Issue Brief

Teacher Retirement Plans: Case Studies in Washington and Ohio Indicate Value of Pensions

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December 2014





NATIONAL INSTITUTE ON Retirement Security

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ACKNOWLEDGEMENTS

We are grateful for the comments, advice and assistance provided by a number of individuals, including John Abraham, Rocky Joyner, Nancy McKenzie, Mark Olleman, Michael Ragan, and Leigh Snell. We also are grateful for the assistance in fact checking our representation of the two retirement systems discussed in this report by the Washington Department of Retirement Services and the State Teachers Retirement System of Ohio. We also thank Laurie Hacking for providing comments on the draft report. However, the views and any errors or omissions are those of the authors alone.

ABOUT NIRS

The National Institute on Retirement Security is a non-profit research institute established to contribute to informed policymaking by fostering a deep understanding of the value of retirement security to employees, employers, and the economy as a whole. NIRS works to fulfill this mission through research, education, and outreach programs that are national in scope.

EXECUTIVE SUMMARY

For more than a century, public retirement systems have provided financial security to current and future retired teachers, while also enabling public schools to manage their educational workforce. However, in recent years, a few states have moved to new benefit design structures for K-12 teachers, including providing teachers a choice between a traditional defined benefit (DB) pension design and alternative designs, such as a defined contribution (DC) plan, or a "hybrid" DB-DC combination design, which includes both DB and DC benefits.

In offering teachers a choice between retirement plans, public policy considerations include state budget concerns, the financial health of the pension fund, and the distribution of risk between the state and employees. In terms of teacher pensions, effects on education quality should also be considered, for example, the retirement plan's effect on recruitment and retention of quality teachers to foster a highly effective teaching workforce.

In 1997, Washington State started covering all teachers in a DB-DC combination plan with a choice to move to that plan from the DB pension available to those teaching in 1997. More recently, the state legislature changed the law to reopen membership in the traditional DB pension for all new teachers hired since 2007 to allow them to choose between the two plans. Several papers on the Washington State experience have reached somewhat different conclusions on the value and implications of the choice option for teachers in that state. This paper delves deeper into the unique experience in Washington, as well as the teacher choice experience in Ohio, and finds that:

1. The experience of teacher election patterns in Washington State is unique, in that the combined DB-DC plan included special features and timing patterns which encouraged participation. Specifically:

- Teachers were provided upfront financial payments to switch to the DB-DC combined plan.
- The bull stock market of the 1990s may have caused teachers to overestimate how much money they would be likely to accumulate in their DC account, thereby making the combined plan seem more generous.
- The state offers in-plan annuitization of the DC account balance, which provides teachers with a much larger lifetime income stream than if they were to buy an annuity from an insurance company, but also shifts longevity risk back to the state.
- 2. Ohio, the only other state that offers teachers a choice between a DB plan and a combined DB-DC plan, does not provide such incentives in the combined plan, and has experienced very different election results. Between 2002-2014, 86 percent of teachers have opted for the traditional DB plan, versus just four percent who opt for the combined plan.
- **3.** Education policy research finds that traditional DB pensions play a critical role in recruiting and retaining productive teachers. Therefore, offering an alternative retirement design could have adverse effects on teacher quality.

Evidence from these two states suggests that teachers are unlikely to choose an alternative retirement plan design unless the state undertakes significant risk in the individual account portion of the plan. Furthermore, because research suggests that offering a choice could have adverse effects on teacher retention and quality, policymakers should proceed with caution before implementing a choice between a DB pension and a combined DB-DC plan.

INTRODUCTION

For over a century, public retirement systems have provided financial security to current and future retired K-12 teachers, while also enabling public schools to manage their educational workforce.

However, the financial crisis of 2008-2009 caused underfunding in most retirement plans, and teacher pensions were no exception. In response, every state legislature has put in place major changes to public pension systems to keep teacher defined benefit (DB) pension plans on a strong and solid financial footing.¹ In enacting legislation to change public retirement systems during the last five years, state policymakers generally have understood that moving toward a defined contribution (DC) retirement savings plan does nothing to address funding shortfalls.³

However, in recent years, a few states have moved to new benefit design structures for teachers, including providing teachers a choice between a traditional DB pension design and alternative designs, such as a defined contribution (DC) plan, or a "hybrid" DB-DC combination design, which includes both DB and DC benefits.

This issue brief examines the decisions of teachers in two states when teachers have the opportunity to choose between different types of retirement plans. First, we examine the circumstances that likely influenced pension choice in Washington State, in which teachers were given a one-time election in 1997 to move from a DB pension to a DB-DC combination plan. Dan Goldhaber and Cyrus Grout of the Center for Education Data and Research (CEDR) at the University of Washington have published several case studies on the experience in Washington, with somewhat conflicting conclusions. We augment their analysis by considering the stock market performance at that time and a one-time financial payment that acted as an incentive to encourage teachers to switch in 1997. In addition, we highlight the ways in which the DC portion of the combination plan in Washington is designed to mitigate the risks that employees typically face in DC plans, ultimately shifting much of that risk back to the state.

Next, we take a closer look at pension choices offered to new teachers on an ongoing basis and their decisions, comparing the experience in Washington with that of Ohio, another state that offers teachers a choice between a DB pension and a DB-DC combination plan. Finally, we address the question of teacher efficacy and plan choice in the context of research on the workforce implications of pension plan design.

AN OVERVIEW OF THE WASHINGTON STATE TEACHERS RETIREMENT SYSTEM

Like many states, Washington first established the State Teachers Retirement System (TRS) around the time of the Great Depression in 1938. The early TRS pension was modified in 1977, and a revised pension—TRS2—provided retirement income based only on a DB formula for teachers hired after 1977. TRS2 benefits were somewhat lower than earlier ones, because the normal retirement age was older, the final salary used in benefit calculations was lowered by using a longer period, and cost of living adjustments were capped at three percent a year. Both the employer and employees contributed to TRS2.³

Teachers who leave before retirement can receive a delayed vested pension or choose a refund of their TRS2 contributions, compounded with a 5.5 percent annual guaranteed interest rate on those funds. During 1980-2000, the bull stock market generated impressive double-digit investment returns through a technology stock bubble that filtered through the broad stock market. This bullish environment framed employees' investment outlooks in the late 1990s. Additionally, as the home of Microsoft, Washington State saw many residents become "millionaires" during the technology bubble, as workers cashed in their stock options. Perhaps not surprisingly, employees leaving TRS2 during this time felt that the 5.5 percent guaranteed interest rate did not represent a good return.⁴

Responding to a desire of some employees for more retirement plan flexibility, legislation passed in 1995 (HB 1206) put all newly hired Washington teachers into a DB-DC combination retirement plan, TRS3, consisting of a DB component with a lower benefit and a DC component. The new DB formula offered only half of the benefit level in TRS2. All contributions from employees were put in individual DC accounts, with investments directed by the teachers themselves.⁵ In 1997, teachers in the TRS2 plan were given an opportunity to opt out of their existing plan and into the new TRS3 plan.

The Washington Department of Retirement Services (DRS) and the Washington State Investment Board (WSIB) designed TRS3 in a manner that incorporated into its DC accounts many important features and cost efficiencies typically found in the TRS pension component, like professional money management and longevity protection.

RESEARCH ON WASHINGTON STATE TEACHERS

One of the most recent policy changes to TRS occurred in July 2007, when TRS2 was reopened as a plan choice for all newly hired K-12 teachers. The State Supreme Court recent-ly upheld the law (HB 2391⁶) that made this change.⁷

Thus, there are two groups that have been offered a choice between TRS2 and TRS3. The first group, called the 1997 Cohort, consists of teachers who were allowed in 1997 to switch out of TRS2 and into TRS3. Those who switched received a reduced DB pension, funded solely by the state, and teachers switching plans would direct the investment of their individual DC accounts.

The second group is the growing population of teachers hired since July 2007—the 2007 Cohort. These newly hired teachers have a 90-day period to elect to participate in either TRS2 or TRS3. If a newly hired teacher fails to make an election, he or she defaults into TRS3, and five percent of salary is withheld and deposited into an age-appropriate target date fund offered under the DC component of TRS3. Since 2008, the majority of the teachers making an "active election" about their retirement plan have chosen to participate in TRS2.

Goldhaber and Grout recently published the paper "Finding a Common Ground in Pension Reform," a project of Bellwether Education Partners. The authors offer two implications on these two specific cohorts. First, they suggest that the overall popularity of the DB-DC combination approach among teachers in Washington might indicate that pension revisions involving such hybrids approaches could be attractive to teachers in other states. Specifically cited are the 75 percent of the 1997 Cohort who choose to transfer from TRS2, and the 60 percent of new teachers in the 2007 Cohort who the authors report as participating in TRS3 either by choice or default.⁸ Secondly, the authors' observations indicate unlikelihood that the "introduction of TRS3 had negatively altered the composition of the teacher workforce by making teaching less desirable" to effective teachers.⁹

Curiously, these conclusions contrast with the conclusions of an earlier working paper on the Washington experience, published by CEDR, entitled "The Choice is Yours: How Pension System Decisions Might Shape the Teacher Workforce." In that paper, Goldhaber and Grout suggested limits on inferring widely from these two specific situations in Washington:

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.¹⁰

Indeed, there were several unique characteristics offered by Washington State that may have incentivized teachers to make the switch. These characteristics are not only unusual, but also transfer risk and potential costs back to the state.

THREE INFLUENCES OF UNOBSERVED TEACHER EXPECTATIONS IN 1997

1. Upfront Financial Payment to Those Who Switched to TRS3

The 1995 law permitted teachers already covered by TRS2 to make a one-time switch to TRS3. The law offered an actuarially equivalent adjustment to the "value" of employee contribution accounts, which some considered a financial incentive for the existing TRS2 members to switch to TRS3. Ultimately, those teachers who elected to switch to TRS3 received the value of their employee contribution account, compounded with a 5.5 percent interest rate, as well as an additional amount equal to 65 percent of their account value.

A public announcement, made on November 20, 1997, contained the subject line "Increase in Bonus for Switching from TRS2 to TRS3." This highlighted the additional value that was being offered, to great effect; the majority of the 1997 Cohort who elected to switch to TRS3 did so after this notice was distributed.¹¹

The additional incentive payment was substantial. Goldhaber and others estimate that the additional amount transferred to the TRS3 DC account for a teacher with five years of experience was about \$9,800. For a teacher with 15 years of experience, it was approximately \$43,000.¹² DRS transferred about \$200 million dollars from the TRS2 plan's well-funded trust fund in 1997.¹³

In total, these actuarial adjustment payments appeared to have encouraged teachers to switch to TRS3. At the time that the incentivized switch option closed down, 18,535 eligible teachers had chosen to switch to the DB-DC combination plan. Since the expiration of the bonus payment after the initial 1998 election, fewer than 350 teachers in the 1997 cohort still covered by TRS2 have elected to move to TRS3.¹⁴ This suggests that the upfront incentive was important to those teachers making the election.

It is worth noting that such a one-time lump sum transfer payment is not only unusual, but also highly unlikely to be replicated, given the current financial status of public pension plans nationwide. Many public pension plans continue to recover from losses caused by the financial crisis and are at funding levels below 100 percent, and therefore are not in a financial position to offer incentive payments, because they would increase plan costs. Transferring funds out of an underfunded public pension would make the funding of existing benefits more challenging, and contrary to the intent of recent plan changes enacted to put public pension funds on a more secure financial footing.

2. Stock Market Return Expectations

Just as the pension funding landscape changed markedly between the late 1990s and post-2008, so too have individual investors' expectations about stock market returns. In fact, even Goldhaber and Grout concede that the context surrounding the teachers' choices between TRS2 and TRS3 in 1997 specifically, "unobserved expectations"—may have played a part in teacher choice:

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.¹⁵

The authors acknowledge in earlier papers that: "the bull market in the mid 1990s may have positively influenced expectations about future investment returns" and the subsequent retirement plan elections of teachers.¹⁶ Despite acknowledging that the study does not account for this influence, the Bellwether paper states: "a well-designed hybrid plan can create an environment under which teachers value the deferred compensation." In fact, the bigger question may be whether its introduction can be timed to financial markets.

Thus, an understanding of the general investor mentality in 1997 is relevant. Patterns over 20 years of strong growth delivered by equity investments represented by the S&P 500 Index should be part of a consideration of the predictive power of the 1997 Cohort's elections. Clearly, the strong technology-driven investment returns in the 1990s provided pressure leading to the creation of the TRS3 plan.¹⁷ Over the 20 years through the end of 1997, an investment fund based on the S&P 500 Index had annual one-year returns including dividends that ranged from a high of 37.58 percent to a low of -4.95 percent. In nine of those 20 years, the Fund had oneyear gains in excess of a 20.0 percent. During the 20-year period ending in 1997, the S&P 500 Index Fund delivered five consecutive 15-year annualized returns in which the gains exceed 14 percent.¹⁸

In the description of TRS3, the DRS Plan Choice Booklet carefully cautions: "The amount of your benefit depends on the amount you contribute and the performance of your investments."¹⁹ Additionally, each of the TRS3 fund information sheets provided by Morningstar includes a similar caution:

The performance data given represents past performance and should not be considered indicative of future results. Principal value and investment returns will fluctuate, so that an investor's shares when redeemed may be worth more or less than the original investment. Fund portfolio statistics change over time.²⁰

Did teachers incorporate such cautions and temper their investment expectations as they reviewed and compared projected benefit values from TRS2 and TRS3 when they made their decisions? We have no data to answer this specific question.

In hindsight, anticipating only modest investment results would have been prudent. The subsequent 16 years of equity returns since 1998, again represented in S&P 500 Index, turned out to be very different than what teachers might have expected based on investment returns prior to 1998. Over the 16 years since 1997, the S&P 500 Index had annual one-year returns that ranged from a +32.39 percent high in 2013 to a -37.00 percent low in 2008. In the two observable 15-year periods since 1997, annualized 15-year returns of the S&P 500 Index show modest gains of 4.47 and 4.68 percent,²¹ both of which fall below the current guaranteed rate used by DRS when refunding employee contributions to TRS2 participants who leave the system.

Policymakers in other states contemplating offering a choice option should consider the experience in Washington, which suggests that the dynamics of the financial markets at the time that choice is offered can have a considerable effect on participants' decisions.

3. Value of Purchasing Lifetime Retirement Income through DRS

Generally, those considering DB pension reform acknowledge that "moving towards a DC-type plan does nothing, by itself to address *existing* shortfalls"²² in existing retirement systems. In Washington State, the DB component of TRS3 has a benefit formula generally equal to half of the benefit payable in TRS2. Thus, the authors of the Bellwether report suggest that the state's long-term financial risk associated with TRS3 is lower than TRS2, perhaps by as much as half of the risk associated with TRS2, because its DB benefit is half of the value of the TRS2.²³ Of course, financial risk does not disappear in moving from a DB to a combined DB-DC design; rather it is shifted onto employees.

However, the current structure of TRS3's DC component somewhat reduces teachers' income replacement risk in two ways. First, in addition to offering diversified indexed mutual funds and target date funds, TRS3 allows participants to have their contributions managed by WSIB during both working years as one of the investment options and retirement years by using DC account accumulation to buy retirement income from WSIB. Research shows that professional asset management enables funds to achieve higher investment returns than individual investors can achieve on their own. Over time, superior returns can go a long way. Just a one percent annual difference in returns can translate to a retirement benefit that is 26 percent higher over the course of a career.²⁴

Second, all teachers in TRS3 have the opportunity to receive monthly income payments from the system through a onetime transfer of DC account funds to WSIB. Purchasing lifetime retirement income from WSIB provides important longevity protection to employees, and maintains a key cost efficiency available under the DB pension component. A DB pension targets its funding requirement to cover the average participant's life expectancy because it is able to predict this with relative accuracy, given a large participant population. In a DC plan, on the other hand, each individual must "oversave" to assure that he or she does not run out of money over 20, 30, or more possible years in retirement.²⁵ Put differently, if an individual saved to just provide adequate income for the average life expectancy—the way a DB plan is able to do—then that person would have a 50 percent chance of outliving his or her retirement income. Thus, in offering the annuitization option, TRS is essentially re-assuming the teachers' DC longevity risk priced at the time of retirement. At the same time, this feature delivers significantly more retirement income to teachers than they can obtain from purchasing annuity income from an insurance company.

For teachers to mitigate longevity risk individually, they would have to purchase an annuity product through an insurance company, which would be much more costly. This is largely why, according to the U.S. Government Accountability Office (GAO), financial experts recommend that retirees receive an annuity benefit from a DB plan if that option is available.²⁶ Recommendations on buying annuities from insurance companies are mixed and, in fact, the GAO reports that only six percent of retirees choose to buy annuities with their DC account assets. The GAO found:

... for retirees who want guaranteed income, experts we spoke to considered lifetime retirement income from DB plans preferable over purchasing an annuity with a lump sum distribution, since DB plans may be able to provide payments at a higher rate than is available through an insurance annuity outside of the plan.²⁷

This is the case in Washington State. WSIB provides an online calculator²⁸ to help teachers determine the amount of initial and future annual income that will be provided for a given amount of dollars transferred from TRS3 DC accounts. Our analysis shows that WSIB's annuity option offers all retiring teachers, including those with TRS3 DC accounts, lifetime annuity protection at very attractive rates.

For example, Table 1 illustrates that a teacher who had \$100,000 in his or her DC account at age 65 could purchase an initial Single Life Annuity benefit that would pay him or her a monthly income of \$625 (\$7,502 annually) from WSIB.²⁹ This benefit would increase by three percent each year in order to account for inflation, or a three percent COLA. This flexibility provides retiring teachers significant additional guaranteed income that will increase each year in retirement.

If the teacher instead chooses to purchase a similar Single

Life Annuity with a three percent COLA from an insurance company, then the monthly benefit payable would be much lower. Again looking at the same \$100,000 DC account balance and using specific annuity purchase rates for the best-priced annuity published in the "Annuity Shopper," an insurance company would pay a retiring male teacher \$430 each month (or \$5,160 annually).³⁰ Because insurance companies are allowed to factor the longer expected lifetimes of female teachers into their pricing structures, the monthly annuity benefit paid to a retiring female teacher would be still lower-she would receive initial monthly annuity checks of only \$409 (\$4,908 annually).³¹ In this best-value annuity, the female teacher would get nearly \$2,600 a year less than she would receive from WSIB. To get the same \$625 monthly WSIB amount from an insurance company, a female teacher would have to have saved between 52-87 percent more than the \$100,000 accumulated in the DC account, depending on the company selected.³²

Table 1: Monthly Lifetime Retirement Income from \$100,000 of DC Account Assets Payable as a Single Life Annuity that Increases by 3 Percent Each Year

	Option Under TRS3 To Buy Annuity From Washington SIB	Purchase Annuity From Insurance Company At Best Rate In Annuity Shopper	Difference in Monthly Income
Male	\$625	\$430	\$195
Female	\$625	\$409	\$216

Source: Author's calculations

This flexibility to purchase an annuity from WSIB helps teachers retire with greater assurance, because the state retirement system is able to pool the risk of outliving the assets in teachers' DC accounts. However, in offering the annuitization option, the DB plan is essentially re-assuming the teachers' DC longevity risk. Thus, this design feature limits the 50 percent risk reduction advantage for the employer that Goldhaber and Grout assert in the Bellwether paper.³³

TEACHERS MAY HAVE OVERESTIMATED THEIR TRS3 RETIREMENT BENEFITS BY USING OVERLY OPTIMISTIC ASSUMPTIONS

The decision to choose between participating in a DB pension or in a DB-DC combination retirement plan likely will include the teachers' perceptions of the relative retirement security that each plan design offers. Workers' perceptions of job tenure and, in the case of DC accounts, perceptions of future rates of return on investments, can measurably impact their decisions. Also, the timing of macroeconomic events such as the bull markets of the late 1990s or the financial crisis of 2008 can shape individual perceptions of the future and thereby impact retirement plan decisions. Employees' understanding of complex financial issues also plays a part, as teachers need to understand risk diversification and interest compounding, which are relatively advanced financial literacy topics.

In DB pensions, teachers have a straightforward way to estimate their replacement retirement income after a career of teaching, by using the DB formula. For example, Washington teachers who participate in the TRS2 plan for 40 years would replace 80 percent of final average salary, based on the TRS2 formula of two percent for each year of service. For teachers in TRS3, estimating their replacement income is a far more complex proposition. After 40 years of teaching, a teacher can anticipate replacing 40 percent of final average salary from the DB component. However, to estimate how much income teachers' DC accounts will replace relies on accurate and reasonable assumptions about salary growth, inflation, and investment returns covering periods up to 40 years.

To help with such choices, most DC plans provide general illustrations in printed booklets, while computers can enable

employees to develop personalized retirement benefit estimates. Teachers in the 1997 Cohort were able to use diskettes and could plug in investment return assumptions of 6, 8, 10, or 12 percent when making benefit estimates.³⁴ Based on the historical returns from the bull market at the time the 1997 Cohort made its elections, teachers might have viewed a 10 percent rate of return as a moderate assumption. Salary was assumed to grow at a nominal rate of three percent, which was the same as the assumed inflation rate.³⁵ Thus, the benefit projection software used "spreads" between salary growth and assumed investment rates of return that equaled 3, 5, 7, and 9 percent in those calculations.

In contrast, and in line with practices of well-funded public pensions,³⁶ the Washington Office of the State Actuary uses a lower, more realistic spread between the actuarial-modeled expected growth in teacher salaries and expected investment returns. The Washington State TRS plan's valuations to establish the actuarially required contribution needed to fund its pension obligations reflects roughly a four percent spread between the salary growth assumption and the assumed investment rate of return earned on plan assets.³⁷

Investment return assumptions can significantly affect the value of the projected retirement benefit, and therefore can greatly affect the choices that teachers make between TRS2 and TRS3. For example, using a higher investment return assumption such as 10 percent generally produces illustrations that would favor choosing the DB-DC combination option, while narrower spreads between assumed factors produce more balanced projections.

Years of Saving	r = 0.04	r = 0.03	r = 0.02	r = 0.01
20	0.28	0.26	0.22	0.20
30	0.49	0.41	0.35	0.30
40	0.77	0.61	0.49	0.40

Table 2: Wealth-to-Earnings Ratio at Retirement from 1% Annual Savings

Source: Poterba, J. Retirement Security in an Aging Society, NBER

Table 2, published by MIT economist James Poterba, illustrates the impact that increased assumed real investment earnings rates exert on estimated wealth-to-earnings replacement ratios using modest interest rates over several career-length time periods. For example, over a 40-year career, a four percent real rate of return generates a projected wealth-to-earnings replacement ratio of 0.77, while a two percent assumed return produces a ratio of just 0.49—a difference of more than 50 percent.³⁸

Poterba does not provide illustrations of the impact of using wider spread in assumptions that show the increasing exponential impact of assuming wider spreads between salary growth and investment return. The Segal Company has estimated benefit replacement ratios for teachers who start teaching at age 25 with an initial salary of \$24,000 and retire forty years later at age 65. Table 3 illustrates several projected benefit replacement outcomes, assuming that teachers contribute five percent of salary to their DC accounts (the TRS3 default contribution), under various combinations of assumed salary growth and investment returns.

If inflation is anticipated to increase at three percent each year, the last illustration in Table 3 reflects a one percent real salary growth rate paired with a nine percent real (12 percent nominal) investment return assumption. This pairing of assumptions delivers a projected income replacement benefit of over 100 percent, based only on what would be the employees default contribution of five percent of salary in Washington's TRS3 plan. This almost seems to be an extraordinarily generous retirement benefit—but at the same time, the likelihood of all of those assumptions prevailing over a 40-year period is quite small.

Thus, appreciating the potential distortion imbedded in

extreme spreads between investment growth and salary growth requires a sophisticated level of financial literacy. Yet, recently, Scheresberg, Lusardi and Yakoboski found that only 12 percent of women displayed high financial literacy when answering questions in the National Financial Capability Study. While college-educated women (a group that would include most teachers) scored higher than women with no college degree, still less than one in five college-educated women answered all of the more complex questions correctly, and less than half answered the three questions measuring basic financial literacy correctly.³⁹ Thus, it would appear unwise to expect teachers to fully grasp the nature of the interrelated financial assumptions on projected retirement benefits.

It is important to note that in their analysis of the 1997 Cohort's decisions, Goldhaber and Grout indicate that the transfer decision was influenced by financial incentives and factors related to risk preferences such as age and income levels; however, they also indicate that the influence of estimated financial value was modest.⁴⁰ This seems in contrast to the analyses conducted by Poterba and Segal.

In summary, while investment disclosures warn that historical returns do not predict future earnings, workers' perceptions are often influenced by such expectations, without regard to accuracy.⁴¹ We do not have observations about the values teachers may have plugged into the modeling software to know if they used more conservative assumptions than the late 1990s bull stock market might predict.⁴² Nevertheless, as had been demonstrated, it is important to provide employees adequate financial information, so they can understand the relative values and reliability of benefit estimates when making retirement plan choices.

Table 3: Income Replacement Based on 40 Years of Employee Contributions Equal to 5% of Salaryto TRS3 DC Accounts

Salary Growth	Investment Rate of Return	Spread	Final Salary	DC Accumulation	Replacement Ratio
3.5%	7.5%	4.0	\$95,022	\$475,892	40%
0.0%	6.0%	6.0	\$24,000	\$203,912	69%
1.0%	9.0%	8.0	\$35,733	\$512,602	115%

Source: Segal calculations of annuity income based on the RP 2000 generational male mortality with 4.50% interest

RETIREMENT PLAN ELECTIONS OF NEW PUBLIC SCHOOL TEACHERS

Due to the importance of investment returns on the account values in DC retirement plans, preferences between DB pensions and combined DB-DC plans can change with fluctuations in investment markets and levels of employee confidence.

Gardner and Nyce have demonstrated that the attraction and retention effect of DB pensions has grown since the 2008 financial crisis, especially among employees under age 40. In 2013, 39 percent of DB participants under 40 reported that their retirement plan was an important reason they decide to work for their current employer, while only 22 percent of the DC participants cite their DC plan as an important reason. When it came to employee retention, the power of the DB plan was even stronger. Fifty eight percent of DB participants under age 40 reported that their retirement plan was an important reason they stay with their current employer, as compared with just 33 percent of similar DC participants.⁴³ In Washington, newly hired teachers must make a positive election to be covered by TRS2. Teachers making an active choice, as opposed to a default, have consistently preferred TRS2 to TRS3 since 2008. Moreover, new teachers hired in Washington State have steadily shifted towards a preference for TRS2 over time. Table 4 illustrates the choices made between TRS2 and TRS3 in each year between 2007 and 2013, as well as the cumulative plan choices over the periods. The share of newly hired teachers actively electing TRS2 increased from 39 percent in 2007, before the financial crisis, to 55 percent in 2013.⁴⁴ This trend further supports the earlier discussion that retirement plan elections are sensitive to financial market performance.

In "Decisions, Decisions: Retirement Plan Choice for Public Employees and Employers," NIRS examined the handful of states that offer public employees an alternative choice to participating in the DB retirement plan. In all states that

Year	TRS 2	TRS 3	TRS 3	TRS 3 Total	TRS 2	TRS 3	TRS 3	
	Choice	Choice	Default		Choice	Choice	Default	TRS 2/3
2007	1,384	1,628	566	2,194	39%	46%	16%	100%
2008	1,558	1,353	792	2,145	42%	37%	21%	100%
2009	889	657	420	1,077	45%	33%	21%	100%
2010	1,444	898	696	1,594	48%	30%	23%	100%
2011	1,302	802	602	1,404	48%	30%	22%	100%
2012	1,774	1,100	724	1,824	49%	31%	20%	100%
2013	1,374	923	189	1,112	55%	37%	8%	100%
Total	9,725	7,361	3,989	11,350	46%	35%	19%	100%

Table 4: Washington State TRS 2/TRS 3 Choice and Default Counts by Year

Source: Washington Education Association analysis of Washington DRS enrollment data.

offer a choice, public employees overwhelmingly choose to enroll in the DB pension. In 2010, public employee elections to participate in a DC plan ranged from a low of two percent in North Dakota to a high of 25 percent in Florida. These election patterns have remained within that range over the period covering 2003 to 2011, as illustrated in Figure 1.⁴⁵

In Washington, the statewide retirement plan for public employees other than teachers (PERS) also offers a choice between the traditional DB plan and a combined DB-DC plan. The NIRS report finds that an impressive 68 percent of new members in Washington have actively chosen the all-DB plan over the default of the combined DB-DC plan, and only 11 percent of new hires actively select the combined DB-DC, as shown in Table 5. **Table 5:** Cumulative Washington PERSNew Hire Elections, March 2002through June 2011

DB Plan Active Enrollments	Total Elections for DB & DC Combined Plans	Combined DB & DC Plan by Default	Combined DB & DC Plan Active Enrollments
68%	32%	21%	11%

Source: Decisions, Decisions: Retirement Plan Choice for Public Employees and Employers. NIRS 2011.



Figure 1: Total DB Election over Time

Source: Decisions, Decisions: Retirement Plan Choice for Public Employees and Employers. NIRS 2011.

COMPARING WASHINGTON'S EXPERIENCE WITH THAT OF OHIO

To see if other states have experienced retirement plan choices by K-12 teachers that are similar to those in Washington State, we consider retirement plan election experience for the State Teacher Retirement System of Ohio (STRS). This retirement system is the only other statewide teacher retirement system that allows employees a retirement plan choice with a DB-DC Combined plan. Since July 1, 2001, STRS has allowed new employees to choose between an all-DB plan, an all-DC plan, and a Combined DB-DC plan.⁴⁶

The STRS DB pension provides a benefit of 2.2 percent of final average salary for each year of service at age 65, or any age with 30 years of service. Each year, cost of living adjustments will be made to the original benefit. Public employees in Ohio do not participate in Social Security, so their retirement plan also has to provide a basic safety net other Americans have. Prior to August 2015, teachers with 35 or more years of service receive an enhanced benefit multiplier. In the Combined Plan, benefits consist of a DB portion equal to one percent of final average salary for each year of service at age 60, and an annuity from the DC portion based on the value of the DC account and market annuity rates at the time of retirement. A teacher can start income from the DC portion at age 50. The Combined Plan benefits do not include cost-of-living adjustments.⁴⁷

In the Combined Plan, employer contributions fund DB benefits, and all member contributions are credited to DC accounts.⁴⁸ The employee contribution is currently 12 percent of pay for all Ohio teachers, with scheduled increases in the next few years. Of that, 11 percent of pay is credited to the DC account, and the additional one percent of pay is used to pay for the employees' share of the cost for disability and survivor benefits and access to retiree health care coverage.⁴⁹ A portion of the employer contribution for teachers in the Combined Plan and DC plan is used to pay down STRS' unfunded liabilities. STRS provides a chart comparing all of the features of the plans.⁵⁰

New teachers have a six-month election window in which to make their choice. The default is the traditional DB pension. After the member is put in the DB plan, either by default or by active election, he or she cannot elect out. Members who choose the Combined Plan or DC plan have a one-time option, after four years of service, to switch to one of the other two plans. If teachers change into the DB plan, they forfeit their DC accounts and are treated as if they had been in the DB plan since their hire date. Employees cannot switch plans after the end of their fifth year.⁵¹ The vast majority of Ohio teachers do not make use of this "do-over" option, which suggests that most teachers are satisfied with the initial plan election.⁵²

Since choice was first offered in 2002, a rather consistent plan enrollment trend developed for STRS members. Table 6 summarizes the choices of over 200,000 new Ohio teachers. Overall, 86 percent of new teachers participate in the DB pension, with a slight bump up in DB pension elections occurring after 2009. Since 2002, on a cumulative basis, only four percent of new teachers have elected the Combined Plan, and only nine percent have elected the DC plan.

The stark differences in election patterns occurring in Ohio and Washington indicate that analyzing the experience in Washington alone may not be informative for policymakers. For many young teachers, retirement may be a distant reality, and other factors could be higher priorities, such as other forms of compensation, grade levels and courses taught, and other working conditions. While election patterns may initially suggest that many participants may not make an active decision and thereby be passively placed into whichever plan is the default, it is interesting to note that in 2013 more than a majority of new Washington teachers actively elected to participate in TRS2. Thus, further research might be needed to provide insights into teachers' motivations for making active versus passive elections.

Year Ending June 30	Defaulted to DB	Elected DB	Total DB	Elected DC	Elected Combined	Total Elections
2002	65%	16%	81%	12%	7%	12,777
2003	71%	15%	86%	9%	5%	22,105
2004	70%	15%	85%	11%	5%	18,976
2005	71%	15%	86%	11%	4%	19,164
2006	72%	13%	85%	11%	4%	17,105
2007	72%	13%	85%	11%	4%	17,098
2008	72%	14%	86%	11%	4%	16,960
2009	71%	15%	86%	10%	4%	16,943
2010	81%	10%	91%	7%	2%	16,173
2011	79%	10%	89%	8%	3%	15,017
2012	77%	11%	88%	9%	3%	14,046
2013	76%	12%	88%	9%	3%	15,362
FY 2014 YTD	75%	12%	87%	9%	4%	7,605
Total	152,662	27,692	180,354	20,506	8,471	209,331
	73%	13%	86%	10%	4%	

Table 6: Teacher Retirement Plan Elections for STRS Ohio Plans

Source: Pension Funding Powerpoint Provided by STRS Ohio dated March 7, 2014

TEACHER EFFECTIVENESS AND RETIREMENT PLAN CHOICE

DB plans are an important recruitment tool. Employees seem to value pensions to the extent that they willingly forego higher wages in order to be ensured guaranteed retirement income.53 Researchers at Boston College find that because DB pensions favor long-term service, public employees' relatively longer tenure compared to their private sector counterparts can lead to a public employee preference for DB pensions instead of DC plans.⁵⁴ Also, employers with DB pensions may be more able to attract desirable skilled employees due to a self-selection effect. This means that employees who are more likely to stick with a job also tend to be more apt to accept employment that offers a DB pension in the first place.55 As mentioned earlier, Nyce finds that DB pensions have a much larger retention effect than DC plans. He also finds that DB pension plans raise employees' commitment to their employer, while no such effect existed for DC plans. Thus, DB pensions can play a crucial role in retaining employees who are willing to make a long-term contribution to their employer's success.⁵⁶

Within the teaching profession specifically, public school teachers have been found to turn over less often than private school teachers, largely due to their compensation, including pension benefits. Ingersoll, as well as Guarino and his colleagues, find that public school teachers turn over less than their private school counterparts.⁵⁷ Furthermore, Ingersoll finds that most public school teachers who turn over move to another school district rather than leave the profession entirely, while private school teachers are more likely to leave the profession.⁵⁸ Data from The National Center for Education Statistics verify this trend, finding that 15.9 percent of private school teachers left teaching after the 2007-2008 school year, as compared with just eight percent of public school teachers who left teaching in the same school year.⁵⁹

Even as DB pensions retain employees longer, there is evidence that they actually increase worker productivity. Dorsey finds "various indirect evidence" that certain productivity gains are attributable to DB pensions.⁶⁰ Moreover, Hall's analysis of changes in productivity when a company moves away from a DB pension finds that those firms that moved from a DB to a DC plan between 1995 and 2000 experienced productivity losses, especially as compared with those firms who retained their DB plans. Hall hypothesizes that this loss of productivity may be due to the fact that workers turn over more quickly with the DC switch, leaving the employer before acquiring all of the job-specific skills necessary to achieve higher productivity. (The author acknowledges that more work needs to be done on this correlation.)⁶¹

Within the teaching profession specifically, the teacher effectiveness literature clearly shows that as teachers gain experience, they become more effective. Ingersoll, Miller, and Stuckey list less stability in the teaching force as one of the trends transforming education. They cite prior research which suggests that teachers' effectiveness—as measured by gains in students' test scores—increases significantly with additional experience for the first several years in teaching. They use this evidence to argue that there are negative consequences to losing new teachers before they fully develop their skills.⁶²

Because DB pensions serve to retain teachers longer, it would follow that such increased retention would lead to productivity gains. That is, the DB pension plan serves to retain the most qualified teachers; this, in turn, increases overall teacher quality at each school. Indeed, in a simulation analysis of teacher effectiveness and retirement benefits, Weller finds the counterfactual to be true—that average teacher effectiveness could fall by at least 4.3 percent and 1.2 percent, respectively, should DB pensions be replaced by DC plans or cash balance plans for teachers.⁶³

Also, Munnell finds that workers leaving state and local government employment on average command wages that are seven percent higher in the private sector than those commanded by private-sector workers coming into the public sector. Munnell's analysis suggests that states and localities with relatively generous pensions should be cautious in implementing pension reform, because reductions in benefits may result in a reduction in their ability to maintain a high-quality workforce.⁶⁴

While the Bellwether paper finds evidence that—for a "subset of teachers"—more effective teachers are more likely to choose the TRS3 plan, it is important to note that they focus their comments on the top quintile. This substantially narrows the already small sample (10 percent of the 1997 Cohort) to a mere two to three percent of the total group.⁶⁵ When the authors report on the full 2,768 performance-related observations, a difference in the estimated performance of those teachers who choose TRS3 exceed the average of those who choose TRS2 by just two to three percent of one standard deviation. The authors further explain that this difference was similar in magnitude to the performance difference between a rookie teacher and a teacher with one or two years in the classroom.⁶⁶

In earlier research, Goldhaber and Grout commented: "whether the quality of the workforce is affected by pension choice will ultimately depend on how the two plans differently affect teacher retention."⁶⁷ This is more in line with the prior research already discussed, including Nyce's demonstration of the retentive power of the DB plan among workers in general, as well as Weller's finding that moving K-12 teachers from DB pensions to cash balance or DC plans would increase teacher turnover.⁶⁸

Directly on this point about retention of employees who can choose plans, Chingos and West, who studied the pension choices made by teachers in Florida, indicate that by the sixth year, 15 percent more of the teachers in Florida who chose the DC plan over the DB plan have left the classroom.⁶⁹ With education research indicating that teachers reach their most productive performance with three to five years of experience,⁷⁰ the experience in Florida suggests that the DC plan might adversely impact teacher quality, while at the same time adding costs associated with replacing teachers just when they reach their peak teaching skills.

CONCLUSION

This paper more closely examines the benefit elections of teachers who are given a choice between a DB pension and a DB-DC combination plan. It finds that newly hired teachers show an ongoing and growing preference for the DB pension. Given the retention effects of DB plans and the fact that changes already made to teacher retirement systems should put them on the path to a strong financial footing, policymakers should proceed with caution when considering any further changes to retirement plan design. The financial security provided by DB pensions helps to attract new teachers and retain experienced teachers, while enabling public schools to manage their educational workforces successfully.

While the 1997 Cohort of teachers in Washington initially chose the DB-DC combination plan in high numbers, further analysis suggests that financial incentives and investment market conditions may have tilted decisions toward the DB-DC combination. In addition, it appears that DB-DC combination plans may be attractive to teachers insofar as the state takes on a significant portion of the risk that individual employees typically face in a DC plan. Key features of TRS3 include allowing teachers to have WSIB invest their DC accounts, and to maximize retirement income by purchasing annuity income through WSIB. Teachers would have to accumulate significantly more assets in their retirement accounts in order to purchase an equivalent annuity from the individual insurance market.

Ongoing active teacher plan elections after the 2008 financial crisis show that newly hired teachers have steadily shifted towards choosing the traditional pension benefit. Similarly, in Ohio, the only other state that provides choice between a DB pension and a combined DB-DC plan, only a small percentage of teachers have elected the Combined Plan.

Lastly, academic research on education productivity indicates that teacher retention is critical to the quality of education. Because DB pensions provide incentives to retain employees, policymakers should consider any reforms to public teacher pension plans in the broader context.

ENDNOTES

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