BORROWING TO SAVE? THE IMPACT OF AUTOMATIC ENROLLMENT ON DEBT

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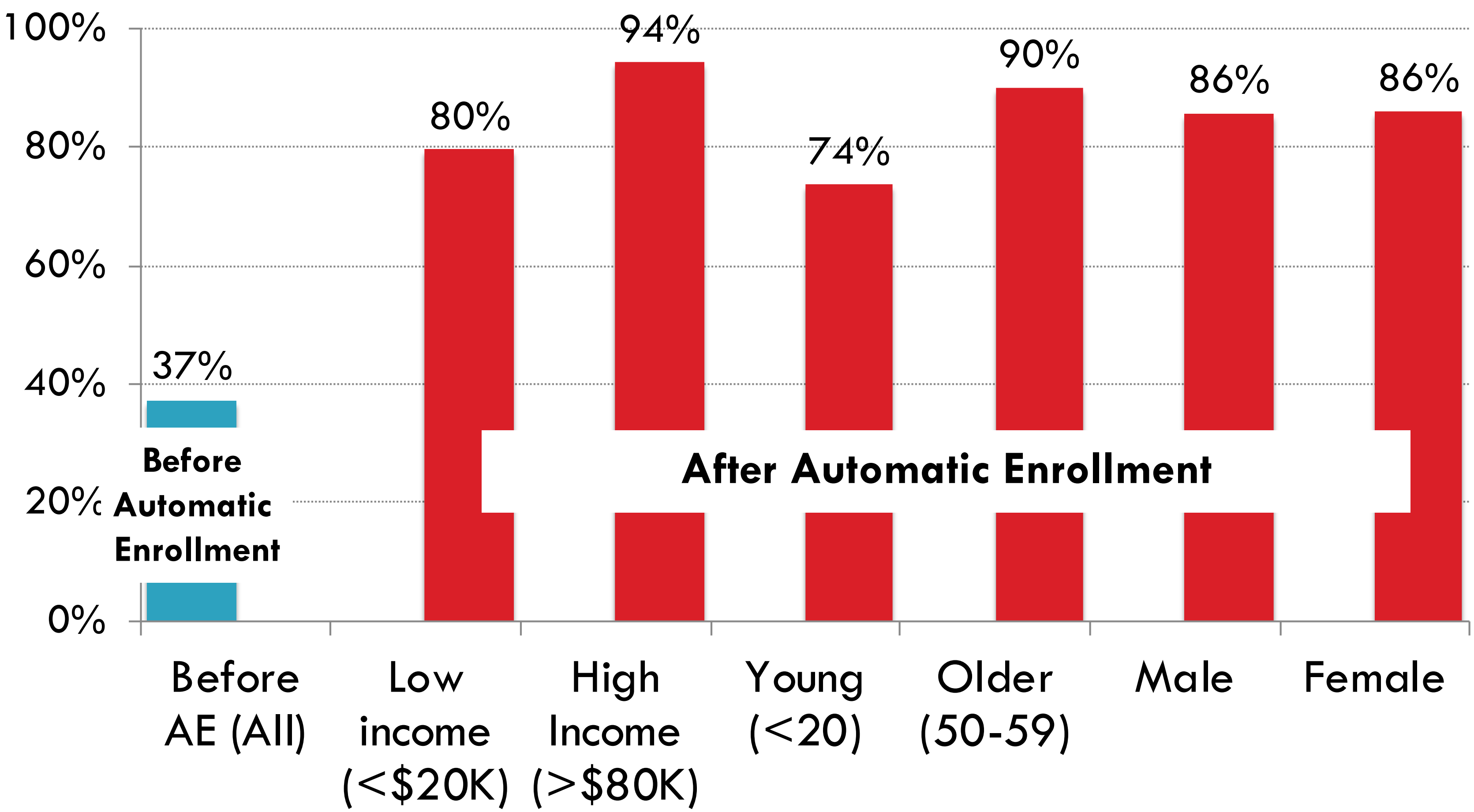
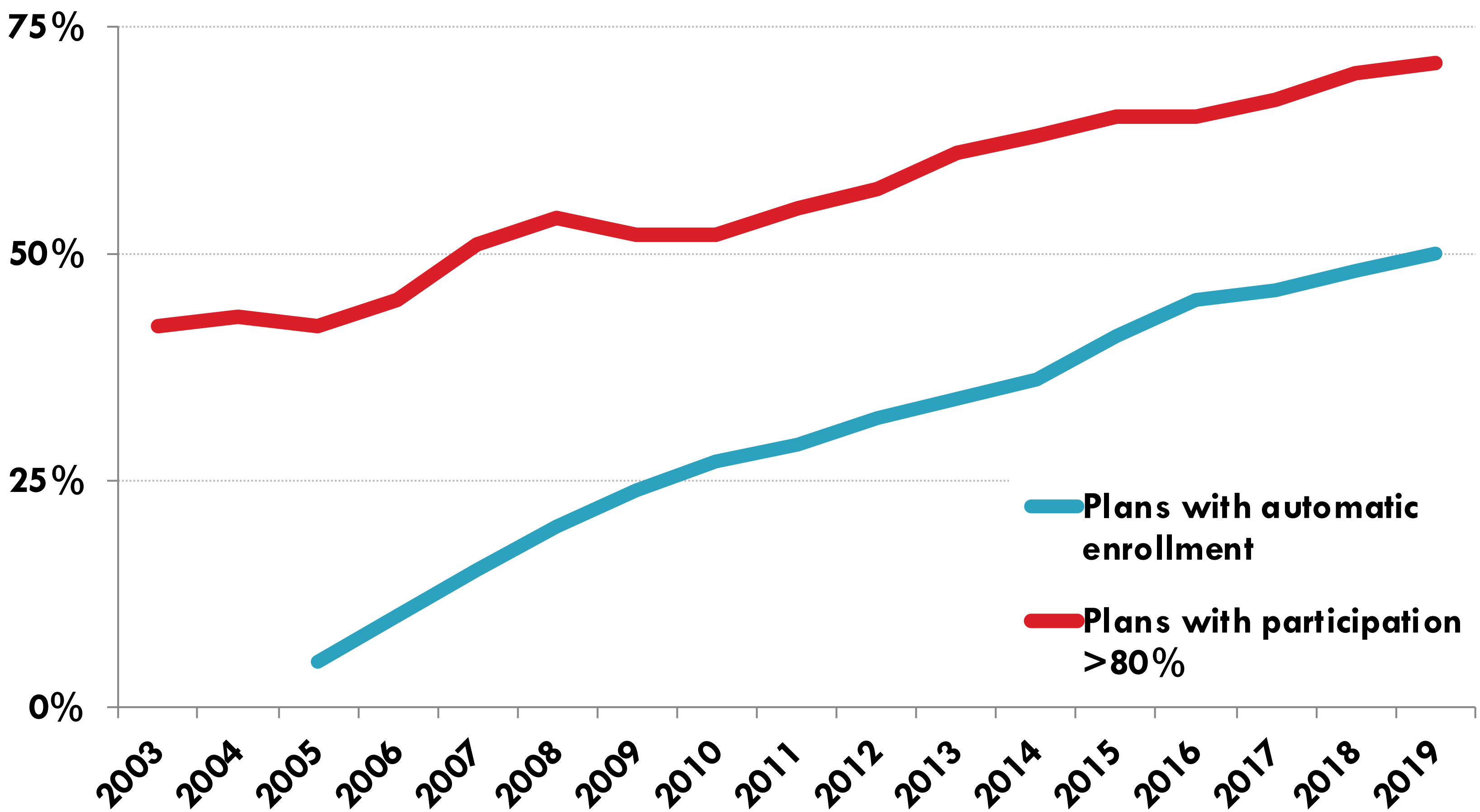
Savings Plan Participation and Automatic Enrollment



Source: Madrian (2001)

Automatic Enrollment Has Dramatically Increased Savings Plan Participation in the US



Source: Vanguard, "How America Saves" (various)

Automatic Enrollment is Dramatically Increasing Savings Plan Participation in the UK

- Mandatory automatic enrollment being phased in from 2012-2017 by firm size
- Opt-out rate of ***only 9-10%***
- 32 percentage point increase in workplace savings plan participation from 2012-2018

Where Does the Increased Savings Come From?

Reduced Consumption?	Reduced Saving Elsewhere?	Increased Debt?

Where Does the Increased Savings Come From?

Today's research question:

To what extent is the increased saving induced by automatic enrollment offset by higher levels of debt?

Increased Debt?

Preview of results

At four years of tenure, automatic enrollment

- Increases cumulative employee plus employer contributions by 4.1% of starting salary on average
- Has no statistically significant effect on the change in debt excluding auto loans and first mortgages
- Effect on auto loans and first mortgages is positive but not statistically significant
  - Immediate effects on net worth muted if accompanied by purchase of an asset

Setting: Thrift Savings Plan Participation of U.S. Army Civilian Employees

Employer contributions

- Non-contingent contribution: 1% of pay
- Match: 100% on first 3% of pay, 50% on next 2% of pay

Opt-in

Automatic Enrollment

- Contribution rate: 3%
- Asset allocation: U.S. Treasury Fund

August 1, 2010

Data

U.S. Dept. of Defense

- Payroll from 2007 – 2015
  - Compensation
  - TSP contributions
- Employee demographics

Credit Bureau

- Credit records from June and December 2007-2014

Empirical Strategy

Compare outcomes for two one-year hire cohorts at equivalent levels of tenure

August 1, 2010

Qualitatively similar results with regression discontinuity analysis

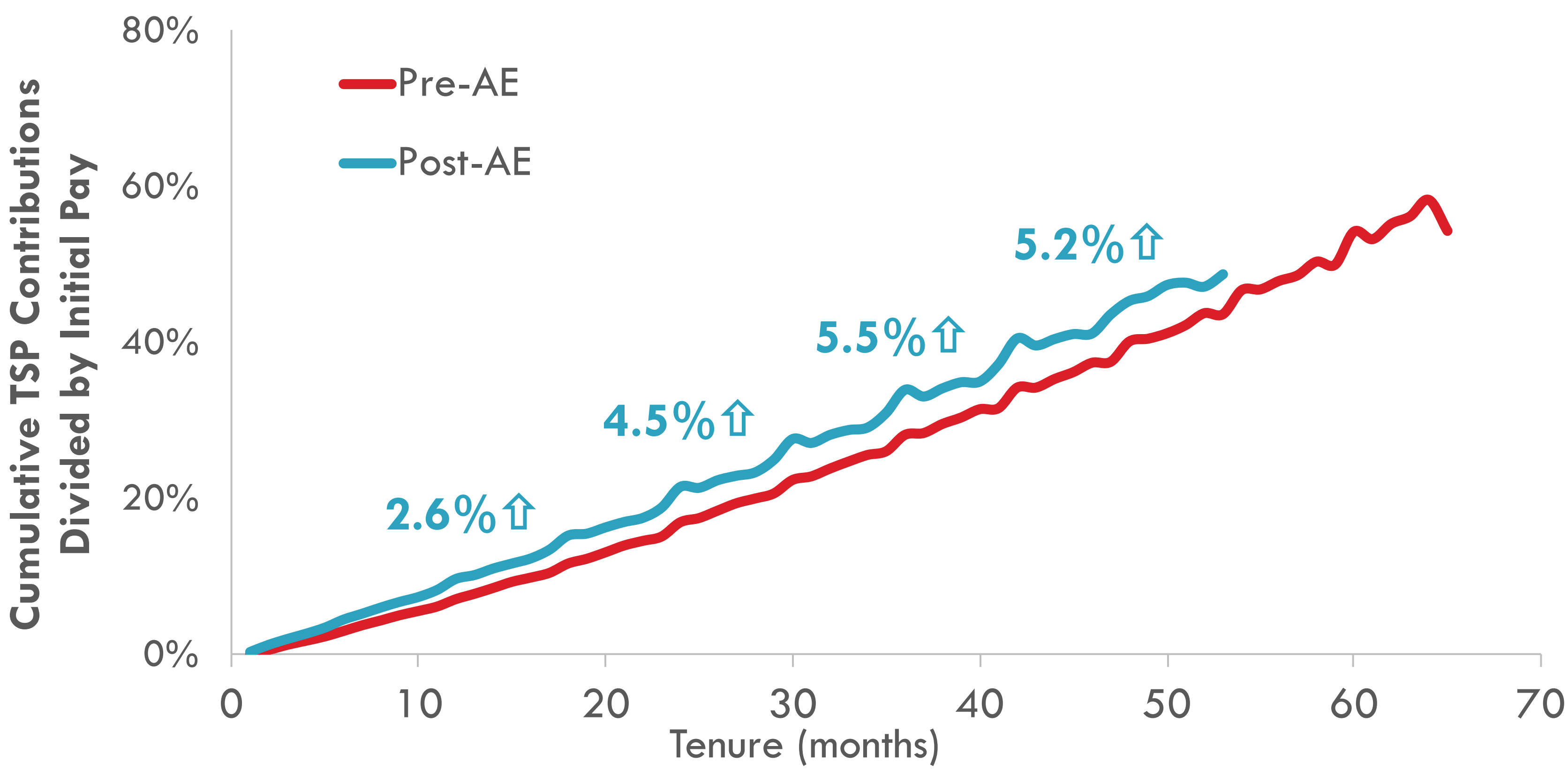
One-Year Cohort Comparison

	Before AE	After AE
Avg. annualized starting salary	$56,418	$55,825
Avg. age at hire	39.7	39.9
% with credit report within 6-months before hire	83.0%	83.2%
Credit score before hire	686.4	687.4
Sample size	N=32,072	N=26,802

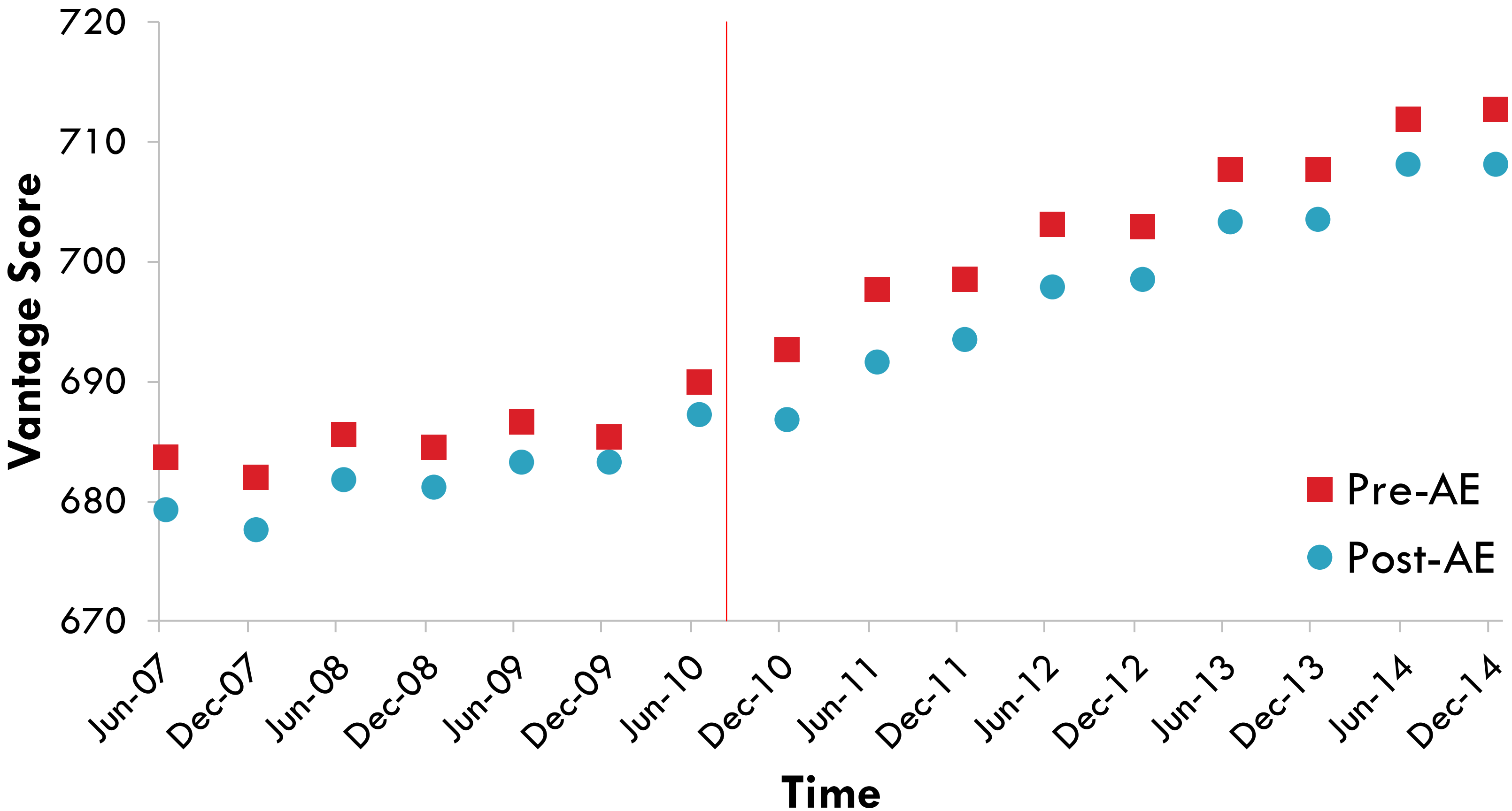
Main outcomes

- Ratio of cumulative TSP contributions to first-year pay
  - Don't observe withdrawals, loans, capital gains
- Vantage credit score
- Debt excluding first mortgages and auto debt as a fraction of first-year pay
- Auto loans as a fraction of first-year pay
- First mortgages as a fraction of first-year pay

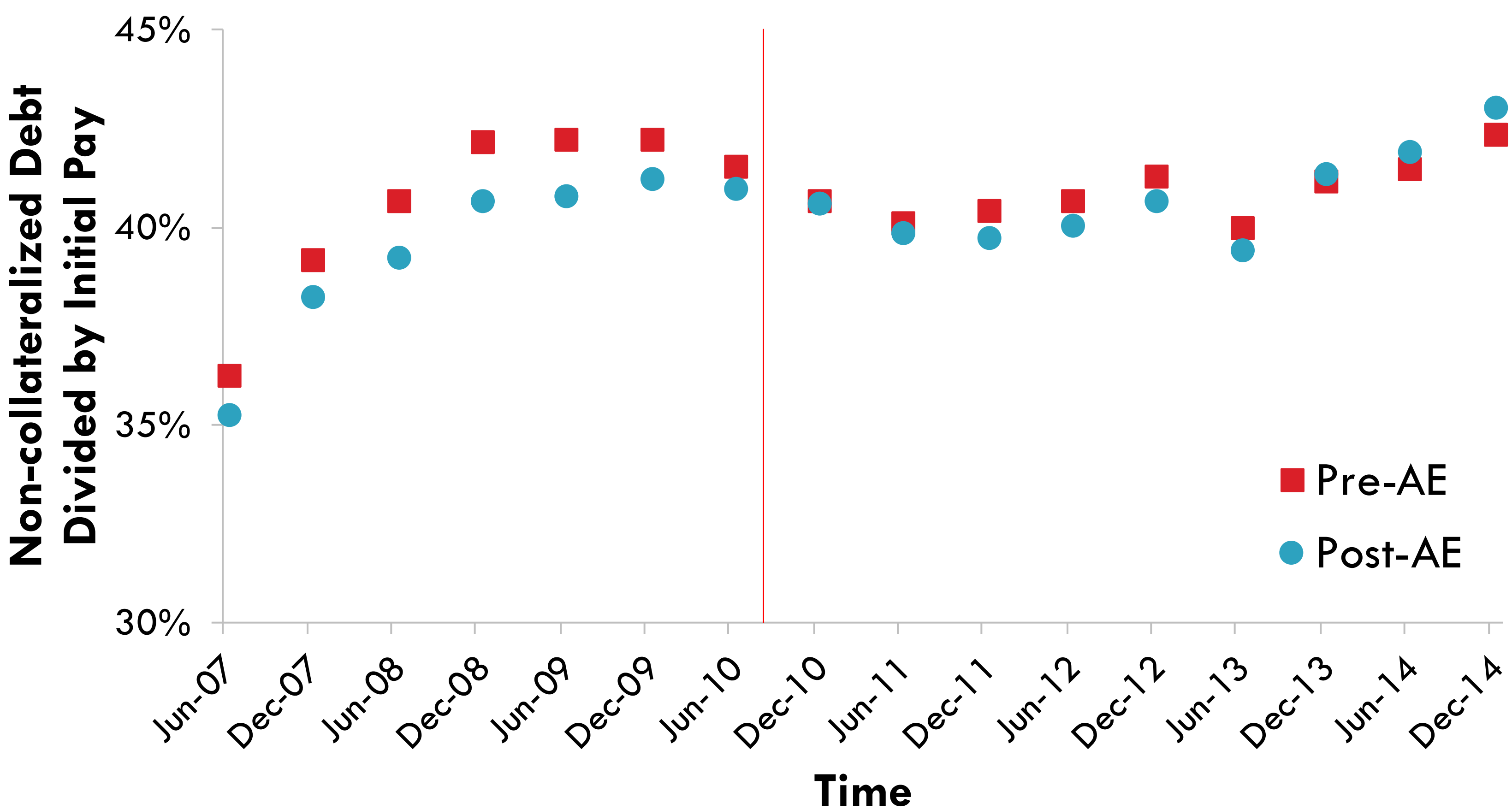
Ratio of Cumulative TSP Contributions (Employer + Employee) to Initial Pay



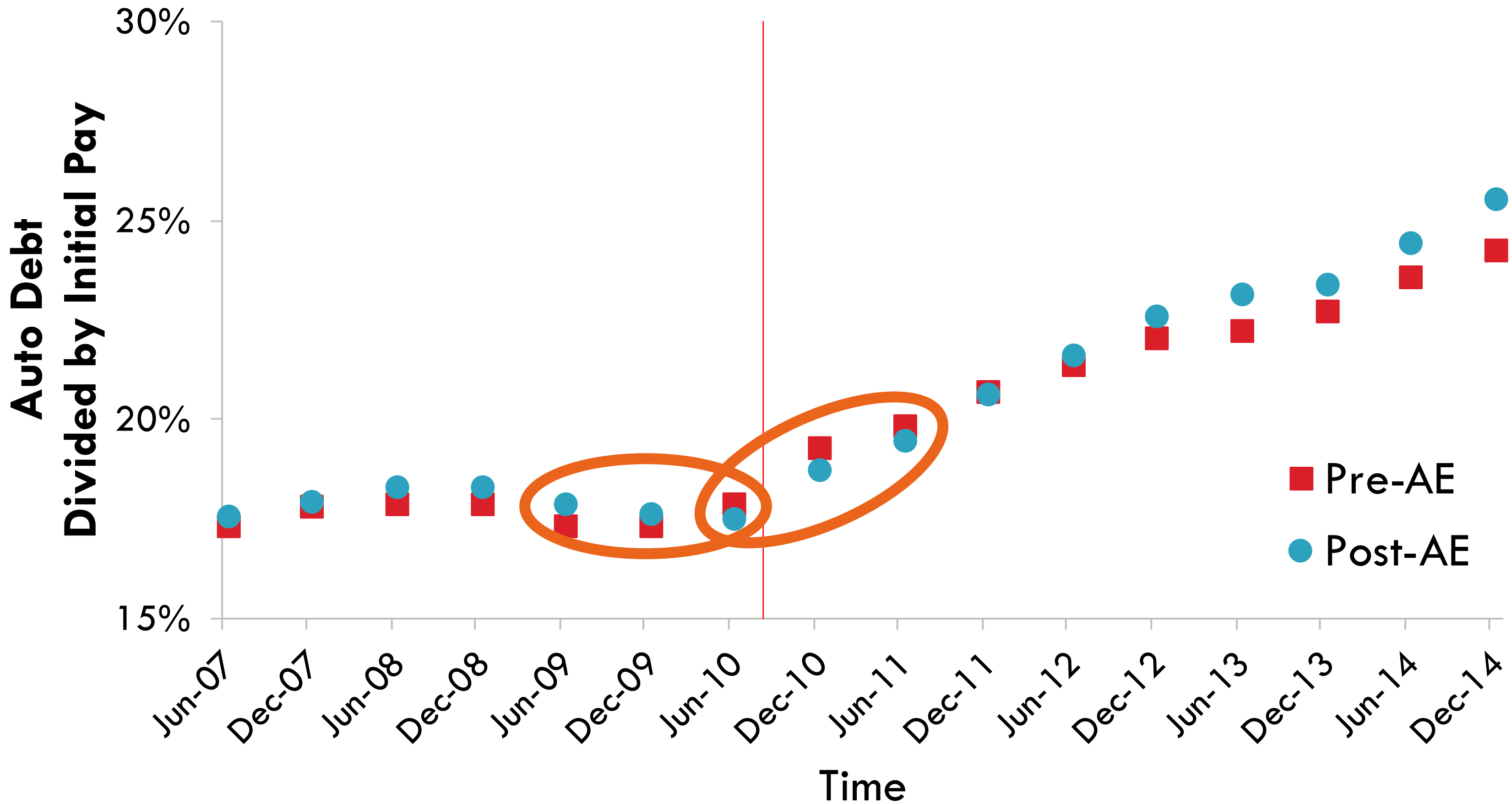
Vantage score



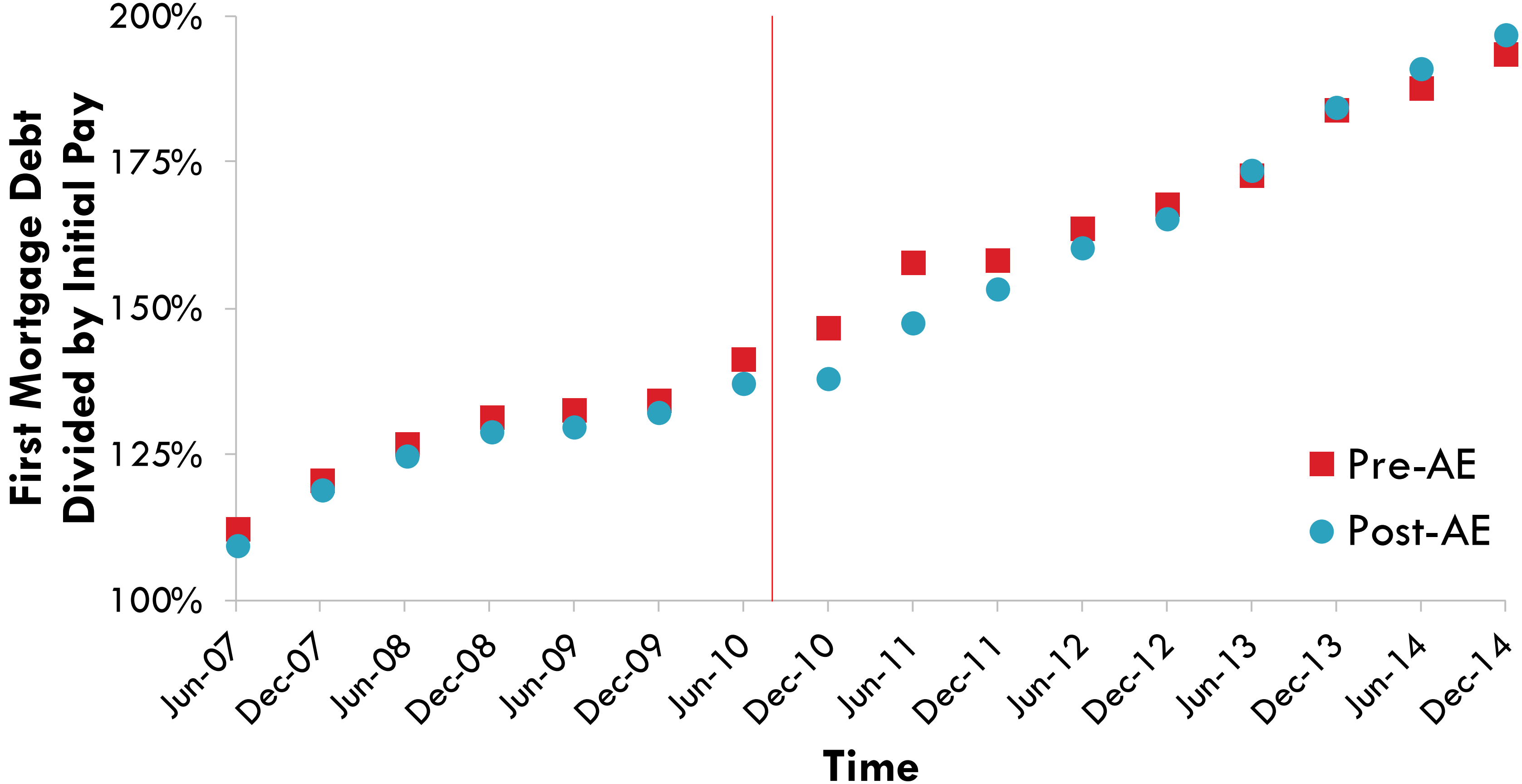
Debt Excluding Auto Loans and First Mortgages Divided by Initial Pay



Auto Debt Divided by Initial Pay



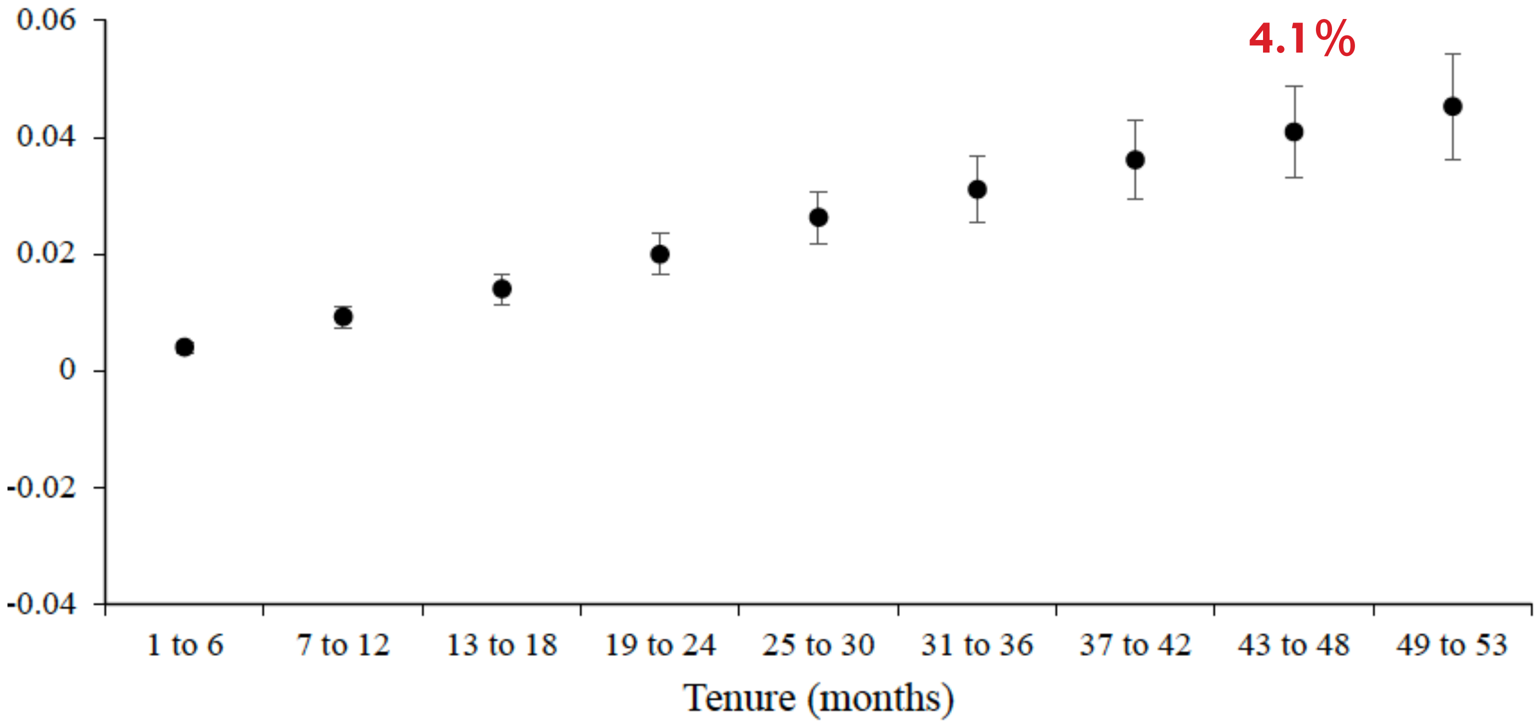
First Mortgage Debt Divided by Initial Pay



Assessing the Impact of Automatic Enrollment on Cumulative TSP Contributions

- Regression framework
  - Outcome: TSP contributions at different points in time (6-month buckets)
  - Key variable of interest: indicator for being hired after automatic enrollment (at different tenure levels)
- To get the impact on cumulative TSP contributions, sum the tenure-specific automatic enrollment effects from hire to the tenure horizon of interest
- Control variables:
  - Calendar time (6-month buckets)
  - Tenure (6-month buckets)
  - Log deflated starting salary, age (quadratic), gender (binary), education (categories), job type (categories), college major (categories), race/ethnicity (categories), geography (state of residence indicators)

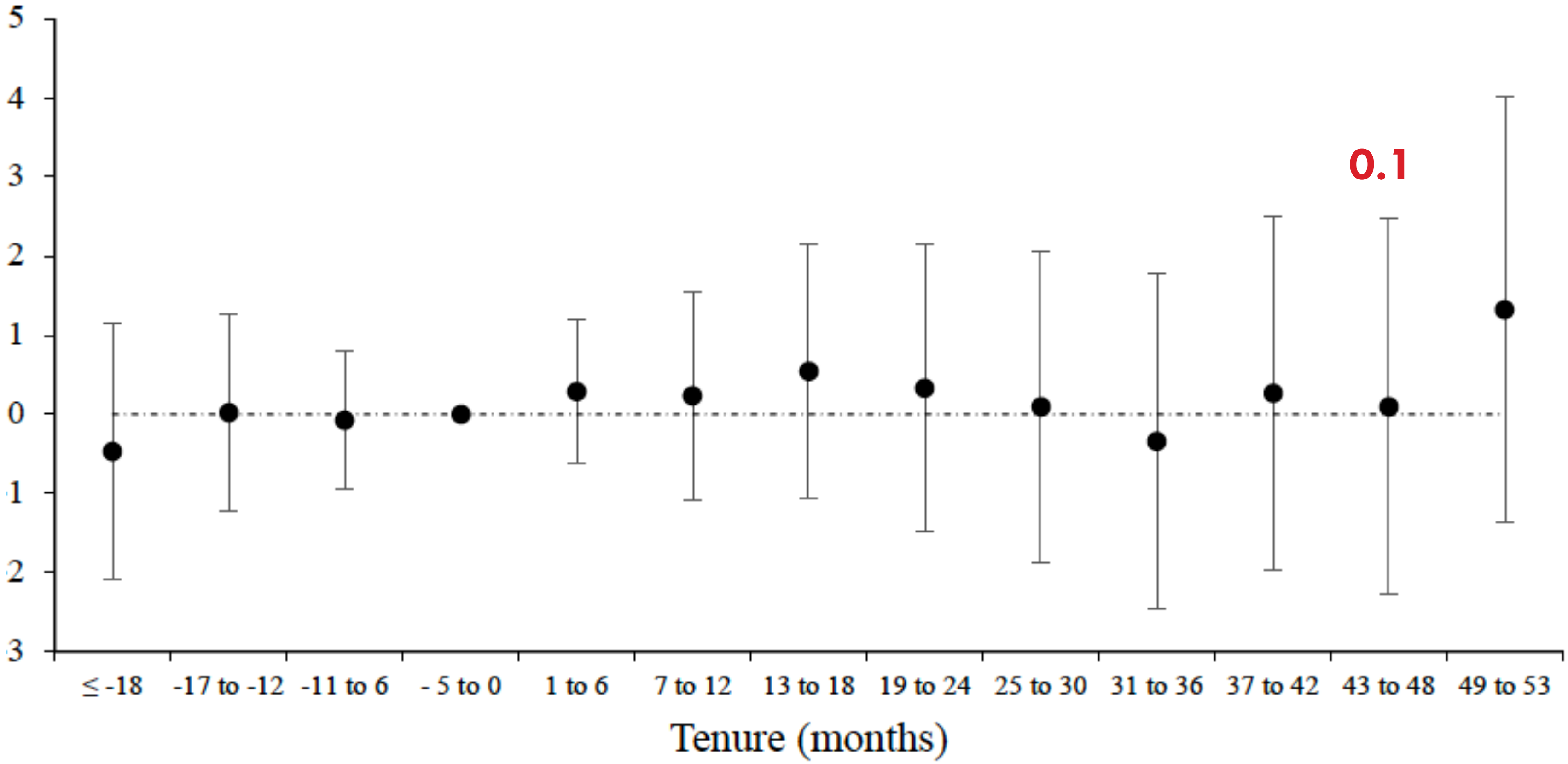
The Estimated Impact of Automatic Enrollment on Cumulative TSP Contributions



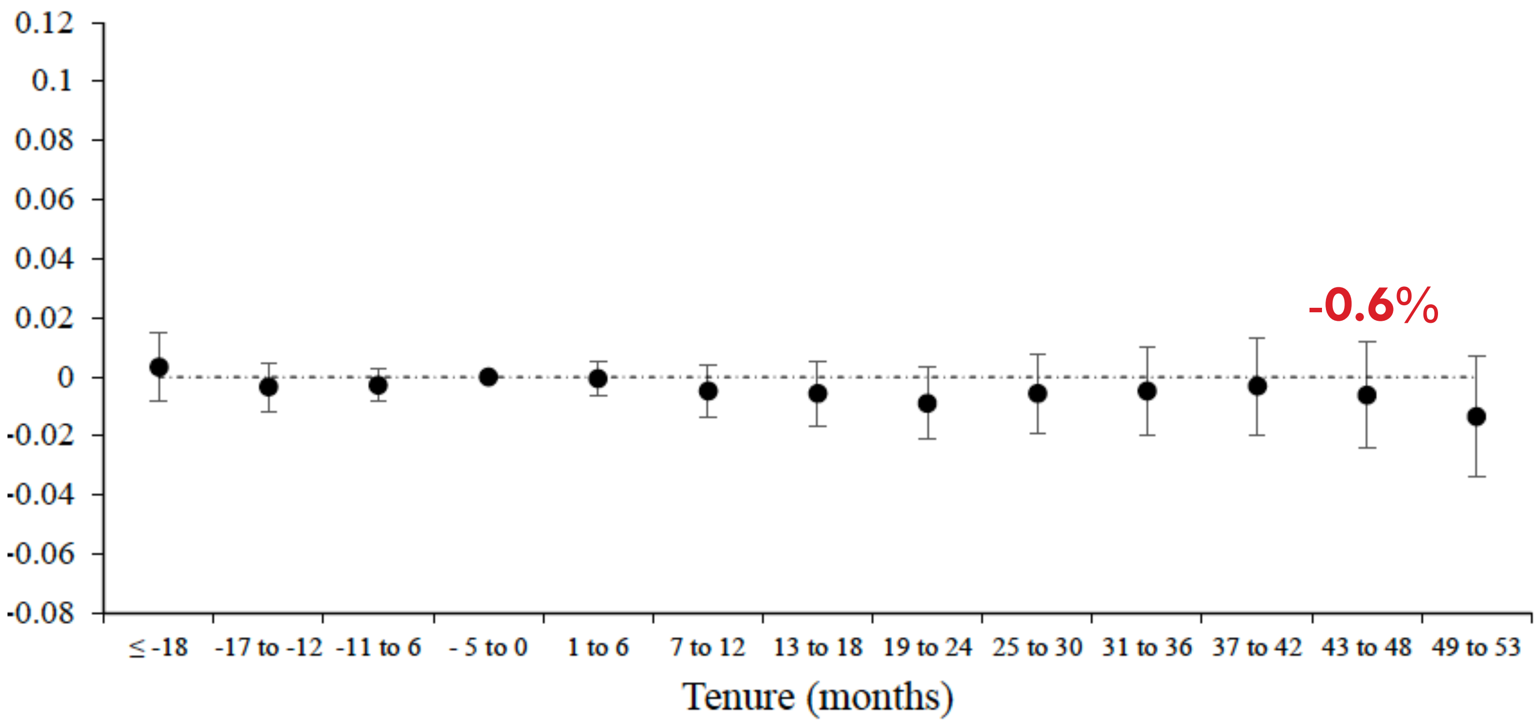
Assessing the Impact of Automatic Enrollment on Credit Outcomes

- Regression framework
  - Outcome: change in debt relative to debt held at hire (at different tenure levels)
  - Key variable of interest: indicator for being hired after automatic enrollment (at different tenure levels)
- Control for time trends in credit availability using the experience of hire cohorts outside of the 1-year pre-AE and post-AE hire cohorts

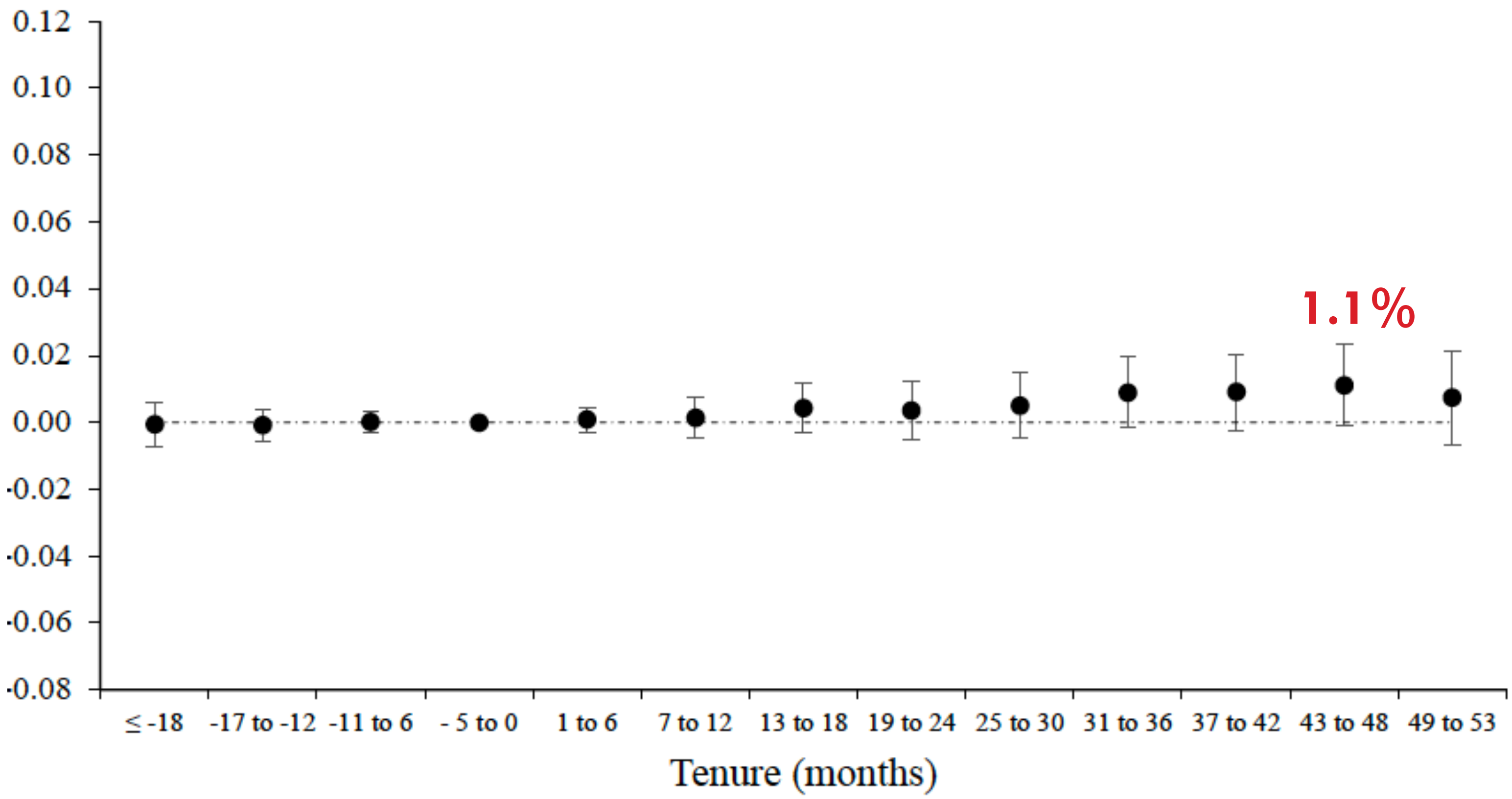
The Estimated Impact of Automatic Enrollment on Vantage Scores



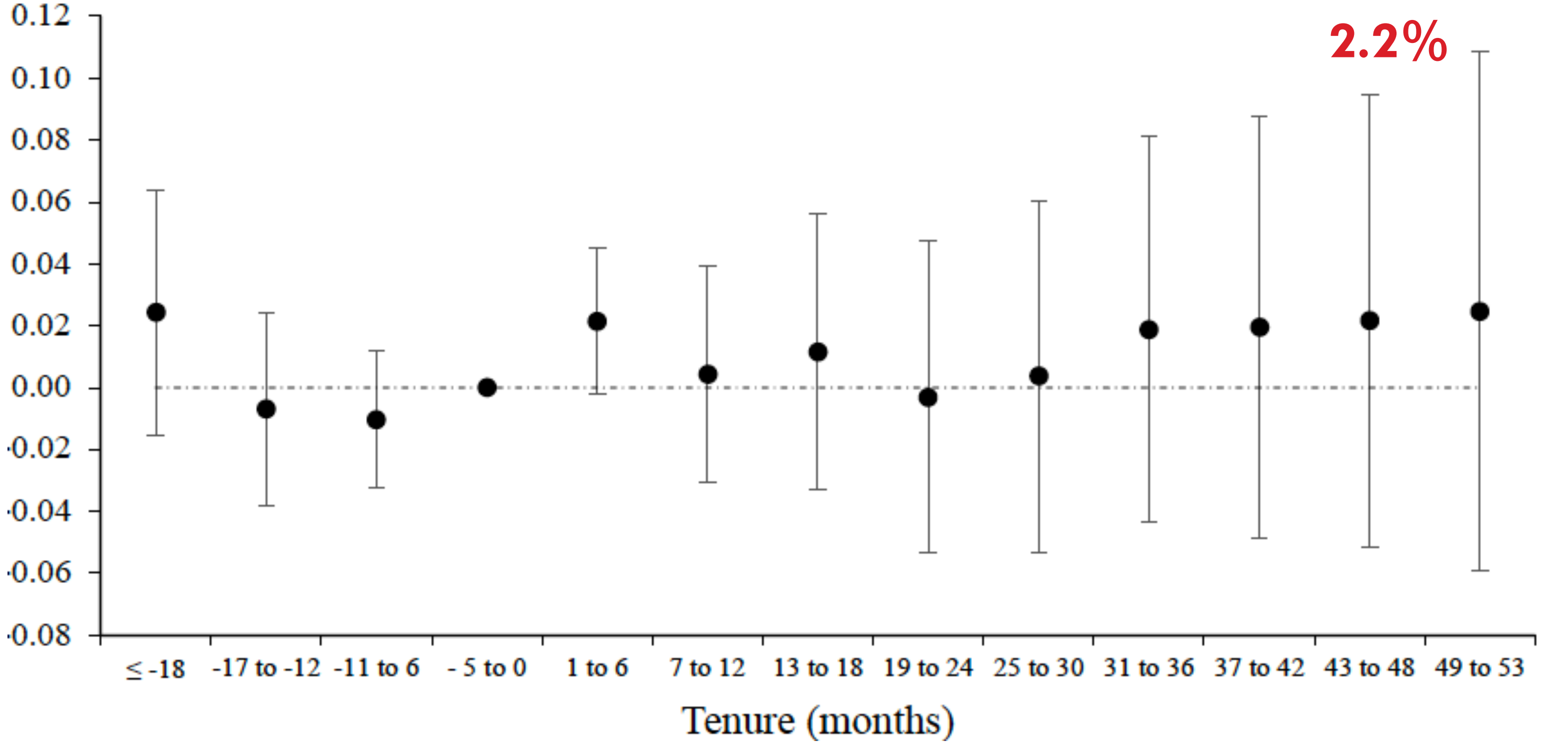
The Estimated Impact of Automatic Enrollment on Debt Excluding Auto Loans and First Mortgages (Divided by Pay)



The Estimated Impact of Automatic Enrollment on Auto Loans (Divided by Pay)



The Estimated Impact of Automatic Enrollment on First Mortgage Debt (Divided by Pay)



Interpreting the Impact of Automatic Enrollment on Auto and Mortgage Debt

- Secured debt in a frictionless market
  - If debt is used to acquire an asset, the increase in debt is offset by an equivalent increase in the value of the underlying asset → no change in net worth
- Larger secured loan implies
  - More valuable asset purchased and/or
  - Fewer financial assets spent down (or financial assets increase due to cash-out refinancing)

Interpreting the Impact of Automatic Enrollment on Auto and Mortgage Debt

- Marginal collateralized debt is used to acquire marginal assets
  - Potential mechanism
    - Greater TSP balances may allow individuals to qualify for a larger loan
  - No immediate impact on net worth in frictionless market
  - But durables depreciate and increase both flow consumption and interest costs, so may not contribute to long-run wealth accumulation
  - Reverse caveat: Homes often appreciate, and mortgages create a forced savings mechanism

Interpreting the Impact of Automatic Enrollment on Auto and Mortgage Debt

- Less cash on hand may lead to greater leverage when buying a given durable (more debt which is not offset by a higher valued asset)
- Less cash on hand lead to cash-out refinancing (more debt which is not offset by a higher valued asset)

Conclusions

- At four years of tenure, automatic enrollment increases cumulative employee plus employer contributions by ~4% of starting salary on average
- No evidence of increased financial distress as measured by Vantage scores and collections
- The small decrease in debt excluding auto loans and first mortgages is not statistically significant
- Auto loans and first mortgages may increase
  - Hard to interpret the effect of this on net worth
- Results highlight the value of viewing multiple portions of (if not entire) household balance sheet