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PitchBook VC Dealmaking Indicator

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

Introduction

PitchBook's VC Dealmaking Indicator is a suite of metrics that quantifies the shifts in VC dealmaking conditions, assessing whether the environment is more favorable for startups or investors. This score integrates various deal terms and market trends, offering a historical view of the power dynamics within venture capital. Our initial methodology, Introducing the VC Dealmaking Indicator, built this tool from PitchBook's wealth of deal terms, deal attributes, and fundraising data. This methodology update aims to improve the efficacy of this measure through refined calculations and adjustments that better account for recent market influences.

For this methodology update, we improved our estimations of the capital demand-supply ratio by incorporating a demand curve that will reset after subsequent VC rounds. We also introduced a new market liquidity measure and removed some cap table features to better capture the market trends. We then applied new weights to the features in order of relevance. This document explains our methodology in depth to provide transparency into how we are measuring the VC dealmaking environment.

Core methodology

The VC Dealmaking Indicator captures key deal terms and attributes to assess the favorability of the venture environment for startups or investors. We have broadly bucketed the features into three categories: market liquidity measures, cap table information, and momentum metrics.

Market liquidity measures

- Capital demand-supply ratio
- Startup funding rate

Cap table information

- Cumulative dividends
- Liquidation participation
- Percentage acquired

Momentum metrics

- Years between VC rounds
- Valuation change

Market liquidity measures

Understanding the balance between capital demand and supply is key to assessing how conducive the environment is for startups seeking funding and the relative bargaining power of investors. When there is abundant capital, startups find it easier to raise funds and negotiate favorable terms. Conversely, limited capital supply relative to demand increases investor leverage. To estimate this supply-demand dynamic within the venture capital ecosystem, we developed a metric that considers the capital deployed by VC firms and other market participants (capital supply) against the amount startups are seeking to raise (capital demand).

To estimate capital demand, we assume that startups typically return to the market for funding after a round, aiming to raise a multiple of their previous capital injection. The amount sought in a startup's next funding round is estimated using the median deal size step-up over a three-year period. For example, if the median deal size step-up between 2019 and 2022 was 1.5x, a startup that raised $50 million on January 1, 2023, would be projected to seek $75 million in its next round.

Because we do not know the exact time the startup will seek to raise the $75 million, we estimate a demand distribution curve representing the cumulative probability that the startup will seek capital at any future point in time following its last fundraising. The demand for capital is then calculated based on this probability curve, producing a forecast that spreads the predicted step-up demand ($75 million in our example) across future time periods up until year six, where we assume the company will not go on to raise another round. These estimates are aggregated across all VC deals, creating a projection of capital demanded over time by deal type and industry. We also account for the cyclicality of the market environment and its influence on the demand curve through the following steps:

1. We start with the cohort of companies over a rolling three-year window that have raised a round and successfully raised a subsequent round within six years. For each year since the last VC round, we calculate the cumulative proportion of companies that successfully raised their next round divided by the number of companies in the cohort, with time *t* representing the number of years since the prior round and *C* being the number of companies that raised at time *t*.

   $P(Success)_t$ is the cumulative probability that a company will raise at time *t*.

$$P(Success)_t = \frac{\sum_{t=0}^{T=6} C_t}{total_{companies}}$$

2. Next, we take a new cohort of companies over the same rolling three-year time frame that suffered a bankruptcy or out-of-business (OOB) event. At each time *t*, we take the number of companies, *D*, that went OOB, divided by the total OOB the cohort experienced at the end of the six-year horizon.

   $P(Failure)_t$ is the cumulative probability that a company has gone OOB at time *t*.

$$P(Failure)_t = \frac{\sum_{t=0}^{T=6} D_t}{total_{OOB}}$$

3. We then adjust the failure probability for each deal type because startups at different stages have varying risks of going OOB.

$$P(Adjustment)_{type} = \frac{Type_{OOB}}{Early_{OOB} + Later_{OOB} + Venture\ growth_{OOB}}$$

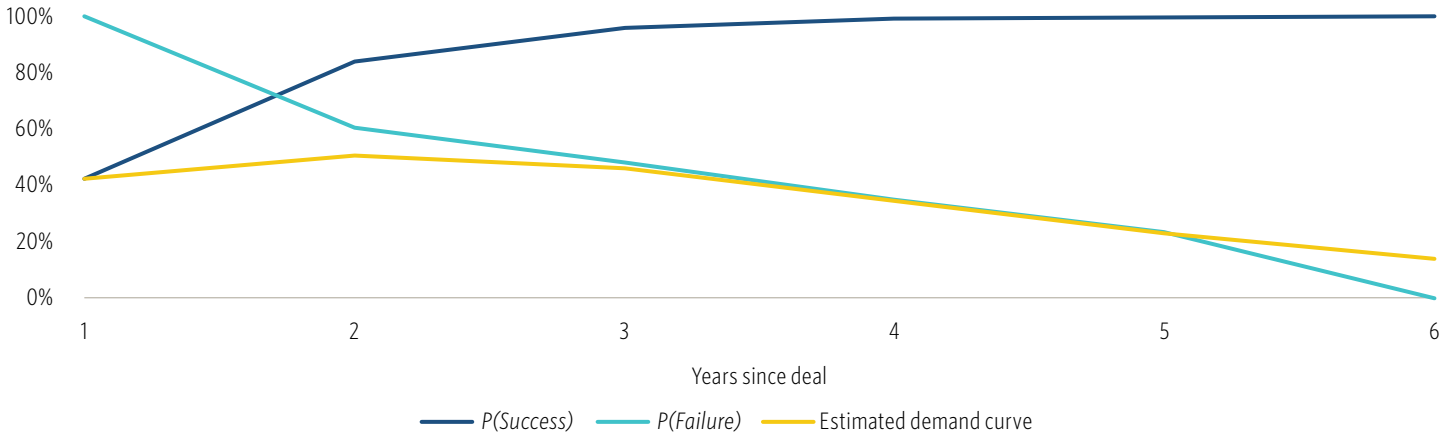
   Using the adjustment, the new probability of raising and not going OOB for each deal type within time *t* is then:

$$P(Failure)_{t,type} = P(Failure)_t * P(Adjustment)_{type}$$

4. The final demand curve is then the proportion of companies that have raised a round at each time *t* multiplied by the proportion of companies that have not failed at time *t*.

$$P(Final\ Demand)_t = P(Success)_t * (100 - P(Failure)_t)$$

Example of US early-stage VC estimated demand curve in 2016



Source: PitchBook
Note: For illustrative purposes only

5. We take into consideration real-time market trends by considering the median time between rounds of deals completed during years between time t = 0 to t = 1, t = 1 to t = 2, and so on. We then compare that to the prior year's median time between rounds. For example, if the median time between rounds is 1.5 years for deals completed in 2015 and it is 1.2 years in 2016, then our adjustment factor would be 1.5/1.2 - 1 = 25%.

$$Adjustment\ Factor = \frac{Median_{t-1}}{Median_t} - 1$$

If adjustment factor, n, > 1, then:

$$P(Demand)_{t,adjusted} = P(Demand)_t + (Adjustment\ Factor) * P(Demand)_{t-1}$$

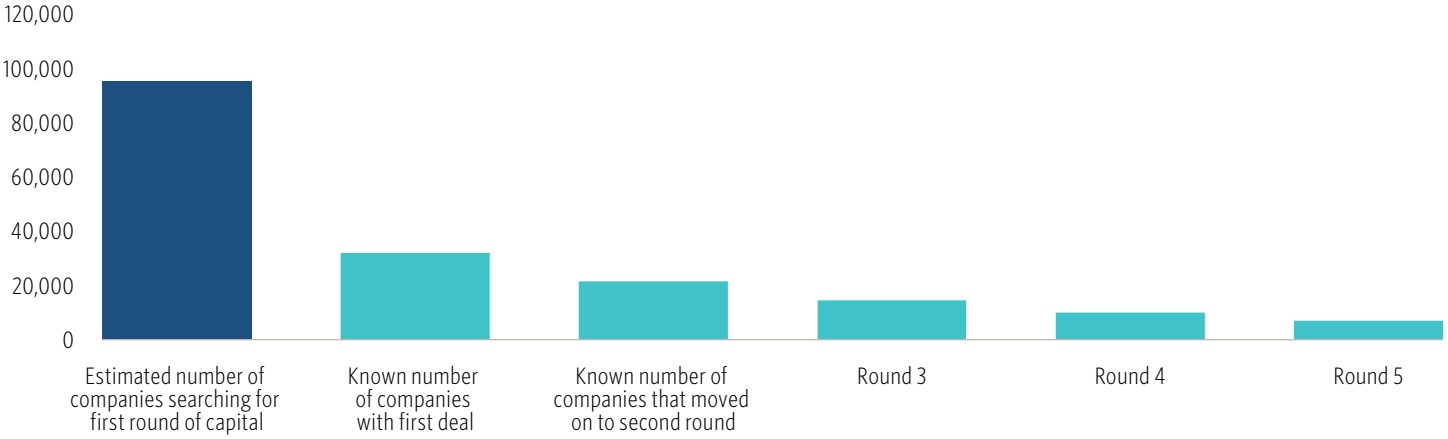
This adjustment factor reflects changing market dynamics where the acceleration of capital raising increases the demand for other startups to raise capital.

Additional assumptions to note:

- After six years since the last funding, the OOB probability is assumed to be 100%, and the need to raise more capital is assumed to be 0% after the sixth year.
- Due to the opaque nature of the VC market and the lack of comprehensive OOB tracking, OOB probability is treated as an independent event.
- We brought forward historical OOB probability curves to replace data from the most recent five years. For instance, currently the 2019 OOB distributions are used to replace data starting from 2020 onward. This aligns with the first assumption that startups are given at least six years before being classified as OOB.
- Due to a more robust data collection process in the venture space after 2006, demand curves for pre-2006 periods are replaced with 2006 figures.

To account for new entrants—startups without prior funding history—we employ a VC funnel analysis that extrapolates from historical dealmaking progressions to estimate the number of potential new market entrants. These startups are assigned the median first-round deal size, contributing to the overall demand estimate. The updated methodology incorporates recent market observations by estimating the capital sought from startups that have yet to raise a round. We calculate the number of unique companies at the initial stage (round 0) using a VC funnel across time horizons, assuming that the proportion of startups progressing to successive rounds holds for companies still seeking their first funding. To align with recent market trends, the estimates have been increased to be roughly three times the number of new entrants as compared to known first deals. For every startup successfully raising an initial round, there were around three startups actively seeking VC funding—one succeeded while two did not.

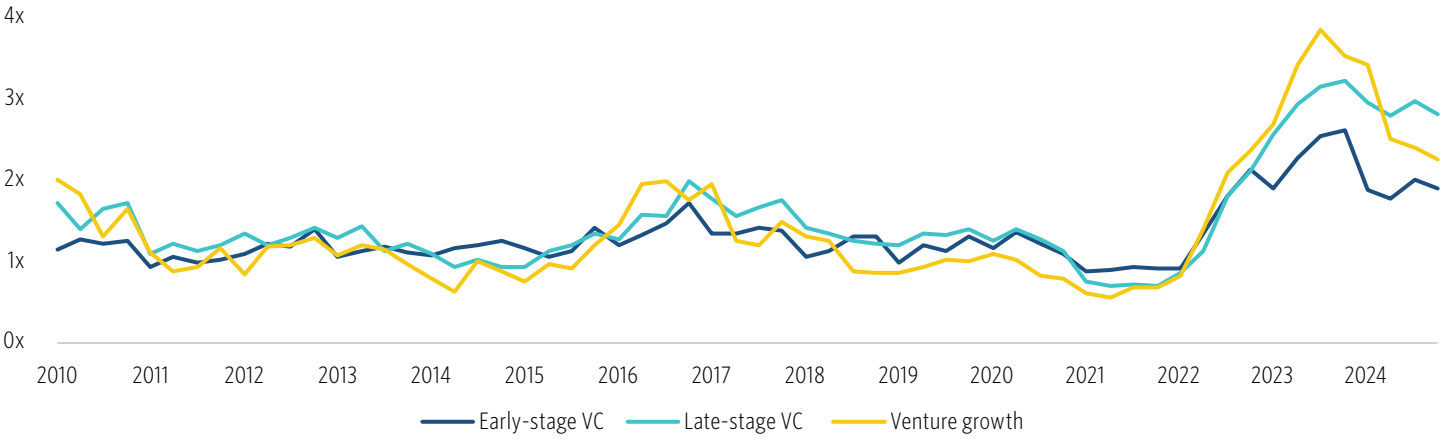
Number of startups in a typical US VC funnel



Source: PitchBook
Note: For illustrative purposes only

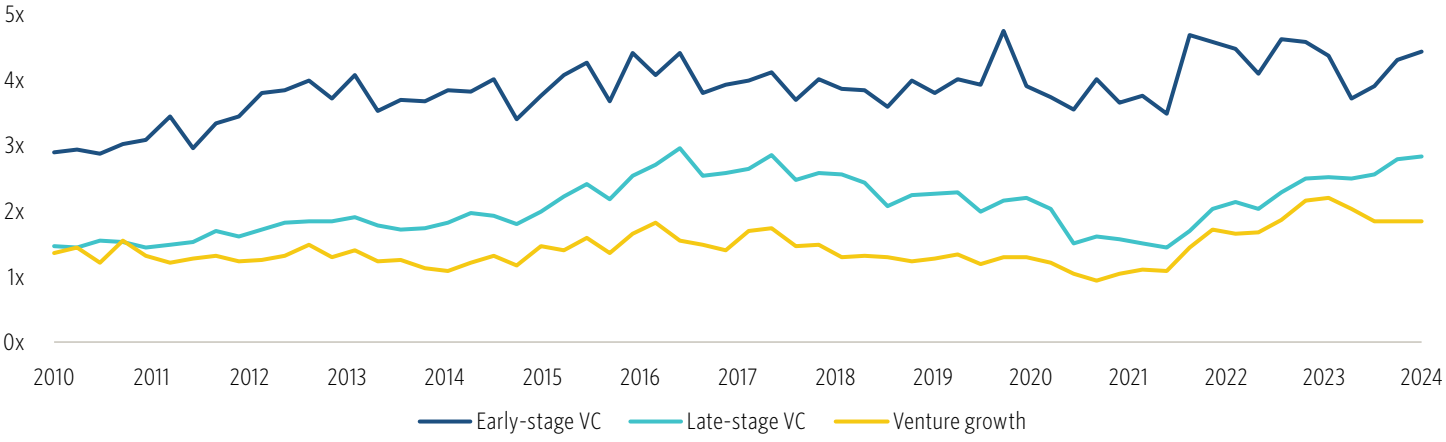
For capital supply, to reduce the impact of outliers—such as large, high-profile deals that can skew estimates of available capital—we apply a 99th-percentile winsorization to the VC deals dataset. This lessens the effect of outsized rounds. For example, OpenAI's $10 billion late-stage VC deal in Q1 2023, funded by Microsoft, significantly exceeds typical deal sizes. By replacing this amount with the running 99th-percentile deal value ($443 million in Q1 2023), we minimize its impact on the demand-supply model. Additionally, to account for missing deal sizes, we imputed the average known deal sizes in a given deal type, close year, and sector to then apply to the demand-supply ratio.

Capital demand-supply ratio by stage



Source: PitchBook • Geography: US • As of October 31, 2024

Startup funding rate by stage



Source: PitchBook • Geography: US • As of October 31, 2024

To complement the capital demand-supply multiple, we introduce a new metric, startup funding rate, which quantifies the estimated number of startups seeking funding relative to the volume of available deals. While the capital demand-supply ratio captures the liquidity dynamics, the startup funding rate seeks to capture the success rate of completing a VC deal. At the early stage, rates remain high even in market downturns, as new businesses are constantly seeking first VC rounds; on average, the early-stage startup funding rate was 3.8x; for every four startups that

demanded capital, only one successfully raised a VC round. As early-stage demand transitions into later stages and eventually venture-growth rounds, a buildup occurs during challenging exit environments. Startups in early and late stages often exit through M&A, while growth-stage companies typically pursue public listings.

Cap table deal terms

For the cap table deal term metrics, we encode each deal with +1 for every investor-favorable term and -1 for every startup-favorable term across each feature. We then total the encoded values for every deal term and divide them by the number of deals for every quarter.

Cumulative dividends, liquidation participation, and percent acquired are key deal terms that PitchBook collects from cap tables. A higher frequency of these terms is indicative of an investor-friendly environment. Generally, during market downturns, investors demand more protective deal terms to limit their downside. In contrast, periods of high liquidity attract more investments, giving startups more bargaining power in their term sheets.

Cumulative dividends: A mandatory payout to investors that accrues over the life of the startup and is realized at a liquidity event. Cumulative dividends are investor friendly because they are typically used as a safety measure so that investors can obtain some economic benefit from a startup even if the startup experiences a less-than-ideal outcome.

Liquidation participation: Determines whether preferred shares receive additional compensation after their liquidation preference is paid out. Liquidation participation is distinct from liquidation preference, which is a multiple of invested capital that the preferred investor is entitled to receive upon liquidation. Typically, this liquidation preference is between 1x and 2x of the invested capital before common equity holders split the remaining proceeds. When a startup goes through a liquidity event, liquidation participation determines if the preferred shareholders are entitled to then share in the proceeds with common equity holders after their preference has been paid out on an as-converted basis. The presence of liquidation participation is investor friendly in our indicator.

Percent acquired: Tracks the proportion of ownership that investors acquire in funding rounds. Larger stakes acquired indicate an investor-friendly environment, as scarcer capital enables investors to negotiate higher equity shares for their investments.

Momentum metrics

We also included other market characteristics such as time to raise between rounds and valuation changes. The growth rate and scaling potential of companies in the venture ecosystem are indicators of the health of the median startup at each stage, as well as the median startup's ability to attract capital and realize growth through its valuation in its next funding round.

Years between VC rounds: Median years between deals collected in the quarter and their previous VC round. We incorporate this metric and assume that the more often deals are being made, the more startup-friendly the environment is, as investors demonstrate interest in the industry or stage of business. A higher median number of years since the last VC round is investor friendly.

Valuation change: The median change from the previous round's post-money valuation to the current round's pre-money valuation. This metric uses deal valuation step-up data, which is calculated by dividing the current round's pre-money valuation by the previous round's post-money valuation. Higher median valuation step-ups signal broad momentum in business fundamentals or pricing for startups, suggesting power is more in the hands of founders negotiating with investors. Lower valuation step-ups signal a cooler market for startups and lowers the likelihood of investors overpaying to get into deals. Low valuation step-ups are coded as investor friendly in our indicator.

Dealmaking Indicator

We normalize our features using range normalization, which converts values of different measurements and ranges into a common scale, in this case a score from 0 to 100. This way we ensure that no single feature can dominate just because the scale is naturally larger, such as valuation step-ups, thus making it easier to understand how the feature trends behave relative to each other. We calculate a score for each feature, X, at each quarter, t.

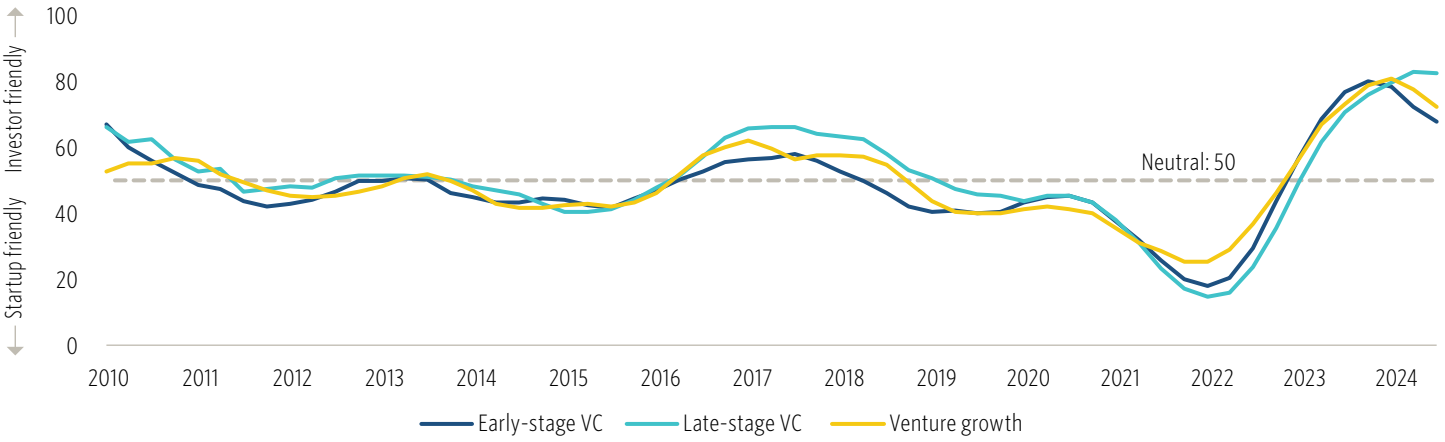
$$Score_{t,X} = \frac{X_t - X_{Min,(t \to T)}}{X_{Max,(t \to T)} - X_{Min,(t \to T)}} * 100$$

We then aggregate an average score at time *t* where each feature is weighted as follows:

PitchBook Dealmaking Indicator feature weights	Weight
Market liquidity measure	**50%**
Capital demand-supply ratio	30%
Startup funding rate	20%
Cap table information	**30%**
Cumulative dividends	10%
Liquidation participation	10%
Percent acquired	10%
Momentum metrics	**20%**
Years since last VC round	10%
Valuation change	10%

The resulting metric is normalized and smoothed over a trailing four quarters (including the current quarter). It is then anchored around the median score of 50, which represents a neutral environment; scores above 50 indicate an investor-friendly market, while scores below 50 signal a startup-friendly environment.

VC Dealmaking Indicator by stage



Source: PitchBook • Geography: US • As of October 31, 2024