



PUBLIC PENSION RESOURCE GUIDE

Case Studies of State Pension Plans that Switched to Defined Contribution Plans

The "Public Pension Resource Guide" provides readers with facts and data on the important role that public pensions play in the economy—for employees and retirees, public employers, and taxpayers alike.

A misperception persists among some that defined contribution (DC) plans "save money" when compared with traditional pensions. However, several states that switched to DC plans have experienced a much different reality over time. Indeed, a recent NIRS analysis of the economic efficiencies of defined benefit (DB) plans reconfirmed that pensions deliver the same amount of lifetime income for about half of the cost of providing the lifetime income from a typical DC plan.

"Case Studies of State Pension Plans that Switched to Defined Contribution Plans" presents summaries of past changes in three state retirement systems that made the switch to a DC plan from a traditional DB pension. Case studies cover the following states: West Virginia, Michigan, and Alaska. Rather than save states money, these DB to DC switch exacerbated funding problems and drove up pension debt.

Overall, certain trends appear common to all three states, such as:

- Changing from a DB plan to a DC plan did not help an existing underfunding problem, and, in fact, increased pension plan costs.
- Workers under the DC plan face increased levels of retirement insecurity.
- The best way to address a pension underfunding problem is to implement a responsible funding policy of making the full annual required contribution each year and to evaluate and adjust assumptions as well as funding over time.

Each analysis examines the key issues and the impact of the plan change over time. Specific areas include: the impact on the overall demographics of the system membership; changes in the cost of providing benefits under the plan; the percent of the actuarial required contribution made by the state and other public employers each year from 2003-2013; the effect on the retirement security of workers impacted by the change; and the impact on the overall funding level of the plan over time. To the extent possible, the case studies also examine subsequent action taken by policymakers to address the results of the plan changes.



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Look Before You Leap: West Virginia Reopens DB Plan Within 15 Years of Closing; Commits to Improve Funding After DC Plan Benefits Prove Inadequate

Recently, there has been a misperception that defined contribution (DC) plans such as 401k plans "save money" as compared with traditional defined benefit (DB) plans. In light of this misperception, and in the wake of the financial crisis of 2008-2009 that caused underfunding in many public pension plans, many public employers have faced pressures to move from DB plans to DC accounts.

However, changing from DB to DC does not solve the underlying funding problem a state may be experiencing. One interesting case study that experienced this is that of the West Virginia Teachers Retirement System (TRS).

TRS, a traditional DB plan, was historically underfunded, due to lack of contributions from the state. While teachers had always made their contributions (6% of their pay out of every paycheck), the state and many county school boards failed to make their full contributions for many years. In fact, for some years from 1979 onward, the state and many school boards failed to match even employee contributions to the fund. To address the problem, in 1991, the state closed the TRS and moved newly hired teachers into a DC plan. Teachers in the DB plan were given a one-time choice to move to the DC plan as well. The state later found, however, that this "funding solution" had overlooked some important considerations. Specifically, new members, by definition, do not start with any unfunded obligation. At the same time, unfunded obligations for existing members are not reduced when new members instead go into a DC plan. As a result, the loss of new members makes it more difficult to finance the unfunded obligations of the DB plan.

In other words, with the plan closed, TRS demographics shifted quickly. By 2005, TRS paid pension benefits to nearly 27,000 retired teachers, while less than 18,000 active teachers still contributed to the fund. The plan's funding level stood at just 25%.

Meanwhile, the DC plan was fairing poorly as well. The members who had opted to transfer from the DB to the DC plan in 1991 found it hard to retire after the 2000–2002 bear market reduced the values of teachers' accounts. While the state contributed 7.5% of salary to members' DC accounts—supplemented by a mandatory 4.5% employee contribution—account balances were too low to provide an adequate retirement income. As of April 30, 2005, the average account balance was just \$41,478, and only 105 of the 1,767 teachers over age 60 had balances over \$100,000. This was largely due to the fact that DC member accounts had achieved much lower investment returns than TRS. Between 2001 and 2010, for example, the average West Virginia DB return was 1.6% higher than the average DC return.

By 2003, the state began reexamining the switch. After studying the issue extensively, it found that the "normal cost" for TRS (the cost of benefits accrued in a single year) was roughly half of the required employer contribution to the DC plan. In other words, providing equivalent benefits would be far less expensive under the DB structure than in the DC plan. As a result, the state decided that, starting in 2005, all new hires would go back into the DB plan.

At the same time, the state became much more disciplined in funding the plan in order to make up for those years when the plan was deliberately underfunded. Extra contributions of \$290.1 million and \$313.8 million were made in 2006 and 2007, respectively. In addition, West Virginia completed a tobacco bond securitization in 2007 and deposited \$807.5 million of those proceeds into TRS as a special appropriation. All these amounts were in addition to the regular required contributions.

After TRS was reopened to new hires, in June 2008, the state allowed teachers who had been hired into the DC plan to choose whether they wanted to remain in that plan, or switch over to TRS. A full 78.6% of teachers (nearly 15,000 members) chose to switch, including 76% of teachers under 40 years old.

Surprisingly, the switch, which was expected to cost the state up to \$78 million before the elections were made, was now expected to save the state about \$22 million, because more young DC members than expected transferred. Specifically, 50% of those over age 70 transferred; 69% of those age 65 to 69 transferred; 81% of those age 45 to 64 transferred; and 76% of members under age 40 transferred.

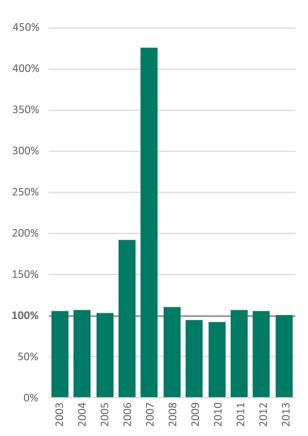


Table 1. Percentage of ARC Made to West Virginia Teachers, 2003-2013

Ultimately, West Virginia projected \$1.2 billion in savings in the first 30 years by moving new entrants from the DC to the DB plan.

Today, the West Virginia TRS pension plan continues to improve. As of July 1, 2013, the plan's funded level stood at 58%. That means that in the eight years since reopening the TRS pension, the state narrowed its historically sizeable funding gap by more than half. In addition, its recommended contribution has stabilized dramatically; in fact, in 2013, the recommended contribution was less than it was in 2010. The plan is expected to reach full funding by 2034.

Other states have watched and learned from the West Virginia experience, which showed that ultimately, moving from a DB plan to a DC plan can have dire consequence for employees,

employers, and taxpayers-even when a large unfunded liability exists. Indeed, all states have made significant changes to their retirement plans in the wake of the financial crisis. As states and municipalities have considered switching from the DB pension to a DC plan, those that have conducted a cost analysis have found that the move would save little to no money in the long term, and could actually substantially increase retirement plan costs in the near term. Not surprisingly, virtually no state that has conducted such a study has made the switch. Only one state (Oklahoma) ultimately opted in favor of moving to DC, but it did so as part of an overhaul of the total compensation package, without conducting a separate cost study for the switch.

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PUBLIC PENSION RESOURCE GUIDE Look Before You Leap to DC: Michigan's Switch Increases Pension Costs, Reduces Retirement Security

Recently, there has been a misperception that switching from a traditional defined benefit (DB) pension plan to a defined contribution (DC) plan such as 401k plan will save taxpayer money and solve pension debt problems. In light of this misperception, and in the wake of the financial crisis of 2008-2009 that caused underfunding in many public pension plans, many public employers have faced pressures to move from DB plans to DC accounts.

However, changing from DB to DC does not decrease retirement plan costs, can drive up pension debt, and will almost certainly increase retirement insecurity. One interesting case study is that of the Michigan State Employees' Retirement System (MSERS).

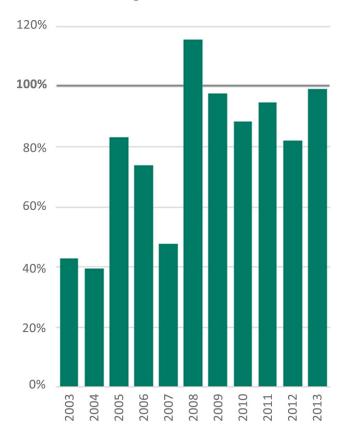
In 1997, MSERS, a traditional DB pension plan, was closed to new hires, who were placed in a DC plan. Current employees were given a one-time choice to opt into the DC as well. In the DC plan, the state provides an automatic contribution of 4% of each employee's pay, with an additional match of 100% up to 3% of pay that the employee contributes.

At the time, the normal cost of the DB plan (the cost of benefits accrued in a single year) was approximately 9.1% of pay. So, it seemed as though the state would be "saving money" because the employer contribution to the DC plan would be capped at 7%, but any cost savings found by Michigan in the DC plan was produced by providing a lower income benefit in the DC plan.

Generally speaking, when a DB plan is frozen, plan costs will increase. This is because the plan's demographics tend to change rapidly. First, the active population will continue to age, and will amass a higher average liability as their wages grow. At the same time, the number of active members will steadily fall, as individuals retire, meaning an ever-smaller payroll base over which to spread payments on any unfunded liability.

When MSERS closed in 1997, the plan was actually overfunded; it had 109% of assets on hand to cover all liabilities. But by 2012—15 years after freezing new hires out—the plan had become severely underfunded, with an unfunded level of just 60.3%. In other words, while the plan had excess assets on hand of some \$734 million in 1997, by 2012, the plan amassed a significant unfunded liability of \$6.2 billion. Of course, between 1997 and 2012, other factors had come into play as well—two large financial market downturns, for example, as well as several years in which the state contributed less than its required payment. More recently, however, the state has been making larger payments to MSERS, and financial markets have rebounded since the last downturn. Yet the state's unfunded liability continues to grow. As demographics continue to worsen, the burden increases. In 1997, the annual required contribution was about \$230 million, or \$4,140 per active member. By 2013, the required contribution had grown to \$611 million, or nearly \$37,100 per active employee.

Table 1. Percentage of ARC Made toMichigan SERS, 2003-2013



In just the one year from 2012 to 2013, the required payment on the unfunded liability grew by \$71.6 million to nearly \$567 million, despite an impressive 12.5% investment return in that year.

Meanwhile, in 2013, about two-thirds of current workers (33,000) were in the DC plan, and their retirement prospects seem dim. According to a 2011 report, the average balance was about \$50,000 in that year; for those close to retirement (age 60 or older), it was \$123,000. At current annuity rates, that balance would provide a benefit of about \$8,200 per year. Meanwhile, the average DB benefit for people currently retiring is over \$20,000 per year.

Even in a "best case" DC scenario-in which employees contribute enough of their own pay to receive the maximum employer contribution-a simple benefit projection shows that the DB benefit is worth much more. For example, an employee at a starting wage of \$40,000 per year, assuming 2% wage increases and 6% net investment returns each year, would accumulate a nest egg of approximately \$288,000 after 25 years of service; this can currently purchase an annuity of about \$1,600 per month. By contrast, an employee in the DB plan would see a monthly benefit of about \$2,050. Thus, the DB benefit is worth about 22% more, but actually costs less: The normal cost of the DB plan is roughly 8% of pay, while total contributions to the DC plan in this example are 10% of pay (7% employer and 3% employee).

This perhaps should not be surprising, as research shows that DB pensions are much more costefficient than DC plans, because they are able to achieve economies of scale by pooling employees. Specifically, they save money due to longevity risk pooling, maintaining a more balanced portfolio over a longer time, and achieving higher investment returns due to professional management and lower fees. NIRS has found that for a given level of retirement income, a typical DC plan costs 91% more than a typical DB plan.

Other states have watched and learned from the Michigan experience, which shows that ultimately, moving from a DB plan to a DC plan can have dire consequence for employees, employers, and taxpayers. The move can increase an unfunded liability, while simultaneously decimating the retirement prospects for workers. Indeed, all states have made significant changes to their retirement plans in the wake of the financial crisis. As states and municipalities have considered switching from the DB pension to a DC plan, those that have conducted a cost analysis have found that the move would save little to no money in the long term, and could actually substantially increase retirement plan costs in the near term. Not surprisingly, virtually no state that has conducted such a study has made the switch. Only one state (Oklahoma) ultimately opted in favor of moving to DC, but it did so as part of an overhaul of the total compensation package, without conducting a separate cost study for the switch.

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PUBLIC PENSION RESOURCE GUIDE Look Before You Leap to DC: Alaska Compounds Its Unfunded Pension Liability

"Going to a defined contribution system didn't solve the problem"

In 2005, Alaska adopted a mandatory 401K-style defined contribution (DC) retirement program for all state employees hired after July 1, 2006 as a way to address its unfunded liabilities for retiree benefits. At the time, the state was facing a combined \$5.7 billion unfunded liability for its Public Employees Retirement System (PERS), Teachers Retirement System (TRS) and retiree medical plan. However, far from solving the pension funding problems, the switch to DC only exacerbated them. In 2006, underfunding increased by 20 percent; eventually, it more than doubled, as the combined unfunded liability reached \$12.4 billion in 2013.

Alaska's Public Pensions in 2005

To examine the current state of public pensions in Alaska, it's important to look back at how the state amassed a \$5.7 billion debt in 2005. A 2014 article in the *Alaska Dispatch* faults funding decisions for the two defined benefit (DB) pensions by the Alaska legislatures and governors, together with sizeable stock market declines and devastating actuarial errors.

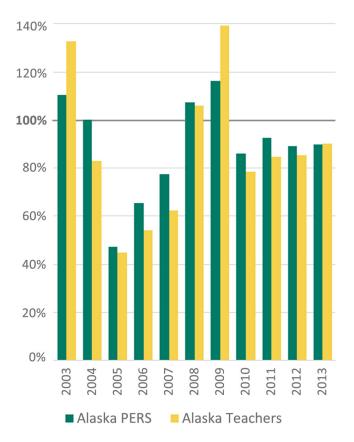
Mercer Inc., the state's actuary, made bad actuarial projections and attempted to hide them. A review by the state found that the firm did not recommend the appropriate contribution increases needed to keep the plans on a sound financial basis. This error, according to officials, amounted to some \$2.5 billion of the unfunded liability. Subsequently, the Alaska Department of Law sued Mercer, and won an unprecedented \$500 million settlement—even as Mercer claimed that accurate information would not have changed the state's action to underfund its pension liabilities.

Governor Frank Murkowski used the \$5.7 billion funding shortfall to push the dramatic change from a DB pension to DC accounts, and he signed a bill (SB14) that made the switch into law after a special legislative session in 2005. Speaking at the press conference on the bill, the governor claimed that moving new employees into a DC plan "will stop the 'so-called' bleeding, so we can slow down the state's increasing liability."

SB 141 Did Not Address the Underfunding of PERS and TRS

Unfortunately, as many experts understand, the change did nothing to reduce the pension funding shortfalls. Instead, Alaska continued the same underfunding practice of paying less than the full cost. The state and public employees contributed just 47% of the annual required contribution (ARC) to PERS and 45% of the ARC to TRS in 2005. As a result, the total unfunded liability reached \$6.9 billion in 2006.

Table 1. Percentage of ARC Made to Alaska PERS and Teachers, 2003-2013



In fact, Alaska failed to make the full ARC payments to both of the state's DB pensions not only in 2005, but in in six of the eight years from 2006 through 2013. This fairly consistent underfunding further increased the prior service costs for PERS and TRS in these years. Specifically, PERS past service cost as a percent of payroll was 12.4% in 2006, and grew to 24.2% in 2014 as the unpaid required contributions we added to outstanding liabilities each year they were not made. For TRS, its prior service cost as a percent of payroll rose from 24.6% in 2006 to 43.5% in 2014.

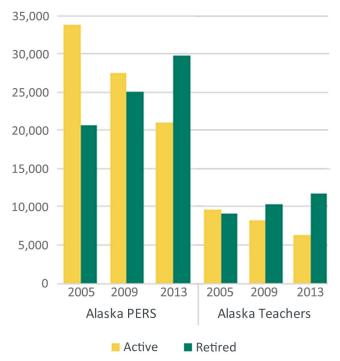
In all, the PERS and TRS total unfunded liabilities increased to \$7.8 billion and \$4.6 billion,

respectively, by 2013—for a total of some \$12.4 billion. In other words, the unfunded pension liability more than doubled since making the DC switch in 2005.

Meanwhile, with all new employees now covered by the DC plan, the demographics of the pensions changed quickly, which can worsen an underfunding problem. The loss of new employees' contributions and corresponding employer contributions makes it more difficult to finance the pensions' unfunded obligations. An issue paper published by gubernatorial candidate Sarah Palin in 2006 acknowledged that "employee contributions were the only constant source that continued coming into the system."

In 2005, PERS made payments to nearly 21,000 retired employees and beneficiaries, and collected contributions from 33,730 active employees. In 2013, the plan was paying benefits to nearly 30,000 retired employees and beneficiaries, but collected contributions from less than 21,000 active members.

Table 2. Alaska Retirement System Membership Status



TRS also took a negative demographic turn. In 2005, TRS made payments to about 9,000 retired teachers and beneficiaries and collected contributions from nearly 9,700 teachers. By 2013, TRS had 11,705 retired teachers and beneficiaries but just 6,352 active teachers. Since July 2006, roughly 17,500 new public employees hired by Alaska began contributing to the DC plan. New members of a DB pension, by definition, do not start with any unfunded obligation for benefits. So, if Alaska kept open the DB pensions instead, these new employees would have resulted in the DB pensions getting a net funding contribution from a stable or growing group of employees rather than an ever smaller payroll base over which to spread the payments to meet the unfunded liabilities.

As early as 2007, legislation was introduced to reopen the DB pensions to new employees, in order to restore the demographic balance and to ensure retirement security with a predictable lifetime benefit for public sector workers. While these pension bills have received hearings and some votes in the legislature, they have not passed. New employees covered by the DC plan have planning and advice tools to help individuals estimate benefits, but the state has not published an analysis to assess how adequate such benefits will be when these employees retire.

Meanwhile, as the demographics of the pensions got worse, the underfunding increased. In 2005, PERS was 65.7% funded, as compared to 60.8% in 2013. The funding for TRS dropped from 60.9% in 2005 to 51.9% in 2013.

Calls for Cash Infusions

Like most public pension plans, the largest potential source of revenue to PERS and TRS is investment earnings. Specifically, between 2006 and 2013—even after adjusting for the stock market losses in 2008-2009—investment income added over \$3 billion to PERS plan assets on a net basis. Had the needed, full ARC payments been made since 2005, the state could have taken better advantage of the growth in financial markets since 2009.

However, this did not occur, and by 2013, the unfunded liability had grown to \$12.4 billion. Considering the impact of closing the pension to new employees, Representative Mike Hawker (Anchorage) commented in 2014 that "I very much was concerned when we closed our retirement systems and went to a defined contribution that by closing those systems we were going to find ourselves in the position we are in today, which was ultimately having to step in with a significant financial bailout."

Reaching dire straits by 2014, Governor Sean Parnell proposed that Alaska add \$2 billion to its \$1 billion regular payment to reduce the underfunding. Eventually, the state made \$3 billion in contributions to PERS and TRS, per HB 385. After much legislative posturing, wrangling, and rewriting, the bill was rushed through in the final days of the legislative session. HB 385 also included a longer amortization period of 30 years, and shifted more of the pension cost to municipalities. This longer amortization allows for lower payments each year, but adds \$2.5 billion more to the funding cost over time-in the same way that the total cost of a 30-year mortgage is higher than that of a 15-year mortgage, due to compound interest on the outstanding unfunded balance.

Key Takeaways from the Alaska Experience

Alaska presents a real-world example that switching to a DC plan does nothing to reduce DB plan costs, and can actually increase them. Losing a significant percent of employees to the DC plan reduced the one steady source of pension funding in Alaska. The false promise of the DC switch may have led policymakers to continue to underfund the pension plans, which only worsened the problem. As a result, the state's unfunded liabilities doubled in less than ten years.

Ultimately, Alaska saw increased pension costs for PERS and TRS after it switched to a DC plan for new hires.

Indeed, all states have made significant changes to their retirement plans in the wake of the financial crisis. Perhaps, it is based on the Alaska experience that as states and municipalities have considered switching from the DB pension to a DC plan, those that have conducted a cost analysis have found that the move would save little to no money in the long term, and could actually substantially increase retirement plan costs in the near term. Not surprisingly, virtually no state that has conducted such a study has made the switch. Only one state (Oklahoma) ultimately opted in favor of moving to DC, but it did so as part of an overhaul of the total compensation package, without conducting a separate cost study for the switch. Indeed, in the same year that Alaska decided to switch to a DC plan West Virginia was making a very different choice to "unscramble the egg," reopening their traditional DB pensions to new employees, after having closed the plan many years ago.

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