

The State of Local Government Pensions: A Preliminary Inquiry

Tracy M. Gordon, Heather M. Rose, and Ilana Fischer

© 2012 Lincoln Institute of Land Policy

**Lincoln Institute of Land Policy
Working Paper**

The findings and conclusions of this Working Paper reflect the views of the author(s) and have not been subject to a detailed review by the staff of the Lincoln Institute of Land Policy.

Contact the Lincoln Institute with questions or requests for permission to reprint this paper. help@lincolninst.edu

Lincoln Institute Product Code: WP12TG1

About the Authors

Tracy Gordon is a Fellow in Economic Studies at the Brookings Institution. Her research is in state and local public finance, political economy, and urban economics.

Heather M. Rose is an Associate Professor at the University of California, Davis. Her research is in the economics of education, education policy, and school finance.

Ilana Fischer is a Research Assistant in Economic Studies at the Brookings Institution.

Prepared for *The Effects of Pension Legacy Costs on Local Government Finance: Fiscal Benefit, Fiscal Illusion, and Fiscal Hangover* conference held at the Lincoln Institute of Land Policy, Cambridge, MA, March 9, 2012. This paper benefited greatly from discussion and comments offered at the conference and by colleagues at the Lincoln Institute and our respective institutions. All remaining errors are, of course, our own.

Abstract

State government pensions have attracted considerable media and scholarly attention. Less well understood are the nation's 3,196 locally administered plans. This paper represents a first step toward filling this gap. After reviewing issues common to state and local plans, it summarizes existing data and research on local pensions. Based on their own technical assumptions, local plans are as well funded as their statewide counterparts (Munnell et al., 2011). However, applying a lower discount rate and generalizing from the nation's largest municipal plans (those with assets above \$1 billion), researchers have estimated aggregate unfunded liabilities of \$574 billion (Novy-Marx and Rauh, 2011). Results from an original news scan suggest that pensions are already burdening some local budgets. Key issues going forward will be determining how local government employee pension costs affect current municipal cash flows and whether pension funding status is capitalized in local property values.

Table of Contents

Introduction	1
Background	2
Conceptual Issues	3
What Do We Know About Local Pensions?	5
Where Are Local Pensions in Trouble?	8
Questions for Future Research	10
References	12
Tables	15
Appendix	28

Introduction

State and local government employee pensions are in the headlines almost daily. Only a few years ago, they were the near exclusive province of a few elected officials, appointed boards, investment advisors, actuaries, and credit rating agencies. What changed?

The most immediate answer is the Great Recession, which sapped not only tax revenues but also investment income. In particular, state and local pension funds lost nearly half the value of their investments in corporate equities from 2007 to 2009 (Figure 1). As a result, the overall ratio of assets to liabilities in these funds dropped from 88 to 75 percent between 2007 and 2011 (Munnell et al., April 2012). Now, although stock markets are recovering, many pension funds are still faring poorly because they generally smooth investment gains and losses over several years.

In addition, a few high profile municipal bankruptcies in Stockton, California and Central Falls, Rhode Island as well as more widespread local fiscal distress have focused attention on public employee pensions and employee compensation generally. The federal government is also paying attention. Alarmed by the prospect of sovereign defaults at home, Congress held a series of hearings into state and local government finances last year. More recently, the Republican staff of the Joint Economic Committee has issued several reports critical of state and local government finances and warning of “possible preemptive actions” on the part of the federal government to avert a bailout (Joint Economic Committee, 2011: 7).

In light of these concerns, many state and local governments have undertaken significant pension reforms. From 2009 to 2011, 43 states passed laws to shore up their pensions’ finances. These laws increased employee contributions (30 states), raised age and service eligibility requirements (32), adjusted formulas for calculating benefits (17), and reduced cost of living increases (21) (Snell, 2012).¹ Some changes have affected not only new hires and active workers but also current retirees, prompting lawsuits in Colorado, Minnesota, New Jersey, and South Dakota. At the local level, voters in San Diego and San Jose, California recently enacted major pension changes, and these reforms too will likely face legal challenges.

Nevertheless, despite heightened attention to state and local government pensions generally, relatively little is known about local pensions specifically. One reason is limited data. For example, the U.S. Census Bureau tracks all state and local government pension funds but reports liabilities only at the state level. Other groups such as the National Association of State Retirement Administrators and Boston College Center for Retirement Research gather more comprehensive financial data but only for a subset of plans.

This omission is unfortunate. Although local plans represent a modest share of public pension fund membership (10 percent) and assets (18 percent), the consequences of failure could be devastating. Personnel costs comprise a greater share of local versus state budgets. Mobile residents and businesses may flee higher property taxes if additional revenues are used to pay off pension legacy costs rather than to provide basic services. A shrinking tax base would leave the fund even worse off and less able to pay promised benefits. The result could be more cities like

Prichard, Alabama, a town of roughly 20,000 that simply stopped sending pension checks in September 2009 and declared bankruptcy one month later.

The purpose of this paper is to survey what is known about local pensions and determine whether places like Prichard are truly representative. After reviewing common features of state and local pensions, the paper summarizes existing data and research. It then reports results from an original news scan designed to pinpoint where local pension plans are experiencing trouble. The paper concludes by highlighting some directions for future research.

Background

Like many institutions now prevalent in state and local government, public employee pensions originated at the local level. New York was the first city to institute a plan for its police officers in 1857. Massachusetts followed suit with the first state plan in 1911 (Munnell et al., March 2008: 3).

Today, state and local pensions are an important part of the nation's retirement system. Every state has at least one public employee pension plan and Pennsylvania has 1,425 plans (Becker-Medina, 2012). As of the first quarter of 2012, state and local pension funds held \$3.1 trillion in assets, or roughly one fifth of total U.S. retirement savings (Figure 2).

State and local pensions are all the more important because many government employees (roughly one quarter) do not participate in Social Security (U.S. Government Accountability Office, 2010). This exclusion stems from historic concerns about the legality of a federal payroll tax on state and local governments. Starting in 1950, however, states could enter into voluntary "Section 218 agreements" to enroll their employees, and since 1991 all state and local workers not covered by their employer have been eligible for Social Security. The bulk of workers not covered by Social Security are teachers in California, Illinois, and Texas and general employees in Alaska, Colorado, Massachusetts, Nevada, Ohio, Louisiana, and Maine (Figure 3).

Another key feature of state and local pensions is that they are typically defined benefit (DB) plans. Under these plans, benefits are calculated by formula, typically based on the product of final salary (often averaged over three to five years), years of service, and a credit (such as two percent) for each year of service. For example, an employee earning \$50,000 in his final three years of employment after twenty years of service would be eligible for an annual pension of \$20,000 (\$50,000 multiplied by 20 and 0.02). As of 2009, DB plans covered nearly 80 percent of state and local workers, compared to 20 percent of private sector employees (U.S. Bureau of Labor Statistics, 2010).

Defined benefit plans used to be more prevalent in the private sector but have largely been replaced by 401(k)-style Defined Contribution (DC) and hybrid plans. Explanations for this phenomenon include higher administrative costs and regulatory burdens for private DB plans since passage of the Employee Retirement Income Security Act of 1974 (ERISA) as well as less advantageous tax treatment since the Tax Reform Act of 1986 and subsequent legislation.

More broadly, there have also been structural changes to labor markets, including higher job mobility and lower job tenure in the private sector. By comparison, state and local government employees tend to be older and remain in their jobs longer (Munnell and Soto, 2007). These differences may reflect pension structure – for example, if DB plans encourage workers to build job-specific skills and discourage mobility. It may also reflect greater rates of unionization in the public sector. (See Friedberg, 2011 for a detailed review of pensions and labor markets).

State and local government pensions also tend to be more generous than private DB plans. The average public sector employee retires with a greater share of his or her pre-retirement income (54 percent) compared to private sector workers (42 percent including Social Security) (Munnell and Soto, 2007). Income replacement rates are even higher (70 percent) for long term state and local government workers, a logical consequence of formulas that reflect final average salaries.

In addition to higher average benefits, state and local pensions have traditionally protected retirees from certain risks. For example, because they typically include automatic cost-of-living adjustments, public DB plans protect employees from inflation risk. Like private DB plans, they also protect employees from investment risk in contrast to 401(k) style plans. Finally, to the extent that they do not offer lump sum distributions, public DB plans provide a guaranteed annuity that insulates retirees from the risk of outliving their pensions.

Conceptual Issues

For most of the past decade, state and local pensions were considered reasonably well funded. For example, from 2003 to 2006 public pension assets covered an average 88 percent of liabilities, compared 86 percent among private DB plans (Munnell et al., April 2008). However, the financial crisis was hard on public pensions, which are on average 60 percent invested in corporate equities (Lucas and Zeldes, 2009). As a result, their reported funding ratios dropped to 79 percent in 2009 and 75 percent in 2011 (Munnell et al., April 2012).

Prefunding of state and local pension plans is a relatively new concept. For most of their history, state and local pensions were viewed as a “gratuity” and financed on a pay-as-you-go basis, or out of current revenues. This practice changed in the 1970s, roughly coinciding with a report mandated by ERISA on state and local pension funding status. The report found a “high degree of pension cost blindness... due to the lack of actuarial valuations, the use of unrealistic actuarial assumptions, and the general absence of actuarial standards” (Munnell et al., April 2008: 2).

In response, the Financial Accounting Standards Board (FASB) promulgated a rule applying to public pensions, but that rule never went into effect. Instead, the Government Accounting Standards Board (GASB) was formed in 1984 and it started issuing its own standards in 1986. GASB compliance is not mandatory but these rules are considered Generally Accepted Accounting Principles (GAAP) for state and local governments.

Note that GASB standards are accounting rules and not funding requirements. They do not require governments to set aside specific amounts for their pension funds in a given year. Nevertheless, credit rating agencies, auditors, and other data consumers use these accounting measures to judge a pension fund’s fiscal health or funded status.

GASB Statements 25 and 27 are the current standards for state and local public employee pensions.² They require that public pension funds perform actuarial valuations that meet certain parameters including:

- Reporting at least every two years
- Reflecting the present discounted value of all future payments, including cost-of-living increases
- Using an actuarial cost method from an approved list
- Basing actuarial assumptions on actual experience and investment assumptions on expected long-term asset yields
- Including in annual required contributions (ARCs) the “normal cost” of benefits accrued in the current year as well as amortized unfunded liabilities
- Amortizing unfunded liabilities over no longer than 40 (later reduced to 30) years (Munnell et al., April 2008: 3)

Implicit in these standards are four conceptual issues. The first is what future costs to include. To see the alternatives it may be helpful to consider Figure 4. The least comprehensive measure – the accumulated benefit obligation (ABO) – includes only benefits for former workers and benefits already earned by active workers (areas A+B in the figure). It does not include the effects of future salary increases and additional years of service (areas C and D).

At the other extreme, the projected value of benefits (PVB) incorporates the present value of all future liabilities generated by former and current workers (areas A+B+C+D). This measure may be too broad in that it does not allow for state and local governments’ ability to limit the rate at which workers accrue benefits, for example by reducing the credit for each year of service. Some state constitutions (Illinois, New York, Arizona, and Alaska) prohibit such changes, essentially freezing pensions as they existed on the employee’s first date of benefit eligibility (Monahan, 2010). However, the PVB is a very broad, and only conceptual, measure because it would accrue the entire future cost of an employee on the day he or she was hired.

An intermediate concept is the projected benefit obligation (PBO), which accounts for effects of future salary increases on pension service already accrued, but not additional years of service (i.e., areas A+B+C). In the above example, a PBO valuation would project the worker’s final salary at retirement (\$50,000) but apply it only to years of service already accrued.

A related issue is how to allocate future costs to the present and intervening years. The Entry Age Normal (EAN) method assigns to each worker’s year of service a constant share (usually as a constant percentage of pay) of the cost of total lifetime benefits. It “front loads” costs because, for most workers covered by a DB plan, each additional year of service costs more in terms of accrued pension rights. By contrast, the Projected Unit Credit (PUC) method allocates benefits in proportion to years of service (with modifications for service credits in the pension formula that vary with years of service). It produces higher employer pension costs in later years relative to the entry age normal method.

The final issue, and the one which has received the most recent attention, is the choice of discount rate. Current GASB rules call for discounting future liabilities based on projected investment returns, typically assumed at 8 percent per year. Critics are increasingly questioning this method. They argue that using projected investment returns to discount future liabilities exposes future taxpayers to unjustified risk.³ They would substitute a lower discount rate or “fair-value method,” conceptually similar to what a private insurer or another party would pay to assume the pension liability.

The reason is that historical investment returns include a risk premium, whereas pension promises are often constitutionally or otherwise legally protected (e.g., Brown and Wilcox, 2009). Higher discount rates can make pensions appear better funded than they truly are. This reduces current funding requirements but could impose unwarranted obligations on future taxpayers should pension shortfalls materialize. The problem of underfunding is compounded if a government must raise taxes when economic conditions are poor. Although state and local governments are perpetual entities and can endure short run market volatility, they cannot avoid long term risks such as a protracted productivity slump.

To assess the underlying risk of pension liabilities, one could consider the rate at which state and local governments borrow in the bond market, adjusted to remove tax advantages of municipal debt. Borrowing costs capture market evaluations of a government’s probability of default. Presumably, this outcome is as likely as failing to meet pension obligations given their legal protections. In fact, pensions may have an even greater claim on public resources. For example, during its 1975 fiscal crisis, New York City defaulted on bonds but continued to make its pension payments (Congressional Budget Office, 2011).

By this reasoning, an even lower discount rate may be appropriate. One benchmark is so-called “risk-free” U.S. Treasury bonds, adjusted to remove any liquidity premium and state tax advantages. Following a similar approach, using a 5 rather than 8 percent discount rate, Munnell et al. (2012) calculate funding ratios of only 50 percent.

It is important to note that reporting requirements are distinct from funding targets. Reporting unfunded liabilities at a riskless rate does not imply that pensions should be 100 percent funded at that rate. Indeed, overfunding can be harmful if it requires raising taxes more than necessary (e.g., Bohn, 2011). Practically speaking, overfunding may also create a political incentives to raise benefits, for example through pension “spiking” or shortening the window over which benefits are calculated to provide higher payments over time (Schieber, 2011).

What Do We Know About Local Pensions?

Despite mounting concerns about their fiscal health, systematic knowledge of local pension plans is sparse. The best available information comes from the U.S. Census Bureau’s *Annual Survey of Employee Retirement Systems of State and Local Government*. From this survey, the Bureau reports data for each government entity in its *Census of Governments* published at five year intervals. It reports aggregate data by state and government type (counties, municipalities, townships, and so forth) in its *Annual Survey of State and Local Government Finances*.

In addition to these products, the Bureau releases plan level data each year for all state pensions and a sample of local systems. Local sampling is based on plan features including revenues, benefit payments, financial holdings, and membership. Observations are weighted by inverse sampling probability. The Bureau imputes data for non-respondents from public Consolidated Annual Financial Reports (CAFRs). Finally, the Bureau conducts a *Quarterly Survey of Finances of Selected State and Local Government Employee Retirement Systems* for the 100 largest plans.

As with other Census Bureau products, the main virtues of the employee retirement survey are its quality and comprehensiveness. Variables include measures of employer and employee contributions, investment earnings, benefit payments, withdrawals, cash and investment holdings, active members, inactive members, and total beneficiaries receiving periodic benefit payments. (Inactive members are former and separated employees on military or other extended leave without pay who have accrued pension rights but not yet retired.)

The main disadvantage of the Census Bureau data is its timeliness – the most recent local data available are for fiscal year 2010. More troubling for our purposes, the Bureau does not report on liabilities for local plans.⁴ Like other pension data sources, the Census Bureau also does not collect information on defined contribution plans or other post employment benefits (OPEBs).

Nevertheless, the employee retirement survey provides some insights into local pensions. For example, Table 1 reports the number of local plans by state. Some states have numerous local administered plans, even after controlling for the number of local governments. Table 2 further categorizes local plans by government type and shows that the ratio of active workers to beneficiaries. States with ratios below 1 for their local plans (i.e., more beneficiaries than active workers) are: Alaska, Arkansas, Delaware, Idaho, Indiana, Kentucky, Michigan, Minnesota, Ohio, South Carolina, West Virginia, and Wisconsin (Becker-Medina, 2012: 34-36).

Of course, neither of these pieces of information tells us about local pension funded status. For this information, we need to turn to independent surveys. For example, the National Association of State Retirement Administrators (NASRA) performs an annual survey of member state and local pension systems. The latest data available are for 2010 and include 126 plans. Measures include local plan liabilities among other actuarial data such as asset smoothing periods and valuation methods. This source is very similar to the *Public Plan Database*, which is available at the Boston College Center for Retirement Research (CRR) website but includes only 17 local plans.

More promising for research is the CRR *Local Pension Plan Survey*. Originally conducted in 2006 and updated in 2010, the survey relies on data from individual plan actuarial reports, local government CAFRs, and local ordinances. The sample frame includes the two largest plans in each state, although the researchers captured 84 plans in 38 states. The sample thus includes 58 percent of local pension assets and 55 percent of participants according to Census data. (Appendix Table A1 summarizes attributes of these data sources.)

To date, very few national studies have focused on local pension liabilities. The first such study was undertaken by CRR and released in December 2008 based on 2006 data. Munnell and co-

authors updated the study in July 2011 based on 2010 data. Rauh and Novy-Marx have also analyzed local pension finances using data from CAFRs for city and county plans holding more than \$1 billion in assets as of 2006.

In brief, Munnell et al. (July 2011) find that local plans are as well funded as their statewide counterparts, an improvement over 2006 when they were slightly worse off (Figure 5). This finding is all the more surprising given that local governments often face higher annual required contributions because their employees (especially police and fire fighters) retire earlier.

However, Munnell et al. also detect important differences by employee type, with teacher plans being the worst funded in 2010 and 2006 (Figure 6). There is also wide dispersion around the average, with 21 percent of local plans funded at less than 60 percent of total liabilities (Figure 7). Based on Census of Governments data, Munnell et al. also note that for a nontrivial share of municipalities (7 percent), pension contributions consume more than 17 percent of local budgets (Figure 8). (By comparison, in fiscal 2009 the average local government spent 11 percent of its budget on public safety and a comparable share on “environment and housing,” which includes sewerage, garbage collection, parks and recreation, housing and community development, and natural resources protection.)

The above results are based on municipalities’ own self reported data and their own choice of discount rate. Novy-Marx and Rauh (2011) calculate unfunded liabilities at a lower, risk-free discount rate roughly equivalent to the yield on U.S. Treasuries. This procedure generates aggregate unfunded liabilities of \$383 billion for the nation’s largest municipal plans. Generalizing to all remaining city and county plans suggests total unfunded liabilities of \$574 billion. This estimate, of course, assumes that all plans resemble the largest plans in their funded status.

Beyond these national studies, some organizations have analyzed local pensions in individual states and regions. For example, the Civic Federation (2011) examined the finances of ten major local government pension funds in Cook County, Illinois. It found that all ten systems declined in funded status since 2000. Funded ratios in fiscal 2009 ranged from a high of 79.4 percent for the Chicago Laborer’s Fund to lows of 43.6 and 36.5 percent for the city’s Police and Fire Funds. Taken together, unfunded liabilities for the ten plans amounted to \$7,098 per Chicago resident based on each plan’s reported discount rate (usually 8 percent). Using market values of pension assets, the Civic Federation finds much lower funded ratios, typically in the 50 to 60 percent range.

Similarly, the Stanford Institute for Economic Policy Research (2012) analyzed California’s 24 largest city and county plans based on plan actuarial reports and local government CAFRs and budgets. The study authors calculated funded ratios at a risk-free discount rate of 5 percent and estimated the share of local spending consumed by pensions for each local government. The study detected a wide range of funding ratios, ranging from 78.5 percent in Fresno to 41.5 percent in Kern County. The same was true for estimated pension costs, ranging from 6 percent in Los Angeles to nearly 18 percent in San Mateo County under the lower discount rate.

In sum, there is limited evidence about the current condition of locally administered pension funds. The evidence that exists suggests some funds are underfunded and already straining local budgets. The next section looks for more qualitative evidence on how local pensions are faring.

Where Are Local Pensions in Trouble?

To get a broader picture of where local pensions were experiencing difficulties, we performed a news search using VOCUS, a proprietary media monitoring software. The main virtue of VOCUS is that it includes tools for identifying and tracking the frequency and distribution of published articles in a wide range of media outlets. A drawback is that it is less well known than other search engines such as Lexis/Nexis.

We therefore attempted to validate the VOCUS results by performing an identical search in Nexis. Using comparable search terms over the same time period, we obtained a similar number of articles (roughly 2,000) from each search engine. The geographic distribution of articles matched, as did a spot check for content. We were therefore satisfied with the quality of the VOCUS results.

Our search covered all U.S. domestic news outlets including newswires, blogs, and newspapers from January 1 to April 4 of 2012. To satisfy the query, articles had to include the word “pension” a minimum of three times in conjunction with terms that identify local governments (e.g. municipality, city, county, etc.) and descriptions of funding problems (e.g. liability, deficit, underfunded, gap, bankrupt, cut, default, reform, fix, problem, or trouble).

VOCUS categorizes news items by Designated Marketing Areas (DMAs). Figure 9 shows the twenty DMAs generating the most articles, while Figure 10 illustrates their geographic distribution and Figure 11 trends over time. We did notice an upward trend and a qualitative change in coverage over the sample period. Later articles reflected court decisions and legislative actions, which could simply reflect the legislative calendar or the topic “heating up.”

These geographical units are roughly equivalent to metropolitan areas although not political jurisdictions. Thus, the VOCUS results are suggestive but not determinative of where pension plans are in trouble. For example, a “spike” in coverage around March 16, 2012 resulted from an Associated Press article describing a January of 2012 report by the National Council on Teacher Quality. The article specifically mentions problems with state and local pensions in Kansas, Alabama, California, New Mexico, among other states. It was thus picked up by a number of local news outlets, similar to what happened in California when the above referenced SIEPR report was released in February.

Here is a selection of pension news coverage over this period:

- Springfield, IL: Several articles (e.g., February 26th *St. Louis Post-Dispatch*) referred to a proposal that would reduce the state’s yearly payments to teacher pensions, nearly \$800 million dollars for Illinois’ 1,101 school districts. (A similar policy was proposed by Governor O’Malley in Maryland.)

- Charleston-Huntington, WV: A spike in articles around February 21st referred to Governor Tomblin’s signing a proposal to relieve school districts of \$1.3 billion dollars in pension payments and shifted them to the state.
- California: Many local newspapers (e.g., San Joaquin County February 22nd) draw attention to unfunded liabilities and exaggerated funding ratios (e.g., \$2.3 billion for the county based on a muni discount rate). Stockton also came up frequently because of its bankruptcy proceedings.
- Honolulu, HI: Articles refer to pension abuse at both the state and county level through “spiking” and “double dipping,” although both practices are legal in the state. A pension state legislature reform committee is discussing options to end such abuse after separate journalism investigations found nearly 59 instances in which employees pensions were greater than \$100,000. A February 26th article found that 20 percent of Hawaiian legislators “double dipped,” against a backdrop of \$8 billion in unfunded liabilities.
- Atlanta, GA: As the city faces budget shortfalls, it is trying to expand on recently passed legislation that loosened limits on public pensions getting involved in alternative investments, such as private equity, hedge funds, and real estate (*Atlanta Journal-Constitution*, January 28th). This proposal follows large changes to retirement benefits to city employees enacted in June of 2011 (limiting benefits and converting all future hires to 401(k) style plans).
- Detroit, MI: The city made headlines in August of 2011 for reaching consensus on a bill that reduced the rate of benefits accrual, eliminated COLAs, and established a defined contribution plan for new hires. However, many news hits referenced indictments brought against former city treasurer Jeffrey Beasley for accepting bribes to place pension funds in certain investments. These “pay-to-play” actions are estimated to have cost the city’s pension fund \$84 million dollars in foregone investment returns.
- Chicago, IL: The city is coping with a variety of pension troubles, most notably unfunded liabilities. Last year, the city implemented a plan to save police and fire funds from insolvency, however several news article noted Civic Federation estimates that municipal and general laborers’ funds will be depleted in 20 years without intervention.
- Los Angeles, CA: There have been suggestions that Mayor Villaraigosa was too aggressively managing board appointees who oversee employee benefits. The Mayor dismissed a board member who voted in favor on expanding health benefit coverage for retirees, and another who voted in favor of adjusting downward the fund’s expected investment returns.
- San Francisco, CA: Mayor Ed Lee worked with unions, the Chamber of Commerce, and city employees to draft a ballot initiative to reduce retirement benefits for current and future workers. The measure is estimated to save \$1.3 billion over ten years, not enough to fill the \$7 billion dollars in unfunded liabilities in San Francisco.

In sum, the news analysis suggests the following potential taxonomy of places experiencing pension troubles. First, there are jurisdictions that have been losing people and jobs over time. A prominent example is Detroit, Michigan, where average employee retirement benefits are only \$28,000 per year but the city includes twice as many retirees as active workers. Also in this category is Prichard, Alabama, which lost 40 percent of its population in the 1970s. Here, pensions may also be a symptom of larger fiscal distress or political dysfunction. (The SEC is investigating Detroit for mismanagement of pension funds.)

Next are jurisdictions that rode the housing boom and bust. Examples include fast growing California cities such as Lincoln and Hercules as well as Stockton, which just entered bankruptcy proceedings this year, the largest city ever to do so. More puzzling are relatively affluent places, such as New York's Suffolk or Nassau County, which appear unable to make tough spending cuts or raise taxes because of political gridlock. Instead, many of these jurisdictions have essentially "doubled down," borrowing from the state or issuing pension obligation bonds to meet their pension obligations but thereby increasing their debt.

It is worth remembering is that only two recent municipal bankruptcies (Vallejo, California and Central Falls, Rhode Island) stemmed from public pensions and employee compensation pressures together with falling revenues. Other cities such as Harrisburg, Pennsylvania and Jefferson County, Alabama are struggling with poor investment decisions. Also, cities such as Atlanta, San Francisco, and New York have taken steps to limit pension growth, often with cooperation from local public employee unions. Central Falls managed to extract concessions from active police officers and fire fighters as well as current retirees, but even this previously unheard of step was insufficient to stop the slide toward bankruptcy.

Questions for Future Research

Recent strains on state and local government finances have focused attention on public employee pensions. This survey has sought to establish the extent to which pensions are a problem for local governments in particular. Results suggest pensions are already burdening some governments' budgets, but there is considerable variation based on government type as well as employees covered (e.g., teachers, police, fire, or general employees) and jurisdiction age, population, and employment trends.

Underfunded local government pensions raise several theoretical questions. Underfunded defined benefit plans allow governments to shift some labor costs into the future. In this sense, they operate like a municipal bond. However, unlike traditional debt, unfunded pension liabilities violate the so-called Golden Rule of public finance, which states that consumers should pay for services as they use them. Debt finance is therefore appropriate for capital investments benefiting future generations, who also pay debt service, but not for labor which is consumed in the present.

An interesting question arises for human capital investments, such as K-12 education, with benefits that endure over time. The problem is that benefits may not stay within the jurisdiction due to household mobility and they may already be capitalized or reflected in home values. In

addition, traditional debt usually requires voter approval, whereas unfunded pension liabilities do not.

Whether and how pensions will burden on local governments also depends on how the property tax operates. The capital tax view suggests investments may flee jurisdictions with higher than average property taxes whether or not these taxes are used to pay off pension legacy costs. Local labor may also bear these taxes to the extent that it is immobile in the near term (e.g., Zodrow, 2001; Ross and Yinger, 1999). By contrast, the benefit tax view states that property taxes are charges for services rendered (e.g., Tiebout, 1956; Oates, 1969; Hamilton, 1975; Fischel, 2001). Using property taxes to pay off pension legacy costs thus reduces local income and may compromise voter willingness to pay for services even through the cost of providing these services has not changed.

In both cases, a key question is whether funding shortfalls are capitalized into home values. Some researchers (e.g., Epple and Schippler, 1981; Mackey, 2011) have used event studies to address this question. There may be similar opportunities going forward to discern effects of an announce pension funding shortfalls on wages or home prices.

Another question is how local pensions affect other budget priorities. Here, we would want to know more systematically what drives pension funding status across jurisdictions. For example, are pension funding problems more prevalent in smaller or larger, or newer or older communities? Are troubles more likely in teacher, public safety, or general government plans? How does funding status overlap with Social Security coverage? How effective are local ordinances requiring that communities make their annual required contributions? How effective is state versus local plan administration?

From a policy perspective, the question is whether federal or state governments will be called on to provide local government bailouts. Based on this concern, Representative Nunes of California introduced a bill last year (H.R. 567) requiring states and localities to use a riskless rate when discounting future liabilities or lose their tax exempt bond authority. However, it is worth noting that only 40 percent of local government pension contributions go to local plans, with the remainder going to state plans covering local employees Munnell et al. (2011). It is thus unclear whether states will be called on to aid local governments (as they already have in Michigan and Rhode Island) or vice versa.

References

- Becker-Medina, Erika, "Public-Employee Retirement Systems State- and Locally-Administered Pensions Summary Report: 2010," *Governments Division Briefs*, Census of Governments, Washington, D.C.: April 20, 2012
- Board of Governors of the Federal Reserve System, *Flow of Funds Accounts of the United States Flows and Outstanding Third Quarter 2011*, Washington, D.C., December 2011
- Bohn, Henning, "Should Public Retirement Plans be Fully Funded?" *Journal of Pension Economics and Finance* 10(2) (2011): 195-219
- Brown, Jeffrey R., and David W. Wilcox, "Discounting State and Local Pension Liabilities," *American Economic Review*, 99(2) (2009): 538-542
- The Civic Federation, *Chicago Area Public Pension Funding Levels Continue to Weaken*, Chicago, IL. 2011
- Epple, Dennis and Katherine Schipper, "Municipal Pension Funding: A Theory and Some Evidence," *Public Choice* 37(1) (1981): 141-172
- Fischel, William A., *The Homevoter Hypothesis*, Cambridge, MA: Harvard University Press, 2001
- Friedberg, Leora, "Labor Market Aspects of State and Local Retirement Plans: A Review of Evidence and a Blueprint for Future Research," *Journal of Pension Economics and Finance* 10 (2) (2011): 337-361
- Inman, Robert P., "Appraising the Funding Status of Teacher Pensions: An Econometric Approach," *National Tax Journal*, 39(1) (March 1986): 21-34
- Joint Economic Committee, *States of Bankruptcy Part I: The Coming State Pensions Crisis* Republican Staff Commentary, Washington, DC, December 8, 2011
- Lucas, Deborah J. and Zeldes, Stephen P., "How Should Public Pension Plans Invest?" *American Economic Review: Papers & Proceedings* 99(2) 2009: 527-532
- MacKay, Robert C., "The Effect of Unfunded Pension Liabilities on Local Housing Prices." Unpublished manuscript, October 24, 2011
- Monahan, Amy. "Public Pension Plan Reform: The Legal Framework," *Education, Finance & Policy* 5(2010): Minnesota Legal Studies Research No. 10-13
- Munnell, Alicia H., Jean-Pierre Aubry, Josh Hurwitz, and Laura Quinby, "The Funding of State and Local Pensions: 2011-2015," *Center for Retirement Research at Boston College Policy Brief*, May 2012

Munnell, Alicia H., Jean-Pierre Aubry, Josh Hurwitz, and Laura Quinby, "How Prepared Are State and Local Workers for Retirement?" *Center for Retirement Research at Boston College Policy Brief*, October 2011

Munnell, Alicia H., Jean-Pierre Aubry, Hurwitz, Josh, and Laura Quimby, "An Update on Locally-Administered Pension Plans," *Center for Retirement Research at Boston College Policy Brief*, July 2011

Munnell, Alicia H., Jean-Pierre Aubry, Laura Quinby, and Richard W. Kopcke, "Valuing Liabilities in State and Local Plans," *Center for Retirement Research at Boston College Policy Brief*, June 2010

Munnell, Alicia H., Jean-Pierre Aubry, and Kelly Haverstick, "The Funding Status of Locally Administered Pension Plans," *Center for Retirement Research at Boston College Policy Brief*, December 2008

Munnell, Alicia H., Kelly Haverstick, and Jean-Pierre Aubry, "Why Does Funding Status Vary Among State and Local Plans?" *Center for Retirement Research at Boston College Policy Brief*, May 2008

Munnell, Alicia H., Kelly Haverstick, Steven A. Sass, and Jean-Pierre Aubry, "The Miracle of Funding by State and Local Pension Plans," *Center for Retirement Research at Boston College Policy Brief*, April 2008

Munnell, Alicia H., Kelly Haverstick, Mauricio Soto, and Jean-Pierre Aubry, "What Do We Know About the Universe of State and Local Plans?" *Center for Retirement Research at Boston College Policy Brief*, March 2008

Munnell, Alicia H. Kelly Haverstick, and Mauricio Soto, "Why Have Defined Benefit Plans Survived in the Public Sector?" *Center for Retirement Research at Boston College Policy Brief*, December 2007

Munnell, Alicia H. and Mauricio Soto, "State and Local Pensions Are Different From Private Plans," *Center for Retirement Research at Boston College Policy Brief*, November 2007

Novy-Marx, Robert, and Joshua Rauh, "Policy Options for State Pension Systems and Their Impact on Plan Liabilities," *Journal of Pension Economics and Finance* 10(2) (2011): 173-194

Novy-Marx, Robert and Joshua Rauh, "The Crisis in Local Government Pensions in the United States" in *Growing Old: Paying for Retirement and Institutional Money Management after the Financial Crisis*, Robert Litan and Richard Herring, eds., Brookings Institution, Washington, DC, 2011: 47-74

Oates, Wallace E., *Fiscal Federalism*. New York, NY: Harcourt Brace Jovanovich, 1972

Pew Center on the States. *The Widening Gap: The Great Recession's Impact on State Pension and Retiree Health Care Costs*. Washington, D.C., 2011

Rauh, Joshua, "Shortfall for State and Local Pension Systems Today: Over \$4 Trillion," *Everything Finance*, Kellogg Finance Department of Northwestern University, October 6, 2011

Schieber, Sylvester J., "Political Economy of Public Sector Retirement Plans," *Journal of Pension Economics and Finance* 10(2) (2011): 269-290

Snell, Ronald K., "State Pension Reform, 2009-2011," National Council of State Legislatures. Washington, D.C., March 2012

Tiebout, Charles, "A Pure Theory of Local Expenditures," *Journal of Political Economy*, 64 (October 1956): 416-424

U.S. Bureau of Labor Statistics, *Employee Benefits Survey, Retirement Benefits: Access, Participation, and Take-Up Rates*, March 2011

U.S. Government Accountability Office, *Social Security Administration: Management Oversight Needed to Ensure Accurate Treatment of State and Local Government Employees* GAO-10-938, October 4, 2010

Walsh, Mary Williams, "Maine Giving Social Security Another Look," *New York Times*, July 20, 2010

Table 1
Local Employee Retirement Plans by State, 2010

	Number	Units of Local Government	Number per 1,000 units
Alabama	7	1,185	6
Alaska	1	177	6
Arizona	3	645	5
Arkansas	30	1,548	19
California	57	4,344	13
Colorado	65	2,416	27
Connecticut	55	649	85
Delaware	5	338	15
District of Columbia	7	2	3,500
Florida	302	1,623	186
Georgia	25	1,439	17
Hawaii	NA	19	NA
Idaho	2	1,240	2
Illinois	451	6,994	64
Indiana	64	3,231	20
Iowa	5	1,954	3
Kansas	7	3,931	2
Kentucky	15	1,346	11
Louisiana	21	526	40
Maine	NA	850	NA
Maryland	14	256	55
Massachusetts	87	861	101
Michigan	132	2,893	46
Minnesota	137	3,526	39
Mississippi	NA	1,000	NA
Missouri	56	3,723	15
Montana	NA	1,273	NA
Nebraska	9	2,659	3
Nevada	NA	198	NA
New Hampshire	2	545	4
New Jersey	3	1,383	2
New Mexico	NA	863	NA
New York	8	3,403	2
North Carolina	2	963	2
North Dakota	10	2,699	4
Ohio	1	3,702	0
Oklahoma	6	1,880	3
Oregon	5	1,546	3
Pennsylvania	1,422	4,871	292
Rhode Island	12	134	90
South Carolina	2	698	3
South Dakota	2	1,983	1
Tennessee	14	928	15
Texas	68	4,835	14
Utah	1	599	2
Vermont	2	733	3
Virginia	17	511	33
Washington	20	1,845	11
West Virginia	40	663	60
Wisconsin	2	3,120	1
Wyoming	NA	726	NA
U.S. Total	3,196	89,476	

Source: U.S. Census Bureau, Annual Survey of State and Local Employee Retirement Systems, 2012;
Census of Governments, 2007

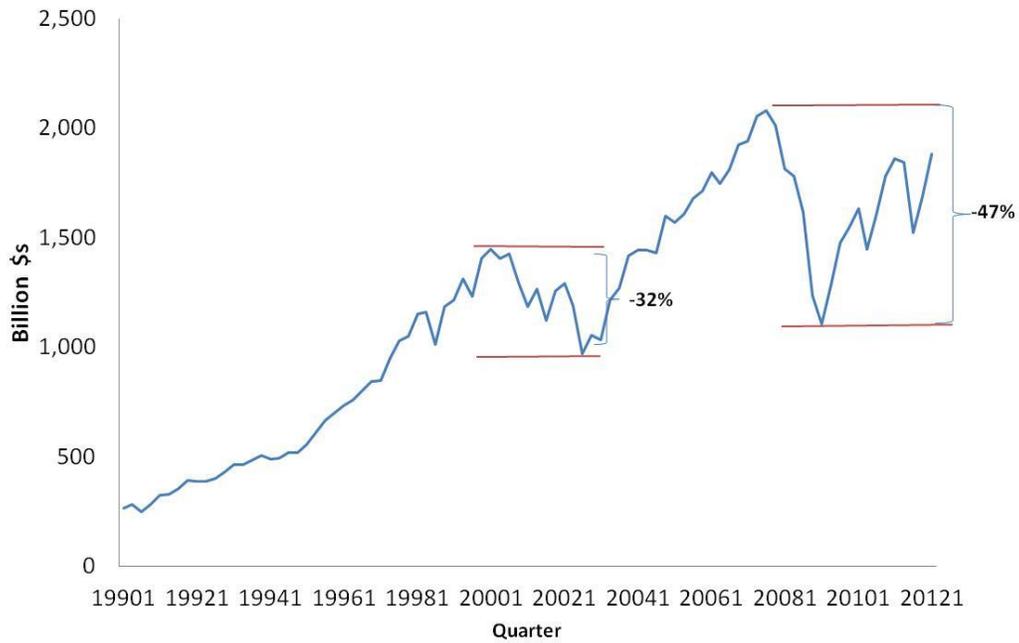
Table 2
Number and Membership of State and Local Plans, 2010

State and type of Government	Number of systems	Membership			Total beneficiaries receiving periodic benefit payments	Active workers per beneficiary
		Total	Active Members	Inactive Members		
United States	3,418	19,413,445	14,657,193	4,756,252	8,246,396	1.8
State	222	17,400,791	12,933,268	4,467,523	6,993,890	1.8
Local	3,196	2,012,654	1,723,925	288,729	1,252,506	1.4
County	168	565,823	480,771	85,051	296,204	1.6
Municipality	2,176	1,205,831	1,035,430	170,400	817,368	1.3
Township	634	47,962	41,322	6,639	33,982	1.2
Special District	206	115,014	99,922	15,091	55,103	1.8
School District	12	78,025	66,478	11,547	49,849	1.3

Source: U.S. Census Bureau, Annual Survey of State and Local Employee Retirement Systems, 2012

Figure 1

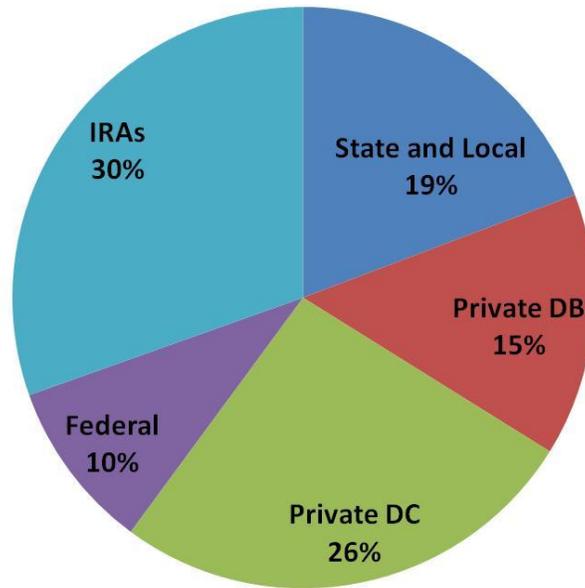
Quarterly Value of Corporate Equities Held by State and Local Employee Retirement Funds



Source: Board of Governors of the Federal Reserve System, 2012

Note: Amounts outstanding at the end of each period, not seasonally adjusted.

Figure 2
Total Retirement Savings = \$16 trillion



Source: Board of Governors of the Federal Reserve System, 2012

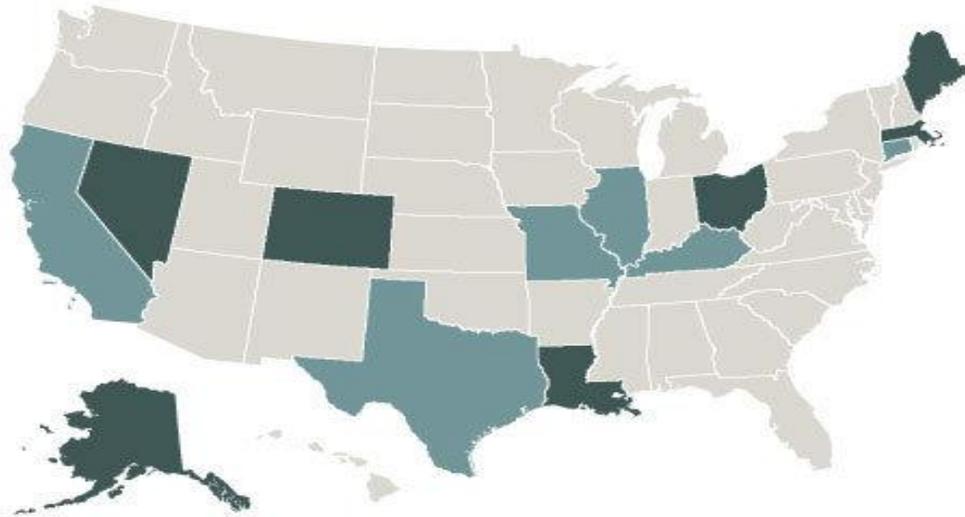
Figure 3

Holding Out on Social Security

Many state and local governments have opted out of the Social Security system for some of their employees, choosing to provide their own pension plans instead.

Social Security participation among public employees*

- MOST EMPLOYEES DO NOT PARTICIPATE**
- SOME PARTICIPATE, MOST TEACHERS DO NOT**
- MOST PARTICIPATE**



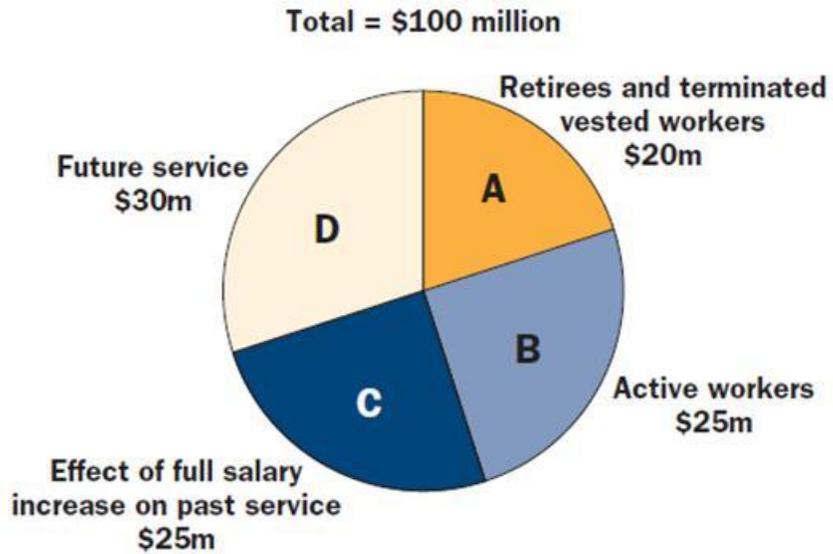
*In most states the majority of police officers and firefighters do not participate in Social Security. New York and New Jersey are exceptions.

Source: National Association of State Retirement Administrators

Source: Walsh, 2010

Figure 4

Figure 1. *Present Value of Projected Benefits for a Hypothetical Plan*

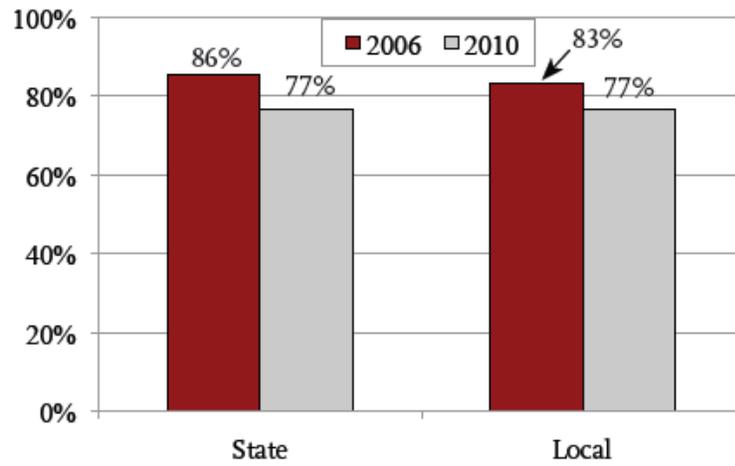


Source: Munnell et al., June 2010.

Note: All sections include active workers; the distinction is that Section B includes only service and salary to date for these workers.

Figure 5

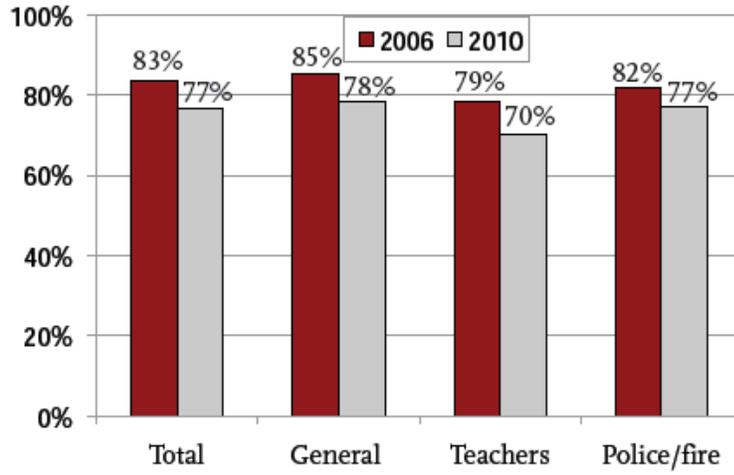
FIGURE 2. AGGREGATE FUNDED RATIOS FOR STATE- AND LOCALLY-ADMINISTERED PLANS, 2006 AND 2010



Source: Munnell et al. July 2011.

Figure 6

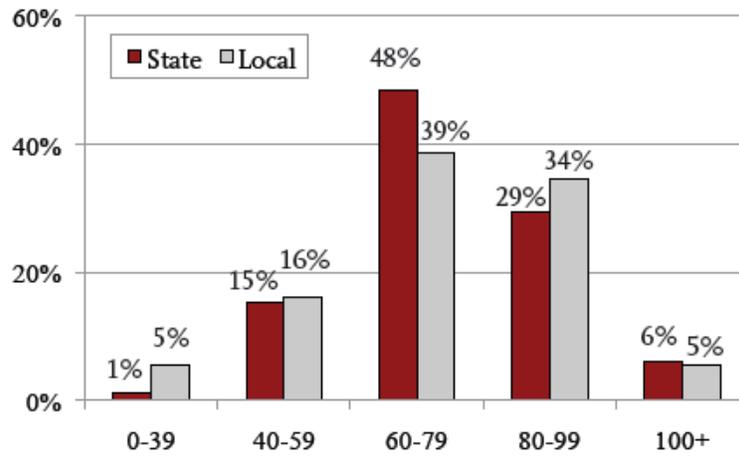
FIGURE 3. FUNDED RATIOS FOR LOCALLY-ADMINISTERED PLANS BY TYPE OF PLAN, 2006 AND 2010



Source: Munnell et al. July 2011.

Figure 7

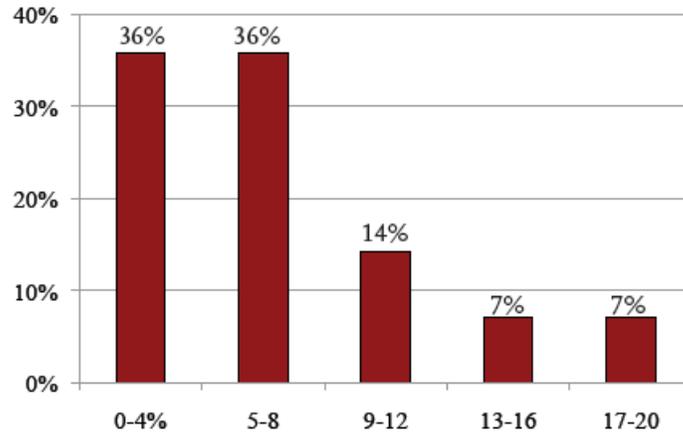
FIGURE 4. DISTRIBUTION OF STATE- AND LOCALLY-ADMINISTERED PLANS, BY FUNDED RATIO, 2010



Source: Munnell et al. July 2011.

Figure 8

FIGURE 10. DISTRIBUTION OF LOCALITIES BY PENSION CONTRIBUTIONS AS A PERCENT OF LOCAL BUDGETS, 2010



Source: Munnell et al. July 2011.

Figure 9
VOCUS Search Results by Designated Market Area, January – March 2012

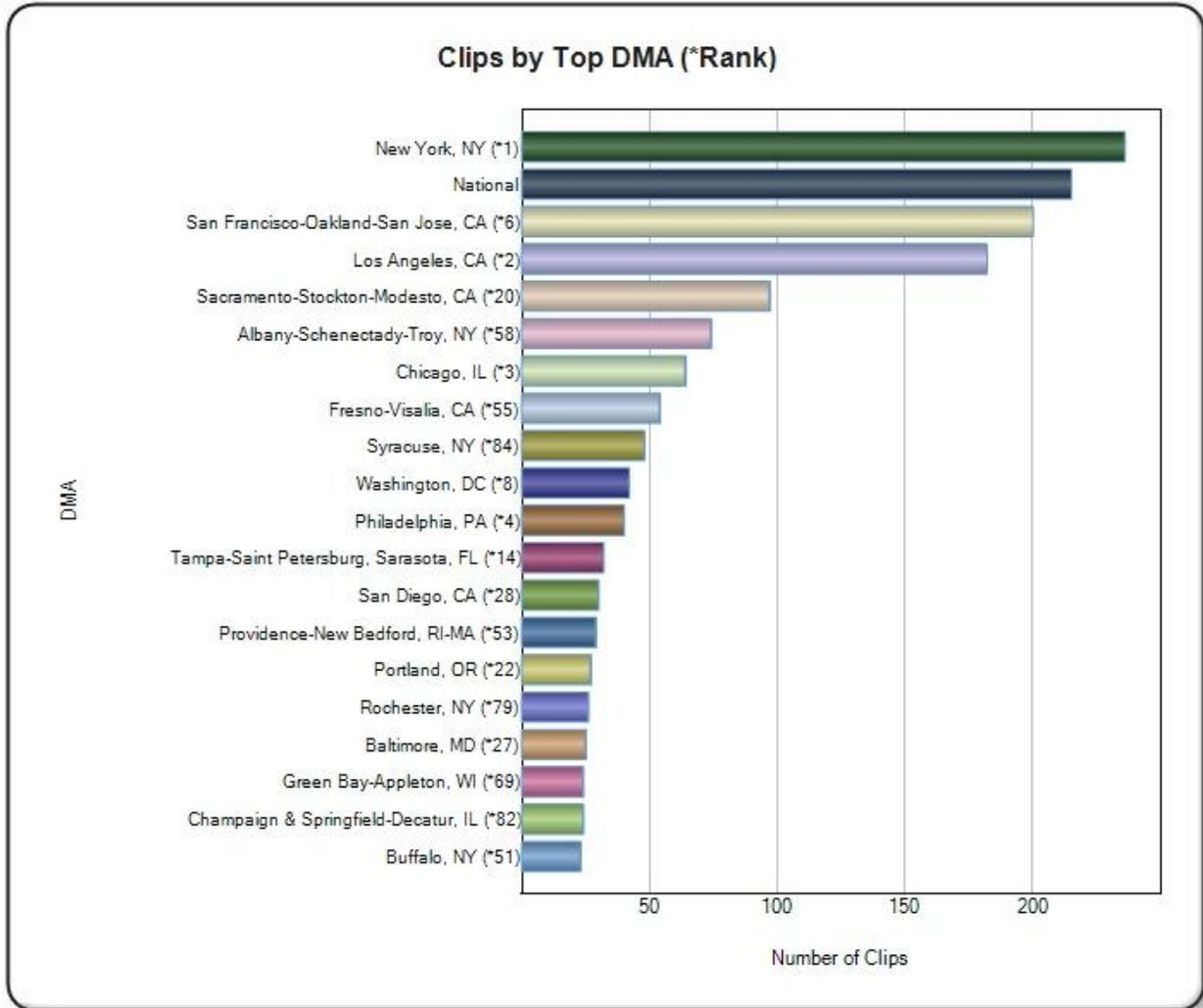
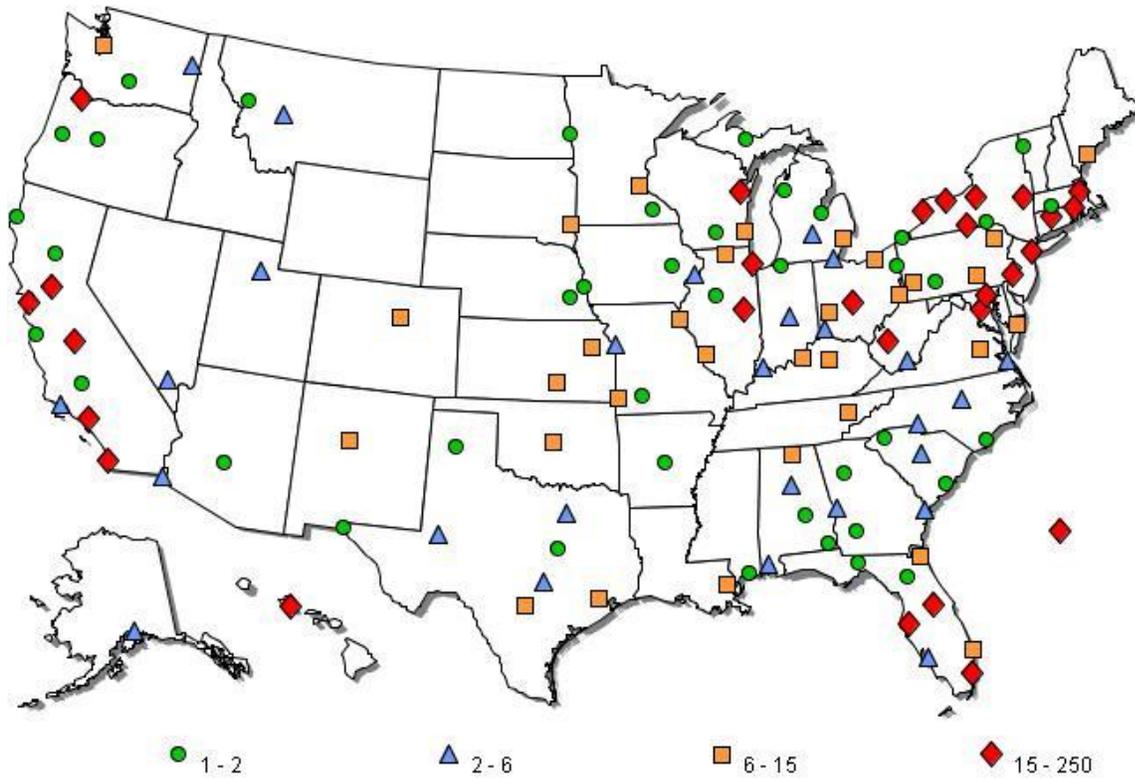
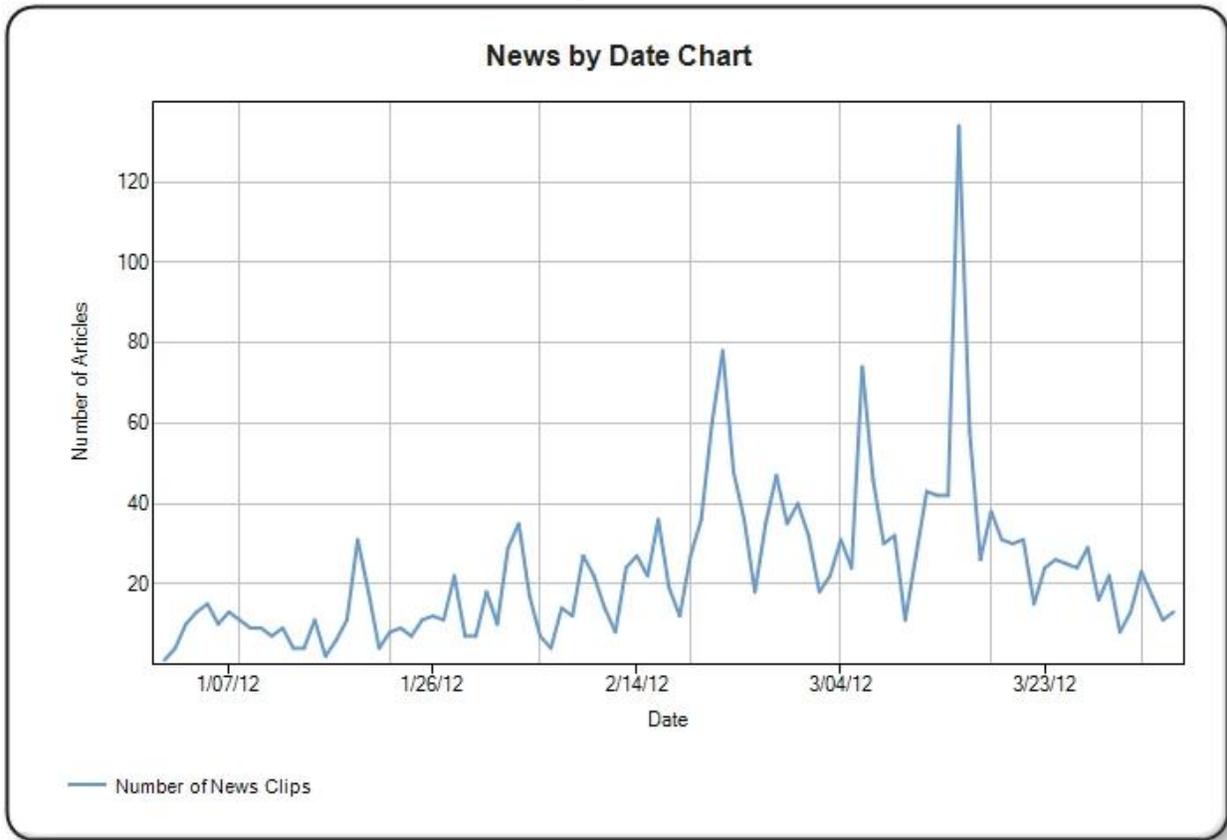


Figure 10
Distribution of VOCUS Search Results by Designated Market Area,
January – March 2012



Note: Ranges denote number of articles.

Figure 11



Appendix – Glossary

Annual Required Contribution (ARC): The employer’s periodic required contribution to a defined benefit pension plan. It is the sum of: (1) the normal cost of benefits, and (2) an amortization payment on Unfunded Actuarial Accrued Liability (UAAL) for past service costs.

Accumulated Benefit Obligation (ABO): The narrowest measure of liabilities, ABO reflects benefits already promised and accrued. Often thought of as “termination liability,” it is the amount that would be owed if the pension were immediately frozen and no further commitments were undertaken or contributions collected from employers or employees.

Projected Value of Benefits (PVB): The broadest conceptual measure of liability, PVB represents the discounted present value of all future cash flows the employer is expected to owe. It does not credit the employer with an ability to limit benefit accruals, for example by changing the rate at which service years translate into post retirement benefits.

Projected Benefit Obligation (PBO): An intermediate liability concept, produced by the projected unit credit cost method, that concept that captures expected future wage increases for existing workers, but not additional years of service.

Entry Age Normal Cost Method (EAN): An actuarial cost method that results in stable employer contributions that increase as a level percentage of payroll. By equally distributing the cost of an employee’s pension each year, this method “front-loads” retirement costs.

Projected Unit Credit Method (PUC): An actuarial cost method in which costs gradually increases as a worker approaches retirement. This method is less conservative than the Entry Age Normal method, i.e., it typically produces a lower accrued liability at any point in time

Discount Rate: The interest rate used to determine the present value of future cash flows according to the formula $PV = FV/(1+r)^n$, where PV = present value, FV = future value, r = discount rate, and n = number of periods. For example, the present value of \$1,000 in one year at a discount rate of 10 percent is \$909.09 (or $1,000/(1+0.10)$). The formula reflects the time value of money, or the idea that money today is worth more than the same nominal amount tomorrow because it could be invested to earn interest. In other words, $909.09 \times 1.10 = \$1,000$.

Appendix Table A1

Data Sources on Local Pension Plans

Source	Title	Geography	Frequency	Years Available	Coverage	Observations	Unit of Observation	Variables Included
U.S. Census Bureau	Annual Survey of State and Local Public Employee Retirement Systems	State	Annual	1957-2010	Population	222	Plan	Revenues, expenditures, financial assets, membership, and obligations
U.S. Census Bureau	Annual Survey of State and Local Public Employee Retirement Systems	Local	Annual	2004-2010	Sample	1,576 (out of 3,196)	Plan	Revenues, expenditures, financial assets, and membership
U.S. Census Bureau	Quarterly Survey of Finances of Selected State and Local Government Employee Retirement Systems	State & Local	Quarterly	1957-2011	Sample of largest based on Census of Governments	100	National aggregates	Revenues, expenditures, and composition of assets
The National Association of State Retirement Administrators (NASRA)	National Association of State Retirement Administrators' (NASRA) Public Fund Survey (PFS)'	State & local	Annual	2000-2010	Sample	126	Plan	Assets, liabilities, membership, employee type, valuation method, smoothing period, allocation method
The Center for Retirement Research at Boston College (CRR)	Center for Retirement Research at Boston College's (CRR) Public Plan Database	State & local	Annual	2001- 2010	Sample (PFS plus UC Retirement System)	126 (109 state, 17 local)	Plan	Assets, liabilities, membership, employee type, valuation method, allocation method
The Center for Retirement Research at Boston College (CRR)	CRR Local Pension Plan Survey	Local	Periodic	December 2008 and May 2011	Sample (2 largest plans in each state)	84 in 2008; 97 in 2011	Plan	Assets, liabilities, membership, employee type, valuation method, allocation method

¹ The National Conference of State Legislatures tabulates the number of states enacting pension legislation in each legislative session. Thus, these totals reflect individual states taking multiple actions in different years.

² On June 25, 2012, GASB voted to approve new standards (Numbers 67 and 68) that will go into effect on a gradual basis for financial reports covering fiscal years beginning after June 15, 2013. The new rules will require state and local governments to report unfunded pension liabilities on their balance sheets as opposed to in the required footnotes to their annual financial statements. In addition, the rules will require speedier recognition pension expenses, including those arising from employee service as well as changes to pension rules, economic and demographic assumptions, and investment gains or losses. They will also eliminate reporting of the Annual Required Contribution (ARC) and abandon asset smoothing over time. Most controversially, the rules would require applying a lower discount rate to liabilities, but only the portion not covered by current assets. (See http://www.gasb.org/cs/ContentServer?site=GASB&c=GASBContent_C&pagename=GASB%2FGASBContent_C%2FGASBNewsPage&cid=1176160127149)

³ As discussed further below, the Government Accounting Standards Board (GASB) will vote June 25, 2012 on whether to adopt a new pension accounting standard.

⁴ The Census Bureau only began reporting liabilities for state plans in its latest release. An excerpt from the 2006 Government Finance and Employment Classification Manual explains why the previously did not do so:

“...The Census Bureau’s classification system is not designed to measure the future liabilities of a system, such as how much a system owes in future benefit payments to members or their survivors. Census Bureau statistics are limited to payments made during the fiscal year only. As a direct result of this omission, the accounting concept of “unfunded liabilities” also is excluded from Census Bureau statistics.

The omission of this category is intentional and was largely the result of such information being unavailable from most systems over the years. Other considerations in this omission were the issue of how to measure such amounts (all Census Bureau statistics are in current dollars only), whether such “estimated” amounts should be reported in a classification system designed to reflect actual cash flows (transactions) only, and the general concern about avoiding any appearance of oversight or making judgments about the fiscal conditions of individual retirement systems. The Census Bureau is a statistical agency only, not involved in financial oversight. The latter is essentially a state government function, and a function of select Federal agencies involved in financial monitoring.”