DO PUBLIC PENSIONS HELP RECRUIT AND RETAIN HIGH-QUALITY WORKERS?

By Alicia H. Munnell, Jean-Pierre Aubry, and Geoffrey Sanzenbacher*

INTRODUCTION

Many state and local governments have responded to shortfalls facing their pension plans by cutting benefits. These benefit cuts – which typically affect only new employees – take many forms, ranging from increases in age and tenure requirements for benefits to reductions in cost-of-living adjustments (COLAs). These benefit reductions will reduce a component of public employment compensation that helps ensure comparability of total compensation between the private and public sectors. Furthermore, more generous pensions may help employers recruit and retain high-quality workers who have the foresight to value the far-off benefit that pensions represent. Thus, it is natural to wonder if reductions in public pension benefits will hinder states' and localities' ability to recruit and retain workers in competition with the private sector. This *brief* sheds light on this question.

The discussion is organized as follows. The first section introduces the notion that states and localities experience a "quality gap" in their recruitment and retention of workers – they recruit workers from the private sector who make less than the workers that are ultimately lost to the private sector. Will reducing pension benefits enlarge this gap? To address this question, the second section examines the possible relationship between worker quality and pension generosity. The third section presents an analysis of this relationship, which shows that for states and localities with relatively generous pensions, a reduction in benefits is associated with an increase in the quality gap. The *brief* concludes by considering the consequences of states and localities cutting pension benefits.

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The Quality Gap

To analyze the effect of pensions on states' and localities' ability to attract and retain high-quality workers, a measure of worker quality is needed. One interesting metric proposed by Borjas (2002) is to use the private sector wage. Essentially, this approach assumes the skills demanded by the private and public sectors are similar, i.e., that a worker who can command a high private sector wage is also valuable to the public sector. The method is to: 1) obtain a sample of workers who are entering the public sector after employment in the private sector; 2) obtain a sample of workers who are leaving the public sector to gain employment in the private sector and; 3) compare the private sector wages of the two groups. If the group entering the state and local sector had lower private wages than the group leaving it, then it would seem the sector is developing a "quality gap" – it is unable to replace workers it loses to the private sector with workers of the same quality.

To estimate this gap, one needs to follow state and local workers from one period to the next. For this purpose, the *Current Population Survey* (CPS) is very useful. The CPS collects data, including sector of employment, on individuals from sampled households over the course of eight monthly observations. These interviews are in non-consecutive months, so an individual's fourth and eighth observations in the CPS occur one year apart. These interviews can be merged together to see if an individual working in the state and local sector one year was working in the private sector the next (and vice versa).[1]

Figure 1 shows the private sector wages of the two groups of interest – workers entering the state and local sector and those leaving it – for the period 1980–2012. Although the magnitude changes from year to year, workers leaving the state and local sector consistently command higher private sector wages than the workers coming into the sector do – on average 7 percent higher.[2] In other words, the state and local sector seems to have a problem retaining workers that command high private sector wages – there does appear to be a quality gap. A key question is whether this quality gap gets worse as states cut their pension benefits.

Pension Generosity and Worker Quality

Economists have hypothesized that one reason firms offer pensions is to attract forward-looking workers who value far-off pension benefits and may be more

Figure 1. Real Private Sector Weekly Earnings of Full-Time Workers Entering and Leaving the State/Local Sector,[3] 1980-2012
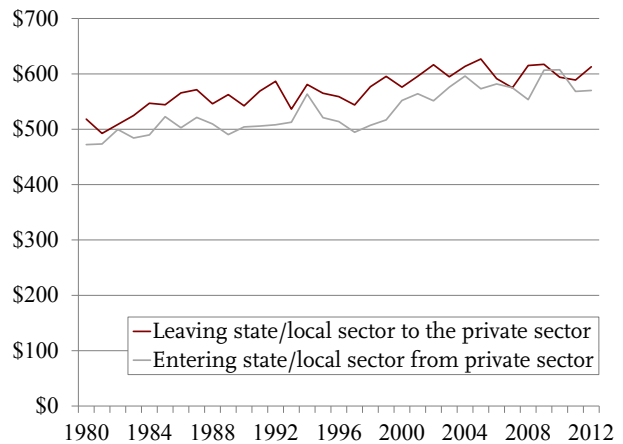
Source: U.S. Census Bureau, *Current Population Survey Outgoing Rotation Groups,* 1979-2013.

productive.[4] Several studies support this hypothesis. A 2002 analysis, using a sample of federal employees, showed that 401(k) savers had higher job ratings and promotion rates than non-savers.[5] Another study found that states with more generous teacher compensation and pensions were able to attract teachers from colleges with higher standardized test scores.[6] Both studies suggest that decreasing pension generosity could hinder states' and localities' ability to attract and retain high-quality workers, widening the gap shown in Figure 1.

To test this hypothesis, two things are required: 1) a measure of pension generosity; and 2) a change in this generosity measure to see if it impacts the quality gap. To measure pension generosity, it is useful to introduce the concept of normal cost. The normal cost is the present value of benefits that are accrued by active members in a calendar year, expressed as a share of payroll.[7] The normal cost data used in this *brief* come from the *Public Plans Database.* These data contain a plethora of information on pension plans representing over 85 percent of state and local workers.

While data are readily available on the cost of today's benefits, obtaining changes in pension generosity over time is more difficult. Even though many plans have implemented benefit cuts following the financial crisis, many of these cuts only affect new workers and have thus had a limited effect on the plan's current normal cost. In fact, the average normal cost of state and local plans was roughly constant

between 2008 and 2012.[8]   Instead, we turn to the variation that exists in the normal cost *across* states' and localities' pension plans, examining whether plans with more generous pensions also have smaller quality gaps. Variation in pension generosity is substantial, as is shown by the range of normal cost for a sample of statewide pension plans (see Figure 2).[9]

FIGURE 2. AVERAGE NORMAL COST AS A SHARE OF PAYROLL FOR A SAMPLE OF STATEWIDE PLANS, 2001-2012
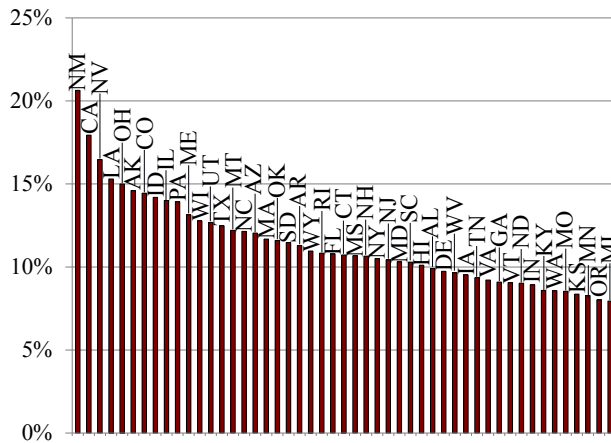
Note: Excludes plans that apply to specific occupations (e.g., school workers, teachers, police, firefighters, etc.) and to political subdivisions smaller than the state.
Source: *Public Plans Database* (2001-2012).

ANALYZING THE RELATIONSHIP BETWEEN PENSION GENEROSITY AND THE QUALITY GAP

To see if pension generosity is related to the quality gap, workers from the *Current Population Survey* are assigned, as closely as possible, a pension plan and that pension plan's normal cost from the *Public Plans Database*.[10] Once this step is complete, the data are "collapsed" at the plan-year level, so that each observation represents a given pension plan in a given year. Each pension-year observation contains data on the normal cost of the plan in that year as well as the average private sector wage of people leaving and entering the plan. With these data in hand, the quality gap for a given plan can be defined as the percent difference between the average wage of those leaving the state and local sector and those entering it.

$$Quality\ gap = \frac{Avg.\ wage\ of\ leavers - Avg.\ wage\ of\ enterers}{Avg.\ wage\ of\ enterers}$$

As discussed, this quality gap is typically a positive number – workers leaving the state and local sector have higher private sector wages than those entering it.

Each observation also contains the demographic characteristics (gender, education, race, marital status, age) of workers entering and leaving the plan. This information can be used to estimate "demographic gaps" that exist in the characteristics of workers who enter and leave. For example, if 50 percent of workers leaving an employer are college educated, but only 40 percent of workers entering are college educated, one would expect the education gap to increase the quality gap. By controlling for demographic gaps, it is possible to isolate the effect of pensions on the relative quality of leavers and enterers.

A regression analysis can be performed using these data to find the relationship between the quality gap within a pension plan and the normal cost of the pension. In this *brief,* two such regression equations are estimated: 1) includes only a measure of the average normal cost of the pension plan; and 2) adds controls for demographic gaps and for the passage of time.[11] The first regression identifies the simple relationship between normal cost and the quality gap. The second regression examines whether this relationship still exists among plans that lost and gained similar workers. For the second regression, the equation is:

Quality gap = f (normal cost, normal cost^2, demographic gaps, time)

The results of the regression can be used to estimate the relationship between a change in the normal cost and the size of the quality gap. Figure 3 shows this estimated relationship for six levels of normal cost, ranging from 7.5 percent of payroll (representing the lowest 5 percent of plans) to 20 percent of payroll (representing the highest 5 percent) and illustrates several points.[12] First, for plans with relatively generous pensions, increases in the normal cost are associated with significant decreases in the quality gap. At a normal cost of 15 percent, a 1-percentage-point increase is associated with a statistically significant 0.9-percentage-point reduction in the quality gap. Given that the quality gap averaged 5 percent between 2001 and 2012, a 0.9-percentage-

point reduction represents nearly 20 percent of the gap. For more generous pensions, the relationship is even more pronounced. At an average normal cost of 20 percent, which represents the top 5 percent of all plans, a 1-percentage-point increase in the normal cost is associated with a decrease in the quality gap of 2.2 percentage points.

Second, Figure 3 shows that these results are similar with or without demographic controls. This similarity suggests the results are not being driven by plans with more generous pensions simply retaining only higher educated or older workers, who command higher private sector wages – plans have a smaller quality gap even if they gain and lose the same type of workers as a plan of average generosity.

FIGURE 3. EFFECT OF A 1-PERCENTAGE-POINT INCREASE IN NORMAL COST ON THE QUALITY GAP
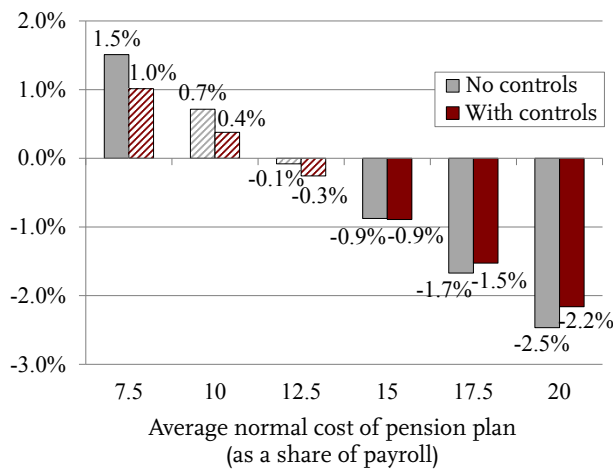
Note: Striped bars are not statistically significant.
Sources: Authors' calculations from U.S. Census Bureau, *Current Population Survey Outgoing Rotation Groups,* 2000-2013; and *Public Plans Database* (2001-2012).

Finally, Figure 3 indicates that the relationship between normal cost and the quality gap is not linear: the relationship is positive, rather than negative, at lower levels of pension generosity. For example, at a normal cost level of 10 percent of payroll, the relationship between normal cost and the quality gap is estimated to be positive (albeit statistically insignificant). This positive relationship means, at this level, a 1-percentage-point increase in the normal cost is associated with an *increase* in the quality gap. This result runs counter to expectations and is certainly worth future research.

CONCLUSION

As states grapple with challenges facing their pensions, many have taken steps that reduce benefit generosity for their new employees. The analysis suggests that states and localities with relatively generous pensions should be cautious, because reductions in benefits may result in a reduction in their ability to maintain a high-quality workforce. To the extent the quality gap already exists for many of these employers, reducing pension generosity may widen the gap.

A couple of caveats are important. First, some variables that may be correlated with both the quality gap and generosity of pensions – e.g., health insurance benefits – were not included in this analysis due to data limitations. If these factors (rather than pension normal costs) drove the result, then changes in pension benefits may have more muted effects than estimated here. Second, the non-linearity in the result is intriguing, but its source unclear. Why do plans at the bottom of the generosity distribution have smaller quality gaps than plans in the middle? Will reductions in these plans have any effect on the quality gap? Future research will seek to shed light on both the causality of the main result and on its apparent non-linearity.

ENDNOTES

1 In practice, this merging must be conducted carefully. Appropriate merging of the CPS data involves two steps: 1) use of CPS-provided identifiers to conduct an initial merge between the fourth and eighth months' interviews; and 2) adjustment of the initial merge by removing observations that the CPS-provided identifiers indicate are the same individual but clearly are not. See Feenberg and Roth (2007) and Madrian and Lefgren (1999).

2 It is worth noting that the same is not true of workers entering and leaving the private sector – their public sector wages are almost identical whether they are coming or going.

3 Wages are normalized to year 2000 dollars. The analysis only includes workers aged 16-64 who were either: 1) working in the private sector at time t and the state/local sector at time $t+1$ (entering state/local); or 2) working in the private sector at time t and the state/local sector at time $t-1$ (leaving state/local). The analysis excludes workers working fewer than 35 hours per week in either year as well as workers making fewer than 90 dollars per week in either year.

4 For example, see Ippolito (1992) or Gustman, Mitchell, and Steinmeier (1994).

5 Ippolito (2002).

6 Munnell and Fraenkel (2013).

7 Although the normal cost captures both the generosity of the benefit and assumptions the state makes regarding its pension plan (e.g., return on investment, retirement age of workers, etc.), because states tend to make similar actuarial assumptions, the normal cost is a good proxy for pension generosity.

8 Munnell et al. (2013); and authors' calculations from the *Public Plans Database*.

9 For simplicity of presentation, the figure excludes plans that apply to specific occupations within a state (e.g., school workers, teachers, police, firefighters, etc.) and plans that apply to political subdivisions below the state level. Many of these plans are included in analyses discussed later in the *brief*.

10 For details on how this merge was conducted, see the Appendix.

11 Full specifications and results from these two regressions are included in the Appendix.

12 Typically, the normal cost of the pension is split between employers and employees. Earlier specifications of the model included the employer and employee normal costs separately. However, because the effects were similar regardless of who was paying the normal cost, the results presented in this *brief* include the total normal cost only.

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APPENDIX

Appendix. Merging Normal Cost onto *Current Population Survey* data

Where possible, workers were assigned the normal cost of a pension plan covering their specific occupation. This procedure was used for teachers, school workers, police and firefighters, and workers in higher education. All other workers were assigned the broadest plan applicable. Given this approach, the normal cost of a state or local worker's pension (or the pension a private sector worker could expect if moving to the state and local sector) was assigned in the following way:

For Local Workers
1. Local workers in cities with their own municipal plan for their occupation (e.g., Chicago Teachers, Denver Employees, etc.) were assigned the normal cost for that plan; then
2. Local workers in states with statewide municipal plans for their occupation (e.g., Colorado Municipal, Maine Local, etc.) were assigned the normal cost for that plan; then
3. Remaining local workers were assigned the relevant statewide plan for their occupation.

For State Workers
State workers were assigned the relevant statewide plan for their occupation (e.g., Delaware State Employees, Georgia Teachers, etc.).

TABLE A1. FULL RESULTS FOR REGRESSION OF QUALITY GAP ON INDICATED VARIABLES

Variable	Specification	
	(1)	(2)
Total Normal Cost	.03894 ***	.02918 **
	(0.0136)	(0.0119)
Total Normal Cost Squared	-.00159 ***	-.00127 ***
	(0.0005)	(0.0005)
Male Gap		.00301 ***
		(0.0005)
Black Gap		-0.000067
		(0.0008)
Married Gap		0.00034
		(0.0006)
College Gap		.00534 ***
		(0.0005)
Age Gap		.00888 ***
		(0.0021)
Age Gap Squared		.00061 ***
		(0.0002)
Year		-.04233 **
		(0.0185)
Year Squared		.00297 **
		(0.0013)
Number of plan-years	765	765
R-squared	0.0062	0.2344
F-statistic	5.41	19.66

Note: Robust standard errors in parentheses. Coefficients are significant at the 10-percent (*), 5-percent (**), or 1-percent (***) level. Includes only plans and years that had at least one person leaving for the private sector and one person entering from the private sector.
Source: Authors' calculations from U.S. Census Bureau, *Current Population Survey Outgoing Rotation Groups,* 2000-2013; and *Public Plans Database* (2001-2012).

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