

A critical difference between defined-benefit (DB) pension systems—which are typically offered to public employees at the state and local level—and the national Social Security system is that DB pensions are *pre-funded*.

This means that in any given year, a government managing a pension fund should be paying in enough to cover all of the benefits earned that same year.

The problem is that governments don’t always contribute as much as they should to pension funds. Sometimes they decide to put less in to pre-fund retirement benefits for their employees, by simply not making the actuarially determined annual payment. Other times they assume that future investment returns will be higher than is reasonable, and this artificially lowers the actuary’s recommended contributions to pension funds and results in underfunded pension systems over time.

Government's need to fill budget gaps, combined with workers' unions pressing for pay and benefit increases, can strongly tempt jurisdictions to underfund pensions—either explicitly, by not making the required payments in full, or implicitly, by adopting generous actuarial assumptions that suggest lower payments will suffice. The result is that state and local governments are currently facing trillions in *unfunded liabilities*.

One proposed solution to today’s public sector pension woes is to transition from DB systems to defined-contribution (DC) systems. DC systems look more like the 401(k) plans typically found in the private sector—employees and employers regularly contribute a certain amount into the retirement account, usually a percentage of salary, those funds are invested to earn returns and grow into a pool of funds the employee can live off of in retirement. There are no guaranteed benefits, but employees own the account and can take it with them wherever they go, and the government has no liabilities, and therefore can create no unfunded liabilities.
Yet, when a particular state or local government proposes switching its pension plan for new employees from the old style DB to a modern DC plan, it is often argued that the switch will cost money—that transition costs will outweigh the benefits of the change. However, those arguments fundamentally misunderstand how defined-benefit pension systems are funded.

**Understanding the Pension Funding Equation**

There are two primary components to pension funding: the annual cost to prefund pension liabilities, known as “normal cost,” and the cost to pay off unfunded pension debt. This can be thought of as:

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\text{Normal Cost} + \text{Debt Payment} = \text{Annual Required Contribution}
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to prefund accrued pension benefits

**Normal Cost**

Actuaries determine annually how much a government should save to fully prefund accrued pension benefits. Put simply, they estimate how much will be needed in the future to provide the benefits promised to existing workers, then they work backwards from there using assumptions about how much the pension fund will earn investing each year’s payments, how long retirees will live, etc. to figure out how much has to be paid in that year to fund the system. That amount is the “normal cost” needed today to grow over time and pay out benefits in the future.

The assumption about investment returns is particularly crucial. If the assumption is too high, then payments made will be too small and therefore create an unfunded liability that is very costly to put right in future.

Employees typically contribute a fixed percentage of their pay toward normal cost. The government, considered the “employer,” contributes the rest of normal cost.

If a government decided to transition toward a DC system it could simply declare its DB plans closed to new members. Existing employees would stay in the DB plan and continue paying their share of normal costs and accruing benefits, while the government would continue its annual contributions to normal costs. Normal cost for the DB system would decline each year, as employees retired and were not replaced in the DB system by new ones. With fewer employees still accruing benefits in the DB system, governments would have less to pre-fund and annual normal cost payments would go down. Eventually the last member of the DB system would retire and there would be no more annual normal cost payments.

**Debt Payments**

If a government has an unfunded liability, either because it chose not to fully fund normal costs in past years, or because it made over-generous assumptions in its estimates of normal costs that did not come to pass, those liabilities are a pension debt. This is measured as the value of a pension fund’s assets relative to the promised benefits.

When such debts occur, pension funds project costs over a fixed period of time, usually 15 to 30 years, and actuaries calculate how much extra a government should pay each year over that time frame to completely pay off any pension debt. This constitutes an *amortized debt payment.*
The amortized debt payment is a separate part of pension funding from normal costs: employee contributions never subsidize debt payments. Instead, the employer (taxpayers) has to make those debt payments.

So, when a government decides to switch from a DB to a DC pension plan for new employees, the annual payments into pension benefits go from:

Normal Cost for all employees + Debt Payments to Normal Cost for some employees + Debt Payments from old plan + Fixed % of salary DC payments for new employees

It doesn't take a math whiz to see the difference between the two. If the costs and risks of making DC payments for new employees is less than the costs and risks that making DB normal costs payments for them would be, the government is saving money. Since DB plans can lead to unfunded liabilities and thus debt payments while DC plans cannot, the risks to taxpayers of higher costs are dramatically reduced with a DC plan.

Since DC plans have a fixed payment that is a percentage of payroll each year, it is much easier to manage than the variable costs under a DB system. If a government wants to create savings from its pension system change, it can simply set its defined-contribution rate to ensure lower costs than under the old system.

Transition Costs?

So how do some people argue that there are transition costs involved in switching to a DC plan?

First, the Government Accounting Standards Board recommends that when a government closes a DB plan that has unfunded liabilities, the payment schedule on that debt should be shortened to reduce the total costs. In other words, the recommendation is that the government starts making bigger debt payments so that it can eliminate the unfunded liability sooner than originally planned. This is just like a financial planner recommending a family pay down credit card debt faster: it may cost you more each month, but it saves you a lot in the long run by reducing the total amount you pay.

However, there is no legal requirement to make such any change to debt payments. It is a policy choice independent of the transition from a DB to a DC system.

Therefore, calling a change in debt repayment a "transition cost" requires both ignoring the fact that the government has a choice whether to do it or not, and believing that an increase in annual payments on existing debt in order to save on total payments over the long run is a “cost.” Certainly, finding money in the budget to make higher payments is not easy, but if it saves taxpayer money in the longer term, it is good fiscal policy.

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1 If a government decides to require employees to share in the costs of annual debt payments, as the cities of Phoenix and San Jose have recently done, then active employees will be subsidizing their peers. However, these practices violate the design norm of pension systems.

The second "transition cost" argument is that a DB plan needs new members—and their payments into the system—in order to keep it solvent. Closing the DB plan to new entrants will require higher payments from employees in the plan or from the government, or so the “transition cost” argument goes.

But this simply is not true. As the calculation for normal costs shows, pension systems are not Ponzi schemes. DB plans are supposed to be fully funded each year by employer and employee contributions plus investment earnings. New workers do not subsidize older workers.

The Bottom Line

When choosing to phase out a defined-benefit system and put new employees into a defined-contribution system, policymakers need to decide what rate they want to pay for the new DC system. Actuaries can easily assess whether the costs of the proposed DC rate will be higher or lower than the normal costs of the old DB system.

Policymakers could choose a rate that makes the net costs of the new system higher than the old. But such a “transition cost” would be an explicitly separate policy decision, and not an inherent challenge of transitioning from defined-benefit to defined-contribution. After all, they could just as easily choose a rate that would make the new system cheaper than the old.

What is more, DC plans dramatically reduce the variability of annual costs to government of pension plans, eliminate the risks of making incorrect assumptions in estimating annual payments, and prevent pension debts—and the high costs associated with them—from coming to pass. False claims of "transition costs" should not discourage governments from exploring the option of switching to a DC plan.

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