8 A Mad Scramble for Infrastructure Dollars

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In response to then president-elect Obama's proposal for a massive stimulus plan to include large sums for infrastructure construction and repair, America 2050, a panel of twenty-six of the nation's infrastructure experts, issued a statement of principles for effective infrastructure spending. "When it comes to infrastructure, America has been flying blind," said the panel. "We should invest in projects that achieve job creation in the short run while creating the foundation for long-term economic success and energy independence."

Early indications are that the Obama administration continues to fly blind, despite assurances to the contrary. Although it speaks of a disciplined effort to ensure that infrastructure funding is not wasted but used only on job-stimulating and economic growth-promoting projects, the mad flurry of activity in the first hundred days has led to a rush for the money, with no rational system for ensuring that the stated goals are achieved.

Driven by a desire to achieve instant economic results, the administration has created intense competition within and between states for infrastructure funding. The pot of money is large—about fifty billion dollars—but when spread across the nation it gets thinner. The American Association of State Highway

and Transportation Officials announced that it could spend all the fifty billion, plus fourteen billion more, on five thousand "ready-to-go" highway and bridge projects. The nation's mayors offered a list of 11,391 infrastructure projects in 427 cities requiring seventy-three billion. Transit officials have 736 shovel-ready projects costing over twelve billion. Absent a well-conceived system for allocating these funds, political rent seeking, not good infrastructure policy, will be the result.

The chapter examines the rationale behind my principal conclusions, which follow:

1. Despite the unprecedented commitment of federal taxpayer dollars in the American Recovery and Reinvestment Act of 2009 (ARRA), the 2009 Omnibus Appropriations Act, and President Obama's proposed 2010 budget, the nation's infrastructure will remain dramatically underfunded as long as we continue to rely exclusively on federal taxpayer funding. Obama administration policies do little to facilitate or encourage the private investment necessary to meet the nation's infrastructure challenges.
2. Although the president has issued guidelines to ensure that ARRA funding achieves programmatic results, provides economic stimulus, and achieves long-term public benefits, the existing bureaucratic structure, combined with the persistence of legislative earmarks and the realities of congressional politics, guarantee that federal infrastructure funding will continue to be largely ad hoc.
3. Favoring public over private supply of infrastructure and a barely visible commitment to market assessments of supply and demand make it almost impossible for the federal government to prioritize infrastructure investments in relation to both other competing infrastructure projects and other categories of federal spending.

4. The long-term economic growth benefits of enacted and proposed infrastructure spending will be far less than those claimed by the Obama administration because of its inability to prioritize economically and its conflicting policy objectives.

President Obama's Infrastructure Initiatives

During the campaign, candidate Obama made frequent reference to the need for investment in both maintenance and repair of existing infrastructure and the creation of new twenty-first-century infrastructure adapted to a digital and green future. With respect to both objectives, candidate Obama had widespread support. The American Society of Civil Engineers estimates that it would take $2.2 trillion from all levels of government to bring America's roads, bridges, and water-related infrastructure into a state of good repair. Other estimates of the nation's infrastructure deficit range from $1.6 to $3.5 trillion. With respect to new infrastructure, there is wide-ranging agreement on a need for constant improvement, along with widely varying cost estimates. Just for a "smart grid" that would increase efficiencies in electricity use and distribution, estimates range from $100 to $400 billion during the next decade.

Anticipations were that as much as half or more of the stimulus package would go for infrastructure. The reality is very different. Less that 13 percent of the funds appropriated in the American Recovery and Reinvestment Act of 2009 (ARRA) is dedicated to infrastructure, even broadly defined. A more realistic accounting puts the infrastructure share at about 7 percent. President Obama has also signed the Omnibus Appropriations Act of 2009, which does nothing to change infrastructure spending priorities. Indeed much of the infrastructure spending in that bill is in the form of thousands of "earmarks," a special-interest budgeting tactic the new president had promised to end.

President Obama's proposed 2010 budget includes a less than 3 percent increase over 2009 and 2008 infrastructure spending, an amount that will barely dent the existing maintenance deficit, leaving little for new infrastructure development. The president is proposing a five-year, five-billion-dollar state grant program for high-speed rail, but that, too, barely dents the forty billion estimated cost of high-speed rail in California alone. The proposed 2010 Department of Energy budget includes an unspecified amount for the smart grid, but overall the department's 2010 budget is unchanged from the projected 2009 budget, all of which is before the earmarkers in Congress get their hands on the budget.

The modest projected infrastructure spending in the 2010 budget is not surprising, given the massive increase in federal debt accumulated in just the opening three months of the Obama administration. For the same reason, there is little chance we will see significant increases in infrastructure funding in the next few budget cycles. Although we will see modest investments in digital and "green" projects, these are likely to be largely symbolic. Absent dramatic increases in funding, the biggest infrastructure issues for President Obama are how to prioritize and manage the expenditure of existing resources.

The president's total surrender on earmarks in the omnibus spending bill does not bode well for a new and better approach. On March 20, however, the president did issue directives on the expenditure of ARRA funds that focus on transparency and limiting the influence of registered lobbyists but do little to jump-start a system for prioritizing federal infrastructure spending. The president does call for "merit-based selection criteria" meant to assure that ARRA funding (1) achieves programmatic results, (2) provides economic stimulus, and (3) achieves long-term public benefits. But those criteria are to be applied by department and agency heads who remain free to define programs and operate independently. Absent fundamental change to the existing federal structure for

funding, construction, and maintenance of infrastructure, the president's directives will have little effect; future appropriations bills will continue to be loaded with funding for local projects having no necessary relation to national infrastructure priorities.

After talk of three or four hundred billion for infrastructure, ARRA was a disappointment for infrastructure proponents. However the thousands of items in the 407-page bill are categorized, the total falls far short of projected needs. Using the broadest possible definition of infrastructure, ARRA contains approximately $100 billion of authorized spending. If all these funds were applied to reducing the existing infrastructure deficit (based on the most conservative estimate of $1.6 trillion), it would take sixteen years of annual appropriations at the same level to accomplish the task. But less than half of the $100 billion is destined for infrastructure of the type included in the deficit estimates, and a significant share of that will go for new facilities rather than maintaining existing infrastructure. In addition, the administration's emphasis on shovel-ready projects means that much of the funding will go for projects that were already funded, allowing state and local governments to divert those funds to deficit reduction or other uses.

In summary, ARRA includes thirty billion dollars for highways and bridges, including those on Indian and federal lands; nearly seven billion for transit; six billion for clean water; four billion for the Army Corps of Engineers; two and a half billion for airports, including one billion to the Transportation Security Administration for explosives-detection machines; more than one billion for rural utilities; and one billion for military facilities. The development of high-speed rail gets eight billion, a fraction of the anticipated costs for a national system, and the much-ballyhooed smart grid gets four and a half billion, less than 5 percent of the most optimistic estimates of the cost.

But if it falls far short of actual infrastructure needs, ARRA does include something for just about everyone under the infrastructure heading. There is fifty million dollars apiece for the Central Utah

Project and the California Bay Delta; $375 million for Corps of Engineers projects on the Mississippi River, a billion each for veterans' hospitals, community development, and the Bureau of Reclamation; twenty-five million for the Smithsonian; seven hundred million for the National Park Service; $140 million for the Coast Guard; one and a half billion for homelessness prevention and rehousing; two billion for redevelopment of abandoned and foreclosed homes; three hundred million for diesel emission reduction; fifty million for the preservation and restoration of national cemeteries and monuments; fifteen million for the preservation of historically black colleges and universities; and much, much more.

The enacted 2009 Omnibus Act contains even more of a grab bag of spending. Many of the nine thousand earmarks in the act are for infrastructure but with no pretence that these projects are part of a program of prioritized spending. The same is sure to be true of the 2010 spending bill, unless President Obama finds the political will to eliminate earmarks. On that campaign promise he has failed once and is likely to fail again. Despite Senator William Proxmire's Golden Fleece Awards of the 1970s and 1980s, outrage in the 2008 presidential election over Alaska's "bridge to nowhere" and candidate Obama's pledge to eliminate them, earmarks have increased from ten in 1982 to five hundred in 1991, six thousand in 2005, and nine thousand in 2009.

Although President Obama's proposed 2010 budget does contain funding for high-speed rail, the smart grid, and other infrastructure innovations, the amounts proposed are a fraction of what the systems are projected to cost. An even bigger problem is that they conform to the modal approach of earlier federal budgets. Those budgets funded infrastructure on the basis of various modes of transportation and other public goods and services, with separate budgets for highways, public transit, airports and air travel, ports and water navigation, and so on and now budgets for the smart grid, for health information services, and for green infrastructure.

That modal approach, combined with the rigid structure of the federal bureaucracy, ensure that integrated infrastructure planning and prioritization is impossible.

Finally, President Obama has embraced the concept of a National Infrastructure Reinvestment Bank, first suggested in 2007 by the Commission on Public Infrastructure at the Center for Strategic and International Studies. According to the president, ''repairs will be determined not by politics, but by what will maximize our safety and homeland security; what will keep our environment clean and economy strong.'' In the commission's vision, the bank would exist not to overcome inefficiencies in capital markets but rather to bring greater efficiency to the expenditure of federal funds and, critically, to raise additional funds from existing capital markets. In addition to drawing on private capital, the bank would circumvent the inefficient modal funding method. In the president's vision, the bank would invest $60 billion over ten years, far short of what is needed, but at least the concept holds the promise of overcoming some of the existing failings of federal infrastructure investment.

The Role for Federal Infrastructure Spending

Obvious examples of infrastructure are roads, bridges, sidewalks, sewer and water systems, railroads, telephone systems, air and water navigation systems, and the Internet. Building on property scholar Carol Rose's ''comedy of the commons,'' some economists now count as infrastructure such natural systems as wetlands (providing water purification services), forests (carbon sequestration), air and water (pollution sinks), and bees (pollination). President Obama's March 20, 2009, directive on stimulus spending includes environmental protection as infrastructure.

Three characteristics define these and other resources as infrastructure: (1) the resource is in demand as an input to the production of other goods and services, (2) the resource can be consumed by a significant number of people without affecting the benefits experienced by other consumers, and (3) the resource is an input to a wide range of private, public, and nonmarket goods and services. Based on this definition, some of what the Obama administration has counted as infrastructure spending—weatherization of homes and homelessness prevention and rehousing, for example—is actually wealth transfers. Those transfers may create some new jobs in the weatherization and housing sectors but will necessarily take resources from other productive sectors of the economy.

The federal government's role in infrastructure spending should depend on the answers to three questions: (1) When should infrastructure be publicly supplied? (2) For publicly provided infrastructure, what type, quantity, and quality should be supplied? (3) Which public infrastructure should be supplied by the federal government, and which by state or local governments?

A mistaken presumption favoring public infrastructure. Beyond the pervasive call for more regulation and a renewed skepticism about markets, the administration has not evidenced overt opposition to private infrastructure. But there has been no suggestion from President Obama, his transportation secretary, or other administration officials that private ownership or participation might be preferable in some circumstances. Rather, in the rush to fund infrastructure projects to stimulate the economy, it is presumed that all the money, at least for traditional infrastructure such as roads and transit, will be spent directly by the government.

There is a risk that the current economic recession, which many blame on capitalist excess, will lead to skepticism about the experiments in private infrastructure that have occurred over the last two decades. Encouraged by several free market think tanks and some academic literature, state and local governments have privatized

both ownership and management of infrastructure, including municipal water and sewer systems, highways, bridges, and solid waste collection and disposal. Those experiments have created opportunities for the investment of private capital in public infrastructure, and have generally worked well in terms of both quality of service and efficiency, although voters have sometimes objected, not surprisingly, when user fees are imposed for what were previously perceived to be free public services.

Several state, local, and foreign governments are far ahead of the federal government in encouraging private supply and management of infrastructure, relying on user fees and other market forces to better link infrastructure supply to demand, and reforming existing law to allow for public-private partnerships. The City of Oakland, California, for example, has recently reached an agreement for a private investment of $150 million in port facilities with promises of another $350 million. The State of Virginia is reviewing a $3.5-billion proposal from an Illinois company to take over management of the state's ports. Texas enacted legislation in 2003 (strengthened in 2005) to facilitate collecting highway tolls by means of public-private partnerships. California has recently adopted legislation enabling several such public-private partnerships. Pennsylvania governor Ed Rendell has proposed that his state lease the Pennsylvania Turnpike to a private operator to cope with a $1.7 billion annual shortfall in the commonwealth's budget for surface transportation infrastructure. Public-private highways, tunnels, and bridges are operating successfully in several other countries including Australia, Canada, France, and Italy.

To his credit, President Obama's 2010 transportation budget proposal does call for "better targeted spending to help communities explore innovative solutions like road pricing to reduce congestion." But there is no indication that the administration has considered public-private approaches like those noted above. Nor does it appear that the administration has heeded the February 2009 report of the National Surface Transportation Infrastructure

Financing Commission, which urges private-sector financial participation and user fee-based funding approaches. That report also confirms that ARRA funding will have little impact on the short- or long-range infrastructure funding challenges faced by the federal government.

Rather than presume government should supply all infrastructure, the Obama administration should take the opportunity of the interest in infrastructure to develop good policies on its public and private provision. The National Research Council provides guidance to developing such policies: "Infrastructure is a means to other ends, and the effectiveness, efficiency, and reliability of its contribution to these other ends must ultimately be the measure of infrastructure performance."

Bridges to nowhere and many other projects funded by congressional earmarks, including projects funded under ARRA and the 2009 Omnibus Spending Bill, whether public or private, will fail that performance test. But many projects that meet the test will pass with even higher marks if privately owned or managed. The key is in knowing which projects should be public and which private. Nothing in the Obama policy pronouncements suggests criteria for making that decision: no suggestion that federal infrastructure funding might be better spent by subsidizing or financing private providers or any encouragement for state and local governments to explore that option. Generally, the presumption is that all the funds will be invested in publicly provided infrastructure.

The public provision of infrastructure is generally justified on the basis that the infrastructure in question is a public good or that it provides significant external benefits; both of these justifications, however, amount to the same thing. A public good is one from which consumers cannot be readily excluded and which can be consumed by many without affecting the benefits to others, making the benefits from which consumers cannot be excluded, by definition, external. So whether described as public goods or external

benefits, the obstacle to private provision is that the supplier cannot readily collect a fee from consumers.

When the infrastructure in question is a public good, there can be no competitive market for it, meaning that the efficiency benefits of a market are absent. Through competitive bidding for the opportunity to supply the public good, however, efficiency gains can be realized in precisely the same way that the government benefits from competitive bidding among private contractors for constructing roads and bridges. Although competitive bidding can be, and sometimes is, corrupted by political influence, that failure in implementation does not diminish the benefits that can flow from true competition among private suppliers of public goods.

Although highways are often pointed to as an example of a public good to be publicly provided, they actually illustrate that the matter is not so simple. In the case of local streets and roads, the near impossibility of excluding nonpayers makes government provision the only option. But, as some states learned with the toll road precursors to the interstate highway system, it is possible to exclude nonpayers from a limited-access highway. Even though this did not, at the time, lead to private ownership or operation of segments of the interstate highway system, it did introduce direct user fees into the provision of highways. Today, even for local streets and roads, the public goods presumption is no longer valid, given the technology that allows for the congestion pricing of road use.

Even when technology has not solved the exclusion problem sufficiently to create a private market, other external benefits (public goods) may result from infrastructure. In that case a private supplier will undersupply the good or service because the demand is limited to those who pay for its benefits. For example, railroads and airlines function as private enterprises with sufficient revenues from freight and passengers to cover their costs. But many benefits to nonpassengers and nonshippers derive from efficient transportation systems. Because these beneficiaries pay nothing to the railroad

or airline, an undersupply of both services will ensue unless public subsidies provide an optimum level of those external benefits.

Such external benefits sometimes lead to the same presumption that favors the public provision of infrastructure. The central insight of Carol Rose's work on the commons is that various nonmarket public benefits derive from open access to resources. Because open access implies public ownership, it is easy to conclude that infrastructure resources providing significant external benefits should be supplied free of charge by the government. But the comedy of the commons does not repeal the tragedy of the commons. Although open access to publicly provided infrastructure may yield significant social benefits, it can also deplete those resources when one person's use affects the amount or quality of supply available to others. Even when the marginal cost from additional consumers is zero, the public supplier does not escape the need to determine how much to supply. Both over- and undersupply of infrastructure negatively affect net social welfare.

How much to spend on what? Whether infrastructure is supplied publicly or privately, a second question is the kind, amount, and quality to supply. A clear advantage of privately owned and maintained infrastructure is the supplier's ability to resolve both those issues on the basis of market demand. The existence of external benefits might justify a government subsidy or providing a larger supply, but, absent a method of measuring the forgone external benefits, there is no way to ensure that subsidized infrastructure is not oversupplied. Because all infrastructure comes at a cost, the opportunity costs of oversupply may be as much or more than the forgone benefits of undersupply.

True to past practice, the Obama administration is taking a supply-side approach to determine how much to spend on what, with the assumption that use will grow with expanding supply. Little attention is paid to demand, largely because, absent a market, the only indicators of demand are congestion and political pressure.

Congestion may be an indication of insufficient supply but not necessarily because consumers of most public infrastructure are paying only indirectly (through taxes) if at all. Under those circumstances the apparent demand will be higher than it would be in a market where consumers pay the full market price; thus the amount supplied is likely to be greater than optimal.

As between different types of infrastructure there has been little in the way of systematic prioritization. Roads, dams, drinking water systems, flood control levees, environmental protection, or other types of infrastructure have risen to the top at different times but generally in response to perceived crises or political winds. A cost/benefit analysis often has been used to assess whether particular projects can be justified, but little economic sophistication has been applied to choose among the various types of infrastructure in which government might invest its limited resources. That the levees of New Orleans went unrepaired for decades while the federal government invested in all manner of local projects to satisfy members of Congress is convincing evidence of the problem.

Such supply challenges argue for greater reliance on private infrastructure and user fees, which provide a measure of demand, reduce congestion, and can influence the behavior of users when the government has other policy objectives, including accounting for the external costs and benefits associated with infrastructure. For example, roads impose an array of environmental costs that are generally unaccounted for, no matter whether drivers have free access or pay a toll. Some city planners have argued for limiting the supply of roads to create congestion, thus encouraging drivers to find other less environmentally harmful modes of travel. User fees, however, based on the actual cost of providing the road plus an estimate of the environmental costs, can reduce congestion and account for those external costs. But there are also external benefits in the form of increased economic activity, precisely the benefits that lead to our thinking of roads as infrastructure. Without taking

into account the demand for those external benefits, we will underestimate demand and provide a less than optimal number of roads.

Other types of infrastructure are subject to similar supply and demand analyses. But they are complicated to get right, and there is no indication that the Obama infrastructure initiatives have made any effort to address such issues. As in determining the relative roles of the public and private sectors, it will require a major overhaul of the federal government's approach to funding, building, and maintaining infrastructure. Those changes will not come easily, but they must be made if we are to avoid wasting vast sums on unproductive and unneeded projects.

When should the Feds do it? Using the interstate highway system as a model, the tendency is to think that the federal government should provide all public infrastructure. Although that was certainly the right approach to an integrated interstate highway system, it is clearly not the best approach to every case. When public benefits and costs are local and likely to vary from one community to the next, state and local governments are far better situated than the federal government to assess questions of supply and demand. In infrastructure planning and provision, as in many other areas of government activity, the principle of subsidiarity should determine which level of government is best. Public infrastructure should be provided at the least centralized level appropriate. A logical corollary of the subsidiarity principle is a presumption in favor of private infrastructure whenever the necessary markets exist or can be created. Markets are, after all, the least centralized method for allocating scarce resources.

Although it is not apparent that the Obama administration has thought in those terms, the method of distributing ARRA funds will inadvertently give the subsidiarity principle some play, for, with few exceptions, ARRA infrastructure funds are being distributed on a per capita basis. Although states are competing for some funds,

each state has a reasonable expectation of funding roughly proportionate to its population. This does not ensure that the funds will be well spent, but it does leave open the possibility that individual states will allocate infrastructure spending on the basis of priorities reflecting real demand and on some chance of promoting economic growth.

Infrastructure Spending as Stimulus

A separate, but not independent, question is whether President Obama's infrastructure initiatives will stimulate the economy in the short run and promote economic growth in the long run. Estimates of the effect of infrastructure spending on job creation vary widely. The Obama administration has suggested that as many as 47,000 jobs can result from investment of one billion dollars. A study done for the Alliance of American Manufacturers (AAM) puts the number at 18,000 jobs per billion invested. California governor Schwarzenegger recently announced that 11,000 jobs would result from an investment of $625 million in infrastructure, a ratio similar to the lower estimate of the AAM.

Estimates of second-order impacts (the external benefits that define particular goods as infrastructure) also vary widely. The work of David Aschauer in the late 1980s for the Federal Reserve Bank of Chicago, which is widely relied on, forecasts dramatic returns on public investment in infrastructure. But other studies indicate that in every decade since 1950, returns on public investment have been between a quarter to a half of those on private investment and that public investment in infrastructure can even have negative economic effects. The difficulty in forecasting growth benefits from public infrastructure investment derives from the absence of reliable measures of demand, particularly where infrastructure is supplied free of charge. Public infrastructure investment can have negative impacts on growth because, absent reliable

demand estimates, infrastructure can be oversupplied, thus diverting resources from more productive investments.

On behalf of the Obama administration, Christina Romer and Jared Bernstein projected 3.7 percent GDP growth and 3,675,000 new jobs as a result of the ARRA stimulus package. Nobel laureate economist Gary Becker expressed skepticism on two grounds: "The activities stimulated by the package to a large extent would draw labor and capital away from other productive activities. In addition, the government programs were unlikely to be as well planned as the displaced private uses of these resources."

The first point is supported by an analysis by Forbes publications showing that most of the jobs created under ARRA will be for specialists with currently low rates of unemployment. The second point is underscored by the pressures to spend the infrastructure funding quickly in a circumstance of intense political competition; politics, not planning, is almost certain to prevail. Becker also reminds us that sooner or later these expenditures must be paid for by increased taxes. Anticipating those taxes will counter much of whatever stimulus effect the short-term spending might provide.

Potential stimulus benefits of infrastructure spending are also undercut by competing objectives. Emphasis on green infrastructure, combined with existing regulatory constraints, means that costs per unit will be higher and benefit per dollar spent will be lower. Similar effects are existing labor regulations such as the Davis-Bacon Act, which mandates prevailing wages on public works projects, and ARRA's Buy America requirement, which requires U.S. production of all iron, steel, and manufactured goods used in public buildings and public works.

Conclusion

Although the Obama administration has clearly underestimated the magnitude of the nation's infrastructure deficit and overestimated

its capacity to rationalize the allocation of federal investments in infrastructure, its general policy statements evidence an appreciation for the need to overcome the history of pork barrel funding of the nation's roads, bridges, water systems, and other basic infrastructure. Aside from the large shortfall in funding just for maintaining existing public infrastructure, a failing unlikely to be remedied given the president's other spending ambitions, the biggest failing of the Obama administration's infrastructure policies is its presumption that private suppliers and market forces have only bit parts to play. The most viable solution to the funding challenge is private capital. The best way to assure that public and private capital is wisely invested is greater reliance on the efficiencies inherent in the market.