

# Outside Equity and Healthcare Firm Behavior

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# Preview

- **Context:** Examining ASC behavior under 3 different external financial investment contexts
- PE investments mostly affect the financial engineering, rather than treatment style, of standalone ASCs
  - Charge more per case; crowd-in physician equity ownership
- PE acquisition of an ASC chain does not generate the same effects
- A looming IPO seems to encourage revenue maximization for the chain

# Motivation

- Raising capital for US businesses has shifted from public markets to private markets – esp. private equity (PE) funds (Mauboussin and Callahan 2020; McKinsey & Co 2022)
- Views on the net effects of PE are mixed (Jensen 1986, 1988; Schleifer and Summers 1988; Davis et al. 2014, 2019; Argawal and Tambe 2016; Olsson and Tag 2017; Antoni et al. 2019)
- PE involvement in US healthcare is rapidly growing
  - Nearly \$800 billion in past 10 years (Scheffler, Alexander, and Godwin 2021)
  - Returns typically better than other PE investments (Bain & Co 2022)

# Motivation

- Growth of PE in healthcare is controversial
  - **Fundamental concern:** PE investors might change how healthcare firms and professionals provide care at odds with patients' interests
- Emerging literature – primarily capturing hospitals, nursing homes, and physician practices
  - Braun et al. 2020, 2021a, 2021b; Gandhi et al. 2020; Cerullo et al. 2021, 2022; Gao et al. 2021; Gupta et al. 2021; Offodile et al. 2021; Singh et al. 2022
- Other industries less examined to date

# Our Contribution

- PE has long been investing in the ASC industry (Newitt 2022)
- Single existing study on PE involvement in ASCs – Dov Brunch et al. (2022)
  - Subsample of Medicare data; only capturing short-run investment effects
  - Largely focused on care quality outcomes; no effects
- Using all-payer data, we examine investment, divestment, and an IPO
- Capture changes in payer mix, case mix, treatment intensity, list prices, and physician ownership stakes

# Background: Outpatient Surgery Market

- Care delivery is moving out
  - Nearly 1/2 of hospital revenues now come from outpatient care (Bannow 2019)
  - Shift is pronounced for surgical care – accounts for 1/3 of all US spending (Muñoz, Muñoz, and Wise 2010)
- Two rival industries in outpatient surgical care
  - Ambulatory Surgery Centers (ASCs)
  - Hospital Outpatient Departments (HOPDs)

# Background: Outpatient Surgery Market



Hospital Outpatient Department  
(HOPD)



Hospital

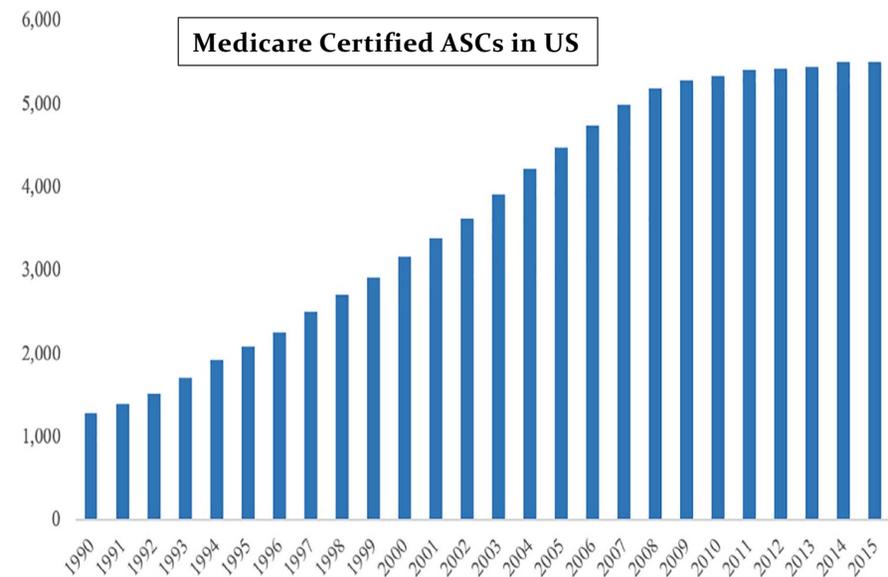
Belongs to...

Free-Standing  
Ambulatory Surgery Center  
(ASC)



# Background: Outpatient Surgery Market

- ASCs tend to be for-profit, urban, and small (MedPAC 2019)
- Rapid expansion in 1990s – 2000s
- ~\$30 billion industry
  - Medicare spends nearly \$5 billion on ASC-delivered per year (MedPAC 2019)



Munnich and Richards (2022)

# Background: Outpatient Surgery Market

- **ASCs typically offer greater consumer convenience and lower service prices** (Grisel et al. 2009; Munnich and Parente 2018; Aouad, Brown, and Whaley 2019; Sood and Whaley 2019)
- **When ASCs enter, HOPDs have lower volumes and worse finances** (Bian and Morrisey 2007; Courtemanche and Plotzke 2010; Carey, Burgess, and Young 2011; Koeing and Gu 2013; Hollenbeck et al. 2015)
- **ASCs seem to place downward pressure on HOPD prices** (Carey 2017; Whaley and Brown 2019; Baker, Bundorf, and Kessler 2019)
- **PE and other investors have history of targeting the ASC industry** (Newitt 2022)

## **Research Question:**

Do outside equity investors change the behavior of ASCs and does the source of investment matter?

# Data

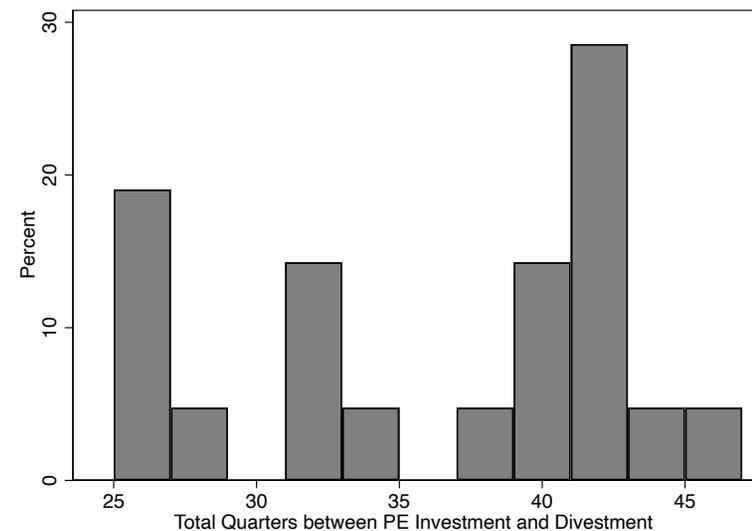
- CMS FOIA: ASC owners and timing of ownership – see Munnich et al. (2021)
- PE owners among Florida ASCs
  - S&P Capital IQ Pro, Bloomberg Businessweek and Bloomberg Terminal, Factiva, SCD Platinum's M&A lists, SEC reports
- Florida AHCA outpatient surgery discharge records 2004 - 2019

# Empirical Outline

- Stacked diff-in-diff event studies for PE **investment** and **divestment** in standalone ASCs
- Standard diff-in-diff for PE acquisition of an ASC chain and eventual **IPO**

# Estimation Approach: PE Investment

- Focus on longstanding ASCs in FL markets
- Treated:
  - > 5 years of PE ownership
- Controls:
  - No direct or indirect PE involvement
  - Out-of-market relative to treated



# Estimation Approach: PE Investment

- Analytic data are at the firm-quarter-year level
- Implement a "stacked" DID event study
  - Quarters around PE investment: [-10, 23] for treated
  - For controls, randomly assign a placebo (anchor) date

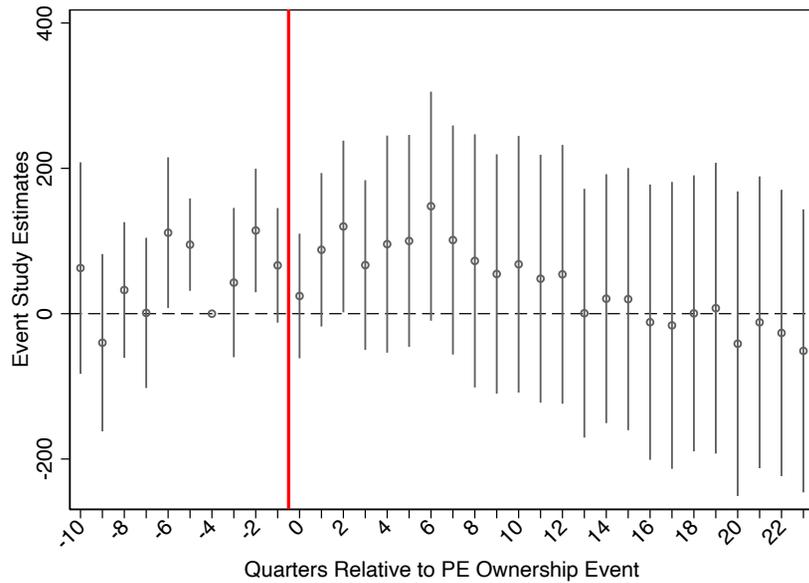
$$Y_{at} = \sum_{\substack{j=-10 \\ j \neq -4}}^{23} \delta_j \mathbb{I}[Treated_a \times (Time = j)] + \lambda_a + \gamma_t + \varepsilon_{at}$$

**TABLE I Baseline Summary Statistics for Analytic Sample**

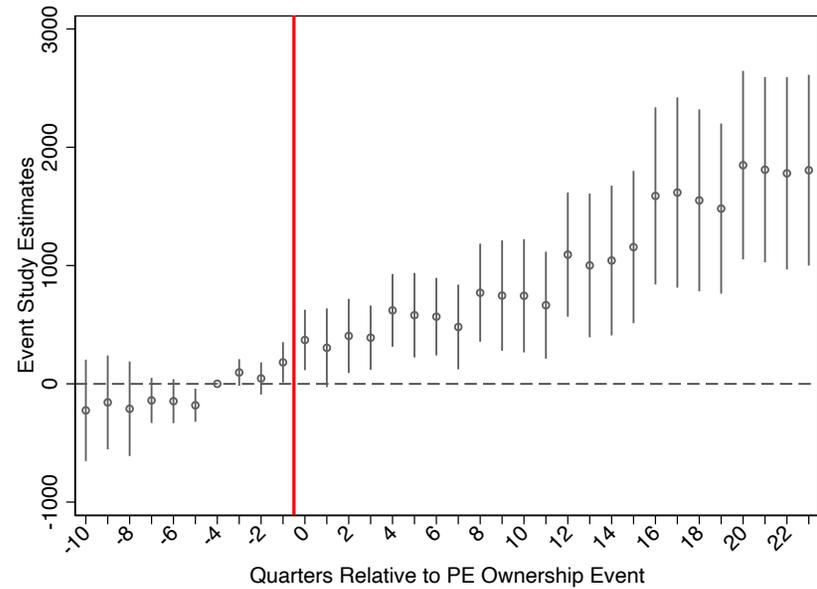
	Treatment Group	Control Group
	<u>Mean</u>	<u>Mean</u>
<b>Case Volume</b>	1,468	989
<b>Procedures Per Case</b>	1.5	1.4
<b>Total Charges Per Case</b>	\$3,772	\$2,453
<b>% Private</b>	52.2	33.7
<b>% Traditional Medicare</b>	34.8	53.3
<b>Any Physician Owners</b>	0.5	0.6
<b>No. Physician Owners</b>	2.2	1.7
<b>Unique ASCs (N)</b>	24	89

# Results: PE Investment

Total Case Volume

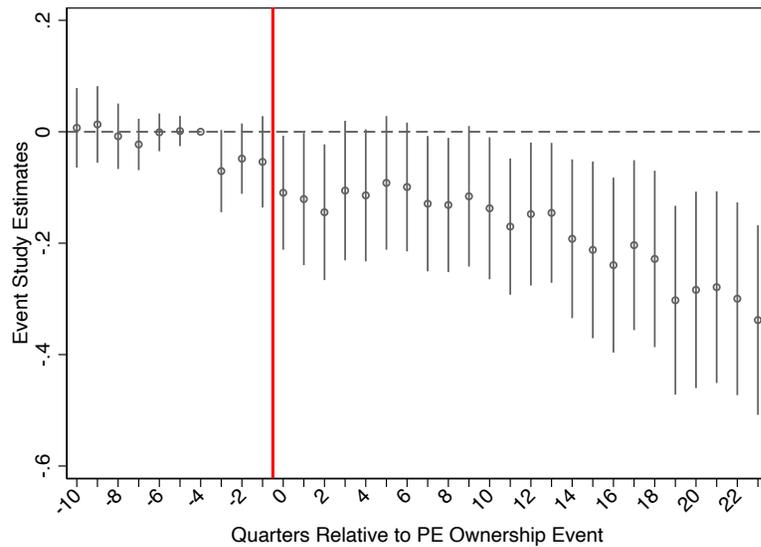


Avg. Total Charges Per Case

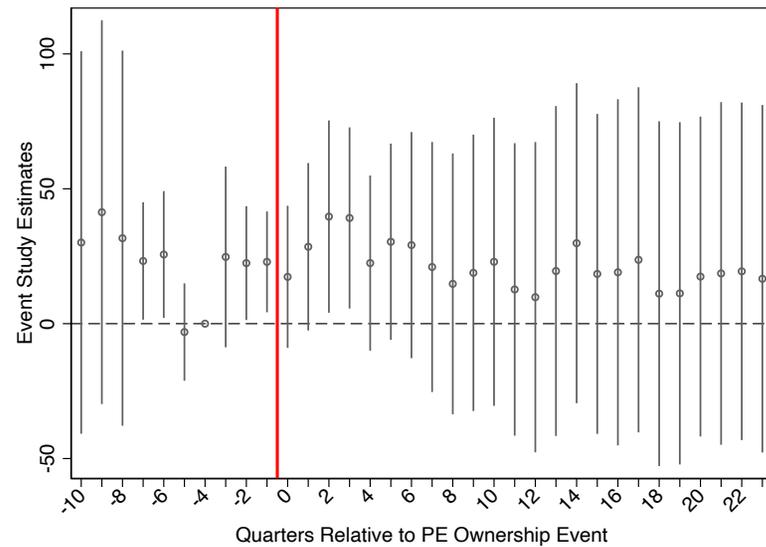


# Results: PE Investment

Avg. Number of Procedures Per Case



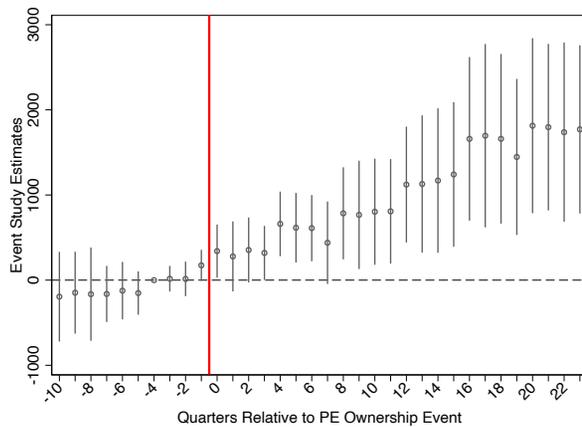
Avg. Complexity of Case



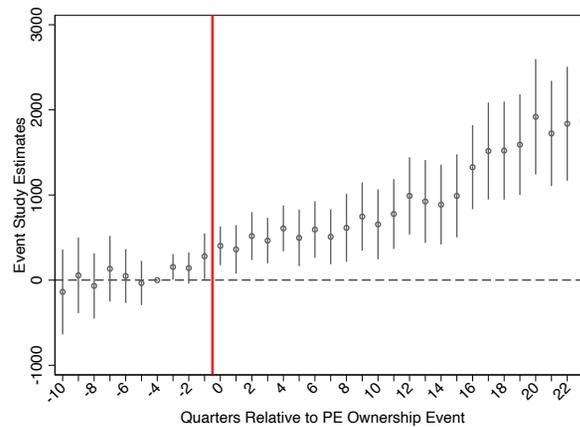
# Results: PE Investment

Singh et al. (2022) find higher charges and higher prices for physician practices

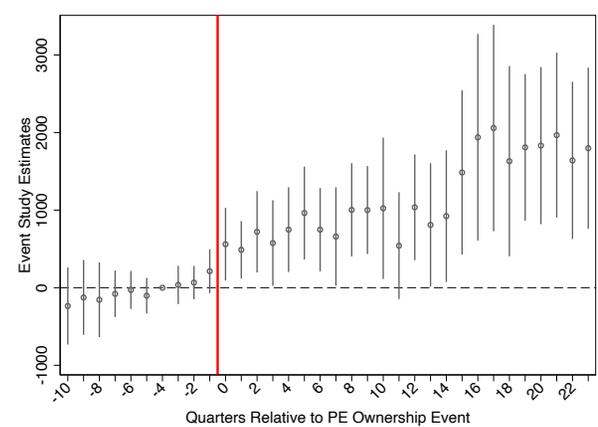
Avg. Total Charges Per Case  
Private



Avg. Total Charges Per Case  
Medicare

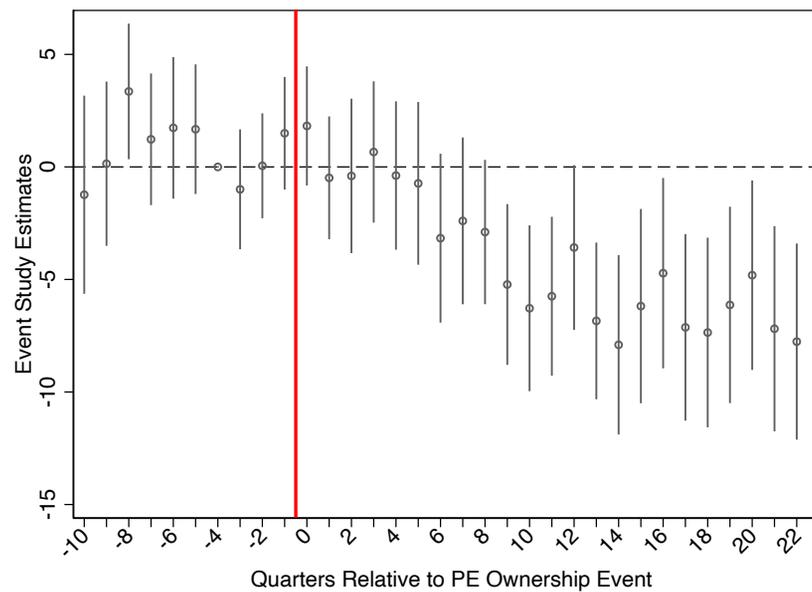


Avg. Total Charges Per Case  
All Others



# Results: PE Investment

% of Payer Mix Privately Insured

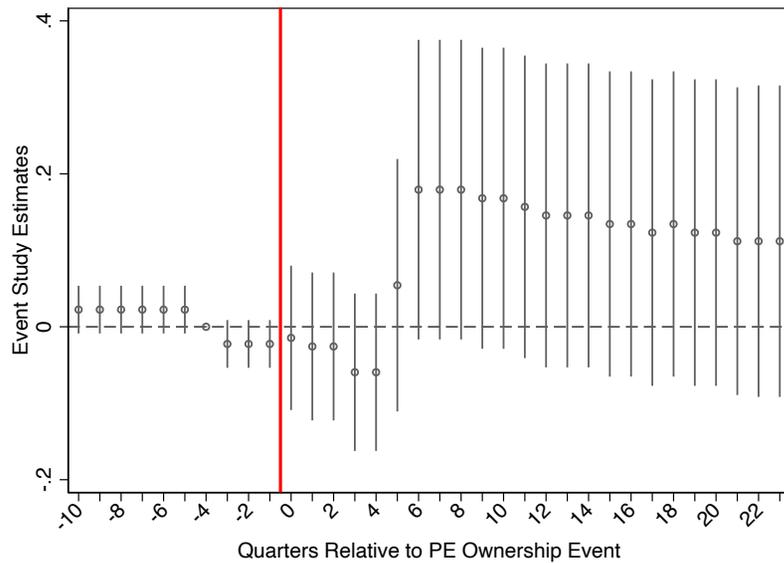


Approx. 20% decline over baseline level

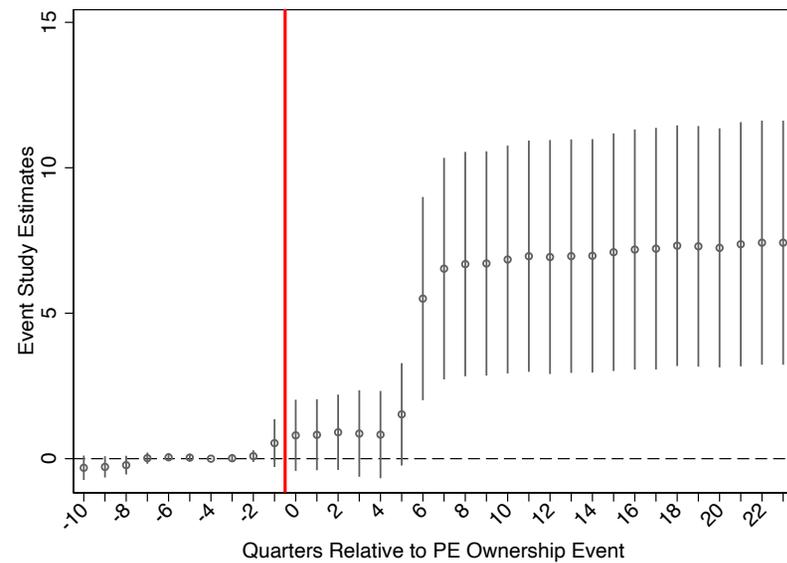
# Results: PE Investment

300% increase over  
baseline # owners

Any Physician Owners



No. Physician Owners



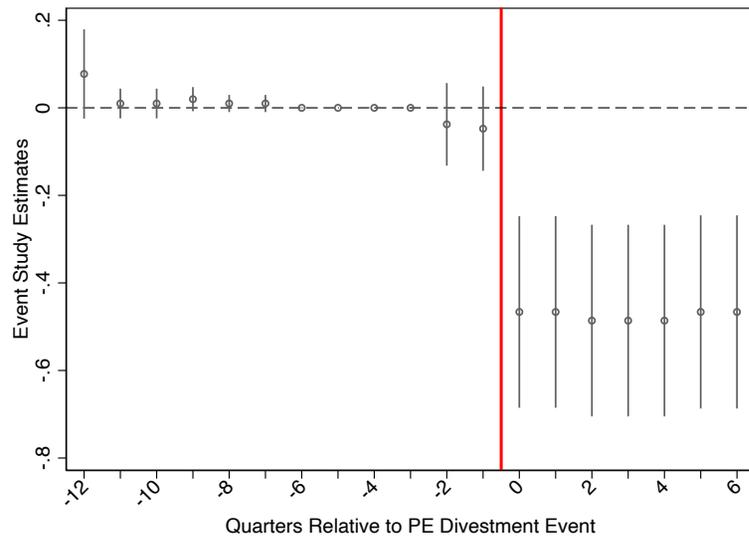
# Estimation Approach: PE Divestment

- Same style of “stacked” DID approach
- Focus on divestment among these same ASCs
  - Placebo (anchor) divestment date for control ASCs, just as before

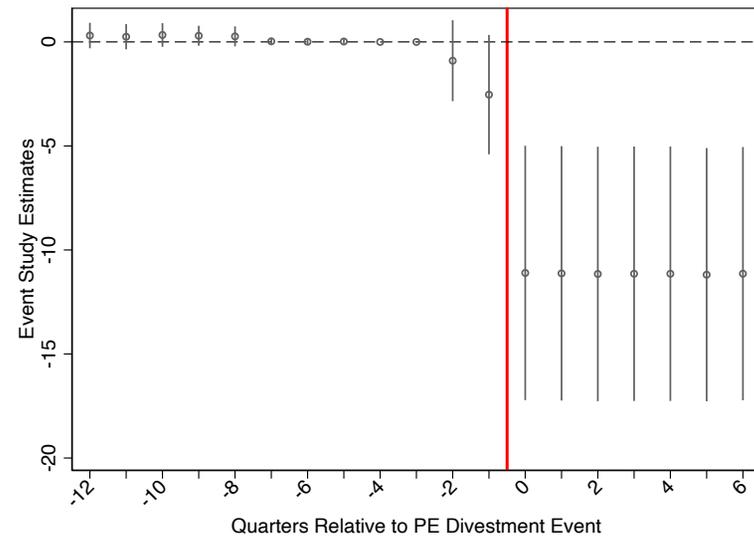
$$Y_{at} = \sum_{\substack{j=-12 \\ j \neq -4}}^6 \theta_j \mathbb{I}[Treated_a \times (Time = j)] + \lambda_a + \gamma_t + \varepsilon_{at}$$

# Results: PE Divestment

Any Physician Owners



No. Physician Owners



# Estimation Approach: PE Acquisition

- Surgery Partners founded in FL in 2004
- December 2009 wholly acquired by HIG Capital
- IPO September 2015

## Estimation Approach: PE Acquisition

- Traditional DID setup – balanced panel of ASCs 2007 - 2017
- Treated: Surgery Partner ASCs prior to acquisition
- Controls: Out-of-market ASCs, never involved with PE

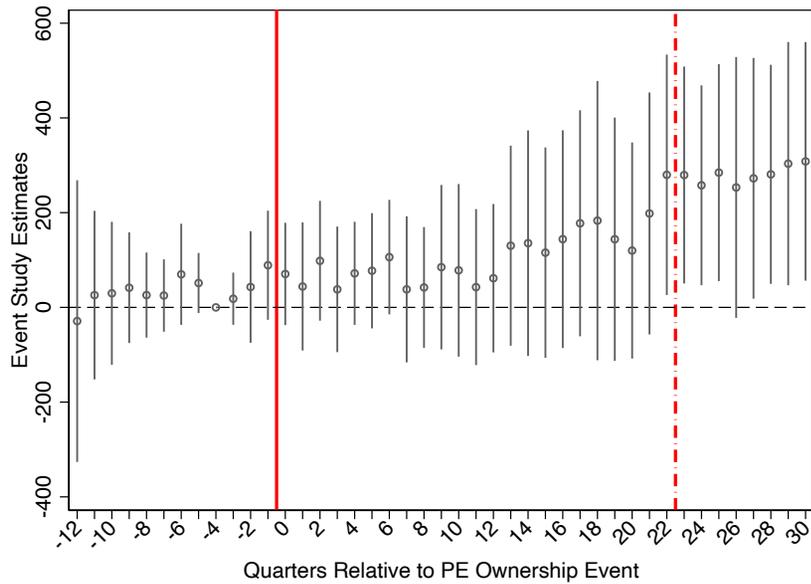
$$Y_{at} = \sum_{\substack{j=-12 \\ j \neq -4}}^{30} \beta_j \mathbb{I}[Treated_a \times (Time = j)] + \lambda_a + \gamma_t + \varepsilon_{at}$$

**TABLE III Summary Statistics for Analytic Sample 2007-2009**

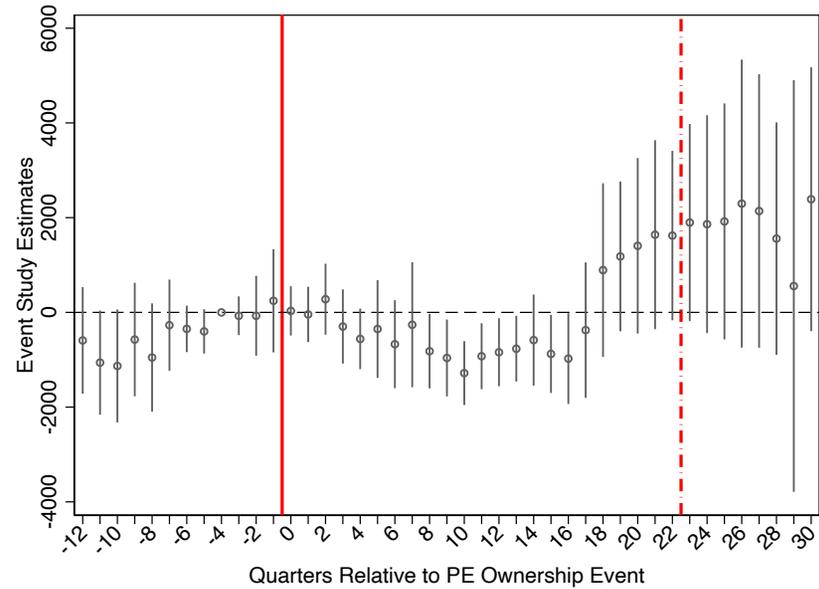
	Treatment Group (Surgery Partners ASC Chain)	Control Group
	<u>Mean</u>	<u>Mean</u>
<b>Case Volume</b>	758	1,076
<b>Procedures Per Case</b>	2.5	1.6
<b>Total Charges Per Case</b>	\$7,616	\$3,046
<b>% Private</b>	59.8	39.6
<b>% Traditional Medicare</b>	22.0	47.7
<b>No. Physician Owners</b>	5.7	2.7
<b>Unique ASCs (N)</b>	8	66

# Results: PE Acquisition

Total Case Volume

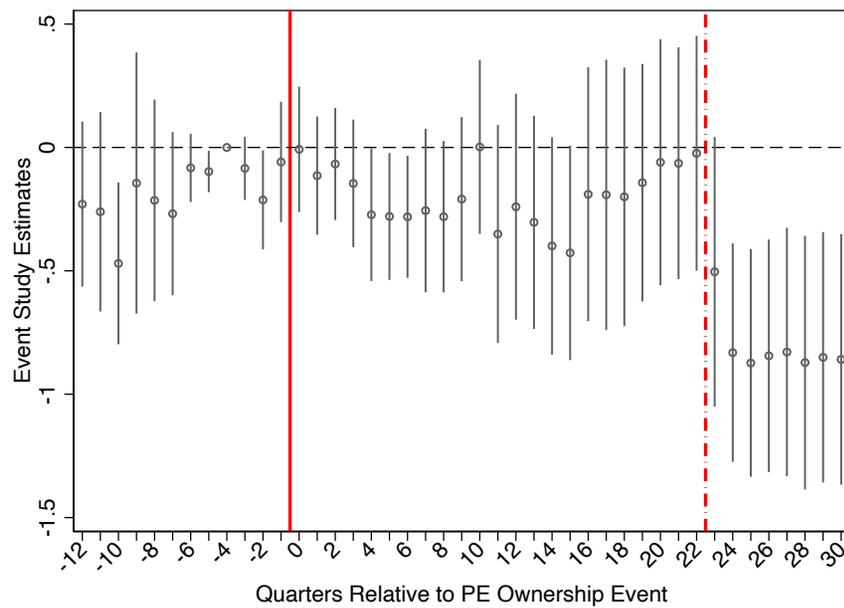


Avg. Total Charges Per Case

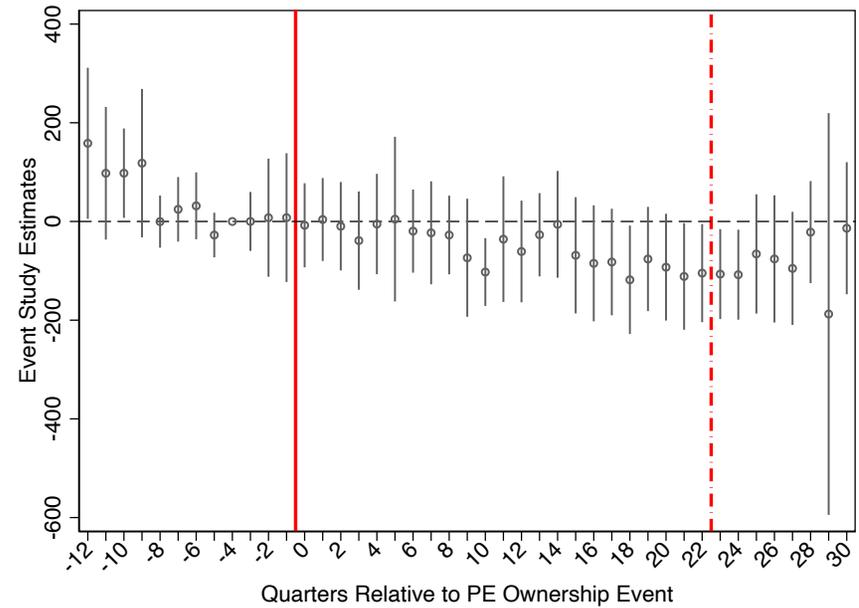


# Results: PE Acquisition

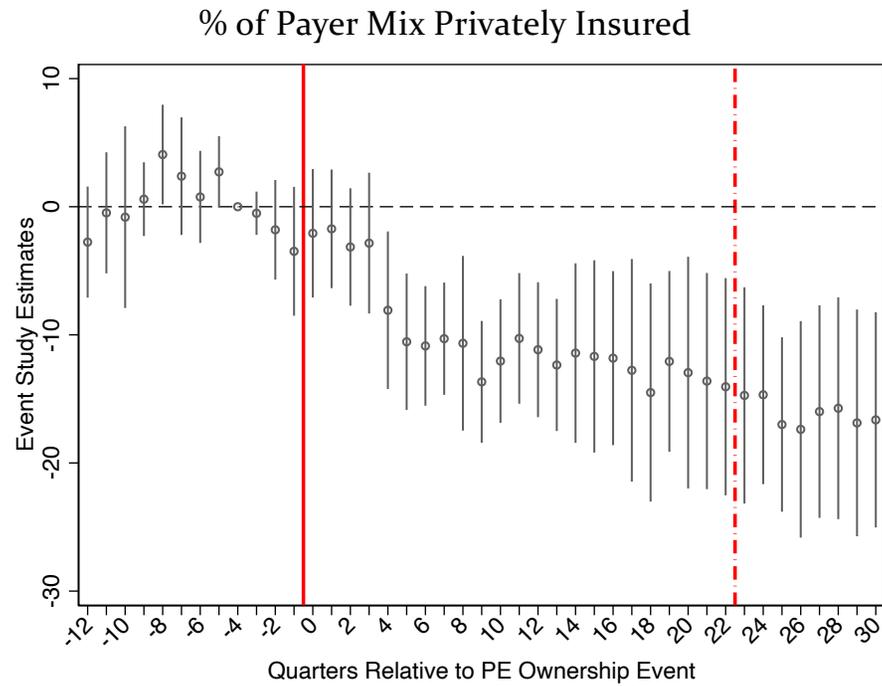
Avg. Total Procedures Per Case



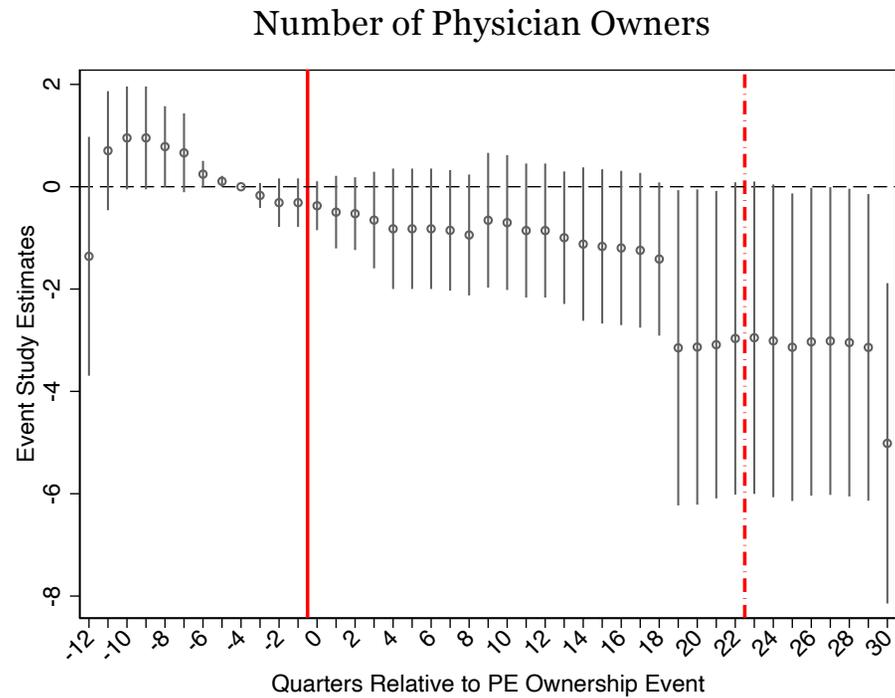
Avg. Case Complexity



# Results: PE Acquisition



# Results: PE Acquisition



# Summary

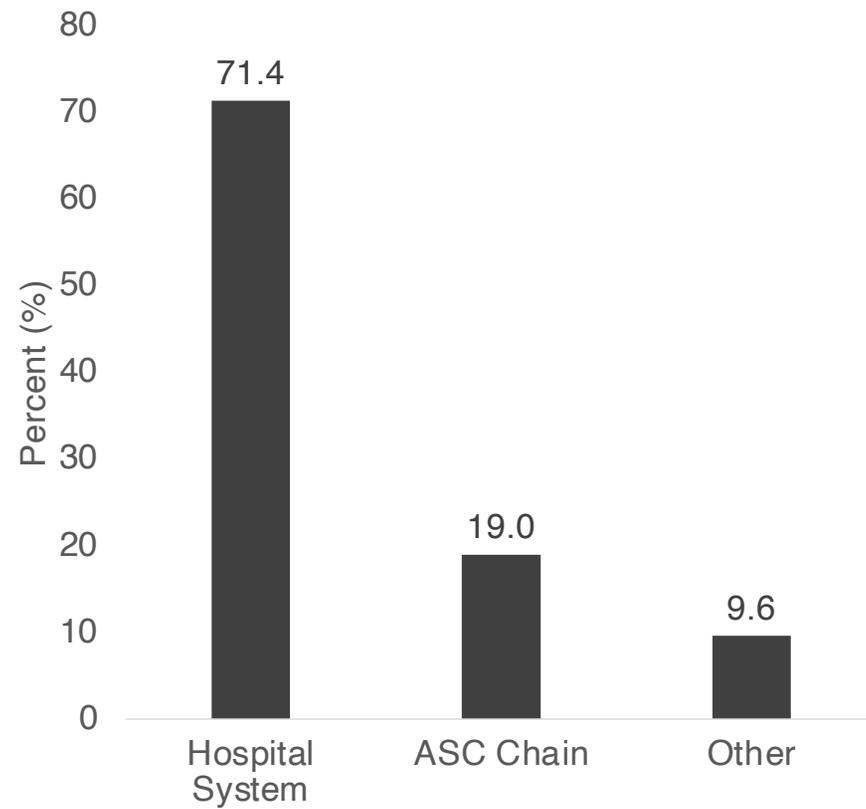
- Clinical conduct of ASCs largely unfazed by PE
  - Physician decision-making and agency appear preserved
- Finances are affected: 1) higher list prices 2) more physician equity investments – w/ coordinated divestments
  - Tying key human capital to firm (e.g., reputation and referrals)
  - Likely that intangible assets > tangible assets for ASCs
  - Contrasts with PE investments in other industries that shrink labor

# Summary

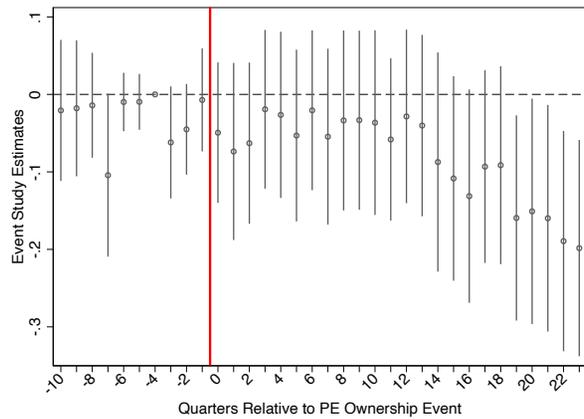
- Findings from PE acquisition of a chain often differ
  - Immediately before/after IPO seems influential
- Overall, results consistent with bespoke strategies for ASC investing
  - Not obviously harmful for patients so long as alternative providers available

Thank you!

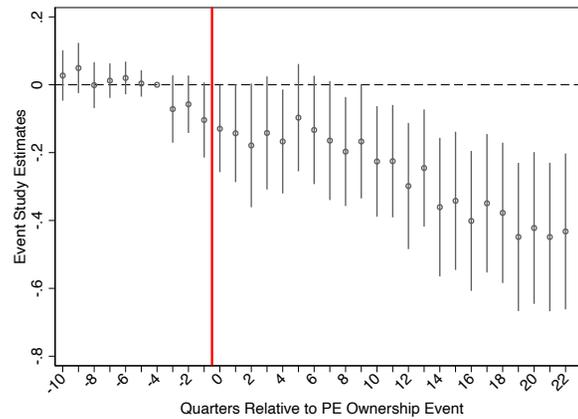
Email: [michael\\_richards@baylor.edu](mailto:michael_richards@baylor.edu)



Avg. Number of Procedures Per Case  
Private



Avg. Number of Procedures Per Case  
Medicare



Avg. Number of Procedures Per Case  
All Others

