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## Three Essays on the Management of Local Government Cash Flows

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## **Abstract**

This dissertation is composed of three essays which evaluate financial strategies used to manage cash flows and the broader working capital management process in local governments. The objective of this dissertation is to address unresolved questions in the literature regarding the use of short-term financial resources to improve a government's internal operating process and successfully navigate challenging fiscal environments. Together, the three essays contribute to our understanding of cash flow management strategies and the consequences of their implementation in United States local governments.

The first essay, in Chapter 2, evaluates the motivating factors that encourage managers to use an external financing source, short-term debt. This research, conducted in collaboration with Professor Sharon N. Kioko, is the first empirical investigation of the factors that promote short-term debt use by a wide range of local governments. It is hypothesized that managers can issue short-term debt as one financial strategy to reduce financial uncertainty from the timing of cash receipts, expenditure flexibility, and favorable long-term debt market conditions. On the basis of data examined between 1996 and 2016 from a heterogeneous sample of New York general purpose governments, evidence suggests that fewer cash assets, a declining prior year budget surplus, higher proportions of federal aid, increases in salary and wages expenditures, more capital spending, as well as more use of long-term debt for bridge financing increase the likelihood of using short-term debt. These results, in turn, imply that managers need to be responsive to changes in the composition of short-term assets and revenues, and understand the cash flow implications of changes in operations, revenue projections, and budgetary spending flexibility. These findings both add to our knowledge of the factors that influence the use of one

external source of financing as well as motivate curiosity about alternative strategies used by managers.

The second essay, in Chapter 3, extends our knowledge by evaluating various financial strategies that rely on internal resources and external sources of financing used throughout the working capital management process. Strategies that rely on internal resources (e.g., unrestricted cash, savings, interfund borrowing, interfund transfers, and delaying payments) and external sources of financing (e.g., speeding up collections of receivables, accessing a line of credit, direct lending, and issuing short-term debt) are used to mitigate cash deficits and promote sustained operations. In this first examination of the preference and use of public working capital management strategies, it is asserted that managers have a pecking order, or preference ranking, for strategies that use internal resources before external sources of financing. Using a 2016 survey of financial managers in New York local governments, findings suggest managers have a preference ranking for reducing unrestricted cash before delaying payments, speeding up the collections of receivables, issuing short-term debt, and not taking any action to mitigate cash flow uncertainty. Managers most often implement strategies that combine the use of unrestricted cash and short-term debt. Yet, rule-based policies and operating procedures regarding these resources lack sufficient development. Ultimately, a more complete understanding of financial strategies used for public working capital management is advanced. However, the extent to which these strategies can be impacted by the broader economic and fiscal environment can be explored in future research.

The third essay, in Chapter 4, asserts that the slack resource of excess taxing capacity influences the use of short-term resources. Specifically, this study systematically examines if excess taxing capacity (the difference between the levy limit and selected property tax level

subject to the limit) impacts General Fund unrestricted cash and short-term borrowing. Using panel data from New York local governments between 1996 and 2016, I find suggestive evidence managers are more likely to reduce cash holdings and engage in short-term borrowing when excess taxing capacity increases. The implications of these findings are that managers likely leverage their internal cash and short-term borrowing capacity to accumulate external slack of their property taxing authority. Local government managers, therefore, are being prudent to not hoard cash and borrow in the short-term instead of continually utilizing more of their taxing authority. Overall, the findings represent an important addition to our knowledge of how a more visible slack resource, excess taxing capacity, influences the use of slack resources that are exclusively within the discretion of government managers, short-term resources.

THREE ESSAYS ON THE MANAGEMENT OF LOCAL GOVERNMENT CASH FLOWS

by

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Dissertation

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Doctor of Philosophy in Public Administration

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## **Chapter 1: Introduction**

## **1.0 Introduction to the Essays**

Cash flow management – the development of procedures that accelerate cash receipts (inflows) and control cash disbursements (outflows) to keep cash readily available – is necessary to sustain governmental operations. Public financial managers seek to maintain a favorable cash position in which outflows are greater than inflows, and thus excess cash is available. Prior research suggest policies should be established to invest idle cash to minimize exposure to risk while maximizing the potential investment earnings (Johnson & Mikesell, 2003; Khan, 1996; Khan & Hildreth, 2003; Larson, 2004; Lienert, 2009; Peng, 2013). Yet, forecasted estimates of cash inflows and outflows can deviate from projections due to unanticipated variations in economic conditions and emergencies. Managers may enact several strategic actions to maintain liquidity, however, the extent of use of alternative strategies is underdeveloped. This reality motivates understanding financial strategies used and implemented to manage cash flows of continual importance to public administration scholarship and practice.

Treating this imperative, this dissertation presents three essays on the management of cash flows. The unifying theme of the essays is their concern for the practice of strategic planning to implement strategies: how managers anticipate use of strategies, evaluate the consequences of their use, and tradeoff alternative courses of action. Each essay tests theoretical arguments of how local government characteristics and contexts shape managerial practices to engage in using a financial strategy.

The first essay, in collaboration with Professor Sharon Kioko, develops an expanded understanding of a local government's engagement in the short-term debt market to maintain liquidity – that is a government's ability to manage cash flows over the budget period, with minimal loss in value. At its core, the essay argues that local governments with more non-cash

assets are motivated to access the external short-term debt market. Moreover, governments that issued short-term debt in the past, report budget shortfalls in multiple-years, have more dependence on unpredictable external sources of revenue such as federal aid might be more likely to engage in short-term debt use. Managers who incur greater non-discretionary expenditures to maintain liquidity, may be more likely to issue short-term debt. The timing of the long-term debt market can also be a factor to encourage more short-term debt use.

New York county, city, town, and village governments between 1996 and 2016 are used to test which predictive factors encourage the use of short-term debt. Considering that the decision to issue short-term debt involves a two-part decision-making process, a linear hurdle model is used to test both the selection into issuing short-term debt and the decision to issue a larger amount of short-term debt. An instrumental variable tobit model is also presented for comparison to this two-part model. Findings indicate the likelihood of issuing external short-term debt is increased by having a greater extent of non-cash assets, reductions in prior year surplus, more dependence on federal aid and less dependence on state aid. Furthermore, less flexibility in employee salary expenses, more spending on capital and equipment, and more issuance of long-term debt motivate short-term debt use. Local government managers can incorporate into their strategic planning the use of short-term debt when the indicated factors are present. The essay adds value by focusing on an external financing source to be leveraged if short-term internal resources, such as cash holdings, are not readily available.

The second essay examines the working capital management process and strategies managers prefer and use throughout the process. Working capital management is a managerial strategy that monitors and utilizes current assets (e.g., cash, accounts receivable, and inventory) and current liabilities (e.g., accounts payable and notes payable) to ensure cash flows are

maintained to sustained operations. This essay investigates how strategies relying on internal resources and external sources of financing are preferred and implemented by local government managers during the working capital management process. Internal resources include unrestricted cash holdings, savings in budget stabilization funds and unassigned fund balances, interfund borrowing, interfund transfers and fund sweeps, and delaying payments. External sources of financing include accelerating the collections of receivables, accessing a line of credit, enacting direct lending arrangements, and issuing short-term debt.

Lower cost and risk strategies are asserted as being more likely to be preferred and implemented. Specifically, it is contended that managers have a pecking order, or preference ranking, for strategies that use internal resources before external sources of financing. Using a 2016 survey of financial managers in New York local governments, managers are found to have a preference ranking for reducing unrestricted cash holdings before delaying payments, speeding up the collections of receivables, issuing short-term debt, and not taking any action to mitigate cash flow uncertainty. Managers implement most often a strategy that uses unrestricted cash holdings in conjunction with issuing short-term debt. However, rules-based policies and operating procedures regarding cash and short-term debt are not widespread. This essay expands our understanding of financial strategies preferred and implemented in the public working capital management process.

The third essay asserts that excess taxing capacity, the difference between the levy limit and selected property tax level subject to the limit, influence the use of short-term resources. This research examines if excess taxing capacity from a New York State constitutional tax limit impacts General Fund unrestricted cash holdings and short-term borrowing. Empirical support is derived from a panel dataset of New York county, city and village governments between 1996

and 2016. Regressions analysis is conducted to investigate the impact of excess taxing capacity on short-term resources. Suggestive evidence is found that county and village governments with increases in excess taxing capacity are associated with reporting lower unrestricted cash holdings. Furthermore, county governments engage in borrowing larger amounts in the short-term when excess taxing capacity increases while village governments are likely to borrow smaller amounts. It is posited that managers are likely leveraging their internal cash holdings and short-term borrowing capacity before accessing external slack of their property taxing authority. Local government managers, therefore, are being prudent to not hoard cash and to borrow in the short-term instead of continually utilizing more of their taxing capacity.

### **1.1 Implications for Scholarship and Practice**

The essays that compose this dissertation make distinct contributions to scholarship and practice. Through developing predictive factors that encourage the use of short-term debt, essay one creates opportunities for researchers to conduct further empirical analysis of patterns of its use, as well as extend investigations of the tradeoffs and consequences of selecting different types of strategies that use external sources of financing (e.g., bank loans, direct lending, new taxes or fees, and excess taxing capacity). This research can aid practitioners by enhancing their understanding of government characteristics and demographic conditions that encourage more short-term debt use. Managers can then create, implement, and/or refine policies that govern the management of short-term debt. These policies can be especially important to enact and understand if a local government infrequently accesses the long-term debt market and may fail to realize that their short-term debt burden is likely to increase as well.

Through providing insights to alternative strategies used for working capital management, essay two provide researchers further insight of the various strategies available and how managers make decisions between preferred and implemented strategies. Practitioners are presented with information on the trade-offs among strategies and what might influence local governments of different sizes to enact certain strategies. Thereby, prudent managers might incorporate into their strategic planning process the knowledge of which types of strategies are more likely be preferred and adopted. Since established policies were not well established, practitioners can institute policies around the use of internal resources and external sources of financing.

Finally, through positing external constraints might impact short-term resources, essay three begins to uncover the interdependencies that exist between the use of short-term resources and limitations placed on local governments. Scholars can expand their knowledge of the impact slack in the form of excess taxing capacity and its influence on short-term resources at the local government level. Furthermore, practitioners are more informed about the likely use of short-term resources to buffer against having to tap into excess taxing capacity.

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## **Chapter 2: The Use of Short-Term Debt by General Purpose Governments**

## 2.1 Introduction

Cash flow management may be viewed as “the development of procedures to accelerate cash receipts and control disbursements to keep cash available as long as possible” (Khan, 2003). As cash flows ebb and flow in the financial period, the government will need to leverage resources, internal and external, to ensure services are provided and obligations are paid. One strategy to manage cash flows is the use of short-term debt as an external source of financing. Short-term debt is typically borrowing money from banks under a written acknowledgment of debt due using unsecured notes<sup>1</sup> that constitutes a conditional or unconditional promise to pay from only specified resources of the issuing government (Moak, 1982). Short-term debt can be issued multiple times in a year for purposes including cash flow management, public improvements, and refunding previously issued notes. The issuance of short-term debt to meet cash flows needs is usually required to be redeemed one year after issuance.

Cash flows can be impacted by declines in revenues sensitive to economic conditions and delays in state aid to typically increase borrowing needs. Local governments can develop a dependence on short-term debt for liquidity - that is a government’s ability to manage cash flows over the budget period, with minimal loss in value. Without the ability to borrow in the short-term, local governments could be unable to meet payroll or other operating expenses if an immediate cash infusion is not received. Therefore, it is imperative to understand the predictors of short-term debt use since certain governments might continually use short-term debt as a cash flow management tool.

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<sup>1</sup> Typically, a note can be issued in anticipation of long-term bonds to be issued, taxes to be collected, nontax revenues to be received, or for unforeseen expenditures to be called a bond anticipation note, tax anticipation note, revenue anticipation note, and budget note, respectively. Short-term notes usually have a maturity of one year or less after the date of issuance. In the State of New York, bond anticipation notes can be issued or renewed for up to five years (New York State, 2008).

Another strategy to manage cash flows is the use of slack resources (e.g., excess unrestricted cash holdings, budget stabilization funds, and discretionary savings in general fund balances) as an internal financing source. Scholars have examined the role of slack resources on a government's resilience to economic turbulence and related volatility in revenues and expenditures (Arapis, Reitano, & Bruck, 2017; Duncombe & Hou, 2014; Gianakis & Snow, 2007; Hendrick, 2006; Hendrick & Crawford, 2014; Marlowe, 2005; Moulick & Taylor, 2017; Snow, Gianakis, & Haughton, 2015; Stewart, 2009; Stewart, Hamman, & Pink-Harper, 2017; Wang, 2015; Wang & Hou, 2012). Emphasis has largely been then size and/or restrictions placed on these resources (Gauthier, 2009; Governmental Accounting Standards Board, 2009; Joyce, 2001; Kriz, 2002). However, restrictions are not a proxy measure of liquidity. Moreover, a government could report a large fund balance, but limited liquid resources to manage cash flows.

Our research extends the existing literature with a specific focus on an organization's choice to use an external source of financing, specifically short-term debt. Using data of local governments in New York state, the results suggest governments are more likely to issue short-term debt if the proportion of their non-cash assets was high. Our analysis also finds evidence that suggests that governments are more likely to issue short-term debt if they reported reductions in budget surplus in the prior years. Consistent with the existing literature, our analysis finds governments that reported a higher proportion of federal aid, a higher percent of spending on employee salaries, or a higher percent of capital spending are generally more likely to use short-term debt to manage cash flows. In New York, local governments are more likely to use short-term debt as a form of bridge financing (New York State, 2008). In a number of instances, local governments choose not to issue long-term debt, and simply relied on the short-

term instruments to finance capital improvements. Not surprisingly, governments were more likely to issue short-term debt with prior experience in the short-term debt market.

The implications of this study are that managers can be responsive to changes in the composition of short-term assets and revenues and understand the cash flow implications of changes in operations, revenue projections, and budgetary spending flexibility. Since engaging in the public capital markets has transaction costs, a government's ability to issue and manage short-term obligations is largely dependent on cash flow management practices. It's important to note that while we focus on the use of short-term debt, governments are increasingly substituting bonds with direct lending (i.e., borrowing directly from a bank) (Breckinridge Capital Advisors, 2014). While most governments can expect lower transaction costs, increased use of direct lending limits visibility and accountability.

The rest of this essay is organized into sections. Section 2.2 is a review of the literature. Section 2.3 seeks to provide potential predictors to engage in the short-term debt market and derives testable hypotheses. Section 2.4 presents a description of the data and model specifications. Section 2.5 discusses the empirical results. Section 2.6 concludes with some limitations of this study as well as the potential implications from the results.

## **2.2 Local Government Working Capital Management Literature**

Scholars have not developed an extensive body of literature on local government working capital management. Yet, our knowledge about slack resources is juxtaposed against our expectations for issuing short-term debt. The concept of slack resources is rooted in organizational theory. Chester Barnard (1938) describes the concept of slack as executives might receive more inducements, such as money, than they contribute to the organization. Cyert and

March (1963) build on this concept by coining the phrase slack resources to mean the “disparity between the resources available to the organization and the payments required to maintain the coalition” (1963, p. 36) which included under-utilized resources such as reserves and excess capital equipment.<sup>2</sup> Although there is no universally accepted definition of slack resources (Riahi-Belkaoui, 1994), slack resources can be defined as “that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or the external pressures for change in policy, as well as to initiate changes in strategy with respect to the external environment” (Bourgeois, 1981). This definition implies that slack resources can be used to mitigate internal and external problems or can be used for strategic purposes.

The Cyert and March (1963) conceptualization of slack resources produced two competing perspectives behind the accumulation of slack. Organizations can use slack resources to mitigate internal and external conflicts that otherwise would necessitate structural change (Cyert & March, 1963; Gianakis & Snow, 2007; Hendrick, 2006; Hendrick & Crawford, 2014; Snow & Gianakis, 2009). Hence, slack resources are a proxy measure of managerial competence (Meier & O’Toole, 2002; O’Toole & Meier, 2011). Managers strategically accumulate resources

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<sup>2</sup> Slack resources take numerous forms such as excess employees in a specific department (Williamson, 1963), skills of professional staff (Walker, 1969), spare capital equipment (Bourgeois, 1981; Cyert & March, 1963), unused capacity (Nohria & Gulati, 1996), buffers to external environments (Thompson, 1967), or excess overhead (Daniel, Lohrke, Fornaciari, & Turner, 2004). Slack can be unabsorbed with currently uncommitted resources (e.g., unreserved fund balance and budget stabilization funds) or absorbed with use in current operations (e.g., creating additional employee positions for operations and non-instructional school spending) (Moulick & Taylor, 2017; Tan & Peng, 2003). Financial management scholars have measured slack as reserves in budget stabilization funds (Gianakis & Snow, 2007; Snow & Gianakis, 2009; Snow, Gianakis, & Fortess, 2008; Snow et al., 2015), discretionary savings in general fund balances (Arapis et al., 2017; Duncombe & Hou, 2014; Hendrick, 2006; Marlowe, 2005, 2013; Moulick & Taylor, 2017; Stewart, 2009, 2011; Stewart et al., 2017; Wang, 2015; Wang & Hou, 2012), excess cash holdings (Gore, 2009; Hand, Pierson, & Thompson, 2016), non-instructional spending (Moulick & Taylor, 2017), and even excess property tax levy capacity (Bradbury, Mayer, & Case, 2001; Gianakis & Snow, 2007; Hawley & Rork, 2015; Lang & Jian, 2004; Nguyen-Hoang & Hou, 2014; Snow & Gianakis, 2009; Snow et al., 2008; Snow et al., 2015).

to finance capital improvements (Marlowe, 2005; Snow & Gianakis, 2009), manage credit risk and/or enhance credit quality (Marlowe, 2011; Snow & Gianakis, 2009), improve performance measures (standardized test scores) (Moulick & Taylor, 2017), and explore innovation opportunities (Fernandez & Wise, 2010; Nohria & Gulati, 1996; Walker, 1969).

Conversely, slack resources may be an indicator of principal-agent problems (Gore, 2009; Jensen, 1986). For example, bureaucrats may accumulate slack resources to produce beneficial rents such as higher compensation (Wintrobe, 1997) or more spending on administrative expenses, manager salaries, and bonuses (Gore, 2009) instead of returning excess resources to citizens in the form of lower taxes and fees. Although bureaucratic budget maximization behavior with slack resources has been suggested (Migué, Bélanger, & Niskanen, 1974; Moe, 1997; Niskanen, 1971) and political pressures arise for tax cuts or spending increases (Rose & Smith, 2012), consistent evidence of this, particularly in the public sector, is limited. Hand et al. (2016) suggest excess cash holdings by local governments is in fact a proxy measure of competent managers saving for a rainy day (Meier & O'Toole, 2002; O'Toole & Meier, 2011) and not an indicator of principal-agent problems as suggested by Gore (2009).

A government's ability to accumulate and retain cash reserves is largely a function of its revenue structure. Empirical evidence suggests governments are more likely to report a large unrestricted fund balance if a significant proportion of revenues were from property or sales taxes (Hendrick & Crawford, 2014; Stewart, 2009; Stewart et al., 2017; Wang, 2015; Wang & Hou, 2012). Furthermore, dependence on intergovernmental revenues may lower unrestricted fund balance (Duncombe & Hou, 2014; Hendrick, 2006; Marlowe, 2005; Stewart, 2009, 2011; Wang & Hou, 2012). Wang and Hou (2012) note intergovernmental transfers may be more volatile over the economic cycle as governments may limit transfers when under fiscal stress to

negatively impact a locality's ability to accumulate reserves. Yet, local governments might realize more volatility exists and accumulate more slack resources to buffer against revenue shocks if a large dependence on intergovernmental revenue sources exists (Arapis et al., 2017; Gianakis & Snow, 2007; Hendrick, 2006; Stewart, 2009; Stewart et al., 2017; Wang, 2015). Governments are, therefore, more likely to issue short-term debt to manage volatile cash flows.

Spending on capital and debt have been found to reduce fiscal slack but may motivate short-term debt use. Increases in capital outlays have been found to lower unreserved fund balance (UFB) (Hendrick, 2006; Hendrick & Crawford, 2014; Wang & Hou, 2012). However, on a conceptual level one might expect that capital outlays might lower (or have no impact on) the UFB and increase the reserved portion of general funds as well as cash balance. Therefore, governments might prudently save for capital projects through restricted funds and not save for capital projects through the general fund UFB. In respect to short-term debt, higher levels of capital outlays are likely to allow for more expenditure flexibility so short-term debt is not likely to be issued as a cash flow management tool. Yet, higher levels of capital outlays could also indicate more infrastructure construction and expansion in which short-term debt could be used to not delay long-term construction projects to motivate short-term debt use.

In addition, long-term debt is also found to significantly influence slack resources with higher debt per capita reducing the UFB (Arapis et al., 2017; Hendrick, 2006; Stewart, 2009) and the imposition of a debt limit decreasing reserve fund balances for high need school districts (Duncombe & Hou, 2014). When general purpose governments borrow, they can transfer money from the general fund to a debt service or sinking fund created for debt obligations. Thus, the general fund UFB is expected to be lower since savings is occurring outside of the general fund. In respect to short-term debt issuance instead of fund balance, more short-term debt could be

issued to strategically time the long-term debt market in which it might be expected that a higher rating could be obtained by waiting a couple of months to issue long-term debt. Hence, a local government might be expected to issue short-term debt to not delay any capital improvement projects financed through long-term debt. Consequently, a local government that will issue more long-term debt might be more likely to use short-term debt.

By investigating one type of liability, short-term debt, which can be used as a cash flow management tool, a contribution to the financial management literature can be made.<sup>3</sup> Scholars have investigated predictors of long-term debt issuance (Bahl & Duncombe, 1993; Clingermayer & Wood, 1995; Ellis & Schansberg, 1999; Fisher & Wassmer, 2014; Kim & Lim, 2017; Trautman, 1995). To our knowledge, one study by Su and Hildreth (2018) examines the role of fiscal slack, unreserved general fund balance, on cash flow management notes (e.g. tax and revenue anticipation notes, tax anticipation notes, and revenue anticipation notes) to find a preference for accumulating slack to short-term borrowing. Yet, as previously discussed, UFB is not a proxy for liquidity but just the difference between assets and liabilities. Therefore, we improve upon the literature by examining the impact of the lack of liquidity (cash balances and short-term investments) on short-term debt. By evaluating a strict form of liquidity, we can test if governments that report less liquidity issue short-term debt as a cash flow management tool.

Furthermore, it is critical scholars understand which factors contribute to short-term debt use to know which types of local governments will access the market. Certain governments that continually access the market might face more risk, especially during recessionary periods.

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<sup>3</sup> This paper could also enhance the local government debt market literature. To the best of our knowledge, the motivations for short-term debt use have not been empirically investigated at the local government level which could complement the overall debt market literature. One study investigates the relationship between fiscal slack and the issuance of cash flow management notes defined as tax anticipation notes, revenue anticipation notes, and tax and revenue anticipation notes (Su & Hildreth, 2018).

During the Great Recession, some local governments experienced a decrease in the number of buyers for their debt and those with buyers were likely experiencing higher interest costs (New York State, 2008). Moreover, local governments that have heavy and ongoing reliance on the short-term debt market might show signs of unresolved poor cash flow management which could lead to larger financial management problems. Consequently, investigating short-term debt use can provide insight into an alternative strategy to manage cash flows, can indicate the initial emergence of financial management problems, and can give a plausible reason for cyclical cash flow problems.

### **2.3 Short-Term Debt Predictors and Testable Hypotheses**

As we have summarized thus far, the literature has largely focused on the relevance and significance of fund balance as a slack resource. Fund balance represents financial resources net of obligations. If a government reports assets (e.g., cash, investments, receivables, transfers in from other funds or governments, inventories, and prepaid expenses) that exceed liabilities (e.g., accounts payable, accrued liabilities, notes payable, and transfers to other funds and governments), they will report a positive fund balance. If assets are less than obligations, the government will report a negative fund balance – a strong indicator that it faces substantial liquidity challenges. What has not been clearly addressed is whether fund balance represents liquid resources. In fact, much of the discussion is focused on the restrictions placed on fund balance (Kelly, 2013).<sup>4</sup> However, restrictions do not measure liquidity. We argue liquidity, or

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<sup>4</sup> For example, Governmental Accounting Standards Board (GASB) requires governments to report fund balance in either of the following five categories - non-spendable, restricted, committed, assigned, and unassigned. Non-spendable fund balance is the amount that is not in spendable form (such as inventory or prepaid amounts) or is legally/contractually required to be maintained intact (such as the principal of an endowment fund). Restricted fund balance is the amount constrained to specific purposes by providers of the funds (such as grantors or bondholders) by constitutional provisions or enabling legislation. Committed fund balance is the amount constrained to specific purposes by the government itself. Assigned fund balance is the amount a government intends to use for a specific

lack thereof, is an important determinant of an organization's choice to use external financial resources, specifically short-term debt. Our essay contributes to the existing literature and financial management field with the examination of when managers are likely to use short-term debt to manage cash flow deficits. In this section, we discuss and develop a series of testable hypotheses based on the strategies a manager would likely use to manage cash flows.

A cash flow deficit occurs when cash inflows (receipts) are less than cash outflows (disbursements) in a given period. Managers can use various strategies to mitigate a cash flow deficit including the use of unrestricted cash reserves, savings, interfund borrowing, interfund transfers, delaying payments, accelerating the collection of receivables, and issuing short-term debt. The use of short-term debt is associated with transaction and monetary costs such as obtaining the financial capacity to issue, time for prior planning of issuance, fees to underwriters, and interest costs. Smaller jurisdictions might be discouraged from market entry due to potentially paying higher short-term interest rates (Moak, 1982) or even having banks be unwilling to issue unsecured notes due to their limited financial resources (Finkler, Smith, Calabrese, & Purtell, 2016). Thus, a government's engagement in the short-term debt market could be after other options have been exhausted.

In fact, managers would likely adjust cash inflows and/or outflows to eliminate the need for use of short-term debt. For example, managers will rely on existing cash reserves to finance the cash flow deficit. If existing cash reserves have been below policy recommendations or restricted for other purposes, managers could alter the collection of revenues and/or the timing

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purpose through the expression by a governing body or official delegated with the authority to assign amounts. Unassigned fund balance is the amount available for any purpose that is the residual classification for only the general fund. Nonspendable, restricted, and committed fund balance are similar to the previous reserved funds. Assigned fund balance is similar to the previous unreserved designated classification. Unassigned fund balance is similar to the previous unreserved undesignated funds (Governmental Accounting Standards Board, 2009).

and level of expenditures to eliminate the cash flow deficit. If expenditures are expected to exceed revenues due to a revenue shortfall or unexpected increase in expenditures (i.e., projected deficit), the finance managers could cut spending, particularly on non-essential items (e.g., capital improvements).

We have therefore developed a series of hypotheses based on strategies managers would likely engage in to eliminate the need for the use of short-term debt. Specifically, we focus on how managers would alter resources to maximize cash flows and minimize transaction costs. The hypotheses are presented in the order we would expect managers to try and mitigate a cash flow deficit such as tapping into unrestricted cash before cutting non-essential spending. For example, managers are more likely to use short-term debt if their government's assets are not readily convertible into unrestricted cash. If a significant proportion of assets are reported as receivables, the government will likely be reporting lower levels of unrestricted cash and therefore more likely to use short-term debt to bridge the gap in the timing of cash receipts from receivables and payment on current obligations. To test this hypothesis, we measure the proportion of non-cash assets reported in the governmental fund statements as a proportion of total assets. We assert governments are more likely to use short-term debt if they report a higher proportion of illiquid resources, all else held constant. This hypothesis is at the core of the analysis and an important metric when estimating working capital needs. Formally, our first hypothesis is as follows:

***Hypothesis 1:*** Governments that report larger proportions of non-cash assets will have an increased expected probability of using (and using more) short-term debt.

Relatedly, governments reporting budget shortfalls in multiple-years are more likely to have drawn down on current cash reserves. They are therefore more likely to report a larger proportion of their assets as illiquid. These governments are more likely to use short-term debt to

manage cash flow deficits but not necessarily resolve their operating deficit. Formally, our second hypothesis is as follows:

***Hypothesis 2:*** Governments with larger cash flow deficits will have an increased expected probability of using (and using more) short-term debt.

To maintain a cash flow surplus, managers can either cut or alter when expenditures are incurred. For example, a local government could cut non-essential costs or delay capital improvements. This strategy allows the government to decrease cash outflows and reduce or eliminate the cash flow deficit. This, however is a strategy that governments with a relatively large proportion of flexible budgetary items (e.g., capital improvements) can adopt. Other governments are more likely to use short-term debt since non-discretionary expenditures (e.g., salaries and wages) must be paid. We therefore expect local governments to use short-term debt if they report a greater proportion of non-discretionary expenditures and use short-term debt less if they report a greater proportion of discretionary expenditures. We measure non-discretionary expenditures using the proportion of salaries and wages paid as a percent of total expenditures and discretionary expenditures using the proportion of capital spending as a percent of total expenditures. Formally, our third hypothesis is as follows:

***Hypothesis 3a:*** Governments with less expenditure flexibility will have an increased expected probability of using (and using more) short-term debt.

***Hypothesis 3b:*** Governments with more expenditure flexibility will have a decreased expected probability of using (and using more) short-term debt.

The use of short-term debt is largely dependent on the timing of cash flows. We postulate that the provider of resources is an important consideration in working capital management. For example, if the government is relying on external sources of revenue (e.g., federal and/or state

aid) it is more likely to use short-term debt given the mismatch in budget cycles, and thus receipt of revenues. Own-source revenues on the other hand are much more predictable in receipt, particularly the property tax. Therefore, a government reporting a higher proportion of own-source revenues will likely not need to use short-term debt as frequently. Our fourth hypothesis can be stated as follows:

***Hypothesis 4a:*** Governments with relatively large portions of own-source revenues will have a decreased expected probability of using (and using more) short-term debt.

***Hypothesis 4b:*** Governments with more dependence on intergovernmental revenues will have an increased expected probability of using (and using more) short-term debt.

Managers could have a practice of using short-term liabilities to mitigate cash flows. Liabilities such as accounts payable, accrued liabilities and other liabilities can be used in conjunction with short-term debt. We assert that governments more likely to report a larger amount of short-term liabilities (other than short-term debt) are likely to report higher use of short-term debt to manage cash flows. Formally, our fifth hypothesis is as follows:

***Hypothesis 5:*** Governments that report a high amount of liabilities (other than short-term debt) have an increased expected probability of using (and using more) short-term debt.

Finally, a frequent practice, particularly by local governments in New York is to use short-term debt as a form of bridge-financing (e.g., bond anticipation notes) (New York State, 2008). The use of bridge financing allows governments to limit delays in capital improvements

all the while timing their long-term debt issue to when market dynamics would likely be most favorable to them. Our final hypothesis can be stated as follows:

***Hypothesis 6:*** Governments that want to wait for a more favorable long-term debt market have an increased expected probability of using (and using more) short-term debt.

The following section describes the sources of data and model specifications.

## **2.4 Data and Model Specification**

This study relies on data on from about 1,600 general purpose governments including 57 counties, 61 cities, 929 towns, and around 554 villages in New York State for fiscal years 1996 through 2016.<sup>5</sup> Since each government has their own governing body and taxing authority, they are more likely to have the freedom to use short-term debt to manage cash flow deficits (New York State Department of State, 2014). Table 2.1 shows the study sample of county (1,197), city (1,279), town (19,288), and village (11,526) government observations.<sup>6</sup> The average amount of short-term debt per capita is \$167.00 for city, \$95.94 for village, \$65.80 for county, and \$16.34 for town governments, respectively.

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<sup>5</sup> Village government observations fluctuate the most year to year due to non-reporting, dissolution, and creation. The villages of East Nassau (1998), Sagaponack (2006), South Blooming Grove (2007), Woodbury (2007), and Mastic Beach (2011) were created over the study period and the village of Andes (2004), Pike (2010), Limestone (2011), East Randolph (2012), Perrysburg (2012), Randolph (2012), Seneca Falls (2012), and Altmar (2005 but officially dissolved in 2013) were dissolved over the study period. The last year of financial data for villages dissolved or the first year of financial data for villages created is indicated by the year in above parentheses. Villages were included when they were in existence and financial data was reported.

<sup>6</sup> The counties that comprise the boroughs of New York City (New York, Bronx, Kings, Queens, and Richmond) are excluded as well as New York City observation which are outliers and significantly different than other city government observations. Missing observations because of non-reporting or missing data include: two cities (Elmira and Mount Vernon) in 2016, about 136 town observations, and 193 village observations.

Each type of local government has a unique set of service responsibilities<sup>7</sup> which impact their reliance on own-source and intergovernmental revenues. Although the property tax is the largest source of own-source revenue, the second most relied own-source revenue is the sales tax for county (20.56%) and town (13.81%) governments and fees and charges for village (29.93%) and city (22.86%) governments. State and federal aid revenue is more relied on by county and city governments than town and village governments. Salaries and wages expenditures comprise 49.41%, 38.56%, 33.95%, and 33.19% of total expenditure for city, town, county, and village governments, respectively. The differences in reliance on revenue sources and non-discretionary spending impact our expectations about short-term debt use across local governments. We expect county and city government results to be more generalizable to other United States large municipalities than town and village governments that are largely influenced by residential preference.

We created our dataset using publicly available resources including data from New York Local Government and School Accountability, Open Book New York, New York State Board of Elections, U.S. Bureau of Labor Statistics, U.S. Bureau of Economic Analysis, and the Local Government Handbook from the New York Department of State. Additional balance sheet financial information was provided by request of the New York State Controller's office and

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<sup>7</sup> County governments are the largest and most inclusive form of local government to function as the administrative unit to carry out state functions (e.g., provide many state mandated services such as Medicaid and conducting elections for the state), education (e.g., pre-school special education and community college), and public safety (e.g., police, jails, and probation and rehabilitation services). City governments have the authority of home rule and have the authority to provide residents local government services such as water infrastructure, public safety, economic development, and social services. Town governments exist within a county to provide both town-wide services such as highway maintenance or police services and partial town services but cannot provide fire services town-wide and thus, create and administer special districts to provide this service. Village governments exist within a town and are created or dissolved by local initiative to truly exist through the discretion of residents (New York State Department of State, 2014).

financial variables were constructed from accounting codes provided. Bloomberg L.P. terminals were used to collect short-term debt amounts.

#### 2.4.1 Model Specifications

The empirical strategy models the two-part decision-making process used by managers to issue short-term debt. Managers might not issue short-term debt in a given year and thus, several zero values of short-term debt exist. Therefore, we model short-term debt use to consider the decision to not issue short-term debt which leads to censoring of the data. First, a hurdle model is presented to address the two-part decision-making process of managers. Second, an instrumental variable approach is used to account for the simultaneity of decision-making by managers with probit and tobit models.

##### 2.4.1.1 Hurdle Models

First, managers evaluate the government's liquidity, which is determined by cash flow management, and decide to issue or not issue short-term debt. Second, managers decide how much short-term debt to issue. The factors that contribute to issuing short-term debt might be differing factors that contribute to issuing larger amounts. For example, a lack of cash reserves could motivate the use of revenue anticipation notes until property taxes are collected. However, a lack of cash reserves might not motivate a government to issue larger amounts of short-term debt especially, if property taxes are about to be collected. Therefore, the choice to issue short-term debt and issuing larger amounts of short-term debt could have different motivating factors determining each choice.

This two-part decision-making process is modeled by estimating a linear hurdle model proposed by Cragg (1971).<sup>8</sup> This model allows for different equations to motivate both the selection into issuing short-term debt and the decision to issue a larger amount of short-term debt, whereas a tobit model uses the same equation for both decisions. The linear hurdle model is characterized by the following relationship:

$$y_i = s_i h_i^*$$

$$s_i = \begin{cases} 1 & \text{if } z_i \gamma + \epsilon_i > 0 \\ 0 & \text{otherwise} \end{cases}$$

$$h_i^* = x_i \beta + v_i$$

where  $y_i$  represents the observed value of short-term debt issued;  $s_i$  is the selection variable which is 1 if short-term debt is not bounded, greater than zero, and 0 otherwise,  $z_i$  is a vector of explanatory variables to predict the issuance of short-term debt,  $\gamma$  is a vector of coefficients for the section of issuing short-term debt,  $\epsilon_i$  is a standard normal error term for the selection decision,  $h_i^*$  is observed only if  $s_i = 1$  (short-term debt is issued),  $x_i$  is a vector of explanatory variables for the amount of short-term debt issued,  $\beta$  is a vector of coefficients for the amount of short-term debt issued, and  $v_i$  is an error term for the amount decision.

#### 2.4.1.2 Instrumental Variable Probit and Tobit Models

Another empirical approach is to address the simultaneity of decision making that would create endogeneity to bias causal estimates of the use of short-term debt. The hypotheses are

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<sup>8</sup> A hurdle model was chosen to allow for two separate decisions/mechanisms to affect the participation of engaging in the short-term debt market and the amount of short-term debt issued. An instrumental variable (IV) probit and IV tobit with instruments of a lagged value of the endogenous variable expressed in ranks (Duncombe & Hou, 2014; Kroszner & Stratmann, 2000) and the amount of financial industry wages per population at the county level for salary and wages expenditures were used. Using the IV tobit indicates the relative effects of a single mechanism or motivating factor (explanatory variable) as being the same in both the participation and amount decisions. We might think that some motivating factors affect the participation decision but not the amount decision and thus, a hurdle model might be more appropriate model to describe the two-part issuance decision.

tested by estimating instrumental variable (IV) regression models. First, an IV probit regression model is used to reduce endogeneity of key variables. Equation (1) and (2) are developed which take the following form:

$$y_{1it}^* = y_{2it}\beta + x_{1it}\gamma + \varepsilon_{it} \quad (1)$$

$$y_{2it} = X_{1it}\Pi_1 + X_{2it}\Pi_2 + v_{it} \quad (2)$$

$$y_{1it} = \begin{cases} 0 & y_{1it}^* < 0 \\ 1 & y_{1it}^* \geq 0 \end{cases}$$

where  $y_{1it}^*$  represents the latent amount of short-term debt engaged in in which we observe  $y_{1it}$  in with a value of 1 if short-term debt is used and a value of zero otherwise where  $i$  indicates a specific community (e.g., a county, city, town or village) and  $t$  indicates year,  $y_{2it}$  is a vector of endogenous variables (endogenous key variables),  $X_{1it}$  is a vector of exogenous variables (exogenous key variables),  $X_{2it}$  is a vector of additional instruments (additional control variables), and  $\varepsilon$  is a stochastic error term. The equation for  $y_{2it}$  is written in reduced form.

Second, an IV tobit model which is left-censored (censored at zero of not issuing short-term debt) is run to test which predictors influence larger amounts of short-term debt being issued. Equation (3) and (4) are developed which the following form:

$$y_{1it}^* = y_{2it}\beta + x_{1it}\gamma + \varepsilon_{it} \quad (3)$$

$$y_{2it} = X_{1it}\Pi_1 + X_{2it}\Pi_2 + v_{it} \quad (4)$$

$$y_{1it} = \begin{cases} a & y_{1it}^* < a \\ y_{1it}^* & a \leq y_{1it}^* \leq b \\ b & y_{1it}^* > b \end{cases}$$

where  $y_{1it}^*$  represents the latent amount of short-term debt engaged in in which we observe  $y_{1it}$  with a continuous value that can be below, at, or above the latent amount of short-term debt used where  $i$  indicates a specific community (e.g., a county, city, town or village) and  $t$  indicates year,

$y_{2it}$  is a vector of endogenous variables (endogenous key variables),  $X_{1it}$  is a vector of exogenous variables (exogenous key variables),  $X_{2it}$  is a vector of additional instruments (additional control variables), and  $\varepsilon$  is a stochastic error term. The equation for  $y_{2it}$  is written in reduced form.

#### 2.4.2 Outcome Variable

Ideally, short-term debt use would be measured on a monthly basis along with measures of cash inflows (e.g., tax receipts, intergovernmental revenues, and fees) and cash outflows (e.g., employee payroll, capital spending, and debt service payments). However, available data is aggregated on an annual basis including all short-term debt issued. The dependent variable is the amount of short-term debt issued in a fiscal year standardized by each community's total population and converted to a natural log.<sup>9</sup> This measure has two components: (1) new short-term debt issued and (2) overdrafts of cash accounts. As collected from Bloomberg L.P.'s workstations, the first component is the annual amount issued of general obligation unlimited notes, general obligation limited notes, revenue notes, bond anticipation notes, tax anticipation notes, revenue anticipation notes, budget notes, certificates of participation, and warrants. The second component is the end of year amount of negative cash reported in governmental funds from Open Book New York.<sup>10</sup> Since negative cash values might be overdrafts of bank accounts that are obligated to be repaid, the amount of negative cash should also be included in short-term

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<sup>9</sup> A value of one was added to all values so natural logs could be taken for values of zero short-term debt.

<sup>10</sup> All governmental funds are included except for the capital fund, debt service fund, and special district funds. These are excluded because they are distinctly created for specific purposes and the governmental funds included are more representative of everyday governmental activities.

debt obligations.<sup>11</sup> The short-term obligation amount plus the amount of negative cash reported is standardized by the total population and presented in natural log form.

### 2.4.3 Test Variables

The independent variables of interest are the hypothesized factors that influence the use of short-term debt. First, a lack of cash reserves is illiquidity. We measure illiquidity as the proportion of assets not easily convertible into unrestricted cash (e.g., accounts receivable, due from other governments, inventory, and restricted cash) standardized by total expenditures and in percent form.<sup>12</sup> The amount of illiquidity is likely to be endogenous because the community chooses the amount to have each year simultaneous to the allocation decision to issue short-term debt. Therefore, for models that address endogeneity, an exogenous variable or instrument can be used that is strongly correlated with the endogenous variable but does not have an independent relationship with short-term debt.

The proposed instrument is a lagged value of the endogenous variable expressed in ranks that has been used by previous researchers (Duncombe & Hou, 2014; Kroszner & Stratmann, 2000).<sup>13</sup> Initially, the amount of illiquidity is lagged for one year for each type of municipal

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<sup>11</sup> In the data, 95 observations (2 counties, 5 cities, 51 towns, and 37 villages) for the fiscal years between 1996 and 2016 had some amount of negative cash reported.

<sup>12</sup> Total governmental fund assets (excluding capital, debt service and special district funds) minus the amount of cash and marketable securities is standardized by governmental fund assets and measured as a percentage. This variable is tested to see if it is endogenous and the null hypothesis that the variable is exogenous is rejected at the 95% level of confidence given the endogeneity test with the `ivreg2` Stata command. Following Duncombe and Hou (2014), partial F-statistics from the first-stage regressions can be calculated then determined if they are above a value of 10 for the instruments to be acceptable (Staiger & Stock, 1997). The Cragg-Donald Wald F statistic is 1468.70. Furthermore, comparing the Kleibergen-Papp rk Wald statistic to critical values established by Stock and Yogo (2005) are done to test if the instrument is likely weak. The Kleibergen-Paap Wald rk F statistic is 1479.05.

<sup>13</sup> This IV ranking approach is used for illiquidity (counties and towns), prior year surplus (villages), sales taxes (villages), fees and charges (counties), state aid (villages), federal aid (towns), capital spending (cities), and long-term debt (towns and villages).

government.<sup>14</sup> Then, ranks are created by dividing the distribution of the lagged variable into thirds to assign a value of “1” to the lowest third of the distribution, a value of “2” to the middle third of the distribution, and a value of “3” to the highest third of the distribution. The rankings are to be strongly correlated to the endogenous variable but not correlated to the error term. Although the observations close to the points that switch from one value to another might be correlated, there are only two cross over points to another value and thus, might minimize this concern. However, for an instrument to be considered a better measure, the instrument should be tested to determine if it is highly correlated with the endogenous variable. Consequently, instrument tests are conducted and a one year lagged ranked instrument is used when necessary.<sup>15</sup>

Second, governments’ ability to generate excess funds for cash inflows is measured as the prior year’s surplus or deficit. Surplus (or deficit if the value is negative) is measured as the percent of prior fiscal year’s total revenues minus total expenditures standardized by total expenditures. Since the ending surplus of one fiscal year is the amount of extra funds to be used in the preceding fiscal year, using a lagged value, or prior year’s value, is appropriate. Third, more discretionary expenditures, more flexible spending, can increase cash flows if cuts are enacted. More discretionary spending is measured as the percent of total expenditures used for capital and equipment since a government could delay capital projects. In contrast, non-discretionary spending or less flexible spending is measured as the percent of total expenditures for employee salaries and wages.

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<sup>14</sup> Two and three year lagged variables are also tested but one year lagged variables are tested to be a less weak instrument and allow for more observations to be used.

<sup>15</sup> The `ivreg2` Stata command is preformed to evaluate the endogeneity test of each regressor. Following Duncombe and Hou (2014), partial F-statistics from the first-stage regressions are calculated then determined if they are above 10 for the instruments to be acceptable (Staiger & Stock, 1997). The Kleibergen-Papp rk Wald statistic to critical values established by Stock and Yogo (2005) are reported and instruments are cautiously concluded a less weak based on a Cragg-Donald Wald F statistic higher than Stock-Yogo critical value of 10% maximal IV size.

Fourth, own-source revenues (property tax, sales tax, and fees and charges) all measure the amount of resources might be used to reduce the engagement in the short-term debt market. Each own source revenue is measured as the percent of each source standardized by total revenues. Fifth, intergovernmental revenues of federal and state aid measure sources of cash flow that likely take longer to receive. Each intergovernmental revenue source is standardized by total revenues and measured as a percent. Sixth, to measure the use of liabilities as a strategy to increase cash flows, the amount of governmental liabilities other than short-term debt per capita is used as a natural log. Finally, the likely timing of the long-term debt market is measured as the amount of long-term debt outstanding standardized by the population, in natural log form.

The selection of the amount of each of these test variables is simultaneously decided with the amount of short-term debt issued. Consequently, each of the above variables are tested for endogeneity with a lagged ranked measure for an instrument. The exception is for salaries and wages which is instrumented with private sector salaries for comparable administration jobs in the county.<sup>16</sup> The variables that are likely endogenous in the IV probit models are illiquidity (counties and towns), prior year surplus (counties, towns, and villages), fees and charges (towns), state aid revenue (towns and villages), federal aid revenue (towns and villages), salaries and wages (cities and towns), capital and equipment (towns and villages), and other liabilities (counties).<sup>17</sup> The variables that are likely endogenous in the IV tobit models are illiquidity

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<sup>16</sup> Private sector wages at the county level was likely a weak instrument for town governments and a lagged rank measure of salaries was used to have a Cragg-Donald Wald F statistic of 11000 and the Kleibergen Paap Wald rk F statistic of 1000.

<sup>17</sup> Each measured variable was tested for endogeneity and found likely to be endogenous. For the IV probit models the measure of illiquidity, the Cragg-Donald Wald F statistic is 1356.59 (counties) and 11000 (towns) while the Kleibergen Paap Wald rk F statistic is 1419.52 (counties) and 8649.82 (towns). For prior year surplus, the Cragg-Donald Wald F statistic is 1602.048 (counties), 13000 (towns), and 2748.37 (villages) while the Kleibergen Paap Wald rk F statistic is 1108.44 (counties), 7688.40 (towns) and 1798.54 (villages). For fees and charges, the Cragg-Donald Wald F statistic is 9750.69 and the Kleibergen Paap Wald rk F statistic is 6170.80 for towns. For state aid, the Cragg-Donald Wald F statistic is 2643.02 (towns) and 420.54 (villages) while the Kleibergen Paap Wald rk F statistic is 2022.04 (towns) and 312.35 (villages). For federal aid, the Cragg-Donald Wald F statistic is 908.74

(counties and towns), prior year surplus (counties, towns and villages), sales taxes (cities), state aid (towns), federal aid (towns and villages), salaries and wages (cities and towns), capital expenditures (towns and villages), other liabilities (counties), and long-term debt (cities).<sup>18</sup>

#### 2.4.4 Control Variables

Several economic, demographic, fiscal, and political factors that might influence engagement in short-term debt market or explain differences between communities.<sup>19</sup> First, the unemployment rate is used as a control for the local economic climate in which poor economic conditions might be correlated with increased service needs.<sup>20</sup> Second, the wealth of a community can create differences in short-term debt use. We control for wealth with the natural log of per capita personal income of residents measured at the county level of government.

Third, the size of government could factor into how much short-term debt is likely to be issued.

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(towns) and 836.90 (villages) while the Kleibergen Paap Wald rk F statistic is 742.72 (towns) and 625.61 (villages). For salaries and wages, the Cragg-Donald Wald F statistic is 83.57 (cities) and 11000 (towns) while the Kleibergen Paap Wald rk F statistic is 64.91 (cities) and 10000 (towns). For capital and equipment outlays, the Cragg-Donald Wald F statistic is 1726.71 (towns) and 875.72 (villages) while the Kleibergen Paap Wald rk F statistic is 1578.24 (towns) and 813.82 (villages). For other liabilities, the Cragg-Donald Wald F statistic is 1157.09 (counties) and the Kleibergen Paap Wald rk F statistic is 1034.92 (counties).

<sup>18</sup> Each measured variable was tested for endogeneity and found likely to be endogenous. For illiquidity, the Cragg-Donald Wald F statistic is 1356.59 (counties) and 11000 (towns) while the Kleibergen Paap Wald rk F statistic is 1419.52 (counties) and 8649.82 (towns). For prior year surplus, the Cragg-Donald Wald F statistic is 1602.05 (counties), 13000 (towns), and 2748.37 (villages) while the Kleibergen Paap Wald rk F statistic is 1108.44 (counties), 7688.40 (towns), and 1798.54 (villages). For sales tax, the Cragg-Donald Wald F statistic is 1037.17 and the Kleibergen Paap Wald rk F statistic is 931.03 for cities. For state aid, the Cragg-Donald Wald F statistic is 2643.02 and the Kleibergen Paap Wald rk F statistic is 2022.04 for towns. For federal aid, the Cragg-Donald Wald F statistic is 908.74 (towns) and 836.90 (villages) while the Kleibergen Paap Wald rk F statistic is 742.72 (towns) and 625.61 (villages). For salaries and wages, the Cragg-Donald Wald F statistic is 83.570 (cities) and 11000 (towns) while the Kleibergen Paap Wald rk F statistic is 64.91 (cities) and 10000 (towns). For capital and equipment, the Cragg-Donald Wald F statistic is 1726.71 (towns) and 8745.72 (villages) while the Kleibergen Paap Wald rk F statistic is 1578.24 (towns) and 813.82 (villages). For other liabilities, the Cragg-Donald Wald F statistic is 1157.09 (counties) and while the Kleibergen Paap Wald rk F statistic is 1034.92 (counties) and. For long-term debt, the Cragg-Donald Wald F statistic is 1118.60 (cities) while the Kleibergen Paap Wald rk F statistic is 1540.42 (cities).

<sup>19</sup> All control variables are measured at the county level except for the indicator for past short-term debt issuance, the indicator for past deficits, government size, and city form of government indicators.

<sup>20</sup> The market conditions were also tested with The Securities Industry and Financial Market Association Municipal Swap Index. However, the annual average of this measure each fiscal year was over 50% correlated to unemployment. The unemployment rate was used instead of the index to control for market conditions.

Larger governments could have more resources to engage in the short-term debt market. The size of government is measured as total revenues per capita in natural log form.

Fourth, prior engagement in the short-term debt market might lower barriers to its future use. We assert jurisdictions that have issued short-term debt in the past two years have a higher expected use of short-term debt in the current year. Prior engagement in market is measured as a dummy variable with a value of 1 if short-term debt is issued in the preceding two fiscal years.

Fifth, governments could incur multiple years of deficits to motivate them to continuously borrow in the short-term. We control for jurisdictions that report deficits (total expenditures greater than total revenues) with a dummy value of 1 if a deficit is reported in the prior two fiscal years.

Sixth, voter preferences are controlled for which might show the preferences towards government and its management. We identify for each county the proportion of votes that went towards a Republican candidate for Senate in the most recent election. The city, town, and village governments located in a specific county are given the county values as a proxy for voter preferences. Since voter's budget information preceding an election carries political weight (Peltzman, 1992), we next control for the year of a Governor and Presidential election in which political priorities about fiscal policy could shift. Finally, several governance indicator variables are included as controls for the government structure of counties and cities.<sup>21</sup> For county

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<sup>21</sup> From the New York State Local Government Handbook, the variables created are an indicator of the city form of government, the number of city council members, an indicator for a community located in a chartered county, an indicator of the type of governance type utilized by the county chief administrative official, an indicator of the county legislative body type, and the number of county legislative members. The city form of government is indicated as a dummy variable for having a mayor council, mayor-council-manager, council-manager, and mayor-commission-manager or mayor-commission with the excluded group of mayor-council-administrator. The indicator of a community located in a chartered county is measured as a 1 if in a chartered county and 0 otherwise. A chartered county means that the county has adopted home rule charters by local initiative and action (The counties that have a charter are Nassau, Westchester, Suffolk, Erie, Oneida, Onondaga, Monroe, Schenectady, Broome, Herkimer, Dutchess, Orange, Tompkins, Rensselaer, Albany, Chemung, Chautauqua, Putman, and Rockland). The dummy variables indicating the county chief administrative governance is measured as indicating a chair of the

governments, an indicator for a chartered county, an indicator of the type of Chief Administrative Official, an indicator of the county legislative body type, and the number of county legislative members are controlled. For city governments, we control for an indicator for the form of government and the number of city council members.

## **2.5 Empirical Results**

The overall results suggest that the expected likelihood of using short-term debt is increased when there is more illiquidity, larger reductions in prior year surplus, increases in fees and charges, less dependence on state aid, more spending on employee salaries and wages, increased spending on capital and equipment, and higher reported long-term debt. This section proceeds by first describing the results of the linear hurdle models in Table 2.2 and margins of the linear hurdle models in Table 2.3. Second, results of models accounting for endogeneity are reported for the IV probit models in Table 2.4, the IV probit margins in Table 2.5, and the IV tobit models in Table 2.6.

### **2.5.1 Hurdle Model Results**

The linear hurdle models reported in Table 2.2 provide supportive evidence for most of our hypotheses. First, hypothesis 1, higher reported illiquidity of assets increases the probability of using short-term debt, is supported by county, town and village governments. As illiquidity increases these governments are more likely to engage in the short-term debt market but are not necessarily encouraged to issue higher amounts of short-term debt. Specifically, we find a 1

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legislative body, executive, and manager with an administrator as the excluded group. The indicator for the county legislative body type is measured as have a legislature with a supervisor as the excluded group. All measurements are taken from 2009 numbers and used over the study period (New York State Department of State, 2009).

percent increase in illiquidity increases the likelihood of issuing short-term debt by 1.3%, 0.7% and 0.5% for county, town, and village governments, respectively. The evidence supports the notion that reductions of cash on hand increase short-term borrowing needs.

Second, we find supportive evidence that reductions in prior year surplus increase the likelihood of issuing short-term debt. A 1 percent decrease in prior year surplus increases the likelihood of issuing short-term debt by 2.0%, 0.6%, and 0.3% for county, town, and village governments, respectively. Reductions in prior year surplus also increase the amount of short-term debt issued for county, city, and town governments. Thus, this predictor is influential in both motivating the use and larger amounts of short-term debt issued.

Third, less expenditure flexibility increases the likelihood of issuing short-term debt. City governments, on average, spend 49.4% of total expenditures on salaries. If salaries and wages were to increase by 1 percent, city governments have an increased likelihood of issuing larger amounts of short-term debt by 2.8%. Similarly, county governments are more likely to issue and issue larger amounts of short-term debt when there is an increase in salaries and wages spending. A 1 percent increase in salaries and wages spending increases the likelihood of issuing short-term debt by 2.3% and increases the amount of short-term debt issued by 4.6%. This evidence supports the fact that higher levels of government that have large increases in personnel cost might be issuing larger amounts of short-term debt to pay for payroll for employees. In contrast, an increase in the amount of spending on salaries and wages reduces the issuance of short-term debt for villages and reduces the amount issued for town governments. Both town and village governments have lower levels of illiquidity at 20.9% and 30.3%, respectively, compared to county and city governments with 64.8% and 62.3%, respectively. These smaller levels of

government might rely more on growing cash reserves to pay for increases in personnel costs instead of issuing short-term debt.

Furthermore, the evidence suggests that more expenditure flexibility as measured by capital and equipment spending increases the likelihood of issuing and issuing more short-term debt. A 1 percent increase in capital spending increases the likelihood of issuing short-term debt by 3.0%, 2.1%, 1.2%, and 1.4% for county, city, town, and village governments, respectively. Given our local government sample is from New York State, local governments can roll over bond anticipation notes and a form of bridge financing (New York State, 2008). It is likely that bond anticipation notes used for capital projects are issued to fund increase in capital spending. Thus, comparable to issuing long-term debt, the evidence suggest that local governments are reporting higher levels of capital spending are likely issuing short-term debt and larger amounts of short-term debt to fund projects.

Fourth, an increased reliance on own-source revenue has minor impacts on the engagement in the short-term debt market. A greater reliance on the property tax is not supported to impact short-term debt. Yet, more reliance on sales tax revenues reduces the likelihood of issuing short-term debt for county and village governments. A greater reliance on fees and charges reduces the amount of short-term debt issued for county governments However, city and village governments gain substantial revenues from fees and charges at 22.9% and 29.9%, respectively. If fees and charges increase by 1 percent, city governments have an increased likelihood if issuing short-term debt by 2.1%. While village governments have an increased likelihood of issuing short-term debt by 0.6% and a 0.9% increase in the amount of short-term debt issued. The reliance on fees and charges which might ebb and flow with service use might

contribute to more dependence on issuing short-term debt for cash flow purposes. Overall, the issuance of short-term debt is minimally affected by changes in own-source revenues.

Increased reliance on intergovernmental revenues predicts short-term debt at a higher level than own-source revenues. City, town, and village governments that have a 1 percent increase in state aid have a 2.1%, 2.6%, and 1.0% reduction in short-term debt issuance. This evidence suggests that when state aid is reduced lower levels of governments seek to issue short-term debt to increase the lack of cash inflows. We do not find evidence that reduced reliance on state aid impacts county governments but that reliance on federal aid predicts short-term debt use. A 1 percent increase in federal aid increases the likelihood of issuing more short-term debt by 3.7%. Since county governments are the administrative arm of the state and are responsible for distributing Medicaid program funds, county governments might be motivated to increase the amount of short-term debt issued when receipt of program funds are delayed.

Fifth, some evidence suggests that county and city governments that have a practice of using short-term liabilities to reduce cash flow deficits are more likely to issue short-term debt. City governments that have a 1 percent increase in other liabilities per capita have a 0.2% increase in issuing short-term debt. Thus, city governments that report higher proportions of other liabilities are likely to also issue short-term debt to increase cash flows. County governments have a 1 percent increase in other liabilities per capita have a 0.5% increase in the amount of short-term debt issued. This result indicates county governments may seek even more cash inflows from the short-term debt market when they have more accounts outstanding to suppliers in the short-term.

Finally, all local governments increase both their likelihood to issue and issue higher amounts of short-term debt when long-term debt outstanding increases. This result indicates that

long-term debt is used in conjunction with the use of short-term debt. A 1 percent increase in short-term debt increases the likelihood of issuing short-term debt by 0.7%, 0.6%, 0.3%, and 0.2% for county, city, town, and village governments, respectively. The amount of short-term debt is also increased by 0.7%, 1.1%, 0.5%, and 0.7% for county, city, town, and village governments, respectively. Therefore, higher reported long-term debt does predict the use and amount of short-term debt issued but at lower magnitudes than increases in employee salaries or capital spending.

Several control variables are also important predictors of short-term debt issuance. First, the most impactful predictor is having issued short-term debt in the prior two years. If short-term debt has been issued in the prior two years, the evidence suggest that local governments have an over 100% chance of issuing short-term debt than those that have not engaged in the short-term debt market in the prior two years. This supports the notion that past experience in issuing short-term debt might lower the barriers to want to issue in future periods. Second, county and town governments that have reported a deficit in the prior two years are less likely to engage in the short-term debt market. Third, as county and town governments grow larger in size they have a reduced likelihood of issuing short-term debt. This could be due to relying on future revenue growth per capita to cover future cash inflows than engaging in short-term borrowing. Fourth, village governments in a Presidential election year reduce the amount of short-term debt issued which could be due to being cautious about political changes. Finally, a higher likelihood of issuing short-term debt exists for county governments that are governed by a legislature and city governments with more council members.

In Table 2.3, we present the marginal results of the hurdle models. These marginal effects are indicated for mean values for predictors and show the overall impact of the predictor on

short-term debt issuance. Ultimately, these marginal results reiterate our general findings that higher reported illiquidity, reductions in prior year surplus, more fees and charges, decreases in state aid revenue, higher amounts of salaries and wages, increases amounts of capital spending, more other liabilities, and more long-term debt outstanding predict short-term debt.<sup>22</sup> Consistent impacts occur for control variables such as issuing short-term debt in the two preceding fiscal years, having a deficit reported in the prior two fiscal years, and the size of a local government.

### 2.5.2 Instrumental Variable Probit and Instrumental Variable Tobit Results

The IV probit models (Table 2.4) and IV tobit models (Table 2.6) report predictors that influence the issuance of short-term debt and higher amounts of short-term debt issued, respectively. Overall, most of our hypotheses are supported when addressing endogeneity concerns. First, hypothesis 1 of more illiquid assets increasing the expected predicted probability of using short-term debt is supported by county and village governments. A 1 percent increase in illiquidity is likely to change the expected probability of issuing short-term debt per capita by 2.1% and 0.5% for county and village governments, respectively. These governments, therefore, are likely to increase their cash position by accessing the short-term debt market when liquid resources are hard to obtain.

Second, hypothesis 2 has some support by county, town and village governments in which more prior year surplus decreases the expected probability of issuing and issuing larger amounts of short-term debt. Town governments and village governments have the most prior year surplus on average at 3.6% and 4.6%, respectively. A 1 percent decrease in surplus, would

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<sup>22</sup> Minor differences to the hurdle model occur with the marginal results. For instance, the impact of a 1% increase in sales tax revenues is not found to significantly influence short-term debt issuance and in a Presidential election year town governments are more likely to reduce the issuance of short-term debt.

increase the expected issuance of short-term debt per capita by 1.0% and 0.6% as well as increase the amount of short-term debt issued by 5.1% and 4.6% for town and village governments, respectively. Managers might be acting prudently by issuing greater amounts of short-term debt per capita when they anticipate prior year accumulations are reduced.

Hypothesis 3 and 4 are somewhat supported. Hypothesis 3a of an increased expected likelihood of issuing short-term debt when salaries and wages spending increase is supported by county and city governments. Yet, hypothesis 3b is counter to expectation with all local governments having an increased expected likelihood of issuing, and issuing more, short-term debt when the proportion of capital and equipment expenditures increase. The result could indicate the financing of infrastructure in the short-run to not delay long-term capital improvements as a source of bridge financing.

Hypothesis 4a has mixed empirical support. County governments rely heavily on the sales tax; thus, managers are less likely to issue short-term debt if the proportion of sales tax revenue increases while having increases in the proportion of property taxes and fees and charges does not significantly predict short-term debt use and larger amounts of short-term debt being issued. The lower levels of government of cities and towns are likely to issue short-term debt when the proportion of property taxes and sales taxes increase. This is as expected with main sources of revenues contributing to less cash flow uncertainty. However, when city governments have an increase in the proportion of fees and charges there is an increase in the issuance and the amount issued of short-term debt. The result being counter to the expectation might be due to the uncertainty of receipt of fees and charges to motivate issuing short-term debt to ensure more timely cash inflows. Furthermore, a higher proportion of state aid decrease the expected likelihood of issuing short-term debt for city, and town governments as well as decrease the

expected likelihood of issuing more short-term debt for city and town governments. This result may indicate intergovernmental aid for lower levels of government might be relied on by managers to generate cash inflows and factor into not engaging in the short-term debt market.

There is no evidence to support hypothesis 5 in the instrumental variable models. Local governments that report a high amount of liabilities are not more or less likely to issue or issue more short-term debt. However, hypothesis 6 of local governments timing the debt-market is supported at all local government levels. An increase in long-term debt per capita increases both the likelihood to engage in the short-term debt market and issue larger amounts of short-term debt.

The control variables that increase the expected likelihood of issuing and issuing more short-term debt are prior short-term debt experience (all governments), not reporting a deficit (county and town governments), more wealth in the county (village governments), smaller sized governments (towns and villages), higher percentages voting for a Republican Senator (cities), not being a Presidential election year (villages), and the county and city governance structure.<sup>23</sup>

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<sup>23</sup> A local government having issued short-term debt in the past two years has an increased expected likelihood of issuing short-term debt by over 100% and has an increased expected likelihood of issuing larger amounts of short-term debt by over 400%. County and town governments that have reported a deficit are more likely to not issue short-term debt by 28.4% and 12.6% and county governments are more likely to not issue large amounts of short-term debt by 60.4%. As wealth, or personal income per capita, increases towns and villages are likely to issue short-term debt while cities are less likely to issue and issue greater amounts of short-term debt. An increase in the size of town and village governments has a higher expected likelihood of not issuing or issuing greater amounts of short-term debt. Counties with an Executive for a Chief Administrative Officer, as compared to those with an Administrator, have a lower expected likelihood of issuing short-term debt. County governments with a legislature instead of a supervisor governing body are associated with a 29.5% increase in the expected likelihood of issuing and 76.1% expected likelihood of issuing greater amounts of short-term debt. City governments that have a Mayor-Council and Mayor-Council-Manager as compared to a Mayor-Council-Administrator have about a 100% reduction in issuing short-term debt. A lower likelihood of issuing a greater amount of short-term debt is expected under a Mayor-Council or Mayor-Council-Manager form of government as compared to a Mayor-Council-Administrator for city governments.

## 2.6 Concluding Remarks

The results suggest the expected likelihood of issuing, as well as issuing more, short-term debt is increased when there is more illiquidity, larger reductions in prior year surplus, less dependence on state aid, more dependence on federal aid, less flexibility in spending from employee salaries, more spending on capital and equipment, a higher proportion of other liabilities, and more long-term debt is issued.

One limitation of this study is that annual values and not quarterly or monthly cash flows are used. Ideally, short-term debt use, measures of cash inflows (e.g., tax receipts, intergovernmental revenues, and fees), and cash outflows (e.g., employee payroll, capital spending, and debt service payments) should be collected on a short-time frame. Data on a less than annual basis is not made publicly available to analyze. A second limitation of this analysis is that legal limitations governing the amount of short-term debt issued is unknown and could have been implemented or changed over time. The legal limitations on short-term debt are unknown broadly across local levels of government unless a more detailed survey or document analysis is conducted to reveal if certain policies exist.

Despite limitations, this analysis has two policy recommendations. First, financial managers can create and implement or refine current policies that govern the management of short-term debt. Policies are imperative since short-term debt is used as a cash flow management tool especially when cash flow surpluses are reduced, and high illiquidity of governmental assets exist. Policies can be created or updated to maintain a certain level of unrestricted cash surplus with higher thresholds with growing dependency on federal aid or increases in employee salaries. Second, short-term debt is expected to be issued in larger amounts with more capital spending and long-term debt outstanding. This signifies that bond anticipated notes are likely used and

thus, a secondary cost of issuing more short-term debt. Therefore, policies around the issuance of long-term debt can account for a higher amount of short-term debt to adequately portray the local government's engagement in the debt market. This can be especially important to enact and understand if a local government infrequently accesses the long-term debt market and may fail to realize that their short-term debt burden is likely to increase as well.

In conclusion, this study helps to develop the working capital literature by investigating the predictors used for engaging and using larger amounts of short-term debt at the local general purpose government level. Financial managers can be made aware of predictors of short-term debt to develop and improve policies for its management.

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**Table 2.1** Descriptive Statistics for New York Local Governments (FYE Between 1996 and 2016)

<i>Panel A: County Governments</i>						
<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Source</b>
<b>Outcome Variable</b>						
Short-Term Debt Per Capita (ln)	1197	1.782	2.343	0	7.924	Bloomberg/Open Book NY
Short-Term Debt Per Capita (>1)	1197	0.388	0.488	0	1	“
Short-Term Debt Per Capita (\$)	1197	65.80	163.40	0	2762.33	“
<b>Test Variables</b>						
Illiquidity (as a % of TA)	1197	64.800	15.655	19.645	100	Open Book NY
Prior Year Surplus/(Deficit) (as a % of TE)	1197	1.173	5.290	-32.447	53.739	“
Property Tax Revenue (as a % of TR)	1197	20.643	5.735	7.874	42.138	“
Sales Tax Revenue (as a % of TR)	1197	20.563	7.337	0.061	44.278	“
Fees & Charges Revenue (as a % of TR)	1197	16.625	7.752	2.278	50.885	“
State Aid Revenue (as a % of TR)	1197	13.510	3.235	5.184	31.438	“
Federal Aid Revenue (as a % of TR)	1197	10.853	3.175	2.857	26.676	“
Salaries & Wages Expenditures (as a % of TE)	1197	33.952	5.701	14.498	57.830	NY LG & SA data
Capital and Equipment Outlay (as a % of TE)	1197	6.191	3.828	0.432	42.076	“
Liabilities Per Capita (ln)	1197	5.418	0.389	4.335	6.740	Open Book NY
Long-Term Debt Per Capita Issued in Year (ln)	1197	5.756	1.292	0	8.024	“
<b>Control Variables</b>						
Unemployment Rate (County level) (ln)	1197	1.734	0.290	0.993	2.416	U.S. BLS
Per Capita Personal Income (County level) (ln)	1197	10.364	0.294	9.751	11.453	U.S. BEA
Issued Short-Term Debt in Past 2 Years (Yes=1)	1197	0.478	0.500	0	1	Bloomberg
Deficit in Past 2 Years (Yes=1)	1197	0.582	0.493	0	1	NY LG & SA data
Size (TR Per Capita) (ln)	1197	7.566	0.245	6.858	8.565	Open Book NY
Percent Voted for a Rep. Senator (County level)	1197	37.414	9.077	17.843	62.791	NY Board of Elections
Governor Election Year (County level) (Yes=1)	1197	0.238	0.426	0	1	“
Presidential Election Year (County level) (Yes=1)	1197	0.286	0.452	0	1	“
Located in a Chartered County (Yes=1)	1197	0.333	0.472	0	1	NY LG Handbook
County CAO (Chair of Legislative Body=1)	1197	0.228	0.420	0	1	“
County CAO (Executive=1)	1197	0.281	0.450	0	1	“
County CAO (Manager=1)	1197	0.123	0.328	0	1	“
County Legislative Body (Legislature=1)	1197	0.702	0.458	0	1	“
Number of County Legislative Members	1197	17.421	6.187	7	39	“

<i>Panel B: City Governments</i>						
<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Source</b>
<b>Outcome Variable</b>						
Short-Term Debt Per Capita (ln)	1279	2.330	2.810	0	7.841	Bloomberg/Open Book NY
Short-Term Debt Per Capita (>1)	1279	0.423	0.494	0	1	“
Short-Term Debt Per Capita (\$)	1279	167.00	316.30	0	2540.63	“
<b>Test Variables</b>						
Illiquidity (as a % of TA)	1279	62.287	19.732	6.794	100	Open Book NY
Prior Year Surplus/(Deficit) (as a % of TE)	1279	1.151	11.043	-42.522	89.103	“
Property Tax Revenue (as a % of TR)	1279	25.377	8.350	3.551	49.018	“
Sales Tax Revenue (as a % of TR)	1279	15.402	5.750	1.725	30.959	“
Fees & Charges Revenue (as a % of TR)	1279	22.860	10.863	0.748	65.021	“
State Aid Revenue (as a % of TR)	1279	12.899	6.189	2.088	51.730	“
Federal Aid Revenue (as a % of TR)	1279	5.249	4.762	0	31.198	“
Salaries & Wages Expenditures (as a % of TE)	1279	49.411	9.310	23.214	78.779	NY LG & SA data
Capital and Equipment Outlay (as a % of TE)	1279	12.626	7.801	1.409	51.211	“
Liabilities Per Capita (ln)	1279	5.310	0.807	0	7.242	Open Book NY
Long-Term Debt Per Capita Issued in Year (ln)	1279	7.001	0.700	3.874	8.306	“
<b>Control Variables</b>						
Unemployment Rate (County level) (ln)	1279	1.704	0.294	1.030	2.398	U.S. BLS
Per Capita Personal Income (County level) (ln)	1279	10.452	0.349	9.751	11.453	U.S. BEA
Issued Short-Term Debt in Past 2 Years (Yes=1)	1279	0.523	0.500	0	1	Bloomberg
Deficit in Past 2 Years (Yes=1)	1279	0.701	0.458	0	1	NY LG & SA data
Size (TR Per Capita) (ln)	1279	7.529	0.270	6.878	8.549	Open Book NY
Percent Voted for a Rep. Senator (County level)	1279	35.076	8.849	17.843	57.891	NY Board of Elections
Governor Election Year (County level) (Yes=1)	1279	0.238	0.426	0	1	“
Presidential Election Year (County level) (Yes=1)	1279	0.285	0.451	0	1	“
City FoG (Mayor-Council=1)	1279	0.689	0.463	0	1	NY LG Handbook
City FoG (Mayor-Council-Manager=1)	1279	0.180	0.384	0	1	“
City FoG (Council-Manager=1)	1279	0.033	0.178	0	1	“
City FoG (Mayor-Commission/-Manager=1)	1279	0.049	0.216	0	1	“
Number of City Council Members	1279	6.921	2.280	2	16	“

<i>Panel C: Town Governments</i>						
<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Source</b>
<b>Outcome Variable</b>						
Short-Term Debt Per Capita (ln)	19288	0.301	1.222	0	7.966	Bloomberg/Open Book NY
Short-Term Debt Per Capita (>1)	19288	0.061	0.239	0	1	“
Short-Term Debt Per Capita (\$)	19288	16.34	104.92	0	2881.02	“
<b>Test Variables</b>						
Illiquidity (as a % of TA)	19288	20.877	23.083	0	100	Open Book NY
Prior Year Surplus/(Deficit) (as a % of TE)	19288	3.572	19.299	-79.705	544.964	“
Property Tax Revenue (as a % of TR)	19288	46.328	17.899	0.089	94.448	“
Sales Tax Revenue (as a % of TR)	19288	13.806	14.457	0	71.903	“
Fees & Charges Revenue (as a % of TR)	19288	11.100	9.687	0.017	92.012	“
State Aid Revenue (as a % of TR)	19288	11.826	6.917	0.053	89.051	“
Federal Aid Revenue (as a % of TR)	19288	2.466	6.401	0	82.175	“
Salaries & Wages Expenditures (as a % of TE)	19288	38.557	9.870	0	83.145	NY LG & SA data
Capital and Equipment Outlay (as a % of TE)	19288	15.827	12.098	0	90.555	“
Liabilities Per Capita (ln)	19288	1.881	1.784	0	8.643	Open Book NY
Long-Term Debt Per Capita Issued in Year (ln)	19288	3.889	2.561	0	9.336	“
<b>Control Variables</b>						
Unemployment (ln)	19288	1.754	0.279	0.993	2.416	U.S. BLS
Per Capita Personal Income (County level) (ln)	19288	10.332	0.278	9.751	11.453	U.S. BEA
Issued Short-Term Debt in Past 2 Years (Yes=1)	19288	0.084	0.278	0	1	Bloomberg
Deficit in Past 2 Years (Yes=1)	19288	0.610	0.488	0	1	NY LG & SA data
Size (TR Per Capita) (ln)	19288	6.447	0.604	3.901	9.496	Open Book NY
Percent Voted for a Rep. Senator (County level)	19288	37.413	8.976	17.843	62.791	NY Board of Elections
Presidential Election Year (County level) (Yes=1)	19288	0.285	0.451	0	1	“
Governor Election Year (County level) (Yes=1)	19288	0.238	0.426	0	1	“

**Panel D: Village Governments**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Source</b>
<b>Outcome Variable</b>						
Short-Term Debt Per Capita (ln)	11526	0.415	1.536	0	12.492	Bloomberg/Open Book NY
Short-Term Debt Per Capita (>1)	11526	0.073	0.259	0	1	“
Short-Term Debt Per Capita (\$)	11526	95.94	3104.12	0	266216.20	“
<b>Test Variables</b>						
Illiquidity (as a % of TA)	11526	30.280	24.794	0	100	Open Book NY
Prior Year Surplus/(Deficit) (as a % of TE)	11526	4.628	35.366	-100	1750.62	“
Property Tax Revenue (as a % of TR)	11526	35.581	19.252	0	100	“
Sales Tax Revenue (as a % of TR)	11526	9.031	9.648	0	83.361	“
Fees & Charges Revenue (as a % TR)	11526	29.926	18.473	0	98.194	“
State Aid Revenue (as a % of TR)	11526	6.446	7.555	0	93.809	“
Federal Aid Revenue (as a % of TR)	11526	2.954	8.056	0	91.394	“
Salaries & Wages Expenditures (as a % of TE)	11526	33.187	14.511	0	90.898	NY LG & SA data
Capital and Equipment Outlay (as a % of TE)	11526	14.923	15.422	0	98.583	“
Liabilities Per Capita (ln)	11526	3.007	1.972	0	10.029	Open Book NY
Long-Term Debt Per Capita Issued in Year (ln)	11526	5.670	2.474	0	12.598	“
<b>Control Variables</b>						
Unemployment (ln)	11526	1.699	0.292	0.993	2.416	U.S. BLS
Per Capita Personal Income (County level) (ln)	11526	10.462	0.358	9.751	11.453	U.S. BEA
Issued Short-Term Debt in Past 2 Years (Yes=1)	11526	0.102	0.302	0	1	Bloomberg
Deficit in Past 2 Years (Yes=1)	11526	0.622	0.485	0	1	NY LG & SA data
Size (TR Per Capita) (ln)	11526	6.990	0.772	0.262	12.351	Open Book NY
Percent Voted for a Rep. Senator (County level)	11526	36.627	8.887	17.843	62.791	NY Board of Elections
Presidential Election Year (County level) (Yes=1)	11526	0.285	0.452	0	1	“
Governor Election Year (County level) (Yes=1)	11526	0.238	0.426	0	1	“

**Notes:** (1) TE is total expenditures and other uses, TR is total revenues and other uses, TA is total governmental assets (excluding capital, debt service and special district funds), ln is natural log, CAO is Chief Administrative Officer, FoG is Form of Government, Bloomberg is Bloomberg, L.P. terminals, Open Book NY is Openbookny.com’s local government spending data, NY LG & SA data is New York Local Government & School Accountability data, U.S. BLS is United States Bureau of Labor Statistics, U.S. BEA is United States Bureau of Economic Analysis, NY Board of Elections is New York State Board of Elections, and FYE is fiscal year end. (2) All dollar values were adjusted with the Gross Domestic Product Implicit Price Deflator with at 2009 base.

**Table 2.2** Linear Hurdle Models with Robust Standard Errors (FYE Between 1996 and 2016)

	<b>County Governments</b>	<b>City Governments</b>	<b>Town Governments</b>	<b>Village Governments</b>
<b>Outcome Model</b>				
Illiquidity (as a % of TA)	-0.001 (0.004)	0.003 (0.002)	-0.0001 (0.002)	-0.014*** (0.002)
Prior Year Surplus/(Deficit) (as a % of TE)	-0.016* (0.007)	-0.011** (0.004)	-0.005** (0.002)	-0.002 (0.002)
Property Tax Revenue (as a % of TR)	-0.018 (0.010)	0.009 (0.007)	0.010** (0.003)	0.002 (0.004)
Sales Tax Revenue (as a % of TR)	0.004 (0.008)	-0.012 (0.010)	0.011** (0.004)	0.018** (0.008)
Fees & Charges Revenue (as a % TR)	-0.027** (0.009)	0.021*** (0.006)	0.003 (0.003)	0.009** (0.003)
State Aid Revenue (as a % of TR)	-0.010 (0.015)	-0.001 (0.009)	-0.021** (0.007)	-0.005 (0.008)
Federal Aid Revenue (as a % of TR)	0.037** (0.013)	0.000 (0.011)	0.001 (0.006)	0.004 (0.006)
Salaries & Wages Expenditures (as a % of TE)	0.046*** (0.008)	0.028*** (0.007)	-0.015*** (0.004)	-0.004 (0.004)
Capital and Equipment Outlay (as a % of TE)	0.042*** (0.011)	0.036*** (0.005)	0.015*** (0.003)	0.020*** (0.003)
Liabilities Per Capita (ln)	0.471*** (0.106)	-0.081 (0.057)	-0.005 (0.027)	0.030 (0.292)
Long-Term Debt Per Capita Issued in Year (ln)	0.661*** (0.080)	1.066*** (0.082)	0.456*** (0.062)	0.658*** (0.086)
Constant	-3.487*** (0.979)	-4.311*** (0.908)	1.910*** (0.506)	0.812 (0.729)
<b>Selection Model</b>				
Illiquidity (as a % of TA)	0.013*** (0.004)	0.002 (0.003)	0.007*** (0.001)	0.005*** (0.001)
Prior Year Surplus/(Deficit) (as a % of TE)	-0.020* (0.009)	-0.007 (0.004)	-0.006*** (0.001)	-0.003** (0.001)
Property Tax Revenue (as a % of TR)	-0.011 (0.013)	0.002 (0.008)	0.002 (0.002)	0.001 (0.002)
Sales Tax Revenue (as a % of TR)	-0.024* (0.012)	0.022* (0.010)	-0.002 (0.002)	-0.008** (0.004)
Fees & Charges Revenue (as a % TR)	-0.001 (0.010)	0.012 (0.007)	0.003 (0.002)	0.006** (0.002)
State Aid Revenue (as a % of TR)	-0.024 (0.021)	-0.021* (0.010)	-0.026*** (0.004)	-0.010** (0.004)
Federal Aid Revenue (as a % of TR)	0.032 (0.017)	0.016 (0.010)	-0.007 (0.004)	-0.003 (0.003)
Salaries & Wages Expenditures (as a % of TE)	0.023* (0.010)	-0.005 (0.009)	-0.001 (0.003)	0.010*** (0.002)
Capital and Equipment Outlay (as a % of TE)	0.030* (0.014)	0.021*** (0.007)	0.012*** (0.002)	0.014*** (0.002)
Liabilities Per Capita (ln)	0.124 (0.143)	0.187** (0.065)	0.020 (0.014)	0.019 (0.015)
Long-Term Debt Per Capita Issued in Year (ln)	0.712*** (0.097)	0.611*** (0.111)	0.249*** (0.025)	0.173*** (0.026)
Unemployment Rate (County level) (ln)	-0.184 (0.195)	0.069 (0.159)	-0.136 (0.072)	0.045 (0.082)
Per Capita Personal Income (County level) (ln)	-0.085 (0.318)	0.261 (0.199)	0.318*** (0.922)	0.406*** (0.089)
Issued Short-Term Debt in Past 2 Years (Yes=1)	1.301*** (0.100)	1.447*** (0.093)	1.644*** (0.044)	1.469*** (0.048)
Deficit in Past 2 Years (Yes=1)	-0.246** (0.096)	0.064 (0.098)	-0.142*** (0.042)	-0.064 (0.048)

Size (TR Per Capita) (ln)	-0.784* (0.350)	-0.928*** (0.286)	-0.315*** (0.048)	-0.066 (0.402)
Percent Voted for a Rep. Senator (County level)	-0.004 (0.007)	-0.010 (0.006)	-0.002 (0.003)	-0.002 (0.003)
Governor Election Year (County level) (Yes=1)	-0.051 (0.112)	0.003 (0.104)	0.032 (0.048)	0.058 (0.052)
Presidential Election Year (County level) (Yes=1)	-0.011 (0.113)	-0.043 (0.100)	-0.099* (0.048)	-0.190*** (0.054)
Located in a Chartered County (Yes=1)	0.337 (0.227)			
County CAO (Chair of Legislative Body=1)	0.197 (0.137)			
County CAO (Executive=1)	-0.458 (0.245)			
County CAO (Manager=1)	-0.137 (0.189)			
County Legislative Body (Legislature=1)	0.315* (0.132)			
Number of County Legislative Members	0.006 (0.009)			
City FoG (Mayor-Council=1)		0.101 (0.210)		
City FoG (Mayor-Council-Manager=1)		-0.039 (0.226)		
City FoG (Council-Manager=1)		0.492 (0.321)		
City FoG (Mayor-Commission/-Manager=1)		-0.673 (0.362)		
Number of City Council Members		0.043* (0.022)		
Constant	0.088 (3.369)	-2.905 (2.624)	-4.375*** (1.056)	-7.579*** (1.070)
Ln Sigma Constant	-0.139*** (0.042)	-0.123*** (0.038)	0.046 (0.028)	0.137*** (0.031)
Sigma	0.870 (0.036)	0.884 (0.034)	1.047 (0.029)	1.146 (0.035)
Wald $\chi^2$ =	Wald $\chi^2(11)$ =	Wald $\chi^2(11)$ =	Wald $\chi^2(11)$ =	Wald $\chi^2(11)$ =
	386.67	301.41	324.99	472.26
(P > $\chi^2$ =)	(P > $\chi^2$ = 0.0000)			
Pseudo R <sup>2</sup>	0.2824	0.2383	0.3434	0.2621
Observations	1197	1297	19288	11526

**Notes:** (1) Standard errors are in parentheses. \*, \*\*, \*\*\* indicates that the corresponding coefficients are significant at the 10%, 5%, and 1% levels, respectively. (2) TE is total expenditures and other uses, TR is total revenues and other uses, TA is total governmental assets (excluding capital, debt service and special district funds), ln is natural log, CAO is Chief Administrative Officer, FoG is Form of Government, FYE is fiscal year end, and all dollar values were adjusted with the Gross Domestic Product Implicit Price Deflator with at 2009 base

**Table 2.3** Linear Hurdle Model Margins (Marginal Effects of Covariates at Means) for Mean Short-Term Debt Per Capita (ln)

Variables	County Governments	City Governments	Town Governments	Village Governments
Illiquidity (as a % of TA)	0.018*** (0.005)	0.005 (0.005)	0.0007*** (0.0001)	0.0012*** (0.0003)
Prior Year Surplus (as a % of TE)	-0.032* (0.014)	-0.018* (0.008)	-0.0006*** (0.0001)	-0.0008* (0.0003)
Property Tax Revenue (as a % of TR)	-0.021 (0.018)	0.007 (0.016)	0.0002 (0.0002)	0.0003 (0.0006)
Sales Tax Revenue (as a % of TR)	-0.032 (0.017)	0.040 (0.020)	-0.0005 (0.0002)	0.0018 (0.0011)
Fees & Charges Revenue (as a % of TR)	-0.009 (0.015)	0.032* (0.012)	0.0003 (0.0002)	0.0019*** (0.0005)
State Aid Revenue (as a % of TR)	-0.037 (0.030)	-0.042* (0.019)	-0.0028*** (0.0006)	-0.0031** (0.0012)
Federal Aid Revenue (as a % of TR)	0.055* (0.024)	0.032 (0.020)	-0.0006 (0.0004)	-0.0008 (0.0009)
Salaries & Wages Expenditures (as a % of TE)	0.044** (0.015)	0.001 (0.017)	-0.0002 (0.0003)	0.0027*** (0.0006)
Capital and Equipment Outlay (as a % of TE)	0.054** (0.020)	0.054*** (0.013)	0.0013*** (0.0003)	0.0047*** (0.0006)
Liabilities Per Capita (ln)	0.304 (0.202)	0.336** (0.126)	0.0019 (0.0014)	0.0063 (0.0045)
Long-Term Debt Per Capita Issued in Year (ln)	1.173*** (0.118)	1.585*** (0.207)	0.0287*** (0.0021)	0.0672*** (0.0059)
Unemployment Rate (County level)	-0.255 (0.271)	0.135 (0.311)	-0.0133 (0.0071)	0.0132 (0.0240)
Per Capita Personal Income (County level) (ln)	-0.118 (0.441)	0.512 (0.389)	0.0309** (0.0105)	0.1178*** (0.0282)
Short-Term Debt Issued in Past 2 Years (Yes=1)	1.747*** (0.130)	2.604*** (0.142)	0.7310*** (0.0841)	1.1951*** (0.0932)
Deficit in Past 2 Years (Yes=1)	-0.345** (0.134)	0.125 (0.191)	-0.0144** (0.0047)	-0.0188 (0.0141)
Size (TR Per Capita) (ln)	-1.088* (0.478)	-1.817*** (0.560)	-0.0306*** (0.0044)	-0.0192 (0.0111)
Percent Voted for a Rep. Senator (County level)	-0.006 (0.010)	-0.020 (0.013)	-0.0001 (0.0003)	-0.0005 (0.0009)
Governor Election Year (County level) (Yes=1)	-0.150 (0.156)	0.006 (0.203)	0.0031 (0.0047)	0.0170 (0.0154)
Presidential Election Year (County level) (Yes=1)	-0.071 (0.155)	-0.085 (0.196)	-0.0097* (0.0047)	-0.055*** (0.0160)
Located in a Chartered County (Yes=1)	0.480 (0.329)			
County CAO (Chair of Legislative Body=1)	0.281 (0.200)			
County CAO (Executive=1)	-0.594* (0.289)			
County CAO (Manager=1)	-0.184 (0.245)			
County Legislative Body (Legislature=1)	0.419* (0.167)			
Number of County Legislative Members	0.008 (0.012)			
City FoG (Mayor-Council=1)		0.197 (0.404)		
City FoG (Mayor-Council-Manager=1)		-0.076 (0.182)		
City FoG (Council-Manager=1)		1.007 (0.667)		

City FoG (Mayor-Commission/-Manager=1)		-1.120* (0.495)		
Number of City Council Members		0.085* (0.042)		
Observations	1197	1279	19288	11526

**Notes:** (1) \*, \*\*, \*\*\* indicates that the corresponding coefficients are significant at the 10%, 5%, and 1% levels, respectively. (2) Coefficients and standard errors, in parentheses, are obtained using margins command at covariate means in Stata. Dummy variables for government structure/authority are represented as the discrete change from the base level.

**Table 2.4** Instrumental Variable Probit Models with Newey's Two-Step Estimator (FYE Between 1996 and 2016)

Variables	County Governments	City Governments	Town Governments	Village Governments
Illiquidity (as a % of TA)	0.021*** (0.005)	0.0002 (0.003)	0.002 (0.002)	0.005*** (0.001)
Prior Year Surplus (as a % of TE)	-0.036** (0.012)	0.002 (0.006)	-0.010*** (0.002)	-0.006*** (0.001)
Property Tax Revenue (as a % of TR)	-0.001 (0.014)	-0.058*** (0.017)	-0.013* (0.006)	-0.004 (0.005)
Sales Tax Revenue (as a % of TR)	-0.026* (0.012)	-0.106*** (0.032)	-0.016* (0.006)	-0.012 (0.007)
Fees & Charges Revenue (as a % of TR)	-0.006 (0.011)	0.026** (0.009)	-0.013 (0.008)	-0.001 (0.006)
State Aid Revenue (as a % of TR)	-0.032 (0.020)	-0.055*** (0.014)	-0.059*** (0.013)	-0.036 (0.018)
Federal Aid Revenue (as a % of TR)	0.024 (0.019)	0.066*** (0.018)	0.018 (0.018)	0.022 (0.013)
Salaries & Wages Expenditures (as a % of TE)	0.029** (0.011)	0.236*** (0.054)	0.007 (0.004)	0.001 (0.003)
Capital and Equipment Outlay (as a % of TE)	0.041** (0.014)	0.108*** (0.021)	-0.014* (0.006)	-0.007 (0.007)
Liabilities Per Capita (ln)	-0.333 (0.220)	-0.067 (0.158)	0.046 (0.027)	0.013 (0.016)
Long-Term Debt Per Capita Issued in Year (ln)	0.679*** (0.097)	1.221*** (0.182)	0.245*** (0.022)	0.179*** (0.026)
Unemployment Rate (County level)	-0.248 (0.211)	-0.339 (0.239)	-0.023 (0.083)	0.033 (0.087)
Per Capita Personal Income (County level) (ln)	-0.041 (0.319)	-0.775* (0.328)	0.190 (0.118)	0.395*** (0.105)
Short-Term Debt Issued in Past 2 Years (Yes=1)	1.277*** (0.105)	1.424*** (0.122)	1.634*** (0.065)	1.508*** (0.058)
Deficit in Past 2 Years (Yes=1)	-0.284** (0.099)	-0.125 (0.133)	-0.126** (0.046)	-0.039 (0.051)
Size (TR Per Capita) (ln)	-0.486 (0.382)	0.359 (0.472)	-0.372*** (0.051)	-0.094* (0.048)
Percent Voted for a Rep. Senator (County level)	0 (0.007)	0.035*** (0.013)	0.003 (0.003)	-0.0009 (0.003)
Governor Election Year (County level) (Yes=1)	0.003 (0.117)	0.003 (0.140)	0.016 (0.050)	0.065 (0.054)
Presidential Election Year (County level) (Yes=1)	-0.046 (0.112)	0.015 (0.132)	-0.080 (0.052)	-0.165** (0.058)
Located in a Chartered County (Yes=1)	0.435 (0.245)			
County CAO (Chair of Legislative Body=1)	0.157 (0.144)			
County CAO (Executive=1)	-0.501* (0.254)			
County CAO (Manager=1)	-0.049 (0.185)			
County Legislative Body (Legislature=1)	0.295* (0.133)			
Number of County Legislative Members	0.010 (0.010)			
City FoG (Mayor-Council=1)		-0.937** (0.363)		
City FoG (Mayor-Council-Manager=1)		-1.173** (0.394)		
City FoG (Council-Manager=1)		-0.952 (0.532)		
City FoG (Mayor-Commission/-Manager=1)		-0.613 (0.462)		

Number of City Council Members		0.022 (0.029)		
Constant	-0.773 (3.254)	-13.873** (4.45)	-1.545 (1.479)	-6.217*** (1.620)
Observations	1197	1279	18363	10969

**Notes:** (1) \*, \*\*, \*\*\* indicates that the corresponding coefficients are significant at the 10%, 5%, and 1% levels, respectively. (2) Coefficients and standard errors, in parentheses, are obtained using margins command at covariate means in Stata. Dummy variables for government structure/authority are represented as the discrete change from the base level. (3) Variables that are found to be likely endogenous are illiquidity (counties and towns), prior year surplus (counties, towns, and villages), fees and charges (towns), state aid revenue (towns and villages), federal aid revenue (towns and villages), salaries and wages (cities and towns), capital and equipment (towns and villages), and other liabilities (counties). Instruments for the endogenous variables are private sector financial industry wages per capita in each county for salaries and wages and all other are one year lagged values of the endogenous variables expressed in the form of ranks.

**Table 2.5** Instrumental Variable Probit Model Margins (Marginal Effects of Covariates at Means)  
for Mean Short-Term Debt Per Capita (ln)

Variables	County	City	Town	Village
	Governments	Governments	Governments	Governments
Illiquidity (as a % of TA)	0.021*** (0.005)	0 (0.003)	0.002 (0.002)	0.005*** (0.001)
Prior Year Surplus (as a % of TE)	-0.036** (0.012)	0.002 (0.006)	-0.010*** (0.002)	-0.006*** (0.001)
Property Tax Revenue (as a % of TR)	-0.001 (0.014)	-0.058*** (0.017)	-0.013* (0.006)	-0.004 (0.005)
Sales Tax Revenue (as a % of TR)	-0.026* (0.012)	-0.106*** (0.032)	-0.016* (0.006)	-0.012 (0.007)
Fees & Charges Revenue (as a % of TR)	-0.006 (0.011)	0.026** (0.009)	-0.013 (0.008)	-0.001 (0.006)
State Aid Revenue (as a % of TR)	-0.032 (0.020)	-0.055*** (0.014)	-0.059*** (0.013)	-0.036 (0.018)
Federal Aid Revenue (as a % of TR)	0.024 (0.019)	0.066*** (0.018)	0.018 (0.018)	0.022 (0.013)
Salaries & Wages Expenditures (as a % of TE)	0.029** (0.011)	0.236*** (0.054)	0.007 (0.004)	0.001 (0.003)
Capital and Equipment Outlay (as a % of TE)	0.041** (0.014)	0.108*** (0.021)	-0.014* (0.006)	-0.007 (0.007)
Liabilities Per Capita (ln)	-0.333 (0.220)	-0.067 (0.158)	0.046 (0.027)	0.013 (0.016)
Long-Term Debt Per Capita Issued in Year (ln)	0.679*** (0.097)	1.220*** (0.182)	0.245*** (0.022)	0.179*** (0.026)
Unemployment Rate (County level)	-0.248 (0.211)	-0.339 (0.239)	-0.023 (0.083)	0.033 (0.087)
Per Capita Personal Income (County level) (ln)	-0.041 (0.319)	-0.775* (0.328)	0.190 (0.118)	0.395*** (0.105)
Short-Term Debt Issued in Past 2 Years (Yes=1)	1.277*** (0.105)	1.424*** (0.122)	1.634*** (0.066)	1.508*** (0.058)
Deficit in Past 2 Years (Yes=1)	-0.284** (0.099)	-0.125 (0.133)	-0.126** (0.046)	-0.039 (0.051)
Size (TR Per Capita) (ln)	-0.486 (0.382)	0.359 (0.472)	-0.372*** (0.051)	-0.094* (0.048)
Percent Voted for a Rep. Senator (County level)	0 (0.007)	0.352* (0.013)	0.003 (0.003)	-0.001 (0.003)
Governor Election Year (County level) (Yes=1)	0.003 (0.117)	0.003 (0.140)	0.016 (0.050)	0.065 (0.539)
Presidential Election Year (County level) (Yes=1)	-0.046 (0.112)	0.015 (0.132)	-0.080 (0.052)	-0.165** (0.058)
Located in a Chartered County (Yes=1)	0.435 (0.245)			
County CAO (Chair of Legislative Body=1)	0.156 (0.144)			
County CAO (Executive=1)	-0.501* (0.254)			
County CAO (Manager=1)	-0.049 (0.185)			
County Legislative Body (Legislature=1)	0.295* (0.133)			
Number of County Legislative Members	0.010 (0.010)			
City FoG (Mayor-Council=1)		-0.937** (0.363)		
City FoG (Mayor-Council-Manager=1)		-1.173** (0.394)		
City FoG (Council-Manager=1)		-0.952 (0.532)		

City FoG (Mayor-Commission/-Manager=1)		-0.613 (0.462)		
Number of City Council Members		0.022 (0.029)		
Observations	1197	1279	18363	10969

**Notes:** (1) \*, \*\*, \*\*\* indicates that the corresponding coefficients are significant at the 10%, 5%, and 1% levels, respectively. (2) Coefficients and standard errors, in parentheses, are obtained using margins command at covariate means in Stata. Dummy variables for government structure/authority are represented as the discrete change from the base level.

**Table 2.6** Instrumental Variable Tobit Regression Models with Newey's Two-Step Estimator (FYE Between 1996 and 2016)

Variables	County Governments	City Governments	Town Governments	Village Governments
Illiquidity (as a % of TA)	0.057*** (0.014)	0.003 (0.011)	0.024* (0.011)	0.033*** (0.007)
Prior Year Surplus (as a % of TE)	-0.106** (0.033)	-0.007 (0.017)	-0.051*** (0.009)	-0.046*** (0.011)
Property Tax Revenue (as a % of TR)	-0.016 (0.037)	-0.151** (0.054)	-0.065* (0.026)	0.024 (0.029)
Sales Tax Revenue (as a % of TR)	-0.061 (0.033)	-0.264** (0.102)	-0.081** (0.029)	-0.014 (0.039)
Fees & Charges Revenue (as a % of TR)	-0.025 (0.029)	0.112*** (0.029)	-0.067* (0.029)	0.057 (0.030)
State Aid Revenue (as a % of TR)	-0.096 (0.053)	-0.142** (0.045)	-0.340*** (0.062)	0.021 (0.034)
Federal Aid Revenue (as a % of TR)	0.085 (0.046)	0.210*** (0.055)	0.079 (0.089)	0.222* (0.088)
Salaries & Wages Expenditures (as a % of TE)	0.098*** (0.029)	0.699*** (0.152)	0.029 (0.023)	0.021 (0.023)
Capital and Equipment Outlay (as a % of TE)	0.132*** (0.036)	0.335*** (0.058)	-0.070*** (0.033)	-0.038 (0.051)
Liabilities Per Capita (ln)	-0.531 (0.582)	-0.132 (0.327)	0.015 (0.095)	0.120 (0.115)
Long-Term Debt Per Capita Issued in Year (ln)	2.215*** (0.263)	4.846*** (0.701)	1.472*** (0.124)	1.550*** (0.187)
Unemployment Rate (County level)	-0.907 (0.546)	-0.861 (0.707)	0.069 (0.425)	0.312 (0.624)
Per Capita Personal Income (County level) (ln)	-0.187 (0.827)	-1.989* (1.001)	1.246* (0.602)	2.930*** (0.743)
Short-Term Debt Issued in Past 2 Years (Yes=1)	4.106*** (0.311)	5.448*** (0.426)	8.945*** (0.368)	11.360*** (0.468)
Deficit in Past 2 Years (Yes=1)	-0.604* (0.257)	-0.405 (0.426)	-0.592* (0.242)	-0.380 (0.360)
Size (TR Per Capita) (ln)	-1.340 (1.011)	0.502 (1.431)	-1.878*** (0.273)	-0.077 (0.306)
Percent Voted for a Rep. Senator (County level)	-0.005 (0.019)	0.103** (0.039)	0.014 (0.017)	0.002 (0.025)
Governor Election Year (County level) (Yes=1)	-0.062 (0.304)	-0.151 (0.417)	0.155 (0.265)	0.533 (0.388)
Presidential Election Year (County level) (Yes=1)	-0.066 (0.292)	-0.096 (0.421)	-0.354 (0.274)	-1.207** (0.412)
Located in a Chartered County (Yes=1)	1.052 (0.635)			
County CAO (Chair of Legislative Body=1)	0.391 (0.397)			
County CAO (Executive=1)	-1.356* (0.665)			
County CAO (Manager=1)	-0.161 (0.508)			
County Legislative Body (Legislature=1)	0.761* (0.358)			
Number of County Legislative Members	0.015 (0.024)			
City FoG (Mayor-Council=1)		-2.85** (1.053)		
City FoG (Mayor-Council-Manager=1)		-3.715** (1.163)		
City FoG (Council-Manager=1)		-2.30 (1.511)		
City FoG (Mayor-Commission/-Manager=1)		-2.451 (1.478)		
Number of City Council Members		0.029 (0.090)		

Constant	-4.928 (8.650)	-51.701*** (14.190)	-12.379 (7.311)	-59.408*** (9.871)
Observations	1197	1218	18363	10969
Left Censored observations ( $\leq 0$ )	732	702	17231	10151

**Notes:** (1) \*, \*\*, \*\*\* indicates that the corresponding coefficients are significant at the 10%, 5%, and 1% levels, respectively. (2) Models are estimated with instrumental variable (IV) tobit with Newey's (1987) two-step estimator for all governments. (3) Likely endogenous variables are illiquidity (counties and towns), prior year surplus (counties, towns and villages), sales taxes (cities), state aid (towns), federal aid (towns and villages), salaries and wages (cities and towns), capital expenditures (towns and villages), other liabilities (counties), and long-term debt (cities). Instruments for the endogenous variables are private sector financial industry wages per capita in each county for salaries and wages (cities) and all other are one year lagged values of the endogenous variables expressed in the form of ranks.

**Chapter 3: What Influences Working Capital Management? A Survey of New York Local Government Financial Officers**

### 3.1 Introduction

Working capital management (WCM) is an integral part of organizational health and successful operations. WCM is a managerial strategy that monitors and utilizes current assets (e.g., cash, accounts receivable, and inventory) and current liabilities (e.g., accounts payable and notes payable) to ensure smooth operations. The primary purpose of WCM is for managers to maintain cash flows to meet short-term operating expenses and obligations; short-term implies, by convention, any duration less than a year.

WCM traditionally appears in corporate finance textbooks with a vast body of literature supporting its importance (Afza & Nazir, 2007; Aktas, Croci, & Petmezas, 2015; Boisjoly & Izzo, 2009; Kieschnick, Laplante, & Moussawi, 2013; Knauer & Wöhrmann, 2013; Kroes & Manikas, 2014; Ross, Westerfield, & Jordan, 2016; Tiruvengadam & Beruvides, 2017). The main assertion is that WCM is beneficial to manage liquidity and firm value (Knauer & Wöhrmann, 2013). However, WCM can also be beneficial to manage liquidity and sustain uninterrupted services for public organizations.

Typically, governments pay for services to residents leading to cash outflows and collect taxes for cash inflows. To manage cash outflows and inflows, WCM strategies can engage the use of internal resources (e.g., unrestricted cash balances, savings, budget stabilization funds, interfund borrowing, transfers, and delaying payments) and/or external sources of financing (e.g., receivables, line of credit, direct lending arrangements, and short-term debt). Public managers continually select WCM strategies to implement irrespective of economic shocks. The choice of different WCM strategies has a short-term direct effect on a government's liquidity (or cash flow) position. For example, if managers choose a strategy allowing payments for services to be postponed, payables increase but cash outflows will be needed at a later point in time. Inversely,

if governments allow for late or credit payments from suppliers, cash inflows are delayed. Given, that governments usually collect property taxes infrequently, such as twice a year, cash balances may already be low to motivate the use of short-term debt for supplemental cash inflows (Lofton & Kioko, 2018). Therefore, to effectively manage cash flows, it is imperative managers understand the range of available WCM strategies as well as the associated costs and risks of using strategies.

Public finance textbooks provide little guidance about available strategies for WCM, tradeoffs when selecting strategies, and how often governments implement strategies (Bartle, Hildreth, & Marlowe, 2013; Finkler, Smith, Calabrese, & Purtell, 2016; Kioko & Marlowe, 2017). Scholars have evaluated managers' savings practices (Arapis, Reitano, & Bruck, 2017a; Duncombe & Hou, 2014; Hendrick, 2006; Hendrick & Crawford, 2014; Marlowe, 2005; Moulick & Taylor, 2017; Stewart, Hamman, & Pink-Harper, 2017; Wang, 2015; Wang & Hou, 2012), perceptions about fund management strategies (Snow & Gianakis, 2009), and attitudes towards adopting new government reporting practices (Frank & Gianakis, 2010) but not a wide range of strategies used for WCM. Our underdeveloped knowledge about public WCM naturally raises the following questions. What strategies for WCM are available to public managers? Do managers have a preferred WCM strategy? To what extent, are managers implementing their preferred WCM strategy? Does the selection and implementation of strategy (or strategies) differ by type of government? The aim of this essay is to provide answers to these questions to improve practice-oriented theory.

This essay summarizes findings of a survey designed to ascertain the preferred and implemented WCM strategies of public managers. I assert that the modified pecking order theory, preferring the use of internal funds over external borrowing, can be applied to WCM

strategies. Findings indicate an internal resource of unrestricted cash is preferred and implemented to mitigate a cash flow deficit for all local governments. Village government managers prefer the use of internal resources (e.g., unrestricted cash and delaying payments and transfers out) before external financing (e.g., speeding up collections of receivables and issuing short-term debt). Among strategies that rely on internal resources, managers prefer and implement the lowest cost and risk strategy. Except for city managers that prefer the use of short-term debt, local government managers prefer the lowest cost and risk strategy among those that rely on external sources of financing. However, the strategy most often implemented is to reduce unrestricted cash and issue short-term debt to mitigate a cash flow deficit for county, city, and village government managers.

The remainder of this article is in five parts: First, section 3.2 describes how public finance professionals conduct cash flow management and the broader concept of working capital management, as well as motivate the use of strategies. Second, section 3.3 offers classifications of WCM strategies that rely on internal resources or external sources of financing and reasons why different strategies are preferred by managers. Third, section 3.4 provides information on the survey, characteristics of responding managers, and hypotheses to test the rank-ordering of strategies preferred and implemented. Fourth, section 3.5 states the survey results for several types of local government managers. Finally, section 3.6 offers concluding remarks.

### **3.2 Cash Flow Management and Working Capital Management**

One important public finance professional is the chief financial officer who is authorized to monitor day-to-day financial operations and is responsible for proper management of resources. While different titles exist for a government's chief financial officer (e.g.,

Comptroller, Controller, Commissioner of Finance, Director of Finance, or Treasurer),<sup>24</sup> the broad term of manager will be used. Ultimately, they are responsible for prudent management of financial resources which necessitates cash flow management and working capital management.

Cash flow management may be viewed as “the development of procedures to accelerate cash receipts and control disbursements to keep cash available as long as possible” (Khan, 2003). First, managers create a cash budget to assess if the government has sufficient cash for operations. A cash budget reports estimates of cash receipts (inflows) and cash disbursements (outflows), usually on a monthly or quarterly basis. Cash inflows include tax receipts, bond proceeds, grants, other revenue from fees, and maturities of investment securities. Cash outflows include payments for employee payroll or benefits, payouts to vendors for goods and services, and debt service payments. Due to the uneven cash flows, managers are motivated to plan and forecast cash balances for a given time frame. The forecasted estimates are based on timing and trend data (e.g., property tax collections and sales taxes remitted) primarily from the previous three to five years of cash flows (Peng, 2013). Knowing that, unanticipated variations in economic conditions and emergencies could produce deviations from these projections.

Secondly, managers think about the organization’s liquidity position, which is the government’s ability to manage cash flows. Liquidity is often determined by the pattern of cash

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<sup>24</sup> The Comptroller (or Controller), who is typically elected, serves as the chief fiscal officer who advises the chief executive officer and governing body about the government’s fiscal condition and examines all financial matters. These functions could include recommendations for programs and operations, fiscal policies, and financial transactions. A Comptroller often serves at the state, county, or city levels of government. The Commissioner of Finance (or Director of Finance) oversees the fiscal and administrative responsibilities which include superintendence over fiscal affairs, budget management, and auditing. The Commissioner of Finance often serves at the county or city levels of government. The Treasurer maintains funds, can issue checks and prepares annual financial reports. The Treasurer often serves at the town and village level of government as the chief fiscal officer. The chief financial officer should understand the funds available and the legal ways to use them, methods of financing, financial policies and procedures, and best practices of similar jurisdictions (Bartle et al., 2013). The CFO can be elected by citizens, appointed by the chief elected official, appointed by the governing body, or hired by a designated manager. Each of these positions can be the chief financial officer of the government and thus, ultimately responsible for the oversight of financial management practices of the government.

inflows, cash outflows, cash reserves, and the availability of temporary loans (Moak, 1982). If cash inflows are greater than cash outflows, a cash flow surplus occurs, in which cash balances are positive. When excess cash is present, scholars recommend policies be established to invest the idle cash in interest bearing accounts, investment pools, certificates of deposit, repurchase agreements, or securities that minimize exposure to risk while maximizing the potential investment earnings (Johnson & Mikesell, 2003; Khan, 1996; Khan & Hildreth, 2003; Larson, 2004; Lienert, 2009; Peng, 2013).

Conversely, a cash flow deficit occurs when cash inflows are less than cash outflows in a given period. A cash flow deficit can occur without a structural deficit, a budget deficit in which expenditures are greater than revenues for multiple fiscal years. However, it could be more likely a government will have a cash flow deficit if there is a structural deficit. Cash inflows do not include prior cash balances. Therefore, governments with varying patterns of cash flows or even cash flow deficits can use available prior cash balances, unrestricted cash, to keep operations active. Although, if the available prior cash balance is added to cash inflows and cash outflows are still greater, a net cash flow deficit occurs. While managers can wait for more cash receipts to address an expected cash flow deficit, actions or a set of actions can be enacted such as using reserve funds, accelerating the collection of revenues, prompt settlement of the receipt of intergovernmental revenues, adjusting the basis of accounting,<sup>25</sup> and maintaining enough fund balance for current needs (Moak, 1982).

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<sup>25</sup> There exist differences between full accrual, modified accrual, and cash basis accounting which can cause larger amounts of unappropriated surplus for working capital to be maintain, respectively. Each government can use a different accounting basis for internal use or external reporting purposes. It is advocated to maintain reasonable working capital funds and discourage budgetary gimmicks that produce temporary changes in the fiscal year such as taking advantage of one-time surpluses to have the appearance of a favorable financial condition (Moak, 1982).

Working capital management (WCM) may be viewed as a broader process than cash flow management in which cash flows, reserves, and short-term obligations are strategically used to maintain liquidity and sustain operations. WCM requires: (1) awareness of how to pursue a goal of positive cash flows, (2) an understanding of the consequences of strategies chosen, and (3) learning by adapting to changes in the environment, gaining knowledge from prior actions, and building capacity for future unanticipated challenges. Ultimately, WCM can be an ideal practice to guide cash flows throughout the budget period. The implementation of WCM focuses on pragmatic actions carried out within the context of governmental legal frameworks and mandates. Managers, therefore, need to understand the strategies available, their associated cost and risk, and the tradeoffs among chosen strategies for prudent WCM.

### **3.3 Working Capital Management Strategies**

Every working capital management strategy used by a manager can have a specific cost and risk. Cost is defined as the monetary and non-monetary price (all transaction costs) incurred with implementing a strategy. The cost of a strategy can include time cost for approval of use, cost to gain financial capacity or information, cost to build relationships with a third party, and interest cost. Risk is defined as the exposure to loss which can include loss of optionality to use funds for another purpose, loss of reputational standing, and loss of surplus in other funds. Each strategy is associated with a different cost and risk. No one strategy is superior to another however, I hypothesize that the lowest cost and risk strategy is preferred, if available to managers. In this section, lower cost and risk strategies are presented first and classified as relying on internal resources or external sources of financing. Table 3.1 summarizes each

strategy according to the potential cost, risk, and use of an internal resource or external source of financing.

### 3.3.1 Strategies: Internal Resources and External Sources of Financing

Strategies can be classified as those relying on internal resources or accessing external sources of financing to maintain liquidity. Internal resources include use of unrestricted cash balances; accessing prior savings and budget stabilization funds; relying on interfund borrowing; interfund transfers including transfers from fund sweeps; and delaying payments of disbursements. Generally, strategies that use internal resources are under managers' discretion but some might require certain authority or approval from a governing body (e.g., budget stabilization funds and interfund transfers). These strategies impose low transaction costs, but minor risk persist from receiving funds in a timely manner following the requisite approval.

Conversely, strategies that use external sources of financing involve accessing a party outside of government (e.g., a financial institution or financial markets) such as speeding up the collection of receivables, accessing a line of credit, engaging in a direct lending arrangement, and the issuance of short-term debt. As compared to strategies that rely on internal resources, the use of external sources of financing typically require more management expertise, prior planning before accessing resources, and the risk that resources will not be received before the expected temporary cash deficit. Therefore, strategies that use external sources of financing are usually higher in cost and risk compared to strategies that use internal resources.

I hypothesize that managers likely prefer a lower cost and risk strategy or combination of strategies. The modified pecking order theory can be applied to support this assertion. As originally asserted, pecking order theory suggests a preference ranking of financial sources in

which internal financing sources are used first, then debt, and last equity (Myers, 1984; Myers & Majluf, 1984). The behavioral choices behind this ordered ranking are that firms perceive internal sources as having lower costs, less information asymmetry, and fewer underinvestment problems, and thus, prefer their use. If external sources are necessary, firms prefer debt for its lower cost and risk before equity is utilized.

Since public organizations do not report equity, modified pecking order theory is applied to evaluate the ranking of internal before external financing sources (Myers, 1984; Myers & Majluf, 1984) and scholars find internal funds are preferred over external borrowing (Bowman, 2002; Calabrese, 2011; Denison, 2009; Yan, Denison, & Butler, 2009). One study has applied the modified pecking order theory to governments to find an internal source of financing, financial slack, reduces a city's probability of using an external source of financing, issuing short-term debt (Su & Hildreth, 2018). However, managers' revealed preferences of a range of WCM strategies and implementation practices have not been evaluated for local governments.

This work contributes to the existing literature as the first to apply the modified pecking order theory to an identified managers' preferences of WCM strategies and implementation practices. The remainder of this section describes strategies that use internal resources and external sources of financing. I hypothesize preferred and frequently implemented strategies are the lowest perceived cost and risk available to a manager and thus, expected low cost and risk strategies are presented first in each classification.

### 3.3.2 Internal Resource: Unrestricted Cash Balance

Managers can choose to use unrestricted cash holdings. This strategy has no cost since managers have full discretion over unrestricted cash balances and no approval is required from a

governing body. Minimal risk exists from loss of the optionality to use unrestricted cash for another purpose (e.g., gaining potential interest from investing idle cash or organizational innovation for more efficient operations). Governments are more likely to accumulate cash balances with higher variation in revenues, fewer sources of revenues, higher population growth, higher levels of administrative costs, and under property tax limits (Gore, 2009; Hand, Pierson, & Thompson, 2016; Kioko, 2015). The existence of large cash holdings is a proxy for more competent managers (Hand et al., 2016; Meier & O'Toole, 2002; O'Toole & Meier, 2011).

It is expected that the use of unrestricted cash is the preferred managerial choice to reduce a cash flow deficit. The literature suggests this will be supported since municipal governments are more likely to draw down “free cash” balances to maintain service levels during a one-time reduction in state aid than reducing budget stabilization funds (Giankis & Snow, 2007). Therefore, the use of unrestricted cash can be used to supplement *temporary* shortfalls in cash inflows and is likely to be prioritized in use over other strategies.

### 3.3.3 Internal Resource: Savings - Budget Stabilization Fund (or Unassigned Fund Balance)

A budget stabilization fund (BSF) is often created from enabling legislation to serve as a government-wide reserve (Hou, 2013). This formal policy instrument is used to operate counter-cyclically in which a government sets aside resources in prosperous years to be used when revenues fall short of forecasts. Jurisdictions with greater unrestricted cash balances and the financial management capacity to accumulate budget surpluses have higher BSF balances (Giankis & Snow, 2007; Snow, Gianakis, & Haughton, 2015). A recent survey finds managers' perceptions of BSFs are embedded components of revenue management strategies in which BSFs are used: (1) as a counter-cyclical strategy, (2) as a capital planning and budget strategy, and (3) as an override to statutory property tax level limit strategy (Snow & Gianakis, 2009).

Although reluctant to tap into BSFs as the first line of defense, managers with savings in an established BSF might maintain savings to maximize their credit rating since credit rating agencies consider formal reserves when making rating decisions (Snow & Gianakis, 2009; Standard & Poor's Global Ratings, 2016).<sup>26</sup>

While a useful resource, managers will likely have limited access to funds in a BSF. Often, appropriation of funds requires prior approval. Moreover, reductions to a BSF could result in a negative credit rating change similar to unassigned fund balances (Marlowe, 2011). Not all local governments have established BSFs. Widespread use is unlikely because governments must have (1) budgetary conditions conducive to establishing savings, (2) political actors willing to create the funds and compel savings, and (3) officials who can achieve budgetary smoothing through decisions that have the same effect as an explicit savings fund (Wolkoff, 1987).

For a majority of local governments, savings are often informal and measured by the General Fund unassigned fund balance (UFB) (Arapis, Reitano, & Bruck, 2017b; Duncombe & Hou, 2014; Hendrick, 2006; Marlowe, 2005; Moulick & Taylor, 2017; Stewart, 2009; Stewart et al., 2017; Wang, 2015; Wang & Hou, 2012). The Government Finance Officers Association recommends governments establish formal policies defining conditions warranting fund balance use, dictating a reserve requirement to be maintained, and planning to replenish the fund balance should it decrease below the prescribed level (Government Finance Officers Association, 2015).

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<sup>26</sup> Standard and Poor's (S&P) states, "a clearly articulated policy and steady funding of reserves is important" and they conduct "an analysis of how the size of the reserve compares to historical revenue and spending patterns and gaps and of the track record of funding the reserve, including any replenishment mechanisms." Furthermore, S&P reviews "financial reserves and balances identified in funds outside of the state's main operating fund or general fund that may be available for budget purposes" which can include budget stabilization funds (Standard & Poor's Global Ratings, 2016). Moody's ratings for US local governments are based on the key factors of (1) economy/tax base (30%), finances (30%), management (20%), and debt/pensions (20%). Within finances, evaluated sub-factors are all reserves in fund balances, 5-year dollar changes in fund balance, operating fund net cash as a percentage of operating revenues and 5-year dollar changes in cash balances as a percent of revenues (Moody's Investors Service, 2016).

UFB can be cost-free due to its use for any purpose with no approval cost. However, some governments with formal fund balance policies might have cost to document and construct a plan to replenish if use drops the level below reserve requirements. Furthermore, the use of UFB could increase the risk of a negative credit rating change (Marlowe, 2011). Managers might perceive a higher cost and risk associated with using savings than unrestricted cash and thus, use it less frequently during a cash flow deficit.

### 3.3.4 Internal Resource: Interfund Borrowing

Interfund borrowing allows managers to reallocate resources through loaning monies between individual funds.<sup>27</sup> For example, the City of Flagstaff, Arizona initiates interfund borrowing for “short-term loans to cover temporary cash deficits in various funds” (City of Flagstaff Arizona, 2016). The City conducted interfund borrowing in which \$3,000,000 was transferred to the General Fund from Other Governmental Funds in FY 2016. The fund from which cash is borrowed has monies returned and sometimes interest paid. Governments typically have an internal policy establishing the use of interfund borrowing. However, it is important to note, the Governmental Accounting Standards Board (GASB) mandates interfund loans must be repaid.<sup>28</sup> If repayment is not expected, the interfund borrowing should be reclassified as a fund transfer (Governmental Accounting Standards Board, 1999).

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<sup>27</sup> Interfund activity that occurs between governmental, proprietary, and fiduciary funds is reported as reciprocal (exchange or exchange-like transactions) or nonreciprocal (nonexchange transactions) interfund activity (Governmental Accounting Standards Board, 1999). One type of reciprocal interfund activity is an interfund loan while one type of nonreciprocal interfund activity is a interfund transfer.

<sup>28</sup> According to GASB’s Statement 34, interfund loans are “amounts provided with a requirement for repayment,” but if repayment is not expected within a reasonable time “the amount that is not expected to be repaid should be reported as a transfer from the fund that made the loan to the fund that received the loan” (Governmental Accounting Standards Board, 1999).

The use of interfund borrowing often requires managers to obtain authorization and sometimes pay interest to the fund monies was borrowed. Interfund borrowing is therefore, a higher cost option relative to utilizing unrestricted cash or savings. Generally, there is minimal risk to this strategy if the loan is fully repaid. The use of interfund borrowing is simply a shift of when resources are used. However, if the government is reluctant to repay the loan, higher cost and risk occur to report and reclassify as a transfer.

### 3.3.5 Internal Resource: Interfund Transfers and Fund Sweeps

Managers can permit the use of interfund transfers and fund sweeps. GASB defines interfund transfers as “flows of assets (such as cash or goods) without equivalent flows of assets in return and without a requirement for repayment” (Governmental Accounting Standards Board, 1999). Fund sweeps occur when the positive balance that accumulate in a fund are transferred to another fund, usually the General Fund, where it can be appropriated for a different purpose. For example, proceeds from a bond can increase resources in a special revenue fund to then be swept into the General Fund (Bifulco, Bunch, Duncombe, Robbins, & Simonsen, 2012). The use of both interfund transfers and fund sweeps reduce the amount of surplus resources in the transferring fund. The fund transferred from has a loss of extra resources that can be used in future periods, since the monies are not repaid. The use of interfund transfers or fund sweeps have the risk of potentially allowing other funds to incur cash flow problems. Furthermore, frequent use can mask reoccurring deficits by allowing regular inflows of cash which risks the public perception of appropriate budgetary transparency.

Managers must make sure any interfund transfer or fund sweep is legally allowed, authorized, and fully disclosed in financial statements. The cost associated with use of this

strategy should not be taken as trivial since failures to fully disclose can lead to monetary and criminal penalties. For example, on September 14, 2016, the City of Miami and former Budget Director, Michael Boudreaux, were convicted of securities fraud by the Securities and Exchange Commission (SEC) for providing materially false and misleading statements and omissions about certain interfund transfers as well as reporting false and misleading information in two Comprehensive Annual Financial Reports. Specifically, the City of Miami's General Fund was increased with transfers from the Capital Improvement Fund and a Special Revenue Fund totaling to about \$37.5 million, which included legally restricted dollars. The transfers were to mask increasing deficits in the General Fund and to maintain the City's goal of \$100 million in reserves to be above the 20% required by City law before triggering the adoption of a plan to restore reserves to the threshold. The interfund transfer was complete before \$153.5 million in bond offerings were rated favorably by credit rating agencies and sold to investors at a potentially better interest rate (Herzinger, 2016; "Securities and Exchange Commission v. City of Miami, Florida and Michael Boudreaux," 2016; U.S. Securities and Exchange Commission, 2013).<sup>29</sup> This court case signifies the importance of understanding the cost and risk of using interfund transfers appropriately to manage cash flows. It might be expected that the use of a interfund transfer or fund sweep during a cash flow deficit be of higher cost and risk compared to use of unrestricted cash, and thus be used less frequently.

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<sup>29</sup> This was the first federal jury trial in which the SEC charged a municipality or one of its officers for violations of the federal securities laws. A month after the jury verdict, the Miami's City Commission voted to pay a \$1 million civil penalty to end litigation with the SEC. This court case reveals that importance of prudent financial management practices for the government, its financial officers, and most significantly the taxpayers who will ultimately bear the burden.

### 3.3.6 Internal Resource: Delay Payments

Delaying payments is altering when cash disbursements are made to those the government owes money (e.g., suppliers of services or goods) to have more available receipts at a point in time. This strategy primarily leverages the capacity of the government (e.g., personnel to contact suppliers, reputation of the government, and relationships forged with suppliers) and is within the control of a government to reduce cash outflows. This strategy is predicated on the fact that managers can delay payments with little or no long-term financial penalties or consequences. For example, managers might not be able to delay payments for salaries and wages or to creditors that enact large monetary costs. Even if managers can delay payments to creditors before financial penalties arise, this strategy has significant reputational risk. A government could become known for the continued practice of delaying payments and perceived as being illiquid, could face higher prices from future supplies, or could have a negative credit rating change if they default on several payments (Standard & Poor's Global Ratings, 2016).<sup>30</sup>

Moreover, managers can use discretion about which payments can be delayed but might need approval to delay legally required payments. For example, as a response to a \$20 million deficit, the City of Bridgeport, Connecticut was granted the authority by Senate Bill 42, in 2016, to delay the City's full pension payments to save about \$26 million over the next six years. Nearly half of the City's deficit was created by transferring City employees to the State's Municipal Employees Retirement System (MERS) in which more than \$90 million was paid to join the plan (Dixon, 2016; Ganim, 2016).<sup>31</sup> Due to the potential financial penalty costs and

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<sup>30</sup> As an important component of a government's overall credit profile, Standard & Poor's evaluates the liquidity position of a government. Cash monitoring can be evaluated as weaker if a government is "meeting certain obligations only by deeply delaying payment on other obligations" (Standard & Poor's Global Ratings, 2016).

<sup>31</sup> However, the upfront payment was not enough to cover police and fire personnel's service credits, and thus an additional \$7.5 million per year was required in payment for the next 27 years. The legislature granted reduced payments into the plan (35% for the next four years and 65% for the proceeding two years) will be followed

reputational risks, delaying payments is likely to be practiced less frequently than other strategies that use internal resources.

### 3.3.7 External Source: Receivables

Managers have the option to speed up the collection of receivables in which parties that owe the government provide those payments to reduce a cash flow deficit. In contrast to delaying payments, managers are likely to have less control over when collections are received to classify this choice as relying on an external source. This strategy is predicated on three aspects. First, the local government must have the financial capacity to devote to contacting parties that owe the government. Managers must spend time interacting with parties that have outstanding obligations which could divert their time or hinder them from completing other tasks. Second, the contacted parties must have the ability and willingness to pay during the period of the cash flow deficit. A party that owes the government can either have an overdue payment or a payment not yet due, in which there is no obligation for early payment. Managers can incentivize payment by imposing high cost penalties for those with overdue payments and offering discounts for early payments. Finally, the government might not receive a full payment in the same time frame in which a cash flow deficit occurs. Even if managers devote resources to accelerating the collection of receivables and secures early payment, the period in which there was a cash flow deficit could have passed. Consequently, the strategy of speeding up the collection of receivables best operates when there is enough financial capacity, parties can and are willing to pay before the deadline, and the process can be completed swiftly.

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by more than 20 years of the City paying higher amounts (125% and 175% of annual requirement) into the MERS (Dixon, 2016; Ganim, 2016).

This option is of higher cost and risk than using unrestricted cash or reserves in a BSF. The manager and finance personnel might have to divert their time and energy to accelerating the collection of receivables. This could be very costly especially for smaller sized governments with only a few finance department employees. This strategy has the risk of harming the government's reputation. If those that owe the government believe that they will be called on to make early payments, they might not want to do future business. Furthermore, there is a risk that the desired amount of cash receipts might not be received, either in a timely manner or at all during the temporary cash flow deficit.

### 3.3.8 External Source: Line of Credit

A line of credit (LOC) is a prearranged loan that establishes a maximum loan balance that a financial institution will permit the borrower to maintain. The borrower, the local government, can draw down on a LOC at any time, as long as they do not exceed the maximum set in the agreement. A local government that has a LOC can access funds when a cash deficit occurs to allow for smooth financial operations. For example, managers can access their LOC for the exact amount of the cash flow deficit. During a period of cash flow surplus, managers can payback the amount that was used. Managers are required to pay the associated costs for the establishment of the LOC which could impose barriers for governments with low financial management capacity. However, the fees and interest costs are significantly lower than the costs associated with issuing short-term debt.

### 3.3.9 External Source: Direct Lending Arrangement

Managers can use direct bank loans as a form of direct lending. A bank loan is borrowing a lump-sum of money from a commercial bank. Direct lending has increased in recent years with banks almost doubling the amount of municipal holdings from \$225 billion in 2009 to \$425 billion in 2014 (Farmer, 2014). Bank loans have the advantages of simplicity compared to accessing a public market for financing, fewer issuance costs, low ongoing compliance requirements, and flexibility in the timing of when the money can be drawn on as well as the repaid, which can often be renegotiated within reasonable limits (Government Finance Officers Association, 2013; Moak, 1982).

According to the Municipal Securities Rulemaking Board, in some cases private placements of debt and bank loans are substituting for temporary cash flow borrowings such as revenue anticipation notes (Municipal Securities Rulemaking Board, 2011). Direct lending is likely to continue by municipal lenders as a strategy to reduce a cash flow deficit. The use of direct lending arrangements might be costly to establish especially for managers that lack expertise to approach an institution to engage in direct lending arrangements. Smaller local governments or others with low managerial expertise might avoid the use of direct lending in favor of accumulating large unrestricted cash holdings.

### 3.3.10 External Source: Short-Term Debt

Short-term debt is typically borrowing money from banks under a written acknowledgment of debt due using unsecured notes<sup>32</sup> that constitutes a conditional or

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<sup>32</sup> Typically, a note can be issued in anticipation of long-term bonds to be issued, taxes to be collected, nontax revenues to be received, or for unforeseen expenditures to be called a bond anticipation note, tax anticipation note, revenue anticipation note, and budget note, respectively. These short-term notes usually have a maturity of one year or less after the date of issuance.

unconditional promise to pay from only specified resources of the issuing government (Moak, 1982). Each note is an explicit agreement which must be engaged in by the government and another party and thus, the use of short-term debt is an external source of financing. The amount of short-term notes issued by local governments has increased to a peak of over \$32.01 billion in 2003 with a steady decline since 2009 to just above \$20 billion in 2014 (The Bond Buyer/Thomson Reuters, 2015). The issuance of short-term debt has the following potential benefits: (1) demonstrates the government has access to credit markets other than the commercial bank (2) offers lower rates, sometimes, with the capital market than by a local bank and (3) provides a benchmark for comparison of rates between the securities of the government and that being paid by other governments (Moak, 1982). The use of short-term debt is motivated with increased spending on salaries, higher spending on long-term debt, more illiquidity of assets, and growing dependence on federal aid whereas, more financial slack in the form of UFB and prior year surpluses reduce the likely issuance of short-term debt (Lofton & Kioko, 2018; Su & Hildreth, 2018).

In contrast to the use of direct lending arrangements, the issuance of short-term debt requires that the government access an external market as well as interact with an external party. The use of this option, therefore, can have several costs: (1) acquire financial capacity of having or hiring professionals with knowledge of how to access the market, (2) incur several months of prior planning to access the market that include determining the amount debt that should be issued and the timing of issuance to take advantage of low interest costs, (3) forge relationships with institutions and underwriters that will aid in accessing the market, and (4) incur monetary costs of payment of fees for issuance and credit rating determinations. Hence, this strategy is

predicated on being able to bear these costs while accepting the risk of timely receipt of funds to hinder the broad use of this strategy.

Larger governments with more financial capacity are more likely to select this strategy. Medium-sized and larger jurisdictions are more likely to have established relationships with commercial banks and prior issuance of short-term debt to allow for advantages in understanding how to access the market (Moak, 1982). Smaller jurisdictions might pay higher short-term interest rates to issue short-term debt (Moak, 1982). These jurisdictions are likely to have lower financial management capacity to motivate obtaining more professional assistance to issue short-term debt, and thus higher costs. Therefore, smaller jurisdictions are likely to use this strategy infrequently and seek alternative sources of financing.

### **3.4 Survey and Responding Manager Characteristics**

The purpose of this article is to improve our understanding of WCM strategies available, preferred, and implemented by managers. A survey of local government managers is used to further our knowledge. Surveys have been utilized in the financial management literature to evaluate UFBs (Marlowe, 2005), perceptions of BSF management strategies (Snow & Gianakis, 2009), and attitudes towards adopting new government reporting (Frank & Gianakis, 2010). This survey focuses on WCM preferences and practices of managers which has not been explored in the literature.

#### **3.4.1 Hypotheses and Survey Implementation**

The survey results strive to support the following asserted hypotheses.

*Hypothesis 1:* Managers prefer (and implement) an active WCM strategy instead of not making changes to mitigate a cash flow deficit.

*Hypothesis 2:* Managers prefer (and implement) a strategy with internal resources before the use of a strategy with external sources of financing to mitigate a cash flow deficit, that is, a pecking order exists for WCM strategies.

*Hypothesis 3a:* Among strategies that rely on internal resources, managers prefer (and implement) the lowest cost and risk strategy.

*Hypothesis 3b:* Among strategies that reply on external sources of financing, managers prefer (and implement) the lowest cost and risk strategy.

*Hypothesis 4:* Smaller sized local governments are more likely to rely on strategies that use internal resources than external sources of financing to mitigate a cash flow deficit.

A survey was given to local government managers in the State of New York in 2016. The State of New York is chosen because of the comprehensive nature of their local general purpose governments (e.g., county, city, town, and village) and that each government has their own governing body and taxing authority. Therefore, general purpose government managers can differ on their strategies through having the autonomy to create unique financial management policies. The State of New York has a total of 57 counties, 61 cities, 931 towns, and 544 villages, excluding New York City and the boroughs that make up New York City. The survey coverage error is low with only three towns and three villages with missing information on their manager or government address and thus, not included in the sample frame.<sup>33</sup>

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<sup>33</sup> Two towns operate as contiguous town/villages in which they only operate at a village government level. Thus, there are a total of 929 unique operating town governments.

Dillman's (2007) tailored design method was implemented with all local government managers being contacted at least four times.<sup>34</sup> The analysis incorporates information from a total of 426 managers that consented and completed, or partially completed, the survey (26.78% of all New York local governments) of which managers from 33 counties (57.89% of all counties), 40 cities (65.57% of all cities excluding New York City), 211 towns (22.71% of all towns) and 142 villages (26.10% of all villages) consented.<sup>35</sup> The usable response rates for counties and cities are higher than the previous literature of about 38% in Frank and Gianakis (2010), 32% in Marlowe (2005) and 21% in Snow, Gianakis, and Fortess (2008).

### 3.4.2 Characteristics of Responding Managers

Table 3.2 compares each type of local government by size (total revenues per capita), the number of governments in the population, and the number of responding managers. The size classifications can be thought of as being small, small-medium, medium, and large for each government type. Responding county and town managers are overrepresented (a 3% or larger positive difference between the governments responding in the survey and the amount

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<sup>34</sup> This method included sending each manager: (1) a pre-notice letter, (2) cover letter with questionnaire, (3) thank you letter, (4) cover letter with replacement questionnaire sent to non-respondents, and (5) priority U.S. mailing of a cover letter and questionnaire. If an email address could be identified for the manager, an electronic version of the survey was sent via Qualtrics and then mail copies of each form of contact were sent to managers without identified emails. County and city governments were sent mailed copies for (4) and (5) contact materials to likely increase response rates of these governments. Town and village governments were emailed for items 4 and 5.

The Syracuse University Institutional Review Board (IRB) approved this survey project along with all materials that were used to contact each local government. The New York local governments that were identified and contacted are 57 counties (which exclude Bronx, Kings, Manhattan, Richmond, and Queens), 61 cities (which exclude New York City), 926 towns (excluding 3 towns in which contact information could not be acquired and 2 towns that are town/village governments and operate their government at the village level), and 541 villages (excluding 3 villages in which contact information could not be acquired). Due to financial constraints, only county and city governments were sent a fifth mode of contact of a priority U.S. mailing of the questionnaire.

<sup>35</sup> Of the 1,585 governments contacted, a total of 472 governments responded to the survey (29.78% of governments contacted) of which 33 counties (57.89% of counties contacted), 42 cities (68.85% of cities contacted), 237 towns (25.59% of contacted towns) and 160 villages (29.57% of contacted villages) responded to either consent or decline participation in the survey.

represented in the population) in large sized governments and underrepresented (a 3% or larger negative difference from the amount represented in the population) in medium sized governments. Therefore, county and town results might favor managers operating with larger budgets who might have more access to multiple working capital management strategies. In contrast, city and village managers are more overrepresented in small-medium and small sized governments, respectively. This leads to results being more indicative of the views of those managing smaller amounts of resources.<sup>36</sup>

Select characteristics of managers are averaged for each type of local government in Table 3.3. Overall, responding local governments, on average, have managers that are between 53 and 61 years of age. Thus, these managers are nearing retirement age. Most local government managers reported their gender identity as male with the exception of village managers in which 79% identified as female. Managers worked in their current position for about 9 years and the public finance profession for about 14 years. Town managers tended to have fewer years in their current position and in the public finance position to connote less experience than other managers. This might also impact their lower levels of satisfaction with their profession as compared to other local government managers. County and city managers worked in finance departments that employed about 40 full-time employees while town and village managers typically had about 5 full-time employees. Cities had the most part-time employees with about 44 part-time employees (more than the average number of full-time employees).

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<sup>36</sup> Responding managers are overrepresented if they are more than 3 percent above the proportion represented in the population and are underrepresented if they are more than 3 percent below the proportion represented in the population. For example, 6 out of 33 (about 18%) responded from large sized county governments. Yet, large sized county governments only represent 8 out of 57 governments (about 14%). Therefore, a larger than 3% difference exists and there is overrepresentation from large sized county managers.

Over 70% of responding county and city managers have a college degree and over 20% have one type of financial certification. In towns and villages, managers reported much lower rates of college degree attainment, slightly above 40%, and less than 20% have at least one certification. Therefore, most managers do not have a certification recognizing special knowledge and skills in areas such as budgeting, auditing, or financial reporting for governments. This important fact could lead to more costly and risky strategies not being selected due to lack of knowledge about accessing and implementing strategies.<sup>37</sup>

Table 3.4 indicated the financial resources that were accumulated in responding managers' governments for fiscal year 2016. On average, village government managers had the largest unrestricted cash balances at \$339 per capita while towns had the lowest balances at \$282 per capita. In contrast, county governments held the most resources in unassigned fund balances at \$270 per capita while city managers had access to only \$199 per capita in UFB. Finally, city governments issue the most short-term debt with \$272 per capita and village governments issues the second most with \$253 per capita. County and town governments had fewer short-term debt with \$70 and \$12 per capita in 2016. These financial measures reported at the end of the year can be put into context of the surveyed preferences reported earlier in the financial year.

### **3.5 Results**

The survey asked various questions about the use of available WCM strategies, preferences for using strategies, and implemented strategies given current constraints during a cash flow deficit.<sup>38</sup> The use (or policies regarding use) of WCM strategies is indicated in Table

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<sup>37</sup> For more detailed results by each type of local government, request information from the author.

<sup>38</sup> See survey for specific questions asked in Appendix 3.2 Survey Instrument.

3.5. In terms of internal resources, a little over half of all local governments have a policy about managing unrestricted cash balances. Village governments who have the most unrestricted cash per capita report only 48.15% of governments have a policy. In contrast, on average, county governments have the highest reported UFB and indicate an establish policy to maintain UFB in about 67% of governments. City, town, and village governments report lower levels of UFB and report significantly lower levels of established policies at about 40%. Interfund borrowing is permitted in a majority of county and city governments (over 70%), and is permitted in about half of town and village governments. The use of unrestricted cash balances and delaying payments and transfers out are selected as two internal resources that could be relied on during a cash flow deficit.

Managers can implement strategies that use external sources of financing such as the use of a LOC or engaging in direct lending arrangements. However, local governments in New York do not often implement these alternative strategies. For the 376 managers reporting, only 1.4% indicate that they have a LOC with about 76% of those with a LOC stating they do not use their line of credit. Of 379 managers reporting, only 9.5% engage in direct lending arrangements in the past year with about 65% of them using direct lending arrangements in the past two years. Therefore, the use of a LOC and direct lending arrangements are not pervasive WCM strategies used by New York local governments, and thus not evaluated in the preference ranking.

The survey results suggest that all four hypotheses are partially supported. Managers were asked to rank order their most likely managerial strategy to be implemented to address a cash flow deficit. Table 3.6 ranks manager preferences according to the Borda Count. The Borda Count is an election based method that is used to rank overall preferences. More points are awarded to higher ranked voter selections and the outcome is determined by gaining the most

points. For this calculation, the first ranked choice was given 5 points (n), the second ranked was given 4 points (n-1), and so forth for all five options.<sup>39</sup> All points are totaled and the option with the most points is ranked first. Using this ranking method, county and city government managers ranked fifth, or last, the strategy to wait and not make changes to current assets or liabilities.<sup>40</sup> Therefore, the first finding is that larger governments prefer to have an active strategy to mitigate a cash flow deficit. However, town and village government managers ranked fourth, or second to last, waiting to make changes. These managers rank the use of short-term debt last which can indicate an aversion to engaging in the short-term debt market.

Second, there is supportive evidence of the modified pecking order theory in which a strategy of using an internal resource is preferred over a strategy of using an external source of financing. Managers prefer to use unrestricted cash during a cash flow deficit. Table 3.6 indicates that overall managers of all local governments, as well as each type of government, ranked first the use of unrestricted cash. Per the survey results, 65.7% of managers ranked first the use of unrestricted cash with more than 55% of managers from each type of local government ranking the strategy the most preferred.<sup>41</sup> Moreover, in *Panel A* of Table 3.7, 75.0% of all managers preferred the use of unrestricted cash when asked if only asset management strategy could be used to reduce a cash flow deficit. Additionally, over 70% of managers from each type of government preferred the use of unrestricted cash. This provides further support that an internal resource is most preferred during a cash flow deficit.

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<sup>39</sup> For the calculation in Table 3.6, the first ranked choice was given 5 points (n), the second ranked was given 4 points (n-1), and so forth for all five options. A modified Borda Count was also calculated for partially ranked options in which 1 point was given to the most preferred option if only one most preferred option was selected (Emerson, 2013).

<sup>40</sup> The measure for all local governments uses survey weights to account for the total number of governments in each type of local government.

<sup>41</sup> This result is indicated in Appendix 3.1 that shows the full results prior to conducting the Borda Count.

Finally, for village managers, the use of internal resources is preferred to the use of external sources of financing during a cash flow deficit. Table 3.6 suggests that village managers prefer to use first unrestricted cash, then delay payments, speed up the collection of receivables, and finally issue short-term debt. This results fully supports the modified pecking order theory in which both strategies relying on internal resources are preferred to any external source of financing. Moreover, village government managers might perceive lower cost and risk strategies rely on internal resources than strategies relying on external sources of financing which necessitate more financial capacity.

The survey results state that county and town managers prefer to speed up collection of receivables before delaying payments. Managers in county governments have more full-time staff, on average about 42 employees, which might allow for greater capacity to accelerate the collection of receivables than smaller sized village governments. Moreover, county and town government managers might be more risk-averse to delaying payments that could have higher financial penalties. City governments are different from other governments in that issuing short-term debt is preferred after the use of unrestricted cash. These governments have the highest educated, more certified, and largest personnel employed in finance departments which could increase their capacity to issue short-term debt to manage cash flows.

In practice, managers likely make multiple changes during a cash flow deficit. The managers were asked, given their current constraints, what type of managerial strategy best matched their current practices. Overall, managers more frequently selected the practice of drawing down unrestricted cash balances as well as issuing short-term debt with 39.5% of managers selecting this strategy, in Table 3.8. This signifies that managers might prefer the use of unrestricted cash balances as an internal resource but want to also depend on an external

source of financing to guarantee the necessary cash inflows are obtained. County, city, and village managers favored this approach with 39.4%, 41.7%, and 35.5%, respectively, selecting this as the implemented practice. Yet, 40.4% of the responding town managers have a practice of using unrestricted cash balances as well as delaying payments. Therefore, town government managers might be more risk averse and only use internal resources that have lower cost and risk.

Most managers prefer the use of short-term debt in conjunction with unrestricted cash during a cash flow deficit. In practice, 62.4% of responding local governments reported the use of short-term debt in the past two years, as noted in Table 3.9. The use of short-term debt is identified by all local government managers as primarily being issued for other reasons such as capital projects (29.6%), when receivables have not been received (22.6%), for other reasons that were not for capital projects (22.04%), and in the absence of unrestricted cash (17.8%).<sup>42</sup> In the State of New York, bond anticipation notes (BANs) are issued to finance capital expenditures for up to five years and are often redeemed or replaced by long-term debt (New York State, 2008). The use of short-term debt in the form of BANs allow for local governments to pay for capital project startup costs before the capital project is supported with a means of long-term financing. The advantage is that interest rates on short-term debt are usually lower than long-term financing options but the disadvantage is that during unfavorable markets long-term interest rates could be higher at the end of the project when the short-term debt is being replaced (Moak, 1982).

County governments primarily use short-term debt when receivables have not been received (36.8%). This might be due to the fact that county governments have historically provided economic assistance, such as Medicaid and Aid to Dependent Children, in which

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<sup>42</sup> Some examples of other reasons for short-term debt use provided are issuing short-term debt to cover a deficit, to try to control for tax increases, and to purchase vehicles and/or large equipment.

reimbursements are obtained from the state and federal government (New York State, 2009). Thus, short-term debt might be issued more often for cash flow purposes of providing cash receipts when waiting for reimbursements to be received.

Although short-term debt is issued, a formalized internal operating procedure or policy governing the management of short-term debt use is only established in 31.4% of all local governments, as noted in Table 3.5. The lack of an established formalized policy hinders financial decision-making about when is appropriate to issue short-term debt and for what purposes the government is best positioned to issue short-term debt. Since most governments have issued short-term debt in the past two years, managers should codify rules into their administrative code regarding the best practices surrounding their most recent issuance of short-term debt. Therefore, successful policies and procedures regarding short-term debt can continue to be implemented consistently.

### **3.6 Conclusion**

The findings of this survey of local government finance professionals expands our knowledge of public sector working capital management in three major ways. First, available strategies are identified as those relying on internal resources (e.g., unrestricted cash, savings, budget stabilization funds, interfund borrowing, transfers, and delaying payments) and those relying on an external source of financing (e.g., receivables, line of credit, direct lending arrangements, and short-term debt). It is important to understand these strategies because managers frequently select strategies to manage liquidity and sustain uninterrupted services. I hypothesize the strategies with the lowest perceived cost and risk will be more preferred and implemented by managers.

Second, the findings of this study support the assertion that managers have a preference ranking, or pecking order, to use an internal resource of unrestricted cash before external sources of financing during a cash flow deficit. In practice, a majority of managers reported preferring to use unrestricted cash during a cash flow deficit. Managers, therefore, need to establish rule-based policies and operating procedures regarding the accumulation, management, and use of unrestricted cash. Participants only had an internal operating procedure or policy in 56.2% of governments regarding the use of unrestricted cash. Consequently, a substantial portion of local governments might need to establish a formalize policy regarding saving unrestricted cash This to mitigate cash flow deficits. Without a formalized policy, governments will be susceptible to loss of institutional knowledge and best practices. This fact is especially important for small sized governments with more part-time employees and managers nearing retirement.

Finally, there is supportive evidence that local governments have managers who prefer to address a cash flow deficit differently. Village government managers typically prefer and implement strategies that use unrestricted cash and delaying payments and transfers out before external sources of financing. City government managers have a higher preference to issue and actually issue the most short-term debt to manage cash flows. In contrast, town and village governments would rather not make any changes during a cash flow deficit than to issue short-term debt. This could be due to the higher cost and risk associated with issuing short-term debt for smaller sized governments. Differences in working capital management practices could also be due to lower educational attainment, lack of certifications, and fewer employees to have the financial capacity to rely on higher risk and cost strategies.

Although scholars have surveyed managers about local finances (Frank & Gianakis, 2010; Marlowe, 2005; Snow & Gianakis, 2009), this is the first article to evaluate the WCM

strategies preferred and practiced by local government managers. This study reduces the intellectual bifurcation between public administration and management research and the subfield of public financial management research (Kioko et al., 2011) by demonstrating the importance of understanding administrative decision-making around working capital management. There are clear advantages to this type of study, but there are also disadvantages. Primarily, survey research typically has some non-response bias in that non-respondents may have differing behaviors that remain unknown. An initial study can make a positive contribution, but differences in manager preferences and practices across states could limit generalizations of these findings. That shortcoming notwithstanding, the responses reflected in this survey reflect the attitude of New York local government managers based on actual experiences. The use of New York State as a case study is a starting point. Yet, more studies of managers that describe cash flow management practices and the broader working capital management process could further contribute to practice-oriented theory.

### 3.7 References

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**Table 3.1** Working Capital Management Strategies

<b>WCM Strategy</b>	<b>Potential Cost</b>	<b>Potential Risk</b>	<b>Type of Resource</b>
Unrestricted Cash Balance	Cost-free	Low-risk with minimal loss of the optionality to use monies for other purposes	Internal resource
Savings: Budget Stabilization Fund (BSF)  Unassigned Fund Balance (UFB)	BSF: Time cost for request and approval of use  UFB: Cost-free if no fund balance policy  Under a policy, cost to devise and enact a plan to replenish if reduce balance below the reserve requirement	BSF: Approval will not be complete in a timely manner  UFB: Minimal loss of the optionality to use monies for other purposes  BSF and UFB: Use could result in a negative credit rating change	Internal resource
Interfund Borrowing	Time cost for request and approval of use  Potential interest cost  Cost to fully document and disclose in financial reports	Low risk since only a temporary loss of surplus in the transferring fund  More risk if reluctant to repay the borrowed funds and have to be reclassified to an internal transfer	Internal resource
Interfund Transfers and Fund Sweeps	Time cost for request and approval of use  Cost to fully document and disclose in financial reports which could have monetary and criminal penalties if improperly reported	Loss of surplus in transferring fund which could create temporary cash flow problems for the fund  Loss of public perception of appropriate budget transparency if frequently used	Internal resource
Delay Payments	Financial capacity (e.g., personnel available, time to contact suppliers, and relationships forged with suppliers)	Loss of government's reputation or credibility as being able to make on-time payments	Internal resource

	<p>Approval to delay legally required payments</p> <p>Financial penalties especially if there are defaults on several payments</p> <p>Potentially charged higher future costs from suppliers</p>	<p>Loss of perception of being liquid by credit rating agencies if continually practiced</p> <p>Risk of incurring a negative credit rating change if continually practiced</p>	
Receivables	<p>Financial capacity (e.g., personnel available to accelerate the collection of receivables, time to contact parties that owe the government, and build relationships with parties with outstanding obligations)</p> <p>Cost to provide incentives for early payment (typically in the form of discounts offered) or enacting high penalties for overdue payments</p>	<p>Risk of parties with outstanding obligations not being able and/or willing to make payments early</p> <p>Risk of full payment not being received during the expected cash flow deficit period</p> <p>Reputational risk of having to call on parties with obligations for early payment that might discourage future interactions with the government</p>	External source of financing
Line of Credit (LOC)	<p>Financial capacity (e.g., expertise to establish and maintain a LOC, knowledge about when to use and pay down the LOC, and maintain a relationship with the financial institution)</p> <p>Monetary cost (e.g., fees and interest costs) to establish and maintain access to a LOC at a financial institution</p>	<p>Low-risk if able to make on-time payments of fees and interest</p> <p>More risk if monetary costs are not paid on-time and defaults negatively impact the government's credit rating</p>	External source of financing

<p>Direct Lending Arrangement</p>	<p>Financial capacity (e.g., expertise to establish and maintain, knowledge about when to use and make payments, and maintain a relationship with the lender)</p> <p>Monetary cost (e.g., fees and interest costs) to establish and maintain compliance</p> <p>Cost to document and disclose the direct lending arrangement</p>	<p>Low-risk if able to make on-time payments of fees and interest</p> <p>More risk if monetary costs are not paid on-time and defaults negatively impact the government's reputation with the lender</p>	<p>External source of financing</p>
<p>Short-Term Debt</p>	<p>Financial capacity (e.g., having or hiring professionals to access and understand the market, forecast the amount of short-term debt needed for expected cash flow deficit, and forge relationships with financial institutions and underwriters)</p> <p>Monetary costs (e.g., fees, and interest cost) for issuance</p> <p>Time cost for prior planning of issuance</p> <p>Cost to document and disclose debt issued</p>	<p>Risk of monies not being received during the expected cash flow deficit period</p>	<p>External source of financing</p>

**Table 3.2** Responding Financial Managers from New York Local Governments

<i>Panel A: County Governments</i>		
<b>Size Range (Revenues per capita)</b>	<b>Total Number in Population</b>	<b>Total Number of Respondents*</b>
\$3,000 and larger (large)	8	6
\$2,500 – \$3,000 (medium)	12	6
\$2,000 – \$2,500 (small-medium)	22	13
Less than \$2,000 (small)	15	8
	57	33
<i>Panel B: City Governments</i>		
<b>Size Range (Revenues per capita)</b>	<b>Total Number in Population</b>	<b>Total Number of Respondents*</b>
\$3,500 and larger (large)	8	6
\$2,750 – \$3,500 (medium)	9	5
\$2,000 – \$2,750 (small-medium)	29	21
Less than \$2,000 (small)	15	8
	61	40
<i>Panel C: Town Governments</i>		
<b>Size Range (Revenues per capita)</b>	<b>Total Number in Population</b>	<b>Total Number of Respondents*</b>
\$1,350 and larger (large)	172	49
\$950 – \$1,350 (medium)	143	26
\$550 – \$950 (small-medium)	354	77
Less than \$550 (small)	260	59
	929	211
<i>Panel D: Village Governments</i>		
<b>Size Range (Revenues per capita)</b>	<b>Total Number in Population</b>	<b>Total Number of Respondents*</b>
\$2,500 and larger (large)	99	25
\$1,700 – \$2,500 (medium)	94	26
\$850 – \$1,700 (small-medium)	211	45
Less than \$850 (small)	140	46
	544	142

**Notes:** \*Responding governments are those that completed or partially completed the survey and provided consent to be in the study. Population data was based on the 2016 population provided by the publicly available New York Local Government and School Accountability dataset.

**Table 3.3** Characteristics of New York Local Government Managers

Characteristics of Managers	Managers of Each Local Government Type			
	County (n=33)	City (n=40)	Town (n=211)	Village (n=142)
Current Age (average)	56	53	61	55
Gender Identity: Female	36.36%	39.47%	23.60%	79.09%
Years in Current Position (average)	10	8	7	10
Years in Public Finance Profession (average)	18	15	9	15
Highest Level of Education is College Degree or Beyond	72.73%	92.50%	48.34%	43.26%
At Least One Certification of Credentials	21.21%	37.50%	10.90%	15.49%
Professional Satisfaction of Extremely Satisfied	57.58%	40.00%	33.33%	43.97%
Professional Satisfaction of Somewhat Satisfied	39.39%	50.00%	46.19%	45.39%
Full-time Personnel Employed in Finance Department (average)	43	39	4	5
Part-time Personnel Employed in Finance Department (average)	10	44	4	4

**Notes:** (1) For more detailed results by each type of local government, request information from the author. Total responding and consenting governments are listed as the sample size. However, some consenting town and village government managers partially completed the survey. Survey results were weighted based on the proportion of each government type in the full New York local government population. (2) Years and persons are rounded up. (3) Credentials include Certified Public Accountant, Certified Government Financial Manager, Certified Public Finance Officer, Certified Public Finance Officer, Certified Public Finance Administrator, Certified Financial Advisor, Licensed Securities Trader, and other identified certifications.

**Table 3.4** Financial Characteristics of New York Local Governments for Responding Managers

<b>Resource</b>	<b>County</b>	<b>City</b>	<b>Town</b>	<b>Village</b>	<b>All</b>
General Fund Unrestricted Cash Balance (end of year average per capita)	\$319	\$308	\$282	\$339	\$313
General Fund Unassigned Fund Balance (end of year average per capita)	\$270	\$199	\$217	\$248	\$234
Short-Term Debt Issued (amount indicated by Bloomberg, per capita)	\$70	\$272	\$12	\$253	\$167

**Notes:** (1) Financial data is reported from Openbook New York for fiscal year 2016. Short-term debt amounts were collected from Bloomberg terminals for fiscal year 2016. The full issuance amount is indicated on a per capita basis. Values are averages of only governments in which managers responded to the survey, when available. (2) All governments are the governments in which managers replied to the survey and financial data was available for 2016.

**Table 3.5 Use (or Policy for Use) of Working Capital Management Strategies  
by New York Local Government Managers**

Type of WCM Strategy	Managers of Each Local Government Type*			
	County (n=33)	City (n=40)	Town (n=211)	Village (n=142)
Unrestricted Cash Balance	<b>57.58%</b> Have a policy to manage	<b>55.00%</b> Have a policy to manage	<b>65.15%</b> Have a policy to manage	<b>48.15%</b> Have a policy to manage
Savings: Unassigned Fund Balance (UFB)	<b>66.67%</b> Have a policy about maintaining General Fund balances	<b>43.59%</b> Have a policy about maintaining General Fund balances	<b>41.98%</b> Have a policy about maintaining General Fund balances	<b>33.03%</b> Have a policy about maintaining General Fund balances
Interfund Borrowing	<b>72.73%</b> Allow use If allowed, used in the past two years: <b>70.83%</b>	<b>86.84%</b> Allow use If allowed, used in the past two years: <b>70.97%</b>	<b>47.78%</b> Allow use If allowed, used in the past two years: <b>53.09%</b>	<b>52.80%</b> Allow use If allowed, used in the past two years: <b>47.69%</b>
Line of Credit (LOC)	<b>0%</b> Had a LOC in the past year	<b>2.56%</b> Had a LOC in the past year	<b>2.22%</b> Had a LOC in the past year	<b>0.83%</b> Had a LOC in the past year
Direct Lending Arrangement	<b>3.03%</b> Engaged in direct lending in the past year	<b>12.82%</b> Engaged in direct lending in the past year	<b>14.29%</b> Engaged in direct lending in the past year	<b>12.8%</b> Engaged in direct lending in the past year
Short-Term Debt	<b>60.61%</b> Issued in past two years <b>39.39%</b> Have a policy regarding using short-term debt	<b>79.49%</b> Issued in past two years <b>27.50%</b> Have a policy regarding using short-term debt	<b>30.77%</b> Issued in past two years <b>28.96%</b> Have a policy regarding using short-term debt	<b>46.46%</b> Issued in past two years <b>24.81%</b> Have a policy regarding using short-term debt

**Table 3.6** Borda Count Ranking of Preferred Working Capital Management Strategy

Type of WCM Strategy	All (n=349)	Counties (n=33)	Cities (n=39)	Towns (n=165)	Villages (n=112)
Unrestricted Cash	<b>Ranked 1</b>	<b>Ranked 1</b>	<b>Ranked 1</b>	<b>Ranked 1</b>	<b>Ranked 1</b>
Delay Payments/Transfers Out	Ranked 3	Ranked 3	Ranked 3	Ranked 4	Ranked 2
Receivable Collections	Ranked 2	Ranked 2	Ranked 4	Ranked 2	Ranked 3
Issue Short-Term Debt	Ranked 5	Ranked 4	Ranked 2	Ranked 5	Ranked 5
Wait and Not Make Changes	Ranked 4	Ranked 5	Ranked 5	Ranked 3	Ranked 4

**Notes:** (1) The highest ranked strategy is bolded. (2) The Borda Count is an election based method that ranks voters' selections in order of preference. The outcome of the election is indicated by gaining the most points. For this calculation the first ranked option was given 5 points (n), the second ranked was given 4 points (n-1), and so forth for all five options. All values are totaled and the option with the most points is ranked highest. A modified Borda Count was calculated for partially ranked options in which 1 point was giving to the most preferred option if only one most preferred option was selected (Emerson, 2013). The overall rankings were the same for both the Borda Count and Modified Borda Count with the exception that village government managers tied in the number of points given to delaying payments and transfers out and speeding up the collections of receivables, being ranked second or third.

**Table 3.7** Asset and Liability Management Strategies Likely to be Implemented

<b><i>Panel A: Asset Management Strategy</i></b>			
	Unrestricted Cash	Wait and Not Make Changes	Speed Up Collections
All Governments (n=347)	<b>75.0%</b>	10.8%	14.2%
Counties (n=33)	<b>78.8%</b>	6.1%	15.2%
Cities (n=38)	<b>71.1%</b>	13.2%	15.8%
Towns (n=160)	<b>78.7%</b>	11.0%	11.0%
Villages (n=106)	<b>73.2%</b>	17.0%	9.8%
<b><i>Panel B: Liability Management Strategy</i></b>			
	Delay Payments and Transfers Out	Wait and Not Make Changes	Issue Short-Term Debt
All Governments (n=336)	<b>47.2%</b>	17.8%	36.1%
Counties (n=33)	<b>48.5%</b>	21.2%	30.3%
Cities (n=37)	<b>48.7%</b>	8.1%	46.0%
Towns (n=161)	<b>40.0%</b>	28.8%	31.9%
Villages (n=107)	45.3%	<b>54.7%</b>	26.4%

**Note:** (1) The highest percentage value given to a specific strategy is bolded.

**Table 3.8** Top Two Strategies for Current Working Capital Management Practices Implemented

	Unrestricted Cash and Issue Short-Term Debt	Unrestricted Cash and Delay Payments and Transfers Out
All Governments (n=337)	<b>39.5%</b>	36.3%
Counties (n=33)	<b>39.4%</b>	36.4%
Cities (n=36)	<b>41.7%</b>	36.1%
Towns (n=161)	36.7%	<b>40.4%</b>
Villages (n=107)	<b>35.5%</b>	32.7%

**Note:** (1) The highest percentage value given to a specific strategy is bolded.

**Table 3.9** Primary Reason for Issuing Short-Term Debt

	Receivables have not been received	Absence of unrestricted cash on hand	Higher than expected expenditures	A more favorable long-term debt market	Other: Capital Projects	Other: Other Reasons
All (n=159)	22.6%	17.8%	2.9%	15.4%	<b>29.6%</b>	22.0%
Counties (n=19)	<b>36.8%</b>	15.8%	5.3%	10.5%	31.6%	15.8%
Cities (n=30)	16.7%	20.0%	0%	20.0%	<b>30.0%</b>	23.3%
Towns (n=52)	9.6%	25.0%	9.6%	7.7%	17.3%	<b>30.8%</b>
Villages (n=58)	12.1%	10.3%	5.2%	13.8%	27.6%	<b>31.0%</b>

**Notes:** (1) The highest percentage value given to a specific reason is bolded. (2) Respondents indicated the use of short-term debt in the past two years and provided a reason for issuance. managers issued short-term debt in the past two years from all governments (n=381) 62.38%, counties (n=33) 60.61%, cities (n=39) 79.49%, towns (n=182) 30.77%, and villages (n=127)46.46%. (3) Managers were asked if they had an internal operating procedure or policy regarding the use of short term debt. Policies were reported in all governments (n=385) 31.42%, counties (n=33)39.39%, cities (n=40) 27.50%, towns (n=183) 28.96%, and villages (n=129) 24.81% had a policy.

**Appendix 3.1** Preference for Working Capital Management Strategy Summary of Results

<i>Panel A: All Local Governments (n=349)</i>							
WCM Strategy	Ranked 1	Ranked 2	Ranked 3	Ranked 4	Ranked 5	Left Blank	Borda Count
Unrestricted Cash	<b>65.7</b>	7.6	15.5	3.7	3.9	3.7	<b>Ranked 1</b>
Delay Payments/Transfers Out	8.9	25.2	15.4	<b>23.5</b>	13.0	14.0	Ranked 3
Receivable Collections	13.3	21.2	<b>24.0</b>	13.6	10.4	17.5	Ranked 2
Issue Short-Term Debt	10.1	18.5	17.7	19.1	<b>23.5</b>	11.1	Ranked 5
Wait and Not Make Changes	5.5	12.3	9.5	19.7	<b>32.4</b>	20.7	Ranked 4
<i>Panel B: County Governments (n=33)</i>							
WCM Strategy	Ranked 1	Ranked 2	Ranked 3	Ranked 4	Ranked 5	Left Blank	Borda Count
Unrestricted Cash	<b>75.8</b>	6.1	15.2	0	0	3.03	<b>Ranked 1</b>
Delay Payments/Transfers Out	9.1	24.2	12.1	<b>33.3</b>	12.1	9.1	Ranked 3
Receivable Collections	12.1	<b>30.3</b>	27.3	9.1	6.1	15.2	Ranked 2
Issue Short-Term Debt	6.1	15.2	15.2	<b>24.2</b>	<b>24.2</b>	15.2	Ranked 4
Wait and Not Make Changes	0	12.1	15.2	15.2	<b>36.4</b>	21.2	Ranked 5
<i>Panel B: City Governments (n=39)</i>							
WCM Strategy	Ranked 1	Ranked 2	Ranked 3	Ranked 4	Ranked 5	Left Blank	Borda Count
Unrestricted Cash	<b>56.4</b>	5.1	20.5	7.7	5.1	5.2	<b>Ranked 1</b>
Delay Payments/Transfers Out	10.3	<b>23.1</b>	15.4	17.9	10.3	23.1	Ranked 3
Receivable Collections	15.4	15.4	<b>17.9</b>	12.8	12.8	25.6	Ranked 4
Issue Short-Term Debt	15.4	<b>23.1</b>	20.5	15.4	15.4	10.3	Ranked 2
Wait and Not Make Changes	7.7	10.3	0	17.9	<b>35.9</b>	28.2	Ranked 5
<i>Panel D: Town Governments (n=165)</i>							
WCM Strategy	Ranked 1	Ranked 2	Ranked 3	Ranked 4	Ranked 5	Left Blank	Borda Count
Unrestricted Cash	<b>70.3</b>	14.5	4.8	2.4	6.1	1.8	<b>Ranked 1</b>
Delay Payments/Transfers Out	4.2	<b>25.5</b>	22.4	17.0	23.6	7.3	Ranked 4
Receivable Collections	10.9	16.4	24.8	<b>27.9</b>	12.1	7.9	Ranked 2
Issue Short-Term Debt	7.3	14.5	19.4	17.6	<b>33.3</b>	7.9	Ranked 5
Wait and Not Make Changes	9.1	20.6	18.8	<b>23.6</b>	19.4	8.5	Ranked 3
<i>Panel E: Village Governments (n=112)</i>							
WCM Strategy	Ranked 1	Ranked 2	Ranked 3	Ranked 4	Ranked 5	Left Blank	Borda Count
Unrestricted Cash	<b>62.5</b>	13.4	9.8	2.7	8.9	2.7	<b>Ranked 1</b>
Delay Payments/Transfers Out	8.0	<b>33.9</b>	18.8	18.8	15.2	5.4	Ranked 2
Receivable Collections	12.5	17.9	<b>33.0</b>	16.1	13.4	7.1	Ranked 3
Issue Short-Term Debt	7.1	17.0	14.3	17.9	<b>38.4</b>	5.4	Ranked 5
Wait and Not Make Changes	10.7	11.6	15.2	<b>34.8</b>	21.4	6.3	Ranked 4

**Notes:** (1) All values are in percentages. The highest percentage value given to a specific ranking of 1 to 5 for a strategy is bolded and shaded. (2) Left Blank means that the financial manager did not rank the given

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option with a value of 1 to 5. (3) The Borda Count is an election based method that ranks voters' selections in order of preference. The outcome of the election is indicated by gaining the most points. For this calculation the first ranked option was given 5 points (n-1), the second ranked was given 4 points (n-1), and so forth for all five options. All values are totaled and the option with the most points is ranked highest. A modified Borda Count was calculated for partially ranked options in which 1 point was giving to the most preferred option if only one most preferred option was selected (Emerson, 2013). The overall rankings were the same for both the Borda Count and Modified Borda Count with the exception that village government managers tied in the number of points given to delaying payments and transfers out and speeding up the collections of receivables, being ranked second or third.

**2016 NEW YORK LOCAL GOVERNMENT FINANCIAL MANAGEMENT SURVEY**

**Appendix 3. 2 Survey Instrument**

**PLEASE RETAIN INFORMED CONSENT FORM FOR YOUR RECORDS**

**PLEASE RETURN INFORMED CONSENT SIGNATURE PAGE  
WITH YOUR COMPLETED SURVEY**

**GO ON TO THE NEXT PAGE**

## 2016 NEW YORK LOCAL GOVERNMENT FINANCIAL MANAGEMENT SURVEY

This survey has been distributed to high ranking financial officers in several hundred local governments throughout New York State. Filling out this voluntary questionnaire indicates that you give your informed consent to be a subject in this study.

To the best of your knowledge, please CHECK the most appropriate box as well as write (or attach/email additional sheets to [mlofton@syr.edu](mailto:mlofton@syr.edu)) for extended open-ended answers when requested.

### Professional Profile

- 1) What is your current position?
  - Chief Fiscal Officer
  - Comptroller (or Controller)
  - Commissioner (Director) of Finance
  - Treasurer
  - Clerk – Treasurer
  - Other (please specify): \_\_\_\_\_
- 2) How many years have you been in the position? \_\_\_\_\_
- 3) How many years have you been in the public finance profession?  
\_\_\_\_\_
- 4) Please indicate your current level of professional satisfaction.
  - Extremely satisfied
  - Somewhat satisfied
  - Neither satisfied nor dissatisfied
  - Somewhat dissatisfied
  - Extremely dissatisfied
- 5) Please indicate the highest level of education completed (Please check all that apply):
  - Some high school, no degree
  - High school degree
  - Some college
  - Four-year college degree
  - Master of Business Administration (MBA)
  - Master of Public Administration (MPA)
  - Other Master degree
  - Juris Doctor (J.D.) or equivalent
  - Ph.D. or equivalent

- 6) Please indicate whether you currently hold any of the following credentials (Please check all that apply):

- Certified Public Accountant (CPA)
- Certified Government Financial Manager (CGFM)
- Certified Public Finance Officer (CPFO)
- Certified Public Finance Administrator (CPFA)
- Certified Financial Advisor
- Licensed Securities Trader
- Other (please specify):  
\_\_\_\_\_

### General Financial Management Characteristics

- 7) How is the chief financial officer (or highest ranking financial officer) selected?
- Elected
  - Appointed by chief elected official
  - Appointed by governing board
  - Hired by appointed manager/administrator
  - Other (please specify):  
\_\_\_\_\_
- 8) Approximately how many people are employed in your government's finance department? \_\_\_\_\_ (full time)  
\_\_\_\_\_ (part time)

9) Has your government issued any long-term debt (e.g., general obligation, revenue-backed, or any other long-term debt) within the past 5 years?

- Yes
- No

If no, please skip to question 12. If yes, please answer question 10.

10) Is your local government rated on any of its outstanding General Obligation (GO) debt?

- Yes
- No

If no, please skip to question 12. If yes, what is your current GO bond rating?

- Aaa/AAA
- Aa1/AA+
- Aa2/AA
- Aa3/AA-
- A1/A+
- A2/A
- A3/A-
- Baa1/BBB+
- Baa2/BBB
- Baa3/BBB-
- Below Baa3/BBB-

11) If your debt (GO or Revenue) is rated security, how often do you interact with credit rating agency officials within a budgeting cycle?

- Once a quarter
- Semi-annually
- Annually
- Other (please specify):  
\_\_\_\_\_

**Working Capital Management Decisions**

This study focuses on how you make decisions when managing working capital (current assets and current liabilities). Current assets include unrestricted cash, marketable securities, and receivables. Current liabilities include accounts payable and short-term debt (i.e., bond anticipation, tax anticipation, revenue anticipation, budget notes, direct-lending arrangements, or a line of credit).

12) Given the above context, do you feel limited in your discretion by state regulations in managing current assets, which include unrestricted cash, marketable securities, and receivables?

- No
- Yes

13) Does your jurisdiction have an internal operating procedure or policy on how to manage unrestricted cash?

- Yes
- No

If no, please skip to question 14. If yes, please briefly describe what operating procedure(s) or policy (policies) that exist or please attach/email copies of the documents to [mlofton@syr.edu](mailto:mlofton@syr.edu).

2016 NEW YORK LOCAL GOVERNMENT FINANCIAL MANAGEMENT SURVEY

14) Do you feel limited by internal operating procedures or policies to use your discretion in managing current assets, which include unrestricted cash, marketable securities, and receivables?

- Yes
- No

15) Given the initial context, do you feel limited in your discretion by state regulations in managing current liabilities, which include accounts payable and short-term debt (i.e., bond anticipation notes, tax anticipation notes, revenue anticipation notes, and budget notes, direct-lending arrangements, or a line of credit)?

- No
- Yes

16) Does your jurisdiction have an internal operating procedure or policy on how to manage short-term debt?

- Yes
- No

If no, please skip to question 17. If yes, please briefly describe what operating procedure(s) or policy (policies) that exist or please attach/email copies of the documents to [mllofton@svr.edu](mailto:mllofton@svr.edu)?

17) Do you feel limited by internal operating procedures or policies to use your discretion in managing current liabilities, which include accounts payable and short-term debt?

- Yes
- No

18) Has your government issued any short-term debt (i.e., bond anticipation notes, tax anticipation notes, revenue anticipation notes, and budget notes) within the past 2 years?

- Yes
- No

If no, skip to question 19. If yes, is the short-term debt issued primarily because there is:

- Receivables have not been received
- An absence of unrestricted cash on hand
- Higher than expected expenditures
- A more favorable long-term debt market is about to occur in a few months
- Other (please specify):  
\_\_\_\_\_

19) Local governments have increasingly engaged in direct bank loans as a form of direct lending. Direct lending is any arrangement in which a single lender (e.g., bank, pension fund, and mutual fund) makes a loan to a municipal issuer. Has your government engaged in direct-lending arrangements in the past year?

- Yes
- No

If no, please skip to question 21. If yes, please answer question 20.

2016 NEW YORK LOCAL GOVERNMENT FINANCIAL MANAGEMENT SURVEY

20) Please indicate the time period within which your jurisdiction has used direct-lending arrangements in the recent past.

- In the last 2 years
- Between 2 and no more than 3 years
- Between 3 and no more than 4 years
- More than 4 years (please specify the number of years):  
\_\_\_\_\_

21) A line of credit (LOC) is a prearranged loan that establishes a maximum loan balance that a financial institution will permit the borrower to maintain. The borrower can draw down on the LOC at any time, as long as they do not exceed the maximum set in the agreement. Did your jurisdiction have a line of credit with a bank in the past year?

- Yes
- No

If no, skip to question 23. If yes, please answer question 22?

22) Please indicate the time period within which your jurisdiction has used your bank line of credit in the recent past.

- In the last 2 years
- Between 2 and no more than 3 years
- Between 3 and no more than 4 years
- More than 4 years (please specify the number of years):  
\_\_\_\_\_

23) Inter-fund borrowing occurs when one fund loans money to another fund and the amounts provided are required to be repaid. Does your jurisdiction allow for inter-fund borrowing?

- Yes
- No

If no, skip to question 25. If yes, please answer question 24.

24) Please indicate the time period within which your jurisdiction has used inter-fund borrowing in the recent past.

- The past year
- Between 1 and no more than 2 years
- Between 2 and no more than 3 years
- Between 3 and no more than 4 years
- More than 4 years (please specify the number of years):  
\_\_\_\_\_

25) A cash flow deficit is when cash disbursements are greater than cash receipts. Should a cash flow deficit occur, which, if any, of the following measures are you likely to implement to address the deficit? (Rank in order of likelihood of use, 1 being most frequent use and 5 being least frequent.)

- \_\_\_\_\_ Draw down unrestricted cash balances
- \_\_\_\_\_ Delay payments of accounts payable
- \_\_\_\_\_ Speed up collections on receivables
- \_\_\_\_\_ Do not take action to make changes to current assets or current liabilities
- \_\_\_\_\_ Increase short-term borrowing (e.g., issue more notes payable)

26) A cash flow deficit is when cash disbursements are greater than cash receipts. Given your current constraints, suppose there is a cash flow deficit, which of the following asset management strategies are you more likely to make to lower the cash flow deficit?

- Draw down unrestricted cash balances in the amount of the cash flow deficit
- Wait and not make changes to assets (e.g., unrestricted cash, marketable securities, and receivables)
- Speed up the collection of receivables

27) Given your current constraints, suppose there is a cash flow deficit, which of the following liability management strategies are you more likely to make to reduce the cash flow deficit?

- Delay payments and transfers out
- Wait and not make changes to current liabilities
- Issue short-term debt (e.g., bond anticipation notes, tax anticipation notes, revenue anticipation notes, and budget notes) in the amount of the cash flow deficit

28) Given your current constraints, suppose there is a cash flow deficit, which of the following management strategies do you prefer to make to reduce the cash flow deficit at your local government? Choose one strategy that best fits your current practices.

- Draw down unrestricted cash balances as well as issue short-term debt to total the amount of the cash flow deficit
- Wait and not make changes to current assets and current liabilities
- Draw down unrestricted cash balances as well as delay payments and transfers out to total the amount of the cash flow deficit
- Speed up the collection of receivables as well as issue short-term debt to total the amount of the cash flow deficit
- Speed up the collection receivables as well as delay payments and transfers out

29) Does your jurisdiction have a policy/policies regarding the maintenance of its general fund balance? This includes a positive balance in any or all of the following fund balance categories: nonspendable, restricted, committed, assigned, and unassigned.

- Yes
- No

If no, please skip to question 30. If yes, please briefly describe what policy (policies) that exist or please attach/ email copies of the documents to [mlofton@svr.edu](mailto:mlofton@svr.edu).

30) Does your government have a policy/policies regarding the creation and maintenance of enterprise fund or proprietary fund balances, which include a policy/policies for a positive balance in any or all of the following fund balance categories: nonspendable, restricted, committed, assigned, and unassigned?

- Yes
- No

If no, please skip to question 31. If yes, please briefly describe what policy (policies) that exist or please attach/ email copies of the documents to [mlofton@syr.edu](mailto:mlofton@syr.edu).

31) Are you willing to be interviewed by phone or in person about your working capital management strategies?

- Yes
- No

32) Please feel free to provide any additional comments you would like to make regarding cash management or the use of short-term debt.

**Demographic Characteristics**

33) What is your current age?

\_\_\_\_\_

34) What is your current gender identity?

- Female
- Male
- Transgender
- Prefer not to answer

35) Are you of Hispanic, Latino, or Spanish origin?

- No
- Yes

36) What is your race? (Please check all that apply):

- African-American or Black
- American Indian or Alaskan Native
- Caucasian
- East Asian or Asian American
- South Asian or Indian American
- Middle Eastern or Arab American
- Native Hawaiian or Other Pacific Islander
- Other

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Thank you for taking the time to participate!

## **Chapter 4: The Impact of Excess Taxing Capacity on Short-Term Resources**

## 4.1 Introduction

In the United States, local governments are creatures of the state in which state governments grant legal powers and impose laws further limiting the authority of local governments. Since the tax revolts in the early 1970's, legislation imposing tax and expenditure limits (TEs) have been established in several states to constrain growth and reduce the size of local governments.<sup>43</sup> TEs can be classified according to their constraints on overall property tax rates, a specific property tax rate, the property tax levy, a cap on general revenue or general expenditure, assessment increases, and full disclosure requirements (Joyce & Mullins, 1991).<sup>44</sup>

In the twenty-eight states that have property tax levy limitations (hereinafter referred to as tax limits) on local governments (Mullins & Wallin, 2004), financial managers can increase property taxes up to a specified levy limit. The difference between the levy limit and selected property tax level subject to the limit is the excess taxing capacity (ETC). Managers may choose to increase property taxes, thereby reducing the ETC, to generate more revenues without having to create a new tax or gain voter approval. In this sense, the ETC is a slack resource to serve as a cushion of actual resources used to adapt successfully to internal or external pressures for change (Bourgeois, 1981). Increased amounts of slack in the form of ETC has been found to reduce general fund unreserved balances and increase budget stabilization funds, school spending, and the likelihood of winning an override vote (Bradbury, Mayer, & Case, 2001; Hawley & Rork, 2015; Nguyen-Hoang & Hou, 2014; Snow, Gianakis, & Haughton, 2015). Managers might also have an incentive to maintain this slack resource because its use has a political cost to increase property taxes on residential and commercial property.

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<sup>43</sup> As of 2015, twenty-eight states have at least one TEL (Tax Policy Center, 2016).

<sup>44</sup> Alternative classifications exist for the measurement of TEs using an index of state-level TEL restrictiveness or stringency (Amiel, 2009; Poulson, 2005).

Slack resources also manifest as short-term resources which can include the use of unrestricted cash (particularly resources reported in the general fund), the use of interfund transfers (accessing unrestricted cash in other funds), and the use of short-term debt (an external source of funds). Evidence supports that short-term resources are used to mitigate cash flow deficits (Lofton, 2018), to buffer against revenue reductions especially if heavily dependent on intergovernmental aid (Arapis, Reitano, & Bruck, 2017; Gianakis & Snow, 2007; Hendrick, 2006; Lofton & Kioko, 2018; Stewart, 2009; Stewart, Hamman, & Pink-Harper, 2017; Wang, 2015), and to stabilize expenditures or spending volatility (Hendrick & Crawford, 2014; Marlowe, 2005).

A prime concern for financial managers is sustaining government operations. Since cash receipts (inflows) and cash disbursements (outflows) are unevenly received, managers may need to use slack resources to sustain operations. For instance, a cash flow deficit occurs when cash inflows are less than cash outflows. When a temporary cash flow deficit is expected to occur, managers have the expertise to recognize that slack resources can be used to reduce or eliminate the cash flow deficit.

In the context of expected cash flow deficits, financial managers can choose to use slack resources in the form of short-term resources or ETC. We might expect managers to use short-term resources when deficits are temporary and of a small amount. For example, a cash deficit created by the need to pay higher than expected employee salaries could be mitigated by using unrestricted cash reserves. However, a cash deficit produced by the need to purchase vehicles or initially support capital projects could be financed through issuing short-term debt (Lofton, 2018). While cash flow deficits that are more sustained and of larger amounts are likely to be

mitigated by reducing the ETC. For example, a cash flow deficit in four consecutive years from reductions in sales tax receipts might motivate a jurisdiction to increase property tax revenues.

While prior research has contributed to our understanding of the impact of slack resources, a central decision-making question has been ignored. That question is: Do managers tradeoff the use of slack in the form of excess taxing capacity and short-term resources to manage cash flows? It is imperative to evaluate this question to broaden our understanding of the use of slack resources to manage internal and external challenges. For example, a financial manager could access short-term resources to mitigate temporary cash flow deficits and access ETC to address sustained structural deficits. Thus, our knowledge of slack resources is expanded if financial managers are trading off accessing different types of slack under tax limits.

The present study extends our knowledge by focusing on the relationship between short-term resources and excess taxing capacity. In contrast to the existing literature (Gore, 2009; Hand, Pierson, & Thompson, 2016; Kioko, 2015), an alternative specification is used for the short-term resource of cash holdings, General Fund unrestricted cash. This more restrictive measurement of cash holdings allows for only cash resources completely under managerial discretion to be influenced by ETC. Furthermore, this study is the first to evaluate the impacts of ETC on short-term obligations which include short-term debt issuance, internal borrowing from a state, interfund transfers-in, and overdrafts of cash reserves. By evaluating two short-term resources used for cash flow management, our understanding of the use of different slack resources can be furthered.

The main conjecture is that managers use low cost short-term resources instead of increasing property tax revenues (i.e., decreasing their excess taxing capacity) to sustain operations. Using data of New York county, city, and village governments under tax limits as a

case study,<sup>45</sup> the results indicate managers are more likely to reduce General Fund unrestricted cash holdings instead of increasing property tax revenues (i.e., decreasing their ETC). Findings here are contrary to the seminal work by Gore (2009) – that is, managers are more likely to seek to maximize their ETC for precautionary reasons rather than hoarding cash. Similarly, more competent managers might use short-term obligations instead of accessing ETC. This work finds evidence of slack in the form of short-term obligations being utilized while slack in the form of ETC is increased.

The implications of this study are that managers can actively use slack in the form of short-term resources while building up slack to mitigate long-term fiscal imbalances. Since using ETC has a political cost, a government is not likely to repeatedly decrease ETC (i.e., increase property tax revenues) during several consecutive fiscal years. Therefore, it is imperative to gain more knowledge about a wider array of slack resources (e.g., unrestricted cash holdings and short-term debt capacity) managers frequently use to be responsive to internal and external challenges.

The rest of this paper is structured as follows. Section 4.2 presents the existing literature on the impact of state-imposed TELs on local governments. Section 4.3 details the literature on the impact of ETC on local governments. Section 4.4 describes two TELs established in New York and gives motivations for the use of short-term resources instead of ETC with testable hypotheses. Section 4.5 discusses the data and the empirical strategy. Section 4.6 presents the results, and concluding remarks are asserted in Section 4.7.

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<sup>45</sup> Only county, city, and village governments in New York State are subject to a constitutional tax limit which limits the authority to impose property taxes. Therefore, other New York local governments (e.g., towns, school districts, library districts, fire districts, and other special purpose governments) are excluded from the analysis. In 1986, New York repealed the constitutional property tax levy limits imposed on small city school districts. The empirical evidence finds the repeal had no significant immediate or gradual impact on average spending for the whole group of small city school districts or for those nearing the limit (Nguyen-Hoang, 2013).

## 4.2 Local Governments and Tax Limits

The primary purpose of TELs is to restrict or decrease the growth of revenues and public expenditures. Several studies have investigated if TELs achieve this purpose to find state-imposed TELs reduce revenues and spending of local governments (Brown, 2000; Chapman & Gorina, 2012; Dye & McGuire, 1997; Dye, McGuire, & McMillen, 2005; Figlio, 1998; Springer, Lusby, Leatherman, & Featherstone, 2009). Local governments have responded by reducing reliance on property taxes (Brown, 2000; Hoene, 2004; Shadbegian, 1999; Skidmore, 1999; Springer et al., 2009) and shifting their revenue structure towards reliance on revenues not subjected to limitations (e.g., sales taxes, income taxes, miscellaneous revenues, and user fees and charges) (Hoene, 2004; Joyce & Mullins, 1991; Lang & Jian, 2004; Shadbegian, 1999; Sun, 2014; Thompson & Green, 2004).

We might expect, under tax limits, local government managers are likely to increase reliance on revenues not subject to the property tax limit, as a long-term solution if cash flow deficits are reoccurring. Moreover, managers are likely to react to tax limits by altering the maintenance of slack resources, and thus changing local government savings behavior. We find evidence that tax limits impact slack resources in the form of cash holdings (Kioko, 2015). For county governments, cash holdings (unrestricted cash holdings and proceeds of bond issues) is found to be reported in significantly lower levels when subject to TELs (Kioko, 2015).

It might also be expected that local government managers under tax limits alter budgetary strategies given their shifts in revenue structure. Potentially binding TELs are more formidable constraints implied by the physical ceiling and public sentiment for taxation; while potentially nonbinding TELs are less restrictive if a local government can circumvent limitations (Joyce & Mullins, 1991). Cities with more stringent TELs are allotted larger amounts of intergovernmental aid, higher debt service expenditures, and acquire less net capital during the Great Recession

(Park, Park, & Maher, 2018). These budgetary impacts can alter financial planning if more intergovernmental aid and debt are continually relied upon. In local governments under TELs, strategies used by officials to respond to the budget crisis during the Great Recession were to shift from property tax increases to implement personnel-related cuts, increases in user fees, other non-tax strategies, and short-term borrowing to raise revenues and pay for services (Jimenez, 2017).

Local governments substitute on a less than dollar-for-dollar basis of miscellaneous revenue for tax revenue (Shadbegian, 1999). Therefore, shifts in revenue structure to diversify revenues might be limited especially for smaller sized governments. Even though local governments had both a diversified (evenly balanced total revenues among selected revenue categories) and complex structure (multiple sources of revenue), greater revenue volatility rather than stability can persist (Carroll, 2009). Moreover, St. Clair (2012) finds Colorado's 1992 Taxpayer's Bill of Rights, a state-imposed TEL, has increased revenue and expenditure volatility for local governments. The ability to conduct financial planning becomes more challenging for managers with both revenue and expenditure volatility. This volatility could create temporary cash flow deficit problems and motivate the use of slack resources instead of long-term changes in revenue structure under tax limits.

#### **4.3 Local Governments and Excess Taxing Capacity**

Excess taxing capacity, the difference between the levy limit and actual property tax level subjected to the limit, has been evaluated for local governments in Massachusetts under Proposition 2½. The ETC is found to increase school spending (Bradbury et al., 2001) and

reduce override voting behavior (Hawley & Rork, 2015; Wallin & Zabel, 2011).<sup>46</sup> These uses of excess taxing capacity are to control for providing leeway to raise revenues without overriding the limit. This use is a different conceptualization than managers choosing the slack resource to manage cash flows and sustain services.

A few studies evaluate the impact of the ETC on slack resources in the form of budget stabilization funds (BSFs) and “free cash”<sup>47</sup> (a proxy measure for General Fund unreserved fund balances). First, in Massachusetts under Proposition 2½, no substitution effects are found between raising taxes (i.e., using excess taxing capacity) and larger stabilization fund balances. In fact, managers increase ETC while growing BSFs (Gianakis & Snow, 2007; Nguyen-Hoang & Hou, 2014; Snow et al., 2015) and thus revenue reserves are significant in building up stabilization funds. Second, Nguyen-Hoang and Hou (2014) find the fiscal constraint of the levy limit measured as the property-tax levy to the levy limit (i.e., one minus the excess taxing capacity percentage ratio) leads to lower reported free cash. Further, increases in ETC yield higher balances when combining both stabilization fund balances and free cash (Gianakis & Snow, 2007). Overall, these findings suggest that local governments increase ETC in conjunction with increasing BSFs, unreserved fund balances, and a combined measure of discretionary slack resources. However, this invites the question: What specific resources are managers altering to establish slack resources for these positive relationships?

The current study differs from the existing literature (Nguyen-Hoang & Hou, 2014; Snow et al., 2015) in several ways. First, the impact of ETC is investigated for slack resources within

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<sup>46</sup> ETC has also been used to restrict the sample (Lang & Jian, 2004) and as an instrumental variable for changes in housing prices (Bradbury et al., 2001).

<sup>47</sup> According to Gianakis and Snow (2007), free cash is defined as the difference between end of year revenues and expenditures on a budgetary or cash basis. This measure is used as a proxy for an audited fund balance or Unreserved General Fund Balances on a GAAP basis. However, this measure may omit some unpaid liabilities and uncollected revenues from the current fiscal year. For more detail on this measure, see footnoted one in Gianakis and Snow (2007).

full discretion of managers. BSFs are established by law with rules governing their use and are accessed only after gaining approval (Hou, 2013). “Free cash” (an approximation of unreserved general fund balances) is the difference between assets and liabilities which blurs if changes are occurring to assets or liabilities to create a positive balance. The use of “free cash” is also investigated prior to Statement 54 from the Governmental Accounting Standards Board which altered the categorization of fund balance (Nguyen-Hoang & Hou, 2014). Although the classification of unreserved fund balance was not limited to any specific purpose, governments could express intentions of its use by designate a portion of unreserved fund balance to a particular manner (Governmental Accounting Standards Board, 2006). Therefore, this categorization of fund balance might not indicate the substantive amount of savings available to managers or the amount that can be used to mitigate volatility in cash flows. Moreover, a government could report large unreserved fund balance to increase their likelihood of a higher credit rating (Marlowe, 2011; Moody's Investors Service, 2016) while discouraging managers from using savings to supplement cash inflows. Due to these points, I investigate slack resources in which managers have a higher level of discretion regarding their use, the General Fund unrestricted cash balance and short-term borrowing.

Second, to further the literature, I use a refined measure of slack resources that managers have full discretion over their use. The work of Gore (2009) and accompanying replication by Hand et al. (2016) use slack in the form of total cash and marketable securities<sup>48</sup> from the United States Census Bureau’s Annual Survey of Governments. Kioko (2015) adds to this measure by including proceeds of bond issues to the measure of cash reported in the United States Census Bureau’s Annual Survey of State and Local Government Finances. One disadvantage of using

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<sup>48</sup> This measure of cash includes cash held in bond funds but excludes cash within pension plans. This measure is also deflated by operating and interest expenditures.

this Census Bureau's measure of cash holdings is that no designations in cash reserves are reported such as cash for capital projects or special revenue funds. Therefore, our knowledge of the level of cash reserves held by local governments is likely overestimated (Kioko, 2015). This present study seeks to provide an alternative source of data and alternative specification of cash reserves to more accurately measure this key slack resource. I measure cash holdings as only cash reported as General Fund unrestricted cash. This allows for a refined measure of cash holdings that allows for only cash within the sole discretion of managers to be evaluated.

Furthermore, the present study contributes to the literature by evaluating the impact of ETC on short-term borrowing. Prior studies have used cash management notes (Su & Hildreth, 2018) and a broader array of short-term notes (Lofton & Kioko, 2018) as a measurement of short-term borrowing. This form of borrowing, however, only captures market transactions. Yet, governments may also borrow from non-market sources such as their state government and between funds. Thus, this study considers a wider definition of borrowing to include internal borrowing from the state and interfund transfers-in. We, then, can assess tradeoffs made by managers to borrow broadly in the short-term or to access the slack in their taxing capacity to sustain government operations.

#### **4.4 New York Local Governments' Use of Short-Term Resources and ETC**

The State of New York imposes two TELs on local governments. First, the New York Constitution establishes a legal limit on the maximum amount of real property tax that can be levied in county, city, and village governments. This constitutional tax limit (CTL) constrains the taxing power of county governments to 1.5 percent of the five-year average full valuation and city and village governments to 2 percent of the five-year average full valuation (New York

State, 2017b, 2017c, 2017d).<sup>49</sup> A local government can levy an amount lower than the CTL to preserve excess taxing authority to access in future periods. The difference between the CTL and the tax levy subject to the limit can be conceptualized as a slack resource in which the excess tax capacity can be used to increase revenues without having to gain voter approval (Gianakis & Snow, 2007; Nguyen-Hoang & Hou, 2014; Snow & Gianakis, 2009; Snow, Gianakis, & Fortess, 2008; Snow et al., 2015).

Second, under Governor Andrew M. Cuomo in 2011, New York State established a limit to the property tax levied for local governments in which the annual growth rate of the property tax is held to two percent or the rate of inflation, whichever is lower (New York State, 2017a). The governments subjected to this TEL are general purpose governments (e.g., counties, cities, towns, and villages) and most single purpose governments (e.g., all independent school districts and most special districts), excluding New York City. Although the property tax cap limits levy growth, the governing body of a local government can override the tax cap with at least 60 percent of the body voting in favor of increasing the property tax above the mandated limit.<sup>50</sup>

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<sup>49</sup> The measure of five-year average uses the last completed assessment roll and four preceding rolls added together and divided by five to establish the five-year average full valuation. County governments can pass a resolution approved by either (1) two-thirds of its legislative body or (2) by a majority of the board and a mandatory referendum to increase the tax limit to a maximum rate of 2 percent. As of 2017, 40 counties are subject to 1.5%, 14 counties are subject to 2%, and three are in between. County, city, and village governments can enact a local law, subject to a mandatory referendum, to establish a lower tax limit but enactment does not affect the constitutional tax limit (CTL) to reduce the threshold in which the State Comptroller is required to withhold certain local assistance payments (New York State, 2017b, 2017c, 2017d). The Constitution and related statutes allow for taxes levied for certain purposes to be excluded and not subject to the CTL. The exclusion items permissible are taxes in the amount to pay principal and interest on a government's indebtedness (e.g., revenue producing improvement bonds and notes, water bonds and notes, capital notes, bond anticipation notes, and bonds issued for purposes other than revenue-producing improvements, water supply improvements, joint sewage projects, and joint drainage projects) and taxes in the amount to pay of direct budgetary appropriations for most capital expenditures (see Local Finance Law 11.00[a]) (New York State, 2017d).

<sup>50</sup> As well as the override, Chapter 97 of the Laws of 2011 which established the tax levy limit (tax cap) does allow local governments and school districts to levy an additional amount for certain excludable expenditures. A local government has the ability to carryover "unused" levy limit amounts, up to 1.5 percent, from one prior fiscal year in fiscal years after 2013 (New York State, 2017a).

Given that some New York local governments are subject to two types of constraints, these jurisdictions are ideal to investigate the relationship between ETC and short-term resources. Each locality can vary their managerial response due to having their own taxing and governance authority. Under tax limits, New York local government managers are likely incentivized to build up ETC (i.e., exhaust less of their constitutional tax limit) to appease stakeholders (e.g., taxpayers, political leaders, and auditors).

Governments likely incur a political cost from stakeholders when reducing any excess taxing capacity since it requires an increase in the property taxes levied on citizens and businesses. A local government manager can be motivated to exhaust a greater percentage of their CTL by desiring to have more revenues to keep pace with growing expenditures, having greater pressure to increase property taxes when access to non-property tax revenue streams are diminished, and having a declining or stagnating tax base (New York State, 2017d). Exhausting more of the tax limit reduces flexibility in revenue structure and optionality to sustain current service levels. The Office of the Comptroller considers county governments that have exhausted over 80 percent and 90 percent of their CTL to be in the caution or danger zone, respectively (New York State, 2017d). With a significant lack of ETC, the ability of governments to increase their property tax is severely limited and minor changes in exclusions or real property valuation could cause the CTL to be exceeded. Managers, therefore, strive to maintain and build up excess taxing capacity to provide greater flexibility over their taxing authority.

Furthermore, ETC can be conceived as a form of unabsorbed slack, or a currently uncommitted resource (Tan & Peng, 2003). Local government managers strive to increase unabsorbed slack, in other forms such as UFB and BSFs, to use as a primary source of discretionary slack (Hendrick, 2006), to be a countercyclical fiscal tool (Marlowe, 2005; Stewart

et al., 2017), buffer against cuts in state aid or budget shocks (Gianakis & Snow, 2007; Moulick & Taylor, 2017), and increase the likelihood of a higher credit rating (Marlowe, 2011; Moody's Investors Service, 2016; Snow & Gianakis, 2009). Unabsorbed slack, however, is highly visible and closely monitored by stakeholders such as taxpayers, political leaders, auditors, interest groups, and the media (Moulick & Taylor, 2017). Therefore, New York local government managers are likely to use resources that are less visible and monitored as a substitute for accessing ETC.

The selection of alternative resources to ETC might depend on the value each local government places on reducing the less visible and monitored resource. I developed a series of hypotheses based on strategies managers would likely engage in to build up ETC through minimizing transaction costs, maximizing cash flows, and encumbering low political costs. One such strategy is to draw down on cash balances which are less visible to citizens and exclusively within the discretion of managers. Slack resources in the form of large cash balances are a proxy for more competent managers (Hand et al., 2016; Meier & O'Toole, 2002; O'Toole & Meier, 2011) because having more unrestricted cash allows for more optionality such as innovation, use as a buffer to the external environment, and potentially higher credit ratings (Gianakis & Snow, 2007; Lofton, 2018; Moody's Investors Service, 2016; Nohria & Gulati, 1996). Managers may prefer to access unrestricted cash balances to build up ETC due to its low political cost for use and being in full discretion of managers. I assert governments are more likely to deplete cash balances if they report more excess taxing capacity, all else held constant. This hypothesis is at the core of the analysis and important when evaluating strategic planning practices of financial managers. Formally, my first hypothesis is as follows:

***Hypothesis 1:*** Governments that report more excess taxing capacity will likely have lower unrestricted cash balances.

A second strategy is to use short-term borrowing capacity to build up ETC. In contrast to BSFs and UFB, the use of short-term debt is less visible and monitored by stakeholders. Credit rating agencies such as Moody's measure the gross debt burden which includes "GO [General Obligation] bonds, notes, loans, capital leases, and any third-party debt backed by the local government's GO guarantee" (Moody's Investors Service, 2016). However, stakeholders such as taxpayers, political leaders, and the media are likely to have less knowledge of the use of short-term borrowing by local governments than knowledge about property tax levels. Therefore, increases in short-term borrowing can occur while building up ETC with less opposition from stakeholders. Formally, my second hypothesis is as follows:

***Hypothesis 2:*** Governments that report more excess taxing capacity will likely have higher levels of short-term borrowing.

The following section describes the data and model specifications to test these two hypotheses.

## **4.5 Data and Methods**

### **4.5.1 Data**

The use of General Fund unrestricted cash and short-term borrowing by a wide array of local governments is not known at a national level due to the lack of reporting of individualized balance sheet data. The State of New York publicly provides data regarding short-term resources from the balance sheet, revenues and expenditures, and debt issuance for its local governments. This allows for the evaluation of short-term resources at the local government level.

Furthermore, New York local governments have their own governing body and taxing authority and thus, managers are more likely to have the freedom to alter their use of unrestricted cash and short-term borrowing in response to changes in ETC (New York State Department of State, 2014).<sup>51,52,53</sup>

This study relies on data on from 672 general purpose governments including 57 counties, 61 cities, and about 554 villages in New York State for fiscal years between 1996 and 2016.<sup>54</sup> The dataset is created using information from a number of publicly available resources including New York Local Government and School Accountability, Open Book New York, New York State Board of Elections, U.S. Bureau of Labor Statistics, U.S. Bureau of Economic Analysis, and the Local Government Handbook from the New York Department of State. In addition, data from Bloomberg L.P. terminals was used to collect for a portion of the short-term borrowing measure. Variables were adjusted for inflation using the Gross Domestic Product (GDP) deflator with a base year of 2009.

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<sup>51</sup> County governments are the largest and most inclusive form of local government that provide many state mandated services such as Medicaid and manage prisons. City governments have the authority of home rule and have the authority to provide residents local government services such as water infrastructure, public safety, economic development, and social services. Town governments exist within a county to provide both town-wide services such as highway maintenance or police services and partial town services but cannot provide fire services town-wide and thus, create and administer special districts to provide this service. Village governments exist within a town and are created or dissolved by local initiative to truly exist through the discretion of residents (New York State Department of State, 2014).

<sup>52</sup> The counties that comprise the boroughs of New York City (New York, Bronx, Kings, Queens, and Richmond) are excluded as well as New York City which are outliers and significantly different. New York City is larger in size than the five counties that are located within, which would distort the regression analysis.

<sup>53</sup> The villages of East Nassau (1998), Sagaponack (2006), South Blooming Grove (2007), Woodbury (2007), and Mastic Beach (2011) were created over the study period and the village of Andes (2004), Pike (2010), Limestone (2011), East Randolph (2012), Perrysburg (2012), Randolph (2012), Seneca Falls (2012), and Altmar (2005 but officially dissolved in 2013) were dissolved over the study period. The last year of financial data for villages dissolved or the first year of financial data for villages created is indicated by the year in above parentheses. Villages were included when they were in existence and financial data was reported.

<sup>54</sup> The number of villages range from 558 in 1996 to 547 in 2016 due to dissolution of villages and some lack of reporting to the state. The total number of local governments range from 676 in 1996 to 665 in 2016.

#### 4.5.1.1 Outcome Variables

Table 4.1 and Table 4.3 indicate the descriptive statistics for county, city, and village governments for the use of unrestricted cash and short-term borrowing, respectively. The first outcome variable is cash holdings measured as unrestricted General Fund cash standardized by operating and debt interest expenditures. In Table 4.1, the reported descriptive statistics for General Fund cash as a proportion of operating expenditures and debt interest is, on average, 12.52% for county governments, 14.49% for city governments, and 28.56% for village governments.

To contextualize the reported cash holdings, Table 4.2 presents a comparison of local government cash measures in the literature. As stated previously, this study reports General Fund unrestricted cash holdings while the prior literature reports a broader measure of cash holdings. New York county governments report months of unrestricted cash that are about 30% of cash holdings and bond proceeds reported by counties nationwide in Kioko (2015). However, on a per capita basis New York county governments hold higher levels of median unrestricted cash (\$158.56 per person) than county governments nationwide (\$94.21 per person). Given a sample of U.S. city governments from the Census Bureau's Annual Survey of Governments, Hand et al. (2016) and Gore (2009) report median months of cash as 10.93 and 8.34 months, respectively.<sup>55</sup> New York city governments report months of unrestricted cash as between 12% and 16% of months of cash holdings reported in Hand et al. (2016) and Gore (2009). Although General Fund unrestricted cash holdings of village governments have not been addressed in the literature, New York village governments are consistent with the prior finding that smaller municipalities report higher levels of cash holdings (Gore, 2009). Therefore, I expect impacts on General Fund

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<sup>55</sup> The reported values are for the test sample used. The medians for the full Census Bureau sample are 9.25% (Gore, 2009) and 11.19% (Hand et al., 2016).

unrestricted cash holdings in New York county and city governments to be more generalizable to other United States large municipalities while impacts on village governments might look more like smaller jurisdictions.

The second outcome variable is short-term borrowing and is measured by the four components of market short-term debt, borrowing from the state government, internal borrowing, and bank overdrafts. The first component is the market value of short-term obligations which is collected from Bloomberg L.P.'s workstations. This component is the full amount issued in the fiscal year of general obligation unlimited notes, general obligation limited notes, revenue notes, bond anticipation notes, tax anticipation notes, revenue anticipation notes, budget notes, certificates of participation, and warrants. The second component is the amount of internal borrowing that local governments have with the State of New York. This includes the current year issuance of capital notes, deficiency notes, installment purchase contracts, and state or authority loans. The third component is transfers-in from other governmental funds to the General Fund to allow for internal borrowing. The final component is the amount of negative cash reported from Open Book New York at the end of the fiscal year for governmental funds.<sup>56</sup> Since negative cash values might be overdrafts of bank accounts that are obligated to be paid back to be bank, the amount of negative cash should also be included in short-term borrowing obligations.<sup>57</sup> These four components comprise the measure of short-term borrowing and are standardized by the total population and presented in natural log form.

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<sup>56</sup> All governmental funds are included except for the capital fund, debt service fund, and special district funds. These are excluded because they are distinctly created for specific purposes and the governmental fund included are more representative of everyday governmental activities.

<sup>57</sup> In the data, 40 observations (1 county, 4 cities, and 35 villages) from the fiscal years between 1996 and 2016 had some amount of negative cash reported.

In Table 4.1, the descriptive statistics for short-term borrowing indicate, on average, city (4.469), county (3.976), and village (2.059) governments issue the most short-term borrowing per capita in natural log form, respectively. For improved interpretability, the amount of short-term borrowing is \$124.14, \$246.92, and \$154.47 per capita for county, city, and village governments, respectively. Table 4.4 compares this broader short-term borrowing measure to the use of market short-term debt (Lofton & Kioko, 2018) and cash flow management notes (Su & Hildreth, 2018). Since this measure is a wider representation of borrowing, more local governments engage in borrowing but for smaller amounts each year. Short-term borrowing is engaged in by 1,161 county observations for a median amount of \$5.94 million, 1,245 city observations for a median amount of \$2.63 million, and 6,954 village observations for a median amount of \$69,000. In contrast, market short-term debt engagement is observed for a smaller number of observed governments but for a larger amount. The use of cash flow notes for 182 California city observations is for a median amount of \$6.36 million (Su & Hildreth, 2018) while a wider array of short-term notes for 541 city observations is for a median amount of \$7.28 million. Therefore, the broadly defined short-term debt measure is engaged in by more local governments for smaller amounts.

#### 4.5.1.2 Test Variable

The variable of interest, excess taxing capacity, is the slack in that taxing authority of a jurisdiction. ETC is measured as the constitutional tax limit minus the property tax levy subject to the limit standardized by the constitutional tax limit, in percentage form. This excess taxing capacity variable ranges from a value of 0 indicating the full constitutional tax limit is exhausted, or no slack in the taxing authority, to a value of 100 indicating none of the limit has been

utilized.<sup>58</sup> ETC is tested for endogeneity in determining each outcome variable. Test results indicate that ETC is not likely to be endogenous for determining unrestricted cash models and in determining short-term borrowing for county and city governments. However, for determining short-term borrowing in village governments, ETC is likely endogenous.

The proposed instrument for ETC is a lagged value of the endogenous variable expressed in ranks that has been used by previous researchers (Duncombe & Hou, 2014; Kroszner & Stratmann, 2000). Initially, the amount of ETC is lagged for one year for village governments. Then, ranks are created by dividing the distribution of the lagged variable into thirds to assign a value of “1” to the lowest third of the distribution, a value of “2” to the middle third of the distribution, and a value of “3” to the highest third of the distribution. The rankings are to be strongly correlated ETC but not correlated to the error term. Although the observations close to the points that switch from one value to another might be correlated, there are only two cross over points to another value and thus, might minimize this concern. However, for an instrument to be considered a better measure, the instrument should be tested to determine if it is highly correlated with the endogenous variable. The results of this test determine that the instrument is not a weak instrument.<sup>59</sup>

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<sup>58</sup> Few jurisdictions effectively exhausted the full constitutional tax limit. A total of 213 observations report a tax margin (constitutional tax limit minus levy subject to the limit) greater than the constitutional tax limit (6 county observations, 6 city observations, and 201 village observations). The following areas in the sample have less than 1% of excess taxing capacity: City of Gloversville (2005), Village of Haverstraw (2002), Village of Herkimer (2013), and Village of Monticello (2005).

<sup>59</sup> The variable that is instrumented is excess taxing capacity for village governments. A one-year lagged ranked measure was used. The following tests were evaluated, first, following Duncombe and Hou (2014), partial F-statistics from the first-stage regressions can be calculated then determined if they are above 10 for the instruments to be acceptable (Staiger & Stock, 1997). Second, the *ivreg2* Stata command is performed to evaluate the endogeneity test of each regressor. Third, comparing the Kleibergen-Papp rk Wald statistic to critical values established by Stock and Yogo (2005) are done to test if the instrument is likely weak. According to *ivreg2* results for village governments, ETC was rejected as exogenous. A IV regression was conducted and regular regression results are presented in Table 4.5. The lagged ranked instrument has a Cragg-Donald Wald F statistic of 15,000, a Kleibergen-Paap rk Wald F statistic of 16,000, and a Stock-Yogo weak Id test of credical values of 16.38 which is greater than the 10% maximal IV size. According to *ivreg2* results for county and village governments, internal

In Figure 4.1 the average excess taxing capacity is depicted overtime by the sample of New York local governments. On average, excess taxing capacity is largest for villages with about 73.34% of their capacity unused, while counties have 61.75% and cities have 53.52% of their taxing authority available. Historically, ETC has declined in recessionary years especially for county and city governments after the 2001 recession.<sup>60</sup> This might indicate that larger governments use excess taxing capacity by have higher taxes subject to the levy limit post-recession.

#### 4.5.1.3 Control Variables

Several control variables are used for both of the outcome variables. First, since a property tax cap was implemented during the study period, I control for its implementation. The property tax cap is measured as a dummy variable that is indicated as 1 for 2012 and after to denote implementation. Second, I include a dummy variable that takes a value of 1 if the jurisdiction successfully voted to override the tax cap and 0 otherwise. This variable controls for lessening the constraint of the additional TEL. Finally, per capita personal income is used to control for differences in wealth between jurisdictions in all models.

The control variables that are specific for determining unrestricted cash borrow heavily from Gore (2009), Hand et al. (2016), and Kioko (2015). First, the coefficient of variation in revenue is measured as the ratio of standard deviation of total revenue to mean total revenue over the current and previous four years. Within the New York local government sample, larger differences exist across governments between the coefficient of variation with county and city

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transfers was close to the threshold of being rejected as endogenous (0.062). A IV regression was conducted and regular regression results are presented in Appendix A

<sup>60</sup> In addition to the 2001 recession, the local governments in New York State had some funding diverted from the State to help rebuild New York City after September 11<sup>th</sup>, 2001.

governments having lower variations at about 48% while village governments have a variation of 90%. Second, limited revenue is measured as the revenue diversification index, Hirschman-Herfindahl Index, used by researchers (Carroll, 2009). This is computed as the product of the fraction of total revenue from each source (property taxes, sales taxes, other sources, and intergovernmental revenue).<sup>61</sup> This is interpreted as a value of 1 indicating complete diversification among each source of revenue. New York county and city governments have more diversification of revenues (above 91%) than village governments (about 84%). Third, differences in the proportion of revenue bases is controlled for such as property tax, sales tax, other tax, fees and charges, state aid and federal aid revenue as a proportion of total revenues. Forth, the natural log of long-term debt outstanding per capita controls for differences in debt burdens.

Fifth, the proportion of spending on administration and capital equipment, which might produce differences in cash holdings, are controlled. Six, control variables are used for population and population density are used to account for differences in the sizes of governments. Seventh, I add to the controls for determining cash holdings with the variables of internal transfers and the natural log of short-term borrowing. A manager might be more likely to use unrestricted cash if the government makes larger transfers from governmental funds to other funds as either the result of repayment from previous transfers or a legal or contractual requirement. Village governments have a heavy practice of transferring funds from governmental funds as a proportion of their liabilities (32.75%) as compared to city (24.49%) and county (12.72%) governments. Furthermore, supplemental resources can be accumulated from short-

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<sup>61</sup> The Hirschman-Herfindahl Index measure of revenue diversification is calculated as  $HHI = \frac{1 - \sum_{i=1}^n R_i^2}{1 - (100\%/n)}$  where  $R_i$  is the proportion of total revenue generated from each source and  $n$  represents the total number of revenue sources selected for measuring diversification (Carroll, 2009).

term borrowing and not the savings of cash. Therefore, these two additional variables are controlled.

The differences in the composition of assets, reliance on revenue sources, and non-discretionary spending impact my expectations about short-term borrowing use across local governments. I expect county government results to be more generalizable to other United States large municipalities than city and village governments that are largely influenced by unique residential preference. County and city governments have over 60% of their assets in non-cash sources while only about 30% of village governments have illiquid resources. All three local government types rely the most on property taxes but the second most relied upon own-source revenue is the sales tax for county (20.56%) and fees and charges for city (22.86%) and village (29.93%) governments. State and federal aid revenue is most relied on by county governments who are the administrative arm of the state for mandated services such as Medicaid. Salaries and wages expenditures comprise 49.41%, 35.95% and 33.19% of total expenditure for city, county, and village governments, respectively.

Given these differences, the additional control variables of interest for short-term borrowing are the motivating factors to use short-term borrowing which are largely based on the work of Lofton and Kioko (2018) and Su and Hildreth (2018). The first control variable is illiquidity since communities with a relatively large proportion of assets that are not easily converted into cash are likely to use more short-term debt. A measure of illiquidity is constructed as the proportion of assets not easily convertible into unrestricted cash (e.g., accounts receivable, due from other governments, inventory, and restricted cash) standardized by total expenditures.<sup>62</sup>

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<sup>62</sup> Total governmental fund assets (excluding capital, debt service and special district funds) minus the amount of cash and marketable securities is the measure of illiquidity. Total expenditure is indicated but total expenditure and other uses is what is used to standardized as reported by the government unit. This value is used to standardized when prior year surplus, categories of expenditures, and illiquidity are measured.

Second, cash flow surplus (or deficit if the value is negative) is measured as the prior fiscal year's total revenues minus total expenditures standardized by total expenditures. Third, expenditure flexibility can be measured by both less flexibility (spending for employee salaries and wages standardized by total expenditures) and more flexibility (spending on capital and equipment standardized by total expenditures) in expenditures. Forth, cash inflows from property tax, sales tax, fees and charges, state aid, and federal aid standardized by total revenues are used. Fifth, dummy variables taking a value of 1 are used for using short-term borrowing in the past two years or having a total expenditures greater than total revenues in the past two years. Finally, demographic and political variables are controlled for as well such as the unemployment rate, size of the government, percent voted for a Republican senator of the county, a governor election year, a presidential election year, and forms of government.<sup>63</sup>

#### 4.5.2 Methods

The empirical strategy of this work is to use regression analysis to predict the influence of ETC on short-term resources. Since local government officials make decisions about the level of excess taxing capacity to have each year and the level of short-term resources, simultaneity of

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<sup>63</sup> Control variable used are unemployment rate at the county level, the natural log of the total revenues per capita to measure the size of government, percent voted for a Republican Senator, years a Governor or President was elected, and form of government dummy variables. Form of government variables include the city form of government, the number of city council members, an indicator for a community located in a chartered county, an indicator of the type of governance type utilized by the county chief administrative official, an indicator of the county legislative body type, and the number of county legislative members. The city form of government is measured as 1 if indicated and 0 otherwise for each mayor council, mayor council manager, council-manager, and mayor commission/mayor commission managers with the omitted reference category of mayor council administrator. The indicator of a community located in a chartered county is measured as 1 if in a chartered county and 0 otherwise. A chartered county means that the county has adopted home rule charters by local initiative and action (Nassau, Westchester, Suffolk, Erie, Oneida, Onondaga, Monroe, Schenectady, Broome, Herkimer, Dutchess, Orange, Tompkins, Rensselaer, Albany, Chemung, Chautauqua, Putman, and Rockland). The indicator for the type of chief administrative governance is measured as 1 if indicated and 0 otherwise for a Chair, Executive, and Manager with the omitted Administrator classification. The indicator for the county legislative body type is measured as 1 for a Legislature and zero otherwise for the omitted Supervisors type. All measurements are taken from 2009 numbers and used over the period (New York State Department of State, 2009).

decision-making can occur to allow for potential endogeneity challenges. Therefore, ETC is tested with a lagged ranked measure to determine if it is likely an exogenous variable.

In the regression models to determine predictors of unrestricted cash holdings the null cannot be rejected and thus, ETC can be treated as an exogenous variable. Below indicates the regression equation used to determine unrestricted cash holdings.

$$y_{it} = \beta_0 + \beta_1 ETC + \beta_2 X_{it} + u_{it} \quad (\text{Equation 1})$$

where  $y_{1it}$  represents the General Fund unrestricted cash holdings where  $i$  indicates a specific community (e.g., a county, city, or village) and  $t$  indicates year,  $ETC$  represents the excess taxing capacity (key test variable),  $X_{it}$  is a vector of exogenous regressors (exogenous control variables), and  $u_{it}$  are the stochastic error terms.

ETC is also tested to determine if it is likely an exogenous variable for regression models to determine predictors of short-term borrowing. For county and city governments, the null cannot be rejected and ETC is treated as an exogenous variable. A tobit regression model is used to determine the amount short-term borrowing. Equation (2) represents the equations used for county and city governments.<sup>64</sup>

$$y_{it}^* = \beta_0 + \beta_1 ETC + \beta_2 X_{it} + u_{it}, \quad u_{it} \sim N(0, \sigma^2) \quad (\text{Equation 2})$$

$$y_{it} = \begin{cases} y_{1it}^* & \text{if } y_{1it}^* > 0 \\ 0 & \text{if } y_{1it}^* \leq 0 \end{cases}$$

where  $y_{it}^*$  represents the latent amount of short-term borrowing engaged in which we observe  $y_{1it}$  with a continuous value of short-term borrowing that can be below, at, or above the latent amount of short-term borrowing used where  $i$  indicates a specific community (village

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<sup>64</sup> This equation is also presented in Table 4.4 for village governments. However, Stata command ivreg2 with endogenous option determined that excess taxing capacity should be rejected as exogenous. Therefore, an instrumental variable model is also presented.

government) and  $t$  indicates year,  $ETC$  is the test variable (excess taxing capacity),  $X_{1it}$  is a vector of exogenous variables (exogenous control variables), and  $\varepsilon$  is a stochastic error term.

ETC for village government's use of short-term borrowing was rejected as being exogenous. Thus, an instrumental variable approach is only reported for village government's use of short-term borrowing. Equation (3) and (4) are developed for the instrumental variable tobit model for villages governments which is presented along with a tobit model in Table 4.4.

The instrumental variable tobit regression model has the following form:

$$y_{1it}^* = y_{2it}\beta + x_{1it}\gamma + \varepsilon_{it} \quad (\text{Equation 3})$$

$$y_{2it} = X_{1it}\Pi_1 + X_{2it}\Pi_2 + v_{it} \quad (\text{Equation 4})$$

$$y_{1it} = \begin{cases} a & y_{1it}^* < a \\ y_{1it}^* & a \leq y_{1it}^* \leq b \\ b & y_{1it}^* > b \end{cases}$$

where  $y_{1it}^*$  represents the latent amount of short-term borrowing engaged in which we observe  $y_{1it}$  with a continuous value that can be below, at, or above the latent amount of short-term borrowing used where  $i$  indicates a specific community (village government) and  $t$  indicates year,  $y_{2it}$  is the endogenous variable (excess taxing capacity),  $X_{1it}$  is a vector of exogenous variables (exogenous control variables),  $X_{2it}$  is a vector of additional instruments (additional control variables), and  $\varepsilon$  is a stochastic error term. The equation for  $y_{2it}$  is written in reduced form.

#### 4.6 Results

The overall results indicate that excess taxing capacity is correlated with the use of General Fund unrestricted cash and short-term borrowing at the local government level. ETC is

likely to reduce the amount of cash holdings by local governments while ETC is likely to increase short-term borrowing for larger local governments.

With respect to the use of unrestricted cash, the evidence suggests that an increase in excess taxing capacity reduces the proportion of unrestricted cash to operating spending. As displayed in Table 4.5, a 1 percent increase in the extra taxing capacity decreases the amount of cash per spending by 0.14% for counties and by 0.11% for villages, at the 10% statistical significance level. Thus, county and village governments in New York seem to support hypothesis 1 by drawing down on cash reserves before relying on tapping into their excess taxing capacity. Furthermore, although there is no empirical evidence that changes in ETC at the city government level impact unrestricted cash, city governments reduce the percent of unrestricted cash to operating spending by 7.27% when they elect to override the tax cap. Village governments also experience a similar relationship with a lower magnitude than city governments.

Consistent with the literature (Gore, 2009; Hand et al., 2016; Kioko, 2015), cash holdings are reduced from more state aid (villages) and long-term borrowing (villages) while cash holdings are increased from more variation in revenues (counties), diversification of revenues (counties), a larger proportion of revenue from sales taxes (villages), and more spending on administration and capital projects (villages). In contrast to Kioko (2015), I find evidence that General Fund unrestricted cash is negatively correlated with a higher proportion of property taxes (villages), fees and charges (cities), federal aid (counties and villages), and short-term borrowing per capita (villages). These opposite results can be explained by the fact that managers might rely on primary sources of revenue (e.g., property taxes and fees and charges) being collected instead of saving extra slack resources as unrestricted cash. Managers might also

use unrestricted cash to sustain operations and buffer against delays in larger proportions of federal aid being received. Furthermore, short-term borrowing, which includes transfers and loans from the State government, can be used by managers for cash flow management instead of relying on saving large unrestricted cash holdings.

Table 4.6 presents the results of the impact of ETC on short-term borrowing. The evidence suggests that, on average, a 1 percent increase in excess taxing capacity increases the expected percent change in short-term borrowing per capita by 1.0% for counties and 1.2% for villages.<sup>65</sup> Consequently, hypothesis 2 is partially supported at the county level of government. Short-term borrowing, therefore, is frequently used instead of relying on tapping into excess taxing capacity, which has a higher political cost for its use.

However, results for cities display no statistically significant evidence of the impact of ETC on short-term borrowing. City governments may differ because of their more extensive use and purpose for external borrowing. City governments in New York issue short-term debt primarily for capital projects unlike counties governments that issue to manage receivables and village governments that issue for other purposes (Lofton, 2018). The differential use of higher levels of external short-term borrowing could hinder the impact of ETC on borrowing.

Consistent with the existing literature, short-term borrowing increases with higher proportions of illiquidity, salaries and wages expenditures, capital spending, long-term debt, and prior use of short-term borrowing while short-term borrowing decreases with more prior year surplus, proportion of own-source revenues, and larger populations (Lofton & Kioko, 2018; Su & Hildreth, 2018). Furthermore, after that tax cap was implemented city and village governments

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<sup>65</sup>The log-level regression results are interpreted as a unit change in x produces a  $\% \Delta y = 100 * (e^{\beta_1} - 1)$ . Which is estimated here to be  $\% \Delta y = 100 * (\beta_1 - 1)$  since beta values range from -0.1 to 0.1. Village government IV results are reported.

increased the amount of short-term borrowing per capita engaged in by 31.1% and 18.4%, respectively. Furthermore, the city managers that are able to advocate for overriding the tax cap did not take engage in an increasing amount of short-term borrowing but tend to reduce their borrowing by 41.7% if they elected to override the tax cap. The form of government impacts the use of short-term borrowing for county governments. Counties that have charters, a chair of the legislative body, and had Chief Administrative Officers who are Managers are encouraged to borrow more while those with a legislature and Executives are encouraged to borrow less. Consequently, county governance and expertise of the officers can promote or discourage more short-term borrowing.

Overall, the results further our knowledge of slack resources used by local governments. Snow et al. (2015) find evidence Massachusetts municipalities that obtain more excess taxing capacity have higher stabilization funds. Excess taxing capacity, therefore, is not a substitute for healthy stabilization funds. However, the current results depict that more excess tax capacity is likely traded off when using unrestricted cash and engaging in short-term borrowing. Managers are likely substituting short-term resources for the preservation of excess taxing capacity to be used as a buffer for future internal and external challenges.

#### **4.7 Challenges and Limitations**

This study expands our knowledge of slack resources at the local government level. However, this study is not without challenges and limitations. First, one limitation of this analysis is that the property tax cap is measured as an indicator variable. Therefore, the nuance of the policy change is not being captured. The indicator measurement allows for the time period in which the policy was in place to be captured but other differences during post 2012 (e.g., lagged

effects of the Great Recession and political changes) could also be influencing results since they are not controlled.

Second, this study focuses on two types of short-term resources yet, local governments could be reacting to changes in ETC with various other external sources of financing (e.g., bank loans or direct lending arrangements) which are not captured within this analysis. Yet, the use of these mechanisms has been reported to be very infrequent with about 1.4% of New York local governments reporting having a line of credit and 9.5% engaging in direct lending arrangements (Lofton, 2018).

Finally, this study relies on New York local governments which have some unique factors to limit generalizations. Local governments have their own taxing and governance authority which provides more flexibility over the use of short-term resources. For governments in which the state imposes restricts on internal resources accumulation such as cash or the extent to the capacity to borrow, the use of short-term resources in reactions to ETC is more limited. Furthermore, the State of New York allows for local governments to borrow internally from the state and issue externally borrowed bond anticipation notes for up to five years before redeeming or replacing notes with long-term debt (New York State, 2008). This practice might encourage more short-term borrowing by New York local governments than a more representative sample of local governments. Yet, with the lack of a national sample of local governments' use of short-term resources, New York local governments are a starting point to investigate the impact of ETC on short-term resources.

## 4.8 Conclusion

This paper measures the effects of excess taxing capacity on local government short-term borrowing and General Fund unrestricted cash holdings. Overall, my findings suggest local government managers build up excess taxing capacity by reducing unrestricted cash and engaging in short-term borrowing. I find increases in excess taxing capacity tend to increase the amount of short-term borrowing for county governments and reduce the amount of short-term borrowing engaged in by village governments. By investigating a broader measure of short-term borrowing from internal and external sources, our understanding about this short-term resource is expanded. Additionally, local government financial managers tend to build up cash balances when they have reductions in their taxing capacity. This is evidence that local governments are not just hoarding cash as suggested by Gore (2009) but managers are competent in saving (Hand et al., 2016; Meier & O'Toole, 2002; O'Toole & Meier, 2011) for the precautionary reason of having exhausted more of their taxing capacity. Ultimately, the findings represent an important addition to our knowledge of the impacts of slack resources used by local governments.

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**Table 4.1** Descriptive Statistics for Unrestricted Cash (FYE Between 1996 and 2016)

<i>Panel A: County Governments</i>						
<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Source</b>
General Fund Cash (% of OE)	1026	12.582	9.810	0	54.696	Open Book NY
Excess Taxing Capacity (CTL Slack)	1026	61.460	19.031	1.884	100	“
Post Tax Cap Implementation (Yes=1)	1026	0.2778	0.448	0	1	“
Voted to Override the Tax Cap (Yes=1)	1026	0.058	0.233	0	1	“
Internal Transfers Out (% of TL)	1026	12.715	14.666	0	66.514	“
Short-Term Borrowing Per Capita (ln)	1026	3.916	1.624	0	8.020	Bloomberg, Open Book NY
Long-Term Debt Per Capita (ln)	1026	5.746	1.339	0	8.024	Open Book NY
Coefficient of Variation of Revenue	1026	0.489	0.199	0.114	1.289	“
Limited Revenue (HHI)	1026	0.956	0.053	0.596	0.999	“
Property Tax Revenue (as a % of TR)	1026	20.482	5.695	7.874	42.138	“
Sales Tax Revenue (as a % of TR)	1026	21.322	7.327	6.609	44.278	“
Other Tax Revenue (as a % of TR)	1026	0.271	0.286	0	2.349	“
Fees & Charges Revenue (as a % of TR)	1026	16.244	7.776	2.278	50.885	“
State Aid Revenue (as a % of TR)	1026	13.364	3.247	5.184	31.438	“
Federal Aid Revenue (as a % of TR)	1026	10.855	3.233	2.857	26.676	“
Administration (% of OE)	1026	41.159	6.221	21.963	62.440	NY LG & SA data
Capital and Equipment Outlay (as a % of TE)	1026	6.195	3.813	0.432	42.076	“
Population (ln)	1026	11.512	1.065	8.484	14.217	“
Population Density	1026	0.319	0.684	0.0003	4.705	“
Per Capita Personal Income (ln)	1026	10.419	0.268	9.843	11.453	U.S. BEA
<i>Panel B: City Governments</i>						
<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Source</b>
General Fund Cash (% of OE)	1096	14.688	13.274	0	96.321	Open Book NY
Excess Taxing Capacity (CTL Slack)	1096	52.972	21.344	0.001	100	“
Post Tax Cap Implementation (Yes=1)	1096	0.276	0.447	0	1	“
Voted to Override the Tax Cap (Yes=1)	1096	0.063	0.243	0	1	“
Internal Transfers Out (% of TL)	1096	24.494	21.664	0	100	“
Short-Term Borrowing Per Capita (ln)	1096	4.518	1.765	0	7.872	Bloomberg, Open Book NY
Long-Term Debt Per Capita (ln)	1096	7.034	0.683	3.874	8.306	Open Book NY
Coefficient of Variation of Revenue	1096	0.482	0.264	0.107	1.616	“
Limited Revenue (HHI)	1096	0.907	0.083	0.445	0.999	“

Property Tax Revenue (as a % of TR)	1096	25.347	8.420	3.551	49.018	“
Sales Tax Revenue (as a % of TR)	1096	15.417	5.747	1.725	30.959	“
Other Tax Revenue (as a % of TR)	1096	0.661	1.035	0	11.251	“
Fees & Charges Revenue (as a % of TR)	1096	22.733	10.828	0.748	65.021	“
State Aid Revenue (as a % of TR)	1096	13.167	6.389	3.245	51.730	“
Federal Aid Revenue (as a % of TR)	1096	5.182	4.658	0	30.987	“
Administration (% of OE)	1096	68.089	9.317	32.445	85.023	NY LG & SA data
Capital and Equipment Outlay (as a % of TE)	1096	12.670	7.790	1.419	51.211	“
Population (ln)	1096	10.011	0.923	7.960	12.701	“
Population Density	1096	3.826	2.904	0.047	16.887	“
Per Capita Personal Income (County level) (ln)	1096	10.508	0.329	9.893	11.453	U.S. BEA

**Panel C: Village Governments**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Source</b>
General Fund Cash (% of OE)	7859	29.889	30.076	0	377.220	Open Book NY
Excess Taxing Capacity (CTL Slack)	7859	72.093	19.185	0	100	“
Post Tax Cap Implementation (Yes=1)	7859	0.277	0.448	0	1	“
Voted to Override the Tax Cap (Yes=1)	7859	0.075	0.263	0	1	“
Internal Transfers Out (% of TL)	7859	32.749	37.097	0	100	“
Short-Term Borrowing Per Capita (ln)	7859	2.484	2.272	0	12.534	Bloomberg, Open Book NY
Long-Term Debt Per Capita (ln)	7859	5.889	2.321	0	12.598	Open Book NY
Coefficient of Variation of Revenue	7859	0.900	0.884	0.077	11.455	“
Limited Revenue (HHI)	7859	0.728	0.154	0.067	0.998	“
Property Tax Revenue (as a % of TR)	7859	37.263	19.568	0.031	94.860	“
Sales Tax Revenue (as a % of TR)	7859	7.868	8.091	0	65.471	“
Other Tax Revenue (as a % of TR)	7859	0.895	0.989	0	16.196	“
Fees & Charges Revenue (as a % of TR)	7859	29.741	18.255	0.091	84.899	“
State Aid Revenue (as a % of TR)	7859	6.225	6.855	0.187	90.839	“
Federal Aid Revenue (as a % of TR)	7859	2.920	7.323	0	79.890	“
Administration (% of OE)	7859	48.818	16.537	1.770	97.199	NY LG & SA data
Capital and Equipment Outlay (as a % of TE)	7859	14.589	14.523	0	94.513	“
Population (ln)	7859	7.738	1.098	2.398	10.94295	“
Population Density	7859	2.295	2.837	0.001	23.620	“
Per Capita Personal Income (County level) (ln)	7859	10.560	0.350	9.843	11.453	U.S. BEA

**Notes:** (1) TE is total expenditures and other uses, TR is total revenues and other uses, OE is total operating expenditures and debt interest, HHI is Hirschman-Herfindahl Index, and all dollar values were adjusted with the Gross Domestic Product Implicit Price

Deflator with at 2009 base. (2) Adjustments were made short-term borrowing and long-term borrowing, . One was added to short-term borrowing and long-term debt to the natural log would be zero for no borrowing. Negative unrestricted cash for jurisdictions was replaced with zero values for 133 observations. Two locations Village of Haverstraw (2002) and Village of West Hampton Dunes (1999) reported going above their constitutional tax limit. These two locations were replaced with having zero ETC.

**Table 4.2** Comparison of Local Government Cash Holdings Literature

	<b>Present Study</b>	<b>Hand, Pierson, and Thompson (2016)</b>	<b>Kioko (2015)</b>	<b>Gore (2009)</b>
Types of local governments	County, city, and village governments	City governments	County governments	City governments
Measure of cash holdings	General Fund unrestricted cash holdings reported by the State of New York	Cash holdings as reported by the Census Bureau	Cash holdings and bond proceeds as reported by the Census Bureau	Cash holdings as reported by the Census Bureau
Months of cash Medians <sup>66</sup> (Means)	Counties – 1.20 (1.51) Cities – 1.35 (1.76) Villages – 2.71 (3.59)	10.93 (not reported)	3.69 (4.77)	8.34 (10.44)
Cash as a % of expenditures Medians (Means)	Counties – 10.03% (12.58%) Cities – 11.27% (14.69%) Villages – 22.56% (29.89%)	(not reported)	30.8% (39.7%)	(not reported)
Cash per capita, adjusted for inflation Medians (Means)	County – \$158.56 (\$207.19) City – \$154.42 (\$214.35) Villages – \$183.13 (\$375.84)	(not reported)	\$94.21 (\$147.68)	(not reported)
Sample size	County – 1,026 City – 1,096 Villages – 7,859	9,576	75,916	9,413
Fiscal years of data	Between 1996 and 2016	Between 1967 and 2011	Between 1970 and 2004	Between 1997 and 2003
Source	New York State Comptroller’s Open Book New York	Census Bureau’s Annual Survey of State and Local Government Finances	Census Bureau’s Annual Survey of State and Local Government Finances	Census Bureau’s Annual Survey of State and Local Government Finances

<sup>66</sup> Cash is measured as the ratio of year-end cash to monthly operating and interest expenses in Gore (2009) and Hand et al. (2016) and is estimated as follows (cash/(operating and interest expenses)/12). In Kioko (2015), cash is reported as months of cash (cash and security holdings/(total expenditures/12 months)), cash as a percent of expenditures, and cash per capita. See Kioko (2015) for the definition of cash and security holdings in Table 8.1. In the present study, cash is reported as the ratio of year-end General Fund unrestricted cash to monthly operating and interest expenses (cash/(current operating expenses and debt interest expenses)/12) and cash as a percent of current operation and debt interest expenses.

**Table 4.3** Descriptive Statistics for Short-Term Borrowing (FYE Between 1996 and 2016)

<i>Panel A: County Governments</i>						
<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Source</b>
Short-Term Borrowing Per Capita (ln)	1197	3.976	1.510	0	8.020	Bloomberg, Open Book NY
Excess Taxing Capacity (CTL Slack)	1197	61.749	18.719	1.884	100	Open Book NY
Post Tax Cap Implementation (Yes=1)	1197	0.238	0.426	0	1	“
Voted to Override the Tax Cap (Yes=1)	1197	0.049	0.217	0	1	“
Illiquidity (% of TA)	1197	64.800	15.655	19.645	100	“
Prior Year Surplus (as a % of TE)	1197	1.173	5.290	-32.447	53.739	“
Property Tax Revenue (as a % of TR)	1197	20.643	5.735	7.874	42.138	“
Sales Tax Revenue (as a % of TR)	1197	20.563	7.337	0.061	44.278	“
Fees & Charges Revenue (as a % of TR)	1197	16.625	7.752	2.278	50.885	“
State Aid Revenue (as a % of TR)	1197	13.510	3.235	5.184	31.438	“
Federal Aid Revenue (as a % of TR)	1197	10.853	3.175	2.857	26.676	“
Salaries & Wages Expenditures (as a % of TE)	1197	33.952	5.701	14.498	57.830	“
Capital and Equipment Outlay (as a % of TE)	1197	6.191	3.828	0.432	42.076	“
Long-Term Debt Per Capita (ln)	1197	5.756	1.292	0	8.024	“
Unemployment Rate (County level) (ln)	1197	1.734	0.290	0.993	2.416	U.S. BLS
Size (TR per capita) (ln)	1197	7.566	0.245	6.858	8.565	Open Book NY
Per Capita Personal Income (County level) (ln)	1197	10.364	0.294	9.751	11.453	U.S. BEA
Short-Term Borrowing in Past 2 Years (Yes=1)	1197	0.986	0.118	0	1	Bloomberg, Open Book NY
Deficit in Past 2 Years (Yes=1)	1197	0.582	0.493	0	1	Open Book NY
Percent Voted for a Rep. Senator (County level)	1197	37.414	9.077	17.843	62.791	NY Board of Elections
Governor Election Year (County level) (Yes=1)	1197	0.238	0.426	0	1	“
Presidential Election Year (County level) (Yes=1)	1197	0.286	0.452	0	1	“
Located in a Chartered County (Yes=1)	1197	0.333	0.472	0	1	NY LG Handbook
County CAO Chair of Legislative Body (Yes=1)	1197	0.228	0.420	0	1	“
County CAO Executive (Yes=1)	1197	0.281	0.450	0	1	“
County CAO Manager (Yes=1)	1197	0.123	0.328	0	1	“
County Legislative Body (Legislature=1)	1197	0.702	0.458	0	1	“
Number of County Legislative Members	1197	17.421	6.187	7	39	“

**Panel B: City Governments**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Source</b>
Short-Term Borrowing Per Capita (ln)	1279	4.469	1.754	0	7.872	Bloomberg, Open Book NY
Excess Taxing Capacity (CTL Slack)	1279	53.524	20.978	0.001	100	Open Book NY
Post Tax Cap Implementation (Yes=1)	1279	0.237	0.425	0	1	“
Voted to Override the Tax Cap (Yes=1)	1279	0.054	0.226	0	1	“
Illiquidity (% of TA)	1279	62.287	19.732	6.794	100	“
Prior Year Surplus (as a % of TE)	1279	1.151	11.043	-42.522	89.103	“
Property Tax Revenue (as a % of TR)	1279	25.377	8.350	3.551	49.018	“
Sales Tax Revenue (as a % of TR)	1279	15.402	5.750	1.725	30.959	“
Fees & Charges Revenue (as a % of TR)	1279	22.860	10.863	0.748	65.021	“
State Aid Revenue (as a % of TR)	1279	12.899	6.189	2.088	51.730	“
Federal Aid Revenue (as a % of TR)	1279	5.249	4.762	0	31.198	“
Salaries & Wages Expenditures (as a % of TE)	1279	49.411	9.310	23.214	78.779	“
Capital and Equipment Outlay (as a % of TE)	1279	12.626	7.801	1.409	51.211	“
Long-Term Debt Per Capita (ln)	1279	7.001	0.700	3.874	8.306	“
Unemployment Rate (County level) (ln)	1279	1.704	0.294	1.030	2.398	U.S. BLS
Size (TR per capita) (ln)	1279	7.529	0.270	6.878	8.549	Open Book NY
Per Capita Personal Income (County level) (ln)	1279	10.452	0.349	9.751	11.453	U.S. BEA
Short-Term Borrowing in Past 2 Years (Yes=1)	1279	0.984	0.127	0	1	Bloomberg, Open Book NY
Deficit in Past 2 Years (Yes=1)	1279	0.701	0.458	0	1	Open Book NY
Percent Voted for a Rep. Senator (County level)	1279	35.076	8.849	17.843	57.891	NY Board of Elections
Governor Election Year (County level) (Yes=1)	1279	0.238	0.426	0	1	“
Presidential Election Year (County level) (Yes=1)	1279	0.285	0.451	0	1	“
City FoG Mayor-Council (Yes=1)	1279	0.689	0.463	0	1	NY LG Handbook
City FoG Mayor-Council-Manager (Yes=1)	1279	0.180	0.384	0	1	“
City FoG Council-Manager (Yes=1)	1279	0.033	0.178	0	1	“
City FoG Mayor-Commission/-Manager (Yes=1)	1279	0.049	0.216	0	1	“
Number of City Council Members	1279	6.921	2.280	2	16	“

**Panel C: Village Governments**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Source</b>
Short-Term Borrowing Per Capita (ln)	11526	2.059	2.235	0	12.534	Bloomberg, Open Book NY
Excess Taxing Capacity (CTL Slack)	11526	73.343	18.319	0	100	Open Book NY
Post Tax Cap Implementation (Yes=1)	11526	0.236	0.425	0	1	“
Voted to Override the Tax Cap (Yes=1)	11526	0.059	0.236	0	1	“
Illiquidity (% of TA)	11526	30.280	24.794	0	100	“
Prior Year Surplus (as a % of TE)	11526	4.628	35.366	-100	1750.62	“
Property Tax Revenue (as a % of TR)	11526	35.581	19.252	0	100	“
Sales Tax Revenue (as a % of TR)	11526	9.031	9.648	0	83.361	“
Fees & Charges Revenue (as a % of TR)	11526	29.926	18.473	0	98.194	“
State Aid Revenue (as a % of TR)	11526	6.446	7.555	0	93.809	“
Federal Aid Revenue (as a % of TR)	11526	2.954	8.056	0	91.394	“
Salaries & Wages Expenditures (as a % of TE)	11526	33.187	14.511	0	90.898	“
Capital and Equipment Outlay (as a % of TE)	11526	14.923	15.422	0	98.583	“
Long-Term Debt Per Capita (ln)	11526	5.670	2.474	0	12.598	“
Unemployment Rate (County level) (ln)	11526	1.699	0.292	0.993	2.416	U.S. BLS
Size (TR per capita) (ln)	11526	6.990	0.772	0.262	12.351	Open Book NY
Per Capita Personal Income (County level) (ln)	11526	10.462	0.358	9.751	11.453	U.S. BEA
Short-Term Borrowing in Past 2 Years (Yes=1)	11526	0.673	0.469	0	1	Bloomberg, Open Book NY
Deficit in Past 2 Years (Yes=1)	11526	0.622	0.485	0	1	Open Book NY
Percent Voted for a Rep. Senator (County level)	11526	36.627	8.887	17.843	62.791	NY Board of Elections
Governor Election Year (County level) (Yes=1)	11526	0.238	0.426	0	1	“
Presidential Election Year (County level) (Yes=1)	11526	0.285	0.452	0	1	“

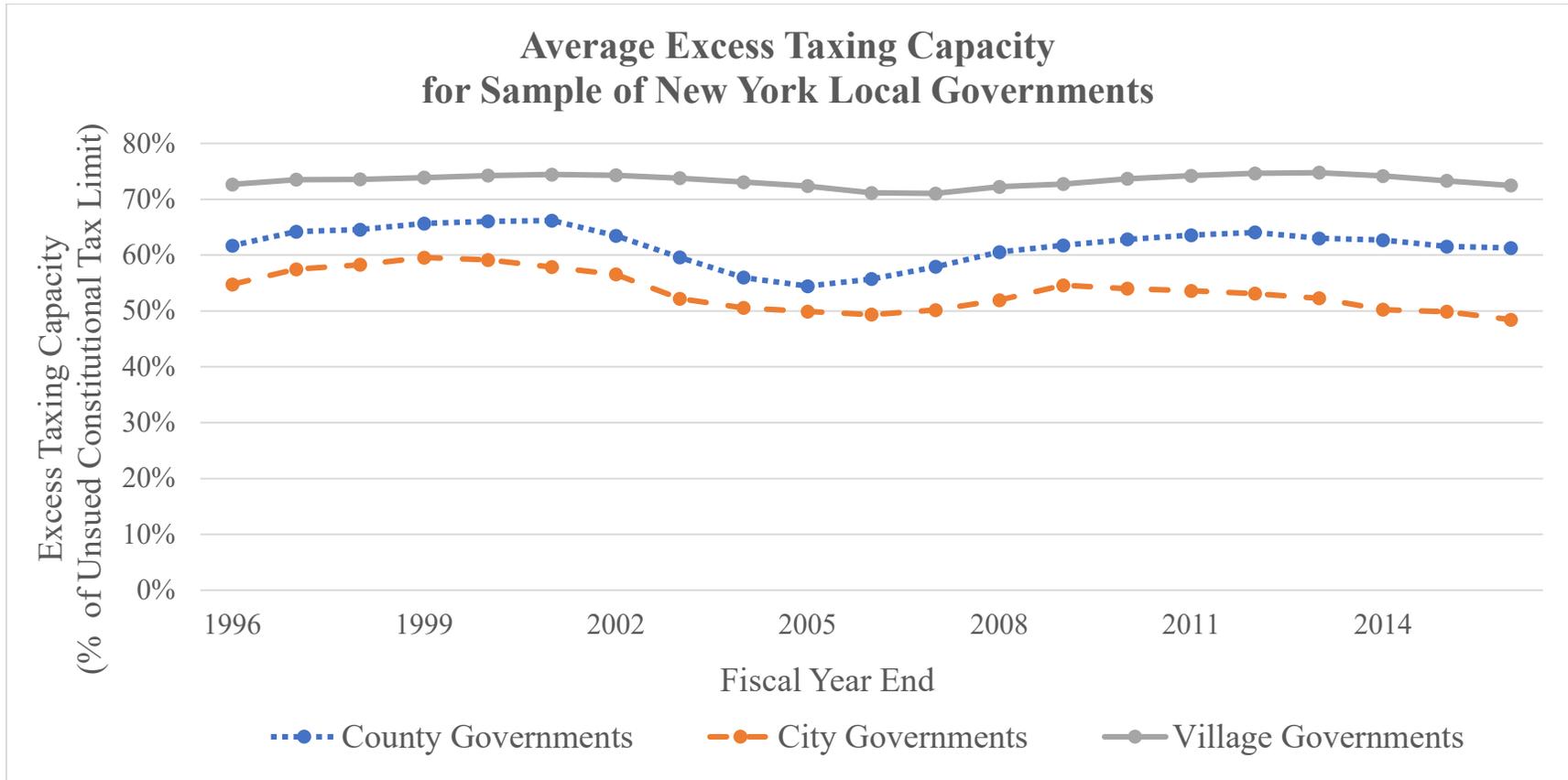
**Notes:** (1) Median and mean short-term borrowing is \$5.95 million and \$47.2 million for the 1,161 counties that borrow, \$2.63 million and \$11.4 million for 1,245 cities that borrow, and \$6,9147 and \$595,160 for the 6,954 villages that borrow. Median and mean per capita short-term borrowing (\$) is 71.53 and 127.99 for counties, 115.34 and 253.66 for cities, and 31.80 and 256.03 for villages. (2) TE is total expenditures and other uses, TR is total revenues and other uses, TA is total governmental fund assets, TL is total liabilities, ln is natural log, and all dollar values were adjusted with the Gross Domestic Product Implicit Price Deflator with at 2009 base. (3) One was added to short-term borrowing and long-term debt so the natural log would be zero for no borrowing. (4) Jurisdictions reporting negative assets or liabilities were dropped. (5) Jurisdictions that report a tax margin (the constitutional tax limit minus the levy subject to the tax limit) greater than the constitutional tax limit are given an excess taxing capacity of 100%.

**Table 4.4** Comparison of Local Government Short-Term Borrowing Literature

	<b>Present Study</b>	<b>Lofton and Kioko (2018)</b>	<b>Su and Hildreth (2018)</b>
Types of local governments	County, city, and village governments	County, city, town, and village governments	City governments
Measure of short-term borrowing	Short-term borrowing – short-term notes from Lofton and Kioko, liability amount due to other funds from all governmental funds, and current year issues of capital notes, deficiency notes, installment purchase contracts, and state or authority loans	Short-term notes – general obligation unlimited notes, general obligation limited notes, revenue notes, bond anticipation notes, tax anticipation notes, revenue anticipation notes, budget notes, certificates of participation, warrants, and overdrafts of cash accounts	Cash management notes – tax anticipation notes, revenue anticipation notes, and tax and revenue anticipation notes
Borrowing amount (million \$) <sup>67</sup> Medians (Means)	Counties – 5.94 (47.20) Cities – 2.63 (11.50) Villages – 0.069 (0.595)	Counties – 13.50 (72.60) Cities – 7.28 (18.50) Towns – 2.52 (9.74) Villages – 1.50 (2.75)	6.36 (58.50)
Sample size	County – 1,197 City – 1,279 Villages – 11,526	Counties – 1,197 Cities – 1,279 Towns – 19,288 Villages – 11,526	3,761
Years of data	Between 1996 and 2016	Between 1996 and 2016	Between 2003 and 2011
Source	Bloomberg L.P. and New York State Comptroller’s Open Book New York	Bloomberg L.P. and New York State Comptroller’s Open Book New York	California Debt and Investment Advisory Commission’s Debt Issuance Database and California State Controller’s website

<sup>67</sup> Mean and median values are for the local governments that borrow in the short-term. In Su and Hildreth (2018), 209 cash management notes were issued for 58 city governments for 182 city observations. In Lofton and Kioko (2018), short-term borrowing amounts were determined for 465 county observations, 541 city observations, 1,172 town observations, and 836 village observations that had issued short-term notes between 1996 and 2016. The present study has 1,161 county observations, 1,245 city observations, and 6,954 village observations engaging in short-term borrowing.

**Figure 4.1** Average Excess Taxing Capacity for Sampled New York Local Governments



**Table 4.5** General Fund Unrestricted Cash (% of OE) Regression Models with Fixed Effects (FYE Between 1996 to 2016)

Variables	County Governments	City Governments	Village Governments
Excess Taxing Capacity (CTL Slack)	-0.135* (0.063)	0.006 (0.057)	-0.111* (0.056)
Post Tax Cap Implementation (Yes=1)	3.252 (7.735)	-2.316 (7.542)	-2.862 (8.727)
Voted to Override the Tax Cap (Yes=1)	-1.884 (1.279)	-7.268*** (1.797)	-2.809* (1.199)
Internal Transfers Out (% of TL)	0.067 (0.052)	0.002 (0.036)	0.013 (0.013)
Short-Term Borrowing Per Capita (ln)	-0.519 (0.326)	-0.491 (0.332)	-0.854*** (0.215)
Long-Term Debt Per Capita (ln)	1.151 (0.678)	-3.023 (2.130)	-1.237* (0.529)
Coefficient of Variation of Revenue	25.588* (10.546)	-13.265 (8.171)	-3.024 (2.402)
Revenue Diversification (HHI)	37.287* (17.193)	-7.670 (12.354)	3.534 (7.093)
Property Tax Revenue (as a % of TR)	0.086 (0.225)	0.182 (0.196)	-0.207* (0.090)
Sales Tax Revenue (as a % of TR)	-0.162 (0.137)	-0.145 (0.265)	0.536* (0.221)
Other Tax Revenue (as a % of TR)	1.996 (1.855)	-0.853 (0.613)	0.689 (0.875)
Fees & Charges Revenue (as a % of TR)	-0.206 (0.132)	-0.310* (0.128)	-0.064 (0.076)
State Aid Revenue (as a % of TR)	-0.055 (0.178)	0.215 (0.181)	-0.134* (0.068)
Federal Aid Revenue (as a % of TR)	-0.415* (0.187)	-0.060 (0.116)	-0.240** (0.081)
Administration (% of OE)	0.050 (0.138)	0.003 (0.090)	0.310*** (0.090)
Capital and Equipment Outlay (as a % of TE)	0.040 (0.079)	0.029 (0.059)	0.083* (0.033)
Population (ln)	7.670 (19.710)	-38.883 (25.465)	9.922 (5.631)
Population Density	0.411 (0.708)	-0.743* (0.301)	-0.253 (0.357)
Per Capita Personal Income (ln)	-3.270 (14.149)	7.726 (12.882)	21.458 (16.051)
Constant	-80.037 (259.043)	369.527 (301.290)	-260.968 (171.021)
Observations	1026	1096	7859
R-Squared	0.1703	0.1266	0.0574
Jurisdiction Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes

**Notes:** (1) Robust standard errors are in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels. (2) CTL is Constitutional Tax Limit, OE is operating expenditures and debt interest, TL is total governmental fund liabilities, ln is natural log, TR is total revenues and other sources, and HHI is Hirschman-Herfindahl Index. (3) Similar statistically significant results for county and village governments dependent variable of cash and short-term investments as a proportion of operating and debt expenditures was also used which produce similar statistically significant impacts of ETC.

**Table 4.6** Short-Term Borrowing (ln) Tobit Regression Models (FYE Between 1996 and 2016)

Variables	County Governments	City Governments	Village Governments	IV Results for Village Governments*
Excess Taxing Capacity (CTL Slack)	0.010*** (0.002)	-0.001 (0.002)	-0.007*** (0.002)	-0.012*** (0.002)
Post Tax Cap Implementation (Yes=1)	0.046 (0.115)	0.311* (0.128)	0.184* (0.077)	0.167* (0.077)
Voted to Override the Tax Cap (Yes=1)	0.282 (0.184)	-0.417* (0.204)	0.113 (0.115)	0.111 (0.115)
Illiquidity (% of TA)	0.040*** (0.003)	0.015*** (0.002)	0.034*** (0.001)	0.033*** (0.001)
Prior Year Surplus (as a % of TE)	-0.009 (0.007)	-0.006 (0.004)	-0.001 (0.001)	-0.001 (0.001)
Property Tax Revenue (as a % of TR)	0.024* (0.011)	0.0001 (0.008)	0.008*** (0.002)	0.007** (0.002)
Sales Tax Revenue (as a % of TR)	-0.025** (0.009)	-0.019 (0.011)	-0.017*** (0.004)	-0.015*** (0.004)
Fees & Charges Revenue (as a % of TR)	-0.034*** (0.009)	0.007 (0.006)	0.012*** (0.002)	0.012*** (0.002)
State Aid Revenue (as a % of TR)	-0.054*** (0.015)	-0.009 (0.009)	-0.007 (0.004)	-0.006 (0.004)
Federal Aid Revenue (as a % of TR)	0.033* (0.014)	0.015 (0.010)	-0.010** (0.004)	-0.011** (0.004)
Salaries & Wages Expenditures (as a % of TE)	0.034*** (0.009)	0.029*** (0.008)	0.0004 (0.002)	-0.002 (0.002)
Capital and Equipment Outlay (as a % of TE)	0.050*** (0.011)	0.037*** (0.006)	0.021*** (0.002)	0.020*** (0.002)
Long-Term Debt Per Capita (ln)	0.196*** (0.035)	0.933*** (0.078)	0.126*** (0.014)	0.124*** (0.014)
Unemployment Rate (County level) (ln)	-0.558*** (0.154)	-0.432** (0.159)	-0.131 (0.094)	-0.153 (0.094)
Size (TR per capita) (ln)	0.984*** (0.235)	-0.030 (0.264)	0.589*** (0.041)	0.579*** (0.042)
Per Capita Personal Income (County level) (ln)	0.032 (0.257)	-0.194 (0.203)	0.799*** (0.113)	0.799*** (0.113)
Short-Term Borrowing in Past 2 Years (Yes=1)	2.536*** (0.347)	5.360*** (0.428)	3.935*** (0.069)	3.931*** (0.069)
Deficit in Past 2 Years (Yes=1)	-0.104 (0.075)	0.193* (0.093)	0.006 (0.052)	0.008 (0.052)
Percent Voted for a Rep. Senator (County level)	0.002 (0.006)	-0.010 (0.007)	0.004 (0.004)	0.004 (0.004)
Governor Election Year (County level) (Yes=1)	-0.028 (0.90)	-0.033 (0.103)	0.021 (0.062)	0.020 (0.062)
Presidential Election Year (County level) (Yes=1)	0.017 (0.087)	0.004 (0.099)	-0.162** (0.060)	-0.162** (0.060)
Located in a Chartered County (Yes=1)	0.701*** (0.184)			
County CAO (Chair of Legislative Body=1)	0.219* (0.105)			
County CAO (Executive=1)	-0.500* (0.194)			
County CAO (Manager=1)	0.450** (0.139)			
County Legislative Body (Legislature=1)	-0.320** (0.099)			
Number of County Legislative Members	-0.005 (0.007)			
City FoG Mayor-Council (Yes=1)		-0.187 (0.202)		
City FoG Mayor-Council-Manager (Yes=1)		-0.292 (0.220)		

City FoG Council-Manager (Yes=1)		-0.217 (0.305)		
City FoG Mayor-Commission/-Manager (Yes=1)		-0.340 (0.285)		
Number of City Council Members		0.012 (0.021)		
Constant	-10.092*** (2.557)	-6.723* (2.715)	-16.074*** (1.251)	-16.752*** (1.265)
Observations	1197	1279	11526	11521
Left Censored observations ( $\leq 0$ )	36	34	4572	4567
Pseudo R-Squared	0.1259	0.1084	0.1832	
Wald $\chi^2$				Wald $\chi^2(21) = 6998.50$

**Notes:** (1) Robust standard errors are in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels. (2) \*An instrumental variable regression was used for villages since ETC was tested to likely be endogenous. A one year lagged ranked variable was used as an instrument. (3) TE is total expenditures and other uses, TR is total revenues and other sources, TA is total governmental fund assets, TL is total liabilities, ln is natural log, and all dollar values were adjusted with the Gross Domestic Product Implicit Price Deflator with at 2009 base.

**Appendix 4.1** Linear Hurdle Models with Robust Standard Errors (FYE Between 1996 and 2016)

	<b>County Governments</b>	<b>City Governments</b>	<b>Village Governments</b>
<b>Outcome Model</b>			
Excess Taxing Capacity (CTL Slack)	0.011*** (0.002)	-0.004 (0.002)	-0.003 (0.001)
Post Tax Cap Implementation (Yes=1)	0.098 (0.107)	0.266* (0.106)	0.507*** (0.068)
Voted to Override the Tax Cap (Yes=1)	0.186 (0.193)	-0.274 (0.207)	0.242* (0.112)
Illiquidity (as a % of TA)	0.032*** (0.003)	0.017*** (0.002)	0.027*** (0.001)
Prior Year Surplus/(Deficit) (as a % of TE)	-0.011 (0.007)	-0.005 (0.003)	0.0001 (0.001)
Property Tax Revenue (as a % of TR)	0.004 (0.009)	0.003 (0.006)	0.009*** (0.003)
Sales Tax Revenue (as a % of TR)	-0.041*** (0.006)	-0.009 (0.009)	-0.040*** (0.004)
Fees & Charges Revenue (as a % TR)	-0.034*** (0.008)	0.009 (0.005)	0.008*** (0.002)
State Aid Revenue (as a % of TR)	-0.066*** (0.012)	-0.014 (0.008)	-0.013** (0.004)
Federal Aid Revenue (as a % of TR)	-0.013 (0.012)	0.025* (0.010)	-0.015*** (0.004)
Salaries & Wages Expenditures (as a % of TE)	0.038*** (0.007)	0.029*** (0.007)	-0.009*** (0.003)
Capital and Equipment Outlay (as a % of TE)	0.053*** (0.010)	0.037*** (0.006)	0.017*** (0.002)
Long-Term Debt Per Capita Issued in Year (ln)	0.204*** (0.032)	1.016*** (0.074)	0.305*** (0.021)
Constant	0.8672 (0.604)	-5.425*** (0.804)	0.182 (0.294)
<b>Selection Model</b>			
Excess Taxing Capacity (CTL Slack)	0.012 (0.007)	0.013** (0.004)	-0.004*** (0.001)
Post Tax Cap Implementation (Yes=1)	-0.324 (0.356)	-0.242 (0.348)	-0.053 (0.046)
Voted to Override the Tax Cap (Yes=1)	0.667 (0.765)	-0.430 (0.402)	-0.018 (0.072)
Illiquidity (as a % of TA)	0.067*** (0.011)	0.002 (0.005)	0.013*** (0.001)
Prior Year Surplus/(Deficit) (as a % of TE)	0.039 (0.023)	-0.0004 (0.009)	-0.0004 (0.0004)
Property Tax Revenue (as a % of TR)	0.010 (0.033)	-0.024 (0.014)	0.0009 (0.001)
Sales Tax Revenue (as a % of TR)	-0.048 (0.027)	-0.069* (0.022)	-0.008*** (0.002)
Fees & Charges Revenue (as a % TR)	-0.056* (0.024)	-0.029* (0.014)	0.001 (0.001)
State Aid Revenue (as a % of TR)	0.015 (0.036)	-0.005 (0.024)	-0.004 (0.002)
Federal Aid Revenue (as a % of TR)	0.041 (0.055)	-0.049* (0.024)	-0.001 (0.002)
Salaries & Wages Expenditures (as a % of TE)	0.071** (0.026)	0.019 (0.021)	0.009*** (0.001)
Capital and Equipment Outlay (as a % of TE)	0.177*** (0.044)	0.003 (0.012)	0.008*** (0.001)
Long-Term Debt Per Capita Issued in Year (ln)	-0.053 (0.065)	-0.049 (0.142)	0.048*** (0.008)
Unemployment Rate (County level) (ln)	-0.722 (0.475)	0.295 (0.337)	-0.284*** (0.056)

Size (TR Per Capita) (ln)	0.133 (0.576)	-0.049 (0.541)	0.029 (0.029)
Per Capita Personal Income (County level) (ln)	1.319 (0.826)	0.216 (0.422)	0.524*** (0.072)
Short-Term Borrowing in Past 2 Years (Yes=1)	1.089** (0.375)	2.969*** (0.348)	1.820*** (0.033)
Deficit in Past 2 Years (Yes=1)	-0.349 (0.218)	-0.023 (0.219)	0.013 (0.031)
Percent Voted for a Rep. Senator (County level)	-0.027 (0.014)	-0.017 (0.016)	0.001 (0.002)
Governor Election Year (County level) (Yes=1)	0.406 (0.310)	-0.113 (0.205)	0.017 (0.037)
Presidential Election Year (County level) (Yes=1)	-0.088 (0.249)	0.410 (0.262)	-0.088* (0.036)
Located in a Chartered County (Yes=1)	5.716*** (0.453)		
County CAO (Chair of Legislative Body=1)	0.409 (0.250)		
County CAO (Executive=1)	-5.859*** (0.530)		
County CAO (Manager=1)	1.078* (0.507)		
County Legislative Body (Legislature=1)	0.046 (0.298)		
Number of County Legislative Members	0.054 (0.036)		
City FoG (Mayor-Council=1)		-4.285** (1.426)	
City FoG (Mayor-Council-Manager=1)		-4.662*** (1.370)	
City FoG (Council-Manager=1)		-0.002 (1.507)	
City FoG (Mayor-Commission/-Manager=1)		0.001 (1.521)	
Number of City Council Members		-0.084 (0.044)	
Constant	-18.332* (7.902)	3.838 (6.180)	-6.804*** (0.781)
Ln Sigma Constant	0.160*** (0.025)	0.315*** (0.023)	0.638*** (0.012)
Sigma	1.174 (0.029)	1.370 (0.032)	1.892 (0.023)
Wald $\chi^2$ =	Wald $\chi^2(12) = 417.14$	Wald $\chi^2(13) = 479.89$	Wald $\chi^2(13) = 1733.32$
(P > $\chi^2$ =)	(P > $\chi^2 = 0.0000$ )	(P > $\chi^2 = 0.0000$ )	(P > $\chi^2 = 0.0000$ )
Pseudo R <sup>2</sup>	0.1184	0.1133	0.1899
Observations	1197	1279	11526

**Notes:** (1) Standard errors are in parentheses. \*, \*\*, \*\*\* indicates that the corresponding coefficients are significant at the 10%, 5%, and 1% levels, respectively. (2) TE is total expenditures and other uses, TR is total revenues and other uses, TA is total governmental assets (excluding capital, debt service and special district funds), ln is natural log, CAO is Chief Administrative Officer, FoG is Form of Government, and all dollar values were adjusted with the Gross Domestic Product Implicit Price Deflator with at 2009 base.

**Appendix 4.2** Months of General Fund Unrestricted Cash Regression Models with Fixed Effects (FYE Between 1996 and 2016)

<b>Variables</b>	<b>County Governments</b>	<b>City Governments</b>	<b>Village Governments</b>
Excess Taxing Capacity (CTL Slack)	-0.016* (0.008)	0.001 (0.007)	-0.013* (0.007)
Post Tax Cap Implementation (Yes=1)	0.390 (0.928)	-0.278 (0.905)	-0.343 (1.047)
Voted to Override the Tax Cap (Yes=1)	-0.226 (0.154)	-0.872*** (0.216)	-0.337* (0.144)
Internal Transfers Out (% of TL)	0.008 (0.006)	0.0002 (0.004)	0.002 (0.002)
Short-Term Borrowing Per Capita (ln)	-0.062 (0.039)	-0.059 (0.040)	-0.102*** (0.026)
Long-Term Debt Per Capita (ln)	0.138 (0.081)	-0.363 (0.256)	-0.148* (0.063)
Coefficient of Variation of Revenue	3.071* (1.266)	-1.592 (0.981)	-0.363 (0.288)
Revenue Diversification (HHI)	4.474* (2.063)	-0.920 (1.483)	0.424 (0.851)
Property Tax Revenue (as a % of TR)	0.010 (0.027)	0.022 (0.024)	-0.025* (0.011)
Sales Tax Revenue (as a % of TR)	-0.019 (0.016)	-0.017 (0.032)	0.064* (0.027)
Other Tax Revenue (as a % of TR)	0.239 (0.223)	-0.102 (0.074)	0.083 (0.105)
Fees & Charges Revenue (as a % of TR)	-0.025 (0.016)	-0.037* (0.015)	-0.008 (0.009)
State Aid Revenue (as a % of TR)	-0.007 (0.021)	0.026 (0.022)	-0.016* (0.008)
Federal Aid Revenue (as a % of TR)	-0.050* (0.022)	-0.007 (0.014)	-0.029** (0.010)
Administration (% of OE)	0.006 (0.017)	0.0004 (0.011)	0.037*** (0.011)
Capital and Equipment Outlay (as a % of TE)	0.005 (0.010)	0.004 (0.007)	0.010* (0.004)
Population (ln)	0.920 (2.365)	-4.666 (3.056)	1.191 (0.676)
Population Density	0.049 (0.085)	-0.089* (0.036)	-0.030 (0.043)
Per Capita Personal Income (County level) (ln)	-0.392 (1.698)	0.927 (1.546)	2.575 (1.926)
Constant	-9.604 (31.085)	44.343 (36.155)	-31.316 (20.523)
Observations	1026	1096	7859
R-Squared	0.1703	0.1266	0.0575
Jurisdiction Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes

**Notes:** (1) Robust standard errors are in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels. (2) CTL is Constitutional Tax Limit, OE is operating expenditures and debt interest, TL is total governmental fund liabilities, ln is natural log, TR is total revenues and other sources, and HHI is Hirschman-Herfindahl Index.

**Appendix 4.3** Months of General Fund Unrestricted Cash Regression Models with Fixed Effects and Robust Standard Errors (Fiscal Year End Between 1996 to 2016)

<b>Variables</b>	<b>County Governments</b>	<b>City Governments</b>	<b>Village Governments</b>
Excess Taxing Capacity (CTL Slack)	-0.021** (0.007)	-0.002 (0.006)	-0.010 (0.006)
Post Tax Cap Implementation (Yes=1)	0.304 (0.886)	-0.400 (0.875)	-0.420 (1.057)
Voted to Override the Tax Cap (Yes=1)	-0.141 (0.146)	-0.847*** (0.220)	-0.359* (0.146)
Internal Transfers Out (% of TL)	0.008 (0.007)	0.0001 (0.005)	0.002 (0.002)
Short-Term Borrowing Per Capita (ln)	-0.062 (0.041)	-0.064 (0.040)	-0.101*** (0.027)
Coefficient of Variation of Revenue	3.147* (1.253)	-1.880 (1.078)	-0.277 (0.318)
Revenue Diversification (HHI)	2.553 (2.000)	-1.805 (1.167)	-0.101 (0.509)
Long-Term Debt Per Capita (ln)	0.141 (0.080)	-0.355 (0.253)	-0.120 (0.065)
Population (ln)	0.374 (2.346)	-5.043 (3.079)	1.208 (0.717)
Population Growth Rate (Past 5 Years)	-0.001 (0.001)	0.075** (0.027)	-0.008 (0.009)
State Aid Revenue (as a % of TR)	-0.001 (0.021)	0.033 (0.019)	-0.002 (0.008)
Per Capita Personal Income (County level) (ln)	-0.231 (1.624)	1.107 (1.493)	2.955 (1.932)
Constant	-3.641 (30.351)	46.312 (36.439)	-34.423 (20.956)
Observations	1025	1096	7860
R-Squared	0.1480	0.1093	0.0337
Jurisdiction Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes

**Notes:** (1) Robust standard errors are in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels. (2) CTL is Constitutional Tax Limit, OE is operating expenditures and debt interest, TL is total governmental fund liabilities, ln is natural log, TR is total revenues and other sources, and HHI is Hirschman-Herfindahl Index.

## Vita

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Name of Author: Michelle Lynn Lofton  
Place of Birth: Galveston, Texas  
Date of Birth: December 30, 1988

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### EDUCATION

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SYRACUSE UNIVERSITY *December 2018*  
Ph.D. in Public Administration, Maxwell School of Citizenship and Public Affairs.  
Fields: Public Finance, Budgeting and Financial Administration; Social Policy.

THE UNIVERSITY OF GEORGIA 2013  
Master of Public Administration. Field: Public Budgeting and Finance Administration.

TRINITY UNIVERSITY 2011  
Bachelor of Science, Business Administration and Economics (Double Major). *Cum laude*.

### PROFESSIONAL APPOINTMENTS

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ASSISTANT PROFESSOR, THE UNIVERSITY OF GEORGIA 2018 - Present  
Department of Public Administration and Policy, School of Public & International Affairs

RESEARCH ANALYST, UNIVERSITY OF WASHINGTON 2016 - 2018  
Daniel J. Evans School of Public Policy and Governance

RESEARCH ASSOCIATE, SYRACUSE UNIVERSITY 2013 - 2017  
Center for Policy Research, Maxwell School of Citizenship and Public Affairs

PROJECT MANAGER, SYRACUSE UNIVERSITY 2015 - 2016  
County of San Diego, CA Project Under the Direction of Dr. Yilin Hou  
Center for Policy Research, Maxwell School of Citizenship and Public Affairs

RESEARCH ASSISTANT, THE UNIVERSITY OF GEORGIA 2011 - 2013  
Department of Public Administration and Policy, School of Public & International Affairs

### TEACHING EXPERIENCE

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Public Financial Administration (The University of Georgia, Fall 2018)  
Public Management (The University of Georgia, Fall 2018)  
Understanding Organizations (Seattle University, Autumn 2017, Spring 2018)  
Economic Analysis (Seattle University, Summer 2017)  
Stata Mini-Course (Syracuse University, Co-Instructor, Spring 2016)

Microsoft Excel Mini-Course (Syracuse University, Co-Instructor, Fall 2015)  
Public Budgeting (Syracuse University, Teaching Assistant, 2014 - 2016)

## PAPERS & REPORTS

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### REPORTS

Hou, Y., **Lofton, M.**, Thomas, J., Carrier, B., Miao, Q., Zhang, P., and Zhang, P. (2016). Toward Long-Term Fiscal Sustainability: Identifying Successes and Potential Financial Uncertainties. Syracuse University Maxwell School of Citizenship and Public Affairs, Center for Policy Research.

### WORKING PAPERS & UNDER REVIEW

**Lofton, M. L.** & Kioko, S. N. (2017). The Use of Short-Term Debt by General Purpose Governments. *Under Review*.

**Lofton, M. L.** (2017). What Influences Working Capital Management? A Survey of New York Local Finance Officers. *Working Paper*.

Kioko, S. N. & **Lofton, M. L.** Testing State Balance Budget Requirements (BBRs) Using Accrual Based Data. *Working Paper*.

### RESEARCH IN PROGRESS

**Lofton, M. L.** The Impact of Excess Taxing Capacity on Short-Term Resources.

Burger, C. & **Lofton, M. L.** The Impacts of the Great Recession on School District Finances.

Jones, P., Burger, C., Reitano, V. & **Lofton, M. L.** Have States Learned How to Use Budget Stabilization Funds to Reduce Fiscal Crises?

## CONFERENCE PRESENTATIONS

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1. Lofton, M. L. (2018). The Impact of Excess Taxing Capacity on Short-Term Resources. Association for Budgeting and Financial Management Conference. Denver, CO.
2. Lofton, M. L. (2017). The Impacts of a New Tax and Expenditure Limit on New York Local Government Finances. Association for Public Policy Analysis & Management. Chicago, IL.
3. Jones, P., Burger, C., Reitano, V., & Lofton, M. L. (2017). Have States Learned How to Use Budget Stabilization Funds to Reduce Fiscal Crises? Association for Budgeting and Financial Management Conference. Washington, DC.
4. Lofton, M. L. & Kioko, S. N. (2017). The Use of Short-Term Debt by General Purpose Governments. Western Social Science Association. San Francisco, CA.
5. Lofton, M. L. (2017). What Influences Working Capital Management. Western Social Science Association. San Francisco, CA.

6. Lofton, M. L. & Hou, Y. (2016). Benefit Generosity and Pension Obligation Bond Use: Evidence from California Local Governments. Association for Budgeting and Financial Management Conference. Seattle, WA.
7. Lofton, M. L. & Kioko, S. N. (2015). The Use of Short-Term Debt by General Purpose Governments. Association for Budgeting and Financial Management Conference. Washington, DC.
8. Lofton, M. L. & Kioko (2014). The Impacts of Deficits of Fund Balances and Liquidity: A Panel Study of New York County Governments. Association for Budgeting and Financial Management Conference. Grand Rapids, MI.

## **GRANTS & AWARDS**

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Graduate Student Poster Award, Association for Budgeting & Financial Management: 2017

Dissertation Fellowship, Department of Public Administration & International Affairs, Maxwell School of Citizenship & Public Affairs, Syracuse University: 2016-2017

Roscoe-Martin Fund Dissertation and Thesis Research Grant Award, Maxwell School of Citizenship & Public Affairs, Syracuse University: 2016

Summer Research Grant, Department of Public Administration & International Affairs, Maxwell School of Citizenship & Public Affairs, Syracuse University: 2015, 2016

Graduate Student Organization Travel Grant, Syracuse University: 2014

Minority in Government Finance Scholarship, Government Finance Officers Association: 2011

## **PROFESSIONAL ACTIVITIES**

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### **ACADEMIC SERVICE**

Association for Budgeting and Financial Management's Graduate Student Poster Award Committee: 2018

Syracuse University's Search Committee for the Assistant to the Chair of the Public Administration & International Affairs Department: 2016

Trinity University's Seattle Alumni Chapter Board Member: 2017 – Present

Trinity University's New York Alumni Chapter Board Member: 2014 – 2016

### **PROFESSIONAL AFFILIATIONS**

Association for Budgeting and Financial Management  
 Association for Public Policy Analysis & Management  
 Government Finance Officers Association  
 Western Social Science Association

*December 2018*