House of Representatives mandates that spending increases or tax cuts be matched with spending cuts or tax increases to keep the federal budget deficit unchanged. See Bivens 2019 for an argument that this adoption was bad economics and bad politics, for reasons alluded to in this paper.

40. A list of potential avenues for fiscal stimulus will be provided in a forthcoming supplement to this report (Bivens 2019).

References

Aaronson, Stephanie, Mary C. Daly, William Wascher, and David W. Wilcox. 2019. "Okun Revisited: Who Benefits Most from a High-Pressure Labor Market." Brookings Papers on Economic Activity, BPEA Conference Drafts, March 7–8, 2019.

Angrist, Joshua, Òscar Jordà, and Guido M. Kuersteiner. 2018. "Semiparametric Estimates of Monetary Policy Effects: String Theory Revisited." *Journal of Business & Economic Statistics* 36, no. 3: 371–387.

Baker, Dean, and Josh Bivens. 2016. *The Wrong Tool for the Right Job: The Fed Shouldn't Raise Interest Rates to Manage Asset Bubbles*. Center for Economic Policy Research (CEPR) and the Economic Policy Institute, May 2016.

Bivens, Josh. 2016. "Why Is Recovery Taking So Long—And Who's to Blame?" Economic Policy Institute, August 2016.

Bivens, Josh. 2018. "The 'Boom' of 2018 Tells Us That Fiscal Stimulus Works, but That the GOP Has Only Used It When It Helps Their Reelection, Not When It Helps Typical Families." *Working Economics Blog* (Economic Policy Institute), October 26, 2018.

Bivens, Josh. 2019. "Potential Avenues for Fiscal Stimulus in the Next Recession." Supplement to the report *What Should We Know About the Next Recession*. Economic Policy Institute, forthcoming May 2019.

Bivens, Josh, and Hunter Blair. 2017a. *Competitive Distractions: Cutting Corporate Tax Rates Will Not Create Jobs or Boost Incomes for the Vast Majority of American Families*. Economic Policy Institute, May 2017.

Bivens, Josh, and Hunter Blair. 2017b. "Trump Budget Proposal Is a Potential Job-Killer, Imposing a Major Fiscal Drag That Would Radically Slow Growth in Coming Years." *Working Economics Blog* (Economic Policy Institute), May 23, 2017.

Bivens, Josh, and Andrew Fieldhouse. 2013. "Aggressively Targeting a Full Recovery Is the Least Risky Thing You Can Do." *Working Economics Blog* (Economic Policy Institute), March 22, 2013.

Bivens, Josh, Elise Gould, Lawrence Mishel, and Heidi Shierholz. 2014. *Raising America's Pay: Why It's Our Central Economic Policy Challenge*. Economic Policy Institute, June 2014.

Bivens, Josh, and Ben Zipperer. 2018. *The Importance of Locking in Full Employment for the Long Haul*. Economic Policy Institute, August 2018.

Blanchard, Olivier. 2019. "Public Debt and Low Interest Rates." American Economic Association Presidential Lecture, January 2019.

Blanchard, Olivier, Giovanni Dell'Ariccia, and Paolo Mauro. 2010. *Rethinking Macroeconomic Policy*. International Monetary Fund Staff Position Note, February 2010.

Bloomberg TV. 2015. "Bernanke 'Using Powers for Good' at Pimco: Randy Quarles." Segment aired May 6, 2015.

Bureau of Economic Analysis (BEA). 2019. National Income and Product Accounts interactive data. Accessed March 2019 at https://apps.bea.gov/iTable/index_nipa.cfm.

Dayen, David. 2016. "Donald Trump's Finance Chair Is the Anti-Populist from Hell." *New Republic*, May 9, 2016.

De Grauwe, Paul. 2012. "The Governance of a Fragile Eurozone." *Australian Economic Review* 45, no. 3: 255–268. https://doi.org/10.1111/j.1467-8462.2012.00691.x.

Federal Reserve Bank of New York. n.d. "Timelines of Policy Responses to the Global Financial Crisis" (online reference).

Furman, Jason. 2016. "The 'New View' of Fiscal Policy and Its Application." Remarks at the Conference on Global Implications of Europe's Redesign, New York, October 5, 2016.

Gagnon, Joseph. 2016. *Quantitative Easing: An Underappreciated Success*. Peterson Institute for International Economics, April 2016.

Horsley, Scott. 2019. "Trump to Recommend Pizza Magnate Herman Cain for Fed Post." NPR News, April 4, 2019.

Kimball, Miles Spencer. 2017. "Contra Randal Quarles." *Confessions of a Supply-Side Liberal: A Partisan Nonpartisan Blog*, August 1, 2017.

Krugman, Paul. 2018. "The Durability of Inflation Derp." *New York Times*, January 23, 2018.

Lawrence, John. 2019. "When America Stared into the Abyss: The Untold Story of How America's Political Leaders Crossed the Aisle to Stave Off Financial Collapse in 2008." *Atlantic*, January 7, 2019.

McNichol, Elizabeth. 2019. *It's Time for States to Invest in Infrastructure*. Center for Budget and Policy

Priorities. Updated March 2019.

Mulvaney, Mick. 2018. “To Everybody from the Acting Director.” Leaked memo posted on the Consumer Finance Monitor website.

National Bureau of Economic Research (NBER). 2019. “U.S. Business Cycle Expansions and Contractions” (online table). Accessed March 2019.

Nicholas, Peter. 2019. “Why Trump Is Serious About Herman Cain.” *Atlantic*, April 9, 2019.

Office of Management and Budget (OMB). 2019. “Table 1.3—Summary of Receipts, Outlays, and Surpluses or Deficits (-) in Current Dollars, Constant (FY 2012) Dollars, and as Percentages of GDP: 1940–2024” (downloadable spreadsheet). In *Historical Tables*. Accessed March 2019.

Quarles, Randal. 2005. “Remarks by United States Treasury Assistant Secretary Quarles.” Harvard Symposium on Building the Financial System of the 21st Century: An Agenda for Europe and the United States, Eltville, Germany, August 22, 2005.

Rappeport, Alan, and Emily Flitter. 2018. “Congress Approves First Big Dodd-Frank Rollback.” *New York Times*, May 22, 2018.

Reuters. 2018. “Gary Cohn on the 10th Anniversary of the Financial Crisis and the U.S. Economy.” September 18, 2018.

Romer, Christina. 2014. “It Takes a Regime Shift: Recent Developments in Japanese Monetary Policy Through the Lens of the Great Depression.” In *NBER Macroeconomics Annual 2013, Volume 28*, edited by Jonathan A. Parker and Michael Woodford, 383–400. Chicago: Univ. of Chicago Press.

Shierholz, Heidi, and Josh Bivens. 2014. “Four Years into Recovery, Austerity’s Toll Is at Least 3 Million Jobs.” *Working Economics Blog* (Economic Policy Institute), July 3, 2013.

Stierholz, Katrina. 2016. “History Rhymes: Martin’s Punch Bowl Metaphor.” *Inside FRASER* (Federal Reserve economic history blog), March 2, 2016.

Taylor, Timothy. 2015. “Pushing on a String: An Origin Story.” *Conversable Economist* blog, July 30, 2015.

U.S. Bureau of Labor Statistics. 2019. “Civilian Unemployment Rate (UNRATE)” [data series]. Retrieved from FRED, Federal Reserve Bank of St. Louis, https://fred.stlouisfed.org/series/UNRATE, April 2, 2019.

White House Office of the Press Secretary. 2010. “Remarks by the President in State of the Union Address.” January 27, 2010.

Yellen, Janet. 2013. “A Painfully Slow Recovery for America’s Workers: Causes, Implications, and the Federal Reserve’s Response.” Remarks at the Conference on a Trans-Atlantic Agenda for Shared Prosperity, sponsored by the AFL-CIO, Friedrich Ebert Stiftung, and the IMK Macroeconomic Policy Institute, Washington, D.C., February 11, 2013.