# MORE PENSION MATH:

## Funded Status, Benefits, and Spending Trends for California's Largest Independent Public Employee Pension Systems

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# Preface

California's public employee pension problems are well documented. Even under the most optimistic assumptions, the funded ratios for statewide systems such as the California Public Employees' Retirement System (CalPERS) and the California State Teachers' Retirement System (CalSTRS) fall well below accepted standards.

Yet little research has been done on California's independent pension systems. These include systems in 20 counties that operate systems permitted by the County Employees Retirement Law of 1937 (CERL), as well as cities and special districts that operate their own pension funds.

This report examines the current state of California's independent public employee pension systems. It examines system assets and funded levels, membership, benefit levels, employee and employer contribution rates, and overall pension costs. It compares the potential impacts of pension costs on non-pension expenditures and offers conclusions on the financial condition of systems, benefit levels, and independent system reporting standards.

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# Acronyms/Glossary

Alameda County Employees' Retirement Association ........ ACERA
California Public Employees' Retirement System ........ CalPERS
California State Teachers' Retirement System ........ CalSTRS
City of Fresno Employees' Retirement System ........ CFERS
City of Fresno Fire and Police Pension System ........ CFFP
City of Los Angeles Fire and Police Pension System ........ LAFPPS
City of Los Angeles Water and Power Employees' Retirement Plan ........ LAWPERP
City of San Jose Federated City Employees' Retirement System ........ SJFERS
City of San Jose Police and Fire Retirement System ........ SJPFRS
Comprehensive Annual Financial Report ........ CAFR
Consumer Price Index ........ CPI
Contra Costa County Employees Retirement Association ........ CCCERA
Cost Of Living Adjustment ........ COLA
County Employees Retirement Law of 1937 ........ CERL
Fresno County Employees' Retirement Association ........ FCERA
Kern County Employees' Retirement Association ........ KCERA
Los Angeles City Employees' Retirement System ........ LACERS
Los Angeles County Employees' Retirement Association ........ LACERA
Orange County Employees' Retirement System ........ OCERS
Pension Obligaton Bond ........ POB
Sacramento County Employees' Retirement Association ........ SCERA
San Bernardino County Employees' Retirement Association ........ SBCERA
San Diego City Employees' Retirement System ........ SDCERS
San Diego County Employees Retirement Association ........ SDCERA
San Francisco Employees' Retirement System ........ SFERS
San Joaquin County Employees' Retirement Association ........ SJCERA
San Mateo County Employees' Retirement Association ........ SamCERA
Santa Barbara County Employees' Retirement Association ........ SBCERA
Sonoma County Employees' Retirement Association ........ SCERA
Stanford Institute for Economic Policy Research ........ SIEPR
Stanislaus County Employees' Retirement Association ........ StanCERA
Ventura County Employees' Retirement Association ........ VCERA

# Executive Summary

Much attention, in both policy research and broader political circles, has been paid to California's statewide pensions systems. In contrast, virtually no systematic analysis of the state's independent pension plans has been performed, though they collectively hold more than $150 billion in assets. The purpose of this report is to explore the 24 largest independent pension systems in 20 California municipalities.

Among our findings:

- The June 2011 funded ratio for the aggregated 24 systems is 53.6 percent, based on a discount rate for liabilities of 5%.
- The City of Fresno's two systems have a funded ratio of 78.5 percent, while the Kern County system is only 41.5 percent funded. None of the systems is at or above 80 percent funded, which is the conventional minimum funded ratio.
- The unfunded liability for the aggregated 24 systems is $135.7 billion.
- Benefit levels vary significantly. The average annual pension benefit in 2009-2010 for miscellaneous members was $34,461; for safety members, it was $67,718. This includes all beneficiaries, regardless of the number of years of service.[1]
- For retired miscellaneous employees, the highest annual benefit in 2009-2010 was $46,211 in Los Angeles City, and the lowest was $24,179 in Stanislaus County.
- Average benefits for retired safety employees range from a low of $48,732 in Fresno County to a high of $90,612 in the City of San Jose.
- A majority of independent systems base final average salary on the last one year of work, while a minority based this on three years. All systems contain some form of cost of living adjustment.
- The aggregate reported 2011-2012 employer contribution rate is 23.8 percent. About one-half of this rate is due to contributions for unfunded liabilities.
- Aggregated pension costs were 4.1 percent of total municipal spending in 1999; by 2011, that figure had more than doubled. The highest share is 17.7 percent in San Mateo County and the lowest is 6.0 percent in Los Angeles County.
- Between 1999 and 2010, pension spending grew at 11.4 percent per year, more than the rate of growth for any other expenditure category.
- If pension systems assumed a 6.2 percent average annual rate of growth, costs would total 17.4 percent of all municipal expenditures, compared to about 10 percent today.
- The 24 systems discount their liabilities at an expected rate of return, typically 7.75 percent. This practice is at odds with that used in the private sector, and it is also at odds with standard practice in economics, which holds that pension liabilities are full-recourse obligations that must be paid without regard to the performance of pension fund investments. As such, each of the systems substantially understates liabilities and overstates funded ratios.

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1 Average annual benefits for career retirees, defined as those who worked at least 30 years, were not available.

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# I. Introduction

Much attention, in both policy research and broader political circles, has been paid to California's statewide pensions systems, including the California Public Employees' Retirement System (CalPERS), the largest defined benefits pension fund in the United States, and the California State Teachers' Retirement System (CalSTRS).[2] In contrast, virtually no systematic analysis of the state's independent pension plans has been performed, though they collectively hold more than $150 billion in assets. Combined, these independent systems would rank immediately behind CalPERS as the second[3] largest U.S. pension system.

However, size is not the only reason these systems merit notice. The financial health of independent pension systems has a substantial and direct impact on the lives of California citizens, perhaps more than that of the statewide systems. The citizens of municipal governments with independent pension systems may bear a larger portion of the cost of that system than of the cost of statewide systems, and the effects of the system's cost on the municipal budget are more local and therefore more visible.[4] The purpose of this report is to explore the 24 largest independent pension systems in 20 California municipalities.[5] These 24 systems account for more than 99 percent of independent system assets.

Our analysis is intended to address what we consider some of the most important questions:

- How much are system members receiving in pension benefits, and how are those benefits determined? How do benefits vary and compare across the systems?
- How financially healthy are these systems—how likely is it that they will be able to cover all of their future obligations without significant increases in the amounts local governments contribute to them, and if such increases are needed, how large would they have to be?
- How do pension costs fit into broader municipal spending? How large a share of municipalities' spending goes to funding these systems, how has that share changed over time, and how is it likely to change in the future?

The answers to these questions make up the remainder of this report, which is structured as follows. Section II provides background on how the independent systems operate and serves as context for the rest of the report. Section III looks in greater detail at the benefit levels, financial standing, and fiscal impact of the independent systems, considered in the aggregate. Section IV compares important measures of benefit levels and financial health across these independent systems.[6] Section V offers conclusions on the financial condition of systems, benefit levels, and independent system reporting standards.

2 For a recent report, see Joe Nation, "Pension Math: How California's Retirement Spending is Squeezing the State Budget," Dec. 13, 2011, *http://siepr.stanford.edu/system/files/shared/Nation_Statewide_Report.pdf*, retrieved Feb. 5, 2012.

3 See the Tower Watson annual report "P&I/TW Top 300 Pension Funds," *http://www.towerswatson.com/assets/pdf/5351/TW-PI-300.pdf*, retrieved Feb. 10, 2012. The independent systems had a combined $156 billion in assets as of June 30, 2011, higher than the roughly $140 billion in assets held by CalSTRS, the second largest U.S. defined benefits fund.

4 As one example, the pension share of both payroll and expenditures is typically greater at the local than at the state agency levels, resulting in greater pressure on non-pension expenditures in the former. There is also typically a higher percentage of safety employees, with higher retirement formulas, in a local agency.

5 Some municipalities contain more than one pension system, often with one for miscellaneous and a second for safety employees.

6 An appendix provides detailed information on each of the 24 systems.

# II. Background

## History

The 20 municipalities considered in this report have a total of 24 pension systems, with the cities of San Jose, Fresno, and Los Angeles having separate systems for different types of employees (Table 1).[7] The municipalities include three cities, 16 counties, and San Francisco, which is both a city and a county.

7 Once municipality, the City of Los Angeles, has three pension systems, making the total 24.

**Table 1**
**Systems Examined and Employee Type**

| System | Employee Type |
|---|---|
| Alameda County Employees' Retirement Association | Miscellaneous & Safety |
| City of Fresno Employees' Retirement System | Miscellaneous |
| City of Fresno Fire and Police Retirement System | Safety |
| City of Los Angeles Fire and Police Pension System | Safety |
| City of Los Angeles Water and Power Employees' Retirement Plan | Miscellaneous |
| City of San Jose Federated City Employees' Retirement System | Miscellaneous |
| City of San Jose Police and Fire Retirement Plan | Safety |
| Contra Costa County Employees' Retirement Association | Miscellaneous & Safety |
| Fresno County Employees' Retirement Association | Miscellaneous & Safety |
| Kern County Employees' Retirement Association | Miscellaneous & Safety |
| Los Angeles City Employees' Retirement System | Miscellaneous |
| Los Angeles County Employees' Retirement Association | Miscellaneous & Safety |
| Orange County Employees' Retirement System | Miscellaneous & Safety |
| Sacramento County Employees' Retirement System | Miscellaneous & Safety |
| San Bernardino County Employees' Retirement Association | Miscellaneous & Safety |
| San Diego City Employees' Retirement System | Miscellaneous & Safety |
| San Diego County Employees' Retirement Association | Miscellaneous & Safety |
| San Francisco City and County Employees' Retirement System | Miscellaneous & Safety |
| San Joaquin County Employees' Retirement Association | Miscellaneous & Safety |
| San Mateo County Employees' Retirement Association | Miscellaneous & Safety |
| Santa Barbara County Employees' Retirement System | Miscellaneous & Safety |
| Sonoma County Employees' Retirement Association | Miscellaneous & Safety |
| Stanislaus County Employees' Retirement Association | Miscellaneous & Safety |
| Ventura County Employees' Retirement Association | Miscellaneous & Safety |

All of the county pension systems were either founded or adapted in order to comply with the County Employees Retirement Law of 1937 (CERL). CERL is meant to codify the "public obligation to county and district employees who become incapacitated by age or long service in public employment and its accompanying physical disabilities by making provision for retirement compensation."[8] Its provisions require municipal governments to provide legally secure retirement benefits to all employees who work a sufficient length of time (typically five years). California cities have no corresponding statewide mandate, although many have adopted their own laws mandating and governing employee pension benefits.

## Structure

All of the plans in this report classify their members by types and tiers. There are two types: safety, which describes employees working in public safety such as firefighters and police, and miscellaneous, which describes all other employees. Tiers are subdivisions of the members of a certain type, usually based on the year an employee began working for the municipal government, though in some cases employees have the option to move between tiers. Different tiers generally indicate different employee contribution rates (the percentage of worker salary contributed) and benefit structures, e.g., tier 1 employees might receive 1.5 percent of their final average salary for each year they worked before retirement at age 50, while tier 2 employees might receive 1 percent.

## Funding

The systems are funded by a combination of employer—i.e., city or county—and employee contributions, as well as investment earnings. Employer contribution rates (the percentage of total employee payroll that the city or county pays into the pension system) are determined by calculating the total contributions needed to ensure the system has sufficient assets to meet its liabilities and then subtracting the share covered by employee contributions. Employee contribution rates are determined by the age at which an employee began working for the municipality, along with his type and tier.

8 California government code Section 31450-31485.18, "The County Employees Retirement Law of 1937."

## Accounting Methods and Assumptions

When calculating required contribution rates, the systems make a number of assumptions about how both their membership and their finances will change over time. These assumptions have substantial bearing on how the systems are funded.

One set of assumptions concerns features of the plan's membership, such as the age at which members will retire, how long retired members will live, how likely an employee is to leave or be fired, and so on. Though these assumptions are important and merit a deeper analysis, they involve behavioral modeling beyond the scope of this report.

We will focus instead briefly on the systems' accounting methods and assumptions, the most important of which are the liabilities discount rate and the investment return assumption. The liabilities discount rate is the rate at which a system discounts future liabilities to determine their present value; the present value reflects the value today for a stream of future payments. For example, the value of a stream of $100 payments for 10 consecutive years is far less than $1,000. The precise present value is based on an appropriate discount rate.

The investment return assumption is the rate at which assets are expected to increase on average each year. If $100 is invested this year, then the assumed rate of return is how much greater than $100 to expect to have a year from now, or the average expected rate over a longer period of years.

The discount rate and the investment return assumption are not the same, and conflating the two is a serious obstacle to a clear discussion of pension financing. The first determines the *present value of future liabilities;* the second determines the *future value of present assets*. Accordingly, they play different roles both in evaluating the financial health of a pension system and in determining contributions.

The discount rate is used to calculate a system's present liabilities. It enters into contribution calculations because it sets the size of a system's liabilities. That said, the discount rate is first and foremost *evaluative*. It is used to evaluate present liabilities, not to set how much needs to be contributed to finance either pension benefits or accumulated liabilities.

There is a well-established standard for discounting liabilities. In economics, liabilities are discounted at a rate that reflects the risk that they will not be paid. Because accrued retirement benefits are legally guaranteed, and

because a municipality cannot shut down its plans for current employees, the only conceivable scenario in which benefits would not have to be paid is municipal default. And because the risk of municipal default is reflected in the yield on municipal bonds, the appropriate discount rate to use for any particular system is in theory the yield on its long-term bonds. But because local municipalities rely heavily on state funds and, in practice, do not use consistent structures for bond sales, a more reliable measure is the long-term yield on California general obligation bonds, approximately 5 percent. As noted above, this is often called the "risk-free" rate, though of course any investment involves some degree of risk. All liabilities totals in this report are listed first under the actual discount rate a system uses and then under the risk-free rate of 5 percent.

Determining how much needs to be contributed is the role of the investment return assumption. The rate of return tells a system how much to expect in the future for each dollar of assets held in the present and for each new dollar of employer contributions. It is fundamentally *prescriptive*. The investment return assumption determines how much an employer should contribute to meet the system's financial obligation.

Recent SIEPR reports on California's statewide pension systems have covered some of the debate surrounding the correct assumed investment rate of return. This report will not argue for any particular assumption but will show the effects on pension costs, including required contributions, under different assumed investment rates of return:

- 5.0 percent, similar to relatively "risk-free" municipal bond yields[9]
- 6.2 percent, based on a blended 20th-century portfolio of equities and fixed income[10]
- 7.1 percent, based on roughly the 50th percentile of pension system earnings over the past 30 years[11]
- 7.75 percent, the most common expected rate used by California independent pension systems.[12]

See the sidebar "The Impact of Discount Rates and Assumed Rates of Return" for further discussion about discount rates and assumed investment rates of return in a non-pension setting.

## The Impact of Discount Rates and Assumed Rates of Return

Consider two families, each family saving for its child's college education. Say both expect to owe $200,000 in tuition, living expenses, and so forth in 16 years. Each family also considers these payments are essential and mandatory for the sake of the child's future. Accordingly, both "discount" the $200,000 at a risk-free rate (or more properly, a low-risk rate, similar to the interest rate on long-term California bonds), roughly 5 percent. The first family in fact invests in California bonds at 5 percent, which requires an investment today of $122,783 (=200,000/(1.05^16). The second thinks it can do better with stocks and expects an annual rate of return of 7 percent. To meet that entire future obligation, the second family today invests $67,747 (= 200,000/(1.07^16). Observe that these different approaches lead to very different current requirements. The difference? The first family can be nearly 100 percent certain that its current investment will guarantee payment of the $200,000 tuition bill in 16 years. The second family expects the same outcome, but its riskier approach (due to investments in volatile stocks) does not provide the same guarantee. In fact, it is probably only about 50 percent certain that its approach will result in a $200,000 tuition fund. Note that the amount owed by each family in 16 years is identical. The only difference is in the certainty, i.e., the risk of achieving the stated goals.

9 Sometimes called the Treasury rate.

10 This 6.2% figure is based on the performance of a hypothetical fund containing 72% equity and 28% income instruments between 1900 and 1999. It assumes an equity rate based on the 20th-century Dow Jones industrial annual average of 5.3%, plus 2% in dividends, less 0.5% in fees. Combined with income instruments with a net rate of return of 5.0%, this hypothetical fund would have earned an average annual rate of just under 6.2%. Based on Berkshire Hathaway, "Buffett letter to shareholders," p. 19, *http://www.berkshirehathaway.com/letters/2007ltr.pdf*, accessed June 4, 2011.

11 This corresponds to recent CalPERS history. The experience of the independent systems in this report may be different.

12 For more discussion on investment rates of return, see Joe Nation, "Pension Math: How California's Retirement Spending is Squeezing the State Budget," Dec. 13, 2011, *http://siepr.stanford.edu/system/files/shared/Nation_Statewide_Report.pdf*, retrieved Feb. 5, 2012.

The process of setting the discount rate and investment return assumption differs for private and public pension systems. Private systems base their investment return assumption on the composition of their investment portfolio and how much they expect the portfolio to earn. However, they are legally required to use a discount rate equal to that of high-grade corporate bonds. Public systems use the expected net return on their investments for both their investment return assumption and their discount rate.[13]

The other relevant feature of public pension system financial accounting is the distinction between the market and actuarial values of assets. The market value of assets is the current market value of a system's cash and investment holdings.[14] The actuarial value, typically the value systems report, involves the smoothing of the market value of assets by recognizing unexpected investment gains or losses over some multiyear period. In effect, any deviations between the expected and actual investment returns in a given year are phased into the actuarial value over multiple years. For example, if a system earns $100 million more than expected in returns in a given year and uses a five-year smoothing period, the market value of its assets will increase by the full $100 million, while the actuarial value will increase by only $20 million in the first year, and the remaining $80 million will be added to the actuarial value in $20 million increments over the next four years. Smoothing assumptions similarly reduce the negative implications of a large annual loss in market value. Smoothing is intended to reduce the volatility in contribution rates, so that contributions can remain relatively constant even through wide swings in investment returns year by year.

13 "Valuing Liabilities in State and Local Plans." Munnell, Kopcke, Aubry, Quinby; The Center for Retirement Research at Boston College. Nov. 11, 2010, *http://crr.bc.edu/briefs/valuing_liabilities_in_state_and_local_plans.html*, accessed Feb. 5, 2012.

14 Plus capital assets—e.g., buildings and software—minus any immediately payable costs, but these represent only a small fraction of the market value.

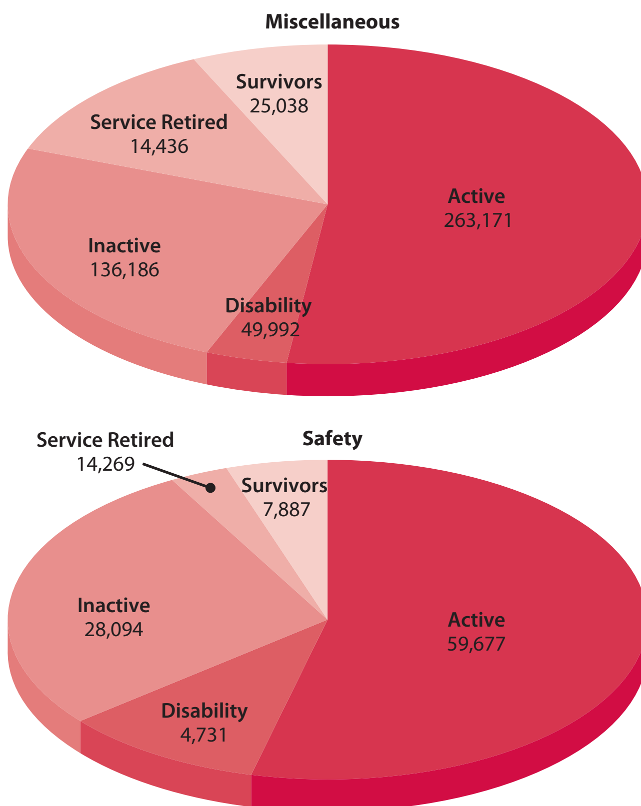
# III. The Systems in Aggregate

This section describes the membership, benefits, and financial standing of the local pension systems in this report, considered not as separate systems but in the aggregate.

## Membership

Collectively, the 24 systems have 603,480 members (Figure 1). Of that number, 322,848 are active members and 54,722 are vested inactive members not yet receiving benefits (consisting primarily of members who have quit or been terminated but have accrued pension benefits). Among the 225,910 members receiving pension benefits, 164,280 are service retirees, 28,705 are disability retirees, and 32,925 are relatives, dependents, or survivors of municipal employees. There are roughly 1.5 active members for every member receiving benefits. The majority of members (82 percent of active members, and 78 percent of benefit recipients) are classified as miscellaneous.

**Figure 1**
**Membership of Aggregated Independent Systems**




Source: Systems' Actuarial Valuation Reports, 2010-2011.

## Benefits

The systems use different variations of the same basic benefit structure. An employee's pension benefit is determined by member type and tier, years of service, age of retirement, and highest average salary (typically over 12 consecutive months), according to a benefit formula of the form x% @ age y, where x is the percentage of final average compensation and y is retirement age.[15] Though the formulas vary slightly, most are similar to the examples shown below (Table 2).

**Table 2**
**Pension Benefit Formula Examples**

| Member Type | Formula | Maximum Annual Benefit as a Percentage of Final Average Salary |
|---|---|---|
| Miscellaneous | 2.5% @ 55 - 2.8% @ 65 | 70% |
| Safety | 3% @ 50 | 90% |

Source: Systems' Actuarial Valuation Reports, 2010-2011.

Benefits across all of the plans are significantly higher for safety than for miscellaneous members. The average pension benefit in 2009-2010 for miscellaneous members was $34,461; for safety members, it was $67,718. This includes all beneficiaries, regardless of the number of years of service.[16]

## Current Funding Level and Unfunded Liabilities

Because each of the plans uses slightly different accounting methods, aggregated liabilities and assets are difficult to calculate.[17] However, we can provide a reasonable approximation of aggregate liabilities by adjusting for the most important account factor, the discount rate. We can also determine the aggregate market value of assets, because the market value is not adjusted by actuarial

15 For example, a formula 3% at 50 indicates 3% of final salary at a retirement age of 50. Assuming a $50,000 final salary, the retirement benefit after 20 years of service equals 3% x 20 years x $50,000, or $30,000. After 30 years, the retirement benefit would equal 3% x 30 years x $50,000, or $45,000.

16 In short, this is not the average benefit for a "career" retiree, i.e., someone who worked 30 or more years. That figure, while unavailable, would likely be much higher.

17 We exclude the actuarial value of assets here precisely because of this complexity. However, as indicated in the Appendix, we report actuarial values for each system.

assumptions. Table 3 indicates aggregate funded ratios, i.e., liabilities divided by the market value of assets and aggregate unfunded liabilities using 5.0 percent, the risk-free discount rate. As indicated, the funded ratio is 53.6 percent. For purposes of comparison, this is higher than the 45.1 percent estimated rate under similar assumptions made for CalPERS as of June 30, 2011.[18] Unfunded liabilities are 568.1 percent of total payroll,[19] meaning that for every dollar active members of the systems earn in salary, the systems in the aggregate have $5.68 in unfunded liabilities.

**Table 3**
**Aggregate Funding Status**

| | |
|---|---|
| Market Value of Assets | $156.721 billion |
| Actuarial Accrued Liabilities[a] | $292.422 billion |
| Unfunded Liabilities | $135.701 billion |
| Funded Ratio | 53.6% |
| Unfunded Liabilities as a Percentage of Payroll | 568.1% |

a Based on a risk-free rate of 5.0%.
Source: Systems' Actuarial Valuation Reports, 2010-2011.

## Contribution Rates

Employer contributions are used to finance both the system's normal cost—the annual cost of providing retirement benefits—and the unfunded cost—the cost to eliminate unfunded liabilities when investment returns fall short of the assumed investment rate of return. The aggregate reported 2011-2012 employer contribution rate averages 23.8 percent of covered payroll, consisting of 12.7 percent for normal cost and 11.1 percent for financing unfunded liabilities. This means that for roughly every dollar contributed to fund pension benefits, nearly another dollar is contributed to finance the unfunded liabilities the system has accrued.

## Aggregate Pensions Costs in Context

Over the past 13 years, the relative cost of funding the 24 systems has increased significantly. In 1999,[20] pension costs were 4.1 percent of aggregate municipal spending;[21] by 2011, that figure had more than doubled to 9.6 percent.

Growth relative to other forms of municipal spending has likewise been substantial. In 1999, total annual aggregate required contributions, i.e., the actuarially determined amount of funding necessary to ensure the system will have sufficient resources to provide for future retirement benefits, totaled $1.23 billion. In 2011, that figure reached $5.03 billion, equal to a compound annual growth rate of 12.5 percent.

Perhaps most indicative of the rapid increase in pension costs, however, is that the aggregated annual growth rate outpaced that of all other municipal spending categories. Between 1999 and 2010,[22] pension spending grew at 11.4 percent per year. In contrast, aggregate municipal spending on education grew 5.6 percent, public assistance 4.5 percent, public protection 5.3 percent, health and sanitation 4.2 percent, recreation and cultural services 5.3 percent, and miscellaneous functions 5.7 percent (Figure 2). Pension spending remained slightly greater than that on public ways and facilities, with a 10.4 percent average annual rate of growth.

18 This assumes a CalPERS market value of assets of $237.5 billion and a discount rate of 4.5%. The discount rate for CalPERS was arrived at in a slightly different manner. For further details, see Joe Nation, "Pension Math: How California's Retirement Spending is Squeezing the State Budget," pp. 23-25, Dec. 13, 2011, *http://siepr.stanford.edu/system/files/shared/Nation_Statewide_Report.pdf*, retrieved Feb. 5, 2012.

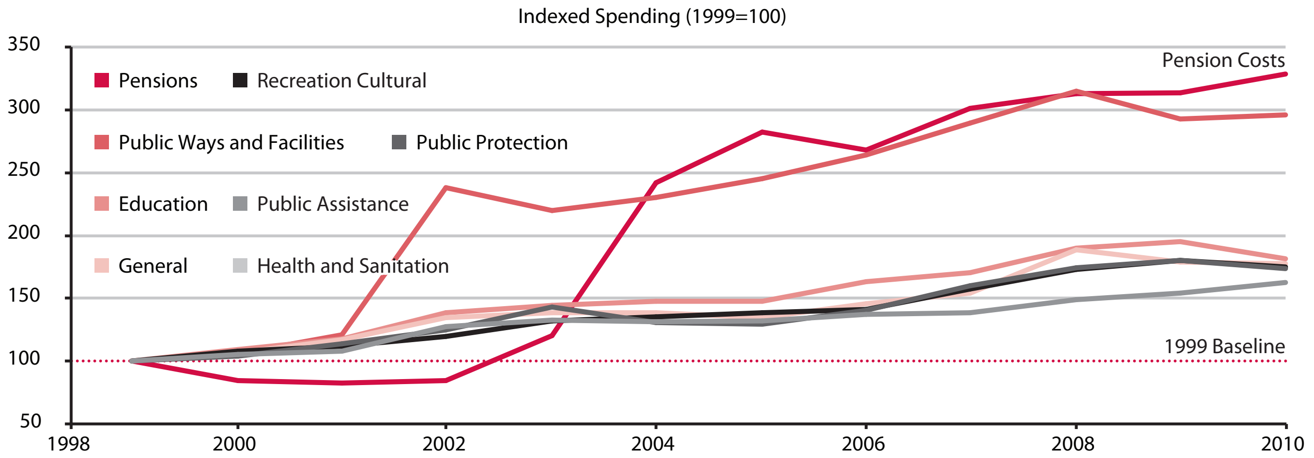
19 This reflects covered payroll, which typically includes salaries and wages but excludes benefits and overtime.

20 1999 is an appropriate starting year for at least two reasons. First and foremost, Fiscal Year 1998-1999 was the last year in which the state and many local governments could claim budgets that were largely structurally balanced. In addition, increased state public retirement benefits were approved in 1999, prior to the start of increased benefits at the municipal level.

21 Aggregate municipal spending includes the total of general and special funds throughout this report.

22 Spending on other budget categories is not available in 2011.

**Figure 2**
**Aggregate Municipal Spending by Category, 1999-2010**

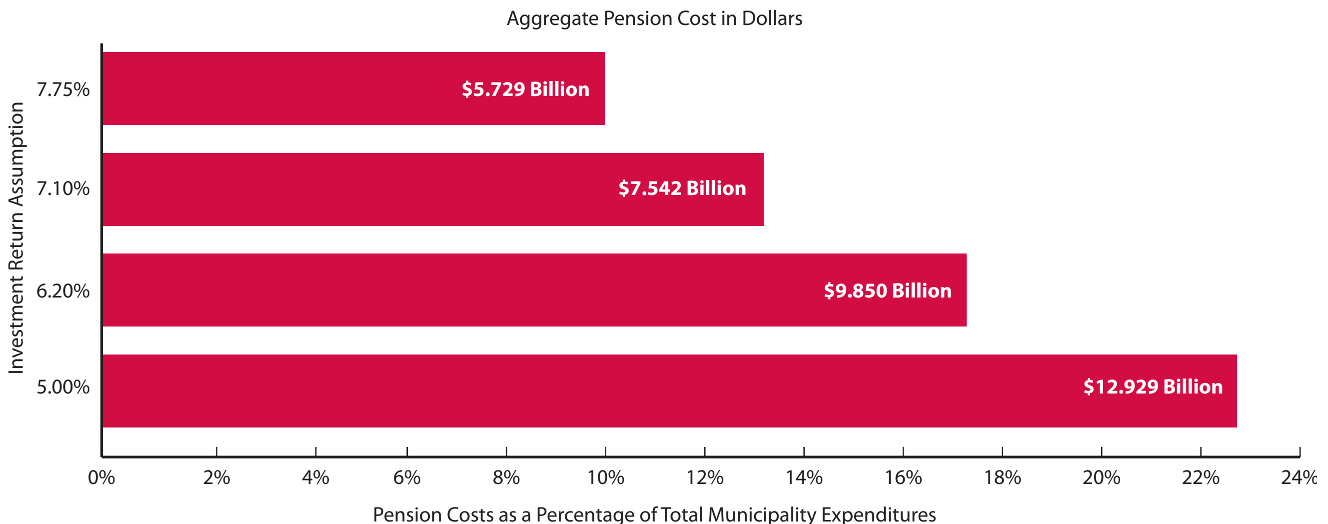



Source: Systems' Actuarial Valuation Reports, 2010-2011, Municipal Comprehensive Annual Financial Reports, 1999-2010, Municipal Adopted Budgets, 2011.

These aggregated pension costs reflect contributions based on each plan's assumed investment rates of return for each year, typically 7.75 percent. Under more realistic assumptions, the amount required to avoid a sharper drop in funded ratios would have been significantly higher. Figure 3 illustrates the impact of different investment return assumptions on pension costs and on pension cost share of municipal spending in the current year.[23] At current assumptions, pension costs total $5.729 billion, a 10.1 percent share of total expenditures. At an investment return assumption of 7.1 percent, total costs rise to $7.542 billion, or 13.4 percent of total expenditures. At 6.2 percent, total costs are $9.851 billion, 17.4 percent of total projected 2011-2012 expenditures. At the risk-free rate of 5.0 percent, expenditures rise to $12.929 billion and occupy 22.9 percent of total municipal expenditures.

23 In calculating the effect of a decrease in the assumed rate of return, we assume that each 1% decrease results in a 16% increase in the contribution rate for safety members and a 9% increase for miscellaneous members. While this differs across each pension system, this heuristic is identical to the contribution rate effects for public agencies as described by CalPERS. See CalPERS, "Agenda Item 7a to Members of the Benefits and Administration Committee," Attachment 2, Mar. 15, 2010, *http://www.calpers.ca.gov/eip-docs/about/board-cal-agenda/agendas/bpac/201103/item7a-0.pdf*, retrieved Nov. 20, 2011.

**Figure 3**
**2012 Aggregate Pension Contributions, Share of Total Expenditures**




Source: Systems' Actuarial Valuation Reports, 2010-2011, and authors' calculations.
Note: Most systems utilize a 7.75% investment return assumption, although as detailed in the appendix, some do not. Aggregate cost figures here are based on the assumptions made by each independent system.

# IV. Comparing the Systems

## Comparisons

In this section, we compare the benefits and financial health of the 24 public pension systems examined in this report. All benefit information refers to 2009-2010, the latest year available.

### Benefits

Though all systems offer variations on the same basic benefit structure, these variations can be quite complex, especially where they involve giving employees the option of choosing amount alternative benefit schemes. For instance, it is difficult to say which is more generous: retirement at 55 with 2 percent of final average salary per year of service, or the choice between retirement at 55 with 1.5 percent and at 60 with 2.5 percent. Our comparisons, then, will not try to quantify which benefits are "best" or "most generous" for employees but instead focus on benefit averages and on those structural features (such as cost of living adjustments) that tend to be more important for determining the ultimate costs of providing benefits.

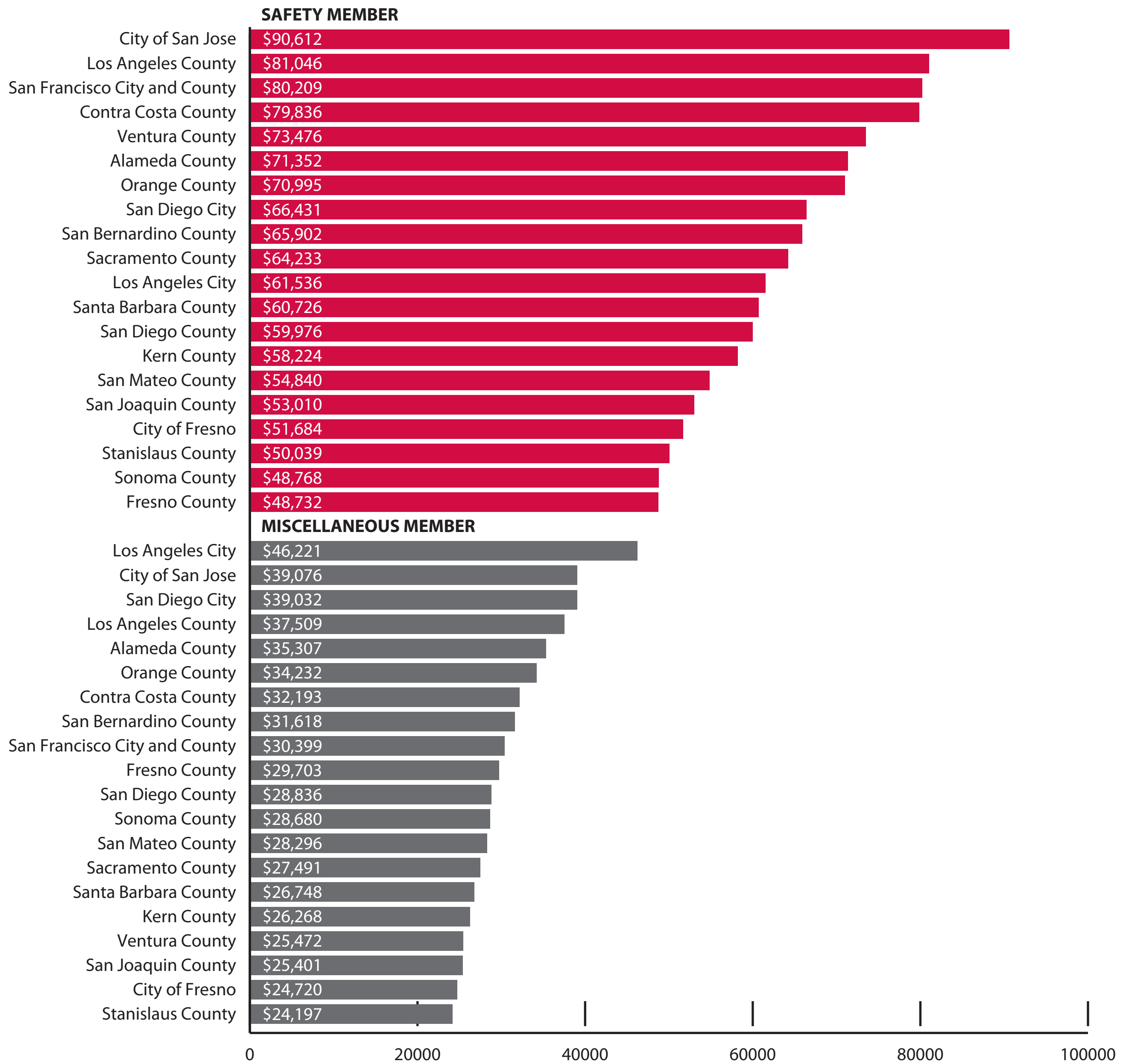
### Average Annual Benefit Levels

Average annual benefits for service retirees, i.e., members who did not retire on disability,[24] vary considerably across systems. For miscellaneous employees, the highest annual benefit is $46,211 in Los Angeles City, and the lowest is $24,179 in Stanislaus County (Figure 4). Los Angeles City's average miscellaneous annual benefit is more than $7,000 higher than the next highest benefits, which are in San Jose. In fact, both of L.A. City's miscellaneous systems (the Los Angeles City Employees' Retirement System and the City of Los Angeles Water and Power Employees' Retirement System) pay average annual pension benefits higher than those of any other system. Although some of this difference can be attributed to a higher cost of living, it is noteworthy that San Francisco miscellaneous retirees, who face a higher cost of living, receive an average annual benefit of only $30,399.[25]

24 As noted earlier, a service retiree is not the same as what some call a "career' retiree," typically defined as someone who worked at least 30 years. Service retirees include anyone who receives retirement pay, regardless of the number of years of service.

25 Because the figures here include all service retirees, we cannot conclude, however, that benefits in Los Angeles City are more generous for career retirees. For example, the relatively low average annual benefits in San Francisco could be driven by a disproportionate number of service retirees who work only a few years.

**Figure 4**
**Average Annual Retirement Benefit, Service Retirees**




Source: Systems' Actuarial Valuation Reports, 2010-2011.
Note: Service retirees include anyone who receives retirement pay, regardless of the number of years of service.

The range is still wider for safety employees, with average benefits ranging from a low of $48,732 in Fresno County to $90,612 in the City of San Jose.

### Cost of Living Adjustments (COLA)

An important feature of pension benefit structure is how it incorporates inflation. All systems contain some form of cost of living adjustment, but these are implemented differently. Table 4 summarizes COLAs among independent systems. Note that San Jose is the only municipality to offer automatic COLAs independent of actual inflation.[26]

**Table 4**
**COLA Adjustments**

| COLA Type | Municipalities |
|---|---|
| Inflation Linked, Maximum 2.5-3%, No Banking | Los Angeles County, Alameda County, Kern County, |
| Inflation Linked, Maximum 2%, No Banking | Contra Costa County[a] |
| Inflation Linked, Maximum 2%, Banking | San Francisco City and County, San Bernardino County, San Diego City, |
| Inflation Linked, Maximum 3%, Banking | Los Angeles City, Orange County, San Diego County, Sacramento County, Fresno County, Ventura County, San Joaquin County, Santa Barbara County, Stanislaus County, |
| Inflation Linked, Maximum 4-5%, Banking | San Mateo County, City of Fresno |
| Automatic 3% | City of San Jose |
| Discretionary COLA | Sonoma County |

a This is based on the most current information reported by Contra Costa to the State Controller. However, a recent letter from the CCCERA actuary suggests banking. See *http://www.cccera.org/agenda%20items/2012/9.2.22.12.pdf*, accessed Feb. 19, 2012.

Source: Systems' Actuarial Valuation Reports, Membership Handbooks, and Guidelines.

### Final Average Salary

Another important feature of benefit structure is the determination of final average salary. A majority of independent systems based final average salary on the last one year of work, while a minority based this on three years (Table 5).

**Table 5**
**Final Average Salary Determinations, 2010-2011**

| Final Average Salary | Systems |
|---|---|
| 1 Year | Los Angeles County, San Francisco, Los Angeles City, San Diego County (hired prior to 2009), Sacramento County (tier 1), San Bernardino County, Contra Costa County, Alameda County (hired before 1983), San Diego City, Fresno County, Ventura County (safety), Kern County, City of San Jose, San Joaquin County, Sonoma County, Santa Barbara County, Stanislaus County, |
| 3 Years | Orange County, San Diego County (after 2009), Sacramento County (tier 2), Alameda County (hired after 1983), Ventura County (miscellaneous), San Mateo County, City of Fresno |

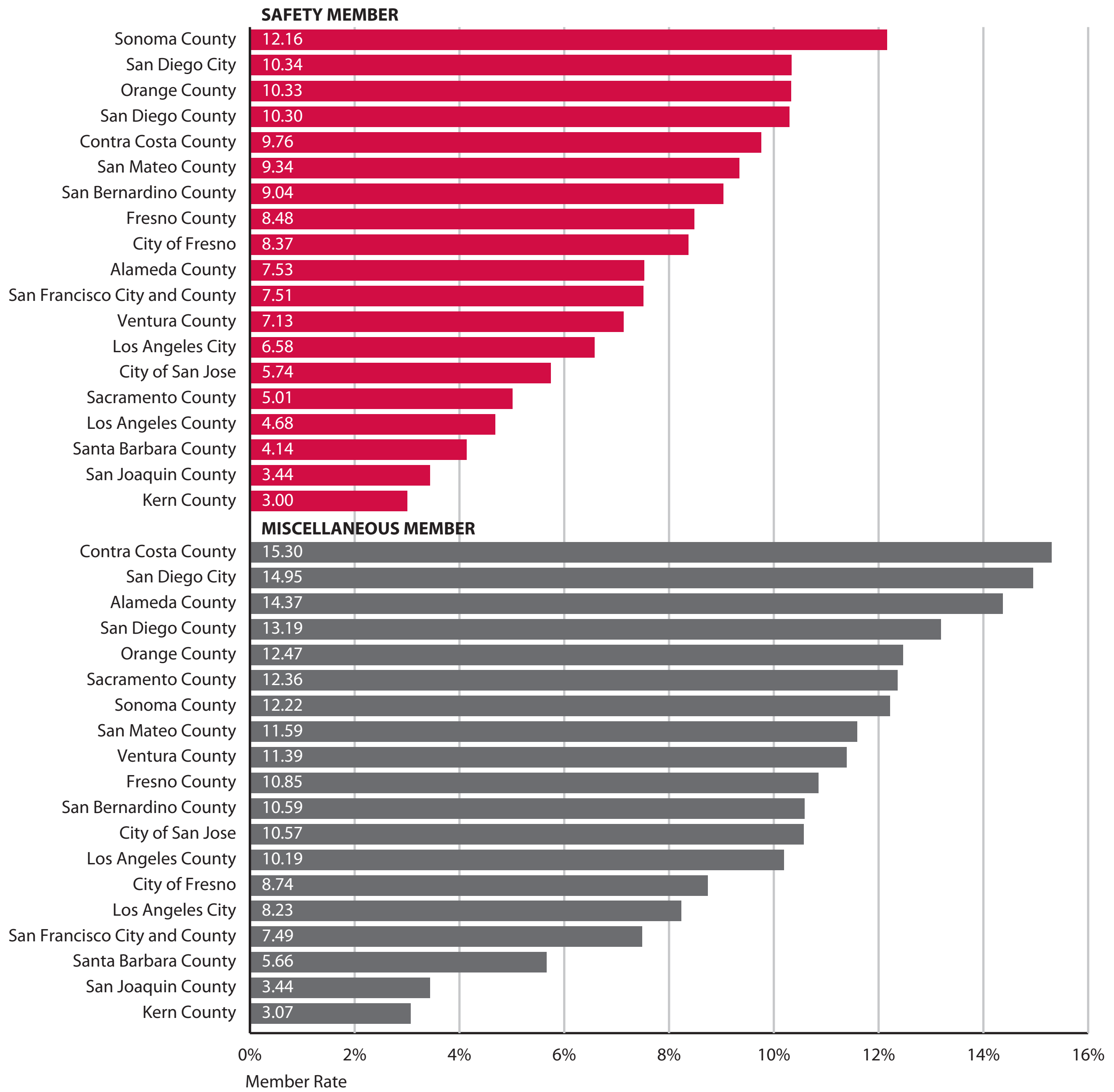
Source: Systems' Actuarial Valuation Reports, Membership Handbooks, and Guidelines.

## Member Contribution Rates

As noted in Section II, active member contributions provide one component of pension system funding. The higher the contribution rate, the greater the share of funding borne by employees. Safety members contribute at a higher average rate (10 percent) than general members (7 percent) (Figure 5). Of note, the ratio of pension *benefits* for safety retirees to that for miscellaneous retirees (approximately 2:1) is greater than the ratio of contribution rates for safety compared with miscellaneous employees (10:7).

26 Several other systems offer automatic COLAs for small subgroups of employees, but these employees generally have to "purchase" the automatic COLA by contributing a greater share of their salaries to the pension system.

**Figure 5**
**2010-2011 Member Contribution Rates**




Source: Systems' Actuarial Valuation Reports, 2010-2011.

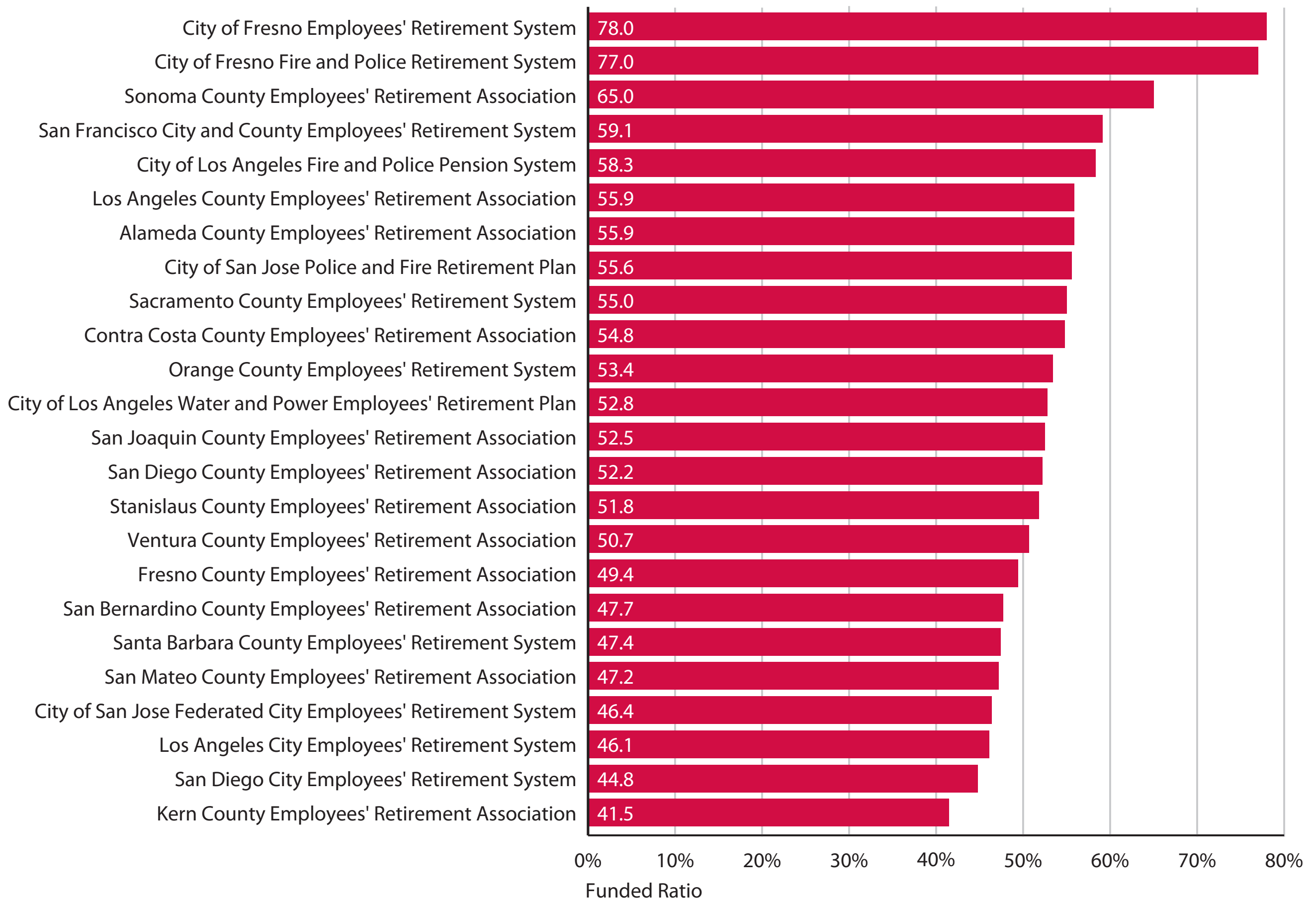
## Financial Health

### Funded Status

Funded status calculations are problematic because systems utilize different smoothing periods, which affects asset values, and different discount rates, which affects reported liabilities. In addition, some systems have issued Pension Obligation Bonds (POBs), which can obscure their true funded status.[27] A thorough analysis of the impacts of these different attributes is beyond the scope of this report. Instead, we compare funded ratios on a market value basis, using a uniform funded ratio and a risk-free discount rate (Figure 6). The average plan is 54.1 percent funded on a market value of assets basis (53.0 percent on an actuarial basis), although there is considerable variation at the ends of the range. Most notably, the City of Fresno's two systems have an aggregate funded ratio of 78.5 percent, while the Kern County system is only 41.5 percent funded. None of the systems is at or above 80 percent funded, which is the conventional benchmark for the minimum funded ratio.

27 In theory, POBs permit systems to borrow at rates lower than their expected investment rate of return, e.g., borrow at 4 percent and earn at 8 percent. The danger is, of course, that this arbitrage effort fails, putting the pension system in an even worse financial condition.

**Figure 6**
**Funded Ratios**

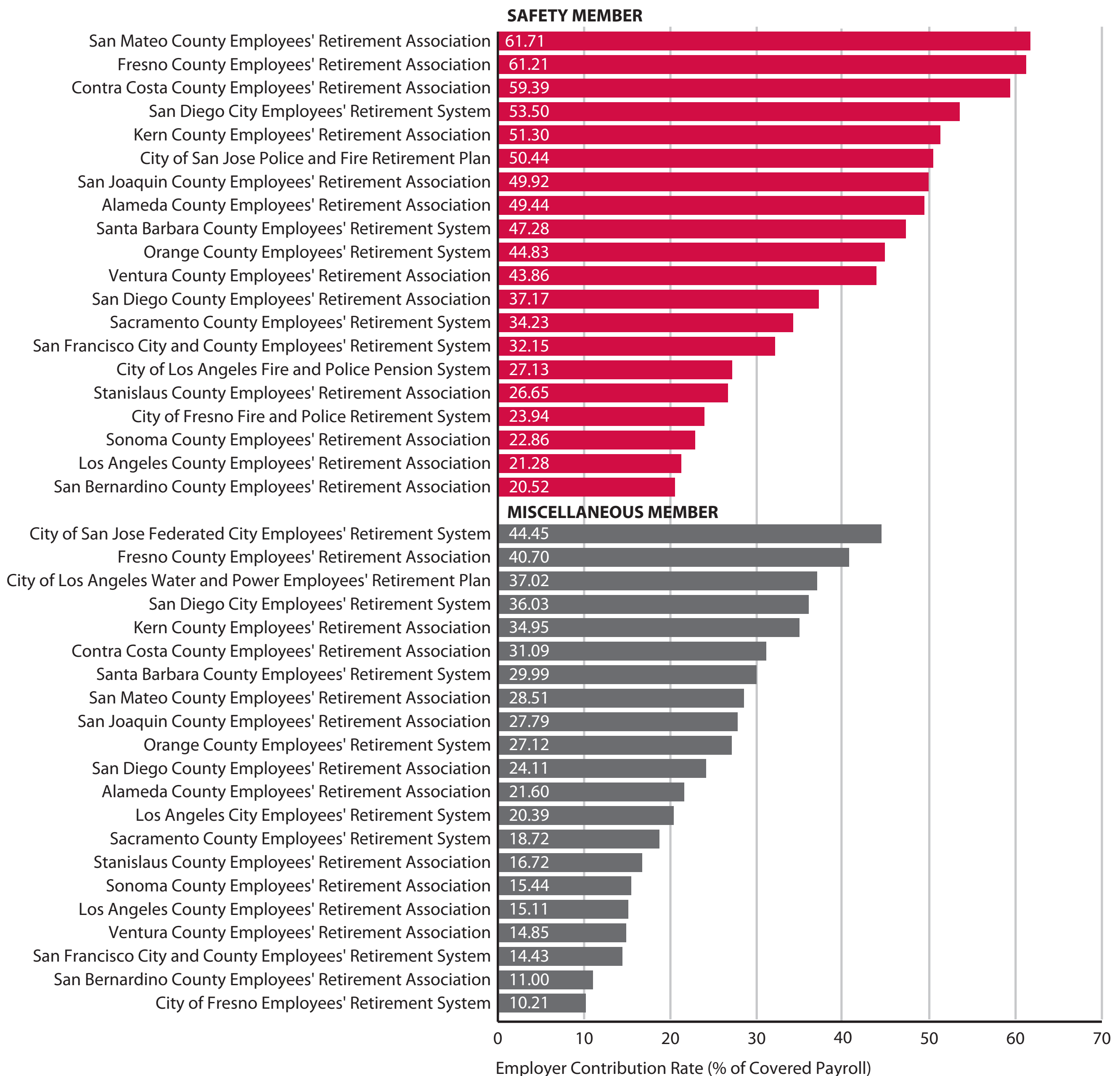



Source: Systems' Actuarial Valuation Reports, 2010-2011.

## Contribution Rates

Systems generally maintain higher employer contribution rates for safety members than for miscellaneous members, both in normal cost and in unfunded liabilities financing. Therefore, for the purposes of comparison, we look at the contribution rates for miscellaneous and safety employees, separately. Figure 7 compares total contribution rates across the 24 systems. The average employer contribution rate for miscellaneous employees is 24.8 percent; for safety employees, it is 40.9 percent.

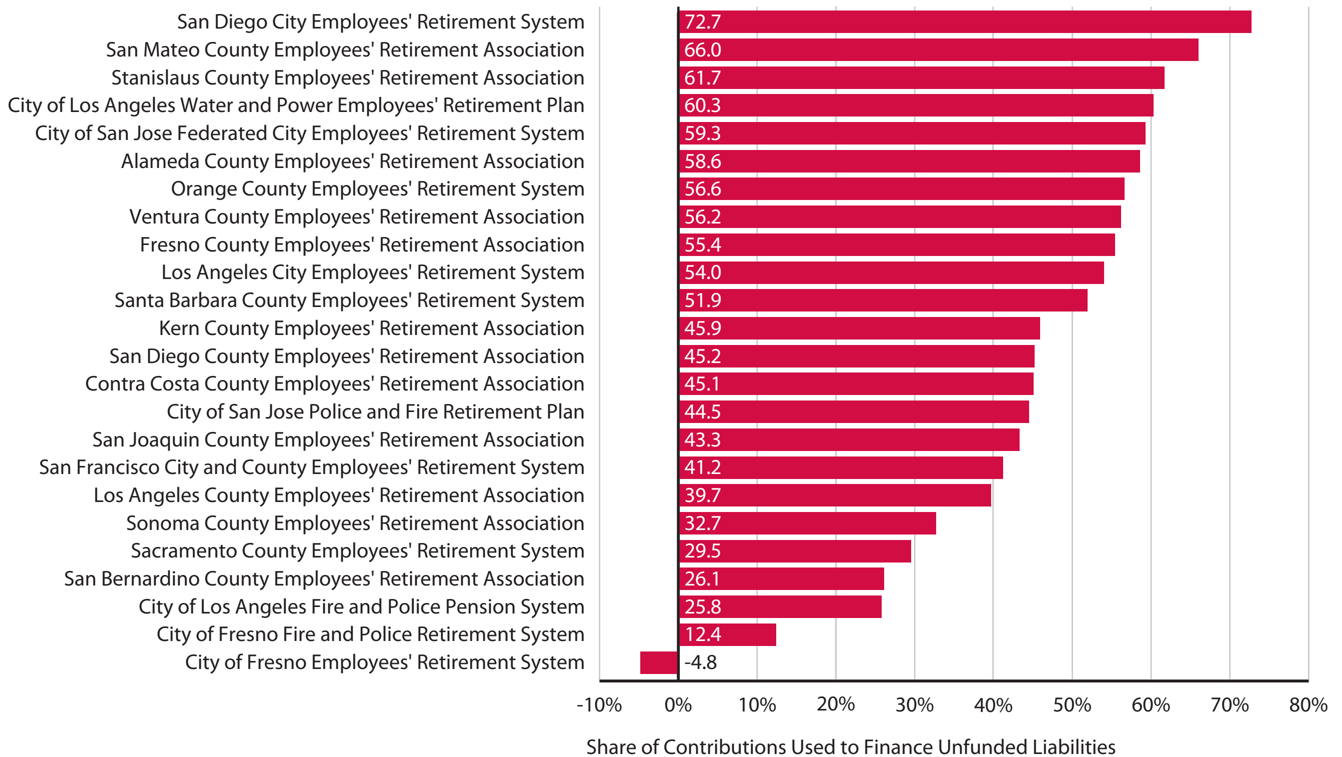
**Figure 7**
**Employer Contribution Rates**




Source: Systems' Actuarial Valuation Reports, 2010-2011.

As noted in Section II, employer contributions are used to fund the system's normal cost and to finance its unfunded liabilities. The contribution rate required to fund the latter depends in large part on assumptions about the amortization of unfunded liabilities, which varies across systems. (A system could experience a high unfunded contribution rate because of shorter amortization periods.) Figure 8 compares the relative share of unfunded to normal cost contribution rates. For example, in the case of the Orange County Employees' Retirement System (OCERS), 58 percent of the total contribution rate occurs due to unfunded liability costs. For combined safety and miscellaneous employees, the average share of contributions used to finance unfunded liabilities is 52 percent.

**Figure 8**
**Share of Employer Contributions Used to Finance Unfunded Liabilities**



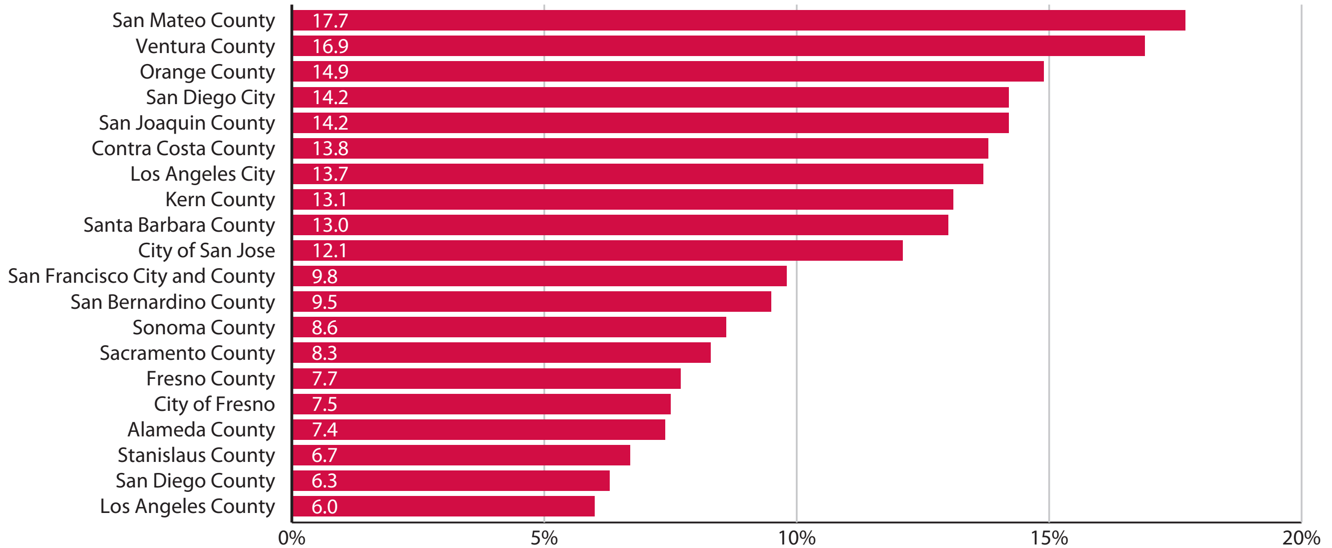

Source: Systems' Actuarial Valuation Reports, 2010-2011.

## Pension Costs as a Percentage of Municipal Spending

Employer pension costs for these 24 systems now constitute a significant share of total city or county expenditures (Figure 9). The average[28] pension cost as a share of municipal expenditures was 11.1 percent in 2011, with the highest share at 17.7 percent in San Mateo County and the lowest at 6.0 percent in Los Angeles County. Pension costs as a share of all expenditures in 2011 were, on average, five times as high as in 1999.

28 This average is unweighted.

**Figure 9**
**Pension Share of Total Expenditures**



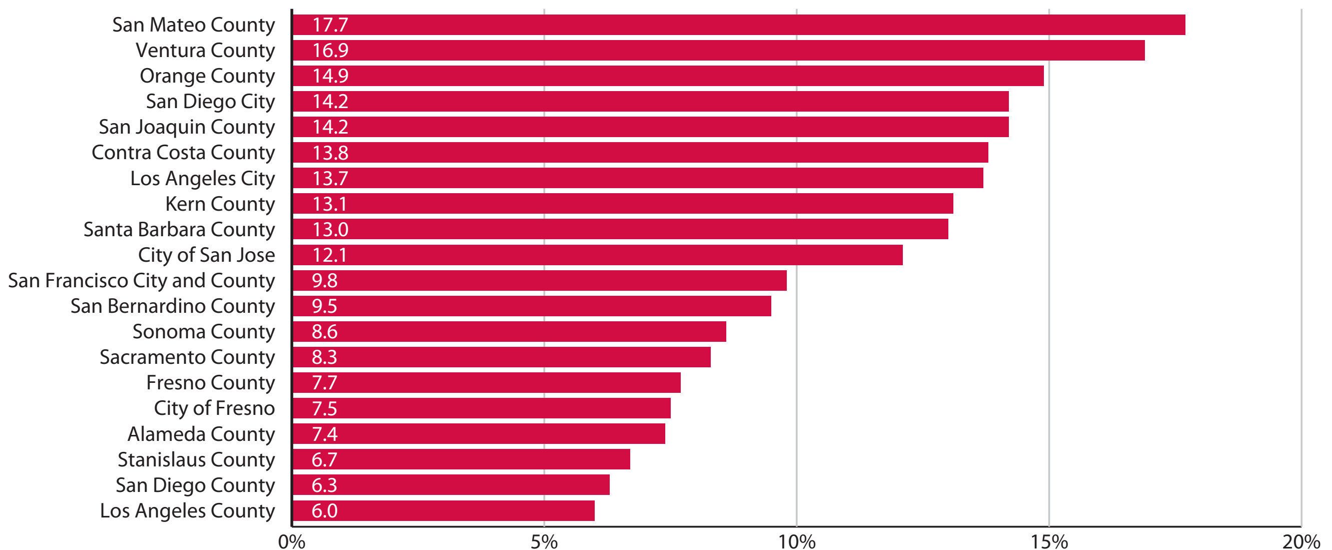

Note: Municipalities not listed had contributions at or near $0 in 1999.
Source: Systems' Actuarial Valuation Reports, 2010-2011, Municipal Comprehensive Annual Financial Reports, 1999-2010, Municipal Adopted Budgets, 2011.

## Pension Costs Annual Growth Rates

Pension cost annual growth comparisons are slightly more difficult, since employee contributions in 1999 for many systems covered the entirety of the contribution required to fund future liabilities under assumptions used at that time. Among the remaining plans[29], the average annual growth rate for pension costs from 1999 to 2011 averages 13.7 percent, ranging from 31.6 percent for Orange County to 6.0 percent for Los Angeles County (Figure 10).

29 We also exclude Ventura County, which made exceptionally low contributions in 1999.

**Figure 10**
**Pension Expenditure Average Annual Growth, 1999-2011**




Source: Systems' Actuarial Valuation Reports, 1999-2011.

# V. Conclusions

Sections I-IV examined funded levels, membership, benefit levels, employee and employer contribution rates, and overall pension costs for California's 24 largest independent public employee pension systems. The Appendix provides details on each of these 24 independent systems. This section offers conclusions and recommendations.[30]

## Financial Health and Impacts

Considered in the aggregate and using a 5 percent discount rate, unfunded liabilities for the 24 systems total $135.7 billion, with a funded ratio of 53.6 percent. At 7.75 percent, the discount rate currently used by most systems, the unfunded amount is $36.0 billion. This funded ratio of 81.8 percent is just above the conventional benchmark for minimum funded levels.

Aggregate pension costs have expanded at a rate of 11.4 percent per year, roughly double that of most other spending categories. This rapid growth has led to pension expenditures occupying 10.1 percent of total municipal spending. That rapid growth is likely to accelerate over the foreseeable future, exerting pressure on spending in other categories. Using realistic assumptions about investment rates of return, aggregate pension costs increase substantially. At a 6.2 percent rate, the aggregate pension cost share increases to 17.4 percent.

The systems in this report are, however, not monolithic. There is considerable variation among individual systems:

- The City of Fresno's two systems have an aggregate funded ratio of 78.5 percent, while the Kern County system is 41.5 percent
- Pensions occupy 17.7 percent of total expenditures in San Mateo County but only 6.0 percent in Los Angeles County
- Average annual pension cost growth ranges from 31.6 percent for Orange County to negative 3.6 percent for Fresno County.

30 For a broader discussion of recommendations, see Joe Nation, "Pension Math: How California's Retirement Spending is Squeezing the State Budget," pp. 39-48, Dec. 13, 2011, *http://siepr.stanford.edu/system/files/shared/Nation_Statewide_Report.pdf*, retrieved Feb. 5, 2012.

## Benefit Levels

There is little variation among benefit structure. All of the systems employ traditional defined benefit formulas, commonly expressed as x% of final salary at age y. Virtually all offer COLAs. Most based final salary on the final one-year of employment, creating pressure for employees to "spike" income.

Not surprisingly, the average annual benefit level for a safety member ($67,718) is nearly double that for a miscellaneous member ($34,461). For miscellaneous employees, the highest annual benefit is $46,211 in Los Angeles City, and the lowest is $24,179 in Stanislaus County. For safety employees, average benefits range from a low of $48,732 in Fresno County to $90,612 in the City of San Jose. San Jose's pension systems rank among the two highest in terms of average annual benefits for both safety and miscellaneous employees.

## Assumptions and Reporting

Like virtually all public employee pension systems, the 24 examined in this report discount their future liabilities at an expected rate of return, typically 7.75 percent. As noted, this practice is at odds with that used in the private sector, where similarly structured pension systems are required by law to discount their liabilities at a high-grade corporate bond rate. This practice of discounting at high assumed rates of return is also at odds with standard practice in economics, which holds that pension liabilities are full-recourse obligations that must be paid without regard to the performance of pension fund investments. As such, each of the systems substantially understates liabilities and overstates funded ratios.

Assumptions about the value of assets, liabilities, and funded status vary across the systems in this report. That variance complicates cross-system comparisons. Indeed, changes in assumptions by individual pension systems make year-to-year comparisons difficult. There are, in effect, few standards for uniform reporting. Systems may now arbitrarily change assumptions or methods involving investment rates of return, amortization periods, asset smoothing, and other key factors. Not surprisingly, those changes typically exaggerate the financial well-being of systems, delaying awareness of potential problems and solutions.

# Appendix: Independent Pension System Descriptions

This appendix provides additional detail on independent pension system background, retirement benefits, funded status, and pension costs. It is organized by municipality rather than by pension system since some municipalities, e.g., the City of Los Angeles, have more than one pension system based on employee type. Independent systems are listed starting with those with the largest pension system assets.

## Los Angeles County

The Los Angeles County Employees Retirement Association (LACERA) is the primary provider of retirement benefits for both the miscellaneous and safety employees of Los Angeles County and four subsidiary districts. However, these four subsidiary districts constitute less than 0.1 percent of the total employees in LACERA. As such, Los Angeles County bears virtually the entire LACERA pension obligation.[31]

Established by the County Employees Retirement Law of 1937, the retirement system currently includes 92,786 active employees and 54,473 benefit recipients. As of June 30, 2011, the system held $39.5 billion in assets at market value, making it the largest independent pension plan in California and the largest county pension plan in the nation.

### Retirement Benefits

LACERA bases annual pension benefits on the number of years of service and average salary over the final, consecutive 12 months of work.[32] Employee benefits by member type are shown in Table A1 below.

31 Since 1971, LACERA has administered a retiree health care benefit program, which we exclude from our analysis. As a result, our figures do not capture the full cost of LACERA to the county, nor the full value of pension benefits accruing to retirees.

32 Annual benefits are based on a 36-month salary for a limited number of employees.

**Table A1**
**LACERA Employee Benefits**

| Member Type | Tier | Formula | Maximum Annual Benefit as Percentage of Final Average Salary | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|---|
| Miscellaneous | A | 1.48% @ 50 - 2.62% @ 62 | 100% | 2% | 65% | No |
| Miscellaneous | B | 1.25% @ 50 - 2.62% @ 62 | 100% | 0% | 1% | No |
| Miscellaneous | C | 1.18% @ 50 - 2.43% @ 65 | 100% | 0% | 1% | No |
| Miscellaneous | D | 1.18% @ 50 - 2.43% @ 66 | 100% | 63% | 14% | Yes |
| Miscellaneous | E | 1.18% @ 50 - 2.43% @ 67 | 100% | 34% | 19% | Yes |
| Safety | A & B | 1.25% @ 41 - 2.62% @ 55 | 100% | 1 | 1 | No(A)/Yes(B) |

Source: LACERA Membership Guidelines.

Since 1983, county employees have not participated in Social Security. Members hired before 1983 who contributed to Social Security are eligible to receive those benefits, although pension benefits are offset by a factor proportional to the number of years worked with Social Security coverage. Benefits are increased by 2% percent or 3% percent annual cost of living adjustments based on the Consumer Price Index (CPI), depending on the specific plan.

The average annual pension benefit in 2009-2010 for service retirees was $37,509 for miscellaneous members and $81,046 for safety members, higher than the corresponding unweighted averages of $31,912 and $64,581, respectively, for the 20 systems in this report. LACERA's average benefit is the fourth highest for miscellaneous employees and second highest for safety employees among the 20 municipalities included in this report.[33]

### Funded Status

The financial health of LACERA declined steadily from 1996 to 2010, though the decline has accelerated in recent years. Using the reported actuarial value of assets, its funded ratio under the assumed 7.75 percent discount rate fell from 102.6 percent in 1996 to 83.3 percent in 2010, the date of its latest actuarial valuation. Although LACERA realized a high positive return on its investments in 2010-2011, the plan has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets. As a result, its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, LACERA has a current funded ratio of 84.6 percent.

A plan is typically considered well-funded if its funded ratio is greater than 80 percent, and LACERA currently meets that standard despite the fall in its historical funded ratio. However, using a risk-free rate to estimate future liabilities reduces LACERA's funded ratio to 55.9 percent (Table A2).

**Table A2**
**LACERA Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $39.452 billion |
| Actuarial Value of Assets | $38.839 billion |
| Actuarial Accrued Liabilities[a] | $70.546 billion |
| Funded Ratio (Market Value) | 55.9% |
| Funded Ratio (Actuarial Value) | 55.1% |
| Unfunded Liabilities | $31.706 billion |
| Unfunded Liabilities Per Dollar of Payroll | 474.4% |

a Assumes risk-free discount rate of 5.0%.
Source: LACERA Actuarial Valuation, 2010.

### Pension Costs

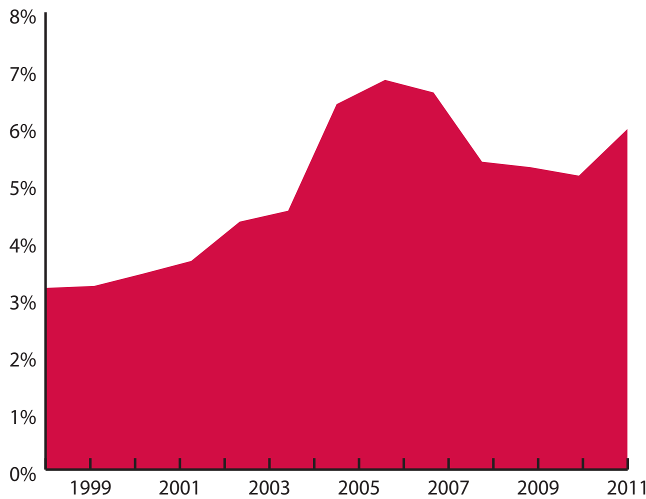
Increasing pension costs have compounded the challenges posed by a sharp decline in county revenues. Pension costs increased from 3.2 percent of total county expenditures in 1999 to 6.0 percent in 2011 (Figure A1).

In 1996, Los Angeles County's annual required contribution[34] to LACERA was $287.5 million. In 2011, it was $999.6 million, or an annual average growth rate of 8.6 percent. Pension cost growth outpaced that of all other county spending categories. Between 1996 and 2011, pension costs increased at an average annual rate greater than county spending on education (6.1 percent), public assistance (1.9 percent), public protection (3.6 percent), health and sanitation (5.6 percent), public ways and facilities (3.1 percent), recreation and cultural services (3.0 percent), and miscellaneous functions (6.6 percent).

33 Throughout the Appendix, we calculate weighted average benefits for municipalities that have more than one pension system.

34 The Annual Required Contribution is the actuarially determined amount of funding necessary to ensure the system will have sufficient resources to provide for future retirement benefits. Throughout this Appendix, we use the annual required contribution (ARC), rather than the actual contribution, as the measure of pension cost, because any unpaid contributions in one year carry over into an employer's net pension obligation in following years. In this sense, the ARC represents the true cost of maintaining the pension fund in a given year, whether the cost is paid that year or deferred.

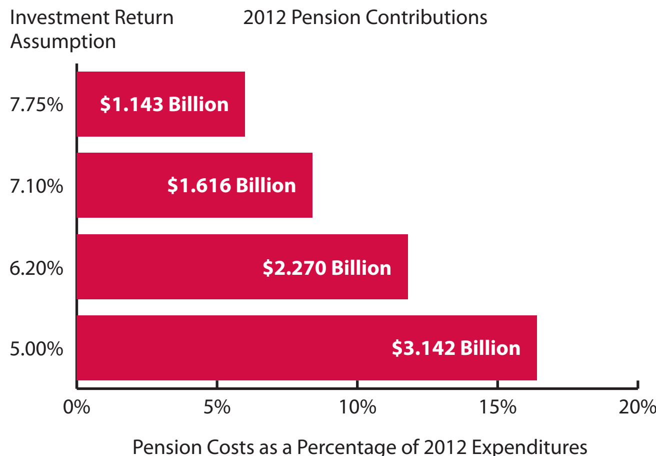
**Figure A1**
**Pension Share of Los Angeles County Expenditures**




Source: LACERA Actuarial Valuations, 1999-2010, and Los Angeles County Comprehensive Annual Financial Reports.

Pension costs were determined using LACERA's current 7.75 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, LACERA projects unchanged pension costs for the county at 6.0 percent of total expenditures. Figure A2 illustrates total pension costs and the pension cost share of total expenditures under various investment return assumptions. At a rate of 6.2 percent, pension costs exceed $2 billion and account for 11.8 percent of total county expenditures.

**Figure A2**
**2012 Los Angeles County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: LACERA Actuarial Valuations, 1999-2010, and Los Angeles County Comprehensive Annual Financial Reports.

## San Francisco City and County

The primary pension provider for San Francisco City and County employees is the San Francisco Employees' Retirement System (SFERS). The system was originally established in 1922 to provide benefits to the survivors of police and firefighters and is now responsible for providing pension benefits to 18,227 miscellaneous and 4,273 safety retirees and beneficiaries. As of June 30, 2011, the system held an estimated[35] $15.8 billion in assets at market value, making it the second largest independent pension system in California.

SFERS is a multiemployer system, covering members from San Francisco City and County, the San Francisco Unified School District, and the San Francisco Community College District, as well as superior court employees. However, employer contribution rates cited reflect averages across all employers; cost figures reflect the total costs across all employers. The system's primary program is a defined benefit system—described here—although SFERS also operates a relatively small supplementary opt-in defined contribution system.

### Benefits

SFERS bases employee annual pension benefits on years of service and average salary over the final 12 months of work (Table A3). The maximum annual pension benefit is 75 percent of final salary for miscellaneous employees and 90 percent for safety employees.

35 The system has not yet reported 2011 assets at market value. However, all of the systems that have reported the 2011 value of their assets saw an increase in asset value between 2010 and 2011 of 20%, plus or minus 2%. We therefore estimate the current market value of assets by assuming 20% growth in value from the reported 2010 figure.

**Table A3**
**SFERS Employee Benefits**

| Member Type | Tier | Formula | Maximum Annual Benefit as a Percentage of Final Average Salary | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|---|
| Miscellaneous | 1 | 1% @ 50 - 2.3% @ 62 | 75% | 2% | 46% | No |
| Miscellaneous | 2 | 1% @ 50 - 2.3% @ 62 | 75% | 98% | 54% | Yes |
| Safety | 1 | 2.4% @ 550 - 3% @ 55 | 90% | 1% | 70% | No |
| Safety | 2 | 2.4% @ 550 - 3% @ 55 | 90% | 99% | 30% | Yes |
| Miscellaneous | E | 1.18% @ 50 - 2.43% @ 67 | 100% | 34% | 19% | Yes |
| Safety | A & B | 1.25% @ 41 - 2.62% @ 55 | 100% | 1 | 1 | No(A)/Yes(B) |

Source: SFERS Membership Guidelines.

Both safety[36] and miscellaneous pension benefits are adjusted by an annual COLA of up to 2 percent. Annual inflation above 2 percent is stored in a COLA "bank"; in years in which inflation falls below 2 percent, the COLA is adjusted upwards by the amount that the previous inflation exceeded 2 percent, up to 2 percent. For example, if inflation in three sequential years was 2, 3, and 0 percent, members would receive COLAs of 2, 2, and 1 percent. In addition, a discretionary supplemental COLA can be added to the automatic COLA when investment earnings are above the assumed rate of return, for a total increase of up to 3.5 percent.

In 2010, the average SFERS miscellaneous service retiree received an average pension benefit of $30,399, slightly below the 20-system average for miscellaneous employees ($31,912). The average safety employee received a pension benefit of $80,209, well above the system average ($64,581). This average safety benefit is the third highest among safety employees in California's 20 largest independent pension systems.

### Funded Status

The financial health of SFERS declined steadily from 1996 to 2010, though the decline has accelerated in recent years. Using the reported actuarial value of assets, its funded ratio under the assumed 7.75 percent discount rate fell from 115.3 percent in 1996 to 91.1 percent in 2010. Although SFERS saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. On a market value of assets, SFERS has a current funded ratio of 89.3 percent.

SFERS currently meets the 80 percent minimum funded ratio requirement using its 7.75 percent investment rate assumption. The table below shows the system's funded status using the risk-free rate. At this risk-free rate, SFERS' funded ratio is 59.1 percent, well below the 80 percent benchmark for being considered financially sound.

36 This is the COLA system for the new safety retirement system, covering employees hired after Nov. 2, 1976. Safety employees hired before this date receive a basic COLA adjustment equal to the highest of (1) the average salary increase for safety employees in California cities with a population above 350,000, (2) the rate of salary increase in the city Memorandum of Operations, or (3) the salary adjustment received by active members in the rank and position in which the member retired.

**Table A4**
**SFERS Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $15.764 billion |
| Actuarial Value of Assets | $16.069 billion |
| Actuarial Accrued Liabilities[a] | $26.683 billion |
| Funded Ratio (Market Value) | 59.1% |
| Funded Ratio (Actuarial Value) | 60.2% |
| Unfunded Liabilities | $10.614 billion |
| Unfunded Liabilities Per Dollar of Payroll | 442.5% |

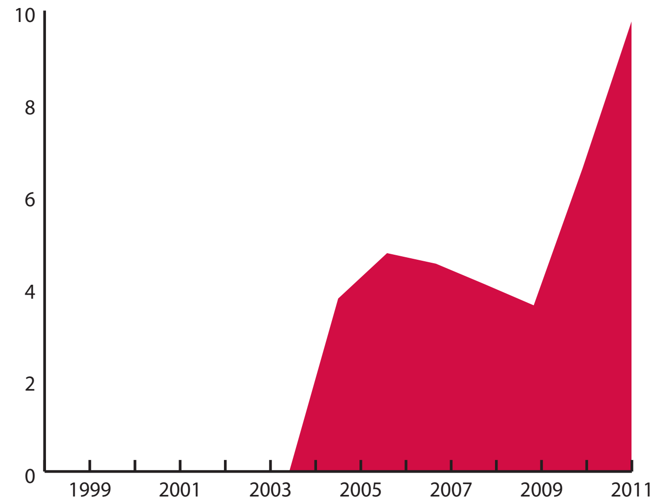
a Assumes risk-free discount rate of 5.0%.
Source: SFERS Actuarial Valuation, 2010.

## Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp decline in county revenues. In relative terms, pension costs increased from 0 percent (San Francisco did not contribute to SFERS because member contributions covered the entirety of normal cost) of total city and county expenditures from 1999 to 2004 to 9.8 percent in 2011.

By 2011, San Francisco City and County costs were $338.3 million, an average annual growth rate of 23.5 percent over those years with non-zero contributions. Between 1999 and 2011, pension costs increased faster than spending on public assistance (6.1 percent), public protection (5.4 percent), health and sanitation (2.6 percent), public ways and facilities (0.17 percent), recreation and cultural services (4.1 percent), and miscellaneous functions (3.8 percent).

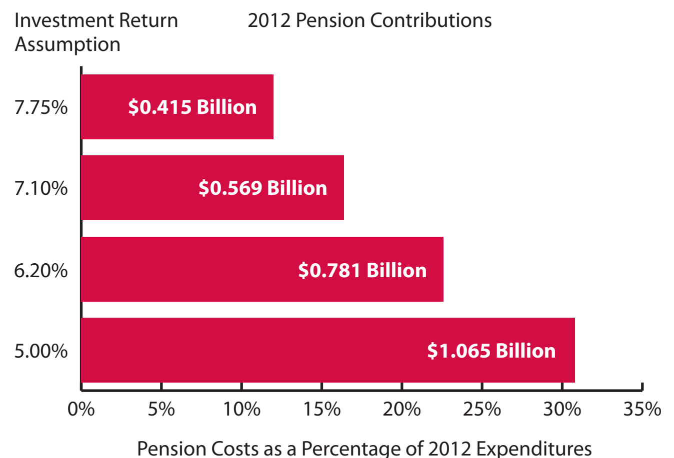
**Figure A3**
**Pension Share of Total San Francisco City and County Expenditures**




Source: SFERS Actuarial Valuations, 1999-2010, and San Francisco City and County Comprehensive Annual Financial Reports.

These costs were determined using SFERS' current 7.75 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, SFERS projects pension costs at 12.0 percent of total expenditures, a substantial increase from 2011. At an investment return assumption of 6.2 percent, pension costs are $781 million, representing 22.6 percent of San Francisco's total spending.

**Figure A4**
**2012 San Francisco Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: SFERS Actuarial Valuations, 1999-2010, and San Francisco City and County Comprehensive Annual Financial Reports.

## Los Angeles City

The City of Los Angeles maintains three independent pension funds: the City of Los Angeles Fire and Police Pension System (LAFPPS), the Los Angeles City Employees' Retirement System (LACERS), and the City of Los Angeles Water and Power Employees' Retirement Plan (LAWPERP). The first is the primary provider of retirement benefits to safety employees, and the second and third are the primary providers to miscellaneous employees. Together, the three plans provide retirement benefits to 25,000 miscellaneous and 12,300 safety retirees and beneficiaries. They hold a total of $30.8[37] billion in assets at market value and are respectively the third, fifth, and seventh largest independent pension plans in California.

All active members of the Los Angeles City police and fire departments, as well as some members of the Los Angeles City harbor department, are members of LAFPPS, giving the plan a total of 13,654 active members. The plan administers retiree health as well as miscellaneous pension benefits, although figures cited in this report describe only the miscellaneous pension benefit programs.

LACERS covers all miscellaneous city employees outside of the Department of Water and Power[38] and currently has 25,449 active members. LAWPERP covers the majority of the employees of the Department of Water and Power, though the plan has reciprocity with LACERS, and so some department employees belong to the miscellaneous city system. LAWPERP currently has 9,203 active members. LACERS includes a health benefit program, but this report excludes those figures.

### Benefits

All three Los Angeles City pension plans base an employee's annual pension benefit on years of service and the highest average 12-month salary. Employees receive a percentage of their highest average salary in pension benefits for each year of service until retirement age, according to the formula for their member type and tier (Table A5).

37 LAFPPS has not released a 2011 actuarial valuation, and so we assume that its assets grew in 2010 at the same rate as those of LACERS and LAWPERP.

38 LACERS excludes some members of the Los Angeles City Community Redevelopment Agency who are members of CalPERS.

**Table A5**
**Los Angeles City Employee Benefits**

| Member Type | Tier | Formula | Maximum Annual Benefit as a Percentage of Final Average Salary | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|---|
| Miscellaneous | LACERS members | 2.16% @ 55 | 75% | 100% | 100% | Yes |
| Miscellaneous | LAWPERP members | 2.1% @ 60 for less that 30 years, and 2.13% @ 55 for 30 or more years | 100% | 100% | 100% | Yes |
| Safety | 1 | 40% @ 20 years of service + 2% for next five + 1.67% for next ten | 66.67% | 0% | 2% | No |
| Safety | 2 | 40% @ 20 years of service + 2% for next five up to 25, then 55% at 25 + 3% for next 5 up to 30 | 70% | 1% | 73% | No |
| Safety | 3, 4, 5 | 2% @ 50 up to 20 + 3% for next 10 up to 30 | 70% | 99% | 25% | Yes |

Source: Systems' Membership Guidelines and Handbooks.

City employees do not participate in Social Security. Both safety and miscellaneous retirees' pension benefits receive COLA adjustments based on the CPI, with a maximum increase of 3 percent for all employees except tier 1 members of LAFPPS. For LACERS members, annual inflation above 3 percent is stored in a "bank"; in years in which inflation falls below 3 percent, the COLA is adjusted upwards by the amount that the previous inflation exceeded 3 percent, up to 3 percent. For example, if inflation in three sequential years registered 3, 5, and 0 percent, members would receive COLAs of 3, 3, and 2 percent. Non-tier 1 members of LAFPPS are eligible for discretionary COLA increases as determined by the LAFPPS board.

In 2010, retired service members of LAFPPS received an average pension benefit of $61,536, slightly below the 20-system average for safety employees of $64,581. Retired service members of LAWPERP received an average annual pension benefit of $51,264; retired service LACERS members, $43,704. As an aggregate, Los Angeles City miscellaneous employees receive an average annual benefit of $46,221, notably higher than the 20-system average for miscellaneous employees ($31,912) and the highest among the state's 20 largest independent pension systems.

### Funded Status

All three Los Angeles City systems have seen a steady decline in funded status from 1999 levels.[39] LAFPPS' funded ratio under the assumed 7.75 percent discount rate on an actuarial basis fell from 104.7 percent in 1999 to 91.6 percent in 2010. LAWPERP's funded ratio fell from 104.0 percent in 1999 to 80.3 percent in 2011, and LACERS' funded ratio fell from 104.0 percent to 72.4 percent.

Based on a market value of assets, LAFPPS has a current funded ratio of 88.2 percent, LAWPERP has a funded ratio of 79.8 percent, and LACERS shows a funded ratio of 72.4 percent. Although the systems experienced high positive return on investments in 2010-2011, they have yet to realize the full extent of 2008-2009 market losses. As a result, funded ratios on an actuarial basis will improve only marginally as recent gains are applied to offset past losses.

Table A6 below shows the systems' funded status using the risk-free rate, resulting in funded ratios for LAFPPS, LAWPERP, and LACERS of 60.6 percent, 53.1 percent, and 46.1 percent, respectively, all well below the 80 percent minimum benchmark.

39 Data prior to 1999 are not available.

**Table A6**
**City of Los Angeles Pension System Assets, Liabilities, and Funded Ratios**

| System | Market Value of Assets | Actuarial Value of Assets | Actuarial Accrued Liabilities[a] | Funded Ratio (Market Value) | Funded Ratio (Actuarial Value) | Unfunded Liabilities | Unfunded Liabilities Per Dollar of Payroll |
|---|---|---|---|---|---|---|---|
| City of Los Angeles Fire and Police Pension System | $13.684 billion | $14.220 billion | $23.472 billion | 58.3% | 60.6% | $9.253 billion | 681.9% |
| City of Los Angeles Water and Power Employees' Retirement Plan | $7.418 billion | $7.465 billion | $14.060 billion | 52.8% | 53.1% | $6.595 billion | 757.9% |
| Los Angeles City Employees' Retirement System | $9.691 billion[b] | $9.691 billion | $21.018 billion | 46.1% | 46.1% | $11.327 billion | 617.8% |

a Assumes risk-free discount rate of 5.0%.

b Market value of assets is not reported. However, this should not make a substantial difference because for total system assets, the actuarial value is within 5% of market value.

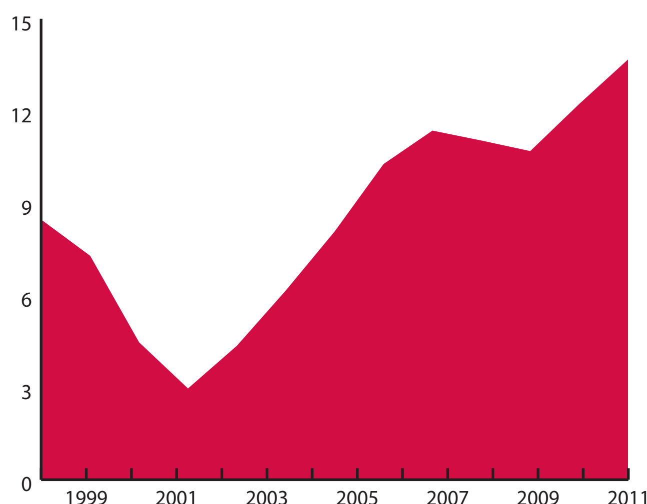
Source: Los Angeles City Employees' Retirement System, Actuarial Valuation June 30, 2011; City of Los Angeles Fire and Police Pension System, Actuarial Valuation June 30, 2010; City of Los Angeles Water and Power Employees' Retirement Plan, Actuarial Valuation June 30, 2011.

### Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp decline in city revenues. In relative terms, pension costs increased from 8.5 percent of total city expenditures in 1999 to 13.7 percent in 2011.

In 1999, Los Angeles City's aggregate annual required contributions for its three systems totaled $291 million, rising to $923 million in 2011, an annual average growth rate of 11.1 percent. This growth outpaced that of spending on public protection, which grew at 5.2 percent, on health and sanitation (3.6 percent), and on recreation and cultural services (5.8 percent), and it occurred while spending on public assistance programs fell by an average of 3.0 percent per year.[40]

**Figure A5**
**Pension Share of Los Angeles City Expenditures**

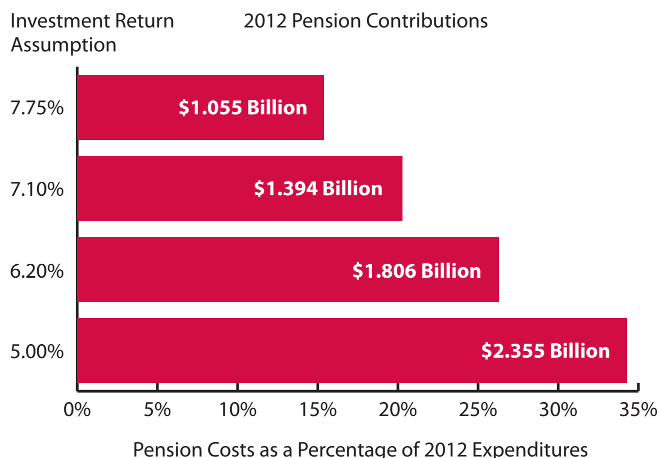



Source: Systems' Actuarial Valuations, 1999-2011, and Los Angeles City Comprehensive Annual Financial Reports.

Pension costs in each year were determined using the systems' assumed discount rates of 7.75 percent for LAFPPS and LAWPERP and 8 percent for LACERS. Under that assumption, for the 2011-2012 fiscal year, the systems project pension costs are estimated at 15.4 percent of city expenditures. Figure A6 below shows how that percentage changes with lower investment return assumptions. At 6.2 percent, pension costs total $1.81 billion, occupying 26.3 percent of the city budget.

40 Data for other categories are not available.

**Figure A6**
**2012 Los Angeles City Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: Systems' Actuarial Valuations, 1999-2011, and Los Angeles City Comprehensive Annual Financial Reports.

## Orange County

The primary provider of retirement benefits for Orange County employees is the Orange County Employees' Retirement System (OCERS). OCERS was established in 1945 after a majority of Orange County voters voted to accept the terms of the statewide County Employees Retirement Act of 1937. The plan currently provides pension benefits to 10,840 miscellaneous and 1,922 safety retirees and beneficiaries. As of June 30, 2011, the plan held an estimated[41] $10.0 billion in assets at market value, making it the fourth largest independent pension system in California.

OCERS is a multiemployer plan with a total of 15 plan sponsors, but 75.8 percent of active members are Orange County employees and the majority of alternative employers are subsidiaries of the county (e.g., the Orange County Fire Authority or the Orange County Public Law Library). Consequently, the county bears nearly the entire OCERS pension obligation.

41 The system has not yet reported 2011 assets at market value. However, all of the systems that have reported the 2011 value of their assets saw an increase in asset value between 2010 and 2011 of 20%, plus or minus 2%. We therefore estimate the current market value of assets by assuming 20% growth in value from the reported 2010 figure.

### Benefits

OCERS bases an employee's annual pension benefit on years of service and final average 36-month salary. (Benefits for employees who entered the system before September 21, 1979, are based on a 12-month salary.) Employees receive a percentage of their final average salary in pension benefits for each year of service up until retirement age, according to the formula for their member type and tier.

**Table A7**
**Orange County Employee Benefits**

| Member Type | Tier | Formula |
|---|---|---|
| Miscellaneous | A | 2% @ 57 |
| Miscellaneous | G/H | 2.7% @ 55 |
| Miscellaneous | K/L | 3% @ 60 |
| Safety | C/D | 2% @ 50 |
| Safety | E/F | 3% @ 50 |

Note: This is a sample of available benefit formulas, not a comprehensive list, but all available formulas are within the range of those in the table.

Source: Systems' Membership Guidelines and Handbooks.

OCERS members do not participate in Social Security. Both safety and miscellaneous retirees' pension benefits receive COLA adjustments based on the CPI, with a maximum increase of 3 percent. Annual inflation above 3 percent is stored in a COLA "bank"; in years in which inflation falls below 3 percent, the COLA is adjusted upwards by the amount that the previous inflation exceeded 3 percent, up to 3 percent. For example, if inflation in three sequential years was 3, 5, and 0 percent, members would receive COLAs of 3, 3, and 2 percent.

In 2009-2010, the average retirement benefit for miscellaneous service retirees was $34,232, slightly above the 20-system average of $31,912 and sixth highest among the state's 20 largest independent pension systems. The average benefit for safety service retirees was $70,995, also higher than the $64,581 average for the 20 systems covered and seventh highest overall.

### Funded Status

The financial health of OCERS declined steadily from 1997 to 2011, though the decline accelerated in recent years. Using the actuarial value of assets, its funded ratio under the assumed discount rate of 7.75 percent fell from 93.8 percent in 1996 to 69.8 percent in 2011. Although OCERS saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. On a market value of assets basis, OCERS has a current funded ratio of 80.7 percent.

Table A8 below shows OCERS' funded status using the risk-free rate, resulting in a funded ratio of 46.2 percent, well below the 80 percent benchmark for being considered financially sound.

**Table A8**
**OCERS Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $10.029 billion |
| Actuarial Value of Assets | $8.673 billion |
| Actuarial Accrued Liabilities[a] | $18.792 billion |
| Funded Ratio (Market Value) | 53.4% |
| Funded Ratio (Actuarial Value) | 46.2% |
| Unfunded Liabilities | $10.119 billion |
| Unfunded Liabilities Per Dollar of Payroll | 640.8% |

s Assumes risk-free discount rate of 5.0%.

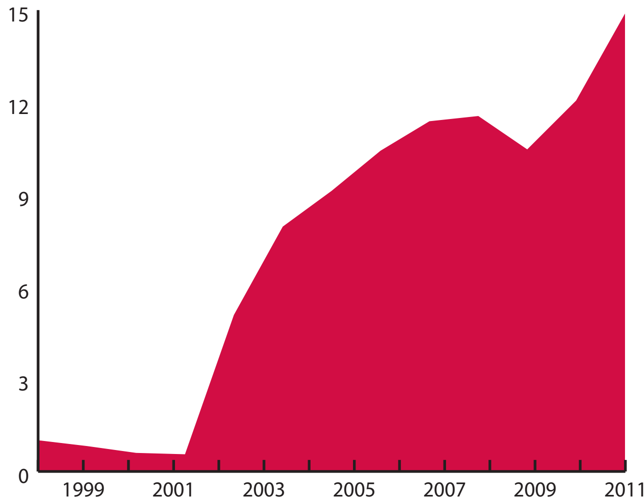
Source: OCERS Actuarial Valuation, December 31, 2010.

### Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp decline in county revenues. In relative terms, pension costs increased from 1.4 percent of total county expenditures in 1996 to 14.9 percent in 2011 (Figure A7).

In 1999, the county's annual required contribution to OCERS was $17.6 million. By 2011, it had increased to $475.5 million, or an annual average growth rate of 31.6 percent. With the exception of recreational spending, a small share of the county budget, pension expenditure growth outpaced that of all other county spending categories. Between 1999 and 2011, pension costs increased faster than county spending on education (which grew at 5.3 percent per year on average), on public assistance (5.7 percent), on public protection (5.2 percent), on health and sanitation (6.2 percent), and on public ways and facilities (6.7 percent).

**Figure A7**
**Pension Share of Orange County Expenditures**




Source: OCERS Actuarial Valuations, 1999-2010, and Orange County Comprehensive Annual Financial Reports.

These costs were determined using OCERS' assumed investment rate of return. Under that same assumption, for the 2011-2012 fiscal year, OCERS projects pension costs at 15.8 percent of total county expenditures. Figure A8 indicates pension costs under different return assumptions. At 6.2 percent, pension costs are estimated at $748 million, or 24.2 percent of the county budget.

**Figure A8**
**2012 Orange County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**

Source: OCERS Actuarial Valuations, 1999-2010, and Orange County Comprehensive Annual Financial Reports.

## San Diego County

The San Diego County Employees Retirement Association (SDCERA) is the primary provider of retirement benefits to San Diego County employees. Like the majority of independent county pension systems, the system was initially the result of the statewide County Employees Retirement Law of 1937 and became an independent entity of the county government in 1989. The system currently administers retirement benefits to 11,898 miscellaneous and 2,024 safety retirees and beneficiaries. As of June 30, 2011, the system held $8.2 billion in assets at market value, ranking as the sixth largest independent pension system in California.

SDCERA is a multiemployer system with four system sponsors in addition to San Diego County, though county employees constitute 93 percent of system membership[42], and the county bears the vast majority of the cost for funding the system.

### Benefits

SDCERA bases annual pension benefit on years of service and final average one-year salary (for employees hired before August 28, 2009) or three-year salary (for employees hired after that date). Employees receive a certain percentage of their final average salary in pension benefits for each year of service up until retirement age (Table A9).

42 The remaining 7% are employees of the superior court.

**Table A9**
**SDCERA Employee Benefits**

| Member Type | Tier | Formula | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|
| 1 | A – Hired before August 28th, 2009 | 2%@50 or 3%@60 | 0% | 59% | No |
| 1 | B – Hired after August 28th, 2009 | 1.7%@55 – 2.62%62 | 100% | 41% | Yes |
| 2 | A – Hired before August 28th, 2009 | 3%@50 | Not Available | Not Available | Yes |
| 2 | B – Hired before August 28th, 2009 | 2.3%@50 – 3%@55 | Majority | Majority | No |

Source: SDCERA Membership Guidelines.

SDCERA miscellaneous members participate in Social Security, while safety employees do not. Miscellaneous members who retire before 62 have the option to augment their benefits with a temporary supplement in exchange for having their pension benefit offset later by their Social Security income. Essentially, this allows miscellaneous members to shift receiving a portion of their pension benefits earlier in their retirement.

All retirees receive annual COLAs based on the CPI. The maximum COLA is 3 percent for tier A members and 2 percent for tier B members. All members have a COLA "bank" that stores any annual inflation that exceeds the maximum, which is then applied to benefits in a year in which annual inflation falls below the maximum. For example, if inflation was 3, 5, and 0 percent over three consecutive years, a member would receive COLAs of 3, 3, and 2 percent. Any fall in the CPI is applied first to retirees' COLA banks, and if the fall in CPI is greater than the amount stored in a retiree's bank, the difference between his stored COLA and the decrease in CPI is applied to his pension benefit. For example, a retiree with 2 percent in a COLA bank who experiences a CPI fall of 3 percent will see benefits reduced 1 percent. Benefits may not be decreased below their level at the onset of retirement.

In 2009-2010, the average annual pension benefit for service retirees was $28,836 for miscellaneous members and $59,976 for safety members. Both figures are slightly below the 20--system average for other large independent state pension systems, with $31,912 and $64,581 for miscellaneous and safety members, respectively.

### Funded Status

The financial health of SDCERA declined steadily from 1999 to 2010, though the decline accelerated in recent years. Based on an actuarial value of assets, its funded ratio under the assumed discount 7.75 percent rate fell from 108.1 percent in 1997 to 84.4 percent in 2010, the date of its latest actuarial valuation. Although SDCERA saw a high positive return on its investments in 2010-2011, the system still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. On a market value of assets, SDCERA has a current funded ratio of 81.9 percent.

SDCERA currently meets the minimum 80 percent funded standard. However, using the risk-free rate results in a funded ratio of 52.2 percent, well below the 80 percent benchmark for being considered financially sound (Table A10).

**Table A10**
**SDCERA Pension System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $8.190 billion |
| Actuarial Value of Assets | $8.443 billion |
| Actuarial Accrued Liabilities[a] | $15.693 billion |
| Funded Ratio (Market Value) | 52.2% |
| Funded Ratio (Actuarial Value) | 53.8% |
| Unfunded Liabilities | $7.250 billion |
| Unfunded Liabilities Per Dollar of Payroll | 661.7% |

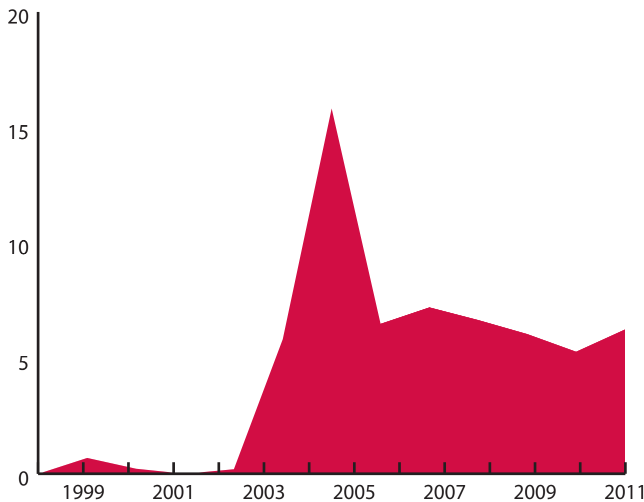
a Assumes risk-free discount rate of 5.0%.
Source: SDCERA Actuarial Valuation 2011.

### Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp decline in county revenues. In relative terms, pension costs increased from less than 1.0 percent of total county expenditures between 1999 and 2003 to 6.3 percent in 2011 (Figure A9).

San Diego County's annual required contribution to SDCERA in 1999 was $0 because member contributions covered the entirety of normal cost. In 2011, pension costs were $217.4 million, an average annual growth rate of 23.4 percent over years with non-zero contributions. Perhaps most indicative of the rapid increase in pension costs, though, is that their growth outpaced that of all other county spending categories. Between 1999 and 2011, pension costs increased faster than county spending on education (which grew at 10 percent per year on average), on public assistance (4.5 percent), on public protection (5.8 percent), on health and sanitation (7.0 percent), on public ways and facilities (4.1 percent), on recreation and cultural services (10.4 percent), and on miscellaneous functions (1.8 percent).

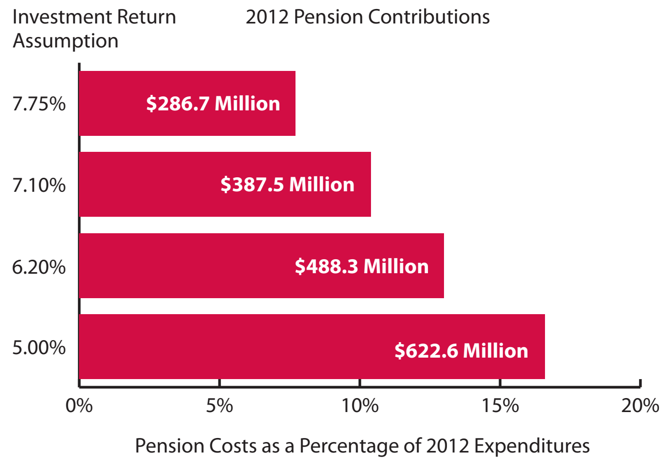
**Figure A9**
**Pension Share of San Diego County Expenditures**




Source: SDCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

These costs were determined using SDCERA's investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, SDCERA projects pension costs at 7.7 percent of the county's expenditures. The figure below shows how that percentage changes as we lower the assumed rate of return. At the mid-level rate of 6.2 percent, pension costs are $488 million, or 13.0 percent of the county budget.

**Figure A10**
**2012 San Diego County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: SDCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

## Sacramento County

The Sacramento County Employees' Retirement Association (SCERA) is the primary provider of retirement benefits to the employees of Sacramento County. Like the majority of independent county pension systems, the system was initially the result of the statewide County Employees Retirement Law of 1937, though the system was not officially established until 1941. SCERA currently administers retirement benefits to 7,084 miscellaneous and 1,737 safety retirees and beneficiaries. As of June 30, 2011, the system held $6.1 billion in assets at market value, ranking as the eighth largest independent pension system in California.

SCERA is a multiemployer system, covering the county, the Sacramento County Superior Court, and 11 special districts. Including court employees, county employees constitute 95 percent of active members and 97 percent of the system's total payroll. County contributions constitute approximately the same percentage of contributions from all employers, and the county directly or indirectly covers roughly 98 percent of the cost of the system.[43]

43 Based on authors' calculations. Calculated by adding county contributions to the estimated share contributed by subsidiary districts.

### Benefits

SCERA bases annual pension benefits on years of service and the highest average consecutive 12-month salary (tier 1) or 36-month salary (tiers 2 and 3) (Table A11). Employees receive a percentage of their highest average salary in benefits for each year of service up until retirement age.

**Table A11**
**SCERA Employee Benefits**

| Member Type | Tier | Formula | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? | Max COLA |
|---|---|---|---|---|---|---|
| Misc. | 1 | 1.48%@50 – 2.61%@62 | 100% | 65% | No | 4% |
| Misc. | 2 | 1.48%@50 – 2.61%@63 | 100% | 4% | No | 0% |
| Misc. | 3 | 1.48%@50 – 2.61%@64 | 100% | 96% | Yes | 2% |
| Safety | 1 | 1.88%@41 – 3%@49 | 100% | 25% | No | 4% |
| Safety | 2 | 1.88%@41 – 3%@50 | 100% | 75% | Yes | 2% |

Source: SDCERA Membership Guidelines.

Both miscellaneous and safety members participate in Social Security. Pension benefits paid by the system are offset by a Social Security reduction factor for each year of service with Social Security coverage, with the specific factor determined by the age at retirement.

All members except tier 2 miscellaneous members—who receive no COLA—have their benefits adjusted annually by an automatic COLA based on the CPI. The maximum annual COLA is 4 percent for tier 1 members and 2 percent for miscellaneous tier 3 and safety tier 2 members. CPI increases above the maximum COLA are banked and applied in years in which the CPI change falls below that maximum. COLAs can be negative, but benefits cannot fall below their level at the onset of retirement.

In 2009-2010, the average service retirement benefits for SCERA miscellaneous and safety retirees were $27,491 and $64,233, both slightly below the 20-system averages of $31,912 and $64,581, respectively.

### Funded Status

The financial health of SCERA declined steadily from 1998 to 2011, though the decline accelerated in recent years. Based on an actuarial value of assets, its funded ratio under the assumed 7.75 percent discount rate fell from 107.9 percent in 1998 to 87.0 percent in 2011. Although SCERA saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. On a market value of assets, SCERA has a current funded ratio of 83.2 percent.

SCERA currently meets the minimum 80 percent funded ratio benchmark, using a 7.75 percent discount rate. At the risk-free rate, the funded ratio falls to 57.5 percent.

**Table A12**
**SCERA Pension System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $6.141 billion |
| Actuarial Value of Assets | $6.420 billion |
| Actuarial Accrued Liabilities[a] | $11.165 billion |
| Funded Ratio (Market Value) | 55.0% |
| Funded Ratio (Actuarial Value) | 57.5% |
| Unfunded Liabilities | $4.745 billion |
| Unfunded Liabilities Per Dollar of Payroll | 538.7% |

a Assumes risk-free discount rate of 5.0%.
Source: SCERA Actuarial Valuation, 2011.

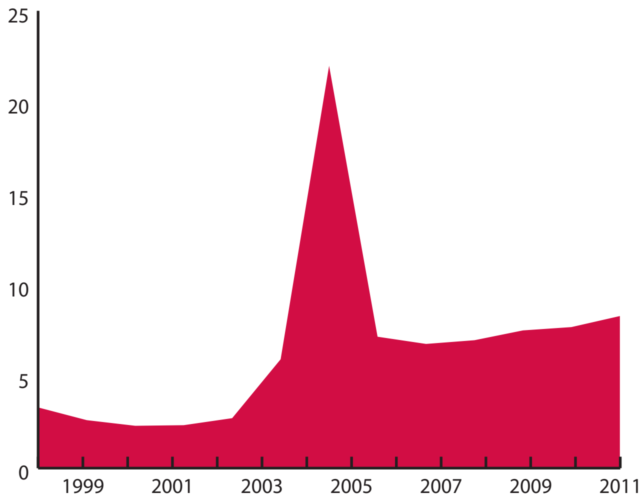
### Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp decline in county revenues. In relative terms, pension costs increased from 3.3 percent of total county expenditures in 1999 to 8.3 percent in 2011.

In 1999, Sacramento County's annual required contribution to SCERA was $46.7 million. By 2011, it was $182.9 million, an annual average growth rate of 12.0 percent. Pension costs increased faster than county spending on public assistance (which grew by 1.2 percent on average), on public protection (4.5 percent), on health and sanitation (9.7 percent), on public ways and facilities (5.4 percent), on recreation and cultural services (0.0 percent), and on miscellaneous functions (1.0 percent).

Note: The spike in costs in 2005 is due to the issuance of pension obligation bonds.

**Figure A11**
**SCERA Share of Sacramento Expenditures**




Source: SCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

These costs were determined using SCERA's 7.75 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, SCERA projects pension costs at 8.4 percent of county expenditures. Figure A12 below shows how that percentage changes under different investment return assumptions. At 6.2 percent, pension costs are $340 million, representing 14.7 percent of the county budget.

**Figure A12**
**2012 Sacramento County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**

Source: SCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

## San Bernardino County

The San Bernardino County Employees Retirement Association (SBCERA) encompasses one of the widest ranges of employers and employer types of the systems in this report, covering not only San Bernardino County but also the City of Big Bear Lake, the City of Chino Hills, the California State Association of Counties, and 17 special districts and agencies. However, most of these additional employers comprise only a small portion of the system; the county itself makes 83 percent of all employer contributions, and county employees comprise 88 percent of all active members.

SBCERA currently administers benefits to 7,855 miscellaneous and 1,410 safety retirees and beneficiaries. As of June 30, 2011, the system held $6.1 billion in assets at market value, ranking as the ninth largest independent pension system in California.

### Benefits

SBCERA bases annual pension benefits on years of service and highest average consecutive 12-month salary. Employees receive a certain percentage of their highest average salary in pension benefits for each year of service up until retirement age. Members have the option to retire earlier than their specified retirement date but face reductions to their benefit accumulation rate, e.g., a miscellaneous employee who retires at 50 receives less than 2 percent for each year of service.

**Table A13**
**SBCERA County Employee Benefits**

| Member Type | Tier | Formula | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|
| 1 | All | 2% @ 55 | 100% | 100% | Yes |
| 2 | All | 3% @ 50 | 100% | 100% | Yes |

Source: SBCERA Comprehensive Annual Financial Report, 2010.

Members do not participate in Social Security. All members receive a COLA based on the CPI up to a maximum of 2 percent, with annual increases above 2 percent banked and applied during years in which inflation is below 2 percent.

In 2010, the annual average retirement benefit for SBCERA service retirees was $31,618 for miscellaneous and $65,902 for safety members. Both numbers are close to the 20-system averages for California's largest independent pension systems.

### Funded Status

The financial health of SBCERA declined steadily from 1998 to 2011, though the decline accelerated in recent years. Using the actuarial value of assets, its funded ratio under the assumed discount rate of 7.75 percent fell from 116.1 percent in 1998 to 79.2 percent in 2011. Although SBCERA saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on a market value of assets, SBCERA has a current funded ratio of 74.9 percent.

SBCERA falls short of the minimum 80 percent benchmark, based on its 7.75 percent discount rate. Using the risk-free rate results in a funded ratio of 50.4 percent (Table A14).

**Table A14**
**SBCERA Pension System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $6.137 billion |
| Actuarial Value of Assets | $6.485 billion |
| Actuarial Accrued Liabilities[a] | $12.853 billion |
| Funded Ratio (Market Value) | 47.7% |
| Funded Ratio (Actuarial Value) | 50.4% |
| Unfunded Liabilities | $6.369 billion |
| Unfunded Liabilities Per Dollar of Payroll | 511.7% |

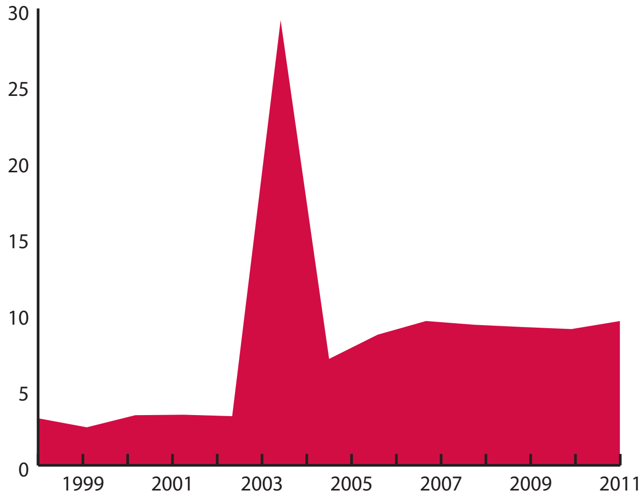
a Assumes risk-free discount rate of 5.0%.
Source: SBCERA Actuarial Valuation, 2011.

### Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp decline in county revenues. In relative terms, pension costs increased from 3.1 percent of total county expenditures in 1999 to 9.5 percent in 2011.

In 1999, the county's annual required contribution to SBCERA was $43.8 million. In 2011, it was $232.3 million, or an annual average growth rate of 14.9 percent. On average, pension costs grew 10.3 percent faster than other types of county expenditures, including public protection (8.0 percent per year), public ways and facilities (7.2 percent), and miscellaneous functions (1.9 percent).

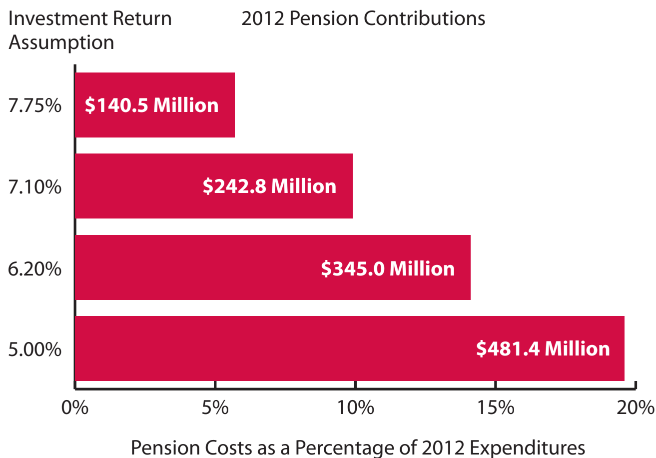
**Figure A13**
**Pension Share of San Bernardino County Expenditures**




Note: The spike in costs in 2004 is due to the issuance of pension obligation bonds.
Source: SBCERA Actuarial Valuation, 1999-2011, and County Comprehensive Annual Financial Reports.

These costs were determined using SBCERA's 7.75 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, SBCERA projects pension costs at 5.7 percent of the county's expenditures. The figure below shows how that percentage changes as we lower investment return assumption. At the mid-level rate of 6.2 percent, pension costs are $345 million and 14.1 percent of county expenditures.

**Figure A14**
**2012 San Bernardino County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: SBCERA Actuarial Valuation, 1999-2011, and County Comprehensive Annual Financial Reports.

## Contra Costa County

The Contra Costa County Employees Retirement Association (CCCERA) is the primary provider of retirement benefits for the employees of Contra Costa County. The system was established by the county government in 1945 and currently provides benefits to 5,793 miscellaneous and 1,766 safety retirees and beneficiaries. As of June 30, 2011, the system held $5.2 billion in assets at market value, ranking as the 10th largest independent pension system in California.

CCCERA is a multiemployer system, covering employees in 16 additional agencies. The county is the largest employer, with its employees accounting for 83 percent of the system's total covered payroll.[44] The next largest employers are the Contra Costa and East Contra Costa fire protection districts (a combined 5 percent of payroll) and the Contra Costa Sanitary District (4 percent of payroll). The county's contributions constitute approximately 77 percent of total employer contributions, though the county directly or indirectly bears approximately 92 percent of the cost of the system.[45]

### Benefits

CCCERA bases annual pension benefits on the highest consecutive 12-month salary (except tier 2 and safety C members, for whom the period is 36 months). Employees receive a percentage of their final average salary in pension benefits for each year of service up until retirement age.

44 91% of miscellaneous employees and 57% of safety employees.

45 Based on authors' calculations. Calculated by adding the county contribution to the contributions of districts and agencies serving Contra Costa (e.g., the Contra Costa Fire Protection District).

**Table A15**
**CCCERA Employee Benefits**

| Member Type | Tier | Formula | Maximum | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|---|
| General | 1 | 1.48%@50 – 2.61%@62 | 100% | 13% | 76% | Yes |
| General | 2 | 1.48%@50 – 2.61%@63 | 100% | 87% | 24% | Yes |
| Safety | 1 – Nonenhanced | 1.48%@50 – 2.61%@64 | 100% | Not Available | Not Available | Yes |
| Safety | 1 – enhanced | 1.88%@41 – 3%@49 | 100% | Not Available | Not Available | Yes |

Source: CCCERA Membership Guidelines.

Miscellaneous CCCERA members participate in Social Security. Safety members do not. All members receive automatic COLAs based on the CPI. The maximum COLA is 2 percent for safety tier C members, 4 percent for tier 2 members, and 3 percent for all others. The board is also allowed to grant a discretionary COLA to retirees, the purchasing power of whose benefits have fallen at least 20 percent from their initial levels.

In 2009-2010, the average pension benefits for miscellaneous and safety CCCERA service retirees were $32,193 and $79,836, respectively. The average benefit for miscellaneous retirees is roughly the 20-system average. The average benefit for safety retirees is significantly higher than the 20-system average of $64,581 and fourth highest among the state's 20 largest independent pension systems.

### Funded Status

The financial health of CCCERA declined steadily from 1997 to 2010. Based on the actuarial value of assets, its funded ratio under the assumed 7.75 percent discount rate fell from 94.1 percent in 1997 to 83.7 percent in 2010, the date of its latest actuarial valuation. Although CCCERA saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. On a market value of assets, CCCERA has a current funded ratio of 82.8 percent.

CCCERA currently meets that 80 percent minimum threshold despite the fall in its historical funded ratio (Table A16). Using the risk-free rate, however, results in a funded ratio of 55.4 percent, well below the minimum.[46]

**Table A16**
**CCCERA Assets, Liabilities, and Funded Ratios**

| Item | Value |
|---|---|
| Market Value of Assets | $5.229 billion |
| Actuarial Value of Assets | $5.290 billion |
| Actuarial Accrued Liabilities[a] | $9.550 billion |
| Funded Ratio (Market Value) | 54.8% |
| Funded Ratio (Actuarial Value) | 55.4% |
| Unfunded Liabilities | $4.260 billion |
| Unfunded Liabilities Per Dollar of Payroll | 613.4% |

a Assumes risk-free discount rate of 5.0%.
Source: CCCERA Actuarial Valuation, 2010.

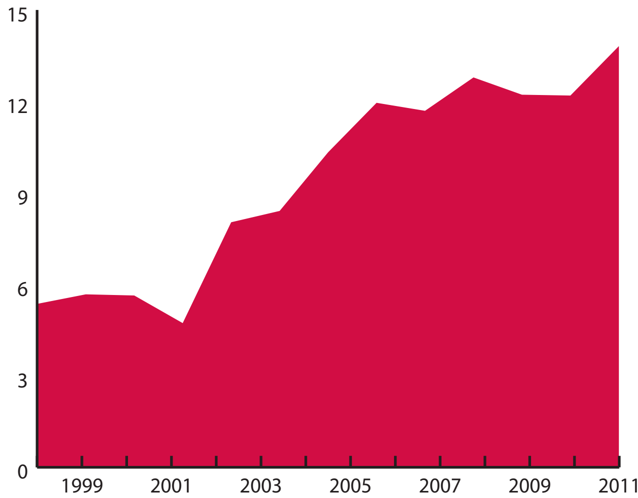
### Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp in county revenues. In relative terms, pension costs increased from 5.4 percent of total county expenditures in 1999 to 13.8 percent in 2011.

In 1999, Contra Costa County's annual required contribution to CCCERA was $48.4 million. In 2011, it had increased to $194.8 million, an annual average growth rate of 12.3 percent. Pension costs increased faster than county spending on education (2.8 percent), public assistance (3.4 percent), public protection (2.9 percent), health and sanitation (5.5 percent), public ways and facilities (6.4 percent), recreation and cultural services (–14.3 percent), and miscellaneous functions (2.8 percent).

46 These figures also appear to exclude the costs of pension obligation bonds (POBs) for both the county and the Contra Costa Fire Protection District.

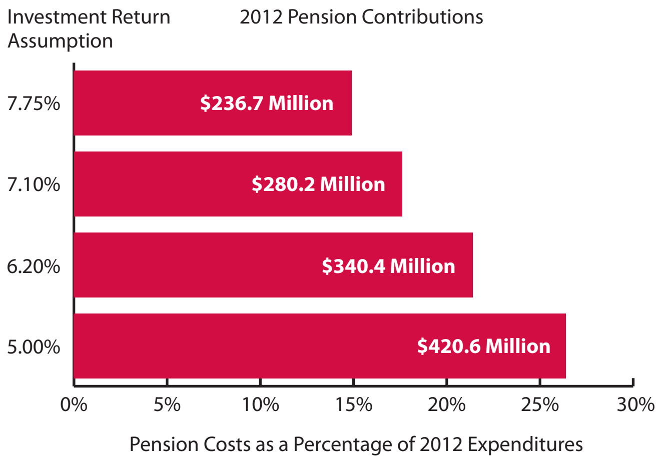
**Figure A15**
**Pension Share of Contra Costa County Expenditures**




Source: CCCERA Actuarial Valuations, 1999-2010, and County Comprehensive Annual Financial Reports.

These costs were determined using CCCERA's 7.75 percent investment return assumption. Using that same assumption for the 2011-2012 fiscal year, CCCERA projects pension costs at 14.9 percent of the county's total expenditures. Figure A16 illustrates pension contributions and spending under different investment return assumptions. At the mid-level rate of 6.2 percent, pension costs are $340 million, or 21.4 percent of the county budget.

**Figure A16**
**2012 Contra Costa County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: CCCERA Actuarial Valuations, 1999-2010, and County Comprehensive Annual Financial Reports.

## Alameda County

The Alameda County Employees' Retirement Association (ACERA) is the primary provider of retirement benefits for the employees of Alameda County. Like the majority of independent county pension systems, the system grew out of the statewide County Employees Retirement Law of 1937, though it was not officially established until 1947. The system currently administers pension benefits to 6,295 miscellaneous and 1,263 safety retirees and beneficiaries. As of June 30, 2011, the system held $4.8 billion in assets at market value, ranking as the 11th largest independent pension system in California.

Like most of the other large state independent pension systems, ACERA is a multiemployer system, covering Alameda County, its subsidiary districts, and its superior court. The county provides 76 percent of total employer contributions and bears directly or indirectly between 95 and 98 percent of the cost of the system, depending on which year's contributions we consider.

### Benefits

ACERA bases annual pension benefits on years of service and final average one-year salary for tier 1 members (employees hired before July 1, 1983) or three-year salary for tier 2 members (employees hired after that date). Employees receive a percentage of their final average salary in pension benefits for each year of service up until retirement age (Table A17).

**Table A17**
**ACERA Employee Benefits**

| Member Type | Tier | Formula | Max | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|---|
| General | 1 | 1.34% @ 50 - 2.61% @ 62 | 100% | 9% | 76% | No |
| General | 2 | 1.18%@50 - 2.33% @ 65 | 100% | 91% | 24% | Yes |
| Safety | 1 | 3% @ 50 | 100% | 100% | 100% | Yes |

Source: ACERA Membership Guidelines.

Most miscellaneous members participate in Social Security; no safety members participate. All retirees receive a COLA adjustment based on the CPI, with a maximum increase of 3 percent for tier 1 members and 2 percent for tier 2 members.

In 2010, the average service retirement benefit for ACERA retirees was $35,307 for miscellaneous members—slightly above the 20-system average and fifth highest among the systems in this report. For safety members, it was $71,352—again above the 20-system average and sixth highest among the state's 20 largest independent pension systems.[47]

### Funded Status

The financial health of ACERA declined steadily from 1997 to 2010, though the decline accelerated in recent years. Based on the actuarial value of assets, its funded ratio under the assumed 7.9 percent discount rate fell from 102.2 percent in 1997 to 83.9 percent in 2010, the date of its latest actuarial valuation. Although ACERA saw a high positive return on its investments in 2010-2011, the system still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, ACERA has a current funded ratio of 86.4 percent.

ACERA currently meets the 80 percent minimum funded ratio requirement using its 7.9 percent investment rate assumption. Table A18 illustrates the system's funded status using the risk-free rate. At this risk-free rate, ACERA's funded ratio is 55.9 percent, well below the 80 percent benchmark for being considered financially sound.

**Table A18**
**ACERA System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $4.787 billion |
| Actuarial Value of Assets | $4.646 billion |
| Actuarial Accrued Liabilities[a] | $8.564 billion |
| Funded Ratio (Market Value) | 55.9% |
| Funded Ratio (Actuarial Value) | 54.3% |
| Unfunded Liabilities | $3.920 billion |
| Unfunded Liabilities Per Dollar of Payroll | 453.5% |

a Assumes risk-free discount rate of 5.0%.
Source: ACERA Actuarial Valuation, 2010.

### Pension Costs

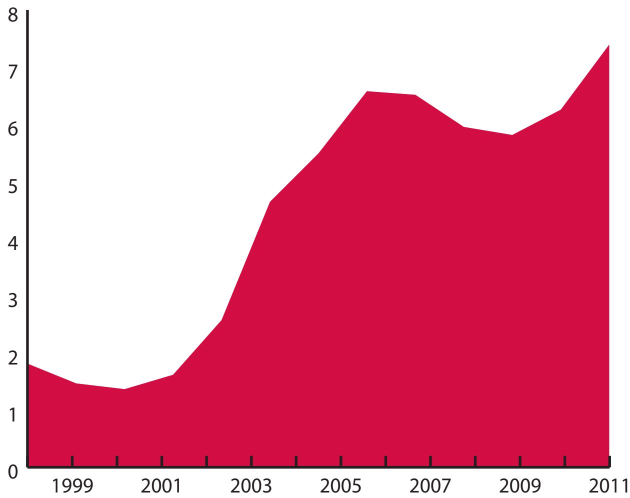
Increasing pension costs have compounded the challenges posed by a sharp decline in county revenues. Pension costs increased from 1.9 percent of total county expenditures in 1999 to 7.8 percent in 2011.

In 1999, Alameda County's annual required contribution[48] to ACERA was $24.7 million. In 2011, it was $158.5 million, or an annual average growth rate of 16.8 percent. Between 1996 and 2011, pension costs increased faster than county spending on education (3.6 percent compound growth rate), on public assistance (3.5 percent), on public protection (2 percent), on health and sanitation (4.4 percent), on public ways and facilities (4.3 percent), and on miscellaneous functions (8.9 percent).

47 For the purpose of comparison, in the case that a municipality maintains multiple pension systems, we treat them as a single, collective system.

48 All of the county pensions costs referred to are calculated using Alameda County's estimated average share of total system pension costs.

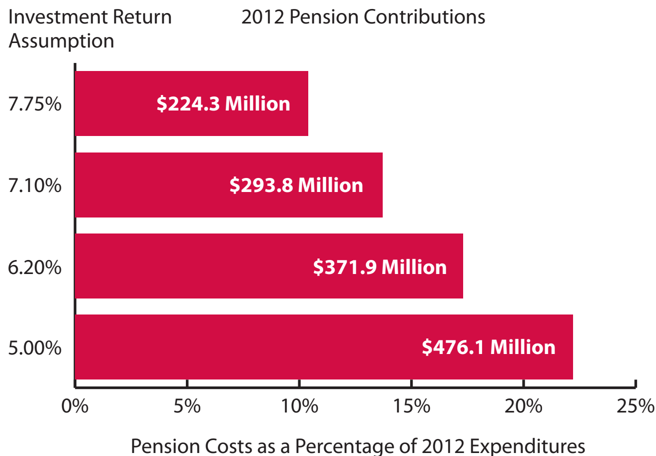
**Figure A17**
**Pension Share of Alameda County Expenditures**




Source: ACERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

These costs were determined using ACERA's 7.9 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, ACERA projects pension costs at 10.4 percent of county expenditures. Figure A18 indicates changes in pension spending as we lower the investment return assumption. At 6.2 percent, pension costs are $372 million, representing 17.3 percent of the county budget.

**Figure A18**
**2012 Alameda County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: ACERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

## San Diego City

The San Diego City Employees Retirement System (SDCERS) is the primary provider of retirement benefits for the employees of the City of San Diego. Founded in 1927, SDCERS was one of the state's earliest established independent municipal retirement systems. The system currently administers retirement benefits to 4,552 miscellaneous and 3,029 safety employees and retirees. As of June 30, 2010, the system held $4.4 billion in assets, ranking as the 12th largest independent pension system in California.

SDCERS is a multiemployer system, covering the San Diego Unified Port District and the San Diego County Regional Airport Authority, in addition to the City of San Diego. The city constitutes the vast majority of the system both in terms of assets (93 percent) and members (89 percent of covered payroll). Because the Port District and Airport Authority systems are legally their own independent, single-employer systems and trusts, the numbers used in this report are those specifically for the City of San Diego system in the SDCERS system.

### Benefits

SDCERS bases an employee's annual pension benefit on years of service and highest average one-year salary. Employees receive a certain percentage of their final average salary in pension benefits for each year of service up until retirement age (Table A19).

**Table A19**
**San Diego City Employee Benefits**

| Member Type | Formula | Maximum Annual Benefit as a Percentage of Final Average Salary |
|---|---|---|
| Miscellaneous | 2.5% @ 55 - 2.8% @ 65 | 90% |
| Safety | 3% @ 50 | 90% |

Source: SDCERS Membership Guidelines.

City employees do not pay into Social Security. However, some members are eligible for reduced Social Security benefits upon reaching qualifying age. All retiree pensions allowances are subject to an annual COLA based on the CPI, with a maximum increase of 2 percent. CPI increases above 2 percent are banked and applied in years

in which the CPI change falls below that maximum. Unlike most of the systems in this report, which use a regional CPI, SDCERS determines COLAs using the national CPI.

In 2009-2010, the annual service retirement benefit for miscellaneous SDCERS retirees was $39,032, notably higher than the 20-system average ($31,912) and third highest among the state's 20 largest independent pension systems. For safety retirees, the average annual service retirement benefit was $66,431, again higher than the 20-system average ($64,851) and eighth highest among those systems.

### Funded Status

The financial health of SDCERS declined steadily from 1997 to 2010, though the decline accelerated in recent years. Using the actuarial value of assets, its funded ratio under the assumed 7.75 percent discount rate fell from 94.2 percent in 1997 to 62.1 percent in 2010, the date of its latest actuarial valuation. Although SDCERS saw a high positive return on its investments in 2010-2011, the system still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, SDCERS has a current funded ratio of 67.8 percent.

SDCERS currently fails to meet the 80 percent minimum funded ratio requirement, even at its 7.75 percent investment rate assumption. Table A20 shows the system's funded status using the risk-free rate. At this risk-free rate, SDCERS' funded ratio is 44.4 percent, well below the 80 percent benchmark.

**Table A20**
**San Diego City Pension System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $4.424 billion |
| Actuarial Value of Assets | $4.382 billion |
| Actuarial Accrued Liabilities[a] | $9.871 billion |
| Funded Ratio (Market Value) | 44.8% |
| Funded Ratio (Actuarial Value) | 44.4% |
| Unfunded Liabilities | $5.489 billion |
| Unfunded Liabilities Per Dollar of Payroll | 1035.2% |

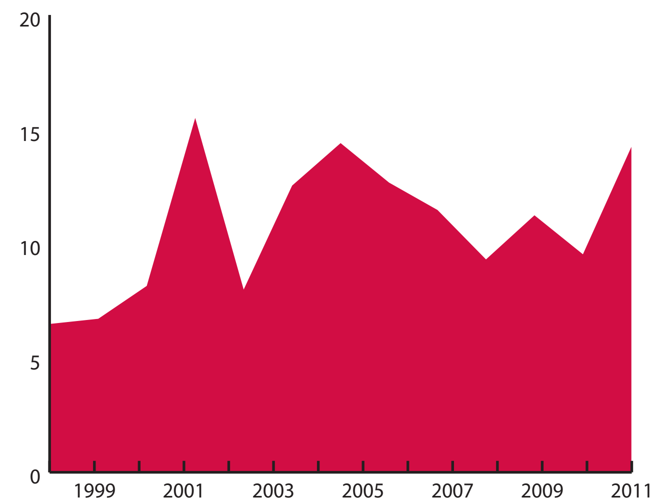
s Assumes risk-free discount rate of 5.0%.
Source: SDCERS Actuarial Valuation, 2010.

### Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp decline in county revenues. Pension costs increased from 6.5 percent of total city expenditures in 1999 to 14.2 percent in 2011 (Figure A19).

In 1999, the city's annual required contribution to SDCERS totaled $229.1 million, or an annual average growth rate of 15.3 percent. On average, pension costs grew 7.3 percent faster than other city expenditures.[49]

**Figure A19**
**Pension Share of San Diego City Expenditures**



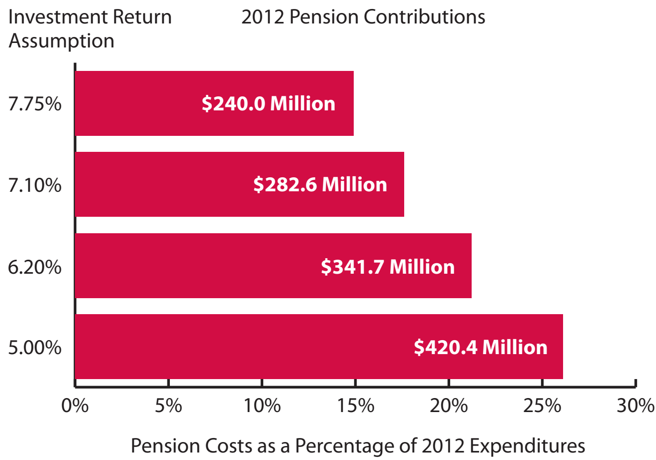

Source: SDCERS Actuarial Valuations, 1999-2010, and City Comprehensive Annual Financial Reports.

Pension costs were determined using SDCERS' 7.75 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, SDCERS projects pensions costs at 14.9 percent of total county expenditures. Figure A20 shows pension cost changes under different investment return assumptions. At 6.2 percent, pension costs are $342 million, or 21.2 percent of the county budget.

49 Data on specific categories are not available.

**Figure A20**

**2012 San Diego City Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: SDCERS Actuarial Valuations, 1999-2010, and City Comprehensive Annual Financial Reports.

## Fresno County

The Fresno County Employees' Retirement Association (FCERA) is the primary provider of retirement benefits to the employees of Fresno County. Like the majority of independent county pension systems, the system was established in the implementation of the statewide County Employees Retirement Law of 1937. FCERA currently provides retirement benefits to 5,125 miscellaneous and 762 safety retirees and beneficiaries. As of June 30, 2011, the plan held $3.2 billion in assets, ranking as the 13th largest independent pension system in California.

FCERA is a multiemployer system, covering five independent districts in addition to Fresno County. However, these four districts constitute less than 1 percent of the total employees in FCERA. As such, Fresno County bears virtually the entire FCERA pension obligation.[50]

### Benefits

FCERA bases an employee's annual pension benefit on years of service and final average one-year salary (for tiers 1 and 2) or three-year salary (for tier 3). Employees receive a percentage of their highest average salary in pension benefits for each year of service up until retirement age, according to the formula for their member type and tier (Table A21). The percentage of highest average salary accumulated for year or service increases with retirement age—that is, the longer an employee waits to retire, the higher the percentage of his highest annual salary he receives in pension benefits for each year worked.

50 Employees of the Superior Court of Fresno County are currently treated as county employees, although this will likely change in the coming years with the implementation of the Trial Court Facilities Act of 2002.

**Table A21**

**FCERA Employee Benefits**

| Member Type | Tier | Formula | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|
| General | 1 | 2.5%@55 - 3.273% @ 60 | 88% | 100% | Yes |
| General | 2 | 2% @ 55 - 2.42% @ 63 | 2% | 0% | Yes |
| General | 3 | 2% @ 55 - 2.1336% @ 65 | 10% | 0% | Yes |
| Safety | 1 | 2.5% @ 50 - 3.275% @ 55 | 93% | 100% | Yes |
| Safety | 2 | 2.29% @ 50 - 3% @ 55 | 7% | 0% | Yes |

Source: FCERA Membership Guidelines.

FCERA pensions are integrated with Social Security. All members[51] pay for and accrue Social Security benefits. All retirees receive an automatic COLA based on the Western Region CPI up to a maximum increase of 3 percent. CPI increases above the maximum COLA are banked and applied in years in which the CPI change falls below that maximum. COLAs can be negative, but benefits cannot fall below their level at the onset of retirement. The FCERA board previously had the discretion to grant additional COLA increases using undistributed system earnings.

In 2009-2010, the average pension benefit for miscellaneous FCERA service retirees was $29,703, the median of the 20 systems examined in this report. The average benefit for safety service retirees was $48,732, significantly lower than the 20-system average ($64,581) and the lowest among the 20 largest independent pension systems in the state.

### Funded Status

The financial health of FCERA declined steadily from 1996 to 2011. Using the actuarial value of assets, its funded ratio under the assumed 7.75 percent discount rate fell from 108 percent in 1996 to 73.5 percent in 2011. Although FCERA saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, FCERA has a current funded ratio of 74.7 percent.

FCERA currently fails to meet the 80 percent minimum funded ratio requirement, even under it 7.75 percent discount rate. Table A22 illustrates the system's funded status using the risk-free rate.

**Table A22**
**FCERA System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $3.167 billion |
| Actuarial Value of Assets | $3.114 billion |
| Actuarial Accrued Liabilities[a] | $6.409 billion |
| Funded Ratio (Market Value) | 49.4% |
| Funded Ratio (Actuarial Value) | 48.6% |
| Unfunded Liabilities | $3.295 billion |
| Unfunded Liabilities Per Dollar of Payroll | 825.7% |

s Assumes risk-free discount rate of 5.0%.
Source: FCERA Actuarial Valuation, 2011.

### Pension Costs

Increasing pension costs have compounded the challenges posed by a decline in county revenues. Pension costs increased from 0.9 percent of total county expenditures in 2002 to 7.7 percent in 2011.[52]

In 2002, Fresno County's annual required contribution to FCERA totaled $7.7 million. By 2011, it had increased to $130 million, or an annual average growth rate of 8.6 percent. Over this period, pension costs grew faster than spending on education (average annual growth rate of 3.6 percent), on public assistance (8.4 percent), and on public protection (3.6 percent).

51 Except employees of the Fresno Madera Agency on Aging.

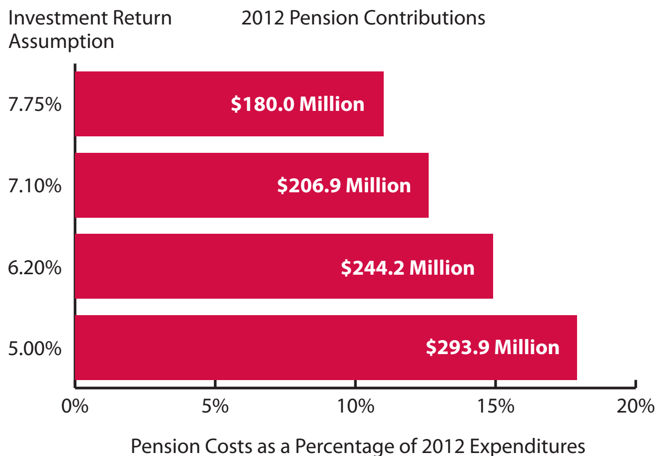
52 We exclude 1999-2001 because plan contributions were irregularly high in 1999 and then $0 in 2000 and 2001.

**Figure A21**
**Pension Share of Fresno County Expenditures**

Source: FCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

These costs were determined using FCERA's 7.75 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, FCERA projects pension costs at 11.0 percent of county expenditures. Figure A22 illustrates pension costs under different investment return assumptions. At 6.2 percent, pension costs are $244 million, or 14.9 percent of the county budget.

**Figure A22**
**2012 Fresno County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: FCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

## Ventura County

The Ventura County Employees' Retirement Association (VCERA) is the primary provider of retirement benefits to Ventura County workers. Like the majority of independent county pension systems, VCERA was initially the result of the statewide County Employees Retirement Law of 1937, though the system was not officially established until 1947. VCERA currently administers retirement benefits to 4,183 miscellaneous and 1,084 safety retirees and beneficiaries. As of June 30, 2011, the system held an estimated $3.1 billion in assets at market value, ranking as the 14th largest independent pension system in California.

VCERA is a multiemployer system, covering the employees of Ventura Regional Sanitation District and Ventura County Superior Court, in addition to those of the county. County members make up 94 percent of all active members, and the county directly or indirectly bears approximately 97 percent of the cost of the system. Because reliable breakdowns of expenses by employer are not available, for the purposes of cost calculation we assume that the county bears the entire VCERA pension obligation.

### Benefits

VCERA bases an employee's annual pension benefit on years of service and highest average one-year salary (for tier 1 and safety members) or three-year salary (for tier 2 miscellaneous members). Employees receive a percentage of their highest average salary in pension benefits for each year of service up until retirement age (Table A23).

**Table A23**
**VCERA Employee Benefits**

| Member Type | Tier | Estimated Percent of FAS for 30 year retirees | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|
| General | 1 | 37.27% @ 50 - 78.34% @ 65 | 4% | 54% | No |
| General | 2 | 35.46% @ 50 - 72.97% @ 65 | 96% | 46% | Yes |
| Safety | 1 | 37.55% @ 50 - 78.59% @ 55 | 100% | 100% | Yes |

Source: VCERA Membership Guidelines.

General members pay for and accrue Social Security benefits, while safety members do not. General members eligible for Social Security who retire before 62 can opt to have their pension benefits supplemented until they turn 62, when their pension benefit will be discounted by a portion of their Social Security income.

Tier 1 miscellaneous and safety retirees receive an automatic COLA to their pension allowances based on changes in the CPI, up to a maximum increase of 3 percent. CPI increases above the 3 percent are banked and applied in years in which the CPI change falls below that maximum. Some tier 2 members, who worked under special provisions, receive an automatic annual 2 percent COLA.

In 2009-2010, the average annual service retirement benefit for VCERA miscellaneous retirees was $25,472, notably below the 20-system average ($31,912) and fourth lowest among the state's largest independent pension systems. For safety retirees, conversely, the average annual service retirement benefit was $73,476, higher than the 20-system average ($64,581) and fifth highest among those systems.

## Funded Status

The financial health of VCERA declined steadily from 1997 to 2010. Based on the actuarial value of assets, its funded ratio under its assumed 8.0 percent discount rate fell from 112.2 percent in 1997 to 80.4 percent in 2010, the date of its latest actuarial valuation. Although VCERA saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, VCERA has a current funded ratio of 79.5 percent.

VCERA current just meets the 80 percent minimum funded ratio requirement using its 7.75 percent investment rate assumption. Table A24 illustrates the funded status using the risk-free rate. At this rate, the funded ratio is 50.7 percent, well below the 80 percent benchmark for being considered financially sound.

**Table A24**
**VCERA Pension System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $3.083 billion |
| Actuarial Value of Assets | $3.115 billion |
| Actuarial Accrued Liabilities[a] | $6.086 billion |
| Funded Ratio (Market Value) | 50.7% |
| Funded Ratio (Actuarial Value) | 51.2% |
| Unfunded Liabilities | $2.970 billion |
| Unfunded Liabilities Per Dollar of Payroll | 453.5% |

a Assumes risk-free discount rate of 5.0%.
Source: VCERA Actuarial Valuation, 2010.

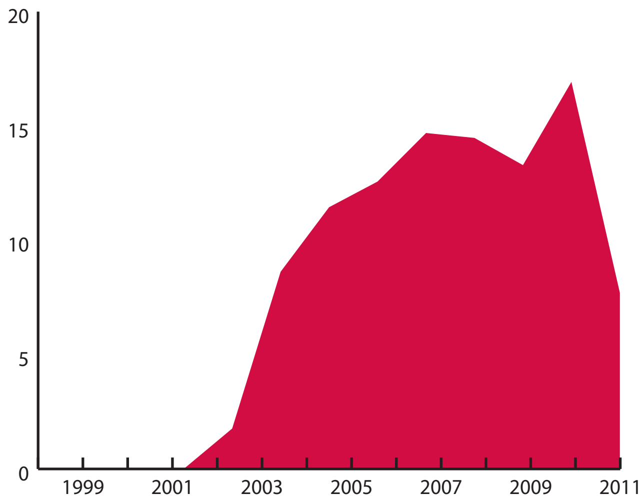
## Pension Costs

Increasing pension costs have compounded the challenges posed by the decline in county revenues. In relative terms, pension costs increased from less than 1 percent of total county expenditures through 2004 to 16.9 percent in 2011.

In 1999, Ventura County's annual required contribution to VCERA totaled only $233,000. From 2003 to 2004, no contributions were made because member contributions covered the entire system normal cost. By 2011, however, costs had increased to $121.9 million, or an annual average growth rate of 43 percent between 2004 and 2011. Over that period, pension costs increased at a faster rate than county

spending on education (average annual growth rate of 4.8 percent), public assistance (3.5 percent), public protection (4.8 percent), health and sanitation (7.5 percent), and miscellaneous functions (-1.5 percent).

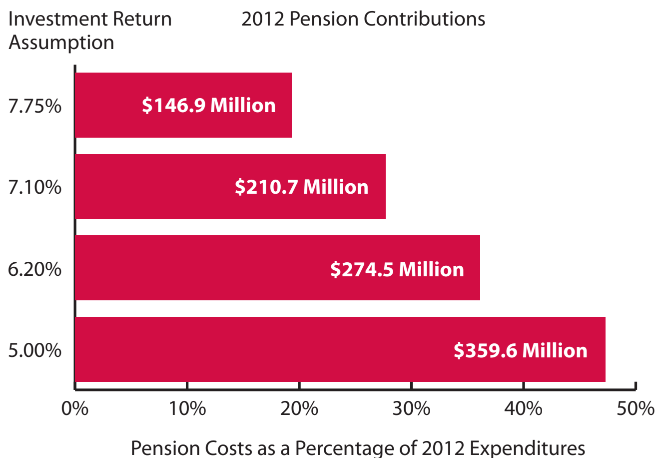
**Figure A23**
**Pension Share of Ventura County Expenditures**




Source: VCERA Actuarial Valuations, 1999-2010, and County Comprehensive Annual Financial Reports.

These costs were determined using VCERA's 8.0 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, VCERA projects pension costs at 19.3 percent of the county's expenditures. Figure A24 illustrates pension costs under different investment return assumptions. At 6.2 percent, pension costs total $274 million, or 36.1 percent of the county budget.

**Figure A24**
**2012 Ventura County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: VCERA Actuarial Valuations, 1999-2010, and County Comprehensive Annual Financial Reports.

## Kern County

The Kern County Employees' Retirement Association (KCERA) is the primary provider of retirement benefits for the employees of Kern County. Like the majority of independent county pension systems, the system was established in the implementation of the statewide County Employees Retirement Law of 1937. The system currently administers benefits to 4,662 miscellaneous and 1,537 safety retirees and beneficiaries. As of June 30, 2011, the plan held $2.8 billion in assets, making it the 15th largest independent pension fund in California.

KCERA is a multiemployer plan, covering the Kern County Superior Court and five categories of special districts, in addition to Kern County. County employees constitute the majority of plan members, making up 90 percent of the plan's covered payroll. The county's contributions to the plan constitute 91 percent of total employer costs, and the county either directly or indirectly bears somewhere between 93 and 97 percent of the cost of the system.[53]

### Benefits

KCERA bases an employee's annual pension benefit on years of service and highest average one-year salary. Employees receive a percentage of their highest average salary in pension benefits for each year of service up until retirement age, according to the formula for their member type and tier (Table A25).

53 Calculated by adding the county's employer share to the shares of those districts that are subsidiaries of the county.

**Table A25**
**KCERA Employee Benefits**

| Member Type | Tier | Formula | Max | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|---|
| General | 1 | 3% @ 60 | 100% | 76% | 100% | No |
| General | 2 (Hired After October 27th, 2007) | 1.62% @ 65 | 100% | 24% | 0% | Yes |
| Safety | 1 | 3% @ 50 | 100% | 100% | 100% | Yes |

Source: KCERA Membership Guidelines.

County employees pay for and accrue Social Security benefits. Some special district members do not participate in Social Security. All retiree pension allowances receive a COLA based on the CPI, up to a maximum of 2.5 percent. As part of a court settlement, members retired before April 1, 2002, are guaranteed an additional fixed 0.5 percent COLA.

### Funded Status

The financial health of KCERA declined steadily from 1997 to 2010. Using the actuarial value of assets, its funded ratio under the assumed 7.75 percent discount rate fell from 97.4 percent in 1997 to 62.7 percent in 2010, the date of its latest actuarial valuation. Although KCERA saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, KCERA's current funded ratio is 62.7 percent.

KCERA falls below the minimum 80 percent funded ratio benchmark. Using the risk-free rate, the funded ratio falls to 41.5 percent.

**Table A26**
**KCERA System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $2.976 billion |
| Actuarial Value of Assets | $2.795 billion |
| Actuarial Accrued Liabilities[a] | $6.741 billion |
| Funded Ratio (Market Value) | 41.5% |
| Funded Ratio (Actuarial Value) | 41.5% |
| Unfunded Liabilities | $3.946 billion |
| Unfunded Liabilities Per Dollar of Payroll | 705.4% |

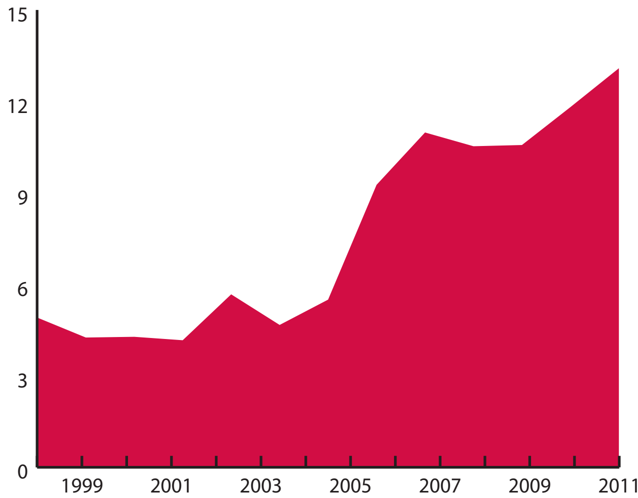
a Assumes risk-free discount rate of 5.0%.
Source: KCERA Actuarial Valuation, 2010.

### Pension Costs

Increasing pension costs have compounded the challenges posed by a decline in county revenues. Pension costs increased from 4.9 percent of total county expenditures in 1999 to 13.1 percent in 2011.

In 1999, Kern County's annual required contribution to KCERA was $38 million. In 2011, it had climbed to $201.5 million, an annual average growth rate of 14.9 percent. Pension costs increased faster than county spending on education (1.2 percent), public assistance (4.7 percent), public protection (7.2 percent), health and sanitation (4.9 percent), public ways and facilities (10 percent), recreation and cultural services (2.1 percent), and miscellaneous functions (5.7 percent).

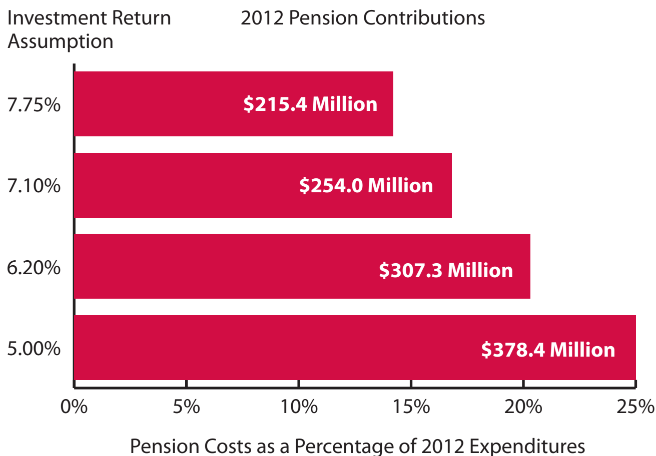
**Figure A25**
**Pension Share of Kern County Expenditures**




Source: KCERA Actuarial Valuations, 1999-2010, and County Comprehensive Annual Financial Reports.

These costs were determined using KCERA's 7.75 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, KCERA projects pension costs at 14.2 percent of the county's expenditures. Figure A26 illustrates pension costs with investment return assumptions. At 6.2 percent, pension costs are $207 million, or 20.3 percent of the county budget.

**Figure A26**
**2012 Kern County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: KCERA Actuarial Valuations, 1999-2010, and County Comprehensive Annual Financial Reports.

## City of San Jose

The City of San Jose operates two independent pension systems, City of San Jose Police and Fire Retirement System (SJPFRS), which covers city safety employees, and the City of San Jose Federated City Employees' Retirement System (SJFERS), which covers city miscellaneous employees. The systems currently provide retirement benefits to 3,111 miscellaneous and 1,790 safety retirees and beneficiaries. As of June 30, 2011, these systems held an estimated[54] $2.7 and $1.8 billion in assets at market value, respectively, making them the 16th and 21st (or collectively the 12th) largest independent pension system in California.

Both SJPFRS and SJFERS are single-employer systems covering only city employees. The systems also provide retiree health benefits, although the analysis in this report is limited to the pension programs.

### Benefits

City employees' pension allowances are based on their years of service and highest average consecutive 12-month salary. Employees receive a percentage of their highest average salary in pension benefits for each year of service up until retirement age (Table A27).

**Table A27**
**San Jose Employee Benefits**

| Member Type | Formula | Max |
|---|---|---|
| General | 2.5% @ 55 | 75% |
| Safety | Retirement at 50 with 25 years of service, or at 55 with 20; 50% for first 20% years, plus 4% for each additional year | 90% |

Source: Systems' Membership Guidelines.

54 The systems have not yet reported 2011 assets at market value. However, all of the systems that have reported the 2011 value of their assets saw an increase in asset value between 2010 and 2011 of 20%, plus or minus 2%. We therefore estimate the current market value of assets by assuming 20% growth in value from the reported 2010 figure.

Neither miscellaneous nor safety city employees participate in—pay for or receive benefits from—Social Security. Both SJPFRS and SJFERS grant retiree pension allowances an automatic, fixed COLA of 3 percent. These are the only independent state pension systems to grant a fixed COLA, that is, one independent of inflation rates.[55]

In 2009-2010, the average service retirement benefit for SJFERS retirees was $39,076, significantly higher than the 20-system average ($31,912) and second highest among the state's 20 largest independent pension systems. For SJPFRS retirees, the average annual service retirement benefit was $90,612, significantly higher than the 20-system average ($64,581) for safety retirees and the highest among those systems.

### Funded Status

The financial health of SJPFRS and SJFERS declined slightly from 1999 to 2011. Based on the actuarial value of assets, SJPFRS' funded ratio under its assumed 7.75 percent discount rate fell from 112.8 percent in 1999 to 79.8 percent in 2011, the date of its latest actuarial valuation.[56] SJFERS' funded ratio at its assumed discount rate of 7.95 percent fell from 93.3 to 68.9 percent. Although the systems saw a high positive return on investments in 2010-2011, they still have yet to realize the full extent of 2008-2009 losses in the actuarial value of assets, and so their funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, SJPFRS has a current funded ratio of 84.1 percent, and SJFERS has a current funded ratio of 72.3 percent.

SJPFRS meets the minimum 80 percent funded benchmark, while SJFERS falls below it. Table A28 illustrates the systems' funded status using the risk-free rate. At this risk-free rate, the funded ratios of SJPFRS and SJFERS are 46.4 percent and 55.6 percent, respectively.

**Table A28**
**SJFERS and SJPFRS System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $2.717 billion |
| Actuarial Value of Assets | $2.577 billion |
| Actuarial Accrued Liabilities[a] | $4.886 billion |
| Funded Ratio (Market Value) | 55.6% |
| Funded Ratio (Actuarial Value) | 52.7% |
| Unfunded Liabilities | $2.309 billion |
| Unfunded Liabilities Per Dollar of Payroll | 919.6% |

a Assumes risk-free discount rate of 5.0%.
Source: Systems' Actuarial Valuation, 2010

### Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp decline in city revenues. In relative terms, pension costs increased from 5.9 percent of total city expenditures in 1999 to 12.1 percent in 2011.

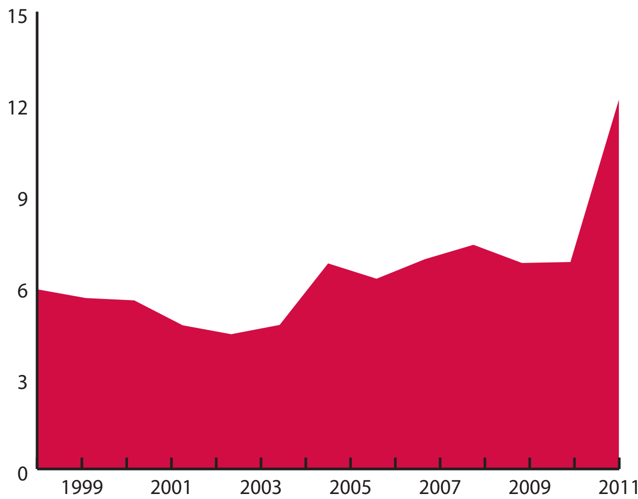
In 1999, the city's annual required contribution to SJPFRS and SJFERS totaled $53.6 million. In 2011, contributions reached $186 million, or an average annual growth rate of 10.9 percent. This means that on average pension costs grew 6 percent faster than other categories of city expenditures.[57]

55 Excepting some tier 2 members of the Ventura County Employees' Retirement Association, though it should be noted that its COLA is funded entirely by supplemental member contributions.

56 Both have subsequently adopted 7.5 percent rates.

57 Data on other categories are not available.

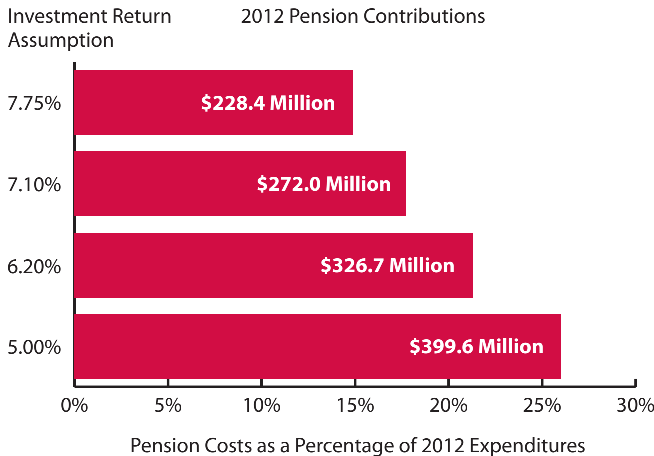
**Figure A27**
**Pension Share of San Jose Expenditures**




Source: SJFERS and SJPFRS Actuarial Valuations, 1999-2010, and City Comprehensive Annual Financial Reports.

These costs were determined using the systems' investment return assumptions noted above. Under those same assumptions, for the 2011-2012 fiscal year, the systems project pension costs at 14.9 percent of city expenditures. Figure A28 illustrates pension costs under investment return assumptions. At 6.2 percent, pension costs are $327 million, or 21.3 percent of the city budget.

**Figure A28**
**2012 San Jose Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: SJFERS and SJPFRS Actuarial Valuations, 1999-2010, and City Comprehensive Annual Financial Reports.

## San Mateo County

The San Mateo County Employees' Retirement Association (SamCERA) is the primary provider of retirement benefits to the employees of San Mateo County. Like the majority of independent county pension systems, the system was initially the result of the statewide County Employees Retirement Law of 1937, though the system was not officially established until 1944. SamCERA currently administers retirement benefits to 3,623 miscellaneous and 524 safety retirees and beneficiaries. As of June 30, 2011, the system held $2.3 billion in assets at market value, ranking as the 17th largest independent pension system in California.

SamCERA is a multiemployer system, covering the San Mateo Mosquito Abatement District and the Superior Court of San Mateo, in addition to San Mateo County. County members make up nearly 100 percent of active members, and county contributions make up roughly that percentage of total employer contributions. As such, the county bears nearly the entire SamCERA pension obligation.

### Benefits

SamCERA bases an employee's annual pension benefit on years of service and highest average consecutive 12-month salary (tiers 1 and 2, the majority of current retirees) or 36-month salary (tier 4, the majority of active employees). Employees receive a percentage of their highest average salary in pension benefits for each year of service up until retirement age (Table A29).

**Table A29**
**SamCERA Employee Benefits**

| Member Type | Tier | Formula | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|
| General | old | 2% @ 55.5 | 30% | 96% | No |
| General | new | 2% @ 61.25 | 70% | 4% | Yes |
| Safety | old | 3% @ 50 | 24% | 98% | No |
| Safety | new | 3% @ 55 | 76% | 2% | Yes |

Source: SamCERA Membership Guidelines.

Miscellaneous SamCERA members pay for and accrue Social Security benefits; safety members do not. All pension allowances receive an annual COLA based on the CPI. For tier 1 members, the maximum annual increase is 5 percent, with any increase in the CPI above 5 percent banked and applied in years in which inflation is below 5 percent. For tier 2 and tier 4 members, the maximum COLA is 3 percent and 2 percent, respectively, with no banking.

The average annual pension benefit in 2009-2010 for service retirees of SamCERA was $28,296 for miscellaneous members and $54,840 for safety members, compared with 20-system averages of $31,912 and $64,581, respectively. SamCERA's average benefit is the eighth lowest for miscellaneous employees and sixth lowest for safety employees among the state's 20 largest independent municipal pension systems.

### Funded Status

The financial health of SamCERA declined steadily from 1999 to 2011. Using the actuarial value of assets, its funded ratio under the assumed discount 7.75 percent discount rate fell from 92.0 percent in 1999 to 74.1 percent in 2011, the date of its latest actuarial valuation. Although SamCERA experienced a high positive return on its investments in 2010-2011, the system still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, SamCERA has a current funded ratio of 71.4 percent.

SamCERA falls short of the 80 percent minimum funded requirement at its 7.75 percent discount rate. Table A30 illustrates the system's funded status using the risk-free rate. At this risk free rate, the Sam CERA funded ratio is 49.0 percent.

**Table A30**
**SamCERA System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $2.318 billion |
| Actuarial Value of Assets | $2.405 billion |
| Actuarial Accrued Liabilities[a] | $4.910 billion |
| Funded Ratio (Market Value) | 47.2% |
| Funded Ratio (Actuarial Value) | 49.0% |
| Unfunded Liabilities | $2.505 billion |
| Unfunded Liabilities Per Dollar of Payroll | 590.7% |

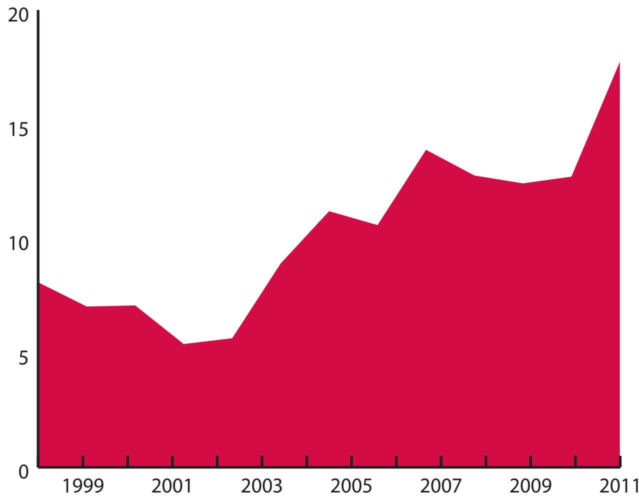
a Assumes risk-free discount rate of 5.0%.
Source: SamCERA Actuarial Valuation, 2011.

### Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp decline in county revenues. Pension costs increased from 8.1 percent of total county expenditures in 1999 to 17.7 percent in 2011.

In 1999, the county's annual required contribution to SamCERA totaled $41.3 million. In 2011, it had increased to $150.5 million, an annual average growth rate of 11.4 percent. During this period, pension costs increased faster than county spending on public assistance (which grew an average of 2.4 percent per year), public protection (5.9 percent), health and sanitation (5.1 percent), public ways and facilities (2.0 percent), recreation and cultural services (4.1 percent), and miscellaneous functions (3.9 percent).

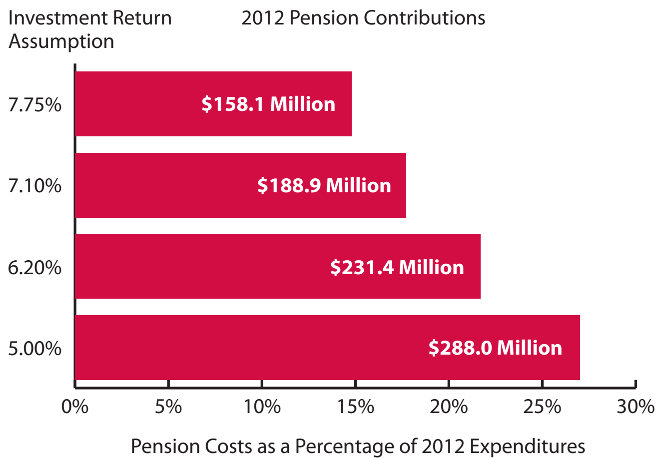
**Figure A29**
**Pension Share of San Mateo Expenditures**




Source: SamCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

These pension costs were determined using SamCERA's 7.75 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, SamCERA projects pension costs at 14.8 percent of county expenditures. Figure A30 illustrates pension costs under different investment return assumptions. At 6.2 percent, pension costs are $231 million, reflecting 21.7 percent of the county budget.

**Figure A30**
**2012 San Mateo County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: SamCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

## San Joaquin County

The San Joaquin County Employees' Retirement Association (SJCERA) is the primary provider of retirement benefits to the employees of San Joaquin County. Like the majority of independent county pension systems, the system was initially the result of the statewide County Employees Retirement Law of 1937, though the system was not officially established until 1946. SJCERA currently administers retirement benefits to 3,697 miscellaneous and 792 safety retirees and beneficiaries. As of June 30, 2011, the system held an estimated $2.3 billion in assets at market value, ranking as the 18th largest independent pension system in California.

SJCERA is a multiemployer system, covering nine special districts in addition to the county. County employees account for 93 percent of all active employees, and the county directly or indirectly bears approximately 98 percent of the cost of the system. Because detailed breakdowns of costs by employer are not available, for the purpose of this report we assume the county bears the entirety of SJCERA's employer obligations.

### Benefits

SJCERA bases annual pension benefits on years of service and highest average consecutive 12-month salary. Employees receive a percentage of their highest average salary in pension benefits for each year of service up until retirement age (Table A31).

**Table A31**
**SJCERA Employee Benefits**

| Member Type | Tier | Formula |
|---|---|---|
| General | All | 2% @ 55 1/2 |
| Safety | All | 3% @ 50 |

Source: SJCERA Membership Guidelines.

Miscellaneous members pay for and accrue Social Security benefits; safety members do not. Pension benefits paid by the system are offset by a Social Security reduction factor for each year of service with Social Security coverage. Members who retire before 62 have the option to augment their benefits with a temporary supplement in exchange for an additional offset of their pension benefits when they become eligible for Social Security benefits. Essentially, this allows miscellaneous members to shift receiving a portion of their pension benefits to earlier in their retirement.

All retirees receive an automatic COLA based on the CPI up to a maximum increase of 3 percent. CPI increases above the maximum COLA are banked and applied in years in which the CPI change falls below that maximum. The SJCERA board and the San Joaquin County Board of Supervisors have the discretion to grant additional COLA increases, though these increases can later be discontinued at their discretion as well.

In 2009-2010, the average service retirement benefits for SJCERA miscellaneous and safety members were $25,401 and $53,010. Both are well below the 20-system averages ($31,912 and $64,581), falling third and fifth lowest, respectively, among the state's 20 largest pension systems.[58]

### Funded Status

The financial health of SJCERA declined steadily from 1996 to 2010. Based on the actuarial value of assets, its funded ratio under the assumed 7.75 percent discount rate fell from 104.4 percent in 1996 to 72.7 percent in 2011. Although SJCERA saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, SJCERA has a current funded ratio of 79.4 percent.

SJCERA's funded ratio at this 7.75 percent discount rate falls below 80 percent, the minimum funded ratio benchmark. At the risk-free rate (Table A32), the funded ratio falls to 48.1 percent.

**Table A32**
**SJCERA System Assets, Liabilities, and Funded Ratio**

| | |
|---|---|
| Market Value of Assets | $2.316 billion |
| Actuarial Value of Assets | $2.210 billion |
| Actuarial Accrued Liabilities[a] | $4.413 |
| Funded Ratio (Market Value) | 52.5% |
| Funded Ratio (Actuarial Value) | 48.1% |
| Unfunded Liabilities | $2.292 billion |
| Unfunded Liabilities Per Dollar of Payroll | 624.0% |

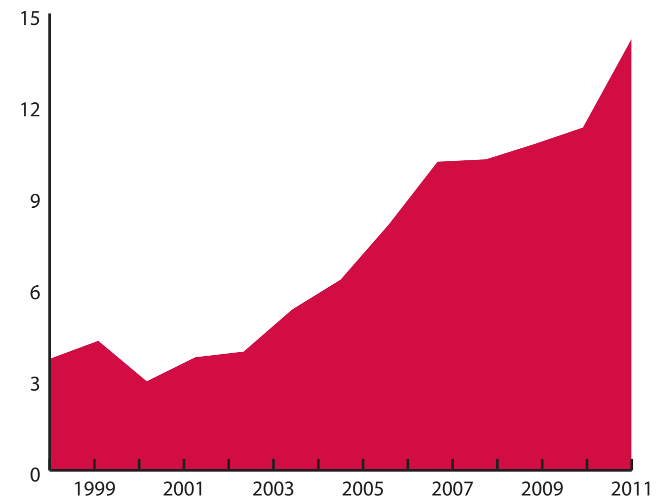
a Assumes risk-free discount rate of 5.0%.
Source: SJCERA Actuarial Valuation, 2010.

### Pension Costs

Increasing pension costs have compounded the challenges posed by a decline in county revenues. Pension costs increased from 3.66 percent of total county expenditures in 1999 to 14.15 percent in 2011.

In 1999, San Joaquin County's annual required contributions to SJCERA totaled $18.8 million, rising to $123 million in 2011. This amounts to annual average growth rate of 16.9 percent. Between 1996 and 2011, pension costs increased faster than county spending on education (average annual growth rate of 6.3 percent), public assistance (3.8 percent), public protection (5.5 percent), health and sanitation (3.3 percent), public ways and facilities (3.4 percent), recreation and cultural services (6.9 percent), and miscellaneous functions (7.7 percent).

**Figure A31**
**Pension Share of San Joaquin County Expenditures**

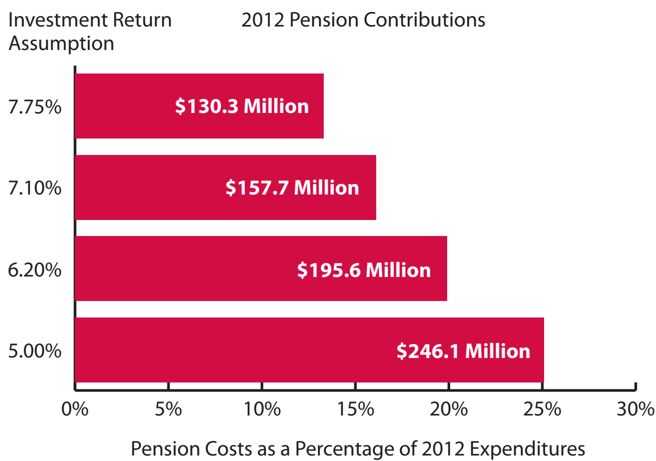



Source: SJCERA Actuarial Valuations, 1999-2010, and County Comprehensive Annual Financial Reports.

58 Here we are comparing the municipalities' 'aggregate' pension systems—i.e., if a municipality has multiple systems, we are aggregating across them for the purpose of comparison.

These pension costs were determined using SJCERA's investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, SJCERA projects pension costs at 13.3 percent of county expenditures.[59] Figure A32 illustrates pension costs under different investment return assumptions. At 6.2 percent, pension costs are $196 million, or 19.9 percent of the county budget.

**Figure A32**
**2012 San Joaquin County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: SJCERA Actuarial Valuations, 1999-2010, and County Comprehensive Annual Financial Reports.

## Sonoma County

The Sonoma County Employees' Retirement Association (SCERA) is the primary provider of retirement benefits for the employees of Sonoma County. Like the majority of independent county pension systems, the system was initially the result of the statewide County Employees Retirement Law of 1937, though it was not officially established until 1946. SCERA currently administers retirement benefits to 3,145 miscellaneous and 635 safety retirees and beneficiaries. As of June 30, 2011, the system held an estimated $2.1 billion in assets at market value, ranking as the 19th largest independent pension system in California.

SCERA is a multiemployer system covering four agencies or special districts and the Sonoma County Superior Court, in addition to Sonoma County. County employees constitute the majority of system members, making up 95 percent of system payroll. County contributions make up 93 percent of total employer contributions[60], and the county either directly or indirectly bears between 94 and 97 percent of the cost of the system.

### Benefits

SCERA bases annual pension benefits on years of service and highest average one-year salary, computed as the average of the highest, but not necessarily consecutive, 26 two-week pay periods. Employees receive a percentage of their highest average salary in pension benefits for each year of service up until retirement age, according to the formula for their member type and tier (Table A33).

**Table A33**
**SCERA Employee Benefits**

| Member Type | Tier | Formula |
|---|---|---|
| General | All | 3% @ 60 |
| Safety | All | 3% @ 50 |

Source: SCERA Membership Guidelines.

Both miscellaneous and safety employees pay for and accrue Social Security benefits. SCERA grants ad hoc COLA adjustments using reserves funded by undistributed investment earnings. The adjustments are at the discretion of the SCERA board, though the system's official policy aim is to maintain 100 percent of the purchasing power of pension allowances when the funds are available.

In 2009-2010, the average service retirement benefit for SCERA miscellaneous employees was $28,680, slightly below the 20-system average ($31,912). The average service retirement benefit for SCERA safety employees was $48,768, well below the 20-system average ($64,581) and second lowest among the state's 20 largest independent pension systems.[61]

59 This figure includes both miscellaneous and special funds.

60 Using 2011-2012 projected contributions.

61 Here we are comparing the municipalities' 'aggregate' pension systems—i.e., if a municipality has multiple systems, we are aggregating across them for the purpose of comparison.

### Funded Status

The financial health of SCERA declined steadily from 1999 to 2011, though the system has maintained a higher funded ratio than the majority of the other systems considered in this report. Based on the actuarial value of assets, its funded ratio under the assumed 7.75 percent discount rate fell from 98.7 percent in 1996 to 88.4 percent in 2011, the date of its latest actuarial valuation. Although SCERA saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, SCERA has a current funded ratio of 98.3 percent.

SCERA meets the minimum funded ratio of 80 percent, assuming a 7.75 percent discount rate. Using a risk-free rate, however, the funded ratio falls to 65 percent (Table A34).

**Table A34**
**SCERA Employee Benefits**

| | |
|---|---|
| Market Value of Assets | $2.202 billion |
| Actuarial Value of Assets | $1.891 billion |
| Actuarial Accrued Liabilities[a] | $3.236 billion |
| Funded Ratio (Market Value) | 65.0% |
| Funded Ratio (Actuarial Value) | 58.4% |
| Unfunded Liabilities | $1.345 billion |
| Unfunded Liabilities Per Dollar of Payroll | 415.5% |

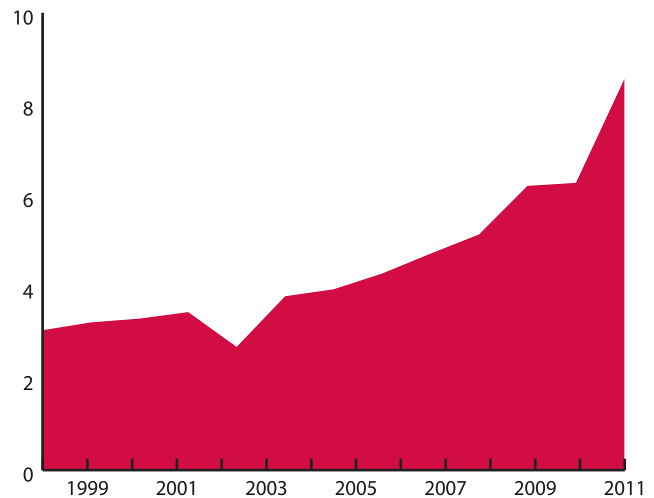
a Assumes risk-free discount rate of 5.0%.
Source: SCERA Actuarial Valuation, 2011.

### Pension Costs

Though SCERA's funded status fared well in recent years compared with the state's other large independent pension systems, the system experienced increased funding costs. Pension costs increased from 3.1 percent of total county expenditures in 1999 to 8.6 percent in 2011.

In 1999, the county's annual required contribution to SCERA was $11.8 million. In 2011, it was $61.1 million, an annual average growth rate of 14.7 percent. Between 1999 and 2011, pension costs increased faster than county spending on education (average growth rate of 6.9 percent per year), public assistance (7.0 percent), public protection (5.0 percent), health and sanitation (4.3 percent), public ways and facilities (2.5 percent), recreation and cultural services (6.3 percent), and miscellaneous functions (5.7 percent).

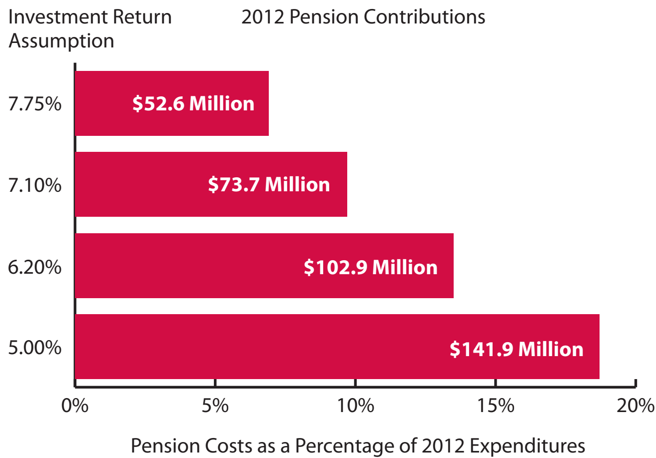
**Figure A33**
**Pension Share of Sonoma County Expenditures**




Source: SCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

Pension costs were determined using SCERA's investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, SCERA projects pension costs equal to 6.9 percent of county expenditures. Figure A34 illustrates pension costs based on different investment return assumptions. At 6.2 percent, pension costs are $ 103 million, or 13.5 percent of the county budget.

**Figure A34**
**2012 Sonoma County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: SCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

## Santa Barbara County

The Santa Barbara County Employees' Retirement Association (SBCERA) is the primary provider of retirement benefits to the employees of Santa Barbara County. Like the majority of independent county pension systems, the system came about in the implementation statewide County Employees Retirement Law of 1937, though the system was not officially established until 1942. SBCERA currently administers retirement benefits to 2,548 miscellaneous and 770 safety retirees and beneficiaries. As of June 30, 2011, the system held $2.0 billion in assets at market value, ranking as the 20th largest independent pension system in California.

SBCERA is a multiemployer system, covering the county, the Santa Barbara County Superior Court, and nine special districts. County employees constitute 90 percent of system members, and county contributions make up 92 percent of all employer contributions (96 percent including Santa Barbara County Superior Court). The system administers other post-employment benefits, including retiree health benefits, but all figures in this report describe only the pension system.

### Benefits

SBCERA bases annual pension benefits on years of service and the highest average consecutive 12-month salary (for most employees) or 36-month salary. Employees receive a percentage of their highest average salary in pension benefits for each year of service up until retirement age, according to the formula for their member type and tier (Table A35).

**Table A35**
**SBCERA Employee Benefits**

| Member Type | Tier | Formula |
|---|---|---|
| General | Plan 5 | 2% @ 57 |
| Safety | Plan 4 | 3% @ 55 |
| Safety | Plan 6 | 3% @ 50 |
| APCD | All | 2% @ 55 |

Source: SBCERA Membership Guidelines.

Only miscellaneous tier 2 members—less than 1 percent of the system by cost—participate in Social Security. Pension benefits are integrated with Social Security, and retirement allowances are offset by a portion of those benefits.

All members except tier 2 miscellaneous members—who receive no COLA—have their benefits adjusted annually by an automatic COLA based on the CPI, up to a maximum increase of 3 percent. CPI increases above 3 percent are banked and applied in years in which inflation falls below 3 percent. The SBCERA board may also grant discretionary COLA increases using undistributed earnings.

In 2009-2010, the average service retirement benefits for SBCERA miscellaneous and safety retirees were $26,748 and $60,726, both slightly below the 20-system averages ($31,912 and $64,581) for the state's 20 largest independent pension systems.

### Funded Status

The financial health of SBCERA declined steadily from 1999 to 2011. Based on the actuarial value of assets, its funded ratio under the assumed 7.75 percent discount rate fell from 98.7 percent in 1999 to 73.0 percent in 2011. Although SBCERA saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis

will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, SBCERA has a current funded ratio of 71.7 percent.

SBCERA currently falls short of the 80 percent minimum funded ratio benchmark. Using the risk-free rate results in a funded ratio of 48.3 percent.

**Table A36**
**SBCERA Employee Benefits**

| | |
|---|---|
| Market Value of Assets | $1.972 billion |
| Actuarial Value of Assets | $2.008 billion |
| Actuarial Accrued Liabilities[a] | $4.159 billion |
| Funded Ratio (Market Value) | 47.4% |
| Funded Ratio (Actuarial Value) | 48.3% |
| Unfunded Liabilities | $2.151 billion |
| Unfunded Liabilities Per Dollar of Payroll | 703.4% |

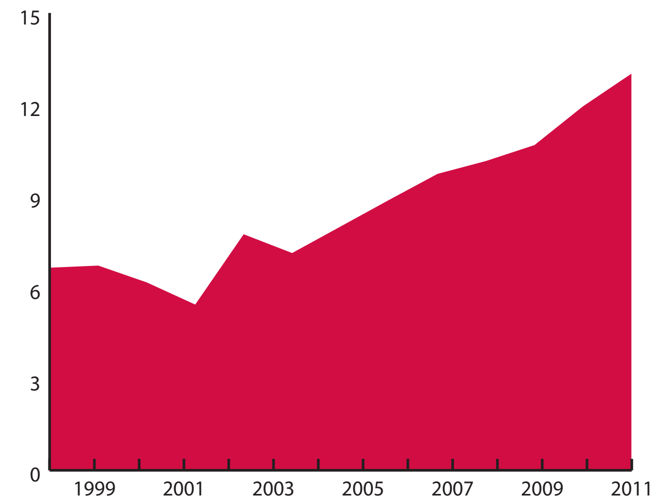
s Assumes risk-free discount rate of 5.0%.
Source: SBCERA Actuarial Valuation, 2011.

## Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp decline in county revenues. Pension costs increased from 6.64 percent of total county expenditures in 1999 to 13.00 percent in 2011.

In 1999, the county's annual required contribution to SBCERA totaled $27.8 million. By 2011, it had increased to $92.5 million. This amounts to annual average growth rate for pension costs of 10.5 percent. Between 1996 and 2011, pension costs increased faster than county spending on education (average annual growth rate of 3.6 percent), public assistance (3.6 percent), public protection (5.0 percent), health and sanitation (5.7 percent), public ways and facilities (1.0 percent), recreation and cultural services (4.3 percent), and miscellaneous functions (4.2percent).

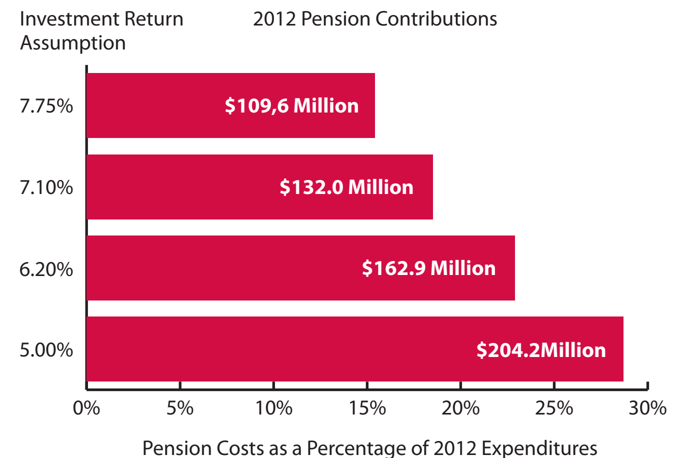
**Figure A35**
**Pension Share of Santa Barbara County Expenditures**




Source: SBCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

Pension costs were determined using SBCERA's 7.75 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, SBCERA projects pension costs at 15.4 percent of the county's expenditures. Figure A36 illustrates the effects of changes in the investment return assumption on pension costs. At 6.2 percent, pension costs are $163 million, equal to 22.9 percent of the county budget.

**Figure A36**
**2012 Santa Barbara County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: SBCERA Actuarial Valuations, 1999-2011, and County Comprehensive Annual Financial Reports.

## Stanislaus County

The Stanislaus County Employees' Retirement Association (StanCERA) is the primary provider of retirement benefits to the employees of Stanislaus County. StanCERA currently administers retirement benefits to 2,380 miscellaneous and 518 safety retirees and beneficiaries. As of June 30, 2011, the system held $1.4 billion in assets at market value, ranking as the 22nd largest independent pension system in California.

StanCERA is a multiemployer system, covering the county, the Stanislaus County Superior Court, and six special districts. County employees constitute the vast majority of system participants, comprising 94 percent of the system's total payroll. County contributions constitute the same percentage of total employer contributions, and the county directly or indirectly covers approximately 97 percent of the cost of the system.[62]

### Benefits

StanCERA bases annual pension benefits on years of service and highest average consecutive 12-month salary (most members) or 36-month salary (miscellaneous tier 2 and 3 members). Employees receive a percentage of their highest average salary in pension benefits for each year of service up until retirement age, according to the formula for their member type and tier (Table A37). Note that only tier 5 systems are open to new members.

**Table A37**

**StanCERA Employee Benefits**

| Member Type | Tier | Formula | Max | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|---|
| General | 1 | 2% @ 57 | 100% | 0% | 51% | No |
| General | 2 | 2% @ 62 | 100% | 0% | 13% | No |
| General | 3 | N/A | 80% | 1% | 1% | No |
| General | 4 | 2% @ 55 | 100% | 4% | 14% | No |
| General | 5 | 2% @ 55 | 100% | 95% | 21% | Yes |
| Safety | All | 3% @ 50 | 100% | 100% | 100% | No |

Source: StanCERA Membership Guidelines.

Members are able to choose whether to participate in Social Security. If so, retirement benefits are reduced.

All members except tier 3 miscellaneous members—who receive no COLA—receive automatic annual COLAs based on the CPI, up to a maximum annual increase of 3 percent. CPI increases above 3 percent are banked and applied in years in which inflation falls below 3 percent.

In 2009-2010, the average annual service retirement benefit for StanCERA miscellaneous retirees was $24,197, well below the 20-system average and lowest among the state's 20 largest independent pension systems. For safety retirees, the average annual service retirement benefit was $50,039, below the 20-system average and third lowest among those systems.

### Funded Status

The financial health of StanCERA declined steadily from 1998 to 2010. Based on the actuarial value of assets, its funded ratio under the assumed 7.75 percent discount rate fell from 105.8 percent in 1998 to 76.3 percent in 2010, the date of its latest actuarial valuation. Although StanCERA saw a high positive return on its investments in 2010-2011, the plan still has yet to realize the full extent of its 2008-2009 losses in the actuarial value of its assets, and so its funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, StanCERA has a current funded ratio of 81.4 percent.

StanCERA currently meets the 80 percent minimum funded ratio requirement using its 7.75 percent investment rate assumption. The table below shows the system's funded status using the risk-free rate. At this risk-free rate, StanCERA's funded ratio is 48.6 percent, well below the 80 percent benchmark for being considered financially sound.

**Table A38**

**StanCERA Pension System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $1.414 billion |
| Actuarial Value of Assets | $1.326 billion |
| Actuarial Accrued Liabilities[a] | $2.727 billion |
| Funded Ratio (Market Value) | 51.8% |
| Funded Ratio (Actuarial Value) | 48.6% |
| Unfunded Liabilities | $1.402 billion |
| Unfunded Liabilities Per Dollar of Payroll | 605.3% |

a Assumes risk-free discount rate of 5.0%.
Source: StanCERA Actuarial Valuation, 2010.

62 Based on author's calculations, assuming the county pays half of county court contributions.

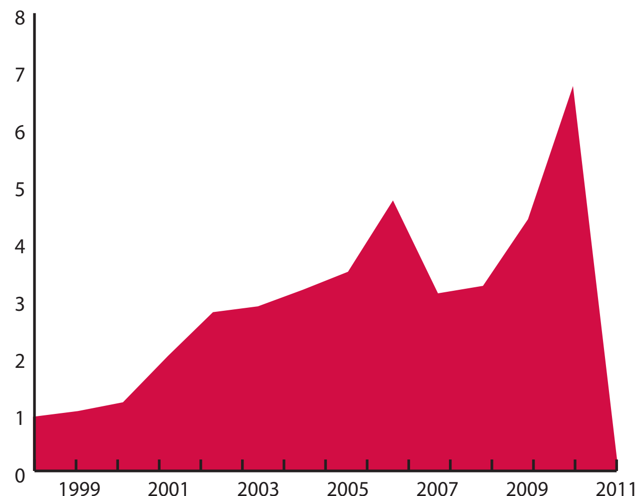
### Pension Costs

Increasing pension costs have compounded the challenges posed by a sharp decline in total county revenues. Pension costs increased from less than 1 percent of county expenditures in 1999 to 6.7 percent in 2011.

In 1999, the county's annual required contribution[63] to StanCERA was $5.8 million. In 2011, it had risen to $48.6 million, an annual average growth rate of 20.2 percent. Between 1999 and 2011, pension costs increased faster than county spending on education (average annual growth rate of 2.5 percent), public assistance (3.7 percent), public protection (3.7 percent), health and sanitation (2.6 percent), public ways and facilities (-3.4 percent), recreation and cultural services (1.0 percent), and miscellaneous functions (-2.7 percent).

**Figure A37**

**Pension Share of Stanislaus County Expenditures**




Source: StanCERA Actuarial Valuations, 1999-2010, and County Comprehensive Annual Financial Reports.

Pension costs were determined using StanCERA's 7.75 percent investment return assumption. Under that same assumption, for the 2011-2012 fiscal year, StanCERA projects pension costs at 6.2 percent of county expenditures. Figure A38 illustrates pension costs under different investment return assumptions. At 6.2 percent, pension costs are $84 million, 12.3 percent of the county budget.

63 We use the annual required contribution (ARC), rather than the actual contribution, as the measure of pension cost because any unpaid contributions in one year carry over into an employer's net pension obligation in following years. In this sense, the ARC represents the true cost of maintaining the pension fund in a given year, whether the cost is paid that year or deferred.

**Figure A38**

**2012 Stanislaus County Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**

Source: StanCERA Actuarial Valuations, 1999-2010, and County Comprehensive Annual Financial Reports.

## City of Fresno

The City of Fresno operates two independent pension systems, the City of Fresno Fire and Police Pension System (CFFP), the primary pension provider for city safety employees, and the City of Fresno Employees' Retirement System (CFERS), the primary provider for city miscellaneous employees. The systems currently provide retirement benefits to 1,622 miscellaneous and 948 safety retirees and beneficiaries. As of June 30, 2011, they held $1.1 and $0.96 billion in assets at market value respectively, raking as the 23rd and 24th (or collectively the 20th) largest independent pension system in California.

Both CFFP and CFERS are single-employer systems covering only city employees. Unlike the other large city pension systems in this report, the Fresno city systems do not administer paid health care benefits in addition to pension benefits.

### Benefits

Pension benefits are based on years of service and highest average consecutive three-year salaries. Employees receive a percentage of their highest average salary in pension benefits for each year of service up until retirement age (Table A39).

**Table A39**
**Fresno City Employee Benefits**

| Member Type | Tier | Formula | Max | Percentage of Active Members of That Type | Percentage of Retired Members of That Type | Open to New Members? |
|---|---|---|---|---|---|---|
| General | All | 2% for each year up to 25, 1% for each year after that, times a retirement age factor (1 @ 55 - 1.3 @ 65) | | 100% | 100% | Yes |
| Safety | 1 | 2.75% for each year of service up to 20 years, 2% for each year after that up to 30 years total | 75% | 20% | 99% | No |
| Safety | 2 | 2% @ 50 - 2.7% @ 55 | | 80% | 1% | Yes |

Source: Systems' Membership Guidelines.

Neither miscellaneous nor safety city employees participate in—pay for or receive benefits from—Social Security. All city retirees receive some form of COLA to their pension allowances, though the form of COLA varies by member type and tier.

In 2009-2010, the average pension benefit for CFFP service retirees was $51,684, well below the 20-system average of $64,581 and fourth lowest among the state's largest 20 systems. For CFERS service retirees, the average annual benefit was $24,720, again below the 20-system average of $31,912 and second lowest among those systems.

### Funded Status

The financial health of CFFP and CFERS declined slightly from 1999 to 2011, but both systems' assets were higher than liabilities throughout the entirety of the period. Based on the actuarial value of assets, CFFP's funded ratio under its assumed 8.0 percent discount rate fell from 128.0 percent in 1999 to 111.4 percent in 2011. CFERS' funded ratio fell from 121.8 to 116.0 percent. Although the systems saw a high positive return on investments in 2010-2011, they still have yet to realize the full extent of 2008-2009 losses in the actuarial value of assets, and so their funded ratio on an actuarial basis will improve only marginally as the recent gains are applied to offset past losses. Based on the market value of assets, CFFP has a current funded ratio of 120.8 percent, and CFERS has a current funded ratio of 122.4 percent.

Both CFFP and CFERS currently meet the 80 percent funded status minimum standard. However, funded ratios at risk-free discount rates are 71 percent and 75 percent on an actuarial basis and 78 percent and 77 percent on a market basis (Table A40).

**Table A40**
**City of Fresno Pension System Assets, Liabilities, and Funded Ratios**

| | |
|---|---|
| Market Value of Assets | $1.109 billion |
| Actuarial Value of Assets | $1.023 billion |
| Actuarial Accrued Liabilities[a] | $1.441 |
| Funded Ratio (Market Value) | 77.0% |
| Funded Ratio (Actuarial Value) | 71.0% |
| Unfunded Liabilities | $.418 billion |
| Unfunded Liabilities Per Dollar of Payroll | 422.9% |

a Assumes risk-free discount rate of 5.0%.
Source: CFFP and CFERS Actuarial Valuations, 2011.

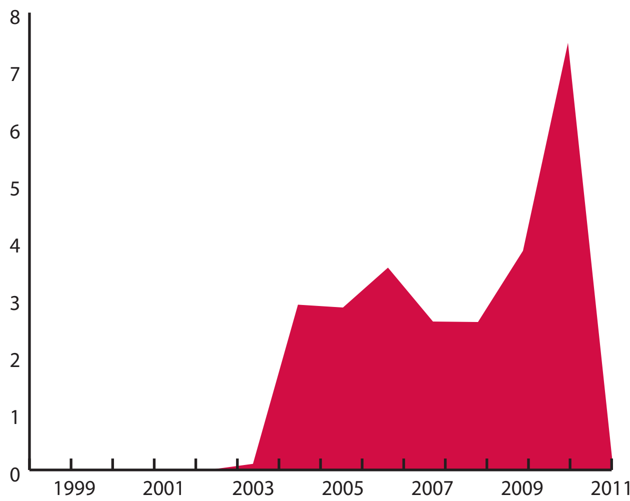
### Pension Costs

Although the City of Fresno pension systems have seen less of a decline in their funded levels in recent years relative to the other plans in this report, they have not escaped the common trend of increasing costs. Pension costs increased from 0 percent of total city expenditures in 1999 to 7.5 percent in 2011.

In 2011, the city's annual costs were $27.6 million. In 1999, the city's annual required contributions to CFFP and CFERS were $0. As a result, it is difficult to compare the rate of growth in pension expenditures with that of growth in other categories of city spending. Note, however, that over the same period, expenditures on recreation and cultural services fell by $8.8 million, and expenditures on public ways and facilities fell by $3.9 million.

**Figure A39**

**Pension Share of Fresno City Expenditures**

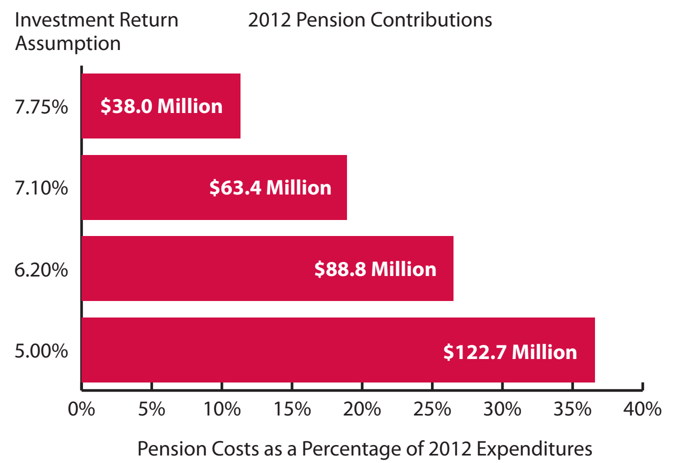



Source: CFFP and CFERS Actuarial Valuations, 1999-2011, and City Comprehensive Annual Financial Reports.

These pension costs were determined using the systems' 8.0 percent investment return assumptions. Under those same assumptions, for the 2011-2012 fiscal year, the systems project pension costs at 11.3 percent of city expenditures. Figure A40 shows changes in pension costs with different investment return assumptions. At 6.2 percent, pension costs are $89 million, or 26.5 percent of the county budget.

**Figure A40**

**2012 Fresno City Pension Contributions, Share of Total Expenditures Under Different Investment Return Assumptions**




Source: CFFP and CFERS Actuarial Valuations, 1999-2011, and City Comprehensive Annual Financial Reports.

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