Initial Public Offerings: Updated Statistics
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134 operating companies went public in the U.S. in 2018, excluding ADRs, natural resource limited partnerships and trusts, closed-end funds, REITs, SPACs, banks and S&Ls, unit offers, penny stocks (offer price of less than $5 per share), and stocks not listed on Nasdaq or the NYSE (including NYSE MKT LLC, the former American Stock Exchange). For 2016, I have included BATS Global Markets, which went public in April, but was listed on BATS rather than the NYSE or Nasdaq. In 2017, BATS was acquired by CBOE Holdings.

Of these 134 operating companies, 120 were from the U.S. A higher volume figure has been reported in many sources (239 counting all offerings), but the higher numbers typically include not only operating companies (mostly domestic), but also some companies that were already traded in other countries and are thus actually follow-on offerings, banks and S&Ls (7 offerings, most of which are mutual conversions with depositors buying the stock), oil & gas partnerships or unit trusts (1 offerings), ADRs (32 offerings), REITs (6 offerings), 44 special purpose acquisition companies (SPACs), 0 closed-end funds, other unit offerings (5 offerings), IPOs that do not trade on the NYSE (including NYSE MKT) or Nasdaq (0 offering), IPOs with an offer price below $5.00 (3 offering), and small best efforts deals (4 offerings). Some of the IPOs could be excluded from the 134 count for more than one reason. There are also several bulletin board-traded issues that I (and Dealogic) classify as follow-ons, and thus don’t count, but which Thomson-Reuters classifies as IPOs.

**Note:** Many of these tables have been updated to include 2018 numbers with the assistance of Jing Lu. Some of the tables may have slightly different counts for the number of IPOs in some years. These inconsistencies are because I periodically add or delete a company that had been misclassified or find some missing data. I do not immediately update every table. I rely on data from Thomson Reuters (SDC) and Dealogic, but also use information from IPOscoop.com and Renaissance Capital and the prospectuses, and other sources. For IPOs from June 1996 and later, the prospectuses (S.E.C. form 424B) are available on EDGAR. For IPOs from 1975-1996 (the pre-EDGAR days), I have most of the original paper prospectuses courtesy of Graeme Howard and Todd Huxster. For foreign IPOs from 1996-2000, the S.E.C. did not require electronic filing, so they are not available on EDGAR, but I have the paper copies for many of them. In November 2013 I stopped at the Stanford Business School library, which has a microfiche collection of prospectuses of deals from the 1980s, and filled in the missing numbers for pre-IPO sales, earnings per share, and founding dates for a handful of “problem children” for which I did not have the numbers. The tables reflect the fact that I now have complete information on these variables for all but one of the 8,497 IPOs from 1980-2018.

In almost all of my tables, I use a more conservative definition of what is an IPO than most other data providers. Partly, the definition that is appropriate depends upon what one is focusing on. From an underwriter’s point of view, anything that generates fees is relevant, including closed-end funds, REITs, and SPACs. I exclude these, as well as penny stocks, banks and S&Ls (mainly conversions of mutual to stock companies), ADRs, natural resource LPs, unit offers, penny stocks, small best efforts deals, and stocks that are not listed on the NYSE (including NYSE MKT and its predecessor, the Amex) or Nasdaq. I exclude some of these categories (such as LPS) partly because it is difficult to determine the founding date of the underlying assets, and I do not like to have a different number of firms in different tables. Another motivation is that I am focusing on operating companies that potentially create jobs.
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.

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<td>1980-1989</td>
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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
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1980-2018 8,497 17.9% 18.4% $165.37 billion $896.95 billion
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<td>$5.40 billion</td>
<td>$42.20 billion</td>
</tr>
<tr>
<td>2015</td>
<td>118</td>
<td>19.2%</td>
<td>18.7%</td>
<td>$4.16 billion</td>
<td>$22.00 billion</td>
</tr>
<tr>
<td>2016</td>
<td>75</td>
<td>14.6%</td>
<td>14.4%</td>
<td>$1.80 billion</td>
<td>$12.52 billion</td>
</tr>
<tr>
<td>2017</td>
<td>107</td>
<td>13.0%</td>
<td>15.0%</td>
<td>$3.69 billion</td>
<td>$22.99 billion</td>
</tr>
<tr>
<td>2018</td>
<td>134</td>
<td>18.9%</td>
<td>19.2%</td>
<td>$6.41 billion</td>
<td>$33.30 billion</td>
</tr>
<tr>
<td>1980-1989</td>
<td>2,048</td>
<td>7.2%</td>
<td>6.1%</td>
<td>$3.30 billion</td>
<td>$53.99 billion</td>
</tr>
<tr>
<td>1990-1998</td>
<td>3,613</td>
<td>14.8%</td>
<td>13.3%</td>
<td>$30.07 billion</td>
<td>$226.38 billion</td>
</tr>
<tr>
<td>1999-2000</td>
<td>856</td>
<td>64.6%</td>
<td>51.7%</td>
<td>$66.92 billion</td>
<td>$129.47 billion</td>
</tr>
<tr>
<td>2001-2018</td>
<td>1,980</td>
<td>14.3%</td>
<td>13.4%</td>
<td>$65.08 billion</td>
<td>$486.95 billion</td>
</tr>
</tbody>
</table>

| 1980-2018 | 8,497 | 17.9% | 18.4% | $165.37 billion | $896.95 billion | $5,087 billion |
Table 2 (updated Dec. 31, 2018)

Mean First-day Returns, Categorized by Sales, for IPOs from 1980-2018

Sales, measured in millions, are for the last twelve months prior to going public. All sales have been converted into dollars of 2003 purchasing power, using the Consumers Price Index. From 2003 to 2017, the CPI has increased by 33.6%, so $10 million in 2003 is equivalent to $13.36 million in 2017. There are 8,497 IPOs, after excluding IPOs with an offer price of less than $5.00 per share, units, REITs, SPACs, ADRs, closed-end funds, banks and S&Ls, small best efforts offers, firms not listed on CRSP within six months of the offering, and natural resource limited partnerships. Sales are from Thomson Financial’s SDC, Dealogic, EDGAR, and the Graeme Howard-Todd Huxster collection of pre-EDGAR prospectuses. The average first-day return is 17.9%.

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0≤sales&lt;$10m</td>
<td></td>
<td>10.3%</td>
<td>425</td>
<td>17.2%</td>
<td>741</td>
<td>68.9%</td>
<td>331</td>
<td>10.0%</td>
<td>429</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10m≤sales&lt;$20m</td>
<td></td>
<td>8.6%</td>
<td>242</td>
<td>18.5%</td>
<td>393</td>
<td>81.4%</td>
<td>138</td>
<td>13.5%</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$20m≤sales&lt;$50m</td>
<td></td>
<td>7.8%</td>
<td>501</td>
<td>18.8%</td>
<td>789</td>
<td>75.5%</td>
<td>154</td>
<td>15.7%</td>
<td>228</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$50m≤sales&lt;$100m</td>
<td></td>
<td>6.3%</td>
<td>356</td>
<td>12.8%</td>
<td>590</td>
<td>62.2%</td>
<td>86</td>
<td>20.8%</td>
<td>293</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$100m≤sales&lt;$200m</td>
<td></td>
<td>5.1%</td>
<td>234</td>
<td>11.8%</td>
<td>454</td>
<td>35.8%</td>
<td>56</td>
<td>19.5%</td>
<td>259</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$200m≤sales</td>
<td></td>
<td>3.4%</td>
<td>290</td>
<td>8.7%</td>
<td>646</td>
<td>25.0%</td>
<td>91</td>
<td>11.9%</td>
<td>686</td>
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<td></td>
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<tr>
<td>All</td>
<td></td>
<td>7.2%</td>
<td>2,048</td>
<td>14.8%</td>
<td>3,613</td>
<td>64.6%</td>
<td>856</td>
<td>14.3%</td>
<td>1,980</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Turnover is calculated as the CRSP–reported first day volume divided by the number of shares issued (global issuance, excluding over allotment options). Nasdaq volume numbers are divided by 2 for 1983-January 2001, by 1.8 for the rest of 2001, and by 1.6 for 2002-2003 to make them comparable to Amex and NYSE volume. The four subperiods are 1983-1989, 1990-1998, 1999-2000, and 2001-2017. Returns are the first-day return, measured from the offer price to the closing market price. Closed-end funds, REITs, SPACs, unit offers, all IPOs by foreign firms, and bank and S&L IPOs are excluded. Table 3 reports the numbers that are graphed here.
Table 3 (updated May 14, 2018)
IPO Turnover Categorized by Decade and First-Day Return, 1983-2017

IPOs with an offer price below $5.00 per share, unit offers, closed-end funds, REITs, bank and S&L IPOs, SPACs, natural resource limited partnerships, all foreign companies, and those with missing volume numbers on CRSP (3 IPOs) are excluded. Turnover is defined as the maximum of the first three days’ CRSP trading volume divided by the number of shares issued (not including the overallotment option). The highest of these first three days is almost always the first day. For Nasdaq-listed IPOs, the trading volume is divided by 2 for January 1983-January 2001, by 1.8 for February 2001-December 2001, and by 1.6 for 2002-2003 to allow more meaningful comparisons with NYSE and Amex (now NYSE MKT)-listed IPOs. As explained in Appendix B of Gao and Ritter’s 2010 *Journal of Financial Economics* article “The Marketing of Seasoned Equity Offerings,” in 2001, Nasdaq changed its trade-reporting rules, and in 2002, institutions changed the way they reported Nasdaq trades. IPOs before 1983 are not included because CRSP has volume for very few of these stocks. For approximately 30 IPOs, the observation is deleted because the (adjusted) turnover is less than 1%.

For Republic Airways Holding (20040526), the CRSP volume of 131,952 is replaced with Bigcharts volume of 1,203,600; and for Nucryst Pharmaceuticals (20051222), the CRSP volume of 49,056 is replaced with Bigcharts volume of 714,500. For BATS Global Markets (20160415), which is listed on BATS, Yahoo Finance is the source of volume and long-run returns, and I have created a CRSP PERM of 12345 for it.

Panel A: Percentage of U.S. Operating Company IPOs with Turnover Greater Than 100%

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Number of IPOs</th>
<th>Percentage with Turnover&gt;100%</th>
<th>Percentage of IPOs on Nasdaq</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983-1989</td>
<td>1,655</td>
<td>0.0%</td>
<td>87%</td>
</tr>
<tr>
<td>1990-1998</td>
<td>3,407</td>
<td>1.5%</td>
<td>84%</td>
</tr>
<tr>
<td>1999-2000</td>
<td>786</td>
<td>21.9%</td>
<td>91%</td>
</tr>
<tr>
<td>2001-2017</td>
<td>1,630</td>
<td>15.7%</td>
<td>64%</td>
</tr>
<tr>
<td>Total</td>
<td>7,478</td>
<td>6.4%</td>
<td>81%</td>
</tr>
</tbody>
</table>

Panel B: Average Turnover Categorized by First-Day Returns

<table>
<thead>
<tr>
<th>Return Categories</th>
<th>Number of IPOs</th>
<th>Average First-Day Returns</th>
<th>Average Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return &lt; 0%</td>
<td>2,105</td>
<td>-2.9%</td>
<td>29.6%</td>
</tr>
<tr>
<td>0% &lt; Return ≤ 10%</td>
<td>2,156</td>
<td>4.5%</td>
<td>32.1%</td>
</tr>
<tr>
<td>10% &lt; Return ≤ 60%</td>
<td>2,703</td>
<td>25.5%</td>
<td>52.1%</td>
</tr>
<tr>
<td>Return &gt; 60%</td>
<td>514</td>
<td>127.8%</td>
<td>99.0%</td>
</tr>
<tr>
<td>Total</td>
<td>7,478</td>
<td>18.5%</td>
<td>43.2%</td>
</tr>
</tbody>
</table>

Panel C: Average Turnover Categorized by First-Day Returns & Decade

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Return &lt; 0%</td>
<td>15.0%</td>
<td>25.7%</td>
<td>53.0%</td>
<td>52.6%</td>
</tr>
<tr>
<td>0% &lt; Return ≤ 10%</td>
<td>18.7%</td>
<td>28.8%</td>
<td>54.0%</td>
<td>52.4%</td>
</tr>
<tr>
<td>10% &lt; Return ≤ 60%</td>
<td>21.9%</td>
<td>45.5%</td>
<td>70.9%</td>
<td>74.7%</td>
</tr>
<tr>
<td>Return &gt; 60%</td>
<td>26.2%</td>
<td>78.5%</td>
<td>102.1%</td>
<td>141.0%</td>
</tr>
<tr>
<td>Total</td>
<td>18.0%</td>
<td>36.7%</td>
<td>76.6%</td>
<td>66.2%</td>
</tr>
</tbody>
</table>
Table 3b (updated May 14, 2018)

Mean First-day Turnover for NYSE and Nasdaq IPOs, 1983-2017

The sample is composed of the IPOs of U.S.-based companies with an offer price of at least $5.00 and listed on the NYSE or Nasdaq (excluding Nasdaq small cap issues before October 2005 and, after Sept. 2005, Nasdaq capital market issues), excluding ADRs, unit offers, closed-end funds, REITs, partnerships, banks and S&Ls, and stocks not listed on CRSP (CRSP includes Amex, NYSE, and NASDAQ stocks). Turnover is volume divided by shares issued. Volume is the maximum of the first three days, which is almost always the first day. Shares issued excludes over allotment options, but includes the global offering size. To adjust for institutional features of the way that Nasdaq and NYSE-Amex volume are computed, we use the procedure discussed in Appendix B of Xiaohui Gao and Jay Ritter’s 2010 *Journal of Financial Economics* article “The Marketing of Seasoned Equity Offerings.” Prior to February 1, 2001, we divide Nasdaq volume by 2.0. This accounts for the practice of counting as trades both trades with market makers and trades among market makers. On February 1, 2001, a “riskless principal” rule went into effect, that resulted in a reduction of approximately 10% in reported volume. Thus, for February 1, 2001 to December 31, 2001, we divide Nasdaq volume by 1.8. During 2002, securities firms began to charge institutional investors commissions on Nasdaq trades, rather than the prior practice of merely marking up or down the net price, resulting in a further reduction in reported volume of approximately 10%. Thus, for 2002 and 2003, we divide Nasdaq volume by 1.6. For 2004 and later years, in which much of the volume of Nasdaq (and NYSE) stocks has been occurring on crossing networks and other venues, we use a divisor of 1.0, reflecting the fact that there are no longer important differences in the reporting of Nasdaq and NYSE volume. Approximately 30 IPOs with adjusted first-day turnover of less than 1% of the issue size are excluded.
<table>
<thead>
<tr>
<th>Year</th>
<th>Number of IPOs</th>
<th>Unadjusted</th>
<th>With Nasdaq Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>NYSE</td>
<td>Nasdaq</td>
</tr>
<tr>
<td>1983</td>
<td>432</td>
<td>11</td>
<td>421</td>
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<tr>
<td>1984</td>
<td>158</td>
<td>8</td>
<td>150</td>
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<tr>
<td>1985</td>
<td>166</td>
<td>8</td>
<td>158</td>
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<tr>
<td>1986</td>
<td>355</td>
<td>28</td>
<td>327</td>
</tr>
<tr>
<td>1987</td>
<td>244</td>
<td>26</td>
<td>218</td>
</tr>
<tr>
<td>1988</td>
<td>75</td>
<td>14</td>
<td>61</td>
</tr>
<tr>
<td>1989</td>
<td>96</td>
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<td>34</td>
<td>52</td>
</tr>
<tr>
<td>2018</td>
<td>110</td>
<td>31</td>
<td>79</td>
</tr>
<tr>
<td>1983-2000</td>
<td>5,303</td>
<td>650</td>
<td>4,653</td>
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<tr>
<td>2001-2003</td>
<td>176</td>
<td>59</td>
<td>117</td>
</tr>
<tr>
<td>2004-2017</td>
<td>1,378</td>
<td>506</td>
<td>872</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,857</strong></td>
<td><strong>1,215</strong></td>
<td><strong>5,642</strong></td>
</tr>
</tbody>
</table>
Table 4 (updated Dec. 20, 2018)

Median Age and Fraction of IPOs with VC and Buyout Backing, 1980-2018

There are 8,497 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 form 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. 387 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)
<table>
<thead>
<tr>
<th>Year</th>
<th>Number of IPOs</th>
<th>Median Age</th>
<th>VC-backed</th>
<th>Buyout-backed</th>
<th>Technology IPOs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>1980</td>
<td>71</td>
<td>32%</td>
<td>1</td>
<td>1%</td>
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<tr>
<td>1981</td>
<td>193</td>
<td>27%</td>
<td>2</td>
<td>3%</td>
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<tr>
<td>1982</td>
<td>77</td>
<td>27%</td>
<td>3</td>
<td>2%</td>
<td>50</td>
</tr>
<tr>
<td>1983</td>
<td>451</td>
<td>25%</td>
<td>12</td>
<td>3%</td>
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<tr>
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<td>171</td>
<td>26%</td>
<td>3</td>
<td>2%</td>
<td>50</td>
</tr>
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<td>1985</td>
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<td>21%</td>
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<tr>
<td>1989</td>
<td>116</td>
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<td>9%</td>
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<tr>
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<td>110</td>
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<td>286</td>
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<td>1992</td>
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<td>24%</td>
<td>113</td>
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<td>1993</td>
<td>510</td>
<td>34%</td>
<td>79</td>
<td>15%</td>
<td>126</td>
</tr>
<tr>
<td>1994</td>
<td>402</td>
<td>32%</td>
<td>22</td>
<td>5%</td>
<td>116</td>
</tr>
<tr>
<td>1995</td>
<td>461</td>
<td>40%</td>
<td>30</td>
<td>7%</td>
<td>204</td>
</tr>
<tr>
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Table 4a (updated Dec. 21, 2018)

Technology Company IPOs, 1980-2018

There are 3,086 tech stock IPOs, after excluding those with an offer price below $5.00 per share, unit offers, ADRs, closed-end funds, natural resource limited partnerships (and most other LPs, but not buyout firms such as Carlyle Group), 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. 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.

For the column with VC-backed IPOs, there are 3,091 IPOs including both technology and non-technology companies.

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 is 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.

Even concepts like market cap (for the price-to-sales ratios) become ambiguous when you realize that companies like Facebook have many deep in-the-money options outstanding, so whether you use the fully diluted number of shares or the undiluted number can affect the calculations substantially for some companies.

(table on the next page)
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**1980-2018**: 3,086 Tech IPOs raised $242,942 million in proceeds, with median sales of $279,209 million and median price-to-sales of 5.8 in 2014. The median age of these companies was 7 years, and 49% were profitable.
Table 4b (updated Dec. 20, 2018)

Technology and Biotechnology Company IPOs, 1980-2018

There are 3,086 tech and 785 biotech IPOs from 1980-2018, 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 Huxter 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. 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 that I created: 5614 for telemarketing firms and 7388 for non-tech business services such as Sotheby’s Auctions.

Biotech is defined as SIC=2830, 2833, 2834, 2835, 2836, and 8731.

Sales are the last twelve months (LTM) revenues as reported in the prospectus. The median sales, in millions, are expressed in dollars of 2014 purchasing power using the CPI. Pro forma numbers are usually used if there have been recent mergers or mergers that coincide with 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)
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</table>

|      | 1980-2018 | 49% | 3,086 | 76% | 13% | 4,626 | 49% | 37.0 | 111.3 |

**15**
Table 4c (updated Dec. 31, 2018)

VC-backed, Growth Capital-backed, and Buyout-backed IPOs, 1980-2018

There are 8,497 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 some information on which IPOs are buyout-backed. **396 growth capital-backed IPOs are not classified as VC-backed in this table.** See my article “Growth Capital-backed IPOs” in *The Financial Review* (November 2015) for further details.

(table on the next page)
<table>
<thead>
<tr>
<th>Year</th>
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<th>Financial sponsor-backed</th>
<th>VC-backed</th>
<th>Growth capital-backed</th>
<th>Buyout-backed</th>
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<td>No.</td>
<td>%</td>
<td>No.</td>
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<td>97</td>
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<td>58%</td>
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Table 4d (updated Dec. 31, 2018)

VC-backed IPOs, U.S.-headquartered Companies Only, 1980-2018

There are 3,123 venture capital-backed IPOs of U.S. headquartered companies, after excluding those with an offer price below $5.00 per share, unit offers, ADRs, closed-end funds, natural resource limited partnerships (and most other LPs, but not buyout firms such as Carlyle Group), acquisition companies, REITs, bank and S&L IPOs, and firms not listed on CRSP. VC-backed includes growth capital-backed IPOs. 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.

The public float is calculated as the shares issued multiplied by the first closing market price, and does not include overallotment shares. All numbers use the undiluted number of shares outstanding. For dual-class companies such as Facebook, all share classes are included, with the assumption that the price per share is the same for each class.

Even concepts like market cap (for the price-to-sales ratios) become ambiguous when you realize that companies like Facebook have many deep in-the-money options outstanding, so whether you use the fully diluted number of shares or the undiluted number can affect the calculations substantially for some companies.

Example: For 1980, the 23 VC-backed IPOs raised $388 million, the shares of which had a market cap of $500 million using the first closing market price. The market cap, using all shares outstanding, was $3.374 billion in total. Of this, Apple Computer issued 4.6 million shares at $22 per share (proceeds of $101.2 million), closing at $28.75 per share (public float value of $132.25 million), with 55.136 million shares outstanding ($1,585 million market cap).

(table on the next page)
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<th>Year</th>
<th>No. of VC-backed</th>
<th>Proceeds in $millions</th>
<th>At first market price, $millions</th>
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<td>Public float</td>
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<td>388</td>
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<td>21</td>
<td>490</td>
<td>575</td>
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<td>682</td>
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<td>13,553</td>
<td>17,009</td>
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| 1980-2018 | 3,123 | 225,255 | 305,754 | 1,739,525 |
**Table 4e (MV not adjusted for inflation) Tech IPOs, 1980-2018**

<table>
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<tr>
<th>Year</th>
<th>No. of Tech IPOs</th>
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<th>Number doubling</th>
<th>Market value, at first market price, $millions</th>
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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.

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Table 6 (updated Dec. 31, 2018)
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<td>41.9</td>
<td>20.9</td>
</tr>
<tr>
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<td>10.1</td>
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<td>42.9</td>
<td>23.0</td>
</tr>
<tr>
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<td>155</td>
<td>11.7</td>
<td>39.4</td>
<td>40.6</td>
<td>20.0</td>
</tr>
<tr>
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<td>14.5</td>
<td>32.3</td>
<td>41.3</td>
<td>26.5</td>
</tr>
<tr>
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<td>21</td>
<td>5.7</td>
<td>47.6</td>
<td>38.1</td>
<td>14.3</td>
</tr>
<tr>
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<td>10.6</td>
<td>32.6</td>
<td>41.9</td>
<td>25.6</td>
</tr>
<tr>
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<td>99</td>
<td>9.3</td>
<td>47.5</td>
<td>40.4</td>
<td>12.1</td>
</tr>
<tr>
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<td>14.1</td>
<td>37.0</td>
<td>30.9</td>
<td>32.1</td>
</tr>
<tr>
<td>2012</td>
<td>103</td>
<td>17.6</td>
<td>40.8</td>
<td>34.9</td>
<td>24.3</td>
</tr>
<tr>
<td>2013</td>
<td>160</td>
<td>20.8</td>
<td>30.0</td>
<td>41.9</td>
<td>28.1</td>
</tr>
<tr>
<td>2014</td>
<td>221</td>
<td>14.4</td>
<td>43.4</td>
<td>39.8</td>
<td>16.7</td>
</tr>
<tr>
<td>2015</td>
<td>123</td>
<td>18.9</td>
<td>35.8</td>
<td>38.2</td>
<td>26.0</td>
</tr>
<tr>
<td>2016</td>
<td>75</td>
<td>14.6</td>
<td>33.3</td>
<td>57.3</td>
<td>9.3</td>
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<tr>
<td>2017</td>
<td>111</td>
<td>11.8</td>
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<td>60.4</td>
<td>16.2</td>
</tr>
<tr>
<td>2018</td>
<td>135</td>
<td>18.6</td>
<td>17.0</td>
<td>61.5</td>
<td>21.5</td>
</tr>
</tbody>
</table>

| 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:

<table>
<thead>
<tr>
<th></th>
<th>Below</th>
<th>Within</th>
<th>Above</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980-1989</td>
<td>30%</td>
<td>57%</td>
<td>13%</td>
</tr>
<tr>
<td>1990-1998</td>
<td>27%</td>
<td>49%</td>
<td>24%</td>
</tr>
<tr>
<td>1999-2000</td>
<td>18%</td>
<td>38%</td>
<td>44%</td>
</tr>
<tr>
<td>2001-2018</td>
<td>34%</td>
<td>45%</td>
<td>21%</td>
</tr>
<tr>
<td>1980-2018</td>
<td>28%</td>
<td>46%</td>
<td>26%</td>
</tr>
</tbody>
</table>

Average first-day returns relative to file price range:

<table>
<thead>
<tr>
<th></th>
<th>Below</th>
<th>Within</th>
<th>Above</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980-1989</td>
<td>0%</td>
<td>6%</td>
<td>20%</td>
</tr>
<tr>
<td>1990-1998</td>
<td>4%</td>
<td>11%</td>
<td>31%</td>
</tr>
<tr>
<td>1999-2000</td>
<td>8%</td>
<td>26%</td>
<td>122%</td>
</tr>
<tr>
<td>2001-2018</td>
<td>4%</td>
<td>11%</td>
<td>37%</td>
</tr>
<tr>
<td>1980-2018</td>
<td>3%</td>
<td>11%</td>
<td>50%</td>
</tr>
</tbody>
</table>

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 1960-2016

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.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Offerings</th>
<th>Average First-day Return</th>
<th>Gross Proceeds, $ Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>269</td>
<td>17.8%</td>
<td>553</td>
</tr>
<tr>
<td>1961</td>
<td>435</td>
<td>34.1%</td>
<td>1,243</td>
</tr>
<tr>
<td>1962</td>
<td>298</td>
<td>-1.6%</td>
<td>431</td>
</tr>
<tr>
<td>1963</td>
<td>83</td>
<td>3.9%</td>
<td>246</td>
</tr>
<tr>
<td>1964</td>
<td>97</td>
<td>5.3%</td>
<td>380</td>
</tr>
<tr>
<td>1965</td>
<td>146</td>
<td>12.7%</td>
<td>409</td>
</tr>
<tr>
<td>1966</td>
<td>85</td>
<td>7.1%</td>
<td>275</td>
</tr>
<tr>
<td>1967</td>
<td>100</td>
<td>37.7%</td>
<td>641</td>
</tr>
<tr>
<td>1968</td>
<td>368</td>
<td>55.9%</td>
<td>1,205</td>
</tr>
<tr>
<td>1969</td>
<td>780</td>
<td>12.5%</td>
<td>2,605</td>
</tr>
<tr>
<td>1970</td>
<td>358</td>
<td>-0.7%</td>
<td>780</td>
</tr>
<tr>
<td>1971</td>
<td>391</td>
<td>21.2%</td>
<td>1,655</td>
</tr>
<tr>
<td>1972</td>
<td>562</td>
<td>7.5%</td>
<td>2,724</td>
</tr>
<tr>
<td>1973</td>
<td>105</td>
<td>-17.8%</td>
<td>330</td>
</tr>
<tr>
<td>1974</td>
<td>9</td>
<td>-7.0%</td>
<td>51</td>
</tr>
<tr>
<td>1975</td>
<td>12</td>
<td>-0.2%</td>
<td>261</td>
</tr>
<tr>
<td>1976</td>
<td>26</td>
<td>1.9%</td>
<td>215</td>
</tr>
<tr>
<td>1977</td>
<td>15</td>
<td>3.6%</td>
<td>128</td>
</tr>
<tr>
<td>1978</td>
<td>19</td>
<td>13.3%</td>
<td>197</td>
</tr>
<tr>
<td>1979</td>
<td>39</td>
<td>8.9%</td>
<td>309</td>
</tr>
<tr>
<td>1980</td>
<td>71</td>
<td>14.3%</td>
<td>905</td>
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<tr>
<td>1981</td>
<td>193</td>
<td>5.9%</td>
<td>2,313</td>
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<td>1982</td>
<td>79</td>
<td>10.7%</td>
<td>1,012</td>
</tr>
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<td>521</td>
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<td>1984</td>
<td>213</td>
<td>3.0%</td>
<td>2,566</td>
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<tr>
<td>1985</td>
<td>217</td>
<td>6.6%</td>
<td>4,749</td>
</tr>
<tr>
<td>1986</td>
<td>478</td>
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<td>15,489</td>
</tr>
<tr>
<td>1987</td>
<td>337</td>
<td>5.7%</td>
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<tr>
<td>1988</td>
<td>132</td>
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<td>1989</td>
<td>124</td>
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<td>5,886</td>
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<td>Num.</td>
<td>First-Day Return</td>
<td>Gross Proceeds</td>
</tr>
<tr>
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<td>------</td>
<td>------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>1990</td>
<td>116</td>
<td>10.4%</td>
<td>4,334</td>
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<tr>
<td>1991</td>
<td>293</td>
<td>11.8%</td>
<td>16,464</td>
</tr>
<tr>
<td>1992</td>
<td>416</td>
<td>10.2%</td>
<td>22,750</td>
</tr>
<tr>
<td>1993</td>
<td>527</td>
<td>12.7%</td>
<td>31,654</td>
</tr>
<tr>
<td>1994</td>
<td>410</td>
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<td>1995</td>
<td>464</td>
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<td>28,017</td>
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<td>1996</td>
<td>689</td>
<td>17.1%</td>
<td>42,428</td>
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<td>1997</td>
<td>485</td>
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<td>308</td>
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<tr>
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<td>2000</td>
<td>382</td>
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<td>70</td>
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<td>105</td>
<td>17.3%</td>
<td>32,065</td>
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<td>225</td>
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<td>122</td>
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<td>4,194</td>
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<td>2000-18</td>
<td>2,471</td>
<td>20.5%</td>
<td>564,229</td>
</tr>
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</table>

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.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of IPOs</th>
<th>No. with missing EPS</th>
<th>Percentage Tech Stocks</th>
<th>Percentage of IPOs with EPS&lt;0</th>
<th>Mean First-day Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EPS&lt;0</td>
</tr>
<tr>
<td>1980-1989</td>
<td>2,048</td>
<td>1</td>
<td>29%</td>
<td>19%</td>
<td>9.2%</td>
</tr>
<tr>
<td>1990-1998</td>
<td>3,613</td>
<td>0</td>
<td>34%</td>
<td>32%</td>
<td>15.9%</td>
</tr>
<tr>
<td>1999-2000</td>
<td>856</td>
<td>0</td>
<td>74%</td>
<td>78%</td>
<td>71.1%</td>
</tr>
<tr>
<td>2001-2018</td>
<td>1,980</td>
<td>0</td>
<td>32%</td>
<td>57%</td>
<td>14.4%</td>
</tr>
<tr>
<td>1980-2018</td>
<td>8,496</td>
<td>1</td>
<td>36%</td>
<td>39%</td>
<td>25.6%</td>
</tr>
</tbody>
</table>

(year-by-year on the next page)
<table>
<thead>
<tr>
<th>Year</th>
<th>Number of IPOs</th>
<th>No. with missing EPS</th>
<th>Percentage of Tech Stocks</th>
<th>Percentage of IPOs with EPS&lt;0</th>
<th>Mean First-day Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EPS&lt;0</td>
</tr>
<tr>
<td>1980</td>
<td>71</td>
<td>0</td>
<td>31%</td>
<td>24%</td>
<td>7.1%</td>
</tr>
<tr>
<td>1981</td>
<td>193</td>
<td>0</td>
<td>38%</td>
<td>17%</td>
<td>8.0%</td>
</tr>
<tr>
<td>1982</td>
<td>77</td>
<td>0</td>
<td>55%</td>
<td>19%</td>
<td>6.4%</td>
</tr>
<tr>
<td>1983</td>
<td>451</td>
<td>0</td>
<td>38%</td>
<td>22%</td>
<td>14.0%</td>
</tr>
<tr>
<td>1984</td>
<td>171</td>
<td>0</td>
<td>29%</td>
<td>16%</td>
<td>11.1%</td>
</tr>
<tr>
<td>1985</td>
<td>186</td>
<td>0</td>
<td>20%</td>
<td>15%</td>
<td>5.2%</td>
</tr>
<tr>
<td>1986</td>
<td>393</td>
<td>1</td>
<td>20%</td>
<td>21%</td>
<td>8.8%</td>
</tr>
<tr>
<td>1987</td>
<td>285</td>
<td>0</td>
<td>20%</td>
<td>17%</td>
<td>5.1%</td>
</tr>
<tr>
<td>1988</td>
<td>105</td>
<td>0</td>
<td>27%</td>
<td>18%</td>
<td>7.0%</td>
</tr>
<tr>
<td>1989</td>
<td>116</td>
<td>0</td>
<td>30%</td>
<td>22%</td>
<td>9.4%</td>
</tr>
<tr>
<td>1990</td>
<td>110</td>
<td>0</td>
<td>28%</td>
<td>15%</td>
<td>9.5%</td>
</tr>
<tr>
<td>1991</td>
<td>286</td>
<td>0</td>
<td>24%</td>
<td>24%</td>
<td>9.4%</td>
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<td>1992</td>
<td>412</td>
<td>0</td>
<td>27%</td>
<td>29%</td>
<td>10.3%</td>
</tr>
<tr>
<td>1993</td>
<td>510</td>
<td>0</td>
<td>25%</td>
<td>28%</td>
<td>12.6%</td>
</tr>
<tr>
<td>1994</td>
<td>402</td>
<td>0</td>
<td>29%</td>
<td>26%</td>
<td>8.0%</td>
</tr>
<tr>
<td>1995</td>
<td>461</td>
<td>0</td>
<td>44%</td>
<td>30%</td>
<td>21.8%</td>
</tr>
<tr>
<td>1996</td>
<td>677</td>
<td>0</td>
<td>40%</td>
<td>41%</td>
<td>16.7%</td>
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<tr>
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Table 10 (updated Dec. 20, 2018)

Gross Spreads Continue to Remain at 7% on Moderate-Size Deals

Here are the numbers for 2001-2018 for U.S. IPOs raising more than $25 million ($2011):

Panel A: Book building deals

<table>
<thead>
<tr>
<th>Proceeds Category</th>
<th>$25-100 million (inflation-adjusted in 2011 $)</th>
<th>more than $100 million (2011 $)</th>
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<tr>
<td>&lt;7%</td>
<td>2.6% (21)</td>
<td>49.5% (525)</td>
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<tr>
<td>=7%</td>
<td>96.0% (769)</td>
<td>49.9% (529)</td>
</tr>
<tr>
<td>&gt;7%</td>
<td>1.4% (11)</td>
<td>0.6% (6)</td>
</tr>
<tr>
<td>Total</td>
<td>100% (801 IPOs)</td>
<td>100% (1,060 IPOs)</td>
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Panel B: Auction deals

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<th>more than $100 million (2011 $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;7%</td>
<td>60.0% (6)</td>
<td>83.3% (5)</td>
</tr>
<tr>
<td>=7%</td>
<td>40.0% (4)</td>
<td>16.7% (1)</td>
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<tr>
<td>&gt;7%</td>
<td>0% (0)</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Total</td>
<td>100% (10 IPOs)</td>
<td>100% (6 IPOs)</td>
</tr>
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</table>

So, with a few exceptions (some of these are Canadian firms, and others were taken public by WRHambrecht using auctions), 7% gross spreads for moderate-size IPOs are as entrenched as ever. Indeed, in 1999-2000, deals above $100 million increasingly had 7% spreads, and this has stuck—in 2001-2016 49.9% of large IPOs also had spreads of exactly 7%. In contrast, during 1997-1998 only 53 of 158 large IPOs (33.5%) had a gross spread of exactly 7%.

Proceeds numbers do not include any shares issued through over-allotment option exercise.
Table 11 (updated Dec. 19, 2018)

Mean and Median Gross Spreads and Number of Managing Underwriters, 1980-2018

IPOs with an offer price below $5.00 per share, unit offers, ADRs, closed-end funds, REITs, bank and S&L IPOs, energy limited partnerships, and firms not listed on CRSP within six months of the offer date are excluded. EW is equally weighted and PW is proceeds-weighted. The fraction=7% is the percentage of IPOs with a gross spread equal to exactly 7%. The number of managing underwriters is the sum of both leads and co-managers. The decrease in the fraction of IPOs with a 7% spread in 2001-2002 is due to the smaller fraction of deals with proceeds of less than $150 million. In 2008 (Visa with a spread of 2.8% on a $17.9 billion IPO), 2010 (General Motors with a spread of 0.75% on a $15.8 billion IPO), and 2012 (Facebook with a 1.1% spread on a $16 billion IPO) a higher fraction of IPOs were mega-deals with a gross spread far below 7%. UW is Underwriter.
<table>
<thead>
<tr>
<th>Year</th>
<th>Number of IPOs</th>
<th>Mean EW</th>
<th>Mean PW</th>
<th>Median</th>
<th>≥7%</th>
<th>Fraction with Multiple Bookrunners</th>
<th>Number of Managing UWs</th>
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### Table 11a (same as Table 11 but starting in 1975)

Mean and Median Gross Spreads and Number of Managing Underwriters, **1975-2018**

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Table 12 (Dec. 19, 2018)
Number of IPOs Categorized by the LTM Sales (in 2005 $), 1980-2018
LTM is last twelve months. MV is the post-issue market value valued at the offer price. PSR is the price-to-sales ratio, and is the median ratio, not the ratio of medians. There has been 24% inflation since 2005.

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<th>Year</th>
<th>Number of IPOs&lt;sup&gt;LTM Sales $2005&lt;/sup&gt;</th>
<th>Percentage of IPOs&lt;sup&gt;LTM Sales $2005&lt;/sup&gt;</th>
<th>Medians, $2005</th>
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1980-2017: 4,373 <50 mm, 4,124 >50 mm, 51% 49%, $47 $167, 3.1
Table 12a (updated Dec. 19, 2018)
Number of IPOs Categorized by the LTM Sales (in 2005 $), 1980-2018
MV is the post-issue market value valued at the first closing price. Sales and MV are in millions. PSR is the price-to-sales ratio. There has been 24% inflation since 2005.

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<td>4%</td>
</tr>
<tr>
<td>2001</td>
<td>79</td>
<td>60</td>
<td>19</td>
<td>76%</td>
<td>24%</td>
</tr>
<tr>
<td>2002</td>
<td>66</td>
<td>50</td>
<td>16</td>
<td>76%</td>
<td>24%</td>
</tr>
<tr>
<td>2003</td>
<td>63</td>
<td>58</td>
<td>5</td>
<td>92%</td>
<td>8%</td>
</tr>
<tr>
<td>2004</td>
<td>173</td>
<td>151</td>
<td>22</td>
<td>87%</td>
<td>13%</td>
</tr>
<tr>
<td>2005</td>
<td>159</td>
<td>139</td>
<td>20</td>
<td>87%</td>
<td>13%</td>
</tr>
<tr>
<td>2006</td>
<td>157</td>
<td>138</td>
<td>19</td>
<td>88%</td>
<td>12%</td>
</tr>
<tr>
<td>2007</td>
<td>159</td>
<td>142</td>
<td>17</td>
<td>89%</td>
<td>11%</td>
</tr>
<tr>
<td>2008</td>
<td>21</td>
<td>18</td>
<td>3</td>
<td>86%</td>
<td>14%</td>
</tr>
<tr>
<td>2009</td>
<td>41</td>
<td>28</td>
<td>13</td>
<td>68%</td>
<td>32%</td>
</tr>
<tr>
<td>2010</td>
<td>91</td>
<td>78</td>
<td>13</td>
<td>86%</td>
<td>14%</td>
</tr>
<tr>
<td>2011</td>
<td>81</td>
<td>67</td>
<td>14</td>
<td>83%</td>
<td>17%</td>
</tr>
<tr>
<td>2012</td>
<td>93</td>
<td>77</td>
<td>16</td>
<td>83%</td>
<td>17%</td>
</tr>
<tr>
<td>2013</td>
<td>157</td>
<td>128</td>
<td>29</td>
<td>82%</td>
<td>18%</td>
</tr>
<tr>
<td>2014</td>
<td>206</td>
<td>175</td>
<td>31</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>2015</td>
<td>118</td>
<td>107</td>
<td>11</td>
<td>91%</td>
<td>9%</td>
</tr>
<tr>
<td>2016</td>
<td>75</td>
<td>61</td>
<td>14</td>
<td>81%</td>
<td>19%</td>
</tr>
<tr>
<td>2017</td>
<td>107</td>
<td>91</td>
<td>16</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>2018</td>
<td>134</td>
<td>121</td>
<td>13</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>1980-2018</td>
<td>8,497</td>
<td>7,913</td>
<td>584</td>
<td>93%</td>
<td>7%</td>
</tr>
</tbody>
</table>
Table 13

IPO Auctions in the U.S., 1999-2018

The average first-day return on WRHambrecht’s 19 IPO auctions has been 12.6%. For IPO auctions for which WRHambrecht was the bookrunner, the numbers are as follows:

<table>
<thead>
<tr>
<th>Name of IPO (ticker)</th>
<th>Date of IPO</th>
<th>Gross Spread</th>
<th>Gross Proceeds</th>
<th>First-day Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ravenswood Winery (RVWD)</td>
<td>19990408</td>
<td>4.00%</td>
<td>$10.5 million</td>
<td>3.62%</td>
</tr>
<tr>
<td>Salon.com (SALN)</td>
<td>19990622</td>
<td>5.00%</td>
<td>$26.25 million</td>
<td>-4.76%</td>
</tr>
<tr>
<td>Andover.net (ANDN)</td>
<td>19991208</td>
<td>6.50%</td>
<td>$72.0 million</td>
<td>252.08%</td>
</tr>
<tr>
<td>Nogatech (NGTC)</td>
<td>20000518</td>
<td>6.50%</td>
<td>$42.0 million</td>
<td>-21.58%</td>
</tr>
<tr>
<td>Peet’s Coffee (PEET)</td>
<td>20010125</td>
<td>6.50%</td>
<td>$26.4 million</td>
<td>17.25%</td>
</tr>
<tr>
<td>Briazz (BRZZ)</td>
<td>20010502</td>
<td>6.00%</td>
<td>$16.0 million</td>
<td>0.38%</td>
</tr>
<tr>
<td>Overstock.com (OSTK)</td>
<td>20020529</td>
<td>4.00%</td>
<td>$39.0 million</td>
<td>0.23%</td>
</tr>
<tr>
<td>RedEnvelope (REDE)</td>
<td>20030925</td>
<td>6.00%</td>
<td>$30.8 million</td>
<td>3.93%</td>
</tr>
<tr>
<td>Genitope (GTOP)</td>
<td>20031029</td>
<td>7.00%</td>
<td>$33.3 million</td>
<td>11.11%</td>
</tr>
</tbody>
</table>

In 2003, WRHambrecht was also the joint bookrunner with JP Morgan on the Sunset Financial Resources IPO that did not use an auction.

<table>
<thead>
<tr>
<th>Name of IPO (ticker)</th>
<th>Date of IPO</th>
<th>Gross Spread</th>
<th>Gross Proceeds</th>
<th>First-day Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>New River Pharmaceuticals (NRPH)</td>
<td>20040805</td>
<td>7.00%</td>
<td>$33.6 million</td>
<td>-6.25%</td>
</tr>
</tbody>
</table>

In 2004, WRHambrecht was a co-manager on the Google auction IPO for which CSFB and Morgan Stanley were the bookrunners. The IPO climbed 18.04% on its first day of trading.

<table>
<thead>
<tr>
<th>Name of IPO (ticker)</th>
<th>Date of IPO</th>
<th>Gross Spread</th>
<th>Gross Proceeds</th>
<th>First-day Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>B of I Holding (BOFI)</td>
<td>20050315</td>
<td>6.00%</td>
<td>$35.1 million</td>
<td>0.00%</td>
</tr>
<tr>
<td>Morningstar (MORN)</td>
<td>20050502</td>
<td>2.00%</td>
<td>$140.83 million</td>
<td>8.38%</td>
</tr>
<tr>
<td>CryoCor (CRYO)</td>
<td>20050714</td>
<td>7.00%</td>
<td>$40.8 million</td>
<td>-1.18%</td>
</tr>
<tr>
<td>Avalon Pharmaceuticals (AVRX)</td>
<td>20050928</td>
<td>7.00%</td>
<td>$28.8 million</td>
<td>-5.10%</td>
</tr>
<tr>
<td>Dover Saddlery (DOVR)</td>
<td>20051117</td>
<td>5.00%</td>
<td>$27.5 million</td>
<td>2.50%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of IPO (ticker)</th>
<th>Date of IPO</th>
<th>Gross Spread</th>
<th>Gross Proceeds</th>
<th>First-day Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic.com (TRFC)</td>
<td>20060125</td>
<td>6.00%</td>
<td>$78.6 million</td>
<td>1.25%</td>
</tr>
<tr>
<td>FortuNet (FNET)</td>
<td>20060131</td>
<td>4.50%</td>
<td>$22.5 million</td>
<td>0.56%</td>
</tr>
</tbody>
</table>
2007: (2 out of 159 IPOs)
Interactive Brokers Group (IBKR) 20070504 1.88% $1,200.4 million 4.30%
Clean Energy Fuels (CLNE) 20070525 5.85% $120.0 million 0.33%

In 2007, WRHambrecht was a co-manager on the Netsuite auction IPO for which Credit Suisse was the bookrunner. The IPO climbed 36.54% on the first day of trading.

2008: (0 out of 21 IPOs)
In 2008, WRHambrecht was a co-manager on the Rackspace Hosting auction IPO for which Credit Suisse, Goldman Sachs, and Merrill Lynch were joint bookrunners. The IPO dropped 19.92% on its first day of trading.

2009: (0 out of 41 IPOs)
2010: (0 out of 93 IPOs)
2011: (0 out of 81 IPOs)
2012: (0 out of 93 IPOs)

2013: (1 out 157 IPOs)
Truett-Hurst Inc (THST) 20130619 7.00% $16.2 million -5.33%

2014: (0 out of 206 IPOs)
2015: (0 out 118 IPOs)
2016: (0 out of 75 IPOs)
2017: (0 out of 107 IPOs)
2018: (0 out of 134 IPOs)

WR Hambrecht has also been a bookrunner on several other IPOs that did not use an auction. On 20150415, for example, they did a $76 million best efforts IPO of Xbiotech (XBIT), which increased 22.37% on the first day of trading.
Table 14 (updated Dec. 19, 2018)

The Market Share of Foreign Companies among U.S. Listings, 1980-2018

This table includes American Depositary Receipts (ADRs) as well as other IPOs, and so has a higher total number of U.S. IPOs. I continue to exclude IPOs with an offer price below $5.00 per share, unit offers, SPACs, REITs, closed-end funds, natural resource limited partnerships, small best efforts IPOs, banks and S&Ls, and IPOs not listed on CRSP (this last screen limits the sample to NASDAQ, Amex, and NYSE-listed issues) within six months of the offer date. Bermuda-domiciled companies are included as foreign, irrespective of the main country of operations. Bermuda, Canada, China, Greece, Israel, the Netherlands, and the United Kingdom are the most common countries for IPOs that list in the U.S. Dealogic is the main source of information on foreign IPOs, because Thomson Financial frequently classifies a follow-on offering that simultaneously includes a U.S. listing as an IPO, as does the NYSE. I have deleted these listings (a list of more than 110 of them can be found in “SDC Corrections” on my IPO Data page) from the IPO counts when I have been able to identify them. The count for Chinese IPOs does not include those from Hong Kong, and excludes “reverse mergers” and best efforts IPOs. There are six bank IPOs of ADRs that are not counted (1 in 1988, 1 in 1993, 2 in 1994, and 2 in 2009). There were 4 additional foreign issues in 1981, but they did not get listed on CRSP until more than six months after the IPO.

In addition to the IPOs listed in this table, there have been at least eleven Chinese IPOs with an offer price of below $5.00 per share, plus some unit offers. Those with an offer price below $5 per share include the following:

2007 2
2008 1
2009 2
2010 4
2017 2
<table>
<thead>
<tr>
<th>Year</th>
<th>Number of IPOs</th>
<th>Domestic</th>
<th>Foreign Total</th>
<th>ADRs</th>
<th>% Foreign</th>
<th>Chinese Total</th>
<th>ADRs</th>
<th>% Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>71</td>
<td>70</td>
<td>1</td>
<td>0</td>
<td>1.4%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1981</td>
<td>193</td>
<td>192</td>
<td>1</td>
<td>0</td>
<td>0.5%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1982</td>
<td>78</td>
<td>76</td>
<td>2</td>
<td>1</td>
<td>2.6%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1983</td>
<td>453</td>
<td>446</td>
<td>7</td>
<td>2</td>
<td>1.5%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1984</td>
<td>175</td>
<td>168</td>
<td>7</td>
<td>5</td>
<td>4.0%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1985</td>
<td>186</td>
<td>183</td>
<td>3</td>
<td>0</td>
<td>1.6%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1986</td>
<td>394</td>
<td>392</td>
<td>2</td>
<td>1</td>
<td>0.5%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1987</td>
<td>285</td>
<td>281</td>
<td>4</td>
<td>0</td>
<td>1.4%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1988</td>
<td>109</td>
<td>100</td>
<td>9</td>
<td>5</td>
<td>8.3%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1989</td>
<td>119</td>
<td>110</td>
<td>9</td>
<td>3</td>
<td>7.6%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1990</td>
<td>111</td>
<td>107</td>
<td>4</td>
<td>1</td>
<td>3.6%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1991</td>
<td>288</td>
<td>278</td>
<td>10</td>
<td>2</td>
<td>3.5%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1992</td>
<td>416</td>
<td>393</td>
<td>23</td>
<td>4</td>
<td>5.5%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1993</td>
<td>527</td>
<td>487</td>
<td>40</td>
<td>17</td>
<td>7.6%</td>
<td>1</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td>1994</td>
<td>420</td>
<td>385</td>
<td>35</td>
<td>22</td>
<td>8.3%</td>
<td>3</td>
<td>2</td>
<td>0.7%</td>
</tr>
<tr>
<td>1995</td>
<td>477</td>
<td>436</td>
<td>41</td>
<td>16</td>
<td>8.6%</td>
<td>1</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td>1996</td>
<td>710</td>
<td>646</td>
<td>64</td>
<td>33</td>
<td>9.0%</td>
<td>1</td>
<td>1</td>
<td>0.1%</td>
</tr>
<tr>
<td>1997</td>
<td>504</td>
<td>430</td>
<td>74</td>
<td>34</td>
<td>14.7%</td>
<td>4</td>
<td>3</td>
<td>0.8%</td>
</tr>
<tr>
<td>1998</td>
<td>294</td>
<td>256</td>
<td>38</td>
<td>13</td>
<td>12.9%</td>
<td>2</td>
<td>1</td>
<td>0.7%</td>
</tr>
<tr>
<td>1999</td>
<td>501</td>
<td>450</td>
<td>51</td>
<td>26</td>
<td>10.2%</td>
<td>1</td>
<td>0</td>
<td>0.2%</td>
</tr>
<tr>
<td>2000</td>
<td>418</td>
<td>336</td>
<td>82</td>
<td>40</td>
<td>19.6%</td>
<td>7</td>
<td>4</td>
<td>1.7%</td>
</tr>
<tr>
<td>2001</td>
<td>83</td>
<td>74</td>
<td>9</td>
<td>4</td>
<td>10.8%</td>
<td>2</td>
<td>2</td>
<td>2.4%</td>
</tr>
<tr>
<td>2002</td>
<td>68</td>
<td>63</td>
<td>5</td>
<td>2</td>
<td>7.4%</td>
<td>1</td>
<td>1</td>
<td>1.5%</td>
</tr>
<tr>
<td>2003</td>
<td>66</td>
<td>60</td>
<td>6</td>
<td>3</td>
<td>9.1%</td>
<td>2</td>
<td>2</td>
<td>3.0%</td>
</tr>
<tr>
<td>2004</td>
<td>189</td>
<td>160</td>
<td>29</td>
<td>16</td>
<td>15.3%</td>
<td>9</td>
<td>9</td>
<td>4.8%</td>
</tr>
<tr>
<td>2005</td>
<td>172</td>
<td>142</td>
<td>30</td>
<td>13</td>
<td>17.4%</td>
<td>8</td>
<td>8</td>
<td>4.7%</td>
</tr>
<tr>
<td>2006</td>
<td>172</td>
<td>138</td>
<td>34</td>
<td>15</td>
<td>19.8%</td>
<td>9</td>
<td>7</td>
<td>5.2%</td>
</tr>
<tr>
<td>2007</td>
<td>190</td>
<td>138</td>
<td>52</td>
<td>31</td>
<td>27.4%</td>
<td>29</td>
<td>27</td>
<td>15.3%</td>
</tr>
<tr>
<td>2008</td>
<td>24</td>
<td>18</td>
<td>6</td>
<td>3</td>
<td>25.0%</td>
<td>4</td>
<td>4</td>
<td>16.7%</td>
</tr>
<tr>
<td>2009</td>
<td>49</td>
<td>38</td>
<td>11</td>
<td>8</td>
<td>22.4%</td>
<td>10</td>
<td>8</td>
<td>20.4%</td>
</tr>
<tr>
<td>2010</td>
<td>125</td>
<td>80</td>
<td>45</td>
<td>34</td>
<td>36.0%</td>
<td>33</td>
<td>32</td>
<td>26.4%</td>
</tr>
<tr>
<td>2011</td>
<td>93</td>
<td>70</td>
<td>23</td>
<td>12</td>
<td>24.7%</td>
<td>13</td>
<td>11</td>
<td>14.0%</td>
</tr>
<tr>
<td>2012</td>
<td>97</td>
<td>85</td>
<td>12</td>
<td>4</td>
<td>12.4%</td>
<td>2</td>
<td>2</td>
<td>2.1%</td>
</tr>
<tr>
<td>2013</td>
<td>167</td>
<td>139</td>
<td>28</td>
<td>10</td>
<td>16.8%</td>
<td>8</td>
<td>6</td>
<td>4.8%</td>
</tr>
<tr>
<td>2014</td>
<td>225</td>
<td>176</td>
<td>49</td>
<td>19</td>
<td>21.8%</td>
<td>14</td>
<td>14</td>
<td>6.2%</td>
</tr>
<tr>
<td>2015</td>
<td>126</td>
<td>103</td>
<td>23</td>
<td>8</td>
<td>18.3%</td>
<td>5</td>
<td>4</td>
<td>4.0%</td>
</tr>
<tr>
<td>2016</td>
<td>83</td>
<td>68</td>
<td>15</td>
<td>8</td>
<td>18.1%</td>
<td>6</td>
<td>6</td>
<td>7.2%</td>
</tr>
<tr>
<td>2017</td>
<td>127</td>
<td>95</td>
<td>32</td>
<td>20</td>
<td>25.2%</td>
<td>17</td>
<td>15</td>
<td>13.4%</td>
</tr>
<tr>
<td>2018</td>
<td>166</td>
<td>120</td>
<td>46</td>
<td>32</td>
<td>27.7%</td>
<td>28</td>
<td>27</td>
<td>16.9%</td>
</tr>
<tr>
<td>1980-2018</td>
<td>8,952</td>
<td>7,989</td>
<td>962</td>
<td>467</td>
<td>10.7%</td>
<td>220</td>
<td>190</td>
<td>2.5%</td>
</tr>
</tbody>
</table>
Table 15 (updated December 19, 2018)

How Many IPOs Are There?

The net number of IPOs excludes Special Purpose Acquisition Companies (SPACs), closed-end funds, Real Estate Investment Trusts (REITs), unit offers (typically composed of a share plus a warrant to buy a share), IPOs with an offer price of less than $5.00, commercial banks and savings and loans, companies not promptly listed on the Amex, NYSE, or Nasdaq, master limited partnerships, small best efforts offers (included in the other exclusions column), and foreign companies issuing American Depositary Receipts (6 of which are banks). For 1993-1994, 6 ADRs are missing a first-day return, and the “including ADRs” averages exclude them. SPACs that are unit offers are classified as SPACs rather than units. No CRSP listing refers to IPOs not listed on CRSP within six months of the IPO. CRSP covers stocks listed on Nasdaq, the NYSE, and the NYSE MKT (the Amex prior to May 10, 2012).
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|           | 13,658               | 8,497              | 1,713                  | 1,843                  | 226 | 555            | 712                        | 472                 | 8956       | 17.8%      |
Table 15a (updated December 19, 2018)

IPO Volume and Average First-day Returns with Banks, LPs, and ADRs Included

In the last two columns of the table, the net number of IPOs is expanded to include LPs, banks and S&Ls, and ADRs. Only CRSP-listed IPOs that have first-day return information are included, and therefore the number of IPOs added is slightly less for many years than if the “net” IPO count is added to the LP count, the bank and S&L count, and the ADR count. CRSP covers IPOs that are listed on Nasdaq, NYSE, and NYSE Market (formerly Amex). If a stock takes more than six months before CRSP-listing, it is not included in the count. The sample size of 13,743 IPOs from 1980-2017 includes the 8,497 IPOs from 1980-2018 used in most tables, plus 466 ADRs with a first-day return, 225 natural resource industry limited partnerships, and 551 bank and S&L IPOs (6 of which are ADRs).

As with Table 15, the net number of IPOs in the first column excludes Special Purpose Acquisition Companies (SPACs), closed-end funds, Real Estate Investment Trusts (REITs), unit offers (typically composed of a share plus a warrant to buy a share), IPOs with an offer price of less than $5.00, commercial banks and savings and loans, companies not promptly listed on the Amex, NYSE, or Nasdaq, natural resource master limited partnerships, small best efforts offers (included in the other exclusions column), and foreign companies issuing American Depositary Receipts (6 of which are banks). SPACs that are unit offers are classified as SPACs rather than units.

Table 15a also differs from Table 15 in that the category of SPACs, closed-end funds, and REITs in Table 15 is decomposed into the three component parts. Blind pool offerings from the pre-2004 era are not included as SPACs. These blind-pool offers are almost always screened out of the net number of offerings because they are either unit offers, penny stocks (offer price below $5 per share), small best efforts deals, or were not CRSP-listed. The remaining blind pool offers are excluded in the “other reasons” category. A typical blind pool offering raised a few million dollars and investors never received anything in return.

The average first-day return on 551 bank and S&L IPOs is 6.1%, with a range of -20% to +57.5%. In most of my tables, I exclude Bank and S&L IPOs because, among other reasons, it is not always clear how many shares are sold to the general public versus sold to depositors and employees, since most of these offerings are demutualizations. The same can be said of some insurance IPOs, which I include.

The average first-day return on 466 ADR IPOs is 16.6%, with a range of -34.8% to 414.3%, with the 2000 internet company Crayfish Co. Ltd IPO having the highest return, at 414.3%. In most of my tables, I exclude ADRs because, among other reasons, the accounting data is not always reliable (SDC sometimes makes translation mistakes) and the U.S. tranche may be a small part of a larger offering, especially in the home country of the company.

The average first-day return on 226 limited partnerships is 3.7%, with a range of -6.8% to +33.3%. In most of my tables, I exclude natural resource company limited partnerships because it is frequently difficult to discern the founding date of the underlying business, since most of these IPOs are spinoffs partly motivated by tax minimization strategies. Also, most of these LPs are created at the time of the IPO, and identifying whether the LP is profitable, what its trailing sales are, and what its assets are, is sometimes problematic. The same can be said of rollups, which I include. I also include newly created reinsurance companies.
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<td>47</td>
<td>4</td>
<td>0</td>
<td>65</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>2008</td>
<td>54</td>
<td>21</td>
<td>22</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>17</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>2009</td>
<td>80</td>
<td>41</td>
<td>22</td>
<td>13</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>2010</td>
<td>196</td>
<td>91</td>
<td>37</td>
<td>22</td>
<td>8</td>
<td>0</td>
<td>7</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>2011</td>
<td>181</td>
<td>81</td>
<td>50</td>
<td>25</td>
<td>9</td>
<td>0</td>
<td>16</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>2012</td>
<td>177</td>
<td>93</td>
<td>45</td>
<td>28</td>
<td>9</td>
<td>1</td>
<td>7</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>2013</td>
<td>256</td>
<td>157</td>
<td>59</td>
<td>29</td>
<td>20</td>
<td>2</td>
<td>8</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>2014</td>
<td>305</td>
<td>206</td>
<td>30</td>
<td>13</td>
<td>6</td>
<td>0</td>
<td>11</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>2015</td>
<td>178</td>
<td>118</td>
<td>34</td>
<td>8</td>
<td>7</td>
<td>1</td>
<td>18</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>2016</td>
<td>107</td>
<td>75</td>
<td>13</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>13</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2017</td>
<td>198</td>
<td>107</td>
<td>50</td>
<td>9</td>
<td>8</td>
<td>0</td>
<td>33</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>2018</td>
<td>239</td>
<td>134</td>
<td>50</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>44</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

| Total | 13,989 | 8,497 | 1,713 | 1,070 | 328 | 9 | 310 | 226 | 551 | 9,747 | 16.9% |
### Table 16 (updated April 25, 2018)

**Long-run Returns on IPOs Categorized by the Pre-issue Sales of the Firm, 1980-2016**

All Last Twelve Months (LTM) sales figures for the firms going public have been converted into dollars of 2015 purchasing power using the Consumer Price Index. 8,252 IPOs from 1980-2016 are used, with returns calculated through the end of December, 2017. IPOs with an offer price below $5.00 per share, unit offers, ADRs, REITs, closed end funds, natural resource partnerships, banks and S&Ls, small best efforts offers, and IPOs not listed on CRSP within six months of the offer date are excluded. Mm is millions of dollars. Buy-and-hold returns are calculated until the earlier of the three-year anniversary or the delisting date (no later than Dec. 29 of 2017 for IPOs from 2015 and 2016). Market-adjusted returns use the CRSP value-weighted index. Style adjustments use firms matched by market cap and book-to-market ratio with at least five years of CRSP listing and no follow-on equity issues in the prior five years. For post-issue book value of equity numbers, I use the post-issue common equity numbers from SDC with corrections by checking the prospectus, and for the remaining missing numbers I use the equity book values reported for the nearest quarter after the IPO on COMPUSTAT, and further missing numbers are calculated using the reported pre-IPO equity book values plus the amount of the proceeds (assuming that overallotment option shares and costs of issuing offset each other) times the fraction of the primary shares. For dual-class shares, the post-issue book-to-market ratio is calculated using the larger of the post-issue number of shares reported from SDC (with corrections to account for all share classes) and the total shares outstanding reported from CRSP at end of the IPO date. Market capitalization (size) is calculated using the first closing market price after the IPO and the post-issue number of shares outstanding. All returns include dividends and capital gains, including the index returns.

<table>
<thead>
<tr>
<th>Sales (in 2015$)</th>
<th>Number of IPOs</th>
<th>Average First-day Return</th>
<th>Average 3-year Buy-and-hold Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPOs</td>
</tr>
<tr>
<td>0-9.999 mm</td>
<td>1,573</td>
<td>22.2%</td>
<td>-10.2%</td>
</tr>
<tr>
<td>10-19.999 mm</td>
<td>706</td>
<td>28.1%</td>
<td>8.4%</td>
</tr>
<tr>
<td>20-49.999 mm</td>
<td>1,493</td>
<td>22.5%</td>
<td>20.0%</td>
</tr>
<tr>
<td>50-99.999 mm</td>
<td>1,368</td>
<td>17.6%</td>
<td>30.1%</td>
</tr>
<tr>
<td>100-499.999 mm</td>
<td>2,081</td>
<td>12.4%</td>
<td>39.0%</td>
</tr>
<tr>
<td>500 mm and up</td>
<td>1,031</td>
<td>9.4%</td>
<td>37.1%</td>
</tr>
<tr>
<td>0-99.999 mm</td>
<td>5,140</td>
<td>21.9%</td>
<td>11.9%</td>
</tr>
<tr>
<td>100 mm and up</td>
<td>3,112</td>
<td>11.4%</td>
<td>38.4%</td>
</tr>
<tr>
<td><strong>1980-2016</strong></td>
<td><strong>8,252</strong></td>
<td><strong>17.9%</strong></td>
<td><strong>21.9%</strong></td>
</tr>
</tbody>
</table>
**Table 16a (updated April 25, 2018)**

**Long-run Returns on IPOs Categorized by the Pre-issue Sales of the Firm, 1980-2016**

All Last Twelve Months (LTM) sales figures for the firms going public have been converted into dollars of 2015 purchasing power using the Consumer Price Index. 8,252 IPOs from 1980-2016 are used, with returns calculated through the end of December, 29 2017. IPOs with an offer price below $5.00 per share, unit offers, ADRs, REITs, closed end funds, natural resource partnerships, banks and S&Ls, small best efforts offers, and IPOs not listed on CRSP within six months of the offer date are excluded. Mm is millions of dollars. Buy-and-hold returns are calculated from the first closing market price until the earlier of the three-year anniversary or the delisting date (Dec. 29 of 2017 for IPOs from 2015 and 2016). Market-adjusted returns use the CRSP value-weighted index. Style adjustments use firms matched by market cap and book-to-market ratio with at least five years of CRSP listing and no follow-on equity issues in the prior five years. The market-adjusted and style-adjusted returns are the average buy-and-hold return on the IPOs minus the average compounded return on the benchmark. For post-issue book value of equity numbers, I use the post-issue common equity numbers from SDC with corrections by checking the prospectus, and for the remaining missing numbers I use the equity book values reported for the nearest quarter after the IPO on COMPSTAT, and further missing numbers are calculated using the reported pre-IPO equity book values plus the amount of the proceeds (assuming that overallotment option shares and costs of issuing offset each other) times the fraction of the primary shares. For dual-class shares, the post-issue book-to-market ratio is calculated using the larger of the post-issue number of shares reported from SDC (with corrections to account for all share classes) and the total shares outstanding reported from CRSP at end of the IPO date. Market capitalization (size) is calculated using the first closing market price after the IPO and the post-issue number of shares outstanding. All returns include dividends and capital gains, including the index returns.

<table>
<thead>
<tr>
<th>Sales (in 2015$)</th>
<th>Number of IPOs</th>
<th>Average First-day Return</th>
<th>Average 3-year Buy-and-hold Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPOs</td>
</tr>
<tr>
<td>Less than $1 billion</td>
<td>7,654</td>
<td>18.6%</td>
<td>20.2%</td>
</tr>
<tr>
<td>$1 billion and up</td>
<td>598</td>
<td>8.6%</td>
<td>42.7%</td>
</tr>
<tr>
<td>1980-2016</td>
<td>8,252</td>
<td>17.9%</td>
<td>21.9%</td>
</tr>
</tbody>
</table>

Note: The 9.0% 3-year market-adjusted buy-and-hold return for large companies corresponds to an annualized market-adjusted return of 2.2% per year, with an average holding period of 2.9 years for the large companies, because $1.427/1.337=1.0666, and $1.0666^{0.34}=1.022$. The 1.337 is 9.0% below the 42.7% average buy-and-hold return, and 0.34 is equal to 1/2.9. The -20.6% 3-year market-adjusted buy-and-hold return for small companies, with an average holding period of 2.8 years, corresponds to an annualized market-adjusted return of -5.5% per year, since the wealth relative (public market equivalent) is $1.202/1.408=0.854$. 

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Table 16b (July 14, 2017)
Distribution of 5-year Buy-and-Hold Returns on IPOs, 1975-2011

7,713 IPOs from 1975-2011 are used, with buy-and-hold returns calculated until the earlier of the five-year anniversary or the delisting date. All returns include dividends and capital gains. IPOs with an offer price below $5.00 per share, unit offers, ADRs, REITs, closed end funds, natural resource partnerships, banks and S&Ls, small best efforts offers, and IPOs not listed on CRSP within six months of the offer date are excluded. The average first-day return in Panel A is 17.8%, with an average 5-year buy-and-hold return (BHR) of 38.8%, measured from the first close. In Panel B, the average first-day return is 10.3%, with a subsequent average 5-year buy-and-hold return of 59.2%. Sales is inflation-adjusted sales for the last twelve months (LTM) prior to the IPO, in dollars of 2016 purchasing power using the CPI.

### Panel A: All 7,713 IPOs

<table>
<thead>
<tr>
<th>5-year buy-and-hold return</th>
<th>From the first close</th>
<th>From the offer price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of IPOs</td>
<td>Percentage</td>
</tr>
<tr>
<td>BHR&lt;50%</td>
<td>3,246</td>
<td>42.1%</td>
</tr>
<tr>
<td>-50%&lt;BHR≤0%</td>
<td>1,397</td>
<td>18.1%</td>
</tr>
<tr>
<td>0%&lt;BHR≤50%</td>
<td>965</td>
<td>12.5%</td>
</tr>
<tr>
<td>50%&lt;BHR≤100%</td>
<td>627</td>
<td>8.1%</td>
</tr>
<tr>
<td>100%&lt;BHR≤200%</td>
<td>698</td>
<td>9.1%</td>
</tr>
<tr>
<td>200%&lt;BHR≤300%</td>
<td>284</td>
<td>3.7%</td>
</tr>
<tr>
<td>300%&lt;BHR≤400%</td>
<td>168</td>
<td>2.2%</td>
</tr>
<tr>
<td>400%&lt;BHR≤500%</td>
<td>90</td>
<td>1.2%</td>
</tr>
<tr>
<td>500%&lt;BHR≤1,000%</td>
<td>154</td>
<td>2.0%</td>
</tr>
<tr>
<td>1,000%&lt;BHR≤2,000%</td>
<td>64</td>
<td>0.8%</td>
</tr>
<tr>
<td>2,000%&lt;BHR&lt;3,000%</td>
<td>11</td>
<td>0.1%</td>
</tr>
<tr>
<td>3,000%&lt;BHR</td>
<td>9</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

| 1975-2011                  | 7,713       | 100.0%      | 7,713        | 100.0%      |

### Panel B: 2,814 IPOs with LTM Sales of $100 million or more ($2016)

<table>
<thead>
<tr>
<th>5-year buy-and-hold return</th>
<th>From the first close</th>
<th>From the offer price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of IPOs</td>
<td>Percentage</td>
</tr>
<tr>
<td>BHR&lt;50%</td>
<td>804</td>
<td>28.6%</td>
</tr>
<tr>
<td>-50%&lt;BHR≤0%</td>
<td>532</td>
<td>18.9%</td>
</tr>
<tr>
<td>0%&lt;BHR≤50%</td>
<td>451</td>
<td>16.0%</td>
</tr>
<tr>
<td>50%&lt;BHR≤100%</td>
<td>326</td>
<td>11.6%</td>
</tr>
<tr>
<td>100%&lt;BHR≤200%</td>
<td>367</td>
<td>13.1%</td>
</tr>
<tr>
<td>200%&lt;BHR≤300%</td>
<td>128</td>
<td>4.5%</td>
</tr>
<tr>
<td>300%&lt;BHR≤400%</td>
<td>83</td>
<td>3.0%</td>
</tr>
<tr>
<td>400%&lt;BHR≤500%</td>
<td>37</td>
<td>1.3%</td>
</tr>
<tr>
<td>500%&lt;BHR≤1,000%</td>
<td>57</td>
<td>2.0%</td>
</tr>
<tr>
<td>1,000%&lt;BHR≤2,000%</td>
<td>26</td>
<td>0.9%</td>
</tr>
<tr>
<td>2,000%&lt;BHR≤3,000%</td>
<td>3</td>
<td>0.1%</td>
</tr>
<tr>
<td>3,000%&lt;BHR</td>
<td>0</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

| 1975-2011                  | 2,814       | 100.0%      | 2,814        | 100.0%      |
Table 17 (updated April 25, 2018)

Long-run Returns on IPOs Categorized by VC-backing or Buyout Fund-backing

All Last Twelve Months (LTM) sales figures for the firms going public have been converted into dollars of 2005 purchasing power using the Consumer Price Index. IPOs from 1980-2016 are used, with returns calculated through the end of December, 2017. In Panel A, the sample size is 8,252 firms. Growth capital-backed IPOs are included in the VC-backed category. IPOs with an offer price below $5.00 per share, unit offers, small best efforts offerings, ADRs, REITs, closed-end funds, natural resource limited partnerships, banks and S&Ls, and IPOs not listed on CRSP within six months of the offer date are excluded. In Panel B, one additional screen is implemented, reducing the sample size. This additional screen is that the last twelve months (LTM) sales of the issuing firm is at least $50 million (2005 purchasing power). Buy-and-hold returns are calculated until the earlier of the three-year anniversary or the delisting date (Dec. 29 of 2017 for IPOs from 2015 and 2016). Market-adjusted returns use the CRSP value-weighted index. All returns include dividends and capital gains. Style adjustments use firms matched by market cap and book-to-market ratio with at least five years of CRSP listing and no follow-on equity issues in the prior five years. All returns include dividends and capital gains, including the index returns. Jerry Cao of Sun Yat-sen University has assisted in providing data on the classification of IPOs as buyout-backed. Growth capital-backed IPOs are classified as VC-backed.

Panel A: IPOs from 1980-2016 categorized by venture capital backing

<table>
<thead>
<tr>
<th>VC-backed or not</th>
<th>Number of IPOs</th>
<th>Average First-day Return</th>
<th>Average 3-year Buy-and-hold Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPOs</td>
</tr>
<tr>
<td>VC-backed</td>
<td>3,091</td>
<td>26.8%</td>
<td>24.7%</td>
</tr>
<tr>
<td>NonVC-backed</td>
<td>5,161</td>
<td>12.6%</td>
<td>20.2%</td>
</tr>
<tr>
<td>NonVC and nonBuyout</td>
<td>4,048</td>
<td>13.5%</td>
<td>16.6%</td>
</tr>
<tr>
<td>All</td>
<td>8,252</td>
<td>17.9%</td>
<td>21.9%</td>
</tr>
</tbody>
</table>

Note: The nonVC- and nonBuyout-backed IPOs do not include a minimum sales screen, unlike in Panel B.

Panel B: IPOs with at least $50 million in LTM sales (2005 purchasing power) from 1980-2016 categorized by private equity (buyout fund) backing

<table>
<thead>
<tr>
<th>Buyout-backed or not</th>
<th>Number of IPOs</th>
<th>Average First-day Return</th>
<th>Average 3-year Buy-and-hold Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPOs</td>
</tr>
<tr>
<td>Buyout-backed</td>
<td>994</td>
<td>8.9%</td>
<td>35.3%</td>
</tr>
<tr>
<td>NonBuyout-backed</td>
<td>3,004</td>
<td>13.8%</td>
<td>39.7%</td>
</tr>
<tr>
<td>All</td>
<td>3,998</td>
<td>12.6%</td>
<td>38.6%</td>
</tr>
</tbody>
</table>
Table 17a (updated April 25, 2018)

Long-run Returns on IPOs Categorized by VC-, Growth Capital-, or Buyout Fund-backing

8,252 IPOs from 1980-2016 are used, with returns calculated through the end of December, 2017. Buy-and-hold returns are calculated from the first closing price until the earlier of the three-year anniversary or the delisting date (Dec. 29 of 2017 for IPOs from 2015 and 2016). Market-adjusted returns use the CRSP value-weighted index. All returns include dividends and capital gains. Style adjustments use firms matched by market cap and book-to-market ratio with at least five years of CRSP listing and no follow-on equity issues in the prior five years. This table is an updated version of Table 3 of my “Growth Capital-backed IPOs” published in the 2015 Financial Review. Growth capital-backed IPOs are defined to be IPOs with a financial sponsor that is financing investments in tangible assets and/or acquisitions are a major part of its growth strategy. Buyouts involve the financial sponsor taking control by buying out prior shareholders. Corporate venture capital and angel investors are not included as financial sponsors.

<table>
<thead>
<tr>
<th></th>
<th>Number of IPOs</th>
<th>Average First-day Return</th>
<th>Average 3-year Buy-and-hold Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPOs</td>
</tr>
<tr>
<td>VC-backed</td>
<td>2,703</td>
<td>28.6%</td>
<td>20.3%</td>
</tr>
<tr>
<td>Growth capital-backed</td>
<td>387</td>
<td>14.3%</td>
<td>55.4%</td>
</tr>
<tr>
<td>Buyout-backed</td>
<td>1,096</td>
<td>9.2%</td>
<td>33.5%</td>
</tr>
<tr>
<td>Financial Sponsored</td>
<td>4,186</td>
<td>22.2%</td>
<td>26.9%</td>
</tr>
<tr>
<td>Non-Financial Sponsored</td>
<td>4,066</td>
<td>13.5%</td>
<td>16.6%</td>
</tr>
<tr>
<td>All</td>
<td>8,252</td>
<td>17.9%</td>
<td>21.9%</td>
</tr>
</tbody>
</table>

Note: The high average 3-year buy-and-hold return for growth capital-backed IPOs is partly attributable, in a mechanical sense, to the five IPOs with the highest buy-and-hold returns in this subsample: The May 10, 1984 IPO of restaurant chain This Can’t Be Yogurt (4,076.6%); the April 10, 1997 IPO of middleware software developer and distributor BEA Systems (2,562.2%); the November 15, 1989 IPO of original equipment manufacturer Solectron (944.0%); the April 24, 1996 IPO of outdoor advertising (billboards) operator Outdoor Systems (935.1%); the February 9, 1983 IPO of health care provider United States Health Care (636.6%); and the September 19, 1989 IPO of health care provider Vencor (635.8%).
Table 18 (updated April 25, 2018)

Long-run Returns on IPOs Categorized by VC-backing, by Subperiod

The sample is composed of 8,252 IPOs from 1980-2016, with returns calculated through the end of December, 2017. Growth capital-backed IPOs are classified as venture capital (VC)-backed in all panels. IPOs with an offer price below $5.00 per share, unit offers, small best efforts offerings, ADRs, REITs, closed end funds, SPACs, natural resource limited partnerships, banks and S&Ls, and IPOs not listed on CRSP within six months of the offer date are excluded. Buy-and-hold returns are calculated from the first closing market price until the earlier of the three-year anniversary or the delisting date (Dec. 29 of 2017 for IPOs from 2015 and 2016). Market-adjusted returns use the CRSP value-weighted index. All returns include dividends and capital gains. Style adjustments use firms matched by market cap and book-to-market ratio with at least five years of CRSP listing and no follow-on equity issues in the prior five years. Market capitalization (size) is calculated using the first closing market price after the IPO. All returns include dividends and capital gains, including the index returns.

Panel A: IPOs from 1980-2016 categorized by venture capital backing

<table>
<thead>
<tr>
<th>VC-backed or not</th>
<th>Number of IPOs</th>
<th>Average First-day Return</th>
<th>Average 3-year Buy-and-hold Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPOs</td>
</tr>
<tr>
<td>VC-backed</td>
<td>3,091</td>
<td>26.8%</td>
<td>24.7%</td>
</tr>
<tr>
<td>NonVC-backed</td>
<td>5,161</td>
<td>12.6%</td>
<td>20.2%</td>
</tr>
<tr>
<td>All</td>
<td>8,252</td>
<td>17.9%</td>
<td>21.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Market-adjusted</td>
</tr>
<tr>
<td>VC-backed</td>
<td></td>
<td></td>
<td>-10.9%</td>
</tr>
<tr>
<td>NonVC-backed</td>
<td></td>
<td></td>
<td>-23.0%</td>
</tr>
<tr>
<td>All</td>
<td></td>
<td></td>
<td>-18.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Style-adjusted</td>
</tr>
<tr>
<td>VC-backed</td>
<td></td>
<td></td>
<td>-1.6%</td>
</tr>
<tr>
<td>NonVC-backed</td>
<td></td>
<td></td>
<td>-11.3%</td>
</tr>
<tr>
<td>All</td>
<td></td>
<td></td>
<td>-7.6%</td>
</tr>
</tbody>
</table>
### Panel B: IPOs from 1980-1989

<table>
<thead>
<tr>
<th>VC-backed or not</th>
<th>Number of IPOs</th>
<th>Average First-day Return</th>
<th>Average 3-year Buy-and-hold Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPOs</td>
</tr>
<tr>
<td>VC-backed</td>
<td>513</td>
<td>8.5%</td>
<td>31.9%</td>
</tr>
<tr>
<td>NonVC-backed</td>
<td>1,535</td>
<td>6.8%</td>
<td>19.3%</td>
</tr>
<tr>
<td>All</td>
<td>2,048</td>
<td>7.2%</td>
<td>22.5%</td>
</tr>
</tbody>
</table>

### Panel C: IPOs from 1990-1998

<table>
<thead>
<tr>
<th>VC-backed or not</th>
<th>Number of IPOs</th>
<th>Average First-day Return</th>
<th>Average 3-year Buy-and-hold Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPOs</td>
</tr>
<tr>
<td>VC-backed</td>
<td>1,258</td>
<td>17.3%</td>
<td>60.0%</td>
</tr>
<tr>
<td>NonVC-backed</td>
<td>2,355</td>
<td>13.5%</td>
<td>29.0%</td>
</tr>
<tr>
<td>All</td>
<td>3,613</td>
<td>14.8%</td>
<td>39.8%</td>
</tr>
</tbody>
</table>

### Panel D: IPOs from 1999-2000

<table>
<thead>
<tr>
<th>VC-backed or not</th>
<th>Number of IPOs</th>
<th>Average First-day Return</th>
<th>Average 3-year Buy-and-hold Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPOs</td>
</tr>
<tr>
<td>VC-backed</td>
<td>517</td>
<td>81.3%</td>
<td>-62.1%</td>
</tr>
<tr>
<td>NonVC-backed</td>
<td>339</td>
<td>39.1%</td>
<td>-39.4%</td>
</tr>
<tr>
<td>All</td>
<td>856</td>
<td>64.6%</td>
<td>-53.1%</td>
</tr>
</tbody>
</table>

### Panel E: IPOs from 2001-2016

<table>
<thead>
<tr>
<th>VC-backed or not</th>
<th>Number of IPOs</th>
<th>Average First-day Return</th>
<th>Average 3-year Buy-and-hold Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPOs</td>
</tr>
<tr>
<td>VC-backed</td>
<td>803</td>
<td>18.3%</td>
<td>20.6%</td>
</tr>
<tr>
<td>NonVC-backed</td>
<td>931</td>
<td>10.3%</td>
<td>20.9%</td>
</tr>
<tr>
<td>All</td>
<td>1,734</td>
<td>14.0%</td>
<td>20.8%</td>
</tr>
</tbody>
</table>
Table 19: Updated Table I of Ritter and Welch 2002 *Journal of Finance* article

Number of IPOs, First-day Returns, and Long Run Performance, IPOs from 1980-2016

The equally weighted (EW) average first-day return is measured from the offer price to the first CRSP-listed closing price. EW average three-year buy-and-hold percentage returns (capital gains plus dividends) are calculated from the first closing market price to the earlier of the three-year anniversary price, the delisting price, or December 29, 2017. Buy-and-hold returns for initial public offerings (IPOs) occurring after Dec. 31, 2016 are not calculated. Market-adjusted returns are calculated as the buy-and-hold return on an IPO minus the compounded daily return on the CRSP value-weighted index of Amex, Nasdaq, and NYSE firms. Style-adjusted buy-and-hold returns are calculated as the difference between the return on an IPO and a style-matched firm. For each IPO, a non-IPO matching firm that has been CRSP-listed for at least five years with the closest market capitalization (size) and book-to-market ratio as the IPO is used. Market capitalization is calculated using the first closing market price after the IPO. If this stock is delisted prior to the IPO return’s ending date, or if it conducts a follow-on stock offering, a replacement matching firm is spliced in on a point-forward basis. IPOs with an offer price below $5.00 per share, unit offers, small best efforts offers, natural resource limited partnerships, REITs, closed-end funds, banks and S&Ls, ADRs, and IPOs not listed on CRSP within six months of issuing have been excluded. Data is from Thomson Financial Securities Data, with supplements from Dealogic and other sources, and corrections by the authors. The number of IPOs per year is much lower than in the 1995 *Journal of Finance* article “The New Issues Puzzle” by Loughran and Ritter because that paper used a $1.00 offer price screen. The number is larger than in the 2002 *Journal of Finance* article “A Review of IPO Activity, Pricing, and Allocations” due to various data corrections and the back-filling of Nasdaq-listed foreign issuers by CRSP. (Updated April 25, 2018)
<table>
<thead>
<tr>
<th>Year</th>
<th>Number of IPOs</th>
<th>Average First-day Return</th>
<th>Average 3-year Buy-and-hold Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IPOs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Market-adjusted</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Style-adjusted</td>
</tr>
<tr>
<td>1980</td>
<td>71</td>
<td>14.3%</td>
<td>89.8%</td>
</tr>
<tr>
<td>1981</td>
<td>193</td>
<td>5.9%</td>
<td>12.0%</td>
</tr>
<tr>
<td>1982</td>
<td>77</td>
<td>11.0%</td>
<td>37.5%</td>
</tr>
<tr>
<td>1983</td>
<td>451</td>
<td>9.9%</td>
<td>15.9%</td>
</tr>
<tr>
<td>1984</td>
<td>171</td>
<td>3.7%</td>
<td>50.2%</td>
</tr>
<tr>
<td>1985</td>
<td>186</td>
<td>6.4%</td>
<td>5.6%</td>
</tr>
<tr>
<td>1986</td>
<td>393</td>
<td>6.2%</td>
<td>16.9%</td>
</tr>
<tr>
<td>1987</td>
<td>285</td>
<td>5.6%</td>
<td>-2.6%</td>
</tr>
<tr>
<td>1988</td>
<td>105</td>
<td>5.5%</td>
<td>58.0%</td>
</tr>
<tr>
<td>1989</td>
<td>116</td>
<td>8.0%</td>
<td>48.1%</td>
</tr>
<tr>
<td>1990</td>
<td>110</td>
<td>10.8%</td>
<td>9.7%</td>
</tr>
<tr>
<td>1991</td>
<td>286</td>
<td>11.9%</td>
<td>31.2%</td>
</tr>
<tr>
<td>1992</td>
<td>412</td>
<td>10.3%</td>
<td>37.4%</td>
</tr>
<tr>
<td>1993</td>
<td>510</td>
<td>12.7%</td>
<td>44.1%</td>
</tr>
<tr>
<td>1994</td>
<td>402</td>
<td>9.6%</td>
<td>78.0%</td>
</tr>
<tr>
<td>1995</td>
<td>461</td>
<td>21.2%</td>
<td>28.9%</td>
</tr>
<tr>
<td>1996</td>
<td>677</td>
<td>17.2%</td>
<td>25.2%</td>
</tr>
<tr>
<td>1997</td>
<td>474</td>
<td>14.0%</td>
<td>58.3%</td>
</tr>
<tr>
<td>1998</td>
<td>281</td>
<td>21.9%</td>
<td>23.4%</td>
</tr>
<tr>
<td>1999</td>
<td>476</td>
<td>71.2%</td>
<td>-47.6%</td>
</tr>
<tr>
<td>2000</td>
<td>380</td>
<td>56.3%</td>
<td>-60.1%</td>
</tr>
<tr>
<td>2001</td>
<td>79</td>
<td>14.2%</td>
<td>17.8%</td>
</tr>
<tr>
<td>2002</td>
<td>66</td>
<td>9.1%</td>
<td>68.6%</td>
</tr>
<tr>
<td>2003</td>
<td>63</td>
<td>11.7%</td>
<td>34.0%</td>
</tr>
<tr>
<td>2004</td>
<td>173</td>
<td>12.3%</td>
<td>51.4%</td>
</tr>
<tr>
<td>2005</td>
<td>159</td>
<td>10.3%</td>
<td>14.6%</td>
</tr>
<tr>
<td>2006</td>
<td>157</td>
<td>12.1%</td>
<td>-28.8%</td>
</tr>
<tr>
<td>2007</td>
<td>159</td>
<td>14.0%</td>
<td>-16.5%</td>
</tr>
<tr>
<td>2008</td>
<td>21</td>
<td>5.7%</td>
<td>11.4%</td>
</tr>
<tr>
<td>2009</td>
<td>41</td>
<td>9.8%</td>
<td>37.0%</td>
</tr>
<tr>
<td>2010</td>
<td>91</td>
<td>9.4%</td>
<td>36.4%</td>
</tr>
<tr>
<td>2011</td>
<td>81</td>
<td>13.9%</td>
<td>38.6%</td>
</tr>
<tr>
<td>2012</td>
<td>93</td>
<td>17.8%</td>
<td>81.9%</td>
</tr>
<tr>
<td>2013</td>
<td>157</td>
<td>21.1%</td>
<td>12.4%</td>
</tr>
<tr>
<td>2014</td>
<td>206</td>
<td>15.5%</td>
<td>17.1%</td>
</tr>
<tr>
<td>2015</td>
<td>115</td>
<td>18.7%</td>
<td>6.9%</td>
</tr>
<tr>
<td>2016</td>
<td>74</td>
<td>14.6%</td>
<td>25.3%</td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980-1989</td>
<td>2,049</td>
<td>7.2%</td>
<td>22.5%</td>
</tr>
<tr>
<td>1990-1994</td>
<td>1,720</td>
<td>11.2%</td>
<td>46.1%</td>
</tr>
<tr>
<td>1995-1998</td>
<td>1,893</td>
<td>18.1%</td>
<td>34.1%</td>
</tr>
<tr>
<td>1999-2000</td>
<td>856</td>
<td>64.6%</td>
<td>-53.1%</td>
</tr>
<tr>
<td>2001-2016</td>
<td>1,735</td>
<td>14.0%</td>
<td>20.8%</td>
</tr>
<tr>
<td>1980-2016</td>
<td>8,252</td>
<td>17.9%</td>
<td>21.9%</td>
</tr>
</tbody>
</table>
These tables show that IPOs have underperformed other firms of the same size (market cap) by an average of 3.3% per year during the five years after issuing, not including the first-day return. The underperformance relative to other firms of the same size and book-to-market ratio has averaged 2.1% per year. Returns are through Dec. 29, 2017.

Table 20-1
Percentage returns on IPOs from 1980-2016 during the first five years after issuing

<table>
<thead>
<tr>
<th></th>
<th>First six months</th>
<th>Second six months</th>
<th>First Year</th>
<th>Second year</th>
<th>Third year</th>
<th>Fourth year</th>
<th>Fifth Year</th>
<th>Geometric Mean years 1-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPO firms</td>
<td>6.6%</td>
<td>0.6%</td>
<td>7.6%</td>
<td>6.5%</td>
<td>11.9%</td>
<td>19.0%</td>
<td>10.3%</td>
<td>11.0%</td>
</tr>
<tr>
<td>Size-matched</td>
<td>5.6%</td>
<td>5.9%</td>
<td>12.0%</td>
<td>14.5%</td>
<td>15.3%</td>
<td>16.3%</td>
<td>12.9%</td>
<td>14.2%</td>
</tr>
<tr>
<td>Difference</td>
<td>1.0%</td>
<td>-5.3%</td>
<td>-4.4%</td>
<td>-8.0%</td>
<td>-3.4%</td>
<td>2.7%</td>
<td>-2.6%</td>
<td>-3.2%</td>
</tr>
<tr>
<td>No of IPOs</td>
<td>8,251</td>
<td>8,225</td>
<td>8,251</td>
<td>8,099</td>
<td>7,360</td>
<td>6,444</td>
<td>5,540</td>
<td></td>
</tr>
<tr>
<td>IPO &amp; BM-matched</td>
<td>6.6%</td>
<td>0.7%</td>
<td>7.6%</td>
<td>6.5%</td>
<td>11.8%</td>
<td>18.7%</td>
<td>10.1%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Difference</td>
<td>2.6%</td>
<td>-3.9%</td>
<td>-1.3%</td>
<td>-6.9%</td>
<td>-0.2%</td>
<td>1.0%</td>
<td>-2.5%</td>
<td>-2.0%</td>
</tr>
<tr>
<td>No. of IPOs</td>
<td>8,247</td>
<td>8,210</td>
<td>8,249</td>
<td>8,090</td>
<td>7,336</td>
<td>6,404</td>
<td>5,517</td>
<td></td>
</tr>
</tbody>
</table>

All returns are equally weighted average returns for all IPOs that are traded on Nasdaq, the Amex (now NYSE MKT), or the NYSE at the start of a period. For the first and third columns, the returns are measured from the closing market price on the first day of CRSP-reported trading until the sixth-month or one-year anniversary. For years 2-5, each year the portfolios are rebalanced to equal weights. If an issuing firm is delisted within a year, its return for that year is calculated by compounding the CRSP value-weighted market index for the rest of the year. For the size-matched returns, each IPO is matched with the nonissuing firm having the same or next higher market capitalization (using the closing market price on the first day of trading for the IPO, and the market capitalization at the end of the previous month for the matching firms). For the size & BM-matched returns, each IPO with a book-to-market ratio higher than zero is matched with a nonissuing firm in the same size decile (using NYSE firms only for determining the decile breakpoints) having the closest book-to-market ratio. Each IPO with a zero or smaller book-to-market ratio is matched with a nonissuing firm of a book-to-market ratio of zero or smaller having the closest market capitalization. For the IPOs, book-to-market ratios are calculated using the first recorded post-issue book value and the post-issue market cap calculated using the closing market price on the first CRSP-listed day of trading. For nonissuing firms, the Compustat-listed book value of equity for the most recent fiscal year ending at least four months prior to the IPO date is used, along with the market cap at the close of trading at month-end prior to the month of the IPO with which it is matched. Nonissuing firms are those that have been listed on the Amex-Nasdaq-NYSE for at least five years, without issuing equity for cash during that time. If a nonissuing subsequently issues equity, it is still used as the matching firm. If a nonissuing gets delisted prior to the delisting (or the fifth anniversary), the second-closest matching firm on the original IPO date is substituted, on a point-forward basis. For firms with multiple classes of stock outstanding, market cap is calculated using the offer price and the total number of shares outstanding across all classes of stock as reported in Compustat. Firms with multiple classes of stock are excluded as potential matching candidates. The sample size is 8,252 IPOs from 1980-2016, excluding IPOs with an offer price of less than $5.00, ADRs, REITs, acquisition funds, closed-end funds, banks and S&Ls, unit offers, small best efforts deals, and oil & gas limited partnerships. For the 1980s and later, IPOs that are not listed on CRSP within six months of the IPO are excluded. For IPOs from 1980 and later, if book value numbers are missing so that no style-matched firm is available as a benchmark, the value-weighted market return is used for the matching firm return. Returns are measured through December 29, 2017. For partial event-years that end on this date, the last partial year is deleted from the computations. For example, for an IPO on March 15, 2015, its first-year return is included, but not the second-year return.
Table 20-2
Percentage returns on IPOs from 1980-1989 during the first five years after issuing

<table>
<thead>
<tr>
<th></th>
<th>First six months</th>
<th>Second six months</th>
<th>First year</th>
<th>Second year</th>
<th>Third Year</th>
<th>Fourth year</th>
<th>Fifth year</th>
<th>Geometric mean years 1-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPO firms</td>
<td>3.6%</td>
<td>-0.9%</td>
<td>3.5%</td>
<td>9.5%</td>
<td>12.1%</td>
<td>2.4%</td>
<td>8.1%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Size-matched</td>
<td>3.7%</td>
<td>3.4%</td>
<td>7.0%</td>
<td>16.5%</td>
<td>16.7%</td>
<td>7.4%</td>
<td>10.2%</td>
<td>10.8%</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.1%</td>
<td>-4.2%</td>
<td>-3.5%</td>
<td>-7.0%</td>
<td>-4.6%</td>
<td>-5.0%</td>
<td>-2.1%</td>
<td>-4.8%</td>
</tr>
<tr>
<td>No. of IPOs</td>
<td>2,048</td>
<td>2,039</td>
<td>2,048</td>
<td>2,010</td>
<td>1,866</td>
<td>1,701</td>
<td>1,546</td>
<td></td>
</tr>
<tr>
<td>Size &amp; BM-Matched</td>
<td>3.6%</td>
<td>-0.8%</td>
<td>3.4%</td>
<td>9.5%</td>
<td>11.8%</td>
<td>2.2%</td>
<td>7.6%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.1%</td>
<td>1.4%</td>
<td>0.8%</td>
<td>14.5%</td>
<td>9.3%</td>
<td>4.4%</td>
<td>10.9%</td>
<td>5.5%</td>
</tr>
<tr>
<td>No. of IPOs</td>
<td>2,044</td>
<td>2,029</td>
<td>2,046</td>
<td>2,009</td>
<td>1,859</td>
<td>1,688</td>
<td>1,542</td>
<td></td>
</tr>
</tbody>
</table>

Table 20-3
Percentage returns on IPOs from 1990-1999 during the first five years after issuing

<table>
<thead>
<tr>
<th></th>
<th>First six months</th>
<th>Second six months</th>
<th>First year</th>
<th>Second year</th>
<th>Third Year</th>
<th>Fourth year</th>
<th>Fifth year</th>
<th>Geometric mean years 1-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPO firms</td>
<td>12.9%</td>
<td>3.7%</td>
<td>15.1%</td>
<td>7.8%</td>
<td>9.1%</td>
<td>25.6%</td>
<td>13.0%</td>
<td>12.9%</td>
</tr>
<tr>
<td>Size-matched</td>
<td>6.6%</td>
<td>8.6%</td>
<td>15.8%</td>
<td>17.8%</td>
<td>16.4%</td>
<td>20.4%</td>
<td>15.9%</td>
<td>17.2%</td>
</tr>
<tr>
<td>Difference</td>
<td>6.3%</td>
<td>-4.9%</td>
<td>-0.7%</td>
<td>-10.0%</td>
<td>-7.3%</td>
<td>5.2%</td>
<td>-3.0%</td>
<td>-4.3%</td>
</tr>
<tr>
<td>No. of IPOs</td>
<td>4,090</td>
<td>4,084</td>
<td>4,090</td>
<td>4,015</td>
<td>3,630</td>
<td>3,184</td>
<td>2,752</td>
<td></td>
</tr>
<tr>
<td>Size &amp; BM-Matched</td>
<td>12.9%</td>
<td>3.6%</td>
<td>15.0%</td>
<td>7.9%</td>
<td>9.2%</td>
<td>25.1%</td>
<td>12.9%</td>
<td>12.8%</td>
</tr>
<tr>
<td>Difference</td>
<td>5.8%</td>
<td>-3.8%</td>
<td>0.1%</td>
<td>-7.9%</td>
<td>-3.1%</td>
<td>0.8%</td>
<td>-0.8%</td>
<td>-2.9%</td>
</tr>
<tr>
<td>No. of IPOs</td>
<td>4,089</td>
<td>4,078</td>
<td>4,089</td>
<td>4,008</td>
<td>3,620</td>
<td>3,164</td>
<td>2,733</td>
<td></td>
</tr>
</tbody>
</table>
Table 20-4
Percentage returns on IPOs from 2000-2016 during the first five years after issuing

<table>
<thead>
<tr>
<th></th>
<th>First six months</th>
<th>Second six months</th>
<th>First year</th>
<th>Second year</th>
<th>Third year</th>
<th>Fourth year</th>
<th>Fifth year</th>
<th>Geometric mean years 1-5</th>
</tr>
</thead>
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<td>IPO firms</td>
<td>-2.8%</td>
<td>-3.7%</td>
<td>-2.8%</td>
<td>1.0%</td>
<td>17.3%</td>
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<td>7.2%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Size-matched</td>
<td>5.5%</td>
<td>3.2%</td>
<td>9.5%</td>
<td>6.2%</td>
<td>11.8%</td>
<td>17.8%</td>
<td>9.4%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Difference</td>
<td>-8.4%</td>
<td>-6.9%</td>
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<td>2,103</td>
<td>2,114</td>
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<td>1,560</td>
<td>1,242</td>
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<td>5.9%</td>
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<td>Size &amp; BM-matched</td>
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<td>14.0%</td>
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<tr>
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<td>1,551</td>
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Returns are through December 29, 2017. Thus, the fifth-year returns are only for those IPOs from 2000 to 2012, and the fourth-year returns are only for those IPOs from 2000 to 2013, etc. Note that the fifth-year returns are available only for those IPOs that survived for at least four years.
Table 21 (updated Dec. 19, 2018)
The Mean and Median Percentage Public Float, 1980-2018

The public float is calculated as the number of shares issued in the IPO (not including overallotment
shares) divided by the post-issue number of shares outstanding in all share classes (using data from CRSP
except for companies with dual-class shares), multiplied by 100%.

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<th>Public Float, %</th>
<th>Percentiles</th>
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<td>Median</td>
</tr>
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<tr>
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<td>193</td>
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<td>25.5</td>
</tr>
<tr>
<td>1982</td>
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</tr>
<tr>
<td>1984</td>
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<td>28.0</td>
</tr>
<tr>
<td>1985</td>
<td>186</td>
<td>32.0</td>
<td>30.7</td>
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<tr>
<td>1986</td>
<td>393</td>
<td>32.0</td>
<td>30.2</td>
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Table 22
Non-distress Delistings within Three Years of the IPO
This is an updated Table 3 of the 2013 *Journal of Financial and Quantitative Analysis* article “Where Have All the IPOs Gone?” by Xiaohui Gao, Jay R. Ritter, and Zhongyan Zhu.

<table>
<thead>
<tr>
<th>Year</th>
<th>No of IPOs</th>
<th>No of cohort IPOs Delisted for Non-distress reasons</th>
<th>Number of acquisitions and buyouts by Strategic Buyer</th>
<th>Financial Buyer</th>
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<td>Private</td>
<td>Percentage</td>
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<td>29</td>
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</tr>
<tr>
<td>1984</td>
<td>171</td>
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<td>2</td>
<td>9.1%</td>
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<td>186</td>
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<td>44</td>
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</tr>
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<td>105</td>
<td>7</td>
<td>0</td>
<td>6.9%</td>
</tr>
<tr>
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<td>0</td>
<td>7.1%</td>
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</tr>
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<td>1</td>
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<td>81</td>
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Table 23 (updated Dec. 19, 2018)
Dual Class IPOs

This table lists the number of IPOs each year that have dual class shares among tech IPOs and among non-tech IPOs. For example, in 1980 there were 22 tech stock IPOs, none of which were dual class, and 49 non-tech stock IPOs, 1 of which used a dual class structure. 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).

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<th>Non-tech IPOs</th>
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Figure 2: See Table 9 for details.
Figure 3

The public float is the number of shares issued in the IPO divided by the post-issue number of shares outstanding in all share classes. See Table 21 for details.

Mean and Median Public Float as a Fraction of Post-Issue Shares Outstanding, 1980-2018
Figure 4: See Table 1 for details.

Average First Day Return and Aggregate Money Left On the Table, 1990-2018

- **US $Billions**
  - Aggregate Money Left On the Table (in $billions)
  - Average First Day Return (Equal Weighted)

- **Percent**
  - 0% to 80%
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
Table 14 gives the numbers plotted here. In this figure, ADRs are included for both the number of Chinese IPOs and the overall number of IPOs.