Deferred Retirement Compensation for K-12 Employees:

Understanding the Need for Pension Reform

by Michael Mannino, Ph.D.,
The Business School, University of Colorado Denver

IP-9-2008 • December 2008

Published with Support from the Donnell-Kay Foundation

Executive Summary

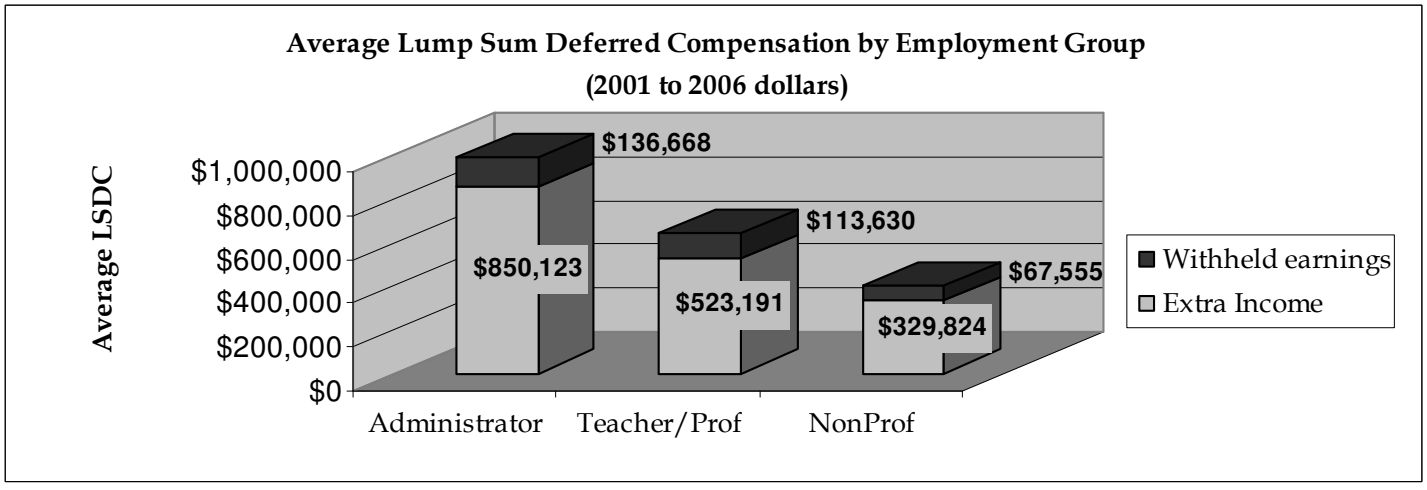
The debate about defined benefit pensions in K-12 education has focused on unfunded liabilities rather than appropriate levels of retirement compensation. Public K-12 employees typically retire at much younger ages with more replacement income and better inflation protection than private sector counterparts. School districts use contribution rates derived from uncertain assumptions about pension plan returns as substitutes for estimating realistic retirement compensation levels. The contribution rates ignore the considerable value of risk assumption that public employee pension plans provide to career employees. In addition, the large amounts of deferred retirement compensation have negative impacts on employee motivation and high, uncertain taxpayer costs.

To improve understanding of public K-12 retirement compensation, this Issue Paper provides historical estimates using a substantial sample of retiree characteristics and salary histories. The sample contains 846 retirees from the Denver Public Schools Retirement System (DPSRS) who retired between 2001 and 2006. While most Colorado K-12 employees receive benefits through the Public Employee Retirement Association (PERA), DPS employees participate in DPSRS. The sample supports reliable estimation of deferred retirement compensation without simplifying assumptions about salary growth and retiree characteristics.

DPSRS is a hybrid defined benefit plan with the following characteristics:

- Promises workers a defined pension amount based on age and years of service, regardless of contributions and earnings generated from investment of contributions
- Allows workers to retire at a much younger age than Social Security, with much higher levels of replacement income especially for higher paid workers
- Provides the hybrid feature of limited portability through account balances based on pension contributions and interest
- Recovers funding shortages from taxpayers

This Issue Paper defines deferred retirement compensation from a hybrid defined benefit plan as the difference between an employee's estimated retirement account balance and the greater pension value she expects to receive. To account for risk, deferred compensation calculations use a private sector standard, the Single Premium Immediate Annuity, and low-risk investment returns. Deferred retirement compensation is divided into two parts.



First, **extra value** represents benefits that exceed the amount a retiree could expect from low-risk investment of employer and employee retirement contributions. Second, **withheld value** keeps an employee's account balance artificially low to subsidize career retirees' benefits and limits pension portability.

When accounting for K-12 employee compensation, large amounts of deferred compensation should be included. For the 846 DPS retirees in the sample, average lump sum deferred compensation (LSDC) is $627,570, broken down as follows:

...extra value represents benefits that exceed the amount a retiree could expect from low-risk investment of employer and employee retirement contributions.

- Among all 96 administrators, the average LSDC is $986,791.
- Among all 577 professional teachers, the average LSDC is $636,821.
- Among all 173 non-professional employees, the average LSDC is $397,379.
- More than 80 percent of deferred compensation involves extra value while less than 20 percent involves withheld value.
- A few outlying administrators, most of whom gained large salary increases late in their careers and retired between ages 54 and 58, receive LSDC of $1.5 million or greater.
- The average deferred compensation represents an average of 38 percent to 51 percent additional compensation per year when allocated to a retiree's working years.

The findings strongly indicate that K-12 public employee compensation is poorly structured:

- Pay for teachers and administrators is heavily backloaded, penalizing non-career employees.
- Seniority and longevity are rewarded over performance and market demand, which would better align compensation with the goals of public education.
- Incentives encourage some K-12 employees to seek highly-paid administrative positions or advanced degrees late in their careers, with little value for students and schools.
- Because deferred compensation for career employees tends to decline as retirement age increases, employees may leave the profession during peak years of productivity.
- Evidence does not support the need for large amounts of deferred compensation to maintain a skilled, competent educational workforce.

The current economic situation provides strong motivation for policy makers to enact reform soon to avoid reductions in K-12 service levels. As a first step, K-12 administrators should be moved into a defined contribution plan. In addition, pensions for teachers and non-professional employees should be reformed as follows, to reduce negative economic impacts:

- Remove early retirement subsidies
- Tie the normal retirement age to Social Security
- Reform rules for calculation of highest average salary to reduce pension spiking practices
- Grant new hires the option to choose a defined contribution plan, which non-career employees may prefer over the traditional defined benefit plan

Introduction

Salaries in public K-12 education are dominated by input factors including seniority, higher education degrees, and continuing education credits. Although some school districts are experimenting with performance-oriented pay, input factors still dominate determination of annual salary increases in most school districts.

Input orientation also dominates retirement compensation in public K-12 education through longevity requirements in defined benefit pensions. In a defined benefit pension, a retiree receives a periodic benefit based on a formula using the number of service years, retirement age, and wages. Employees cannot receive periodic benefits until satisfying longevity requirements involving age and years of service. Typically, defined benefit plans base periodic benefits on a percentage of a retiree's final average salary. In addition, the periodic payments may be increased on an annual basis to account for inflation.

Colorado's K-12 career public employees are beneficiaries of a defined benefit retirement plan. While most K-12 employees receive pension benefits through the state's Public Employee Retirement Association, employees of the Denver Public Schools (DPS) participate in their own retirement system. The Denver Public Schools Retirement System (DPSRS) plan provides a benefit rate of 2.5 percent per service year applied to an average salary over the 36 highest months of earnings with an annual inflation adjustment of 3.25 percent. Employees can achieve these benefit levels with a minimum age of 50 and 30 years of service.[1] Thus, a retiree with a highest average salary of $50,000 would receive $37,500 (75 percent) in the first year of retirement if retiring at age 50 with 30 years of service, or $31,250 (62.5 percent) at age 55 with 25 years of service.

The input orientation of salaries in public K-12 education can further boost retirement compensation. Employees can substantially increase retirement compensation by earning an advanced degree or administrator's license shortly before retirement. These practices, known as "pension spiking," increase individual pension earnings but provide little value for the school and the students.

Employees can substantially increase retirement compensation by earning an advanced degree or administrator's license shortly before retirement.

The benefits in many public defined benefit plans are backloaded. Backloaded pension plans provide modest pension value until an employee reaches the minimal longevity requirements, when periodic pension benefits can begin. In hybrid plans like DPSRS, an employee can receive a lump sum payment before attaining sufficient longevity. In the payment, the employee's contribution, and possibly part of the employer's contribution, may be compounded at low-risk interest rates. Also, vesting periods further reduce pension values during initial years of employment. As documented by the economists Robert Costrell and Michael Podgursky, the value of pension benefits can increase dramatically as soon as minimal longevity requirements are attained.[2]

The increase in pension value is a form of deferred compensation: compensation not realized until longevity requirements are met. This Issue Paper separates deferred retirement compensation into two parts: extra value and withheld value. Extra value represents pension value that is more than a retiree could expect from low-risk investment of retirement contributions—including

contributions from both employee and employer. Low-risk interest rates are an appropriate standard of comparison, because in a defined benefit system the taxpayer, not the public employee, bears most of the risk.

Withheld value represents the portion of deferred compensation attributable to account balances being held below the level expected from low-risk investment of contributions. To finance benefits of career employees, some pension plans maintain account balances at low levels through lower interest rates and reduced employer contributions. Reducing account balances makes defined benefit plans less portable, thus harming younger workers who may move to another employer in a few years.

Analysis of the results indicates high levels of deferred retirement compensation; the levels far exceed the compensation that would be provided based on low-risk investment of employee and employer contributions.

To analyze levels of deferred retirement compensation, this Issue Paper provides historical estimates of deferred compensation for DPS career employees. The estimates were made using a large sample of recent retirees in the Denver Public Schools Retirement System (DPSRS) and a substantial sample of private sector discount rates from the private Single Premium Immediate Annuity marketplace. The Paper provides statistics for several measures of deferred compensation for the DPSRS retiree sample. Analysis of the results indicates high levels of deferred retirement compensation; the levels far exceed the compensation that would be provided based on low-risk investment of employee and employer contributions. The Paper then discusses the implications of the extraordinarily high levels of deferred retirement compensation for career public K-12 employees.

How the Data are Calculated

This Issue Paper calculates deferred compensation from hybrid defined benefit pensions by using a hypothetical account balance and pension value. A hypothetical account balance is derived from investment of employee and employer contributions. Account balances are hypothetical because they may not match the official account balances of an actual pension plan. A pension value is derived from the expected lifetime pension payouts discounted to the retirement date.

Justification for Calculation Assumptions

Certain assumptions underlie the calculations of hypothetical account balances and pension values. Risk assessment must be performed to determine appropriate interest rates for calculation of account balances. Public K-12 unions and employee groups have argued and bargained successfully for no pension risks except termination risk.[3] Termination risk is the chance that an employee will be terminated or will leave employment before achieving full annuitized benefits. Since K-12 employees have acquired strong job protections, such as tenure for teachers and other collective bargaining provisions, termination risk is low and mostly controllable by employees. Therefore, hypothetical account balances should be calculated using interest rates available on low-risk investments. The interest rates used in this study are substantially higher than the traditional risk-free investment, the 90-day Treasury Bill rate, but lower than historically riskier investments, such as stocks or low-grade bonds.

This Issue Paper uses a private sector standard, the Single Premium Immediate Annuity (SPIA), as the source of discount rates to determine pension values. SPIA products provide lifetime income in exchange for a lump sum payment by the purchaser of the

product. Discount rates are the interest rates that would be paid on the lump sum investments to provide lifetime income. Providers finance SPIA products exclusively with fixed income investments to ensure payout of lifetime benefits without longevity risk to the purchaser and taxpayer subsidies.

The providers of SPIA products use rates of return that are considerably lower than the rates of return used by the public defined benefit industry. The public defined benefit industry uses rates of return that blend expected portfolio returns from combined stock and bond investments. If returns do not meet assumptions, public entities augment their underfunded pension funds through additional taxpayer contributions resulting in tax increases or spending decreases in other areas. Since a private sector standard is used to determine pension values, the discount rates in SPIA products are appropriate.

The choice of a mortality table is another important issue for calculating pension values. Mortality tables contain probabilities of retiree lifetimes. Mortality tables used in the SPIA marketplace assume longer lifetimes compared to mortality tables used in the public sector. Longer lifetimes increase pension values as compared to the values computed using public sector mortality tables. Private sector mortality tables have more bias for adverse selection, meaning that purchasers of SPIA products typically live longer than retirees taken from a broad cross section of the population. The DPSRS mortality table was used because a private sector mortality table was not available. Thus, the calculated pension values underestimate the cost of comparable SPIA products.[4] (The effect of this underestimate is that this Issue Paper somewhat *understates* the true comparative cost of public employee pensions.)

Definition of Key Terms

Using low-risk interest rates, SPIA discount rates, and the DPSRS mortality table, three different measures provide varied perspectives of deferred retirement compensation.

- **Lump Sum Deferred Compensation (LSDC)**: the difference between the pension value and the hypothetical account balance at retirement date. The LSDC is an absolute measure of deferred compensation representing the additional amount (beyond the account balance) to purchase lifetime retirement benefits in the private sector.

The LSDC is an absolute measure of deferred compensation representing the additional amount (beyond the account balance) to purchase lifetime retirement benefits in the private sector.

- **Deferred Compensation Ratio (DCR)**: the pension value divided by the hypothetical account balance. The DCR is a relative measure of deferred compensation reflecting the pension value relative to the investment of employee and employer contributions. For example, a DCR of 2.0 means that pension value is double the hypothetical account balance. With a DCR of 2.0, the LSDC is equal to the account value.
- **Supplemental Contribution Rate (SCR)**: the additional contribution rate necessary during a retiree's working years to increase the hypothetical account balance to the pension value. The additional contributions would be invested at the same interest rates as actual contributions. Two allocation approaches are used: a uniform rate across all service years and a weighted rate that increases proportionately through the first 20 service years, and then remains uniform for the remaining service years.

For each measure, this Issue Paper separates deferred compensation into *extra value* and *withheld value* components as depicted in **figure 1**. Total deferred compensation is calculated using actual account balances. The actual account balances approximate DPSRS account values with employee retirement contributions, matching employer contributions, and DPSRS guaranteed interest rates, historically 3 to 5 percent. Actual account balances are kept artificially low to partially finance pension benefits that are paid later.[5]

Part of total deferred compensation represents extra value more than a retiree could expect from low-risk investment of retirement contributions (including contributions from both employee and employer). This Issue Paper uses larger, full account balances to calculate the extra value component of deferred compensation. Full account balances involve higher interest rates provided by the Colorado Public Employees Retirement Association, historically 5 to 6.8 percent, compared to 3 to 5 percent provided by DPSRS for actual account balances. In addition, full account balances involve all employer contributions, not just matching employer contributions.

Withheld value, the remaining component of total deferred compensation, helps finance benefits for career employees. Withheld value is calculated as the difference between total deferred compensation and extra value component.

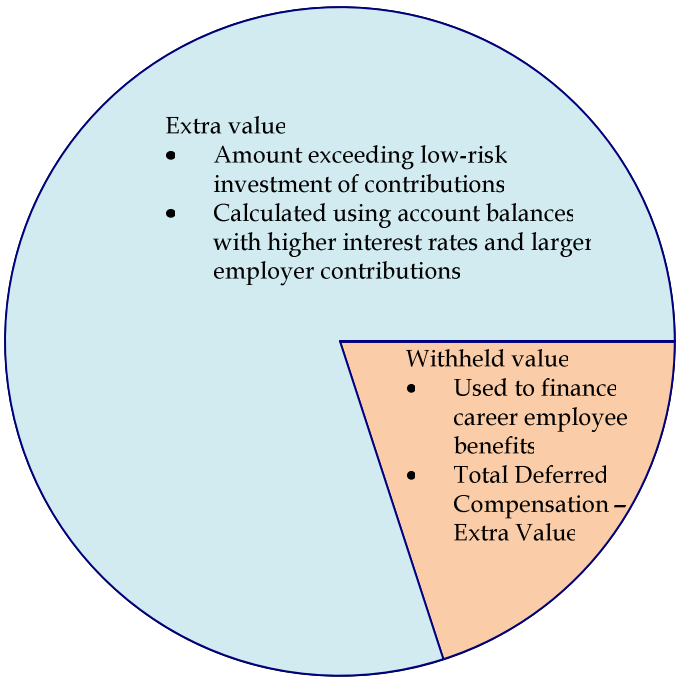


Figure 1. Components of Total Deferred Compensation

Retiree and Discount Rate Samples

Reliable estimates of deferred compensation require a sample of retirees, an essential element for realistic retiree characteristics and salary growth. In January 2008, DPSRS provided a substantial sample of recent DPSRS retirees. The sample included all DPSRS retirees in the period 2001 to 2006, a total of 1,571 retirees. The sample contained retiree characteristics—retirement age, retirement date, hire date, years of service, sex, DPSRS calculated highest average salary (HAS), and job description—and annual salary histories from 1991 to retirement dates. Because this study emphasizes career employees with long-term service, the original sample was reduced in size. Only retirees with at least 25 years of service, at least 11 years of salary history, and at most 2 years of missing salary history were retained, resulting in a final sample of 846 retirees.

Table 1 lists characteristics of the reduced sample used to estimate deferred compensation. To facilitate analysis, this Issue Paper divides retirees into three employment groups according to supervisory responsibilities and educational requirements. In consultation with the DPS personnel department, job descriptions were classified as administrators (supervisory responsibilities and university degree requirements), teachers/professionals (university degree requirements without substantial supervisory responsibilities), and non-professionals (some postsecondary education or training requirements). The sample characteristics show a preponderance of female retirees in the administrative and teacher/professional classes, a clear separation in highest average salary by job classification[6], and a preponderance of retirees with early retirement. The average retirement age of the sample was only 57.1 years.

The sample of salary histories covered only a subset of retirees' working years. A backcasting method filled the gaps to provide complete salary histories. Backcasting involves estimating missing past values. (In contrast, "forecasting" is the estimation of missing future values.) Missing salary values were estimated using the Average Wage Index and Scaled Factors developed by the U.S. Social Security Administration (SSA).[7]

Present value calculations used discount rates provided on single premium immediate annuities (SPIA).[8] The discount rates were net of profit, commission, safety margin, and other factors. The discount rates in the sample varied by retirement date, retirement age, and sex.[9]

...the average total lump sum deferred compensation (LSDC) is $627,570, representing the additional amount necessary to purchase lifetime retirement benefits in the private sector.

Sample Statistics for Deferred Compensation Measures

Table 2 shows large levels of deferred compensation for the entire retiree sample. For example, the average total lump sum deferred compensation (LSDC) is $627,570, representing the additional amount necessary to purchase lifetime retirement benefits in the private sector. This lump sum amount is equivalent to a pension value of 3.90 times the average account balance (DCR), 38 percent additional compensation per year (uniform SCR), and 51 percent additional compensation in later employment years (weighted SCR). The sample statistics show that part of total deferred compensation represents withheld value in addition to extra value. For example, 17 percent of the total LSDC represents withheld value, as the mean withheld value LSDC is 17 percent of the mean total LSDC.

Table 1. Descriptive Statistics for the Sample of 846 DPSRS Retirees

Retirement Age:	**50-54**	**55-59**	**60-64**	**65-69**	**70+**	
Female	150	287	94	26	5	
Male	71	149	46	14	4	
Total	221	436	140	40	9	
Retirement Year:	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Female	135	97	76	97	79	78
Male	74	47	33	63	34	33
Total	209	144	109	160	113	111
Job Classification:	**Administration**		**Teacher/Prof**		**Non-Prof**	
Female	60		416		86	
Male	36		161		87	
Total	96		577		173	
Highest Average Salary:	**Administration**		**Teacher/Prof**		**Non-Prof**	
Female:						
Mean	$81,768.98		$54,892.99		$31,243.61	
Median	$80,894.53		$55,519.92		$30,950.77	
Standard Deviation	$10,882.81		$6,546.92		$7,080.32	
Male:						
Mean	$82,703.76		$56,674.72		$36,371.40	
Median	$79,985.84		$56,242.25		$35,721.07	
Standard Deviation	$14,770.43		$6,303.30		$8,111.56	
Total sample:						
Mean	$82,119.52		$55,390.14		$33,822.33	
Median	$80,894.53		$55,783.67		$33,434.56	
Standard Deviation	$12,415.25		$6,523.64		$8,017.75	

Table 2. Deferred Compensation Divided into Extra Value and Withheld Value

	Classification	**Mean**	**Median**	**Std. Dev.**
LSDC	Withheld value	$106,821		
LSDC	Extra value	$520,749		
LSDC	**Total**	**$627,570**	**$ 598,987**	**$247,235**
DCR	Withheld value	1.22		
DCR	Extra value	2.68		
DCR	**Total**	**3.90**	**3.81**	**0.92**
Uniform SCR	Withheld value	13%		
Uniform SCR	Extra value	25%		
Uniform SCR	**Total**	**38%**	**36%**	**13%**
Weighted SCR	Withheld value	16%		
Weighted SCR	Extra value	35%		
Weighted SCR	**Total**	**51%**	**51%**	**16%**

Legend
LSDC: lump sum deferred compensation
DCR: deferred compensation ratio
SCR: supplemental contribution rate

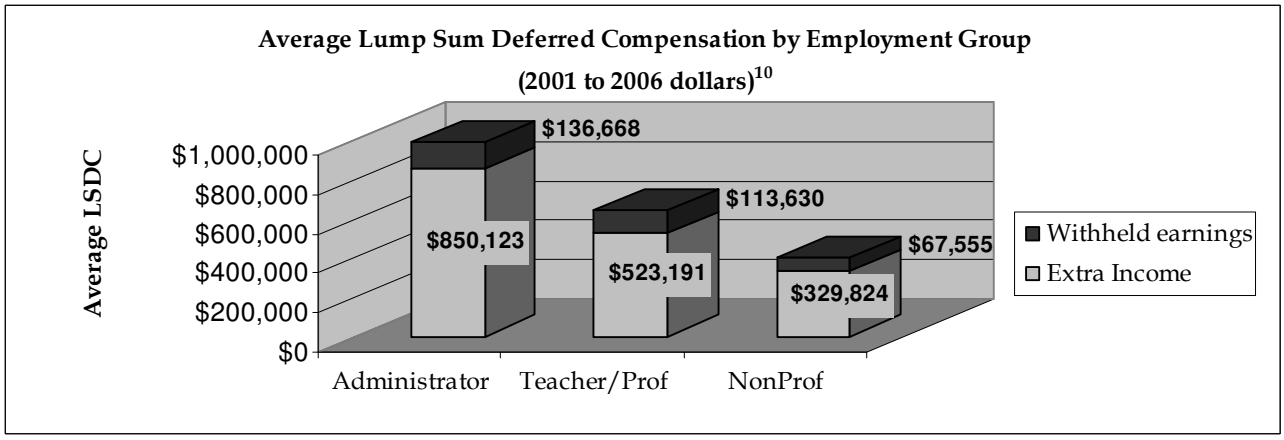


Figure 2. LSDC Sample Statistics for DPSRS Employment Groups

Table 3. LSDC Sample Statistics for DPSRS Employment Groups

Group	Classification	LSDC Mean
Administrator	Withheld value	$136,668
Administrator	Extra value	$850,123
Administrator	**Total LSDC**	**$986,791**
Teacher/Prof	Withheld value	$113,630
Teacher/Prof	Extra value	$523,191
Teacher/Prof	**Total LSDC**	**$636,821**
Non Prof	Withheld value	$67,555
Non Prof	Extra value	$329,824
Non Prof	**Total LSDC**	**$397,379**

There are important differences in deferred compensation by employment group, as depicted separately in **figure 2** and **table 3**. Lump sum deferred compensation for administrators is substantially larger than for the other groups, although the other groups still receive large amounts of deferred compensation.

Figure 3 further depicts the differences among the employment groups for the deferred compensation ratio (DCR) measure. A box and whisker chart is a convenient method to display major points in a list of values.[11] The charts indicate that the administrative group achieved somewhat higher DCR values than the other groups. The median DCR for the administrative group is 4.24 versus 3.72 and 3.85 for the teacher/professional and non-professional groups, respectively. Restated, the pension value for the administrative group is 4.24 times the account balance and the LSDC is 3.24 times the account balance. The DCR box charts demonstrate that all groups received large amounts of deferred compensation relative to their account values. Although the median DCR values for the administrator group dominate the other groups, the other groups achieved higher maximum DCR values.

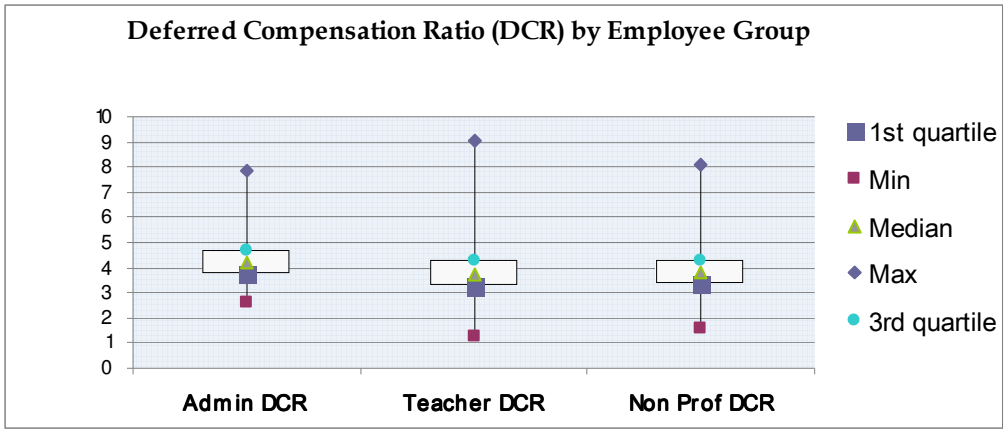


Figure 3. Box and Whisker Charts for Total DCR

Table 4. LSDC Outliers Using Actual Account Balances for the DPSRS Retiree Sample

ID	LSDC Actual	Highest Average Salary	Salary Increases[12]	Retirement Age	Retirement Date	Discount Rate
11318061652	$1,649,925	$99,066	31.9%	50	12/27/2006	0.0509
11410033356	$1,618,781	$119,000	23.0%	58	7/1/2005	0.0466
11460194301	$1,599,018	$91,792	18.9%	55	9/1/2005	0.0458
11502039316	$1,573,341	$89,575	25.1%	54	7/1/2005	0.0466
11443176665	$1,545,944	$110,680	36.8%	55	7/1/2006	0.0571
11460200834	$1,503,625	$94,829	28.1%	56	12/22/2006	0.0503
11398238594	$1,484,517	$105,563	31.8%	55	12/18/2004	0.0501
11458075857	$1,477,025	$89,034	37.5%	61	12/31/2003	0.0522
11461259187	$1,422,046	$85,648	25.7%	54	12/22/2006	0.0505
11500121445	$1,365,616	$93,482	30.0%	56	12/30/2004	0.0501
11458257493	$1,345,351	$93,441	15.5%	62	7/1/2006	0.0571
11459158706	$1,343,648	$98,151	41.9%	57	7/1/2003	0.052
11492239993	$1,262,300	$91,545	49.2%	57	12/18/2004	0.0503

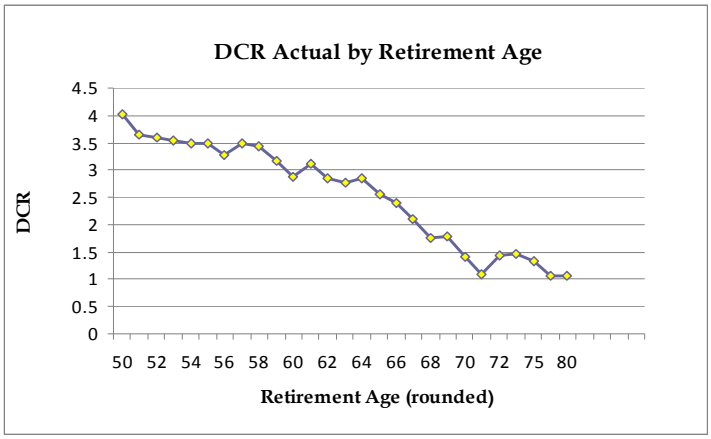


Figure 4. Graph of Deferred Compensation Ratio (Actual) by Retirement Age

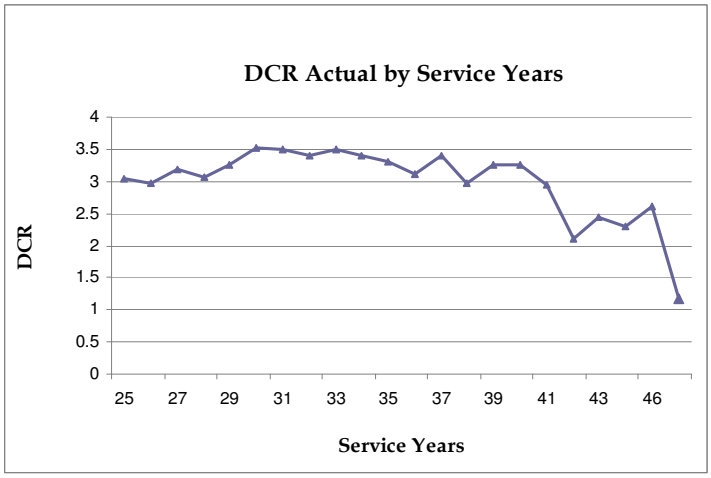


Figure 5. Graph of Deferred Compensation Ratio (Actual) by Service Years

Identification of outliers provides insights about the characteristics of retirees who earned extra large amounts of deferred compensation. Each outlier[13] in **table 4** was an administrative employee with a highest average salary greater than $85,000 and LSDC (actual) greater than $1.26 million. All outliers except two had an early retirement age around the mid-50s. Discount rates were important parts of most outliers as the retirement dates involved relatively modest rates in the 5 percent range. Most retirees had salary increases larger than expected for employees in the final stages of their careers. Seven of the outliers had extra large salary increases in their last five years.

Deferred compensation for the DPS retiree sample is higher for retirees at minimal longevity levels. Deferred compensation decreases as retirement age increases, as shown in **figure 4**. Deferred compensation increases slightly as service years increase from 25 to 30 and then declines, as shown in **figure 5**.

Defined benefit plans like DPSRS provide full (unreduced) retirement benefits for many retirees before achieving the typical normal retirement age of 65. Unlike many retirees who rely on private sector plans and Social Security, public sector retirees can receive full benefits at relatively young ages while working less than full careers. Indeed, the early retirement structure is so generous that public employees would have to be economically irrational *not* to retire once they have met the minimum longevity requirement. Although benefit rates increase with service years, the increase does not offset the amount of retirement benefits lost by working longer than minimal longevity requirements.

Policy Implications

Career employees in DPSRS clearly receive large amounts of deferred retirement compensation. This Issue Paper thus provides strong evidence to support the assertion in the *Tough Choices or Tough Times* report[14] that teacher compensation is heavily backloaded. Most of the deferred retirement compensation is extra value rather than withheld account value. Administrators received substantially more deferred retirement compensation than teachers and non-professional employees, although all groups received large amounts of deferred retirement compensation. The results reported here would likely translate to other top-tier defined benefit plans available to K-12 public employees in other states.[15]

The large amounts of deferred retirement compensation provided by the DPSRS plan indicate a poorly-designed compensation structure for K-12 public employees. Input-oriented compensation structures reduce the role of market incentives and the ability to align compensation with the goals of an organization. Public sector defined benefit plans magnify the negative impacts of input-oriented compensation because so much compensation is contingent upon achieving longevity requirements. In addition, public sector defined benefit plans have other negative side effects, including loss of skilled employees during years of peak productivity, pension spiking practices, and high taxpayer cost as employees retire upon achieving minimal longevity requirements.[16]

The large amounts of deferred compensation should be recognized in accounting for compensation of K-12 employees. Retirement compensation for career employees in the K-12 public sector substantially exceeds retirement compensation in the private sector. Defined benefit plans like DPSRS allow public sector employees to retire at younger ages with higher levels of replacement income and better inflation protection than private sector counterparts. In the DPSRS retiree sample, the average retirement age (57.1 years) and the average replacement ratio (75.4 percent) are unattainable for typical private sector counterparts.

The large amounts of deferred retirement compensation provided by the DPSRS plan indicate a poorly-designed compensation structure for K-12 public employees.

Colorado and other states have laws mandating parity between public and private sector compensation.[17] Typically, the employer contribution rate to retirement plans is used to compare retirement compensation in the public and private sectors.[18] The supplemental contribution rates shown in this Issue Paper indicate that the employer contribution rate, which excludes significant amounts of deferred compensation, is a poor measure of compensation value for the retirement benefits of career public sector K-12 employees.

Retirement compensation for future retirees in plans like the DPSRS plan seems likely to increase, perhaps substantially, in compari-

son to private sector retirement plans. Higher volatility in the stock and bond markets will make private sector workers more risk averse with their retirement portfolios. Private sector workers will work longer and retire with less replacement income as a result of these trends. If public sector workers retain the same benefit levels, the gap between private and public sector retirement will grow substantially. Thus, a realistic assessment of retirement compensation is essential to maintain parity between public and private sector earnings.

Beyond the behavioral impacts and accounting for compensation, one fundamental question must be asked: Why are public K-12 employees entitled to high levels of retirement compensation? Such high levels do not seem justified by the requirement to have a high-quality workforce. Adjusted for work hours, average hourly wages for teachers are higher than other professionals.[19] Since the private sector does not offer similarly generous retirement compensation, these benefit levels cannot be justified by the need to retain employees who would otherwise switch to the private sector. In contrast to K-12 teachers, universities maintain competent workforces for university professors and instructors using market compensation without defined benefit pensions. University professors also typically work to normal retirement age.

Strong reform of retirement compensation for administrators should occur because of the extra cost for this group and the lack of collective bargaining protection to prevent reform.

In many states, defined benefit plans cannot be reformed for teachers and non-professional employees due to union contracts and political influence. However, more flexibility exists to reform the plans for administrators. Strong evidence indicates that administrators receive substantially more retirement compensation than the other employee groups. Consequently, the cost of retirement benefits for the administrative group is substantially larger for the taxpayer compared to the cost of retirement benefits to the teacher/professional and non-professional groups.

Strong reform of retirement compensation for administrators should occur because of the extra cost for this group and the lack of collective bargaining protection to prevent reform. State policy makers should move administrators and other exempt[20] employees to a defined contribution plan. As precedence for this change, in the early 1990s the University of Colorado System reformed retirement plans for exempt employees by requiring them to enroll in a defined contribution plan. No evidence exists to suggest that the University of Colorado System has had difficulty maintaining a competent workforce due to the switch to a defined contribution plan.

For other employee groups, reforms should be considered to control taxpayer cost, to reduce the extra value provided by the plan, and to reduce negative behavioral impacts. Because of restrictions imposed by law and union contracts, reforms may only be possible for new hires, however. Removing subsidies for early retirement would fix many of the problems.[21] Changing the normal retirement age to match the Social Security normal retirement age would provide parity with the private sector. Employees would still be eligible for early retirement, but a reduction in benefits would be comparable to the reduction imposed by Social Security. Reforming pension spiking practices would control excessive, unearned deferred compensation and focus employee effort away from practices not likely to improve the educational product. To provide greater flexibility for

non-career employees, new hires can be given the choice between a defined benefit and defined contribution plan. The combination of reduction in extra value provided by the defined benefit plan to career employees and additional choices for non-career employees would provide more balance in retirement compensation and help reduce negative side effects.

Without substantial reform soon, large amounts of underfunding in plans like DPSRS may force drastic tax increases or substantial reductions in services. High levels of retirement compensation to career employees contributes to underfunding. A reasonable tradeoff for both school employees and taxpayers is to align retirement compensation with the private sector to lessen the need for reductions in service, employment, and compensation levels. The current economic situation demands bold thinking to avoid meltdowns in taxation and school service levels.

Notes

[1] This longevity requirement is known as the rule of 80: combination of service years and retirement age summing to 80.

[2] Robert Costrell and Michael Podgursky, "Peaks, Cliffs and Valleys: The Peculiar Incentives in Teacher Retirement Systems and their Consequences for School Staffing," *Education Next* 8, no. 1 (Winter 2008): 22-28, http://www.hoover.org/publications/ednext/11130171.html

[3] As an example, the Colorado Education Association (CEA) repeatedly has argued the case against defined contribution pension reforms in the context of political action. See "Defined Contribution vs. Defined Benefit Retirement Plans," *Colorado School Journal* 121, no. 2 (October-November 2005): 14-15; "Stop the Privatization of PERA!" *Colorado School Journal* 121, no. 4 (February-March 2006): 10-11; "Protect the Promise of Our Retirement Security!" *Colorado School Journal* 121, no. 5 (April-May 2006): 4-5; "Public Employee Coalition Stops Attacks on PERA!" *Colorado School Journal* 121, no. 6 (June-July 2006): 2. As a member of the Colorado Coalition for Retirement Security, CEA lobbied against pension reforms that included Defined Contribution plans, including Senate Bill 06-162. See Colorado General Assembly website, http://www.leg.state.co.us; National Education Association, September 2006 State Report, http://www.nea.org/neatoday/0609/statereport.html

[4] In a previous study of university retirees, the usage of private sector mortality tables increased pension values 5% to 10% as compared to usage of public sector mortality tables. See Michael Mannino and Beth Cooperman, "Deferred Compensation for Career Employees in Public Defined Benefit Pension Plans: Evidence from Colorado PERA," *Journal of Pension Economics and Finance*, published online May 9, 2008, http://journals.cambridge.org/action/displayAbstract;jsessionid=D1539D0F8F249F186C711D609E222BA7.tomcat1?fromPage=online&aid=1870064

[5] The 2007 DPSRS document "Retirement and You," indicates that "… earnings in excess of 5% on employee fund balances, such excess earnings ultimately have the effect of reducing costs, increasing benefits, or a combination of both."

[6] Part of the reason for higher administrative salaries is due to the longer work hours for some administrators. Teachers have longer breaks during a school year and summer.

[7] According to the SSA website (http://www.ssa.gov), the AWI is "based on compensation (wages, tips, and the like) subject to Federal income taxes, as reported by employers on Form W-2." The AWI has been published since 1951 with details about its derivation available at the SSA website. The SFs replaced simplistic assumptions about steady workers who earn a constant percentage of the AWI. The SFs were developed using the SSA's Continuous Work History Sample. See Michael Clingman and Orlo Nichols, "Scaled factors for hypothetical earnings examples under the 2004 trustee report assumptions," Actuarial Note, No. 2004.3. Social Security Administration (December 2004). In Mannino and Cooperman, "Deferred Compensation for Career Employees," involving university retirees in Colorado, backcasting using the AWI and SFs was found to be reliable, perhaps with a small bias to underestimate salary growth.

[8] A sample of discount rates was provided by Mr. Richard Greer, F.S.A. and M.A.A.A. of Aegon Corporation.

[9] Since the discount sample did not exactly match each retiree, a weighted nearest neighbor search and linear regression were used to find the best rate for each retiree. The average number of days between the retirement date and date of the matching discount rate was 7.4. The regression used the closest Moody's AAA rate and retirement age to predict the discount rate.

[10] The sub heading indicates the inflation adjustment. The pension values use the dollars based on the retirement dates. The amounts are historical dollars not ad-

justed for inflation although salary history is an implicit inflation adjuster.

[11] The box contains 50% of the distribution (first quartile, median, and third quartile values) while the whiskers show the minimum and maximum values.

[12] Salary increase column was computed as the percentage increase in annual salary over the last 5 years of employment.

[13] Table 3 lists the outliers in which the LSDC values were greater than the third quartile plus 1.5 times the inter quartile range (difference between the third and first quartile values).

[14] New Commission on the Skills of the American Workforce "Tough Choices or Tough Times: Executive Summary," National Center on Education and the Economy, 2007, http://skillscommission.org/executive.htm

[15] For a listing of longevity requirements and plan benefit features in defined benefit plans available to K-12 employees, see Janet S. Hansen, "Teacher Pensions: Background Paper," Report for the Donnell-Kay and Piton Foundations, May 2008, http://ednewscolorado.org/images/HFdocs/pension%20background%20paper%20final.pdf

[16] The side effects of defined benefit plans available to K-12 teachers have been recently documented by Costrell and Podgursky in "Peaks, Cliffs, and Valleys."

[17] Colorado Revised Statutes § 24-50-104.

[18] In Colorado, the Department of Personnel and Administration conducts an annual compensation survey as a tool to adjust public employee compensation. Prior to 2008, the compensation survey used the employer contribution rate as a measure of retirement compensation for public employees. In 2008, retirement compensation was omitted from the survey.

[19] Vedder compares teacher compensation to other professionals. He concludes that as a whole, teachers are not underpaid after adjusting for hours worked. Because of the rigid structure of union contracts and the lack of market incentives, pay for selected specialties and locations may be too low, however. For more details, see Richard Vedder, "Comparable Worth," *Education Next*, Volume 2, Number 3, Summer 2003, http://www.hoover.org/publications/ednext/3347411.html

[20] In the Colorado state personnel system, exempt employees are "at will," meaning that they do not have the civil service protections provided to classified staff.

[21] Retirement before the normal retirement age of 65 is subsidized in plans like DPSRS. On an actuarial basis, pension benefits should be reduced 5 percent to 9 percent per year for retirement before age 65.

INDEPENDENCE INSTITUTE is a non-profit, non-partisan Colorado think tank. It is governed by a statewide board of trustees and holds a 501(c)(3) tax exemption from the IRS. Its public policy research focuses on economic growth, education reform, local government effectiveness, and Constitutional rights.

JON CALDARA is President of the Independence Institute.

DAVID KOPEL is Research Director of the Independence Institute.

PAMELA BENIGNO is the Director of the Education Policy Center.

MICHAEL MANNINO, Ph.D., is Associate Professor and Computer Science and Information Systems (CSIS) PhD Program Co-Director at the Business School, University of Colorado Denver. He is co-author of the Issue Backgrounder *Implicit Compensation for Career Public Employees*.

ADDITIONAL RESOURCES on education policy can be found at: http://www.i2i.org/main/page.php?page_id=8

13952 Denver West Parkway • Suite 400 • Golden, Colorado 80401-3141
www.IndependenceInstitute.org • 303-279-6536 • 303-279-4176 fax