Three Routes to a Pension Dead End

You Can't Save Money With Less Efficient Retirement Plans

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KRC Pension Primers: *As policymakers, members of the media, and citizens evaluate pension proposals, the Keystone Research Center's "pension primers" seek to demystify the often-complex details in the pension debate. This is the pension primer #16* **October 25, 2016**

The first nine months of calendar year 2016 provided a welcome break from the Pennsylvania public sector pension debates that have preoccupied legislative leaders since 2013, but which rank low as priorities for Pennsylvania voters.[1] In recent weeks, however, a new pension proposal dubbed "franken-reform" by *Capitolwire's* Chris Comisac, has reared its head(s). The "three-way hybrid" represents a variation on past proposals that would have moved new public employees partway or completely to 401(k)-style defined contribution (DC) savings plans instead of the state's existing guaranteed defined benefit (DB) pensions.

This brief draws on studies of the three-way hybrid by four actuaries summarized in an Actuarial Note (*AN*) transmitted to lawmakers yesterday with a cover memo by the Independent Fiscal Office (IFO). Our brief finds that the three-way hybrid would not generate meaningful savings for the state, but would deeply cut retirement benefits for future employees. This cut would make total compensation (wages plus benefits) for college-educated state and school employees uncompetitive with the private sector, worsening an emerging teacher shortage and likely requiring, in the future, higher salaries to attract and retain great staff for classrooms and state agencies.

In more detail, we find:

- Based on the career trajectories and hybrid variations examined by two actuaries and the IFO itself, the hybrid plan would cut retirement benefits for future school and state employees by at least 15 percent, by a third or more on average across all variations examined, and by 50 percent or more for employees choosing a straight DC retirement plan.
- The three-way hybrid does not save meaningful amounts of money. Even without considering reasons the hybrid will increase costs, the plan reduces the "normal cost" of pensions for new employees by less than a percentage point across the two pension systems, and saves an amount equal to less than half a percent of the unfunded pension liability.
- Over the 12-to-32-year period with projected savings (the actuaries do not project savings in the first 12 years (*AN*, IFO, p. 11)), there are three independent reasons that the three-way hybrid is likely to increase costs by more than the small projected savings:
    - First, if the state and school districts cut pension benefits by roughly a third, they are likely to have to increase salaries to attract and retain great teachers and agency staff, particularly among the college-educated ranks that already make less than comparable private workers and that account for a majority of Pennsylvania public sector workers (and the large majority of total payroll).
    - Second, elimination of early retirement options combined with reductions in pensions will likely lead many long-service employees who would have retired from 55 to 61 to

  - stay until 62 to 67. School districts, in particular, should think long and hard about whether they really want a substantial growth in their more senior, highest-salary cohort by 2050.
  - Third, although the actuaries have no consensus on this issue, the diversion to DC accounts of roughly half Act 120 contributions to the pension plans for new workers, and the aging of the pension obligations of the DB pensions, could require more conservative investment approaches in two or three decades, lowering investment returns and increasing costs.
- The cuts in retirement benefits would make overall compensation for Pennsylvania state and school employees uncompetitive, particularly for those with a college degree or more, such as teachers. A new study finds that teacher pay in Pennsylvania already trails private sector pay by 10-15 percent.[2]
- Slashing retirement benefits deeply would likely exacerbate Pennsylvania's looming teacher shortage.

The only policy rationale articulated for shifting employees to 401(k)-style savings accounts is to reduce the state's (and taxpayers') exposure to financial market risk. Leaving aside the downsides of transferring that risk to individuals, however, the shift away from DB pensions is likely to backfire—and to increase state and school district compensation—in the long run. State and school district compensation costs for public salaries and benefits may be a bit more predictable but they will end up higher for the three reasons highlighted above (need to increase salaries, reductions in early retirement of higher salary career employees, potential erosion of investment returns).

Underlying the lukewarm (at best) reading of the IFO and the actuaries on the three-way hybrid plan is a basic problem with 401(k)-style savings accounts that the legislature (and most editorial boards and members of the media) keep ignoring: DC savings are much less efficient retirement savings vehicles because they generate lower returns and have higher costs than pooled pension plans. The IFO and both system actuaries build these amply documented "retirement 101" realities into their models and, a result, conclude that the hybrid options save very little but deeply slash benefits.

There is something perverse (at least to us) about deeply cutting benefits of middle-class workers with no benefit to taxpayers in an economic and political climate brimming with anger about an economy that delivers mostly for the one percent.[3] Here's another idea: instead of eviscerating the retirement benefits of the few middle-class workers that still have good pensions, how about doing something to help the private workers that have little or no retirement benefit?

It is past time for the Pennsylvania legislature (and Pennsylvania media) to stop ignoring the inefficiency of DC savings accounts compared to pooled DB pensions. It is time for the legislature to move back to the direction it started down in 2010: to reduce taxpayer financial market risk within a DB framework. That direction can give the state and taxpayers "best-of-both-worlds" retirement plans that have predictable costs and that are efficient.[4]

The Three-Way Hybrid Pension Plan

This brief relies on analyses of the three-way hybrid plan by four different actuaries and the Independent Fiscal Office (IFO). Analyses by these five entities—129 pages counting the attachments—were transmitted yesterday in an Actuarial Note by the IFO to legislators and the public in anticipation of a possible vote on the plan in the next day or two. The IFO actuary, Milliman, notes (*AN*, Milliman, p. 28) the time constraints because it received the studies by each pension system actuaries only on October 7 and 12, and that more time might have led to "addition and/or different commentary" and discovery and consideration of additional issues. When an actuary points to 12 to 17 days as inadequate, it suggests that a small fraction of that time is insufficient for legislators and interested members of the public, who are not pension experts.

The full Actuarial Note package includes (1) a cover memo from the Independent Fiscal Office (IFO) (now playing the role previously played on state pension proposals by the Public Employee Retirement Commission); actuarial studies of the impact of the three-way hybrid on (2) the State Employees' Retirement System (SERS) by the SERS actuary, Korn Ferry Hay Group, Inc. (hereafter "Hay Group" or "Hay") and (3) the Pennsylvania School Employees' Retirement System (PSERS) by the PSERS actuary, Xerox HR services (hereafter "Xerox"), (4) a summary of the SERS and PSERS actuaries' studies by the IFO actuary, Milliman; and (5) a study of the impact of the three-way hybrid plan on the asset allocation and investment returns of the pension plans by a fourth actuary, Cheiron.[5]

As detailed in Table 1, the "three-way hybrid" proposal incorporates as options for new school employees and most new state employees two past pension proposals and a variation of these options.[6] (Our numbering of these options follows that in the actuarial transmittal note.) Option 3 is Governor Corbett's original 2013 pension proposal—the retirement plan of new employees choosing this option would be an individual straight DC savings plans. Option 2 is similar to the pension proposal at the center of "budget framework" talks at the end of 2015. This option would give new employees a DB pension with a 1 percent multiplier—i.e., half the size of the DB benefit received by employees covered under Act 120 of 2010—and also provide those employees with DC savings accounts half the size or less of the DC accounts of new employees choosing the pure DC option. The last option, Option 1, which is also the "default option" for new employees (in which they would participate if they did not make an explicit choice among the three options), would provide a DB pension five eighths the size of that enjoyed by Act 120 employees (i.e., a 1.25 percent multiplier instead of 2 percent) and the same DC savings account as with the 1 percent multiplier. Since the hybrid with the 1.25 percent multiplier is more generous than the hybrid option with the 1 percent multiplier, employees would contribute one percentage point more of their salary to their retirement when they choose this option.

In all three hybrid options, PSERS members would receive a smaller DC savings account while making the same total contributions to their own retirement as SERS members. In Options 1 and 2, the DC savings account for PSERS employees would be 9 percent smaller (because of total contributions of 5.5 percent versus 5 percent). In Option 3, the savings account would be 14 percent smaller (because of total contributions of 9.5 percent instead of 11 percent). One benefit of the first two hybrid options for new PSERS members compared to new SERS members and compared to Act 120 is that the vesting period decreases to five instead of 10 years.

Table 1. The Characteristics of the Proposed Three-Way Pension Plan				
	Act 120	Option 1 – Default Hybrid	Option 2 – Alternative Hybrid	Option 3 – DC Only
Defined Benefit Multiplier	2.0%	1.25%	1%	Not Applicable
Employee Contribution to DB Plan	PSERS 7.5% SERS 6.25%	PSERS 5.5% SERS 5.0%	PSERS 4.5% SERS 4.0%	Not Applicable
Employee Contribution to DC Plan	No DC	PSERS 3.0% SERS 3.5%	PSERS 3.0% SERS 3.5%	7.5%
Total Employee Contribution	PSERS 7.5% SERS 6.25%	PSERS 8.5% SERS 8.5%	PSERS 7.5% SERS 7.5%	7.5%
Employer Contribution to DC Plan*	Not Applicable	2.0%	2.0%	PSERS 2.0% SERS 3.5%
Total Contribution to DC Plan	Not Applicable	PSERS 5.0% SERS 5.5%	PSERS 5.0% SERS 5.5%	9.5% 11.0%
Final Average Salary Definition for DB benefit	Highest 3 years	Highest 5 years	Highest 5 years	Not Applicable
Eligibility for Full DB Benefit with No Benefit Reduction	1) Age 65 with a minimum of 3 years credit or 2) Any combination of age and service ≥ 92 with ≥ 35 years of service	Age 67 with a minimum of 3 years credit	Age 67 with a minimum of 3 years credit	Not Applicable
Early retirement benefit penalty	PSERS: Reduced by 3% per year if ≥ age 55 and ≥ 25 years of service; otherwise actuarially equivalent reduction in benefit SERS: Actuarially equivalent reduction in benefit	Reduced by 3% per year under age 67 if service ≥ 25 years; otherwise, actuarially equivalent reduction in benefit	Reduced by 3% per year under age 67 if service ≥ 25 years; otherwise, actuarially equivalent reduction in benefit	Not Applicable
Vesting Period	10 years*	PSERS 5 years SERS 10 years	PSERS 5 years SERS 10 years	3 years
Source. Independent Fiscal Office, *Actuarial Transmittal Note, Amendment 10803 to Senate Bill 1071, Printer's Number 1913*, October 24, 2016				

For some future employees, contributions increase compared to the current Act 120 defined benefit plan. For SERS members, the increase for options 1 and 2 is 36 percent (from 6.25 percent of salary to 8.5 percent of salary), and the increase for option 3, the straight DC plan, is 20 percent (from 6.25 percent of salary to 7.5 percent of salary). For PSERS members, the increase for option 1 is 13 percent (from 7.5 percent of salary to 8.5 percent). Options 2 and 3 for PSERS members maintain the current 7.5 percent contribution. As we will see below, future employees in most cases would make higher contributions to their retirement for a substantially reduced benefit.

The three-way hybrid also curtails the potential for long-service state and school employees to retire without penalty (i.e., on full pension benefits) at an earlier age. It eliminates the "rule of 92," which allows school or state employees whose age plus years of service add up to 92 with at least 35 years of

service to retire on full benefits. The proposal also increases from 65 to 67 the ("superannuation") age at which all eligible employees can draw full pension with no penalty. Since under the rule of 92 a long-service teacher or other employee could currently qualify for retirement at age 57 with 35 years of service, this will mean some new employees will have to work an additional 10 years to age 67 for a full pension.

The three hybrid options would result in relatively low employer costs for the retirement plans of future employees: between 3 and 4 percent of payroll for SERS and between 2.0 percent and 2.3 percent of payroll for PSERS (Table 2). Employer normal costs for new employees under Act 120 are already low, however: 4.92 percent for SERS Act 120 employees (*AN*, Hay Group, p. 7); and 2.59 percent for PSERS Act 120 employees. Thus there is little decrease in the employer share of pension costs: less than one percentage point across both systems assuming most employees choose Options 1 and 2.

Table 2. Comparison of Employer Normal Cost Rates for New Employees Under Act 120 and the Three-Way Hybrid

	PSERS	SERS
Act 120	2.76%	4.92%
Option 1 (DB + DC)	2.29%	3.88%
Option 2 (DB + DC)	2.23%	3.70%
Option 3 (DC only)	2.00%	3.50%

Source. Actuarial Note (*AN*), Milliman, p. 20, based on SERS and PSERS actuarial reports by Hay and Xerox.

Minimal Savings

The actuarial studies find that the three-way hybrid plan would generate savings. What is surprising, however, is how small these savings are relative to the benefit cuts discussed below. Table 4 in the IFO cover memo (*AN*, IFO, p. 10) summarizes the savings across both systems for the 32-year period from 2017-18 to 2048-49. On a present value basis the projected savings equal $209.3 million or $6.5 million per year. (On a cash flow basis, the savings equal $2.6 billion.) The $209.3 million equals 0.35 percent of the 2016 unfunded liability of $58.9 billion across the two systems (for the unfunded liabilities, see *AN*, Cheiron, pp. 6-7).

Table 6 in the IFO cover memo (*AN*, IFO, p. 11) projects an actual increase in employer contributions for the first 12 years under the three-way hybrid: an increase of $218 million across the two systems on present value basis (using a 7.5 percent discount rate) and $359 million on a cash flow basis.

The three-way hybrid would save more money if the PSERS and SERS DB pools have disappointing investment returns over the next three decades plus. The intuition behind this is that the state bears the risk of disappointing returns only for DB pensions and that these pensions would be only about half as big with the three-way hybrid as under Act 120. If the PSERS and SERS DB pool returns dip to 6.5 percent instead of 7.5 percent, according to the IFO actuary, the savings across the two systems more than double on a cash flow basis, to $6.9 billion (*AN*, Milliman, p. 23).[7] Assuming the ratio of cash flow to present value savings are similar to the 7.5 percent returns case (the present value savings are not reported for the 6.5 percent investment returns sensitivity analysis), the present value savings over 32 years would grow to $555 million or about $17 million per year, just under 1 percent of the unfunded liabilities of the system.

On the time frame that these small savings would materialize, we argue below that the three-way hybrid is likely to *increase* costs for three reasons not included in the actuaries' estimates. But before we present that analysis, we summarize the actuaries' estimates of the three-way hybrid on future school and state employees' benefits.

Impact on Benefits

While the three-way hybrid would deliver meager savings, three different sets of estimates find that the plan would result in large cuts in benefits for future employees. The IFO did its own estimates so that it could make consistent model assumptions and consider identical career trajectories of SERS and PSERS. The SERS and PSERS actuaries each did their own estimates. While we summarize all three findings below, the overall message is a consistent one: the three-way hybrid would lead to deep benefit cuts of at least 20 percent for all variations examined, more than third on average across a large set of variations, and more than 50 percent for a substantial number of variations.

Table 3 summarizes the Independent Fiscal Office's own estimates of benefit cuts relative to Act 120 for employees who retire at age 65 with 35, 25, or 15 years of service. For option 1, the default hybrid, the cuts range from 20 percent to 27 percent. For option 3, the DC-only option, the cuts range from 52 percent to 67 percent. The cuts are slightly higher for PSERS employees because the contributions to the DC portion of the benefit are lower. The cuts are dramatically higher for employees choosing the DC-only option, even though the contributions for new employees into this option (11 percent) are comparable to the projected contributions into the reduced DB benefit

Table 3. Hybrid Retirement Benefit Cuts (Relative to Act 120) by Years of Service

	35 Years of Service		25 Years of Service		15 Years of Service	
	PSERS	**SERS**	**PSERS**	**SERS**	**PSERS**	**SERS**
Default Hybrid (Option 1)	22%	20%	25%	23%	27%	25%
DC- Only (Option 3)	59%	52%	64%	59%	67%	61%

Source. Independent Fiscal Office (IFO), *Actuarial Note Transmittal: Amendment 10803 to Senate Bill 1071 (AN)*, October 24, 2016, Table 3, p. 9.

Table 4 summarizes the estimates by the SERS actuary of the benefits under Options 1-3 of the hybrid for state employees who leave public service after 10, 20, and 30 years respectively and then retire at age 65.[8] Table 4 shows cuts in benefits that range from 18 percent to 57 percent for the nine sample-employee/hybrid options in the table. Employees who stay with the state for 30 years would experience smaller cuts in benefits than those who stay just 10 or 20 years. Those who choose Option 1 or Option 2, and thus maintain a DB benefit of with at least a 1 percent multiplier, experience smaller cuts in benefits than employees who choose the DC-only retirement plan.

Table 4. Estimated Benefit Cuts for Three Sample State Employee by the State Employees' Retirement System Actuary			
Employee Years of State Service	10 Years	20 Years	30 Years
Act 120 Annual Benefit, Pay in Final Year = $50,000	$9,455	$19,060	$28,884
	Cut in Age 65 Retirement, Hybrid Option Benefit (DB+DC) Compared to Act 120 Benefit		
Hybrid Option 1: DC plan with 1.25% multiplier DB Plan	27%	25%	18%
Hybrid Option 2: DC plan with 1.0% multiplier DB Plan	37%	36%	30%
Hybrid Option 3: DC plan with no DB plan	57%	54%	50%
Model Assumptions			
1. Annual investment return for DC accounts = 6% per year			
2. The DC account balances annuitized assuming a 4% interest rate and RP-2014 unisex mortality (REWITE USING FN ON THIS)			
Source. IFO, *AN*, Hay Group, pp. 124-129 of the PDF (last six pages)			

Table 5 shows the cuts projected for PSERS members by the PSERS actuary under eight different career trajectories for employees selecting option 2. For the first six options, the cuts in benefits are 35 percent or 36 percent, similar to the cut for SERS members choosing option 2. As with SERS, the projected cuts for those choosing option 1, the larger DB multiplier of 1.25 percent, the cuts, are smaller (22 percent to 24 percent for career trajectories A-F); and the projected cuts for those choosing the pure defined contribution, option 3, are even higher—60 percent or more.

Table 5. PSERS Benefits Under Option 2									
Employee	A	B	C	D	E	F	G	H	
Years of Service	20	20	20	35	35	35	35	35	
Age at Hire	45	45	45	30	30	30	22	32	
Age at Exit	65	65	65	65	65	65	57	67	
Retirement Age	65	65	65	65	65	65	57	67	
Salary at Termination	$50,000	$70,000	$90,000	$50,000	$70,000	$90,000	$70,000	$70,000	
For Ages	65 and after	65 and after	65 and after	65 and after	65 and after	65 and after	57-61	62 and after	67 and after
PSERS Benefit	$19,286	$27,000	$34,714	$33,750	47,250	60,750	47,236	47,236	Unknown
Hybrid DB	$8,745	$12,242	$15,740	$15,303	$21,424	$27,545	$0	$19,338	$22,792
Hybrid DC	$3,756	$5,258	$6,761	$7,136	$9,991	$12,645	$7,088	$7,088	$10,863
Hybrid Total	$12,501	$17,500	$22,501	$22,439	$31,415	$40,190	$7,088	$26,426	$33,655
Benefit Cut vs Act 120	35%	35%	35%	34%	34%	34%	85%	44%	Unknown
Source. IFO, *AN*, Xerox, Table 3A, p. 100 of the PDF									

All three-way hybrid options deliver lower benefits according to all the estimates above because the defined contribution portion of these options would provide a smaller retirement benefit than if the same DC contributions were invested in the existing defined benefit plan. There are three reasons for this. First, the defined contribution savings accounts would deliver lower investment returns. Second, they would have higher costs because of the fees charged by financial services firms to manage DC savings options. Third, the defined contribution savings would convert accumulated savings into a lifetime annuity less efficiently than the existing DB plan.[9]

The reasons that DC savings accounts deliver significantly lower benefits for any level of contributions are non-controversial and supported by decades of empirical experience. Indicative of this, the IFO group, Hay Group and Xerox all use the same assumptions for the DC savings plans net of costs: 6 percent. This compares with 7.5 percent projected for the existing SERS defined benefit plan.[10] The National Institute on Retirement Security estimates that, taken together, all the reasons that DC savings plans deliver less "bang for the buck" can result in those plans requiring nearly twice as much in contributions to achieve any given level of benefit.[11]

Three Costs That Could Each Outweigh Any Savings

The story so far: the three-way hybrid would generate a reduction in the normal cost for new employees of less than one percentage point of salary; if investment returns for SERS and PSERS fall a percentage point short of the current assumption (i.e., equal 6.5 percent not 7.5 percent) then the savings are projected at a bit less than one percent of the current unfunded liability and most of these would come in the second or third decade after implementation; and third the three-way hybrid would deeply cut benefits, a third or more on "average" across many variations.

In this section, we consider three reasons that costs might *increase* as a result of the three-way hybrid, particularly on the time from 15 to 30+ years over which small savings might materialize.

Deep cuts in benefits will likely necessitate increases in salaries in excess of three-way hybrid savings. The system actuaries' estimates of the savings for SERS and PSERS do not consider the need for future wage hikes that might be necessary following the deep cut in benefits to attract and retain great teachers and other school and state employees. It flies in the face of human resource policy and basic labor market competition to think that Pennsylvania could reduce benefits by a third or more and not have to increase future salaries by at least a few percent to attract and retain great teachers and agency staff. This is especially the case because state and school employees already earn less than comparable private workers who have the same education, experience, and other characteristics that influence pay levels. The amount by which public trails private pay is greatest for more educated employees.[12] Moreover, given the scale of the savings from the three-way hybrid—a normal cost reduction of less than one percent of salary—it would take only a small wage increase to offset benefit cuts of a third or more to exceed the savings several times over.

Reductions in early retirement options will increase average salaries of teachers and other school plus state employees. Unintended consequences haunt public policy in general and are even more likely if legislation is rushed through without being fully evaluated. One possible unintended consequence of the three-way hybrid plan could be that the elimination of early retirement options and the cuts in benefits would lead many long-service employees who would have retired from 55-61 to retire instead from 62 to 67. The IFO actuary notes this possibility (*AN*, Milliman, p. 17):

> Buck [another name for Xerox, the PSERS actuary] assumed no change in the retirement patterns for members entering the new hybrid plan classes…We would anticipate current retirement rates to decrease for these members between ages 55 and 61 with in increased rate at age 62 when first eligible to collect benefits immediately. Accordingly, we believe the cost estimates are undervaluing the cost of the hybrid plan, which would lead to reduced savings.

School districts especially may be wary of this unintended consequence. If it shifted the age composition of teachers even an extra 5 percent towards more senior cohorts in year 15 or 30 after implementation, it could easily increase average salaries by a few percentage points—again several times the normal cost savings projected for the three-way hybrid. Health care costs for this older cohort would also increase.

A transition cost. In addition, the actuaries' estimates assume that there would be no "transition cost" because of a reduction in contributions into the DB plans for new employees. Such a reduction in contributions—and the associated reduction in the size of the defined benefit pension for new employees—would shift the age profile of the benefit obligations of SERS and PSERS DB plans towards retirees and older employees approaching retirement. The PSERS actuary noted the possibility of such a transition cost (*AN*, Xerox, p. 7):

> This analysis is based on an assumed 7.50% annual discount rate. However, under the Amendments, it is possible that liquidity issues may arise due to the shift in liability towards retirees and that the PSERS Board may change the asset allocation to reduce the risk of the portfolio and reflect the need to hold a growing proportion of its assets in more liquid, less volatile asset classes. In general, lowering the risk of the portfolio lowers the discount rate used in the System's valuation. This generally increases the accrued liabilities and contribution requirements of the System. The cost impact of the Amendments could thus change, potentially significantly, if there is a change in the asset allocation and expected asset return. We recommend that an analysis be performed by PSERS' investment consultant using projected cash flows of the System based on the provisions of the Amendments to determine whether such a reduction in the future assumed long-term rate of return on assets may be warranted. If so, the projections shown on the attachments should be recalculated accordingly.

The SERS actuary, by contrast, concluded that it was not "…necessary or appropriate to factor in any future reduction(s) to the annual investment return assumption (of 7.50 percent) currently used..." (*AN*, Hay Group, p. 3).

As the IFO actuary notes (*AN*, Milliman, p. 26), this is a judgment call: "The question is, if a change in benefit design is made, would that require the Systems' Boards to modify the assumption? We believe that there is much uncertainty regarding the possible actions of the Boards in future years." As with the first two reasons the three-way hybrid would likely increase costs, it would only take a small change in investment strategy, and small reduction in expected (and actual) investment returns, to wipe out the savings from the three-way hybrid several times over.

A Growing Teacher Pay Penalty

While we addressed above the issue of public vs. private pay in general, it is worth revisiting that issue in the case of public school teachers because of new evidence on teacher pay and an emerging teacher shortage.

While some lawmakers and members of the public have the impression that school teachers earn high salaries and benefits, the facts show the opposite to be true, on average. An August national study reaffirmed that state and school employees earn less than comparable private workers who have the same education, experience, and other characteristics.[13] The study found that the teacher pay penalty is now wider than ever: teachers earn 17 percent less in weekly wages than comparable private

employees. While benefits offset this pay gap somewhat, the overall compensation (wages and benefits combined) penalty for teachers versus comparable private employees is still 11.1 percent.

In Pennsylvania, comparable statistical analysis that controls for all the individual characteristics that impact wages has not yet been done. A simple comparison of college-educated Pennsylvania teachers with private sector college-educated Pennsylvanians reveals a roughly 10 percent weekly wage gap. For Pennsylvania teachers with a masters degrees, the teacher pay penalty with similarly educated private sector workers grows to about 15 percent. This pay gap is far higher than it was 20 years ago. The growth in this pay gap in a period during most of which overall college educated wages stagnated is all the more remarkable.[14] This trend over the last 20 years also raises the question of whether some long-time lawmakers carry around outdated perceptions of the relative pay of teachers, from early parts of their careers and/or increases in teacher pay in the 1980s and early 1990s when non-college workers saw wages decline sharply. Whatever the explanation, the perception that Pennsylvania teachers enjoy outsized pay simply does not fit with the evidence.

The existing teacher pay penalty is one factor contributing to more teachers leaving mid-career and also to a reduction in the number of college students studying to become teachers. In the past three years, there has been a 59 percent drop in the number of college students entering Pennsylvania's teacher preparation programs, and there has been a 66 percent drop in the number of teaching certificates issued by the Department of Education.

Stop Expecting a Different Result

The definition of insanity, it is said, is to keep trying the same thing and expecting a different result. In a sense, the pension proposals advanced by the Pennsylvania legislature since 2013 represent a variation on trying the same thing again: each new proposal substantially shifts new employees to defined contribution savings plans. Given the similarities of each new proposal—including the three-way hybrid—to proposals already examined, it is hardly a surprise that the overall findings of the actuarial studies of each new proposal are similar to the previous ones. All of these proposals cut benefits significantly but save little or no money and for the same reason—because of the inefficiency of DC savings accounts. All of these proposals potentially require future wage increases to offset benefit cuts so that public employment remains competitive with private. Each new proposal could exacerbate Pennsylvania's emerging teacher shortage. Each of these proposals siphons off a large share of future contributions for the retirement of new employees into individual accounts, potentially threating the high investment returns associated with large, pooled DB plans that have a balanced profile of members of all ages.

The Pennsylvania legislature should stop expecting a different result. It should step back and build on what it did in Act 120. As well as reducing benefits, Act 120 included a little-noticed risk sharing provision that will increase Act 120 employee contributions as much as 2 percentage points if investment returns are below the 7.5 percent target over an extended period of time. That modest change represents real protection of Pennsylvania taxpayers and the stage from financial market risk. In earlier pension briefs, Keystone Research Center pointed to some ways the state could seek to further mitigate future taxpayer financial market risk while retaining efficient DB pension plans as the retirement vehicle for Pennsylvania schools and the state.[15] Building on Act 120 would represent a new direction compared to the past four years, with the welcome possibility of a different, and better, result.

END NOTES

[1] According to a poll by Franklin and Marshall College May 8, 2013, "pension reform" was the top priority of 1 out of 14 Pennsylvania voters (7.4 percent); http://www.fandm.edu/uploads/files/747696610313690938-keymay13-1.pdf. As far as we know, no public poll since then has asked voters how pensions compare as a priority with other issues under discussion in Harrisburg such as education funding, the minimum wage, and job creation.

[2] Sylvia A. Allegretto and Lawrence Mishel, *The teacher pay gap is wider than ever: teachers' pay continues to fall further behind comparable workers*, Economic Policy Institute, Washington DC, August 9, 2016; http://www.epi.org/files/pdf/110964.pdf

[3] On recent economic trends in Pennsylvania, and the stagnation or decline of wages for virtually every race/ethnicity, gender, and education (four-year college and non-college) group over the past 15 to 35 years, see Mark Price and Stephen Herzenberg, *The State of Working Pennsylvania 2016*, Keystone Research Center; http://keystoneresearch.org/SWP2016

[4] In another illustration of the inefficiency of individual savings accounts, several major Universities are being sued because of the high fees accompanying the savings options in their 401(k) plans. See Tara Siegel Bernard, "M.I.T., N.Y.U. and Yale Are Sued Over Retirement Plan Fees," *New York Times*, August 9, 2016; http://www.nytimes.com/2016/08/10/your-money/mit-nyu-yale-sued-4013b-retirement-plan-fees-tiaa-fidelity.html?_r=1

[5] The Independent Fiscal Office (IFO) "Actuarial Note Transmittal" to the legislature includes the IFO cover note and four attachments: the Hay and Xerox analyses, a synthesis of these analyses by the IFO's own actuary (Milliman), and a supplemental analysis discussing the three-way hybrid's impact on asset allocation prepared by a fourth actuary, Cheiron.

[6] Most future hazardous duty employees, including Pennsylvania State Police, correction officers, and various other public safety personnel, would remain in the existing DB pensions. This group accounts for approximately 13 percent of SERS membership. See Public Employee Retirement Commission (PERC), *Actuarial Note Transmittal on SB 1082*, December 17, 2015, p. 7; https://rlws.sers.pa.gov/apex/f?p=146:15:10199794611432::::P15_HIST_LEG_KEY:3234

[7] For reasons not immediately apparent, the cash flow savings with a 7.5 percent return according to Milliman (*AN*, Milliman, p. 23) are slightly higher than reported by the IFO (*AN*, IFO, p. 10)--$2.9 billion versus $2.6 billion.

[8] The SERS actuary's model considers an employee retiring from public service with a $50,000 salary, which is a typical salary for employees retiring today. It thus gives an indication of what benefit levels would have been if the three-way hybrid had been in place the past several decades.

[9] The Hay Group assumes that DC account balances are annuitized assuming a 4% interest rate and 2014 mortality estimates for both sexes combined—i.e., "RP-2014 unisex mortality"; see https://www.soa.org/Research/Experience-Study/pension/research-2014-rp.aspx and see https://www.irs.gov/pub/irs-drop/n-13-49.pdf

[10] A gap of 1.5 percentage points in the DC vs. existing DB return net of costs is equivalent to a 1 percentage point gap in investment returns and a 0.5 percentage gap in costs. These gaps in returns and costs between DC and DB are consistent with a large body of actual experience with DB and DC plans. On the inefficiency of DC compared to DB plans, see William B. Fornia and Nari Rhee, *Still a Better Bang for the Buck*, National Institute on Retirement Security; online at http://www.nirsonline.org/storage/nirs/documents/Still%20a%20Better%20Bang/bangforbuck_2014.pdf. For additional references to the empirical evidence on lower returns for DC accounts, see Stephen Herzenberg, *Less Bang for Pennsylvania's Buck: Governor's Pension Proposal Would Force Taxpayers (and Employees) to Foot the Bill for Retirement Plans with High Fees, Low Returns*, Keystone Research Center Pension Primer #6, online at http://keystoneresearch.org/publications/research/pension-primer-6-less-bang-PA-buck

[11] Fornia and Rhee, *Still a Better Bang for the Buck*, NIRS.

[12] Jeffrey H. Keefe, *Public versus private employee costs in Pennsylvania: Apples-to-apples study provides accurate comparison of compensation*, Economic Policy Institute, August 18, 2011; online at http://www.epi.org/publication/public_versus_private_employee_costs_in_pennsylvania/

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[13] See Sylvia A. Allegretto and Lawrence Mishel, *The Teacher Pay Gap Is Wider Than Ever*, Economic Policy Institute, August 9, 2016; http://www.epi.org/files/pdf/110964.pdf. The authors note that they "…use weekly wages to avoid measurement issues regarding differences in annual weeks worked (teachers' traditional "summers off") and the number of hours worked per week that arise in many studies of teacher pay."

[14] On wage trends for college-educated workers in Pennsylvania, see Mark Price and Stephen Herzenberg, *The State of Working Pennsylvania 2016*, Keystone Research Center; http://keystoneresearch.org/SWP2016

[15] See Stephen Herzenberg, *Moving Backwards on Pension Reform*, Keystone Research Center, June 2, 2014, see especially pp. 18-19, http://keystoneresearch.org/sites/default/files/Tobash_PA_Pension_Brief_06022014.pdf