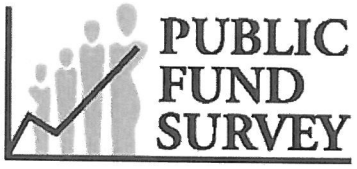

Public Fund Survey Summary of Findings for FY 2009

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Executive Summary

The second sharp decline in the value of equities this decade caused public pension funding levels to also go down, to 80 percent in FY 09 from 85 percent in FY 08. This measure was taken near the low point of capital market valuations, particularly global equities, for the majority of plans in the Survey that have a fiscal year-end date of June 30.

The value of public pension trust fund assets, from which state and local government pension plans pay benefits, have rebounded sharply since their mid-2009 low, and these gains are helping to offset the effects of the market decline: 20 months after reaching its recent low point in March 2009, the S&P 500 is higher by 80 percent. Yet, because nearly all public pension plans phase in their investment gains and losses over several years, the full extent of the market drop will be incorporated into public plan funding levels over several years.

Aggregate public pension funding levels are likely to continue to drift lower through FY 13. Assuming that investment returns remain in a normal range, and assuming that plan sponsors maintain their ARC effort, funding levels are projected to begin to improve following FY 13.

For many pension plans, the higher unfunded liabilities resulting from the market decline are increasing their Annual Required Contribution (ARC)—the sum of the cost of benefits accrued in the current year and the cost to amortize unfunded liabilities. Consistent payment of the ARC is intended to bring the plan to full funding by the end of the funding period. The ARC experience of plans in the Survey in FY 09 was consistent with previous years: the average ARC received was 88 percent, but four of every 10 plans in the Survey continue to receive less than 90 percent of their full required contribution. The average ARC paid since inception of the Public Fund Survey in FY 01 is 91 percent.

The Center for Retirement Research at Boston College, in an April 2010 issue brief, found that, for the public pension community as a group, receiving the full ARC would require additional pension contributions of two percent of payroll, an amount that varies by plan.[i]

Many plan sponsors made changes this year to benefit levels, financing arrangements, or both, to ameliorate the effects of increased unfunded liabilities. In some cases, these changes affected new hires only; other changes affected existing plan participants. Notably, legislatures in three states—Colorado, Minnesota, and South Dakota—took significant action to lower unfunded liabilities by reducing future cost-of-living adjustments for existing retired plan participants. These actions reduced the plans' respective unfunded liabilities and prompted legal challenges that remain pending.

The pattern of changes to plan designs and financing arrangements is likely to continue in 2011.

About the Public Fund Survey

The Public Fund Survey is an online compendium of key characteristics of most of the nation's largest public retirement systems. The Survey is sponsored by the National Association of State Retirement Administrators and the National Council on Teacher Retirement.

Beginning with fiscal year 2001, the Survey contains data on public retirement systems that provide pension and other benefits for 13.4 million active (working) members and 6.9 million annuitants (those receiving a regular benefit, including retirees, disabilitants and beneficiaries). As of FY 09, systems in the Survey hold assets of $2.1 trillion, an amount that has increased due to improvements in capital markets in 2009-10.[1] The membership and assets of systems included in the Survey comprise approximately 85 percent of the entire state and local government retirement system community.

The primary source of Survey data is public retirement system annual financial reports. Data also is taken from actuarial valuations, benefits guides, system websites, and input from system representatives. The Survey is updated continuously as new information, particularly annual financial reports, becomes available. This report focuses on fiscal year 2009, for which data is reported for 99 of the 101 systems in the survey.

A key objective of the Survey is to increase the transparency and understanding of the public pension community and public pension funding concepts by providing a factual and objective basis on which to discuss many issues related to retirement benefits for public employees. The Survey is accessible online at www.publicfundsurvey.org.

This Summary of Findings provides objective descriptions and perspective regarding key areas of public pension activity, such as changes in plans' funding condition, membership, investment returns, and contribution rates.

Overview of the public pension community

A 2007 study by the U.S. Government Accountability Office reported that employees of state and local government comprise 12 percent of the nation's full-time workforce. These employees perform a broad range of functions in such roles as public school teachers and administrators, firefighters, judges, police officers, public health officials, correctional officers, transportation workers, game wardens, nurses, engineers, health inspectors, bus drivers, procurement specialists, computer programmers, custodians, and others.

The Public Fund Survey captures key information from public retirement systems that account for some 85 percent of all public pension assets and participants in the U.S.

Retirement benefits play a key role in attracting and retaining qualified employees needed to perform essential public services. Pension plans provide stable and adequate income replacement in retirement for long-term workers, and ancillary casualty benefits related to disability and death before retirement. Unlike government programs funded out of general revenues, state and local government retirement systems generally are funded in advance, by investing employee and employer contributions during employees' working years. Most of these benefits are distributed in the form of a lifetime payout in retirement. This arrangement allows for long-term financing and the majority of revenues to be generated from

[1] As of 6/30/10, according to the Federal Reserve of the U.S., the aggregate value of state and local government defined benefit plan assets was $2.6 trillion,

investment earnings and employee contributions, while also ensuring retirees do not outlive their retirement assets.

The long-term nature of pension finance requires funding and asset allocations to be evaluated regularly to ensure that plans and benefits are sustainable over a long time horizon and continue to accommodate the changing needs of the workforce and policy goals of the sponsoring government.

As with virtually all investors, market volatility in recent years has affected public pension funds. Public pension plans are designed to withstand volatility: even after the market decline, through the use of strategies such as portfolio diversification, long investment and funding horizons, actuarial smoothing of investment gains and losses, and pooling of assets, the vast majority of public pension plans remain able to pay promised benefits to retirees for decades into the future.

Following the steep market losses through March 2009, the median public pension fund return for the year ended March 31, 2010, was 32.6 percent. As of November 2010, since reaching its recent low point in March 2009, the S&P 500, a widely-used measure of U.S. equity markets, has grown by more than 80 percent. Although this is not enough to offset all of the losses experienced in the market decline, this sharp increase helps illustrate the importance of a long-term investment focus and strategies, as well as the value of phasing in investment gains and losses to moderate volatility in funding levels and costs.

Most plans use a five-year smoothing period (see Figure I) to phase in investment gains and losses. This will extend through 2013 the period during which the recent investment losses are incorporated into public pension funding levels. Plans that use smoothing periods longer than five years will, of course, take longer to recognize their losses, as will those whose actuarial valuation date lags their fiscal year-end date.

Effects of the 2008 market decline

The market decline that took place in the second half of 2008 and lasted through early March 2009, is increasing unfunded liabilities—and the cost of amortizing them—for most public pension plans. The extent of the resulting increases in required contributions varies by plan and depends on several factors, especially the plan's funding condition prior to the market decline; the adequacy of contributions to the plan by employers and employees; and the plan's demographic composition. The cost to amortize unfunded liabilities is also affected by the plan's actuarial methods, assumptions, and past and future investment returns.

Twenty months after reaching its recent low point in March 2009, the value of the S&P 500 has increased by more than 80 percent.

Roughly three-fourths of the systems in the Public Fund Survey have a fiscal year-end date of June 30; most of the remaining systems have a fiscal year-end of December 31. The lag time between an actuarial event and a plan's actuarial valuation date, combined with other strategies employed to cushion the effects of market volatility, serve as an early warning signal of the future direction of the plan's funding level and required cost, giving plan administrators and policymakers an opportunity to plan and budget for changes to contribution rates and, if necessary, to benefit levels and financing arrangements.

The higher costs resulting from the market decline have begun to materialize. In many cases, these higher required contributions are coming due at a time when revenue for most states and political subdivisions is stagnant or lower, complicating the ability of pension plan sponsors to fully fund their

pension costs. In 2009 and 2010, an unprecedented number of public pension plan sponsors have responded to higher pension costs by raising contributions for employees or employers, or both; and reducing benefits, in some cases for existing plan participants.

Three states—Colorado, Minnesota, and South Dakota—in 2010 reduced future rates of automatic cost-of-living adjustments for both existing and future retired members. These actions significantly reduced the affected plans' unfunded liabilities and are expected to result in notable improvements in the plan's funding levels. These actions also prompted legal challenges that remain pending, and the outcome of which will add to the body of public pension legal protection case law.

According to the National Conference of State Legislatures, at least dozen other states increased contribution rates for some groups of current or future plan participants, and several other states enacted combinations of higher retirement ages, lower retirement multipliers, or more years of service required to qualify for a retirement benefit.[ii]

Another notable change among states has been establishment of hybrid, or combination retirement plans, which feature elements of both defined benefit and defined contribution plans. For example, this year, legislation was approved in Utah that requires all newly-hired public employees hired after June 2011 to choose between a hybrid plan and a defined contribution plan. Also, effective July 1, 2010, all newly-hired public school employees in Michigan participate in a hybrid plan.

The Related Resources section and Appendix C provide information regarding many of the changes made to benefit levels and contributions. Authority to revise benefit and financing arrangements varies widely among states, depending on a combination of constitutional and statutory provisions and case laws. In some cases, policymakers may modify future benefit accrual patterns for existing plan participants. In other cases, once an employee has begun participating in the pension plan, the employee is entitled to continue to accrue benefits for the duration of her or his employment with the plan sponsor, with little or no change permitted. [iii]

Most public pension plans contain these key characteristics:

- ***mandatory participation***
- ***mandatory annuitization***
- ***pooled assets that are professionally invested***
- ***cost-sharing of contributions by employees and employers.***

Pensions and retirement security

The future retirement security of Americans employed outside the public sector appears increasingly uncertain. This is due to a number of factors, including a sharp decline in the portion of the private sector workforce that has access to a traditional pension plan; heavy reliance on defined contribution plans, a retirement plan model that has been found to be undependable in its ability to provide reliable retirement income; a large number of employers that do not sponsor a retirement benefit; and, among those employers that do sponsor a retirement benefit, relatively low rates of participation among employees.

By contrast, some 87 percent of employees of state and local government participate an employer-sponsored retirement benefit.[iv] Retirement plans in the public sector generally contain the following key characteristics:

- mandatory participation
- mandatory annuitization, meaning that retiring participants must take their benefit as a lifetime annuity

- pooled assets that are professionally invested
- cost-sharing of contributions by employees and employers.

These plan design features promote retirement security by a) helping ensure that workers actually participate in the employer-sponsored retirement plan; b) increasing the number of retiring workers who take their retirement assets as a lifetime annuity; c) minimizing administrative and investment costs; and d) maintaining the fund's stream of revenue and reducing taxpayers' costs.

Also, according to one study, by pooling assets and risk and generating higher investment returns for all plan participants, defined benefit plans deliver the same retirement benefit at nearly one-half of the cost of a defined contribution plan.[v] DB plans also are designed to assist public employers to attract and retain workers needed to perform essential public services; to promote an orderly turnover of workers, particularly among those who have reached an age at which they may be unable to perform the duties required of their position; and to enhance the retirement security of a large segment of the nation's workforce.

The Meaning and Implications of Actuarial Funding Ratios

The most recognized measure of a public retirement plan's ability to meet current and future obligations is its actuarial funding ratio, derived by dividing the actuarial value of a plan's assets by the value of its liabilities. Pension benefits for public employees usually are funded in advance, meaning that a significant portion of the assets needed to fund pension liabilities is accumulated during an employee's working life, which is paid during the participant's years in retirement.

Such "pre-funding" is one way of financing a pension benefit. The opposite of pre-funding is pay-as-you-go, an arrangement under which current benefit obligations are paid with the pension plan sponsor's current revenues. In most cases, a pay-as-you-go pension plan eventually becomes too expensive to support with only current receipts and contributions. By contrast, investment earnings account for most revenue generated by a pre-funded pension plan, reducing required contributions from employees and employers (taxpayers).

Funded status is a spot measure of the degree to which a plan is on course to meet a distant goal. A pension plan whose assets equal its liabilities at one point in time, is funded at 100% and considered to be *fully funded.* A plan with assets less than its accrued liabilities at one point in time is considered *underfunded.*

Underfunding is a matter of degree, not of kind: the status of a plan whose funding level declines from 101 percent in year one to 99 percent the following year, changes from overfunded to underfunded. Yet despite this diametric shift in terminology, the reality of the plan's funding condition has changed little. The fact that a plan is underfunded is not necessarily a sign of fiscal or actuarial distress; many pension plans remain underfunded for decades without causing fiscal stress for the plan sponsor or reducing benefits to current beneficiaries.

The critical factor in assessing the current and future health of a pension plan is whether or not funding its liabilities creates fiscal stress for the pension plan sponsor. Although a pension plan that is fully funded is preferable to one that is underfunded, other factors held equal, a plan's funded status is simply a snapshot in a long-term, continuous financial and actuarial process. A plan's funding level is akin to a single frame of a movie that spans decades.

Because public pensions are "going concerns," operating essentially as perpetual entities, there is nothing particularly important about being fully

funded at any particular point. Likewise, the fact that a plan is underfunded does not necessarily present a fiscal or actuarial challenge to the plan sponsor.

The effect of the 2008 market decline was sufficient to prompt most plans to evaluate whether adjustments are required with respect to their level of benefits and financing structure in order to regain long-term actuarial solvency, and changes have been made to benefit levels and contribution rates for many plans in order to restore or preserve their long-term sustainability.

Attaining full funding of a pension plan has been likened to a mortgage: at the end of the process, when fully paid, the mortgage would be considered fully funded. Although at any point during the 30-year mortgage, the outstanding liability may be considered an unfunded liability, more relevant considerations are a) whether the mortgage holder has the resources to continue making payments until the obligation is resolved; and b) whether the obligation is indeed being amortized. The size of a mortgage-holder's outstanding obligation reveals little about the holder's financial condition. The length of the mortgage and the ability of its owner to amortize the obligation without financial hardship are more relevant indicators. Likewise, more pertinent considerations with regard to funding a public pension plan are the ability of the plan sponsor to continue to pay promised benefits and to make required contributions without causing fiscal stress, and whether the plan's unfunded liability is being amortized.

All plans, underfunded and fully funded alike, that are open to newly hired workers, rely on future contributions and investment returns. A key difference between underfunded and fully funded plans is that underfunded plans require additional revenue to amortize the shortfall between assets and accrued liabilities. The degree of underfunding and its associated cost to the plan sponsor are key considerations in assessing a plan's overall condition.

Other factors indicative of a pension plan's health include the:

- length of the funding amortization period
- required current and future contribution rates
- plan's demographics
- plan's actuarial assumptions
- sustainability of the plan design
- plan's governance structure
- fiscal health of the plan sponsor
- commitment of the plan sponsor to continue funding the plan

Information about these factors is provided in annual reports and other material published by most public retirement systems.

Recent Changes in Funding Levels

Figure A summarizes aggregate assets and liabilities and the resulting actuarial funding ratio for plans in the Public Fund Survey, showing that the aggregate public pension funding level declined in FY 09 from 85.0 percent to 79.8 percent.

This decline continues a trend that began in FY 02 following the 2000-2002 investment market drop. In addition to investment returns, rates of liability growth (as shown in Figure F) also have a major effect on funding levels.

Public pensions are designed to absorb volatility in actuarial experience, including variations from expected levels of investment performance. This is achieved through the use of actuarial smoothing methods, which phase in investment gains and losses; funding amortization periods (that average approximately 25 years for plans in the Survey), which are timeframes during which unfunded liabilities are paid off; and through use of a discount rate that is based on historic and projected long-term investment returns.

Figure A: Change in aggregate actuarial value of assets, liabilities, and funding levels, FY 01 to FY 09

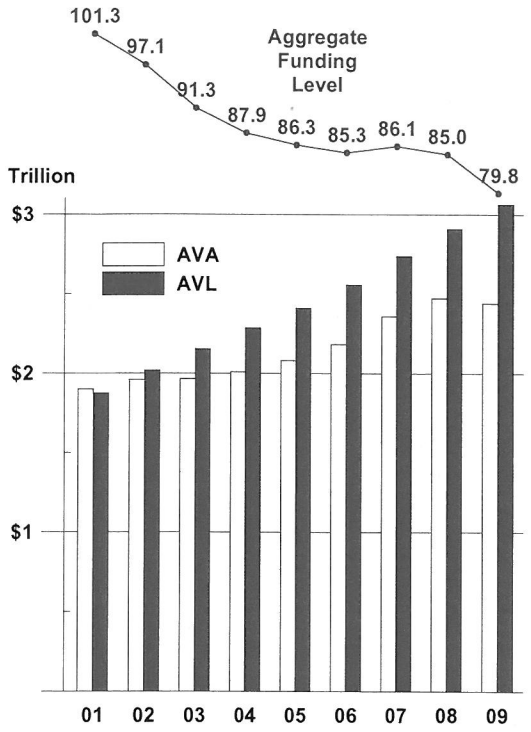


Figure B shows the change in the aggregate public pension funding level since 1990. As a result chiefly of changes in equity values, funding levels improved sharply during the 1990s before beginning their decline in FY 01.

Figure B: Change in aggregate public pension funding level, FY 90 to FY 09

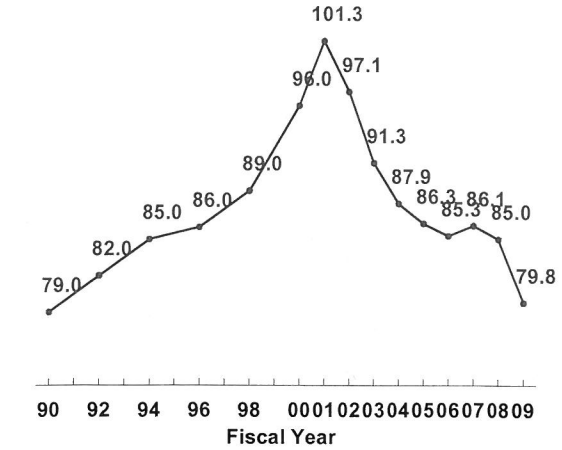


Figure C illustrates the latest actuarial valuation dates of the plans in the Public Fund Survey, along with the daily close of the S&P 500 from July 1, 2005 to June 30, 2010. Since equities are the largest single asset held by most public pension funds, the S&P 500 provides a reasonable proxy for public pension fund investment returns. This chart provides an indication of how many plans have incorporated at least a portion of the change in asset values experienced in the last couple of years.

As Figure C shows, 72 of the 126 plans in the Public Fund Survey have reported results of actuarial valuations conducted after the sharpest portion of the market decline, which took place in the second half of 2008. As valuations are conducted for the remaining plans, and as lower asset values are "smoothed" into the calculations of plans that phase in investment gains and losses (see Figure I), funding levels will continue to gradually decline until all the investment losses have been recognized.

Investment returns that exceed plan assumptions in the years following the market drop will offset the investment losses.

Figure C: Daily close of the S&P 500 and latest reported actuarial valuation dates for plans in the Public Fund Survey

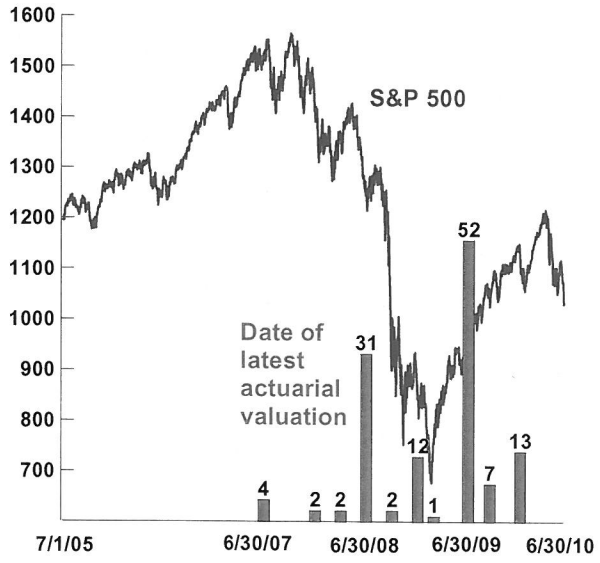
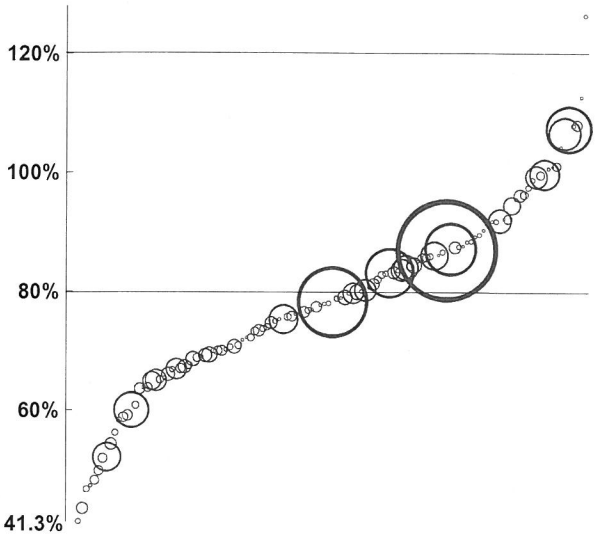


Figure D plots funding levels of the 126 plans in the Survey. The size of each circle on the chart is roughly proportionate to the size of the plan's liabilities: larger bubbles signify larger plans, and smaller bubbles indicate smaller plans.

Roughly three-fourths of systems in the Survey use a fiscal year-end date of June 30 and most other systems have a FY-end date of 12/31.

Figure D: Distribution of actuarial funding levels for plans in the Public Fund Survey, based on latest available data

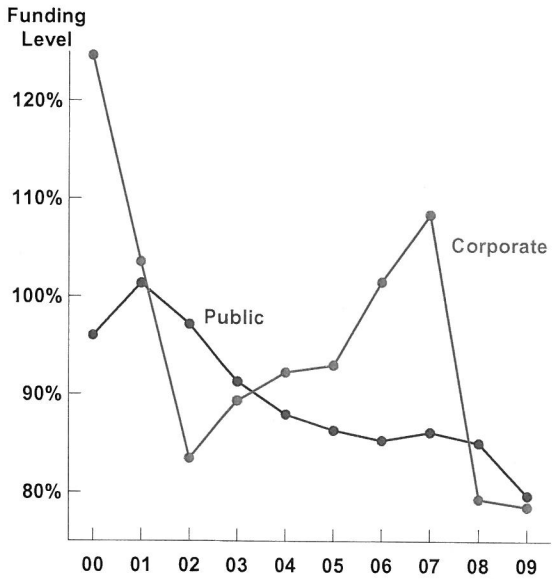


In contrast to pension plans sponsored by states and local governments, corporate pension plans operate under federal regulations known as ERISA. These laws are more restrictive in allowing corporate plans to moderate the effects of market volatility and required changes in plan costs. Unlike public sector entities, which are considered 'going concerns,' a corporation can be acquired or declare bankruptcy, or their pension plans can be terminated, leaving the cost of unfunded liabilities to future shareholders or to taxpayers. In part to forestall such events, corporate accounting standards and federal laws a) prescribe how required contributions are calculated; b) tie contribution requirements to current interest rates (rather than long-term investment return assumptions, which public plans use); and c) limit the period over which corporate pension plans may smooth investment gains and losses and amortize its unfunded liabilities.

As a result of ERISA regulations and private sector accounting standards, the aggregate funding level and required employer costs of corporate plans are significantly more volatile than for public plans.

Figures E and F illustrate the contrast in funding levels and contributions between corporate and public pension plans. The volatility and uncertainty of required costs for corporate pensions has been identified as a major factor in the decision by many corporations to freeze or terminate their pension plan. By contrast, due to their status as "going-concerns," public pension plan funding levels and contributions are designed to absorb change more slowly, resulting in more moderate year-to-year changes in funding levels and costs.

Figure E: Comparison of corporate and public pension funding levels, FY 00 to FY 09

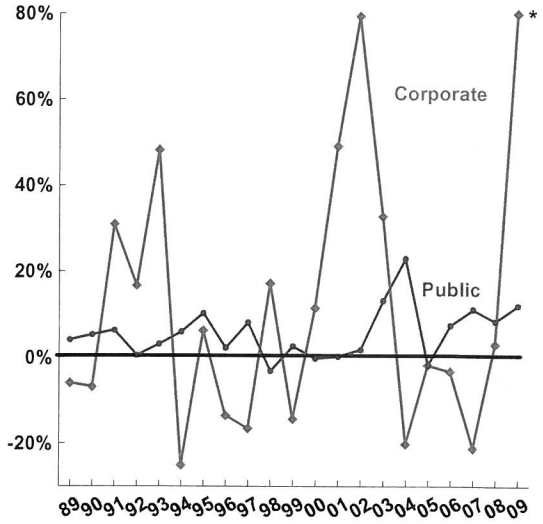


Wilshire, Milliman, and Public Fund Survey

A number of recent studies have reported public pension unfunded liabilities and funding levels on the basis of measures in place for corporate pension plans. Due especially to low current interest rates,

these studies predictably find unfunded public pension liabilities that are much larger, and funding levels that are far lower, compared to what they are when measured on the basis of public pension methods and assumptions permitted under prevailing standards.

Figure F: Comparison of change from prior year in corporate and public pension contributions, 1989-2009



US Dept of Labor,
US Census Bureau,
Milliman

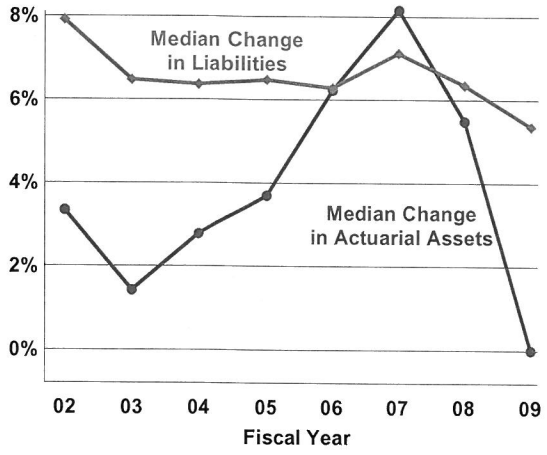
*Estimate

The Governmental Accounting Standards Board has been reviewing its statements used to calculate and report public pension liabilities, known as the PEB (Post Employment Benefits) project. In June 2010, GASB issued its Preliminary Views on the project, which reaffirmed, tentatively, the current method for measuring liabilities, with a relatively minor change, rejecting the view that public pensions should calculate and report their liabilities on the basis of methods used by corporate plans. GASB is expected to release the next PEB review document, known as an Exposure Draft, in 2011. The ED is a nearly-final decision of GASB's views on these statements.

For a plan's funding level to improve, the rate of growth in assets must exceed the rate of growth in liabilities. Liability growth is affected by a variety of factors, including changes in salary and benefit levels, and demographic changes in plan participants, such as rates of mortality or retirement. As Figure G shows, median liability growth in FY 09 significantly exceeded growth in assets, which produced the predictable outcome of a lower funding level.

Liability growth has generally been trending lower in recent years, due to such factors as lower salary growth and approval of fewer discretionary cost-of-living adjustments. Lower salary growth has been driven in part by furloughs, which were imposed by nearly one-half of the states in 2010. Due to investment losses, the value of assets has risen at a much slower pace, and is projected to be lower in FY 10 as more of those losses are incorporated into valuations.

Figure G: Median change from prior year in actuarial value of assets and liabilities



Although comparing public pension funding levels with other plans may be tempting, one should also be mindful of the limitations of such comparisons. Important differences can render comparisons misleading. Such differences include the:

- level of required employee and employer contributions;
- plan sponsor(s)' commitment and ability to make required contributions;
- fiscal condition of the plan sponsor;

- plan's demographic makeup;
- level of benefits provided by the plan;
- plan's governance structure, including the ability (or inability) to modify the plan design and financing structure;
- plan sponsor's level of support for the pension plan;
- plan's amortization period(s);
- required benefit payments in the current and future years relative to the plan's asset base; and
- the pension fund's investment performance, risk tolerance, asset allocation, and expected investment return
- the plan's actuarial methods and assumptions.

Analysis of a public pension plan's financial or actuarial condition must take these and other factors into account; failure to do so creates a risk of misunderstanding or misrepresenting the plan's true condition.

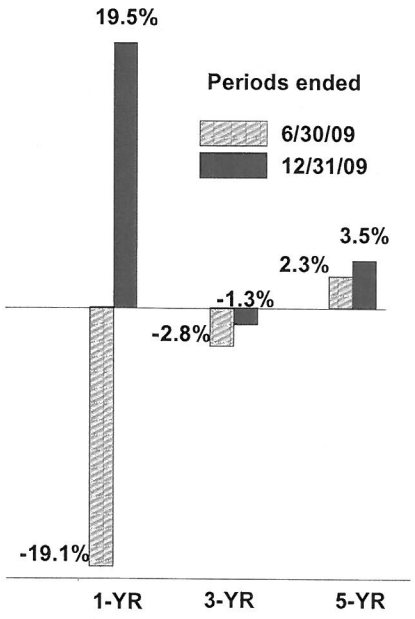
Investment returns and future funding levels

Over time, investment earnings are a major driver of a public pension plan's funding condition: from 1982 through 2009, investment earnings accounted for 60 percent of all public pension revenue.[vi]

Figure H plots median public pension fund investment returns for the one-, three-, and five-year periods ended as of 6/30 and 12/31. This chart reflects a bit of the remarkable volatility of investment markets in recent years, as well as the poor returns over the past five years.

Due primarily to poor returns in recent years, and especially the market decline of 2008-09, the aggregate public funding level is projected to decline through 2013. Assuming that capital market returns are at or above assumed benchmarks, the aggregate funding level is expected to bottom out at around 70 percent. The market losses of 2008 have been partially offset by improving investment returns since U.S. equity markets reached their recent low point in March 2009. This volatility in asset values also helps to illustrate the importance of phasing in investment gains and losses.

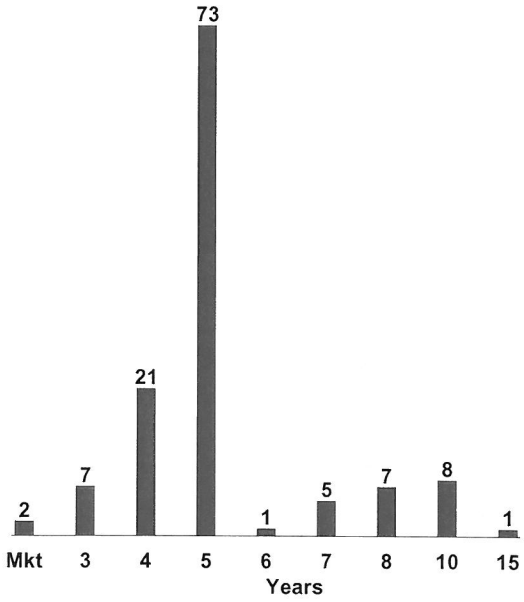
Figure H: Median annual public pension fund investment returns (in percent) for years ended 6/30/09 and 12/31/09



Source: Callan Associates

Figure I presents the distribution of periods plans use to determine their actuarial value of assets. Five years remains the predominant length of smoothing periods, although more plans are now using periods longer than five years than were several years ago. All plans that use eight years are part of the Washington State Department of Retirement Systems.

Figure I: Distribution of smoothing periods used to calculate actuarial value of plan assets



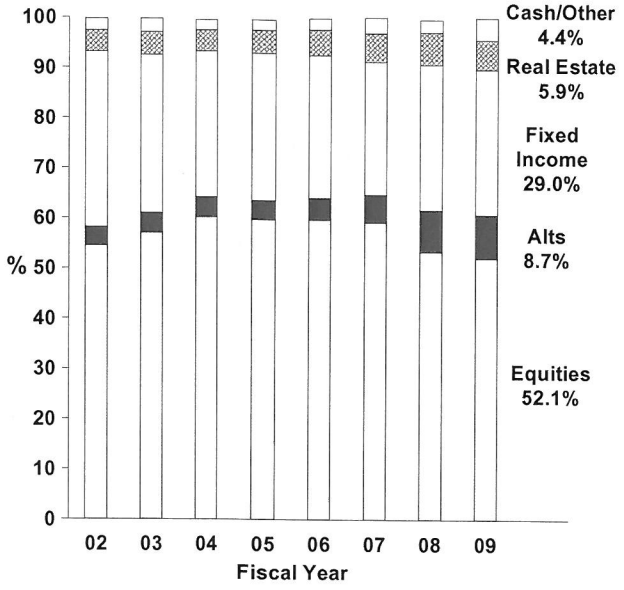
Asset Allocation and Investment Expenses

Figure J compares average asset allocations for funds in the Public Fund Survey from FY 02 through FY 09. While the fixed income allocation has barely changed during this period, increased allocations to real estate and alternatives (chiefly private equity and hedge funds) have occurred by reducing equity allocations. This increased diversification reflects an effort by most public funds to retain expected returns at lower levels of risk, or to increase projected returns at the same level of expected portfolio risk.

The increase in allocations to alternatives, which are mostly private equities and hedge funds, and real estate, are likely the cause of higher expenses public retirement systems have been paying in recent years, as shown in Figure K, which compares median investment expenses in FY 04 and FY 09, by quartile, for the 92 funds in the Survey for which this data is available. A number of public retirement systems have announced in recent months that they are making efforts to negotiate lower fees for these types of investments.

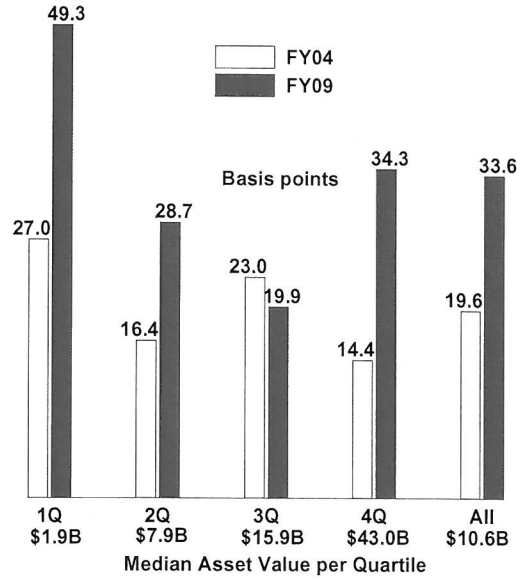
Larger funds usually are able to use their size to negotiate lower asset management fees than smaller funds and individual investors. Perhaps because larger funds are more likely to be invested in alternative classes (which typically cost more to manage than other asset classes), expenses for the largest quartile are higher than those for the third quartile of funds.

Figure J: Average asset allocation, FY 02 to FY 09, with FY 09 averages listed



The median cost to administer plans in the Survey is under 10 basis points, or 0.10 percent of assets. Combined with investment management costs, the total cost of administering a typical public pension plan is less than 50 basis points. This is considerably less than the cost of a typical defined contribution plan, whose costs generally are 1.25 percent to 2.0 percent of assets.

Figure K: FY 04 and FY 09 median investment management expenses, by quartile

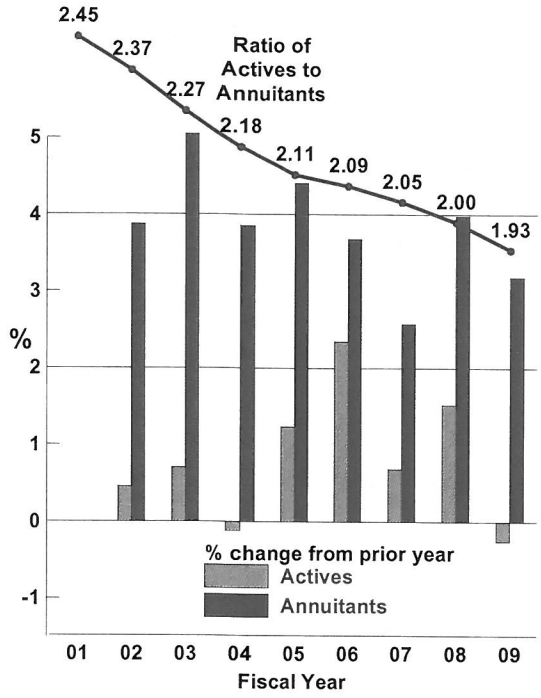


Membership Changes

The Survey tracks two groups of members: actives, who are working and currently receiving service credit in their retirement plan; and annuitants, which includes any member receiving a regular benefit from the system: retirees, beneficiaries and disabilitants.

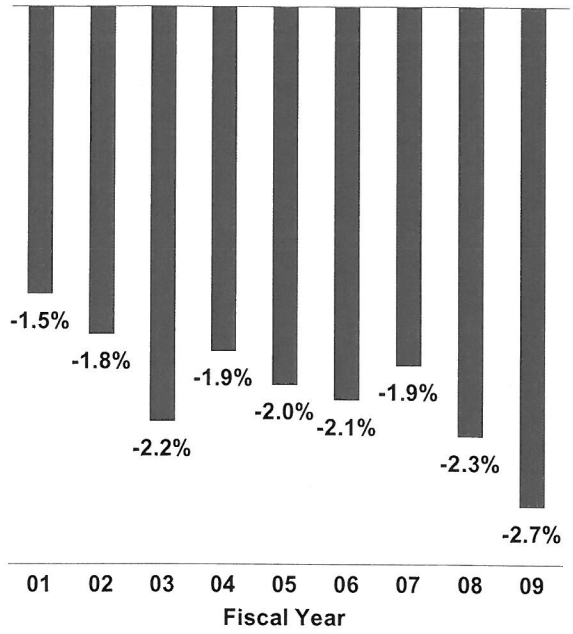
Figure L summarizes the percentage changes from the prior year in these membership groups from FY 01 to FY 09. Due largely to the gradual aging of the public sector workforce and to slow rates of employment growth among states and local government, the rate of growth in annuitants has been outpacing the rate of growth in active (working) members in recent years. As the chart shows, the ratio of actives to annuitants has declined from 2.45 in FY 01 to 1.93 in FY 09. The number of annuitants among plans in the Public Fund Survey has increased since FY 01 by 35 percent, compared to growth in actives of less than seven percent.

Figure L: Percentage change over prior year in active members and annuitants, FY 01 to FY 09, and change in ratio of actives to annuitants



By itself, a declining ratio of actives to annuitants does not indicate a problem, because most public pensions fund the cost of their benefits in advance. However, to the extent that a plan is underfunded, a low or declining ratio of actives to annuitants can complicate the plan's ability to move toward full funding, as amortizing unfunded liabilities over a smaller payroll base becomes relatively more expensive. An extreme example of this is evident in the case of pension plans that are closed. If a closed plan has an unfunded actuarial liability, its cost as a percentage of payroll will rise, often precipitously, as the liability is distributed among a diminishing pool of active participants.

Figure M: Median external cash flow for systems in the Public fund Survey, FY 01 to FY 09



A declining ratio of actives to annuitants also can have financial and operational effects on a retirement system. For example, fewer active members create a larger negative cash flow (contributions minus benefit payments and administrative expenses). At a certain point, a negative external cash flow can require a pension fund to allocate a larger percentage of its assets to more liquid securities, or to make other adjustments to its asset allocation which may reduce long-term investment returns. Also, as a group, annuitants tend to require more time and attention than actives from the retirement system staff. This is likely because annuitants are reliant, to some degree, on current income from the system, and are more attuned to the system's activities and operations.

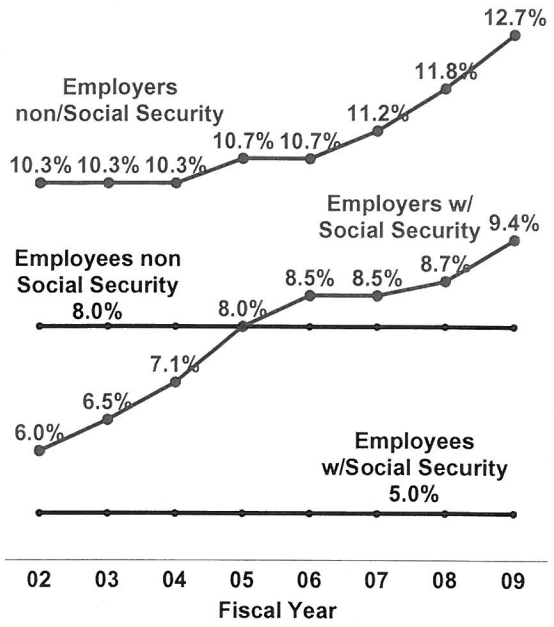
Figure M displays the median external cash flow among systems in the Public Fund Survey. External cash flow is the difference between a fund's contributions received and the fund's required expenditures (chiefly benefits and administrative expenses). Ninety-one of the 97 systems (94 percent) whose external cash flow was measured in FY 09, had a negative external cash flow.

Although "negative cash flow" may provoke negative connotations, paying out more in benefits than it receives in contributions is a normal development in the evolution of a pension plan: assets are accumulated through contributions, increased through investment earnings, then paid out in the form of benefits. As a workforce ages, a pension plan eventually will distribute more in benefits than it takes in from contributions. Most public pension plans are in this stage now.

Contribution rates and Annual Required Contributions

Most employees of state and local government are required to contribute toward the cost of their retirement benefit. According to the U.S. Census, from 1982 to 2008, contributions from employees and employers accounted for approximately 14 and 28 percent, respectively, of public pension fund revenues, with investment earnings making up the remaining 58 percent.[vii] In most cases, contribution rates for employees are set as a fixed percentage of pay. In some plans, employee contribution rates vacillate. Employee contributions are the most stable source of public pension revenue, and they perform an important function by providing a reliable and predictable stream of revenue that most plans use to fund current benefits. Figure N plots median contribution rates for employers and employees since FY 02 for general employees and school teachers. This data does not include public safety personnel, such as firefighters and police officers, or narrow employee groups, such as legislators or judges.

Figure N: Median employee and employer contribution rates as a percentage of pay, Social Security-eligible workers, FY 02 to FY 09



Median employer contribution rates for workers who participate in Social Security rose to 9.4 percent of pay, and to 12.7 percent of pay for employers whose participants do not participate in Social Security. The median employee contribution rates remained five percent of pay for Social Security-eligible workers, and eight percent for non-Social Security-eligible.

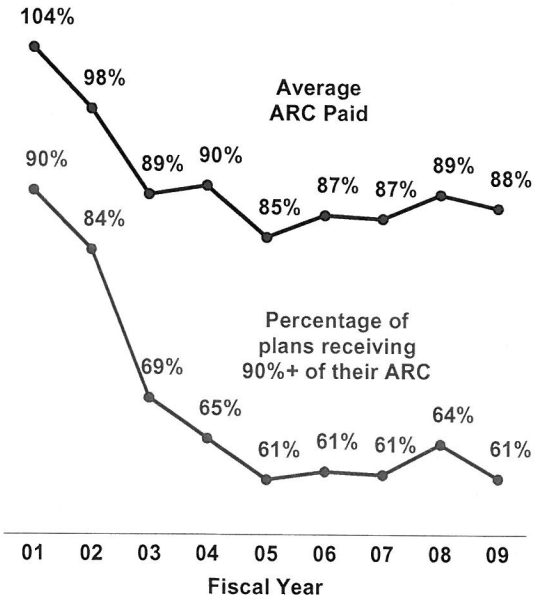
Approximately one-fourth of all employees of state and local government do not participate in Social Security, including nearly one-half of public school teachers, a majority of firefighters and police officers, and most or substantially all public employees in Alaska, Colorado, Louisiana, Maine, Massachusetts, Ohio, and Nevada. Contribution rates usually are higher for non-Social Security eligible employers and workers, because benefits usually also are higher to offset the lack of Social Security.

"Employee contributions are the most stable source of public pension revenue, and they perform an important function by providing a reliable and predictable stream of revenue used to fund current benefits."

Employers and employees participating in non-Social Security plans each avoid the 6.2 percent contribution used to fund Social Security, but they are required to pay the 1.45 percent Medicare contribution.

A plan's annual required contribution, or ARC, reflects the amount needed to fund benefits accrued in the current period (the normal cost) plus the amount needed to retire the plan's unfunded liability over the plan's funding period. Failure to make required contributions is a major contributor to public pension plans' unfunded liabilities. Although many plan sponsors consistently make their full ARC, some consistently fail to make their ARC.

Figure O: Average annual required contribution paid and percentage of plans paying at least 90 percent of their ARC, FY 01 to 09



In a recent study of public pensions, the Government Accountability Office stated that many of the plan sponsors failing to pay their ARC also had plans in relatively poorer funding condition. "[T]he failure of some [plan sponsors] to consistently make the annual required contributions

undermines [funding] progress and is cause for concern, particularly as state and local governments will likely face increasing fiscal pressure in the coming decades. While unfunded liabilities do not generally put benefits at risk in the near-term, they do shift costs and risks to the future." [viii]

Figure O plots ARC history for plans in the Survey on the basis of two measures: the overall average ARC paid, and the percentage of plans receiving at least 90 percent of the ARC. Each plan's ARC experience is equally weighted, meaning that ARC experiences are not weighted by plan size or by the size of required contributions. As Figure O shows, the overall average ARC paid by public plan sponsors in FY 09 was 88 percent, consistent with the levels of the previous six years. Similarly, the percentage of plan sponsors paying at least 90 percent of their ARC also was consistent with the experience of recent years.

Methods for setting employer contribution rates vary; some plan sponsors set the rate on the basis of the ARC; others pay a fixed percentage of employee pay; and others base their contribution simply on how much is available or that can be wrung from the state budget.

Assumptions for Inflation and Investment Return

Among the many actuarial assumptions used to calculate a plan's liabilities, rates of inflation and investment return exert a major effect on plan costs. The assumed inflation rate affects actual and projected wage growth, which is a major driver of benefit levels. Inflation also is one component of the investment return assumption; the other is the assumed real return, which is the investment return net of inflation.

Figure P: Distribution of inflation assumptions

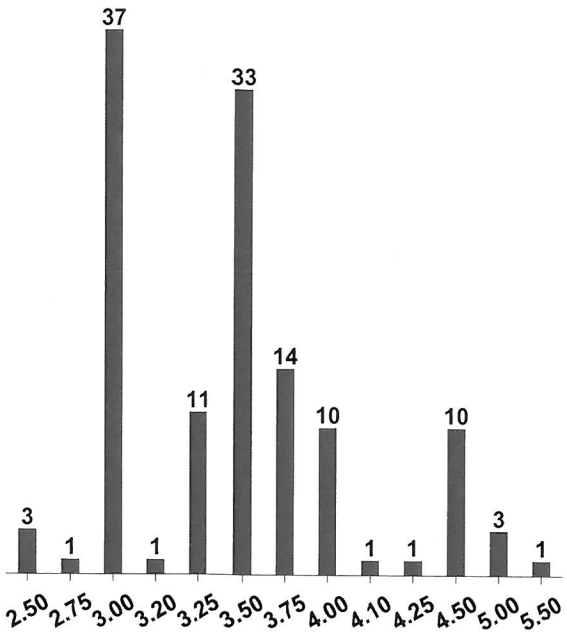
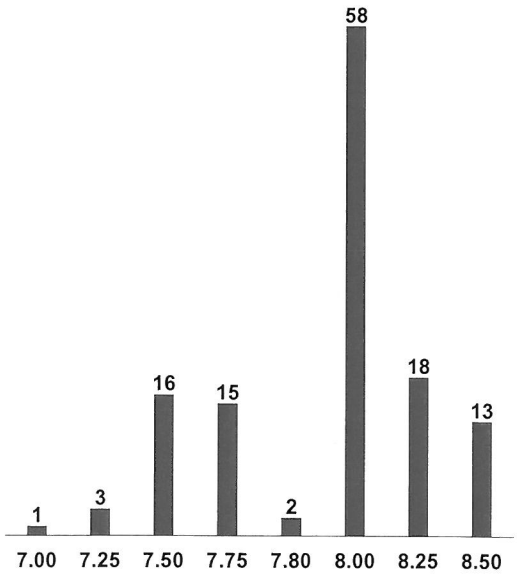


Figure P plots the distribution of inflation assumptions among plans in the Public Fund Survey, based on the latest available data. Many plans have reduced their inflation assumptions in recent years, resulting in a median assumption of 3.5%. Most plans in the Survey use an inflation assumption between 3.0 percent and 3.5 percent. For the 25-year period ended June 2009, the average rate of inflation, based on the most-recognized inflation indicator published by the U.S. Bureau of Labor Statistics, was 2.9 percent.[ix]

Figure Q plots the distribution of investment return assumptions. As with inflation assumptions, investment return assumptions for many plans have been reduced in recent years. In particular, all investment return assumptions in the Public Fund Survey above 8.5 percent have been reduced. The median and modal assumption remains 8.0 percent.

Figure Q: Distribution of investment return assumptions, FY 09



The issue of public pension plan investment return assumptions has received growing attention in recent months, with some critics of the 8.0 percent return assumption charging that that return is unrealistically high. Several plans have reduced their investment return assumption during the last year, and others are considering doing so.

Conclusion

The effects of at least some of the 2008-09 market decline have begun to be incorporated into actuarial valuations for most public pension plans. As market losses are fully incorporated into these valuations, funding levels are likely to trend lower, although the extent of the decline is being offset with investment gains experienced since the market reached its low point in March 2009.

Each public pension plan will have its own actuarial experience and its funding condition will be affected by factors unique to the plan, including its funding condition before the market drop, asset allocation, and its plan sponsors' willingness and ability to pay required contributions.

In response to declining funding levels and rising costs, a growing number of states have made changes to their plans' benefit levels and contribution rates, a response that more states are likely to emulate in the coming months.

End Notes

[i] Center for Retirement Research, "The funding of state and local pensions: 2009-2013" April 2010
[ii] National Conference of State Legislatures, "Pension enactments in state legislatures, 2010"
[iii] Robert Klausner, for NCPERS, "State constitutional protections for public sector retirement benefits,"
[iv] U.S. Bureau of Labor Statistics, National Compensation Survey, March 2010
[v] National Institute on Retirement Security (Almeida, Fornia), "A Better Bang for the Buck," August 2008
[vi] U.S. Census Bureau, "State and Local Government Employee Retirement Systems,"
[vii] Ibid.
[viii] Government Accountability Office, "State and Local Government Retiree Benefits: Current Funded Status of Pension and Health Benefits," January 2008
[ix] Bureau of Labor Statistics, CPI-All Urban Consumers

Related Resources

Government Accountability Office: "State and Local Government Retiree Benefits: Current Funded Status of Pension and Health Benefits," January 2008

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Monahan, Amy, "Public pension plans: The legal framework," University of Minnesota Press, 2010

National Association of State Retirement Administrators/National Council on Teacher Retirement, "Market Declines and Public Pensions," December 2008

_____"Selected Approved Changes to State Public Pensions to Restore or Preserve Plan Sustainability," updated August 2010

National Conference of State Legislatures, "Pension Enactments in State Legislatures, 2010"

National Institute on Retirement Security (Almeida, Fornia), "A Better Bang for the Buck," August 2008

U.S. Department of Labor, Bureau of Labor Statistics (Wiatrowski), "The Structure of State and Local Government Retirement Benefits, 2008," February 2009

Appendix A

State	System	Asset Market Value ($000s)	Active Members	Annuitants	As of FYE
AK	Alaska Public Employees Retirement System	8,535,815	28,850	24,082	6/30/2009
AK	Alaska Teachers Retirement System	3,727,466	8,531	10,026	6/30/2009
AL	Retirement Systems of Alabama	24,011,008	229,866	102,185	9/30/2009
AR	Arkansas Teachers Retirement System	8,802,987	70,655	28,818	6/30/2009
AR	Arkansas Public Employees Retirement System	4,349,812	44,702	24,972	6/30/2009
AZ	Arizona State Retirement System	20,103,261	223,323	99,125	6/30/2009
AZ	Arizona Public Safety Personnel Retirement System	4,115,701	19,867	8,609	6/30/2009
AZ	Phoenix Employees Retirement System	1,409,558	9,317	4,763	6/30/2009
CA	California Public Employees Retirement System	179,373,573	822,805	487,018	6/30/2009
CA	California State Teachers Retirement System	118,430,073	459,009	232,617	6/30/2009
CA	Los Angeles County Employees Retirement Association	30,498,981	95,788	53,069	6/30/2009
CA	San Francisco City and County Retirement System	11,246,080	34,714	22,209	6/30/2009
CA	San Diego County Employees Retirement Association	6,179,829	17,699	13,453	6/30/2009
CA	Contra Costa County Employees Retirement Association	4,476,730	8,942	7,272	12/31/2009
CO	Colorado Public Employees Retirement Association	32,689,201	190,206	84,088	12/31/2009
CO	Colorado Fire & Police Pension Association	2,852,130	9,995	6,469	12/31/2009
CO	Denver Public Schools Retirement System	2,746,176	8,070	6,218	12/31/2009
CO	Denver Employees Retirement Plan	1,585,360	8,614	7,416	12/31/2009
CT	Connecticut Teachers Retirement Board	11,410,680	51,738	28,787	6/30/2009
CT	Connecticut State Employees Retirement System	7,322,780	54,287	32,354	6/30/2009
DC	District of Columbia Retirement Board	3,729,385	10,389	4,219	9/30/2009
DE	Delaware Public Employees Retirement System	5,794,880	42,878	23,127	6/30/2009
FL	Florida Retirement System	96,503,161	668,416	288,216	6/30/2009
GA	Georgia Teachers Retirement System	42,478,583	226,560	82,382	6/30/2009
GA	Georgia Employees Retirement System	12,274,161	112,638	51,283	6/30/2009
HI	Hawaii Employees Retirement System	10,846,789	66,589	36,260	6/30/2008
IA	Iowa Public Employees Retirement System	17,974,038	167,717	89,852	6/30/2009
ID	Idaho Public Employee Retirement System	8,888,352	67,813	32,197	6/30/2009
IL	Illinois Teachers Retirement System	28,497,729	169,158	94,424	6/30/2009
IL	Illinois Municipal Retirement Fund	22,302,839	181,380	93,298	12/31/2009
IL	Illinois State Universities Retirement System	11,032,973	73,699	46,810	6/30/2009
IL	Illinois State Employees Retirement System	8,477,852	65,599	57,099	6/30/2009
IL	Chicago Public School Teachers PRF	8,375,970	31,905	24,218	6/30/2009
IN	Indiana Public Employees Retirement Fund	12,402,755	153,643	65,455	6/30/2009
IN	Indiana State Teachers Retirement Fund	7,199,138	76,256	42,817	6/30/2009
KS	Kansas Public Employees Retirement System	10,246,341	156,073	70,724	6/30/2009
KY	Kentucky Teachers Retirement System	11,515,883	75,937	42,050	6/30/2009
KY	Kentucky Retirement Systems	9,881,697	144,821	87,279	6/30/2009
LA	Louisiana Teachers Retirement System	11,250,281	88,206	65,838	6/30/2009
LA	Louisiana State Employees Retirement System	7,100,333	61,991	38,253	6/30/2009
MA	Massachusetts State Employees Retirement System	17,290,056	85,839	52,486	12/31/2009
MA	Massachusetts Teachers Retirement Board	19,329,511	88,673	53,951	12/31/2009
MD	Maryland State Retirement and Pension System	28,570,474	199,705	116,007	6/30/2009
ME	Maine Public Employees Retirement System	8,309,748	50,477	34,962	6/30/2009
MI	Michigan Public School Employees Retirement System	34,498,380	268,208	171,922	9/30/2009
MI	Michigan State Employees Retirement System	8,583,155	27,455	49,029	9/30/2009
MI	Municipal Employees Retirement System of Michigan	5,276,645	36,713	20,145	12/31/2009
MN	Minnesota Public Employees Retirement Association	14,285,198	158,103	73,807	6/30/2009
MN	Minnesota Teachers Retirement Association	13,833,826	77,162	50,208	6/30/2009
MN	Minnesota State Retirement System	7,947,527	54,603	30,708	6/30/2009
MN	St. Paul Teachers Retirement Fund Association	773,259	3,940	2,933	6/30/2009
MN	Duluth Teachers Retirement Fund Association	179,933	1,016	1,264	6/30/2009

Appendix A

State	System	Asset Market Value ($000s)	Active Members	Annuitants	As of FYE
MO	Missouri Public Schools Retirement System	23,702,851	130,313	62,897	6/30/2009
MO	Missouri State Employees Retirement System	6,229,006	55,454	32,100	6/30/2009
MO	Missouri Local Government Employees Retirement System	3,217,034	32,831	14,150	6/30/2009
MO	MoDOT & Patrol Employees Retirement System	1,221,133	8,813	7,480	6/30/2009
MO	St. Louis Public School Retirement System	891,563	5,085	4,570	12/31/2009
MS	Mississippi Public Employees Retirement System	15,504,160	167,901	79,099	6/30/2009
MT	Montana Public Employees Retirement Board	3,674,649	34,894	18,626	6/30/2009
MT	Montana Teachers Retirement System	2,301,619	18,456	12,036	6/30/2009
NC	North Carolina Retirement Systems	60,933,314	492,736	210,739	6/30/2009
ND	North Dakota Public Employees Retirement System	1,360,977	20,076	7,319	6/30/2009
ND	North Dakota Teachers Fund for Retirement	1,309,717	9,707	6,466	6/30/2009
NE	Nebraska Retirement Systems	6,945,006	57,234	17,189	6/30/2009
NH	New Hampshire Retirement System	4,315,256	51,032	24,501	6/30/2009
NJ	New Jersey Division of Pension and Benefits	67,516,993	527,755	248,285	6/30/2009
NM	New Mexico Public Employees Retirement Association	8,917,094	61,366	26,590	6/30/2009
NM	New Mexico Educational Retirement Board	7,113,652	63,822	32,497	6/30/2009
NV	Nevada Public Employees Retirement System	18,770,137	105,417	41,905	6/30/2009
NY	New York State and Local Retirement Systems	110,937,778	563,075	366,178	3/31/2009
NY	New York State Teachers Retirement System	72,471,757	274,974	139,297	6/30/2009
NY	New York City Employees Retirement System	31,903,416	180,482	129,281	6/30/2009
NY	New York City Teachers Retirement System	23,077,489	109,868	68,492	6/30/2009
OH	Ohio Public Employees Retirement System	57,733,762	365,229	171,955	12/31/2009
OH	Ohio State Teachers Retirement System	50,095,719	174,807	129,659	6/30/2009
OH	Ohio Police & Fire Pension Fund	9,056,794	29,062	25,317	12/31/2009
OH	Ohio School Employees Retirement System	8,024,889	125,465	65,757	6/30/2009
OK	Oklahoma Teachers Retirement System	7,452,193	89,388	46,796	6/30/2009
OK	Oklahoma Public Employees Retirement System	5,173,538	45,683	26,949	6/30/2009
OR	Oregon Employees Retirement System	42,904,809	171,068	107,936	6/30/2009
PA	Pennsylvania Public School Employees Retirement System	42,995,480	273,000	173,000	6/30/2009
PA	Pennsylvania State Employees Retirement System	24,661,949	110,107	110,866	12/31/2009
RI	Rhode Island Employees Retirement System	7,876,626	35,274	23,419	6/30/2008
SC	South Carolina Retirement Systems	20,492,378	231,830	124,286	6/30/2009
SD	South Dakota Retirement System	5,648,767	38,596	19,949	6/30/2009
TN	Tennessee Consolidated Retirement System	26,369,226	212,725	98,230	6/30/2009
TX	Teacher Retirement System of Texas	88,652,972	839,612	284,614	8/31/2009
TX	Texas Employees Retirement System	19,938,288	141,779	76,335	8/31/2009
TX	Texas Municipal Retirement System	16,305,676	102,419	38,980	12/31/2009
TX	Texas County & District Retirement System	15,555,540	123,446	38,511	12/31/2009
TX	Houston Firefighters Relief and Retirement Fund	2,368,961	3,492	2,486	6/30/2009
TX	Austin Employees Retirement System	1,511,266	8,142	4,086	12/31/2009
UT	Utah Retirement Systems	17,717,845	105,106	44,146	12/31/2009
VA	Virginia Retirement System	41,348,413	346,929	141,746	6/30/2009
VA	Educational Employees Supplementary RS of Fairfax County	1,441,434	19,731	8,595	6/30/2009
VT	Vermont Teachers Retirement System	1,145,066	10,799	5,910	6/30/2009
VT	Vermont State Employees Retirement System	1,014,698	8,095	4,797	6/30/2009
WA	Washington Department of Retirement Systems	44,217,932	302,089	126,385	6/30/2009
WI	Wisconsin Retirement System	69,996,296	267,293	150,671	12/31/2009
WV	West Virginia Consolidated Public Retirement Board	7,389,992	73,678	50,563	6/30/2009
WY	Wyoming Retirement System	5,686,401	41,495	21,100	12/31/2009
	Total	**$2,104,609,564**	**13,358,170**	**6,949,514**	

Appendix B

State	Plan	Actuarial Funding Ratio (%)	Actuarial Value of Assets ($000s)	Liabilities ($000s)	Unfunded Accrued Liability ($000s)	Latest Actuarial Valuarion Date	As of FYE
AK	Alaska PERS	78.8	7,210,772	9,154,282	1,943,510	6/30/2008	6/30/2009
AK	Alaska Teachers	70.2	3,670,086	5,231,654	1,561,568	6/30/2008	6/30/2009
AL	Alabama Teachers	74.7	20,582,348	27,537,400	6,955,052	9/30/2009	9/30/2009
AL	Alabama ERS	72.2	9,928,104	13,756,176	3,828,072	9/30/2009	9/30/2009
AR	Arkansas Teachers	75.7	10,617,000	14,019,000	3,402,000	6/30/2009	6/30/2009
AR	Arkansas PERS	78.0	5,413,000	6,938,000	1,525,000	6/30/2009	6/30/2009
AZ	Arizona SRS	79.0	27,094,000	34,290,000	7,196,000	6/30/2009	6/30/2009
AZ	Arizona Public Safety PRS	70.0	5,445,497	7,778,394	2,332,897	6/30/2009	6/30/2009
AZ	Phoenix ERS	75.3	1,895,148	2,518,094	622,946	6/30/2009	6/30/2009
CA	California PERF	86.9	233,272,000	268,324,000	35,052,000	6/30/2008	6/30/2009
CA	California Teachers	78.2	145,142,000	185,683,000	40,541,000	6/30/2009	6/30/2009
CA	LA County ERS	94.5	39,662,361	41,975,631	2,313,270	6/30/2008	6/30/2009
CA	San Francisco City & County	96.3	15,358,824	15,941,390	582,566	7/1/2008	6/30/2009
CA	San Diego County	91.5	8,413,065	9,198,636	785,571	6/30/2009	6/30/2009
CA	Contra Costa County	88.4	5,282,505	5,972,471	689,966	12/31/2008	12/31/2009
CO	Colorado School	69.2	21,054,910	30,412,815	9,357,905	12/31/2009	12/31/2009
CO	Colorado State	67.0	13,382,736	19,977,217	6,594,481	12/31/2009	12/31/2009
CO	Colorado Municipal	76.2	2,932,628	3,850,821	918,193	12/31/2009	12/31/2009
CO	Denver Schools	88.3	2,917,927	3,304,766	386,839	1/1/2010	12/31/2009
CO	Denver Employees	91.8	1,924,991	2,095,887	170,896	1/1/2009	12/31/2009
CO	Colorado Affiliated Local	89.2	1,855,493	2,081,304	225,811	1/1/2009	12/31/2009
CO	Colorado Fire & Police	101.0	856,090	847,821	-8,269	1/1/2009	12/31/2009
CT	Connecticut Teachers	70.0	15,271,000	21,801,000	6,530,000	6/30/2008	6/30/2009
CT	Connecticut SERS	51.9	9,990,200	19,243,400	9,253,200	6/30/2008	6/30/2009
DC	DC Police & Fire	100.7	3,048,400	3,027,900	-20,500	10/1/2009	9/30/2009
DC	DC Teachers	92.2	1,445,000	1,567,500	122,500	10/1/2009	9/30/2009
DE	Delaware State Employees	98.8	6,744,050	6,827,006	82,956	6/30/2009	6/30/2009
FL	Florida RS	87.1	118,764,692	136,375,597	17,610,905	7/1/2009	6/30/2009
GA	Georgia Teachers	91.9	54,354,284	59,133,777	4,779,493	6/30/2008	6/30/2009
GA	Georgia ERS	85.7	13,613,606	15,878,022	2,264,416	6/30/2009	6/30/2009
HI	Hawaii ERS	68.8	11,380,961	16,549,069	5,168,108	6/30/2008	6/30/2008
IA	Iowa PERS	81.2	21,123,980	26,018,594	4,894,614	6/30/2009	6/30/2009
ID	Idaho PERS	73.7	8,646,000	11,732,200	3,086,200	7/1/2009	6/30/2009
IL	Illinois Teachers	52.1	38,026,044	73,027,198	35,001,154	7/1/2009	6/30/2009
IL	Illinois Municipal	83.2	22,754,804	27,345,113	4,590,309	12/31/2009	12/31/2009
IL	Illinois Universities	54.3	14,282,000	26,316,200	12,034,200	6/30/2009	6/30/2009
IL	Chicago Teachers	73.3	11,493,255	15,683,242	4,189,987	6/30/2009	6/30/2009
IL	Illinois SERS	43.5	10,999,954	25,298,346	14,298,392	6/30/2008	6/30/2009
IN	Indiana PERF	97.5	9,293,952	9,034,573	-259,379	7/1/2008	6/30/2009
IN	Indiana Teachers	48.2	9,034,048	18,750,063	9,716,015	6/30/2008	6/30/2009
KS	Kansas PERS	58.8	11,827,619	20,106,787	8,279,168	12/31/2008	6/30/2009
KY	Kentucky Teachers	63.6	14,885,981	23,400,426	8,514,445	6/30/2009	6/30/2009
KY	Kentucky County	70.6	7,402,277	10,491,358	3,089,081	6/30/2009	6/30/2009
KY	Kentucky ERS	46.7	5,297,114	11,332,961	6,035,847	6/30/2009	6/30/2009
LA	Louisiana Teachers	59.1	13,500,766	22,839,411	9,338,645	6/30/2009	6/30/2009
LA	Louisiana SERS	60.8	8,499,662	13,986,847	5,487,185	6/30/2009	6/30/2009
MA	Massachusetts Teachers	63.0	21,262,462	33,738,966	12,476,504	1/1/2010	12/31/2009
MA	Massachusetts SERS	76.5	19,019,062	24,862,421	5,843,359	1/1/2010	12/31/2009
MD	Maryland Teachers	66.0	20,600,000	31,200,000	10,600,000	6/30/2009	6/30/2009
MD	Maryland PERS	63.8	11,800,000	18,500,000	6,700,000	6/30/2009	6/30/2009
ME	Maine State and Teacher	74.0	8,631,558	11,668,033	3,036,475	6/30/2008	6/30/2009
ME	Maine Local	112.7	2,201,653	1,953,629	-248,024	6/30/2008	6/30/2009
MI	Michigan Public Schools	83.6	45,677,000	54,608,000	8,931,000	9/30/2008	9/30/2009
MI	Michigan SERS	82.8	11,403,000	13,766,000	2,363,000	9/30/2008	9/30/2009
MI	Michigan Municipal	75.0	6,245,500	8,321,900	2,076,400	12/31/2008	12/31/2009
MN	Minnesota Teachers	77.4	17,882,408	23,114,802	5,232,394	7/1/2009	6/30/2009
MN	Minnesota PERF	70.0	13,158,490	18,799,416	5,640,926	6/30/2009	6/30/2009
MN	Minnesota State Employees	85.9	9,030,401	10,512,760	1,482,359	6/30/2009	6/30/2009
MN	St. Paul Teachers	72.2	1,049,954	1,454,314	404,360	6/30/2009	6/30/2009
MN	Duluth Teachers	76.5	279,256	364,811	85,555	7/1/2009	6/30/2009
MO	Missouri Teachers	79.9	28,826,075	36,060,121	7,234,046	6/30/2009	6/30/2009
MO	Missouri State Employees	83.0	7,876,079	9,494,807	1,618,728	6/30/2009	6/30/2009
MO	Missouri Local	80.0	3,330,663	4,161,775	831,112	2/28/2009	6/30/2009
MO	Missouri PEERS	80.7	2,792,182	3,458,044	665,862	6/30/2009	6/30/2009
MO	Missouri DOT and Highway	47.3	1,471,497	3,113,394	1,641,897	6/30/2009	6/30/2009

Appendix B

State	Plan	Actuarial Funding Ratio (%)	Actuarial Value of Assets ($000s)	Liabilities ($000s)	Unfunded Accrued Liability ($000s)	Latest Actuarial Valuarion Date	As of FYE
MO	St. Louis School Employees	87.6	963,900	1,099,900	136,000	1/1/2009	12/31/2009
MS	Mississippi PERS	67.3	20,597,581	30,594,546	9,996,965	6/30/2009	6/30/2009
MT	Montana PERS	83.5	4,002,212	4,792,819	790,607	6/30/2009	6/30/2009
MT	Montana Teachers	63.8	2,762,200	4,331,000	1,568,800	7/1/2009	6/30/2009
NC	North Carolina Teachers and	99.3	55,127,658	55,518,745	391,087	12/31/2008	6/30/2009
NC	North Carolina Local	99.6	17,100,739	17,173,975	73,236	12/31/2008	6/30/2009
ND	North Dakota Teachers	77.7	1,900,300	2,445,900	545,600	7/1/2009	6/30/2009
ND	North Dakota PERS	85.1	1,617,100	1,901,200	284,100	6/30/2009	6/30/2009
NE	Nebraska Schools	86.6	7,007,582	8,092,339	1,084,757	7/1/2009	6/30/2009
NH	New Hampshire Retirement	58.3	4,937,320	8,475,052	3,537,732	6/30/2009	6/30/2009
NJ	New Jersey Teachers	65.0	34,708,001	53,418,429	18,710,428	6/30/2009	6/30/2009
NJ	New Jersey PERS	64.9	28,879,176	44,470,403	15,591,227	6/30/2009	6/30/2009
NJ	New Jersey Police & Fire	70.7	22,937,838	32,442,101	9,504,263	6/30/2009	6/30/2009
NM	New Mexico PERF	84.2	12,575,142	14,932,624	2,357,482	6/30/2009	6/30/2009
NM	New Mexico Teachers	67.5	9,366,300	13,883,300	4,517,000	6/30/2009	6/30/2009
NV	Nevada Regular Employees	73.4	19,158,282	26,087,621	6,929,339	6/30/2009	6/30/2009
NV	Nevada Police Officer and	68.9	4,813,594	6,987,537	2,173,943	6/30/2008	6/30/2009
NY	NY State & Local ERS	107.3	128,916,000	120,183,000	-8,733,000	4/1/2008	3/31/2009
NY	New York State Teachers	106.6	88,254,700	82,777,500	-5,477,200	6/30/2008	6/30/2009
NY	New York City ERS	79.7	40,722,200	51,063,300	10,341,100	6/30/2008	6/30/2009
NY	New York City Teachers	66.9	33,902,600	50,667,600	16,765,000	6/30/2008	6/30/2009
NY	NY State & Local Police &	108.0	22,767,000	21,072,000	-1,695,000	4/1/2008	3/31/2009
OH	Ohio PERS	75.3	55,315,148	73,466,166	18,151,018	12/31/2008	12/31/2009
OH	Ohio Teachers	60.0	54,902,859	91,440,955	36,538,096	6/30/2009	6/30/2009
OH	Ohio School Employees	82.0	9,723,000	14,221,000	4,498,000	6/30/2009	6/30/2009
OH	Ohio Police & Fire	65.1	9,309,000	14,307,000	4,998,000	1/1/2008	12/31/2009
OK	Oklahoma Teachers	49.8	9,439,000	18,950,900	9,511,900	6/30/2009	6/30/2009
OK	Oklahoma PERS	66.8	6,208,245	9,291,458	3,083,213	7/1/2009	6/30/2009
OR	Oregon PERS	80.2	43,520,600	54,259,500	10,738,900	12/31/2008	6/30/2009
PA	Pennsylvania School	86.0	60,922,100	70,845,600	9,923,500	6/30/2008	6/30/2009
PA	Pennsylvania State ERS	84.4	30,205,000	35,797,000	5,592,000	12/31/2009	12/31/2009
RI	Rhode Island ERS	56.2	6,231,411	11,083,014	4,851,603	6/30/2007	6/30/2008
RI	Rhode Island Municipal	90.3	1,064,615	1,179,233	114,618	6/30/2007	6/30/2008
SC	South Carolina RS	69.3	24,699,678	35,663,419	10,963,741	7/1/2008	6/30/2009
SC	South Carolina Police	77.9	3,363,136	4,318,955	955,819	7/1/2008	6/30/2009
SD	South Dakota PERS	91.8	6,778,500	7,387,400	608,900	6/30/2008	6/30/2009
TN	TN State and Teachers	96.2	26,214,995	27,240,151	1,025,156	7/1/2007	6/30/2009
TN	TN Political Subdivisions	89.5	4,897,974	5,475,620	577,646	7/1/2007	6/30/2009
TX	Texas Teachers	83.1	106,384,000	128,030,000	21,646,000	8/31/2009	8/31/2009
TX	Texas ERS	87.4	23,509,622	26,907,779	3,398,157	8/31/2009	8/31/2009
TX	Texas County & District	89.8	16,564,213	18,448,162	1,883,949	12/31/2009	12/31/2009
TX	Texas Municipal	75.8	16,305,700	21,525,100	5,219,400	12/31/2009	12/31/2009
TX	Houston Firefighters	95.6	2,945,100	3,080,500	135,400	7/1/2008	6/30/2009
TX	City of Austin ERS	71.8	1,672,500	2,330,900	658,400	12/31/2009	12/31/2009
TX	Texas LECOS	86.1	780,808	907,102	126,294	8/31/2009	8/31/2009
UT	Utah Noncontributory	85.6	16,622,548	19,429,734	2,807,186	12/31/2009	12/31/2009
VA	Virginia Retirement System	84.0	52,548,000	62,554,000	10,006,000	6/30/2008	6/30/2009
VA	Fairfax County Schools	76.9	1,733,946	2,255,298	521,352	12/31/2008	6/30/2009
VT	Vermont Teachers	65.4	1,374,079	2,101,838	727,759	6/30/2009	6/30/2009
VT	Vermont State Employees	78.9	1,217,638	1,544,144	326,506	6/30/2009	6/30/2009
WA	Washington PERS 2/3	101.1	16,692,700	16,508,000	-184,700	6/30/2008	6/30/2009
WA	Washington PERS 1	70.9	9,852,900	13,901,000	4,048,100	6/30/2008	6/30/2009
WA	Washington Teachers Plan 1	76.8	8,262,300	10,753,900	2,491,600	6/30/2008	6/30/2009
WA	Washington Teachers Plan 2/3	107.9	5,681,000	5,263,800	-417,200	6/30/2008	6/30/2009
WA	Washington LEOFF Plan 1	128.0	5,592,500	4,367,700	-1,224,800	6/30/2008	6/30/2009
WA	Washington LEOFF Plan 2	126.4	5,052,700	3,998,200	-1,054,500	6/30/2008	6/30/2009
WA	Washington School Employees	104.3	2,302,600	2,207,300	-95,300	6/30/2008	6/30/2009
WI	Wisconsin Retirement System	99.8	78,911,300	79,104,600	193,300	12/31/2009	12/31/2009
WV	West Virginia PERS	79.7	3,930,701	4,930,158	999,457	7/1/2009	6/30/2009
WV	West Virginia Teachers	41.3	3,554,771	8,607,869	5,053,098	6/30/2009	6/30/2009
WY	Wyoming Public Employees	87.5	5,742,542	6,565,677	823,135	1/1/2010	12/31/2009
	Total	79.8	$2,561,175,228	$3,208,469,565	$647,294,337		

Appendix C
Selected recent changes to public pension plan designs and financing structures

Change	Affected Plans
Higher employee contributions	Arizona SRS, California PERF, Colorado PERA, Iowa PERS, Minnesota PERA, Minnesota TRA, Mississippi PERS, Missouri SERS, New Mexico ERB, New Mexico PERA, New York State & Local RS, New York STRS, Vermont TRS, Virginia RS
Increased normal retirement provisions (age, years of service, and/or vesting period)	Arizona SRS, California PERF, Colorado PERA, Iowa PERS, Illinois SERS, Ilinois SURS, Illinois TRS, Kentucky RS, Kentucky TRS, Michigan PSRS, Minnesota PERA, Minnesota SRS, Mississippi PERS, Missouri SERS, Nevada PERS, New Jersey PERS, New Mexico ERB, New Mexico PERA, New York State & Local RS, New York State TRS, Rhode Island ERS, Texas TRS, Utah RS, Vermont TRS, Virginia RS
Lower benefit accrual	California PERF, Nevada PERS, New Jersey PERS, Utah RS
Lower automatic cost-of-living adjustment	Colorado PERA, Illinois SERS, Ilinois SURS, Illinois TRS, Minnesota PERA, Minnesota TRA, Rhode Island, South Dakota RS, Virginia RS