Where Have All the IPOs Gone?

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IPO volume has been very low in the U.S. since 2000

In 1980-2000, an average of 311 firms went public every year
In 2001-2011, an average of 99 firms went public every year
IPO Volume has been particularly low for small firms

Small firm IPOs are defined as IPOs with less than $50 million in LTM sales ($2009)

Number of U.S. IPOs with pre-IPO Annual Sales less than or greater than $50m/Year ($2009)
Firms going public have become older, too.

Figure: 25th, 50th, and 75th PERCENTILES OF FIRM AGE AT TIME OF GOING PUBLIC BY YEAR OF IPO.
IPO Exits for VC-backed firms have been limited
from IPO Task Force slides, October 2011.

Source: Thomson Reuters/National Venture Capital Association (Based on number of exits per year; M&A exits are for private company sales only.)
Conventional Wisdom: The IPO Market Is Broken

Sarbanes-Oxley Act of 2002 (SOX) has imposed costs on publicly traded firms, especially small firms. Decimalization, Reg FD in 2000, and the Global Settlement in 2003 have led to a drop in analyst coverage for small firms, lowering their P/E ratios.
We call these explanations

The regulatory overreach hypothesis
Our Explanation: A Long-term Structural Change

Increased economies of scope
Increased importance of speed to market
We call our explanation

The economies of scope hypothesis
Structural Changes in the Product Market

The profitability of small independent firms has declined relative to the value created as part of a larger organization that can quickly implement new technology and benefit from economies of scope
Our Evidence

The percentage of small firms that are unprofitable has increased
Are recent IPOs going private more frequently?

Source: Table 7 (both LBOs and acquisitions by private firms)
Small firm IPOs have become less profitable

Percentage of IPOs from the prior 3 years with negative EPS in fiscal year $t$

Source: Table 2, columns 2 and 4
## Industry effect?

<table>
<thead>
<tr>
<th>IPO year</th>
<th>Small firm IPOs (sales&lt;$50m)</th>
<th>Large firm IPOs (sales&gt;$50m)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>EPS≥0</td>
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<td>Panel A: All IPO firms</td>
<td></td>
<td></td>
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<tr>
<td>1980-2000</td>
<td>3,462</td>
<td>3,733</td>
</tr>
<tr>
<td>2001-2009</td>
<td>272</td>
<td>192</td>
</tr>
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<td>Panel B: Tech and Biotech IPO firms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980-2000</td>
<td>1,959</td>
<td>1,791</td>
</tr>
<tr>
<td>2001-2009</td>
<td>192</td>
<td>103</td>
</tr>
<tr>
<td>Panel C: IPO firms in all other industries</td>
<td></td>
<td></td>
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<tr>
<td>1980-2000</td>
<td>1,503</td>
<td>1,942</td>
</tr>
<tr>
<td>2001-2009</td>
<td>80</td>
<td>89</td>
</tr>
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</table>

The decline in the profitability of small firm IPOs is **not** entirely driven by the tech and biotech industries.

Source: Table 3, using the three fiscal years after the IPO
Are small firm IPOs being acquired more frequently?

Percentage of Small Firm (blue) and Large Firm (orange) IPOs that Are Acquired or Bought Out Within 3 Years
IPO activity has been modest in other developed countries.
Small firm IPO returns have been disappointing

Mean 3-year buy-and-hold returns on IPOs (grey) and style-matched seasoned firms (red)

- Small firm IPOs
- Large firm IPOs

- 1980 - 2000
- 2001 - 2009

- 1980 - 2000
- 2001 - 2009
Summary of Evidence

Small firm IPOs become less profitable post-IPO
  Dramatic decline in profitability after 2000
  Decline in profitability is not limited to tech firms
  Mergers have become more common

Small firm IPOs generate disappointing returns

Eat or be eaten: Many IPOs either make acquisitions or are acquired themselves
Evidence on post-IPO analyst coverage

There is near universal analyst coverage on IPOs in 1994 to 2009

The percentage of small (grey) and large (red) firm IPOs with analyst coverage from at least one lead underwriter within one year of the IPO

Source: Table 5, column 3
Tick size and stock prices

Bid-ask spreads have declined for small company stocks
25-50 cents per share pre-1994
1-10 cents per share now
How does a larger spread boost a stock’s price?

Wide bid-ask spreads are profitable for market makers.

Profitable market-making creates an incentive to generate trading volume.

Analyst coverage generates trading volume, so a securities firm that makes markets has an incentive to have an analyst cover these stocks.

Analyst coverage increases the demand to own the stock, boosting the stock price.
How much does analyst coverage boost a stock’s price?

Answer: 5%

Source: 2010 *Financial Management* article by Demiroglu and Ryngaert “The First Analyst Coverage of Neglected Stocks” covering 549 initiations from 1997-2005, with 88% of these stocks having a market cap below $250 million
Tradeoffs

Wider bid-ask spreads increase the cost of trading, resulting in lower liquidity and a lower stock price.

Tradeoff: wider bid-ask spreads boost analyst coverage, boosting price, and lower liquidity, lowering the price.

Which effect dominates?

What is the optimal bid-ask spread? Is it 5 cents? Is it 25 cents? Is it $2 per share?
Wider bid-ask spreads are a tax on small traders

Why have an implicit tax, rather than an explicit tax with the proceeds paid directly to analysts?

Why should traders pay for increased analyst coverage for a company, rather than the company?
Independent Research Network

In 2005-2007, Nasdaq and Reuters created the Independent Research Network to boost coverage of microcap stocks.

Very few companies were willing to pay $120,000 per year to have the IRN subsidize coverage from three independent analysts.
NPV of analyst coverage

For a $200 million market cap stock, a 5% increase in price adds $10 million to the market cap.

At a 10% cost of capital, a firm should be willing to pay up to $1 million per year to get and maintain analyst coverage.

But even at $120,000 per year, very few firms were willing to pay for analyst coverage.
Other Possible Explanations for Fewer Small IPOs

Consolidation of underwriters
  Demise of “Four Horsemen”

Depressed stock market
  But 1996 was the peak of IPO volume

Litigation environment
  But is it worse now than in 1990s?

Patent “trolls”
  Affects private and public firms
Policy Implications

The stock exchanges and VC industry have argued that structural changes (e.g., subsidizing analyst coverage, lowering regulatory burdens) are needed to boost IPO activity.

Our analysis indicates that these will not be very effective at generating IPO activity.
Policy Implications

Our analysis suggests that companies are not going public because they have less value as a small independent company than as part of a larger organization.
Implications for Employment

Sample: 1,245 U.S. Emerging Growth Company IPOs from June 1996-December 2010

Pre-IPO Employment: 437,934 jobs
Employment 10 years after the IPO: 1,142,200 jobs
Post-IPO growth of 161%

Conclusions

No one explanation explains all of the prolonged drought in small firm IPOs in the U.S.

**SOX and Analyst Coverage explanations** are of the category “The IPO market is broken”

**Our economies of scope explanation** focuses on increased economies of scope and the importance of speed to market

We focus not on public vs. private, but small vs. large firm as the profit-maximizing organizational form
Analogy: The Decline of the Family Farm

For many thousands of years, most farms were passed from father to son. In the last 150 years, technology and the relative costs of farm equipment and inputs such as fertilizer have been changing. Now, when a farmer retires, most farms are split into pieces and sold to adjacent farmers, who then combine the operations, and average farm size grows. The number of family farms has been falling.
Analogy (continued)

The decline of the small family farm is not because inheritance law is flawed. It is because the optimal scale of a farm has increased.