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Accounting for the Overcapitalization of VC

How the overcapitalization and change in market mechanics has altered financing in the US

PitchBook is a Morningstar company providing the most comprehensive, most accurate, and hard-to-find data for professionals doing business in the private markets.

Key takeaways

- According to our capital-demand-to-supply model, late-stage VC-backed companies in the US currently need about 3x the amount of capital being supplied. The low capital availability can be seen in the market, with late-stage deal value in 2023 coming in at an annualized figure of roughly $76 billion, just half the amount invested in the stage in 2021. Exits are also hard, or impossible, to come by, leaving companies at the stage in a difficult position to either raise capital in an investor-friendly market or wait out the slowdown by extending runway.

- Because the mechanics of the market have changed dramatically over the past 18 months, we altered the inputs to our capital-demand-to-supply model to examine the change in the market capitalization due to lengthened time between rounds. Both companies and investors have become more efficient with their capital, looking to extend runways as much as possible. Layoffs and debt financings have been large pieces of the venture narrative—in many cases being used as drivers of lengthening runway. With these new mechanics, it should be expected that companies are taking longer between rounds than historical data, which is used in the demand-to-supply model. In fact, the early stage could still be near market equilibrium.

- US venture saw an enormous influx of capital in 2020 and 2021, beginning immediately after the initial pandemic freeze. In 2021, the overcapitalization of VC reached $55 billion. Over the past 18 months, that overcapitalization has turned into a deficit. Down rounds were expected to be a large part of the market when the slowdown hit, but they took longer to show up in the data. When the capital surplus turned into a deficit in Q2 2023, down rounds spiked to 15.2% of completed rounds, the highest proportion seen in the dataset since 2013.

For this model, a 1.0x ratio denotes a market that is matching equal demand with supply. Lower than 1.0x indicates an overabundance of capital.

Introduction

Generic VC market mechanics would accept that VC investment should provide enough runway for a startup to reach the next milestones in around 12 to 18 months. If the general assumption is that the next round will occur when a certain benchmark or multiple benchmarks have been hit by the company, the deal size should include enough capital to hire employees needed, develop a product through additional research & development or manufacturing, and provide capital for marketing if needed.

This generalization plays out well in the data. Of the median time between rounds seen annually over the past decade for the US venture market, the lower and upper bounds of the range are 1.19 years and 1.50 years, respectively. This relatively tight range also suggests that the expectation of the time between rounds doesn't change much, regardless of the amount raised. Across every stage in the US, deal sizes have increased significantly over the past decade. The relationship between the deal size and financing timelines is negative, albeit only slightly. Over the past couple of years, when capital has been abundant, companies actually came back to market sooner, adding more fuel for growth simply because they could.

With the venture bull run ending in 2022, the venture era of growth at all costs has shifted to a market of efficiency, and capital has become a coveted commodity. In today's market, common themes are efficiency, caution, and pathway to profitability. This should impact the time between rounds, pushing companies to grow more sustainably and raise capital only when needed—rather than dip back into the capital markets just to add dilutive fuel.

Our capital-demand-to-supply model uses backward-facing data to output the expected amount of capital that is needed or likely to be demanded by startups in the market and juxtaposes that with the observed amount of capital invested by stage. This look at the data offers a unique take on financing mechanics of the market, highlighting the overabundance or dearth of capital in the market today. If the mechanics have changed and companies are becoming more efficient with their capital, then historical data will bias the model by overestimating the demand. On a basic level, if the market was vastly overcapitalized over the past few years, is there truly already a gap between funding needs of companies and the capital available from the market?

Market overcapitalization

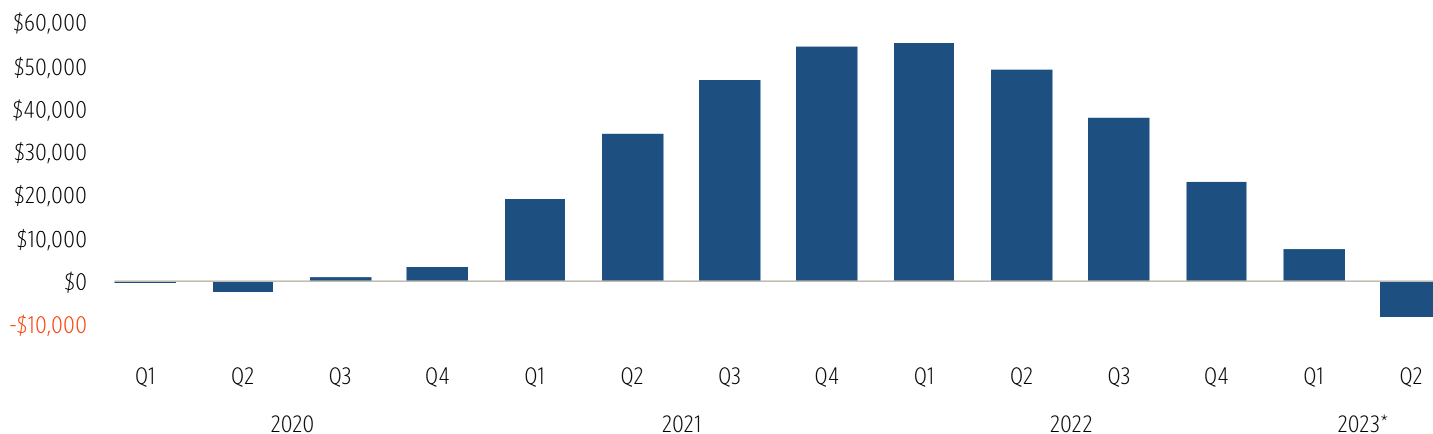
To define overcapitalization in simple terms, it is raising more capital than is needed for the traditional months of runway. “Need” is somewhat subjective and specific to each company, as costs, revenues, and growth needs are neither known nor equal between companies, even those in the same sector.

What is known are the external factors pressuring the venture market during 2020 and 2021. There was a V-shaped recovery of the public markets after a February-to-March drop, which then continued surging to new records until early 2022; and interest rates went to effectively zero, thereby driving a search for yield. And these are the external pressures. Venture had been the second-highest-performing private strategy over the prior decade, behind only growth. These factors increased investment in VC as the strong public listing and M&A market generated strong returns relatively quickly for large late-stage investors.

The overcapitalization of the venture market occurred almost immediately after the pandemic, coinciding with the drop in interest rates to effectively 0%. The dealmaking narrative in late 2020 and 2021 was filled with anecdotes of quick turnarounds on term sheets—signed over the weekend in some cases—and price-agnostic, fast-moving large investors such as SoftBank and Tiger Global. The data itself highlights the fast and loose nature of venture in 2021. The US deal count spiked from roughly 13,500 completed rounds in 2020 to nearly 19,000 in 2021. 2020’s figure was even near a record at the time, despite several months of a market stall as the onset of the COVID-19 pandemic challenged the in-person mechanics of the market.

This shift is observable in our capital-demand-to-supply model. For this model, a 1.0x ratio denotes a market that is matching equal demand with supply. Lower than 1.0x indicates an overabundance of capital. For much of 2020 and the entirety of 2021, the US venture market was operating within an overabundant capital environment. Not only had dry powder started to stack up from LPs clamoring for exposure to the top-performing private strategy, but the surging public markets provided ample opportunities for IPOs during those years, further pulling capital into the venture landscape.

Aggregate venture capital oversupply and undersupply by quarter



Source: PitchBook • Geography: US
*As of June 30, 2023

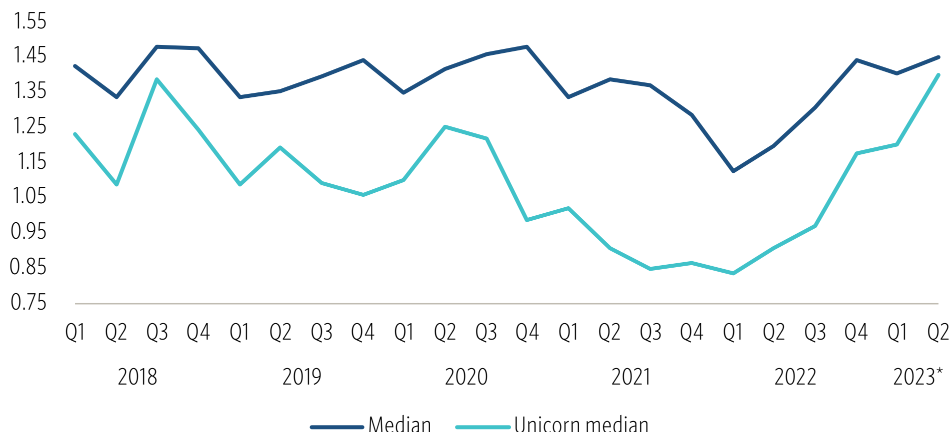
Methodology

Market overcapitalization takes into account historical time between rounds and deal size step-ups. An amount raised over this step-up, or earlier than normal, is a surplus.

Using our demand-to-supply model, we can look at the relative surplus or deficit for the market by quarter. In Q2 2020, the market had run through a previous—albeit minor—overcapitalization, running a supply deficit of around $2.6 billion. Q2 2020 dealmaking was slow, showing a quarter-over-quarter decline of more than 20% caused by market paralyzation from COVID-19. Deal value was relatively low back then, too, running at around a $140 billion annualized rate. A year and a half later, the market bolted to a surplus of roughly $55 billion on the back of market excitement and the opportunity for cheap borrowing.

With so much money pushing into venture, companies raised for growth or to add runway in case of the inevitable sea change. So, while capital availability is much lower now, in theory, VC-backed companies should have been capitalized in higher-than-normal times. From Q4 2020 through Q1 2022, the time between rounds declined four of the five quarters, dipping to just over 1.1 years.

It could be argued that this time period was one of the hottest IPO markets of the 21st century. Not only were some of these VC-backed companies taking on further dilution by raising again in the private market, but they were potentially surpassing an IPO that was immensely lucrative. IPOs have had their detractors over the past decade due to rising costs, but 2021 highlights the imbalance that had grown between private and public markets. The market essentially opted to raise excess capital to stay private rather than unlock returns through a public offering because staying private with cheap equity capital was the better option.



Source: PitchBook • Geography: US
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The median time between rounds has quickly readjusted over the past year as companies further spread their cash on hand to stay out of the challenging dealmaking market. Companies that pushed out an IPO are now faced with poor options to IPO and a private financing market that will likely value companies lower than expected.

After Q1 2022—which was the most active quarter in our dataset in terms of deal count, with more than $79.3 billion invested into VC-backed companies—the median time between rounds in the US has jumped back to 1.5 years, which is in line with pre-2020 averages. We should expect that figure to continue inching up, even reaching the highest figure in the past decade, as the market dynamics that created the quick reversal show no signs of easing in the short term.

A median time between rounds of 1.5 years would put companies that raised in Q1 2022 back in the market in Q4 2023. If these companies also raised just a year prior to their Q1 2022 raise, then basic assumptions lead to further runway availability.

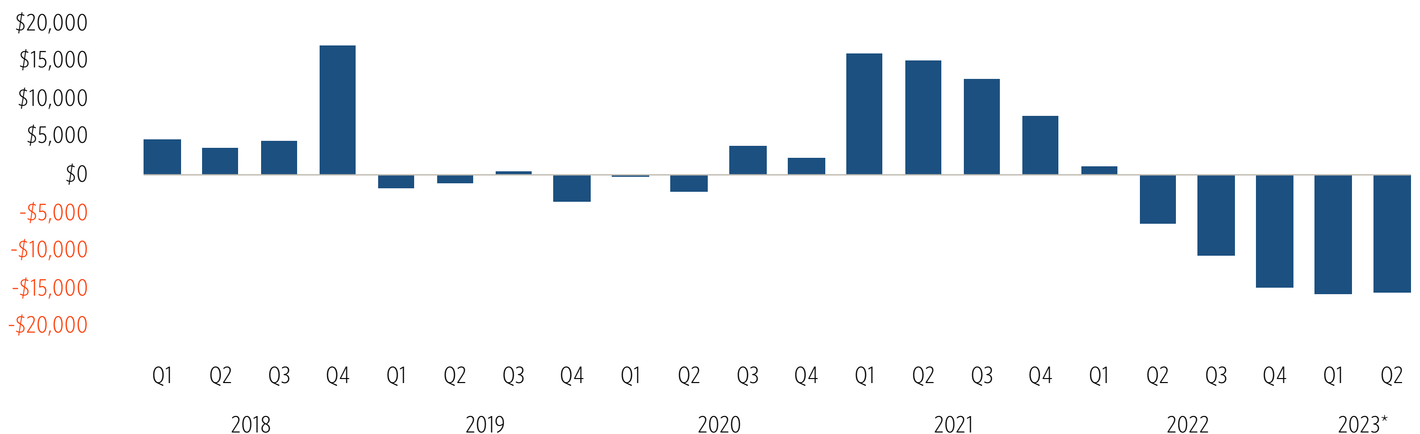
Capital availability

The question isn't if there is less capital available now than a couple years ago; we know this to be true. That is hard to argue when $347.5 billion was invested in the US in 2021, and just $85.6 billion has been invested so far in 2023 through Q2. A large portion of the $85 billion has gone to just two deals—Stripe's $6.9 billion deal and OpenAI's $10.0 billion round. We've seen crossover institutions pull back drastically as well. These institutions, which are involved in the largest VC deals, have dropped participation from more than 550 deals and a quarterly peak of nearly $50 billion in 2021 to fewer than 200 deals and a quarterly peak of around $15 billion in 2023. They have been large drivers of the high volume of deal value over the past few years.

Capital availability has been low throughout the market. Seed and early stage have also suffered challenging financing markets, despite relying much less on large, non-VC institutions that have pulled back from startup investment. Investors have become much more deliberate in their capital deployment. The loose financing market of the past few years was subsidized by the quick return to fundraising by GPs up and down the venture lifecycle. That speed exhausted LP allocations, and as the market has returned to a more sustainable pace, the fundraising pause is forcing GPs to slow their deployment or else risk running through dry powder and being pushed back into the fundraising market when LPs aren't ready.

The US VC market is now operating through five consecutive quarters of less capital making it to the market than is estimated to be demanded. The past two quarters of this deficit were more severe than the most overcapitalized quarter in 2021. Because the model uses deal size step-up as one of the inputs, the estimated demand is calculating off of previously inflated values, but the inability for companies to exit will likely create a situation wherein extra private financing is needed for companies that would otherwise exit, thereby adding to the market demand.

Venture capital oversupply and undersupply by quarter



Source: PitchBook • Geography: US
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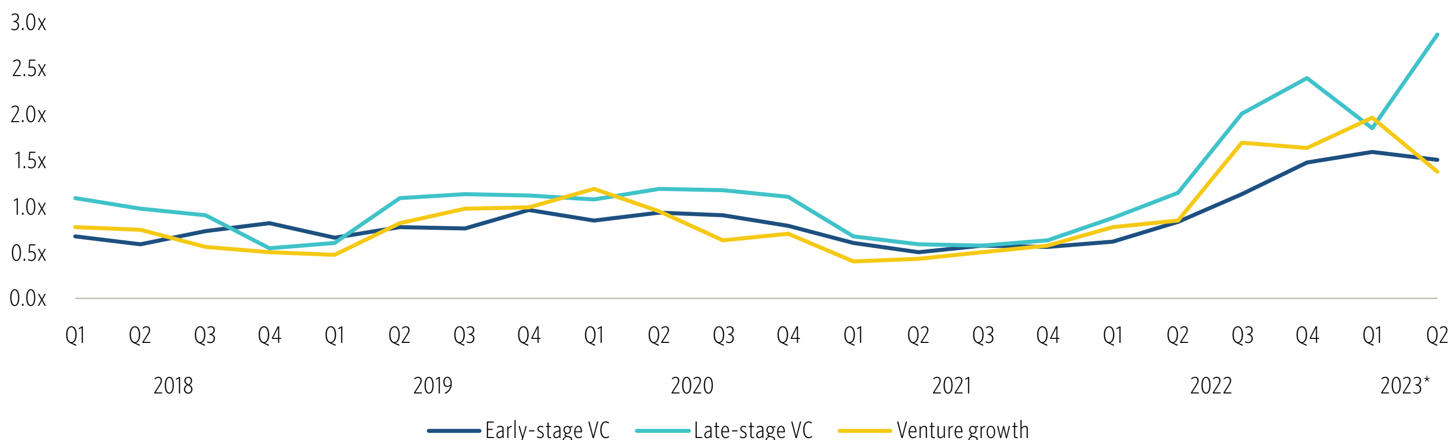
Coming into 2023, the availability of capital had already shifted over the prior 12 months. Our VC Dealmaking Indicator sprung quickly to "investor friendly." Valuations began to come down, and many completed term sheets were cluttered with investor protective terms, such as liquidation multiples, cumulative dividends, and other structural terms that were more heavily dilutive for founders and existing investors. Capital availability quickly was at a deficit. Through Q2 2023, the late-stage demand-to-supply ratio reached nearly 3.0x, meaning $3 was theoretically needed for each $1 being invested.

Quarterly VC capital-demand-to-supply ratio by stage



Source: PitchBook • Geography: US
*As of June 30, 2023

The model calculates from a historical dataset, adjusting as data is added. Data flowing into the model derived largely from periods of near-matched markets, or slightly overcapitalized markets. As mentioned, the market dynamics have quickly shifted over the past year and a half, benefiting companies that had overcapitalized when the market was high. Investors quickly called on portfolio companies to restructure spending and become efficient with their capital on hand, knowing that returning to the market to raise capital would be a formidable endeavor.

Despite the deep deficit in available capital and the high number of companies currently VC-backed—Q2 2023 data shows a company inventory of more than 50,000—down rounds didn't show up in the data. It wasn't until Q2 2023 that there was any significant movement in this figure. Becoming efficient with cash did show through in the operations of startups. Layoffs were a major narrative in 2022 and early 2023. Cuts to operating costs may be a short-term fix to a problem, but for cash runway, they do extend startups' capital for some time. Debt has also been a factor in startup runways. 2022 was the fourth consecutive year of more than $30 billion in debt making it to VC-backed startups in the US. While concerns around the use of debt in a rising-interest-rate market may arise, debt further extends runway, keeping companies operating and growing without a return to an equity financing.

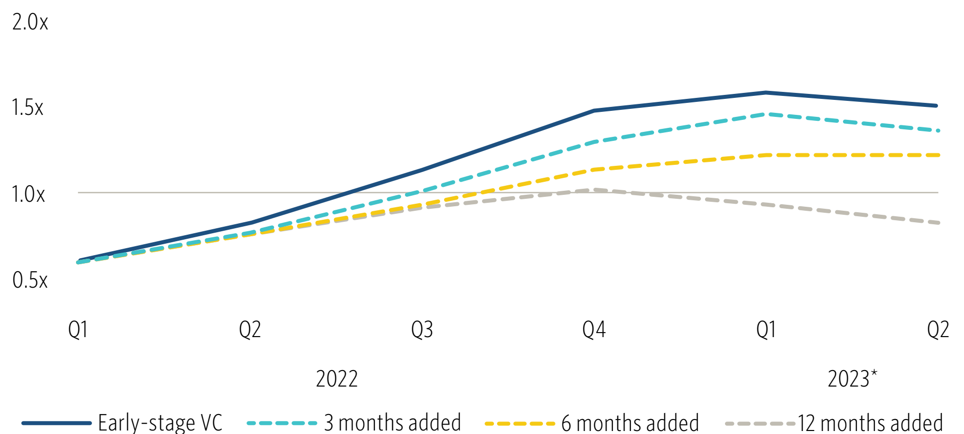
Together, these factors change the dynamic of the market, extending runways and biasing the capital-availability model.

Adjusting the capital-demand-to-supply model

Our capital-demand-to-supply model does not have static inputs, so the estimated time between rounds is not simply set at 1.5 years. But there are likely biases in the model—especially when looking at the most recent quarter or quarters—as shifts in investment activity that can occur relatively quickly are effectively unimpactful to the output.

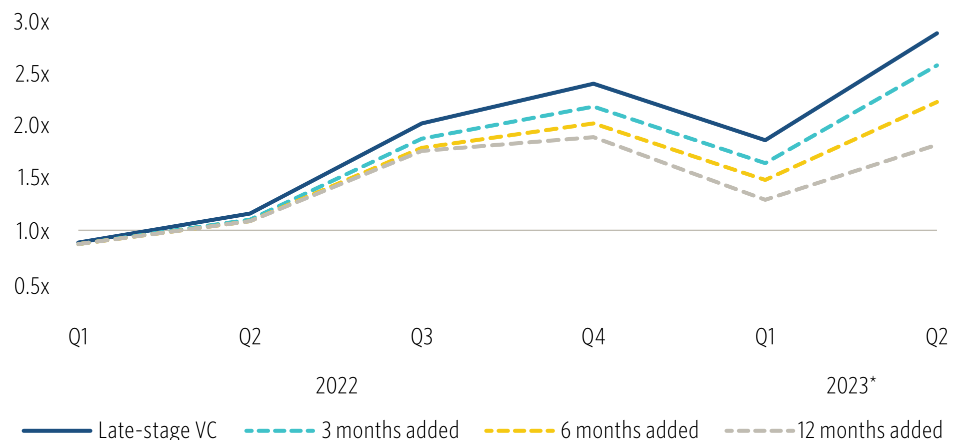
It's difficult to determine how long either of these would extend runway. Layoffs could be a minor impact if revenues and growth also significantly decline. However, we can edit the demand-to-supply model to look at the change in ratio if the market collectively added three months, six months, and 12 months to its runway due to the overcapitalization and additional runway extensions, and see how each stage would be impacted. This can give us an additive view of the true demand-to-supply within the market and provide insight into how the dealmaking market will shape up during the rest of the year.

Quarterly early-stage VC capital-demand-to-supply ratio with extended time between rounds



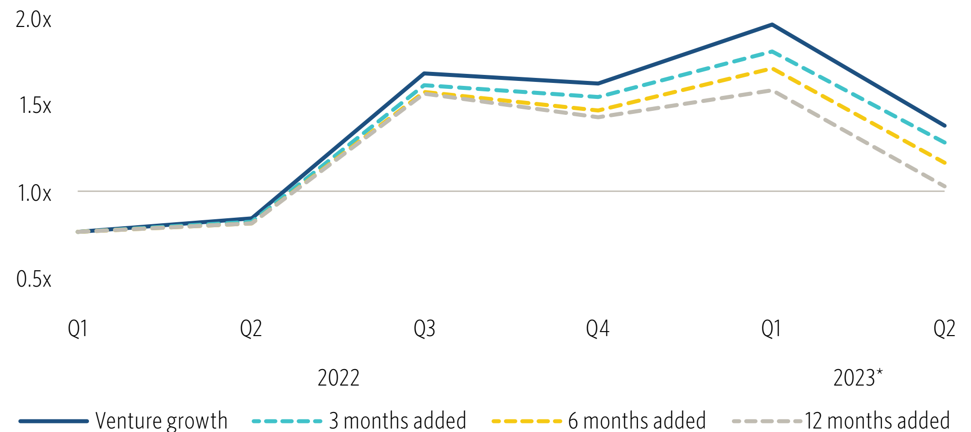
Source: PitchBook • Geography: US
*As of June 30, 2023

Quarterly late-stage VC capital-demand-to-supply ratio with extended time between rounds



Source: PitchBook • Geography: US
*As of June 30, 2023

Quarterly venture-growth capital-demand-to-supply ratio with extended time between rounds



Source: PitchBook • Geography: US
*As of June 30, 2023

To varying degrees, the decline in the demand-to-supply multiple is evident across stages. The late stage is the only stage that continues to be well short of the capital needed. We must note that venture growth has been showing a decline in the demand-to-supply multiple, but at this stage, many companies should be exiting for their next financing round. This would, in turn, require no further private capital—at least, this is what the model is showing. We know that exits have been few and far between, so the decline in this multiple is likely being overstated, as more capital will be needed than estimated from historical data. Along the same lines, fewer companies are raising their first venture-growth round, as these larger deals tend to rely upon crossover investors, which have pulled back significantly.

The early stage is in a much less precarious position if runways are able to be sufficiently extended. If the early stage has collected an additional 12 months of runway due to market overcapitalization, then demand would still be oversupplied in the current market despite the slower dealmaking. The early stage hasn't been burdened by the investor pullback like the late or venture-growth stages, and larger investors have instead moved up the venture lifecycle to invest earlier, while awaiting late-stage investments to exit. There continues to be a high number of investors targeting this stage that remain within their new investment window. 85% of the funds closed in the US since the beginning of 2020 are smaller than $250 million.

Interestingly, the late stage remains at a high deficit in the biased models with increased runway, despite the high amount of capital invested into it in recent years. Even if late-stage companies are able to extend runway by 12 months, the stage remains at a roughly 41% deficit of capital. The late stage has consistently received the largest share of capital in the market, with $150.9 billion raised in 2021—roughly $60 billion more than even venture growth. But the size of the late stage has increased dramatically—by 40% since the beginning of the overcapitalization period. The count of 12,500 companies held within the stage is nearly as large as the number of early-stage companies, highlighting the ability for middling companies to pass through the VC lifecycle during this time, rather than be acquired or go out of

business (as many would have during a more standard period of VC). According to our demand-to-supply model, the late stage was actually the least overcapitalized stage during 2021 and showed the fastest return to undercapitalization when the market turned.

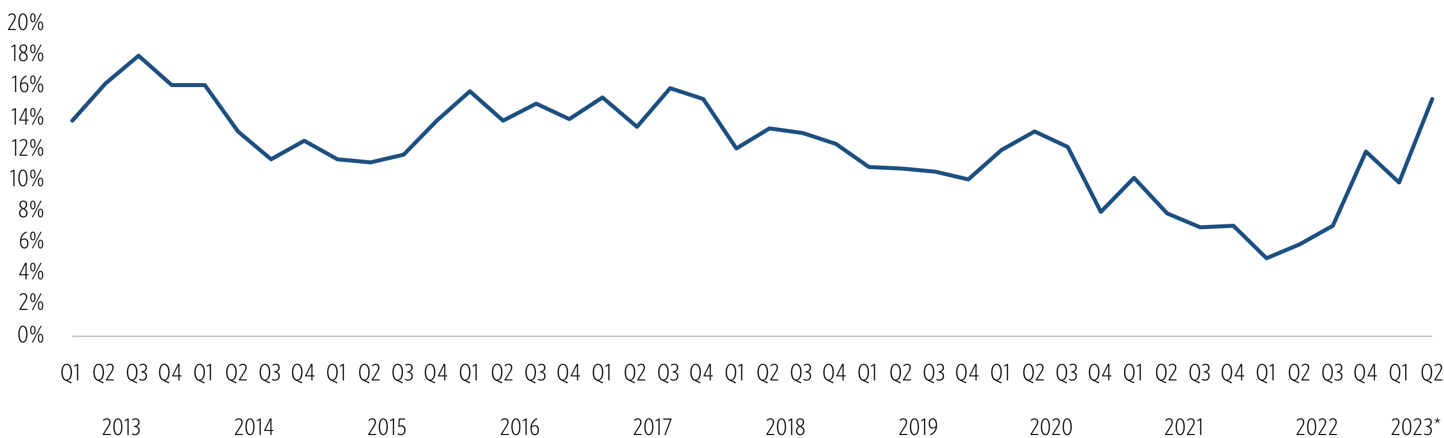
What the adjustments to this model show are that different stages of venture are in very different situations regarding capital needs and availability. This is somewhat obvious, but highlights how the structure of venture has changed, or at least how the extension of the traditional "venture capital" market has changed over the past decade. The later stages of VC have become heavily reliant on non-VC sources of capital to stay private, and now that those sources are gone, the challenges that have arisen will lead to companies failing to reach a successful exit, or see existing VC investors severely diluted due to further private raises at lower valuations. Without nontraditional investors actively deploying capital into the venture market at high paces, the late stage will continue to operate at a deficit unless it shrinks to a more manageable portion of venture. Since the onset of the pandemic, more than 30% of deals completed each quarter have been into companies that were at least five years old (a piece of our late-stage methodology). From 2013 through Q1 2020, that average was just 24.2%.

Navigating low supply

Through 18 months of the venture slowdown, the market has adapted relatively well. The overcapitalization from the past few years enabled companies to continue growth, though the global economy hasn't yet realized the deep recession that some predicted.

Now that that overcapitalization has depleted, unless companies have truly been able to extend their cash, we should see more begin their re-entrance into the financing market. In our Q2 2023 US VC Valuations Report, we finally began to see a surge in down rounds. 15.2% of rounds completed in Q2 were at a lower valuation than the company's prior round and more than double the figures we had reported at the market's peak.

Down rounds as share of all completed VC financings by quarter



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In the past decade, the highest proportion of down rounds we have tracked in a single quarter was in 2013, at 18.1% of completed deals. The economy is still making its way back from the global financial crisis, but that year, there were 101 public listings by US VC-backed companies—through the first half of 2022, there were just 31. That number of IPOs was on top of a company inventory of 21,000, which is much fewer than today.

Dry powder has also been a crutch for the industry. That figure has become incredibly concentrated in recent vintages. More than 50% of the dry powder in 2020-to-2022 vintages is stored in just 7% of the closed vehicles. We believe that a large portion of the supply-side deficit is derived from the crossover and other nontraditional investors that have pulled back from VC to more traditional strategies.

The supply crunch is unlikely to subside soon, and tech layoffs continue. So far this year, more than 200,000 employees have been laid off from tech firms globally. Though this number isn't solely private companies, it remains an indication that the oversupply of the market was broad, and a rebalancing is taking place.

A major hurdle ahead—regardless of return to activity from investors—is 50,000-plus companies remaining private and VC-backed in the US. A return to investment patterns of 2020 and 2021 is unlikely. The factors that led to that exuberance are not part of the current environment. As of the end of July 2023, the public markets are not yet ready to resume large-scale IPOs, and the Federal Trade Commission and its antitrust crusade has hampered M&A activity, stranding large amounts of capital in the private market. The high number of companies will meet a different sort of competition for the funds. Rather than investors battling to invest in a round, companies will compete for investor attention.

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