J.P.Morgan

INNOVATION ECONOMY

Innovation Economy update

2024

Executive summary

“Following an eventful year for the Innovation Economy, J.P. Morgan remains optimistic that 2025 will bring welcome changes for private markets as the macroeconomic backdrop continues to improve. Despite muted exit activity in 2024, several key companies successfully went public, and high-growth technology companies in the public markets continue to perform well. We expect venture investment levels will continue to improve and that many of the companies in line to go public will have the chance to explore opportunities in 2025. An increase in exit activity should alleviate liquidity pressures, which have hindered investors from deploying capital (except for AI companies). Additionally, we found that venture investment in 2024 saw more mid-stage investing and increased concentration in California. AI has been the big winner, with a large proportion of capital going toward the space, including most rounds over $1 billion. The rate of AI development drew in capital in 2024, and this is expected to continue in 2025 as adoption spreads.”

- Melissa and John

Co-heads of Innovation Economy:

Melissa Smith
Co-Head of Innovation Economy and Head of Specialized Industries

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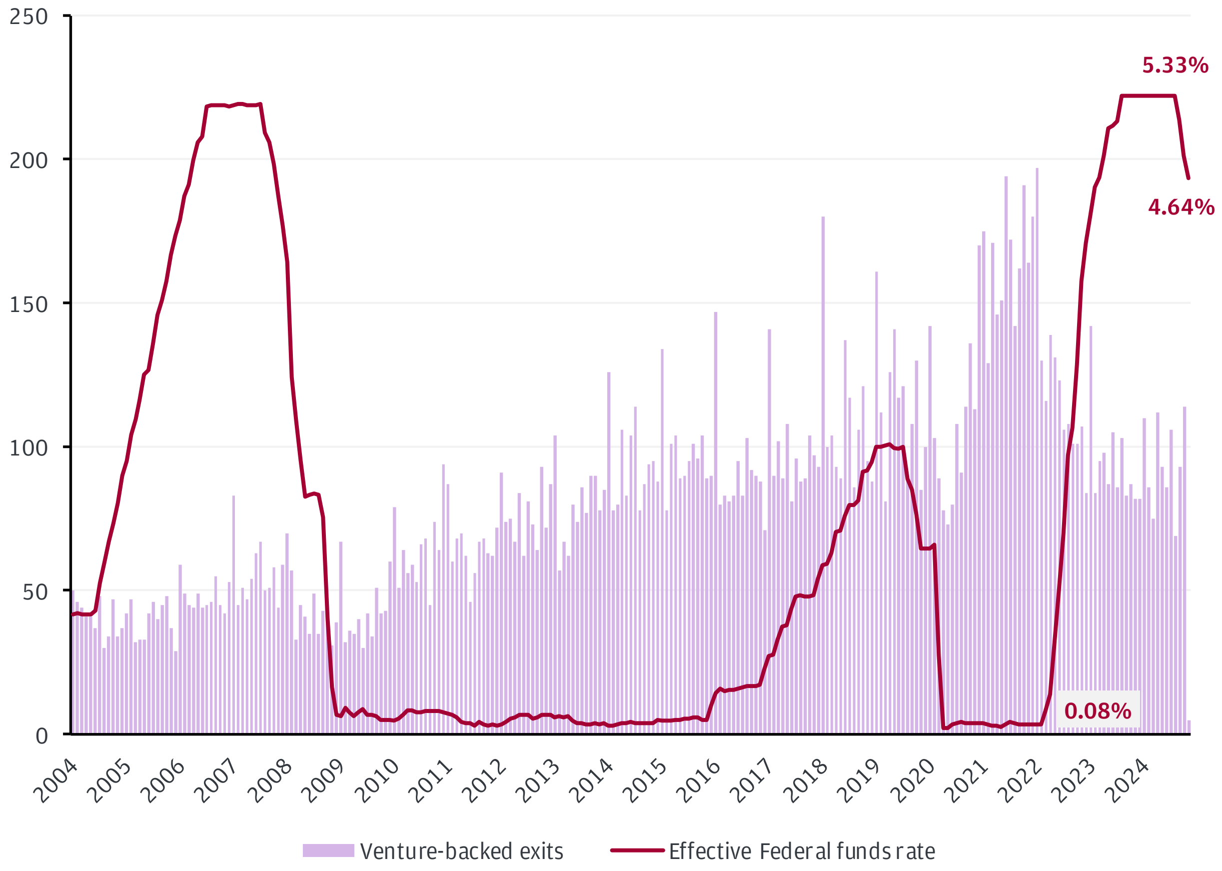
Declining rates and robust public markets may breathe life back into venture ecosystem

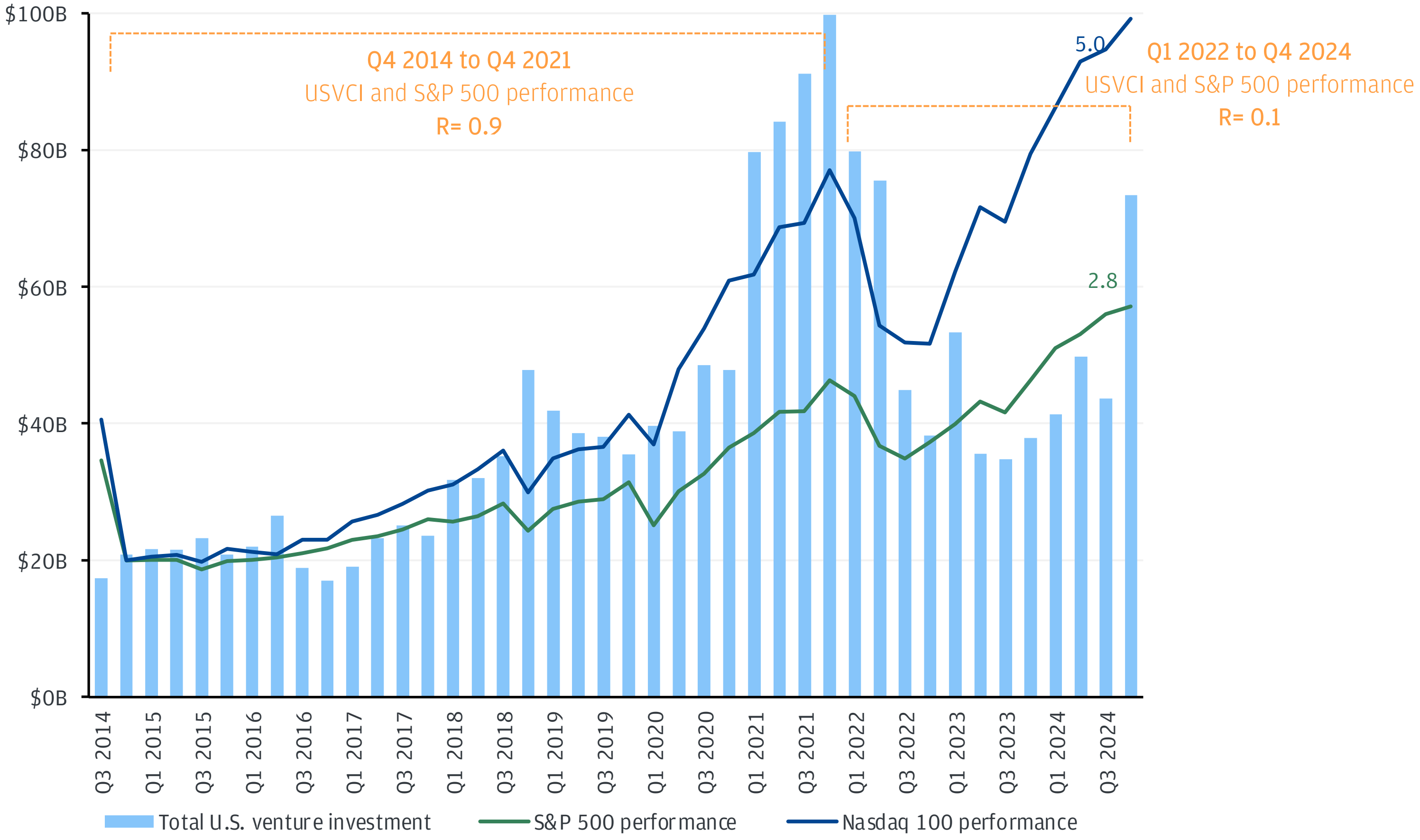
DECLINING INTEREST RATES MAY HELP TO SPUR EXIT ACTIVITY

VENTURE-BACKED EXITS VS. EFFECTIVE FEDERAL FUNDS RATE[1]



CORRELATION BETWEEN VC ACTIVITY AND PUBLIC MARKET PERFORMANCE DECLINED AFTER 2021

U.S. VENTURE INVESTMENT (USVCI) VS. PERFORMANCE OF S&P 500 AND NASDAQ 100[2]



The Fed's attempt to stymie inflation through rising interest rates had a knock-on effect on venture-backed exits. Rising interest rates can impede deal activity by increasing the cost of capital, which in turn raises the minimum acceptable rate of return for the deal. With rates starting their climb down, more activity may follow, especially for tech companies, since lower rates tend to support higher tech valuations. When looking at public market performance, venture activity has generally risen alongside public markets. However, at the beginning of 2022, this relationship lessened. A myriad of reasons have caused investors to slow down, including uncertainty in the geopolitical environment, constrained exit markets and differing valuation expectations. In addition, Limited Partners (LPs) have been hesitant to back new funds when the capital being returned to them has been at such low levels.

Notes: (1) Venture-backed exits includes acquisitions, buyouts, and public listings of venture-backed companies. (2) U.S. Venture Investment and Nasdaq 100 R = 0.9 and 0.0 for Q4 2014 to Q4 2021 and Q1 2022 to Q4 2024 periods, respectively.

Sources: The Federal Reserve and PitchBook. Data has not been reviewed by PitchBook analysts.

2024 venture dashboard

Key Innovation Economy indicators:

Venture Investment

$208B
Total capital invested

⇧ 28% Since 2023 | ⇩ 41% Since 2021

13.6K
Number of deals

⇩ 8% Since 2023 | ⇩ 30% Since 2021

VC Fundraising

$93B
Total VC fundraising

⇩ 11% Since 2023 | ⇩ 56% Since 2021

Down Rounds[3]

21%
Down round frequency

⇧ 2pp Since 2023 | ⇧ 18pp Since 2021

IPO Activity[1,2]

8
Number of Tech IPOs

⇧ 33% Since 2023 | ⇩ 213% Since 2021

$4B
Total Tech IPO proceeds

⇧ 236% Since 2023 | ⇩ 657% Since 2021

M&A Activity[1]

1,009
M&A transactions

⇩ 4% Since 2023 | ⇩ 39% Since 2021

$154B
Total M&A proceeds[4]

⇩ 24% Since 2023 | ⇩ 41% Since 2021

Notes: (1) Includes IPOs and M&A transactions in which the company going public or being acquired was venture-backed prior to the transaction. (2) Includes only companies listed on major U.S. exchanges. (3) PP denotes 'percentage point'. (4) For deals reporting a transaction amount.

Sources: Aumni and PitchBook. Data has not been reviewed by PitchBook analysts.

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02 | Venture investment

CARLY RODDY

Managing Director,
Co-Head of Private Capital Markets – Americas

TROY WAGNER

Managing Director,
Co-Head of Private Capital Markets – Americas

IPO markets are beginning to open up

From a private capital perspective, we see that the IPO markets are beginning to open up, which has positive downstream effects for both our issuer and investor clients. A constructive IPO environment has led to a resurgence in pre-IPO funding rounds with broad-based participation from crossover investors, sovereign wealth funds, pensions and growth equity firms.

In addition, the anticipated pickup in M&A activity in 2025 is poised to create increased liquidity for funds and limited partners, buoying the private fundraising environment.

Many companies are opting to remain private longer

In parallel with these constructive dynamics, many companies are opting to remain private longer, securing substantial funding through mega-rounds and investor/employee tender offers, as seen with fundraises from Stripe, SpaceX, Revolut and, most recently, Databricks.

This environment has fostered a great deal of creativity in deal structuring to effectively meet client objectives and adapt to the evolving market landscape, which we expect to continue in 2025.

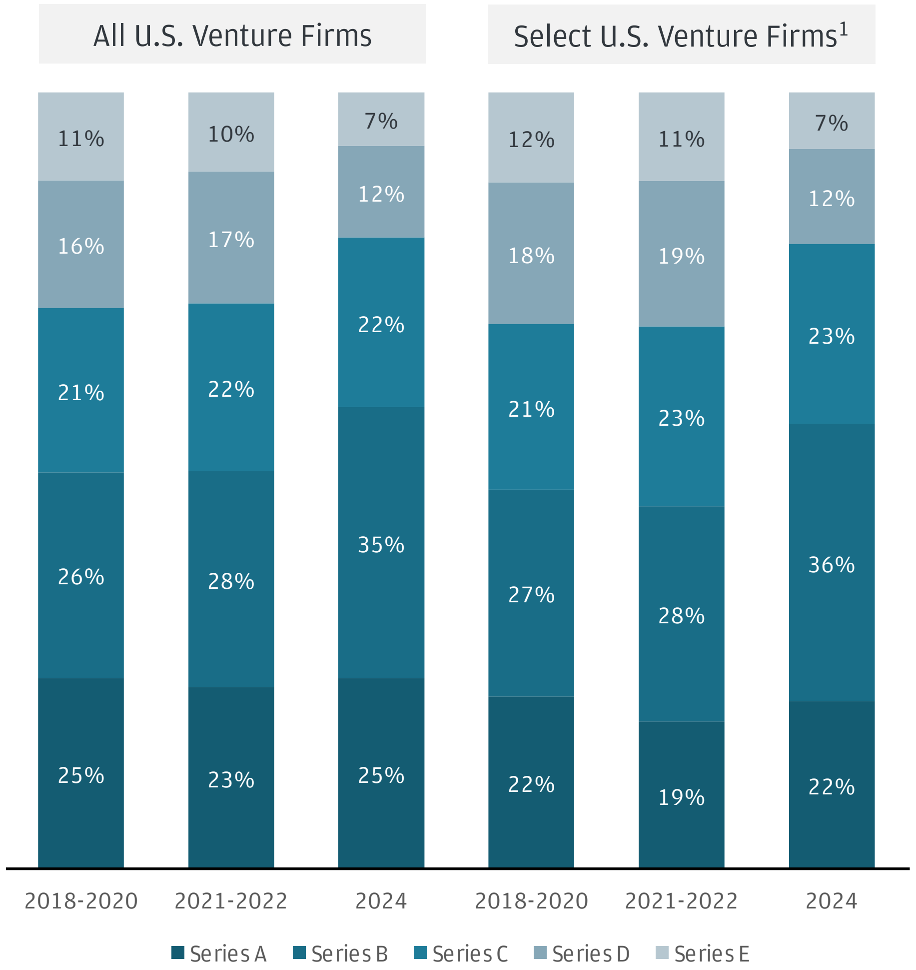
Select J.P. Morgan-led transactions

2024	$1,000mm	scale	EPP – AI	Placement Agent
2024	$300mm	SANDBOXAQ™	EPP – AI	Sole Placement Agent
2024	$1,500mm	EPIC GAMES	EPP – Gaming	Placement Agent
2024	$70mm	SiMa.ai	EPP – AI / Semis	Sole Placement Agent
2024	$225mm	cogent BIOSCIENCES	PIPE – Biotech	Placement Agent
2024	$170mm	beacon therapeutics	EPP – Biotech	Sole Placement Agent

Venture capital became more concentrated in 2024

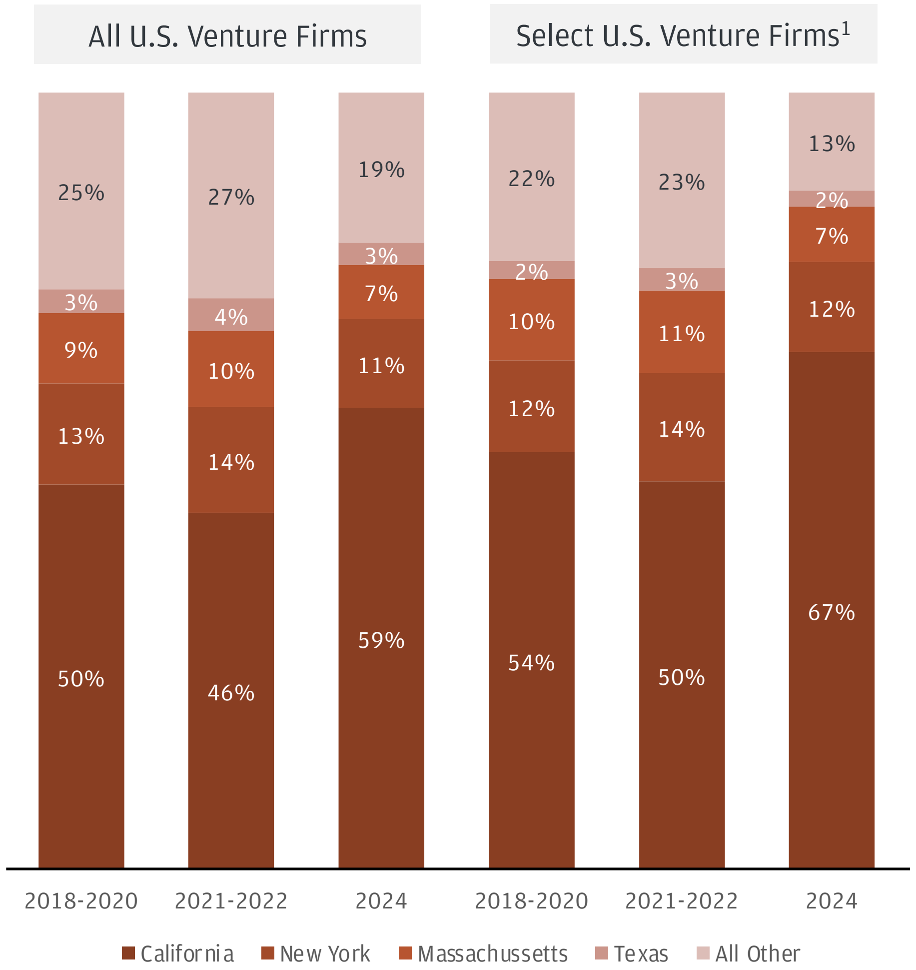
VENTURE FIRMS ARE MOVING DOWNSTREAM

TOTAL U.S. VENTURE FIRM CAPITAL INVESTED BY SERIES (%)



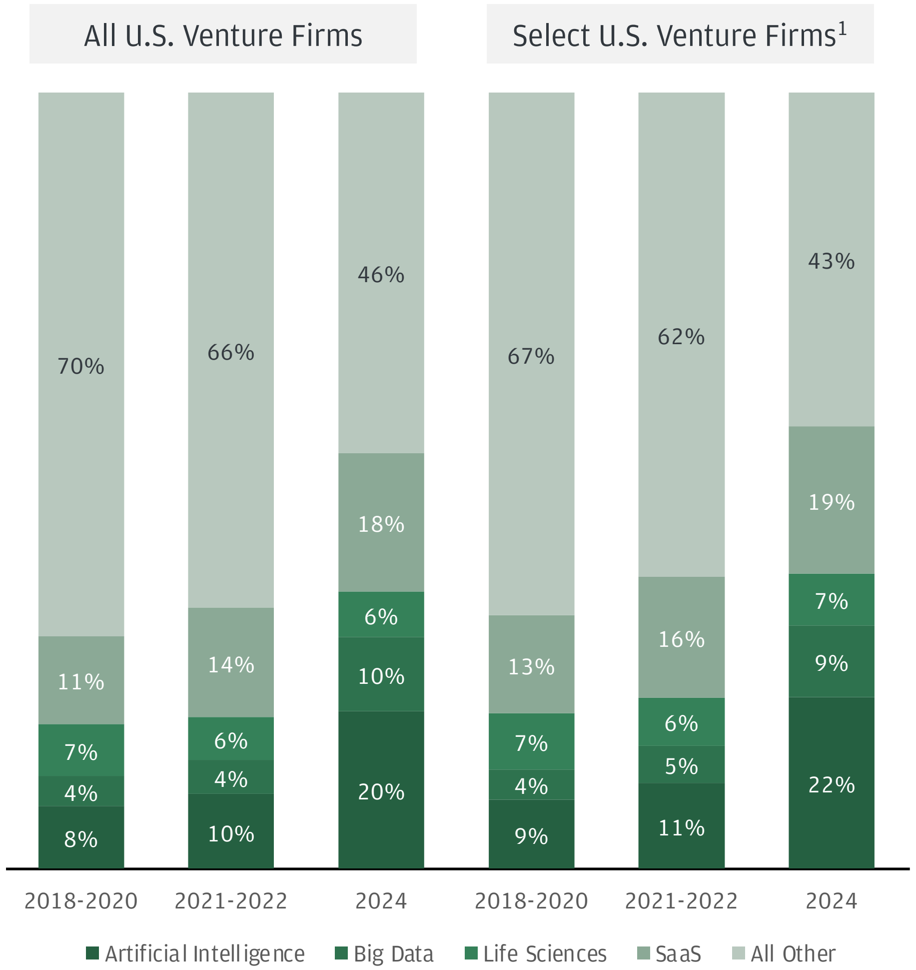
VENTURE FIRMS ARE FOCUSING MORE ON CALIFORNIA

TOTAL U.S. VENTURE FIRM CAPITAL INVESTED BY U.S. STATE (%)



VENTURE FIRMS DOUBLING DOWN ON ARTIFICIAL INTELLIGENCE

TOTAL U.S. VENTURE FIRM CAPITAL INVESTED BY SECTOR (%)[2]



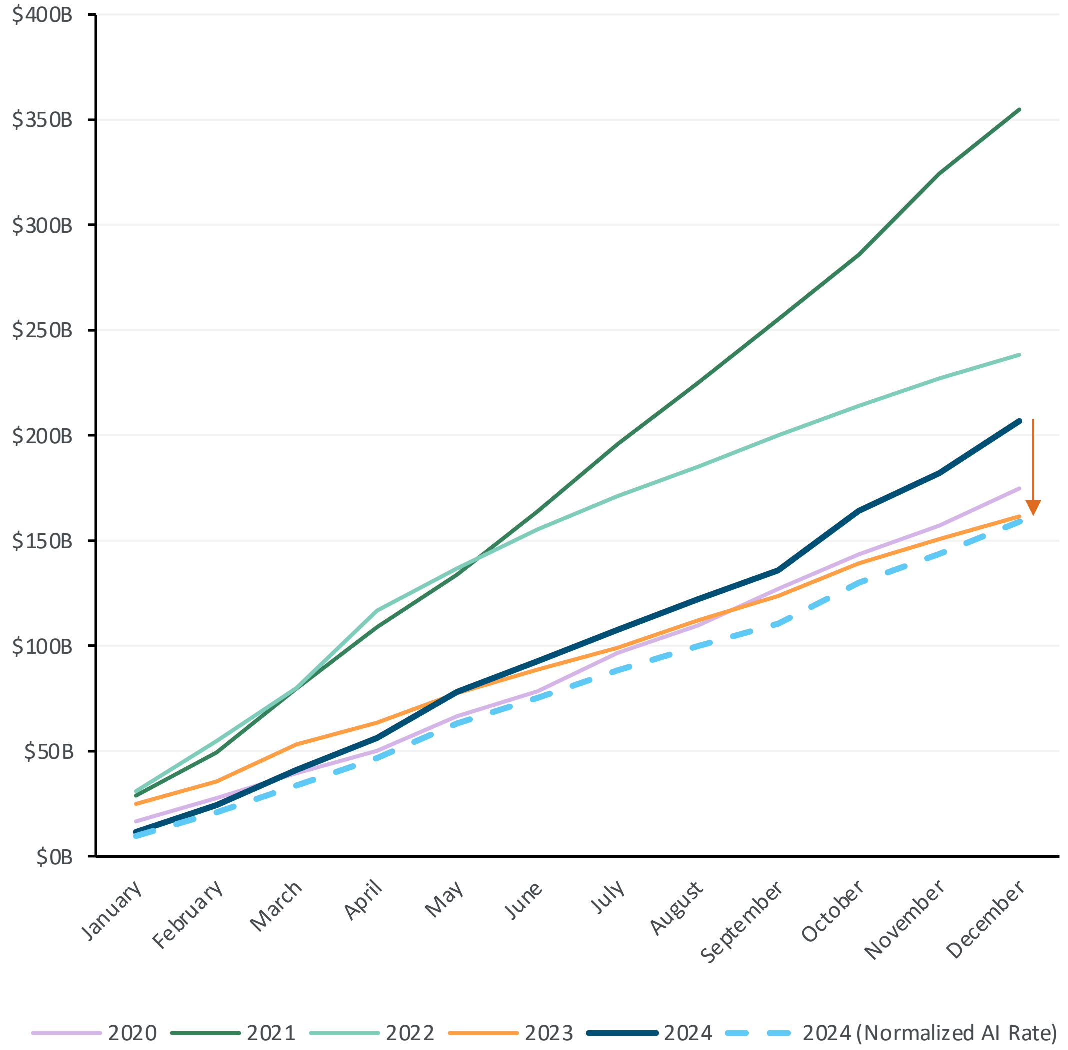
Given the heightened late-stage valuations following venture's peak in 2021 and early 2022, many investors reduced their late-stage activity to focus on earlier-stage companies, whose valuations posed less of an impediment. California's share of deal activity increased, largely due to the many well-funded AI companies based there. AI was a key theme in 2024, with most U.S. venture firms increasing their allocation to the space, including a select cohort of U.S. venture firms that typically can deploy larger amounts of capital on a deal-by-deal basis. Overall, venture capital became more concentrated in 2024 across stage, region and sector.

Notes: (1) Select U.S. Venture Firms is a cohort based on certain considerations, including strong investing track records and well-established brands, created and used by J.P. Morgan. (2) Sectors are not mutually exclusive.

AI companies increased their share of venture deals and dollars

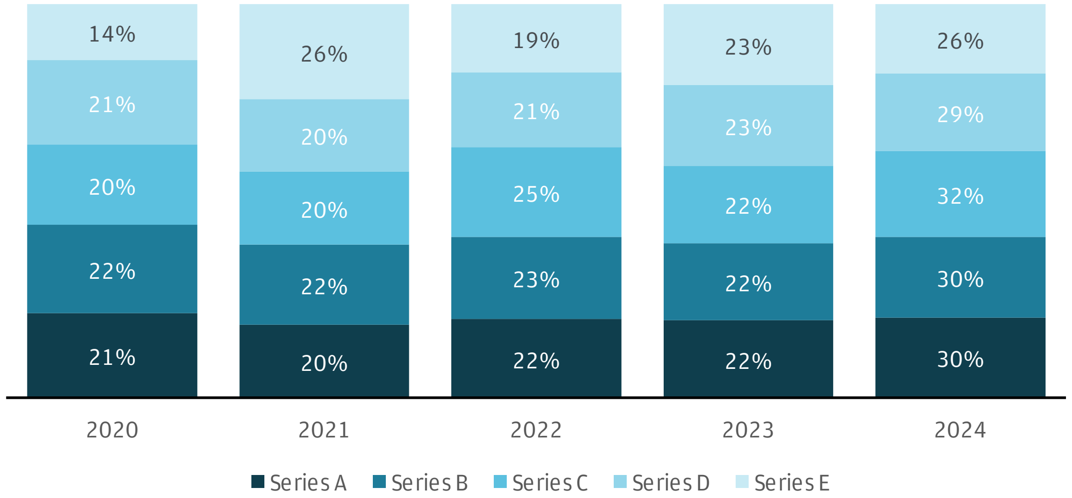
THE LEVEL OF AI INVESTMENT MADE THE DIFFERENCE IN 2024

MONTHLY U.S. VENTURE INVESTMENT BY YEAR[1]



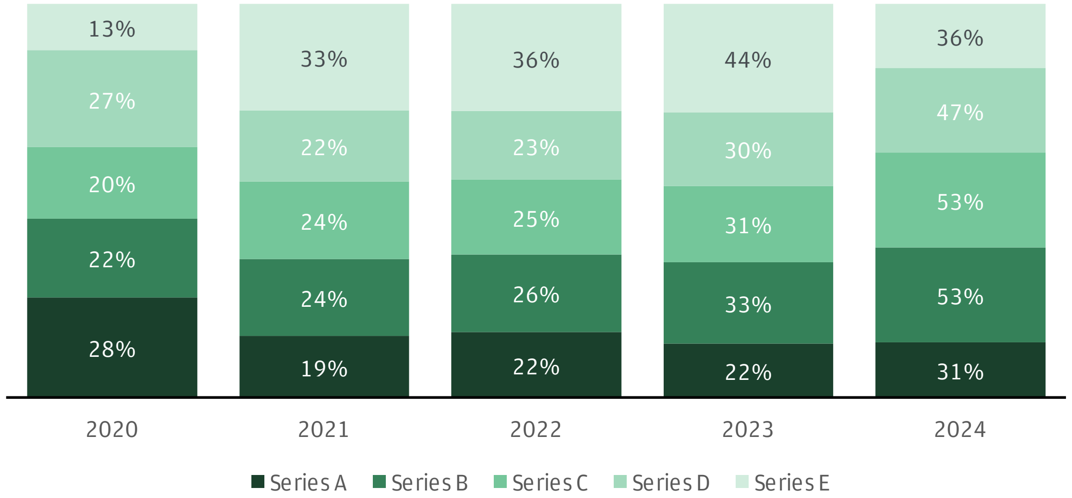
NEARLY A THIRD OF ALL VENTURE DEALS WERE FOR AI STARTUPS IN 2024

PROPORTION OF AI VENTURE DEALS VS. ALL VENTURE DEALS, BY SERIES



SIGNIFICANT STEP-UP IN AI'S SHARE OF INVESTMENT FOR MOST SERIES

PROPORTION OF AI VENTURE INVESTMENT VS. ALL VENTURE INVESTMENTS, BY SERIES



Venture investment started slow in 2024 but has since surpassed 2020 and 2023. A major driver has been the large amount of capital allocated to AI companies. Without this, 2024 may have hit a new low for the decade. Sixteen deals above $1 billion were raised in 2024, totaling $54 billion, compared to nine in 2023, which raised $26 billion. Most of the companies that raised funds had an AI element. Questions remain around the longevity of AI interest, especially as the development of proprietary models is capital-intensive. The number of venture funds raised with a preference for AI was in line with prior years; however, the amount of capital raised was over 2.5 times that of 2023. There will likely be demand for this capital, as the median $1 billion+ deal was a Series C, suggesting there may be more activity to come in 2025.

Note: (1) To evaluate the impact of AI investment in 2024, a line was added to show the level of investment in 2024 if AI investment was "normalized". To normalize, the AI investment rate was reduced by 50%.

Source: PitchBook. Data has not been reviewed by PitchBook analysts.

Late-stage companies have mostly rightsized themselves

MOST COMPANIES THAT RAISED DURING “PEAK VENTURE” HAVE RAISED AGAIN[1]

STATUS OF COHORT THAT RAISED A SERIES B, C, OR D VC ROUND BETWEEN 2021 AND Q2 2022

3,303
Companies raised

74%
Have raised a subsequent round of financing

83% Still private	**11%** Acquired	**3%** Buyout	**1%** Public	**2%** Out of business

PV/Recent financing details:	Average	25th pct	50th pct	75th pct
Deal size (million)	$66/$67	$16/$7	$35/$25	$75/$65
Valuation (million)	$200/$220	$88/$87	$200/$220	$498/$585

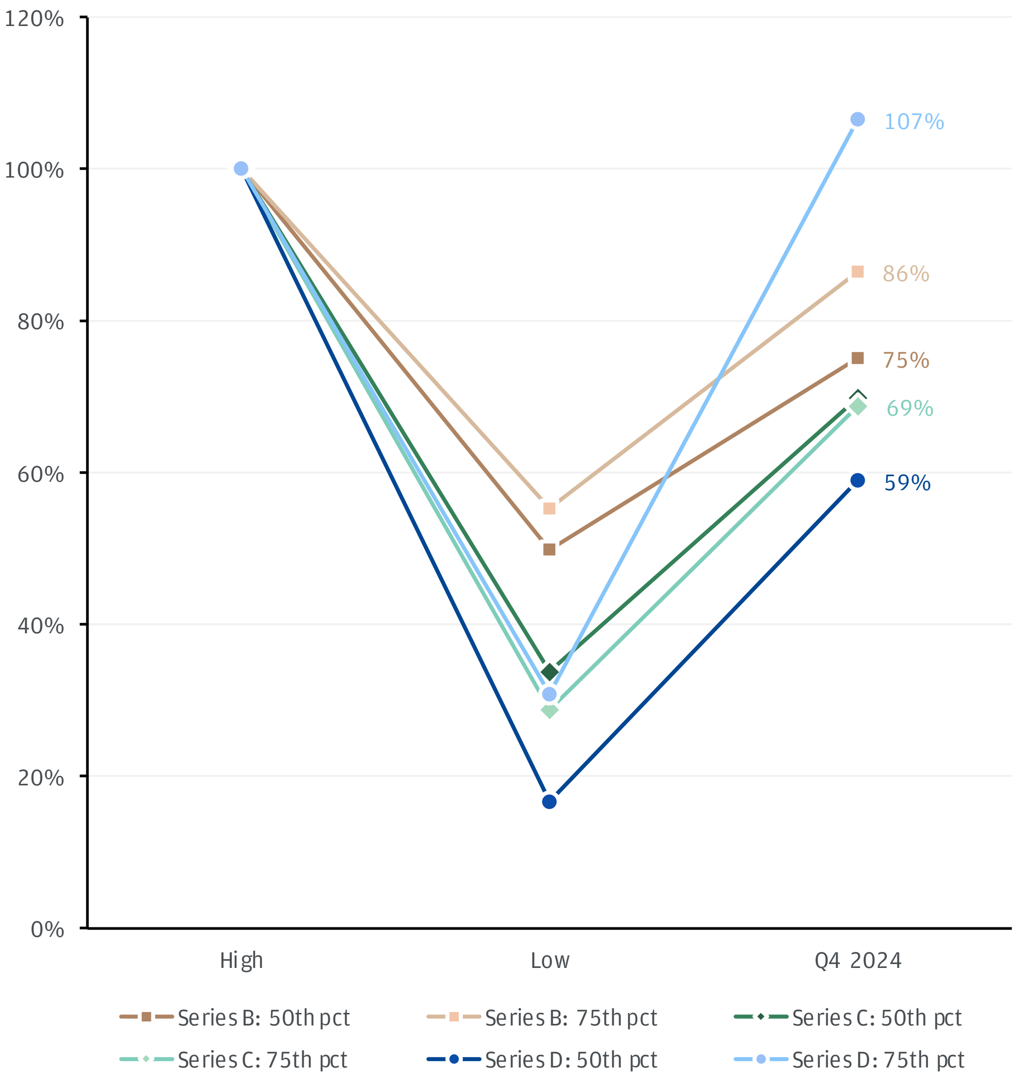
26%
Have not raised a subsequent round of financing

99% Still private	**1%** Acquired

PV financing details:	Average	25th pct	50th pct	75th pct
Deal size (million)	$60	$20	$40	$75
Valuation (million)	$202	$90	$202	$460

VALUATIONS TRACKING BACK UP TO THE PEAK

LATE-STAGE VALUATIONS INDEXED TO HIGH WATER MARK



One of the reasons given for the slowdown in late-stage venture investment was agreeing on a price with investors. As valuations across all stages fell substantially from their peak, determining a company's valuation became a moving target. However, 74% of companies that raised funds during the Peak Venture period were able to secure subsequent financing. Most of those who raised funds achieved a modest step-up in valuation but had to compromise by raising a smaller round than their prior one. Of this cohort, 15% exited, mainly via acquisition. For the companies that didn’t raise subsequent funding, only 1% exited. With valuations rising again, it could become easier for companies to meet or exceed prior valuations when raising fresh capital.

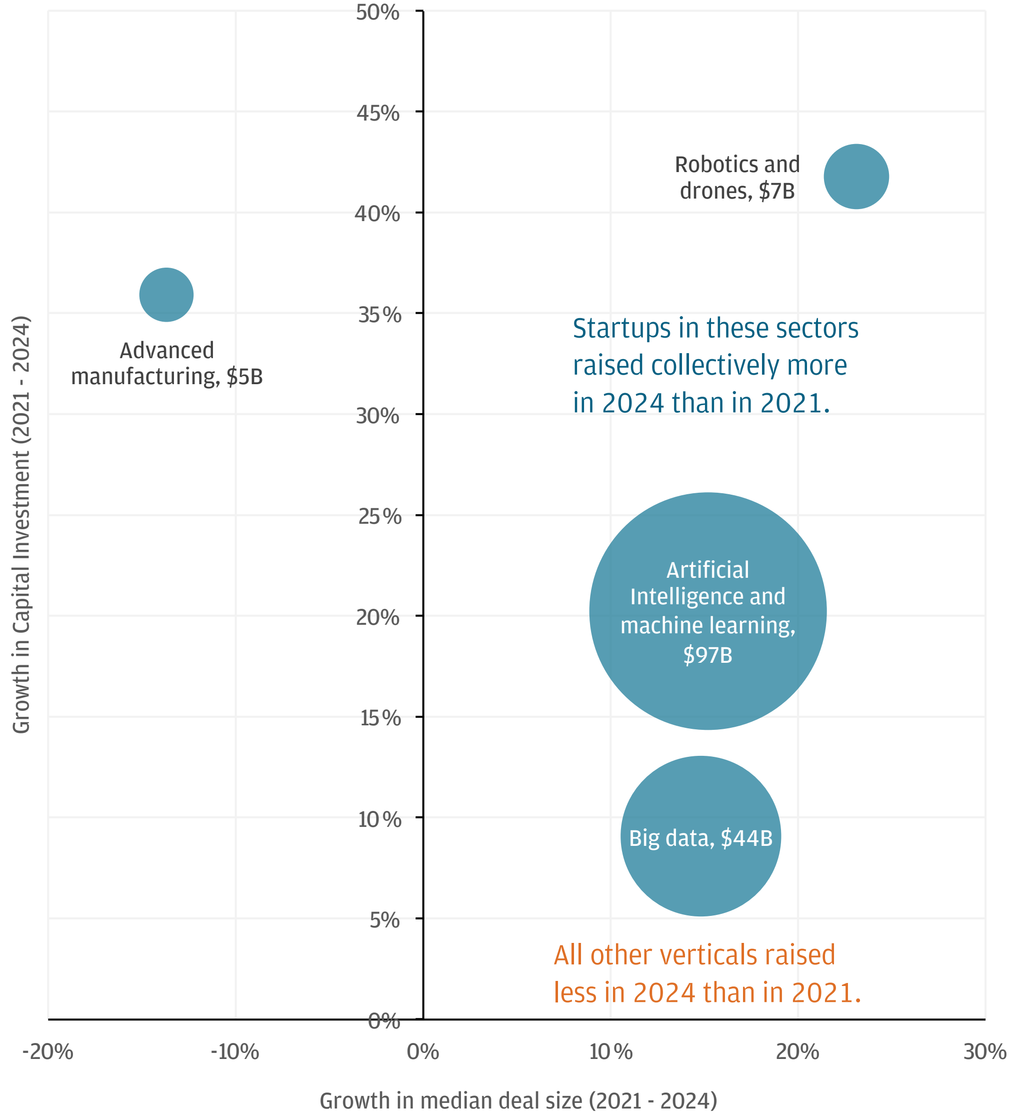
Note: (1) Peak Venture (PV) is used to describe the period between 2021 and Q2 2022 when venture investment was elevated (compared to prior levels) and consistently rose quarter-over-quarter.

Source: PitchBook. Data has not been reviewed by PitchBook analysts.

Sectors and cities on the rise in 2024

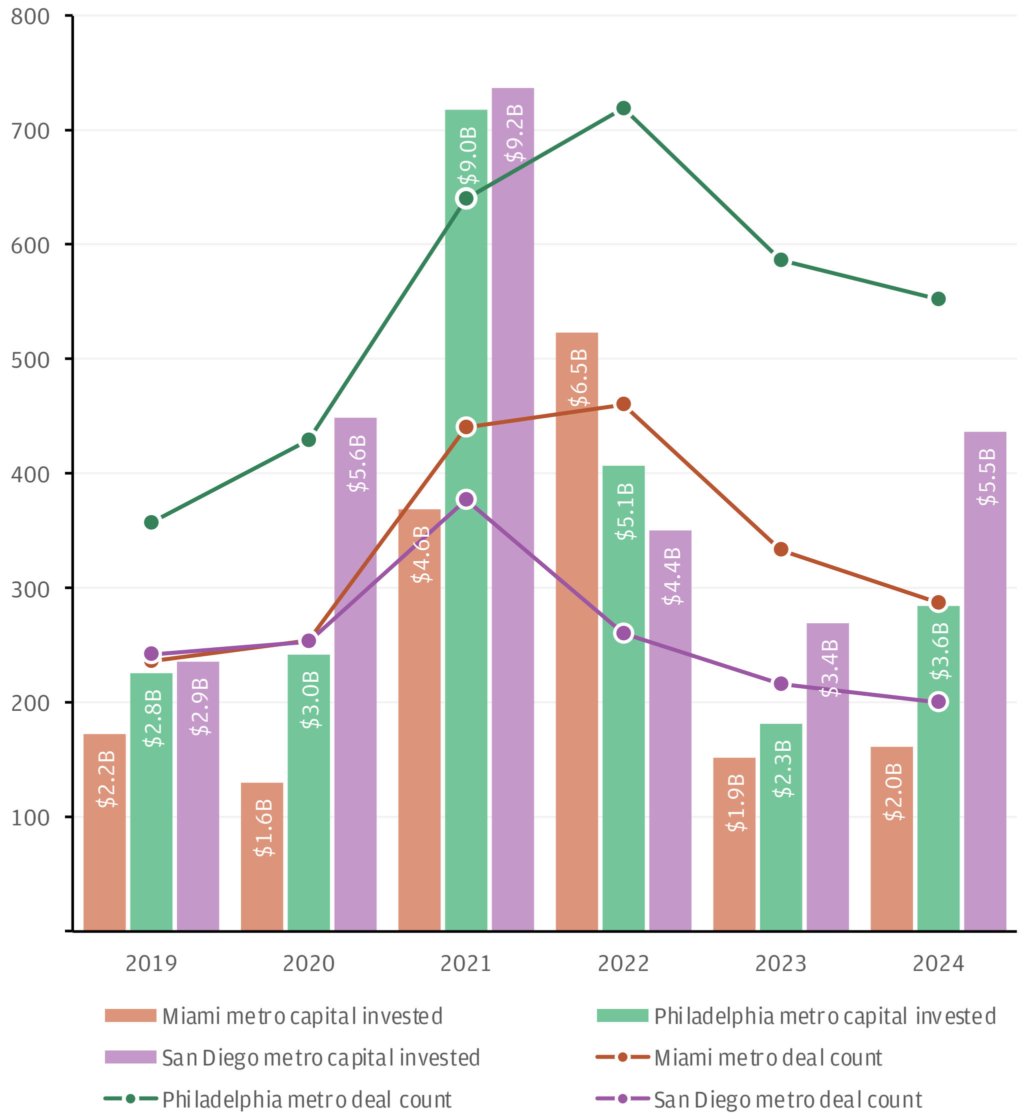
SECTORS BUCKING THE VENTURE SLOWDOWN TREND

SELECT VERTICALS BASED ON GROWTH IN CAPITAL INVESTMENT AND MEDIAN DEAL SIZE[1]



MIAMI, PHILADELPHIA, AND SAN DIEGO RISE UP THE RANKS

DEAL ACTIVITY FOR MIAMI, PHILADELPHIA AND SAN DIEGO METRO AREAS



Venture investment peaked during 2021 and 2022, with practically every sector experiencing an uplift. Since then, levels of investment have fallen, settling for most sectors around pre-pandemic levels. However, four sectors—advanced manufacturing, AI, robotics and drones, and big data—have continued to attract a similar or greater level of investment, which in turn has pushed the median deal size for almost each one higher. Outside the major hubs like San Francisco, New York City, and Boston, a few places have stood out. The Philadelphia and San Diego metro areas attracted venture investment in 2024 above pre-pandemic levels, raising their rankings[2] from 10th to seventh, and ninth to fifth, respectively. Miami's deal activity in 2024 also increased above pre-pandemic levels, raising its ranking from 11th to eighth.

Notes: (1) Sectors are not mutually exclusive. (2) Rankings based on the level of venture investment or deal activity of a region compared to all other regions from 2019 to 2024.

Source: PitchBook. Data has not been reviewed by PitchBook analysts.

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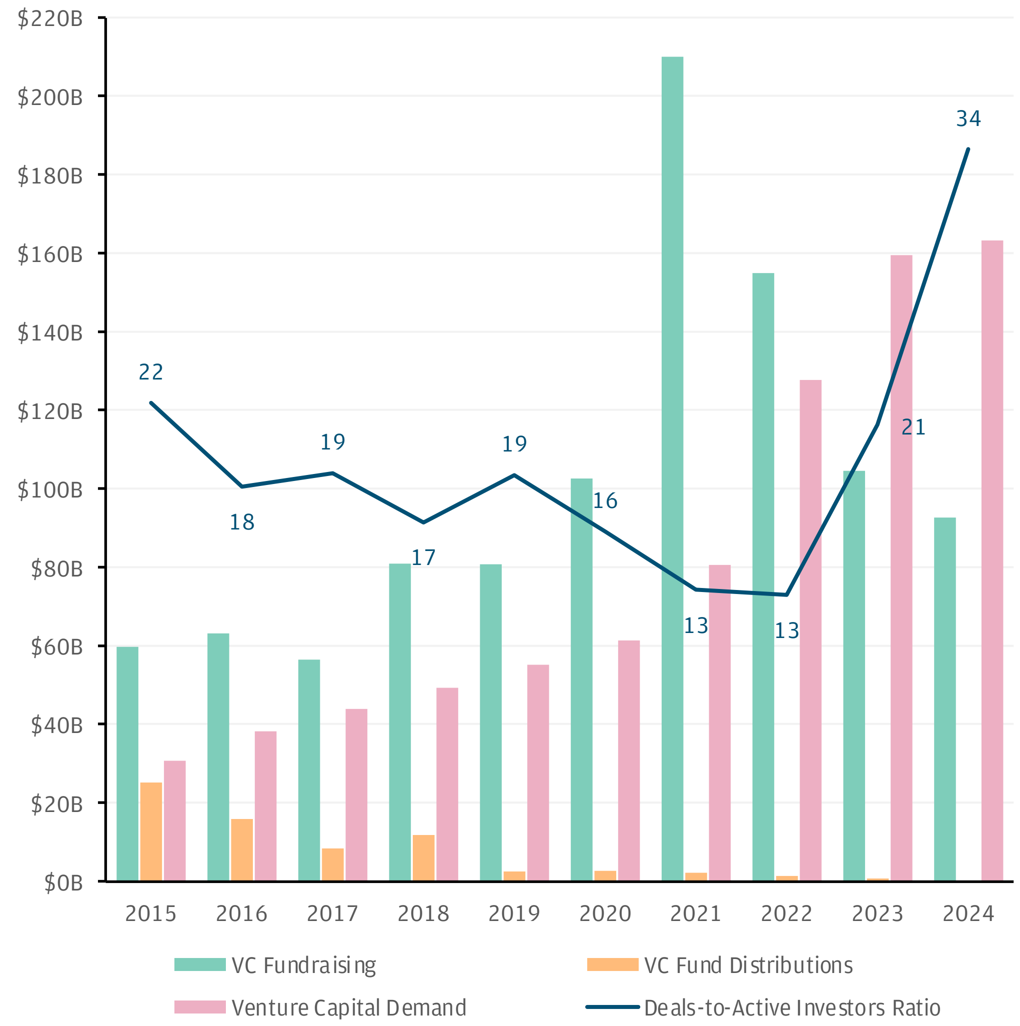
03 | Venture fundraising

Venture capitalists willing but still waiting?

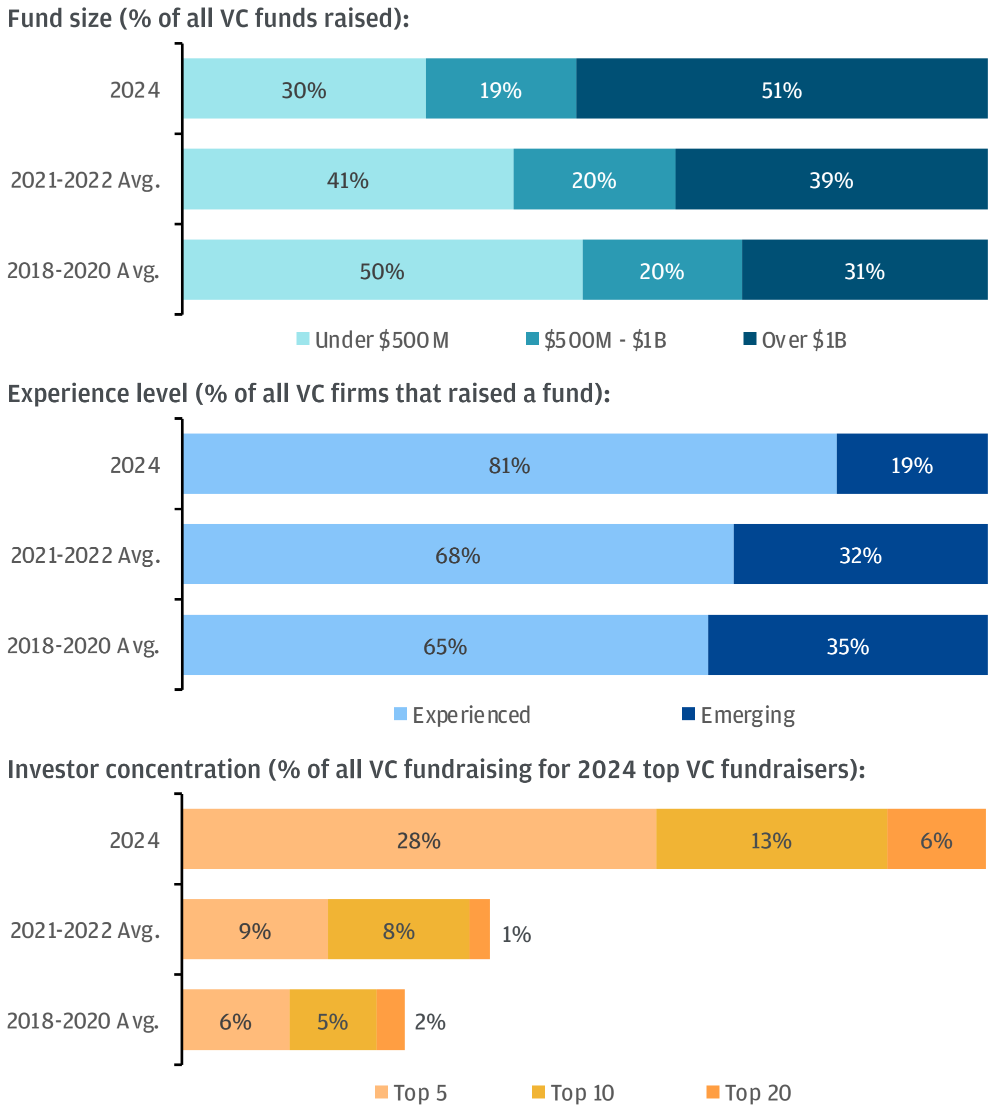
EXPECTED DEMAND OUTPACES FUNDRAISING AS INVESTORS GO DORMANT

U.S. VENTURE CAPITAL SUPPLY AND DEMAND DYNAMICS[1]



FUNDRAISING FLOWS TO LARGER AND EXPERIENCED FUNDS

U.S. VENTURE CAPITAL FUNDRAISING BREAKDOWN BY SELECT CRITERIA[2]



VC dry powder stands at an all-time high of $328 billion[3]. However, distributions have practically fallen to zero as liquidity has been tough to come by due to stifled M&A activity and quiet IPO markets. The lack of capital returned to LPs has caused some to pause. Starting in 2023, the level of VC fundraising fell below expected demand. The number of VC investors actively investing has also fallen, although many may return in 2025. More experienced firms, raising larger funds, have weathered the environment better, relying on their scale, reputations, and deep networks. This has manifested as higher average fund sizes for the industry. Emerging managers, who typically raise smaller funds, have had a tough time. As a result of this shift, a notable 28% of all VC fundraising in 2024 went to the top five investors.

Notes: (1) Venture capital demand based on PitchBook's proprietary methodology. Emerging is defined as firms that have launched fewer than four funds. Experienced is defined as firms that have launched four or more funds. (2) Investor concentration based on the 2024 top VC fundraisers cohort. (3) As of March 2024.

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04 | Exit activity

KEITH CANTON

Managing Director,

Head of Americas Equity Capital Markets

2025 is expected to be a strong year for equity markets

The year is expected to be a strong year for equity markets issuance with a convergence of tailwinds, including a resilient economy, modest Fed easing and an IPO market that delivered substantial investor returns in 2024. The backlog of quality IPO candidates is as robust as ever, particularly within the technology sector. Our pipeline continues to build with issuers seeking to take advantage of favorable market conditions and increased investor appetite for the IPO asset class.

While there are many reasons to be optimistic, we also remain attentive to potential headwinds, such as inflation uncertainties, interest rate risk and geopolitical challenges. As we navigate these dynamics, we continue to work with our clients across sectors to position their stories around scalability, profitability and durability while providing objective advice on their capital markets goals.

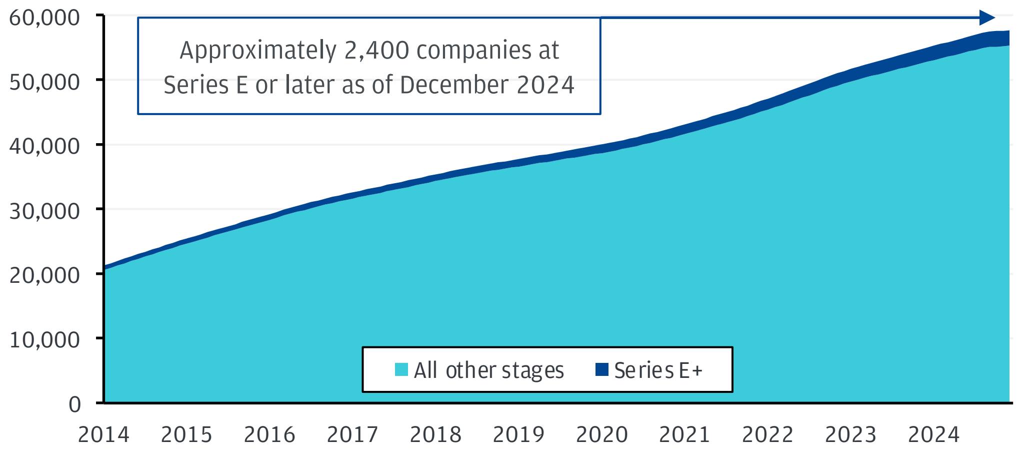
Select J.P. Morgan-led transactions

2024	$968mm	WAYSTAR	IPO - HealthTech	Lead Left Bookrunner
2024	$820mm	AsteraLabs	IPO - AI / Semis	Lead Active Bookrunner
2024	$564mm	onestream	IPO - Software	Lead Active Bookrunner
2024	$411mm	TEMPUS	IPO - AI / HealthTech	Joint Lead Bookrunner
2024	$367mm	kyverna	IPO - Biotech	Lead Left Bookrunner
2024	$331mm	septerna	IPO - Biotech	Lead Left Bookrunner

Public markets hungry for high-growth technology companies

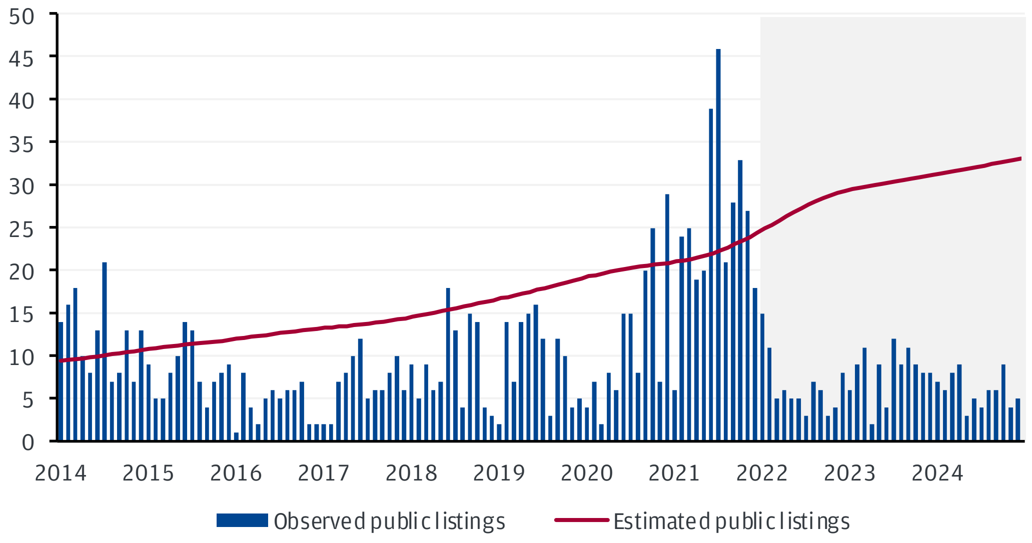
NUMBER OF U.S. VENTURE-BACKED COMPANIES AT AN ALL-TIME HIGH

CUMULATIVE COUNT OF U.S. VENTURE-BACKED COMPANIES



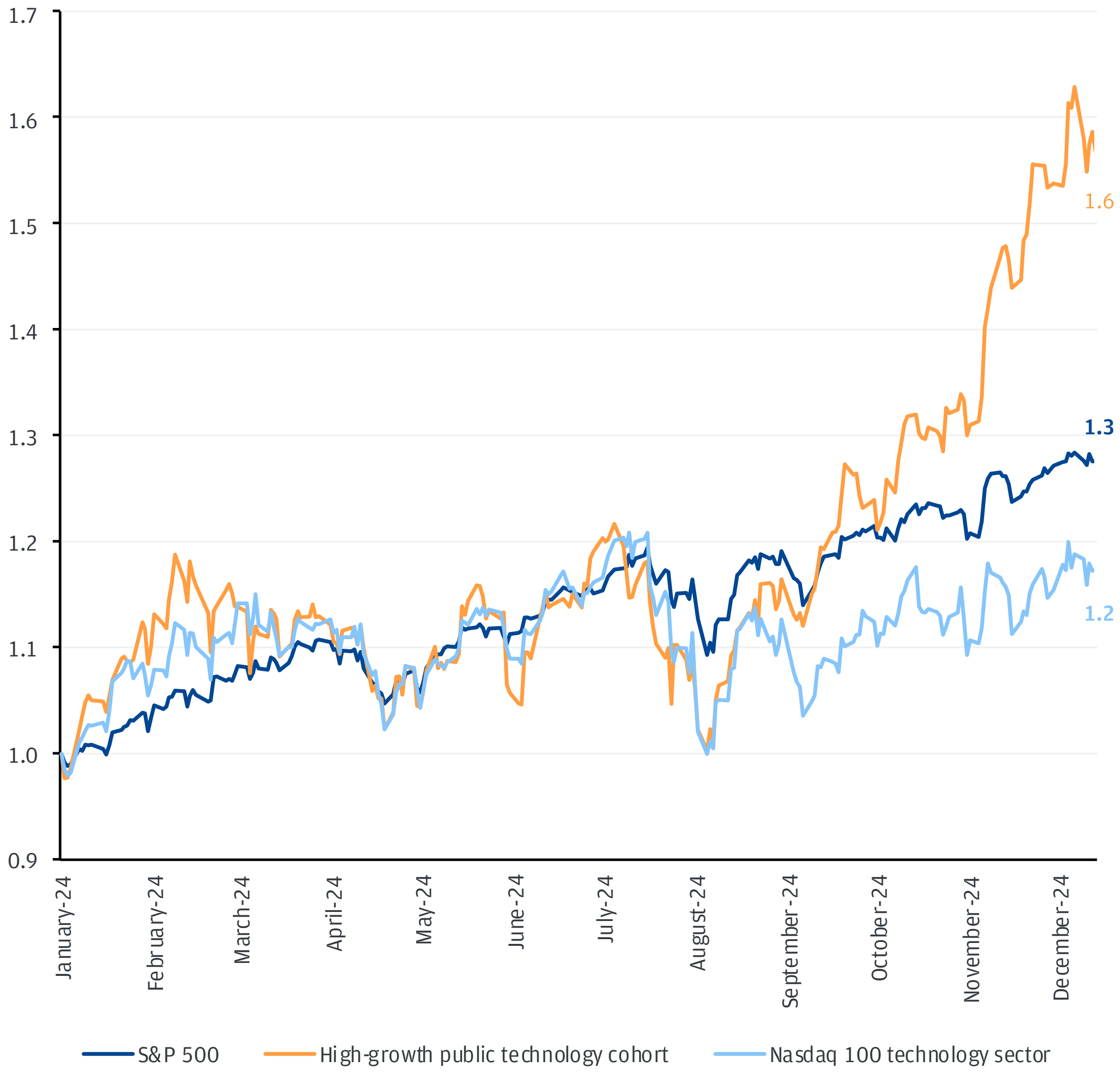
ESTIMATED IPO BACKLOG CONTINUES TO GROW

VENTURE-BACKED IPOS ESTIMATED VS. OBSERVED COUNT



HIGH-GROWTH PUBLIC TECH COMPANIES ARE OUTPERFORMING THE BROADER MARKET

2024 STOCK PERFORMANCE OF HIGH-GROWTH PUBLIC TECHNOLOGY COHORT[1,2,3]



Despite the growing number of venture-backed private companies, IPOs in 2024 have been low, with 13 IPOs over $1 billion compared to 40 in 2020 and 87 in 2021. Conditions appear to have been favorable in 2024, as high-growth public technology companies have performed well. Some reasons previously offered for delaying going public include uncertainty around valuation, the availability of private capital, and concerns over the extra rigor associated with being public (such as quarterly reporting requirements). However, since the downturn in 2022, many late-stage venture-backed companies have optimized their valuations and managed costs. Going public is still a primary goal for many; the strong performance of public tech companies and healthy demand for recent IPOs suggest that 2025 might see higher IPO activity.

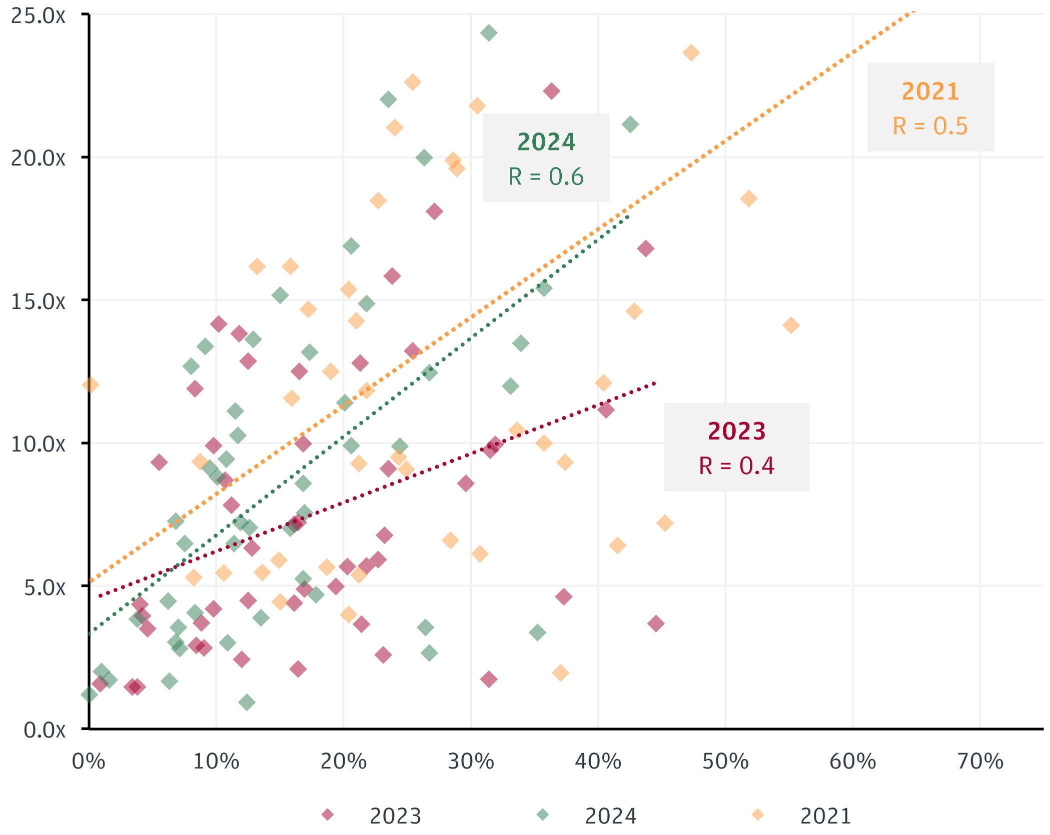
Notes: (1) Includes select public technology companies listed on a major U.S. exchange. (2) High growth is defined as achieving a trailing twelve-month (LTM) revenue growth rate exceeding 20 percent. (3) Performance indexed to January 2024.

Sources: Bloomberg and PitchBook. Data has not been reviewed by PitchBook analysts.

Growth back in vogue for public market investors

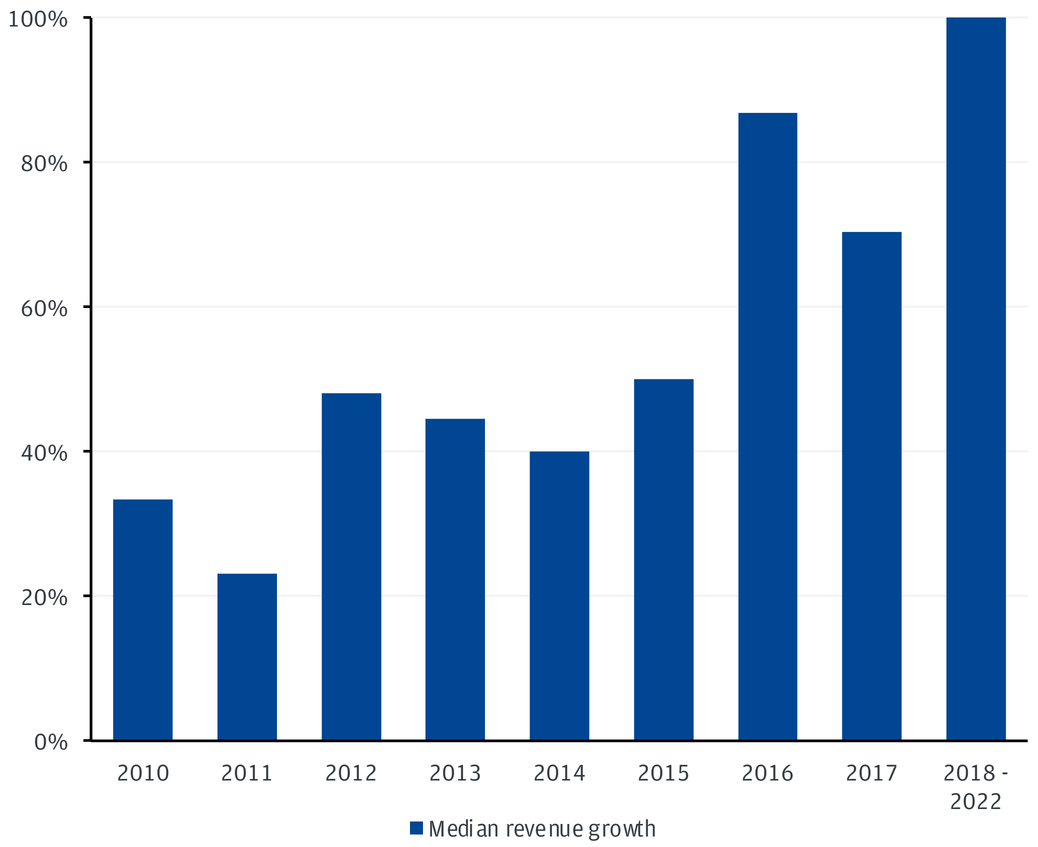
REVENUE GROWTH IS INCREASINGLY CORRELATED WITH HIGHER VALUATIONS

PUBLIC TECHNOLOGY COMPANY COHORT: LTM REVENUE GROWTH VS. ENTERPRISE VALUE/REVENUE MULTIPLE FOR SELECT YEARS[1]



MANY U.S. BASED UNICORNS ARE EXHIBITING OUTSIZED REVENUE GROWTH

MEDIAN LTM REVENUE GROWTH BY FOUNDING YEAR FOR U.S. BASED UNICORNS[2]



As the slowdown in venture took hold in 2023, many investors (both private and public) chose to focus on less risky companies that were profitable or on a path to becoming so. However, in 2024, a focus on growth has returned, evidenced by high-growth companies receiving higher valuation multiples. This is encouraging for the many high-growth enterprises that are preparing to go public, particularly those that can demonstrate consistent performance. IPOs play an important role in recycling capital. Between 2019 and 2021, venture-backed IPOs accounted for approximately 79% of the total proceeds for all venture-backed exits, compared to 18% for M&A transactions[3]. However, from 2022 to 2024, IPO and M&A transactions represented 44% and 49% of the total proceeds, respectively.

DISTRIBUTION OF PUBLIC TECHNOLOGY COMPANY COHORT BY 2024 PROFITABILITY AND GROWTH[1]

LTM EBITDA Margin / LTM Revenue Growth	<10%	10-15%	15-20%	20%+
>20%	7	5	1	1
15 - 20%	2	1	1	1
10 - 15%	0	2	3	3
<10%	6	6	2	19

OVERVIEW OF VENTURE-BACKED IPOS LISTED ON A MAJOR U.S. EXCHANGE BY YEAR

Year	IPO Count	Proceeds	# of IPOs > $1B
2024	48	$14B	13
2023	51	$5B	7
2022	40	$2B	4
2021	217	$96B	87

Notes: (1) Includes select public technology companies listed on a major U.S. exchange. 2) Unicorns founded between 2018 and 2022 grouped together due to low data counts within each respective year. (3) Many M&A transactions do not disclose the price, so this figure is likely higher.

Sources: Bloomberg and PitchBook. Data has not been reviewed by PitchBook analysts.

VINEET SETH

Managing Director,

Head of Technology M&A

We anticipate a significant increase in M&A activity

Looking ahead, we anticipate a significant increase in M&A activity within the technology sector, particularly in software. Venture capital, growth equity and private equity firms are holding portfolio assets longer than usual, which is expected to lead to a surge in deal volumes as these private businesses are brought to market. We're already observing this trend in our mandate activity and the RFP requests we receive.

There's also substantial pent-up demand among public companies, as many strategics have been sidelined by previous regulations. We expect this to change with the new U.S. regulatory regime. Additionally, interest in corporate clarity, often driven by activist investors, is likely to result in more carve-outs and spinoffs.

While we foresee a rise in activity, we remain cautious about valuation increases due to elevated capital costs from inflation. We continue to work closely with our clients to strategically position them in this evolving landscape.

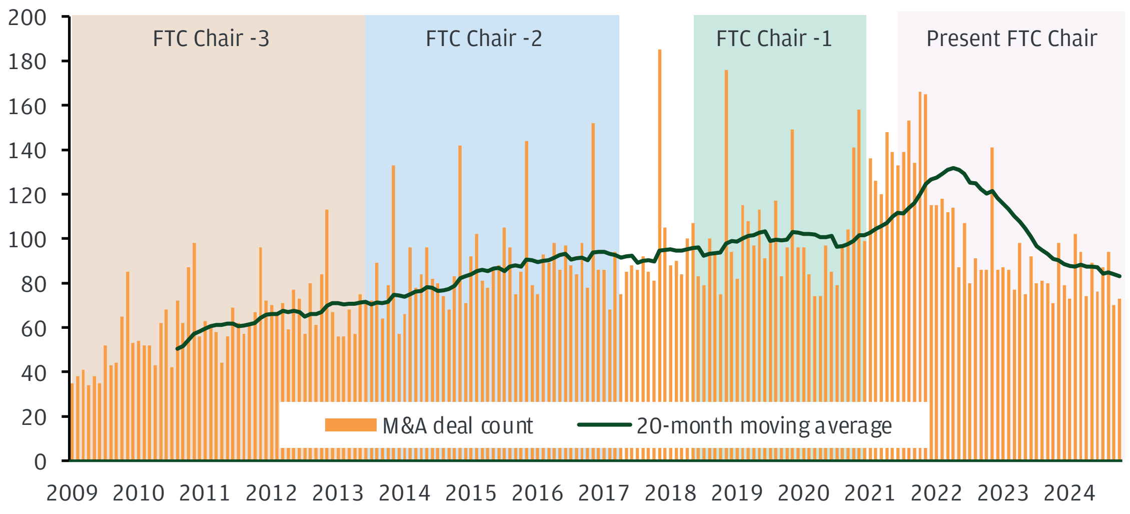
Select J.P. Morgan-led transactions

2024	$6,900mm	SQUARESPACE sale to PERMIRA	M&A - Software	Sell Side Advisor
2024	$6,400mm	IBM acquisition of HashiCorp	M&A - Software	Buy Side Advisor
2024	$450mm	noname sale to Akamai	M&A - Software / Cyber	Sell Side Advisor
2024	$325mm	airbase sale to paylocity	M&A - Software / FinTech	Sell Side Advisor
2024	Undisclosed	CompTIA sale to THOMABRAVO H.I.G. CAPITAL	M&A - IT Consulting	Sell Side Advisor
2024	Undisclosed	cdata sale to WARBURG PINCUS	M&A - Software	Sell Side Advisor

M&A continues to moderate, but conditions are improving

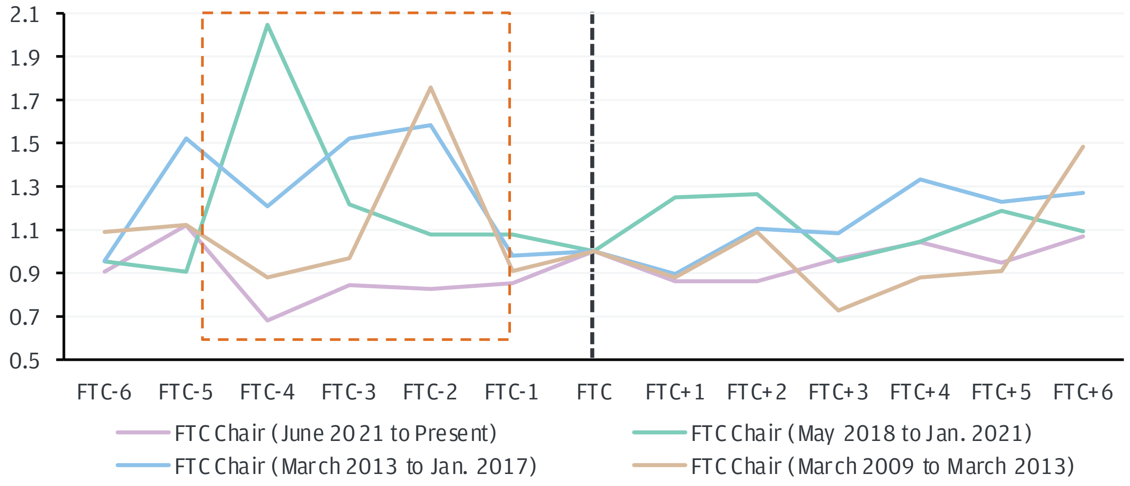
M&A HAS BEEN FALLING, BUT IN LINE WITH PRE-PANDEMIC LEVELS

M&A DEAL ACTIVITY DURING DIFFERENT FTC CHAIR TENURES[1,2]



M&A ACTIVITY TYPICALLY SPIKES PRIOR TO A NEW FTC CHAIR APPOINTMENT

M&A DEAL ACTIVITY INDEXED TO SIX MONTHS BEFORE AND AFTER APPOINTMENT OF FTC CHAIR



DECLINING M&A PROCEEDS LIMIT THE RETURN OF CAPITAL

STRATEGIC M&A PROCEEDS VS. MEDIAN TRANSACTION SIZE[3]

Since its peak in 2021, M&A activity has been slowly moderating, hampered by elevated interest rates, misalignment in valuation expectations and a challenging regulatory environment. With the new incoming presidential administration, a new FTC chair is likely to be appointed. Historically, the months leading up to the appointment of a new FTC chair have seen increased M&A activity, but over the longer term, activity generally remains unaffected. This is because only a small proportion of M&A transactions (although potentially a large share of proceeds) are typically impacted by FTC oversight. Previously, deals by large tech companies have fallen into this category, which might explain the sharp decline in the number of these types of transactions in favor of direct equity investments instead.

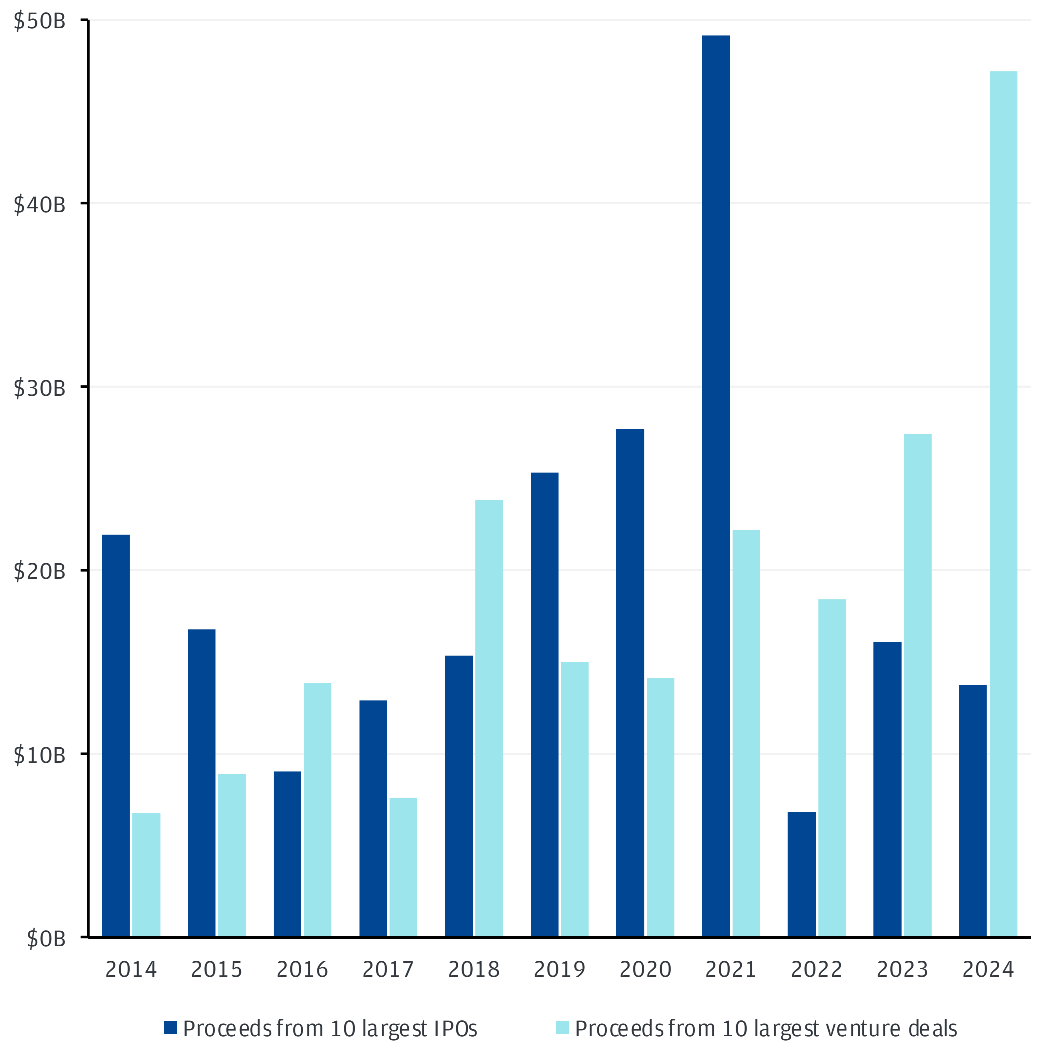
Notes: (1) M&A = Mergers and Acquisitions; FTC = Federal Trade Commission. (2) Only includes deals in which the target company is venture-backed. (3) Only includes deals in which the target company is venture-backed and a price is disclosed.

Source: PitchBook. Data has not been reviewed by PitchBook analysts.

Secondaries provide some release for tied-up shareholders

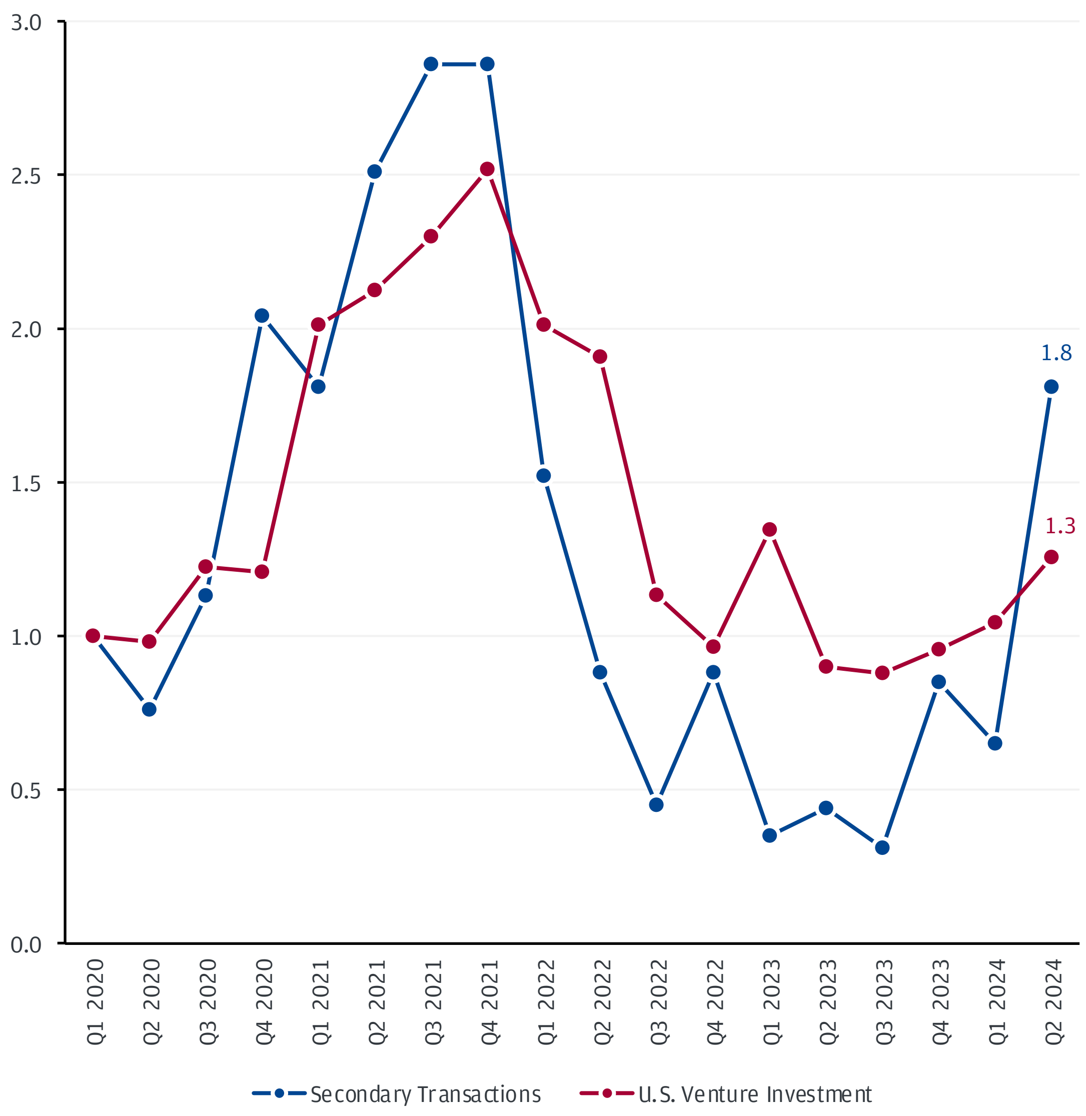
MORE CAPITAL GOING AND LESS CAPITAL COMING OUT

PROCEEDS FROM THE TEN LARGEST U.S. IPOS VS. THE TEN LARGEST U.S. VENTURE DEALS[1,2]



RELEASE VALVE: SECONDARY MARKET ACTIVITY CLIMBS

SECONDARY TRANSACTION VOLUME AND U.S. VENTURE INVESTMENT[3,4]



Historically, IPOs were the main way companies gained access to large sums of capital and provided their shareholders with liquidity. The rate of IPOs has fallen drastically since 2021, with more companies able to meet their funding needs in private markets. Despite the strong performance of public markets, the necessary IPO volumes to unlock the substantial amount of private capital haven't materialized. Liquidity remains important for investors, who have seen holding periods for their investments extend beyond historical norms. Consequently, secondary market activity has risen as some see it as a viable option for liquidity. Some of this depends on the price a seller can get. During 2023, a larger proportion of sales were at a discount. However, this trend reversed by the end of 2023, and now the majority are sold at a premium or par.

Notes: (1) Includes IPOs on major U.S. exchanges, regardless of sector or backing-status prior to IPO. (2) Proceeds refers to sum of capital raised via IPO or venture round. (3) Indexed to Q1 2020. (4) Secondaries refers to the trading of existing shares in private, venture-backed companies.