

# Teacher Pension Workshop: Connecting Evidence-Based Research to Pension Reform

## Does Deferred Compensation Retain Government Employees?

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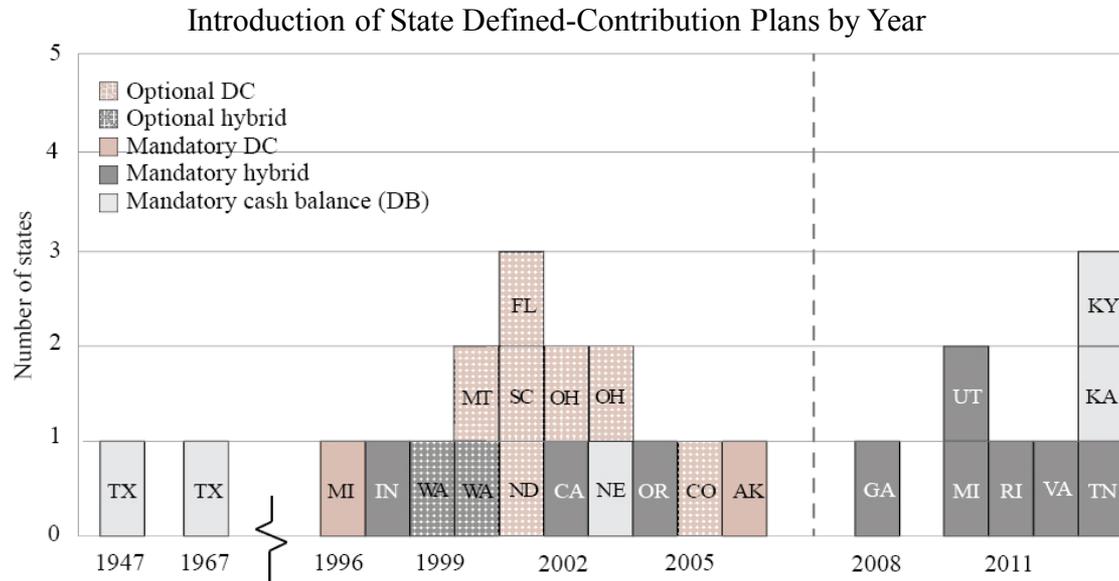
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# *Does Deferred Compensation Retain Government Employees?*

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RAND's Teacher Pension Workshop  
Santa Monica, CA  
March 9, 2018

# Despite efforts to change public pension design, conversation has largely ignored effects on the workforce.



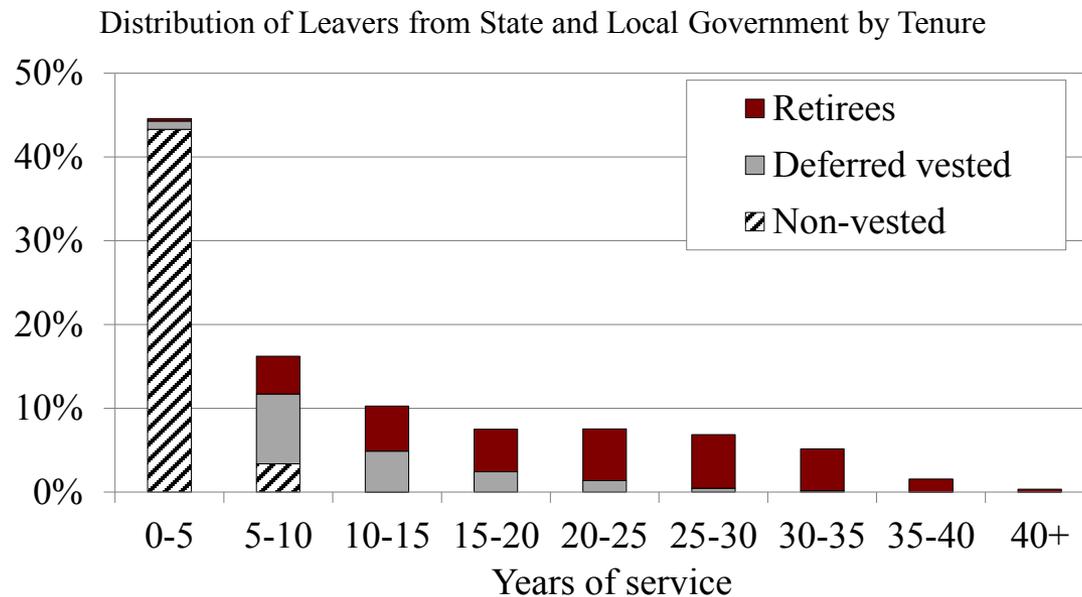
Source: Alicia H. Munnell, Jean-Pierre Aubry, and Mark Cafarelli. 2013. "Defined Contribution Plans in the Public Sector: An Update." *State and Local Plans Issue in Brief* 37. Center for Retirement Research at Boston College.

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DB pensions are ungenerous to short- and medium-tenure workers, and very generous to long-tenure colleagues.

- This “back-loaded” structure encourages employees to:
  - Stay long enough to qualify for generous benefits; or
  - Leave immediately to earn pension benefits somewhere else; and
  - It should recruit workers who anticipate long tenures.

# Many state and local workers leave without a generous pension.



Source: Alicia H. Munnell, Jean-Pierre Aubry, Josh Hurwitz, and Laura D. Quinby. 2012. "The Impact of Long Vesting Periods on State and Local Workers." *State and Local Plans Issue in Brief* 26. Center for Retirement Research at Boston College.

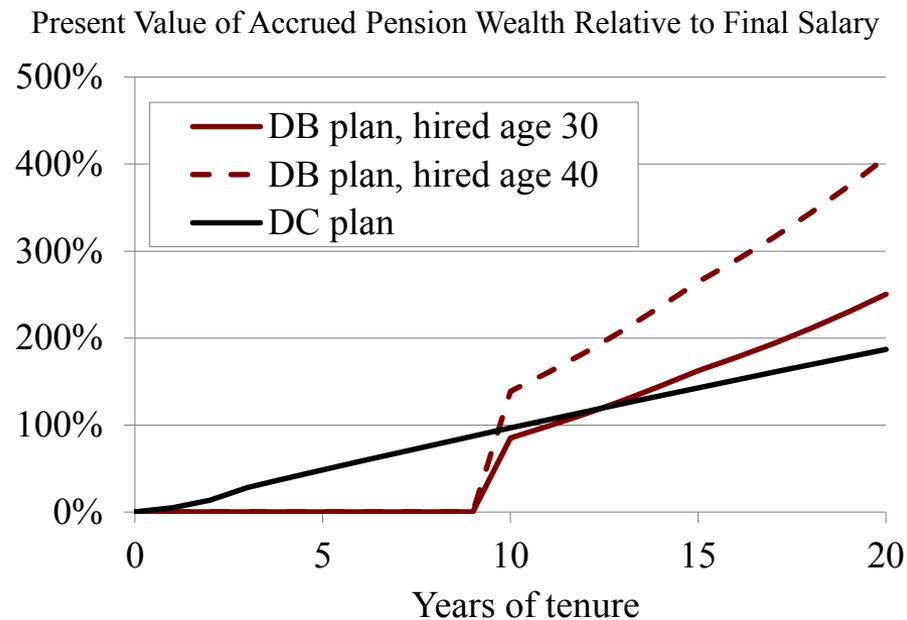
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# A natural experiment in Michigan shows how turnover changed after the shift to DC.

- In 1997, MI state employees transitioned from a back-loaded DB pension to an “evenly loaded” DC plan.
- Retiree health insurance premiums also became more expensive.
- MI Public School Employees Retirement System followed suit:
  - Transitioned to a hybrid plan in 2011.
  - Offered an optional DC plan in 2012.

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The DB plan required 10 years to vest, but then was more generous than the DC plan.



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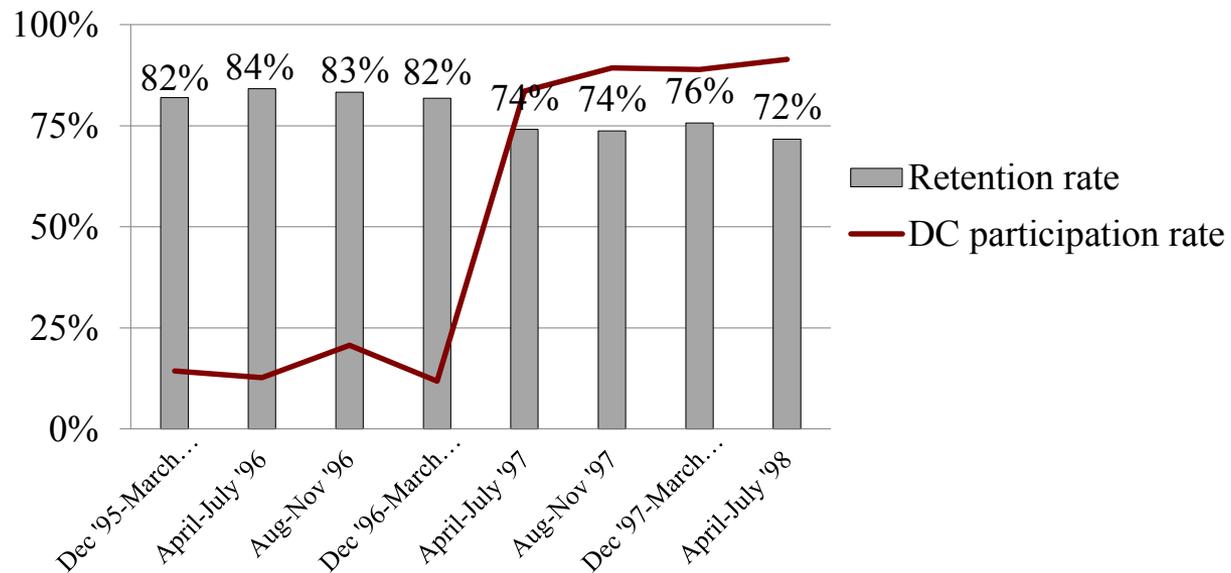
I estimate the effect of switching to a DC plan by looking at employees hired a few months apart.

- Personnel records of state-government employees (2001-14).
- Hired before April 1, 1997 → defaulted into DB plan.
- Study the turnover of employees hired a few months apart who (mostly) participate in different plans.
- This approach controls for working conditions in state government and the local labor market.



# The trend in retention rates suggests a decline due to pension reform.

Probability of Earning 10 Years of Tenure by Month Hired



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## The Regression Discontinuity equation:

$$\begin{aligned} & \text{Earn 10 Years Tenure}_i \\ &= \beta_0 + \beta_1(\text{Hire Date}_i) + \beta_2(\text{Hired After April 1, 1997}_i) \\ &+ \beta_3(\text{Hire Date}_i)(\text{Hired After April 1, 1997}_i) + \mathbf{X}_i + \varepsilon_i \end{aligned}$$

*Earn 10 Years Tenure<sub>i</sub>* is a binary variable.

Each employee is observed once.

Bandwidth = 2 years to control for cyclical hiring.

Results are insensitive to bandwidth or specification of the equation.

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# Effect of the hire-date threshold on the likelihood of staying for 10 years.



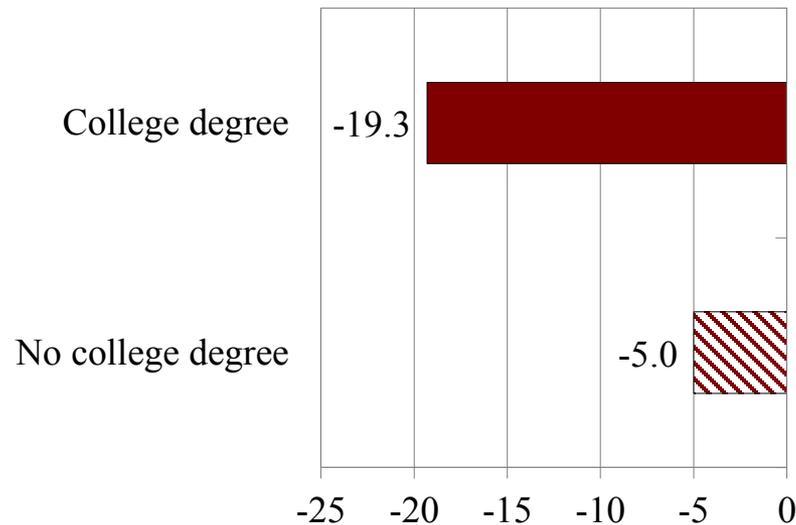
Note: Solid bars are statistically significant at the five-percent level or better.

Source: Author's calculations from data provided by MI ORS.

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# Mid-career workers with a college degree responded most to the change in incentives.

Effect of Hire Date on the Probability of Staying for 10 Years



Note: Solid bar is statistically significant at the five-percent level or better.

Source: Author's calculations from data provided by MI ORS.

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## These results are robust to sensitivity tests.

- Changing the definition of “hired a few months apart.”
  - Altering the bandwidth.
  - Donut-hole RDD to account for hiring slowdown prior to pension reform.
- Placebo “threshold” for DC participation.
  - No effect of being hired after April 1, 1995.
- Omitting or changing the employee demographic control variables.

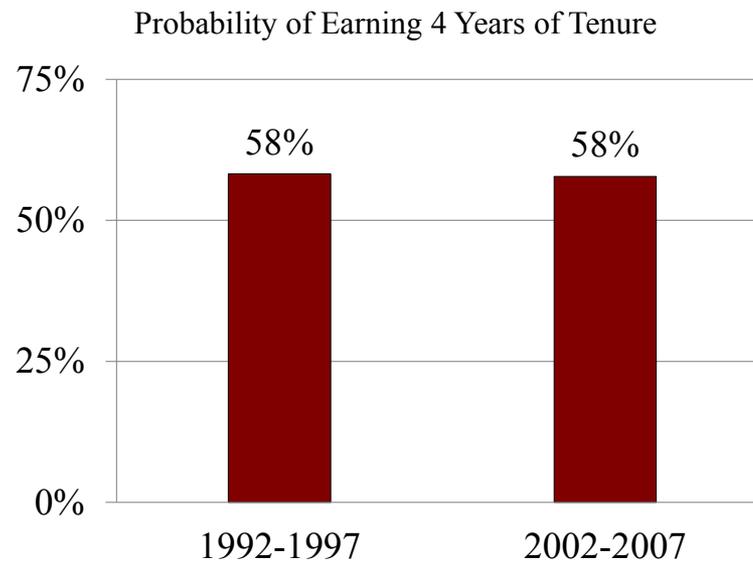
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## What about turnover during the first 4 years of employment?

- Historical *Actuarial Valuation Reports* show what happened to turnover during the 4 years before personnel data was available.
- AVs publish turnover assumptions based on plan experience.
  - Average turnover rate over the previous 5-year period, conditional on tenure.
- I calculate the probability of staying for 4 years before and after 1997.

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Newly hired state workers were equally likely to stay for 4 years after pension reform.



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## In summary, the switch to a DC plan increased turnover in MI state government.

- Employees with 4 years of tenure were 7 percentage points *less likely* to stay for another 6 years.
- Older, college-educated employees responded the most.
- New hires were equally likely to stay for 4 years.
- Reforms that increase turnover have benefits and costs.
- The national conversation around pension reform should consider these issues seriously.

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Thank you!



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