

Governmental Employer
Funding of Defined Benefit Plans
and
CalPERS Employer Rate Smoothing Policies



Ron Seeling
CalPERS Chief Actuary

Key Messages



- ⌘ The long term nature of actuarial work and the ongoing nature of governmental employers allows a long term approach to funding post employment preferable for governmental employers.
- ⌘ Employers sponsoring plans at CalPERS stated emphatically that they desired more stability and predictability in the contributions to their pension plan.
- ⌘ The strong markets of the late 1990s resulted in a substantial surplus across all of CalPERS.

Key Messages



- ⌘ While some surplus was used for benefit improvement, about 80% of the decline in the funded status was due to the long and deep market downturn in the early 2000s.
- ⌘ The markets have done well over the past several years and the plans at CalPERS are quickly returning to 100% funded.

The Nature of Pension Actuarial Work



- ⌘ By their very nature, actuarial calculations for post employment benefits are very long term in nature, not year by year predictors.
- ⌘ The work is based on long term average demographic and economic assumptions.
 - ☒ Investment return assumption and experience has a large impact on employer contributions.
 - ☒ The 20 year compound return for CalPERS Public Employees Retirement Fund is in excess of 9%, but individual yearly returns included a negative 7.23% and a positive 20.1%.
 - ☒ The current long term investment return assumption is 7.75%.

Basic Definitions



- ⌘ When a new employee is hired, there is created an obligation to pay that individual “something” at “sometime” after the employee terminates.
- ⌘ The “something” and “sometime” depends on when and how the employee terminates and most often on some unknown future salary.
- ⌘ The actuarial assumptions produce a probability of occurrence for each of hundreds of possible futures for the employee.

Basic Definitions

- ⌘ Three important values are computed based on having all actuarial assumptions met (a big if).
 - ☒ **Present Value of Benefits** – The total dollars needed today to pay for all future benefits for all current (but not future) employees without the need for future contributions at all.
 - ☒ **Normal Cost** - The “annual premium” needed each year of the employee’s career to pay for an employee’s total benefit.
 - ☒ **Accrued Liability** - The assets that would be on hand now if all Normal Costs had been collected in the past had all actuarial assumptions had been met. This is also the Present Value of Benefits less the Present Value of future Normal Costs.

Funded Status



- ⌘ The plan's **Funded Status** is equal to the plan's assets divided by the plan's accrued liability.
- ⌘ When assets are less than the accrued liability, the plan is simply behind schedule in accumulating assets and contributions in excess of normal cost must be collected.
- ⌘ When assets are more than the accrued liability, the plan is ahead of schedule in accumulating assets and contributions less than normal cost can be collected.
- ⌘ It is the nature of actuarial work and investing in assets that rise and fall in value that sometimes the plan is sometimes ahead of schedule and sometimes behind schedule.

Funded Status



- ⌘ Too much is made of a plan's current funded status.
 - One should look for progress in returning to 100% funding not the current funded status at any one point in time.
 - The average funded ratio of CalPERS' plans was about 138% (on a market value basis) at the height of the stock market boom, through about June 30, 2000.
 - Some surplus was used for benefit enhancements, but about 80% of the surplus remained to reduce future employer contributions.

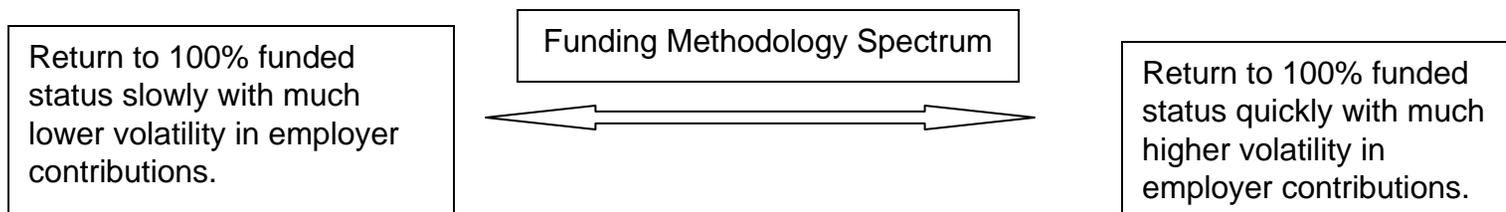
Funded Status



- ⏏ Then came one of the deepest and longest declines in the stock market's history.
- ⏏ CalPERS experienced two fiscal years in a row of negative returns for the first and only time in its 75 year history.
- ⏏ The average funded ratio of CalPERS dropped to 80% (on a market value basis).
- ⏏ The markets have experienced a significant rebound since their low point and the average CalPERS plan's funded ratio stands at approximately 93% (on a market value basis) as of June 30, 2006.
- ⏏ The investment return for fiscal 2006-07 is again superior and the plans will continue to march toward 100% funding.

Funded Status versus Smoothing

- ⌘ Any “smoothing” in the employer rate setting process comes at the expense of the funded status of the plan.
- ⌘ The more you smooth, the slower you return to 100% funded whether you start above or below 100% funded status.
- ⌘ There is a funding methodology spectrum



- ⌘ The goal must be to strike the proper balance between protecting the plan’s funded status and producing stable employer contributions.

Funded Status versus Smoothing



- ⌘ There are significant differences between private sector and public sector employers with respect to the appropriate choice of where to be on this funding spectrum.
- ⌘ In many instances, the life expectancy of private sector employers is shorter than the life expectancy of the pension promises made by the company.
- ⌘ Recent trends in federal legislation regarding the funding of private sector defined benefit plans have been strongly slanted toward short term solvency rather than long term funding.

Funded Status versus Smoothing



- ⌘ On the other hand, most public sector employers will be there to back up their pension promises for the long term.
- ⌘ So, public sector employers can afford to focus on long term funding, and corresponding significantly lower contribution volatility than their private sector counterparts.
- ⌘ There is also a lack of symmetry in this spectrum.
 - ⊞ A policy set to eliminate unfunded liability quickly (a conservative approach when the plan is behind schedule) essentially backfires when applied to the same plan in a surplus position.
 - ⊞ Nevertheless, the Board's fiduciary counsel has opined on multiple occasions that symmetry is required.

The CalPERS Study of Smoothing Methods



- ⌘ CalPERS' actuarial staff set about studying the impact of various asset smoothing and amortization methods on the plan's funded status as well as employer contribution rates.
- ⌘ We studied 32 different methods.
- ⌘ We generated 1,500 scenarios of future asset returns using a statistical normal distribution based on CalPERS asset allocation to generate the scenarios.
- ⌘ Each of the 1,500 scenarios consisted of 50 years worth of future investment returns.
- ⌘ For each of these 1,500 scenarios we computed the plan's funded status and employer contribution rate for each of the next 50 years.

The CalPERS Study of Smoothing Methods

⌘ We set the following objectives:

☑ Seek the smoothing method that “best” simultaneously:

☑ Minimizes any negative impact on the funded status of the plans.

☑ Minimizes the volatility in the employer’s contribution.

☑ Minimizes the average future employer contribution.

☑ Select a method that produces employer rates that comply with generally accepted accounting standards as provided by Governmental Accounting Standards Board Statement No. 27 (GASB 27).

Comparison of Prior and New Methods

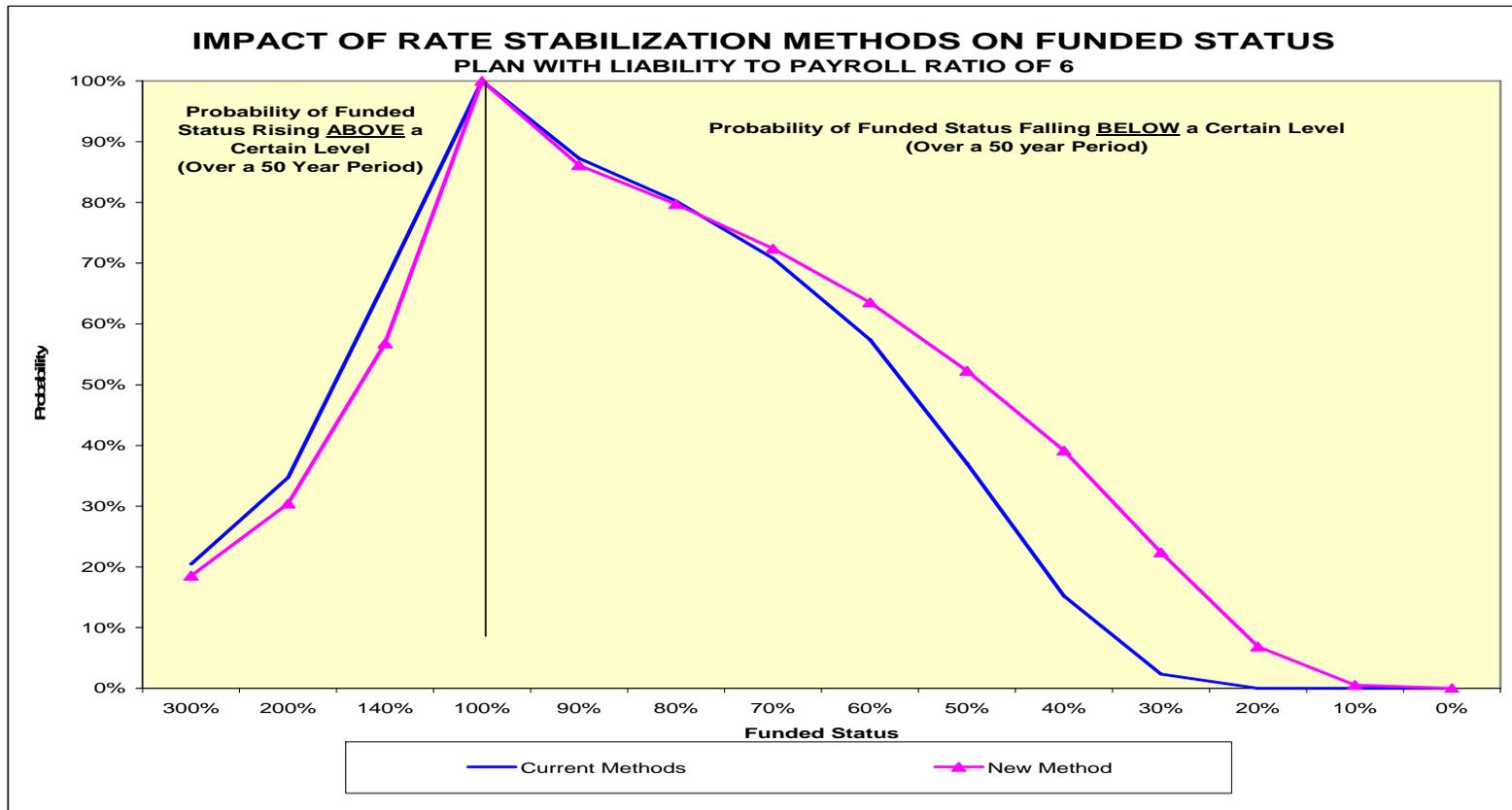
	<u>Prior Method</u>	<u>New Method</u>
Spread of Asset Gains/Losses	3 year asymptotic	15 year asymptotic
Actuarial Value Corridor	90% - 110%	80% - 120%
Amortization of Gains/Losses	10% of Unamortized Amount	30 Year rolling (about 6% of unamortized amount)
Minimum Contribution	None	Normal Cost less 30 year amortization of any surplus
Amortization of Plan Amendments, Changes in Methods or Assumptions	20 Year Declining	20 Year Declining

Impact of New Methods on Funded Status and Employer Rates.

⌘ The new methods:

- ☑ Reduce the standard deviation of the annual change in employer rates (the volatility) by 52%.
- ☑ Increase the average employer contributions by .2% of payroll.
- ☑ Produce employer rates that are compliant with GASB 27.
- ☑ Produce only a minor impact on the potential funded status of the plan. See next slide.

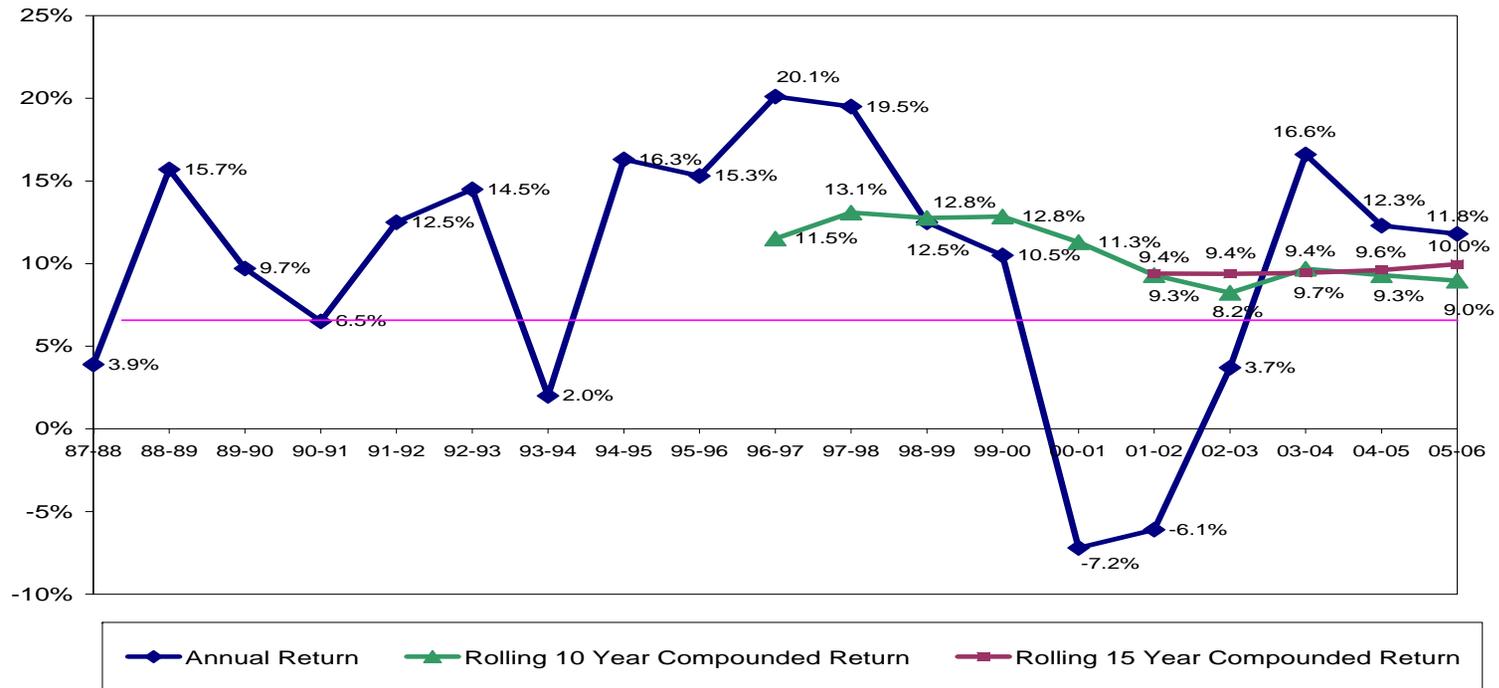
Impact of New Methods on Funded Status



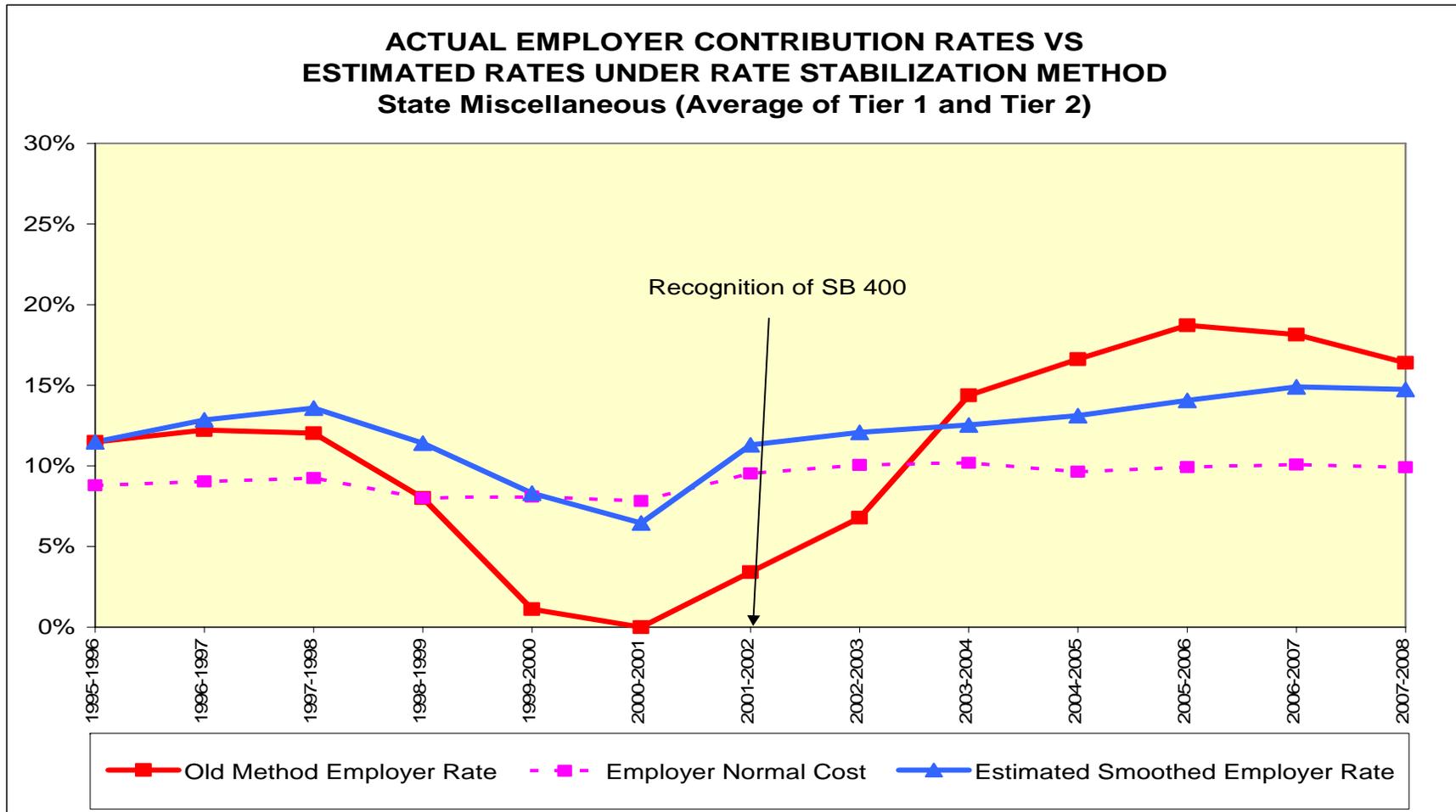
The x-axis in the funded status of the plan and the y axis is the probability of the plans hitting that funded status at some point during the 50 year projection period.

History of Investment Returns at CalPERS

Despite the volatility in the annual investment returns, the longer compound investment returns surpass the actuarially assumed return.

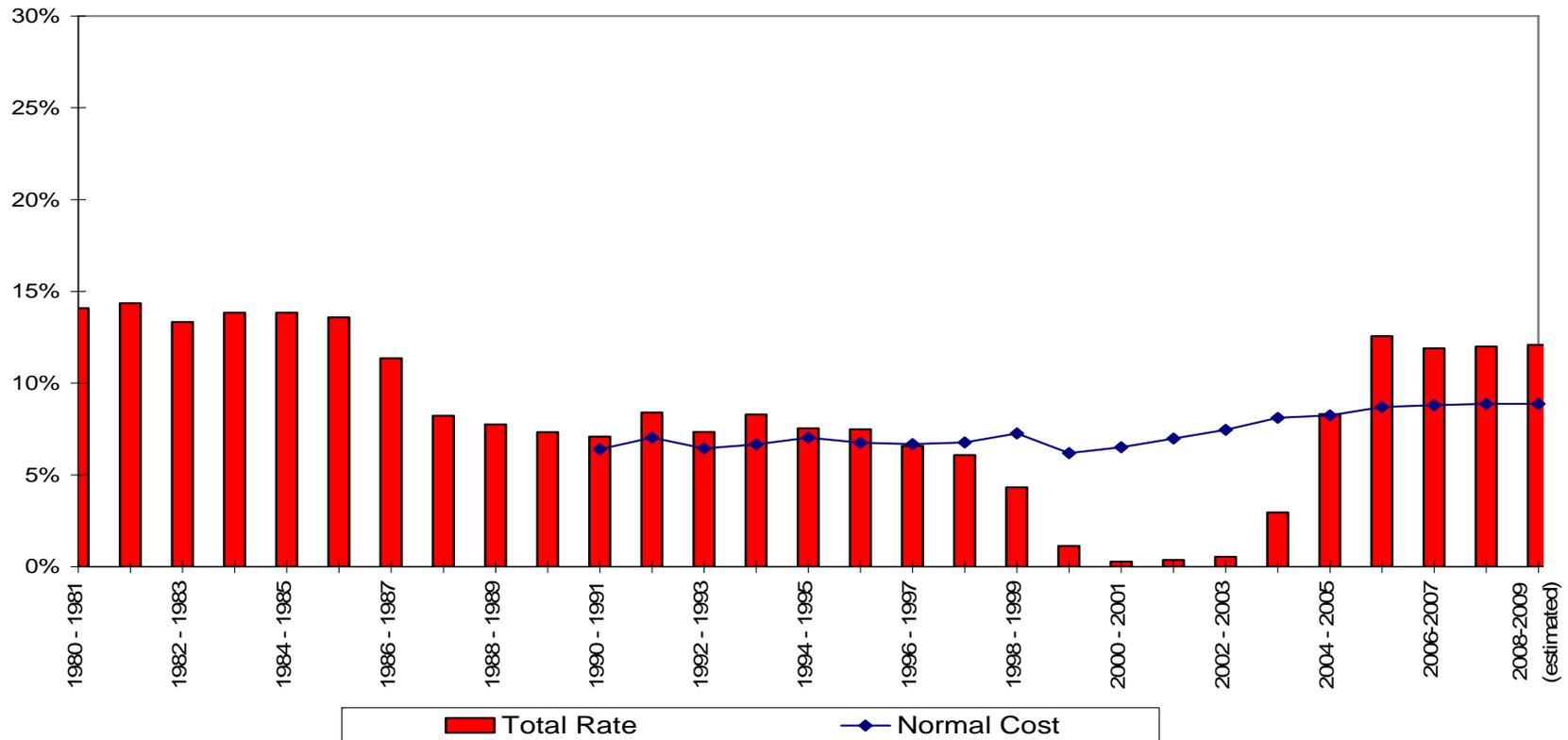


Comparison of State Contributions for the Largest State Plan Old vs. New Smoothing Methods



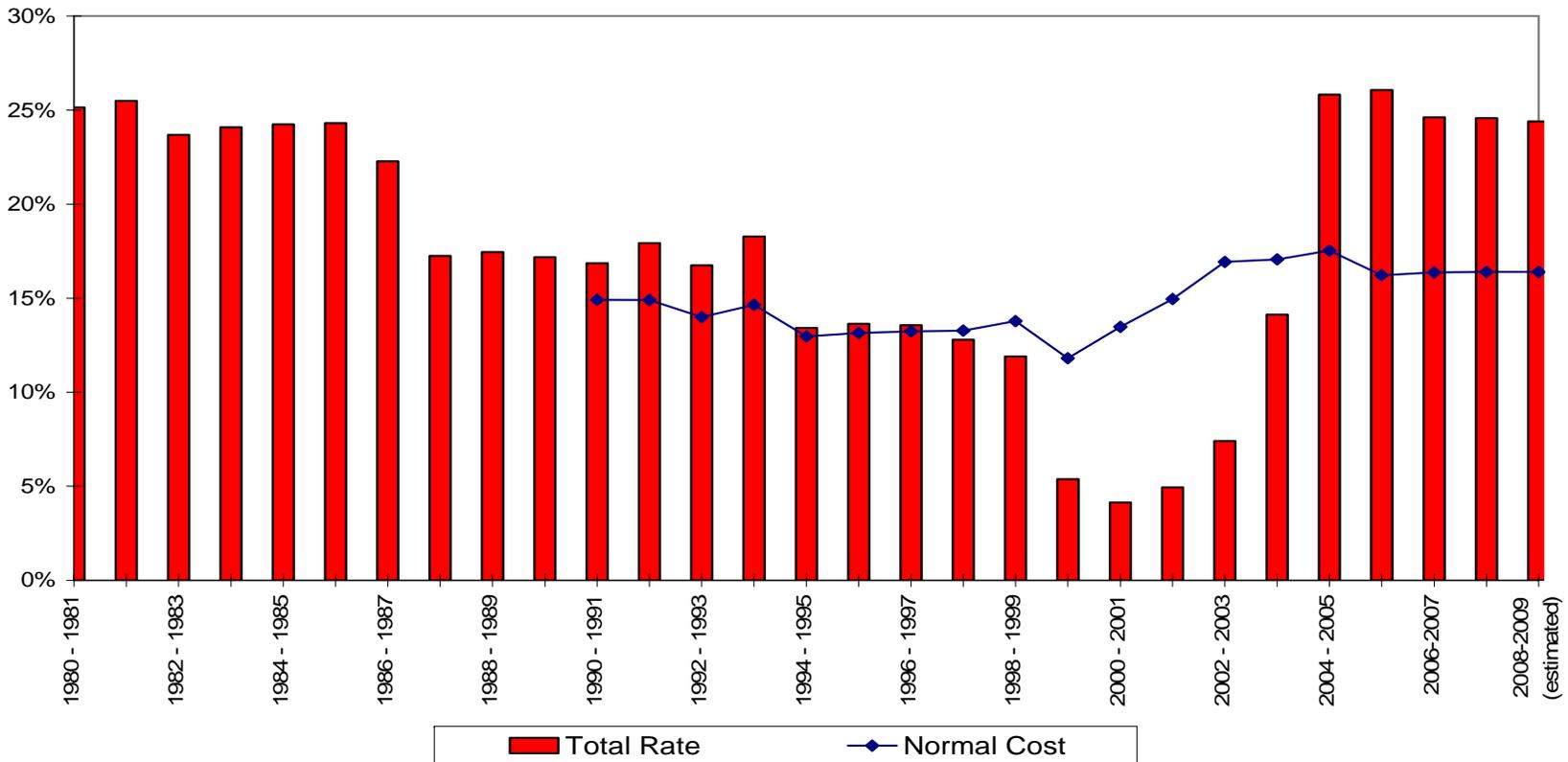
History of Public Agency Employer Contribution Rates

History of Average Employer Contribution Rates for Public Agency Miscellaneous Plans



History of Public Agency Employer Contribution Rates

History of Average Employer Contribution Rates for Public Agency Safety Plans



General Results of Smoothing



- ⌘ CalPERS implemented smoothing in response to great market volatility.
- ⌘ There was no way to know then, nor is there any way to know now the future direction of the markets.
- ⌘ It is equally likely that the new smoothing methods will help ease future increases in rates as it is that the new methods will slow down decreases in rates.
- ⌘ That being said, the impact on employer rates has been very positive so far. For example, about 75% of all local public agency plans experienced an employer rate change of less than 1% of pay between 2005-06 and 2006-07. The remaining 25% of plans included those that improved benefits and had a planned change in employer rate.

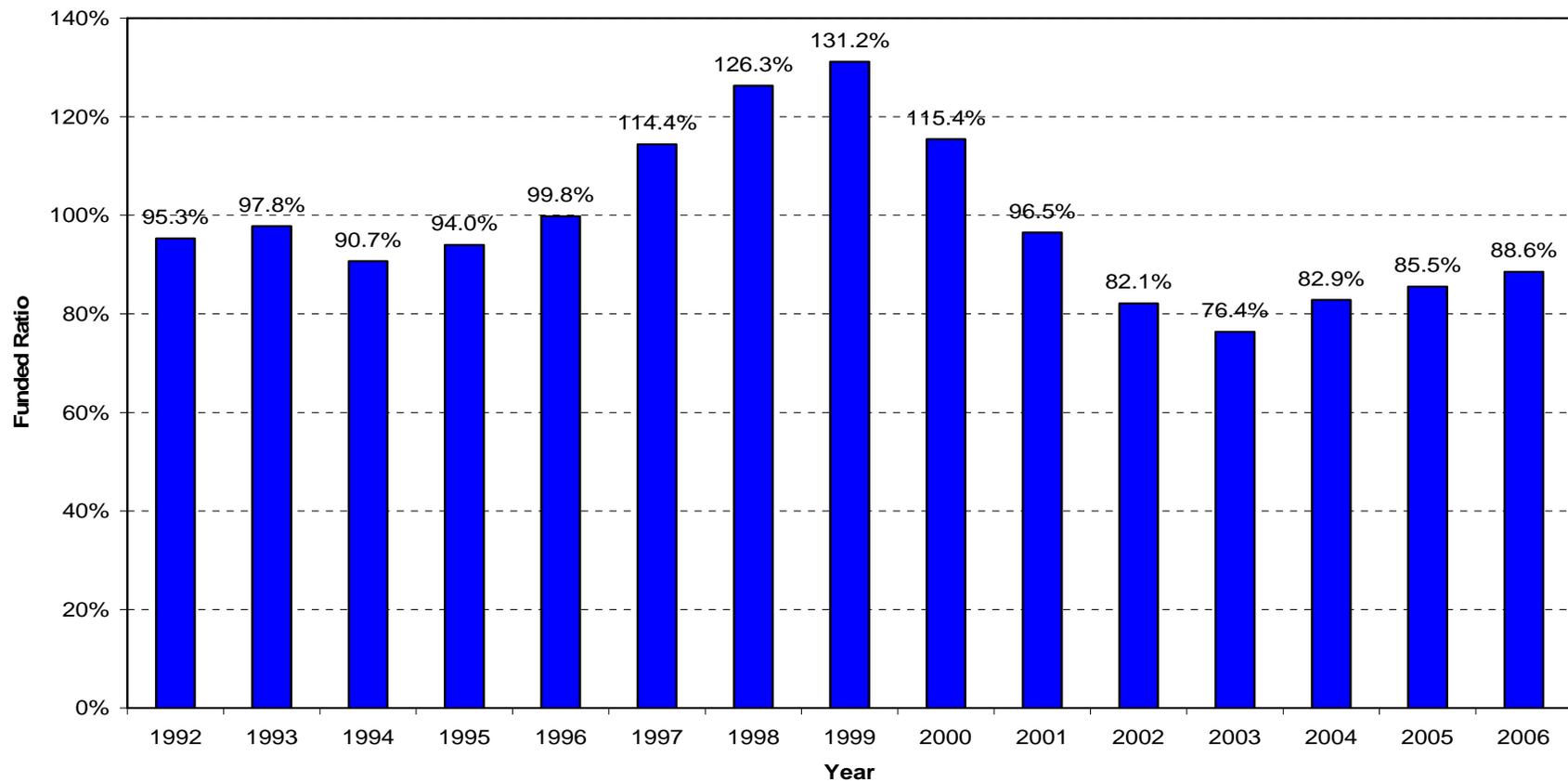
General Results of Smoothing



- ⌘ From these graphs that follow it can be clearly seen that the funded status of all plans at CalPERS dropped significantly upon the market crash in early 2000.
- ⌘ But market returns have improved dramatically and the smoothing techniques have not allowed employer rates to drop as quickly.
- ⌘ All plans are recovering nicely and marching back to one hundred percent funded status fairly quickly.

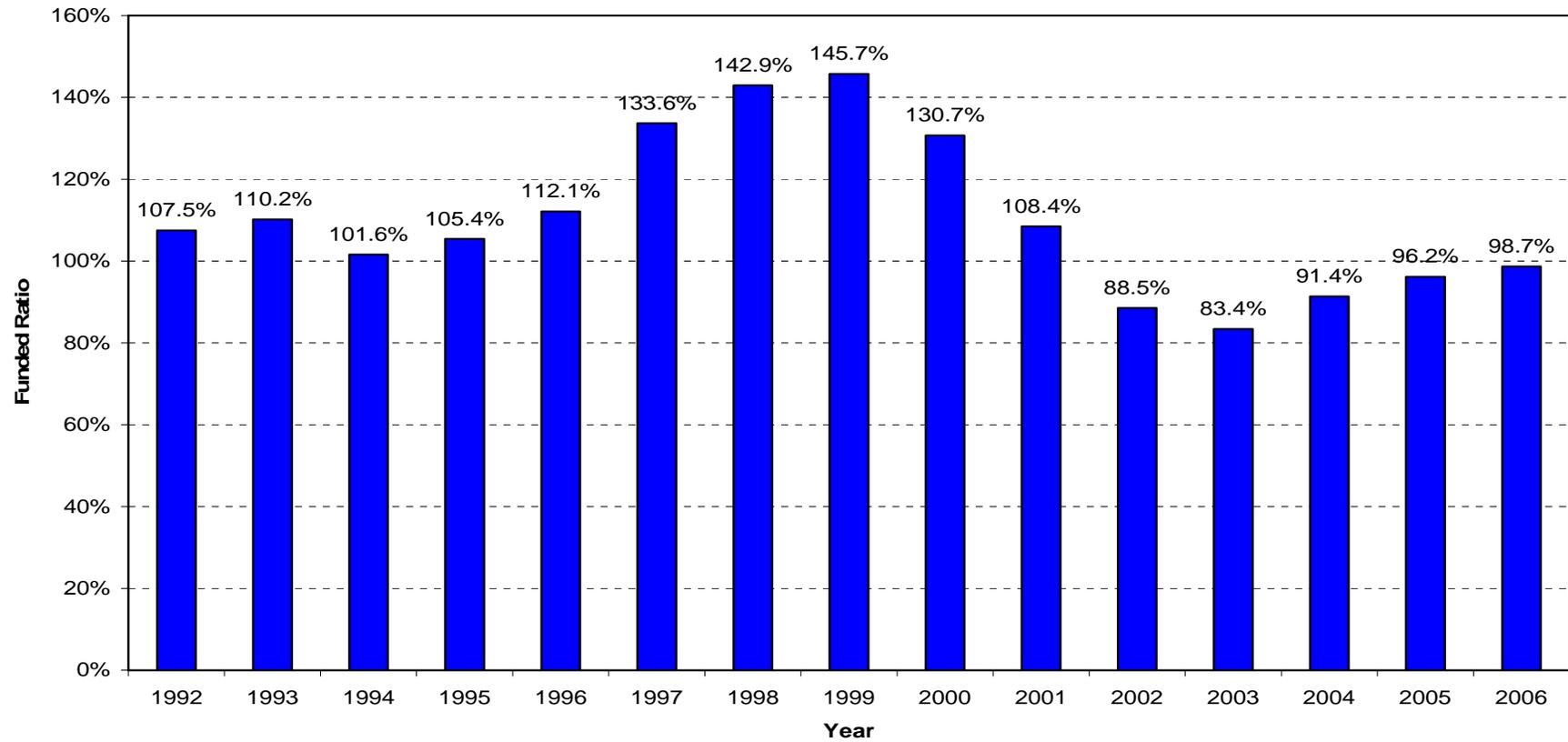
Funded Status of State Plans

History of Funded Ratio - MVA Basis
State Plans



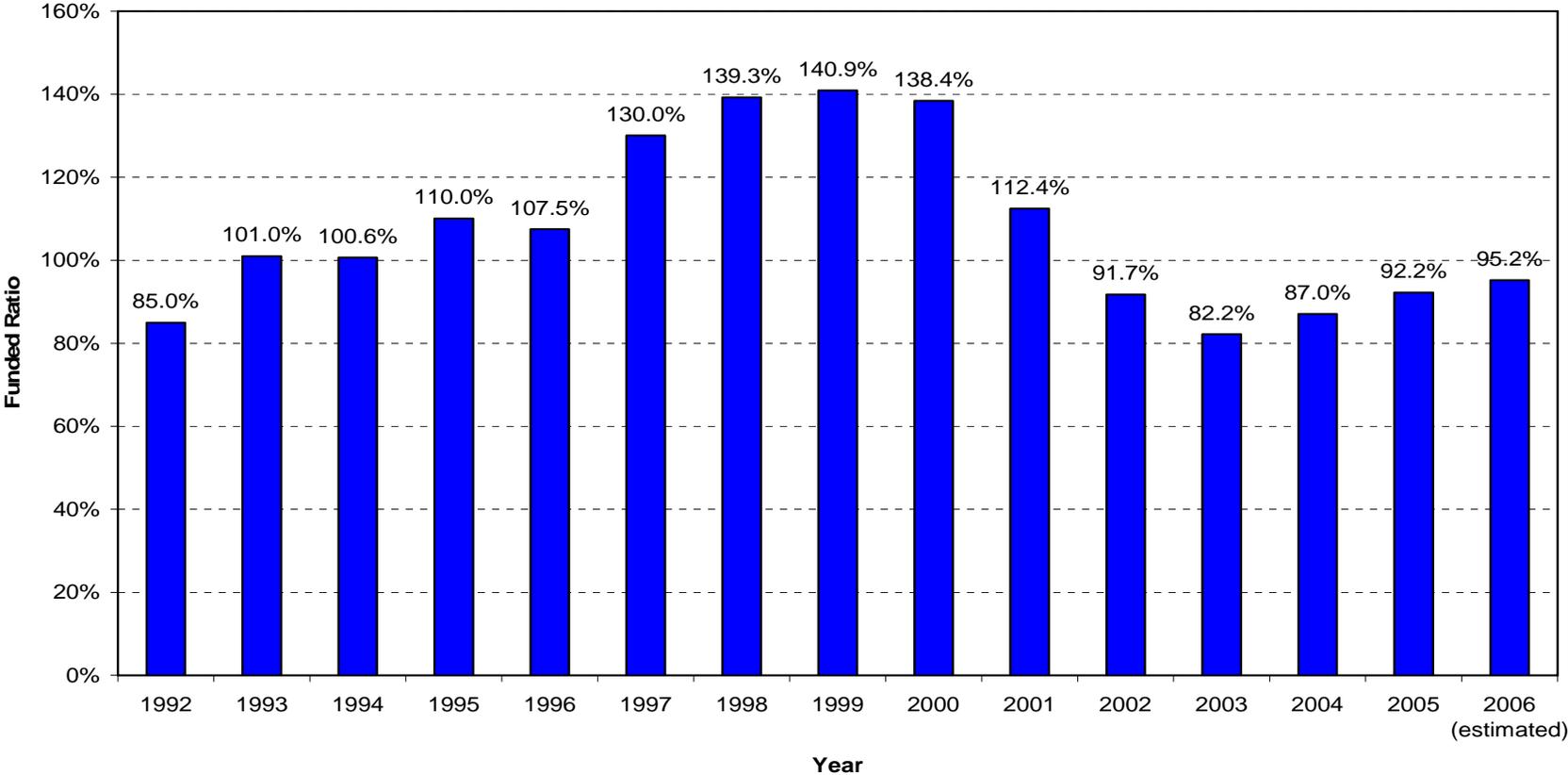
Funded Status of The School Pool Plan

History of Funded Ratio - MVA Basis
Schools Pool



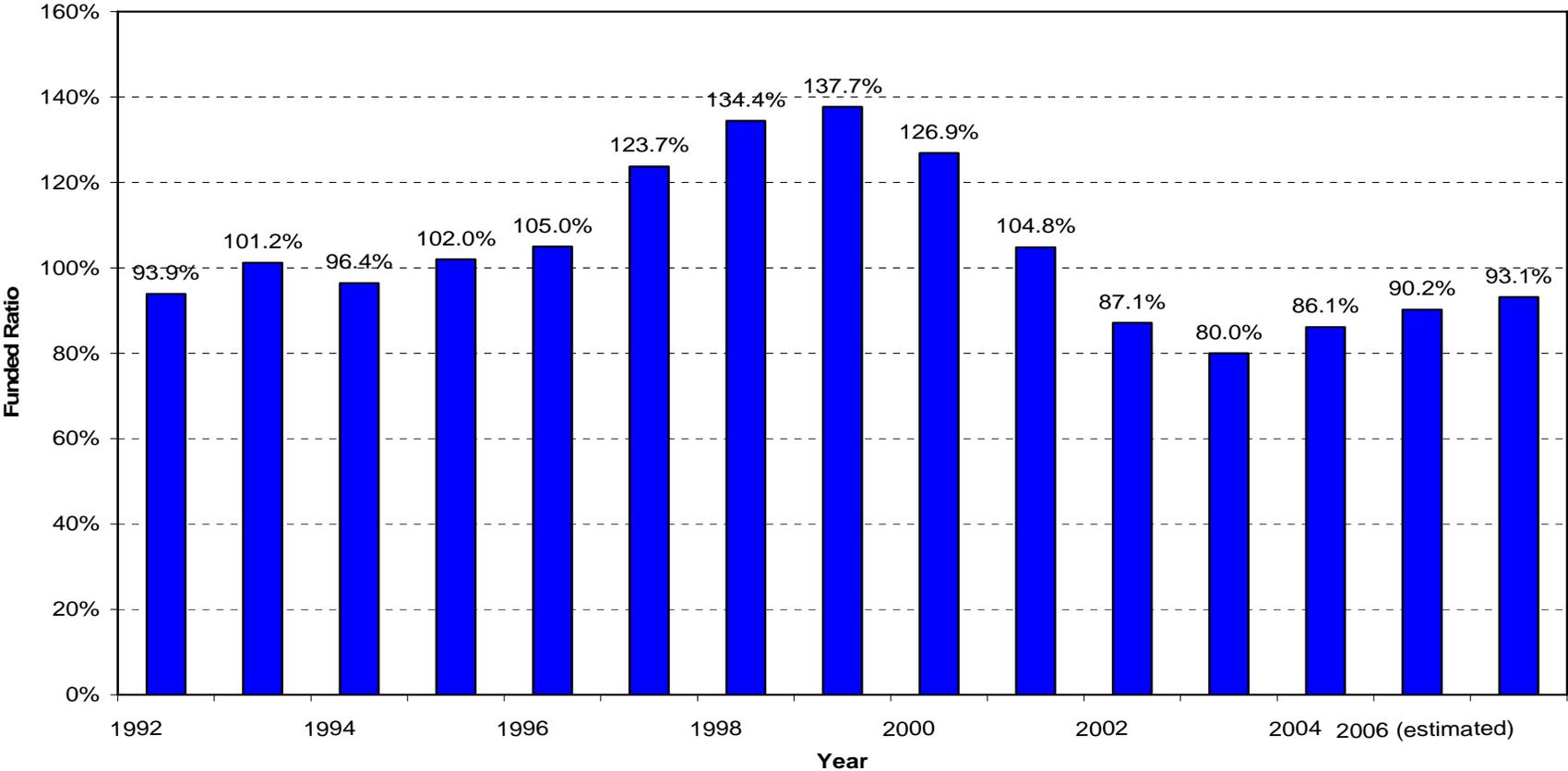
Funded Status of Public Agency Plans

History of Funded Ratio - MVA Basis
Public Agencies



Funded Status Across all Plans at CalPERS

History of Funded Ratio - MVA Basis
PERF



Next Steps at CalPERS



- ⌘ CalPERS is studying a remaining question regarding smoothing.
 - “How do we bring the employer’s rates back towards normal cost as the plans approach one hundred percent funding?”
 - We want a mechanism that avoids having employer contributions “stuck” too high or too low when the plan approaches one hundred percent funding on a market value of assets basis.
 - Actuarial staff at CalPERS should complete this work and deliver it to the CalPERS Board by the end of this calendar year, in time for next rate setting at CalPERS.