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STREET SMART Reforming the Transportation Budget Process

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In the last few years, several events have catapulted infrastructure policy—a somewhat overlooked area—to the forefront of public attention. The failure of the levees to prevent the flooding of New Orleans in 2005, along with the collapse of the I-35 bridge in Minneapolis two years later, served to highlight both the disastrous condition of our national infrastructure as well as the dire consequences of inaction. The dual threats of climate change and terrorism underscored the high cost of our economic dependence on fossil fuels. And the abuse of earmarks in the last surface transportation bill—including the embarrassingly wasteful Bridge to Nowhere earmark¹—reinforced the notion that our infrastructure dollars are allocated in an inefficient and often counterproductive manner. The next opportunity to change infrastructure policy is the upcoming transportation bill, and it is clear that—unlike the 2005 authorization, which changed little—a substantial revision is in order.

And not a moment too soon. The nation’s transportation infrastructure is underdeveloped and inefficient, and its current state jeopardizes long-term economic growth. The average rush hour commuter has seen annual delays nearly triple since 1982 (Puentes 2008), wasting 2.8 billion gallons of gasoline nationwide in 2007 (about a fifth of the amount imported from the Persian Gulf).² Including lost time and fuel, the total cost of congestion was \$87.2 billion (\$750 per traveler) in 2007, an increase of over 400% in 25 years (Schrank and Lomax 2009). Congestion increases business costs as well, both by adding uncertainty to supply chains (which forces businesses to

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keep large and expensive stocks of inventories (Weisbrod et al. 2001)) and restricting the available labor pool from which business can draw workers. The lack of transportation options for many communities has even exacerbated poverty (Talukdar 2008). In 2006 the chief economist of the Department of Transportation estimated that the total economic cost of congestion is over \$150 billion each year (Wells 2006).

The obvious shortfalls of the surface transportation system have led many independent analysts to conclude that the system is vastly underfunded. The Transportation Research Board (TRB) estimates that the system needs an additional \$58 billion each year just to maintain current performance levels, and about twice that to improve performance (TRB 2006). The National Surface Transportation Policy and Revenue Study Commission (NSTPRSC), which was created by Congress, found that in 2007 the United States spent about 40% of the amount needed to bring the transportation system “to a state of good repair and create a more advanced surface transportation system to sustain and ensure strong economic growth” (NSTPRSC 2007). The Department of Transportation (DOT) found in 2007 that spending on roads, bridges, and mass transit could rise by about 70% while still maintaining positive net benefits to society (DOT 2007a). The Chamber of Commerce, using the same measure, saw positive net benefits up to more than twice current funding levels (Cambridge Systematics 2008). The American Society of Civil Engineers (ASCE) assessed the nation’s infrastructure conditions and gave the road system a D-, bridges a C, and transit a D; they recommended doubling the investment levels in surface transportation infrastructure (ASCE 2009).

Worse still, the current financing mechanisms struggle to support even these inadequate funding levels, let alone higher levels. The federal surface transportation program, which includes highways and mass transit, is financed mainly through the gas tax, although it also receives revenues from taxes on truck tires, sales of trucks and trailers, and heavy vehicle use (Federal Highway Administration 1998). But greater fuel efficiency, rising gas prices, and recession have all led to less driving and lower gas consumption, which in turn led to lower revenues for the Highway Trust Fund. As a consequence, the fund is running dry,

requiring two infusions of general funds worth in total \$15 billion just to keep the trust fund able to meet its authorized commitments. At least an additional \$8 billion in general funds will be necessary to keep the program running through fiscal year 2010 (Transportation Transformation Group 2009). If the trust fund is not back-filled with general funds, transportation projects across the country will be forced to stop work. This would cause layoffs, depress aggregate demand, exacerbate the recession, as well as delay or sacrifice the benefits that those projects would provide.

The gas tax has also lost substantial purchasing power since it was last changed in 1993. Not only is it not indexed for general inflation, the prices for the highway and street construction have risen twice as fast, causing the current purchasing power of the gas tax to be about half of what it was 15 years ago.

Beyond the system’s extensive funding problems, it also inefficiently allocates the resources it already has. Politics play a large role in this misallocation: for example, the bias toward highways (and away from mass transit) can be traced to the fact that rural and exurban areas—which enjoy disproportionate representation in Congress, especially the Senate—tend to rely heavily on federal highway spending. This misallocation lowers the economic returns on investment, an unfortunate outcome in an environment where revenues are difficult to raise and economic growth is sorely needed.

Clearly, the status quo is unsustainable. Underinvestment in the federal transportation system is often attributed to a perceived bias in the budgeting process against public investments. To solve this problem, many have suggested the adoption of alternate budget practices—such as a capital budget—believing this could “fix” this bias and lead to a more efficient level of transportation infrastructure investment. This report first examines current federal budget process and how adopting a capital budget might result in more efficient levels of investment spending. We then examine some of the difficulties and disadvantages of a capital budget, especially to transportation funding. Finally, the paper considers proposals for a national infrastructure bank as an alternative mechanism to achieve more rational and efficient levels and compositions of investment.

The case for a federal capital budget

The federal budget largely uses a cash-basis of accounting, with the exceptions of financial transactions involving loans, loan guarantees, lease-purchases, and interest on Treasury debt. Cash-basis accounting means that resource inflows and outflows are recognized in the budget when cash is received or paid. For purchases of goods and service, costs are recognized when the obligations incurred at delivery are liquidated (that is, paid out). Current budget accounting does not distinguish purchases of materials and supplies from durable assets. Both the cost of office supplies, which may be consumed within the fiscal year, and a capital structure, which may last for 40 years, are shown in the budget when the government pays for the purchase. This accounting treatment recognizes the cost of all purchases up-front or at least close to the time when the decision is made to acquire the goods without regard to the period over which they deliver benefits.

In the budget process, policy makers must choose between spending priorities that accrue benefits in the near-term (consumption) and those that accrue benefits in the long-term (investment). Assuming a strict cost-benefit framework for budgeting, an efficient allocation of resources would maximize benefits with no time preference (although subject to a discount rate). But political considerations may incline policy makers to weigh costs and benefits in two-, four-, and six-year windows, despite the fact that capital asset are often expected to produce benefits over many years, and in the case of infrastructure, often decades. For this reason, full up-front recognition of costs for long-term investments puts capital expenditures at a disadvantage in the competition for funding because the costs are front-loaded while—unlike consumption—the benefits are not. This apparent bias in the budget process might help explain why the surface transportation system suffers from chronic underinvestment.

Some defenders of the current budgeting process argue that the accounting rules play little role in policy decisions. After all, the only thing that changes is the budget score; that is, how much the policy affects outlays and the deficit in each year. But the actual *cost* of the program does not change—just *when* the cost appears in the budget. From a purely rational perspective, it is difficult to

understand how the timing of cost recognition could have a significant effect of budget decisions.

But budget process—and the numbers it uses—clearly affect legislation and policy. Examples abound of the role played by “the budget score” in influencing the prospects of policy proposals. One extreme case of this is President Clinton’s health care proposal. The proposal required that all individuals have insurance, forced employers to either provide insurance for employees or pay for them to purchase health care on the open market, and created “regional health care alliances”—a form of managed competition—from which individuals could purchase health coverage. The proposal failed in part because the Congressional Budget Office (CBO) had concluded that the premiums individuals were to pay were “governmental in nature,” and were thus to be included in budget revenues. Further, the outlays of these regional alliances were also found to be governmental in nature and therefore were to be included in federal budget outlays. Those determinations—which then-Health and Human Services Secretary Shalala described as “devastating”—made the plan look extremely expensive, allowing opponents to paint it as a 25% budget increase and the largest tax increase in history (Klein 2009). After the release of the CBO budget cost estimate, support for the plan waned and the proposal died quietly. This episode highlights how much a change in the official budget score can help or hurt a policy proposal’s chances in the legislative process even when the actual policy proposal remains unchanged.

Capital budgeting is proposed to level the playing field for short- and long-lived assets by spreading the cost of capital assets over their useful lives. Capital budgeting usually refers to the practice of separating budget accounts into two categories: operating and capital. One form of capital budgeting proposed for the U.S. government would replace the outlay cost of capital goods in the budget with annual depreciation or the decline in the value of the assets. For structures including highways, bridges, and transit systems that usually take longer than a year to construct, no cost would be recognized in the fiscal year of the decision to undertake the investment. Costs of the project would begin to appear in the budget only when the asset was put into use. Subsequently, an

annual charge representing the value of the portion of the asset consumed during the fiscal year would be included in the budget.

Capital budgeting is widely used. Private for-profit companies often use a similar accounting practice in their treatment of capital assets in the statement of net income, which aims to match revenues from an activity with its costs in the same period to calculate the net gain or loss for the period (President's Commission to Study Capital Budgeting 1999). Although the specific practices vary widely, most state and local governments also use capital budgeting to account for capital investments (Casados 1999).

The case against a federal capital budget

Although appeals to this private practice are often used to support a federal capital budget, the situations are not exactly analogous because budgeting and financial reporting have different purposes: budgeting is used to choose a future allocation of scarce resources, whereas financial accounting is used to report profit (and loss) performance for a past period. Private companies cannot exclusively use that accounting method for future budgeting decisions because, in the end, they are still limited in their capital investment decisions by the funds that the market will provide them (President's Commission to Study Capital Budgeting 1999). A federal accounting example more analogous to the private practice is the annual federal financial statement—Statement of Net Cost—which uses depreciation rather than the full purchase price of capital assets (U.S. Treasury 2008).

The experience with state and local governments is also not analogous. In this case, the separation between capital and operating budgets is used in part to differentiate expenditures for capital from other purchases because of differences in the means of *financing* capital and non-capital. This distinction is necessary because state and local governments are commonly subject to constitutional restrictions on their ability to borrow. Many are subject to balanced budget requirements, with an exception for the acquisition of capital assets. In those cases, debt financing is permitted for capital expenditures, and that debt must be repaid during the useful life of the capital asset. For transportation projects, debt service is usually provided by receipts from

fuel taxes, tolls, fares, federal grants, and sometimes general revenues (Congressional Budget Office 2008a).

Capital budgeting is also used by the states as a means of enforcing fiscal discipline and spending restraint. By limiting borrowing to an amount no greater than the value of new capital assets, capital budgeting in the states aims to restrict increases in public debt to instances in which it does not reduce the government's net worth. For every dollar of debt outstanding, there is a dollar's worth of capital assets.

The federal government, by contrast, is not subject to constitutional restriction on its authority to borrow. Currently the government regularly borrows more in new funds each year than its net outlays for new investment in physical capital—in the last five years, for example, the average annual deficit was \$319.7 billion while the net capital investment was \$196.3 billion (Office of Management and Budget 2009a). In fact, the federal government has run a deficit in all but four of the last 40 years. While it is true that state capital budgets can be instructive, it is also clear that the purpose of a federal capital budget would be quite different from that of the states.

Shortcomings of a federal capital budget

Proposals to adopt a federal capital budget face both conceptual and practical obstacles. If the function of budgeting is to choose an allocation of available resources across alternative uses, budget accounting should match the recognition of total costs with the decision to incur it. A capital budget would spread the recognition of costs over the life of an asset rather than at the decision to acquire it, thus violating this principle. The recognition of the costs of current decisions would be pushed to the future, where they would be subject to less control.

As the Office of Management and Budget's (OMB) 2009 budget analysis documents note:

Many of these [proposals] would undermine effective consideration and control of costs by spreading the real cost of the project over time... This could be several years after the initial expenditure, in which case the budget would record no expenses at all in the budget year or several years thereafter, even though the Government is obligated

to buy the asset....Control can only be exercised up front when the Government commits itself to the full...cost. Spreading the costs over time would make the cost of a capital asset appear very cheap when decisions were being made that compared it to alternative expenditures. (Office of Management and Budget 2009b)

To be sure, federal budget practice accounts for the current resource costs of previously enacted policies. These flows, including current period outlays to fund transportation infrastructure, are included in the baseline for the fiscal year. But the baseline's separation of the effects of past from current policy decisions merely distinguishes existing policy from changes in that policy. Resource flows in the baseline remain available for re-allocation to other purpose, if policy makers choose to do so. Depreciation is not a flow of resources that are now available for use in other purposes.

Finally, current budget practice recognizes some costs that are sunk before the beginning of the current budget period. Prominent examples include outlays to liquidate obligations from policies whose costs were difficult to estimate at adoption, such as insurance or disaster assistance. The argument for capital budgeting, however, does not claim that the resource cost of capital assets cannot be reasonably estimated.

Practical obstacles

The operating difficulties of a capital budget are also formidable, beginning with task of determining which federal expenditures should be considered capital. While capital is easily defined in abstract, it is extraordinarily difficult to delineate in practice. Yet the boundaries of "capital" must be specified in order to limit the coverage of a capital budget (President's Commission to Study Capital Budgeting 1999). Property, plant, and equipment with a useful life of more than one year is a common accounting definition. The federal government defines capital assets as "land, structure, equipment, intellectual property (e.g., software), and information technology (including IT service contracts) used by the federal government and having an estimated useful life of two years" (OMB 2009c), but this applies only to

assets directly used by the federal government. In principle, capital could include any investment that provides benefits over an extended period, such as federal expenditures for such diverse purposes as education, housing, health, research and development, criminal justice, and environmental protection. Taken to the extreme, one could make the argument that even tax increases should qualify as capital investments because deficit reduction would—all else equal—lead to falling interest rates, thus boosting private investment in things like physical and human capital.

The absence of a bright line between capital spending and everything else exposes capital budgeting to the risk of defining capital too narrowly (introducing bias against omitted forms of capital) and too broadly (and classifying virtually the entire budget as "capital"). A capital budget that gives favorable budgetary treatment to covered expenditures would provide incentives for program proponents to try to qualify their favored spending for inclusion.

One method of imposing limits on the coverage of a capital budget would be to require federal ownership or direct control of the asset. In fact, most federal outlays for transportation infrastructure are *grants* to states for the liquidation of contract obligations incurred by the states to acquire assets. Even if policy makers were able to restrict the coverage of a capital budget to a meaningful subset of federal expenditures, the useful life of an asset is difficult to estimate. Engineering studies can project the length of time that a structure is expected to be able to function in its intended purpose, but changes in technology, relative prices, or population distribution can change the value of the service flow.

A closely related difficulty is projecting the rate of depreciation in the value of the asset. For convenience of accounting, one might straight-line the decline in the value of the asset to zero at an arbitrary future date. But once the cost of an asset is sunk, the distribution of that cost across future budget periods serves no useful purpose. One could, with similar effect and justification, recognize the full purchase price of the asset in the first budget year beyond the current budget window.

Furthermore, few governments currently recognize depreciation of existing assets as a budget cost, making useful precedents hard to find. Some national governments

in the past—especially in Northern Europe and in some colonial administrations—experimented with such accounting, but most countries abandoned it eventually (Jacobs 2008). In the United States, two separate Presidential Commissions—the 1967 President’s Budget Concepts Commission and the 1999 President’s Commission to Study Capital Budgeting—recommended against adopting a capital budget for the federal government.

In addition, there is growing recognition that decisions about capital and annual operations need to be made jointly as a part of an integrated fiscal and management plan. Any accounting that separates decisions is likely to produce inefficiencies from the wrong amount or type of capital. In fact, the current stovepipe separation of decisions about federal spending for transportation infrastructure and other spending is subject to this same shortcoming. The current shortfall between state spending plans for transportation investment and available federal tax revenues is exposing another manifestation of harm: when the dedicated source of funding becomes inadequate, it functions as a potentially inefficient ceiling on spending.

These considered rejections do not forever preclude the possibility of adopting a federal capital budget. But a successful proposal would likely have to meet stringent conditions that include:

- a precise, narrow, and enforceable definition of capital;
- a reliable, low-cost method for determining the change in the value of assets over time;
- consistency with increased fiscal discipline and financial stability; and
- integration with budget decisions affecting non-capital uses of resources.

These conditions might be met, for example, by a proposal in which:

- capital is defined as general use property, plant, and equipment owned by the federal government with a useful life of more than two years and that could be sold for fair market prices to other entities (its annual change in realizable value would be an objec-

tive measure of the value of resources consumed over the fiscal year);

- more controls were put on the overall government structural deficit (calculated without capital budgeting reforms) to mitigate the possibility that policy makers use the new budget rules to greatly expand the national debt; and
- capital budget were to be a component of, rather than separate from, the unified budget.

While these conditions would address most of the weaknesses of existing proposals, they would also deprive proponents of many of the budgetary advantages they appear to seek, making such a proposal unlikely.

Transportation and the federal budget process

Capital budgeting is intended to result in a more efficient level of capital investments, which proponents tend to believe means *more* investment. But in addition to the shortcomings discussed above, adopting a capital budget may not be effective in removing budget obstacles to higher levels of investment. This is because transportation investment—which constitutes over 70% of overall federal infrastructure investment (Congressional Budget Office 2008b)—is currently determined largely outside the annual budget process.

Government spending decisions take place in two stages: authorization and appropriation. An authorization bill starts in the respective House and Senate authorizing committees—for example, a surface transportation program would be drafted in the House Committee on Transportation and Infrastructure and the Senate Committee on Environment and Public Works. Authorizing a program is tantamount to creating or renewing its existence.

For a normal—i.e., non-transportation—discretionary spending program, the authorizing bill also specifies ceilings on funding levels (authorization levels), but does not give the program legal authority to draw specific sums from the Treasury. That authority is provided in the annual appropriations process, which allocates budget authority (BA) to programs for the upcoming fiscal year. Appropriators cannot appropriate more than the authorized

level, but they can—and often do—appropriate less. Each year those funding levels may be revised, meaning that the appropriations committees have discretion to define spending levels from year-to-year.³ They may choose to provide funding levels that are stable or volatile.

The federal transportation funding process is quite different, specifically concerning surface transportation (including roads, bridges, and mass transit), which comprises about 85% of the total federal transportation infrastructure investment (Congressional Budget Office 2008b). The first major difference is that unlike most other authorizations, the surface transportation authorization bill actually provides “contract authority” to agencies, which means that agencies can obligate the funds *before* they are appropriated. The use of contract authority—rather than appropriated budget authority, which requires the two-stage process prior to obligation—provides more stability and less uncertainty to a program that must do long-range planning and operate smoothly from year to year.

Federal spending for surface transportation must still be appropriated before it is outlayed (that is, physically paid out of the U.S. Treasury), but because in the case of transportation contractual obligations and funding already exist, the transportation appropriators almost always appropriate at authorization levels to liquidate the obligations (surface transportation appropriations that fall below the authorization levels violate legislative rules and are subject to a point of order in the House of Representatives (Department of Transportation 2007b)). When appropriators do diverge from the authorization levels, it is usually due to changing circumstances—in the most recent case, the March omnibus spending bill (for the remainder of FY09) appropriated funding slightly below the authorization level because the Highway Trust Fund revenues fell due to the recession. Thus, a lower level of spending from the fund was seen as acceptable given the recent spike in deficit-financed transportation spending in the stimulus legislation (the American Reinvestment and Recovery Act). Overall, the role of the appropriations process for surface transportation can be characterized less as setting limits on transportation spending (relative to the appropriations processes for other discretionary spending) and more as adopting authorization levels to changing revenue baselines.

The second way that the transportation funding process is unique is that transportation expenditures are financed almost exclusively through earmarked taxes levied on sales of fuel and transportation equipment. (These tax receipts accounted for about 95% of all federal surface transportation infrastructure investment over the last 10 years.)⁴ This is no accident: in fact, transportation funding is guided by the principle—both out of convention and an ideological belief within Congress—that funding for the transportation system should be derived from those who directly benefit from the system. This strong link between system funding and its users is protected in a number of ways. First, the last two authorizations included a firewall between the trust fund and other discretionary spending, allowing a point of order to block legislation in the House of Representatives if it violates the guaranteed funding levels (Sec 8003) (Department of Transportation 2007b). Second, the Revenue Aligned Budget Authority (a provision in Safe, Accountable, Flexible, Efficient Transportation Equity Act, or SAFETEA-LU, the 2005 reauthorization) adjusts obligation limitations and authorization levels to avoid a significant deficit or surplus in the Highway Trust Fund, ensuring that current users do not subsidize future users or vice versa. Finally, transportation receipts are credited directly to the Highway Trust Fund, making them difficult to divert for other purposes.

As such, capital budgeting by itself would not help transportation funding overcome its common constraints. The basic premise of a capital budgeting is that in its absence, consumption priorities would tend to crowd out investment priorities, but the strong link between transportation expenditures and receipts mainly prevents this from happening. Only in rare and unique circumstances—such as the Balanced Budget Act of 1997—do other non-transportation priorities raid the trust fund, and it is unlikely that a capital budget would have led to different outcomes in these cases.

The link between current expenditures and receipts derived from current users is truly a double-edged sword for advocates of higher transportation spending. On the one hand, this dedicated revenue stream effectively shields transportation expenditures from competition with other priorities. On the other hand, this link between receipts and expenditures means that the constraint on higher

expenditures is Congress's unwillingness to raise excise taxes. Of course, capital budgeting would have no effect on the political unpopularity of tax increases.

Using a capital budget to make transportation look cheaper in the near-term by pushing some spending beyond the budget window would mean that less has to be offset by excise taxes. But even if capital budgeting pushes the spending into the future for budget purposes, much of that money will actually be outlayed *within* the budget window, and if excise tax receipts are inadequate, the funds must come from somewhere else. The general fund is the logical source of additional funding, but that introduces another complication: the 1974 Budget Act limits programs eligible for contract authority to those whose funds come from trust funds whose receipts are at least 90% derived from user fees. If enough general funds were used to bridge the near-term shortfall in revenue, it would force the federal transportation program to abandon the use of contract authority and thus make it harder for federal, state, and local agencies to do long-term transportation planning.

Finally, capital budgeting promises little in the way of making transportation investments more efficient. One could assume that the theoretical bias toward consumption and away from investment might at the very least result in an overallocation of projects with short-term benefits. But there is little evidence to show this—if anything, the systemic bias is in the opposite direction, away from maintenance and repair projects and toward large, high-publicity, new-capacity projects. And the inefficient geographic (rural/exurban over urban/metropolitan) and modal (highway over transit) misallocations would—under a capital budget proposal—remain intact.

Capital budgeting has potential merits, but it comes fraught with difficulty, fiscal danger, and little promise of actual policy improvement. Accordingly, this report's next section considers a national infrastructure bank as a possible policy alternative that may provide many of the same intended benefits as a capital budget but with less downside.

Infrastructure bank

Description

The national infrastructure bank is a federal financial entity designed to promote a more efficient level and mix

of infrastructure investments by creating a funding process outside the normal budgeting process. Many different versions of an infrastructure bank have been proposed—most notably by Sens. Dodd and Hagel, Rep. DeLauro, and President Obama—but they are similar in a few key respects. In all cases, the national infrastructure bank (“the bank,” or “NIB”) would evaluate and finance infrastructure projects “of substantial regional and national importance” (Dodd-Hagel 2007) undertaken by state and local governments and private firms. While President Obama's proposal limits the bank's focus to transportation infrastructure, the other proposals allow the bank to finance housing, energy, telecommunications, drinking water, wastewater, and other infrastructures (see **Table 1** for a comparison of each proposal).

The NIB itself would have various tools for financing infrastructure projects. Most proposals allow the bank to offer direct subsidies, loans, and loan guarantees, and some, like the recent proposal from Rep. DeLauro (D-Conn.), allow the bank to purchase infrastructure-related debt and equity securities issued by both public and private entities (such as project-specific bonds) (DeLauro 2009). The resulting project loans—either directly made or subsidized by the bank (through guarantees or repurchases)—would be paid back by the borrower (either state/local governments or private entities), who would likely derive revenue from fees levied on users of the infrastructure or general tax revenue.

The NIB would operate as a relatively independent agency. The Congressional proposals create the bank as a wholly owned government corporation—similar to the Federal Deposit Insurance Corporation and Amtrak—while President Obama's proposal envisions the bank as an independent entity within the Department of Transportation, much like the Internal Revenue Service Oversight Board (which is independent but still within the Department of Commerce). Each of the proposals would have the NIB run by directors or non-governmental advisors appointed by the president and confirmed by the Senate.

Finally, the NIB would derive its capital from an initial injection of government funds, although most proposals allow the bank to eventually capitalize itself by issuing bonds, either general purpose or project-specific. President Obama's proposal would prefer to have the bank borrow

TABLE 1

Comparing the National Infrastructure Bank bills

Proposal	Governance	Types of projects	Project threshold	Location	Bond issuance?	Financial tools
Dodd-Hagel	Five-member board of directors, president appointment and senate confirmation, similar to FDIC	Publicly owned mass transit systems, housing properties, roads, bridges, drinking water systems, and wastewater systems. Focus on large capacity-building projects that are not adequately served by current financing mechanism	At least \$75 million	Independent entity, wholly owned government corporation	Yes	Direct subsidies, direct loan guarantees, long-term tax-credit general purpose bonds, and long-term tax-credit infrastructure project specific bonds
DeLauro	Five-member board of directors, president appointment and senate confirmation, similar to FDIC	Transportation, environmental, energy, and telecommunications infrastructure projects	No threshold	Independent entity, wholly owned government corporation	Yes	Senior and subordinated loans and purchase senior and subordinated debt securities; issue and sell debt securities; issue "public benefit" bonds; make loan guarantees; borrow on the global capital market; and purchase, pool, and sell infrastructure-related loans and securities
Obama	Board of non-governmental advisors, president appointment and senate confirmation, similar to IRS oversight board	Cross-modal transportation projects with special attention to broader economic and environmental impacts; Focus on high-value projects that are difficult to finance in the existing system	At least \$25 million	Independent within Department of Transportation	No	A flexible set of financing tools, including a combination of grants and credit products like direct loans and loan guarantees

SOURCE: Author's analysis.

through the U.S. Treasury, which issues its own bonds (more on this later). All proposals promise a funding process that relies less on yearly appropriations from Congress in the hopes that it will allow the bank to operate with less political constraints.

There is ample precedent for an infrastructure bank. A continent-wide infrastructure bank has been in use in Europe since 1957 (the European Investment Bank, or EIB), lending out \$70 billion in 2006 (Congressional Budget Office 2008b). Infrastructure banks are not even new to the United States—currently, at least 33 states have infrastructure banks that operate in similar fashion (Katz 2009). And among other activities, the New-Deal-era Reconstruction Finance Corporation engaged in infra-

structure financing throughout the Great Depression, providing preferential financing to projects in an effort to create jobs and jumpstart the economy.

Advantages

Access to private capital. The primary constraint to boosting investment levels is finding a politically viable and economically efficient funding mechanism. The United States has a political climate that is very anti-tax, and the gas tax—which would be the obvious choice—is seen as disproportionately falling on low-income households (which is a false perception (Poterba 1991)). The NIB would appear to sidestep this obstacle by leveraging private capital, both by issuing bonds and by allowing for the

co-financing of infrastructure projects. This would allow the government to avoid raising some taxes by taking advantage of the increased interest in infrastructure investment opportunities on the part of private capital markets, which—even without an infrastructure bank to guide the private investments—have already raised between \$120 billion and \$170 billion for infrastructure investments in the last two years (Jacobius 2009). In this way, higher levels of infrastructure investment could be achieved in a more politically viable way.

It should be noted, however, that this might lead to a more inefficient outcome. In order to leverage private capital, the NIB must provide incentives such as taking on more risk or reducing its claim on future profits. It is possible that providing these incentives could end up costing more than the yields that private markets demand on Treasury bonds, which can be thought of as another form of “leveraging private capital”—if so, using private capital on a project basis rather than borrowing private capital through the Treasury would represent a net loss to the government.

Political independence. The goal is not just to get more infrastructure investment, but also to get better investment. Few can deny that the infamous Bridge to Nowhere gave infrastructure projects a bad reputation, and while that certain project constituted only a small portion of the transportation bill—about 0.14% of the six-year SAFETEA-LU bill, with all earmarks comprising just over 8%—legitimate questions surround Congress’s ability to allocate funds to the most meritorious and efficiency-enhancing projects. In fact, the current system is fraught with poor political incentives, with each policy maker trying to maximize the transportation expenditures for his or her home state. This leads to inefficient outcomes—for example, the top 100 metropolitan areas in the country have 65% of the population, comprise 74% of the economy, and suffer over 80% of the country’s congestion costs, but they received just half of the earmarks in SAFETEA-LU (Puentes 2008).

But the problem goes beyond the earmarking process—in fact, the program formulas themselves are often written to reapportion funding to certain states at the expense of others for the sake of parochial interests, with

little regard for overall efficiency of allocation. This phenomenon is apparent when looking at how the outcomes of the past three surface transportation reauthorization acts corresponded to who wielded power over the legislative process. The 1991 surface transportation reauthorization (ISTEA) increased funding for northeastern and other transit-heavy states (although only marginally—federal transportation policy still heavily weighted toward highways) in part due to the influence of Rep. Norm Mineta (D-Calif.) and Sen. Daniel Patrick Moynihan (D-N.Y.), who chaired the transportation committees in the House and Senate and both represented transit-heavy areas. They were succeeded by Rep. Bud Shuster (R-Pa.) and Sen. John Chaffee (R-R.I.) during the passage of TEA-21, the 1998 reauthorization act, which largely protected the funding for those states. As the chairmanships shifted from Shuster and Chaffee in the northeast to Rep. Don Young (R-Alaska) and Sen. Jim Inhofe (R-Okla.), so did transportation policy, with SAFETEA-LU moving the distribution pattern back toward the Sunbelt and other highway-dependent states (largely through the addition of the Equity Bonus program) (Panagopoulos and Schank 2007). (Any who still doubt a chairman’s power over the transportation bill need only take note of the fact that the “LU” in SAFETEA-LU was added by Chairman Young to honor his wife, Lula (Kucinich 2008).)

Further adding to these inefficiencies is the fact that the transportation legislation must pass Congress. In order to garner sufficient political support (especially in the Senate), the funds are spread evenly across the country. This was not a problem in the past, as funds were needed across the country during the construction of the interstate highway system. But as the system neared completion, this investment strategy began exhibiting steep diminishing returns, as the rate of return for federal transportation investments fell from 18% in the 1970s to 5% in the 1980s, to eventually 1% in the 1990s (Shirley and Winston 2004). The areas that are now most in need of transportation investment are the nation’s metropolitan areas, but they are concentrated in only a handful of states, providing limited representation in the Senate.

The political independence of the infrastructure bank’s decision-making process is thus a significant benefit, assuming it can be achieved. The proposals all achieve a

certain level of independence by providing a less-political funding source (borrowing either from the Treasury or private capital markets), reliance on initial capitalization (rather than annual appropriations), and distance from the existing bureaucracy. As previously stated, some proposals go further on this last point than others: the DeLauro and Dodd-Hagel bills establish the bank as an independent government-owned corporation (similar to a government-sponsored enterprise), while President Obama's proposal establishes the bank as an independent entity within the Department of Transportation (modeled after the IRS Oversight Board).

Disadvantages

Less accountability. The benefit received from more political independence is not without its cost. Indeed, political independence cannot be achieved without a concomitant loss of accountability. Proposals to create the NIB outside of the DOT and not make it reliant on annual Congressional appropriations (either by allowing it to issue its own debt and/or initial capitalization) would reduce the oversight that the executive and legislative branches could exert on the NIB's activities. This could invite waste, fraud, and abuse, and the vacuum created by the lack of top-down influence could be filled by other types of influence, such as special interest lobbying or the preferences of the bond market. Accountability and political independence are two sides of the same coin, and assessments on whether more independence and less accountability provides more or less net benefits depends to no small degree on the cynicism one feels toward the political system. Either way, the loss of accountability is a cost that should be weighed against the gross benefits of political independence.

Undue influence of profit motive. The current federal financing system relies heavily on transportation grants. With the exception of a few programs like the Transportation Investment Generating Economic Recovery (TIGER) and High Speed Rail grants, most of the funds are distributed through formulas to state departments of transportation, which are given significant flexibility in which projects they chose to fund (more so for highway than transit projects). One benefit of the NIB is that it

would examine more closely the investment returns for each proposed project, thus achieving a more efficient distribution of investment resources.

But it is unclear to what extent the NIB would value economic returns as opposed to financial returns. The NIB, after all, is a bank, and in choosing which projects to fund it would strive to maximize its own returns, not just the returns to society. This could create problems of its own. If the recipients elect to pay back the financial obligation with general revenues, then it is possible that wealthier recipients—or governments with wealthy jurisdictions—would be favored, as they would be able to offer more favorable terms to the NIB and/or private co-financers.

Other recipients might elect to convert the economic returns from the transportation project into revenue returns that can be promised to creditors, either to the bank or to private co-financers. But the ease with which a recipient can translate those economic returns into a revenue stream varies with the type of project—a bridge, for example, can be tolled with relative ease, but a highway, especially one with many non-tolled substitutes, would be more difficult. This could bias the project selection process in favor of certain projects and away from others, independent of their relative economic benefits.

Emphasizing a project's financial returns in the funding process could result in other unfavorable outcomes. To illustrate this problem, imagine two proposed roads. The first road is in a regional center and would serve as the type of route duplication necessary to relieve congestion throughout the entire system. The second road is a highway spoke, extending from the current system into the exurbs that currently have minimal access to the system. Many of the benefits of the first road accrue to the users across the entire system—not just the users of that particular road—while the benefits of the second road primarily accrue to the road's users. Assuming both roads cost the same amount and provide the same overall benefits, the second road might be favored because more of the road's benefits can be captured, either through tolls, tax increment financing, or other methods. To this extent, the bank's project selection process might be biased toward projects whose benefits are concentrated rather than diffuse, likely leading to inefficient results.

In a similar manner, the infrastructure bank could favor projects in wealthy over poor areas, thus exacerbating the socio-economic divide. Travelers with higher incomes have a higher ability to pay to use the transportation segment, and their lost wages due to congestion are higher on an hourly basis (because their hourly wages are higher), so they would have a higher willingness to pay to shorten their commutes. A transportation system that judges the worthiness of a project based on its future revenue stream thus might lead to inequitable outcomes as well.

Finally, past experience in public-private infrastructure investment has shown that private investors must be guaranteed that future changes to the transportation system do not devalue their investment. To prevent tolls from being set too low for investors to recoup their costs, contracts would fix the level or range of acceptable toll prices for the road. This practice would interfere with the system operator's ability to manage demand through congestion pricing, which should be tied to the marginal social cost of each trip taken, not to the cost of the road in question (Vickrey 1992).

Private investors would also demand non-compete or compensation clauses, which bar or discourage adding capacity to the transportation system if it results in less ridership on the tolled road.⁵ Even in the absence of a legal obligation, local and state governments would still have an incentive to avoid degrading the value of the semi-private road, because if they do, then private capital markets will look less favorably on future investments in their jurisdiction. The reality of third parties having a vested—and often legal—interest in the revenue produced by a single segment of the transportation system can thus restrict the pricing and capacity options available for future system improvement, eventually leading to a less efficient system overall.

Cyclicality. One of the most potent benefits of infrastructure investment is its use as a counter-cyclical economic stimulus. Recessions are characterized by falling demand for goods and services, which leads businesses to cut capacity by laying off workers, thus shrinking disposable income, shattering economic security, and forcing households to contract their spending even more. By boosting its own spending on infrastructure, unemployed workers in construction, accounting, office supply, capital manu-

facturing, and other industries are put back to work. With more income, these workers increase their spending, which in turn creates more jobs throughout the economy. Overall, each dollar of infrastructure investment provides on net about \$1.59 in additional economic growth, making it about 33% more effective than generic tax cuts and 10-15 times more effective than many variants of business tax cuts (Pollack 2008).

But fiscal policy should not always be expansionary. As the economy recovers, the private sector rehires workers, and businesses once again look for loans to expand capacity. When this happens, fiscal policy should recede, making room for private spending to replace public spending. To this extent, effective economic stabilization means having a counter-cyclical fiscal policy, one that spends more during a recession and less during an expansion.

Relying heavily on an infrastructure bank to finance public investment could complicate efforts to make fiscal policy more counter-cyclical. Private capital markets usually become more risk-averse during a recession. If the bank's bonds (assuming it issues its own bonds) and co-financing opportunities are viewed as risky, then private capital available to the bank will shrink and overall levels of infrastructure investment will fall at the exact moment they are needed to rise. The portions of the economy reliant on new construction projects will be put out of work, and these effects will ripple through the rest of the economy, making the recession deeper and longer.

It is not clear, however, that the NIB will be seen as a risky investment. An investment in a road or an NIB bond should not be any riskier during a recession than during an expansion, and—when considering that most investments *do* get riskier during a recession—private capital might actually become more available to the bank.⁶ At the very least, the effects of the business cycle on the bank's access to private capital is uncertain, which by itself could reduce the control that policy makers have over fiscal policy.

Other issues

Budget treatment. There will be some projects on which the NIB might make a profit even without government subsidies—the European Investment Bank, for example, has only lost money on a few projects in its 51 years of

existence (Urban Land Institute 2009). That said, many of the projects in which it chooses to invest could require substantial government assistance that will not be fully recouped. Portions of that assistance, such as the initial public capitalization and tax-free loans, are explicit, but others are not. For example, there would exist an implicit guarantee that the federal government would bail out the bank if it became insolvent, offering it a subsidy that may exist nowhere in law but, as the bailouts of Fannie Mae and Freddie Mac have shown, are nonetheless very real costs. Accordingly, the option to set up the bank as an independent Government Sponsored Entity (GSE) should be rejected, and the cost of the guaranteed risk should be explicitly included in the budgetary cost of the program.

Bond issuance. Some of the current NIB proposals also suffer from flaws that are common in policies that sacrifice efficiency for political viability. In order to obscure the budgetary cost and thus inoculate the proposal from criticism of big-government spending, the NIB is made to look financially independent. Most proposals (although to its credit, not President Obama's proposal) do this by having the bank issue its own debt, which will unfortunately make the end goal—that is, financing worthy infrastructure projects—more expensive to the federal government. Agencies that issue debt pay higher interest rates on that debt compared to what the federal government pays on its debt—for example, Fannie Mae and Freddie Mac currently pay about 0.3% more in interest than the U.S. Treasury does, and that disparity was even higher when they were independent agencies (GSEs) before they were brought on-budget.

Given that agencies are part of the federal government, why does it cost them more than the U.S. Treasury to borrow money from the public? For one, Treasury bonds (or T-bills) have been around for hundreds of years, so buyers are familiar and comfortable with them; NIB bonds, on the other hand, are new and have unfamiliar provisions and terms, making it unlikely that they would be received with as much acceptance as T-bills. Additionally, the market for NIB bonds will be smaller and the demand more uncertain, thus making the bonds less liquid—that is, bondholders will be less certain

at the moment of purchase that they will be able to find a buyer when they are ready to sell (by comparison, there has rarely been a time when sellers of T-bills could not find buyers). For these reasons, buyers of NIB bonds will demand a higher yield as compensation for the additional risk (Congressional Budget Office 1982).

To avoid having this extra federal debt carry greater liquidity costs (the bank's debt is guaranteed, so for all intents and purposes it *is* federal debt), NIB borrowing should be able to take advantage of the U.S. Treasury's low cost of debt. In fact, the Federal Financing Bank (FFB) was created for exactly this purpose, to “centralize and reduce the cost of federal borrowing” and thus reduce overall debt costs (U.S. Treasury 2009). Prior to the establishment of the FFB in 1974, agencies issued their own debt and ended up wasting significant government resources. It would be a shame to ignore the lesson policy makers learned 35 years ago.

There are two more reasons to allow the NIB access Treasury debt. First, use of the FFB would also help mitigate the bias toward projects that can translate their economic returns into revenue streams. Forcing NIB to issue its own debt could make it overly responsive to the concerns of the bond market, which might punish it with higher yields if the NIB decides to finance projects with high economic returns but low financial returns. The reliance on private co-financing will still push the bank toward projects with high financial returns (but not necessarily the highest economic returns), but releasing the bank from bond market pressures is a step in the right direction.

Second, using Treasury debt to finance the NIB could ensure that the infrastructure bank does not become pro-cyclical, a concern discussed above. Treasury bonds are considered one of the safest investments available, and during a recession they experience a huge surge in demand as private capital markets become more risk-averse. This makes debt cheaper—yields on 10-year Treasuries fell from 4.1% at peak of the business cycle (December 2007) to 2.4% a year into the recession. Allowing the bank to access Treasury debt would ensure that it has more access to capital during a recession, and thus could provide more infrastructure investment right when the economy needs it the most.

Capitalization. The current NIB proposals also have the federal government providing initial capital to the NIB, and then essentially “setting it free.” At first glance, providing initial funds beyond those necessary to cover start-up costs and administrative overhead seems unnecessary. The bank would already be subsidized through tax-free loans and the federal guarantee on its debt. In fact, the federal government runs many subsidized credit programs without providing initial capitalization, such as the student loan programs (both the direct loan and loan guarantee programs). Instead, the agency requests up-front appropriations on the subsidy cost of the preferential credit in each year. The subsidy is scored based on an accrual basis (that is, subject to the Federal Credit Reform Act), so unlike an initial injection of capital, the budget will smooth the spending over time rather than show a sudden spike in outlays.

The question isn’t so much “should the NIB be capitalized,” but rather how it should be subsidized—all at once, or on a continuing basis? Programs are mostly appropriated money on a yearly basis, and for good reason. In general, granting agencies large chunks of money to use over many years diminishes budget oversight and accountability, thus increasing waste and inefficiency.

It is possible, however, that making the NIB solely dependent on yearly appropriations would exact an even greater efficiency cost. For one, Wall Street tends to be skeptical of government—certainly as a regulator but especially as a financing partner—so the more the NIB behaves like an independent financial entity, the more successful it might be in securing private co-financing for projects. Although contracts could be written by private investors to safeguard themselves from unexpected changes in bank policy stemming from Congressional intervention, even the appearance of political involvement in the bank’s functions—and the uncertainty that accompanies it—could make capital markets reluctant to participate in the bank’s infrastructure investments. At the very least, it is quite possible that private investors will demand a greater premium on their investment if the bank relies fully on yearly appropriations rather than receiving initial capitalization.

Furthermore, as noted above, the independence of the bank’s decision-making process is integral to the bank’s success. It is a near certainty that policy makers

will attempt to influence the bank’s project financing decisions, regardless of whether the bank is initially capitalized or not. Making the bank reliant on yearly appropriations might make the bank more susceptible to this kind of influence, resulting in a less efficient project selection.

Conclusion

There is a rare consensus among experts, policy makers, and public opinion that the nation’s transportation infrastructure policy is in dire need of reform. But efforts are complicated by an inefficient budgeting process and an aversion to higher deficits and taxes. Capital budgeting is often seen as a silver bullet, a solution that could produce a more efficient level of infrastructure investment without touching any political third rails.

But capital budgeting opens the door to fiscal irresponsibility and could set a precedent that budgeting rules can be easily altered to serve policy goals. Furthermore, it will have little effect on transportation infrastructure, a huge part of the overall national infrastructure and one in most need of attention.

The infrastructure bank also has its shortcomings, but those tend to be in areas where the current system is the strongest. Two tradeoffs are relevant here. The first is the classic efficiency vs. equity tradeoff: the current system is weighted heavily in favor of equity concerns, spreading investment across the entire system regardless of need (consistent, of course, with the concept of “Congressional equity,” in which all areas are equal but some areas—such as small/rural states or areas represented by senior members—are more equal than others). The infrastructure bank, on the other hand, would direct resources toward areas of the system in most need of attention (although possible biases due to technical and socio-economic factors could undercut this strength), but in the process sacrifices the fairness of the current system where each state is guaranteed a minimum investment return on its gas tax contribution.

The second tradeoff is independence vs. accountability. This paper has shown how the NIB’s independence from congressional politics will promote better allocation of investment resources, but the cost of this independence is accountability, as the political system (through Congress) will be less able to hold the NIB accountable for its decisions. Regular audits, an active Inspector General,

and high transparency are all the more necessary to compensate for Congress's diminished oversight role.

While a capital budget would reshape the entire system and introduce new flaws, adding an infrastructure bank component to the current funding and budgeting system would achieve a more efficient level and composition of investment, resulting in a modern and efficient transportation system that would serve as the basis for sustained economic growth.

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Endnotes

1. A reference to the Gravina Island Bridge, which would link Ketchikan, Alaska to an island of 50 residents.
2. According to the Energy Information Administration, 772 million barrels of crude oil were imported from the Persian Gulf in 2007. With each barrel refined into roughly 19 to 20 gallons of gasoline, Persian Gulf oil imports translate into roughly 15.4 billion gallons of gasoline.
3. Yearly budget authorities often do extend beyond the budget year, but that practice is mainly to avoid penalizing agencies that have difficulty spending all their appropriation within the budget year by giving them access to it for the next year or two.
4. Author's analysis of CBO (2008b).
5. For example, in exchange for private financing of a tolled express lane along California's State Route 91, California agreed to a non-compete clause, which prohibited expanding capacity (additional lanes or mass transit) along the corridor if it would compete with the express lane, and thus deprive the investors of toll revenue. California eventually did add lanes to the freeway to meet increased demand, and was forced to buy back the Route 91 express lane for a considerably higher price.
6. While it is true that vehicle miles traveled (VMT) fall during a recession, leading to lower tolling revenue, most capital projects aren't finished for a few years, at which point the economy will have (hopefully) recovered and VMT will have returned to normal levels.

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