



GOVERNMENT AND MUNICIPAL SYSTEMS, LLC

Commerce Committee

March 20, 2011

HB 5529: AN ACT CONCERNING PUBLIC EMPLOYEE'S PENSIONS SOLVENCY

Testimony Submitted by:
Anthony M. Leonardi & Jeffrey R. Shearman

This document serves as a summary of our recent discussions related to the Public Employee Benefit Solvency Program - PEBS™, as well as provides additional information for your further review and consideration.

Demonstrably sound and prudent management, especially in the economic environment of the past several years, is to be commended. Despite the strong returns earned over the recent years, The Connecticut State Employee's Retirement System ("SERS") is currently in a dangerously low funding position.

Accordingly, we believe that the Public Employee Benefit Solvency Program () can be seen as a timely, non-correlated source of highly predictable cash flows that can help to enhance SERS's funding position and liquidity while reducing the level of future state contributions.

The objective of the PEBS™ plan is to strengthen the State Employees Retirement System so that the State can meet its obligations to its employees, while reducing the cost to the state to fund such liabilities.

Contained herein are the key illustrations, census data, mortality assumptions, and data points used to create a comprehensive model of the expected cash flows resulting from this program. PEBS creates stable and highly predictable cash flows in a manner that can be an attractive enhancement and diversification of SERS's asset allocation and portfolio management strategy. The various risk factors that we believe should be taken in to account are also discussed.

We appreciate your time and attention to this information. Should you have any questions at all, please do not hesitate to contact any of our representatives, or me directly at 612-328-7892.

Sincerely yours,

William Gray
President

Government and Municipal Systems, LLC

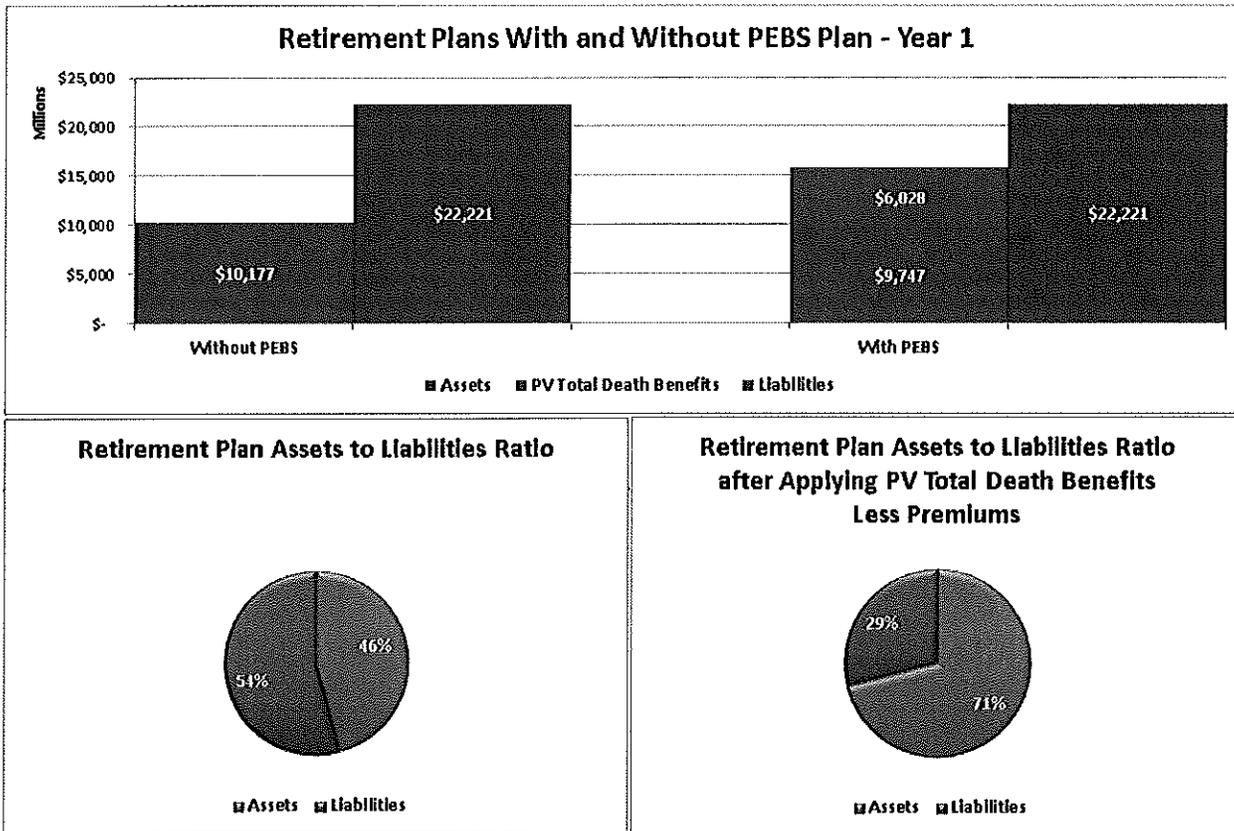
Capitol Hill, South Building, Suite #900, 601 Pennsylvania Avenue NW, Washington, DC 20004



The Potential Impact

Figure 1 illustrates the estimated potential impact and effect of PEBS and graphs the actuarial assets and present value of accrued liabilities¹ of the Connecticut State Employees Retirement System (SERS). The green shaded bar shows the overall net present value impact that the PEBS plan could have on SERS's assets.

Figure 1 - \$200,000 Initial Policy Proceeds per General Participant²



The assumptions³ can be tested to your own requirements.

¹ Asset and liability numbers from Source: Cavanaugh Macdonald Consulting, LLC "Connecticut State Employees Retirement System Report of the Actuary on the Valuation Prepared as of June 30, 2010".

² General Participant is considered an Active Employee between Ages of 25-69.

³ Key Inputs: Census of 38,491 Active Employees Ages 25-69 who are General Participants of CT SERS was used. 3% Discount Rate was used to estimate present value of all future cash flows.



Result

- The indicative net IRR is approximately 7.45% p.a.
- In the first year, the death benefit cash flows can be capitalized on SERS balance sheet for an indicative PV of approximately \$6.028 billion for \$200,000 of initial death benefit per eligible employee with an offsetting NPV of premium cost (paid over five years) of \$2.013 billion.
- These amounts net to approximately \$4.015 billion which, when validated by SERS's accountant and actuary, increases funding of liabilities to 71% from the current 46%.⁴

Why a life insurance product?

Many governmental jurisdictions across the country are beginning to recognize that they have a significant but unrealized non-monetary asset in the form of the insurable interest in their employees or members of their employee benefit plans. Under certain conditions, the asset can be capitalized for the benefit of these plans. The key attributes of the proposed insurance structure comprise:

- Low risk, contractual cash flows that can be discounted at a low rate
- Mortality-based cash flows that are uncorrelated with other asset classes
- An annuity-like structure

The contractual nature of the insurance policy adds certainty that enables SERS to receive an immediate positive effect to its balance sheet. This is so because once the first premium payment is made the policies are in full force and effect and may be valued based on the NPV of the expected contractual death benefit which is both predictable and calculable with actuarial precision.

The PEBS program is an innovative application of life insurance to generate policy proceeds that provide a reliable, long-term annuity-like cash flow stream to the policyholder, in this case SERS. GAMS has developed, working with major life insurance carriers, a life insurance policy and proprietary patent-pending rider that contractually guarantees death benefits to the policy owner (SERS). The contractually guaranteed death benefit is set for each policy issued on each consenting active state employee.

⁴ Note that the IRR is sensitive to the face amount of death benefit: IRR rises with larger amounts and declines with smaller amounts. This reflects cost and scale efficiencies. Scenarios can be run to SERS's specific requirements.



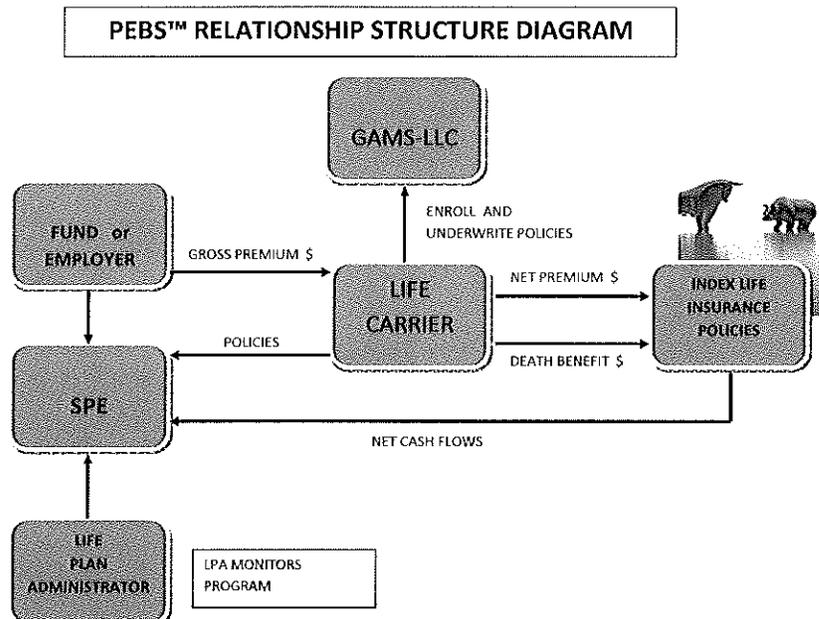
This pool of policy cash flows creates a non-correlated asset that is mortality-based and, because the growing death benefit that is paid out at each individual's death is a contractual amount, the long-term discount rate for valuation purposes can be very low. Our illustrations assume a long-term discount rate close to the current risk-free rate (as proxy, an approximation of the US Government bond yield).

The discounted cash flows at this near risk free rate, in the absence of a market, are a reasonable basis for fair value⁵ since the cash flows are contractual and dependent primarily on well established mortality assumptions and counterparty risk represented by the insurance carrier. The mortality-based actuarial modeling is proven to be reliable when applied to large populations of participants such as is the case with SERS. Hence, the annuity-like nature and timing of the expected cash flow profile over the period of the insured population.

Implementation

It is proposed that SERS create a Special Purpose Entity (SPE or Trust) to own and act as beneficiary of life insurance policies of \$200,000 per full time actively-at-work employees of the State of Connecticut who are eligible for SERS benefits and currently between the ages of 25 and 69. At its creation the SPE should be granted all necessary powers.

Structure
Figure 2



Fiduciary Concept – Exclusive Benefit

⁵ Please refer to Exhibit 5 for a discussion of the discount method and suggested accounting entries.



The PEBS model is based on *fiduciary* owned life insurance (FOLI). A large portion of the assets under SERS's charge exist for the exclusive benefit of members of the Connecticut State Employee Retirement System and their beneficiaries. Likewise, with FOLI, the state employees' retirement trust fund is the exclusive beneficiary of the life insurance policies through ownership by SERS (SPE/Trust) of the cash flows. The PEBS Program uses life insurance as a tool to enhance SERS's funded status that each retired employee and dependent enjoys and relies upon in their retirement years.

Insurable Interest

It is upon the premise of fiduciary status that it would appear inarguable that an insurable interest exists between the SERS and the full time employees of the State who would be insured by the PEBS program. Not unreasonably, insurance carriers generally will not put forward a formal proposal until the insurable interest question is addressed formally and in writing by a credible legal entity within the Connecticut State government with authority over such matters.

Risk

The following list identifies potential risks in the PEBS program. A more thorough Table of Risks in the program with an attempt to assess locus and possible steps in mitigation is included at Exhibit 4. Please review the Table of Risks carefully.

- Mortality Risk
- Market Risk
- Credit Risk
- Interest/Discount Rate Risk
- Operational Risk
- Surrender Risk
- Legal/Regulatory Risk
- Structural/Implementation Risk

In summary



- Highly predictable and contractual cash flows allow a basis for valuation at or near the risk free rate.
- The IRR of the cash flows is approximately 7.45% p.a.
- There is a first year 54% positive net present value impact on the funding position.

Next steps

GAMS has designed and built a spreadsheet model which can be utilized to generate various scenarios for Connecticut SERS as you evaluate this proposal. These include analyses of the impact of various assumptions, variables and the use of leverage. As stated in the executive summary recently submitted by GAMS to Connecticut SERS there are several different ways that SERS can create value, including outright monetization, from the cash flows arising from the PEBS program. GAMS looks forward to working with you to develop the appropriate modeling so that you can evaluate the PEBS program and choose the exact parameters that fit best with your overall investment strategy to meet your long term obligations.

It would be our pleasure to work through these numbers with you and your staff at your convenience. Please do not hesitate to let us know how we can assist you in further analysis of the PEBS program and its potential impact on Connecticut SERS future funding position with any alternative assumptions. In any event we appreciate your feedback and the opportunity to discuss this proposal in order to further refine our understanding of your goals and the proposal structure.

* * * * *



EXHIBITS

- 1) Government and Municipal Systems, LLC
- 2) Bio - William Gray, President, GAMS
- 3) Projected Mortality Based Cash Flows
- 4) Risks
- 5) The Discounted Cash Flow Method as an Approximation of Fair Value
- 6) Sources
- 7) Disclaimer and Notice of Confidentiality
- 8) Policy and Rider



EXHIBITS

1) Government and Municipal Systems, LLC

Government & Municipal Systems, LLC (GAMS or the Company), was formed by Bill Gray to bring the benefits of universal life insurance for individuals to the larger scale, group employee pension and health benefit plans in the U.S. in order to create a new pool of assets that is in accord with public employee goals as well as sound investment practices and good governance. A new pool of assets of this type strengthens a plan's funded status by adding a low-risk, annuity-like yield from a non-correlated asset class.

After years of development, the Company's team of 30+ financial, medical, insurance and legal professionals has designed a special life insurance vehicle, Public Employee Benefit Solvency™ Program or "PEBS™" for short, which develops, markets and helps implement the program.

Well-funded plans using PEBS will strengthen and diversify future cash flows and gain the opportunity to reduce future sponsor contribution requirements. This benefit can be especially meaningful in states with budget or fiscal challenges.



EXHIBITS

2) Bio - William Gray, President, GAMS

Bill Gray, JD, LL.M., received his legal training at the University of North Dakota Law School, Exeter University in England, and at the Graduate Tax Program at the William Mitchell College of Law, St. Paul, Minnesota. He practiced business, tax and estate planning for five years and was hired by the E.F. Hutton Insurance Group as a Regional VP at the end of 1981, when Universal Life was first introduced. Later, he became their National Director of Special Markets.

Recruited by Merrill Lynch Insurance Group in 1985 as an Estate Planning and Business Insurance Specialist, Bill quickly led the firm for the next three years in the Single Premium Life era, producing more than \$40 million of premium each year.

With the Technical and Miscellaneous Revenue Act (TAMRA) of 1988 eliminating single premium sales, selling traditional life insurance was challenging by contrast. Frustrated with objections from advisors about the time value of money and other issues, he devised the first Life Premium Financing program for Estate Planning in 1989, conducting the original tax research and then having it replicated by major law and accounting firms. He spent the last two of his twelve years with Merrill Lynch implementing large premium financing cases.

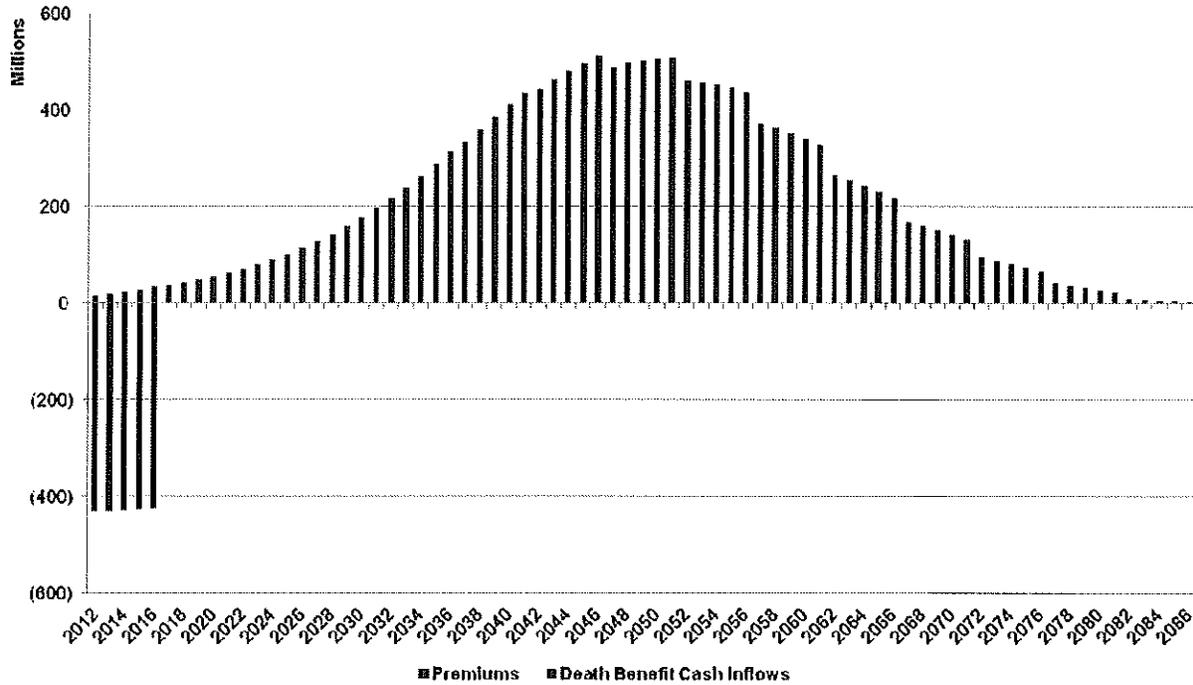
Bill formed the Tax Track Companies in 1996 and has had his special life insurance designs implemented by major insurance companies on an exclusive basis. He resides in Deephaven, Minnesota and is President and CEO of Government and Municipal Systems, LLC, of Washington, DC, a company specializing in addressing the unfunded pension liabilities of public employee pension plans, corporations, and unions.



EXHIBITS

3) Figure 3. Projected Mortality Based Cash Flows

Estimated net positive cash flow of \$4.015 billion will be generated over the life of the program under the stated assumptions.





EXHIBITS

4) Risks

The following table outlines the identified risks in the PEBS program with an attempt to assess its locus and possible steps in mitigation. The probability and materiality of each risk element and rank ordering from Connecticut SERS's perspective can be addressed separately.

Risk	Comments	Mitigation	Residual Risk	Address in SPE
Mortality Risk: Significant health care breakthroughs extend the timing of cash flows negatively impacting returns.	The timing of projected cash flows is based on the actual mortality experience of the plan as shown in the most recent actuarial report combined with the historical experience of the life insurance carrier. A large population is very predictable and should be accurate within any three year period with the possibility of a deviation over a one or two year period.	Re-insurance.	Low	Yes
Market Risk: Major market returns come in less than the experience of the past 30 years.	The Crediting Rate is based on 3 market indices assumed to have an overall average return of 8.18% p.a. over the insured period. Returns below that average will lead to calls for additional premium. Over the last 30 year period taking every day of the year as a possible starting point 8.18% average rate of return is the lowest 20 year period average realized using the life insurance product crediting rate formula.	None. Policy owner accepts responsibility	Low Transferred to policy owner	Yes
Credit Risk: (A) Policy owner does not pay premiums as they are due. (B) Insurance carrier(s) default Risk.	 This assumes extreme financial stress for the Policy owner. This could happen but never has an insurer failed to pay out under a life insurance policy in the US. An industry response could be expected to protect the industry's reputation.	 None Policy owner accepts responsibility High credit ratings. Policy owner accepts responsibility. Use only highly rated life insurance carrier with strong balance sheet and reserves. This can be strengthened further through	 Minimal Low Policy owner supports the funding SPV	 Yes



GOVERNMENT AND MUNICIPAL SYSTEMS, LLC

		the use of re-insurance backing of the life insurance contract purchased.		
Interest/Discount Rate Risk:	Risk-free rates are at historic lows. Future valuations of the cash flow stream will be subject to discount rates that change, adversely in a rising rate environment.	None. Outright assignment/sale of the cash flows would monetize value immediately at a negotiated rate.	Moderate	
Operational Risk: The SPE does not process transactions timely or accurately. The carrier does not process transactions timely or accurately.	Possible but highly improbable. Cure periods will account for acts of God. Both parties will be using automated systems with comprehensive disaster recovery capabilities.	Policy owner accepts responsibility for its operations. Incentives/penalties to encourage compliance.	Minimal	Yes
Surrender Risk: The Policy owner decides to cash out some or all of the policy surrender value.	This is possible but improbable since financially sub-optimal.	Penalties designed to deter policy owner from cashing out.	Minimal.	
Legal/Regulatory Risk: Third party regulators make rulings that negatively affect the PEBS program after implementation.	This will vary state by state. Any time laws effecting the taxation or accumulation treatment within a life insurance policy are changed all those policies already issued are deemed to be governed by the laws in effect at the time of policy issue. This has historically been upheld in the courts, both State and Federal, since life insurance is considered to be a long term investment largely driven by legal and taxation treatment.	Obtain legal opinions before implementation	Moderate Quantify when opinions in hand	Yes
Structural/Implementation Risk: The PEBS structure is not implemented properly or there are unintended consequences from implementation	GAMS advises on the probable impact on the Plan's funding position. It assumes no liability for the financial, legal, accounting or regulatory impact of any policy that is implemented.	Verification and validation by the Plan's principal fiduciaries and advisors.	This risk is borne by the government and plan.	No



EXHIBITS

5) The Discounted Cash Flow Method as an Approximation of Fair Value

Generally accepted accounting principles require that a retirement fund's assets be recorded at fair value. In the absence of market prices other methods of pricing and estimation must be employed in accordance with guidance dating as far back as GASB Statement 31 (1997).

A long history of using the estimated present value of discounted cash flows has been established in such cases and for similar assets. This is especially true in the case of fixed income securities and thinly-traded asset-backed securities which are at the core no more than a series of reasonably estimable cash flows that are derived from or enhanced by some underlying asset or credit.

Several factors combine in the PEBS program to create a favorable context for valuation. These include accurate and reasonable estimates of cash flows based on tested mortality tables applied to a large population that are contractual promises to pay; are backed by a highly creditworthy life insurance carrier; and are intended to be held until the death of the insured.

In such cases, using the present value of expected future net cash flows to estimate fair value means using the discounted value of expected future death benefits. For FOLI policies covering a large group of employees, cash surrender value is not the best estimate of fair value.⁶ With a large group of employees, fair value should be estimated as the present value of actuarial expected future death benefits based on actuarial assumptions concerning group longevity. Unlike individuals and small groups, actuarial assumptions concerning large group longevity are reasonably accurate. Accordingly, the present value of actuarial expected death benefits can be estimated with reasonable accuracy, and is the best estimate of fair value.⁷

⁶ SFAS 149, Amendment of Statement 133 on Derivative Instruments and Hedging Activities, notes in paragraph A24 that CSV does not equal the fair value of company owned life insurance policies.

⁷ Nurnberg, Hugo. *Company-Owned Life Insurance in Business Combinations and Goodwill Testing*. The CPA Journal, 2005.



GOVERNMENT AND MUNICIPAL SYSTEMS, LLC

(continued)

Figure 3 - Table of Accounting Entries – Subject to application of SWIB’s accounting principles.

Date	Account	Debit	Credit	Explanation	Notes
Policy Purchase	Cash		X	Record first premium payment at cost	
"	SPE	X		"	
EOY 1	SPE	X		Record remaining premium liability	
"	Premiums Payable – ST		X	"	
"	Premiums Payable - LT		X	"	
EOY 1	SPE	X		Record fair value of cash flows using discount method	
"	Fair Value Adjustment		X	"	
BOY 2	Cash		X	Pay second year premium due	Repeat each year until premiums are paid in full
"	Premiums Payable	X			"
EOY 2	SPE	X		Adjust fair value of cash flows using discount method	Repeat at end of each year for life of SPE
"	Fair Value Adjustment		X	"	"

SPE – Special Purpose Entity – Life Insurance Policies
 EOY – End of Year
 BOY – Beginning of Year



EXHIBITS

6) Sources

Mortality tables and experience noted in the following actuarial reports created by Cavanaugh Macdonald Consulting LLC :

Connecticut State Employees Retirement System Report of the Actuary on the Valuation Prepared as of June 30, 2010:

Mortality assumptions are based on the above-referenced tables with modifications to categorize the table for:

- 1) non-smokers and smokers and
- 2) life insurance carrier's own long term experience for similar populations.

The resulting table is then used to project premiums and death benefit cash flows.

The census data used showing approximately 38,481 actively at work full time employees. A more current census will impact all of the information contained in this memorandum.



EXHIBITS

7) Disclaimers and Notice of Confidentiality

The information contained herein is the confidential and proprietary information of Government and Municipal Systems, LLC. It is subject to the terms of a non-disclosure agreement between GAMS and Connecticut SERS. It may not be distributed outside of Connecticut SERS without the permission of GAMS, LLC.

The data and information in this model are estimates. They have been approximated using actuarial values received from a globally recognized insurance carrier and have been adjusted for the relevant and specific key variables and circumstances. Upon confirmation of insurable interest status and receipt of request for a proposal from Connecticut SERS, all numbers will be updated.

The data and information presented here are illustrative and should be used for discussion purposes only.



EXHIBITS

8) Policy and rider

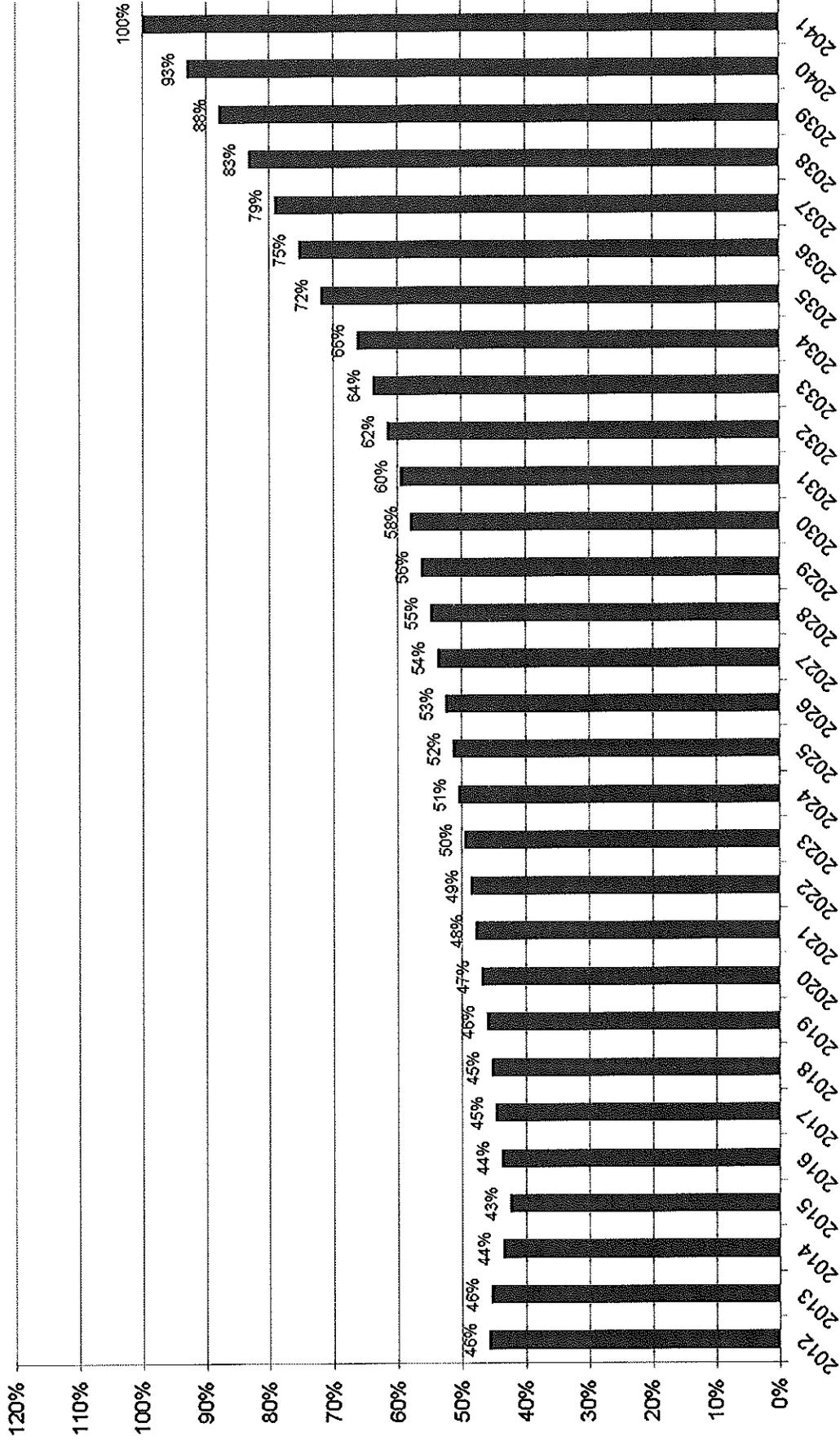
A complete example of the policy and rider will be provided at such time the insurable interest question is addressed and Connecticut SERS has requested a formal proposal.



This page intentionally left blank.

Estimated Funding Ratios for Connecticut State Employees Retirement System without PEBS

Exhibit 1

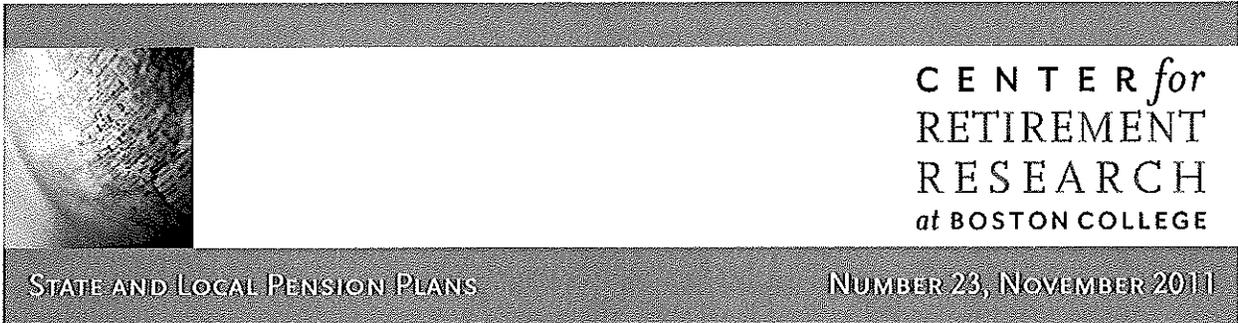


■ Assets to Liabilities Ratio

Source: Cavanaugh Macdonald Consulting Report dated June 21, 2010
 30 Year Projection of State of Connecticut State Employees Retirement System, Attachment 1.

3/19/2012

© GAMS, LLC. 2011.



HOW WOULD GASB PROPOSALS AFFECT STATE AND LOCAL PENSION REPORTING?

By Alicia H. Munnell, Jean-Pierre Aubry, Josh Hurwitz, and Laura Quinby*

INTRODUCTION

States and localities account for pensions in their financial statements according to standards laid out by the Governmental Accounting Standards Board (GASB). Under these standards, state and local plans generally follow an actuarial model and discount their liabilities by the long-term yield on the assets held in the pension fund, roughly 8 percent. Most economists contend that the discount rate should reflect the risk associated with the liabilities and, given that benefits are guaranteed under most state laws, the appropriate discount factor is closer to the riskless rate. The point is not that liabilities should be larger or smaller, but rather that the discount rate should reflect the nature of the liabilities; the characteristics of the assets backing the liabilities are irrelevant.

In 2006, GASB embarked on a project to review its accounting standards for pensions and propose changes as needed. The resulting proposals, outlined

in two exposure drafts released for public comment in 2010, encompass a host of reforms pertaining to virtually every aspect of pension accounting.¹ Three of the main proposals, however, pertain to the valuation of assets and liabilities. First, plan assets would no longer be smoothed but rather valued at market. Second, liabilities would be discounted by a blended rate that reflects the expected return for the portion of liabilities that are projected to be covered by plan assets and the return on high-grade municipal bonds for the portion that are to be covered by other resources. Third, the entry age normal/level percentage of payroll would be the sole allocation method used for reporting purposes.

As it seems likely that the GASB proposals will soon become final standards, this *brief* takes a look at how the accounting changes will alter the funded ratios of state and local plans. The first section reviews

*Alicia H. Munnell is the director of the Center for Retirement Research at Boston College (CRR) and the Peter F. Drucker Professor of Management Sciences at Boston College's Carroll School of Management. Jean-Pierre Aubry is the assistant director of state and local research at the CRR. Josh Hurwitz and Laura Quinby are research associates at the CRR.

LEARN MORE →

Search for other publications on this topic at:
crr.bc.edu

how plans currently value plan assets and employer liabilities and explains GASB's proposals. The second section presents aggregate funded ratios for the 126 plans in our *Public Plans Database* (PPD). The third section discusses some of the implications of the GASB proposals. The conclusion is that employers and plan administrators should be prepared for funded ratios reported in their financial statements to decline sharply under the new rules. But accounting changes do not alter the underlying fundamentals; \$1,000 owed to a retired teacher in ten years under current standards will remain \$1,000 owed in ten years under the new standards. So policymakers should not let new numbers throw them off the path of sensible reform.

ACCOUNTING METHODS: OLD AND NEW

In the public sector, the rules for both reporting and funding public pension plans are set out in Governmental Accounting Standards Board (GASB) Statements 25 and 27 and their amendments.² GASB, like its private sector counterpart, the Financial Accounting Standards Board, is an independent organization and has no authority to enforce its standards. Many state laws, however, require that public plans comply with GASB standards, and auditors require state and local governments to comply with the standards to receive a "clean" audit opinion. In addition, bond raters generally consider whether GASB standards are followed when assessing credit standing.³

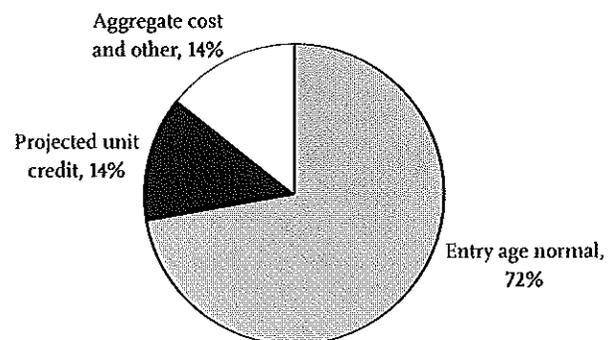
The financial well-being of a pension plan is frequently judged by its funded ratio. This measure equals plan assets divided by employer liabilities. Conceptually, the valuation of plan assets should be straightforward. In reality, most plans currently report funded status using a level that is smoothed, typically over a five-year period.⁴ This smoothing means that asset losses incurred in 2009 are still depressing funded ratios in 2011.⁵ Conversely, the full value of gains experienced in 2010 will not be recognized until 2015. In order to increase transparency in pension reporting, GASB is proposing that, for reporting purposes, plans abandon their actuarial smoothing methods in favor of a market valuation of plan assets.

Valuing pension liabilities raises two questions. What should be included in liabilities? And what discount rate should be used to express those liabilities in today's dollars? GASB currently defines liabilities in terms of the projected benefit obligation (PBO) liability concept. The PBO includes pension benefits to be paid to retired employees, benefits earned to date by active employees based on their current salaries

and years of service, and the effect of future salary increases on the value of pension rights already earned by active workers. With regard to the discount rate, GASB 25 states that it should be based on "an estimated long-term yield for the plan, with consideration given to the nature and mix of current and planned investments..."

GASB's proposed change maintains the PBO liability concept, but alters the discount rate and the allocation method, proposing that the entry age/level percentage of payroll method be used for reporting purposes. Requiring that all plans use the same actuarial cost method is a change from the current arrangement under which plans that satisfy certain parameters can use the same cost method for funding and reporting purposes. As shown in Figure 1, 72 percent of plans currently use the entry age normal method, and aggregate cost plans are already required to report liabilities using entry age normal, so approximately 14 percent of plans will have to change their method for reporting.

FIGURE 1. ACTUARIAL COST METHODS USED BY STATE AND LOCAL PLANS, 2010



Source: Authors' calculations from *Public Plans Database* (2010).

Under the new discount method, each plan will project the number of future years in which assets on hand, investment returns, and certain future employer and employee contributions will be sufficient to pay annual benefit payments.⁶ The payments made in those years are discounted by the expected return on assets. Meanwhile, benefit payments that occur in years after assets have run out will be discounted by the high-grade municipal bond yield. The new blended rate maintains the current link between liabilities and the assets used to pay for them; so long as the liabilities are projected to be funded, they are

discounted by expected returns. Once they become unfunded, they are on the same footing as general obligation debt and are discounted by the municipal bond rate.

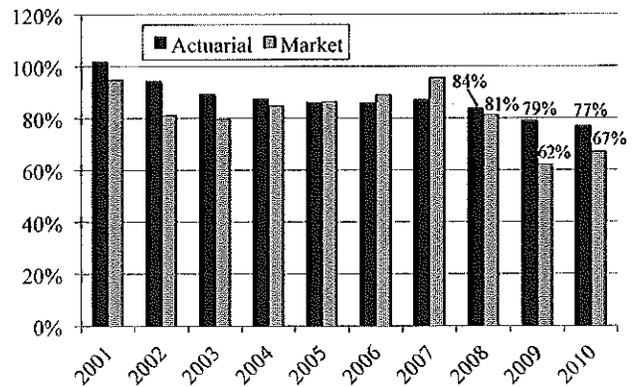
IMPACT OF CHANGES IN ACCOUNTING ON FUNDED RATIOS

In order to demonstrate the impact of the proposed accounting changes on state and local funded ratios, this section proceeds in two steps. First, it presents funded ratios based on current GASB standards and funded ratios calculated using the market value of assets. Then, it combines market assets with liabilities discounted by the blended rate to demonstrate the full impact of GASB's proposed changes.

Immediately recognizing asset gains and losses results in a funded ratio that clearly demonstrates the degree to which plan funding is tied to the fate of the stock market. Figure 2 compares aggregate funded ratios for the 126 plans in the PPD calculated over time using actuarial versus market assets. It is clear that actuarial funded ratios lag market ratios. Market assets were lower than actuarial assets in the early 2000s as gains from the late 1990s were still present in actuarial values and losses from the 2001 dotcom bubble had not yet been fully accounted for. The picture reversed between 2005 and 2007, when market assets reflected gains that had not yet been fully accounted for in the actuarial measures. The 2009 financial crisis caused an enormous decline in market assets and a 19-percentage point drop in funding, whereas actuarial assets only declined by 5 percentage points. In contrast, 2010 funded ratios using market assets increased by 5 percentage points, while funded ratios using actuarial assets were still dropping. But the bottom line is that the aggregate funded ratio using market assets was only 67 percent in 2010 compared to 77 percent using actuarial assets, so policymakers should be prepared for a sharp decline in funding if GASB introduces this change.

The next step is to estimate how funded ratios would change if liabilities were discounted using a blended rate of return. This exercise requires knowing the underlying stream of benefit payments owed by the plan in future years. Public pensions typically do not disclose this information, so the benefit stream must be re-engineered based on data from actuarial reports on the age, salary, and tenure of the workforce, as well as assumptions regarding retirement, separation, and mortality (see Appendix A).⁷

FIGURE 2. AGGREGATE FUNDED RATIOS FOR STATE AND LOCAL PLANS USING ACTUARIAL AND MARKET ASSETS, 2001-2010



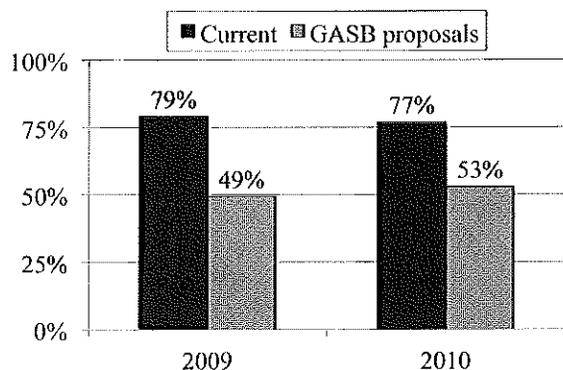
Source: Authors' calculations from *Public Plans Database (2001-2010)*.

With the stream of projected benefits in hand, the task is to project the portion of that stream that will be covered by plan assets and the portion that will be covered by other resources. Projected assets depend on two factors – contributions and investment returns. Contributions, in turn, consist of two components – normal cost and amortization payments.⁸ In determining how much sponsors will contribute in the future, GASB recommends looking at the percent of Annual Required Contributions (ARC) paid in the past. We interpreted the past to be the last ten years. In terms of investment returns, GASB proposes to use the plan's long-run expected return.

With flows of projected benefits, government and employee contributions, and investment returns, it is possible to calculate the date when assets are exhausted. All benefits payable in years prior to the exhaustion date are discounted using each plan's assumption regarding the expected return on assets. Benefits payable after the run-out date are discounted by 3.7 percent – the current yield on high-grade municipal bonds.⁹

Figure 3 (on the next page) compares the funded ratios currently reported with our estimates of what these ratios would have looked like under GASB's current proposals for 2009 and 2010. Results for individual plans and our estimates of the blended discount rate that will result from GASB's new procedure can be found in Appendix B.¹⁰ The bottom line is that the headline number will decline in 2010 – the latest year for which data are available – from 77 percent to 53 percent.

FIGURE 3. AGGREGATE FUNDED RATIOS FOR STATE AND LOCAL PLANS: CURRENTLY REPORTED VERSUS GASB PROPOSALS, 2009-2010



Source: Authors' estimates from *Public Plans Database* and various Actuarial Valuation reports (2009-2010).

IMPLICATIONS OF GASB'S PROPOSALS

GASB lays out the rationale for its blended rate in the exposure drafts. GASB's argument is that, while the expected rate of return is appropriate for discounting liabilities backed by assets, liabilities not covered by assets fall to the sponsoring government and therefore should be discounted by the sponsor's borrowing cost.¹¹ The argument is at odds with the economist's view that the discount rate should reflect the riskiness of the liabilities, irrespective of how the liabilities are funded. That debate, which has gone on for years, will not be settled in a *brief*. Instead, the following section discusses implementation issues, interpretation challenges, and the implications for the ARC associated with GASB proposals.

IMPLEMENTATION ISSUES

The main implementation problem with GASB's proposed blended rate is that it requires a complicated calculation based on a number of assumptions. The determination of the portion of benefits funded requires a projection of plan assets available each year to cover promised benefits. The asset projection would include assumptions not only about plan returns but also about future contributions from the government and from employees.¹² These contributions may or may not come to pass. One can imagine extended disputes about the validity of the underlying assumptions.

INTERPRETATION CHALLENGES

Economists use pension data generated under GASB's standards to address three main economic issues: 1) basic comparisons of pension finances across states and over time; 2) the impact of pensions and other post-employment benefits (OPEBs) on government budgets and borrowing capacity; and 3) the relative compensation of public sector workers. In order to produce useful analysis, the data need to provide meaningful measures of government obligations and be consistent across states and localities and over time. The new GASB discounting proposal fails on a number of counts.

- It creates a liability number with no theoretical underpinnings in terms of the potential burden on states and localities. It makes no theoretical sense for two identical streams of benefits to have different values based on the funded status of the plan. Having the present discounted value of liabilities depend on both the long-run expected rate of return and on the funded status makes the numbers even more difficult to interpret and difficult to adjust for alternative returns than the current liability numbers.
- It makes comparisons across states and localities impossible because the denominator of the funded ratio will reflect the value of the assets. Moreover, a change in the funded status of a given plan will be attributable to both the change in assets and the impact of that change on the value of liabilities. This feedback complicates a systematic analysis of why funding has improved or deteriorated.
- It creates a new "projected" funded ratio – the projected assets divided by the liability calculated at the blended rate. This concept has the potential to compete with the traditional funding ratio – assets divided by liabilities – and create unnecessary confusion.

IMPLICATIONS FOR THE ARC

GASB's proposals will affect the reported ARC – the payment required to cover normal cost and amortize the unfunded liability over 30 years – in two ways. First, the move from actuarial to market value of assets and the new liability measure increase the

unfunded liability and thereby the required amortization payment. Second, a blended discount rate will raise the normal cost. Therefore, reported ARCs are likely to increase substantially. However, the feedback that GASB has received suggests that employers will continue to use the traditional actuarial smoothing techniques to calculate their ARCs for funding purposes.

Unfortunately, the GASB exposure drafts contain a provision that has the potential to undermine the disciplinary role of the ARC. Plans in states with statutory contribution rates will no longer be required to calculate an ARC.¹³ This change not only represents a loss in analysts' ability to assess how close plan contributions are to those required to keep the system on track but also creates an escape valve that states could use as ARCs rise beyond reach: introduce a statutory rate and dispense with ARC calculations.¹⁴

CONCLUSION

The purpose of this *brief* is not so much to re-argue the case for using a discount rate based on the nature of the liabilities irrespective of how those liabilities are funded, but rather to provide a "heads up" in the event that the GASB proposals are adopted. The proposals will sharply reduce the reported funded levels of public sector plans. It would be unfortunate if the press and politicians characterized these new numbers as evidence of a worsening of the crisis when, in fact, states and localities have already taken numerous steps to put their plans on a more secure footing. Reforms need to be done carefully and thoughtfully, remembering that pensions are an important part of the total compensation of public sector workers. Policymakers should not let new numbers throw them off course.

ENDNOTES

- 1 Governmental Accounting Standards Board (2011a and 2011b).
- 2 Statement No. 25 is titled "Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans." Statement No. 27 is titled "Accounting for Pensions by State and Local Governmental Employers." The provisions of GASB 25 and 27 became effective June 15, 1996.
- 3 U.S. Government Accountability Office (2008).
- 4 The smoothing method is not a simple five-year average, but rather a gradual recognition of investment gain/loss experienced by a plan relative to its expected return on assets.
- 5 See Munnell et al. (2011a).
- 6 Only those contributions that are designed to fund payments for current employees, both active and inactive, would be included.
- 7 The methodology for first re-engineering the benefit stream and then re-discounting this stream is adapted from the procedure used to estimate trust fund run-out dates under the termination framework described in Munnell et al. (2011b).
- 8 The exercise is complicated by the fact that GASB's proposal puts each of these components over a different definition of payroll. The normal cost is calculated as a percent of payroll for current members, whereas the amortization payment is set relative to the payroll for both current members and new hires. GASB's approach of using two different payrolls reflects what most plans currently do. Whereas the normal cost for current members is funded over the members' worklives, amortization of unfunded liabilities occurs over a longer period, which includes the hiring of new workers.
- 9 Bloomberg (2011).
- 10 This rate equals the single number that could be used to discount the benefit stream to produce an equivalent liability to the multi-step process described above.
- 11 Governmental Accounting Standards Board (2011a and 2011b).
- 12 Interestingly, FASB considered and rejected such an approach not only because the contribution assumptions are so uncertain but importantly because it would "unnecessarily complicate the recognition and disclosure requirements" (Financial Accounting Standards Board, 1985).
- 13 Governmental Accounting Standards Board (2011a and 2011b).
- 14 Relying on statutory rates raises potential concerns – they may not be set to adequately reflect a plan's funding needs and their static nature makes it more difficult for a plan's funding strategy to respond to changing conditions.

REFERENCES

- Bloomberg L.P. "Municipal Bonds," Bloomberg Online. Accessed October 20, 2011. Available at: <http://www.bloomberg.com/markets/rates-bonds/government-bonds/us/>.
- Financial Accounting Standards Board. 1985 (December). Statement No. 87: "Employers' Accounting for Pensions."
- Governmental Accounting Standards Board. 1994 (November). Statement No. 25: "Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans."
- Governmental Accounting Standards Board. 1994 (November). Statement No. 27: "Accounting for Pensions by State and Local Government Employees."
- Governmental Accounting Standards Board. 2011a (June). "Proposed Statement of the Governmental Accounting Standards Board: Financial Reporting for Pension Plans, an amendment of GASB Statement No. 25." Available at: <http://bit.ly/vDMdxq>.
- Governmental Accounting Standards Board. 2011b (June). "Proposed Statement of the Governmental Accounting Standards Board: Accounting and Financial Reporting for Pensions, an amendment of GASB Statement No. 27." Available at: <http://bit.ly/vDMdxq>.
- Munnell, Alicia H., Jean-Pierre Aubry, Josh Hurwitz, Madeline Medenica, and Laura Quinby. 2011a. "The Funding of State and Local Pensions in 2010." *Issue in Brief* SLP-17. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Munnell, Alicia H., Jean-Pierre Aubry, Josh Hurwitz, and Laura Quinby. 2011b. "Can State and Local Pensions Muddle Through?" *Issue in Brief* SLP-15. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Public Plans Database, 2001-2010*. Center for Retirement Research at Boston College and Center for State and Local Government Excellence. Available at: <http://pubplans.bc.edu>.
- U.S. Government Accountability Office. 2008. *State and Local Government Retiree Benefits: Current Funded Status of Pension and Health Benefits*. GAO-08-223. Washington, DC.

APPENDICES

APPENDIX A. METHODOLOGY

The model estimates the dates when the 126 plans in our sample may exhaust their assets by projecting future pension payments for currently active workers, as well as annual asset levels.

PROJECT ANNUAL BENEFIT PAYMENTS

To determine the annual level of benefit payments that will be owed by the plan sponsor, the model must:

- 1) Project the age and annual benefit payment at the time of retirement for each individual in the active population.
- 2) Calculate the benefit payment received by current retirees.
- 3) Estimate the life expectancy of current and future retirees.

To this end, the model requires detailed information in three categories: demographics, actuarial assumptions, and plan design. The demographic data include the number of active members and current retirees in each plan, the average salaries and tenure of active members of different ages, and the average benefit received by retirees of different ages. Assumptions pertain to rate of return, turnover, vesting, mortality, and salary growth. The plan design data include the employee contribution rate, benefit formula, and COLA provisions. We have detailed, plan-specific assumptions for the 14 largest plans. Each plan is assigned one of the 14 sets of assumptions by comparing calculated liabilities under each of the 14 assumption sets to the plan's own reported liability.

In each year, an active member of a plan will either continue working, separate, retire, or die. At time t , the number of individuals, by birth cohort i , remaining in the plan is

$$pop_{i,t} = pop_{i,t-1} * (1 - mort_{i,t-1}) * (sep_{i,t-1}) * (1 - ret_{i,t-1})$$

the number of individuals who separate is equal to

$$separates_{i,t} = pop_{i,t-1} * (1 - mort_{i,t-1}) * (sep_{i,t-1})$$

and the number of individuals who retire is equal to

$$retirees_{i,t} = pop_{i,t-1} * (1 - mort_{i,t-1}) * (ret_{i,t-1})$$

where $pop_{i,t}$, $mort_{i,t}$, $sep_{i,t}$, and $ret_{i,t}$ are the number of members, mortality rate, separation probabilities, and retirement rates respectively for cohort i at time t .

When an individual separates, his accrued tenure, salary history, and separation date are stored. Those who separate are also assigned a survival probability from their date of separation until retirement age. The starting pension benefit, S , for person n of birth cohort i who separates from the plan at time t is given by

$$S_{i,n} = a * tenure_{i,n,t} * W_{i,n,t} * P(t) * 1(tenure_{i,n} \geq vesting\ period)$$

where a is the plan's accrual rate, $tenure_{i,n}$ is the accrued years of service at the time of separation, and $P(t)$ is the probability of living from time t until retirement. The vesting period is a plan-specific input and $1(.)$ is an indicator function that takes the value of 0 if false and 1 if true.

Benefits for individuals who work until retirement age are computed in a similar manner. The starting benefit for an individual, m , at the time of retirement is

$$R_{i,m} = a * tenure_{i,m,t} * W_{i,m,t}$$

where a is the plan's accrual rate, $W_{i,t}$ is the plan-specific average of the highest annual wages received by person n or m in 2009; and $tenure_{i,t}$ is the accrued years of service as of 2009. In total, the benefits paid to birth cohort i reaching retirement at time t are equal to

$$Benefits_{i,t} = \sum_{n=1}^N S_{i,n} + \sum_{m=1}^M R_{i,m}$$

In each subsequent year, the expected value of the cohort's total benefit is equal to the previous year's payment multiplied by the plan specific cost-of-living adjustment and the survival probability of living to the next year.

$$Benefits_{i,t} = Benefits_{i,t-1} * (1 + COLA) * (1 - mort_{i,t-1})$$

Total future payments to active workers made by the pension plan in a given year is then equal to

$$B_t = \sum_i Benefits_{i,t} * 1(i \geq \text{minimum retirement age at time } t)$$

where $1(\cdot)$ is the indicator function that takes the value of 0 if false and 1 if true.

Current retirees are treated similarly to active employees. The *Public Plans Database* records the total benefits paid to retired employees in 2009 and the proportion of those benefits paid to retirees of different ages. The model assumes that, in each subsequent year, the expected value of each retiree birth cohort's total benefit is equal to the previous year's payment multiplied by the plan-specific cost-of-living adjustment and the survival probability of living to the next year.

In order to project amortization payments, which are set relative to payroll for both current and future plan members, new hires replace employees who separate, retire, or die. The total workforce grows over time according to $growth_{i,t}$ – general population growth projections reported by the U.S. Census Bureau.

$$pop_{i,t} = \frac{(pop_{i,t-1} * (1 - mort_{i,t-1}) * (1 - sep_{i,t-1}) * (1 - ret_{i,t-1}) + (pop_{i,t-1} - (pop_{i,t-1} * (1 - mort_{i,t-1}) * (1 - sep_{i,t-1}) * (1 - ret_{i,t-1})))) * growth_{i,t-1}}$$

The distribution of the ages of new hires reflects those reported in the Actuarial Valuations of the fourteen largest plans.

PROJECT ANNUAL ASSET LEVELS

Each year, a plan's assets increase with new contributions and income earned. Its assets decrease with the benefits it pays. The model assumes that plans receive contributions and pay benefits at two points during the year. Accordingly,

$$Assets_t = (Assets_{t-1} * (1 + r)) + \left(\frac{(C_t - B_t)}{2} * (1 + r) \right) + \left(\frac{(C_t - B_t)}{2} \right)$$

where r is the assumed rate of return on plan assets, and B_t is the annual benefit paid in a given year.

C_t is the contribution rate in a given year t . Calculating C_t requires several steps. The first step is to determine the percent of ARC paid in the past. For plans that currently fund based on an actuarially-determined contribution rate, the model calculates the average percent ARC paid from 2001 to 2009. Years in which plans made unusually high contributions due to the issuance of Pension Obligation Bonds are ignored. Similarly, negative amortization is top-coded at 100 percent. The second step is to multiply the dollar value of the ARC in 2009 by the average percent ARC paid to produce an adjusted ARC. Finally, it is necessary to make an assumption about where the ARC dollars go. Our assumption is that they first go to cover normal cost and any excess is applied to amortization.

Contribution amounts then need to be related to projected payrolls. The normal cost and amortization payments are divided by payroll in 2009 to produce two percentages. The normal cost percentage is applied to the payroll for current members. The amortization percentage is applied to the payroll for both current members and future hires. The amortization payments are assumed to stop after 30 years because plans experience no investment losses over the projection period.

APPENDIX B. FUNDED RATIOS FOR STATE AND LOCAL PLANS UNDER GASB GUIDELINES, 2010

Plan name	Funded ratio			GASB run-out date	Blended rate
	Current	Current liabilities w/ market assets	Blended rate liabilities w/ market assets		
Total	76.9%	67.1%	52.8%	2042	6.1%
Alabama ERS	68.2	57.2	57.2	>2100	8.0
Alabama Teachers	71.1	60.2	52.5	2043	6.8
Alaska PERS	66.0*	52.4	52.4	>2100	8.3
Alaska Teachers	59.5*	47.6	37.5	2037	6.3
Arizona Public Safety Personnel	67.7	55.6	55.6	>2100	8.5
Arizona SRS	76.4	61.4	61.4	>2100	8.0
Arkansas PERS	74.1	67.3	67.3	>2100	8.0
Arkansas Teachers	73.8	67.2	67.2	>2100	8.0
California PERF	80.8*	62.6	56.3	2053	7.0
California Teachers	71.5**	66.1	38.9	2034	4.9
Chicago Teachers	67.1	54.7	32.0	2034	4.7
City of Austin ERS	69.6*	69.8	55.7	2033	5.8
Colorado Municipal	77.0*	76.5	44.3	2038	5.0
Colorado School	63.7*	62.9	51.6	2041	6.4
Colorado State	61.2*	60.3	48.4	2039	6.2
Connecticut SERS	44.4	37.0	37.0	>2100	8.3
Connecticut Teachers	61.4	52.3	42.0	2045	6.7
Contra Costa County	81.7**	77.6	77.6	>2100	7.7
DC Police & Fire	108.0	92.4	55.4	2042	4.8
DC Teachers	118.3	99.2	99.2	>2100	7.0
Delaware State Employees	96.0	83.3	70.7	2042	6.7
Denver Employees	86.8*	78.1	78.1	>2100	8.0
Denver Schools	90.5*	92.6	92.6	>2100	8.0
Duluth Teachers	81.7	61.5	61.5	>2100	8.5
Fairfax County Schools	76.5**	67.4	67.4	>2100	7.5
Florida RS	86.6	76.7	73.3	2054	7.4
Georgia ERS	80.1	78.0	69.4	2042	6.4
Georgia Teachers	82.6*	68.7	68.7	>2100	7.5
Hawaii ERS	60.0*	53.1	42.3	2045	6.4
Houston Firefighters	93.0	81.5	81.5	>2100	8.5
Idaho PERS	78.9	78.8	78.8	>2100	7.8
Illinois Municipal	83.3	86.3	86.3	>2100	7.5
Illinois SERS	46.1	38.6	22.3	2029	4.8
Illinois Teachers	48.4	40.5	18.4	2024	4.1
Illinois Universities	46.4	40.2	33.9	2044	6.6

Plan name	Funded ratio			GASB run-out date	Blended rate
	Current	Current liabilities w/ market assets	Blended rate liabilities w/ market assets		
Indiana PERF	85.2 %	72.9 %	72.9 %	>2100	7.3 %
Indiana Teachers ^a	46.2*	41.6	23.5	NA	4.1
Iowa PERS	81.4	75.1	75.1	>2100	7.5
Kansas PERS	61.4*	51.1	39.6	2041	6.2
Kentucky County	65.5	56.8	45.7	2036	5.9
Kentucky ERS	40.3	33.8	22.5	2017	4.0
Kentucky Teachers	61.0	51.2	34.8	2028	4.7
LA County ERS	83.3**	71.7	47.4	2039	5.2
Louisiana SERS	57.7	54.6	54.6	>2100	8.2
Louisiana Teachers	54.4	50.8	35.3	2027	5.1
Maine Local	96.3	83.6	68.4	2044	6.4
Maine State and Teacher	66.0	57.6	57.6	>2100	7.8
Maryland PERS	59.7	71.1	71.1	>2100	7.7
Maryland Teachers	65.4	60.2	60.2	>2100	7.8
Massachusetts SERS	81.0	65.9	65.9	>2100	8.3
Massachusetts Teachers	67.1*	55.3	55.3	>2100	8.3
Michigan Municipal	78.1*	69.9	69.9	>2100	8.0
Michigan Public Schools	71.1**	58.8	51.1	2042	6.8
Michigan SERS	72.6*	60.2	53.4	2042	6.9
Minneapolis ERF	65.6	65.6	65.6	>2100	8.5
Minnesota PERF	76.4	66.0	33.8	2037	4.9
Minnesota State Employees	87.3	74.9	45.5	2042	5.6
Minnesota Teachers	78.5	67.7	41.4	2028	4.8
Mississippi PERS	64.2	53.5	34.3	2026	4.7
Missouri DOT and Highway Patrol	42.2	40.3	40.3	>2100	8.2
Missouri Local	81.0	83.4	59.7	2034	5.2
Missouri PEERS	79.1	65.7	65.7	>2100	8.0
Missouri State Employees	80.4	68.3	68.3	>2100	8.5
Missouri Teachers	77.7	63.8	51.5	2041	6.4
Montana PERS	74.0	63.3	44.8	2035	5.5
Montana Teachers	65.5	55.8	34.7	2032	4.8
Nebraska Schools	82.5*	69.4	69.4	>2100	8.0
Nevada Police Officer and Firefighter	67.8	57.6	33.3	2041	5.2
Nevada Regular Employees	71.2	60.1	60.1	>2100	8.0
New Hampshire Retirement System	58.5	54.1	54.1	>2100	8.5

Plan name	Funded ratio			GASB run-out date	Blended rate
	Current	Current liabilities w/ market assets	Blended rate liabilities w/ market assets		
New Jersey PERS	62.0 %	52.5 %	30.3 %	2027	4.5 %
New Jersey Police & Fire	69.0	58.3	34.1	2031	4.8
New Jersey Teachers	57.6	44.9	25.5	2021	4.2
New Mexico PERF	78.5	64.2	36.5	2032	4.7
New Mexico Teachers	65.7	57.4	40.5	2036	5.6
New York City ERS	76.2*	64.4	45.4	2034	5.4
New York City Teachers	64.9*	54.1	38.8	2023	4.7
New York State Teachers	100.3**	87.0	80.9	2055	7.4
North Carolina Local Government	101.5*	85.6	85.6	>2100	7.3
North Carolina Teachers and State Employees	94.5*	80.0	65.4	2036	5.6
North Dakota PERS	73.4	66.8	41.7	2040	5.4
North Dakota Teachers	69.8	54.5	44.9	2044	6.6
NY State & Local ERS	97.8*	87.5	87.5	>2100	8.0
NY State & Local Police & Fire	102.0*	91.2	85.6	2051	7.5
Ohio PERS	77.0*	79.6	79.6	>2100	8.0
Ohio Police & Fire	69.7*	65.5	65.5	>2100	8.3
Ohio School Employees	72.6	58.6	58.6	>2100	8.0
Ohio Teachers	85.8	95.3	95.3	>2100	8.0
Oklahoma PERS	66.0	60.0	60.0	>2100	7.5
Oklahoma Teachers	47.9	41.8	41.8	>2100	8.0
Oregon PERS	89.7*	80.3	67.3	2052	6.8
Pennsylvania School Employees	75.1	57.7	34.1	2024	4.4
Pennsylvania State ERS	79.6*	71.5	50.7	2028	5.1
Phoenix ERS	69.3	56.9	56.9	>2100	8.0
Rhode Island ERS	48.4	42.7	42.7	>2100	8.2
Rhode Island Municipal	74.0	62.7	62.7	>2100	8.3
San Diego County	84.3	68.7	68.7	>2100	8.3
San Francisco City & County	91.1	74.5	60.8	2042	6.3
South Carolina Police	74.5	58.8	40.0	2027	4.9
South Carolina RS	65.5	50.8	40.0	2040	6.2
South Dakota PERS	96.3	87.9	87.9	>2100	7.7
St. Louis School Employees	88.5*	89.1	75.4	2044	6.4
St. Paul Teachers	68.1	55.4	41.2	2037	6.1
Texas County & District	87.6*	87.4	87.4	>2100	8.0
Texas ERS	85.4	70.8	69.5	2065	7.9
Texas LECOS	86.3	71.8	33.1	2033	4.4
Texas Municipal	83.8*	83.8	83.8	>2100	7.0
Texas Teachers	82.9	71.3	71.3	>2100	8.0

Plan name	Funded ratio			GASB run-out date	Blended rate
	Current	Current liabilities w/ market assets	Blended rate liabilities w/ market assets		
TN Political Subdivisions	83.4 %*	72.0%	50.8%	2036	5.4 %
TN State and Teachers	92.1 *	76.2	76.2	>2100	7.5
University of California	86.7	72.8	52.7	2046	5.7
Utah Noncontributory	82.2	76.9	76.9	>2100	7.8
Vermont State Employees	81.2	75.0	75.0	>2100	8.5
Vermont Teachers	66.5	61.5	42.0	2038	5.9
Virginia Retirement System ^b	75.4 *	63.5	63.5	>2100	7.5
Washington LEOFF Plan 1	121.2 *	99.3	99.3	>2100	8.0
Washington LEOFF Plan 2	111.6 *	94.3	94.3	>2100	8.0
Washington PERS 1	67.5 *	54.2	35.5	2019	4.2
Washington PERS 2/3	95.2 *	79.8	40.6	2046	5.2
Washington School Employees Plan 2/3	93.6 *	79.4	57.4	2051	6.5
Washington Teachers Plan 1	72.3 *	58.8	39.9	2020	4.3
Washington Teachers Plan 2/3	93.3 *	79.8	40.5	2047	5.3
West Virginia PERS	74.6	72.6	72.6	>2100	7.5
West Virginia Teachers	46.5	46.5	46.5	>2100	7.5
Wisconsin Retirement System	99.6 *	96.8	96.8	>2100	7.8
Wyoming Public Employees	84.9 *	78.4	54.9	2035	5.5

^a The reported funded ratio for Indiana Teachers is made up of two separately funded accounts, the pre-1996 account and the 1996 account. The pre-1996 account is for employees hired prior to 1996 and is funded under a pay-go schedule. The 1996 account is for employees hired afterwards and is pre-funded. The funded ratio for the pre-funded account is currently 94.7 percent. As expected, the pay-go account has a much lower funded ratio of 33.1 percent.

^b The funded ratios presented represent the VRS plan only for the state employees, teachers and political subdivisions. They do not reflect the information in the other plans – SPORS, JRS and VaLORS.

* Numbers are authors' estimates.

** Received from plan administrator.

Sources: Various 2010 actuarial valuations; and *Public Plans Database (2001-2009)*.

ABOUT THE CENTER

The Center for Retirement Research at Boston College was established in 1998 through a grant from the Social Security Administration. The Center's mission is to produce first-class research and educational tools and forge a strong link between the academic community and decision-makers in the public and private sectors around an issue of critical importance to the nation's future. To achieve this mission, the Center sponsors a wide variety of research projects, transmits new findings to a broad audience, trains new scholars, and broadens access to valuable data sources. Since its inception, the Center has established a reputation as an authoritative source of information on all major aspects of the retirement income debate.

AFFILIATED INSTITUTIONS

The Brookings Institution
Massachusetts Institute of Technology
Syracuse University
Urban Institute

CONTACT INFORMATION

Center for Retirement Research
Boston College
Hovey House
140 Commonwealth Avenue
Chestnut Hill, MA 02467-3808
Phone: (617) 552-1762
Fax: (617) 552-0191
E-mail: crr@bc.edu
Website: <http://crr.bc.edu>



Visit our:

PUBLIC PLANS DATABASE

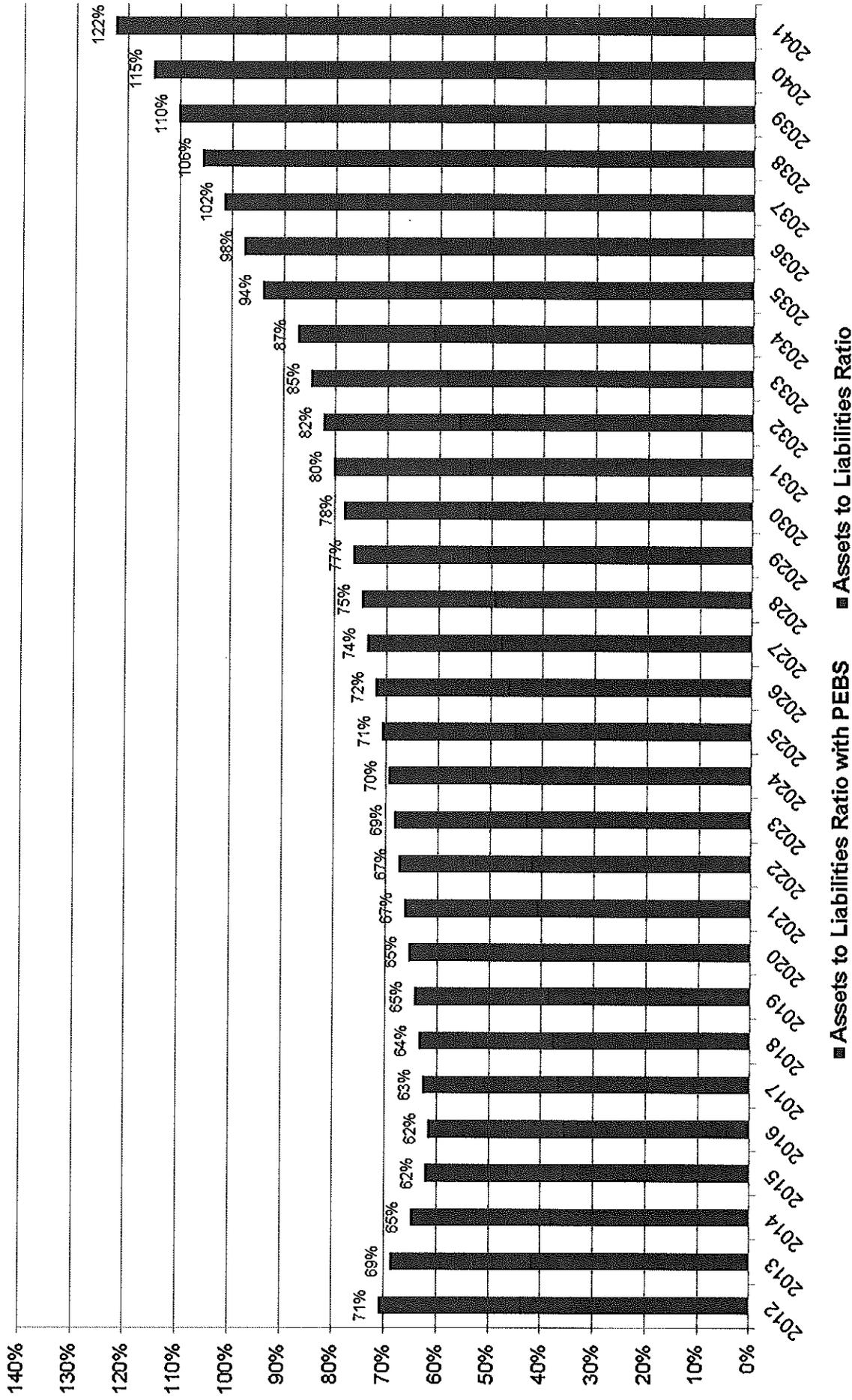
pubplans.bc.edu

The Center for Retirement Research thanks AARP, Bank of America, InvescoSM, LPL Financial, MetLife, MFS Investment Management, National Reverse Mortgage Lenders Association, Prudential Financial, Putnam Investments, State Street, TIAA-CREF Institute, T. Rowe Price, and USAA for support of this project.

© 2011, by Trustees of Boston College, Center for Retirement Research. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that the authors are identified and full credit, including copyright notice, is given to Trustees of Boston College, Center for Retirement Research.

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 opinions or policy of the partners or the Center for Retirement Research at Boston College.

Estimated Funding Ratios for Connecticut State Employees Retirement System with PEBS Exhibit 3



Source: Cavanaugh Macdonald Consulting Report dated June 21, 2010
 30 Year Projection of State of Connecticut State Employees Retirement System, Attachment 1.

Connecticut Retirement Systems – Year 1

Summary of PEBS Effect on Plan Assets VS Liabilities

