



The Choice is Yours: How Pension System Decisions Might Shape the Teacher Workforce

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Interest in Teacher Pension Reform

Numerous estimates peg the national shortfall in public pension assets relative to liabilities at several trillion dollars.¹ Figure 1 displays state pension funding levels for the 2010 fiscal year, when 34 states had less than 80 percent of their pension liabilities funded.² As states address shortfalls by allocating more money to pension funds, they will be required to cut spending elsewhere and/or increase taxes; in some cases substantially. Put another way, the provision of past government services will be paid for with reduced services and/or higher taxes in the future, and financial flexibility exercised in the past will necessitate financial rigidity in the future. The financial condition of teacher pension systems in particular has received attention from several recent reports.³ In Illinois, the Chicago Public School district cited rising pensions payments as a driver of fiscal woes that led it to lay off more than 1,000 teachers in July 2013.⁴

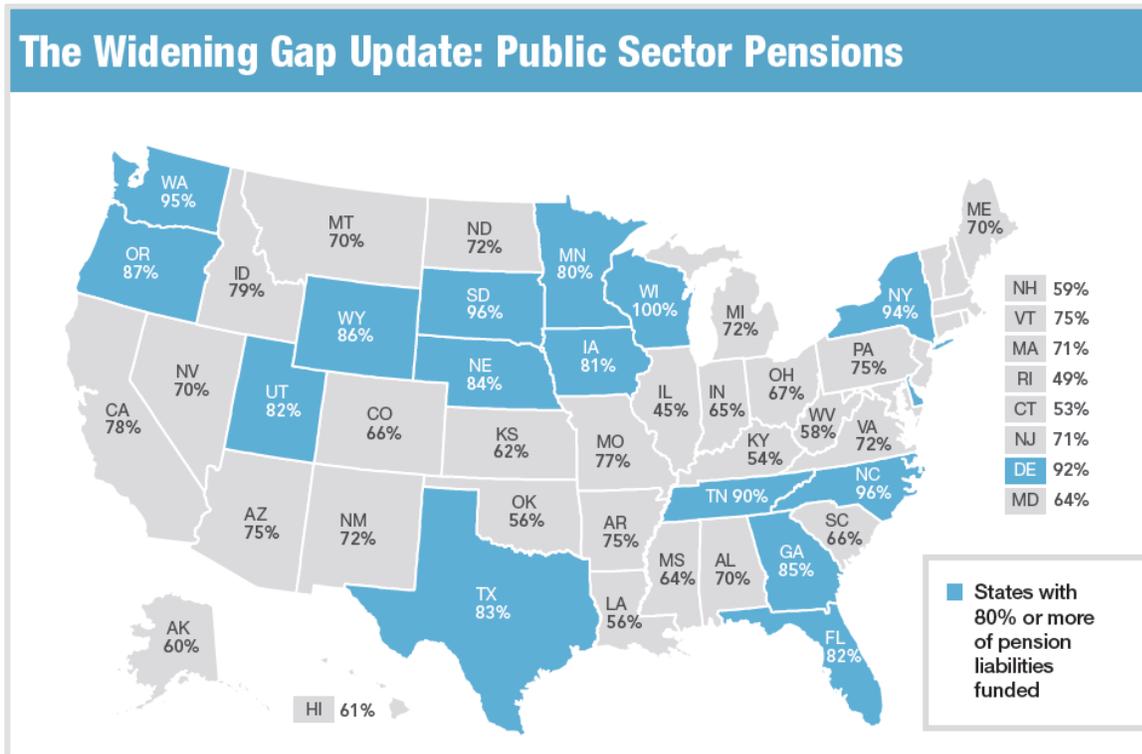


FIGURE 1. STATE PENSION FUNDING LEVELS

Source: Pew Center on the States, 2012.

Given the prevalence of funding shortfalls, the idea of shifting public sector pensions from defined benefit (DB) plans towards defined contribution (DC) plans has gained traction because DC plans are, by definition, fully funded.^{5,6} To be clear, moving towards a DC-type pension system does nothing, by itself, to address *existing* shortfalls. It would serve to shift the risk

¹ For discussions of the financial status of public sector pensions, see Barro and Buck (2010), Pew Center on the

² Note that an 80 percent funding level is not itself a threshold of financial health, as it implies a shortfall of billions of dollars.

³ See, for example, Johnson, Chingos, and Whitehurst (2013) and Zeehandelaar and Winkler (2013).

⁴ <http://www.chicagotribune.com:80/news/education/ct-met-cps-layoffs-20130719,0,4180625.story>

⁵ See Beshears et al. (2011), Hess and Squire, (2010), and Olberg and Podgursky (2011).

⁶ Under a defined benefit plan, an employee receives a monthly payment in retirement that is determined by a formula that typically accounts for years of service and end-of-career salary levels. A defined contribution plan functions in essentially the same way as a 401(k) pension or Individual Retirement Account (IRA), where the employer and/or employee contribute a percentage of salary to the employee's account.

associated with investment returns earned on pension assets away from taxpayers and towards employees. But such a move would also make it more difficult in the future for policymakers to kick the proverbial can down the road when it comes to funding employee retirement benefits. As noted above, correcting for the underfunding of pension systems in the past will likely result in the sacrifice of some educational spending today in order to uphold the promises that were made to employees in the past. Under a DC system, policymakers cannot load pension obligations onto future spending.

As a form of compensation, pensions are used as a tool to attract and retain effective employees, and a question for any state considering teacher pension reform is how restructuring compensation might affect the composition of the teacher workforce. Along these lines, teacher pension systems, the great majority of which are traditional DB plans, are of particular interest. Recent research in education finance has found that the proportion of compensation paid as retirement benefits may be too high and that the financial incentives embedded in some states' teacher pension plans may produce undesirable patterns of attrition. The research shows that the deferred compensation from DB plans may not be highly valued by many teachers, implying that as a form of compensation, such pensions may be doing too little to attract talented people into teaching. Also, DB plans may induce ineffective teachers to remain in the profession because the cost of leaving late in a career is too high.⁷ Similarly, effective late career teachers may be induced to leave the profession earlier than they otherwise would have due to the large retirement incentives in many DB plans.⁸ These findings suggest that at least in some states, compensation could be restructured to make the profession more attractive without necessarily increasing expenditures.

As public agencies consider the tradeoffs between DB and DC pension systems, it is important to gain insight into what implications pension reforms might have on workforce composition. In this brief, we report on research from Washington State where, during two periods of time, teachers were able to choose between enrolling in a traditional DB plan and a hybrid DB-DC plan.⁹ Our research investigates the factors that determine teachers' pension preferences, focusing on the relative financial value of the two plans, and teacher and workplace characteristics. We find that financial incentives and factors related to risk preferences explain why a large share of teachers was willing to transfer to the hybrid plan, but among new hires teacher characteristics explain little of the pension decision. There is some evidence that more effective teachers are more likely to enroll in the hybrid plan. The overall popularity of the hybrid plan suggests that states could reduce the financial risk associated future pension liabilities without sacrificing the desirability of pension plans to employees.

Evolution of Teacher Pensions in Washington State

Legislation passed in 1995 replaced the state's traditional DB pension plan covering public educators (TRS2) with a new hybrid plan (TRS3), consisting of both defined benefit and defined contribution components. According to the analysis in the legislation's Final Bill Report, the creation of the hybrid pension plan grew out of findings from a survey of employees and employers. The state's survey found three prevailing concerns: 1) Employees felt that leaving service before age 65 would not yield a good return on their contributions; 2) Younger employees felt they were contributing to a plan from which they might not benefit; and 3) A

⁷ Regarding the proportion of compensation paid as retirement benefits, see Fitzpatrick (2011). Regarding attrition patterns, see Costrell and Podgursky (2009) and Koedel, Podgursky, and Shi (forthcoming).

⁸ See, for example, Costrell and McGee's (2010) analysis of separation decisions under Arkansas's teacher pension system.

⁹ The full report (Goldhaber and Grout, 2013) is available at <http://cedr.us/publications.html>.

general sentiment that Plan 2 was paternalistic and inflexible in the form and timing of retirement benefits. The stated intent of the legislation creating the hybrid plan was to balance flexibility with stability, increase employee control over investments, and to accommodate greater career mobility among employees (HB 1206, Laws of 1995).

Among Washington teachers, two groups of enrollees have been able to choose between the two plans. The first group consists of teachers enrolled in the traditional DB plan who, between July 1996 and January 1998, were eligible to transfer to the new hybrid plan and receive a transfer bonus payment (75 percent of those eligible transferred).¹⁰ The second group consists of teachers hired since July 2007 who have been able to choose between the hybrid plan and the traditional plan, which was reopened as an option to new hires.¹¹ For the purposes of this brief we refer to these two groups as the 1997 and the 2007 choice cohorts.

Key features of TRS2 and TRS3 are outlined in Table 1 below. The primary difference between the two plans is that under TRS3 the defined benefit is half as large and each employee's contributions go into an individual defined contribution account rather than the state's pension fund. There are several important differences in TRS3's defined benefit component. First, the vesting period is longer: ten years vs. five years. Second, the TRS3 defined benefit includes a protection against inflation.¹² Third, a teacher eligible for retirement can separate (i.e. leave the profession) and delay receiving benefits without losing eligibility for health care coverage.¹³ The latter two differences allow for more flexibility in separation and retirement timing, provided the accumulation of sufficient service credit years (SCY), while the former requires a substantially longer tenure to earn access to state-funded benefits.

TABLE 1. KEY FEATURES OF TRS2 AND TRS3

Type	TRS2		TRS3	
	Traditional DB	DB Component	DC Component	
Vesting Period	5 years	10 years	N/A	
Employee Contributions	Set by legislature depending on status of pension fund ^a	N/A	5%–15% of salary (employee's choice)	
Employer Contributions	Set by legislature depending on status of pension fund	Identical to TRS2 contributions	N/A	
Annual Benefit	$0.02 * (\text{AFC}) * (\text{SCY})^b$	$0.01 * (\text{AFC}) * (\text{SCY})$	Size of retirement account depends on contributions and investment performance.	
Retirement Eligibility	65 yrs. of age, or 62 yrs. of age & 30 SCY (full benefit), or 55 yrs. of age & 20 SCY (reduced benefit)	65 yrs. of age, or 62 yrs. of age & 30 SCY (full benefit), or 55 yrs. of age & 10 SCY (reduced benefit)	Withdrawal ages and penalties for early withdrawal dependent on Federal tax rules.	

¹⁰ Teachers who transferred to TRS3 by January 1998 received a transfer bonus payment equal to 65 percent employee contributions to TRS2 plus accrued interest (5.5 percent compounded quarterly).

¹¹ A teacher who does not make an active choice within 90 days is defaulted into the hybrid plan.

¹² With the accumulation of 20 or more service credit years (SCY) the defined benefit increases by approximately 3 percent during each year between separation and retirement.

¹³ Under TRS2, a retirement-eligible teacher (at least 20 SCY and 55 years of age) must begin receiving retirement benefits immediately after separation to be eligible for health care coverage. Teachers who separate prior to being eligible for retirement do not qualify for any health care coverage under either plan.

^a In the decade preceding 1997, when employees enrolled in TRS2 could choose to switch to TRS3, the employee contribution rate averaged 6.6 percent, ranging between 6.9 percent and 6.03 percent. In the decade preceding 2008, employee contribution rates ranged between 0.15 percent and 4.26 percent.

^b Average Final Compensation (AFC) is based on a teacher's salary during the 60 highest-paid consecutive months of employment and Service Credit Years (SCY) are indicated a teacher's total years of employment.

Factors Explaining Teacher Choices of Pension Plan

Before describing the detailed findings about the factors predicting teacher pension choices it is worth stepping back to present the bigger picture: a substantial proportion of teachers, when given the choice, opt for the hybrid pension system. In the 1997 cohort, about 75 percent opted to transfer from TRS2 to TRS3. The overall popularity of the hybrid plan is notable for the fact that the default (i.e. the result of taking no action) was to remain in TRS2, but is perhaps unsurprising given that teachers were offered a financial incentive to opt into the new system. Furthermore, the bull market in the mid-1990s likely influenced perceptions about future investment returns. The hybrid plan remained popular with the 2007 choice cohort, but to a lesser extent. During 2007-2009, approximately 60 percent of new hires enrolled in TRS3, which is the default plan. Relative to 1997, enthusiasm for TRS3 was likely dampened by a weaker investment market and the lack of any financial bonus.

Looking more closely at the pension decision, we focus on the influence that factors related to financial value, risk preferences, and expected length of tenure have on teachers' pension decisions.

Financial Incentives

Central to a teacher's choice between TRS2 and TRS3 is comparison of the financial benefits the two plans are likely to provide in retirement. The net values of both plans at the time of the pension decision were estimated for each teacher, assuming the teacher worked until retiring at 65. These estimates, which vary substantially with a teacher's age and experience level, represent the total value of the expected stream of future benefits minus the expected costs. We find that teachers are responsive to the relative financial value of the plans, with increased relative value corresponding with a higher probability of choosing the higher value plan. However, the influence of financial value is modest, particularly for the 2007 choice cohort, suggesting that retirement benefits may not be a highly-valued form of compensation for many newer employees.¹⁴

Risk

While both plans provide a guaranteed benefit for life, that benefit is half as large under TRS3 and the ultimate size of the benefit provided by the DC component is uncertain (it could be large or small). As such, TRS3 is less likely to appeal to teachers who are more risk averse. Results from the statistical models are consistent with the notion that teachers who are less risk averse prefer the hybrid plan. Younger age, white ethnicity, male gender, and holding an advanced degree, correspond with a higher probability of choosing TRS3 among the 1997 choice cohort. With the exception of age, these factors did not exert a significant influence on pension choice among the 2007 choice cohort. However, teachers hired after the 2008 financial crisis was in full swing were approximately 5 percentage points less likely to choose the hybrid plan than those hired in the previous school year, which is consistent with changing perceptions of financial risk.

¹⁴ This is consistent with a finding from other pension research (Fitzpatrick, 2011).

Portability and teacher mobility

Because the relative value of TRS2 and TRS3 varies with length of tenure, a teacher's expectations about tenure may play a role in pension preference. Generally speaking, TRS3 provides more flexibility in terms of separation and retirement timing, but has a longer vesting period than TRS2 (five vs. ten years). Teacher and workplace characteristics related to tenure length may affect pension choice if one plan or another is viewed as more 'portable' (i.e. it provides better value when leaving the profession early). We do not find significant evidence in the statistical models that teachers with characteristics associated with higher rates of attrition are systematically choosing one plan over another.

Teacher effectiveness

We also estimate statistical models that take account of value-added measures of effectiveness.¹⁵ A teacher's "value added" is a statistical measure of a teacher's contribution to student learning as measured by standardized tests. Our models that include this value-added measure show a positive relationship between teacher effectiveness and the probability of choosing TRS3 in both choice cohorts. In the 1997 cohort, a teacher in the top quintile of effectiveness is approximately six percentage points more likely to choose TRS3 than a teacher in the bottom quintile, and we find little variation among the bottom four quintiles. In the 2007 choice cohort a similar pattern is observed, but the results are sensitive to the inclusion of teachers who defaulted (rather than actively enrolling) into TRS3. When defaulters are excluded, a teacher in the top quintile of effectiveness is 14 percentage points more likely to choose TRS3 than is a teacher in the bottom quintile, and the top three quintiles are not significantly different from one another.

General findings from statistical analyses

Among the 1997 choice cohort, our findings from the statistical analyses are consistent with expectations based on the relative financial value of the two plans and teacher characteristics associated with risk aversion. While these factors are statistically significant determinants of teachers' pension choices, the magnitude of their influence is modest. It is likely that unobserved expectations related to tenure and investment returns, and unobserved attitudes towards investment choice and risk are driving a substantial proportion of the pension decision. Furthermore, these unobserved expectations and attitudes do not appear to be highly correlated with teacher and workplace characteristics we are able to control for in our models.

Among the 2007 choice cohort we find that age and financial value exert a small amount of influence on the pension decision, but that preference for TRS2 or TRS3 is otherwise uncorrelated with teacher and workplace characteristics (with the exception of teacher effectiveness). This finding is a departure from other studies of pension choice, which tend to find that personal characteristics such as gender, ethnicity, and education *do* influence pension choice. Another way to frame these findings is that we find no evidence to suggest that the introduction of the hybrid plan has altered the make-up of new hires in terms of teacher characteristics, or that it has reduced the quality of new hires.

Policy Implications

Current interest in teacher pension reform stems from the poor financial condition of many states' pension systems. The costs of these systems were not fully capitalized into the cost of education in the past, which is putting pressure on current finances, and policy-makers may want to reduce the likelihood of this occurring in the future. Moreover, there are concerns that many

¹⁵ This is only possible for a subset of teachers who are in tested grades and subjects at the elementary level, where the proctor of the state assessment is likely to be students' regular classroom teacher.

states' traditional defined benefit plans may not distribute compensation in a way that optimally attracts and retains the best teachers. In considering pension reforms, such as shifting towards defined contribution structures, it is important to gain insights into teachers' preferences for different types of plans. Washington State's experience of creating a hybrid pension plan can provide useful information to policy makers dealing with these issues.

The "big picture" policy implication of the experience in Washington State is that teacher pension systems can be reformed in a way that is attractive to both teachers and states. This can be illustrated by considering the introduction of a hybrid pension plan in Washington State from several perspectives:

1. From a financial standpoint, the anticipated costs associated with funding the two pension plans are similar.
2. From the perspective of the state and teachers with choice (i.e., the 1997 and 2007 choice cohorts), the creation of hybrid plan and the corresponding reallocation of risk and flexibility represent a win-win transaction.
 - a. The state's financial exposure is significantly lower under the hybrid plan because its per-teacher pension liability is approximately half as large.
 - b. Teachers' decisions to transfer into or enroll in the hybrid plan imply an improvement of circumstances over being in the traditional plan.
 - c. Teachers choosing the traditional DB plan are no worse off than if hybrid system had never been created.¹⁶

The proportion of teachers choosing to transfer to the hybrid plan (75 percent) or enroll as a new hire (60 percent) suggests that there was substantial win-win territory to be taken by restructuring the pension system.

As stated previously, creating a new pension system does not by itself reduce unfunded liabilities associated with an existing DB system. However, a state can reduce the financial risk associated with its exposure to those liabilities by inducing employees to voluntarily transfer to the new system. Our analysis of the 1997 transfer decision illustrates a situation in which a large proportion of teachers in a traditional DB plan were willing to transfer to a hybrid pension system, and that the decision to transfer was influenced by financial incentives and factors related to risk preferences (particularly age and income). While these findings cannot be generalized to hybrid plans as a whole (we only observe choice between two specific plans), they do indicate the potential to induce a large proportion of transfers to a suitably structured plan.

Our analysis of pension choice among new hires in the 2007 choice cohort indicates that a popular hybrid pension plan can be created at comparable cost to a traditional DB plan and with lower financial exposure for taxpayers. Excepting teacher age, new hires' pension preferences were not related to observable teacher and work-environment characteristics. It appears unlikely that the introduction of TRS3 significantly altered the composition of the teacher workforce in terms of attracting new hires. Furthermore, we find no evidence that transitioning to the hybrid system negatively affected the quality of the teacher workforce. In fact, more effective teachers were slightly more likely to choose the hybrid plan.

As unfunded pension obligations compete for many state's current education dollars, there is likely to be increasing pressure to enact reforms that will prevent the recurrence of such problems in the future. Given the stakes involved, pension reform is inevitably a contentious process, but the findings from Washington State suggest changes can be made to pension systems that make both teachers and taxpayers better off.

¹⁶ This argument cannot be generalized further because teachers hired after 1996 did not have pension choice and some certainly would have preferred TRS2.

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