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Theory and Practice for Coping with Economic Downturns at the Local Level: Part II

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This bulletin continues from where "Theory and Practice for Coping with Economic Downturns at the Local Level: Part I" left off by further exploring the impact of budget-balancing strategies on capital investments. This bulletin examines both the literature on cutback management and the results of a survey administered to county commissioners during the Great Recession. Specifically, it focuses on the use of capital spending reductions in county government to cope with fiscal stress and the potential long-term impact of such reductions, as there is a limited amount of research on this form of local government. In light of the literature and survey results, it is recommended that local governments consider avoiding cuts to their capital budgets due to the long-term costs of delayed maintenance and the opportunity costs incurred by stifling economic development. Policy choices, including public–private partnerships, available to many local governments for reducing capital budget cuts and maintaining capital investments are also presented.

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Introduction

Local governments have a limited number of tools and strategies for coping with economic recessions. This has resulted in a relatively rich and robust literature on local government cutback management. However, the literature is lacking studies on the long-term consequences of capital spending reductions during recessions. Understanding these consequences is particularly relevant because capital budgets are often one of the initial areas to which budget cuts are made during fiscal downturns. In fact, early evidence of what local governments are doing to cope with the presumed recession created by the COVID-19 pandemic suggests that counties in North Carolina are reducing capital spending as one of their top two strategies to balance their budgets.[1] A major reason that capital spending is used as a mechanism for closing budget gaps is the notion that capital can take on a disproportionately large share of reductions because it can be deferred without consequences (Hulten and Peterson 1984). However, short-term public finance decisions can affect fiscal sustainability and cause long-term, negative budgetary effects (Chapman 2009; Ebdon 2004). Understanding the long-term effects created by capital reductions is important because local governments are responsible for such a large share of our nation's infrastructure and we are in the midst of a potentially long-term public infrastructure crisis.

Reducing capital spending may create long-term effects on local governments due to the cost of delaying maintenance or even terminating capital projects (Dornan 2002; Huq, Taylor, and Whritenour 1986).[2,3] According to a report by the Government Accountability Office, in the absence of substantial policy changes in the treatment of infrastructure, the fiscal condition of states and local governments will continue to decline through 2060, and closing the fiscal gap by 2058 will cost $9.9 trillion (Czerwinski 2010).[4] New York, for example, is grossly underfunded. At current spending rates, it is projected that the state's local infrastructure may be underfunded by as much as $80 billion (Office of the New York State Comptroller 2009). The numbers from New York and other states clearly indicate that infrastructure expenditures are not keeping up with needs (American Society of Civil Engineers 2011).

Reducing capital spending can also create long-term effects because capital investment is an important component of economic development (Ady 1997; Chapman 2009). By choosing to reduce capital spending, local governments are undermining their economic development efforts and potentially incurring large opportunity costs. Additionally, it is often less costly to invest in infrastructure during recessions, and investment can provide local employment opportunities (Marlowe 2009; Kwon 2006). Another advantage of investing in economic development is that it has been shown to disproportionately benefit unemployed, minority, and less educated citizens (Bartik 1991; Davis, Connolly, and Weber 2003; Freeman and Rodgers 1999). Economic development is also a politically feasible option during a recession (MacManus et al. 1989).

1. See Afonso (2020).

2. Preventive maintenance considerably reduces costs over the life of the capital (Dornan 2002).

3. Some researchers estimate that the United States has been facing a looming infrastructure crisis for three decades and has been underinvesting in infrastructure since the 1960s (Huq, Taylor, and Whritenour 1986). Choate and Walter (1981) concluded that the infrastructure in this country is deteriorating faster than it is being replaced and noted the large costs associated with this ongoing trend.

4. A few studies suggest that in some instances the nation's infrastructure is apparently in better condition than it was twenty years ago (Campbell and Hubbard 2009; Edwards 2013).

In light of these consequences—and given that these are not new problems—it is surprising that capital spending reductions are so often advocated and enacted. MacManus (1984, 58) begins her manuscript by saying that “the early 1980s will in all likelihood be remembered as the ‘period of retrenchment,’” suggesting that this so-called new normal is not so new. Local governments will continue to face periods of economic downturn. They will continue to have to make hard decisions with regard to their spending, and favoring consumption (instead of investment) spending is likely to lead to slowed growth (Butkiewicz and Yanikkaya 2011; Hansson and Henrekson 1994).

There are expected fluctuations and patterns that emerge with regard to budget surpluses and shortfalls. “The state/local government fiscal position is sensitive to the business cycle in rather predictable ways. The larger and then smaller surpluses of the late 1970s and early 1980s are not unusual” (Bahl 1982, 7). Therefore, information about the consequences of expenditure decisions is very important to decision makers. The majority of the previous literature has revolved around the short-term choices that cities make during fiscal crises. Reducing, deferring, or canceling capital projects are not necessarily presented as the best courses of action, but they are often presented as politically feasible options that do not have large costs associated with them (LaPlante 2012; McGranahan 1999; Pagano 2001). Moreover, there is almost no discussion of whether these capital projects get back on track once the economy rebounds or of the long-term effects of this policy. A more holistic and long-term view of the choices made, as well as the consequences of these choices, is needed. The one exception is Rivenbark, Afonso, and Roenigk (2018), which examines capital expenditures of municipalities in North Carolina during the Great Recession. They find that while municipalities did continue to invest in infrastructure, the investments were not sufficient for keeping up with depreciation. There is no comparable analysis for counties, however.

This bulletin combines literature on cutback management with the results of a survey of county commissioners to examine the possibility of long-term consequences of budget choices made during recessions. It then reports the results of the survey, which illustrate how capital spending reductions are the most often used mechanism for closing budget gaps (these survey results also provide new information on how counties cope with recessions). This bulletin also outlines the consequences of delaying maintenance of capital and the associated opportunity costs for economic development and discusses the policy choices available to decision makers who wish to smooth their capital spending through the economic cycle.

Literature Review

> Most cities, large and small, are confronted with massive expenditures needed to repair, service, and rebuild basic public works facilities. . . . The situation is critical not only because of the massive amount of capital requirements, but also because of the enormous cost of delay and the consequent magnification of cost due to inflation. . . . Without a much stronger commitment to preserve and augment the nation’s critically needed stock of public works, the viability of the economy, its prospects for growth and the maintenance of an acceptable level of the quality of life are seriously in jeopardy. (Huq, Taylor, and Whritenour 1986, 166)

First, it is important to define what is meant by *capital*. Capital is a nonrecurring expense that is expected to have a life span of greater than five years (Pagano 1984). Capital budgets are reserved not just for capital spending but specifically for projects that will cost more than $50,000 (Pagano 1984).[5] Local government service provision has become increasingly capital-intensive since the end of the nineteenth century, making the study of capital critical (Justice and Scorsone 2012; Sbragia 1996).

Capital is also a major contributor to local government fiscal stress. Bradbury (1983) defined structural distress as a long-term imbalance between a government's revenue-raising capacity and its capital investment needs, responsibilities, and demands on the services it provides. Put another way, "far from being a simple budget gap to be closed with short-term spending reductions and revenue increases, a structural gap reflects a persistent difference between revenue capacity and spending pressures" (LaPlante 2012, 290). For local governments, the factor that is most likely to cause structural distress is deferral of capital spending. Overall, it is very difficult to sustain any of the other strategies available because of balanced-budget requirements.[6] A clear understanding of capital spending policies and outcomes is important. This study proceeds to explore the relationship between recessions and capital spending from the perspective of cutback management and examines the long-term consequences of cutback strategies on local governments.

Cutback Management

Any discussion of the ways in which local governments choose to cope with recessions must begin with cutback management. Cutback management was first developed in response to the 1970s recession, which heralded a shift in how we view the growth of public revenues. Levine (1978) identified both the reasons for cutback management and the ways in which it may be accomplished. Initially, the primary components of cutback management involved a broad spectrum of expenditure reductions in addition to revenue raising. However, over the last fifteen years we have seen a shift away from revenue raising and toward reduced expenditures and increased spending from savings.[7]

The literature on cutback management was robust throughout the 1980s and early 1990s, and it is making a comeback now that we find ourselves in a so-called new normal.[8] A common thread seen throughout this literature is that capital spending is on the "hit list." If the budget shortfall is either mild or moderate and is perceived as short term, one of the most likely reactions is to delay capital projects and maintenance (Bartle 1996; Dougherty and Klase 2009). For example, one study identifies two primary strategies local governments use when faced with revenue shortfalls: capital spending cuts and reductions in cash balances (Bartle 1996). In another study, delaying or canceling capital projects and personnel reduction are identified as the two most popular techniques (Aronson and Schwartz 1987). In a comprehensive overview of cutback management, four strategies are identified, and one of the four is "reduction in capital spending strategy," which is choosing to make cuts in areas that are capital-intensive and where there are plans for new construction or infrastructure repairs (MacManus 1984, 64).

5. This also depends on the size of the local government in question.

6. It is by no means impossible; it can be accomplished through heavy reliance on debt or through annual reliance on fund balances. However, both of these strategies are unsustainable in the long run.

7. These are typically fund balances, also known as rainy day funds.

8. For more information on cutback management and its origins, see Scorsone and Plerhoples (2010).

The willingness to defer capital spending is most likely a result of the belief that it is politically feasible and that delaying spending will not cause economic harm (McGranahan 1999; Hoene and Pagano 2003; LaPlante 2012; Pagano 2001). The political acceptability of capital reductions is seen in budget choices. Allocational budgets (for police, fire protection, sanitation, etc.) receive more stable funding than nonallocational budgets (for public buildings, parks and recreation, highways, etc.) because there is a lower risk of driving away middle-class taxpayers when cutting nonallocational budgets (Jordan 2003). The fear of taxpayer exit results in nonallocational budgets experiencing "higher frequencies of shifts in priority" and more frequent, sharp decreases than their allocational counterparts (Jordan 2003, 357).

It is important to note that capital freezes or reductions are not just suggested courses of action—they are implemented strategies. Delaying or terminating capital spending and projects is one of the most popular ways to cope in recessions (Hoene and Pagano 2009; MacManus 1993; MacManus and Pammer 1990; Morgan and Pammer 1988). Capital spending is firmly nonallocational, and, not surprisingly, one study finds that 62 percent of municipalities have delayed or canceled capital projects (Hoene and Pagano 2009). Bartle (1996) investigates where cuts are made when state aid decreases and finds that localities respond by increasing taxes so that most programs are largely spared.[9] However, he finds that capital spending cuts are still used to close budget gaps, with decreases in funding of 3.88 percent, and that the next largest category of expenditure decreases is wages, with a decrease of 0.07 percent. In fact, cuts in capital spending make up 78.6 percent of the budget gap. The study also reveals a difference in the magnitude of the cuts. For large reductions in state aid, capital expenditures are reduced by 7.07 percent, which accounts for 93.1 percent of the budget gap. Capital spending reductions are used less frequently for moderate and small reductions in state aid, and they account for only 61.8 percent and 67.5 percent, respectively. Nonetheless, the literature is consistent, and it is clear that local governments, when facing revenue shortfalls, reduce capital expenditures.

One reason for this reduction is that recessions are perceived as short-term problems, so they are dealt with through short-term expenditure cuts (MacManus 1993). Unfortunately, however, this perception is not completely accurate. "Policy choices that defer investments add to spending pressure because unmet capital needs do not disappear but instead grow more costly the longer they are shelved and may require interim expenditures" (LaPlante 2012, 300).

It is not the case that every local government reduces capital. One study examining the effects of a recession on spending finds that just over 51 percent of counties engage in infrastructure expansion, 12 percent engage in incentive programs to rehabilitate existing structures, 41 percent purchase land for public use, and 5 percent purchase homes or buildings for public use (MacManus 1993). Moreover, the advice to defer, delay, or cancel capital projects is not universal. For example, Marlowe (2009) suggests three courses of action for local governments that want to do something positive during downturns. First, they should use financial reserves to maintain or increase expenditures. Second, they should increase or move up the schedule on capital projects. Third, they should make changes to tax policy to encourage spending by taxpayers. Reducing capital budgets is clearly in conflict with these suggestions.

The positive effects of public spending in times of fiscal downturn are especially strong if the public provision has a direct relationship with private-sector business and industry. Roads, bridges, and other forms of basic infrastructure are examples of such provisions (Fisher 1997; Marlowe 2009). Low interest rates and lulls in the construction industry during these periods

9. This may be because these reductions are not viewed as short-term changes.

often make capital projects less expensive as well (Marlowe 2009). In keeping with the advice to invest in capital during economic downturns, Wang and Hou (2012) advocate financing capital continuously and shifting strategies depending on the economic environment. They suggest using pay-as-you-go financing in booms and pay-as-you-use financing in busts.[10]

Long-Term Consequences

"In weathering the storm created by a fiscal crisis, responses of the moment can create long-term change, not just temporary deviation" (Berne and Stiefel 1993, 682). Scholarship has shown that short-term public finance decisions affect fiscal sustainability and can have long-term, negative effects, but the studies do not adequately examine why or how (Chapman 2009; Ebdon 2004; Scorsone and Plerhoples 2010). This is common in the literature: there is an acknowledgment that these short-term cuts may impact long-term goals, but there is no analysis (Pandey 2010; Thompson and Gates 2007). There is evidence that these cuts are not just decremental but actually represent a shift in priorities, which may mean that program spending will not quickly rebound after a crisis has subsided (Bartle 1996; Berne and Stiefel 1993; Dougherty and Klase 2009; Hoggart 1991; Pagano 1984).

Clearly, capital budgets are often dramatically reduced in times of fiscal crisis, but there is surprisingly little analysis of the long-term consequences of such cutbacks. In fact, "a hallmark of investigations of local fiscal stress in the United States is the short time span adopted in the evaluations" (Hoggart 1991, 57).[11] When the three best examples of studies that investigate the long-term consequences of recessions on local government budgets are examined, it becomes clear more work needs to be done to understand the effects of cutback management on specific programs. The three studies are discussed below.

Berne and Stiefel (1993) analyze the long-term consequences of cutback management on New York City's education programs. One of the many short-term decisions made during the recession that confronted New York City in the late 1970s was related to capital spending and maintenance. The authors' analysis reveals a dire need for capital maintenance and an overwhelming backlog of required maintenance due to the cuts made during the recession. In no area is the need equal to or less than the available resources, and in many areas it is almost two times as large as the available resources. In fact, at the time of the analysis, the amount of capital needed to address the backlog of required maintenance was $700 million for the educational system alone. One of the major effects of the cuts was on the number of trade workers employed by the school system to maintain the infrastructure. There were 1,000 trade workers at the start of the recession. This number was reduced during the recession to 400, and a decade later there were 853. The authors conclude that the seemingly short-term choices about capital spending and maintenance have led to a long-term change in priorities that has had serious consequences.[12]

10. Although the decision to consumption smooth may be attractive and lead local governments to believe that debt financing of capital is their best option, Trussel and Patrick (2012) find that fiscal distress can best be reduced by either raising taxes or decreasing debt, suggesting that debt increases fiscal distress. Pagano (2002) finds that municipalities choose pay-as-you-go financing in boom years.

11. For example, in one analysis the author analyzes longer-term effects and finds that there is a change in priorities as anticipated and there is not simply a return to pre-crisis spending patterns. However, the author does not examine capital spending (Hoggart 1991).

12. In fact, in one study looking at changes in capital spending not specifically during recessions, the authors identify four key consequences, including changes in priorities (Kwon 2006). This is in keeping with other research (Bartle 1996; Dougherty and Klase 2009).

Freudenberg, Fahs, Galea, and Greenberg (2006) also examine the reductions made during the late 1970s recession in New York City and link them to a syndemic involving the spread of HIV, tuberculosis, and homicide in the mid-1990s.[13] They estimate the cost of trying to control the syndemic at $50 billion (in 2004 dollars) and the savings produced by the expenditure decreases (to which they link the syndemic) at only $10 billion, not including the costs incurred by individuals, the impact on victims' standard of living, or the loss of life. Although this study is not exactly in keeping with the scope of this bulletin, it demonstrates the long-term consequences of budget choices (Freudenberg et al. 2006).

Ammons, Smith, and Stenberg (2012) present an extensive study of fiscal stress on long-term service delivery and examine the historical precedent for the widespread claim that local governments are facing a "new normal." They find very little evidence to suggest that the scope of government will be changed permanently because of the current recession. Although their results are compelling, they do not examine specific places where dramatic reductions have been made or how long it may take those programs to bounce back to pre-downturn levels, presuming they ever do.

Survey

A survey was employed to assess how counties had been affected by the Great Recession and the strategies they used to cope with it. There are a few aspects of this survey that make it unique. First, it is from the perspective of elected officials. Second, it looks at counties, not municipalities. Counties were chosen because the majority of research on local government and recessions focuses on municipalities (for example, Levine, Rubin, and Wolohojian 1981; Hoene and Pagano 2009; Weikart 2012). Although they face similar constraints and difficulties and employ similar strategies, counties perform different services and operate in different environments than municipalities. There is also evidence that counties react to fiscal stress differently (MacManus 1993). Third, the survey covers a wide spectrum of counties, not just the large ones, including large urban and small rural counties.

The thirty-eight-question survey was distributed to county commissioners in Georgia and California.[14] It was administered in the winter of 2010 using the Academic Survey System and Evaluation Tool (ASSET) developed by Seton Hall University. ASSET is an online survey tool available to academics.[15] The survey had three sections: the demographics of the county and the respondent, the recession's impact on the county, and the county's use of local-option sales taxes (LOSTs).[16] Georgia and California were selected because both had been hit hard by the Great Recession and because both had great diversity in their primary industries, their LOST laws, and the size and demographics of their counties. In an impact ranking of how large an effect the

13. *Syndemic* is defined as "two or more epidemics, with biological determinants and social conditions interacting synergistically, that contribute to an excess burden of disease in a population" (Freudenberg et al. 2006, 424).

14. The survey was sent to only the most senior commissioner within each county.

15. One week prior to the survey distribution, an email was sent to the county commissioners alerting them they would be receiving a request to participate in a survey. A follow-up email was sent a month after the survey release, once again requesting participation.

16. The survey's scope is broader than just capital, and a discussion of the other results of the survey as well as a broader discussion of the survey tool and its implementation are in Afonso (2013a).

recession had on the states, both Georgia and California were in the top ten most-affected states (Center for Social Inclusion 2009). They were, however, facing the Great Recession with very different recent histories.[17]

For example, Georgia and California were affected to varying degrees by the 2001 recession. During that recession, Georgia was one of the states most affected in terms of job loss, whereas California was better insulated and was approximately in the middle of the pack. However, California had greater revenue shortfalls than Georgia (Boyd 2008). Georgia and California also rely on different industries, so they likely experience different effects of a recession that may affect their revenues differently (Boyd 2008). This comparison can provide a broader picture of the coping mechanisms needed and employed by counties. Finally, both Georgia and California allow their counties to adopt LOSTs and special-purpose local-option sales taxes.

Thirty-nine Georgia county commissioners and thirty-five California county commissioners responded. Seventy percent of the respondents are male, the average age is between 35 and 45, and more than 90 percent classified their race as white. The average length in local government service for a respondent is 7–10 years, with an average of 5–7 years in his or her current position. Within the counties represented by the respondents, a great deal of diversity is represented: self-reported populations range from 3,000 to 1.4 million; there are 40 rural counties and 34 urban counties; and unemployment rates range from 6.5 percent to 28 percent.

Figure 1. Mechanisms Employed by Counties to Cope with the Recession

Mechanism	Percentage of Respondents (%)
Reductions in capital programs	88
Hiring freezes	78
Decreased employee benefits	53
Furloughs	47
Fee increases	46
Firing employees	39
New fees	27
Increased tax rates	18
New taxes	7

The survey is valuable because there was a great deal of discussion and speculation among academics and pundits about the Great Recession's effect on local governments, but it was important to assess decision makers' feelings about how their own local governments were doing. When asked to respond to the statement "My county has been hit very hard by the recession," an overwhelming number (85 percent) of county commissioners answered that it was true. Additionally, 74 percent perceived property values to be dropping in their counties, and 92 percent perceived businesses in their counties to be failing.

So what did county commissioners in California and Georgia report doing during the Great Recession? Eighty-eight percent of the county commissioners in California and Georgia

17. Although this publication is intended for a North Carolina audience, it is valuable to see how other states dealt with the recession. For details on how local governments in North Carolina coped with the Great Recession, see Ammons and Fleck (2010).

reported that the "recession has caused them to cut capital projects." This number does not include maintenance delays. Figure 1 shows that delaying or canceling capital projects was the most-often-cited response to the recession (88 percent), followed by instituting hiring freezes (78 percent), decreasing employee benefits (53 percent), and instituting furloughs (47 percent). This is expected—in fact, it is exactly as Aronson and Schwartz (1987) described. The three least-cited tools for coping with the recession represented revenue increases: introducing new taxes (7 percent), increasing tax rates (18 percent), and introducing new fees (27 percent).[18]

Consequences of Capital Reductions

Having established that capital spending reductions are one of the most-often-used mechanisms for closing budget gaps, it is important to examine the ramifications of those decisions. There are numerous potential consequences to reductions in capital maintenance and spending, but the two most relevant are highlighted here. First, reductions in capital expenditures can dramatically increase the long-term costs of maintenance. Second, not investing in infrastructure and canceling capital projects stifles economic development and growth.

Costs of Delayed Maintenance

Public investment in infrastructure is vital to our nation and economy, and many believe we have an infrastructure crisis (Duffy-Deno and Eberts 1991; Kile 2011). This potential crisis is exacerbated by under-maintenance of existing infrastructure, which just disguises the deficits and postpones the problem (Justice 2009; Bartle 1996). An example of the infrastructure crisis in this country is our wastewater systems, which have an alarmingly low replacement rate (Anderson 2010). The American Society of Civil Engineers (2011) estimates that the total amount needed to maintain the wastewater treatment infrastructure was $40 billion in 2010 and that the amount will escalate to $78 billion in 2020 and to nearly $122 billion by 2040. One study estimates that as a result of declining state and federal assistance, $36.2 billion will be needed over the next twenty years to maintain municipal wastewater infrastructure in New York alone (Office of the New York State Comptroller 2009). Additionally, the total cost for needed drinking-water delivery infrastructure is estimated to have been $35 billion in 2010, and predictions are that it will grow to $48 billion by 2020 and $74 billion by 2040 (American Society of Civil Engineers 2011).

The trend toward maintaining capital at the bare minimum levels has been described as a "ticking time bomb," because it simply applies small band-aids to mask the much larger and more costly needs for public infrastructure (Caiden 1989). Furthermore, preventive maintenance considerably reduces costs over the life of the capital (Dornan 2002). Changing the priority of capital investment and delaying maintenance and projects can be very costly. Many of the survey respondents highlighted that maintaining capital spending had not been a priority, and only one acknowledged the potential consequences of this trend. A representative selection of the survey results follow:

- Commissioners largely dealt with these actions by dramatically reducing capital investment and capital projects for the foreseeable future.

18. For further discussion of these findings, see Afonso (2013a).

- Capital funding was reduced or eliminated. There were minor reductions in some programs, but no major reductions to services.
- Less was being spent on upkeep and maintenance, which will result in higher catch-up costs six or eight years out.

However, like any policy, there is disagreement in the government's appropriate role regarding capital investment. If the government is not adequately investing in infrastructure, the private sector will have the opportunity to step in and provide a market solution it otherwise would not have due to "crowding out." For example, private roads are unlikely to be a successful enterprise because there are public roads available that are "free." Another example would be private airports, which would have to pay federal and state taxes on earnings and property taxes at the local level and would cost more to consumers than the artificially low cost that the public option affords (Edwards 2013). Public spending does crowd out private spending (e.g., see Afonso and Sousa 2012; Ghosh Roy 2012; Landau 1983; Voss 2002). However, crowding out only happens when the private sector would have otherwise provided the service. Additionally, if positive externalities are associated with the infrastructure, then the private sector will provide it below the efficient point; transportation is a classic example in which positive externalities are present (Bell et al. 2006).

Economic Development

In the discussion of how local governments can attract new businesses and engage in economic development, the majority of attention is given to tax incentives. However, local governments need to keep in mind that other factors, such as community assets and infrastructure, attract businesses to their areas (Chapman 2009). A firm's location decisions are linked to five important factors: tax policy, education, transportation infrastructure, public safety, and basic infrastructure (Ady 1997). Capital is a key component of what attracts new economic development to an area, and during a recession economic development is one of the more politically feasible options available to local governments (MacManus et al. 1989).[19]

Therefore, the decision to delay capital spending may not only exaggerate the costs of maintenance but also have a long-term impact on economic development. Public investment in infrastructure generates greater benefits to private-sector outputs than public consumption spending, at an estimated magnitude of as much as seven times larger, and it increases private output by a factor of 0.39 (Aschauer 1987). Thus, capital spending is critical to economic recovery and development. The results are especially strong for core infrastructure, such as streets and highways, airports, utilities, mass transit, and water and sewer systems.[20] Over twenty years, a $1.00 investment in transportation and power results in $4.24 in tax revenue,

19. It is not only recession-era reductions, however, that are creating this infrastructure crisis and stifling economic development. For example, 60 percent of the county commissioners in California and Georgia stated that property tax and assessment restrictions have also made their communities less likely to invest in strategic infrastructure improvements. Clearly, capital is underfunded, and county commissioners opt out of infrastructure development for a variety of reasons.

20. The positive effects of public spending in times of fiscal downturn are especially strong when the public service being provided has a direct relationship with private-sector business and industry. Examples of these services are roads, bridges, and other forms of basic infrastructure (Fisher 1997; Marlowe 2009). In fact, highways are the most fundamental public-sector investment in terms of economic development (Barro and Sala-i-Martin 1995).

$1.42 of which is for state and local governments, and increased spending of $1.00 on highways and streets results in $0.35 of tax revenue (Cohen, Freiling, and Robinson 2012). Helms (1985), Duffy-Deno and Eberts (1991), and Garcia-Mila and McGuire (1992) find a positive relationship between public investment and/or highway capital and state personal income, which is a proxy for economic development. In light of these statistics, reduction in capital spending seems especially problematic. Fifteen of the county commissioners who responded to the survey highlighted reductions in capital spending and maintenance in an open-ended question on the tactics they had employed. Six specifically mentioned that their road programs had received cuts and were being undermaintained. Examples of their responses include:

- less road maintenance, frozen salaries, and reduction in all capital spending;
- deferral of road and building projects;
- scaling down of infrastructure and road building and repair; and
- less revenue and cuts to road budgets and salaries.

Furthermore, the underprovision of capital may not just be manifested in opportunity costs; it may also deepen the effects of the recession. Kwon (2006) finds that unemployment rates have a large and statistically significant relationship with capital spending and speculates that the reason for this is that capital spending provides stimulus and jobs. In fact, there are dramatic estimates of the effect. The input-output multiplier of public investment on private output is still contested, but on the high end is the Keynesian multiplier, which demonstrates the use of capital expenditures as a countercyclical tool. One study estimated that at the federal level, one billion dollars of investment in public infrastructure would add ten billion dollars to the gross national product and create more than 30,000 jobs (Huq, Taylor, and Whritenour 1986). In addition, other research has shown that economic development most directly benefits the unemployed, less educated, and minority populations of the community (Bartik 1991; Davis et al. 2003; Freeman and Rodgers 1999). The evidence holds for both urban and rural localities. Thus, economic development presents an opportunity for making a positive impact on these citizen groups, who are a primary concern for public administrators (Carroll 1992).

Again, there is no universal agreement within the academy regarding the relationship between public investment in infrastructure and economic growth. In modeling this relationship, many scholars adhering to a more neoclassical economic framework have gotten more ambiguous results; often this relationship cannot be established.[21] The studies that have found evidence suggesting that government spending encourages economic growth find this relationship only when expenditures involve education, transportation infrastructure, and, less frequently, general infrastructure (for examples of this extensive literature, see Butkiewicz and Yanikkaya 2011; Ghosh Roy 2012; Hansson and Henrekson 1994; Schaltegger and Torgler 2006). While it is challenging to say this area of research is conclusive, it does suggest that capital provides the biggest return on investment for economic growth (which is admittedly only one piece of a complicated set of goals and priorities of local government).

21. The neoclassicist tradition includes, among others, theories based on public choice and new institutional economics.

Policy Choices

A review of the literature and the survey results reveal that county governments are in a difficult position and in many ways have no good options. Several lessons emerge, however. First, county governments should spend money on capital even in recessions. The short-term benefits of cutting capital are outweighed by the long-term costs.[22] If a county government must make cuts to capital spending because of dire circumstances or the current political environment, it is important to be mindful and intentional in reinstating spending as quickly as possible. Consideration also should be given to taking out debt. The literature advocates taking out debt for capital projects during times of recession to smooth consumption of capital throughout the economic cycle (Wang and Hou 2012).[23] Debt may help a county avoid the future costs of an infrastructure crisis and may help the local economy grow, especially with low interest rates. The interest rates were at a historical low at the time of the survey; the Federal Reserve's targeted federal funds rate was between 0 percent and 0.25 percent (Associated Press 2009). The presumed impact of the COVID-19 pandemic on interest rates is expected to be similar.

Second, local governments can integrate maintenance costs into capital budgets to avoid delaying them by balancing the costs between operating and capital budgets. One estimate of the cost of early delays in infrastructure maintenance is one fifth of the annual appropriations (Huq, Taylor, and Whritenour 1986). Changing the way that capital is budgeted and planned for in the long term may make it easier to understand and protect those moneys. An option for local governments is to incorporate maintenance costs into the capital budget to help ensure that current and future citizens pay for the infrastructure and the associated costs of it equitably (Pagano 1984). However, if there is a change in priorities, dedicated maintenance funds with moneys that can easily be shifted to other areas of the budget may be depleted, because "the political will to spend those funds for maintenance may no longer exist—especially if, in intervening years, a history of diverting them elsewhere has been established" (Pagano 1984, 33). Maintenance funds may not help ensure the viability of maintenance infrastructure spending if they are not adequately constrained by law, which of course would reduce flexibility. Research has shown that effective governments use their money more strategically, resulting in lower spending but better outcomes in some cases (Butkiewicz and Yanikkaya 2011). Strategic and forward-looking budget planning and implementation are thus critical for local governments.

Third, local governments can increase their use of intergovernmental cooperation and contracting out. Examples of ways in which local governments have contracted out or shared responsibility with other local governments are projects such as street maintenance; rehabilitation of public housing units; and construction of wastewater treatment plants, regional sewer treatment facilities, and prison and juvenile detention facilities.[24] These strategies are more likely to succeed when local governments engage in strategic planning and integrate these relationships into a long-term plan (Beckett-Camarata 2003; Ebdon 2004; McGowan and

22. Beyond just economic development and consequences of structural distress, the management of capital has been found to have a positive relationship with bond ratings as well (Ebdon 2004).

23. Simonsen, Robbins, and Kittredge (2001) discuss three strategies regarding debt that practitioners suggest. First, long-term debt should be used only to finance capital projects. Second, it is the responsibility of the debt managers to get taxpayers the best deal in terms of interest payments and other matters. Third, the life of the capital project should dictate the bond maturity.

24. Evidence suggests that citizens are equally satisfied with their level of public services in a consolidated form of government (Lowery and Lyons 1989).

Wittmer 1998). On a positive note, there is evidence that strategic planning is being used by at least large counties, with almost 80 percent of those surveyed reporting such use (Ebdon 2004).

Public–private partnerships are another option available to local governments that are determining how to finance infrastructure improvements. In testimony before the Joint Economic Committee of Congress, greater use of public–private partnerships was recommended and numerous success stories were presented.

"There are many advantages of infrastructure public-private partnerships and privatization. Most fundamentally, when private businesses are taking risks and putting their profits on the line, funding is more likely to get allocated to high-return projects and completed in the most efficient manner" (Edwards 2013, 3). Capital projects completed through use of a public–private partnership are more likely to be completed on time and in a cost-effective manner, with the expected benefits increasing with the complexity of the project (Raisbeck, Duffield, and Xu 2010).[25]

Fourth, earmarked revenues are often considered an effective way to ensure levels of capital spending. In the state of North Carolina, a portion of local sales tax revenue is earmarked for K-12 capital investments for counties (there is no associated earmark for the municipal allocations), and there are local sales taxes earmarked for transportation as well.[26] There are other earmarked revenue streams available to local governments. For example, Aspen, Colorado, earmarked 50 percent of property tax revenue for capital projects and what they refer to as their asset management plan (Marlowe, Rivenbark, and Vogt 2009). Some jurisdictions in North Carolina have informally earmarked portions of their property tax revenue to build a capital reserve fund and debt service fund as well. While not as binding, these strategies can be effective. Linking costs and services more closely through the use of tolls and user fees, especially in transportation finance, and increased "use of land value tax as a benefit tax for local government improvements" is advocated as a component of long-term planning (Chapman 2009, 3).[27] We also know that citizens prefer user fees to increases in other taxes (ACIR 1986). That being said, local governments experiencing fiscal stress are not advised to create enterprises (Rubin 1988). So what did counties do in the Great Recession? The respondents reported increasing fees more frequently than increasing taxes: 46 percent increased fees, and 27 percent introduced new fees, while only 18 percent increased their tax rates and 7 percent introduced a new tax. Another option to increase revenues for infrastructure is through increased use of business improvement districts and common-interest developments (Warner 2010).[28] Of course, local governments can try to grow the tax base and increase total revenue via economic development, of which capital is considered a fundamental component.

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25. Other evidence finds mixed reviews for public–private partnerships for infrastructure projects (Hodge and Greve 2007).

26. See Millonzi (2015).

27. These moneys are typically earmarked.

28. However, the author does not necessarily advocate these benefit principle taxes because they may lead to fragmentation and increased segregation of haves and have-nots.

Conclusion

Understanding the impact of the spending decisions made by counties and other local governments in times of fiscal crisis is critical for these governments, their respective stakeholders, and the academic community, as these three groups work together to create both short- and long-term budgetary strategies. This bulletin presents information to demonstrate how capital reductions may affect future budget needs and goals for economic development.

The survey, in addition to the previous literature, reveals how often capital reductions are employed during fiscal crises. County commissioners in California and Georgia who responded to the survey reported that reducing capital spending was the mechanism most often used to close budget gaps; 88 percent of the respondents reported that their counties made such reductions in the most recent recession. Despite the frequency of capital reductions, the long-term ramifications of these reductions are unclear. However, numerous practical implications of capital reductions for local governments in North Carolina are known. First, the savings in postponing capital spending today may lead to much greater expenditures in the future; the cost of maintenance and repairs compound while also shortening the life span of the capital. In addition, investing in capital during recessions may be far less expensive due to low interest rates, a struggling real estate market, and sluggish business conditions. Furthermore, if capital investment leads to economic development, there may be a substantial opportunity cost.

Second, public officials should consider other, potentially better, methods to budget and finance capital. Existing capital will decay, require maintenance, and eventually have to be replaced. Changing the way capital is budgeted for (e.g., by using dedicated revenue streams or incorporating maintenance into capital budgets) may ensure the appropriate level of funding for the life of the project. Intergovernmental cooperation and public–private partnerships are other options some local governments should explore.

Third, practitioners should seriously reconsider capital reductions as a "go-to" budget-gap-closing mechanism because of both the long-term consequences of capital reductions and the importance of serving citizens in the best possible manner. Infrastructure expenditures are not keeping up with our needs, and "estimates of the costs to repair, replace, or upgrade aging infrastructure so that it can safely, efficiently, and reliably meet current demands, as well as expand capacity to meet increasing demands, top hundreds of billions of dollars" (American Society of Civil Engineers 2011; Czerwinski 2010, 30). The delay in infrastructure expenditures may also have long-term consequences for economic development and growth; the fact that 92 percent of the responding county commissioners reported that businesses in their communities were failing highlights the urgency of addressing infrastructure investment. Infrastructure spending, especially for transportation, is positively related to economic growth, whereas spending in the operating budget consistently retards growth (Butkiewicz and Yanikkaya 2011; Hansson and Henrekson 1994). These positive or negative effects may impact the community's more disadvantaged members most heavily (Bartik 1991).

This bulletin incorporates literature discussing cutback management, the infrastructure crisis, and economic development. It cannot predict whether the effects of capital reductions are short-term or whether capital spending and infrastructure maintenance can quickly or adequately recover to prior levels after recessions are over. Based on the apparent change in priorities, previous analysis, and evidence of an infrastructure crisis, capital budgets will likely not completely rebound, making it currently too difficult to measure the long-term effects of capital reductions (Jordan 2003; Berne and Stiefel 1993; American Society of Civil Engineers 2011; Kile 2011).

For more information on capital financing and budget balancing strategies in North Carolina, please see:

https://www.sog.unc.edu/sites/www.sog.unc.edu/files/reports/lfb48.pdf

https://www.sog.unc.edu/sites/www.sog.unc.edu/files/Ammons%26Fleck.2010.Budget-Balancing%20Tactics.pdf

https://www.sog.unc.edu/publications/bulletins/budgeting-strategies-being-employed-county-and-municipal-governments-fy-2021-during-covid-19

https://www.sog.unc.edu/publications/book-chapters/financing-capital-projects

https://www.sog.unc.edu/blogs/coates-canons/financing-capital-projects%E2%80%94part-i-saving-through-fund-balance-and-capital-reserve-funds

References

Advisory Commission on Intergovernmental Relations (ACIR). 1986. *Changing Public Attitudes on Governments and Taxes, S-15*. Washington, DC: ACIR.

Ady, Robert M. 1997. "Taxation and Economic Development: The State of the Economic Literature (Discussion)." *New England Economic Review (March/April):* 77–82.

Afonso, Whitney B. 2013a. "Coping with the Great Recession: Theory and Practice for County Governments." *International Journal of Public Administration* 36 (11): 768–79.

Afonso, António, and Ricardo M. Sousa. 2012. "The Macroeconomic Effects of Fiscal Policy." *Applied Economics* 44 (34): 4439–54.

Afonso, Whitney B. 2020. "Budgeting Strategies Being Employed by County and Municipal Governments for Fiscal Year 2021 During the COVID-19 Pandemic." UNC School of Government. https://www.sog.unc.edu/publications/bulletins/budgeting-strategies-being-employed-county-and-municipal-governments-fy-2021-during-covid-19.

American Society of Civil Engineers. 2011. *Failure to Act: The Economic Impact of Current Investment Trends in Water and Wastewater Treatment Infrastructure*. Washington, DC: ASCE. https://www.nh.gov/water-sustainability/publications/documents/asce-infrastructure-report.pdf.

Ammons, David N., and Trevor A. Fleck. 2010. *Budget Balancing Tactics in Local Government*. Chapel Hill, NC: UNC School of Government.

Ammons, David N., Karl W. Smith, and Carl W. Stenberg. 2012. "The Future of Local Government: Will Current Stresses Bring Major, Permanent Changes?" *State and Local Government Review* 44 (S1): 64S–75S.

Anderson, Richard. 2010. "Trends in Local Government Expenditures on Public Water and Wastewater Services and Infrastructure: Past, Present, and Future." National Technical Reports Library: U.S. Department of Commerce.

Aronson, Jay, and Eli Schwartz. 1987. *Management Policies in Local Government Finance*. Washington, DC: International City Management Association.

Aschauer, David A. 1987. "Is Government Spending Stimulative?" Federal Reserve Bank of Chicago. (A series of occasional papers in draft form prepared by members of the research department for review and comment).

Associated Press. 2009. "Fed Slashes Interest Rates to All-Time Low." *CBS Money Watch*, December 16, 2008. http://www.cbsnews.com/2100-500395_162-4670976.html.

Bahl, Roy. 1982. "The Fiscal Health of State and Local Governments: 1982 and Beyond." *Public Budgeting and Finance* 2 (4): 5–22.

Barro, Robert J., and Xavier Sala-i-Martin. 1995. *Economic Growth*. New York: McGraw-Hill.

Bartik, Timothy J. 1991. *Who Benefits from State and Local Economic Development Policies?* Kalamazoo, MI: W. E. Upjohn Institute for Employment Research.

Bartle, John R. 1996. "Coping with Cutbacks: City Response to Aid Cuts in New York State." *State and Local Government Review* 28 (1): 38–48.

Beckett-Camarata, Jane. 2003. "An Examination of the Relationship Between the Municipal Strategic Plan and the Capital Budget and Its Effect on Financial Performance." *Journal of Public Budgeting Accounting and Financial Management* 15:23–40.

Bell, Michael, David Brunori, Royce Hanson, Changyong Choi, Lori Metcalf, and Bing Yuan. 2006. *State and Local Infrastructure Financing: A Review of Spending Patterns and Financing Mechanisms*. Washington, DC: National Center for Real Estate Research.

Berne, Robert, and Leanna Stiefel. 1993. "Cutback Budgeting: The Long-Term Consequences." *Journal of Policy Analysis and Management* 12 (4): 664–84.

Bilodeau, Marc. 1994. "Tax-earmarking and Separate School Financing." *Journal of Public Economics* 54 (1): 51–63.

Boyd, Donald. 2008. "What Will Happen to State Government Finances in a Recession?" *Rockefeller Institute Fiscal Report,* January 30, http://boydresearch.com/pdf/BoydDadayanRecessionReportJan2008.pdf.

Bradbury, Kathering L. 1983. "Structural Fiscal Distress in Cities—Causes and Consequences." *New England Economic Review*, 33–44.

Butkiewicz, James L., and Halit Yanikkaya. 2011. "Institutions and the Impact of Government Spending on Growth." *Journal of Applied Economics* 14 (2): 319–41.

Caiden, Naomi. 1989. "Budgeting for Time-Bombs: Recent General Accounting Office Reports on the Crises of the Nuclear Weapons Complex and the Savings and Loan Industry." *Public Budgeting and Finance* 9 (4): 83–92.

Campbell, Jeffrey R., and Thomas N. Hubbard. 2009. "The State of Our Interstates." Chicago Fed Letter 264 (July). https://www.chicagofed.org/publications/chicago-fed-letter/2009/july-264.

Carroll, James D. 1992. "The Public Administration of Investment: Grappling with the Blind Men and the Elephant." *Public Administration Review* 52: 223–39.

Center for Social Inclusion. 2009. *Measuring the Recession: An Impact Analysis*. Center for Social Inclusion. November 9, 2009. https://www.centerforsocialinclusion.org/publication/measuring-the-recession-an-impact-index/.

Chapman, Jeff. 2009. "Fiscal Stimulus versus Economic Base Development." In *Navigating the Fiscal Crisis: Tested Strategies for Local Leaders*, edited by Gerald J. Miller and James H. Svara. Washington, DC: ICMA.

Choate, Pat, and Susan Walter. 1981. *America in Ruins: Beyond the Public Works Pork Barrel*. Washington, DC: Council of State Planning Agencies.

Cohen, Isabelle, Thomas Freiling, and Eric Robinson. 2012. *The Economic Impact and Financing of Infrastructure Spending*. College of William & Mary. https://www.wm.edu/as/publicpolicy/documents/prs/aed.pdf.

Czerwinski, Stanley. 2010. *State and Local Governments: Fiscal Pressures Could Have Implications for Future Delivery of Intergovernmental Program*. Government Accountability Office. Washington, DC: U.S. Government Printing Office. https://www.gao.gov/new.items/d10899.pdf.

Davis, Elizabeth E., Laura S. Connolly, and Bruce A. Weber. 2003. "Local Labor Market Conditions and the Jobless Poor: How Much Does Local Job Growth Help in Rural Areas?" *Journal of Agricultural and Resource Economics* 28 (3): 503–18.

Delisle, Elizabeth Cove. 2010. *Fiscal Stress Faced by Local Governments*. CBO: Economic and Budget Issue Brief. https://www.cbo.gov/sites/default/files/111th-congress-2009-2010/reports/12-09-municipalitiesbrief.pdf.

Dornan, Daniel L. 2002. "Asset Management: Remedy for Addressing the Fiscal Challenges Facing Highway Infrastructure." *International Journal of Transport Management* 1 (1): 41–54.

Dougherty, Michael J., and Kenneth A. Klase. 2009. "Fiscal Retrenchment in State Budgeting: Revisiting Cutback Management in a New Era." *International Journal of Public Administration* 32 (7): 593–619.

Duffy-Deno, Kevin T., and Randall W. Eberts. 1991. "Public Infrastructure and Regional Economic Development: A Simultaneous Equations Approach." *Journal of Urban Economics* 30 (3): 329–43.

Ebdon, Carol. 2004. "Capital Management Practices in U.S. Counties." *Public Works Management and Policy* 8 (3): 192–202.

Edwards, Chris. 2013. "Encouraging Private Infrastructure Investment. Testimony of Chris Edwards before the Joint Economic Committee of Congress." *Cato Institute*, July 24, 2013. https://www.downsizinggovernment.org/encouraging-private-infrastructure-investment.

Fisher, Ronald. 1997. "The Effects of State and Local Public Services on Economic Development." *New England Economic Review* 3 (4): 54–67.

Freeman, Richard B., and William M. Rodgers. 1999. "Area Economic Conditions and the Labor Market Outcomes of Young Men in the 1990s Expansion." NBER Working Paper 7073, National Bureau of Economic Research.

Freudenberg, Nicholas, Marriane Fahs, Sandro Galea, and Andrew Greenberg. 2006. "The Impact of New York City's 1975 Fiscal Crisis on the Tuberculosis, HIV, and Homicide Syndemic." *American Journal of Public Health* 96 (3): 424–34.

Garcia-Mila, Teresa, and Therese J. McGuire. 1992. "The Contribution of Publicly Provided Inputs to States' Economies." *Regional Science and Urban Economics* 22 (2): 229–41.

Ghosh Roy, Atrayee. 2012. "Revisiting the Relationship between Economic Growth and Government Size." *Economics Research International* (August 7): Article ID 383812.

Hansson, Pär, and Magnus Henrekson. 1994. "A New Framework for Testing the Effect of Government Spending on Growth and Productivity." *Public Choice* 81 (3–4): 381–401.

Helms, Jay L. 1985. "The Effect of State and Local Taxes on Economic Growth: A Time Series-Cross Section Approach." *Review of Economics and Statistics* 67: 574–82.

Hodge, Graeme A., and Carston Greve. 2007. "Public–Private Partnerships: An International Performance Review." *Public Administration Review* 67 (3): 545–58.

Hoene, Christopher W., and Michael A. Pagano. 2003. "Fend-for-Yourself Federalism." *Government Finance Review* 19 (5): 36.

Hoene, Christopher W., and Michael A. Pagano. 2009. *Research Brief on America's Cities: City Fiscal Conditions in 2009*. National League of Cities. http://www.mml.org/pdf/advocacy/city_fiscal_conditions_09.pdf.

Hoggart, Keith. 1991. "Adjusting to Fiscal Stress: City Expenditure in the San Francisco–Oakland Metropolitan Area." *Local Government Studies* 17 (2): 57–75.

Hulten, Charles R., and George E. Peterson. 1984. "The Public Capital Stock: Needs, Trends, and Performance." *The American Economic Review* 74 (2): 166–73.

Huq, A. M., G. Thomas Taylor Jr., and Robert L. Whritenour Jr. 1986. “Structural Deficits and Infrastructure Investment in the U.S. Economy: An Emerging Policy and Management Crisis in Capital Expenditures.” *International Journal of Public Administration* 8 (2): 145–69.

Jordan, Meagan. 2003. “Punctuations and Agendas: A New Look at Local Government Budget Expenditures.” *Journal of Policy Analysis and Management* 22: 345–60.

Justice, Jonathan. 2009. “Coping with Fiscal Stress.” In *Navigating the Fiscal Crisis: Tested Strategies for Local Leaders*, edited by Gerald J. Miller and James H. Svara. Washington, DC: ICMA.

Justice, Jonathan B., and Eric A. Scorsone. 2012. “Measuring and Predicting Local Government Fiscal Stress.” In *Handbook of Local Government Fiscal Health*, edited by Helisse Levine, Eric Scorsone, and Jonathan Justice, 43–74. Burlington, MA: Jones & Bartlett Learning.

Kile, Joseph. 2011. *The Highway Trust Fund and Paying for HighwaysStatement of Joseph Kile, Assistant Director for Microeconomic Studies, before the US Senate Committee on Finance*. US Senate Committee on Finance. https://www.cbo.gov/sites/default/files/112th-congress-2011-2012/reports/05-17-highwayfunding.pdf.

Kwon, Osung. 2006. “Local Decision-Making on Capital Spending in US Cities (1980–2000).” *International Review of Public Administration* 10 (2): 37–48.

Landau, Daniel. 1983. “Government Expenditure and Economic Growth: A Cross-Country Study.” *Southern Economic Journal* 49 (4): 783–92.

LaPlante, Josephine M. 2012. “A Framework for Deciphering and Managing the Fiscal Environment.” In *Handbook of Local Government Fiscal Health*, edited by Helisse Levine, Eric Scorsone, and Jonathan Justice, 285–320. Burlington, MA: Jones & Bartlett Learning.

Levine, Charles H. 1978. “Organizational Decline and Cutback Management.” *Public Administration Review* 39: 316–25.

Levine, Charles H., Irene Rubin, and George G. Wolohojian. 1981. *The Politics of Retrenchment: How Local Governments Manage Fiscal Stress*. Beverly Hills, CA: Sage.

Lowery, David, and William E. Lyons. 1989. “Government Fragmentation versus Consolidation: Five Public Choice Myths about How to Create Informed, Involved, and Happy Citizens.” *Public Administration Review* 49: 533–43.

MacManus, Susan A. 1984. “Coping with Retrenchment: Why Local Governments Need to Restructure Their Budget Document Formats.” *Public Budgeting and Finance* 4 (3): 58–66.

MacManus, Susan A. 1993. “Budget Battles: Strategies of Local Government Officers during Recession.” *Journal of Urban Affairs* 15 (3): 293–307.

MacManus, Susan A., and William J. Pammer Jr. 1990. “Cutbacks in the Country: Retrenchment in Rural Villages, Townships, and Counties.” *Public Administration Quarterly* 14: 302–23.

MacManus, Susan A., Jessie M. Rattley, Patrick J. Ungaro, William R. Brown Jr., Scott O'Donnell, Donald, L. "Pat" Shalmy, Norm Hickey, and Denise Jubell. 1989. "A Decade of Decline: A Longitudinal Look at Big City and Big County Strategies to Cope with Declining Revenues." *International Journal of Public Administration* 12 (5): 749–96.

Marlowe, Justin. 2009. "Can Local Government Leaders Formulate Strategies That Will Actually—Rather Than Hopefully—Stimulate Their Local Economies? Has History Any Record of Such Successes?" In *Navigating the Fiscal Crisis: Tested Strategies for Local Leaders*, edited by Gerald J. Miller and James H. Svara. Washington, DC: ICMA.

Marlowe, Justin, William C. Rivenbark, and John A. Vogt. 2009. *Capital Budgeting and Finance: A Guide for Local Governments*. Washington, DC: ICMA.

Millonzi, Kara A. 2015. "Local Sales and Use Tax Changes and New State Revenue Sharing Requirement." *Coates' Canons*. https://canons.sog.unc.edu/local-sales-and-use-tax-changes/.

McGowan, Robert P., and Dennis Wittmer. 1998. "Gaining a Competitive Edge: Economic Development Strategies for State and Local Governments." *Public Administration Quarterly* 22 (3): 301–14.

McGranahan, Leslie. 1999. "State Budgets and the Business Cycle: Implications for the Federal Balanced Budget Amendment Debate." *Economic Perspectives—Federal Reserve Bank of Chicago* 23: 2–17.

Morgan, David R., and William J. Pammer Jr. 1988. "Coping with Fiscal Stress: Predicting the Use of Financial Management Practices among U.S. Cities." *Urban Affairs Review* 24 (1): 69–86.

Office of the New York State Comptroller. 2009. *Cracks in the Foundation: Local Government Infrastructure and Capital Planning Needs*. Albany, NY: Office of the New York State Comptroller.

Pagano, Michael A. 1984. "Notes on Capital Budgeting." *Public Budgeting and Finance* 4 (3): 31–40.

Pagano, Michael A. 2001. *Defusing Default: Incentives and Institutions*. Washington, DC: Johns Hopkins University Press.

Pagano, Michael A. 2002. "Municipal Capital Spending during the 'Boom.'" *Public Budgeting and Finance* 22 (2): 1–20.

Pandey, Sanjay K. 2010. "Cutback Management and the Paradox of Publicness." *Public Administration Review* 70 (4): 564–71.

Raisbeck, Peter, Colin Duffield, and Ming Xu. 2010. "Comparative Performance of PPPs and Traditional Procurement in Australia." *Construction Management and Economics* 28 (4): 345–59.

Rivenbark, William, Whitney Afonso, and Dale Roenigk. 2018. "Capital Spending in Local Government: Providing Context through the Lens of Government-Wide Financial Statements." *Journal of Public Budgeting, Accounting and Financial Management* 30 (4): 402–14.

Rubin, Irene S. 1988. "Municipal Enterprises: Exploring Budgetary and Political Implications." *Public Administration Review* 48 (1), 542–50.

Sbragia, Alberta. 1996. *Debt Wish: Entrepreneurial Cities, U.S. Federalism, and Economic Development*. Pittsburgh, PA: University of Pittsburgh Press.

Schaltegger, Christoph A., and Benno Torgler. 2006. "Growth Effects of Public Expenditure on the State and Local Level: Evidence from a Sample of Rich Governments." *Applied Economics* 38 (10): 1181–92.

Scorsone, Eric, and Christina Plerhoples. 2010. "Fiscal Stress and Cutback Management among State and Local Governments: What Have We Learned and What Remains to Be Learned?" *State and Local Government Review* 42 (2): 176–87.

Simonsen, Bill, Mark D. Robbins, and Bill Kittredge. 2001. "Do Debt Policies Make a Difference in Finance Officers' Perceptions of the Importance of Debt Management Factors?" *Public Budgeting and Finance* 21 (1): 87–102.

Thompson, Fred, and Bruce L. Gates. 2007. "Betting on the Future with a Cloudy Crystal Ball? How Financial Theory Can Improve Revenue Forecasting and Budgets in the States." *Public Administration Review* 67 (5): 825–36.

Trussel, John M., and Patricia A. Patrick. 2012. "A Survival Analysis of U.S. Municipalities in Fiscal Distress." *International Journal of Public Administration* 35 (9): 620–33.

Voss, Graham M. 2002. "Public and Private Investment in the United States and Canada." *Economic Modeling* 19 (4): 641–64.

Wang, Wen, and Yilin Hou. 2012. "Do Local Governments Save and Spend across Business Cycles? Evidence from North Carolina." *The American Review of Public Administration* 42 (2): 152–69.

Warner, Mildred E. 2010. "The Future of Local Government: Twenty-First-Century Challenges." *Public Administration Review* 70: s145–s147.

Weikart, Lynne. 2012. "Monitoring the Fiscal Health of America's Cities." In *Handbook of Local Government Fiscal Health*, edited by Helisse Levine, Eric Scorsone, and Jonathan Justice, 387–404. Burlington, MA: Jones & Bartlett Learning.