

PitchBook

NATIONAL
VENTURE CAPITAL
ASSOCIATION

Venture Monitor

4Q 2017



svb



Silicon Valley Bank

In partnership with

PERKINS COIE
COUNSEL TO GREAT COMPANIES

Solium

2017 sees more than \$84B in VC invested, the highest tally since the dot-com era
Pages 4-5

Sector analysis, with spotlights by Silicon Valley Bank on biotech & fintech
Pages 15-17

League tables for 4Q deals, investors, exits and more
Pages 32-34

The definitive review of the US venture capital ecosystem covering 4Q and full-year 2017

Credits & Contact

PitchBook Data, Inc.

JOHN GABBERT Founder, CEO
ADLEY BOWDEN Vice President,
Research & Analysis

Content

NIZAR TARHUNI Analysis Manager
KYLE STANFORD Analyst
BRYAN HANSON Data Analyst II
JENNIFER SAM Senior Graphic Designer

RESEARCH

reports@pitchbook.com

National Venture Capital Association (NVCA)

BOBBY FRANKLIN President & CEO
MARYAM HAQUE Vice President of Research &
Strategic Engagement
BEN VEGHTE Vice President of Communications &
Marketing

Contact NVCA

nvca.org
nvca@nvca.org

Silicon Valley Bank

GREG BECKER Chief Executive Officer
MICHAEL DESCHENEUX President
DENNY BOYLE Managing Director, Fintech
JONATHAN NORRIS Managing Director, Life
Science & Healthcare
DEREK RIDGLEY Credit Research & Development
Officer

Contact Silicon Valley Bank

svb.com
venturemonitor@svb.com

Perkins Coie

BUDDY ARNHEIM Partner, Emerging Companies &
Venture Capital
FIONA BROPHY Partner, Emerging Companies &
Venture Capital
LOWELL NESS Partner, Blockchain Technology &
Digital Currency

Contact Perkins Coie

perkinscoie.com
startuppercolator.com

Solium

KEVIN SWAN VP Corporate Development

Contact Solium

solium.com



Contents

Executive summary	3
Overview	4-5
Perkins Coie: Cryptos, standardization & structured release valves	7-8
Angel/seed	9
First financings	10
Early-stage VC	11
Late-stage VC	12
Activity by region	13
Activity by sector	14
SVB: When tech meets biotech	15
SVB: US fintech investment grows in 2017: What's next?	17
Corporate VC	18-19
Growth equity	21-22
Q&A: SVB President Michael Descheneaux	23
SVB: Credit Insights: Debt vs. equity	24
SVB: Startup Financial Insights	25
Exits	26-27
Fundraising	28-30
League Tables	32-34
Methodology	35

Executive Summary

The fourth quarter of 2017 bookended the year as the third consecutive quarter with more than \$20 billion deployed into US venture-backed companies, and marked the close of a strong year of investment that surpassed \$80 billion annually for the first time since the dot-com era. Investors deployed \$84.2 billion into 1,772 companies in 4Q, the fewest since 4Q 2011, bringing the annual total to 7,783 and marking the lowest level since 2012.

In unpacking the data and speaking with venture investors, the impact of the continued evolution of market dynamics were evident in 2017. After investors raised a total of \$110 billion via venture funds from 2014 to 2016—and an additional \$32.4 billion last year—capital ready for deployment into startups has been more than ample. Beyond traditional capital from venture capital funds, SoftBank's headline-grabbing \$100 billion Vision Fund has had an ever-increasing role in the ecosystem with no signs of abating. SoftBank was present in several of the highest-profile deals of the year, including WeWork's \$3 billion US investment and Compass' \$450 million rounds last quarter. Not to mention it is set to become the largest investor in Uber this year.

While such a large pool of capital is available to the industry, investors are working to stay disciplined in their approach, translating into overall fewer deals taking place, though more capital being deployed at higher valuations. As a result, median deal sizes have increased across all stages in recent years, doubling at the angel, seed and early stages since 2013, while the median late-stage deal has grown about 67% over that period. At the same time, the age of companies receiving funding at each series has also seen a noticeable increase over the past five years. This is likely a cause and result of investors looking for stronger KPIs when investing such large checks. That is, the stronger the company, the worthier of that oversized deal they seemingly are. Coinciding with these market shifts, investment into unicorns (i.e., those valued at \$1 billion+) occurred at a frenetic pace, reaching a record high in 2017. These companies attracted \$19.1 billion last year, which represented 23% of the total capital invested across the industry.

An important trend that flew more under the radar in 2017 was the rise in life science investment, which reached a 10-year high with \$17.6 billion deployed to 1,046 companies working on groundbreaking innovations in healthcare. Part of the rise can be attributed to the renewed focus on biotech opportunities. Once seen as a niche investment strategy, biotech has moved in the direction of software, becoming somewhat mainstream in the venture world. In fact, cancer screening company Grail recorded the second-largest deal of the fourth quarter, raising \$1.2 billion, and bioengineering startup Ginkgo Bioworks raised \$275 million in 4Q and joined Grail to reach unicorn status. This trend is further supported by recent fundraising activity led by the arrival of new firms such as Pivotal bioVenture Partners, which raised a \$300 million fund in 2017, as well as established firms such as Andreessen Horowitz, which recently closed its \$450 million second biotech fund.

Public policy developments have also had a positive impact on the biotech sector. Investors have welcomed the recent appointment of physician and former venture investor Scott Gottlieb as Commissioner of the Food and Drug Administration (FDA) and support his efforts to reform the FDA to better advance healthcare innovations.

A change in leadership at the FDA hasn't been the only example of public policy impacting the venture ecosystem. Many aspects of the recently-passed tax reform plan will touch entrepreneurs, startups and venture investors. Lowering the corporate tax rate to 21% as well as the repatriation provisions to allow corporations to bring back profits from overseas may signal increased M&A activity in the year ahead after activity stalled in 2017 with the fewest recorded (565) since 2009. The changes in tax reform bring good news for startups looking to take the next step in their growth, and VC investors seeking liquidity.

While the overall US economy posted a strong 2017, optimism for a strengthening venture-backed IPO environment in 2017 yielded an uptick from 41 IPOs in 2016 to 58 in 2017, but the resurgent comeback many were looking for never fully materialized. With companies staying private longer and valuations peaking in the private market, the challenge remains for public market investors to gain early access to the new wave of high-growth companies in order to reap the full benefits. Capital market reform remains a focus for the venture industry, and some are perhaps more cautiously optimistic for an uptick in IPO activity in 2018. Many will be closely tracking Spotify's efforts to directly list on the NYSE in hopes it could lead others to pursue the same track.

Overview

Midway through last year, we highlighted that 2017 was pacing to come in as the highest year since at least the dot-com era in terms of total capital invested. As we closed out 2017, this certainly played out, with more than \$84 billion in capital invested across nearly 8,100 completed financings, reflecting a drop of around 6% in terms of aggregate deals, yet a surge in total deal value of 16% year over year (YoY).

The venture markets today have undergone a shift in the dynamics and parameters that have shaped them. Companies are larger and many are taking on institutional financings later in their lifecycle as evident by the growing median age of companies raising venture rounds. This trend is particularly notable the earlier in the investment cycle you look. Since 2013, the median age of companies raising institutional angel & seed rounds has grown a staggering 38% to 2.42 years, with companies at the Series A round coming in at just over 3.5 years of age, and Series B companies typically raising those rounds at around year five, on a median basis.

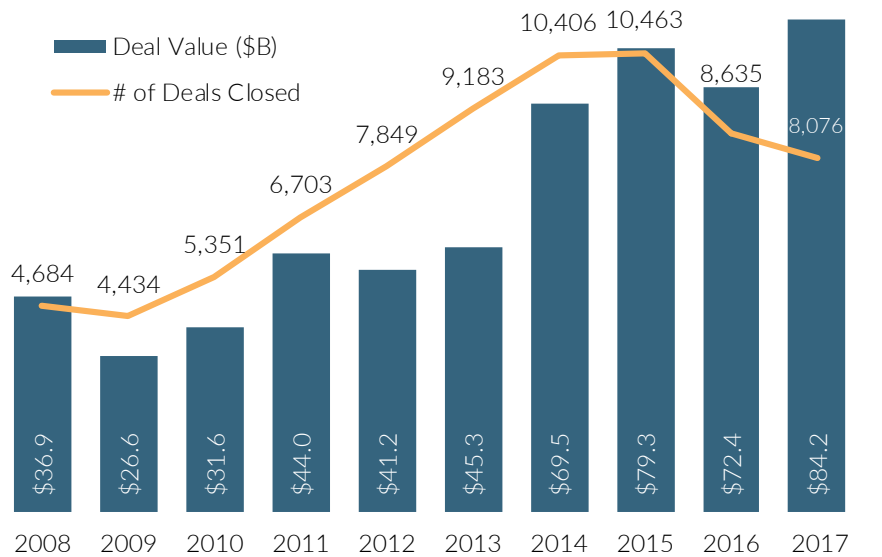
We've also continued to witness liquidity cycles stretch to unprecedented levels, driven by record amounts of dry powder ready to be deployed to the outperforming businesses that have proven their going concerns in today's marketplace. This notion is compounded by a founder and management mentality that has embraced the continued use of private capital to fuel growth, rather than move through an IPO

or M&A exit. Just as recently as a few years ago, this wasn't simply a matter of choice, but also an implicit need to garner the typically large amount of capital needed to drive growth at a later-stage company. That is not the case today.

To illustrate, venture financings of at least \$50 million have grown at a compounded annual growth rate of some 13% since

\$84B+ invested for first time since dot-com era

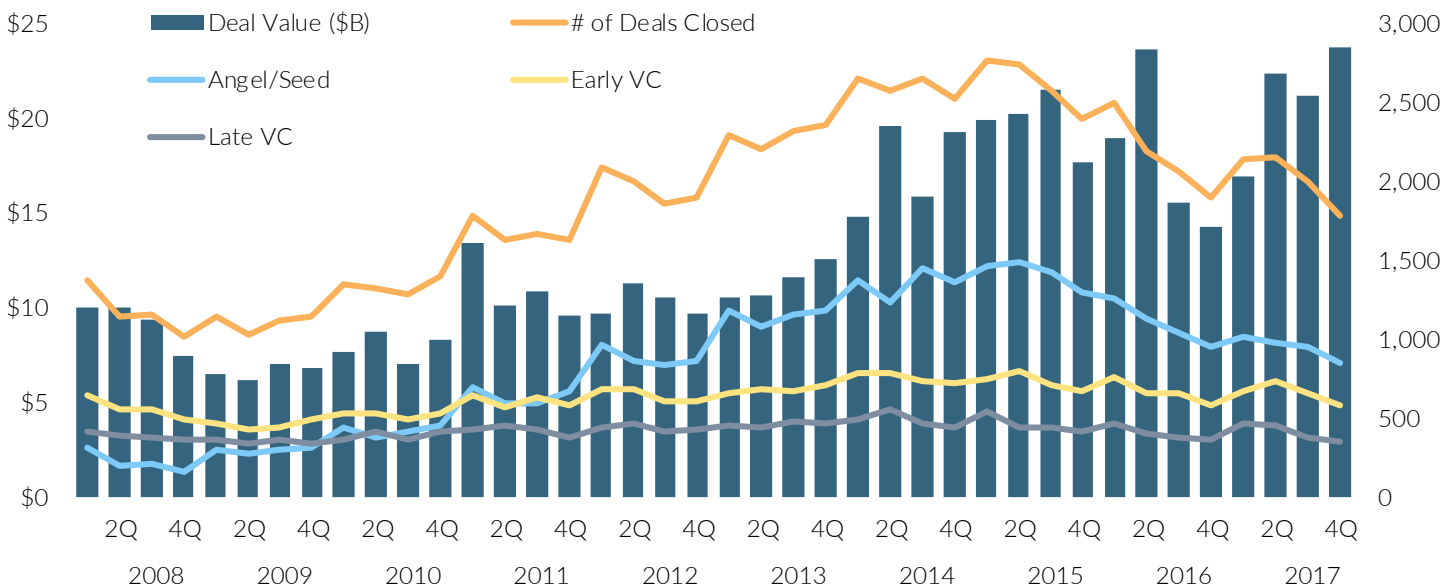
US VC activity



PitchBook-NVCA Venture Monitor

2017 a record year in deal value

US VC activity



PitchBook-NVCA Venture Monitor

2007, more than double the pace at which rounds completed between \$25 million and \$50 million (6% CAGR) have grown, and at nearly 4x the rate at which rounds between \$5 million and \$25 million have increased (2.5%-3% CAGR). Further, VC financings of \$50 million+ accounted for nearly half of all VC invested in 2017, a staggering figure in and of itself that is even more remarkable when compared to the fact that such rounds represented less than 20% of all VC invested in 2007.

increase of over 10% and nearly 49%, respectively. Further, investments in companies valued over \$1 billion amounted to more than a fifth of all VC invested last year, yet less than 1% of total deal flow. We've also begun to see winners and losers emerge amongst some of the various tech platforms we saw rise over the last half decade or so in areas such as fintech,

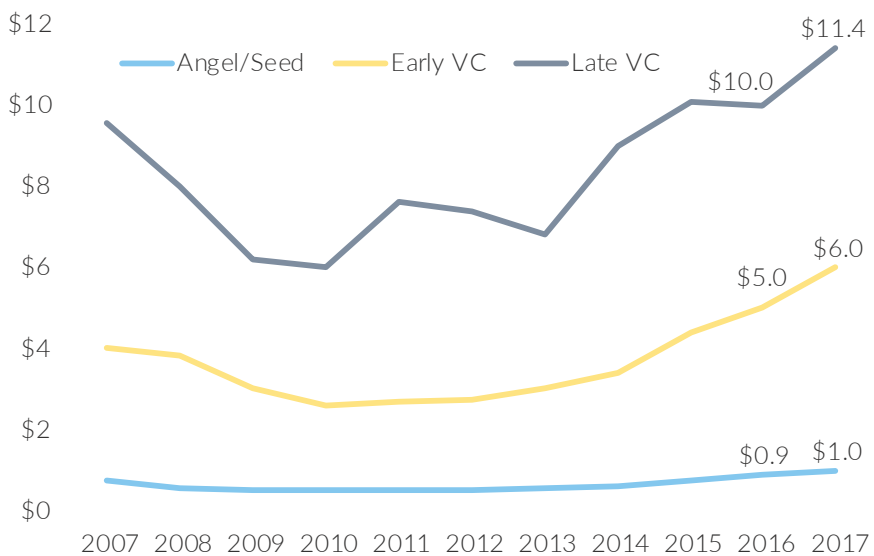
Big Data, virtual reality and the sharing economy, among others. For example, companies such as Airbnb, Lyft, WeWork, Magic Leap, Unity, SoFi, Wish and Coinbase have all built relatively successful businesses over the last few years, able to continue raising private capital at hefty valuations and contributing to the continued rise of unicorn financings.

Round sizes have also continued to increase and have shown no sign of slowing down, growing at a rapid pace across the entire venture lifecycle. At \$6 million, early-stage rounds came in roughly 20% higher than what we saw in 2016, with late-stage rounds growing 14% to \$11.4 million. This, coupled with the rounds completed by aging companies that continue to push off full liquidity events, has resulted in a profound rise in private company valuations, particularly at the late stage where we saw median Series D+ valuations jump to \$250 million last year, a hike of over 85% relative to the already large \$135 million figure we saw in 2016.

In many ways, 2017 can be characterized by the record amount of activity we saw involving unicorns. More than \$19 billion was invested into such companies across 73 completed fundings, reflecting a YoY

Early-stage rounds grow in size by roughly 20%

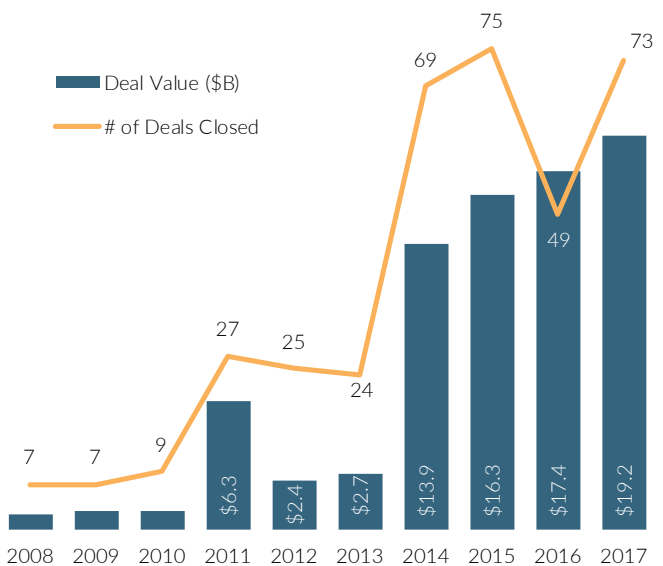
Median deals size (\$M) by stage



PitchBook-NVCA Venture Monitor

Nearly record unicorn activity

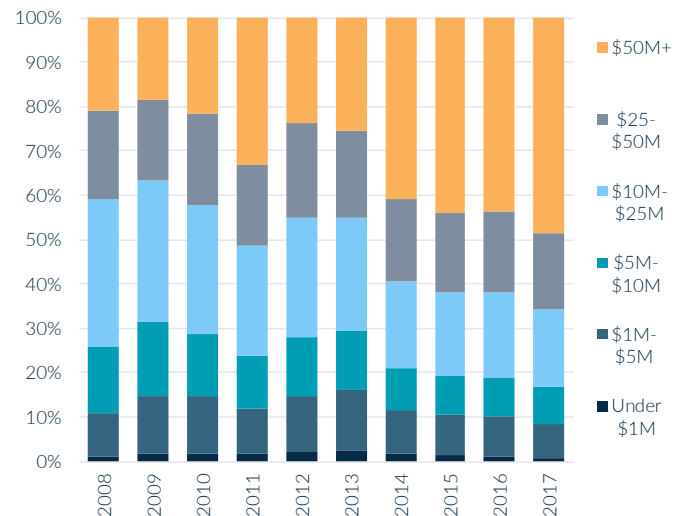
US unicorn activity



PitchBook-NVCA Venture Monitor

Near 50% of value from deals of \$50M+

US VC activity (\$) by size



PitchBook-NVCA Venture Monitor

Shape the future of the venture industry with NVCA

ADVOCACY

COMMUNITY & EDUCATION

RESEARCH

JOIN US!

Please contact NVCA with your
membership queries

membership@nvca.org
202.864.5918



Cryptos, standardization & structured release valves



Silicon Valley continues to impress us with

its ability to reinvent itself despite a host of changing market dynamics. On a sector basis, we've seen a transition away from hardware businesses and a slowdown across the 3D printing and digital health technology markets. Yet just as these platforms, among others, have moved through their respective growth cycles, many others have blossomed today. This year's flavor revolves around the cryptocurrency markets, with AI and robotics businesses also receiving ample attention.

With the backdrop of more than \$4.2 billion raised via ICOs in 2017, we've continued to see requests from prospective clients to conduct new ICOs, or from businesses looking to create new infrastructure tools such as various digital or hardware wallets. With this increased popularity, however, comes increased complexity from a legal perspective. Despite our active participation in the market, we've remained conservative with our approach to serving the industry, following an evaluation framework that spans three primary steps.

1: Token Utility

First, we look for tangible underlying utility in the tokens of the businesses we represent.

2: Management review

Second, we conduct extensive background checks on the management teams we work with. While we understand the prospective value that can be derived in the market, we also see the structure of the market at times incentivizing bad actors. Thus, we find it even more prudent that we vet the teams we work with.

3: Setting expectations

Last, we look to set realistic expectations with entrepreneurs. While on the surface, an ICO may appear a much easier and quicker capital-raising process, the reality is in many situations it isn't. Properly conducted ICOs can take anywhere from three to five months to move through regulatory, tax and disclosure work, with legal fees that can still reach the same levels seen with small IPOs. To that point, we look to ensure that the businesses we work with not only provide tangible value, but also are well prepared for the process ahead of them.

Despite many traditional venture funds moving down market as round sizes have grown, many of the new companies across the aforementioned sectors are availing themselves of seed and early-stage funding via the swathes of angel and sub-\$100 million-\$150 million vehicles that have grown in popularity over recent years. This produces a challenge in terms of fund formation that we've worked to help both new managers and smaller vehicles sidestep.

Typically, such vehicles are only working with a handful of LPs and as a result, we've looked to adjust the way we structure such funds and genericize the terms of these vehicles to make the process much more cost-effective. For funds raising anywhere from \$25 million to \$50 million in capital, racking up legal fees in the hundreds of thousands of dollars can be seen as offensive to not only the GPs but the LPs and thus, adding a more structured approach in this market has been pivotal.

In addition, as round sizes have grown significantly as of late, many of these smaller vehicles lack the capital under management to participate in some of the follow-on rounds of their portfolio

With more than 1,000 lawyers in 19 offices across the United States and Asia, Perkins Coie represents great companies across a wide range of industries and stages of growth—from startups to FORTUNE 50 corporations. Attorneys in our Emerging Companies and Venture Capital practice offer one of the premier legal resources in the nation for venture-backed companies that have IP as a key value driver. Our clients turn to us for guidance on company formation, IP protection and enforcement, financings, corporate governance, technology transactions, product counsel, and mergers and acquisitions, to name a few of the legal areas on which we focus. We also represent investors as they make, manage and divest investments in diverse industries. Learn more at perkinscoie.com and startuppercolator.com.

Cryptos, standardization & structured release valves, cont.

companies. However, in an effort to take advantage of their preemptive rights to participate in future financings, we've seen an increasing trend of GPs structuring one-time investment funds in the form of special purpose vehicles. These SPVs are structured as separate capital pools set up between the venture partners and their LPs to take advantage of follow-on investment opportunities. As many of these opportunities revolve around companies that both the GPs and LPs typically already know well, the hard work of sourcing, placing and monitoring investments has already been done, effectively offering fund managers a boost in leverage that can be very lucrative.

Lastly, the lack of liquidity driven by a dearth of VC-backed exits has been a heightened issue as of late. As companies demonstrate go-to-market, customer adoption and market expansion success, raising capital privately has persisted. Yet through this, companies face significant challenges in providing liquidity to their employees as the bulk of the incentives placed in front of them come in the form of equity. As a result, the use of secondary sales for investors, management and employees has grown. At times, such transactions can be sporadic and opportunistic, but given their expensive nature and complexity, we've seen a number of companies look to structure

formal, periodic secondary opportunities. These sales don't completely solve the industry's liquidity issues, as they are constrained by limits on the amount of vested equity that can be sold, and tend to have difficulty in realizing an optimal price for both employees and investors, given discrepancies between common and preferred stock owned by different groups. Yet at the moment, they do provide a stop-gap measure to help alleviate some of the liquidity challenges aging private companies are facing.

TAKE OUR AR/VR SURVEY. ENTER TO WIN A \$500 AMEX GIFT CARD.

Calling All AR/VR Industry Leaders

PERKINS COIE LLP wants to hear from industry leaders in augmented and virtual reality. Please complete our 2018 AR/VR Survey, which expands on our previous report on industry trends and the investment outlook. You'll be eligible to win a \$500 American Express gift card with a completed survey. Individual responses will remain confidential. [Start survey>>](#)

PerkinsCoie.com/AR/VR

Angel & seed activity

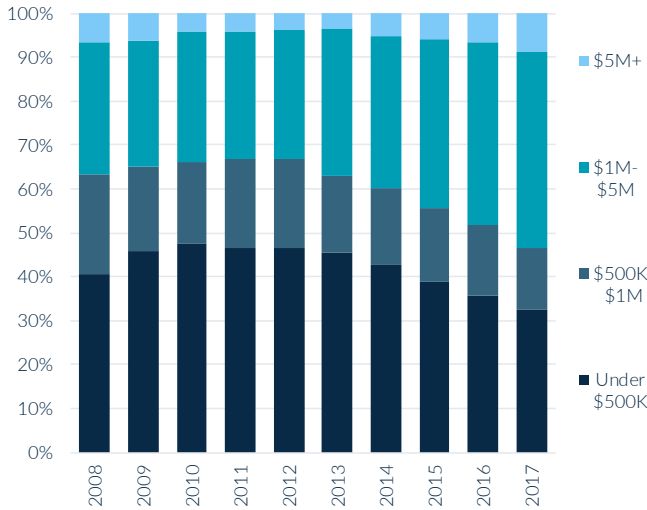
Following a 2016 that saw both capital invested and completed financings at the angel & seed stage drop around 20%, the market stabilized to some extent last year. In lock-step with financing trends across the entire venture market, deal flow in the bucket declined some 13% YoY, with aggregate capital invested growing

moderately. As many businesses continue to bootstrap operations or rely on pre-seed funding sources, today's angel & seed investments have become more institutionalized. As a result, deal sizes have grown, with the median size rising to \$1 million last year, up 100% over the last five years. In addition, we've seen a significant amount of capital raised by micro VC funds targeting the space. Between 2011 and 2015, the count of micro VC funds doubled, and today sit on roughly \$5 billion in dry powder yet to be deployed.

What we continue to note, however, is the lower counts in completed financings. Today, more institutional investors are in the market looking to back early-stage startups. The number of companies competing for this capital has also grown considerably over the last few years. As a result, the bar has risen in terms of the KPIs that investors will want to see before investing. This notion, along with the delayed entrance of companies into the traditional seed & angel space will continue to contain deal flow in the size bucket.

Smaller deals shrinking in number

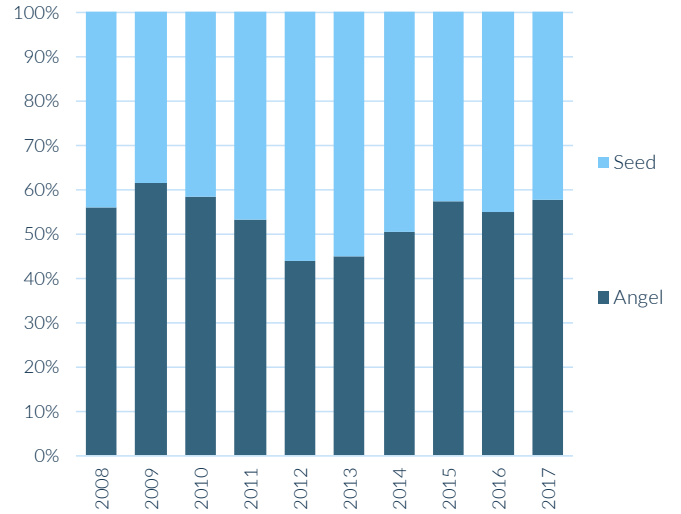
US angel & seed deals (#) by size



PitchBook-NVCA Venture Monitor

Angel deals account for larger amount

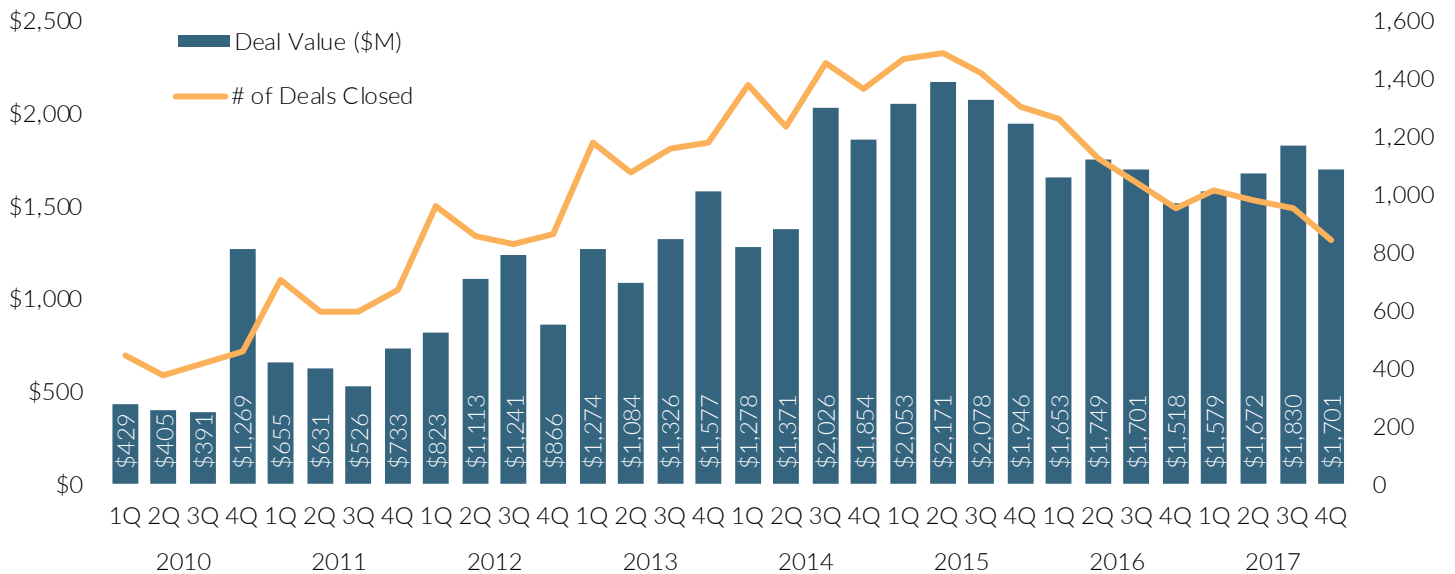
US angel vs seed deals (#)



PitchBook-NVCA Venture Monitor

Decline in angel & seed activity has slowed over the past year

US angel & seed activity

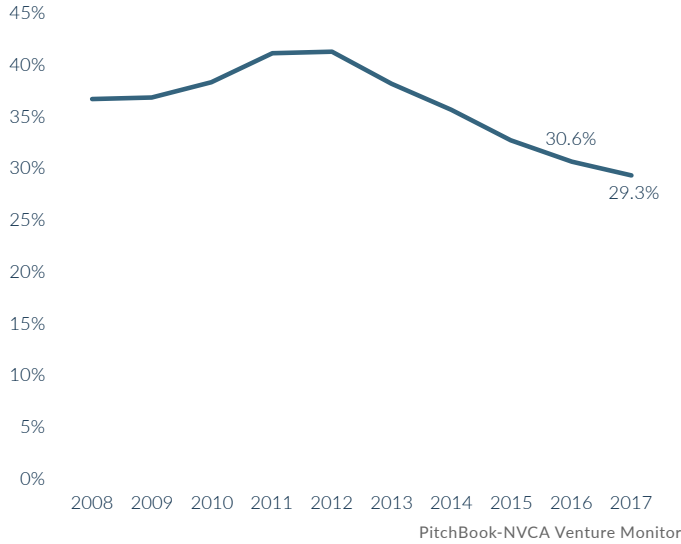


PitchBook-NVCA Venture Monitor

First financings

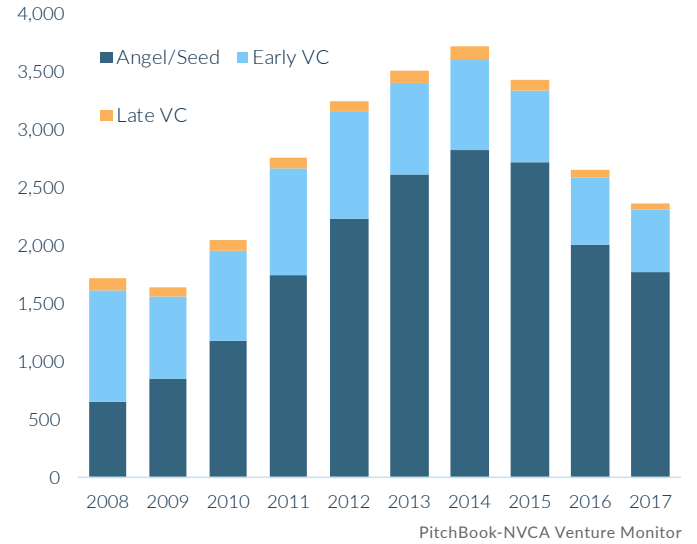
First financings continue decline

Percentage of first-financing VC rounds



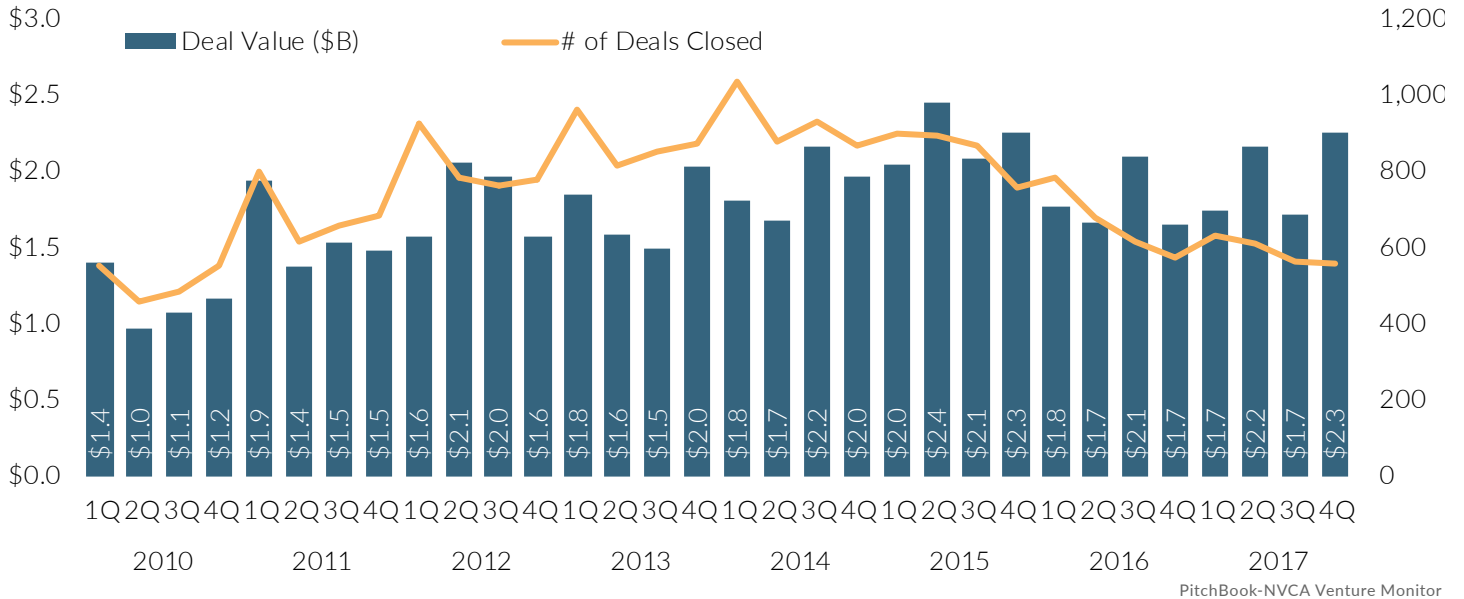
Angel/seed deals have fallen furthest

US first-financing VC rounds (#) by stage



The number of startups receiving their first round has leveled off

US first-financing activity



Since 1999, Solium has been simplifying the complexities of equity plans through smarter software, remarkable service and trusting relationships. Our Shareworks platform is loved by emerging private companies as well as public enterprises. And more than 10,000 early-stage companies rely on our products and valuation services.

Why Solium? Trust a company that manages the equity plans and cap tables of companies that are launching rockets into space, building self-driving cars, disrupting the food delivery business and changing the way we get around.

Solium has offices in North America, UK & EMEA and Asia Pacific. Visit us at solium.com.

Early-stage VC

The early stage saw a dramatic increase in capital investment during the fourth quarter, seeing more than \$10 billion invested in a single quarter for the first time. Not only is that a 40% increase over the total invested during 3Q, but it is nearly double the amount invested during the

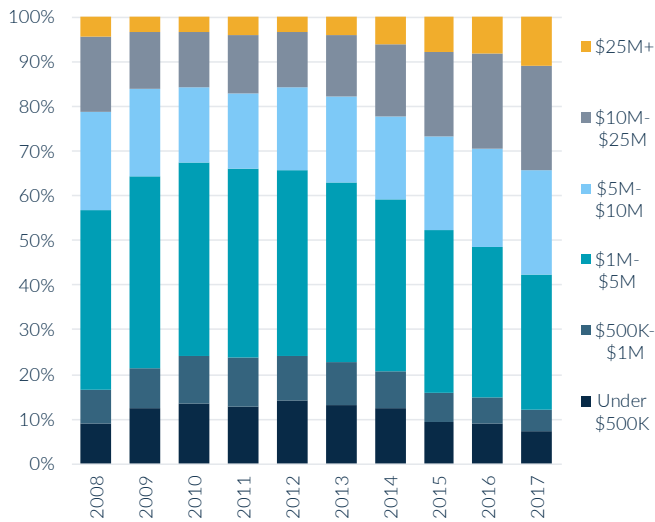
same period in 2014, which at the time was the highest we've seen of any quarter in the last decade. The 582 transactions completed during 4Q comes in as the second lowest quarterly total of the past five years, however, as we continue to collect data we may see that number inch slightly higher.

While increasing deal sizes have become a common fixture, such deals at the early

stage illustrate how excessive dry powder in the industry is not solely reserved for late-stage plays, but even mid-sized and early ones. The market will continue to cycle through various trends, and while investors might be looking to be more selective before investing in what they see as the next quality blockchain, robotics or AI business, they'll continue to make larger initial, and follow on bets across the industry.

Large deals bolstering early-stage tallies

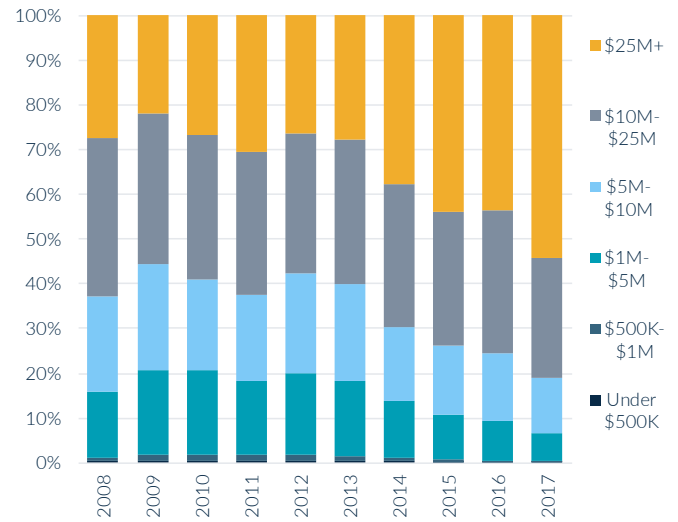
US early-stage activity (#) by size



PitchBook-NVCA Venture Monitor

Deals <\$10M fall to decade low

US early-stage activity (\$) by size



PitchBook-NVCA Venture Monitor

Early-stage VC has shown relatively consistent growth in deal value

US early-stage VC activity



PitchBook-NVCA Venture Monitor

Late-stage VC

We continue to see late-stage venture activity exhibit considerable influence over the private financial markets, as well as across the broader capital markets. Despite a significant portion of non-traditional investors exiting the market as of late, newcomers such as sovereign wealth funds, and, most dramatically, SoftBank's \$100 billion Vision Fund have only added fuel to a maturing late-stage space recently

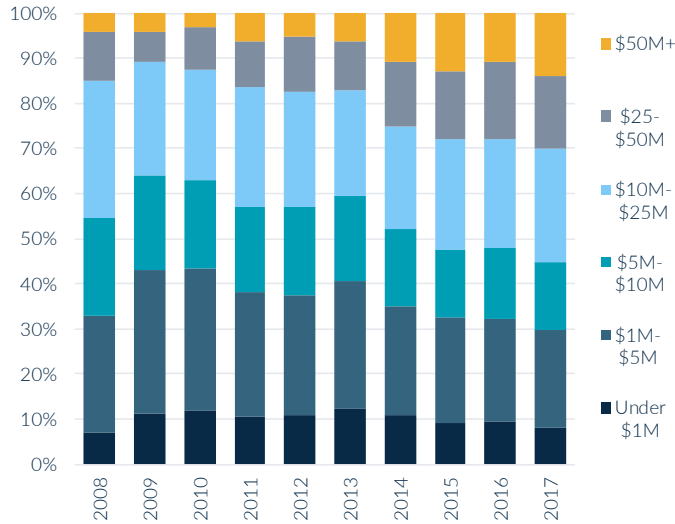
defined by mega-deals. Over \$47 billion was poured into late-stage VC rounds in 2017 across more than 1,600 transactions, reflecting a roughly 10% YoY jump in deal value through nearly equal number of deals. Further, deals over \$50 million in size contributed nearly 70% of all late-stage capital invested last year—that figure stood at just over 30% in 2012.

Venture-backed exits have remained subdued, particularly across some of the primary avenues historically used. Dry powder levels have never been higher,

leading to massive financings being readily available. Despite the obvious impact on exits and LP liquidity in this market dynamic, many of the non-traditional investors such as SoftBank have been able to acquire a notable portion of their late-stage transactions via the secondary market. Should this continue, we could very well see the late-stage market remain little changed over the next year or so as earlier-stage investors would begin to receive an increased portion of the liquidity the current market dynamic has taken away.

Deal size growth clearly visible

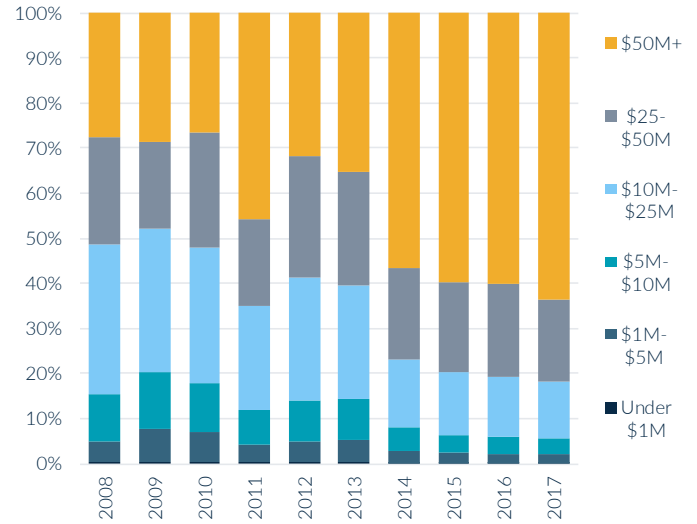
US late-stage activity (#) by size



PitchBook-NVCA Venture Monitor

\$50M+ deals account for 65% of capital

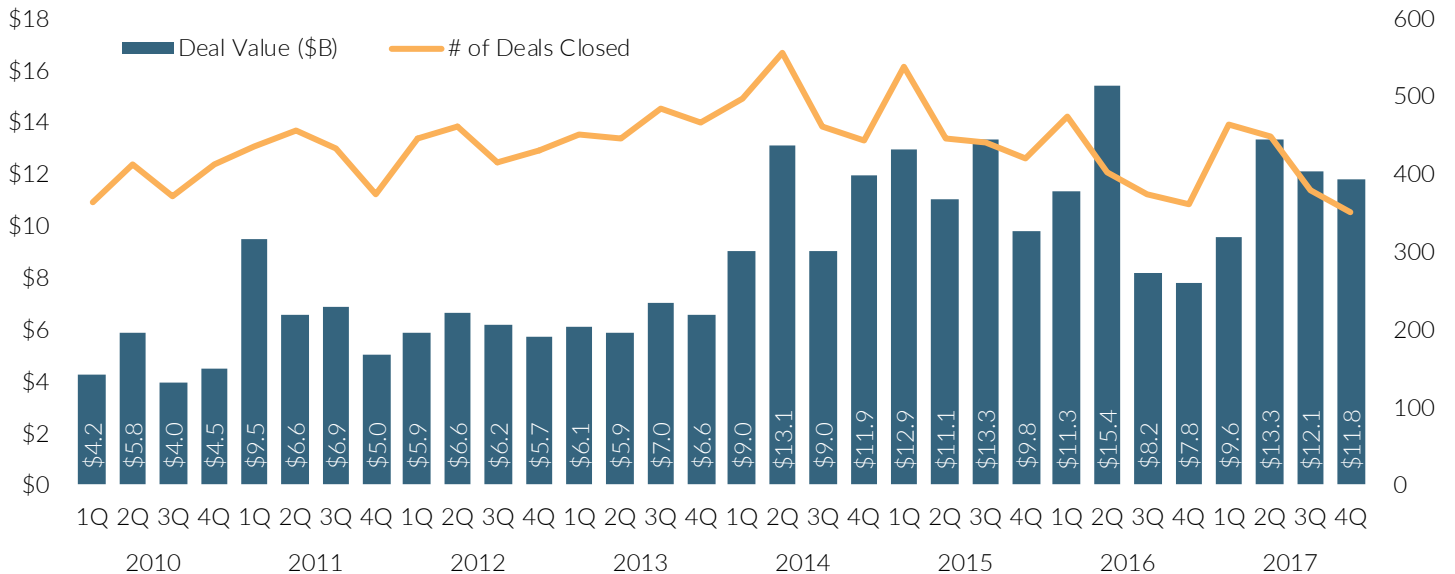
US late-stage activity (\$) by stage



PitchBook-NVCA Venture Monitor

Late-stage deal value has stayed at historic highs

US late-stage activity

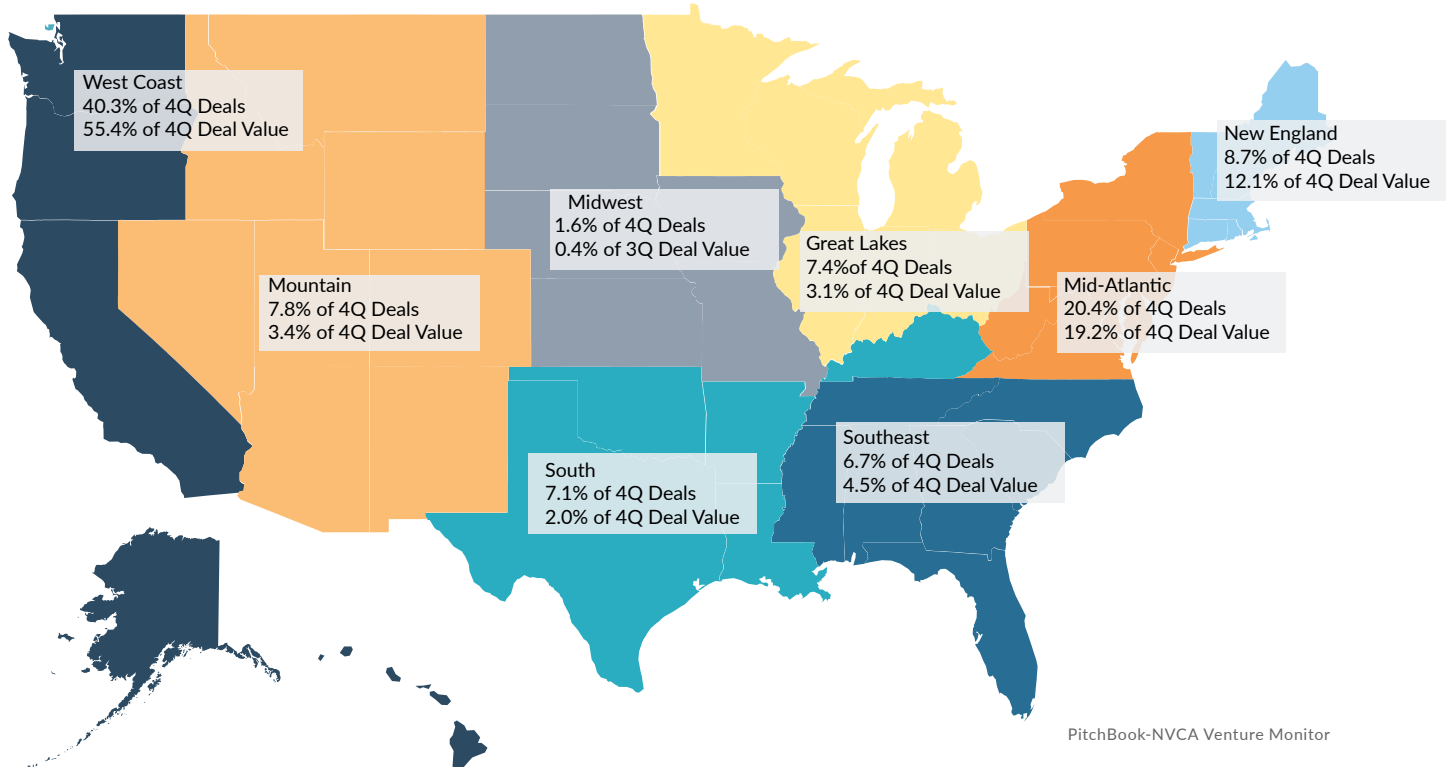


PitchBook-NVCA Venture Monitor

Activity by region

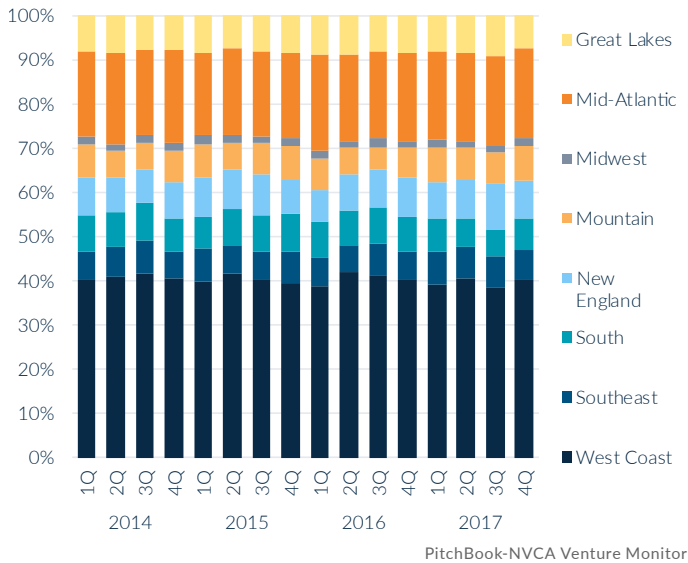
Despite opportunities outside traditional VC hubs, few trends have changed

4Q 2017 US VC deal activity by region



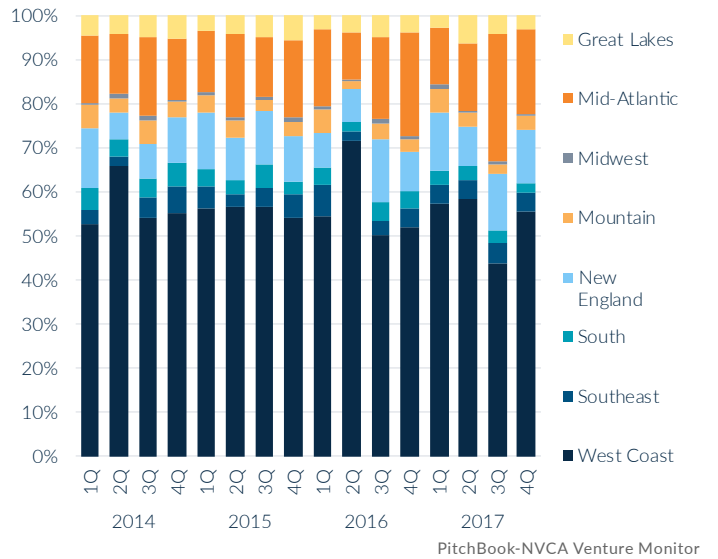
Mid-Atlantic holds steady in 2nd

US VC deal activity (#) by region



West Coast deal value rebounds in 4Q

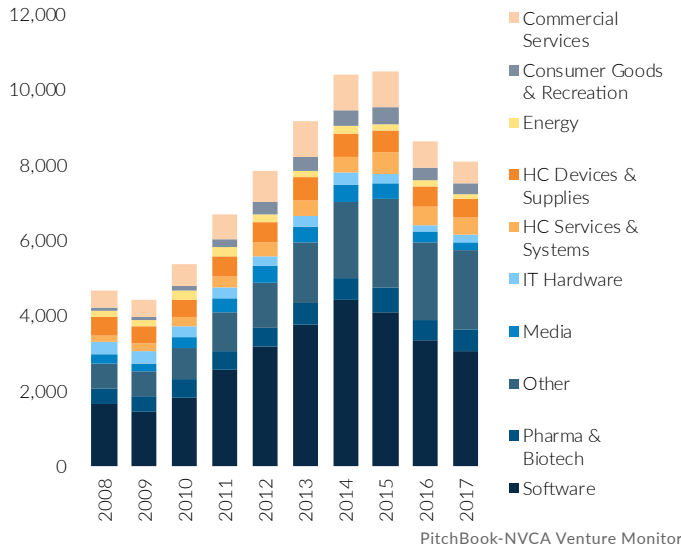
US VC activity (\$) by region



Activity by sector

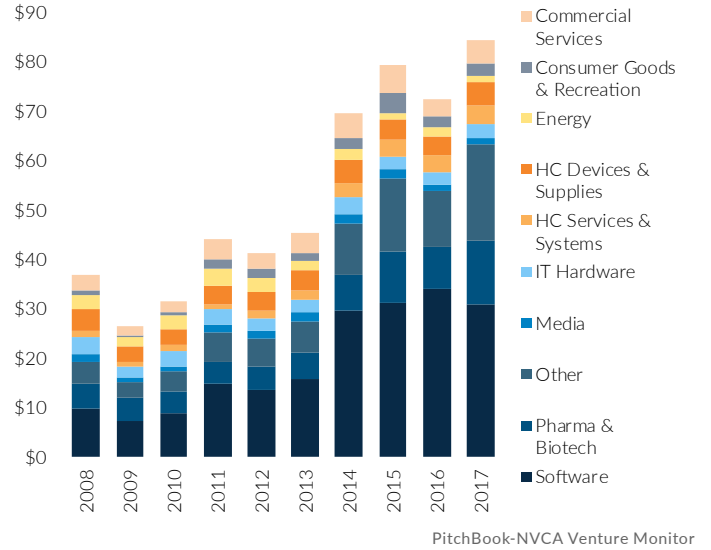
Traditional sector lines are blurring

US VC activity (#) by sector



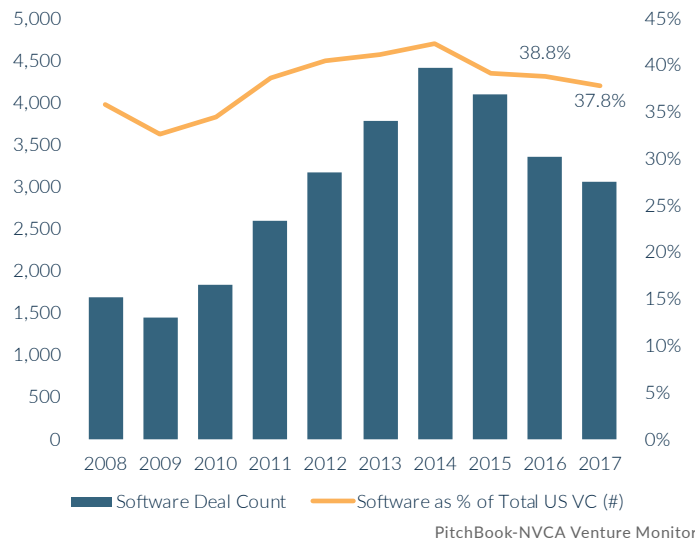
Pharma & biotech has a big year

US VC activity (\$) by sector



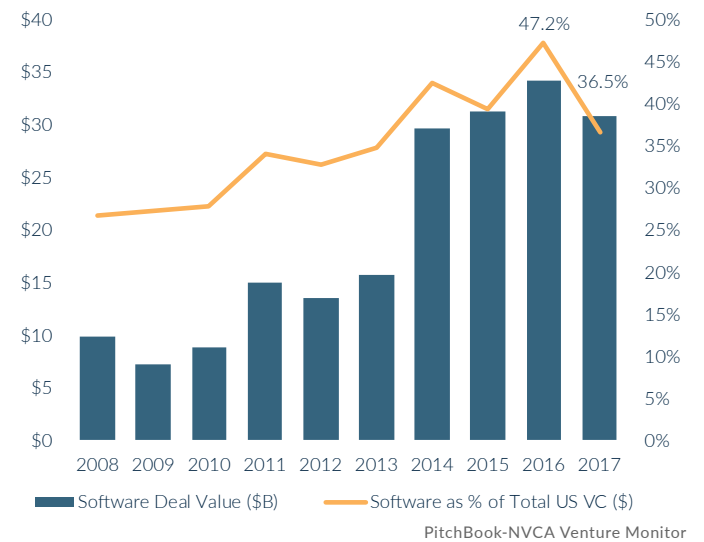
Software slowly sliding

US VC activity (#) in software



After 2016 peak, software declines

US VC activity (\$B) in software



When tech meets biotech

If there is an overall theme for the breakout year of life sciences/healthcare investments, it is this: Technology is driving the future.

In 2017, investment into venture-backed companies hit the stratosphere, punctuated by several very large, \$100 million-plus bets in biopharma and diagnostics/tools (Dx/Tools) companies. All told, \$17.9 billion was invested in life science companies last year, a 21% increase over the previous record of 2015 and 48% over 2016. In contrast, overall venture funding only grew 16% over 2016.

Traditional healthcare investors and generalist investors, many of the latter new to the life sciences industry, are quickly staking out positions in the emerging ecosystem that is combining technology advancements in artificial intelligence (AI) with genomic data to develop groundbreaking diagnostic and treatment options. These investors see healthcare as the next great frontier, one with enormous challenges but also full of potential for big payoffs. Specifically, biopharma investments are focused on therapeutic developments, notably oncology and orphan/rare indications. The diagnostics and tools sector is seeing huge investments in next-generation DNA sequencing (NGS) technology and liquid biopsy companies that enable earlier and more accurate cancer detection.

New investors propel life science investing to new heights

What happened in 2017? Traditional VC investors, joined by corporate venture arms and crossover investors, provided a very large pool of capital for biopharma and Dx/Tools companies. Some interesting trends to watch: Generalist investors quickly are becoming the most active players in Dx/Tools. Traditional venture investors have returned to devices, joined by PE firms and family offices that often lead deals in commercialization rounds.

Biopharma leads the way

In 2017, biopharma saw a wave of IPOs, while M&A activity slowed. The open IPO window, in combination with record high pre-money IPO valuations, helped drive activity. Many biopharma IPOs earlier in the 2013-2017 cycle involved early-stage companies (pre-clinical and Phase I). However, in 2017 we saw a dramatic shift from early-stage to Phase II and Phase III companies going public.

Biopharma investors see tremendous returns

That said, half of biopharma big exit M&A deals focused on early-stage (pre-clinical and Phase I) companies. Biopharma companies continue to buy early-stage companies in order to replenish their pipelines. This drove down the time to exit from the close of Series A financing for biopharmas, with the median time to exit at a record 3.5 years. These deals had very healthy upfront multiples, providing tremendous returns for investors.

Dx/Tools investors bet heavily, but exits are scarce

Investments and exits have diverged for Dx/Tools. Despite heavy investment in the sector, exits proved elusive. The R&D tools subsector has largely dominated the few acquisitions that have occurred in the past five years. Historically, the majority of Dx/Tools exits has been based on commercial revenue multiples rather than the enterprise values typically seen in biopharma M&A. Based on the current

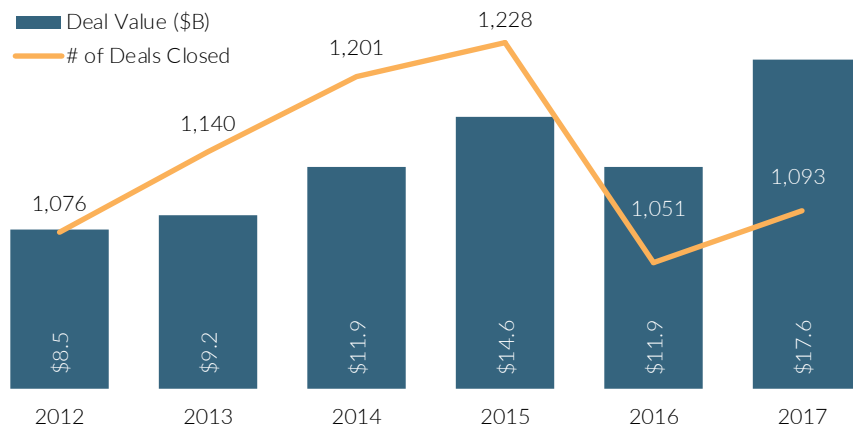
uptick in venture investment and soaring valuations, robust exit multiples will be difficult to achieve with the current acquirer pool.

However, we believe that large Dx/Tools companies will adopt M&A strategies similar to biopharma: These companies will fuel their primary R&D activities by acquiring early-stage, venture-backed Dx/Tools companies. At the same time, tech giants like Amazon, Apple, Alphabet and Microsoft are targeting Dx/Tools companies as an entry point into life science investing; we expect their activity to grow and lead to big exits.

Large companies drive device M&A

IPOs and M&A activity remained stable for device companies in 2017. M&A deals were driven by large companies (J&J, Boston Scientific, for example), although longtime acquirer Medtronic continued to be absent. The acquisitions focused on companies that are developing minimally invasive solutions and advanced imaging/visualization platforms. Interestingly, companies that require clinical trials (PMA/De Novo 510(k)) are being acquired early, while iterative 510(k) companies must prove themselves in the market first. Since 2015, PMA and De Novo 510(k) acquisitions generated larger upfront multiples and swifter exits than iterative 510(k) exits, and these acquisitions are now approaching the upfront deal values and multiples that we see in biopharma. We anticipate healthcare-focused investors to place bigger bets in innovative early-stage device companies.

US VC activity in life sciences





Emily Leproust, Co-founder and CEO, Twist Bioscience

Smart money. Brilliant minds. Connected.

We're relentlessly focused on connecting investors with the world's most innovative thinkers. That's why we built the platform that enables the venture and entrepreneurial ecosystem to move big ideas forward—and create what they believe in.

svb.com

Download our Healthcare Investments and Exits Report at svb.com/healthcareexits.

US fintech investment grows in 2017: What's next?

Fintech established itself as a key standout category in 2017, posting the strongest year for investment since the 2015 peak. Aggregate fintech investments reached approximately \$6.5 billion in 2017. Major contributing categories have been alternative lending, payments, wealth management, and more recently blockchain/cryptocurrency, insurtech and real estate tech.

The numbers are only part of what's interesting about the fintech story, with unique challenges relative to disruptors of other major industries. Specifically, scaling has been difficult for fintech companies dealing with compliance and regulatory issues, access to capital hurdles and intense competition from startups and incumbents. Despite these challenges, we believe the investment pace will continue due to two core reasons: increasing customer demand and enabling platform technologies that provide key infrastructure for young fintech companies to launch and grow. These fintech infrastructure companies, analogous to how Amazon Web Services and open source supported software companies, are lowering the barriers to new company creation and helping them scale.

Successful fintech companies are finding that partnerships often are key, including with fintech infrastructure companies— developer-focused platform technologies based on APIs to solve complex operational challenges of providing financial services. These companies use software to leverage existing infrastructure such as payment rails, all types of bank accounts, customer information databases and certain compliance functions. This allows other fintech companies and incumbent banks to focus on building the core aspects of their businesses instead of spending on costly infrastructure, which lowers barriers to entry and promotes innovation.

- Consider processing payments of all types: There's a patchwork of

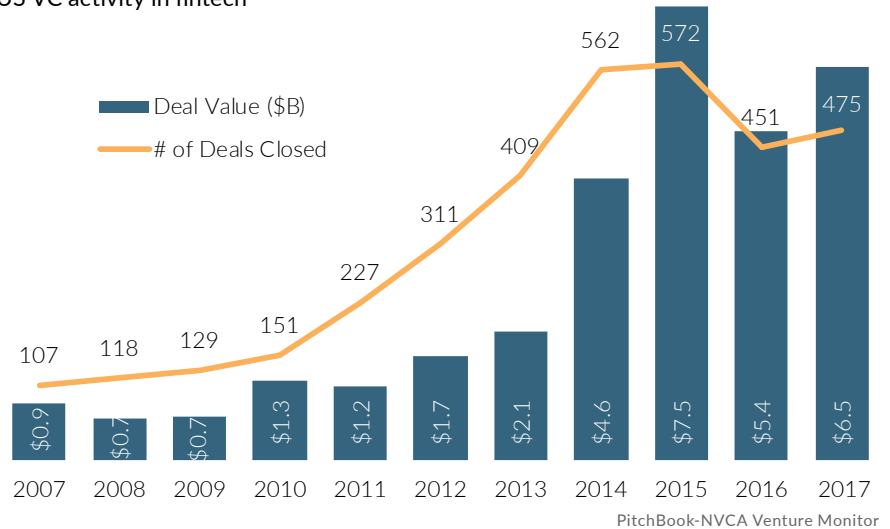
government regulations that is expensive, complicated and risky. Enter Stripe, a payment processing for Internet businesses, and Marqeta, an API platform for prepaid debit and credit cards.

- Data aggregation: Consumers and businesses keep their money and investments in myriad financial accounts and are constantly trying to simplify their financial lives. Enter Plaid and Quovo (aggregating account data in an app-based world).
- Customer retention and cross-selling: Finding new revenue streams from current and prospective customers is critical. Enter DriveWealth (natively embedded modern brokerage platform).

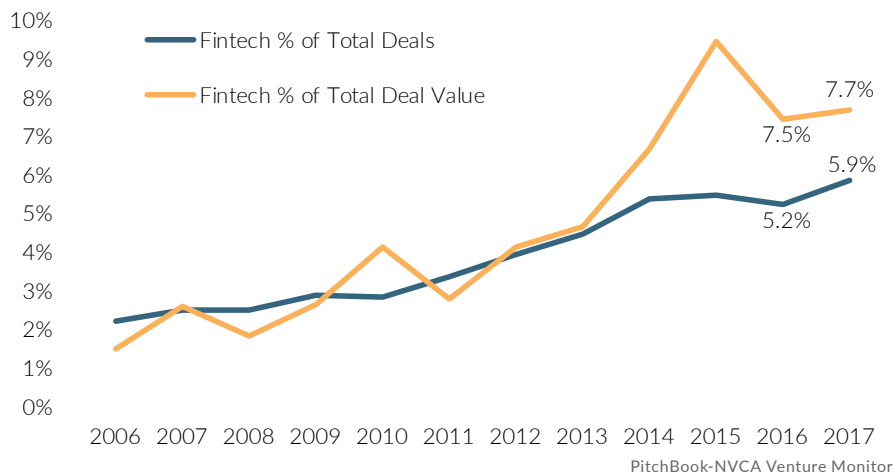
While global opportunities abound for fintech, there could be some bumpy times ahead. We will eventually head into a less buoyant economic climate, with interest rates rising and access to capital (potentially) shrinking. Fintech business models will be tested in new ways.

As with other tech industry sectors, we are seeing a flight to quality: VCs are focusing investment on the "best of breed" fintech companies. In this environment, we believe fintech infrastructure companies are poised to continue to drive innovation in financial services by providing the tools and services that will become even more critical for other fintech companies and incumbent financial services firms to start and survive. These are the fintech companies to watch.

US VC activity in fintech



Fintech investment as percentage of total US VC activity



Corporate VC

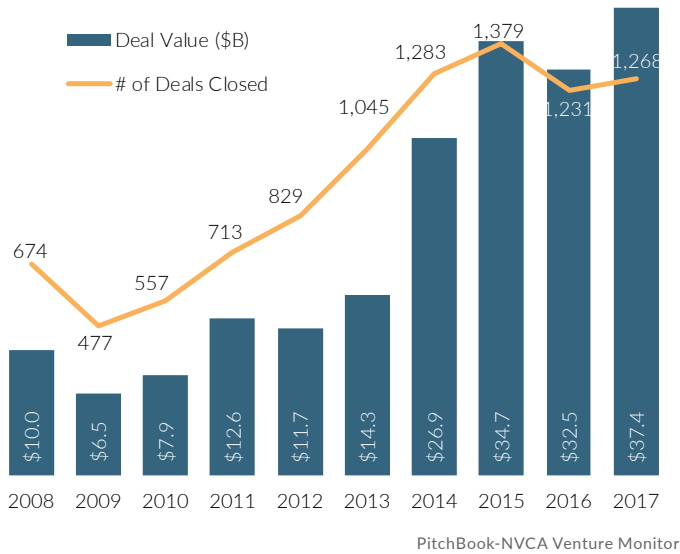
Corporate venture investors have continued to play a growing role within the US VC industry, participating in rounds that amounted to 44% of all 2017 venture

deal value. In total, CVCs participated in 1,268 completed financings worth a record amount of over \$37 billion last year, reflecting YoY increases of 3% and 15%, respectively. While CVCs have certainly been active across the venture lifecycle, these investors have not been shy to cut large checks as the industry has continued to necessitate in order to participate in

follow-on fundings. To illustrate, CVCs participated in roughly 29% of all venture financings completed above \$25 million last year, the highest proportion we've seen since at least 2006. Further, over \$11 billion worth of transactions completed last year also included at least one corporate venture investor.

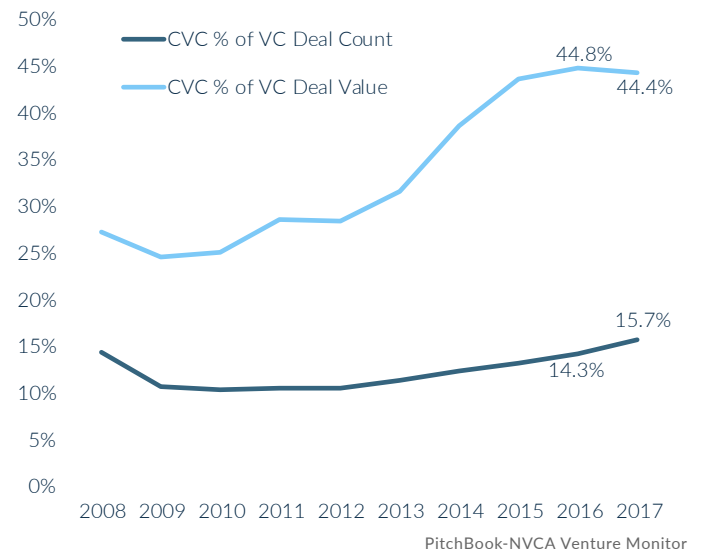
Corporate VC activity ticks up in 2017

US corporate VC participation activity



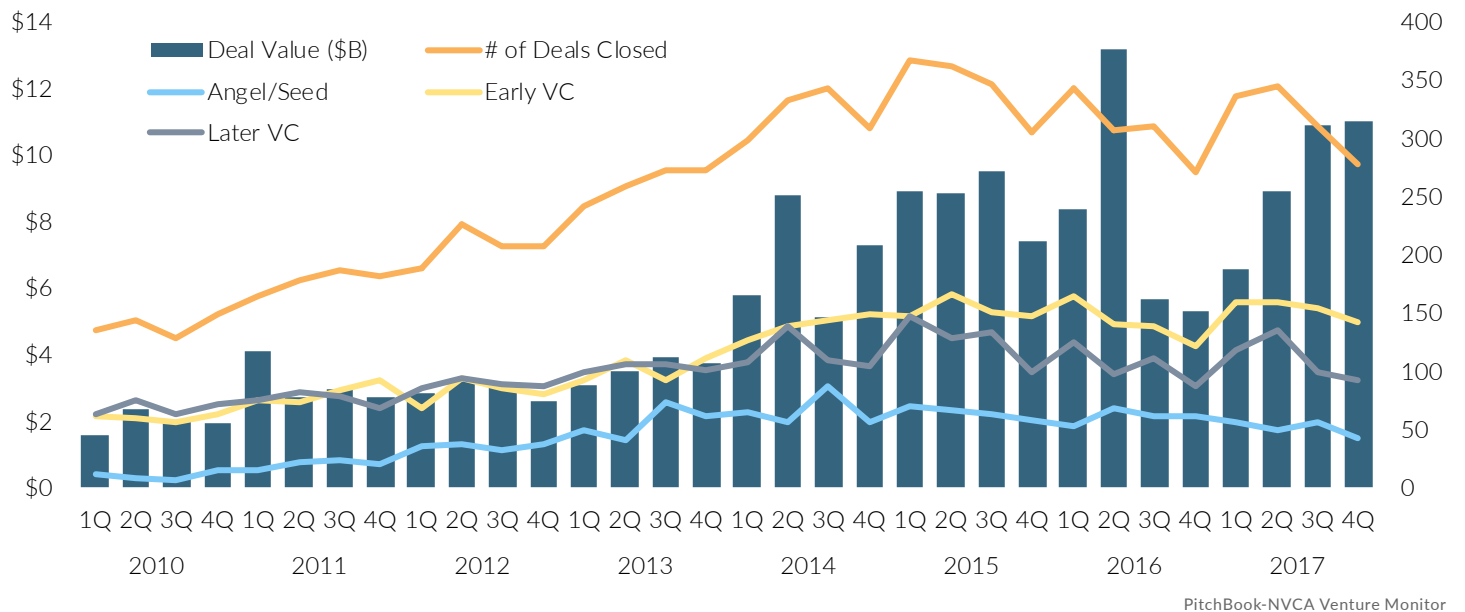
CVCs taking part in higher % of deals

US corporate VC participation % of total VC



CVCs have continued participating in high volume of large deals

US corporate VC participation activity



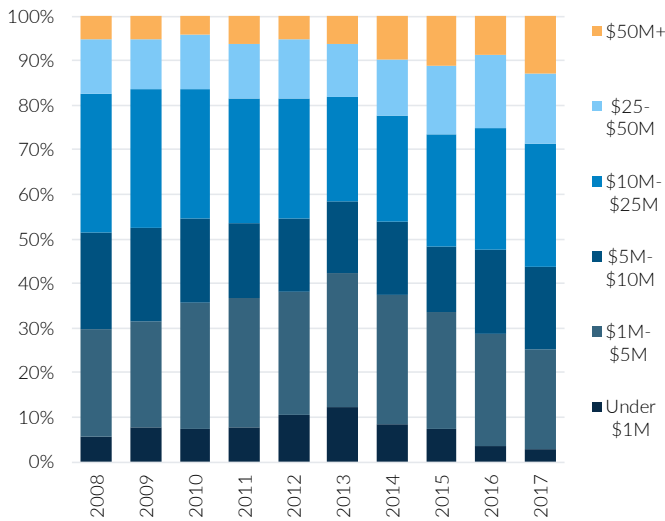
As we continue to see emerging technologies develop in rapid cycles, access to intellectual property will continue to drive corporate VC investment. For example, nearly all of the major auto companies and tech giants are invested in AI-driven smart car technologies, helping

boost their legacy R&D processes. Lyft's \$1.5 billion deal in December included investment from Google Capital, and the company previously took capital from General Motors (NYSE: GM) as well. Big pharma & biotech corporations have also looked to startups that are developing

breakthrough technologies and drugs, especially considering the cost of drug development has soared in recent years. For instance, Grail's \$1.2 billion funding last quarter saw Merck (NYSE: MRK), Bristol-Myers Squibb (NYSE: BMY) and Johnson & Johnson (NYSE: JNJ) all join in.

CVC 50M+ deals reach highest in decade

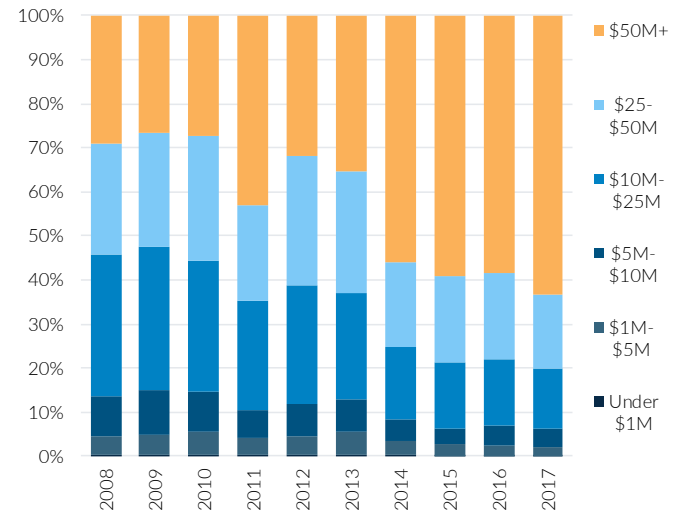
US corporate VC activity (#) by size



PitchBook-NVCA Venture Monitor

CVC deal sizes continues to grow

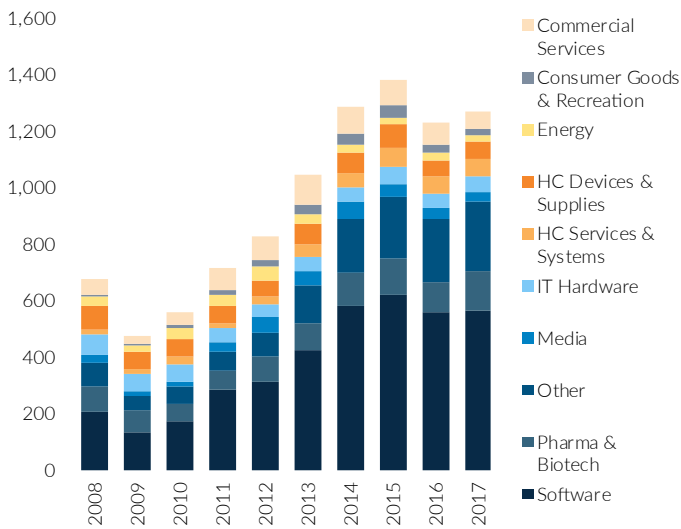
US corporate VC activity (\$) by size



PitchBook-NVCA Venture Monitor

CVC following overall VC sector trends

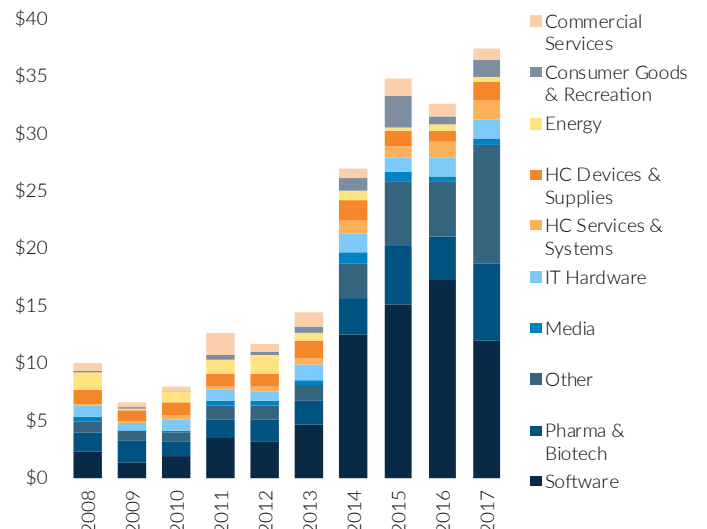
US corporate VC participation (#) by sector



PitchBook-NVCA Venture Monitor

Software holding onto top spot

US corporate VC participation (\$) by sector



PitchBook-NVCA Venture Monitor

Solium

Success is doing what you
want.

And letting someone
else worry about the rest.

Solve your cap table
Comply with 409A
Love your numbers

Stop by and ask us how.
solium.com

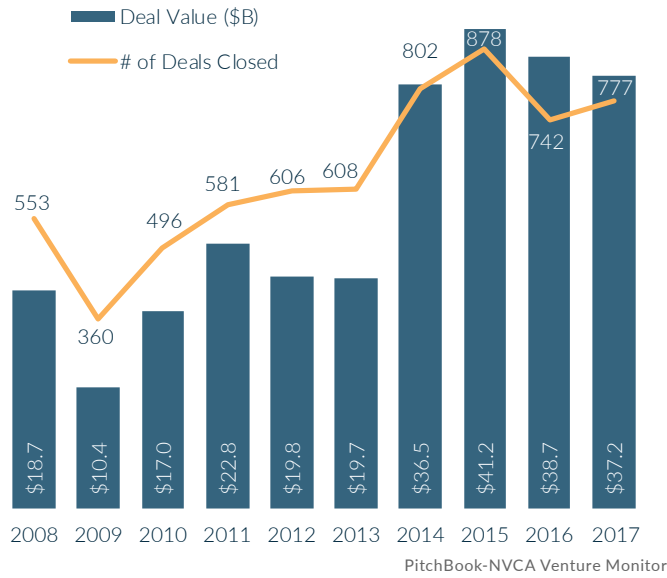


Growth equity

As growth equity has grown, the median size and valuations of such deals has skyrocketed

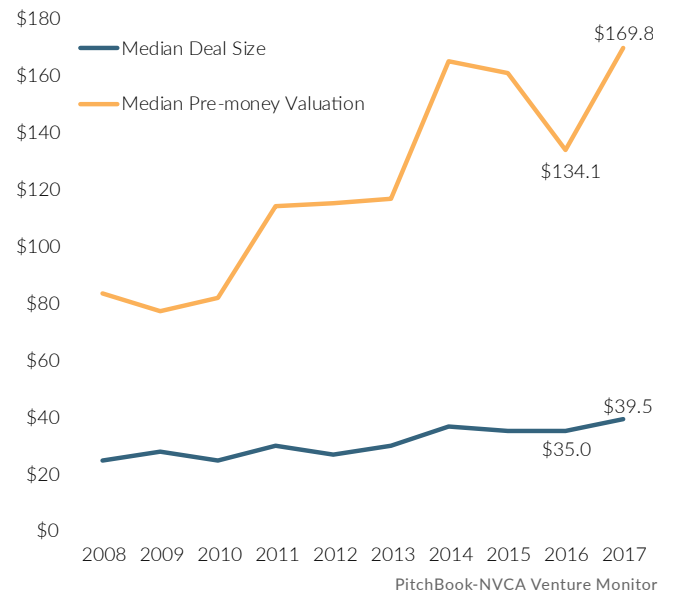
GE continues strong run

US growth equity activity



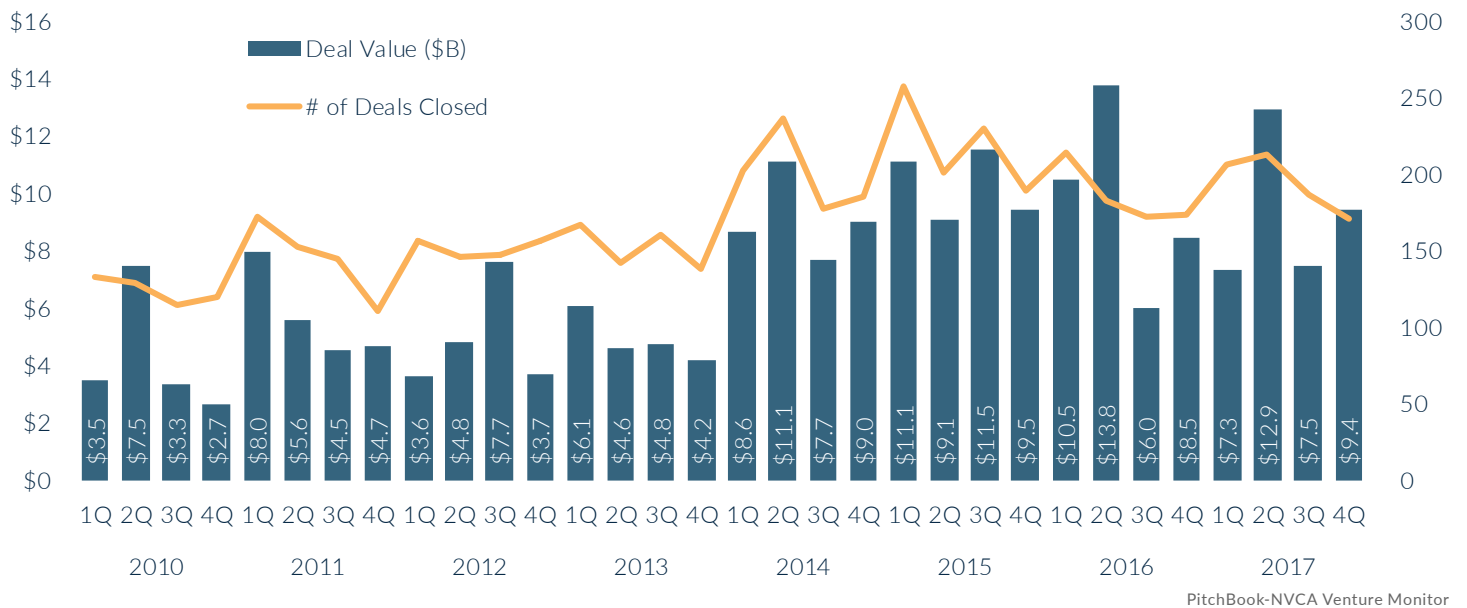
Median GE sizes reaching new highs

Median growth equity deal size and valuation (\$M)



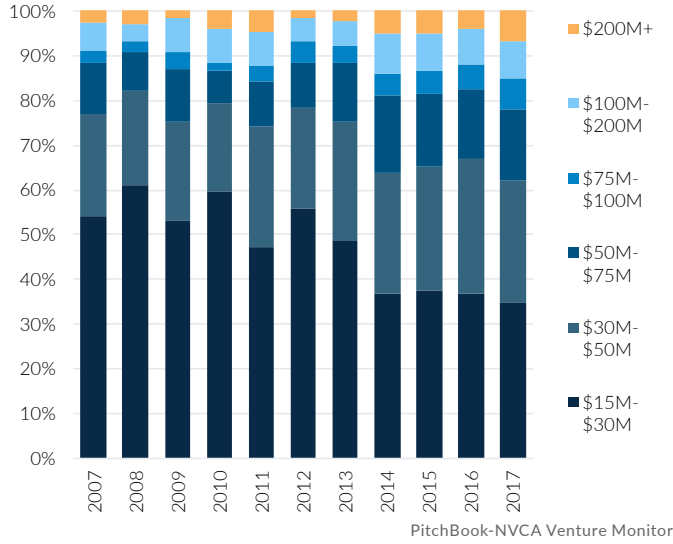
Deal volume slowed through back half of 2017

US growth equity activity



21% of GE deals exceed \$75M

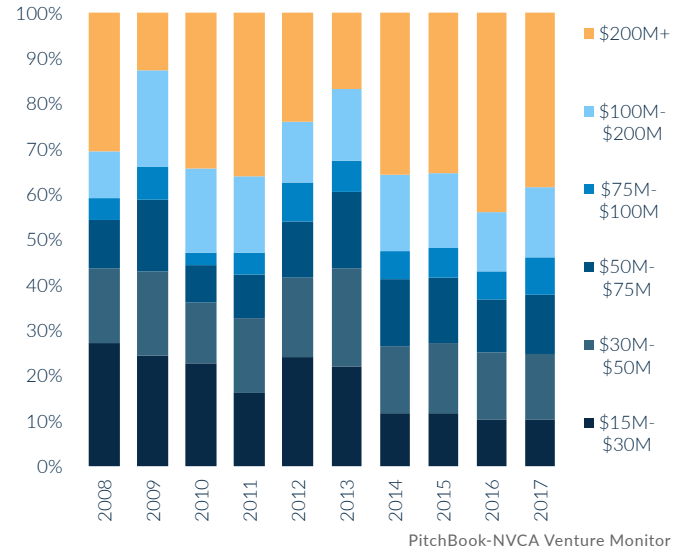
US growth equity activity (#) by size



Having surged post-2013, the impact of the growth equity stage has been unmistakable

Growth in overall value is clear

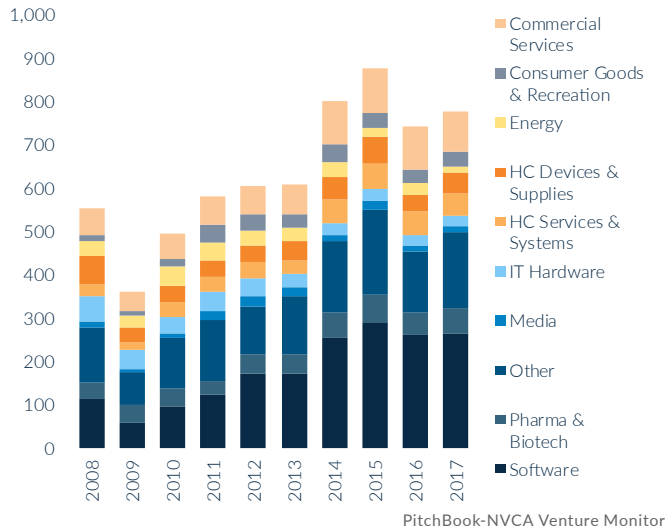
US growth equity activity (\$) by size



From 2014 through 2017's end, the inflation of even the growth financing stage is clear

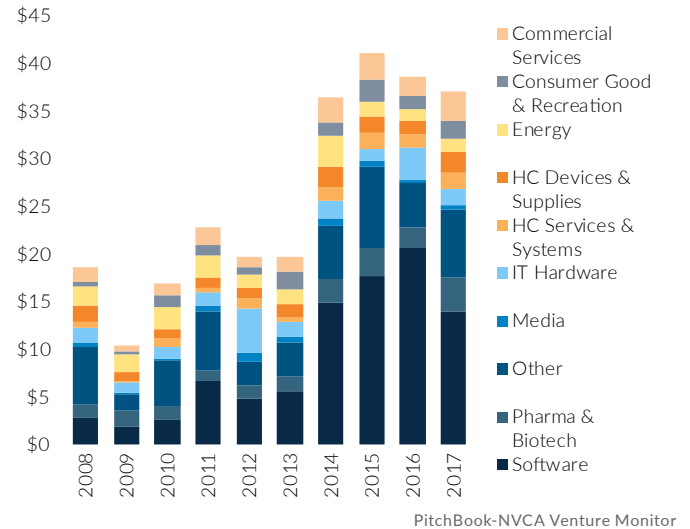
Sector investment stays steady

US growth equity activity (#) by sector



PE growth firms primarily look at tech

US growth equity activity (\$) by sector



Note: Growth equity is not included as a subset of overall VC data, but is rather its own unique dataset. See the Methodology, page 35, for more details on this particular category.

As market dynamics shift, lenders adapting strategies to fit

Q&A with Michael Descheneaux, President of Silicon Valley Bank

The venture industry has taken off since the end of the Great Recession, achieving figures unseen since the dot-com era. In the past few years, we've seen new dynamics take hold: Deal sizes grew while the number of completed financings declined; valuations rose as IPOs plummeted; and a variety of nontraditional investors became involved. We asked Silicon Valley Bank's President Mike Descheneaux about his perspectives on the venture industry today and where it's headed:

What's your outlook for the venture capital industry given its trends in recent years?

Interest in the tech sector is strong for investors, companies and corporates alike, and venture capital remains the go-to source of funding for growing businesses. VC firms are bullish on tech, and the favorable fundraising environment is resulting in new expansion and opportunity funds. While raising VC funds for seed investing is challenging, there is plenty of capital for successful late-stage companies. In each of the last four years, annual US venture fundraising has exceeded \$30 billion, and that figure doesn't include nontraditional investors such as SoftBank's Vision Fund. With excessive dry powder in the ecosystem, companies are choosing to stay private longer. However, as the pressure to generate liquidity increases, there could be more M&A activity.

What recent factors or market dynamics have impacted how SVB evaluates, invests in, or lends to the venture community?

The pace of M&A exits was healthy in 2017. IPOs, however, were a different story. The growth in IPOs we had expected did not materialize. Normally, this would put a chilling effect on valuations and the pace of venture investing in general. Instead, capital continued to be available for private, late-stage companies throughout 2017, resulting in valuations at the high end of the private company market that occasionally outpaced those seen in the public market.

These dynamics impacted the venture debt market, too. With ample, relatively inexpensive equity financing available to breakout companies across multiple sectors,

coming from less-traditional sources such as mutual funds, hedge funds, family offices, micro VCs and initial coin offerings (ICOs), many companies that would have otherwise been candidates for venture debt didn't require this supplemental financing in order to fund their plan and/or reduce dilution. At the same time, other breakout companies elected to supplement their equity raise with unprecedented amounts of venture debt, which compelled us to reevaluate how we think about valuations, growth rates, burn rates, access to capital and the amount of debt that is healthy.

We've seen anecdotes around the use of capital call loans by GPs across private equity and VC. What benefits do GPs realize?

While there are differing views on this subject, capital call lending provides GPs with a tool to fund investments and/or operating expenses in advance of receiving capital calls from the fund's limited partners. VC and PE firms both use this tool, but typically see different benefits. Focused on operational benefits, VCs are attracted by the convenience of being able to fund an investment quickly while reducing the

number and frequency of capital calls, but typically do not borrow for long periods of time before calling capital. In contrast, PE funds value those same benefits, but tend to borrow for longer periods of time so as to delay the eventual capital call, thereby improving fund IRR.

Have you noticed any changes in regional deal flow, specifically new trends in investment outside of Silicon Valley? If so, what is driving that?

SVB has seen a dramatic increase in new capital sources and growing tech hubs in places such as Southern California, New York and London. New domestic capital sources such as family offices and high-net-worth individuals and new foreign capital sources, mostly from Asia, are fueling the venture growth in SoCal, New York, Salt Lake City and Boston, to name some examples. Much like the pattern seen with successful Silicon Valley-based companies, employees of successful startups in these regions are leaving to start new ventures. VCs are also showing greater interest to invest in markets outside of Silicon Valley, exemplified by funds such as Steve Case's "Rise of the Rest Fund."

Given the massive rise in fundraising in recent years, what do you think the future holds?

We expect VC fundraising to remain strong considering the pace of innovation, growing pervasiveness of technology, increasing number of viable investment opportunities and the expectation that more mega funds will be created, such as SoftBank's Vision Fund. Venture-backed companies are staying private longer, prompting larger capital investments to continue to support these companies.



Michael Descheneaux is the president of Silicon Valley Bank, and oversees the global commercial bank, private bank, credit administration and business analytics, as well as SVB Financial Group's venture capital investment arm, SVB Capital. He is also a member of the executive committee of the company and serves on the board of directors for the company's joint venture bank in China.

Michael joined SVB Financial Group in 2006 and was appointed chief financial officer in 2007. As CFO, Descheneaux was responsible for all finance, treasury and accounting functions for the company.

Credit insights: Debt vs. equity

The venture debt market consists of a relatively small universe of lenders that provide loans which explicitly rely on the borrower's continued access to venture equity as the primary source of repayment for the loan. This type of loan, typically referred to as growth capital, differs from loans that rely on other sources of repayment, such as cash flow or the collection of accounts receivable.

Venture debt lenders evaluate both the durability of support from existing investors and probability of attracting interest from new, outside investors to ensure the loan is repaid. For these reasons,

venture debt is deployed most broadly at the Series A stage, when reserves among the existing syndicate are typically at their apex and valuations are heavily influenced by anticipatory metrics, including technical or product development milestones.

Looking back over the last eight quarters, debt-to-valuation ranges have remained fairly consistent – buoyed by either increasingly larger equity round sizes at the early stage or increasing valuations at the late stage.

Typically Series A-B companies raise equity that supports nine to 12 months of runway and venture debt supplements by providing an additional three to six months. While the median debt-to-valuation ratio is typically higher for Series A-B than for later stage companies, the average equity round is also smaller which in turn means the average loan size is smaller.

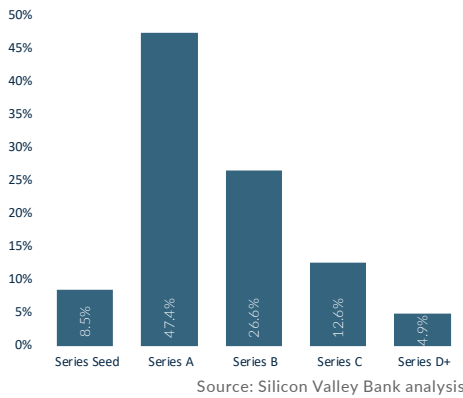
In contrast, later-stage companies (Series C-D) typically have lower median debt-to-valuation ratios, but the average loan size grows along with the equity size for each successive round. The universe of companies that receive successive rounds of equity shrinks over time as valuations are increasingly correlated to business execution and less competitive companies

disappear. Thus, should loan size increase with each successive round, too much debt can impact future equity negotiations.

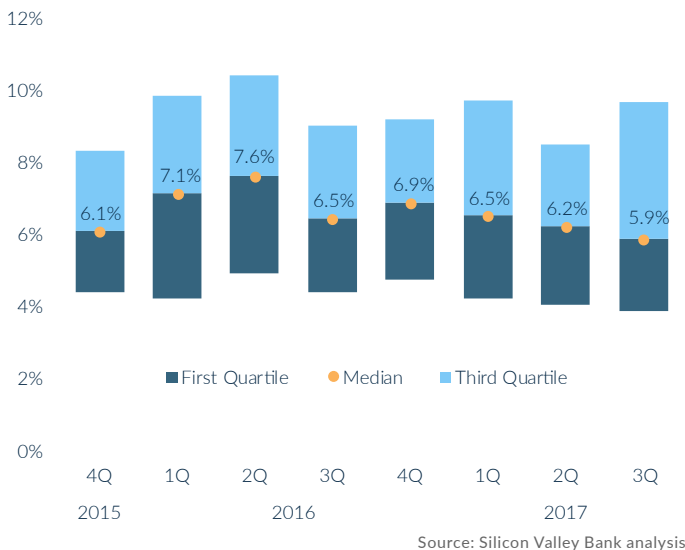
In prior business cycles, the equity progression described above (larger equity rounds / lower debt-to-valuation ratios) often forced the most successful later-stage companies to diversify their investor syndicate beyond the VC ecosystem – in order to satisfy the increasingly larger funding cycles required to grow at scale. It was also generally true that super-sized equity rounds often could not be accommodated in the private market, which drove companies to the public markets or an M&A deal. But now this pattern has reversed.

Super-sized rounds are now routinely being filled with private rather than public equity. In addition to being abundant, later stage PE has also been relatively cheap (for breakout companies) in historical terms. As a result, the super-sizing of the largest late stage funding rounds has effectively outstripped the capacity of the venture debt market to 'match fund' in some examples, and the highly competitive pricing dynamic for those same examples has increasingly placed later stage equity in direct competition with venture debt.

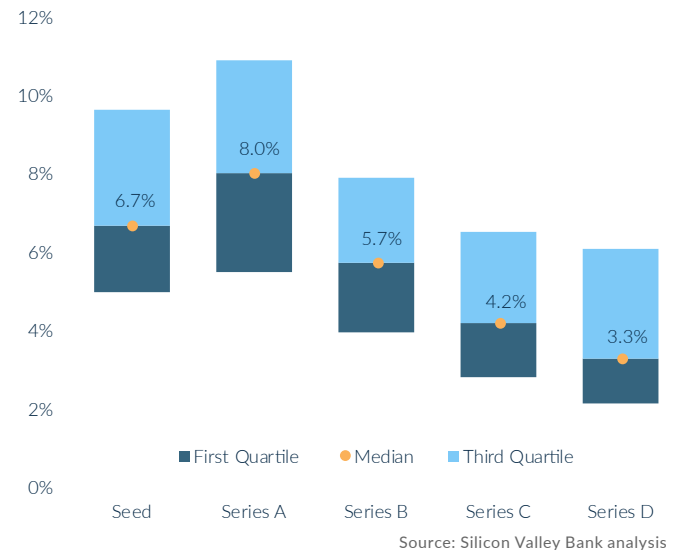
Distribution of US venture debt by series



Debt-to-valuation (%) by quarter



Debt-to-valuation (%) by stage



Note: Fluctuations in financial and credit ratios can be influenced by changes in the underlying subsector composition on the measurement date.

Startup financial insights



As the venture ecosystem continues to benefit from record fundraising, access to capital and valuation growth, technology companies are demonstrating traction and validating their business models at increasingly earlier stages in their fundraising lifecycle. One of the key indicators of life stage and business model traction is a company's revenue run rate, or annualized revenue.

While early-stage VC-backed tech deals are rarely valued on the basis of revenue alone, many successful companies have demonstrated a multimillion-dollar revenue run rate at the time of their Series A and Series B fundraising. Based on SVB analysis, US tech companies raising Series A rounds 2011-2017 showed a median revenue run rate of \$1.5 million, while companies raising their Series B round showed more than double that, at \$3.5 million.

At the growth stage, companies continue to scale operations and build a more predictable conversion funnel, resulting in greater revenue traction at their Series C and Series D rounds. Companies raising a Series C round showed a median revenue run rate of \$7.5 million, while companies raising their Series D round showed nearly double that, at \$13.7 million.

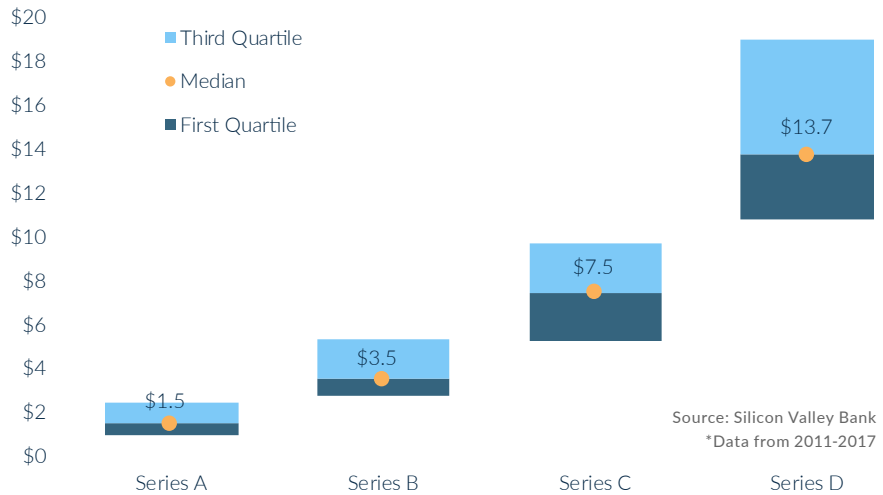
While revenue growth is a useful gauge of business model traction, especially at earlier stages, today's venture-backed tech companies are demonstrating operating discipline, thanks in part to declining operating costs over time, and charting a path to profitability as they mature through the fundraising life cycle. SVB has observed that US technology companies raising their Series A and Series B rounds post median

operating expenses that are more than double their revenues: -145% for Series A and -120% for Series B.

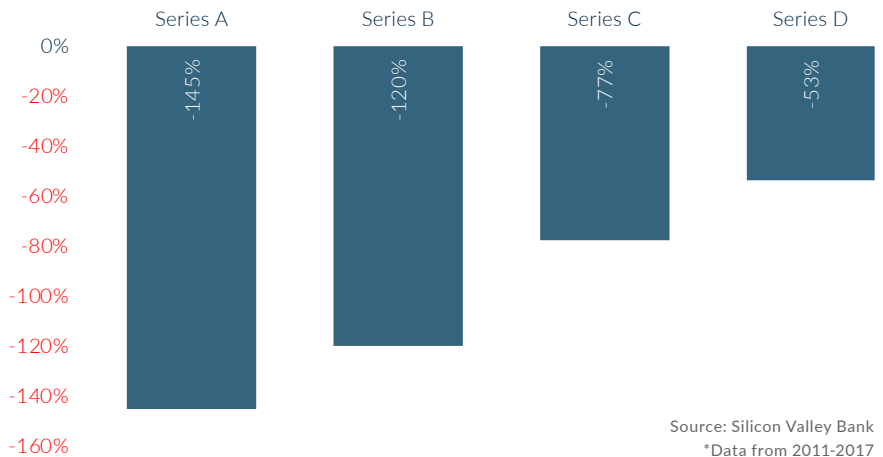
As companies move to growth stage at Series C and Series D, realizing more significant traction and revenue growth, operating margins tend to improve significantly. Tech companies raising their Series C round showed a median

operating margin of approximately -75%, an improvement of 45% from the Series B round, and a median operating margin of -53% at their Series D round. At this stage, successful companies continue to show operating margin improvement and revenue growth as they move to the exit stage of the J-curve and, eventually, realize their valuation through an exit event.

Startup revenue run rate (\$M) on deal date by series



Median operating margin (%) on deal date by Series



For more than 30 years, Silicon Valley Bank (SVB) has helped innovative companies and their investors move bold ideas forward, fast. SVB provides targeted financial services and expertise through its offices in innovation centers around the world. With commercial, international and private banking services, SVB helps address the unique needs of innovators. Learn more at svb.com.

©2017 SVB Financial Group. All rights reserved. SVB, SVB FINANCIAL GROUP, SILICON VALLEY BANK, MAKE NEXT HAPPEN NOW and the chevron device are trademarks of SVB Financial Group, used under license. Silicon Valley Bank is a member of the FDIC and the Federal Reserve System. Silicon Valley Bank is the California bank subsidiary of SVB Financial Group (Nasdaq: SIVB).

Exits

We've continued to see completed exit counts trend lower following a surge in VC-backed company sales and liquidity events between 2009 and 2014. However, despite counts moving lower, sales have been significantly larger and aggregate exit value has remained heightened. 2017 saw more than \$51 billion exited across some 769 liquidity events, equating to a marginal YoY decline of 3.6% in terms of aggregate exit value, yet a drop of over 10% in terms of volume. Buoyed by SNAP's massive capital raise (\$3.4B) and a host of backlogged exits that came to market early in the year, Q1 showed signs of a rebounding exit market with nearly \$17 billion exited across 228 sales. However, each subsequent quarter saw exit activity in terms of both value and volume decline. In fact, the 167 exits completed in 4Q registers as the lowest figure we've seen since Q2 2011.

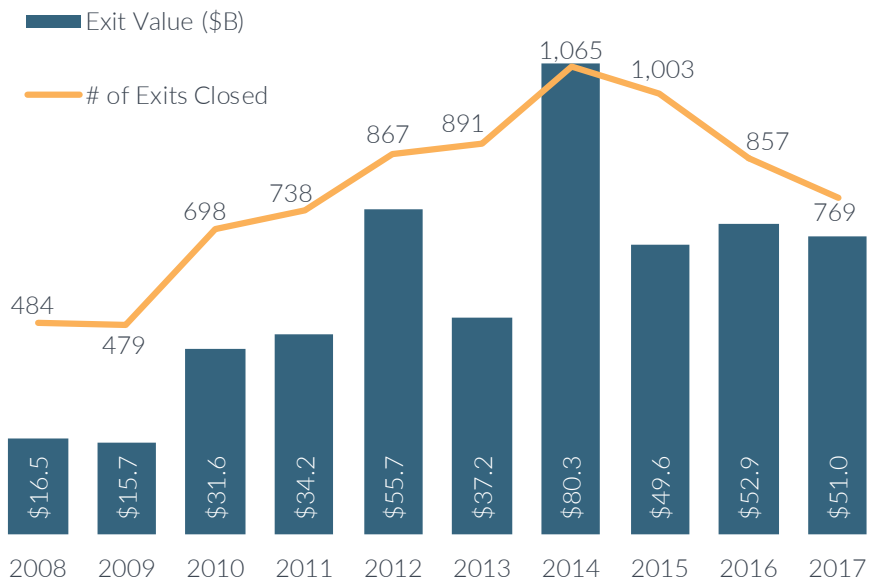
We've harped on today's industry dynamic, which can be summarized by a few items such as larger round and exit sizes, fewer sales and older companies raising capital. This has certainly manifested itself on the back end of the venture cycle with the median exit size across all exit types soaring

to an unprecedented level. At \$85 million last year, the median exit size jumped close to 17% YoY. This figure not only comes in as the largest median exit size we've recorded in at least a decade, but also the largest YoY percentage increase in that metric. This trend also holds true when looking at strategic and financial acquisitions, which paid a median of \$87 million to acquire venture-backed businesses last year— also

the highest figure we've seen on record in at least a decade. With sales processes continuing to push out, the median time to exit in the venture market has reached a record 5.6 years. Undoubtedly driven by the ability of many companies to raise larger sums of late-stage private capital, companies are coming to market as larger entities and as a result, exit sizes and valuations have hit uncharted territory.

Exits continue to slide, leaving industry in crunch

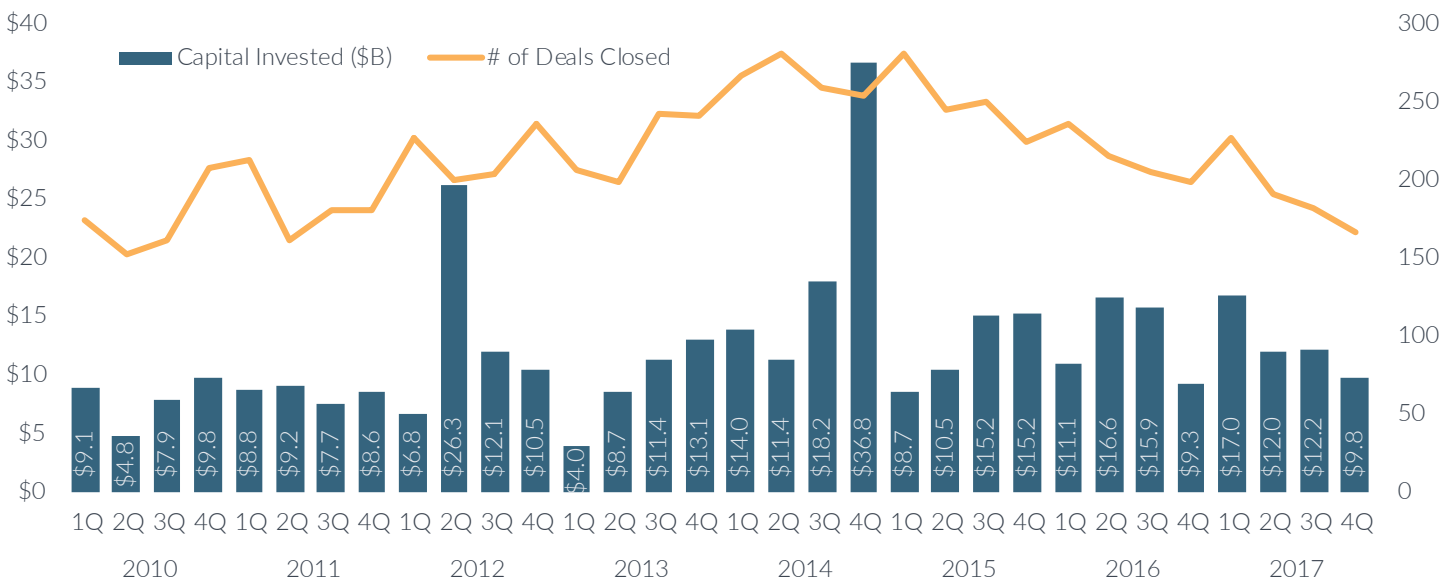
US VC-backed exit activity



PitchBook-NVCA Venture Monitor

Exits slide during eight of past 11 quarters

US VC-backed exit activity



PitchBook-NVCA Venture Monitor

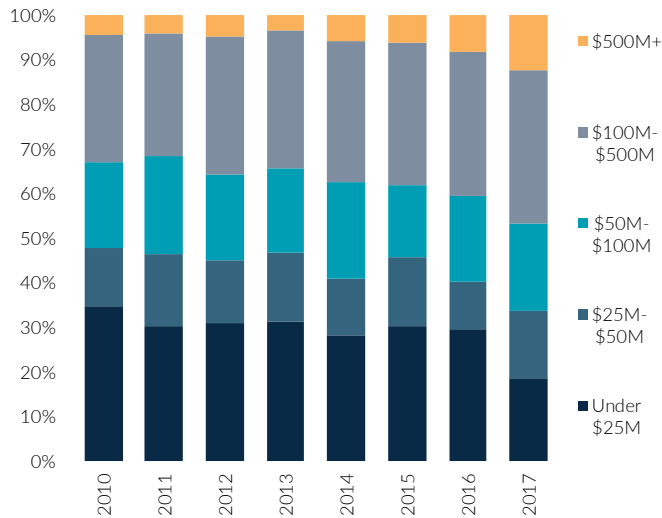
Despite exit volume declining, we've noticed a shift in the makeup of exit types being utilized by management teams. Strategic acquisitions typically represent the bulk of sales by sheer count, yet as M&A activity across the board has lightened up, VC-backed sales to strategics last year declined roughly 20% YoY. That said, we've continued to

see private equity play a larger role in the venture market. Nearly \$7 billion worth of venture-backed exits were completed by private equity last year across 146 sales, reflecting YoY growth of over 200% in terms of total exit value, and a jump of 33% in terms of completed sales to PE. With the proliferation of both tech-focused private equity funds, as well as a

lending ecosystem that has grown to better understand how to stack debt against recurring revenue software businesses, we expect this outlet to remain in place for venture-backed management teams. Last, the IPO markets rebounded as well last year, with close to \$10 billion raised across 58 completed listings, reflecting significant increases of 236% and 41%, respectively.

Exits are getting larger, however

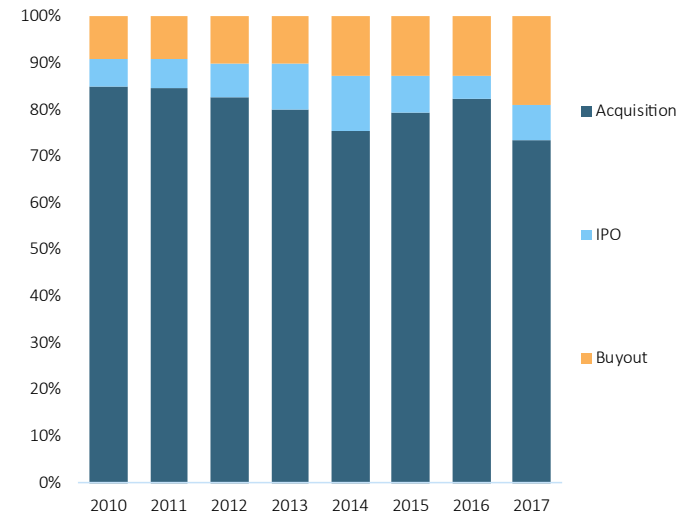
US VC-backed exit (#) by size



PitchBook-NVCA Venture Monitor

Buyouts account for 19% of exits

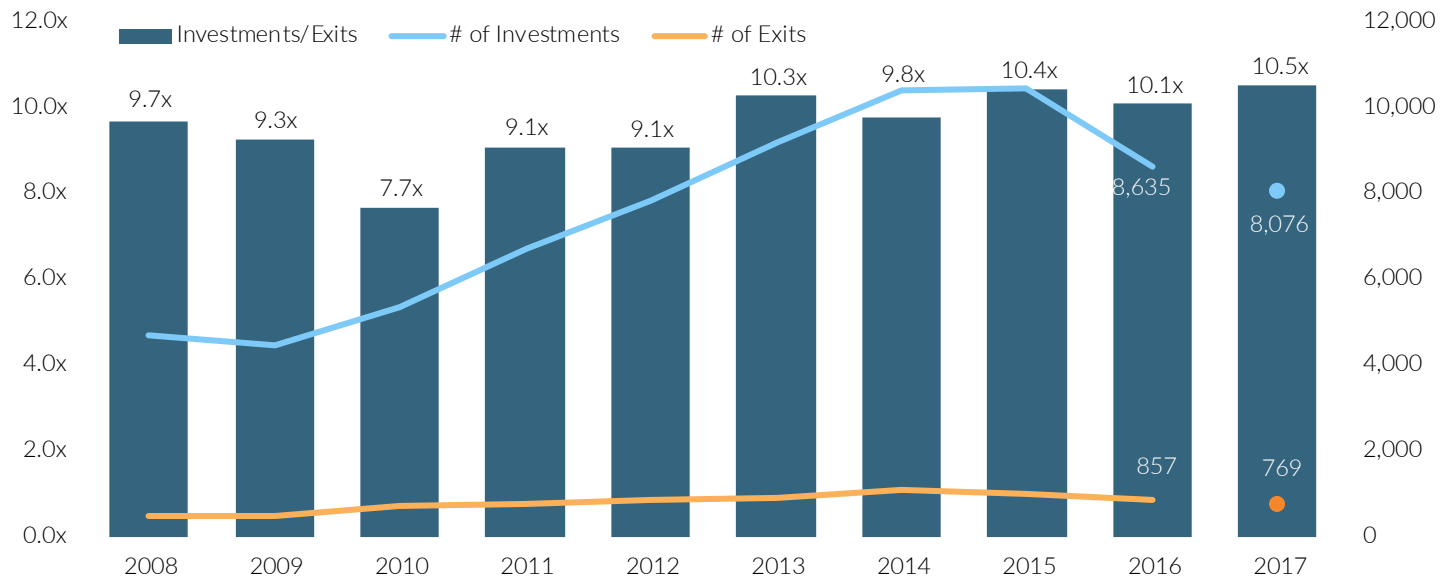
US VC-backed exit activity (#) by type



PitchBook-NVCA Venture Monitor

Despite slowing deal flow, exits fall further

US VC investment-to-exit ratio



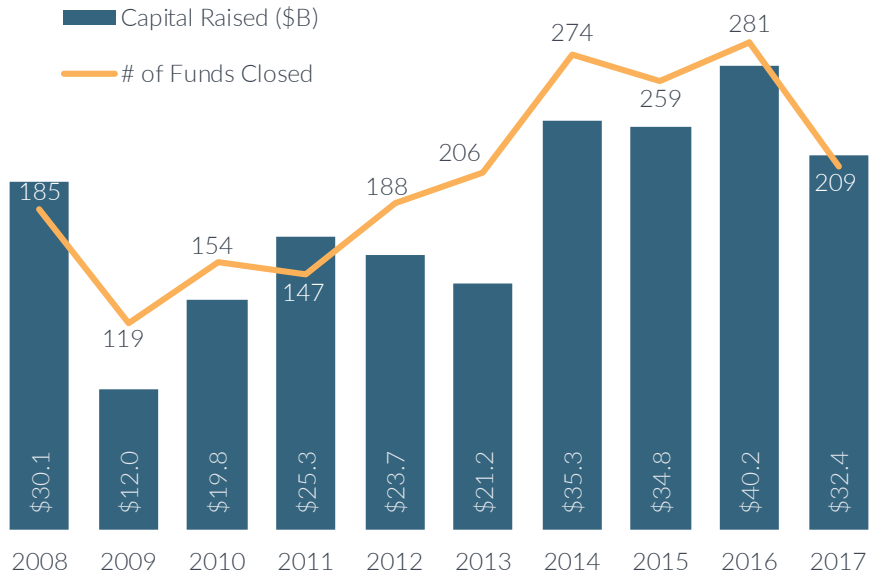
PitchBook-NVCA Venture Monitor

Fundraising

While coming in lower than the total amount of capital raised in 2016, on a historical basis, managers were still able to garner considerable success on the fundraising trail last year. More than \$32 billion was raised across 209 completed closes, equating to a YoY drop of close to 20% in terms of total capital raised and 26% in terms of the number of vehicles closed. Interestingly, barring activity between 2014 and 2016, more vehicles closed last year than in any year in the last decade, with more capital raised than in any year during that same timeframe.

Buoyed by a mix of outsized fundraises by the likes of NEA (\$3.3 billion) and Mithril Capital Management (\$850 million), along with a steady pace of fund closings, 2017 was poised to match the record amount of capital (\$40 billion) raised in 2016. However, as we transitioned to the back half of the year, fund sizes remained

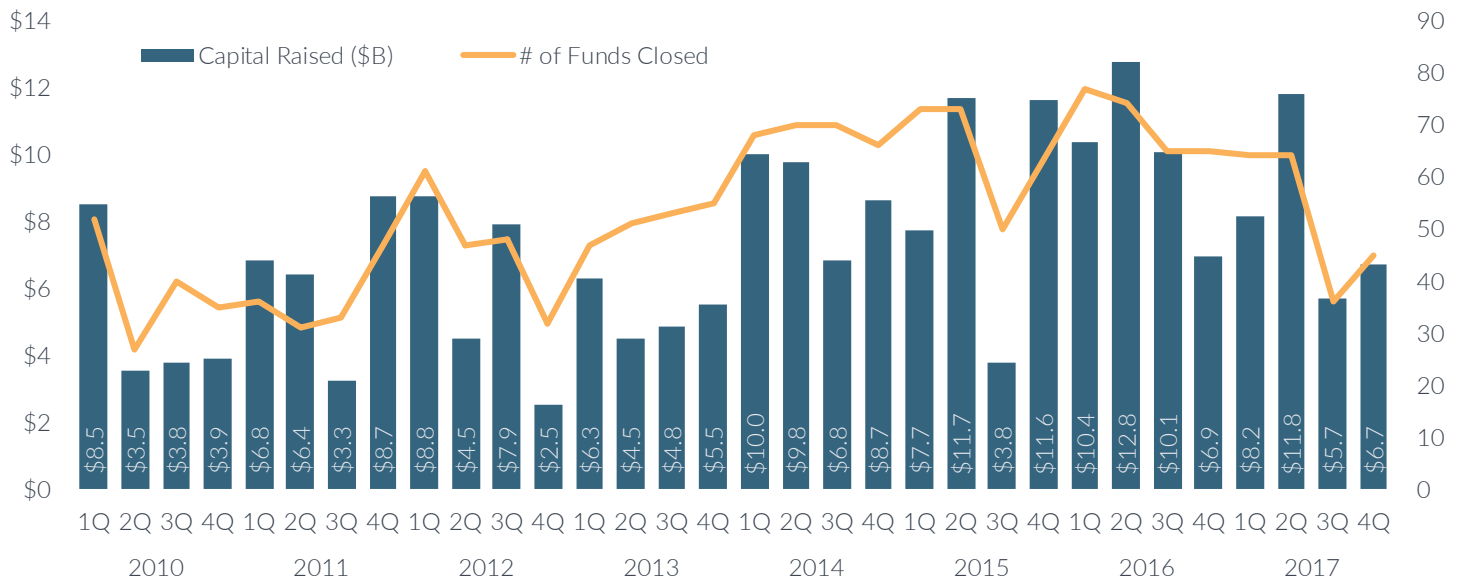
\$143B raised since 2014 US VC fundraising activity



PitchBook-NVCA Venture Monitor

Fundraising showed signs of slowing over past six months

US VC fundraising activity



PitchBook-NVCA Venture Monitor

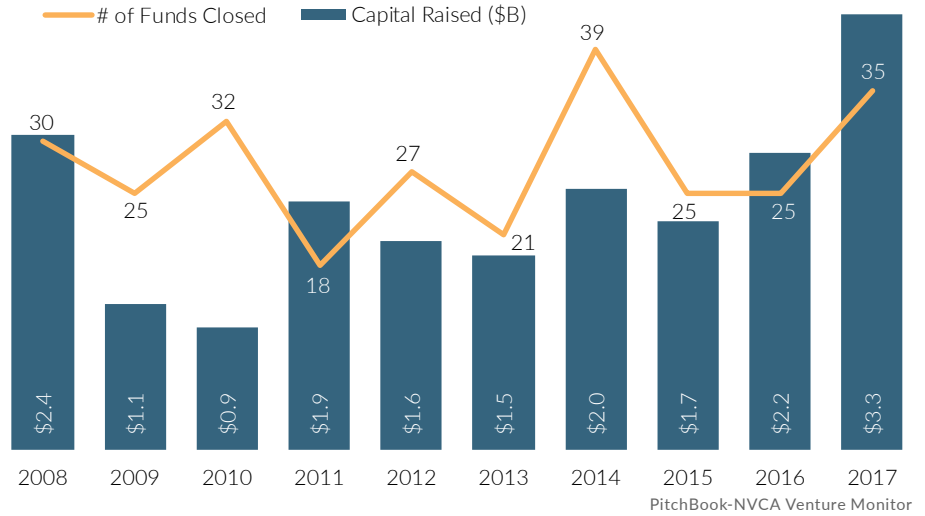
heightened on a median basis, but total closings dropped off dramatically, with both 3Q and 4Q seeing 36 and 45 total vehicles closed, respectively. This compares to the 64 funds we saw close in each of the first two quarters of last year. Given the massive uptick in vehicles we've continued to see come to market in recent years, along with ample dry powder yet to be deployed, seeing commitments slow to a certain extent is likely a positive to the overall industry, as capital availability certainly isn't an issue for the market today.

Despite the drop in fund counts in 2H, some of the largest vehicles to close in 2017 came then, such as TPG's Rise Fund, which closed on \$2 billion in 4Q, and Institutional Venture Partners' IVP XVI, which closed on \$1.5 billion in September of last year. To that point, median fund sizes have continued to rise, coming in at \$60 million last year, relative to \$50 million in 2016 and just \$32 million in 2015.

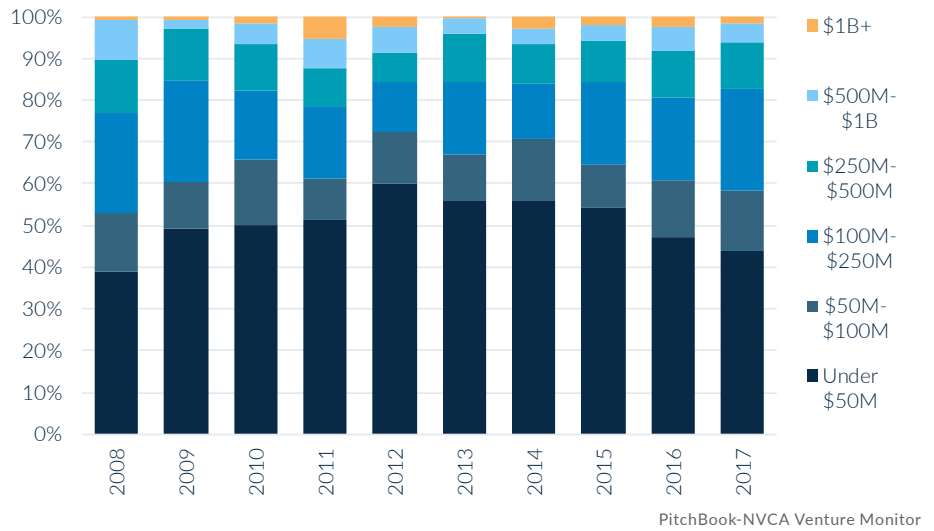
As we've noticed across the PE market as well, first-time fund managers have continued to garner interest from LPs across all stages. More than \$3.3 billion was raised by such managers last year across 35 vehicles, a growth of 47% and 40%, respectively. Further, first-time managers raising sub \$50 million vehicles have also had considerable success, raising close to \$380 million last year across 15 funds, equating to a jump of some 23% in terms of total capital raised across the same number of vehicles that closed in the bucket in 2016.

First-time funds finding results

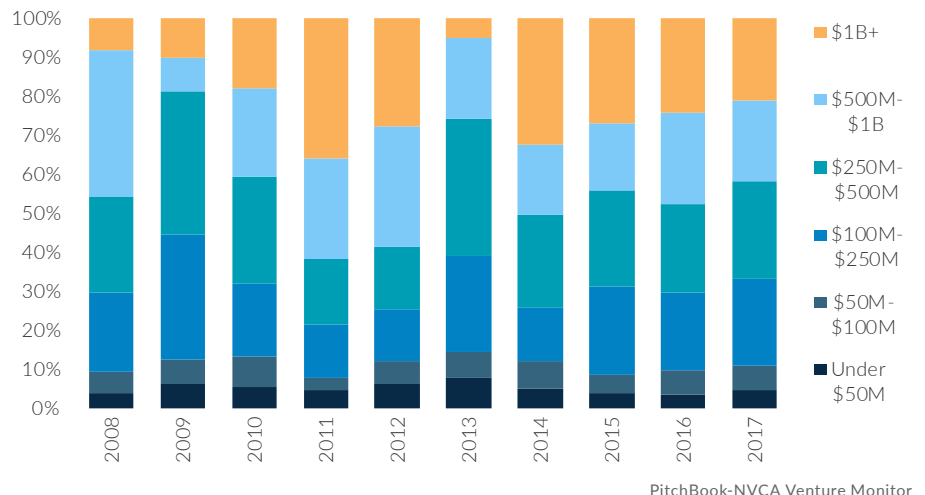
US first VC fundraising activity



US VC fundraising activity (#) by size

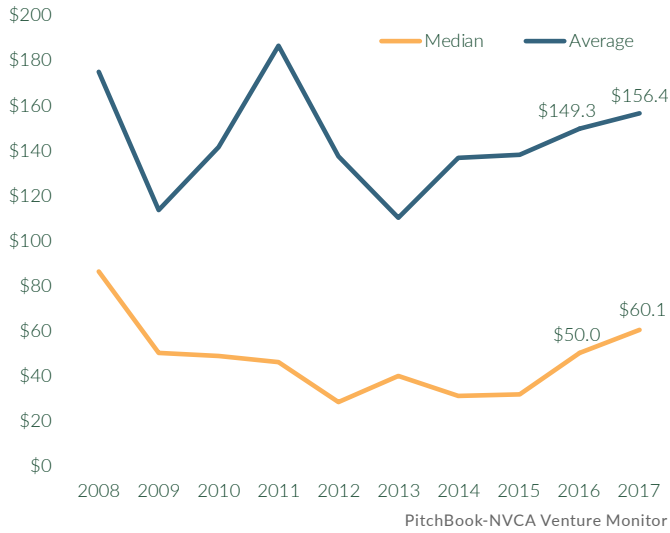


US VC fundraising activity (\$) by size



Median fund size jumps past \$60M

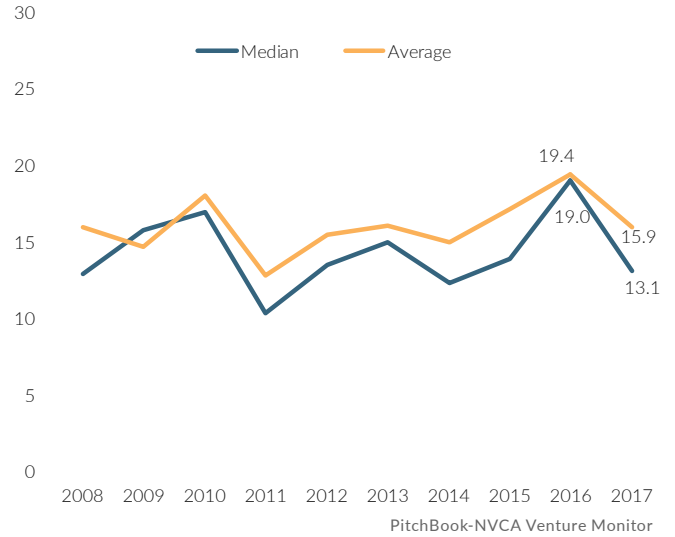
Median & average VC fund size (\$M)



Looking ahead to 2018, fund sizes look set to only grow

Time to close fell last year

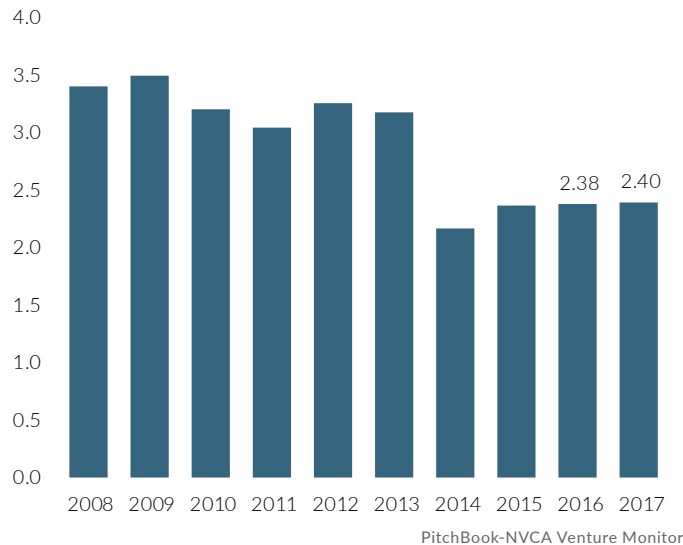
Median & average time (months) to close VC fund



2017 saw a remarkable 20% YoY increase in the average step-ups of venture funds

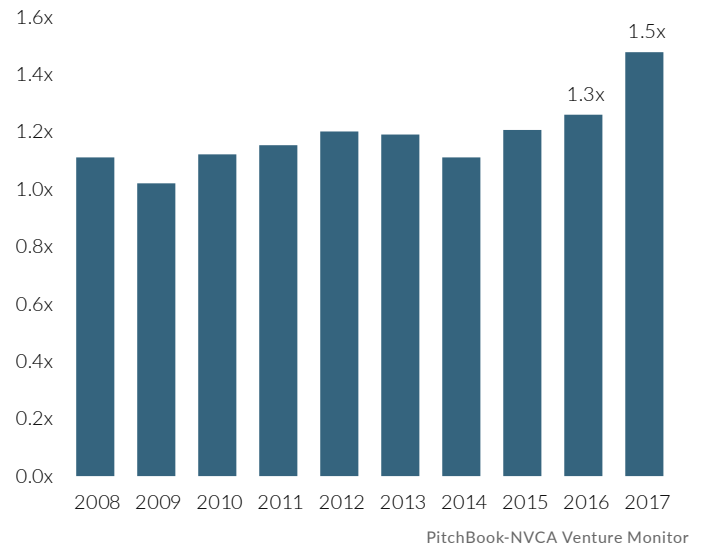
Firms raising next funds faster

Average time (years) between funds



Follow-on funds growing significantly

Median step-up between funds



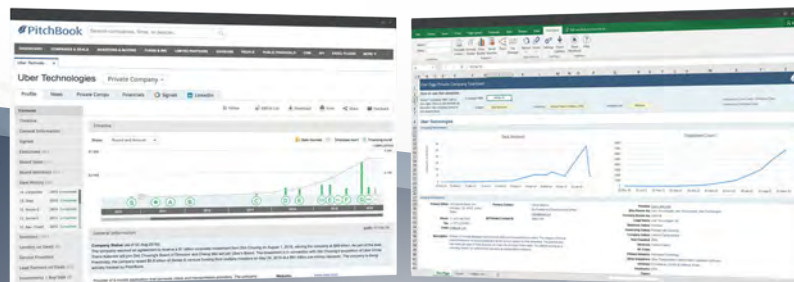
We do
pre-money valuations,
cap tables,
series terms,
custom search,
growth metrics.

You invest
in the next big thing.

See how the PitchBook Platform can
help VCs invest smarter.

demo@pitchbook.com

 PitchBook®



4Q league tables

Most active investors angel/seed

Plug and Play Tech Center	11
Innovation Works	10
Social Starts	9
Right Side Capital Management	8
New Enterprise Associates	7
SV Angel	7
Y Combinator	7
FundersClub	6
Techstars	6
500 Startups	5
Eniac Ventures	5
Liquid 2 Ventures	5
PLG Ventures	5
TEDCO	5
Andreessen Horowitz	4
Greycroft	4
M25 Group	4
Social Capital	4

PitchBook-NVCA Venture Monitor

Most active investors early stage

New Enterprise Associates	15
Keiretsu Forum	14
Y Combinator	10
Kleiner Perkins Caufield & Byers	9
Plug and Play Tech Center	9
True Ventures	8
Accel	7
GV	7
Intel Capital	7
Keiretsu Capital	7
Khosla Ventures	7
Lerer Hippeau Ventures	7
Sequoia Capital	7
ARCH Venture Partners	6
Comcast Ventures	6
Lux Capital	6
Redpoint Ventures	6
RRE Ventures	6
Salesforce Ventures	6
Slow Ventures	6
Alexandria Venture Investments	5
AME Cloud Ventures	5
Great Oaks Venture Capital	5
Greycroft	5
Lightspeed Venture Partners	5
Next47	5
Shasta Ventures	5
SV Angel	5
Tiny Capital	5
Versant Venture Management	5

PitchBook-NVCA Venture Monitor

Most active investors late stage

Keiretsu Forum	11
Kleiner Perkins Caufield & Byers	10
GV	9
New Enterprise Associates	7
Norwest Venture Partners	7
Think +	7
General Catalyst Partners	6
Salesforce Ventures	6
Baillie Gifford	5
Flagship Pioneering	5
Menlo Ventures	5
Spark Capital	5
True Ventures	5
Bain Capital Ventures	4
Canaan Partners	4
DBL Partners	4
Fidelity Management & Research	4
GE Ventures	4
Keiretsu Capital	4
Lightspeed Venture Partners	4
Meritech Capital Partners	4
Revolution	4
SharesPost	4

PitchBook-NVCA Venture Monitor

Top 10 largest US VC deals in 4Q 2017

Company	Deal size (\$M)	Series/stage	Date	HQ	State	Industry
Lyft	1,500.00	Series H	12/5/2017	San Francisco	California	Software
Grail	1,211.66	Series B	11/22/2017	Menlo Park	California	Pharma and Biotech
Faraday Future	1,000.00	Early Stage VC	12/22/2017	Los Angeles	California	Transportation
Magic Leap	502.00	Series D	10/17/2017	Plantation	Florida	Computer Hardware
Compass	500.00	Early Stage VC	12/7/2017	New York	New York	Consumer Products and Services
SpaceX	450.00	Series H	11/27/2017	Hawthorne	California	Aerospace & defense
Essential Products	300.00	Series B	10/12/2017	Palo Alto	California	Consumer Durables
Ginkgo Bioworks	275.00	Series D	12/14/2017	Boston	Massachusetts	Pharma and Biotech
Harmony Biosciences	270.00	Early Stage VC	10/5/2017	Plymouth Meeting	Pennsylvania	Pharma and Biotech
Via	250.00	Early Stage VC	10/2/2017	New York	New York	Software

PitchBook-NVCA Venture Monitor

Top 10 largest US VC funds closed in 4Q 2017

Fund name	Investor	Fund size (\$M)	Close date	HQ	State
TPG Growth	The Rise Fund	\$2,000.00	10/4/2017	Washington	District of Columbia
Flagship Pioneering	Flagship Pioneering Fund VI	\$618.00	12/20/2017	Cambridge	Massachusetts
Andreessen Horowitz	AH Bio Fund II	\$450.00	12/20/2017	Menlo Park	California
Frazier Healthcare Partners	Frazier Life Sciences IX	\$419.00	11/1/2017	Seattle	Washington
Redpoint Ventures	Redpoint Omega III	\$400.00	10/2/2017	Menlo Park	California
Icon Ventures	Icon Ventures VI	\$263.00	10/11/2017	Palo Alto	California
Vida Ventures	Vida Ventures	\$254.80	12/5/2017	Boston	Massachusetts
Illumina Ventures	Illumina Innovation Fund I	\$230.00	10/16/2017	San Francisco	California
Owl Ventures	Owl Ventures II	\$185.00	10/19/2017	San Francisco	California
M33 Growth	M33 Growth I	\$180.00	10/13/2017	Boston	Massachusetts

PitchBook-NVCA Venture Monitor

Top five largest US VC-backed IPOs in 4Q 2017

Company	Exit size (\$M)	Exit post-val (\$M)	Date	HQ	State	Industry
Razer	528.73	4,407.39	13-Nov-2017	San Francisco	California	Computer Hardware
Switch	531.25	4,200.25	5-Oct-2017	Las Vegas	Nevada	IT Services
CarGurus	150.40	1,684.90	12-Oct-2017	Cambridge	Massachusetts	Transportation
Denali Therapeutics	250.00	1,583.63	8-Dec-2017	South San Francisco	California	Pharma and Biotech
Stitch Fix	120.00	1,527.00	17-Nov-2017	San Francisco	California	Retail

PitchBook-NVCA Venture Monitor

Largest US VC acquisitions in 4Q 2017

Company	Exit size (\$M)	Exit post-val (\$M)	Date	HQ	State	Industry
NeoTract	528.73	4,407.39	2-Oct-2017	Pleasanton	California	Healthcare Devices and Supplies
Musical.ly	531.25	4,200.25	19-Dec-2017	Santa Monica	California	Software
ZirMed	150.40	1,684.90	1-Nov-2017	Louisville	Kentucky	Healthcare Technology Systems
Black Duck	250.00	1,583.63	12-Dec-2017	Burlington	Massachusetts	Software
nuTonomy	120.00	1,527.00	21-Nov-2017	Cambridge	Massachusetts	Software

PitchBook-NVCA Venture Monitor

US VC activity by state & territory

State	Deal Count
California	615
New York	219
Massachusetts	132
Texas	83
Washington	72
Colorado	59
Florida	48
Illinois	46
Pennsylvania	43
North Carolina	41
Virginia	32
Utah	31
Ohio	29
Arizona	24
Maryland	24
New Jersey	22
Oregon	22
Georgia	21
Tennessee	19
Indiana	16
Wisconsin	16
Connecticut	14
District of Columbia	14
Minnesota	14
Michigan	11
Kentucky	10
Delaware	8
Idaho	8
Kansas	7
Iowa	6
Louisiana	6
Nevada	6
South Carolina	6
Arkansas	5

PitchBook-NVCA Venture Monitor

State	Deal Count
Hawaii	5
Missouri	5
Montana	5
Nebraska	5
Wyoming	4
Maine	3
New Hampshire	3
North Dakota	3
Oklahoma	3
Alabama	2
Alaska	2
New Mexico	2
South Dakota	2
Vermont	2
Mississippi	1
Puerto Rico	1

PitchBook-NVCA Venture Monitor

US VC activity by Metropolitan Statistical Area (MSA)

MSA	Deal Count
San Francisco-Oakland-Fremont, CA	310
New York-Northern New Jersey-Long Island, NY-NJ-PA	227
Boston-Cambridge-Quincy, MA-NH	130
San Jose-Sunnyvale-Santa Clara, CA	112
Los Angeles-Long Beach-Santa Ana, CA	106
San Diego-Carlsbad-San Marcos, CA	61
Seattle-Tacoma-Bellevue, WA	61
Austin-Round Rock, TX	47
Washington-Arlington-Alexandria, DC-VA-MD-WV	46
Chicago-Naperville-Joliet, IL-IN-WI	44
Denver-Aurora, CO	32
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	23
Miami-Fort Lauderdale-Pompano Beach, FL	22

PitchBook-NVCA Venture Monitor

US VC activity by Congressional District

State	District	Deal Count
California	District 12	141
New York	District 12	109
California	District 18	82
New York	District 10	57
California	District 14	52
California	District 52	42
Massachusetts	District 7	42
California	District 17	38
California	District 13	32
California	District 33	29
Washington	District 7	29
Massachusetts	District 5	27
Illinois	District 7	22
Colorado	District 2	20
Colorado	District 1	18
California	District 15	16
Pennsylvania	District 14	16
California	District 49	15
Texas	District 21	15
Texas	District 25	14
New York	District 7	13
District of Columbia	Delegate District	12
Massachusetts	District 4	11
Massachusetts	District 8	11
Virginia	District 8	11
Arizona	District 9	9
California	District 2	9
California	District 28	9
North Carolina	District 6	9
California	District 19	8
North Carolina	District 4	8
Ohio	District 3	8
Tennessee	District 5	8
Utah	District 3	8
Wisconsin	District 2	8

PitchBook-NVCA Venture Monitor

Methodology

Fundraising

We define VC funds as pools of capital raised for the purpose of investing in the equity of startup companies. In addition to funds raised by traditional VC firms, PitchBook also includes funds raised by any institution with the primary intent stated above. Funds identifying as growth-stage vehicles are classified as PE funds and are not included in this report. A fund's location is determined by the country in which the fund is domiciled; if that information is not explicitly known, the HQ country of the fund's general partner is used. Only funds based in the United States that have held their final close are included in the fundraising numbers. The entirety of a fund's committed capital is attributed to the year of the final close of the fund. Interim close amounts are not recorded in the year of the interim close.

Deals

We include equity investments into startup companies from an outside source. Investment does not necessarily have to be taken from an institutional investor. This can include investment from individual angel investors, angel groups, seed funds, VC firms, corporate venture firms, and corporate investors. Investments received as part of an accelerator program are not included, however, if the accelerator continues to invest in follow-on rounds, those further financings are included. All financings are of companies headquartered in the US.

Angel & seed: We define financings as angel rounds if there are no PE or VC firms involved in the company to date and we cannot determine if any PE or VC firms are participating. In addition, if there is a press release that states the round is an angel round, it is classified as such. Finally, if a news story or press release only mentions individuals making investments in a financing, it is also classified as angel. As for seed, when the investors and/or press release state that a round is a seed financing, or it is for less than \$500,000 and is the first round as reported by a government filing, it is classified as such. If angels are the only investors, then a round is only marked as seed if it is explicitly stated.

Early-stage: Rounds are generally classified as Series A or B (which we typically aggregate together as early stage) either by the series of stock issued in the financing or, if that information is unavailable, by a series of factors including: the age of the company, prior financing history, company status, participating investors, and more.

Late-stage: Rounds are generally classified as Series C or D or later (which we typically aggregate together as late stage) either by the series of stock issued in the financing or, if that information is unavailable, by a series of factors including: the age of the company, prior financing history, company status, participating investors, and more.

Growth equity: Rounds must include at least one investor tagged as growth/expansion, while deal size must either be \$15 million or more (although rounds of undisclosed size that meet all other criteria are included). In addition, the deal must be classified as growth/expansion or later-stage VC in the PitchBook Platform. If the financing is tagged as late-stage VC it is included regardless of industry. Also, if a company is tagged with any PitchBook vertical, excepting manufacturing and infrastructure, it is kept. Otherwise, the following industries are excluded from growth equity financing calculations: buildings and property, thrifts and mortgage finance, real estate investment trusts, and oil & gas equipment, utilities, exploration, production and refining. Lastly, the company in question must not have had an M&A event, buyout, or IPO completed prior to the round in question.

Corporate VC: Financings classified as corporate VC include rounds that saw both firms investing via established CVC arms or corporations making equity investments off balance sheets or whatever other non-CVC method actually employed.

Capital efficiency score: Our capital efficiency score was calculated using companies that had completed an exit (IPO, M&A or PE Buyout) since 2006. The aggregate value of those exits, defined as the pre-money valuation of the exit, was then divided by the aggregate amount of VC that was invested into those companies during their time under VC backing to give a Multiple On Invested Capital (MOIC). After the average time to exit was calculated for each pool of companies, it was used to divide the MOIC figure and give us a capital efficiency score.

Exits

We include the first majority liquidity event for holders of equity securities of venture-backed companies. This includes events where there is a public market for the shares (IPO) or the acquisition of majority of the equity by another entity (corporate or financial acquisition). This does not include secondary sales, further sales after the initial liquidity event, or bankruptcies. M&A value is based on reported or disclosed figures, with no estimation used to assess the value of transactions for which the actual deal size is unknown.

The 411 on the PitchBook and National Venture Capital Association (NVCA) partnership

Why we teamed up

NVCA is recognized as the go-to organization for venture capital advocacy, and the statistics we release are the industry standard. PitchBook is the leading data software provider for venture capital professionals, serving more than 1,800 clients across the private market. Our partnership with PitchBook empowers us to unlock more insights on the venture ecosystem and better advocate for an ever-evolving industry.

Meet the PitchBook-NVCA Venture Monitor

A brand-new, quarterly report that details venture capital activity and delivers insights to inform your investment strategy. PitchBook's data will also bolster our year-in-review publication.



THE PERKS OF PARTNERSHIP

The PitchBook Platform

As an NVCA member, your free access to the PitchBook Platform includes five advanced searches and five profile views per month.

Fundraise faster with targeted searches for limited partners who will likely be interested in your fund.

Conduct better due diligence by diving deep into a company's round-by-round financing history, executive team and market traction.

Price deals with confidence using pre- and post-money valuations, public and private comps, cap tables and series terms.

Find promising investors quickly by zeroing in on other firms or strategic acquirers whose investment preferences match your portfolio company.

More data. Less dough.

Our members get 10% off a new subscription to the PitchBook Platform (up to a \$10,000 value) or one free, additional seat. If your firm was a PitchBook client prior to September 14, 2016, you're eligible for one of these discounts the next time you renew your contract.

Help us help you

We will email quarterly surveys to each member firm, which will give you the opportunity to report your activity to PitchBook. The data you provide will not only power PitchBook-NVCA reports, but also ensure your firm is represented accurately in the PitchBook Platform. If you'd like to send your quarterly activity report directly to PitchBook, email research@pitchbook.com.



Ready to get started with the PitchBook Platform? Go to pitchbook.com/nvca