

TEACHERS' RETIREMENT BOARD  
BENEFITS AND SERVICES COMMITTEE

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SUBJECT: Adequacy of CalSTRS Benefits

ITEM NUMBER: 5

ATTACHMENT(S): 1

ACTION:     

MEETING DATE: November 4, 2004

INFORMATION: X

PRESENTER: Ed Derman

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### INTRODUCTION

In 1998, at the request of the Teachers' Retirement Board (Board), California State Teachers' Retirement System (CalSTRS) commissioned a Retirement Benefits Comparison and Adequacy Study to determine whether the benefits provided by CalSTRS under the Defined Benefit (DB) Program at that time were adequate, and how those benefits compared to those paid by systems in neighboring states. Since the 1998 study, CalSTRS has enhanced retirement benefits by permitting the conversion of unused sick leave to service credit for all members, increasing the age factor after age 60, adding a career factor and a longevity bonus and using one year final compensation for career educators. In addition, the Defined Benefit Supplement (DBS) Program was established to supplement the existing benefit. Finally, purchasing power maintenance has increased from 75 percent to 80 percent. The purpose of this study is to update where the DB Program stands with respect to the adequacy of benefits paid to its members, determine the extent to which those benefits permit members to maintain their standard of living after retirement, and compare the benefits paid by the DB Program to those paid by other retirement systems.

### SUMMARY OF FINDINGS

Since the 1998 Benefit Comparison and Adequacy Study, CalSTRS has significantly increased the monthly retirement benefit for educators with at least 30 years of service or who retire after age 60, and provided other post-retirement benefits to assist members in maintaining their standard of living in retirement. As a result, the percentage of final salary replaced with the DB benefit alone has increased by 20 percent to 34 percent, with additional increases resulting from the DBS Program. CalSTRS, when compared with other retirement systems, pays among the highest monthly benefits at age 62 and age 65.

Based on the methodology used in the Georgia State studies, an appropriate target replacement ratio for CalSTRS members ranges from 81 percent to 88 percent. The current CalSTRS service retirement benefit, excluding the impact of DBS account balances and additional savings, is not sufficient to meet the target replacement ratio for members retiring with less than 32 years of service. Members who consistently contribute a relatively modest amount to a supplemental

savings plan, however, should be able to meet the target replacement ratio when combined with CalSTRS benefits. A survey of recently retired CalSTRS members indicates that California educators generally save for retirement at a higher rate than the rest of the population.

The availability of affordable health care can have a tremendous impact on the ability of a person to maintain his or her standard living in retirement. Members without employer-paid post-retirement health care can expect to see a 10 to 20 percent loss of discretionary income after 20 years due to ongoing increases in health care costs. Without post-retirement lifetime health care and a substantial supplemental savings account, retirement before age 60 may not be feasible for members in most cases, unless a member plans to engage in post-retirement employment.

Finally, although an annuity from the DBS Program account should help offset inflation in the future, CalSTRS post-retirement benefits (both the 2 percent annual adjustment and the purchasing power supplemental benefit payment) may not be sufficient to fully offset estimated rising health care costs or periods of high inflation 10 years after retirement.

A copy of the complete report is attached.

**CALIFORNIA  
STATE TEACHERS' RETIREMENT SYSTEM**

**RETIREMENT BENEFITS COMPARISON AND ADEQUACY  
STUDY**

**NOVEMBER 2004**

**CALSTRS**

**HOW WILL YOU SPEND YOUR FUTURE?**

## INTRODUCTION

In 1998, at the request of the Teachers' Retirement Board, CalSTRS commissioned a Retirement Benefits Comparison and Adequacy Study to determine whether the benefits provided by CalSTRS under the Defined Benefit (DB) Program at that time were adequate, and how those benefits compared to those paid by systems in neighboring states. Since the 1998 study, CalSTRS has enhanced retirement benefits by permitting the conversion of unused sick leave to service credit for all members, increasing the age factor after age 60, adding a career factor and a longevity bonus and using one year final compensation for career educators. In addition, the Defined Benefit Supplement (DBS) Program was established to supplement the existing benefit. Finally, purchasing power maintenance has increased from 75 percent to 80 percent. The purpose of this study is to update where the DB Program stands with respect to the adequacy of benefits paid to its members, determine the extent to which those benefits permit members to maintain their standard of living after retirement, and compare the benefits paid by the DB Program to those paid by other retirement systems.

This study uses information comparable to that used in the 1998 study with some modifications. Information used for comparison is based on statistical data for those members who retired for service during the 2002-03 fiscal year.

## DEFINITIONS

In this study, we use two terms throughout that indicate the extent to which benefits enable a retired member to maintain his or her standard of living. The first is **Replacement Ratio**, which is computed by dividing the annual retirement benefit by the final year's salary. The second is **Benefit Adequacy**, which is the extent to which the replacement ratio provided by the benefit enables the member to continue the pre-retirement standard of living.

## THE BASICS OF CALSTRS BENEFITS

Currently, members of the DB Program, which include all full-time and most part-time educators, receive two benefits at retirement. The first is the monthly DB benefit. This benefit is based on the member's age, years of service credit and final compensation at the time of retirement. That amount is increased by a longevity bonus if the member has at least 30 years of service credit prior to 2011. This monthly benefit is increased by 2 percent of the original benefit each year as a hedge against inflation. In addition, if inflation has eroded the purchasing power of the current benefit to a level that is less than 80 percent of the value of the original benefit, the member receives a quarterly supplemental benefit that brings the current benefit up to the 80 percent level.

DBS is the second benefit program, and was established to provide supplemental benefits to members of the DB Program. Beginning in January 2000, 25 percent of a member's retirement contributions were redirected to the DBS Program. This redirection of member contributions to the member's DBS account will remain in effect until January 1, 2011. Additional member and employer contributions are added to a member's DBS account for compensation earned from service in one school year that exceeds 1.000 year of service credit. At retirement, the DBS

account may be distributed either as a lump-sum distribution, or, if the member has at least \$3,500 in his or her DBS account, as an annuity, or both.

Although there were no annuities paid during the 2002-03 fiscal year, in the future, DBS supplemental accounts need to be included in determining the member's overall retirement income. For example, an individual contributing 25 percent of his or her contributions to the DBS account for 10 years beginning in 2001 could receive an annuity of approximately \$150 per month at age 65. That amount would increase to the extent that service is performed in excess of 1.000 year of service credit in a school year. The following table shows examples of the monthly annuity distributions that are paid based on DBS account balances.

<b>Monthly DBS Single Life Annuity with a Cash Refund</b>				
<b>DBS Account Balance</b>	<b>Age at Retirement</b>			
	<b>Age 50</b>	<b>Age 55</b>	<b>Age 60</b>	<b>Age 65</b>
<b>\$3,500</b>	\$24	\$25	\$27	\$28
<b>\$5,000</b>	\$35	\$36	\$38	\$41
<b>\$7,500</b>	\$53	\$55	\$57	\$61
<b>\$10,000</b>	\$70	\$73	\$77	\$82
<b>\$15,000</b>	\$105	\$110	\$115	\$123
<b>\$20,000</b>	\$141	\$146	\$154	\$164
<b>\$25,000</b>	\$176	\$183	\$192	\$205

In addition, DB members can supplement their retirement benefits by investing in tax-deferred retirement vehicles, predominantly under Section 403(b) of the Internal Revenue Code. In a 403(b) plan, the member's income is reduced while working, up to a maximum amount specified in federal law, and that amount is invested as directed by the member. No taxes are owed on the amount contributed and on the earnings from investing those contributions until payments from the accounts are made, after retirement. CalSTRS offers a 403(b) plan to school employees, called the Voluntary Investment Program.

## **ASSUMPTIONS USED TO EVALUATE BENEFIT ADEQUACY**

### **Retirement Ages and Service Credit Years Used for Comparisons and Adequacy**

The 1998 Retirement Benefit Comparison and Adequacy Study that was presented to the Board looked at replacement ratios and benefit comparisons at age 60 with 25 years of service credit and age 65 with 30 years of service credit. The current study looks at retiring educators at each year of age from age 60 through age 63, and each year of service from 30 years of service through 35 years of service. The replacement ratio paid to members after age 63 does not change, given the same final compensation and years of service. Using these different ages and years of service shows how the benefit enhancements enacted in 1998 and 2000 have substantially increased retiring member benefits since the 1998 study. It also incorporates the average age of retirement for members retiring in 2002-03, which is 61.2 years of age.

### **Final Average Salary/Final Compensation**

In calculating final average salary, the 1998 study used a final salary of \$47,500 for age 60 and a final salary of \$57,800 for age 65. The final salary for age 65 was based on an assumed 4 percent annual increase in salary from age 60 to age 65. For the current study, we used the actual average final compensation for members retiring in the 2002-03 fiscal year with at least 30 years of service credit at each age from age 60 through age 63. The average final compensation for all retiring educators in 2002-03 is \$5,807 or a final average annual salary of \$69,684.

### **Supplemental Retirement Savings**

Both the 1998 study and the current study assume that members would save for retirement, and includes replacement ratios with and without member contributions to a 403(b) program. Because there was limited 403(b) information available in the 1998 study to determine the average member contribution rate to a 403(b) account, it was assumed that the average contribution rate was around 3 percent with an 8 percent return rate. For the 2004 study, CalSTRS sent a survey to approximately 9,100 educators who retired from CalSTRS in June and July 2003, asking each individual whether they made contributions to a 403(b) plan; the average percentage of gross salary per month contributed; and the total number of years the contributions were made. Of the members surveyed, 4,120 (45 percent) responded. The survey indicated that:

- 70 percent of the surveyed educators contributed to a 403(b) plan during their career
- The average contribution was 11 percent of gross salary
- The average contribution period was approximately 17 years
- The average monthly distribution was \$765
- The average length of the distribution was for 21 years
- The average lump sum distribution was about \$70,000
- A majority of retired educators who will take a distribution at a later date will do so to pay for future health care costs or when required by federal law to take a distribution at age 70 ½.

For purposes of the study, we assumed that members contributed 5 percent of their salary to a 403(b) plan. This level of investment is appropriate because CalSTRS members do not participate in Social Security, which saves them 6.2 percent of salary. In addition, a combined 8 percent contribution to CalSTRS and 5 percent contribution to a 403(b) plan, for a combined contribution of 13 percent, is consistent with the total 13.2 percent contribution paid by classified school employees to CalPERS and Social Security. Although a CalPERS school employee would pay the 13.2 percent contribution throughout his or her career, the calculations for a CalSTRS member were based on a member contributing to a 403(b) plan only for the first 15 years of employment.

### **REPLACEMENT RATIOS AND BENEFIT ADEQUACY**

At the time that the 1998 Benefit Comparison and Adequacy Study was formulated and presented to the Board, university research conducted in 1993 by Georgia State University was the basis of comparison to the 1998 CalSTRS benefit. Replacement ratios were used as a measure of the adequacy of the CalSTRS benefit. As indicated earlier, the replacement ratio is computed by dividing the annual retirement benefit by the final year's salary. The survey data that was used studied the retirement needs and adequacies at age 65. Retirement adequacy was

defined as the amount of benefit needed to continue the pre-retirement standard of living. The results of the Georgia State Study showed a range of replacement ratios at age 65 from 76 percent to 85 percent depending on the level of income at retirement. Based on various assumptions, the 1998 study determined that the percentage of income necessary for retirement income adequacy was 70 to 75 percent of final salary at age 60 and 80 to 85 percent at age 65. The 1998 study found no survey data that specifically defined the needs and adequacies for age 60. It was therefore assumed that a range of 70 to 75 percent at retirement age 60 should be the target for retirement adequacy. Study findings showed that the CalSTRS retirement benefit was 59 percent of final salary at age 60 with 25 years of service and 68 percent at age 65 with 30 years of service.

This current study uses the 2001 Georgia State University study (the most recently conducted study) as a basis to define replacement ratios for the CalSTRS retirement benefit. The university study concluded that adequate replacement ratios for 65 year old retirees are between 76 percent and 87 percent depending on an individual's retiring income and marital status. This is a 4 to 8 percent increase of required income since a follow up 1997 study conducted by Georgia State University. Just as in the 1993 and 1997 Georgia State studies, there is no single definitive replacement ratio for all retirees. Many factors, such as marital status, retirement income, region of residence and supplemental savings, make it difficult if not impossible to define the ideal replacement ratio. However, just as in the 1998 Benefit Comparisons and Adequacy study, we believe that reasonable assumptions can be formulated for CalSTRS members that would allow the identification of appropriate replacement ratios. Based on similar formulas used in the Georgia State study, we calculated a range of the percentage of salary paid to CalSTRS members that, if paid to a member in retirement, would permit the member to maintain in retirement the same level of income, net of employment-related expenses, the member earned while employed. These ratios range between 81 percent and 88 percent, which are at the higher end, but consistent with the findings of the Georgia State study. This range assumes that health care will be paid for by the employer after retirement for life.

Although the terms replacement ratio and benefit adequacy are related, the phrase "benefit adequacy" must consider more than just the CalSTRS retirement allowances and supplemental savings. There are other age-related and economic factors that must be accounted for to determine the sufficiency of income for retiring educators. We did not encounter a single study, commentary, or opinion that matched the type of benefits CalSTRS retiring educators would receive at retirement, reflecting the lack of a Social Security benefit. However, we did find expert commentaries and research conclusions that addressed specific subjects regarding retirement adequacy presently and in the future. One recurrent observation by most experts and researchers contradicted the old axiom espoused by financial planners that an individual will need at least 75 percent of their pre-retirement salary in order to maintain their same standard of living in retirement. In an editorial published in the April 2002 magazine *Plan Sponsor*, editors warned that the chasm between retirement expectations and the reality of sufficient retirement savings is probably wider than we think. The article stated that

- "Most financial planning models employed today have certain imbedded assumptions;
- Your tax bracket in retirement will be less than it is today.

- You will not need 100 percent of your preretirement income to maintain the same lifestyle in retirement.
- You will spend money on the same kinds of things you did prior to retirement.

First, as a number of diligent savers are finding out, a retiree's post retirement income actually can exceed their preretirement paycheck. Particularly by the time one reaches 70, the current minimum required distribution law serves to flush a fair amount of retirement savings back into the taxable realm-whether the retiree needs that money to live on or not. Ironically, that may create situations where the current system forces workers to liquidate retirement savings decades before they actually are needed to support healthcare expenses. The plain fact is that, with so many traditional retirement savings vehicles closed to the 70-year old, personal savings efforts are frequently discarded-or-abandoned in favor of vehicles that are not tax-advantaged. The combination of these phenomena, and the tendency of both federal and state governments to tinker with tax rates over an extended period of time-means that retirees no longer can safely assume that they will enjoy a reduced tax burden in retirement."

These same comments and related opinions were echoed by other respected pension and retirement researchers. The 2001 Georgia State study noted that new data showed only a relatively minor decrease in post-retirement spending patterns. The 2004 annual Retirement Confidence Survey, a comprehensive study by the Employee Benefit Research Institute of the attitudes and behaviors of American workers and retirees towards saving, retirement planning, and long-term financial security, found that some workers may be overly optimistic about their standard of living in the years immediately after their retirement. About two-thirds of workers believe that they will be at least as comfortable in the years immediately after retirement as they were before retirement. While job-related expenses decline or are eliminated in retirement, other expenses remain constant (such as housing, living expenses, and property taxes) and may rise (such as leisure and medical expenses).

Olivia S. Mitchell, executive director of Wharton's Pension Research Council notes: "It may be a good idea for people to assume that they will need the same level of income during their retirement years that they need now. A lot of people don't have very good information about what their expenses will be during retirement. We know from our research at the Pension Research Council that there's a substantial underestimation of the need for long-term care and nursing home insurance. People also don't understand what medical costs may be in retirement. And many people don't focus enough on the risk posed by inflation. We haven't had a lot of inflation lately, but even a low rate over 30 years of retirement can erode one's nest egg."

Other studies have shown that people are not properly prepared for retirement. In a May 2003 survey conducted for MetLife, people aged 56 to 65 were asked a series of questions designed to test their knowledge of retirement and income-planning statistics. When asked, "What are the greatest financial risks facing retirees?" only 23 percent correctly answered longevity risk. Another question asked: "An individual who reaches age 65 has a life expectancy of age 85. What are the chances he or she will live beyond that age?" Only 37 percent gave the correct answer, which is 50 percent.

The table below shows the replacement ratios resulting from the DB Program for career members with different retirement ages and years of service, based on the average final compensation for members retiring at that age. Including DBS benefits would increase the replacement ratios by about 1 to 1.5 percentage points for every \$10,000 in DBS funds at retirement.

<b>Age</b>	<b>Years of Service</b>	<b>Final Monthly Salary</b>	<b>Monthly Allowance</b>	<b>Replacement Ratio</b>
60	30	\$6,336	\$4,382	69%
60	31	\$6,336	\$4,621	73%
60	32	\$6,336	\$4,861	77%
60	33	\$6,336	\$5,000	79%
60	34	\$6,336	\$5,139	81%
60	35	\$6,336	\$5,279	83%
61	30	\$6,411	\$4,687	73%
61	31	\$6,411	\$4,937	77%
61	32	\$6,411	\$5,187	81%
61	33	\$6,411	\$5,336	83%
61	34	\$6,411	\$5,486	86%
61	35	\$6,411	\$5,635	88%
62	30	\$6,473	\$4,860	75%
62	31	\$6,473	\$5,116	79%
62	32	\$6,473	\$5,371	83%
62	33	\$6,473	\$5,527	85%
62	34	\$6,473	\$5,682	88%
62	35	\$6,473	\$5,837	90%
63	30	\$6,597	\$4,950	75%
63	31	\$6,597	\$5,208	79%
63	32	\$6,597	\$5,467	83%
63	33	\$6,597	\$5,625	85%
63	34	\$6,597	\$5,783	88%
63	35	\$6,597	\$5,942	90%

The replacement ratios paid to members who retire older than age 63 are the same as those who retire at age 63 and have identical final compensation and years of service.

The following table shows the replacement ratios for these same members, assuming that they invested 5 percent of their salary in a 403(b) plan for the first 15 years of their career, beginning at age 25, and earn a rate of return equal to 5 percentage points above the rate of inflation.

<b>Age</b>	<b>Years of Service</b>	<b>Final Monthly Salary</b>	<b>Monthly Allowance</b>	<b>403(b) account*</b>	<b>Replacement Ratio</b>
60	30	\$6,336	\$4,382	\$589	78%
60	31	\$6,336	\$4,621	\$589	82%
60	32	\$6,336	\$4,861	\$589	86%
60	33	\$6,336	\$5,000	\$589	88%
60	34	\$6,336	\$5,139	\$589	90%
60	35	\$6,336	\$5,279	\$589	93%
61	30	\$6,411	\$4,687	\$631	83%
61	31	\$6,411	\$4,937	\$631	87%
61	32	\$6,411	\$5,187	\$631	91%
61	33	\$6,411	\$5,336	\$631	93%
61	34	\$6,411	\$5,486	\$631	95%
61	35	\$6,411	\$5,635	\$631	98%
62	30	\$6,473	\$4,860	\$676	86%
62	31	\$6,473	\$5,116	\$676	89%
62	32	\$6,473	\$5,371	\$676	93%
62	33	\$6,473	\$5,527	\$676	96%
62	34	\$6,473	\$5,682	\$676	98%
62	35	\$6,473	\$5,837	\$676	101%
63	30	\$6,597	\$4,950	\$726	86%
63	31	\$6,597	\$5,208	\$726	90%
63	32	\$6,597	\$5,467	\$726	94%
63	33	\$6,597	\$5,625	\$726	96%
63	34	\$6,597	\$5,783	\$726	99%
63	35	\$6,597	\$5,942	\$726	101%

\*Assumes account balance used to purchase additional CalSTRS service credit

This current study indicates that, considering only the DB Program benefit, a CalSTRS member retiring with less than 32 years of service would fall short of the recommended replacement ratios of 81 to 88 percent. However, with the addition of supplemental savings, most retiring career educators would have enough retirement income to exceed the recommended replacement ratios. The age at which a member begins investing in a supplemental retirement savings plan

can have a major impact on the amount available at retirement. For example, if the member started investing at age 30, rather than age 25, the impact of the supplemental investing on the monthly retirement benefit would be reduced by 22 percent.

**1998 Benefit Adequacy versus 2004 Benefit Adequacy**

The table below compares the replacement ratios currently being paid by the DB Program (that is, excluding DBS benefits) to those paid under the program as it existed in 1998, assuming the same final year’s salary, and assuming 4 percent annual salary increases for each of the two years prior to retirement.

<b>Age</b>	<b>Years of Service</b>	<b>Replacement Ratio (1998)</b>	<b>Replacement Ratio (2004)</b>	<b>Percentage Increase</b>
60	30	58%	69%	20%
60	31	60%	73%	22%
60	32	62%	77%	25%
60	33	63%	79%	24%
60	34	65%	81%	24%
60	35	67%	83%	24%
61	30	58%	73%	27%
61	31	60%	77%	29%
61	32	62%	81%	31%
61	33	63%	83%	31%
61	34	65%	86%	31%
61	35	67%	88%	31%
62	30	58%	75%	30%
62	31	60%	79%	33%
62	32	62%	83%	35%
62	33	63%	85%	34%
62	34	65%	88%	34%
62	35	67%	90%	34%
63	30	58%	75%	30%
63	31	60%	79%	32%
63	32	62%	83%	35%
63	33	63%	85%	34%
63	34	65%	88%	34%
63	35	67%	90%	34%

As is seen above, the changes made to the DB Program since the 1998 study, even disregarding the impact of the DBS benefit, has had a dramatic effect on a member's ability to replace employment compensation in retirement. The reasons for this are that

- The percentage of final salary paid per year of service now increases after age 60, which it did not do in 1998. As a result, in 1998, the replacement ratio didn't change for a given number of years of service and final compensation, even if the member retired after age 60. Under the current DB Program, the replacement ratio does increase for retirements after age 60.
- Members with at least 30 years of service now receive an additional increase in the percentage of final salary
- Members with at least 30 years of service also receive a longevity bonus
- Members with at least 25 years of service have final compensation determined based on 12 consecutive months of the highest average annual earnable salary for a school year, rather than the highest 36 consecutive months

It should be noted that the adequacy of the current benefits paid by CalSTRS indicated above results to a large degree to the enhancements paid to members with at least 30 years of service. Such members generally receive an addition to their age factor, as well as a dollar increase in the monthly benefit. If these enhancements were not paid, the replacement ratio would be significantly lower. For example, the replacement ratio of the CalSTRS benefit paid to a 60 year old with 30 years of service, who receives both the career factor and the longevity bonus, is 69 percent, while the replacement ratio of the benefit paid to a 60 year old with 29 years of service is only 58 percent. About 87 percent of the difference between the replacement ratios paid to the two members is attributable to the career factor and the longevity bonus. It should also be recalled that the longevity bonus has a limited existence. Only members with at least 30 years of service by 2011 will receive a longevity bonus. On the other hand, all future members will accrue significantly larger DBS balances as they work summer school and perform other excess service and therefore earn increased DBS retirement benefits throughout their career.

The increase in benefits resulting from the enhancements enacted since 1998 that is paid to a member retiring with less than 30 years of service is more limited. For example, a member retiring at age 60 with 29 years of service in 2004 will receive a monthly DB benefit that is only 4 percent larger than would have been paid in 1998, due to the change in how final compensation is calculated. Members retiring after age 60 will see somewhat larger increases. If a member retires at age 63 or older with 29 years of service, the monthly benefit will be 25 percent larger than would have been paid to a similar member retiring in 1998, due to both the change in calculating final compensation and the increase in the age factor after age 60. Similarly, the replacement ratio of the benefit paid to a member who retired in 1997-98, with an average age of 60.8 years and 26.8 years of service credit, is about 53 percent. The average member who retired in 2003-02 was 61.2 years old and had 27.9 years of service credit. The replacement ratio for that average member from benefits paid from the DB Program was slightly over 63 percent, an increase of about 19 percent, due in part to the increased age factor and the change in how final compensation is determined. Although ad-hoc and other increases paid to pre-1999 retirees since their retirement help improve the standard of living of previously retired members, it is clear that the retirement benefits paid by CalSTRS to those who retired before 1999 are less adequate than those being paid to more recently retired members.

## CHANGES IN ECONOMIC CONDITIONS AFTER RETIREMENT

It is difficult to categorically define exactly what an ideal replacement ratio should be for each retiring educator. However, if we examine specific post-retirement factors that retiring educators will encounter once their career has ended, and incorporate the impact of these factors with the CalSTRS retirement allowance an individual receives, reasonable assumptions about retirement adequacy and a range of replacement ratios can be determined. There are three factors of particular importance to CalSTRS members: inflation, health care and elder care.

### Inflation

The rate of inflation in California over the last 20 years averaged around 3.25 percent per year and approximately 2.7 percent over the last 10 years. Assuming that the rate of inflation averages 3 percent per year, a member with a retirement allowance of \$4,860 per month in 2003 would have to make up \$700 per month in the year 2013 and \$2,000 in the year 2023 to maintain the same purchasing level at retirement. The following chart shows how inflation can erode the overall retirement allowance by a member retiring in 2003 with a retirement allowance of \$4,860 per month.

Year	Annual Adjustment	Allowance plus Adjustment	Benefit Needed to Offset		
			2 Percent Inflation	3 Percent Inflation	4 Percent Inflation
2003	\$0	\$4,860			
2004	\$97	\$4,957	\$4,957	\$5,006	\$5,054
2007	\$389	\$5,249	\$5,261	\$5,470	\$5,686
2010	\$680	\$5,540	\$5,583	\$5,977	\$6,395
2013	\$972	\$5,832	\$5,924	\$6,531	\$7,194
2015	\$1,166	\$6,026	\$6,164	\$6,929	\$7,781
2020	\$1,652	\$6,512	\$6,805	\$8,033	\$9,467
2023	\$1,944	\$6,804	\$7,222	\$8,778	\$10,649

The real value of a retirement plan's benefit is measured by its purchasing power during the retirement years as well as by its tax treatment. Each of these factors affects the value of benefits after retirement. For example, the CalSTRS retirement benefit, including the purchasing power benefit, is indexed to changes in the California Consumer Price Index to protect against the erosion of the benefit's value over time, through the quarterly purchasing power benefit. Retirement benefits provided by a number of large public employee plans have some inflation protections built into the design of the plan and may also be partially or, in some cases, wholly exempt from state income taxes. The method of retirement income inflation protection afforded by each plan and the tax treatment of retirement benefits for state income tax purposes vary widely among plans and taxing jurisdictions. Such differences may also be affected by or related to plan designs that take into account Social Security benefits or their absence.

Cost of living adjustments represent an attempt to check purchasing power losses due to inflation. With some plans cost of living adjustments are wholly discretionary. In these cases,

ad hoc increases may be granted from time to time by the state legislature. Such increases may apply to retirees equally across the board, or larger adjustments may be directed to longtime retirees for whom the retirement benefit's purchasing power has declined by the greatest amount. For example, in 2000, CalSTRS sponsored legislation for an ad hoc increase to a benefit recipient's monthly allowance beginning with a 1 percent increase for those individuals who had a benefit effective date prior to January 1, 1998, to a 6 percent increase for benefit recipients with a benefit effective date prior to January 1, 1975.

Another alternative used by some plans relies on additional payments based on the investment experience of the plan. Under these conditions, no adjustment takes place unless the plan has a sufficiently favorable investment experience. For example, the Wisconsin Retirement System provides for supplemental adjustments in benefits when investment earnings in excess of the actuarially assumed rate produce a surplus in the annuity reserve.

Most public plans either automatically provide for a fixed rate of adjustment (usually 2 or 3 percent) or a floating rate tied to changes in the Consumer Price Index (CPI) typically with a 3 percent ceiling on the rate of adjustment. Not all of the plans who use a fixed rate apply such rates in the same manner. Some systems, such as CalSTRS, provide for adjustments on the original benefit, while others provide for compounded percentage adjustments. Most of the systems that compound the adjustment do so annually while some systems may employ an automatic adjustment on the low end of the typical range, but also add excess investment provisions as a supplement. Other systems use a multipart automatic adjustment, with a small fixed amount such as 1 percent being guaranteed and further adjustment based on changes in the CPI up to a specified maximum.

The overall value of retirement benefits can also be affected by their treatment under varying state income tax laws. The income from a majority of public plans is partially or totally subject to state income tax. Seven states have no state income tax while some states have exempted public retirees from paying state income taxes on their retirement benefit.

The CalSTRS post-retirement benefits includes an annual two percent benefit adjustment and a unique inflationary safeguard in the form of annual supplemental payments in quarterly installments when purchasing power falls below 80 percent of the original allowance. Other than CalPERS which has a 75 percent purchasing power feature, we did not find any public pension system that has a purchasing power supplemental payment. This purchasing power plan feature compares favorably with other state plans that require state income tax. States that are fully exempt from paying state income tax and have compounded COLAs have the highest overall value. A listing of post-retirement benefit packages based on annual cost of living increases and state income tax, ranked by order of the after-tax benefit paid to a member after 20 years of retirement, is provided in Appendix A.

### **Health Care**

In February 2004, CalSTRS staff presented to the Board results from an employer survey regarding health benefits provided to active and retired employees. Survey findings revealed that approximately 57 percent of district employees must pay all their health insurance premiums at age 65. Almost two-thirds of the districts reported that health insurance premiums increased less

than 20 percent, whereas 30 percent of the districts reported a 20 to 29 percent increase in premiums during the 2001 and 2002 fiscal years. Some districts expect employees to pay a higher share of their health care premiums in the future. This will be accomplished by capping the districts' premium contributions. Another strategy to control the districts' share of health care premium will be to increase the employees' out-of-pocket expenses through higher co-payments for doctor visits and prescription drugs.

These findings are consistent with a recent Kaiser Family Foundation and Hewitt Associates poll, which found that one in 10 firms dropped subsidized health benefits for future retirees in the last year while another 20 percent are likely to follow suit over the next 36 months. Of the companies surveyed, 71 percent made retirees pay more toward health premiums in the last year while 86 percent say they'll do so over the next three years. For new retirees, premium payments increased by 20 percent in 2002-2003 for pre-65 retirees and 18 percent for retirees age 65 and older. Among surveyed employers, the total cost for employers and retirees for health benefits increased by an estimated 13.7 percent from \$18.1 billion in 2002 to an estimated \$20.6 billion in 2003, to provide coverage to retirees and their dependents. The Kaiser report noted that between the spring of 2002 and spring of 2003, monthly premiums for employer sponsored health insurance rose 13.9 percent, the third consecutive year of double premium increases and the highest premium increase since 1990.

In a report released by Fidelity Investments following the firm's *Changing Benefits, Critical Decisions: The Health Benefits and Behavior Study*, it was estimated that health premiums in 2004 are expected to increase 7.4 percent. Employees will pay an average of \$1,233, up from \$1,107 last year. Combining both the employee share of premium and expected out-of-pocket cost, the total amount employees will pay for their health care in 2004 rises to \$2,450. In a related report by Fidelity that addresses saving for health care, it was estimated that a 65-year old couple retiring today, with no access to an employer sponsored health care plan, needs an estimated \$175,000 to fund out-of-pocket medical expenses in retirement.

A February 2003 *Issue Brief* (study) entitled *Retiree Health Benefits: Savings Needed to Fund Health Care in Retirement* sponsored by the Employee Benefit Research Institute (EBRI), found that an individual with access to employment-based health benefits in retirement to supplement Medicare will have needed to save a present value of between \$37,000 and \$750,000 to retire at age 65 in 2003. The range is determined by various assumptions regarding life expectancy, premium levels, annual changes to premiums, and out-of-pocket expenses. An individual without access to employment-based health benefits who instead purchases Medigap coverage will have needed to save between \$47,000 and almost \$1.5 million, to retire at 65 in 2003.

In a February 2004 *Issue Brief*, Professor Jack Van Derhei, Temple University, research director of the EBRI Fellow Program noted that "The thing that would probably have the single biggest determination on whether or not the amount of money you retire with turns out to be sufficient is whether or not you have one of the potentially catastrophic health care expenses, things like home health care and nursing home care." The *Issue Brief* (No. 266) noted that fewer retirees are going to have health insurance from a former employer and Medicare is projected to be severely underfunded once the baby boomer generation starts retiring. All of this indicates more insecurity for future retirees about their ability to cover health expenditures in retirement. The

following chart demonstrates the ongoing health care cost for an individual with no post-retirement health care or no employer health care after age 65. The increase in health care assumes a 10 percent increase in Medicare premiums and a seven percent yearly increase in health care costs (A seven percent yearly increase was used based on the assumption that future costs will be tempered with federal legislation and low periods of inflation that will average no more than seven percent over the next 20 years.)

<b>Costs in 2003</b>	<b>Costs in 2023</b>
Medicare Part B premium of \$59 per month	Medicare Part B premium of \$397 per month
<b>\$700 annually</b>	<b>\$4,764 annually</b>
Other health care premiums of \$300 per month, plus out-of pocket costs (for co-pays, prescription drugs and miscellaneous health care expenses excluding dental and vision care) of \$100 per month	Premiums and out of pocket costs (for co-pays, prescription drugs and miscellaneous health care expenses excluding dental and vision care) of \$1,061 per month
<b>\$4,800 annually</b>	<b>\$12,732 annually</b>

### **Elder Care**

Recent research shows that 6 out of 10 retired individuals will need some type of long term care. Home health care, assisted living and nursing home care costs are expensive and can have a major effect on an individual’s finances. One year in a California nursing home can cost \$50,000 or more. According to CalPERS, “long-term care can easily exceed \$130,000 in California, due to the fact the average length of stay in a nursing home for adults over age 65 is 2.6 years.” We have factored in elder care or long term care as a post-retirement cost that could have an impact on an individual’s retirement allowance. To do this, we assumed that each retiring educator in our study categories purchased the CalPERS Long-Term Care Program 5 years prior to retirement.

<b>Retirement Age</b>	<b>Age at the Time of Purchase</b>	<b>Monthly Premium at the Time of Purchase</b>	<b>Current Monthly Premium</b>	<b>Average Annual Rate of Increase</b>
<b>Age 60</b>	Age 55	\$104	\$135	5.4%
<b>Age 62</b>	Age 57	\$117	\$148	4.8%
<b>Age 65</b>	Age 60	\$141	\$172	4.1%

We then compared the initial purchase monthly premium to the rate paid at retirement and calculated an ongoing average increase of five percent annually.

<b>Future Monthly Long Term Care Premiums Assumed 5 Percent Annual Increase</b>			
<b>Year</b>	<b>Member Age 60</b>	<b>Member Age 62</b>	<b>Member Age 65</b>
<b>2003</b>	\$135	\$148	\$172
<b>2005</b>	\$149	\$163	\$190
<b>2010</b>	\$190	\$208	\$242
<b>2013</b>	\$220	\$241	\$280
<b>2015</b>	\$242	\$266	\$309
<b>2020</b>	\$309	\$339	\$394
<b>2023</b>	\$358	\$393	\$456

## **RETIREMENT BENEFIT COMPARISONS**

We compared CalSTRS' retirement benefit with other state and local retirement systems that were also used in the 1998 study. The comparisons show retirees in CalSTRS and other systems retiring at age 60 with 30 years of service credit; age 62 with 32 years of service credit; and, age 65 with 35 years of service credit, as well as the contribution rates for 2002-03. The same 2003 final compensation was used for all retiring individuals. The calculation assumes that there were no salary increases during the final compensation period. Because different retirement systems use different definitions of final compensation, if a person was receiving increases in compensation toward the end of his or her career, the replacement ratio of those retirement systems that have longer final compensation periods may be lower than indicated. For example, all the California plans base final compensation on the highest 12 consecutive months; the other plans shown base final compensation on either the highest 24 or 36 consecutive months.

The table indicates that, for the scenarios calculated, the benefit paid by CalSTRS generally was higher than those paid by other retirement systems. For those retirement systems whose service also is covered by Social Security, the total amount of income replaced after retirement is higher than at CalSTRS, but this would be offset if CalSTRS members invested the savings from not participating in Social Security in a supplemental retirement savings program, such as a 403(b) plan.

<b>Retirement System</b>	<b>Member Contribution Rate</b>	<b>Employer Contribution Rate</b>	<b>Age 60 Ratio</b>	<b>Age 62 Ratio</b>	<b>Age 65 Ratio</b>
<b>CalSTRS</b>	8%	8.25%	69%	83%	90%
<b>CalPERS Classified School*</b>	7%	2.894%	69%	78%	88%
<b>LA City Fire and Police—Tier 3</b>	8%	6.50%	70%	70%	70%
<b>San Francisco Safety—Tier 2</b>	7.5%	4.48%	65%	70%	70%
<b>LA Water and Power</b>	6%	11.33%	65%	69%	76%
<b>Long Beach Miscellaneous—Tier 2*</b>	8%	7.199%	78%	83%	91%
<b>Nevada PERS (contributory plan)</b>	9.75%	9.75%	72%	78%	89%
<b>Rhode Island Teachers</b>	9.50%	9.95%	63%	69%	77%
<b>Washington Teachers* (Plan 1)</b>	6.00%	1.27%	58%	63%	69%
<b>Oregon PERS*</b>	6.00%	12.73%	48%	51%	56%
<b>Pennsylvania School*</b>	6.50%	1.94%	72%	77%	88%

\* Service covered by Social Security. Social Security adds an additional 22 percent at age 62 and 29 percent at age 65 to the replacement ratio

## **SUMMARY OF FINDINGS**

Since the 1998 Benefit Comparison and Adequacy Study, CalSTRS has significantly increased the monthly retirement benefit for educators with at least 30 years of service or who retire after age 60, and provided other post-retirement benefits to assist members in maintaining their standard of living in retirement. As a result, the percentage of final salary replaced with the DB benefit alone has increased by 20 percent to 34 percent, with additional increases resulting from the DBS Program. CalSTRS, when compared with other retirement systems, pays among the highest monthly benefits at age 62 and age 65.

Based on the methodology used in the Georgia State studies, an appropriate target replacement ratio for CalSTRS members ranges from 81 percent to 88 percent. The current CalSTRS service retirement benefit, excluding the impact of DBS account balances and additional savings, is not sufficient to meet the target replacement ratio for members retiring with less than 32 years of service. Members who consistently contribute a relatively modest amount to a supplemental savings plan, however, should be able to meet the target replacement ratio when combined with

CalSTRS benefits. A survey of recently retired CalSTRS members indicates that California educators generally save for retirement at a higher rate than the rest of the population.

The availability of affordable health care can have a tremendous impact on the ability of a person to maintain his or her standard living in retirement. Members without employer-paid post-retirement health care can expect to see a 10 to 20 percent loss of discretionary income after 20 years due to ongoing increases in health care costs. Without post-retirement lifetime health care and a substantial supplemental savings account, retirement before age 60 may not be feasible for members in most cases, unless a member plans to engage in post-retirement employment.

Finally, although an annuity from the Defined Benefit Supplement Program account should help offset inflation in the future, CalSTRS post-retirement benefits (both the 2 percent annual adjustment and the purchasing power supplemental benefit payment) may not be sufficient to fully offset estimated rising health care costs or periods of high inflation 10 years after retirement.

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**APPENDIX A: COMPARISON OF ANNUAL COST OF LIVING INCREASES AND STATE INCOME TAX**

In our comparison we made the following assumptions:

- Initial benefit: \$4,000 per month
- Retirement age: Age 65
- Rate of annual inflation: 2.5 percent annually
- Annual ad hoc adjustment (for those plans without automatic adjustments): 2.0 percent

<b>State</b>	<b>Annual Benefit Adjustment</b>	<b>State Income Tax Treatment</b>	<b>10 Year Benefit/ Month</b>	<b>20 Year Benefit/ Month</b>	<b>Benefit/ Month After State Tax</b>
1. Colorado	3.5 percent Compounded	Exempt up to \$24,000	\$5,640	\$8,190	\$7,905
2. S. Dakota	3.1 percent Compounded	None	\$5,475	\$7,470	\$7,470
3. Illinois	3 percent Compounded	Exempt	\$5,375	\$7,225	\$7,225
4. Michigan	3 percent Compounded	Exempt	\$5,375	\$7,225	\$7,225
5. Mississippi	3 percent Compounded	Exempt	\$5,375	\$7,225	\$7,225
6. Rhode Island	3 percent Compounded	Taxable	\$5,375	\$7,225	\$6,720
7. Tennessee	CPI up to 3 percent	Exempt	\$5,150	\$6,600	\$6,600
8. Florida	3 percent Simple	None	\$5,080	\$6,380	\$6,380
9. Georgia	CPI up to 1.5 percent every 6 months Compounded	Up to \$14,000 Excludable	\$5,150	\$6,600	\$6,290
10. Ohio	3 percent Simple	Tax credit up to \$200	\$5,080	\$6,380	\$6,060
11. Arkansas	3 percent Simple	Exempt up to \$6,000	\$5,080	\$6,380	\$5,970
12. Hawaii	2.5 percent Simple	Exempt	\$4,900	\$5,900	\$5,900
13. Washington	CPI up to 3 percent	None	\$4,900	\$5,900	\$5,900
14. Louisiana	CPI up to 3 percent 2.5 percent	Exempt	\$4,900	\$5,900	\$5,900
15. Nevada	CPI up to 5 percent	None	\$4,900	\$5,900	\$5,900

<b>State</b>	<b>Annual Benefit Adjustment</b>	<b>State Income Tax Treatment</b>	<b>10 Year Benefit/ Month</b>	<b>20 Year Benefit/ Month</b>	<b>Benefit/ Month After State Tax</b>
16 Wyoming	CPI up to 3 percent	None	\$4,900	\$5,900	\$5,900
17. Maryland	CPI 2.5 percent	Exempt up to \$18,500	\$4,900	\$5,900	Unknown
18. Montana	3 percent Guaranteed	Exempt up to \$3,600	\$5,080	\$6,380	\$5,770
19. Kentucky	Guaranteed 1.5 percent + Ad Hoc	Exempt up to \$37,500	\$4,900	\$5,900	\$5,745
<b>20. CalSTRS</b>	<b>2 percent Simple</b>	<b>Taxable</b>	<b>\$4,720</b>	<b>\$5,520 + \$601 = \$6,121</b>	<b>\$5,650</b>
21. Connecticut	CPI up to 5 percent	Taxable	\$4,900	\$5,900	\$5,600
22. S. Carolina	CPI up 4 percent	Exempt up to \$15,000	\$4,900	\$5,900	\$5,575
23. Virginia	CPI up to 3 percent	Taxable	\$4,900	\$5,900	\$5,560
24. Alabama	Ad Hoc 2 percent*	Exempt	\$4,720	\$5,520	\$5,520
25. Kansas	Ad Hoc 2 percent*	Exempt	\$4,720	\$5,520	\$5,520
26. Massachusetts	Ad Hoc 2 percent*	Exempt	\$4,720	\$5,520	\$5,520
27. New Hampshire	Ad Hoc 2 percent*	Exempt	\$4,720	\$5,520	\$5,520
28. N. Carolina	Ad Hoc 2 percent*	Exempt	\$4,720	\$5,520	\$5,520
29. Pennsylvania	Ad Hoc 2 percent*	Exempt	\$4,720	\$5,520	\$5,520
30. Texas	Ad Hoc 2 percent*	None	\$4,720	\$5,520	\$5,520
31. Oregon	CPI up to 2 percent	Tax credit for household incomes under \$45,000	\$4,720	\$5,520	\$5,520
32. Nebraska	CPI up to 5 percent	Taxable	\$4,900	\$5,900	\$5,495
33. Utah	CPI up to 4 percent	Taxable	\$4,900	\$5,900	\$5,490
34. Minnesota	CPI up to 2.5 percent	Taxable	\$4,900	\$5,900	\$5,485
35. Iowa	CPI up to 3 percent	Exempt up to \$6,000	\$4,900	\$5,900	\$5,445

<b>State</b>	<b>Annual Benefit Adjustment</b>	<b>State Income Tax Treatment</b>	<b>10 Year Benefit/ Month</b>	<b>20 Year Benefit/ Month</b>	<b>Benefit/ Month After State Tax</b>
36. Maine	CPI up to 4 percent	Exempt up to \$6,000	\$4,900	\$5,900	\$5,440
37. Alaska	Smaller of 9 percent or 75 percent of CPI	None	\$4,675	\$5,425	\$5,425
38. Indiana	Ad Hoc	Taxable	\$4,720	\$5,520	\$5,335
39. N. Dakota	Ad Hoc	Taxable	\$4,720	\$5,520	\$5,305
40. Delaware	Ad hoc	Exempt up to \$12,000	\$4,720	\$5,520	\$5,270
41. West Virginia	Ad Hoc	Exempt up to \$2,500	\$4,720	\$5,520	\$5,220
42. Missouri	CPI up to 5 percent	Exempt up to \$6,000	\$4,720	\$5,520	\$5,220
43. Idaho	CPI up to 6 percent Discretionary	Taxable	\$4,720	\$5,520	\$5,190
44. Oklahoma	Ad Hoc	Exempt up to \$5,500	\$4,720	\$5,520	\$5,185
45. New York	50 percent of CPI up to 3 percent	Exempt	\$4,500	\$4,950	\$4,950
46. New Jersey	60 percent of CPI	Exempt to \$15,000	\$4,540	\$5,140	\$4,925
47. New Mexico	50 percent of CPI	Taxable	\$4,500	\$4,950	\$4,615
48. Vermont	50 percent of CPI up to 5 percent	Taxable	\$4,500	\$4,950	\$4,600
49. Arizona	Investment Surplus	Exempt up to \$2,500	N/A	N/A	N/A
50. Wisconsin	Investment Surplus	Taxable	N/A	N/A	N/A

\* Assumes 2 percent annual ad hoc cost of living increase