

Initial Public Offerings: Underpricing

Jay R. Ritter
Cordell Professor of Finance
University of Florida
352.846-2837 *voice*

<https://site.warrington.ufl.edu/ritter/>

June 13, 2018

Index

Table 1: Mean First-day Returns and Money Left on the Table, 1980-2018

Table 1a: Also including the post-issue aggregate market value, 1980-2018

Table 5: Number of U. S. IPOs with an offer price of greater than \$5.00 that doubled (offer to close) in price on the first day of trading, 1997-2018

Table 6: Number of Initial Public Offerings, First-Day Return, and Revisions from the File Price Range by Cohort Year, 1990-2018

Table 7: Percentage of IPOs Relative to File Price Range, 1980-2018

Table 8: Number of Offerings, Average First-day Returns, and Gross Proceeds of Initial Public Offerings in 1960-2018, by Year

Table 9: Fraction of IPOs with Negative Earnings, 1980-2018

Figure 4: Average First-day Return and Aggregate Amount of Money Left on the Table, 1990-2018

Figure 5: Number of IPOs and Average First-day Return, 1980-2018

Table 1: Mean First-day Returns and Money Left on the Table, 1980-2018

The sample is IPOs with an offer price of at least \$5.00, excluding ADRs, unit offers, closed-end funds, REITs, natural resource limited partnerships, small best efforts offers, banks and S&Ls, and stocks not listed on CRSP (CRSP includes Amex, NYSE, and NASDAQ stocks). Proceeds exclude overallotment options, but include the global offering size. The amount of money left on the table is defined as the closing market price on the first-day of trading minus the offer price, multiplied by the shares offered.

Year	Number of IPOs	Mean First-day Return		Aggregate Amount Left on the Table	Aggregate Proceeds
		Equal-weighted	Proceeds-weighted		
1980	71	14.3%	20.0%	\$0.18 billion	\$0.91 billion
1981	193	5.9%	5.7%	\$0.13 billion	\$2.31 billion
1982	77	11.0%	13.3%	\$0.13 billion	\$1.00 billion
1983	451	9.9%	9.4%	\$0.84 billion	\$8.89 billion
1984	171	3.7%	2.5%	\$0.05 billion	\$2.02 billion
1985	186	6.4%	5.6%	\$0.23 billion	\$4.09 billion
1986	393	6.1%	5.1%	\$0.68 billion	\$13.40 billion
1987	285	5.6%	5.7%	\$0.66 billion	\$11.68 billion
1988	105	5.5%	3.4%	\$0.13 billion	\$3.88 billion
1989	116	8.0%	4.7%	\$0.27 billion	\$5.81 billion
1990	110	10.8%	8.1%	\$0.34 billion	\$4.27 billion
1991	286	11.9%	9.7%	\$1.50 billion	\$15.39 billion
1992	412	10.3%	8.0%	\$1.82 billion	\$22.69 billion
1993	510	12.7%	11.2%	\$3.52 billion	\$31.44 billion
1994	402	9.6%	8.3%	\$1.43 billion	\$17.17 billion
1995	461	21.2%	17.5%	\$4.90 billion	\$27.95 billion
1996	677	17.2%	16.1%	\$6.76 billion	\$42.05 billion
1997	474	14.0%	14.4%	\$4.56 billion	\$31.76 billion
1998	281	21.9%	15.6%	\$5.25 billion	\$33.65 billion
1999	476	71.2%	57.4%	\$37.11 billion	\$64.67 billion
2000	380	56.4%	46.0%	\$29.81 billion	\$64.80 billion
2001	79	14.2%	8.7%	\$2.97 billion	\$34.24 billion
2002	66	9.1%	5.1%	\$1.13 billion	\$22.03 billion
2003	63	11.7%	10.4%	\$1.00 billion	\$9.54 billion
2004	173	12.3%	12.4%	\$3.86 billion	\$31.19 billion
2005	159	10.3%	9.3%	\$2.64 billion	\$28.23 billion
2006	157	12.1%	13.0%	\$3.95 billion	\$30.48 billion
2007	159	14.0%	13.9%	\$4.95 billion	\$35.66 billion
2008	21	5.7%	24.8%	\$5.63 billion	\$22.76 billion
2009	41	9.8%	11.1%	\$1.46 billion	\$13.17 billion
2010	91	9.4%	6.2%	\$1.84 billion	\$29.82 billion
2011	81	13.9%	13.0%	\$3.51 billion	\$26.97 billion
2012	93	17.8%	8.9%	\$2.77 billion	\$31.11 billion
2013	157	21.1%	20.5%	\$7.94 billion	\$38.75 billion
2014	206	15.5%	12.8%	\$5.40 billion	\$42.20 billion
2015	118	19.2%	18.9%	\$4.16 billion	\$22.00 billion
2016	75	14.6%	14.4%	\$1.80 billion	\$12.52 billion
2017	107	13.0%	16.0%	\$3.69 billion	\$22.99 billion
2018	134	18.6%	19.1%	\$6.39 billion	\$33.45 billion
1980-1989	2,048	7.2%	6.1%	\$3.30 billion	\$53.99 billion
1990-1998	3,613	14.8%	13.3%	\$30.07 billion	\$226.38 billion
1999-2000	856	64.6%	51.7%	\$66.92 billion	\$129.47 billion
2001-2018	1,980	14.3%	13.4%	\$65.08 billion	\$487.10 billion
1980-2018	8,497	17.9%	18.4%	\$165.37 billion	\$896.95 billion

Table 1a (updated Dec. 31, 2018)**Mean First-day Returns and Money Left on the Table, 1980-2018**

The market value includes the market value of all share classes using the post-issue no. of shares.

Year	Number of IPOs	Mean First-day Return		Aggregate Amount Left on the Table	Aggregate Proceeds	Market value at 1 st closing market price
		Equal-weighted	Proceeds-weighted			
1980	71	14.3%	20.0%	\$0.18 billion	\$0.91 billion	\$5.87 billion
1981	193	5.9%	5.7%	\$0.13 billion	\$2.31 billion	\$10.74 billion
1982	77	11.0%	13.3%	\$0.13 billion	\$1.00 billion	\$5.11 billion
1983	451	9.9%	9.4%	\$0.84 billion	\$8.89 billion	\$41.35 billion
1984	171	3.7%	2.5%	\$0.05 billion	\$2.02 billion	\$8.76 billion
1985	186	6.4%	5.3%	\$0.23 billion	\$4.09 billion	\$15.18 billion
1986	393	6.1%	5.1%	\$0.68 billion	\$13.40 billion	\$46.77 billion
1987	285	5.6%	5.7%	\$0.66 billion	\$11.68 billion	\$45.59 billion
1988	105	5.5%	3.4%	\$0.13 billion	\$3.88 billion	\$21.65 billion
1989	116	8.0%	4.7%	\$0.27 billion	\$5.81 billion	\$22.37 billion
1990	110	10.8%	8.1%	\$0.34 billion	\$4.27 billion	\$17.79 billion
1991	286	11.9%	9.7%	\$1.50 billion	\$15.35 billion	\$52.53 billion
1992	412	10.3%	8.0%	\$1.82 billion	\$22.69 billion	\$74.35 billion
1993	510	12.7%	11.2%	\$3.52 billion	\$31.44 billion	\$126 billion
1994	402	9.6%	8.3%	\$1.43 billion	\$17.19 billion	\$63 billion
1995	461	21.2%	17.5%	\$4.90 billion	\$27.95 billion	\$127 billion
1996	677	17.2%	16.1%	\$6.76 billion	\$42.05 billion	\$215 billion
1997	474	14.0%	14.4%	\$4.56 billion	\$31.76 billion	\$139 billion
1998	281	21.9%	15.6%	\$5.25 billion	\$33.65 billion	\$164 billion
1999	476	71.2%	57.4%	\$37.11 billion	\$64.67 billion	\$651 billion
2000	380	56.4%	46.0%	\$29.81 billion	\$64.80 billion	\$643 billion
2001	79	14.2%	8.7%	\$2.97 billion	\$34.24 billion	\$176 billion
2002	66	9.1%	5.1%	\$1.13 billion	\$22.03 billion	\$84 billion
2003	63	11.7%	10.4%	\$9.96 billion	\$9.54 billion	\$40 billion
2004	173	12.3%	12.4%	\$3.86 billion	\$31.19 billion	\$148 billion
2005	159	10.3%	9.3%	\$2.64 billion	\$28.23 billion	\$105 billion
2006	157	12.1%	13.0%	\$3.95 billion	\$30.48 billion	\$135 billion
2007	159	14.0%	13.9%	\$4.95 billion	\$35.66 billion	\$212 billion
2008	21	5.7%	24.8%	\$5.63 billion	\$22.76 billion	\$63 billion
2009	41	9.8%	11.1%	\$1.46 billion	\$13.17 billion	\$59 billion
2010	91	9.4%	6.2%	\$1.84 billion	\$29.82 billion	\$113 billion
2011	81	13.3%	13.0%	\$3.51 billion	\$26.97 billion	\$158 billion
2012	93	17.8%	8.9%	\$2.77 billion	\$31.11 billion	\$181 billion
2013	157	21.1%	20.5%	\$7.94 billion	\$38.75 billion	\$257 billion
2014	206	15.5%	12.8%	\$5.40 billion	\$42.20 billion	\$238 billion
2015	118	19.2%	18.7%	\$4.16 billion	\$22.00 billion	\$508 billion
2016	75	14.6%	14.4%	\$1.80 billion	\$12.52 billion	\$79 billion
2017	107	13.0%	15.0%	\$3.69 billion	\$22.99 billion	\$162 billion
2018	134	18.9%	19.2%	\$6.41 billion	\$33.30 billion	\$225 billion
1980-1989	2,048	7.2%	6.1%	\$3.30 billion	\$53.99 billion	\$223 billion
1990-1998	3,613	14.8%	13.3%	\$30.07 billion	\$226.38 billion	\$983 billion
1999-2000	856	64.6%	51.7%	\$66.92 billion	\$129.47 billion	\$1,294 billion
2001-2018	1,980	14.3%	13.4%	\$65.08 billion	\$486.95 billion	\$2,586 billion
1980-2018	8,497	17.9%	18.4%	\$165.37 billion	\$896.95 billion	\$5,087 billion

Table 5
Number of U. S. IPOs (excluding ADRs) with an offer price of greater than \$5.00
that doubled (offer to close) in price on the first day of trading, 1997-2018

A listing of each IPO since 1980 that doubled on the first day can be found elsewhere on Jay Ritter's IPO Data page.

Quarter	Number	Quarter	Number
1997, first	0	2007, first	0
1997, second	2	2007, second	0
1997, third	0	2007, third	0
1997, fourth	0	2007, fourth	0
1998, first	0	2008, first	0
1998, second	2	2008, second	0
1998, third	3	2008, third	0
1998, fourth	7	2008, fourth	0
1999, first	19	2009, first	0
1999, second	24	2009, second	0
1999, third	27	2009, third	0
1999, fourth	45	2009, fourth	0
2000, first	48	2010, first	0
2000, second	9	2010, second	0
2000, third	20	2010, third	0
2000, fourth	(Transmeta) 1	2010, fourth	(Youku.com ADR) 0
2001, first	0	2011, first	(Qihoo 360 ADR) 0
2001, second	0	2011, second	(LinkedIn) 1
2001, third	0	2011, third	(China Mobile Games ADR) 0
2001, fourth	0	2011, fourth	0
2002, first	0	2012, first	0
2002, second	0	2012, second	(Splunk) 1
2002, third	0	2012, third	0
2002, fourth	0	2012, fourth	0
2003, first	0	2013, first	0
2003, second	0	2013, second	(Noodles & Co.) 1
2003, third	0	2013, third	(Sprout, Benefitfocus) 2
2003, fourth	0	2013, fourth	(Potbelly, Container Store) 2
2004, first	0	2014, first	4
2004, second	(Jed Oil) 1	2014, second	0
2004, third	0	2014, third	1 (ReWalk Robotics) 1
2004, fourth	0	2014, fourth	1 (Habit Restaurants) 1
2005, first	0	2015, first	(Spark Therapeutics, Shake Shack) 2
2005, second	0	2015, second	(Aduro Biotech, Seres Therapeutics) 2
2005, third	(Baidu.com is ADR) 0	2015, third	(Global Blood Therapeutics) 1
2005, fourth	0	2015, fourth	0
2006, first	(Chipotle Mexican) 1	2016, first	0
2006, second	0	2016, second	0
2006, third	0	2016, third	1 (Nutanix)
2006, fourth	(Nymex Holdings) 1	2016, fourth	0

Table 5 (continued, as of December 21, 2018)

**Number of U. S. IPOs (excluding ADRs) with an offer price of greater than \$5.00
that doubled (offer to close) in price on the first day of trading, 1997-2018**

The count does not include ADRs, penny stocks, and units.

2017, first	0	2018, first	(Zscalar) 1
2017, second	0	2018, second	0
2017, third	0	2018, third	0
2017, fourth	(Reto Eco-Solutions) 1	2018, fourth	0

Table 6 (updated Dec. 31, 2018)

Number of Initial Public Offerings, First-Day Return, and Revisions from the File Price Range by Cohort Year, 1990-2018

Cohort Year	Number of IPOs	Percentage First-day Return	Percentage of IPOs with OP < Lo	Percentage of IPOs in the Middle	Percentage of IPOs with OP > Hi
1990	97	9.4	24.7	52.6	22.7
1991	262	11.2	19.8	55.3	24.4
1992	363	9.9	38.0	40.5	21.5
1993	461	11.6	21.3	54.0	24.7
1994	334	8.4	37.7	49.7	12.6
1995	390	19.9	19.7	45.4	34.9
1996	600	15.9	25.0	50.2	24.8
1997	421	13.8	29.9	45.8	24.2
1998	285	21.3	27.4	50.2	22.5
1999	466	70.4	14.8	37.3	47.9
2000	371	57.1	22.1	39.4	38.5
2001	77	14.3	26.0	57.1	16.9
2002	67	8.7	32.8	53.7	13.4
2003	65	12.4	15.4	55.4	29.2
2004	172	12.3	37.2	41.9	20.9
2005	161	10.1	34.2	42.9	23.0
2006	155	11.7	39.4	40.6	20.0
2007	155	14.5	32.3	41.3	26.5
2008	21	5.7	47.6	38.1	14.3
2009	43	10.6	32.6	41.9	25.6
2010	99	9.3	47.5	40.4	12.1
2011	81	14.1	37.0	30.9	32.1
2012	103	17.6	40.8	34.9	24.3
2013	160	20.8	30.0	41.9	28.1
2014	221	14.4	43.4	39.8	16.7
2015	123	18.9	35.8	38.2	26.0
2016	75	14.6	33.3	57.3	9.3
2017	111	11.8	23.4	60.4	16.2
2018	135	18.6	17.0	61.5	21.5
1990-2018	6,074	20.9	28.1	46.1	25.8

Banks and S&Ls are included in this table, which excludes IPOs with a midpoint of the original file price range of less than \$8.00, as well as unit offers, small best efforts offers, ADRs, closed-end funds, REITs, partnerships, acquisition companies (SIC=6779), and stocks not listed on CRSP (CRSP includes firms listed on the NYSE, Amex (now NYSE MKT) and NYSE Arca, and NASDAQ). If a \$5.00 offer price screen was used instead of the \$8.00 midpoint screen, the sample size would increase by, for example, 20 IPOs in 1999 and 13 in 2000. Lo and Hi are the minimum and maximum of the original file price range. Because the average first-day return is lower on the firms that are added than on those that are deleted, the 10.1% average first-day return in 2005 is less than the 10.3% reported in other tables, such as Table 1.

Table 7

Percentage of IPOs relative to file price range:

	Below	Within	Above
1980-1989	30%	57%	13%
1990-1998	27%	49%	24%
1999-2000	18%	38%	44%
2001-2018	34%	45%	21%
1980-2018	28%	46%	26%

Average first-day returns relative to file price range:

	Below	Within	Above
1980-1989	0%	6%	20%
1990-1998	4%	11%	31%
1999-2000	8%	26%	122%
2001-2018	4%	11%	37%
1980-2018	3%	11%	50%

The sample used in this table is described in Table 6.

Table 8 (updated Dec. 31, 2018)

**Number of Offerings, Average First-day Returns, and
Gross Proceeds of Initial Public Offerings in 1960-2018**

Data from 1960-1974 is taken from Table 1 of Roger Ibbotson, Jody Sindelar, and Jay R. Ritter's 1994 *Journal of Applied Corporate Finance* article "The Market's Problems with the Pricing of Initial Public Offerings" Vol. 7, No. 1 (Spring 1994), pp. 66-74. Data from 1975-2017 are compiled by Jay R. Ritter using Thomson Financial, Dealogic, and other sources. The 1975-1993 numbers are different from those reported in the 1994 *JACF* article because the published article included IPOs that did not qualify for listing on Nasdaq, the Amex, or NYSE (mainly penny stocks). Unlike other tables, **bank and S&L IPOs are included in the counts in this table.**

Year	Number of Offerings¹	Average First-day Return²	Gross Proceeds, \$ Millions³
1960	269	17.8%	553
1961	435	34.1%	1,243
1962	298	-1.6%	431
1963	83	3.9%	246
1964	97	5.3%	380
1965	146	12.7%	409
1966	85	7.1%	275
1967	100	37.7%	641
1968	368	55.9%	1,205
1969	780	12.5%	2,605
1970	358	-0.7%	780
1971	391	21.2%	1,655
1972	562	7.5%	2,724
1973	105	-17.8%	330
1974	9	-7.0%	51
1975	12	-0.2%	261
1976	26	1.9%	215
1977	15	3.6%	128
1978	19	13.3%	197
1979	39	8.9%	309
1980	71	14.3%	905
1981	193	5.9%	2,313
1982	79	10.7%	1,012
1983	521	9.0%	11,306
1984	213	3.0%	2,566
1985	217	6.6%	4,749
1986	478	6.1%	15,489
1987	337	5.7%	12,568
1988	132	5.3%	4,089
1989	124	7.7%	5,886

1990	116	10.4%	4,334
1991	293	11.8%	16,464
1992	416	10.2%	22,750
1993	527	12.7%	31,654
1994	410	9.6%	17,418
1995	464	21.1%	28,017
1996	689	17.1%	42,428
1997	485	14.0%	32,547
1998	308	20.6%	34,411
1999	484	70.0%	64,816
2000	382	56.1%	64,931
2001	79	14.2%	34,241
2002	70	8.6%	22,136
2003	68	11.9%	10,075
2004	181	12.4%	31,663
2005	167	10.0%	28,578
2006	162	12.0%	30,648
2007	160	14.0%	35,704
2008	21	5.7%	22,762
2009	42	10.6%	13,307
2010	100	9.2%	30,708
2011	82	13.8%	27,750
2012	105	17.3%	32,065
2013	162	20.9%	39,093
2014	225	15.0%	46,967
2015	122	18.7%	22,296
2016	78	14.2%	13,234
2017	119	12.5%	24,044
2018	143	17.8%	34,027
1960-69	2,661	21.2%	7,988
1970-79	1,536	7.1%	6,663
1980-89	2,365	6.9%	60,881
1990-99	4,194	21.0%	294,839
2000-18	2,471	20.5%	564,229
1960-2018	13,227	16.8%	902,903

¹ Beginning in 1975, the number of offerings excludes IPOs with an offer price of less than \$5.00, ADRs, small best efforts offers, units, Regulation A offers (small issues, raising less than \$1.5 million during the 1980s and \$5 million until 2012), real estate investment trusts (REITs), natural resource limited partnerships, and closed-end funds. Banks and S&L IPOs are included. From 2012 and later, Regulation A offerings (issues raising up to \$50 million are eligible) are included.

² First-day returns are computed as the percentage return from the offering price to the first closing market price.

³ Gross proceeds exclude overallotment options but include the international tranche, if any. No adjustments for inflation have been made.

Table 9 (updated December 19, 2018)**Fraction of IPOs with Negative Earnings, 1980-2018**

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, I 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). I am not completely consistent in the use of earnings before or after extraordinary items. Some extraordinary items are associated with the IPO, including gains or losses on conversion of convertible securities at the time of the IPO, or writeups or writedowns associated with mergers. I usually use the before extraordinary items EPS if the one-time charges are associated with the IPO. When the trailing twelve months EPS number is unavailable, I use the most recent fiscal year EPS number. 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. Don Patton of UC-Davis has tracked down a couple of remaining missing numbers. 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.

Year	Number of IPOs	No. with missing EPS	Percentage Tech Stocks	Percentage of IPOs with EPS<0	Mean First-day Returns	
					EPS<0	EPS≥0
1980-1989	2,048	1	29%	19%	9.2%	6.8%
1990-1998	3,613	0	34%	32%	15.9%	14.3%
1999-2000	856	0	74%	78%	71.1%	41.6%
2001-2018	1,980	0	32%	57%	14.4%	14.1%
1980-2018	8,496	1	36%	39%	25.6%	12.8%

(year-by-year on the next page)

Year	Number of IPOs	No. with missing EPS	Percentage Tech Stocks	Percentage of IPOs with EPS<0	Mean First-day Returns	
					EPS<0	EPS≥0
1980	71	0	31%	24%	7.1%	16.5%
1981	193	0	38%	17%	8.0%	5.4%
1982	77	0	55%	19%	6.4%	12.1%
1983	451	0	38%	22%	14.0%	8.8%
1984	171	0	29%	16%	11.1%	2.2%
1985	186	0	20%	15%	5.2%	6.6%
1986	393	1	20%	21%	8.8%	5.4%
1987	285	0	20%	17%	5.1%	5.8%
1988	105	0	27%	18%	7.0%	5.4%
1989	116	0	30%	22%	9.4%	7.8%
1990	110	0	28%	15%	9.5%	11.0%
1991	286	0	24%	24%	9.4%	12.7%
1992	412	0	27%	29%	10.3%	10.3%
1993	510	0	25%	28%	12.6%	12.8%
1994	402	0	29%	26%	8.0%	10.2%
1995	461	0	44%	30%	21.8%	21.0%
1996	677	0	40%	41%	16.7%	17.6%
1997	474	0	36%	36%	12.6%	14.9%
1998	281	0	40%	46%	32.2%	13.2%
1999	476	0	78%	76%	81.0%	40.2%
2000	380	0	68%	81%	59.4%	43.8%
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	173	0	35%	50%	11.9%	12.7%
2005	159	0	28%	45%	7.3%	12.8%
2006	157	0	31%	40%	7.3%	15.4%
2007	159	0	47%	55%	13.8%	14.3%
2008	21	0	29%	43%	1.8%	8.7%
2009	41	0	34%	29%	12.8%	8.6%
2010	91	0	36%	41%	6.9%	11.1%
2011	81	0	44%	57%	11.0%	17.7%
2012	93	0	42%	46%	22.4%	13.9%
2013	157	0	27%	64%	20.4%	22.5%
2014	206	0	26%	71%	17.1%	11.4%
2015	118	0	32%	70%	19.1%	19.6%
2016	75	0	28%	67%	13.2%	17.4%
2017	107	0	28%	76%	12.3%	15.4%
2018	134	0	29%	81%	20.6%	10.3%
1980-2018	8,497	1	36%	39%	25.6%	12.8%

Figure 4: See Table 1 for details.

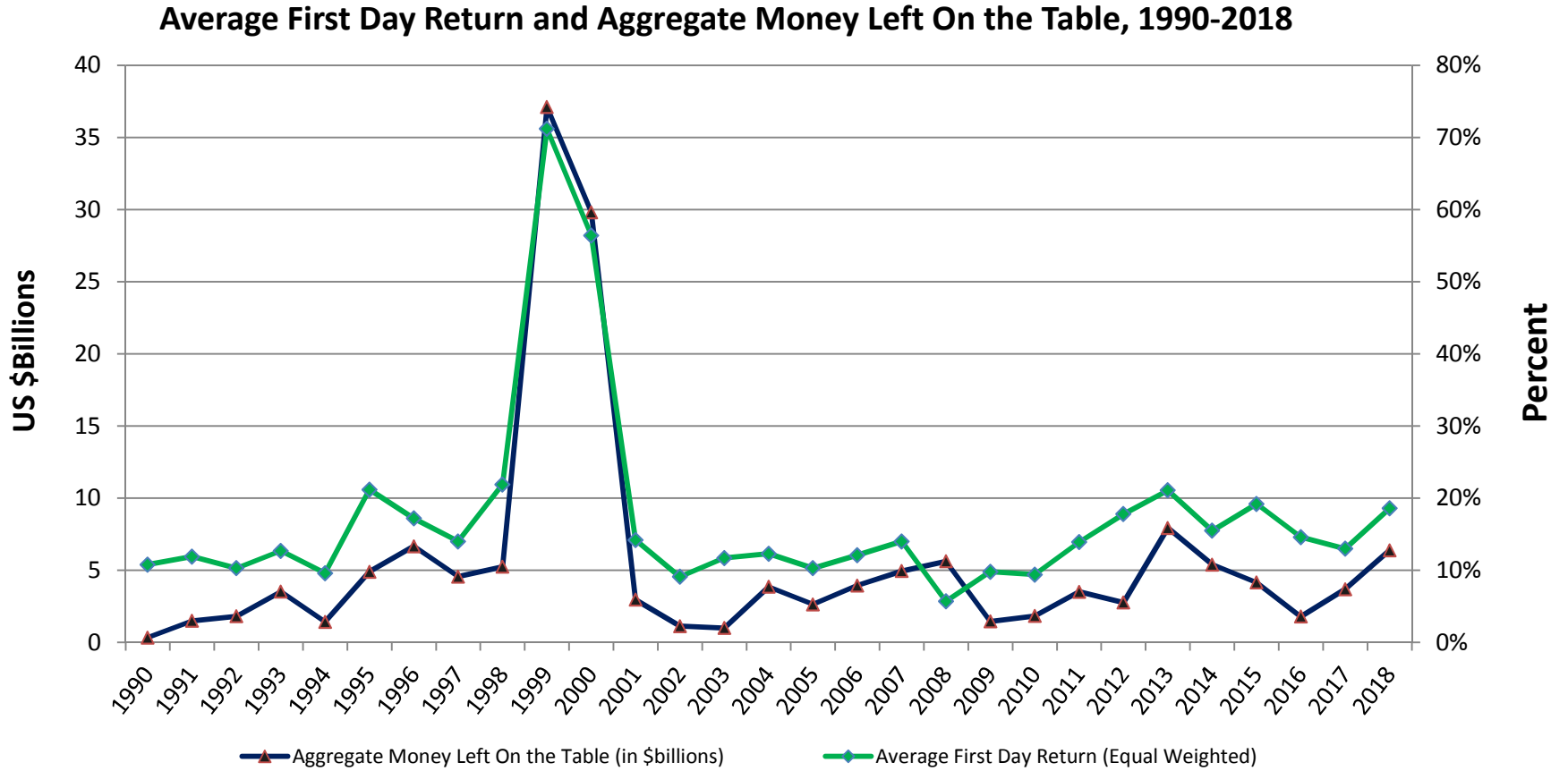


Figure 5. See Table 1 for details. A PowerPoint of this slide can be downloaded from elsewhere on Jay Ritter's IPO Data page.

Number of U.S. Offerings and Average First-day Return, 1980-2018

