Transform or Tweak: Concerns About the Financial Sustainability and Labor Market Effects of Teacher Retirement Systems

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"Concerns" about the financial health of teacher pension funds and their role in the labor market for teachers are addressed in this paper by focusing on the accounting and actuarial practices public pension funds use to both avert financial trauma during market downturns and discourage financial optimism during market upturns, possibly leading to reduced employer contributions or unfunded benefit improvements. Retirement plans do not need to be redesigned for a younger, itinerant teacher workforce because teacher turnover for brand new teachers has actually changed little over the past two decades and that turnover was higher 40 years ago. Teachers are already in the midst of their retirement surge, well ahead of the baby boomers they taught. Unlike Social Security, teacher retirement system benefits are paid for in advance by contributions they and their employers made over decades and the investment earnings of those contributions. Teacher retirement systems are still as close to fully funded as they have ever been historically.

This paper demonstrates that adapting private sector retirement practices to teacher pension funds would lead to reduced benefits and more exposure of retirees to market volubility without a reduction in employer costs. The investment *efficiency* of traditional public sector pension plans, compared to the 401-K type retirement plans common in the private sector, is created by pooling risk and reducing sizable administrative expenses associated with individual retirement accounts. These investment efficiencies are not as available in the private sector. Unlike governments, even the largest private sector businesses can go out of business and individual retirement accounts are one way to protect the retirement of private sector employees. In addition to the loss in investment efficiency, the switch to an individual retirement account system actually increases taxpayer costs in the short-run and should be made when state revenues are running high.

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Transform or Tweak: Concerns About the Financial Sustainability and Labor Market Effects of Teacher Retirement Systems

Teacher pension funds have emerged as a significant education policy issue not only over concerns of affordability but also over concerns about their impact on teacher labor markets. Policymakers worry about the impending retirement of large numbers of teachers, the impact of the financial meltdown on taxpayer support of retirement systems, increasing mobility among entering teachers, and the affordability of "generous" retirement benefits compared to private sector retirement plans.

For example, the National Commission on Teaching and America's Future (NCTAF, 2009) urges states and school districts to reexamine the fiscal consequences of pension plan provisions that push teachers in their fifties out of the workforce. They argue that in some states, retirement "bumps" that encourage teachers to retire early ultimately strain the finances of the retirees. At the same time, the NCTAF study suggests that early-out provisions create additional stress on public pension systems that have already experienced a significant financial decline and "could be strained to the breaking point."

This paper addresses "concerns" such as those raised by NCTAF about the financial health of teacher pension funds and their role in the labor market for teachers. It focuses on the accounting and actuarial practices public pension funds use to both avert financial trauma during market downturns and discourage financial optimism (possibly leading to reduced employer contributions) during market upturns. The evidence presented below indicates that teacher turnover/mobility for brand new teachers has changed little. Fears over the capacity of Social Security to fund retirement for the baby boom generation do not apply directly to the boomers' teachers who are in state pension systems paid for in advance by contributions they and their employers made over decades and the investment earnings of those contributions. Their retirement systems are still as close to

fully funded as they have ever been historically. This paper also highlights the investment *efficiency* of public sector pension plans relative to 401-K type retirement plans common in the private sector.

Concern: The mass retirement of teachers who taught the baby-boomers threatens pension fund financial stability.

The U.S. is in the middle of the teacher retirement surge, not the beginning, and pension funds are still well funded, not broken. According to the Schools and Staffing Survey, the annual teacher retirement rate has gown over the past 15 years by at least half, from 2.0 percent in 1990-91 to 3.0 percent in 2003-04. However, NCTAF's misdirected worry about the financial solvency of teacher retirement plans and the solutions they suggest are more relevant to the Social Security debate than the teacher pension fund debate. Public employee pension systems are forward funded by employers and employees, not pay-as-you-go plans like Social Security where the current taxpaying generation pays for most of the retirement plan outlays for current retirees. Actuaries in the state pension systems were required to anticipate teacher retirement bulge and they established pension plan asset targets over the past few decades in order to fund the retirement obligations.

The retirement patterns of the teaching labor force are different from those of the general population as the retirement fund actuaries well know. The end of the baby boom was 1964 and by 1970 enrollment stated to drop sharply as did the employment of teachers. The last teachers hired before 1970 have now taught as many as 38 years. Reflecting the sharp drop in teacher hiring during the 1970's when the baby-boom generation left K-12 schools, the *number of teachers returning annually will drop sharply in the next few year* (Figure 1). The retirement rate should begin declining substantially between 2010 and 2020.

Figure 1 - Age Distribution of Teachers of the Baby Boomers in 1999-2000 and Projected Age Distribution for 2008-09

Source: 1999-2000 Schools and Staffing Survey.

Unlike the boomers themselves, the generation of teachers that taught the baby boomers is already well into their retirement and at least through 2008, the average teacher retirement system was funded well above the 80 percent level (see Figure 3), which has historically been considered adequate for meeting full funding requirements. The disproportionately large bulge of teachers who taught baby boomers collectively pumped their own contributions, along with employer's contributions into retirement system assets early in their careers where they have been compounding in well-managed investment funds for the past three to four decades.

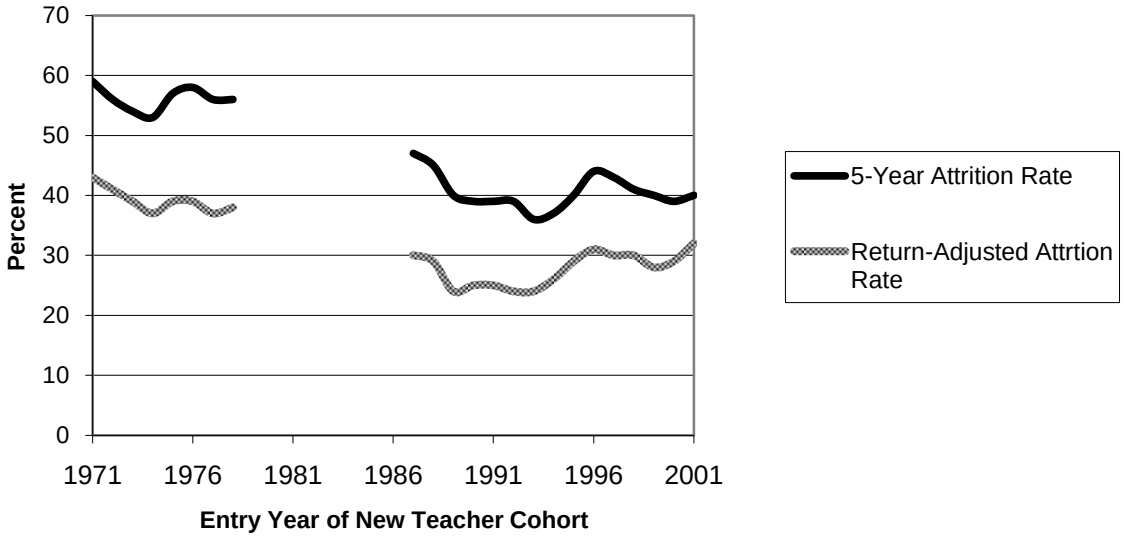
In some states, teacher retirement funds are better prepared for the retirement bulge than they would have been 30 years ago. As recently as 1984, Massachusetts and Indiana were pay-as-you-go operations (Clark and North, 2009) that might have bent under the demographic pressures articulated by NCTAF. Over the past 20 years, however, both states have been catching up to other states in fully-funding their public employee retirement plans. Over recent years, Massachusetts has been able to move towards full funding by decreasing benefits and increasing both employer and employee contributions to the plan (see Table 3).

Concern: Teacher mobility has increased, which undermines the ability of traditional teacher pension funds to help attract and retain quality teachers.

Historically, public employees have traded off higher compensation for more job security (also necessary to separate government work from political patronage) and higher benefit levels including retirement benefits. The security and benefits helped recruit and retain public sector workers even at lower wages than those offered in the private sector. Perhaps due to current employment trends in the private sector, or perhaps due to a misunderstanding of historical teacher employment trends, many argue that few new teachers plan to make a career of teaching. Many analysts (e.g., Smith and Guthrie, 2009; or Hansen, 2009) argue that one policy objective of traditional teacher retirement plans—to attract and retain career teachers—is no longer relevant or effective. The current pension system may also contribute to teacher shortages, as those who do not plan to spend thirty years in the teaching profession may be discouraged from teaching at all (Gustman et. et al. 1994). According to this argument, the more portable 401K type plans used in the private sector would be more effective in recruiting young talent for their anticipated short stints in teaching.

Even if not a teacher shortages issue, it has become popular to believe that college graduates from more selective colleges or with higher college entrance test scores make especially "effective" teachers and employment practices should center around their employment needs. In Washington D.C., for example, more than 25 percent of newly hired teachers in 2004 and 2005 came from Teach for America and the D.C. Teaching Fellows (Rotherham and Sullivan, 2006). In New York, one-third of new teachers have entered teaching through similar programs (Boyd et al. 2008). The current pension system is viewed as deterring these college graduates from teaching by offering them no retirement benefits unless they stay in teaching long enough to qualify for the minimum benefit (called "vesting").

Figure 2 - Five Year and Return-Adjusted Attrition Rates of New Teachers in Illinois



Source: DeAngelis and Presley (2007), Illinois Education Research Council.

The historical facts, however, fail to support the perception that fewer new teachers expect to make a career of teaching. In the *past*, high proportions of new teachers never made a career of teaching. Using a longitudinal database, the Illinois Education Research Council (2008) analyzed 35 years of teacher data and found that *new teachers' attrition decreased substantially since the 1970s contrary to conventional wisdom*. During the 1970s, an average of 56 percent of new teachers from each cohort left teaching during the first five years compared to 40 percent in cohorts since 1986. Many of those who left teaching returned within five years of their first job to an Illinois school, so the net attrition rate was 25 to 30 percent over the past two decades.

Concerned researchers further argue that even if career paths are little different than they have been for decades, traditional retirement plans do little to attract idealistic young educators from selective colleges who are portrayed in the popular press as achieving high levels of academic success with disadvantaged children even if only for a short time in their early work life. However, research on the effectiveness of Teach for America, the most selective of these programs, is not conclusive.

A handful of studies have reached mixed conclusions (Decker et al. 2004; Grossman et al. 2006; Rockoff et al. 2006; Laczko-Kerr and Berliner, 2002; Raymond et al. 2001). A large number of diverse teacher characteristics are associated with effectiveness suggesting that successful policies for preparation, hiring and evaluation of teachers cannot be narrowly focused on one or two elements of effective teaching such as academic background (Harris, Rutledge and Ingle, 2008). The research on alternative certification programs--even the most selective ones—provides no evidence that catering to a young, mobile, itinerant teaching force would yield enough benefits to rearrange state teacher retirement systems:

- In a study of the New York City's Teach for America and Teaching Fellow program, neither college selectivity (SAT score of undergraduate institutions or the teacher's undergraduate GPA) were associated with teacher effectiveness measured in a sophisticated value-added study (Rockoff et al. 2006).
- Harris (2007) reviewed 28 studies of teacher effectiveness using either the older gain score approach, or the newer and more valid value-added or experimental methods. Under the value-added approaches, experience was the most consistent predictor of effectiveness, while the impact of teacher licensing exam scores and the selectivity of teachers' undergraduate institutions tended to be an inconsistent predictor of effectiveness. Even in research studies using older methodologies, selectivity of the undergraduate institution was just as likely to have no effect as a statistically significant one.

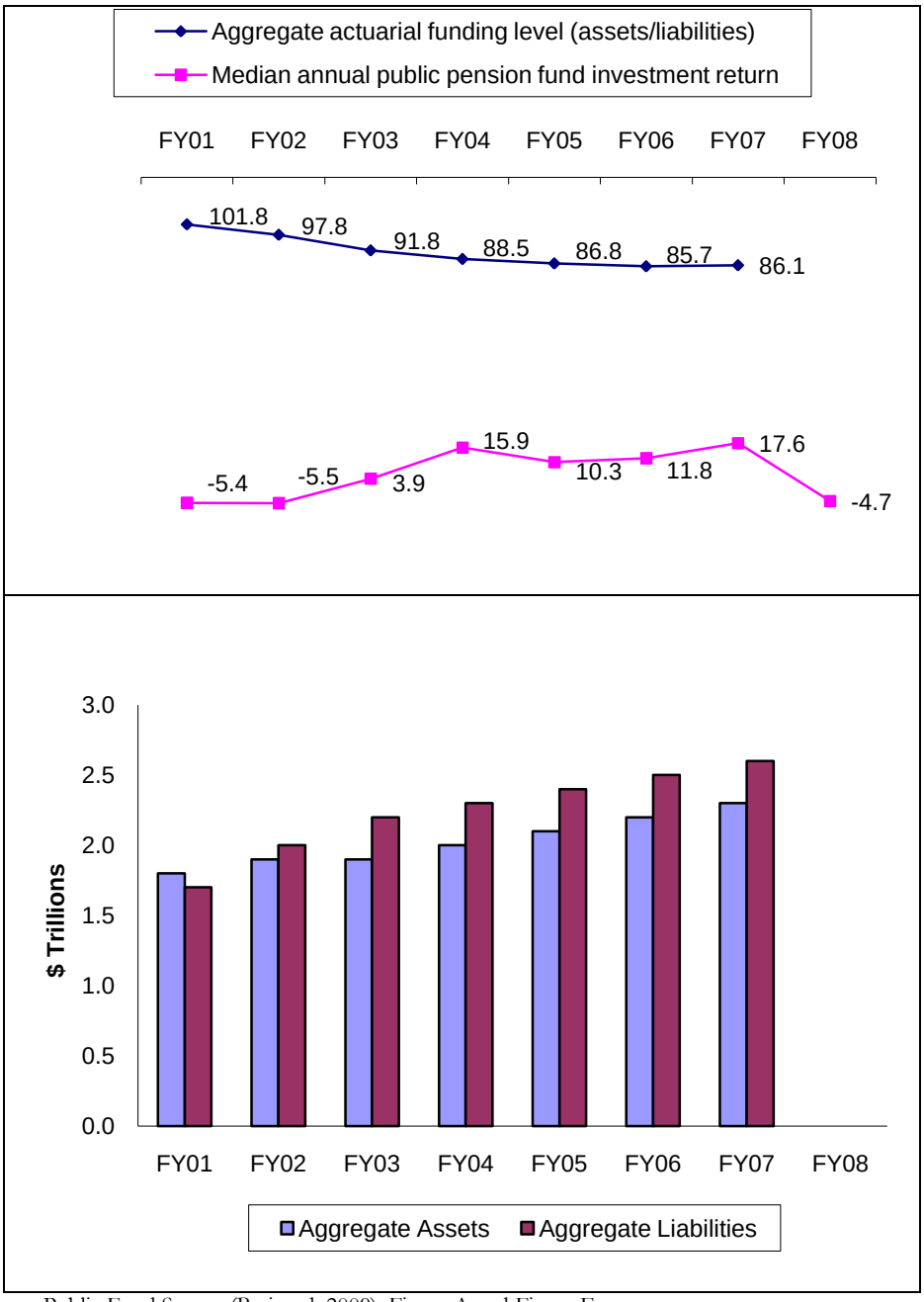
This evidence suggests that there is no clear need to build benefit structures and employment practices around a younger, itinerant teacher workforce in order to improve student achievement.

Concern: Unfunded pension plan liabilities continue to mount, shifting the financial burden to the next generation and straining teacher pension funds to the breaking point.

The bankruptcy of many high-profile private sector companies—and sometime their pension funds or worthless company sock in individual retirement accounts—naturally worry the public and many of these fears roll over to public sector retirement funds. The public also tends to think that public employee pension funds are in the same perilous long-run financial situation as Social Security. For example, NCTAF (2009) urges states and school districts to reexamine the fiscal consequences of pension provisions that push teachers in their fifties out of the workforce and strain pension funds to the breaking point.

Even in the midst of the retirement of the teachers of the baby boomers, however, public pension plans are financially solid, in part because they are plans for *government* employees. Full funding of a government pension plan means that if the government (or the pensions fund itself) went out of business, there would be enough *assets* to cover the benefits earned by employees to date (the liabilities). Because private sector companies fail, it is vitally important that private sector employees "own" their retirement through individual retirement accounts or that company defined benefit plans be fully funded. However, unlike private sector companies, governments do not go out of business. That's one reason the interest rate on municipal bonds is so low. For similar reasons, there is less worry about fully funding public sector pension plans than private sector plans. Historically, 80 percent funding is considered very adequate. At funding levels over 100 percent, the current generation of taxpayers would be subsidizing future generations of taxpayers.

Figure 3 – Change in Aggregate Actuarial Assets, Liabilities and Funding Levels Compared to Change in Annual Investment Return, FY01 to FY07



Source: Public Fund Survey (Brainard, 2009), Figure A and Figure E.

Calculating assets and liabilities over time is complicated and can be easily misinterpreted. In Figure 3 above, for example, it appears as if the unfunded liability (or, aggregate actuarial funding level) was increasing at the same time investment earnings were improving from low levels in FY01 and FY02 (Public Fund Survey. 2009). However, the asset (and liability) calculation averages five years of data in a typical public pension plan:

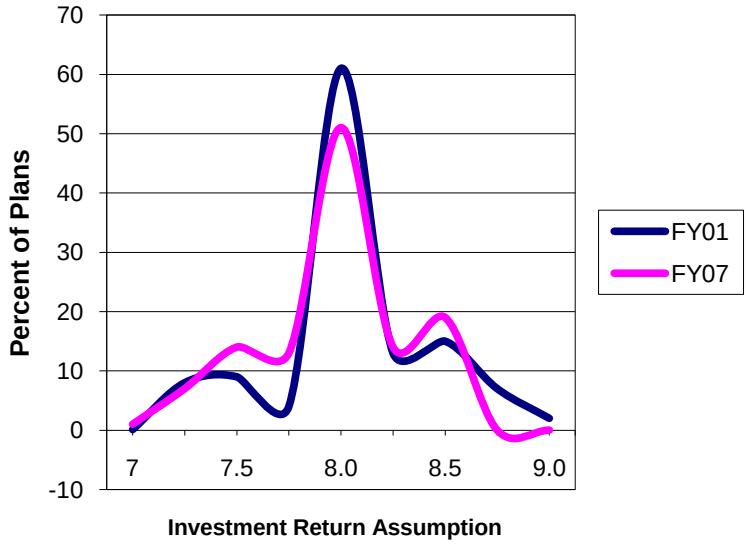
- FY2001 data averages FY96 to FY01 data
- FY2002 data averages FY97 to FY02 data
- FY2003 data averages FY98 to FY03 data
- FY2004 data averages FY99 to FY04 data
- FY2004 data averages FY00 to FY05 data
- FY2006 data averages FY01 to FY06 data
- FY2007 data averages FY02 to FY07 data

So, the FY07 data are the first to capture all five years of the recovery from the 2001 stock market plunge and then it reflects the average of the five years, not the ending point of the five years. The stock market slide in 2008 and 2009 will be averaged with the four previous years so the "smoothed" funding level will change modestly and gradually.

Sate teacher retirement plans anticipated the retirement of the teachers of the baby boomers from the day they were hired. However, calculating the benefits earned by employees to date (the liabilities) is also a difficult calculation, because the benefits are received years or decades in the future. Fund managers discount future benefits (accrued liabilities) to obtain a present value by estimating a long-run investment return typically based on historical data. High expected investment returns reduce the estimates of liabilities and make the plans look more fully funded.

Figure 4 shows that the investment return predicted actuaries for the various public pension funds varies narrowly around 8 percent. Over the six years between FY01 and FY07, the distribution of expected investment returns by fund has shifted slightly to the left indicating lower expected returns. Some variation would be expected because funds vary in the amount of risk they take on and therefore the expected investment return varies. Pension funds with low expected returns are often construed by state statute to low-risk investments and securities.

Figure 4 Distribution of Investment Return Assumptions



Source: Public Fund Survey (Brainard, 2009). Figure O.

Some accountants, auditors and researchers argue that the value of future benefits for retirees should be discounted by the long-term interest of a safe government security—3 or 4 percent—rather than an historical actual average. Such a calculation results in the appearance of dramatically under funded pension plans and these calculations are often used to argue that pension plans are I fact dramatically under funded. However, if future investment returns corresponded to low-risk, long-term government securities, then current taxpayers would be subsidizing future taxpayers by over-saving for retirement payouts.

Concern: Increasingly generous retirement benefits threaten the financial stability of public pension funds.

One concern is "unfunded benefit bumps," situations where lawmakers want to increase pension benefits in a political environment—especially when economic times are good and investment returns are outpacing immediate needs—without paying attention to the pension plan's ability to support the benefit improvements over the long term (Hansen, 2009). Complaints also

arise about individuals who "game" the retirement formula by moving to higher paying jobs or higher paying school districts late in their career. Clark and North (2009) claim that the data show that the "generosity" of teacher plans has increased over time, and in particular, income replacement rates for teachers have increased by about 10 percent over the past quarter century or so.

Researchers who use the term "generosity" should instead use a semantically-neutral term like "benefit levels" or simply "benefits". Pension funds are financed by *both* employee and employer contributions and the investment earnings these contributions generate. Increased retirement benefits threaten financial stability only if contributions to the plan are insufficient. Observing changes in benefit levels alone is not enough information to draw conclusions about the financial viability of pensions without also considering many other intervening factors including revenue generation. In recent years, more retirement funds have increased benefits than decreased them but the changes have usually been modest and employee contributions were frequently increased to pay for the better benefits. In contrast to the insinuations of the generosity semantics, several other states increased employee and employer contributions with no offsetting improvement in benefits.

Table 1 lists states with increases in the replacement income formula of at least 0.5 percent (per year of service) of final average income. Benefits can also be increased modestly by using fewer years of income in the calculation of final average salary or by reducing the retirement age when teachers with enough experience can retire with full benefits.

Table 1
Teacher Retirement Plans With Improvement in the Benefit Formula, 1984-2006

	Normal Retirement Age	Final Average Salary Years	Benefit Formula	Contribution	
				Employee	Employer
North Dakota		5 to 3	up	up	up
Kentucky			up	up	up
Missouri	up	5 to 3	up	up	down
Nebraska		5 to 3	up	up	up
Pennsylvania			up	up	down
Maryland	down		up	down	up
Kansas		5 to 3	up		up
Montana		5 to 3	up		

Note: Table includes states where the benefit formula improved by at least 0.5 percent.
Source: Derived from Wisconsin Legislative Council (1984 and 2006) as presented in Clark and Craig (2009).

Five of the eight states raised the contribution level of employees (and Missouri and Pennsylvania also decreased the employer's share). Of the remaining three, the employer's share increased in two. Only Montana had no change in contribution rates.

About half of the states improved retirement benefits by a modest amount (Table 2). Of the 25 states with small improvement in retirement benefits, 11 increased employee contributions, but three states reduced employee and employer contributions (Georgia, Tennessee and Texas) and four states decreased employer contributions without changing employee contributions.

Is it possible to improve benefits modestly without increasing either employee or employer benefits and still maintain the financial viability of the pension fund? This could occur if the investment return of the pension fund improved enough over time to support the higher benefit payout.

Table 2
Teacher Retirement Plans With Modest Improvement in the Benefit Formula, 1984-2006

	Normal Retirement Age	Final Average Salary Years	Benefit Formula	Contribution	
				Employee	Employer
Arizona	up	5 to 3	small up	up	up
Idaho		5 to 3.5	small up	up	up
Minnesota			small up	up	up
Mississippi	down	5 to 4	small up	up	up
Nevada	up		small up	up	down
New Mexico		3 to 5	small up	up	up
South Carolina	up		small up	up	up
New Jersey			small up		
Georgia	down		small up	down	down
Tennessee			small up	down	down
Texas	down		small up	down	down
Arkansas		5 to 3	small up		up
Connecticut		5 to 3	small up		up
Delaware		5 to 3	small up		down
North Carolina			small up		down
Oregon	up		small up		down
Wisconsin			small up		down
Wyoming			small up		
Iowa		5 to 3	small up		
Ohio			small up		
Virginia			small up		
Alaska	up		partial up	up	down
Illinois			partial up	up	up
Rhode Island	up		partial up	up	up
New York			partial up		up
California	down	3 to 1	partial up		down
Colorado	up		partial up		

Note: Table includes states where the benefit formula improved but by less than 0.5 percent.
"Partial up" means that only some categories of employees had a better benefit formula in 2006.
Source: Derived from Wisconsin Legislative Council (1984 and 2006) as presented in Clark and Craig (2009).

Nearly one-third of states did not improve their benefits formula and three cut retirement benefits (Florida, Massachusetts and South Dakota) as shown in Table 3. Nine of the 15 states actually increased the employee contribution despite no improvement in retirement benefits. In eight of the nine states, the employer contribution also increased.

Table 3
Teacher Retirement Plans With No Improvement in the Benefit Formula, 1984-2006

	Normal Retirement Age	Final Average Salary Years	Benefit Formula	Contribution	
				Employee	Employer
Alabama				up	
Louisiana				up	up
Maine				up	down
Michigan		5 to 3		up	
New Hampshire				up	up
Oklahoma				up	up
Washington				up	up
Hawaii	up			down	down
Utah				down	up
Vermont				down	down
Indiana					up
West Virginia					up
Florida			small down		down
Massachusetts	down		down	up	up
South Dakota			down	up	up

Source: Derived from Wisconsin Legislative Council (1984 and 2006) as presented in Clark and Craig (2009).

Concern: Taxpayers cannot afford to guarantee the retirement benefits offered by traditional public employee pension systems when the economy weakens and tax revenues shrink.

Public employers are just as concerned as taxpayers about paying for retirement fund obligations when tax revenues shrink and the economy weakens. In this environment, it is often suggested that traditional defined benefit (DB) pensions be replaced with 401(k)-type defined contribution (DC) retirement savings plans to both reduce taxpayer liability for funding the plans and make retirement benefits secure.

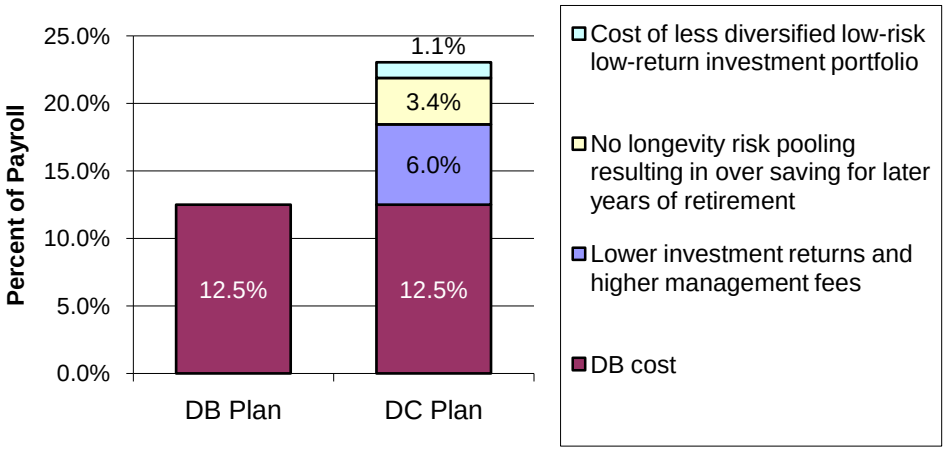
Defined Benefit plans provide employees with a predictable monthly benefit in retirement that depend on the number of years an employee devotes to the job and the worker's pay – usually at the end of their career. Benefits in DB plans are pre-funded. Employers and employees contribute to a common pension trust fund and the funds are invested by professional asset managers whose activities are overseen by independent trustees and other fiduciaries. Investment earnings and the contributions pay for the retirement benefits.

Defined Contribution plans have no predictable retirement income. Employers and employees contribute to the plan over the course of a worker's career. The value of the contributions at the time of retirement depends on the amount of employer and employee contributions, the investment returns earned on assets, and the individual's lifespan. DC plans are typically "participant directed," meaning that each individual employee decides how much to save, how to invest the funds, how to modify these investments over time, and at retirement, how to withdraw the funds. Retirement experts typically advise individuals in DC plans to change their investment patterns to low-risk, low-return investments over their lifecycle.

DC plans shift risks (investment risk and the risks associated with living past average life expectancy) from the employer, taxpayers and the pool of current and former employees in the retirement system to the individual. The desirability of this risk shift is debatable because large groups of individuals can pool risks to improve investment returns. More important is the investment efficiency of DC plans relative to DB plans. Instead of saving money for the employer, which can be accomplished only by cutting employer funding, DC plans result in lower retirement benefits.

Comparisons of DB and DC plans for public employees should be based on investment efficiency more than risk shifting to individuals. For the same cost as a DC plan, employers can use a DB plan to deliver substantially higher benefits for their employees and leverage the other policy goals such as recruitment and retention goals.

Figure 5 – Cost of Equivalent Retirement Payouts for DB and DC Plan as Percent of Payroll



Source: Almeida and Fornia (2008), National Institute on Retirement Security.

Due to their group nature, DB plans possess "built-in" savings, which make them highly efficient retirement income vehicles, capable of delivering retirement benefits at a low cost to the employer and employee. These savings derive from three principal sources (Figure 5):

1. DB plans better manage longevity risk—the chance of running out of money in retirement. By pooling the longevity risks of large numbers of individuals, DB plans are able to do more with less. They avoid the "over saving" dilemma—that is, saving more than people need on average to avoid running out of cash in the later years of retirement—inherent in DC plans. Typically, individuals with DC plans make very modest withdrawals—around 5 percent annually—to preserve the retirement fund for late retirement years beyond normal life expectancy. Much of the retirement savings is passed on to heirs.
2. Because DB plans, unlike the individuals in them, do not age, they are able to take advantage of the enhanced investment returns that come from a risk-balanced portfolio throughout an individual's lifetime. Typically, individuals with DC plans are advised to move their investments into low-risk, low-return investments as the approach retirement and then after retirement.

3. DB plans, which are professionally managed, on average achieve greater investment returns than individual investors with DC plans. A retirement system that achieves higher investment returns can deliver any given level of benefit at a lower cost. Furthermore, grouping thousands of individuals into a single account is far more efficient from an administrative and accounting perspective than the administration of thousands of individual accounts.

An analysis of these three efficiency factors by the National Center on Retirement Security (Almeida and Fornia, 2009) indicates that the cost to deliver the same level of retirement income to a group of employees is 46 percent lower in a DB plan than it is in a DC plan (Figure 5).

Independent of the debate over the relative merits of DB and DC plans for retirees, and contrary to the expectations of cost cutters, states have found that abandoning a DB pension for a DC plan can actually increase costs for several years after the conversion. Conversion to DC plans should occur when states are flush with money, not at a time of deteriorating economic conditions. In order to switch to a DC plan, current retirement plans must be frozen and fully funded followed by the gradual implementation of the DC plan over time. Freezing a DB plan will involve increased costs, reduced benefits, or some combination thereof (Boivie and Almeida, 2008). Such a switch leads to additional, temporary costs to employers and/or taxpayers due to higher costs of operating two plans and, if the plan is not fully funded, front-loaded contributions to fully fund the old pension plan.

Accounting regulations require pension obligations to be paid off sooner when a plan is frozen. It has an effect similar to refinancing a house from a 30-year mortgage to a 15-year mortgage, where monthly payments go up over the first 15 years in order to reduce costs compared to a full 30-year mortgage. State and local governments facing budget pressures won't find it helpful to be accelerating pension payments unnecessarily during a budget crunch to save money many years

down the line. For example, Alaska's freeze in 2005 forced additional contributions of 14 percent of payroll to the Teacher's Retirement System and 9 percent of payroll to the Public Employees Retirement System – on top of regular contributions (Alaska Retirement Management Board. 2006).

Discussion

Teacher retirement systems need continuous tweaking to maintain financial stability, but a transformation to an individual retirement account system would likely increase costs in the short term, reduce retirement benefits in the long term and make it more difficult to retain career employees.

Proponents of a younger, itinerant teacher workforce, as well as those who believe such a workforce is inevitable, often complain that traditional teacher retirement plans are out of step, making it difficult to attract the best and brightest to this mobile workforce. The evidence, however, shows that teacher turnover for brand new teachers has hardly changed over the past two decades and that turnover was actually higher 40 years ago.

The worries of taxpayers over Social Security do not apply to teacher retirement funds. The teachers of the baby-boom generation are in the midst of their retirement surge a decade or two ahead of the retirements of the baby-boom generation itself, and teacher retirement systems are still as close to fully funded as they have ever been. The retirement of teachers is paid for in advance by past contributions they and their employers made and the investment earnings of those contributions. This paper highlighted how the averaging of past investment returns and assumptions about future investment returns are used to both avert financial panic over pension plan funding during market downturns. Critics of teacher retirement systems also attack their "generosity" as a source of financial concern. A brief analysis of state-by-state changes in "benefits" indicated a correlation with increased employee and employer contributions to finance the increases.

Public employers: 1) do not go out of business, 2) employ large numbers of individuals, and 3) offer lower pay in return for more employment and retirement security. In the private sector, even big employers go out of business and employees typically receive higher compensation for greater employment risk. Implementing private sector retirement practices, even if optimal in the private sector, would introduce serious economic inefficiencies to public sector retirement plans where risk, investment costs and administrative fees can be pooled. The investment efficiency of DB plans reached by pooling risk makes it possible to have higher benefits than the DC plans common in the private sector for the same employee and employer contributions. To the extent that DB plans lower total compensation and add risk to retirement, wages for public sector employees would need to increase.

Pension benefits are the payouts to retired workers far off in the future. The contributions from employers and employees needed now to finance those benefits is subject to a lot of uncertainty. Annual employer contributions to retirement funds are not a measure of benefits. Employees also make sizable contributions to their plans and the biggest source of funding for retirement is the investment returns on employer and employee contributions. It is clear that policymakers and even many researchers need to devote more effort to understanding rather than criticizing the accounting and actuarial practice of pension funds. Economists also need to pay more attention to the efficiency of various retirement plan options instead of only the benefit levels and who bears the risk of fluctuations in financial markets.

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