

Internet Appendix to “The New Game in Town: Competitive Effects of IPOs”*

In this appendix, we present additional figures and the robustness tests not included in the main text.

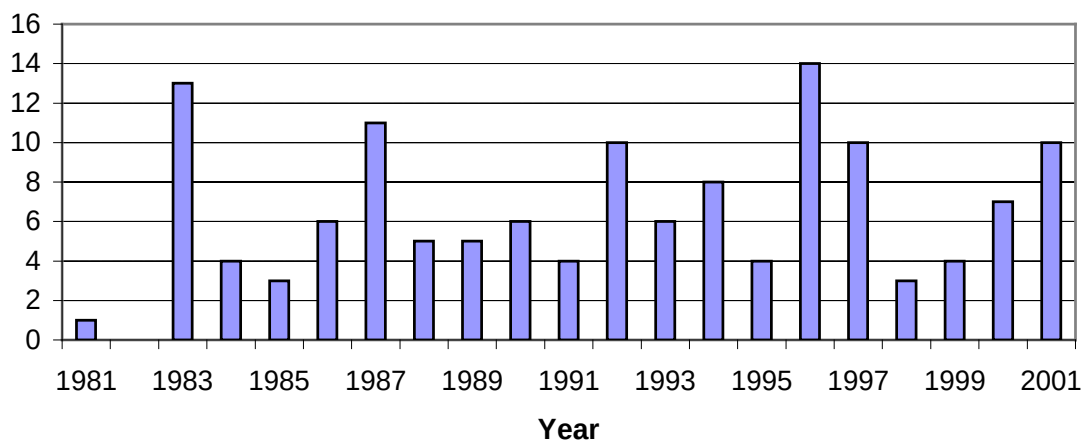


Figure IA.I. Distribution of IPO events over time. The sample from which events are selected includes all nonfinancial firms in the SDC New Issues Database that went public between 1980 and 2001, a sample comprising 4,188 issuing firms. We identify the sample IPOs as those IPOs for which there is no IPO in the same industry in the six surrounding years that has a larger issuing volume. These selection criteria generate 134 IPO events.

* Citation format: Hsu, Hung-Chia, Adam Reed, and Jorg Rocholl, 2010, Internet Appendix to “The New Game in Town: Competitive Effects of IPOs,” *Journal of Finance* 65, 495–528, <http://www.afajof.org/supplements.asp>. Please note: Wiley-Blackwell is not responsible for the content or functionality of any supporting information supplied by the authors. Any queries (other than missing material) should be directed to the authors of the article.

Table IA.I
The Distribution of IPO Events

In this table we report the distribution of IPO events using different selection criteria. Panel A reports the distribution of IPO events by year. Panel B reports the distribution of IPO events by industry. For each panel, column (1) reports the distribution of IPOs with market capitalization in the top 10% of all Compustat firms in the same industry, and column (2) reports the distribution of IPOs with market capitalization in the top 10% of all IPOs in the same industry. Columns (3), (4), and (5) report the distributions of IPOs using the six-year rolling window (used in the paper), eight-year rolling window (used in Table IA.III), and four-year rolling window (used in Table IA.IV), respectively. Column (6) reports the distribution of all IPOs from 1980 to 2001 from Jay Ritter's website. In Panel A, column (7) reports the distribution of IPOs that would obtain if they were uniformly distributed over time. In Panel B, column (7) reports the industry distribution of all Compustat firms. ***, **, and * indicate significance of the Chi-squared goodness-of-fit test at the 1%, 5%, and 10% levels, respectively.

Panel A. IPO Year Distribution							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
IPO Year	Top 10% ind marketcap	Top 10% ind marketcap among all IPOs	6-year rolling window	8-year rolling window	4-year rolling window	Benchmark: Total number of IPOs	Benchmark: Uniformly distributed IPOs
1980	1	6	0	0	0	56	261.23
1981	1	22	1	1	1	156	261.23
1982	2	13	0	0	0	59	261.23
1983	11	43	13	5	14	360	261.23
1984	3	10	4	4	5	170	261.23
1985	3	9	3	2	3	184	261.23
1986	5	21	6	6	14	329	261.23
1987	7	16	11	10	9	271	261.23
1988	4	9	5	4	7	114	261.23
1989	4	9	5	6	5	119	261.23
1990	2	8	6	5	6	116	261.23
1991	6	28	4	2	4	253	261.23
1992	12	33	10	5	11	348	261.23
1993	3	27	6	4	8	442	261.23
1994	7	21	8	6	10	373	261.23
1995	11	28	4	4	5	409	261.23
1996	9	30	14	13	14	550	261.23
1997	8	19	10	9	14	395	261.23
1998	4	14	3	4	6	232	261.23
1999	18	28	4	4	7	400	261.23
2000	23	23	7	5	9	339	261.23
2001	6	16	10	11	9	72	261.23
Total	150	433	134	110	161	5747	5747
Correlation with total number of IPOs (Column (6))	0.57	0.75	0.57	0.43	0.68		
Chi-Square Test Compared with Column (6)	54.92	77.33	70.96	97.08	52.13		
Chi-Square Test Significance	***	***	***	***	***		
Chi-Square Test Compared with Column (7)	94.05	100.23	53.16	46.80	55.31		
Chi-Square Test Significance	***	***	***	***	***		

Table IA.I
The Distribution of IPO Events (Continued)

Panel B. Industry Distribution							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
IPO Year	Top 10% ind marketcap	Top 10% ind marketcap among all IPOs	6-year rolling window	8-year rolling window	4-year rolling window	Benchmark: number of IPOs	Benchmark: Total number of firms in Compustat
1	0	2	2	2	2	17	49
2	0	1	0	0	0	2	0
7	0	1	0	1	0	4	17
8	0	0	0	0	0	2	8
10	4	2	2	2	2	12	336
12	0	1	1	2	1	6	52
13	7	12	2	2	3	123	1077
14	0	1	1	1	1	4	48
15	2	4	2	2	4	36	161
16	1	2	2	1	1	14	65
17	2	3	2	2	1	27	82
20	1	10	3	2	3	101	546
21	0	1	1	1	1	4	28
22	0	4	2	2	3	35	176
23	1	7	3	3	4	63	265
24	0	2	2	2	2	20	121
25	0	3	1	1	3	25	121
26	0	3	4	2	4	27	206
27	1	7	3	3	4	69	334
28	4	34	2	2	3	420	1446
29	0	1	0	2	0	4	131
30	1	6	3	3	4	57	289
31	1	2	2	1	2	12	57
32	1	3	2	1	0	28	172
33	0	6	3	3	4	57	311
34	1	6	3	2	5	56	392
35	15	28	3	2	5	469	1340
36	20	27	4	2	5	509	1504
37	1	9	3	2	4	85	466
38	14	30	4	2	5	447	1243
39	4	9	3	2	3	85	289
40	0	1	0	0	0	1	0
41	0	1	1	1	0	6	19
42	0	1	1	1	1	2	176
44	1	2	1	1	1	13	104
45	0	2	1	1	1	11	171
46	0	0	0	0	0	1	23
47	0	3	3	2	3	25	92
48	2	12	2	1	2	120	970
49	1	9	3	3	4	83	723
50	4	16	3	2	3	163	610
51	0	8	3	3	4	77	376
52	0	3	2	2	2	22	59
53	0	4	3	2	3	31	174
54	0	4	3	1	5	35	176
55	2	3	2	1	1	27	80
56	0	7	2	2	3	65	150
57	2	5	3	2	4	62	127
58	1	13	4	3	5	130	371
59	7	15	3	2	5	164	455
70	0	3	2	2	2	27	135
72	0	3	2	3	2	21	76
73	29	35	4	1	5	1245	2679
75	0	2	3	2	3	18	63
76	0	1	2	2	2	9	15
78	2	7	2	2	2	61	231
79	3	5	3	2	4	61	288
80	5	19	3	3	4	184	442
81	0	0	0	0	0	2	5
82	0	4	1	1	1	31	74
83	1	3	2	2	2	24	38
86	0	0	0	0	0	0	0
87	9	12	3	3	5	180	444
99	0	3	2	2	3	26	339
Total	150	433	134	110	161	5747	21017
Correlation with (7)	0.88	0.91	0.51	0.18	0.54		
Correlation with (6)	0.93	0.87	0.47	0.10	0.48		
Chi-Square Test Compared with (7)	93.97	85.91	197.37	220.71	181.60		
Test Significance	***	**	***	***	***		
Chi-Square Test compared with (6)	97.31	107.80	256.87	332.72	251.10		
Test Significance	***	***	***	***	***		

Table IA.II

Abnormal Returns of the Industry Competitors for IPOs Whose Market Capitalization Is in the Top 10% in the Industry

In this table we report the CAR of the industry competitors around the completion dates of IPOs. In Panel A, the IPO events are selected if their end-of-IPO month market capitalization is in the top 10% of all Compustat firms in the industry. In Panel B, the IPO events are selected in their market end-of-IPO-month capitalization is in the top 10% of all IPOs in the industry. Panel A then reports the CAR of 43,406 industry competitors (representing 150 IPO events) around completed IPO dates, both for individual firms and for the portfolio of IPO events. Panel B reports the CAR of 81,341 industry competitors (representing 433 IPO events) around completed IPO dates, both for individual firms and for the portfolio of IPO events. Abnormal returns are computed as the difference between the actual stock price return and the expected market model return over each indicated window. The market model is estimated using 255 days of daily returns ending 42 days prior to the IPO event. We report both the Patell Z-statistic and the corresponding *p*-value.

Days	Panel A. Top 10% in the Industry						Panel B. Top 10% of all IPOs in the Industry					
	Individual Firms			Portfolio Based on IPO Events			Individual Firms			Portfolio Based on IPO Events		
	Mean CAR	Patell Z	P-Value	Mean CAR	Patell Z	P-Value	Mean CAR	Patell Z	P-Value	Mean CAR	Patell Z	P-Value
(-10,1)	-0.28%	-2.25	0.024	-0.45%	-1.17	0.242	-0.45%	-5.88	<0.001	-0.41%	-2.87	0.004
(-10,5)	-0.32%	-1.92	0.055	-0.64%	-1.58	0.114	-0.58%	-7.12	<0.001	-0.58%	-3.86	<0.001
(-10,7)	-0.36%	-2.21	0.027	-0.72%	-1.75	0.080	-0.67%	-8.19	<0.001	-0.64%	-4.12	<0.001
(-10,10)	-0.45%	-2.46	0.014	-0.86%	-2.11	0.035	-0.86%	-9.94	<0.001	-0.80%	-4.97	<0.001
(-10,15)	-0.61%	-1.73	0.084	-0.94%	-2.07	0.039	-0.74%	-7.80	<0.001	-0.78%	-4.95	<0.001
(-10,20)	-0.73%	-1.79	0.074	-1.23%	-2.40	0.016	-0.80%	-8.35	<0.001	-1.01%	-5.94	<0.001
(-5,1)	-0.45%	-4.64	<0.001	-0.47%	-1.76	0.078	-0.31%	-5.48	<0.001	-0.29%	-3.27	0.001
(-5,5)	-0.49%	-3.67	0.000	-0.66%	-2.09	0.037	-0.45%	-6.82	<0.001	-0.47%	-4.28	<0.001

Table IA.III
Abnormal Returns for the Incumbent Firms around IPO Events using Eight-year Rolling Windows

In this table we report the CAR of the sample of 7,463 incumbent firms (representing 110 IPO events) around completed IPO dates, both for individual firms and for the portfolio of IPO events. Panel A has 7,463 incumbent firms; Panel B has 110 portfolios of incumbent firms based on the IPO events. Abnormal returns are computed as the difference between the actual stock price return and the expected market model return over each indicated window. The market model is estimated using 255 days of daily returns ending 42 days prior to the IPO event. We report significance levels using the Patell Z-statistic. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Days	Panel A. Individual Firms			Panel B. Portfolio Based on IPO Events		
	Mean CAR	<i>Patell Z</i>	P-Value	Mean CAR	<i>Patell Z</i>	P-Value
(-10,1)	-1.03%	-5.37	<0.001	-0.88%	-2.54	0.011
(-10,5)	-2.03%	-9.27	<0.001	-1.34%	-3.60	<0.001
(-10,7)	-1.74%	-7.53	<0.001	-1.45%	-3.59	<0.001
(-10,10)	-1.54%	-7.39	<0.001	-1.53%	-3.69	<0.001
(-10,15)	-1.73%	-8.38	<0.001	-2.04%	-4.21	<0.001
(-10,20)	-1.84%	-9.10	<0.001	-2.48%	-4.77	<0.001
(-5,1)	-0.64%	-5.19	<0.001	-0.54%	-1.85	0.064
(-5,5)	-1.65%	-9.72	<0.001	-0.99%	-3.16	0.002

Table IA.IV
Abnormal Returns for the Incumbent Firms around IPO Events using Four-year Rolling Windows

In this table we report the CAR of the sample of 9,606 incumbent firms (representing 161 IPO events) around completed IPO dates, both for individual firms and for the portfolio of IPO events. Panel A has 9,606 incumbent firms; Panel B has 161 IPO portfolios of incumbent firms based on the IPO events. Abnormal returns are computed as the difference between the actual stock price return and the expected market model return over each indicated window. The market model is estimated using 255 days of daily returns ending 42 days prior to the IPO event. We report significance levels using the Patell Z-statistic. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Days	Panel A. Individual Firms			Panel B. Portfolio Based on IPO Events		
	Mean CAR	<i>Patell Z</i>	P-Value	Mean CAR	<i>Patell Z</i>	P-Value
(-10,1)	-1.48%	-7.46	<0.001	-0.73%	-2.79	0.005
(-10,5)	-2.28%	-11.10	<0.001	-1.16%	-3.86	<0.001
(-10,7)	-1.85%	-8.83	<0.001	-1.27%	-3.90	<0.001
(-10,10)	-1.60%	-8.00	<0.001	-1.22%	-3.61	<0.001
(-10,15)	-1.62%	-8.29	<0.001	-1.85%	-4.49	<0.001
(-10,20)	-1.81%	-9.21	<0.001	-2.17%	-5.02	<0.001
(-5,1)	-0.82%	-6.79	<0.001	-0.31%	-1.79	0.074
(-5,5)	-1.63%	-11.01	<0.001	-0.73%	-3.17	<0.002

Table IA.V
Abnormal Returns for the Incumbent Firms around IPO Events Excluding Low-tech and Heavy Industries

In this table we report the CAR of the sample of 8,424 incumbent firms (representing 122 IPO events) around completed IPO dates, both for individual firms and for the portfolio of IPO events. Panel A has 8,424 incumbent firms; Panel B has 122 portfolios of incumbent firms based on the IPO events, after excluding those IPO events with two-digit SIC industries 10, 12, 13, 14, 15, 16, and 17. Abnormal returns are computed as the difference between the actual stock price return and the expected market model return over each indicated window. The market model is estimated using 255 days of daily returns ending 42 days prior to the IPO event. We report significance levels using the Patell Z-statistic. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Days	Panel A. Individual Firms			Panel B. Portfolio Based on IPO Events		
	Mean CAR	<i>Patell Z</i>	P-Value	Mean CAR	<i>Patell Z</i>	P-Value
(-10,1)	-1.56%	-7.26	<0.001	-0.82%	-2.87	0.004
(-10,5)	-2.50%	-10.96	<0.001	-1.22%	-3.87	<0.001
(-10,7)	-2.12%	-9.24	<0.001	-1.38%	-3.94	<0.001
(-10,10)	-1.94%	-9.14	<0.001	-1.39%	-4.11	<0.001
(-10,15)	-1.96%	-9.20	<0.001	-1.83%	-4.70	<0.001
(-10,20)	-2.08%	-9.90	<0.001	-2.16%	-5.04	<0.001
(-5,1)	-0.89%	-6.82	<0.001	-0.30%	-2.00	0.046
(-5,5)	-1.83%	-11.08	<0.001	-0.70%	-3.27	0.001

Table IA.VI
Abnormal Returns for the Incumbent Firms around IPO Events Using Six-year Rolling
Windows with Ritter's IPO Universe

In this table we report the CAR of the sample of 12,151 incumbent firms (representing 137 IPO events selected from the sample 5,747 IPOs on Jay Ritter's website) around completed IPO dates, both for individual firms and for the portfolio of IPO events. The IPO events are selected if there are no larger IPOs in the same two-digit SIC industry in the surrounding six years. Panel A has 12,151 incumbent firms; Panel B has 137 portfolios of incumbent firms based on the IPO events. Abnormal returns are computed as the difference between the actual stock price return and the expected market model return over each indicated window. The market model is estimated using 255 days of daily returns ending 42 days prior to the IPO event. We report significance levels using the Patell Z-statistic. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Days	Panel A. Individual Firms			Panel B. Portfolio Based on IPO Events		
	Mean CAR	Patell Z	P-Value	Mean CAR	Patell Z	P-Value
(-10,1)	-1.11%	-6.11	<0.001	-1.07%	-4.08	<0.001
(-10,5)	-1.69%	-8.50	<0.001	-1.21%	-3.81	<0.001
(-10,7)	-1.76%	-8.25	<0.001	-1.44%	-4.23	<0.001
(-10,10)	-1.54%	-7.44	<0.001	-1.54%	-4.32	<0.001
(-10,15)	-0.85%	-5.46	<0.001	-1.75%	-4.54	<0.001
(-10,20)	-1.07%	-5.76	<0.001	-2.13%	-4.83	<0.001
(-5,1)	-0.91%	-7.48	<0.001	-0.95%	-4.44	<0.001
(-5,5)	-1.49%	-9.83	<0.001	-1.08%	-3.88	<0.001

Table IA.VII
Abnormal Returns for the Incumbent Firms around IPO Events Using Six-year Rolling
IPOs: Fama-French 48 Industries

In this table we report the CAR of the sample of 12,476 incumbent firms (representing 119 IPO events) around completed IPO dates, both for individual firms and for the portfolio of IPO events. We define industries according to the 48-industry classifications by Fama and French. Panel A has 12,476 incumbent firms; Panel B has 119 portfolios of incumbent firms based on the IPO events. Abnormal returns are computed as the difference between the actual stock price return and the expected market model return over each indicated window. The market model is estimated using 255 days of daily returns ending 42 days prior to the IPO event. We report significance levels using the Patell Z-statistic. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Days	Panel A. Individual Firms			Panel B. Portfolio Based on IPO Events		
	Mean CAR	Patell Z	P-Value	Mean CAR	Patell Z	P-Value
(-10,1)	-1.48%	-11.91	<0.001	-1.12%	-4.48	<0.001
(-10,5)	-2.08%	-14.35	<0.001	-1.34%	-3.60	<0.001
(-10,7)	-2.22%	-13.52	<0.001	-1.45%	-3.59	<0.001
(-10,10)	-1.66%	-10.57	<0.001	-1.53%	-3.69	<0.001
(-10,15)	-1.43%	-9.68	<0.001	-2.04%	-4.21	<0.001
(-10,20)	-0.97%	-6.52	<0.001	-2.48%	-4.77	<0.001
(-5,1)	-0.98%	-10.65	<0.001	-0.54%	-1.85	0.064
(-5,5)	-1.57%	-13.36	<0.001	-0.99%	-3.16	0.002

Table IA.VIII
Abnormal Returns for the Incumbent Firms around the IPO Events Using Six-year Rolling
IPOs: Information Technology Industries

In this table we report the CAR of the sample of 2,925 incumbent firms (representing 30 IPO events) in the information technology industries around completed IPO dates, both for individual firms and for the portfolio of IPO events. Information technology industries are defined as the two-digit SIC codes under each of the following Fama-French 48 industries: Industry 22 (Electrical Equipment), 32 (Telecommunication), 34 (Business Services), 35 (Computers), 36 (Software), and 37 (Electronic Equipment). Panel A has 2,925 incumbent firms; Panel B has 30 portfolios of incumbent firms based on the IPO events. Abnormal returns are computed as the difference between the actual stock price return and the expected market model return over each indicated window. The market model is estimated using 255 days of daily returns ending 42 days prior to the IPO event. We report significance levels using the Patell Z-statistic. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Days	Panel A. Individual Firms			Panel B. Portfolio Based on IPO Events		
	Mean CAR	Patell Z	P-Value	Mean CAR	Patell Z	P-Value
(-10,1)	-3.06%	-8.58	<0.001	-3.34%	-4.10	<0.001
(-10,5)	-3.73%	-8.27	<0.001	-3.64%	-3.76	<0.001
(-10,7)	-3.64%	-7.94	<0.001	-3.67%	-4.14	<0.001
(-10,10)	-2.99%	-5.30	<0.001	-3.49%	-2.88	0.004
(-10,15)	-2.89%	-4.40	<0.001	-3.68%	-2.25	0.024
(-10,20)	-2.27%	-2.80	0.005	-3.20%	-1.80	0.072
(-5,1)	-1.87%	-7.70	<0.001	-2.23%	-3.76	<0.001
(-5,5)	-2.55%	-7.15	<0.001	-2.53%	-3.25	0.001

Table IA.IX
The Effect of IPO Events on Incumbent Firms Using Age Since Founding

In this table we report estimates from a panel regression of incumbent firms' sales growth, growth in capital expenditure, growth in operating income, and abnormal stock return on an IPO indicator and control variables from 1977 to 2005. *Sales Growth* is the difference between current log sales and log sales in the previous year. *Capital Expenditure Growth* is the difference between the log of current-year capital expenditure and the log of capital expenditure in the previous year. *Operating Income Growth* is the difference between the log of current-year operating income and the log of operating income in the previous year. *Abnormal Stock Return* is the difference between daily stock returns and the value-weighted market portfolio return, compounded to an annual frequency based on fiscal years. *IPO Dummy* is an indicator variable equal to one in the IPO event year and the three following years. *Log(Age Since Listing)* is the log of the number of years between the incumbent firm's listing year and the observation year. *Log(Years from Founding to Listing)* is the log of the number of years between the incumbent firm's founding year and the listing year. *Log(Assets)* is the log of firm assets in the previous year. *Annual Underpricing* is the average level of IPO underpricing in a given year as reported in Ritter (2007). *Industry M/B Ratio* is the median industry market-to-book ratio in the previous year. Standard errors are adjusted for clustering by IPO event. *t*-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable:	Sales Growth	Capex Growth	Operating Income Growth	Abnormal Stock Return
	(1)	(2)	(3)	(4)
IPO Dummy	-0.034*** (-4.08)	-0.100*** (-3.70)	-0.024** (-2.53)	-0.031* (-1.96)
Lag Dependent Variable	0.064* (1.76)	-0.171*** (-23.11)	-0.177*** (-16.17)	-0.019*** (-3.12)
Log(Age Since Listing)	-0.089*** (-10.66)	-0.127*** (-8.90)	-0.053*** (-7.98)	0.006 (0.76)
Log(Years from Founding to Listing)	-0.009*** (-4.81)	0.007* (1.81)	-0.012*** (-4.21)	-0.017*** (-3.97)
Log(Assets)	0.004*** (3.11)	0.004 (1.56)	-0.004** (-2.18)	0.011*** (5.12)
Annual Underpricing	0.076** (2.23)	0.029 (0.58)	-0.007 (-0.26)	0.294*** (3.76)
Industry M/B ratio	0.073*** (4.40)	0.236*** (7.24)	0.078*** (6.52)	0.017* (1.97)
Intercept	0.179*** (5.73)	-0.073* (-1.82)	0.171*** (7.23)	-0.048 (-1.56)
IPO Events Fixed Effect?	Yes	Yes	Yes	Yes
N	72807	71194	54065	62540
R ²	0.0435	0.0351	0.0358	0.0059

Table IA.X

The Effect of Leverage, Certification, and Industry Structure on Post-IPO Event Performance

In this table we report estimates from regressions of incumbent performance on its determinants and control variables. Industry-adjusted Sales Growth, Operating Income Growth, and Capital expenditure Growth are the log changes of four-year average industry-adjusted sales, operating income, and capital expenditure before IPO events to after IPO events. *Lagged Dependent Variable* is the four-year pre-IPO value of the respective dependent variable. *Leverage Ratio* is the ratio of long-term debt to market-adjusted value of assets (book value of debt plus market capitalization). *Bondrankyes* is an indicator variable equal to one if the firm has a Standard & Poor's long-term domestic issuer credit rating in the Compustat Database. *VC Backing* is an indicator variable equal to one if the firm is venture-backed. *High UW Ranking* is an indicator variable equal to one if the firm's Carter and Manaster (1990) underwriter ranking is at least nine. *Hightech* is an indicator variable equal to one if the firm is in the high-tech industry classification. *High Research Intensity* is an indicator variable equal to one if the ratio of research and development expenses to assets is in the top quartile of the sample. *High HH* is an indicator variable equal to one if the firm's Herfindahl index of industry concentration is greater than 1,800. *Log(Age)* is the log of the number of years between the incumbent firm's IPO year and the observation year. *Log(Assets)* is the log of firm assets in the previous year. *Industry Underpricing* is the median issue-day underpricing of IPOs in the industry over the year prior to the IPO event. *Industry M/B Ratio* is the median industry market-to-book ratio over the year prior to the IPO event. Standard errors are adjusted for clustering by IPO event. *t*-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Industry-adjusted Sales Growth				Operating Income Growth				Capex Growth			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Lagged Dependent Variable	-0.253*** (-10.70)	-0.230*** (-11.03)	-0.346*** (-13.77)	-0.325*** (-14.30)	-0.563*** (-15.70)	-0.541*** (-18.89)	-0.569*** (-16.28)	-0.542*** (-18.76)	-0.296*** (-8.84)	-0.340*** (-11.06)	-0.390*** (-14.93)	-0.418*** (-17.37)
Leverage Ratio	-0.956*** (-8.88)	-0.943*** (-11.99)	-0.883*** (-8.92)	-0.908*** (-11.96)	-0.788*** (-6.37)	-0.800*** (-7.16)	-0.998*** (-8.01)	-0.971*** (-9.19)	-1.071*** (-6.73)	-1.124*** (-9.58)	-1.257*** (-8.68)	-1.319*** (-12.12)
Bondrankyes	0.227*** (5.60)	0.204*** (5.16)	0.248*** (6.20)	0.245*** (6.53)	0.403*** (9.60)	0.394*** (11.34)	0.376*** (8.21)	0.370*** (9.37)	0.280*** (5.75)	0.291*** (7.44)	0.253*** (5.03)	0.271*** (6.04)
VC Backing	0.122*** (3.07)		0.084** (2.11)		0.093* (1.76)		0.108** (2.22)		0.143*** (3.22)		0.191*** (4.71)	
High UW Ranking		0.092** (2.47)		0.107*** (3.19)		0.128*** (4.37)		0.135*** (5.07)		0.147*** (3.15)		0.157*** (3.35)
High Research Intensity	0.063 (1.01)	0.119* (1.88)	-0.049 (-0.76)	-0.027 (-0.39)	0.242 (1.31)	0.318* (1.91)	0.249 (1.16)	0.322 (1.57)	-0.165 (-1.61)	-0.227** (-2.52)	-0.041 (-0.39)	-0.092 (-1.01)
High HH	0.055 (0.66)	0.076 (0.73)			-0.020 (-0.27)	0.035 (0.64)			0.044 (0.45)	0.018 (0.21)		
Log(Age)	-0.087*** (-3.46)	-0.095*** (-4.84)	-0.158*** (-6.11)	-0.141*** (-8.53)	-0.123*** (-4.80)	-0.126*** (-5.05)	-0.102*** (-3.61)	-0.104*** (-4.06)	-0.228*** (-9.30)	-0.198*** (-9.63)	-0.216*** (-7.58)	-0.181*** (-8.16)
Log(Assets)	0.160*** (6.40)	0.149*** (7.95)	0.279*** (10.80)	0.265*** (13.51)	0.511*** (13.00)	0.484*** (17.17)	0.517*** (13.44)	0.486*** (17.04)	0.310*** (7.70)	0.339*** (9.11)	0.397*** (12.64)	0.412*** (14.04)
Industry Underpricing	-0.604*** (-3.68)	-0.603*** (-3.53)			-0.150 (-0.68)	-0.116 (-0.55)			0.166 (0.75)	0.243 (1.10)		
Industry M/B Ratio	0.009 (0.18)	-0.012 (-0.25)	0.327 (0.77)	0.270 (0.95)	0.064 (1.08)	0.081 (1.37)	0.398 (1.39)	0.052 (0.20)	-0.064 (-1.03)	-0.052 (-0.84)	-0.387** (-2.02)	-0.494* (-1.95)
Intercept	-0.316** (-2.14)	-0.265** (-1.98)	-1.363* (-1.75)	-1.258** (-2.42)	-0.374*** (-3.56)	-0.405*** (-4.23)	-0.992** (-1.98)	-0.372 (-0.83)	0.050 (0.30)	-0.144 (-0.86)	0.436 (1.18)	0.483 (0.99)
IPO Events Fixed Effect?	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
N	4376	6866	4376	6866	3101	4796	3101	4796	4359	6850	4359	6850
R ²	0.2129	0.1802	0.1459	0.1310	0.2004	0.1932	0.1732	0.1920	0.1258	0.1326	0.0959	0.0817

Table IA.XI

The Effect of Leverage, Certification, and Industry Structure on Firm Survival After the IPO Events

In this table we report estimates from a probit regression of firm survival on determinants of incumbent competitiveness and control variables. The dependent variable is equal to zero if the firm was delisted within three years after the IPO with CRSP delisting codes equal to and above 500, and one otherwise. *Leverage Ratio* is the ratio of long-term debt to market-adjusted value of assets (book value of debt plus market capitalization). *Bondrankyes* is an indicator variable equal to one if the firm has a Standard & Poor's long-term domestic issuer credit rating in the Compustat database. *Good Bondrank* is an indicator variable equal to one if the firm has a Standard & Poor's long-term domestic issuer credit rating of BBB or above. *VC Backing* is an indicator variable equal to one if the firm is venture backed. *High UW Ranking* is an indicator variable equal to one if the firm's Carter and Manaster (1990) underwriter ranking is at least nine. *Hightech* is an indicator variable equal to one if the firm is in the Loughran and Ritter (2004) high-tech industry classification. *High Research Intensity* is an indicator variable equal to one if the ratio of research and development expenses to assets is in the top quartile of the sample. *High HH* is an indicator variable equal to one if the firm's Herfindahl index of industry concentration is greater than 1,800. *Return on Assets* is the ratio of operating income to assets. *Log(Age)* is the log of the number of years between the incumbent firm's IPO year and the observation year. *Log(Assets)* is the log of firm assets in the previous year. *Industry Underpricing* is the median issue-day underpricing of IPOs in the industry over the year prior to the IPO event. *Industry M/B Ratio* is the median industry market-to-book ratio over the year prior to the IPO event. Standard errors are adjusted for clustering by IPO event. Z-values are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Explanatory Variable	Model									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Leverage ratio	-0.240*** (-9.97)								-0.180*** (-6.97)	-0.204*** (-9.22)
Bondrankyes		0.117*** (5.19)							0.108*** (3.40)	0.108*** (4.52)
Good bondrank			0.148*** (2.71)							
VC backing				0.041*** (5.47)					0.016** (2.50)	
High UW ranking					0.047*** (3.65)					0.017 (1.53)
Hightech						0.046*** (3.62)			0.021** (1.97)	0.024** (2.25)
High research intensity							0.047*** (5.24)		0.010 (0.87)	0.013 (1.29)
High HH								-0.030 (-1.50)	-0.019* (-1.79)	-0.017 (-1.38)
Return on assets	0.061*** (5.83)	0.048*** (4.72)	0.048*** (4.71)	0.047*** (5.49)	0.052*** (4.85)	0.048*** (4.26)	0.065*** (5.24)	0.050*** (4.70)	0.051*** (5.37)	0.064*** (5.74)
Log(Age)	0.033*** (6.66)	0.006 (1.09)	0.005 (0.89)	0.006 (1.02)	0.008 (1.56)	0.006 (1.16)	0.006 (1.01)	0.006 (0.99)	0.029*** (5.72)	0.032*** (7.23)
Log(Assets)	0.036*** (13.00)	0.025*** (8.51)	0.028*** (9.91)	0.025*** (8.98)	0.027*** (8.75)	0.031*** (10.87)	0.031*** (11.61)	0.030*** (11.00)	0.023*** (6.51)	0.029*** (9.50)
Industry underpricing	-0.196*** (-4.34)	-0.197*** (-3.84)	-0.195*** (-3.89)	-0.201*** (-5.08)	-0.216*** (-4.14)	-0.218*** (-4.28)	-0.204*** (-4.09)	-0.206*** (-4.17)	-0.173*** (-5.29)	-0.192*** (-4.68)
Industry M/B ratio	0.002 (0.36)	0.013 (1.54)	0.013 (1.45)	0.007 (1.23)	0.012 (1.22)	0.008 (1.01)	0.009 (1.00)	0.012 (1.34)	-0.004 (-0.78)	-0.001 (-0.24)
Intercept	0.049*** (2.93)	0.089*** (4.44)	0.087*** (4.18)	0.094*** (5.30)	0.092*** (4.13)	0.079*** (4.12)	0.088*** (4.32)	0.093*** (4.39)	0.050*** (2.81)	0.055*** (3.53)
Pseudo R ²	0.1515	0.1067	0.1019	0.1036	0.1030	0.1059	0.1035	0.1008	0.1725	0.1635
N	7143	8559	8559	5630	8559	8559	8559	8559	4514	7143