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POLICY BRIEF

Keynesian Stimulus: A Virtuous Semicircle?

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The magnitude of the economic shock triggered by the pandemic and the lockdowns imposed throughout the United States in the past year cannot be overstated. From its peak in February 2020 to its trough in April 2020, employment shrank by 25.3 million jobs, and the unemployment rate increased from 3.5 percent to 14.5 percent.[1] Long-term unemployment was higher from February to April than during any recession in eight decades. Inflation-adjusted GDP plummeted by roughly $2 trillion between the first and second quarters of 2020, a decrease of approximately 11 percent.[2]

Faced with an emergency of increasing urgency, the temptation to take action—almost any action—by policymakers is understandable. With low interest rates, fiscal stimulus (tax cuts, spending increases) becomes even more appealing to policymakers looking for a relatively costless economic solution to counteract the recession and accompanying unemployment.

Since March 2020, Congress and two successive administrations have passed and signed into law five COVID-19 pandemic relief bailouts: $192 billion from the Families First Coronavirus Response Act;[3] $2.2 trillion from the Coronavirus Aid, Relief, and Economic Security (CARES) Act;[4] $733 billion for the Paycheck Protection Program and Health Care Enhancement Act;[5] $915 billion for the Coronavirus Response and Relief Act;[6] and, finally, $1.9 trillion for the America Rescue Plan Act of 2021.[7] That adds up to almost $6 trillion in "emergency" federal spending over the course of a year.

Much of this response is considered stimulus, designed to save jobs that would have been lost or create jobs that would have gone uncreated otherwise. But this perspective fails to acknowledge the limits that this type of government intervention has in achieving the goal of pulling the economy out of recession. Furthermore, low interest rates lower the cost of government borrowing, but the cost of interest is just one of many factors—including the costs of future taxation and the

question of whether stimulus spending actually shrinks the size of the private sector—that should be considered when determining government policy.

The financial crisis of 2007–2008 renewed economists' interest in studying the short-term effects of government spending. That renewed interest has yielded over a decade of new, data-driven research on the short-term effects of fiscal policy. And that research tends to show smaller benefits of short-term spending than economists had previously believed, although the benefits may be larger in recessions or when interest rates are very low.

The evidence presented in this policy brief suggests that government purchases—for example, directly hiring federal employees, paying contractors for public projects, and so forth—probably reduce the size of the private sector at least a little, even while they increase the size of the government sector. On net, incomes grow, but privately produced incomes shrink. Therefore, government purchases tend to crowd out private consumer spending, private investment, and exports to foreign countries.

Many economists say that government purchases still stimulate growth in the private sector when the economy is at its lowest ebb, such as when interest rates near zero or when deep recessions occur. But the massive fiscal multiplier that economists rely on to reach that conclusion (whereby government spending jump-starts the private sector into vigorous action, usually by hiring workers whose incomes are spent on various goods and services in ever-expanding circles of consumption) is largely a myth. According to the best available evidence, there are no realistic scenarios where the short-term benefit of stimulus is so large that the government spending pays for itself. In fact, even when government spending crowds in some private-sector activity, the positive impact is small, and much smaller than economic textbooks suggest.

THE COVID-19 PANDEMIC AS A BAD SUPPLY SHOCK: A POOR FIT FOR KEYNESIAN STIMULUS

The idea of stimulating the economy through increased government spending draws on the views of economist John Maynard Keynes.[8] In Keynesian thought, a fall in economic aggregate demand is revealed by a decrease in the spending of many people around the same time. Because one person's spending is another person's income, a fall in aggregate demand makes a nation poorer, at least in dollar terms. When citizens of a now-poorer nation prudently cut back on spending further, they trigger another wave of falling income, which triggers more waves after that, an effect known as a *fiscal multiplier*, which is attributed to Keynes. So a negative shock to consumer spending or business confidence sets off waves of job losses and layoffs.

A key element of almost every Keynesian theory—what Keynesians see as the crucial factor that turns a decrease in dollar spending into a decrease in employment—is the failure of the price

mechanism: firms that see fewer customers in their shops do not cut prices to sell their products, and workers who are facing unemployment do not negotiate with their employer to continue working at a lower wage. Although Keynesians offer many explanations for why these wage and price cuts do not happen,[9] they have basically one policy remedy: in the short run, governments should spend because they can do a better job than markets at creating real demand for goods, services, and labor.[10]

According to Keynesian theory, then, government spending can take the place of missing private spending during a crisis. If the government increases its own spending, it creates new employment (mostly for workers who would otherwise be unemployed). These newly employed workers consume more goods and services, and, in turn, the businesses that produce those goods and services increase their demand for inputs such as capital goods and labor. In effect, government spending creates a virtuous cycle.

The COVID-19 recession revealed the limits of Keynesian stimulus policy, though. In the Keynesian framework, economic growth is stimulated by increasing aggregate demand. But amid the pandemic and its accompanying lockdowns, the COVID-19 recession was driven by supply constraints on growth, not a lack of aggregate demand. Lockdowns meant that output in some ("non-essential") sectors of the economy was illegal, and many businesses, even if they were allowed to operate, faced restrictions on the number of customers or employees that could be in a building at any given time. This kind of restriction is effectively a tax on output.[11] In addition, many businesses saw operating costs rise with the introduction of voluntary sanitization and safety measures; for example, hand sanitizer stations, clear plastic dividers at checkout lines, greater distances between customers and workers, and so forth. From the point of view of many businesses, the COVID-19 recession was more of a cost shock, or a bad supply shock, than a traditional Keynesian demand shock.

Both history and Keynesian-influenced economic theory teach that extra government spending per se cannot do much to overcome the effects of a supply shock. Therefore, during the pandemic, it would have been difficult, if not impossible, to stimulate the economy through government spending. With vaccines now increasingly available, with the cost shock subsiding, and with customers and employees feeling more comfortable in workplaces and stores that resemble more the pre-COVID-19 world, the case for large government spending programs as short-term stimulus has grown even weaker.

DOES A DOLLAR OF EXTRA GOVERNMENT SPENDING GROW THE PRIVATE SECTOR?

The spending multiplier is the idea that an initial amount of government spending leads to a larger increase in overall economic activity. In other words, an initial, government-induced change in the total demand for goods and services (i.e., aggregate demand) causes a change in total output for the economy that is a multiple of the initial change. For example, if the government spends $1.00 to hire

a new worker and, as a result of this spending, the overall economy grows by $2.00, the spending multiplier is 2.0 ($1.00 of extra government spending and $1.00 of extra consumer and business spending). Likewise, if the economy grows by $1.50, the spending multiplier is 1.5. However, if the overall economy grows by only 50 cents (in other words, government spending grows by $1.00 but consumer and business spending shrinks by 50 cents), then the spending multiplier is 0.5.

The possibility that higher government spending, rather than increasing the size of the private sector, results in the private sector shrinking, is often omitted from the Keynesian theories that students learn in textbooks. Nevertheless, this kind of result turns up routinely in recent data-driven research.[12] As discussed later in this brief, evidence from the past few decades has seriously weakened (though not entirely defeated) the argument that expanding the government is a path to growing the private sector.

The size of the multiplier has been a matter of debate among economists for a long time. Whereas some economists find that the multiplier is greater than one,[13] others find that the multiplier is less than one or even roughly zero,[14] and yet others find that, when accounting for the future taxes needed to pay for current spending, the multiplier is actually negative and total real incomes and total economic output actually decline.[15]

No strong evidence supports the Keynesian view that the virtuous cycle of stimulus lasts for several years. A 2011 survey of the literature by Valerie Ramey points to fiscal multipliers likely in the 0.5 to 2.0 range in the short term of a few years.[16] Furthermore, while Ramey was a discussant on a paper on the multiplier debate by economists Lawrence Summers and Brad DeLong, she noted that little evidence exists supporting the idea that temporary increases in government spending raise output in the long term.[17]

In 2019, Ramey revisited her estimate of the short-term multiplier effect for the *Journal of Economic Perspectives* and found a narrower range of 0.6–1.0.[18] The outpouring of academic interest into Keynesian fiscal multipliers has ultimately led researchers to the view that those effects are even smaller than earlier supposed.

In a 2018 paper, Ramey and her coauthor also look at changes in government spending multipliers depending on the state of the economy using two different indicators of the state of the economy: (a) the amount of slack, as measured by the unemployment rate, and (b) whether interest rates are being held constant close to the zero lower bound.[19] They conclude, "We find no evidence of large multipliers when the U.S. economy is experiencing substantial slack as measured by the unemployment rate. All estimates indicate multipliers below unity."[20]

So even during recessions, even during times of high unemployment, high-quality statistical analysis of US economic history shows that extra government spending shrinks the private sector, at least a little. That conclusion is counterintuitive to a Keynesian—it is mathematically impossible,

according to Keynesianism as taught in almost all undergraduate textbooks—but it is what Ramey has found repeatedly. Just because an idea is true in theory does not mean it is true in fact. And in this case, textbook Keynesian theory does not fit the facts.

Arguably, outcomes might be different when interest rates are very close to zero. When the central bank has exhausted its arsenal of monetary policy tools, government spending may be able to give the economy a push. The central bank could even boost the multiplier by leaving rates low when demand rises. Indeed, during the financial crisis of 2007–2008, Ben Bernanke, then chairman of the Board of Governors of the Federal Reserve System, encouraged Congress to create a sizable short-term spending package.

But again, being good in theory is not the same as being good in practice. And importantly, even if an idea is good in practice, one does not know how exactly good the idea is until one measures. What did Ramey find?

> In our analysis of multipliers in zero lower bound interest rate states, we also find no evidence that multipliers are greater than one at the zero lower bound in the full sample. The results are mixed, however, when we exclude World War II from the sample. Our preferred shock, the military news shock, indicates multipliers around 1.4 at the two-year horizon and the estimates are reasonably precise. On the other hand, [another reasonable statistical method] suggests multipliers just below one, but they are not precisely estimated.[21]

In other words, if one excludes World War II, Ramey's preferred method (which she pioneered) yields a multiplier of 1.4, so $1.00 of government spending appears to cause an extra 40 cents of private spending: greater than one, but far less the values of 2.0, 3.0, or greater seen in college textbooks.

Complementing Ramey's 2018 articles, Efrem Castelnuovo and Guay Lim's review of the literature focuses specifically on how monetary policy indirectly influences government spending multipliers, especially at the zero lower bound for interest rates.[22] Drawing largely on theoretical arguments, they note that a zero lower bound can cause the fiscal multiplier to be larger than one because an "increase in spending leads to an increase in output, marginal cost, and expected inflation. The increase in expected inflation, given the zero level of the policy rate, drives the real ex ante interest rate down, which then boosts the multiplier."[23] Thus, government spending might boost expected inflation, and fixing interest rates near zero lowers the real cost of borrowing, boosting private-sector investment.

Economist Scott Sumner at the Mercatus Center at George Mason University argues that the finding of Castelnuovo and Guay is conditional on having an incompetent or passive monetary policy in place; that is, having a monetary policy not designed to hit a growth target in aggregate demand. However, if the Federal Reserve is acting appropriately, it has already set its policy to achieve optimal growth of expected aggregate demand, a rate of growth that should not change

along with fiscal policy. Therefore, the central bank will attempt to neutralize the impact of fiscal stimulus (perhaps with quantitative easing or by communicating to financial markets that future monetary policy will be different) and thus will push the fiscal multiplier toward zero, helping ensure that expected aggregate demand growth is unchanged by fiscal policy.

In the case of the spending during this pandemic, the current monetary policy of the Federal Reserve seems reasonably competent, so one should not expect fiscal stimulus to have a big effect because the Federal Reserve will offset the effect of any stimulus such that inflation will average about 2 percent during the 2020s. The financial crisis of 2007–2008 gave the Federal Reserve experience with many new monetary policy tools, and it has brought bold actions to bear throughout the COVID-19 pandemic: while economists debate whether the fiscal multiplier would be much larger than unity if the Federal Reserve were to run out of options, the Federal Reserve has made it quite clear that it is not out of options yet.

WHAT EXPERTS SAY ABOUT THE LIKELY EFFECT OF COVID-19-ERA SPENDING

Several studies have looked specifically at federal spending and its impact on the economy during the pandemic. First, the Congressional Budget Office estimates the multiplier of the CARES Act to be 0.58, with $2,632 billion in spending and a $1,535 billion boost to GDP between fiscal years 2020 and 2023.[24]

Economists Alexander Arnon, Zheli He, and Jon Huntley also estimate the multiplier of the CARES Act by applying the multipliers estimated for American Recovery and Reinvestment Act of 2009 to specific outlays in the CARES Act. They find that, overall, $2,283 billion in spending will return of $812 billion of GDP growth over two years, equating to a low multiplier of 0.36.[25]

More recently, Arnon and coauthors' estimates of the latest $1.9 trillion stimulus, as passed in the American Rescue Plan Act of 2021, show low projected government spending multipliers.[26] They find that the fiscal multiplier of the act is as low as 0.14 and as high as 0.56. A multiplier of 0.14 with $1.9 trillion in spending produces $260 billion in additional output, or a net loss of $1.61 trillion for the private sector. A multiplier of 0.56 produces $586 billion in addition output.

Here Ramey's 2018 paper comes to mind. She explains that even low multipliers—if they are positive and the relative size of the spending package is enormous, like it was during the World War II—can lift the economy.

That said, with the exception of the work of Robert Barro and Charles Redlick,[27] these findings do not take under consideration the cost of having to repay the spending with higher taxes, which creates its own distortions, inefficiencies, and losses of well-being down the road. According to Barro and Redlick, when these factors are considered, the multiplier is negative.

CONCLUSION

When the government buys goods and services or hires workers who buy goods and services, does doing so jump-start the private economy, as generations of Keynesians and endless editions of undergraduate textbooks have claimed? The best empirical evidence suggests that the answer is generally no. Indeed, in most cases, even during most recessions, government spending creates additional output—or at least hires some extra workers—but probably shrinks the private sector. As one of us noted in a paper, coauthored with Daniel Rothschild, studying the 2009 stimulus bill, when the government hires people, it may well be poaching workers from the private sector rather than hiring them from the unemployment lines.[28] The work of Ramey and others suggests that this effect is no anomaly; instead, it's enough of a pattern that it likely pushes the Keynesian multiplier below one.

And whereas there's some evidence that government purchases grow the private sector when interest rates are close to zero, as rates are today, even then, the multiplier for the private sector is small by the standards of college textbooks. The fiscal multiplier does not rise to two or three; instead it is perhaps 1.4, at best.

As of 2021, the best evidence tells us this: A stimulus bill that boosts government purchases does not create a lengthy virtuous spiral of spending. Instead, at best, it is more like a virtuous semicircle.

Therefore, the case for rapid, short-term spending programs to help Americans will have to be based on a mix of long-term considerations and safety-net considerations: build the bridge (for example) if it will increase economic productivity for decades or if many of the people hired by the bridge contractor would otherwise have had difficulty putting food on the table. But whether such projects pay off in the long term and whether such projects are the best way to enhance the welfare of struggling individuals are determined by microeconomics. The Keynesian idea that short-term government spending can reboot a crashed economy has not proven useful. The virtuous spiral of spending that Keynes imagines is no longer a truism, if it ever was. Now, it is more like a myth.

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NOTES

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