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Hunting High and Low: The Decline of the Small IPO and What to Do About It

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Marshall Lux and Jack Pead

Abstract

Since the bursting of the dot-com bubble in 2000, the annual number of initial public offerings in the U.S. has fallen and not recovered. Since that year, the number of IPOs has averaged 135 annually, less than a third of the average in the 1990s. That decline has long been viewed as a problem that threatens American technological innovation, job creation and competitiveness. This paper surveys the by-now extensive research and debate about IPOs, particularly tackling the question of identifying the factors behind the decline. This is not a simple problem. Multiple factors appear to have played a role not just in the recent decline in IPOs, but in the surge in number and volume of IPOs that began in the early 1980s. These factors include a financial system that features greater scale and consolidation in both financial intermediaries and institutional investors; the fallout from the Eliot Spitzer-led Global Analyst Research Settlements in 2003, which left many smaller startups without research coverage; the rise of private capital, from private equity to liberalized rules on other forms of private capital offerings; a shift in institutional investing from active to passive strategies; and an increasing burden of regulation on all public companies. It's quite clear that the locus of the problem is with smaller companies that struggle to get coverage from the sell side and that feel a disproportionate burden from regulation like Sarbanes-Oxley than larger corporations. Two broad trends dovetail here: There is more private capital to support private startups than in the past, and the challenges of management in the public arena are complex, with high levels of M&A, activist investors, enhanced regulation, personal liability for managers and directors, and the perception of a short-term perspective in a shareholder-centric governance system. We offer a number of regulatory recommendations to ease the burden. We also ask the question: Given the larger context of changing and diversifying equity and capital markets, is the decline in IPOs since the '90s a serious issue or a reflection of more diverse equity markets that offer a multiplicity of paths forward?

¹ A-ha, 1985.

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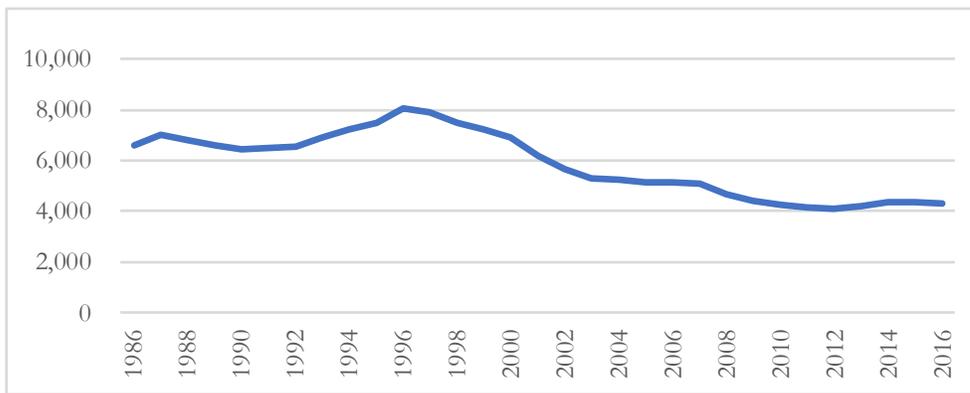
A paper seeking to undertake a nuanced analysis of what is a complex phenomenon would not be possible without the support of those with varying perspectives on the issue. We would like to express our gratitude to Robert Greene at Patomak Global Partners for spurring the line of inquiry which led to the development of this paper and for his continued support. As in prior years, the support of the Mossavar-Rahmani Center for Business and Government at the Harvard Kennedy School and the wider Harvard community has been critical in not just allowing us to do this work, but to do it well. In particular, we would like to thank Bob Glauber, John Haigh, Richard Zeckhauser, Scott Leland and Susan Gill for their advice, encouragement and support. We'd like to thank Jon Korngold at General Atlantic for his thoughts. Finally, we thank Vladimir Ivanov and Scott Bauguess at the SEC for assisting us with our inquiries and allowing us to unearth new data on private offerings.

1. Introduction

The initial public offering has long been associated with the vitality of the U.S. capital markets. But since 2000, near the height of the dot-com bubble, the number of IPOs began a long decline. The average annual number of IPOs fell by over 61% between the 1990s and the 2000s.² Certainly, in the late 1990s and the early 2000s, IPOs were inflated by the waves of internet and tech companies rushing to sell public shares and cash out their venture capital backers. Yet, as our research finds, the sharp decline since that time is hardly just a correction in the IPO market, but represents a more persistent, longer-term trend. In fact, the decline in IPOs persisted throughout the recession that followed the dot-com bust, through the subsequent recovery, through the market collapse that led to the Great Recession, and through the nearly decade-long recovery.

In this paper, we aim to explore the factors that have driven what appears to be a new normal in IPO levels in the U.S. We find that the overall decline in IPOs between 2000 and today is largely the result of a dramatic fall in the number of small IPOs, those below about \$100 million. Throughout this period, a complementary trend has also occurred, with the number of public companies falling by 46% between 1996 and 2016—from some 8,090 to just 4,331.³ We explore a number of causes shaping these trends and conclude that both market and regulatory factors are responsible.

Figure 1: Number of domestic public companies, USA, 1986–2016.



Source: World Bank

Understandably, the decline in IPOs and the number of publicly listed companies has triggered a search for an explanation as well as demands for policy action. Policymakers from both parties have argued that the decline in IPOs and public companies is cause for concern. In 2012, Congress passed the bipartisan Jumpstart Our Business Startups Act (the JOBS Act). As explained in Part 4, the legislation has helped to bolster small companies' access to public and private capital markets. But as our research shows, more can be done to revitalize public capital markets. As then-newly named Securities and Exchange Commission Chairman Jay Clayton stated in July 2017, "Many of our country's most innovative businesses are opting to remain privately held" and, in order to reverse the trend, "we need to increase the attractiveness of our

² Bloomberg. The average number of IPOs per annum from 1990-1999 was 529. This number fell to 205 during the period 2000-09.

³ "Listed Domestic Companies, Total, United States," The World Bank, World Federation of Exchanges database, accessed Dec. 18, 2017, <https://data.worldbank.org/indicator/CM.MKT.LDOM.NO?locations=US>.

public capital markets.”⁴ Importantly, Clayton noted, any reform aimed at making public markets more attractive should do so “without adversely affecting the availability of capital from our private markets.”⁵

In Part 5, we present strategies to do just that. Certainly, non-policy factors—including financial innovations and changes in investor preferences—have driven the decline in IPOs. Yet to the extent that regulatory policy is discouraging public equity offerings and impeding investor choice, the SEC and Congress should reexamine those policies. We conclude our study by identifying a number of policy reforms that could improve the health of the public capital markets without undermining the appeal of the private capital ecosystem.

2. Why IPOs Matter

IPOs are just one aspect of a complex financial ecosystem that has developed organically over time. An IPO on the New York Stock Exchange or the Nasdaq represents the debut of a company in the public equity markets. With \$29 trillion in total market capitalization at year-end 2016, the U.S. equity markets are the largest single segment of the U.S. capital markets, more than double the size of the market for U.S. Treasuries.⁶

The first IPO that resembles a market vehicle we would recognize today took place in the Netherlands in 1602, with the public offering of shares in the United East India Company, which in turn led to the founding of the first modern stock market, the Amsterdam Stock Exchange.⁷ In the U.S., IPOs experienced dramatic growth in annual numbers only in the 1960s.⁸ Multiple factors fueled the growth and construction of a robust, if often volatile, technology-driven IPO market. First, in the 1950s, institutional investors began shifting their investing focus from bonds to stocks.⁹ The fears going back to the Great Depression about the safety of stocks had faded, particularly as institutions adopted modern portfolio theory—building diversified portfolios that included allocations of higher-risk equity, like shares of companies undergoing IPOs.¹⁰ Institutions, particularly corporate and public pension funds, were growing rapidly in an affluent U.S. with a large Baby Boomer generation coming of age. Second, a professionalized venture capital industry had developed after World War II (often backed by institutional funds) and was channeling its capital into startups, many of them companies exploiting the latest technological advances, like semiconductors and digital electronics.

⁴ SEC Chairman Jay Clayton. “Remarks at the Economic Club of New York.” July 12, 2017. U.S. Securities and Exchange Commission, accessed Dec. 18, 2017. <https://www.sec.gov/news/speech/remarks-economic-club-new-york>.

⁵ Ibid.

⁶ “A Financial System That Creates Economic Opportunities: Capital Markets,” U.S. Department of Treasury. Oct. 2017.

⁷ Shiller, Robert. “ECON 252: Financial Markets (2011) Lecture 4 - Portfolio Diversification and Supporting Financial Institutions.” Open Yale Courses, accessed December 18, 2017, <http://oyc.yale.edu/economics/econ-252-11/lecture-4>.

⁸ Burhop, Carsten, and David Chambers, “8. Initial Public Offerings: A Historical Overview,” Research Foundation Books 2016, no. 3 (Dec. 1, 2016): 132–46. <https://doi.org/10.2470/rf.v2016.n3.11>.

⁹ Ibid.

¹⁰ Burck, Gilbert, “A New Kind of Stock Market,” *Fortune*, March 1959, p. 120.

After the recession and severe market slump of the '70s, when both venture capital and IPOs nearly submerged, the IPO market roared back in the early '80s.¹¹ IPOs became a key component of a sophisticated equity-capital market structure; this model is one many hearken back to when articulating concerns about flagging IPO numbers. Venture capital was organized to support and profit from a high-risk culture of startups, entrepreneurs and innovation. Venture stakes were illiquid and in time needed to be transformed into public shares, through acquisition or IPOs, if only so they could invest their capital into new high-risk, high-reward opportunities. Venture funds were relatively small, which fast-growing companies could quickly burn through.¹² To drive growth, many companies required the much greater and cheaper capital provided by public markets: permanent equity capital.

That transition from private to public involved a widely understood tradeoff. Venture capital funds could monetize their profits, and deserving companies could raise large amounts of public capital for growth.¹³ However, this came at the cost of assuming new burdens, particularly on the regulatory front. Governance grew more complex. Rather than dealing with a board that consisted of a handful of venture capitalists, newly public firms had large shareholder bases, increasingly consisting of sophisticated institutions expecting steady share appreciation.¹⁴ And new public companies discovered they had multiple stakeholders, including employees, customers and local communities, with their approach to management being closely and continuously scrutinized. The IPO process also introduced startups to Wall Street, the gatekeeper to the capital markets, and to regulatory oversight, particularly from the SEC, which mandated transparency and a complex disclosure regime.

In retrospect, this equity capital market structure was an increasingly intricate balancing of tradeoffs that had barely existed before the '60s and was in flux as early as the mid-'80s, with the explosion of financial innovations, from high-yield bonds to private equity, to rising levels of hostile M&A and the emergence of shareholder-centric governance, which altered the always-rocky path between venture-backed startup and public company.

Still, that model of the IPO became a popular ideal, closely associated with technological vitality and economic prosperity.¹⁵ A robust IPO market became evidence of the underlying health of new-business creation; a sign that companies were maturing in ways that made entrepreneurs eager to trade ample public capital for the responsibility to shoulder regulatory burdens and be accountable to shareholders; and the fact that new companies gave investors, both institutional and retail, an opportunity to participate broadly in high-growth stocks. The health of the IPO became a litmus test for the health and dynamism of the economy. As a result, comparison in the number of IPOs has long been a key metric to signify, for good or bad, the competitiveness of New York versus Tokyo, London and, today, Hong Kong.¹⁶

¹¹ Burhop, op. cit.

¹² Wilson, John W, *The New Venturers: Inside the High-Stakes World of Venture Capital*, Reading, Mass: Addison-Wesley, 1985.

¹³ For a broad overview of the venture process, see Paul Gompers and Josh Lerner, *The Venture Capital Cycle*, MIT Press, 2006.

¹⁴ Kahle, Kathleen M., and Stultz, Rene, "Is the U.S. Public Corporation in Trouble?" *Journal of Economic Perspectives*, Vol. 31, No. 3, Summer 217, p. 81.

¹⁵ A comprehensive study from the Kauffman Foundation in 2012 on employment and revenue growth clearly delineated 1980-2000 as a distinct period in IPOs, then studied a slice of that, 1996-2000. See Kenney, Martin, Patton, Donald, and Ritter, Jay, "Post-IPO Employment and Revenue Growth for U.S. IPOs, June 1996-2010," Kauffman Foundation, 2012.

¹⁶ Committee on Capital Markets Regulation, "The Competitive Position of U.S. Public Equity Markets" Dec. 4, 2007.

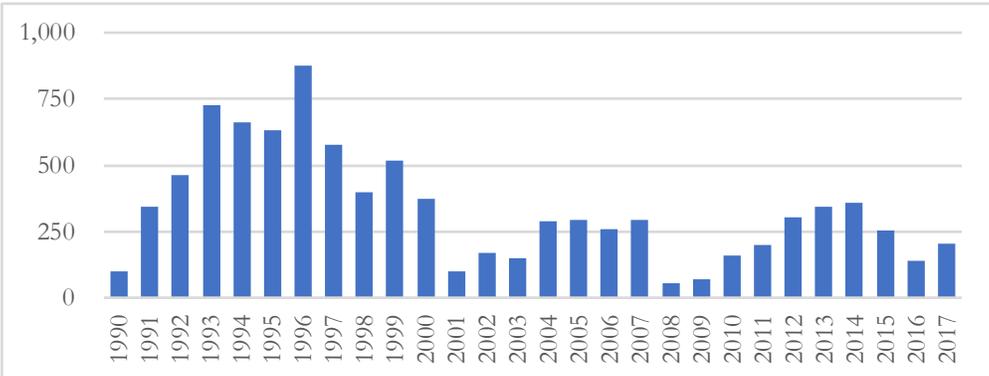
There were clearly benefits of a healthy IPO market. Research suggests that IPOs finance growth and stimulate innovation, productivity and job creation.¹⁷ In fact, the broadest rationale for IPOs is the argument that they produce new companies generating the largest numbers of jobs. Many investors buy shares in IPOs in the belief that the company will generate an acceptable rate of return; while that’s not always the case, the roster of companies that participated in high-profile IPOs—Intel, Apple, Microsoft, Amazon.com, Google, Facebook—is impressive and continues to drive the stock market. Apple has the highest market capitalization of any public corporation in the world.

Of course, many aspects of IPOs remain controversial: from the role of Wall Street firms that set IPO prices, which critics often view as either too low or too high (leaving money on the table or persuading investors to overpay), to the large number of IPOs that simply don’t perform for public shareholders. These shouldn’t be surprising. Price setting is an art, not a science. And IPOs of emerging companies are, by definition, risky. But tech stocks have been prone to bubbles and manias, from the sonics-and-tronics frenzy of the ’60s to the dot-com bubble of the late ’90s. In particular, the dot-com bust severely damaged both venture capital and the IPO market after bursting in mid-2000. And as we have seen, IPOs have never recovered to those heights since.

3. Examining the Decline in IPOs

The IPO market can be viewed from a variety of perspectives, including by the number of IPOs and the total amount of capital raised. These results can be segmented by size or sector. Looking at the market as a whole, since 2000 the average number of IPOs annually has fallen by over 60% from the levels seen during the 1990s.¹⁸ We utilized Bloomberg data to examine the scope of this downward trend and the types of companies not inclined to raise funds via public capital markets.

Figure 2: Number of IPOs, USA, 1990–2017.



Source: Bloomberg

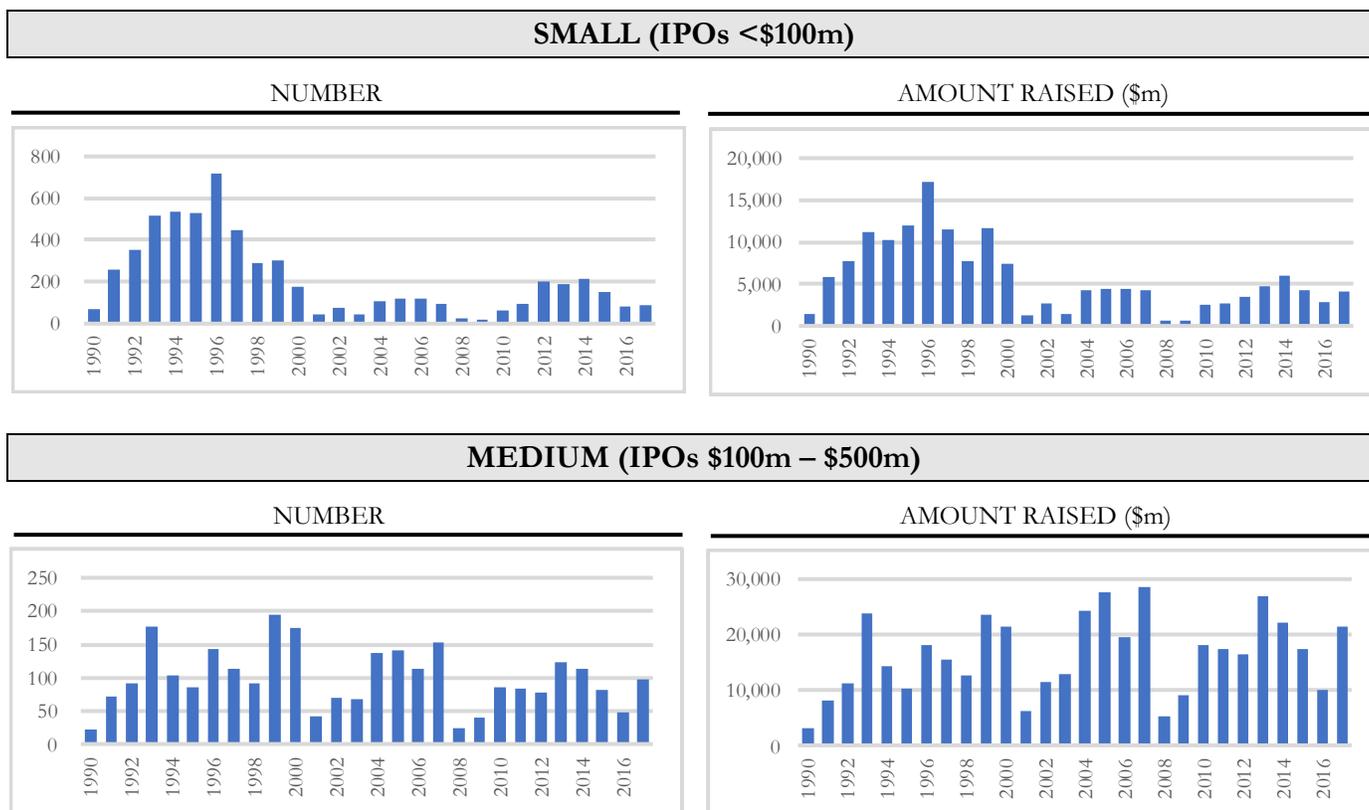
¹⁷ Kenney, Martin, Patton, Donald, and Ritter, Jay, “Post-IPO Employment and Revenue Growth for U.S. IPOs, June 1996-2010,” Kauffman Foundation, 2012.

¹⁸ Bloomberg. The average number of IPOs per annum from 1990-1999 was 529. This number fell to 205 during the period 2000-09.

The immediate finding is that the number of offerings has fallen dramatically since 2000, which represents the end of an IPO boom that featured the public debuts of waves of internet and tech stocks. That boom resulted in the burst of the so-called dot-com bubble and a subsequent recession. Of course, the number of IPOs has fluctuated before. From 1973 (when the Nasdaq stock exchange, which focused on small, often tech stocks, launched) through 1980, the major exchanges averaged about 17 IPOs a year.¹⁹ Those years did feature economic dislocation and falling markets after the boom years of the 1950s and 1960s.²⁰ IPOs then recovered in the 1980s, averaging 347 a year from 1983 to 1987.²¹ After the recession of the late 1980s, IPOs took off in the 1990s, before coming to a fairly abrupt halt from 2001 onward.

In order to parse out the trends in IPOs by their relative size, we separated the IPO data into three categories: small (<\$100 million), medium (\$100 million to \$500 million) and large (>\$500 million).²² We indexed these categories so they are based on real 2017 prices.²³ The segmented results are shown below.

Figure 3: IPOs segmented by size, based on 2017 real prices, USA, 1990–2017.



¹⁹ Michelle Lowry, Roni Michaely, and Ekaterina Volkova, "Initial Public Offerings: A Synthesis of the Literature and Directions for Future Research" (Mar. 20, 2017), available at <https://ssrn.com/abstract=2912354>.

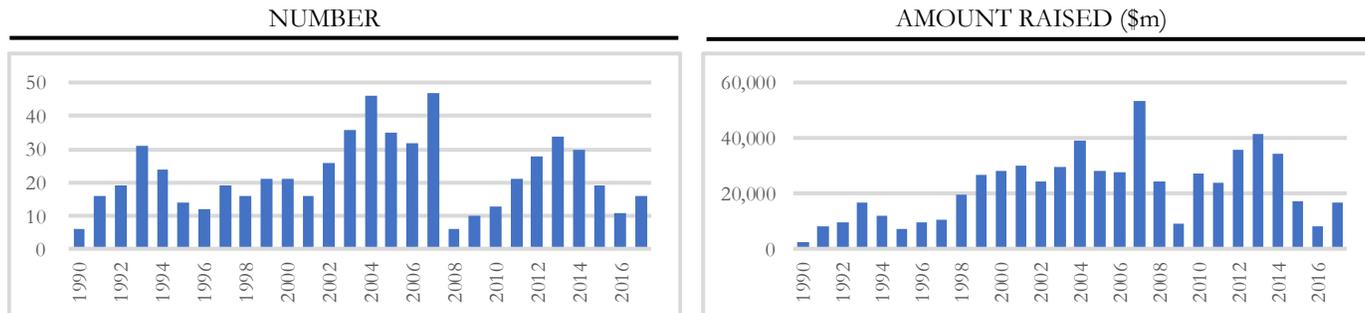
²⁰ Ibid.

²¹ Ibid.

²² IPO data obtained from Bloomberg. Only IPOs with offer stage classified as ‘trading’ included. Year of IPO based on ‘Effective Date.’

²³ Size thresholds deflated annually at the 1 July CPI in the given year. CPI used is the Consumer Price Index for All Urban Consumers: All items from the Federal Reserve Bank of St Louis (FRED) database.

LARGE (IPOs >\$500m)



Source: Bloomberg, Federal Reserve Economic Data

The most notable trend that emerges from this analysis is the precipitous drop in the number of small IPOs since the year 2000. The number of small IPOs averaged 401 annually in the 1990s, but then dropped to only 105 annually in the 18 years since. In the 1990s, small IPOs made up 27% of all capital raised in public markets, whereas in the period from 2000 to present they have represented only 7% of all capital raised.

The trends in medium and large-cap IPOs differ significantly from those seen for smaller IPOs. For medium-sized IPOs (between \$100 million and \$500 million), both the number of IPOs and the amounts raised appear to be cyclical. We see downturns in the number of medium-sized IPOs in the aftermaths of the dot-com bust (2001–03) and the Great Recession (2008–09). But apart from cyclicity, there does not appear to be a significant increase or decrease in the number of medium-sized IPOs over time. The trends in large-cap IPOs present a different picture. First, there are relatively few large-cap IPOs, never more than 50 in any one year. So a few major IPOs can skew the results in terms of amounts raised. Notably, this segment was smaller in the 1990s and saw major growth in the 2000s, peaking in 2007. This segment recovered again in the years after the financial crisis, peaking in 2013, before falling through 2016. This number ticked up again in 2017 with 16 offerings, supported by major IPOs such as Snap and six major energy-sector IPOs. As we’ll discuss later in this paper, the burden of regulatory pressures faced by companies in this large-cap category is very different from those affecting sub-\$100 million market-capitalization companies.

4. Drivers Behind the Decline in Small-Cap IPOs

The decline in small-cap IPOs in the U.S. has been dramatic and long term. As SEC Commissioner Michael Piwowar said in his opening remarks at an SEC-New York University conference on IPOs in May 2017: “Traditional economic factors, such as fluctuations in companies’ demand for capital and changes in investor sentiment, cannot explain the large decrease.” Piwowar focused on a single metric to explain the overall decline. “The substantial drop in the number of IPOs in the United States is primarily driven by the disappearance of small IPOs,” he said. Our segmented IPO analysis above confirms and illustrates Piwowar’s statement.

A survey of the literature and of the data suggests there are five major, intertwined drivers behind the decline of small-cap IPOs: (1) analyst coverage trends, (2) buy-side trends, (3) a shift from active to passive investment strategies, (4) the growth in private capital and (5) increasingly burdensome regulation.

A. Sell-Side Coverage Trends

The issuer's decision to undergo an IPO does not occur spontaneously. Managers of companies evaluating whether to go public or not weigh numerous considerations, primarily the extent to which there will be investors on the buy side for the newly public company. If investment demand is too low, the IPO could fail or the company's share price could drop dramatically after going public. Both are disastrous outcomes for a growing company.

One important consideration management and boards make before deciding to go public is how much analyst coverage the company will receive. In fact, the necessity to attract "coverage" by analysts has traditionally been one of the key hurdles for private companies considering going public.²⁴ Less coverage means a smaller pool of investors will assess the stock, both in the lead-up to the IPO and in the secondary market. Research by Merkley, Michaely and Pacelli shows that the quality of analyst coverage available for a stock, as measured through forecast errors and optimism bias, is correlated with the number of analysts covering the stock.²⁵ They hypothesize that higher levels of competition between analysts lead to higher-quality coverage, and vice versa. This suggests that lower levels of analyst coverage should increase the wariness of potential investors that the available coverage may be of lower quality and potentially biased. This in turn can become a self-fulfilling prophecy, where low levels of coverage lead to lower investor appetite.

Why would smaller IPOs, in particular, appear to be endangered? Part of the answer may lie in the relationship between Wall Street—that is, the sell side—and investors on the buy side. Both sell side and buy side have been changing in fundamental ways since 2000—trends that affect all IPOs—but small-cap offerings most dramatically.

Since the 1970s, the sell side, roughly synonymous with investment banking and brokerage, has changed considerably. Investment banks have consolidated from a large number of small firms, many of them private partnerships, to a much more compact group of very large public corporations—including a few full-service, global banks. As firms grew larger, small-cap companies declined in importance. And the large investment banks that continue to raise equity capital need to sell clients multiple products, from M&A to debt to equity, to generate significant returns.²⁶ A single equity offering by a small company represents a less important, increasingly small-value client, with low potential for follow-up business. (One exception for both the sell side and buy side: biotechnology and life sciences IPOs, which may involve small caps but which are heavy capital users, offering multiple opportunities to invest in finances and the possibility of five to 10 times returns.²⁷)

On top of that, the mutuality of interests between investment banks' research analysts and IPO issuers spawned a sense of conflict, which emerged after the 2000 dot-com collapse. Analysts were charged with trading positive coverage for a piece of the IPO underwriting by their firm's investment bank. New York Attorney General Eliot Spitzer's crusade against research conflicts in the early 2000s led to the Global

²⁴ Aggarwal, Rajesh, Laurie Krugman, and Kent Womack. "Strategic IPO Underpricing, Information Momentum, and Lockup Expiration Selling." *Journal of Financial Economics* 66, no. 1 (2002): 105–37.

²⁵ Merkley, Kenneth, Michaely, Roni, and Pacelli, Joseph, "Does the Scope of the Sell-Side Analyst Industry Matter? An Examination of Bias, Accuracy and Information Content of Analyst Reports," SSRN, Dec. 19, 2013.

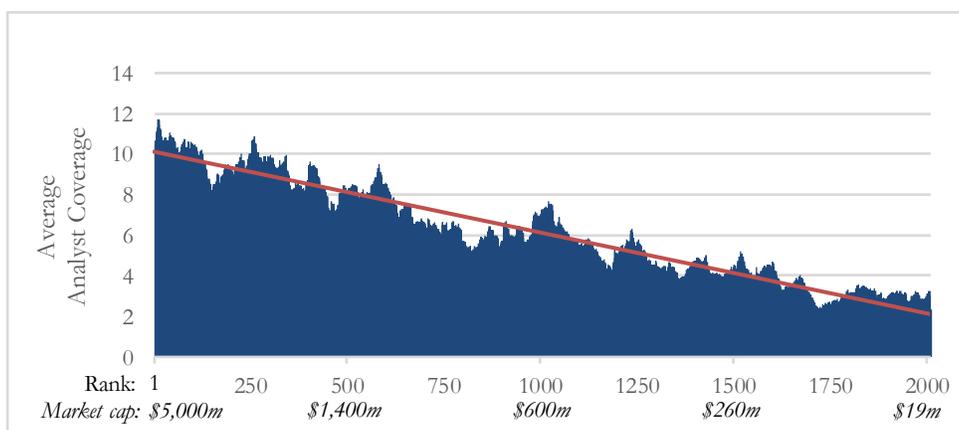
²⁶ Solomon, Jack, "Capital Formation, Smaller Companies and the Declining Number of Initial Public Offerings," *SEC Advisory Committee*, June 22, 2017, p. 11.

²⁷ *Ibid.* p. 8.

Analyst Research Settlements in April 2003 that banned any quid pro quo between research and investment banking²⁸—meaning the promise of future business for a recommendation. While this eliminated a conflict, it undermined the economics of equity research, forcing a restructuring and rethinking of many research units. The settlement set off a chain of consequences. Investment banks had generally subsidized small-cap coverage with profits from large-cap stocks. Now the economic model of most investment banks focused more tightly on large-cap companies.²⁹ Smaller companies found themselves in the cold.

To assess the relationship of IPO trends and analyst coverage, we examined how levels of analyst coverage vary with market size. First, we analyzed trends in coverage among small-cap stocks, starting by looking at the constituents of the Russell 2000. This index takes the smallest 2,000 companies of the Russell 3000 index, which itself is made up of the largest 3,000 publicly listed companies in the U.S. and is intended to be a benchmark for the entire stock market. Ranking the constituents of the Russell 2000 in decreasing order of market capitalization, we found that the level of analyst coverage for each stock decreases in line with size. The largest company in the index has a market capitalization of about \$5 billion and is covered by 15 sell-side analysts, while the smallest has a market capitalization of \$19 million and is covered by four analysts.³⁰ To reduce volatility in the data and better illustrate this trend of declining coverage with market value, we calculated the average level of coverage based on the 25 closest ranked stocks to each side of the relevant company (to calculate an average of 51 data points). We show the raw data in Appendix Item 2. Our analysis neatly shows the trend: The average level of coverage decreases from around 10 analysts for the largest companies in the index to just two analysts for the smallest companies. This is shown by the linear trend line in the data below.

Figure 4: Russell 2000—Analyst coverage declines in line with a company’s market value.



Source: Russell, Bloomberg

The low levels of coverage for smaller stocks are significant. With coverage from just a few analysts, companies find it exceedingly difficult to attract new investors or to raise additional capital. We note that 159 companies in the Russell 2000 had no coverage at all. With such thin coverage, investors seeking to perform due diligence on a potential investment are unable to obtain a diversity of opinions about the stock.

²⁸ “SEC Fact Sheet on Global Analyst Research Settlements.” U.S. Securities and Exchange Commission. Accessed December 18, 2017. <https://www.sec.gov/news/speech/factsheet.htm>.

²⁹ Solomon, op. cit., p. 15.

³⁰ Factset as at 30 June 2017.

This inability to perform a “broker consensus” is likely to preclude investors from investing in the company, particularly in light of the findings of Merkley, Michaely and Pacelli, described above, which suggest that lower levels of coverage equate to lower-quality coverage.³¹

This problem is particularly pronounced for the smallest companies. Research from Cowen shows that over 60% of the 1,171 companies with market capitalization below \$100 million listed on major U.S. exchanges receive no analyst coverage.³² This research suggests that a lack of coverage corresponds with lower stock liquidity and is particularly a problem for retail investors with limited research capabilities.

B. Buy-Side Investing Trends

Another longer-term trend in the years after 2000 reshaped the buy side. The result was similar to the sell side: Larger entities lost interest in relatively smaller companies. The universe of investors that buys stocks and “pays” for sell-side research, either through brokerage stock commissions or so-called soft dollars (which trade research for commissions without cash changing hands) has significantly changed. The equity markets began experiencing a broad shift from small retail investors to large institutional investors starting in the 1960s.³³ Over the decades, those institutions grew larger, meaning that smaller-cap IPOs had less impact on their returns.³⁴ As a result, institutions like investment banks gravitated toward liquid, large-cap stocks that could produce higher absolute-dollar returns.³⁵

Meanwhile, the composition of investors in IPOs changed. Even as late as the dot-com boom, many IPOs had a substantial component of retail investors.³⁶ But during this period, a fundamental shift in investing began to occur. Retail brokerage as a profit engine had been in decline since commissions were deregulated in 1975, and price competition ensued. Meanwhile, more and more retail investment was going into self-directed retirement plans, like individual retirement accounts or 401(k)s, essentially redirected to institutions.³⁷ These vehicles invested in stocks, but not necessarily in IPOs.

To large institutions managing equity portfolios in the billions of dollars, stocks below a certain market capitalization were simply too small to “move the needle.”³⁸ Investment funds typically seek to take positions in portfolio companies valued in the millions of dollars. For a small-cap stock with a market capitalization of less than a few hundred million dollars, such a position will present a material ownership

³¹ Merkley, Michaely and Pacelli. *op. cit.*

³² Solomon, *op. cit.*, p. 14.

³³ Western, David L. “Booms, Bubbles and Busts in the US Stock Market.” Psychology Press, 2004.

³⁴ Goldstein, Michael, Paul Irvine, Eugene Kandel, and Zvi Wiener. “Brokerage Commissions and Institutional Trading Patterns.” The Society for Financial Studies, October 24, 2009. <https://pdfs.semanticscholar.org/a97f/162148741f78e4a63d17885e2bd33de19efd.pdf>.

³⁵ Solomon, *op. cit.*, p. 5.

³⁶ Langevoort, Donald. “The SEC, Retail Investors, and the Institutionalization of the Securities Markets.” Georgetown University Law Center, 2008. http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1082&context=fwps_papers.

³⁷ *Ibid.*

³⁸ Rangelova, Elena, Jonathan Feeney, and Yi Lu. “Under the Radar: Structural Alpha in the Small-Cap Equity Market.” New York, NY: Investcorp, July 2015. http://www.investcorp.com/docs/uploads/credit-ratings/Under_the_Radar_Structural_Alpha_in_the_Sm-Cap_Equity_Market_201507_F.pdf.

stake in the company and may require disclosure in order to meet regulatory requirements.³⁹ In addition, thinly traded stocks tend to have wider bid-ask spreads, meaning the transaction costs associated with taking positions (and later exiting them) are larger. Researchers have found that this illiquidity of small stocks has driven large investment funds from them since the late 1990s. For example, Bartlett, Rose and Solomon have argued that the market events surrounding the Russian financial crisis of 1998 “prompted a fundamental reconsideration among mutual-fund portfolio managers about the liquidity risk of investing in small IPOs.”⁴⁰ They argue that this led to a sustained change in the investment paradigms of major institutional investors.

Gao, Ritter and Zhu make a different argument. They believe that “an ongoing change in the economy” has led to a situation where small companies have suffered a broad decline in profitability, particularly because of the acceleration of technology.⁴¹ As a result, managers at those companies feel they can create greater profits by selling out in a trade sale to a larger company in or around their industry than by operating independently and growing organically. In particular, they feel a greater urgency to grow quickly, “with profitable growth opportunities potentially lost if they are not quickly seized.”⁴² That, they conclude, is an explanation for the decline in small IPOs.

C. The Shift from Active to Passive Investing

Another more recent phenomenon contributing to the reduction in buy-side demand for small caps is the growth of passive investing strategies at the expense of active or value investing. These low-fee portfolios that mirror the market, or aspects of it, began to grow quickly after 2000 as investors recoiled from the market shocks of the dot-com bust and the financial crisis. These passive strategies represent a fundamental shift in investing, from brokerages charging commissions and mutual funds actively trading, to low-cost fee-driven index funds pursuing essentially passive strategies. This evolution was fueled by the broad acceptance of the principle of efficient markets, which makes the case that fund managers will not consistently beat the market. In the last few years, as the recovery from the Great Recession lifted stock values, that shift has accelerated. In 2016, according to Morningstar, ownership of U.S. stocks was 46% passive and 54% active.⁴³ In that year, some \$263 billion exited actively managed funds—mostly mutual funds—and \$237 billion moved into index funds or exchange-traded funds, more than double that of 2015.⁴⁴ The bottom line for IPOs: Passive money doesn’t participate in capital formation like IPOs, nor does it demand traditional equity research.

The shifting investment preferences of mutual funds and the trend toward passive investments drive a reduction in the level of demand for small caps in both primary and secondary markets.

³⁹ “Schedule 13D.” U.S. Securities and Exchange Commission, accessed December 18, 2017. <https://www.sec.gov/fast-answers/answerssched13htm.html>.

⁴⁰ Bartlett, Robert P. III, Rose, Paul, and Solomon, Steven Davidoff, “The Small IPO and the Investing Preferences of Mutual Funds,” SSRN, 2017, p. 2.

⁴¹ Gao, Xiaohui, Ritter, Jay, and Zhu, Zhongyan, “Where Have All the IPOs Gone?” SSRN, Aug. 26, 2013.

⁴² *Ibid.* p. 4.

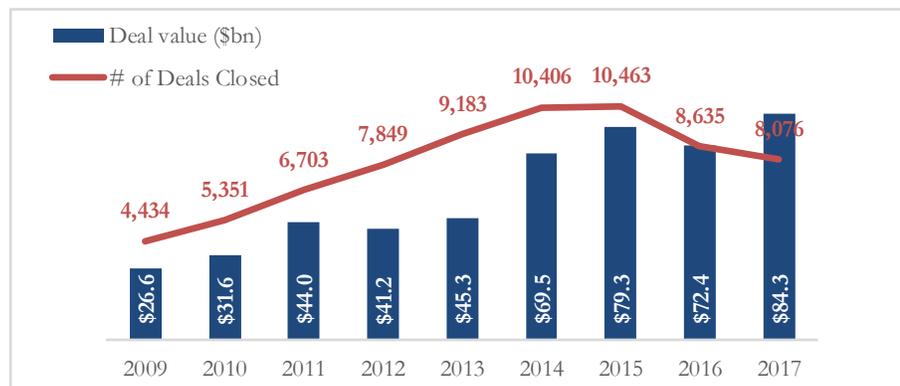
⁴³ Solomon, *op. cit.* p. 7.

⁴⁴ *Ibid.* p. 7.

D. Growth in Private Capital

As regulatory and organic market factors have reduced the appeal of public listings for small caps, a key alternative, raising capital privately, has become more accessible. Citing Preqin data, the Boston Consulting Group reports that the total assets under management of the world's private equity firms have increased from \$1.8 trillion to \$2.5 trillion in the past five years, an increase of 39%.⁴⁵ This growth is being similarly reflected in venture capital funds. Data from the National Venture Capital Association (shown below) indicates that VC funding in the U.S. has more than doubled over the past five years.⁴⁶ There is no stronger symbol of this growth than SoftBank's unprecedented circa \$100 billion Vision Fund, closed in 2017.⁴⁷ Of course, growth in funds targeting VC investment does not in itself prove that private funding is displacing small-cap IPOs, but it may indicate the increasing viability of this alternative for small caps looking to raise capital.

Figure 5: US VC Activity: more funding is chasing fewer VC deals.



Source: National Venture Capital Association

John Coffee, a professor at Columbia Law School, has argued that the decline in IPOs coincided with the liberalization of rules on private placements. He noted that the Rule 144 amendment in 1990, aimed at creating greater liquidity, “meant that large institutional investors (known as Qualified Institutional Buyers) could quickly resell privately placed securities of smaller non-reporting issuers to each other.”⁴⁸ In 1997, the SEC relaxed rules on the resale of privately placed securities, reducing the mandatory post-placement holding period to one year (from two years). Coffee also added that the development of alternative trading systems (ATs) for privately placed stock, pioneered by firms such as SecondMarket

⁴⁵ Hammoud, Tawfik, Michael Brigl, Johan Oberg, David Brostein and Christy Carter. Capitalizing on the New Golden Age of Private Equity. Boston Consulting Group. March 2017.

⁴⁶ “Venture Monitor 4Q 2017.” Washington, DC: Pitchbook and National Venture Capital Association, 2018. <https://nvca.org/research/venture-monitor/>.

⁴⁷ “Establishment of SoftBank Vision Fund | Press Releases | News | About Us.” SoftBank Group. Accessed January 30, 2018. https://www.softbank.jp/en/corp/news/press/sb/2016/20161014_02/.

⁴⁸ Coffee, John, “Gone With the Wind: Small IPOs, the JOBS Act, and Reality,” CLS Blue Sky Blog, <http://clsbluesky.law.columbia.edu/2013/02/01/gone-with-the-wind-small-ipos-the-jobs-act-and-reality/>, Feb. 1, 2013.

(since acquired by Nasdaq), “has further reduced the pressure on issuers to conduct an early IPO.”⁴⁹ It is now easier for growing companies to obtain the capital they need while staying private.

Other regulatory actions have streamlined requirements for offerings in private markets, making this process easier for issuers. The most significant step forward with respect to private offerings was the National Securities Markets Improvement Act of 1996 (NSMIA), which exempted covered securities—companies registered with or otherwise exempted by the SEC—from having to comply with registration and review requirements in each state where they intended to offer securities.⁵⁰ This substantially simplified and standardized the offering process for companies, allowing them to preempt so-called blue-sky laws and more easily undertake offerings across multiple states.

In the years following the NSMIA, the growth of the internet dramatically disrupted the traditional offering process. By connecting potential issuers and investors, the internet diminished the relative power of centralized stock exchanges, which had historically provided a physical marketplace for shares. In the years that followed, private companies have been able to list on alternative trading systems that function much like traditional public equity markets, effectively blurring the line between public and private ownership. As noted by Ewens and Farre-Mensa, the internet has lowered search costs and substantially enhanced the ability of companies to meet their capital needs while remaining private.⁵¹

While it is commonly known for its reforms aimed at stimulating public equity offerings, the JOBS Act also introduced concessions for certain types of private offerings. Title IV of the legislation increased the amount that a company can raise under a Regulation A offering from \$5 million to \$50 million. This is significant since these offerings are exempt from requiring registration and are open to non-accredited as well as accredited investors.⁵² In addition, the bill created a new form of Regulation D offering that allows general solicitation of investors, provided that only accredited investors participate in the offering.⁵³ As stated by the SEC, this allowance for general solicitation reversed “almost 80 years of regulatory practice.”⁵⁴ These reforms make small private capital offerings easier to undertake.

In fact, empirically, the most potent form of private capital for startups appears to be venture capital. Although VC comprises less than 1% of startup funding,⁵⁵ research suggests that venture-backed

⁴⁹ Ibid.

⁵⁰ “National Securities Markets Improvement Act of 1996,” October 11, 1996.

<https://www.gpo.gov/fdsys/pkg/PLAW-104publ290/pdf/PLAW-104publ290.pdf>.

⁵¹ Ewens, Michael, and Joan Farre-Mensa. “The Evolution of the Private Equity Market and the Decline in IPOs.” SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, Dec. 3, 2017.

<https://papers.ssrn.com/abstract=3017610>.

⁵² “SEC Adopts Rules to Facilitate Smaller Companies’ Access to Capital.” U.S. Securities and Exchange Commission. Accessed Dec. 18, 2017. <https://www.sec.gov/news/pressrelease/2015-49.html>.

⁵³ Ibid.

⁵⁴ Bauguess, Scott, Rachita Gullapalli, and Vladimir Ivanov. “Capital Raising in the US: An Analysis of the Market for Unregistered Securities Offerings, 2009-2014.” U.S. Securities and Exchange Commission, October 2015.

<https://www.sec.gov/files/unregistered-offering10-2015.pdf>.

⁵⁵ Da Rin, Marco, Thomas F. Hellmann, and Manju Puri. “A Survey of Venture Capital Research.” Working Paper. National Bureau of Economic Research, October 2011. <http://www.nber.org/papers/w17523>.

companies play an outsized role in job creation,⁵⁶ IPOs⁵⁷ and innovation.⁵⁸ Traditionally, VC funding was consigned to the earliest and riskiest stages of new company development. As a result, venture portfolios have long accepted the reality of many failures, a smaller number of reasonably successful companies and a handful of blockbusters. Quite a lot of research suggests that venture funding offers significant advantages to companies over other forms of financing: their sales⁵⁹ and employees⁶⁰ grow faster, their professionalism is greater,⁶¹ time to market is shorter,⁶² the likelihood of an IPO is greater⁶³ and post-IPO survival is longer.⁶⁴

Ewens and Farre-Mensa argue that “private markets are filling much—if not all—of the IPO gap.”⁶⁵ Relying on Dow Jones VentureSource data on VC-backed startups, they argue that “of those startups whose first round was before 1997 and went on to raise over \$150 million in the following seven years, 83% did so by going public; by contrast, only 36% of startups reaching that scale since 2000 were public—even though the annual number of startups raising over \$150 million has not changed.” This suggests that startups are opting to remain private. We do note that this data may suffer from selection bias, given that VC-backed startups (which, by definition, have a history of private investment) are more likely to be able to access private capital markets than non-VC-backed firms. So the trend of VC-backed startups remaining private may not necessarily be reflected by all startups.

To attempt to identify trends in the broader market for private capital offerings, we analyzed data from the SEC’s Electronic Data Gathering, Analysis and Retrieval (EDGAR) system. If the hypotheses of researchers such as Ewens and Farre-Mensa is correct, we would expect to see an uptick in the number of private capital offerings. First, we needed to confirm where exactly to look. There are many challenges in analyzing SEC data. There are multiple types of private offerings, including 144As, Regulation D, Regulation A and Regulation S. We narrowed our analysis to the Regulation D market for the following reasons. While the 144A market is of significant size, “over 99% of securities” in it are debt instruments, which are not comparable to IPOs.⁶⁶ Data is also not available for the small number of 144A equity offerings. In 2014, the average Reg D offering raised around \$39 million.⁶⁷ While the Reg D market is “mainly equity offerings,”

⁵⁶ Puri, Manju, and Rebecca Zarutskie. “On the Lifecycle Dynamics of Venture-Capital- and Non-Venture-Capital-Financed Firms,” working paper, National Bureau of Economic Research, August 2008.

<http://www.nber.org/papers/w14250>.

⁵⁷ Da Rin. op. cit.

⁵⁸ Kortum, Samuel, and Josh Lerner. “Assessing the Contribution of Venture Capital to Innovation.” *The RAND Journal of Economics* 31, No. 4 (2000): 674–92. <https://doi.org/10.2307/2696354>.

⁵⁹ Tyebjee, Tyzoon T., and Albert V. Bruno. “A Model of Venture Capitalist Investment Activity,” *Management Science* 30, No. 9 (Sep. 1, 1984): 1051–66. <https://doi.org/10.1287/mnsc.30.9.1051>.

⁶⁰ Davila, Antonio, George Foster and Mahendra Gupta, “Venture-Capital Financing and the Growth of Startup Firms.” Stanford Graduate School of Business, 2000, <https://www.gsb.stanford.edu/faculty-research/working-papers/venture-capital-financing-growth-startup-firms>.

⁶¹ Hellmann, Thomas, and Manju Puri. “Venture Capital and the Professionalization of Startup Firms: Empirical Evidence.” *The Journal of Finance* 57, No. 1 (Feb. 1, 2002): 169–97. <https://doi.org/10.1111/1540-6261.00419>.

⁶² Ibid.

⁶³ Shane, Scott, and Toby Stuart. “Organizational Endowments and the Performance of University Startups.” *Management Science* 48, No. 1 (Jan. 1, 2002): 154–70. <https://doi.org/10.1287/mnsc.48.1.154.14280>.

⁶⁴ Baker, Malcolm, and Paul Gompers. “The Determinants of Board Structure at the Initial Public Offering,” SSRN Scholarly Paper. Rochester, N.Y.: SSRN, Aug. 1, 2002. <https://papers.ssrn.com/abstract=236035>.

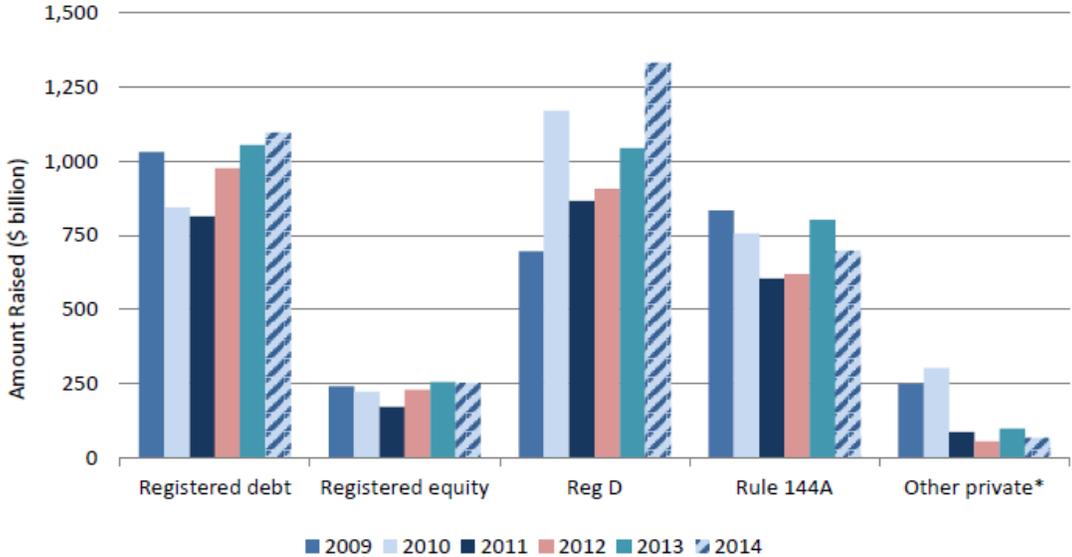
⁶⁵ Ewens, Michael, and Joan Farre-Mensa, op. cit.

⁶⁶ Ibid.

⁶⁷ Bauguess, op. cit.

the SEC has reported that from 2009–14, 13.2% of Reg D offerings were debt offerings.⁶⁸ Reg D is also used for more customized kinds of offerings, such as those including options or warrants.⁶⁹ Unfortunately, the available Reg D data does not allow us to separate out debt and other offering types. Relevant amounts raised in the key capital markets are shown in the chart below for the period 2009–14 from the SEC.

Figure 6: Aggregate capital raised by offering method, 2009–14



* Other private includes Regulation S offerings, Section 4(a)(2) offerings, and Regulation A offerings.

Source: SEC

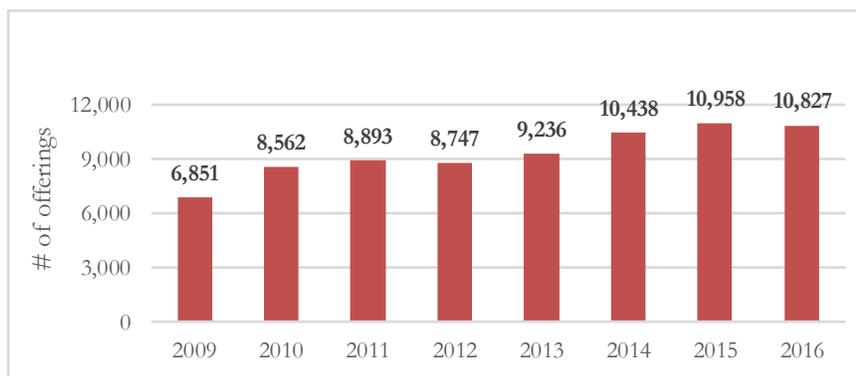
Filtering Reg D data in order to identify those private offerings where the company’s management may also have undertaken making an offering on public markets, we find evidence that suggests that private capital may be filling the IPO gap. The data, shown below, comes from Form D documents that companies file with the SEC on undertaking a private offering. This Form D documentation is only available in electronic form from 2009 onward. Taking the Form D data, we removed the offerings attributable to investment companies raising new capital for new investment funds. These issuers make up the majority of Reg D offerings but do not represent potential IPO candidates. These are undertaken by “hedge funds, venture capital funds, private equity funds and other pooled investment funds” and made up 84% of all capital raised through Reg D offerings from 2009–14.⁷⁰ We isolated the non-fund Reg D offerings and additionally removed offerings of under \$1 million. We did see that the number of non-fund Reg D offerings greater than \$1 million has been growing consistently in the period since 2009. This growing source of funding may be absorbing some or many would-be IPOs.

⁶⁸ Ibid.

⁶⁹ Ibid.

⁷⁰ Bauguess, op. cit.

Figure 7: Non-fund Regulation D offerings raising greater than \$1 million



Source: SEC

Our analysis suggests that private capital markets may be substituting for public markets, which have historically been a larger source of capital for small-cap companies. This has been assisted by regulatory changes that have made private capital offerings easier and accentuated a preference of companies to remain private. Elisabeth de Fontenay, an associate professor at Duke University School of Law, notes a structural advantage held by private companies: “Private companies today can raise large amounts of capital while disclosing less than their public company counterparts in part by free riding on the enormous volume of public-side information, which makes private company valuation vastly easier and more accurate.”⁷¹ Some of these disclosure requirements for public companies are discussed in the next section.

E. Regulatory Pressures

The decline in IPOs after 2000 coincided with a period of increasing regulatory restrictions for listed companies. Regulatory efforts such as Regulation Fair Disclosure (2000), Sarbanes-Oxley (2003) and Dodd-Frank (2010) represented changes in how and what information was disclosed to investors and materially increased the potential liability faced by company directors. The accumulating layers of regulation that they represent has contributed to the belief that more companies delay or decline IPOs because of the mounting regulatory burden of public ownership. That regulation, plus changes in the marketplace like rising levels of M&A, ubiquitous activist investors and the demands of “short-termism” in a shareholder-centric system, has also contributed to the appeal of remaining private. While regulation has clearly played a role in avoiding IPOs, the subject is not at all straightforward.

In October 2000, the SEC implemented Regulation Fair Disclosure, or Reg FD. This rule demanded that if or when a listed company “discloses material nonpublic information ... it must make public disclosure of that information.”⁷² This was intended to stamp out selective disclosure of information by

⁷¹ De Fontenay, Elisabeth, “The Deregulation of Private Capital and the Decline of the Public Company,” Harvard Law School Forum on Corporate Governance and Financial Regulation, April 27, 2017. <https://corpgov.law.harvard.edu/2017/04/27/the-deregulation-of-private-capital-and-the-decline-of-the-public-company/>.

⁷² “Final Rule: Selective Disclosure and Insider Trading.” U.S. Securities and Exchange Commission, August 21, 2000. <https://www.sec.gov/rules/final/33-7881.htm>.

companies prior to public release, particularly to analysts or institutional investors. While the costs of complying with this requirement are theoretically low, it opened up major potential liabilities for public companies. Reg FD also introduced a degree of ambiguity into decision making. Indeed, what is or is not considered material nonpublic information may be subject to reasonable debate. And even if the distinction is clear, Reg FD necessitates that management be prepared to publicly release such information “as soon as is reasonably practicable,” if for some reason it is unintentionally disclosed.⁷³

Enacted in response to scandals such as Enron and WorldCom, Sarbanes-Oxley introduced a number of requirements relating to internal controls, auditing and financial disclosure. The act required that the chief executive officer or the chief financial officer certify corporate financial statements, and established criminal penalties for knowingly certifying noncompliant reporting. The most contentious of these regulations for smaller companies is Section 404, the Assessment of Internal Controls, which under part (a) requires that management report on the effectiveness of its internal controls over financial reporting and under part (b) requires that this report be attested to by an external auditor.⁷⁴ Concerns about the impact of this requirement on small companies prompted the SEC in 2005 to charter a 21-member Advisory Committee on Smaller Public Companies to evaluate the issue.⁷⁵

Reporting in 2006, the committee found that smaller public companies “have been disproportionately subject to the burdens associated with Section 404 compliance.”⁷⁶ They reported that for companies with market capitalizations of less than \$100 million, Section 404 compliance costs on average amounted to 2.55% of total revenue.⁷⁷ This compared to a figure of 0.53% for companies with market capitalizations of \$100 million to \$499 million. The figure was lower again for even larger companies. Based on its analysis, the committee recommended that companies with market capitalizations below \$128 million be exempted from Section 404 “unless and until a framework for assessing internal controls over financial reporting for such companies is developed that recognizes their characteristics and needs.”⁷⁸

After years of SEC deferrals in enacting elements of Sarbanes-Oxley, including Sections 404(a) and (b), Dodd-Frank gave a permanent exemption from Section 404(b) to companies classified as non-accelerated filers. As per Rule 12b-2 of the Securities Exchange Act,⁷⁹ non-accelerated filers are companies with common equity held by non-affiliates valued at less than \$75 million. This threshold, which has not changed since Dodd-Frank was passed, is substantially below the \$128 million benchmark in the SEC’s advisory committee report in 2006. We note that if adjusted for inflation, this \$128 million benchmark would be \$154 million in 2017 dollars.⁸⁰ This suggests there is scope for the threshold under which the exemption applies to be raised.

⁷³ Ibid.

⁷⁴ “15 U.S. Code § 7262 - Management Assessment of Internal Controls.” Legal Information Institute, accessed Dec. 18, 2017, <https://www.law.cornell.edu/uscode/text/15/7262>.

⁷⁵ “Final Report of the Advisory Committee on Smaller Public Companies.” U.S. Securities and Exchange Commission, April 23, 2006, <https://www.sec.gov/info/smallbus/acspc/acspc-finalreport.pdf>, p. 1.

⁷⁶ Ibid. p. 23.

⁷⁷ Ibid. p. 33.

⁷⁸ Ibid. p. 6.

⁷⁹ “17 CFR 240.12b-2 - Definitions.” Accelerated filer and large accelerated filer. Legal Information Institute, accessed December 18, 2017, <https://www.law.cornell.edu/cfr/text/17/240.12b-2>.

⁸⁰ Based on Consumer Price Index for All Urban Consumers: All Items from the Federal Reserve Bank of St. Louis (FRED) database, <https://fred.stlouisfed.org/series/CPIAUCSL?cid=9>

Other regulatory actions in the early to mid-2000s may have dampened investor appetite for small-cap stocks. As already mentioned, the Global Analyst Research Settlement increased the compliance burden on investment banks providing sell-side coverage of stocks, making research a less attractive business, and likely exacerbated low levels of coverage on small-cap stocks. At the same time, the introduction of the Regulation National Market System (Reg NMS) by the SEC in 2005 reduced the liquidity of small-cap stocks. By making securities tradable across multiple exchanges, the already small number of daily transactions for small stocks has been distributed across multiple markets, lowering liquidity.⁸¹ All else being equal, this increases the return required from an investment in order to overcome transaction costs associated with larger bid-ask spreads.

In addition to its focus on the banking system, Dodd-Frank introduced new requirements relating to company disclosures. These included sections relating to conflict minerals (Section 1502), mine safety (Section 1503), resource extraction (Section 1504) and pay ratio (Section 953[b]). In their 2017 report on capital markets, the Treasury argued that while the inclusion of certain of these provisions was well intentioned, “the effort to use securities disclosure to advance policy goals distracts from their purpose of providing effective disclosure to investors.”⁸² We agree that if the intention is to affect the conduct of companies with regard to specific policy matters, these aims will be better achieved by policy enacted through the relevant department of government in the specific policy area. However, if disclosures are viewed as material, their inclusion may be justified. In the context of an increasing focus on ethical investment and the screening of potential investments based on environmental, social and governance (ESG) factors, defining what information is material is increasingly challenging. Ultimately, any disclosure requirements must take into account a certain level of practicability in terms of the ability of the company to obtain the necessary information weighed against its importance.

In the aftermath of the financial crisis, the JOBS Act (2012) attempted to promote capital formation in both public and private markets. Title I of the bill defined a new class of publicly listed companies that would receive regulatory exemptions through and after the IPO process, so-called emerging growth companies (EGCs). In accordance with the act, a company will be classified as an EGC if it listed after December 9, 2011, and:

- Is not a large accelerated filer (that is, has free float of less than \$700 million).
- Has gross annual revenues of under \$1 billion.
- Has issued less than \$1 billion in non-convertible debt in the prior three-year period.
- Has been listed for less than five years.

The act allows EGCs to receive certain benefits in the listing process and in the secondary market. These include the ability to confidentially share draft IPO material with the SEC, to sound out potential investor demand by “testing the waters,” and to face fewer restrictions with regard to the distribution of analyst research.⁸³ EGCs are also only required to present two (rather than three) years of audited financial statements. Post-IPO, EGCs are exempt from certain disclosure requirements, such as on CEO pay-ratio and auditor attestation of internal controls (as per Sarbanes-Oxley Section 404[b]).⁸⁴ These provisions are

⁸¹ U.S. Department of Treasury. op. cit. p. 60.

⁸² U.S. Department of Treasury, op. cit. p. 29.

⁸³ “Jumpstart Our Business Startups Act, Frequently Asked Questions.” U.S. Securities and Exchange Commission, Dec. 21, 2015. <https://www.sec.gov/divisions/corpfin/guidance/cfjobsactfaq-title-i-general.htm>.

⁸⁴ “Update on Emerging Growth Companies and the JOBS Act,” Ernst & Young LLP, November 2016. [http://www.ey.com/Publication/vwLUAssets/ey-update-on-emerging-growth-companies-and-the-jobs-act-november-2016/\\$FILE/ey-update-on-emerging-growth-companies-and-the-jobs-act-november-2016.pdf](http://www.ey.com/Publication/vwLUAssets/ey-update-on-emerging-growth-companies-and-the-jobs-act-november-2016/$FILE/ey-update-on-emerging-growth-companies-and-the-jobs-act-november-2016.pdf).

clearly beneficial to companies evaluating a potential listing. Since the JOBS Act was implemented, 87% of IPOs have been EGCs.⁸⁵

One provision of the JOBS Act was that the SEC should study and issue a report on the decimalization of equity trading that officially began in 2001, after years of debate and experimentation. Decimalization priced trading to the penny rather than in fractions, in large part to reduce bid-ask spreads. In 2011 the Treasury sponsored a conference and formed an IPO Task Force to “examine the challenges that emerging-growth companies face in pursuing an IPO” and develop recommendations.⁸⁶ A year later, the SEC staff published a report that summarized its findings. Decimalization, the report argued, kicked off changes in market structure toward “a low-cost, frictionless environment characterized by electronic trading that favored highly liquid, large capitalization stocks at the expense of smaller capitalization stocks.”⁸⁷ The changes favored short-term strategies and particularly hurt less liquid smaller companies with trading volumes too low “to make money for the investment bank’s trading desk.”⁸⁸ The task force concluded “that the lack of profitability undermines the incentives for underwriters to take smaller companies public.”⁸⁹

The report also noted that decimalization threatened “the economic sustainability of sell-side research departments” by reducing spreads and trading commissions that once supported research. The combination of the Global Analyst Research Settlement and decimalization made analyst coverage of small companies unprofitable.⁹⁰

The Task Force did ultimately conclude that the benefits of decimalization outweighed the costs, arguing that the public has gained from greater market access and reduced trading costs.⁹¹ But the report made clear that small-company IPOs had been affected by fundamental changes in market structure.

5. Policy Recommendations

Our analysis suggests that the decline in small-cap IPOs cannot be explained by any one factor alone. The decline has been the result of a combination of natural market trends and regulatory pressures. In evaluating potential regulatory reform, the relevant question to ask is: To what extent has each factor played a part? Some of the factors, such as shifts in investing preferences from active to passive funds, are difficult to address through reforms to legislation or enforcement approaches. However, regulatory reforms have the potential to make IPOs relatively more appealing when they are weighed against other options that may be contemplated by companies considering a listing.

We posit that the regulatory reforms of the early 2000s (including Reg FD and Sarbanes-Oxley) have contributed to the wariness companies have shown in undertaking IPOs. This is driven by the perceived negative impacts of being listed on public markets, which include myriad reporting and disclosure

⁸⁵ Ibid.

⁸⁶ Securities and Exchange Commission, “Report to Congress on Decimalization,” July 2012, <https://www.sec.gov/news/studies/2012/decimalization-072012.pdf>, p. 1.

⁸⁷ Ibid. p. 2.

⁸⁸ Ibid. p. 2.

⁸⁹ Ibid. p. 2.

⁹⁰ Ibid. p. 2.

⁹¹ Ibid. p. 2. footnote 7.

requirements, exposure to personal liability and the transfer of some level of corporate control to public shareholders. Reforms that can reduce concern around these factors would make IPOs more appealing relative to the other options available. We therefore propose the following recommendations.

A. Increase the Threshold for Eligibility as a Smaller-Reporting Company (SRC) and Non-Accelerated Filer

The first part of this recommendation is already under way. In June 2016, the SEC proposed to amend the definition of SRC to increase the ceiling for inclusion from \$75 million to \$250 million in free float.⁹² This proposal is in the “final rule stage” as of February 2018.⁹³ According to the SEC, this amendment would lead to an increase in the number of SRCs from around 32% to 42% of all listed companies.⁹⁴ Companies that would become SRCs as a result of the change would be freed from various financial and management reporting requirements. These include concessions relating to management discussion and analysis in annual reports and the level of required detail on executive compensation and historical financial statements.⁹⁵

Despite pursuing this positive change, the SEC has not proposed to similarly update the definitions related to accelerated filing, meaning that companies recategorized as SRCs under the amendment would remain accelerated filers.⁹⁶ This is relevant given that the definitions of SRC and non-accelerated filer are currently aligned, meaning that any company that is an SRC is also a non-accelerated filer. Under the proposed rule change, companies with free float between \$75 million and \$250 million will have their status updated to that of SRC, but will remain accelerated filers. This means they would still be required not only to report Forms 10Q and 10K in 40 and 75 days, respectively (faster than for SRCs), but also to comply with SOX Section 404(b) (auditor attestation of internal controls). As discussed in Section 4, Section 404 compliance is a major cost for small companies.

Aligning the definition of non-accelerated filer with the forthcoming updated definition of SRC will streamline the regulatory categories and provide relief to small-cap companies with free float between \$75 million and \$250 million. We note that this recommendation was put forward by the CEO of Sutro Biopharma, a private biopharmaceutical company headquartered in San Francisco, at the September meeting of the SEC Advisory Committee on Small and Emerging Companies.⁹⁷

⁹² “SEC Proposes Amendments to Smaller Reporting Company Definition.” U.S. Securities and Exchange Commission, June 27, 2016. <https://www.sec.gov/news/pressrelease/2016-131.html>.

⁹³ “View Rule, RIN: 3235-AL90.” Reginfo.gov. Office of Information and Regulatory Affairs. Accessed February 13, 2018. <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201710&RIN=3235-AL90>.

⁹⁴ “Proposed Rule: Amendments to Smaller Reporting Company Definition.” U.S. Securities and Exchange Commission, June 27, 2016. <https://www.sec.gov/rules/proposed/2016/33-10107.pdf>, p. 18.

⁹⁵ Ibid. pps. 8-9.

⁹⁶ “Fast Answers: Form 10-Q.” U.S. Securities and Exchange Commission. Accessed Dec. 19, 2017. <https://www.sec.gov/fast-answers/answersform10qhtm.html>.

⁹⁷ Newell, William, “Sarbanes-Oxley Section 404(b): Costs of Compliance and Proposed Reforms,” presented at the SEC Advisory Committee on Small and Emerging Companies, Sep. 13, 2017. <https://www.sec.gov/info/smallbus/acsec/william-newell-acsec-091317.pdf>.

B. Extend the EGC On-Ramp

Since the JOBS Act was enacted in April 2012, 87% of all IPOs have self-identified as EGCs.⁹⁸ This high percentage suggests that most companies undergoing listings find the concessions offered to EGCs to be desirable. At present, a company can remain an EGC for five years post-listing, provided that its revenues remain below \$1 billion, public float remains below \$700 million and it does not raise more than \$1 billion in debt over a three-year period.⁹⁹

It is understandable that once companies surpass a certain size threshold, they should be expected to abide by stricter reporting and disclosure requirements, which reflect the demands of their diversified investor bases. Also, once above a certain size, the proportional cost of meeting these requirements is less. However, what if a company reaches the end of the five-year on-ramp and has not surpassed any of these size thresholds? The five-year timeline appears to assume that a company will grow above the EGC size thresholds over that time. This, of course, may not be the case. The cessation of the concessions afforded to the company as an EGC will create a substantial burden for a company that has not achieved scale.

So it must be asked what the purpose of the five-year timeline actually is, other than a reflection of an expectation as to how long it will take a company to achieve a certain scale. For a small company considering an IPO, the EGC concessions would be substantially more compelling if they were offered without a timeline. After all, it is the size that is most relevant to the relative cost of compliance. While removing the on-ramp timeline altogether may not be feasible, given it would create two tiers of companies (those that went public before the JOBS Act and those after), it may be appropriate to extend the timeline. A shift to a 10-year on-ramp would provide company management substantially longer to leverage the benefits of EGC status and would enhance sentiment around IPOs.

We therefore support the extension of the time that a company may remain an EGC after an IPO. A shift to a 10-year on-ramp would give company management evaluating a potential IPO substantially more comfort around their ability to economically meet their near-term regulatory requirements upon listing.

C. Increase the Shareholding Required to Bring Shareholder Proposals

The current provisions allowing shareholders to put forward shareholder proposals at annual company meetings set the bar too low. The \$2,000 shareholding amount required to be able to table proposals was instituted more than 30 years ago¹⁰⁰ and is not fit for the present day. While arguments can be made for the benefits of the democratization of the public markets, it is neither practical nor efficient for shareholders owning an immaterial amount of a company's stock to be able to wield a disproportionate influence on a company's affairs. For instance, the Manhattan Institute found that in 2016, one third of all shareholder proposals were brought by just six individual investors.¹⁰¹ This suggests that shareholder proposals are being driven by the individuals proposing them, rather than by anything the company is or is

⁹⁸ Ernst & Young LLP, *op. cit.*

⁹⁹ *Ibid.*

¹⁰⁰ U.S. Department of Treasury, *op. cit.* p. 32.

¹⁰¹ Copland, James, and Margaret O'Keefe. "Proxy Monitor: An Annual Report on Corporate Governance and Shareholder Activism." Manhattan Institute, 2016, https://www.manhattan-institute.org/sites/default/files/pmr_2016.pdf, p. 7.

not doing. Shareholder proposals take up significant time and company resources to deal with, yet they cost almost nothing for shareholders to submit.

A balanced approach to shareholder proposals would be more appropriate. We will not suggest an optimal threshold, but the current \$2,000 requirement is obviously too lenient. The shareholding value should be substantially revised upward, and the requirement should be based on the percentage ownership in the company. It is unreasonable to allow shareholders owning less than 0.001% of a company's stock to dominate shareholder meetings.

Additionally, the requirements for resubmitting proposals substantially similar to those tabled in prior years should be revised. At present, “if over a five-year period a proposal fails to receive 3% support once, 6% twice or 10% three times, a company may exclude it.”¹⁰² Notwithstanding drastic changes in the share register of a company, any proposal that receives less than 3% support on one occasion is extremely unlikely to be passed in the years following. With such low requirements, shareholder activists can waste time at company meetings year after year, with little scope or intention for a proposal to actually be passed. We believe that adopting the percentage requirements proposed by the SEC in 1997 but never enacted (6%, 15%, 30%) would be a reasonable approach.¹⁰³

D. Allow Shareholders the Right to Mandatory Arbitration

Since 2006, the Committee on Capital Markets Regulation has urged the SEC to allow corporations to include in their charters the provision for mandatory arbitration in issuer-stockholder disputes. We agree with this step, believing it would reduce a major cost for all public corporations, and particularly for smaller companies that might be considering an IPO. Harvard Law School's Hal Scott, who directs the Committee on Capital Markets Regulation, describes the current U.S. system of securities class-action litigation as “anomalous and extreme,” noting that “going public in the U.S. exposes companies to litigation risk that can cost billions of dollars—the mere filing of such suits can reduce a company's market value by 10%, and public companies have paid \$55.6 billion in securities class-action settlements in the last 10 years.”¹⁰⁴ Scott notes that investors rarely are compensated adequately themselves in these lawsuits. In 2016, plaintiff's attorneys received fully \$1.27 billion in fees and expenses from such cases, out of the \$6.4 billion in settlements.¹⁰⁵

SEC Commissioner Michael Piwowar endorsed this approach in July 2017, soon after the agency's new chairman, Jay Clayton, suggested plans for a broad rollback of regulatory requirements on companies going public, particularly on disclosure. The issue has been controversial. Republicans and the Consumer Financial Protection Bureau (CFPB) have battled over mandatory arbitration after the CFPB adopted rules

¹⁰² Higgins, Keith. “Finding Common Ground on Shareholder Proposals,” Oct. 3, 2017.

<https://corp.gov.law.harvard.edu/2017/10/03/finding-common-ground-on-shareholder-proposals/>.

¹⁰³ Ibid.

¹⁰⁴ Scott, Hal. “Shareholders Deserve Right to Choose Mandatory Arbitration.” CLS Blue Sky Blog (blog), Aug. 21, 2017, <http://clsbluesky.law.columbia.edu/2017/08/21/shareholders-deserve-right-to-choose-mandatory-arbitration/>.

¹⁰⁵ Ibid.

banning banks and credit card companies from participating in class actions.¹⁰⁶ But we believe some restraints on shareholder litigation make sense, particularly for smaller emerging companies.

E. Simplify the Disclosure Framework

As a recent Heritage Foundation backgrounder on securities regulation, written by senior fellow David Burton, outlined, there are currently some 14 different categories of firms using securities, each with different exemption and disclosure requirements, creating different classes of investors across them.¹⁰⁷ These have expanded over the past few decades through legislation like SOX, Dodd-Frank and the JOBS Act. “Disclosure requirements have become so voluminous that they obfuscate rather than inform, making it more difficult for investors to find the relevant information.”¹⁰⁸ Throughout this paper, we have discussed a number of these categories: three tiers of crowdfunding companies, two tiers of Reg A companies, private companies, private companies using Reg D (or the smaller number of “sophisticated” investors allowed to buy Reg D securities under Section 506), SRCs, EGCs and fully reporting public companies.¹⁰⁹

The Heritage study argues that the benefits of mandatory disclosure are lower than generally assumed.¹¹⁰ The study proposes a dramatic reduction and simplification of these categories to three: private, quasi-public and public. Public companies could engage in general solicitation and would be above a certain threshold in size or have shares traded on a national exchange. Disclosure requirements would be based on some measure of the public float. Quasi-public companies could generally solicit and would involve companies that today operate under crowdfunding, Reg A or Rule 505 exemptions. Private companies would retain some provisions restricting purchase of securities to “accredited” investors.¹¹¹

Although the details are important and often debatable, we generally agree with the need to reduce and simplify disclosure requirements, particularly on smaller companies. Such a reduction would reduce costs and free management to pursue growth and innovation.

6. Conclusions

Our research argues convincingly that there has been a long-term secular decline in initial public offerings since the late 1990s. The decline in IPOs has continued through several economic cycles and has also disproportionately affected smaller startups that might want—or need—to sell shares in the public markets. Our research also strongly suggests that there is no single cause of this decline; that, in fact, a variety of different factors have played roles, from fundamental shifts in the structure of capital markets and investing, to successive waves of re-regulation that have washed over public companies. Again, these factors

¹⁰⁶ Lynch, Sarah. “U.S. SEC’s Piwowar Urges Companies to Pursue Mandatory Arbitration Clauses.” Reuters, July 18, 2017. <https://www.reuters.com/article/us-usa-sec-arbitration/u-s-secs-piwowar-urges-companies-to-pursue-mandatory-arbitration-clauses-idUSKBN1A221Y>.

¹⁰⁷ Burton, David. “Backgrounder: Securities Disclosure Reform.” Washington, DC: The Heritage Foundation, Feb. 13, 2017. <http://www.heritage.org/sites/default/files/2017-02/BG3178.pdf>, p. 2.

¹⁰⁸ Ibid., p. 1.

¹⁰⁹ Ibid., p. 2.

¹¹⁰ Ibid., p. 3.

¹¹¹ Ibid., pps. 10-11.

have hit smaller companies disproportionately hard. Startups struggle to pay for the kinds of disclosure and compliance regimens demanded by Sarbanes-Oxley, Reg FD or Dodd-Frank—practices larger companies more easily shoulder. Growth and consolidation have made it increasingly less economical for sell-side firms to research and highlight smaller IPO candidates or for buy-side firms to invest in their IPOs. Even the markets themselves have been driven by reforms like decimalization, which produced smaller bid-ask spreads and furthered the larger goal of frictionless, efficient markets. Those gains, however, came at the cost of increasing the importance of larger-cap stocks with greater liquidity and further undermining the economics of sell-side research, which had already suffered a significant blow from the Global Analyst Research Settlement.

The larger question this study raises is: How much does this matter? Initial public offerings since their rise in the 1980s and '90s have assumed an outsized role in how we evaluate the health of our market system, particularly in terms of job creation and technological innovation. The benchmark usually employed is the number of IPOs that occurred in the '90s, a period that historically appears to represent a uniquely high plateau—until the bubble burst in 2000. In those decades, a number of market developments emerged organically that offered smaller, growing companies alternatives to the single pathway leading to the public markets—notably, but not exclusively, private equity, venture capital and growing levels of M&A. As private equity and venture capital matured, they could provide many of the benefits that public markets were struggling to offer: plentiful capital, lucrative compensation for senior executives, a long-term perspective and a tightly focused governance regime. (The downside: private equity portfolio companies will ultimately be sold, often in IPOs.) And companies that remained private, whether through private equity ownership or continued reinvestment by venture capital (the “unicorn” phenomenon), are able to operate without many of the regulatory burdens of their public peers, and without concerns that they will be taken over through M&A or driven to operate in a short-term fashion by shareholder activists.

In this paper, we have not directly tackled the related issue of the health of the public markets. The number of stocks has declined roughly in parallel with the post-2000 decline in IPOs, from just over 8,000 in 1996 to almost half of that today.¹¹² Some of this decline is clearly attributable to the growth of private equity and venture capital as viable financing options, though one of the exit options of these investors is the IPO. Still, while the effect of a shrinking number of stocks is important, particularly to investors in public stocks, and related to a dearth of IPOs, it is beyond our ambit here.

IPOs are important because they serve as a lone gateway to *public* ownership. We assume that there is value in a vibrant system of public ownership. What we have tried to capture in our policy recommendations is that there are incremental steps that can make it easier for companies to take the option of an IPO and successfully negotiate the often-difficult years that immediately follow. The JOBS Act was a start here, but it should certainly be revisited. Important steps include reducing the disclosure and, in some cases, regulatory burdens on these companies; extending the time period that emerging growth companies can operate in a regulatory- and disclosure-lite fashion; and tackling the problem of unrestrained shareholder litigation and burdensome cause-oriented share proposals. More generally, we can simplify and rationalize the nearly impenetrable thicket of financial regulation of public companies, a task that would clearly benefit both prospective and current public companies.

¹¹² “Listed Domestic Companies, Total, United States,” The World Bank, World Federation of Exchanges database, accessed Dec. 18, 2017, <https://data.worldbank.org/indicator/CM.MKT.LDOM.NO?locations=US>.

Appendix

Item 1 – SEC Filing Categories

Filer category	Public float	Form 10-K	Form 10-Q
Large accelerated filer	<\$700m	60 days after fiscal year end	40 days after fiscal quarter end
Accelerated filer	\$75m – \$750m	75 days after fiscal year end	40 days after fiscal quarter end
Non-accelerated filer	<\$75m	90 days after fiscal year end	45 days after fiscal quarter end

Item 2 – Russell 2000 Analyst Coverage

Index constituents and market caps sourced from Russell, analyst coverage data from Bloomberg.

