Assessing Pension Benefits Paid under Pennsylvania’s State Employees’ Retirement System

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A REPORT OF THE PUBLIC PENSION PROJECT
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The Public Pension Project is a joint effort by Urban’s Program on Retirement Policy and State and Local Finance Initiative. It examines the cost and financing of retirement plans provided to government employees, assesses their impact on retirement security and employee recruitment and retention, and evaluates reform options. The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders.

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Executive Summary

Pennsylvania’s State Employees’ Retirement System (SERS), one of the two largest pension funds in the commonwealth, has been facing deepening financial problems over the past dozen years. In 2013, future benefits promised to employees and retirees exceeded the assets set aside to pay for them by $18 billion. This shortfall has intensified calls for pension reform, which in turn have raised concerns about the potential impact on employees’ retirement security.

To inform the growing debate, this report evaluates the pension benefits provided to state employees. It projects annual and lifetime pension benefits for newly hired, Class A-3 employees, assuming they earn average salaries over their careers and separate from state employment at the rates estimated by the plan actuaries. Retirees receive lifetime pensions equal to 2 percent of their final average salaries—calculated over the three highest-compensated years—multiplied by final years of service. In addition, long-service supplements are available to those who served for at least 40 years, raising retirement annuities 2 percent for each year served in excess of 40, up to 10 percent. Employees may begin collecting full benefits at age 65 if they have completed 10 years of service. Those with 35 years of completed service may retire as soon as the sum of their age and years of service total 92. Employees are required to contribute 6.25 percent of their salaries each year to the plan. At separation, they may opt for a refund of their past contributions instead of future pension benefits. Refunded contributions are credited with 4 percent interest each year, less than the 7.5 percent annual return that the SERS trustees assume the plan assets will earn.

Overall, annual age-65 pension benefits for newly hired employees who complete at least five years of service will average $24,400 in constant 2013 dollars, and total lifetime pension benefits will average $227,600. Three-fifths of those pension benefits will be financed by employee contributions. Lifetime benefits net of employee contributions will average only $89,300. On average, those benefits are equivalent to a 4 percent salary supplement received throughout employees’ careers.

Pension benefits vary widely across the workforce, with long-serving employees receiving much more than shorter-term employees. One-quarter of newly hired employees who complete at least five years of service will receive more than $34,900 in pension benefits each year, and one-tenth will receive more than $47,900 per year (in constant 2013 dollars). However, half will receive less than $21,000 per year, and one-quarter will receive less than $12,300. In terms of lifetime benefits net of employee contributions, one-quarter of employees with at least five years of completed service will accumulate more than $139,900, and one-tenth will accumulate more than $219,400. However, one-fifth of newly hired employees who complete at least five years of service will lose money by participating in the plan, because the pensions or refunds that they collect will be worth less than the contributions they are required to make. Under SERS, 76 percent of all state-financed pension benefits go to the 25 percent of employees receiving the most benefits. The remaining 75 percent of the workforce receives only 24 percent of all state-financed benefits. The top 5 percent receives 22 percent of all payments.
Employees who separate at younger ages receive little, if any, benefits from the plan because they must wait many years to begin collecting their pensions, and those benefits are based on the relatively low salaries they earned early in their careers. Age-25 hires must work 32 years before they accumulate rights to future pension benefits worth more than their required plan contributions, and age-30 hires must work 26 years to receive anything from the plan.

Which employees benefit most from the plan depends arbitrarily on when they joined and how long they worked. For example, age-25 hires who separate after 34 years of service receive about $45,000 from the plan, net of their own required contributions, but receive $250,000 if they stay one more year. Age-60 hires who separate after five years of service receive 14 times as many state-financed benefits, relative to their career earnings, as age-25 hires who separate after 33 years. But age-25 hires who retire after 40 years of service receive only about two-thirds as many state-financed benefits, relative to their career earnings, as other age-25 hires who retire after 35 years.

Pennsylvania’s pension plan for Class A-3 state employees receives an overall grade of F in the Urban Institute’s state and local pension plan report card and ranks as the third-worst plan in the nation covering newly hired general state employees. The plan scores poorly because it is inadequately funded, it penalizes work at older ages by reducing lifetime benefits for older employees, and it provides few retirement benefits to short-term employees.

Various pension reforms could distribute benefits more equitably across the workforce. Changes to the benefit formula could reduce the disparity in lifetime benefits between those employed for 35 years and those employed one year less and boost pensions for short-term employees. Alternately, expressing retirement benefits as account balances, as in 401(k)-type defined contribution plans or cash balance plans, would also raise benefits for employees who separate early and eliminate the existing pension penalty imposed on older employees. Younger and older employees would both gain because these balances could continue to grow until retirement, regardless of how early employees separate or how long they remain on the job. In the existing pension plan, retirement benefits are frozen when employees separate, so their value erodes with inflation and lost interest while employees wait to retire. The existing plan also withholds a month’s worth of benefits for each month employees continue to work beyond the retirement age. Whether achieved through revisions to the benefit formula or more structural changes to the plan design, carefully developed reforms could put more Pennsylvania state employees on a path to a financially secure retirement.
Introduction

Pennsylvania’s State Employees’ Retirement System (SERS), one of the two largest pension funds in the commonwealth, faces serious financial problems. In 2013, it paid $2.5 billion in pension benefits to about 120,000 beneficiaries and covered another 105,000 active employees (Hay Group 2014). Yet, it has set aside enough assets to cover only 59 percent of the future pension benefits that are promised to employees and retirees—even by its own favorable actuarial assumptions—leaving an $18 billion shortfall (Hay Group 2014). The plan’s financial situation has deteriorated markedly over the past dozen years. In 2000, for example, SERS held enough assets to cover 132 percent of its future obligations. The funding ratio fell partly because the 2007 financial crisis and subsequent stock market crash shrank plan assets and partly because the state failed to make the annual contributions that the plan actuaries estimated were necessary to cover accumulating benefit obligations. For instance, the state paid only 60 percent of its annual required contribution in 2013 and less than half its required contribution from 2005 to 2011 (Hay Group 2014). From 1994 to 2004, by contrast, the state made its full contribution each year.

The state pension’s worsening financial problems have led to calls to reform the system. For example, a bill introduced in the Pennsylvania House of Representatives in 2014 by Representative Mike Tobash would create a hybrid plan that would shrink the existing lifetime pension, based on years of completed service and final average salary, and add a 401(k)-type defined contribution plan (Tobash 2014). Another 2014 bill, introduced by Representative Glen Grell, would replace the existing state pension with a cash balance plan that ties future pension benefits to investment returns (Grell 2014). Critics of such reforms, however, maintain that they would undermine employees’ retirement security (Herzenberg 2013a, 2013b).

To inform the growing pension reform debate in Pennsylvania, this report evaluates the pension benefits provided by SERS to state employees. We project annual and lifetime pension benefits for newly hired state employees, assuming they earn average salaries over their careers and separate from state employment at the rates estimated by the plan actuaries. Our results show that long-tenured state employees, as well as shorter-term employees hired at older ages, earn substantial retirement benefits from the plan. Most employees, however, do not benefit much from the plan, even those who devote many years to state employment. One in five employees with at least five years of completed service lose money by participating in the plan because the pensions they earn are worth less than their required plan contributions.

How Are Benefits Calculated for New Hires?

Most newly hired state employees are enrolled in SERS as Class A-3 members. They receive lifetime pensions equal to 2 percent of final average salary multiplied by final years of service. Final average salary is calculated over an employee’s three highest-compensated years of service. Long-service supplements
are available to those who served for at least 40 years, raising retirement annuities 2 percent for each year served in excess of 40, up to 10 percent; there is no further bonus for participating in the plan for more than 45 years. Employees may begin collecting full benefits at age 65, if they have completed 10 years of service. If they are still employed when they apply for retirement, however, they need to have completed only three years of service (as long as they are at least age 65). Employees with 35 years of completed service may retire as soon as the sum of their age and years of service totals 92. An employee hired at age 22 who served continuously until retirement could begin collecting a full pension at age 57. Reduced early retirement benefits are available at any age after 10 years of service. These early benefits are subject to actuarial reduction factors to reflect the increased number of benefit checks they will receive, so that their expected lifetime pensions are the same whether or not they retire early. Retirees may receive cost-of-living adjustments (COLAs) at the discretion of the state legislature. Such adjustments have been infrequent in recent years, and our analysis assumes that retirees will not receive any in future years. Benefits are capped at 100 percent of employees’ highest annual salary. State employees are also covered by Social Security.

In exchange for these benefits, SERS requires employees to contribute 6.25 percent of their salary each period (in addition to Social Security payroll taxes). When employees separate they may opt for a refund of their past contributions instead of future pension benefits. Refunded contributions are credited with 4 percent interest each year.

Class A-3 benefits are available to state employees hired on or after January 1, 2011 and reflect pension reforms passed in 2010. State employees hired on or after July 1, 2001 but before January 1, 2011 are Class AA members and receive more generous benefits. Their annual pension benefits replace a larger share of their final average salaries—2.5 percent for every year of completed service—and begin at age 60 if they have completed 5 years of service (3 years if still employed when applying for retirement) or after they have completed 35 years of service regardless of age. Class AA members are also entitled to long-service supplements of 2 percent for each year of service in excess of 40, up to 45 years of service. State employee pension benefits were boosted a decade and a half ago when the state pension fund had accumulated more than enough assets to cover future obligations. Class AA benefits replaced the less generous pension available to Class A employees hired before July 1, 2001. Pension benefits for those early hires are computed the same way as for Class A-3 members hired on or after January 1, 2011, except that the early hires may begin collecting full benefits at age 60. Additionally, Class A members contribute only 5 percent of their salary to the plan.

How Can We Project Future Pension Benefits?

Our analysis examines how many pension benefits newly hired state employees will likely receive under existing SERS rules at age 65 and over their lifetime. Employees are assumed to earn the average salary for their age and years of service for those hired in 2013 as reported by the plan actuaries (Hay Group
Following the actuaries, we assume that salary growth varies by tenure, increasing, for example, 11.05 percent per year after 1 year of service, 6.15 percent per year after 10 years of service, and 4.30 percent per year after 30 or more years of service. Our simulations project final service years by applying separation probabilities that vary by age and years of service as estimated by the plan actuaries. We assume plan participants discount future benefits by 7.5 percent per year, and that prices increase 2.75 per year, the same rates adopted by the SERS trustees (Pennsylvania State Employees’ Retirement System 2013). All financial amounts are expressed in constant 2013 dollars.

We compute annual pension benefits by applying the benefit formula to our assumed salary histories. The calculations assume that all plan participants receive their payments as single-life annuities—forgoing survivor benefits for any spouse—and that beneficiaries never receive any future COLAs, consistent with the assumption used by the plan actuaries. We compute the value of lifetime benefits by summing all future annual payments, discounting them by 7.5 percent per year and by the probability that employees will die before they can collect. The value is measured at the year the plan participant leaves state employment, expressed in constant 2013 dollars. Mortality probabilities are derived from unisex life tables compiled by the Social Security Administration. When we estimate the value of lifetime benefits, we assume that plan participants will elect to receive refunds of their contributions instead of pensions, if the refunds are worth more.

How Much Annual Income Will Retirees Receive?

Figure 1 projects annual pension income at age 65 for state employees hired in 2013 who earn average salaries throughout their careers. Benefits increase sharply with years of service. An employee hired at age 25 who completes 10 years of service receives annual benefits beginning at age 65 equal to only $3,400 (in constant 2013 dollars). Those annual benefits increase to $11,400 after 20 years of completed service, $26,600 after 30 years, and $54,200 after 40 years.

The state pension backloads payments late in employees’ careers because the benefit formula directly ties payments to years of service. Final average salary also increases with tenure, so the earnings base partially replaced by the plan grows as employees work longer. Future retirement benefits erode over time when employees separate before they may begin receiving payments because the benefit is not adjusted for inflation in the interim.

The same general pattern is evident for employees who join the state workforce at older ages, except that they receive larger pensions than those who join at younger ages and separate with the same number of completed service years. Older hires receive higher annual benefits because they generally earn more than younger hires with the same years of service and they do not have to wait as long to begin collecting. As a result, their benefits are reduced less by inflation.
How Much Will Retirees Receive over a Lifetime?

How well employees are served by the state retirement plan depends on how much they receive over their lifetimes, not in a single year. Employees who begin collecting their pensions at relatively young ages will benefit more from the plan than their counterparts who begin collecting the same annual payment at older ages. Figure 2 shows how the value of lifetime pension benefits increases with years of service for Class A-3 members hired at age 25. Employees who separate before completing 10 years of service do not receive any pension benefits, because they have not yet vested in the plan. Age-25 hires do not receive many benefits over their lifetimes immediately after they vest at age 35—their benefits are worth only about $8,000 in 2013 dollars—because they must wait 30 years to begin collecting and, as noted in figure 1, their benefits are based on the relatively low salaries they earned in their mid-30s. Additional years of service, however, raise lifetime benefits at an increasing rate. They rise to just more than $80,000 after 25 years of service and to nearly $275,000 after 34 years of service. The big payoff comes from working 35 years. Employees hired at age 25 can begin collecting immediately after completing 35 years of service—at
age 57—instead of waiting until age 65. That one additional service year raises lifetime benefits by more than $200,000. Lifetime benefits increase more slowly with subsequent service. Nonetheless, employees who remain on the job for 40 years will accumulate about $570,000 in pension benefits.

Each year employees must contribute 6.25 percent of their salaries to the plan. They must work many years before their future retirement benefits are worth more than those contributions. If employees could earn as much on their contributions outside the plan as SERS assumes it will earn on its investments, their contributions would be worth three times as much as their future pension benefits after 12 years of service, twice as much after 19 years of service, and nearly 50 percent more after 25 years of service. Age-25 hires must remain in the plan for 32 years before their future benefits are worth more than their contributions. After just a few more years on the job, however, future benefits are worth much more than what employees contributed.

FIGURE 2
Value of Employee Contributions and Future Benefits
For 25-year-old hires

Source: Authors’ calculations based on SERS plan documents and actuarial reports.
Notes: Monetary figures are in constant 2013 dollars. Projections are reported for Class A-3 system members hired in 2013 who are not engaged in hazardous duty. Future benefits are discounted at 7.5 percent and the annual inflation rate is assumed to be 2.75 percent, the rates adopted by the retirement system.
Employees who separate before earning a large portion of pension benefits may have their contributions refunded, but they receive only 4 percent interest each year, much less than what the plan assumes could be earned on those contributions. Figure 2 shows how much employees receive if they opt for a refund. All age-25 hires separating with less than 25 years of service are better off taking a refund than waiting for a future pension. Even with a refund, though, they lose money by participating in SERS because they could have earned more by investing their contributions outside the plan. Using the plan trustees’ investment-return assumptions, we estimate that employees hired at age 25 who separate with 24 years of completed service forfeit nearly $40,000 by participating in the plan. Employees who complete 25 or more years of service are better off collecting a pension than a refund. Nonetheless, those who separate with less than 32 years of service lose money in the plan because their future pensions are worth less than their contributions combined with the investment returns they could have earned on those contributions outside the plan, even though their pensions are worth more than those contributions when refunded with only 4 percent interest. These employees—many of whom serve in state employment for decades—subsidize the large pensions that long-tenured employees receive.

Most Pennsylvania state employees do not complete 25 years of service. Our calculations based on data from the SERS actuaries show that half of all newly hired employees complete fewer than 12 years of service, and only a quarter will complete at least 22 years of service (Hay Group 2013). Completed service is higher among those who remain employed for some minimum period, and state policymakers may choose to favor longer-serving employees in any pension reforms. Among employees with at least 5 years of completed service, half remain on the state payroll for fewer than 20 years and one-quarter remain for at least 29 years. Among employees with at least 10 years of completed service, half remain on the payroll for less than 22 years, while one-quarter remain for at least 30 years.

Relatively few state employees are hired at age 25. According to SERS actuaries, 14 percent of employees join the state payroll before age 25, 16 percent join between ages 25 and 29, 23 percent join while in their 30s, 21 percent join while in their 40s, and 26 percent join at age 50 or older (Hay Group 2013). Given this diversity, focusing on a single entering cohort could generate misleading results. Thus, we broaden our analysis to consider outcomes for employees hired at various ages.

Figure 3 shows how the expected value of lifetime pension benefits net of employee contributions changes with years of service for employees hired at ages 25, 35, 45, and 60. For age-25 hires, the figure highlights the plan-related financial losses experienced by those separating after about 25 years of service and the gains experienced by those remaining on the job for 35 years, who receive about $250,000 in state-financed pension benefits—12 times as much as those who leave after 34 years. The value of net lifetime benefits decreases after 35 years of service because additional service years do not raise annual payments enough to offset the decline in the number of checks received by those who continue working and the additional contributions they must make. However, net lifetime benefits increase again after 40 years of service, when employees qualify for the long-service supplement.
Lifetime pension benefits net of employee contributions grow somewhat differently for employees hired at older ages. Older hires who receive refunds of their contributions lose more by participating in the plan than younger hires who separate with the same tenure because those hired later tend to earn and contribute more. With additional time on the job, however, employees hired at older ages accumulate state-financed lifetime pension benefits faster than those hired at younger ages. After 30 years of service, for example, employees hired at age 35 have accumulated $200,000 in future lifetime benefits, while those hired at age 25 have not yet accumulated any benefits. Similarly, employees hired at age 45 will have accumulated $150,000 in future lifetime benefits after 20 years, compared with about $3,000 for those hired at age 35. Age-60 hires will have accumulated $42,000 after five years and $78,000 after 10 years. Older hires benefit from the pension plan sooner than those hired at younger ages because they do not wait as long to begin collecting their pension. Age-60 hires may start collecting their pension after completing only five years of service. However, the value of lifetime benefits also begins declining sooner
when employees are hired at older ages. For example, lifetime benefits begin falling after 30 years of service for age-35 hires and after 24 years of service for age-45 hires, because the growth in annual benefits from working another year is not large enough to offset the benefit checks lost by those who delay retirement or the additional contributions they must make.

Figure 4 shows the variation by starting age in the number of years that employees must work before they accumulate any state-financed pension benefits. Employees hired at age 20 must remain employed by the state for 36 years before the value of their lifetime pension benefits exceeds the value of their plan contributions. The service requirement drops steadily as starting age rises. For example, those hired at age 30 must work 26 years before their pension is worth more than their required contributions, whereas those hired at age 40 must work 14 years. Those hired at age 60 need work only five years to benefit from SERS.

**FIGURE 4**

Service Years Required to Earn Any State-Financed Benefits

![Bar chart showing the variation by starting age in the number of years that employees must work before they accumulate any state-financed pension benefits.](chart)

Source: Authors’ calculations based on SERS plan documents and actuarial reports.

Notes: Projections are reported for Class A-3 system members hired in 2013 who are not engaged in hazardous duty. Future benefits are discounted at 7.5 percent and the annual inflation rate is assumed to be 2.75 percent, the rates adopted by the retirement system.
The change in lifetime retirement benefits from working an additional year can significantly affect employee compensation. Another year of service sometimes substantially increases the value of lifetime pension benefits, boosting total compensation. Sharp spikes in the growth of lifetime benefits can create strong incentives for employees to remain on the job until they realize those rewards, even if the job is a poor match with their skills and they could be more productive elsewhere. However, working an additional year after the plan’s retirement age can reduce lifetime pension benefits because workers forfeit a year of benefits for every year they remain on the job, cutting total compensation and creating strong incentives to retire.

Figure 5 shows the annual increment to the expected value of lifetime pension benefits net of employee contributions. For a 25-year-old hire, SERS reduces total compensation until employees have served for 25 years. The value of future pension benefits grows in the years that immediately follow, augmenting employee compensation. During the 34th year of service, for example, the increment to future benefits amounts to about $17,500 (in constant 2013 dollars), about one-quarter of final average salary. The next year, however, the value of lifetime benefits net of employee contributions soars by $209,000, more than three times final average salary. Lifetime benefits then decline, reducing total compensation and encouraging employees to retire. Spikes in the growth rate of lifetime pension benefits are not nearly as pronounced for employees who join the state payroll at older ages, but they are still significant.

Instead of expressing the expected value of lifetime benefits net of employee contributions in dollars, we express it as the portion of salary that the state would have to set aside each year (combined with employee contributions) to finance the stream of future benefits that employees will receive once they retire (figure 6). These calculations show how much retirement benefits supplement employee salaries, averaged over their careers, assuming that employer contributions earn 7.5 percent nominal returns, the rate assumed by the plan trustees.
The existing retirement plan significantly reduces salaries for employees hired at age 25 who separate before completing 32 years of service because, as we saw earlier, future pension benefits for employees with less seniority are worth less than their required contributions. For age-25 hires who leave after completing 24 years of service, for example, SERS reduces their salaries by 2 percent each year they worked (figure 6). The plan supplements salary for those who remain on the job for at least 32 years, but how much they benefit depends on how long they stay. For instance, the plan supplements salaries 1.1 percent each year for those who separate after 34 years of service and 6.2 percent each year for those who separate after 35 years of service. The annual supplement then falls each year that age-25 hires remain on the job beyond 35 years, declining to 4.4 percent after 40 years of service and 3.3 percent after 45 years of service.

Employees hired at older ages get much more out of the plan for each year of service than those hired at younger ages. For example, the plan supplements salaries 7.4 percent each year for age-45 hires who separate after 20 years of service and 9.7 percent each year for age-60 hires who separate after only 5 years of service.
How Are Pension Benefits Distributed across the State Workforce?

Table 1 reports the distribution of projected pension benefits for newly hired state employees participating in SERS as Class A-3 members. Overall, annual age-65 pension benefits will average $15,300 in constant 2013 dollars, and total lifetime pension benefits will average $143,200. Three-fifths of those pension benefits will be financed by employees’ own contributions. Lifetime benefits net of employee contributions will average only $56,300. On average, those benefits are equivalent to a 2.63 percent salary supplement received throughout employees’ careers. Average benefit levels will be significantly higher among those who remain in state employment for at least a few years. For employees who complete at least five years of service, annual benefits will average $24,400, total lifetime benefits will average $227,600, and lifetime benefits net of employee contributions will average $89,300, which could be financed by a state contribution of 4.04 percent of salary throughout employees’ careers.

Pension benefits vary widely across the workforce. Focusing on employees who complete at least five years of service, we estimate that one-quarter of newly hired employees will receive more than $34,900 in...
annual pension benefits each year (the 75th percentile, as reported in table 1), and one-tenth will receive more than $47,900 per year (the 90th percentile). However, half will receive less than $21,000 per year (the 50th percentile, or median value), and one-quarter will receive less than $12,300 (the 25th percentile). In terms of lifetime benefits net of employee contributions, one-quarter of employees with at least five years of completed service will accumulate more than $139,900, and one-tenth will accumulate more than $219,400. However, one-fifth of newly hired employees who complete at least five years of service will lose money by participating in SERS, because the pension or refund that they collect will be worth less than the contributions they are required to make.

The variation in pension benefits that we measure arises solely from differences in years of service across employees. It is not surprising that long-serving employees receive more lifetime pension benefits, just as they receive higher lifetime salaries. To evaluate the distribution in lifetime pension benefits, it is instructive to express them as the percentage of employees’ salary that the state would have to contribute each year of their careers to finance promised benefits. If all groups were treated equally, then we would expect that these employer contributions to annual salaries would not vary much across the workforce. However, we find sharp differences. The median employer contribution for employees who complete at least five years of service is 4.62 percent, but a quarter of employees receive contributions that exceed 6.67 percent of salary and a tenth receive contributions that exceed 8.44 percent. For another quarter of employees, contributions are less than 1 percent of salary.

Under SERS, 76 percent of all state-financed pension benefits go to the 25 percent of employees receiving the most benefits (figure 7). The remaining 75 percent of the workforce would receive only 24 percent of all state-financed benefits. The top 5 percent would receive 22 percent of all payments.
## TABLE 1

**Distribution of Projected Pension Benefits**

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<th>Annual benefits at age 65 ($)</th>
<th>Total lifetime benefits ($)</th>
<th>Dollar amount</th>
<th>As percent of career salary</th>
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<td>At least 10 years of service</td>
<td>37,500</td>
<td>352,600</td>
<td>151,600</td>
<td>6.20</td>
</tr>
<tr>
<td><strong>90th percentile</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All participants</td>
<td>43,800</td>
<td>441,700</td>
<td>178,100</td>
<td>8.01</td>
</tr>
<tr>
<td>At least 5 years of service</td>
<td>47,900</td>
<td>512,100</td>
<td>219,400</td>
<td>8.44</td>
</tr>
<tr>
<td>At least 10 years of service</td>
<td>49,100</td>
<td>518,200</td>
<td>230,000</td>
<td>7.79</td>
</tr>
</tbody>
</table>

**Source:** Authors’ calculations from SERS plan documents and actuarial reports.

**Notes:** Monetary figures are in constant 2013 dollars. Projections are for Class A-3 members hired in 2014 in nonhazardous positions and assume a 7.5 percent discount rate and 2.75 percent inflation. Pension benefits are measured when they are first received.
How Does the Plan Compare with Other State Pensions?

Pennsylvania’s pension plan for Class A-3 state employees receives an overall grade of F in the Urban Institute’s state and local pension plan report card (Johnson, Butrica, Haaga, Southgate, and Steurele 2014). The report card grades plans on three broad criteria:

1. Do they place both short- and long-term employees on a path to retirement security?
2. Do they create the proper incentives for employees so governments can attract and retain a productive workforce?
3. Are plans setting aside enough funds to finance the future benefits they have promised employees?

Scores are based on the Urban Institute’s State and Local Employee Pension Plan Database (SLEPP), which provides detailed benefit rules and financial information on employee contribution rates, vesting requirements, benefit formulas and eligibility rules, early-retirement reductions, cost-of-living adjustments, and actuarial assumptions. Because states frequently change their plans for new hires, but exempt incumbent employees from these changes, plan rules often vary by hire date. The database collects information for each of these variants, often called plan tiers, so that it represents plan rules for nearly all participants employed in 2014. There are 687 plan tiers in SLEPP, covering teachers, police officers and firefighters, and general state and local government employees in all 50 states and the District
of Columbia. Only state-administered plans are included; plans administered by municipalities are excluded.

Pennsylvania’s plan receives an A for putting long-term employees on a path to retirement income security, but an F for short-term employees’ retirement security. The report card’s simulations indicate that retirees who complete 40 years of service in the plan receive enough Social Security and pension benefits at age 70 to replace 114 percent of their age-64 earnings, easily surpassing the 80 percent threshold required for the top grade. Simulations for short-term employees assume that they separate after eight years, and then immediately begin working in a new job with a different employer that offers a retirement plan with the exact same rules as the state plan. The pattern repeats until individuals have held five eight-year jobs over 40 years. These short-term employees would be able to replace only 37 percent of their age-64 earnings at age 70, because they do not work long enough to vest in the state plan.

The plan receives low grades on the workforce incentive criteria. It receives a C for rewarding younger workers, because age-25 hires accumulate only 3 percent of the maximum value of their lifetime pension benefits, net of their own contributions, in their first 10 years of service. The plan receives a D for promoting a dynamic workforce because 25-year-old hires earn 36 percent of the accumulated value of their lifetime pension benefits in a single year after age 45. That spike creates strong incentives for employees to remain in the plan until they qualify for those windfalls and can lock mid-career employees into their jobs even if they are not good fits and could be more productive elsewhere. The plan receives an F for encouraging work at older ages because lifetime pension benefits net of employee contributions for age-25 hires fall 69 percent on average for each year worked between ages 65 and 69, creating strong incentives for older employees to retire once eligible.

Benefits promised by retirement plans are not worth much if plans lack the financial resources to deliver on those promises. The Urban Institute report card rates plans on whether they set aside enough funds each year to cover accruing obligations—measured by the share of annual required contributions, as determined by plan actuaries, that has been paid over the past four years—and whether they have amassed enough funds to cover their accumulated benefits obligations—measured by the most recent ratio of plan assets to liabilities. Pennsylvania’s state plan receives an F on both counts. From 2010 to 2013, the plan has made only 47 percent of its annual required contributions, and the plan’s funding ratio stood at only 59 percent in 2013.

Overall, Pennsylvania’s pension plan for state employees ranks as one of the worst in the nation. Only Massachusetts and New Jersey scored worse on the Urban Institute’s report card among plans covering newly hired general state employees.
Conclusions

Long-term state employees do well in Pennsylvania’s state pension plan. For example, employees hired at age 25 who complete 40 years of service will receive lifetime pensions paying $54,200 a year, replacing 80 percent of their final average salaries. Those benefits are worth nearly $600,000, over a lifetime.

Although employees must make significant contributions to offset the cost of providing those benefits, 25-year-old hires would receive about $250,000 in state-financed benefits over a 35-year career. Employees hired by the state relatively late in life also receive generous pension benefits under SERS.

However, employees who join the state payroll at relatively young ages and stay for less than 30 years get little, if anything, from the plan. For example, age-25 hires must work 32 years before they accumulate rights to future pension benefits worth more than their required plan contributions, and age-30 hires must work 26 years to get anything from the plan. Those who choose to have their contributions refunded lose money because the plan credits less interest to their contributions than they could earn outside the plan. One in five newly hired state employees who complete at least five years of service will lose money by participating in the plan.

Which employees benefit most from the plan depends arbitrarily on when they are hired and how long they worked. For example, age-25 hires receive about $45,000 from the plan, net of their own required contributions, if they separate after 34 years of service, but $250,000 if they stay one more year. Relative to their career earnings, age-60 hires who separate after five years of service receive 14 times as many state-financed benefits as age-25 hires who separate after 33 years. But age-25 hires who retire after 40 years of service receive only about two-thirds as many state-financed benefits, relative to their career earnings, as those who retire after 35 years.

Various pension reforms could distribute benefits more equitably across the workforce. For example, eliminating the entitlement to full pension benefits after 35 years of completed service for employees at least 57-years-old—and thus making all employees wait until age 65 to collect full benefits—would reduce the disparity in lifetime benefits between those who meet the 35-year threshold and those who fall just short. Indexing the final average salary measure that enters the benefit formula to the change in average salaries would boost pensions for employees who separate before they can begin collecting retirement benefits, allowing more employees who spend less than a full career in state employment to benefit from the plan.

Alternative plan designs could also allow employees to accumulate pension benefits more steadily over their careers (Johnson and Southgate 2014; Johnson, Butrica, Haaga, Southgate 2014). Some states, including Rhode Island and Tennessee, have recently shifted to hybrid plans, which typically combine a relatively small traditional defined benefit plan with a 401(k)-type defined contribution plan. Other states, including Kentucky, have shifted to cash balance plans, which express benefits as an account balance that builds over time with employee and employer contributions as well as accumulated investment returns. They are similar to defined contribution plans, except that participants do not own their individual
accounts. Instead, they are pooled and professionally managed, and often guarantee some minimum investment return. Additionally, cash balance plans allow participants to collect their benefits as lifetime annuities (instead of having to purchase them from private insurance companies that usually offer unfavorable rates). Account balances in defined contribution and cash balance plans may continue to increase with investment returns after employees separate, so employees who separate early may accumulate substantial savings by retirement. In the existing state plan, by contrast, retirement benefits are frozen when employees separate, so their value erodes with inflation and lost interest while employees wait to retire. Account balances in defined contribution and cash balance plans may continue to grow after employees have reached the plan’s retirement age, so these plan designs do not penalize work at older ages. Whether achieved through revisions to the benefit formula or more structural changes to the plan design, carefully developed reforms could put more Pennsylvania state employees on a path to a financially secure retirement.
Notes
1. Economists generally agree that SERS understates its future obligations by discounting future benefits 7.5 percent per year (Hay Group 2013), higher than the discount rate used in the private sector (Novy-Marx and Rauh 2011).

2. Instead of Class A-3 membership, new hires may elect Class A-4 membership, which provides larger pensions but requires more contributions from employees. Since most employees opt for Class A-3, we do not analyze Class A-4 benefits.

3. Our estimated variation is derived solely from differences in service years, because we assume that all employees earn the same average salary for their age and years of service. Actual pension benefits that state employees receive vary more because salaries differ across employees with the same hire date and years of completed service.
References


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