

# Would More Infrastructure Spending Stimulate the Economy in 2017?

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MERCATUS POLICY PRIMER



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*Veronique de Rugy and Matthew D. Mitchell. "Would More Infrastructure Spending Stimulate the Economy in 2017?" Mercatus Policy Primer, Mercatus Center at George Mason University, Arlington, VA, January 2017.*

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Release: January 2017

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**W**hile there is debate about how much American public works need improving, there does appear to be some consensus that America’s infrastructure suffers from a maintenance deficit.<sup>1</sup> In addition, economists have long recognized the value of infrastructure. Roads, bridges, airports, and canals are the conduits through which goods are exchanged, so investments in these conduits tend to increase the flow of goods and services.<sup>2</sup> This does not, however, mean that a surge in federal infrastructure spending will be stimulative in the short run or a good investment in the long run.

This is because there are three important caveats to the general rule that infrastructure is good for economic growth. First, while there is ample literature to suggest that infrastructure spending may be a good long-term investment—depending on who is investing whose money—there is also ample evidence to suggest it is a particularly bad vehicle for short-term stimulus and does not boost short-term job growth.

Second, the data also show a wide variance in the long-run return on infrastructure investments.<sup>3</sup> Research suggests that this is because the political process is often biased against valuable projects, like road maintenance, in favor of more grandiose and flashy projects, like high-speed trains. The political process also encourages a systematic tendency to overestimate the benefits and underestimate the costs of infrastructure projects. In other words, the most politically valuable projects are not necessarily the most economically or socially valuable

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1. See Robert Krol, “America’s Crumbling Infrastructure?,” *InsideSources*, June 26, 2015; Ed Glaeser, “Spending Won’t Fix What Ails U.S. Infrastructure,” *Bloomberg View*, February 13, 2012; Ed Glaeser, “If You Build It . . .,” *City Journal*, Summer 2016; and “Why Has Economic Growth Been So Slow, and How Can We Speed It Up? A Discussion with Lawrence H. Summers and Robert Barro” (American Enterprise Institute, Washington, DC, November 4, 2016).

2. Luis Servén, “Infrastructure and Growth” (Research Brief, World Bank, June 2010).

3. *Ibid.*

projects. The result is that many infrastructure projects should not be undertaken or suffer from massive cost overruns, waste, fraud, and abuse.

Third, it is a common mistake to assume that it is efficient or proper for the federal government to pay for roads and highways. With very few exceptions, most roads, bridges, and even highways are by nature local or, at the highest level, state projects. The federal government should have nothing to do with them. In the next section, we briefly relate what is known about the Trump infrastructure plan. We then review the case for fiscal stimulus, the case for infrastructure spending as fiscal stimulus, and the case for infrastructure as a long-term investment.

## THE TRUMP PLAN: WHAT WE KNOW

In his first address as president-elect, Donald Trump repeated a promise made several times during the campaign that he would rebuild America's infrastructure. He pledged, "We are going to fix our inner cities and rebuild our highways, bridges, tunnels, airports, schools, hospitals. We're going to rebuild our infrastructure, which will become, by the way, second to none. And we will put millions of our people to work as we rebuild it."<sup>4</sup>

To date, there are few details on what the plan actually looks like. But in a 10-page white paper released in October, campaign advisors made private financing the cornerstone of Mr. Trump's infrastructure plan.<sup>5</sup> The private investment would be encouraged by \$137 billion in federal tax credits available to investors who want to back transportation projects. The projection is that these tax credits would unleash up to \$1 trillion worth of infrastructure investment over 10 years.

This financing option would be implemented on top of existing financing programs and public-private partnerships. The promise is that the investment will in turn spur economic growth and create thousands of jobs. This thinking is in line with some commentators on the right and many more on the left who see infrastructure spending as a means to supercharge economic growth.

The plan also aims to cut through a "mountain of red tape" that slows construction projects, asserting that infrastructure projects across the United States are "routinely delayed for years due to endless studies, red-tape, and obstructionist lawsuits."<sup>6</sup> On his campaign website, Mr. Trump's team claims that this red

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4. "Transcript: Donald Trump Speaks at Victory Rally," NPR, December 9, 2016.

5. Wilbur Ross and Peter Navarro, "Trump versus Clinton on Infrastructure" (report, PeterNavarro.com, October 27, 2016).

6. Ibid.

tape “increases costs on taxpayers and blocks Americans from obtaining the kind of infrastructure that is needed for them to compete economically.”<sup>7</sup> It adds that the administration would link spending to reforms that “streamline permitting and approvals, improve the project delivery system, and cut wasteful spending on boondoggles.”<sup>8</sup>

## THE EFFECTIVENESS OF FISCAL STIMULUS

In news articles and political circles, the word *stimulus* is being thrown around a fair amount in connection with President-elect Donald Trump’s infrastructure plan.<sup>9</sup> It is not clear that the president-elect is actually thinking about infrastructure spending as a Keynesian stimulus per se, but he has used some turns of phrase that suggest this is what he has in mind.<sup>10</sup> Others are still hoping that his plan will be such a stimulus. Recently, Nobel laureate economist and *New York Times* columnist Paul Krugman noted that he has his “doubts about whether the promised surge in infrastructure spending [under President Trump] will really happen. But an accidental, badly designed stimulus would still, in the short run, be better than no stimulus at all.”<sup>11</sup>

Mr. Krugman’s views are not the consensus. As macroeconomist and 2011 Nobel laureate in economics Thomas Sargent put it,

In early 2009, President Obama’s economic advisers seem to have understated the substantial professional uncertainty and disagreement about the wisdom of implementing a large fiscal stimulus. In early 2009, I recall President Obama as having said that while there was ample disagreement among economists about the appropriate monetary policy and regulatory responses to the financial crisis, there was widespread agreement in favor of a big fiscal stimulus among the vast majority of informed economists. His advisers surely knew that was not an accurate description of the full range of professional opinion. President Obama should have been told that there are respectable reasons for doubting

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7. “Infrastructure,” Donald J. Trump for President, accessed December 20, 2016.

8. Ibid.

9. Rachael Bade and Jake Sherman, “Free-Market Republicans Contort to Defend Trump,” *Politico*, December 9, 2016; Igor Bobic, “Mitch McConnell Warns against ‘Trillion-Dollar Stimulus’ in Trump’s Infrastructure Plan,” *Huffington Post*, December 12, 2016.

10. Bade and Sherman, “Free-Market Republicans Contort to Defend Trump.”

11. Paul Krugman, “Trump Slump Still Coming?,” *New York Times*, November 14, 2016.

that fiscal stimulus packages promote prosperity, and that there are serious economic researchers who remain unconvinced.<sup>12</sup>

## A Short History of Fiscal Stimulus

Though it was once popular among both policymakers and academic economists, fiscal stimulus had fallen out of favor by the 1990s. After a number of clumsy implementations of fiscal stimulus in the 1960s and 1970s, economists began to worry that government could not implement stimulus programs in time to be effective.<sup>13</sup> Moreover, advances in macroeconomic theory had given economists reason to believe that stimulus might be ineffective at best and counterproductive at worst. For instance, if consumers understand that deficits are simply future taxes, they may spend less today in order to save for those taxes, offsetting whatever government spending the deficits finance.<sup>14</sup> Similarly, if the recipients of stimulus know that the money is only a temporary boost to their income, they may save the bulk of it instead of spending it right away and boosting aggregate demand.<sup>15</sup> Finally, if rational market participants observe government's policy processes, they may learn from past experiences and change the way they react to new stimulus. This can make forecasting the effect of fiscal stimulus next to impossible.<sup>16</sup>

As theory and evidence began to pile up against discretionary fiscal stimulus, academic economists turned against the idea. In 1997, in the pages of the profession's top journal, Martin Eichenbaum declared that "there is now widespread agreement that countercyclical discretionary fiscal policy is neither desirable nor politically feasible."<sup>17</sup>

At the same time, policymakers grew more reluctant to attempt fiscal stimulus. Examining data from 1984 through 2009, Alan Auerbach, William Gale,

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12. Art Rolnick, "Interview with Thomas Sargent," Federal Reserve Bank of Minneapolis, August 26, 2010.

13. Martin Feldstein, "Rethinking the Role of Fiscal Policy," *American Economic Review* 99, no. 2 (2009): 556–59.

14. Robert Barro, "Are Government Bonds Net Wealth?," *Journal of Political Economy* 82, no. 6 (1974): 1095–1117.

15. See Milton Friedman, *A Theory of the Consumption Function* (Princeton: Princeton University Press, 1957). See also Franco Modigliani and Richard Brumberg, "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data," in *Post-Keynesian Economics*, ed. Kenneth K. Kurihara (New Brunswick, NJ: Rutgers University Press, 1954).

16. Robert E. Lucas Jr., "Econometric Policy Evaluation: A Critique," in *The Phillips Curve and Labor Markets*, ed. Karl Brunner and Alan Meltzer, vol. 1, Carnegie-Rochester Conference Series on Public Policy (New York: Elsevier, 1976), 19–46.

17. Martin Eichenbaum, "Some Thoughts on Practical Stabilization Policy," *American Economic Review* 87, no. 2 (1997): 236–39.

and Benjamin Harris find that policy became much less responsive to changes in economic conditions in the 1990s.<sup>18</sup> It seemed that the academic consensus had prevailed upon politicians to abandon efforts to fine-tune the economy.

Things changed during the 2000s. According to Auerbach, Gale, and Harris, policy once again responded to changes in economic conditions in the years that followed 2001.<sup>19</sup> Indeed, the Bush administration pushed for no fewer than four countercyclical fiscal measures: cash rebates in 2001, “bonus depreciation” in early 2002, more tax rebates in 2003, and more still in early 2008. These measures were largely tax-cut focused rather than spending-increase focused.<sup>20</sup> They were also “Keynesian” in that they were designed to get consumers spending again to stimulate aggregate demand and because they were not accompanied by spending reductions (and so involved large deficits).<sup>21</sup>

The onset of the Great Recession in 2008 brought more stimulus. In addition to the Bush administration rebate in early 2008, there was also the \$700 billion Troubled Asset Relief Program in the fall of 2008, the \$862 billion American Recovery and Reinvestment Act (ARRA) in early 2009 (which included \$47 billion in direct infrastructure spending and tens of billions of dollars more in local tax and bond subsidies to spur construction<sup>22</sup>), and various smaller programs such as “cash for clunkers” (\$3 billion in early 2009).<sup>23</sup>

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18. Alan Auerbach, William Gale and Benjamin Harris, “Activist Fiscal Policy,” *Journal of Economic Perspectives* 24, no. 4 (2010): 141–64.

19. *Ibid.*

20. Journalistic accounts to the contrary, recent evidence suggests that tax-cut-focused stimulus is more effective than spending-increase-focused stimulus. See Martin Eichenbaum and Jonas Fisher, “Understanding the Effects of a Shock to Government Purchases,” *Review of Economic Dynamics* 2, no. 1 (1999): 166–206; Olivier Blanchard and Roberto Perotti, “An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output,” *Quarterly Journal of Economics* 117, no. 4 (2002): 1329–68; Craig Burnside, Martin Eichenbaum, and Jonas Fisher, “Fiscal Shocks and Their Consequences,” *Journal of Economic Theory* 115, no. 1 (2004): 89–117; Andrew Mountford and Harald Uhlig, “What Are the Effects of Fiscal Policy Shocks?,” *Journal of Applied Econometrics* 24, no. 6 (2009): 960–92; and Alberto Alesina and Silvia Ardagna, “Large Changes in Fiscal Policy: Taxes versus Spending,” *Tax Policy and the Economy* 24 (2010): 35–68.

21. President George W. Bush’s White House declared, “President Bush’s tax cut will give the economy a timely second wind by placing more money in the hands of consumers and entrepreneurs.” The White House, “The President’s Agenda for Tax Relief,” accessed December 29, 2016.

22. Douglas Elmendorf, Letter to Honorable Nancy Pelosi, Congressional Budget Office, February 13, 2009; Steven Maguire and Jeffrey M. Stupak, “Tax-Exempt Bonds: A Description of State and Local Government Debt,” Congressional Research Service, January 9, 2015.

23. It has been estimated that on a per-vehicle basis, the “Cash for Clunkers” program yielded about \$596 in environmental benefits at a cost of \$2,600, for a net per-vehicle cost of about \$2,000, or \$1.4 billion in total. See Burton Abrams and George Parsons, “Is CARS a Clunker?,” *The Economists’ Voice* 6, no. 8 (2009).

The revival of fiscal stimulus has not made it any less controversial. This may be due, in part, to the fact that the renewed use of fiscal stimulus since 2001 has coincided with historically low rates of economic growth.<sup>24</sup> It may also be because of the fact that studies of particular stimulus efforts such as the ARRA continue to show mixed results.<sup>25</sup>

The academic research shows that the effectiveness of stimulus turns on a number of factors, including the size of the multiplier, the macroeconomic conditions of the time, and political and institutional factors that determine how the money is spent. Effectiveness also depends on the specific form that stimulus takes—and infrastructure stimulus in particular has been found especially ineffective.<sup>26</sup> We address each of these factors in turn.

## The Fiscal Multiplier

A key measure of the effectiveness of fiscal stimulus is the government purchases multiplier (the multiplier). The multiplier measures the amount by which the economy expands when the government increases its purchases of goods and services by \$1.00. It is important to remember that when it measures the size of the economy, the Bureau of Economic Analysis automatically counts a \$1.00 increase in government purchases and gross investments as a \$1.00 increase in *measured GDP*.<sup>27</sup> Therefore, the key question is whether this increase in public-

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24. Matthew D. Mitchell, “Economic Freedom, Growth, and What Might Have Been,” *Neighborhood Effects*, September 16, 2016.

25. For evidence that the ARRA did not work, see John F. Cogan and John B. Taylor, “What the Government Purchases Multiplier Actually Multiplied in the 2009 Stimulus Package,” in *Government Policies and the Delayed Economic Recovery*, ed. Lee E. Ohanian, John B. Taylor, and Ian J. Wright (Stanford, CA: Hoover Institution Press, 2012); John Taylor, “An Empirical Analysis of the Revival of Fiscal Activism in the 2000s,” *Journal of Economic Literature* 49, no. 3 (2011): 686–702; Timothy G. Conley and Bill Dupor, “The American Recovery and Reinvestment Act: Solely a Government Jobs Program?,” *Journal of Monetary Economics* 60, no. 5 (2013): 535–49. For evidence that the ARRA did work, see James Feyrer and Bruce Sacerdote, “Did the Stimulus Stimulate? Real Time Estimates of the Effects of the American Recovery and Reinvestment Act” (NBER Working Paper No. 16759, National Bureau of Economic Research, Cambridge, MA, February 2011).

26. Antony Davies et al., “The U.S. Experience with Fiscal Stimulus: A Historical and Statistical Analysis of U.S. Fiscal Stimulus Activity, 1953–2011” (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, April 2012).

27. This is not to say that the activity is valuable, only that it counts toward measured GDP. Nobel laureate Friedrich A. Hayek is famous for noting that when it comes to judging the value of their activities, public-sector decision makers are at a significant disadvantage relative to private-sector decision makers because public-sector decision makers are not able to benefit from the information about opportunity costs that price signals contain. See F. A. Hayek, “The Use of Knowledge in Society,” *American Economic Review* 35, no. 4 (1945): 519–30.



sector GDP enhances (“multiplies”) private-sector GDP or displaces (“crowds out”) private-sector GDP.

If the multiplier is smaller than 0, stimulus displaces enough private-sector activity to offset any increase in public-sector activity; this would mean stimulus actually shrinks the economy. However, if the multiplier is between 0 and 1, then stimulus displaces private-sector economic activity, but not by enough to counteract the increase in public-sector economic activity. If the multiplier is larger than 1, then stimulus spending not only increases public-sector economic activity, it also increases private-sector economic activity.

Notwithstanding the confidence of stimulus advocates, there is no academic consensus regarding the size or even the sign of the multiplier. As a recent paper in the *Journal of Monetary Economics* puts it, “economists have offered an embarrassingly wide range of estimated multipliers.”<sup>28</sup> The largest recent estimate is by Northwestern University economists Lawrence Christiano, Martin Eichenbaum, and Sergio Rebelo. They estimate that the multiplier may be as large as 3.7, implying that \$1.00 in government purchases stimulates another \$2.7 in private-sector economic activity.<sup>29</sup> On the other end of the spectrum is an estimate by University of Chicago economists Andrew Mountford and Harald Uhlig. They find that the multiplier may be as small as  $-2.88$ , implying that \$1.00 in government purchases displaces \$3.88 in private-sector economic activity.<sup>30</sup> Papers by UCSD macroeconomist Valerie Ramey, Harvard’s Robert Barro and Charles Redlick, and Stanford’s John Cogan and colleagues all find multipliers so small that they suggest stimulus is counterproductive.<sup>31</sup>

A wide range of estimates exists, in part, because there is a wide range of circumstances in which stimulus might be applied.<sup>32</sup> We now turn to the particular

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28. Eric M. Leeper, Todd B. Walker, and Shu-Chun S. Yang, “Government Investment and Fiscal Stimulus,” *Journal of Monetary Economics* 57, no. 8 (2010): 1000–12.

29. Lawrence Christiano, Martin Eichenbaum, and Sergio Rebelo, “When Is the Government Spending Multiplier Large?” (working paper, Northwestern University, Chicago, IL, August 2009).

30. Andrew Mountford and Harald Uhlig, “What Are the Effects of Fiscal Policy Shocks?,” *Journal of Applied Econometrics* 24, no. 6 (2009): 960–92.

31. Robert Barro and Charles Redlick, “Macroeconomic Effects from Government Purchases and Taxes” (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, July 2010); John F. Cogan et al., “New Keynesian versus Old Keynesian Government Spending Multipliers,” *Journal of Economic Dynamics and Control* 34, no. 3 (2010): 281–95; Valerie A. Ramey, “Government Spending and Private Activity,” in *Fiscal Policy after the Financial Crisis*, ed. Alberto Alesina and Francesco Giavazzi (Cambridge, MA: University Of Chicago Press, 2013), 19–55.

32. Matthew D. Mitchell, “What Can Government Do to Create Jobs?” (Testimony before the House Committee on Education and the Workforce, Mercatus Center at George Mason University, Arlington, VA, February 2012).

circumstances of the United States to see how infrastructure stimulus might impact the current economic situation.

## Stimulus without Idle Resources

When the government borrows in order to fund stimulus expenditures, it draws on savings that individuals and firms might otherwise invest. Since these investments would be part of aggregate demand, it would seem at first blush that Keynesian fiscal stimulus should have no effect on overall purchasing power. This is why critics of Keynesian models sometimes liken fiscal stimulus to trying to raise the level of water in a pool by withdrawing it at one end and dumping it back in at the other.<sup>33</sup> Keynesians concede that this is true in normal times, but assert that recessions are different because during recessions, the economy has “idle resources”—unused assets such as unemployed workers. This topic has been widely debated among macroeconomists.<sup>34</sup> But on one thing there is agreement: in the absence of idle resources, Keynesian fiscal stimulus does not work. In this case, the pool analogy holds. This is especially relevant today because with annual growth in real GDP at 3.5 percent in the third quarter of 2016<sup>35</sup> and unemployment at 4.6 percent—which many believe to be close to the “structural unemployment rate”—there are not as many idle resources on which to draw as there were during the height of the Great Recession.<sup>36</sup>

What is more, it is not clear that fiscal stimulus would employ those resources that *are* idle. That is because many of today’s idle workers are not even looking for work. While the official unemployment rate is 4.6 percent, the rate jumps to 9.9 percent when one includes discouraged workers, marginally attached workers, or workers who are part time for economic reasons.<sup>37</sup> Many of these unemployed or discouraged workers are out of work either because their specialized skill sets are not in demand or because they lack training altogether.<sup>38</sup>

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33. Russell Roberts, “Economist: Don’t Jump the Gun on Stimulus Plans,” *All Things Considered*, NPR, January 16, 2008.

34. William Harold Hutt, *The Theory of Idle Resources: A Study in Definition* (London: Jonathan Cape, 1939).

35. Bureau of Labor Statistics, “National Income and Product Accounts Gross Domestic Product: Third Quarter 2016 (Third Estimate),” December 22, 2016.

36. Bureau of Labor Statistics, “Employment Situation Summary,” December 2, 2016.

37. Bureau of Labor Statistics, “Total Unemployed, Plus All Marginally Attached Workers plus Total Employed Part Time for Economic Reasons, as a Percent of All Civilian Labor Force plus All Marginally Attached Workers,” LNS13327709, accessed December 20, 2016.

38. Arnold Kling, “PSST: Patterns of Sustainable Specialization and Trade,” *Capitalism and Society* 6, no. 2 (2011): 1–18.

## Stimulus with Low Interest Rates and Distortionary Taxation

Some studies obtain larger multipliers than others because they assume that stimulus will be applied when interest rates are at or near 0 percent.<sup>39</sup> Theoretically, low interest rates make stimulus more potent because the government is able to employ idle resources by borrowing funds at a low cost. At least for the time being, interest rates are indeed historically low, so this may be a reasonable assumption. Recently, however, the Federal Reserve has begun to raise interest rates and has signaled that more rate hikes are likely to come.<sup>40</sup> And, unfortunately, if temporary stimulus spending turns into permanent spending, then when interest rates do return to normal, the government will have to finance its spending at a higher cost.<sup>41</sup> This will make the actual multiplier significantly smaller. What is more, not all studies that incorporate this low-interest-rate assumption obtain large estimated multipliers. For example, studies that consider the tax that will need to be levied tomorrow to pay for today's spending find much smaller multipliers, even when interest rates are exceedingly low.<sup>42</sup>

## Stimulus with Monetary Offset

Ironically, one reason that the Federal Reserve may be planning to raise rates is that it expects the Trump administration to pursue an expansionary fiscal policy.<sup>43</sup> This fiscal policy is expected to be inflationary, and because the Federal Reserve has targeted a 2 percent inflation rate, it has obliged itself to raise rates in order to meet that target. This means that it has obliged itself to offset whatever expansionary fiscal policy Congress and the president decide to pursue. This

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39. Christiano, Eichenbaum, and Rebelo, "When Is the Government Spending Multiplier Large?"

40. Binyamin Appelbaum, "Fed Raises Key Interest Rate, Citing Strengthening Economy," *New York Times*, December 14, 2016.

41. The historical record suggests that stimulus is rarely temporary. Jason E. Taylor and Andrea Castillo, "Timely, Targeted, and Temporary? An Analysis of Government Expansions over the Past Century" (Mercatus Research, Mercatus Center at George Mason University, Arlington, VA, October 2014).

42. See, for example, Thorsten Drautzburg and Harald Uhlig, "Fiscal Stimulus and Distortionary Taxation" (NBER Working Paper No. 17111, National Bureau of Economic Research, Cambridge, MA, June 2011). With these assumptions about taxation, they find that the short-run multiplier is only 0.52, implying stimulus spending crowds out private-sector activity. Worse, they estimate that the long-run multiplier is -0.42, implying that enough private-sector activity is crowded out that it more than offsets the increased public-sector activity.

43. Scott Sumner, "Monetary Offset: Why Is It So Difficult to Understand?," *EconLog*, August 30, 2016.

phenomenon is known as “monetary offset,” and recent evidence indicates that the Federal Reserve does, indeed, offset fiscal policy actions.<sup>44</sup>

## Stimulus in a Highly Indebted Nation

An extensive study from the International Monetary Fund (IMF) shows that fiscal multipliers in nations with debt levels in excess of 60 percent of GDP are zero or even negative.<sup>45</sup> The current US debt-to-GDP ratio is 75 percent, and, according to the Congressional Budget Office, there are a number of factors that might push it above 90 percent in the next decade, including low labor force participation, low productivity, high federal borrowing rates, and excess cost growth for Medicare and Medicaid.<sup>46</sup>

## Stimulus under Flexible Exchange Rates

The same IMF study also finds that a nation’s exchange-rate regime impacts the size of the multiplier. When a nation’s exchange rate is fixed, the multiplier can be relatively large.<sup>47</sup> But when the country allows the market to dictate movements in the exchange rate—as the United States does—the IMF economists found that the multiplier is much lower. This is because fiscal stimulus tends to cause domestic interest rates to rise relative to foreign interest rates. And when this happens, foreigners increase their demand for the domestic currency, causing the exchange rate to appreciate. This, in turn, makes domestic goods more expensive and foreign goods cheaper, decreasing net exports and lowering output.

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44. Scott Sumner, “The Fed Did Monetary Offset and the ECB Did Not,” *TheMoneyIllusion*, April 30, 2016; Scott Sumner, “Why the Fiscal Multiplier Is Roughly Zero” (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, September 2013).

45. Ethan Ilzetzki, Enrique G. Mendoza, and Carlos A. Végh, “How Big (Small?) Are Fiscal Multipliers?,” *Journal of Monetary Economics* 60, no. 2 (2013): 239–54.

46. Congressional Budget Office, “The 2016 Long-Term Budget Outlook,” July 12, 2016.

47. Under a fixed-exchange-rate regime, the central bank cannot, by law, let its currency appreciate. Since fiscal stimulus tends to put pressure on the domestic currency to appreciate, central banks in fixed-exchange regimes respond to stimulus by buying foreign currencies. This is effectively a monetary stimulus. Thus, fiscal stimulus under a fixed-exchange-rate regime automatically induces monetary stimulus as well. This model has come to be known as the Mundell-Fleming model, and it has had an enormous impact on modern macroeconomics. See Robert Mundell, “Capital Mobility and Stabilization Policy under Fixed and Flexible Exchange Rates,” *Canadian Journal of Economic and Political Science* 29, no. 4 (1963): 475–85. See also Marcus Fleming, “Domestic Financial Policies under Fixed and Floating Exchange Rates,” *IMF Staff Papers* 9, no. 3 (1962): 369–79.

## Stimulus in a Balance-Sheet Recovery

The Great Recession resulted in an unprecedented collapse in net wealth. From the fourth quarter of 2007 to the first quarter of 2009, the net worth of households and nonprofits fell 19.3 percent, a collapse that had never before been recorded by the Federal Reserve.<sup>48</sup> In other words, it was a deep “balance sheet” recession. But with personal wealth diminished and private credit impaired, some economists believe that stimulus is likely to be less effective than it would be in a different type of recession.<sup>49</sup> This is because consumers are likely to use their stimulus money to rebuild their nest eggs—to pay off debts and save—not to buy new products as Keynesian theoreticians want them to. The same is likely true for state and local governments that have used their ARRA dollars to reduce their budget gaps or reduce their borrowing rather than to increase infrastructure spending or other government purchases.<sup>50</sup>

It is worth noting that in an essay for the *New York Review of Books*, Paul Krugman and Robin Wells have argued that fiscal policy works *better* in a balance sheet recession than it does in a normal recession.<sup>51</sup> They cite the work of Richard Koo, who makes the case that Japan’s recession would have been much worse if not for the stimulus put in place, precisely because the country was in a balance sheet recession. Their view is a minority one, but it is still worth mentioning.

## Diminishing Marginal Returns to Stimulus

New research also suggests that there are diminishing marginal returns to stimulus.<sup>52</sup> This makes new stimulus even less helpful than what has already been undertaken.

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48. Federal Reserve Bank of St. Louis, “Households and Nonprofit Organizations; Net Worth, Level,” December 8, 2016.

49. Richard Clarida, “A Lot of Bucks, but How Much Bang?,” VoxEU, March 16, 2009; Claudia R. Sahm, Matthew D. Shapiro, and Joel Slemrod, “Balance-Sheet Households and Fiscal Stimulus: Lessons from the Payroll Tax Cut and Its Expiration” (NBER Working Paper No. 21220, National Bureau of Economic Research, Cambridge, MA, May 2015).

50. Joshua Aizenman and Gurnain Kaur Pasricha, “The Net Fiscal Expenditure Stimulus in the US, 2008–9: Less Than What You Might Think, and Less Than the Fiscal Stimuli of Most OECD Countries,” *Economists’ Voice* 8, no. 2 (2011); Cogan and Taylor, “What the Government Purchases Multiplier Actually Multiplied.”

51. Paul Krugman and Robin Wells, “The Slump Goes On: Why?,” *New York Review of Books*, September 30, 2010.

52. Christopher J. Erceg and Jesper Lindé, “Is There a Fiscal Free Lunch in a Liquidity Trap?” (International Finance Discussion Paper, Federal Reserve Board, Washington, DC, July 2010).

The federal government has already spent over \$1 trillion in legislated stimulus. Beyond this, unlegislated “automatic stabilizers”<sup>53</sup> in the budget have helped to push the deficit over \$615 billion in FY 2016.<sup>54</sup>

## THE UNIQUE PROBLEMS WITH INFRASTRUCTURE STIMULUS

There are unique problems with infrastructure stimulus that tend to diminish its chances of success. Chief among these are long implementation delays. The Congressional Budget Office reports,

For major infrastructure projects supported by the federal government, such as highway construction and activities of the Army Corps of Engineers, outlays during the initial year usually amount to less than 25 percent of the total funding provided. For large projects, the initial rate of spending can be significantly lower than 25 percent.<sup>55</sup>

Economists from the IMF studied the impact of implementation delays on the multiplier and found that “implementation delays can postpone the intended economic stimulus and may even worsen the downturn in the short run.”<sup>56</sup>

Perhaps the most important reasons to be skeptical about further stimulus—particularly infrastructure stimulus—have to do with the way it is implemented. As a general rule, the studies that obtain large multipliers do so by assuming that stimulus funds will be distributed just as Keynesian theory says they ought to be. Keynesian economist and former presidential economic advisor Lawrence Summers has offered a widely accepted summary of how—ideally—fiscal stimulus ought to be applied.<sup>57</sup> He argues that fiscal stimulus “can be counterproductive if it is not timely, targeted, and temporary.” In reality, however, infrastructure spending cannot fulfill these criteria.

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53. “Automatic stabilizers” are provisions in the budget, such as means-tested programs, that automatically increase deficit spending when the economy slows. Some economists believe that these automatic stabilizers are the optimal way to apply Keynesian stimulus. See, for example, John B. Taylor, “Reassessing Discretionary Fiscal Policy,” *Journal of Economic Perspectives* 14, no. 3 (2000): 21–36.

54. Office of Management and Budget, “Historical Tables,” accessed December 8, 2016.

55. Congressional Budget Office, “Options for Responding to Short-Term Economic Weakness,” January 2008.

56. Leeper, Walker, and Yang, “Government Investment and Fiscal Stimulus.”

57. Lawrence Summers, “The State of the U.S. Economy” (Brookings Institution, Washington, DC, December 19, 2007).

## There Is No Such Thing as a “Shovel-Ready” Project

By nature, infrastructure spending fails to be timely. Even when the money is available, it can be months, if not years, before it is spent. This is because infrastructure projects involve planning, bidding, contracting, construction, and evaluation.<sup>58</sup>

According to the Government Accountability Office, as of June 2011, 95 percent of the \$45 billion in Department of Transportation infrastructure money had been appropriated, but only 62 percent (\$28 billion) had actually been spent.<sup>59</sup> In light of these delays, President Obama eventually conceded that “there’s no such thing as shovel-ready projects.”<sup>60</sup>

## Un-targeted

Effective targeting means that stimulus money should be spent in those areas that have been hardest hit by the recession. The goal is to make the most use of idle resources. For instance, depressed areas like Detroit have a considerable number of unemployed resources (people, firms, equipment, etc.). So, theoretically, government stimulus should be able to put these idle resources to work. A number of studies, however, have shown that stimulus funding tends not to go to those areas that have been hardest hit by a recession.<sup>61</sup>

Even targeted stimulus may fail. Many of the areas that were hardest hit by the recession are in decline because they have been producing goods and services that are not, and will never be, in great demand. Therefore, the overall value added by improving the roads and other infrastructure in these areas is likely to be lower than if the new infrastructure were located in growing areas that might

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58. See Leeper, Walker, and Yang, “Government Investment and Fiscal Stimulus,” for more details.

59. Government Accountability Office, “Recovery Act: Funding Used for Transportation Infrastructure Projects, but Some Requirements Proved Challenging,” June 29, 2011.

60. Stephanie Condon, “Obama: ‘No Such Thing as Shovel-Ready Projects,’” CBS, October 13, 2010.

61. Veronique de Rugy, “Stimulus Facts—Period 2” (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, April 2010); and Jason Reifler and Jeffrey Lazarus, “Partisanship and Policy Priorities in the Distribution of Economic Stimulus Funds” (working paper, September 2010), available through SSRN at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1670161](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1670161); Jennifer LaFleur and Matt Grabell, “Stimulus Infrastructure Funding Short-Changes States with High Unemployment,” *ProPublica*, February 15, 2009; and Robert Inman, “States in Fiscal Distress” (NBER Working Paper No. 16086, National Bureau of Economic Research, Cambridge, MA, June 2010).



have relatively low unemployment but do have great demand for more roads, schools, and other types of long-term infrastructure.<sup>62</sup>

Job poaching, not creating. Unemployment rates among specialists, such as those with the skills to build roads or schools, are often relatively low. Moreover, it is unlikely that employees specialized in residential-area construction can easily update their skills to include building highways. As a result, we can expect that firms receiving stimulus funds will hire their workers away from other construction sites where they were employed rather than from the unemployment lines. This is what economists call “crowding out.” The term typically refers to government employment of capital that would have been employed by the private sector. In this case, labor, not capital, is being crowded out. In fact, new data confirm that a plurality of workers hired with ARRA money were poached from other organizations rather than from the unemployment lines.<sup>63</sup>

### Not Temporary

Even in Keynesian models, stimulus is only effective as a short-run measure. In fact, Keynesians also call for surpluses during an upswing.<sup>64</sup> In reality, however, the political process prefers to implement the first Keynesian prescription (deficit-financed spending) but not the second (surpluses to pay off the debt).<sup>65</sup> The inevitable result is a persistent deficit that, year in and year out, adds to the national debt.<sup>66</sup> A review of historical stimulus efforts has shown that temporary stimulus spending tends to linger and that two years after an initial stimulus, 95 percent of the spending surge remains.<sup>67</sup>

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62. Gary Becker, “Infrastructure in a Stimulus Package,” *Becker-Posner Blog*, January 18, 2009.

63. Garrett Jones and Daniel Rothschild, “Did Stimulus Dollars Hire the Unemployed? Answers to Questions about the American Recovery and Reinvestment Act” (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, September 2011).

64. Paul Krugman, “Hard Keynesianism,” *The Conscience of a Liberal*, *New York Times*, May 2, 2011.

65. John Cullis and Philip Jones, *Public Finance and Public Choice*, 2nd ed. (New York: Oxford University Press, 1998), chapter 14.

66. Office of Management and Budget, “Historical Tables,” table 1.2. If the federal government followed the full Keynesian prescription, then it would have run a primary deficit during most of the last 40 years. Instead, the federal government ran a primary deficit 66 percent of the time. When interest payments are counted as expenses, the government ran a deficit 95 percent of the time.

67. Olivier Blanchard and Roberto Perotti, “An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output,” *Quarterly Journal of Economics* 117, no. 4 (2002): 1329–68.



Ratchet-up effect. Evidence from World War II suggests that when spending spikes, as is the case during the recent recession, it tends not to return to pre-spike levels.<sup>68</sup> This “ratchet up” in spending is exacerbated when federal spending is channeled through state and local governments, as was the case in the ARRA. Data from 50 states over a 13-year period show that temporary grants from the federal government to state and local governments cause the latter to increase their own future taxes by between 33 and 42 cents for every dollar in federal grants received.<sup>69</sup>

### Money Spent Hastily Is Money Spent Unwisely

There is an inherent tradeoff between speed and efficiency. Policymakers need time to weigh the merits of a project, structure requests for proposals, administer a fair bidding process, select the best firms, competently build the project, and impartially evaluate the results. Quite understandably, economists have found that when funds are spent quickly, they are not spent wisely.<sup>70</sup>

In sum, there are strong reasons to suspect that stimulus—especially infrastructure stimulus—is not likely to be implemented as Keynesian theoreticians say it ought to be. This means that even by Keynesian standards, the newest round of stimulus is likely to fail. Tellingly, the political economy problems that plague the implementation of stimulus were actually significant enough to make John Maynard Keynes himself a skeptic. Toward the end of his life, he wrote,

Organised public works, at home and abroad, may be the right cure for a chronic tendency to a deficiency of effective demand. But they are not capable of sufficiently rapid organisation (and above all they cannot be reversed or undone at a later date), to be the most serviceable instrument for the prevention of the trade cycle.<sup>71</sup>

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68. Robert Higgs explores the theoretical arguments for why government activity might “ratchet up” during a crisis and never return to precrisis levels. See Robert Higgs, *Crisis and Leviathan: Critical Episodes in the Growth of American Government* (Oxford: Oxford University Press, 1987).

69. Russell Sobel and George Crowley, “Do Intergovernmental Grants Create Ratchets in State and Local Taxes?” (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, August 2010).

70. Bent Flyvbjerg, “Survival of the Unfittest: Why the Worst Infrastructure Gets Built—and What We Can Do about It,” *Oxford Review of Economic Policy* 25, no. 3 (2009): 362.

71. John Maynard Keynes, “The International Control of Raw Materials,” in *The Collected Writings of John Maynard Keynes*, vol. 27, ed. Elizabeth Johnson and Donald Moggridge (1942; Cambridge: Cambridge University Press, 2012), 122.

Given the experience with recent stimulus packages, Keynes’s observations appear to be remarkably prescient. Unfortunately, neither modern-day Keynesians nor those who would like to see Mr. Trump pursue stimulus appear to have paid heed.

## INFRASTRUCTURE SPENDING AS A LONG-TERM INVESTMENT

It is unclear whether President-elect Trump believes that infrastructure spending will be stimulative as a short-term measure. It is clear, however, that he does see government spending on infrastructure as promoting long-term economic and job growth.

That may be true under the right conditions. For example, the holdout problem may make it difficult for private entrepreneurs to assemble land necessary to build roads.<sup>72</sup> And it may be technologically difficult for them to charge user fees. Such “market failure” arguments have historically caused many economists to view infrastructure projects as public goods that markets are likely to underprovide. It is important to note, however, that entrepreneurship and technological change can alter the nature of goods, making private production more feasible. For example, remote toll readers have dramatically reduced the transaction cost of tolling.

In addition, lawmakers—however well-intentioned—face serious difficulties in making the right decision. Many factors come into play, but it is worth highlighting two. First, government decision makers do not have better information than private agents operating in the market. In fact, because public decision makers are unguided by the market signals of prices, profit, and loss, they have access to *less* information than do private decision makers.<sup>73</sup> This means that they often lack important information about the problem at hand, the alternative means to address it, or the opportunity cost of their actions.

Second, government decision makers face a strong incentive to cater to concentrated special interest groups. This explains why government program mechanisms tend to be organized around picking winners and losers instead of rewarding success or punishing failure in the same way as the market.<sup>74</sup> This behavior explains why Congress continues to support local infrastructure

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72. Though the modern practice of “straw purchases,” whereby buyers use third parties to purchase land and avoid the holdout problem, seems to suggest an alternative to eminent domain.

73. Hayek, “Use of Knowledge in Society.”

74. Matthew D. Mitchell, *The Pathology of Privilege: The Economic Consequences of Government Favoritism* (Arlington, VA: Mercatus Center at George Mason University, 2014).

projects that benefit parochial interests while foisting the cost onto far-distant taxpayers. When national taxpayers pay for local projects, there is a strong incentive to spend more on these projects than would be efficient.<sup>75</sup>

The perverse incentives are obvious when one surveys a number of trends in infrastructure spending.

### Cost Overruns Are the Rule Rather Than the Exception

The most comprehensive study of transportation infrastructure cost overruns examines 20 nations spanning five continents. The authors find that 9 out of 10 public works projects come in over budget.<sup>76</sup> These cost overruns dramatically increase infrastructure spending.

Overruns routinely range from 50 to 100 percent of the original estimate.<sup>77</sup> For rail, the average cost is 44.7 percent greater than the estimated cost at the time the decision was made. For bridges and tunnels, the equivalent figure is 33.8 percent, and for roads 20.4 percent.<sup>78</sup> On average, US cost overruns reach \$55 billion per year.<sup>79</sup> Even if they lead to localized job growth, these investments are usually inefficient uses of public resources.

### Inaccurate Estimates of Demand Plague Infrastructure Projects

A study of 208 projects in 14 nations on five continents shows that 9 out of 10 rail projects overestimate the actual traffic.<sup>80</sup> Moreover, 84 percent of rail-passenger forecasts are wrong by more than 20 percent. Thus, for rail, passenger traffic averages 51.4 percent fewer passengers than estimated traffic.<sup>81</sup> This means that there is a systematic tendency to overestimate rail revenues. For roads, actual vehicle traffic is on average 9.5 percent *higher* than forecast traffic, and 50 percent

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75. Gordon Tullock, "Problems of Majority Voting," *Journal of Political Economy* 67, no. 6 (1959).

76. Bent Flyvbjerg, Mette K. Skamris Holm, and Søren L. Buhl, "Underestimating Costs in Public Works Projects: Error or Lie?," *Journal of the American Planning Association* 68, no. 3 (2002): 279–95.

77. Ibid.

78. Ibid.

79. The Capitol Hill Visitor Center, an ambitious three-floor underground facility, originally scheduled to open at the end of 2005, was delayed until 2008. The price tag leaped from an estimate of \$265 million in 2000 to a final cost of \$621 million.

80. Bent Flyvbjerg, "Measuring Inaccuracy in Travel Demand Forecasting: Methodological Considerations Regarding Ramp Up and Sampling," *Transportation Research A: Policy and Practice* 39, no. 6 (2005): 522–30.

81. Bent Flyvbjerg, Mette Skamris Holm, and Søren L. Buhl, "How (In)accurate are Demand Forecasts in Public Works Projects? The Case of Transportation," *Journal of the American Planning Association* 71, no. 2 (2005): 131–46.

of road traffic forecasts are wrong by more than 20 percent.<sup>82</sup> In this case, there is a systematic tendency to *underestimate* the financial costs and *overestimate* the reduction in congestion from road expansion.

### Survival of the Unfittest

Studies have shown that project promoters routinely ignore, hide, or otherwise leave out important project costs and risks to make total costs appear lower.<sup>83</sup> Researchers refer to this as the “planning fallacy” or the “optimism bias.” Scholars have also found that it can be politically rewarding to lie about the costs and benefits of a project. The data show that the political process is more likely to give funding to managers who underestimate the costs and overestimate the benefits. In other words, it is not the best projects that get implemented, but the ones that look the best on paper.<sup>84</sup>

### Maintenance vs. Ribbon-Cutting Ceremonies

In a recent debate between economists Larry Summers and Robert Barro, both agreed that “fixing potholes is the most productive activity in government.”<sup>85</sup> Unfortunately, politicians prefer to send out press releases about the launch of grand public works and to follow up with ribbon-cutting ceremonies rather than to fix bridges and pavement.

The result is a deficit in infrastructure maintenance all over America. The good news is that there are better ways to fund infrastructure, such as implementing user fees that let users pay for the maintenance of aging infrastructure. Like all prices, user fees allocate scarce resources to the people who value them the most. User fees also discourage white elephants by requiring that the projects pay for themselves.

Harvard economist Edward Glaeser suggests one way to minimize the public choice problems inherent in infrastructure spending. His solution is to

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82. Ibid.

83. Bent Flyvbjerg, “Design by Deception: The Politics of Megaproject Approval,” *Harvard Design Magazine* 22, (2005): 50–59. See also Bent Flyvbjerg, “Machiavellian Megaprojects,” *Antipode* 37, no. 1 (2005): 18–22; Bent Flyvbjerg, “Megaprojects and Risk: An Anatomy of Ambition,” *Sociologist* 1, no. 1 (2004): 50–55; and Bent Flyvbjerg, Mette K. Skamris Holm, and Søren L. Buhl, “What Causes Cost Overrun in Transport Infrastructure Projects?,” *Transport Reviews* 24, no. 1 (2004): 3–18.

84. Bent Flyvbjerg, “Survival of the Unfittest.”

85. “Why Has Economic Growth Been So Slow” (American Enterprise Institute).

convert the Highway Trust Fund into a road and bridge *maintenance* fund only.<sup>86</sup> New projects would be exclusively funded by state and local governments.

## Oversized Role of the Federal Government

As Glaeser writes, a “prominent infrastructure illusion is that transportation should be a centralized, tax-funded federal responsibility, rather than decentralized, user-fee-funded local responsibility.”<sup>87</sup> Indeed, with very few exceptions, most roads, bridges, and even highways are local projects (or state projects, at the highest level) by nature. The federal government should not have anything to do with them.

In addition, the oversized role of the federal government in infrastructure tends to compound the perverse political incentives. While many of the spending decisions are made at the state and local levels, elected officials at those levels spend money that they do not have to be accountable for because it comes from the federal government. Glaeser sums it up nicely:

Whenever the person paying isn’t the person who benefits, there will always be a push for more largesse and little check on spending efficiency. Would Detroit’s People Mover have ever been built if the people of Detroit had to pay for it? We should move toward a system in which states and localities take more responsibility for the infrastructure that serves their citizens.<sup>88</sup>

In this way, costs and benefits will be internalized and decision makers will be less inclined to overspend.

All things considered, taxpayers and consumers would be better off if these activities were privatized.

## CONCLUSION

Economists have long recognized the value of infrastructure. Roads, bridges, airports, canals, and other projects are the conduits through which goods are exchanged. In many circumstances, private firms can and should be allowed to provide this infrastructure. But in other cases, there may be a role for public

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86. Edward Glaeser, “Spending Won’t Fix What Ails U.S. Infrastructure: Edward Glaeser,” *Bloomberg View*, February 13, 2012.

87. Glaeser, “If You Build It . . .”

88. *Ibid.*

provision at the local level.<sup>89</sup> But whatever its merits, infrastructure spending is not likely to provide much of a stimulus, and it can even fail to provide economic growth in the long term.

As a short-term measure, more deficit-financed infrastructure spending is a risky bet. At best, it is likely to be ineffective; at worst, it will be counterproductive. One long-term impact of further stimulus is certain: it would leave the United States deeper in debt at a time when the country can ill afford it. As a long-term measure, infrastructure spending is not a solution for America's lackluster growth rates.

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89. Typically, economists believe that "public goods" will be underprovided by private firms. A public good is one whose benefits are nonexcludable and nonrivalrous. This means that private actors who provide such goods have no way of charging users, even though additional users are costless. New technologies such as wireless toll booths, however, are rapidly changing some public goods into private goods.

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## ACKNOWLEDGMENTS

The authors are grateful for numerous helpful suggestions from Tracy Miller, Garrett Jones, Richard Williams, and an anonymous reviewer. The authors are responsible for any errors or omissions that remain.