# When Investor Incentives and Consumer Interests Diverge: Private Equity in Higher Education


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# The Rise and Fall of a Law-School Empire Fueled by Federal Loans

Don Lively's mission to offer legal education to students rejected elsewhere is coming unraveled

Don Lively, president of Arizona Summit Law School, which has experienced a decline in enrollment. PHOTO: DOMINIC VALENTE FOR THE WALL STREET JOURNAL

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# Private Equity in For-Profit Higher Education

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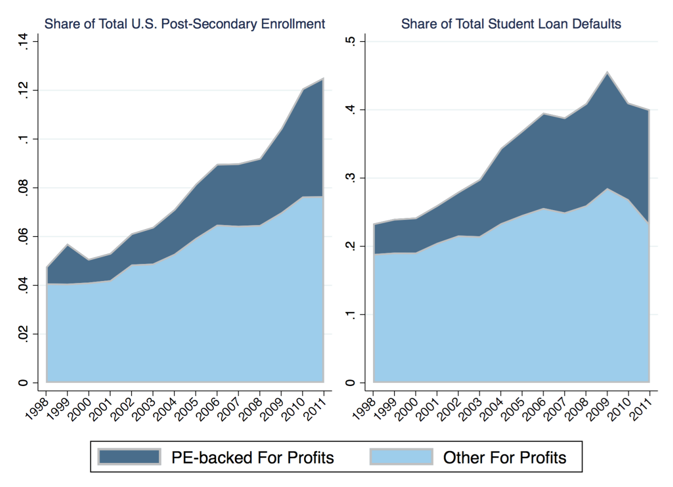
# Private Equity Accounts for Most of Increase in Defaults

**Figure 3:** For Profit Schools Share of Loan Defaults and Enrollment



# Paper Outline

## Question

- **What is the role of private equity in for-profit higher education?**

## Methodology

- Use hand collected data matched to IPEDS and College Scorecard
- (1) Event studies, (2) matching and (3) regulatory events

## Preview of Results

- Following private equity buyouts we see higher profits, deteriorating student outcomes, instructional spending and increased reliance on federal grants and loans

# Motivation

- Private sector provides large fraction of government-funded goods and services
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- Profit-maximizing incentives $\Rightarrow$ efficiency
  - But with information frictions, government funding of private firms may lead to rent-seeking or other socially destructive behavior
    (Laffont and Tirole 1991, Hart, Shleifer,and Vishny 1997, Dixit 1997)

# Private Equity Buyouts and Customer Interests

- Private equity investors have short term, high-powered incentives
  - Jensen 1989, Kaplan and Stromberg 2009
- Private equity buyouts add value to target firms
  - Kaplan 1989, Lerner et al. 2011, Davis et al. 2011, Bloom et al. 2015
- In restaurant industry, make customers better off
  - Bernstein and Sheen 2016
  - High competition
  - Transparent product quality
  - Immediate market feedback

# For-Profit Colleges

- For profit higher education industry is characterized by incentive problems, reliance on federal aid, and revenue that is disconnected from performance
  - Deming, Goldin and Katz 2012, Kelchen 2017, Pusser and Turner 2003, Cellini and Chaudhary 2014, Cellini 2010, Armona, Chakrabarti and Lovenheim 2017, Cellini, Darolia and Turner 2017, Darolia et al 2015, Deming et al. 2016

- Short term, high-powered incentives may be less well aligned with customer interest in sectors with
  - Intensive government subsidy
  - Lower competition
  - Complex or opaque product quality
  - Outcomes measurable only many years after payment

Private equity investment has increased in sectors with these characteristics

- E.g. healthcare, infrastructure, defense, and education

# Mechanisms

- Selection
- Composition changes (due to increased enrollment)
- Increase in misleading or obfuscating marketing and recruiting
- Lower education quality (due to cost reductions)
- Superior ability to capture government aid (translates to higher per-student debt)

# Mechanisms

- Selection
  $\Rightarrow$ Exploit loan limit increase to show management improves after buyout, private equity schools raise tuition and increase borrowing

- Composition changes (due to increased enrollment)
  $\Rightarrow$ Show direct evidence

- Increase in misleading or obfuscating marketing and recruiting
  $\Rightarrow$ Show suggestive evidence that sales spending is higher

- Lower education quality (due to cost reductions)
  $\Rightarrow$ Direct evidence from decrease in instructional spending

- Superior ability to capture government aid (translates to higher per-student debt)
  $\Rightarrow$ (1) Loan limit increase responsiveness, (2) private equity owned firms bunch under statutory cutoffs, (3) public firms' share prices responsive to Gainful Employment policy changes (tie access to federal loans/grants to student outcomes)

# Data

- School data 1987-2016 (some from 1990, some later)
  - IPEDS, Delta Cost Project, College Scorecard
- Private equity acquisitions
  - Hand collected by authors based on researching ownership history of all for-profits that report to IPEDS in U.S.
  - Linked to Preqin: PE firm performance roughly representative of industry
- Law enforcement actions (web research)
  - 125 actions, 58 first-time school-years with action
  - PE owned schools 4% of school-years, 46% of school-years with first-time law enforcement actions

# Empirical Strategy

## Concern

- Private equity firms do not select schools randomly.
  $\Rightarrow$ Observed effects could be due to private equity firms choosing schools on different trends

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### Pre-Trends

- Show that we see strong effects following a private equity buyout

### Matching

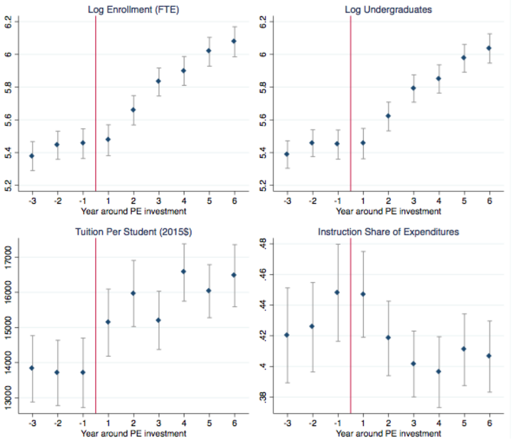
- Use CEM and NNM matching to construct sample of firms similar in pre-period

### Event Studies

- Show that following increases in loan limits, private equity schools are faster to increase borrowing and tuition

# Enrollment Increases, Instruction Share Decreases

**Figure 5:** Operations around Private Equity Ownership Change

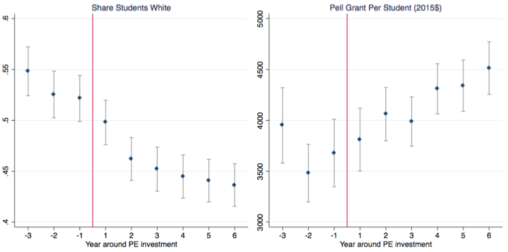


# Sales Employees by Institution Control Type

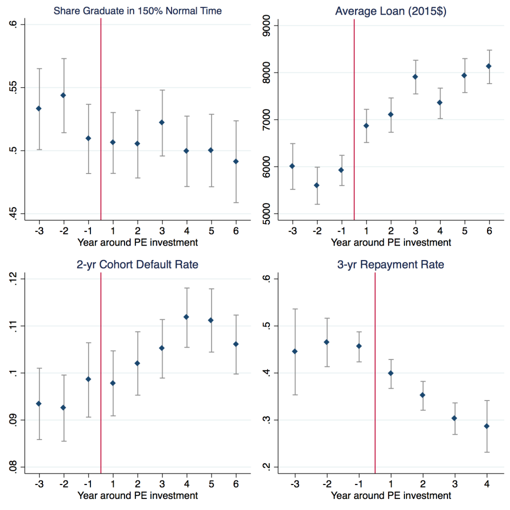
**Figure 1:** Share of Sales and Non-Instructional Employees

# Student Body Becomes Poorer, Higher Minority Share

**Figure 6:** Demographics around Private Equity Ownership Change



# Student Outcomes Deteriorate Following Buyout



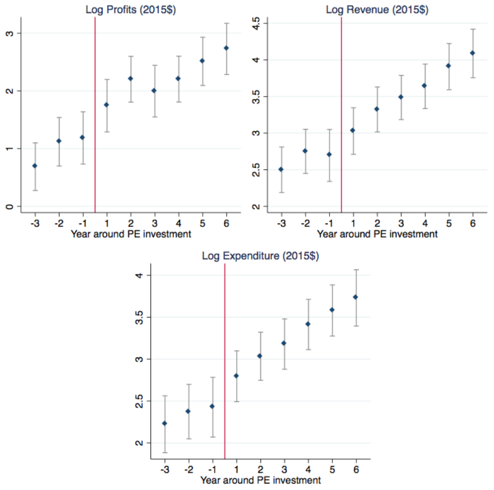
# Wages Decline Following Buyout

*Panel 2*

| Dependent variable* | Median (50th pctile) | | | 75th pctile | | | 90th pctile | | |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| PE owned | -.022 | -.037** | -.017 | -.028** | -.042** | -.024* | -.032* | -.045** | -.028* |
| | (.010) | (.012) | (.01) | (.010) | (.01) | (.009) | (.012) | (.011) | (.012) |
| Public | -.055* | -.092** | -.045 | -.052** | -.086*** | -.045* | -.05** | -.083*** | -.043* |
| | (.022) | (.024) | (.023) | (.017) | (.019) | (.018) | (.018) | (.016) | (.017) |
| PE owned·Public | | .07*** | | | .064*** | | | .062*** | |
| | | (.013) | | | (.011) | | | (.013) | |
| Composition controls‡ | N | N | Y | N | N | Y | N | N | Y |
| Highest degree offered f.e.† | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Selective admissions f.e. | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| School f.e. | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Year f.e. | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| N | 17238 | 17238 | 17238 | 17238 | 17238 | 17238 | 17238 | 17238 | 17238 |
| $R^2$ | .96 | .96 | .96 | .96 | .96 | .96 | .95 | .95 | .95 |

# Profitability Increase Following Private Equity Buyouts

**Figure 4:** Financials around Private Equity Ownership Change



# 2007-08 Loan Limit Increases

- Exploit the 2007 increase in student loan borrowing limits (Lucca, Naudald and Shen 2017)
- Private equity owned schools increase tuition and borrowing at a faster rate
- Selection would have to operate through private equity investors' ability to predict better management $\Rightarrow$ points to a treatment effect

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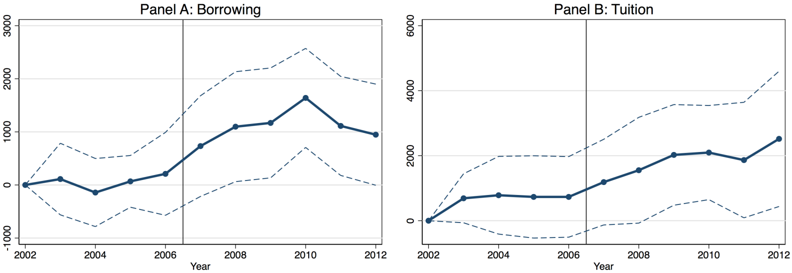
$$L_{it} = \alpha_i + \alpha_t + \beta PE_i * Post2007 + \gamma X_{it} + \varepsilon_{it}$$

- $L_{it}$ is average loan amount of school $i$ in year $t$, $\alpha_i$ school fixed effects, $\alpha_t$ year fixed effects, $PE_i$ is an indicator of school being private equity owned and $Post2007$ is post 2007 limit increase

# Faster in Raising Tuition and Borrowing

**Figure 10:** Difference in Difference Coefficients Over Time




$$L_{it} = \alpha_i + \alpha_t + \sum_{2002}^{2012} \beta_j PE_i * 1[Year = j] + \gamma X_{it} + \varepsilon_{it}$$

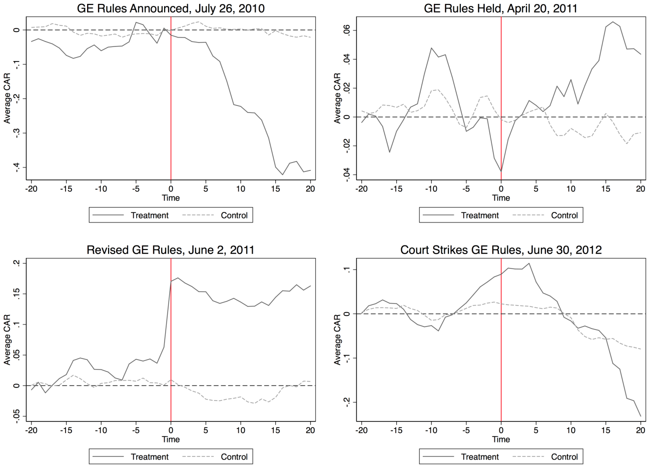
# Gainful Employment Announcement

- Tie federal aid eligibility to graduates' debt-to-earnings levels
  - Announced Oct 2010
  - Held April 2011
  - Revised (weakened) June 2011
  - Struck down June 2012
- Never enforced, but can use stock market expectations to test whether federal aid is truly important to for-profits
- Treatment: 15 firms that own for-profit schools with Gainful Employment data available 2010-2015
- Control: 48 firms in same 3-digit NAICS as treatment (611 and 812)

$$CAR_{it} = \alpha_i + \alpha_t + \delta FP_i * Post_t + \varepsilon_{it}$$
$$CAR[0,n] = \sum_{0}^{n} AR_{it}$$

# Reliance on Federal Aid

**Figure 12:** Gainful Employment Rules and Cumulative Abnormal Returns



# Concluding Remarks

- Private equity buyouts lead to
  - Expanded enrollment and increased profits (consistent with prior literature on PE)
  - But also to higher average debt per student, lower graduation rates, lower earnings

- Selection may play role, but operational changes (e.g., loan limit increase response) suggest treatment effect

- Private equity ownership increases profitability through 4 channels, all of which appear inimical to students' interests
  - Expanded enrollment
  - Increased predatory recruiting practices
  - Lower education quality
  - Rent-seeking capture of government aid