

REFORMING PUBLIC PENSIONS

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Pension reform has taken center stage in the public policy debate as states struggle to deal with the fallout from the Great Recession. Retirement benefits are not only a critical component of income-maintenance for public retirees, but also a source of economic stimulus to every state economy. In this article, we integrate and extend the pension reform movements in law, education and economics by studying teacher pensions across the United States. Our interdisciplinary approach concentrates on defined benefit plans in states that do not contribute to Social Security. Focusing on this vulnerable and important group of government workers, we aim to improve theory and practice by providing a valuable perspective as states reconsider their pension obligations.

We initially estimate the severity of the public pension problem through a variety of statistical analyses and comparisons among fifty plans that do and do not fund Social Security. We then evaluate the legality and desirability of existing and proposed reforms. Significantly, pension reform raises new constitutional questions that are challenging courts to arrive at an acceptable conceptual framework for consistent interpretation and application. With the foregoing financial, political, and legal considerations in mind, we suggest a comprehensive set of reform measures. We provide these policy prescriptions along with a managerial paradigm for political action. The policymaking methodology directs attention not only to the pension plans themselves, but also to the political reality of their creation and continued operation. We conclude that a comprehensive response to the public pension crisis is necessary to avert disaster and maintain plan solvency both now and in the future.

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“Today, education is perhaps the most important function of state and local governments.”

--*Brown v. Board of Education*ⁱⁱ

Education has entered an age of uncertainty. The Great Recession has forced hard choices on government leaders with education shrinking in state budgets and declining in national priority.

An often overlooked challenge to government-sponsored education comes from the crisis in public pensions.ⁱⁱⁱ The federal safeguards in place for pensions sponsored by private employers do not exist in the public realm. With trillions of dollars at stake, practitioners, policymakers, and academics alike are urgently addressing the pension problem. Politicians in more than forty states have been considering a variety of proposals and implementing changes that affect millions of government workers and retirees.^{iv} Courts have also entered the milieu as impacted employees are testing whether reforms surmount legal obstacles and pass constitutional muster.

The debate over public pension reform has far reaching implications for the present financial security of teachers and the future of education. Given that educator wages are lower than other professions and forms of government employment,^v pensions as a form of deferred compensation enable states to hire the most effective teachers.^{vi} Cutting pension benefits without increasing salaries could hurt the recruitment and retention of quality public school teachers.^{vii} With teacher quality linked to economic achievement individually^{viii} and gains in gross domestic product collectively,^{ix} changes to educator pension systems deserve serious consideration.

In this article, we integrate and extend the pension reform movements in law, education and economics by studying teacher pensions across the United States. Our interdisciplinary approach concentrates on defined benefit plans that do not contribute to Social Security. Focusing on this vulnerable and important group of government workers, 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 their plans, collectively more than thirty billion dollars annually, and not to Social Security.^x These defined benefit plans are in pension systems that span thirteen states and comprise more than 300,000 members. Using the latest data from the Center for Retirement Research at Boston College, we investigate the financial condition of fifty teacher pensions over a seven year period and explore the similarities and differences between plans in Social Security and non-Social Security states. Our financial calculations show serious underfunding of educator defined benefit plans systemic of all pensions since the global financial crisis. The detailed comparisons between plans that do and do not fund Social Security also demonstrate that the latter pensions are, in fact, much worse than the former and most at risk of failure.

Part II surveys the recent reforms of public pensions as well as the legal obstacles to these legislative solutions. Significantly, pension reform raises new constitutional questions that are challenging courts to arrive at an acceptable conceptual framework for consistent interpretation and application. We assess and summarize decisions on public pension changes by concentrating on the constitutional constraints under the Contracts Clause. 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.

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 and their ongoing constitutional challenges. The discussion additionally advances and synthesizes scholarship across different disciplines. In particular, our analysis and proposals relating to the public pension crisis bridge the academic divide in law, education, and economics. Through our quantitative and qualitative analysis, we extend the recent research of legal scholars on public pension systems as well as our own prior research in this area.

Our proposals advocate items for immediate action as well as measures meant for ongoing improvement. Due to the diversity in law and legislation among states, we do not urge a uniform answer to the pension problem, but rather, provide options and a decision-making framework for political action. The multi-dimensional model directs attention to potential reforms *ex ante* and *ex post* to the pension contract. 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. The defined benefit plans of public school teachers have unfunded liabilities of almost a trillion dollars that is part of a national gap in public plans estimated as exceeding three trillion.^{xi} These plans have no oversight by the federal government and no insurance program if the plan fails. As such, our evaluation and recommendations regarding defined benefit plans that are not part of Social Security inform the ongoing debate over public pensions that has made the headlines of every major newspaper in the country. These benefits are not only a critical component of income-maintenance for public retirees, but also a source of economic stimulus to every state economy.^{xii}

The narrow focus on teacher pensions additionally highlights the broad significance of reform to education. Great thinkers throughout history have reflected on the value of education to society.^{xiii} Nelson Mandela believed that “[e]ducation is the most powerful weapon you can use to change the world.”^{xiv} G. K. Chesterton described education in an equally profound manner: “Education is simply the soul of society as it passes from one generation to another.”^{xv} For these reasons, perhaps, states have always viewed education as an essential element of a successful democratic system of government.^{xvi} Therefore, our study serves as an important reminder to political leaders that how they deal with the public pension crisis is at once humanistic, yet deterministic as well.

I. Measuring the Financial Condition of Public Pensions: A Study of Educator Defined Benefit Plans

Widespread media attention of recent studies has exposed enormous unfunded liability in public pension plans.^{xvii} Depending on the assumed discount rate and other variables, state pensions are collectively between \$700 billion and almost \$4.6 trillion short of the funding needed to meet their actuarial liabilities.^{xviii} For public school teachers, one study found that unfunded obligations amounted to \$933 billion.^{xix} In this section, we add to these financial analyses by examining educator defined benefit plans.^{xx}

These plans are the primary kind of pension offered to public employees.^{xxi} Under a defined benefit plan, the government has the obligation to provide retirement income to its employees for the duration of the participant's life and potentially that of his or her spouse.^{xxii} As such, these plans require employees to rely on employers for their retirement income.^{xxiii} In theory, the promise of a pension benefit creates a concomitant duty on the part of the state.^{xxiv} In reality, however, the employee bears the risk that a state government will fail to provide such benefits.^{xxv}

We analyze seven years of data (2003-2009) provided by the Boston College Center for Retirement Research. We examine a total of fifty public teacher pensions, comparing the thirteen plans that do not fund Social Security with the thirty-seven plans that do. To preview our conclusion, we find that the asset allocation in non-Social Security plans are providing lower returns (and less risk) than plans that invest in Social Security. The contribution rates are higher for both employees and employers in non-Social Security states, but their investment performance is worse along with their funded ratios. Overall, the data analysis exposes more serious flaws in the non-Social Security states because they do not have a guaranteed pension like those retirement systems that also have Social Security. The results are shown in the Appendices in Tables 1-7 and Figures 1-5.

A. Asset Allocation

Pensions are funded by employer and employee contributions and the income generated through their investment.^{xxvi} More than half of pension financing derives from these investments.^{xxvii} If the investments fail to generate an adequate rate of return, as evidenced by the most recent market downturn, the adverse effects on the plan can be devastating.^{xxviii}

Pension funds are invested in a diversified portfolio based on various asset allocations that include cash, equities, bonds, real estate, and alternative assets.^{xxix} Differences in asset allocations typically affect the return to the pension plan and, accordingly, are a determinant of pension health.

Descriptive statistics show that the differences in asset allocations for the plans that do and do not contribute to Social Security are most apparent in bonds, real estate, and alternative investments. The largest variation is in the allocation to bonds. Plans that do not fund Social Security have nearly 4% more of their assets allocated to bonds, and, in particular, U.S. bonds.^{xxx} These plans also invest more in real estate (6.95% versus 5.29%), with over 1.5% more assets in real estate investments.^{xxxi} However, they allocate less to alternative investments, with the largest variation in 2009.^{xxxii}

Inferential statistics suggest that the defined benefit plans that do not invest in Social Security are reducing risk through the higher allocation to bonds, real estate, and alternative investments. Comparing the one-year (annual) investment returns for each type of pension plan, there are similar average returns over the seven year time period.^{xxxiii} Nevertheless, these small percentage differences have a large impact because of the enormous value of pension assets in both types of plans.^{xxxiv} For five out of the seven years, the non-Social Security plans have a better return.^{xxxv} In 2003, Social Security plans have a higher return and, in 2009, a smaller loss.^{xxxvi} Calculating the standard deviation of these returns, there is a small difference in return (5.42% vs. 5.62%) and a larger (4.83 vs. 5.21) difference in risk for the defined benefit plans that invest in Social Security. These results suggest that, as a group, non-Social Security pensions have a lower return with lower risk over the seven year period than Social Security pensions. The next three indicators of financial conditions add additional dimensions to the analysis.

B. Plan Membership

The number of active members and retirees is another important factor to consider in observing the economic status of pension plans.^{xxxvii} A larger numbers of retirees will require the plan to have more active members in order to sufficiently finance the pension fund. The non-Social Security plans average nearly 50,000 more members and about 14,000 more retirees per state than that of Social Security plans.^{xxxviii} Current demographic data indicate that the budget crisis is reducing the number of new teachers. As a result, the composition of active and retired plan membership may continue to be in jeopardy.

C. Contribution Rates

An additional consideration is the contributions made by employers and employees to the defined benefit pension plans. In most state teacher pension plans, the employee contributes a certain percentage of his or her pay and the employer contributes a certain percentage based on the employees pay.

The data shows that non-Social Security plans have significantly higher contribution rates for both employees and employers.^{xxxix} Social Security plans pay on average a 3% lower employee contribution and the employers pay over 1% less.^{xl} This is a sizeable difference. Significantly, these high contribution rates limit the ability of non-Social Security states to raise more funds without adding Social Security to their plans.^{xli} The difficulty is underscored by a recent study concluding that government contributions to employee retirement, including social security and pensions, will have to increase by 250% to achieve full funding.^{xlii}

D. Funded Ratio

The final and principal calculation to consider in evaluating defined benefit plans is the funding ratio.^{xliii} This ratio measures a plan's financial health by dividing the market or actuarial value of assets by the liabilities^{xliv} or, stated differently, the funded ratio of a defined benefit pension plan is the ratio of a plan's current assets to the present value of earned pensions.^{xlv}

The funded ratio of teachers' pension plans with Social Security remained above 80% each year until 2009, where it dipped to 76%.^{xlvi} Meanwhile, non-Social Security plans struggled to stay around the 70% mark for most of the decade and dropped sharply by more than 11% from 2008 to 2009.^{xlvii} The average of the non-Social Security states pensions' funded ratios fall at a much steeper rate than that of the Social Security pensions, deteriorating at nearly double the rate of Social Security plans in percentage points.^{xlviii}

The substantial decline in the funded ratios of non-Social Security plans presents a real danger for teachers who may not receive their retirement benefits. This risk of insufficient assets on which to earn income necessary to pay the promised benefits is, of course, compounded by the fact that these teachers are not eligible for Social Security benefits.

E. Regression Results

The descriptive statistics reported in Tables 1-4 and Figures 1-5 show the differences between non-Social Security pensions and Social Security pensions for public employees in defined benefit plans. In Tables 5-7, we run OLS regressions to determine which variables, if any, are significantly different when the dependent variable is the unfunded actuarial accrued liability (Uaal). The regression allows us to look at all of the variables at one time rather than just examining one variable at a time. Table 5 provides the definitions for each of the variables in the

OLS regressions. Table 6 shows the means and standard deviations for all of the variables in the regression for all fifty states, the regression for the non-Social Security states, and the regression for Social Security states. Table 7 provides the results.

The OLS regression for all states is of primary interest because it allows us to determine if there is a significant difference for the dummy variable Social Security pension plans or non-Social Security plans. At the .01 level of significance, there is a difference between the two types of state pension plans when looking at the Uaal which measures the difference between the actuarial accrued liability and actuarial assets. Thus, if the plan is non-Social Security, it is more likely to have an unfunded actuarial accrued liability. It is also significantly more likely (.01 level of significance) to have more teachers in the plan with lower salaries, more equities and bonds in the investment portfolio, a higher projected benefit obligation, more members in the pension plan, and a larger state population. There is not a significant difference in the employee or employer contribution rates or the one year return on portfolio investment variables and the Uaal variable.

In sum, the market crash wiped out billions for already unfunded public pension plans. Our financial evaluation makes clear that plans in non-Social Security states have not been spared. In fact, our comparative study and regression results show these plans are more unstable and susceptible to failure than plans of public employees scheduled to receive retirement along with Social Security benefits.

Our assessment of the effect of ongoing economic forces is even more dramatic when considered together with the demographic forces reshaping retirement income security. Pension receipt among retirees is expected to continue to grow as aging Baby Boomers, which account for a disproportionate share of the population, retire sooner than previous generations and live longer.^{xlix} Therefore, the unsustainability of these plans, whose membership includes roughly one-quarter of all public employees,¹ 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. Advances in medical science will allow many of us the blessing of a long life. Yet such a blessing comes with the curses of old age that include loss of autonomy and control, along with the threat of outliving one's resources when we are no longer able to provide for ourselves through work.

It is not surprising then that 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.^{li} To gain a better understanding of how to manage what analysts are calling the public pension "bomb,"^{liii} the next section surveys these political measures in addition to their potential legal constraints.

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 marshaled the political will to enact reform legislation.^{liiii} Unfortunately, most measures address only part of the problem and fall short of an optimal solution.^{liv} Moreover, many states are facing lawsuits challenging these new statutes which may ultimately stymie reform measures.^{lv} With a view to guiding future legislative correctives, this

section reviews recent reforms in non-Social Security states and analyzes their likely legal obstacles. A summary of public pension reforms is provided in Table 8.

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.^{lvi} The pension funds in two states whose employees are without Social Security, Colorado and Illinois, will default in the next decade without drastic measures.^{lvii} 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.”^{lviii} Other states are in an emergency scenario as well where paying down the pension debt will curtail public services, such as money needed for schools.^{lix} 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.

More than twenty-five states enacted significant changes in legislation to its public pensions in 2011.^{lx} States with pension plans that do and do not fund Social Security have enacted similar reforms. 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. A summary of the major reforms made to state teacher’s retirement systems that do not contribute to Social Security are further detailed below.

All non-Social Security states enacted reform legislation. Five of the thirteen states altered their contribution rates in the past few years to combat funding issues.^{lxi} Meanwhile, one state altered its employer contribution rate by actually decreasing it.^{lxii} Another typical reform has been to alter the COLA, which is an adjustment made to pension benefit payouts in order to counteract the effects of inflation.^{lxiii} Four states have made changes to its plan’s COLAs, many affecting only new retirees.^{lxiv}

The most common changes have been to age and service requirements. Eight of the thirteen non-Social Security states have modified these requirements.^{lxv} Furthermore, six states have made changes to the calculation of retirement benefits.^{lxvi} These changes normally concern decreasing the benefit factor and increasing the number of years used to calculate the final average compensation.^{lxvii} The general formula for most plans at retirement entitles an employee to an annual income equal to a percentage of the employee’s final average salary, multiplied by the number of years of employment.^{lxviii}

Alaska was relatively proactive in the maintenance of its pension plan. In 2005, it shifted all of the state’s new employees to defined contribution plans.^{lxix} Furthermore, in 2008, the state authorized up to \$5 billion in pension obligation bonds by state and local governments to fund its pension and make up for double-digit investment losses in individual portfolios.^{lxx}

In contrast, California has only recently made necessary reforms. The state has the largest public pension system in the United States.^{lxxi} A report by the Little Hoover Commission, a bi-partisan state oversight agency, estimated the unfunded liabilities of California’s ten largest public pension plans (of eighty-seven studied) to be \$240 billion.^{lxxii} Since its funded ratio plummeted along with the stock market, California had only managed to lower the benefit factor from 2.5%

to 2.148% at age 63 or later.^{lxxiii} But the state legislature had been attempting to cut costs by rolling back retirement benefit increases that were enacted in 1999.^{lxxiv} It finally succeeded this year. The 2013 Pension Reform Act makes a number of changes for new employees. These include reduced benefit formulas and increased retirement ages.^{lxxv} Among other plan modifications, there will be a three-year final compensation formula, a cap on the annual salary used to calculate it, a prohibition on purchasing additional retirement service credit, and a limitation on post-retirement public employment.^{lxxvi}

To forestall impending financial doom, Colorado has made extensive reforms to its pension in recent years.^{lxxvii} The changes increased both employer and employee contributions and raised the minimum retire age from 55 to 60 for future employees.^{lxxviii} The state also capped its COLA for both current and future employees and retirees at 2%, instead of 3.5%.^{lxxix}

Another struggling non-Social Security state that made changes was Illinois.^{lxxx} It has the worst-funded public pension in the nation.^{lxxxi} Unfunded pension obligations approach \$80 billion.^{lxxxii} To curtail its accruing liabilities, Illinois enacted legislation to stop double dipping, which enabled retirees to receive pension benefits and a second salary from a public entity.^{lxxxiii} It also raised the retirement age for new employees from 60 to 67 and capped the salary on which pension benefits are calculated.^{lxxxiv} Missouri followed Illinois by increasing its standard retirement age for new hires to 67.^{lxxxv}

Kentucky enacted various reforms in 2008 that affected only new hires.^{lxxxvi} The reforms included: changing the final average compensation calculation to the final five years of pay, instead of the highest five, and implementing a graduated tier system for new employees lowering the benefits.^{lxxxvii} In 2010, the state also increased the retiree health care contribution.^{lxxxviii}

Louisiana and Maine have made changes to their pension plans as well.^{lxxxix} Louisiana increased its employee contributions, cut its COLA, and altered the final average compensation for new hires to the highest five consecutive years.^{xc} Maine increased the normal retirement age for participants with less than 5 years of service from 62 to 65.^{xc1} The state is also considering legislation for switching to a defined contribution plan or shifting state employees into Social Security.^{xc2}

Massachusetts, Nevada, Texas, and Ohio are the remaining non-Social Security states that made changes.^{xc3} Massachusetts tightened many loopholes to save money, such as increasing the minimum age for retirement from 55 to 60.^{xc4} Nevada also increased the retirement age for new hires from 60 to 62, and reduced the COLA and final benefits calculation.^{xc5} Texas upped the age and service requirements, reduced early retirement benefits, and lowered benefits as a percent of final salary.^{xc6} Despite political gridlock over pension reform since 2009, Ohio recently changed the law for all of its pension plans, including the plan available to teachers. The 2012 legislation affects all workers and retirees and is expected to save almost \$12 billion in accrued liabilities.^{xc7} The teachers pension plan increased employee (but not employer) contributions and retirement age, modified the benefit formula, reduced the COLA, and lengthened the years of service requirement.^{xc8}

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 to new hires. But certain states like Colorado and Ohio, unable to finance their pension obligations, went further and extended reforms to current

employees and even retirees.^{xcix} The next section analyzes the challenges to these legal changes in Colorado and other states to enable lawmakers to reasonable anticipate the litigation risk of future pension reform.

B. Legal Barriers to Reform

This part explains the next phase of public pension reform-related controversies—litigation. It considers lawsuits against state governments by affected employees claiming constitutional and other legal protections. The discussion is intended to improve our understanding of the impact and potential success of future reforms on public sector employee retirement systems.

Legislative interference with pension rights raises state and federal constitutional concerns. Namely, government alteration of the defined benefit plan or its basic features could potentially violate the Contracts Clause, the Takings Clause, and the Due Process Clause.^c Legal protection extends only to existing employees and retirees. No protection is afforded to 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.^{ci} A few states like Texas still adhere to it.^{cii} As far as the constitution is concerned, lawmakers in states that have adopted the gratuity approach have the most freedom to fix pension problems.^{ciii} They may be constrained by moral and policy concerns, but not the law.^{civ}

An overwhelming majority of states, however, have transformed tradition and retreated from the notion of pensions as unprotected gratuities.^{cv} The modern view gaining momentum is more protective of the retirement security of public employees. We use the term “view” loosely as this category of cases has by no means congealed into clear conceptual framework.^{cvi} We understand the modern view to mean merely that it is possible for government workers to have a protectable interest in their pensions. The interest can be conditional and allow states to change the plan terms under certain circumstances.^{cvi} Nevertheless, at some point, the interest may become unconditional and free from any and all detrimental changes by the state.^{cvi} Legal protection for public pensions may be grounded in contract, related tort principles, and property.^{cix}

1. Due Process Clause

Courts in Maine and Connecticut picture pensions as property.^{cx} In both states, the pension expectation matures into a property right at some point prior to retirement, possibly upon acceptance of employment. The property-based analysis tests the legislation for compliance with substantive due process under a rational basis review. Statutory changes will be upheld if they have a legitimate purpose and the method of achieving that goal is reasonable.^{cx} Thus, while legislatures in property states do not have an unfettered power of revocation, employees not yet retired or eligible for retirement are protected against purely arbitrary revisions.^{cxii}

In *Spiller v. State*,^{cxiii} 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 was not a violation of Due Process.^{cxiv} These pension reforms applied only to employees who had not met the initial service requirement.^{cxv} Despite endorsing a property approach, the Supreme Court of Connecticut in *Pineman v. Oechslin*^{cxvi} never reached the due process issue because it was not pursued on appeal.^{cxvii}

Notwithstanding the agreement of the two states that modification of pension benefits should be subject to a property model, Connecticut specifically rejected the contract approach while Maine did not. Despite its failure to find that the pension statute constituted a contract for employees

with fewer than seven years of creditable service,^{cxviii} the court in *Spiller* left the contract door ajar for which to envision future legislative modifications of pension benefits.^{cxix} It also endorsed promissory estoppel in appropriate cases to protect employee reliance interests before retirement.^{cxx}

Following *Spiller v. State*, the First Circuit Court of Appeals in *Parker v. Wakelin*^{cxxi} further interpreted Maine's retirement statute to contractually bind the state to provide an undiminished level of benefits only upon retirement. Public school teachers were challenging several reforms, including an increase in member contributions, a cap on the salary used to calculate benefits, and a delay in the first cost-of-living adjustment.^{cxxii} The appellate court reversed the district court decision determining that contract protection began once a worker satisfied the service requirements.^{cxxiii} The statutory language guaranteed pension benefits once they are due.^{cxxiv} In attempting to understand the meaning of the word "due," the Circuit Court found there were three possible explanations. First, pension benefits could be due from the moment of employment.^{cxxv} Second, they could be due if the teacher had completed the initial service requirements, albeit benefits are not yet payable.^{cxxvi} Third, benefits could be literally due to be received at retirement.^{cxxvii} The First Circuit found the latter interpretation the most persuasive without further elaboration by the legislature.^{cxxviii}

2. Takings Clause

Takings Clause challenges also involve envisioning pensions as property. These challenges are largely, but not entirely, derivative of the Contract Clause jurisprudence discussed in more detail below.^{cxxix} Moreover, like other constitutional claims in the public pension area, state and federal law is read virtually in unison.^{cxxxx}

Ohio provides an illustration. In *State ex rel. Horvath v. State Teachers Ret. Bd.*,^{cxxxi} the Supreme Court of Ohio found that a revocation of interest earned on contributions prior to retirement did not constitute an unconstitutional taking a property under state and federal law. Utilizing the triad of factors provided by the U.S. Supreme Court in *Penn Cent. Transp. Co. v. New York*, the court found that public pension funds were properly characterized as public not private property and any economic impact was slight considering offsetting potential, although unrealized, benefits provided by the retirement system.^{cxxxii} 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.^{cxxxiii}

3. Contract Clause

The remaining non-Social Security states (and most states), along with Maine and Ohio discussed *supra*, adhere to a contracts perspective limited by the Contract Clause and subject to intermediate scrutiny.^{cxxxiv} Stricter examination of legislative ends as well as the means for achieving them concerning contract rights results in a higher degree protection for participants from legislative revision than those found to be property. Therefore, courts in jurisdictions recognizing pensions as contracts are more likely to bar reform efforts.

Constitutional contract protection has generated the most scholarly attention and criticism concerning public pensions.^{cxxxv} Not surprisingly, it is the primary basis of recent lawsuits.^{cxxxvi}

This little interpreted clause is experiencing a renaissance as courts across the country give it new meaning in the context of pension reform.^{cxxxvii}

The legal analysis is substantially the same under federal or state law because the majority of state contract clauses echo the federal contract clause.^{cxxxviii} 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.^{cxxxix}

a. Contract Existence

Determining element one-- the existence of a contract—varies across jurisdictions. The source of the contract right may be found in the state constitution, statute, judicial decision, or even the collective bargaining agreement.^{cxl} The most common basis for the agreement is the state statute providing 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.^{cxli} As a textual matter, federal and several state courts employ a canon of construction requiring clear and unambiguous evidence of a contract.^{cxlii} The presumption against finding a contract is predicated on the idea that legislatures, in enacting statutes, declare policy rather than binding contracts.^{cxliii} While the use of this textual canon may be questionable when the government is acting as an employer, decisions on constitutional contract law still favor existing employees and retirees.^{cxliv} With respect to these pension plan participants, the question is not only “if” there is a contract, but “when” was it formed? Courts have given different answers.

At one end of the scale are states like Alaska,^{cxlv} California,^{cxlvi} Colorado,^{cxlvii} Illinois,^{cxlviii} Nevada,^{cxlix} and Massachusetts,^{cl} among others, which find the pension contract formed simultaneously with employment.^{cli} The effect of such a rule is that future accruals may be protected or, alternatively, purely prospective changes to pension benefits may be null and void.^{clii} Because the law in these states is extremely protective of public employees' and retirees' pension expectations, legislatures 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 perhaps why courts appear to be liberalizing this line of authority.^{cliii} A recent decision from Colorado, for instance, distinguished core retirement benefits protected upon employment from other plan provisions.^{cliv} In finding the cost of living (COLA) reduction for employees and retirees constitutional, the district court in *Justus v. State*^{clv} noted the absence of any clear statutory language evidencing that plan participants were entitled to an unchanged COLA for the duration of their benefits.^{clvi} The court also emphasized the fact that the legislature had previously changed the COLA for participants.^{clvii} Although the prior change had not been to detrimental, the court found that the revision negated any reasonable expectations that the COLA would remain the same.^{clviii}

The result in Colorado suggests that judges in future cases may not blindly follow precedent and read all plan provisions into the agreement.^{clix} Rather, courts may scrutinize each provision to discern whether it is a term of the contract.^{clx} Lessons for lawmakers attempting to save money in order to salvage their retirement systems would be to differentiate primary from arguably ancillary terms.^{clxi} 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.

A lower court in Massachusetts also deviated from the contract upon initial employment rule endorsed by the state supreme court. The intermediate appellate court in *Dullea v. Mass. Bay Transp. Auth.*,^{clxii} allowed the complete repeal of increased benefits 37 days after enactment due to the lack of substantial service under the provision.^{clxiii} It held that contract rights to pension benefits originate “when the employees first began work *or* level existing at the point when the promise had created expectations firm enough to command judicial respect.”^{clxiv} Moreover, like Colorado, a more recent decision by the Massachusetts Supreme Court in *Madden v. Contributory Ret. Appeal Bd.*,^{clxv} emphasized its prior precedent separating core essential terms from the purportedly peripheral.^{clxvi} 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.

At the opposite end of the scale are decisions from jurisdictions like Kentucky,^{clxvii} Louisiana,^{clxviii} Missouri,^{clxix} and Ohio.^{clxx} These states find no contract until retirement or earlier upon qualification for retirement.^{clxxi} 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 upheld under a contract challenge. Recall from the discussion above that Maine protects pre-eligibility pension interests as a matter of property, but only retirees as a matter of contract.^{clxxii} Thus, Maine falls into this category as well. Furthermore, some of the states following the first day rule outlined above adhere to a limited versus absolute contract paradigm.^{clxxiii} Pre-retirement benefit reductions withstand constitutional challenge to the extent they are reasonable.^{clxxiv} Post-retirement (or retirement eligibility) benefit reductions are invalid.^{clxxv} This formalistic dichotomy between limited vested rights which can be modified and absolute vested rights which cannot be modified is not found in federal law.^{clxxvi}

Still other jurisdictions fall in between these two extremes. Courts draw fault 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 the “first day” of government employment approach followed in many non-Social Security states but more difficult than the “last day” approach adopted in a few others. This more moderate method of ascertaining constitutional safeguards directs attention to the reliance interests of public workers.^{clxxvii} Pension benefits may be protected under alternative theories bordering contract. Specifically, rights may arise pre-retirement eligibility under the doctrines of promissory estoppel or akin to quasi-contract.^{clxxviii} Employment benefits are protected as a result of proven reliance.^{clxxix} Moreover, at some point during the employment relationship, reliance is presumed as a matter of law.^{clxxx}

In the non-Social Security states specifically, decisions from Maine and Massachusetts indicate that reliance interests may trigger constitutional protection. Recollect that the Supreme Court of Maine declared the promissory estoppel option potentially available to prevent detrimental changes to pension benefits.^{clxxxi} Remember too that an appellate court in Massachusetts announced that a contract right arises after “substantial service.”^{clxxxii}

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.^{clxxxiii} Other jurisdictions may also attempt to strike a balance between

government discretion to reform their retirement systems and their employees' legitimate expectations by protecting benefits after each day of service. Legislatures would be free to change terms on a going forward basis for current employees as well as to provide for a prorated solution for retirees. Safeguarding benefits actually earned to date would mirror private sector pension protection and allow legislative changes for future service.^{clxxxiv}

Stuart Buck contends that “[t]his theory coheres with most of the caselaw construing federal and state contracts clauses.”^{clxxxv} Whether or not Buck’s assessment that an accrual method provides the most accurate description of existing decisions, it is this particular middle ground that has generated the approval of legal scholars.^{clxxxvi} The position of Professor Alicia Munnell and Laura Quinby, associated with the Center for Retirement Research at Boston College, seems to square with Buck. They posit that distinguishing between benefits earned for past service (protected) and benefits expected for future service (unprotected) is defensible because it puts public pensions on the same footing as private pensions.^{clxxxvii} Professor Amy Monahan similarly concludes that protected benefits should be those earned for services performed.^{clxxxviii} She asserts that theory and public policy support the idea that government workers are only entitled to the benefits they have accrued during their employment.^{clxxxix} Monahan explains that retroactive changes are unfair to employees just as it is unfair to employers to lock them into an economic bargain prospectively at the beginning of employment.^{cxc}

She additionally claims non-accrual based pension jurisprudence is unsupported by contract theory which looks to the reasonable expectations of the parties.^{cxc} Accepting the concept of pensions as deferred compensation,^{cxcii} Monahan argues that no employee can have a reasonable expectation of future benefits given the nature of the employment relationship.^{cxciii} Subject to the employment at will doctrine, employee can have their salary reduced or can even be terminated at any time for almost any reason.^{cxciv} Professor Monahan’s argument makes sense. But her logic does not necessarily extend to discrete groups of government workers who have heightened protection from the loss of employment. Teachers, most notably, fall into this category.^{cxcv} For the academic profession at least, tenure virtually guarantees employment. Reliance on future accruals is therefore more reasonable for teachers. As a result, it is more probable that prospective retirement benefits may be deemed a protectable interest.^{cxcvi}

In any event, legal developments are dynamic and not definitely resolved. The foregoing discussion reveals that the means of discerning where the pension privilege ends and a legal contract begins is still a moving target. As the legal community attempts to understand the diverse judicial methods of determining liability, the paucity of court decisions coupled with the complexity of the constitutional issues place politicians in a difficult position.^{cxcvii} Financial concerns force them to find solutions to rescue their deteriorating retirement systems, yet jurisprudential considerations in many states provide no clear guidance whether reforms will overcome legal obstacles.

If no contract exists between the government pension plan sponsor and its participants, there is no need for further inquiry into the degree of impairment or its necessity as set forth in elements two and three respectively. Correspondingly, even if a contract is found, be it on the first or last day of employment, or somewhere in between, legislative changes must still be ruled a substantial impairment of that contract. Regardless of impairment, pension reforms may withstand constitutional challenge if they are found to be within the police power of the state.

b. Substantial Impairment

The Supreme Court has given scarcely any guidance as to what constitutes a substantial impairment of the contract.^{ccviii} The Court has indicated that the requisite degree of impairment may be measured by reference to the values underlying the common law of contracts.^{ccix} This suggests a balancing approach where lower 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 evaluate certainty in terms of the participants need to order their financial affairs against fairness to state legislatures which need to maintain flexibility.^{cc} In short, continuing the advised analogy to private law, “substantial” would seem to mean a material rather than a minor breach.^{cci}

Not all state courts interpreting their own constitutional provisions use the language “substantial impairment,” but they often espouse a similar if not identical standard.^{ccii} California’s version, for instance, measures whether disadvantages are offset by new advantages.^{cciii} Illinois courts discern whether the modification directly or indirectly diminishes the benefits.^{cciv} Legislatures seeking clarity from the constitutional conundrum of contract clause jurisprudence should turn to actual results under state decisional law. California has been the most prominent battle ground over pension reform. In California, changes to benefit formulas,^{ccv} funding sources, and methodology^{ccvi} have each been ruled to be substantial impairments of the pension contract.^{ccvii} Conversely, changes to actuarial factors reducing employer contributions (rather than benefit calculations) were not deemed substantial.^{ccviii} Other jurisdictions have found participants’ contract rights impaired by increasing minimum age requirements for retirement,^{ccix} mandating unpaid leave,^{ccx} and doubling employee contributions without added benefits.^{ccxi}

Consider as well the seemingly small 1.5 percent COLA reduction in Colorado at issue in *Justus v. State* which had a serious financial impact on pension participants.^{ccxii} If the district court decision is reversed and pension reform is upheld on appeal, retirees who received a pension of \$33,254 in 2009 will lose more than \$165,000 in benefits over a twenty-year period.^{ccxiii} Of course, the same reforms will save taxpayers millions.

Analyzing case outcomes across approximately half of the United States, Professor Monahan concluded that the second part of the three-part constitutional contract standard is relatively easy to satisfy as many reforms of public pension plans have been found to be impairments.^{ccxiv} 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 because they rise to the level of constitutional harm.^{ccxv} Public pension benefits are the one and only retirement payment from any government. 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 vulnerable position in terms of their retirement security.^{ccxvi}

c. Reasonable and Necessary to Accomplish 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. To do so, however, such legislative changes must be 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.^{ccxvii} 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.^{ccxviii} Satisfying both will shield state pension reforms from invalidity.^{ccxix} 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 and ask whether the modifications are reasonable and bear a material relationship to the theory of the pension system and its successful operation.^{ccxx}

In considering public pension reform, reducing the budget deficit is likely to be held an important purpose,^{ccxxi} but cutting pension benefits may not be deemed necessary to accomplish that purpose.^{ccxxii} State reforms may better surmount a Contract Clause challenge, however, if they have already attempted other ways to address their monetary woes.^{ccxxiii}

Relying on Supreme Court precedent that found economic interests a defensible use of state power, one scholar predicts that states may use of the ongoing recession to justify pension modifications under the necessity exception.^{ccxxiv} 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.^{ccxxv} Still, simply showing an unanticipated severity of the financial crisis may not be enough.^{ccxxvi}

The inability of state governments to excuse themselves for pension changes is even more likely when considering the availability of equitable defenses. Specifically, the government's resort to the excuse doctrine may be rebuffed by reference to legal equity given that states are at least partly responsible for the present predicament.^{ccxxvii} As indicated earlier, in many cases, proof of persistent underfunding aggravated actuarial deficits and made pensions vulnerable to the stock market plunge in the first place. The application of the equitable defenses of unclean hands or estoppel would be particularly apt should governments attempt to use a different discount rate to establish excuse than they used to set their contributions.

Consequently, the level of legal protections afforded to public pension benefits is, at worst, a quagmire and, at best, greatly in need of direction and development. The analysis above makes clear that across or even within individual states, constitutional law provides inadequate guidance to lawmakers intent on reforming their retirement systems. However, it is axiomatic that new hires do not have legally enforceable expectations of a predictable level of retirement income. As such, many governments, including those outlined above in states that do not fund Social Security, limited pension reform to incoming workers. While these lawmakers played it safe and avoided lawsuits with substantial legal bills, they may have also eluded a more immediate and meaningful outcome.

Focusing on public sector employee pensions that do not contribute to Social Security, we attempted to rationalize contradictory court decisions as well as frame the academic debate seeking a cogent conception of contract law. We also analyzed other theories of recovery and, correspondingly, potential pitfalls to the ongoing statutory changes to state retirement systems. Accordingly, our study of the political and legal context of public pension reform provides a basis for the conversation to come on how best to revamp these failing systems. It is axiomatic that pervasive investment losses make it necessary to put money in to these plans, but it also means there is less money available to pay contributions. Growing obligations raise the specter of more taxes and less public services, including state funding of education.^{ccxxviii} The dire financial situation also presents the possibility of a costly federal bailout.^{ccxxix} The potential

consequences to public employees and retirees who do not participate in Social Security are especially distressing as they could be left with insufficient assets for retirement.

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

Hardly any attention has been paid to public pensions until the recent market downturn exposed enormous unfunded liabilities. It should be underscored that states must attempt to close the trillion plus dollar gap between what state governments and workers put into their pension funds and what states owe retirees and beneficiaries. The foregoing sections examined the financial, political, and legal setting related to public pensions, particularly the plans of educators in non-Social Security states. With these considerations in mind, this section suggests a comprehensive set of reform measures. These policy prescriptions are provided as part of a managerial paradigm along with criteria by which to evaluate them. The evaluation criteria are not presented as a definite algorithm, but rather as principles reflecting an often-conflicting range of values. These common goals of social policy include efficiency, equity (fairness), and adequacy.^{ccxxx}

The policymaking methodology directs attention not only to the pension plans themselves, but also to the political reality of their creation and continued operation. This means addressing both the internal environment associated with public pensions, such as contribution and benefit levels along with plan design, as well as the external environment. The political dimension, or moral hazard, is what analysts increasingly point to as the predominant source of the public pension problem.^{ccxxxi} Notably, our proposed changes and underlying philosophy are reinforced by scholarly works in law, education, and economics. 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.

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. As such, corrective measures should include restraining political leaders who are incentivized to supply potentially excessive benefits as well as restricting unions that understandably demand such benefits for their members without regard for whether these obligations can ever realistically be met. To date, the negotiations have typically taken place without input from an ignorant and often uninterested public.

1. Lawmakers

This part confronts the political dimension of public pension promises. Pension security is put in peril by politicians who are disposed to sacrifice future benefits for present interests.^{ccxxxii} Too often, elected officials spend public dollars with far less care than they would spend private dollars.^{ccxxxiii} Experience also teaches that pension benefits are usually increased during economic boom cycles but not decreased during the bust cycles.^{ccxxxiv} Indeed, comparable to state action during the relentless rise in stock prices, governments promised workers better compensation and benefit packages during the housing boom when sky high prices elevated property tax revenues.^{ccxxxv} Public sector employment packages were so good that some analysts found that they even exceeded those found in the private sector.^{ccxxxvi}

In addition to the political incentives to provide excessive benefits, there are two main dangers related to pension fund assets: underfunding and borrowing.^{ccxxxvii} Examples abound. Because pension funds hold a massive amount of assets,^{ccxxxviii} legislators in California and other states have been known to dip into them to pay unrelated bills.^{ccxxxix} Moreover, it has been reported that Illinois, for instance, has not paid its pension bill since 1970.^{ccxl} Illinois is not unusual. Funding level declines have been persistent across states.^{ccxli} The situation is bad and getting worse.^{ccxlii}

Professor Jack Beermann provides one of the most inclusive accounts of the political economy of public pensions.^{ccxlili} With respect to underfunding public pensions, he explains that it is in substance, if not in form, an example of deficit spending.^{ccxliv} Basically, current taxpayers enjoy the benefits of government services while delaying the costs for future taxpayers.^{ccxlv} The harm to the next generation is that they 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.^{ccxlvi}

Given these inherent risks, our discussion centers on three possible reforms.^{ccxlvii} First, we propose that state governments impose new funding requirements. Second, because state budget requirements have been shown to increase underfunding, we next suggest that states modify these requirements. Third, and finally, we urge states to enact prohibitions against the misuse of fund assets. Notably, the federal funding and fiduciary duty rules mandated by the Employee Retirement Income Security Act of 1974 (ERISA) for private pension plans do not extend to public plans.

a. Funding Requirements

As an initial matter, lawmakers should dissuade their penchant for underfunding public pensions by enacting legislation compelling certain (or at least an acceptable range) of funding levels.^{ccxlviii} The exact level, full funding or something less, should be enough to ensure the payment of future liabilities.^{ccxlix} 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 relating to these payments.^{cccl} In the non-Social Security states, court decisions in Alaska and California have held that that actuarially sound funding is a contractually protected term of the pension program.^{cccli} The Illinois Supreme Court, however, has determined that protection extends only to benefits and not funding.^{ccclii}

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 on public pensions.^{cccliii} Borrowing to satisfy operating expenses may not be available in tight fiscal times so underfunding pensions allows state governments to balance their budgets without cutting services.^{cccliv} As a result, there is a negative correlation between underfunding and balanced budgets.^{ccclv} To eschew balanced budget regulation from undercutting pension funding, states can simply change the law to delineate pension funding as a current cost.^{ccclvi}

c. Misuse of Assets

Our last recommendation aimed at deterring the morally hazardous behavior of state legislatures concerns the inappropriate use of pension fund assets. Drawing inspiration from the 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.^{cclvii}

Consequently, states should deal directly with funding issues by mandating a particular level of funding and/or indirectly by amending balanced budget laws that encourage underfunding. They should also bar the improper removal and use of fund assets. These safeguards should deter the dynamic of rent seeking by politicians and better align the spending of public dollars with the best interests of their owners, the taxpaying public.

2. Labor Leaders

In addition to curtailing political behavior on the supply side of the pension problem, states may similarly consider curbing the demand side. Because most public school teachers are unionized,^{cclviii} banning or otherwise restricting collective bargaining over retirement income would eliminate the potential pressure on lawmakers to provide unsustainable benefits.

Professor Maria O'Brien Hylton outlines the debate for and against such a ban before staking a more moderate position.^{cclix} As she explains, proponents of denying collective bargaining point to the political reality that the retirement benefits of government workers are the product of a process that disadvantages taxpayers.^{cclx} Opponents, including Professor Paul Secunda and the International Labor Organization, argue that collective bargaining is a moral imperative amounting to a fundamental human right.^{cclxi}

Hylton questions, however, whether the opponents' position should extend to public employees. She asserts that there are fundamental distinctions between public and private sector employees that justify a difference in treatment.^{cclxii} She notes that collective bargaining in the public sector is a relatively recent phenomenon and, accordingly, lacks a long-standing tradition that it is appropriate.^{cclxiii} As she also observes, unlike their counterparts in the private sector, public employees do not typically generate profits.^{cclxiv} As such, public employees negotiate to secure a larger slice of taxpayer dollars in the form of benefits and other compensation.^{cclxv} Given the evidence that unions have engaged in rent seeking behavior, they have the power to raid the public fisc.^{cclxvi} Hylton, therefore, concludes that restricting union activity regarding public pensions may be proper in exceptional cases.^{cclxvii} We agree.

As a practical matter, prohibiting or even limiting collective bargaining in the public sector would provoke fierce resistance. The massive protests to potential government regulation of union rights concerning pensions recently evidenced in Wisconsin and other states suggest that an embargo should be considered as a last resort.^{cclxviii} Of course, states should study their own collective bargaining experience to see if such a prohibition would actually remove barriers to necessary reforms.^{cclxix} Politicians should not invite controversy if banning bargaining would be insufficient to solve the pension problem.^{cclxx} 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 once divergent interests to insure that public pension plans remain afloat.^{cclxxi}

Notwithstanding the foregoing proposals relating to lawmakers and labor leaders, curing the pension crisis will be further enhanced by regulation including taxpayers in the reform process. Unlike public sector unions, taxpayers are diffuse and disorganized. Suggested methods of taxpayer involvement will be considered in the next section.

3. Taxpayers

The political expediency of public pension promises can be resisted not only through law reform limiting such morally hazardous behavior, but also through regulation targeting public passivity. Recall the tendency of politicians to please voters and supporters, many of whom are government workers, by promising additional benefits and binding taxpayers to irresponsible commitments from which they likely cannot remove themselves. Customarily, provoking a political backlash is undesirable, but its absence in the provision of government-sponsored pensions has enabled the present predicament. Therefore, reforms should inform and enable taxpayers to participate in the provision of public pensions.

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

a. Transparency

To begin, raising awareness is necessary so that the public can understand and evaluate the economic magnitude of state public pension liabilities. Humans deal with crisis in our daily lives and, to the extent we survive them, such troubles usually raise our level of consciousness and lower our expectations. A good dose of reality is needed by the electorate (and all parties) impacted by public pensions.

As stated earlier, scholarly interest in public pension liabilities is relatively recent and coincides with the series of financial setbacks suffered by economies worldwide.^{cclxxiii} We were one of a few commentators who, five years ago, sounded the alarm that a souring investment climate increased the risk that thousands of government workers would not receive their expected pension.^{cclxxiv} At that time, we urged the acceptance of mandatory disclosure laws to timely identify funding issues and facilitate solutions.^{cclxxv} We stand by that recommendation.

We agree, however, with Professor Beermann who observes that transparency is not a complete panacea because of psychological propensities to discount long-term problems, especially when the overall share of liability is small.^{cclxxvi} Further, because residents move from state to state, taxpayers may also determine (correctly) that they will not be held accountable when obligations come due.^{cclxxvii} Nonetheless, despite these potential impediments, we believe that more sunshine relating to the financial status of retirement plans is an integral part of the overall solution to the public pension predicament.^{cclxxviii}

b. Uniformity

Next, improved uniformity on key information will likewise lead to 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.^{cclxxix} When and how liabilities are reported is subject to vagaries in each state.^{cclxxx} Not all states publish current data.^{cclxxxi}

Comparisons of the reported information among public pension systems are complicated by different levels of requisite funding and underlying assumptions that determine pension plan liabilities.^{cclxxxii} These assumptions include demographics, assumed rates of return on investments, as well as other economic indicators and information about the plan.^{cclxxxiii} In retirement systems for teachers, for instance, there are different actuarial methods for calculating retirement benefits that include age at entry, projected unit credit, and aggregate cost.^{cclxxxiv}

Assumed inflation rates range from 2.5% to 5% and assumed interest rates range from 7% to 12.9%.^{cclxxxv} States may 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.

We highlighted the lack of uniformity as an obstacle to reform in our prior research and advocated the adoption of the Uniform Management of Public Employees Retirement Systems Act (UMPERS) or minimum universal disclosure rules akin to it.^{cclxxxvi} We do so again.^{cclxxxvii}

The reporting obligation of UMPERS 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.^{celxxxviii} The summary plan description provides an explanation of the retirement program and its benefits.^{cclxxxix} The annual report must contain specific financial and actuarial information.^{ccxc} Both must be distributed to plan participants and beneficiaries and made available to the public.^{ccxci} The annual disclosure of financial and actuarial status is a more detailed compilation of the retirement system and its financial position.^{ccxcii} The disclosure need not be published,^{ccxciii} 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.^{ccxciv}

Thus far, however, only Wyoming^{ccxcv} and Maryland^{ccxcvi} have adopted the contents of the uniform law.^{ccxcvii} Such a small percentage of the United States hardly creates uniformity. More states should consider it to ensure clear and complete information to those with an interest in monitoring the system and to create political incentives for leaders to address pension difficulties in a timely and reasonable manner.

c. Accuracy

Last, but certainly not least, in helping to preserve public pensions is improved accuracy. Current reporting methods understate the liability to the taxpayer. These misrepresentations as to the magnitude of fiscal stress are frequently credited as a contributing cause to the imminent demise of many public pension plans.^{ccxcviii}

The private sector may be the best reference for fixing flawed actuarial methods and practices.^{ccxcix} Valuing pension liabilities according to the likelihood of payment, rather than the return expected on pension assets, is one of many possible corrections.^{ccc} But it is an important one in forcing state sponsors to disclose the true cost of their future pension commitments and should be considered as a first step in enabling reform.^{ccci} Basing the discount rate on the riskiness of the payout, actuaries agree that it should be about half what states typically designate; that is, around 4 percent rather than the inflated 8 percent used by many states.^{cccii} With an arguably correct rate, unfunded liabilities for public sector pensions more than triples from \$1 trillion to more than \$3 trillion.^{ccciii} For individual states, a market-based discount rate can up unfunded debt obligations even more. In New Jersey, for example, Professors Eileen Norcross and Andrew Biggs calculated liabilities to be \$173.9 billion rather than \$44.7 billion as reported by the state.^{ccciv} Similarly, a 2010 Stanford study found California pension plans to have unfunded liabilities several times larger than reported.^{cccv} 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 with their retirement systems.^{cccvi}

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

B. Modifying Existing Plans or Plan Structure

State pension deficits are at an all-time high.^{cccvii} Accordingly, each state government must continue to do the math and make corrections. Pension costs may be more manageable for some jurisdictions than for others. The kind and magnitude of change needed varies due to differences in benefit levels, size of unfunded pension liabilities, and levels of effort by states historically to make contributions. Significantly, the chronic failure of pension plan sponsors to pay required contributions has caused even more contributions to make up the difference.^{cccviii} What is consistent across jurisdictions is that states will not assume any new fiscal commitments concerning their pensions, but rather, attempt to cut costs both now and in the future. How they solve their pension crises will have a profound impact on interested parties and the economy. To name just a few concerns, certain measures may treat similarly-situated workers differently, fail to provide adequate levels of support at retirement, and pose different degrees of litigation risk (and expenses).^{cccix} Reforms are also likely to have long term labor market affects. Conventional wisdom accepts that deferred compensation by way of pension benefits is a recruitment and retention tool for government service.^{cccx} As a result, the amount and other attributes of government-sponsored pensions may determine who enters public service and how long they stay.^{cccxi}

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 potpourri of reform possibilities. Such reforms include more modest modifications of existing plans to major changes in plan structure.^{cccxi} We also suggest that lawmakers contemplate additional protections like adding federal Social Security to those plans without it and establishing a state entity similar to its federal counterpart 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 with the major portion coming from investment returns on already-accumulated assets that have been accrued over a long period of time.^{cccxiii} Given the pension funding equation, contributions must increase or benefits decrease, or both, since fund investments have failed to produce the return needed to make the promised payments. To add to incoming funds, states can simply up employee contributions.^{cccxiv} This solution may be more difficult to enact in non-Social Security states since employees already pay 3% more on average in contributions than Social Security states.^{cccxv}

To subtract outgoing funds, states could change benefit calculations, such as capping salaries to determine the final average pay. States should at least eliminate loopholes like double dipping and pension spiking as has been done in California and other states.^{cccxvi} Raising the retirement age can also help a public pension plan save on future costs.^{cccxvii} Even increasing the age for new hires by just a few years can result in significant savings.^{cccxviii} With retirees expected to live four more years than retirees in 1950, it makes sense to adjust for this higher age expectancy.^{cccix}

Another option is to cut COLAS or pass some of the investment risk to employees.^{cccxx} This can be done by correlating COLAs with the performance of investment returns.^{cccxxi} Wisconsin's

pension system is a good example of this type of risk sharing.^{cccxxii} The legislature in Wisconsin created a dividend process for COLAs.^{cccxxiii} The system works by providing a dividend if the investments returns are positive in a given year.^{cccxxiv} However, if the following year the system has a poor investment return, retirees may see their pensions reduced.^{cccxxv}

2. Alternative Benefit Plans

Rather than restraining pension growth through modifications of existing plans (and in lieu of a federal rescue), states could consider changes to plan structure. In the past several years, we have seen the erosion of government guaranteed benefits to 401k style or hybrid plans.^{cccxxvi}

The defined contribution plan eliminates the Ponzi-style system of defined benefit plans that pay pension benefits to retirees from current contributions.^{cccxxvii} Employer and employee contributions would be used solely to generate savings for employees. In contrast, governments sponsoring a defined benefit plan promise to pay a particular level of benefit that may have no relationship to what employees contributed to the fund during their employment. Economists Michael Podgursky and Robert Costrell argue this is the fundamental flaw in defined benefit design.^{cccxxviii} They explain that alternative plans will close the gap between contributions and pension wealth by tying benefits to contributions.^{cccxxix}

The defined contribution plan has the economic advantage for government employers of removing responsibility for underfunding or underperformance of fund assets. At the same time, however, there are adequacy concerns with employees completely bearing the risk of their retirement. Current account balances of these plans in the private sector show that low and moderate wage earners lack adequate income for retirement.^{cccxxx} Teachers, whose salaries are usually modest at best and declining relative to the private sector and other public sector workers, will be particularly at risk.^{cccxxxi} Nevertheless, the defined contribution plan could be modified to provide a federal guarantee to help ensure that workers have adequate income at retirement.^{cccxxxii}

Because of legal considerations, states changing the plan structure will likely leave in place existing defined benefit plans with reforms targeting new hires. As a result, fairness concerns arise in creating two tiers of employees. Illinois, California, and other states are in this situation where young educators may not be getting their fair share of the retirement pie.^{cccxxxiii} Equity concerns can be minimized to some extent by allowing employees a choice of plans.^{cccxxxiv} 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.^{cccxxxv} Employee opinion polls indicate a preference for defined benefit plans while other studies show that these plans inhibit mobility and harm employees who move out of state.^{cccxxxvi} The reason defined benefit plans incentivize employees to stay with one employer is that they are structured so that employees earn more retirement benefits relative to their salary later in their careers. Defined contribution plans are portable and not tied to the employer. They, therefore, eliminate the penalty for mobility.

In addition to employee adequacy and equity associated with changing plan structure, state governments should assess efficiency issues beyond the obvious reduction in liability. Alternative plans appear to be more efficient because they reduce the risk for states of future defined benefit pension deficits.^{cccxxxvii} However, the switch to a defined contribution plan may further imperil defined benefit plans because there will be less active members to fund existing pensions.^{cccxxxviii}

In addition, there is disagreement among economists over whether eliminating the defined benefit plan will cause turnover. Increased turnover is an important consideration because it not only raises costs due to the recruitment and training of new hires, but possibly lowers teacher effectiveness as well.^{cccxxxix} Professor Christian Weller asserts the turnover risk is real. He explains that public sector employers, unlike their private sector counterparts, are not able to offset the switch in plans to retain workers through stock options and grants.^{cccxi}

Transition costs may also be substantial.^{cccxi} Moreover, defined contribution plans have higher investment and administrative costs.^{cccxlii} Public defined benefit plans generally have lower administrative expenses because they are free from regulation.^{cccxlili} The weighted average administrative cost for DB plans is only 0.34 percent of assets, but as the Illinois Municipal Retirement Fund found out, replacing defined benefit plans with defined contribution plans could increase costs to more than 2.25 percent.^{cccxliv} 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.^{cccxlv}

Cash balance plans, a type of hybrid plan now popular in the private sector, have lower net costs than defined contribution plans and asset-liability matching strategies that effectively neutralize volatility.^{cccxlvi} Transition and turnover costs, however, will likely increase similar to defined contribution plans. 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.^{cccxlvii} 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.^{cccxlviii} Notwithstanding the warnings of actuaries who feared 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.^{cccclix}

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. Despite their heavy debt burden, governments have choices in attempting to right-size their budgets and constrain the growth of benefits costs. In choosing, it should be remembered that pension plans have micro and macroeconomic effects.^{ccccli} Retirement planning is important not only for the financial security of public employees, but as a key component of the national economy.

C. Supplementing Benefits with Social Security

The growing concern over the ability of pension plans to serve the retirement needs of public sector employees warrant contemplation of supplementing pension benefits with Social Security benefits. After all, the guarantee of future income in some form is fundamental to the phenomenon of retirement.

Social Security is the largest federal social program.^{ccccli} Established in 1935, the Social Security System^{ccccli} provides lifetime retirement benefits and also benefits for disability, survivorship, and death.^{ccccli} While the future of this social insurance program remains uncertain,^{ccccli} the program has accomplished its mission of reducing poverty rates among elderly Americans.^{ccccli} In fact, most retired workers depend on Social Security benefits as their primary source of income.^{ccccli} Together with pensions and personal savings, it is a critical component of old-age income security.^{ccccli}

Today, Social Security coverage is almost universal. The program protects 94% of all workers.^{ccclviii} The remaining non-covered workers consist of public employees, including members of the thirteen state teacher retirement systems in Alaska, California, Colorado, Connecticut, Illinois, Kentucky, Louisiana, Maine, Massachusetts, Missouri, Nevada, Ohio and Texas.^{ccclix} As detailed previously, pension plan members collectively tally in the hundreds of thousands.^{ccclx} Population statistics also provide an estimate of the number of individuals and families that are affected by the failure to receive a Social Security retirement benefit. According to the 2010 Census, the combined population in these states is 121,518,384, which is almost 40 percent of the United States population of 306,745,538.^{ccclxi} Thus, Social Security benefits would provide a safety net to thousands of teachers and may also help prevent any gaps in coverage that adversely affect work, such as becoming disabled.^{ccclxii} Moreover, unlike state plans, Social Security is transferable as workers move from job to job and in and out of public employment.^{ccclxiii}

However, for states and their employees, gaining Social Security coverage comes at a cost.^{ccclxiv} These costs could be significant at a time when many pension plans are struggling financially.^{ccclxv} Social Security is primarily funded by a payroll tax.^{ccclxvi} It requires employers and employees to each contribute 6.2% of the employee's annual salary and these payments must be made in a timely fashion.^{ccclxvii} As discussed *supra* in Part III.A.1, many states have skipped required payments to their state teachers' defined benefit plans over the years because legislatures decided to save money and push the payments into the future. If the contributions required by Social Security are added to the current contribution rates, it would be a substantial expense for both the employers and employees.^{ccclxviii}

Given (or in spite of) the present economic climate along with the massive scope of public sector benefits-driven indebtedness, states may determine that the benefits of inclusion outweigh the costs. For example, the State of Maine recently proposed to make Social Security available to all state employees, including teachers.^{ccclxix} The proposal includes a phase in period and would eliminate additional stress on its pension fund and the possibility of repudiating earlier promises to retirees.^{ccclxx}

State teachers' retirement systems that choose to add Social Security coverage do so by voluntary agreement, otherwise known as a "Section 218 Agreement,"^{ccclxxi} between the Social Security Administration (SSA) and the state.^{ccclxxii} 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.^{ccclxxiii}

The terms of admission require the state to hold a referendum.^{ccclxxiv} Majority vote in favor of coverage among pension plan members wins.^{ccclxxv} States may alternatively opt to divide employees under the same pension plan into groups.^{ccclxxvi} Groups in favor of joining, do so; those against, do not. Once coverage is provided, it cannot be terminated.^{ccclxxvii} Furthermore, all future employees of that group are required to participate in Social Security.^{ccclxxviii} A chronology of Social Security legislation and coverage is summarized in Table 9.

The federal government could possibly mandate that all public pensions must contribute to Social Security to help the solvency of both Social Security and the public pensions.^{ccclxxix} Universal coverage would improve the shortfalls in Social Security by creating more members thereby increasing the FICA tax revenues as well as enhance state pension plans by sharing some of the burden in paying out benefits with the federal Social Security system.^{ccclxxx} A federal

mandate, however, may be constitutionally suspect in requiring state employers to pay a tax to the federal government.^{ccclxxxii} Furthermore, research has shown that this may only improve the solvency of both Social Security and state pension plans by a mere couple of years.^{ccclxxxiii}

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, if any.^{ccclxxxiii} As such, state governments and their employees should 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 such a guarantee via the Pension Benefit Guaranty Corporation (PBGC). The corporation administers bankrupt plans and pays workers less than 100% of their defined benefits.^{ccclxxxiv} Its underwriting and financial activity is funded in part from insured plan sponsor premiums.^{ccclxxxv}

Adopting a similar approach, the state sponsor would pay insurance premiums per employee for each employee participating in the pension program.^{ccclxxxvi} Like the addition of Social Security, such an alternative would not be free. Indeed, it may pose a substantial and, in particular cases, insurmountable strain on already budget-strapped states. In designing the program, moreover, states should take care to avoid the serious funding problems that have plagued the PBGC. It 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.^{ccclxxxvii} Nonetheless, with proper incentives, insuring defined benefit pensions against default (albeit at a reduced rate) would provide public employees some retirement security while simultaneously allowing states significant cost savings in the long-run.

A state assurance against plan insolvency would also eliminate the need for future federal aid in which all taxpayers would bear the burden.^{ccclxxxviii} Placing state pensions within the federal umbrella of PBGC protection would not be easy or advisable.^{ccclxxxix} Moreover, bankruptcy is not a likely option for restructuring state pension debt obligations.^{cccxc} In the 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 the authorization to issue tax subsidized bonds.^{cccxi} Accordingly, with many teacher 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.

In conclusion, the preceding discussion conducted a normative analysis of possible pension reforms. No measure alone will be a panacea. 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, our analysis and recommendations have implications for the pensions of all public employees and, even more broadly, for government policies concerning old-age security. The American public certainly understands that we must live by our human capital.^{cccxcii} 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 and our economy.

CONCLUSION

Education is not only the “soul of society,” but the sacred duty of government. The crisis in public pension systems potentially places that obligation in jeopardy.

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

Given the variation in plans among states, as well as the legal and political environments in which they operate, we do not propose a single, simple solution to this intractable problem. Rather, we offer an array of options that should be taken into account in 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.

For the short-term, we unite legal and economic theory in assessing the costs and benefits of possible reforms (including modifications of existing plans as well as 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 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 alternatively, creating a state institutional safeguard similar to what the PBGC provides for private pensions.

With the viability of government benefit programs being increasingly called into question, nothing is certain except that the direction of future pension changes will remain controversial. It bears repeating that reforming educator pension systems has far-reaching social consequences and ultimately reveals the value we place on education. If Aristotle was right that “teachers who educate deserve more honor than parents,”^{cccxciv} their economic well-being should be part of the conversation about retirement.

APPENDIX: TABLES 1-9 AND FIGURES 1-5

Panel A: Equities	Non-Social Security		Social Security	
	U.S. Equities	Foreign Equities	U.S. Equities	Foreign Equities
2003	36.15%	11.26%	42.76%	13.89%
2004	37.36%	13.08%	44.07%	15.43%
2005	39.86%	14.96%	42.08%	15.59%
2006	42.26%	17.65%	40.78%	16.41%
2007	40.86%	18.94%	39.22%	16.66%
2008	32.55%	17.80%	32.32%	16.83%
2009	30.88%	18.49%	28.36%	16.04%
Average	37.13%	16.03%	38.51%	15.84%

Panel B: Bonds	Non-Social Security		Social Security	
	U.S. Bonds	Foreign Bonds	U.S. Bonds	Foreign Bonds
2003	19.83%	1.62%	15.77%	1.36%
2004	17.86%	1.52%	13.77%	1.45%
2005	17.44%	1.49%	13.23%	1.50%
2006	16.65%	1.47%	13.32%	1.11%
2007	15.18%	1.48%	12.48%	1.13%
2008	16.98%	2.05%	14.07%	1.53%
2009	15.55%	1.90%	13.53%	1.55%
Average	17.07%	1.65%	13.74%	1.38%

Panel C: Alternative Investments and Real Estate	Non-Social Security		Social Security	
	Alternative Investments	Real Estate	Alternative Investments	Real Estate
2003	2.07%	5.45%	1.91%	4.42%
2004	1.96%	5.26%	1.94%	4.34%
2005	2.16%	5.57%	2.34%	4.58%
2006	2.03%	6.94%	2.56%	5.24%
2007	3.52%	7.62%	3.07%	5.64%
2008	4.97%	8.94%	5.14%	6.79%
2009	4.73%	8.86%	6.33%	6.02%
Average	3.06%	6.95%	3.33%	5.29%

Panel D: Cash & Other	Non-Social Security		Social Security	
	Cash & Short Term	Other Assets	Cash & Short Term	Other Assets
2003	2.68%	3.00%	3.12%	3.49%
2004	2.84%	3.25%	3.10%	2.96%
2005	2.14%	3.65%	2.52%	2.42%
2006	1.73%	3.90%	2.35%	2.89%
2007	1.69%	3.72%	2.94%	3.34%
2008	2.35%	5.22%	1.99%	4.18%
2009	2.71%	6.72%	2.51%	5.70%
Average	2.31%	4.21%	2.65%	3.57%

Panel E: Investment Returns	Non-Social Security		Social Security	
	1-year Investment Returns	Standard Deviation	1-year Investment Returns	Standard Deviation
2003	5.55%	5.65384	6.38%	6.04475
2004	15.39%	2.74204	15.11%	2.94383
2005	10.39%	1.56769	10.30%	1.84733
2006	11.42%	3.09414	11.25%	2.57144
2007	17.49%	3.00598	16.85%	3.52448
2008	-4.93%	6.86027	-6.97%	6.71585
2009	-17.37%	10.92009	-13.56%	12.84398
Average	5.42%	4.83486	5.62%	5.21309

TABLE 2^{cccxcvi}**MEMBERSHIP IN DEFINED BENEFIT PUBLIC PENSION PLAN****Panel A: Averages**

Year	Actives		Retirees		Inactive vested		All members	
	Non-Social Security	Social Security	Non-Social Security	Social Security	Non-Social Security	Social Security	Non-Social Security	Social Security
2003	177,524.17	132,072.97	71,206.25	56,569.43	23,948.36	22,859.48	289,702.58	218,092.80
2004	166,296.31	132,674.43	71,878.85	59,840.51	23,500.08	27,213.48	278,625.85	227,276.03
2005	181,666.83	133,371.49	76,785.00	62,352.83	25,966.55	23,894.59	300,298.92	227,369.69
2006	175,489.85	136,337.97	75,683.15	64,714.69	13,717.22	25,815.47	230,401.46	234,762.91
2007	188,832.67	137,441.49	82,643.25	67,317.51	29,298.91	27,193.91	318,011.17	239,638.03
2008	181,892.23	138,412.74	81,237.92	69,774.94	28,086.08	28,002.65	307,930.38	244,462.94
2009	194,711.08	138,296.91	88,801.92	72,103.83	31,721.18	28,615.79	333,863.25	247,429.86
Average	180,916.16	135,515.43	78,319.48	64,667.68	25,176.91	26,227.91	294,119.09	234,147.47

Panel B: Totals

Year	Actives		Retirees		Inactive vested		All members	
	Non-Social Security	Social Security	Non-Social Security	Social Security	Non-Social Security	Social Security	Non-Social Security	Social Security
2003	2,130,290.00	4,622,554.00	854,475.00	1,979,930.00	263,432.00	754,363.00	3,476,431.00	7,633,248.00
2004	2,161,852.00	4,643,605.00	934,425.00	2,094,418.00	282,001.00	898,045.00	3,622,136.00	7,954,661.00
2005	2,180,002.00	4,668,002.00	921,420.00	2,182,349.00	285,632.00	812,416.00	3,603,587.00	7,957,939.00
2006	2,281,368.00	4,771,829.00	983,881.00	2,265,014.00	164,606.60	877,726.00	2,995,219.00	8,216,702.00
2007	2,265,992.00	4,810,452.00	991,719.00	2,356,113.00	322,288.00	924,593.00	3,816,134.00	8,387,331.00
2008	2,364,599.00	4,844,446.00	1,056,093.00	2,442,123.00	337,033.00	952,090.00	4,003,095.00	8,556,203.00
2009	2,336,533.00	4,840,392.00	1,065,623.00	2,523,634.00	348,933.00	972,937.00	4,006,359.00	8,660,045.00

TABLE 3^{cccxvii}
EMPLOYEE AND EMPLOYER CONTRIBUTION RATES

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

Average	5.41%	9.27%
Non-Social Security States		
Alaska	8.00%	7.00%
California	8.00%	8.25%
Colorado	8.00%	10.15%
Connecticut	6.00%	10.11%
Illinois	9.40%	25.49%
Kentucky	9.11%	17.21%
Louisiana	8.00%	15.50%
Maine	7.65%	14.35%
Massachusetts	11.00%	1.62%
Missouri	4.00%	4.51%
Nevada	11.88%	11.88%
Ohio	10.00%	10.00%
Texas	6.40%	6.40%
Average	8.26%	10.96%

TABLE 4^{cccxviii}		
FUNDING RATIO		
Year	Funded Ratio	
	Non- Social Security	Social Security
2003	70.81%	85.16%
2004	75.26%	85.25%
2005	69.49%	83.48%
2006	75.37%	83.07%
2007	72.44%	84.45%
2008	74.57%	81.33%
2009	63.56%	76.39%
Average	71.64%	82.73%

TABLE 5. DEFINITION OF KEY VARIABLES USED IN THE REGRESSION

1-year Investment Return: One-year investment return on the total portfolio of pension investments.
Actuarial Assets: Current market value of assets and portion unrealized gains and losses.
Actuarial Accrued Liability: Present value of future benefits earned for accrued service.
Bonds: Percentage of investments in all fixed income assets.
Employee Contribution Rates: Employee contribution rates expressed as a percentage of payroll.
Employer Contribution Rates: Employer contribution rates expressed as a percentage of payroll.
Equities: Percentage of investments in all equities.
Members: Total number of members in the pension plan.
Salary: Average salary of classroom teachers.
Teachers: Number of public elementary and secondary school teachers.
Unfunded Actuarial Accrued Liability (UAAL): Difference between the actuarial accrued liability and actuarial assets.

TABLE 6. MEANS AND STANDARD DEVIATIONS FOR ALL VARIABLES IN THE REGRESSION

	All States		Non-Social Security States		Social Security States	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Uaal	5,200,558.07	7,646,885.37	3,359,228.44	5,514,811.08	5,830,306.50	8,164,526.91
S.S. or Non-S.S.	.25	.436	-	-	-	-
Teachers	66,335.58	70,606.32	102,099.52	105,380.23	54,104.05	48,338.75
Salary	46,604.35	8,099.40	46,129.10	9,076.36	46,766.89	7,748.77
Employee Contr. Rates	5.72%	2.79%	8.33%	1.74%	4.82%	2.50%
Employer Rates	8.47%	3.89%	10.88%	4.13%	7.65%	3.44%
Equities	57.22%	9.18%	58.32%	7.73%	56.85%	9.61%
Bonds	27.05%	8.05%	27.24%	6.99%	26.98%	8.39%
ret_1yr	4.25%	12.44%	3.78%	12.31%	4.41%	365.86
Actliabs	35,044,017.76	34,788,329.18	29,930,064.89	27,124,678.96	36,793,027.66	36,929,745.03
Members	266273.97	252,665.56	202,571.26	147,066.99	288,060.77	276,661.35
LogPopulation	6.58	.459	6.75	.499	6.53	.432

TABLE 8^{cccxcix}
RECENT PUBLIC PENSION LEGISLATION IN NON-SOCIAL SECURITY STATES

2008-2011 Legislative Changes in Teachers Defined Benefit Plans					
State	Employee Contribution	Employer Contribution	COLA	Age and Service Requirements	Calculation of Retirement Benefits
Alaska	N/A	Set contribution rate at 12.56%	N/A	N/A	N/A
California	N/A	N/A	N/A	N/A	Pensionable compensation cap at \$113,700. Benefit factor decreased from 2.5% at age 62 or higher to 2% for at 62 with a maximum factor of 2.5% at age 67.
Colorado	Increased contribution rate from 8% to 10.5%	Decreased rate from 13.66% to 11.16%	Reduced COLA to the lesser of 2% or inflation for 2010 and limits the COLA to 2% in future years unless the system experiences a negative investment return, then the COLA will be the lesser of inflation from the preceding 3 years or 2%	Higher age requirement for members with less than five years of service	N/A

Connecticut	N/A	N/A	For retirements after October 1, 2011 the minimum COLA will be reduced from 2.5% to 2%	Increase in age and service requirement from age 60 and 25 years of service to age 63 and 25 years of service	A higher benefit reduction factor for early retirement from 3% to 6%
Illinois	N/A	N/A	Post-retirement increases will be the lesser of 3% or 50% of CPI	Increased normal retirement age at 62 for 5 years of service, 60 for 10 years of service, and 55 for 35 years of service	N/A
Kentucky	N/A	N/A	Reduced COLA capped at 5% to 1.5%	Increased regular retirement to 25 years of service from 20	Established a sliding scale of multipliers ranging from 1.1% for 10 years of services or less to 2% for 30 years or more of services
Louisiana	Contribution rate increase from 7.5% to 8%	N/A	N/A	N/A	For all new hires, the final average compensation will be calculated using the five highest consecutive years instead of three years.
Maine	N/A	N/A	N/A	Increased normal retirement age for	N/A

				participants with less than 5 years of service from 62 to 65	
Massachusetts	Reduced rate for those who join the system on or after April 20, 2012 by 3%	N/A	N/A	Increased minimum retirement age from 55 to 60	Increased in benefit factor range from 1.5% to 2.5%, changes to 1.65% to 2.5%
Missouri	N/A	N/A	N/A	Increased the standard retirement age for new hires to 67	N/A
Nevada	For new hires, the state may retain contributions that exceed the actuarially-required rate by no more than 2%	N/A	N/A	Increased age requirement of age 60 with 10 years of service to age 62	Increased actuarial reduction for early retirement from 4 % to 6% for new hires. For new hires, the average final compensation benefit will exclude increases in compensation to 10% per year for the 60-month period that begins 24 months before the 36 months used in calculation
Ohio	Increase member contributions	N/A	Skips the COLA for 2014 fiscal	Increases age and service requirements	New Final Average Salary

	by 4%, phased in by 1% per year beginning 2013.		year for current retirees. A 2% COLA will resume. New Retirees will not receive a COLA until the fifth anniversary of retirement.	for retirement.	calculation of the average of the five highest years. New formula is 2.2% for all years of service.
Texas	Increased the contribution requirement from 6% to 6.45%	N/A	N/A	Increased minimum service requirement from five years to 10	N/A

TABLE 9
SOCIAL SECURITY LEGISLATIVE HISTORY

1935	The Social Security Act (the Act) of 1935. This Act provided for unemployment insurance, old-age insurance and means-tested welfare programs. ^{cd}
1939	Child, spouse, and survivor benefits added to the original retirement benefits. ^{cdi}
1951	States could voluntarily elect social security coverage for public employees not covered under a public retirement system by entering into a Section 218 Agreement with the Social Security Administration (SSA). ^{cdii}
1955	States could extend Social Security coverage to employees covered under a public retirement systems by conducting employee referendums (other than police and firefighters). ^{cdiii}
1956	Disability Insurance Program created. ^{cdiv}
1965	Medicare is created, and employees covered for Social Security under a Section 218 Agreement are automatically covered for Medicare beginning July 1, 1966. ^{cdv}
1972	Benefits increased and a new benefit formula provided that is erroneously generous. ^{cdvi}
1977	Corrected the flawed benefit formula. ^{cdvii}
1983	Coverage under a Section 218 Agreement cannot be terminated (unless the government entity is legally dissolved). ^{cdviii}
1986	Employees hired after this date are covered for Medicare only, unless specifically excluded by law. For state and local government employees hired before April 1, 1986, Medicare coverage may be elected under a Section 218 Agreement. ^{cdix}
1987	State Social Security Administrators are no longer responsible for collecting social security contributions from public employers or for verifying and depositing the taxes owed by public employers. ^{cdx}
1991	Most state and local government employees are subject to mandatory Social Security and Medicare coverage, unless they are members of a public retirement system or covered under a Section 218 Agreement. ^{cdxi}
1994	Authorized all states the option to extend social security and Medicare coverage to police officers and firefighters who participate in a public retirement system. ^{cdxii}

FIGURE 1
EQUITY AND BOND ASSET ALLOCATION FOR
NON-SOCIAL SECURITY PUBLIC PENSIONS

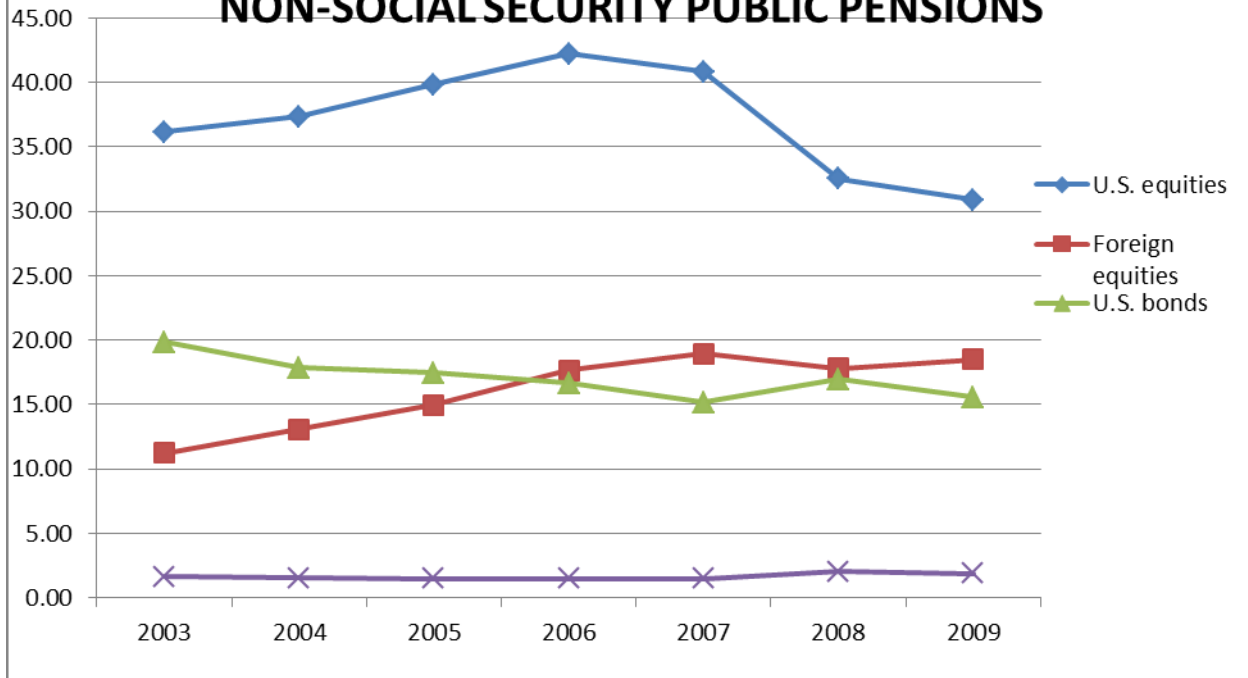


FIGURE 2
CASH, REAL ESTATE, ALTERNATIVE INVESTMENTS,
AND OTHER ASSET ALLOCATIONS FOR NON-
SOCIAL SECURITY PUBLIC PENSIONS

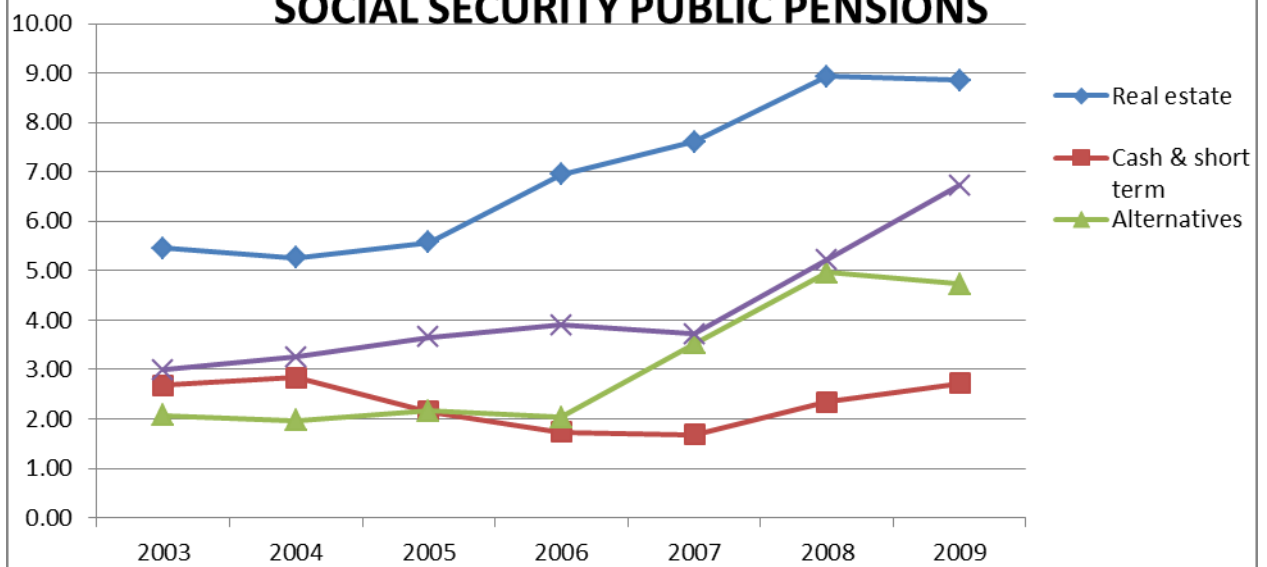


FIGURE 3
1-YEAR INVESTMENT RETURN

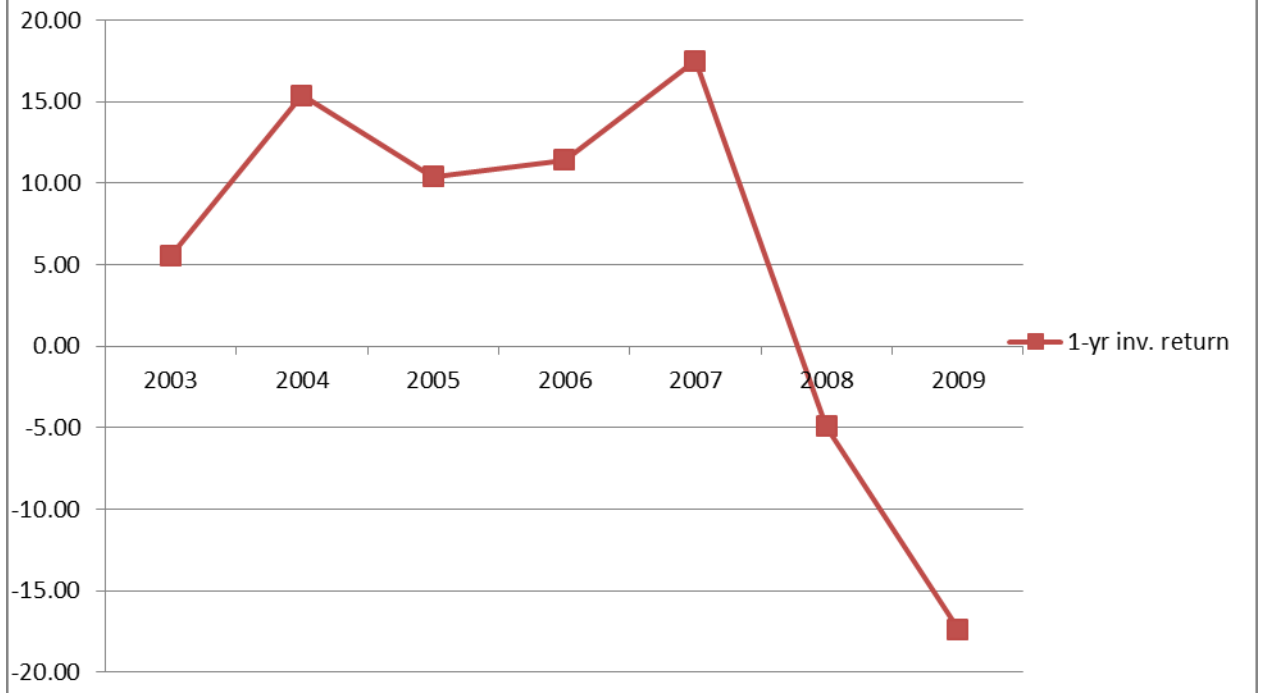
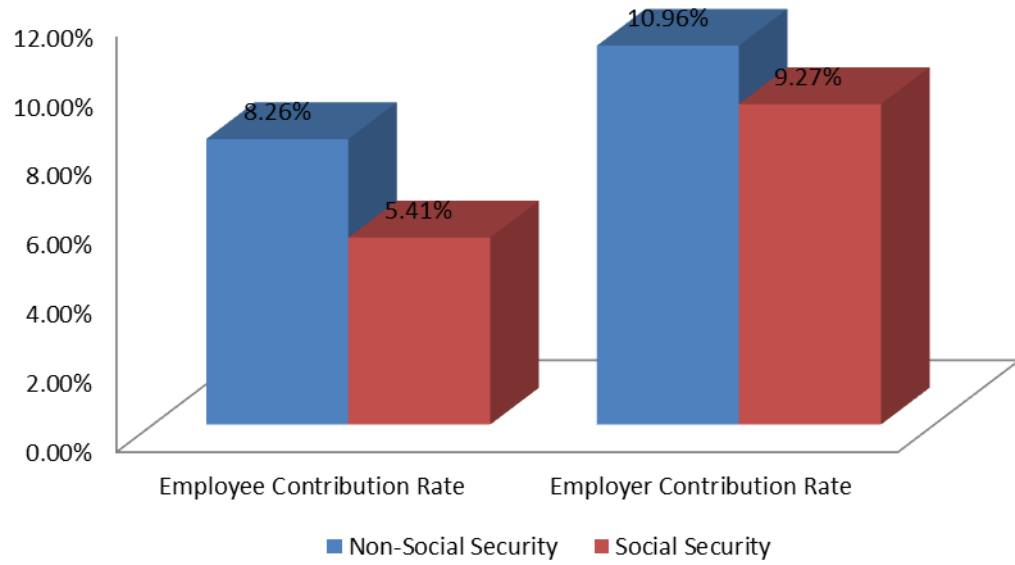
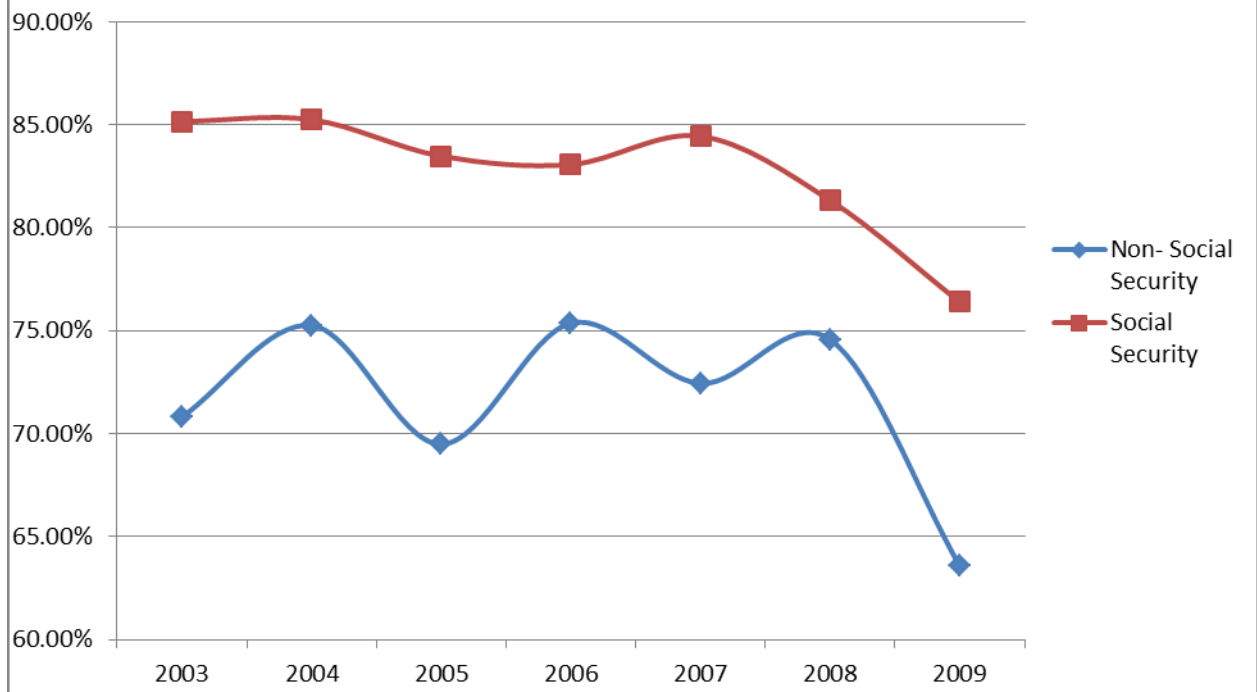


FIGURE 4
EMPLOYEE AND EMPLOYER CONTRIBUTION
RATES



**FIGURE 5
FUNDED RATIO**



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Business Administration. The authors thank Maria O'Brien Hylton for valuable comments on the paper as well as the Center for Financial Policy and the Robert H. Smith School of Business for grants supporting this research. We are also grateful to Jose Castro for his excellent research assistance.

ⁱⁱ 347 U.S. 483 (1954).

ⁱⁱⁱ See Michael A. Rebell, *Safeguarding The Right To A Sound Basic Education In Times Of Fiscal Constraint*, 75 ALB. L. REV. 1855 (2011-2012) (exploring the relationship between pension crisis and education); see also Kristi L. Bowman, *Before School Districts Go Broke: A Proposal For Federal Reform*, 79 U. CIN. L. REV. 895 (2011) (explaining that public school districts have reached the point of fiscal crisis and seeking a nationwide solution requiring fiscal accountability).

^{iv} National Association of State Retirement Administrators, Issue Brief: Spending on Public Employee Retirement Systems, at 1, Aug. 27, 2012, <http://www.nasra.org> (hereinafter "2012 NASRA Issue Brief") ("In the wake of the 2008-09 market decline, over 40 states and many cities have taken steps to improve the financial condition of their retirement plans and to reduce costs.").

^v Darius Lakdawalla & Rand Corporation, *The Economics of Teacher Quality*, 49 J.L. & ECON. 285 (2006) (concluding that teacher wages have fallen from 1940-1990 despite the increased demand for education in advanced economies); REPORT OF THE TASK FORCE ON TEACHER LEADERSHIP, *Leadership for Student Learning: Redefining the Teacher as Leader* at 6 (April 2001) (noting that data from the federal Bureau of Labor Statistics and other sources put elementary and secondary school teachers below that of police officers, detectives and firefighters); *id.* at 1 (advising that the average salaries for teachers remain at or near the bottom of the professional wage scales).

^{vi} See Lakdawalla & Rand, *supra* note 3 (concluding that evidence from the National Longitudinal Survey of Youth demonstrates that wages are a good measure of teacher quality); see also Melanie Hicken, *Firefighters, teachers face smaller retirement safety net*, CNNMONEY, Feb. 11, 2013 ("Before the recession, studies showed that public and private-sector workers had roughly equal compensation when both salaries and benefits were considered[.]") (quoting Jean-Pierre Aubry at Boston College's Center for Retirement Research)).

^{vii} 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 Research, Boston College (Jan. 2013); Eric A. Hanushek, *The Economic Value of Higher Teacher Quality*, National Bureau of Economic Research Working Paper at 1 (Dec. 2010), <http://www.nber.org/papers/w16606> (commenting that a widely accepted policy proposal for hiring better teachers is to provide more financial incentives).

^{viii} Linda Darling-Hammond, *Educating Teachers: The Academy's Greatest Failure or Its Most Important Future?*, 85 ACADEME 26-33 (Jan.-Feb. 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); Michelle A. Rhee, *Commentary, Policies Should Reflect The Importance of Teaching*, EDUC. WEEK, Jan. 25, 2012, at 24 (citing study from Harvard and Columbia detailing profound economic impact of highly effective teachers on students earnings and overall quality of life).

^{ix} A 2010 study, "The High Cost of Low Educational Performance," by the OECD in collaboration with the Hoover Institute at Stanford University concluded that boosting U.S. average Program for International Student Assessment scores by 25 points over the next 20 years could lead to a gain of \$41 trillion for the U.S. economy over the lifetime of the generation born in 2010. See Steven L. Paine & Andreas Schleicher, *What the U.S. Can Learn from the World's Most Successful Education Reform Efforts*, McGraw-Hill Research Foundation Policy Paper, at 2 (Mar. 2011). The same study also found that bringing all students to a minimum level of proficiency could imply GDP increases for the U.S. of \$72 trillion according to historic growth relationships. *Id.* at 3. See also Claudia Goldin & Lawrence Katz, *Human Capital and Social Capital: The Rise of Secondary Schooling in America, 1910-1940*, 29 J. INTERDISC. HIST. 683-723 (1999) (linking workforce level of education to U.S. economic expansion in the middle of the twentieth century); Shawn Fremstad & Andy Van Kleunen, *Redefining Public Education for the 21st Century: Toward a Federal Guarantee of Education and Training for America's Workers*, CLEARINGHOUSE REV. J. POV. L. & POL'Y (May-June 2006).

^x NASRA Issue Brief 2012, *supra* note 3, at 2 (noting that forty percent of public school teachers do not contribute to Social Security (25-30 percent of state and local employees overall), amounting to \$31.2 billion annually that would have been paid to Social Security).

^{xi} Estimates for educator plans range from \$332 billion to \$933 billion. See JOSH BARRO & STUART BUCK, FOUND. FOR EDUC. CHOICE OF THE MANHATTAN INST. REPORT FOR POLICY RESEARCH, UNDERFUNDED TEACHER PENSION PLANS: IT'S WORSE THAN YOU THINK (2010). For studies that calculate \$3 trillion in unfunded liabilities for public plans, see REPORT OF THE STATE BUDGET CRISIS TASK FORCE 2, 34035 (2012), available at <http://www.statebudgetcrisis.org/wpcms/wp-content/images/Report-of-the-State-Budget-Crisis-Task-Force-Full.pdf>; Eileen Norcross & Andrew Biggs, *The Crisis in Public Sector Pension Plans: A Blueprint for Reform in New Jersey* (Mercatus Center, George Mason University, Working Paper No. 10-31, 2010), available at <http://mercatus.org/sites/default/files/publication/WP1031-%20NJ%20Pensions.pdf>.

^{xii} NASRA Issue Brief 2012, *supra* note 3, at 3 (explaining that more than 200 billion dollars is paid annually from pension funds to public retirees and their beneficiaries across the United States).

^{xiii} Horace Mann said that "[a] human being is not attaining his full heights until he is educated." HORACE MANN, *THE ART OF TEACHING* (1840). Plato advised that "The purpose of education is to give to the body and to the soul all the beauty and all the perfection of which they are capable." PLATO, *THE REPUBLIC* (Benjamin Jowett trans. 1946).

^{xiv} Address by Nelson Mandela, *Lighting Your Way to a Better Future*, Launch of Mindset Network at the Planetarium, University of Witwatersrand Johannesburg South Africa (July 16, 2003).

^{xv} G.K. CHESTERTON, *THE OBSERVER* (1924).

^{xvi} See Erin E. Buzuvis, Note, "A" For Effort: Evaluating Recent State Education Reform In Response To Judicial Demands For Equity And Adequacy, 86 CORNELL L. REV. 644, 690 (2001) (listing education clauses in state constitutions).

^{xvii} *The Widening Gap Update*, PEW CENTER ON THE STATES, June 2012, available at http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Retirement_security/Widening%20Gap%20Brief%20Update_webREV.pdf. See also *Promises with a Price: Public Sector Retirement Benefits*, PEW CENTER ON THE STATES, 2005, available at http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/State_policy/pension_report.pdf (estimating underfunding for both pensions and retiree health care benefits for all state and local employees to be \$1.38 trillion). Cf. Eduard Ponds et al., *Funding in Public Sector Pension Plans-International Evidence* (Nat'l Bureau of Econ. Research, Working Paper No. 17082 (2011)) (examining underfunded public employee pension plans in other countries).

^{xviii} Assuming that investments will appreciate at about 8% 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 CENTER ON THE STATES, 2011, available at http://www.pewcenteronthestates.org/uploadedFiles/Pew_pensions_retiree_benefits.pdf; see also DEAN BAKER, CTR. FOR ECON. AND POLICY RESEARCH, *THE ORIGINS AND SEVERITY OF THE PUBLIC PENSION CRISIS* (2011), available at 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 30-year Treasury bond. See PEW, *The Widening Gap*, *supra*, at 16. Other studies put the figure around \$3 trillion or more. See Norcross & Biggs, *supra* note 9 (valuing pension liabilities at about \$3 trillion according to the likelihood of payment rather than the return expected on pension assets); REPORT OF THE STATE BUDGET CRISIS TASK FORCE 2, 34-35 (2012), available at <http://www.statebudgetcrisis.org/wpcms/wp-content/images/Report-of-the-State-Budget-Crisis-Task-Force-Full.pdf> (report chaired by former New York Lieutenant Governor, Richard Ravitch, and former Federal Reserve Board Chair, Paul Volcker, estimating \$3 trillion of underfunding by using a lower discount rate than the 8 percent rate of return commonly used by pension plans); ANDREW G. BIGGS, *STATE BUDGET SOLUTIONS, PUBLIC SECTOR PENSIONS: HOW WELL FUNDED ARE THEY REALLY* (2012), available at http://www.statebudgetsolutions.org/doclib/20120716_PensionFinancingUpdate.pdf (finding total unfunded

liabilities of approximately \$4.6 trillion as of 2011). Total liabilities are, of course, even higher. Norcross & Biggs, *supra* note 9, at 1 (estimating total liabilities to be \$5.2 trillion); Robert Novy-Marx & Joshua Rauh, *Public Pension Promises: How Big Are They and What Are They Worth?*, 66 J. FIN. 1211 (Aug. 2011) (calculating total liabilities to be \$3.20 trillion under a taxable muni rate and \$4.43 trillion using a Treasury-discounting measure for 116 state government defined benefit plans).

^{xix} See BARRO & BUCK, *supra* note 10 (calculating \$933 billion shortfall in teacher pension funding); *see also id.* (noting previous study estimated only \$332 billion).

^{xx} Our calculations ignore other post-retirement employee benefits, including state-provided employee health care. *The Trillion Dollar Gap*, THE PEW CENTER ON THE STATES (February 2010) (reporting these additional costs total \$587 billion in present value). We also focus on state pensions, not local city and county plans. *See* Novy-Maxx & Rauh, *supra* note 17, at 1215 (estimating these plans hold \$.56 trillion in assets (citing U.S. Census Bureau, *Census of Governments* (2007))).

^{xxi} *See generally* JULIA K. BONAFEDE ET AL., WILSHIRE ASSOCS. INC., 2005 WILSHIRE REPORT ON STATE RETIREMENT SYSTEMS: FUNDING LEVELS AND ASSET ALLOCATION 4 (2005), http://www.wilshire.com/Company/2005_State_Retirement_Funding_Report.pdf [hereinafter 2005 WILSHIRE REPORT]. Ninety percent of public employee plans are defined benefit plans. Gordon Tiffany, *Public Employee Retirement Planning*, 28 EMP. BENEFITS J., June 2003, at 3, 7. These plans “define” retirement benefits upon employment and are financed in part by employees’ fixed contributions.

^{xxii} Edward A. Zelinsky, *The Defined Contribution Paradigm*, 114 YALE L.J. 451, 454 (2004)

^{xxiii} 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, & PUBLIC POL’Y 307, 310-11 (2007).

^{xxiv} *See* LAWRENCE A. FROLIK & KATHRYN L. MOORE, *LAW OF EMPLOYEE PENSION AND WELFARE BENEFITS* 34–35 (2004)

^{xxv} EVERETT T. ALLEN ET AL., *PENSION PLANNING: PENSION, PROFIT-SHARING, AND OTHER DEFERRED COMPENSATION PLANS* 401-02 (9th ed. 2003) (discussing the “funding risk”); Lahey & Anenson, *supra* note 22, at 313-14.

^{xxvi} *See* ALLEN ET AL., *supra* note 24, at 441-53.

^{xxvii} NASRA Issue Brief 2012, *supra* note 3, at 6. Because investment income accounts for a major share of pension funding, studies have focused on improving investment decisions. *See, e.g.*, Marcia Gaughan Murphy, *Regulating Public Employee Retirement Systems for Portfolio Efficiency*, 67 MINN. L. REV. 211 (1980) (regulation of pension fund investment); Odd J. Stalebrin et al., *Prudent Public Sector Investing And Modern Portfolio Theory: An Examination Of Public Sector Defined Benefit Pension Plans*, 30 PUBLIC BUDGETING & FIN. 28-46 (2010) (statistical analysis illustrating that majority of plans are incurring more than optimal risk in their portfolios).

^{xxviii} *See* Appendix Figure 3.

^{xxix} There is a steady stream of research measuring asset allocations in public and private pension plans. *See, e.g.*, Karen Eilers Lahey et al., *Real Estate and Alternative Asset Allocations of U.S. Firms’ Defined Benefit Pension Plans*, 18 J. REAL ESTATE PORT. MGT. 273 (2012) (reviewing the business literature).

^{xxx} *See* Appendix Table 1; Figure 1.

^{xxxi} *See* Appendix Table 1; Figure 2. Real estate is normally an asset used to keep up with inflation of the liabilities. This is because real estate investments tend to keep up with inflation, thereby, hedging against the effects of inflation on the portfolios’ liabilities.

^{xxxii} *See id.*

^{xxxiii} *See* Appendix Figure 3.

^{xxxiv} *Id.* In 2009, states that do not contribute to Social Security had total actuarial assets of \$371,763,812 and an average of \$28,597,216 assets per state. For states that do contribute to Social Security, the total amount of actuarial assets was \$1,219,653,106 with an average of \$34,847,232 per state. *Id.*

^{xxxv} *Id.*

^{xxxvi} *Id.*

^{xxxvii} See Appendix Table 2.

^{xxxviii} *Id.* (showing non-Social Security plans have 45,401 more active members and 13,652 more retirees per state). Examining active versus retiree participant shares in any individual state, however, may produce a more optimistic picture. For example, the Teacher Retirement System of Texas, a non-Social Security state, has an active share of 73%. Novy-Marx & Rauh, *supra* note 17, at 1225. *But see id.* (including Texas as a state that, considering all public pensions, has large plans and a very small active participant share).

^{xxxix} See Appendix Table 3; Figure 4.

^{xl} *Id.*

^{xli} *Id.*

^{xlii} Robert Novy-Marx & Joshua D. Rauh, *The Revenue Demands of Public Employee Pension Promises 1* (Simon School Working Paper No. FR 11-21, June 2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1973668. This conclusion depends on important assumptions concerning investment performance and the effect that revenue shifts and increased taxes would have on the stability of the tax base. *Id.* (reporting that the contribution percentage represents 14.1% of total revenues).

^{xliii} Olivia S. Mitchell et al., *Developments in State and Local Pension Plans*, in *PENSIONS IN THE PUBLIC SECTOR 11, 25* (Olivia S. Mitchell & Edwin C. Husted eds., 2001).

^{xliv} If liabilities exceed assets, the plan is underfunded. See 2005 WILSHIRE REPORT, *supra* note 1, at 3. The actuarial value of assets is often determined using a smoothing method to reduce the effects of market volatility when calculating contribution rates. See *id.* at 9. For an explanation of the different valuation methods (current market, actuarial, or variations of the two), see ALLEN ET AL., *supra* note 24, at 253–54.

^{xlv} *Glossary of Actuarial and Pension Terms*, OFFICE OF THE STATE ACTUARY (2012) available at http://osa.leg.wa.gov/About_Pensions/Glossary.htm, (last accessed 3/7/12).

^{xlvi} See Appendix Table 4. The average public employee pension is 59 percent underfunded. ANDREW G. BIGGS, STATE BUDGET SOLUTIONS, PUBLIC SECTOR PENSIONS: HOW WELL FUNDED ARE THEY REALLY (2012), available at http://www.statebudgetsolutions.org/doclib/20120716_PensionFinancingUpdate.pdf. The funding problem is also getting worse. Using standard actuarial accounting, the average public pension fell to about 75 percent in 2011 versus 103 percent in 2000. *Id.* Without significant reform, the downward trend can be expected to continue. See Lahey & Anenson, *supra* note 22, at 315-16 (finding number of unfunded plans tripled from 2000 to 2003).

^{xlvii} See Appendix Table 4; Figure 5.

^{xlviii} See *id.*

^{xlix} In almost 150 years, retirement age has fallen dramatically. See Patrick Purcell, *Older Workers: Employment and Retirement Trends*, Congressional Research Service Report for Congress (Sept. 16, 2009) (showing more than three-quarters of males aged 65 or over were in the labor force in 1850 compared with less than one-fifth by 1990).

¹ Jack M. Beermann, *Public Pension Crisis*, Boston University School of Law Working Paper 17 (Aug. 17, 2012), available at: <http://ssrn.com/abstract=2131481> (noting that about 1 in 4 public employees do not contribute to the Social Security System).

^{li} Many newly elected governors and legislators have promised to focus on improving public pensions. *Roads to Reform: Changes to Public Sector Retirement Benefits Across States*, THE PEW CENTER ON THE STATES (November 2010) [hereinafter “*Roads to Reform*”].

^{lii} Given the data, the ticking time bomb seems an apt analogy. Katie Benner, *The Public Pension Bomb*, FORTUNE (May 12, 2009), available at money.cnn.com (“States nationwide have short changed their retirement systems.”). In California, a non-Social Security state with one with the largest unfunded liabilities in the public pension system nationally, interested parties are calling the crisis a pension “tsunami.” See pensionsunami.com.

^{liii} NASRA Issue Brief 2012, *supra* note 3, at 3 (“As states and cities address the effect of the Great Recession, cost of pension benefits remain a key point in the discussion.”); Michael Corkery, *Pension Crisis Looms Despite Cuts*, WALL ST.J.COM, (Sept. 21, 2012) (noting that forty-five states since 2009 have cut pension benefits); Paul M. Secunda, *Constitutional Contracts Clause Challenges in Public Pension Litigation*, 28 HOFSTRA LAB. & EMP. L.J. 263 (Spring 2011) (providing statistics on state governors rolling back pensions to respond to the budget crisis); see also Edward J. Zychowicz, *A Global Look at the Reform of Public Pension Systems*, 2 J. INT’L BUS. & L. 49 (2003) (providing an international comparison of public pension reform).

^{liv} See, e.g., Christopher D. Hu, Note, *Reforming Public Pensions in Rhode Island*, 23 STAN. L. & POL’Y REV. 523 (2012) (discussing Rhode Island and concluding that five years of piece meal legislation did not work).

^{lv} Stuart Buck, *Legal Obstacles to State Pension Reform*, THE ASSOCIATION FOR EDUCATION FINANCE AND POLICY, Aug. 26, 2011, available at <http://ssrn.com/abstract=1917563> or <http://dx.doi.org/10.2139/ssrn.1917563> (commenting on litigation in nine states).

^{lvi} *American States’ Pension Funds: A Gold Plated Burden*, ECONOMIST, Oct. 16, 2010, at 11, available at <http://www.economist.com/node/17248984>; Joshua Rauh, *The Day of Reckoning for State Pension Plans*, Kellogg Sch. of Mgmt. (Mar. 22, 2010), <http://kelloggfinance.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 9, at 2 (reporting that state actuaries estimate that New Jersey’s pension plans could run out of assets to make benefit payments as early as 2013) (citations omitted).

^{lvii} *American States’ Pension Funds: A Gold Plated Burden*, *supra* note 55.

^{lviii} Maria O’Brien Hylton, *Combating Moral Hazard: The Case for Rationalizing Public Employee Benefits*, 45 IND. L. REV. 413, 468 (2012).

^{lix} Buck, *supra* note 54 (noting policy tradeoff between benefits and public services).

^{lx} *Pensions and Retirement Plans – Resources*, NATIONAL CONFERENCE OF STATE LEGISLATURES (2012), available at <http://www.ncsl.org/issues-research/labor/pension-and-retirement-legislative-summaries-and-r.aspx> (last accessed 3/7/12) Eighteen legislatures enacted increases in employee contributions and sixteen enacted increases in employer contributions, while only eleven states did in 2010. *Id.* Sixteen legislatures increased age and service requirements and six legislatures lengthened the period over which final average salary is computed. See *id.*

^{lxi} *Id.* Two of the changes only apply to new hires. *Id.*

^{lxii} *Id.*

^{lxiii} *Id.*

^{lxiv} *Id.*

^{lxv} *Id.*

^{lxvi} *Id.*

^{lxvii} *Id.*

^{lxviii} Edward A. Zelinsky, *The Cash Balance Controversy*, 19 VA. TAX REV. 683, 687–91 (2000). The final-pay provision bases benefits on earnings averaged, for example, over the last three years of employment or over the three consecutive years in a ten-year period immediately prior to retirement in which earnings are the highest. Compare California’s relatively simple state retirement system formula—2% x Years of Service x Final Average Salary—with Ohio’s more complicated formula—2.2% x Final Average Salary x Years of Service up to thirty years and 2.5% x Final Average Salary x Years of Service after thirty years. NAT’L EDUC. ASS’N, CHARACTERISTICS OF LARGE PUBLIC EDUCATION PENSION PLANS 60, 63 (2004), available at <http://www.nea.org/takenote/images/char2004.pdf>. 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. Husted eds., 2001). 20–21. 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 24, at 229–34 as well as COMM. ON RET. SYS. RESEARCH, SOC’Y OF ACTUARIES, SURVEY OF ASSET VALUATION METHODS FOR DEFINED BENEFIT PENSION PLANS (2001), available at <http://www.soa.org/ccm/content/?categoryID=1079102> (surveying asset valuation methods used in Canada and the United States for defined benefit plans).

^{lxix} Alaska, SB141 2005; *Roads to Reform*, *supra* note 50. Employees are bitter about the switch and continue to ask lawmakers to repeal the change every year. *Id.*

^{lxx} *Id.*; Alaska, Ch. 35, Laws of 2008 (HB 13).

^{lxxi} Lahey & Anenson, *supra* note 22, at 320-21 (reviewing financial status of public pension systems in California five years ago); see also Hylton, *supra* note 57, at 465 (noting that California will be insolvent in twenty years by some accounts and that its municipalities are already declaring bankruptcy).

^{lxxii} LITTLE HOOVER COMMISSION, PUBLIC PENSIONS FOR RETIREMENT SECURITY 3 (2011); see also *id.* (predicting that large cities in California will soon be devoting one-third of their operating budgets to pension payments).

^{lxxiii} *Roads to Reform*, *supra* note 50.

^{lxxiv} California SB 400 1999; *Roads to Reform*, *Roads to Reform*, *supra* note 50. The proposed changes consist of higher contributions by employees, raising the retirement age, and eliminating pension spiking. *Id.* Pension spiking is when employees inflate their final salary to receive a larger pension check. See Anthony York & Jack Nolan, *California state employees take advantage of pension perk*, available at latimes.com/news/local/la-me-pensions-airtime-20110216,0,6769843-story (last checked 1-18-13) (reporting that employees buy additional years to add to their pension formula which normally is years of service times the highest one year or three year compensation times 2 to 3 percent); Buck, *supra* note 54 at 22-23 (discussing pension spiking among firefighters in Massachusetts leading to reform and litigation). See generally Beermann, *supra* note 49 (outlining methods of pension spiking).

^{lxxv} For a complete discussion of the California pension reform, see <http://www.calpers.ca.gov/eip-docs/employer/program-services/summary-pension-act.pdf>.

^{lxxvi} *Id.*

^{lxxvii} *Roads to Reform*, *supra* note 50. Many of the changes only affect new hires. *Id.* The Colorado Public Employees’ Retirement Association (PERA) is the 21st largest public pension plan in the United States. PERA website, <http://www.copera.org/pera/about/overview.htm>.

^{lxxviii} Colorado, Ch. 65, Laws of 2010 (SB 146).

^{lxxix} Colorado, Ch. 2, Laws of 2010 (SB 1); *Roads to Reform*, *supra* note 50. The COLA reduction has been challenged as a violation of U.S. and state constitutional protections. See *Justus v. State*, No. 2010CV1589 (filed D. Co. 2011) [available at <http://www.copera.org/pdf/Misc/06-29-11Order.pdf>, last accessed 2/9/13]. Because of this challenge, many states have suspended their COLA changes. *Roads to Reform*, *supra* note 50.

^{lxxx} *Id.*

^{lxxx} *Id.* For the earlier financial woes of the Illinois pension plan, see Lahey & Anenson, *supra* note 22, at 318-20 (detailing public pension situation in Illinois as of 2005).

^{lxxxii} R. Eden Martin, *Unfunded Public Pensions— The Next Quagmire* (Aug. 19, 2010) (explaining that Illinois has unfunded pension obligations approaching \$80 billion with unfunded retiree health obligations adding approximately \$40 billion more); *see also* Hylton, *supra* note 57, at 467 n.65 (discussing the rise and fall of Illinois governor Rod Blagojevich and his disastrous policies on its debt); *id.* at 414-15 (comparing operating budget of \$43 billion to its five pension funds that are \$35 billion in the red). Illinois owes \$2.6 billion this year on its pensions and, by comparison, the state will spend almost \$6 billion next year on primary education. *Id.*

^{lxxxiii} *Roads to Reform, supra* note 50. The state also authorized the issuing of \$3.5 billion in pension obligation bonds and is considering issuing additional debt in the future. *Id.*; Illinois Public Act 96 – 0889 (SB 1946) 2010.

^{lxxxiv} Illinois Public Act 96 – 0889 (SB 1946) 2010; *Roads to Reform, supra* note 50. Raising the retirement age to 67 is the highest of any state. *Id.*

^{lxxxv} *Id.* Other changes for Missouri consist of mandatory employee contributions and increased vesting periods for new hires. *Id.*; Missouri, HB 1 of the First Extraordinary Session of 2010 (signed by the governor on July 19, 2010).

^{lxxxvi} *Roads to Reform, supra* note 50; Kentucky, HB 1 of 2008 Special Session.

^{lxxxvii} Kentucky, HB 1 of 2008 Special Session; *Roads to Reform, supra* note 50.

^{lxxxviii} *Id.* Kentucky, Act 159 of 2010 (HB 540).

^{lxxxix} Louisiana, Act 992 of 2010 (HB 1337).

^{xc} *Roads to Reform, supra* note 50.

^{xc} *Id.*

^{xcii} *Id.*

^{xciii} *Id.*

^{xciv} Massachusetts ch. 176, Acts of 2011 (SB 2065); *see also* Buck, *supra* note 54, at 22-23 (discussing pension spiking among firefighters in Massachusetts leading to reform and litigation).

^{xcv} Nevada ch. 426, Laws of 2009 (SB 427); *Roads to Reform, supra* note 50.

^{xcvi} *Id.* Texas Ch. 1308, Laws of 2009 (HB 2559). Benefits remain unchanged for current members despite the fact that Texas law allows such changes. *See supra* discussion of legal barriers to pension reform in Part II.B.

^{xcvii} The teacher's plan is called the State Teachers Retirement Plan of Ohio or STRS and the website is: <https://www.strsoh.org/legislation/legislation.html>. Many of these changes will be phased in over a period of time.

^{xcviii} *Id.*

^{xcix} *See* discussion *supra* notes 76-78, 96-97. 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).

^c 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 Ret. Bd.*, the Supreme Court of Ohio declared

that the disparate treatment of public employees (public school teachers) who meet retirement eligibility and those who survived an equal protection challenge. *State ex rel. Horvath v. State Teachers Ret. Bd.*, 697 N.E.2d 644, 652-53 (Ohio 1998). 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 Tr. of La. State Employees' Ret. Sys.*, 851 So.2d 110, 1108 (La. 2003).

^{ci} *See Dodge v. Bd. of Educ. of City of Chicago*, 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 (1889) (abolition of pension plan and transfer of funds deducted from employees' paychecks to other purposes did not violate pension plan beneficiaries' due process rights because public pensions as gratuities that could be withdrawn at any time).

^{cii} *City of Dallas v. Trammel*, 101 S.W.2d 1009 (Tex. 1937); *Kunin v. Feofanov*, 69 F.3d 59, 63 (5th Cir. 1995) (Texas law). Pensions are deemed gratuities only with respect to compulsory plans. Amy Monahan, *Public Pension Plan Reform: The Legal Framework*, 5 EDUC. FIN. & POL'Y 617 (2010) (noting that only compulsory plans in Texas and Indiana have no legal protection for adverse plan changes only for compulsory). Optional plans have protection. *Id.*; *see also Kraus v. Bd. of Tr. Of Pol. P. Fund*, 390 N.E.2d 1281, 1285 (Ill. 1979) (explaining that optional retirement plans in Illinois had protection from the time they began contributing to the pension fund) (case citations omitted). Indiana and, possibly, Arkansas may also follow the gratuity approach with respect to involuntary plans. *See Robinson v. Taylor*, 29 S.W.3d 691 (Ark. 2000)); Eric M. Madiar, *Public Pension Benefits Under Siege: Does State Law Facilitate Or Block Recent Efforts To Cut The Pension Benefits Of Public Servants?*, 27 ABA J. LAB. & EMP. L. 179, 185 (Winter 2012) (listing Texas, Indiana and Arkansas as a state utilizing the gratuity approach).

^{ciii} As discussed *supra*, however, there may be additional protections for pension benefits.

^{civ} *See Opinion of the Justices to the House of Representatives*, 303 N.E.2d 320, 325 (Mass. 1973) (citing, e.g., *Foley v. Springfield*, 328 Mass. 59 (1951) (allowing the legislature to cut retirees' pensions in case they accepted and had earnings from outside employment after their retirement) and *McCarthy v. State Bd. of Retirement*, 331 Mass. 46 (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)); *City of Dallas v. Trammel*, 101 S.W.2d 1009 (Tex. 1937) (law cutting monthly pension payments to retiree by more than half held constitutional because retiree has not vested right to participate in the fund which is under the complete control of the legislature).

^{cv} For the evolution from pensions as gratuities to protectable interests, see, e.g., *Kraus v. Bd. of Tr. Of Pol. P. Fund*, 390 N.E.2d 1281, 1285 (Ill. 1979) (gratuity approach changed under the state constitution); *State ex rel. Horvath v. State Teachers Ret. Bd.*, 697 N.E.2d 644 (Ohio 1998) (gratuity approach changed by state statute). The gratuity approach led to 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.*

^{cvi} *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 such as the structure of the state pension program at issue and the intent of the legislature that created it). For different approaches to public pension protection mentioned by courts, see, e.g., *Pineman v. Oechslin*, 488 A.2d 803, 808 (Conn. 1985) (describing two limited vesting views and an estoppel approach). For various categories of pension rights conceived by legal scholars, *See, e.g., Monahan, supra* note 101 (suggesting three modern approaches; Constitutional Protection of Past and Future Benefit Accruals, Constitutional Protection of Past Benefit Accruals and non-constitutional Contract Protection); Jeffrey B. Ellman & Daniel J. Merrett, *Pension and Chapter 9: Can Municipalities Use Bankruptcy to Solve Their Pension Woes*, 27 EMORY BANKR. DEV. J. 365 (2011) (describing multiple modern views including the vested-rights doctrine, the California Rule, the Pennsylvania Rule, contract-theory and the property interest approach.). 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.

Notably, even the traditional view had variations in meaning. *See* Kraus v. Bd. of Tr. Of Pol. P. Fund, 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).” Opinion of the Justices to the House of Representatives, 303 N.E.2d 320, 326 (Mass. 1973).

^{cvi} *See, e.g.*, Parker v. Wakelin, 123 F.3d 1, 7 (1st Cir. 1997) (reviewing various approaches). *See also* discussion *infra* at Part II.B.3.

^{cviii} *See id.*

^{cix} In determining federal constitutional protection, courts defer to the definitions provided by state law.

^{cx} Pineman v. Oechslin, 488 A.2d 803, 809-10 (Conn. 1985); Spiller v. State, 627 A.2d 513, 516-17 (Me. 1993).

^{cxii} *See, e.g.*, Pension Benefit Guar. Corp. v. R.A. Gray & Co., 467 U.S. 717, 720 (1984) (rational basis review of due process claim regarding private pension benefits).

^{cxiii} The Supreme Courts of Maine and Connecticut indicated, directly or indirectly, that employees have statutory rights to their pensions upon retirement or retirement eligibility. *See* Spiller v. State, 627 A.2d at 516 (retirement); Pineman v. Oechslin, 488 A.2d at 810 (eligibility).

^{cxiiii} 627 A.2d 513, 516-17 (Me. 1993). For further analysis of the decision, see Andrew C. Mackenzie, Note, *Spiller v. State: Determining The Nature Of Public Employees' Rights To Their Pensions*, 46 ME. L. REV. 355 (1994).

^{cxiv} Spiller v. State, 627 A.2d at 517 n.12.

^{cxv} *Id.* at 514.

^{cxvi} 488 A.2d 803 (Conn. 1985).

^{cxvii} *Id.* at 810.

^{cxviii} *Id.* at 514-17 (reversing lower court decision that contract rights begin upon employment).

^{cxix} *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...”).

^{cxx} *Id.* (citing Christensen v. Minneapolis Mun. Employees Retirement Benefits Bd., 331 N.W.2d 740, 748 (Minn. 1983)).

^{cxxi} 123 F.3d 1 (1st Cir. 1997).

^{cxxii} *Id.* at 3.

^{cxxiii} *Id.* at 2.

^{cxxiv} *Id.* at 8.

^{cxxv} *Id.* (plaintiffs position).

^{cxxvi} *Id.* (district court decision). Under the Maine statute, the service requirement is a necessary but not sufficient condition to receive a pension.

^{cxxvii} *Id.* at 9 (state position).

^{cxxviii} *Id.* There is a fourth reading of the statutory text; that is, benefits could be due once an employee qualifies for retirement. The statutory scheme provided that eligibility for retirement is triggered by completion of a number of years of service and reaching a particular age. *Id.* at 2-3.

^{cxxix} See Buck, *supra* note 54, 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)); see also Beermann, *supra* note 49, at 59 (clarifying that pension modifications may not violate the Contracts Clause for the reason that they are deemed a reasonable and necessary government interest but can still be considered an illegal taking because the government justification is irrelevant). Spiller v. State, 627 A.2d 513, 515 n.6 (Me. 1993) (noting that the lower court decided the case on the contract clauses despite the fact that the plaintiffs also argued a takings of their property without compensation and without due process of law).

^{cxxx} See, e.g., E-470 Public Highway Authority v. Revenig, 91 P.3d 1038, 1045 n.10 (Colo. 2004).

^{cxxxi} 697 N.E.2d 644, 648-52 (Ohio 1998)

^{cxxxii} *Id.* at 650 (citing *Penn Cent. Transp. Co. v. New York*, 438 U.S. 104, 124 (1978)).

^{cxxxiii} *Id.* at 650-52.

^{cxxxiv} Beermann, *supra* note 49.

^{cxxxv} Because most state statutes do not expressly create a contract. Amy B. Monahan, *Statutes As Contracts? The “California Rule” And Its Impact On Public Pension Reform*, 97 IOWA L. REV. 1029, 1037 (2012) (The collective bargaining contract, often known as memorandums of understanding in the public sector, may explicitly create a contract.) , the central judicial inquiry is whether such a contract may be implied from the circumstances.

^{cxxxvi} U.S. CONST. Art. I, § 10 (providing “No State shall . . . pass any . . . Law impairing the Obligation of Contracts.”).

^{cxxxvii} See Note, *Public Employee Pensions in Times of Fiscal Distress*, 90 HARV. L. REV. 992 (1976) (analyzing possible pitfalls to modifications of public pensions due to economic crises). See also Buck, *supra* note 54 (discussing nine states facing lawsuits over pension reform). For earlier litigation over public pensions, see David L. Gregory, *The Problematic Status of Employee Compensation and Retiree Pension Security: Resisting the State, Reforming the Corporation*, 5 B.U. PUB. INT. L.J. 37 (1995-1996) (discussing litigation in New York, Oregon, Maine, and the U.S. Court of Appeals for the Fourth Circuit).

^{cxxxviii} See 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.”). Federal courts also rely primarily on state law to determine the existence of a contract.

^{cxxxix} U.S. Trust Co. v. New Jersey, 431 U.S. 1 (1977); Allied Structural Steel Co. v. Spannaus, 438 U.S. 234 (1978)

^{cxl} See Spiller v. State, 627 A.2d 513, 515 n.9 (Me. 1993) (case citations omitted). The non-Social Security states of Alaska, Illinois, and Louisiana 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.”

^{cxli} U.S. Trust Co. of N.Y., 431 U.S. at 17 n.14; see also Monahan, *supra* note 134, at 1038, 1041.

^{cxlii} See, e.g., Pineman v. Oechslin, 488 A.2d 803, 809-10 (Conn. 1985); Spiller v. State, 627 A.2d 513, 515 (Me. 1993); 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 (1996); see also Parker v. Wakelin, 123 F.3d 1, 5 (1st Cir. 1997) (recounting history of the doctrine to Justice Marshall’s opinion in *Fletcher v. Peck*, 10 U.S. 87 (1810)). See also Monahan, *supra* note 134, at 1076 (explaining that courts in California do not use the rule of construction and, in fact, erroneously fail to inquire into legislative intent at all).

^{cxliii} See, e.g., *National Railroad Passenger Corp. v. Atchison, Topeka & Santa Fe Railway Co.*, 470 U.S. 451, 465-66 (1985); *Nat'l Educ. Ass'n-R.I. v. Ret. Bd. of the R.I. Emps.' Ret. Sys.*, 890 F. Supp. 1143, 1151 (D.R.I. 1995) (describing the presumption as “no small hurdle to vault”). The strength of the presumption in any given case will depend on what principles the court looks to for guidance. A court may simply conclude there is no contract based on the absence of any reference to contract in the text. See *Parker v. Wakelin*, 123 F.3d 1, 9 (1st Cir. 1997) (reserving the issue of whether the statute must expressly employ contract language). Other courts may be willing to delve into legislative history, if any, and so on.

^{cxliv} Beermann, *supra* note 49, at 33 (discussing state constitutional law). See generally Monahan, *supra* note 101 (reviewing 24 states and concluding that there are legal protections for public pension benefits).

^{cxlv} Alaska has language that specifically applies only to accrued benefits, but the courts have interpreted the provision to protect all benefits from the time participants enroll. *Hammond v. Hoffbeck*, 627 P.2d 1052, 1057 (Alaska 1981); *Municipality of Anchorage v. Gallion*, 944 P.2d 436 (Alaska 1997).

^{cxlvi} See generally Monahan, *supra* note 134 (tracing ninety year history of the California rule).

^{cxlvii} *Colo. Springs Fire Fighters Ass'n v. City of Colo. Springs*, 784 P.2d 766, 771 (Colo. 1989); *Police Pension & Relief Bd. v. Bills*, 366 P.2d 581, 584-85 (Colo. 1961).

^{cxlviii} *Kraus v. Bd. of Tr. Of Pol. P. Fund*, 390 N.E.2d 1281, 1291-93 (Ill. 1979) (construing 1970 Illinois Constitution as approving New York view that employees receive protection at the time they become members of the system); Eric M. Madiar, *Is Welching on Public Pension Promises an Option for Illinois? An Analysis of Article XIII, Section 5 of the Illinois Constitution 2* (Mar. 1, 2011), <http://ssrn.com/abstract=1774163>. 20-21 (discussing Illinois legislative history indicating a purpose to protect employees upon joining the retirement system).

^{cxlix} *Nicholas v. State of Nevada*, 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 134, at 140 (explaining that Nevada follows the California Rule of Contract Clause analysis for public pensions).

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

^{cli} Monahan, *supra* note 134, 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).

^{clii} Monahan, *supra* note 134, at 1066-69 (discussing California law).

^{cliii} Monahan, *supra* note 134, at 1072-73 (discussing decisions in Colorado and Oregon).

^{cliv} *Justus v. State*, No. 2010-CV-1589, slip op. at 9 (Colo. Dist. Ct. June 29, 2011); see also Monahan, *supra* note 134 (noting that the district appears to break with the California rule endorsed by the Colorado Supreme Court).

^{clv} No. 2010-CV-1589, slip opinion (Colo. Dist. Ct. June 29, 2011).

^{clvi} *Id.*

^{clvii} *Id.*

^{clviii} *Id.*

^{clix} The case is still pending on appeal.

^{clx} See *Hughes v. State*, 838 P.2d 1018, 1033-34 (Or. 1992) (allowing removal of tax exemption for pension benefits not yet earned through service).

^{clxi} *Cf. Smith v. Bd. of Tr. of La. State Employees' Ret. Sys.*, 851 So.2d 110, 1105 (La. 2003) (distinguishing between retirement benefits and reemployment benefits at issue in the case). *Contra Legislature v. Eu*, 816 P.2d 1309, 1332-33 (Cal. 1991) (no COLA reduction once participant enters the system).

^{clxii} 421 N.E.2d 1228 (Mass. App. Ct. 1981).

^{clxiii} *Id.* at 1235-36.

^{clxiv} *Id.* (emphasis added).

^{clxv} *Madden v. Contributory Ret. Appeal Bd.*, 729 N.E.2d 1095, 1098-99 (Mass. 2000).

^{clxvi} *Madden*, 729 N.E.2d 1095 at 1098 (holding that the statutory contract language means that the government may not deprive members of the "core of . . . reasonable expectations" that they had when they entered the retirement system) (citing Opinion of the Justices to the House of Representatives, 303 N.E.2d 320 (Mass. 1973)).

^{clxvii} *City of Louisville v. Bd. of Educ. Of Louisville*, 163 S.W.2d 23, 25 (Ky. 1942).

^{clxviii} *Smith v. Bd. of Trs. of the La. State Emps.' Ret. Sys.*, 851 So.2d 1100, 1106-07 (La. 2003) (retirement eligibility). 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 v. Bd. of Tr. of La. State Employees' Ret. Sys.*, 851 So.2d 110, 1105 (La. 2003) (noting that the constitutional provision also declares that future benefits can be altered by legislative enactment).

^{clxix} *State ex. Rel Phillip v. Public School Retirement System of St. Louis*, 262 S.W.2d 569 (Mo. 1953); *Fraternal Order of Police v. St. Joseph*, 8 S.W.3d 257 (Mo. App. W.D. 1999).

^{clxx} *State ex rel. Horvath v. State Teachers Ret. Bd.*, 697 N.E.2d 644, 653-54 (Ohio 1998).

^{clxxi} Recall that the satisfaction of plan vesting requirements also triggers legal protection in Maine and Connecticut. However, because those states reject contract in favor of a property approach, pension reforms will stand if they satisfy due process of law.

^{clxxii} *Parker v. Wakelin*, 123 F.3d 1 (1st Cir. 1997).

^{clxxiii} *Nicholas v. State of Nevada*, 992 P.2d 262, 264 (Nev. 2000).

^{clxxiv} *Id.* (citing *Pub. Emps.' Ret. Bd. v. Washoe Cnty.*, 615 P.2d 972, 974 (Nev. 1980)). *See also* discussion *infra* at Part II.B.3.b-c.

^{clxxv} *Id.* (citing decisions from California, Louisiana, and Michigan). 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 Pol. Off. 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. *Pub. Emps.' Ret. Bd. v. Washoe Cnty.*, 615 P.2d 972, 974 (Nev. 1980) (finding reduction in retirement benefits unconstitutional after repeal of a law quadrupling the amount of benefits a retired legislature may receive which went into effect after the legislators service ended).

^{clxxvi} See the discussion of the development of the absolute and limiting vesting approaches *supra* note 104.

^{clxxvii} *West Virginia Booth v. Sims*, 456 S.E.2d 167, 188 (W. Va. 1995) ("Scores of thousands of little people have organized their lives around government pensions..."). *See generally* Robert A. Graham, Note, *The Constitution, The Legislature, and Unfair Surprise: Toward A Reliance-Based Approach to the Contract Clause*, 92 MICH. L. REV. 398 (1993) (positing a reliance-based approach to Contract Clause analysis). *See also* Charles A. Reich, *The New Property*, 73 YALE L. REV. 733, 738-39 (1964) ("No form of government largess is more personal or individual than an old age pension."); Joseph William Singer, *The Reliance Interest in Property*, 40 STANFORD L. REV. 611 (1988).

^{clxxxviii} *Pineman v. Oechslein*, 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) (public employee acquires contract right in 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. Employees Retirement Benefits Bd.*, 331 N.W.2d 740, 747 (Minn. 1983); *West Virginia Booth v. Sims*, 456 S.E.2d 167, 181 (W. Va. 1995) (declaring that 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 existing pension benefits and contribution schedules”); *see also* *Beermann*, *supra* note 49, at 36-37 (contrasting results in estoppel cases where employees were challenging the same pension reforms (citing *Myers v. W. Virginia Consol. Pub. Ret. Bd.*, 226 W.Va. 738 (2010) and *Adams v. Ireland*, 207 W.Va. 1 (1999))). For a discussion of the causes of action for promissory estoppel and quasi-contract, *see* T. Leigh Anenson, *Treating Equity like Law: A Post-Merger Justification of Unclean Hands*, 45 AM. BUS. L.J. 455, 499 (2008); *see also id.* at 501 (analyzing equitable defense of estoppel).

^{clxxxix} The West Virginia Supreme Court announced: “[C]hanges 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 basis, but after ten years of state service detrimental reliance is presumed.” *Booth v. Sims*, 456 S.E.2d 167, ¶ 15 (W.Va. 1994) (syllabus by the court).

^{clxxx} *Id.* The Minnesota Supreme Court adopted a “promissory estoppel approach” and equated it to a contract implied in law often referred to as quasi-contract. *Christensen v. Minneapolis Mun. Employees Retirement Benefits Bd.*, 331 N.W.2d 740, 748 (Minn. 1983) (finding suspension of retiree benefits due to increase in retirement age unconstitutional); *see also* *Pineman v. Oechslein*, 488 A.2d 803, 808 (Conn. 1985) (delineating Minnesota’s approach is 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 a future case. *Christensen v. Minneapolis Mun. Employees Retirement Benefits Bd.*, 331 N.W.2d at 748.

^{clxxxix} *See Spiller v. State*, 627 A.2d 513, 516-17 (Me. 1993); *see also* discussion *supra* at note 119 and accompanying text.

^{clxxxii} *See Dullea v. Mass. Bay Transp. Auth.*, 421 N.E.2d 1228, 1235 (Mass. App. Ct. 1981) (finding contract right arises after substantial services are provided); *accord* *Singer v. City of Topeka*, 607 P.2d 467, 475 (Kan. 1980) (more than 11 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 (Cal. 1947) (employee has pension rights as soon as he has performed substantial services for his employer”). For the evolution of the “California Rule” of public pension rights, *see* *Monahan*, *supra* note 134.

^{clxxxiii} *See Singer v. City of Topeka*, 607 P.2d 467, 474 (Kan. 1980) (citing cases from Arkansas, Delaware, and Pennsylvania); *Buck*, *supra* note 54, at 33 (relying on federal precedent construing statutory contract claims under ERISA (citing *Hoefel v. Atlas Tack Corp.*, 581 F.2d 1, 4-5 (1st Cir. 1978); *Pratt v. Petroleum Prod. Mgmt., Inc. Employee Sav. Plan & Trust*, 920 F.2d 651, 661 (10th Cir. 1990)); *see also* *Hurd v. Illinois Bell Tel. Co.*, 234 F.2d 942, 946 (7th Cir.), *cert. denied*, 352 U.S. 918, 77 S. Ct. 216, 1 L. Ed. 2d 124 (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 court decision adopting the satisfaction of service paradigm).

^{clxxxiv} *Madiar*, *supra* note 101, at 183.

^{clxxxv} *Buck*, *supra* note 54, at 3; *see also id.* at 35. In support of his position, *Buck* cites, for example, *Hughes v. Oregon*, 838 P.2d 1020 (Ore. 1992), where the Oregon Supreme Court declared that pension reform subjecting PERS retirement benefits to taxation was a nullity as applied to benefits “accrued or accruing for work performed before the effective date of [the] legislation.” *Id.* at 34.

^{clxxxvi} *See Monahan*, *supra* note 134; *Buck*, *supra* note 54. *But see Madiar*, *supra* note 101, at 192-93 (criticizing *Monahan*’s position that contract protections should extend to what workers have accrued).

^{clxxxvii} Alicia H. Munnell & Laura Quinby, Legal Constraints on Changes in State and Local Pensions 3 (Aug. 2012), Center for Retirement Research at Boston College, available at http://crr.bc.edu/wpcontent/uploads/2012/08/slp_25.pdf (arguing that public pension benefits should be subject to the same economic considerations as private pensions).

^{clxxxviii} Monahan, *supra* note 134.

^{clxxxix} *See id.*

^{cxc} *See id.* The result is especially incongruous when government employers can change other aspects of the employment relationship. Monahan, *supra* note 101; *cf.* Julie A. Roin, *The Limits of Textualism: Cooper v. IBM Personal Pension Plan*, 77 U. CHI. L. REV. 1195 (2010) (explaining how courts will look at the practical impact of the plan change and the employer's flexibility to finance future plans when considering cash balance plan conversions from defined benefit pension plans in the private sector).

^{cxc} Monahan, *supra* note 134.

^{cxci} *Id.*; Buck, *supra* note 54 (pension as back-loaded salary).

^{cxci} Monahan, *supra* note 134, at 1078-79; *cf.* Beermann, *supra* note 49 (agreeing with Monahan's argument only to the extent that it is supported by the policy of flexibility).

^{cxci} Monahan, *supra* note 134, at 1078-79.

^{cxcv} Lawmakers tailoring reforms to certain groups need to be careful of equal protection violations as well. Certain groups of workers may also have reasonable and protectable expectations as to certain aspects of their plan. Plans are different because they cover employees with different characteristics. *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. Husted eds., 2001). For the police and firefighters whose jobs are physically demanding, retirement plans provide for retirement at earlier ages in order to preserve a younger workforce. *Id.* Therefore, dramatically increasing the minimum retirement age for these employees may be deemed unconstitutional.

^{cxcvi} *Accord* Beermann, *supra* note 49; *cf.* Buck, *supra* note 54, at 37 (arguing that even state employees with a property interest in their jobs, such as those with academic tenure, can still be fired after due process is afforded to them).

^{cxcvii} In anticipating subsequent reforms, lawmakers in states where rights are derived entirely by legislation (and where courts also examine the statutory language) should be explicit that the reforms do not create a contract.

^{cxcviii} Monahan, *supra* note 134, 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 (1987). Later cases examined not only if there was an alternation of the agreement, but also its significance.

^{cxcix} *Allied Structural Steel Co. v. Spannaus*, 438 U.S. 234, 245 (1978).

^{cc} *See* *Balt. Teachers' Union v. Mayor & City Council of Balt.*, 6 F.3d 1012, 1017 (4th Cir. 1993) (explaining that inducement to contract and reasonable reliance are determinants of impairment); *see also* Monahan, *supra* note 134 (arguing that fairness should prevail allowing legislative changes).

^{cci} *U.S. Trust Co. of New York 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)).

^{ccii} At least one state foregoes any remaining analysis after finding a contract. *Yeazell v. Copins*, 402 P.2d 541 (Ariz. 1965) (contract begins at employment and may not be changed without employee consent).

^{cciii} California's concept of contract seems to conflate the second and third prongs of the standard contract approach. *See* Monahan, *supra* note 134 (noting ambiguity); *see also* Munnell & Quinby, *supra* note 186, at 2-3 (putting California's test in the third prong of the contract standard).

^{cciv} Kraus v. Bd. of Tr. of Police Pension Fund of Niles, 390 N.E.2d 1281, 1293 (Ill. App. Ct. 1979) (finding Illinois lawmakers had a New York state of mind).

^{ccv} See Betts v. Bd. of Admin., 582 P.2d 614 (1978)

^{ccvi} See Valdes v. Cory, 139 Cal. App. 3d 773 (Cal. Ct. App. 1983); Bd. Of Admin. v. Wilson, 52 Cal. App. 4th 1109, 61 Cal. Rptr. 2d 207 (Cal. Ct. App. 1997)

^{ccvii} For decisions in other states, see Calabro v. City of Omaha, 531 N.W.2d 541 (Neb. 1995) (eliminating cost-of living supplemental payments found to be a substantial impairment); Deonier v. State, 114 Idaho 721 (1988) (offsetting pension benefits by the amount of workers' compensation benefits received deemed substantial impairment).

^{ccviii} Int'l Assn. of Firefighters v. City of San Diego, 667 P.2d 675 (Cal. 1983); *accord* Strunk v. Pub. Employees Ret. Bd., 108 P.3d 1058 (Or. 2005). 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 134 (citing cases from Washington, West Virginia, South Dakota, and Maryland, respectively).

^{ccix} Christensen v. Minneapolis Mun. Employees Retirement Benefits Bd., 331 N.W.2d 740, 751 (Minn. 1983). Mandatory retirement age reductions, in contrast, have been allowed. See Kraus v. Bd. of Tr. Of Pol. P. Fund, 390 N.E.2d 1281, 1293 (Ill. 1979).

^{ccx} Opinion of the Justices, 609 A.2d 1204 (N.H. 1992).

^{ccxi} Singer v. City of Topeka, 607 P.2d 467, 476 (Kan. 1980). *Cf.* Kraus v. Bd. of Tr. Of Pol. P. Fund, 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).

^{ccxii} See discussion of Colorado reforms, *supra* notes 76-78 and accompanying text.

^{ccxiii} First Amended Class Action Complaint at 8-9, Justus v. State, No. 2010-CV-1589 (Colo. Dist. Ct. Mar. 17, 2010).

^{ccxiv} Monahan, *supra* note 101; *see also* Monahan, *supra* note 134 (clarifying that her prior research reviewed twenty four jurisdictions).

^{ccxv} We agree with Professor Monahan that employees in non-Social Security states should fare no better under the first prong of the Contract Clause analysis, *id.* at 1078-79, but we believe this distinction is important in the second prong inquiring into the impact of the reform.

^{ccxvi} See, e.g., Monahan, *supra* note 134.

^{ccxvii} Energy Reserves Grp., Inc. v. Kan. Power & Light Co., 459 U.S. 400, 411-12 (1983).

^{ccxviii} U.S. Trust Co. of N.Y., 431 U.S. at 29-31 (“unforeseen and unintended”).

^{ccxix} Unlike the deference given legislatures in determining the existence of a contract, courts tend to scrutinize legislative justifications for changing contractual terms. See United States Trust, 431 U.S. at 25-26 (“Courts defer to a lesser degree when the State is a party to the contract because the State’s self-interest is at stake.”).

^{ccxx} Madden v. Contributory Ret. Appeal Bd., 729 N.E.2d 1095, 1098 (Mass. 2000) (citing a California decision) (finding 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).

^{ccxxi} 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. Employees Retirement Benefits Bd., 331 N.W.2d 740, 751 (Minn. 1983) (cutting expenditures at a time of fiscal distress is legitimate and significant public purpose).

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

^{ccxxiii} Baltimore Teachers Union v. Mayor and City Council of Baltimore, 6 F.3d 1012, 1020-21 (4th Cir. 1993).

^{ccxxiv} Whitney Cloud, Note, *State Pensions Deficits, The Recession, and a Modern View of the Contracts Clause*, 120 YALE L.J. 2199 (2011)

^{ccxxv} *See id.* at 2205.

^{ccxxvi} *See id.*; *see also* AFSCME v. City of Benton, Arkansas, 513 F.3d 874, 882 (8th Cir. 2008) (calling for an unprecedented emergencies, ' such as mass foreclosures caused by the Great Depression. . .); *Peterson v. Fire and Police Pension Association*, 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 54, at 46 ("Court holdings on the necessity exception tend to veer in different directions.").

^{ccxxvii} T. Leigh Anenson, *The Triumph of Equity: Equitable Estoppel in Modern Litigation*, 27 REV. LITIG. 377, 390-91 (2008); T. Leigh Anenson, *From Theory to Practice: Analyzing Equitable Estoppel Under a Pluralistic Model of Law*, 11 LEWIS & CLARK L. REV. 633, 660 (2007); T. Leigh Anenson, *Limiting Legal Remedies: An Analysis of Unclean Hands*, 99 KY. L.J. 63 (2010); *see also* T. Leigh Anenson, *The Role of Equity in Employment Noncompetition Cases*, 42 AM. BUS. L.J. 1, 47-48 (2005) (comparing equitable defenses).

^{ccxxviii} *See, e.g.*, Gina Raimondo, *Truth in Numbers: The Security and Sustainability of Rhode Island's Retirement System* (May 2011), available at <http://www.ricouncil94.org/Portals/0/Uploads/Documents/General%20Treasurer%20Raimondo%20report.pdf> ("In recent years, state aid to cities and towns, which is used mostly for K-12 education, has decreased annually by eight percent[.]").

^{ccxxix} We do not favor the kind of federal invention 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 57, at 434-36 (discussing the outlay of taxpayer dollars as a windfall to banks and not to borrowers).

^{ccxxx} These norms are implicit in the recent legal and economic literature on public pensions in the law and policy journals on pension reform and explicit in publications addressing other issues involving retirement income security. Brian J. Kreiswirth, *The Role of the Basic Public Pension in a Retirement Income Security System*, 19 COMP. LAB. L. & POL'Y 393 (1997-1998) (discussing values of fairness, adequacy, and efficiency); Robert Costrell, et al, "Fixing Teacher Pensions: Is it Enough to Adjust Existing Plans?," EDUCATION NEXT, Fall 2011, 60-69, http://educationnext.org/files/ednext_20114_forum.pdf (outlining economist debate over pension reform on grounds of equity (fairness) and efficiency); *see also* Monahan, *supra* note 134 (criticizing California rule of constitutional contract protection on grounds of inefficiency).

^{ccxxxi} *See, e.g.*, Hylton, *supra* note 57, at 4. *See generally* JOHN CULLIS & PHILIP JONES, PUBLIC FINANCE & PUBLIC CHOICE: ANALYTICAL PERSPECTIVES (3d ed. 2009).

^{ccxxxii} *See, e.g.*, West Virginia Booth v. Sims, 456 S.E.2d 167, 183 (W. Va. 1995) ("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."); Reinke, *supra* note 98 (detailing causes of pension underfunding to include states falling behind in their payments and ill-considered benefit increases).

^{ccxxxiii} Hylton, *supra* note 57, at 446; Olivia S. Mitchell & Robert S. Smith, *Pension Funding in the Public Sector*, 76 REV. ECON. & STAT. 278, 282-83 (1994).

^{ccxxxiv} See Hylton, *supra* note 57, at 445 (using California as an example of this phenomenon); Beermann, *supra* note 48, at 27; see also *Roads to Reform*, *supra* note 50 (noting that states have historically ignored their retirement obligations in both good times and bad).

^{ccxxxv} Hylton, *supra* note 57, at 421-22 (discussing how states lowered contribution levels and retirement ages).

^{ccxxxvi} *Id.* at 422 (citations omitted); see also *id.* (commenting that large numbers of public employees began receiving six figure pensions for the first time).

^{ccxxxvii} See, e.g., Darryl B. Simko, *Of Public Pensions, State Constitutional Contract Protection, and Fiscal Constraint*, 69 TEMP. L. REV. 1059, 1061 (1996) (“Borrowing pension monies and under-funding pension systems are the modern realizations of this potential for abuse [unknown in the private sector].”). Studies have examined other behaviors associated with the political dimension of public pensions. See David H. Webber, *Is Pay-to-Play Driving Public Pension Fund Activism in Securities Class Actions – An Empirical Study*, 90 B.U. L. REV. 2031 (2010) (questioning whether politicians drive pension funds to class action lawsuits in securities litigation).

^{ccxxxviii} See, e.g., Novy-Marx & Rauh, *supra* note 17, at 1213 (noting that the 116 state plans studied had \$1.94 trillion in total assets in 2009); W. Scott Simon, *Public Employee Pension Plan Trusts*, in THE PRUDENT INVESTOR ACT: A GUIDE TO UNDERSTANDING (2006) (commenting that \$2.75 trillion in state and municipal pension fund assets were spread among about 2,300 public employee pension plans in the U. S. at the end of 1999) (citing Greenwich Associates and the U.S. Census).

^{ccxxxix} See Olivia S. Mitchell & Robert S. Smith, *Pension Funding in the Public Sector*, 76 REV. ECON. & STAT. 278, 278 (1994) (discussing state government borrowing from public pension funds); see also Frederick M. Hess & Juliet P. Squire, *The False Promise of Public Pensions*, 158 POL’Y REV. 75-85 (2009) (commenting on the irresponsible oversight of pension fund assets).

^{ccxli} 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 (reporting findings of the Civic Federation, a Chicago research group sponsored by the business community, that Illinois has not paid its pension bill in full since 1970).

^{ccxlii} See, e.g., Ellman & Merrett, *supra* note 105 (detailing statistics on funding level decline for public pensions). Given the horrific budget issues facing most states, lawmakers will be even more apt to take funding holidays.

^{ccxliii} 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. *The Trillion Dollar Gap*, *supra* note 18 (reporting total shortfall more than \$1 trillion if retiree health care and other benefits included).

^{ccxliv} Beermann, *supra* note 49, at 26 (commenting that economists and political scientists began studying the problem as early as the 1970s); see also Ellman & Merrett, *supra* note 105 (considering the political dimension of public pension promises). For another extensive discussion, see Hylton, *supra* note 57; Simko, *supra* note 236.

^{ccxlv} Accord Simko, *supra* note 236, at 1061. Beermann explains that deficit spending is not universally bad. However, he concludes that it “seems to be intended more for political stimulus than economic stimulus.” Beermann, *supra* note 49, at 23. 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. *Id.* at 24. They are also out of office when the bill comes due. *Id.*

^{ccxlv} *Id.*

^{ccxlv} *Id.*

^{ccxlvii} We focus on funding policy shown to be the major concern with unfunded liabilities. See Costrell, et al, *supra* note 229 (noting studies indicating that fund mismanagement is not the primary cause of the pension deficit). There are, of course, alternative or additional options. States may choose to focus on future benefits, see Aaron Burgin, *Carlsbad pension reform initiative wins*, available at <http://web.signonsandiego.com/news/2010/Nov/02/Carlsbad-pension-reform-initiative-leading-in-early> (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* 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); Kathleen Paisley, *Public Pension Funds: the Need for Federal Regulation of Trustee Investment Decisions*, 4 *YALE L. & POL'Y REV.* 188 (1985-1986) (seeking federal regulation of trustee investment decisions); David Hess, *Empirical Evidence on the Effect of Governance Structures and Practices: Public Pension Fund Assets*, 39 *U.C. DAVIS L. REV.* 187 (2006).

^{ccxlvi} *Cf.* Reinke, *supra* note 98 (arguing that the federal government should 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).

^{ccxlix} The optimal funding level is beyond the scope of this article. *See* Forman, *supra* note 150, at 860 (urging full funding of public pensions despite potential misuse by employees and lawmakers); Norcross & Biggs, *supra* note 9, at 2 (discussing new statute in New Jersey that put on ballot constitutional requirement to fully fund pensions); Costrell et al., *supra* note 229 (outlining the problem of overfunding).

^{cccl} *See* Simko, *supra* note 236, at 1065-79 (listing states that already require adequate funding levels); *see also* Beermann, *supra* note 49, at 39 (commenting that any attempt to move to actuarially adequate funding may be impossible or extremely difficult for many states).

^{cccli} *See* Municipality of Anchorage v. Gallion, 944 P.2d 436 (Alaska 1997)); Valdes v. Cory, 89 Cal. Rptr. 212 (Cal. Ct. App. 1983); *see also* Stone v. State, 664 S.E.2d 32 (N.C. Ct. App. 2008) (citing opinions from other jurisdictions, including West Virginia, New York, Washington, Pennsylvania, and Wisconsin).

^{ccclii} *See* McNamee v. State, 672 N.E.2d 1159 (Illinois 1996).

^{cccliii} *See* Barbara A. Chaney, et al., *The Effect of Fiscal Stress and Balanced Budget Requirements on the Funding and Measurement of State Pension Obligations*, 21 *J. ACCOUNTING & PUB. POL'Y* 287, 293 (2002).

^{cccliv} *Id.* *See also* Beermann, *supra* note 49, at 33 (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”).

^{ccclv} Chaney, et al., *supra* note 250, at 307 (finding state balanced budget requirements negatively correlated with pension funding to full actuarial standards).

^{ccclvi} *Accord* Beermann, *supra* note 49, at 33. 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.

^{ccclvii} *Cf.* Ridgeley A. Scott, *A Skunk at a Garden Party: Remedies for Participants in State and Local Pension Plans*, 75 *DENV. U. L. REV.* 507 (1998) (advocating federal regulation of trust assets).

^{ccclviii} Beermann, *supra* note 49, at 20.

^{ccclix} Hylton, *supra* note 57, at 472-82.

^{ccclx} *Id.* at 476; *see also* Beermann, *supra* note 49, at 20-21 (providing example of excessive benefits due to legislative largesse and overly zealous unionized public school teachers in Rhode Island).

^{ccclxi} Hylton, *supra* note 57, at 476-80 (commenting that “the 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”) (citing Freedom of Association and the Right to Collective Bargaining, Int'l Labour Org., <http://www.ilo.org/global/topics/freedom-of-association-and-the-right-to-collective-bargaining/lang-en/index.htm> (last visited Sept. 27, 2011)). Other opponents to a ban on collective bargaining include Susan Brooks Thistlethwaite, We Need a New Social Gospel: The Moral Imperative of Collective Bargaining, *Wash. Post*, Feb. 23, 2011, http://onfaith.washingtonpost.com/onfaith/panelists/susan_brooks_thistlethwaite/2011/02/we_need_a_new_social_gospel_the_moral_imperative_of_collective_bargaining.html, Edgar Moore, Midlands Voices: Collective-Bargaining Rights Essential to Worker Dignity, *Omaha.com* (May 6, 2011), <http://www.omaha.com/article/20110506/NEWS0802/705069989/-1>, and Michael Zimmer, Collective

Bargaining as a Human Right, Michael Zimmer.org (Feb. 20, 2011), <http://michaelzimmer.org/2011/02/20/collective-bargaining-as-a-human-right/>. *Id.*

^{cclxii} *Id.* at 480-81.

^{cclxiii} *Id.*

^{cclxiv} *Id.*

^{cclxv} *Id.* (“When public employees strike, they strike against taxpayers.”).

^{cclxvi} *Id.*; see also Beermann, *supra* note 49 (explaining the unions have placed a higher priority on current wages than on adequate funding of pension promises). See generally Anne O. Krueger, *The Political Economy of the Rent-Seeking Society*, 64 AM. ECON. REV. 291 (1974).

^{cclxvii} Hylton, *supra* note 57, at 417 (noting that it may be necessary to prohibit bargaining over retirement income in extreme cases).

^{cclxviii} See Steven Greenhouse, *Strained States Turning to Laws to Curb Unions*, N.Y. TIMES, Jan. 4, 2011, at A1, available at <http://www.nytimes.com/2011/01/04/business/04labor.html?pagewanted=all> (reporting that “lawmakers in Indiana, Maine, Missouri and seven other states plan to introduce legislation that would bar private sector unions from forcing workers they represent to pay dues or fees, reducing the flow of funds into union treasuries”); Joe Newby, *Thousands Protest in Los Angeles in Support of Public Sector Unions*, Examiner.com (Mar. 28, 2011), <http://www.examiner.com/conservative-in-spokane/thousands-protest-los-angeles-support-of-public-sector-unions>; Mark Niquette & Stephanie Armour, *Democrats From Wisconsin, Indiana Take Haven in Illinois to Block Bills*, BLOOMBERG (Feb. 23, 2011), <http://www.bloomberg.com/news/2011-02-23/wisconsin-indiana-democrats-flee-to-illinois-to-block-union-rights-votes.html> (reporting that Democratic lawmakers are fleeing their states to stall votes on Republican-backed bills restricting union rights). Labor struggles in Wisconsin has received the most attention. See Secunda, *supra* note 52, at 263 (discussing pension reform bill in Wisconsin that strips most collective bargaining rights from most public-sector employees); Mark Trumbull, *Did Wisconsin choose nuclear option in collective bargaining fight?*, THE CHRISTIAN SCIENCE MONITOR (Mar. 9, 2011).

^{cclxix} See Rosalind S. Helderman, *Union-Free State Not Spared Fiscal Woes*, Wash. Post, Mar. 20, 2011, at C1, available at http://www.washingtonpost.com/local/politics/union-free-virginia-note-spared-state-pension-woes/2011/03/16/abkokfx_story.html (reporting that public pension problems in Virginia remain despite the lack of unions); Elizabeth G. Olson, *Are Public Unions Our Convenient Economic Scapegoats?*, CNN MONEY (Feb. 28, 2011), <http://management.fortune.cnn.com/2011/02/28/are-public-unions-our-convenient-economic-scapegoats> (blaming the economic downturn due to unvarnished greed and illegal activity in the financial markets for public pension liabilities). Compare Mary Williams Walsh, *The Burden of Pensions on States*, N.Y. TIMES, Mar. 10, 2011, <http://www.nytimes.com/2011/03/11/business/11pension.html?&usocore=r=1&ref=pensionsandretirementplans> (noting that collective bargaining does not appear to be the main factor driving pension costs higher" in Wisconsin) with Robert M. Costrell, *Oh, To Be a Teacher in Wisconsin: How can fringe benefits cost nearly as much as a worker's salary? Answer: collective bargaining.*, WALL ST. J. (Feb. 25, 2011) (blaming collective bargaining for the high cost of teacher fringe benefits).

^{cclxx} States like Texas have never permitted collective bargaining in the public sector. See Hylton, *supra* note 57, at 452-53 (noting that the prohibition did not stop morally hazardous behavior yet did make change easier to implement when the state could no longer afford its retirement benefits).

^{cclxxi} See Sabrina Tavernise, *Ohio Senate Passes Bill to Weaken Collective Bargaining Clout of Public Workers*, N.Y. TIMES, Mar. 3, 2011, <http://www.nytimes.com/2011/03/03/us/03states.html>.

^{cclxxii} Hylton, *supra* note 57, 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”).

^{cclxxiii} Stephen P. D’Arcy et al., *Optimal Funding of State Employee Pension System*, 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). For earlier reports of funding problems, see John E. Petersen, *In an Era of Uncertainty, States and Localities are Looking to Some Unusual Options*, GOVERNING, June 2004, at 54, 55–56, and Janice Revell, *The \$366 Billion Outrage*, FORTUNE, May 31, 2004, at 130.

^{cclxxiv} Lahey & Anenson, *supra* note 22, at 316.

^{cclxxv} *See id.*

^{cclxxvi} Beermann, *supra* note 49, at 24.

^{cclxxvii} *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).

^{cclxxviii} *See* Costrell, et al, *supra* note 236 (calling for transparency to defined benefit plan participants as well); Reinke, *supra* note 98 (discussing federal bill, Public Employee Pension Transparency Act, that 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, at 3A (Feb. 23, 2009).

^{cclxxix} There are different vesting requirements, fiduciary standards, and reporting rules. *See generally* CYNTHIA L. MOORE, PUBLIC PENSION PLANS: THE STATE REGULATORY FRAMEWORK (2d ed. 1993) (discussing various disclosure and reporting requirements in states). In a survey of state and local government pension funds by the Government Finance Officers Association and the Public Pension Coordinating Council, 90% had an annual report, but half of those systems distributed it only on demand. Hess, *supra* note 19, at 191, 210.

^{cclxxx} *See* 2005 WILSHIRE REPORT, *supra* note 1, at 3.

^{cclxxxi} *See generally* 2005 WILSHIRE REPORT, *supra* note 1; *see also id.* at 3 (noting that even for those systems seeking to report in a timely manner, it often takes six months to a year for actuaries to determine values).

^{cclxxxii} *See id.*; *see also* Mitchell et al., *supra* note 14, at 23–25 (discussing various methods used by actuaries to determine pension plan liabilities); Tongxuan Yang & Olivia S. Mitchell, *Public Pension Governance, Funding, and Performance: A Longitudinal Appraisal* (Pension Research Council Working Paper 2005), available at <http://prc.wharton.upenn.edu/prc/prc.html> (highlighting the lack of national regulation and conformity about funding targets, management of funds, investment alternatives, and reporting of performance).

^{cclxxxiii} NAT'L EDUC. ASS'N, *supra* note 67, at 70–71.

^{cclxxxiv} *See id.* at 70–77; *see also* Karen Eilers Lahey et al., *Retirement Plans for College Faculty at Public Institutions*, 17 FIN. SERV. REV. 323-41 (2008) (evaluating the risk and return of defined benefit and defined contribution plans of the largest four-year public institutions of higher education in all fifty states).

^{cclxxxv} NAT'L EDUC. ASS'N, *supra* note 67, at 70–77.

^{cclxxxvi} *See* Lahey & Anenson, *supra* note 22, at 329-31; *see also* Unif. Mgmt. of Pub. Employee Ret. Sys. Act, 7A U.L.A. 336 (1998), available at <http://www.law.upenn.edu/bl/ulc/ulc.htm#mpersa> (last visited Jan. 20, 2013). For a summary of the Act by one of its reporters, *see generally* Steven L. Willborn, *Public Pensions and the Uniform Management of Public Employee Retirement Systems Act*, 51 RUTGERS L. REV. 141 (1998). The goal of transparency in order to permit public monitoring led the National Conference of Commissioners on Uniform State Laws to approve the Uniform Management of Public Employees Retirement Systems Act (UMPERS) in 1997. *See* Lahey & Anenson, *supra* note 22, at 329-30.

^{cclxxxvii} *See also* Daniel J. Kaspar, *Defined Benefits, Undefined Costs: Moving Toward a More Transparent Accounting of State Public Employee Pension Plans*, 3 W. & M. POL'Y REV. 1 (2011), available at <http://ssrn.com/abstract=1926234> (proposing federal legislation that mandates states to adopt a uniform standard for the reporting and valuation of pension funding).

^{cclxxxviii} Sections thirteen through eighteen address the reporting and disclosure requirements of the Act. Unif. Mgmt. of Pub. Employee Ret. Sys. Act, §§ 13–18, 7A pt.3 U.L.A. 75–85 (2006). UMPERS establishes the standards of

fiduciary conduct. *See* Willborn, *supra* note 283, at 141. UMPERS also establishes the standards of fiduciary conduct. *See* Willborn, *supra* note 283, at 141.

^{cclxxxix} *See id.* § 16.

^{ccxc} *See id.*

^{ccxc} *See id.* § 13(b)(2)–(3); *see also id.* § 14(a)(1)–(3). It has the same wide distribution requirements as the summary plan description. *See id.* §§ 13(b)(5), 14(a)(4).

^{ccxcii} *See id.* § 17.

^{ccxciii} *See id.* §§ 13(b), 14.

^{ccxciv} *See id.* § 18.

^{ccxcv} Eight years after its approval by the Uniform Law Commission, Wyoming became the first state to adopt the Uniform Management of Public Employees Retirement Systems Act on February 25, 2005. Press Release, Nat'l Conference of Comm'rs on Unif. State Laws, Unif. Law Comm'rs, Wyoming Enacts Important State Law on Managing Public Employee Retirement Systems (Mar. 18, 2005), *available at* <http://www.nccusl.org/Update/DesktopModules/NewsDisplay.aspx?ItemID=134>. The law became effective July 1, 2006. *Id.*

^{ccxcvi} Maryland's pension fund management had been subject to public scrutiny. *See, e.g.,* Stephanie Hanes, *Chapman Draws 7½-Year Prison Term*, BALTIMORE SUN, Nov. 2, 2004, at 1A; Michael Dresser & Jon Morgan, *Md. Pension Trustees Are Often Absent*, BALTIMORE SUN, Nov. 18, 2001, at 1B; Jon Morgan *et al.*, *Questions Abound in Pension's Fiscal Skid*, BALTIMORE SUN, Nov. 15, 2001, at 1A.

^{ccxcvii} *See* Nat'l Conference of Comm'rs on Unif. State Laws, *A Few Facts About The Uniform Management of Public Employee Retirement Systems Act (1997)*, http://www.nccusl.org/Update/uniformact_factsheets/uniformacts-fs-umpersa.asp. The South Carolina legislature incorporated the fiduciary portions of UMPERSA into its Code in 1998. W. Scott Simon, *Public Employee Pension Plan Trusts*, in *THE PRUDENT INVESTOR ACT: A GUIDE TO UNDERSTANDING* (2006).

^{ccxcviii} *See, e.g.,* Beermann, *supra* note 49. *See generally* Fred J. Giertz & Leslie E. Papke, *Public pension plans: Myths and realities for state budgets*, 60 NAT. TAX J. 305-23 (2007) (finding evidence that assumptions are manipulated in order to lower the necessary contributions to the pension plans).

^{ccxcix} Norcross & Biggs, *supra* note 9, 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.” *Id.* at 2 n.6.

^{ccc} *See, e.g.,* Novy-Marx & Rauh, *supra* note 17, 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); BARRO & BUCK, *supra* note 10, at 5-6. For an explanation of the two competing theories-- market and actuarial-- for accurate valuation of state pension plans, see Kaspar, *supra* note 286, at 12-16.

In addition to choosing a rate with 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* M. Barton Waring, *Liability-Relative Investing*, 30 J. PORT. MGT. __ (2008) (finding that the mid-point of a public pension's stream of future benefit payments is around 15 years in the future and, accordingly, a lump sum payment in 15 years can be treated as the annual benefit liabilities owed by a plan). *Accord* Norcross & Biggs, *supra* note 10, at 1; *see also* Hylton, *supra* note 57, 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”).

^{ccci} *Accord* Beerman at 33. 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 57, at 423-30 (noting that GASB 45 mimicked 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* Governmental Accounting Standards Bd. (GASB), Other Postemployment Benefits: A Plain-Language Summary of GASB Statements No. 43 and No. 45 (2004) [hereinafter GASB Statements], available at <http://www.gasb.org/cs/BlobServer?blobcol=urldata&blobtable=MungoBlobs&blobkey=id&blobwhere=1175820457538&blobheader=application%2Fpdf>. States need not follow the standards in the first place. Texas went so far as to block their implementation by statute. Hylton, *supra* note 56, at 424 (citations omitted).

^{ccci} BARRO & BUCK, *supra* note 10, at 5; *see also* Norcross & Biggs, *supra* note 10, at 1 n.1 (applying a discount rate of 3.5%, the yield on Treasury bonds with a maturity of 15 years as of May 27, 2010); Novy-Marx & Rauh, *supra* note 17, at 1217-18, 1246 (noting states use an 8% 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* STANFORD INSTITUTE FOR ECONOMIC POLICY RESEARCH, GOING FOR BROKE: REFORMING CALIFORNIA’S PUBLIC EMPLOYEE PENSION SYSTEMS 2 (2010), http://siepr.stanford.edu/system/files/shared/GoingforBroke_pb.pdf.

^{ccci} BARRO & BUCK, *supra* note 10, at 5.

^{ccci} Norcross & Biggs, *supra* note 10, 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 percent annual return that New Jersey predicts it can achieve on funds’ investment portfolios).

^{ccci} STANFORD INSTITUTE FOR ECONOMIC POLICY RESEARCH, *supra* note 299 (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%).

^{ccci} *Accord*, e.g., Kaspar, *supra* note 286, at 2, 19; *see also* Hylton, *supra* note 57, at 418-23 (explaining that many private sector companies made significant changes to plans and were able to reduce costs after being forced by the Financial Accounting Standards Board (FASB) in 1993 to confront the true cost of their pensions). For the same reasons of accuracy and accountability, scholars have called for changes in the accounting method when reporting on Social Security trust funds. *See generally* Jackson E. Howell, *Accounting for Social Security and Its Reform*, 41 HARV. J. ON LEGIS. 59 (2004).

^{ccci} Ellman & Merrett, *supra* note 105. Recent data from the Bureau of Labor of Statistics show that public pension obligations account for almost 17 percent of all public debt in the United States. Yet, for states as a whole, it is less than one percent of total spending. NASRA Issue Brief 2012, *supra* note 3, at 3.

^{ccci} NASRA Issue Brief 2012, *supra* note 3, at 1, 3; Ellman & Merrett, *supra* note 105 (providing statistics on funding level declines).

^{ccci} *See* discussion *supra* Part II.B.

^{ccci} Costrell et al., *supra* note 229 (citing literature); Deborah Kemp, *Public Pension Plans: The Need for Federal Regulation*, 10 HAMLIN L. REV. 27 (1987) (“The impetus for this expansion [of public pensions] is the need to induce individuals to accept lowering paying government employment over jobs in private industry.”); Steven E. Achelpohl, *Public Pensions in Nebraska: Good News for the Public Employee*, 16 CREIGHTON L. REV. 63 (1982-83) (noting that lower salary levels frequently means that financial security at retirement represents the major inducement to a person weighing government service); Michael Corkery, *Pension Crisis Looms Despite Cuts*, WALL ST.J.COM, (Sept. 21, 2012) (“Part of the attraction of public service jobs has been guaranteed pensions and other benefits.”); Achelpohl, *supra* (commenting that good government in the future turns on the ability to attract capable people and explaining that the public pension boom was due to competitive pressure from the increase in private

pension coverage). 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 M.R.S.A. Sec. 17050 (1989).

^{cccxi} Monahan, *supra* note 102 (citing Costrell & Podgursky 2009).

^{cccxi} *Roads to Reform*, *supra* note 50. Suggestions made by professionals and organizations ranged from incremental changes of existing plans to a more drastic overhaul of plan structure. *Id.*

^{cccxiii} Employer contributions account for 28 percent, employee contributions 12 percent, with investment returns making up the remaining amount. NASRA Issue Brief 2012, *supra* note 3, at 3 (employees contribute 4-8 percent of their pay to retirement); *see also* National Association of State Retirement Administrators, Issue Brief: Public Pension Plan Investment Returns, October 2011, <http://www.nasra.org/resources/InvestmentReturnBrief.pdf>.

^{cccxiv} *Id.*

^{cccxv} *See* Table 4.

^{cccxvi} Part II.A. *See also* Beermann, *supra* note 49 (pension spiking); Hylton, *supra* note 57, 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 90% of this “final salary”—an amount often greater than the retiree's true base pay).

^{cccxvii} *The Trillion Dollar Gap*, *supra* note 19.

^{cccxviii} *Id.*

^{cccxix} *Id.*

^{cccxx} *Id.*

^{cccxxi} *Id.*

^{cccxxii} *Id.*

^{cccxxiii} *Id.*

^{cccxxiv} *Id.*

^{cccxxv} *Id.* The only guarantee is the base benefit. *Id.*

^{cccxxvi} Lahey & Anenson, *supra* note 22, 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 ADMINISTRATION 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).

^{cccxxvii} *See* Lahey & Anenson, *supra* note 22, at 321-25 (discussing the defined contribution plan option). For more discussion between choice of plan, *see also* Jonathan Barry Forman, *Public Pensions: Choosing between Defined Benefit and Defined Contribution Plans*, 1999 L. REV. M.S.U.-D.C.L. 187; Forman, *supra* note 150, at 837.

^{cccxxviii} Robert M. Costrell, "GASB Won't Let Me": A False Objection to Pension Reform, Policy Perspective Published by The Laura and John Arnold Foundation (2012) (arguing that plans should tie benefits to contributions).

^{cccxxix} *See id.*

^{cccxxx} Pension Coverage and Retirement Security, Center for Retirement Research at Boston College (Dec. 22, 2009). Pension coverage has also declined in the private sector. EBRI Issue Brief (Nov. 2009), available at www.ebri.org. By 2030, life expectancy at age 65 is expected to be 17.5 years for men (82.5 years of age) and 21 years (86.1 years of age) for women. Alicia H. Munnell, *The Financial Crisis and Restoring Retirement Security*, Testimony before the Committee on Education and Labor, U.S. House of Representatives, Feb. 24, 2009 (citing the 2008 Annual

Report of the board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds).

^{ccccxxi} Pension Coverage and Retirement Security, Center for Retirement Research at Boston College (Dec. 22, 2009).

^{ccccxxii} For a discussion of providing a federal guarantee for defined contribution plans in the private sector, see THERESA GHILARDUCCI, *WHEN I'M SIXTY-FOUR: THE PLOT AGAINST PENSIONS AND THE PLAN TO SAVE THEM* (2008); Regina Jefferson, *Rethinking the Risk of Defined Contribution Plans*, 4 FLA. TAX REV. 607, 640-41 (2000). *See also* Hylton, *supra* note 57, 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); *id.* (outlining the plan and its advantages (citing Thrift Savings Plan, <https://www.tsp.gov/planparticipation/about.shtml> (last visited Jan. 2, 2013))).

^{ccccxxiii} Costrell et al., *supra* note 229. In New York, Pennsylvania, and Alabama, new hires will receive 10 to 20 percent less in retirement than current workers. *See* Hincken, *supra* note 4, at 1; *see also id.* (considering the case of new California state highway patrol officer who will receive \$900,000 less than his colleagues over the course of a 30-year retirement).

^{ccccxxiv} Lahey & Anenson, *supra* note 22, at 325.

^{ccccxxv} *See id.*; Alicia H. Munnell et al., *Why Some States Introduced Defined Contribution Plans?*, CENTER FOR RETIREMENT RESEARCH AT BOSTON COLLEGE (2008). Other states include North Dakota, Washington, Montana, Florida and South Carolina. *Id.* California and Maine also offer the defined contribution plan option to employees, but is only as a supplemental plan. <http://www.calstrs.com/about%20calstrs/ataglance.aspx>; http://www.maineper.org/FAQs/Active_Members_FAQs.htm.

^{ccccxxvi} Frederick M. Hess & Juliet P. Squire, *The False Promise of Public Pensions*, 158 POL'Y REV. 75-85 (2009) (discussing outmoded paradigm of teaching as a profession that is not in a mobile workforce); Robert M. Costrell & Michael Podgursky, *Golden Handcuffs*, EDUC. NEXT 61 (Winter 2010).

^{ccccxxvii} *Id.*

^{ccccxxviii} *See supra* discussion in Part I.B. of the differences in defined benefit plan membership between Social Security and non-Social Security states.

^{ccccxxix} *See* Christian E. Weller, *Buyer Beware: The Risks to Teacher Effectiveness from Changing Retirement Benefits*, Issue Brief, Center for American Progress (Sept. 2011).

^{cccxl} Costrell, et al, *supra* note 229, at 67. It is unlikely that teachers, especially those with tenure, would return to the private sector in order to receive a better pension. *Employee Commitment to Worker's Retirement Plans Has Declined Over Last Decade, Watson Wyatt Analysis Finds* (Oct. 21, 2009) (showing benefit values as a percentage of pay in the private sector has dropped over the last decade).

^{cccxli} Costrell et al, *supra* note 229. *Contra id.* (Costrell & Podgursky position).

^{cccxlii} Munnell et al., *supra* note 334.

^{cccxlili} *Id.*

^{cccxliv} *Annual State and Local Government Employee-Retirement Systems Survey*, U.S. Census Bureau (2006); *the Defined Benefit Versus Defined Contribution Debate: The \$250 Million Question*, Illinois Municipal Retirement Fund (1999). *See also* Munnell et al., *supra* note 334.

^{cccxlv} Costrell, et al., *supra* note 229, at 69 (discussing Alaska's consideration of returning to the defined benefit plan and West Virginia which did in fact return to the defined benefit plan); *see also The Trillion Dollar Gap*, *supra* note 19.

^{cccxlvi} Richard J Bottelli, Jr. & Zorast Wadia, *Cash Balance Renaissance*, 26 BENEFITS QUARTERLY 25, 26-28 (2010).

^{cccxlvii} *Id.*

^{cccxlviii} Costrell, et al., *supra* note 229, at 64 (Costrell and Podgursky 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 4, 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).

^{cccxlx} Louisiana's new cash balance plan has been ruled unconstitutional by a trial judge for not receiving the requisite vote of the state legislature. *Id.* The decision has been appealed. *Id.* Kansas, where employees do contribute to Social Security, will also make cash balance plans available for new employees beginning January 2015. Other Social Security states whose pension reform included provisions for mandatory or optional hybrid plans for new employees include Michigan (2010), Rhode Island (2012), Tennessee (2012), and Virginia (2014). Washington switched new employees into a hybrid plan in 1998.

^{cccl} 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).

^{cccli} Dorothy A. Brown et al., *Social Security Reform: Risks, Returns, and Race*, CORNELL J. L. & PUB. POL'Y 633 (1999-2000).

^{ccclii} 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." 42 U.S.C. § 401 (1935).

^{cccliii} *Id.* To receive the lifetime retirement benefits a worker must have 40 credits of covered work and can begin receiving the benefits at age 62. *Id.*

^{cccliv} See Olivia S. Mitchell, et al., *Social Security Earnings and Projected Benefits*, in FORECASTING RETIREMENT NEEDS AND RETIREMENT WEALTH 327 (Olivia S. Mitchell, P. Brett Hammond, & Anna M. Rappaport eds., 2000) (showing uncertainty of future benefits under the Social Security System). Changes to Social Security seem inevitable, see Benjamin A. Templin, *Full Funding: The Future of Social Security*, 22 J. L. & POL. 395 (2006) (discussing the reasons behind the Social Security funding crisis), which has inspired a lively debate. PETER A. DIAMOND & PETER R. ORSZAG, SAVING SOCIAL SECURITY: A BALANCED APPROACH 23, 83, 87-88, 93, 167-70, 183 (2004); Dorothy A. Brown et al., *Social Security Reform: Risks, Returns, and Race*, 9 CORNELL J. L. & PUB. POL'Y 633 (1999-2000) (discussing potential changes to Social Security reform from modest adjustments to a privatized system); Peter Diamond, *Reforming Public Pensions in the US and the UK*, 116 ECON. J. F94-F118 (2006) (describing the political debate on reforming Social Security in the U.S.); Justin Zimmerman, *Incentivizing Work at Older Ages: The Need for Social Security Reforms*, 19 ELDER L.J. 485 (2012).

^{ccclv} Brown et al., *supra* note 348, at 633 (citing U.S. Soc. Sec. Admin., *Income of the Population 55 or Older*, 1996 133 tbl.VIII.5 (1998)).

^{ccclvi} *Id.* (citing U.S. Soc. Sec. Admin., *Income of the Population 55 or Older*, 1996, 93 tbl.VI.A.1 (1998)).

^{ccclvii} Patricia E. Dilley, *Hope We Die Before We Get Old: The Attack on Retirement*, 12 ELDER L.J. 245 (2004) (discussing pensions, personal savings, and Social Security, as the "three legged stool" of retirement); Patricia E. Dilley, *Evolution of Entitlement: Retirement Income and the Problem of Integrating Private Pensions and Social Security*, 30 LOY. L.A. L. REV. 1063 (1996-1997).

^{ccclviii} *Id.*; see also Table 1. According to the Bureau of Labor Statistics in December 2011 there were 153,302,000 people in the labor force and 139,551,000 employed. *Employment Situation Summary Table A. Household Data, seasonally adjusted*, Bureau of Labor Statistics, available at <http://www.bls.gov/news.release/empsit.a.htm> (last accessed March 22, 2011). In 2011, there were around 25 million public sector employees. *Id.*

^{ccclix} *Id.* 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. *Id.* (discussing covered workers in commerce and industries other than railroads) *Teachers and Social Security*, September 7 2006, available at <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. 6635, 76th Cong. (1939) (enacted) (adding child, spouse, and survivor benefits to wives and widows over age sixty-five and children under eighteen); H.R. Res. 7225, 84th Cong. (1956) (enacted) (offering a Disability Insurance Program). 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 (2011) (allowing coverage of all state employees except for police and firefighters covered under a public retirement system); see also P.L. 103-432, Approved Oct. 31, 1994 (108 Stat. 4398) (extending coverage to police officers and firefighters). In 1991, Congress amended the law to provide that state and local government employees are subject to mandatory Social Security coverage unless they are members of a public retirement system or covered under a “Section 218 Agreement.” Dawn Nuschler, et al., *Social Security: Mandatory Coverage of New State and Local Government Employees*, CONGRESSIONAL RESEARCH SERVICE, July 25, 2011. Available at <http://www.nasra.org/resources/CRS%202011%20Report.pdf> , last accessed 2/23/12).

^{ccclx} See *supra* Part I.B.

^{ccclxi} *Population Distribution and Change: 2000 to 2010*, 2010 Census Briefs (2011), available at <http://www.census.gov/prod/cen2010/briefs/c2010br-01.pdf> (last accessed March 22, 2012). The two largest populations both are included in the group of states that do not contribute to Social Security and are California with 33,871,648 and Texas with 20,851,820. *Id.*

^{ccclxii} Simply adding Social Security coverage would not necessarily provide better benefit protections than what is already provided by the state because the effect of adding coverage would depend on exactly how state and local governments modify their existing plans to allow this extra coverage. Nuschler, *supra* note 356.

^{ccclxiii} *Id.* In 1983, Congress amended the Social Security Act to eliminate the windfall that occurred under the previous law which allowed a person to collect Social Security earned from a previous job in addition to collecting his or her pension benefits from public employment. *SSA PUBL. NO. 05-10045*, SOCIAL SECURITY ADMINISTRATION (2012) available at <http://www.ssa.gov/pubs/10045.html> (Windfall Elimination Provision); *Teachers and Social Security*, CONNECTICUT GENERAL ASSEMBLY REPORT, September 7 2006, available at <http://www.cga.ct.gov/2006/rpt/2006-R-0547.htm>, last accessed 3/7/12).

^{ccclxiv} *Id.*

^{ccclxv} *Id.* “The extent of cost increases would depend on how states and localities adjust their existing pension plans in response to mandatory Social Security coverage.” *Id.*

^{ccclxvi} 26 U.S.C. § 21 (2007) (Federal Insurance Contributions Act (FICA) tax). It was also designed as protection against socially recognizable conditions, including poverty, old age and disability. See *Brief History of Public Pensions in the United States and Kansas*, KANSAS LEGISLATIVE RESEARCH DEPARTMENT, September 16, 2011. Available at <http://kslegislature.org/klrd> (last accessed 2/23/11).

^{ccclxvii} *Teachers and Social Security*, CONNECTICUT GENERAL ASSEMBLY REPORT, September 7 2006. Available at <http://www.cga.ct.gov/2006/rpt/2006-R-0547.htm> , last accessed 2/7/13). There is a maximum taxable earnings amount for Social Security of \$110,100 for 2012. See *ssa.gov*. See also 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. Husted eds., 2001) (explaining that those systems whose participants do not pay social security will have higher retirement benefits to make up for not receiving social security benefits).

^{ccclxviii} *Id.* It is likely that the state would redesign the plan to offset some of the benefits of adding Social Security with the contribution rates. *Id.*

^{ccclxix} Maine created a task force that generated a report in 2009. ME. UNIFIED RET. PLAN TASK FORCE, TASK FORCE STUDY AND REPORT: MAINE STATE EMPLOYEE AND TEACHER UNIFIED RETIREMENT PLAN (2010), available at <http://www.maineperc.org/PDFs/other%20publications/MainePERS%20Final%20URP%20Task%20Force%20Report%3#-9-2010.pdf>. See also Hylton, *supra* note 57 (noting that the pension shortfall in Maine was directly attributable to investment losses and not to overly generous pension promises).

^{ccclxx} See Mary Williams Walsh, *Maine Giving Social Security Another Look*, N.Y. TIMES, July 21, 2010, at A1, available at <http://www.nytimes.com/2010/07/21/business/economy/21states.html>; Hylton, *supra* note 57 (advising that “Maine will have to come up with a considerable sum to sustain its existing pension plan, presumably through some combination of taxes and service cuts”).

^{ccclxxi} 42 U.S.C. § 418.

^{ccclxxii} Dawn Nuschler, et al., *Social Security: Mandatory Coverage of New State and Local Government Employees*, CONGRESSIONAL RESEARCH SERVICE, July 25, 2011, available at <http://www.nasra.org/resources/CRS%202011%20Report.pdf>, last accessed 2/23/12).

^{ccclxxiii} 42 U.S.C. § 418. “Section 218 Agreements” cover positions not individuals. Public employees brought under a Section 218 Agreement in groups known as coverage groups. *Id.*

^{ccclxxiv} 42 U.S.C. § 418(d)(3). In 1955, Congress passed a law that allowed public employees who already had public pensions to elect Social Security coverage through “Section 218 Agreements” by conducting employee referendums.

^{ccclxxv} *Id.* There have been proposals involving extending mandatory Social Security coverage to all newly hired public employees. This is in response to projected Social Security shortfalls. *Id.*

^{ccclxxvi} *Id.* “Further amendments 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.” Nuschler, *supra* note 356.

^{ccclxxvii} *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 held that the law was valid. *Id.*

^{ccclxxviii} H.R. Res. 1900, 98th Congress (1983) (enacted). Some state retirement systems have placed bans on social security coverage and have prohibited members from holding another referendum, such as Connecticut Teachers’ Retirement System. See e.g. *Teachers and Social Security*, CONNECTICUT GENERAL ASSEMBLY REPORT, September 7 2006. Available at <http://www.cga.ct.gov/2006/rpt/2006-R-0547.htm>, last accessed 3/7/12).

^{ccclxxix} See Nuschler, *supra* note 356; Bipartisan Policy Center, *Restoring America’s Future: Reviving the Economy, Cutting Spending and Debt, and Creating a Simple, Pro-Growth Tax System*, The Debt Reduction Task Force, Senator Pete Domenici and Dr. Alice Rivlin, Co-Chairs, November 2010, pages 19 and 79, <http://bipartisanpolicy.org/sites/default/files/BPC%20FINAL%20REPORT%20FOR%20PRINTER%2002%2028%2011.pdf>.

^{ccclxxx} *Id.*

^{ccclxxxi} *Id.*

^{ccclxxxii} *Id.*

^{ccclxxxiii} 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, *supra* note 24, at 7 (noting that personal savings rates are “running at historically low levels”).

^{ccclxxxiv} The PBGC guarantees the payment of basic pension benefits either by becoming the trustee of under-funded 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). 2005 PERFORMANCE & ACCOUNTABILITY REPORT, PENSION BENEFIT GUARANTY CORPORATION 6, 10 (Nov. 15, 2005) [hereinafter 2005 PBGC Performance & Accountability Report]. The PBGC separately operates single-employer and multiemployer pension programs. The PBGC's obligations begin upon plan termination for single-employer pensions and upon insolvency for the multiemployer pensions.

^{ccclxxxv} *Id.* at 11. Other funding comes from employer under-funding liability payments, income earned on investments, and any assets taken over from failed plans. *Id.*; see also 29 U.S.C. §§ 1306-1307 (2000) (addressing premium rates). 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 381, at 3.

^{ccclxxxvi} 2005 PBGC PERFORMANCE & ACCOUNTABILITY REPORT, *supra* note 381, at 11.

^{ccclxxxvii} 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. 193-210 (1999) (positing that the PBGC guarantee encourages more risk taking regarding pension investments by corporate sponsors).

^{ccclxxxviii} R. Eden Martin, *Unfunded Public Pensions—The Next Quagmire* (Aug. 19, 2010) (advising that “[t]he next big issue on the national political horizon” is whether the federal government should bailout the many states across the country with “overly generous and badly underfunded pension plans”).

^{ccclxxxix} Martin, *supra* note 385. Due to the number of plan failures and the failing financial health of major industries, the PBGC has an exploding deficit and faces tremendous future exposure. 2004 ANNUAL REPORT, PENSION BENEFIT GUARANTY CORPORATION 10 (Mar. 1, 2005) (Executive Director's Report); 2005 PBGC PERFORMANCE & ACCOUNTABILITY REPORT, *supra* note 381, at 1. See also T. Leigh Anenson & Karen Eilers Lahey, *The Crisis in Corporate America: Private Pension Liability and Proposals for Reform*, 9 U. PENN. J. LABOR & EMP. L. 495, 504-10 (2007) (analyzing the fiscal distress of the PBGC and suggesting reforms).

^{cccc} 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 Hylton, *supra* note 57 (providing city and county examples that have restructured pension debt through bankruptcy); Ellman & Merrett, *supra* note 105 (focusing on cities rather than states ability to use bankruptcy to solve their pension problems).

^{cccci} Martin, *supra* note 385 (citing Joshua Rauh & Robert Novy-Marx, THE ECONOMIST VOICE); see also Reinke, *supra* note 98 (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. As discussed in Part II.A., Alaska and Illinois issued bonds to fund their pension obligations. 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. BUDG., 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 22, at 321-22 (cautioning against the continued use of bonds as a stop-gap measure that gambles on economic upswings or other uncertainties); see also Hylton, *supra* note 57, at 430-31 (describing the government bond debacle after GASB 45 became effective that was a boon for Wall Street banks); THAD CALABRESE, SOC'Y OF ACTUARIES, PUBLIC PENSIONS, PUBLIC BUDGETS, AND THE RISKS OF PENSION OBLIGATION BONDS, 7-11 (2010), available at <http://www.soa.org/library/monographs/retirement-systems/public-pension-finance/2010/june/mono-2010-mrs10-calabrese.pdf> (outlining risk of bonds).

^{ccccii} Paine & Schleicher, *supra* note 8, at 4, 14.

^{cccciii} Costrell et al., *supra* note 229 (“Teacher benefits have become a flashpoint in the education debate.”).

^{cccciv} DIOGENES LAERTIUS, 1 LIVES OF EMINENT PHILOSOPHERS 463 (trans. R. D. Hicks 1942) (attributing sentiment to Aristotle).

^{cccxcv} *Public Pension Plan Database*, CENTER FOR RETIREMENT RESEARCH AT BOSTON COLLEGE, available at <http://pubplans.bc.edu/pls/htmldb/f?p=198:3:3062121679734452::NO::> (last accessed 12/7/12).

^{cccxcvi} *Public Pension Plan Database*, CENTER FOR RETIREMENT RESEARCH AT BOSTON COLLEGE available at <http://pubplans.bc.edu/pls/htmldb/f?p=198:3:3062121679734452::NO::> (last accessed 3/7/12).

^{cccxcvii} *2010 Comparative Study of Major Public Employee Retirement Systems*, WISCONSIN LEGISLATIVE COUNCIL (2011).

^{cccxcviii} *Public Pension Plan Database*, CENTER FOR RETIREMENT RESEARCH AT BOSTON COLLEGE available at <http://pubplans.bc.edu/pls/htmldb/f?p=198:3:3062121679734452::NO::> (last accessed 3/7/12).

^{cccxcix} *Pensions and Retirement Plans – Resources*, NATIONAL CONFERENCE OF STATE LEGISLATURES (2012), available at <http://www.ncsl.org/issues-research/labor/pension-and-retirement-legislative-summaries-and-r.aspx> (last accessed 3/7/12).

^{cd} Social Security Act of 1935, 42 U.S.C. § 401 (1935).

^{cdi} H.R. Res. 6635, 76th Cong. (1939) (enacted).

^{cdii} 42 U.S.C § 418 (2011).

^{cdiii} 42 U.S.C § 418 (2011).

^{cdiv} H.R. Res. 7225, 84th Cong. (1956) (enacted).

^{cdv} 1965 Pub. L. 89-97, 19 Stat. 286, enacted July 30, 1965.

^{cdvi} 1972 Pub. L. 92-603 enacted on Oct. 30, 1972.

^{cdvii} H.R. Res. 9346, 95th Cong.(1977) (enacted)

^{cdviii} H.R. Res. 1900, 98th Congress (1983) (enacted).

^{cdix} *Id.*

^{cdx} 1987 Pub. L. 100-203, 101 Stat. 1330, enacted Dec. 22, 1987

^{cdxi} Reconciliation Act of 1990, Pub. L. 101-508, 101 Stat. 1388 enacted 1990

^{cdxii} 1994. P.L. 103-432, Approved Oct. 31, 1994 (108 Stat. 4398).