Education, cognitive performance, and investment fees

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Smarter people, better financial decisions?

Thrift Savings Plan money often rolls over into more expensive IRAs

- TSP expense ratios are 0.03%
- Asset-weighted average expense ratio of equity mutual funds in IRAs: 0.74% (ICI, 2015)

**Hypotheses**

Education and cognitive ability associated with

- Lower likelihood of rolling into IRA
- Choosing cheaper IRAs if rolling over
Data

• All Army personnel who had positive TSP balance any time in 2016-2018
  – Federal civilian employees
  – Uniformed service members

• Educational attainment and AFQT score data

• Quarterly TSP account data, 2016Q1-2018Q1
TSP withdrawal options

If still employed by federal gov’t

• One-time “age-based in-service withdrawal” if older than 59½
  – Cash withdrawal
  – Rollover to an IRA or another employer plan

• Financial hardship withdrawal
TSP withdrawal options

If separated from federal gov’t employment

• One-time partial withdrawal if haven’t taken age-based in-service withdrawal
  – Cash withdrawal
  – Rollover to an IRA or other employer plan

• Full withdrawal, to be taken before April 1 of year following the year participant turns 70½
  – Lump-sum cash
  – Rollover
  – Stream of monthly payments
  – Life annuity purchase
Possible transitions of TSP balances after separation
Balance projection methodology

• At each calendar date $t$ in data
  – Take all employees who separated $n$ quarters ago
  – Estimate probability that their TSP balance transitions from state $i$ to state $j$

• Average $i$ to $j$ probabilities across all date $t$’s to get $i$ to $j$ probability at $n$ quarters post-separation
Balance projection methodology

- Combine transition probabilities for post-separation quarter 1, 2, ..., $n$ to estimate what fraction of TSP balances are in what state $n$ quarters after separation
TSP balance status among age 60-69 separators

31% of people roll over by 10 years after separation
TSP balance status among age 60-69 separators

38% of dollars roll over by 10 years after separation
TSP balance status among age 50-59 separators

20% of people roll over by 10 years after separation
TSP balance status among age 50-59 separators

30% of dollars roll over by 10 years after separation
TSP balance status among age 40-49 separators

11% of people roll over by 10 years after separation
TSP balance status among age 40-49 separators

22% of dollars roll over by 10 years after separation
Regression analysis

Sample: TSP participants employed as of 2016Q1, separate by 2018Q1

Dependent variable: Whether roll over

Main explanatory variables:
• Years of education
• AFQT score
Additional control variables

- Age, age squared
- Gender
- Race
- Military status (uniformed vs. civilian)
- Log(TSP balances)
  - Measured immediately prior to first rollover or last observed balance if no rollover
Rollover probability

1 year more education
1 standard deviation higher AFQT
With additional controls
IRA fee information

• Expense ratio data (44 institutions)
  – CRSP Mutual Fund Database, 2016-2017
  – Asset-weighted average of all mutual funds offered by IRA provider excluding institutional funds and hybrid funds

• Advisory fee data (33 institutions)
  – Form ADV Part 2a filed with SEC
  – Assume all IRA accounts pay advisory fee
Missing data treatment

• For 14 IRA providers that provide advisory services but not their own mutual funds
  – Use average of firm-level expense ratios for providers that do offer mutual funds, weighted by rollover dollars from TSP

• For 25 IRA providers that offer own mutual funds but not advisory services
  – Use weighted average of firm-level advisory fees for providers that do offer advisory services

• Exclude providers that offer neither own funds nor advisory services
  – 23% of individuals who roll over and 18% of rollover dollars
Average IRA fees

• Average dollar of TSP rollovers pays
  – 57 basis points of expense ratio
  – 119 basis points of advisory fees
  – 176 basis points total

• 100 basis points of extra fees → 22% lower balances after 25 years
Total annual IRA fees, basis points (among those who roll over)

With additional controls
Total annual fees, basis points

With additional controls
Summary

• A significant fraction of TSP balances are eventually rolled over into an IRA

• Likelihood of rolling over and fees paid have only a weak relationship with education and cognitive ability