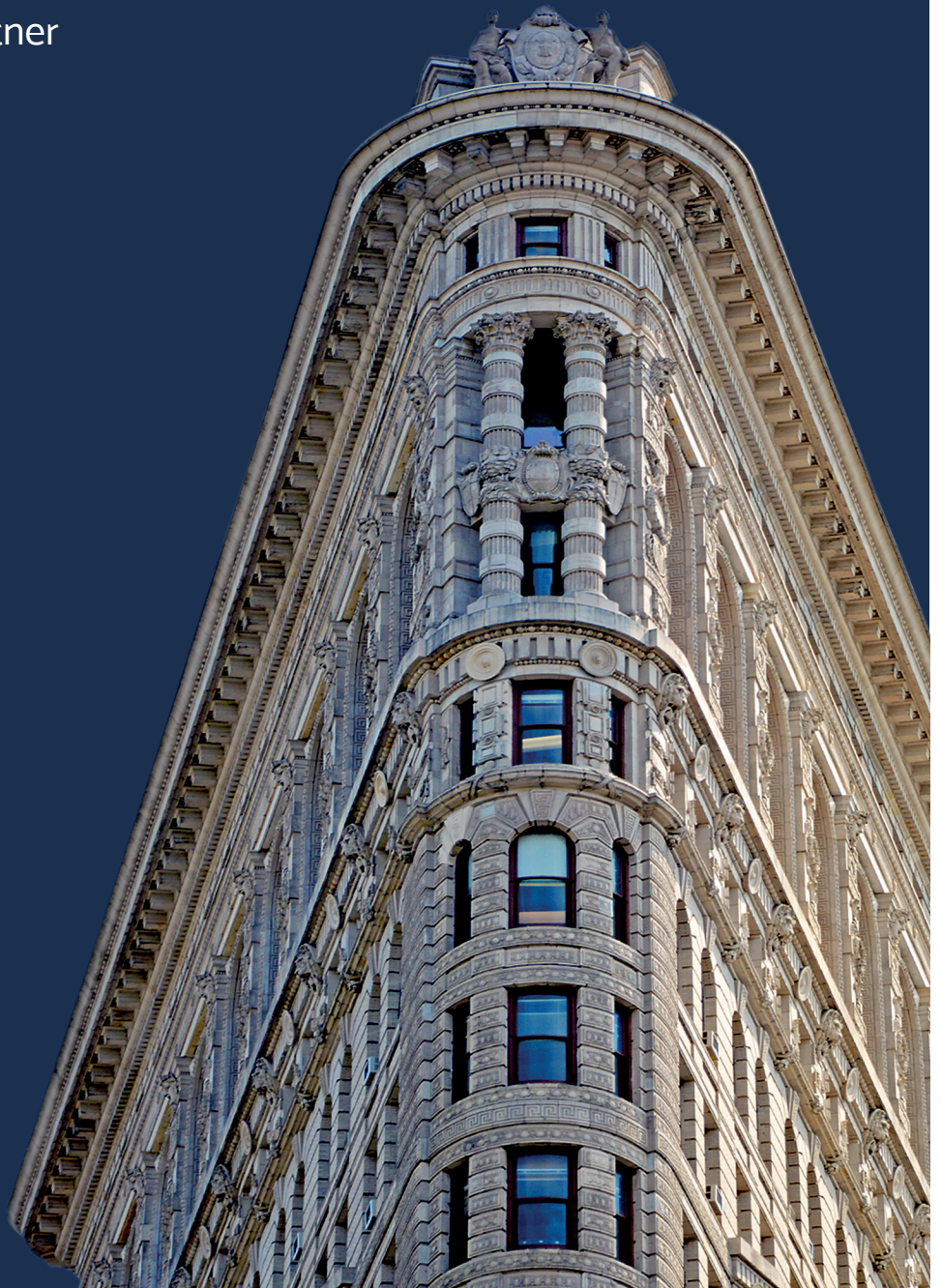


The Shrinking Public Market and Why it Matters

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June 27, 2017



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Section 1: Executive Summary

The number of publicly listed companies in the U.S. has fallen dramatically, decreasing by roughly half since its peak in 1996¹. This trend has spanned multiple economic cycles and has impacted countries across the globe². Due to the size and importance of the U.S. within the global economy, this paper will focus on the shrinking universe of publicly listed businesses in the U.S., why we believe this phenomenon is likely to persist and, ultimately, why it matters to institutional investors.

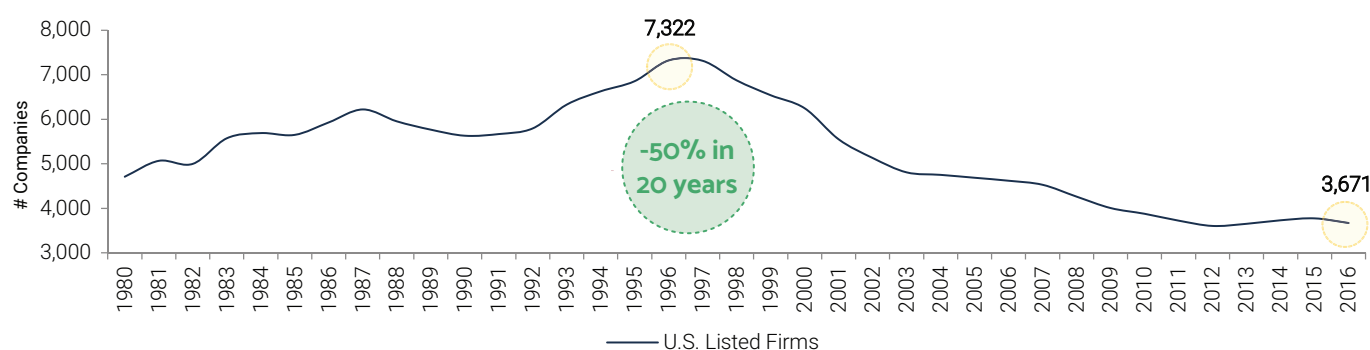
1.1 Key Takeaways

- ▶ The number of publicly listed companies in the U.S. has declined by ~50% since its peak in 1996. Countries in different regions, such as Germany and Brazil, have also experienced a decline in public listings, although not quite to the extent of the U.S.³.
- ▶ In general terms, the remaining public companies in the U.S. are older, larger, and slower growing.

- ▶ The increased net cost of listing has resulted in fewer IPOs bringing new companies into the market. Robust merger activity continues to remove companies from public exchanges⁴.
- ▶ We believe that unprecedented access to private capital and a reasonable outlook for a healthy M&A environment should allow this trend to persist.
- ▶ The public market no longer offers the full breadth of opportunities historically available, and consequently investors may consider a broader basket of alternatives to access younger and more rapidly growing companies.
- ▶ Private Equity continues to offer exposure across the company life cycle.

Over the last four decades there has been no shortfall of capital flowing into the public markets. In 1976, mutual and index funds represented ~\$41bn in AUM⁵. By the

Collapse in Number of Listed Stocks



Sources: Doidge, Craig, G. Andrew Karolyi, and René M. Stulz. "The U.S. listing gap." *Journal of Financial Economics* 123, no. 3 (2017): 464-87. doi:10.1016/j.jfineco.2016.12.002; Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. *The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities*. Global Financial Strategies, Credit Suisse. March 22, 2017

¹ Doidge, Craig, G. Andrew Karolyi, and René M. Stulz. "The U.S. listing gap." *Journal of Financial Economics* 123, no. 3 (2017): 464-87. doi:10.1016/j.jfineco.2016.12.002

^{2,3} Data from The World Bank, accessed May 25, 2017

⁴ Doidge, Craig, G. Andrew Karolyi, and René M. Stulz. "The U.S. listing gap." *Journal of Financial Economics* 123, no. 3 (2017): 464-87. doi:10.1016/j.jfineco.2016.12.002

⁵ Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. *The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities*

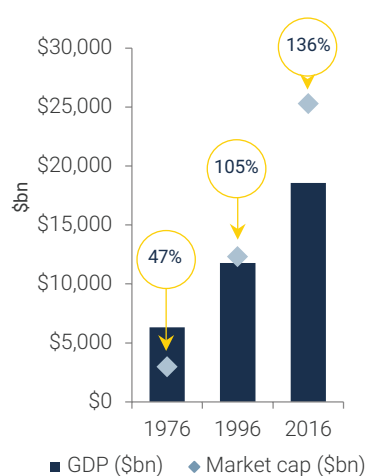
listing peak in 1996, that figure had grown over 44 times to ~\$1.8 trillion, and public listings grew by 53%⁶. In the ensuing 20 years mutual and index fund AUM continued on a strong growth trajectory, increasing by another 492% to over \$10.7 trillion, however the number of public companies fell by half⁷. Total market capitalization more than doubled between 1996 and 2016, reaching 136% of GDP⁸.

This period was also characterized by an aging public opportunity set, as fewer companies chose to list. The

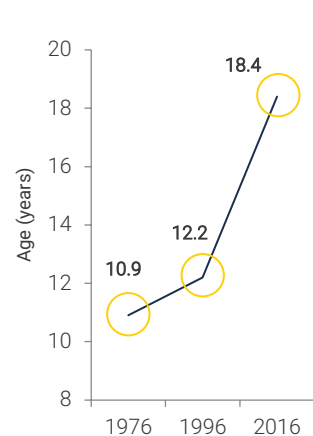
average age of a listed company grew from 12.2 years in 1996 to 18.4 years in 2016, or by over 50%⁹.

The net effect of continued robust capital inflows and growth in market capitalization since the listing peak is that more investment dollars are concentrated in fewer, older businesses. The large increases in average age and market cap, the latter of which has grown by ~4x in size, have coincided with a declining trend in year-over-year ("YoY") revenue growth in the S&P 500¹⁰.

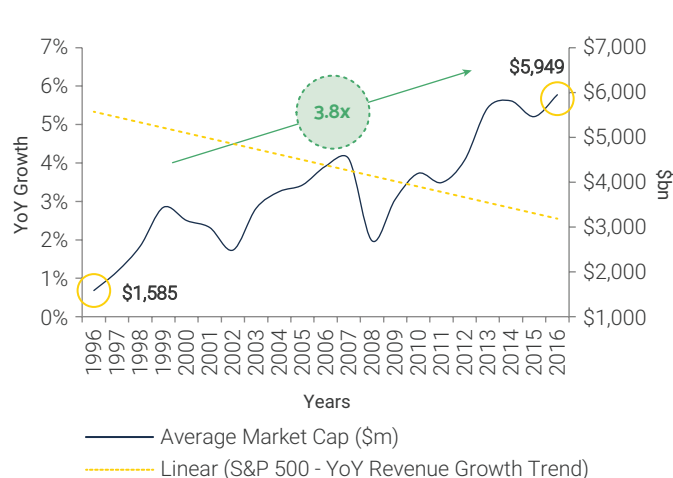
Market Cap as a % of GDP



Average Age of Listed Companies



Average Markets Caps Matched by Declining Revenue Growth



Source: Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities. Report. Global Financial Strategies, Credit Suisse. March 22, 2017

Sources: Center for Research in Securities Prices, University of Chicago Booth School of Business and S&P CapitalIQ

⁶ Doidge, Craig, G. Andrew Karolyi, and René M. Stulz. "The U.S. listing gap." *Journal of Financial Economics* 123, no. 3 (2017): 464-87. doi:10.1016/j.jfineco.2016.12.002; Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities. Report. Global Financial Strategies, Credit Suisse. March 22, 2017

⁷ Doidge, Craig, G. Andrew Karolyi, and René M. Stulz. "The U.S. listing gap." *Journal of Financial Economics* 123, no. 3 (2017): 464-87. doi:10.1016/j.jfineco.2016.12.002; Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities. Report. Global Financial Strategies, Credit Suisse. March 22, 2017

^{8,9} Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities. Report. Global Financial Strategies, Credit Suisse. March 22, 2017

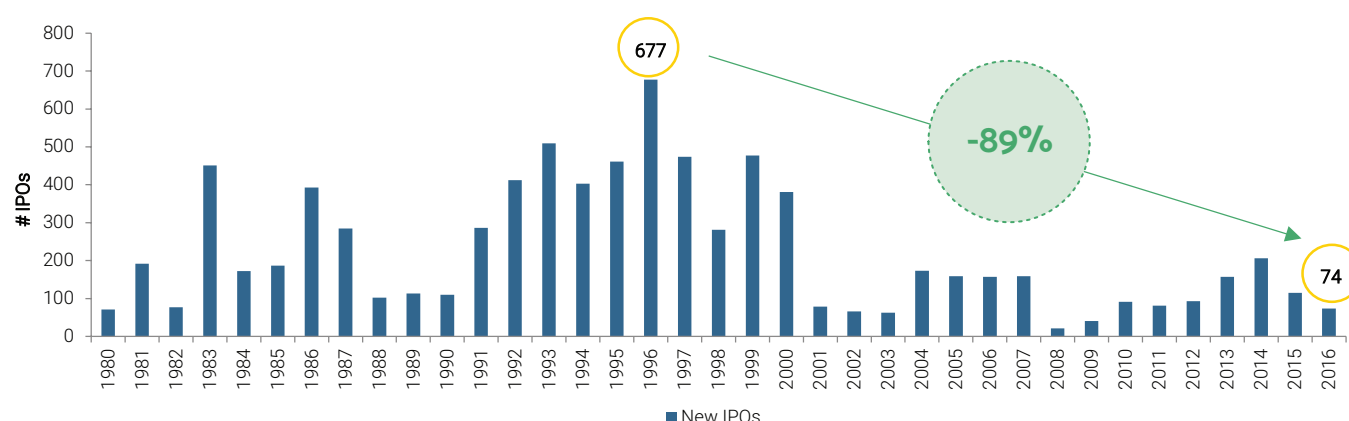
Section 2: How did this happen?

The shrinking number of public companies has not been for lack of new firms that can be listed; it is estimated that from the listing peak through 2012 both the total universe of firms and the number of firms eligible to list in the U.S. actually grew by ~7.5% each¹¹. Despite this increasing pool of candidates, the total number of listed companies today has roughly halved since 1996. Given that the total pool of firms eligible to list has not contracted, it is the propensity for firms to list that appears to have diminished¹². This is borne out by the data; since 2000, IPOs have been dramatically depressed relative to levels seen in the 1990s. Median new listings from 1980-1996 were a rather healthy 285 per year, although that dropped by over 50% to a median of 136 in the years following 1996. The propensity to list has fallen across all industries, so this is not a phenomenon limited to certain sectors, but a universal one¹³.

A business typically seeks to go public when it's viewed as a net benefit for the firm and its investors¹⁴. Traditionally, a number of potential advantages have been associated with going public, one of the most prominent being to access the capital required to finance growth initiatives and expansion. Historically, this has generally been available at scale in the public markets. Other benefits can include the ability to use shares as currency for M&A and to pay employees, liquidity for existing shareholders, and the generally held notion that being a publicly listed company implies a certain standard of quality and transparency for any given brand.

Executives, of course, have to weigh the benefits of listing against the costs, and will typically avoid going public if they perceive the costs to be higher than the benefits¹⁵. Costs include a broad swath of considerations such as a short-term emphasis on

2016 IPOs were a sliver of peak annual IPO volume, 89% since 1996



Source: Ritter, Jay R., Qie (Ellie) Yin, and Hongyu (Derek) Shan. Initial Public Offerings: Updated Statistics. Report no. 352.846-2837. University of Florida. February 20, 2017

¹⁰ Data from the Center for Research in Securities Prices, University of Chicago Booth School of Business accessed March 3, 2017; Data from S&P CapitalIQ accessed April 20, 2017

¹¹¹²¹³ Doidge, Craig, G. Andrew Karolyi, and René M. Stulz. "The U.S. listing gap." *Journal of Financial Economics* 123, no. 3 (2017): 464-87. doi:10.1016/j.jfineco.2016.12.002

¹⁴¹⁵ Doidge, Craig, G. Andrew Karolyi, and René M. Stulz. "The U.S. listing gap." *Journal of Financial Economics* 123, no. 3 (2017): 464-87. doi:10.1016/j.jfineco.2016.12.002

quarterly performance vs long-term value creation, competitive costs associated with required disclosures, administrative and direct costs of listing and remaining public, and regulation. As evidenced by the sharp and sustained drop in IPO activity, the net cost of listing has gone up since the 1996 peak, particularly for smaller companies that are not able to bear the costs of listing as efficiently as larger businesses¹⁶. Large companies are also typically better positioned to weather pressures from analysts and activist investors due to more significant resources they can bring to bear and generally more secure market positions¹⁷. Recognizing this issue, in 2011 the U.S. Department of the Treasury formed the “IPO Task Force” with the specific goal of reducing the costs associated with going public, particularly for emerging growth companies (defined as any company with total annual gross revenue of less than \$1 billion) and the small cap IPO market. They concluded that the high costs of regulatory compliance have caused many executives at emerging growth companies to postpone or forgo an IPO in favor of focusing their relatively limited resources on business-building¹⁸. Rather than choosing to go public early, CEOs of prominent private companies echo these sentiments today:

“We’re in no rush to go public, we don’t need to¹⁹.”

John Zimmer, CEO at Lyft

“[Going public] has never been a goal in and of itself. It all comes down to where companies can find the capital they need to forward invest in the business²⁰.”

Ben Silbermann, CEO at Pinterest

“So we have to slow down, further improve in some areas, and ensure sustainable growth for a long-term future²¹.”

Lei Jung, CEO and co-founder at Xiaomi

These are important decisions that CEOs face. Coupled with a broad array of growing alternative financing options, which to an extent limits the benefit of listing, companies are staying private for longer, pursuing their objectives outside of the public spotlight. In the period from 1996-2016, the median age at which a company went public was 11 years old, or a 37% increase from the median age of eight years in the decade and a half prior²². The median time from first venture investment to IPO has grown from ~5 years in 2006 to over 8 years in 2016²³. The impact of this has been felt in the form of dramatically fewer IPOs since 1996, and so it is unsurprising that we have witnessed the subsequent aging of the average publicly listed company.

^{16,17} Doidge, Craig, G. Andrew Karolyi, and René M. Stulz. “The U.S. listing gap.” *Journal of Financial Economics* 123, no. 3 (2017): 464-87. doi:10.1016/j.jfineco.2016.12.002

¹⁸ “Rebuilding the IPO On-Ramp: Putting Emerging Growth Economies and the Job Market Back on the Road to Growth.” Issue brief. IPO Task Force. October 20, 2011

¹⁹ McDermid, Riley. “Lyft CEO says ridership has doubled and that it’s not for sale.” *Bizjournals.com*. Accessed April 31, 2017. <http://www.bizjournals.com/sanfrancisco/blog/techflash/2016/10/lyft-ceo-says-ridership-has-doubled-not-for-sale.html>

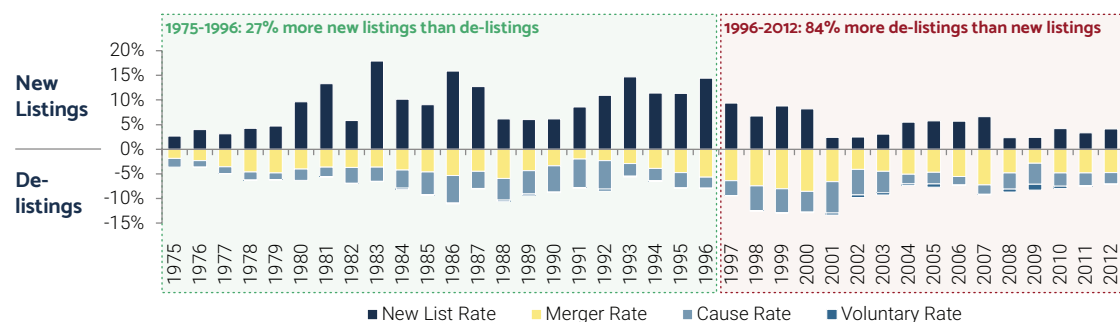
²⁰ Shontell, Alyson. “The CEO of \$11 billion Pinterest reveals his thoughts on going public, crazy private markets, and advice for founders who don’t want to fail.” *Business Insider*. April 21, 2016. Accessed May 01, 2017. <http://www.businessinsider.com/ben-silbermann-interview-pinterest-ceo-on-ipo-startups-2016-4>

²¹ Russell, Jon. “Xiaomi stops disclosing annual sales figures as CEO admits the company grew too fast.” *TechCrunch*. January 11, 2017. Accessed May 17, 2017. <https://techcrunch.com/2017/01/11/xiaomi-2016-to-2017/>

²² Ritter, Jay R., Qie (Ellie) Yin, and Hongyu (Derek) Shan. *Initial Public Offerings: Updated Statistics*. Report no. 352.846-2837. Finance, University of Florida. February 20, 2017

²³ Pitchbook: National Venture Capital Association *Venture Monitor* 1Q 2017

% Change in New Listings vs De-listing



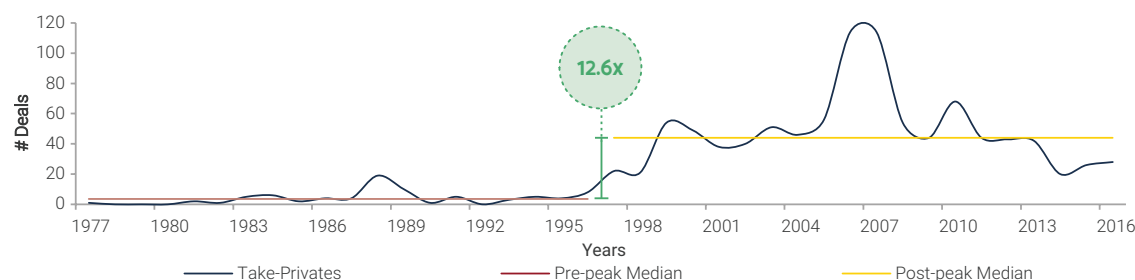
Source: Doidge, Craig, G. Andrew Karolyi, and René M. Stulz. "The U.S. listing gap." *Journal of Financial Economics* 123, no. 3 (2017): 464-87. doi:10.1016/j.jfineco.2016.12.002.

While new listings have fallen, de-listing activity has remained strong. A de-listing occurs when a company is removed from a public exchange due to a merger, for cause (i.e. bankruptcy or failure to meet regulatory requirements), or for voluntary reasons²⁴. Based on data underlying the above chart, de-listings occurred at an average of 408 per year in the period between 1975 and 1996, however they were offset by strong new listing activity, which averaged 518 per year over the same period and culminated in the 1996 peak. That trend has since reversed; steady new listings continued through 2000 although were largely offset by particularly robust merger activity. Since then, exits from a public exchange have remained strong with an average of 415 per year,

whereas average annual new listings compressed to 185. Since 1996, total de-listings from public exchanges outpaced total new listings by 84%.

Of the various reasons a company might delist, the primary driver has typically been merger activity²⁵. The most common type of merger is corporate M&A, when a corporate/strategic buyer purchases a company and takes it off of an exchange. Merger activity also includes the acquisition of a public company by a financial sponsor in a take-private transaction, typically executed by Private Equity buyout firms. These types of transactions have grown considerably over time²⁶.

De-listings from Private Equity Deals



Source: Data from S&P CapitalIQ; methodology sourced from the Research Institute of Industrial Economics IFN Working Paper No. 1115, 2016. Authored by Alexander Ljungqvist, Lars Persson and Joacim Tåg

²⁴ "Listing and Delisting Requirements." SEC Emblem. United States Security and Exchange Commission. October 15, 2012. Accessed May 08, 2017. <https://www.sec.gov/fast-answers/answerslistinghtm.html>; Doidge, Craig, G. Andrew Karolyi, and René M. Stulz. "The U.S. listing gap." *Journal of Financial Economics* 123, no. 3 (2017): 464-87. doi:10.1016/j.jfineco.2016.12.002

²⁵ Doidge, Craig, G. Andrew Karolyi, and René M. Stulz. "The U.S. listing gap." *Journal of Financial Economics* 123, no. 3 (2017): 464-87. doi:10.1016/j.jfineco.2016.12.002

²⁶ Data for public-to-private transactions sourced from S&P CapitalIQ accessed May 20, 2017. Methodology sourced from "Ljungqvist, Alexander, Lars Persson, and Joacim Tåg. "Private Equity's Unintended Dark Side: On the Economic Consequences of Excessive Delistings." Research Institute of Industrial Economics - IFN Working Paper No. 1115, 2016, 3. doi:10.3386/w21909."

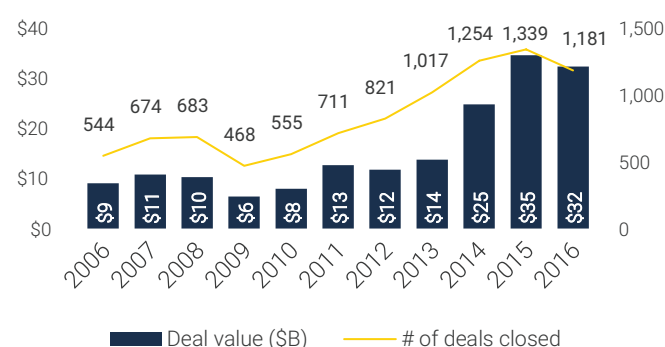
Section 3: Will these trends persist?

The dearth in new listing activity has left investors that have historically been large IPO participants, such as mutual and hedge funds, with a decision to make. In an environment where the average company at IPO is older, with more time to grow as a privately-run business, fund managers have reacted by attempting to increase their activity at the pre-IPO stage. Katie Reichart, Senior Analyst of Manager Research at Morningstar, characterizes this shift in behavior: "It can be a big boost if they get in early. Mutual fund managers don't want to miss out on that runway to growth²⁷." Indeed, mutual funds have begun participating in the pre-IPO realm in search of this additional growth; 26 mutual fund managers had collectively invested \$11.5 billion in late stage venture companies through the first half of 2016 across 194 different funds, but these private investments are often made after significant value has already been ascribed to the underlying companies, and

private positions only comprise a small part of each fund, making it difficult to feel the full benefit of the potential gains²⁸. Greater access to capital in the private markets stems from a number of additional sources; Private Equity continues to be an active participant, and sovereign wealth fund AUM has grown to ~\$7.4 trillion, or 13% per annum since 2000, and these funds have become regular investors across stages²⁹. Additionally, Corporate Venture Capital ("CVC") has become a far greater participant in late-stage deals; \$32bn in deal volume was completed with CVC participation in 2016, up 257% in the last decade³⁰.

When public markets were the only source of capital at scale, emerging growth companies would typically raise between \$50 million and \$150 million to finance their businesses and pursue further expansion³¹. Only a fraction of this amount was available through private

US venture activity with CVC participation



Source: Pitchbook - National Venture Capital Association Venture Monitor Q1 2017

Median amount raised prior to IPO (\$M)



Source: WilmerHale 2016 IPO Report

²⁷ McLaughlin, Tim, and Ross Kerber. "Mutual funds chase head start on hit IPOs with pre-public investing." Reuters. June 04, 2015. Accessed May 19, 2017. <http://www.reuters.com/article/us-funds-investments-ipo-insight-idUSKBN00K0CA20150604>; Morningstar Manager Research, North America Team Bios http://www.morningstarmanagerresearch.com/uploads/7/7/2/0/77206365/manager_research_team_bios_na.pdf

²⁸ "Despite the risks, investing in private companies offers potential benefits." T. Rowe Price, 2017.; Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities. Report. Global Financial Strategies, Credit Suisse. March 22, 2017; Katie Reichart, Unicorn Hunting: Mutual Fund Ownership of Private Companies is a Relevant, but Minor, Concern for Most Investors," Morningstar Manager Research, December 2016; Shell, Adam. "What shrinking stock market means for your money." USA Today. June 03, 2017. Accessed June 05, 2017. <https://www.usatoday.com/story/money/markets/2017/06/03/shrinking-stock-market/102421848/>

²⁹ 2000-2011 data on Sovereign Wealth Fund AUM from Statista & 2012-2015 data is from the Sovereign Wealth Fund Institute

³⁰ Pitchbook: National Venture Capital Association Venture Monitor 1Q 2017

³¹ "Rebuilding the IPO On-Ramp: Putting Emerging Growth Economies and the Job Market Back on the Road to Growth." Issue brief. IPO Task Force. October 20, 2011

funding sources; in 1996, the median amount raised prior to IPO was \$12 million³². However, with increasing access to capital in the private markets during the subsequent years, that figure has grown at 11% per annum to nearly \$100m in 2016, easily within the range of capital that public markets would traditionally provide³³. We believe that access to ample levels of private funding effectively drives down one of the key benefits of going public, and allows companies to continue pursuing their growth and business objectives without enduring the costs and distractions associated with operating in the public spotlight.

There is also a generally supportive environment for healthy M&A – the primary cause for companies to exit a public exchange – to persist. While publicly listed companies have indeed aged and grown larger on average in the wake of a more limited IPO market, they have also become more profitable, with a higher tendency to return capital to investors³⁴. One outcome of larger, more profitable businesses is the accumulation of cash on their balance sheets; since 2000, S&P 500 cash and equivalents have grown at an annual rate of 7%. In 2016 that figure sat at \$1.5 trillion, over three times what it was in 2000³⁵. Additionally, it is often difficult to maintain organic growth rates as companies become larger, and merger activity is one path to

expanding inorganically; in a 2016 Deloitte survey of 750 US-headquartered corporations spanning 18 industries, respondents indicated that M&A activity will represent the most significant percentage, or 43%, of excess cash expenditures³⁶. If passed, proposed revisions to the tax code, particularly regarding the tax rate on repatriated cash, could be a further tailwind to domestic M&A.

This combination of robust access to private funding, which has reduced the net benefit to listing, and a healthy M&A environment should allow current conditions to persist.

³² WilmerHale 2016 IPO Report

³³ "Rebuilding the IPO On-Ramp: Putting Emerging Growth Economies and the Job Market Back on the Road to Growth." Issue brief. IPO Task Force. October 20, 2011.; WilmerHale 2016 IPO Report

³⁴ Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities. Report. Global Financial Strategies, Credit Suisse. March 22, 2017; Kalhe and Stulz, (2016). The decline in appetite to innovate may also lead companies to pay out more. See Claudio Loderer, René Stulz, and Urs Waelchli, "Firm Rigidities and the Decline in Growth Opportunities," Management Science, Forthcoming; Gustavo Grullon, Yelena Larkin, and Roni Michaely, "The Disappearance of Public Firms and the Changing Nature of U.S. Industries," Working Paper, February 2017. Some have argued that profits are too high. See "Too much of a Good Thing: Profits are too High. America Needs a Giant Dose of Competition," Economist, March 26, 2016

³⁵ S&P CapitalIQ data accessed April 01, 2017

³⁶ Thomson, Russell, Trevear Thomas, Mark Garay. M&A Trends, Year-end Report 2016. Deloitte

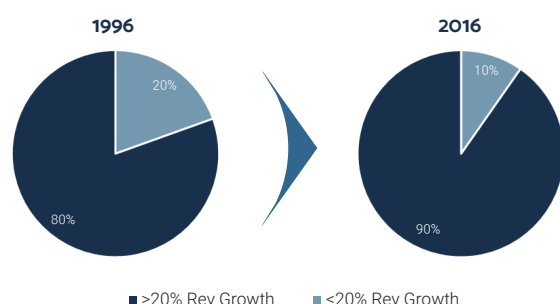
Section 4: Why does this matter?

We believe the public market no longer offers the breadth of investment opportunities that it used to, and so public investors face the need to consider alternatives to access younger companies with the potential for more rapid growth. The dearth of IPOs since the listing peak in 1996 has reduced the refresh rate of new businesses entering the public market such that the average public company is 50% older and ~4x larger than it was 20 years ago as mutual and index fund AUM has grown dramatically. Over the same period, the number of companies in the S&P 500 growing at 20% or greater has halved³⁷.

No longer the promised-land for companies poised to grow, the public stock market is quickly becoming a holding pen for massive, sleepy corporations³⁸.

The value creation that is occurring in pre-IPO companies is also difficult to ignore; traditional IPO investors are

S&P 500 Growth - Total



Source: S&P CapitalIQ

attempting to access these businesses in order to capture their growth potential – arguably what they used to achieve at IPO – and any investors without a means of doing so are likely missing out³⁹. Andrew Boyd, the Head of Global Equity Capital Markets at Fidelity, succinctly summarizes this viewpoint: “The pre-IPO market has become the IPO market of the past, but it’s only available to investors such as venture capital firms, mutual funds and hedge funds able to put up large amounts of money that once were only available through public markets⁴⁰.” Amazon, Google, and Facebook are real-world examples of the impact that time to IPO and market capitalization at IPO can have on the potential for subsequent growth (see charts on following page).

As these companies sequentially remained private for longer, by the time of IPO they had achieved greater scale both by revenue and market cap, and we believe the impact on revenue growth and potential for returns is apparent. This is not a commentary on which of these businesses is superior – to the contrary, they are each market leaders and innovators in their respective spaces. The fact that Facebook was able to raise \$2.84 billion of private funding and subsequently IPO at over \$100 billion makes it inconceivable that an IPO investor in the company could replicate the returns of an investor in Amazon’s IPO⁴¹. Notionally, Facebook would need to reach a ~\$70 trillion market cap and Google would need to reach a ~\$16 trillion market cap to match Amazon’s return since IPO⁴².

³⁷ S&P CapitalIQ data accessed March 31, 2017

³⁸ “How Private Markets Are Killing Public Equity.” Institutional Investor. April 12, 2017. Accessed May 31, 2017. <http://www.institutionalinvestor.com/article/3709471/investors-endowments-and-foundations/how-private-markets-are-killing-public-equity.html#.WQfhuunrvct>

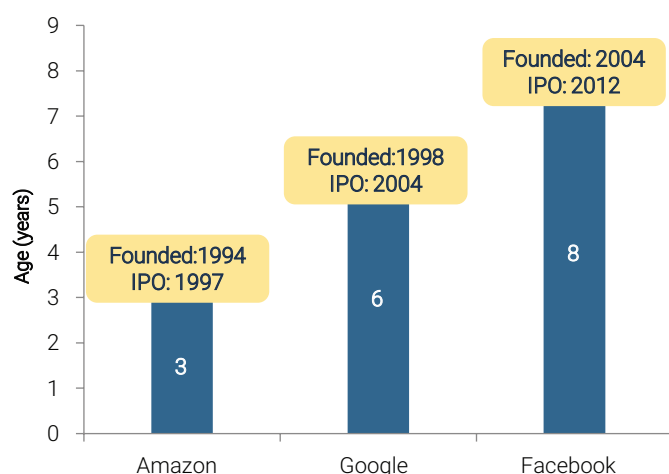
³⁹ McLaughlin, Tim, and Ross Kerber. “Mutual funds chase head start on hit IPOs with pre-public investing.” Reuters. June 04, 2015. Accessed May 19, 2017. <http://www.reuters.com/article/us-funds-investments-ipo-insight-idUSKBN00K0CA20150604>; Tech Investing Daily Research & Analysis Group. “Special Report: Silicon Secrets: How to Invest in Private Start-ups.” Accessed June 08, 2017. <http://www.wealthdaily.com/report/silicon-secrets-how-to-invest-in-private-start-ups/1397>

⁴⁰ McLaughlin, Tim, and Ross Kerber. “Mutual funds chase head start on hit IPOs with pre-public investing.” Reuters. June 04, 2015. Accessed May 19, 2017. <http://www.reuters.com/article/us-funds-investments-ipo-insight-idUSKBN00K0CA20150604>

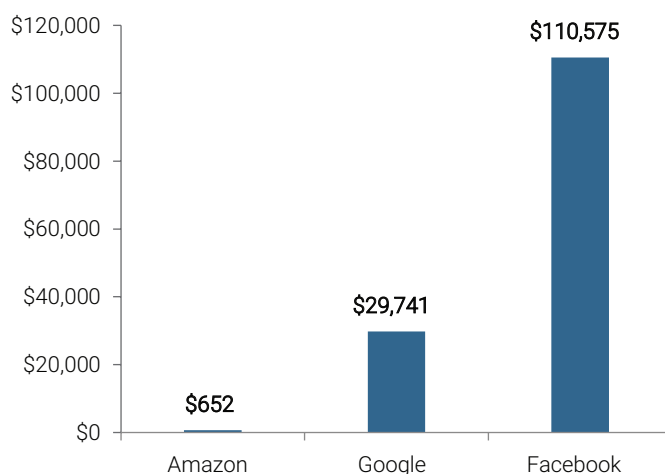
⁴¹ Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities. Report. Global Financial Strategies, Credit Suisse. March 22, 2017

⁴² Pantheon estimates are based on market capitalization at IPO without adjusting for inflation in order to maintain a like-for-like comparison with the return Amazon has generated since IPO

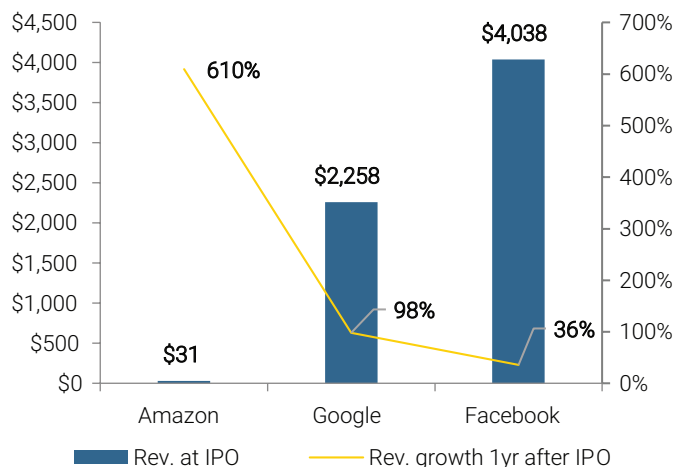
Age before IPO⁴³



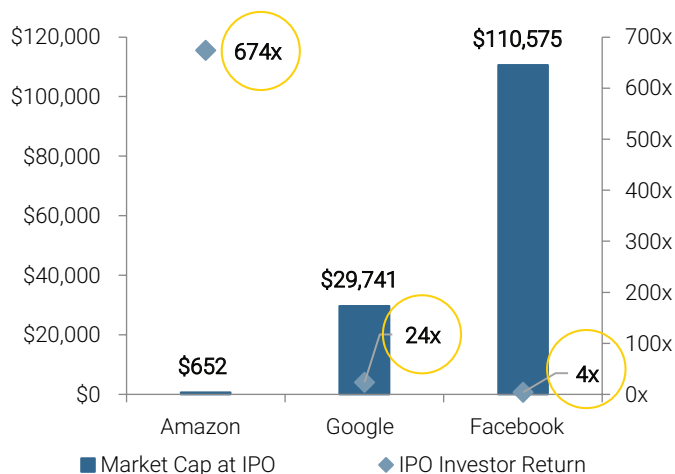
Market Cap at IPO (\$m)⁴⁴



Revenue (\$m) and % Growth at IPO⁴⁵



IPO Investor Returns⁴⁶



Sources: Revenue and growth data at IPO sourced from S&P CapitalIQ; Age before IPO, Market Cap at IPO and IPO Investor Returns sourced from Amazon, Google, and Facebook company reports, "Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities. Global Financial Strategies, Credit Suisse. March 22, 2017," and S&P CapitalIQ as of June 08, 2017

⁴³ Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities. Report. Global Financial Strategies, Credit Suisse. March 22, 2017

⁴⁴ Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities. Report. Global Financial Strategies, Credit Suisse. March 22, 2017

⁴⁵ S&P CapitalIQ data accessed April 01, 2017. Revenue and revenue growth reflect the latest available LTM revenue as of the IPO quarter for each respective company

⁴⁶ Mauboussin, Michael J., Dan Callahan, CFA, and Darius Majd. The Incredible Shrinking Universe of Stocks: The Causes and Consequences of Fewer U.S. Equities. Report. Global Financial Strategies, Credit Suisse. March 22, 2017

Section 5: Private Equity continues to have exposure across the company life cycle

Many core Private Equity investment strategies are direct beneficiaries of the trends driving the reduced public opportunity set. In the context of fewer new listings and longer private company life cycles, Private Equity can provide the capital that companies seek while operating as private businesses, and venture / growth equity managers often access outperforming companies long before the new cohort of pre-IPO investors do.

Private Equity's ability to participate in this trend is clear: PE-backed IPOs have steadily grown to include ~80% of total IPOs through 2016⁴⁷

Some sources expect Private Equity portfolios to be the greatest source of IPO activity in 2017⁴⁸. On the larger end of the spectrum, buyout funds have become more active in public-to-private transactions. Recent years that have been characterized by high levels of merger activity should also provide buyout funds with more

opportunities for carve-out transactions, which typically increase following waves of corporate M&A.

While mutual funds and hedge funds can provide investors with some limited access to investment opportunities in the private markets, very few public market investors, if any, have built experience and domain expertise investing in young companies comparable to Private Equity investors, and the corporate governance dynamics are fundamentally different⁴⁹. We believe that Private Equity investors can benefit from favorable ownership characteristics which include active, control positions that are aligned with long-term value creation. This model of active ownership and close alignment between General Partners and management teams allows the asset class to have a major role in driving growth and operational improvements in their underlying investments, rather than taking the more passive role associated with traditional public investors⁵⁰.

	Ownership Characteristics	Alignment / Implications
Venture Capital / Growth Equity	<ul style="list-style-type: none"> ▶ Minority control position (often ~20% at entry), although a syndicate may have substantial ownership in a company ▶ Typically includes board representation 	<ul style="list-style-type: none"> ▶ Focus on longer-term value creation ▶ Easy access to portfolio company management
Buyout	<ul style="list-style-type: none"> ▶ Majority control of the companies they invest in ▶ Virtually always includes board representation 	<ul style="list-style-type: none"> ▶ Focus on longer-term value creation ▶ Easy access to portfolio company management ▶ Nimble decision making
Public Investors	<ul style="list-style-type: none"> ▶ Small ownership positions ▶ Even large (sometimes activist) shareholders typically target much smaller percentage ownership ▶ Activist investors may negotiate board representation 	<ul style="list-style-type: none"> ▶ Often managed to short-term growth / earnings targets ▶ Portfolio company management is less accessible

⁴⁷ Ritter, Jay R., Qie (Ellie) Yin, and Hongyu (Derek) Shan. Initial Public Offerings: Updated Statistics. Report no. 352.846-2837. Finance, University of Florida. February 20, 2017

⁴⁸ Duran, Lee. BDO Perspective, Winter 2017

⁴⁹ "Despite the risks, investing in private companies offers potential benefits." T. Rowe Price, 2017 and Pantheon opinion

⁵⁰ Ott, Rainer, Mauro Pfister. "Diversify your portfolio with private equity." Capital Dynamics. May 2017

Section 6: **Summary**

The opportunity set for public equity investors has changed dramatically over the past twenty years. The number of publicly listed companies in the U.S. has halved and the firms that remain are on balance older, larger, and slower growing. Ample access to private capital combined with higher regulatory and compliance burdens have dissuaded many firms from going public, severely constraining the inflow of new companies to the public realm.

De-listings, primarily driven by M&A and take private activity, continue to outpace IPOs, and these trends should continue to depress the number of companies available to public investors. In order to access the full breadth of opportunities formerly available in the public markets, investors today need to have exposure across both public and private capital strategies. This is especially true for those investors who want to access younger and higher growth companies where much of the value is now being created prior to initial public offerings. Finally, we also note that private capital's active ownership model, strong corporate governance, alignment with management and longer-term investment horizon can also benefit investors with exposure to private markets.

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