

Infrastructure Investment: A State, Local, and Private Responsibility

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Despite huge and ongoing budget deficits, some policymakers are proposing to increase federal spending on infrastructure. President Obama, for example, has called for passage of a \$50 billion plan for new infrastructure investment. The president and other leaders believe that more federal spending on roads, rail, and other assets would boost growth and create jobs.

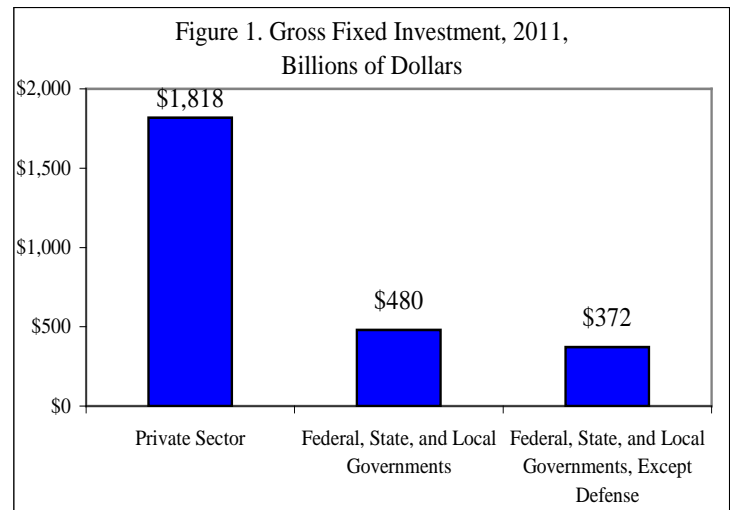
The U.S. economy certainly needs infrastructure. The important policy issue, however, is who can deliver it most efficiently—the federal government, state and local governments, or the private sector. To maximize benefits, infrastructure spending should be allocated to the highest-valued projects and constructed in the most cost-effective manner. Yet decades of experience show that when the federal government gets involved in infrastructure, investment often gets bogged down in politics, mismanagement, and cost overruns.

This bulletin discusses the advantages of devolving infrastructure activities to the states and the private sector. It examines the global trend toward greater reliance on businesses to finance, design, build, and manage facilities such as highways, bridges, and airports. Policymakers should study these innovations and work to reduce barriers to private infrastructure investment in the United States.

How Much Is Spent on Infrastructure?

Most of America's infrastructure investment is provided by the private sector, not governments. Indeed, private infrastructure spending—on factories, warehouses, freight rail, pipelines, refineries, and many other items—is about four times larger than federal, state, and local government infrastructure spending combined. If defense spending is excluded, private spending is about five times greater than government spending.

Figure 1 shows data on gross fixed investment, which is a broad measure of infrastructure spending. In 2011 private investment was \$1.818 trillion, compared to government investment of \$480 billion.¹ Excluding



Source: U.S. Bureau of Economic Analysis.

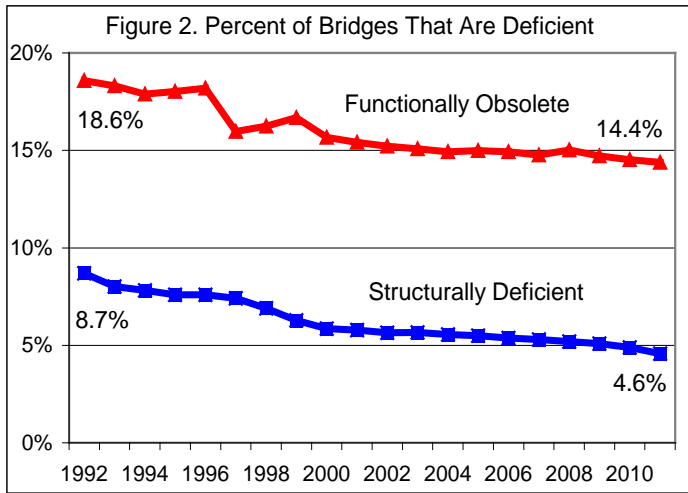
defense, government investment was just \$372 billion.

One implication of the data is that if policymakers want to boost infrastructure spending, the first priority should be to make reforms to spur private investment. A corporate tax rate cut, for example, would increase the returns to a broad range of private infrastructure spending. Regulatory reforms to reduce barriers to investment are also needed, such as in the energy industry.

Is Government Infrastructure Spending Too Low?

While government infrastructure spending is smaller than private spending, it is certainly important to the U.S. economy. However, claims that governments aren't spending enough on infrastructure are dubious.

Consider how pundits and special-interest groups often complain that our roads and bridges are "crumbling." It turns out that Federal Highway Administration data show the opposite. For example, the share of the 117,000 bridges in the National Highway System that are "structurally deficient" and "functionally obsolete" has fallen steadily

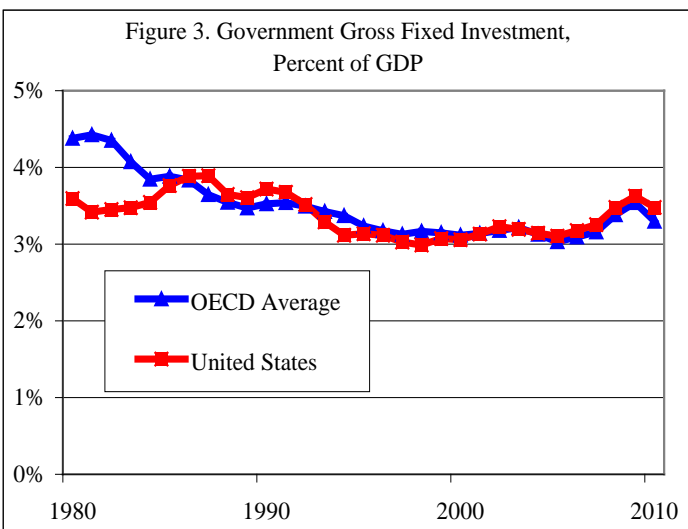


Source: Federal Highway Administration.

in recent decades, as shown in Figure 2.² Since 1992 the share that is structurally deficient has fallen from 8.7 percent to 4.6 percent, while the share that is functionally obsolete has fallen from 18.6 percent to 14.4 percent.

Highway conditions have also improved. The “International Roughness Index” shows substantial quality improvements in U.S. interstates and other major highways in recent decades.³ These data undermine the notion that governments are not investing enough in infrastructure.

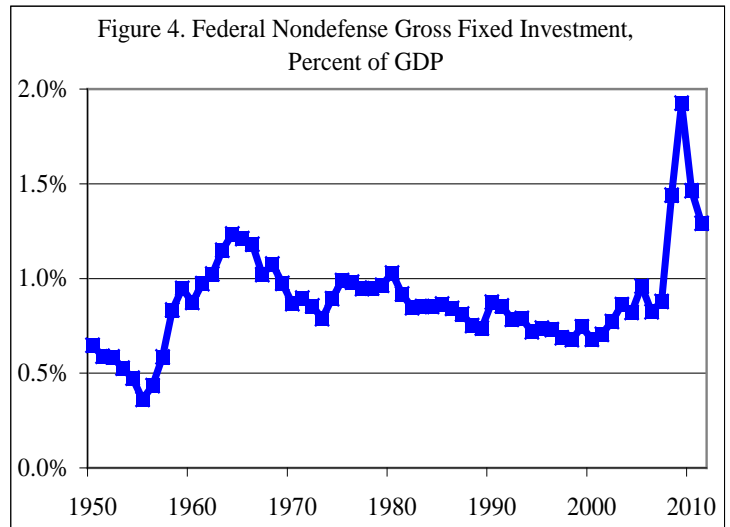
Another way to gauge whether we are investing enough is to compare the United States to other countries. Figure 3 shows gross fixed investment by the government as a percent of gross domestic product (GDP) for the United States and the average of countries in the



Source: Organization for Economic Cooperation and Development.

Organization for Economic Cooperation and Development (OECD).⁴ While U.S. investment has dipped in recent decades, so has the OECD average. In 2010 government investment in the United States was 3.5 percent of GDP, which was a little higher than the OECD average of 3.3 percent.

Let’s look at just the federal portion of U.S. spending on infrastructure. Figure 4 shows that federal nondefense gross fixed investment as a share of GDP was low during the 1950s, higher during the 1960s, and then declined somewhat until the 2000s.⁵ The recent spike is due to the 2009 “stimulus” law. Aside from that spike, the high level of investment during the 1960s was unique, and largely attributed to the building of the Interstate Highway System. In 1965, for example, 50 percent of all federal nondefense investment was for highways.⁶ That ratio was down to 28 percent by 2012, but that makes sense because the system is long since complete.



Source: U.S. Bureau of Economic Analysis.

Note that the level of federal infrastructure spending tells us nothing about the quality of the spending. Large federal spending on urban redevelopment schemes in the mid-20th century, for example, often had very negative effects on cities and local communities. Indeed, federally funded high-rise public housing projects were a disaster. Similarly, federal spending on dams and other water infrastructure—which peaked in the mid-20th century—was often misallocated to projects that had low economic returns and damaging environmental effects.

Thus, believing that simply jacking up the level of federal infrastructure spending will boost growth is wishful thinking. Economic growth won’t be spurred if

spending goes toward low-value projects, which has often been the case with federal efforts. And that is not surprising given that federal decisions are far removed from local demands and market price signals.

Aside from defense, much of federal infrastructure spending is state, local, and private in nature. In 2012 federal nondefense infrastructure investment totaled \$52 billion in direct spending and \$96 billion in state grants.⁷ The direct spending portion included \$20 billion for water and power projects, which should be privatized or transferred to the states. The state grant portion included \$42.0 billion for highways, \$13.8 billion for urban transit, \$11.5 billion for community development, \$6.3 billion for housing, and \$3.8 billion for airports. Again, these are all properly state, local, and private activities. Airports, for example, should be privatized, as they have been in many other countries. There are few, if any, advantages of funding these activities at the federal level, but there are many disadvantages.

Problems with Federal Infrastructure Spending

There are frequent calls for increased federal spending on infrastructure, but advocates ignore the problems and failures of past federal efforts. There is a history of pork-barrel politics and bureaucratic bungling on many types of federal investment, which has often gone to low-value and even harmful activities.

Consider the two oldest federal infrastructure agencies—the Army Corps of Engineers and the Bureau of Reclamation.⁸ Although these agencies constructed some impressive facilities, they have also both been known for spending on boondoggles, distorting their analyses to justify projects, harming the environment, and spending on projects for private interests rather than the public interest. For example, the Army Corps' costly "MRGO" canal near New Orleans was a big economic failure, and it also magnified the damage caused by Hurricane Katrina.⁹

Federal infrastructure projects often suffer from large cost overruns.¹⁰ Highway projects, energy projects, airport projects, and air traffic control projects have ended up costing far more than promised. When both federal and state governments are involved in infrastructure, it reduces accountability. That was one of the problems with the federally backed Big Dig highway project in Boston, which exploded in cost to five times the original estimate.¹¹ U.S. and foreign studies have found that privately financed infrastructure projects are less likely to have cost overruns.¹²

Perhaps the biggest problem with federal control of infrastructure is that when Washington makes mistakes it

replicates them across the nation. High-rise public housing projects, for example, were a terrible idea that federal funding helped spread nationwide. The replication of mistakes has also been a serious problem in transportation spending. Federal subsidies for light-rail projects, for example, have biased cities across the country to opt for these expensive systems, even though they are less efficient and flexible than bus systems.¹³

When the federal government spends on particular types of infrastructure, the states are eager to grab their share of funding, and they discount any concerns about long-term efficiency. With light-rail systems, cities typically receive federal subsidies for up-front capital costs, but down the road these systems have higher operating and maintenance costs than bus systems.

High-speed rail represents another federal effort to create a one-size-fits-all solution for the country. The Obama administration is trying to impose its rail vision on the nation even though the economics of high-speed rail are poor, as the cost escalation in California's planned system suggests.¹⁴ Fortunately, high-speed rail provides a rare example of at least some states rejecting the "free" dollars from Washington.

Even if federal experts could optimally choose the best infrastructure projects for each part of the country, politics usually intrudes on the efficient allocation of funding. Amtrak investment, for example, gets spread around to low-population areas where passenger rail makes no economic sense. Indeed, most of Amtrak's financial losses come from long-distance routes through rural areas that account for only a small fraction of all riders.¹⁵ Those routes exist because every lawmaker wants an Amtrak train to run through their state. The result is that investment gets steered away from where it is really needed, such as the Northeast corridor. It's the same story in highway funding where some states with greater needs due to growing populations—such as Texas—consistently get the short end of the stick on funding.¹⁶

Another problem with federal infrastructure spending is that it comes with piles of regulations. Davis-Bacon labor rules and other federal regulations raise the costs of building infrastructure. And federal highway funds come with requirements to spend money on activities such as bicycle paths, which many state policymakers may think are extraneous.

Decentralizing Infrastructure Financing

A 2012 Obama Administration report supported an increased federal role in infrastructure, noting that the states are "strapped for cash."¹⁷ But the federal

government—with its huge budget deficits—is even more strapped for cash. Besides, the states have many options to fund infrastructure, including taxes, bonds, user fees, public-private partnerships, and privatization.

Rather than funding infrastructure, federal policymakers could better help the states by reducing barriers to investment, such as by repealing costly labor and environmental regulations. The publisher of *Public Works Financing*, William Reinhardt, noted that “construction companies are carrying a much heavier regulatory burden under the Obama administration than ever before.”¹⁸ Federal policymakers should also relax rules to allow for greater tolling of major highways and make it easier for the states to privatize infrastructure.

Without top-down rules and subsidies from Washington, the states could become “laboratories of democracy” for infrastructure. They could innovate with new ways of financing and managing their roads, bridges, airports, seaports, and other facilities. In Canada and Australia, the expansion in private funding of traditionally government infrastructure has been led by the provinces and states.¹⁹

For highways, a big step forward would be to end the federal gasoline tax and devolve the financing of highways to the states. Some Republicans in the House have proposed ways to reduce the federal role in highways, such as by allowing individual states to opt out of the federal gas tax and highway spending.²⁰ That would give states the freedom to innovate with private highway financing and other approaches to solving today’s congestion problems.

A report from the Center for American Progress concluded that “private investment is critical to improving the country’s infrastructure.”²¹ The Obama administration also supports private investment in infrastructure. However, the Center for American Progress and the administration also want to expand federal control over infrastructure through a National Infrastructure Bank and other policies. Thus, they seem to favor private funding of public projects, but they are less interested in private funding of private projects. In other words, they want to keep the federal government in the driver’s seat.

That is a misguided approach because a big advantage of devolving infrastructure activities to the states and bringing in private funding is that it would decentralize decisionmaking. When state governments and private firms are spending their own money, they are more likely to make cost-efficient decisions than officials and politicians in Washington, D.C.

It is true that state governments and private investors can make mistakes on infrastructure projects. But at least those mistakes are not automatically repeated across the country. If federal funding of high-speed rail were ended, for example, California could still move ahead with its own system if it wanted to. But other states could wait and see how California’s system was performing before putting their own taxpayers on the hook.

Privatizing Infrastructure: A Global Trend

Many types of infrastructure that are currently owned by governments used to be owned by the private sector. Before the 20th century, for example, more than 2,000 turnpike companies in America built more than 10,000 miles of toll roads.²² And up until the mid-20th century, most urban rail and bus services were private.²³ With respect to railroads, the federal government subsidized some of the railroads to the West, but most U.S. rail mileage in the 19th century was in the East, and it was generally unsubsidized. The takeover of private infrastructure by governments here and abroad in the 20th century caused many problems.

Fortunately, most governments have reversed course in recent decades and started to hand back infrastructure to the private sector. Since 1990 about \$900 billion of state-owned assets have been sold in OECD countries, and about 63 percent of the total has been infrastructure assets.²⁴ What spurred the trend? The OECD says that “public provision of infrastructure has sometimes failed to deliver efficient investment with misallocation across sectors, regions, or time, often due to political considerations. Constraints on public finance and recognized limitations on the public sector’s effectiveness in managing projects have led to a reconsideration of the role of the state in infrastructure provision.”²⁵

Short of full privatization, many countries have partly privatized portions of their infrastructure through public-private partnerships (“PPPs” or “P3s”). PPPs differ from traditional government contracting by shifting various elements of financing, management, maintenance, operations, and project risks to the private sector.

Over the past 15 years, the value of PPP infrastructure projects has soared in major industrial countries.²⁶ In a 2011 report, the OECD found a “widespread recognition” around the world of “the need for greater recourse to private sector finance” in infrastructure.²⁷

Unfortunately, the United States “has lagged behind Australia and Europe in privatization of infrastructure such as roads, bridges and tunnels,” notes the OECD.²⁸ More than one fifth of infrastructure spending in Britain and

Portugal is now through the PPP process, so this has become a normal way of doing business in some countries.²⁹ Canada is also a leader in using PPP for major infrastructure projects.

The industry reference guide for infrastructure PPP and privatization is the newsletter *Public Works Financing*. According to that source, only 1 of the top 38 firms doing transportation PPP and privatization around the world are American.³⁰ Of 726 transportation projects currently listed in the newsletter, only 28 are in the United States. Canada—a country with one-tenth of our population—has about the same number of PPP deals as we do. In Canada, PPPs account for 10 to 20 percent of all public infrastructure spending.³¹

Nonetheless, a number of U.S. states have moved ahead with PPP and privatization. The following projects from Virginia illustrate the possibilities of expanding the private role in infrastructure investment:³²

- *Midtown Tunnel*. Skanska and Macquarie are building, and will operate, a three-mile tolled tunnel under the Elizabeth River between Norfolk and Portsmouth. Private debt and equity are covering most of the project's \$2.1 billion cost.
- *Capital Beltway*. Transurban and Fluor have built and are now operating and maintaining new toll lanes along 14 miles of I-495. The firms used debt and equity to finance about \$1.5 billion of the project's \$2 billion cost.³³ The lanes opened in November 2012 after being completed on time and on budget. The same firms will be partnering with Virginia to finance, build, and manage new toll lanes south from the Beltway along I-95.
- *Dulles Greenway*. The Greenway is a privately owned toll highway in Northern Virginia completed in the mid-1990s with \$350 million of private debt and equity, and without government aid.³⁴
- *Jordan Bridge*. FIGG Engineering Group and partners fully financed and constructed a \$142 million highway bridge over the Elizabeth River between Chesapeake and Portsmouth. The cost of this handsome and soaring private bridge will be paid back by toll revenues over time.³⁵ The bridge opened in 2012.

One of the fuels for the rise in PPPs has been growing investment by pension funds. Infrastructure investment is a good fit for pension funds because it provides a return over a very long period of time, which matches the pattern of long-term liabilities of these funds.³⁶

In Canada and Australia there is a larger pension fund investment in infrastructure than in the United States. In these and other countries, the growth in pension assets has been driven by the pre-funding of government retirement programs. Thus, there is a virtuous cycle supporting economic growth in these countries whereby growing pools of pension and retirement funds are becoming available to invest in privatized infrastructure.

Advantages of PPPs and Privatization

There are many advantages of infrastructure PPP and privatization. One is that funding is more likely to get allocated to high-return investments when business profits are on the line. Businesses, of course, can make investment mistakes just as governments do. But unlike governments, they have a systematic way of choosing investments that maximize the net returns. When investment returns are maximized, it stimulates the largest gains to the economy.

One reason privatized infrastructure is efficient is that businesses can tap debt and equity markets to build capacity and meet market demands. By contrast, government investment suffers from fluctuations and uncertainties in the federal budget process. Our air traffic control system, for example, needs major investments but the Federal Aviation Administration (FAA) cannot count on a stable funding stream.

Federal management of capital investments has often been poor, as has been the case with the FAA. The FAA has a long history of delays and cost overruns on its technology upgrade projects. The solution in this case is to privatize the U.S. air traffic control system, as Canada has done with very favorable results.³⁷

A Brookings Institution study described some of the advantages of PPPs.³⁸ It noted that the usual process for government investment decouples the initial construction from the future management of facilities, which results in contractors having little incentive to build projects that will minimize operation and maintenance costs. PPPs solve this problem because the same company both builds and operates new facilities, as with Virginia's Capitol Beltway project. "Many advantages of PPP stem from the fact that they bundle construction, operations, and maintenance in a single contract. This provides incentives to minimize life-cycle costs which are typically not present when the project is publicly provided," notes the Brookings' study.³⁹

Another advantage of infrastructure PPP and privatization is the greater efficiency of construction. U.S. and foreign experience indicate that PPP projects are more likely to be completed on-time and on-budget than traditional government contracts. A 2007 Australian study

compared 21 PPP projects with 33 traditional projects and found: “PPPs demonstrate clearly superior cost efficiency over traditional procurement . . . PPPs provide superior performance in both the cost and time dimensions, and . . . the PPP advantage increases (in absolute terms) with the size and complexity of projects.”⁴⁰ Studies of British and U.S. PPPs have found similar positive results.⁴¹

Private firms in PPPs take on a major financial risk, which creates a large incentive to get work done on time and on budget. A government official overseeing the Capital Beltway PPP project lauded the private firms in charge for their rapid and nonbureaucratic way of solving the problems that arose during construction, which is “not the way government works typically,” the official noted.⁴²

William Reinhardt notes that “the design-build contracting approach used in a P3 guarantees the construction price and project completion schedule of large, complex infrastructure projects that often befuddle state and local governments, as was the case with Boston’s Big Dig.”⁴³ Reinhardt says that P3 projects typically experience capital cost savings of 15 to 20 percent compared to traditional government contracting.

Once infrastructure is built, private managers are usually superior to government managers because they can increase operational efficiencies and reduce excess labor costs. In Nassau County, New York, the government slashed the cost of its public bus system from \$156 million in 2011 to \$113 million in 2012 by contracting out the operations to French company Veolia, which is the world’s largest operator of public transport.⁴⁴ Private infrastructure managers are also more likely than the government to charge efficient market rates to users.

Despite the advantages of PPPs over traditional government projects, there are some pitfalls to avoid. One concern is that officials may lease existing assets, such as toll highways, simply to paper over government budget deficits rather than to actually improve infrastructure. Another concern is that policymakers may write poor contracts that assign profits to private parties but risks and possible losses to taxpayers.

The authors of the Brookings Institution study suggest ways to structure PPP deals to avoid such problems. Also, state policymakers should actively search for projects and activities that can be fully privatized. Full privatization avoids any risk that taxpayers will get stuck with unforeseen project costs, which can occur when the government is a partner in projects. Virginia’s new Jordan Bridge is a good example of how a major infrastructure project can be a fully private endeavor.

Conclusions

Federal policymakers are understandably concerned that America have top-notch infrastructure in order to compete in the global economy. But the best way forward is for the federal government to cut subsidies and reduce its control over the nation’s infrastructure. At the same time, the states should innovate with privatization and PPPs to the full extent possible. State governments would be more likely to make sound infrastructure decisions if they were free of the distortions created by federal spending programs and regulations.

Privatization holds great promise. Consider, for example, that U.S. airports and seaports are generally owned by governments, but many foreign airports and seaports have been partly or fully privatized. The World Economic Forum rates America’s seaports only 19th in the world, but the world’s second- and third-best seaports—in Singapore and Hong Kong—are private.⁴⁵

In sum, rather than increasing federal infrastructure spending—as some policymakers are proposing—we should begin devolving federal infrastructure activities to the states. The states should then unleash businesses and entrepreneurs to help America solve its mobility and congestion challenges.

¹ U.S. Bureau of Economic Analysis, National Income and Product Accounts, Table 1.5.5, www.bea.gov/iTable.

² Federal Highway Administration data is available at www.fhwa.dot.gov/bridge/deficient.cfm.

³ Federal Highway Administration data cited in Randal O’Toole, “Ending Congestion by Refinancing Highways,” Cato Institute Policy Analysis no. 695, May 15, 2012.

⁴ This is Organization for Economic Cooperation and Development (OECD) data for government gross fixed capital spending. The data underlies Figure 2.1 in OECD, “Pension Funds Investment in Infrastructure: A Survey,” September 2011.

⁵ Figure 4 shows gross federal investment spending, including direct spending and state aid. See U.S. Bureau of Economic Analysis, National Income and Products Accounts, Table 3.2.

⁶ *Budget of the United States Government, Fiscal Year 2013, Historical Tables* (Washington: Government Printing Office, 2012), Tables 9.2, 9.5, and 9.6. Fiscal year data.

⁷ *Ibid.*

⁸ Chris Edwards, “Cutting the Army Corps of Engineers,” Cato Institute, March 2012, www.downsizinggovernment.org/usace. And see Chris Edwards and Peter J. Hill, “Cutting the Bureau of Reclamation and Reforming Water Markets,” Cato Institute, February 2012, www.downsizinggovernment.org/interior/cutting-bureau-reclamation.

⁹ Chris Edwards, “Cutting the Army Corps of Engineers,” Cato Institute, March 2012, www.downsizinggovernment.org/usace.

¹⁰ Chris Edwards, "Government Cost Overruns," Cato Institute, March 2009, www.downsizinggovernment.org/government-cost-overruns.

¹¹ For background, see the *Boston Globe's* "Easy Pass" series of reports by Raphael Lewis and Sean Murphy, www.boston.com/globe/metro/packages/bechtel.

¹² For example, see Allen Consulting Group and the University of Melbourne, "Performance of PPPs and Traditional Procurement in Australia," November 30, 2007. And see Richard Kerrigan, "P3 Study: Over 80% of U.S. Highway P3s Were On-Time and On-Budget," *Public Works Financing*, November 2012, p. 16.

¹³ Randal O'Toole, "Urban Transit," Cato Institute, June 2010, www.downsizinggovernment.org/transportation/urban-transit.

¹⁴ Randal O'Toole, "High-Speed Rail," Cato Institute, June, 2010, www.downsizinggovernment.org/transportation/high-speed-rail.

¹⁵ Tad DeHaven, "Privatizing Amtrak," Cato Institute, June 2010, www.downsizinggovernment.org/transportation/privatizing-amtrak.

¹⁶ Ronald Utt, "Turn Back Transportation to the States," Heritage Foundation, February 6, 2012, p. 2.

¹⁷ Department of the Treasury and Council of Economic Advisors, "A New Economic Analysis of Infrastructure Investment," March 23, 2012, p. 6.

¹⁸ William G. Reinhardt, "Take Back Infrastructure," *Public Works Financing*, January 2012, www.pwfinance.net.

¹⁹ Emilia Istrate and Robert Puentes, "Moving Forward on Public Private Partnerships," Brookings Institution and the Rockefeller Foundation, December 2011, pp. 10, 11.

²⁰ See Republican Study Committee, "RSC Transportation Solutions," <http://rsc.scalise.house.gov>.

²¹ Donna Cooper, Keith Miller, and John Craig, "Accelerating Infrastructure Improvements with Better Public Policies that Tap Private Investment," Center for American Progress, November 27, 2012, p. 2.

²² Gabriel Roth, "Federal Highway Funding," Cato Institute, June 2010, www.downsizinggovernment.org/transportation/highway-funding.

²³ Randal O'Toole, "Urban Transit," Cato Institute, June 2010, www.downsizinggovernment.org/transportation/urban-transit.

²⁴ Organization for Economic Cooperation and Development, "Pension Funds Investment in Infrastructure: A Survey," September 2011, p. 34.

²⁵ *Ibid.*, p. 34.

²⁶ *Ibid.*, p. 36.

²⁷ *Ibid.*, p. 27.

²⁸ *Ibid.*, p. 107.

²⁹ Eduardo Engel, Ronald Fischer, and Alexander Galetovic, "Public-Private Partnerships to Revamp U.S. Infrastructure," Brookings Institution, February 2011, p. 5.

³⁰ *Public Works Financing*, October 2011, p. 3.

³¹ *Public Works Financing*, October 2011, p. 18.

³² Details on Virginia's PPPs are available at www.vappta.org/projects.asp.

³³ www.virginiahotlanes.com/beltway/project-info/funding.php.

³⁴ <http://dullesgreenway.com>.

³⁵ www.figgbridge.com/jordan_bridge.html.

³⁶ Frederic Ottesen, "Infrastructure Needs and Pension Investments," OECD, September 20, 2011.

³⁷ Chris Edwards and Robert W. Poole, Jr., "Airports and Air Traffic Control," Cato Institute, June 2010, www.downsizinggovernment.org/transportation/airports-atc.

³⁸ Engel, Fischer, and Galetovic.

³⁹ *Ibid.*, p. 7.

⁴⁰ Allen Consulting Group and the University of Melbourne.

⁴¹ For the United States, see Kerrigan. For a summary of British PPP results, see Engel, Fischer, and Galetovic, p. 13.

⁴² Comments of Ron Kirby, Washington Council of Governments, *Public Works Financing*, December 2012, p. 21.

⁴³ William G. Reinhardt, "The Case For P3s in America," *Public Works Financing*, January 2012.

⁴⁴ *Public Works Financing*, "Nassau County Transit's Solution," September 2012, p. 7.

⁴⁵ World Economic Forum, "The Global Competitiveness Report, 2012–2013," 2012, p. 415.