Senate Proposal Goes Backwards, Not Forwards, On Pensions

SB 1 does nothing about pension debt, deeply erodes retirement security, and will end up costing taxpayers

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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 of the pension debate. This is pension primer #12.* **June 3, 2015**

Pennsylvania accumulated pension debts in its two main public pension plans in the 2000s because of failures to make adequate pension contributions and financial market collapses. Lawmakers began to address the pension debt problem in 2010 by cutting pension benefits for new employees by more than 20% and committing to ramp up pension contributions over time to required levels. Five years later, the state is two thirds of the way to the point at which increases in pension contributions level off to a few percent per year. The state and school districts can see the light at the end of the pension tunnel.

By building on the savings achieved in Act 120 of 2010, and implementing recommendations with bipartisan support, it may be possible to level off increases in pension contributions as soon as next year. This would free up policymakers to stop talking about public sector pensions and focus instead on Pennsylvanians' top priorities, schools and jobs.

The pension proposal rushed through the Senate in mid-May, however, would not accelerate movement to the end of the pension tunnel. Some of its elements could be incorporated into a pension reform package that moves the state forward. But its three core elements – cuts in pension benefits for current employees, deep cuts in benefits for young future employees, and the movement of future employees into two new less-efficient retirement savings plans – step backwards.

Based on actuarial studies for the two pension systems and for the Public Employee Retirement Commission (PERC), supplemented by analysis by the Pew Trust and by the research literature on pension plans, this brief evaluates the impacts of SB 1. We find that SB 1 would:

- Cut benefits for young, future employees up to 70%. The actuary for the Pennsylvania Public School Employees' Retirement System (PSERS) projects benefit cuts for future career employees of about 70% relative to Act 120's already-reduced benefits. The Pew Trust also projects large (although not as large) benefit cuts for career employees alongside either increases in benefits or little change in benefits – depending on assumptions – for employees who start young and leave mid-career.

- Enact unconstitutional benefit cuts for current employees. SB 1 reduces benefits earned from future years of service for current employees hired before Act 120 went into effect ("Act 9 employees"). Court precedents suggest that some or all of these benefit cuts would be found unconstitutional. In 2013, Senate Republicans themselves eliminated similar cuts proposed by Governor Corbett from their own pension reform proposal because they feared they would be unconstitutional.

- Achieve no meaningful savings likely to stand up in court. Excluding savings from cuts in benefits to current employees, the PSERS actuary estimates savings of only $614 million on a present-value basis and $3.2 billion on a cash-flow basis. The State Employees' Retirement System (SERS) actuary expects savings of $2 billion on a cash-flow basis but does not break this down into savings from benefit cuts for current versus future employees.

- Increase costs for taxpayers in the long run, for three reasons.

  - Less efficient retirement plans for young employees. The two retirement plans into which future workers' retirement contributions would go are likely to deliver lower returns and have higher costs than Pennsylvania's current pension plans, requiring as much as twice as much in contributions for any given level of benefits.

  - A possible "transition cost" because fewer contributions for young workers would go into the existing defined benefit pool. While SB 1 would not completely close the existing defined benefit plans, it would sharply curtail the contributions into these plans on behalf of young workers. As the demographic profile of benefits owed by the existing plans ages, those plans' investment time horizon will shorten and the investment returns they earn may fall, requiring hiring employer (hence taxpayer) contributions.

  - Increased taxpayer costs because future wages have to increase to retain and attract high-quality teachers, nurses, and other public servants. For college-educated Pennsylvania public sector workers, good pension benefits offset salaries that average 25% or more below private college-educated workers. If benefits are cut by as much as 70%, salaries are likely to have to increase to make overall compensation competitive.

The basic disconnect in the campaign to eliminate traditional Pennsylvania public sector pensions has been a rallying cry that highlights Pennsylvania's pension debt followed by proposals that do nothing about that debt – or could even increase it. That disconnect continues with SB 1. The simple facts are that Pennsylvania's current pension plan designs are hard to beat because they are more efficient than other retirement savings vehicles.

This does not mean that no changes should be made to Pennsylvania's current pensions. In addition to honoring pension commitments to current and retired workers, there are two main challenges. The first is ensuring that required contributions are made every year. The second is managing the financial market risk (or "cost uncertainty") that taxpayers bear with existing pensions. Real reform would focus on these challenges while seeking not to lose the efficiency of existing plans which benefits all parties (taxpayers, employees, and public sector employers). Such reforms could include dedicating specific revenue sources to paying annual pension contributions (as proposed by Gov. Wolf), strengthening a risk sharing provision of Act 120 (which increases employee pension contributions if financially markets consistently underperform), and seeking to reduce fees paid to outside investment managers by Pennsylvania's pension plans (as proposed by Gov. Wolf and contemplated by SB 1). Any pension reform that builds on Act 120 should also address the real retirement security crisis in Pennsylvania: the collapse of retirement security in the private sector.

Senate Bill 1

A flawed process. As widely noted, Senate Bill 1 is a complicated 410-page bill that was rushed through the Senate last month in a non-transparent process that provided little time for careful vetting. The actuary for PERC makes the flawed nature of this process clear on page one of its letter to PERC, noting that: "Due to the lack of time available to complete this preliminary letter, we did not read the entire Bill nor include all the provisions contained in the Bill…"[1] Earlier on the same page, PERC says:

> Due to time constraints dictated by the Commission for providing this actuarial note, we are providing this letter without a complete review of all facets of the legislation or all actuarial cost project information used by the system actuaries in their analyses. We are disclosing that the time available for preparing this letter was insufficient to perform a complete review and thus, this letter should be considered preliminary…

Key SB 1 Provisions. The two most important provisions of SB 1 impact two groups of employees: current employees hired prior to Act 120 (so-called "Act 9 employees" in most cases) and new employees hired on or after July 1, 2016 for PSERs and on or after January 1, 2016 for SERS.

For current pre-Act 120 employees (hired before the beginning or middle of 2011), Senate Bill 1 reduces the value of pension benefits three ways.

1. It gives employees the choice of (a) a 20% lower increase in their benefits for each future year of service (2% times final average salary instead of 2.5% in exchange for a 1.25% lower employee contribution) or (b) paying a higher share of their salary (10.5% instead of 7.5% for PSERS employees or 8.75% instead of 6.25% for SERS employees) to maintain the existing 2.5% multiplier.

2. If employees elect to take their own pension contributions as a lump sum when they retire – a choice called "Option 4" – SB 1 increases the amount by which the remaining monthly pension benefit is reduced. The proposed change would make the impact of Option 4 on the pension plans "actuarially neutral." This means that whether employees elect to take Option 4 or not has no impact on the projected cost to the pension plan of employee benefits. Currently, the pension plan takes a financial hit when employees take Option 4.

3. It limits the overtime pay that counts towards pensions (an "anti-spiking" provision") for SERS employees.

For employees hired in 2016 SB 1 replaces the current defined benefit pension with a combination of a 401(k)-style defined contribution (DC) plan and a so-called cash balance (CB) plan.[2] Employers would contribute 3% to the DC plan and employees contribute 2.59% under PSERS and 4% under SERS. The cash balance plan would be established as a new "tier" within the existing defined benefit pension plans. Employees would contribute 3% to this plan (and employers nothing) and be guaranteed an interest credit each year on their cash balance account of the lower of 4% or the current interest rate on 30-year Treasury bonds (3% today). From 2019 forward, employees may also be credited with up to half the pension plan investment earnings the previous year in excess of the assumed rate of return (currently 7.5%). Thus if investment earnings were 12.5% and the interest rate on 30-year Treasury bonds were the current 3%, employees would be credited with a maximum of 5.5% (3% plus half of 12.5% minus 7.5%). At least seven percentage points of earnings would be retained by the pension plans to pay down the unfunded liability.[3] As this example illustrates, the cash balance portion of SB 1 requires employees to make contributions from which half or more of earnings will be skimmed off in most years to pay down pre-existing debt that new employees had nothing to do with creating.

<u>Extending the period for paying down pension debt</u>. SB 1 also delays paying down the SERS pension debt by extending the amortization period for SERS and also because employer contributions to SERS are based on the cost of benefits for new employees rather than the cost of retirement benefits for all employees, including those remaining in the DB pension. Since these costs will be lower under the new DC-CB hybrid, this lowers contributions to SERS slightly in the short term (as does extending the amortization period), but increases SERS contributions down the road.

The next several sections of this brief examine more deeply the impacts of SB 1.

Benefit Cuts of Up to 70%

The PSERS actuary, Xerox, estimated the impact of SB 1 on future benefits for six sample career trajectories.[4] Table 1 shows the results. All six are career employees with at least 25 years of service, five retiring at age 65 and one retiring at 57. As shown in Table 1, the estimated cut in benefits compared to Act 120 would range from 69% to 72%. Stunningly, PSERS projects that three of the six career employees would have annual benefits of less than $10,000, another would receive only $10,602, and no retiree would receive more than $20,000.[5]

Table 1

Public School Employees' Retirement System of Pennsylvania

Comparison of Benefits Under Act 120 of 2010 and SB1

Employee	A	B	C	D	E	F
Age at Hire	30	30	30	30	40	22
Age at Termination	65	65	65	65	65	57
Retirement Age	65	65	65	65	65	57
Salary at Termination	$31,111	$51,852	$72,592	$93,333	$51,852	$57,000
PSERS Benefit Act 120	$21,000	$35,000	$49,000	$63,000	$25,000	$29,232
SB 1 CB + DC Benefit	$6,361	$10,602	$14,843	$19,084	$7,669	$8,201
SB 1 Cut in Benefit	70%	70%	70%	70%	69%	72%
Assumptions						
Cash Balance Design		Defined Contribution Design				
Member Contribution	3.00%	Member Contribution			3.00%	
Employer Credit	0.00%	Employer Credit			2.59%	
Assumed 30 Year Treasury Bo	3.00%	Assumed Rate of Return			6.00%	
Assumed Conversion Rate	2.00%	Assumed Conversion Rate			3.00%	
Mortality Table for Conversion	PSERS Table	Mortality Table for Conversion			RP-2014 White Collar (75% female, 25%	
Source. David L. Driscoll, "Letter to PSERS Executive Director Glen Grell Re: Draft Senate Bill No. 1," May 6, 2015; p. 54 of PDF online at https://rlws.sers.pa.gov/apex/f?p=146:15:26855372515404::::P15_HIST_LEG_KEY:3079						

Like any estimates, those shown in Table 1 depend on the assumptions made (which are detailed at the bottom of the table). The Pew Trust has also reported estimates of benefit cuts under SB 1, in its case for SERS employees.[6] Pew finds that cuts for two career employees would range from 32% to 57% depending on the rate of return assumed for the defined contribution plan – an average of about 45% if you pick the middle of the range. Pew projects smaller benefit cuts than Xerox because Pew makes different assumptions. Pew assumes that any given lump sum in a DC or DB account translates into a higher annual pension benefit than does Xerox.[7] In most cases, Pew also assumes higher rates of return for the cash balance and defined contribution plans. A final difference is that Xerox reports cuts for PSERS and Pew cuts for SERS. Pew notes that, in its models, the benefit "…reduction is greater still for PSERS plan participants."[8] (Pew does not, however, report the projected PSERS benefit cuts.)

Pew also finds that SERS benefits could increase by "over 30%" for employees hired at a young age (27) who leaves state service mid-career (at age 45) and then retire at 62. This "over 30%" figure is an average of results that vary widely based on assumptions: benefits increase little relative to Act 120 if the rate of return on the DC plan is 5% but as much as 70% if the rate of return is 7.5%.[9] While the superiority of benefits under SB 1 for mid-career leavers sounds impressive, retirement benefits would still be low, with a replacement ratio of 8% and 24%. Thus, the improvement in benefits is modest and much smaller in dollar terms than the erosion of benefits for career employees.[10] In addition, improving the benefits of mid-career leavers from public service does not seem an important priority from a human resource perspective. In conjunction with cutting the benefits for employees who stay until retirement age, better benefits for mid-career leavers could increase turnover among experienced teachers and other public servants.

Unconstitutional Benefit Cuts for Current Employees

As noted, SB 1 reduces benefits earned from future years of service for current employees hired before Act 120 went into effect ("Act 9 employees"). Intuitively, because of the multiplier reduction from 2.5% to 2% these cuts are likely to equal at least 20% for employees who began their careers within the last few years (and thus would be subject to the lower SB benefit levels for most of their career). A model that takes into account all of the benefit cuts in SB 1, including the modifications to Option 4, finds that for three typical employees who have five years of experience (a teacher, a secretary, and an income maintenance case worker), benefit cuts would be 24% to 28%.[11] These are substantial cuts.

Court precedents suggest that these benefit cuts would be found unconstitutional and a violation of the contract impairment clause of the constitution.[12] In particular, the requirement that current members increase contributions to maintain the same benefits (or to accept a 20% reduction in benefits for each additional year of service) hives closely to the facts of a series of legal cases in the 1980s that resulted from the General Assembly's attempt to increase employee contributions on a temporary basis while not providing any corresponding increase in benefits. Act 31 of 1983 provided for an increase in employee contributions of 1.25% of compensation until the pension plans became fully funded. The courts found that the increased contributions were an unconstitutional impairment of contract for all SERS and PSERS members but that the additional employee contributions could be imposed on new employees. SERS and PSERS were required to refund with interest contributions collected from the existing employees.

Additional evidence of the likely unconstitutionality of the SB 1 benefit cuts comes from the fact that the Senate Republicans themselves in 2013 chose not to advance Governor Corbett's proposal to cut the multiplier for future years of service or a change to the generosity of the Option 4 payment of employee contributions as a lump sum. Prime sponsor Senator Mike Brubaker explained his elimination of the portion of Governor Corbett's proposal that applied to current employees as a way of avoiding the threat of a successful legal challenge.

No Meaningful Savings Likely to Stand Up in Court

Table 2, taken from the actuarial study of SB 1 by the PSERS actuary, breaks down the source of estimated savings due to SB 1. Excluding savings from cuts in benefits to current employees, the PSERS actuary estimates savings of only $614 million on a present-value basis and $3.2 billion on a cash-flow basis. These modest savings would like be more than offset by increases in wages and potential

Table 2

Public School Employees' Retirement System of Pennsylvania
Cost/(Savings) Allocation of Table 1 - Total Potential Projected Cost/(Savings)
Due to Senate Bill No. 1
(Amount in millions)

	Cash Flow Basis	Present Value as of June 30, 2015
Benefit Changes		
Members as of June 30		
Reclassification of Class T-D to Class T-G effective July 1, 2016	$ (7,027.5)	$ (2,982.9)
Cost neutral Option 4 withdrawals for service on or after July 1, 2016	$ (6,056.0)	$ (2,318.8)
Sub-total	$(13,083.5)	$ (5,301.7)
Employees who first become a member on or after July 1, 2016		
Cash balance plan for school employees hired after June 30, 2016 in lieu of Class TE or TF membership under current PSERS	$(13,345.1)	$ (2,730.3)
Defined contribution plan for school employees hired after June 30, 2016 in lieu of Class TE or TF membership under current PSERS	$ 10,174.6	$ 2,116.4
Sub-total	$ (3,170.5)	$ (613.9)
Total Senate Bill No. 1 Cost/(Savings) $ (16	$(16,254.0)	$ (5,915.6)

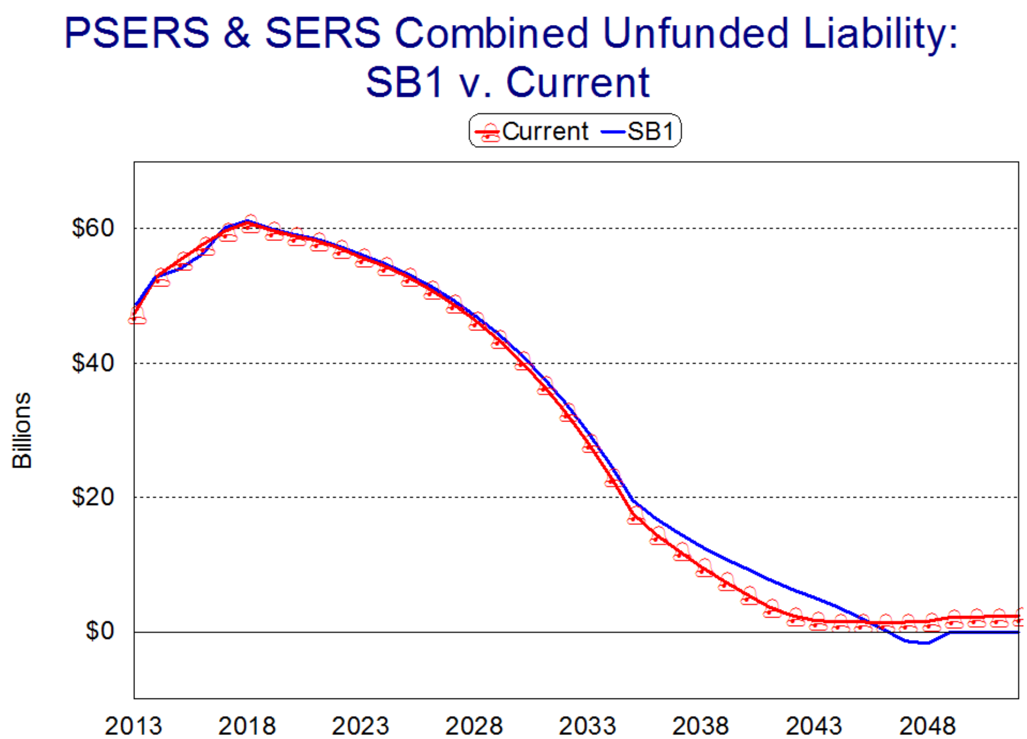
Notes:
1. Cost allocation is dependent on the order in which the changes are implemented. If a different order is utilized individual results will vary. The cost for the benefit reforms assumes that the funding reforms a reflected first.
2. Based on Buck's Senate Bill No. 1 cost note dated May 6, 2015. All statements of reliance included in th cost note continue to apply. Please refer to that cost note for more information.
3. The present value of the cost/(savings) is based upon the valuation discount rate of 7.5%. Changing that rate would modify the present value.

Source. https://rlws.sers.pa.gov/apex/f?p=146:15:34850462975329::::P15_HIST_LEG_KEY:3079 transition costs (explained in more detail below.) The SERS actuary estimates savings of $2 billion on a cash-flow basis by 2050 but does not break these down between savings from current employees and savings from new employees.

No Progress on Pension Debt

Even with savings likely to be rejected by the courts, and deep cuts in benefits, SB 1 makes no more rapid progress on paying down Pennsylvania's pension debt than existing law, as shown in Figure 1.

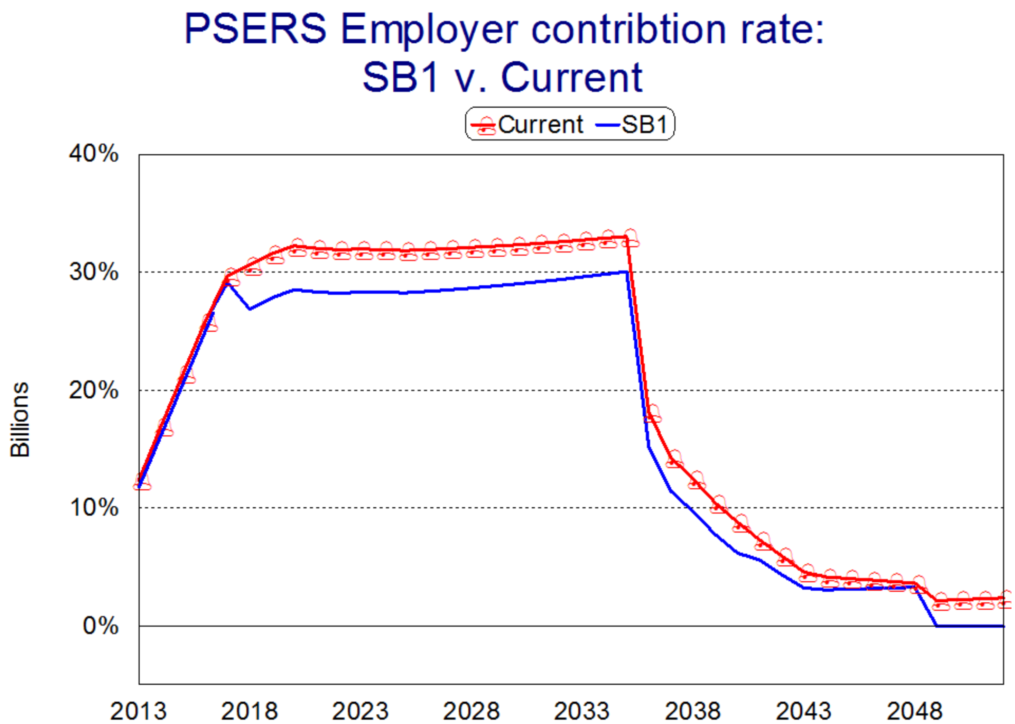
Figure 1.



Source. Actuarial Studies of SB 1 by the SERS and PSERS actuaries, see end notes 4 and 16

Figure 2 shows that SB 1 would also make only a tiny difference to pension contributions each year – again assuming that the courts do not reject the benefit cuts for current employees. If they do reject those cuts, the gap in contributions under SB 1 and current law would largely disappear. Moreover, since unconstitutional savings would have been baked into calculations of contributions rates for several years, the pension systems would likely end up deeper in debt at the time the courts reject the savings – similar to what recently happened in Illinois (although Pennsylvania's funded ratio would likely still be significantly above the low Illinois level). It is in this sense that SB 1 risks plunging Pennsylvania backwards into the darker middle of the pension tunnel. In addition to the potential for going backwards on pension debt, taxpayer costs will go up in the long run under SB 1. These costs are the subject of the next section.

Figure 2.



Source. Actuarial Studies of SB 1 by the SERS and PSERS actuaries, see end notes 4 and 16

Higher Costs for Taxpayers in the Long Run

In conjunction with actuarial studies that show no meaningful savings likely to stand up in court, there are three other reasons that SB 1 would likely lead to higher costs for taxpayers in the long run.

Less efficient retirement plans for young employees. The retirement plans into which future workers' retirement contributions would go are likely to be less efficient than Pennsylvania's current pension plans, delivering less "bang for the buck" – less in retirement benefits for any given level of contributions. A large body of research shows that 401(k)-style defined contribution savings accounts – into which most future contributions would go under SB 1 – achieve lower investment returns (people investing their own money don't do as well as professional managers and also have to invest more conservatively as they approach retirement) and have higher administrative, financial management, trading, and annuity costs than traditional pooled defined benefit plans.[13] The National Institute on Retirement Security estimates (see previous note) that it requires up to twice as much in contributions with 401(k)-style savings accounts to achieve the same benefit. With respect to the cash balance part of SB 1, the real-world evidence is sparse. As a matter of logic, nonetheless, once the CB accounts are a large part of the overall DB plan, investment managers may invest more conservatively because they only need to earn a 4% (or lower) rate of return on the CB accounts. If so, this would lead to lower investment returns in the DB plans under SB 1 and thus to higher required contributions.

The inefficiency of the SB 1 DC-CB hybrid helps explain why the PSERS actuary projects large benefit cuts but little savings from new employees' retirement plans. This is a worst-of-both-worlds situation in which SB 1 achieves meagre new-employee benefits but few or no savings for taxpayers.

A possible "transition cost" because fewer contributions for young workers would go into the existing defined benefit pool. While SB 1 would not completely close the existing defined benefit plans, it would sharply curtail (by about 70% on average across the two plans) the contributions into these plans on behalf of young workers. In addition, because it would, in the aggregate, dramatically reduce the defined benefits owed to new workers, it would gradually age the demographic profile of benefits owed by both defined benefit plans. As a rising fraction of the plans' benefit obligations are retirees or (Act 120 or Act 9) employees close to retirement, the investment time horizon of PSERS and SERS will shorten and the investment returns may fall. This phenomenon is what produces the so-called transition cost, estimated at $42 billion (on a cash-flow basis) when actuaries in 2013 examined a Senate proposal to put new employees entirely into DC individual accounts.[14]

Under SB1, since some money – about 3% of salary for each new employee instead of 10% – would continue to go into the defined benefit plans (for the CB part of future employees' pensions), the transition costs would be attenuated compared to an immediate 100% transition to DC savings accounts. The actuarial studies of SB 1, however, indicate that there could still be a transition cost. For example, the SERS actuary says:

> This analysis is based on an assumed 7.50% annual discount rate. However, under Senate Bill No. 1, it is possible that liquidity considerations may arise due to the shift in liability towards retirees and 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 increases the accrued liabilities and contribution requirements of the System. Therefore, the cost analysis presented will change, potentially significantly, if there is a change in the asset allocation and expected asset return. However, due to time constraints, this analysis was not performed for this cost note.[15]

The SERS actuary also acknowledges that SB 1 "…will result in reduced future inflows of contributions…" to the existing DB pool but adds that "…we do not view the SB 1 changes as constituting a closure of the SERS DB system…"[16] that would lead to an expectation of lower future investment returns. The SERS actuary adds however that this issue requires "close monitoring" of plan liquidity under SB 1 and that "…actions that result in a more conservative investment policy…may warrant downward adjustment to the actuarial investment return assumption."

Increased taxpayer costs because future wages have to increase to retain and attract high-quality teachers, nurses, and other public servants. For college-educated Pennsylvania public sector workers, good pension benefits offset salaries that average 25% or more below private college-educated workers.[17] Even with good benefits, Pennsylvania public workers earn wages plus benefits per hour that are 3.7% less than equivalent private-sector workers, with a bigger gap for college-educated workers including teachers. If benefits are cut by as much as 70%, salaries are likely to have to increase to make overall compensation competitive. Moreover, since salaries are subject to federal income tax, unlike pension contributions, shifting compensation from pensions to salaries is likely to be a less cost-effective way to deter turnover among the experienced public servants that hold our schools and state agencies together.

Time for Real Pension Reform

As a result of the benefit cuts and phased increases in contributions in Act 120 of 2010, Pennsylvania is finally beginning to see the light at the end of the tunnel on pensions. Within two years even without further legislative action, pension contributions are projected to increase by less than the maximum 4.5 percentage points allowed under the Act 120 collars.

A growing number of proposals have surfaced in the last three years that could accelerate the move towards the light at the end of the pension tunnel.

- Former Republican Representative Glen Grell (now head of PSERS) proposed issuing up to $9 billion in bonds to pay down pension debt and Gov. Wolf included a $3 billion bond in his budget proposal.
- Gov. Wolf proposed seeking to save $200 million annually by reducing fees paid to outside investment firms for managing portions of the SERS and PSERS assets. Similarly SB 1 proposes a "Public Pension Management and Investment Review Commission" that would, among other responsibilities, review fees paid for active and passive management of pension assets and report to the legislature within six months of forming.
- Rep. Grell proposed seeking "voluntary savings" from current employees (including from making Option 4 actuarially neutral) as part of a negotiated pension reform package that also includes increased funding and lower employee contributions.
- Keystone Research Center has proposed exploring a transition to stronger risk-sharing provisions under which employer and employee would "split the ARC" (annual required contributions) going forward. In recent testimony, the Pew Trust has made the same proposal.[18]
- Governor Wolf proposed in his budget using revenues from liquor store modernization to pay of his proposed $3 billion pension bond and also dedicating a portion of increased sales tax revenues to paying state contributions to PSERS. Dedicating revenues to making pension payments should help reassure bond rating agencies, helping to lower the commonwealth's cost of borrowing.

This list of ideas could be the basis for consensus pension changes that restore the pension plans to financial health more quickly, honor commitments to current and retired public sector workers, provide retirement security for future teachers, firefighters, nurses and other public servants, retain Pennsylvania's efficient defined benefit pension design but reduce the financial market risk to taxpayers in the future.

SB 1, however, represents a step backward. It risks constitutional rejection of benefit cuts, switches young employees to inefficient retirement savings vehicles, and would harm all retirement system stakeholders in the long run – taxpayers, employees, and public employers seeking to attract and retain high-quality staff. If SB 1 were enacted and pension contributions based on savings then rejected by the courts, Pennsylvania could find itself in a deeper pension hole three or four years down the road and plunged back into the darkness of the middle of the pension tunnel.

The best way to protect taxpayers and public employees going forward is to build on the strengths of the current pension plans and on the type of collaborative legislative process that achieved the 2010 reforms.

In addition, any public pension reform that builds on Act 120 should combined with legislation to address the real retirement security crisis in Pennsylvania: the collapse of retirement plans in the private sector. Half of private workers have no retirement savings through their job and most of the other half have only a 401(k) plan into which neither employer nor employee contributes sufficiently. To address this crisis, other states are creating state retirement savings vehicles accessible to private sector workers. Pennsylvania should do the same.

END NOTES

[1]Timothy J. Nugent and Katherine A. Warren, "Letter transmitting preliminary actuarial note on SB 1," Milliman, p. 1, May 11, 2015, p. 25 of PDF online at https://rlws.sers.pa.gov/apex/f?p=146:15:26855372515404::::P15_HIST_LEG_KEY:3079

[2] For more background on cash balance pension plans, see the first part of Stephen Herzenberg, *Cash Balance Pension Plan Could Hurt Public Employees and Taxpayers*, Keystone Research Center, October 1, 2013; online at http://keystoneresearch.org/publications/research/cash-balance-pension-plan-could-hurt-public-employees-and-taxpayers

[3] The portion of the excess interest (over 7.5%) paid to cash balance accounts will be less than half for many years because this amount depends on the ratio of the total balance in the cash balance accounts to the systems' existing pension debt. Since the total balance in the cash balance account will start very small and only grow slowly, it will take many years until even half of interest earnings over 7.5% will be paid to account holders.

[4] David L. Driscoll, "Letter to PSERS Executive Director Glen Grell Re: Draft Senate Bill No. 1," May 6, 2015; p. 54 of PDF online at https://rlws.sers.pa.gov/apex/f?p=146:15:26855372515404::::P15_HIST_LEG_KEY:3079

[5] Xerox did these estimates by asking the question: if SB 1 had been in effect for decades, what would be the benefit be of a career employee retiring now, with the age at hire, termination, and retirement shown in Table 1 in the text. This makes the dollar comparisons of retirement benefits with what today's retirees receive an apples-to-apples comparison.

[6] Pew Charitable Trusts, "Summary of Analysis and Recommendations: SB 1 and Governor's Pension Proposal," May 21, 2015. The figures reported here are based on Pews' estimates of benefit changes under SB 1 and are on reading figures off a graph.

[7] To be precise, Pew assume a 4% conversion rate rather than the 2% or 3% used for the DC and DB plans by Xerox. The higher the conversion rate, the more the funds left in individuals' DC or CB accounts continue to earn after they start to draw benefits and thus the larger the amount that can be paid out each year in benefits and the funds still last until the projected end of life.

[8] Pew Charitable Trusts, "Summary of Analysis and Recommendations: SB 1 and Governor's Pension Proposal," May 21, 2015, p. 2.

[9] The intuition behind the improvement in benefits is that when people retire mid-career under the current pension plans, their benefits are not automatically inflation-adjusted. Thus, even with low inflation (Pew assumes 2.25%), benefits by the time of retirement at age 62 have already been eroded in buying power by 31%. Meanwhile, CB and DC cash accounts would grow in value.

[10] Pew's estimates assume that mid-career leavers will leave money in their CB accounts until they retire. This seems unlikely because of the unfavorable interest sharing terms of the CB accounts. If the system actuaries made the same assumption, they may overestimate the savings from new employees that result from SB1.

[11] These estimates were provided by the Pennsylvania State Education Association.

[12] This section draws primarily from Nicholas Joseph Marcucci, "Summary of Contract Impairment Cases," memo to Leonard Knepp, Executive Director, April 13, 2011.

[13] 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. See also 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; online at http://keystoneresearch.org/publications/research/pension-primer-6-less-bang-PA-buck

[14] For references to the actuarial studies that projected a $42 billion transition cost from an immediate switch of all new employees to 401(k)-type savings plans, see end note i in the "talking points" at http://keystoneresearch.org/sites/default/files/KRC_TP_CorbettDCPlan_06252014.pdf

[15] Nugent and Warren, "Letter transmitting," p. 51 of PDF online at https://rlws.sers.pa.gov/apex/f?p=146:15:26855372515404::::P15_HIST_LEG_KEY:3079

[16] Hay Group, "Actuarial Cost Note – Projected Impact of Senate Bill No. 1, p. 8; p. 63 of PDF online at https://rlws.sers.pa.gov/apex/f?p=146:15:26855372515404::::P15_HIST_LEG_KEY:3079

[17] 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/

[18] This proposal was first made at the end of Stephen Herzenberg, *Moving Backwards on Pension Reform: Tobash Plan Does Little to Reduce Pension Debt But Will Erode Quality of Public Schools and Services, Hurt Retirement Security*; online at http://keystoneresearch.org/sites/default/files/Tobash_PA_Pension_Brief_06022014.pdf