Digging a Deeper Pension Hole

Transitioning to Defined Contribution Plan Brings Higher Pension Debt and Taxpayer Costs

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Keystone Pension Primers: *As Pennsylvania policymakers, media, and citizens evaluate Governor Tom Corbett's pension proposal unveiled February 5, 2013, the Keystone Research Center will release a series of short "pension primers" to demystify the often complex details at the heart of the pension debate. This is the first installment in that series.* **February 26, 2013**

Governor Tom Corbett has proposed a major restructuring of Pennsylvania's retirement system for new employees from a system that provides a defined benefit (based on employees' salaries and years of service) to a 401(k)-type plan that defines only the amount contributed each year by employer and employee. This pension primer shows that the Governor's proposal will increase the cost of pensions for the state and school employers—and ultimately taxpayers.

Proponents of the new plan argue that it is necessary to reduce the $41 billion in additional funds required to meet pension obligations already incurred by the current pension systems.[1] However, the Governor's proposal would increase, rather than decrease, Pennsylvania's unfunded pension liabilities.

The Governor's Pension Proposal

On February 5, Governor Corbett and Budget Secretary Charles Zogby outlined proposed changes to Pennsylvania's pension plans for state workers and public school employees, including the creation of a defined contribution plan for all future employees. Starting in 2015, all new employees would be enrolled in a plan akin to a private-sector 401(k) retirement account. Subsequent reports indicated that, under the Governor's plan, individual accounts would be managed by professional managers at the State Employee Retirement System (SERS) and the Public School Employee Retirement System (PSERS).

Under the proposed arrangement, the employers (the commonwealth and school districts) would fund two separate pension systems. They would contribute a fixed percentage of the salaries of all current and new employees to help pay off the pension debt of the current SERS and PSERS defined benefit pension plans. They would also contribute a fixed percentage to the individual retirement accounts of new employees and a different fixed percentage to cover additional benefits earned each year by remaining active employees in the current defined benefit pensions.[2]

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[1] The $41 billion estimate of the current pension system "unfunded liability" comes from Pennsylvania Office of the Budget, *The Keystone Pension Report: A Discussion of Structural Reform and Relief to Pennsylvania's Retirement System for Long Term Sustainability*, accessible online at http://www.portal.state.pa.us.

[2] When a state creates a new plan for future employees, by spreading across all employees (current and new) the total employer contributions to cover the unfunded liability, it can avoid a spike in the employer contribution rate that is imposed

Key Facts About Pennsylvania Pensions

While each "Keystone Pension Primer" focuses on one issue in the pension debate, lawmakers, members of the media, and the public should consider all issues in evaluating the Governor's proposal:

- **The Governor's proposal would increase Pennsylvania's pension debt (or "unfunded liability").**
- **The Governor's pension proposal would increase the cost of pensions for new employees** above the very low levels (3% for SERS and PSERS together) achieved in the Pension Reform Act of 2010.
- **The Governor's proposal does not make the responsible contributions to pensions required by the Pension Reform Act.** Diverting required pension contributions is a replay of the short-sighted political decisions that Governor Corbett has pointed to as helping create the current unfunded liabilities.
- **The Governor's proposal to cut current workers' pensions risks court reversal** for violation of a constitutionally protected contract. **It leaves the state uncertain of pension costs for years** and then with potentially higher pension debt.
- **Teachers, nurses, emergency responders, and other public employees contribute heavily to their own pensions and earn lower salaries than comparable private-sector workers**. School and state employees have contributed 7% of every paycheck, on average, to their own pension. Even with good benefits, public workers earn lower wages plus benefits than equivalent private workers.
- **The Pension Reform Act of 2010 reduced pensions for future employees by over 20%** and protects taxpayers by requiring even higher employee pension contributions if financial markets plummet.
- **Pennsylvania's pension debt should be kept in perspective** compared to the overall budget and the rise of income inequality in the state. Pension debt is a small share of total state funding over the decades the state has to pay it off. In addition, Pennsylvania's "99%" lose an amount equal to the current pension debt ($40 billion) each year because the richest 1% garner a bigger piece of the overall economic pie today than in the 1970s.

Lower Returns from Pension Investments Leads to Higher Pension Debt

Over the past decade, investment returns account for 71% of the value of Pennsylvania pension benefits, with employees contributing 19% and the employer 10% of the total.[3] While employees contribute a predictable fixed amount each year, the amount the employer (i.e., state and school districts) must pay is highly related to the return on investment of the assets of the current pension systems. By reducing the return on pension system assets, the Governor's proposal drives up the amount that the state and school districts—and taxpayers—must pay to cover current pension commitments.

Many policymakers now recognize that switching to a defined contribution plan for future employees, as the Governor proposes, will not make Pennsylvania's unfunded pension liabilities vanish: the state and school districts will still be responsible for the pension benefits of current employees and retirees. Few policymakers recognize,

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on current employees still in the defined benefit plan as the group of current employees shrinks (ultimately to zero as employees in the defined benefit plans retire).

[3] See Pennsylvania Office of the Budget, *The Keystone Pension Report,* Exhibit 2, page 2.

however, that transitioning new employees into defined contribution plans will increase the pension debt of the existing defined benefit plans by reducing investment earnings. Here are some reasons why.

A shortening investment horizon.[4] A defined benefit plan that continues to take in new employees has a balanced mix of young, middle-age, and retired members. This balance gives such plans the ability to diversify their portfolios over a long investment horizon, including large amounts of high-risk, high-return investments (stocks or private equities), as well as some low-risk investments (bonds) that have lower returns. In defined benefit plans that no longer take in new employees, remaining plan participants gradually age and the plans' investment horizons shorten. As a result, investment managers must shift plan assets from higher return to safer assets—just as individual investors approaching retirement shift savings out of risky assets, protecting themselves against sudden drops in asset values shortly before withdrawal of money. The shift of pension funds to lower-return assets reduces investment earnings. In Pennsylvania, lower investment earnings mean the state and school districts will have to make additional contributions to cover pension benefits promised to SERS and PSERS participants. In other words, the state's unfunded pension liabilities will grow.

A need for more liquid assets. As participants in the SERS and PSERS defined benefit plans age, more of them will begin to tap into their retirement benefits. As this happens, remaining funds in the plans must be removed from illiquid assets, such as private equities, and invested in more liquid assets, such as bonds, easy to convert into pension checks for retirees. This shift to more liquid assets also lowers the rate of return. The resulting loss in investment income increases the unfunded liabilities and needs to be made up through additional contributions to the plans.

Reduced contributions from employees and employers to the defined benefit asset pool. Under the Governor's proposal, new employees will contribute only to their own individual defined contribution accounts—6.25% of salary for state workers and 7.5% for school employees. The employer contribution to new employees' retirement plans—4% according to Budget Secretary Zogby—will also go into the individual defined contribution accounts of new employees. By contrast, if the current defined benefit plan continued, all employee and employer contributions would add to the asset pool that both pays off the unfunded pension liability and covers new employee benefits. As contributions (by new employees and by employers) to defined contribution accounts increase each year, the contributions to the SERS and PSERS assets pool will correspondingly decrease. This results in lower investment earnings, requiring larger employer contributions to meet the pension obligations of the existing defined benefit pensions, and increasing the state's unfunded pension liabilities.

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[4] For the arguments in this and the next paragraph, see, for example, California Public Employees Retirement System, *The Impact of Closing the Defined Benefit Plan at CalPERS*, March 2011, online at http://www.calpers.ca.gov/eip-docs/closing-impact.pdf. Governor Corbett's pension proposal differs from the proposal analyzed in this California report because in Pennsylvania employer contributions to pay down unfunded liabilities will be spread across all employees (not just new ones). Nonetheless, the erosion of investment returns due to a shrinking investment time horizon and the need for more liquid assets apply also to the Pennsylvania proposal.

The Administration's Pension Briefing Ignores the Decline in Investment Returns

The Corbett administration has acknowledged that, as a result of lower employer contributions each year, its pension proposal will increase the state's pension debt by roughly $5 billion by 2019 (from about $65 to $70 billion).[5] The administration's estimates presented on the day of the Governor's budget briefing, however, do not factor in the diminished rate of return on defined benefit plan assets that would result from placing new employees in a defined contribution plan.[6]

Actuarial Studies in Other States Confirm That Switching Plans Increases Pension Debt

Many states that have considered a transition to defined contribution plans from existing defined benefit plans have commissioned actuarial studies of this option. In almost all cases, the studies conclude that such a transition is not the best approach, in part because it would increase unfunded liabilities.[7] These studies indicate that modifying defined benefit pension plans to lower long-term costs and increase employee contributions—both of which Pennsylvania did in the Pension Reform Act of 2010—is more cost-efficient. Appendix A contains an annotated bibliography that summarizes many of the recent actuarial studies (and contains complete source notes). Some highlights:

- In California, the state Legislative Analyst's Office acknowledged that closing defined benefit plans to new employees would require changes in investment asset mix, increasing expenses in the short and medium term. A study for the California Public Employees' Retirement System also concluded that closing the defined benefit plan to new employees would lower investment returns of plan assets due to a shrinking investment time horizon and the need for more liquid assets.
- In Florida, Corbett administration pension consultant, Milliman, just completed an actuarial study of a proposal similar to Governor Corbett's, with new employees entering a defined contribution plan and employer contributions to pay off the unfunded liability spread across the entire payroll (including new employees). Milliman noted that, "Over time, the State Board of Administration may lose the ability to invest with a long-term perspective as annual cash flow becomes more and more negative. Under a closed plan, as the active population shrinks and the retired population continues to grow, benefit payments will exceed the contributions made to the plan by continually increasing amounts. This will possibly necessitate future changes in asset allocation in order to provide sufficient sources of cash for benefit payments, which in turn could impact the rates of return earned by the Fund's assets. This could jeopardize the ability of FRS's assets to earn the assumed valuation rate of return of 7.75% per annum,

[5] See "Budget Day Pension Briefing," p. 18, online at http://www.portal.state.pa.us/portal/server.pt/document/1320360/2013_pension_slide_presentation_pdf
[6] In the chart on page 19 of the administration pension briefing, the yellow line (representing the unfunded liability after the adoption of a defined contribution plan for new employees) should increase above the blue (baseline case) and red (baseline plus reduced lower "pension collars" and employer pension contributions in 2013-2019) lines by an amount that increases each year as you move out to the right.
[7] Nari Rhee and Diane Oakley, *Issue Brief: On the Right Track? Public Pension Reforms in the Wake of the Financial Crisis,* National Institute on Retirement Security, p. 12; online at http://www.nirsonline.org/index.php?option=com_content&task=view&id=734&Itemid=49

thereby putting upward pressure on costs."(Despite this acknowledgment, Milliman did not include a lower rate of return in its actuarial model, noting that "Our study does not consider the impact of potential asset allocation changes or the impact of the soft freeze on the assumed asset rate of return."[8] As noted earlier, the impact of a lower rate of return was also omitted from the Governor's budget presentation.)

- In Kansas, an actuarial study concluded that closing the defined benefit plan would lead to a change in asset mix to "produce a greater degree of liquidity, reflect a shorter time horizon for investment, and the resulting lower risk tolerance level…The System's need to hold more cash equivalents to meet outgoing cash flows would also reduce the total return of the investment portfolio…The lower investment return would result in higher contributions needed to provide the same benefits."
- In Minnesota, a 2011 study estimated a transition to a defined contribution plan would cost the state $2.8 billion.
- The New Hampshire Retirement System in 2012 found that closing its defined benefit plan to new hires would likely lead to more conservative investments and lower returns, and would increase the unfunded liability by an additional $1.2 billion.
- In New Mexico, an analysis for the state legislature found that, when a defined benefit plan is closed to new hires, "…a growing portion of assets will likely be held in short-term securities, thereby reducing investment returns."
- In Texas, the Employee Retirement System of Texas (ERS) in 2012 concluded that it made sense to "modify the existing plan design instead of switching all employees to an alternative plan structure." A study by the Texas Teacher Retirement System (TRS) concluded that freezing the defined benefit pension could cause the liability to grow by an estimated $11.7 billion—49% higher than the current liability—due to lower investment returns from shifting to more liquid assets.

Actual Experiences in Other States That Switched Plans Equally Unpromising

The idea that switching to a defined contribution plan will not solve the problem of an unfunded liability is not just theory. It is the experience of the states that have moved in that direction. There are three states that have closed off their defined benefit plans and put all new hires in 401(k)-type plans: West Virginia (1991), Michigan for its state employees (1997), and Alaska (2006).

Michigan: Michigan began enrolling all new state employees in a 401(k)-type plan in 1997. Since then, the system's unfunded liabilities have skyrocketed, from $697 million in 1997 to $4.078 billion in 2010.[9] This increase

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[8] Milliman, *Study Reflecting the Impact of Closing the Florida Retirement System Defined Benefit Plan to New Members Effective January 1, 2014*, February 15, 2013, online at http://static-lobbytools.s3.amazonaws.com/press/53183_florida_s_pension_plan_requested_by_speaker_will_weatherford.pdf

[9] Data for 2001 to 2010 from Michigan State Employees Retirement System (MSERS), *Comprehensive Annual Financial Report (CAFR) for the Fiscal Year Ended September 30, 2011*, p. 43, online at http://www.michigan.gov/documents/orsstatedb/State_Employees-2011_CAFR_375807_7.pdf; data for 1997 to 2000 from MSERS, *CAFR for the FY Ended September 30, 2007*, p. 43, online at http://www.michigan.gov/documents/orsstatedb/CAFR_StateEmployees_221902_7.pdf. There are two estimates for the Michigan unfunded liability in the 2000 CAFR, the second showing that the defined benefit fund had a *surplus* of $733 million when the fund was closed to new employees (not a deficit of $697 million).

partly reflects inadequate employer contributions to pay for the unfunded liability. (Michigan has not made its annual required contributions suggested by the Governmental Accounting Standards Board (GASB) in nine of the last 10 years.)

Alaska: Alaska adopted a 401(k)-type plan for both new state and public school employees that became effective in 2006. Although sold as a way to reduce the employer contribution rates, these rates have increased. For state employees, the (actuarially determined) employer contribution rate required to pay off the unfunded liabilities increased from 12.39% of salary in 2006 to 22.48% in 2012. For teachers, this rate increased from 24.57% to 36.04%. Across the two plans, the unfunded liabilities associated with the closed defined benefit plans have increased from $3.8 billion in 2006 to $7 billion in 2011 (the latest year for which data are available).[10]

West Virginia: West Virginia adopted a 401(k)-type plan in 1991, but reversed course in 2006, reopening its defined benefit plan to all new hires in 2005 and allowing the members of the 401(k)-type plan to switch into the defined benefit plan. There were several reasons cited for the switch back, including a study done by West Virginia's Consolidated Public Retirement Board, which found that the individual account balances in the 401(k)-type plan were not on track to generate adequate retirement income for public employees and that public employees would have such low incomes in retirement that they would be eligible for means-tested public programs, driving up costs to the state.

Digging a Deeper Hole

In recent months, Governor Corbett has frequently cited the state's pension debt to justify policy changes to the pension systems for state and public school employees. His plan, however, would increase, rather than reduce, the state's unfunded pension liabilities. Policymakers should carefully consider the implications of a plan that may end up costing taxpayers more down the road.

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[10] The analysis in this paragraph is based on data in Alaska Department of Administration (ADA), Division of Retirement and Benefits (DRB), Public Employees' Retirement System (PERS), *Comprehensive Annual Fiscal Report for the Fiscal Year Ended June 30, 2012*, pp. 117-118, online at http://doa.alaska.gov/drb/pdf/pers/cafr/2012PersCafr.pdf; and ADA/DRB/PERS, *Teachers' Retirement System Comprehensive Annual Financial Report For the Fiscal Year Ended June 30, 2012*, pp. 110-11, online at http://doa.alaska.gov/drb/pdf/trs/cafr/2012TrsCafr.pdf. There is a three-year lag in Alaska between the actuarial determination of required employer contribution rates and their application. It could therefore be argued that rather than comparing the 2012 and 2006 rates, we should compare the 2014 (which is based on 2011 financial data) and 2009 rates (based on 2006 financial data when Alaska switched to defined contribution plans). During this alternate period, the employer contribution rate for unfunded pension liabilities has increased from 21.5% to 24.19% for state workers; for teachers the rate has increased from 34.8% to 43.51%. Thus, the qualitative finding remains that employer contribution rates to pay off the unfunded liabilities have increased since the switch to a defined contribution rate. (Note also that employer contributions to pay of the unfunded liabilities in Alaska continue to be imposed on total salaries, including those of new employees, not just on remaining active employees who actually participate in the closed defined benefit plans, as proposed by Governor Corbett.)

Appendix A. High Cost to Taxpayers of Transitioning to Defined Contribution Plans

Public officials who are considering moving from a defined benefit pension plan to a defined contribution plan should be aware of the potential effects. Actuaries and benefit experts who have analyzed proposed changes in other states have found that closing a defined benefit plan and transitioning to a defined contribution plan can result in significant additional costs to the state (and to schools), hence to taxpayers. Aside from transition costs and the impact on unfunded liabilities, most of the studies in other states also find that new defined contribution plans are substantially less cost-effective in the long term—i.e., they deliver less retirement security for any given level of employee plus employer (or taxpayer) contributions than defined benefit plans. In this annotated bibliography, we highlight primarily findings that relate to the unfunded liabilities in defined benefit plans closed to new entrants, as proposed by Governor Corbett.

Arizona

An analysis of the defined benefit and defined contribution plans conducted by the Arizona Retirement System in 2006 concluded: "If the goal of a retirement plan is to provide the least expensive method of providing a basic guaranteed replacement income to the members, then the defined benefit plan appears to provide a significant advantage for the majority of participants if the plan choices are mutually exclusive."[11]

California

A 2011 study for the California Public Employees' Retirement System concluded that closing the defined benefit plan would lower investment returns of plan assets due to a shrinking investment time horizon and the need for more liquid assets.[12] The study also concluded that freezing the defined benefit plan would incur the increased administrative costs of a defined contribution plan and the costs associated with having two systems concurrently.

In 2005, Milliman, serving as actuary for the Los Angeles County Boards of Retirement, studied the fiscal impact of placing Los Angeles County employees hired after July 1, 2007 into a new defined contribution retirement plan instead of the current defined benefit pension. Milliman estimated that the county's defined benefit plan contribution rate would increase by 3.66%, increasing county contributions to the closed defined benefit plan by $206 million in 2008. While the contributions would gradually decline over time, the county would have to wait until 2018 to see any savings in defined plan costs as a result of the change. The actuary found that investments of assets may need to be more conservative because no new members will be added after July 1, 2007, reducing investment returns and requiring the employer to pay more to fund retirement benefits.

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[11] Paul Matson and Suzanne Dobel, *A Comparative Analysis of Defined Benefit and Defined Contribution Retirement Plans*, Arizona Retirement System, 2006, online at http://www.nasra.org/resources/ASRS%20DBDC%20White%20Paper.pdf.

[12] California Public Employees Retirement System, *The Impact of Closing the Defined Benefit Plan at CalPERS*, March 2011, online at http://www.calpers.ca.gov/eip-docs/closing-impact.pdf.

Colorado
A study by Buck Consultants under contract to the State Auditor in 2001 concluded that "…it is more expensive for a defined contribution plan to provide a career employee with the same level of retirement benefits as a defined benefit plan..."[13]

Kansas
An actuarial study examined questions related to closing the defined benefit plan (with no new hires becoming members of the defined benefit plan).[14] The study concluded, "The System's current asset mix reflects its position as an institutional investor with a very long time horizon. In anticipation of the closed plan moving into a negative cash flow situation, the target asset mix would be rebalanced to produce a greater degree of liquidity, reflect a shorter time horizon for investment, and the resulting lower risk tolerance level. The System's ability to invest in illiquid asset classes, such as private equity and real estate, would be reduced. The System's shorter time horizon for investment would dictate a reduction in the higher return producing asset classes, which produces more volatility of returns. The System's need to hold more cash equivalents to meet outgoing cash flows would also reduce the total return of the investment portfolio. As a result, the return on the portfolio would be expected to be lower than the investment return assumption on an ongoing basis. The lower investment return would result in higher contributions needed to provide the same benefits."

Kentucky
An actuarial analysis in Kentucky done by the actuarial firm Cavanaugh Macdonald in 2011 found that a conversion to a defined contribution plan would increase the state's costs for nearly two decades.[15]

Minnesota
A 2011 study for the Minnesota State Legislature found that the transition costs of switching new hires from defined benefit pensions to defined contribution plans "…would be approximately $2.76 billion over the next decade for all three systems."[16] The analysis explained that costs increase during a transition period because once a plan is closed to new members any unfunded liabilities remaining in the existing defined benefit plan must be paid off over a shorter timeframe.

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[13] Buck Consultants, Incorporated, Study of Retirement Plan Designs for the State of Colorado Pursuant to Senate Bill 01-049, online at
http://www.leg.state.co.us/OSA/coauditor1.nsf/All/5F3AC8C645174C5087256E30007BC1D8/$FILE/1409%20PERA%20Fin%20FY%2002.pdf

[14] Kansas Public Employees Retirement System (KPERS or the System) and Cavanaugh Macdonald Consulting LLC (Cavanaugh Macdonald), *Fiscal Impact Report: Senate Substitute for HB 2194 and House Substitute for HB 2333 Conference Committee on Senate Substitute for HB 219*, online at
http://www.kpers.org/legislation_fiscalimpactreport.pdf

[15] Kentucky Retirement Systems, *Actuarial Analysis of Senate Bill 2 GA*, online at
http://www.google.com/url?sa=t&rct=j&q=actuarial%20analysis%20of%20senate%20bill%202%20ga%2C%20letter%20to%20mr.%20william%20a.%20thielen%2C%20coo%20kentucky%20retirement%20systems%2Cfebruary%2025%2C%202011&source=web&cd=6&ved=0CDwQFjAF&url=http%3A%2F%2Fwww.lrc.ky.gov%2Frecord%2F11rs%2FHB480%2FSCS1AA.doc&ei=QLUNT-TrKsbw0gGZqu3dBQ&usg=AFQjCNE9PiL-TMquoWWT-1Qrt7gb6nh7VA&cad=rja

[16] Retirement Systems of Minnesota, *Retirement Plan Design Study*, June 1, 2011, online at
http://www.msrs.state.mn.us/pdf/Study6-1-2011web.pdf

Nevada

A 2010 study by the Segal Company of Nevada's proposal to put new hires in a defined contribution plan found that the state's total pension costs would increase.[17]

New Hampshire

The New Hampshire Retirement System performed an analysis on proposed 2012 defined contribution legislation related to the benefit plan design and funding.[18] The report found that closing the defined benefit plan to new hires would increase the unfunded liability by an additional $1.2 billion; and closing the defined benefit plan to new workers will likely lead to changes in investment allocations, including an increase in more conservative investments with lower returns because over time it will become a retiree-only system. The study also found that proposed employer contribution rates for the defined contribution plan are higher than the annual ("normal") costs in the defined benefit plan for new members (see KRC Pension Primer #2 which reaches the same conclusion with regard to Governor Corbett's proposed plan).

New Mexico

The New Mexico legislature requested analysis on the implications of moving from a defined benefit program to a defined contribution program for all new education employees in 2005.[19] The analysis was conducted by Gabriel, Roeder, Smith & Company, and as the report explained, when a defined benefit plan is closed to new hires, "…since a growing portion of plan assets must be used to pay benefits, a growing portion of assets will likely be held in short-term securities, thereby reducing investment returns."

New York

In 2011, a study was conducted by the National Institute on Retirement Security and Pension Trustee Advisors on behalf of the Office of New York City Comptroller John C. Liu. The study found that costs associated with traditional pensions range from 36% to 38% less than a defined contribution plan providing equivalent benefits. Longevity risk pooling saves from 10%-13%, maintenance of portfolio diversification saves from 4%-5%, and superior investment returns saves from 21%-22%.
http://www.nirsonline.org/storage/nirs/documents/NYC%20BB%20Report/final_nyc_report_oct_2011.pdf

Texas

The Employee Retirement System of Texas (ERS) in 2012 noted that, in many cases, the increased cost of freezing a defined benefit plan, combined with the inefficiencies of defined contribution plans made it sensible to "modify the existing plan design instead of switching all employees to an alternative plan structure."[20] The Teacher Retirement System of Texas (TRS) concluded that even if contributions remained the same as in the current

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[17] Segal Company, *Public Employees' Retirement System of the State of Nevada: Analysis and Comparison of Defined Benefit Contribution Retirement Plans*, online at http://www.nvpers.org/public/executiveOfficer/2010-DB-DC%20Study%20By%20Segal.pdf.

[18] Gabriel, Roeder, Smith, and Company, *New Hampshire Retirement System, Defined Contribution Retirement Plan Study*, January 11, 2012, online at http://www.nhrs.org/documents/GRS_DC_Plan_Study_01_11_11_FINAL.pdf.

[19] Gabriel, Roeder, Smith, and Company, *Defined Contribution Retirement Plan Study* for the New Mexico Educational Retirement Board, October 14, 2005, online at http://www.nasra.org/resources/New%20Mexico%20ERB-DC.pdf

[20] Employee Retirement System of Texas, *Sustainability of the State of Texas Retirement System*, Report to the 82nd Texas Legislature, September 4, 2012.

defined benefit plan, participants in an individually directed defined contribution plan would have only a 50% chance of earning investment returns high enough to get 60% or more of the defined benefit plan benefit.[21] The study found that it would cost 12% to 138% more to fund a target benefit through alternative retirement systems. Individually directed defined contribution accounts were found to be the most costly, and a defined benefit system the least costly. Finally, the study estimated that freezing the defined benefit pension could cause the liability to grow by nearly an estimated $11.7 billion—49% higher than the current liability—due to lower investment returns resulting from a transition to a more liquid asset allocation.

Wisconsin

A 2011 study for the state legislature analyzed the impact of establishing a defined contribution plan as an option, among other potential changes to the Wisconsin Retirement System (WRS). The final report stated: "Actuarial analysis indicates that to provide a benefit equal to the current WRS plan, an optional DC [defined contribution] plan would require higher contributions than employers and employees currently pay." The study recommended: "Given the current financial health and unique risk-sharing features of the WRS, neither an optional DC plan nor an opt-out of employee contributions should be implemented in Wisconsin at this time. Analysis included in this study from actuaries, legal experts, financial experts, and information from similar studies conducted in other states show that there are significant issues for both study items in terms of the actual benefit provided and potential for negative effects on administrative costs, funding, long term investment strategy, contribution rates, and individual benefits."
http://etf.wi.gov/publications/wrs-study.pdf

[21] Teacher Retirement System of Texas, *Pension Benefit Design Study*, online at http://www.trs.state.tx.us/about/documents/pension_study_benefit_design.pdf