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

Does Deferred Compensation Retain Government Employees?

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Does Deferred Compensation Retain Government Employees?

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

Introduction of State Defined- Contribution Plans by Year

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.

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

Present Value of Accrued Pension Wealth Relative to Final Salary

Source: Author’s calculations.
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.
A gentle introduction to the statistical technique called “Regression Discontinuity.”

Source: Author’s calculations from data provided by MI ORS.
The trend in retention rates suggests a decline due to pension reform.

Probability of Earning 10 Years of Tenure by Month Hired

Source: Author’s calculations from data provided by MI ORS.
The Regression Discontinuity equation:

\[
\text{Earn 10 Years Tenure}_i = \beta_0 + \beta_1 (\text{Hire Date}_i) + \beta_2 (\text{Hired After April 1, 1997}_i) \\
+ \beta_3 (\text{Hire Date}_i)(\text{Hired After April 1, 1997}_i) + X_i + \epsilon_i
\]

\text{Earn 10 Years Tenure}_i \text{ 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.
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.
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.
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.
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.
Newly hired state workers were equally likely to stay for 4 years after pension reform.

Source: Author’s calculations from Actuarial Valuation Reports and data provided by MI ORS.
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.
Thank you!

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