On the Effect of Student Loans on Access to Homeownership

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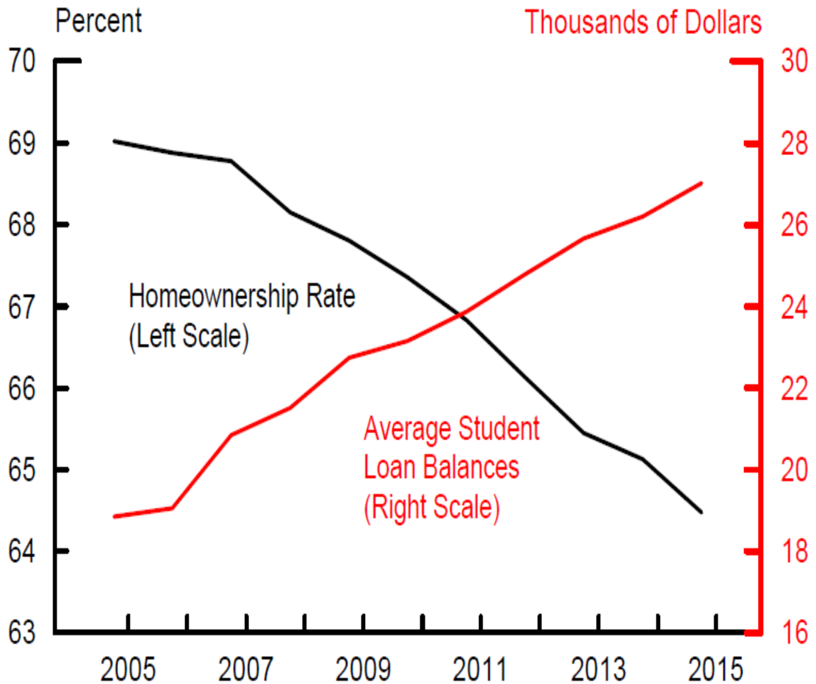
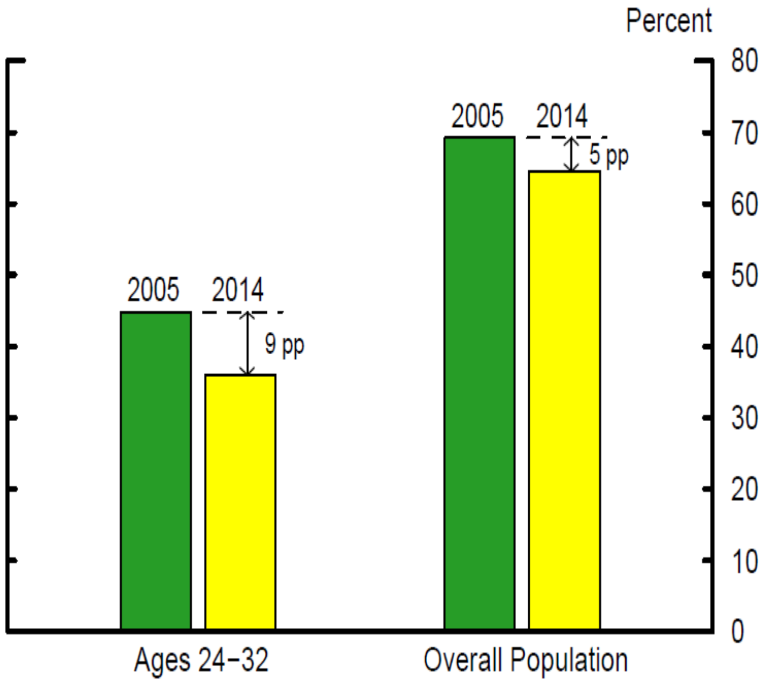
Student Loan Debt and Homeownership

Average Student Loan Balances and Homeownership Rate



Note: Student loan balances in 2015:Q2 dollars.
Source: Student loan balances: NYFED CCP/Equifax.
Homeownership rate: Current Population Survey (CPS)

Homeownership Rate 2005 and 2014



Source: CPS 2005 and 2014 (authors' calculations).

Student Loans and Homeownership

- Anecdotal and survey evidence:
  - Student loan debt might adversely affect homeownership decisions/access (Rutgers, NAR, Fannie Mae)
  - Narrative focused on the effect of student loans reducing ability to qualify for mortgage through effects on debt-to-income ratios and ability to save for down payments
  - Additionally, student loan debt may reduce desire to take on more debt
- Student loans are only one type of debt, however:
  - Large balances for young borrowers
  - Typically not underwritten, available to marginal borrowers

Research Question

- All else equal, how does variation in student loan debt affect the probability of homeownership?
  - Hold closely related educational decisions constant
  - Though experiment: forgive $1,000 of student loans accrued through age 22
- Access to student loans likely has further effects, but this is beyond the scope of our study

Endogeneity of Student Loan Debt

- Unobservable factors that influence both borrowing and homeownership might bias results
  - Students with a high expected income might borrow more and also be more likely to own
  - Tight credit markets could restrain students from borrowing large amounts and also restrict their access to home loans
  - Many other family background characteristics are not available in datasets which also contain detailed loan and schooling information

Our Study

- Estimates the effect of student loan debt on entry into homeownership
- Unique administrative data for cohort aged 23-31 in 2004 followed over time*
  - Credit bureau records
  - Federal student loan and need-based grant recipient information
  - Records on college enrollment, graduation and major, and school characteristics
- Instrument: changes to tuition rates at home-state public universities

*Data were anonymized. No PII was provided to the FR

Preview of Results

- A \$1,000 increase in student loan debt decreases the homeownership probability by up to 2 percentage points
  - Effect identified from modest changes in tuition rates → may not extrapolate linearly to large changes in debt balances
- Effect is most pronounced during individual's late 20s, attenuates thereafter
- Failing to control for endogeneity of student loan debt biases the estimates

Existing Studies

- Cooper and Wang (2014)/Houle and Berger (2015)
  - Small negative effect of debt after controlling for observable characteristics
  - 10 percent increase in debt decreases homeownership rate by 0.1-0.5 percentage points among young borrowers
- Gicheva and Thompson (2014)
  - Homeownership lower among cohorts with higher rates of borrowing

Sample Details

- Representative cohort of individuals between ages 23 and 31 in 2004
- Credit records by TransUnion available roughly bi-annually between 1997 and 2010
  - Homeownership approximated by presence of secured closed-end mortgage debt
- Educational histories by National Student Clearinghouse (NSC)
  - Detailed enrollment spells (duration, institution)
  - Graduation records (degree, major)
- Pell Grant and Federal Loan records by the DoEd

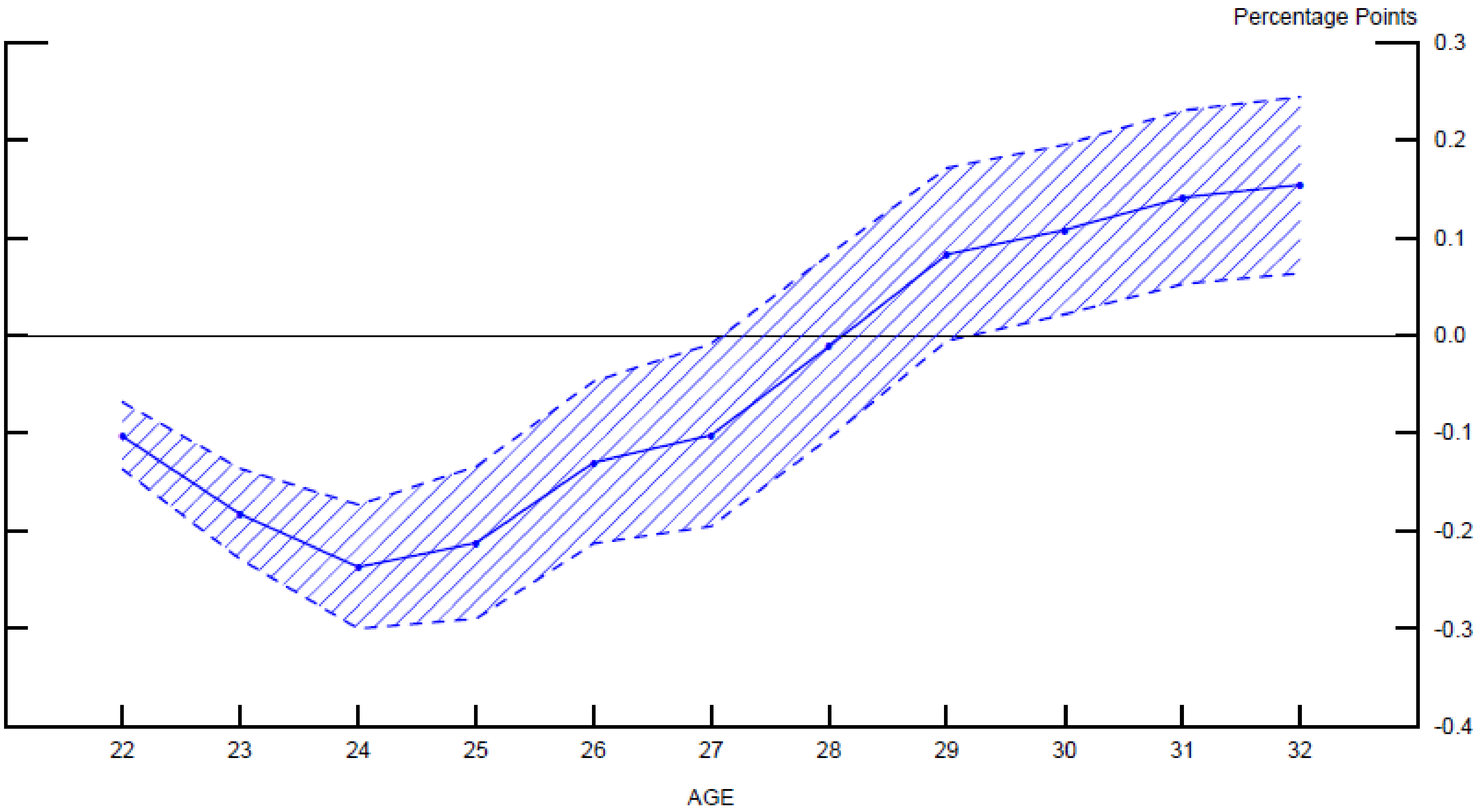
Preliminary Correlations/Control on Observables

- Regresses indicator for homeownership on individuals' student loan debt by age 22

- Controls for a rich set of individual characteristics measured at age 22 as well as state and year fixed effects
  - Attained degrees, majors, Pell grant controls, school sectors, and time-varying state controls (unemployment rate, average wages, and median house prices)
  - Standard errors clustered at the state/cohort level

- Effect on homeownership estimated for ages 22-32

Effect of a $1,000 Increase in Debt on Homeownership Rate – OLS Estimates



Addressing Omitted Variable Bias

- Need: instrument for student loan debt that does not affect decision for homeownership through any other channel than debt
- Candidate IV: Increases in average tuition at public 4-year universities in home state when subject was 18-22 years old
  - Home state tuition changes not determined by individual choices
- Treatment group: Individuals who attended a public, 4-year university by age 22
  - Other same-cohort, same-state individuals form control group
  - Absorb state/time specific shocks correlated with tuition
  - Show tuition changes uncorrelated with attendance at public 4-year universities (no endogenous selection into treatment)

Estimating Equation

- 1st Stage

$$X = \alpha_1 Z + \alpha_2 D + \alpha_3 Z \cdot D + \boldsymbol{W\alpha}_4 + \delta_s + \delta_c$$

- 2nd Stage

$$Y_t = \beta_1 X + \beta_2 D + \beta_3 Z + \boldsymbol{W\beta}_4 + \theta_s + \theta_c$$

X: Debt by age 22

Z: In-state tuition, ages18-22

D: Attended public, 4-year univ.

Y: Homeowner

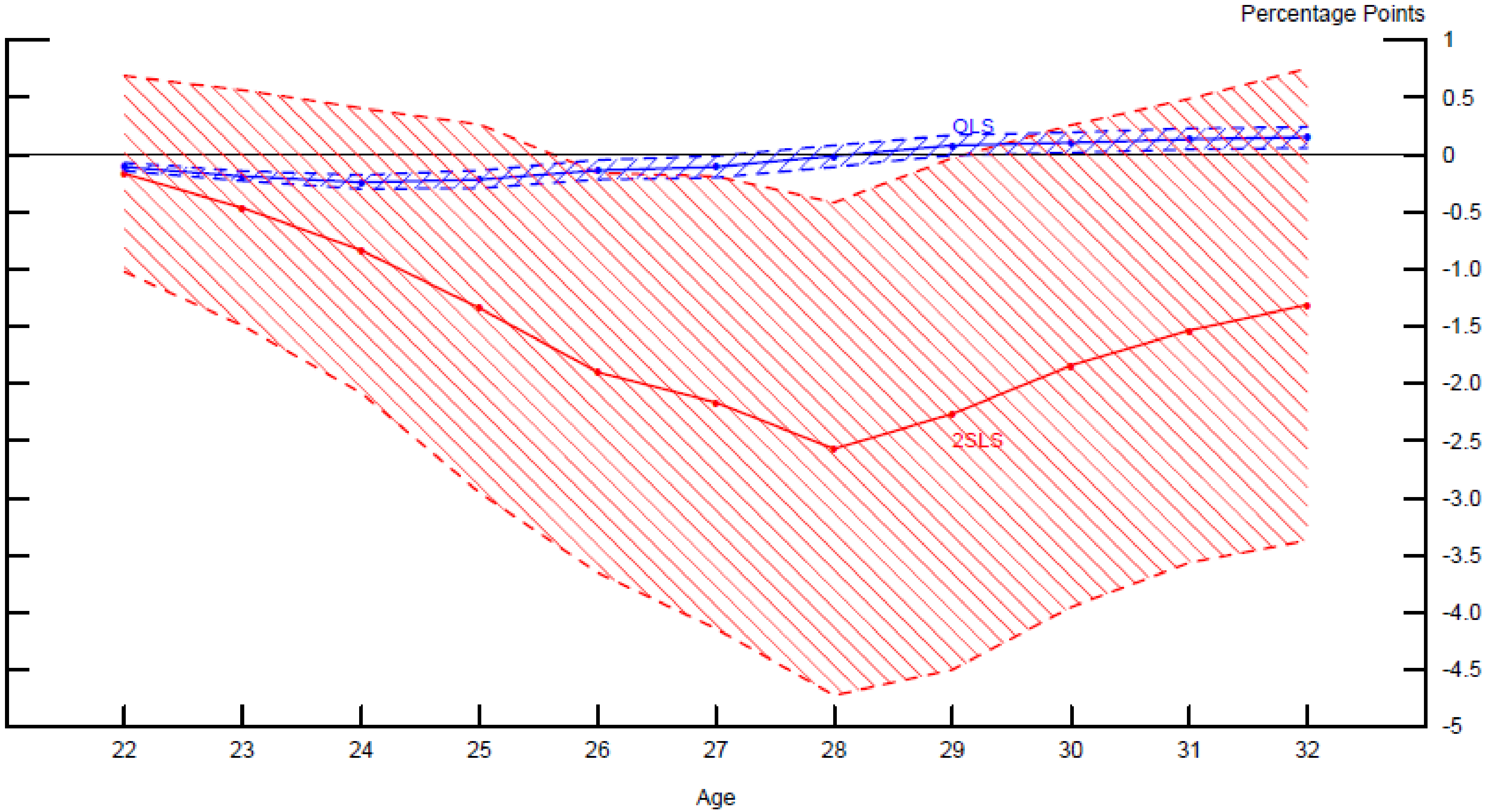
W: Controls (age 22)

S: State

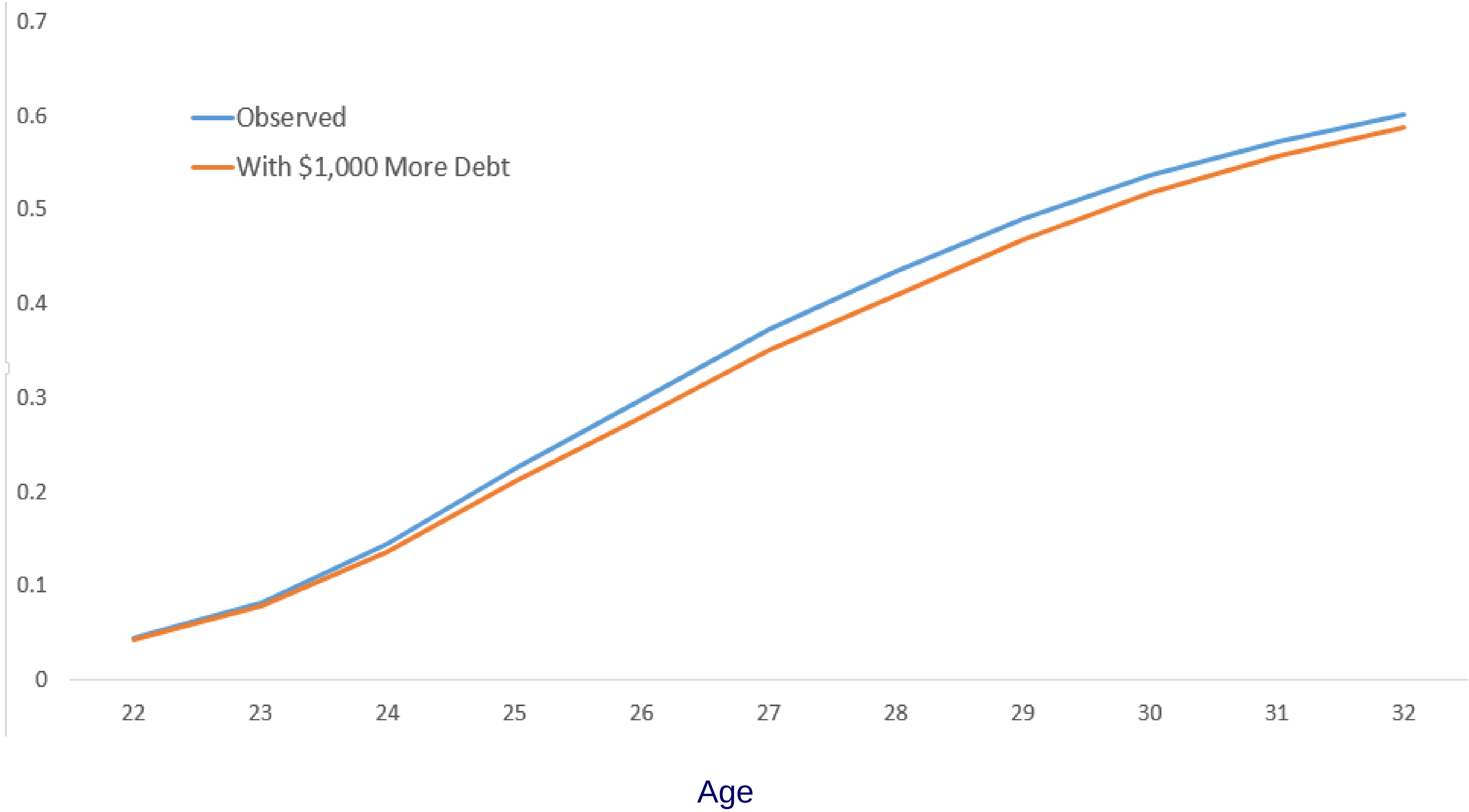
C: Cohort

t: age

Effect of a $1,000 Increase in Debt on Home-ownership Rate – OLS vs IV Estimates



Effect of a $1,000 Increase in Debt on Home-ownership for Treatment Group



Identification Concerns/Validity Tests (1)

- IV estimates stable to inclusion of local economic controls

Probability of Homeownership by Age 28

	(1)	(2)
Student Loans ($1,000s)	-0.0258**	-0.0257**
	(0.0111)	(0.0110)
Tuition	0.00455	0.00475*
	(0.00279)	(0.00276)
Attended Public 4-Year Univ.	0.202***	0.201***
	(0.0448)	(0.0446)
State Average Wages		9.48e-07
		(1.74e-05)
State Unemployment Rate		-0.0139**
		(0.00682)
State House Prices		-0.000403
		(0.000343)
State and Year F.E.s	YES	YES
Major, Degree, Attendance and Pell Grant Controls	YES	YES

Identification Concerns/Validity Tests (2)

- Change in tuition does not affect composition of treatment group (endogenous selection)

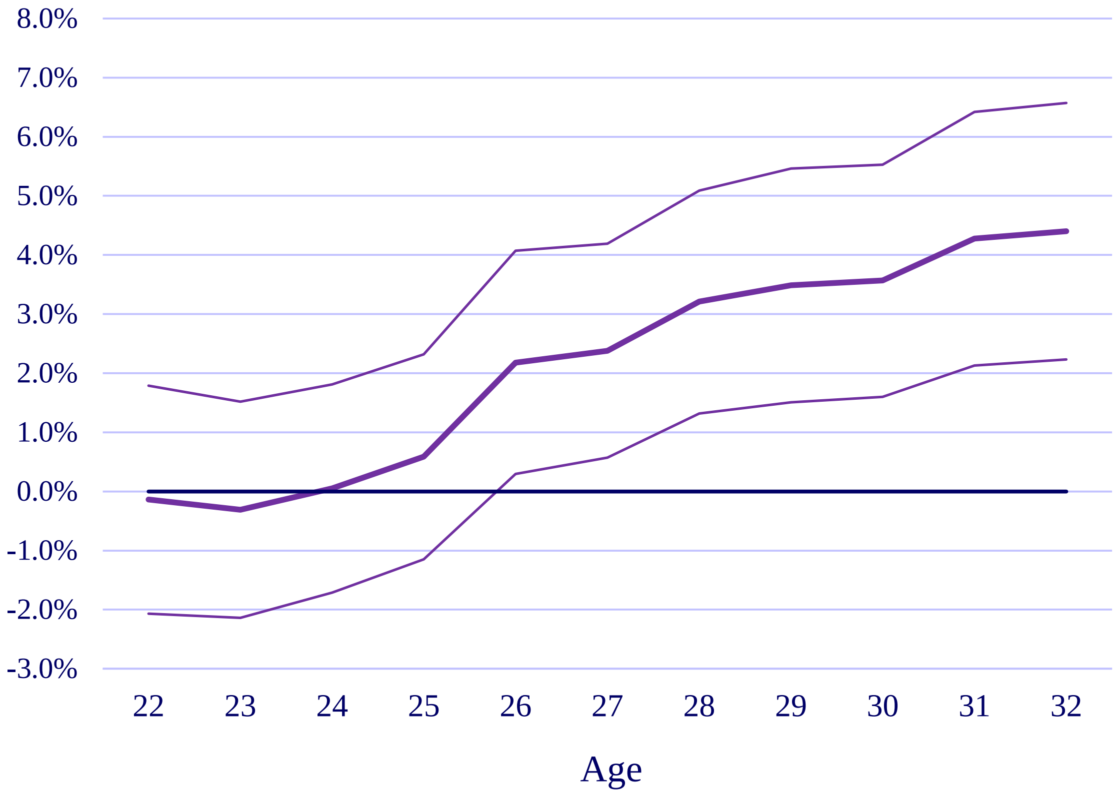
Probability of Attending a Public, 4-Year University by Age 22

	(1)	(2)
Tuition ($1,000s)	-0.001	0.002
	(0.003)	(0.003)
State FE	YES	YES
Year FE	YES	YES
Degree Controls	NO	YES
Major Controls	NO	YES
Pell Grant Controls	NO	YES

Effect of Student Loan Debt on Credit Score

- One potential channel for effect on homeownership
- Direction is theoretically ambiguous
- Decrease:
  - Increased debts may directly lower credit scores
  - Higher debts increase probability of delinquency, which consequently lowers credit scores
- Increase:
  - Establishes a credit history
  - Timely payment of debts improves credit scores

Effect of $1,000 increase in Student Loan Debt on Probability of Credit Score < Median, by Age



Other Outcomes

- Meaningful effect of increased student loan debt on homeownership

- However, direction of causality is unclear
  - Debt → Credit Score → Homeownership

  OR
  - Debt → Homeownership → Credit Score

- Similar stories could be told about other credit outcomes

- One instrument is insufficient to disentangle direct effects on multiple inter-related outcomes

Conclusions

- Evidence of omitted variable bias on studies based solely on observable controls

- Once omitted variable bias is addressed
  - Student loan debt can have an economically meaningful effect on homeownership of borrowers
  - Effect seems strongest during borrowers' late 20's

- Channels outside the scope of our analysis
  - Mortgage underwriting may have become more sensitive to debt since the financial crisis
  - Student loan debt might provide access to higher education, possibly increasing likelihood of homeownership

Thank you!