McGRAW HILL FINANCIAL | Global Institute

Dynamic Scoring and Infrastructure Spending

Douglas Holtz-Eakin
President
American Action Forum

Michael Mandel
Chief Economic Strategist
Progressive Policy Institute

July 6, 2015

Table of Contents

Executive Summary

We review recent trends in federal infrastructure spending and the policy case for dynamic scoring of revenue and spending legislation. The use of dynamic scoring depends upon the magnitudes of near-term impacts on economy-wide spending and the long-run impacts on productivity. We conclude that federal infrastructure investment should be dynamically scored.

A simple example suggests that **$100 billion in new infrastructure spending could generate an extra $62.5 to $165.5 billion in national output over the next twenty years**, based on a range of scenarios. Assuming a 20 percent effective tax rate, **this $100 billion infrastructure investment would generate a 20-year revenue offset ranging from $12.5 to $33.1 billion.**

Douglas Holtz-Eakin is president of the American Action Forum and former director of the Congressional Budget Office. Michael Mandel is chief economic strategist at the Progressive Policy Institute and senior fellow at the Mack Institute for Innovation Management at Wharton.

This report was commissioned by The McGraw Hill Financial Global Institute. The Institute is McGraw Hill Financial's platform for thought leadership. It leverages essential intelligence from the world's leading data and analytics company to guide and inform public policy debates. Through its unparalleled and expansive research, the Institute equips global leaders with insights to promote sustainable economic growth.

Introduction And Overview

Dynamic Scoring Allows For A More Complete Analysis Of The Macro Impact Of Proposed Policies And Legislation

Modern economies rely on networks of transportation and other infrastructure. Many commentators have expressed concern over the quality of the U.S. infrastructure, leading to calls for increased federal infrastructure spending.[1] These calls, however, have run directly into federal budgetary realities: a large amount of debt, entitlement programs that consume ever-greater fractions of budget resources, and no broad-based desire to raise taxes.

In this setting, dynamic scoring becomes important.[2] Conventional budget scoring incorporates the full range of private sector work, saving, and other responses to new policies like infrastructure spending. It does not, however, take into account the impact of spending on the overall size of the economy. Dynamic scoring incorporates these growth effects, permitting policymakers to distinguish between policies beneficial and detrimental to growth.

In theory, the logic behind dynamic scoring is irrefutable. Most legislation has economic consequences, and those consequences should be considered when assessing or 'scoring' the budget impact of that legislation. Until now, a combination of political pressures and economic disagreements has effectively pushed dynamic scoring to the sidelines. Depending on whether it was applied to spending legislation or tax changes, dynamic scoring could potentially be used to support the agenda of one side or another. At the same time, normally confident economists have been forced to admit that different economic models and assumptions applied to the same legislation could produce widely differing results.

$100 billion in new infrastructure spending could generate an extra $62.5 to $165.5 billion in national output over the next twenty years

The 114th Congress has adopted a budget resolution that requires dynamic scoring to be used for "major legislation." Major legislation is defined as tax or mandatory spending bills that lead to a change in revenues, outlays, or deficits of more than 0.25 percent of GDP.[3]

In general, infrastructure bills would not be dynamically scored because they are discretionary spending, and the dynamic scoring rules are built on the Budget Act's requirement that the Congressional Budget Office (CBO) provide cost estimates for tax and mandatory spending bills,

but not discretionary spending bills. In addition, the size of the changes involved would likely be less than 0.25 percent of GDP.

However, House leadership can designate other bills for dynamic scoring. In this paper, we argue that dynamic scoring should be extended to major infrastructure legislation.

This report makes both economic and political arguments in favor of dynamic scoring for infrastructure legislation. First, in the aftermath of the Great Recession, economists have focused on getting a better understanding of the economic impact of infrastructure investments. In particular, in 2014 the International Monetary Fund released a broad study of the short-term and medium-term economic impact of infrastructure investments across both developed and developing countries. Also, in 2014 two economists, Pedro Bom and Jenny Ligthart, published a meta-analysis of 68 previous studies of the long-term productivity impact of public infrastructure spending.

Using these studies, this report develops a range of reasonable multipliers that can be used for dynamic scoring of infrastructure spending. In particular, section five shows how they can be used to estimate the budget impact of an infrastructure bill, both short-term and long-term. Based on these reasonable multipliers, $100 billion in new infrastructure spending could generate an extra $62.5 to $165.5 billion in national output over the next twenty years, taking the initial investment into account. Assuming a 20 percent effective tax rate, this $100 billion infrastructure investment would generate a 20-year revenue offset ranging from $12.5 to $33.1 billion.

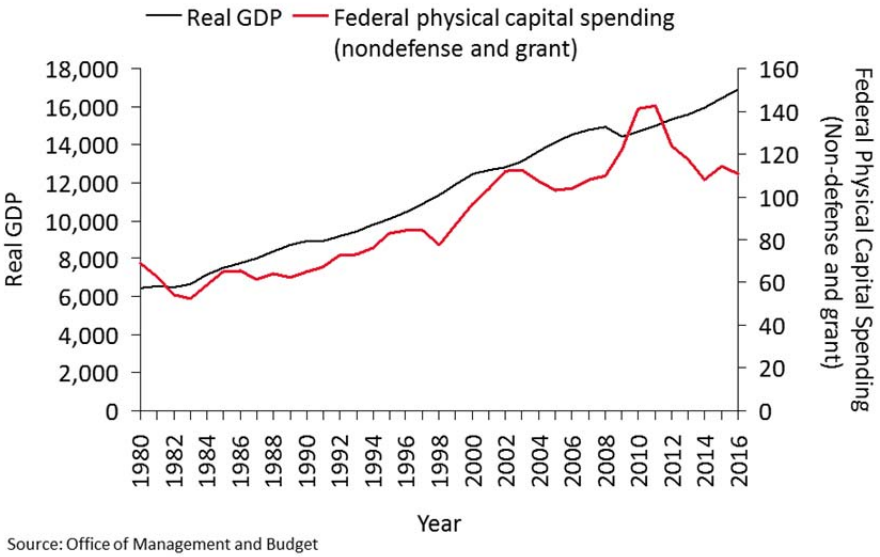
The remainder is organized as follows. Section two reviews trends in federal infrastructure spending. Section three provides a framework and empirical evidence for the impact of federal investment spending on the near-term path of total spending in the economy. Section four provides a corresponding analysis for the long-run productivity impacts. Section five provides an example of dynamic scoring of a stylistic $100 billion infrastructure expenditure. Section six is a summary with conclusions.

A Review Of Federal Infrastructure Spending

Federal Infrastructure Spending Has Declined At The Time When The United States Needs Renewed Investment Most

Until recently, federal spending on major nondefense physical investments, both direct and indirect, has kept pace with the growth of the overall economy. As *Figure 1* shows, from 1981 to 2011, the federal spending on nondefense major physical investments and grants for physical investments, adjusted for inflation, rose by 127 percent. Over the same stretch, real GDP rose by 128 percent.

Figure 1: Federal Capital Spending Lags Real GDP

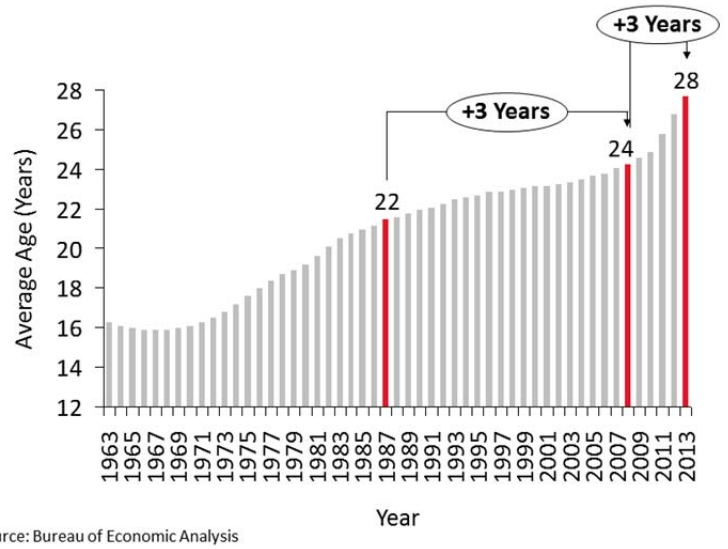


Source: Office of Management and Budget
2015-2016 are estimates based on FY2016 budget proposal; dollars in billions

But since 2011, federal direct and indirect spending on infrastructure and other physical capital has dropped far below the 20-year trend, measured in 2009 dollars. In part that decline is a natural fall-off after the big surge of spending in 2010 and 2011, when most of the funds from the American Reinvestment and Recovery Act (ARRA) of 2009 were dispersed. The concern is that if federal investment in physical capital continues at too low a level for a prolonged period it will undermine the quality of the infrastructure.

For example, consider highways and streets. The Bureau of Economic Analysis tracks the average age of highways and streets across the country, accounting for renovation. While one would expect our motor infrastructure to be aging as the rate of new building declines, *Figure 2* shows that the rate of aging has accelerated over the past few years.

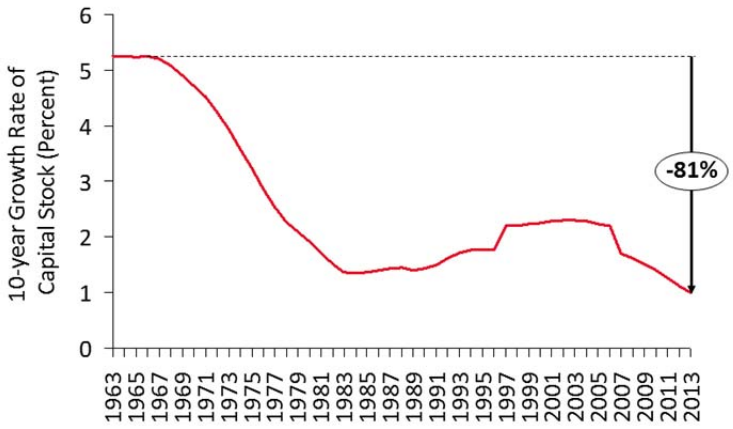
Figure 2: Highways and Streets Get Older Faster



Source: Bureau of Economic Analysis

Figure 3 looks at infrastructure from another angle. The BEA regularly estimates the inflation-adjusted dollar value of the stock of highways and streets. It can be thought of as a measure of the amount of highways and streets the US has, adjusting for depreciation. By this measure our highway and street infrastructure has only grown under 1 percent a year over the past ten years, the slowest rate since at least the 1960s.

Figure 3: Highways and Streets Grow Slower



Source: Bureau of Economic Analysis

Short-Run And Medium-Run Impacts Of Infrastructure Spending On Gdp

While Short-Run Impacts Can Be Muted, Infrastructure Spending Has Medium-Term Multipliers And Long-Term Productivity Increases

Conceptual Issues

Dynamic scoring requires a systematized way of measuring the impact of infrastructure spending on the economy. In particular, if the CBO has information on how much a $1 increase in federal infrastructure spending raises aggregate spending and thus Gross Domestic Product (GDP), it can use the information to estimate the additional tax revenue that will be generated as a result. Traditionally the impact of government spending (such as infrastructure) on demand in the economy is summarized by a concept known as "the multiplier." A multiplier of 1 means that $1 of spending generates an increase of $1 in GDP. A multiplier of 2 implies that $1 of spending generates an increase of $2 in GDP, while a multiplier of 0 implies that $1 of spending generates no increase in GDP.

The size of the multiplier depends crucially on the state of the economy. If the economy is in a deep slump, building new infrastructure can generate jobs and income that have spillover effects to the rest of spending in the economy. In such a circumstance, larger multipliers are possible. If labor and capital in the economy are already fully employed, the multiplier is likely to be zero.

Moreover, of all the types of stimulus spending…the CBO study estimates that infrastructure spending had one of the highest potential multiplier effects on employment and output

To be sure, the multiplier does not address the critical question of the timing of economic impact, which could be immediate or drawn-out over several years. However, for the purposes of dynamic scoring, the multiplier does provide a useful summary.

The magnitude of the demand impact of infrastructure spending was hotly debated during the Great Recession and its aftermath. Obviously the spending to upgrade a highway or rebuild a bridge generates construction jobs and jobs at suppliers. But as the United States and other countries implemented large fiscal stimulus packages such as the American Recovery and Reconstruction Act (ARRA) to combat the Great Recession, there were natural questions about how much additional growth such spending generated, above and beyond the construction jobs directly connected with the spending.

Evidence

In its latest report on the economic impact of ARRA, the Congressional Budget Office specified a range of multipliers from 0.4 to 2.2 for the impact of transfer payments to state and local governments for infrastructure (CBO 2015). The midpoint of this range, 1.3, would imply that each $1 of spending in ARRA generated $1.30 in GDP over several quarters. Since short-term interest rates remain very low, the CBO report notes that crowding out of other employment growth or investment in other areas of the economy was minimal.

Moreover, of all the types of stimulus spending (direct purchases, consumer subsidies, tax credits), the CBO study estimates that infrastructure spending had one of the highest potential multiplier effects on employment and output. According to the CBO report, their multiplier estimate represents:

> "The estimated direct and indirect effects on the nation's output of a dollar's worth of a given policy. Therefore, a provision's multiplier can be applied to the budgetary cost of that provision to estimate its overall impact on output."

Another recent authoritative set of multiplier estimates comes from the International Monetary Fund (IMF, 2014). In 2014, the IMF published a very extensive investigation of the economic impacts of infrastructure spending, across both developed and developing countries. Their results suggested that developed countries have a short-term investment spending multiplier of about 0.4 and a medium-term investment multiplier of about 1.4.

However, the IMF study also emphasizes that public investment has different impact depending on the macroeconomic environment.

> "During periods of low growth, a public investment spending shock increases the level of output by about 1½ percent in the same year and by 3 percent in the medium term, but during periods of high growth the long-term effect is not statistically significantly different from zero."

The macroeconomic impact also depends on how wisely countries spend their money, with bigger impacts accompanying greater efficiency. The report concludes that

> "In countries with high efficiency of public investment, a public investment spending shock increases the level of output by about 0.8 percent in the same year and by 2.6 percent four years after the shock."

Multiplier For Dynamic Scoring

So given the CBO and IMF estimates, what's a reasonable value for the infrastructure multiplier for the purposes of dynamic scoring? The midpoint of the CBO's range, 1.3, is very close to the IMF's medium-term estimate of 1.4.

However, we note that the actual multiplier could be quite a bit higher or lower depending on the macroeconomic environment. Moreover, predicting the state of the economy even a couple of years ahead is not an easy task.

Therefore, we suggest using a conservative medium-term multiplier of 0.8 for the purposes of dynamic scoring. In other words, $1 of additional infrastructure spending adds $0.8 to GDP if there is sufficient slack in the economy. As we note in section 5, the medium-term multiplier could be even lower as the economy approaches full employment.

Should Dynamic Scoring Include Long-Run Impacts On Productivity And GDP?

Dynamic Scoring Must Incorporate Both Short And Long-Term Impact Of Infrastructure To Capture Potential Productivity Increases

Conceptual Issues

So far we have focused on the impact of infrastructure on GDP in the short and medium run. Higher GDP obviously generates more tax revenue, which affects the ultimate net budget cost of infrastructure spending.

High-productivity infrastructure investments can generate improvements in economic well-being by increasing connectivity or reducing congestion

However, infrastructure spending could also have a long-term impact on productivity that should be considered. Over the long-term, higher productivity—the ability to generate more output and income from each dollar of capital or hour of work—is the key to higher labor earnings and improved standards of living. Because higher productivity is so central to economic growth, it must be an explicit concern – rather than a presumed outcome – when contemplating increased infrastructure spending. The notion that investing in infrastructure will generate productivity has an intuitive appeal: imagine an economy with trucks but no roads, or trains and no tracks. Moreover, there are countless

testimonials across the country asserting that a new road, or airport, or other project generated a boom in economic activity.

High-productivity infrastructure investments can generate improvements in economic well-being by increasing connectivity, reducing congestion, or providing a necessary productive input. If so, this is a critical dimension of improving long-term employment, allowing labor to enhance its productivity at lower cost and encouraging private capital investments in structures, equipment, and technologies to reap higher returns from American industry.

But there are reasons to be cautious as well. First, the test for a high-productivity public investment is that it should generate a rate of return to society that exceeds the market return in the private sector. The resources for any public investment are ultimately drawn from the private sector through taxes and fees, or in some cases by borrowing from the private sector. In each case, the dollars used to make these investments constitute foregone opportunities to make other market investments.

To meet a productivity test, transportation investments should have a greater impact in terms of raising future standards of living than other uses of funds as measured by the return on other market investments. Thus, to ensure the best use of taxpayer dollars, government must channel funding to the projects that offer the highest returns to society.

The notion that investing in infrastructure will generate productivity has an intuitive appeal: imagine an economy with trucks but no roads, or trains and no tracks

That means choosing programs that do the most to enhance long-term productivity. A second concern is that politics interfere with making sure that the right projects are chosen. Not every road, high-speed rail, or water project can meet the test. Will public policy actually consist of a portfolio of well-selected and thoughtfully targeted investments that may make a substantial contribution to aggregate economic productivity?

A third issue is that any shift in resources creates losers as well as winners. A dollar spent on any project means a dollar less to spend on another project. In an environment of finite resources, funding infrastructure projects will generate some productivity, but at the expense of jobs that could have been created in other sectors had the money been used differently. This is why reform to direct government spending to the most productive investments is so crucial. Even if infrastructure always raises productivity, its net effect on the economy as a whole—

taking into account the benefits that will be foregone as a result of reduced public spending in other areas of the economy—will be positive only if government investments are rigorously selected to meet productivity criteria.

Shifts of investment and employment occur not just across industries and sectors, but also across counties and states. Even a sub-optimal investment is likely to be able to show some positive output impacts, especially in the short-term, from the perspective of the winning state or city. But from a national perspective, and over time, these gains could be—and often are—outweighed by losses elsewhere. Federal infrastructure policy should guide federal dollars so as to produce a net gain for the economy as a whole, rather than for one area or region in the short-term.

The construction of the Interstate Highway network, for example, created jobs near Interstate interchanges as new and existing businesses were drawn to locations where they could take maximum advantage of the accessibility afforded by the new highway system. Towns that were bypassed by the Interstates, however, lost jobs as some of their businesses moved to these new locations and as other businesses that stayed "died on the vine" because they could no longer compete. Nevertheless, the federal investment creating the Interstate Highway network was justified because overall gains exceeded overall losses.

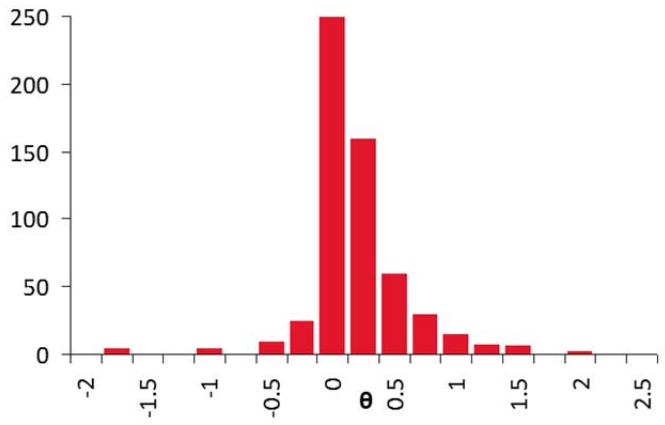
Evidence

The modern literature on the productivity impacts of public infrastructure was spawned by the work of David Aschauer [1989]. In effect, he assumed that GDP is produced by combining the usual inputs – private-sector capital and labor – and inputs of public-sector capital. For the United States, he concluded that infrastructure had a very strong positive effect on private-sector productivity – stronger than the impact of private-sector capital. His specific estimate indicated that a 10 percent rise in the public-sector capital stock would raise the level of productivity by 3.9 percentage points. Put differently, the so-called "elasticity" of productivity with respect to public capital is 0.39. If productivity impacts are as large as the Aschauer results implied, federal infrastructure outlays would have a lasting impact on the path of real GDP, personal incomes, and the federal budget.

Unfortunately, the Aschauer finding does not hold up. Holtz-Eakin [1994] quickly showed that the result was an example of reverse causality; i.e., during periods of high-productivity growth, more spending on infrastructure occurred. Using data from the 50 U.S. states, he found little to no evidence of lasting productivity impacts.

A large amount of empirical research followed. The histogram below, reproduced from Bom and Ligthart [2014] summarizes 578 estimates from 68 studies that cover various time periods, nations or states, levels of government (municipal, state, federal), and types of public capital.

Figure 4: Distribution of Productivity Elasticities



Source: Bom and Ligthart, 2014

The histogram shows the distribution of θ, the elasticity defined above. As one can see by inspecting the figure, there are large positive (over 2.0) and large negative (below -1.5) examples in the literature. However, the bulk of the estimates cluster closely around zero. The overall shape of the distribution does suggest a greater chance of positive impacts than negative ones, so a consensus estimate of the elasticity might be slightly above zero.

Long-Term Multiplier For Infrastructure Spending

Given the empirical evidence, it's reasonable to include a small but nonzero productivity effect when the CBO does dynamic scoring. The latest papers suggest that the elasticity of output with respect to public capital is between 0 (for bad project selection) and 0.1 (for good selection). To be conservative, that suggests it is reasonable to use an elasticity of 0.03 for dynamic scores.

The Implementation Of Dynamic Scoring For Infrastructure

Dynamically Scoring Infrastructure Requires The Assumption Of Conservative Multipliers To Balance Macroeconomic Volatility

Unlike most pieces of federal tax or spending legislation, economists have a very good understanding of the channels by which an increase in federal infrastructure spending can affect tax revenues. As shown in section 3, the evidence suggests that the multiplier is greater than zero, implying that a temporary increase in infrastructure spending will lead to a temporary increase in jobs and wages paid, which in turn will temporarily increase the tax revenues collected by the federal government. As shown in section 4, the evidence suggests a small but non-zero productivity effect, implying that temporary infrastructure spending will lead to a small but long-lasting increase in output, which in turn will lead to a small but long-lasting increase in federal tax revenues.

In this section we outline a simple procedure for dynamically scoring an increase in federal infrastructure spending. Obviously the CBO would use a far more sophisticated model. However, the procedure discussed here has the key elements of dynamic scoring for infrastructure.

Structure Of Procedure

To generate an estimate of the true impact of infrastructure spending, three numbers are needed: The short-term infrastructure multiplier **M**, the long-term productivity elasticity θ, and the tax revenue generated by a unit of output (the effective tax rate), **T**. Based on the evidence, for this simple procedure we use:

$M=0.8$; $\theta=0.03$ and $T=0.2$.[4]

Are these numbers reasonable? If the multiplier is 0.8, then $100 billion worth of additional infrastructure spending will yield a temporary increase of $80 billion of GDP, spread out over several quarters. So there's some crowding out from the spending, but not enough to eliminate the effect of the infrastructure spending on the economy. Under the assumption that 20 percent of the $80 billion gain in GDP is returned in federal taxes, that yields $16 billion in revenue.

However, notice that the 16 percent offset ($16 billion in revenue offsetting $100 billion in spending) will depend on the state of the economy. The closer the economy is to full employment, the greater the possibility of significant crowding out and the smaller will be the offset. Potentially, if the economy is at full employment, the short-run demand-side offset will be close to zero. The percentage offset will also depend on the size of the spending program. A $1 trillion program would produce considerably more crowding out of private sector activity

and would fall well short of generating $800 billion in additional GDP. Thus, it would not be expected to provide an offset of $160 billion.

What about the productivity elasticity? Government general capital is roughly $10 trillion, according to the BEA, so $100 billion for additional infrastructure spending is roughly a (100/10000 =) 1.0 percent increase. Using the productivity elasticity of 0.03, that suggests that the level of productivity and output eventually rises by 0.03 percent. If GDP is $18 trillion, then $100 billion in extra infrastructure spending generates $5.4 billion in extra output per year, assuming an immediate effect of infrastructure spending on productivity. Assuming that the effective tax rate is 20 percent, that means the yearly revenue offset would be roughly $1.1 billion.

This long-term productivity offset is not affected by the state of the economy. Moreover, it keeps adding up over time. However, the supply-side gain doesn't all come out once. It takes years to build new infrastructure, and then businesses and consumers require years to adjust their behavior to the new capabilities. Moreover, the new infrastructure starts depreciating as soon as it is built. For purposes of this exercise, two scenarios are calculated: One which assumes it takes five years to hit the maximum productivity gains, and the other in which the combination of building time and behavioral adjustment means it takes 12 years until maximum productivity gains.

The next question is the appropriate horizon for the analysis. Conventional scoring uses a 10-year budget window. The fiscal year 2016 Budget Resolution,[5] however, specifies that the Joint Committee on Taxation use a 20-year window for any analysis that it provides on major legislation. So, it is clear that any tax legislation will be scored over two decades. It is less clear what would happen to spending legislation. Our expectation is that if or when spending legislation receives a dynamic score, the Congress will be interested in an apples-to-apples comparison with tax policy and that the 20-year window will be used. Nevertheless, in the current exercise we present the analysis over both horizons.

Over the 20-year horizon, assuming a 5-year phase-in, the productivity impacts add up to a total gain in national output of $85.5 billion and total federal tax revenue gain of $17.1 billion. If it takes longer to get infrastructure projects finished and the adjustment process takes longer, then the total revenue offset is $12.5 billion.

We can now combine the demand-side and supply-side revenue offsets. In an economy with slack and efficient implementation of infrastructure projects, a $100 billion infrastructure

investment would add as much as $165.5 billion to national output over the course of 20 years. As a result, the 20-year revenue offset for a $100 billion infrastructure project would be as much as $33.1 billion. In a full-employment economy where it takes longer to implement infrastructure projects, the 20-year national output gain would be $62.5 billion and the revenue offset would be $12.5 billion.

We did similar calculations for the 10-year budget window. In that case, the national output gain would range from $7.5 billion to $123.0 billion, while the potential revenue offset ranges from $1.5 billion to $24.6 billion. Note that infrastructure projects benefit greatly from dynamic scoring in the longer 20-year budget window, which reflects the long-lived nature of infrastructure investments.

Summary and Conclusions

We review recent trends in federal infrastructure spending and the policy case for dynamic scoring of revenue and spending legislation. The use of dynamic scoring depends upon the magnitudes of near-term impacts on economy-wide spending and the long-run impacts on productivity. We conclude that federal infrastructure investment should be dynamically scored. A simple example suggests that $100 billion in new infrastructure spending could generate an extra $62.5 to $165.5 billion in national output over the next twenty years, taking the initial investment into account. Assuming a 20 percent effective tax rate, this $100 billion infrastructure investment would generate a 20-year revenue offset ranging from $12.5 to $33.1 billion.

References

Aaron, H., "Discussion," in A. Munnell (ed.), Is There a Shortfall in Public Investment? Boston: Federal Reserve Bank of Boston, 1990.

Aschauer, D., "Is Public Expenditure Productive?" Journal of Monetary Economics, 23, March 1989, pp. 177-200.

Bom, P. R.D. and J. E. Ligthart, J. E., "What Have We Learned From Three Decades Of Research On The Productivity Of Public Capital?" Journal of Economic Surveys, 28: 889–916, 2014

Congressional Budget Office, "Public Spending on Transportation and Water Infrastructure, 1956-2014," Washington D.C.: March 2015.

Congressional Budget Office, "Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output in 2014," February 2015.

Garcia-Mila, T. and T. McGuire, "The Contribution of Publicly Provided Inputs to States' Economies," Regional Science and Urban Economics, Vol. 22, No. 2, June 1992.

Holtz-Eakin, D., "Public Sector Capital and the Productivity Puzzle," Review of Economics and Statistics, forthcoming, 1994.

Hulten, C. and R. Schwab, "Regional Productivity Growth in U.S. Manufacturing: 1951-1978," American Economic Review, 74, 1984, pp. 152-162.

Hulten, C. and R. Schwab, "Public Capital Forniation and the Growth of Regional Manufacturing Industries," National Tax Journal, December 1991, pp. 121-134.

International Monetary Fund, "Is It Time For An Infrastructure Push? The Macroeconomic Effects Of Public Investment," Chapter 3, Economic Outlook, October 2014.

Mandel, Michael and Diana Carew, "Infrastructure Investment and Economic Growth: Surveying New Post-Crisis Evidence," Progressive Policy Institute, March 2014.

Munnell, A., "Why Has Productivity Growth Declined? Productivity and Public Investment," New England Economic Review, January/February 1990a, pp. 3-22.

Munnell. A., "How Does Public infrastructure Affect Regional Economic Performance'?" in A. Munnell (ed.), Is Then a Shortfall in Public Capital Investment? Boston: Federal Reserve Bank of Boston, 1990b.

Footnotes

[1] Steve Kroft, "Falling apart: America's neglected infrastructure," CBS News. Access July 1, 2015. http://www.cbsnews.com/news/falling-apart-america-neglected-infrastructure/

[2] American Action Forum, "Beyond the Hyperbole: Dynamic Scoring and the Budget Process," Americanactionforum.org. Accessed July 1, 2015. http://americanactionforum.org/videos/beyond-the-hyperbole-dynamic-scoring-and-the-budget-process

[3] United States Congress, "An original concurrent resolution setting forth the congressional budget for the United States Government for fiscal year 2016 and setting forth the appropriate budgetary levels for fiscal years 2017 through 2025," Congressional Bills, Congress.gov. Accessed May 26, 2015. https://www.congress.gov/114/bills/sconres11/BILLS-114sconres11eah.pdf

[4] Tax Policy Center, "Average Federal Tax Rates for All Households, by Comprehensive Household Income Quintile, 1979-2011," Accessed May 26, 2015. https://knowledgecenter.unr.edu/help/manage/government_cite.aspx#publaw,

[5] United States Congress, "H.R. 5," Congressional Bills, Congress.gov. https://www.congress.gov/bill/114th-congress/house-resolution/5/text