Reforming Public Pensions

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INTRODUCTION

There is a crisis in the public pension systems of several states. With trillions of dollars at stake, practitioners, policymakers, and academics alike are urgently addressing the pension problem. Politicians in nearly every state have been considering a variety of proposals and implementing changes that affect millions of government workers and retirees. Courts have also entered the milieu as impacted employees test whether reforms surmount legal obstacles and pass constitutional muster. Members of Congress have even attempted to facilitate a solution to the state pension debt crisis due to its negative impact on the American economy.

In this Article, we integrate and extend the pension reform movements in law, education, and economics by studying teacher pensions across the United


2. See discussion infra Part II.B.


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States. Our interdisciplinary approach concentrates on an overlooked and vulnerable group of government workers—those who have defined benefit plans and do not contribute to Social Security. The federal government does not oversee these plans, and there are no insurance programs if the plans fail. Through our quantitative and qualitative analysis, we aim to improve theory and practice by providing a valuable perspective as states reconsider their pension obligations.

Part I appraises the problem and establishes that the retirement income security of public employees is in jeopardy. More specifically, it analyzes the pensions of teachers who contribute to defined benefit plans, collectively more than thirty billion dollars annually, and not to Social Security.\(^4\) These plans are in pension systems that span thirteen states and comprise more than three million members.\(^5\) Our financial calculations show serious underfunding of educator defined benefit plans since the global financial crisis. A statistical analysis comparing plans that do and do not fund Social Security also demonstrates that the latter pensions are, in fact, most at risk of failure.

Part II surveys the recent reforms of public pensions as well as the legal obstacles to these legislative solutions. Given our concern with teacher pensions in non-Social Security states, we highlight the following jurisdictions: Alaska, California, Colorado, Connecticut, Illinois, Kentucky, Louisiana, Maine, Massachusetts, Missouri, Nevada, Ohio, and Texas. Significantly, pension reform raises new constitutional questions that challenge courts to craft a conceptual framework for consistent interpretation and application. We assess and summarize decisions on public pension changes involving the Due Process Clause, Takings Clause, and Contract Clause, and we find that the Contract Clause is the most significant legal barrier to reform.

Part III focuses on fixing teacher pensions. Our recommendations take into account the dire financial condition of educator defined benefit plans and the experience with existing reforms along with their ongoing constitutional challenges. Due to the diversity in law and legislation among states, we do not urge a uniform answer to the pension problem, but provide options and a decision-making framework for political action. The multi-dimensional model directs attention to potential reforms to the pension contract ex ante and ex post. It also addresses key actors in the provision of public retirement benefits: politicians and unions. It further aims to involve the public, who will ultimately bear the financial and social burdens associated with public plans, by increasing the accuracy and transparency of pension promises.

The Article concludes that a comprehensive response to teacher pensions is necessary to avert disaster. Part of that response includes the addition of Social Security or a state insurance program for pension plan failure. The defined ben-

\(^4\) Nat’l Ass’n St. Retirem. Admins., supra note 1, at 2 (noting that forty percent of public school teachers do not contribute to Social Security, which is thirty percent of state and local employees overall, amounting to $31.2 billion annually that would have been paid to Social Security).

\(^5\) See discussion infra Part I; infra Table 2.
Benefit plans of public school teachers have unfunded liabilities of almost one trillion dollars, part of a national gap in public plans which exceeds three trillion dollars. As a result, our analysis of public pension reform has far-reaching implications for the present financial security of teachers and the future of education, and informs an ongoing debate that has made the headlines of every major newspaper in the country.


7. A recent report by the Center for Retirement Research at Boston College concluded that pension cuts “will almost certainly result in a lower quality of applicants for one of the nation’s most important jobs.” Alicia H. Munnell & Rebecca Cannon Fraenkel, *Compensation Matters: The Case of Teachers*, CENTER FOR RETIREMENT RES., Bos. C. (Jan. 2013), http://crr.bc.edu/wp-content/uploads/2013/01/slp28_508rev.pdf; see also Eric A. Hanushek, *The Economic Value of Higher Teacher Quality* 1 (Nat’l Bureau of Econ. Research, Working Paper No. 16606, 2010), http://www.nber.org/papers/w16606 (commenting that a widely accepted policy proposal for hiring better teachers is to provide more financial incentives); Robert M. Costrell & Michael Podgursky, *Teacher Pension Costs: High, Rising, and Out of Control*, EDUC. NEXT (June 25, 2013), http://educationnext.org/teacher-pension-costs-high-rising-and-out-of-control (concluding that the high costs of teacher defined benefit plans are real and are “crowding out other school spending and are leading to layoffs of young teachers”). Teacher quality has been linked to advances in student education. See, e.g., Linda Darling-Hammond, *Educating Teachers: The Academy’s Greatest Failure or Its Most Important Future?*, 85 ACADEME 26, 29 (1999) (commenting that the ability of teachers is one of the most powerful determinants of student achievement and is more influential than poverty, race, or the educational attainment of parents).
REFORMING PUBLIC PENSIONS

I. MEASURING THE FINANCIAL CONDITION OF PUBLIC PENSIONS: A STUDY OF EDUCATOR DEFINED BENEFIT PLANS

Widespread media attention to recent studies has exposed enormous unfunded liability in public pension plans. Such liability is defined as the future benefits to be paid for which sufficient funds have not been accumulated. Depending on the assumed discount rate and other variables, state pensions are collectively somewhere between $700 billion and $4.6 trillion short of the funding needed to meet their actuarial liabilities. For public school teachers, one study found that unfunded obligations amounted to $933 billion. In this section, we add to these financial analyses by examining educator defined benefit plans and providing statistical analysis of these public plans and the factors that explain their problems.


9. Assuming that investments will appreciate at about eight percent per year indefinitely, the 2011 Pew Report estimated $700 billion in unfunded liabilities. The Widening Gap: The Great Recession’s Impact on State Pension and Retiree Health Care Costs, PEW CHARITABLE TR., (Apr. 25, 2011), http://www.pewtrusts.org/en/research-and-analysis/reports/0001/01/01/the-widening-gap; see also Dean Baker, The Origins and Severity of the Public Pension Crisis, CENTER FOR ECON. & POL’Y RES. 10 (2011), http://www.cepr.net/documents/publications/pensions-2011-02.pdf (estimating a shortfall at $647 billion using more favorable rates of return for pension fund assets). But the unfunded liabilities rise to $1.8 trillion using assumptions similar to corporate pensions or $2.4 trillion using a discount rate based on a thirty-year Treasury bond. See Andrew G. Biggs, Public Sector Pensions: How Well Funded Are They, Really?, ST. BUDGET SOLUTIONS iii (July 2012), http://www.statebudgetsolutions.org/doclib/20120716_PensionFinancingUpdate.pdf (finding total unfunded liabilities of approximately $4.6 trillion as of 2011); PEW CHARITABLE TR., supra note 8. Other studies put the figure around three trillion dollars or more. See Report of the State Budget Crisis Task Force, supra note 6, at 34-35 (estimating three trillion dollars of underfunding by using a lower discount rate than the eight percent rate of return commonly used by pension plans).

10. See Barro & Buck, supra note 6 (calculating a $933 billion shortfall in teacher pension funding, but noting that a previous study estimated only $332 billion).

11. Our calculations ignore other post-retirement employee benefits, including state-provided employee health care. See The Trillion Dollar Gap: Underfunded State Retirement Systems and the Road to Reform, PEW CHARITABLE TR. (Feb. 18, 2010), http://www.pewtrusts.org/en/research-and-analysis/reports/2010/02/10/the-trillion-dollar-gap (reporting that these additional costs total $587 billion in present value). We also focus on state pensions, not local city and county plans. See Robert Novy-Marx & Joshua Rauh, Public Pension Promises: How Big Are They and
Defined benefit plans are the primary kind of pension offered to public employees. Under a defined benefit plan, the government has the obligation to provide retirement income to its employees for the duration of their lives and potentially the lives of their spouses. As such, unlike other pension plans where employees bear the investment risk themselves, defined benefit plans cause employees to rely on employers for their retirement income. In theory, the promise of a pension benefit creates a concomitant duty on the part of the state. In reality, however, employees bear the risk that state governments will fail to provide such benefits. Because of legal impediments to cutting accrued pension benefits, taxpayers will share the burden of plan insolvency when states raise taxes to cover pensions.

We analyze seven years of data (2003-2009) provided by the Boston College Center for Retirement Research. Data collection ends in 2009 because that is the last year that complete data are available. We examine a total of fifty public

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14. Karen Eilers Lahey & T. Leigh Anenson, Public Pension Liability: Why Reform is Necessary to Save the Retirement of State Employees, 21 NOTRE DAME J.L. ETHICS & PUB. POL'Y 307, 310-11 (2007); see also id. at 312 (explaining that defined benefit plans specify an output while defined contribution plans specify an input). For different types of pension plans and their characteristics, see discussion infra Part III.B.


17. See discussion infra Part III.A.3.

18. While there have been some changes in return results and asset allocation for these plans, they reflect the fact that reported data are smoothed over a three-to-four year period to more accurately portray long-term results. It takes a long period of time for significant changes to appear in the data where the changes are in return or mandated by legislatures. If anything, the new changes required by the Governmental Accounting Standard Board (GASB) in 2012 make the data appear worse in terms of the employer contributions. The GASB sets the reporting standards for public pension accounting. The changes require states to lower the discount rate. See Accounting and Financial Reporting for Pensions, GOVERNMENTAL
teacher pensions, comparing the thirteen plans that do not fund Social Security with the thirty-seven plans that do. \[^9\] We hypothesized that non-Social Security states would be in better financial condition due to larger contributions from both employers and employees because they do not have to contribute funds to Social Security. Pension health is critical for participants in these state plans because they are unable to collect Social Security unless they have significant earnings outside of their primary employment. Therefore, if the pension plan cannot make the promised payments, retirement income is not protected by the federal program. Our analysis is noteworthy not only because of the significance of our results relating to pension health, but also because there has been no study of public pensions focused on non-Social Security states.

Contrary to our hypothesis, overall, the data analysis exposes a greater risk for non-Social Security states of not being able to meet benefit payments to retirees. \[^20\] The results are confirmed with an OLS regression. This statistical method allows a comparison of all the factors that impact the differences between non-Social Security plans and those plans that also invest in Social Security.

\[^{19}\] State governments were not able to include employees with pensions in the Social Security System until the middle of the twentieth century. Originally, the Social Security Act of 1935 excluded state and local employees from coverage. Judith S. Lohman, Teachers and Social Security, OLR RES. REP. (Sept. 7, 2006), http://www.cga.ct.gov/2006/rpt/2006-R-0547.htm (advising that limited coverage was due to "constitutional concerns over whether the federal government could impose taxes on state governments"). Given its limited inclusion, numerous amendments were added throughout the years to expand the coverage. H.R. Res. 7225, 84th Cong. (1956) (enacted) (offering a Disability Insurance Program); H.R. Res. 6635, 76th Cong. (1939) (enacted) (adding child, spouse, and survivor benefits to wives and widows over age sixty-five and children under eighteen). Not until 1951 were states able to extend Social Security coverage to employees that were already covered under a public retirement system. 42 U.S.C § 418 (2012) (allowing coverage of all state employees except for police and firefighters covered under a public retirement system); see also Social Security Act Amendments of 1994, Pub. L. No. 103-432, 108 Stat. 4398 (extending coverage to police officers and firefighters). In 1991, Congress amended the law to provide that most state and local government employees are subject to mandatory Social Security coverage unless they are part of an alternative pension plan. Dawn Nuschler, et al., Social Security: Mandatory Coverage of New State and Local Government Employees, CONG. RES. SERVICE 3 (July 25, 2011), http://www.nasra.org/Files/Topical%20Reports/Social%20Security/CRS%202011%20Report.pdf.

\[^{20}\] To reiterate, the results have not changed significantly due to the changes made by the public pension plan accounting regulatory body. If anything, the changes make the numbers look worse in terms of employer contributions.
These factors include the number of teachers and their average salaries, asset allocation, investment return, plan membership, contribution rates, actuarial accrued liability, and the log of the population for each state. Data used in the OLS regression and results are shown in the Appendix in Tables 1-6.

The descriptive statistics reported in Tables 1-4 show the average differences between non-Social Security pension plans and Social Security pension plans for public school teachers who participate in defined benefit plans. Tables 5 and 6 show the results of OLS regressions that determine which variables, if any, are statistically significant when the dependent variable is the unfunded actuarial accrued liability (Uaal). The Uaal is the difference between the actuarial accrued liability and actuarial assets.

There are ten independent variables. The first independent variable is the mean number of active teachers (Teachers). The mean and standard deviation are much higher for non-Social Security states than for Social Security states. The non-Social Security states have both very large teacher populations (California and Texas) and very small teacher populations (Alaska) among the thirteen states.

The second independent variable is the mean salary (Salary). The mean salary is smaller for non-Social Security states but has a larger standard deviation. The third independent variable is the employee contribution rate (Employee Contr. Rates). The contribution rate is the percentage of salary that is contributed to the pension plan by the employee. Employees in non-Social Security states have a higher mean contribution percentage than Social Security states, reflecting the fact that they do not contribute to Social Security. The employer contribution rate (Employer Rates) is the fourth independent variable. It is the percentage of the employee salary that the employer contributes to the pension plan. The rate is higher in non-Social Security states than Social Security states.

The fifth independent variable is the mean percentage of equities (Equities) in the pension plan portfolio. Equities include both United States and foreign stocks, with both Social Security and non-Social Security states having a higher percentage in United States stocks. Non-Social Security states have a higher

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21. See infra Table 5.
22. See infra Table 5.
23. See infra Table 5.
24. See infra Table 5.
25. See infra Table 5.
26. See infra Table 3.
27. See infra Table 5.
28. See infra Table 3.
29. See infra Table 5.
30. See infra Table 1.
percentage of equities but a lower standard deviation, indicating that the percentage of equity holdings is more homogenous on average in these states. Bonds (Bonds) are the sixth independent variable and consist of the mean percentage of both United States and foreign bonds in the pension plan portfolio. As with equities, non-Social Security states have a higher percentage of bonds with a smaller standard deviation.

The seventh independent variable is the mean one-year investment return (One-Year Return). It is the one-year return on the total portfolio of all pension investments for the states in each type of pension plan. Non-Social Security states have a lower return and standard deviation. The eighth independent variable is the mean actuarial accrued liability (Actuarial Liability), which is the present value of future benefits earned for accrued service. The mean dollar number is smaller for non-Social Security states.

The ninth independent variable is the total number of all members (Members), shown by type of pension plan. Non-Social Security states have fewer members and a smaller standard deviation. The tenth and last independent variable is the log of the mean population (LogPopulation) by type of pension plan. The log of the number is used because otherwise this variable would overwhelm all of the other variables.

We run OLS regressions with the data because it is an efficient model to test which of the variables, if any, have a strong relationship with the Uaal. The model allows us to look at all of the variables at one time rather than testing one variable at a time. This type of statistical model focuses on the conditional probability distribution of the dependent variable (Y), given (X), the multiple independent variables. In other words, the OLS regression has the ability to show how strong a relationship there is between Uaal and each of the independent variables. If there is a significant relationship, the results will be marked at the .05 or .01 level of significance. A variable significant at the .05 level indicates that if there is in fact no relationship between the variables, we would expect to get our results only five times out of one hundred. Significance

31. See infra Table 5.
32. See infra Table 5.
33. See infra Table 5.
34. See infra Table 5.
35. See infra Table 5.
36. See infra Table 5.
37. See infra Table 5.
38. See infra Table 5.
39. See infra Table 5.
40. See infra Table 5.
41. See infra Table 5.
at the .01 level indicates that we would get our results only one time out of one hundred if there is in fact no relationship between the variables.

Table 5 shows the means and standard deviations of all the variables in the regression for all fifty states, and for the non-Social Security states and Social Security states separately. Table 6 provides the results of the OLS regression.

The OLS regression for all states is of primary interest because it allows us to determine if there is a significant difference in Uaal between Social Security states and non-Social Security states. We see this by looking at the dummy variable representing membership in a non-Social Security state. A dummy variable in a regression is used to distinguish between two subgroups of data. One subgroup is given a value of zero (Social Security state) and the other subgroup is given a value of one (non-Social Security state) to indicate the absence or presence of the variable that may shift the results of the regression.

At the .01 level of significance, there is a statistical difference between the Uaal for the two types of state pension plans based on the dummy variable. Thus, there is a statistically significant difference between non-Social Security states and Social Security states in their level of unfunded actuarial accrued liability. This means that if the state is non-Social Security, it is more likely to have Uaal.

What can be said about the regression results for all states? Of the ten independent variables, seven of them have a statistically significant relationship to the dependent variable Uaal. If the pension plan has more teachers and a higher projected benefit obligation, then its Uaal will be larger. If the pension plan has lower salaries, fewer equities and bonds in its investment portfolio, fewer members, and a smaller population, then it will have a higher Uaal.

Another way of thinking about the results is that the Uaal is the difference between what the actuary estimates to be the accrued liability (what is owed to the members of the pension plans) and what the actuary estimates the asset value to be in the investment portfolio. If it is a positive difference, then more is owed than has been set aside to pay the members in retirement. Given that contribution rates and one-year returns are not statistically significant, these variables are not strongly related to this actuarially determined difference. The variables outlined above that are statistically significant have a stronger relationship.

In sum, the market crash wiped out billions for already underfunded public pension plans. Our financial evaluation makes clear that plans in non-Social Security states have not been spared and, in fact, are more underfunded than in Social Security states. Each state must examine on an individual basis how the factors in our regression impact Uaal and, accordingly, affect its plan.

Our assessment of the effect of ongoing economic forces is even more dramatic when considered together with demographic forces reshaping retirement income security. Pension receipt among retirees is expected to continue to grow as aging baby boomers, who account for a disproportionate share of the population, retire sooner and live longer than previous generations.42 Therefore, the

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42. In almost forty years, retirement age has fallen dramatically. See Patrick Purcell, Older Workers: Employment and Retirement Trends, 2000 MONTHLY LAB. REV. 19,
unsustainability of these plans, whose membership includes roughly one-quarter of all public employees, should be of great interest to lawmakers and the public at large who must eventually foot the bill. It is assuredly of great concern to the participants themselves.

The gravity of the current crisis has pushed pension reform for teachers and other government workers to the front of the public policy agenda in each state capital. To gain a better understanding of how to manage what analysts are calling the public pension "bomb," the next Part surveys pension reform and its potential legal constraints. To reiterate, surveying recent changes to pension plans in non-Social Security states is important given our results showing their weakened financial condition in comparison to those in Social Security states. But participants will likely have constitutional protections from reforms that reduce their benefits. Understanding what measures are available to fix these failing retirement systems is largely a function of the complex legal environment in which they operate.

II. REVIEWING REFORMS AND THEIR LEGAL OBSTACLES: STATE SURVEY OF PUBLIC PENSION LEGISLATION AND LITIGATION

Pension reform has taken center stage in the public policy debate as states struggle to deal with the fallout from the Great Recession. Given the alarming actuarial deficits, government officials in almost every state have enacted reform legislation. Unfortunately, most measures address only part of the problem,

21 tbl.2 (showing about one-half of males aged sixty-five or over were in the labor force in 1950 compared with less than one-fifth by 1990).


45. Given the data, the ticking time bomb seems an apt analogy. See Katie Benner, The Public Pension Bomb, FORTUNE (May 12, 2009), http://archive.fortune.com/2009/05/12/news/economy/benner_pension.fortune/index.htm (“[S]tates nationwide have shortchanged the retirement programs . . . .”).

falling short of an optimal solution.\textsuperscript{47} Moreover, many states are facing lawsuits challenging these new statutes that may ultimately stymie reform measures.\textsuperscript{46} With a view toward guiding future legislative correctives, this Part reviews recent reforms in non-Social Security states and analyzes their likely legal obstacles.

\textit{A. Political Reform Measures}

The recession is putting tremendous pressure on public pensions and the state governments that fund them. Even with an optimistic rate of return on pension fund investments, projections estimate that plans in seven states will be insolvent by 2020 and plans in half the states will be broke by 2027.\textsuperscript{48} The pension funds in two non-Social Security states, Colorado and Illinois, could default in the next decade unless drastic measures are taken.\textsuperscript{49} The financial situation in these two states, along with California, led one analyst to conclude that "bankruptcy or the complete cessation of all state functions save paying benefits to retirees is not unthinkable."\textsuperscript{50} Other states are also in an emergency scenario where paying down the pension debt will curtail public services, such as money for schools.\textsuperscript{51} With the desire for public employees to have adequate retirement benefits both now and in the future, elected officials in several states have enacted a variety of reform measures. These changes apply to all members of public pensions, including educators.

State legislators have focused on the following measures to help their pension funds: employee contributions, employer contributions, cost of living adjustments (COLAs), age and service requirements, and calculation of benefits. Since 2011 all non-Social Security states except Nevada enacted reform legisla-

\textsuperscript{47} See, e.g., Christopher D. Hu, Note, Reforming Public Pensions in Rhode Island, 23 STAN. L. & POL'Y REV. 523, 530-33 (2012).
\textsuperscript{49} See American States' Pension Funds: A Gold Plated Burden, ECONOMIST, Oct. 14, 2010, at 11, http://www.economist.com/node/17248984; Josh Rauh, The Day of Reckoning for State Pension Plans, KELLOGG SCH. MGMT. (Mar. 22, 2010), http://k elloggfinance.wordpress.com/2010/03/22/the-day-of-reckoning-for-state-pension-plans (illustrating the ten states whose funds are expected to become insolvent the soonest and the ten expected to become insolvent the latest); see also Norcross & Biggs, supra note 6, at 2 (citations omitted) (reporting that state actuaries estimate that New Jersey's pension plans could run out of assets to make benefit payments as early as 2013).
\textsuperscript{50} American States' Pension Funds: A Gold Plated Burden, supra note 49.
\textsuperscript{52} Buck, supra note 48, at 5 (noting a policy tradeoff between benefits and public services).
tion. Several altered their contribution rates in the past few years to combat funding issues. Others increased employee contributions. Meanwhile, one state decreased its employee contributions for new hires. Increasing the contribution rate for employees, employers, or both, should increase the funds available to invest in the existing portfolio of assets. Additional funds add to the dollar amount of assets and, ideally, the investment income which may decrease the unfunded pension liability. Decreasing the employee or employer contribution rate must be balanced by increasing the employer or employee contribution rate, respectively, or increasing the investment income of the portfolio. Otherwise the unfunded pension liability will increase.

Another typical reform was altering the COLA, which is an adjustment made to pension benefit payouts in order to counteract the effects of inflation. Nine states have changed their plans' COLAs, some affecting existing employees and retirees. COLA increases allow retirees to offset some of the impact of inflation on their income. COLA increases, however, occur the year after the inflation has taken place. This means that even when there is a COLA adjustment, retirees' income losses have already occurred and are only partially compensated. By eliminating the COLA or making it dependent on the inflation rate, the costs of retirement benefits over time are significantly reduced.

A common change has also been to increase age and service requirements. Many non-Social Security states have modified these requirements. Increasing the retirement age allows for a longer accumulation period for each individual. This means that there are more contributions from both employees and employers and, hopefully, greater investment income to support the future benefits to be paid. Keeping members active longer also reduces the number of retirees and the length of time that they can collect benefits. Increasing service requirements for retirement eligibility achieves the same ends as increasing the


54. See Snell, supra note 53.
55. Id.
56. Id.
57. Id.
59. See Snell, supra note 53.
retirement age. In many plans, both age and service requirements have been increased.

Furthermore, six states have made changes to the calculation of retirement benefits. These changes normally involve decreasing the benefit factor and increasing the number of years used to calculate the final average compensation. The general formula for most plans at retirement entitles an employee to an annual benefit equal to a percentage of the employee's final average salary, multiplied by the number of years of employment. The reduction in the benefit factor and the increase in the number of years required for retirement results in future retirees having lower benefits in retirement for a shorter period of time. Lower benefits should reduce unfunded liability, but it would take many years for this to have a significant impact on a pension plan. A shorter period of time in retirement should also reduce the cost of future benefits, depending on the longevity of retirees.

In light of the foregoing, legislatures have been making changes to their retirement plans to combat concerns about their continued viability. Presumably to avoid the high costs of lawsuits, states have been careful to limit reforms (other than COLA changes) to new hires. But certain states like Colorado, Maine, and Ohio, unable to finance their pension obligations, have gone further and have extended reforms to current employees and retirees. The next section analyzes challenges to legal changes in Colorado and other states, which will enable lawmakers to reasonably anticipate the litigation risk of future pension reform.

60. See id.
61. See id.
62. Edward A. Zelinsky, The Cash Balance Controversy, 19 VA. TAX REV. 683, 687-91 (2000). The final-pay provision may base benefits on earnings averaged, for example, over the highest three years of employment. See id. at 689. Teachers typically accrue benefits after thirty years of service and receive 57.7% of the final average salary, while public safety workers generally receive 66.6% of the final average salary. See Olivia S. Mitchell et al., Developments in State and Local Pension Plans, in PENSIONS IN THE PUBLIC SECTOR 11, 15 (Olivia S. Mitchell & Edwin C. Hustead eds., 2001). Another common method is the career-pay provision that bases benefits on earnings averaged over the entire career of employment. For an explanation of the various types of defined benefit formulas used in calculating plan benefits, see ALLEN ET AL., supra note 16, at 229-34.
63. See Snell, supra note 53, at 8.
64. States whose employees receive Social Security have also cut benefits to retirees. See Gavin Reinke, Note, When a Promise Isn't a Promise: Public Employers' Ability to Alter Pension Plans of Retired Employees, 64 VAND. L. REV. 1673, 1674 (2011) (noting that Colorado, Minnesota, South Dakota, and New Jersey have passed pension reforms that reduced the amount of benefits to already-retired public employees).
B. Legal Barriers to Reform

This section explains the next phase of public pension reform-related controversies: litigation. Legislative interference with pension rights raises state and federal constitutional concerns. Specifically, government alteration of the defined benefit plan or its basic features could potentially violate the state and federal due process clauses, takings clauses, and contract clauses. Legal protection extends only to existing employees and retirees, not new hires.

The traditional view of public pensions sees them as gratuities granted by the state that can be modified or abolished even after retirement. Texas courts still consider pensions as gratuities. As far as the Constitution is concerned,

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66. Reforms that disadvantage certain workers more than others may also be challenged under the equal protection clause. Similar to the due process clause, alleged equal protection violations are subject to a rational basis review. As a result, pension reform will not be voided on equal protection grounds so long as the statutory classification has some relation to the purpose of the retirement system. Because many statutes set apart retirees as the class that the retirement system is chiefly designed to benefit, it follows that non-retirees will not be entitled to the same treatment under the law. For instance, in State ex rel. Horvath v. State Teachers Retirement Board, legislation targeting non-retirees survived an equal protection challenge. 697 N.E.2d 644 (Ohio 1998). The Supreme Court of Ohio declared there was no disparate treatment between public school teachers who met retirement eligibility and those who did not. Id. at 652-53. Independent of these constitutional rights provisions, certain states also have constitutional provisions relating to their public retirement systems. These provisions may be an independent source of legislative limitation on unilateral modifications. See Smith v. Bd. of Trs. of La. State Emps.’ Ret. Sys., 851 So. 2d 110, 1108 (La. 2003).

67. See Dodge v. Bd. of Educ. Chi., 302 U.S. 74, 81 (1937) (ruling that a new statute reducing payments under a prior statute to those already receiving their pensions did not violate the contract clause); Pennie v. Reis, 132 U.S. 464, 470-72 (1889) (deducting funds from employees’ paychecks for other purposes did not violate beneficiaries’ due process rights because pensions are gratuities that could be withdrawn at any time).

68. See Kunin v. Feofanov, 69 F.3d 59, 63 (5th Cir. 1995) (applying Texas law); City of Dall. v. Trammel, 101 S.W.2d 1009, 1017 (Tex. 1937). Pensions are deemed gratuities only with respect to compulsory plans. See Amy Monahan, Public Pension Plan Reform: The Legal Framework, 5 EDUC. FIN. & POL’Y 617, 621 (2010) (noting that only compulsory plans in Texas and Indiana have no legal protection for adverse plan changes). Optional plans have protection in Indiana. Id.; see also Kraus v. Bd. of Trs. of Police Pension Fund, 390 N.E.2d 1281, 1285 (Ill. App. Ct. 1979) (explaining that optional retirement plans in Illinois had protection from the time employees began contributing to the pension fund). Indiana and possibly Arkansas may also follow the gratuity approach with respect to involuntary plans. See
lawmakers in states that have adopted the gratuity approach have the most freedom to fix pension problems.\textsuperscript{69} They may be constrained by moral and policy concerns, but not the law.\textsuperscript{70}

An overwhelming majority of states, however, have transformed tradition and retreated from the notion of pensions as unprotected gratuities and adopted a modern view that is more protective of the retirement security of public employees.\textsuperscript{71} Change has come by both judicial interpretation and legislative enactment.\textsuperscript{72} The modern view postulates that it is possible for government workers to have a protectable interest in their pensions.\textsuperscript{73} We use the term "view"

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\textsuperscript{69} As discussed infra in Part III.A.2, however, there may be additional protections for pension benefits: public employee political power may also pose a significant impediment to change.

\textsuperscript{70} See Op. of the Justices to the House of Representatives, 303 N.E.2d 320, 325 (Mass. 1973) (allowing the legislature to cut retirees' pensions to the extent they accepted earnings from outside employment after their retirement); McCarthy v. State Bd. of Ret., 331 Mass. 46, 46-47 (1954) (holding that it did not matter that the member was actually receiving his retirement benefits when the statute was passed denying him creditable service for his period in the General Court); Trammel, 101 S.W.2d at 1009-1010, 1017 (upholding a law that cut monthly pension payments to a retiree by more than half because the retiree did not have a vested right to participate in the fund).

\textsuperscript{71} For the evolution from pensions as gratuities to protectable interests, see, for example, Kraus, 390 N.E.2d at 1285, in which the gratuity approach changed under the state constitution; and Horvath, 697 N.E.2d at 652, in which the gratuity approach changed by state statute. The gratuity approach turned into the opposite and equally inflexible absolute vesting approach. Dullea v. Mass. Bay Transp. Auth., 421 N.E.2d 1228, 1233 (Mass. App. Ct. 1981). From these all-or-nothing approaches to pension protection emerged the concept of limited vesting. Id.

\textsuperscript{72} See supra note 71 and accompanying text. For early literature discussing the transition from the gratuity to the contract approach, see generally Note, \textit{Public Employee Pensions in Times of Fiscal Distress}, 90 Harv. L. Rev. 992, 994-1003 (1977); Note, \textit{Contractual Aspects of Pension Plan Modification}, 56 Colum. L. Rev. 251, 255-63 (1956).

\textsuperscript{73} For different approaches to public pension protection mentioned by courts, see, for example, Pineman v. Oechslin, 488 A.2d 803, 808 (Conn. 1985), which describes two limited vesting views and an estoppel approach. For various categories of pension rights conceived by legal scholars, see, for example, Jeffrey B. Ellman & Daniel J. Merrett, \textit{Pension and Chapter 9: Can Municipalities Use Bankruptcy to Solve Their Pension Woes}, 27 Emory Bankr. Dev. J. 365 (2011), which describes multiple modern views including the vested-rights doctrine, the California Rule, the Pennsylvania Rule, contract-theory, and the property interest approach; and Monahan, supra note 68, at 624-28, which suggests three modern approaches:
loosely, as this category of cases has by no means congealed into a clear conceptual framework.\textsuperscript{74} The interest can be conditional and allow states to change the plan terms under certain circumstances.\textsuperscript{7} Nevertheless, at some point, the interest may become unconditional and protected from any and all detrimental changes by the state.\textsuperscript{75} Legal protection for public pensions may be grounded in contract, related tort principles, and property.\textsuperscript{76} If state law accepts the modern view, then employees will likely have more success challenging pension reforms as violating the due process clause, takings clause, and contract clause of the state or federal constitution.\textsuperscript{77} We argue that among the due process clause, takings clause, and contract clause, state and federal contract clauses will be the major impediment to pension reform. We focus our analysis on court decisions in the non-Social Security states.

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constitutional protection of past and future benefit accruals, constitutional protection of past benefit accruals, and non-constitutional contract protection. An additional complication is that courts and commentators use the term “vesting” to mean different things without further elaboration and do not always distinguish between the satisfaction of service requirements and retirement eligibility. We try to avoid the term in this Article.

\textsuperscript{74} Parker v. Wakelin, 123 F.3d 1, 7 (1st Cir. 1997) ("There is much disagreement on the details."); see also id. (eschewing abstract theory in favor of contemplating the structure of the state pension program at issue and the intent of the legislature that created it). Notably, even the traditional view had variations in meaning. See Kraus, 390 N.E.2d at 1285 (explaining conflicting Illinois decisions suggesting whether benefits could be recalled entirely under the gratuity approach). In discussing public pension law in 1973, the Supreme Court of Massachusetts opined that “the law in this country defining the character of retirement plans for public employees was not settled at the time (indeed it remains unsettled today).” Op. of the Justices to the House of Representatives, 303 N.E.2d at 326.

\textsuperscript{75} See, e.g., Parker, 123 F.3d at 7 (reviewing various approaches); see also discussion infra Part II.B.3.

\textsuperscript{76} See discussion infra Part II.B.3.

\textsuperscript{77} In determining federal constitutional protection, courts defer (albeit not entirely) to the definitions of property and contract provided by state law. See Pineman v. Oechslin, 637 F.2d 601, 604 (2d Cir. 1981).

\textsuperscript{78} The legal analysis is substantially the same under federal or state law because the majority of state constitutional clauses echo the federal constitutional clauses. See, e.g., E-470 Pub. Highway Auth. v. Revenig, 91 P.3d 1038, 1045 n.10 (Colo. 2004) (reading state and federal law in unison for a constitutional takings claim challenging public pension reform); 16B AM. JUR. 2D Constitutional Law § 753 (2012) (“Generally, the federal and state constitutional guarantees against the impairment of contractual obligations are interpreted essentially identically and given the same effect.”).
1. Due Process Clause

As in many states, courts in Connecticut and Maine picture pensions as property.\textsuperscript{79} In both states, the pension expectation matures into a property right at some point prior to retirement, possibly upon acceptance of employment.\textsuperscript{80} Courts review legislation for compliance with substantive due process under a rational basis review:\textsuperscript{81} statutory changes will be upheld if they have a legitimate purpose and the method of achieving that goal is reasonable.\textsuperscript{82} Thus, legislatures in states that view pensions as property do not have an unfettered power of revocation, as employees not yet retired or eligible for retirement are protected against purely arbitrary revisions.\textsuperscript{83} This means, however, that legislatures need only show that pension reforms bear some reasonable relation to state finances. In contrast to the stricter level of judicial scrutiny under contract clause jurisprudence discussed in Part II.B.3, the legislature may have other alternatives available to it (such as reducing state services or raising taxes), but still validly choose the pension reform option. The showing is minimal and, as evidenced by the cases, a fairly easy hurdle to overcome.\textsuperscript{84}

In \textit{Spiller v. State},\textsuperscript{85} the Supreme Court of Maine determined that state action excluding unused sick leave from the benefit calculation as well as increasing the minimum retirement age and penalty for early retirement did not violate due process.\textsuperscript{86} These pension reforms applied only to employees who had not met the initial service requirement.\textsuperscript{87} Therefore, Maine’s recent reforms, in-

\textsuperscript{79} Pineman v. Oechslin, 488 A.2d 803, 809-10 (Conn. 1985); Spiller v. State, 627 A.2d 513, 516-17 (Me. 1993).
\textsuperscript{82} See id.
\textsuperscript{83} See, e.g., Pineman, 488 A.2d at 810.
\textsuperscript{86} Spiller, 627 A.2d at 517 n.12.
\textsuperscript{87} Id. at 514.
creasing the retirement age for those with less than five years of service, are unlikely to merit a due process challenge.  

The Supreme Court of Connecticut in *Pineman v. Oechslin* endorsed a property approach once employees become eligible to receive benefits, but never reached the due process issue. A superior court applied *Pineman in Levine v. State Teachers Retirement Board* to uphold COLA changes in the teachers' retirement system. Teachers in the Connecticut public school system claimed they had state and federal substantive due process guarantees to the COLA in existence when they were eligible for retirement. The court noted, however, that retirement eligibility and COLA eligibility were set at different times under the statute, with COLA eligibility occurring only after retirement. Therefore, the court determined that the teachers did not have a property right in a particular COLA amount. Even assuming a property interest in the COLA, the court further found that the teachers did not satisfy their burden to show a violation of their substantive due process rights. The court emphasized that the sponsor of the reform bill stated that the teachers received higher salaries, which limited the state's ability to fund their retirement system. Relying on this testimony, the court held that there was no arbitrary forfeiture of retirement benefits by modifying a prospective COLA. Accordingly, the due process hurdle is quite low, with reasonable reforms fulfilling state and federal constitutional conditions.

2. Takings Clause

Takings clause challenges also involve viewing pensions as property. State and federal takings clauses recognize government power to take property and limit the exercise of that power. Traditionally, the Takings Clause has been an issue when the government formally condemns land through its power of eminent domain, but it has many other applications, such as reforming public pen-

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88. See *Pew Charitable Tr.*, *supra* note 44; discussion *supra* Part II.A (summarizing reforms in non-Social Security states).
89. 488 A.2d 803 (Conn. 1985).
90. *Id.* at 810.
92. *Id.* at *3.
93. *Id.* at *4.
94. *Id.*
95. *Id.* at *5-6.
96. *Id.* at *6.
97. *Id.* at *5-6.
sions. However, we suggest that the takings clause is not much of a barrier to pension reform.

Ohio provides an illustration. In State ex rel. Horvath v. State Teachers Retirement Board, the Supreme Court of Ohio found that a revocation of interest earned on contributions prior to retirement did not constitute an unconstitutional taking of property under state or federal law. Utilizing the triad of factors provided by the U.S. Supreme Court in Penn Central Transportation Co. v. New York, the Ohio court found that public pension funds were properly characterized as public, not private, property, and that any economic impact was offset by the potential benefits of a functioning retirement system. The court additionally reasoned that there were no reasonable investment-backed expectations to accrued interest because the reform removing the provision for interest earned was in effect for as many or more years as the law providing for interest and that, in any event, reliance on a state of affairs should not include the challenged regulatory scheme.

Takings clause challenges are also largely, but not entirely, impacted by the contract clause jurisprudence discussed in more detail below. For instance, in Maine Ass'n of Retirees v. Board of Trustees of Maine Public Employee Retirement System, the First Circuit Court of Appeals concluded that the fact that the retirees lacked a contract right foreclosed the takings claim. Even if pension modifications were found to abridge state and federal constitutional rights, the remedy available for a takings claim is “just compensation,” rather than injunc-

98. 697 N.E.2d 644 (Ohio 1998).
99. Id. at 648-52.
100. Id. at 650 (citing Pa. Cent. Transp. Co. v. New York, 438 U.S. 104, 124 (1978)). The triad of factors are: (1) the economic impact of the regulation on the claimant, (2) the extent to which the regulation has interfered with distinct investment-backed expectations, and (3) the character of the government action. See id.
101. Id. at 650-52.
102. If no contract right is found, there is no takings claim. See Spiller v. State, 627 A.2d 513, 515 n.6 (Me. 1993) (noting that the lower court decided the case on the contract clause despite the fact that the plaintiffs also argued a taking of their property without compensation and without due process of law); Buck, supra note 48, at 2 n.6 (commenting that a takings violation is dependent on finding a contractual right in the future stream of payments); id. at 49-50 (citing Ruckelshaus v. Monsanto Co., 467 U.S. 986, 1003 (1984) (finding that contracts are property within the meaning of the takings clause)). If a contract right is found, pension modifications may not violate the contract clause if they are deemed a reasonable and necessary government interest, but can still be considered an illegal taking because the government justification is irrelevant. See Beermann, supra note 43, at 64.
103. 758 F.3d 23 (1st Cir. 2014).
104. Id. at 32 n.12.
tive relief to bar the enforcement of pension reform measures. As such, the most serious constitutional objections to statutory reform in the public pension field come from contract challenges.

3. Contract Clause

The remaining non-Social Security states, along with Maine and Ohio, discussed previously, adhere to a contract perspective limited by the contract clause and subject to intermediate scrutiny. Stricter examination of legislation concerning contract rights results in a higher degree of protection than for property rights. Therefore, courts in jurisdictions recognizing pensions as contracts are more likely to bar reform efforts.

To determine whether pension reform is an unconstitutional impairment of an employee’s contract, courts employ a three-part test: (1) whether there is a contractual obligation; (2) if a contract exists, whether the legislation imposes a substantial impairment; and (3) if there is an impairment, whether the legislation is reasonable and necessary to serve an important public purpose.

a. Contract Existence

Determining the first element—the existence of a contract—varies across jurisdictions. The source of the contract right may be found in the state constitution, a statute, a judicial decision, or even a collective bargaining agreement. The most common basis for the contract is the state statute providing

105. Secunda, supra note 46, at 271 (outlining the differences in remedies between the takings clause and contract clause).

106. See U.S. CONST. art. I, § 10 (providing “No State shall . . . pass any . . . Law impairing the Obligation of Contracts”); see also Allied Structural Steel Co. v. Spannaus, 438 U.S. 234, 240-44 (1978). While Maine and Ohio recognize pensions as property and a contractual right, Connecticut appears to have rejected the contract approach entirely in favor of a property model. See Pineman v. Oechslin, 488 A.2d 803, 810 (Conn. 1985); supra Part II.B.

107. See Spannaus, 438 U.S. at 244-50 (discussing the second and third parts of the test); U.S. Trust Co. v. New Jersey, 431 U.S. 1, 17-18, 21, 28-29 (1977).

108. See Spiller v. State, 627 A.2d 513, 516 n.9 (Me. 1993). The non-Social Security states of Alaska and Illinois have constitutional pension protection provisions. ALASKA CONST. art XII, § 7 (“Membership in employee retirement systems of the State or its political subdivisions shall constitute a contractual relationship. Accrued benefits of these systems shall not be diminished or impaired.”); ILL. CONST. art. XIII, § 5 (“Membership in any pension or retirement system of the State, any unit of local government or school district, or any agency or instrumentality thereof, shall be an enforceable contractual relationship, the benefits of which shall not be diminished or impaired.”).
for public pensions. Courts tend to look to the relevant language as well as the intent of the drafters to discern whether a contractual right was created against the state. As a textual matter, federal and several state courts require clear and unambiguous evidence of a contract. The presumption against finding a contract is predicated on the idea that legislatures, in enacting statutes, declare policy rather than binding contracts. Nevertheless, many decisions on constitutional contract law still favor existing public employees and retirees. With respect to these pension plan participants, the question is not only "if" there is a contract, but "when" it was formed. Courts have given different answers.

At one end of the spectrum are states like Alaska, California, Colorado, Illinois, Nevada, and Massachusetts, among others, which find that

109. Because most state statutes do not expressly create a contract, the central judicial inquiry is whether such a contract may be implied from the circumstances. See Amy B. Monahan, Statutes as Contracts? The "California Rule" and Its Impact on Public Pension Reform, 97 IOWA L. REV. 1029, 1037 n.39 (2012) (stating that collective bargaining contracts, often known as memoranda of understanding in the public sector, may explicitly create a contract).

110. See, e.g., Pineman, 488 A.2d at 809-10; Spiller, 627 A.2d at 515; State ex rel. Horvath v. State Teachers Ret. Bd., 697 N.E.2d 644, 653-54 (Ohio 1998). Courts have coined the phrase "unmistakability doctrine" for this rule of construction. United States v. Winstar Corp., 518 U.S. 839, 871 (1996); see also Parker v. Wakelin, 123 F.3d 1, 5 (1st Cir. 1997) (dating the history of the doctrine to Justice Marshall's opinion in Fletcher v. Peck, 10 U.S. (6 Cranch) 87 (1810)); Monahan, supra note 109, at 1076 (explaining that courts in California do not use this rule of construction and, in fact, erroneously fail to inquire into legislative intent at all).


112. Beermann, supra note 43, at 51-52 (discussing state constitutional law and questioning the use of this textual canon when the government is acting as an employer).

113. See Parker, 123 F.3d at 9 (finding three possible interpretations of the statutory language that guaranteed pension benefits once they are due: from the moment of employment; upon completion of the initial service requirements, even if benefits are not yet payable; and when benefits are literally due to be received at retirement).

114. Alaska has language that specifically applies only to accrued benefits, but the courts have interpreted the provision to protect all benefits from the time partici-
a pension contract forms simultaneously with employment. The effect of such a "first day" rule is that future accruals may be protected or, in other words, purely prospective changes to pension benefits may be null and void. Because the law in these states is extremely protective of public employees' and retirees' pension expectations, legislatures in these states face the most difficult legal obstacles to pension reform. Notably, reform would be especially onerous in Illinois and Alaska, as it would require a constitutional amendment.

The inability of legislatures to respond to economic emergencies under the first day rule is one reason why some court decisions appear to be liberalizing

116. See generally Monahan, supra note 109, at 1051-69 (tracing the ninety-year history of the California rule).


119. Nicholas v. State, 992 P.2d 262, 264 (Nev. 2000); Pub. Emps.' Ret. Bd. v. Washoe Cnty., 615 P.2d 972, 973-74 (Nev. 1980); see also Monahan, supra note 109, at 1040 (explaining that Nevada follows the California rule of contract clause analysis for public pensions). Nevada provides even broader protection for workers than California and other states. While California limits the contract right only to benefits that accumulate during their service, see Pasadena Police Officers Ass'n v. City of Pasadena, 195 Cal. Rptr. 339, 346 (Cal. Ct. App. 1983), Nevada immunizes benefits from alteration at the time of retirement and allows employees to keep even those favorable changes that went into effect after the employee's service ended. Washoe Cnty., 615 P.2d at 974 (finding the reduction in retirement benefits unconstitutional after the repeal of a law quadrupling the amount of benefits a retired legislator may receive, which went into effect after the legislator's service ended).

120. See generally Op. of the Justices to the House of Representatives, 303 N.E.2d 320, 329 (Mass. 1973) (holding that a proposed increase in the contribution rate for employees was presumptively invalid because no evidence had been presented to excuse the impairment of the members' pension rights).

121. Monahan, supra note 109, at 1036, 1046, 1071 (counting twelve states that follow the California approach but noting that three of them have now modified it: Oregon, Colorado, and Massachusetts); see also Jonathan B. Forman, Funding Public Pension Plans, 42 J. MARSHALL L. REV. 837, 866 (2009).

122. Monahan, supra note 109, at 1066-69 (discussing California law).

123. See supra note 108 and accompanying text.
this line of authority. These decisions make clear that the question of contract existence includes not only when the contract is formed, but also what it protects. For instance, a recent decision from Colorado distinguished core retirement benefits protected upon employment from other plan provisions. In ruling the COLA reduction for employees and retirees constitutional, the district court in Justus v. State found no clear statutory language evidencing that plan participants were entitled to an unchanged COLA for the duration of their benefits. The court also emphasized the fact that the legislature had previously changed the COLA for participants, holding that the revision negated any reasonable expectations that the COLA would remain the same. The court of appeals, however, reversed and remanded. It held that the plaintiffs had a contractual right to the COLA when their rights vested, which could not be reduced unless the government satisfied the second and third prongs of the contract analysis. In finding a contract right to a particular COLA amount, the appellate court relied on precedent from the Colorado Supreme Court holding that employees had contract rights to pension escalation provisions. The court reasoned that the COLAs at issue operated like these provisions because both increased plan members’ benefits after they have retired, pursuant to a specified formula. The Supreme Court of Colorado granted certiorari and reversed the judgment of the court of appeals. In holding that the retirees did not have a contractual right to the COLA formula in effect at the time they became eligible for retirement or retired, the court’s ruling tracked the district court opinion.

124. Monahan, supra note 109, at 1072-73 (discussing decisions in Colorado and Oregon).
125. Justus v. State, No. 2010-CV-1589, slip op. at 9 (Colo. Dist. Ct. June 29, 2011); see also Monahan, supra note 109, at 1073 (noting that the district appears to break with the California rule endorsed by the Colorado Supreme Court).
127. Id.
128. Id.
130. Id. at *7. The appellate court clarified that the employees do not have a contractual right to any increase in COLA that went into effect after they became eligible to retire or retired. Id.
131. Id. at *6-7 (discussing Police Pension & Relief Bd. v. Bills, 366 P.2d 581 (Colo. 1961) and Police Pension & Relief Bd. v. McPhail, 338 P.2d 694 (Colo. 1959)).
132. Id. at *7.
134. Id. at *2.
It also distinguished, and, to some extent, overruled its former decisions that the appellate court had followed.\textsuperscript{135}

Other states have relied on the same rationale as the Colorado Supreme Court, holding that employees do not have an expectation to a specific unchanging COLA amount. The New Mexico Supreme Court in \textit{Bartlett v. Cameron},\textsuperscript{136} for instance, found that the COLA's history of revision supported the court's interpretation that such adjustments were legislative policy rather than enforceable rights.\textsuperscript{137} Also important was that the COLA had been tied to inflation, which allowed for it to decrease.\textsuperscript{138}

A lower court in Massachusetts also deviated from the first day rule endorsed by the state supreme court. The intermediate appellate court in \textit{Dullea v. Massachusetts Bay Transportation Authority}\textsuperscript{139} allowed the complete repeal of increased benefits thirty-seven days after enactment due to the lack of substantial service under the provision.\textsuperscript{140} It held that contract rights to pension benefits originate "when the employees first began work."\textsuperscript{141} Moreover, like Colorado, a more recent decision by the Massachusetts Supreme Court in \textit{Madden v. Contributory Retirement Appeal Board}\textsuperscript{142} emphasized its prior precedent separating core essential terms from those perceived to be peripheral.\textsuperscript{143} Accordingly, legislatures contemplating statutory amendments need to consider carefully not only if and when there is a contract, but also what terms are included within it.

The ongoing COLA litigation in many states that have upheld these reforms suggests that judges in future cases may not strictly follow precedent and read all plan provisions into the agreement.\textsuperscript{144} Rather, courts may scrutinize each provision to discern whether it is a term of the contract.\textsuperscript{145} One lesson for lawmakers attempting to save money in order to salvage their retirement systems is

\textsuperscript{135} See \textit{id.} at *1, *5-7.
\textsuperscript{136} 316 P.3d 889, 895 (N.M. 2013).
\textsuperscript{137} \textit{Id.}
\textsuperscript{138} \textit{Id.}
\textsuperscript{140} \textit{Id.} at 1235-36.
\textsuperscript{141} \textit{Id.}
\textsuperscript{142} 729 N.E.2d 1095 (Mass. 2000).
\textsuperscript{143} \textit{Id.} at 1098 (citing Op. of the Justices to the House of Representatives, 303 N.E.2d 320 (Mass. 1973) (holding that the statutory contract language means that the government may not deprive members of the "core of... reasonable expectations" they had when they entered the retirement system)).
\textsuperscript{144} See Munnell et al., \textit{supra} note 58, at 4 ("Of the 17 states that changed their COLA, 12 have been challenged in court. The courts have ruled in nine states and in all but one case have upheld the cut.").
to differentiate primary from arguably ancillary terms. Distinguishing between COLAs and other retirement benefits is a prime example. Maine’s COLA changes were recently upheld on such grounds. The type of COLA is also important, with an investment- or inflation-linked COLA formula more likely to withstand constitutional challenge. Legislators should also consult the history of state pension legislation. Past modifications of particular provisions may increase the odds that such reforms will be allowed in the future.

At the opposite end of the spectrum are jurisdictions like Kentucky, Louisiana, Maine, Missouri, and Ohio. These states find no contract until retirement or upon qualification for retirement. As a result, legislation adversely affecting non-retired workers (and some existing workers who meet the prescribed age and service requirements for retirement eligibility) will be up-


148. See Smith, 851 So. 2d at 1106-07. The Louisiana Constitution explicitly provides that membership in any retirement system shall be a contractual relationship between employee and employer. LA. CONST. art. X, § 29(B). Similar to Alaska and Illinois, Louisiana constitutionally protects accrued benefits of state public pension plan participants. LA. CONST. art. X, § 29(E)(5). Rather than reading pension contract rights to begin with employment, however, the Louisiana Supreme Court interpreted its constitution to protect benefits once a participant qualifies for retirement under the plan. Smith, 851 So. 2d at 1105 (noting that the constitutional provision also declares that future benefits can be altered by legislative enactment such that only benefits earned to date are protected).

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150. See Parker v. Wakelin, 123 F.3d 1 (1st Cir. 1997). Recall from the discussion supra Part II.B.1 that Maine protects pre-eligibility pension interests as a matter of property.


153. The satisfaction of plan vesting requirements also triggers legal protection in Connecticut. However, because that state rejects a contract in favor of a property approach, pension reforms will stand if they satisfy due process of law. See Pimenov v. Oechslin, 488 A.2d 803, 810 (Conn. 1985) (determining that the statutory retirement plan for state employees was not contractual in nature).
held under a contract challenge. For instance, despite its failure to find that the pension statute constituted a contract for employees with fewer than seven years of creditable service, 54 the Supreme Court of Maine in Spiller v. State left the contract door ajar, allowing future legislative modifications of pension benefits. 55 Following Spiller, the First Circuit Court of Appeals in Parker v. Wakelin56 further interpreted Maine’s retirement statute to contractually bind the state to provide an undiminished level of benefits only upon retirement. 57

Still other jurisdictions fall in between these two extremes. Courts draw lines at some point after the onset of employment but before retirement eligibility. As such, it is potentially easier for state sponsors to alter existing benefits than under the “first day” of government employment approach followed in many non-Social Security states, but more difficult than under the “last day” approach adopted in a few others. Instead of focusing on the day a contract right obtains, this more moderate method of ascertaining constitutional safeguards directs attention to the reliance interests of public workers. 58 Specifically, rights may arise pre-retirement eligibility under the doctrines of promissory estoppel or quasi-contract. 59 Employment benefits are protected as a result of proven reliance. 60 Moreover, at some point during the employment relationship, reliance is presumed as a matter of law. 61

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155. Id. at 517 n.12 ("We do not here determine whether additional changes to the retirement statute would implicate the contract . . . clauses of our constitutions . . .").

156. 123 F.3d 1 (1st Cir. 1997).

157. Id. at 2 (reversing the district court decision determining that contract protection began once a worker satisfied the service requirements).


159. Pineman v. Oechslin, 488 A.2d 803, 808 (Conn. 1985) (discussing contract implied in law approach); Singer v. City of Topeka, 607 P.2d 467, 476 (Kan. 1980) (finding that a public employee acquires a contract right in a pension plan after “continued employment over a reasonable period of time during which substantial services are furnished to the employer, plan membership is maintained, and regular contribution into the funds are made”); Christensen v. Minneapolis Mun. Emps. Ret. Bd., 331 N.W.2d 740, 747 (Minn. 1983); Sims, 456 S.E.2d at 181 (declaring that a protectable interest depends on whether the employee had a sufficient number of years within the system to have “relied substantially to his or her detriment on the existing pension benefits and contribution schedules”).

160. The West Virginia Supreme Court announced: “changes can be made with regard to employees with so few years of service that they cannot be said to have relied to their detriment. Line drawing in this latter regard must be made on a case-by-case
In the non-Social Security states specifically, decisions from Maine and Massachusetts indicate that reliance interests may trigger constitutional protection. While Maine’s pension statute has been read to create contract rights upon retirement, the Supreme Court of Maine declared the promissory estoppel option potentially available to prevent detrimental changes to pension benefits. Thus, Maine appears to have moved to an intermediate position of pension contract formation. Remember, too, that an appellate court in Massachusetts, a jurisdiction following the first day rule of pension contract protection, announced that a contract right arises after “substantial service.”

Additional possibilities exist for mid-career pension protection. Courts could adopt an approach that secures public pensions, like private pensions, after an employee completes the requisite service under the plan. Alternatively, safeguarding benefits actually earned to date would mirror private sector pension protection and allow legislative changes for future service. It is this basis, but after ten years of state service detrimental reliance is presumed.”

161. *Id.* The Minnesota Supreme Court adopted a “promissory estoppel approach” and equated it to a contract implied in law, often referred to as a quasi-contract. *Christensen*, 331 N.W.2d at 748 (finding unconstitutional a suspension of retiree benefits due to an increase in retirement age); *see also Pineman*, 488 A.2d at 808 (discussing Minnesota’s approach that “a statutory pension plan is found to constitute a contract implied in law based upon the reasonable expectations of the public employees”). The court reserved judgment on whether a contract approach may be viable in future cases. *Christensen*, 331 N.W.2d at 748.


163. *See Dullea v. Mass. Bay Transp. Auth.*, 421 N.E.2d 1228, 1235 (Mass. App. Ct. 1981) (finding that a contract right arises after substantial services are provided); *accord Singer*, 607 P.2d at 475 (finding that more than eleven years of service is substantial service). An early decision in California came to a similar conclusion. See *Kern v. City of Long Beach*, 179 P.2d 799, 803 (Cal. 1947) (stating that an employee has “pension rights as soon as he has performed substantial services for his employer”).

164. *See Singer*, 607 P.2d at 474 (citing cases from Arkansas, Delaware, and Pennsylvania); *Buck*, *supra* note 48, at 33 (relying on federal precedent construing statutory contract claims under ERISA); *see also Hurd v. Ill. Bell Tel. Co.*, 234 F.2d 942, 946 (7th Cir. 1956) (finding that a “pension plan is a unilateral contract which creates a vested right in those employees who accept the offer it contains by continuing in employment for the requisite number of years”). But see *Parker v. Wakelin*, 123 F.3d 1, 3 (1st Cir. 1997) (reversing a court decision adopting the satisfaction of service paradigm).

ticular middle ground that has generated the approval of legal scholars.\textsuperscript{166} Accepting the concept of pensions as deferred compensation,\textsuperscript{167} Professor Monahan argues that no employee can have a reasonable expectation of future benefits given the nature of the employment relationship.\textsuperscript{168} Subject to the employment-at-will doctrine, employees can have their salaries reduced or even terminated at any time for almost any reason.\textsuperscript{169} Professor Monahan’s argument makes sense, but her logic does not necessarily extend to discrete groups of government workers, like tenured teachers, who have heightened protection from the loss of employment.

If no contract exists between the government pension plan sponsor and its participants, pension reforms are constitutional. If a contract is found, be it on the first or last day of employment, or somewhere in between, pension reforms may withstand constitutional challenge if the legislative changes do not substantially impair that contract, or if they are found to be reasonable and necessary.

\textit{b. Substantial Impairment}

The second prong of the contract analysis, requiring substantial impairment, is another serious obstacle to pension reform. The Supreme Court has given little guidance as to what constitutes a substantial impairment of a pension contract.\textsuperscript{170} The Court has indicated that the requisite degree of impairment may be measured by reference to the values underlying the common law of contracts.\textsuperscript{171} This suggests a balancing approach where courts weigh the policies of certainty and fairness on a case-by-case basis. For the sake of simplicity, courts considering public pension contracts could weigh certainty (in terms of the participants’ need to order their financial affairs) against fairness (in terms

\begin{itemize}
\item \textsuperscript{166} See Monahan, supra note 109, at 1076-79 (asserting that theory and public policy support the idea that government workers are only entitled to the benefits they have accrued during their employment); Buck, supra note 48, at 3 ("This theory coheres with most of the case law construing federal and state contracts clauses."). But see Madiar, supra note 68, at 192-93 (criticizing Professor Amy Monahan’s position that contract protections should extend to what workers have accrued).
\item \textsuperscript{167} Buck, supra note 48, at 4 (viewing pensions as back-loaded salary).
\item \textsuperscript{168} Monahan, supra note 109, at 1078-79; cf. Beermann, supra note 43, at 59-60 (agreeing with Monahan’s argument only to the extent that it is supported by the policy of flexibility).
\item \textsuperscript{169} Monahan, supra note 109, at 1078-79.
\item \textsuperscript{170} Id. at 1041 n.70. Under the original understanding of the Contract Clause, all retrospective modifications of contractual obligations were unconstitutional. See Douglas W. Kmiec & John O. McGinnis, The Contract Clause: A Return to the Original Understanding, 14 Hastings Const. L.Q. 525, 526 (1987).
\item \textsuperscript{171} Allied Structural Steel Co. v. Spannaus, 438 U.S. 234, 245 (1978).
\end{itemize}
of state legislatures' need to maintain flexibility.\textsuperscript{172} In short, "substantial" would seem to mean a material rather than a minor breach.\textsuperscript{173}

Not all state courts interpreting their own constitutional provisions use the language "substantial impairment," but they often espouse a similar, if not identical, standard.\textsuperscript{174} California's version, for instance, measures whether disadvantages are offset by new advantages.\textsuperscript{175} In California, changes to benefit formulas,\textsuperscript{176} funding sources, and methodology\textsuperscript{177} have each been held to be substantial impairments of the pension contract.\textsuperscript{178} Conversely, changes to actuarial factors reducing employer contributions (rather than altering benefit calculations) were not deemed substantial.\textsuperscript{179} Illinois courts discern whether the modification directly or indirectly diminishes the benefits.\textsuperscript{180} Other jurisdictions have found participants' contract rights impaired by increasing minimum age

\begin{enumerate}[172.]
\item See Balt. Teachers Union v. Mayor & City Council, 6 F.3d 1012, 1017 (4th Cir. 1993) (explaining that inducement to contract and reasonable reliance are determinants of impairment).
\item See U.S. Trust Co. v. New Jersey, 431 U.S. 1, 26-27 (1977); see also id. at 31 (citing El Paso v. Simmons, 379 U.S. 497, 515 (1965)).
\item At least one state foregoes any remaining analysis after finding a contract. Yeazell v. Copins, 402 P.2d 541, 546 (Ariz. 1965) (finding that a contract begins at employment and may not be changed without employee consent).
\item California's concept of contract seems to conflate the second and third prongs of the standard contract approach. See Monahan, supra note 109, at 1064 (noting ambiguity); see also Munnell & Quinby, supra note 80, at 2-3 (putting California's test in the third prong of the contract standard).
\item See Betts v. Bd. of Admin., 582 P.2d 614, 619 (Cal. 1978).
\item For decisions in other states, see Deonier v. State, 760 P.2d 1137, 1141-42, 1146 (Idaho 1988), which deemed offsetting pension benefits by the amount of workers' compensation benefits to be a substantial impairment; and Calabro v. City of Omaha, 531 N.W.2d 541, 551 (Neb. 1995), which found cost-of-living supplemental payments to be a substantial impairment.
\item Int'l Ass'n of Firefighters v. City of San Diego, 667 P.2d 675, 679-81 (Cal. 1983). Other pension reforms outside of California that did not rise to the level of substantial impairments include reducing the amount of employer contributions where there was no evidence that doing so would render the pension system actuarially unsound, investing pension assets in a state prison construction project, accounting changes, changing the default rules for beneficiary designations, and providing participants a choice of continuing to accrue benefits under an old formula or moving to a new accrual structure. Monahan, supra note 68, at 632 (citing cases from Washington, West Virginia, South Dakota, and Maryland, respectively).
\end{enumerate}
requirements for retirement, mandating unpaid leave, and doubling employee contributions without added benefits.

Analyzing case outcomes across approximately half of the United States, Professor Monahan concluded that the second part of the three-part constitutional contract standard has created a serious barrier to pension reform, since many reforms of public pension plans have been found to be impairments. In the thirteen states where pensions are a substitute for federal Social Security benefits, we believe that reforms are even more likely to be barred as a constitutional harm because public pension benefits are the one and only retirement payment from any government in these states. Indeed, in considering the public pension crisis, many scholars have emphasized that the absence of additional federal benefits places these particular public workers in a more precarious position.

c. Reasonable and Necessary to Accomplish an Important Objective

Despite the existence of a contract and its substantial impairment, state reforms may still survive under the third prong of the contract clause analysis if they are reasonable and necessary to accomplish an important purpose.

Under the federal ends-means analysis, the purpose of the reform is sufficiently important if it is meant to accomplish a broad social or economic objective rather than favoring narrow special interests. The method is reasonable and necessary if the government did not assume the risk of the events prompting the change and there was no other way to solve the problem. Satisfying both will shield state pension reforms from constitutional challenge. Courts testing legislative objectives under state law appear to ascribe to a similar standard of review. In Massachusetts, for example, judges use more lenient language

183. Singer v. City of Topeka, 607 P.2d 467, 476 (Kan. 1980); cf. Kraus, 390 N.E.2d at 1293 (suggesting that increasing contribution rates to some employees to equalize their contributions with those of others would not be prohibited).
184. Monahan, supra note 68, at 624; see also Monahan, supra note 109, at 1035 n.29 (clarifying that her prior research reviewed twenty-four jurisdictions).
185. See, e.g., Monahan, supra note 109, at 1076.
188. Unlike the deference given legislatures in determining the existence of a contract, courts tend to scrutinize legislative justifications for changing contractual terms. See id. at 25-26 (finding that courts defer to a lesser degree when the state is a party to the contract because the state’s self-interest is at stake).
and ask whether the modifications are reasonable and "bear a material relationship to the theory of the pension system and its successful operation."

In considering public pension reform, reducing the budget deficit is likely to be considered an important purpose. But cutting pension benefits may not be deemed necessary to accomplish that purpose. However, recent reforms related to teacher pensions in one state were upheld on state constitutional contract grounds because they created accountability with the public school system and maintained a system of free public education. State reforms may better surmount a contract clause challenge if they have already attempted other ways to address their monetary woes.

Relying on Supreme Court precedent that found economic interests a defensible use of state power, one scholar predicts that states may use the recession to justify pension modifications under the necessity exception. By analogy to the doctrine of excuse in contract theory, states raising the defense must show they had no reason to know of a possible drastic drop in the market value of their public pensions. Still, simply showing the unanticipated severity of the financial crisis may not be enough.

189. Madden v. Contributory Ret. Appeal Bd., 729 N.E.2d 1095, 1098 (Mass. 2000) (citing Wisley v. San Diego, 188 Cal. App. 2d 482, 485-86 (Cal. Dist. Ct. App. 1961) (finding a teacher’s part-time service may be prorated to reduce creditable service after she entered the retirement system because the regulation was correcting a disparity in treatment)).

190. See, e.g., Spiller v. State, 627 A.2d 513, 515 (Me. 1993) (noting lower court ruling that reducing budget deficit satisfied the ends requirement but that pension cuts failed to meet the means requirement); Christensen v. Minneapolis Mun. Emps. Ret. Bd., 331 N.W.2d 740, 751 (Minn. 1983) (cutting expenditures at a time of fiscal distress is a legitimate and significant public purpose).

191. Pub. Emps.' Ret. Bd. v. Washoe Cnty., 615 P.2d 972, 973-74 (Nev. 1980) (finding denial of early retirement to certain public employees was unreasonable and unnecessary without evidence the change was essential to maintain the integrity or flexibility of the system).

192. See Buck, supra note 48, at 17 (citing Idaho case).


195. Cloud, supra note 194, at 2205.

196. See id.; see also AFSCME v. City of Benton, Ark., 513 F.3d 874, 882 (8th Cir. 2008) (calling for "unprecedented emergencies, such as mass foreclosures caused by the Great Depression"); Peterson v. Fire & Police Pension Ass'n, 759 P.2d 720, 725-26 (Colo. 1988) (allowing alteration of survivor pension benefits "to avoid bankrupting the Denver system and others throughout the state"); cf. Buck, supra note 48.
REFORMING PUBLIC PENSIONS

State governments are even less likely to justify pension reform when equitable arguments are available to challengers. Specifically, the government’s resort to the excuse doctrine may be rebuffed by equitable principles given that states are at least partly responsible for the present predicament.\(^9\) As indicated earlier, in many cases, proof of persistent underfunding aggravated actuarial deficits and made pensions susceptible to the stock market plunge in the first place. Equitable theories of unclean hands or estoppel would be particularly apt should governments attempt to use a different discount rate to establish excuse than the discount rate used to set their contributions.

Of the three constitutional provisions previously discussed, reform measures face the most serious challenge from state and federal constitutional contract clauses. This issue is important, as it can lead to vastly different payments to employees, depending on whether the reforms are upheld. For example, the seemingly small 1.5% COLA reduction in Colorado at issue in Justus v. State had a serious financial impact on pension participants. Retirees who received a pension of $33,254 in 2009 will lose more than $165,000 in benefits over a twenty-year period.\(^9\) Studies suggest that eliminating a two percent compounded COLA reduces lifetime benefits by at least fifteen percent and that eliminating a three percent COLA reduces benefits by up to twenty-five percent.\(^9\) Moreover, COLA cuts are particularly detrimental in states like Maine and Colorado, where employees are not covered by Social Security, which is fully adjusted for price increases.\(^2\) COLAs, as a result, provide retirement income valuable protection against inflation. Of course, the same reforms will save taxpayers billions.

Most states have avoided any litigation by reserving pension reform, other than COLA cuts, for new hires. This is true even in states where contract rights do not exist until retirement eligibility, which suggests that those state governments at least can do more to remedy their retirement systems. Even in states that protect pensions upon employment, there may be avenues to uphold cer-

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\(^{199}\) See Munnell et al., supra note 58, at 3 tbl.1.

\(^{200}\) See id. at 3. The current low inflation environment may not undercut retirement earnings too severely, but real earnings will erode if inflation rises. See id. at 4. Moreover, in Maine and Illinois, employees with higher benefits will be harmed because these states targeted COLA reforms to retirees with lower benefits. Id.
tain provisions not yet addressed in the decisional law. For example, given the recent cases upholding COLA reform, states may take advantage of current developments by asserting that a particular reform measure is not a term of the contract under the first element. Or, under the third element, governments may attempt to show that they have otherwise exhausted efforts to rectify their retirement system.

However, governments may find it particularly difficult to reform teacher plans for existing employees in non-Social Security states. Once tenured, a court may find that a contract exists for future benefits. In addition, under the second element, any detrimental change may be held as an unjustifiable impairment because of the lack of Social Security as a safeguard.

Given the uncertainty of the law in many states, it is impossible to accurately forecast whether contract challenges will be overcome. Moreover, in a state like California, where there have been many successful challenges to pension reform legislation, it makes sense for the government to simply limit reform measures to new hires. Finally, in the event that reform measures modifying plan terms do withstand legal challenge, they may not be enough to solve the underlying pension-funding problem.

Our study of the political and legal context of public pension reform provides a basis for conversation on how best to revamp these failing systems. Pervasive investment losses make it necessary to put money into these plans, but this also means there is less money available to pay contributions. Growing obligations raise the specter of more taxes and fewer public services, including state funding of education. This dire financial situation also presents the possibility of a costly federal bailout.

III. Developing a Decision-Making Framework: Discussion and Recommendations

The previous sections examined the financial, political, and legal settings related to public pensions, including the plans of teachers in non-Social Security states. With these considerations in mind, this section suggests a comprehensive set of reform measures. These policy prescriptions are provided along with

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201. See, e.g., Gina M. Raimondo, Truth in Numbers: The Security and Sustainability of Rhode Island’s Retirement System, Off. Gen. Treasurer (May 2011), http://www.ricouncil94.org/Portals/o/Uploads/Documents/General%20Treasurer%20Raimondo%2oreport.pdf (“In recent years, state aid to cities and towns, which is used mostly for K-12 education, has decreased annually by eight percent . . . .”).

202. We do not favor the kind of federal intervention historically provided to the private sector, such as the automotive industry and financial services. See T. Leigh Anenson & Donald O. Mayer, “Clean Hands” and the CEO: Equity as an Antidote to Excessive Compensation, 12 U. Pa. J. Bus. L. 947, 948-50 (2010) (explaining how banks were able to privatize the gain and ultimately socialize the risk during the most recent financial meltdown); Hylton, supra note 51, at 434-36 (discussing the outlay of taxpayer dollars as a windfall to banks and not to borrowers).
criteria by which to evaluate the reforms. The evaluation criteria are presented as principles reflecting an often-conflicting range of values. These common goals of social policy include efficiency, equity, and adequacy.203

The policymaking methodology directs attention to pension plans and to the political reality of their creation and continued operation. This means addressing both the internal environment of public pensions, such as contribution and benefit levels, as well as the external environment. Analysts increasingly point to the political dimension, or moral hazard, as the predominant source of the public pension problem.204 By bringing both theorists and empiricists into the discussion of public pensions, along with our own analysis and estimations, we aim to enhance the quality of the debate over the relative merits of competing reform proposals.

Our comprehensive set of recommendations includes enacting legislation that would require mandatory pension funding and prohibit the improper use of pension fund assets; amending balanced budget constraints that adversely impact funding; and adopting a uniform state law that would impose transparency, uniformity, and accuracy in the valuation of public pensions. While we caution against banning union activity, we suggest a bar may be appropriate if union negotiations contribute to the pension deficit, the risk of plan failure is imminent, and other available options for reform are exhausted. With respect to the pension plans themselves, we offer options for plan modification or redesign. Finally, because our focus is on plans that do not contribute to Social Security, we counsel states to consider adopting or enrolling in that federal program or adopting a state insurance program that would shield public employees from losing their retirement savings in the event of plan failure.

A. Minimizing Moral Hazard

Short-term political manipulations have resulted in long-term harm to public employee retirement systems. The political risks associated with public pensions are unknown in the private sector and deserve consideration in any comprehensive reform package. Corrective measures should therefore restrain political leaders who are incentivized to supply potentially excessive benefits and restrict unions that demand such benefits for their members without regard for whether these obligations can be met. To date, negotiations have typically taken place without input from the unengaged public.

203. These norms are implicit in the recent legal and economic literature on public pensions and explicit in publications addressing other issues involving retirement income security. See, e.g., Robert Costrell, et al., Fixing Teacher Pensions: Is it Enough to Adjust Existing Plans?, EDUC. NEXT, Fall 2011, at 60; Brian J. Kreiswirth, The Role of the Basic Public Pension in a Retirement Income Security System, 19 COMP. LAB. L. & POL’Y 393 (1998) (discussing values of fairness, adequacy, and efficiency).

204. See, e.g., Hylton, supra note 51, at 414.
1. Lawmakers

This section confronts the political dimension of public pension promises. Politicians who sacrifice future benefits for present interests put pension security at risk.\textsuperscript{205} Too often, elected officials spend public dollars with less care than they would spend private dollars.\textsuperscript{206} Pension benefits are usually increased during economic boom cycles but not decreased during the bust cycles.\textsuperscript{207} Indeed, in the same way states lower contribution levels and retirement ages when stock prices rise, governments promised workers better compensation and benefit packages when the housing boom raised property tax revenues.\textsuperscript{208} Public sector employment packages were so good that some analysts found that they exceeded private sector packages.\textsuperscript{209}

In addition to the political incentives to provide excessive benefits, there are two main dangers related to pension fund assets: borrowing and underfunding.\textsuperscript{210} Examples abound. Because pension funds hold massive assets,\textsuperscript{211} legislators in California and other states dip into them to pay unrelated bills.\textsuperscript{212} Moreover, Illinois has not made its full pension contribution since 1970.\textsuperscript{213} Funding

\begin{itemize}
\item \textsuperscript{205} See, e.g., Booth v. Sims, 456 S.E.2d 167, 183 (W.Va. 1994) ("It is a recurrent problem of government that today's elected officials curry favor with constituents by promising benefits that must be delivered by tomorrow's elected officials.").
\item \textsuperscript{206} See Olivia S. Mitchell & Robert S. Smith, Pension Funding in the Public Sector, 76 REV. ECON. & STAT. 278, 282-83 (1994).
\item \textsuperscript{207} See Hylton, supra note 51, at 445 (using California as an example of this phenomenon); see also PEW CHARITABLE TR., supra note 44, at 1 (noting that states have historically ignored their retirement obligations in both good times and bad).
\item \textsuperscript{208} Hylton, supra note 51, at 421-22.
\item \textsuperscript{209} Id. at 422 (citations omitted).
\item \textsuperscript{210} See, e.g., Darryl B. Simko, Of Public Pensions, State Constitutional Contract Protection, and Fiscal Constraint, 69 TEMP. L. REV. 1059, 1060 (1996) ("Borrowing pension monies and under-funding pension systems are the modern realizations of this potential for abuse [unknown in the private sector].").
\item \textsuperscript{211} See, e.g., Novy-Marx & Rauh, supra note 11, at 1213 (noting that the 116 state plans studied had $1.94 trillion in total assets in 2009).
\item \textsuperscript{212} See Mitchell & Smith, supra note 206, at 278 (discussing state government borrowing from public pension funds).
\item \textsuperscript{213} Nanette Byrnes & Christopher Palmeri, Sinkhole! How Public Pension Promises Are Draining State and City Budgets, BLOOMBERG BUSINESSWEEK, June 13, 2005, http://www.businessweek.com/magazine/content/05_24/b3937081.htm.
\end{itemize}
level declines have been persistent across states. The situation is bad and getting worse.

Professor Jack Beermann provides one of the most inclusive accounts of the political economy of public pensions. With respect to underfunding public pensions, he explains that it is in substance an example of deficit spending. Basically, current taxpayers enjoy the benefits of government services while passing the costs onto future taxpayers. The next generation will be required to pay for the excesses of prior generations and, at the same time, receive less government services as states allocate limited funds to pensions for retirees.

Given these inherent risks, our discussion centers on three possible reforms. First, we propose that state governments impose new funding requirements. Second, we suggest that states modify state budget requirements that encourage underfunding. Third, we urge states to enact prohibitions against the misuse of fund assets.

214. Given the horrific budget issues facing most states, lawmakers will be even more apt to take funding holidays. See, e.g., Ellman & Merrett, supra note 73, at 367-69 (detailing statistics on funding level decline for public pensions).

215. For fiscal year 2008, the Pew Center found that states and localities fell short of funding their pension plans by $452 billion of pension liabilities. Pew Charitable Tr., supra note 11 (reporting total shortfall more than $1 trillion if retiree health care and other benefits are included).

216. Beermann, supra note 43, at 29 (commenting that economists and political scientists began studying the problem as early as the 1970s).

217. Id. at 32; accord Simko, supra note 210, at 1061. Politicians benefit from deficit spending because it allows them to reward supporters (government workers) with additional services (or in this case pension benefits) without requiring the public to pay for them. Beermann, supra note 43, at 33. They are also out of office when the bill comes due. Id.


219. Id.

220. We focus on funding policy shown to be the major concern with unfunded liabilities. See Costrell et al., supra note 203, at 66 (noting studies indicating that fund mismanagement is not the primary cause of the pension deficit). There are, of course, other options. States may choose to focus on future benefits, see Aaron Burgin, Carlsbad Pension Reform Initiative Wins, UT SanDiego, Nov. 3, 2010, http://www.utsandiego.com/news/2010/nov/02/carlsbad-pension-reform-initiative-leading-in-earl (discussing initiative in Carlsbad, California, requiring voter approval of future employee benefits), or seek to improve investment decisions or even governance structures that may also improve pension health. See generally Kathleen Paisley, Public Pension Funds: The Need for Federal Regulation of Trustee Investment Decisions, 4 Yale L. & Pol'y Rev. 188 (1986) (seeking federal regulation of trustee investment decisions); Sharon Reece et al., Regulating Public Pension Fund Investments: The Role of Federal Legislation, 6 BYU J. Pub. L. 101 (1992) (advocating federal tax policy to promote state pension funds to target certain kinds of investments in the state).
a. Funding Requirements

As an initial matter, lawmakers should restrain underfunding of public pensions by enacting legislation compelling a certain range of funding. The exact level, full funding or something less, should be enough to ensure the payment of future liabilities. In short, to the extent possible, states should be required to set aside enough assets in their pension funds to provide retirement benefit cash flows for these payments. In the non-Social Security states, court decisions in Alaska and California, two states with constitutional contract protection for the pensions of public employees upon acceptance of employment, have held that actuarially-sound funding is a contractually protected term of the pension program. The Illinois Supreme Court, however, has determined that this protection extends only to benefits, not funding.

b. Balanced Budget Constraints

As a related matter, state governments should modify existing balanced budget constraints, if any. Balanced budget requirements were put in place in many states to avoid accelerating budget deficits, but they have had unintended consequences for public pensions. Borrowing to satisfy operating expenses may not be available in tight fiscal times, so underfunding pensions allows state

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221. The optimal funding level is beyond the scope of this Article. See Costrell et al., supra note 203, at 66 (outlining the problem of overfunding); Forman, supra note 121, at 860 (urging full funding of public pensions despite potential misuse by employees and lawmakers); Norcross & Biggs, supra note 6, at 2 (discussing new statute in New Jersey that put on ballot constitutional requirement to fully fund pensions).

222. See Simko, supra note 210, at 1065-79 (listing states that already require adequate funding levels); see also Beermann, supra note 43, at 43 n.146 (commenting that any attempt to move to actuarially-adequate funding may be impossible or extremely difficult for many states).

223. See discussion supra Part II.B.3.


governments to balance their budgets without cutting services.\textsuperscript{227} Thus, there is a positive correlation between underfunding and balanced budgets.\textsuperscript{228} To prevent balanced budget regulation from undercutting pension funding, states can simply change the law to delineate pension funding as a current cost.\textsuperscript{229}

c. Misuse of Assets

Our last recommendation to deter the morally hazardous behavior of state legislatures concerns the inappropriate use of pension fund assets. Like federal regulation of private pensions, states should consider measures prohibiting the removal of trust assets and limit other uses to arms' length transactions subject to fiduciary standards.\textsuperscript{230} For example, loans made with pension assets should require a reasonable rate of interest and security if appropriate. Moreover, administrators should act solely for the benefit of participants and beneficiaries.

States should deal directly with funding issues by mandating a particular level of funding, amending balanced budget laws, and barring the improper use of fund assets. These safeguards would deter the dynamic of rent seeking by politicians and better align the spending of public dollars with the best interests of the taxpaying public.

2. Labor Leaders

In addition to curtailing political behavior on the supply side of the pension problem, states may consider curbing the demand side. Because most public school teachers are unionized,\textsuperscript{231} restricting collective bargaining over retirement income would eliminate some of the pressure on lawmakers to provide unsustainable benefits. To be sure, even in those states without a substantial le-

\textsuperscript{227} Id; see also Beermann, \textit{supra} note 43, at 35-36 (concluding that "the short-term nature of state budgeting and the inapplicability of 'balanced budget' requirements conspire to create a long term mess of underfunded pension obligations").

\textsuperscript{228} Chaney et al., \textit{supra} note 226, at 306-07 (finding state balanced budget requirements negatively correlated with pension funding to full actuarial standards).

\textsuperscript{229} See Beermann, \textit{supra} note 43, at 36. Because pension promises are an off-budget method of providing compensation to state employees for current services, the larger the share that can be paid in the form of deferred compensation, the more services government can provide out of current revenue.


\textsuperscript{231} Beermann, \textit{supra} note 43, at 23.
gal barrier to pension reform, attempts to change the retirement system may still be thwarted by the political barrier of a union.

Professor Maria O'Brien Hylton outlines the debate for and against such a ban before staking a more moderate position. As she explains, proponents of denying collective bargaining claim that the retirement benefits of government workers result from a process that disadvantages taxpayers. Opponents, including Professor Paul Secunda and the International Labor Organization, argue that collective bargaining is a moral imperative and a fundamental human right.

Hylton questions, however, whether the opponents' position should extend to public employees, pointing to fundamental distinctions between public and private sector employees that justify a difference in treatment. She notes that collective bargaining in the public sector is a relatively recent phenomenon and lacks a long-standing tradition. As she observes, unlike their counterparts in the private sector, public employees do not typically generate profits and may negotiate to secure a larger slice of taxpayer dollars in the form of benefits and other compensation. Unions therefore have the power to raid the public fisc. Hylton concludes that restricting union activity with regard to public pensions may be proper in exceptional cases. We agree.

As a practical matter, prohibiting or even limiting collective bargaining in the public sector would provoke fierce resistance. Recently, massive protests to government regulation of union rights concerning pensions in Wisconsin and other states suggest that an embargo should be considered as a last resort.

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232. See discussion supra Part II.B.3.a (explaining that Kentucky, Louisiana, Maine, Missouri, and Ohio do not protect pensions under a contract analysis until retirement).

233. Hylton, supra note 51, at 472-82.

234. Id. at 476; see also Beermann, supra note 43, at 23-24 (providing example of excessive benefits due to legislative largesse and overly zealous unionized public school teachers in Rhode Island).

235. Hylton, supra note 51, at 476 n.188 ("[T]he ILO, a United Nations agency that promotes labor rights, is one of many groups that believe collective bargaining is a democratic right, not a mere economic procedure.") (internal citation omitted).

236. Id. at 480-81.

237. Id.

238. Id. ("When public employees strike, they strike against taxpayers.").

239. Id.; see also Beermann, supra note 43, at 29-30 (explaining the unions have placed a higher priority on current wages than on adequate funding of pension promises).

240. Hylton, supra note 51, at 417 (noting that it may be necessary to prohibit bargaining over retirement income in extreme cases).

Non-Social Security state plans in the most precarious financial position, like Illinois, may need to consider this option. Pension underfunding undermined the state's credit rating and increased its general cost of borrowing.\(^{242}\) Of course, states should study their own collective bargaining experience to see if such a prohibition would actually remove barriers to necessary reforms.\(^{243}\) For example, Texas's prohibition on public sector collective bargaining is partially credited for its successful implementation of public pension reform.\(^{244}\) Politicians


\(^{244}\) Some states, like Texas, have never permitted collective bargaining in the public sector. \textit{See} Hylton, \textit{supra} note 51, at 452-53 (noting that the prohibition did not
should not invite controversy if banning bargaining would not help solve the pension problem. As a political strategy, lawmakers could publicize their intent to enact measures to weaken public sector unions regarding public pensions (such as proposing to study this option) as a way of bringing more reticent and unreasonable unions to the bargaining table. At least in some states, like Ohio, the magnitude of the current crisis aligned divergent interests and kept public pension plans afloat.\(^{245}\)

3. Taxpayers

The political expediency of public pension promises should be resisted not only through reform limiting such morally hazardous behavior, but also through regulation targeting public passivity. Recall the tendency of politicians to please voters, many of whom are government workers, by promising additional benefits and binding taxpayers to irresponsible commitments. In order to make the financial effects of pension reform more salient, politicians should inform and enable taxpayers to participate in the provision of public pensions.

There is consensus among pension scholars across disciplines that increased transparency and uniformity, along with more accurate discount and amortization rates, should be included in any retirement reform package.\(^{246}\) We address each recommendation in turn.

a. Transparency

To begin, raising awareness is necessary for the public to understand and evaluate the economic magnitude of state public pension liabilities. As stated earlier, scholarly interest in public pension liabilities is a recent phenomenon and coincides with a series of financial setbacks suffered by economies worldwide.\(^{247}\) Five years ago, we were part of a group of scholars that raised awareness of a souring investment climate risking thousands of government workers' pensions.\(^{248}\) At that time, we urged the adoption of mandatory disclosure laws to stop morally hazardous behavior yet did make change easier to implement when the state could no longer afford its retirement benefits).


246. Hylton, supra note 79, at 471-72 (recommending reforms that “encourage taxpayers to function like shareholders and others with a serious stake in the financial health of a private enterprise”).

247. Stephen P. D'Arcy et al., Optimal Funding of State Employee Pension Systems, 66 J. RISK & INS. 345, 347 (1999) (comparing the volume of research done on private pension funding with the lack of research on state pension funding).

248. Lahey & Anenson, supra note 14, at 316.
identify funding issues and facilitate solutions. As discussed below, such disclosures should be made to participants, beneficiaries, and the general public, and include financial and actuarial information related to the plan. We stand by that recommendation.

We agree, however, with Professor Beermann that transparency is not a panacea because of psychological propensities to discount long-term problems, especially when the overall share of liability is small. Further, because taxpayers move from state to state, they may determine that they will not be held accountable when obligations come due. Nonetheless, we believe that more sunshine over the financial status of retirement plans is an integral part of an overall solution to the public pension predicament. At the very least, increased transparency should make it easy for taxpayers to find information on the financial condition of public pensions through required reporting on a timely basis and made readily available on the internet.

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249. See id. As discussed infra in Part III.A.3.b, we suggested the adoption of a uniform law for the management of public employees' retirement systems. The National Conference of Commissioners on Uniform State Laws approved the Uniform Management of Public Employees Retirement Systems Act (UMPERSA) in 1997 to promote transparency and uniformity and, thereby, to permit public monitoring. See id. at 329-30. As of 2014, however, only two states have adopted its disclosure provisions. It is unclear why so few states have enacted such legislation. One reason may be that governments with financially troubled pensions do not want transparency. Cf. Paul M. Secunda, Litigating for the Future of Public Pensions in the United States 56 (Marquette University Law School Legal Studies Research Paper Series, Research Paper No. 14-19, May 2014) (on file with authors) (surmising that UMPERSA has had such a low adoption rate "because the law is the classic 'political orphan,' with no interest group caring enough to overcome legislative inertia").

250. Beermann, supra note 51, at 27.

251. See id.; see also Robert P. Inman, Public Employee Pensions and the Local Labor Budget, 19 J. PUB. ECON. 49, 50 (1982) (arguing that mobile taxpayers are likely to support deferring payment for current services until later at the expense of less mobile residents).

252. See Costrell et al., supra note 203, at 65 (calling for transparency to defined benefit plan participants); Reinke, supra note 64, at 1706-07 (discussing the federal bill, the Public Employee Pension Transparency Act, which requires pension plans to file annual reports on funding levels and actuarial assumptions). Given the increased demands of public accountability, state governments have begun to put spending online. See Tracy Loew, States Put Spending Online, USA TODAY, Feb. 23, 2009, at 3A.
b. Uniformity

Increased uniformity on key information will create progress on the problem of public pensions. The financial status of public pensions is difficult to discern, in part, because these funds vary widely with different sets of laws for each system. When and how liabilities are reported is subject to vagaries in each state, and not all states publish current data.

Different levels of requisite funding and different assumptions determining liabilities further complicate comparisons of reported information among public pension systems. These assumptions include demographics, assumed rates of return on investments, other economic indicators, and information about the plan. In retirement systems for teachers there are different actuarial methods for calculating retirement benefits including age at entry, projected unit credit, and aggregate cost. Assumed inflation rates range from 2.5% to 4.5% and assumed interest rates range from 7% to 8.5%. States can also consolidate their systems for purposes of reporting, or disclose the data separately for each system within the state. Adopting the same criteria for reporting within and between states would permit a complete comparison of each separate system.

Previously, we highlighted this lack of uniformity as an obstacle to reform and advocated the adoption of the Uniform Management of Public Employees.
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Retirement Systems Act (UMPERSA) or minimum universal disclosure rules akin to it. We do so again now.

UMPERSA requires three kinds of reports to be produced and distributed by each retirement system: a summary plan description; an annual report; and an annual disclosure of financial and actuarial status. The summary plan description provides an explanation of the retirement program and its benefits. The annual report must contain specific financial and actuarial information. Both must be distributed to plan participants and beneficiaries and made available to the public. The annual disclosure of financial and actuarial status is a more detailed compilation of the retirement system and its financial position. The disclosure need not be published, but must be available at the principal office of the system and at a central repository where reports of all systems in a state are filed.


263. See id. For the specific kinds of disclosures we recommended, see the discussion, infra, at Part III.A.3.b.

264. See id. § 13(b)(2)-(3); see also id. § 14(a)(1)-(3). The annual report is subject the same wide distribution requirements as the summary plan description. See id. §§ 13(b)(5), 14(a)(4).

265. See id. § 17.

266. See id. §§ 13(b), 14.

267. See id. § 18.
Thus far, only Wyoming\textsuperscript{268} and Maryland\textsuperscript{269} have adopted the substance of the uniform law.\textsuperscript{270} More states should consider it to ensure clear and complete information to those monitoring the system and to create political incentives for leaders addressing pension difficulties. As evidenced by our statistical analysis in Part I, adoption of a uniform pension law would be especially opportune for those states' pensions whose members face sizable exposure to the loss of retirement income by not contributing to Social Security.

c. Accuracy

Last but not least is improved accuracy. Current reporting methods underestimate taxpayer liability. For instance, a recent report revealed that while states had forty-eight cents of each dollar promised to current and future retirees in 2011, they reported having seventy-four cents of each dollar owed to retirees.\textsuperscript{271} These misrepresentations of the magnitude of fiscal stress are frequently credited as contributing to the imminent demise of many public pension plans.\textsuperscript{272}

The private sector may be the best reference for fixing flawed actuarial methods and practices.\textsuperscript{273} Valuing pension liabilities according to the likelihood

\begin{itemize}
  \item 269. Maryland adopted UMPERSA after its pension fund management was subject to public scrutiny. \textit{See}, e.g., Michael Dresser & Jon Morgan, \textit{Md. Pension Trustees Are Often Absent}, BALTIMORE SUN, Nov. 18, 2001, at 1B; Jon Morgan et al., \textit{Questions Abound in Pension's Fiscal Skid}, BALTIMORE SUN, Nov. 15, 2001, at 1A.
  \item 272. \textit{See}, e.g., Beermann, \textit{supra} note 43. \textit{See generally} J. Fred Giertz & Leslie E. Papke, \textit{Public Pension Plans: Myths and Realities for State Budgets}, 60 NAT. TAX J. 305, 305-23 (2007) (finding evidence that assumptions are manipulated in order to lower the necessary contributions to the pension plans).
  \item 273. Norcross & Biggs, \textit{supra} note 6, at 2 (noting that "economists almost universally agree" that private sector accounting methods are more appropriate than current public sector assumptions in calculating pension liabilities). They explain that "[c]urrent public sector pension accounting rules effectively violate well-accepted economic precepts such as the Modigliani-Miller results in corporate finance, the Black-Scholes formula for options pricing, and the general "law of one price."" \textit{Id}.

\end{itemize}
of payment, rather than the return expected on pension assets, is one possible correction. This would force state sponsors to disclose the true cost of their future pension commitments, and should be considered a first step in enabling reform. Economists agree that the discount rate on the riskiness of the payout should be about half what states typically designate; that is, around four percent rather than the inflated eight percent used by many states. With an arguably

274. See, e.g., Barro & Buck, supra note 6, at 5-6; Novy-Marx & Rauh, supra note 11, at 1211 (asserting that the appropriate discount rate to calculate liabilities should reflect risk from a taxpayer perspective rather than the expected rate of return on pension assets as stipulated by government accounting rules). For an explanation of the two competing theories—market and actuarial—for accurate valuation of state pension plans, see Kaspar, supra note 260, at 12-16.

In addition to choosing a rate at which to discount the future payments from accrued benefits, the amortization period is another important variable in calculating pension debt. Longer periods show smaller present values versus shorter periods, which yield larger values. Despite an aging workforce, public pensions amortize over thirty years as compared to private pensions that use a fifteen-year period. See Hylton, supra note 51, at 432 (arguing that governments "cannot justify the use of a thirty-year period because the number of years until retirement is not that long in most cases"); Norcross & Biggs, supra note 6, at 1; M. Barton Waring, Liability-Relative Investing, 30 J. PORTFOLIO MGMT. 8-20 (2004) (finding that the mid-point of a public pension's stream of future benefit payments is around fifteen years in the future and, accordingly, a lump sum payment in fifteen years can be treated as the annual benefit liabilities owed by a plan).

275. See Beerman, supra note 43, at 35. The public sector accounting standards set by the Governmental Accounting Standards Board (GASB) 45 are incomplete in so far as they allow states to set their own discount rate. Hylton, supra note 51, at 423-30 (noting that GASB 45 mimicked Financial Accounting Standards Board (FASB) 106 in the private sector and drew attention to the present value of the level of benefits promised, but failed to specify a discount rate); see also Other Postemployment Benefits: A Plain-Language Summary of GASB Statements No. 43 and No. 45, GOV'T ACCOUNTING STANDARDS BD. (2004), http://www.gasb.org/cs/BlobServer?blobcol=urldata&blobtable=MungoBlobs&blobkey=id&blobwhere=1175820457538&blobheader=application%2Fpdf [hereinafter GASB Statements]. States need not follow the standards in the first place. Texas went so far as to block their implementation by statute. Hylton, supra note 51, at 442.

276. Barro & Buck, supra note 6, at 5; see also Norcross & Biggs, supra note 6, at 1 n.1 (applying a discount rate of 3.5%, the yield on Treasury bonds with a maturity of fifteen years as of May 27, 2010); Novy-Marx & Rauh, supra note 11, at 1217-18, 1246 (noting that states use an eight percent discount rate). Under a market value of liability theory, however, states like Texas may legitimately use a different (higher) discount rate since the promised payout is not guaranteed and may reduce benefits at any time. California, based on current case law backing benefits under the Constitution, should apply the risk-free rate. See Going for Broke: Reforming California's Public Employee Pension Systems, STANFORD INST. FOR ECON. POLICY RESEARCH 2 (2010), http://siepr.stanford.edu/system/files/shared/GoingforBroke_pb.pdf.
correct rate, unfunded liabilities for public sector pensions more than triples from $1 trillion to over $3 trillion. For individual states, a market-based discount rate can raise unfunded debt obligations even more. In New Jersey, for example, Eileen Norcross and Andrew Biggs calculated liabilities to be $173.9 billion rather than $44.7 billion as reported by the state. Similarly, a 2010 Stanford study found California pension plans to have unfunded liabilities several times larger than reported. Whether or not the truth will set states free, it will at least provide government sponsors (and, by extension, taxpayers) a better idea of the fiscal challenges they are facing.

Accordingly, the lack of transparency and uniformity, in addition to inaccurate actuarial methods and practices, has exacerbated the widespread moral hazard problem inherent in public pensions. Fixing these faults is an important part of the remedy.

B. Modifying Existing Plans or Plan Structure

State pension deficits are at an all-time high. The kind and magnitude of change needed to reduce pensions costs vary between states due to differences in benefit levels, size of unfunded pension liabilities, and levels of effort by states to make contributions in the past. Significantly, the chronic failure of pension plan sponsors to pay required contributions now requires even more contributions by states and benefactors to make up the differences. States will typically not assume any new fiscal commitments concerning their pensions, but rather attempt to cut costs. Certain measures may treat similarly situated workers differently, fail to provide adequate levels of support at retirement, and

277. Barro & Buck, supra note 6, at 5.
278. Norcross & Biggs, supra note 6, at 2 (recalculating New Jersey's unfunded benefit obligation using private sector accounting methods to be $173.9 billion rather than $44.7 billion, when liabilities are discounted at the 8.25% annual return that New Jersey predicts it can achieve on the funds' investment portfolios).
279. STANFORD INST. FOR ECON. POLICY RESEARCH, supra note 276 (studying the three largest pension plans and applying a risk-free rate of 4.14% rather than rate of return assumptions of 8%, 7.75%, and 7.5%).
280. See, e.g., Kaspar, supra note 260, at 2, 19; see also Hylton, supra note 51, at 418-23 (explaining that many private sector companies made sizable changes to plans and were able to reduce costs after being forced by the FASB in 1993 to confront the true cost of their pensions).
281. Ellman & Merrett, supra note 73, at 367-69 (providing statistics on funding level declines). Recent data from the Bureau of Labor of Statistics show that public pension obligations account for almost seventeen percent of all public debt in the United States. Yet, for states as a whole, it is less than one percent of total spending. NAT'L ASS'N ST. RETIREMENT ADMINS., supra note 1, at 3.
282. NAT'L ASS'N ST. RETIREMENT ADMINS., supra note 1, at 1, 3.
pose different degrees of litigation risk and expense.\textsuperscript{283} Reforms are also likely to have long term labor market effects. Since deferred compensation by way of pension benefits is a recruitment and retention tool for government service,\textsuperscript{284} the amount and other attributes of government-sponsored pensions may determine who enters public service and how long they stay.\textsuperscript{285}

As indicated previously, there is tremendous variation among educator defined benefit plans. The following discussion takes a holistic view of these public pensions and offers a variety of reform possibilities. Such reforms span a spectrum of modest modifications to major changes in plan structure. We also suggest that lawmakers contemplate additional protections, like adding federal Social Security and establishing a similar state entity for private pensions in case of insolvency.

1. Defined Benefit Plan Changes

State government employers fund defined benefit plans through a combination of employer and employee contributions, and investment returns on already-accumulated assets that have accrued over a long period of time.\textsuperscript{286} Since fund investments have failed to produce the return needed to make the promised payments, contributions must increase, benefits must decrease, or both.

To increase incoming funds, states could raise employee contributions.\textsuperscript{287} This solution may actually be more difficult to enact in non-Social Security states since employees already pay on average three percent more in contributions than Social Security states.\textsuperscript{288} As analyzed in Part II.A, however, Colorado, Louisiana, Ohio, and Texas accomplished increased member contributions to teacher plans.

To decrease costs, states can change benefit calculations by capping salaries or altering the number of years with which to determine the final average salary. The majority of non-Social Security states made such changes to the calculation

\textsuperscript{283} See discussion supra Part II.B.

\textsuperscript{284} Costrell et al., supra note 203, at 69; Deborah Kemp, Public Pension Plans: The Need for Federal Regulation, 10 HAMLINE L. REV. 27 (1987) ("The impetus for this expansion [of public pensions] is the need to induce individuals to accept lower paying government employment over jobs in private industry."). Maine, for instance, created its retirement system to encourage "qualified persons to seek public employment and to continue in public employment during their productive years." 5 ME. REV. STAT. ANN. tit. 5, § 17050 (1989).

\textsuperscript{285} Monahan, supra note 68, at 617.

\textsuperscript{286} Employer contributions account for twenty-six percent, employee contributions thirteen percent, with investment returns making up the remaining amount. NAT'L ASS'N ST. RETIREMENT ADMINS., supra note 1, at 2 (employees contribute four to eight percent of their pay to retirement).

\textsuperscript{287} Id.

\textsuperscript{288} See infra Appendix, Table 4.
of retirement benefits.\textsuperscript{289} States should eliminate loopholes like double-dipping and pension spiking as has been done in California and other states.\textsuperscript{290} Raising the retirement age saves on future costs,\textsuperscript{291} and with retirees expected to live four more years than retirees in 1950, it makes sense to adjust for this higher age expectancy.\textsuperscript{292}

An even more attractive option is to cut COLAs and thus pass some of the inflation or investment risk to employees.\textsuperscript{293} While reducing benefits for new hires and current employees lowers future pension costs, COLA payments are based on benefits that are being paid.\textsuperscript{294} This means that cutting COLAs actually reduces existing unfunded liability.\textsuperscript{295} An investment-based adjustment can be made by correlating COLAs with the performance of investment returns.\textsuperscript{296} Wisconsin’s pension system is a good example of this type of risk sharing.\textsuperscript{297} The legislature in Wisconsin created a process for COLAs that works by providing a dividend if the investment returns are positive in a given year and reduces pensions if the system has a poor investment return.\textsuperscript{298}

Colorado’s COLA cuts also represent a risk-sharing arrangement. The state eliminated the fixed guarantee and tied the COLA to investment returns and inflation.\textsuperscript{299} Unlike Illinois, Connecticut, and Kentucky, which simply reduced the guaranteed amount, Ohio linked COLAs to changes in inflation for its non-teacher plans.\textsuperscript{300} Maine and Connecticut, on the other hand, lowered the cap on the existing inflation adjustment.\textsuperscript{301} Linking COLAs to inflation makes sense for

\textsuperscript{289} See discussion supra Part II.A.

\textsuperscript{290} See id.; Hylton, supra note 51, at 422 (noting that some states encouraged employees to use up saved vacation and over-time during their last year of employment in order to inflate their income; the state would then pay ninety percent of this “final salary”—an amount often greater than the retiree’s true base pay). For recent litigation from Illinois and Texas over the removal of spiking, see Buck, supra note 146, at 18, 40.

\textsuperscript{291} PEW CHARITABLE TR., supra note 11; see also discussion supra Part II.A.

\textsuperscript{292} Id. at 31.

\textsuperscript{293} Id. at 10.

\textsuperscript{294} Munnell et al., supra note 58, at 2.

\textsuperscript{295} Id.

\textsuperscript{296} PEW CHARITABLE TR., supra note 11.

\textsuperscript{297} Id.

\textsuperscript{298} Id. The only guarantee is the base benefit. Id.

\textsuperscript{299} Munnell et al., supra note 58, at 3. Missouri also ties the COLA to inflation. Kentucky has a performance-based COLA with certain guarantees only if the COLA is 100% funded. See NAT’L ASS’N ST. RETIREMENT ADMINS., supra note 1.

\textsuperscript{300} Munnell et al., supra note 58, at 4.

\textsuperscript{301} See id. at 3-4.
states that had fixed guarantees, since low inflation rates for the past several years caused adjustments that exceed inflation to increase real retirement benefits. Providing for or lowering the cap on COLAs is also appropriate in these difficult financial times: while maintaining the value of benefits for retirees is important, state economies are not likely able to afford full inflation protection. Additionally, legislatures in Illinois and Maine attempted equity in their COLA reductions by giving retirees with higher benefits more of the inflation risk.

As explained in Part II.A, nine of the thirteen non-Social Security states made changes to their COLAs, the majority of which applied to existing employees and/or retirees. As further detailed in Part II.B, the COLA changes have been challenged in three states with mixed results, although some of the cases have not concluded. Assessing litigation across the states where COLA reforms largely withstood challenge, however, suggests that COLA changes are a legal possibility that may be worth the cost of litigation.

2. Alternative Benefit Plans

Rather than restraining pension growth through modification of existing plans (and in lieu of a federal rescue), states could change plan structure. In the past several years, we have seen the erosion of government guaranteed benefits and the implementation of 401(k) style or hybrid plans. The defined contribution plan, not to be confused with a defined benefit plan, eliminates the potential for persistently underfunded plans that risk collapse. Employer and employee contributions would be used solely to generate savings for employees. In contrast, governments sponsoring a defined benefit plan pay a particular level of benefit that may have no relationship to what em-

302. See NAT’L ASS’N ST. RETIREMENT ADMINS., supra note 1, at 2-3 (listing common COLA types and features).

303. See id. at 4.

304. See id. (assessing litigation where COLA cuts withstood challenge in eight of nine states and concluding that “legal hurdles to cutting COLAs appear to be quite low”); see also id. (noting that a lawsuit has been filed in the non-Social Security state of Illinois but that no decision has been reached).

305. Lahey & Anenson, supra note 14, at 323 (explaining that the federal government adopted the defined contribution plan solution in 1986 and now has half of its workers enrolled which relieves the federal retirement system of the unfunded pension liabilities facing state and local governments); Dan Van Bogaert, Solving The Public Pension Plan Dilemma, 19 J. PENSION BENEFITS: ISSUES IN ADMIN. 37, 37-46 (2012) (comparing status of government-sponsored pension systems relative to the private sector and analyzing different points of view regarding public pension reform).

ployees contributed. Economists Michael Podgursky and Robert Costrell argue this is the fundamental flaw in defined benefit design, and argue that alternative plans will close the gap between contributions and pension wealth by tying benefits to contributions.307

The defined contribution plan has the economic advantage for government employers of removing responsibility for underfunded or underperforming fund assets.308 At the same time, however, the prospect of employees completely bearing the risk of their retirement raises concerns.309 Current account balances of these plans in the private sector show that low and moderate wage earners lack adequate income for retirement.310 Teachers, whose salaries are usually modest, and are declining relative to the private sector and other public sector workers, are particularly at risk.311 Nevertheless, the defined contribution plan could be modified in a way that provides a federal guarantee to help ensure that workers have adequate income at retirement.312

States changing pension plan structure will likely leave in place existing defined benefit plans and instead target new hires because of legal concerns, giving rise to two tiers of employees and corresponding concerns regarding fairness. Illinois, California, and some other states are in a situation where young educators may not be getting their fair share of the retirement pie.313 Equity concerns


308. See Lahey & Anenson, supra note 14, at 318-25.

309. See id. at 323; see also Dana M. Muir & John A. Turner, Imagining the Ideal U.S. Pension System, in IMAGINING THE IDEAL PENSION SYSTEM: INTERNATIONAL PERSPECTIVES 19, 38-41 (Dana M. Muir & John A. Turner eds., 2011) (discussing policies that might reverse the decline in defined benefit plans in the private sector).


311. Id.

312. For a discussion of providing a federal guarantee for defined contribution plans in the private sector, see generally THERESA GHILARDUCCI, WHEN I’M SIXTY-FOUR: THE PLOT AGAINST PENSIONS AND THE PLAN TO SAVE THEM (2008); Regina T. Jefferson, Rethinking the Risk of Defined Contribution Plans, 4 FLA. TAX REV. 607, 640-41 (2000); see also Hylton, supra note 51, at 468 (advocating the adoption of a Federal Thrift Savings Plan, a special defined contribution plan available to federal employees and members of the uniformed services).

can be minimized to some extent by allowing employees a choice of plans.\textsuperscript{314} Many states, such as Ohio and Colorado, offer the option of either a defined contribution plan or a defined benefit plan to its new employees.\textsuperscript{315} Employee opinion polls indicate a preference for defined benefit plans, while studies show that these plans inhibit mobility and harm employees who move out of state.\textsuperscript{316} Defined benefit plans incentivize employees to stay with one employer because employees earn more retirement benefits later in their careers.\textsuperscript{317} In contrast, defined contribution plans are portable and not tied to the employer, eliminating the penalty for mobility.\textsuperscript{318}

Along with assessing employee adequacy and equity concerns associated with changing plan structure, state governments should assess efficiency issues. Alternative plans appear to be more efficient because they reduce the risk of future defined benefit pension deficits.\textsuperscript{319} However, switching to less-popular defined contribution plans may further imperil defined benefit pensions since there will be less active members to fund already existing pensions.\textsuperscript{320}

Additionally, there is disagreement among economists over whether eliminating defined benefit plans will cause turnover. Increased turnover is an important consideration because it both raises costs due to the recruitment and training of new hires and lowers teacher effectiveness.\textsuperscript{321} Professor Christian Weller explains that public sector employers, unlike those in the private sector, are not able to offset the switch in plans to retain workers through stock options and grants, making the risk of turnover particularly acute.\textsuperscript{322}

Moreover, defined contribution plans typically have higher investment and administrative costs because defined benefit plans are free from regulation.\textsuperscript{323}

\textsuperscript{314} Lahey & Anenson, \textit{supra} note 15, at 325.
\textsuperscript{315} See \textit{id.}; Alicia H. Munnell et al., \textit{Why Have Some States Introduced Defined Contribution Plans}, CTR. FOR RETIREMENT RESEARCH AT BOS. COLL. (2008). Other states include North Dakota, Washington, Montana, Florida, and South Carolina. \textit{Id}. California and Maine also offer the defined contribution plan option to employees, but only as a supplemental plan. \textit{Id}.
\textsuperscript{317} Lahey & Anenson, \textit{supra} note 14, at 318-19.
\textsuperscript{318} \textit{Id}.
\textsuperscript{319} Costrell & Podgursky, \textit{supra} note 316, at 62.
\textsuperscript{320} We are assuming there is not a corresponding increase in contributions.
\textsuperscript{322} Costell et al., \textit{supra} note 203, at 67.
\textsuperscript{323} Munnell et al., \textit{supra} note 58.
The weighted average administrative cost for defined benefit plans is only 0.34% of assets, but as the Illinois Municipal Retirement Fund learned, replacing defined benefit plans with defined contribution plans could increase costs to more than 2.25%. Alaska, which abandoned the defined benefit plan and offered only the defined contribution plan to state employees in 2005, is now attempting to return to its former plan structure.

The comparatively high management costs of defined contribution plans, however, may decrease with the size of the plan and, in any event, may be nominal compared to the cost of operating underfunded defined benefit plans. In fact, a recent study of teacher pensions by Costrell and Podgursky indicate that defined benefit plans may be more costly. Comparing the pension costs of private sector professionals (who are nearly all in defined contribution plans) and public sector professionals (who are predominately in defined benefit plans), the study concluded that the latter costs are higher and rising. Using time series data from 2004 to 2013, they report the cost gap has increased from 1.9% to 6.4% of salary. Private sector pension expenses, in contrast, remained relatively stable.

Cash balance plans, a type of hybrid plan now popular in the private sector, lower net costs more than defined contribution plans and have asset-liability matching strategies that effectively neutralize volatility. Transition and turnover...
ver costs, however, will likely increase as they do for defined contribution plans.\textsuperscript{331} But adequacy concerns are more favorable because employees receive a guaranteed return, although payments are still largely determined by the performance of invested contributions instead of a percentage of the employee's final salary.\textsuperscript{332} While the pension benefit is lower than it would be with a defined benefit plan, employees do not have to manage the investment risk as they would under a defined contribution plan.\textsuperscript{333} Notwithstanding the warnings of actuaries, who fear that state employees who lack Social Security benefits will become "ward[s] of the state," Louisiana began offering the cash balance plan option for new hires effective July 1, 2012.\textsuperscript{334}

Another type of pension option may be on the horizon with the assistance of Congress. The proposed Secure Annuities for Employee (SAFE) Retirement Act of 2013 is designed to amend the Internal Revenue Code of 1986 to provide for reform of public pension plans.\textsuperscript{335} It retains the defined benefit model but shifts management to an insurance company. The new proposal would eliminate the accounting and moral hazard problems in the current system, transferring public pension risk to private insurers. More specifically, the SAFE plan would purchase a deferred annuity contract from a private insurer that covers employees' benefits earned in each year's accrual.\textsuperscript{336} Because the contracts

\begin{itemize}
\item \textsuperscript{331} Costrell and McGee, however, conclude that net turnover would not increase. Robert M. Costrell \& Joshua B. McGee, Teacher Pension Incentives, Retirement Behavior, and Potential for Reform in Arkansas, 5 EDUC. FIN. \& POL'Y 492, 514-16 (2010). Turnover would rise for middle-aged workers, but fall for younger and older workers. See id.
\item \textsuperscript{332} Id.
\item \textsuperscript{333} Costrell et al., supra note 203, at 64 (favoring the conversion of educator defined benefit pensions to cash balance plans). Cash balance plans also have more limited death and disability benefits. Hicken, supra note 313, at 2 (discussing Louisiana's switch to a cash balance pension plan and its effect on employees who become disabled or family members of employees who die before reaching the retirement age).
\item \textsuperscript{334} Louisiana's new cash balance plan was ruled unconstitutional by a trial judge for not receiving the requisite vote of the state legislature. Hicken, supra note 313, at 2. The decision was appealed. Id.
\item \textsuperscript{335} See Hatch Unveils Bill to Overhaul Pension Benefit System, Secure Retirement Savings, supra note 3 (discussing S.B.1270). For a recent proposal from the academic community, see generally Jonathan Barry Forman \& Michael J. Sabin, Tontine Pensions: A Solution to the State and Local Pension Underfunding Crisis, 163 U. PENN. L. REV. (forthcoming 2015), http://ssrn.com/abstract=2393152 or http://dx.doi.org/10.2139/ssrn.2393152 (arguing for a new type of "tontine" pension and showing how a model tontine pension could be used to replace a large traditional pension plan like the California State Teachers' Retirement System).
\end{itemize}
would be purchased each year of service, the annual accumulated benefit would be fully funded and transfer the risk from both the employee and the government. After purchase of the contract, the private insurer would bear the investment and longevity risk. However, the new structure is not foolproof, since state regulations do not guarantee against insurer bankruptcy. Defined benefit plan costs may also increase given insurers’ more stringent capital requirements.

Whether state governments should shift all or part of the retirement risk to their employees by implementing alternative plans is a value-laden question and one that requires the resolution of disputed assumptions. Given differences across the thirteen teacher plans in the non-Social Security states, we do not take a position on the appropriate plan amendment or redesign for each state. Our thesis is that, despite their heavy debt burden, governments have choices in attempting to right-size their budgets and constrain the growth of benefits costs. In choosing, they should remember that pension plans have micro and macroeconomic effects. Retirement planning is not only important for the financial security of public employees, but a key component of the national economy. We emphasize that plan changes have legal effects that may limit reforms to new hires, particularly for teacher pensions that do not fund Social Security. As considered in Part II.B.3, changes to these plans may be more difficult due to heightened protection from interference under a constitutional contract analysis.

337. Id.
338. Id.
339. Id. (quoting Hank Kim, the executive director of the National Conference on Public Employees Retirement Systems, say that “there are a slew of private insurance companies that have gone bankrupt”).
340. Id.
341. Jacob S. Hacker, Restoring Retirement Security: The Market Crisis, the “Great Risk Shift,” and the Challenge for Our Nation, 19 ELDER L.J. 1 (2011) (concluding that security in employer-sponsored public plans has even broader implications for states individually and for our country as a whole).
342. NAT’L ASS’N ST. RETIREMENT ADMINS., supra note 1, at 3 (explaining that more than 200 billion dollars are paid annually from pension funds to public retirees and their beneficiaries across the United States). But see Andrew G. Biggs, Public Pension Stimulus Nonsense, AM. ENTERPRISE INST. (May 3, 2012), http://www.aei.org/article/economics/fiscal-policy/labor/public-pension-stimulus-nonsense (calling the argument an economic fallacy and explaining that if pensions were eliminated the money spent on them would not disappear but would be spent elsewhere).
C. Supplementing Benefits with Social Security

Those concerned with the insolvency of pension plans should consider supplementing pension benefits with Social Security benefits. Social Security is the largest federal social program.343 Established in 1935, the Social Security System344 provides lifetime retirement benefits and benefits for disability, survivorship, and death.345 Most retired workers depend on Social Security benefits as their primary source of income.346 Together with pensions and personal savings, it is a critical component of old-age income security.347

Today, Social Security coverage is almost universal, protecting ninety-four percent of all workers.348 The remaining non-covered workers consist of public employees, including members of the thirteen state teacher retirement systems emphasized in this Article. Social Security benefits would provide a safety net to thousands of teachers and help prevent gaps in coverage that adversely affect work, such as disability.349 Moreover, unlike state plans, Social Security is transferable as workers move from job to job and in and out of public employment.350 While the future of this social insurance program remains uncertain,351 providing coverage for employees as long as it is viable is still worthwhile.

344. See Social Security Act, Pub. L. No. 74-271, ch. 531, 49 Stat. 620 (1935) (codified as amended at 42 U.S.C. ch. 7 (2006)). The Social Security Act of 1935 was created “to provide for the general welfare by establishing a system of Federal old-age benefits, and by enabling the several States to make more adequate provision for aged persons.” Id.
345. Id. To receive the lifetime retirement benefits a worker must have forty credits of covered work and can begin receiving the benefits at age sixty-two. Id.
348. Nuschler et al., supra note 19; see also infra Appendix, Table 1.
349. Simply adding Social Security coverage would not necessarily provide better benefit protections than what is already provided by the state. The effect of adding coverage would depend on exactly how state and local governments modify their existing plans to allow this extra coverage. Nuschler et al., supra note 19, at 10.
However, for states and their employees, Social Security coverage comes at a cost that could be significant because many pension plans are struggling financially. Social Security is primarily funded by a payroll tax that requires employers and employees to each contribute 6.2% of the first $117,000 of employee’s annual salary in a timely fashion. As discussed in Part III.A.1, many states have occasionally skipped required payments to their state teachers’ defined benefit plans because legislatures decided to save money and push the payments into the future. If the contributions required by Social Security were added to the current contribution rates, it would create a substantial expense for both the employers and employees.

Given (or in spite of) the present economic climate and the massive scope of public sector benefits-driven indebtedness, states may determine that the benefits of inclusion outweigh the costs. For example, Maine recently proposed making Social Security available to all state employees, including teachers.


352. Teachers and Social Security, supra note 350 (“The extent of cost increases would depend on how states and localities adjust their existing pension plans in response to mandatory Social Security coverage.”).


355. It is likely that the state would redesign the plan to offset some of the benefits of adding Social Security with the contribution rates.

356. Maine created a task force that generated a report in 2010. Task Force Study and Report: Maine State Employee and Teacher Unified Retirement Plan, ME. UNIFIED RET. PLAN TASK FORCE (2010), http://www.maineprs.org/PDFs/other_publications/MainePRS%20Final%20URP%20Task%20Force%20Report%203-9-2010.pdf; see also Hylton, supra note 51, at 442 (noting that the pension shortfall in Maine was directly attributable to investment losses and not to overly generous pension promises).
The proposal includes a phase-in period and would eliminate additional stress on its pension fund. States that choose to add Social Security coverage do so by voluntary agreement, known as a “Section 218 Agreement,” between the Social Security Administration and the state. Such agreements coordinating retiree pension costs with Social Security differ from state to state. Certain groups may be covered while others are not, depending on how states make the arrangements.

The terms of admission require the state to hold a referendum requiring a majority vote among pension plan members. States may alternatively opt to divide employees under the same pension plan into groups, with those in favor of joining doing so and those against not. Once coverage is provided, it cannot be terminated, and all future employees of that group are required to participate in Social Security. The federal government could mandate that all public pensions must contribute to Social Security to help the solvency of both


359. Nuschler et al., supra note 19, at 1.

360. 42 U.S.C. § 418. “Section 218 Agreements” cover positions not individuals. Public employees are brought under a Section 218 Agreement in groups known as coverage groups.

361. 42 U.S.C. § 418(d)(3). Effective 1955, federal legislation allowed public employees who already had public pensions to elect Social Security coverage through “Section 218 Agreements” by conducting employee referendums. Nuschler et al., supra note 19, at 2. There have been proposals involving extending mandatory Social Security coverage to all newly hired public employees. Id. at 5. This is in response to projected Social Security shortfalls. Id.

362. Id. at 2 (“[A]mendments in 1956 permitted certain states to split state or local retirement systems into ‘divided retirement systems’ based on groups of employees that voted for Social Security coverage and groups of employees that voted against Social Security coverage. Currently 23 states are authorized to operate a divided retirement system.”).

363. Id. This law was challenged in California in Bowen v. Pub. Agencies Opposed to Social Security Entrapments, 477 U.S. 41 (1986). The Supreme Court rejected California’s arguments and upheld the law. Id.

Social Security and public pensions. Universal coverage would improve the shortfalls in Social Security by creating more members, increasing the FICA tax revenues, and enhancing state pension plans by sharing some of the burden in paying out benefits with the federal Social Security system. A federal mandate, however, may be constitutionally suspect since it would, in effect, require state employers to pay a tax to the federal government. Furthermore, research has shown that this may only extend the solvency of both Social Security and state pension plans by a couple of years.

When state pension funds run out of money, retirees who are not under Social Security will have no relief other than their own personal savings. State governments and their employees should seriously consider having their public pension plans participate in the Social Security System as an additional protection against the economic risk of old age.

D. State Guarantee Against Default

The absence of any safeguards, particularly a safety net for public workers in the event of plan failure, is a serious concern. In addition to (or in place of) supplementing state pensions with federal Social Security benefits, states could provide a guaranteed benefit for insolvent plans.

Private-sector plans pursuant to federal law have a guarantee via the Pension Benefit Guaranty Corporation (PBGC). The corporation administers bankrupt plans and pays workers their defined benefits up to a maximum based on their age at retirement. Its underwriting and financial activity is funded in part from insured plan sponsor premiums.


366. See Nuschler et al., supra note 19, at 7.

367. See id. at 18.

368. Id. at 7-8.

369. The level of voluntary savings is declining because more people are choosing to maintain a relatively high standard of living during their pre-retirement years and forego accumulated savings for old age. See ALLEN ET AL. supra note 16, at 7 (noting that personal savings rates are "running at historically low levels").

370. We recognize there would be means-tested welfare benefits available.

371. The PBGC guarantees the payment of basic pension benefits either by becoming the trustee of underfunded plans upon termination or by providing financial assistance through loans (which are typically not repaid) in the event a pension fund can no longer pay benefits when due at the guaranteed level (insolvency). Performance and Accountability Report, PENSION BENEFIT GUARANTY CORP. 6, 10 (2005), http://www.pbgc.gov/docs/2005par.pdf [hereinafter 2005 PBGC PERFORMANCE &
Adopting a similar approach, the state sponsor could pay insurance premiums per employee for each employee participating in the pension program. Like Social Security, such an alternative could pose a substantial strain on already budget-strapped states. To overcome this obstacle and defray costs, one commentator urges states to consolidate plans, if legally and politically possible. In designing the program, moreover, states should take care to avoid the serious funding problems that have plagued the PBGC. The PBGC has suffered from years of adverse selection by plan sponsors that have engaged in risky behavior, confident that the PBGC will provide insurance in the event of plan failure. Nonetheless, proper incentives and control measures can be put in place, such as the imposition of fiduciary standards or independent oversight. Another cause of PBGC weakness is corporate employers transitioning

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372. Id. at 11. Other funding comes from employer underfunding liability payments, income earned on investments, and any assets taken over from failed plans. Id.; see also 29 U.S.C. §§ 1306-1307 (2012). The corporation receives no taxpayer monies and its statutory duties are not backed by the full faith and credit of the United States Government. 2005 PBGC PERFORMANCE & ACCOUNTABILITY REPORT, supra note 371, at 3.

373. 2005 PBGC PERFORMANCE & ACCOUNTABILITY REPORT, supra note 371, at 11; accord Mendales, supra note 260, at 539-43 (proposing to create state emergency funds paralleling the federal PBGC to ensure payment of benefits during unexpected crises).

374. Mendales, supra note 260, at 543 (“[B]eing much larger, the state plans could absorb liabilities of this kind with comparatively minimal increases in employer and employee contributions.”).

375. Anenson & Lahey, supra note 330, at 508-16 (citing legal, economic, and sociological reasons for the failing financial integrity of existing defined benefit plans and of the federal pension insurance program that supports them).

376. A down-side risk of plan termination insurance is that government sponsors may follow a riskier investment strategy. Brian A. Ciochetti et al., Determinants of Real Estate Asset Allocations in Private and Public Pension Plans, 19 J. REAL ESTATE FIN. ECON. 193 (1999) (positing that the PBGC guarantee encourages more risk taking regarding pension investments by corporate sponsors). Private sector pensions have been plagued with problems similar to the public sector pensions, where dubious accounting rules have allowed plan sponsors to avoid paying the full cost of promised benefits.

377. As discussed supra at notes 261-270 and accompanying text, UMPERSA has fiduciary standards that Wyoming, Maryland, and South Carolina have adopted. See Unif. Management of Public Employee Retirement Systems Act §§ 7-11, 7A U.L.A. 347-55 (Supp. 1998); see also Willborn, supra note 260, at 141 (explaining that the Act provides “a clear statement of the standard of fiduciary conduct” that “permits and encourages public pension systems to engage in modern investment
to defined contribution plans, a switch that has likely been exacerbated by reforms raising employer premiums.

Like private employers, states also offer defined contribution plans to new employees, including teachers. However, unlike the private pension world, the majority of public pension plans are defined benefit plans. These pensions have millions of members and hold millions of dollars in assets. Moreover, rather than repeatedly raising premiums to support sustainability, a state PBGC-type program may provide a lower benefit and higher age for retirement eligibility compared to the federal program. Ultimately, while the details of any program would need to be thoroughly vetted under the particular circumstances of the state, insuring defined benefit pensions against default (albeit at a reduced rate) would provide public employees some retirement security while simultaneously allowing states considerable cost savings in the long-run.

practices”). Other suggestions for improved performance have targeted board composition and structure. See Hess, supra note 253, at 216-20 (proposing to change the composition of the governing boards of trustees of public pensions to minimize political pressures).

378. Anenson & Lahey, supra note 330, at 513 (“[P]ension scholars have concluded that the increasingly complex legislation and its attendant costs to business have deterred the establishment of defined benefit plans and/or fostered their termination.”); Edward A. Zelinsky, supra note 13, at 471-79 (explaining ERISA’s role in encouraging defined contribution pensions). Entire industries also imploded, along with their pension plans, which left the PBGC with massive liabilities. Anenson & Lahey, supra note 330, at 509 (explaining that much of the PBGC’s exploding deficit is attributed to weaknesses in certain industries such as steel and air transportation that account for almost three-quarters of past claims while representing fewer than five percent of the insured participants).

379. Anenson & Lahey, supra note 330, at 527-30 (criticizing increase in employer insurance premiums imposed by the Pension Reform Act of 2006); see also Zelinsky, supra note 13, at 477 (explaining the premium payment structure of the PBGC generates costs associated with defined benefit plans that do not exist with other pension plans).


383. See Anenson & Lahey, supra note 330, at 528 (suggesting PBGC reduce benefits and raise age of benefit eligibility).
Placing state pensions within the federal umbrella of PBGC protection would not be easy or advisable. State assurance against plan insolvency would eliminate the need for future federal aid, which would cause all taxpayers to bear the burden. Moreover, bankruptcy is not a likely option for restructuring state pension debt obligations. In states facing emergency cost-cutting and taxing situations, it may be necessary to accept federal assistance (if offered) in the form of a low-interest loan or authorization to issue tax-subsidized bonds. With many defined benefit plans on the brink of economic disaster, states should study ways of providing plan termination insurance to bridge the gap in coverage that would otherwise be filled by Social Security.


386. See generally David A. Skeel Jr., States of Bankruptcy, 79 U. Chi. L. Rev. 677 (2012) (making a case for state bankruptcy). Federal bankruptcy is available to subdivisions of state governments. See Ellman & Merritt, supra note 73, at 369 (focusing on cities' rather than states' ability to use bankruptcy to solve their pension problems); Hylton, supra note 51, at 458-61 (providing city and county examples that have restructured pension debt through bankruptcy).

387. Martin, supra note 384; see also Reinke, supra note 64, at 1675 (arguing that the federal government could incentivize state governments to adopt minimum funding requirements by allowing them to issue tax-exempt bonds for the purpose of funding the pensions of public employees). A common response for states attempting to address failing pension funds is to issue bonds. Alaska and Illinois, for example, issued bonds to fund their pension obligations. See PEW CHARITABLE TR., supra note 44. Underfunding will also adversely affect the investment ratings of government bonds. See Daniel P. Mahoney, Toward a More Ethical System of State and Local Government Retirement Funding, 14 J. PUB. BUDGETING, ACCT. & FIN. MGMT. 197, 202 (2002). We previously cautioned governments against rolling the dice by issuing more bonds to satisfy pension obligations. Lahey & Anenson, supra note 14, at 321-22 (cautioning against the continued use of bonds as a stop-gap measure that gambles on economic upswings or other uncertainties).
In conclusion, the preceding discussion conducted a normative analysis of possible pension reforms. No measure alone is a panacea, and many measures will be subject to contentious political and legal debate. The main objective of this Article has been to present alternatives and broaden the conversation about public pension reform across disciplines. While it concentrated on one subcategory of public pensions, educator defined benefit plans in non-Social Security states, our analysis and recommendations have implications for pensions of all public employees and, even more broadly, for government policies concerning old-age security.

CONCLUSION

The public pension debt crisis jeopardizes the fiscal solvency of states and the nation's long-term financial health. Retirement benefits are also a critical component of income-maintenance for public retirees. The American public certainly understands that we must live by our human capital. What we do with the pensions of public school teachers will have a profound impact on the retirement security of these important and often under-valued group of government workers.

While the education debate has been spotlighted teacher pensions, the legal literature on pension reform has largely ignored them. Using data from the Center for Retirement Research at Boston College, we provide a comprehensive analysis of teacher defined benefit plans. We initially estimated the severity of the public pension problem through statistical analyses and comparisons between plans that do and do not contribute to Social Security. We then evaluated the legality and desirability of existing and proposed reforms.

Given the variation in plans among states and the legal and political environments they operate in, we do not propose a single solution to this intractable problem. Instead, we offer an array of options that should be considered when assessing the present and future role of pensions as income maintenance for public retirees and their beneficiaries. We additionally provide a paradigm for considering changes to public plans.

Our proposals advocate items for immediate action as well as measures for ongoing improvement. For the short-term, we unite legal and economic theory in assessing the costs and benefits of possible reforms (including modifications of existing plans and changes to plan structure). For the long-term, we suggest a three-pronged model of measures targeting politicians, unions, and the public. The framework is meant to facilitate decision-making by policymakers as they tackle tough issues and difficult choices. Finally, in the thirteen states where


389. Costrell et al., supra note 203 ("Teacher benefits have become a flashpoint in the education debate.").
teacher pensions systems do not contribute to Social Security, we strongly encourage government leaders to consider a safety net in the event of plan failure. We suggest that states either supplement these plans with Social Security, or create a state institutional safeguard similar to what the PBGC provides for private pensions.
## Table 1: Public Pension Plan Allocation

### Panel A: Equities

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-Social Security</th>
<th>Social Security</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S. Equities</td>
<td>Foreign Equities</td>
</tr>
<tr>
<td>2003</td>
<td>36.15%</td>
<td>11.26%</td>
</tr>
<tr>
<td>2004</td>
<td>37.36%</td>
<td>13.08%</td>
</tr>
<tr>
<td>2005</td>
<td>39.86%</td>
<td>14.96%</td>
</tr>
<tr>
<td>2006</td>
<td>42.26%</td>
<td>17.65%</td>
</tr>
<tr>
<td>2007</td>
<td>40.86%</td>
<td>18.94%</td>
</tr>
<tr>
<td>2008</td>
<td>32.55%</td>
<td>17.80%</td>
</tr>
<tr>
<td>2009</td>
<td>30.88%</td>
<td>18.49%</td>
</tr>
<tr>
<td>Average</td>
<td>37.13%</td>
<td>16.03%</td>
</tr>
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### Panel B: Bonds

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<th>Year</th>
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<th>Social Security</th>
</tr>
</thead>
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<td>U.S. Bonds</td>
<td>Foreign Bonds</td>
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<td>2003</td>
<td>19.83%</td>
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</tr>
<tr>
<td>2004</td>
<td>17.86%</td>
<td>1.52%</td>
</tr>
<tr>
<td>2005</td>
<td>17.44%</td>
<td>1.49%</td>
</tr>
<tr>
<td>2006</td>
<td>16.65%</td>
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</tr>
<tr>
<td>2007</td>
<td>15.18%</td>
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</tr>
<tr>
<td>2008</td>
<td>16.98%</td>
<td>2.05%</td>
</tr>
<tr>
<td>2009</td>
<td>15.55%</td>
<td>1.90%</td>
</tr>
<tr>
<td>Average</td>
<td>17.07%</td>
<td>1.65%</td>
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### Panel C: Alternative Investments and Real Estate

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<th>Alternative Investments</th>
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<th>Alternative Investments</th>
<th>Real Estate</th>
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<tr>
<td>2003</td>
<td>2.07%</td>
<td>5.45%</td>
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<td>4.42%</td>
</tr>
<tr>
<td>2004</td>
<td>1.96%</td>
<td>5.26%</td>
<td>1.94%</td>
<td>4.34%</td>
</tr>
<tr>
<td>2005</td>
<td>2.16%</td>
<td>5.57%</td>
<td>2.34%</td>
<td>4.58%</td>
</tr>
<tr>
<td>2006</td>
<td>2.03%</td>
<td>6.94%</td>
<td>2.56%</td>
<td>5.24%</td>
</tr>
<tr>
<td>2007</td>
<td>3.52%</td>
<td>7.62%</td>
<td>3.07%</td>
<td>5.64%</td>
</tr>
<tr>
<td>2008</td>
<td>4.97%</td>
<td>8.94%</td>
<td>5.14%</td>
<td>6.79%</td>
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<td>2009</td>
<td>4.73%</td>
<td>8.86%</td>
<td>6.33%</td>
<td>6.02%</td>
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<td><strong>Average</strong></td>
<td><strong>3.06%</strong></td>
<td><strong>6.95%</strong></td>
<td><strong>3.33%</strong></td>
<td><strong>5.29%</strong></td>
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### Panel D: Cash and Other

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<th>Year</th>
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<td>Short Term</td>
<td>Other Assets</td>
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<td>2003</td>
<td>2.68%</td>
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</tr>
<tr>
<td>2004</td>
<td>2.84%</td>
<td>3.25%</td>
</tr>
<tr>
<td>2005</td>
<td>2.14%</td>
<td>3.65%</td>
</tr>
<tr>
<td>2006</td>
<td>1.73%</td>
<td>3.90%</td>
</tr>
<tr>
<td>2007</td>
<td>1.69%</td>
<td>3.72%</td>
</tr>
<tr>
<td>2008</td>
<td>2.35%</td>
<td>5.22%</td>
</tr>
<tr>
<td>2009</td>
<td>2.71%</td>
<td>6.72%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>2.31%</strong></td>
<td><strong>4.21%</strong></td>
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### Panel E: Investment Returns

<table>
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<tr>
<th>Year</th>
<th>One-year Investment Returns</th>
<th>Standard Deviation</th>
<th>Social Security</th>
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<tr>
<td></td>
<td>One-year Investment Returns</td>
<td>Standard Deviation</td>
<td>One-year Investment Returns</td>
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<tr>
<td>2003</td>
<td>5.55%</td>
<td>5.6384</td>
<td>6.38%</td>
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<tr>
<td>2004</td>
<td>15.39%</td>
<td>2.74204</td>
<td>15.11%</td>
</tr>
<tr>
<td>2005</td>
<td>10.39%</td>
<td>1.56769</td>
<td>10.30%</td>
</tr>
<tr>
<td>2006</td>
<td>11.42%</td>
<td>3.09414</td>
<td>11.25%</td>
</tr>
<tr>
<td>2007</td>
<td>17.49%</td>
<td>3.00598</td>
<td>16.85%</td>
</tr>
<tr>
<td>2008</td>
<td>-4.93%</td>
<td>6.86027</td>
<td>-6.97%</td>
</tr>
<tr>
<td>2009</td>
<td>-17.37%</td>
<td>10.92009</td>
<td>-13.56%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>5.42%</strong></td>
<td><strong>4.83486</strong></td>
<td><strong>5.62%</strong></td>
</tr>
</tbody>
</table>
### Table 2: Membership in Defined Benefit Public Pension Plan

#### Panel A: Averages

| Year | Actives | | Retirees | | |
|------|---------|-------------------------------------------------|---------|-------------------------------------------------|
|      | Non-Social | Social | Non-Social | Social | |
|      | Security | Security | Security | Security | |
| 2003 | 177,524.17 | 132,072.97 | 71,206.25 | 56,569.43 | |
| 2004 | 166,296.31 | 132,674.43 | 71,878.85 | 59,840.51 | |
| 2005 | 181,666.83 | 133,371.49 | 76,785.00 | 62,352.83 | |
| 2006 | 175,489.85 | 136,337.97 | 75,683.15 | 64,714.69 | |
| 2007 | 188,832.67 | 137,441.49 | 82,643.25 | 67,317.51 | |
| 2008 | 181,892.23 | 138,412.74 | 81,237.92 | 69,774.94 | |
| 2009 | 194,711.08 | 138,296.91 | 88,801.92 | 72,103.83 | |
| **Average** | **180,916.16** | **135,515.43** | **78,319.48** | **64,667.68** | |

#### Inactive Vested | All Members

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-Social</th>
<th>Social</th>
<th>Non-Social</th>
<th>Social</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Security</td>
<td>Security</td>
<td>Security</td>
<td>Security</td>
</tr>
<tr>
<td>2003</td>
<td>23,948.36</td>
<td>22,859.48</td>
<td>289,702.58</td>
<td>218,092.80</td>
</tr>
<tr>
<td>2004</td>
<td>23,500.08</td>
<td>27,213.48</td>
<td>278,625.85</td>
<td>227,276.03</td>
</tr>
<tr>
<td>2005</td>
<td>25,966.55</td>
<td>23,894.59</td>
<td>300,298.92</td>
<td>227,369.69</td>
</tr>
<tr>
<td>2006</td>
<td>13,717.22</td>
<td>25,815.47</td>
<td>230,401.46</td>
<td>234,762.91</td>
</tr>
<tr>
<td>2007</td>
<td>29,298.91</td>
<td>27,193.91</td>
<td>318,011.17</td>
<td>239,638.03</td>
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<tr>
<td>2008</td>
<td>28,086.08</td>
<td>28,002.65</td>
<td>307,930.38</td>
<td>244,462.94</td>
</tr>
<tr>
<td>2009</td>
<td>31,721.18</td>
<td>28,615.79</td>
<td>333,863.25</td>
<td>247,429.86</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>25,176.91</strong></td>
<td><strong>26,227.91</strong></td>
<td><strong>294,119.09</strong></td>
<td><strong>234,147.47</strong></td>
</tr>
</tbody>
</table>

## Panel B: Totals

<table>
<thead>
<tr>
<th>YEAR</th>
<th>ACTIVES</th>
<th>Retirees</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Non-Social Security</td>
<td>Social Security</td>
</tr>
<tr>
<td>2003</td>
<td>2,130,290.00</td>
<td>4,622,554.00</td>
</tr>
<tr>
<td>2004</td>
<td>2,161,852.00</td>
<td>4,643,605.00</td>
</tr>
<tr>
<td>2005</td>
<td>2,180,002.00</td>
<td>4,668,002.00</td>
</tr>
<tr>
<td>2006</td>
<td>2,281,368.00</td>
<td>4,771,829.00</td>
</tr>
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<td>2007</td>
<td>2,265,992.00</td>
<td>4,810,452.00</td>
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<tr>
<td>2008</td>
<td>2,364,599.00</td>
<td>4,844,446.00</td>
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<tr>
<td>2009</td>
<td>2,336,533.00</td>
<td>4,840,392.00</td>
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<table>
<thead>
<tr>
<th>YEAR</th>
<th>INACTIVE VESTED</th>
<th>ALL MEMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-Social Security</td>
<td>Social Security</td>
</tr>
<tr>
<td>2003</td>
<td>263,432.00</td>
<td>754,363.00</td>
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<tr>
<td>2004</td>
<td>282,001.00</td>
<td>898,045.00</td>
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<tr>
<td>2005</td>
<td>285,632.00</td>
<td>812,416.00</td>
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<td>2006</td>
<td>164,606.60</td>
<td>877,726.00</td>
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<tr>
<td>2007</td>
<td>322,288.00</td>
<td>924,593.00</td>
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<tr>
<td>2008</td>
<td>337,033.00</td>
<td>952,090.00</td>
</tr>
<tr>
<td>2009</td>
<td>348,933.00</td>
<td>972,937.00</td>
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Table 3: Employee and Employer Contribution Rates

Panel A: Social Security States

<table>
<thead>
<tr>
<th>Plan</th>
<th>Employee Contribution Rate</th>
<th>Employer Contribution Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>5.00%</td>
<td>6.42%</td>
</tr>
<tr>
<td>Arkansas</td>
<td>6.00%</td>
<td>14.00%</td>
</tr>
<tr>
<td>Delaware</td>
<td>3.00%</td>
<td>6.85%</td>
</tr>
<tr>
<td>Florida</td>
<td>3.00%</td>
<td>4.91%</td>
</tr>
<tr>
<td>Georgia</td>
<td>5.53%</td>
<td>5.30%</td>
</tr>
<tr>
<td>Hawaii</td>
<td>6.00%</td>
<td>6.54%</td>
</tr>
<tr>
<td>Idaho</td>
<td>6.23%</td>
<td>10.39%</td>
</tr>
<tr>
<td>Indiana</td>
<td>3.00%</td>
<td>5.85%</td>
</tr>
<tr>
<td>Iowa</td>
<td>5.38%</td>
<td>8.33%</td>
</tr>
<tr>
<td>Kansas</td>
<td>4.00%</td>
<td>7.72%</td>
</tr>
<tr>
<td>Maryland</td>
<td>2.00%</td>
<td>6.47%</td>
</tr>
<tr>
<td>Montana</td>
<td>7.15%</td>
<td>2.49%</td>
</tr>
<tr>
<td>Nebraska</td>
<td>8.28%</td>
<td></td>
</tr>
<tr>
<td>New Hampshire</td>
<td>7.00%</td>
<td>11.04%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>6.50%</td>
<td>14.30%</td>
</tr>
<tr>
<td>New Mexico</td>
<td>7.90%</td>
<td>13.90%</td>
</tr>
<tr>
<td>New York</td>
<td>3.50%</td>
<td>8.62%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>6.00%</td>
<td>5.12%</td>
</tr>
<tr>
<td>North Dakota</td>
<td>8.75%</td>
<td>8.75%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>7.00%</td>
<td>9.50%</td>
</tr>
<tr>
<td>Oregon</td>
<td>6.00%</td>
<td>5.73%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>7.37%</td>
<td>8.65%</td>
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<tr>
<td>Rhode Island</td>
<td>8.75%</td>
<td>22.32%</td>
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<tr>
<td>South Carolina</td>
<td>6.50%</td>
<td>9.68%</td>
</tr>
<tr>
<td>South Dakota</td>
<td>6.00%</td>
<td>6.00%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>0.00%</td>
<td>13.02%</td>
</tr>
<tr>
<td>Utah</td>
<td>0.00%</td>
<td>16.32%</td>
</tr>
<tr>
<td>Vermont</td>
<td>5.00%</td>
<td>1.80%</td>
</tr>
<tr>
<td>Virginia</td>
<td>5.00%</td>
<td>6.26%</td>
</tr>
<tr>
<td>Washington</td>
<td>4.80%</td>
<td>9.18%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>6.00%</td>
<td>29.20%</td>
</tr>
<tr>
<td>Wyoming</td>
<td>7.00%</td>
<td>7.12%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>5.00%</td>
<td>4.80%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>5.41%</strong></td>
<td><strong>9.27%</strong></td>
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Panel B: Non-Social Security States

<table>
<thead>
<tr>
<th>Plan</th>
<th>Employee Contribution Rate</th>
<th>Employer Contribution Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>8.00%</td>
<td>7.00%</td>
</tr>
<tr>
<td>California</td>
<td>8.00%</td>
<td>8.25%</td>
</tr>
<tr>
<td>Colorado</td>
<td>8.00%</td>
<td>10.15%</td>
</tr>
<tr>
<td>Connecticut</td>
<td>6.00%</td>
<td>10.11%</td>
</tr>
<tr>
<td>Illinois</td>
<td>9.40%</td>
<td>25.49%</td>
</tr>
<tr>
<td>Kentucky</td>
<td>9.11%</td>
<td>17.21%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>8.00%</td>
<td>15.50%</td>
</tr>
<tr>
<td>Maine</td>
<td>7.65%</td>
<td>14.35%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>11.00%</td>
<td>1.62%</td>
</tr>
<tr>
<td>Missouri</td>
<td>4.00%</td>
<td>4.51%</td>
</tr>
<tr>
<td>Nevada</td>
<td>11.88%</td>
<td>11.88%</td>
</tr>
<tr>
<td>Ohio</td>
<td>10.00%</td>
<td>10.00%</td>
</tr>
<tr>
<td>Texas</td>
<td>6.40%</td>
<td>6.40%</td>
</tr>
<tr>
<td>Average</td>
<td>8.26%</td>
<td>10.96%</td>
</tr>
</tbody>
</table>

Table 4: Funding Ratio

<table>
<thead>
<tr>
<th>Year</th>
<th>Funded Ratio</th>
<th>Non-Social Security</th>
<th>Social Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>70.81%</td>
<td>85.16%</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>75.26%</td>
<td>85.25%</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>69.49%</td>
<td>83.48%</td>
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</tr>
<tr>
<td>2006</td>
<td>75.37%</td>
<td>83.07%</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>72.44%</td>
<td>84.45%</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>74.57%</td>
<td>81.33%</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>63.56%</td>
<td>76.39%</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>71.64%</td>
<td>82.73%</td>
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</tr>
</tbody>
</table>


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Table 5: Means and Standard Deviations for All Variables in the Regression

Panel A: All States

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
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<tbody>
<tr>
<td>Uaal</td>
<td>5,200,558.07</td>
<td>7,646,885.37</td>
</tr>
<tr>
<td>S.S. or Non-S.S.</td>
<td>.25</td>
<td>.436</td>
</tr>
<tr>
<td>Teachers</td>
<td>66,335.58</td>
<td>70,606.32</td>
</tr>
<tr>
<td>Salary</td>
<td>46,604.35</td>
<td>8,099.40</td>
</tr>
<tr>
<td>Employee Contr. Rates</td>
<td>5.72%</td>
<td>2.79%</td>
</tr>
<tr>
<td>Employer Rates</td>
<td>8.47%</td>
<td>3.89%</td>
</tr>
<tr>
<td>Equities</td>
<td>57.22%</td>
<td>9.18%</td>
</tr>
<tr>
<td>Bonds</td>
<td>27.05%</td>
<td>8.05%</td>
</tr>
<tr>
<td>One-Year Return</td>
<td>4.25%</td>
<td>12.44%</td>
</tr>
<tr>
<td>Actuarial Liability</td>
<td>35,044,017.76</td>
<td>34,788,329.18</td>
</tr>
<tr>
<td>Members</td>
<td>266,273.97</td>
<td>252,665.56</td>
</tr>
<tr>
<td>LogPopulation</td>
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<td>.459</td>
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</table>

Panel B: Non-Social Security States

<table>
<thead>
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<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uaal</td>
<td>3,359,228.44</td>
<td>5,514,811.08</td>
</tr>
<tr>
<td>S.S. or Non-S.S.</td>
<td>102,099.52</td>
<td>105,380.23</td>
</tr>
<tr>
<td>Teachers</td>
<td>46,129.10</td>
<td>9,076.36</td>
</tr>
<tr>
<td>Salary</td>
<td>8.33%</td>
<td>1.74%</td>
</tr>
<tr>
<td>Employee Contr. Rates</td>
<td>10.88%</td>
<td>4.13%</td>
</tr>
<tr>
<td>Employer Rates</td>
<td>58.32%</td>
<td>7.73%</td>
</tr>
<tr>
<td>Equities</td>
<td>27.24%</td>
<td>6.99%</td>
</tr>
<tr>
<td>Bonds</td>
<td>3.78%</td>
<td>12.31%</td>
</tr>
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<td>One-Year Return</td>
<td>29,930,064.89</td>
<td>27,124,678.96</td>
</tr>
<tr>
<td>Actuarial Liability</td>
<td>202,571.26</td>
<td>147,066.99</td>
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<td>LogPopulation</td>
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</table>
## Panel C: Social Security States

<table>
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<th>Mean</th>
<th>Std. Deviation</th>
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<tbody>
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<td>S.S. or Non-S.S.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Teachers</td>
<td>54,104.05</td>
<td>48,338.75</td>
</tr>
<tr>
<td>Salary</td>
<td>46,766.89</td>
<td>7,748.77</td>
</tr>
<tr>
<td>Employee Contr. Rates</td>
<td>4.82%</td>
<td>2.50%</td>
</tr>
<tr>
<td>Employer Rates</td>
<td>7.65%</td>
<td>3.44%</td>
</tr>
<tr>
<td>Equities</td>
<td>56.85%</td>
<td>9.61%</td>
</tr>
<tr>
<td>Bonds</td>
<td>26.98%</td>
<td>8.39%</td>
</tr>
<tr>
<td>One-Year Return</td>
<td>4.41%</td>
<td>12.32%</td>
</tr>
<tr>
<td>Actuarial Liability</td>
<td>36,793,027.66</td>
<td>36,929,745.03</td>
</tr>
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<td>Members</td>
<td>288,060.77</td>
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<tr>
<td>LogPopulation</td>
<td>6.53</td>
<td>.432</td>
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### Table 6: OLS Regression Results for the Full Sample and Non-Social Security Versus Social Security States

#### Panel A: All States

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized Beta</th>
<th>Std. Error</th>
<th>Standardized Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uaal</td>
<td>50,084,742.56</td>
<td>8,954,085.52</td>
<td>-.167</td>
</tr>
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<td>S.S. or Non-S.S.**</td>
<td>-2,931,998.84</td>
<td>995,195.59</td>
<td>-.24</td>
</tr>
<tr>
<td>Teachers*</td>
<td>26.017</td>
<td>8.53</td>
<td>.24</td>
</tr>
<tr>
<td>Salary**</td>
<td>-91.927</td>
<td>41.36</td>
<td>-.097</td>
</tr>
<tr>
<td>Employee Contr. Rates</td>
<td>127,523.02</td>
<td>139,045.44</td>
<td>.047</td>
</tr>
<tr>
<td>Employer Rates</td>
<td>-10,976.913</td>
<td>91,355.09</td>
<td>-.006</td>
</tr>
<tr>
<td>Equities**</td>
<td>-233,669.06</td>
<td>39,600.88</td>
<td>-.281</td>
</tr>
<tr>
<td>Bonds**</td>
<td>-205,603.34</td>
<td>47,086.77</td>
<td>-.216</td>
</tr>
<tr>
<td>1yr Return</td>
<td>28,844.58</td>
<td>25,706.65</td>
<td>.808</td>
</tr>
<tr>
<td>Actuarial Liability**</td>
<td>.178</td>
<td>.020</td>
<td>-.476</td>
</tr>
<tr>
<td>Members**</td>
<td>-14.42</td>
<td>2.638</td>
<td>.047</td>
</tr>
<tr>
<td>LogPopulation**</td>
<td>-3,916,186</td>
<td>1,216,688.47</td>
<td>-.235</td>
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*Significant at .05
** Significant at .01
### Panel B: Non-Social Security States

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized Beta</th>
<th>Std. Error</th>
<th>Standardized Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uaal</td>
<td>43,054,163.55</td>
<td>22,427,877.61</td>
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</tr>
<tr>
<td>S.S. or Non-S.S.**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers*</td>
<td>31.041</td>
<td>14.248</td>
<td>.593</td>
</tr>
<tr>
<td>Salary**</td>
<td>-231.969</td>
<td>74.504</td>
<td>-.382</td>
</tr>
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<td>Employee Contr. Rates</td>
<td>298,526.43</td>
<td>353,884.03</td>
<td>.094</td>
</tr>
<tr>
<td>Employer Rates</td>
<td>62,853.66</td>
<td>157,722.83</td>
<td>.047</td>
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<tr>
<td>Equities**</td>
<td>-106,351.03</td>
<td>120,468.38</td>
<td>-.149</td>
</tr>
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<td>-.244</td>
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</tr>
<tr>
<td>Actuarial Liability**</td>
<td>.003</td>
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<tr>
<td>Members**</td>
<td>-1.603</td>
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<td>-.043</td>
</tr>
<tr>
<td>LogPopulation**</td>
<td>2,797,787.91</td>
<td>2,797,787.91</td>
<td>-.317</td>
</tr>
</tbody>
</table>

*Significant at .05  
** Significant at .01

### Panel C: Social Security States

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized Beta</th>
<th>Std. Error</th>
<th>Standardized Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uaal</td>
<td>29,243,593.05</td>
<td>11,101,420.18</td>
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</tr>
<tr>
<td>S.S. or Non-S.S.**</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Teachers*</td>
<td>-14.22</td>
<td>15.81</td>
<td>-.084</td>
</tr>
<tr>
<td>Salary**</td>
<td>-40.628</td>
<td>48.94</td>
<td>-.039</td>
</tr>
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<td>Employee Contr. Rates</td>
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<td>.013</td>
</tr>
<tr>
<td>Employer Rates</td>
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<td>108,664.65</td>
<td>-.011</td>
</tr>
<tr>
<td>Equities**</td>
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<td>Bonds**</td>
<td>-201,244.187</td>
<td>49,463.27</td>
<td>-.207</td>
</tr>
<tr>
<td>1yr Return</td>
<td>27,520.35</td>
<td>29,067.18</td>
<td>.042</td>
</tr>
<tr>
<td>Actuarial Liability**</td>
<td>.252</td>
<td>.024</td>
<td>1.141</td>
</tr>
<tr>
<td>Members**</td>
<td>-19.95</td>
<td>2.83</td>
<td>-.676</td>
</tr>
<tr>
<td>LogPopulation**</td>
<td>-1,176,011.69</td>
<td>1,598,002.79</td>
<td>-.062</td>
</tr>
</tbody>
</table>

*Significant at .05  
** Significant at .01