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RETIREMENT
RESEARCH
AT BOSTON COLLEGE

November 2008, Number 8-19

THE FINANCIAL CRISIS AND STATE/LOCAL DEFINED BENEFIT PLANS

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Introduction

Equity assets in retirement plans dropped in value by about $4 trillion between October 9, 2007 and October 9, 2008. The decline was divided equally between defined benefit and 401(k)/Individual Retirement Accounts (IRAs). The decline in the defined benefit arena was in turn divided equally between private sector plans and those sponsored by state and local governments. This *brief* explores what a loss of roughly $1 trillion of state and local defined benefit equity assets means for the individual participants and for the taxpayers of the sponsoring entities.

The *brief* is structured as follows. The first section describes the important role of defined benefit plans in the public sector. The second section describes the immediate impact of the financial crisis on public sector participants, while the third section turns to the impact on plan sponsors by assessing the funding status of these plans. The fourth section explores the possible responses by plan sponsors should equity values remain low. The final section concludes that, while everyone agrees that funding of state and local plans is an important goal, the smoothing of asset values in the public sector allows these plans some space to restore their funding levels.

The Importance of Public Sector Defined Benefit Plans

Pension coverage is much more widespread among state and local workers than among those in the private sector. In 2006, almost 80 percent of state and local workers age 25-64 were covered by a pension, compared to only 45 percent in the private sector.[1] Public sector pension coverage also tends to be primarily in defined benefit plans. Looking just at those with some type of pension coverage, a full 80 percent of public sector participants rely solely on a defined benefit plan; in the private sector, more than 60 percent of participants rely solely on a defined contribution plan (Figure 1 on the next page). Finally, public defined benefit plans provide larger benefits than their private sector counterparts.[2]

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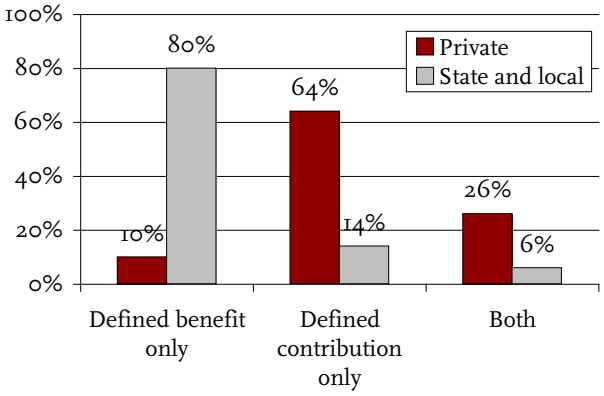
Figure 1. Percent of Workers Covered by a Pension, by Pension Type and Sector, 2004



Sources: Authors' calculations from U.S. Department of Labor Form 5500 (2004); and Standard & Poor's (2007).

Because of the significance of defined benefit plans in the public sector, assets in state and local plans exceed those in the private sector, even though the state and local workforce is only one sixth the size of the private workforce.[3] As of the end of 2007, state and local plans accounted for more than 20 percent of total retirement assets (see Table 1).[4]

Table 1. Retirement Plan Assets, 2007, Trillions of Dollars

Pension sponsor	Assets	Percent of total
Defined benefit plans		
State and local governments	$3.2	20.9%
Private employer	2.7	17.7
Defined contribution plans		
Private employer	3.5	22.9
IRAs	4.7	30.7
Federal government*	1.2	7.8
Total	15.3	100.0

* These assets include all federal pension plans. Most of these assets are held in defined benefit plans for civilian and military workers. But the government's defined contribution Thrift Savings Plan is also included.
Source: U.S Board of Governors of the Federal Reserve System (2008).

State and local defined benefit plans, like all forms of retirement saving, have seen large declines in the value of their equities during this financial crisis. Between October 9, 2007 – the peak of the market – and October 9, 2008, equities declined by 42 percent. State and local defined benefit plans, which held roughly 70 percent of their assets in equities, saw a decline in the value of their equities of $1.0 trillion (see Table 2). The question is how this decline affects individuals and plan sponsors.

Table 2. Equity Declines from October 9, 2007 (Peak) to October 9, 2008, Trillions of Dollars

Pension sponsor	Decline
Defined benefit plans	
State and local governments	$1.0
Private employer	0.9
Defined contribution plans	
Private employer	1.1
IRAs	0.8
Federal government*	0.1
Total	3.8

* While the government's defined contribution Thrift Savings Plan accounts for slightly less than 20 percent of total assets, it includes virtually all of the equity exposure.
Note: Figures do not add to total due to rounding.
Source: Munnell and Muldoon (2008).

Impact of Decline in Defined Benefit Assets on Participants

In defined benefit plans, participants are promised benefits based on years of service and earnings (typically the last five years), and generally benefits must be paid regardless of what happens to the assets in the employer's pension plan. This outcome differs sharply from that of 401(k)s. In 401(k)s, individuals bear the risk of market declines. If the stock market collapses, 401(k) participants take an immediate hit to their retirement assets. And those about to retire – who on average held about two thirds of their assets in equities – will be forced to retire on less.[5] In contrast, participants in defined benefit plans are largely sheltered from the effect of the financial crisis on retirement assets. Employers bear the market risk.

Public plan participants actually have a higher degree of protection than their private sector counterparts. Whereas the Employee Retirement Income Security Act of 1974 (ERISA) protects benefits earned to date, participants may end up with less than expected if their employer closes down the plan for reasons of economy or bankruptcy. In such cases, the factors in the benefit formula are applied to today's earnings rather than the higher earnings at retirement. In contrast, many state courts have ruled that the public employer is prohibited from modifying the plan.[6] This prohibition means that employees hired under a public retirement plan have the right to earn benefits as long as their employment continues. Thus, if the employer wants to reduce the future accruals of benefits, such a change usually applies only to new hires.

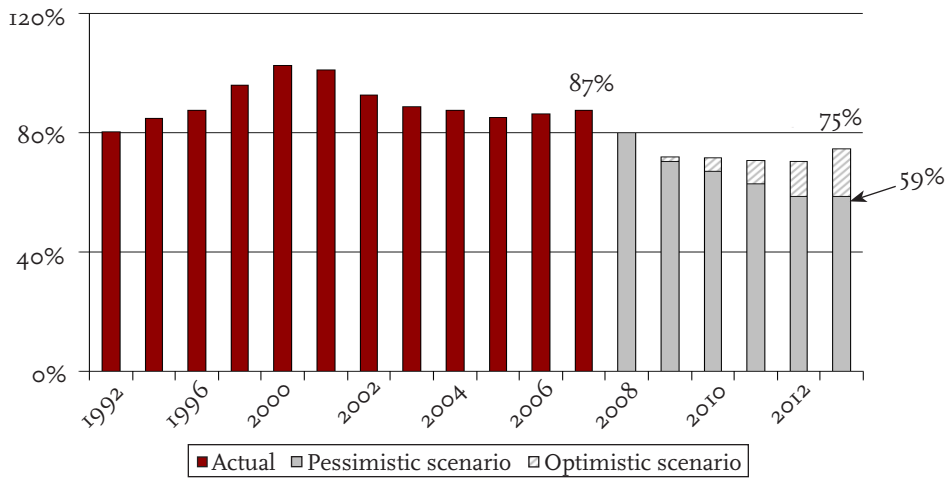
The Impact of the Financial Crisis on Plan Sponsors

As noted above, the financial crisis has reduced the value of equities in state and local defined benefit plans by about $1 trillion.[7] This change has clearly hurt the funding status of state and local plans. But the impact will become evident only over time, because the actuaries in the public sector tend to smooth the impact of both gains and losses by averaging the market value of assets over a five-year period. For our sample of roughly 120 state and local plans, the funding level was 87 percent in 2007. By October 9, 2008, if assets were valued at market, the ratio would have declined to 65 percent. But, because of the smoothing of asset values, the full impact of the financial crisis will be recognized gradually over the next five years.

The precise pattern of state and local pension funding over the next five years depends crucially on what happens to the value of equities. Figure 2 displays two alternative scenarios. Under the pessimistic scenario, asset levels remain at their October 9, 2008 levels; under the optimistic scenario, asset levels return to their peak (October 9, 2007) by the end of 2010. In both cases, liabilities are assumed to grow at 5.7 percent, the geometric average over the period 2001-2006.[8] This assumption produces an aggregate funding ratio in 2013 of 59 percent under the pessimistic scenario and 75 percent under the optimistic scenario.

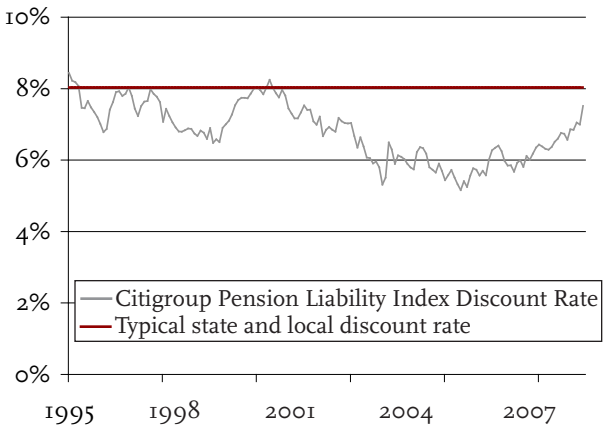
Unlike projections made for private sector defined benefit plans, no adjustment is required for the impact of the financial crisis on the value of liabilities in the public sector. The financial crisis has led to a mass exodus out of corporate bonds, raising the rates that serve as the basis for discounting private sector liabilities. Thus, estimates of the impact of the financial crisis on private sector firms has required reducing liabilities to reflect the higher discount rate as well as lowering assets for the loss in equity values.[9] In other words, higher discount rates have tempered the impact of the financial crisis in private sector defined benefit plans. In the public sector, rates have remained remarkably steady over the last ten years (see Figure 3 on the next page), and states and localities are unlikely to adopt higher rates that would reduce

Figure 2. Funding Status of State/Local Plans, 1992-2007 and Projections for 2008-2013, Based on Smoothed Asset Values



Sources: Author's calculations based on Zorn (1996-2000); National Association of State Retirement Administrators and National Council on Teacher Retirement, *Public Fund Survey*, 2001-2005; and Center for Retirement Research, *State and Local Public Pension Survey*, 2006.

Figure 3. Discount Rates Used for State/Local and Private Defined Benefit Plans, 1995-2008

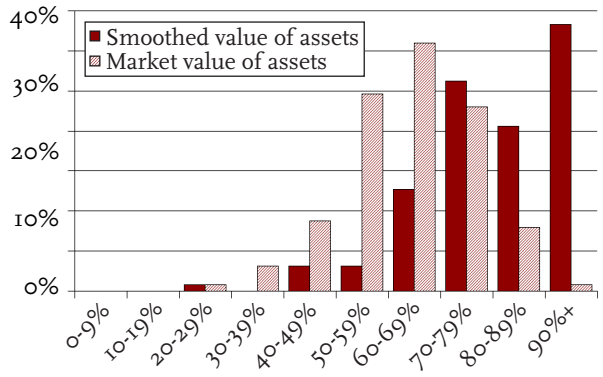


Sources: Citigroup (2008); Zorn (1996-2000); 2001-2005 *Public Fund Survey*; and 2006 *State and Local Public Pension Survey*.

their liabilities.[10] Thus, no adjustment is required on the liability side in projecting future funding ratios for state and local plans.

To this point, the discussion has focused on the aggregate funding status of public plans – that is, total assets divided by total liabilites for the sector as a whole. Aggregate data hide information about individual pension plans. Not all plans were 87 percent funded in 2007, and not all plans held 70 percent of their assets in equities. Figure 4, which shows the distribution of plans by funding status both with and without the smoothing of asset values, suggests that a number of plans had very low funding ratios to start and that these plans will be under considerable financial pressure.

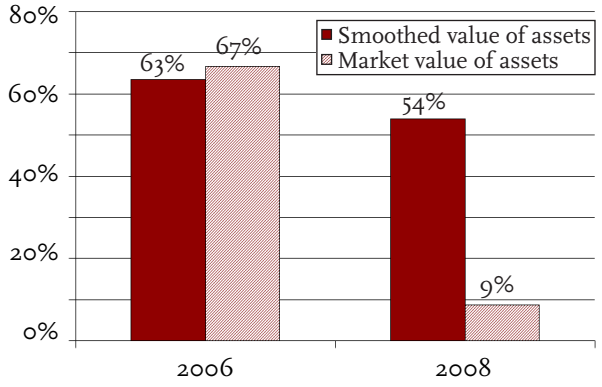
Figure 4. Distribution of Funding Ratios, 2008, Smoothed and Market Value of Assets



Source: Authors' calculations based on 2006 *State and Local Public Pension Survey*.

Figure 5 presents a summary measure of the distribution of plan funding levels before and after the financial crisis by calculating the percent of plans with assets equal to at least 80 percent of liabilities – a measure viewed as acceptable by many before the financial crisis. In 2006, the last year for which we have complete data, 63 percent of plans reported having a funding ratio of 80 percent or greater. Interestingly, the percent would have been even higher using the market value of assets. By 2008, that percentage declined to 54 percent when assets are smoothed and 9 percent if assets were valued at market. The question is how states and localities will respond to the decline in the funding status of their pension plans.

Figure 5. Percent of Plans with Funding Ratios of 80 Percent or More in 2006 and 2008, Smoothed and Market Value of Assets



Source: Authors' calculations based on 2006 *State and Local Public Pension Survey*.

Will States and Localities Have to Raise Contributions?

Defined benefit plans in the public sector differ from those in the private sector in two ways. First, public plans are not covered by ERISA, which as a result of the Pension Protection Act of 2006, now requires companies to amortize gains and losses over seven years. (Sponsors can apply for an extension to ten years.) Second, contributions come from participants as well as plan sponsors.

Public Sector Funding Requirements

Although state and local government plans are not subject to ERISA's funding standards, they are strongly influenced by the guidance from the Government Accounting Standards Board (GASB). GASB 25, which took effect in 1996, addressed how funding information should be reported in the financial statement. GASB recommended that plan sponsors report, among other items, the extent to which they cover an annual required contribution (ARC) that includes the normal cost – the cost of benefits accruing in the current year – and a payment to amortize the plan's unfunded actuarial liability. Initially, 40 years was considered an acceptable amortization period, but that was reduced to 30 years in 2006.[11]

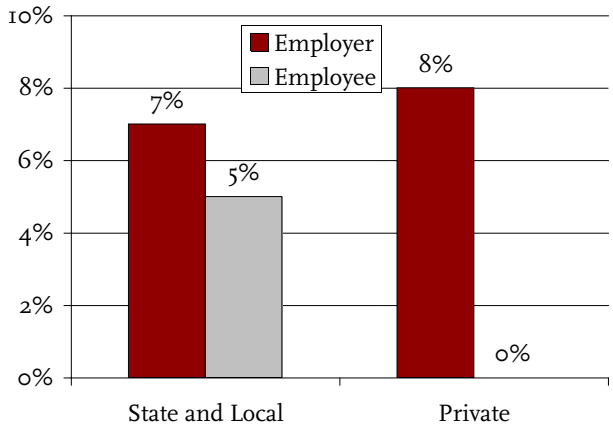
GASB, like its private sector counterpart FASB, is an independent organization and has no authority to enforce its recommendations. Many state laws, however, require that public plans comply with GASB standards, and auditors generally require state and local governments to comply with GASB standards to receive a "clean" audit opinion. And bond raters generally consider whether GASB standards are followed when assessing credit standing.[12] Thus, financial reporting requirements have a considerable impact, and most public plans were on a path to full funding.

As states and localities are only about one-third of the way through the amortization process begun in 1996, they would not be expected to be fully funded. Moreover, it is unlikely that states and localities will go bankrupt, or otherwise repudiate their indebtedness, as can happen to sponsors of private sector plans.[13] To the extent that this argument holds, there is no need for 100 percent funding to assure employees the payment of benefits. The finance literature also suggests that full funding may not always be optimal for public plans.[14] For these reasons, the U.S. Government Accountability Office reports that many experts and government officials prior to the financial crisis considered 80 percent funding to have been acceptable for public plans.[15] This standard suggests that, if equity values continue to remain depressed, states and localities will aim to increase their contributions.

Public Sector Pension Contributions

Unlike the case in the private sector, public sector defined benefit plans are not financed entirely by the employer. State and local plans provide larger benefits than those in the private sector, so the cost of these plans is substantially larger. Interestingly, employer contributions as a percent of payroll are roughly the same in the state and local and private sectors, and public sector employee contributions make up for the difference in the cost of benefits (see Figure 6).

Figure 6. Employer and Employee Contribution Rates for Defined Benefit Plans, by Sector, 2006



Note: The state and local employer contribution rate reflects the average annual rate from 2002 to 2006 for Social Security eligible employees only. The rates for those without Social Security averaged 10.5 percent for the employer and 8 percent for the employee.
Sources: Brainard (2007); Munnell and Sundén (2004); and Munnell and Soto (2004).

The ability of states and localities to increase employee contributions is severely limited in the short run. As discussed in the context of benefits, many state courts have ruled that the public employer is prohibited from modifying the plan. The only way, in many instances, to raise additional funding from participants is to require higher contributions from new employees. Thus, if contributions need to be increased, the money will come primarily from taxpayers.

Conclusion

Public sector plans, like their private sector counterparts, have been hit by the financial tsunami. Before the crisis, most public plans were on a path to full funding as recommended by GASB, but the tsunami has thrown them off course. What they do next depends on what happens to asset values. Under our pessimistic assumption, where equities remain at their current values for the next five years, their assets will amount to only 59 percent of liabilities at the end of the period. To avoid such an outcome, public plan sponsors will be forced to increase their contribution rates. But because these sponsors have a buffer – the ability to smooth asset values over five years – they will not be forced to raise contributions just as state and local tax revenues plummet in the midst of a serious recession. Under the more optimistic assumption that equities return to their peak October 9, 2007 values by the end of 2010, assets will equal 75 percent of liabilities after five years. With this better outlook, some poorly funded plans may be forced to increase their contributions, but others may be able to avoid a hike. In the end, taxpayers will foot the bill from any permanent damage caused by the financial crisis, because it is not possible to cut benefits or raise contribution rates for current participants in public plans.

Endnotes

1 In both cases, the percentage covered has remained virtually unchanged since the late 1970s.

2 See Munnell and Soto (2007).

3 From 2001-2007, the state and local workforce fluctuated between 16.0 and 16.7 percent of the size of the private workforce (see U.S. Bureau of Labor Statistics 2008).

4 Table 1 includes the holdings of IRAs because, even though they are not employer-sponsored, most of the money is rollovers from 401(k)s. See Investment Company Institute (2008).

5 Fidelity Investments (2007) and Vanguard (2008). Equity holdings as a percent of assets may be somewhat lower in Individual Retirement Accounts.

6 Steffen (2001).

7 CalPERS has also taken a hit on its residential real estate investments. See Jacobius (2008).

8 The calculation of 2008 public sector defined benefit funding status was based on data from the Center for Retirement Research at Boston College's 2006 *State and Local Public Pension Survey* and the Wilshire Associates (2008). The calculations began with the market value of assets from the 2006 *Survey*. Monthly fluctuations in the Dow Jones Wilshire 5000 Index were applied from the fiscal year end date through October 9, 2008 (one year after the peak of the stock market). After 2008, we projected asset levels under a pessimistic and an optimistic scenario. For the optimistic scenario, it was assumed that 2008 assets would return to their 2007 levels by the end of 2010, and then continue to grow at 8 percent per annum from 2011-2013. In the pessimistic scenario, assets were assumed to grow at 4 percent annually from 2009 onward. In both scenarios, throughout the whole period, it was assumed that plans continued to experience net flows of $40 billion, based on the average net asset acquisition in the Flow of Funds from 1997-2007 (Federal Reserve, 2008).

9 A higher discount rate reduces the present value of plan obligations while higher projected wage growth

raises the present value of plan obligations. The standard yardstick for gauging these offsetting effects is the difference between the two assumptions – the discount rate less projected wage growth. The greater the difference, the smaller would be the reported value of pension liabilities. As reported in Munnell and Soto (2007), the difference between the discount rate and projected wage growth was larger in private plan valuations from 1996 through 2002, and in 2006 was roughly the same.

10 It is unclear whether the increase in rates caused by financial panic should be incorporated in the actuarial calculation.

11 This amortization period applied to both the plan's "initial" underfunding and any subsequent underfunding created by benefit increases attributed to "past service."

12 U.S. Government Accountability Office (2008).

13 Orange County is an exception in that it declared bankruptcy in 1994, but public sector employees did not forfeit any benefits (see Jameson 2001). In contrast, observers are closely watching the City of Vallejo case. Vallejo declared bankruptcy in May 2008 as a result of spiraling payroll costs and declining revenues. A month later, Vallejo asked a judge to void all four of its employee labor contracts (see Jones 2008). Voiding employee contracts would set the stage for reducing wages and benefits prospectively.

14 Full funding of public sector pensions may result in variations in state tax rates over time, and, if taxpayer utility is maximized at a constant tax rate, this may not be optimal. D'Arcy, Dulebohn, and Oh (1999) calculate optimal funding levels for selected states that, depending on the relative growth rates of pension obligations and the tax base, may be greater or less than one. Mumy (1978) also explored optimal funding in state and local pensions.

15 Some of these experts also suggested that it might be unwise politically for a plan to be overfunded – that is, have a ratio of assets to liabilities in excess of 120 percent – because the excess funding could become appropriated by politicians for other purposes or used as an excuse to increase benefits. See U.S. Government Accountability Office (2008).

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The Center for Retirement Research thanks AARP, AIM Investments, Bank of America, Deloitte Consulting LLP, ING, John Hancock, MetLife, Nationwide Mutual Insurance Company, Prudential Financial, State Street, TIAA-CREF Institute, and T. Rowe Price for support of this project.

The research reported herein was supported by the Center's Partnership Program. The findings and conclusions expressed are solely those of the authors and do not represent the views or policy of the partners or the Center for Retirement Research at Boston College.