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Recommended Citation
doi: https://doi.org/10.1080/15309576.2021.1955217

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Applying The Loss-Conflict Model of Fiscal Retrenchment:
Understanding City Expenditure And Revenue Responses to a Budget Crisis

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Abstract

Using data from a 2015 national survey of U.S. cities with a population of 50,000 or more, this research examines cities’ responses to a budget crisis. The study develops and tests a model of retrenchment choices that categorizes expenditure- and revenue-related actions implemented by cities based on the degree of loss that they are likely to inflict on budgetary actors and the resulting conflict. Factor analysis confirms that city responses can be categorized into two groups representing slight-loss/low-conflict and high-loss/high-conflict retrenchment actions. The study then applies regression analysis to identify the different economic, fiscal, demographic, political, governance, and institutional factors that influence reliance on different groups of retrenchment responses.

Key words: fiscal stress, fiscal retrenchment, city governments, Great Recession
Introduction

City governments deliver a range of services and public infrastructure that are crucial for the health, safety and wellbeing of people (Jimenez 2015). How cities respond to fiscal difficulties matters for their capacity to consistently provide critical public services. Numerous terms have been used in the public budgeting and public administration literature to refer to how governments respond to fiscal stress. Levine (1979, 180) uses the term “cutback management,” defined as “managing organizational change toward lower levels of resource consumption and organizational activity.” However, Levine (1978) does not focus exclusively on fiscal stress but also on other causes of organizational decline such as political vulnerability and organizational entropy, among others (Jimenez 2014a). Another term used in the literature is fiscal retrenchment. For Levine, Rubin and Wolohojian (1981, 38), fiscal retrenchment responses refer to “the tactics jurisdictions pursue when faced with fiscal stress.” This study explores the pattern of fiscal retrenchment responses in midsized and large cities in the U.S. that faced a budget crisis, and empirically examines the factors that influence the choice of responses.

Different groups of models have been introduced and explored in the literature to explain the choice of fiscal retrenchment responses (For more comprehensive reviews, see Maher and Deller 2007; Raudla, Savi, and Randma-Liiv 2015; Justice and Yang 2018; Bordeaux 2018). One group – the decremental perspective – suggests that retrenchment is dominated by decremental budgeting. Whereas incrementalism means that governments increase program budgets by small steps, decrementalism refers to the reduction of budgets at the margins (Schick 1980). The decremental model assumes that across-the-board cuts will dominate in the retrenchment process because they minimize political conflict by promoting a sense of fairness and equity among budgetary claimants (Levine 1978), and because they simplify decision
making (Levine, Rubin and Wolohojian 1981). This prediction has received inconclusive support in the empirical literature. A few studies show that governments rely on across-the-board-cuts to address fiscal difficulties (Levine 1985; Lewis 1984), or an equal mix of across-the-board and targeted cuts (Hendrick 2011; Dougherty and Klase 2009). Other studies indicate that targeted cutting is the predominant response (Levine, Rubin and wolohojian 1981; Bartle 1996; Maher and Deller 2007; Jimenez 2014a, 2015; Justice and Yang 2018).

A second group of models – the “stages” approach – suggests that governments go through a series of predictable and hierarchical stages of responses to fiscal stress. Retrenchment actions vary according to the level of resource scarcity (see Schick 1980; Wolman and Davis 1981; Levine, Rubin and Wolohojian 1981). Specifically, organizations avoid highly disruptive administrative responses in the early stages of scarcity but are forced to implement deep budget and service cuts when revenues decline severely. Empirical evidence indicates that retrenchment does not follow a strict sequence of stages (Levine, Rubin and Wolohojian 1981; Bartle 1996; Morgan and Pammer 1988; Pammer 1990; Justice and Young 2018). Still, some observe that retrenchment, to a certain extent, follows a phased-in response pattern, with more severe tactics adopted as fiscal stress worsens (Hendrick 2011; Klase 2018; Bordeaux 2018).

A third group of models is based on Cohen, March, and Olsen’s (1972) garbage can theory, which argues that the decision-making process is unstructured, and choices are often the product of chance. Morgan and Pammer (1988), Pammer (1990), Bartle (1996), and Maher and Deller (2007) do not find any consistent explanations for how municipal governments choose among different retrenchment responses, and conclude that the choice of action is largely random. Justice and Yang (2018) question this conclusion, arguing that the choices are influenced by the conditions that prevail in each government and community. If local contexts
differ, there is no reason to expect that governments will implement a similar or consistent set of responses.

Building on the key insights from the literature, this study develops and tests an alternative model of fiscal retrenchment responses that categorizes several expenditure- and revenue-related actions implemented by city governments based on the concepts of loss and conflict. The loss-conflict model is tested using data from a 2015 national survey of cities in the U.S. with a population of 50,000 or more. The analysis proceeds in two parts. In the first part, factor analysis confirms the loss-conflict model, specifically whether city responses can be categorized into groups representing slight-loss/low-conflict and high-loss/high-conflict retrenchment actions. In the second part, the study applies regression analysis to identify different economic, fiscal, demographic, political, governance, and institutional factors that influence the use of specific groups of retrenchment actions.

**The Loss-Conflict Model of Fiscal Retrenchment**

This study builds on the model of fiscal retrenchment developed by Jimenez (2014a) that classifies retrenchment choices guided by two concepts: loss and conflict. March and Simon (1958, 87) define conflict as “a breakdown in the standard mechanisms of decision making, so that an individual or group experiences difficulty in selecting an alternative.” Some preconditions for conflict to occur include: a) a decision situation that involves multiple actors; b) interdependence among actors; and c) incompatibility of goals (Dahrendorf 1958). Actors in a decision situation experience a loss (gain) when they fail (succeed) to achieve their goals. The degree of conflict depends on the extent of loss – whether real or perceived – experienced by actors. The succeeding discussion threshest the key ideas of the loss-conflict model.

**Multi-Actor Decision Situation**
Budgeting involves making decisions about the allocation of public funds to achieve public objectives (Rubin 2016). Because retrenchment involves decisions that affect revenues and expenditures, it is an integral dimension of the budgetary decision-making process. Several actors formally and directly interact to bargain and negotiate, or informally and indirectly attempt to influence, decisions on how much funds to raise, who is going to pay, and how the funds will be spent and for whom. These actors include elected officials, appointed managers, city government employees, and citizens. The process of decision making needs to take place repeatedly and within a limited time frame – annually in the case of most municipal governments – if a budget is to be adopted in time for government to meet its service responsibilities.

Interdependence

Different budgetary actors play formal and informal roles in the retrenchment process (Rubin 2016). Retrenchment decisions, as most budgetary decisions, are primarily formulated and adopted by appointed managers and elected officials. Elected officials rely on the information, analysis, and recommendations provided by appointed managers. These elected and appointed officials are the formal decision makers in the retrenchment process who directly shape cities’ responses to fiscal stress. But these formal decision makers are also influenced by other actors within the city government, and external actors who play a more informal and indirect role in budgeting. Within the city administration, elected and appointed officials are dependent on employees to implement their decisions (Jimenez 2017a). Externally, whether retrenchment choices are adopted also depends on the support of citizens (Jimenez 2014a). Citizens are taxpayers and consumers of services. In a representative democracy, they also determine whether current officials will hold on to their jobs in the next election (Downs 1957). Interest groups can exercise an even stronger influence on elected officials if they are able to
raise resources to support candidates during elections. City officials must therefore be cognizant of the needs and demands of different constituencies, even if citizens and groups do not have formal roles in budgeting.

**Goal Compatibility**

The different actors have distinct goals in the budgeting process, and these goals are not necessarily compatible. While some describe groups of actors in the budget process as monolithic groups with singular goals or interests, others argue that interests vary even within the same group. For example, the stereotypical description of elected officials is that they desire to be re-elected. To maximize votes, elected officials need to be responsive to the demands of voters (Downs 1957). This might lead to higher expenditures if constituents demand more services, and lower taxes if elected officials fear alienating voters. Others argue that elected officials can be fiscally responsible and maintain the quality and level of services without necessarily increasing spending; or raise taxes when circumstances – such as a structural deficit – demand so (Rubin 2016). City managers are concerned about their professional reputation, which can lead them to emphasize efficiency in government operations (Jimenez 2020). But some managers may behave as budget maximizers (Niskanen 1972). Similarly, public sector employees are described as primarily interested in higher salaries and non-monetary benefits from their position (Niskanen 1972). Others argue that government workers are guided by the public interest and aim to provide public services efficiently and effectively (Perry and Wise 1990). Citizens have distinct fiscal tastes. While some prefer a small government that provides fewer services and taxes less, others desire a big public sector (Tausanovitch and Warshaw 2014). Groups have different policy goals. Some desire higher government spending for goods and services that directly benefit their members while minimizing their tax costs. Others may not
be active in the budget process, especially during periods of growth, which means that many aspects of the budget do not have interest group backing (Rubin 2016).

**Experience of Loss**

Multi-actor decision situations, interdependence, and incompatibility of goals are necessary but insufficient conditions for conflict to occur. Actors must also perceive that decision making is a zero-sum game in which one’s gain translates to a loss for another. These gains or losses are defined in terms of the specific goals of each actor. A gain is the achievement of the outcomes that an actor prefers, and the inverse constitutes a loss. The more severe the loss, the more aggressive the reaction will be of groups who experienced the loss (Matland 1994). It is the severity of loss experienced by actors that determines the level of conflict.

It is during periods of fiscal stress that budgetary decision making becomes a zero-sum game where one’s gain results in a loss for another. Actors attempt to maintain or gain a bigger share of the shrinking budget pie at the expense of others. During periods of growth, actors see budgetary decision making as a positive-sum game where different stakeholders can potentially gain (Schick 1980). In contrast, during periods of fiscal stress, there are not enough resources to fund different spending priorities or to postpone tax increases. Everyone stands to lose. Elected officials compete with each other to protect programs that benefit their constituencies from cuts. Managers and employees face cuts to salaries and benefits, as well as the threat of layoffs. Citizens demand efficiency improvements, including cuts to personnel size and salaries, to reduce government spending and taxes. But despite citizens’ opposition, taxes might need to be raised to balance budgets. Organized groups increase their lobbying effort to preserve government spending that benefits their members, at the expense of other groups’ favored programs.
The concepts of conflict and loss explain the two most common findings in the literature on fiscal retrenchment. First, government officials generally avoid conflict when choosing retrenchment strategies (For more recent studies, see Justice and Young 2018; Bordeaux 2018). It is only when fiscal stress has become severe that officials are forced to implement conflictual strategies to improve their government’s ability to provide services. Avoiding conflict is crucial because conflict leads to non-cooperation (March and Simon 1958). When actors do not cooperate, decision delay or outright paralysis (decisions are not adopted) occurs. For example, city officials might not agree on specific actions to take to address a budget crisis. Employee unions may prolong negotiations about budget-balancing decisions that involve layoffs. Citizen groups may file a lawsuit against a government that is planning to terminate a certain service. The ultimate power of citizens, of course, is to punish elected officials at the polls. Non-cooperation can also lead to implementation failure, that is, decisions have been adopted but are not effectively carried out. Employees, for example, can resort to sabotage and work stoppage to delay the implementation of retrenchment responses.

Second, because the intensity of conflict is influenced by the degree of loss imposed on actors, decision makers attempt to mitigate the perception of loss through a variety of means. Specifically, the retrenchment response can minimize the magnitude of loss by either imposing small losses on actors or by limiting the number of actors that are affected (or “magnitude” approach). If more actors stand to lose, the response can emphasize fairness by ensuring that all parties share equally in the loss (“fairness” approach). Additionally, the response can delay the imposition of loss to the future (“immediacy” approach), or shift the loss to other actors with no standing in the budget process (“transferring or shifting” approach) (see Jimenez 2014a;
Bordeaux 2018). These arguments are explained further in the succeeding discussion of specific retrenchment actions.

**Classifying Retrenchment Responses According to The Loss-Conflict Model**

Figure 1 contains a list of common retrenchment responses identified in the literature, which are grouped into three major categories, specifically personnel-related expenditure responses, service-related expenditure decisions, and revenue actions. These initial classifications build on categories identified in extant studies of fiscal retrenchment (see, among others, Pammer 1990; Maher and Deller 2007) as well as on basic distinctions made in the public budgeting and financial management literature between the expenditure and revenue sides of the budgeting process (see Rubin 2016; Mikesell 2018).

Each retrenchment response within each major category is ranked based on the degree of loss that they are likely to impose on affected budget actors, and the resulting potential level of conflict. The continuum ranges from slight-loss/low-conflict (SL-LC) actions to high-loss/high conflict (HL-HC) responses. The rankings are not exact and does not allow us to measure the actual severity of loss and conflict associated with each strategy. The classification system also only compares responses within the same category, and not across categories. As previously argued, the perceived severity of loss associated with different retrenchment actions is influenced by the immediacy of loss, the magnitude of the loss, perceived fairness of loss, and ease of transferring or shifting losses to others with limited standing in a city’s budget process.

The easiest way to minimize the perception of loss is to maintain the status quo by employing retrenchment responses whose effects are less immediate and therefore less visible. For example, personnel responses such as service termination or transfer, salary reduction,
unpaid leave, revision of union contracts to reduce benefits, and layoffs impose immediate losses on budget claimants – from government workers to citizens – and thus are likely to mobilize opposition from those affected, and lead to conflict. Among service responses, the effects of rationing or terminating services are immediately felt by citizens. Transferring a service to another government can be controversial especially if citizens and city officials believe that they have lost control over a vital local service. Revenue actions such as property tax assessment and rate increases have immediate effects, and cannot easily be hidden or avoided. People can choose to shop in other jurisdictions to escape the high sales tax in their cities, but properties, and therefore property owners, cannot escape taxation.

Other personnel and service responses have less visible outcomes in the short term, that is, they have minimal effects on current operations and are likely to be seen as imposing slight losses because the existing situation changes marginally. These include freezing salaries, reducing training budgets, leaving vacant positions unfilled, and deferring capital projects. The effects of a salary freeze will be felt only in future years as inflation reduces the value of the salary. In the short term, unfilled vacancies and lower investment in professional development do not impose significant losses on employees or affect current operations. In the long run, they will increase staff workload and weaken administrative capacity to deliver services. Losses (in terms of poorer quality infrastructure) from postponed capital projects or maintenance will be visible only in the long term as it takes time before fixed assets deteriorate.

The perception of loss can be further minimized by emphasizing the fairness of a retrenchment response. This can be done by ensuring that all parties share equally in the loss. For example, among service responses, across-the-board cuts appeal to the sense of fairness and equity among actors, making such cuts appear less severe, because after all, everyone sacrifices
and suffers. Among personnel responses, cuts to professional development budgets do not affect just a single department or unit, but employees across different units of the organization. In terms of revenue responses, fairness can be ensured by linking benefits to costs. Among revenue responses, service fees, in comparison to general taxes, are generally viewed positively by citizens as they directly tie payment to the consumption of services.

A retrenchment response can also lessen the magnitude of perceived loss by imposing small losses on actors, limiting the number of actors that are affected, or limiting the scope of adjustments. In raising revenues, property and sales tax increases impose direct losses on most residents in a jurisdiction. However, the effect of a sales tax increase on residents’ wallets is significantly less than that of a property tax increase. There is also the issue of fairness. The elderly and those with fixed income are especially hit hard by any property tax increase. The large tax bill and the unequal tax burdens contribute to the unpopularity of the property tax. In terms of service fees, although the clearer link between consumption and payment may increase service charges’ acceptability to residents, a caveat is that the introduction of new user fees can potentially incite citizen opposition especially if the service is widely used and previously available to any resident at no additional cost. In this case, the less controversial approach is to limit the scope of services affected by focusing on adjusting existing service fees, rather than introducing new charges for other services.

Finally, perceived loss can be minimized by shifting the loss to other actors with no or limited standing in a city’s budget process. Among revenue-raising strategies, the sales tax is exportable to non-residents. For example, cities tend to increase the sales tax on hotel occupancy that falls squarely on visitors. These visitors, of course, also happen to be non-voters in the
taxing jurisdiction. Intergovernmental aid shifts the burden for funding of local programs to other levels of government, and is therefore perceived as a no-loss strategy.

**Predictions**

To summarize, the previous discussion indicates that the loss-conflict model leads to two testable predictions. First, city fiscal retrenchment responses can be categorized according to whether they represent SL-LC actions or HL-HC responses. Second, city governments will typically prioritize the implementation of SL-LC over HL-HC responses.

**Analyzing City Responses to Fiscal Stress**

**The Municipal Fiscal Retrenchment And Recovery (MFRR) Survey**

To test the predictions from the loss-conflict model, the study uses data from the MFRR survey directed by the author.\(^1\) Implemented from March to August 2015, the survey gathered information about how cities responded to the fiscal stress caused by the Great Recession of 2007 to 2009. The survey targeted appointed managers such as city managers, chief administrative officers, chief operating officers, and city or business administrators. The budget or finance director received the questionnaire when a city did not have any appointed manager (if the position was vacant, or the position did not exist). The sampling frame included all 674 municipal governments with a population of 50,000 or more as listed in the 2007 Census of Governments. A total of 268 cities participated in the survey for a response rate of 40%. Nine in ten survey respondents were appointed managers, and the remaining was a finance or budget department head. Forty-five states were represented in the sample. The five missing states had only six cities with a population of 50,000 or more.

\(^1\) The details of the survey implementation process can be found in Jimenez (2019).
To assess if responding cities are systematically different from non-respondents, the two groups are compared in terms of key community, governance, and fiscal features. The results of difference-of-means tests for continuous variables including direct expenditures, own-source revenues, property tax as a percentage of total tax revenues, median household income, and population; and Chi-Square tests for dichotomous variables indicating government form, and access to sales tax and income tax, indicate that there is no systematic difference between participating and non-participating cities in terms of these variables (see Jimenez 2019 for the complete results).

**Trends in The Use of Specific Fiscal Retrenchment Responses**

Respondents to the MFRR survey were asked whether their city faced a serious budget crisis defined as “a severe reduction in the ability of the local government to pay for the costs of delivering services demanded by citizens, and to meet other financial obligations such as debt servicing.” Those with a positive response (253 cities) were requested to indicate the extent to which their city relied on different responses to address the budget crisis.

Table 1 provides information on the extent of use of each fiscal tool. The easiest way to present the information in table 1 is to categorize cities as to whether they relied on a tool (those that responded “Slightly relied,” “Moderately relied,” and “Heavily relied”) or not. Among personnel responses, cities generally relied on SL-LC responses such as leaving vacant positions unfilled, freezing hiring or salaries, reducing professional development budgets, and hiring part-time workers. They also minimized the use of HL-HC actions such as revising union contracts, implementing furloughs, and reducing salaries. What is surprising is that some 63% reported relying on layoffs. This can be indicative of the seriousness of the budget difficulties faced by cities.
As with personnel-related actions, cities also generally avoided specific HL-HC service responses. A large majority of cities deferred maintenance or new capital expenses, but very few eliminated a service or closed facilities. Approximately half of the cities reported cutting social or public safety services, or rationing services in general. The group of cities that used across-the-board service cuts is only slightly larger than the group that targeted cuts.

For revenue raising, a majority of cities did not increase taxes. The most used tools were raising existing fees, introducing new fees, improving revenue collection, and increasing intergovernmental aid. Although the general configuration of revenue responses supports the argument that city officials avoid HL-HC strategies, there are some findings that do not neatly fit the expected pattern. Specifically, more cities increased property tax than sales tax rates. The simple explanation is that all cities in the sample have access to the property tax, which means more cities can increase the tax. In contrast, not all cities have access to the sales tax, which helps clarify why fewer respondents report increasing the tax.

Confirming The Proposed Categories of Fiscal Retrenchment Responses

The previous analysis shows the general trends in the retrenchment responses. The study uses factor analysis to determine if the items can be categorized into SL-LC and HL-HC responses. Some research uses exploratory factor analysis to identify categories of responses, but this approach can cause items that represent distinct approaches – such as service, personnel cost containment, and revenue-raising responses – to load into the same factor. Confirmatory factor analysis is a more appropriate approach because it distinguishes among service-, personnel-, and revenue actions, and then identifies, within each major grouping, subcategories that represent SL-LC and HL-HC actions.
In general, the results of the confirmatory factor analysis (also in table 1) support the loss-conflict model of fiscal retrenchment. For each major category of responses, two sub-categories emerge representing SL-LC and HL-HC actions. For personnel responses, the first factor (Eigenvalue of 2.621) is comprised of SL-LC actions including unfilled vacant positions, hiring freeze, early retirement, part-time labor, and cuts to professional development budget. The second factor (Eigenvalue of 2.482) consists of HL-HC personnel responses including layoffs, furlough, salary freeze ², salary cuts, and increase in worker benefit contributions.

For service responses, the first factor (Eigenvalue of 2.525) includes SL-LC decisions such as capital project or maintenance deferment, across-the-board cuts, targeted cuts, and cuts to public safety services or to social services. At first glance, it might be surprising that targeted cuts, in particular, to public safety and social services, load into SL-LC responses. It is plausible that these cuts represent marginal cuts to operations. Only responses that indicate substantial service cuts or actual termination of service load into the HL-HC sub-category (Eigenvalue of 2.368). HL-HC service responses include transferring services to other governments, rationing service, closing facilities, and eliminating a service.

For revenue responses, the first factor (Eigenvalue of 2.224) consists of SL-LC actions such as improving collections, increasing intergovernmental revenue, implementing tax amnesty program, conducting tax lien sale, and increasing existing service fees. The second factor (Eigenvalue of 1.809) covers HL-HC decisions such as expanding the sales tax base, introducing

² The result for the salary freeze does not conform with the expectation that it imposes slight loss on employees because its effects are not immediate, as previously explained. However, how long the freeze has been in effect matters. A one-time freeze is unlikely to be controversial. In contrast, a salary freeze that has been in effect for years (which is the case for most public sector organizations) is likely to cause demoralization among employees. It is very unlikely that the effects of a multi-year freeze will not be felt by employees as they find that each succeeding year, their incomes become increasingly insufficient to buy the same bundle of goods that they used to be able to afford because of inflation. Unfortunately, there is no way to confirm this as the MFRR survey does not provide information about the length of the salary freeze.
new service fees, and increasing property tax rates and assessment. One revenue response—increasing sales tax rate—did not load into any factor.

**Comparing Reliance on SL-LC And HL-HC Responses**

Which category of responses did cities use the most? Did cities generally avoid HL-HC responses, and rely more on SL-LC responses? Comparing the mean scores for the major and subcategories of responses can help in answering these questions (the mean is calculated based on the following coding of responses: 0=Did not use, 1=Slightly relied, 2=Moderately relied, and 3=Heavily relied). Among major categories, more cities, on average, implemented personnel actions (mean score of 1.33), followed by service responses (.95), and finally revenue tools (.61). These scores demonstrate that cities, on balance, responded to the budget crisis that they faced by cutting expenditures (but mostly personnel-related) rather than raising revenues. The trend is a preliminary indicator that cities avoided the categories of responses most likely to affect citizens directly (revenue-raising and service cuts), and thus have a greater potential to cause wider conflict, and focused instead on internal responses (personnel responses), which affect a smaller group of stakeholders such as city employees.

Additional information can be gleaned by comparing the average use for SL-LC or HL-HC responses within each major retrenchment category. The comparison focuses on the mean responses for each SL-LC and HL-HC group in each major response group. For personnel actions, the mean score for the SL-LC group is 1.53 compared with 1.15 for the HL-HC group. For service responses, the difference in mean scores between the two subcategories is even larger. The average use for the SL-LC subcategory is 1.29, compared with .62 for the HL-HC group. In contrast, for revenue responses, the mean scores for SL-LC and HL-HC subcategories are comparable at .66 and .65, respectively.
Explaining The Choice of Retrenchment Responses

Factor analysis supports the prediction that retrenchment responses can be grouped into SL-LC or HL-HC responses. However, although a general pattern has emerged that cities tend to avoid HL-HC decisions and prioritize SL-LC actions, some anomalies cannot be overlooked. Quite glaringly, there is not much difference in the average use of SL-LC and HL-HC revenue actions. For specific responses, a surprising finding is that a large majority of cities implemented layoffs. These exceptions raise the possibility that the choice of responses is not only based on city officials’ perception of loss and conflict associated with different retrenchment responses. Local conditions also are influencing retrenchment choices, as Kim and Warner (2018) and Justice and Yang (2018) argue. Using regression analysis, this section explores how differences in local contexts – specifically economic, fiscal, demographic, political, intergovernmental, institutional, and governance environments – may shape the choice of retrenchment responses.

Economic And Fiscal Condition

In general, moderate economic and fiscal stress allow governments to rely on SL-LC responses. However, when a government’s fiscal condition deteriorates because of severe economic decline, government officials have little choice but to implement HL-HC responses, whether expenditure- or revenue-related (Jimenez 2014a; Bordeaux 2018). To measure local economic condition, the models include private sector employment and housing values. Employment in the private sector as percentage of total population is the primary measure of the level of local economic activity (Ladd and Yinger 1989). A substantial portion of city own-source revenues comes from the property tax (Jimenez 2013). Thus, the models also control for both the level and change of housing values. The data are from the American Community Survey.
To measure fiscal stress, the models include a composite fiscal recovery index using responses to three questions from the MFRR survey: 1) “My local government has fully recovered its fiscal health”; 2) “The fiscal health of my local government has been slowly improving but recovery is brittle”; and 3) “A fiscal relapse or another serious budget crisis is very likely to happen if a new economic downturn occurs.” Responses range from 1 or “Strongly Disagree” to 5 or “Strongly Agree.” Responses to the last two questions are reverse coded to make them consistent with the first question. The items load into a single factor with an Eigenvalue of 3.40. The resulting fiscal recovery index is based on factor scores and has a Cronbach’s alpha of 0.90. Higher index values indicate improving perceived fiscal health.  

**Demographic Factors**

Population size and change are often included in models of retrenchment choices, but their effects are unclear. Population growth can indicate improving local economic condition, which means that it will be associated with the adoption of SL-LC rather than HL-HC responses. But a growing population may also cause budget problems for cities if the growth translates to higher service demand without a commensurate increase in revenues, especially if the new residents have low income (Jimenez 2020). The expenditure pressure may force growing cities to implement HL-HC responses. Population size has a similarly unpredictable effect. Larger cities have a more diversified economic base, which means that they can weather national recessions better than smaller cities, avoid severe fiscal stress, and rely mostly on SL-LC responses. Still, a bigger population can mean higher service demand, which could necessitate HL-HC actions if revenues remain stagnant (Jimenez 2014a). The data are from the American Community Survey.

**Citizens And Interest Groups**

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3 Objective measures of fiscal condition – e.g. budget deficit and reserves – are also included in alternative specifications of the models. However, they are excluded in the final versions because of high collinearity.
Political factors point to the role of citizens and groups. Studies show that government budget choices are shaped by citizen political ideology (Jimenez 2009). Specifically, conservative political ideology has been found to be associated with lower expenditures, revenues, and debt (Tausanovitch and Warshaw 2014). Conservative political ideology will be associated with reduced reliance on different revenue responses, but increased use of HL-HC personnel- and service actions to reduce the size of government. The models include Tausanovitch and Warshaw’s (2014) policy conservatism index, with higher values indicating more conservative residents.

In terms of group influence, the political pressure to maintain expenditures for services is more intense when cities serve ethnically diverse populations (Alesina, Baqir and Easterly 1999). Different ethnic groups will resist SL-LC and HL-HC actions that lead to cuts to services that benefit their members. Similarly, if city hall is a source of patronage jobs, ethnic groups will resist SL-LC and HL-HC personnel responses. Ethnic fragmentation also means that groups will be less willing to shoulder the costs of services that benefit other ethnic groups who they deem to be undeserving of government support (Luttmer 2001). This means that there will be less support for increasing general taxes. Thus, ethnic fragmentation will be associated with greater use of SL-LC revenue responses such as user fees, and less reliance on HL-HC revenue responses such as tax increases. Ethnic heterogeneity is measured using the ethnic fractionation index, with higher values indicating greater ethnic and racial fragmentation.

Other interests can influence retrenchment choices. Public employees, for example, represent a distinct interest group in the budget process (Niskanen 1972). Public employees are likely to reject SL-LC and HL-HC personnel actions, and favor any way to raise more revenue precisely to avoid cuts. Because there are no data on city unions, the percentage of workers in
local public administration proxies for public employee interest group. This approach is based on Gray and Lowery’s (1996) argument that interest group density is a function of the size of the latent constituency. The raw data for city racial and ethnic composition and employment are from the American Community Survey.

**Fiscal Institutions**

State governments impose fiscal rules on their local governments to control local budget choices and improve fiscal discipline. These state-imposed local fiscal institutions such as tax and expenditure limits (TELs), balanced budget requirements (BBRs), and debt limits (DLs) can influence the retrenchment choices of city officials, but in different ways. TELs control the growth in tax revenues and spending. It is expected that TELs will prevent cities from using HL-HC tax-related responses, but not SL-LC revenue responses. Evidence from the literature suggests that governments facing TELs are forced to rely more on user fees compared with taxes (Mullins and Joyce 1996). With limited ability to increase taxes, cities will experiment with all available means to control spending, including SL-LC and HL-HC personnel and service responses. The data are Mullins and Joyce (1996) and the Lincoln Institute of Land Policy.

There are very few studies that outline how DLs and BBRs can influence retrenchment choices. DLs constrain the amount and type of debt that cities can incur. One of the strictest DL requires voter referendum before any debt can be issued by a city government. Because of the difficulty of accessing additional funding through debt, cities that face a budget crisis will likely be forced to rely on revenue-raising and expenditure-cutting responses, whether SL-LC and HL-HC. BBRs typically require governments to balance their operating expenditures and revenues. Poterba (1994) shows, at least at the state level, that BBRs lead to expenditure cuts but not tax increases. Cutting expenditures is easier compared with increasing taxes, which requires
changing or enacting new laws. If this is also true at the city level, BBRs will force officials to rely more on both SL-LC and HL-HC personnel and service responses than on revenue actions. The data are from the Advisory Commission on Intergovernmental Relations (1993).

**Intergovernmental Factors**

Cities are creatures of their states. As such, a city government’s powers and responsibilities are, to a large extent, determined by its state government. City service responsibilities, typically, are beyond local control, and are instead viewed as outcomes of historical and legal developments as enshrined in state constitutions, statutes, and court decisions (Krane Rigos and Hill 2001). State governments can create additional responsibilities for cities through mandates that require the establishment or expansion of services or activities necessitating additional local expenditures. Because cities cannot just stop delivering certain services, those with more service responsibilities will be forced to implement HL-HC actions to balance their budgets. Clark and Fergusson’s (1981) functional performance index measures city service responsibilities, with higher values indicating that a city performs a wider range of functions. The raw data for the index are from the Annual Survey of State and Local Government Finances. State mandates is measured using an item in the MFRR survey that asked respondents to what extent state mandates to provide a certain service or level of service has contributed to the most recent serious budget crisis faced by the city government. Responses range from 0 or “Did not contribute” to 3 or “Strongly contributed.”

Beyond variations in service responsibilities, cities also differ in their revenue-raising authority. The ability to access different revenue sources may have inconsistent effects on the choice of retrenchment responses. One argument is that a diverse revenue base allows cities to raise more revenues, helping cities avoid deep budget deficits (Kim and Warner 2017), and rely
more on SL-LC responses. However, the elasticity of the revenue source, or its sensitivity to changes in real income, is important. Income-elastic revenue sources – such as income and sales taxes, as well as user fees – are more sensitive to changes in the business cycle (Jimenez and Afonso 2021). The property tax, in contrast is more stable. Jurisdictions that rely on elastic revenue sources are likely to see steep reductions in revenues when there is a recession (Jimenez and Afonso 2021; Alm, Buschman, and Sjoquist 2011), forcing them to rely on HL-HC responses to balance their budgets. Revenue diversification is measured using the Hirschman-Herfindahl Index, with higher values indicating more equal reliance on various revenue sources.

The models also account for intergovernmental fiscal transfers. Cities benefit from fiscal transfers from their state government, as well as from the federal government. Intergovernmental fiscal transfers to cities can alleviate the need for HL-HC responses (Jimenez 2014a). Intergovernmental revenue as a percentage of city own-source revenues measures city dependence on intergovernmental fiscal aid. The raw data for revenue diversification and fiscal aid are from the Annual Survey of State and Local Government Finances.

Local Governance

Cities differ in their local governance arrangements. For example, cities have different government form, the most basic of which are mayor-council and council-manager forms. In the mayor-council government, the council functions as the legislative body, and the mayor is the elected chief executive charged with implementing city policies. In council-manager cities, the council also sets city policies but appoints a chief executive – the city manager – to run the day-to-day operations of the government. The council-manager form of government is often considered more professional and capable of implementing politically unpopular budget balancing decisions because the primary chief executive is appointed rather than directly elected.
by local voters (Jimenez 2020). There is some evidence in the literature indicating that council-manager governments, compared with mayor-council ones, are more aggressive at implementing HL-HC personnel, service, and revenue responses (Jimenez 2014a). The data for government form are from the International City/County Management Association’s Municipal Government Form Survey.

It is important to note that mayor-council cities have adopted the position of the appointed chief administrative officer in an effort to professionalize city administration (Jimenez 2020). Thus, an additional measure of local governance is the authority assigned to the appointed manager, whether city manager or chief administrative officer. The manager responsibility index is an additive index that measures whether the appointed manager in either the mayor-council or council-manager government performs the following responsibilities: 1) Develop and analyze public policy alternatives; 2) Implement adopted policies; 3) Prepare the operating and capital improvements budget; 4) Present the budget directly to the entire governing body; 5) Appoint key management personnel, particularly key administrative and financial staff; 6) Supervise key management personnel, particularly key administrative and financial staff. The data are from a 2013 city government survey directed by the author.\(^4\) Table 2 provides additional information on variable operationalization, data sources, and descriptive statistics.

[Table 2 here]

**Empirical Approach And Results**

The analysis uses Ordinary Least Squares (OLS) regression to estimate the distinct effects of different contextual factors on the choice of retrenchment responses. The regression

\(^4\) This online survey examined basic governance characteristics of cities with a population of 50,000 and above.
uses Huber-White Sandwich estimators to produce heteroskedasticity-robust standard errors. The dependent variables are the factor scores for SL-LC and HL-HC responses within each major retrenchment category, with higher values indicating greater use. The alphas for the factor-based SL-LC and HL-HC personnel and service response indices are acceptable (from 0.64 to 0.76), but the alphas for the SL-LC and HL-HC revenue response indices are lower (0.40 to 0.49), which means that these latter indices should be considered exploratory (see Table 2).

Table 3 shows the results of the OLS regressions. All models include region dummies to control for differences in regional economic recovery and other unobserved region-specific factors that can affect city budgetary solvency (State dummies cannot be included because they are perfectly collinear with fiscal institutions). The models explain between 22% to 43% of the variation in the outcome variables.

Panels 1 and 2 show the results for personnel responses. For economic and fiscal factors, larger private sector employment is associated with decreased use of HL-HC responses. Because the dependent variables are based on factor scores, the coefficients are expressed in standard deviations. Thus, the coefficient of –0.022 for private sector employment in panel 1 means that a 1-unit increase in private sector employees as a percentage of total city population is associated with 0.022 standard deviation decrease in the use of HL-HC personnel responses. Because standard deviations are not particularly enlightening, the discussion focuses on the direction of relationships for statistically significant variables.

\[\text{Table 3 here}\]

Panels 1 and 2 show the results for personnel responses. For economic and fiscal factors, larger private sector employment is associated with decreased use of HL-HC responses. Because the dependent variables are based on factor scores, the coefficients are expressed in standard deviations. Thus, the coefficient of –0.022 for private sector employment in panel 1 means that a 1-unit increase in private sector employees as a percentage of total city population is associated with 0.022 standard deviation decrease in the use of HL-HC personnel responses. Because standard deviations are not particularly enlightening, the discussion focuses on the direction of relationships for statistically significant variables.

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5 The regression diagnostics include Breusch-Pagan / Cook-Weisberg, Kernel density plots and Shapiro-Wilk test, augmented partial residual plots, variance inflation factor, and added-variable plot and DFBETA. The concerning finding is the significant result for heteroskedasticity. The results are available from the author.
The change in median house value and self-reported fiscal health are also statistically significant in panels 1 and 2. An increase in home values and perception of improving fiscal health are negatively correlated with the use of SL-LC and HL-HC responses. For demographic controls, population size is positively associated with SL-LC choices. For citizen and groups, ethnic fragmentation has a negative relationship with SL-LC actions. Focusing on state-imposed local fiscal rules, the evidence indicates that TELs and DLs force cities to rely on HL-HC responses. Among intergovernmental factors, an increase in service responsibilities is associated with the implementation of HL-HC retrenchment actions. Focusing on local governance, cities where managers exercise more responsibilities implement HL-HC responses.

Panels 3 and 4 focus on service responses. Larger private sector employment, growth in house values, and self-reported fiscal recovery are significantly and negatively correlated with the use of SL-LC actions. Improvement in house values and fiscal recovery are also negatively associated with reliance on HL-HC responses. Cities with big populations and less conservative residents tend to rely on SL-LC service responses. Fiscal institutions are not statistically significant. Higher values for the manager responsibility index and functional responsibility index correlate with increased use of SL-LC retrenchment actions.

Panels 5 and 6 focus on revenue responses. For economic and fiscal factors, larger private sector employment has a positive relationship with the use of HL-HC responses. This is contrary to the expectation that a more vibrant local economy will not induce cities to rely on conflictual revenue-raising responses. It is possible that cities can raise additional revenues given their stronger economic base. Perceived fiscal recovery shows a negative association with the use of SL-LC actions. For demographic and political variables, cities with smaller populations and conservative residents rely less on SL-LC responses. Focusing on local governance, mayor-
council cities rely more on SL-LC actions compared with council-manager cities. TELs have a positive relationship with SL-LC revenue responses but are not systematically correlated with HL-HC actions. For intergovernmental factors, state mandates and greater service responsibilities are associated with the implementation of HL-HC retrenchment revenue responses.

The results for region dummies further highlight how differences in local contexts shape retrenchment responses of cities in the sample. Cities in the South and North rely less on personnel and service responses compared with cities in the West region. Western cities, in contrast, are less dependent on revenue responses than Southern and Northern cities, and to a certain extent, Midwestern municipalities.

**Discussion And Conclusion**

Several models have been introduced in the literature to describe and predict how governments decide which retrenchment responses to implement, when, and to what extent they rely on those responses. Research in the last four decades has not provided consistent evidence in support of a single model of retrenchment. In terms of this study’s theoretical contributions, the first part of the research developed and tested the loss-conflict model of fiscal retrenchment, which suggests that different personnel, service, and revenue responses can be grouped into sub-categories according to the level of loss and the potential conflict, or SL-LC and HL-HC decisions. Using data from a national survey of mid-sized and large city governments, and applying confirmatory factor analysis, the empirical results provide support for the proposed retrenchment classifications.

The loss-conflict model of fiscal retrenchment also predicts that cities will prioritize the implementation of SL-LC responses over HL-HC responses. Analysis of the actions taken by the
city governments suggests some support for this expectation, but the evidence is not definitive. Specifically, examining the granular responses, there are differences that cannot be attributed solely to the perception of loss and conflict. This observation suggests that local context matters in the choice of retrenchment responses.

The second part of the study models the contextual factors that influence the choice of responses. The regression results indicate that few variables are strongly statistically significant—a pattern that conforms with the overall findings in Pamm (1990), Maher and Deller (2007), and Justice and Yang (2018), among others. It cannot be ruled out that this is due to the small sample size and the inclusion of several independent variables in the models, which reduce the statistical power for the regression analysis (see Dougherty 2011). Despite the issue, a consistent finding from the multivariate analysis is the importance of economic and fiscal variables. The evidence indicates that cities with a larger private sector, growing housing values, and improving fiscal condition, mostly avoid both SL-LC and HL-HC retrenchment responses. Ladd and Yinger (1989, 17) explain that the “level of economic activity in a city is the primary determinant of the resources available to the city government.” Private firms, which are engaged in the production of goods and services, own or generate economic resources that can be taxed by government including property, retail sales, and wages and salaries. The healthier the local private sector, the more resources available to government to minimize fiscal decline and the need to implement conflictual personnel and service retrenchment responses. Housing value influences local property taxes, which is one of the most important sources of revenues for cities. In their analysis of city finances during the Great Recession, Alm, Buschman, and Sjoquist’s

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6 Statistical power is the probability of finding a significant relationship in the sample when there is a significant relationship in the population. Maximizing the statistical power for regression analysis requires larger samples.
(2011) conclude that “local government reliance on the property tax rather than on more elastic revenues sources like income, sales, and excise taxes has – so far, in any event – helped local governments to avoid some of the more severe difficulties experienced by many other governments in the current economic situation.” On the importance of public official’s perception of fiscal stress, Maher and Deller (2007, 1567) observe that “the most consistent variable associated with our response models is the respondents’ evaluation of the level of fiscal stress facing their community.” These observations from previous studies are consistent with the results of this research.

The citizen and interest group variables are the least important. The mostly insignificant results for the citizen variables represent a discontinuity from recent studies pointing to the critical role of these external actors in shaping city fiscal policy. Tausanovitch and Warshaw (2014), for example, find that municipal governments are responsive to the tax, spending and debt preferences of residents, but the analysis here shows that citizen political ideology only correlates with one retrenchment subcategory. The weak results for citizen and interest group variables suggest that there is a degree of democratic deficit in fiscal retrenchment decision making. Democratic responsiveness, it seems, goes out of the window in times of fiscal stress. But it is probably premature to conclude that citizens do not matter in fiscal retrenchment. The results of the MFRR survey clearly show that cities focus more on implementing personnel-related actions rather than service or revenue responses when facing a budget crisis. Citizens likely perceive personnel cost-containment actions positively, believing that they are not directly affected by such actions, and may even see such responses as a means to reduce public sector bloat and make government operations more efficient. In comparison, citizens will be directly negatively affected by service cuts and higher user fees or taxes. The pattern of city responses to
the budget crisis suggests that city officials weight retrenchment choices by taking into consideration the views and possible reactions of citizens, being careful not to antagonize voters by demonstrating that government can avoid serious service disruptions without imposing additional tax burdens on residents even during a period of severe fiscal difficulties.

Still, other scholars point out that retrenchment is largely a managerial process, which explains the limited influence of external actors (Pammer 1990). The important role of managers is seen in the results for the local governance variables. The extent of the responsibilities assigned to the appointed city manager or chief administrative officer systematically influences some personnel and service responses. Government form also matters to a certain extent. Mayor-council cities tend to favor less conflictual revenue-raising responses than council-manager cities. The results provide partial support to Jimenez (2020) who argues that appointed managers enjoy greater leeway to choose policies that promote the fiscal health of their government even if those policies are not popular among voters.

Fiscal institutions and intergovernmental factors demonstrate weak, but nonetheless, revealing relationships with the retrenchment choices. Confirming the results in Jimenez (2017b), the results show that TELs shape how cities respond to fiscal stress. Specifically, TELs force cities to resort to controlling personnel expenses rather than directly cutting services, and to rely on revenue responses that do not involve tax increases, such as improving revenue collections and relying more on user fees, among others. Previously unexplored, the analysis here shows that cities facing DLs are forced to focus on personnel cuts to deal with budget difficulties. The findings also provide insights on the role of the intergovernmental system – another factor that has not been examined in extant studies – in city government retrenchment process. The results demonstrate that cities offering a wider range of services are forced to adopt
more conflictual personnel and revenue responses. Those cities that face state mandates to provide new services or expand existing ones also face pressure to use conflictual revenue-raising actions.

There are several avenues for future research that address the limitations of this study. For example, some studies show that citizen participation and management practices also influence retrenchment choices (Jimenez 2014a; 2014b; Justice and Yang 2018). It is also useful to further validate the loss-conflict model with multi-year data on retrenchment responses. Using longitudinal data will help establish cause-and-effect relationships. Finally, future studies need to assess the longer-term effects of retrenchment decisions specifically on government’s administrative capacity, and the efficiency and effectiveness of service delivery.

References


Figure 1
Loss-Conflict Model of Fiscal Retrenchment

<table>
<thead>
<tr>
<th>Personnel-Related Expenditure Responses</th>
<th>Service-Related Expenditure Responses</th>
<th>Revenue-Raising Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Salary reduction</td>
<td>• Service elimination</td>
<td>• Property assessment increase</td>
</tr>
<tr>
<td>• Union contract revision to reduce pay/benefits</td>
<td>• Facility closure</td>
<td>• property tax rate increase</td>
</tr>
<tr>
<td>• Furloughs</td>
<td>• Service rationing</td>
<td>• Sales tax base expansion</td>
</tr>
<tr>
<td>• Increase in retirement benefit contributions</td>
<td>• Service transfer to other governments</td>
<td>• Sales tax rate increase</td>
</tr>
<tr>
<td>• Layoffs</td>
<td>• Cuts to public safety</td>
<td>• New service fees</td>
</tr>
<tr>
<td>• Early retirement</td>
<td>• Cuts to social services</td>
<td>• Increase existing fees</td>
</tr>
<tr>
<td>• Use of part-time labor</td>
<td>• Targeted cuts to other services</td>
<td>• Tax lien sale</td>
</tr>
<tr>
<td>• Salary freeze</td>
<td>• Across-the-board service cuts</td>
<td>• Increasing intergovernmental revenue</td>
</tr>
<tr>
<td>• Professional development budget cuts</td>
<td>• Capital project/maintenance deferment</td>
<td>• Revenue collection improvement</td>
</tr>
<tr>
<td>• Hiring freeze</td>
<td></td>
<td>• Tax amnesty program</td>
</tr>
<tr>
<td>• Vacant positions unfilled</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Salary reduction
- Union contract revision to reduce pay/benefits
- Furloughs
- Increase in retirement benefit contributions
- Layoffs
- Early retirement
- Use of part-time labor
- Salary freeze
- Professional development budget cuts
- Hiring freeze
- Vacant positions unfilled

- Service elimination
- Facility closure
- Service rationing
- Service transfer to other governments
- Cuts to public safety
- Cuts to social services
- Targeted cuts to other services
- Across-the-board service cuts
- Capital project/maintenance deferment

- Property assessment increase
- property tax rate increase
- Sales tax base expansion
- Sales tax rate increase
- New service fees
- Increase existing fees
- Tax lien sale
- Increasing intergovernmental revenue
- Revenue collection improvement
- Tax amnesty program
Table 1
Specific Retrenchment Responses and Factor Loadings
(Number of Cities = 253)

<table>
<thead>
<tr>
<th>Responses</th>
<th>Personnel Responses</th>
<th>Service Responses</th>
<th>Revenue Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Cities Relying on Response</td>
<td>Factor Loading</td>
<td>% of Cities Relying on Response</td>
</tr>
<tr>
<td></td>
<td>Slight</td>
<td>Moderate</td>
<td>Heavy</td>
</tr>
<tr>
<td>Unfilled vacant positions</td>
<td>11.07</td>
<td>28.46</td>
<td>57.71</td>
</tr>
<tr>
<td>Hiring freeze</td>
<td>15.81</td>
<td>28.46</td>
<td>39.92</td>
</tr>
<tr>
<td>Early retirement</td>
<td>16.60</td>
<td>12.65</td>
<td>17.39</td>
</tr>
<tr>
<td>Part-time labor</td>
<td>37.55</td>
<td>18.18</td>
<td>7.51</td>
</tr>
<tr>
<td>Professional devt. budget cut</td>
<td>40.32</td>
<td>26.48</td>
<td>16.60</td>
</tr>
<tr>
<td>Lay off</td>
<td>23.32</td>
<td>14.62</td>
<td>24.90</td>
</tr>
<tr>
<td>Furlough</td>
<td>8.30</td>
<td>15.42</td>
<td>11.07</td>
</tr>
<tr>
<td>Salary freeze</td>
<td>14.23</td>
<td>22.13</td>
<td>44.66</td>
</tr>
<tr>
<td>Salary reduction</td>
<td>9.49</td>
<td>5.14</td>
<td>9.88</td>
</tr>
<tr>
<td>Union contracts revision to cut pay or benefits</td>
<td>13.44</td>
<td>14.23</td>
<td>20.55</td>
</tr>
<tr>
<td>Increase benefit and retirement contributions</td>
<td>27.67</td>
<td>29.25</td>
<td>20.16</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>2.621</td>
<td>2.482</td>
<td></td>
</tr>
</tbody>
</table>

Note: SL-LC means Slight Loss / Low Conflict, whereas HL-HC refers to High Loss / High Conflict.
Table 2
Variable Operationalization, Data Sources and Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Data Source</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic and fiscal factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Private sector employment (As % of total population) *</td>
<td>ACS</td>
<td>4.57</td>
<td>5.17</td>
<td>29.62</td>
<td>56.53</td>
</tr>
<tr>
<td>• Median house value (ln $) *</td>
<td>ACS</td>
<td>185122.80</td>
<td>117203.50</td>
<td>35308.01</td>
<td>696460.10</td>
</tr>
<tr>
<td>• % change in median house value (Annual % change) *</td>
<td>ACS</td>
<td>-5.66</td>
<td>6.35</td>
<td>-26.77</td>
<td>4.28</td>
</tr>
<tr>
<td>• Fiscal recovery index (See main text for definition)</td>
<td>MFRR</td>
<td>-0.08</td>
<td>1.01</td>
<td>-1.81</td>
<td>2.93</td>
</tr>
<tr>
<td>Demographic factors</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Population *</td>
<td>ACS</td>
<td>157404.60</td>
<td>312369.00</td>
<td>48995.25</td>
<td>3775232.00</td>
</tr>
<tr>
<td>• Population change (% change from 2000 to 2010)</td>
<td>DC, ACS</td>
<td>11.25</td>
<td>16.95</td>
<td>-37.30</td>
<td>123.40</td>
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<tr>
<td>Citizens and Interest groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Policy conservatism index (Higher values indicate that citizens prefer more conservative policies)</td>
<td>Tausanovitch and Warshaw (2014)</td>
<td>-0.08</td>
<td>0.27</td>
<td>-0.82</td>
<td>0.65</td>
</tr>
<tr>
<td>• Ethnic fractionation index (1 - \sum_i \text{Race}_i^2); where \text{Race}_i denotes the share of population identified as race (i), including white, black, Hispanic, Asian and Pacific Islander, and American Indian. Ranges from 0-1. Higher values indicate greater ethnic heterogeneity.) *</td>
<td>ACS</td>
<td>0.50</td>
<td>0.14</td>
<td>0.10</td>
<td>0.75</td>
</tr>
<tr>
<td>• Public sector employment (As % of total employed)*</td>
<td>ACS</td>
<td>4.41</td>
<td>2.70</td>
<td>1.61</td>
<td>17.95</td>
</tr>
<tr>
<td>Intergovernmental factors</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• State mandates (See main text for definition)</td>
<td>MFRR</td>
<td>1.40</td>
<td>1.03</td>
<td>0.00</td>
<td>3.00</td>
</tr>
<tr>
<td>• IGR dependence (Intergovernmental revenue as % of own-source revenues) *</td>
<td>ASSLGF</td>
<td>20.11</td>
<td>23.07</td>
<td>1.27</td>
<td>210.21</td>
</tr>
<tr>
<td>• Functional performance index (\sum_i E_i \cdot W_i / N); where (E_i) is per capita expenditure in all cities for subfunction (i), (N) is the number of cities performing subfunction (i), (W_i) is the weight for subfunction (i), which is 1 if city performs subfunction (i), and 0 if city does not perform subfunction (i). Higher values indicate more service responsibilities) *</td>
<td>ASSLGF</td>
<td>3.39</td>
<td>9.52</td>
<td>0.22</td>
<td>124.77</td>
</tr>
<tr>
<td>• Revenue diversification index (\sum_i \frac{R_i \cdot n}{\sum_i R_i \cdot n}); where (R_i) is the ratio of each revenue category to total revenue for city (i) and (n) is the number of revenue categories. Revenue categories used are property, sales and gross receipts, income, other taxes, general charges, and miscellaneous general revenue. Ranges from 0 to 1 with higher values indicating greater diversification) *</td>
<td>ASSLGF</td>
<td>0.81</td>
<td>0.11</td>
<td>0.31</td>
<td>0.96</td>
</tr>
<tr>
<td>Fiscal Institutions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• State-imposed local binding tax and expenditure limit or TEL (Binding TELs are more stringent because they have relatively fixed revenue or expenditure ceilings or combine limits to constrain both rate and assessment increases; 1-yes, 0-no)</td>
<td>ULP, Mullins and Joyce (1996)</td>
<td>0.79</td>
<td>0.41</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>• State-imposed local debt limit or DL requiring referendum for all bonds issued by government (1-yes, 0-no)</td>
<td>ACIR (1993)</td>
<td>0.73</td>
<td>0.45</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>• State-imposed local balanced budget requirement or BBR typically requiring balanced operating budgets by end of the fiscal year (1-yes, 0-no)</td>
<td>ACIR (1993)</td>
<td>0.54</td>
<td>0.50</td>
<td>0.00</td>
<td>1.00</td>
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<tr>
<td>Local Governance and Political Institutions</td>
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<td></td>
</tr>
<tr>
<td>• Council-manager (1-yes, 0-no)</td>
<td>ICMA</td>
<td>0.70</td>
<td>0.46</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>• Manager responsibility index (See main text for definition. Ranges from 0-6 with higher values indicting greater manager responsibility for personnel, budget, and policy matters)</td>
<td>2013 city survey</td>
<td>5.40</td>
<td>1.12</td>
<td>1.00</td>
<td>6.00</td>
</tr>
</tbody>
</table>

Note: “*” indicates average value for 2008-2011. ASSLGF = Annual Survey of State and Local Government Finances 2008-2011; ACS = American Community Survey 2008-2011; DC = Decennial Census 2000; ICMA = International City/County Management Association’s Government Form Survey 2001, 2006, and 2011; ACIR = Advisory Commission on Intergovernmental Relations; ULP = Lincoln Institute of Land Policy; MFRR = Municipal Fiscal Retrenchment and Recovery Survey. The 2013 city survey was directed by the author and gathered information about basic governance features of cities with a population of 50,000 or more. The summary statistics presented in this table are based on actual values of the variables.
<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Personnel Responses</th>
<th>Service Responses</th>
<th>Revenue Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Panel 1</td>
<td>Panel 2</td>
<td>Panel 3</td>
</tr>
<tr>
<td></td>
<td>SL-LC</td>
<td>HL-HC</td>
<td>SL-LC</td>
</tr>
<tr>
<td></td>
<td>Coef.</td>
<td>S.E.</td>
<td>Coef.</td>
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<td>Economic and fiscal factors</td>
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<tr>
<td>Private sector employment</td>
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<td>0.014</td>
<td>-0.022**</td>
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<tr>
<td>Median house value</td>
<td>-0.000*</td>
<td>0.000</td>
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<tr>
<td>% change in median house value</td>
<td>-0.037***</td>
<td>0.012</td>
<td>-0.043***</td>
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<tr>
<td>Fiscal recovery index</td>
<td>-0.252***</td>
<td>0.063</td>
<td>-0.185***</td>
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<td>Demographic factors</td>
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<tr>
<td>Population (log)</td>
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<td>Citizens and Interest groups</td>
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<td>Policy conservatism index</td>
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<td>-0.292</td>
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<td>Ethnic fractionation index</td>
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<td>-0.547</td>
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<tr>
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<td>Constant</td>
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N: 253
R-Sq: 0.218

Note: Standard errors (S.E) are heteroskedasticity-robust. The base region is the West. *** significant at 1%, ** at 5%, * at 10%, two-tailed tests.