

Initial Public Offerings: Technology Stock IPOs

Jay R. Ritter

Cordell Professor of Finance

University of Florida

352.846-2837 *voice*

<http://bear.warrington.ufl.edu/ritter>

March 13, 2014

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Note: There are minor differences in the number of IPOs for certain years, such as 1980, in different tables because of some reclassifications of SIC codes, a more rigorous application of the requirement that a stock be listed on the Nasdaq, NYSE or Amex within six months of going public, and reclassifications of a few IPOs on the basis of whether they were a limited partnership, etc.

Table 4

Median Age and Fraction of IPOs with VC and Buyout Backing, 1980-2013

There are 7,866 IPOs after excluding those with an offer price below \$5.00 per share, unit offers, ADRs, closed-end funds, oil & gas limited partnerships, acquisition companies, REITs, bank and S&L IPOs, and firms not listed on CRSP. Missing numbers are supplemented by direct inspection of prospectuses on EDGAR, information from Dealogic for IPOs after 1991, Howard and Co.'s *Going Public: The IPO Reporter* from 1980-1985, the Graeme Howard-Todd Huxster collection of IPO prospectuses for 1975-2006, and the Stanford GSB microfiche collection of registration statements from the 1980s. Tech stocks are defined as internet-related stocks plus other technology stocks, not including biotech. Loughran and Ritter (2004) list the SIC codes in their appendix 3 and sources of founding dates in appendix 1. Age is defined as the year of the IPO minus the year of founding. For buyout-backed IPOs, the founding date of the predecessor company is used. For rollups, the founding date of the oldest acquired company is used in most cases. Private equity (PE) or buyout-backed IPOs were restricted to "reverse LBOs" in the 1980s and 1990s. Jerry Cao has assisted with providing information on which IPOs are buyout-backed.

The financial backers of some companies are easy to classify, such as when Sequoia Capital and Kleiner Perkins invested in Google, or when KKR invested in Dollar General. But other situations involve growth capital investing, as when Warburg Pincus finances a company that rolls up some doctors' offices. With just two categories (VC and buyout), there is some arbitrariness in the categorization of IPOs backed by growth capital investors. 303 growth capital-backed IPOs are classified as VC-backed.

The definition of technology stocks has been changed from that in Loughran and Ritter (2004 *Financial Management*), with SIC=3559, 3576, and 7389 added to tech. Some 7389 (business services) companies have had their SIC codes changed into non-tech categories, such as consulting and two new SIC codes: 5614 for telemarketing firms and 7388 for non-tech business services such as Sotheby's Auctions.

(table on the next page)

Year	Number of IPOs	IPOs w/ Missing Age	Median Age	VC-backed		Buyout-backed		Technology IPOs	
				No.	%	No.	%	No.	% VC-backed
1980	74	0	6	24	32%	1	1%	24	58%
1981	196	0	8	54	28%	1	1%	73	40%
1982	78	0	5	22	28%	2	3%	42	36%
1983	451	0	7	118	26%	9	2%	173	38%
1984	173	0	7	45	26%	3	2%	50	52%
1985	187	0	9	39	21%	17	9%	37	43%
1986	392	0	7	79	20%	42	11%	77	40%
1987	284	0	7	67	24%	42	15%	58	66%
1988	102	0	8	33	32%	8	8%	28	61%
1989	113	0	7	40	35%	10	9%	35	66%
1990	110	0	8	42	38%	14	13%	31	74%
1991	286	0	9	116	41%	72	25%	70	63%
1992	412	0	10	138	33%	98	24%	113	59%
1993	510	0	9	171	34%	79	15%	126	69%
1994	403	0	8	130	32%	22	5%	117	56%
1995	461	0	7	188	41%	29	6%	204	55%
1996	676	0	7	263	39%	34	5%	274	55%
1997	474	0	9	133	28%	36	8%	173	42%
1998	282	0	8	76	27%	31	11%	113	48%
1999	477	0	4	271	57%	32	7%	369	66%
2000	381	0	6	240	63%	31	8%	261	68%
2001	79	0	12	32	41%	21	27%	23	70%
2002	66	0	15	23	35%	20	30%	20	65%
2003	63	0	11	24	38%	21	33%	18	61%
2004	174	0	8	79	45%	44	25%	62	66%
2005	160	0	13	45	28%	67	42%	46	48%
2006	157	0	13	53	34%	68	43%	48	52%
2007	160	0	9	68	42%	32	20%	75	63%
2008	21	0	14	9	43%	3	14%	6	67%
2009	41	0	15	12	29%	18	44%	13	46%
2010	92	0	10	40	43%	27	29%	34	71%
2011	81	0	11	44	54%	18	22%	36	81%
2012	94	0	12	48	51%	27	29%	40	85%
2013	156	0	12	76	49%	35	22%	43	72%
1980-1989	2,050	0	7	521	25%	135	7%	597	46%
1990-1994	1,721	0	9	597	35%	285	17%	457	63%
1995-1998	1,893	0	8	660	35%	130	7%	764	51%
1999-2000	858	0	5	511	60%	63	7%	630	67%
2001-2013	1,344	0	11	553	41%	401	30%	464	65%
1980-2013	7,866	0	8	2,842	36%	1,014	13%	2,912	57%

Table 4a (updated March13, 2014)

Technology Company IPOs, 1980-2013

There are 2,911 IPOs after excluding those with an offer price below \$5.00 per share, unit offers, ADRs, closed-end funds, partnerships, acquisition companies, REITs, bank and S&L IPOs, and firms not listed on CRSP. Missing and questionable numbers from the SDC new issues database are supplemented by direct inspection of prospectuses on EDGAR, information from Dealogic for IPOs after 1991, Howard and Co.'s *Going Public: The IPO Reporter* from 1980-1985, and the Graeme Howard-Todd Huxster collection of IPO prospectuses for 1975-2006. Tech stocks are defined as internet-related stocks plus other technology stocks including telecom, but not including biotech. Loughran and Ritter (2004) list the SIC codes in their appendix 3 and sources of founding dates in appendix 1. For buyout-backed IPOs, the founding date of the predecessor company is used. Price-to-sales ratios are computed using both the offer price (OP) and the first closing market price (MP) for computing the market capitalization of equity. Market cap is calculated using the post-issue shares outstanding, with all share classes included in the case of dual-class companies. The undiluted number of shares is used, which in some cases (e.g., Facebook, Twitter, and Castlight Health) understates the market cap due to the existence of substantial amounts of in-the-money employee stock options that are highly likely to be exercised. Sales are the last twelve months (LTM) revenues as reported in the prospectus. The median sales, in millions, is expressed in both nominal dollars and in dollars of 2014 purchasing power using the CPI. The median age, in years, is the number of years since the calendar year of the founding date and the calendar year of the IPO. The percentage of IPOs that are profitable measures profitability using trailing LTM earnings (usually using after extraordinary items earnings, and usually using pro forma numbers that are computed assuming that any recent or concurrent mergers have already occurred, and the conversion of convertible preferred stock into common stock). In some cases, last fiscal year earnings are used when LTM earnings are unavailable.

(table on the next page)

Year	Number of IPOs	Proceeds in \$billions		Median Price-to-sales		Median sales, \$mm		Median age	% profitable
		VC-backed	Technology	OP	MP	Nominal	\$2014		
1980	22	395	389	3.4	3.8	16.2	48.8	6.5	91%
1981	72	660	852	3.5	3.6	12.9	34.8	9	88%
1982	42	492	648	4.2	4.5	10.5	26.2	5	83%
1983	173	2,819	3,271	5.7	6.5	8.6	20.6	6	70%
1984	50	614	543	2.4	2.5	9.8	22.5	6.5	80%
1985	37	667	375	2.0	2.4	13.4	29.8	7	84%
1986	77	1,558	1,217	3.4	3.6	13.0	27.8	6	74%
1987	58	1,332	1,324	3.2	3.2	18.3	38.4	5.5	86%
1988	28	688	888	2.8	2.9	24.0	48.6	5.5	79%
1989	35	869	748	3.4	4.0	31.5	61.0	6	77%
1990	31	1,085	747	3.6	3.7	29.1	53.5	9	94%
1991	70	3,887	2,738	3.2	3.7	34.5	60.0	9	74%
1992	113	4,970	5,847	3.4	3.6	22.8	38.7	8	65%
1993	126	5,849	5,435	3.0	3.6	27.0	44.3	8	74%
1994	117	3,726	3,659	3.7	4.2	21.0	33.6	8	70%
1995	204	7,110	9,781	4.6	5.7	21.6	33.6	7	71%
1996	274	11,598	16,185	6.9	8.3	16.7	25.3	7	47%
1997	173	4,977	7,447	5.2	5.7	21.5	31.7	7	50%
1998	113	3,845	8,118	8.8	11.9	22.1	32.0	6	36%
1999	369	21,705	33,561	26.5	42.8	12.0	17.1	4	14%
2000	261	23,254	42,498	31.7	48.9	12.1	16.8	5	14%
2001	23	2,658	5,773	8.1	13.4	22.8	30.5	9	30%
2002	20	1,956	2,587	2.9	3.1	95.2	125.9	9	40%
2003	18	1,789	2,242	4.1	4.6	86.2	111.1	7	39%
2004	61	7,126	9,191	6.4	7.1	55.5	70.2	8	44%
2005	46	3,458	7,029	4.8	4.8	68.0	83.5	9	37%
2006	48	4,527	4,873	5.5	6.3	57.6	68.0	9	50%
2007	75	9,234	11,371	6.5	8.0	70.0	81.0	8	29%
2008	6	863	1,194	4.9	5.7	156.7	173.8	14	67%
2009	13	1,697	4,022	2.6	3.2	180.4	200.2	11	69%
2010	34	3,873	4,374	3.5	3.9	116.2	125.6	11	62%
2011	36	8,603	9,412	6.1	6.6	141.3	150.3	10	36%
2012	40	21,031	20,260	4.3	4.8	105.9	109.4	9	43%
2013	43	11,553	8,486	5.5	6.1	105.8	107.6	9	28%
2014	3			7.0	14.1	22.6	22.6	10	0%
1980-2014	2,911	180,468	237,085	5.8	6.9	20.6	34.3	7	31%

Table 4b (updated February 24, 2014)

VC-backed, Growth Capital-backed, and Buyout-backed IPOs, 1980-2013

There are 7,856 IPOs after excluding those with an offer price below \$5.00 per share, unit offers, ADRs, closed-end funds, natural resource limited partnerships, special purpose acquisition companies (SPACs), REITs, bank and S&L IPOs, small best efforts offerings, and firms not listed on CRSP within six months of the IPO. Missing numbers in the Thomson Reuters new issues database are found by direct inspection of prospectuses on EDGAR, information from Dealogic for IPOs after 1989, Howard and Co.'s *Going Public: The IPO Reporter* from 1980-1985, and the Graeme Howard-Todd Huxster collection of IPO prospectuses for 1975-1996. Some foreign company IPOs from 1997-2001 that did not use ADRs but did not file electronically, and therefore do not have a prospectus available on EDGAR, were also accessed from the Graeme Howard-Todd Huxster database. Additional information was collected from microfiches at Stanford's GSB library. Tech stocks are defined as internet-related stocks plus other technology stocks including telecom, but not including biotech. Loughran and Ritter (2004) list the SIC codes in their appendix 3 and sources of founding dates in appendix 1, and I have slightly updated the classifications.

Growth capital-backed IPOs are IPOs with a financial sponsor that, unlike a buyout-sponsored deal, typically owns far less than 90% of the equity prior to the IPO. Furthermore, many growth capital-backed IPOs have debt in their capital structure. The main criteria for classifying a financial sponsor as growth capital rather than venture capital is whether the company is investing in tangible assets (e.g, stores or hospitals) or intangibles (e.g., R&D); this is highly correlated with the industry of the company: restaurants, retail operations such as clothing store chains, healthcare operations (doctors' offices and dental offices), and retirement homes are generally classified as growth capital-backed. Many growth capital-backed IPOs are involved in rollups of a fragmented industry, where the financial sponsor has provided capital to make acquisitions to consolidate a fragmented industry, such as funeral homes. If a company is growing via acquisitions, it would generally be categorized as growth capital-backed rather than venture-backed. Jerry Cao has provided information on which IPOs are buyout-backed. 301 growth capital-backed IPOs are not classified as VC-backed in this table.

On February 24, one IPO from 1993 and 1996 each were deleted (reclassified as a trust and ADR), and one from 2013 was added. The other columns have not been updated.

(table on the next page)

Year	Number of IPOs	Financial Sponsor-backed		VC-backed		Growth Capital-backed		Buyout-backed	
		No.	%	No.	%	No.	%	No.	%
1980	71	24	34%	22	31%	1	1%	1	1%
1981	192	55	29%	53	27%	1	1%	1	1%
1982	77	23	30%	20	26%	1	1%	2	3%
1983	451	127	28%	107	24%	11	2%	9	2%
1984	173	48	28%	38	22%	7	4%	3	2%
1985	187	56	30%	30	16%	9	5%	17	9%
1986	392	121	31%	72	18%	7	2%	42	11%
1987	284	109	38%	63	22%	4	1%	42	15%
1988	102	41	40%	28	27%	5	5%	8	8%
1989	113	50	44%	30	27%	10	9%	10	9%
1990	110	56	51%	39	35%	3	3%	14	13%
1991	286	188	66%	97	34%	19	7%	72	25%
1992	412	236	57%	122	30%	16	4%	98	24%
1993	509	250	49%	165	32%	6	1%	79	15%
1994	403	152	38%	118	29%	12	3%	22	5%
1995	460	217	47%	161	35%	27	6%	29	6%
1996	675	297	44%	224	33%	39	6%	34	5%
1997	474	169	36%	104	22%	29	6%	36	8%
1998	282	107	38%	61	22%	15	5%	31	11%
1999	477	303	64%	259	54%	12	3%	32	7%
2000	381	271	71%	238	62%	2	1%	31	8%
2001	79	53	67%	22	28%	10	13%	21	27%
2002	66	43	65%	11	17%	12	18%	20	30%
2003	63	45	71%	20	32%	4	6%	21	33%
2004	173	122	71%	73	42%	5	3%	44	25%
2005	160	112	70%	41	26%	4	2%	67	42%
2006	157	121	77%	52	33%	1	1%	68	43%
2007	160	100	62%	62	39%	6	4%	32	20%
2008	21	12	57%	7	33%	2	10%	3	14%
2009	41	30	73%	12	29%	0	0%	18	44%
2010	92	67	73%	38	39%	2	2%	27	29%
2011	81	62	77%	40	49%	4	5%	18	22%
2012	94	75	80%	45	48%	3	3%	27	29%
2013	157	111	71%	64	41%	12	8%	35	22%
1980-1989	2,043	654	32%	463	23%	56	3%	135	7%
1990-1994	1,720	882	51%	541	31%	56	3%	285	17%
1995-1998	1,891	790	42%	550	29%	110	6%	130	7%
1999-2000	858	574	67%	497	58%	14	2%	63	7%
2001-2013	1,344	953	71%	487	36%	65	5%	401	30%
1980-2013	7,855	3,853	49%	2,538	32%	301	4%	1,014	13%

Table 9

Fraction of IPOs with Negative Earnings, 1980-2013

IPOs with an offer price below \$5.00 per share, unit offers, ADRs, closed-end funds, partnerships, acquisition companies, REITs, bank and S&L IPOs, and firms not listed on CRSP within six months of the offer date are excluded. When available, we use the earnings per share for the most recent twelve months (commonly known as LTM for last twelve months) prior to going public. When a merger is involved, we use the pro forma numbers (as if the merger had already occurred). When unavailable, we use the most recent fiscal year EPS numbers. Missing numbers are supplemented by direct inspection of prospectuses on EDGAR, EPS information from Dealogic for IPOs after 1991, and Howard and Co.'s *Going Public: The IPO Reporter* from 1980-1995. Remaining missing numbers have been found in the Graeme Howard-Todd Huxster collection of IPO prospectuses and the Stanford Business School microfiche collection of prospectuses from the 1980s. Tech stocks are defined as internet-related stocks plus other technology stocks, not including biotech. Loughran and Ritter (2004) list the SIC codes in their appendix 3 and sources of founding dates in appendix 1.

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Year	Number of IPOs	No. of IPOs with missing EPS	Percentage Tech Stocks	Percentage of IPOs with EPS<0	Mean First-day Returns	
					EPS<0	EPS≥0
1980	74	0	32%	26%	6.3%	16.2%
1981	196	0	37%	18%	8.6%	5.7%
1982	78	0	54%	21%	5.9%	12.1%
1983	451	0	38%	22%	14.0%	8.8%
1984	173	0	29%	17%	10.5%	2.2%
1985	187	0	20%	15%	5.2%	6.6%
1986	392	0	20%	21%	8.7%	5.5%
1987	284	0	20%	17%	5.0%	5.8%
1988	102	0	27%	16%	7.0%	5.4%
1989	113	0	31%	20%	9.3%	7.9%
1990	110	0	28%	13%	11.1%	10.8%
1991	286	0	24%	24%	9.4%	12.7%
1992	412	0	27%	29%	10.2%	10.3%
1993	510	0	25%	29%	12.5%	12.8%
1994	403	0	29%	22%	8.0%	10.3%
1995	461	0	44%	28%	21.6%	21.0%
1996	676	0	41%	41%	16.8%	17.6%
1997	474	0	36%	28%	12.0%	14.8%
1998	282	0	40%	38%	34.3%	14.2%
1999	477	0	77%	75%	81.3%	39.5%
2000	381	0	69%	80%	59.4%	43.7%
2001	79	0	29%	49%	15.3%	13.1%
2002	66	0	30%	45%	5.6%	12.0%
2003	63	0	29%	44%	10.0%	13.2%
2004	174	0	36%	50%	11.9%	12.7%
2005	160	0	29%	45%	7.3%	12.6%
2006	157	0	31%	40%	7.3%	15.4%
2007	160	0	47%	55%	13.8%	14.1%
2008	21	0	29%	43%	1.8%	9.8%
2009	41	0	32%	29%	12.8%	8.6%
2010	92	0	37%	41%	6.5%	11.1%
2011	81	0	44%	57%	10.5%	17.1%
2012	94	0	43%	46%	22.7%	13.3%
2013	156	0	28%	64%	20.4%	22.7%
1980-1989	2,050	0	29%	19%	9.2%	6.8%
1990-1994	1,721	0	27%	25%	10.4%	11.4%
1995-1998	1,893	0	40%	34%	19.7%	17.3%
1999-2000	858	0	73%	77%	71.2%	41.1%
2001-2013	1,344	0	35%	49%	12.5%	13.9%
1980-2013	7,866	0	37%	35%	27.3%	12.8%

Figure 2: See Table 9 for details.

Fraction of IPOs with Negative EPS and Fraction of Tech Stocks, 1980-2013

