



Economic Policy Institute

Executive Summary | July 1, 2014

THE SHORT- AND LONG-TERM IMPACTS OF INFRASTRUCTURE INVESTMENTS ON U.S. EMPLOYMENT AND ECONOMIC ACTIVITY

Executive Summary

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This executive summary presents the key findings and policy recommendations in *Short- and Long-Term Impacts of Infrastructure Investments on U.S. Employment and Economic Activity*, Economic Policy Institute Briefing Paper #374, by Josh Bivens. For the full report, please visit <http://www.epi.org/publication/impact-of-infrastructure-investments>.

In many respects, the beginning of the Great Recession in the United States should have ushered in a Golden Age of infrastructure investment. The nation entered the Great Recession having underinvested in public investments across the board, and infrastructure specifically, for decades. In its annual reports, the American Society of Civil Engineers (ASCE) has consistently given failing grades to the nation's infrastructure in a bid to attract policymakers' attention. And this slowdown in infrastructure investment, which began in the 1970s, has been convincingly linked to the slowdown in overall productivity growth that began in the same period. In short, the case for expanded infrastructure investments was strong even before the Great Recession hit.

The case was made much stronger in 2008 as the U.S. economy entered a long and steep recession driven by a severe negative shock to private spending by households and businesses. This reduced spending led to a large increase in private savings and sharp cutbacks in private investment, which together drove interest rates to historic lows. A large increase in infrastructure investment would have filled the hole in aggregate demand caused by the pullback in private-sector spending, and the extraordinarily low interest rates, which made deficit financing so attractive, could have enabled temporary tabling of the politically difficult choices about how to finance the increase.

The American Recovery and Reinvestment Act of 2009 (ARRA) was a promising beginning, providing for substantial short-term increases in public investment. But it was also essentially the end of such investment: By the end of 2011 ARRA's boost to the U.S. economy had passed, yet there remained a large gap between aggregate demand and potential supply, and a substantial chunk of the prerecession infrastructure deficit. Since then, political developments in the United States have led to extreme downward pressure on public spending of all kinds, and growth of spending on public investments across the board slowed to historic lows.

Yet six years after the beginning of the Great Recession, the case for a significant increase in infrastructure investments remains extraordinarily strong, as evident in recent calls for more infrastructure investments by former economic advisors to presidents Obama and Reagan. This report assesses the likely short- and long-term economic impacts under three different scenarios for expanded infrastructure investments.

It finds that these three potential infrastructure packages—rescinding the cuts scheduled under the budget “sequester,” investing in the energy efficiency of buildings and a “smart grid,” and undertaking an ambitious program of transportation and utilities investments— would yield from \$18 billion to \$250 billion for infrastructure investment. In the near term, these increases in infrastructure spending would boost gross domestic product (GDP) by between \$29 billion and \$400 billion and create between 216,000 and 3 million net new jobs (if financed with government debt). Any method of making these infrastructure investments deficit-neutral reduces their impact on near-term activity and employment, but every method of financing them except cuts to government transfers still leaves a net positive impact. And because we can predict the effect of these investments on the composition of labor demand (creating a disproportionate share of jobs that skew towards men and Latinos, and away from younger workers) we can recommend workforce policies to

ensure that traditionally underserved populations benefit from these investments. Finally our analysis conforms with a large and growing body of research persuasively arguing that infrastructure investments can boost even private-sector productivity growth—by as much as 0.3 percent annually, allowing macroeconomic policymakers to target significantly lower rates of unemployment. Extrapolating from the experience of the late 1990s, the NAIRU could be lowered by as much as 1 full percentage point by a sustained \$250 billion annual increase in infrastructure investment. This could mean that more than 1 million additional workers each year find employment.

Three scenarios for infrastructure investment examined in the report

The first scenario examines the \$18 billion in annual increased public investment (mostly infrastructure investment) that could be financed over the next decade by completely canceling the automatic spending cuts to discretionary programs in the U.S. federal budget in 2014 and 2015. These cuts (often known as the budget “sequester”) were enacted in 2011 and have since reliably driven down domestic spending in the federal budget. As this report shows, because the majority of public investment in the federal budget is actually funded through this discretionary spending, anything that cuts this spending will be extraordinarily likely to reduce infrastructure investment as well. This is admittedly a parochial scenario to examine, as it relies on the minutiae of U.S. budget policy to interpret the dollar amounts. But it could well illustrate how broad and unfocused efforts to simply rein in public spending across large categories in the name of fiscal responsibility are extraordinarily likely to lead to steep cuts in public investment. This is a warning applicable to policymakers in other countries, given the sharp cuts in public spending across the developed world.

The rush to cut spending that sweeps up public investments and infrastructure in its wake is particularly irrational: Those who make an economic case for reducing budget deficits claim to be concerned about public investment “crowding out” productive private capital formation. But preserving productive private capital formation by cutting productive public capital formation makes little sense.

The second scenario stresses a relatively new rationale for investing in infrastructure: making green investments that help the transition to an economy that emits fewer greenhouse gases (GHGs). Over 10 years an infrastructure investment package that combines the construction of a national “smart grid” with investments in the energy-efficiency of the nation’s building stock would yield \$92 billion in additional annual infrastructure investments, with roughly half stemming from the smart-grid construction and half stemming from energy- efficiency investments. While the *rationale* for this type of infrastructure package is relatively new, the *activities* undertaken are really quite traditional infrastructure investments: building new capacity for utilities and maintaining, repairing, and constructing new buildings and structures.

The third and most ambitious scenario aims to fully close the “infrastructure deficit” identified by the ASCE in a seven-year window by increasing infrastructure investments by \$250 billion annually over that period. While high-reaching, this level of increased annual spending is in line with budgets proposed by the Congressional Progressive Caucus (CPC) in the U.S. House of Representatives, so it is hardly at the fringe of U.S. political debate. This package would essentially be spread proportionately over all components of traditional infrastructure: highways, other transportation projects, utilities, and water treatment and sewage projects.

Short-term challenges and the role of infrastructure investment in meeting them

The need to boost aggregate demand is a bit less pressing than it was in 2009, but still remains acute. The U.S. economy continues to suffer from underappreciated degrees of economic “slack”—unused resources, with idle potential labor being the most damaging. This slack is still the result of deficient aggregate demand. A significant boost to demand would absorb some of this slack and would put idle resources and unemployed adults back to work in large numbers, with little danger at all of running into near-term capacity constraints. Further, unlike in many economic contexts, any boost to demand stemming from infrastructure investments in the near term is quite unlikely to spur a countervailing contractionary response from other macroeconomic policymakers—particularly those at the Federal Reserve.

Given these considerations, this report estimates the near-term effects of our three infrastructure investment scenarios on net new economic activity and employment as well as how much this net boost to economic activity and employment would change depending on how the infrastructure investments were financed.

On average, each \$1 billion in infrastructure investments yields \$1.6 billion in additional economic activity and roughly 11,000 net new jobs, if these investments are deficit-financed. Deficit-financed investments under the three different scenarios translate into increases in economic activity of \$29 billion, \$147 billion, and \$400 billion respectively. The associated employment increases are 216,000, 1.1 million, and 3 million jobs.

If the increase in infrastructure investment is financed through means other than issuing government debt, the boost to economic activity and employment is attenuated, although it remains positive in every mode of finance except for cuts to government transfer spending. If infrastructure investments are paired with equivalent cuts to transfers, the entire short-term stimulative effect will essentially be blunted. The smallest countervailing drag on infrastructure investment financing comes from progressive tax increases (i.e., tax increases that fall most heavily on higher-income households) and from regulatory mandates that compel infrastructure investments from private-sector households. Besides government transfers, the largest countervailing drag on infrastructure investment financing comes from regressive tax increases (i.e., tax increases that fall heavily on low- and moderate-income households).

While it is important to stress that these boosts to economic activity and employment are context-specific—they would significantly lessen were such investments undertaken when the U.S. economy is much closer to full employment, it is equally important to not underweight their importance because of their context-dependent nature. Put simply, the United States is stuck in what is known as a “liquidity trap” wherein the traditional tools of macroeconomic stabilization cannot easily remedy a shortfall of aggregate demand. This is inflicting enormous costs on households and there is little guarantee that these conditions will change reasonably soon absent a strong policy response. Further, while macroeconomists of the past generation often assumed that generating sufficient aggregate demand is a relatively simple task, recent analyses (for example by Summers (2013) and Krugman (2013)) have raised the possibility that much of the advanced world is entering a period of chronic demand shortfalls. Given this, the macroeconomic boost from infrastructure spending can, even in the long run, provide a positive “aggregate demand externality” that will serve as a buffer against falling into future liquidity traps.

Long-term challenges and the role of infrastructure investment in meeting them

In the longer term, two of the most pressing challenges faced by the U.S. economy are generating acceptable rates of productivity growth and ensuring that the benefits of this growth are broadly shared across U.S. households.

A now-extensive literature strongly suggests that a slowdown in the rate of public investment can largely explain the slowdown in overall productivity growth that began in the early 1970s. While this productivity growth temporarily reaccelerated in the late 1990s and early 2000s despite no increase in public investment, productivity growth has since slowed markedly, a slowdown that occurred even before the Great Recession. Greater commitments to public investments, including infrastructure, would help reverse the slowdown.

Increasing investments in infrastructure would also help address the significant rise in income inequality in the United States over the last three decades. Due to this rise in inequality, living standards of low- and moderate-income households have badly lagged both historic growth rates (i.e., those prevailing in the three decades before 1979) and overall average growth rates. Almost by definition, the benefits of infrastructure investments are more broadly shared than benefits generated by private investments, and so would provide some assurance that future productivity growth will boost living standards of low- and moderate-income households.

Additionally, infrastructure investments would tackle a related, decades-long problem—how to generate high-quality jobs, particularly for groups traditionally disadvantaged in the labor market: women, minorities, young workers, and workers without a four-year university degree. This report assesses the degree to which investments in infrastructure would *mechanically* affect the creation of high-quality jobs for these groups, and assesses the impact of these investments on job quality more generally.

Overall, it finds that infrastructure investments raise overall job quality by creating jobs that skew heavily away from the bottom fifth of wages, and disproportionately fall in the top four-fifths of the wage distribution. Less hopefully, among these traditionally disadvantaged groups, only Hispanics and workers without a four-year college degree would see disproportionate employment growth from infrastructure investments. Of course, while infrastructure investments in the U.S. economy do not *mechanically* create high-quality jobs for traditionally disadvantaged groups, they can be part of an overall economic strategy to support this kind of employment growth; the investments just may need to be paired with complementary policies to ensure that jobs in sectors heavily concentrated in infrastructure spending (construction and manufacturing, broadly) are equally available to all qualified groups of workers. And regarding younger workers, the relatively small share of young workers in construction and manufacturing could argue for substantial investment in apprenticeships and training in these sectors.

Policy recommendations

This report finds that expanded infrastructure investments would help address a wide range of challenges faced by the U.S. economy and yield large economic returns. In short, the case for a campaign to significantly increase infrastructure investments could hardly be stronger.

In the near term, increased infrastructure investment should be financed with government debt. Interest rates remain at historic lows and the short-term stimulative benefits of infrastructure investments are maximized if they are financed with debt rather than with tax cuts or cuts to other forms of public spending. If politics demands that increased infrastructure investments are paid for, progressive tax increases (i.e., those that fall heavily on higher-income households) would provide the smallest countervailing drag to near-term economic activity and employment.

For infrastructure investments aimed at mitigating the emission of greenhouse gases (GHGs), the optimal financing is government debt *even over the long run*. The key problem of GHGs is that they inflict an unpriced externality (the threat of global climate change) on the economy, making their emissions “too cheap.” This relative cheapness leads economic actors to invest too much in traditional (GHG-emitting) economic production and too little in GHG mitigation. One way to shift this (absent putting the correct price on GHG emissions) is through public investments in GHG mitigation that are deficit-financed; the deficit finance will, in a full-employment economy, lead to higher interest rates and less private investment in traditional (GHG-emitting) capital.

In the longer term, deficit-financed infrastructure investment is unlikely to do economic harm. As long as the social rate of return to infrastructure matches the social rate of return to private investment, deficit financing infrastructure investments will just produce the substitution of public infrastructure capital for private-sector capital. However, there may be other reasons to want infrastructure investments to be deficit-neutral in the longer run. In this case, issues of distributional equity should be considered. In particular, the decades-long rise in income inequality argues strongly that the burden of financing infrastructure investments may appropriately fall most heavily on higher-income households, which have seen their incomes grow much faster than average over this period.

To ensure that progress in providing quality employment to traditionally disadvantaged groups is not compromised, infrastructure investments should be paired with robust efforts to ensure equal opportunity for all qualified workers in jobs in infrastructure-heavy sectors such as construction and manufacturing, and with better apprenticeship programs. Besides government regulation and oversight, one key way to ensure this equal representation is through private labor-market institutions such as unions and worker centers for immigrant workers. Barriers to forming these labor market institutions should be removed. One key example of such barriers is the failure of labor law to keep pace with employer hostility to collective bargaining. Reforms that ensure that the ability of willing workers to form unions can help both in private-sector monitoring of access to good jobs as well as in the creation of apprenticeship programs that are beneficial to both employers and workers.

The last policy recommendation is to not generalize the results of this study to other countries, particularly in the global South. Infrastructure investments in the United States tend to be significantly less labor-intensive than other forms of spending because U.S. construction and manufacturing sectors are very capital-intensive. However, a key driver of this capital-intensity is the logic of globalization: Capital-abundant countries like the United States will focus production in capital-intensive sectors. But this logic works in reverse for poorer countries in the global South: Growing globalization will pressure labor-abundant countries to specialize in labor-intensive sectors. In short, the relative labor-intensity of infrastructure investments in other countries is likely very different than in the United States.

About the author

Josh Bivens joined the Economic Policy Institute in 2002 and is currently the director of research and policy. His primary areas of research include macroeconomics, social insurance, and globalization. He has authored or coauthored three books (including *The State of Working America, 12th Edition*) while working at EPI, edited another, and has written numerous research papers, including for academic journals. He appears often in media outlets to offer economic commentary and has testified several times before the U.S. Congress. He earned his Ph.D. from The New School for Social Research.

Acknowledgments

This work was prepared for a project undertaken by the International Labour Organization (ILO) to study the employment impacts of infrastructure spending. Financial support from the ILO is gratefully acknowledged.

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