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STATE RESEARCH

Trouble Brewing

The Disaster of California State Pensions

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Table of Contents

Figures

Executive Summary

California has promised its public employees lavish pensions and retiree health benefits without setting aside nearly enough money to pay for those benefits. As a result, California already admits to a $75.5 billion shortfall in paying for these promises to public employees—$40.5 billion for the teachers' retirement plan (California State Teachers' Retirement System, or CalSTRS) and $35 billion for the California Public Employee Retirement System (CalPERS).

This shortfall has grown so large because elected officials preferred the hidden cost of higher retirement benefits to the visible cost of higher wages. For instance, a recent report from the Reason Foundation noted that thanks to a 1999 pension bill radically increasing benefits, "there are 9,111 state and local government retirees in California, such as police officers, firefighters and prison guards, who receive pensions of at least $100,000 a year (through CalPERS), and an additional 3,065 retired teachers and school administrators who receive pensions of over $100,000 a year (through CalSTRS)."[1] As a California pension recipient told *Forbes* last year, "It's just taxpayers' money, so nobody cares."[2]

Unfortunately, the situation is actually far more dire than is currently admitted. The actuarial valuations mentioned above took place as of June 30, 2008 and both pension systems have had substantial losses in their investments since that date. As of the most recent information available, CalPERS' assets had dropped to a reported $200 billion, and the teachers' retirement system's assets had dropped to $134 billion; these losses would add another $44 billion in unfunded liabilities.

But it gets even worse. When the California pension systems set aside money for future pension payments, they rosily assume that their investments are going to earn a steady 7.75 percent or 8 percent return year after year. But that assumption is clearly too optimistic—especially after a decade of zero stock market growth—and does not match the bond-like nature of pension obligations. Financial economists generally agree that pension obligations should not be measured with such optimistic assumptions.

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[1] Adam B. Summers, "How California's Public Pension System Broke (and How to Fix It)," Reason Policy Study 382 (June 2010), p. 7, available at http://reason.org/files/california_pension_crisis_reform_study.pdf.

[2] Stephane Fitch, Gilt-Edged Pensions." *Forbes*, 22 Jan. 2009, available at http://www.forbes.com/forbes/2009/0216/078.html.

In this paper, I re-estimate California's pension obligations using a discount rate approximating what private pensions are allowed to use. With this more realistic assumption, California's unfunded pension liabilities—i.e., the gap between existing plan assets and the present value of benefits accrued by participants—actually reach $282.2 billion, a figure that rises to $326.6 billion when current market values are taken into account. On top of that, the California Controller estimates that retiree health benefits are currently underfunded by $51.8 billion. **The total of these actuarial obligations thus reaches $378.8 billion.**

This is a staggering figure. For comparison, as of July 1, 2009, the California state government had approximately $67 billion in outstanding state bonds.[3] **Thus, shortfalls in state pensions and retiree health benefits are more than five times the existing state debt.** All of this is money that California taxpayers may eventually have to cough up to pay for someone else's retirement. Other crucial state services—from bridge repairs to teachers serving in the classroom—may be shortchanged because state retirees are receiving so great a portion of the state budget.

California politicians can either continue hiding their heads in the sand, or else face up to these looming obligations by ceasing to promise overly lavish benefits and by increasing the required contributions from salaried employees. In addition, California may consider changing the structure of its pension system so that it depends more on employee savings, rather than promising a guaranteed financial payment regardless of how much a given employee saved.

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[3] California State Treasurer, "The State of California Debt Affordability Report," Oct. 2009,available at http://www.treasurer.ca.gov/publications/2009dar.pdf.

Introduction

California's financial problems are now legendary, thanks to a perfect storm of unemployment, drastic declines in a previously overpriced housing market, and through-the-roof spending. Its fiscal situation was so bleak in 2009 that, for a time, it issued IOUs instead of cash payments. California has reportedly cut some $32 billion from its budget over the past year, but it remains to be seen whether any budget plan will alleviate the projected deficits of between $15 and $25 billion per year over the next four years.[1] So desperate is California for money that "recent months have seen cash-strapped California seriously consider proposals to sell naming rights to its state buildings, to legalize and tax marijuana, to keep marijuana illegal but tax it anyway, to privatize the state's prisons, to build and operate state prisons in Mexico, and to sell off surplus state vehicles autographed by the governor."[2] Indeed, California has even resorted to seizing people's savings. As ABC News reported, "California law used to say property was unclaimed if the rightful owner had had no contact with the business for 15 years. But during various state budget crises, the waiting period was reduced to seven years, and then five, and then three. Legislators even tried for one year. Why? Because the state wanted to use that free money."[3]

Unfortunately, these dire budgetary problems are only going to get worse in the future. California's problems stretch far beyond its budget deficit and even beyond the $17.8 billion shortfall in its unemployment fund over the next year (according to a May 2009 report from the state's Employment Development Department).[4]

Unfunded pension liabilities are already admitted to be $75.6 billion. This is money that California should be setting aside— but isn't—to cover future pension payments.

But the estimated unfunded liabilities right now are far too low. In order to produce such estimates, California (like most other state governments) is assuming, on average, that pension investments will appreciate at around 8 percent per year for the indefinite future. Put another way, pension payments scheduled to be made in the future are given a current valuation using a 7.75 percent or 8 percent discount rate.

While this assumption is allowed by the Government Accounting Standards Board (GASB), it is too optimistic to be an accurate way to estimate future pension liabilities. This is because defined-benefit pension plans offer a guaranteed benefit, not a benefit that swings up and down along with high-risk investments. If investment returns are below expectations, as is often the case with the stock market, the government is

responsible to cover the shortfall. The pension plan does not have the option of shortchanging current pension recipients just because the stock market hasn't performed as expected.

For this reason, private-sector pensions are required to use discount rates equal to the interest paid on high-quality corporate bonds. This is true even if the private pension invests in stocks or other investments that supposedly have a higher rate of return in the long run. Bonds represent a guaranteed stream of payments year after year, just as the pension plan's obligation to pay out pensions is a guaranteed stream of payments. Currently, the rate paid by corporate bonds is about 5.2 percent, the lowest in nearly a decade.

Using the same standards that govern private sector pension plans and taking into account the declines in stock market values, actual financial liabilities for California pension plans are more properly estimated at over $326 billion.

This actuarial deficit is not primarily a result of the recent stock market decline. As of June 30, 2007, before the stock market crash, CalSTRS already had an admitted unfunded liability of $18.7 billion and CalPERS had an unfunded liability of $44.5 billion, for a total of $63.2 billion. Out of the total $326.6 billion figure that I estimate here, only around $44.4 billion of the increase in unfunded liabilities stems from declines in the market value of the plans' investments, while $206.6 billion is due to the funds' use of excessively aggressive discount rates for future liabilities in addition to the choice to balance budgets by delaying or reducing pension contributions.

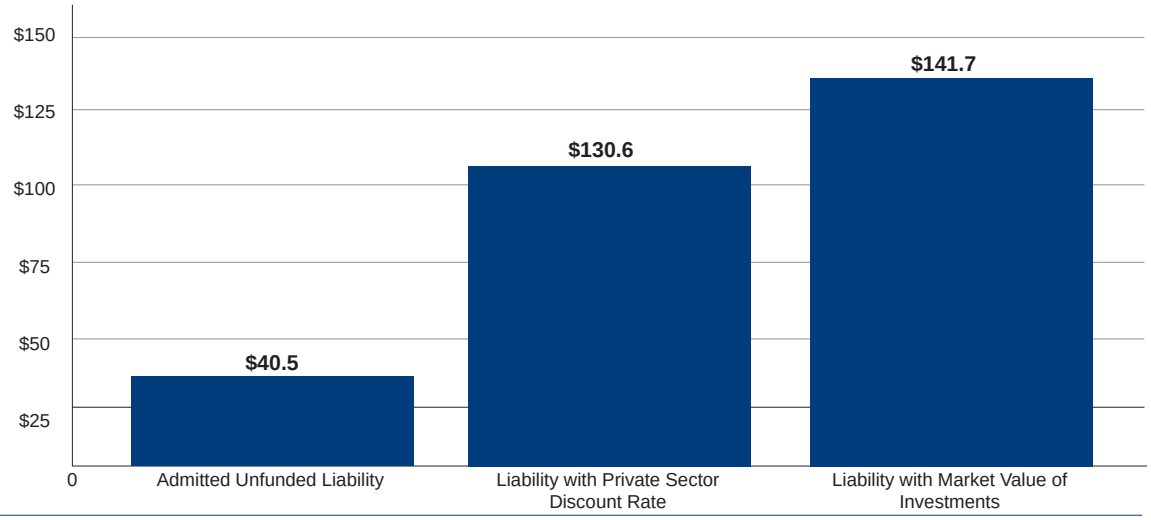
In any event, the past few years of stock market activity have merely proven how dangerous it is to assume 8 percent stock market growth in perpetuity. Indeed, what California has done resembles the misbehavior that led to the recent financial crisis in which banks and other institutions also systematically underestimated their risks and liabilities. But unlike Wall Street's misbehavior, California's use of aggressive discount rates is endorsed by GASB.

California is faced with a thorny dilemma. Beleaguered California taxpayers are already struggling with providing for their own retirement, not to mention digging California out of a fiscal hole unmatched by any other state. They may well balk at facing ever-steeper cuts in state services or ever higher taxes to pay for state employees to collect a comfortable retirement. Moreover, the need to pour more money into lavish state employee pensions will force California either to cut back spending in other budget areas—classroom education, Medicaid, transportation, etc.—raise taxes, or both.

The State of California understates teachers' pension unfunded liabilities by as much as $101.2 billion. To put this in perspective, California's total budget was about $89.5 billion for FY2009-2010.

Figure 1

CalSTRS unfunded liabilities (dollars in billions)

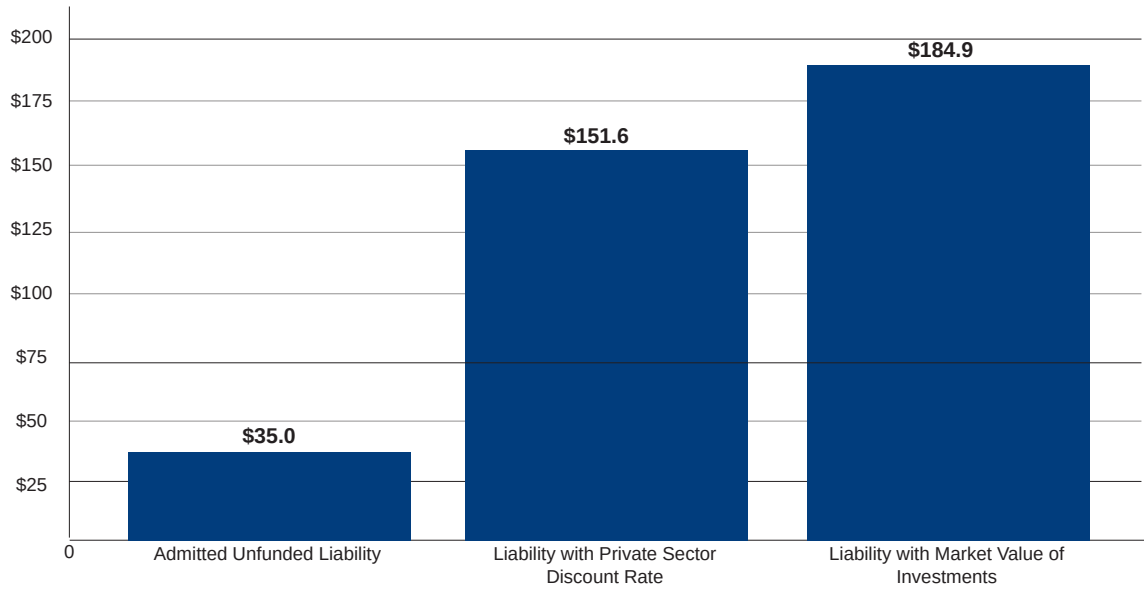


Source: California State Controller's Office (2010).

The State of California understates public employees' pension unfunded liabilities by as much as $149.9 billion, which is greater than California's current total budget.

Figure 2

CalPERS unfunded liabilities (dollars in billions)



Source: California State Controller's Office (2010).

I conclude by recommending policy actions that California can take to address its pension liabilities. Unfortunately, there is not much to be done about the accrued liability: it represents income already earned by public employees but not yet paid. California must simply amortize these costs over time at taxpayer expense. As the Government Accountability Office notes, "All unfunded liabilities shift the responsibility for paying for benefits accrued in past years to the future."[5] However, several actions are available to avoid future funding shortfalls and rein in out of control public pensions. For example, California should consider shifting to a defined-contribution retirement plan, especially for new and young employees; this is the norm in the private sector and was pursued successfully by Michigan in the 1990s. If a defined-contribution plan faces too much political resistance, California may consider hybrid options like cash balance plans and TIAA-CREF, the latter of which has provided a version of defined-contribution retirement saving for public university employees for decades.

California's Retiree Obligations

Pension Plans

CalPERS and CalSTRS are the two largest state pension plans in the entire country. CalPERS controls some $200 billion in assets, has a total membership of over 1.1 million people, and paid retirement benefits to about 485,000 retirees in 2008-2009. CalSTRS is not much smaller, controlling over $134 billion, with a total membership of over 833,000, and retirees numbering nearly 224,000 in 2008-2009.

As is the case in almost all states (two exceptions are Michigan and Alaska[6]), California's pension plans are defined-benefit plans. That is, employees are promised a specific amount of money regardless of how well or poorly the plan's investments have done or any budgetary problems the plan or the state might be experiencing. Generally, the plans base benefit levels on number of years of service and income in the last few years toward retirement—in other words, benefits may not match up closely with contributions made, and participants can often permanently increase their pensions by briefly boosting their income at the end of their careers.

Under California law, pension plans are akin to contracts, which means that "amending state pension plans may violate the contract clauses of both the federal and state constitutions."[7] While such plans

can theoretically be changed, the California Supreme Court has held that "changes in a pension plan which result in disadvantages to employees should be accompanied by comparable new advantages."[8]

In an alarming report filed with the Teachers' Retirement Board on February 5, 2010, the head of CalSTRS noted that given substantial stock market losses in 2008-2009, the unfunded actuarial obligation "would increase to about $78 billion and the funded ratio would decline to about 58 percent. Moreover, given existing assumptions around investment returns and contributions, the funded ratio will decline to 13 percent over the next 30 years."[9] The report went on to observe that even if the stock market recovers, it is extremely implausible that it could ever make up for the losses to date: "In order to fully fund the [defined-benefit] program in 30 years, investment returns for the next five years would have to exceed 20 percent per year, a rate of return that is 2 ½ times the assumed investment return."[10] The report also noted that the Teachers' Retirement Board had recommended increased contributions from employers, members, and the state back in 2006, but "unfortunately, many felt that CalSTRS could 'invest its way' out of the problem."[11]

Retiree Health Benefits in California

In addition to these two main pension plans, the State of California provides health benefits to public employees who retire. These health benefits are classified as "other post-employment benefits," or "OPEB." A February 9, 2010, report for the state Controller noted that "one major difference, in practice, between pensions and OPEB is that pension benefits are almost always pre-funded, whereas OPEB typically are not. . . . The State of California currently finances retiree healthcare benefits on a pay-as-you-go basis, and no separate pool of assets is available to pay future retiree healthcare benefits."[12]

For pay-as-you-go obligations in California, the money comes from the California general fund, which is invested "in short-term fixed-income instruments through the Pooled Money Investment Account," subject to a typical interest rate of around 4.5 percent.[13] The state Controller's office therefore used that 4.5 percent as a discount rate in estimating the actuarial liabilities for these health benefits. The Controller's report estimated that California's annual contribution to retiree health benefits for 2010 should have been $3.9 billion, compared to an actual contribution of $1.3 billion.

In other words, if California wished to fully fund its retiree health benefit obligations, it would need to roughly triple the budget allotted to that program.

The Past Decade of Pension Reform

The history of state pensions over the past decade is one of hubris, irresponsible behavior, and lack of foresight. The booming stock market of the 1990s resulted in stronger-than-expected asset performance in pension plans, leading to funding surpluses. As a result, state governments started making "commitment[s] to significantly increase benefits, particularly in the 1990s and in the early part of this decade"; as one state pension director said, "A lot of people were riding that wave of euphoria from investment returns."[14]

California in particular gave in to union pressure to increase pensions based on the promise that the stock market would keep rising forever, eliminating the need to actually come up with the money. As a recent Reason Foundation report points out, a 1999 California bill increased public pension benefits to staggeringly high levels, allowing many public safety employees to retire with up to 90% of their final year's salary as a guaranteed pension, and moreover made those increases retroactive and thus applicable to workers who had not paid nearly enough into the pension system.[15] As Dan Walters noted in the Sacramento Bee, "A milestone on California's meandering journey toward fiscal insolvency occurred exactly a decade ago when the Legislature enacted a massive increase in state employee pensions on the expedient assumption that it would cost taxpayers nothing. . . . The CalPERS board, dominated by union representatives, told legislators that taxpayers wouldn't have to bear the load because investment income, which was flowing into the pension trust fund from high-tech stocks, would continue indefinitely."[16]

Unfortunately, those generous reforms turned out to be difficult to pay for as the 2000s progressed and the stock market stopped growing. As Dan Walters noted, "Within a few years, the dot-com bubble had burst, CalPERS had suffered major losses and the state's burden for pensions had pushed into the multibillion-dollar range, not counting the heavy impact on local governments that had cavalierly followed the state's lead on boosting pension benefits."[17] Or in the words of Reason's Adam Summers, "California, like many other governments across the country, did not save for a rainy day. In fact, it did quite the opposite: continuing a spending binge without addressing the rapidly increasing costs of state workers' retirement benefits."[17]

In stark contrast to the assumption of 8 percent growth year after year, we have now been

through a period of more than 11 years with essentially zero overall growth in the stock market—the S&P 500 closed on January 8, 2010, at 1141.69, a level that it had reached in July of 1998.

The lack of stock market growth stands in stark contrast to the generous benefits and ample loopholes offered by the California pension system. A recent article in *Forbes* described "Gary Clift, a 52-year-old Californian who speaks with an insider's authority. Clift spent 26 years working for the state's Department of Corrections & Rehabilitation, retiring in 2006. He's now collecting 78 percent of the $112,000 salary he earned before stepping down and full health care coverage for life." Despite receiving these benefits, "Clift holds special vitriol for a state program that lets employees retire and return to work part-time as 'consultants.' Some of the 'retired annuitants' . . . deliberately get themselves laid off to collect unemployment pay without having to even show up, Clift says."[19]

Discount Rates

When money is owed at some future date, we need to be able to figure out how much that future obligation would cost us in today's dollars. As a highly simplified example, if you owe $10,000 that is due in 10 years' time, and you want to set aside enough money to cover the debt, you do not need to come up with $10,000 today. Instead, if you are able to get an interest rate of 3 percent on your savings account, you would need to set aside only $7,441 today (this is the sum that will turn into $10,000 when multiplied by .03 for 10 straight years). In this example, you have assessed your future obligations using a 3 percent discount rate—the future debt is discounted to see how much it amounts to today.

Pension funds likewise need to use discount rates to know how to prepare for their future financial obligations. In so doing, they follow the lead of GASB, an organization that sets financial standards for state and local governments. GASB "operates independently and has no authority to enforce the use of its standards," but "many state laws require local governments to follow GASB standards, and bond raters do consider whether GASB standards are followed."[20]

In its Statement 25, "Financial Reporting for Defined Benefit Pension Plans and Note Disclosure for Defined Contribution Plans," GASB requires that a discount rate "be based on an estimated long-term investment yield for the plan, with consideration given to the nature and mix of current and expected plan investments."

Some scholars support the GASB position on discount rates. On this side is the view of many actuaries that discount rates should be basically set at an 8 percent level and left there as a way of keeping the participants' contributions and the plan's projections relatively consistent across the years.[21] The argument on behalf of this discount rate is that the stock market has historically performed at or above that level, and given that governments are almost certain to exist permanently (unlike private companies), government pension plans can afford to take the long view in which expected rates of return reflect what may happen over a period of several decades.

But tying discount rates to a plan's actual investments means, in practice, that when a plan makes riskier investments (which have a higher expected rate of return), it can then set aside less money for future obligations even though riskier investments have a greater possibility of loss. This greater possibility of loss has been strikingly seen in the stock market in recent years, which has fallen far short of its performance in the previous few decades. As economist Barton Waring points out, seeing the doctor might reveal that you are sick, just as assuming a realistic interest rate might reveal that a pension plan is underfunded. But using an 8 percent discount rate in disregard for financial reality is "like assuming that you remain healthier by not ever seeing the doctor."[22]

This view is echoed by financial economists, who think it "unambiguous that the appropriate discount rate is one that reflects the riskiness of the liabilities, not the assets."[23] In other words, public pension plans are providing a benefit—and are therefore incurring a liability—that is substantially risk-free to the participants, who are guaranteed to be paid their money come what may. Thus, "discount rates should be derived from securities that have as little risk as the liabilities themselves."[24] This approach is often known as the market value of liability, or "MVL theory.

University of Chicago economists Robert Novy-Marx and Joshua Rauh make a strong case for a discount rate that is linked to liability risk instead of asset risk. They demonstrate that, if using a discount rate linked to asset values, any underfunded pension plan can eliminate its funding gap simply by increasing the risk profile of its asset portfolio to meet the required return hurdle.[25] So long as average returns are sufficient to cover plan benefits, GASB standards treat the plan as fully funded even if there is a greater than 99 percent chance of a funding shortfall due to the investments' risky nature. Because taxpayers will be responsible for closing these funding gaps, the asset-

linked discount rate is not a reasonable measure of plan funding adequacy.

The Financial Accounting Standards Board (FASB), which issues guidance for private pension plans, sides with economists like Novy-Marx and Rauh: it directs private plans to discount their pension liabilities based on the risk profile of pension liabilities, not pension assets. Because defined-pension benefits should involve very little risk (defaulting only in the case that the sponsoring corporation goes bankrupt and the Pension Benefit Guaranty Corporation fails to insure the losses), high-quality corporate bond interest rates are the standard. Paragraph 44A of relevant FASB Statement 87 reads:

> [A]n employer may look to rates of return on high-quality fixed-income investments in determining assumed discount rates. The objective of selecting assumed discount rates using that method is to measure the single amount that, if invested at the measurement date in a portfolio of high-quality debt instruments, would provide the necessary future cash flows to pay the pension benefits when due. Notionally, that single amount, the projected benefit obligation, would equal the current market value of a portfolio of high-quality zero coupon bonds whose maturity dates and amounts would be the same as the timing and amount of the expected future benefit payments.

The rate most often used by private pension plans is the Moody Aa bond rate, currently pegged by Mercer Consulting at 5.19 percent over a 15-year plan horizon, which is the period used by most public sector plans.[26] Note that private pensions look to high-quality corporate bonds, not to the lower yields on nearly risk-free assets such as Treasury bonds. This reflects the fact that pension obligations are essentially a high-quality debt obligation but nonetheless could be defaulted under certain narrow circumstances (such as corporate bankruptcy).

GASB is currently considering whether to revise its rules on public pension accounting, in particular what specific discount rate(s) to mandate. In the following analysis, I examine how California's state pensions stack up when subjected to the same requirements that private pension plans must meet under FASB standards.

California's True Liabilities for Its Pension Plans

Using a Private Sector Discount Rate Adds $206.5 Billion in Unfunded Liabilities

Like most state and local governments, the California pension plans discount their future liabilities at approximately an 8 percent rate, set to match the expected return on plan assets. How-

ever, this practice is not in line with the accounting standards of private-sector pensions and fails to reflect the fact that taxpayers are on the hook for pension obligations even when plan assets underperform. Therefore, I adjust the calculations of California's pension plans' present-value liabilities to use discount rates in line with private-sector methodology.

This is not an innovation on my part. Robert Novy-Marx and Joshua Rauh have assembled a dataset of all state pension plans and then analyzed what the true liabilities of those plans are likely to be if the discount rate were either the 15-year Treasury bond rate or a municipal bond rate. In their words, "while the plans appear almost fully funded under government-chosen discount rates, there is a large probability of significant shortfalls in the future," and "the cost of fully insuring future taxpayers and plan participants against these potential shortfalls would approach $2 trillion." They further point out that using "any plausible discounting assumption," the "underfund in state pension plans is larger than the total magnitude of outstanding state bonds, which was $798 billion as of the end of fiscal year 2005."[27]

Similarly, researchers at Stanford recently made headlines with a study claiming that the California pension systems are underfunded by over $500 billion. They reached this conclusion by applying a 4.14% interest rate drawn from U.S. Treasury bonds.[28]

The current analysis draws on the same methodology used by Novy-Marx/Rauh and the Stanford researchers, but is substantially more modest and conservative, in that I use the discount rates currently allowed to private pension plans under federal law, rather than the far lower Treasury rates. Like Novy-Marx and Rauh, I assume that the pension plans have a 15-year duration, which means assuming that pension plans will need to eliminate shortfalls within 15 years.

The initial liabilities are taken from the most recent Comprehensive Annual Financial Reports filed by the two major California pension plans (which report a total of $75.5 billion in unfunded liabilities). I multiply those figures by each plan's discount rate (plus 1) to the 15th power (for example, if 8 percent is the discount rate currently used, I take 1.08 to the 15th power, which then shows what that discount rate amounts to over a 15-year period). From this, I can see what the estimated liabilities will be in 15 years.

I then discount those liabilities back to the present by plugging the more realistic rates allowed

to private pension plans into the Novy-Marx/Rauh formula. This formula allows us to see the current liability for what the pension plans will owe in 15 years' time.

The results are striking. A more realistic estimate of the two major pensions' liabilities in California is actually around $282 billion, or $206.5 billion more than the California state government currently admits.

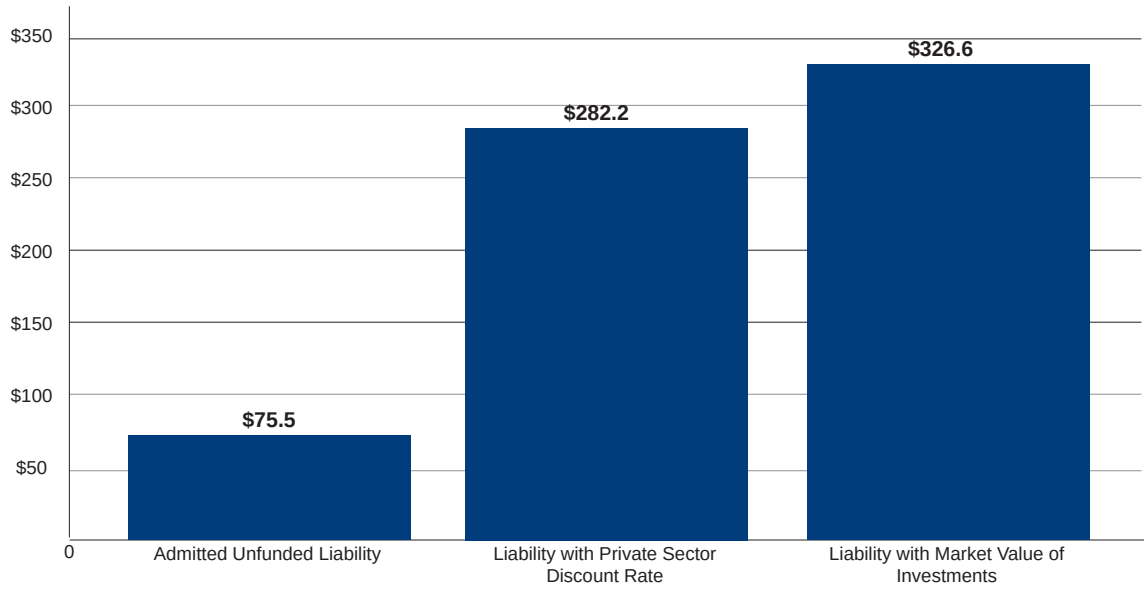
Using Current Market Value Adds Another $44.4 Billion in Unfunded Liabilities

Unfortunately, the picture gets even worse. The above analysis relies only on the reported actuarial liabilities, as found in the Comprehensive Annual Financial Reports for each pension plan. But the CalPERS plan was last actuarially evaluated as of June 30, 2008, and CalSTRS was valued on June 30, 2009. The actual market value of their investments is now substantially lower. As of the most recent information available, CalSTRS has $134 billion in assets (compared to $145 billion in actuarial assets on June 30, 2009),[29] while CalPERS has $200 billion in assets (compared to $233 billion in actuarial assets on June 30, 2008).[30]

The grand total of pension underfunding in California thus reaches $326.6 billion.

California's unfunded liability is estimated to be four times greater than what the state currently admits. Figure 3

Combined CalSTRS and CalPERS unfunded liabilities (dollars in billions)



Source: California State Controller's Office (2010).

Retiree Health Benefits Add Another $51.8 Billion in Unfunded Liabilities

As noted earlier, California offers its public employees generous health benefits through their retirement. According to the most recent actuarial valuation, California is currently facing a $51.8 billion actuarial accrued liability to pay for these retiree health benefits on an ongoing basis.[31] The state Controller's office already used 4.5 percent as a discount rate in estimating the actuarial liabilities due to the fact that the state does not set aside money for long-term investments. Thus, I do not re-estimate those liabilities using a lower discount rate.

Nonetheless, adding in the $51.8 billion figure, California is facing a $378.4 billion shortfall in promises made to public employees who retire. California taxpayers may eventually be on the hook for this staggering figure despite any difficulties they may have in paying for their own retirement.

Recommendations

The underfunded status of California state pensions and retiree health benefits is massive and unsustainable. California must stop hiding its head in the sand about the overly optimistic promises made to state employees. Moreover, California must take actions to close funding gaps in order to maintain its creditworthiness; last summer, California's state bonds were downgraded to A-minus, "based on the magnitude of the state's financial challenges and persistent weakening economy."[30]

As a first step, California must account for the existing liability and fund it appropriately. Unfunded pension liabilities have ballooned in part because politicians preferred to incur hidden pension costs instead of visible wage costs: it is easier to hand out more generous retirement benefits to be funded later than give pay raises that cost money now. This first step will not be easy. But under California constitutional law, California does not have the option of defaulting on existing pension liabilities. Thus, the $326.6 billion in unfunded pension liabilities will simply have to be paid off over time through higher taxes and/or cost savings in other areas of government.

As a second step, California should take measures to reduce pension promises for the future. One option is to shift away from defined-benefit pension schemes to defined-contribution options such as 401(k) plans. In lieu of contributions to a pension plan, governments can make deposits

into individual employees' accounts, into which employees may also deposit their own funds. Defined-contribution plans cannot, by definition, have funding deficits: the employer only makes initial deposits into the retirement account and does not guarantee returns. The accountholder makes decisions about investing the asset balance.

These sorts of plans generally supplanted defined-benefit pensions in the private sector. While 84 percent of state and local government employees had access to a defined-benefit pension plan as of March 2009, only 21 percent of private industry workers did (and only 16 percent of non-union private industry workers).[33] Michigan successfully implemented a defined contribution reform in the 1990s, with all new state employees shifted to a defined-contribution system since 1997. Florida also offers a defined-contribution alternative to its defined benefit plan.

Public employee unions' opposition to defined-contribution retirement plans is often fierce; as a result, such a shift may be politically infeasible. But, as in Michigan, opposition can be forestalled by allowing existing employees to remain in the defined-benefit system through retirement.

Two more moderate reforms are also possible. First, California might shift from defined-benefit to cash-balance pensions. Cash-balance plans are a sort of hybrid between defined-benefit and defined-contribution plans: employees make contributions, and then the state plan guarantees a specific rate of return (such as 4 percent) on those contributions. Thus, employees are guaranteed not to lose money on their own investments, but the state is not on the hook for promised benefits that may have exceeded contributions by 20 percent or 50 percent. Nebraska, for example, offered a cash-balance plan as an option starting in 2003, while Georgia offered a hybrid plan starting in 2009.[34] While these plans have the advantage of closely tying the size of the benefit to lifetime compensation (as opposed to, say, the last three years' income), they do not shield states from adopting overly aggressive investment targets or needing to make up for market underperformance.

Second, California could shift to a TIAA-CREF-style hybrid plan. The Teacher's Insurance and Annuity Association has been the leading provider of retirement products to college and university employees for nearly a century. TIAA-CREF offers a variety of products, including traditional defined-contribution pension investments like mutual funds. They also offer annuity investments that provide DB-like certainty-of-retirement-benefit levels. A move to TIAA or a similar provider could relieve gov-

ernments of market risk related to their employees' retirement investments while reassuring unionized employees that their savings are not being made less secure. The fact that most public university employees have long been offered TIAA-type plans instead of defined-benefit pensions should also help in making the case that these are not a second-rate style of retirement plan.

In short, accounting accurately in the current period for the future costs of promised benefits—particularly, by using a more conservative discount rate for future pension liabilities, as advocated in this paper—will raise the currently recognized cost of benefits and dampen the political impulse to be overly generous. No matter what path pension reform might take, California pension plans have no excuse not to admit the true extent of their unfunded liabilities and to take serious and substantive steps to prevent financial disaster in the future.

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Stuart Buck and Robert Maranto (forthcoming). "School Choice," in Paul Quirk and William Cunion eds., *Governing America: Major Policies and Decisions of Federal, State, and Local Government* (Facts on File).

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Gary W. Ritter, Robert Maranto, and Stuart Buck, "Harnessing Private Incentives in Public Education," *Review of Public Personnel Administration*, 29 no. 3 (2009): 249-269.

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