

Online Appendix

Raising the Stakes: Physician Facility Investments and Provider Agency

By ELIZABETH L. MUNNICH, MICHAEL R. RICHARDS, CHRISTOPHER M. WHALEY, AND XIAOXI ZHAO

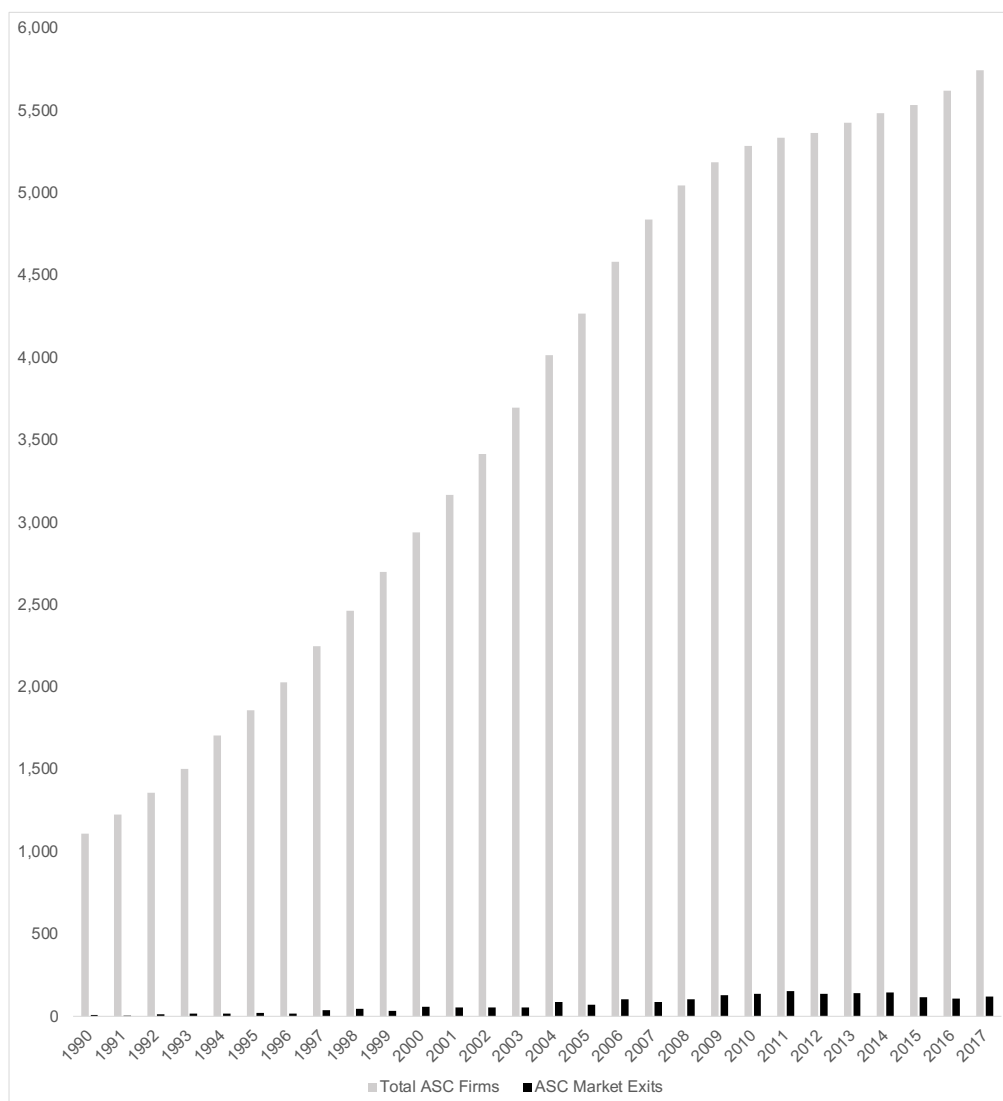
Appendix A

Appendix Table A1: Comparing Summary Statistics across Physician ASC Owner Subgroups

	Stacked Main Analytic Sample (‘New Owners’)	Full Sample 2013-2019 (‘New Owners’)	Already Owners by 2013 (‘Always Owners’)
ASC Volume	21.4 (37.9)	20.9 (41.7)	27.6 (48.2)
HOPD Volume	13.3 (20.0)	10.4 (20.2)	10.5 (23.4)
Total Volume	35.8 (40.7)	31.3 (45.4)	38.1 (51.9)
Unique Medicare Patients	29.5 (30.46)	25.8 (33.67)	31.7 (39.5)
Average Work RVUs per Case	14 (7.63)	14.2 (8.3)	13.2 (7.7)
Total Medicare Revenues	343,444 (665,721)	251,305 (563,285)	187,843 (381,358)
<i>Patient Characteristics</i>			
Age	74.44 (2.52)	74.2 (3.1)	74.2 (3.0)
Share Female	0.54 (0.19)	0.56 (0.24)	0.56 (0.23)
Share White	0.68 (0.22)	0.70 (0.26)	0.71 (0.25)
Share Low-income subsidy eligible	0.12 (0.14)	0.13 (0.19)	0.11 (0.17)
Share Dual eligible	0.11 (0.14)	0.11 (0.18)	0.10 (0.16)
HCC Risk score	1.35 (0.53)	1.34 (0.63)	1.27 (0.6)
Share of Patients Same-Day ED Visit	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)
Share of Patients ED Visit 1-7 Days	0.01 (0.04)	0.01 (0.05)	0.01 (0.05)
Share of Patients Visit 8-30 Days	0.02 (0.05)	0.02 (0.06)	0.02 (0.06)
<i>Physician Specialty</i>			
Anesthesiology	3.5%	7.0%	6.0%
Cardiology	9.3%	5.0%	0.3%
Gastroenterology	19.7%	14.2%	17.4%
General Surgery	4.9%	4.0%	5.9%
Ophthalmology	23.6%	14.9%	16.1%
Orthopedic Surgery	19.4%	24.0%	19.8%
Other	19.6%	30.9%	34.4%
Unique Physicians (N)	741	4,078	21,837

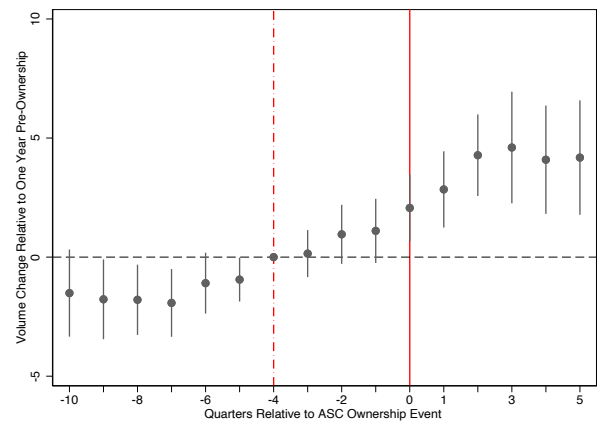
Notes: Most of the data are from the Medicare claims data used in our main analyses. Physician specialization information is from Doximity data, which primarily relies on National Plan and Provider Enumeration System (NPPES) publicly available files for specialty information.

Appendix Figure A1: National Trends in Total Medicare-Certified ASCs and Number of Market Exits by Year, 1990-2017

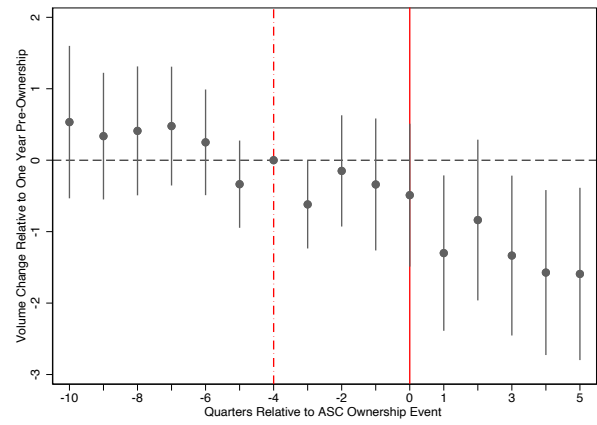


Notes: Data are from the Medicare Provider of Service Files

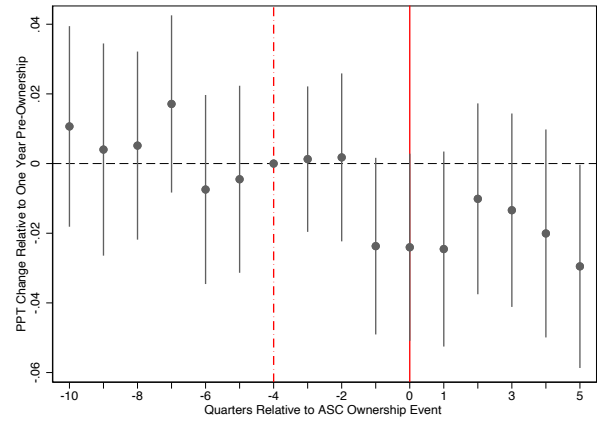
Appendix Figure A2: Difference-in-Differences Event Study Estimates for ASC Ownership Effects among Those with Pre-Ownership Experience When Using Less Restrictive Analytic Sample



ASC Procedure Volume

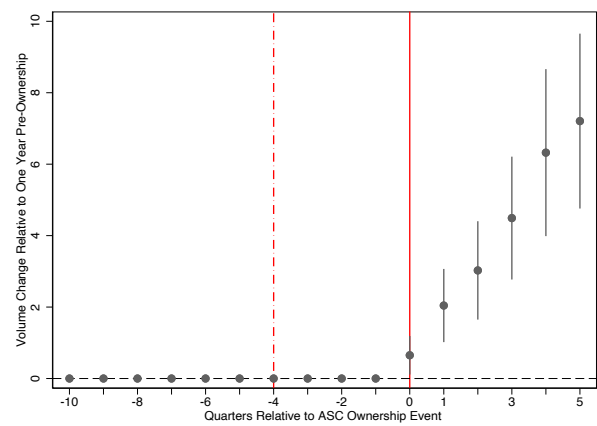


HOPD Procedure Volume

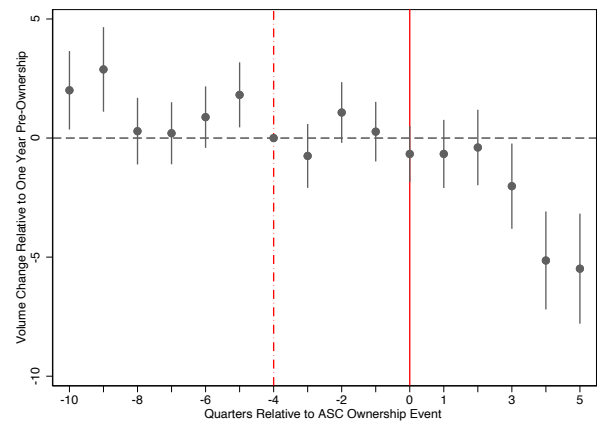


Any HOPD Use

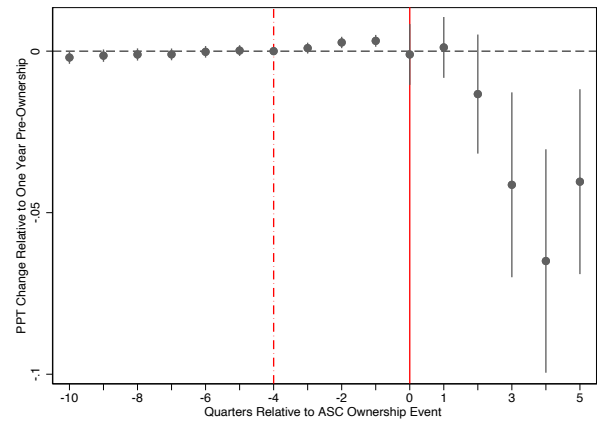
Appendix Figure A3: Difference-in-Differences Event Study Estimates for ASC Ownership Effects among ASC Owners with No Pre-Ownership ASC Experience When Using Less Restrictive Analytic Sample



ASC Procedure Volume

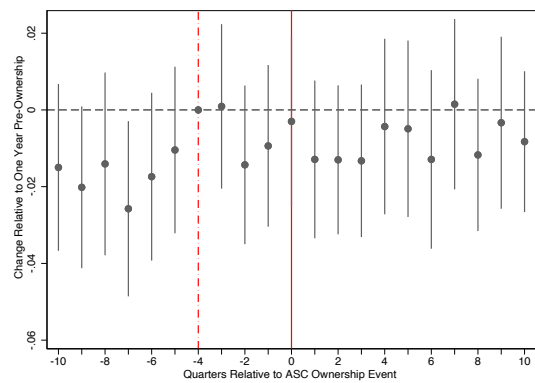


HOPD Procedure Volume

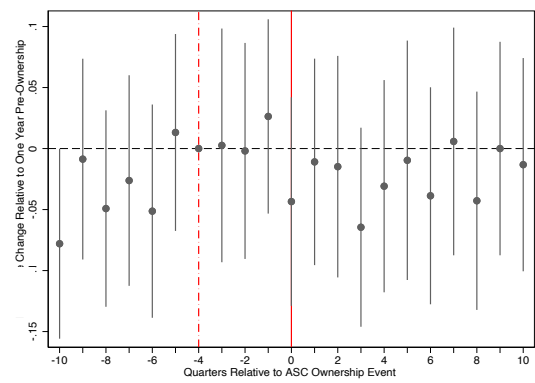


Any HOPD Use

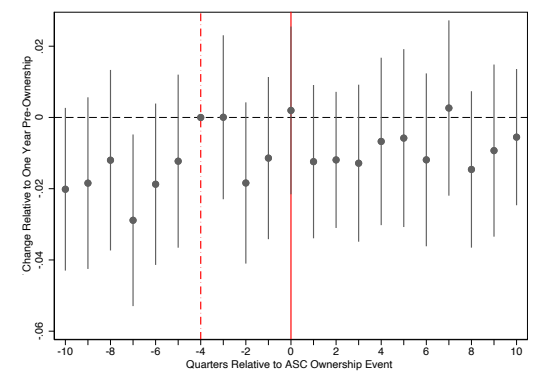
Appendix Figure A4: Difference-in-Differences Event Study Estimates for ASC Ownership Effects among ASC Owners with No Prior ASC Experience



Share Dual Eligible

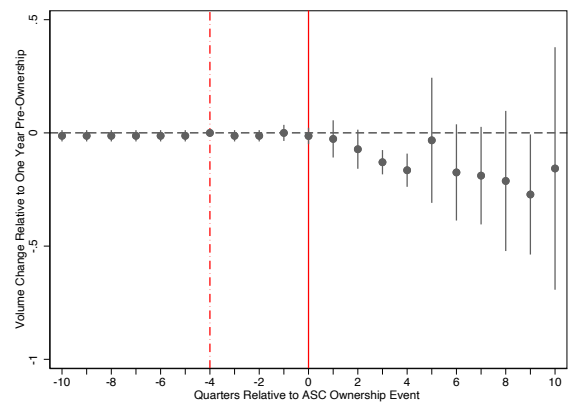


Avg. HCC Risk Score

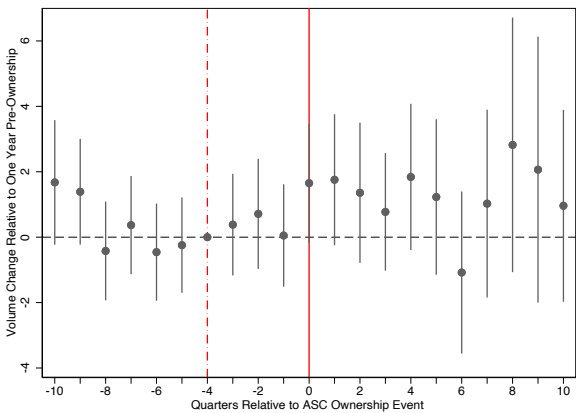


Share Qualifying for Low-Income Subsidy

Appendix Figure A5: Difference-in-Differences Event Study Estimates for ASC Ownership Event Study Estimates Corresponding to the Analytic Sample and Empirical Strategy Utilized in Table 5



ASC Procedure Volume



HOPD Procedure Volume

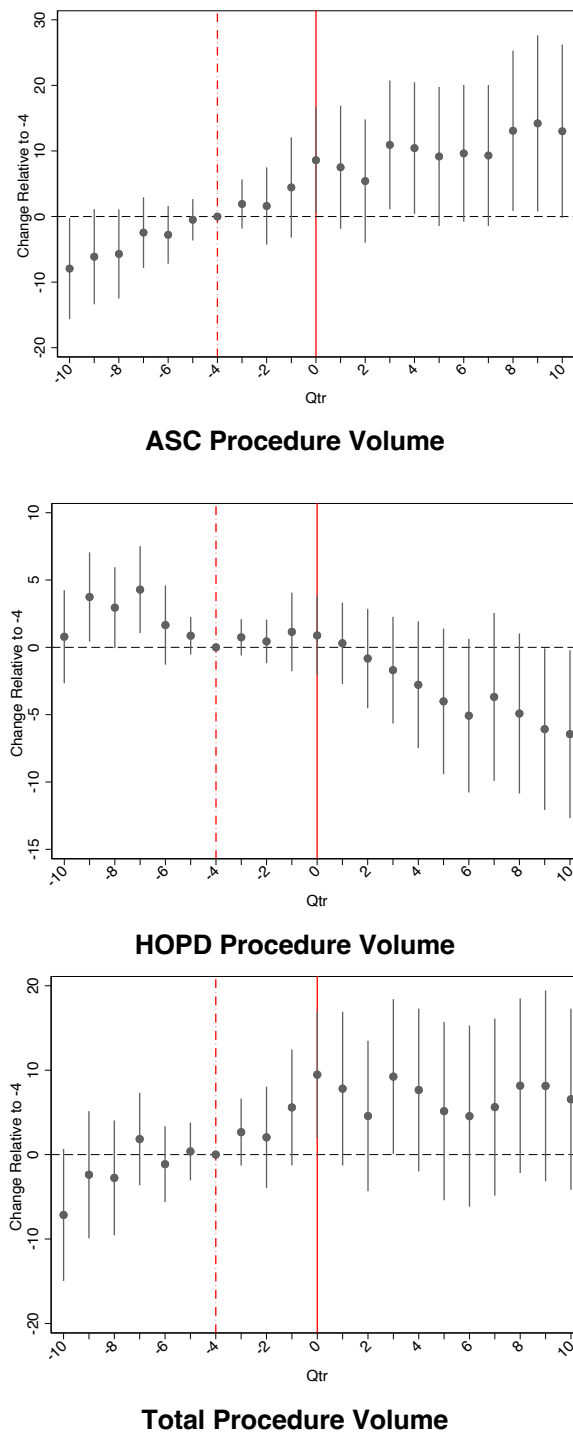
Appendix Table A2: Difference-in-Differences Estimates for ASC Ownership Effects on Patient Mix Using Stacked Analytic Sample across All Outpatient Procedure Settings

PANEL A: Pre-Period ASC Experience						
	Avg. Age	Share Dual Eligible	Share Female	Avg. HCC Risk Score	Share Qualifying for Low-Income Subsidies	Share White
	(1)	(2)	(3)	(4)	(5)	(6)
1[Treated x Post]	-0.00688 (0.0425)	-0.00258 (0.00192)	0.00174 (0.00308)	-0.0149 (0.00829)	-0.00299 (0.00203)	0.00127 (0.00333)
Physician Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Qtr-Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Unique Physicians	5,882	5,882	5,882	5,882	5,882	5,882
Observations (N)	123,522	123,522	123,522	123,519	123,522	123,522
Pre-Period Mean: Treated	74.40	0.11	0.57	1.29	0.13	0.66
Pre-Period Mean: Control	74.48	0.11	0.55	1.34	0.13	0.67
PANEL B: No Pre-Period ASC Experience						
	Avg. Age	Share Dual Eligible	Share Female	Avg. HCC Risk Score	Share Qualifying for Low-Income Subsidies	Share White
	(1)	(2)	(3)	(4)	(5)	(6)
1[Treated x Post]	0.00328 (0.0866)	0.00410 (0.00368)	0.00134 (0.00584)	-0.00737 (0.0179)	0.00553 (0.00391)	-0.00414 (0.00572)
Physician Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Qtr-Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Unique Physicians	11,928	11,928	11,928	11,928	11,928	11,928
Observations (N)	250,488	250,488	250,488	250,452	250,488	250,488
Pre-Period Mean: Treated	74.91	0.11	0.49	1.56	0.13	0.71
Pre-Period Mean: Control	74.94	0.14	0.53	1.81	0.16	0.68
	0.00328	0.00410	0.00134	-0.00737	0.00553	-0.00414

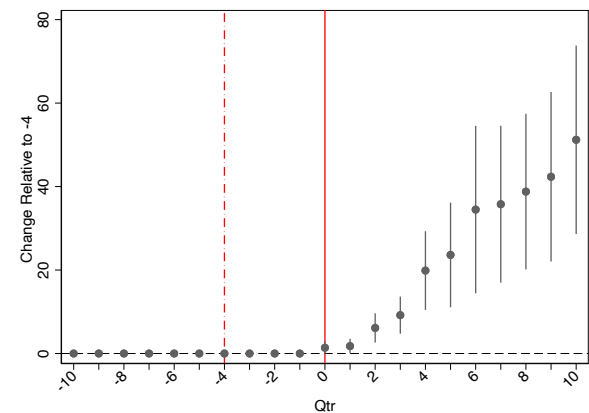
Notes: Analytic data are from 100% Medicare claims 2013-2019 and restricted to a balanced panel of physicians constructed for the 'stacked' difference-in-differences estimation (Section III). All outcomes are calculated over ASC and HOPD cases belonging to the physician. Difference-in-differences estimations therefore capture changes in overall patient mix following ASC ownership stake. Standard errors clustered at the physician level, *** P value at 0.01, ** P value at 0.05.

Appendix B

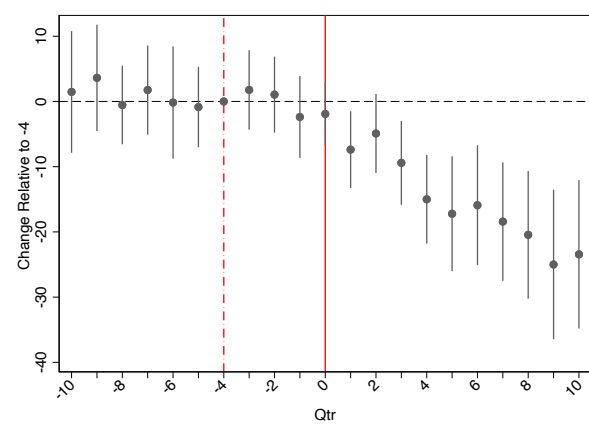
Appendix Figure B1: Difference-in-Differences Event Study Estimates for ASC Ownership Effects among Those with Pre-Ownership Experience When Using Florida All-Payer Data



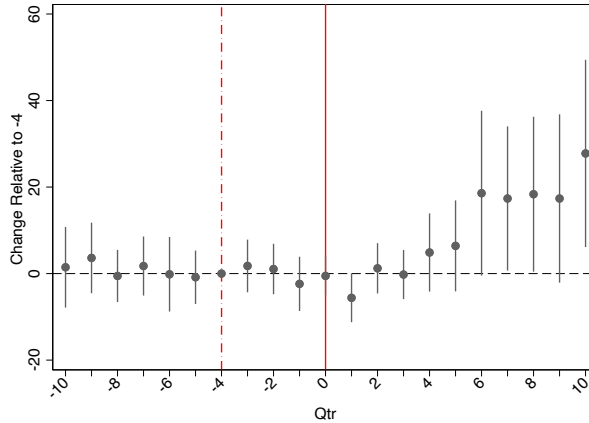
Appendix Figure B2: Difference-in-Differences Event Study Estimates for ASC Ownership Effects among Those with No Pre-Ownership Experience When Using Florida All-Payer Data



ASC Procedure Volume

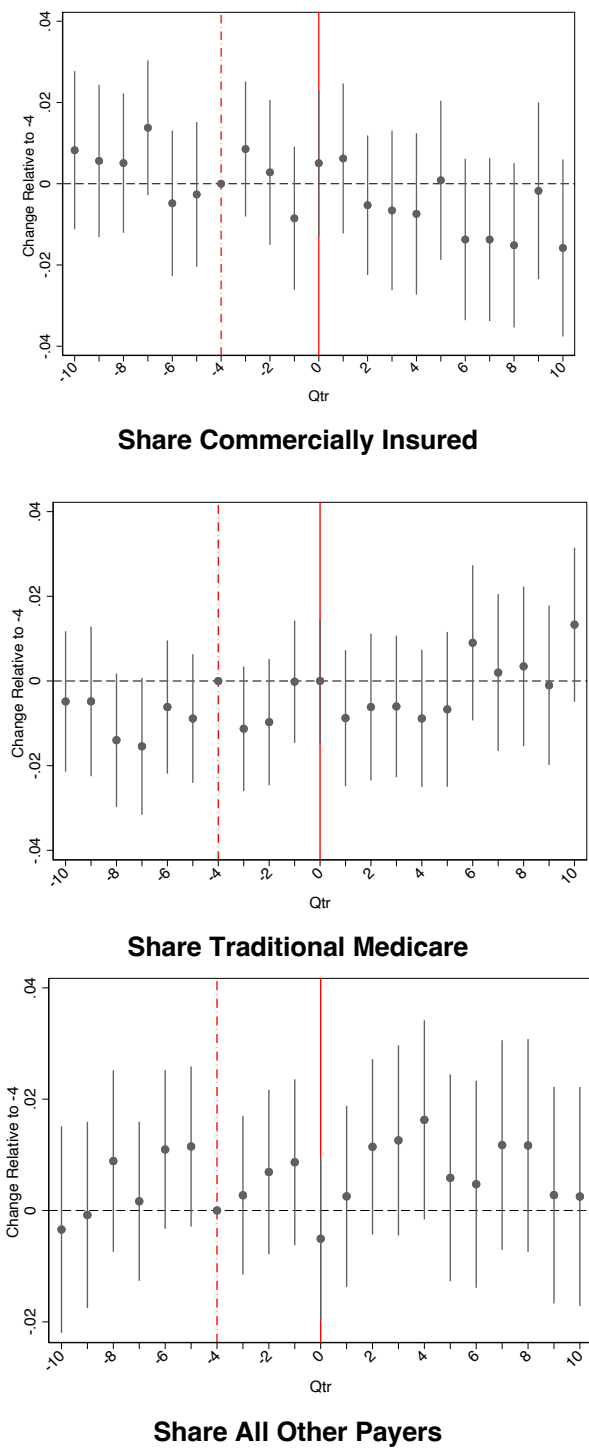


HOPD Procedure Volume

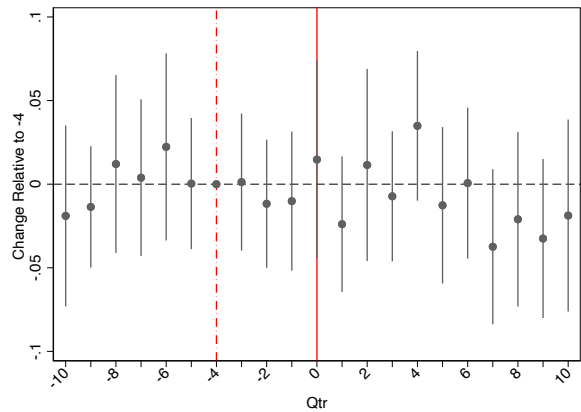


Total Procedure Volume

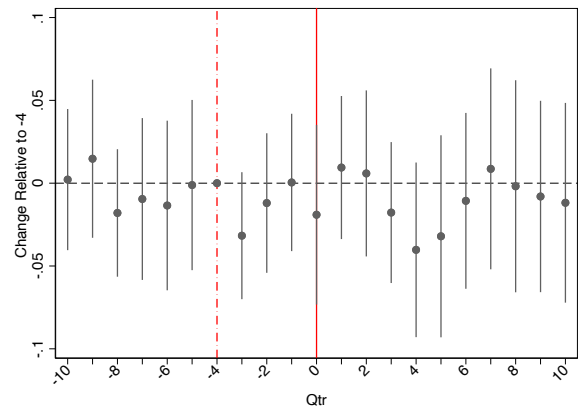
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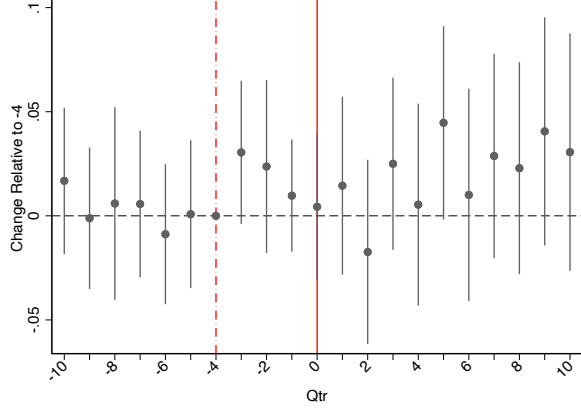
Appendix Figure B4: Difference-in-Differences Event Study Estimates for ASC Ownership Effects among Those with No Pre-Ownership Experience When Using Florida All-Payer Data



Share Commercially Insured



Share Traditional Medicare



Share All Other Payers