

# ***New Ideas for Federal Budgeting: A Series of Working Papers for the National Budgeting Roundtable***

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**Budgeting for the Future: Public Investment as  
Intertemporal Politics**  
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## WORKING PAPER #6

### Budgeting for the Future: Public Investment as Intertemporal Politics

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#### I. Introduction

A central task of public budgeting is aligning the disposition of resources with a nation's goals (Redburn and Posner 2015): to ensure that resources are allocated, insofar as possible, to those uses that will contribute most to valued social outcomes. This paper focuses on a particular and important problem of resource-allocation confronting U.S. federal policymaking: the problem of *under-investment*. Consider, for instance, physical infrastructure, a set of capital goods that generate a long-run stream of social and economic benefits. A recent comprehensive assessment of the United States' infrastructure stock – including the nation's dams, levees, drinking water, bridges, roads, transit, schools, and energy distribution networks– by the American Society of Civil Engineers (ASCE) estimated that the U.S. requires approximately \$3.64 trillion in public investment simply to maintain these critical systems in a state of good repair. The ASCE further projects that current policy at federal, state, and local levels will cover only about 55 percent of this investment (ASCE 2013). On the basis of a separate assessment, the Center for American Progress estimated in 2012 that necessary repairs and improvements to the nation's physical infrastructure would require \$1.29 trillion over the following decade above current levels of federal investment (Cooper 2012).

As Figure 1 demonstrates, the U.S. federal government engages in considerably less non-defense public physical capital investment now – both as a percentage of GDP and as a percentage of the total federal budget – than it did in the 1960s and 1970s (Office of Management and Budget 2015). The public capital stock itself shrunk by about 25 percent as a share of GDP between its peak in 1973 and 2003 (Bivens 2012). As Figure 2 makes clear, similar trends hold for federal investment writ large, defined as investment in public non-defense physical capital, education and training, and research and development. As a share of GDP, the U.S. federal government now spends in these areas slightly more than 60 percent of what it spent at the end of the 1970s. These trends represent diminished and, arguably, inadequate investment in public goods that are fundamental to the pursuit of widely valued outcomes: economic growth, the health and quality of life of citizens, and the functioning of local communities. Put differently, under-investment represents a mismatch between the allocation of national resources and what could reasonably be considered a set of broadly shared national goals.

This paper offers an analysis of the political roots of public, especially federal, under-investment and assesses the prospects for overcoming the problem. There are a variety of plausible and fruitful starting points for such an analysis. One could consider current deficiencies in federal budgetary policy, for instance, as a problem of partisan polarization and conflict, as economic wrong-headedness, or as a failure of moral judgment. In the discussion that follows, I approach the political challenges of public investment by conceptualizing fiscal policy as an *intertemporal policy dilemma*: as a domain in which politicians face trade-offs between delivering goods to their constituents in the short run and pursuing longer-term goods that their constituents value. Achieving adequate levels of public investment represents an intertemporal dilemma because it requires political leaders to impose sacrifice on citizens in the present, while the full social benefits of most public investments will often be realized only in the future

– and often only over a long period of time. Public investment, that is, represents an exchange of pain today for gain tomorrow.

A wide range of policy problems – from climate change to pension sustainability to skill shortages – confront governments with intertemporal dilemmas. Drawing on a range of social scientific literatures, the paper asks what insights can be gleaned from considering budgeting for public goods as a special instance of this larger class of political problems. It assesses the problem of public investment, in part, by asking why it is *generally* difficult for politicians in a democratic political system to impose costs on citizens in the present for the sake of long-term policy benefits. In analyzing budgeting through an intertemporal lens, the paper also explores the prospects for progress, pointing to political forces that militate in favor of more public goods provision and to budgetary rules that, if adopted, might facilitate investment in the country’s fiscal future and long-run prosperity.

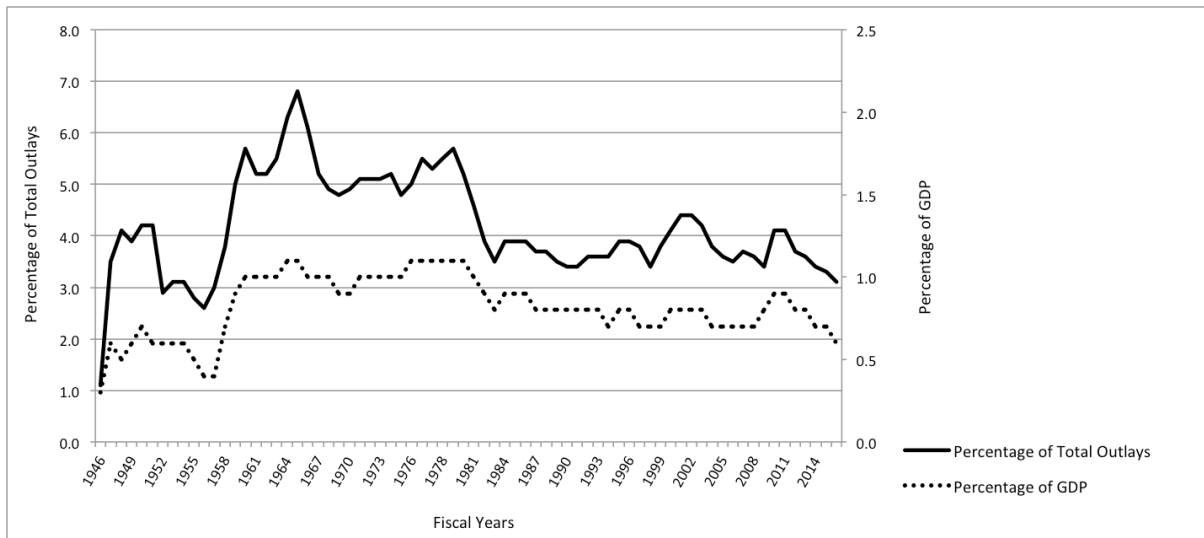


Figure 1: Major Public Physical Non-Defense Capital Spending, Direct Federal Plus Grants, 1946-2014. Source: OMB Historical Table 9.3, <https://www.whitehouse.gov/omb/budget/Historicals>

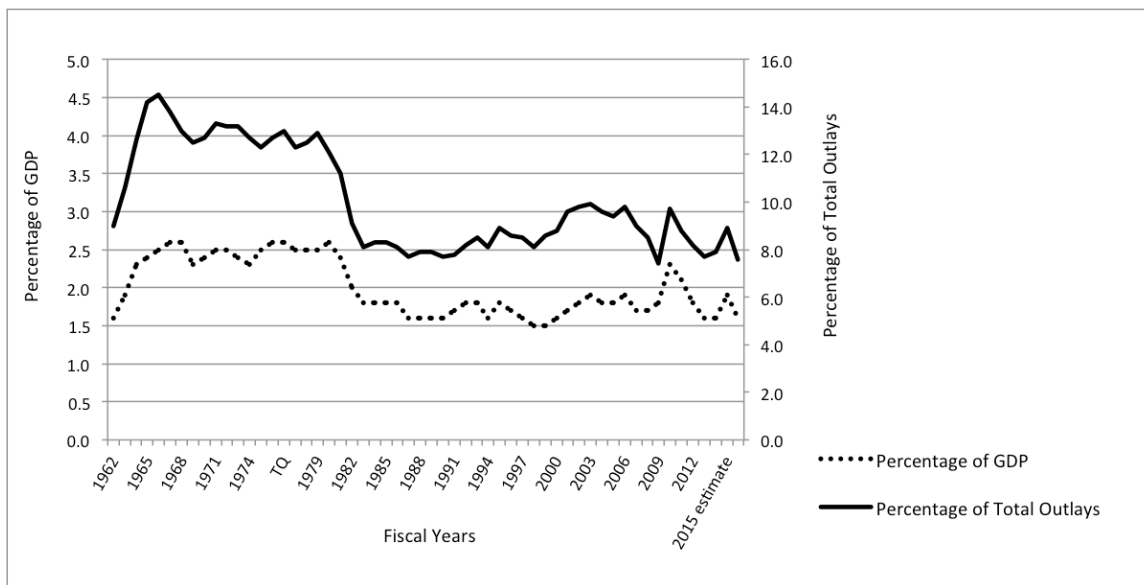


Figure 2: Total Investment Outlays (including Major Public Physical Capital, R&D, and Education and Training), 1962-2015 (estimate). Source: OMB Historical Table 9.1, <https://www.whitehouse.gov/omb/budget/Historicals>

## II. Historical Context: Reagan-era cuts, Never Restored

This paper is not principally an effort to explain declining levels of federal public investment, but this pattern nonetheless bears some reflection. One feature of the pattern that is immediately clear is that most of the drop happened all at once, as part of the sharp cuts in non-defense discretionary spending of the early Reagan years (although the drop in proportion to total spending began at the end of the Carter Administration). This drop is not a “denominator” effect: total federal non-defense investment outlays fell by 20% in constant dollars between 1980 and 1982.<sup>1</sup> Federal investment roughly kept pace with the rest of the budget *after* the Reagan cuts. But, notwithstanding temporary bumps in the first few years of the new century and following the 2008 financial crisis, public investment regained little of the substantial ground lost during the 1980-1982 period. Both as a share of the federal budget and as a proportion of national income, federal investment remains at much lower levels than in the 1960s and 1970s. The pattern is broadly similar whether we track investments in physical capital, in education and training, or in research and development.<sup>2</sup> Moreover, non-defense investment fared very similarly to non-defense discretionary spending as a whole during and after the Reagan years.

In the Reagan period itself, the sharp fall in domestic discretionary spending as a share of the budget made room for a steep rise in defense spending. However, public investment’s share did not rise as defense’s share fell, and remained low in historical terms, in the post-Reagan years. Rather, the proportion of federal outlays devoted to mandatory spending – of which Social Security, Medicare, and Medicaid are the largest components – rose steeply (by 40%) in the 35 years following Reagan’s inauguration, claiming considerably more than the budgetary room vacated by defense. (The share going to net interest payments fell by several percentage points.)

At the same time, federal tax receipts have failed to keep pace with the rise in social expenditures. While total mandatory federal spending more than tripled between 1980 and 2015, total federal revenues increased by only 125 percent in the same period. Over the last two decades, revenue constraints have been partly a function of the electoral success of a Republican Party committed to reducing the federal tax take. Equally important, the nation has seen markedly slower rates of economic growth since 2000, diminishing the scope for paying for governmental functions out of “easy money” (U.S. Bureau of Economic Analysis).

Thus, the initial drop in levels of federal investment can be explained as a Reagan-era shift in fiscal priorities, away from domestic spending and in favor of tax cuts. The lack of a relative rebound can be viewed in large part as a consequence of steeply rising federal retirement-security and health care costs within revenue constraints that did not come close to keeping pace. Put differently, spending on current social benefits for large segments of the electorate rose rapidly, but elected officials chose not to adopt the tax increases or engage in the levels of borrowing that would have been required to make room for a restoration of levels of public investment. And in recent years, the Republican Party has made a renewed and relatively successful push to cap levels of domestic discretionary spending, culminating in the Budget Control Act of 2011 and its sequestration provisions (Hallerman, Krawzak, and McCrimmon 2015).

We saw some of these dynamics play out in the passage of the 2015 transportation bill, the Fixing America’s Surface Transportation (FAST) Act. Prior to 2015, Congress had not passed a multi-year surface transportation funding measure since 2005; since 2009, the interstate highway program had limped along with 33 short-term patches. The federal gas tax had not been increased since 1993, leaving the Highway Trust Fund in deficit and requiring over \$60 billion in transfers from general revenues to meet obligations (Mejdrich 2015). A broad coalition of business and labor interests lobbied hard for a long-term bill to address the problem. With passage of a 5-year, \$300-billion measure in December 2015, Congress injected needed resources into the system, but the way in which it did so was telling: rather than increasing the gas tax or creating another recurring source of revenue, the bill relied on “offsets” and

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<sup>1</sup> These spending cuts were, in part, justified as liberating resources for private investment. Aside from a spike in 1984, however, U.S. BEA data do not show any marked real increase in gross private domestic investment through the 1980s. See <https://fred.stlouisfed.org/series/GPDICA#0>.

<sup>2</sup> All estimates reported here come from data in Office of Management and Budget (2015), Tables 1.1, 3.1, 3.2, 8.6, 8.8, 9.1, 9.7, and 9.9.

one-off transfers to boost funding for transportation. These measures included the depletion of other forms of public capital, including the sell-off of oil from the nation's Strategic Petroleum Reserve and the liquidation of most of the Federal Reserve's surplus account (Plautz 2015b, 2015a). Even under considerable pressure to address a chronic investment shortfall, Congress declined to direct additional, long-run resources toward meeting the nation's infrastructure needs. Between 2021 and 2025, assuming that spending levels authorized by the FAST Act continue, the highway trust fund account is projected to face a \$97 billion funding gap (Plautz 2015b).<sup>3</sup>

Broadly speaking, the reduction of federal investment over the last 35 years appears to have been generated by a set of ideological and fiscal conditions that were not unique to capital spending, but that pressured all non-entitlement domestic spending. It is not this paper's aim to explain this aggregate, long-run trajectory. Nevertheless, these trends provide a useful backdrop to the analysis that follows by supplying a benchmark against which current levels of investment can be judged: whether measured as a proportion of national income or a proportion of federal spending, current federal investment spending is low in historical terms.

This fiscal overview also makes clear that any increase in levels of federal investment would require additional sources of financing above and beyond that which may be needed to meet rising mandatory outlays in coming decades. A legislated revenue increase appears extremely unlikely under current institutional conditions, with the Republican Party in firm control of both houses of Congress and solidly opposed to tax hikes of any kind (a phenomenon that I explore further below). There is, however, no reason to see the present partisan balance of power as a permanent feature of federal politics. Moreover, as will be explored below, there may be good reasons to finance new investments through borrowing, rather than through tax increases. Either way, new resource flows will be required.

The remainder of this paper undertakes an analysis of the conditions under which elected officials might be willing to provide the resources needed to boost public investment, the kinds of budgetary rules that might make them more likely to do so, and the kinds of investments that federal politicians might be most willing to make.

### III. Conceptualizing Intertemporal Policy Trade-offs in Budgeting

The analysis in this paper is premised on the notion that the politics of public investment is partly shaped by the *temporal* character of investment-oriented policies: in particular, the fact that public investment's costs must be paid before its full benefits have been realized. To a considerable degree, a policymaker's decision about the level of public investment in which the government will engage represents an intertemporal policy trade-off: a trade-off between present and future.

In Figure 3, I depict one kind of intertemporal policy trade-off in general form. Here we imagine a decision-maker who is considering two policy alternatives, A and B. Let us assume, for the sake of this analysis, that policymakers are unwilling to assume additional debt in order to finance current spending, and thus face a fixed budget constraint.<sup>4</sup> Under Policy A, society's "consumption possibilities" – which we could think of as the sum total of available resources – will decline over time. In the realm of federal budgeting, *status quo* levels of public investment could be plausibly characterized as having the qualities of Policy A. Left unaddressed, continued underinvestment in public goods can be expected to lead to the ongoing deterioration of vital infrastructure and other forms of capital and, in turn, to worsening economic and social outcomes over time.

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<sup>3</sup> For detail, see Table 5 of CBO cost estimate for H.R. 22 conference agreement at [https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/costestimate/hr22\\_1.pdf](https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/costestimate/hr22_1.pdf).

<sup>4</sup> To the extent that a budget constraint is not operative – that deficit spending to finance public investments is a perfectly plausible option – policymakers may not face an intertemporal dilemma in this domain. That is, they may be able to fiscally engineer investments such that *both* the costs and the benefits arrive in the long run.

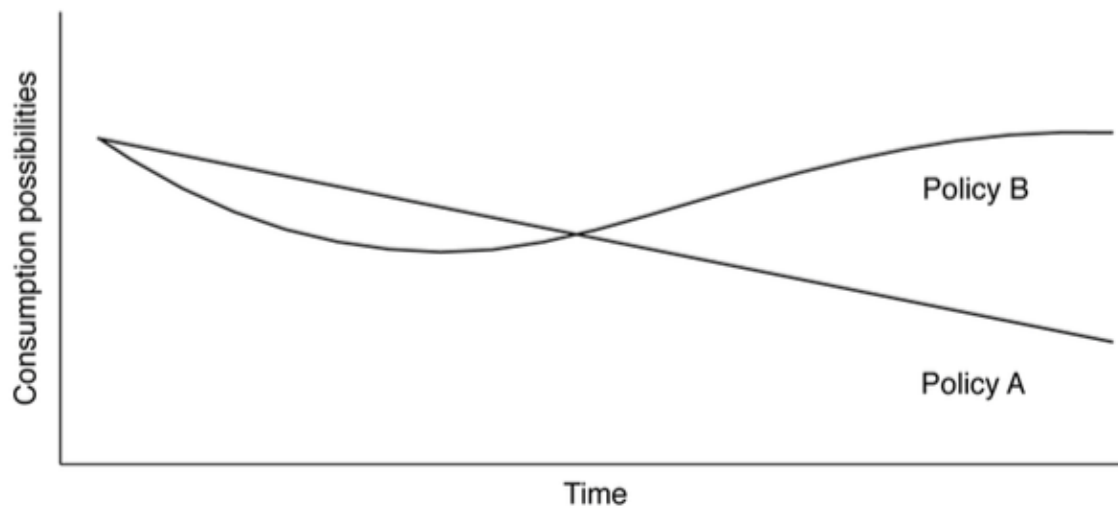


Figure 3: An intertemporal policy dilemma

Under Policy B, in contrast, higher costs (as compared to Policy A) are paid in the present – a dip in short-run consumption possibilities – but greater losses are avoided<sup>5</sup> over the long run. In the realm of public goods-provisions, policymakers can impose higher taxes today or reduce spending on current, consumption-oriented public services and benefits in order to finance investments in transit, the electrical grid, or other vital infrastructure that will maintain those systems’ contributions to economic and social activity over the long run. Paying costs today thus averts far greater losses in the future. The economic literature suggests that policy options of type B abound. Researchers commonly find substantial, positive high social rates of return (even after the application of standard discount rates) to public investment in general (e.g., Bom and Ligthart 2008; Heintz 2010; Congressional Budget Office 2016) as well as to investments in a variety of specific public goods, such as educational facilities (Cellini, Ferreira, and Rothstein 2010), high-quality pre-school (Nores, Belfield, Barnett, and Schweinhart 2005), disaster preparedness (Healy and Malhotra 2009), and more efficient energy infrastructure (Granade, Creyts, Derkach, Farese, Nyquist, and Ostrowski 2009).

In short, reduced levels of public investment represent foregone opportunities to incur modest budgetary cost to achieve much greater economic and social gain.

#### IV. The Problem of Policymaking for the Long Term

Under what conditions might policy makers choose to take advantage of such opportunities? As a starting point for the analysis, it is useful to consider why it is *generally* difficult for elected politicians to make intertemporal tradeoffs in favor of the future – to invest in the long term at short-term expense.

At the outset, we should bracket one possible explanation for short-sighted policy: that politicians simply care much less about long-term than short-term policy outcomes. It is certainly true that a good part of governing involves attending to current social problems that demand a policy response with quick payoff. And, if they value their political careers, Members of Congress and the President must keep a close eye on their short-run electoral prospects. Yet there is little reason to think that, when it comes to making their own policy judgments, politicians are indifferent to the long-run social consequences of their choices. Politicians pursue and cling to public office, in large part, for the unparalleled opportunity that office

<sup>5</sup> While Figure 3 depicts a tradeoff in which public investment allows society to avoid absolute losses (losses that would emerge without investment), public investments could also generate absolute gains – gains that would be foregone without investment. I discuss the political implications of these two types of payoff structure below.



holding provides to deploy state authority to pursue social outcomes that they value. And, whatever their social goals, it is likely that most elected officials seek to leave an enduring mark on society – i.e., to shape social conditions over the long run. There is, similarly, little reason to suppose that under-investment derives from an electorate uninterested in the long term – from citizens who fundamentally prefer to mortgage the future in favor of the present (for experimental results on this point, see Jacobs and Matthews 2012). While measuring discount rates is notoriously difficult, the available evidence suggests that individuals' discount rates are typically lower than the social rate of return to many public investments (Jacobs 2011). Thus, policymakers and citizens alike should in principle see public investment as an attractive long-term proposition.

Why might a political system populated by officials and voters who *care* about the long term tend to deliver policies biased toward the short run, including systematic under-investment in long-run public goods? Drawing on findings from political economy, social psychology, and public policy, the remainder of this section outlines three key sources of short-termism in democratic politics. Obstacles to farsighted policymaking include: a poverty of information about longer-term outcomes; the fragility of long-run political commitments; and the challenge of imposing investment costs on organized groups. As I will indicate, not all farsighted policies face all three challenges of long-termism in equal measure. The politics of public investment, I will suggest, is especially afflicted by the first and second of these problems, and much less so by the third.

#### Information about long-term outcomes

One basic difference between the long term and short term lies in the lower quality of the available *information* about the long term. We can think of the problem of informational poverty in two ways. As research on retrospective economic voting and political business cycles has emphasized (Kramer 1971; Nordhaus 1975), voters have ready access to information about past conditions – they can simply look around them – but have much more difficulty divining future policy consequences. The typical voter probably has a rough sense of how much she currently pays in taxes and of the current state of the roads and bridges she drives on; but she has much poorer information about her likely tax liabilities or the quality of the infrastructure on which she will rely 20 years from now.<sup>6</sup> When voters seek to evaluate incumbent officials at election time, they may *care* about how well those officials will manage the future; but they may, as an informational matter, have to rely on observation of past or present conditions as a “shortcut” to predicting how well incumbents have managed, or will manage, the future (Key and Cummings 1966; Fiorina 1978).

A second feature of the informational problem is cognitive. Decades of public opinion research have established that voters pay modest attention to public affairs and, at best, economize on information and cognitive effort when making political judgments (e.g., Delli Carpini and Keeter 1997; Kuklinski, Quirk, Jerit, Schwieder, and Rich 2000). This well-established finding has especially important consequences for the politics of the long term. Because information about present conditions is typically much more *vivid* and *salient* than information about conditions that have not yet emerged, voters are more likely to allocate scarce attentional resources to the former than the latter (Jacobs 2011).

Consider the voter presented with a policy that will increase her taxes today and, she is told, help maintain energy, transport, and educational infrastructure in coming decades. Even if clear information about the future material benefits of public investment can be provided, the current tax increase – taking home that smaller paycheck in the present – is simply more likely to draw the voter's attention than the temporally distant benefits of investment. In a world in which information about the present is more cognitively salient than information about the future, voters are likely to judge their elected representatives based on past rather than future conditions.

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<sup>6</sup> Likewise, citizens have little clear information at hand about the social and economic consequences of future deficits – but, again, quite good information about their current tax bill and the current level of government transfers and services they receive (though, on the latter point, see Mettler (2011)).

The informational quality of the long term thus tends to generate *retrospective* – i.e., backward-looking – rather than prospective policy judgments by the electorate. As economist William Nordhaus (1975) argued in seminal work on the political business cycle, retrospective electoral behavior creates incentives for governments to make shortsighted policy (see also, e.g., Hibbs 1977; Rogoff 1990). Given a tradeoff between lower taxes today and better infrastructure tomorrow – and an electorate ignorant of or inattentive to this tradeoff – a politician seeking to remain in office would be wise to choose myopically: to avoid inflicting pain on constituents today, even at the cost of far greater societal pain tomorrow. Critically, this incentive structure holds even if both voters and their representatives in fact place substantial value on long-term outcomes.

Policymakers themselves also confront asymmetries in the quality of information about shorter-term, as compared to longer-term, outcomes. Public officials and political systems in the aggregate can attend to only a small number of policy issues at a time (e.g., Jones and Baumgartner 2005; Baumgartner, Breunig, Green-Pedersen, Jones, Mortensen, Nuytemans, and Walgrave 2009). Moreover, indicators of past and current social problems and policy performance appear to be especially powerful drivers of official

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Even if they care about the long run, then, politicians will often have reason to favor a short-run “sure thing” over a riskier, long-range investment.

attention (Kingdon 1984; Birkland 1998; Baumgartner and Jones 2009). Problems whose consequences have not yet emerged – those electrical grids and bridges that have not yet collapsed – are less likely to emit attention-generating signals and are thus at a disadvantage in the competition for policymakers’ scarce cognitive resources. Moreover, while elites possess richer policy knowledge than ordinary voters, they nonetheless confront a forecasting problem over the long run. Uncertainty is a common feature of policy deliberations in general (e.g., Hecló 1974; Hall 1993; Blyth 2002), but problems of prediction tend to proliferate over longer time horizons. Policies that pay off over longer periods of time typically hinge on more extended and intricate causal chains, and the state of the world tends to become less knowable over longer time horizons (Jacobs 2011). It is, quite simply, a far easier matter to calculate the

immediate impact of a tax increase on household incomes than it is to forecast the long-run beneficial impact of an investment in disaster preparedness. Even if they care about the long run, then, politicians will often have reason to favor a short-run “sure thing” over a riskier, long-range investment.

### The fragility of political commitments

A second source of short-termism in democratic politics arises from institutional features of democracy itself. Consider a policy that raises current taxes to fund improvements in transport infrastructure. Implicitly, such a policy amounts to a non-simultaneous exchange between citizens and governing elites. The policy’s long-run payoffs will depend critically on whether politicians maintain the initial commitment to deliver the promised benefits. Such commitments may be vulnerable, first, to the well-known problem of time inconsistency (Alesina and Tabellini 1988; Persson and Tabellini 1994): after extracting resources from constituents for a stated long-term goal, politicians may face political incentives to divert those resources towards unrelated purposes. Money collected for transport investments might, instead, be spent on tax cuts for the wealthy or on welfare programs. The vote, moreover, is a blunt tool for holding incumbents accountable for particular broken promises. Further, even if today’s incumbents remain committed to the long-run project, democracy generates turnover in office, and tomorrow’s incumbents may have divergent policy preferences and little stake in a bargain to which they were not a party. Over longer time horizons, moreover, both the temptations to renege and the chances of turnover in office multiply.

Citizens have little reason to pay the costs of a farsighted policy – even an investment in a public good that they value – if they doubt politicians’ commitments to delivering the future benefits. Observational data suggests that citizens’ levels of trust in government are an important driver of their willingness to pay taxes for public goods and services (Chanley, Rudolph, and Rahn 2000; Simonsen and Robbins 2003; Hetherington 2005; Clinch and Dunne 2006). In addition, Scott Matthews and I (2012, Forthcoming) report evidence from a series of experiments in which U.S. respondents are asked about their willingness

to pay higher taxes in exchange for the promise of long-term public goods. The results indicate that citizens frequently oppose paying for public investment because they are uncertain about whether politicians will keep their promises. The findings also suggest that Americans' low levels of trust in government represent a substantial political obstacle to expanded public investment.

Policymakers, too, may be deterred by political uncertainty. Whether today's politicians are willing to invest in the long run at short-run expense depends in part on how vulnerable they think their policy initiatives are to the predations of other politicians. In work on intertemporal choice in the field of pensions (Jacobs 2011), for instance, I find that governments' decisions about whether to invest in the accumulation of large pension reserves hinge critically on how likely they think it is that future governments might divert those funds toward unrelated initiatives. Analysts of climate change politics point similarly to massive uncertainty about whether political commitments made today to reduce carbon emissions will be maintained long enough to achieve future environmental benefits (Hovi, Sprinz, and Underdal 2009; Bernauer 2013). In the realm of public investment, current officeholders may fear that future officeholders will abandon today's undertaking and redirect the raised revenues toward other objectives.<sup>7</sup> Moreover, public investments frequently involve complexity in coordination across branches and levels of government, likely amplifying uncertainty about whether benefits can be delivered. In sum, politicians considering whether to take the political risk of raising funds for long-term public goods are likely to be deterred from doing so if they expect that such projects will, over time, be dismantled by their successors, poorly implemented by the executive, or subject to foot-dragging by lower levels of government with whom such investments must be coordinated.

#### The opposition of organized cost-bearer

A third problem arises when investing in the long run. It often requires imposing costs on *well-organized* sectors of society. The problem of imposing short-run losses on organized groups arises in paradigmatic form in the field of environmental protection: in this domain, many investments in the long run (such as stricter pollution rules or efforts to reduce carbon emissions) concentrate their costs on organized industrial sectors and organized segments of the workforce (Harrison 1996). Well-organized groups are likely to fight hard to defend against these losses and, in political battle, will often have the upper hand against the larger, but often inattentive and unorganized, segments of the public that might benefit from the measures (e.g., Wilson 1980; Arnold 1990; Immergut 1992). The problem here is not that interest groups are short-sighted. The difficulty, rather, is that interest groups, quite naturally, expend their organizational resources on the defense of *their own* members' welfare; and the organized groups paying an investment's costs may not expect to reap a large share of that investment's benefits.

Interestingly, it is not as obvious that this same problem afflicts the politics of public-goods provision in the U.S. – that is, that public investment typically faces opposition from well-organized groups. The bulk of the cost of most public investment is borne by the general taxpayer – spread across a diffuse and largely unorganized group – rather than concentrated on a specific, organized sector of society (as in the case, say, of measures to reduce carbon emissions). Indeed, as I discuss further below, some of the best-organized interests in society may directly *benefit* from enhancements in many public goods, such as physical infrastructure. In this important sense, the ecosystem of organized interests may make it politically easier for politicians to invest in public infrastructure than to take farsighted action in other policy domains, such as environmental protection.

However, an important and relatively recent feature of the interest-group environment in the U.S. warrants attention: the rise of well-financed anti-tax organizations, such as Americans for Tax Reform and the Club for Growth, and their willingness to fight aggressively against tax increases (Hacker and Pierson 2005). While anti-tax groups have narrow membership bases – and, thus, cannot credibly claim to *represent* taxpayers in general – they nonetheless represent critical organizational actors battling against

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<sup>7</sup> Likewise, today's legislative majority considering tough fiscal measures to reduce deficits might reasonably fear that tomorrow's majority will expend any fiscal slack that it inherits on increased spending or tax cuts (much as, in 2001, the President and legislative majorities expended Clinton-era surpluses).

the kinds of short-run cost-imposition that would likely be necessary to close America's public-investment deficit.

## V. The Prospects for Investment-Oriented Budgeting

Summarizing the argument so far, under-investment in public infrastructure represents a mis-allocation of budgetary resources insofar as the provision of public goods – from transport to energy to education – represents a widely valued governmental purpose. Further, under-spending in many public goods derives from the intertemporal character of public investment: the fact that (assuming a current budget constraint) its costs must be imposed in the present, while its benefits emerge only in the future. Such intertemporal trade-offs are difficult for at least three reasons: because of the relative poverty of information about the long term, compared to information about the present; because of the fragility of long-term political commitments in a democracy; and, to a lesser extent, because of opposition from interest groups representing those who would bear the investment's costs. If these are the hurdles to future-oriented budgeting, what are the prospects for overcoming them? Drawing further on literatures on the politics of public policy, political economy, and relevant strands of cognitive research, the remainder of this paper examines the problem from a somewhat different perspective, considering political logics that can under certain conditions militate *in favor of* more expansive investment in long-term public goods. The analysis also identifies strategies that policymakers might employ to enhance the political feasibility of increased public investment.

## VI. Overcoming the Informational Tilt Toward the Short Term

As I have argued, the informational bias against the future means that voters are more likely to attend and respond to any short-run costs of public investment than to its longer-term benefits. Presidents and legislators thus face the prospect of punishment at the polls if they inflict current sacrifice to invest in society's long-run welfare. Yet evidence from the literature also suggests that this informational and electoral tilt toward the present is a variable, rather than a constant.

First, the long-term benefits of public investment are not uniformly of low salience. Political scientist Douglas Arnold's (1990) work on the logic of political accountability is useful in thinking about the problem. Like most private investments, public investments typically deliver their gains in a stream of payoffs, rather than a lump sum. Yet, critically, public investments vary in how soon the prospect of policy benefits first becomes *visible* to constituents. The timing of this visibility depends in part on how quickly the stream of payoffs commences. The social or economic benefits of an investment in scientific research may take decades to materialize and only become visible long after today's incumbents have left office. Investments in physical infrastructure, in contrast, will often yield a much more politically favorable visibility dynamic. For one thing, the benefits of many infrastructure investments – for instance, in schools, roads, and bridges – typically commence within a few years of a project's initiation – i.e., as soon as construction is finished. Even if such projects become profitable in social-accounting terms only after decades of use, local citizens will begin to reap their benefits within a handful of years. In fact, such investments may yield visible signs of benefit-delivery even more quickly. Investments that involve the creation of local physical capital tend to generate salient indicators of future gains as soon as construction crews arrive and ground is broken.

In that sense, many forms of public-infrastructure investment may in fact involve informational dynamics quite favorable to farsighted budgeting. This logic assumes that politicians raising tax revenues to make such investments are able to direct those revenues, insofar as possible, to relatively "shovel-ready" projects, minimizing the time lag between the imposition of costs and the visibility of the future benefits. But, these informational dynamics do not favor all forms of infrastructure investment equally. Investments in some public goods – consider, for instance, energy grids, disaster-preparedness measures, hazardous waste containment facilities, or sanitation facilities – may take place outside major population centers and

(as compared to roads and schools) their benefits may be much less apparent to constituents in the near term.<sup>8</sup>

Additional lessons can be drawn from research in behavioral economics. Longstanding findings on the endowment effect indicate that people tend to overweight losses relative to the prospect of gains (Thaler 1980; Kahneman and Tversky 1984). Building on this insight, a range of observational (e.g., Nincic 1997; Weyland 1998) and experimental (e.g., Quattrone and Tversky 1988; Arceneaux 2012) studies have found that citizens are more supportive of policies that they see as preventing *deteriorations* in welfare than in policies offering equivalent improvements. A cognitive bias toward loss-avoidance likely explains why reform-minded politicians – such as advocates of health care reform (Eckles and Schaffner 2010) or Social Security reform (Williamson 2011) in the U.S. – have often sought to present their initiatives as preventing future catastrophe.

These findings on the cognitive and political salience of losses (as well as common intuition) imply that some strategies for *framing* public investment are likely to be more successful than others. Policymakers seeking to build public support for infrastructure investment are likely to be more effective if they frame such investments as averting future losses – pointing, in effect, to the downward slope of the Policy A line in Figure 3 – rather than as generating improvements. Investments in transport infrastructure, thus, can perhaps be more persuasively sold to constituents as measures to avoid the deterioration of existing systems than as enhancements to the *status quo*. The advantages of focusing on loss avoidance are probably even greater for less visible and less “glamorous” forms of investment, such as maintenance. It may be difficult to sell voters on the benefits of costly repairs to energy grids and wastewater systems, but much easier to generate interest in the rolling blackouts and sewer overflows that will occur if nothing is done.

At the same time, loss-avoiding rhetorical strategies will be more plausible under some circumstances than others. Research on agenda setting suggests an important role for dramatic episodes of system breakdown: the collapse of a major bridge, an outbreak of water-borne illness, a plane crash, a break in the levees (Kingdon 1984; Birkland 1998; Baumgartner and Jones 2009). What political scientist John Kingdon (1984) terms “focusing events” serve to crystallize attention around longstanding but low-visibility vulnerabilities in current arrangements. Put differently, such events dramatically presage the likelihood of *future losses* if no action is taken. Infrastructure can quietly decay for decades without attracting much notice. However, crumbling physical capital also has a tendency to generate occasional punctuations that draw attention to the need for improvements. A September 2014 incident in which an Amtrak train became disabled under the Hudson River, delaying 61 NJ Transit trains, appears to have helped create a sense of urgency around long-stalled plans to build a new tunnel. The event likely prompted the inclusion of new rules in the FAST Act that will increase Amtrak’s flexibility to direct revenues toward enhancements on the Boston-Washington corridor (Mejdrich and Walerius 2015). Focusing crises – though often tragic in their immediate human consequences – will sometimes offer critical windows of opportunity for justifying costly investments as measures required to prevent similar disasters in decades to come.

There are thus certain conditions under which the long-run benefits of investment can in fact be made salient to voters in the short run. There is also one additional strategy through which politicians can seek to level the informational playing field between the short run and the long run: by diffusing responsibility for the near-term sacrifice that public investment requires. A large literature on the politics of loss imposition addresses the question of how and under what conditions politicians can undertake painful reforms without suffering defeat at the polls. Among the conditions identified as important is the degree to which responsibility for imposing sacrifice is dispersed across officeholders. Comparative studies of welfare-state retrenchment routinely find that policymaking processes that involve *shared responsibility*, including cross-party and neo-corporatist bargains, aid the cause of loss-imposition by diffusing or displacing responsibility for unpopular measures (see also Weaver 1986; Pierson 1994; e.g., Bonoli 2000; Schludi 2005). Conversely, voters are more likely to hold their leaders accountable for the performance of

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<sup>8</sup> By a similar token, the long-run costs of infrastructure investments – including their maintenance costs – may be of relatively low visibility. Changes to accounting rules in the federal budget, discussed below, might help address this problem.

the economy where institutions more sharply focus political responsibility (Powell and Whitten 1993; Anderson 2000; Duch and Stevenson 2008).

Politicians, this literature suggests, can more safely impose short-run sacrifice on voters to the extent that they do so as part of a broad coalition. A glance at past fiscal policymaking episodes in the U.S. suggests that bipartisanship has important insulating effects on policymakers seeking to inflict fiscal pain for a long-run purpose. The 1990 and 1993 budget bills, which raised taxes to reduce the federal deficit, provoked either broad (1990) or unified (1993) Republican opposition in Congress and thus passed by relatively (1990) or extremely (1993) narrow majorities. President George H.W. Bush (in the first case) and Congressional Democrats who voted for the measure (in the second case) appear to have suffered electorally for their support of these cost-imposing policies in the absence of broad bipartisan consensus (Schmalz 1992; Brady, Cogan, Gaines, and Rivers 1996). In contrast, the Social Security reform of 1983, which entailed short-run costs both for taxpayers and seniors, was negotiated within a bipartisan commission and enacted with overwhelming support from both parties. There is little evidence that President Reagan or Congressional Democrats or Republicans suffered electorally for this act of short-run loss-imposition (Light 1995).

While today's polarized partisan environment makes cross-party deal-making more difficult than in the past, log-rolling across partisan and ideological fault lines to fund the delivery of local public goods was long a common feature of the congressional appropriations process (e.g., Schick 2007). Compared to many other policy issues, moreover, public support for infrastructure spending does not feature sharp partisan division.<sup>9</sup> Much critical infrastructure in the U.S. was built at a time of rising tax revenues, making it politically easier to embark on new spending commitments. Yet ideological polarization may not itself be an insurmountable obstacle to the formation of a broad legislative coalition for enhanced investments in widely valued public goods. A broad legislative coalition, moreover, would provide incumbents with electoral cover for imposing the costs that such investments would likely entail.

### Budgetary rules and processes

Intrinsic structural features of some long-term public goods and politicians' framing and coalitional strategies can help tilt the informational playing field in favor of increased public investment. Public investment also takes place within a set of budgetary rules that shape the available information about its costs and benefits. How might broad features of the federal budget process interact with public investment's intertemporal features to impede or facilitate farsighted action? While basic features of human cognition cannot readily be changed, budgeting rules can be; and their reform thus might offer an opportunity for policymakers to generate political conditions more conducive to boosting public investment. I consider here two types of rules that may shape the informational conditions surrounding public investment: rules governing the accounting of streams of costs and benefits; and rules governing the distribution of particularistic policy benefits.

### Accrual-based accounting and capital budgeting

Given the intertemporal nature of capital investment, its politics might be considerably influenced by how future costs and benefits are taken into account in the scoring of policy proposals and in their treatment under budget rules. Under the accounting system employed for most purposes by the federal government – known as *cash basis* accounting – costs and revenues are recorded in the year in which they are actually paid or received. Thus, for instance, net budgetary outlays for Social Security, which is managed on a cash basis, are recorded as part of federal outlays in the year in which benefits are in fact paid out. Likewise, cash-basis accounting front-loads the accounting of costs for public investments expected to generate benefits over the long run: the costs are fully charged against the government's balance sheet in the early years, as they are paid out, while any future fiscal returns (such as user fees) will be credited over the long stretch of time during which they are realized (Office of Management and Budget 2016). Cash-basis accounting is well suited to capturing the government's net fiscal position in a given time

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<sup>9</sup> See, e.g., Gallup polling at <http://www.gallup.com/poll/161438/americans-widely-back-government-job-creation-proposals.aspx>.

period; it provides the information that policymakers need, for instance, to assess the short-run effects of budgetary decisions on the macro-economy or determine government borrowing requirements.

When programs are scored on an *accrual* basis, in contrast, costs ~~and benefits~~ are recorded at the time they are incurred rather than at the time when the resulting cash flows will take place. Thus, for instance, the costs of a policy change that will increase future governmental liabilities (e.g., obligations to retirees) would be scored in the current period as the net present value of the projected, resulting stream of higher outlays – thus, in accounting terms, frontloading downstream costs generated by decisions made today. In the case of public investment, the effect would run in the opposite direction: costs would be attributed to the period of time over which the benefits accrue and can be conceptualized as the portion of the value of the asset that was consumed during a given year (i.e., depreciation). In the evaluation of capital projects, accrual methods thus take directly into account the fact that current capital outlays are made for long-term purposes, and they facilitate an “apples to apples” comparison between short-run cash expenses and future returns. (For further discussion, see Redburn 1993.; Congressional Budget Office 2008; Vesey 2012; Office of Management and Budget 2016).

Standard practice in private firms, accrual methods are relatively uncommon in the public sector. Nonetheless, a shift toward accrual accounting at the federal level could help level the informational scales between present and future as decisions about public investment are being made. Were public investments’ up-front costs to be amortized over the life of the capital being created, far more investment spending could occur without the need to impose visible sacrifice on voters, whether through spending offsets in other program areas or tax increases. Moreover, mere changes in the scoring of policy costs could have a significant impact on the political feasibility of major investments. Consider, by analogy, the salient role of CBO’s estimates of the costs of drafts of the Affordable Care Act on the politics of its enactment and the efforts of Democratic legislators to adjust the proposal in order to achieve a favorable scoring of the legislation by CBO (Stolberg 2009). Under accrual accounting, an investment project’s announced short-run costs would be a fraction of what they are under cash-based rules and might thus be more palatable both to policymakers and to the general public.

A closely related accounting idea is capital budgeting. When capital spending is budgeted separately from operational expenses, decisions about certain investment expenses may be made separately and under different rules than those for operations. States and localities typically use capital budgeting as a tool for both limiting and justifying borrowing, with the use of debt permitted for capital but not for operating expenditures. Most state and local governments then charge the debt servicing costs of capital expenditures (rather than depreciation costs, as with private-sector accrual methods) against the operating budget (Congressional Budget Office 2008; Vesey 2012). Whereas accrual-based accounting treats up-front cash outlays as costs paid over an extended period of time, capital budgeting with debt financing would *in fact* spread the federal government’s investment outlays over time – aligning their timing more closely with the timing of the project’s benefits. Capital budgeting also in principle places a useful constraint on government’s ability to incur long-term debt obligations, allowing borrowing only for initiatives expected to generate long-run social gains.<sup>10</sup>

## ACCURAL ACCOUNTING

Under accrual accounting, an investment project’s announced short-run costs would be a fraction of what they are under cash-based rules.

A third, and also closely related possibility, would use debt financing but with the federal government in the position of creditor, rather than debtor. The federal government could provide the financing for investment in public goods by providing *loans* or *loan guarantees* to other entities – public or private – wishing to undertake them. Under Federal Credit Reform Act (1993) rules, the costs of such loans or guarantees would be calculated not in terms of the immediate cash outlay, but as the present value of the

<sup>10</sup> Capital budgeting could also be combined with a rule, on the operational side of the budget, that requires balance over the business cycle, thus allowing deficit spending to boost aggregate demand during economic downturns.

long-term subsidy cost, which would include any interest-rate discount provided and an allowance for the expected probability of default (Redburn 1993). Since 1992, federal guarantees of credit and federal direct loans, including those financing private capital investment, have been budgeted and accounted for on an accrual basis. Administratively, lending for public investment might be managed by a Federal Infrastructure Bank, which might be capitalized with public funds or with private funding with federal backing (Pollack 2009; Miller, Costa, and Cooper 2012).

Like accrual-based accounting and capital budgeting, the extension of public credit to finance public investments would dramatically reduce the “sticker shock” associated with their short-run cash costs. Additionally, the extension of credit should tend to focus policymakers’ attention more closely on the *quality* of investments since the prospects for repayment – and thus the loan’s calculated cost – would hinge on the project’s ability to generate benefits (and, perhaps especially, revenues). The flip side of this potential virtue of credit extension is, however, also its chief limitation: its usefulness would likely be limited to projects that can generate a well-defined income stream – via, for instance, user fees – that can be used to repay the loan. Investments in transportation infrastructure would seem a plausible candidate, while spending on primary and secondary education would appear less so.

Each of these proposals has been under consideration in Washington for some time,<sup>11</sup> and each has come in for considerable criticism. Among the chief challenges that each of these proposals would face is definitional: how to decide what counts as capital or as investment. Following practice in the private sector and in the National Income and Product Accounts, should capital be defined in categorical terms as including only certain kinds of (mostly physical) assets (President’s Commission to Study Capital Budgeting 1999)? A categorical definition would provide a clear, bright line for policymakers and budget offices and thus minimize *post hoc* definitional wrangling. Yet it would exclude a wide range of governmental functions – such as investments in education, research, public health, and the environment – that yield long-run social returns. Generating a longer-term orientation in the budget process might thus call for defining investment in broader terms, as a function of a policy’s or project’s expected stream of benefits. A broader definition would naturally generate disagreement over the long-run consequences of particular policies or projects. Yet it is not at all obvious that this would be a bad thing. Given existing attentional biases toward the short run, greater debate of policy proposals’ long-run outcomes could be salubrious. Moreover, to say that the dividing line between operating and capital expenses is unclear or up for debate is not to say that the distinction should be ignored, as it is under most current federal budgetary practices.

A further objection relates to the transparency of accrual-based rules. Under such rules, the calculated cost of a policy decision turns on a forecast and, thus, on set of assumptions about uncertain parameters such as rates of depreciation and rates of default (in the case of loans). By contrast, accounting for cash flows is relatively simple and assumption-free (Vesey 2012). Again, however, it is unclear that this difficulty represents a compelling reason to maintain cash-based accounting. Few would argue that uncertainty about future economic and demographic developments should stop the Social Security Administration’s Chief Actuary from generating long-run trust fund forecasts to aid policy planning, even though we know that these forecasts contain error. Under cash-based accounting, we know for certain that we are treating short-run and long-run consequences asymmetrically. Under accrual rules, we would face imprecision as a result of uncertainty about assumptions, but we would have almost certainly shifted the decision calculus in a more rational direction.<sup>12</sup>

Accrual rules, it might also be argued, risk a perilous loosening of fiscal constraints. If borrowing or amortization of costs can be justified for all policies with long-run benefits, one might fear, the result will be runaway spending and borrowing for “investment” purposes. This is a distinct possibility, especially if “capital” itself is ill defined. One way to guard against this danger would be via the imposition of a global cap on capital borrowing, which might be defined as a percentage of the total federal budget or of GDP.

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<sup>11</sup> A move to accrual accounting, for instance, featured prominently in the recommendations of the 1967 President’s Commission on Budget Concepts (President’s Commission on Budget Concepts 1967).

<sup>12</sup> Just as the SSA’s Chief Actuary supplies forecasts under alternative assumptions, costs under accrual rules could be expressed as a range or a distribution, rather than a point estimate.



More fundamentally, however, accrual-based budgeting rules – if applied consistently – can be a powerful tool in the pursuit of long-run fiscal sustainability. Indeed, the 1992 reform that changed budgeting for credit to an accrual basis, and similar proposals to reform treatment of federal insurance programs, are designed to force policymakers to take account of the long-term costs of policy decisions made today – thus, for instance, making it more difficult for them to take on long-run liabilities without attending to the future outlays they will generate (Redburn 1993).

Comprehensive accrual accounting could further help manage long-run fiscal burdens by accounting for the costs of *inaction*: for instance, by scoring the costs of deferred maintenance on physical infrastructure. Full accrual accounting would require decision makers to take into account the long-run maintenance costs of new infrastructure before it is built. And accrual methods might help optimize the allocation of capital expenditures by, for instance, inducing policymakers to shift a greater share of transportation investment toward higher-value activities, such as the repair and upkeep of existing infrastructure rather than new construction (Kahn and Levinson).

### Particularistic benefits

The Republican Party adopted a ban on “earmarks” in federal appropriations bills when it assumed leadership of the House of Representatives in 2010. While often framed as an inducement to wasteful federal spending – on items such as Alaska’s infamous “bridge to nowhere” – earmarks take on a somewhat different cast if we consider the informational dynamics associated with public investment. Political scientist David Mayhew (1974), in seminal work on the U.S. Congress, pointed to the central role of particularistic benefits in members’ re-election-seeking strategies. In pursuing public goods with broad benefits, members of Congress face an informational problem: it is difficult for individual incumbents to claim responsibility for widely diffused welfare gains generated by policies enacted by the legislature as a whole. Members of Congress can much more easily claim credit at election time when they can point to visible policy benefits for which they are manifestly responsible. Earmarks, which allowed individual legislators to tie specific expenditures to particular projects in their own districts, were a straightforward mechanism for generating such credit-claiming opportunities (see, e.g., Lazarus 2009).

While earmarks have always represented a small portion of federal spending, it is possible that their demise has at least modestly reduced incentives to spend on capital projects. Consider, again, the informational features of public investment, especially in physical capital. While a majority of the expected returns to such investments will be long term and thus of low visibility in the present, the initiation of such projects will itself be highly visible by virtue of these projects’ localized nature. Once ground is broken voters receive an immediate and credible signal that a stream of policy benefits is on the way. These informational attributes give incumbents a clear motive for supporting such investments, even if their long-run benefits are fully discounted – *if* elected officials can claim credit for those benefits. Doing away with earmarks, by removing such credit-claiming opportunities, may in turn reduce legislative incentives to spend on geographically specific forms of public capital.<sup>13</sup>

At a time of diminishing programmatic consensus between the parties about the value of public investment, budgetary rules that preserve *electoral* inducements to produce public goods may be especially important. Earmarks themselves may be too politically toxic a concept to be revived. Moreover, as traditionally practiced, earmarking may tend to reduce the quality of public investments, even if they boost the quantity.<sup>14</sup> Nonetheless, in seeking ways of bringing levels of federal investment into line with the nation’s long-term needs, policymakers should consider procedural devices that can constructively capitalize on legislators’ natural tendency to favor the delivery of particularistic public goods that are easily traceable to their own efforts.

## **VII. Making Long-Term Investments More Robust**

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<sup>13</sup> The point is necessarily a somewhat speculative one. In one study of transportation spending, however, Knight (2004) finds that opportunities to earmark expenditures caused members to approve a greater number of projects.

<sup>14</sup> I thank Roy Meyers for suggesting this point.

Even if citizens are in principle willing to pay for long-term public goods, they may not trust that politicians will deliver those goods as promised. Thus, the political prospects for public investment hinge additionally on whether politicians can make their long-run policy commitments credible to voters. How can this be done?

Investments in physical infrastructure in fact confront problems of credibility that are somewhat less acute than those afflicting other forms of farsighted policy action. How vulnerable a policy commitment is to reversal or renegeing hinges in part on how *fungible* the resources are that the policy mobilizes. Consider the credibility problem faced by policymakers seeking to raise taxes or cut social spending in order to pay down the federal debt. Over the entire time horizon of the investment – from the extraction of revenues to the zeroing out of the debt decades hence – the accumulated resources remain in highly convertible form: money. Revenues collected in the name of debt-reduction can be easily redirected toward fighter jets or farm subsidies. In contrast, investments in brick-and-mortar infrastructure relatively quickly convert tax dollars into non-fungible assets: the physical infrastructure itself. Once built, a bridge (unlike a budget surplus) cannot be converted into a fighter jet. Cash may be fungible, but concrete is not.

Thus, some forms of investment may be subject to less long-term political uncertainty than others. Even in the domain of infrastructure investment, however, cash is not turned into concrete immediately. Citizens still face a time lag between when they pay for public investment through higher taxes and when the concrete is poured. Thus, taxpayers may still have reason to doubt that the extracted resources will be spent on the public goods they value. Moreover, in an era of low trust in government, citizens tend to doubt not only public officials' honesty and integrity but also the competence of public authorities. Planned projects may not be effectively carried out by the multiple agencies or levels of government that must coordinate in their implementation. The school or bridge may indeed get built, but poorly and wastefully. There is still a serious credibility problem to be solved.

The public policy and public opinion literatures point to ways in which the credibility of state commitments can be reinforced by appropriate policy designs. Patashnik's (2000) work on trust funds in the U.S. budget process illustrates this point nicely. When politicians undertake a commitment to spend a new tax on a specific purpose, they sometimes entrench that commitment by channeling the new revenue stream into an identifiable account – a trust fund – that is then walled off (at least provisionally) from the rest of the budget. A trust fund is intended to make spending promises more credible by rendering any attempt to divert the funds *visible* to constituents, thus raising the political costs of renegeing. The Social Security trust funds represent one especially prominent instance of this mechanism at work. Trust funds with dedicated revenue streams are also used to finance important elements of U.S. public infrastructure, including the federal highway system (financed out of gasoline taxes) and the airport and airway system (financed out of excise taxes on passengers and cargo).

Little work has been done to date examining whether such accounting systems in fact boost public confidence in fiscal commitments. In recent survey-experimental research, however, Scott Matthews and I (Forthcoming) begin to investigate this question. In the experiments that we conduct, we find that subjects do express greater willingness to pay taxes for future public goods when those funds will be managed under trust-fund rules, under which monies collected for a given purpose cannot be employed for any other objective unless the law is changed.

In this same set of studies, we also examine two additional potential strategies for building public confidence in long-term benefit promises. The first of these is delegating responsibility for management of public investment to a more, rather than a less, respected agency or political unit. In one of our experiments, we compared subjects' willingness to pay higher taxes for infrastructure improvements when ultimate responsibility for the project was said to be lodged with (varying across subjects) (a.) Congress, (b.) the Army Corps of Engineers, or (c.) local governments. While the national legislature is among the least trusted of institutions in the American political system, the military and local governments remain among the most trusted. And, in turn, levels of support for the identical public investment are substantially

higher when the investment is said to be managed by the Army Corps or local governments rather than by Congress.<sup>15</sup>

Additionally, we examined the effectiveness of insulating implementation from politics. A long line of argumentation in the field of political economy suggests that the credibility of policy commitments can be enhanced through political insulation. As students of macroeconomic policy have long argued, governments' commitments to maintain a given level of monetary growth, in the face of short-run electoral incentives to inflate the economy, can be made more credible by assigning control over the money supply to an authority that is independent of electoral politics (e.g., Rogoff 1985). Scholars in the public choice

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User fees, where practicable, dovetail neatly with credit-based financing mechanisms, such as loans and loan guarantees, by monetizing the returns to public capital.

tradition have contended that moral hazard in the production of public goods can be reduced by delegating authority to a bureaucracy insulated from external political pressure (e.g., Miller 2000). Hibbing and Theiss-Morse (2002), moreover, find that Americans routinely express a preference for government by neutral experts rather than partisan politicians. On these lines of reasoning, if citizens fundamentally distrust politicians, then perhaps confidence in public investments can be enhanced by minimizing legislators' discretion over the use of the funds and lodging responsibility for public investments with a non-partisan, independent agency. This hypothesis is not, however, borne out in our experiments: we find no appreciable effect of political insulation on public willingness to pay for investments. While voters may not trust their elected representatives, they seem no more eager to entrust their tax dollars to unelected officials over whom they can exert even less control.

Policymakers might further seek to minimize uncertainty about benefit delivery by raising revenues at the point at which public goods are enjoyed. Financing public goods via user fees – such as tolls or fares – tightly links and synchronizes the payment of policy costs with the delivery of policy benefits, thus removing scope for uncertainty about the latter. User fees, where practicable, dovetail neatly with credit-based financing mechanisms, such as loans and loan guarantees, by monetizing the returns to public capital. Yet user fees have important drawbacks as a financing mechanism. Paying for public goods via user fees is typically suboptimal from a distributive perspective. User fees are generally regressive, imposing flat dollar costs on users of differing means. For investments in many public goods – such as primary and secondary education – payment at the point-of-service would be broadly unacceptable and probably undesirable. User fees also misallocate costs, as compared to general revenue financing, to the extent that the use of a public good has significant positive externalities. The benefits of mass transit, for instance, are enjoyed not only by riders but by all who drive on less-congested roads and breathe less-polluted air as a result of transit use. While there is surely scope for expanded imposition of user charges, and their political attractions are considerable, they are limited as a tool for financing America's unmet public-investment needs.

## VIII. Interest Groups and Public Investment

The fate of fiscal policy decisions hangs not only on their popularity with the general public but also on the alignment of organized support and opposition: on the positions taken by those groups with the capacity to lobby public officials and with the resources to influence the outcome of election battles. As noted above, public-infrastructure provision does not in most cases directly impose costs on organized groups. Nonetheless, organized interests may figure in the politics of public investment in at least three important respects.

First, as noted above, while those who pay the costs of public investment – taxpayers – are not a well-organized political group, they *do* have organized representation of sorts. Organizations such as Americans for Tax Reform, the Club for Growth, and Americans for Prosperity wield vast financial

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<sup>15</sup> Further tests indicate that this difference in support derives from differences, across the institutional conditions, in beliefs about whether the promised public goods will be delivered, rather than from other differences in subjects' views of these institutions.

resources, which they deploy to exert electoral pressure on (especially) Republican legislators to take and maintain firm positions against raising taxes. Whatever Republican voters' opinions on matters of public infrastructure, ATR has persuaded nearly all Republican members of Congress to oppose the tax increases that would be needed to fund major new investments, while the Club for Growth has demonstrated its willingness to generously finance primary challenges against Republican incumbents who vote for revenue hikes (Hacker and Pierson 2005). The prospects for closing America's infrastructure funding gap will thus hinge considerably on the political influence of well-financed anti-tax organizations. Those prospects would likely be better under a return to Democratic Congressional majorities (with which anti-tax groups have never had much sway), under a change in campaign finance rules that limited these groups' ability to shape election outcomes, or with the emergence of an organizational counterweight devoted to enhanced public-good provision.

Second, at least a partial organizational counterweight may be found in corporate America. Many of the long-term *benefits* of public goods are captured by producers, who rely on infrastructure to get their products to market, to import inputs into their production processes, and to bring power to their factories; on research funding to develop new product lines; and on education and training to supply a skilled workforce. Firms and their lobby groups, moreover, tend to pay attention not just to present business conditions but also to longer-term developments that might affect corporate profitability. The National Association of Manufacturers (NAM), for instance, routinely joins America's civil engineers in decrying the decay and underfunding of the country's infrastructure<sup>16</sup> and pushed hard for the recent passage of a long-term highway funding bill (Weisman 2014a). Over the last several years, in fact, a broad interest-group coalition – including the AFL-CIO, the Association of Equipment Manufacturers, the Council of State Chambers of Commerce, and the U.S. Chamber of Commerce – has been pressing congressional Republicans to increase the gas tax to pay for transportation investments (Weisman 2014b; Sargent 2015).

The Republican majority resisted calls for revenue hikes and enacted a transportation bill financed by one-off offsets and asset sales that will leave a large financing gap when it expires in a few years' time. It is unclear, however, for how long the Republican Party will be able to resist pressure from its business allies to adequately fund economically vital infrastructure. A future Democratic legislative majority, moreover, would likely enjoy broad business and labor support for such infrastructure initiatives.

Third and finally, while public investments may be undertaken primarily for their long-term social benefits, infrastructure projects also tend to deliver *short-term* benefits to organized groups. As political scientists Kimberly Morgan and Andrea Campbell (2011) find in an analysis of “delegated governance,” those societal actors responsible for delivering public programs can often become key constituencies for those programs' creation or expansion (see also Mettler 2011). Public investments often rely on a set of “intermediaries” who are paid to develop, maintain, and manage the creation of long-run capital – such, the firms and workers that build physical infrastructure or the teachers that deliver educational goods. As these producer groups are often well organized, they tend to be influential advocates for expanded public investment – ironically, for reasons mostly unrelated to that investment's long term social benefits.

This is, in a certain sense, good news for public-goods provision. At the same time, the interests of organized intermediaries and those of the general public are not identical. Teachers unions, for instance, are traditionally strong advocates for robust investment in education. Yet the literature on the effects of teachers' unions suggests that their activities may yield higher incomes for senior teachers without clear improvements in student outcomes (Hoxby 1996; Hoxby and Leigh 2004; Brunner and Squires 2013). Likewise, construction firms and suppliers lobbying for greater spending on transport infrastructure are not necessarily pressing for those forms of infrastructure that would deliver the greatest public benefit. Advocacy by well-organized “short-term winners” may ease the political path to increased infrastructure investment, but may not always yield the most efficient allocation of limited budgetary resources.

## IX. Conclusion

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<sup>16</sup> See, for instance, the NAM's “Catching Up” report at <http://www.nam.org/Data-and-Reports/Reports/Catching-Up/>

Analyzing budgeting for public investment as an intertemporal dilemma – as a tradeoff between short-term and long-term consumption possibilities – reveals a number of significant features of the issue's politics. An expansion of investment spending via tax increases would involve asking voters to pay costs in the present in order to address problems that have yet to draw much public attention. It would also represent a long-term policy bargain between taxpayers and their elected representatives – a bargain in which citizens must trust politicians (whom they do not generally trust) to do tomorrow what they promise today. And the case for rejecting that bargain has powerful representation in Washington among well-financed anti-tax organizations.

At the same time, some long-term public goods have certain features that make their provision politically attractive. Where public goods take the form of localized physical capital, for instance, their production is itself often immediately visible to constituents, vividly signaling future benefits in the present. The physicality (the literal concreteness) of most public infrastructure likewise enhances the credibility of its benefits, especially critical given low levels of public trust in government. More broadly, because of the central role of much public investment in supporting economic activity, corporate America represents an influential and reasonably far-sighted voice for supplying public goods.

The prospects for enhanced public investment will turn in part on policymakers' political acumen. Public officials can enhance investment's political appeal by artfully framing public investment as an exercise in loss-avoidance and by seeking out opportunities to reach broad bipartisan agreement. Yet the political scope for expanded investment may also depend heavily on structural features of the budgetary process and of financing mechanisms. Public and organized opposition to tax increases is likely to remain strong for the foreseeable future. Meanwhile, current budgetary principles force plans for new investment to confront this opposition head on and under the least favorable of terms, maximizing the apparent, short-run costs of capital creation relative to its long-run benefits. The path to expanded investment may thus lie in the broader use of accounting and financing mechanisms – such as accrual methods, capital budgeting, and loans and loan guarantees – that more closely and rationally align the payment of investment's costs with the emergence of its benefits.

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