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Federal Highway Funding Needs to Change

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PRESIDENT TRUMP HAS CALLED FOR A $1 TRIL-lion expansion of infrastructure spending in the United States.[1] While the details of the president's proposal have not been fully spelled out, it does appear that Washington would remain an important player in highway financing.

Despite commonly expressed concerns, highways and roads in the United States are not "crumbling," but pavement conditions do vary considerably among states.[2] A continuation of Washington's formula-based spending approach to highway financing would make it nearly impossible to reallocate funds to areas of the country in greatest need. Furthermore, federal aid often distorts state and local decision-making, resulting in the funding of projects that provide a low return. It makes more sense to reduce Washington's role in funding highways and let states fund their highways and roads.

This paper briefly examines current funding and discusses some of the problems created by federal financing of highway construction. Significant reform is necessary to ensure that highway funds are well spent. A reduction in the federal fuel tax would make it politically easier for states to set their fuel tax rates at levels that could fund their particular highway needs. To strengthen planners' incentives to choose high-return projects, states must foot a larger share of the bill for highway construction costs.

CURRENT FEDERAL FUNDING

State and local governments share the primary responsibility for funding, building, and maintaining highways and roads in the United States, but the federal government also plays a role. Between 2005 and 2014, the federal government funded close to 40 percent of total state and local highway spending. Most of these federal expenditures take the form of

grants or loan subsidies for new highway construction. Washington funded 86 percent of state and local capital spending over the 2005–2014 period.[3] Considering the many rules and regulations that go along with these funds, Washington is an important player in transportation funding.

The Highway Trust Fund was established in 1956 and serves as the principal source for federal financing of highways and roads in the United States. It has been replenished primarily by taxes on gasoline and diesel fuel, set at 18.3 and 24.3 cents per gallon, respectively, since 1993. These taxes provided 77 percent of fund revenues in 2015.[4] Other sources of funds include taxes on tires, vehicles, trucks and trailers, and fuels other than gasoline and diesel. Because of improved vehicle fuel economy, revenues from fuel taxes have not been sufficient to cover authorized expenditures. Since fiscal year (FY) 2008, transfers from the general fund have augmented the Highway Trust Fund to finance authorized highway and road expenditures.

The Fixing America's Surface Transportation Act of 2015 (FAST Act) authorizes surface transportation funding for FY 2016 through FY 2020. Approximately $70 billion from the general fund will be transferred to help finance authorized expenditures over the five-year period. With this transfer, total federal funding of highway and road projects is expected to average approximately $45 billion per year. The FAST Act provides each state with a gross apportionment on the basis of the share of funds the state received in 2015. Most funds are distributed through five formula-based programs: (1) $23.0 billion per year to the National Highway Performance Program, (2) $2.6 billion per year to the Highway Safety Improvement Program, (3) $2.4 billion per year to the Congestion Mitigation and Air Quality Improvement Program, (4) $1.3 billion per year to the National Highway Freight Program, and (5) $4.0 billion per year to the Surface Transportation Block Grant Program. The remaining funds are discretionary and are allocated by the Federal Highway Administration.[5]

FISCAL FEDERALISM AND THE EFFICIENT PROVISION OF HIGHWAYS

Scholars of fiscal federalism examine how a decentralized system of government can provide local public goods, such as highways, in the most efficient manner.[6] The basic principle of fiscal federalism is that "the provision of public services should be located at the lowest level of government encompassing, in a spatial sense, the relevant benefits and costs."[7] People have different preferences for local public goods and services. Assuming there are no spillover benefits or costs across jurisdictions, decentralized provision of local public goods and services is more efficient.[8] This principle rests on the premise that state and local governments have more information about local public preferences than national governments, giving them an informational advantage over national governments in providing local public goods and services. As a result, the most efficient level of supply for local public goods will vary among jurisdictions. In the United States, the provision of public infrastructure, such as highways and roads, is inconsistent with the principle of fiscal federalism and with efficiency.[9]

State and local government officials should evaluate highway projects by weighing costs against benefits. Projects should be undertaken only if the benefits to the community outweigh the costs the community will incur by building the infrastructure and maintaining it over time. In this case, there is no justification for a federal role in funding highways and roads. This proposition may not hold when some users of a highway live outside the relevant jurisdiction. They benefit from using the highway but do not pay local taxes to finance it. Local officials are unlikely to consider the benefits accruing to nonvoting, nonpaying users of highways built in their jurisdiction in any benefit-cost calculation. As a result, the officials may judge that the costs of a potential project would outweigh its benefits to their community, even though the combined benefits to local and nonlocal users would actually outweigh the project's costs. In such situations, not enough highways will be built.

When a highway project's benefit to a community is less than its cost to the community, the project should not be built—but federal dollars often lower the community's cost enough for the project to move forward.

Benefits that accrue to parties other than the ones undertaking the expense are called *spillover benefits*. Where spillover benefits are substantial and cross jurisdictional borders, federal involvement in highway financing is justifiable. The federal government (or the state government, if the spillover is within a state) can provide funding equal to the size of the benefit spillover as a percentage of total benefits.[10]

BENEFIT AND PRODUCTIVITY SPILLOVERS

How large are spillovers and how close does the federal government come to providing the right amount of aid to ensure an efficient provision of highways and roads? The percentage of highway project funding that comes from the federal government is called the *matching rate*. For federal dollars used on Interstate highway projects, the matching rate is 90 percent. For other roads or highways the matching rate is 80 percent.[11] These high matching rates suggest the dubious assumption that most of the benefits of Interstates and highways pass to users from outside the local jurisdiction or state.

It is difficult to quantify the size of spillover benefits (in the case of highways, benefits gained by nonresidents of the jurisdiction that funded the road). One US Department of Transportation (USDOT) travel study for Interstate highways found that about one-third of drivers are from out of state.[12] According to the most recent USDOT Travel Survey in 2009, the average vehicle trip was 9.7 miles.[13] These results indicate that trips tend to be local and the federal matching rate is far too large to result in efficient decisions about highway construction.

Another possible spillover benefit can occur because improved highways in neighboring communities result in a more integrated transportation system, increasing productivity and economic activity outside the region where the highways are built. Evidence of such productivity spillovers is mixed and inconclusive. The earliest research on productivity spillovers did not find any effects.[14] In some cases, the building of an Interstate highway caused businesses to relocate closer to the highway, resulting in a negative economic impact on neighboring communities further from the new road.[15] One recent study did find that highway and road construction in neighboring states had a positive impact on agricultural output in midwestern states.[16]

HOW FEDERAL DOLLARS DISTORT LOCAL DECISIONS

Because Washington provides a high level of support for highway construction, local officials often move forward with projects that fail benefit-cost tests. When a local community funds the entire cost of building highways and roads, the community has a strong incentive to use its limited funds for projects where the benefit is larger than the cost. The federal government circumvents this efficient outcome when it pays part of the cost of a local project. When a highway project's benefit to a community is less than its cost to the community, the project should not be built—but federal dollars often lower the community's cost enough for the project to move forward.[17] In some years, Congress places a limit on the total dollars sent to each state. If a state chooses to spend more than this amount, it bears the full cost of the additional spending.[18]

REDUCING WASHINGTON'S ROLE IN TRANSPORTATION

Expanding Washington's role in funding highways would be a mistake. The formula-driven allocation of funds ensures that each state gets its "fair" share, making it nearly impossible to reallocate funds to areas where the payoffs from additional investment would be highest. The matching rates for federal funding of highway construction are far too high, distorting local benefit-cost calculations and resulting in the selection of low- or even negative-return projects. Furthermore, the FAST Act allows revenue from the Highway Trust Fund to be used for mass transit and bike trails. If these projects don't pass a benefit-cost test at the local level, it is inefficient to support them with federal funds.

Washington's role in highway funding should be reduced rather than expanded. One approach would be to eliminate all or most of the federal taxes used to fund highways. By returning highway construction and maintenance responsibilities entirely to the states, policymakers would empower each state to choose a fuel tax that enables it to meet its transportation needs. This could also encourage states to experiment with other funding options, such as a vehicle-miles-traveled tax or a system of variable tolling to reduce congestion.

Another possible but weaker reform option would narrow Washington's role to a few significant national highway responsibilities. For example, federal funding could be limited to Interstate highway maintenance. This would also allow for a reduction of the federal fuel tax, giving states an easier path to funding all other highway and road investments in their own jurisdictions.

Reducing Washington's role in funding highway construction would result in more economically efficient choices in highway construction and maintenance because states would be paying the full cost of each project. Giving local officials incentives to spend carefully would also result in greater innovation associated with funding and managing transportation systems. The bottom line is that this kind of reform would improve decision making, resulting in a more efficient use of limited transportation funds.

NOTES

1. Aric Jenkins, "President Trump Again Called for $1 Trillion on Infrastructure—without Many Details," *Fortune*, February 28, 2017; "Fact Sheet: 2018 Budget: Infrastructure Initiative," WhiteHouse.gov, accessed August 4, 2017.
2. Robert Krol, "America's Infrastructure Isn't Crumbling: Some Facts on Highway, Road, and Bridge Conditions in the United States" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, 2017).
3. The percentages are averages for the 2005–2014 period. The data come from the Congressional Budget Office, "Public Spending on Transportation and Water Infrastructure, 1956 to 2014," March 2015.
4. Chad Shirley, "The Status of the Highway Trust Fund and Options for Paying for Highway Spending" (Testimony before the Committee on Ways and Means, US House of Representatives, Congressional Budget Office, Washington, DC, June 17, 2015).
5. Robert S. Kirk, "Federal-Aid Highway Program (FAHP): In Brief," Congressional Research Service, December 16, 2013.
6. Robert Jay Dilger, "Federalism Issues in Surface Transportation Policy: Past and Present," Congressional Research Service, January 5, 2011.
7. Wallace E. Oates, "An Essay on Fiscal Federalism," *Journal of Economic Literature* 37, no. 3 (1999): 1122.
8. This principle also assumes there are no (or are limited) economies of scale in the provision of local public goods. The evidence supports this assumption. See Shirley Svorny, "The Economics and Politics of City Size," unpublished paper, January 2003.
9. Charles R. Hulten and Robert M. Schwab, "A Fiscal Federalism Approach to Infrastructure Policy," *Regional Science and Urban Economics* 27, no. 2 (1997).
10. Robert Krol, "Political Incentives and Transportation Funding" (Mercatus Research, Mercatus Center at George Mason University, Arlington, VA, 2015); Hulten and Schwab, "Fiscal Federalism Approach."
11. Kirk, "Federal-Aid Highway Program," 1.
12. Edward M. Gramlich, *A Guide to Benefit-Cost Analysis*, 2nd ed. (Englewood Cliffs, NJ: Prentice Hall, 1990), 181.
13. USDOT, *National Household Travel Survey*, 2009.
14. See, for example, Douglas Holtz-Eakin and Amy Ellen Schwartz, "Spatial Productivity Spillovers from Public Infrastructure: Evidence from State Highways," *International Tax and Public Finance* 2, no. 3 (1995).
15. Amitabh Chandra and Eric Thompson, "Does Public Infrastructure Affect Economic Activity? Evidence from the Rural Interstate Highway System," *Regional Science and Urban Economics* 30, no. 4 (2000).

16. Tingting Tong et al., "Evaluating the Spatial Spillover Effects of Transportation Infrastructure on Agricultural Output across the United States," *Journal of Transport Geography* 30 (June 2013).

17. Krol, "Political Incentives and Transportation Funding."

18. Shama Gamkhar, "The Role of Federal Budget and Trust Fund Institutions in Measuring the Effect of Federal Highway Grants on State and Local Government Highway Expenditure," *Public Budgeting and Finance* 3, no. 1 (2003); Todd M. Nesbit and Steven F. Kreft, "Federal Grants, Earmarked Revenues, and Budget Crowd-Out: State Highway Funding," *Public Budgeting and Finance* 29, no. 2 (2009). Both studies also find that states do not reduce their own source funds when federal grants are received, or only reduce them by a modest amount.

About the Author

Robert Krol is a professor of economics at California State University, Northridge. He received his PhD in economics from Southern Illinois University, Carbondale, in 1982. His recent research has focused on transportation infrastructure issues, the forecasting bias of government agencies, and the impact of economic policy uncertainty on exchange rate volatility.

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