PitchBook

Has the music stopped?

Venture capital in the new macro environment

March 22, 2023

PitchBook

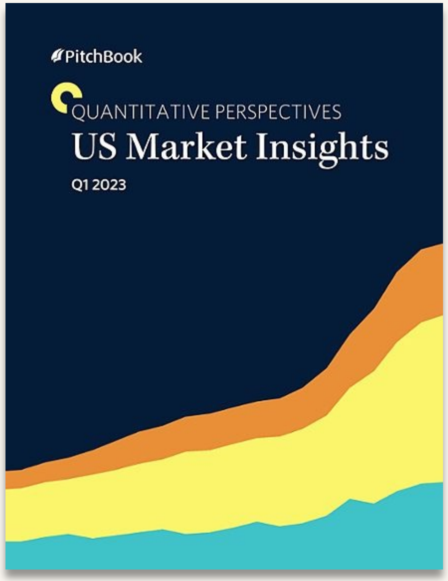
PitchBook: The leading resource for public and private market analysis

Presenters

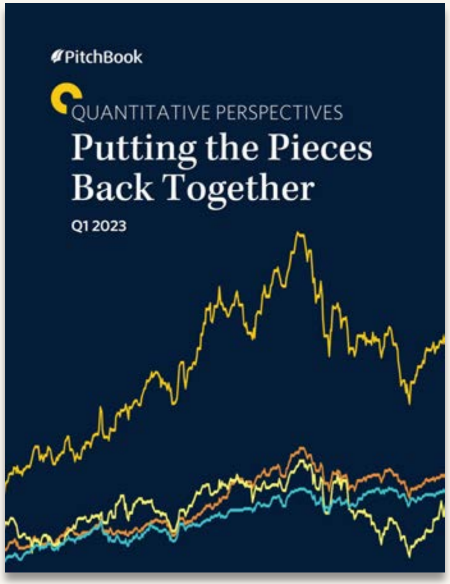
Alex Warfel, CFA
Quantitative Research Analyst

Zane Carmean, CFA, CAIA
Lead Analyst, Quantitative and Funds Research

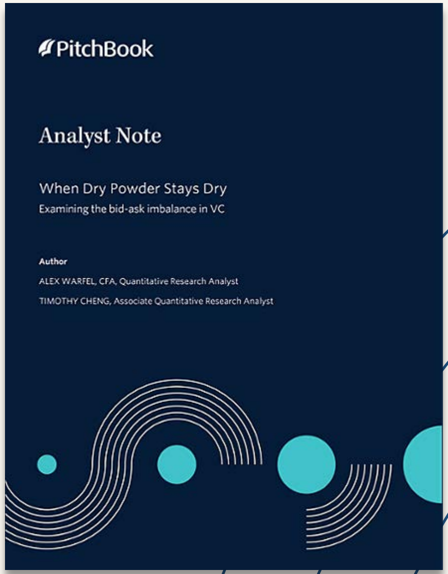
Relevant Reports



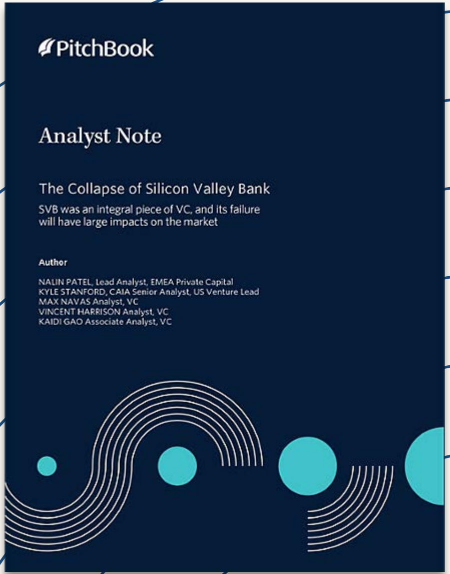
[Quantitative Perspectives: US Market Insights]



[Quantitative Perspectives: Putting the Pieces Back Together]



[Analyst Note: When Dry Powder Stays Dry]



[Analyst Note: The Collapse of Silicon Valley Bank]

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Agenda

1) Macro Backdrop
2) The IPO Backlog
3) The Negotiating Table

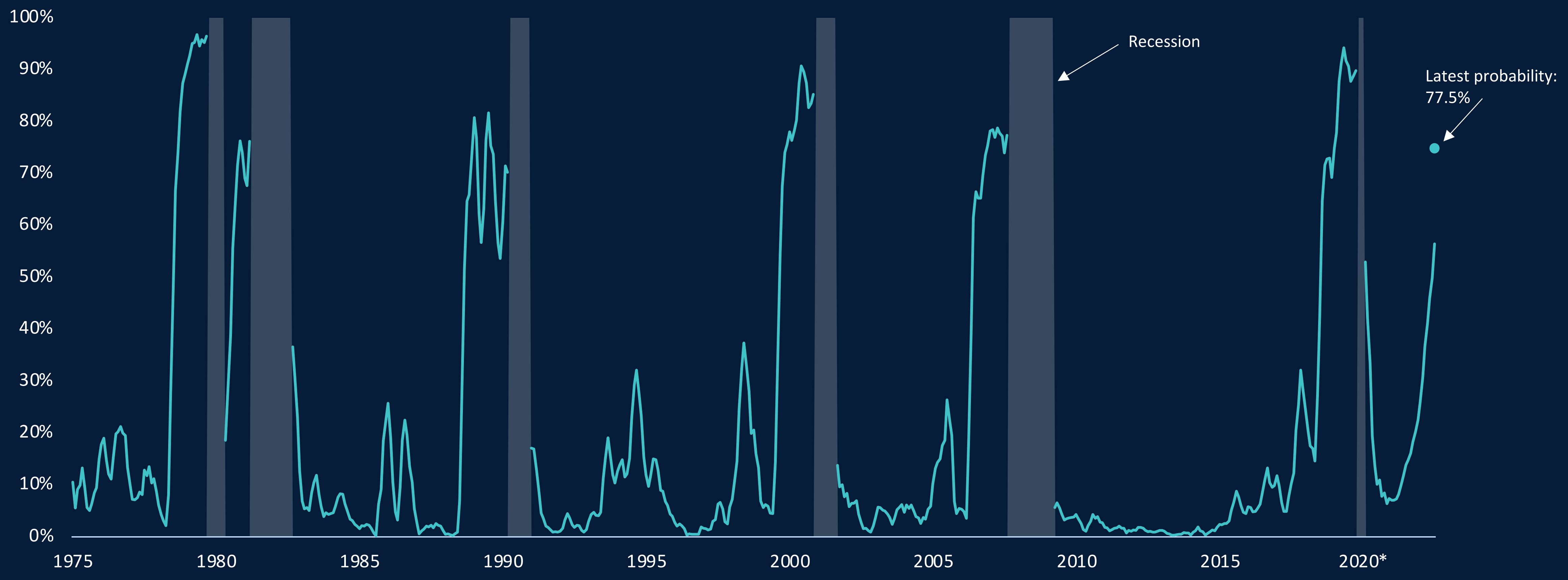
Macro Backdrop

Poll: What is your outlook for the US economy in 2023?

A	No recession and return to growth
B	Shallow recession
C	Deep recession

The window for a soft landing has narrowed—our quantitative model predicts a recession in late 2023 or early 2024 is more likely than not.

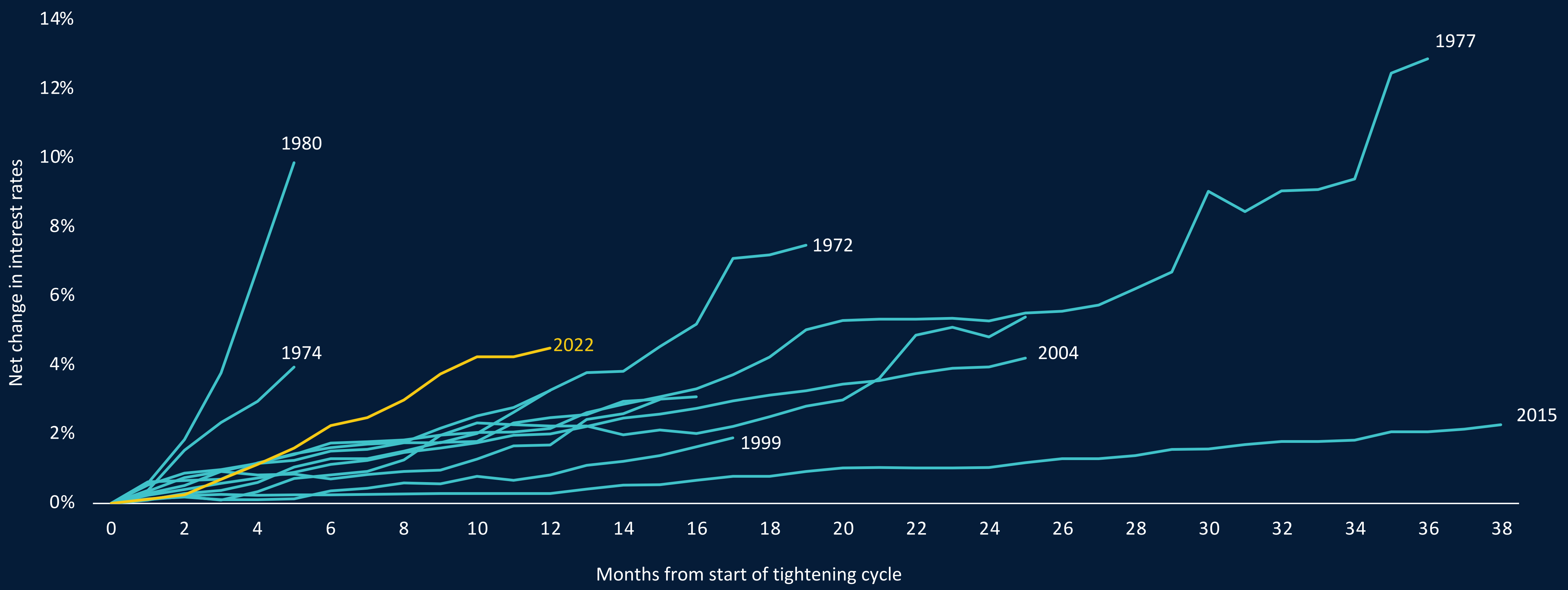
Probability of a US recession occurring in the next 18 months



Source: PitchBook | Geography: US
*As of February 28, 2023
Note: Predictions are out-of-sample and not made during a recession.

All eyes are on the Fed and how much longer the current tightening cycle may last.

Path of the federal funds rate in the current and prior Fed tightening cycles*

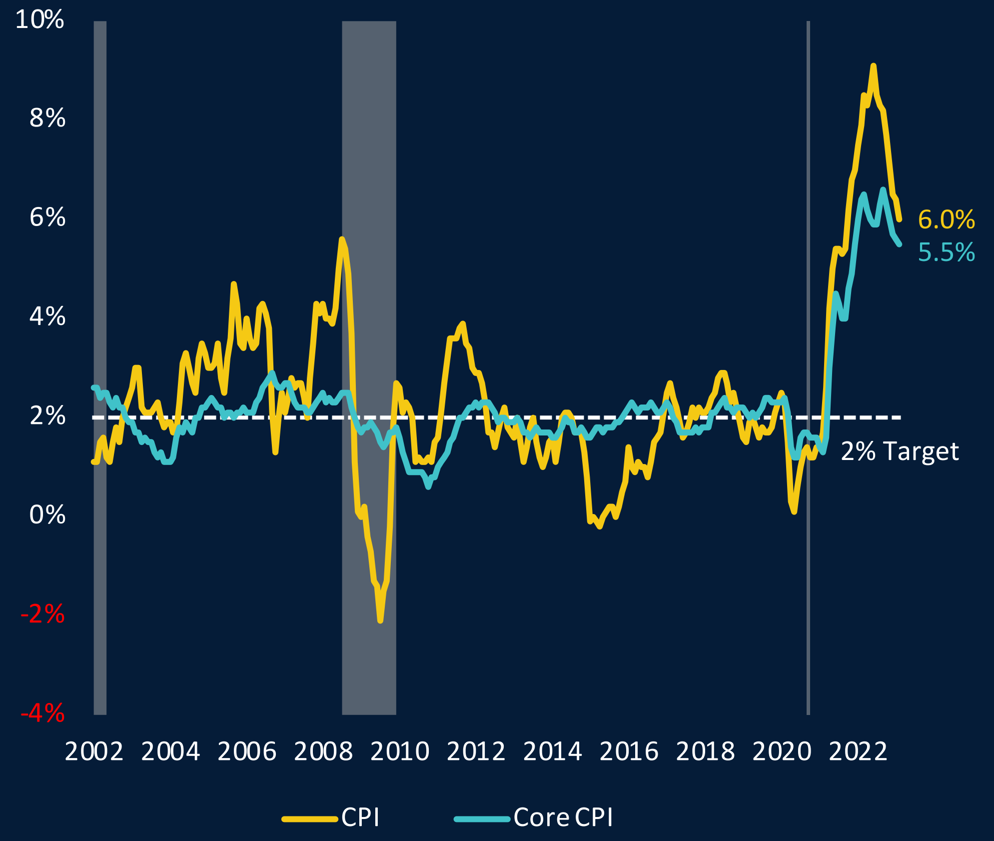


Source: Federal Reserve | Geography: US

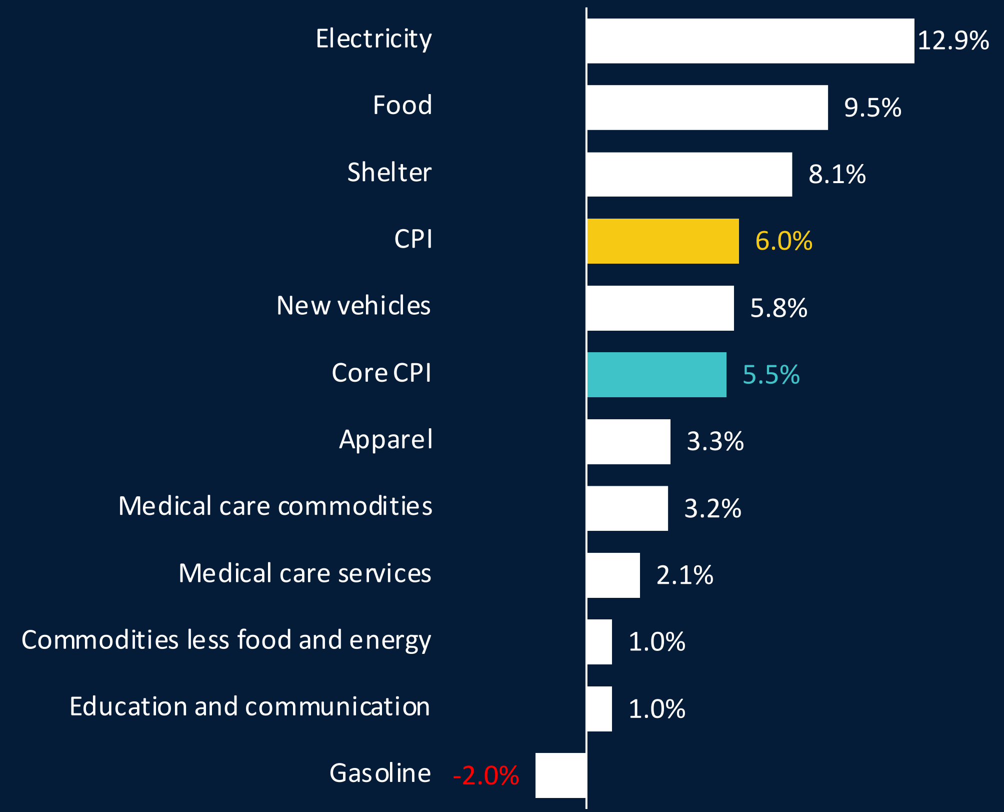
*As of March 13, 2023

On the bright side, there appears to be a break in the clouds regarding inflation. However, there is still considerable improvement needed to get down to the Fed's 2% target.

Consumer Price Index (CPI)*



CPI one-year change by select categories for February 2023*

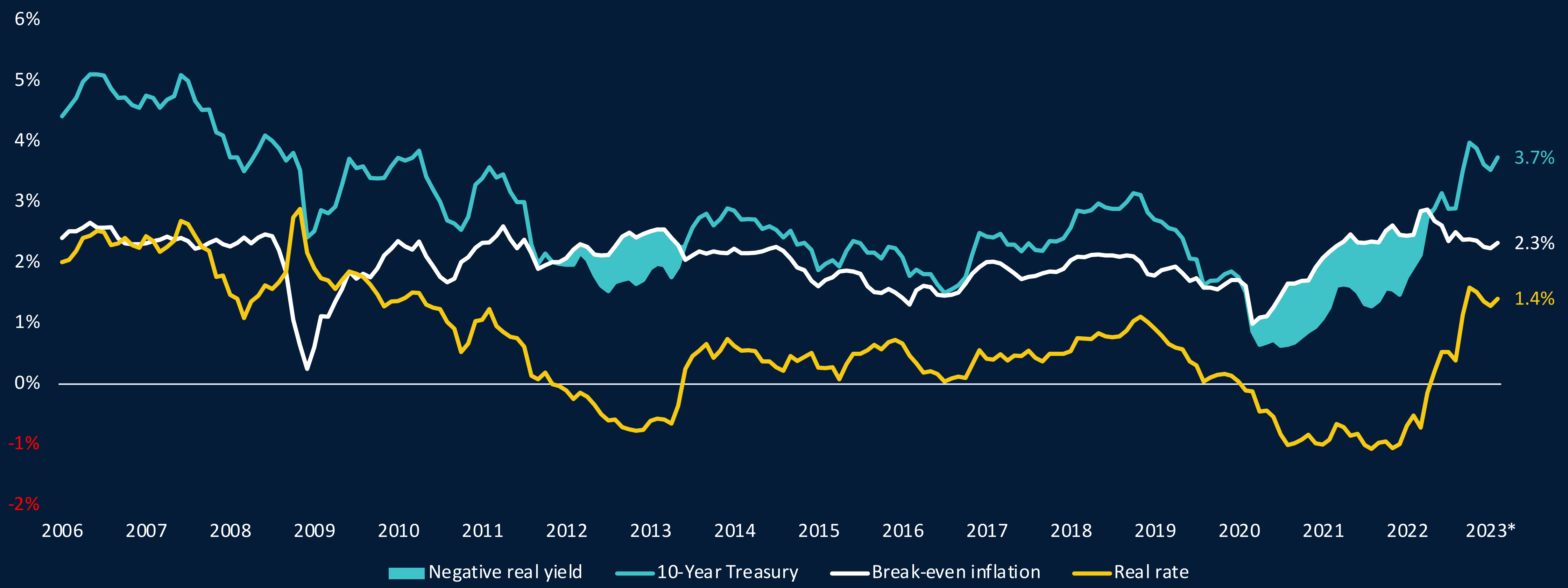


Source: Bureau of Labor Statistics | Geography: US

*As of February 28, 2023

Real and nominal 10-year yields continue to hover around multi-year highs. The higher rates go, the greater headwinds long-duration asset classes like VC face.

10-Year Treasury real versus nominal rates (monthly series)



Source: FRED | Geography: US

*As of February 28, 2023

Outperformance of growth prior to 2022 has given way to inflation-hedging real assets and real estate strategies. VC fund performance is lagging as of data captured through Q2 2022 at -9.8%.

One-year pooled IRRs by strategy

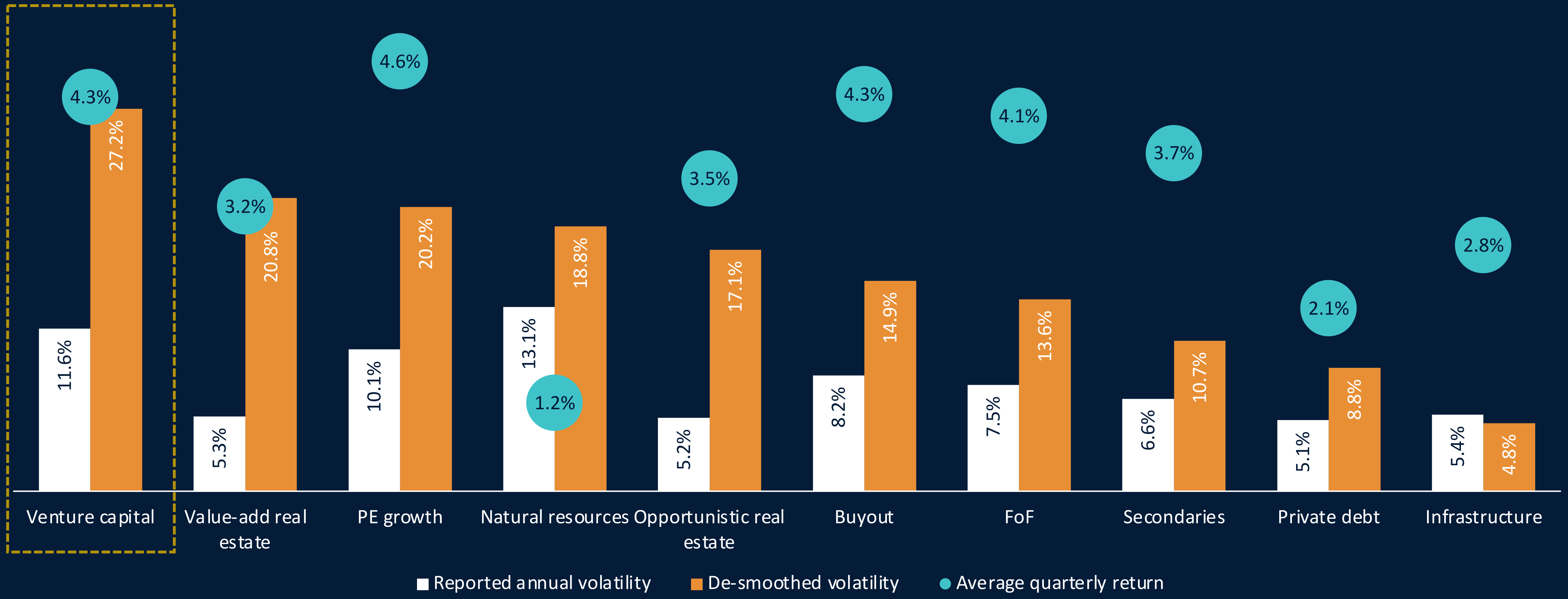
2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*	15-year horizon IRR
Infrastructure 33.1%	Natural resources 2.8%	Private debt 19.6%	Secondaries 23.7%	Secondaries 19.2%	Private debt 15.6%	VC 22.1%	VC 19.3%	Value-add real estate 14.3%	Natural resources 16.3%	PE growth 21.2%	PE growth 20.3%	PE growth 20.3%	PE growth 39.3%	VC 57.5%	Natural resources 18.2%	PE growth 15.8%
Secondaries 24.3%	Infrastructure -8.2%	Buyout 8.6%	Private debt 19.8%	Natural resources 18.2%	Buyout 14.7%	Opportunistic real estate 21.5%	Infrastructure 16.7%	Buyout 14.3%	Buyout 14.3%	Buyout 19.3%	VC 19.8%	VC 17.2%	VC 39.3%	PE growth 56.6%	Opportunistic real estate 12.5%	Secondaries 13.1%
Buyout 24.2%	Secondaries -9.2%	PE growth 5.8%	Opportunistic real estate 19.7%	Opportunistic real estate 14.6%	Opportunistic real estate 13.2%	Buyout 20.3%	Buyout 15.8%	VC 12.8%	Opportunistic real estate 11.2%	Secondaries 15.6%	Secondaries 16.2%	Buyout 15.3%	FoF 25.5%	FoF 51.4%	Value-add real estate 11.0%	Buyout 12.9%
Opportunistic real estate 23.8%	FoF -10.9%	Natural resources 3.7%	Buyout 18.4%	PE growth 13.0%	All private capital 12.8%	Value-add real estate 18.8%	PE growth 15.7%	Secondaries 11.7%	All private capital 11.1%	All private capital 15.5%	FoF 15.8%	FoF 12.1%	Buyout 21.3%	Buyout 50.7%	Secondaries 5.2%	VC 12.3%
FoF 20.0%	VC -12.0%	All private capital 2.6%	Natural resources 18.0%	Value-add real estate 12.7%	Secondaries 12.8%	All private capital 17.1%	FoF 15.3%	PE growth 11.6%	PE growth 10.8%	FoF 13.3%	Value-add real estate 13.6%	All private capital 10.8%	All private capital 16.0%	Secondaries 45.5%	Infrastructure 5.2%	FoF 11.6%
All private capital 19.6%	PE growth -13.1%	FoF 1.3%	All private capital 17.1%	VC 11.2%	PE growth 12.7%	FoF 14.2%	Opportunistic real estate 15.0%	FoF 11.4%	Private debt 10.1%	Infrastructure 13.2%	All private capital 10.8%	Secondaries 10.7%	Secondaries 14.4%	All private capital 42.8%	All private capital 1.1%	All private capital 11.4%
Private debt 15.3%	All private capital -18.9%	VC -0.5%	PE growth 15.9%	Buyout 9.6%	Value-add real estate 11.2%	Private debt 13.1%	All private capital 14.5%	Opportunistic real estate 10.2%	Value-add real estate 9.0%	Opportunistic real estate 11.9%	Buyout 10.8%	Value-add real estate 8.3%	Infrastructure 9.0%	Natural resources 41.0%	Buyout 0.6%	Opportunistic real estate 9.1%
VC 13.4%	Buyout -20.2%	Infrastructure -6.3%	Infrastructure 13.1%	All private capital 9.5%	FoF 9.0%	PE growth 12.6%	Secondaries 14.0%	All private capital 10.1%	Infrastructure 8.9%	Value-add real estate 11.9%	Infrastructure 9.9%	Opportunistic real estate 6.9%	Opportunistic real estate 4.1%	Opportunistic real estate 31.2%	Private debt 0.1%	Infrastructure 8.6%
Natural resources 12.6%	Opportunistic real estate -21.1%	Secondaries -10.2%	FoF 12.0%	FoF 7.4%	VC 7.4%	Secondaries 8.6%	Value-add real estate 13.8%	Infrastructure 8.7%	FoF 6.8%	Private debt 11.3%	Opportunistic real estate 8.0%	Private debt 6.8%	Value-add real estate 3.6%	Value-add real estate 28.8%	FoF -0.9%	Private debt 8.4%
PE growth -0.1%	Private debt -26.2%	Opportunistic real estate -40.6%	VC 11.1%	Infrastructure 5.6%	Natural resources 7.3%	Natural resources 7.7%	Private debt 12.2%	Private debt 5.5%	Secondaries 6.5%	Natural resources 11.0%	Private debt 5.7%	Infrastructure 2.6%	Private debt 2.2%	Infrastructure 18.8%	PE growth -4.3%	Value-add real estate 6.4%
Value-add real estate -8.1%	Value-add real estate -26.2%	Value-add real estate -45.9%	Value-add real estate 0.3%	Private debt 4.1%	Infrastructure 6.6%	Infrastructure 2.7%	Natural resources 0.0%	Natural resources -19.4%	VC -0.3%	VC 10.5%	Natural resources 5.0%	Natural resources -9.9%	Natural resources -19.4%	Private debt 18.6%	VC -9.8%	Natural resources 6.0%

Source: PitchBook | Geography: US

*As of June 30, 2022

Private market volatility is notoriously understated. De-smoothing our return series presents a more realistic picture for the popular risk measure.

Reported and de-smoothed annualized volatility of quarterly fund returns over the last 10 years*



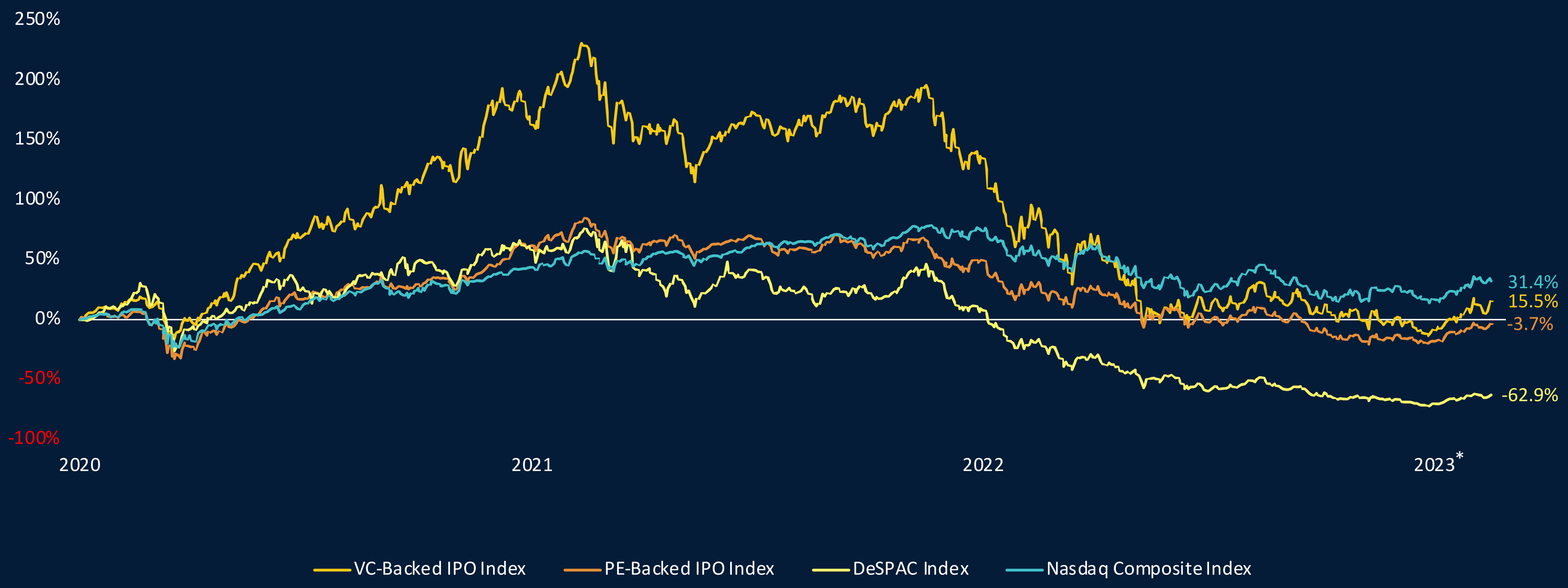
Source: PitchBook | Geography: US

*As of September 30, 2022

The IPO Backlog

It's been a wild ride since the start of 2020. Public markets are clawing their way back from lows in 2022, but there is still a long way to go for the market to recover fully.

Performance of PitchBook IPO and DeSPAC Indexes versus Nasdaq

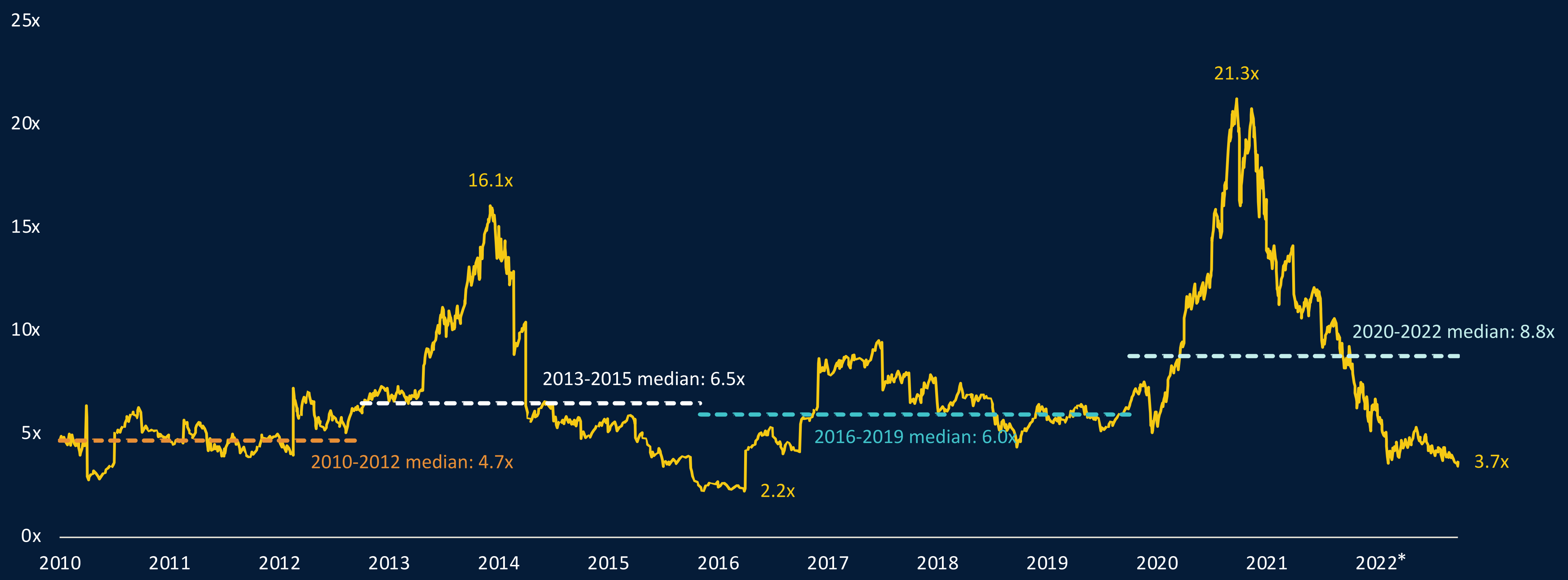


Source: PitchBook, Morningstar | Geography: US

*As of February 17, 2023

Valuations have come down significantly from their peak, reaching levels not seen since 2016. However, over the last few months, the tech wreck appears to have stabilized.

TTM price-to-sales multiple of VC-backed IPO Index

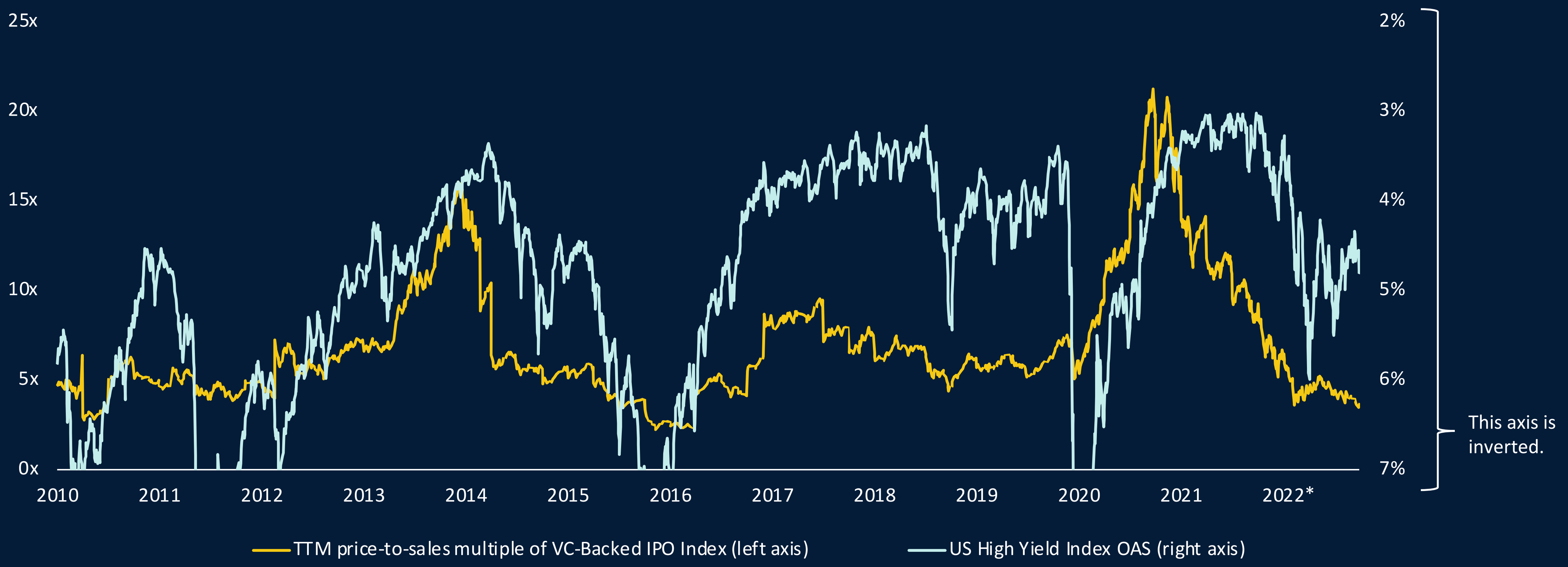


Source: PitchBook, Morningstar | Geography: US

*As of December 31, 2022

Valuation declines are related to periods of instability as evidenced by the option-adjusted spread (OAS) on high-yield securities.

TTM price-to-sales multiple of VC-backed IPO Index constituents versus High Yield OAS

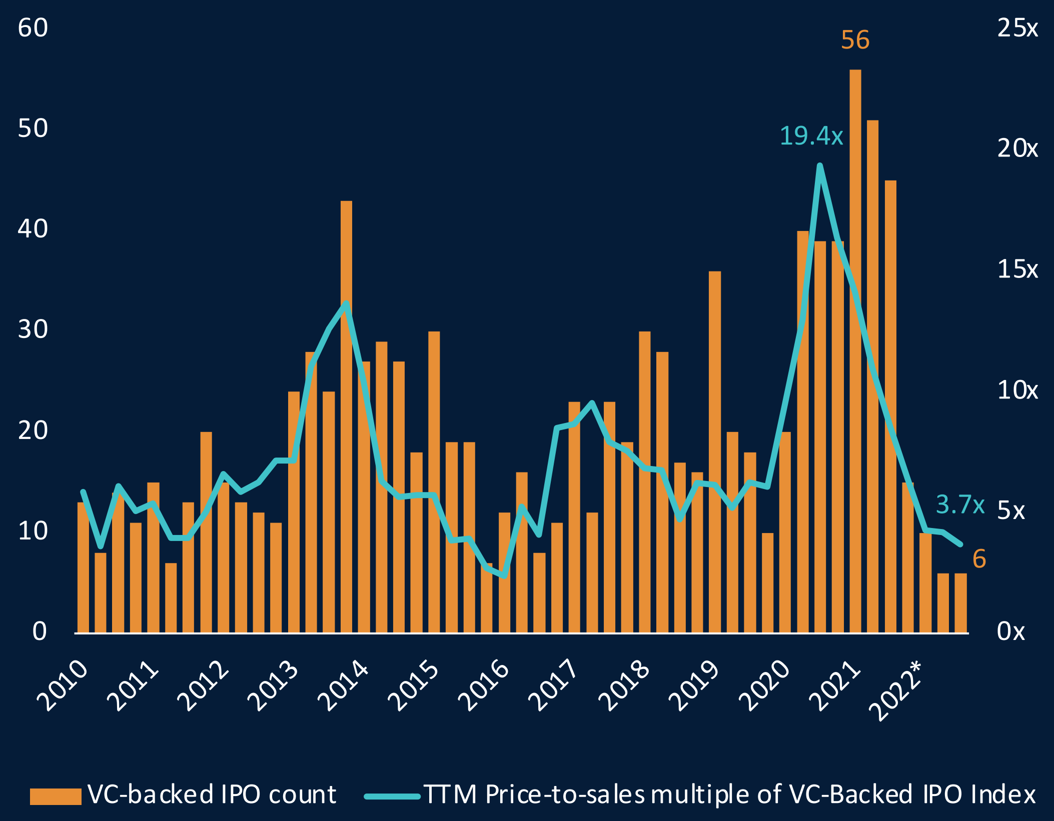


Sources: PitchBook, Morningstar, FRED | Geography: US

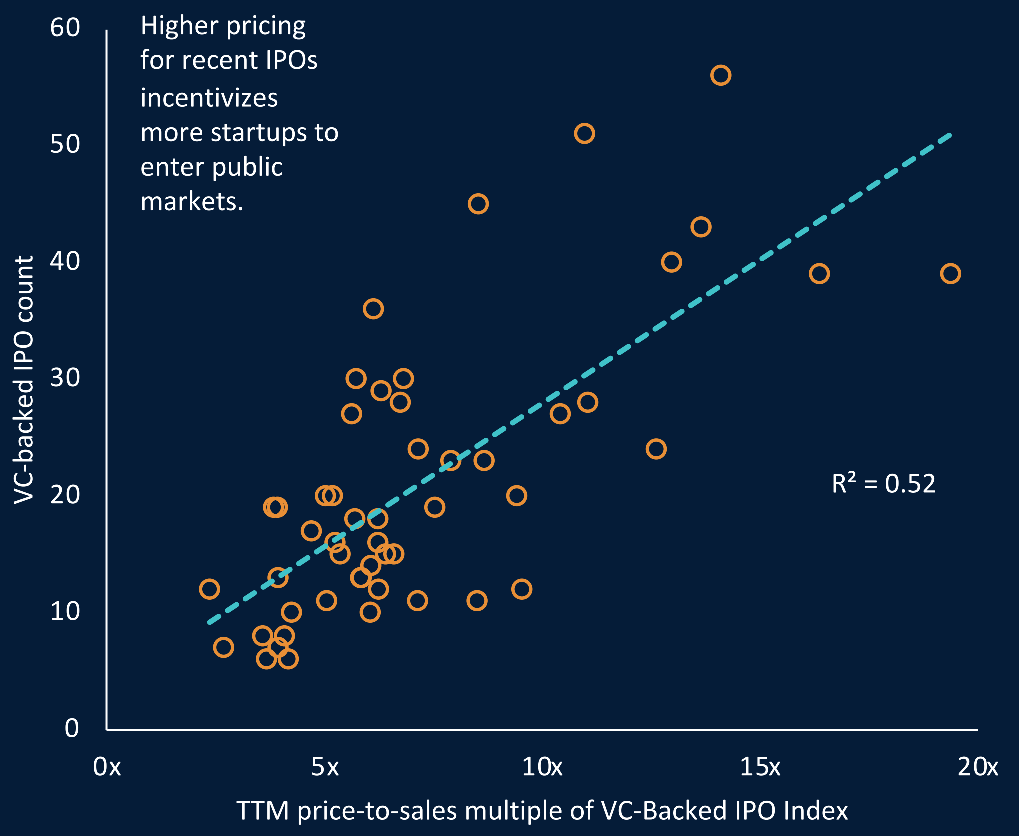
*As of December 31, 2022

Valuation multiples influence how open or closed the IPO window is for companies looking to enter the public markets...

TTM price-to-sales multiple of VC-backed IPO Index versus quarterly IPO count



Relationship between TTM price-to-sales multiple of VC-backed IPO Index versus quarterly IPO count*

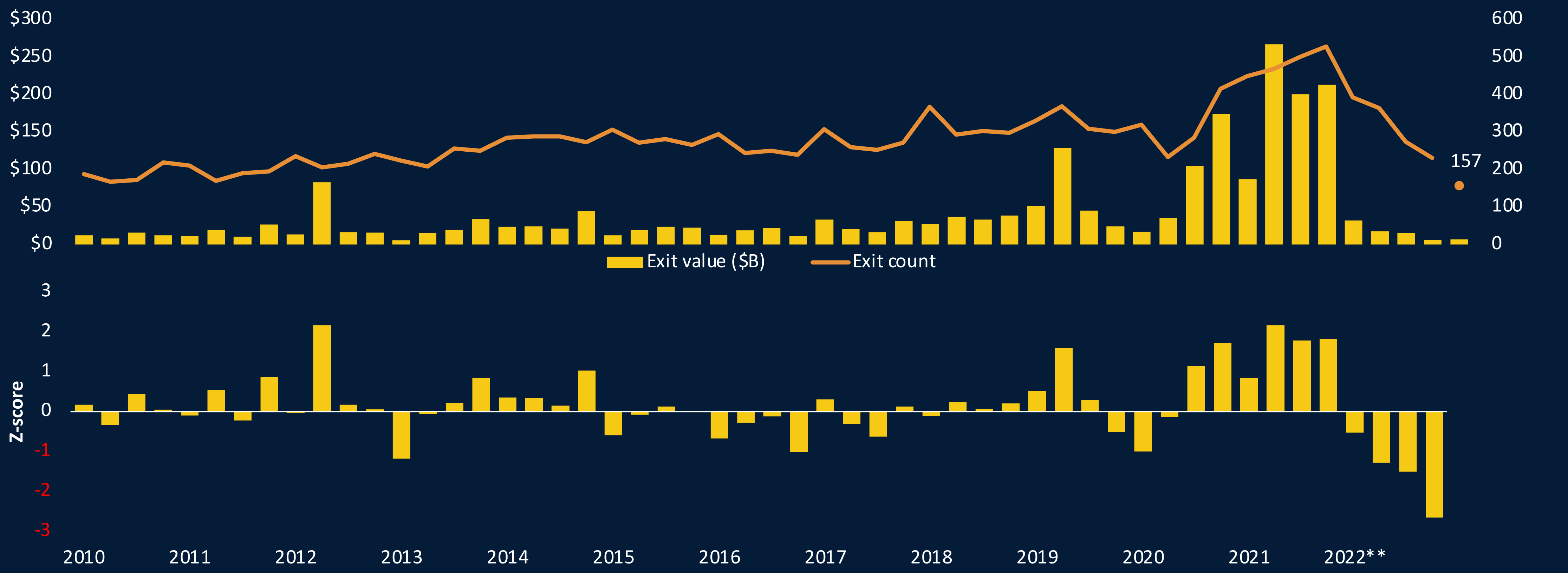


Source: PitchBook | Geography: US

*As of December 31, 2022

…and right now, the low valuation multiples are keeping the IPO window closed as all exits are significantly below historical levels. This is painful for companies that expected to IPO in 2022.

Quarterly VC exit activity* and trend-adjusted Z-score

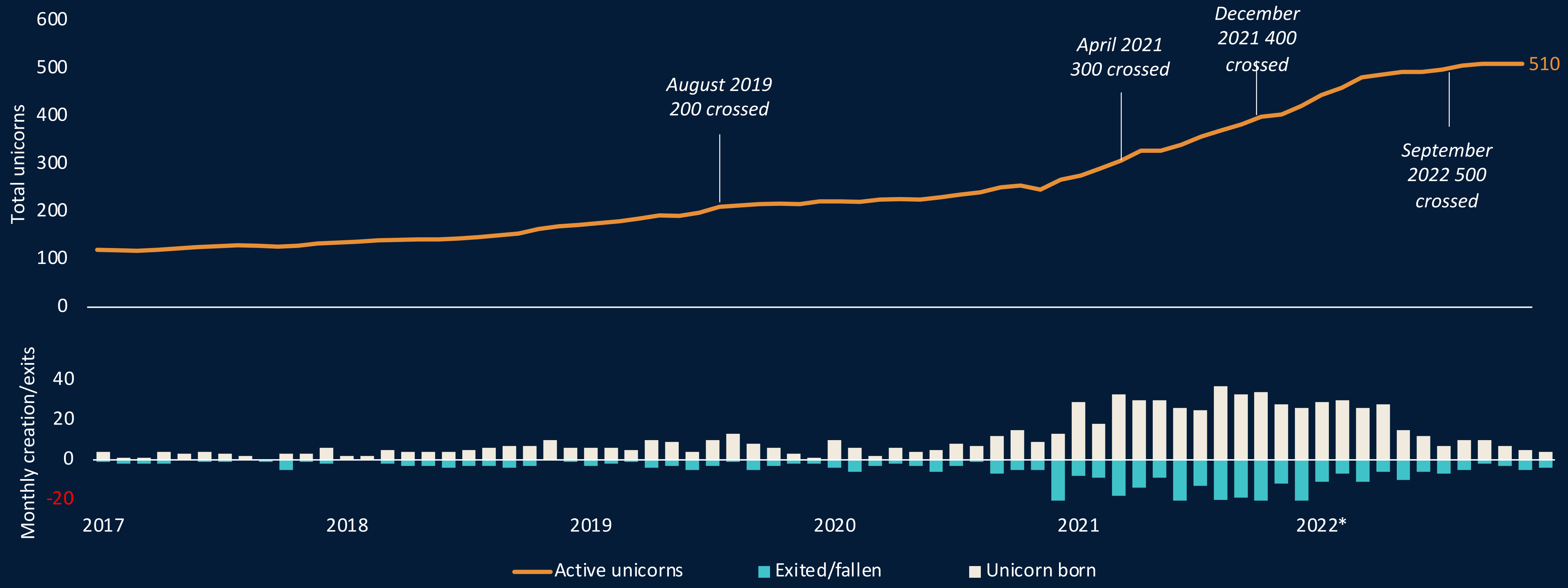


Source: PitchBook | Geography: US

*As of February 27, 2023; **As of December 31, 2022

Unicorns are no longer rare, but growth in the herd has slowed considerably over the last year.

Unicorn counts and monthly change



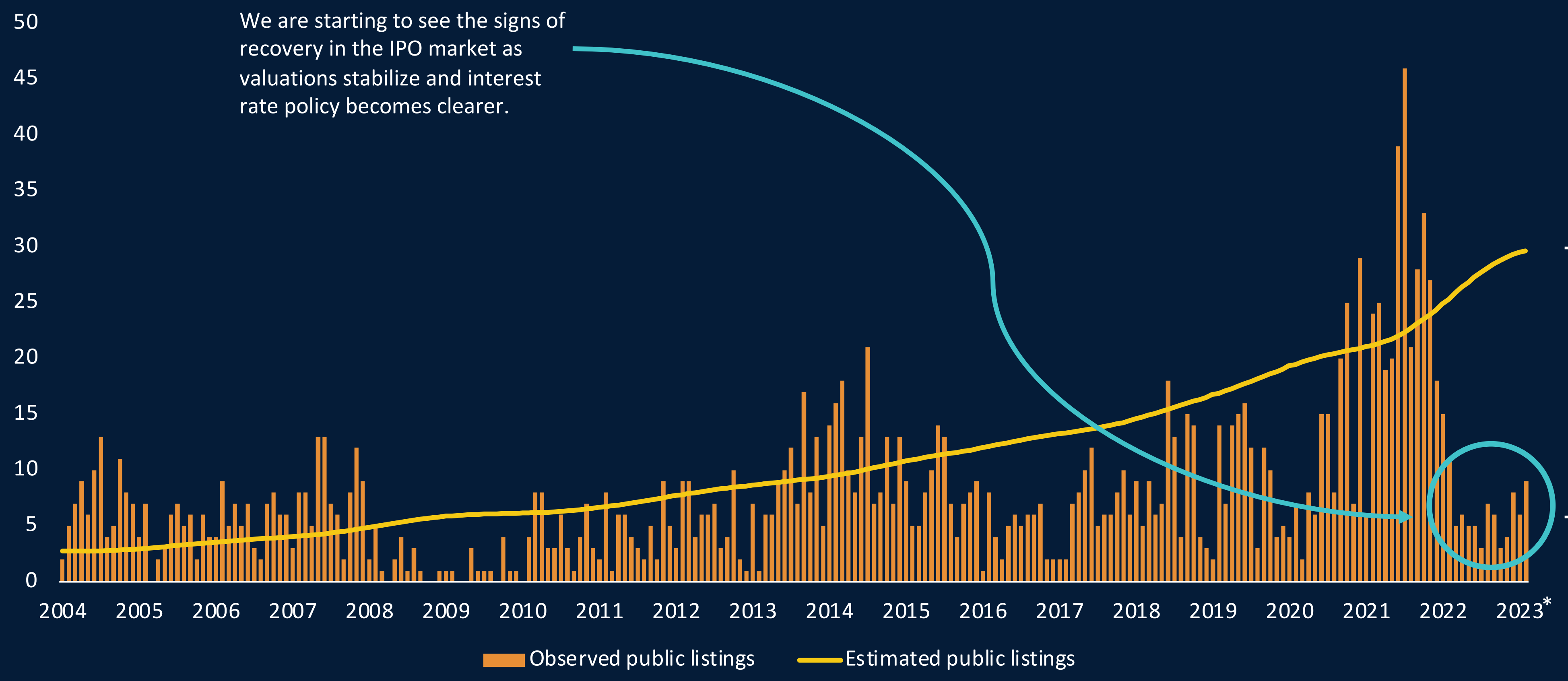
Source: PitchBook | Geography: US

*As of December 31, 2022

Note: "Fallen" unicorns are those that suffered a down round to less than a $1B valuation.

We estimate the number of public listings that could be occurring based on historical trends in exit timing. The number of observed public listings is far below this estimate indicating…

Monthly VC-backed public listing count versus estimated IPO backlog



The frenzy of capital raises that occurred in 2020 and 2021 caused the gulf between currently listing companies and the number of companies that the VC company inventory suggests should be entering the public markets. Now that the IPO markets have shut, these companies have been left in the lurch.

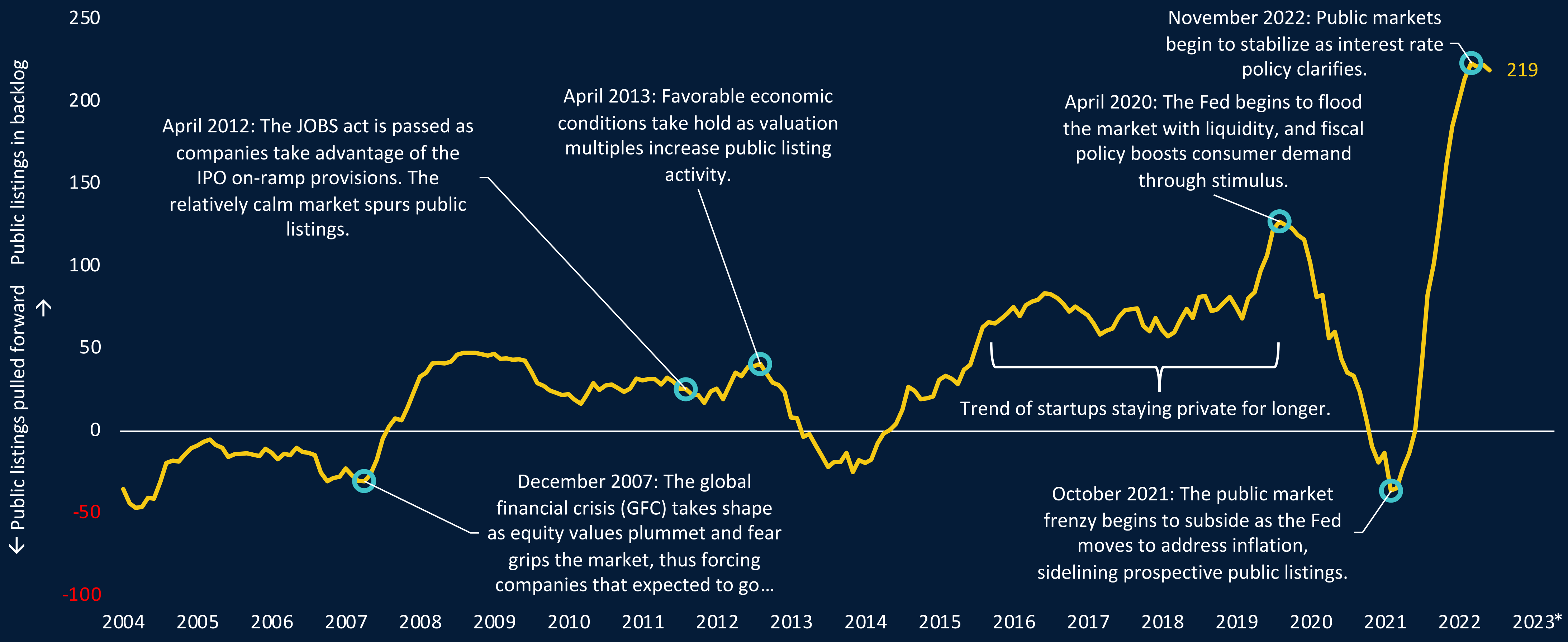
Source: PitchBook | Geography: US

*As of February 23, 2023

Note: Public listing includes reverse mergers, traditional IPOs, and direct listings.

…a spike in the number of pent-up public listings. When public listings start to pick up again, it may take many months or years to clear this backlog.

Estimated IPO backlog*



Source: PitchBook | Geography: US

*As of February 28, 2023

The Negotiating Table

Poll: How would you characterize the current state of the VC dealmaking environment?

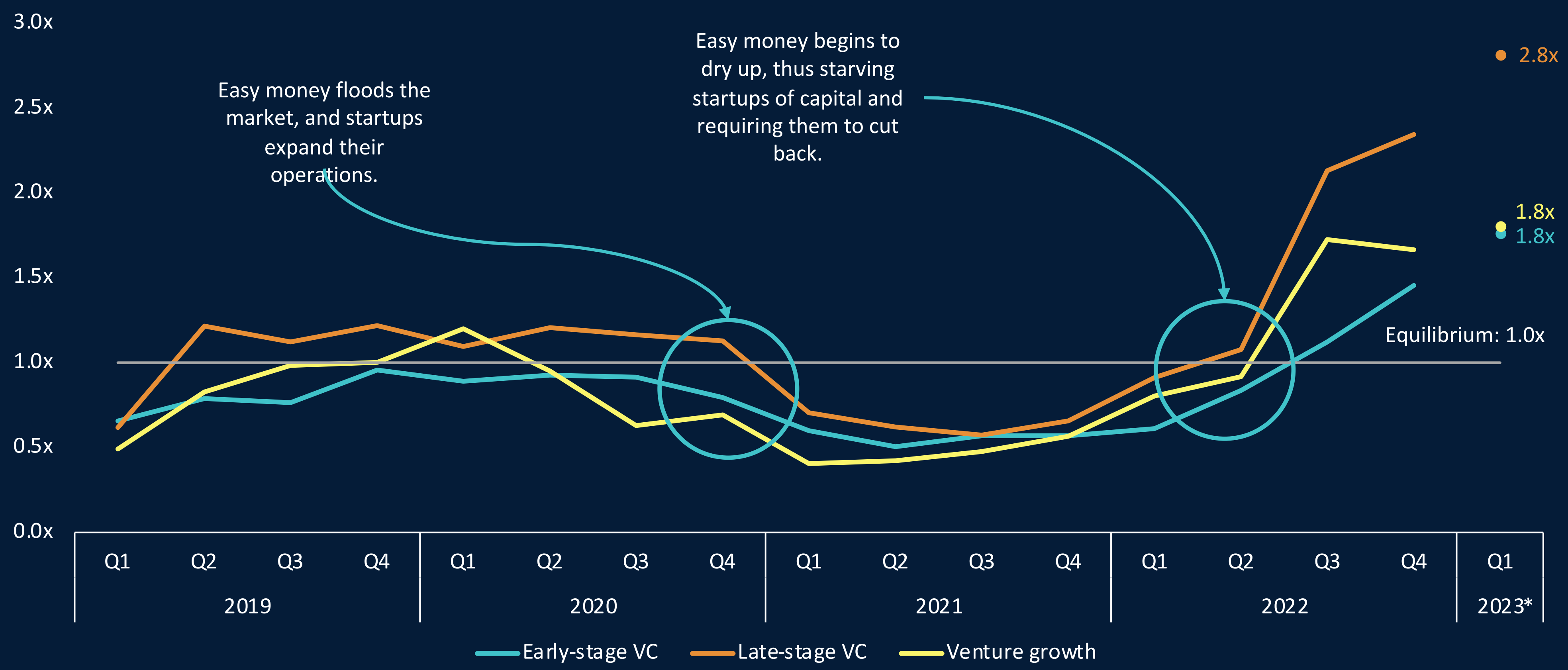
A More investor-friendly environment than pre-pandemic

B Similar investor-friendliness as pre-pandemic

C Less investor-friendly than pre-pandemic

The supply and demand of capital balance in VC is out of balance. The late stage is the most overextended, with startups needing 2.8x more capital than is being supplied by investors.

VC capital demand to supply ratio by stage



Companies need more capital than is being supplied by the market, requiring them to cut back.

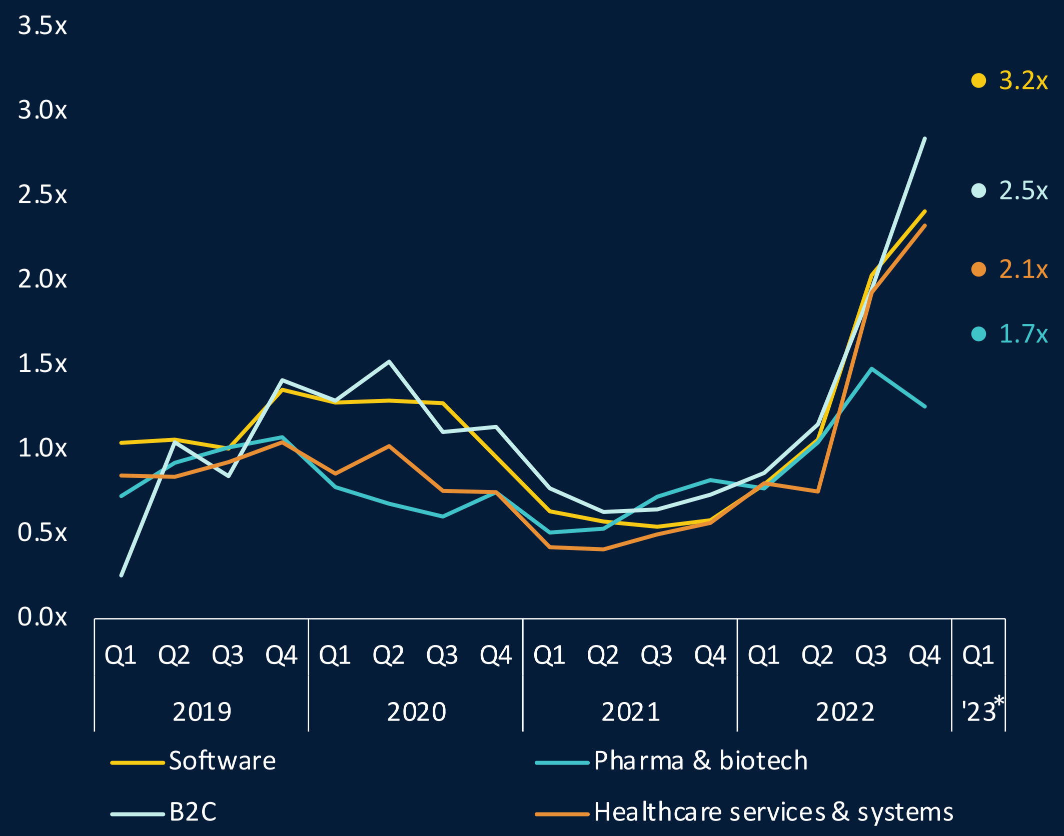
Venture investors are providing more capital than theoretically needed by startups to sustain operations, sending them into growth mode.

Source: PitchBook | Geography: US

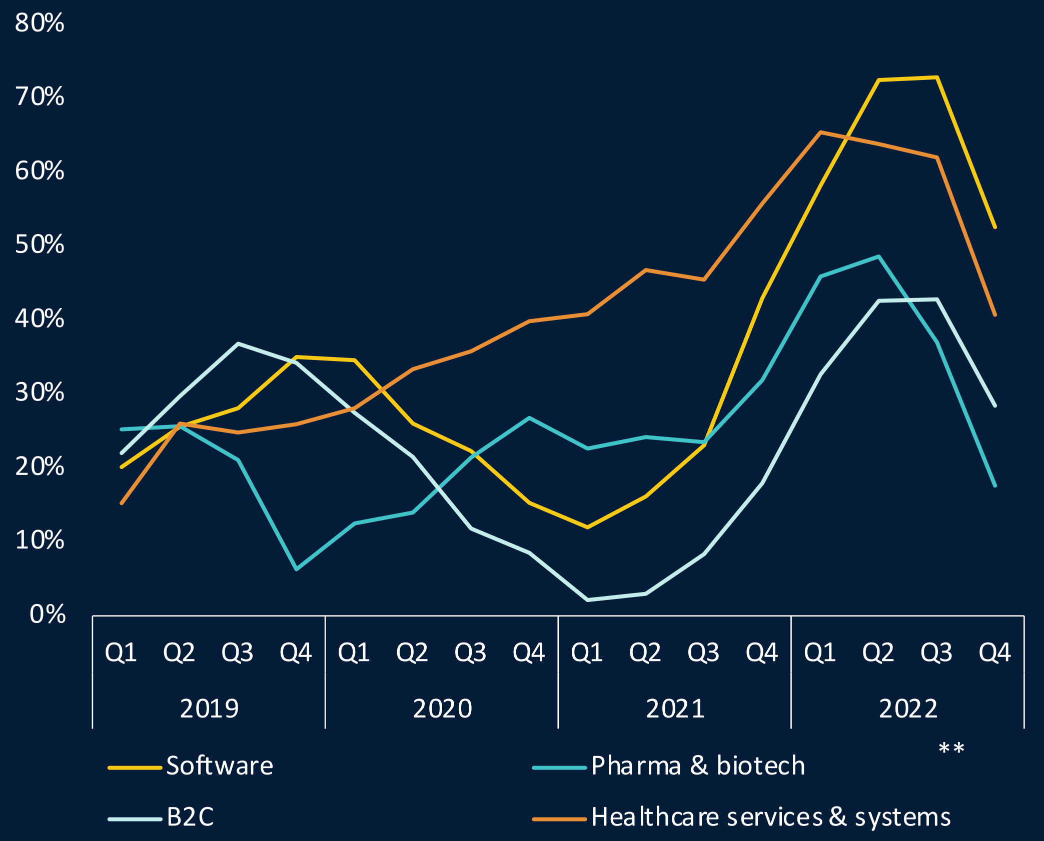
*As of February 28, 2023

While founders in all industries have reduced their capital needs, software companies are most capital starved and may need to curtail operations further. Pharma & biotech is faring well.

VC capital demand to supply ratio by select industries



VC capital demand YoY change by select industries

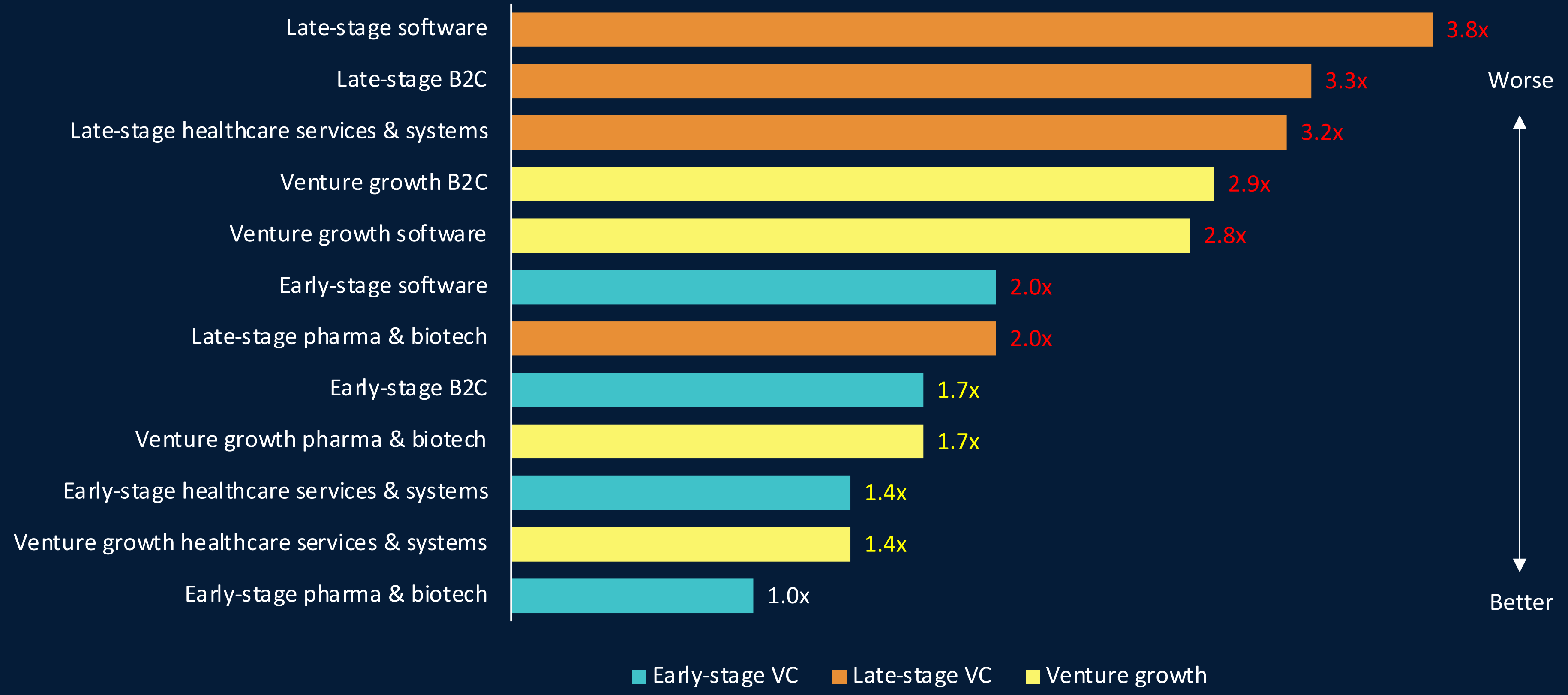


Source: PitchBook | Geography: US

*As of February 28, 2023; **As of December 31, 2022

Certain stages and industries show more distress than others. Late-stage software is struggling the most, while early-stage healthcare and pharma are relatively better capitalized.

Capital demand to supply ratio by select industry*

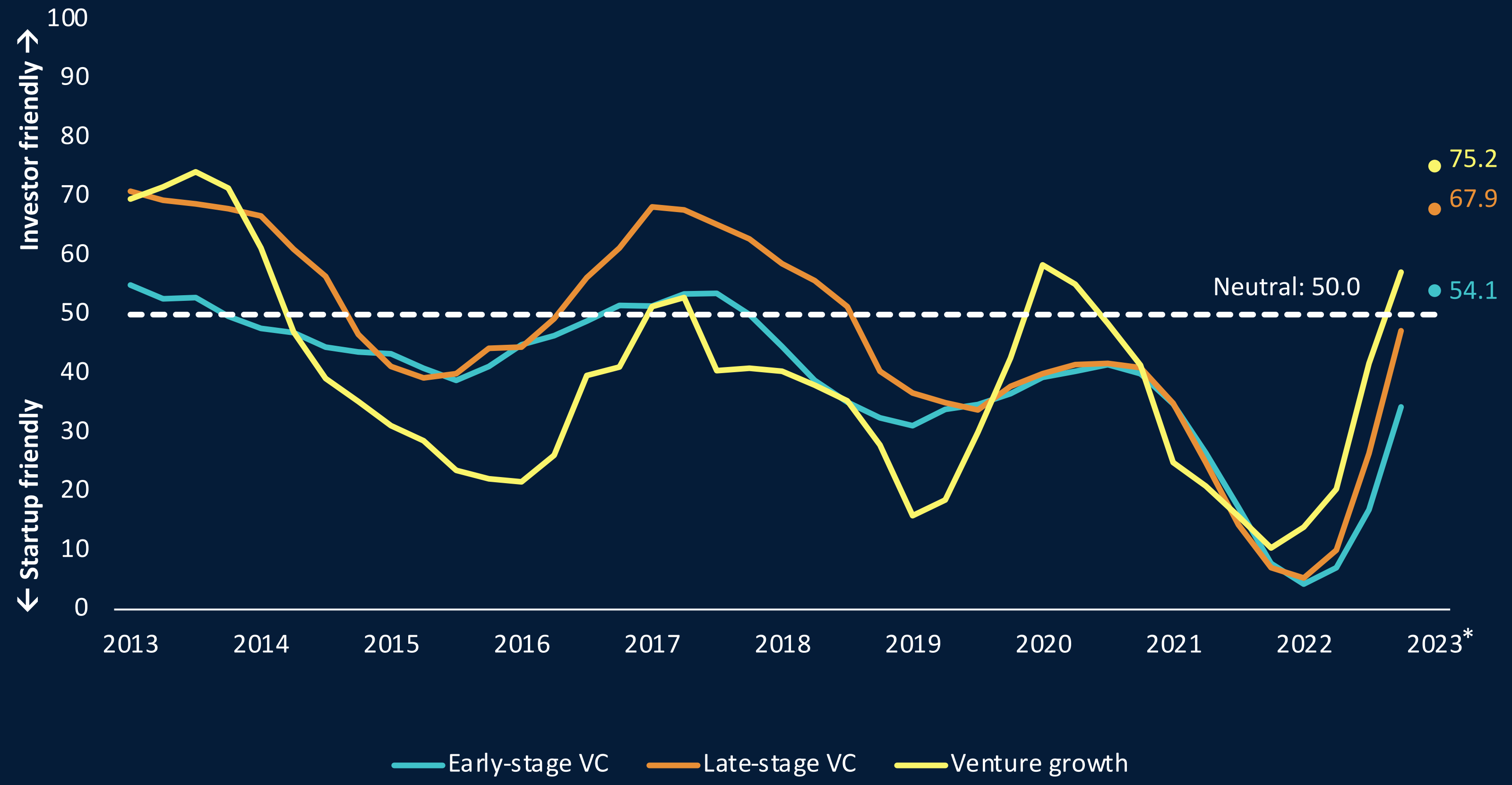


Source: PitchBook | Geography: US

*As of February 28, 2023

This all contributes to a better environment for investors with dry powder. All stages have moved further into investor-friendly territory.

VC Dealmaking Indicator



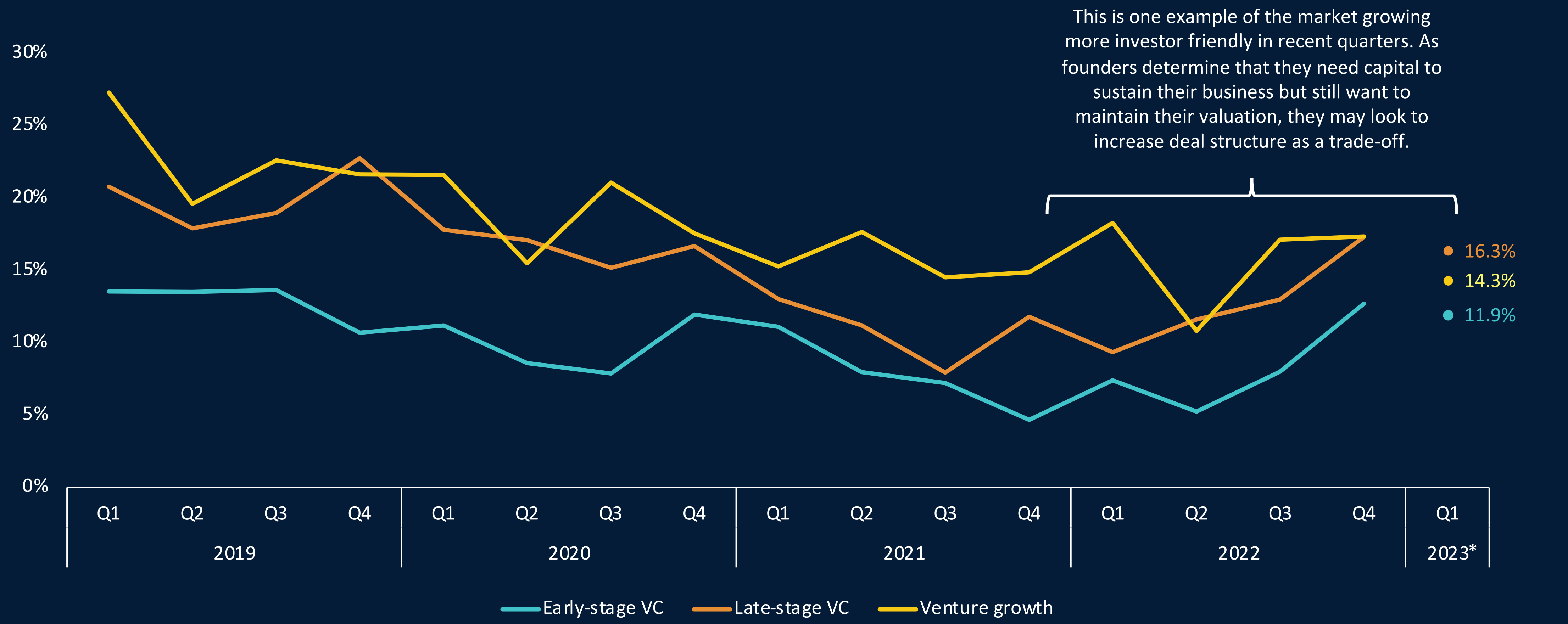
Source: PitchBook | Geography: US

*As of February 28, 2023

The VC Dealmaking Indicator quantifies how friendly the deal-making environment is between startups and investors. A high score indicates investor friendliness, and a low score indicates startup friendliness.

Not only are participating preferred shares becoming more popular, so are cumulative dividends. While founders may be tempted to accept tougher deal terms to keep capital flowing…

Quarterly VC deals with participation preference as a share of all VC deals

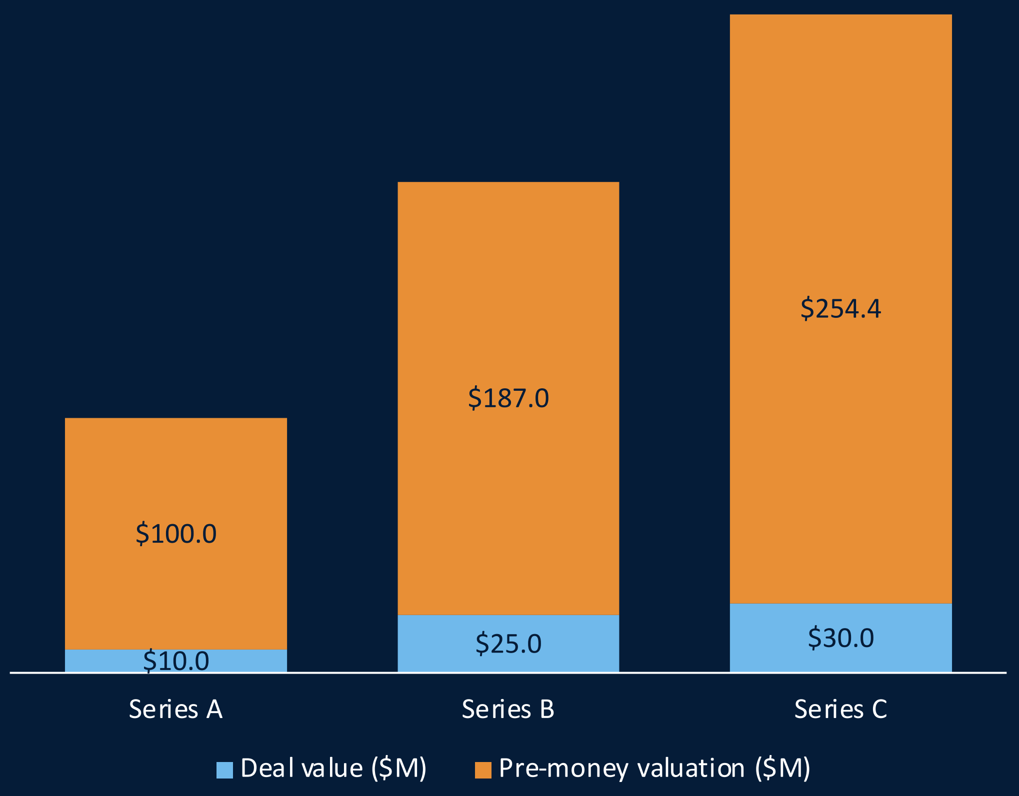


Source: PitchBook | Geography: US

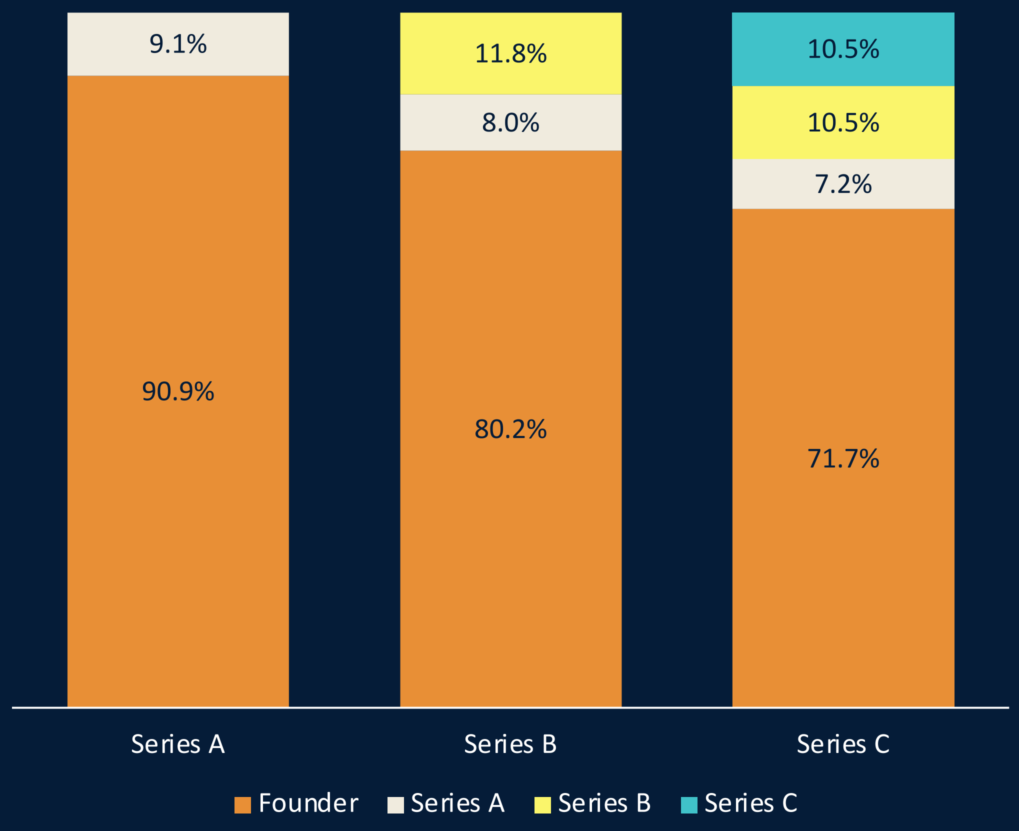
*As of February 25, 2023

…they should be wary of the impact this has on their returns and the returns of their previous investors. Consider a hypothetical company raising its Series C after a strong Series B in 2021.

Hypothetical lifecycle of VC company



Hypothetical common equity ownership for VC company



Note: For illustrative purposes only

Participating preferred stock can dampen future returns for founders and previous investors.

Share of economic ownership (with $M) across rounds *without* a Series C participating preferred stock

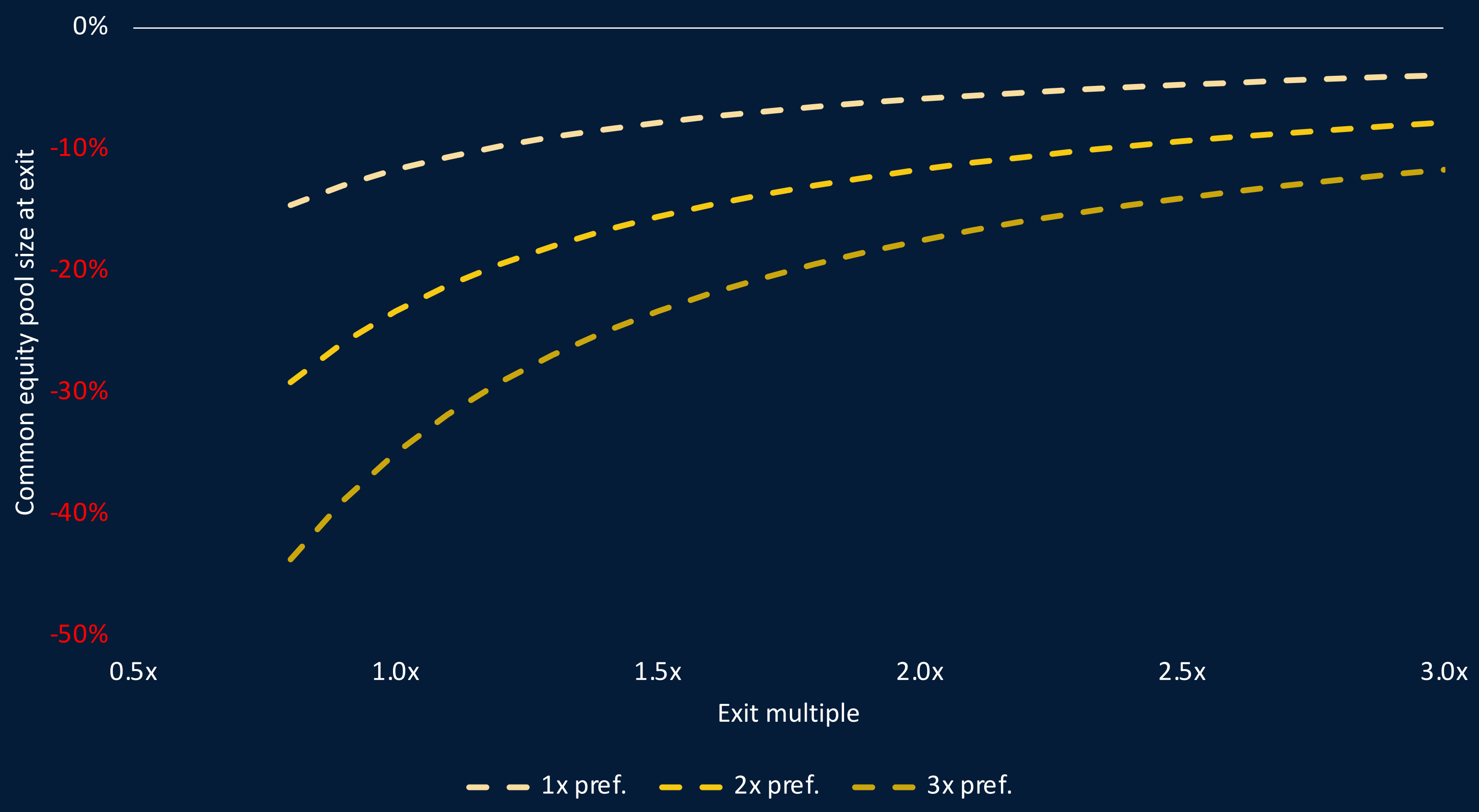
Share of economic ownership (with $M) across rounds *with* a Series C participating preferred stock at 1.0x

Note: For illustrative purposes only

For this example, assume that no previous investors hold participating preferred shares. When a founder accepts a participating preferred term in this Series C round, it changes the economic ownership for everyone.

But the effect of participating preferred shares is strongest at smaller exit multiples.

Hypothetical change in common equity pool by exit multiple and liquidation preference multiple

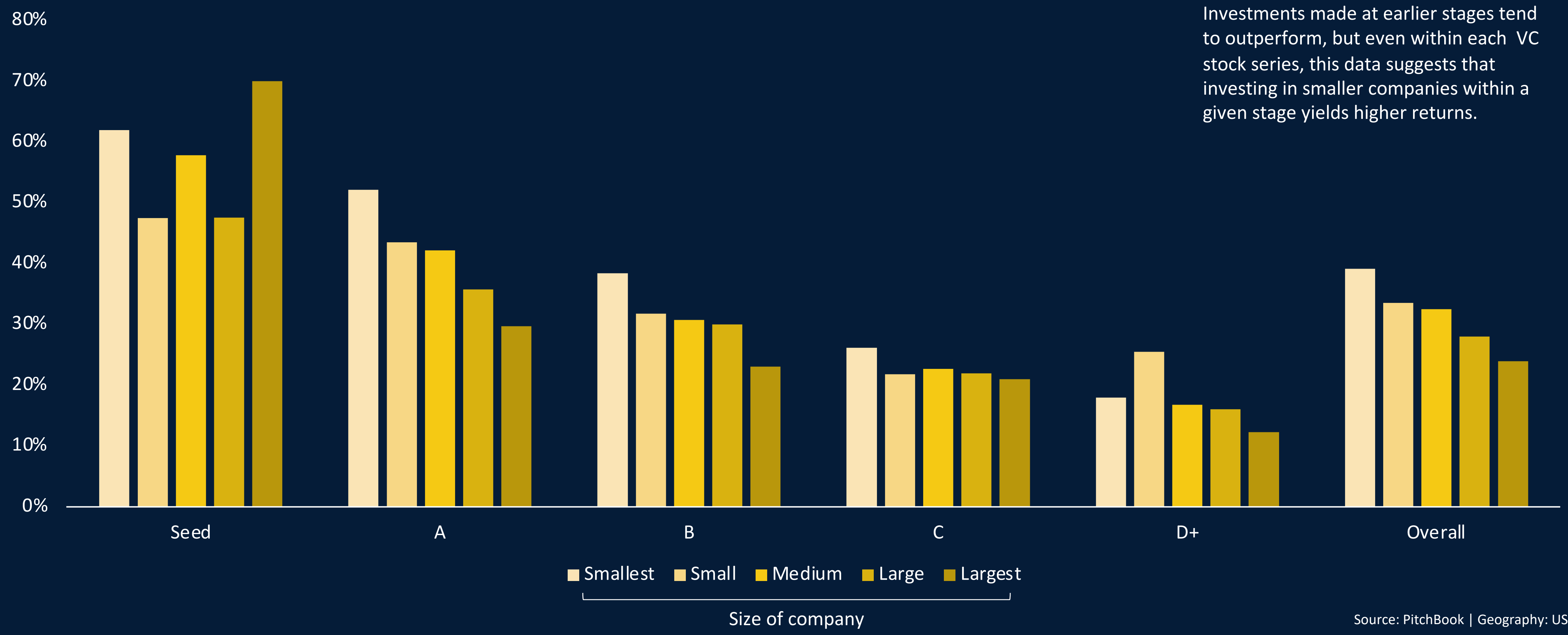


Note: For illustrative purposes only

The equity available to common shareholders can be reduced by accepting participating preferred shares. The effect is greatest at smaller exit multiples because the liquidation preference does not scale with the size of the company. This form of deal structure is most useful as a form of downside protection for investors.

While 2021 induced FOMO on returns of the most expensive startups, historical data implies that invested in smaller companies produces better results.

Annualized change in company value by stock type and quintile of company size*



Investments made at earlier stages tend to outperform, but even within each VC stock series, this data suggests that investing in smaller companies within a given stage yields higher returns.

Source: PitchBook | Geography: US

*As of December 31, 2022

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US +1 206.623.1986
UK +44 (0)207.190.9809
demo@pitchbook.com