

A public investment agenda that delivers the goods for American workers needs to be long-lived, broad, and subject to democratic oversight

Report • By [Josh Bivens](#) and [Hunter Blair](#) • December 8, 2016

Summary: A policy effort to boost public investment should include both “core” infrastructure investments such as building roads and “noncore” public investments, such as improving early child care. Both provide high rates of return. Public finance is the most accountable way of financing infrastructure. Tax credits dangled to entice private financiers and developers provide no compelling efficiency gains and open up possibilities for corruption and crony capitalism.

Summary

A welcome theme in the 2016 presidential election was a commitment to increasing public investment. Both candidates in the Democratic primary put forward detailed plans for such investments, and in the general election contest, Donald Trump generally criticized Hillary Clinton's five-year, \$275 billion plan for infrastructure as too small.

Now that the election is over, it is time to translate these campaign promises into reality, and get serious about correctly diagnosing and fixing America's chronic underinvestment in the roads, bridges, educational institutions and other things that make up the public capital stock. This policy brief makes a number of points that should inform evaluations of public investment plans issued by President-elect Trump and Congress.

The economic case for increased public investment, including infrastructure investment, is clear

- Public investment in the United States has lagged for decades. And net federal investment has actually been *negative* at times since the Great Recession, as the long-run downward trend was reinforced by sharp reductions in discretionary federal spending imposed by the 2011 Budget Control Act (BCA). This federal disinvestment has been amplified by state and local decisions to cut back investment. Infrastructure investment has predictably lagged with the broader public investment drought.
- As public investment has lagged, productivity growth has slowed markedly and private investment remains weak. The most reliable way policymakers can accelerate productivity growth is to step up public investment.
- Productivity growth is needed (if not sufficient) if we are going to raise typical workers' wages. Productivity growth is a measure of the additional income

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generated in an average hour of work in the economy. Rising productivity provides the *potential* for pay increases over time. Other policies are needed to ensure that this potential translates into reality, but productivity growth is a crucial element of rising living standards.

- While public investment has clear long-term growth benefits, it can also provide a near-term boost to an economy that still suffers from insufficient aggregate demand. Despite some claims that the United States is near full employment, there is still considerable productive slack (workers and capital sitting idle) in the economy that could be taken up by a burst of public investment to boost aggregate demand.

There should be a broad public investment portfolio

- A policy effort to boost public investment should include a broad portfolio of investments. “Core” infrastructure investments—building roads, bridges, transportation systems, water and sewer systems, and utility facilities—provide high rates of economic return. But so do many categories of noncore public investments, such as improving early child care and childhood education and investing in renewable energy and health care.
- Many of these noncore investments—particularly human-services investments—are at least as neglected as core infrastructure. This is particularly true if one considers the low pay in these sectors that impedes the development of a fully professionalized and motivated workforce.
- Human services investments would provide *at least* as much as, or more of, a near-term boost to economic activity and jobs than core infrastructure. Human services investments unambiguously create more *direct* jobs per dollar invested. And while core infrastructure investments create more spinoff jobs (in firms that supply affected industries and in companies supplying goods and services purchased by new wage earners), human services investments still generate more total jobs.

There is no need to reinvent the wheel: public finance is the most transparent, efficient, and accountable way of financing infrastructure

- We should be extremely wary of claims about free lunches that can be had by providing a larger private role in financing infrastructure investment. A larger private role in financing infrastructure provides no efficiency gains, but opens up many avenues for crony capitalism, corruption, and rampant inequality of public investments across communities.
- A poorly constructed plan with no real safeguards will result in private-sector profiteering while radically blunting the amount of net new investment generated.

This will in turn severely restrict the near- and long-term potential benefits of a public investment effort.

Lagging public investment leads to lagging productivity

As a share of the overall economy, public investment—government spending on the nation’s physical and human capital stock—has lagged considerably relative to its pre-1970s peaks. In the early 1990s, a number of researchers, led by economist David Aschauer (1989, 1990, 2000) identified a slowdown in public investment as a key source of the slowdown in overall productivity growth that plagued the U.S. economy after 1973. Another wave of researchers criticized Aschauer’s estimates of the effect of public investment on productivity growth, often on the simple grounds that they were “too large.” Some also criticized the first round of public investment research on technical statistical grounds.

But what really led to the abandonment of a push for more public investment was the productivity rebound in the late 1990s. This productivity renaissance—which was led by *private-sector* investment in information and communications technology (ICT)—seemed to have solved the problem that more public investment was meant to address.

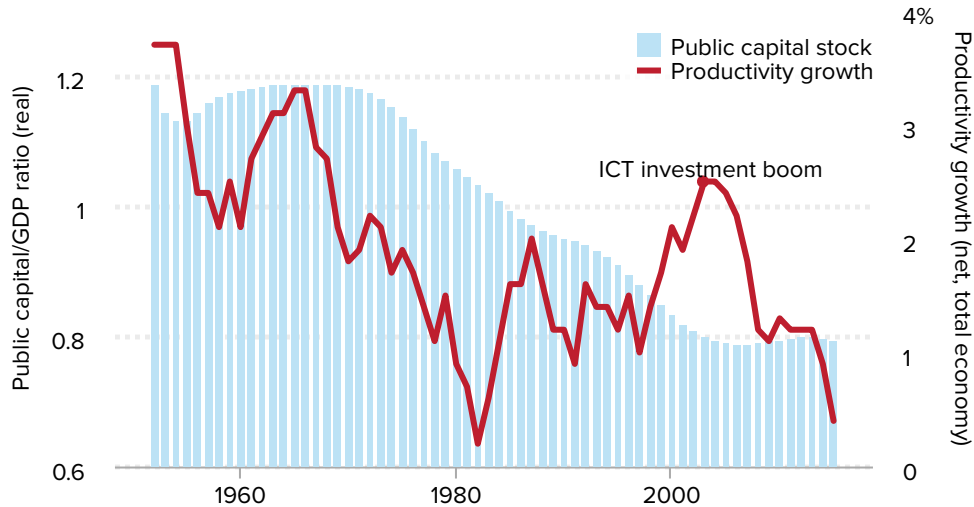
But productivity growth has slowed since 2005, and this deceleration should put public investment back front-and-center. As private investment has lagged in the last 15 years (even before the Great Recession), the most reliable policy lever for boosting productivity growth is boosting public investment. **Figure A** shows public capital stock as a share of potential gross domestic product (GDP), and productivity growth.¹ The slowdown in public investment has led to a steady decline in the size of the public capital stock relative to the overall economy.

Luckily, the most recent productivity slowdown has coincided with a resurgence of research showing that increased public investment could provide substantial gains in productivity. The new research—notably Heintz (2010)—addresses the technical criticisms of the earlier Aschauer work yet still finds large effects. Bivens (2012a) reviews a range of the empirical literature on public capital and productivity and finds strong evidence that increasing the growth rate of the American public capital stock would significantly boost overall productivity growth.

Figure A

More public capital is associated with faster productivity growth

Public capital stock as a share of GDP and productivity growth, 1952–2015



Notes: ICT stands for information and communications technology.

Source: Bureau of Labor Statistics' total economy productivity data and Bureau of Economic Analysis National Income and Product Accounts

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Public investment would address “secular stagnation” (the chronic shortfall of aggregate demand)

Besides boosting productivity in the longer term, increased public investment would also strengthen the American labor market in the near term by boosting aggregate economic demand.

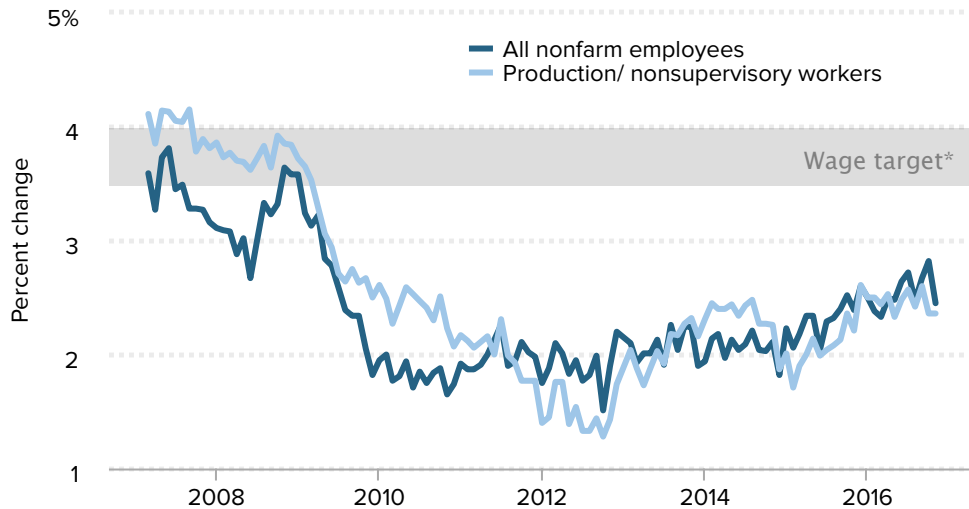
Strangely, many have declared that the U.S. economy has been nearly at full employment for essentially the past year, implying little short-run boost is possible from an increase in public investment that boosts demand.

There is no serious basis for this claim, and the complacency it breeds is dangerous. The clearest sign that we are not near full employment is the extraordinarily subdued wage growth, as shown in **Figure B**. Since the recovery from the Great Recession began, hourly wage growth (nominal) has never come close to 3 percent. In a healthy economy without slack demand, a reasonable pace of nominal wage growth is 3.5 percent to 4 percent. Further, given that the share of income accruing to labor fell precipitously in the early stages of the recovery and has yet to return to previous levels, a period of even faster growth is needed to claw back some of this depressed labor share of income.²

Figure B

Nominal wage growth has been far below target in the recovery

Year-over-year change in private-sector nominal average hourly earnings, 2007–2016



*Nominal wage growth consistent with the Federal Reserve Board's 2 percent inflation target, 1.5 percent productivity growth, and a stable labor share of income.

Source: EPI analysis of Bureau of Labor Statistics Current Employment Statistics public data series

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Full employment could finally be secured in coming years with a serious near-term public investment effort that was funded with debt. Moving to a higher public investment level in the long term, funded by progressive revenue sources or debt, would also solve many fears over “secular stagnation.”³ In short, chronic weakness of aggregate demand argues strongly for a greatly increased public investment effort.⁴

Public investment should be broadly defined to include more than infrastructure

Public investment can be roughly separated into two broad areas. “Core” infrastructure mostly refers to highways and other transportation facilities, water and sewer lines, and, sometimes, public utilities. One key reason why we have traditionally relied on the public sector to provide infrastructure is that many projects carry enormous upfront costs, but the marginal costs of providing services to additional users are very small. This tends to lead to “natural monopolies.” For example, once the New York City subway system was built, there was no serious way that a private competitor could make money by constructing a second subway system in New York City. Natural monopolies require accountable

regulation and management. Given that substantial public oversight was always going to be necessary, moving directly to public financing often made sense.

But this public role means that investments can be held hostage to political ideology. By many measures, after decades of ideological opposition to public spending, the United States has an infrastructure investment deficit.⁵ Given this deficit, a commitment to restoring core infrastructure is most welcome, particularly since there is a lot of evidence indicating that a large increase in infrastructure spending would increase national productivity.⁶

But other noncore forms of public investment also have the potential to provide large benefits, both by boosting demand in the short run as well as boosting productivity in the long run.⁷ Some of these noncore public investments could include providing resources for early child care and education, public health, and energy efficiency. The case for increasing noncore public investments is every bit as strong as for infrastructure. In fact, the rationale for noncore public investments may be even stronger in many cases because it is often *harder* for private-sector actors to claim economic returns on noncore investments than to claim returns on core infrastructure investments. For example, key economy-wide benefits of high-quality prekindergarten programs include the reduced likelihood that children in these programs encounter the criminal justice system when they grow up. Not having a criminal record obviously provides direct benefits to this group, while others benefit from not being the potential victims of crime. In short, the public benefits are even larger than the private benefits.

As an example of the large potential payoff of noncore public investments, consider investments in high-quality early childhood education. It is now clear that anything with the potential to narrow school achievement gaps between low- and high-income children could significantly boost national productivity. McKinsey (2009) estimates that completely eliminating the achievement gaps between children of different income groups would boost national income by roughly \$70 billion annually.

It is equally clear that these achievement gaps are almost fully set before children begin kindergarten. This argues strongly for the potentially significant economic payoffs of high-quality child care and early childhood development. Yet this high-quality early child care and development is blocked by both insufficient demand and supply. Tens of millions of American families find the cost of such care to be nearly prohibitive and the supply of such care lags in large part because working conditions in the industry are among the least favorable of all industries while wages are among the lowest in the economy (Gould 2015). An ambitious national investment to professionalize the industry and help offset the costs to American families would have a large payoff.⁸

Similarly, by making it easier to balance work-family commitments, providing affordable high-quality child care could boost women's labor force participation and spur economic growth.⁹ And if investments in health care gave underserved communities better access to care and improved their health, it could reduce lifetime health costs and add to quality of life.¹⁰

All forms of public investment are excellent near-term job-creation strategies

The type of public investment most frequently invoked in debates over fiscal stimulus is core infrastructure investment. For example, infrastructure investments in the American Recovery and Reinvestment Act (ARRA) were key to gaining support for enacting ARRA.

This is somewhat ironic. Core infrastructure does not provide any more near-term jobs than do more expansive forms of public investment such as investments in human services. All types of public investment have very high “bang-for-the-buck” as generators of economic activity and jobs, compared with any other fiscal policy lever. Only transfer payments particularly targeted to low-income households (for example, Medicaid or unemployment insurance or food stamps) come close in this regard.¹¹

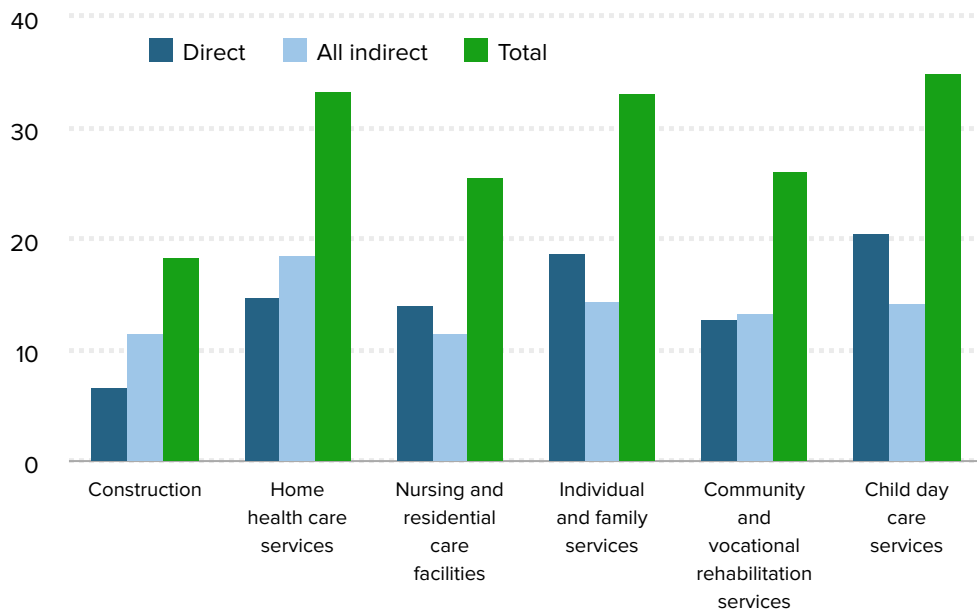
Human services investments (such as child care and home health care) generate three times as many *direct* jobs as core infrastructure spending. This direct job advantage significantly erodes, but remains, once indirect jobs are factored in. (These jobs include “supplier jobs” supported in supplier industries and related service sectors, and “responding” jobs supported by wages in the new jobs created.). This is evident in **Figure C**, which compares jobs supported by construction (the industry mostly closely associated with core infrastructure spending) with jobs supported by various human services sectors. Though not shown in the figure, construction jobs tend to have higher *responding* multipliers compared with human services jobs, due to the higher wages paid to construction workers. One implication of this is that if investment in human services is accompanied by measures to ensure higher wages in human services, it would increase responding jobs enough to at least partly offset any decline in direct jobs caused by these higher wages.

Similarly, while direct jobs supported by investments in human services employ greater shares of women and African American workers than direct jobs created by core infrastructure investments, these differences shrink once the indirect and responding jobs are considered. **Tables 1 and 2** provide the number of jobs created by a \$1 billion investment in construction and in child care and the shares of those jobs held by workers of different demographic and worker characteristics

As Table 1 shows, of the 34,228 jobs supported by each \$1 billion in child care spending, 60.0 percent are held by child care workers themselves. These child care jobs skew heavily towards women (who hold 94.5 percent of such jobs, versus 48.5 percent of all jobs economy-wide) and African American workers (17.7 percent of jobs, versus 10.9 percent economy-wide). These direct jobs are notably low wage, with 41.4 percent in the lowest wage fifth, and more than two-thirds (68.5 percent) in the bottom 40 percent of the overall wage distribution.

Figure C

Jobs supported by each \$1 million in final demand, by sector and type of job



Note: Indirect jobs include “supplier jobs” supported in supplier industries and related service sectors, and “responding” jobs supported by wages in the new jobs created.

Source: Authors' analysis based on employment requirements matrix from the Bureau of Labor Statistics and employment multipliers derived in Bivens (2015)

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However, when supplier jobs and jobs supported by induced spending are included, the share of total jobs accounted for by women shrinks from 94.5 percent to 73.7 percent, and the share accounted for by African American workers shrinks from 17.7 percent to 14.7 percent.

Table 2 shows that of the 17,785 jobs supported by each \$1 billion in construction spending, only 37.5 percent are accounted for by construction workers themselves, with supplier and induced jobs accounting for a much bigger share of the total. Also, while direct construction jobs skew heavily male (90.5 percent) and Latino (27.7 percent, relative to 15.8 percent economy-wide), they also are more heavily unionized (15.2 percent relative to 10.7 percent economy-wide and to an even lower share in the private sector).¹² Further, construction jobs are high-wage jobs: only 10.1 percent are in the bottom wage fifth economy-wide, and 70.2 percent of these jobs pay above the 40th percentile in the overall wage distribution.

When supplier and induced jobs are considered, the total jobs supported skew significantly less male, with the share held by men falling from 90.5 percent to 72.4 percent. They also skew less Latino, with this share falling from 27.7 percent to 21.2 percent.

Table **Jobs generated through \$1 billion investment in child care sector, all and by demographic characteristics of workers**

	Jobs gained					Percentage of jobs gained					Economy-wide
	Direct	Materials	K-input	Induced (responding)	Total	Direct	Materials	K-input	Induced (responding)	Total	
Totals	20,550	3,174	1,913	8,592	34,228	60.0%	9.3%	5.6%	25.1%	100.0%	
Gender											
Male	1,139	1,810	1,642	4,427	9,018	5.5%	57.0%	85.8%	51.5%	26.3%	51.5%
Female	19,410	1,364	271	4,165	25,210	94.5%	43.0%	14.2%	48.5%	73.7%	48.5%
Race											
Non-Hispanic white	12,611	2,018	1,268	5,691	21,587	61.4%	63.6%	66.3%	66.2%	63.1%	66.2%
Non-Hispanic black	3,647	348	106	933	5,034	17.7%	11.0%	5.5%	10.9%	14.7%	10.9%
Hispanic	3,245	596	437	1,362	5,640	15.8%	18.8%	22.9%	15.8%	16.5%	15.8%
Asian (including Pacific islander)	635	161	74	460	1,330	3.1%	5.1%	3.9%	5.3%	3.9%	5.3%
Other	411	52	28	147	638	2.0%	1.6%	1.4%	1.7%	1.9%	1.7%
Age											
Less than 25 years	5,077	456	182	1,254	6,969	24.7%	14.4%	9.5%	14.6%	20.4%	14.6%
25–54	13,167	2,275	1,463	6,014	22,918	64.1%	71.7%	76.5%	70.0%	67.0%	70.0%
55 years and older	2,305	443	268	1,325	4,341	11.2%	14.0%	14.0%	15.4%	12.7%	15.4%
Union status											
Covered	726	199	247	921	2,093	3.5%	6.3%	12.9%	10.7%	6.1%	10.7%
Not covered	19,823	2,975	1,666	7,671	32,136	96.5%	93.7%	87.1%	89.3%	93.9%	89.3%
Education											
Less than high school	1,498	387	317	833	3,034	7.3%	12.2%	16.5%	9.7%	8.9%	9.7%
High school only	5,342	908	724	2,421	9,395	26.0%	28.6%	37.9%	28.2%	27.4%	28.2%
Some college	8,490	893	496	2,560	12,438	41.3%	28.1%	25.9%	29.8%	36.3%	29.8%
Bachelor's only	4,285	734	281	1,835	7,136	20.9%	23.1%	14.7%	21.4%	20.8%	21.4%
Advanced degree	934	253	95	942	2,225	4.5%	8.0%	5.0%	11.0%	6.5%	11.0%
Wage quintile											
First (lowest)	8,518	680	171	1,762	11,130	41.4%	21.4%	8.9%	20.5%	32.5%	20.5%
Second	5,574	635	344	1,684	8,238	27.1%	20.0%	18.0%	19.6%	24.1%	19.6%
Third	3,479	617	452	1,715	6,263	16.9%	19.4%	23.6%	20.0%	18.3%	20.0%
Fourth	1,879	599	494	1,715	4,688	9.1%	18.9%	25.8%	20.0%	13.7%	20.0%
Fifth (highest)	1,099	642	452	1,715	3,909	5.3%	20.2%	23.6%	20.0%	11.4%	20.0%

Note: Employment statistics represent pooled data from 2009–2012. Supplier jobs include materials and k-input (capital-input) jobs; indirect jobs include supplier jobs and induced (responding) jobs.

Source: Authors' analysis of Current Population Survey Outgoing Rotation Group microdata

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Table 3 **Jobs generated through \$1 billion investment in construction sector, all and by demographic characteristics of workers**

	Jobs gained					Percentage of jobs gained					Economy-wide
	Direct	Materials	K-input	Induced (responding)	Total	Direct	Materials	K-input	Induced (responding)	Total	
Totals	6,664	2,714	2,176	6,230	17,785	37.5%	15.3%	12.2%	35.0%	100.0%	
Gender											
Male	6,028	1,773	1,868	3,210	12,879	90.5%	65.3%	85.8%	51.5%	72.4%	51.5%
Female	636	943	309	3,020	4,908	9.5%	34.7%	14.2%	48.5%	27.6%	48.5%
Race											
Non-Hispanic white	4,264	1,852	1,442	4,127	11,685	64.0%	68.2%	66.3%	66.2%	65.7%	66.2%
Non-Hispanic black	335	257	120	677	1,388	5.0%	9.5%	5.5%	10.9%	7.8%	10.9%
Hispanic	1,846	442	498	987	3,773	27.7%	16.3%	22.9%	15.8%	21.2%	15.8%
Asian (including Pacific islander)	122	122	85	333	662	1.8%	4.5%	3.9%	5.3%	3.7%	5.3%
Other	97	44	32	106	279	1.5%	1.6%	1.4%	1.7%	1.6%	1.7%
Age											
Less than 25 years	727	332	207	909	2,175	10.9%	12.2%	9.5%	14.6%	12.2%	14.6%
25–54	5,129	1,957	1,665	4,361	13,111	77.0%	72.1%	76.5%	70.0%	73.7%	70.0%
55 years and older	808	427	305	960	2,500	12.1%	15.7%	14.0%	15.4%	14.1%	15.4%
Union status											
Covered	1,010	193	281	668	2,151	15.2%	7.1%	12.9%	10.7%	12.1%	10.7%
Not covered	5,654	2,523	1,895	5,563	15,636	84.8%	93.0%	87.1%	89.3%	87.9%	89.3%
Education											
Less than high school	1,380	289	360	604	2,633	20.7%	10.7%	16.5%	9.7%	14.8%	9.7%
High school only	2,758	876	824	1,756	6,214	41.4%	32.3%	37.9%	28.2%	34.9%	28.2%
Some college	1,673	779	564	1,856	4,873	25.1%	28.7%	25.9%	29.8%	27.4%	29.8%
Bachelor's only	709	568	320	1,331	2,928	10.6%	20.9%	14.7%	21.4%	16.5%	21.4%
Advanced degree	143	204	109	683	1,139	2.1%	7.5%	5.0%	11.0%	6.4%	11.0%
Wage quintile											
First (lowest)	670	443	194	1,277	2,586	10.1%	16.3%	8.9%	20.5%	14.5%	20.5%
Second	1,313	529	392	1,221	3,455	19.7%	19.5%	18.0%	19.6%	19.4%	19.6%
Third	1,651	600	514	1,244	4,009	24.8%	22.1%	23.6%	20.0%	22.5%	20.0%
Fourth	1,707	582	562	1,244	4,095	25.6%	21.5%	25.8%	20.0%	23.0%	20.0%
Fifth (highest)	1,323	561	514	1,244	3,641	19.8%	20.7%	23.6%	20.0%	20.5%	20.0%

Note: Employment statistics represent pooled data from 2009–2012. Supplier jobs include materials and k-input (capital-input) jobs; indirect jobs include supplier jobs and induced (responding) jobs.

Source: Authors' analysis of Current Population Survey Outgoing Rotation Group microdata

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The single most important finding of any public investment jobs analysis is that *all* forms of public investment have extraordinarily high bang-for-the-buck as job-generators compared with other forms of fiscal policy.¹³ And all forms of public investment would generate large long-run economic benefits. Additionally, a mix of “core” infrastructure spending and noncore investments, particularly in human services sectors, would provide jobs for a very wide range of workers. Finally, when assessing which groups are disproportionately benefiting from such investments, it is crucial to consider not only the direct jobs created but the total jobs created.

The financing mechanisms of infrastructure can radically change its benefits

It is crucial to note that the gains highlighted above assume that a policy change actually manages to produce net new infrastructure investment. This generally should be a straightforward proposition. Governments—federal, state, and local—have been financing infrastructure for decades, and it works. But the plans that President-elect Trump has issued so far are odd enough, along many dimensions, to cast doubt on any assurances of substantial net new investment. In fact, unless further clarifications and safeguards are included with these plans, they may lead to no net new investment at all, even as hundreds of billions of taxpayer dollars are spent.

In coming days, Trump’s plan will invariably be described as a simple *public-private partnership* or *P3*. P3s are standard models for financing infrastructure that could *in theory* have little downside compared with direct public provision. However, the real-world record of P3s is much spottier.¹⁴

Even more concerning than the downside of real-world P3s is the fact that the Trump plan is not even a P3. It is instead, at least in its embryonic form, simply a way to transfer money to developers *with no guarantee at all that net new investments are made*.

To see why, it is important to know what a textbook P3 would look like and what are the most common rationales for using them. P3s are long-term contracts between government and private companies to provide and finance infrastructure. They sit somewhere between standard public provision and full privatization of infrastructure. Say that a state or local government wants an additional road connecting two towns, but is constrained for some reason (usually by simple anti-tax politics) from raising the money itself to publicly finance the project. A crucial part of this process is that the democratically elected and accountable government ensures that the project is in the public interest. Having done this, the government can then negotiate with private financiers and developers to get the project built.

Sometimes, investors get tax breaks for purchasing bonds issued by the developer to finance the project. The developers receive a revenue stream of some kind in exchange

for their investment, and this revenue can be used to pay back debt- and equity-holders in the project. Often this is an explicit user fee, such as a toll for using a road. P3s based on explicit user fees are clearly not going to facilitate investments in underserved communities that are unable to provide profitable revenue streams. In theory, this could be addressed with clever “shadow user fees,” such as minimum revenue streams guaranteed by the public partner. But such alternative mechanisms raise numerous new questions of corruption. For example, who makes sure that these minimum revenue streams are fair and only pay for the value of the infrastructure, as opposed to just constituting pure giveaways to private profiteers?

Supporters of P3s allege that they add profit incentives to support infrastructure provision. Theoretically, this profit motive could filter out so-called “bridges to nowhere” that politicians approve to get votes or curry favor, because a private partner will actually want an economic return on investment. In a well-managed P3 in which infrastructure operators face some competition, the private partner is also expected to weigh the long-term costs of deferring maintenance, specifically the loss of users and their fees if the quality of the infrastructure deteriorates quickly. This could lead to better maintenance and repair, particularly if political incentives reward breaking ground on new projects (ribbon-cutting ceremonies) over the unglamorous work of maintenance and repair on existing assets. And to the extent that there is competition, it could lead to more efficient pricing as users pay the costs of infrastructure (though, as always, simple efficiency should not be the sole criteria of policymakers).

As noted before, however, much standard infrastructure provision is characterized by economies of scale that lead to natural monopolies. So, even “private” operators in P3s will likely have to be tightly managed and regulated, and the hand-waving benefits of “competition” are unlikely to appear (monopoly is, by definition, absence of competition). In short, even textbook P3s are not some shortcut around the need for government to be effective and well-run.

And in the real world, there are many ways that P3s can go badly. For example, some P3s have included noncompete clauses that protect the private partner’s investment. These clauses can hamstring the ability of the public sector to build further infrastructure in the public interest. For instance, there may be much more traffic than was anticipated when a P3 was used to build a toll road. The public partner might then wish to build more freeway lanes to help alleviate the new traffic, but the private partner could sue to protect those unexpectedly high profits on its toll road. This is not an academic concern—exactly this happened with the P3 that provided California’s State Route 91 Express Lanes.¹⁵

Or the private partner may ramp up prices (user fees) or reduce the service quality to cut costs and maximize profits. Since so much infrastructure has the character of a monopoly, customers are not free to just switch to other providers. Another issue with real-world P3s is renegotiation. Private companies have incentives to engage in opportunistic renegotiation. Such renegotiations reverse *all* of the benefits of ever engaging the private sector in infrastructure provision and financing. Take, for example, the case where a P3 toll road is built, but traffic is lighter than forecast, so revenue disappoints. The private

operator might try to renegotiate higher tolls or even minimum revenue guarantees from a public partner.

The international evidence on P3s suggests that renegotiation is a major problem.¹⁶ Private partners tend to initiate a renegotiation fairly quickly, and they tend to get bailed out when they run into financial problems. Most of the time, these bailouts occur due to the poor performance of the private sector in forecasting the revenue stream of say, a toll. In short, the use of P3s to make infrastructure investments without the whole endeavor turning into crony capitalism depends heavily on strong regulation and the willingness to *not* renegotiate and bail out the private partner when it fails.

Frankly, this would raise alarm bells about the incoming Trump infrastructure plan even if it was a simple P3. But the Trump infrastructure plan is not just a simple P3. Instead, the details released so far indicate only that it is a plan to give tax credits to private financiers and developers, period. Specifically, Trump's plan is to provide a tax credit equal to 82 percent of the equity amount that investors commit to financing infrastructure. The lack of further details and clarification is daunting and raises all sorts of questions.

Who decides which projects need to be built? How will the Trump administration provide communities with needed infrastructure investments that are unlikely to be profitable for private providers (for example, lead-free water pipes in Flint, Michigan)? Are investors in *already existing* P3s eligible for the credit, or is it restricted to new investment? If private investors in already existing P3 arrangements are eligible, how do we ensure these (not cheap) tax credits actually induce net new investments rather than just transferring taxpayer largesse to operators of already existing projects? If we assume tax credits will be restricted (on paper, anyhow) to just *new* investment, how do we know the money is not just providing a windfall to already-planned projects rather than inducing a net increase in how much infrastructure investment occurs?

To be fair, even well-planned infrastructure initiatives—such as the aid to state and local governments for infrastructure investment in the American Reinvestment and Recovery Act (ARRA)—can theoretically simply crowd out already-planned investment instead of creating net new investment on a dollar-for-dollar basis.¹⁷ But a tax credit for private-sector provision introduces an additional complication. Instead of getting net new investment, states and localities may just change how they will finance the infrastructure investment they have already planned.

Trump's plan frames the infrastructure problem as a lack of innovative financing options. This is nonsense. The problem is that politicians don't want to ask taxpayers to pay for valued infrastructure.

But, even in P3s, these taxpayers *do* pay. They just pay "user fees" or "tolls" to private entities rather than "taxes" to government. Thinking that the former is clearly superior is pure ideology. After all, nothing in theory really stops governments from financing infrastructure directly and paying for it with their own tolls and user fees. In fact this happens all the time. But too often it is simply assumed that bringing in the private sector is always and everywhere more efficient and innovative. This is false. And this ideology-

based outlook will lead to plans that radically reduce—and may even totally erase—any net *new* investment actually induced.

The bottom-line for the public investment agenda

The long game regarding the public investment agenda should be to boost public investment levels *permanently*. A new research literature has bolstered claims that public investment can help long-run growth. At the same time, macroeconomists are increasingly concerned that secular stagnation may well mean that private investment will be insufficient to keep the economy pinned at full employment in coming years. To maximize the aggregate demand benefits of a *permanent* increase in public investment while allaying concerns over deficits, this permanent increase could be funded with progressive revenue sources.

Any infrastructure-investment effort should certainly not be “funded” with one-time tax gimmicks that do not actually raise revenue over the long run. Corporate tax reform (often identified as the most likely potential source for financing infrastructure investments in the near term) should focus like a laser on boosting revenue in the long run and ending the deferral loophole in the corporate income tax code. Everything else is largely a distraction from this larger effort. Gimmicks that lead to long-term *losses*—such as a “repatriation holiday”—should be off the table.

Finally, promises that a free lunch can be had by relying heavily on private investors for infrastructure should be viewed skeptically. Tax credits dangled to entice private financiers and developers to provide infrastructure provide no compelling efficiency gains and mostly just open up possibilities for corruption and crony capitalism.

About the authors

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 co-authored 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 often appears 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.

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Endnotes

1. We use potential GDP as the denominator to keep steep economic downturns (such as the Great Recession) from boosting our measure of public capital stock. The capital stock is the result of cumulative years of public investment and hence provides an excellent measure of the payoff of public investment efforts.
2. The share of corporate income received by workers in the form of wages and benefits fell sharply during the recovery from the Great Recession and is at its lowest point in decades, signaling that workers have not regained the bargaining power necessary to secure wage increases. See EPI's nominal wage tracker <http://www.epi.org/nominal-wage-tracker/> for data on both nominal wage growth as well as data on the shift from labor compensation to corporate profits. See Bivens (2015) for the argument on why a healthy nominal wage target for today's American economy should be something like 3.5 percent to 4.5 percent for the next couple of years.
3. The biggest difference between public investment as near-term boost versus public investment as a long-term growth strategy is how it is funded; see Bivens (2014) on this point. The short-term stimulus benefits of public investments are maximized if they are funded with debt. They are almost totally neutralized if they are funded by cuts to other government spending, including transfer programs. The stimulus benefits are attenuated, but still present, if funded with broad-based taxes. Finally, funding public investment with progressive revenue sources would still deliver considerable stimulus benefits (roughly two-thirds as much as financing with debt).
4. See Summers (2016) on the case for worrying about secular stagnation, and why a higher level of infrastructure investment would be a well-targeted response to such worries.
5. The American Society of Civil Engineers (ASCE), admittedly not a completely disinterested group, releases an annual report on the nation's infrastructure shortfall, which can be found at: <http://www.infrastructurereportcard.org/http://www.infrastructurereportcard.org/>
6. See Bivens (2012a) for evidence on the estimated high rates of return for core infrastructure investments.
7. See Bivens (2012b) for evidence on the estimated high economic returns of increasing noncore public investments.
8. See Whitebook et al. (2001) on why higher compensation is needed to boost quality in the child care sector.
9. See Bivens et al. (2016) for estimates of how one model child care policy (capping families' expenditures on child care at 10 percent of family income) could boost participation of women in the labor force.
10. See Hoynes, Schanzenbach, and Almond (2014) on the long-run health benefits of childrens' exposure to nutritional assistance. See Brown, Kowalski, and Lurie (2015) on the potential economic returns to childrens' exposure to health insurance coverage.
11. See Bivens (2011) on the agreement among both public and private forecasters on the relative efficiency of different forms of fiscal stimulus.
12. Given well-known problems in disaggregating the construction sector into residential versus commercial construction, it is possible that commercial construction (which would be the subsector boosted by infrastructure investments) might employ lower shares of Latino workers

than either the residential or the overall sectors. Residential construction accounts for roughly half of the total sector, so a large overrepresentation of Hispanic workers in that subsector could drive up their share in the overall sector, leading to overstatements of how many Hispanic workers would be supported by an increase in infrastructure investment. Bivens (2014) tried to account for this possible bias, but found little evidence that it was large enough to detect. Conversely, Bivens (2014) did find that the share of unionized workers is much higher (high enough to detect) in the commercial sector, so the share of jobs supported by infrastructure that are unionized is certainly larger than Table 2 indicates.

13. Recent retrospective assessments of the American Recovery and Reinvestment Act (ARRA) find extraordinarily powerful job-creation stemming from its increases in both core infrastructure (see Wilson (2012)) and noncore public investments (see Chodorow-Reich et al. (2015)).
14. See Blunt (2016) for an example of a P3 gone wrong.
15. See Engel, Fischer, and Galetovic (2014) for details on this project and other instances of P3s going badly.
16. See Engel, Fischer, and Galetovic (2014) on this international evidence.
17. For the record, research shows the ARRA investments worked very well, with substantial net new investment created. On this, see Leduc and Wilson (2015).

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