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**Capital Budgeting:**

**Efficacy and Feasibility for  
the Federal Government**

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## **INTRODUCTION**

In most large firms and U.S. states, budgeting processes follow a two-track route: an “operations budget” describes short-term flows of money and resources, while a “capital budget” helps decisionmakers understand their long-term investments and durable assets. Despite this common practice in states and firms, the U.S. federal government does not use capital budgeting. Several federal advisory boards and agencies have suggested the adoption of a capital budget, but the GAO and presidential commissions have considered and rejected the idea. Still, proponents of capital budgeting recommend it as an effective method for reallocating federal resources toward the most productive public goods and ensuring that decisionmakers can avoid biases against long-term investment and maintenance.

This paper will explore existing institutions for capital budgeting, and investigate whether a transition to a federal capital budget would significantly improve federal investment decisions. Part I of this paper explains how a how a capital budget works and outlines the theoretical arguments around this method of accounting. Part II discusses current U.S. federal approaches to accounting for capital investment, then briefly describes state and foreign approaches to capital budgeting. Part III evaluates the arguments around whether capital budgeting will improve capital decisions in the United States, and Part IV considers how to implement a capital budget in the federal government. In sum, the paper finds that capital budgeting could address underinvestment in capital goods, but will probably not improve allocation of capital among current capital investments. While a well-designed capital budget could improve U.S. fiscal governance, there are already many practices and institutions that could be strengthened to address the same issues.

## I. UNDERSTANDING THE CAPITAL BUDGET AND PUBLIC CAPITAL INVESTMENT

### A. What is a capital budget?

Capital budgeting refers to the organizational practice of keeping separate accounts for cash flows and for long-term investments.<sup>1</sup> This approach can more accurately describe the long-term health of an organization and the productivity of its investments, though it does not provide a definite account of inflows and outflows of cash.<sup>2</sup> Many approaches to capital budgeting match costs and benefits of an investment over a time horizon, reflecting the declining value of an asset and its continuing benefits. This approach helps decisionmakers understand the value of long-term investments by matching their costs to their benefits, providing a more valuable guide to decisions than a short-term view.

While capital budgets have the common feature of segmenting long-term investments from short-term operations, there are many different expressions of this underlying theme. Researchers at the Brookings Institute separated capital budget proposals into four overarching categories.<sup>3</sup> First, there is the “basic segmentation model,” which presents federal investment projects separate from the operating budget and overall federal debt. Second, there is the “capital debt budget model,” followed by many states, which sets a bond cap and allows capital expenditure up to this threshold. Third, there is the “depreciation model,” often used in the private sector, which spreads costs across the life of an asset and charges the operating budget for depreciation each year. Finally, there

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<sup>1</sup> CONGRESSIONAL BUDGET OFFICE, CAPITAL BUDGETING 1 (2008), available at <http://www.cbo.gov/sites/default/files/05-08-capital.pdf>

<sup>2</sup> *Id.*

<sup>3</sup> EMILIA ISTRATE & ROBERT PUENTES, INVESTING FOR SUCCESS: EXAMINING A FEDERAL CAPITAL BUDGET AND A NATIONAL INFRASTRUCTURE BANK 10 (Jun. 10, 2009), available at <http://www.brookings.edu/research/reports/2009/12/10-infrastructure-puentes>.

are the “fusion models” which combine aspects from other models such as segmenting capital from operational debt, setting strict bond caps, and applying depreciation to assets. These are most similar to the comprehensive accrual accounting programs of countries like New Zealand.

### **B. Simple Illustration: “Cheap Bridge” and “Sturdy Bridge”**

As a simplified illustration, consider a state government deciding to buy a “Cheap Bridge” or a “Sturdy Bridge.” The Cheap Bridge will cost \$10 million and last for 10 years, after which it must be replaced. The Sturdy Bridge will cost \$20 million and last for 100 years.

Looking at an operational budget, the Cheap Bridge looks cheaper to a decisionmaker in year 1, since it costs \$10 million less than the Sturdy Bridge; a legislator might have to look in the budget footnotes to discover that the Sturdy Bridge has a longer lifespan. Looking at a capital budget, the Sturdy Bridge might be more attractive, though this would be displayed differently under different capital budget approaches.

In the “basic segmentation” model, both investments would be considered on a separate budget than normal operational expenses like wages and transfer payments. If the state has balanced budget rules, supermajority tax requirements, pay-as-you-go legislation, or other fiscal constraints, the \$10 million bridge could be easier to pass despite the superior quality of the more expensive bridge. Using a separate capital budget, however, the state would be more free to choose the option with a cheaper long-term cost structure.

In the “capital debt budget” model, the state would target the amount of debt it could afford to issue and plan for capital investments based on this tolerance for debt. This follows the

actual practice of many states.<sup>4</sup> While a capital debt budget is normally paired with a capital investment plan,<sup>5</sup> the direct effect is to exempt some debt from operating budget fiscal constraints, not provide a detailed framework for comparing capital investments. The capital debt budget model would, however, group appropriation decisions around capital investments together, allowing comparison and competition between capital investments rather than between capital and non-capital spending.

In the “depreciation” model, capital investments are displayed as costs stretched over the period of their useful life.<sup>6</sup> This model allows for comparisons across programs. Under a depreciation model in the bridge hypothetical, the Sturdy Bridge is clearly more attractive, because the headline cost includes the bridge’s lifespan and benefits. In one approach to capital budgeting, the cost in year 1 would be \$200,000, depreciating \$20 million over 100 years, assuming no discounting.<sup>7</sup> In another approach, the Sturdy Bridge could be evaluated for its net present value, assessing the economic benefits in each year and applying a discount rate. In this approach, the value of the Sturdy Bridge could be a net positive in budget terms if it generates future revenue to justify its present costs.

### C. Theoretical Bases for Capital Budgeting

The difference between the operating budget and the capital budget comes from their assignment of costs and benefits over time. To an operating budget, costs are incurred when money leaves the treasury. For a state, firm, or household that is worried about bouncing a check or keeping close control of its outlays, this approach makes sense. Capital budgets, on the other

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<sup>4</sup> See NATIONAL ASSOCIATION OF STATE BUDGET OFFICERS, CAPITAL BUDGETING IN THE STATES 85 (2014), available at <http://www.nasbo.org/sites/default/files/pdf/Capital%20Budgeting%20in%20the%20States.pdf>.

<sup>5</sup> *Id.* at 5.

<sup>6</sup> Istrate, *supra* note 3, at 10.

<sup>7</sup> This highly simplified illustration assumes straight-line depreciation and does not account for the time value of money.

hand, match costs to benefits—either explicitly in depreciation models or implicitly through debt financing. That means costs are expanded over the lifespan of an asset, allowing a decisionmaker to compare the \$1 million yearly benefit of a Sturdy Bridge with a \$200,000 yearly cost. Alternately, it can compress benefits to a single year, allowing a decisionmaker to compare the \$20 million upfront cost of the Sturdy Bridge with its \$100 million lifetime benefit.

In more abstract terms, the purpose of a capital budget is to help decisionmakers make long-term decisions while using short-term summary information. In a presentation to the Congressional Budget Office, Prof. Miles Kimball said that the fundamental purpose of a capital budget is “to map complex intertemporal decisions into corresponding static, atemporal, one period decisions that yield the same answer about what should be done.”<sup>8</sup> This approach recognizes that spending on long-term decisions is different than spending on short-term decisions, and seeks to accurately reflect that difference so that decisionmakers can plan for the long term.

Besides providing a long-term decisionmaking framework, capital budgets are also valuable for smoothing out expenditures to avoid balanced budget requirements or other fiscal caps. In many states, the use of capital budgeting stems in part from a legal obligation to balance the budget.<sup>9</sup> Without a capital budget, states might prefer to underinvest in capital because large purchases could conflict with the balanced budget “ceiling” on expenditures, forcing cuts in other programs or short-term revenue increases. With a capital budget, the costs of long-term assets can be spread across multiple years in a predictable way without violating balanced budget rules. Using the Cheap Bridge and Sturdy Bridge example, a state with a balanced budget law

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<sup>8</sup> Miles Kimball, Presentation to CBO: The Applied Theory of Capital Budgeting (May 16, 2014), *available at* <http://blog.supplysideliberal.com/post/85887614416/capital-budgeting-the-powerpoint-file>.

<sup>9</sup> NATIONAL COUNCIL OF STATE LEGISLATURES, STATE BALANCED BUDGET PROVISIONS (last visited Apr. 20, 2015) <http://www.ncsl.org/research/fiscal-policy/state-balanced-budget-requirements-provisions-and.aspx>.

might adopt a capital budget so that it can treat the Sturdy Bridge as a \$200,000 yearly debt service expense rather than a \$20 million single-year cost that requires major program cuts or tax increases. These caps exist for prudential reasons as well—states do not have fiscal sovereignty as the U.S. federal government, and taking on excess debt quickly raises state borrowing costs.<sup>10</sup>

A final benefit of capital budgeting comes from the underlying process required. Because capital budgeting relies on future costs and benefits, an institution implementing a capital budget will need to investigate and evaluate this information. Just as an operational budget forces agencies to account for all inflows and outflows of money, a capital budget forces agencies to analyze future conditions, rates of return, cost-benefit analysis, and other efficacy-based measures rather than control-based measures. In this way, proponents argue that capital budgeting focuses attention on outcomes rather than outflows.<sup>11</sup>

## II. CAPITAL PRACTICES IN THE U.S. FEDERAL GOVERNMENT

Capital budgeting has been applied in states, foreign governments, local governments, and firms, with varying processes and effects. The U.S. federal government uses some capital budgeting components and related concepts, but has not merged these programs into an overall capital budget.

Moving from theoretical examples into real-world applications, capital budgets become far more complex. First, there is no objective or even commonly shared definition for what is “capital” and what is not. Second, projecting future costs and benefits is inherently uncertain, even for commonplace public investments like highways and sewer systems. Finally, motivated

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<sup>10</sup> See, e.g. PEW TRUSTS, INFOGRAPHIC: S&P STATE CREDIT RATINGS, 2001-2014 <http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2014/06/09/sp-ratings-2014> (showing changes in state bond ratings from 2001-2014)

<sup>11</sup> F. William Thompson, Lecture on Capital Budgeting, *available at* <http://www.willamette.edu/~fthomps/Lectures/CapitalBudgeting.doc>.



stakeholders and politicians can manipulate capital budgets to understate costs or overstate benefits. For these reasons, the practice of capital budgeting varies widely. This section lays out the main ways that governments have approached capital budgeting.

## **A. Capital Investment in the U.S. Federal Government**

While the U.S. government does not maintain a capital budget, it does keep track of federal capital investment and treats some investments differently for management purposes, though not on the scale that a capital budget would require. The federal government also allows accrual accounting for certain loan and insurance programs, allowing some of the same effects as capital budgeting for financial assets. Overall, the federal government keeps many summaries of its capital investments, has mechanisms for evaluating capital investments, and treats some long-term programs differently for budget purposes, but these individual aspects of financial management have not been united at the highest levels to form a capital budget.

### **1. Capital Summaries**

The closest U.S. federal government analogue to a full capital budget is the Financial Report of the U.S. Government, an annual summary of federal revenues, costs, assets, liabilities, and other obligations. This document provides some of the summary functions of a capital budgeting process since it accounts for the assets that spending purchases and not simply the inflows and outflows of cash,<sup>12</sup> but the Report fails to provide a strategic framework for comparing and deciding between capital investments, and has no legal impact on spending decisions. The Report is valuable as an inventory of assets, but Congressional negotiations over

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<sup>12</sup> FINANCIAL REPORT OF THE U.S. (2014) *available at* [http://www.fiscal.treasury.gov/fsreports/rpt/finrep/finrep14/fr\\_index\\_new.htm](http://www.fiscal.treasury.gov/fsreports/rpt/finrep/finrep14/fr_index_new.htm)

debt focus on debt held by the public and other measures of the operational budget deficit,<sup>13</sup> rather than priorities among federal investment.

Another useful “summary” document laying out federal investment comes from the yearly Analytical Perspectives on the Federal Budget from OMB. This yearly report lays out high-level summaries of the portion of the federal budget devoted to investment, helping draw attention to the government’s spending priorities over time. In contrast to other definitions of federal investment, the Analytical Perspectives definition of capital includes federally-funded state-owned assets, research & development, and education & training, with consistent reporting since 1940.<sup>14</sup> Like the Financial Report of the United States, it is primarily valuable as a descriptive document, but does not provide a mechanism for choosing among investments or restating their budget impact, as a full capital budget would do.

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<sup>13</sup> CRFB, THE BETTER BUDGET PROCESS INITIATIVE: IMPROVING FOCUS ON THE LONG TERM (2015) *available at* [http://isites.harvard.edu/fs/docs/icb.topic1379255.files/CFRB%20budget\\_process\\_reform\\_-\\_improving\\_focus\\_on\\_the\\_long-term%20of%2023%20January%202015.pdf](http://isites.harvard.edu/fs/docs/icb.topic1379255.files/CFRB%20budget_process_reform_-_improving_focus_on_the_long-term%20of%2023%20January%202015.pdf) (noting that the Financial Report of the United States is rarely discussed and has no place in the current budget process).

<sup>14</sup> THE PRESIDENT’S BUDGET, FY 2016: 18. FEDERAL INVESTMENT 287 (2015) [https://www.whitehouse.gov/sites/default/files/omb/budget/fy2016/assets/ap\\_18\\_investment.pdf](https://www.whitehouse.gov/sites/default/files/omb/budget/fy2016/assets/ap_18_investment.pdf)

Federal Investment	Actual 2014	Estimate	
		2015	2016
Major public physical capital investment:			
Direct Federal:			
National defense .....	117.1	115.2	110.9
Nondefense .....	37.5	43.2	39.8
Subtotal, direct major public physical capital investment .....	154.6	158.4	150.7
Grants to State and local governments .....	78.9	82.0	84.6
Subtotal, major public physical capital investment .....	233.5	240.4	235.3
Conduct of research and development:			
National defense .....	70.6	72.6	76.9
Nondefense .....	60.7	61.6	63.1
Subtotal, conduct of research and development .....	131.3	134.2	140.1
Conduct of education and training:			
Grants to State and local governments .....	56.6	61.0	58.1
Direct Federal .....	42.8	85.3	57.1
Subtotal, conduct of education and training .....	99.5	146.2	115.2
<b>Total, major Federal investment outlays .....</b>	<b>464.3</b>	<b>520.9</b>	<b>490.6</b>
<b>MEMORANDUM</b>			
Major Federal investment outlays:			
National defense .....	187.6	187.8	187.8
Nondefense .....	276.7	333.0	302.8
Total, major Federal investment outlays .....	464.3	520.9	490.6
Miscellaneous physical investment:			
Commodity inventories .....	-0.5	-0.1	-0.1
Other physical investment (direct) .....	2.0	2.4	2.5
Total, miscellaneous physical investment .....	1.5	2.3	2.4
<b>Total, Federal investment outlays, including miscellaneous physical investment .....</b>	<b>465.8</b>	<b>523.2</b>	<b>493.0</b>

Figure 1: Federal Investment Summary from FY2015 Analytical Perspectives on the Federal Budget

## 2. Accrual Accounting and FASAB Standards

Unlike federal summaries of investment outlays, accrual accounting at the federal level provides a more comprehensive summary and restatement of budget impacts for long-term federal investments, though it is limited to certain financial assets. Accrual accounting is similar to capital budgeting in that it recognizes that actual inflows and outflows of cash represent a limited picture of an asset's worth.<sup>15</sup> Applied to federal insurance and loan programs, accrual accounting focuses on the present value of an asset based on its future flows of interest payments, defaults, and actuarial risk.<sup>16</sup> Like capital budgeting, accrual accounting helps decisionmakers recognize that the budget impact of a large initial payment depends on the value

<sup>15</sup> FED. ACCT. STANDARDS ADVISORY BOARD (FASAB), APPENDED GLOSSARY 2093 (2012).

<sup>16</sup> *Id.* at 2093-2094.

of the asset the government receives in return—for example, a promissory note in the case of accrual accounting, or a bridge in the case of capital budgeting.

Much of the federal approach to accrual accounting of assets comes from the Federal Accounting Standards Advisory Board (FASAB) Handbook and the Federal Credit Reporting Act of 1990. The FASAB Handbook provides guidance to agencies reporting their capital assets, accrual of future liabilities and payments, deferred maintenance on assets, and other accounting concepts beyond simple cash accounting.

In the past, capital budgeting studies criticized FASAB for its loose definition of deferred maintenance and lacking unified federal guidelines on the subject.<sup>17</sup> In 2012, FASAB was amended with a dedicated subchapter for deferred maintenance.<sup>18</sup> Government-wide financial statements will now include a description of the agency’s approach to deferred maintenance and the amount of deferred maintenance for “general [Property, Plant & Equipment,] heritage assets, and stewardship land.”<sup>19</sup> These categories are extremely broad and will not allow detailed analysis, but reporting aggregate levels of deferred maintenance should help shift toward long-term views of asset value in the federal government.

One important FASAB distinction is between “federal capital” and “national capital.” Federal capital is owned directly by the federal government, but national capital is any federally-financed capital that contributes to economic growth.<sup>20</sup> Examples of “national capital” include federally financed state infrastructure, education and training grants, and investments in basic research. While these assets are not “federal capital” as a matter of legal ownership, in economic terms they still accrue benefits for the federal government. Since government capital

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<sup>17</sup> BROWN ET AL., REPORT OF THE PRESIDENT’S COMMISSION TO STUDY CAPITAL BUDGETING 30 (1999) available at <http://clinton2.nara.gov/pcscb/report.pdf>

<sup>18</sup> FED. ACCT. STANDARDS ADVISORY BOARD (FASAB) 1452 (2012).

<sup>19</sup> *Id.* 1459.

<sup>20</sup> Congressional Budget Office, *supra* note 1, at 4.

investments create positive externalities, the federal government captures their value through increased tax revenue and enhanced social welfare, regardless of ownership. Federal administrators have recognized this problem, but estimating economic impacts for federally-funded investments has proved too difficult in the past.<sup>21</sup> Instead of rigorously accounting for these assets, FASAB categorizes them as “stewardship investments”<sup>22</sup> and the Financial Report of the United States summarizes them as such.

Another important source of long-term accounting techniques comes from the Federal Credit Reporting Act (FCRA) of 1990, which adopted accrual accounting for a wide variety of federal financial activities. This reform led to serious impacts on how the federal government manages its loan and insurance programs. Because cash-flow accounting recognizes outflows and inflows in the period they actually occur, legislators were able to pass loan guarantees with understated budget impacts, since the federal government would not pay until a borrower defaulted.<sup>23</sup> After the FCRA, budget impacts for loan programs depend on OMB calculations of default risk, fee charges, collateral, and historic performance of similar loans.<sup>24</sup> Agencies may reestimate the budget impact of their loan programs as new evidence comes to light.<sup>25</sup>

Since accrual accounting and capital budgeting both aim to correct the short-term biases of cash-flow accounting, adoption of accrual accounting in the FCRA could be a template for future creation of a capital budgeting process. Accrual accounting for financial assets, however, may be relatively easy compared to estimating the depreciation rate for infrastructure or return on investment for basic research. The FCRA often applies to programs where the federal

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<sup>21</sup> *Id.*

<sup>22</sup> FED. ACCT. STANDARDS ADVISORY BOARD (FASAB) 710 (2012).

<sup>23</sup> 2 U.S.C. § 661e(a) (exempting FDIC, NCUA, RTC, PBGC, National Flood Insurance, National Crop Insurance, Tennessee Valley Authority).

<sup>24</sup> CENTER ON FEDERAL FINANCIAL INSTITUTIONS, Budgeting for Credit Programs: A Primer 1, 3 (2004) available at <http://www.coffi.org/pubs/Budgeting%20Primer.pdf> (last visited Apr. 20, 2015).

<sup>25</sup> See 2 U.S.C. 661c(f) (West).

government and borrower are bound by a contract with known payment conditions; calculating the future economic impact of a road or bridge could be far less certain than the economic impact of a student loan. Still, the use of complex econometric models, annual reestimation, and comparison to past performance could all be applied to evaluating capital investments, and the FCRA remains the most significant precedent for any move toward capital budgeting.

### ***3. Capital Practices Within the Executive Branch***

Within the executive branch, several major executive actions have shaped approaches to capital investment. Executive Order 12893 shapes analysis of large infrastructure investments, while OMB Circular A-11 shapes agencies' ability to invest in assets for their own use. Neither has the same legislative effect as a full capital budget, but both take steps toward the capital planning process that accompanies capital budgeting.

Executive Order 12893, "Principles for Federal Infrastructure Investments," lays out processes for federal agencies tasked with funding and maintaining infrastructure projects, as mandated by the Federal Capital Investment Program Information Act of 1984.<sup>26</sup> This process requires cost-benefit analysis and long-term plans for infrastructure projects over \$50 million, including both federally-owned and federally-financed infrastructure.<sup>27</sup> The Executive Order also requires this analysis in agencies' requests to OMB and when requesting OMB clearance for legislative proposals affecting infrastructure.<sup>28</sup> Still, agencies do not always conduct perfect cost-benefit analysis and planning; a 1998 CBO study found that the FAA had approved airport

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<sup>26</sup> Principles for Federal Infrastructure Investments, 59 FR 4233.

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

improvements with cost-benefit ratios below 1 (indicating costs outweighed benefits) and above 105 (indicating suspiciously high benefits relative to costs).<sup>29</sup>

Another federal approach to capital comes from OMB Circular A-11, which defines federal capital assets as “land, structures, 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 or more.”<sup>30</sup> This capital definition often applies to the capital planning process for agency property rather than public investments, unlike Executive Order 12893. An accompany document lays out the process for agencies seeking to invest in productive assets, requiring a “Business Case” with predictions of an asset’s future costs and benefits before receiving authorization from OMB.<sup>31</sup> This process is similar to the future-oriented analysis required for capital budgeting, though the relevant audience is the agency and OMB administrators, not legislators, voters, and the bond market. Processes such as these demonstrate that capital budgeting concepts already exist within the federal government, but have not been applied to the Congressional process for authorizing and appropriating funds.

Even with existing capital planning mechanisms, however, federal agencies face major difficulties acquiring expensive capital assets such as real property. A 2013 GAO Report found that budget constraints severely limited agencies from acquiring new property, forcing these agencies into expensive and inefficient leases rather than purchases.<sup>32</sup> Examining only 55 building leases operated by the General Services Administration, the report found that the

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<sup>29</sup> Congressional Budget Office, *supra* note 1, at 20.

<sup>30</sup> OMB CIRCULAR A-11, PREPARATION, SUBMISSION, AND EXECUTION OF THE BUDGET (2014) available at [https://www.whitehouse.gov/sites/default/files/omb/assets/a11\\_current\\_year/a11\\_2014.pdf](https://www.whitehouse.gov/sites/default/files/omb/assets/a11_current_year/a11_2014.pdf)

<sup>31</sup> OMB INSTRUCTIONS FOR THE PLANNING, BUDGETING, ACQUISITION AND MANAGEMENT OF NON-IT CAPITAL ASSETS (2014), available at [https://www.whitehouse.gov/sites/default/files/omb/assets/a11\\_current\\_year/non\\_it\\_capital\\_assets.pdf](https://www.whitehouse.gov/sites/default/files/omb/assets/a11_current_year/non_it_capital_assets.pdf)

<sup>32</sup> GOVERNMENT ACCOUNTABILITY OFFICE, GREATER TRANSPARENCY AND STRATEGIC FOCUS NEEDED FOR HIGH-VALUE GSA LEASES (2013), available at <http://www.gao.gov/products/GAO-13-744>

government had overpaid by almost \$1 billion so that it could lease instead of purchase.<sup>33</sup>

Agencies have also been forced to slowly save their retained fees or execute land swaps to skirt their budget caps.<sup>34</sup>

The U.S. federal government undertakes many of the necessary steps for a capital budget, but does not combine these steps into a high-level framework for legislators, voters, and the bond market to evaluate its fiscal choices. Through the Financial Report of the United States, OMB internal processes for strategic capital acquisitions, accrual accounting for loans and insurance programs, and federal agencies' creative circumventions of operating budget caps, the federal government has many of the precursors to a capital budget. Whether it is feasible to combine these into a workable process remains an open question.

## B. State Governments

### 1. State Capital Budgeting Generally

With 42 states maintaining some form of capital budgeting, state experiences provide a wealth of potential comparisons, models, and cautionary tales.<sup>35</sup> These experiences, however, diverge broadly. No two states use the same definition of capital. Idaho, for example, defines capital as expenditures for “[c]onstruction, remodeling, and maintenance of buildings and other structures.”<sup>36</sup> Wyoming, however, takes a broad view of capital, defining it as “tangible and intangible assets acquired for use in operations that will benefit more than a single fiscal period.”<sup>37</sup> It is difficult to generalize across states except in the aggregate. The National Association of State Budget Officers found that states spent 61.6% of their capital budgets on

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<sup>33</sup> *Id.*

<sup>34</sup> GOVERNMENT ACCOUNTABILITY OFFICE, CAPITAL FINANCING: ALTERNATIVE APPROACHES TO BUDGETING FOR FEDERAL REAL PROPERTY 2 (2014), available at <http://www.gao.gov/assets/670/661564.pdf>

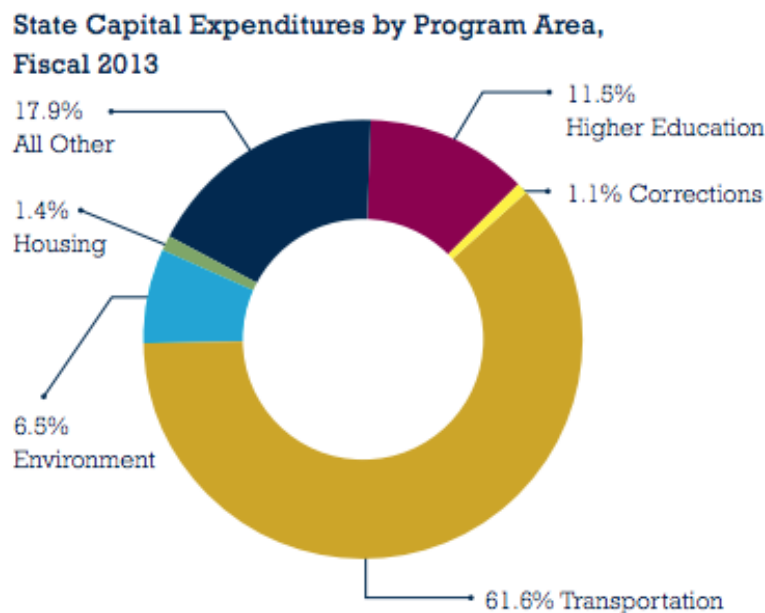
<sup>35</sup> National Association of State Budget Officers, *supra* note 4, at 3-5.

<sup>36</sup> *Id.* at 8.

<sup>37</sup> *Id.* at 10.



transportation, as pictured below, but at the same time 19 states did not even allow transportation funding through the capital budgets.<sup>38</sup>



**Source:** NASBO State Expenditure Report, Fiscal Year 2012.

**Note:** Capital Spending for K-12 education is not included in this data set.

**Figure 2: State Capital Expenditure by Program Area**

Indeed, states do not even have a common source for their definitions. In some states, the constitution defines capital and grants capital budget authority.<sup>39</sup> Nevada’s definition specifically requires that capital expenditures are “non-carpet, non-drapery, non-painting.”<sup>40</sup> Clearly, these definitions show the broad space for possible approaches to capital budgeting.

It is also difficult to identify any common legal doctrine, since judges have not stepped in to police the bounds of capital budget definitions. Cases that reference capital budgets have mostly centered on statutory interpretation and allocation of authority among governmental subunits, with emphasis on allocating authority to the branch or level of government most

<sup>38</sup> *Id.* at 5.

<sup>39</sup> *Id.* at 7 (Arkansas, Georgia, Minnesota, Pennsylvania, Rhode Island, and Wisconsin)

<sup>40</sup> *Id.* at 8.

capable of making long-term decisions. In one case, the Supreme Court of Connecticut blocked a school board from reallocating funds within a municipal capital budget. The court ruled on statutory grounds, but also observed that the holding was “consistent with the overall financial planning that is required for capital expenditures. Fiscal prudence requires long-term planning for these expenditures... To grant a board of education discretion over the reallocation of capital funds could wreak financial chaos on a municipality.”<sup>41</sup> Similarly, the Colorado Supreme Court ruled that the legislature could not define “capital outlay” in appropriations bills, since it intruded on the executive’s authority to allocate funds.<sup>42</sup> By and large, courts have stayed out of substantive decisions regarding capital budgeting, preferring to vest decisionmaking power according to statutory interpretation and structural analysis of which institution is competent to make capital determinations.

For these reasons, it is easier to pick out a single state and use it as an example of state capital budgeting practices. Massachusetts uses a relatively broad description of capital budgeting, and maintains detailed descriptions of its capital plan.<sup>43</sup> For this reason, it will be a useful example.

## **2. Example: Capital Budgeting in Massachusetts**

Massachusetts keeps a capital budget, funded by bonds, federal grants, and some specialty financing mechanisms, separate from its tax-funded operations budget.<sup>44</sup> The capital budget is the primary funding source for major investment in the Commonwealth, though several independent authorities provide funds for mass transit, housing finance,

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<sup>41</sup> *Bd. of Educ. of City of New Haven v. City of New Haven*, 237 Conn. 169, 184 (1996).

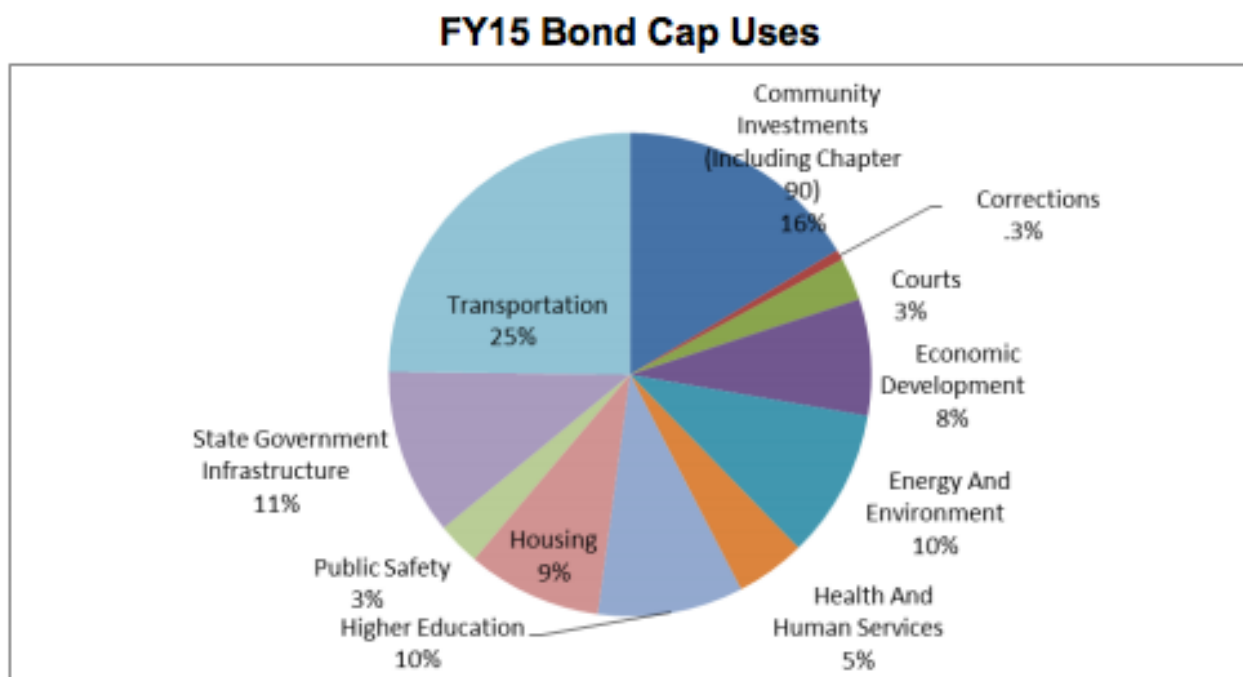
<sup>42</sup> *Colorado Gen. Assembly v. Owens*, 136 P.3d 262, 268 (Colo. 2006).

<sup>43</sup> MASSACHUSETTS GOVERNOR’S BUDGET FY2016, available at [http://www.mass.gov/bb/h1/fy16h1/cap\\_16/hdefault.htm](http://www.mass.gov/bb/h1/fy16h1/cap_16/hdefault.htm) (last visited Apr. 20, 2015)

<sup>44</sup> *Id.*

and school construction.<sup>45</sup> The key player in developing and implementing the capital budget is the Executive Office for Administration & Finance, or “ANF,” which develops the 5-year capital investment plan and is responsible for scheduling, cost estimation, and financing recommendations.<sup>46</sup>

Shortly after publication of the operating budget, the Massachusetts ANF publishes a 5-year capital investment plan laying out the state’s commitments and strategy for the near future.<sup>47</sup> The Patrick-Murray administration also began the tradition of publishing an annual debt affordability analyses, providing a justification for the annual cap on bond issuance.<sup>48</sup> The affordability of debt, rather than future benefits of capital spending, is the major focus of the Massachusetts capital budgeting process.



<sup>45</sup> *Id.* at 494.

<sup>46</sup> National Association of State Budget Officers, *supra* note 4, at 40.

<sup>47</sup> COMMONWEALTH OF MASSACHUSETTS, FY 2015-FY2019 CAPITAL INVESTMENT PLAN 1-3 (2014), available at <http://www.mass.gov/bb/cap/fy2015/dnld/fy15capitalplanma.pdf>

<sup>48</sup> MASSACHUSETTS DEBT AFFORDABILITY ANALYSIS: DEBT SERVICE (2014) [http://www.mass.gov/bb/h1/fy14h1/cap\\_14/hdebt.htm](http://www.mass.gov/bb/h1/fy14h1/cap_14/hdebt.htm) (last visited Apr. 20, 2015).

Figure 3: Massachusetts Capital Budget FY2015<sup>49</sup>

The introduction to the FY 2015-2019 Massachusetts capital investment plan states, “[t]he primary factor constraining the amount of the Commonwealth’s capital investment plan is affordability.”<sup>50</sup> This debt-focused approach governs most of the capital budget, but the state makes some exceptions for “self-financing” projects. After a “rigorous review” within the administration, three major projects have qualified as self-financing—two energy efficiency programs and an IT upgrade program.<sup>51</sup> While most of the budget is prioritized based on a hard cap set by debt affordability, these programs with projected positive return on investment do not count toward that cap.

The capital investment plan also notes past deviations from strict capital budgeting practices. Before FY2015, the Massachusetts Department of Transportation included employee payroll on the capital budget, though the department will move them off the capital budget starting in 2015.<sup>52</sup> The MBTA, a public transportation authority separate from the state, has also used variances in capital budgeting rules to pay 444 of its employees.<sup>53</sup> Clearly, capital budgets can be vulnerable to some overt manipulation for budget purposes.

In 2012, Massachusetts amended its capital budgeting laws to create a Capital Debt Affordability Committee (“the Committee”) made up of nominees from the Governor’s

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<sup>49</sup> *Id.* at 24.

<sup>50</sup> *Id.* at 4.

<sup>51</sup> *Id.* at 17.

<sup>52</sup> *Id.* at 10.

<sup>53</sup> Nicole Dungca, *Some Question the T’s use of capital budget for salaries*, THE BOSTON GLOBE (Apr. 3, 2015) <http://www.bostonglobe.com/metro/2015/04/03/pays-employees-with-money-meant-for-capital-projects/zMNJE1sZmM8L1ijSIOeDzO/story.html>

office, the Treasurer's office, and nonvoting members from the legislature.<sup>54</sup> The Committee is tasked with analyzing and recommending a bond cap for the state's debt-funded capital expenditures.<sup>55</sup> The Committee measured "affordability" as the ability to sustainably meet projected debt service within the budget without raising taxes to uncompetitive levels or negatively impacting critical public services."<sup>56</sup> In its FY2016 deliberations, the Committee primarily considered the costs of servicing debt given the state's AA+/Aa1 credit ratings, its relatively high debt-to-GDP ratio compared to peer states, and long-term pension liabilities.<sup>57</sup>

Overall, the Massachusetts capital budgeting process includes many prudent measures that could be expected of any rational planning process. The capital budget includes a long-term plan for investment, an analysis of debt costs, and ways to analyze and compare capital programs. None of these would be absolutely necessary for a capital budget; in fact, paying for wages runs completely counter to the legal and financial justification for capital budgeting. In this light, many of the non-essential good government processes underlying the capital budget are as or more important than the legal framework at its core.

### C. Foreign Governments

Some foreign governments have adopted capital budgeting or expanded accrual accounting, though practices vary widely. Some commentators have praised these steps as

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<sup>54</sup> EXECUTIVE OFFICE FOR ADMINISTRATION AND FINANCE, DEBT AFFORDABILITY COMMITTEE RECOMMENDATIONS (2014) available at <http://www.mass.gov/anf/budget-taxes-and-procurement/cap-finance/capital-debt-affordability-committee/>

<sup>55</sup> *Id.*

<sup>56</sup> *Id.* at 5

<sup>57</sup> *Id.* at 5-8.

sound financial management, though other reports argue that they have politicized the budgeting process, especially in developing countries.

Two of the most prominent examples of capital budgeting come from the United Kingdom and New Zealand. Practices in these countries have followed a trend labeled as “New Public Management,” which emphasizes privatization of government functions, more flexible and incentive-driven competition among government agencies, and public accounting systems that recognize assets and liabilities on a longer-term basis than normal cash budgeting allows. This has led to expanded use of accrual accounting, more intensive planning for government investment, and separate budgets and funding sources for capital.

### *1. Capital and Accrual Accounting in New Zealand*

In the early 1990s, the newly formed National Party faced forecasts of slow growth and expanding budget deficits.<sup>58</sup> Hoping to avoid tax increases, the government began a broad policy of prioritizing spending and moving the government toward output- and outcome-based measures of success.<sup>59</sup> Since this shift began, New Zealand has been recognized as the international leader in its focus on outcomes and applied accrual accounting.<sup>60</sup>

By 1993, New Zealand had adopted GAAP (Generally Accepted Accounting Principles) as the underlying framework for its budget.<sup>61</sup> At present, the New Zealand financial reports include depreciation for government assets and infrastructure and full

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<sup>58</sup> Ken Warren & Cheryl Barnes, *The Impact of GAAP on Fiscal Decision Making in New Zealand*, 3 OECD JOURNAL ON BUDGETING 7, 10 (2003), available at <http://www.oecd.org/newzealand/43494437.pdf>

<sup>59</sup> *Id.* at 11.

<sup>60</sup> ELLIG ET AL., GOVERNMENT PERFORMANCE AND RESULTS: AN EVALUATION OF GPRA'S FIRST DECADE 133 (2011).

<sup>61</sup> Warren, *supra* note 58, at 17.

funding for its pension system and accident insurance system.<sup>62</sup> This system, however, is overlaid on a radically different approach to service delivery than in the United States. New Zealand has privatized all but a small core of its government, and existing government agencies must meet performance targets but otherwise have broad authority over their spending and borrowing decisions.<sup>63</sup> Given these operational differences, New Zealand's more businesslike accounting principles make sense.

Viewed from a U.S. perspective, the New Zealand appropriations process resembles firms seeking investment from a bank more than government agencies seeking bigger budgets from the legislature. The country managed the transition to this system in a three incremental steps. Under the Public Finance Act of 1989, New Zealand agencies operate in three "Modes," A, B, and C.<sup>64</sup> In Mode A, government agencies operate via traditional budget requests and appropriations. Once the agency has developed an accrual accounting system and identified its outputs (such as licenses, social services, or roads), it enters Mode B.<sup>65</sup> In Mode B, government agencies retroactively request finances for the "outputs" they produce and enter into "contracts" with the government to produce these outputs.<sup>66</sup> Many of the inherently governmental agencies, such as police and regulatory functions, occupy Mode B.<sup>67</sup> Finally, agencies in Mode C operate almost like state-owned enterprises—they are benchmarked to private competitors, pay taxes and fees, and compete with private

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<sup>62</sup> Thompson, *supra* note 11.

<sup>63</sup> Susan Newberry, *The Use of Accrual Accounting in New Zealand's Central Government: Second Thoughts*, 4 ACCOUNT. ECON. LAW 283, 288 (2014) available at <http://www.degruyter.com/view/j/acl.2014.4.issue-3/acl-2014-0003/acl-2014-0003.xml>

<sup>64</sup> Thompson, *supra* note 11.

<sup>65</sup> *Id.*

<sup>66</sup> GOVERNMENT ACCOUNTABILITY OFFICE, ACCRUAL BUDGETING: EXPERIENCES OF OTHER NATIONS AND IMPLICATIONS FOR THE UNITED STATES 179 (2000) available at <http://www.gao.gov/assets/160/156759.pdf>

<sup>67</sup> *Id.*

entities for government contracts.<sup>68</sup> Compared to the capital budgeting practiced in U.S. state governments, this level of focus on outputs and assets would be revolutionary. While capital budgeting in the U.S. focuses on the value of assets and their associated debt, budget systems in New Zealand focus on output value from all aspects of government operations. This businesslike approach to government has required accrual accounting and capital budgets in order to function like the firms it imitates, but goes far beyond proposals for the U.S. federal government.

The New Zealand approach to “New Public Management” also rests in part on its fused executive and legislative branches. Under New Zealand law, the Minister of Finance has enormous power to conduct “borrowing, lending, investing, and financial market activities without prior parliamentary scrutiny.”<sup>69</sup> Under the U.S. constitution, such a system would likely be unconstitutional if Congress lacked control over appropriations.<sup>70</sup> This delegation makes more sense in New Zealand’s fused executive and legislative branches (the country uses a unicameral parliamentary system),<sup>71</sup> but it is hard to see American appropriators giving up so much power.

## ***2. Capital and Accrual Accounting in the United Kingdom***

Starting in 2002, the UK began publishing its budgets on an accrual basis as part of the “New Public Management” movement. This bundle of reforms allowed depreciation of

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<sup>68</sup> *Id.*

<sup>69</sup> Newberry, *supra* note 63, at 288.

<sup>70</sup> See, e.g., Kate Stith, *Congress' Power of the Purse*, 97 Yale L.J. 1343, 1377 (1988).

<sup>71</sup> NEW ZEALAND PARLIAMENT, HOW PARLIAMENT WORKS: OUR SYSTEM OF GOVERNMENT (May 1, 2013) <http://www.parliament.nz/en-nz/about-parliament/how-parliament-works/our-system/00CLOOCHowPWWorks111/our-system-of-government> (last visited Apr. 20, 2015)



government assets, a separate budget for capital investments, and capital access funds to loan money among agencies.<sup>72</sup>

The UK uses accrual accounting, in part, to maintain the so-called “Golden Rule” of intergenerational equity. According to this principal, net debt beyond a single business cycle is justified only for productive investments; this allows the current generation to impose costs on future generations, but only for long-term projects that benefit these future generations.<sup>73</sup> Since the 2007-2008 financial crisis and ensuing recession, however, the UK government has suspended its commitment to a balanced operating budget and accruing debt only for investment.<sup>74</sup>

Though the UK does not grant such broad delegations from Parliament to the executive, as in New Zealand, adopting such a major budget overhaul required a high degree of consensus among political actors. One series of interviews comparing the UK adoption of accrual accounting and New Public Management practices with a similar movement in the Republic of Ireland. The interviews found that a majoritarian, high-consensus political structure allowed adoption of a major overhaul.<sup>75</sup> In the Republic of Ireland, by contrast, the interviews emphasized coalition governments moving more slowly and on a consensus-driven basis, ultimately rejecting the most drastic aspects of New Public Management.<sup>76</sup> This reliance on broad consensus does not bode well for the

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<sup>72</sup> GOVERNMENT ACCOUNTABILITY OFFICE, BUDGETING FOR CAPITAL (1993), *available at* <http://www.gao.gov/assets/110/105060.pdf>

<sup>73</sup> MARC ROBINSON, ACCRUAL BUDGETING AND FISCAL POLICY 11 (2009), *available at* <http://www.oecd.org/gov/budgeting/43410301.pdf>

<sup>74</sup> *Id.* at 13

<sup>75</sup> Ciaran Connolly & Noel Hyndman, *Accruals accounting in the public sector: a road not always taken*, IPA SEMINAR NOVEMBER 2010 at 13.

<sup>76</sup> *Id.*

political prospects of major budget reform in a non-parliamentary democracy like the United States.

## **II. ASSESSING THE NEED FOR A U.S. CAPITAL BUDGET**

### **A. Overview of Arguments For and Against Capital Budgeting**

Arguments for and against capital budgeting fall into several categories, though these categories have a complex interrelationship. The first and most important question is whether the U.S. underinvests in capital goods, and whether a capital budget would address any structural bias causing this underinvestment. The second question is whether capital budgeting processes will improve the allocation of funds among federal capital investments. The third question is whether capital budgeting can resist politicized manipulation.

Evidence suggests that the U.S. government could invest more in infrastructure and basic research, but problems with identifying efficient projects make additional spending less valuable than past spending. This tradeoff could be reduced somewhat if the capital budgeting process ensures better investment decisions, but there is no guarantee that accounting changes can seriously improve the federal government's return on investment. Finally, capital budgeting could be subject to political manipulation, but past experience suggests that technocratic accounting and financial managers can resist political intrusion enough to maintain a credible process.

### **B. Underinvestment in Capital Goods**

Proponents of a U.S. capital budget often argue that the country underspends on transportation infrastructure, basic research, education, and other long-term productivity-enhancing investments.<sup>77</sup> According to this argument, pressures to reduce spending have decreased both unproductive short-term spending and productive long-term investment.<sup>78</sup> Many commentators disagree with these views, however. These arguments usually point to public investment in the U.S. and abroad that have been unproductive or over budget, and note that just because existing infrastructure is productive does not mean that marginal increases will be equally valuable.

Even if the U.S. underinvests in public goods, capital budgeting is not necessarily the perfect response. Underinvestment may be the result of political or empirical disagreements, not the structural biases that capital budgeting claims to address. Even if there are structural biases in the budget process, reforming government budgeting processes may be more difficult or have less impact than alternative measures. This section summarizes these arguments.

### **1. Efficient Levels of Investment**

Many proponents argue that capital budgeting will address underinvestment in U.S. infrastructure and other capital spending.<sup>79</sup> While a capital budget could be justified as a planning procedure even in the absence of underinvestment, much of the capital budgeting

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<sup>77</sup> See, e.g., Miles Kimball & Noah Smith, *One of the biggest threats to America's future has the easiest fix*, QUARTZ (Feb. 4, 2014) <http://qz.com/173492/one-of-the-biggest-threats-to-americas-future-has-the-easiest-fix/>; Ezra Klein, *This is how the government should budget. But it probably can't*. VOX (Dec. 29, 2014) <http://www.vox.com/2014/12/29/7459971/capital-budgeting>

<sup>78</sup> See, e.g., Miles Kimball, *Technical Afterword to "One of the biggest threats to America's future has the easiest fix"* CONFESSIONS OF A SUPPLY-SIDE LIBERAL (Feb. 4, 2014) <http://blog.supplysideliberal.com/post/75583538053/one-of-the-biggest-threats-to-americas-future-has>

<sup>79</sup> See, e.g., Government Accountability Office, Statement of Frederick D. Wolf Before Subcommittee on Economic Development Committee on Public Works and Transportation House of Representatives (Dec. 8, 1987) <http://www.gao.gov/assets/110/101903.pdf>. The arguments in this section apply beyond the range of the infrastructure debate, but will tend to focus on infrastructure to reflect the most common arguments about capital budgets.

debate addresses the substantive question of whether the U.S. federal government should invest more or less in maintenance and new capital projects.<sup>80</sup>

Critics of U.S. public investment often point to reports of crumbling transportation infrastructure. The American Society of Civil Engineers gave U.S. infrastructure a D+ grade in 2013, indicating “poor” performance on categories including ports, roads, airports, schools, transit, and wastewater.<sup>81</sup> Framed in more positive terms, McKinsey & Company listed U.S. infrastructure investment as a top candidate for increasing GDP growth by 2030.<sup>82</sup> Of course, civil engineers and consultants might personally benefit from investments to fix deficient infrastructure. Respected international bodies and academic economists have also pointed to gains from infrastructure investment, however. An empirical analysis of advanced economies from the IMF suggested that infrastructure investments resulted in GDP growth and no net debt increases.<sup>83</sup> Deeper analyses of U.S. infrastructure investment have found links between investment and productivity increases. Studies have found links between the interstate highway expansion and productivity increases in transportation-dependent industries,<sup>84</sup> links between overall public investment and productivity growth,<sup>85</sup> and between faster growth for high-

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<sup>80</sup> Infrastructure projects have been the main focus of this debate, but investment in R&D and social interventions could be included in a federal capital budget, and there are similar arguments that the government underinvests funds in this area as well. See Neil H. Buchanan, *Good Deficits: Protecting the Public Interest from Deficit Hysteria*, 31 Va. Tax Rev. 75, 105 (2011).

<sup>81</sup> AMERICAN SOCIETY OF CIVIL ENGINEERS, 2013 REPORT CARD FOR AMERICA’S INFRASTRUCTURE (2013), available at <http://www.infrastructurereportcard.org/>

<sup>82</sup> MCKINSEY & COMPANY, GAME CHANGERS: FIVE OPPORTUNITIES FOR US GROWTH AND RENEWAL (2013), available at [http://www.mckinsey.com/insights/americas/us\\_game\\_changers](http://www.mckinsey.com/insights/americas/us_game_changers)

<sup>83</sup> INTERNATIONAL MONETARY FUND, IS IT TIME FOR AN INFRASTRUCTURE PUSH? 75-80 (2014) available at <http://www.imf.org/external/pubs/ft/survey/so/2014/RES093014A.htm>

<sup>84</sup> John G. Fernald, *Roads to Prosperity? Assessing the Link Between Public Capital and Productivity*, 89 American Econ. Rev., 619, 637 (1999).

<sup>85</sup> Aschauer, David, *Is Public Expenditure Productive?* 23 J. MONET. ECON 177, 199 (1989).

investment regions of the United States.<sup>86</sup> Links between transportation infrastructure and property values are also well-established using both observational<sup>87</sup> and experimental<sup>88</sup> methods.

Despite links between higher public investment and economic benefits, the U.S. government has invested a declining portion of its budget. A Brookings Institution report documented the declining percentage of GDP devoted to federal investment (including transportation and non-transportation), falling from approximately 6% of GDP in 1962 to 3% in 2008.<sup>89</sup> Taking this analysis a step further, former Council of Economic Advisors chair Prof. Larry Summers argued that U.S. public investment was zero after accounting for depreciation, and said this level of spending was nonsensical given the government's low borrowing costs.<sup>90</sup> In more colloquial terms, Summers asked “if anyone is proud of Kennedy Airport, and...how it is possible that a moment when the long-term interest rate in a currency we print is below 3 percent and the construction unemployment rate approaches double digits is not the right moment to increase public investment in general—and perhaps to repair Kennedy Airport in particular.”<sup>91</sup>

## 2. Diminishing Returns on Investment

Still, there is reason for some doubt about the state of U.S. infrastructure, mostly stemming from concern that excess spending will be misallocated. First, possible opportunities to improve infrastructure do not necessarily mean that current infrastructure is “crumbling.”

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<sup>86</sup> Alicia H. Munnell, *Infrastructure Investment and Economic Growth*, 6 JOURNAL OF ECONOMIC PERSPECTIVES 189 (1992).

<sup>87</sup> Garrett, T. *Light Rail Transit in America: Policy Issues and Prospects for Economic Development*, FEDERAL RESERVE BANK OF ST. LOUIS, 2004.

<sup>88</sup> Climent Quintana-Domeque and Marco Gonzalez-Navarro, *Street Pavement: Results from an Infrastructure Experiment in Mexico*, Industrial Relations Section, Working Paper No. 556, (2010).

<sup>89</sup> Istrate, *supra* note 3, at 3.

<sup>90</sup> Lawrence Summers, Speech at Julius-Rabinowitz Center, Princeton University (Feb. 19, 2015) available at <http://larrysummers.com/2015/02/25/reflections-on-secular-stagnation/>

<sup>91</sup> Lawrence Summers, U.S. *Economic Prospects: Secular Stagnation, Hysteresis, and the Zero Lower Bound*, 49 BUSINESS ECONOMICS 65, 72 (2014), available at <http://larrysummers.com/wp-content/uploads/2014/06/NABE-speech-Lawrence-H.-Summers1.pdf>

International rankings have seen the U.S. drop to 9<sup>th</sup> place in the world since 2012, but the U.S. slightly improved its absolute score in the same period.<sup>92</sup> Second, simply increasing infrastructure spending might provide macroeconomic stimulus, but making efficient infrastructure decisions can be difficult. Considering infrastructure investment more generally, one IMF Working Paper found that high debt and poor analysis has plagued infrastructure investment in many countries, with associations between high investment and high GDP growth attributable to economic booms driving growth in all areas of the economy.<sup>93</sup> International examples of poorly executed infrastructure abound, in both the developed and developing world. A study comparing projected and actual costs of hydropower projects found that the average cost for a dam was twice as high as initially estimated, and many never paid back the initial outlays to build them.<sup>94</sup> Even in Australia, which uses capital budgeting and claims to apply “rigorous cost-benefit analysis” to infrastructure decisions, cost overruns and benefit shortfalls plagued government projects in broadband internet and rail transport.<sup>95</sup> In the U.S., even studies finding large benefits from past infrastructure projects warn of diminishing returns; as the author of one study finding benefits from the interstate system remarked, “[b]uilding an interstate network might be very productive; building a second network may not.”<sup>96</sup>

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<sup>92</sup> WORLD ECONOMIC FORUM COMPETITIVENESS RANKINGS (2014) <http://reports.weforum.org/global-competitiveness-report-2014-2015/rankings/> (last visited Apr. 20, 2015).

<sup>93</sup> Andrew M. Warner, *Public Investment as an Engine of Growth*, IMF WORKING PAPER (2014), available at <https://www.imf.org/external/pubs/ft/wp/2014/wp14148.pdf>

<sup>94</sup> Ansar et al., *Should we build more large dams? The actual costs of hydropower megaproject development*, 69 ENERGY POLICY 43, 50 (2014), available at <http://www.sciencedirect.com/science/article/pii/S0301421513010926>

<sup>95</sup> Henry Ergas & Alex R.W. Robson, *The Social Losses from Inefficient Infrastructure Projects: Recent Australian Experience* (2009) available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1465226](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1465226)

<sup>96</sup> John G. Fernald, *Roads to Prosperity? Assessing the Link Between Public Capital and Productivity*, 89 AM. ECON. REV 619, 621 (1999); see also U.S. TREASURY & COUNCIL OF ECONOMIC ADVISORS, A NEW ECONOMIC ANALYSIS OF INFRASTRUCTURE INVESTMENT 6-10 (2012) available at <http://www.treasury.gov/resource-center/economic-policy/Documents/20120323InfrastructureReport.pdf>

The tradeoff between aggregate-level benefits and project-level inefficiencies is a consistent theme through the debate over federal investment.<sup>97</sup> This result might suggest that political leaders should shy away from policies that privilege capital spending. Another interpretation, however, would take the aggregate benefits of public investment and the particular harms of poorly chosen projects and conclude that a more strategic process is necessary for funding transportation. In that case, capital budgeting could help address both sides of the issue, increasing aggregate infrastructure spending while improving mechanisms for evaluating projects. Whether capital budgeting can generate enough efficiency gains to offset diminishing returns to infrastructure will be discussed later in this section.

### ***3. Reallocation from Non-Infrastructure Programs to Infrastructure Investment***

Even if U.S. infrastructure could use more investment, a capital budget might privilege roads and bridges over operating budget expenditures like healthcare and assistance to the poor. According to this critique, additional infrastructure investment might be justified compared to the costs of increased taxes or debt, but in the current political environment the more likely outcome would be cuts to seniors, the poor, and disabled people.

Empirical analysis from the state level does not support this outcome, though dynamics may be different at the national level. An analysis from Prof. James Poterba found that states with capital budgets spent more on public capital projects than states with unified operations and capital budgeting, but did not spend less on operational expenses.<sup>98</sup> Entitlements and social welfare spending might suffer if the U.S. used a capital budget to follow a U.K.-style “Golden

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<sup>97</sup> Mark Magner, *Benefits of Infrastructure Spending Not So Clear-Cut*, WALL STREET JOURNAL (Feb. 1, 2015) <http://www.wsj.com/articles/benefits-of-infrastructure-spending-not-so-clear-cut-economists-say-1422819575> (summarizing results of critical scholarship on infrastructure, but noting that well-executed infrastructure projects have been key sources of growth).

<sup>98</sup> James Poterba, *Capital budgets, borrowing rules, and state capital spending*, 56 JOURNAL OF PUBLIC ECONOMICS 165, 165-167(1995), available at <http://www.sciencedirect.com/science/article/pii/004727279401431M>.

Rule” strategy, which demands a balanced operational budget and borrowing only to finance investments, or pursued a New Zealand-style wide scale privatization and devolution of government functions, but these represents only a few possible strategies that involve capital budgeting, and do not accord with state-level experience in the U.S.

Even if there were some decline in transfer payments as a result of capital budgeting, it is also unclear if this would result in distributional harm to the poor or vulnerable populations. The Obama administration<sup>99</sup> and left-leaning think tanks<sup>100</sup> have often touted the distributional benefits of infrastructure investment through increased employment and economic efficiency. Still, a budget that focuses on “investment” and economic impacts could leave the profoundly disadvantaged, the disabled, and the elderly out of its calculations even as it assists the working poor and middle class. Ultimately, policymakers will have to weigh these values without the tools of a capital budget.

#### ***4. Efficacy of Capital Budgeting to Address Underinvestment***

Even if U.S. infrastructure could use more government investment, there may be policies that have greater impact than capital budgeting. This stems in part from the inability of capital budgeting to address all shortcomings in the political process, but also from the existence of partial substitutes. While capital budgeting may address a bias against long-term investment in theory, there is still the empirical question of whether the U.S. government has a structural bias against investment. This theoretical bias may be reduced in practice by substitutes for a full capital budget such as reports on federal capital investment, business case analysis within OMB,

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<sup>99</sup> U.S. TREASURY & COUNCIL OF ECONOMIC ADVISORS, A NEW ECONOMIC ANALYSIS OF INFRASTRUCTURE INVESTMENT 6-10 (2012) *available at*

<http://www.treasury.gov/resource-center/economic-policy/Documents/20120323InfrastructureReport.pdf>

<sup>100</sup> *See, e.g.*, JOSH BIVENS, THE SHORT- AND LONG-TERM IMPACT OF INFRASTRUCTURE INVESTMENTS ON EMPLOYMENT AND ECONOMIC ACTIVITY IN THE U.S. ECONOMY 1-3 (2014) *available at*

<http://www.epi.org/publication/impact-of-infrastructure-investments/>



state-level capital budgeting, and statutory cost-benefit analysis mandates for some infrastructure projects.

The GAO has consistently recognized the potential for structural bias against capital investments.<sup>101</sup> This recognition has sometimes accompanied strong arguments in favor of capital budgeting, as in 1987 when a GAO officer testified that federal practices were “out of sync” with states and private firms, and that capital budgeting could help protect capital investments in the wake of the Gramm-Rudman-Hollings Act.<sup>102</sup> In other cases, it has accompanied more cautious advice to adopt moderate reforms.<sup>103</sup>

Scholars from the Brookings Institution performed a qualitative comparison of capital budgeting and a National Infrastructure Bank, and concluded that capital budgeting would not provide large incremental benefits beyond enforcing current practices on capital investment.<sup>104</sup> The authors instead favored a National Infrastructure Bank because it would provide market discipline and competitive selection of infrastructure projects, thus enforcing a more rigorous standard than capital budgeting processes.<sup>105</sup>

Indeed, current practices for federal programs already incorporate significant cost-benefit analyses or accrual accounting, indicating that the marginal impact of a centralized capital budget could be small. OMB Circular A-11 provides guidance for agencies acquiring capital

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<sup>101</sup> See, e.g., Government Accountability Office, Statement of Frederick D. Wolf Before Subcommittee on Economic Development Committee on Public Works and Transportation House of Representatives (Dec. 8, 1987) <http://www.gao.gov/assets/110/101903.pdf>; GOVERNMENT ACCOUNTABILITY OFFICE, RESTRUCTURING THE FEDERAL BUDGET—THE CAPITAL COMPONENT 1-3 (1989), available at <http://gao.gov/assets/220/211581.pdf>; GOVERNMENT ACCOUNTABILITY OFFICE, BUDGETING FOR CAPITAL 9 (1998), available at <http://www.gao.gov/assets/110/107248.pdf>.

<sup>102</sup> Government Accountability Office, Statement of Frederick D. Wolf Before Subcommittee on Economic Development Committee on Public Works and Transportation House of Representatives (Dec. 8, 1987) <http://www.gao.gov/assets/110/101903.pdf>

<sup>103</sup> GOVERNMENT ACCOUNTABILITY OFFICE, BUDGETING FOR CAPITAL 10 (1998), available at <http://www.gao.gov/assets/110/107248.pdf>.

<sup>104</sup> Istrate, *supra* note 3, at 14.

<sup>105</sup> *Id.*

assets with their existing budgets,<sup>106</sup> while legislators can easily reference the Financial Report of the United States or the yearly Analytical Perspectives on the Budget to evaluate overall levels of federal investment. Some infrastructure programs are already subject to cost-benefit analysis requirements,<sup>107</sup> while loans are subject to accrual accounting under the Federal Credit Reporting Act.<sup>108</sup> Capital budgeting could invigorate these mechanisms, but would not revolutionize the way government invests.

One potential response to this critique might accept that a capital budget would not fundamentally transform investment decisions, but would be far more broadly applicable than the National Infrastructure Bank and thus have a greater aggregate effect. Another response might accept that capital budgeting is not revolutionary in its efficiency improvements, but would instead transform the discussion about federal spending from a debt-focused debate to a cost-benefit debate, preserving productive investments from budget cuts. Still, the Brookings Institution critique should weigh heavily on decisions about investment budgeting processes. Just as proponents of a capital budget argue for more strategic cost-benefit analyses across infrastructure improvements, they should consider the cost-benefit calculations across budget improvements, including maintenance of existing rules.

### **C. Misallocation of Public Funds Among Capital Investments**

Proponents of capital budgeting argue that it will not only increase allocation of public funds to productive investment, but also improve the allocation of public funds among capital goods. While no planning or budgeting process can predict the future to make perfect allocations of funding, critics of current processes find several major

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<sup>106</sup> OMB CIRCULAR A-11, PREPARATION, SUBMISSION, AND EXECUTION OF THE BUDGET (2014), *available at* [https://www.whitehouse.gov/sites/default/files/omb/assets/a11\\_current\\_year/a11\\_2014.pdf](https://www.whitehouse.gov/sites/default/files/omb/assets/a11_current_year/a11_2014.pdf)

<sup>107</sup> Principles for Federal Infrastructure Investments, 59 FR 4233.

<sup>108</sup> 10 2 U.S.C. §661c (2000).

structural biases in U.S. infrastructure funding, though capital budgeting could introduce biases of its own. This section will explore these structural biases.

U.S. investment in tangible capital goods is often criticized as biased against maintenance. Studies have found maintenance of existing infrastructure is more beneficial than many new infrastructure projects,<sup>109</sup> but maintenance creates few “political externalities” such as ribbon-cutting ceremonies, naming rights, and salient new projects.<sup>110</sup>

Some researchers have argued that capital budgeting will not seriously address the maintenance bias. Proposals for a basic segregation capital budget or a capital debt budget do not explicitly require maintenance clauses in grants to states, tighter maintenance requirements at the federal level, or future spending on maintenance for capital projects already funded.<sup>111</sup> The capital budgeting process could spur greater focus on future costs and reward agencies for committing capital to build low-maintenance facilities, but the Federal Capital Investment Program Information Act of 1984 already requires a needs assessment for maintenance on federal capital projects,<sup>112</sup> and recent amendments to FASAB have improved standards for deferred maintenance accounting.<sup>113</sup> Further, wide adoption of capital budgets at the state level has not solved maintenance problems for state-owned infrastructure.<sup>114</sup>

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<sup>109</sup> CONGRESSIONAL BUDGET OFFICE, THE ECONOMIC EFFECTS OF FEDERAL SPENDING ON INFRASTRUCTURE, 21 (1998).

<sup>110</sup> See Brown, *supra* note 17.

<sup>111</sup> Istrate, *supra* note 3, at 17.

<sup>112</sup> See 31 U.S.C.A. § 1105 (West); see also Istrate, *supra* note 3, at 13 (2009).

<sup>113</sup> FED. ACCT. STANDARDS ADVISORY BOARD (FASAB), 1454 (2012) available at [http://www.fasab.gov/pdf/files/2014\\_fasab\\_handbook.pdf](http://www.fasab.gov/pdf/files/2014_fasab_handbook.pdf)

<sup>114</sup> Istrate, *supra* note 3, at 13.

Other proposals, however, explicitly address bias against maintenance in the capital budget by accounting for deferred maintenance. Under cash flow budgeting practices, deferred maintenance is not revealed until the maintenance actually occurs.<sup>115</sup> Under a capital budget that followed the depreciation model, budgets would automatically include maintenance appropriations and any deferred maintenance would count as a spending cut in the current period and an increased cost in future periods.<sup>116</sup> This would make depreciation costs explicit in the federal budget, preventing legislators from ignoring them and pushing maintenance to the future.

Overall, the issue of deferred maintenance on capital investments reveals a split between macro-level and micro-level capital budgeting. Well-designed capital budgeting proposals could raise overall investment in infrastructure, legislative attention to maintenance issues, and free up funds for agencies to act on their own initiative, but when agencies choose between new projects and maintenance they already have a wide variety of tools for analysis and better understanding of the problem.

Some critics of capital budgeting have argued that minimizing the budget impact of capital investments will lead to political biases toward spending that trump structural biases against spending. Brookings Institute Senior Fellow Charles L. Schultze, a member of the 1998 Presidential Commission to Study Capital Budgeting, pointed out that private firms have a profit motive to constrain their capital budgeting decisions, while states had to maintain low debt and good return on investment in order to satisfy the bond market.<sup>117</sup> The federal government, with its enormous resources and practically unlimited borrowing

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<sup>115</sup> Kimball, *supra* note 77.

<sup>116</sup> *Id.*

<sup>117</sup> Charles Schultze, Lecture on Capital Budgeting (Apr. 24, 1998), *available at* <http://www.brookings.edu/research/testimony/1998/04/24federalbudget-schultze>

ability, would have fewer constraints on its decisions.<sup>118</sup> A capital budget that allowed legislators to understate the debt impact of a capital project through depreciation or exemption from fiscal constraints would therefore leave infrastructure projects ungoverned by market and political constraints.<sup>119</sup>

This concern seems to conflict with the experience of the U.K., however. The U.K.'s use of "Golden Rule" budgeting put greater political emphasis on fiscal responsibility, not less, and was only abandoned after the 2007 Financial Crisis.<sup>120</sup> This argument also conflicts with results from accrual accounting adopted in the Federal Credit Reporting Act, which has reduced inefficient preference for loan guarantees.<sup>121</sup> The political constraints on legislators might change if they adopted capital budgeting, but it is not clear from past experience that accounting for long-term investments differently than short-term operations would lead to a major expansion of unproductive investment.

Overall, existing mechanisms to sort good investments from bad investments accomplish much of the work that capital budgeting might do. Unifying processes and comparing capital expenditures across categories might be preferred in an ideal world, but mechanisms already exist to cover many of a capital budget's process advantages.

#### **D. Politicization and Manipulation of the Capital Budget**

A final hurdle to adoption of a capital budget in the U.S. comes from fears that an apparently technocratic tool will be politicized and manipulated to favor politically powerful

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<sup>118</sup> *Id.*

<sup>119</sup> *Id.*

<sup>120</sup> MARC ROBINSON, ACCRUAL BUDGETING AND FISCAL POLICY 11 (2009), available at <http://www.oecd.org/gov/budgeting/43410301.pdf>

<sup>121</sup> CENTER ON FEDERAL FINANCIAL INSTITUTIONS, Budgeting for Credit Programs: A Primer 1, 3 (2004) available at <http://www.coffi.org/pubs/Budgeting%20Primer.pdf> (last visited March 16, 2005).

interests. This concern has been a major argument against capital budgeting in past research,<sup>122</sup> though some of these reports have noted that existing budget institutions have significant vulnerability to political manipulation.<sup>123</sup> A full accounting of political manipulation as applied to capital budgeting will consider whether it incrementally increases or decreases improper political forces on investment decisions.

“Politicization and manipulation” in this context normally refers to pressure to reclassify spending as capital to avoid budget constraints on non-capital spending. At the state level, Massachusetts’ experience with state transportation departments shifting payroll from operating to capital budget provides a stark illustration of this problem.<sup>124</sup> Developing countries in the 1990s often used even more blatant budget miscategorization, raising concern among international institutions. The World Bank wrote in 1998 that,

The dual budget may well be the single most important culprit in the failure to link planning, policy and budgeting, and poor budgetary outcomes. The dual budget is misconceived because it is based on a false premise - that capital expenditure by government is more productive than current expenditure. Separating development and recurrent budgets usually leads to the development budget having a lower hurdle for entry. The result is that everyone seeks to redefine their expenditure as capital so it can be included in the development budget.<sup>125</sup>

The FY 2003 U.S. budget included an analytical section echoing these concerns, arguing that developing country experience helped demonstrate that easing constraints on capital would lead appropriators and stakeholders to push every desired program into the capital budget.<sup>126</sup>

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<sup>122</sup> See, e.g., Congressional Budget Office, *supra* note 1, at 12, see Brown, *supra* note 17, at 22.

<sup>123</sup> See, e.g. Brown, *supra* note 17, at 29 (noting that current infrastructure investments are biased toward politically salient projects with high visibility and concentrated benefits for contractors and workers).

<sup>124</sup> Nicole Dungca, *Some Question the T’s use of capital budget for salaries*, THE BOSTON GLOBE (Apr. 3, 2015) <http://www.bostonglobe.com/metro/2015/04/03/pays-employees-with-money-meant-for-capital-projects/zMNJE1sZmM8L1ijSIOeDzO/story.html>

<sup>125</sup> World Bank, Public Expenditure Management Handbook 56(1998) available at <http://www1.worldbank.org/publicsector/pe/handbook/pem98.pdf>

<sup>126</sup> Office of Management and Budget, The President’s Budget for FY2003 (2002).

This experience of politicization should not be taken as the norm, however. The closest analogue would seem to be accrual accounting, where accounting for future costs and revenues of a loan program could allow legislators to understate budget impacts with overoptimistic forecasts. In response, Congress set up a statutory scheme that empowered technocrats at OMB and CBO while also requiring collaboration between the agencies as a check on any attempt to politicize accounting rules.<sup>127</sup> This requires functioning technocratic institutions that can resist political influence, but this is a common thread for many of the complex accounting regimes undertaken by developed democracies.

Another potential political inefficiency afflicting capital budgets relates to difficulties in legislative control. Some critics of capital budgeting point to reduced transparency and lack of accountability to elected appropriators.<sup>128</sup> For example, Sweden abandoned capital budgeting in 1981 after appropriators became frustrated with complex but incomplete capital definitions and a lack of separate financing for capital budgets.<sup>129</sup> According to this view, spreading the costs of an asset or project throughout its life cycle could lead to unfinished projects, halted and restarted construction, or past priorities overruling current legislators' preferences.<sup>130</sup> A capital budget requiring annual appropriations for a depreciating asset, for example, could produce incentives to pay for the asset in the first year and thus bind future Congresses by leaving an unfinished and incompletely funded project.

This problem, however, does not significantly differ from current practice, and would be avoidable in any case. First, capital projects can already receive funding in one

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<sup>127</sup> See 2 U.S.C. § 661b(a).

<sup>128</sup> Congressional Budget Office, *supra* note 1, at 20.

<sup>129</sup> GOVERNMENT ACCOUNTABILITY OFFICE, BUDGETING PRACTICES IN WEST GERMANY, FRANCE, SWEDEN, AND GREAT BRITAIN 10 (1986), available <http://www.gao.gov/assets/90/87469.pdf>

<sup>130</sup> Istrate, *supra* note 3, at 7.

period that forces another Congress to pay for prior obligation authority; the treatment of multi-year obligation authority as mandatory spending for many transportation programs provides one example.<sup>131</sup> Second, there is no reason a capital budget would actually have to pay out for depreciation; the cash budget could account for full upfront purchase costs, while the capital budget could display the costs as distributed over a longer period as an accounting fiction.<sup>132</sup> While this approach might reduce transparency when viewing short-term accounts, it arguably provides a more accurate long-term picture of federal finances.

Overall, U.S. policymakers should be confident in their ability to design a process that resists large-scale politicization. The federal government has a wealth of technocratic institutions and experience with prior accounting changes. Further, if there are benefits to eliminating structural biases against capital investment, these efficiencies should increase tolerance for minor instances of politicization.

### III. APPLYING CAPITAL BUDGETING TO THE FEDERAL GOVERNMENT

Capital budgeting has been repeatedly proposed and considered at the federal level, with high-level analyses from CBO, GAO, Brookings Institution, the 1998 President's Commission to Study Capital Budgeting, and the 1967 President's Commission on Budget Concepts. Given its persistence at the federal level, adoption at the state level, and limited implementation in other developed countries, capital budget may someday move from the periphery into mainstream budgeting practice. This section will explore how to implement such a shift, though too many potential designs exist to explore any one in depth.

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<sup>131</sup> *Id.* at 4.

<sup>132</sup> Congressional Budget Office, *supra* note 1, at 10 (discussing capital accounts within a unified budget and advantages of appropriating funds up-front for control purposes).



## A. Defining Capital

Defining capital for the capital budget is the first and most important step of any implementation strategy. Two major options have been proposed: a static definition and a dynamic definition.

A static definition might be the most simple to implement because the federal government already uses several simple definitions of capital expenditure. Congress could adopt the language of EO 12836 and apply capital budgeting to all infrastructure projects above \$50 million, or adopt the language of OMB Circular A-11 and recognize capital as “land, structures, 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 or more.”<sup>133</sup> These definitions might be relatively easy to apply, but could easily exclude intangible investments like research & development, training & education, or federally funded programs owned by states and localities. Having a “static” definition might also give a false sense of stability; ultimately, the definition of “infrastructure” and similar terms could be stretched to include a wider variety of programs.

Dynamic definitions of capital would apply more subjective rules that depend on empirical analysis. Some scholars, for example, propose expert committees to evaluate evidence and incorporate non-traditional investment into the capital budget. Profs. Miles Kimball and Noah Smith argued that any investment that increases future tax revenue should be included in the capital budget.<sup>134</sup> Prof. Neil Buchanan expanded this argument

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<sup>133</sup> OMB CIRCULAR A-11, PREPARATION, SUBMISSION, AND EXECUTION OF THE BUDGET (2014) *available at* [https://www.whitehouse.gov/sites/default/files/omb/assets/a11\\_current\\_year/a11\\_2014.pdf](https://www.whitehouse.gov/sites/default/files/omb/assets/a11_current_year/a11_2014.pdf)

<sup>134</sup> Kimball, *supra* note 8.

into several institutional designs.<sup>135</sup> To separate programs with positive social return on investment, Buchanan explores several possible institutional forms for a “growth budgeting board.” After rejecting adversarial quasi-judicial procedures and blue-ribbon expert commissions, he recommends a miniature “Fiscal Fed,” an independent agency with appointed members and authority to recommend a program’s inclusion in the capital budget.<sup>136</sup> Buchanan argues that such an arrangement would actually resemble the board of a “National Infrastructure Bank,” but would leave Congress more discretion to accept or reject a classification rather than allowing the board to make lending decisions independently.<sup>137</sup>

## B. Varieties of Capital Budgeting

Puentes & Istrate categorize proposals for federal capital budgets into basic segmentation, capital debt budget, depreciation, and fusion models.<sup>138</sup> Implementation for basic segmentation and capital debt budget models would be relatively easy, but depreciation-model budgeting would be more difficult.

A basic segmentation model keeps operations and capital on separate balance sheets, with different fiscal constraints for each side.<sup>139</sup> Depending on political tolerance for debt or new spending, this approach could exempt capital spending from Statutory PAYGO Act of 2010, the Budget Control Act of 2011, the debt ceiling, or other fiscal constraints. At its most extreme, basic segmentation might guarantee parliamentary

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<sup>135</sup> Buchanan, *supra* note 80, at 109-111.

<sup>136</sup> *Id.*

<sup>137</sup> *Id.*

<sup>138</sup> Istrate, *supra* note 3, at 10.

<sup>139</sup> *Id.*

treatment similar to reconciliation to ease its passage through Congress. Because basic segmentation depends only on separate treatment for operating and capital expenses, the variety of reforms is very broad for this approach.

A capital debt budget model involves setting a target for affordable debt and limiting capital spending based on market realities.<sup>140</sup> The two main components would be a capital investment plan governing and justifying future outlays and a debt affordability analysis covering, as in Massachusetts.<sup>141</sup> This approach might be hard to translate to the federal level, however, because fiscal and monetary sovereignty makes optimal debt levels more uncertain.<sup>142</sup> While a state or smaller country can analyze the state of the bond market, compare itself with peers, and identify a relatively tight fiscal constraint, a sovereign nation has far more power to tax, print money, and repudiate its debts, reducing its borrowing costs to near-zero interest rates.

Depreciation-based capital budgeting raises more difficult challenges. This approach raises serious controversy with its potential for diminished Congressional control and the potential for error in calculating depreciation rates, but it also places the most emphasis on planning and comparison among investment options.<sup>143</sup> One major problem for depreciation analysis concerns how to deal with intangible assets. Federally funded roads and bridges may have useful lives and maintenance schedules, but R&D spending provides long-term benefits without physical deterioration.<sup>144</sup> For intangible

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<sup>140</sup> *Id.*

<sup>141</sup> MASSACHUSETTS GOVERNOR'S BUDGET FY2016, available at [http://www.mass.gov/bb/h1/fy16h1/cap\\_16/hdefault.htm](http://www.mass.gov/bb/h1/fy16h1/cap_16/hdefault.htm) (last visited Apr. 20, 2015).

<sup>142</sup> See, e.g., Charles Schultze, Lecture on Capital Budgeting (Apr. 24, 1998), available at <http://www.brookings.edu/research/testimony/1998/04/24federalbudget-schultze>.

<sup>143</sup> Because depreciation budgeting requires a forward-looking analysis of an asset's quality, future value, and economic impacts, depreciation budgeting can focus attention on benefits rather than simply the cost of debt.

<sup>144</sup> Istrate, *supra* note 3, at 7.

assets, a depreciation model might have to reverse itself and use net present value or ROI calculations, compressing benefits of an investment into a single period rather than expanding costs over many periods.<sup>145</sup>

## CONCLUSION

Despite widespread adoption by states, firms, local governments, and some foreign governments, capital budget proponents have not established a strong argument for reform at the U.S. federal level. Capital budgets would help put federal capital investment on par with federal spending, but current policy does not entirely disadvantage investment. Going forward, capital budgeting will have to distinguish itself from more incremental approaches such as a National Infrastructure Bank or improved disclosure of federal accounts. Still, the idea has been raised again and again throughout the 20<sup>th</sup> and 21<sup>st</sup> centuries, and will probably remain on the table in years to come.

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<sup>145</sup> See, e.g., Kimball, *supra* note 8.

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