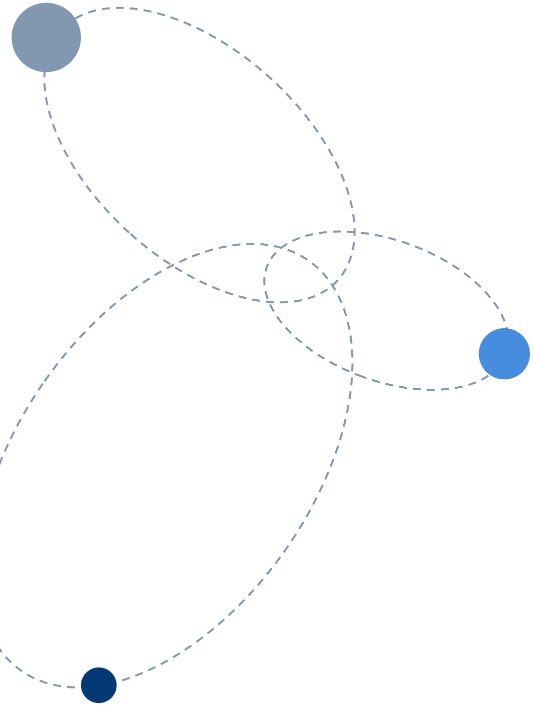
The Three-Body Problem

Finding the New Stable Points
in Venture Capital

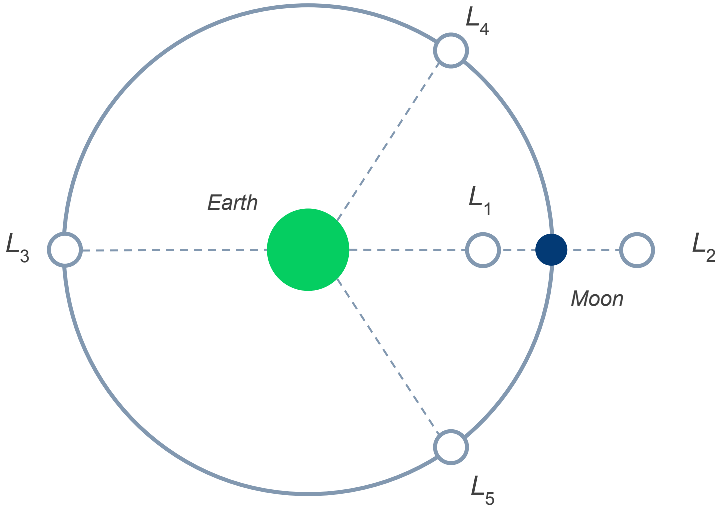
QED INVESTORS

The Three-Body Problem

The Three-Body Problem is one of the oldest problems in physics. It’s the name given to the challenge of determining the motion of three celestial bodies moving under no influence other than that of their mutual gravitation.



Seeking Stability



When one of the three objects is small relative to the other two, points of stability exist called “Lagrange Points.”

LAGRANGE POINTS

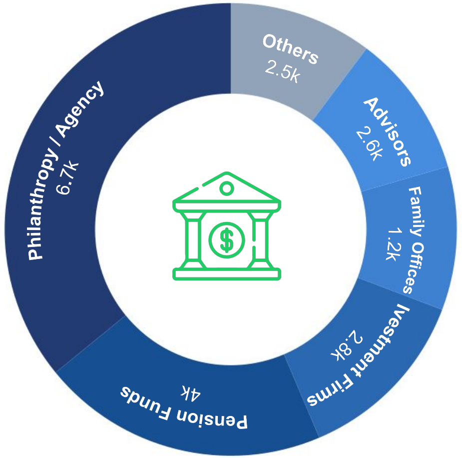
BENEFIT

Locating in a Lagrange Point allows the small-mass object to exert **little to no energy** to maintain its orbit.

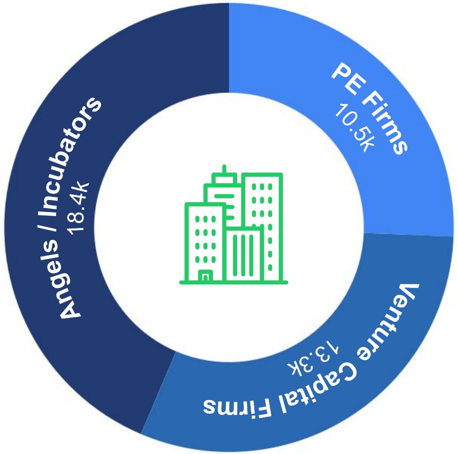
The gravitational and centrifugal forces of the two large bodies are in equilibrium so **few corrections are needed** to maintain orbit.

The Three-Body Problem has many parallels to the VC ecosystem

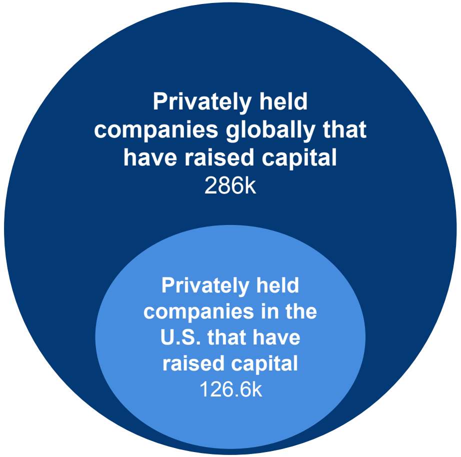
U.S. LP Ecosystem



U.S. Private Capital Ecosystem



U.S. Startup Ecosystem



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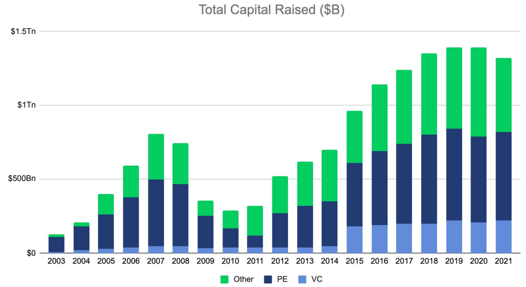
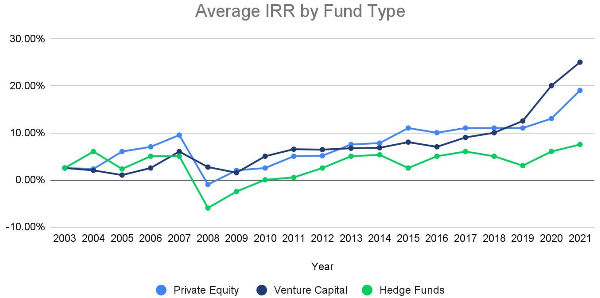
*PitchBook Data, Inc.; *Data has not been reviewed by PitchBook analysts.*

Private Market Returns

Returns have improved over the past 10 years and allocations to the private asset class have followed

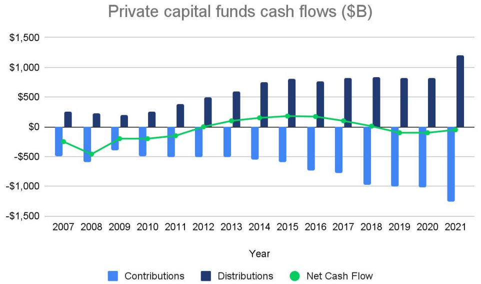


Funds have raised and deployed hundreds of billions of dollars



Funds and LPs have all done very well

*PitchBook Data, Inc.; *Data has not been reviewed by PitchBook analysts.*



LPs have continued to reinvest proceeds into private funds

Source: PitchBook Data, Inc.

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But the startup ecosystem is experiencing a series of changes that can’t be ignored.

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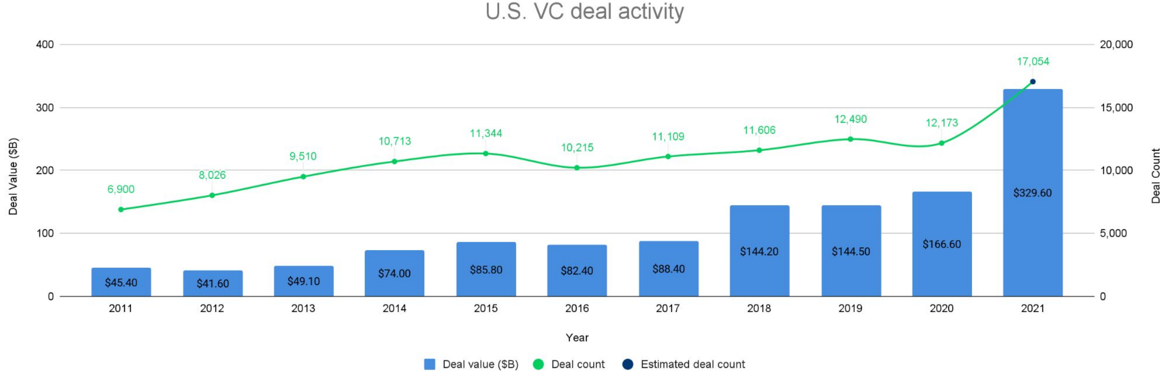
Change 1

The ecosystem has experienced a Cambrian explosion of funding availability



*PitchBook Data, Inc.; *Data has not been reviewed by PitchBook analysts.*

1. For the 2001 calendar year, there were 178 unique new companies founded that year that received funding from a U.S.-headquartered investor. **$929.46 million** of capital was invested over 183 deals.

2. For the 2011 calendar year, there were 1,416 unique new companies founded that year that received funding from a U.S.-headquartered investor. **$2.44 billion** of capital was invested over 1,534 deals.

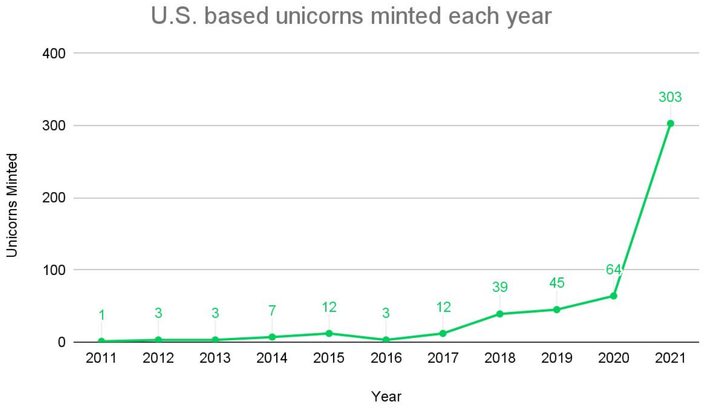
3. For the 2021 calendar year, there were 1,897 unique new companies founded that year that received funding from a U.S.-headquartered investor. **$14.28 billion** of capital was invested over 2,120 deals.

*PitchBook Data, Inc.; *Data has not been reviewed by PitchBook analysts.*

Change 2

More value is being created than ever before in the private markets

There are 1,112 private companies valued at $1 billion or more, as of May 19, 2022



Source: CB Insights

520
unicorns on the global list were minted in 2021 alone

$3.7 trillion
combined valuation of those companies

587
unicorns are U.S. based, worth a combined $1.9 trillion

Two-thirds of all current U.S. based unicorns minted in the past decade have reached $1 billion status in the past 16 months

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Change 3

Going from Zero to One is no longer a dark art

1
Infrastructure exists for startups to build faster and cheaper

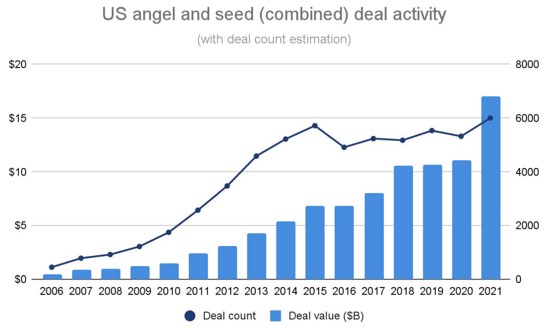
salesforce, aws, stripe, PLAID, Google Ads, kubernetes, TREASURY PRIME

2
More people in the ecosystem have the required skills to launch and scale startups because they came from startups

2m+ people
currently working in tech roles in the U.S.

2k+ people
working on “stealth” businesses on LinkedIn. Up from 500 2 years ago

3
Angel and seed funding is much easier to come by



Source: Q4 2021 PitchBook-NVCA Venture Monitor

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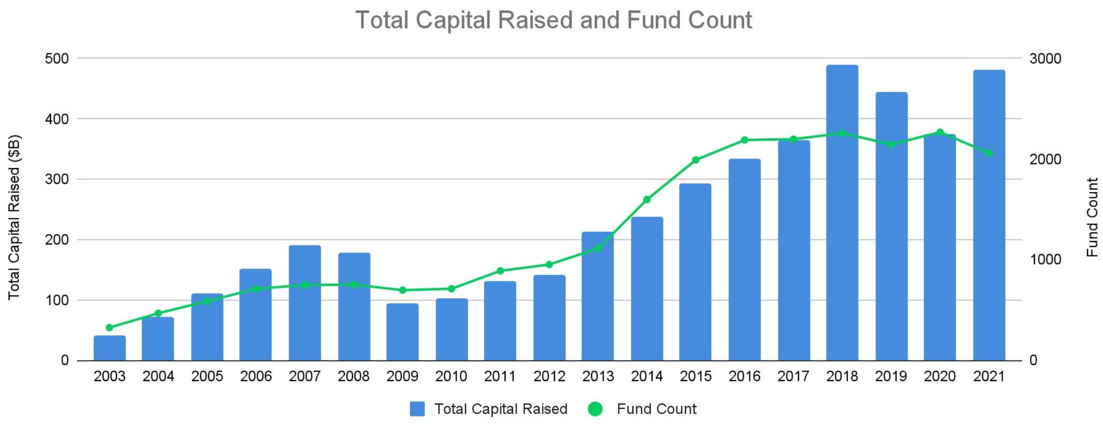
Change 4

Asset allocators have increased their allocation to the private ecosystem



Source: PitchBook Data, Inc.

1. Public market performance over the past two decades has created a windfall for asset allocators
2. Money has been pouring into the VC asset class because asset allocators seek alpha and the private markets have been generating outsized returns
3. Low yield and scarcity of other quality investment opportunities have driven returned capital back into the VC asset class

Instability in an ecosystem can only exist for short periods of time.

Major changes to an industry's drivers always lead to major changes in how that industry is structured.

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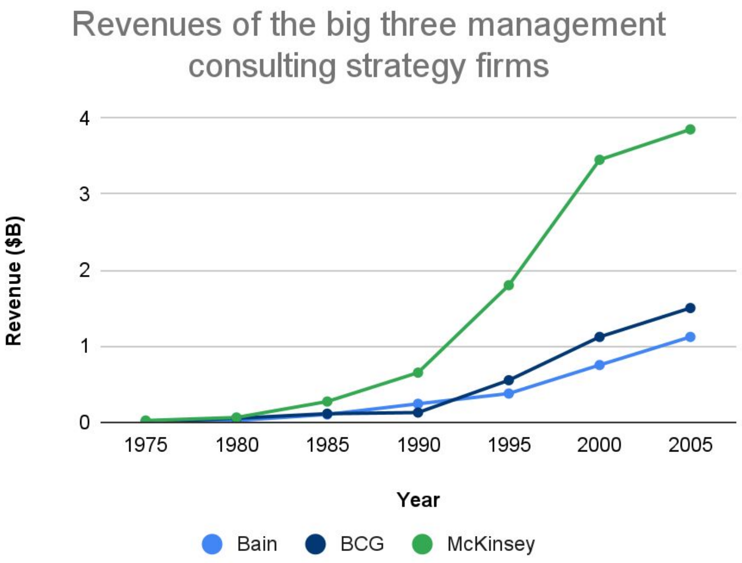
Change happened in Consulting



Source: CBInsights -- Killing Strategy: The Disruption Of Management Consulting

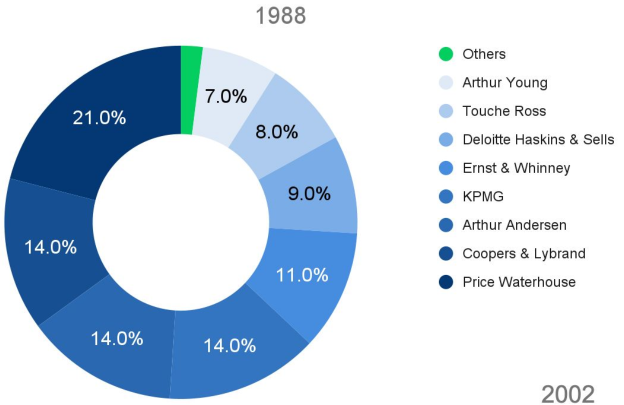
Primary drivers of change in consulting included:

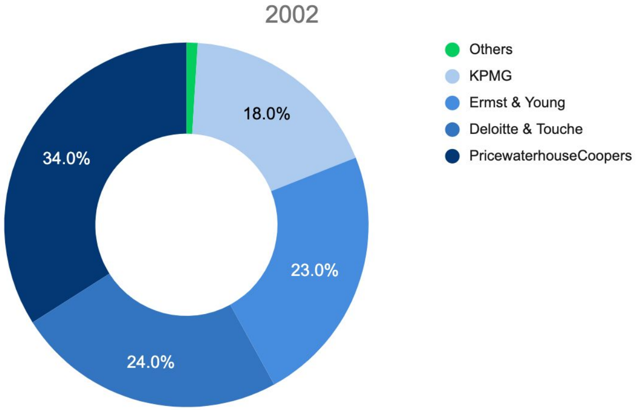
- Corporates have grown in size and complexity so consulting firms with a broader footprint have become one-stop shops.
- Corporations have come to rely on consulting firms to “staff up” particular projects without hiring permanent resources. The ebb and flow of assignments is best absorbed by larger consulting firms, the best of which began mastering this in the mid 1980s and 1990s.
- No board or shareholders will blame an executive team for hiring a “name brand” consulting firm to seek advice.
- Acquiring niche specialists (i.e. data analytics firms, design consultants, digital agencies) has become a competitive advantage over small and mid-size firms that can’t provide the same full suite of services.

Change happened in Accounting

Primary drivers of change in accounting included:

- Mergers enabled firms to achieve greater economies of scale and ultimately increase market share and maintain market position.
- As infrastructure was being developed and built, smaller firms did not have the scale or resources to afford to build.
- The globalization of clients prompting a need for greater global reach.
- The hesitancy of capital market participants to recommend that companies use smaller firms with whom they were not familiar.





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Report: United States General Accounting Office Report to the Senate Committee on Banking, Housing, and Urban Affairs

Change happened in Investment Banking

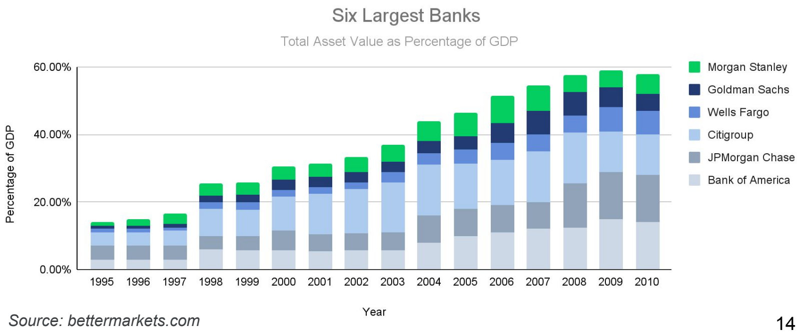
Primary drivers of change in investment banking included:

- The 1999 repeal of Glass-Stegal removed the restriction to separate investment banking and commercial banking activities which resulted in a wave of consolidation combining these two forces. Being able to access a large stable supply of deposits to lend to corporate clients was a very large unlock for the whole industry.

- A "forced" wave of consolidation occurred during the 2008 financial crisis as many investment banks that were reliant on non-deposit-funded balance sheets folded. As a result, corporate and institutional clients fled to the "safety" of the largest banks. The largest banks have continued to gain market share since.

The U.S. investment banking industry includes about 3,000 companies with combined annual revenue of about $140 billion. The 50 largest firms generate more than 90 percent of the industry's revenue.

Source: Statista



Source: bettermarkets.com

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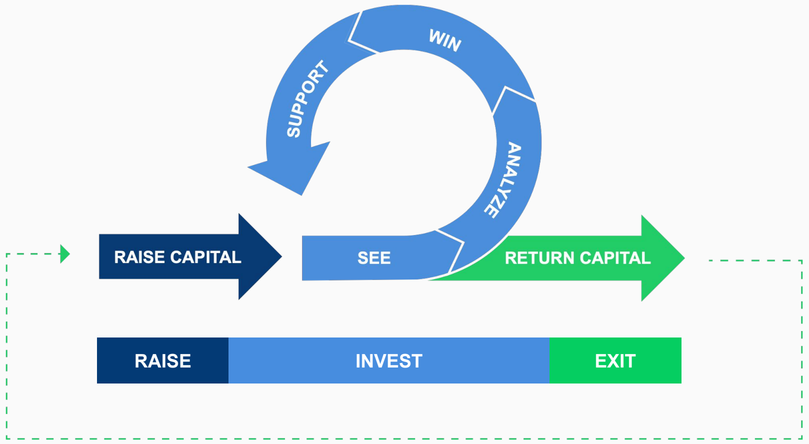
And change is coming to the VC ecosystem

So what do VCs do?

Simply put, they raise capital, they invest capital and they return capital and profit.

Being great at investing is a necessary condition for raising capital. LPs allocate capital based on performance so the better VCs are at investing, the more access they have to capital.



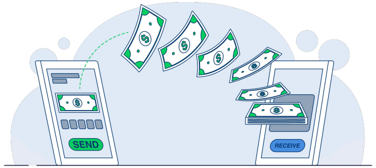
VCs' major work streams

Breaking Down the VC Investment Process

1 SEE

You can only invest in what you see.
A significant portion of a VC's time is spent sourcing deals.

2 ANALYZE

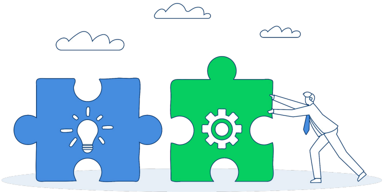


It is critical to identify the right company.
VCs evaluate whether or not a startup's risk/return profile passes the firm's return expectations.

3 WIN

Investing in a private company requires getting them to accept your capital.

4 SUPPORT



The support function helps kink the curve on outcomes by providing fractional access to high-quality resources that startups couldn't afford given their stage and capitalization.

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Applying the Three-Body Problem analogy to the startup ecosystem requires solving for VCs' points of stability.

Assertion: There are four distinct stable points for VCs in this new world.

Stable Point 1

Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist

QED

Stable Point 1

- Scale
- Non-consensus alpha
- Late-stage generalist
- Solo capitalist

Seeing more deal flow increases the odds that a VC firm has a shot at investing in a break-out winner

Bigger teams can source and process more deal flow which results in greater coverage. The **information asymmetry** from seeing more shouldn’t be underestimated. Real alpha can be generated by scaled firms as they approach “full coverage”.

Information asymmetry allows them to **spot emerging trends** and breakout companies with greater clarity than firms with “partial coverage”. And scale allows VCs to see off-market deal flow by accessing talent spinning out of its vast portfolio.

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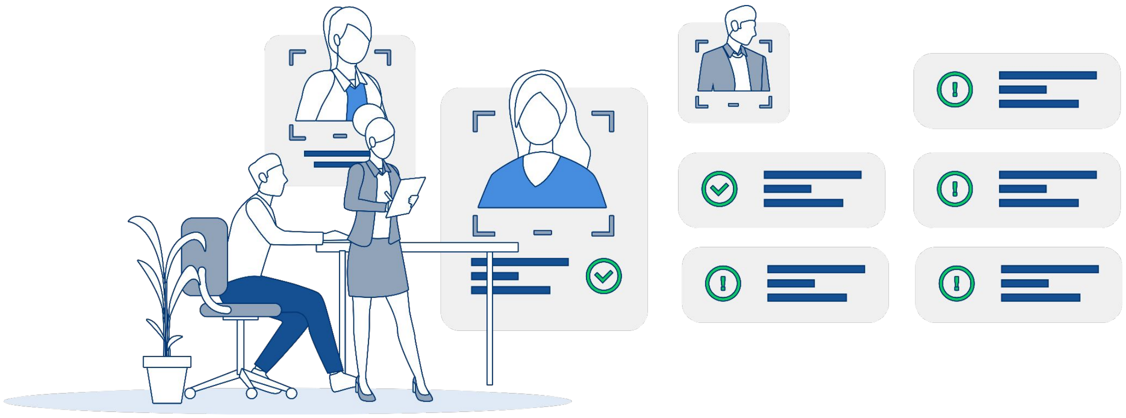

Scale allows for speed and thoroughness to co-exist

The small number of investment professionals at a non-scaled VC creates the need to make costly tradeoffs between these two dimensions. Non-scaled VCs either outsource aspects of diligence or they make decisions without answering questions that require expertise that their teams don't possess.

Having a variety of deeply skilled individuals directly on the team is a competitive weapon.

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Stable Point 1

Scale
Non-consensus alpha
Late-stage generalist
Solo capitalist

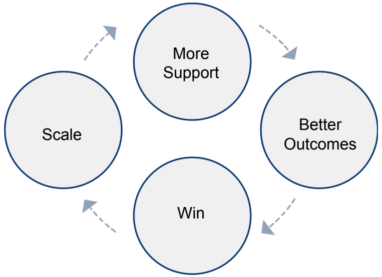
Many pieces of the value proposition offered by scale players help them win deals

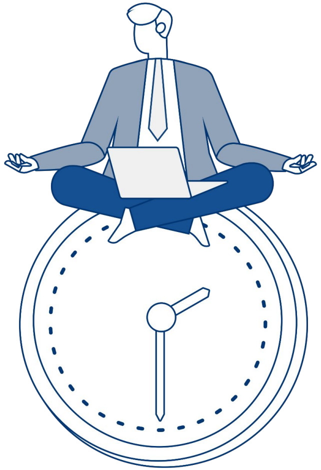
The ability to invest in later rounds is a massive competitive weapon of at-scale firms.

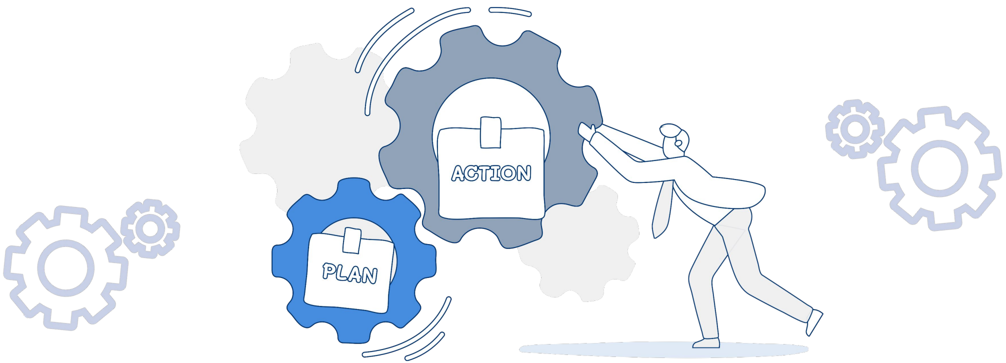
- Supporting solid portfolio companies when markets are going through periods of dislocation is valuable.
- Supporting troubled companies when they need bridge capital is valuable.

Having a built out team of investors and operational support can help win deals.

And the sheer quantity of breakout winners will help scale players win future deals because winners want to be associated with winners.







The support function is the clearest VC work stream that benefits from scale

The support function can help kink the curve on outcomes and win deals by providing resources to startups that they otherwise wouldn't be able to afford given their stage and capital.

At-scale specialists can add differential value relative to their generalist counterparts because the advice they provide to their companies can be both strategic and tactical when dealing with industry specific challenges.

QED

Stable Point 1

Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist

Scale: Stable because it offers a strong value proposition to both its customers

VALUE PROPOSITION TO LPS

- Once a scale firm is underwritten, a significant amount of money can be put to work.
- Alpha will be captured because they'll find and invest in more than their fair share of the right hand tail outcomes.
- Beta will be captured because they'll have first crack at de-risked companies due to brand and reach.
- Scaled firms should be able to generate returns with less volatility given the size of their portfolios.

VALUE PROPOSITION TO STARTUPS

- Capital will be available through cycles, in times of need and in cases where capital can crown the winner in a space.
- Significant resources will be made available that a startup wouldn't be able to directly pay for given their stage and cash position.
- Brand will help attract and retain talent.
- Having a large portfolio allows for a VC to connect dots and share advice in ways that VCs with smaller portfolios can't.

Stable Point 2

Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist

QED

Stable Point 2

Scale

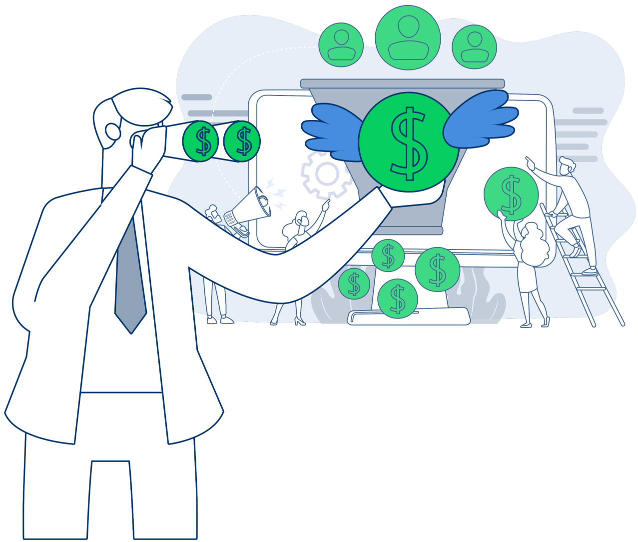
Non-consensus alpha

Late-stage generalist

Solo capitalist

Non-consensus deals don’t always come from the typical channels so non-consensus investors have the ability to generate deal flow that other investors aren’t interested in

Non-consensus alpha VCs are typically first-check specialists. There are overlooked teams, overlooked geographies and ideas that require a leap of faith, many of which are never taken seriously or never seen by most VC firms.



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Stable Point 2

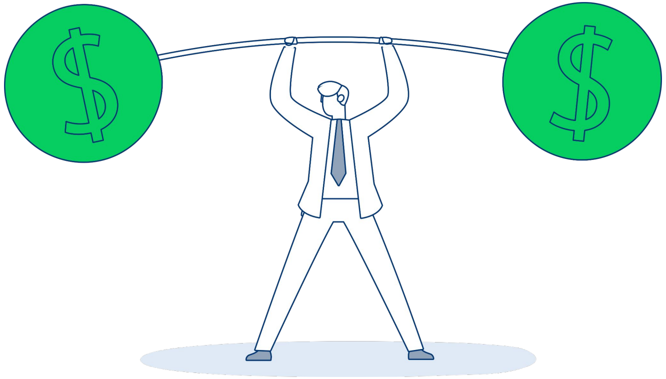
Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist

QED



Being able to suspend disbelief is a superpower of non-consensus investors

They only care about investing in great companies with enough regularity to offset the high rate of being wrong and writing off capital. They care about team and TAM and getting money in early enough to produce outsized returns when they invest in a right-hand-tail winner.

Non-consensus specialists can be really good at spotting ideas and teams that can defy the odds. Knowing how industries work can help them overcome the non-consensus nature of certain investments.

Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist

Winning in this space involves getting to “yes” when others say “no”

Many non-consensus investors don’t make concentrated bets which means they have to play nice with others and work with a startup to assemble a consortium of investors.

Specialists have industry specific contacts and resources that make them valuable and help them win deals.

Stable Point 2

- Scale
- Non-consensus alpha
- Late-stage generalist
- Solo capitalist

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Supporting non-consensus companies typically involves helping them put learning agendas in place that de-risk the business one major driver at a time

Support is focused on helping a company tell their story to customers, investors and employees.

Support is focused on delivering results that can shift the business from non-consensus to consensus so that future rounds of capital will be easier to raise and at higher valuations.

Non-consensus alpha: Stable because it offers a strong value proposition to both its customers

VALUE PROPOSITION TO LPS

- Great non-consensus firms can generate significant alpha due to the unlimited return profile of early stage non-consensus startups.
- Diversified exposure to a different set of companies.
- Non-consensus firms win deals based on factors outside of price.

VALUE PROPOSITION TO STARTUPS

- Many startups require an early investor to “suspend disbelief” to see the possibilities of what they’re building and non-consensus firms serve this purpose.
- Non-consensus VCs are a great fit for Startups that require an investor to believe that a talented team will “find a solution” to a problem if given enough time and money.

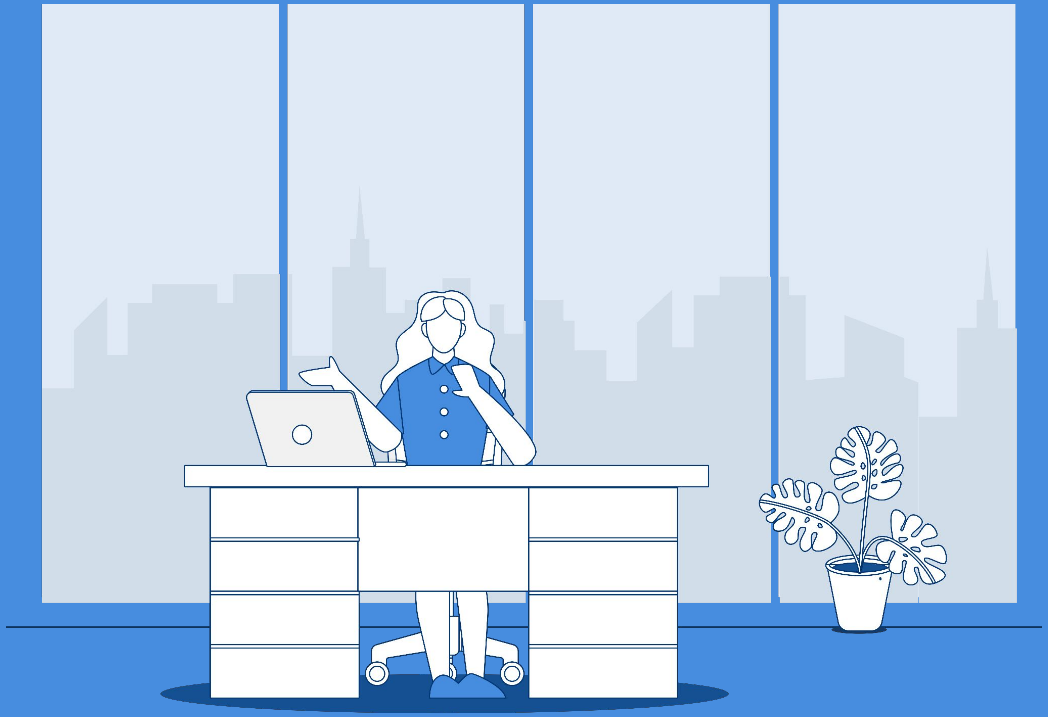
Stable Point 3

Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist



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Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist

Discovering and gaining access to late-stage, high-growth companies is a solvable problem

Late-stage generalists are able to insert themselves in the funding processes run directly by companies as well as those managed by bankers.

Late-stage generalists have the highest probability of seeing 100% of the deals that they want to see in their target areas of focus.

- Scale
- Non-consensus alpha
- Late-stage generalist
- Solo capitalist

Late-stage generalists are writing checks into highly de-risked companies which significantly reduces the complexity of making an investment decision

Diligence on these companies can be done by the firm's investment professionals, but it can also be outsourced to third-party specialists and consulting firms. The checks being written into these companies are large enough that expectations on speed and thoroughness are aligned.

Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist

Winning in this space involves getting to “yes” with great terms

In many cases, the playing field is leveled by giving all potential investors equal access to information and asking them to adhere to a strict timeline.

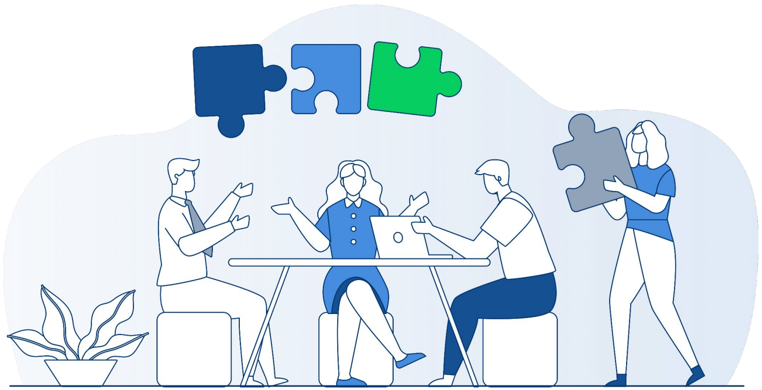
Long-term stability requires overlaying price discipline with an understanding of market comps and market cycles.

Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist



Supporting late-stage companies typically involves helping them navigate scaling challenges and helping them prepare for going public or being acquired

Strategic help can be provided directly by the investment firm or by third parties that they pay to help their portfolio companies.

Stable Point 3

Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist

QED

Late-stage generalist: Stable because it offers a strong value proposition to both its customers

VALUE PROPOSITION TO LPS

- The risk/return and duration profiles of late stage private companies is attractive to many LPs.
- Many LPs are interested in accessing private companies that will soon become public companies.
- An effective way for LPs to invest capital. LPs can more predictably get capital return and shift strategy as the environment changes.

VALUE PROPOSITION TO STARTUPS

- Many later-stage companies need help navigating scaling challenges and the ultimate path to liquidity and late stage specialists have significant experience navigating these specific challenges.
- Since the value add of these firms is similar, the late-stage specialist competes based on price and terms.

Stable Point 4

Scale

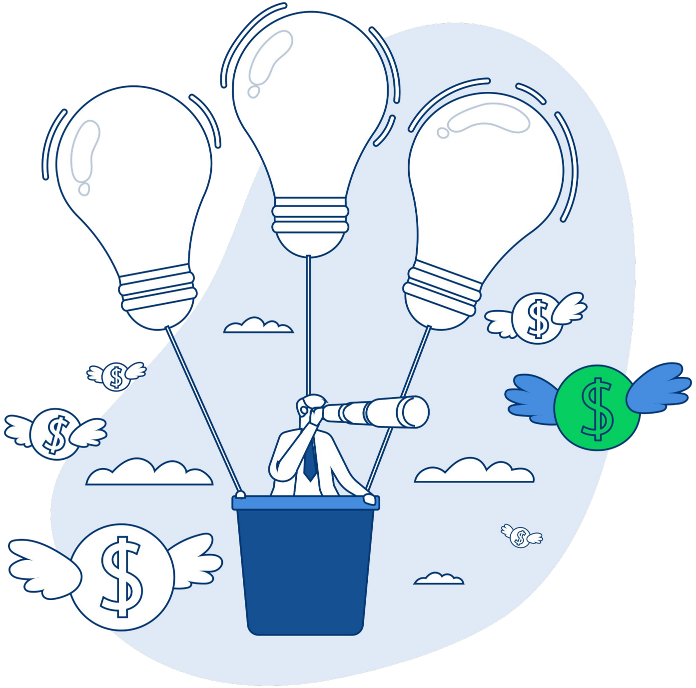
Non-consensus alpha

Late-stage generalist

Solo capitalist

Stable Point 4

- Scale
- Non-consensus alpha
- Late-stage generalist
- Solo capitalist



Solo capitalists build their own sources of deal flow but given their size the expectation is that they'll only see a fraction of the overall ecosystem

The goal of a solo capitalist is to generate quality of deal flow over quantity of deal flow. Solo capitalists often rely on larger VC firms to pull them in and share their deal flow when the solo capitalist could be helpful to a startup.

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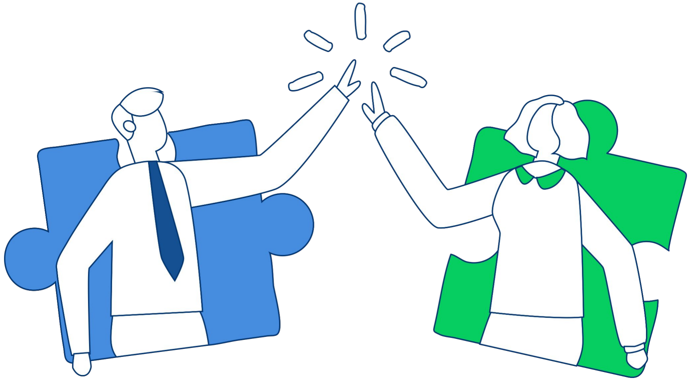
Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist

Solo capitalists rarely conduct the same level of diligence as would be expected from a larger VC firm



Many times, nearly all the diligence they do is around team and TAM and whether or not they’re excited by the problem and solution statements that a founder shares with them.

Solo capitalists typically each have their own methods for analysis. While most large VCs have a complex IC or memo-writing process, solo VCs are making the decision, by definition, as an individual, and that process is tailored to their style. Startups appreciate the speed of decision making that comes from a single decision maker.

Stable Point 4

Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist

Solo capitalists win deals because they can provide the most value per dollar invested than anyone else on the cap table

Great solo capitalists can advise more companies than a typical VC can because they don't typically take active Board roles that by definition consume time. Solo capitalists' checks are typically quite small and therefore don't push anyone aside. Their flexibility around ownership and terms make them easy to work with.

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Scale

Non-consensus alpha

Late-stage generalist

Solo capitalist

Solo capitalists are very transparent about the help they can provide companies

Typically the support comes in the form of business introductions, recruiting, and expert advice around specific topics.

Stable Point 4

- Scale
- Non-consensus alpha
- Late-stage generalist
- Solo capitalist

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Solo capitalist: Stable because it offers a strong value proposition to both its customers

VALUE PROPOSITION TO LPS

- Allows for the LPs to be active members of a community; generating deal flow, learning about trends and helping connect dots.
- By only accepting small checks, solo capitalists create opportunities for individual investors and small LPs to invest in the VC asset class.

VALUE PROPOSITION TO STARTUPS

- Best ratio of value add per dollar invested of anyone on their cap table.
- Direct access to an expert who can help a founder solve critical problems.

But there are many VC firms caught in strategically unstable positions

If a talented founder with an amazing business idea had the ability to choose a VC firm to fund their company, would they pick your firm first?

If a potential LP had the ability to choose a VC firm, would they allocate assets to your firm?

If the answer to either of these questions is “no” then your VC firm is in an unstable orbit

Many smart firms are in or heading towards each major stable point

SCALE

An impressive list of multi-billion-dollar funds

- SEQUOIA
- andreessen. horowitz
- INSIGHT PARTNERS

NON-CONSENSUS ALPHA

Funds investing in non-obvious, non-derisked businesses, including seed specialists

- LUX
- BENCHMARK
- First Round

LATE STAGE GENERALIST

Funds that write the biggest checks into late-stage firms

- TIGERGLOBAL
- DRAGONEER INVESTMENT GROUP
- SILVERLAKE

SOLO CAPITALIST

Funds organized around an individual

- Elad Gil
- Naval Ravikant
- Harry Stebbings

Today's market conditions are putting stress on how much capital LPs can allocate to VC firms going forward.

The best firms are demanding greater allocations from LPs given their performance which further strains capital availability.

Thus begins the start of the death spiral for many VC firms that can't quickly move to a stable point.

The startup death spiral is very familiar to everyone in the ecosystem. VCs can also fall prey to the gravity of a death spiral

Miss goals

Struggle to raise capital

Refactor goals and hiring plan to preserve runway

Miss goals

Lose talent

Struggle to raise capital

RIF to preserve runway

Miss goals

Lose talent

Struggle to raise capital

COMPANY FAILS

STARTUP

VCs

Struggle to see or win the best deals

Accepted term sheets are adversely selected or overpriced

Track record suffers

Struggle to raise capital

Talent loss

Can’t support companies

Brand suffers

Struggle to see or win the best deals

VC FAILS

Change is always a choice

“It is not necessary to change. Survival isn’t mandatory.”

- William Edwards Deming

About the Author

Frank Rotman is a Founding Partner and the Chief Investment Officer of QED Investors.

His investment focus has been on emerging next-generation fintech and proptech companies. Frank was one of the earliest analysts hired into Capital One and he spent almost 13 years building and managing many of the company's business units, credit organizations and operational areas.

Frank graduated from the University of Virginia with degrees in Applied Mathematics (B.S.) and Systems Engineering (M.S.).

He writes prolifically on Twitter as @fintechjunkie and posts additional content frequently on qedinvestors.com and fintechjunkie.com

QED Investors is a global leading venture capital firm based in Alexandria, Va. Founded by Nigel Morris and Frank Rotman in 2007, QED Investors is focused on investing in disruptive financial services companies worldwide.

QED Investors is dedicated to building great businesses and uses a unique, hands-on approach that leverages our partners' decades of entrepreneurial and operational experience, helping their companies achieve breakthrough growth. Notable investments include AvidXchange, Bitso, ClearScore, Current, Creditas, Credit Karma, Kavak, Klarna, Konfio, Loft, Mission Lane, Nubank, QuintoAndar, Remitly and SoFi.

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