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Public Pension Reform and Teacher Turnover: Evidence from Washington State

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Pension Structure and Employee Turnover: Evidence from a Large Public Pension System

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Traditional defined benefit (DB) pension systems in many states face large funding shortfalls. Movement toward defined contribution (DC) pension structures may reduce the likelihood of future shortfalls, but there is concern that such reforms may have the undesirable effect of increasing employee turnover. In studying patterns of employee turnover following the introduction of a hybrid pension plan (with both DB and DC components) in Washington State, we find little evidence that the introduction of the hybrid plan increased employee turnover. Moreover, we find that turnover is significantly lower among those who voluntarily transferred from the state's traditional DB plan to the hybrid plan. These findings cast doubt on the conventional wisdom that movement toward DC pension structures will necessarily result in greater employee turnover.

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Introduction

Public pension systems in many states face large funding shortfalls as the retirement benefits promised in the form of defined benefit (DB) annuities have outpaced the accrual of assets in states' pension funds.[1] These large, unfunded pension obligations can put tremendous pressure on states and local governments to make cuts in other areas, as funding for services must compete with unfunded liabilities for taxpayer dollars. This is one reason why there is growing interest in adopting pension systems that limit the likelihood of future funding shortfalls.[2] Specifically, a number of states have recently followed the direction of the private sector by moving toward pension systems that include defined contribution (DC) elements—either stand-alone DC systems or hybrid DB-DC systems (Munnell, Aubry, & Caffarelli, 2014).[3]

One concern about moving away from traditional DB structures is that it could result in increased rates of employee turnover. For instance, in a 2011 statement to the Committee on Ways and Means, the National Education Association maintained that, "Defined benefit plans are a proven tool for retaining accomplished public sector professionals."[4] Implicit in this statement is the notion that alternatives to DB plans are likely to be less effective retention tools.

There are, in fact, good theoretical reasons to expect that employee turnover might be higher under DC plans than under DB plans. Backloaded patterns of pension wealth accrual—under which benefits tend to grow slowly during the first 15 or 20 years of a teacher's career and much more rapidly toward the end of a career—are typical of traditional DB plans and can create a large financial incentive to stay rather than exit employment. Employees enrolled in DB plans might then be expected to exhibit lower rates of turnover due to the presence of these "pull" incentives. However, the empirical evidence on the matter is mixed (and quite limited regarding public pension systems). Gustman and Steinmeier (1993) and Even and MacPherson (1996) both find firms with employer-sponsored pension plans have lower rates of turnover regardless of whether the plans have DB or DC structures, while others find evidence of higher turnover under DC pension plans (e.g., Ippolito, 2002; Nyce, 2007).

In this policy brief, we present evidence from Washington State, which introduced a hybrid pension plan with DB and DC features to replace its traditional DB plan. Specifically, we compare the level of turnover among teachers enrolled in a traditional DB pension plan to the turnover among those enrolled in a hybrid DB-DC plan.

Our analysis suggests that the introduction of the hybrid plan in Washington did not lead to increases in teacher turnover. Specifically, we do not observe significant differences between teachers who are mandated into the state's pure DB plan and those mandated into the hybrid DB-DC plan, and we actually find that experienced teachers choosing to transfer from the traditional DB plan to the new hybrid plan exit employment at a significantly *lower* rate than teachers who chose to stay in the DB

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[1] The shortfall of pension assets relative to accrued liabilities is estimated to be in the trillions of dollars (Pew Center on the States, 2010; Novy-Marx & Rauh, 2011).

[2] To be clear, moving toward alternative pension structures will not alleviate *existing* shortfalls, which can only be addressed by (1) increasing payments into pension systems, which requires cutting spending elsewhere or raising taxes, or (2) cutting benefits that employees have already earned, which is problematic from a legal standpoint.

[3] A DB pension plan provides an employee with an annuity in retirement that is formulaically determined as a function of years of service, highest average salary level (e.g., over 3 consecutive years), and retirement age. In many plans, employees can retire at younger ages with the accumulation of enough years of service (e.g., 20 or 30 years of service). DB pension plans are typically funded by both employee and employer contributions, which are invested by the pension system. When contributions and/or investment returns are lower than what is needed to meet the pension system's obligations, the employer is responsible for covering the shortfall.

[4] The full statement, titled "Statement of the NEA on Public Pensions," can be found at http://www.nea.org/home/43840.htm.

plan. These findings cast doubt on the conventional wisdom that movement toward DC pension structures will necessarily result in greater employee turnover.

Pension Reform in Washington State

In 1995, Washington State adopted legislation that replaced the traditional DB pension plan (TRS2) covering public educators with a new hybrid plan (TRS3) with both DB and DC features (House Committee on Appropriations, 1995). The creation and design of the hybrid plan grew out of findings from a state-conducted survey of employees and employers. According to the Final Bill Report, that survey identified three prevailing concerns about the existing plan (TRS2):

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.
3. There was a general sentiment that Plan 2 was paternalistic and inflexible in the form and timing of retirement benefits.

The stated intent of the legislation creating TRS3 was to balance flexibility with stability, increase employee control over investments, and accommodate greater career mobility among employees.

Teachers have enrolled in TRS2 and TRS3 under several contexts. Those hired between July 1977 and July 1996 were mandated into TRS2. Those hired between July 1996 and July 2007 were mandated into TRS3. Since July 2007, new hires have been able to choose between TRS2 and TRS3; those not indicating a choice default into TRS3. Finally, teachers who were mandated into TRS2 as new hires were able to transfer to TRS3 following its introduction in 1996. Those who switched to TRS3 during a transfer period between July 1996 and January 1998 received a transfer bonus payment equal to 65% of their accrued contributions to TRS2.[5]

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 DC account rather than the state's pension fund. There are two important differences in the TRS3 DB component. First, the vesting period is longer: 10 years vs. 5 years. Second, the TRS3 DB increases in value by 3% each year between separation and retirement if a teacher has accumulated 20 or more years of service.

[5] Of those teachers eligible in the study sample, 77% transferred during this period. Very few transferred after 1998.

Table 1. Key Features of TRS2 and TRS3

	TRS2	TRS3	
Type	Traditional Defined Benefit	DB Component	DC Component
Vesting Period	5 years	10 years	N/A
Employee Contributions	Set by legislature depending on status of pension fund	N/A	5–15% (employee's choice)
Employer Contributions	Set by legislature depending on status of pension fund	Identical to TRS2 contributions	N/A
Annual Benefit Formula	*0.02* *(AFC)*(YOS)	*0.01* *(AFC)*(YOS)	N/A
Retirement Eligibility	65 yrs. of age, or 55 yrs. of age & 30 YOS (reduced benefit), or 55 yrs. of age & 20 YOS (reduced benefit)	65 yrs. of age, or 55 yrs. of age & 30 YOS (reduced benefit), or 55 yrs. of age & 20 YOS (reduced benefit)	Withdrawal ages and penalties for early withdrawal dependent on federal tax rules

Note: Average final compensation is abbreviated AFC; years of service is abbreviated YOS. The benefit reductions associated with early retirement are smaller with 30 YOS and were made more generous in 2008. Since 2008, a teacher with 30 YOS and an age of 62 can retire with full benefits.

Has the Introduction of a Hybrid Pension Plan Affected Teacher Turnover in Washington?

Teacher turnover depends on many factors, which makes isolating the effects of pension structure difficult. Fortunately, any particular Washington State teacher will have the same employer, job assignment, and salary whether he or she is enrolled in TRS2 or TRS3, which makes addressing this question easier. Enrollment in TRS2 and TRS3, however, is dependent in part on when a teacher is hired, and comparing patterns of turnover in different time periods can be problematic since time-related factors are likely to influence employee turnover independently of pension structure. Given this, we focus on comparing the behavior of teachers who are hired and employed during the same (or nearly the same) years.

Specifically, we analyze teachers' propensity to exit employment under the following contexts:

1. Comparing the turnover rates of teachers hired in 1996 (who could stay in TRS2 or transfer to TRS3) to teachers hired in 1997 (who were mandated into TRS3);

2. Comparing the turnover rates of teachers who could choose between TRS2 and TRS3 as new hires; and

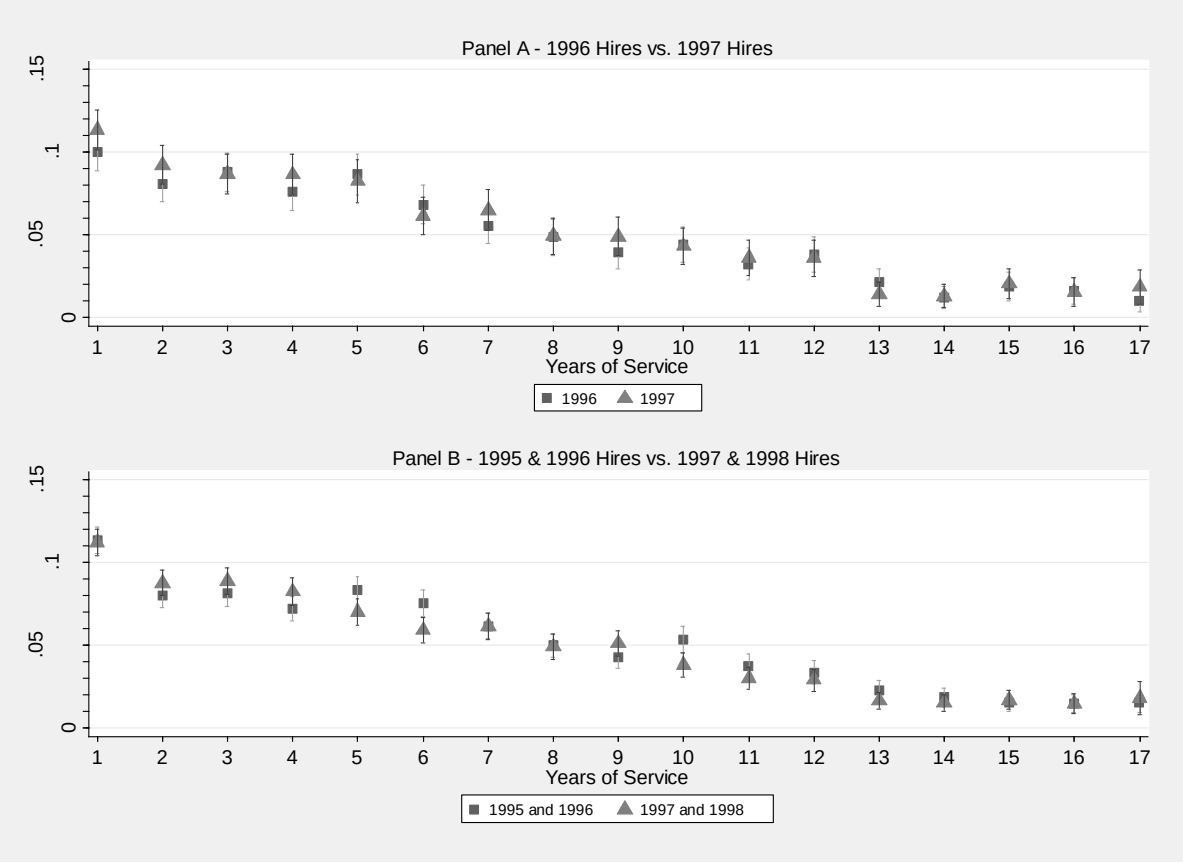
3. Comparing the turnover rates of teachers who transferred from TRS2 to TRS3 to teachers who chose to stay in TRS2.

In each case, conventional wisdom would suggest an expectation of higher rates of turnover among the teachers enrolled in TRS3 because overall compensation is less backloaded than under TRS2, lowering the incentive for teachers to remain in the system to collect deferred compensation.

Comparison 1: Turnover rates of teachers hired just before and after the introduction of TRS3

As noted above, comparisons of teacher turnover across different time periods run the risk of conflating pension system effects with other factors that influence turnover.[6] Here we compare turnover among teachers hired just before and after the introduction of TRS3 in July 1996; by focusing on teachers hired in adjacent years, we seek to minimize the extent to which time-related factors may differentially influence turnover among these two groups. Panel A of Figure 1 compares the predicted probability of turnover for teachers hired in the 1996 school year (represented by squares) to the predicted probability of turnover for teachers hired in the 1997 school year (represented by triangles). Panel B of Figure 1 performs the same comparison but expands the year-hired window to include the 1995 and 1996 school years before the introduction TRS3 and the 1997 and 1998 school years after TRS3.

Figure 1. Predicted Probability of Exit by Years of Service for Pre- and Post-TRS3 Hires



Note: The predicted values represented above are obtained from logit regression models controlling for year of hire, years of service, and vectors of teacher and school characteristics. The brackets around each predicted value represent the 95% confidence interval of that estimate. The models exclude teachers over the age of 55.

We fail to find any systematic difference in the pattern of turnover between the two groups of teachers. The vertical distance between each square and triangle represents the difference in the predicted probability of turnover after a given number of years. In general, these distances are small. Moreover, the probability of turnover among one group is not consistently higher or lower than

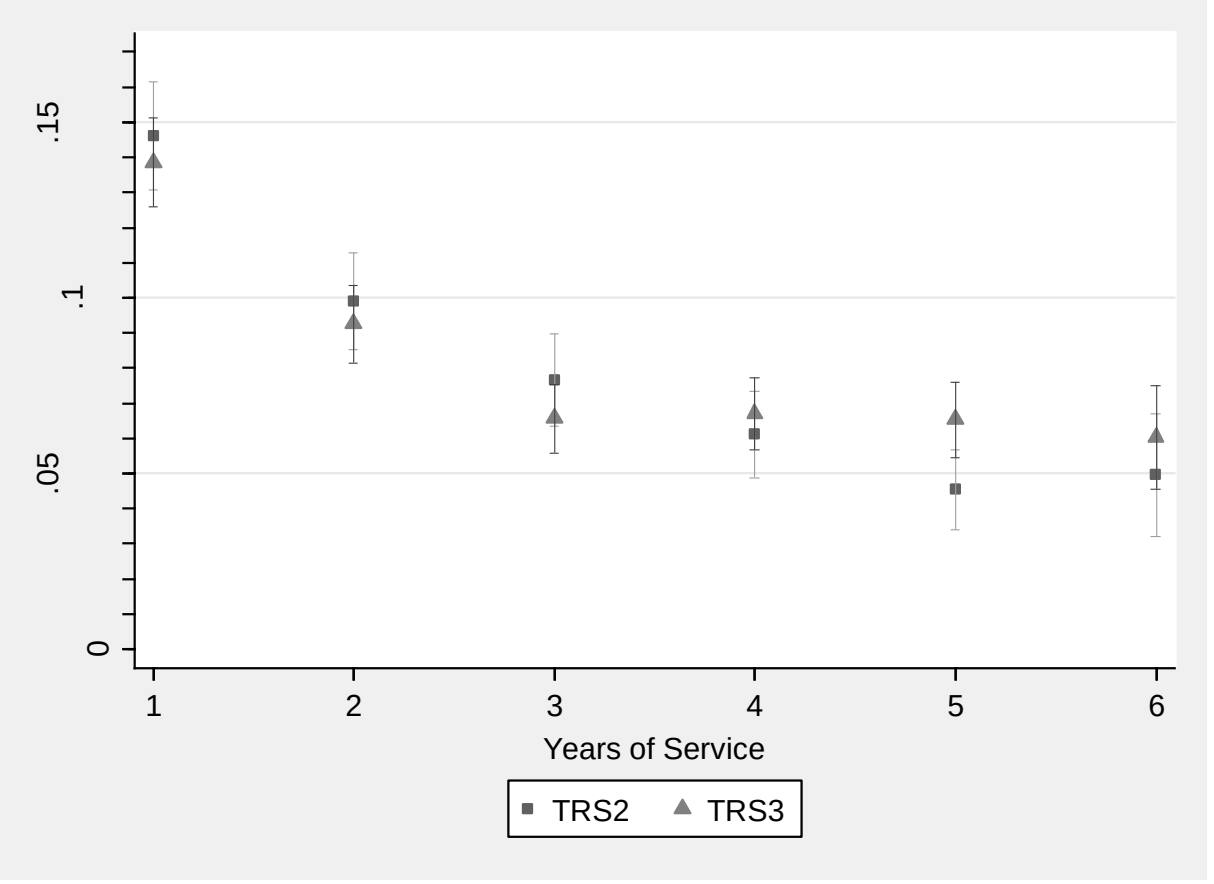
[6] This issue is discussed in more detail in Goldhaber, Grout, and Holden (2015).

among the other group, which is what one would expect if pension structure was influencing teacher turnover.

Comparison 2: Comparing the turnover rates of teachers who could choose between TRS2 and TRS3 as new hires

TRS2 was reintroduced in July 2007, and teachers hired since the 2008 school year have been able to choose between TRS2 and TRS3. Figure 2 compares the turnover rates of teachers hired in the 2008 and 2009 school years who chose TRS2 (represented by squares) to those who chose (or defaulted into) TRS3 (represented by triangles). As in Comparison 1, the differences in the predicted probability of turnover are small in most years, and the probability of turnover among one group is not consistently higher or lower than among the other group. While we cannot rule out the possibility that the level of turnover might be slightly different between TRS2 and TRS3 enrollees in any particular year, we again fail to find evidence that consistently supports the notion that pension structure is influencing turnover.

Figure 2. Probability of Exit for 2008 and 2009 Hires by Plan and Years of Service



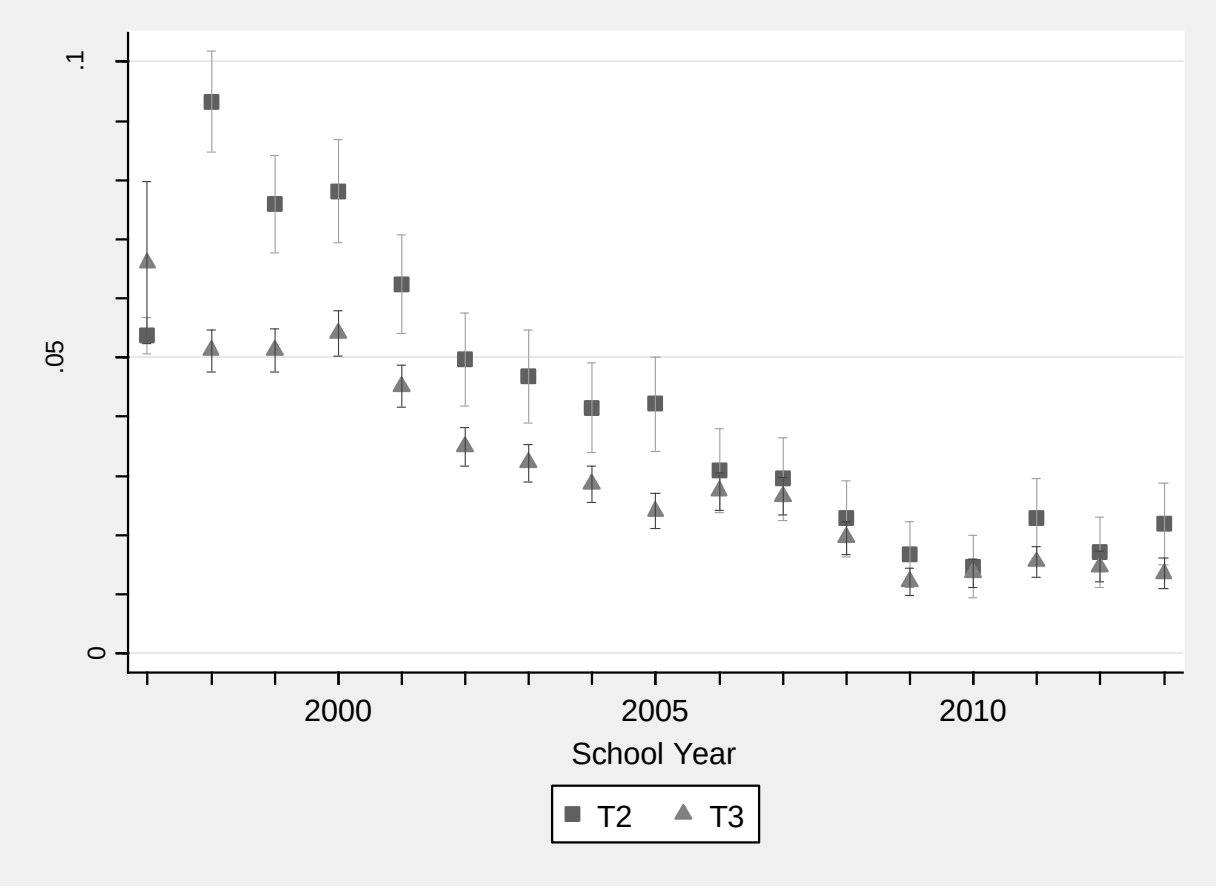
Note: The predicted values represented above are obtained from logit regression models controlling for plan choice, years of service, and vectors of teacher and school characteristics. The brackets around each predicted value represent the 95% confidence interval of that estimate. The models exclude teachers over the age of 55.

Comparison 3: Turnover rates of teachers who could transfer from TRS2 to TRS3

As described above, teachers were given the option to transfer from TRS2 to TRS3 following the introduction of TRS3 in the 1997 school year. To be clear, this enrollment context is quite different from that analyzed in Comparison 2. The teachers choosing between TRS2 and TRS3 are relatively experienced—roughly three-quarters had 3 or more years of service as of the end of the 1996 school

year. The plots in Figure 3 compare the turnover rates of teachers who stay in TRS2 to the quit rates of those choosing to transfer to TRS3.

Figure 3. Probability of Exit Among Teachers With the Opportunity To Transfer to TRS3



Note: The predicted values represented above are obtained from logit regression models controlling for plan choice, school year, and vectors of teacher and school characteristics. The brackets around each predicted value represent the 95% confidence interval of that estimate. The models exclude teachers over the age of 55.

In contrast to the first two comparisons, here we *do* find evidence of a relationship between pension structure and turnover. Turnover is consistently *lower* among teachers who self-selected into TRS3 than among those choosing to stay in TRS2. During the period 1998–2005, the predicted propensity to exit employment is between 1.3 and 4.2 percentage points *lower* among teachers who transferred to TRS3.[7]

Conclusion

Conventional wisdom and theoretical arguments suggest that moving toward DC pension structures will have the undesirable effect of increasing employee turnover (though the empirical record is comparatively mixed). In studying Washington State's introduction of a hybrid pension plan we find little evidence to support this notion. Indeed, among teachers given the opportunity to transfer to the hybrid plan following its introduction in the 1997 school year, we find that those choosing to

[7] Two subsample estimates on teachers with fewer than 5 years of service and teachers with 5 or more years of service produce similar results.

transfer exhibit significantly *lower* rates of turnover than those choosing to stay in the traditional DB plan.

While our findings run counter to conventional wisdom, they are not without precedent. As noted earlier, there is evidence that the influence of employer-sponsored DB plans on turnover is similar to the influence of plans with DC structures. Also, in analyzing the behavior of employees transferring from a DB plan to a DC plan, Goda, Jones, and Manchester (2013) find lower rates of turnover among transferring employees. Gustman and Steinmeier (1993) posit that pension-covered jobs pay higher levels of compensation than workers could find elsewhere and it is this compensation premium, not backloaded pension structures, that drive lower turnover rates. Our findings are consistent with this idea.

There are several important points to consider when interpreting our findings. The first is that the creation of TRS3 was driven in part by *employees'* desire for a different type of pension plan rather than by fiscal concerns (House Committee on Appropriations, 1995). This plan, when measured by the take-up rate among teachers who can choose between it and a pure DB plan the state also operates, has been quite popular.[8] Second, while Washington moved toward a DC structure, it is a hybrid plan that retains a significant DB component as well. The DC take-up rate for states that offer teachers a choice between a pure DB and a pure DC plan has generally been much lower (Chingos & West, 2015; Papke, 2004). Finally, in other related work we show that the introduction of TRS3 did not have a negative impact on either the quality of teachers in Washington or their retirement security.[9] In short, the experience in Washington demonstrates that public pension reform can be undertaken without negative impacts on the teacher workforce.

[8] During a 1996–1997 transfer period, 75% of eligible teachers transferred from TRS2 to TRS3 and 60% of new hires in the 2008 and 2009 school years opted to enroll in TRS3. Employers contribute the same amount of money to the state's pension fund regardless of whether the employee is enrolled in TRS2 or TRS3.

[9] A policy brief discussing that research is available at http://www.teacherpensions.org/resource/finding-common-ground-pension-reform-lessons-washington-state.

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