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MAKING MOUNTAINS OUT OF MOLEHILLS

Do teacher pensions create "peculiar incentives" for retirement?

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In a recent study, *Peaks, Cliffs and Valleys: The Peculiar Incentives in Teacher Retirement Systems and their Consequences for School Staffing*, Robert M. Costrell and Michael Podgursky criticize teacher pensions for having "peculiar accumulation patterns that reward or penalize teachers at seemingly arbitrarily chosen points in their career" (Costrell and Podgursky 2009). They focus on discontinuities inherent in simple benefit formulas and take aim at formulas that reward tenure[1] up to a point, then encourage retirement. Costrell and Podgursky suggest replacing traditional defined-benefit pensions with 401(k)-style plans or cash balance plans that they say would provide more neutral incentives for career decisions.

But do teacher pensions really create peculiar incentives, or are these standard features of defined-benefit pension plans designed to meet recruitment and retention objectives? And would 401(k)-style plans and cash balance plans better equip school districts to meet these goals? This Policy Memo takes a closer look at why benefit formulas for teacher pensions are structured the way they are and considers whether traditional pensions should be abandoned in favor of individual account plans.

Does it make sense to reward tenure up to a point, and then encourage retirement?

> In many states, teachers will accumulate very little pension wealth until their early 50s, at which point they can suddenly reap very large increases. But if they stay much beyond such a pension "peak," they can suffer declines in pension wealth – incurring a tax-like financial penalty for staying too long. (Costrell and Podgursky 2009)

Though defined-benefit pensions can be designed to provide neutral retirement incentives, in most cases the value of accrued benefits increases over time relative to pay, promoting teacher retention. Backloading of benefits is a standard feature of pension formulas where years of service are multiplied by a percentage, such as 1.5%, and then by the final salary (typically averaged over three years). Backloading occurs because for each additional year worked, the value of

accrued benefits increases not just because there is an additional year of service, but also because past service credits are multiplied by a higher final average salary. In addition to promoting retention, formulas based on final average salary help teachers plan for retirement, since accrued benefits are expressed as a percentage of pay.

However, the value of accrued benefits tends to level off after a designated "normal" retirement age, because teachers are typically not compensated—or not fully compensated—for their shorter expected retirements. In other words, teachers who retire later can expect to draw on a pension for fewer years, but the pension formula may not fully respond in an actuarially fair manner. For example, the California State Teachers Retirement System (CalSTRS) gradually increases the benefit multiplier from 1.5% to 2.4% between age 55 and 63, but the multiplier stays fixed at 2.4% after age 63. In some plans, teachers may even have an incentive to retire before the normal retirement age if the penalty for early retirement is not enough to offset the longer expected retirements of early retirees.

Costrell and Podgursky suggest that there is something arbitrary about encouraging tenure up to a point, and subsequently encouraging (or at least not discouraging) retirement. But this is commonplace for both public and private pensions in the United States and other countries. For example, Social Security retirement benefits level off after a participant has worked 35 years and reached age 70, after which additional years of work only increase monthly benefits to the extent that they raise the participant's average earnings.

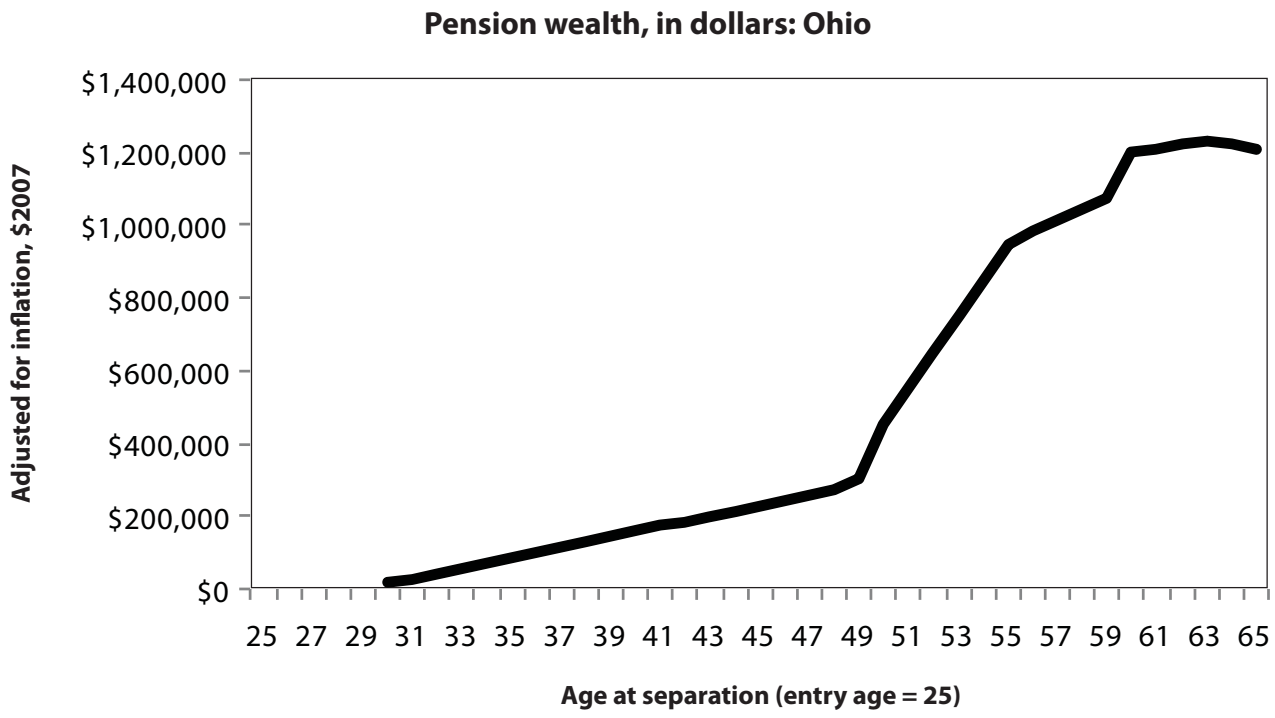
In the case of employer-provided pensions, similar concave (hump-shaped) incentive structures reflect their dual roles as recruitment and retention tools, as employers balance the need to attract workers, encourage them to stick around, and later nudge them toward retirement—or at least make it easy for teachers who want to retire to do so. Unlike Social Security, however, the typical teacher pension is structured so teachers continue to accrue service credits as long as they work, but the slope of the benefit curve becomes less steep and may decline as teachers are not fully compensated for shorter expected retirements beyond the normal retirement age. That is, their monthly benefits will continue to increase if they keep working, but their expected lifetime benefits may shrink.

The rationale for this kind of backloaded pension benefit is that there is a learning curve for teachers, as with most skilled occupations, and school districts incur costs to recruit and train teachers. One study estimated the costs of teacher turnover to be as high as $33,400 when productivity losses from losing experienced teachers were estimated based on the cost of raising test scores through smaller class sizes (Milanowski and Odden 2007). This implies that school districts should try to structure pensions and other incentives to promote teacher retention to recoup and minimize training and recruitment costs. Pensions are also viewed as a way to reward loyalty and teamwork (mentoring younger teachers, for example).

The fact that school districts want experienced teachers to stay for the duration of their careers does not mean compensation should be structured so teachers work into old age. From a human resources perspective, an advantage of defined-benefit pensions is that they can be structured to encourage—but not force—workers to retire. Encouraging all but the most dedicated teachers to retire around the normal retirement may be advantageous if there are diminishing returns to experience (a teacher with 20 years of experience may be as good, or nearly as good, as a teacher with 30 years). Also, while a high normal retirement age reduces turnover costs, it is not much of a recruitment tool.

Gently ushering out "superannuated" teachers with old-school teaching methods was a major factor behind the creation of teacher pensions (Graebner 1978). Though this would now be considered age discrimination, and teachers today can update their skills through continuous education and training, school districts do not want teachers staying on the job simply because they cannot afford to retire. Unlike employers who offer 401(k)-style plans, school districts have not had to grapple with the dilemma of older workers clinging to their jobs because their retirement plan savings have evaporated. The switch to 401(k) plans in the private sector is likely a major factor behind an increase in the labor force participation of older workers in recent decades, which has only accelerated during the economic downturn even as jobs have dried up. As a result, unemployment among older workers has been unusually high in this recession (Garr 2009; Morrissey 2008).

FIGURE A



SOURCE: Approximation from Costrell and Podgursky (2009).

As noted earlier, pension benefits are sometimes structured to encourage teachers to retire *early* in response to declining enrollment, changing personnel needs, or budget shortfalls. For example, school districts may use early retirement incentives to create more openings for English-as-a-Second-Language teachers. Though such inducements may increase long-term costs if staffing levels are not permanently reduced, state and local governments operating under balanced-budget constraints may opt to reduce payrolls in order to manage cyclical downturns in tax revenues, even if this increases pension fund outlays.

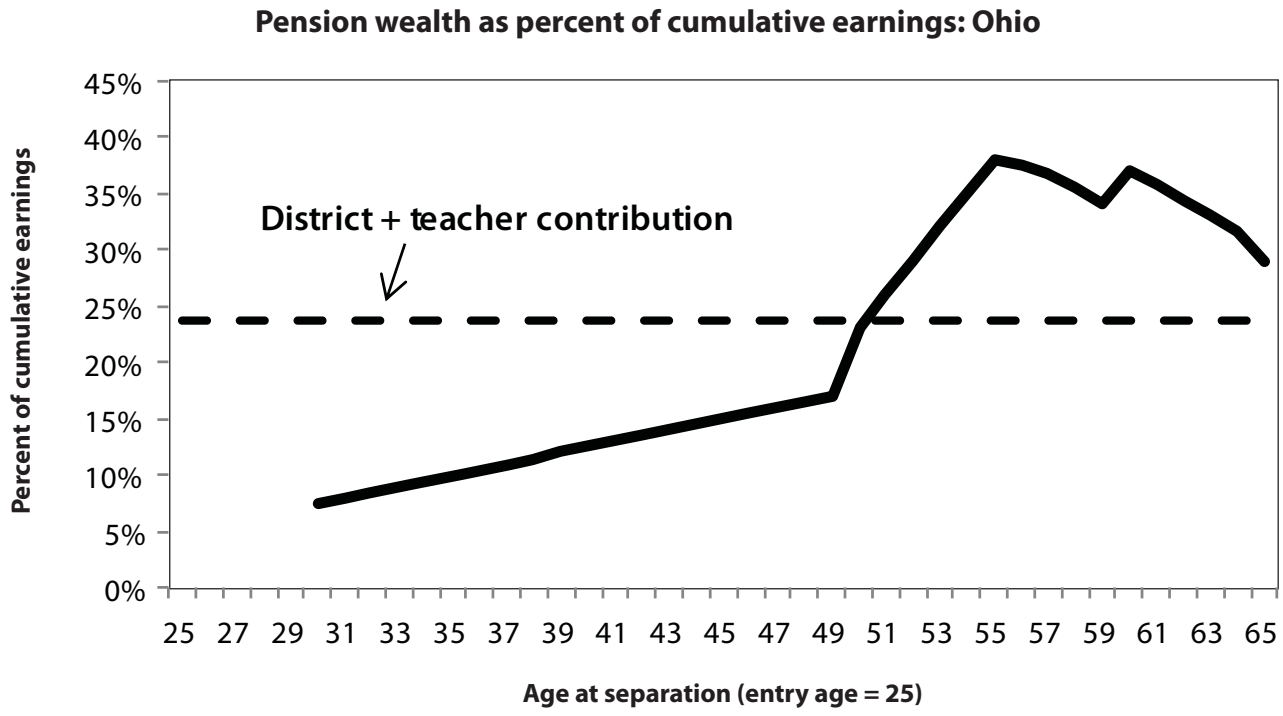
Are there "peaks, cliffs, and valleys" in teacher pension formulas?

Costrell and Podgursky say the main contribution of their paper is in graphically illustrating the peaks, cliffs, and valleys in pension wealth accumulation that occur over the course of a teacher's career (Costrell and Podgursky 2009, 177). But these charts are misleading because do not accurately represent the incentives teachers face.

Simple pension benefit formulas, such as those based on designated early and normal retirement ages, create discontinuities in the benefit formula as financial incentives vary from year to year. This typically results in pension benefits accumulating in a somewhat kinked, but hardly dramatic, hill pattern over time, as is clear when the value of accrued benefits is graphed by age and tenure (see **Figure A**, adapted from Costrell and Podgursky 2009).

The dramatic "peaks, cliffs, and valleys" emerge only because Costrell and Podgursky graph changes in pension wealth as a share of earnings (see **Figure B**, from Costrell and Podgursky 2009). However, the financial incentive to work another year is the *sum* of pay and benefits, not benefits *divide*d by pay. To see how misleading this is, consider that a pay raise could result in either an upturn or downturn in the chart (depending on whether the change in the value of accrued benefits outweighs the effect of the pay raise itself) even though a raise is normally considered a financial incentive to keep working.

FIGURE B



SOURCE: Approximation from Costrell and Podgursky (2009)..

Though Figure B suggests otherwise, a teacher can almost always increase his or her lifetime income by working another year. A straightforward and more complete picture of the financial incentives faced by teachers would graph total compensation (salary plus benefits), against age and experience. This would show a somewhat kinked slope, but not "peaks, cliffs, and valleys."

Costrell and Podgursky do allude to total compensation toward the end of their paper in claiming that "the reduction in pension wealth from working an additional year and forgoing that year's pension payment can approach or exceed the teacher's take-home pay, in which case her total compensation is little or nothing." Though theoretically possible, this strong claim is not backed up with empirical evidence. Instead, the authors follow up with the much weaker assertion that "anecdotal evidence is commonplace of teachers (and others) timing their retirement decisions, at least in part, to features of the benefit formula" (Costrell and Podgursky 2009, 197).

Figure B also misleadingly compares pension contributions to pension benefits earned, even though employers typically shoulder more than half of pension costs. While some teachers may earn less in pension benefits than they and their employers together contributed in a given year, this is not an accurate depiction of the incentives they face, especially since teachers make career decisions not just based on current compensation, but also on future pay and benefits as well as non-financial considerations.

This is not to deny that kinked incentive structures are somewhat inefficient. Take the example of a 62-year-old California teacher who began teaching at 25. Because the CalSTRS multiplier increases from around 2.266% at age 62 to 2.40% at 63 before leveling off, her lifetime benefits will appear to increase by roughly 0.7 percentage points if she waits until the full retirement age of 63 (2.266% x 37 years of service x 22 years of expected retirement results in lifetime benefits equal to 18.45 times final average salary; whereas 2.40% x 38 years of service x 21 years of expected retirement results in lifetime benefits equal to 19.15 times final average salary). However, if she waits two years instead, her lifetime

pension benefits will decline by approximately 0.4 percentage points (2.40% x 39 years of service x 20 years equals lifetime benefits equal to 18.72 times final average salary).[2]

It might seem, then, that the teacher would be slightly better off retiring at the full retirement age of 63 rather than at 62 or 64, even if she might prefer to retire earlier or later. But it is also clear that unless the bends in the schedule are very sharp, these sorts of calculations are not likely to trump other reasons for choosing a retirement date, such as Medicare and Social Security eligibility, spousal retirement, or health status. This also ignores the fact that the teacher is likely to get a raise each year, which also boosts the value of pension benefits. Taking this into account, the fact that the multiplier levels off after the normal retirement age could be seen as a way to slow the growth in total compensation rather than a way to lure teachers into early retirement.

A study by University of Illinois economist Kristine Brown found that the real-world retirement decisions of California teachers were not very sensitive to kinks in the CalSTRS benefit formula. Brown took advantage of what is known as a natural experiment—unanticipated changes in a benefit formula—to measure the effect of financial incentives on retirement behavior. Brown found that financial incentives to delay retirement had a relatively small impact on retirement decisions, implying that the average teacher would delay retirement by just one and a half months in response to a 10% increase in the annual financial return to working (Brown 2006).

From an economist's standpoint, bunching at kink points is evidence of inefficiency because it implies that people are induced to make seemingly arbitrary choices. But since retirement decisions appear relatively inelastic, Brown concludes that "there is little efficiency cost from distortions created by the program." These findings suggest that Costrell and Podgursky are overreacting to very modest distortions. After all, there are many examples of kinked incentive structures, such as income tax brackets, that have little effect on behavior. In other words, Costrell and Podgursky are making "peaks, cliffs, and valleys" out of molehills.

On the other hand, it also suggests that some tools in the human resources toolkit may not be very effective. Retirement decisions are often made years in advance, even influencing career decisions. The real lesson of the Brown study appears to be that the teaching profession attracts people who value retirement highly and are willing to forgo significant financial incentives in order to retire as planned.

In any case, simple benefit formulas like a "normal" retirement age or a "rule of 90" (participants eligible for full benefits when the sum of their age and years of service is 90) are designed for saliency. In other words, it is fairly easy for a recruiter to explain to a prospective teacher that he will be eligible for full retirement benefits at age 60 if he has worked at least 30 years, with the benefit equal to 1.5% times years of service times final salary. From both a recruitment and retirement planning perspective, the advantages of an easy-to-understand formula outweigh the modest efficiency costs, especially since Social Security benefits (or lack thereof) must also be factored into such calculations.

Costrell and Podgursky refer to the "peculiar" incentives in teacher retirement systems, but what seems truly peculiar is that they do not explain how these benefit structures came about, thus avoiding the hard work of demonstrating that they no longer serve (or have never served) their purpose. Costrell and Podgursky's small sample also hurts their credibility, as they focus disproportionately on high-cost states (e.g., where public sector workers are not covered under Social Security), and plans that are atypical in having multiple peaks in the benefit formula.

Should traditional pensions be replaced by individual account-type plans?

The authors propose a switch to 401(k)-style defined-contribution plans, saying these create "neutral incentives" for retirement. But workers with 401(k)-style defined-contribution plans face retirement incentives that are worse than discontinuous—they are random and even perverse. With 401(k) plans, the ability to retire depends on investment returns. And because stock market fluctuations tend to coincide with business cycles, workers with 401(k)s are more likely to postpone retirement when both the job market and the stock market are down, exacerbating unemployment. In contrast, as noted earlier, public sector employers can use defined-benefit pensions to manage cyclical fluctuations in tax revenues.

Moreover, 401(k)-style plans are also highly inefficient, characterized by high fees and other leakages. To the extent that private-sector employers have saved money by freezing traditional pensions and switching to 401(k)s, they have done so only by cutting back their contributions and requiring their employees to make up the difference. Thus, workers shoulder nearly two-thirds of the cost of 401(k) plans on average.[3]

This kind of cost-shifting is unlikely to work in the public sector, where good pension benefits help compensate teachers for lower pay. Unionized teachers are well informed about pension benefits and value them highly. When teachers in states like Ohio, South Carolina, and West Virginia have been given the choice between traditional pensions and 401(k)s, the vast majority have opted for traditional pensions (Almeida and Boivie 2009). The secure retirement benefits provided by traditional defined-benefit pensions are particularly important to teachers who are not covered under Social Security. In any case, since public sector workers already contribute to their pensions, the opportunity to save money by shifting costs to workers is more limited (Munnell, Haverstick, and Soto 2007).

The authors also advocate cash balance plans, which are a hybrid between 401(k)-style plans and traditional pensions. In cash balance plans, a fixed percentage of a worker's salary, typically 4-5%, is deposited annually into a notional account that is credited with interest at a rate determined by the employer. These plans generally provide neutral incentives for retirement because accrued benefits increase steadily relative to a worker's pay. Unlike 401(k) plans, they also shield workers from most financial risks as well as the high fees associated with inefficient 401(k) plans.

Defined-benefit pensions also serve an insurance function, providing retirement income no matter how long a beneficiary lives. In contrast, cash balance benefits are typically disbursed in a lump sum, so retirees can outlive their savings. The lump-sum disbursement could be used to purchase an annuity on the private market; however, annuities can be expensive and yield poor returns for individuals. For this and other reasons, it is generally easier for workers to plan their retirements around traditional defined-benefit pensions. This is especially true in the case of cash balance plans where the rate of return is variable—tied to the return on long-term Treasury bonds, for example.

More importantly, neutral retirement incentives are only an improvement over arbitrary or perverse incentives. The question, then, boils down to whether current incentive structures meet the recruitment, retention, and retirement security goals they were designed to achieve. While there are certainly examples of poorly-designed pension provisions, such as the oft-cited case of "deferred retirement option plans" that turned out to be more expensive than anticipated, Costrell and Podgursky do not present a convincing case that teacher pensions should be scrapped simply because they promote both retention and retirement, or have kinked benefit formulas.

In any case, defined-benefit pensions can always be structured like cash-balance plans to provide neutral retirement incentives, if so desired. Though pension benefits are usually pegged to final average salary, they can just as easily be a fixed share of career earnings. A such, they would resemble cash balance plans (which are technically a type of defined-benefit pension), but with the added protection of providing lifetime benefits. The disadvantage, of course, is that such a benefit formula would not help school districts promote teacher retention nor meet other objectives.

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Endnote

1. Tenure is used here to mean years of service with the same employer, not protection from dismissal without cause.
2. Author's calculations, based on Brown (2006).
3. Author's estimate, based on Table 3 in Purcell (2009).