

Political Economy of Public Sector Retirement Plans

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Virtually all state and local employers in the United States offer workers some sort of retirement benefits today but there is significant variation in the characteristics of those plans. There is also a great deal of public angst about the level and timing of commitments made in these plans. The literature on retirement plans suggests that they are important elements of compensation that plan sponsors use in meeting their human resource goals. But public retirement plans are created and operated in a public policy environment and forces other than local labor market considerations may be brought to bear in the organization and operation of these plans. This paper explores some of the possible explanations for the variation in state retirement plans. Public disclosure data is used to develop a model that explains relative generosity of benefits based on the characteristics of participants and the marketplaces in which the plans are offered. The final section of the paper places the issues explored in a forward looking context. The public disclosure environment recently put in place for public retirement plans is likely to have a more profound effect on state pension operations than any other development in recent history.

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Introduction

The coverage in news and business media of contemporary public pension issues is often alarming. The stories come at the subject from a number of different directions. One set of stories focuses on the generosity of public pension benefits to specific individuals with the intimation that these plans are simply providing unreasonable benefits to beneficiaries by almost any standard (Walsh and Schoenfeld, 2010). A separate set of articles focuses on the broad concepts of costs or liabilities and a general outlook that we are headed into a time when the payoff of pensions accumulated over the decades since the end of World War II are finally coming due and that the burden is threatening public fiscal operations at virtually all levels of government (Von Drehle, 2010). Another view focuses on the historical governance of plan financing suggesting that sponsors have deluded themselves with false estimates of long-term costs and obligations, distorted valuations of the assets backing plans and their income-generating potential (Biggs, 2010). Finally, there is the view that decision makers face almost impossible challenges in restructuring plans in an environment where those protected by them take a stand to defend what they perceive as rights earned through years of public service often backed by legal provisions (Laing, 2010).

In the current context, we are focusing on public pensions sponsored by state and local governments here in the United States although delineation of issues in the prior paragraph could easily apply to a number of national governments around the world and some even apply it to the federal government here in the United States. A recent article in a newsletter published by the Kansas City Chamber of Commerce observed, “The closest thing to a universal global crisis lies in the pension systems that have been adopted in every nation, state and city of the world. If there is one area of government spending that utterly defies any sort of simple solution it is the

retirement system that has evolved over the last fifty to sixty years. Every single government entity is now facing the same dilemma—how to pay for the promised pensions without crippling the current economy” (Greater Kansas City, 2010).

One aspect of the recent coverage of state and local retirement plans is the broad implication that the problems delineated are universal. But the systematic review of the situation facing public plans across the country does not necessarily support that view. The Pew Center on States (2010) concludes that some states have done a far better job of minding the operation and financing of their retirement plans than others. They single out Florida, Idaho, New York, North Carolina and Wisconsin as poster examples of states doing a good job on their plan financing. At the other end of the spectrum they identify Connecticut, Illinois, Kansas, Kentucky, Massachusetts, Oklahoma, Rhode Island and West Virginia as having fallen far short of putting aside the resources to meet maturing obligations.

The variation that exists across the range of states naturally raises questions about why some states have done a good job and others so poorly in establishing and operating their retirement systems. Is there some variation in the structure or generosity of benefits that can account for different outcomes? Is there something peculiar about the resident populations or economies from state-to-state that explains differences in public pension offerings and plan management? Or is it that policymakers in some states differentiate themselves along the popular red-blue voting distributions or other political categorizations that would explain the pension outcomes?

Before exploring any of these potential explanations for public pension outcomes, a couple of anomalous observations about the tending of retirement obligations by public jurisdictions are noted. Much of this discussion in this paper will be focused on public sector

pension plans—the primary subject of the current analysis. We will point out, however, that there is a marked discrepancy across many of the jurisdictions being analyzed between the financing and management of pensions and the management of retiree health benefit programs for the same covered populations. For all practical purposes, many jurisdictions are offering retiree health benefits that are different in kind from their pension programs but have almost identical characteristics in terms of the financing and cost structure for the public coffers. Yet the approach to financing and management that many states have taken on the two types of benefits are totally different.

Even more puzzling than this discrepancy in behavior within public jurisdictions is why there might be similar variation in the treatment of separate large pension plans within a single jurisdiction. For example, the Pew study on state retirement systems (2010) indicated that Indiana was one of the states on the funding bubble—that is, close to having the level of assets considered necessary to indicate reasonably secure benefits but still shy of that funding level. Shortly after the release of the Pew study, the Indiana Public Employees Retirement Fund (PERF) posted a message (2010) regarding this finding on its web site. It said:

A report released recently by the Pew Center on the States may give the false impression that the Indiana Public Employees' Retirement Fund (PERF) is not well funded.

In fact, PERF is among the better-funded public retirement systems in the nation. The system's aggregate funded status at the end of the 2009 fiscal year was 93.5 percent. This is significantly ahead of the 80 percent target noted in the Pew report...

The Pew report lumped together a collection of Indiana public pension plans as well as retiree health care. PERF has no involvement in health care and the overall numbers in the Pew report are not reflective of the PERF system.

Members and employers can be assured that the Indiana Public Employees' Retirement System is in solid financial shape. PERF's ability to meet its obligations to pay benefits

to current and future retirees, or other benefit recipients, remains uncompromised (Indiana, 2010).

The interesting thing about the Indiana situation is that the state has a number of public employee pension systems—one for general employees, one for state police, one for judges, and so forth on down to one for teachers. The PERF plan at the end of 2008 represented about 37 percent of the aggregate plan obligations in the various plans but held about half the combined plan assets. It was, indeed, well funded according to the criteria spelled out in the Pew study on public pensions. The Indiana teachers' plan, by contrast, comprised about 54 percent of the total obligations in the set of state plans but held only about one-third of total plan assets. Assets were valued at about 42 percent of estimated liabilities at the end of 2008.

The differences in the management of retiree pension versus health obligations or the Indiana situation with its pension plans give rise to a question of why states or other jurisdictions have such different practices in the way they operate their retirement plans. It also raises a question of the extent to which existing separations in plans sponsored by a plan sponsor might be honored in a situation where total plan funding becomes a fiscal issue. To be more explicit, in the fiscal year ended July 1, 2008, Indiana made a contribution of \$107 million to its PERF plan, slightly more than the actuarially required contribution for that year. Although the PERF is now apparently well funded because of this and past contributions, how secure are the PERF obligations if the state were to choose to divert annual contributions from this plan to catch-up contributions for the teachers' plan?

Operating Environment for State Retirement Plans

The vast majority of employer-sponsored pensions covering state and local government workers here in the United States today are traditional defined benefit plans. These plans provide retirement annuities to workers meeting various eligibility criteria. Virtually all of them have

some sort of age and service requirements that must be met in order to qualify for a retirement benefit. Some of the plans also provide disability annuities for workers found to be disabled according to criteria specified in the plan. Others provide a coordinated disability benefit through an insurance arrangement operated outside their pension plan. Virtually all of them provide survivor annuities for dependents of workers or annuitants who die and leave a surviving spouse or minor dependents.

On first blush, the public pension world is remarkable because of its seeming relative stability in contrast to what has happened in the private sector. There pension plan sponsors have moved away from sponsorship of traditional defined benefit plans over the past couple of decades and moved toward pure defined contribution plans or restructured defined benefit plans that look and feel like defined contribution plans. We will come back to this point later in the context of pension plans but for now it serves as an apparent distinction between what is happening with the pension systems and retiree health benefit programs. In this latter case, the public employer community seems to be heading in precisely the same direction as their private sector counterparts although there are timing issues that distinguish developments here.

In 1984, the Financial Accounting Standards Board (FASB) issued standard No. 81 requiring that private sector employers sponsoring welfare benefit plans report either the current cost of retiree welfare benefits or the unfunded liability if the amounts were distinguishable from the benefit costs for active employees. FAS 81 raised the general awareness about these unfunded liabilities and their potential implications. In 1984, Congress enacted significant restrictions on employers' ability to fund welfare benefit plans. The funding restrictions in the Deficit Reduction Act of 1984 (DEFRA) prohibited employers from taking medical cost inflation and utilization trends into account when funding retiree medical benefits and limited funding to

current retirees. The Omnibus Budget and Reconciliation Act (OBRA) of 1989 went another step further in restricting private employer's coordination of pension and retiree health funding by limiting contributions permitted under section 401(h) of the Internal Revenue Code. The effect of these legal restrictions has been to substantially eliminate any tax-preferred means of funding the health care liabilities of future retirees by private plan sponsors.

In December 1990, FASB issued Statement No. 106 dealing with Employers' Accounting for Postretirement Benefits Other than Pensions. While the statement applied to all forms of retirement benefits other than pensions, it was primarily focused on retiree health benefits. Its stated purpose was to change the common "pay-as-you-go" practices being used at the time to an accrual accounting of the obligation during the period a worker earned the benefits. FASB surmised that these benefits were not gratuities but were a form of deferred compensation earned over a period of service by a worker and that the employer's obligations should be recognized as that service is provided.

Private sector employers were caught in a trap by the regulatory environment. On the one hand, they had to recognize the accruing obligations but could not divert current productivity to secure those obligations through the funding mechanisms they used in their pensions. The rapid escalation of costs in this sector drove employers to limit their obligations by curtailing the plans. Some eliminated them outright but most of the larger ones modified plan offerings gradually over time. They introduced service requirements, retirement eligibility requirements, participant premiums and employer premium caps that drove escalating costs directly to participant financing.

Public sector employers' situation was dramatically different than that of their private sector counterparts in regard to their ability to fund their retiree health obligations as they

accrued. The motivation that had driven policymakers to limit private sector funding of these plans was to stem income tax leakages. Those leakages did not exist with public sector employers. Yet public sector employers did not move to fund their retiree health obligations even after the private sector experience. Among the plan sponsors included in this analysis, total actuarially accrued liabilities were \$611 billion with \$34 billion in assets backing the obligations. Among the states, Arizona has funded about two-thirds of its estimated OPEB liability and Ohio has funded about 40 percent of its estimated obligations. There are a handful of states that have some funding of retiree health obligations but the vast majority has none at all.

Ultimately, the Government Accounting Standards Board (GASB) issued Statement 45 requiring that public entities account for their other post-employment benefits (OPEB) in essentially the same fashion that FASB had required of private sector employers some 15 years earlier. With the first few years of reporting a matter of record, the pattern of sponsor behavior may be following the familiar path forged by the private sponsors of plans earlier. Clark and Morrill (2010) report that in the last five years, state and local employers have moved to reduce the generosity of their plans in order to reduce the cost and obligations associated with them. They have established new basic service requirements for workers to qualify for benefits and set graded scales where subsidization of premiums depends on the number of years of service at the time of retirement when the individual qualifies for the benefit.

Benefit Generosity and Public Perceptions

There appears to be a growing public concern that public pensions have become misaligned with developments elsewhere in our daily lives. Front page articles in the *New York Times* that trumpet significant numbers of former New York cops now drawing retirement pay in excess of their regular salaries (Walsh and Schoenfeld, 2010) likely contribute to this perception.

But the sense that things aren't "right" comes in the explanation for how this can happen. It seems in the case of the retired New York police officers drawing outsized pensions that some of them were credited with earnings for their pension determination that came for work outside their compensated police duties. For example, the power company, Consolidated Edison, contracts to hire off duty police officers to guard construction sites and pays the officers directly for their time. In some instances, if not all, this outside time and compensation is getting included in the pension determination when officers retire even though there appear to be regulations that specifically exclude the inclusion of such time. In other cases, the inequity of the determination of the ultimate pension benefit is not quite so clear cut because the pension is based on policing time but includes abnormal hours of overtime in the period before retirement. There are still public plans, especially police and fire plans, that determine the retirement benefit on the basis of pay that participants earn in their final year of employment. The definition of pay in these plans includes overtime wages.

Pension administrators have known for decades that final-year-pay plans that include overtime pay as a pension determinant lead to abusive practices on the part of some participants. In some cases, the abuse is not even intended to be abusive. By the time officers are approaching retirement eligibility, they have generally worked with their current commanding officers for many years and have bonded relationships that naturally result in personal consideration for each other's welfare. If there is an opportunity to give an officer overtime, why not give it to the long-serving fellow who deserves a little special consideration after a career of commitment? But the occasional few hours here or there can become a systematic process leading to unintended consequences; in fact it has become so systematic that it has come to be known as "spiking" of earnings in the pension world. In some cases, final pay balloons beyond anything

representing normal earnings and boosts pensions well beyond levels intended by plan designers or policymakers who adopt them.

If the New York City retirement plan for its police officers were an isolated case where retirees end up receiving significantly larger pension benefits than their annual pay while working, it could be dismissed as an outlier. The evidence suggests that the practice exists elsewhere. In California, former fire chiefs have been singled out because they were allowed to add in unused vacation time in calculating their pay for determination of a lifetime pension based on their pay in their last year of service (Mendel, 2009). In Illinois, the former President of the State Senate has been reported to be receiving a pension that is 30 percent larger than his salary while serving in office (*Sun Times*, 2009). The stories abound.

In many cases, there is a linkage made to pension practices that lead to unintended generous benefits in selected cases to relatively large benefits that are paid to other retirees by public plans. For example, the *New York Times* has a list of some 3,700 people posted on its public web site of individuals getting annual pension benefits in excess of \$100,000 per year from the New York State system or one of several New York City systems (*New York Times*, 2010). Similar lists of public plan retirees can be found at other news outlets for other systems around the country. These lists are often linked to a number of interesting and virtually all negative comments from the general public but they not particularly enlightening in regard to the appropriateness of the pensions being provided to beneficiaries receiving them. It is unlikely that very many people would criticize a retiree who spent 40 years as a public employee in a janitorial position earning a final salary of \$25,000 per year for getting a pension of \$20,000 per year. Many more would criticize the state executive who spent 40 years in the comptroller's office and finished her career as the State Comptroller at a final salary of \$200,000 netting her an

annual pension of \$160,000 per year even though the two are being treated equivalently under the plan. The question is whether the complaints about the \$160,000 pension are really about the extravagance of the plan or are a complaint about the salary the worker was paid prior to retirement.

In a world in which average pay is somewhere in the range of \$40,000 per year, the majority of people may not understand why it is important to pay a comptroller \$200,000 per year. If that is what the market requires in order to hire a competent comptroller, the only alternative to paying a competitive wage is to hire an incompetent one. Then the costs to the public purse may be much more than the marginal difference in pay between a competent and incompetent comptroller or the long-term cost of paying a pension of more than \$100,000 per year to a retired public employee who happened to earn a relatively high wage in a public job.

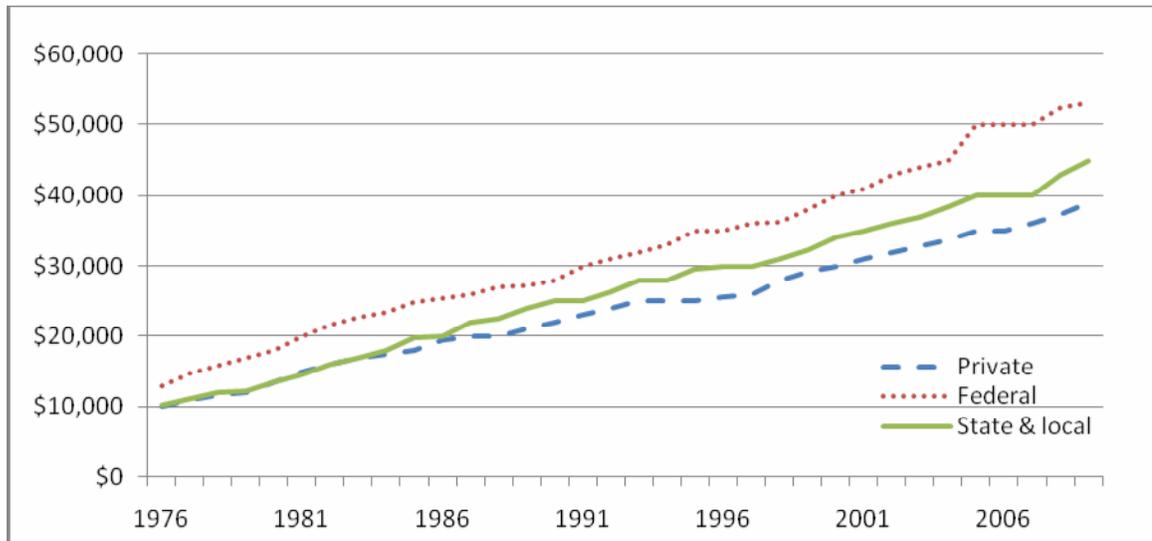
My first knowledge of state and local pensions dates to the late 1970s when I worked on a study commission established by the 1977 Social Security Amendments that was directed to evaluate the feasibility and desirability of covering all public workers under Social Security on a mandatory basis. At that time and over virtually all of the intervening period, widely held conventional wisdom has been that public employees tend to have somewhat more generous retirement benefits than their private sector counterparts justified by the rationale that these same public employees are paid less during their working years than private sector workers. It is well known that over the period since the late 1970s, private sector employers have significantly reduced their commitment to defined benefit retirement arrangements and shifted more toward defined contribution plans in order to control costs and reduce their risk exposure associated with defined benefit plans (Schieber, 2007).

The private sector shift to defined contribution savings vehicles has not been universally oriented toward cost savings but a considerable portion of it clearly was thus directed (Brown et al, 2000). The more dramatic curtailment of health benefit plans over the past couple of decades in the private sector compared to the public sector has largely been driven by the desire to limit costs of these plans. Given that private employers have moved somewhat more aggressively in curtailing their retirement plan offerings than public sector workers in recent years, earnings differentials between the sectors should reflect these changes. Figure 1 shows median reported earnings levels from the March CPS data for each year from 1976 through 2008 for workers who reported that they were working full time on a full-year basis broken out separately for workers who reported they were working in the private sector or for the federal government or for state or local government employers. In the aggregate, the data suggest that private sector workers pay has lagged behind that of public sector workers over the last 25 to 30 years with the differential growing gradually over time.

The characteristics of work in the public and private sectors are highly varied. There is not a straightforward way to link the job comparability or pay rates of a mineworker, auto assembly lineman, or other jobs concentrated in the private sector, to that of the air traffic controller, highway patrolman, and many other jobs prevalent in the public sector. Thus, the pay differentials in Figure 1 at any particular point in time do not necessarily reflect a fair comparison of pay that workers in each sector are earning. Simply looking at Figure 1 and focusing on the period from the mid-1970s through the early-1980s, might lead to the conclusion that there was pay parity between private sector workers and those in the state and local sectors. Sharon Smith (1976) applied a human capital model using 1973 CPS data to estimate the pay rates associated with workers based on their characteristics. She estimated that women were

paid a 12 percent premium in state level jobs compared to their private sector counterparts but found no differential among men. At the local level, Smith estimated that women in the public sector received a 3.6 percent premium relative to the private sector women but men were estimated to lag their private sector counterparts by 4.9 percent.

Figure 1: Median Reported Annualized Earnings for Private Sector, Federal and State and Local Workers by Year



Source: Tabulations of the March Current Population Survey, various years.

Katz and Krueger (1991) evaluated the differences in public and private sector wage changes during the 1980s. They found that the growth in skill differentials associated with education prevalent in the private sector during that decade did not carry over to the public sector. At the state and local level, they found that wages of workers with lower levels of education increased significantly relative to the private sector but that for college graduates the decade resulted in a large negative differential in wages for men and eliminated the historical large positive differential for women.

Poterba and Rueben (1994) estimated that there was rough parity in public and private sector wages for men when controlling for worker characteristics and that women received a 3 to 5 percent premium in the public sector when they did not control for occupational differences but that the difference disappears when they did. Their results supported those of Katz and Krueger in finding that the pay penalty that public sector male workers with high-school educations that existed in the late 1970s had been eliminated by the early 1990s and that the premium for men with college degrees had been significantly diminished. For women employed in the public sector with high-school educations, the pay premium that existed in 1979 was significantly enhanced by the early 1990s while highly educated women saw their late 1970s wage premium eliminated by the early 1990s.

Borjas (2002) used decennial census and CPS data from various years to evaluate evolving pay structures in the public versus the private sectors over the period from 1960 through 2000. He restricted his analysis to full-time workers and developed parallel results for men and women. He found that when controlling for workers' characteristics, workers in the federal sector have consistently realized a pay premium compared to those in the private sector. For men at both the state and local level, he found a pay penalty of around 15 percent in 1980 gradually declining to around 10 percent in the mid-1990s with those in the local sector doing somewhat better than those in state jobs. Among women, he found approximate pay parity between 1980 and the mid-1990s at the local level but a pattern similar to that of men at the state level. By the mid 1990s, state level workers were at roughly a 10 percent disadvantage relative to private sector workers and those at the local level were doing slightly better than that. In his extended analysis, Borjas concludes that there has been substantial pay compression in the public sector over the past couple of decades at the same time we saw pay dispersal in the private

sector. The net effect of these opposing trends was that the public sector was more likely to lose highly skilled workers to the private marketplace. While he does not explore it, it is noteworthy that unionization among the private sector was declining in the private sector during the period when pay dispersion was most marked and rising in the public sector during that same period. It is also noteworthy that the union movement has been quite public and vocal about their ongoing support of traditional employee benefit plans, especially defined benefit pensions and retiree health insurance.

In a recent study, Bender and Heywood (2010) focus on worker characteristics in reaching their conclusion that state employees earn 11 percent less than comparable private sector workers and those at the local level earn 12 percent less. Their analysis reaching back to the early 1980s leads them to conclude that state and local workers earnings have been declining over the past couple of decades relative to those in the private sector. When they add in adjustments to pay to allow for differences in the structure of benefits in the private and public sectors, they find the net effect on their results is minimal. In any event, Bender and Heywood conclude that while state and local budgets may be under pressure now due to the recent fiscal crisis, there is little evidence that public sector compensation should be reduced and, if anything, should be increased at this time.

In developing the segment of their analysis that includes benefit costs, Bender and Heywood rely on the National Compensation Survey (NCS). If the NCS is capturing employer contributions as its measure of costs associated with retirement benefit plans, which is likely the case, the true costs of retiree benefit plans that are not being funded are not being captured. Thus, the benefit costs reported in the survey may be biased downward and the bias is likely greater for public workers than those in the private sector. This is the case for retirement plans because

private employers offering traditional pensions are subject to more stringent funding requirements than their public sector counterparts. It is the case for retiree health benefit plans because they are so much more prevalent in the public sector.

Bender and Heywood conclude that pay patterns between the private and public sectors have been diverging over the past 20 years, a conclusion consistent with Borjas' findings. Bender and Heywood also note that tenure patterns in the two sectors are different with public sector workers having longer average tenures than private sector workers. The body of research on the comparability of public and private pay suggests that the public sector has become relatively more rewarding for lower skill workers in recent decades and less likely to be as attractive to those with higher skills and that this is especially the case at the state and local level. But these conclusions likely suggest that the public criticism regarding payment of pensions over \$100,000 per year as the *New York Times* and other media coverage suggests is inappropriate. If highly skilled professionals are underpaid in the public sector, then the public will be underserved by workers at those skill levels unless there are mitigating benefits in public service.

By at least some measures state and local workers are underpaid in comparison to their private sector counterparts and this may act as a motivation on the part of policymakers to adopt and maintain retirement plans that are somewhat more generous than generally available in the private sector. In the latest National Compensation Survey reported by the Bureau of Labor Statistics (2010), state and local employers were reported to pay 7.9 percent of compensation in the form of retirement benefits and 11.4 percent in the form of health benefits compared to private employer contribution rates of 3.5 percent and 7.5 percent on retirement and health benefits respectively. Even among private sector employers with more than 500 employees, the

share of compensation spent on retiree benefits was 5.0 percent and on health care was 8.5 percent.

The fact that public sector employers are spending relatively more on retirement benefits than those in the private sector is an indication that benefits are more generous but reported costs alone are not necessarily a direct indicator of the relative generosity of benefits. Given variations in funding levels and funding methods used to assess plans, differences in the relative ages of workforces or the ratios of active workers-to-retirees can drive plan costs. For example, in the data that we have been able to compile on plans sponsored by the states covering public sector workers, the estimated combined “actuarially required contributions” for the pension and retiree health benefit plans in the most recent reported disclosure data would be 58 percent of pension covered pay. The estimate of actual contributions made in the most recent plan year is 28 percent of pay. In other words, measuring retirement plan costs on the basis of actual contributions would underestimate actual costs for the period by nearly 110 percent even if all the underlying assumptions and methods for estimating those obligations were accepted.

Blissful Ignorance or Misguided Direction

One recurring theme in contemporary stories about public pensions is that policymakers and plan administrators have relied on cost estimates of their plan designs and modifications that have woefully misled them about the actual costs of the commitments they were making. Where cost estimates have not sufficiently clouded the true ramifications of plan commitments, rosy scenarios on future financial performance of assets securing liabilities can obscure the effort that will be required to deliver benefits.

In partial explanation of the lavish pensions offered by the New York public systems, Walsh and Schoenfeld (2010) offer:

The benefits have been enacted by legislators, signed into law by governors, hailed by comptrollers and adopted by local officials — all of whom were told by actuaries and other financial advisers that the pensions would cost just a fraction of what they are now turning out to cost. In very few cases do they know what they're agreeing to," said Edmund J. McMahon, director of the Empire Center for New York State Policy, which tracks pension costs. "They almost always obscure the costs, from themselves and from the public."

No one likes to deal with adverse surprises but democratic political systems are particularly sensitive to their ramifications when they arise. Unanticipated pension costs in a political context are the sort of problem that can motivate a range of responses on the part of public policymakers, some of them more deserving of praise and support than others. In the political environment, however, there almost always has to be a person or group that is identified as being responsible for unanticipated surprises. In the case of retirement cost surprises, one of the leading "culprits" for placing blame is the actuary.

The pension consulting industry in the United States, which includes virtually all of the pension consulting actuaries here, can trace its roots back to the need for sound financial management of state and local pension systems (Sass, 1997). In 1920, the federal government had established the Civil Service Retirement System (CSRS) based on design work that had been done through the Federal Efficiency Commission. One of the young staffers there, George Buck, played a leading role in designing the federal plan submitted to congress for approval. He studied British literature on pension costs and actuarial computations in developing his proposal. Buck's recommendations for the design of the CSRS were ultimately rejected by the congress, but his work established his reputation among those interested in pension operations.

Around the time that Buck was finishing up his work at the Efficiency Commission, the pensions being offered by New York City for its workers were unraveling. New York had established its plan shortly after the turn of the century and required employee contributions. As the system began to mature, it became clear that contribution rates would not support the benefits

that had been promised under the system. Buck applied his knowledge of pension costs and funding to the New York City case and helped them restructure their system. He used this as the springboard to set up a consulting agency that was working with many clients by the end of the 1920s. Sass quotes Buck's long-time assistant as saying that he believed that "employees should be paid their full salary and 'buy their own geraniums'." (Sass, p. 63). This was interpreted to mean that workers should be paid their compensation in the form of cash and should contribute to buy their own retirement coverage with rates varying in accordance with their age at the time they were purchasing a benefit under the plan. Buck did not believe in intergenerational transfers and insisted on retirement saving only being held in assets permitted for investment by regulated insurance companies (Sass, p. 64).

Actuarial analysis of retirement programs was largely concentrated in the insurance industry until the 1940s because most of the funding of pensions was through insurance companies. When federal tax law was modified to allow private sponsors of pensions to set up and administer their own trusts for funding their defined benefit pensions an opportunity for independent consultants to help plan sponsors set up and run their own pension systems arose. There were no federal stipulations requiring any pension sponsors to fund their accruing pension obligations during this time and the intervening period leading up to the mid-1970s when the Employee Retirement Income Security Act (ERISA) was adopted. Even then, there were no requirements in ERISA regarding the funding of state and local pension accruals. The extent to which pensions were funded during the two middle quarters of the twentieth century was ultimately a plan sponsor decision but the actuary likely had some influence on the path taken.

The idea of hiring an actuary and not pursuing some sort of funding program for a pension is a seeming oxymoron. Undoubtedly, some actuaries push their public clients to fund

more aggressively than others and some decision makers within government have been more receptive to the idea of funding than others. George Buck brought his principles about accruing and securing pension obligations to New York City at a time when policymakers there were caught in a bind because running a pay-as-you-go plan was untenable but there was a sense that they needed to use the pension to meet their existing human resource needs. Sass documents that Buck went on from there to work with many other public clients. When the tax laws were changed in the 1940s allowing private sector firms to set up their own pension trusts, George Buck expanded his consulting business to include private clients. Shortly thereafter, Birchard Wyatt established The Wyatt Company as a pension consultancy. About the same time, Towers Perrin, Forester and Crosby (TPF&C) converted from being an insurance agency to a consulting firm specializing primarily in pension matters. Many other firms came into being in the coming years and most of them worked for both public and private clients.

Pension funding was not just a New York concern in the 1920s. Other public entities moved to fund their retirement programs as well. A Commission on Pensions of State Employees in California in the late 1920s stated that “An urgent responsibility rests upon the state to see that any retirement system which its sponsor is placed upon a sound financial basis, where liabilities are provided for as they are incurred rather than when they mature” (Legislative Analyst, 2010). Despite the good intentions of George Buck and the California Commission, many of the state and local pension systems in the United States were poorly funded leading up to the Great Depression (Clark, Lee, Sabelhaus, 2010). Clark and his colleagues indicate that most of the plans were not based on sound actuarial principles prior to the Depression and that most were badly underfunded. Of course, the dramatic economic downturn during the Depression had a devastating effect on state and local revenues at a time

when the clamor for public services was at a peak. Not only were the states struggling to cover their own budgets, but in many cases legal statutes or court orders required them to pick up the pension liabilities of the municipalities within their borders as well.

The passage of the Social Security Act in 1935 encouraged expansion of the state and local pension systems as public sector workers were left outside of the national program initially. After World War II, the move toward offering pensions by larger private sector employers further encouraged public sector employers to offer plans to their workers. While the public sector system evolved independently of the private sector system, it was influenced by the same worker concerns, and economic trends and factors that affected other pension sponsors.

With the bankruptcy at Studebaker in the mid-1960s, there was a growing public concern about the financing of pensions in general and the U.S. Congress set about a decade-long discussion about creating a regulatory environment to secure accrued benefits. Ultimately, Congress largely exempted state and local government pension sponsors from the funding requirements stipulated for private employers but policymakers were sufficiently concerned about the state of public plans that the U.S. House of Representatives, Committee on Education and Labor established a Pension Task Force on Public Employee Retirement Systems to document the status of public plans during the development of ERISA. The Task Force issued a report in 1978 (U.S. House of Representatives) where they found that 17 percent of state and local retirement plans were being run on a pay-as-you-go basis, 25 percent on some other non actuarial basis and the remainder on some sort of actuarial funding basis (p. 151).

In the late 1970s, the most common funding approach used by employers in both the private and public sectors who were funding their pension plans was the entry-age normal method. Under this method, the actuary would estimate the present value of expected lifetime

benefits under the retirement plan that would be paid to a worker entering a plan and divide that by the present value of estimated lifetime earnings the worker would earn while working under the plan to determine the flat percentage of pay that would have been contributed each year of the workers' career to fully fund the benefits that would be payable when he or she retired. Beyond the late 1970s, public and private plans went in different directions in their funding practices.

Watson Wyatt's 1980 *Actuarial Assumptions Survey* of plans with more than 1,000 lives, the overwhelming majority of which would be private plans, revealed that most defined benefit plans that based benefits on salaries — i.e., either final- or career-average plans — funded benefits on the basis of the *entry-age-normal-cost method*. Nearly two-thirds of final-pay plans used this funding method. Assuming all actuarial assumptions were met, an employer using the entry-age-normal-cost method contributed a steady percentage of a worker's pay to the pension plan over his or her career. By keeping contributions as a percentage of pay uniform, the employer was spared significantly higher costs toward the end of a worker's career.

In the early 1980s, the FASB began to look at the various actuarial methods used for calculating pension obligations and expenses for plan sponsors' financial statements. The board ultimately promulgated new rules, under which accruing pension benefits would be accounted for using the *projected-unit-credit* method. Under this method, pension costs gradually increase throughout the worker's career, thus lowering costs early in workers' careers and increasing them as workers get closer to retirement. The FASB change affected how pension expenses are reported on financial disclosure documents, but funding must be carried out in accordance with ERISA. The reason that the FASB's new rules played an important role in funding is that they encouraged many plan sponsors — particularly those that sponsored final-pay plans — to move to a projected-unit-credit funding method. In 1983, 10 percent of final-pay defined benefit plans were funded on a

projected-unit-credit basis (Table 1). By the mid-1990s, nearly two-thirds of them were being funded that way. The baby boomers were in their 20s and 30s when the FASB rules were adopted. The net effect of shifting from an entry-age-normal funding method to a projected-unit-credit funding method was to delay funding for a portion of the baby boomers' retirement benefits from the first half of their careers to the last half.

Table 1: Percentage of Large Final-Pay Plans Using Projected-Unit-Credit Method

Year	Percent of firms
-----	-----
1983	10
1984	19
1985	25
1986	36
1987	44
1988	50
1989	49
1990	52
1991	54
1992	60
1993	63
1994	64
1995	63
1996	66
1997	67
1998	65
1999	65
2000	67
2001	66
2002	69
2003	75
2004	76
2005	73

Source: Watson Wyatt Worldwide, *Survey of Actuarial Assumptions and Funding* (Arlington, VA: Watson Wyatt Worldwide, various years).

Novy-Marx and Rauh (2009) estimate that today, only about 15 percent of public plans are funded on a projected unit credit basis and that the remaining plans are funded on an entry-age normal or related basis. The entry-age normal funding pattern is more conservative than the

projected unit credit pattern because the former tends to front-load contributions toward the beginning of a worker's career. If the actuaries are systematically underestimating pension costs for some reason, it seems odd that they would continue to use the conservative entry-age-normal funding method so universally in valuing public sector plan funding requirement.

It is possible that actuarial incompetence is leading some public plan sponsors to adopt plan provisions or administrative practices that are leading to erratic or overly burdensome funding requirements and a number of public plans have turned to the courts in recent years to make this claim. Alaska recently settled a suit that it had brought against its former actuary for a reported \$500 million. Of course, with every action there is a reaction and the long-term result of may be the opposite of the desired outcome when all the dust settles. Many of the larger actuarial firms in recent years have simply gotten out of the business of consulting on retirement plan issues with public clients because of the legal liabilities that they face in cases like the one in Alaska. The smaller firms that step in to pick up the business typically do not have the financial wherewithal of the larger firms to finance the systems and quality control mechanisms to assure their work. When problems arise with the work done by the smaller firms, the professional insurance coverage or resources of the small firms themselves dramatically limit recovery by aggrieved clients.

The *Fresno Bee* (Branan, 2010) reported that Fresno County, California's pension shortfall had grown from \$200 million to nearly \$800 million over the past four years. Based on a pension audit they had recently conducted, the pension board had concluded that \$160 million of this growth was due to benefit payments made on the basis of actuarial miscalculations and errors. The County's retirement association brought a lawsuit against the actuary claiming \$99

million in damages to the plan but settled for \$250,000 when they discovered that the actuary's professional insurance had lapsed.

Pensions and the calculations related to them are complex and the pension boards may not always be able to sort out all the issues that come before them. A commission appointed by California's governor suggested that the state needed to create an advisory panel to oversee pension actuaries dealing with public plans. The State legislature adopted the recommendation in 2008 and members have been appointed to the panel but it has never met because the State Comptroller has not appropriated funds to support its operations. Undoubtedly, more oversight will help in some cases but a follow-on editorial in the *Fresno Bee* on the current local government pension dilemma that Fresno is facing noted that their "pension problem is a self-inflicted wound by various members of the Board of Supervisors and other county officials." The editorial specifically asserts that the county leaders should have been calculating the long-term costs associated with benefit enhancements adopted in 2001. The County Grand Jury concluded that "supervisors were to blame for the pension problems because they failed to say no to union demands for better benefits." The editorial concludes that the pension problems arose because "elected officials were looking out for union members instead of taxpayers footing the bill."

Certainly pension administrators overseeing the operation of pension systems that are covering billions of dollars in obligations and who are responsible for the investment of the billions of dollars of assets covering them have substantial fiduciary obligations to assure that the pension systems are being run on a sound basis. Rather than waiting for the sort of oversight panel that California has authorized to help them evaluate the quality of work being provided by their actuaries, many public plan administrators are now hiring independent actuaries to do

periodic audits of the regular actuarial valuations and special project studies that help them monitor the financial status of their plans. Even with such a backstop in place, pension valuations may still be underestimating the long-term obligations that public pensions imply for their plan sponsors. The prospect of this happening has been raised in a number of recent economic analyses of public pension obligations and has become a matter of some controversy. The issue in question is the appropriate method for valuing future pension obligations.

The Government Accounting Standards Board in its Statement 25 indicates that the discount rate that should be used to derive the present value of future pension obligations “should be based on an estimated long-term investment yield for the plan, with consideration given to the nature and mix of current and expected plan investments.” Marx and Rauh (2009) collected pension valuation data on 116 public pension plans sponsored by the 50 states to evaluate their calculation and reporting of their pension funding status. They conclude that most states are using an 8 percent rate to discount their future pension obligations and that there is little variation in assumed rates across the spectrum of states. This may well reflect the long-term expected rate of return on assets invested along the lines that public plans have invested in recent years. Marx and Rauh cite *Pensions and Investment* indicating that state pension funds on September 30, 2008 were roughly invested, on average, in 53 percent public equity, 8 percent private equity, 7 percent in real estate equity, and the remaining 32 percent in fixed income securities (p. 202).

Brown and Wilcox (2009) point out that valuing pension obligations in accordance with the GASB Statement 25 ruling is implicitly equivalent to assuming that the pension liabilities have the same risk profile as the invested assets securing the benefits. They go on to summarize articles by Moore (2000) and Morrison and Foerster (2007) to indicate that most public sector

workers have relatively strong contractual rights to their pension benefits and indicate that jurisdictions that have passed through difficult financial circumstances in the past have often cut jobs and public services but have generally stood by their pension obligations because the legal status of the benefits is so well grounded. The point here is that the obligation to pay these benefits is a virtual certainty and the future stream of payments should be valued accordingly on the basis of a discount rate that is essentially risk free.

Both Brown and Wilcox and Novy-Marx and Rauh suggest that the appropriate measure of liability for considering the funded status of public pension plans is the accrued benefit obligation (ABO) which takes into consideration the earned benefit to date based on current service under the plan and current pay rates. In terms of measuring the pension obligation at a point in time, this is likely the best measure. However, it may not fully capture the obligation that a group of workers pose to a covering jurisdiction if there are anti-cutback protections in the plan such that once a worker is covered under a particular benefit formula or set of rules those features cannot be suspended or curtailed even for future accrual purposes.

In the analysis of the 116 plans that Novy-Marx and Rauh developed, they estimated the plans' asset holdings as of December 2008 at \$1.94 trillion and their stated liabilities at \$2.98 trillion. If the liabilities had been valued using a Treasury rate they would have been \$5.17 trillion; at municipal bond rates \$3.25 trillion. Needless to say, the funding status of plans looks very different under the modified perspective on how liabilities should be valued. If plans' liabilities had been valued on the basis of less risky discounting rates all along, it is likely that the legislative entities that approved the plans might have been less generous in provision of pensions to public sector workers.

It would be misleading to say the view of financial economists who have argued that liabilities are being miscalculated is universally endorsed. The actuarial profession points to its Actuarial Standards of Practice (ASOP) Number 27 which states specifically that “the appropriate discount rate is the same as the investment return assumption” in arguing that it is following its professional standards based on a long history of observation of plan operations when it uses the assumed rate of return on assets as the discount rate. The GASB’s own stated *Preliminary Views* (2010) on issues related to pension disclosure are that:

The discount rate should be the single rate that, when applied to projected benefit payments, results in a present value of those payments equivalent to the sum of (1) the present value of projected benefits expected to be paid from current and expected future plan net assets, discounted at the long-term expected rate of return on plan investments, and (2) the present value of projected benefit payments that are expected to be made after plan net assets are projected to be fully depleted, discounted using a high-quality municipal bond index rate (p. 16).

Keith Brainard, the research director at the National Association of State Retirement Administrators suggests that the risk free discounting of liabilities might make sense in the case of corporate sponsors of pensions because they can go bankrupt but such an approach is not appropriate in the case of public plan sponsors. He argues that public plan sponsors have an “essentially perpetual” life and can stay invested throughout financial market cycles (Mysak, 2010). Possibly the strongest opposition of all to valuing pension liabilities any other way than they have been valued for years will come from the participants in the plans, especially the union members of the plans with a natural platform to organize and make themselves heard with the policymakers who ultimately may be asked to weigh in on the subject. Biggs (2010) tells of a recent solicitation for actuarial services by the Montana Public Employees’ Retirement Board and the Montana Teachers’ Retirement System where the request for proposals states: “If the Primary Actuary or the Actuarial Firm supports [market valuation] for public pension plans, their proposal may be disqualified from further consideration.”

Caught in the Pension Trap with a One-Way Ratchet

If public pension benefits are guaranteed by constitutional provision or legislative fiat in many states, plan sponsors are drastically limited in their ability to modify plans to fit fiscal circumstances when times are hard. This means that how policymakers conduct their operations during good times, when scrutiny is often not so vigilant, becomes extremely important. A recent editorial in the *Washington Post* (May 30, 2010) compared the current budgetary issues being faced in Montgomery County, Maryland and Fairfax County, Virginia. Both of these counties are adjacent to Washington, DC and are among the most affluent in all of the United States. They each have populations around 1 million, similar demographics, and both with school systems that are consistently rated among the top in the nation.

At the beginning of 2010, Montgomery County was facing a \$1 billion shortfall out of a \$4.3 billion spending plan. Fairfax County faced a shortfall about one quarter Montgomery County's on a similarly sized budget. Fairfax County is run by an unelected technocrat and Montgomery County by an elected county executive. In 2006, the Fairfax County executive proposed a 6 percent larger budget than the year before. The executive in Montgomery County proposed an 11 percent larger budget than the prior one capping a three-year spending spree that had driven up costs by 30 percent.

The Montgomery County executive aspired to be governor of Maryland and was positioning himself with public employee unions during this period of budgetary largesse. When a new county executive took office in Montgomery County at the beginning of 2008, he was shortly faced with budgetary shortfalls. Among other things, he attempted to hold the line on salary deals negotiated by his predecessor and in one deal swapped a current pay increase for a future pension COLA adjustment based on salary increases that were never received—the net

cost to the pension plan in present value terms was \$300 million—a short-term gain for long-term pain. Meanwhile in Fairfax County, the county executive froze salaries when revenues started to fall off in 2008 and held the line as the recession evolved. In this case, differences in political structure played a significant role in how pay and pension policy evolved.

In 2010, teachers in Montgomery County, whose pay has grown a three times the inflation rate over the past decade, make 20 percent more than those in Fairfax County. Compensation costs comprise 90 percent of the total school budget in these counties. Wage growth drags along pension costs in both jurisdictions because teachers are covered by traditional pensions in both cases. Health benefits were being pushed up as well. Lo and behold! The cost per pupil in Montgomery County in 2010 is 20 percent higher than in Fairfax County with little difference in overall results on any quantitative scaling of educational outcomes.

Assuming that Fairfax County, Virginia is as legally committed to deliver accumulated public pension benefits as other public jurisdictions there is no easy relief from pension costs even in times of tight budgets. Jurisdictions might cut back on contributions to their plans during periods of slack revenue collection, but those contributions plus interest will have to be made up later. If pension benefits are protected on the downside from any adjustments, plan sponsors become trapped by the generosity of prior generations. If good times lead to added benefits, then the retirement system comes with a built-in ratchet that drives pension costs up and never lets them slide back the other direction. Undoubtedly union structures play some role in this sort of process but the political structure of the decision-making process does as well.

Explaining Pension Benefits across the State Divides

The plans analyzed in this discussion are generally organized and operated at the state-wide level. Most of the plans provide coverage for state level workers in addition to public employees in a variety of local jurisdictions. In some cases, there will be one or two plans that cover virtually all public workers. In others, there will be separate plans for general public employees, teachers, state police, police and fire fighters, judges, legislators and so forth. A handful of states offer a token benefit of \$100 a month or so to National Guard members and several have separate plans for volunteer firefighters which also tend to offer token benefits. These are excluded to the extent possible in the analysis. There are also a number of states that have offered a defined contribution plan for new hires in recent years and, in some cases, allowed some existing workers to shift to the new plan. None of these defined contribution arrangements are considered in the analysis here.

Much of the data analyzed here is reported in state level Comprehensive Annual Financial Reports (CAFR) or separate CAFR reports that the individual pension plans themselves have prepared. In almost every case, the CAFR reports at the state or plan level are available on the web. In only one case, neither a state or pension level CAFR was posted. In that case, the executive director of the state retirement system provided an electronic version of the system's latest CAFR. In quite a number of cases, the disclosure information from the CAFR reports has been augmented with the latest available actuarial report on the relevant plan. Much of the information is as of December 31, 2009 or June 30, 2009. In a smattering of cases, the fiscal year ends on September 30 and the filing information is as of that date. In a few cases, especially among the smaller plans, the last reported information is based on an actuarial report that is two or three years old. In a handful of cases, disclosure information could not be located

on a plan. In virtually every case, the evidence available suggested these plans were so small that they were immaterial in the context of the analysis and were ignored.

There were 11.6 million workers covered under the pension plans that comprise the database on which the following analysis is based. By comparison, the March 2008 *Current Population Survey* (CPS) estimate of full-time state and local employment is 14.8 million with another 4.8 million workers reported as part time. The combination of these two would suggest that the full time equivalent (FTE) state and local workforce at that juncture was around 16.6 million workers. There a number of reasons the population analyzed in the context of this paper are less than the public employment levels being reported at that time. The most important ones are that public pension coverage is often not a one-to-one mapping of public employment covered by the systems involved. Some of the plans may have a one-year of employment or similar requirement before actual coverage under the plan is established. Many of the plans will not cover all part-time workers, especially those who are working few hours per pay period or seasonally. Possibly the most important reason for the discrepancy is that the universe of plans included here are state-wide plans and most do not include the largest municipalities within their jurisdictions. For example, the Missouri CAFR is quite explicit that the public employees of the two largest municipalities in the state, Kansas City and St. Louis, have their own independent retirement systems.

The employment levels in many of the municipal cases are substantial. An analysis of the implications of including or excluding municipal workers for California suggests that there are approximately 100,000 public employees in Los Angeles, Sacramento, San Diego and San Francisco covered by pension programs sponsored by those political jurisdictions that are not picked up in the California state systems which cover approximately 460,000 employees. The

search for pension disclosure information on these four cases made it clear that the general consistency in financial disclosure at the state level because of the Government Accounting Standards Board (GASB) does not yet extend down to the municipal level. Tracking down all of the municipal plans and condensing their situation into a consistent format with state level data was beyond the scope of this project. For the pensions plans that are included here, estimated accrued liabilities are \$2.89 trillion and the estimated value of assets backing them is \$2.33 trillion leaving an unfunded pension liability of \$560 billion, about 20 percent of the total estimated obligation. The list of plans that are well funded and those that are poorly funded corresponds directly with that published by the Pew Center on States (2010) because we are using essentially the same sources of raw data as they did in developing their analysis although the data here is often more current.

Comparisons across economic systems often rely on simplified measures to describe outcomes that are imperfect at the task. For example, relative standards of living across time or across geographies are often measured by comparing per capita income or per capita gross domestic product. These sorts of measures do not capture differences in quality of life that are important to many people and so are not perfect in the role in which they are used but are often the best alternative available. There is no simple measure of the pension offering at the state and local government level that is perfect for comparing it to other pension programs. Often plans will be measured against each other by comparing the potential benefits that will be paid to hypothetical workers who have spent their careers under the alternative plans. But not everyone spends a full career under any specific plan. Thus the extent of backloading in the benefit formula, vesting schedules, early withdrawal provisions, disability and survivor provisions and

similar considerations are important. Yet, all of these cannot be captured in a single measure for straightforward comparison purposes.

For purposes of this analysis, we compare plans on the basis of plan generosity measured by a derived earnings “replacement rate” estimated across the plans currently being offered to state and local employees across the 50 states. The replacement rate in this case is the average benefit provided to retirees covered under the plans divided by the average pay rate of active workers currently covered under them. The states are grouped together in the Table 2 in quintiles based on the generosity of their plans as measured by their replacement rates. The averages shown in the table are calculated across the 10 states in each group. Weighting them by numbers of workers made little difference in the results. The results shown here are simply the averages from the ten states in each category.

Table 2: Summary Characteristics of Pension Plans Provided to State and Local Workers at the State Level by Generosity of Benefits Provided to Retirees Relative to Workers’ Covered Pay

Replacement rate quintile	Average replacement rate	Average dependency ratio	Percent of workers covered under Social Security	Median S&L worker wage/median private wage in 2008	Average covered earnings
1	32.40%	53.30%	90.90%	1.090	42,202
2	40.50%	56.50%	83.40%	1.161	44,982
3	47.60%	50.10%	84.80%	1.108	40,893
4	52.90%	56.10%	74.00%	1.123	46,176
5	65.70%	47.90%	57.80%	1.183	44,927

Source: Developed by the author.

The average replacement rate in the bottom quintile of the distribution is half that of top quintile and the three states with the lowest replacement rates are providing benefits that are only about one-third of the top three states. The average dependency ratio variable in the table is

simply an average across the states in each quintile of the number of retirees divided by the number of active workers in their respective retirement systems. There is no clear pattern between plan generosity and the average dependency ratio that would suggest the relative number of retirees is driving plan generosity.

One potential explanation for why some states might provide more generous retirement benefits than others, and it is supported by the results in Table 2, is that a number of public employees in a few states are still not covered under the Social Security system. For example, in Ohio, virtually none of the state or local employees there are covered under Social Security. In Texas, general employees of the state are covered under Social Security but teachers are not. The fact that some state and local workers are still not covered under Social Security dates back to the period when state and local governments were given the option of being covered under the system or not. In 1983, there was some discussion by the U.S. Congress about covering all workers under the system on a mandatory basis but those state and local jurisdictions then outside the system were allowed to remain outside the system. At least in theory, any public employer not providing workers Social Security coverage would have to provide a benefit of some comparable worth in order to be competitive in a labor market where virtually all other employers are required to provide such coverage. While the data in the paper are consistent with the idea that employers not offering Social Security coverage have to make up for it in their own retirement plans, more than 90 percent of the state and local workers in three of the ten states in the top (most generous) quintile (Wisconsin, New Jersey, and New York) are covered by Social Security in their public employment.

The idea that public sector workers are provided richer pensions because they have inferior pay may be arguably consistent with the literature on pay differentials between public

and private sector workforces. To be totally consistent, it would seem that the generosity of the pensions would decline as the pay differential with the private sector increases. The second column from the right-hand side of the table shows the averages of the median wages reported by state and local workers on the March 2009 CPS divided by the median wages reported by private sector workers in each state. The results do not reflect any clear cut pattern in the relationship of plan generosity and relative pay rates between public and private sector workers. The right-hand column in the table suggests there is no clear pattern in the relationship of average pay under public plans and the generosity of the pension plan offered.

In order to more clearly sort out what factors might help explain the general generosity of public pensions offered at the state level, we estimate a simple model where:

$$\begin{aligned} \text{Replacement Rate}_i = & \alpha + \beta_1 \text{Dependency Ratio}_i + \beta_2 \text{FundingRatio}_i + \beta_3 \text{Union}_i + \\ & \beta_4 \text{SocialSecurity}_i + \beta_5 \text{Pubwage/Privwage}_i + \beta_6 \text{RelWageGrowth}_i + \\ & \beta_7 \text{GDPgrowth}_i + \beta_8 \text{Avpay08}_i + \varepsilon_i \end{aligned}$$

where $\text{Replacement Rate}_i$ is the average benefit being provided by the pensions offered by state i divided by the average covered pay of active workers under the system; $\text{Dependency Ratio}_i$ is the number of people receiving a benefit in state i divided by the number of active workers covered under the system as reported in the most recent valuation; Funding Ratio_i is the actuarial value of assets in the plans sponsored by state i divided by the actuarial accrued liability in the plans from the most recent plan valuation; Union_i is the percentage of state and local workers in state i that are unionized as estimated from the March 2009 CPS; Social Security_i is the percentage of state and local workers in state i who are covered under Social Security; $\text{Pubwage/Privwage}_i$ is the ratio of average wages paid to state and local workers in 2008 to the average wage of private sector workers as derived from the March 2009 CPS; RelWageGrowth is the change in the ratio

of public wages to private wages from 1998 to 2008; $GDPgrowth_i$ is the rate of growth in real GDP per capita from 1995 through 2005 in the state; and $Avpay08_i$ is the average pay of workers in the state pension plans from the most recent valuation.

The dependency ratio in a pension will take on more or less importance in pension costs depending on the degree of funding in the plan. In a system that is financed on a pay-as-you go basis, the cost of the system will go up in direct proportion with the dependency ratio. If the dependency ratio is driving up costs, the way to hold it down is by providing a less generous benefit. With fully funded plans, cost will not rise as directly with changes in the dependency ratio but a high ratio suggests that tenures under plan coverage might be relatively short. If that is the case, the plan would likely be less generous. So the characteristics of both types of plans suggest that dependency ratios should vary inversely with plan generosity.

If there is economic benefit to funding a pension over running it on a pay-as-you-go basis, the benefit of funding a generous plan would be greater than funding one that is less so. Thus, we expect the sign between the level of funding and the generosity of the plan to be positive. We expect that the more unionized the public workforce, the more generous the benefits to be. We expect there to be a strong negative relationship between the share of workers covered by Social Security and the generosity of the public plan benefit. We expect that the higher the public wage level is relative to private wage levels in the state that the less generous the public pension benefit will be. We expect the sign on the economic growth variable, “growth in GDP per capita from 1995 to 2005” to be positive because the larger this number the more expansionary the economy in those states and the likelihood that legislatures will have resources to support richer public pensions. We expect the sign for the variable capturing average pay under the public pension systems to be positive. Pensions generally integrate implicitly or

explicitly with Social Security and the redistributive characteristics of that plan suggest benefit generosity with tend to be positively correlated with pay levels for pension participants.

The results of the OLS estimation of the model are presented in Table 3. For the most part, the signs on the variables are consistent with what we had anticipated although there are some surprises. Given the public hype that unions often make about their strong support of the traditional pension model, possibly the biggest surprise in the table is lack of significance in the estimate of the effect of unionization on pension generosity. One explanation may be that the structure of public pensions was largely in place prior to the union movement's focus on public employment and that the results may be far different a few years down the road if the trend toward defined contribution plans by public employers continues.

The lack of significance in the relative wage variables is also notable. At least the sign is right on first variable that captures the ratio of median public to median private wages in 2008. The growth variable is the 2008 ratio minus the 1998 measure derived in the same fashion. The sign on the growth variable suggests that if the public-to-private ratio had increased over the prior decade, that the public pension offering was less generous. Stated somewhat conversely, those with less generous pensions gained relative to the private sector in terms of wages paid to their public employees. Again, the estimate is not significantly different from zero.

The sign on the economic growth variable came out the opposite of the direction that we had anticipated and it is highly significant. We had assumed that rapid economic growth, measured by growth in GDP per capita, in an area would be good cover for the political process of expanding retirement benefits. One possible explanation ties back to the relative pay literature comparing wage levels between public and private sector workers. The generosity measure for the pension that is used here is affected by average tenures of public employees at the time they

retire. It is possible that public employees in states with relatively high economic growth rates have greater opportunities outside the public sector than their counterparts in low-growth states and thus are leaving public employment with lower tenures under their public pensions. This is clearly an area that deserves further exploration.

Table 3: Multivariate Model of Replacement Rates for State and Local Workers in 2008

Independent variable	Estimate of β	t Value	Pr > [t]
Intercept	0.841	3.18	0.0028
Dependency ratio	-0.266	-1.78	0.0820
Funding ratio	0.369	2.65	0.0113
Percentage unionized in 2008	0.047	0.62	0.5372
Percentage covered by Social Security	-0.280	-4.41	< .0001
Ratio of public wage to private wage	-0.211	1.00	0.3236
Change in public wage/private wage ratio from 1998 to 2008	-0.029	-0.21	0.8310
Growth in real GDP per capita 1995-2005	-6.685	-2.57	0.0139
Average public pay in 2008	0.660	2.43	0.0196
N	50		
R ² (adj)	0.3738		
F Value	4.66		

Source: Estimated by the author.

Looking Forward

The idea that the universe of state and local pension plans here in the United States are all on the brink of financial disaster is not palpable. Those that are relatively well funded by conventional measures, even if they were to move toward revaluing their liabilities using a lower discount rate than they have been, would have considerable resources at hand during a period when they would be called upon to amortize their new unfunded liabilities. Many of these states have a long commitment to funding their benefit promises on a conservative basis and would

likely continue to do so. To assume that these states would only fund accruing obligations and not amortize unfunded obligations ignores a long history of deliberate policy to secure liabilities as they are accrued. Some of the states that are not well funded, even on a conventional basis, face a daunting challenge of meeting obligations that seemingly have a strong legal basis because these costs will climb in the future at the same time that the governments are called upon to meet the other public obligations they all have.

The legal requirements to provide the benefits that workers have accrued to date are important in understanding the options that policymakers will face as they deal with the fiscal realities that their retirement plans pose. Many academic analysts who study the retirement system and many press stories have been extremely critical of private sector plan sponsors that have “reneged” on the “implicit contracts” that private pension promises represented according to some viewpoints. It is unlikely that many publicly elected policymakers will risk the sorts of criticism that has been aimed at the private decision makers who have curtailed pension benefits for existing workers covered by plans, sometimes even those within a few years of retirement. But that does not mean that public policymakers do not have options to begin to bring their plans under control. It is already beginning to happen.

Clark, Craig and Sabelhaus give a litany of plan changes already under way in the public sector. In 1997, Michigan created a defined contribution plan for all new employees and offered existing participants in the traditional defined benefit plan the opportunity to shift over to the new plan. In 2003, Nebraska closed its prior plan to new employees and covered them under a cash balance plan. Effective July 1, 2006, Alaska extended coverage of all new state employees to a new defined contribution plan. In 2011, newly hired state workers in Utah will be able to choose between a defined contribution plan or a hybrid plan with the latter being the default

plan. Colorado, Florida, Montana, North Dakota, Ohio and South Carolina have all created optional defined contribution plans for their workers in recent years. The idea that state and local policymakers cannot change their pension plans defies the realities of what is happening in states where the realities of cost control have already been confronted.

None of these changes has directly reduced the benefits of existing participants in their pension programs although some jurisdictions have restricted cost of living increases lately. Undoubtedly real legal restrictions are one explanation for the lack of adjustment to existing systems for current employees. Another reason may be that the contributory nature of public plans makes the “implicit contract” somewhat more binding than in the private sector case where most plans were noncontributory. At some juncture, however, budgets may get to be so binding that policymakers will be forced to consider the curtailment of future accruals under existing formulas. There are many ways that currently accrued benefits can be protected if the structure of existing plans is modified or accrual rates are modified on a prospective basis.

The differing perceptions in regard to the “contractual” obligation on public retirement benefits are interesting given the parallel tracks that pension and retiree health benefits seemingly occupy. In response to a query about why so few public sponsors of retiree health benefits have funded these plans, one executive director of a state pension plan told me:

Very few states have stepped in with OPEB financing because in most states the retiree health benefit is not a contractual right and is subject to revision unlike pension benefits. States are actively looking at a combination of benefit reductions, more significant cost sharing and changes to health care generally as a means to close the funding gap. In [my state] the legislature has many different approaches under review including elimination of the retiree subsidy for those still actively employed.

This observation suggests that the commitments to the “implicit contracts” that public employers might have with their employees is little different than those that many private sector employers were accused of violating when they modified their retirement programs in recent years.

Retirement promises are easy to make when the payout is many decades in the future and the bill can be passed on to future generations. Paying for the benefits as they come due is another matter and the unfunded obligations that are behind the “implicit contract” assuring retirement benefits for many contemporary state and local workers will likely be renegotiated in some cases.

The temptation to trade short-term savings for long-term costs is extremely strong for policymakers facing another election in the near future. The example of Montgomery County, Maryland cited earlier trading pay increases for current workers by giving them extra pension credits is a good example of policymakers making such a trade. One reason that these sorts of trades have been made in the past with little public fanfare is that there has been little public exposure to the terms of the trades. Often the underlying implications are not readily apparent to most of the public. In the Montgomery County case as in many others, the savings from skipping a scheduled pay increase is readily understandable but the “slight tweak” of the pension that adds hundreds of millions in obligations that will be payable years from now is not.

In contemporary policy discussions, one option for dealing with long-term public pension costs that seems to be gaining some credence is for those jurisdictions whose workers are not covered by Social Security to bring such workers under the national system’s coverage as part of a package of bringing the state pension systems into balance. Rauh suggests this as a “compensating differential” for freezing benefits at current levels for workers not covered by Social Security. The state legislature in Maine is seriously considering such an option as part of pension reform on its agenda in the summer of 2010 (Williams, 2010).

There are many reasons that all workers in the United States should be covered under Social Security but expanding coverage to state and local workers now outside the system is not

a way for current plan sponsors to save money. It is well known that mature retirement systems that are financed on a pay-as-you-go basis are inefficient for participants. While Social Security is arguably partially funded, a very small portion of the system's obligations are covered by the existing trust fund accumulation so it is mostly financed on a pay-as-you-go basis. A system that is redistributive, like the U.S. Social Security system will be even more inefficient as a retirement savings vehicle for workers with above average pay levels. There may be some question as to whether public sector workers receive comparable pay to workers in the private sector when one controls for the work that is being done in the respective sectors, but there is no question that average or median public pay is higher than that in the private sector. Putting workers now outside the system into Social Security will mean that those individuals affected and their employers will have to contribute more to purchase those benefits over the long term than they will be paid.

If public policymakers can get by with freezing their existing pensions systems and not offering a replacement plan, as Rauh suggests, then moving workers into Social Security coverage may reduce a jurisdiction's pension costs prospectively. But it will also mean a substantial reduction in retirement benefits for most affected public workers in the future. If policymakers have to offer workers a replacement plan that in conjunction with Social Security roughly matches the existing system being replaced, there is little prospect for long-term saving. Social Security coverage cannot be more efficient for any state and local government workforce now outside the system than their existing systems no matter how far out of financing balance they might be at the present time. The demographics for efficient operation of retirement systems financed on a pay-as-you-go basis simply do not exist today and are unlikely to reappear in the foreseeable future.

In 1938, an Advisory Council on Social Security was debating the appropriate financing model for the program. Many people may not realize it today, but Franklin Roosevelt had insisted that the system had to be funded and the original legislation included a payroll tax schedule that would have largely accomplished that end. But almost immediately after the Social Security Act passed in 1935 a public policy debate broke out over whether shifting to pay-as-you-go financing was not preferable. Among the '38 Advisory Council members, the leading proponent of funding the system was Edwin Witte, an economics professor from the University of Wisconsin. A leading proponent of shifting to pay-as-you-go funding was J. Douglas Brown, a professor from Princeton University. At one juncture in their deliberations, Witte explained to his fellow council members that shifting to pay-as-you-go financing would ultimately mean future taxpayers would have to pay much higher taxes to support the system than if they funded the system. He used 1980 as his point of reference for future taxpayers. As he finished his argument, J. Douglas Brown simply responded: "But [in 1980] we will all be dead" (Schieber and Shoven, 1999). Outside of that Council, few people fully grasped the long-term fiscal implications of their discussion or the ramifications for various generations of Social Security participants. Public disclosure of the sort that public plans are now subject to might have changed the nature of the discussion and subsequent policy deliberations leading to operating Social Security on a pay-as-you-go basis.

In most cases, the state and local governments here in the United States operate on some sort of balanced budget requirement. Yet, for many years the Witte/Brown debate has been carried out in one form or the other across many of the state jurisdictions sponsoring the plans covered here. In some cases, the Wittes of the world have prevailed because they have focused on pension costs from an accrual perspective and whether or not the balanced budget rules

applied to pension financing, they have stuck with the spirit of the balanced budget requirement. In other cases, the Browns of the world have prevailed because they have focused on the immediate cash flows required to deliver this year's pension benefits and have taken advantage of trust fund accumulations to defer covering this year's accruing costs.

The evidence from the private sector suggests that the proclamation of standardized accounting rules for retirement obligations led to profound effects on the retirement plans sponsored by employers. The changes were not instantaneous but were driven by a growing awareness of the implications of contemporary decisions on future obligations. It may be premature to suggest that the recently implemented GASB disclosure requirements will have the same ultimate effect on public retirement systems as the disclosure requirements did in the private sector, but there is some evidence that a new order is already emerging. If the further curtailment of retiree health benefit plans continues and if the shift toward defined contribution plans in states like Alaska, Florida, Michigan and others continues, the effect of public disclosure are likely to prove the most profound change to public pension policy that has occurred in decades.

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