How Social Security Coverage Affects Teacher Mobility

Pin-En A. Chou
Michigan State University
April 22, 2016

Abstract

This paper studies the cross-state variation in teacher pensions and Social Security coverage and investigates how Social Security works as a buffer against pension plans changes towards teacher mobility. Data on Individual-level mobility data come from the School and Staffing Survey (SASS), and data on characteristics of public pensions plans come from the Center for Retirement Research at Boston College and the National Council on Teacher Quality (NCTQ). With restricted residency data, I can match individual teacher to their pension characteristics and Social Security coverage. Controlling for teacher characteristic, states-year level characteristic, year and state fixed effects, I can estimate how Social Security coverage interacting pension plans coverage affects teacher mobility.
1 Introduction

About 40% of the 3 million public K-12 teachers are not covered by Social Security (Figure 1). These teachers instead rely on their own saving and teacher pensions that are mostly underfunded and rarely portable. Some scholars have argued that all teachers should join Social Security to solve the portability, fairness and back loading issues of teacher pensions (Doherty et al., 2012)

Policies that increase and maintain labor mobility allow a more efficient allocation of resource and can therefore raise Society welfare by allowing workers to move to where returns are higher (Schiff, 1992). A growing body of recent literature suggests that a higher teacher turnover rate may improve student achievement in class (Jackson, 2013; Boyd et al., 2008; Goldhaber et al., 2007; Hanushek et al., 2005). While Jackson (2013) suggests that teacher turnover can lead to optimal allocation of teachers to schools, previous literatures find that pension plans decrease worker mobility, increase job tenure, and increase young teacher’s exit out of teaching (Papke & Litwok, 2013; Friedberg & Owyang , 2005; Gustman& Steinmeier, 1993; Allen et al., 1988; McCormick & Hughes, 1984). To address the lower mobility and inefficiency labor allocation pension imposed on teachers, this paper aims to estimate what role Social Security coverage plays when teachers are covered under both teacher pension and Social Security.
As Table 1 shown, the average state specific vesting period for teachers pensions increased from 5.7 years in 2008 to 6.5 in 2012, and 15 states, up from 9 in 2008, now make teachers wait for 10 years. Because teachers who leave the state-level (sometimes district-level) public school system before vesting are not entitled to pension benefits upon retiring, longer vesting periods and lack of portability of pension plans can increase the cost of moving jobs before one is vested and creates a disincentive to move. As for workers who are covered by Social Security, they also need 10 years of work to be eligible\(^1\) for Social Security retirement benefits upon retiring. But different from pension plans, Social Security has the portability across state lines and jobs. Workers’ later earning history if move to another state or another professions is considered the same way into their Social Security earning records as long as their new employers are also covered by Social Security. Those workers therefore make their mobility decision without worrying about extra cost coming from his retirement system. For teachers not yet vested in pension plans who are afraid of getting no retirement benefits if move away from current state public school system, Social Security coverage offers another option of retirement benefits that can ease the fear of moving. For example, teachers who rely solely on their pensions can either work until vested for their pension benefit or leave before vested and get no pension benefits. Unlike the former group, teachers with Social Security coverage can either work until vested for both pension and Social Security

\(^1\) As you work and pay tax into Social Security, you earn Social Security credits for each $1260 in earnings. With a maximum of earning four credits each year, most people need 40 credits (10 years) to qualify for Social Security benefits.
benefit, or move out from original school system before vested in pension and collect Social Security instead. Social Security coverage therefore provides more flexible options when searching for another job and can ease the disincentive pension plans imposed on teachers.

This paper will estimates how variation in pension structure interacting with variation in Social Security coverage may affect mobility of teachers, and what type of teachers response stronger.

2 Previous Literature

Teacher Pension, Mobility and Retirements

Papke & Litwok (2013) study how pension characteristic such as vesting period, Social Security coverage, and contribution rate affect the early years of a teacher’s career. The authors select four states - Michigan, Wisconsin, California and Florida to illustrate the variability in pension wealth upon vesting. With a discrete time hazard model, they use panel data from National Longitudinal Survey of Youth (NLSY97) to analyze whether these cross-states difference in pension plans affect young teacher’s first exit in the labor market. With the results estimated under standard logit assumptions, the paper suggests that current system of retirement compensation of teachers is not helping to retain young teachers. They also suggest that with a portable benefit contribution plan
or Social Security coverage, a subset of teachers is more likely to exit teaching. Friedberg & Turner (2011) analyze how incentive embedded in public defined benefit plans affect the retirement of public school teachers. Individual-level data come from the School and Staffing Survey (SASS) and the Teacher Follow-Up Survey (TFS). With basic demographic and a full set of job satisfaction variables, they use the Peak Value measure of teacher pensions incentives developed by Colie and Gruber (2007) as the key pension control variable to capture the effect of changes in public pension on teacher retirement decision. They find that teachers first delay retiring when the pension is still accumulating, and retire abruptly. In addition, dissatisfied teachers respond stronger to pension incentives with a larger magnitude comparing to the satisfied teachers do.

Pension and Labor Mobility

Friedberg & Owyang (2005) study the link between the decline in both job tenure and DB coverage. Using data from 1983-2001 Survey of Consumer Finance (SCF) and 1993 Current Population Survey (CPS), controlling for job characteristics, they suggest workers with DB pensions have longer job tenure than workers with DC pensions or no pensions. Gustman& Steinmeier (1993) investigate whether a lack or pension portability cause the lower mobility rate in the pension covered jobs. Using data from the Survey of Income and Program Participation (SIPP) from the 1983-1986 time period, they control for personal characteristics (age, education, work experience, marital status,
children, year until expected retirement, home ownership, and race), and job characteristics (occupation, industry, firm size, and union status). The authors find that pensions are associated with a 9% decrease in one-year mobility rate and find similar mobility with DB and DC plans. Allen et al. (1988) estimate how pension coverage affects labor mobility by comparing the mobility of workers with and without pension coverage. Using data from 1979 and 1983 Current Population Survey (CPS), the authors focus on reduction in the lifetime value of pension benefits associate with job changes. They suggest that pension coverage was one of the most important factors that influence job duration and show that the average workers between the ages of 35 and 54 lose approximately 50% of a year’s earning to change jobs. McCormick & Hughes (1984) estimate how pension coverage affect labor mobility. They use data from the General Household Survey (GHS) in 1973 - 1974, and control for individuals’ education, occupation, house tenure, age, sex, marital status, race, number of children, and the regional unemployment. With a logit model, they suggest that an employee with a pension plan is less likely to change their jobs comparing to similar employees without a pension plan.

Teacher Mobility

Falch (2011) investigate how exogenous wage change affects teacher turnover rate and finds that wage premium reduce voluntary quit during the period of 1993-2002.
Jackson (2013) studies the importance of match between teachers and schools. He finds that match quality increase with experience and has a negative correlation with switching schools. Li (2009) suggests that classroom characteristics play a larger role on teacher mobility compares to average school characteristics. Jackson (2013) finds that teachers perform better in class after a move to another school than before the move; he also finds matching quality increases and school switching decreases monotonically with an increase in experience, suggesting teachers switching jobs until the productive match.

Boyd et al. (2008) find that less-effective (responsible for lower students’ achievement gain) elementary school teachers disproportionately leave after their first year of teaching. Goldhaber et al. (2007) and Hanushek et al. (2005) also find that teachers who move and leave teaching are on average less effective than the teachers who stay. This attrition might be due to poor initial career choice and may reflect “counseling out” by school officials. With the assumption that the teachers who replace the ones who left are at least as effective as the average teachers, an attrition of the less effective teachers can improve education outcomes if many of them leave teaching careers or if the new schools are a “better fit” (become more effective) for them. Some papers suggest that high turnover rate can result to significant decrease in students’ performance in schools with higher proportions of low-achieving and black students. (Bempah et al., 1994; Guin, 2004; Ronfeldt et al., 2011).
3 Background Information

Social Security

Current Social Security system collects Social Security tax from workers and their employers. The tax revenue is then used to pay benefits to 1) people who earned enough credits and already have retired; 2) people who are disabled\(^2\); 3) a spouse or child of someone who receives Social Security; 4) a spouse or child or dependent parent of a qualified worker who died.

The basic operation of the Social Security program is as follow: Individuals and their employers each pay a 6.2% Federal Insurance Contributions Act (FICA) tax on the individual’s earning, for a total tax burden of 12.4%. In 2016, this tax is only levied on the first $118,500 of earnings. The money collected from this tax is then deposited into a trust fund that is invested in government bonds. Checks written on this trust fund are paid to people who are eligible to receive Social Security. To be eligible to collect Social Security, a person must have worked and paid this payroll tax for at least ten years and must be age 62 or older. Checks are paid until the recipient dies, and, if there is a surviving spouse, he or she may receive a payment (if it is greater than their own Social Security benefit) until his or her own death.

\(^2\) Social Security pays benefits to people who can not work due to medical situation that is expected to last more than a year or result to one’s death. To be eligible for the disability benefits, a worker need to meet two different earning test: 1) A recent work test that is based on the worker’s age at the time he become disabled. 2) A duration work test to show that the worker works long enough under Social Security. Certain blind people have to meet only the duration work test. (Source: SSA)

In the Social Security system, the retirement benefits are calculated as a redistributive function of past earnings, based on the individual’s Average Indexed Monthly Earnings (AIME). AIME is the 35-year average of real monthly earning with the 35 highest earning years considered.

Primary Insurance Amount (PIA), the monthly benefit a person would receive if he/she choose to begin receiving retirement benefits at his/her full retirement age, is then calculated as 90% of AIME up to the first bend point, 32% of AIME in excess of the first bend point but less than the second bend point, plus 15% of AIME in excess of the second bend point. For example, if Mary’s AIME were $6,000, her PIA would be:

\[
PIA = 0.9 \times (\$856) + 0.32 \times (\$5,157 - \$856) + 0.15 \times (\$6,000 - \$5,157) = \$2,273.17
\]

Social Security provides portable retirement benefits between states and professions under jobs that pay into Social Security. Since Social Security calculates your credits and benefits the same way as long as you work under a Social Security covered (SS-covered) job, there is no incentive for or against moving from a SS-covered job to another. However, there might be a disincentive for one to move from a SS-covered job to a non-SS covered job due to the concern that non-SS-covered earning history will not be calculated into ones SS retirement benefit.
Teacher Pensions

Today, there are five kinds of teacher pensions that states can choose to offer their teachers: Defined benefit (DB), Defined contribution (DC), Cash-Balance (CB), Hybrid, and Choice of plans. A defined benefit plans guarantee a specified amount of retirement benefit upon retiring and collect payments form teachers, states, and districts. The defined benefits are rarely portable. If a teacher leaves a state level public school system, for example, moves to another state (in some states moves to another district) or go to a private school, her benefit calculation starts from zero again in the new system.

A defined contribution plans set a fixed contribution level for both teachers and their employers and allow teachers to chose how to invest using the contributions. The DC benefits therefore are not fixed and relied on the return of the investments. Unlike DB plans, DC is portable and the retirement fund that accrues stay with the teachers.

Cash-Balance plan is portable like a DC plans but with a safety net-teachers are guarantee a minimum return by the state. Hybrid plan is like a combination of both DB and DC plans- a smaller version of DB plan with a smaller version of portable DC plan added. Choice of plans allows teachers to choose between the plans the state offers and give teachers more options according to what they prefer.

Data from the Center for Retirement Research at Boston College and the National Council on Teacher Quality (NCTQ) show the prevalence of the plans. As shown in Table 2, while 23 states have their teachers participate in the same statewide public
employee pension systems, 28 states have their teachers participate in separate pension systems. Today, 37 states and the District of Columbia offer their teachers only a defined benefit plan. Alaska is so far the only state that has adopted mandatory defined contribution plan for their teachers and Kansas is the only state adopted cash-balance plan for their teachers entering the system beginning 2015. Nationwide, five states including Michigan, Indiana, Oregon, Rhode Island and Virginia adopted Hybrid plans; while Florida, Louisiana, Ohio, South Carolina, Utah and Washington—provide teachers with a choice of plans.

Current pension system collects contributions from workers and their employers. The contributions are then used to pay benefits to 1) people who are vested and already have retired; 2) people who are disabled\(^3\); 3) a spouse or child or dependent parent of a qualified worker who died.

The basic operation of the teacher pensions is as follow: With contribution rates vary by states (Table 3), individuals and their employers each pay their contribution (\% individual’s salary) to the pension systems. To be eligible to collect pension benefits, a person must be vested (Table 1) and reached individual state’s retirement eligibility requirements (Table 4). Pension Benefits are paid until the recipient dies. Most teacher pensions offer a survivor benefits and the rules differ across pension plans. For example,

\(^3\) Social Security pays benefits to people who can not work due to medical situation that is expected to last more than a year or result to one's death. To be eligible for the disability benefits, a worker need to meet two different earning test: 1) A recent work test that is based on the worker’s age at the time he become disabled. 2) A duration work test to show that the worker works long enough under Social Security. Certain blind people have to meet only the duration work test.  (Source: SSA)
in Illinois, a dependent can choose between a lump-sum payment and a monthly benefits payment. The dependent can be the deceased worker’s spouse, civil union partner, an unmarried natural or adopted child under 18, or a dependent parent who received at least half of his support from you for the 12-month prior to the worker’s death.

Unlike Social Security, some pension plans allow teachers to withdraw their contributions upon leaving (Table 5). In addition, some states allow teachers to purchase service time for out-of-state teaching or approved leaves of absences (e.g., maternity or paternity, adoption leaves) (Table 6). Previous literatures use these characteristics to measure how portable is a state pension plan (Doherty et al., 2012; Litwok and Papke, 2013).

Pension benefits (Source: National Education Association, 2016; Doherty et al., 2012)

The basic teacher pension benefit formula is calculated as followed:

Monthly pension benefit

= (1/12) * a teacher’s final average salary (FAS) * years of service * multiplier

Each state has its own multiplier and own definition of FAS. For example, Connecticut calculates the average of the higher three years salary as FAS with a multiplier of 2%.

How Social Security Interact with Teacher Pensions

When the Social Security system was first created in 1935, all public school
teachers were excluded from coverage. The exclusion was based on constitutional concern of whether federal government should be allowed to impose tax on state government. In the 1950s, congress enacted Section 218 along with an amendment of the Social Security Act, allowing Social Security coverage to be extended to state and local government employees including public school teachers. Since then, 35 states have extended their Social Security coverage to their public school teachers. As shown in Table 7, the teachers who work in the District of Columbia and the following 12 states are only covered by their public retirement systems but are not covered under the Social Security: Alaska, California, Colorado, Connecticut, Illinois, Kentucky, Louisiana, Maine, Massachusetts, Nevada, Ohio, and Texas.

The low portability of most pension plans barriers teacher mobility. As mentioned before, the vesting period is one of the key dimensions along with pension plans vary. Table 1 shows the vesting periods required by state level in 2008 and 2012. The increase in state requirements of vesting period changes the pension wealth of teacher at different age and time of tenure and could therefore affect teacher’s decision of staying, moving or leaving teaching career in a different way. For example, an Illinois public school teacher who started teaching in 2008 and was thinking of moving to another state in 2012 could make very different decision on his mobility when facing an increase of vesting period from 5 years to 10 years. Before the policy change, he might just stay for another year until vested and move to another job. Now that the vesting
period has increased along with the low portability, the foregone pension wealth if he leaves before vested will be taken into account and affect his moving decision. With the same increase of vesting period from 5 years to 10 years, for a teacher who started teaching in 2008 in New York, it’s a different story. Knowing that his Social Security benefit is portable across states and jobs, he can still accumulate his earning history in Social Security system. In hypothesis, with all else equal, Social Security will likely reduce the barriers teacher pensions imposed onto teacher mobility.

4 Data

Individual-level data on teacher characteristic, general condition in schools and district hiring and retention practice come from the School and Staffing Survey (SASS). The SASS is a system of related surveys conducted by the National Center of Education Statistics (NCES) in 1987, 1990, 1993, 1999, 2003, 2007, and 2011. To determine how many teachers stay at the same school (stayer), move to another school (mover) or leave the teaching profession (leaver), SASS operates the Teacher Follow-up Survey (TFS) that resurveys the same respondents who completed SASS in the previous year one year later. With the access to restricted data on state residence, I can match teachers to their pension plans and Social Security coverage. Currently, I have access to 1999 SASS and 2000 TFS public-use data, which give me an overview of teachers demographic and allows me to study how teacher mobility correlates with teacher characteristics.
Mobility at a younger age has been more difficult to study than retirements because of a lack of data and identification. (Friedberg, 2011). The SASS offers a nationally representative cross-section teacher data with rich information, of demographics, characteristics of the school, teacher credential, and type of students instructed. The TFS survey provides a measure of one-year mobility to study teacher behavior. With the restricted-data on location of residence, I can link individual teacher to their state-level pension plans that are publicly available. One cons of using SASS is that it only provides current earning but not earning histories of teachers. I will therefore impute an earning history for teachers by running a regression of earning on polynomials of years of service like Friedberg & Turner (2011) to construct each teacher pension wealth. Also, measurement errors will likely exist due to data are self-reported by the teachers. Lastly, lack of information on one’s spouse working condition and earning may result to omit important control variables.

This paper discusses data from the 2001 TFS. As Table 8 shows, 84% of teachers stayed in the same school from prior year (stayers). About 8% of teachers moved to another school (movers) and 8% of teacher left teaching (leavers). Among all movers, 84% chose to teach in the same state as prior year; 1% moved from a public school to a private school in the same state; 1% moved from a public school to a private school in a different state. While most teachers on average have 15 years of total teaching experience and had stayed in the SASS school for 9 years, teachers who move to another
school (movers) have on average 11 years of total teaching experience and had stayed in the SASS school for 5 years.

Table 9 describes teacher characteristics. While about 25% of all teachers are males, only about 19% of movers are males. At the same time, while about 48% of all teachers earned a degree higher than bachelor, only 39% of all movers have a degree higher than bachelor. Approximately, 72% of all stayers, 62% of all movers and 59% of all leavers are a member of the union; 15% of all stayers, 29% of all movers and 24% of all leavers are new teachers with less than three years of teaching experience. Leaver and movers have a higher proportion (33% of all movers and 24% of all leavers) of younger teachers who aged less than 30 compared to stayers (15% of all stayers). While stayers have more balance distribution after the age of 30 (23% between the age of 31 and 39; 32% between the age of 40 and 49 and 30% older than age 49), there are less movers age older than 50 (26% between the age of 31 and 39; 27% between the age of 40 and 49 and 14% older than age 49) and more leavers age older than 50 (22% between the age of 31 and 39; 19% between the age of 40 and 49 and 35% older than age 49). One possible reason for a smaller proportion of older movers is because of the fear of losing pension wealth. On the other hand, it is likely that a large proportion of older leavers leave for their retirements. While there are about 1% of all teachers having a total family income of $100,000 or more, 15% of all leavers have a total family income of $100,000 or more.
5 Methodology

To estimate how Social Security coverage interacting pension plans coverage affect teacher’s mobility, I use a discrete time hazard model under standard logit assumptions:

\[ Pr(\text{Move}_{ist} = 1 | \cdot) \]

\[ = f(\alpha(\text{Post policy change}), \beta(\text{Post policy change} \times \text{Social Security Coverage}), X_{ist} \gamma, R_{st} \eta, S_s, \delta_t) \]

Where \( Pr(\text{Move}_{ist} = 1 | \cdot) \) is a measure of the probability that teacher \( i \) in state \( s \) will move to another school prior to previous year. \( X_{ist} \) is a vector of teacher characteristic variables, such as: gender (dummy of male), race (dummies of Black and Hispanic), married Status, age, education, teaching experience, member of union, total family income, pension wealth, being a new teacher (<3 years teaching experience), and number of dependents. The vector \( R_{st} \) includes pension plans characteristics, Social Security coverage, and other covariates that vary at the state and year level such as: employment rate, unemployment rate, and labor participation rate. \( S_s \) and \( \delta_t \) are state and year fixed effects.

I plan to run different regressions with different measures of dependent variable such as: the probability that a teacher moves to another school in another state, the probability that a teacher moves to another school in the same state, the probability that a teacher moves to from a public school to a private school in another state, the probability that a teacher moves to from a public school to a private school in the same state, and lastly the
probability that a teacher leaves the teaching profession.

6 Descriptive Results

I restrict my samples to teachers who voluntarily moved or left their previous schools.

Table 10 describes some correlations between teacher demographic and teacher mobility.

There is a negative correlation between age and both possibility of moving and leaving teaching. Estimates in Column 1 show that a teacher who is Hispanic or with a longer tenure is less likely to move away. Estimates in Column 2 show that new teachers, teachers with more teaching experience, teachers with higher family income, teachers with more dependent age less than five, or teachers with less total dependents are more likely to exit teaching. I would expect married teachers or female teachers to have less mobility while more educated teachers having more mobility to move or quit teaching.

Reference


http://www.econ.msu.edu/faculty/papke/docs/teacher_exit081815_DL_LEP.pdf

Lohman (2006) Retirement and Pension Systems; Teachers; Social Security; Municipal Officials/Employees, OLR Research Report


National Education Association (NEA): http://www.nea.org


20


TeacherPension.org: http://www.teacherpensions.org

The United State Social Security Administration (SSA): https://www.ssa.gov

Table 1: State Policy for vesting periods

<table>
<thead>
<tr>
<th>State</th>
<th>2008</th>
<th>2012</th>
<th>Change in Vesting Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Alaska</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Arizona</td>
<td>5</td>
<td>0</td>
<td>⬇</td>
</tr>
<tr>
<td>Arkansas</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>California</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Colorado</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Connecticut</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Delaware</td>
<td>5</td>
<td>10</td>
<td>⬆</td>
</tr>
<tr>
<td>DC</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>6</td>
<td>8</td>
<td>⬆</td>
</tr>
<tr>
<td>Georgia</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Hawaii</td>
<td>5</td>
<td>10</td>
<td>⬆</td>
</tr>
<tr>
<td>Idaho</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Illinois</td>
<td>5</td>
<td>10</td>
<td>⬆</td>
</tr>
<tr>
<td>Indiana</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Iowa</td>
<td>4</td>
<td>7</td>
<td>⬆</td>
</tr>
<tr>
<td>Kansas</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Kentucky</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Louisiana</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Maine</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Maryland</td>
<td>5</td>
<td>10</td>
<td>⬆</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Michigan</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Minnesota</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mississippi</td>
<td>8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Missouri</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Montana</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Nebraska</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Nevada</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>New Hampshire</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>New Jersey</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>New Mexico</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>5</td>
<td>10</td>
<td>⬆</td>
</tr>
<tr>
<td>North Carolina</td>
<td>5</td>
<td>10</td>
<td>⬆</td>
</tr>
<tr>
<td>North Dakota</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Ohio</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Oklahoma</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Oregon</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>Type of Plan</td>
<td>Pensions that covered teachers</td>
<td>Website</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------</td>
<td>--------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Alaska</td>
<td>DC</td>
<td>Teachers' Retirement System (TRS)</td>
<td><a href="http://doa.alaska.gov/trb/">http://doa.alaska.gov/trb/</a></td>
</tr>
<tr>
<td>Arizona</td>
<td>DB</td>
<td>State Retirement System</td>
<td><a href="http://www.azasrs.gov">http://www.azasrs.gov</a></td>
</tr>
<tr>
<td>Arkansas</td>
<td>DB</td>
<td>Teachers' Retirement System (TRS)</td>
<td><a href="http://artrs.gov/">http://artrs.gov/</a></td>
</tr>
<tr>
<td>California</td>
<td>DB</td>
<td>CALSTRS (California State Teachers Retirement System)</td>
<td><a href="http://www.calstrs.com/">http://www.calstrs.com/</a></td>
</tr>
<tr>
<td>Colorado</td>
<td>DB</td>
<td>Public Employees' Retirement Association (PERA)</td>
<td><a href="https://www.copera.org/default.htm">https://www.copera.org/default.htm</a></td>
</tr>
<tr>
<td>Connecticut</td>
<td>DB</td>
<td>Teachers' Retirement System (TRS)</td>
<td><a href="http://www.ct.gov/trb/site/default.asp">http://www.ct.gov/trb/site/default.asp</a></td>
</tr>
<tr>
<td>Delaware</td>
<td>DB</td>
<td>State Employees' Pension Plan (SEPP)</td>
<td><a href="http://www.delawarepensions.com/">http://www.delawarepensions.com/</a></td>
</tr>
<tr>
<td>DC</td>
<td>DB</td>
<td>District of Columbia Retirement Board Teachers' Retirement Plan</td>
<td><a href="http://dcrb.dc.gov/">http://dcrb.dc.gov/</a></td>
</tr>
<tr>
<td>Florida</td>
<td>DB/DC</td>
<td>Florida Retirement System Pension Plan</td>
<td><a href="http://www.myfrs.com/portal/server.pt/community/myfrs/257">http://www.myfrs.com/portal/server.pt/community/myfrs/257</a></td>
</tr>
<tr>
<td>Georgia</td>
<td>DB</td>
<td>Teachers' Retirement System</td>
<td><a href="http://www.trsga.com/">http://www.trsga.com/</a></td>
</tr>
<tr>
<td>Hawaii</td>
<td>DB</td>
<td>Employees' Retirement System</td>
<td><a href="http://ers.hawaii.gov/">http://ers.hawaii.gov/</a></td>
</tr>
<tr>
<td>Idaho</td>
<td>DB</td>
<td>Public Employee Retirement System of Idaho (PERSI)</td>
<td><a href="http://www.pers.state.id.us/">http://www.pers.state.id.us/</a></td>
</tr>
<tr>
<td>Illinois</td>
<td>DB</td>
<td>Teachers' Retirement System (TRS)</td>
<td><a href="http://trs.illinois.gov/">http://trs.illinois.gov/</a></td>
</tr>
<tr>
<td>Indiana</td>
<td>Hybrid</td>
<td>Teachers' Retirement Fund (TRF)</td>
<td><a href="http://www.in.gov/inps/">http://www.in.gov/inps/</a></td>
</tr>
<tr>
<td>Iowa</td>
<td>DB</td>
<td>Public Employees Retirement System (PERS)</td>
<td><a href="http://www.ipers.org/index.html">http://www.ipers.org/index.html</a></td>
</tr>
<tr>
<td>Kansas</td>
<td>DB/Cash Balance</td>
<td>Public Employees Retirement System (PERS)</td>
<td><a href="http://www.kpers.org/index.html">http://www.kpers.org/index.html</a></td>
</tr>
<tr>
<td>Kentucky</td>
<td>DB</td>
<td>Teachers' Retirement System</td>
<td><a href="http://ktrs.ky.gov/">http://ktrs.ky.gov/</a></td>
</tr>
<tr>
<td>Louisiana</td>
<td>DB</td>
<td>Teachers' Retirement System</td>
<td><a href="http://www.trsl.org/main/">http://www.trsl.org/main/</a></td>
</tr>
<tr>
<td>Maine</td>
<td>DB</td>
<td>Public Employees Retirement System (PERS)</td>
<td><a href="http://www.maine.pers.org/">http://www.maine.pers.org/</a></td>
</tr>
<tr>
<td>Maryland</td>
<td>DB</td>
<td>Maryland State Retirement and Pension System (MSRPS)</td>
<td><a href="http://www.sra.state.md.us/">http://www.sra.state.md.us/</a></td>
</tr>
<tr>
<td>Massachusetts</td>
<td>DB</td>
<td>Teachers' Retirement System</td>
<td><a href="http://www.mass.gov/mtrs/">http://www.mass.gov/mtrs/</a></td>
</tr>
<tr>
<td>Michigan</td>
<td>Hybrid/DC</td>
<td>Public School Employees' Retirement System</td>
<td><a href="http://www.michigan.gov/orsschools">http://www.michigan.gov/orsschools</a></td>
</tr>
<tr>
<td>Minnesota</td>
<td>DB</td>
<td>Teachers Retirement Association</td>
<td><a href="http://www.mnepers.org/">http://www.mnepers.org/</a></td>
</tr>
<tr>
<td>Mississippi</td>
<td>DB</td>
<td>Public Employees' Retirement System</td>
<td><a href="http://www.pers.state.ms.us/">http://www.pers.state.ms.us/</a></td>
</tr>
<tr>
<td>State</td>
<td>Plan Type</td>
<td>Retirement System</td>
<td>Website</td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
<td>--------------------------------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Missouri</td>
<td>DB</td>
<td>Two plans: Public School Retirement System and Public Education Employee Retirement System</td>
<td><a href="https://www.prsrmo.org/">https://www.prsrmo.org/</a></td>
</tr>
<tr>
<td>Montana</td>
<td>DB</td>
<td>Teachers' Retirement System</td>
<td><a href="http://www.trs.mt.gov/">http://www.trs.mt.gov/</a></td>
</tr>
<tr>
<td>Nebraska</td>
<td>DB</td>
<td>School Retirement System</td>
<td><a href="http://npers.ne.gov/SelfService/public/planInformation/school/schoolPlanInfo.jsp">http://npers.ne.gov/SelfService/public/planInformation/school/schoolPlanInfo.jsp</a></td>
</tr>
<tr>
<td>Nevada</td>
<td>DB</td>
<td>Public Employees' Retirement System</td>
<td><a href="http://www.nvpers.org/">http://www.nvpers.org/</a></td>
</tr>
<tr>
<td>New Jersey</td>
<td>DB</td>
<td>Teachers' Pension and Annuity Fund</td>
<td><a href="http://www.state.nj.us/treasury/pensions/tpaf1.shtml">http://www.state.nj.us/treasury/pensions/tpaf1.shtml</a></td>
</tr>
<tr>
<td>New Mexico</td>
<td>DB</td>
<td>Educational Retirement Board (ERB)</td>
<td><a href="http://www.nmerb.org/">http://www.nmerb.org/</a></td>
</tr>
<tr>
<td>New York</td>
<td>DB</td>
<td>New York State Teachers' Retirement System</td>
<td><a href="http://www.nystrs.org/">http://www.nystrs.org/</a></td>
</tr>
<tr>
<td>North Carolina</td>
<td>DB</td>
<td>Teachers' and State Employees' Retirement System of NC</td>
<td><a href="https://www.nctreasurer.com/Pages/default.aspx">https://www.nctreasurer.com/Pages/default.aspx</a></td>
</tr>
<tr>
<td>North Dakota</td>
<td>DB</td>
<td>Teachers' Fund for Retirement</td>
<td><a href="http://www.nd.gov/rio/TFFR/default.htm">http://www.nd.gov/rio/TFFR/default.htm</a></td>
</tr>
<tr>
<td>Ohio</td>
<td>DB/DC</td>
<td>State Teachers' Retirement System (STRS)</td>
<td><a href="https://www.strsoh.org/index.html">https://www.strsoh.org/index.html</a></td>
</tr>
<tr>
<td>Oklahoma</td>
<td>DB</td>
<td>Teachers' Retirement System</td>
<td><a href="http://www.ok.gov/TRS/">http://www.ok.gov/TRS/</a></td>
</tr>
<tr>
<td>Oregon</td>
<td>Hybrid</td>
<td>Public Employees' Retirement System</td>
<td><a href="http://www.oregon.gov/pers/Pages/index.aspx">http://www.oregon.gov/pers/Pages/index.aspx</a></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>DB</td>
<td>Public School Employees' Retirement System</td>
<td><a href="http://www.prs.state.pa.us/default.html">http://www.prs.state.pa.us/default.html</a></td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Hybrid</td>
<td>Employees' Retirement System</td>
<td><a href="https://www.ersri.org/">https://www.ersri.org/</a></td>
</tr>
<tr>
<td>South Carolina</td>
<td>DB/DC</td>
<td>South Carolina Retirement System</td>
<td><a href="http://www.retirement.sc.gov/default.htm">http://www.retirement.sc.gov/default.htm</a></td>
</tr>
<tr>
<td>South Dakota</td>
<td>DB</td>
<td>South Dakota Retirement System</td>
<td><a href="http://www.sdrs.sd.gov/">http://www.sdrs.sd.gov/</a></td>
</tr>
<tr>
<td>Tennessee</td>
<td>Hybrid</td>
<td>Consolidated Retirement System</td>
<td><a href="http://www.treasury.tn.gov/tcrs/index.html">http://www.treasury.tn.gov/tcrs/index.html</a></td>
</tr>
<tr>
<td>Texas</td>
<td>DB</td>
<td>Teacher Retirement System</td>
<td><a href="http://www.texasretire.org/">http://www.texasretire.org/</a></td>
</tr>
<tr>
<td>Utah</td>
<td>Hybrid/DC</td>
<td>Utah Retirement Systems</td>
<td><a href="https://www.urs.org/">https://www.urs.org/</a></td>
</tr>
<tr>
<td>Vermont</td>
<td>DB</td>
<td>Teachers' Retirement System</td>
<td><a href="http://www.vermonttreasurer.gov/retirement/teachers-vstrs">http://www.vermonttreasurer.gov/retirement/teachers-vstrs</a></td>
</tr>
<tr>
<td>Virginia</td>
<td>Hybrid</td>
<td>Virginia Retirement System (VRS)</td>
<td><a href="http://www.varetire.org/">http://www.varetire.org/</a></td>
</tr>
<tr>
<td>Washington</td>
<td>DB/Hybrid</td>
<td>Teachers' Retirement System</td>
<td><a href="http://www.drs.wa.gov/member/systems/trs/">http://www.drs.wa.gov/member/systems/trs/</a></td>
</tr>
<tr>
<td>West Virginia</td>
<td>DB</td>
<td>Teachers' Retirement System</td>
<td><a href="http://www.wvretirement.com/TRS.html">http://www.wvretirement.com/TRS.html</a></td>
</tr>
<tr>
<td>Wisconsin</td>
<td>DB</td>
<td>Wisconsin Retirement System</td>
<td><a href="http://etf.wi.gov/">http://etf.wi.gov/</a></td>
</tr>
<tr>
<td>Wyoming</td>
<td>DB</td>
<td>Wyoming Retirement System</td>
<td><a href="http://retirement.state.wy.us/">http://retirement.state.wy.us/</a></td>
</tr>
</tbody>
</table>

Source: Doherty et al. (2015)
<table>
<thead>
<tr>
<th>State</th>
<th>Teacher%</th>
<th>Employer%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>6.0</td>
<td>11.0</td>
</tr>
<tr>
<td>Alaska</td>
<td>8.0</td>
<td>12.6 (district) 37 (state)</td>
</tr>
<tr>
<td>Arizona</td>
<td>11.5</td>
<td>11.5</td>
</tr>
<tr>
<td>Arkansas</td>
<td>6.0</td>
<td>14.0</td>
</tr>
<tr>
<td>California</td>
<td>8.0</td>
<td>13.8</td>
</tr>
<tr>
<td>Colorado</td>
<td>8.0</td>
<td>16.4</td>
</tr>
<tr>
<td>Connecticut</td>
<td>7.3</td>
<td>24.1</td>
</tr>
<tr>
<td>Delaware</td>
<td>5.0</td>
<td>9.6</td>
</tr>
<tr>
<td>DC</td>
<td>8.0</td>
<td>10.4</td>
</tr>
<tr>
<td>Florida</td>
<td>3.0</td>
<td>6.1</td>
</tr>
<tr>
<td>Georgia</td>
<td>6.0</td>
<td>13.2</td>
</tr>
<tr>
<td>Hawaii</td>
<td>8.0</td>
<td>16.0</td>
</tr>
<tr>
<td>Idaho</td>
<td>6.2</td>
<td>10.4</td>
</tr>
<tr>
<td>Illinois</td>
<td>9.4</td>
<td>33.6</td>
</tr>
<tr>
<td>Indiana</td>
<td>3.0</td>
<td>7.5</td>
</tr>
<tr>
<td>Iowa</td>
<td>6.0</td>
<td>8.9</td>
</tr>
<tr>
<td>Kansas</td>
<td>6.0</td>
<td>13.6</td>
</tr>
<tr>
<td>Kentucky</td>
<td>12.9</td>
<td>29.2</td>
</tr>
<tr>
<td>Louisiana</td>
<td>8.0</td>
<td>27.7</td>
</tr>
<tr>
<td>Maine</td>
<td>7.7</td>
<td>13.9</td>
</tr>
<tr>
<td>Maryland</td>
<td>7.0</td>
<td>17.4</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>11.0</td>
<td>28.9</td>
</tr>
<tr>
<td>Michigan</td>
<td>6.4</td>
<td>22.3</td>
</tr>
<tr>
<td>Minnesota</td>
<td>7.5</td>
<td>14.7</td>
</tr>
<tr>
<td>Mississippi</td>
<td>9.0</td>
<td>15.8</td>
</tr>
<tr>
<td>Missouri</td>
<td>14.5</td>
<td>14.5</td>
</tr>
<tr>
<td>Montana</td>
<td>8.2</td>
<td>11.0</td>
</tr>
<tr>
<td>Nebraska</td>
<td>9.8</td>
<td>11.9</td>
</tr>
<tr>
<td>Nevada</td>
<td>12.5</td>
<td>12.5</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>7.0</td>
<td>12.7</td>
</tr>
<tr>
<td>New Jersey</td>
<td>6.9</td>
<td>23.0</td>
</tr>
<tr>
<td>New Mexico</td>
<td>7.9/10.7</td>
<td>13.9</td>
</tr>
<tr>
<td>New York</td>
<td>3.0-6.0</td>
<td>17.5</td>
</tr>
<tr>
<td>North Carolina</td>
<td>6.0</td>
<td>8.7</td>
</tr>
<tr>
<td>North Dakota</td>
<td>9.8</td>
<td>10.8</td>
</tr>
<tr>
<td>Ohio</td>
<td>11.0</td>
<td>14.0</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>7.0</td>
<td>17.0</td>
</tr>
<tr>
<td>Oregon</td>
<td>6.0</td>
<td>21.6</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>7.5/10.3</td>
<td>21.4</td>
</tr>
<tr>
<td>State</td>
<td>Value 1</td>
<td>Value 2</td>
</tr>
<tr>
<td>---------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>3.8</td>
<td>23.1</td>
</tr>
<tr>
<td>South Carolina</td>
<td>8.0</td>
<td>10.9</td>
</tr>
<tr>
<td>South Dakota</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Tennessee</td>
<td>5.0</td>
<td>9.0</td>
</tr>
<tr>
<td>Texas</td>
<td>6.7</td>
<td>6.8</td>
</tr>
<tr>
<td>Utah</td>
<td>0.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Vermont</td>
<td>5.0</td>
<td>12.5</td>
</tr>
<tr>
<td>Virginia</td>
<td>5.0</td>
<td>11.7</td>
</tr>
<tr>
<td>Washington</td>
<td>4.7-15</td>
<td>10.4</td>
</tr>
<tr>
<td>West Virginia</td>
<td>6.0</td>
<td>29.9</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>6.8</td>
<td>6.8</td>
</tr>
<tr>
<td>Wyoming</td>
<td>7.5</td>
<td>7.6</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>7.3</td>
<td>14.9</td>
</tr>
</tbody>
</table>
Table 4: State requirements for retirement eligibility

<table>
<thead>
<tr>
<th>State</th>
<th>Age/Year of service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>62/10</td>
</tr>
<tr>
<td>Alaska</td>
<td>Any age</td>
</tr>
<tr>
<td>Arizona</td>
<td>65/any; 62/10; 60/25; 55/30</td>
</tr>
<tr>
<td>Arkansas</td>
<td>any/28; 60/5</td>
</tr>
<tr>
<td>California</td>
<td>62/5</td>
</tr>
<tr>
<td>Colorado</td>
<td>any/35; 58/30; 65/any</td>
</tr>
<tr>
<td>Connecticut</td>
<td>60/20; any/35 (at least 25 years of service must be in CT)</td>
</tr>
<tr>
<td>Delaware</td>
<td>65/10; 60/20; any/30</td>
</tr>
<tr>
<td>DC</td>
<td>any/30; 60/20; 62/5</td>
</tr>
<tr>
<td>Florida</td>
<td>65/8; any/33</td>
</tr>
<tr>
<td>Georgia</td>
<td>any/30; 60/10</td>
</tr>
<tr>
<td>Hawaii</td>
<td>60/30; 65/10</td>
</tr>
<tr>
<td>Idaho</td>
<td>65/5; 55/(Rule of 90)</td>
</tr>
<tr>
<td>Illinois</td>
<td>67/10</td>
</tr>
<tr>
<td>Indiana</td>
<td>65/10; 60/15; 55/(Rule of 85)</td>
</tr>
<tr>
<td>Iowa</td>
<td>65/7; 62/20; 55/(Rule of 88)</td>
</tr>
<tr>
<td>Kansas</td>
<td>65/5; 60/30</td>
</tr>
<tr>
<td>Kentucky</td>
<td>any/27; 60/5</td>
</tr>
<tr>
<td>Louisiana</td>
<td>60/5</td>
</tr>
<tr>
<td>Maine</td>
<td>65/5</td>
</tr>
<tr>
<td>Maryland</td>
<td>Rule of 90; 65/10</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>60/10</td>
</tr>
<tr>
<td>Michigan</td>
<td>60/10</td>
</tr>
<tr>
<td>Minnesota</td>
<td>66/3 (Social Security eligibility age for full benefits, not to exceed 66);</td>
</tr>
<tr>
<td>Mississippi</td>
<td>60/8; any/30</td>
</tr>
<tr>
<td>Missouri</td>
<td>60/5; any/30; Rule of 80</td>
</tr>
<tr>
<td>Montana</td>
<td>60/5; 55/30; 60/30 with increased multiplier</td>
</tr>
<tr>
<td>Nebraska</td>
<td>65/0.5; 55/(Rule of 85)</td>
</tr>
<tr>
<td>Nevada</td>
<td>65/5; 62/10; any/30</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>65/any</td>
</tr>
<tr>
<td>New Jersey</td>
<td>65/10</td>
</tr>
<tr>
<td>New Mexico</td>
<td>67/5; any/30; 65/(Rule of 80)</td>
</tr>
<tr>
<td>New York</td>
<td>63/10</td>
</tr>
<tr>
<td>North Carolina</td>
<td>65/10; 60/25; any/30</td>
</tr>
<tr>
<td>North Dakota</td>
<td>65/5; 60/(Rule of 90)</td>
</tr>
<tr>
<td>Ohio</td>
<td>DB: 65/5; any/30; Hybrid: 60/5</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>62/5; 60/(Rule of 90)</td>
</tr>
<tr>
<td>Oregon</td>
<td>65/5; 58/30</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>65/3; (Rule of 92)/35 years of service</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>normal Social Security retirement age (67)/any</td>
</tr>
<tr>
<td>South Carolina</td>
<td>65/8; (Rule of 90)/8</td>
</tr>
<tr>
<td>South Dakota</td>
<td>65/3; 55/(Rule of 85)</td>
</tr>
<tr>
<td>Tennessee</td>
<td>65/5; any/(Rule of 90)</td>
</tr>
<tr>
<td>Texas</td>
<td>65/5; 62/(Rule of 80)</td>
</tr>
<tr>
<td>Utah</td>
<td>65/4; any/35</td>
</tr>
<tr>
<td>Vermont</td>
<td>65/5; any/(Rule of 90)</td>
</tr>
<tr>
<td>Virginia</td>
<td>normal Social Security retirement age (67)/5; any/(Rule of 90)</td>
</tr>
<tr>
<td>Washington</td>
<td>Plan 2: 65/5; Plan 3: 65/10</td>
</tr>
<tr>
<td>West Virginia</td>
<td>any/35; 55/30; 60/5; if vested and deferred: 60/20 or 62/(less than 20)</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>65/5; 57/30</td>
</tr>
<tr>
<td>Wyoming</td>
<td>65/4; Rule of 85</td>
</tr>
</tbody>
</table>

Source: Doherty et al.(2015)

Note:  
  a) 65/5 means retirement at age 65 with 5 years of service.  
  b) Rule of 90 means eligible for retirement when sum of age and years of service is 90
<table>
<thead>
<tr>
<th>State</th>
<th>Withdraw after 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Own with Interest</td>
</tr>
<tr>
<td>Alaska</td>
<td>Full with interest</td>
</tr>
<tr>
<td>Arizona</td>
<td>Own with Interest</td>
</tr>
<tr>
<td>Arkansas</td>
<td>Own with Interest</td>
</tr>
<tr>
<td>California</td>
<td>Own with Interest</td>
</tr>
<tr>
<td>Colorado</td>
<td>Own and partial employers</td>
</tr>
<tr>
<td>Connecticut</td>
<td>Own with Interest</td>
</tr>
<tr>
<td>Delaware</td>
<td>Own with Interest</td>
</tr>
<tr>
<td>DC</td>
<td>own w/o interest</td>
</tr>
<tr>
<td>Florida</td>
<td>own w/o interest</td>
</tr>
<tr>
<td>Georgia</td>
<td>Own with Interest</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Own with Interest</td>
</tr>
<tr>
<td>Idaho</td>
<td>Own with Interest</td>
</tr>
<tr>
<td>Illinois</td>
<td>Less than own</td>
</tr>
<tr>
<td>Indiana</td>
<td>Own with interest (DB portion of hybrid)</td>
</tr>
<tr>
<td>Iowa</td>
<td>Own plus partial employer plus interest</td>
</tr>
<tr>
<td>Kansas</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Less than own</td>
</tr>
<tr>
<td>Louisiana</td>
<td>Own, without interest</td>
</tr>
<tr>
<td>Maine</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Maryland</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Michigan</td>
<td>Hybrid DB portion: own with interest</td>
</tr>
<tr>
<td>Minnesota</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Mississippi</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Missouri</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Montana</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Nebraska</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Nevada</td>
<td>Own with interest</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Own with interest</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Own with interest</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Own with interest</td>
</tr>
<tr>
<td>New York</td>
<td>Own with interest</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Own with interest</td>
</tr>
<tr>
<td>North Dakota</td>
<td>Own with Interest</td>
</tr>
<tr>
<td>Ohio</td>
<td>Own contribution plus portion of employer’s (DB and Combined)</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Oregon</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Own, without interest</td>
</tr>
<tr>
<td>South Carolina</td>
<td>Own with interest</td>
</tr>
<tr>
<td>South Dakota</td>
<td>Own plus 85% of employer’s plus interest</td>
</tr>
<tr>
<td>Tennessee</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Texas</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Utah</td>
<td>Hybrid plan: DB portion, own contributions</td>
</tr>
<tr>
<td>Vermont</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Virginia</td>
<td>Own with interest</td>
</tr>
<tr>
<td>State</td>
<td>Ownership Type</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Washington</td>
<td>Own with interest</td>
</tr>
<tr>
<td>West Virginia</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Own with interest</td>
</tr>
<tr>
<td>Wyoming</td>
<td>Own with interest</td>
</tr>
</tbody>
</table>

Source: Doherty et al. (2015)
<table>
<thead>
<tr>
<th>State</th>
<th>Purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Limited</td>
</tr>
<tr>
<td>Alaska</td>
<td>Not apply</td>
</tr>
<tr>
<td>Arizona</td>
<td>Limited</td>
</tr>
<tr>
<td>Arkansas</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>California</td>
<td>Unlimited (prior teaching); Limited (approved leave)</td>
</tr>
<tr>
<td>Colorado</td>
<td>Limited</td>
</tr>
<tr>
<td>Connecticut</td>
<td>Unlimited (prior teaching); Limited (approved leave)</td>
</tr>
<tr>
<td>Delaware</td>
<td>Limited (prior teaching); Unlimited (approved leave)</td>
</tr>
<tr>
<td>DC</td>
<td>Limited (prior teaching); Unlimited (approved leave)</td>
</tr>
<tr>
<td>Florida</td>
<td>Limited</td>
</tr>
<tr>
<td>Georgia</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Not permitted</td>
</tr>
<tr>
<td>Idaho</td>
<td>Limited</td>
</tr>
<tr>
<td>Illinois</td>
<td>Limited (prior teaching); Unlimited (approved leave)</td>
</tr>
<tr>
<td>Indiana</td>
<td>Limited</td>
</tr>
<tr>
<td>Iowa</td>
<td>Limited (prior teaching); Unlimited (approved leave)</td>
</tr>
<tr>
<td>Kansas</td>
<td>Unlimited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Limited</td>
</tr>
<tr>
<td>Louisiana</td>
<td>Unlimited (prior teaching); Limited (approved leave)</td>
</tr>
<tr>
<td>Maine</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Maryland</td>
<td>Limited</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Michigan</td>
<td>Hybrid: Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Minnesota</td>
<td>Not permitted (prior teaching); Limited (approved leave)</td>
</tr>
<tr>
<td>Mississippi</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Missouri</td>
<td>Limited</td>
</tr>
<tr>
<td>Montana</td>
<td>Limited</td>
</tr>
<tr>
<td>Nebraska</td>
<td>Limited</td>
</tr>
<tr>
<td>Nevada</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Not permitted</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Limited</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>New York</td>
<td>Unlimited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Limited</td>
</tr>
<tr>
<td>North Dakota</td>
<td>unlimited</td>
</tr>
<tr>
<td>Ohio</td>
<td>limited</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Oregon</td>
<td>Not permitted</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Limited</td>
</tr>
<tr>
<td>South Carolina</td>
<td>Unlimited (prior teaching); Limited (approved leave)</td>
</tr>
<tr>
<td>State</td>
<td>Policy Details</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------------------</td>
</tr>
<tr>
<td>South Dakota</td>
<td>unlimited</td>
</tr>
<tr>
<td>Tennessee</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Texas</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Utah</td>
<td>unlimited</td>
</tr>
<tr>
<td>Vermont</td>
<td>Limited</td>
</tr>
<tr>
<td>Virginia</td>
<td>Limited</td>
</tr>
<tr>
<td>Washington</td>
<td>Limited</td>
</tr>
<tr>
<td>West Virginia</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
<tr>
<td>Wyoming</td>
<td>Limited (prior teaching); Not permitted (approved leave)</td>
</tr>
</tbody>
</table>

Source: Doherty et al.(2015)
<table>
<thead>
<tr>
<th>State</th>
<th>Fully Covered</th>
<th>Partially Covered</th>
<th>Not Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alaska</td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Arizona</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arkansas</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>California</td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Colorado</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connecticut</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delaware</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC</td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Georgia</td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Hawaii</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idaho</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illinois</td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Indiana</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iowa</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kansas</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kentucky</td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Louisiana</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maine</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maryland</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michigan</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minnesota</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mississippi</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missouri</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Montana</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nebraska</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nevada</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Hampshire</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Jersey</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Mexico</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Carolina</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Dakota</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oregon</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhode Island</td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>South Carolina</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Dakota</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tennessee</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texas</td>
<td></td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Utah</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vermont</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virginia</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>Proportion of Teacher Mobility</td>
<td>Proportion Teach in same state</td>
<td>Proportion Move to Private School</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------------</td>
<td>--------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Washington</td>
<td>84% 36%</td>
<td>87% 34%</td>
<td></td>
</tr>
<tr>
<td>West Virginia</td>
<td>8% 27%</td>
<td>8% 27%</td>
<td></td>
</tr>
<tr>
<td>Wisconsin</td>
<td>8% 27%</td>
<td></td>
<td>8% 27%</td>
</tr>
<tr>
<td>Wyoming</td>
<td>1% 10%</td>
<td>1% 7%</td>
<td></td>
</tr>
<tr>
<td>AVERAGE</td>
<td>84% 36%</td>
<td>87% 34%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Doherty et al. (2012)
<table>
<thead>
<tr>
<th></th>
<th>Weighted Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>24%</td>
</tr>
<tr>
<td>Female</td>
<td>76%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>17%</td>
</tr>
<tr>
<td>31-39</td>
<td>24%</td>
</tr>
<tr>
<td>40-49</td>
<td>30%</td>
</tr>
<tr>
<td>&gt;=50</td>
<td>29%</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>86%</td>
</tr>
<tr>
<td>Black</td>
<td>7%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5%</td>
</tr>
<tr>
<td>Others</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>Associate/No college degree</td>
<td>1%</td>
</tr>
<tr>
<td>Bachelor</td>
<td>51%</td>
</tr>
<tr>
<td>Master</td>
<td>43%</td>
</tr>
<tr>
<td>Professional</td>
<td>4%</td>
</tr>
<tr>
<td>Doctorate</td>
<td>1%</td>
</tr>
<tr>
<td><strong>New/Experienced</strong></td>
<td></td>
</tr>
<tr>
<td>New (&lt;3 years)</td>
<td>17%</td>
</tr>
<tr>
<td>Experienced (&gt;3 years)</td>
<td>83%</td>
</tr>
<tr>
<td><strong>Member of Union</strong></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>73%</td>
</tr>
<tr>
<td>Widowed/Divorced/Separated</td>
<td>11%</td>
</tr>
<tr>
<td>Never Married</td>
<td>16%</td>
</tr>
<tr>
<td><strong>Total Family Income</strong></td>
<td></td>
</tr>
<tr>
<td>Less than $20,000</td>
<td>1%</td>
</tr>
<tr>
<td>$20,000-$34,999</td>
<td>10%</td>
</tr>
<tr>
<td>$35,000-$49,999</td>
<td>23%</td>
</tr>
<tr>
<td>$50,000-$74,999</td>
<td>41%</td>
</tr>
<tr>
<td>$75,000-$99,999</td>
<td>23%</td>
</tr>
<tr>
<td>$100,000 or more</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Observation Size</strong></td>
<td>5,788</td>
</tr>
<tr>
<td><strong>Population Size</strong></td>
<td>3,425,917</td>
</tr>
</tbody>
</table>

Table 9: Teacher Background Weighted Statistics of TFS (2000-2001)
Table 10: Descriptive results using 2001 TFS public-use data

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1) Mover</th>
<th>(2) Leaver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>-0.0119</td>
<td>-0.00301</td>
</tr>
<tr>
<td></td>
<td>(0.00844)</td>
<td>(0.0102)</td>
</tr>
<tr>
<td>Black</td>
<td>-0.00509</td>
<td>0.0150</td>
</tr>
<tr>
<td></td>
<td>(0.0211)</td>
<td>(0.0226)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.0254*</td>
<td>-0.0199</td>
</tr>
<tr>
<td></td>
<td>(0.0142)</td>
<td>(0.0158)</td>
</tr>
<tr>
<td>Age</td>
<td>-0.00280***</td>
<td>-0.00203**</td>
</tr>
<tr>
<td></td>
<td>(0.000810)</td>
<td>(0.000985)</td>
</tr>
<tr>
<td>Married</td>
<td>0.00391</td>
<td>0.00945</td>
</tr>
<tr>
<td></td>
<td>(0.0108)</td>
<td>(0.00940)</td>
</tr>
<tr>
<td>NEW</td>
<td>0.00391</td>
<td>0.0462***</td>
</tr>
<tr>
<td></td>
<td>(0.0158)</td>
<td>(0.0140)</td>
</tr>
<tr>
<td>Tenure</td>
<td>-0.00174***</td>
<td>0.000503</td>
</tr>
<tr>
<td></td>
<td>(0.000523)</td>
<td>(0.000717)</td>
</tr>
<tr>
<td>Famincome</td>
<td>-1.33e-07</td>
<td>9.17e-07***</td>
</tr>
<tr>
<td></td>
<td>(2.32e-07)</td>
<td>(2.85e-07)</td>
</tr>
<tr>
<td>Education</td>
<td>-0.000524</td>
<td>0.000805</td>
</tr>
<tr>
<td></td>
<td>(0.00186)</td>
<td>(0.00301)</td>
</tr>
<tr>
<td># Dependent</td>
<td>-0.000539</td>
<td>-0.0126***</td>
</tr>
<tr>
<td></td>
<td>(0.00327)</td>
<td>(0.00305)</td>
</tr>
<tr>
<td># Dependent&lt;5</td>
<td>-0.00947</td>
<td>0.0208**</td>
</tr>
<tr>
<td></td>
<td>(0.0117)</td>
<td>(0.0101)</td>
</tr>
<tr>
<td>TOTEXPER</td>
<td>-0.000753</td>
<td>0.00207**</td>
</tr>
<tr>
<td></td>
<td>(0.000514)</td>
<td>(0.000843)</td>
</tr>
<tr>
<td>UNION</td>
<td>0.000538</td>
<td>-0.00580***</td>
</tr>
<tr>
<td></td>
<td>(0.000912)</td>
<td>(0.00113)</td>
</tr>
<tr>
<td>Minory</td>
<td>0.0107</td>
<td>0.0188**</td>
</tr>
<tr>
<td></td>
<td>(0.00913)</td>
<td>(0.00946)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.228***</td>
<td>0.0482</td>
</tr>
<tr>
<td></td>
<td>(0.0463)</td>
<td>(0.0615)</td>
</tr>
</tbody>
</table>

Observations  | 5,524           | 5,524           |
R-squared     | 0.024           | 0.019           |

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1