Measuring the Impacts of TELs on Municipal Financial Conditions

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Abstract

The study of government financial condition has taken on greater meaning as policy-makers now struggle through one of the worst economic and financial crises in the past 50 years. To date, studies of local government financial condition have been limited by data availability, measurement inconsistencies and limited generalizability. This study attempts to move the research forward by studying the determinants of municipal financial condition cross-sectionally. We examine more than 1,000 municipalities in 47 states for fiscal year 2005. Our research was greatly aided by recent work on qualifying local tax and expenditure limitations across the US. Our findings reflect the importance of understanding municipal financial condition within the context of state-imposed limitations.

The fiscal pressure facing local governments today is more severe than has been experienced at any time in the past 50 years (Miller and Svara, 2009). Its severity is both deep and broad, affecting every state and local government in the US. The hardest hit economic sectors, particularly the housing sector, have meant sizable reductions in the primary revenue sources of local governments; property and sales taxes (Miller and Svara, 2009; Pagano and Hoene, 2009). How local governments respond to the current fiscal crisis has been the focus of a number of recently released studies and website links provided by both professional organizations, including the International City/County Managers Association (2010), The Government Finance Officers Association (2010) and the National League of Cities (2010) and academics groups (States as Facilitators or Obstructionists of Local Governments Conference, 2010). In helping communities cope with fiscal stress, much of the focus tends to be on overcoming short-term constraints through the drawing down of fund balances and long-term success through revenue growth and improved efficiencies. The challenges associated with growing the revenue base are exacerbated by the proliferation of tax and expenditure limitations (TELs) imposed on local governments. Today, TELs impacting local governments exist in all US states except for the northeastern states of Connecticut, Maine, New Hampshire and Vermont. Unfortunately, there is little overlap between the fiscal health and TEL literatures.

From a practical standpoint, the biggest challenge in attempting to study local fiscal conditions is data uniformity. There exists a proliferation of studies since the 1970s attempting to measure fiscal condition; all of which are limited in their generalizability due to data constraints. As a result, we are left with a proliferation of empirical metrics specific to particular case studies (Hendrick, 2004; Kloha, Weissert and Kleine, 2005; Lu, 1994). This study adds to the existing research in two important ways; it examines the financial condition of a cross-section of cities throughout the US and it explores the relationship between the fiscal condition of cities and state-imposed TELs on those cities. The remainder of the study proceeds as follows; literature review, description of TEL and financial condition measurement, methodology, results and concluding comments.

Literature Review

Ever since the near fiscal meltdown of major US cities like New York in the 1970s, public finance scholars as well as government and professional organizations have sought to provide analytical tools for the purpose of measuring fiscal condition in an attempt to prevent a repeat. One of the most commonly cited and influential bodies was the Advisory Commission on Intergovernmental Relations (ACIR) which produced a series of reports and studies throughout the 1970s and 1980s focusing on state and local government fiscal capacity issues (1971, 1979, 1981, 1988, 1989). Other federal reports tended to focus more on the impact of federal aid programs on local needs (Congressional Budget Office, 1978; US Department of the Treasury, 1978).

Today, each of the three major local government organizations have offered up tools for measuring fiscal condition. One of the more common of these is the International City/County Managers Association's Measuring Fiscal Condition (Nollenberger, 2003) which consists of 36 indicators for communities to track over time. The Government Finance Officers Association provides an award for fiscal stewardship (both budget and audit) and publishes a monthly magazine that included the popular "10-Point Test of Financial Condition" (Brown, 1993). This "Ten-Point Test" developed by Brown (1989) and updated by Maher and Nollenberger (2009) is a set of indicators that can be easily calculated for smaller cities across the nation. The ratios are used by comparing an individual city to other sized cities around the country. Since 2003, the National League of Cities has published an annual survey of city staff describing city fiscal conditions (the most recent, Hoene and Pagano, 2009).

Academics have also made contributions to both theoretical conceptualizations of fiscal condition as well as empirical measurements. Clark and Ferguson (1983) present one of the more comprehensive models of fiscal strain that captures relationships between political outcomes, the economic base, and fiscal policies. Ladd and Yinger (1989) developed a "need-capacity gap" framework that combines expenditure needs with revenue-raising capacity and applied it to the largest cities in the US. Other important works during that era include Rubin's case study of a medium-sized Midwestern city (1982) and Levin and Rubin's (1980) edited work on cutback strategies. Hendrick (2004) as well as Hondale, Costa and Cigler (2004) do commendable jobs of summarizing the range of such studies.

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Building on Berne and Schramm (1986), Hendrick (2004) designed an "open system" theoretical framework for the study of fiscal health that captures three dimensions in local government: properties of the government's environment; balance of fiscal structure with environment; and properties of the government's fiscal structure. Studying communities in the Chicago area, Hendrick finds support for her more extensive theoretical framework of fiscal health and identifies fiscal slack, measured in terms of fund balance, degree of discretionary spending, level of off-budget fiscal activities and size of the government to be particularly noteworthy and in need of further study. Seeking to predict fiscal condition, Kloha, Weissert and Kleine (2005) developed a 10-point scale and applied it to communities in Michigan. Their scale includes population growth, real taxable value growth; large real taxable value decrease; general fund expenditures as a percentage of taxable value; general fund operating deficit; prior general fund operating deficits; size of general fund balance; fund deficits in the current or previous year and; general long-term debt as a percentage of taxable value.

Unfortunately, the generalizability of much of the research on fiscal condition is limited due to reliance on case studies, or survey data (Levine, 1980; Levine, Rubin and Wolohojian, 1981; Downs and Rocke, 1984). For instance, Pammer (1990) has conducted one of the few cross-sectional analyses of cities to study the degree to which 120 cities utilized a variety of retrenchment strategies in response to fiscal stress. Similarly, Ward (2001) surveyed local governments in Louisiana to gauge how they responded to fiscal stress. Unfortunately, in both cases there is little ability to generalize from the samples about the appropriate measures of fiscal condition to which the governments were responding. More recent research on the measurement of fiscal condition has also been confined to communities within a particular state; Hendrick (2004) studied communities in the Chicago suburb and Kloha, Weissert and Kleine (2005) focused on Michigan communities.

This lack of generalizability of fiscal condition research is particularly troublesome given that most of the policy efforts in the past 30 years to control local fiscal policies have been in the form of TELs. Dissatisfaction with taxation levels and perceived excessive government spending grew substantially over the latter half of the twentieth century. As a result, the number of tax and expenditure limitations (TELs) efforts such as California's Proposition 13, Massachusetts's Proposition 2½ and Colorado's Taxpayers' Bill of Rights (TABOR) has grown. By 2006, forty-six states had implemented state statutory or constitutional limits on local

government tax revenue and expenditures, with thirty-one states placing limits on state taxes and/or expenditures (Deller and Stallmann, 2007; Mullins, 2004).

As put by Lowry and Alt (2001) any institutional structures, such as TELs, that limit fiscal flexibility can affect credit risk which, by definition, is an assessment of financial condition. While Wagner (2004) and Poterba and Rueben's (1999) research focused on the effect of TELs on credit ratings, the explanation of the relationship the two is directly applicable to TELs and fiscal condition analysis. According to these scholars, TELs are intended to force fiscal discipline on state and local governments and introduce a certain degree of certainty into the taxing and budgeting process. As such, the level of risk associated with the presence of TELs should be reduced, hence improving their credit worthiness of those governments and in turn reducing the cost of borrowing. On the other hand, TELs can create barriers to fiscal flexibility and may inhibit the ability of state and local governments to raise sufficient revenues for future obligations, such as the repayment of credit or debt. If state and local governments are limited in their ability to raise revenues to repay credit or debt the risk of default is higher, thus leading to lower creditworthiness. Lower credit ratings (weaker financial condition) in turn raise the cost of credit and debt.

But to our knowledge, there has been no systematic analysis examining the explicit relationship tax and expenditure limitations and notions of fiscal condition at the local level. While many authors (e.g., Lowry and Alt 2001; Wagner 2004; and Poterba and Rueben 1999) have talked in vague terms about the impact of TELs and fiscal conditions, most studies (e.g., Abrams and Dougan., 1986; Bails, 1990; Lowery, 1983; Joyce and Mullins, 1991; Mullins and Joyce, 1996; Skidmore, 1997; Shadbegian, 1998, 1999) have focused on how affected governments alter revenue and/or expenditure policies. This study attempts to address this gap in the literature by explicitly examining the relationship between TELs and municipal fiscal conditions.

TEL Index

One of the primary difficulties for a systematic study of the impact tax and expenditure limitations have on fiscal policies and/or condition is the unique nature of each state's particular tax and expenditure limitation. As noted above, 46 of the 50 states have some form of tax and expenditure limitation (TEL) in place on state or local governments with the oldest being a 1875

limit on the growth in property tax rates in Missouri (Mullins and Wallin 2004). But as noted by Poterba and Rueben (1999) no two states are alike and TELs range from limits on how fast specific taxes can increase for specific units of government to strict limits on how much government spending can increase from one year to the next.

Joyce and Mullins (1991) place tax and expenditure limitations into six broad classifications ranging from simple full disclosure–truth in taxation rules--to strict general revenue or expenditure increases. Full disclosure rules generally require some type of public discussions and a specific legislative vote prior to enactment of tax rate increases, and require a majority vote of the legislative body to increase taxes and spending. These types of tax and expenditure limitations generally are not fiscally binding (that is it is usually possible to work around the limit). The most restrictive tax and expenditure limitations limit the amount or the percentage by which revenues and/or expenditures can increase from the previous year and are codified in the state constitution. Often tied to inflation rates, population growth rates or growth in per capita income, these types of tax and expenditure limitations are the most binding for governments (Poulson 2005).

Another complicating factor for research is the timeframe over which tax and expenditure limitations have been in place. West Virginia has had an overall local property tax rate limit in place since 1939 or Missouri's limit imposed in 1875 (Mullins and Wallin 2004). Arkansas passed a supermajority requirement to raise taxes in 1934, Florida adopted limits on corporate income taxes in 1971, California's Proposition 13 was enacted in 1979, Colorado's Taxpayer's Bill of Rights (TABOR) in 1992, Massachusetts's Proposition 2½ in 1980, and Wisconsin's limit on the ability of local governments to raise property taxes occurred in 1993 (NCSL 2005; Kornhauser 2002; Deller and Stallmann 2007).

This significant heterogeneity across the states in terms of how the TELs are structured and the timeframe in which they were enacted create a significant problem in modeling the dynamics of the interplay between the tax and expenditure limitation and subsequent fiscal policies, government performance and fiscal condition. The heterogeneity has been addressed within the empirical literature by either studying individual states in isolation almost within a case-study approach or through the adoption of simplistic dummy variables in multivariate regression (for example, Cutler, et.al 1999; Mason 2005; McGuire and Rueben 2006; Deller and

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Stallmann 2007; Stallmann and Deller (forthcoming)). This almost default approach has severely limited the depth and generalizability of the TEL literature.

Modeled on the work of Poulson (2005), Amiel, Deller and Stallmann (2009) (henceforth called ADS) construct a TEL Index that quantifies the severity or restrictiveness of the TEL of individual states on both state and on local governments. [1] The work of ADS (2009) employs six characteristics, each of which affects how strict or binding a TEL is: 1) the type of TEL; 2) if the TEL is statutory or constitutional; 3) growth restrictions; 4) method of TEL approval; 5) override provisions; and 6) exemptions (see Table 1).   Higher point values in each category correspond to stricter limitations, while lower point values correspond to more lenient limitations. The rankings in each category are ordinal, and do not reflect magnitude. For example, in the ADS Index, a revenue and expenditure limit is worth six possible points while a tax revenue limit is worth two points. This does not mean that the former is three times more restrictive than the latter. Rather, it simply indicates that a TEL that restricts both revenue and expenditures is more severe than a TEL that limits only tax revenue. While the ADS Index is annual from 1969 to 2005 and is constructed for both TELs imposed on state and local governments separately, for this research we use the Local ADS Index for 2005, the most current year of the Index.

Fiscal Condition Measurement

There are as many empirical fiscal condition metrics available as there are studies, meaning no two are alike. That being said, fiscal condition seems to be generally accepted as the ability of a government to meet current and future obligations. This conceptual definition is consistent with Kloha, Weissert and Kleine (2005), "fiscal stress… a failure to meet standards in the areas of operating position, debt, and community needs and resources over successive years" (314), Hendrick (2004) "fiscal health… ability of government to meet its financial and service obligations" (79), and Berne and Schramm, "… the probability that a government will meet its financial obligations" (71).

The general empirical framework of fiscal condition measurement tends to incorporate measures of revenue and expenditure capacity, operating position and fiscal flexibility (Berne

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[1] For a detailed discussion of the indices used here see Amiel, Deller and Stallmann (2009). The indices themselves and the data used to construct the indices can be downloaded at: http://www.aae.wisc.edu/pubs/sps/ under staff paper no. 536.

and Schramm, 1986; Hendrick, 2004; Kloha, Weissert and Kleine 2005). The specific measures tend to be unique to each analysis. For instance, Ladd and Yinger (1984) combine revenue capacity and spending needs to create a "need-capacity gap" or "standardized fiscal health" approach. Hendrick (2004), measures revenue capacity in terms of own-source revenues relative to city wealth (tax base, personal income and sales receipts). Clark and Ferguson (1983) measure fiscal strain by computing revenues per capita and dividing it by a city wealth index, population change, income and a residual of revenues per capita. Maher and Nolenberger (2009) computed general-fund revenues (excluding capital projects funds) per capita, intergovernmental revenues as a percentage of total general fund revenues and own-source tax revenues as a percentage of general-fund revenues.

The diversity in spending measures is just as great. While excluding a revenue measure, Kloha, Weissert and Kleine (2005) calculate general fund expenditures as a percentage of taxable value as one of their 10 measures of fiscal distress. Hendrick's (2004), measure of spending need consists of per capita expenditures relative to crime rates, housing age, population density and whether a municipality was in a fire district. Clark and Ferguson's (1983) expenditure measure is calculated the same as their revenue measure. Berne and Schramm (1986) define spending within the context of current and future expenditure pressure. Maher and Nollenberger (2009) capture spending in terms of relative general fund spending per capita. Ladd and Yinger (1989) focused on costs and spending needs for only general government, police and fire.

Fiscal flexibility captures the ability of governments to maneuver in both the short and long run. Hendrick (2004) uses the term "fiscal slack" which is meant to be more broadly defined than just unreserved fund balances. In fact, Hendrick (2004) defines fiscal slack in terms of four distinct measures; unreserved fund balance as a percentage of spending, capital expenditures as a percentage of total spending, enterprise income as a percentage of total own-source income (including enterprise), and debt service as a percentage of total spending. The importance of governments' ability to manage short-term fiscal shocks and provide fiscal flexibility through fund balances has been well documented (Porterba, 1994; Holcombe and Sobel, 1997; Pagano and Johnston, 2000; Pagano, 2002; Maher and Nollenberer, 2009). Hendrick's (2004, p.98) includes enterprise funds because they "… provide opportunities for municipalities to share revenues and costs with a separate set of funds that are less visible to public scrutiny". Capital expenditures provide opportunities for municipalities to vary spending

based on economic conditions (Levine, Rubin and Wolohojian, 1981; Hendrick, 2004). Conversely, communities with sizable debt have less slack (Hendrick, 2004).

Measures of debt levels are found in nearly every study of financial condition. According to Kloha, Weissert and Kleine (2005, p319), "[l]arge levels of debt relative to the government's ability to generate revenue are a clear sign of fiscal distress." Similarly, Maher and Nollenberger (2009) state that debt is often limited by state governments and is an important indicator of credit worthiness (also see for example, Ammar, et al. 2001; Benson and Marks 2007; Johnson and Kriz. 2005). Clark and Ferguson (1983) measure debt per capita and divide it by a city wealth index, population change and income. The purpose of measuring debt within the fiscal condition framework is, as previously mentioned, an attempt to capture current fiscal flexibility, but it also serves as a measure of future commitments (Berne and Schramm, 1986).

Another future commitment in need of consideration is pension obligations (Berne and Schramm, 1986; Maher and Nollenberger, 2009). In their update of Brown's "10-Point Test", Maher and Nollenberger (2009), measure unfunded pension liability as a ratio of the actuarial value of the plan's assets by the actuarial accrued liability. According to Maher and Nollenberger (2009, p65) "[t]he level of funding differs significantly among cities, raising important concerns regarding the future financial condition of many jurisdictions." Another useful measure of future obligations, other post-employment benefits (OPEBs) such as retiree's insurance costs is not currently required to be reported by the Government Accounting Standards Board.[2]

Finally, operating position is the frequently included by public finance researchers to measure fiscal condition. Financial position is typically measured in terms of general fund operating revenues relative to general fund operating expenditures. According to Maher and Nollenberger (2009),

> This measure… is a financial indicator that the credit rating agencies review on a
> regular basis. Credit agencies are concerned when there are two consecutive
> years of deficits, a deficit in the current year that is larger than the deficit in the
> past year, a deficit in two or more of the past five years, or an abnormally large
> deficit – more than 5 to 10 percent. (63).

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[2] See Marlowe (2007) for a discussion of the anticipated size of OPEBs.

Kloha, Weissert and Kleine's (2005), 10-point "fiscal distress index" is comprised of three different measures of operating position – current general expenditures relative to revenues, the existence of an operating deficit in the previous fiscal year and whether the government had a fund deficit in both the current and previous year.

Once the measures have been defined, the next step in the financial condition analysis process has also been debated. The differences generally boil down to the extent to which it is appropriate to combine the indictors into one single measure of fiscal condition, or examine the components separately. For instance, Brown (1989) recommends a combined score based on a community's quartile ranking on each of the 10 indicators. If the individual elements or metrics are to be combined, how should they be combined, simple addition as suggested by Kloha, Weissert and Kleine (2005), or perhaps through more rigorous statistical approaches such as factor analysis or principal component, or even cluster analysis? Should each individual metric have the same weight and if not how is the aggregation weighting scheme determined?

Others, such as Hendrick (2004, p85), assert that fiscal health is too complicated to combine into one single measure, "[t]he complexity and indirect nature of the relationships between dimensions make it difficult to construct one, comprehensive indicator of fiscal health or fiscal condition. Rather, measures of these dimensions should be constructed separately and assessed in relation to one another to produce a complete and more accurate picture of fiscal conditions."

As summarized by Hondale, et. al (2004) and Hendrick (2004) there currently exist a number of studies attempting to measure fiscal conditions, or health or stress. Despite the extent of the academic and professional association based literature and the increasingly widespread use of metrics of fiscal condition in modern management practices, the current state-of-the-art is lacking on several fronts. While there is general widespread agreement on the theoretical characteristics of fiscal condition, there is a large breach between the theory and the empirics. Simply put, the empirical metrics that have been suggested in the literature appears to be all over the proverbial map. Indeed, Maher and Deller (forthcoming) find evidence that "objective" metrics of fiscal health derived from secondary data are poor predictors of "subjective" metrics based on surveys of local officials' perceptions of fiscal health. Part of this divide between the theory and the empirical work is the lack of adequate secondary data sources. For example,

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reporting requirements, if any exist at all, vary significantly from state to state. Metrics that make good sense in one state may not be operational in another state. An additional problem is that all of the available studies on fiscal conditions that we are aware of ignore the presence of tax and expenditure limitations.

Methodology

The principle aim of this study is to measure the relationship between municipal fiscal conditions and TELs. This requires the operationalization of two complicated concepts (TEL and fiscal condition) as well as the creation of a dataset capable of measuring the relationship. Measurement of TELs was solved by Amiel, Deller and Stallmann (2009) and we simply incorporated the 2005 local ADS Index values for each municipality. Because the ADS Index is constructed at the state level, each municipality within the same state is assigned the same Index value.

The financial condition data we utilized was initially collected by the Government Finance Officers Association (GFOA). The GFOA requires that governments interested in receiving their Certificate of Achievement for Excellence in Financial Reporting award submit audit report information.[3] These GFOA data have been used in several studies of financial condition (Brown, 1989, 1993; Maher and Nollenberger, 2009). The only drawback of these data is that they are self-reported and, thus, do not constitute a true sample of US cities. According to Maher and Nollenberger (2009, p62), the "… strength of the dataset is that it provides a consistent collection of audited financial data for municipalities throughout the country… one might think of the respondents as high-performing communities and thus providing a benchmark for all municipalities". In 2005, the GFOA collected audit report data on 1,746 municipalities from 47 states data (missing municipalities in HI, NJ and WV). The number of municipalities in each state represented in the dataset range from 240 in California to one in Vermont. The average population size of municipalities is 67,748 and ranged from 33 (Indian Creek Village, FL) to 8.1 million (New York, NY).

As detailed below our basic models can be expressed as:

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[3] For additional information of the GFOA Certificate program see:
http://www.gfoa.org/index.php?option=com_content&task=view&id=35&Itemid=58

$$\left.\begin{array}{c} FC_j \\ \Delta FC_{j,t-1\to t} \end{array}\right\} = \alpha + \beta TEL + \sum_i \varphi_i Demograp_i + \sum_i \gamma_i Govtstruc_i + \varepsilon_j$$

Here FC_j is the j$^{\text{th}}$ fiscal condition metric and $\Delta FC_{j,t-1\to t}$ is the change in the j$^{\text{th}}$ metric over the time period t-1 to t. The variable *TEL* is the ADS Index for limits placed on local governments within the state, *Demograp* is a set of demographic variables describing the local community serviced by the municipality and *Govtstruc* captures the characteristics of the structure of the municipality. Finally, the regression error term (ε) is assumed to be well behaved. Each are now discussed in turn.

<u>Dependent Variables</u>

Consistent with previous research, we measure municipal fiscal condition within the framework of current available resources (revenue and expenditure capacity, operating position, fiscal slack) and long-term commitments (debt and pension liabilities). While the measurement of these concepts varies substantially across previous works, we have attempted to be as consistent with the field as possible. In addition to the measurement, there is also the issue of timeframe. Researchers have examined fiscal condition from the perspective of a particular year (Clark and Ferguson, 1983; Brown, 1989; Ladd and Yinger, 1989; Hendrick, 2004; Maher and Nollenberger, 2009) whereas others make a compelling argument that change over time is appropriate (Kloha, Weissert and Kleine, 2005). Since each captures a different dimension of fiscal condition and are, in most cases, dependent on one another, we have included both determinants of fiscal condition in 2005 and change in fiscal condition between 2003 and 2005. In our presentation of the basic model to be estimated *t*-1 is 2003 and *t* is 2005.

Own-Source Revenues. The principle objective of this measure is to determine the ability of municipalities to manage fiscal stress (revenue capacity) through revenue growth. The specific measures of revenue capacity range from own-source taxes divided by personal income (ACIR, 1979) to revenues per capita divided by a city wealth index, population change, income (Clark and Ferguson, 1983) to own-source revenues relative to wealth (Hendrick, 2004). We measure revenue capacity as own-source revenues divided by taxable property. The expectation is that, all other things being equal, communities have more revenue capacity (less fiscal stress) the lower their own-source revenues relative to taxable property. It is suggested by the more practitioner-based studies of fiscal condition that just as, if not more important, than current

revenue levels is the examination of trends over time (Brown, 1989; Nollenberger, 2003; Maher and Nollenberger, 2009). To accommodate this recommendation, change in own-source revenues (2003-05) relative to taxable property has also been included. We expect an inverse relationship between these two measures that is municipalities with lower revenues per taxable property in 2003 would grow at a rate greater than municipalities that had higher revenues per taxable property.

General-Fund Expenditures. Including spending as a measure of fiscal condition appears relatively straightforward. Communities spending more are, all other things held equal, in worse fiscal condition than those spending less (Brown, 1989). The reality is that this is too simplistic a view (Hendrick, 2004). The more appropriate approach is to determine the extent to which expenditures are keeping pace with service demands and ability to meet those needs (Hendrick, 2004; Clark and Ferguson, 1983). While conceptually appealing, practically capturing this concept is difficult. Hendrick (2004), measures spending relative to crime, housing age , density and whether a community was in a fire district. Clark and Ferguson (1983), calculate per capita spending relative to a wealth index, population change and income. Given data limitations and the inability to define a unifying measure, we use Khola, Weissert and Kleine's (2005) definition as general fund expenditures as a percentage of taxable property. Similar to the revenues measure, communities are considered to have more fiscal stress the greater their spending as a percentage of taxable property. Similarly, the greater the increase in municipal spending between 2003 and 2005 the more fiscally stressed the community.

Operating Position. Definitions of operating position are much more consistent in the literature and calculated as general-fund revenues relative to general-fund expenditures (Brown, 1989; Kloha, Weissert and Kleine, 2005; Maher and Nollenberger, 2009). The only differences in measurement appear to be in terms of focus, that is whether there is a current year surplus/deficit, the size of a deficit and the number of deficits over several fiscal years. We use Kloha et. al.'s (2005) measure of operating position; general-fund revenues minus general-fund expenditures, divided by general fund revenues. We also sum the annual surplus/deficits between 2003 and 2005. The expectation is that communities able to grow greater surpluses over the three-year period are in better financial condition and those with the greatest deficits are in greater fiscal stress.

Fiscal Slack. The most common measure of fiscal slack is the size of government's unreserved fund balances. We measure municipal fund balance as the sum of general-fund unreserved undesignated and unreserved designated funds divided by general-fund revenues. In an effort to provide a more complete measure of fiscal slack, we followed Hendrick's (2004) approach and incorporated enterprise funds and debt service.[4] Enterprise income was calculated by summing enterprise income and own-source revenues then dividing by enterprise income. Debt service was calculated as a percentage of general-fund expenditures. For measures of change, we subtracted the difference in ratios for 2003 from 2005. The expectation is that the growth/decline in these ratios will be a function of improving/declining financial condition and the ratio in 2003. It should not be surprising to find communities with greater levels of slack in 2003 to grow less or decline between 2005 and 2003 compared to communities with less fiscal slack in 2003.

Future Obligations. The size of future obligations measured in terms of debt levels and debt expenses is frequently included in fiscal condition analyses (Berne and Schramm, 1986; Brown, 1989; Nollenberger,2003; Hendrick, 2004; Kloha, Weissert and Kleine, 2005; Maher and Nollenberger, 2009). More difficult to measure due to data availability is pension obligations (Berne and Schramm, 1986). In one of the few studies of fiscal condition where pension liabilities were computed, Maher and Nollenberger (2009, p65) found, "The level of funding differs significantly among cities, raising important concerns regarding the future financial condition of many jurisdictions." We measured a municipalities' future obligations with two ratios: general obligation debt as a percentage of taxable property and unfunded pension liability as a ratio of unfunded actuarial value of the pension plan's assets by the actuarial liability of the plan. Change in future obligations was calculated as the difference between levels in 2003 from those in 2005.

Independent Variables

The key independent variable for this analysis is the severity of the tax/expenditure limit imposed by states on municipalities. As discussed earlier, Amiel, Deller and Stllmann (2009)

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[4] We also measured enterprise income relative to general fund revenues per Hendrick (2004) and enterprise assets relative to liabilities per Maher and Nollenberger (2009). In both cases, the models were statistically insignificant.

recently completed an analysis of TEL severity over time and across each of the 50 states. For 2005 the local TEL Index has a mean of about 15.9, standard deviation of 10.7 and a range of 0 to 38. Colorado has the most restrictive local TEL as measured by the ADS Index with a value of 38 followed by Michigan and Washington with values of 37, then California with a value of 36. States with no TEL-type restrictions on local governments include Connecticut, Maine, New Hampshire and Vermont. This is not to say that these latter states have "perfect flexibility" in generating revenues. For example, New Hampshire does not have a sales tax which can be a major source of revenues for many municipalities.

We hypothesize that the stricter the community's TEL, the worse its financial position. Specifically, TEL severity should be negatively related to operating position (current revenues to current expenditures and change in operating position between 2003 and 2005), fiscal slack (fund balance, change in fund balance) and positively related to operating position (debt service and change in debt service) and long-term commitments (debt as a percentage of taxable property and change in debt as a percentage of taxable property between 2003 and 2005). Popular studies of fiscal condition have typically measured revenue and expenditures in a per capita basis (Brown, 1989; Nollenberger, 2003; Maher and Nollenberger, 2009) or relative to tax base (Khola, Weissert and Kleine, 2005). The expectation is that communities are in stronger fiscal condition the lower their relative revenues and expenditures. While this may be appropriate for case-studies of communities within states, it ignores differences in ability for communities to grow revenues and/or expenditures across states. This is why TEL severity needs consideration. We hypothesize that the stricter the community's TEL, the lower its general fund revenues and expenditures as a percentage of taxable property.

Demographic Characteristics. Determinants of community fiscal condition are typically associated with demographic attributes and internal management capacity (Berne and Schramm, 1986; Hendrick, 2004). For this analysis, five measures of community needs/capacity are included; the percentage of population age 18 or less, per capita income, taxable property per capita, population change between 2003 and 2005, and change in taxable property between 2003 and 2005. Communities with greater resources, or wealth, are expected to be in stronger financial condition than those with less wealth. Similarly, the percentage of the population age 18 or less functions as a measure of service demand. Thus, the larger the youth population, the greater the level of service demand and weaker the community's financial position.

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Government Structure. The ability of local governments to effectively manage finances is typically rooted in management structure. In fact, the financial management of a city plays an important role in determining bond ratings (Maher and Kammholz, 2008). It is expected that, all else being equal, local governments with a manager form of government, compared to a commission or mayor-council will perform better, including financially. To capture this relationship we utilized ICMA's 2006 survey of governments. The survey provided response data on 1,006 of our available cases (58 percent of total). Of those communities, 75 percent represented council-manager forms of government. The ICMA dataset also enabled us to focus more closely on the financial management of the community. One of the questions asked respondents, "Who has the independent authority to develop and make recommendations for the budget submitted to the council?" The responses were; chief administrative officer (60 percent), chief financial officer (9 percent), chief elected officer (10 percent), a combination of chief elected and administrative officers (7 percent) and other (6 percent). Dichotomous variables were created to measure the impact of the chief administrative officer the chief financial officer.

Results

Except for FY 2005 operating position, all of the regression models are statistically significant[5]. The amount of variation in the dependent models explained by our independent variables varies from two percent to 30 percent. The models with the lowest r^2 were those attempting to explain variation in change in GO debt ($r^2 = 0.023$), fund balance ($r^2 = 0.039$) municipal debt service ($r^2 = 0.05$). Models with the greatest predictive power were those explaining change in operating position ($r^2 = 0.301$), change in own-source revenues ($r^2 = 0.293$) and change in general fund expenditures $r^2 = 0.212$). Regarding the latter models, the baseline values in FY 2003 were important determinants of the change variables thus, the cumulative operating position between 2003 and 2005 was positively affected by the 2003 operating position; the change in own-source revenues between 2003 and 2005 was negatively associated with own-source revenues in 2003; and change in GF expenditures was negatively related to GF expenditures in 2003.

The findings generally support our primary research question in that the severity of state-imposed TELs on local governments affects most facets of local financial condition including

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[5] The F Scores for the listed models had p values < 0.01.

revenues, expenditures, unreserved fund balances, debt service, general-obligation debt and unfunded pension liabilities. As hypothesized, the more severe the local TEL, the lower the level of the community's own-source revenues and general fund expenditures. Contrary to our hypothesis, TEL severity is positively associated with the size of a community's unreserved fund balance and the extent to which pension obligations are funded. The relationship between TELs and debt service, and overall general-obligation debt is also contrary to our hypothesis. It appears that the stricter a municipality's TEL, the lower its GO debt and debt service. The existence of a statistical relationship between fiscal condition and TELs is much more consistent than that found between fiscal condition and either demographic characteristics or management form.

Management form was found to be related to several dimensions of municipal fiscal condition. Controlling for TELs and demographic composition, council-manager forms of government generally have less GO debt and pay less debt service than communities with other forms of government (principally mayor-council). From the perspective of financial condition analysis, it appears that who has authority over the budget process also matters. Communities with chief administrative officers (CAO) and chief financial officers (CFO) in charge of the budgeting process tend to have larger fund balances, and communities with CAOs grew their reserves at a higher rate between 2003 and 2005. In addition, communities where a CAO manages the budgeting process, GO debt grew at a higher rate between 2003 and 2005. Where a CFO manages the budging process, pensions were funded at a higher rate and the level of pension funding grew at a higher rate between 2003 and 2005, furthermore, own-source revenues and spending were higher than other communities.

Our models also suggest that the demographic composition and change in its composition between 2003 and 2005 are related to fiscal condition. The community's wealth measured as per capita income was positively related to debt service and pension funding and negatively related to own-source revenues and GF expenditures. Community wealth measured as per capita taxable property was also negatively related to own-source revenues and GF expenditures, as well as debt service. The percent change in population and taxable property were positively related to changes in own-source revenues and changes in expenditures, and negatively related to change in GO debt. Change in population was also positively associated with change in debt service whereas change in taxable property was positively related to change in fund balance

Conclusions

This was an ambitious project in that we sought to examine the relationship between two complicated concepts in ways not previous done. Most research on both TELs and financial condition tend to be limited to case studies specific to a particular state. While the case studies provide a rich theoretical base, they limit our ability to examine the effects of different policies across the states. This is particularly troublesome as state and local officials debate recovery strategies from the current economic crisis. Utilizing the work by Amiel, Deller and Stallmann (2009) we were able to quantify different TELs imposed on most communities throughout the US. This was supplemented with audited financial data collected by GFOA providing a unique dataset capable of measuring commonly identified measures of fiscal condition in a cross-sectional manner. The data are not perfect – the communities are self-selected and reflect more professional managed communities than a pure national sample. That being said, the positives of a large national sample of municipalities in nearly every state outweigh the negatives.

This study also revealed a flaw in some studies of financial condition. Several studies (Brown, 1989; Maher and Nollenberger, 2009) have suggested that relative revenues and/or expenditures by themselves reflect fiscal strength/weakness depending on whether a community was low (positive) or high (weak) compared to the comparison group. This, however, assumes that communities have the ability to grow equally while the reality is that TEL affect the extent to which can grow. Given the negative relationships between TEL strength and revenues/expenditures, the results suggest that such comparisons need to be done within the context of TEL limits.

Our findings that TEL severity was positively associated with size of undesignated fund balance and the extent to which pension obligations are funded, while also being negatively associated with debt service and overall general-obligation debt challenge the notion that TELs inherently put communities in weaker financial position. It could be the case that TELs force communities to more effectively manage their resources by building reserves, better funding future obligations and controlling debt. From the perspective of state policy makers, and perhaps taxpayers, TELs are having the desired effects (limiting spending and revenues) and forcing stronger fiscal management practices. On the other hand, the current economic downturn could

very well alter these relationships. As tax bases decline and revenues drop, those communities under more strict TELs will have a more difficult time recovering which may lead to more rapid drawing down of fund balances, incurring debt and reducing pension funding.

The analysis also reveals that management form is related to local financial condition. Council-manager forms of government generally have less debt than communities with other forms of government, e.g., mayor-council. Yet, from the perspective of financial condition analysis, it appears that who has authority over the budget process also matters. Communities with chief administrative officers and chief financial officers in charge of the budgeting process tended to have larger fund balances. Communities with chief financial officers running the budget process also tended to higher own-source revenues and general-fund expenditures, and better funded pensions.

This analysis also confirmed the assertion by scholars such as Hendrick (2004) that a composite measure of financial condition is not possible given the different, unrelated dimensions. We found little relationship between each of our measures of financial condition and those independent variables included in the models had varying effects, depending on the dependent variable.

A final observation about the models is their weak overall explanatory power. None of the models explained more than 30 percent of the variation in the dependent variable even when change was estimated and 2003 base values was included. Clearly work on financial condition needs to move beyond measurement to explanation.

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Descriptive Statistics of Dependent Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Revenues as Pct. Taxable Property (2005)	1726	.00	18.88	1.0415	1.060
Pct. Point Change in Revenues 2003-2005	1481	-13.83	6.29	-.0424	.7697
GF Expends as Pct Taxable Property (2005)	1726	.00	21.73	1.1822	1.224
Pct. Point Change in GF Expends 2003-2005	1481	-19.98	9.04	-.0762	0.903
Unreserved Fund Balance as Pct. GF Revs (2005)	1738	-25.52	298.83	35.70	27.58
Pct. Point Chg. In Fund Balance 2003-2005	1492	-71.83	51.65	0.0869	12.34
Debt Service as Pct. Expends (2005)	1739	.00	93.64	6.4796	8.21120
Change in Debt Service 2003-2005	1498	-1.20	1.58	-0.0074	0.135
GO Debt as Pct. Taxable Property (2005)	1728	.00	16.08	.7673	1.22343
Pct. Point Change in GO Debt 2003-2005	1483	-14.27	12.38	-.0202	.85711
Pension Assets to Liabilities (2005)	1171	-69.87	389.22	80.357	30.16
Pct. Point Chg. Pension Assets 2003-2005	979	-101.68	132.11	-5.81	16.84

Descriptive Statistics for Independent Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Percent Population Less 18 Yrs	1738	3.00	60.50	27.7510	7.60004
Per Capita Income	1738	60.50	137384	24708	11535
Per Capita Taxable Property	1738	3086	20391767	107993	532508
Manager-Council Form of Gov't	979	.00	1.00	.7763	.41693
Budget by Chief Admin. Officer	1006	.00	1.00	.7664	.42333
Budget by Chief Financial Officer	1006	.00	1.00	.0596	.23694
Population Change 2003-05	1499	-1.00	1028	.8687	26.61
Change Taxable Property 2003-05	1489	-1.00	38357	48.21	1048

Amiel, Deller and Stallman
Local TEL Index

Type of TEL	Points	Statutory/Constitutional	Points
Overall Property Tax Rate Limit	7	Full Disclosure	1
Limited to more than or equal to 2.5%	2		
Limited to more than 2.5 percent	1	**Scope**	
		Constitutional	1
Specific Property Tax Rate Limit	6	County	1
		Municipality	1
Property Tax Revenue (Levy) Limit	5	Special District	1
Limit less than or equal to inflation or 5%	3	Other	1
Limit less than or equal to 5%	2		
Limit more than 5%	1	**Overrides/Exemptions**	
		Sales Tax Option	
Assessment Increase	4	Other taxes	-1
No approved increases	4	Debt Service	-1
Lower of 5%(0r less) or CPI	3	Home Rule	-1
Limit less than or equal to 5%	2	Special Levies	-1
Limit more than 5%	1	Capital Improvements	-1
		Emergency	-1
General Revenue Limit	3	Construction	-1
No new tax or rate increase	4	Other	-1
Limit equal to inflation and or population growth	3		
Limit is less than or equal to five percent	2	**Method of override**	
Limit is between five and ten percent	1	No approved overrides	4
		Super majority Referendum	2
		Majority vote by local representatives	1
General Expenditure Limit	2	Simple Majority Referendum	1
Limit equal to inflation and or population growth	4	Appeal to Courts	1
Limit is equal to the change in per capita income	3	Appeal to state board	1
Limit is less than or equal to five percent	2		
Limit is between five and ten percent	1		

Amiel, Deller and Stallmann
Local TEL Index 2005

State	Value	State	Value
AK	13	MT	20
AL	15	NC	7
AR	21	ND	16
AZ	32	NE	30
CA	36	NH	0
CO	38	NM	34
CT	0	NV	29
DE	9	NY	17
FL	22	OH	21
GA	11	OK	18
IA	19	OR	27
ID	16	PA	12
IL	20	RI	10
IN	9	SC	3
KS	8	SD	10
KY	26	TN	3
LA	19	TX	18
MA	14	UT	11
MD	11	VA	1
ME	0	VT	0
MI	37	WA	37
MN	8	WI	13
MO	20	WY	7
MS	7		

Pearson's Correlation Coefficients
Modeled Dependent Variables

	Fund Balance	Chg Fund Balance	Debt Service	Chg Debt Service	Revenues	Chg. Revenues	Expends	Change Expends	Debt	Chg Debt	Pension Liability	Chg Pension Liability
Fund Balance		.085**	-.032	.008	-.165**	.043	-.193**	.041	-.139**	.019	-.005	.025
Chg Fund Balance	.085**		.007	-.067**	.015	.019	-.026	-.014	.021	-.017	-.010	.026
Debt Service	-.032	.007		.297**	.004	.024	.005	.017	.390**	.006	.006	-.038
Chg Debt Service	.008	-.067**	.297**		-.028	-.045	-.009	-.023	-.060*	.080**	-.016	.023
Revenues	-.165**	.015	.004	-.028		.057*	.951**	.068**	.406**	.098**	.038	.013
Chg. Revenues	.043	.019	.024	-.045	.057*		.062*	.926**	.125**	.359**	-.324**	-.024
Expends	-.193**	-.026	.005	-.009	.951**	.062*		.080**	.407**	.123**	.015	.014
Change Expends	.041	-.014	.017	-.023	.068**	.926**	.080**		.130**	.379**	-.258**	-.022
Debt	-.139**	.021	.390**	-.060*	.406**	.125**	.407**	.130**		.323**	-.013	-.001
Chg Debt	.019	-.017	.006	.080**	.098**	.359**	.123**	.379**	.323**		-.025	-.025
Pension Liability	-.005	-.010	.006	-.016	.038	-.324**	.015	-.258**	-.013	-.025		-.009
Chg Pension Liability	.025	.026	-.038	.023	.013	-.024	.014	-.022	-.001	-.025	-.009	

	Revenue and Expenditure Capacity			
	Own-Source Revs as Pct Property Value	Chg. Own-Source Revs 2003-05	GF Expends as Pct Property Value	Chg. GF Expends 2003-05
TEL Index	**-0.013** ***	**-0.0012**	**-0.016** ***	**0.0011**
Demographic Characteristics				
Pct. Population Less 18	-0.00011	-0.000067	-0.002	0.0011
Per Capita Income	-0.0000079 *	-0.00000034	-0.000011 **	-0.00000067
Per Capita Taxable Property	-0.00000248 ***	-0.00000027	-0.0000030 ***	-0.00000014
Change in Population	0.00024	0.0058 ***	-0.00048	0.00623 ***
Change in Taxable Property	-0.00031	-0.00437 ***	0.00044	-0.00423 ***
Management Form				
Council-Manager	-0.035	-0.00052	-0.056	0.0079
Budget - CAO	-0.00018	0.024	-0.057	0.008
Budget - CFO	0.476 ***	0.034	0.409 **	0.0.86
Own-Source Revs 2003		-0.5611		
Expends as Pct Value 2003				-2.282 *
Fund Balance 2003				
Debt Service 2003				
GO Debt 2003				
Pension Funding 2003				
N	779	779	779	779
Adj. R^2	0.102	0.293	0.125	0.212

Fund Balance and Debt Service

	Fund Balance		Change Fund Balance		Debt Service		Change Debt Service	
TEL Index	**0.355**	*******	**0.009**		**-0.126**	*******	**-0.00018**	
Demographic Characteristics								
Pct. Population Less 18	0.092		0.008		0.051		-0.0002	
Per Capita Income	0.000021		0.000012		0.000066	*	0.00000038	
Per Capita Taxable Property	-0.0000049		0.0000049		-0.000010	*	-0.000000076	
Change in Population	0.0062		0.0461		-0.021		-0.000868	**
Change in Taxable Property	-0.0274		-0.0294	***	-0.0032		0.000117	
Management Form								
Council-Manager	0.108		-1.335		-2.755	***	-0.022	
Budget - CAO	6.713	**	3.070	**	-0.101		-0.0061	
Budget - CFO	10.920	**	1.514		-1.960		-0.015	
Own-Source Revs 2003								
Expends as Pct Value '03								
Fund Balance 2003			-18.269	***				
Debt Service 2003							-0.331	***
GO Debt 2003								
Pension Funding 2003								
N	777		775		776		778	
Adj. R^2	0.039		0.178		0.050		0.113	

GO Debt, Pension Funding and Operating Position

	Debt		Change Debt		Pension Funding		Change Pension Funding	Change Operating Position
TEL Index	**-0.026**	*******	**-0.0027**		**0.603**	*******	**-0.089**	**-0.0021**
Demographic Characteristics								
Pct. Population Less 18	-0.00078		-0.0037		-0.200		-0.031	-0.00053
Per Capita Income	0.000005		0.0000015		0.00034	*	0.00012	0.0000016
Per Capita Taxable Property	-0.0000036	***	-0.00000079	*	-0.000027		-0.0000075	-0.00000018
Change in Population	0.00149		0.0029	*	0.0051		0.0817	0.0012
Change in Taxable Property	0.00154		-0.0018	***	-0.0333		0.00768	0.000093
Management Form								
Council-Manager	-0.263	**	-0.018		-5.923		-0.647	0.00046
Budget - CAO	0.0618		0.133	*	-0.309		-2.524	-0.068
Budget - CFO	0.1303		0.177		13.545	*	-1.118	-0.058
Own-Source Revs 2003								
Expends as Pct Value '03								
Fund Balance 2003								
Debt Service 2003								
GO Debt 2003			-5.747	***				
Pension Funding 2003							-24.42 ***	
Operating Position 2003								2.346 ***
N	779		779		547		521	769
Adj. R²	0.091		0.023		0.070		0.187	0.301