

Pensions in the Trenches: How Pension Spending Is Affecting U.S. Local Government

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Abstract

Some experts claim that U.S. local governments are experiencing dramatic increases in pension expenditures and that pension spending is crowding out government services. Others maintain that serious pension problems are limited. This issue is important to political scientists, urban scholars, and policy practitioners, but no existing studies—nor the datasets they rely on—allow evaluation of whether pension expenditures are rising or how they are affecting local government. This article analyzes a new dataset of the annual pension expenditures of over 400 municipalities and counties from 2005 to 2016. I find that pension expenditures rose almost everywhere over this period, but there is significant variation in that growth. On average, local governments are not responding to rising pension spending by increasing revenue. They are instead shrinking their workforces. Moreover, I find that the magnitude of the employment reductions due to pensions varies with key features of the political environment.

Keywords

pension, tax, local government, public employment, spending

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Over the last few decades, state and local policy makers have enacted changes to make government employees' pension benefits more generous, and they have also consistently underfunded those pensions—setting aside too little money to pay for them. As a result of these decisions and the investment losses of the Great Recession, U.S. public employee pensions as of 2017–2018 were underfunded by somewhere between \$1.24 trillion and \$4 trillion, depending on the estimates used (Board of Governors of the Federal Reserve System 2019; Pew Charitable Trusts 2020). Because public pension benefits in most states are backed by strong legal guarantees (Monahan 2010), someone has to make up for these shortfalls.

Many experts claim that state and local governments are feeling the consequences in the form of rapidly rising pension expenditures. In at least a few local governments, such as San Diego and Detroit, rapidly rising pension costs have forced government officials to make painful decisions about future pension benefit levels, government service provision, and taxes (e.g., Erie et al. 2011). And some argue that the events unfolding in these cities are part of a larger trend—one affecting state and local governments almost everywhere. DiSalvo (2015) raises examples of pension-induced fiscal pressure in cities ranging from New York City to Scranton, Pennsylvania. Kiewiet and McCubbins (2014, p. 106) write that pension costs are one cause of “the onset of the New Fiscal Ice Age, a period in which a given level of state and local tax revenue purchases a considerably lower level of current services.” California’s nonpartisan Little Hoover Commission (2011, p. iii) has warned that “pension costs will crush government.” And as the *New York Times* has put it, “many Americans may be forced to rethink what government means at the state and local level” because of rising pension costs (Walsh 2011).

Others argue that claims of widespread pension problems and fiscal crisis are exaggerated. Some point out that the experiences of cities like New York and San Diego are atypical, and that most places are not experiencing such fiscal stress. As Munnell et al. (2013, p. 5) write, “The question is whether cities across the country are about to topple like dominoes. And whether pensions are the problem. The answer appears to be ‘no’ on both fronts.” Others claim that the supposed crises in places like San Jose and Rhode Island were manufactured by political elites in order to impose an ideological, anti-worker agenda of austerity (e.g., Rivlin 2018). As Hinkley (2018, p. 60) writes, “Pushing austerity in the name of fiscal crisis has opened up legal, policy, and political avenues for focusing on public pensions—and other long-term obligations—as the central problem of urban fiscal health.”

Given the state of the research literature, it is impossible to know which of these conclusions is closer to the mark. There is a large body of research on public-sector retirement policies (e.g., DiSalvo and Kucik 2018; Gorina

2018; Kiewiet 2010; Munnell 2012; Thom and Randazzo 2015), but it has not yet evaluated how pension expenditures have changed for a large number of local governments, nor has it evaluated how local governments are responding to any increases. There is also a literature on U.S. local political economy (e.g., Alesina et al. 1999; Hopkins 2009; Rugh and Trounstone 2011), but it has barely engaged in questions about the causes and consequences of legacy costs like pensions and retiree healthcare—even though they are likely an important component of spending in every local government.

Answering questions about pension spending growth and local governments' responses is important for a wide range of constituencies, including policy makers, policy practitioners, and citizens more broadly. Debates about public pensions tend to focus on quantities like unfunded liabilities and actuarial assumptions, which are technical, debatable, and hard to understand. In contrast, the questions I pose here are simple. My focus is on what has happened in local governments in recent years and how that is affecting the citizens they serve—a focus that stands to advance the national conversation about pensions in a way that is easier to understand.

These questions are also of fundamental importance to urban scholars and scholars of American government because they are questions about what local government is, what it does, and how that may be changing. The nation's nearly 90,000 local governments spend roughly a quarter of all public money in the United States, provide services such as public education and public safety, and are responsible for local infrastructure like sewers and roads. The local political economy literature rightfully prioritizes these as important outcomes to be explained, and in doing so, it emphasizes the role of local-level factors like political institutions, partisanship, ideology, and race (e.g., de Benedictis-Kessner and Warshaw 2016; Gerber and Hopkins 2011; Tausanovitch and Warshaw 2014; Trounstone 2018). Yet when it comes to pension expenditures, local officials have only limited control; their pension costs are shaped by investment returns as well as local and state political decisions—many of which take time to have their full impact. Studying pensions in local government therefore calls for a focus on how local officials wrestle with and respond to changes in costs beyond their control.

This article begins to answer these questions through analysis of a new dataset of the annual pension expenditures of over 400 municipal and county governments from 2005 to 2016, which I hand-collected from the cities' and counties' annual financial statements. This dataset is unlike any that existed before because it tracks actual local government pension expenditures over time, not just in the largest cities or in the cities with the biggest problems, but instead in a large, diverse set of cities and counties across the country. With these new data, we can see for the first time how cities' and counties' pension

expenditures have changed over this period. In addition, by connecting these local pension expenditure data with U.S. Census data on local government employment and finances, I evaluate whether growing pension expenditures are associated with increased revenue, employment reductions, or cuts to non-pension spending.

I find that between 2005 and 2016, city and county pension expenditures rose in real terms almost everywhere—in total, per employee, and as a share of general revenue—but also that there was substantial variation in the extent of the growth over that period. In an analysis of within-local government change over time, I find that larger increases in pension contributions are not associated with larger increases in revenue. Instead, they are associated with greater reductions in local government employment. Thus, the picture that emerges is one of rising local pension spending and cities and counties cutting back the size of their workforces in response. Moreover, this employment-reduction response appears to vary with some features of the political and institutional environment: It is more pronounced in places with restrictive tax and expenditure limitations and public-sector collective bargaining, but it does not vary in the expected way with local citizens' ideology and partisanship.

Background and Literature

Approximately 14 million people work full-time for U.S. state and local government, and almost all of them are eligible for a traditional pension. This means that government employees receive a defined benefit in retirement for as long as they live, equal to a fraction of their final average salary times the number of years they worked for the government. Most state and local employees are enrolled in large, state-operated pension plans such as CalPERS in California and OPERS in Ohio, but many local governments operate their own plans. In principle, the model for funding pensions is straightforward: They are supposed to be prefunded, with government employers and employees setting aside funds to pay for the retirement benefits earned each year.

However, even before the Covid-19 recession of 2020, most state and local pension funds did not have sufficient assets to cover the retirement benefits that had been promised. Two broad categories of state and local government decisions contributed to this shortfall. First, over the years officials have made pension benefits more generous and thus more expensive (DiSalvo 2015), such as by increasing the benefit formula's multiplier or reducing the retirement age. Between 1999 and 2001 alone, 34 different states enacted a total of 97 new laws expanding pension benefits for public employees (Anzia

and Moe 2017). These changes have had long-lasting effects, because in many states, pension benefits can only be reduced for future government hires—not for future years of work by current employees.

Second, state and local governments have consistently underfunded their pensions, setting aside too little money to pay for the benefits they have promised. The decline in asset values brought by the Great Recession did play a big role in decreasing pension funding ratios, but so did many different kinds of decisions by policy makers, including adopting actuarial assumptions that make pension liabilities look smaller than they actually are (see, e.g., Novy-Marx and Rauh 2011), failure to pay the amounts supposedly required for full funding (Anzia and Moe 2019), and politically-motivated investment decisions (Andonov et al. 2018).

There is good reason to expect these trends are affecting local governments' pension costs, but the existing literature has done little to study what local governments are experiencing or how they have responded. Research on public pensions has focused on outcomes related to large state and local pension *plans* (e.g., Mitchell and Smith 1994; Thom 2013). One prominent line of work attempts to explain variation in plans' funding ratios (e.g., Gorina 2018; Thom and Randazzo 2015). Another explores governments' actuarial assumptions and estimates what public pension liabilities are worth with different assumptions (e.g., NASRA 2011; Novy-Marx and Rauh 2011; Stalebrink 2014; Vermeer et al. 2010). While plan-level outcomes presumably do have effects on the local governments that participate in those plans, so far the research literature has not directly studied those effects at the local government level.¹

The likely reason is that there aren't any readily available data on pension costs in local government, except for local governments that operate their own pension plans (see, e.g., Dippel 2019). Nearly all of the aforementioned empirical work relies on the Public Plans Database developed by Boston College's Center for Retirement Research, which documents each state and large local plan's funded ratio, actuarial assumptions, required contributions, and more. Yet these plan-level data do not tell us about the pension expenditures of particular governments, most of which contribute to multiple pension plans—typically at least one state-operated plan and often one or more locally-administered plans. The problem is therefore a mismatch between the unit of analysis in available datasets—the pension *plan*—and the unit of analysis needed to study what local governments are experiencing—which is the local *government*. Because of this, we do not actually know how pervasive or pronounced any local pension cost increases have been so as to be able to assess how governments are responding.²

The U.S. local political economy literature would also seem to be a natural place to look for insights about how local governments have responded to pension cost changes, yet it has paid little attention to public pensions, in spite of their potential significance as a component of local spending and a driver of local fiscal decisions. Data scarcity is one likely reason for this. Another is an (often implicit) assumption in this literature that local officials have control over fiscal matters—which is appropriate for many studies of local politics (see Gerber and Hopkins 2011), but not if the focus is on local public pension costs.

When it comes to their pension expenditures, local officials usually do *not* have full or direct control. Instead, they are heavily constrained by both the decisions of *state* policy makers and choices made in the *past* by policy makers at the state and local levels. A salient question when it comes to local pension costs, then, is how local governments wrestle with and respond to changes in those costs. These questions are structurally similar to those that ask how city fiscal policies are shaped by state institutions (e.g., Sapotichne et al. 2015; Shi et al. 2018) or how governments respond to fiscal shocks (e.g., Poterba 1995), but those literatures in political economy and public administration barely investigate questions about local public pensions.

Data

To evaluate how local governments' pension spending has changed over time and how governments have responded, I assembled a new dataset. My goal was to collect several recent years of the pension contributions of a diverse set of local governments across the United States—and a set of local governments for which I have data on local fiscal and employment outcomes. There is no central repository for such information, so I set out to collect a large number of local governments' comprehensive annual financial reports (CAFRs), which detail what the governments contributed to each of their employee retirement plans in each year.

While CAFRs are the only reliable source of information on local governments' pension contributions, it can be difficult to locate them and sometimes costly to acquire them—especially for years in the more distant past. Once the CAFRs are in hand, moreover, it takes time to find the relevant information and interpret it, first because most CAFRs are hundreds of pages long, and second because local governments are not always clear and consistent in the way they report their pension contributions. Collecting and reading the CAFRs of thousands of local governments for several decades would have been prohibitively costly.

I therefore selected 236 municipal governments and 239 county governments from those that appear in the U.S. Census's Survey of Governments (SOG) Finance and Employment files for most years between 2005 and 2016. I first defined eight strata based on local government population, with the first stratum being governments with fewer than 10,000 residents and the last being those with more than 1 million. I then used random sampling with replacement to draw local governments from each stratum, weighting by population within strata.³

Next, I attempted to collect CAFRs for each of those governments for that 12-year period. Most governments had at least some CAFRs on their websites, typically for the more recent years. When CAFRs were not available online, I requested the documents from the local governments, filing public information requests where necessary. I was able to obtain at least some years' CAFRs for 460 local governments, including 232 municipalities and 228 counties.

The most important piece of information I drew from the CAFRs was the amount the government contributed to each of its employee retirement plans in that year.⁴ I included contributions to defined contribution (DC) plans as well as defined benefit (DB) plans, although DC plans are rare and typically make up a small share of total contributions. A small number of governments also fund other post-employment benefits (OPEB) from their pension fund contributions. I subtracted out funds going to OPEB whenever possible, but for a small number of plans, the pension contribution amounts include some OPEB expenditures.

My decision to start with 2005 was motivated by both practical constraints and consideration of trends in pensions and local government. It was important to include years before and after the Great Recession, first because the decrease in asset values during the recession led to calls for state and local governments to contribute more toward pensions, and second because of drops in local revenue. However, going back farther to 2000 would have built in yet another period of negative investment returns (Brainard and Brown 2020), and going back even farther to the mid-1990s was not feasible given the cost and difficulty of acquiring CAFRs for years even as recent as 2005. Thus, while the dataset does not show what pension costs were before 2005, it does include years before, during, and after the Great Recession.

Three other features of the data collection are worth highlighting. First, most CAFRs did not clearly and consistently report whether there were employer-paid member contributions (EPMC) or, if there were, how much. Therefore, the retirement contributions discussed below do not include EPMC. Second, they also do not include contributions the local governments made using revenue from pension obligation bonds (POBs) or any

interest paid on those bonds, even though both can be substantial. Third, the dataset tracks what governments actually paid toward retirement benefits—not what they should be paying. Given that my focus is on whether pension expenditures have risen over time and how that is affecting local government, the appropriate measure is what local governments are actually spending on pensions.

For the analysis to follow, I summed the retirement expenditures for all plans in each city- and county-year.⁵ In total, the dataset has 5,085 annual pension expenditure observations from 442 unique governments,⁶ spanning all 50 states plus Washington, D.C. For 375 local governments, the dataset includes pension expenditure information for all 12 years from 2005 to 2016, and for the remaining 67, it includes pension expenditures for some.

Importantly, the cities and counties in the dataset should not be viewed as a representative sample of cities and counties in the United States.⁷ However, the goal of this study is to document changes in local pension spending in cities and counties of varying sizes, and to evaluate whether changes in local pension spending within those cities and counties are associated with changes in local fiscal and employment outcomes. Because this dataset tracks the overtime pension contributions of a diverse set of 442 local governments and links them to Census finance and employment data, it is uniquely suited to the task.

Change in Local Pension Expenditures, 2005 to 2016

I begin with a descriptive analysis of how pension contributions have changed over time in the cities and counties in the dataset.⁸ I adjust each year's total pension expenditures for inflation (to 2016 dollars) and calculate two additional variables for each local government and year: total pension expenditures as a share of general revenue, and total pension expenditures per full-time equivalent (FTE) employee.⁹ Both variables are of interest, but the second is a clearer measure of pension-related fiscal pressure, because a local government's pension contributions are partially a function of how many employees it has: If a city hires more employees, its total pension contributions should increase because it is contributing on behalf of more people.¹⁰ Thus, pension expenditures as a share of general revenue could be higher in some places because they have more employees, and that ratio could be increasing within a government because it is expanding its workforce. Pension contributions per employee, by contrast, takes into account the size of the workforce—and should generally be higher in governments and years where pension benefits are more generous or where the government is making up for larger funding shortfalls.

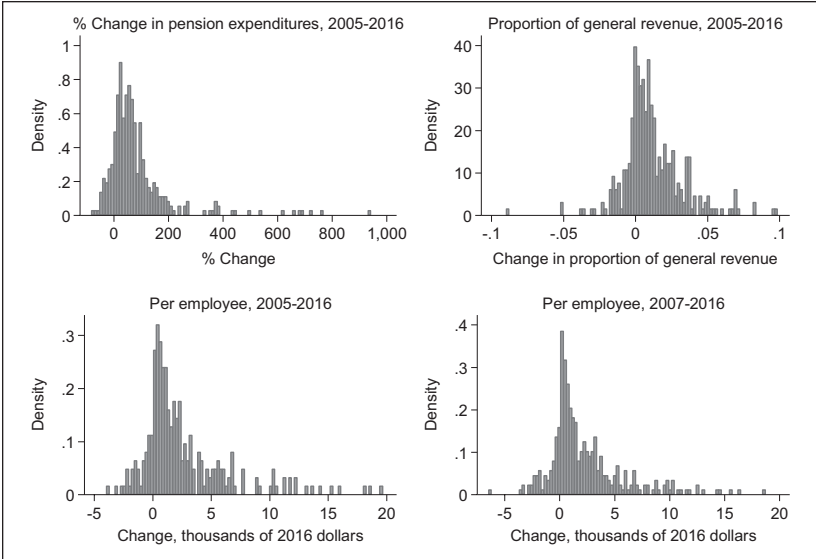


Figure 1. Within-city and county change in pension expenditures.

I first calculate percent growth in total pension contributions from 2005 to 2016 for the cities and counties for which I have comparable data for both years. The distribution is shown in the top left panel of Figure 1. The number is positive for 88 percent of cities and counties, and the median change is 56 percent. Particularly notable is the long right tail of the distribution. In 26 percent of the cities and counties, for example, pension spending more than doubled in 12 years.

The first figure only tells us so much, however, because rising pension spending could be a sign of a growing budget or public-sector workforce. In the top-right panel, therefore, I present the distribution of the change in pension expenditures as a proportion of general revenue from 2005 to 2016. It shows that pensions have grown as a share of revenue in 76 percent of the cities and counties, with a median change of 0.008 (or 0.8 percentage points). More notable, again, is the right tail: the top 25 percent of the cities and counties saw pension expenditures consume an additional 2.1 percent of general revenue or more, and the top 10 percent had pensions absorb an additional 3.7 percent.

In the bottom two panels, I show the within-government change in pension expenditures per local government employee, first for 2005 to 2016 (which features fewer governments due to missing employment data

for 2005), and then on the right for 2007 to 2016 (to assess whether the same general pattern holds when I include a larger set of governments). Both show that the vast majority of cities and counties have seen increases in pension expenditures per employee. The median within-government change from 2005 to 2016 was \$1,419 per employee, and in 25 percent of the cities and counties, per-employee pension expenditures increased by \$3,542 or more.

Some might wonder whether pension expenditures as of 2016 were unusually high by historical standards, and without a longer time period of data, I cannot say for sure. It is possible that some of the post-2005 pension expenditure increases reflect a return to historical norms. Strong investment returns during the late 1990s did lead some state and local governments to decrease their contributions through the early 2000s (NASRA 2019), and so by starting in 2005, I may have captured local governments at a period of historically low contributions. However, many state and local governments also increased pension benefits during the late 1990s and early 2000s. Moreover, some took “pension holidays,” lowering their contributions below the required amounts. In later years, many pension funds also lowered their discount rates. All of these decisions, combined with the market losses during the Great Recession, helped to set the stage for future growth in state and local government pension expenditures.

Figure 2 helps to shed some light on this. There, I show a longer time period of pension expenditures for six cities for which older CAFRs were available online.¹¹ All but one (Upper Arlington, Ohio) show clear patterns of pension expenditure increases even over this longer time period. In all of the cities except Dubuque, Iowa, expenditures dip around the year 2000, and in San Francisco and Renton, Washington, expenditures in 2005 were lower than in 1995. But even in those latter two cities, after post-2005 pension expenditures returned to mid-1990s levels, they kept going up. In the other cities, moreover, pension expenditures were already higher in 2005 than they had been in the mid-1990s. While I cannot draw any broad conclusions from this small sample, the patterns of Figure 2 suggest that at least in some places, the pension expenditure increases of 2005 to 2016 were more a break from the past than a return to normal.

Regardless of this bigger picture, what we can see in the larger dataset I have collected is that most cities and counties have experienced growth in their pension contributions since 2005. By themselves, these increases are important and relevant for local government budgets. And there is considerable variation in the extent of that growth.¹² An important next step is to analyze how local governments responded to those changes.

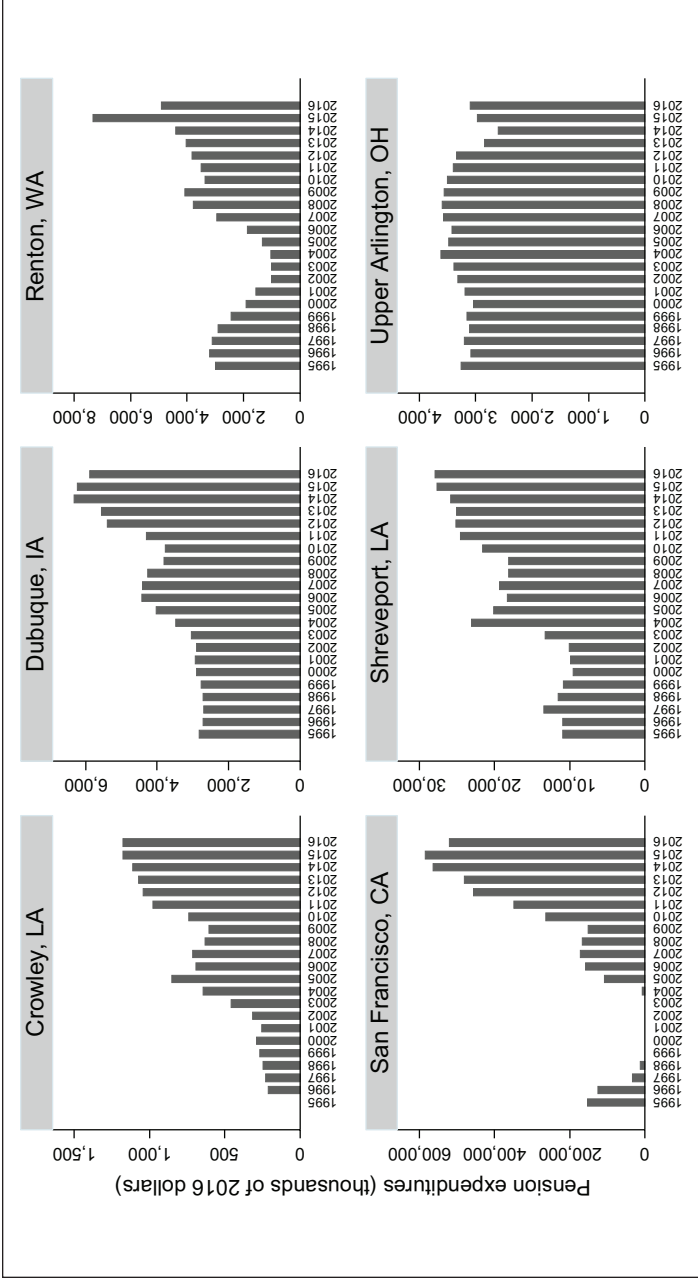


Figure 2. Comparison to the mid-1990s.

How Is Pension Spending Affecting Local Government?

Local governments might respond to pension cost increases in different ways. Some might increase revenue, some might decrease spending, and some might do both. My approach is to evaluate whether there are discernable trends in cities' and counties' responses—and any clear links between those trends and changes in local pension spending. In particular, I focus on whether larger pension spending increases are associated with larger increases in revenue, decreases in employment, or decreases in spending on items other than retirement benefits.

Some insights and findings from the political economy literature suggest that local government responses will tilt more toward employment and spending reductions than revenue increases. First, a long line of public opinion research shows that most Americans do not like paying taxes and think their own taxes are too high (e.g., MacManus 1995; Page and Shapiro 1992), which makes raising revenue politically difficult. Even if taxes are increased to fund popular government services, most voters do not make a direct connection between the services they receive and the taxes they pay (Beck et al. 1990; Sears and Citrin 1982). Raising revenue might be even harder if the purpose is to fund pensions. In many places, pension spending has gone up not to pay for more services in the present but rather to make up for funding shortfalls—and thus to pay for services provided in the past. On top of this, most local governments have limited taxing authority. For example, only about half of U.S. municipal governments raise revenue from sales taxes, and a tiny fraction have authority to impose income taxes (Scharff 2016).

Some local governments also have the option of issuing POBs, but many experts view them as risky and problematic (Cournoyer 2013; Kiewiet 2010). When governments issue POBs, they use the revenue from the bonds to make a large payment into the pension fund and then hope that investment returns will be greater than the interest rate they're paying on the bonds. The problem is that the gamble may not work, in which case the government ends up in an even bigger hole than it started with. The riskiness of the maneuver may be one reason why more local governments don't go this route: In this dataset, only 38 cities and counties had POBs, and only 13 issued them during the study period.

By comparison, decreasing public employment and expenditures might be a more appealing and feasible option for policy makers. Compared to revenue increases, incremental reductions in spending and service provision might be less likely to be noticed by citizens and less likely to be attributed to the decisions of local elected officials (Arnold 1990; Wilson 1995).

Moreover, local officials looking for cost-savings have strong reasons to focus on employment levels and employee costs in particular: Local government service provision is heavily dependent on the employees providing the services, a large share of local spending goes toward employee compensation, and as I've said, a local government's pension contributions are in part a function of its employment levels. For all of these reasons, officials confronting rising pension expenditures might find that reducing employment is the "least bad" option.

I first explore whether cities and counties tend to cope with rising pension spending by increasing revenue. I model two dependent variables, both from the U.S. Census SOG Finance files for 2005 to 2016: the log of total general revenue, and the log of total own-source general revenue, adjusted to 2016 dollars.¹³ General revenue better captures the total revenue cities and counties have at their disposal, but own-source general revenue may more clearly reflect local government actions to increase revenue in response to rising pension costs. Throughout, the main independent variable of interest is logged pension expenditures (in dollars) per full-time equivalent employee.

Because I am focused on how cities and counties might be changing their general revenue in response to rising pension spending, I model the general revenue variables with OLS and fixed effects for each city and county, which partial out the influence of any time-constant characteristics of the local governments that lead them to have higher or lower general revenue and pension expenditures. I also include year fixed effects because there are likely secular trends that affect pension spending and general revenue in all cities. During the Great Recession, for example, required pension expenditures increased because of the decline in fund asset values, and at the same time, government revenues dropped. Including year fixed effects allows me to test whether greater-than-average increases in pension expenditures are associated with greater-than-average increases in general revenue. In addition, to account for variation in the state of the economy both within and across local governments, I include the unemployment rate in each local government and year.¹⁴

I lag the pension expenditure variable by one year so that I am estimating the relationship between pension expenditures in year $t-1$ and general revenue in year t . This models government decision-making in a realistic way; presumably officials make decisions about next year's budget based on what they observe of this year's. Finally, because there might be other changes in the local jurisdiction that affect general revenue and may be correlated with pension cost increases, I include a series of time-varying local demographic variables: log per capita income, log population, percentage urban, percentage homeowners, and percentage Black, Asian, and Hispanic.¹⁵

The estimates from this model are shown in column 1 (general revenue) and column 2 (own-source general revenue) of Table 1. In both, the coefficients on pension expenditures per employee are close to zero and statistically insignificant. Certain other variables are related to general revenue, such as per capita income and population, and as expected, general revenue is lower when city and county unemployment is higher. However, there is no evidence of a link between rising pension spending and increasing general revenue. In cities and counties that experience greater-than-average increases in pension spending per employee, the next year does not bring greater-than-average increases in revenue.

Next I test whether rising pension expenditures have a negative relationship with local government employment. Modeling the relationship between pension spending and local employment is less straightforward than it might seem, because the independent variable of interest—pension expenditures per employee—itself has employment in the denominator. Lagging the pension cost variable by one year (as I did for the models of general revenue) helps to address the mechanical endogeneity of pension spending and employment in the same year—and again, it is a plausible model of government decision-making.

The dependent variables come from the U.S. Census SOG Employment files, which have information on full- and part-time government employment and payroll for 92 percent of the city- and county-years in the pensions dataset. I model them using the same approach as in columns 1 and 2, logging the dependent variables and including local government and year fixed effects and time-varying local demographics. Again, the local government fixed effects account for time-invariant characteristics of governments that might lead them to have greater pension expenditures and higher or lower government employment levels. As before, the year fixed effects are also important, because cities and counties might have reduced employment during and after the Great Recession for reasons unrelated to pension costs; including the year fixed effects allows me to evaluate whether greater-than-average increases in pension expenditures are associated with greater-than-average reductions in employment.

In column 3 of Table 1, I present the results of a model of logged full-time equivalent employment. The coefficient estimates suggest that rising pension expenditures have indeed led to an average reduction in public-sector employment: a 10 percent increase in pension expenditures per employee is associated with a 0.44 percent decrease in employment the following year. To get a sense of the magnitude of this effect, consider that the median increase in pension expenditures per employee from 2007 to 2016 was \$1,203, and that is approximately a 25 percent increase from the 2007 median pension expenditure per

Table I. Local Government Pension Expenditures, Revenue, and Employment.

	General revenue (1)	Own-source revenue (2)	FTE employment (3)	Full-time employment (4)	Part-time employment (5)	Capital outlays (6)
Ln (pension exp.)	-0.005 (0.015)	0.008 (0.009)	-0.044*** (0.007)	-0.043*** (0.007)	-0.036 (0.027)	0.096 (0.097)
Ln(income per capita)	0.737*** (0.200)	0.719*** (0.196)	0.339*** (0.092)	0.364*** (0.106)	0.073 (0.257)	1.709** (0.766)
Ln(population)	0.329** (0.142)	0.297* (0.151)	0.355*** (0.107)	0.358*** (0.109)	0.142 (0.189)	-0.132 (0.544)
% Urban	0.105 (0.490)	0.342 (0.505)	0.558** (0.238)	0.604** (0.240)	1.221 (1.170)	-0.977 (1.484)
% Homeowner	0.107 (0.239)	0.026 (0.271)	0.035 (0.139)	0.040 (0.144)	0.234 (0.457)	0.451 (1.459)
% Black	1.161 (0.812)	1.239 (0.777)	0.743* (0.401)	0.687* (0.362)	1.981 (1.366)	3.350 (3.574)
% Asian	0.234 (0.516)	-0.036 (0.566)	0.106 (0.646)	-0.047 (0.649)	-0.137 (1.222)	-1.954 (3.149)
% Hispanic	0.412 (0.390)	0.227 (0.472)	-0.088 (0.340)	-0.202 (0.343)	0.619 (1.094)	2.288 (2.037)
% Unemployment	-0.917** (0.415)	-0.596 (0.585)	0.100 (0.201)	0.195 (0.234)	0.673 (0.809)	-1.022 (2.218)
R-squared	0.995	0.994	0.998	0.998	0.964	0.890
Observations	4,092	4,092	4,038	4,038	4,004	4,036

Note. Standard errors clustered by state in parentheses. All models include local government and year fixed effects. Ln(pension exp.) is logged per-employee pension expenditures in 2016 dollars.
 * $p < .10$. ** $p < .05$. *** $p < .01$.

employee (\$4,901, see Supplemental Appendix). The coefficient estimate in column 3 of Table 1 suggests that a 25 percent increase in pension expenditures is associated with a 1.1 percent decrease in local employment. Given that the median local government in this dataset had 10.13 full-time equivalent employees per thousand residents as of 2007, a 1.1 percent decrease represents the loss of 11 employees for a city or county of 100,000 people. Naturally, the model predicts larger employment losses for the cities and counties that experienced larger growth in pension expenditures.

If local governments are in fact reducing employment in response to rising pension contributions, there is good reason to expect the cuts will be greater among full-time employees than part-time local employees, because part-time employees often are not eligible for pensions. I explore this in columns 4 and 5 of Table 1. In column 4, the dependent variable is the log of the number of local governments' full-time employees. The coefficient on log per-employee pension expenditures is negative and statistically significant, suggesting that a 10 percent increase in pension expenditures per employee is associated with a 0.43 percent reduction in full-time employment.¹⁶ When I instead model part-time employment, in column 5, the coefficient on pension expenditures is statistically insignificant.¹⁷ Thus, growing pension expenditures are associated with declining numbers of full-time employees—not part-time employees.¹⁸

Finally, in column 6, I test for a link between rising pension expenditures and capital outlays. This is an important dimension of local government activity because it relates to its investments in construction and the purchase of land, equipment, and existing buildings, and because I can be confident that these expenditures do not include pension spending.¹⁹ On average, I find that larger increases in pension spending are not associated with greater reductions in capital outlays in these local governments: the coefficient on per-employee pension expenditures is statistically insignificant.²⁰ Thus, results in Table 1 suggest that local governments respond to rising pension expenditures with employment reductions—more so than revenue increases or reductions in capital outlays.

Does the Political Context Matter?

Next, I consider whether local governments' responses to rising pension expenditures vary with the local political environment. While a number of political factors could matter, here I carry out a preliminary analysis of three that seem especially relevant: collective bargaining and union strength, the degree to which local governments are constrained by TELs, and the partisan or ideological leanings of local residents.

First, it is important to consider collective bargaining and union strength because the topic at hand is public pensions—an important part of public employee compensation. In general, local government employees that are better organized and more politically active should be in a better position to secure favorable policies (Moe 2011). In many places, moreover, public-sector unions have collective bargaining, meaning that local government employers and employees must negotiate and reach legally-binding agreement on matters related to compensation and working conditions. These factors may affect how local officials respond to rising pension contributions, although the direction of any such effect is theoretically ambiguous. Politically active groups of employees may be better able to stave off employment reductions and persuade officials to raise revenues instead. But if raising revenue is too difficult, local officials needing to cut spending in places with collective bargaining might actually be *more* likely to reduce employment levels—because they may have fewer politically workable levers for keeping costs down in other ways, such by as limiting salary increases.

A second relevant political condition is the extent to which cities and counties are constrained by TELs. These fiscal institutions, imposed by the states, can be another factor limiting local officials' options for responding to rising pension costs. Empirical studies on the effects of TELs find that they make it harder for local officials to raise revenue and thus work to limit local spending (e.g., Dye et al. 2005; Poterba and Rueben 1995). Thus, we might expect cities and counties more heavily constrained by state TELs to be less likely to respond to pension cost increases by increasing revenue and more likely to reduce employment and spending.

Third, the American politics literature in general and recent work in the local politics literature in particular place heavy emphasis on the role of ideology and partisanship in shaping policy, particularly spending. Some studies find evidence that the partisanship of local officials matters for local policy (e.g., de Benedictis-Kessner and Warshaw 2016, 2020), and other work finds an association between citizen ideology or partisanship and local spending (Einstein and Kogan 2016; Tausanovitch and Warshaw 2014). Extending these findings to local public pensions, one might predict that cities and counties with more liberal or Democratic residents should be more likely to increase revenue (and less likely to decrease employment or spending) in response to pension cost increases. But there are also reasons to question this. At the state level, decisions about public pensions tend *not* to divide along party lines (Anzia and Moe 2017, 2019). It is possible, then, that local politicians' responses to rising pension costs won't divide along partisan lines either.

As an illustration of these dynamics, consider West Covina, California: a majority Democratic city with public-sector collective bargaining in a state with a strong TEL. Rising pension costs have been a factor contributing to

West Covina's significant budget shortfalls in the last decade (Yee 2019). The city recently put forward a ballot measure to increase the sales tax, but it failed at the polls (Singgih 2020). To close its budget gaps, the city has gradually reduced employment, often by leaving vacant positions unfilled (e.g., San Gabriel Valley Tribune 2011). And the 2018–2019 budget arrangement helps to show that city officials are limited in their ability to reduce costs in other ways, such as through salaries: To balance its budget, the city made 10 percent cuts to almost all city departments (Wong 2018), but the cuts to the fire department had to be less than 10 percent because any more would have necessitated salary reductions—and that would have required negotiations with the firefighter union (Yee 2018).

To explore these possibilities, I combine the pension costs dataset with existing datasets of collective bargaining, TEL restrictiveness, and citizen partisanship. First, to measure the presence of local collective bargaining, I rely on two datasets assembled by Anzia and Moe (2015, 2016). The first contains indicators of whether police officers and firefighters in municipal governments have collective bargaining; these data are available for 176 of the 227 city governments in my dataset.²¹ For the remaining municipal governments, and for all county governments, I code local governments as having collective bargaining if state law requires bargaining for police, firefighters, and other local employees.²²

I focus on two of the dependent variables from Table 1: own-source general revenue and full-time employment. To evaluate whether the relationship between rising pension expenditures and these outcomes varies with the presence of collective bargaining, I interact the pension expenditure variable with the indicator for collective bargaining. Figure 3 presents the coefficient estimates and 95 percent confidence intervals for logged pension expenditures; the full model estimates are presented in the Supplemental Appendix.

Figure 3 shows that regardless of whether the local government has collective bargaining, there is no significant relationship between pension expenditures and revenue increases. However, collective bargaining does make a difference to the employment estimates. For local governments without collective bargaining, the coefficient on the pension expenditures variable remains negative, but it is smaller than before and statistically insignificant. For governments with collective bargaining, the relationship is large and negative: a 10 percent increase in per-employee pension expenditures is associated with about a 0.46 percent decrease in full-time local government employment. Thus, the relationship between pension spending and employment reductions is more pronounced in places with collective bargaining, consistent with an account in which local governments with collective bargaining have less capacity to constrain costs by other means.

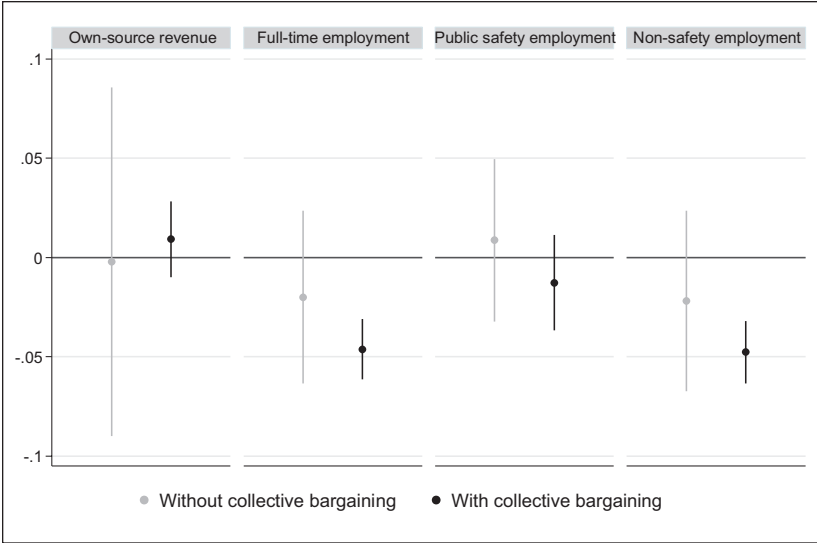


Figure 3. Collective bargaining, public safety, and non-public safety.

One final question relevant to union strength has to do with *which* employees are most affected by rising pension contributions. Public safety employees (particularly police and fire protection employees) are some of the best organized and most active groups in local politics (Anzia and Moe 2015), and it may be that their political strength helps to insulate them from pension-related employment reductions. The estimates in Figure 3 suggest that that is the case.²³ In places with collective bargaining, increases in pension expenditures per employee are associated with larger employment reductions for non-public safety employees.

Next I evaluate whether local responses to rising pension expenditures vary with the strength of TELs. I turn to a widely-used index of local TEL severity as of 2005 developed by Amiel et al. (2009), which incorporates information on the type of TEL, its scope and restrictions, and the provisions and established methods for exemptions and overrides. The index ranges from 0 (e.g., New Hampshire) to 38 (Colorado), with higher values indicating more restrictive TELs. I interact this measure of local TEL severity, centered around its mean, with the pension expenditure variable, evaluating whether local governments more constrained by TELs are less likely to increase revenue and more likely to reduce employment in response to pension expenditure increases. The main estimates are shown in columns 1 and 2 of Table 2; the full estimates are in the Supplemental Appendix.

Table 2. Local TELs and Partisanship.

	Own-source revenue (1)	Full-time employment (2)	Own-source revenue (3)	Full-time employment (4)	Full-time employment (5)
Ln(pension expenditures)	0.021 (0.022)	-0.049*** (0.008)	0.006 (0.011)	-0.048*** (0.008)	-0.039 (0.026)
Local TEL×Ln(pension exp.)	-0.001 (0.001)	-0.002* (0.001)			-0.001 (0.001)
Dem. presidential vote×Ln(pension exp.)			-0.042 (0.071)	-0.112** (0.055)	-0.082 (0.053)
Collective bargaining×Ln(pension exp.)					-0.014 (0.025)
R-squared	0.994	0.998	0.994	0.998	0.998
Observations	4,081	4,027	4,092	4,038	4,027

Note. Standard errors clustered by state in parentheses. All models include local government and year fixed effects and the time-varying controls from Table 1.

* $p < .10$. ** $p < .05$. *** $p < .01$.

The estimates in column 1 show little sign that local governments are responding to pension cost increases by increasing revenue, regardless of how constrained they are by local TELs. The coefficient on log pension expenditures is statistically insignificant, suggesting that in local governments with average TELs, pension cost increases are not associated with revenue increases. Moreover, the coefficient on the interaction term is negatively signed but not significant. Thus, the association between pensions and revenue does not vary significantly with the strength of local TELs.

In column 2, however, I find that stricter TELs matter for the relationship between pension expenditures and local government employment. The coefficient on pension expenditures shows that in a local government with average TEL severity, a 10 percent increase in per-employee pension expenditures is associated with a 0.49 percent reduction in full-time employment. The coefficient on the interaction term is also negative and significant, indicating that the relationship between pension expenditures and employment reductions is more pronounced in places with stricter local TELs. For example, for a local government with a TEL that is 10 points (roughly a standard deviation) higher than average, a 10 percent increase in pension contributions is associated with about a 0.65 percent reduction in full-time employment.

Finally, I turn to an assessment of whether local partisanship or ideology influences responses to rising pension expenditures. My main measure of partisanship is local-level presidential vote share for Barack Obama in 2008,²⁴ centered around its mean. In column 3 of Table 2, I interact this measure with the pension expenditure variable in a model of logged own-source revenue. There is no evidence of a stronger relationship between pension expenditures and revenue increases in more Democratic cities and counties. In column 4, I model the relationship between pension contributions and full-time employment, interacting per-employee pension expenditures with the measure of partisanship. The estimates do not suggest that officials representing more Democratic constituencies are more likely to avoid employment reductions in dealing with rising pension expenditures.²⁵ In fact, the coefficient on the interaction term in column 4 is negative, suggesting that pension-induced employment reductions may be even more pronounced in more Democratic constituencies.

The reason for this may be that more Democratic cities and counties are more likely to have public-sector collective bargaining. In column 5, where I model full-time employment with the pension expenditure variable interacted with all three of these local conditioning variables—collective bargaining, local TEL severity, and Democratic presidential vote—the coefficient on the interaction with Democratic presidential vote is negative but insignificant. However, I still find that pension expenditures are significantly related to

employment reductions in cities with collective bargaining: adding together the coefficients on log pension expenditures and its interaction with collective bargaining yields a statistically significant estimate of -0.053 .

Conclusion

Up to this point, there has been a great deal of research on public pensions, but it has been focused on funding ratios, unfunded liabilities, investment returns, and changes to benefit formulas—not on what local governments are experiencing or how they are adjusting. Experts have made a variety of claims about how pension costs are or are not transforming local government, but without a large-scale, data-based study of local governments' pension expenditures. Meanwhile, the local politics literature has mostly ignored pensions, even though employees' retirement benefits are an important part of local government budgets everywhere.

One contribution of this article is therefore its description of local governments' pension expenditures from 2005 to 2016. I set aside generalizations about whether local governments are in crisis or whether political elites are manufacturing crisis and simply focus on summarizing local governments' pension expenditures as reported in their CAFRs. I find a trend in those data: pension expenditures mostly rose over that 12-year period. In some places they rose a little, and in others they rose a lot. Different readers can interpret these changes as good, bad, or neutral. Regardless, the takeaway is that cities and counties were spending more on pensions—in real terms, per employee and as a share of general revenue—in 2016 than they were in 2005.

Some of the increases between 2005 and 2016 are probably a return to pension expenditure levels of the past, but it also looks as though once those expenditures returned to mid-1990s levels, they kept going up. Pension costs in some places were also projected to increase further in years beyond 2016 (Hartman 2020). And that was before the Covid-19 crisis. The 2020 recession brought investment losses for many public pension funds (Glass and Vanatta 2020), portending further employer contribution increases in the coming years. And this comes at a time when state and local government revenues have cratered and other costs have risen (Belz and Sheiner 2020). It is too soon to say how exactly this will play out, but it seems clear that state and local policy makers will continue to face difficult decisions going forward—decisions about how to raise revenue, pay for pension obligations and other costs, protect workers, and keep government operating.

The second contribution of this article is its quantitative analysis of how local governments responded to rising pension expenditures during the period of 2005 to 2016. In theory, they could have responded in a variety of ways,

using different combinations of revenue increases, cuts to employment, cuts to other spending, or issuing POBs. In practice, however, there was a trend of reducing local government employment, not of increasing revenue. And because so much of what local governments do involves employees providing services, this suggests that pension expenditures are crowding out public service provision.

As with my descriptive analysis of local pension expenditure changes, this is not an assessment of what local governments *should* do but rather an analysis of what they *did* do. Some will lament that the response hasn't been more in the direction of increasing revenue, some will propose that more of the cuts should come from public safety, and some will argue that the response should instead have been to make large reductions to pension benefits or OPEB. Those are important policy discussions to have. But my goal here was to assess how local governments actually responded, and to provide some rationale for why they responded the way they did.

The political and institutional constraints local policy makers face are clearly an important part of the story. For example, raising revenue and reducing pension benefits are both politically and legally difficult. It makes sense, moreover, that the states with restrictive TELs are the ones with the strongest relationship between rising local pension costs and reductions in employment.

But other aspects of the politics of pensions are more counterintuitive—and cut across standard ideological and partisan lines. One might think more Democratic, liberal cities and counties would be more likely to respond to pension expenditure increases by increasing revenue and staving off employment reductions. But they are not. Also, debates about public pensions are often framed as pitting pro-employee, pro-pension interests against anti-pension, anti-public-worker interests, but my findings here suggest that that's an overly simplistic characterization. From one perspective, public-sector unions have incentives to advocate for better benefits and lower employee contributions, because that is in their members' interests (Anzia and Moe 2015; DiSalvo 2015). In the longer run, however, absent greater revenue, local governments' payments for those benefits can limit their ability to grow or even maintain employment—or to increase salaries—which isn't good for public employees or their unions (Anzia and Moe 2019). One takeaway from my study is that as local governments spend more on pensions, in some cases they have fewer jobs to offer.

And a pension-induced reduction in local government employment is not just significant for the employees. Local governments are responsible for providing goods and services that affect the day-to-day lives of everyone living in the United States, such as public education, water service,

transit, sewers, public safety, parks, and libraries. If it becomes harder for local governments to carry out their functions, everyone stands to be impacted—especially those most dependent on public provision of those goods and services.

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. Using plan-level data to estimate how much local governments spend or should be spending on pensions is a difficult and imperfect exercise. See Munnell and Aubry (2016) for an example.
2. Dippel (2019) analyzes U.S. Census data on locally-administered pension plans, but because most local governments contribute to state-operated plans (often in addition to local plans), those data do not capture the full amounts local governments contribute toward retirement benefits.
3. The initial data collection began in the fall of 2015 and focused on municipal governments. At that time, 2012 was the latest year available in the SOG Finance files. The SOG Finance survey used one consistent sample of local governments for 2005 to 2008 and a different sample for 2009 to 2012. I determined which municipal governments were included in both of these samples and drew 236 municipal governments from that set. I used a similar process for selecting counties in spring 2018. At that time, the SOG Employment files were available through 2016 and the Finance files through 2015, so I drew a sample of counties that were included in both datasets for most of the years from 2005 to 2016. See the Supplemental Appendix for more details.

4. I provide a detailed account of the data collection and coding in the Supplemental Appendix.
5. I excluded plans that were inconsistently reported in the CAFRs year to year. Nearly all such plans were small relative to the governments' other plans. See the Supplemental Appendix for details.
6. The CAFRs for 13 counties and 5 municipalities did not have the requisite information on retirement plans to be included. See the Supplemental Appendix for details.
7. Most municipal governments in the United States are small, so a representative sample would contain mostly small municipalities. Another common approach in local politics research is to include the full population of cities above a certain size, but that wouldn't have yielded a sample diverse in size either.
8. In the Supplemental Appendix, I analyze variation in pension contributions across cities and counties.
9. Data on revenue and FTE employment come from the U.S. Census. See the Supplemental Appendix.
10. This is not to say that pension costs are *only* a function of employment levels. Local pension costs are shaped by many factors, including benefit structures (which often vary by type of employee and date of hire), salaries, unfunded liabilities, and actuarial assumptions.
11. Of the cities and counties in my dataset, there were only seven for which I could locate CAFRs online for years as early as 1995–1996. Pension expenditures for all seven are shown in the Supplemental Appendix. Pension cost data are missing for Crowley, Louisiana, in 1995 and 1997. For 1997, in Figure 2, the number shown is the average of the 1996 and 1998 values.
12. The Supplemental Appendix evaluates local characteristics associated with greater growth.
13. Unfortunately, I know of no existing data on local government decisions about tax rates, assessments, or charges that cover all of the governments in this dataset.
14. The unemployment data are from the Bureau of Labor Statistics. For municipalities with fewer than 25,000 residents, I use the unemployment rate for the municipality's parent county.
15. These variables are from the U.S. Census Bureau. I lose a few observations for a few reasons: because pension costs for some city- and county-years are not comparable to other years within the same government, because of clear errors in the finance and employment data, or because of extreme changes in pension expenditures for a single year. See Supplemental Appendix for details.
16. When I add logged general revenue as a predictor, the results are substantively unchanged. See the Supplemental Appendix.
17. The number of observations is smaller because some localities have no part-time employees.
18. Local governments could also reduce hours worked by part-time employees, but when I model part-time employee payroll, which reflects hours, I find no significant relationship with pensions.

19. For many spending variables in the SOG Finance files, it is not clear whether they include pension expenditures, and it would be problematic to analyze the effects of rising pension costs on expenditure variables that might include those very pension costs.
20. However, when I limit the model to only municipal governments, I find a negative, statistically significant relationship. This may be because city governments typically spend a larger share of total revenue on capital outlays than counties—on average 27 percent for cities as opposed to 10 percent for counties—which makes capital outlays a more obvious place for cities to cut costs.
21. Cities are coded as having collective bargaining if either police officers or firefighters do.
22. No existing datasets track collective bargaining or union membership for all local governments, but both are heavily shaped by state collective bargaining laws: States that require government employers to bargain with their employees tend to have local governments with collective bargaining and high union membership rates (Flavin and Hartney 2015; Moe 2011).
23. These estimates are from models of the logged full-time employment levels of public safety employees (police protection, fire protection, and corrections) and non-safety, non-education employees. (Very few of these local governments handle education, but in the cities and counties that do, the education employees are a large share of the total workforce, so I exclude them.)
24. These data come from a variety of sources, including Tausanovitch and Warshaw (2013). City-level presidential election returns were not available for a few cities; for them, this variable equals presidential vote in the parent county. See Supplemental Appendix for details.
25. Both of these results are substantively the same when I replace the presidential vote variable with the Tausanovitch and Warshaw (2013) citizen ideology scores. See the Supplemental Appendix.

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