

Discussion of “ The Ripple Effects of Loan Costs: Major and Occupation Choices, Earnings, and Job Satisfaction” by
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Summary of the Paper

- This paper belongs to the broad literature about how college educational loans affect student behavior and outcomes
- How does the cost of college educational loans affect various college choices and college outcomes
 - Cost is measured by the interest rate on federal college educational loans
 - Direct impacts on college financing: federal loans, parent loans and support, own savings
 - Choices of majors, employment, and occupation
- The paper is of great relevance to the currently heated policy debates on student loans
- Literature on the effects of college educational loans on students behavior and outcomes
 - Most papers that identify causal relationships are case studies
 - Difficult to identify with nationally representative data

The Data

- Individual-level data from the National Survey of College Graduates (NSCG)
 - 2003, 2010, 2013, 2015, 2017, 2019 waves; college graduates aged 23-76
 - Long time series: Subsample of individuals who graduated from high school in or after 1992
- Data contains rich information on individual college financing, choices, and labor market outcomes
- Data only contains information on the census division of one's high school
 - There are nine census divisions

The Model: DID

$$Y_{id_0t_0t} = \beta_0 + \beta_1 PS_{d_0t_0} + \beta_2 IR_{t_0} \times PS_{d_0t_0} + \delta_{t_0} + \delta_{d_0} (+ \delta_t) + X_{it}B + \epsilon_{id_0t_0t} \quad (1)$$

- Two dimensions of variation:
 - Federal loan interest rate in year of HS graduation
 - Private college enrollment share in year of HS graduation *and* HS census division
 - may be due to data constraint: only 9 divisions
- Assumptions:
 - HS graduates tend to go to college within state (division)
 - Private college is more expensive
 - Students borrow more if they go to private college
 - → hence students living in localities with less public college option will be more sensitive to cost of loans, i.e. interest rate.

Problem with Interpretation (I)

- Does β_2 reflect the effect of cost of loans or other things, such as household income or wealth?
 - Interest rate is counter-cyclical
 - During recession, interest rate is lower. At the same time, households may have lower income, which leads to lower family support and higher borrowing.
 - Recession also affect housing value and household wealth and hence borrowing
 - Lovenheim (2011): 2008 financial crisis reduces housing wealth and hence college enrollment
 - Lovenheim and Reynolds (2013): housing wealth affects college choices, and higher value leads to choices of higher quality of college and hence higher likelihood of completing college
- May control for interactions between unemployment rate and private share, housing value and private share, etc.
 - Robustness check control for unemp rate by HS grad year*division
- Alternatively, may take the more traditional IV approach, treating interest rate as a demand shock in general.

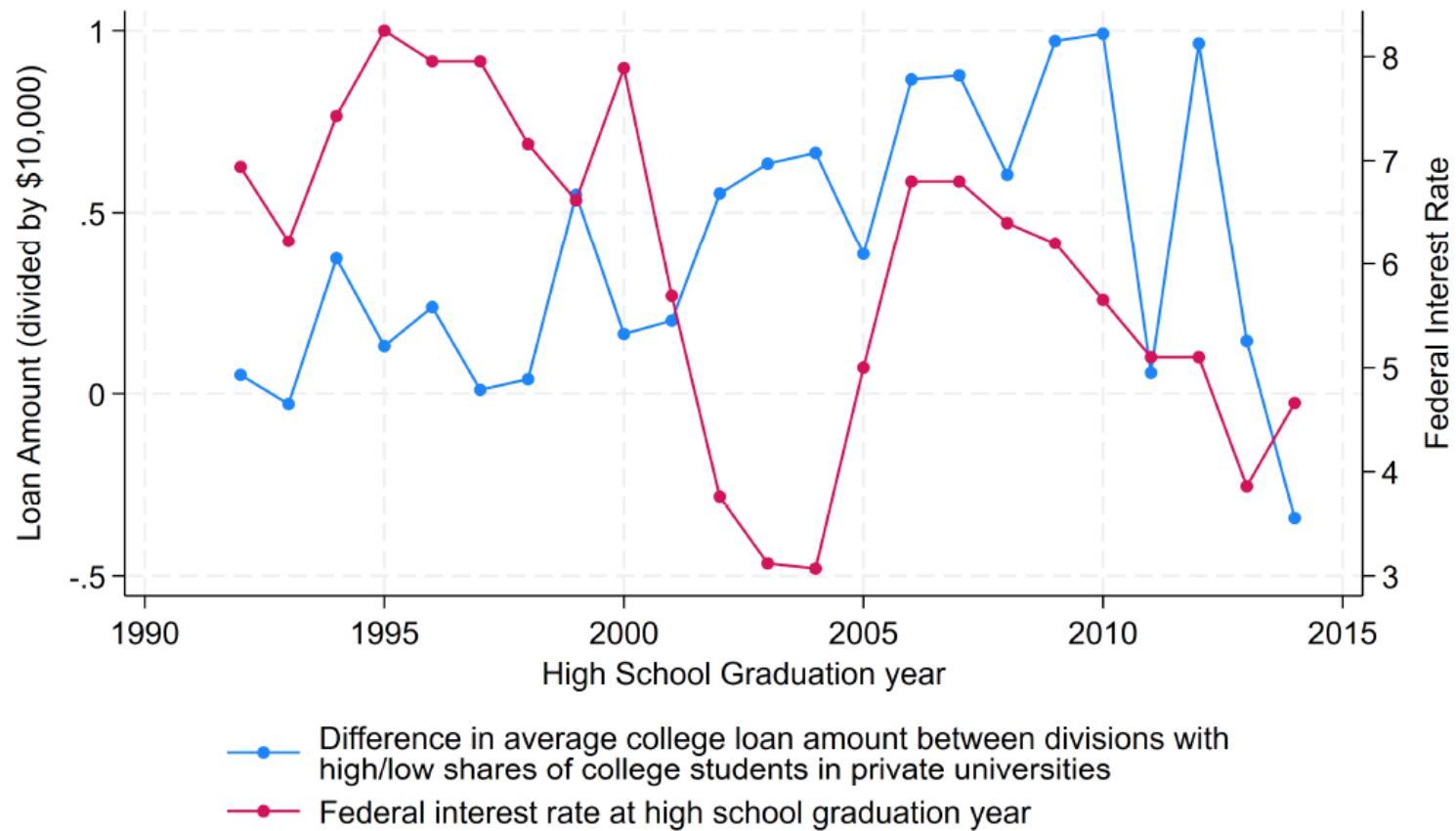
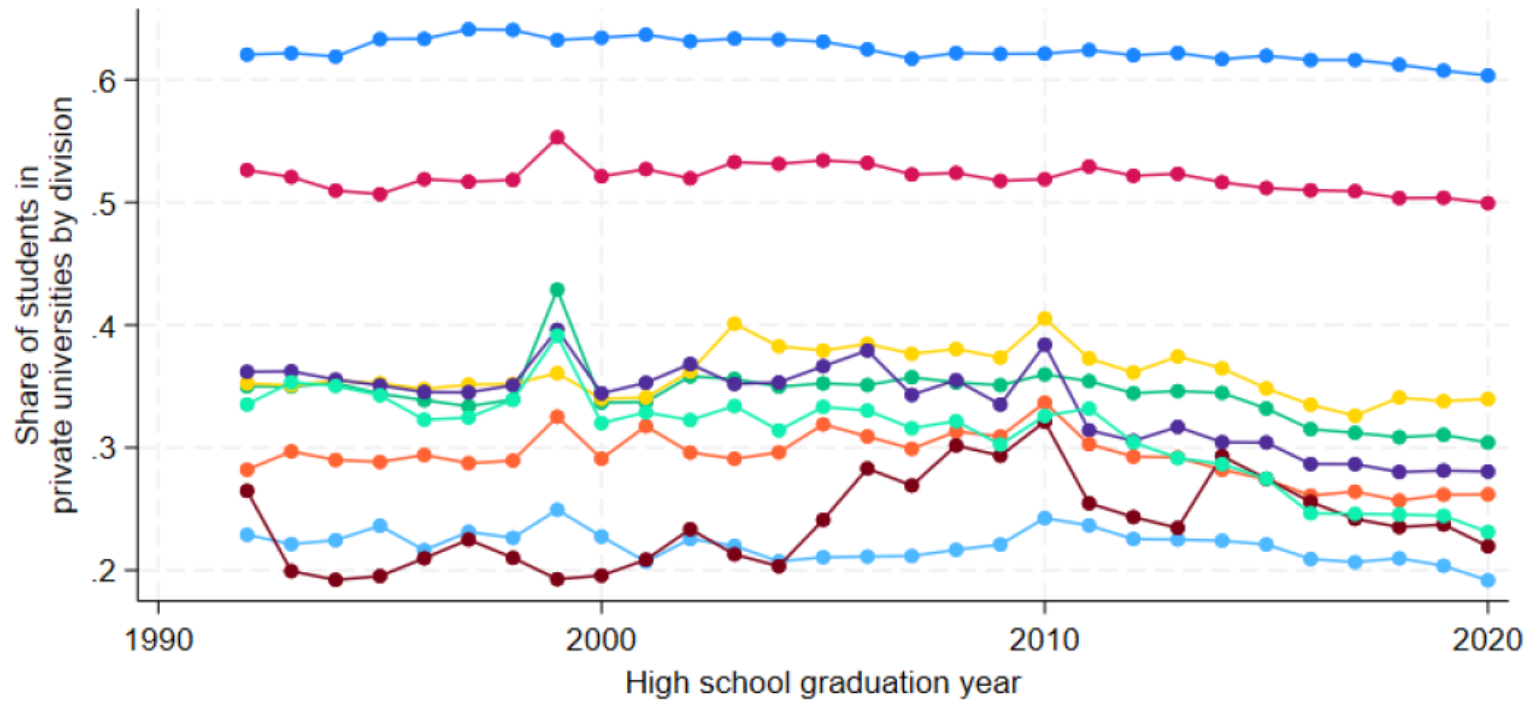


Figure 1: Trends in Federal Loan Interest Rates and the College Loan Gaps

Problem with Interpretation (II)

- Model uses year* census division variation in private college enrollment share, which may introduce endogeneity in the private share
 - If recession has systematically different impacts on local economy in different divisions, then private enrollment share will be reversely affected by student enrollment and borrowing choices
 - Are for-profit universities included in the private category? Their enrollment trend may be very different from not-for-profit universities and may be more sensitive to business cycles.
 - Are two-year HEIs included?
 - Using the share at the beginning of the sample period would be more compelling
 - Regardless, more discussions are needed
 - Armona, Chakrabarti, Lovenheim (2022) use similar method to study the role of for-profit colleges on student debt and default: time series of local labor demand shocks interacted with baseline private college share in a state.

Figure E.2: Private Share by Division Over Time



- New England: 0.62[0.01]
- West North Central: 0.36[0.02]
- West South Central: 0.22[0.01]
- Mid-Atlantic: 0.52[0.01]
- South-Atlantic: 0.34[0.03]
- Mountain: 0.24[0.04]
- East North Central: 0.34[0.02]
- East South Central: 0.29[0.02]
- Pacific: 0.31[0.04]

Selection of Students Who Graduated

- Students who attended and graduated from college in different parts of business cycles may be quite different
 - More students go to college because of fewer jobs in recession → negative selection
 - Fewer students go to college because for family liquidity constraint, and those who actually do are positively selected
 - During recessions, state appropriation to universities and hence university resources may decrease, affecting teaching quality and student graduation
- Does the sample include students with only a bachelor's degree or also students with a graduate degree?
- Many robustness checks: those at the individual level are more compelling

References

- MF Lovenheim “The effect of liquid housing wealth on college enrollment” *Journal of Labor Economics* 29(4), 2011
- MF Lovenheim and CL Reynolds “The effect of housing wealth on college choice: evidence from the housing boom” *Journal of Human Resources* 48(1), 2013
- L Armona, R Chakrabarti, MF Lovenheim. “Student debt and default: The role of for-profit colleges” *Journal of Financial Economics* 144(1), 2022