

NOTHING VENTURED

In a global recession, amidst record volatility
and health concerns, why allocating to venture
makes all the sense in the world.

by Adam Day



EXECUTIVE SUMMARY

Venture fund investing, like many subjects to the otherwise uninitiated, feels shrouded in mystery, lurking behind veils of numbers, formulas, and industry specific jargon like 'series seed', and 'GP catchup' (not a condiment), and 'power-law distribution'. It is perhaps this aura of opacity that prevents the investor from including venture in his portfolio. But the asset class has, despite general sentiment, impressive and consistent returns while also showing resilience to market shock and relative uncorrelation with other assets.

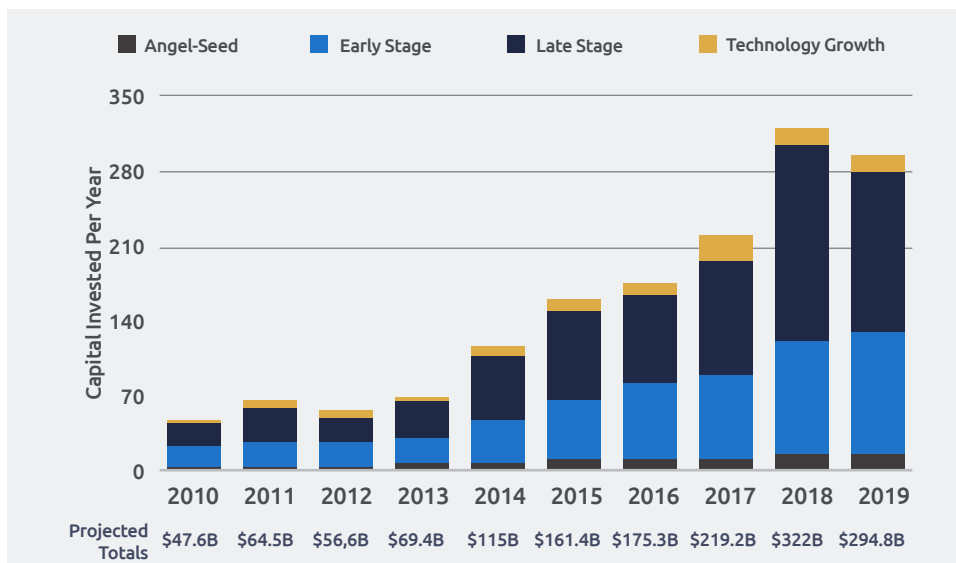
All investors who have the means and opportunity – and I will leave this definition to the purview of others – should allocate a substantial portion of their portfolio to venture. No other asset class can offer the risk adjusted return profile, the potential for outsized gains, resilience to market shock, and relative uncorrelation of venture.

Despite the fastest 30% market drop in history, despite the price of oil, and despite the unknown operational behavior necessitated by Covid-19, there is ample data suggesting venture should be a crucial part of the investor's plan. The data I've presented here suggests specifically that venture is not the risky asset that most assume, should be allocated to in times of economic contraction, and is readily available even to the average investor. Many investors will be surprised to discover how small funds fare against their larger counterparts, how focused strategies can outperform multi-sector funds, and how emerging and developing general partners consistently achieve top quartile returns. This is not an asset class solely for institutions; the time is now to dip a toe in the water, or, better yet, take the plunge.

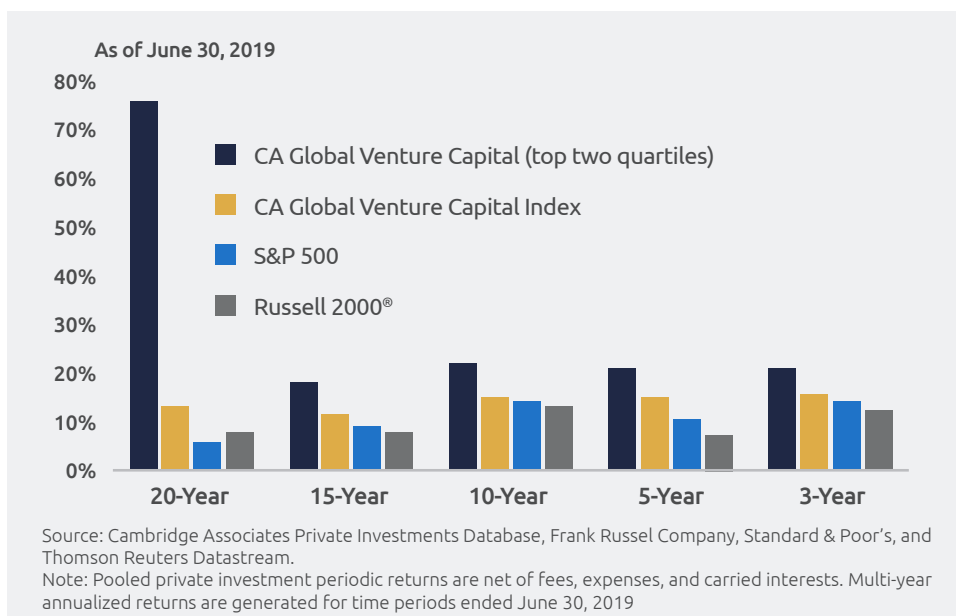
VENTURE IN TWO CHARTS

Ridiculous though it may seem, venture capital can be adequately summarized by the following two charts, thereby saving the reader hours of clumsy googling with phrases like “venture dollars global investment total” (full transparency: this is what I did.) For detractors and promoters alike, venture capital in all its complexity can be described as such: while the industry has expanded by an order of magnitude over the last two decades, returns have continued to outpace the market on average:

Projected Global Venture Dollar Volume: 2010-2019



Global Venture Capital Periodic Rates of Return



In short, there is a lot of money invested, and that money does well.



There has been a veritable explosion in capital allocation to the venture class in the last ten years; an increase of approximately \$250B. As the mystique has evaporated, venture funds have become more accessible to investors and more transparent in their reporting. Most importantly, venture performance shows well above-average returns, especially in the top two quartiles. Despite this, or perhaps because of it, the venture world appears to be the subject of more disagreement and the target of criticism than ever before. Many of these scathing criticisms take the entire venture canvas and paint the letters R-I-S-K, obscuring what may otherwise be an enjoyable work of art.

Note that the VC index on a ten-year time horizon only slightly outperforms the two equity indices shown. Keep in mind that the ten, five, and three-year clusters incorporate in their return measurement the longest period of economic expansion in US history;¹ a time in which all the equity indices reached all-time highs. This benefits venture capital too, you may retort, which is certainly true since the underlying portfolio companies often operate in or do business within the United States. The crucial insight here, however, is that the venture capital index still outperformed public securities.

Venture may not have **benefited** more from the Global Financial Crisis during the period of recovery, but that appears to be the case only because it never **suffered** as much.

Consider this scenario: the Global Financial Crisis unfolds in 2008, our imagined investor, Sally, endures a devastating 20% drop in the market value of her public securities portfolio. Sally retreats from the market as quickly and efficiently as she can. She doesn't want to lock in too many losses, so a good portion of her portfolio remains in public securities. She wants to catch the upswing of the market, but she has no idea when the economy will recover. And now, she's sitting on cash. What to do, what to do? Uncertainty abounds.

From March 2008 to March 2011, public equities declined 3%, but Private Equity (which includes venture in this finding), increased by 11%.² Venture funds created in this same period produced an average of 1.76, 2.08, 3.22, 2.35 total value to paid-in capital (TVPI) multiples for those respective years.

The data appear compelling, but a common objection would be that the multiples are skewed by top performers. What about bottom quartile performers? Since 2007, the bottom quartile has produced, on average, positive IRR in every year.³ This finding should shift the investor notion of risk in venture – the worst performers produced small returns, not zeros.

¹<https://www.whitehouse.gov/articles/economy-reaches-longest-expansion-in-u-s-history-in-third-quarter-of-2019-beats-market-expectations/>

²<https://www.cambridgeassociates.com/insight/diversification-challenges/>

³<https://www.cambridgeassociates.com/wp-content/uploads/2020/02/WEB-2019-Q3-USVC-Benchmark-Book.pdf>

If you're not there yet, you just can't swallow the venture pill, then consider some of the most recent data examining and comparing US VC returns and its value add over publicly traded indices. For the skeptical who still believe that only the top decile or quartile produce valuable returns, this table is for you:

Fund Index Summary: Horizon Pooled Return Compared to CA Modified Public Market Equivalent (MPME)

Net to Limited Partners

CA Index	1-YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	25-YEAR
Cambridge Associates LLC US Venture Capital Index^{®1}	14.81	14.06	13.28	14.34	11.01	11.03	34.43
MPME Analysis²							
S&P 500 Index	4.13	13.49	10.79	13.47	9.36	7.54	9.58
Value-Add (bps)	1,068	58	250	87	166	348	2,485
Russell 2000[®]	-8.96	8.48	8.40	11.86	8.68	8.53	9.06
Value-Add (bps)	2,377	559	489	248	233	250	2,537
Russell 3000[®] Index	2.80	12.94	10.42	13.37	9.44	7.79	9.58
Value-Add (bps)	1,201	112	287	97	157	323	2,485
Constructed Index: NASDAQ Composite Price Index/NASDAQ Composite Total Return³	0.29	16.16	13.53	15.72	11.53	8.74	11.25

To reiterate, the longest bull market in history did not outperform the venture index on any of the time horizons shown above. It would be wise to take note of this because if an asset class can benefit as much from economic expansion as another asset class, and at the same time suffer proportionally less in times of economic contraction, wouldn't it be fair to say one is less risky than the other? More to the point: wouldn't it be wise to incorporate that asset into a portfolio, both for the sake of volatility and total return?

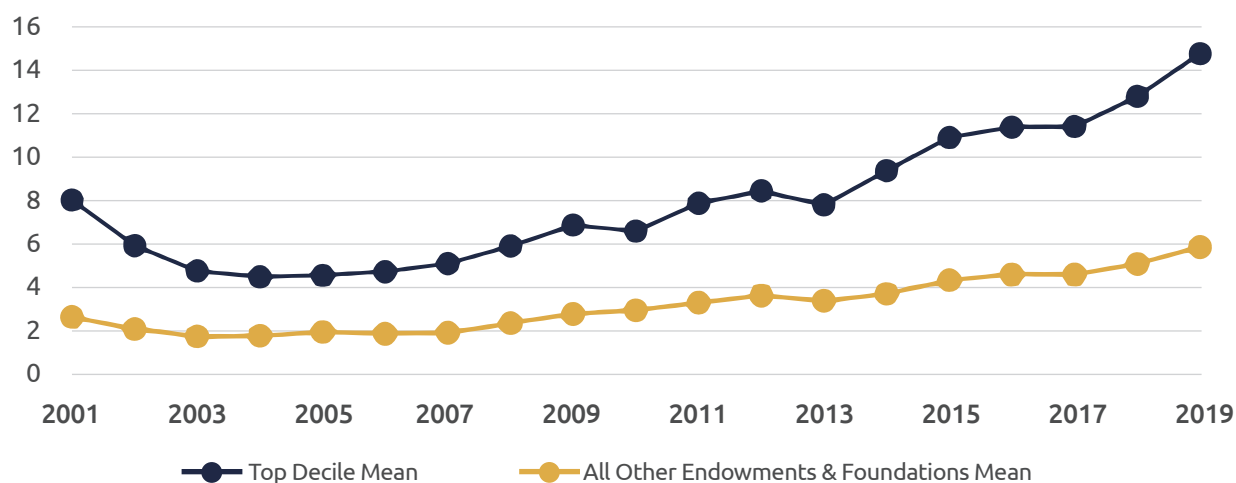
Institutional investors, endowments and foundations, often considered the most sophisticated investors, have already experimented with and executed portfolio strategies that include venture capital. As the allocations have been increasing every year, so too has the linear correlation between allocation and return performance been made clearer.

⁴<https://www.cambridgeassociates.com/wp-content/uploads/2020/01/VC-Positively-Disrupts-Intergenerational-Investing.pdf>

It is interesting to note the increase in allocation by the entire data set of institutions surveyed. Perhaps even more interesting is the allocation size by the top performers – in excess of 11% of their entire portfolio (for the last five years) is devoted to venture capital. The Yale endowment, a consistent top decile performer and long considered the gold standard among institutional investors, has targeted a 21.5% allocation to venture for 2020, compared to only 2.75% of domestic equity and 13.75% of foreign equity.⁵

Mean Venture Capital Allocation

Years ended June 30



Source: Cambridge Associates LLC.

Notes: Analysis includes 155 institutions that provided asset allocation data for each of the June 30 periods listed. The top decile is based on the 20-year AACR rankings as of June 30, 2019, and includes 16 institutions.

Simply, the best performing endowments over the last twenty years are the ones with the highest mean allocation to venture.⁴



⁵<https://news.yale.edu/2019/09/27/investment-return-57-brings-yale-endowment-value-303-billion>

Upon reviewing the above, you might develop a strange feeling in the pit of your stomach. And it's not because of the tacos you ate last night. A 20% allocation to venture capital seems high. Many wealth managers and other financial experts propose no more than 5%-10% of a High Net Worth Individual's investible assets (or portfolio in total!) be allocated to alternatives, much less venture alone.⁶ The typical investor is only allocating around 5% of their portfolio to illiquid alternatives,⁷ of which venture is only one subclass. What's the reason for the disparity?

Endowments absolutely have different time horizons (sometimes referred to as more patient capital) and they certainly have better access to venture funds. After all, many are sitting on billions of investible assets. But as has already been established, average venture is still outperforming the equities market on most time horizons, so patience and access have little to do with the disparity of how investors choose to allocate. I purport the explanation can be found in the understanding of risk. After all, why would endowments allocate so much to an asset class that has long been perceived to be the riskiest available?

In portfolio allocation, risk can be measured in different ways, but for this discussion perhaps the most relevant analysis is venture's correlation among other asset classes.

Correlation Among Asset Classes' Quarterly Return

	Venture Capital	Private Equity	Real Estate	Large-Cap Equity	High Yield Bonds	Aggregate Core Bond
Venture Capital	1.00	0.71	0.69	-0.06	-0.13	-0.13
Private Equity	0.71	1.00	0.65	0.46	0.33	-0.06
Real Estate	0.69	0.65	1.00	0.13	0.03	-0.11
Large-Cap Equity	-0.06	0.46	0.13	1.00	0.73	0.13
High Yield Bonds	-0.13	0.33	0.03	0.73	1.00	0.35
Aggregate Core Bond	-0.13	-0.06	-0.11	0.13	0.35	1.00

Source: Cambridge Associates Global Venture Capital, Global Private Equity, and Global Real Estate Benchmarks Return Report. Venture capital, private equity and real estate data from Cambridge Associates. Private equity asset class excludes venture capital. Large-cap equity proxy is Lipper aggregated US large-cap equity fund performance. High yield bond proxy is Lipper aggregated US high yield bond fund performance. Aggregated core bond proxy is Lipper aggregated US aggregated core bond fund performance. Returns for period dating 1990-2014, as of Dec. 31, 2015. Sample size for each asset lists is as follows: venture capital: 771; private equity: 932; real estate: 309; large-cap equity: 674; high yield bonds: 421; and aggregate core bond: 385. Past performance is not a guarantee of future results.

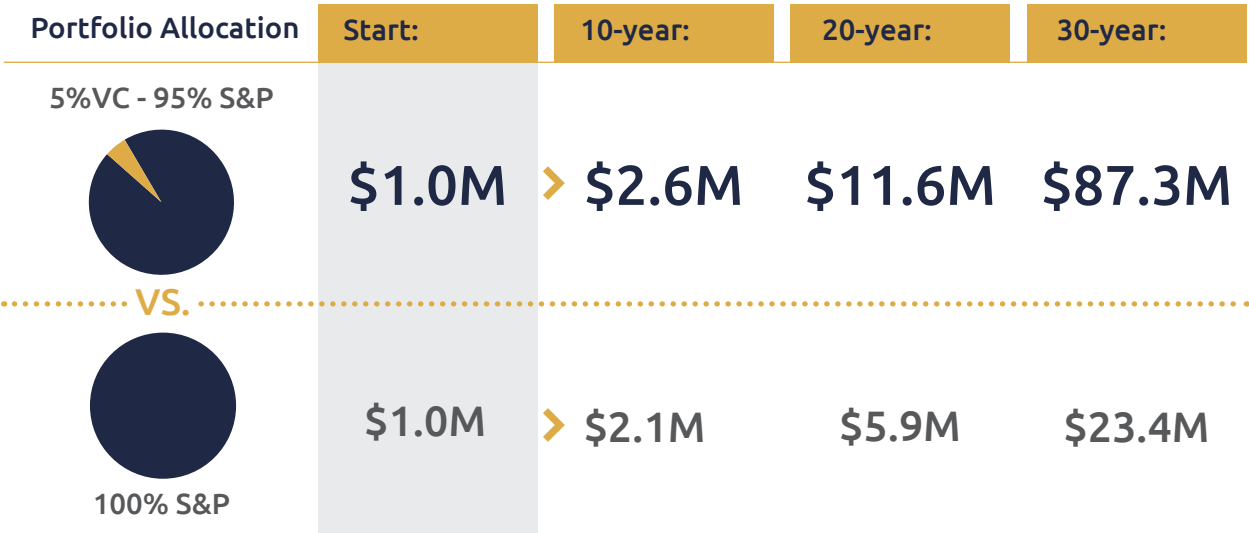
Venture returns are most correlated with private equity, which makes sense since they are similar in terms of mechanics and value creation. While venture doesn't typically use leverage the way private equity does, both buy portfolios of operating companies and try to improve cash flow, as well as divest the asset at the appropriate time. What is most surprising to me on this table, however, is the fact that two of the highest performing assets in terms of historical total returns (venture capital and large-cap equity) have almost no correlation! Considering this data set, it appears managing volatility with venture as a key part of the portfolio is not insurmountable by any means. In fact, it's quite the opposite!

⁶<https://www.investmentnews.com/advisers-using-alternative-investments-still-struggle-with-allocations-64776>

⁷https://www.iselectfund.com/wp-content/uploads/2017/07/White-Paper_-iSelect-Approach-to-Venture-Capital.pdf

At this point, you may hear your father’s voice in your head: “If the Yale Endowment told you to jump off a bridge, would you do it!?” In truth, what many endowments have done seems just as crazy to the average investor. But the data has proven the wisdom in the allocation decision. Bottom line: the effects of allocation can be substantial. How substantial? I will close this section with another chart, just for good measure (pun intended):

The Hypothetical Impact of 5% VC Allocation



S&P 500 return data calculated using the Cambridge Associates LLC U.S. Venture Capital Index (2015) for the period ending 12/31/2014. VC return data calculated using Kauffman Foundation data from “Returns to Angel Investors in Groups” (2007) for the period 1990-2007.

When returns have been shown to be impressive, when the asset class has been shown to be relatively uncorrelated with key pieces of a traditional portfolio structure, and when market freefall has failed to materially harm the investment, why would an investor pass on investing in a venture fund?





RETURN TO DISCUSSIONS OF RISK —————

The evolution of Venture Capital over the last 20 years has not, by and large, changed the way it is perceived by many investors. The image of the thrill-seeking, alpha-personality venture capitalist still dominates the landscape. Whether this perception mirrors reality is irrelevant; what is relevant is whether a venture fund is a good investment. Enough has been written over the last five years about the return profile of venture investments, especially as it relates to top quartile funds. The data clearly demonstrate longevity, returns and widespread adoption.⁸

The question is, then, and perhaps always has been for some: is the return commensurate with the risk? After all, a venture fund has always been perceived to be a risky asset class, illiquid, without control or proper oversight, heavily dependent on the top managers with the most elite track records, a closed system, a boy's club, and generally an investment with a binary return profile ('we crushed it!' or 'total goose egg').

When risk is cited as the reason for passing on venture investment, my intuition tells me that this is a very generalized notion, based on an unquantified concept of capital loss or illiquidity. Certainly, these characteristics exist in venture investing, but unless an investor can adequately quantify the risk, it is presumptuous to assume that venture is displaced on the efficient frontier of modern portfolio theory. In other words, how can any investor know if the return is not worth the risk, if the investor never attempts to quantify the risk?

⁸<https://apinstitutional.invesco.com/dam/jcr:1f35880c-bdf9-42ea-8afe-ab69b85bc7a4/The%20Case%20for%20Venture%20Capital.pdf>

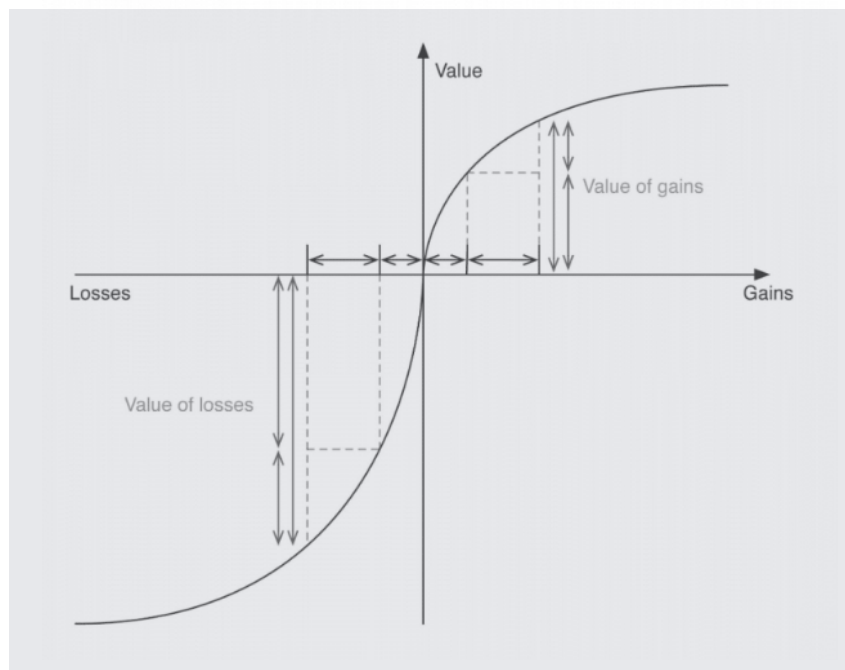
BEHIND THE DECISION-MAKING VEIL

I contest that the average investor is avoiding, irrationally, the fear itself of capital loss. Irrational because avoiding the fear is not an investing behavior, it's an emotional one, and the actual probability of loss is not being rationally considered by the investor. Moreover, the risk does not disproportionately outweigh the return profile, or, to state it more mathematically, the expected value of the investment in venture suggests return and risk are commensurate.⁹ Here we can digress for one paragraph and one paragraph only to make the most salient point in the discussion of risk.

While not novel, it will benefit the reader to understand that in the world of investor behavior, we fear loss disproportionately; we feel losses more powerfully than we feel the excitement or joy from gains. In other words, "losses loom larger than corresponding gains."¹⁰ This simple principle of behavioral economics is an important tool for understanding decision making in investing. And more to the point, to avoid our own loss aversion bias to make more intelligent decisions. Alright, two paragraphs.

Loss aversion serves us in many practical facets of the real world, but in the world of investing, the bias can have unintended consequences as it ignores (or overrules) the concept of expected value. The quintessential thought experiment to demonstrate the phenomenon: imagine a coin is flipped: heads you lose \$10K. What value (payout to you) does a tails outcome need to be that makes you want to flip the coin? Or, how much potential gain do you need in order to risk the loss of \$10K? In this experiment, proposed by Kahneman and Tversky, we can easily see the rational side of the investor begin to look for the nearest exit. Most people, a large majority in fact, need the tails value to be at least double the heads value. This is loss aversion bias causing an irrational decision. There is nothing wrong with the decision, or the aversion associated with it, but in portfolio construction, among the hundreds of investment decisions and allocations that must be made along the investing timeline, it is not the decision that yields the highest expected value.

As depicted in the figure¹¹ below, losses are perceived/felt/believed (take your pick) to have twice the disutility as a corresponding gain.



⁹https://www.iselectfund.com/wp-content/uploads/2017/07/White-Paper_-iSelect-Approach-to-Venture-Capital.pdf

¹⁰Tversky, A.; Kahneman, D. (1991). "Loss Aversion in Riskless Choice: A Reference Dependent Model". *Quarterly Journal of Economics* 106 (4): 1039–1061

¹¹<https://thedecisionlab.com/biases/loss-aversion/>



As it relates to venture, the aversion is not a description about where venture as an asset exists on the efficient frontier, it's a reflection of the individual investor's risk appetite. The point is a subtle one. There is certainly nothing irrational about stating that venture fund investing feels too risky because personal fear of loss requires a bigger payout than venture can give. This would be consistent with a portfolio focused solely on wealth preservation.

The question then arises, if loss aversion demonstrates that a corresponding gain needs to be double the value of the potential loss, where does venture sit on that curve? And if the expected gain exceeds that ratio, shouldn't the investor then be rationally committed to investing?

An examination of capital loss ratio should advance that concept. If you expect a venture investment to have 50% chance of total capital loss (loss of total investment as in the coin toss) then in order to invest \$10K, you'd need the other 50% of outcome probability to have a total weighted value of at least \$20K. In other words, controlling for the time value of money in our thought experiment, you need a 2x multiple on invested capital.

The rational investor should feel compelled to invest in Venture!

	GLOBAL VENTURE CAPITAL		GLOBAL BUYOUT		GLOBAL PRIVATE EQUITY	
Vintage Years	1991-2001	2002-2015	1991-2001	2002-2015	1991-2001	2002-2015
Gross Pooled IRR	61.7%	19.2%	21.6%	15.2%	22.8%	15.5%
Gross Median IRR	-21.7%	0.0%	9.3%	12.4%	6.4%	11.3%
Gross Pooled TVPI	2.0x	2.4x	2.2x	1.8x	2.2x	1.8x
Gross Median TVPI	0.3x	1.0x	1.4x	1.5x	1.2x	1.5x
Loss Ratio	51.5%	20.0%	24.6%	8.9%	25.4%	8.6%
Impairment Ratio	65.6%	40.9%	35.0%	27.7%	36.1%	27.5%

Source: Cambridge Associates LLC Private Investment Database.

Notes: Capital loss ratio is defined as the percentage of capital in deals realized below cost, net of any recovered proceeds, over total investment capital. Impairment ratio is defined as the percentage of investment capital realized or valued as less than cost.

The above table¹² requires reflection. I included this table because it should show, in stark reality, the capital loss risk associated with venture (as well as other alternative classes), and I find it helpful to confront what at first may appear detrimental to my argument. A few quick points: 1) the 2002-2015 time period included all the venture funds that had to divest their portfolio companies during the Global Financial Crisis. Funds that begin in and around years of crisis tend to do very well, but funds that must sell their portfolio companies in and around years of crisis tend to have higher probability of loss.

There is no denying that from 2002-2015, the venture loss ratio is high. But take a closer look: the Total Value to Paid In (TVPI) multiple is the key to understanding the risk adjusted return: 2.4x! So, in the example of the coin flip, this return would more than satisfy the investor even if the loss ratio were 50%. Instead, the loss ratio is less than half that, and the expected multiple on invested capital much more.¹³ Furthermore, this 20% loss of capital ratio is not congruent with the stigma that venture is so often a “total goose egg.” From the perspective of loss aversion, it is more likely that investors are overweighting the risk of loss (well beyond 20% capital loss ratio) simply because the risk exists.

In short, capital loss risk is quantifiable, and does not adequately justify avoidance of venture investment.

¹²<https://www.cambridgeassociates.com/insight/venture-capital-positively-disrupts-intergenerational-investing/>

¹³TVPI cannot be said to be a replacement to actual MOIC, but it's the best expected proxy in this discussion.

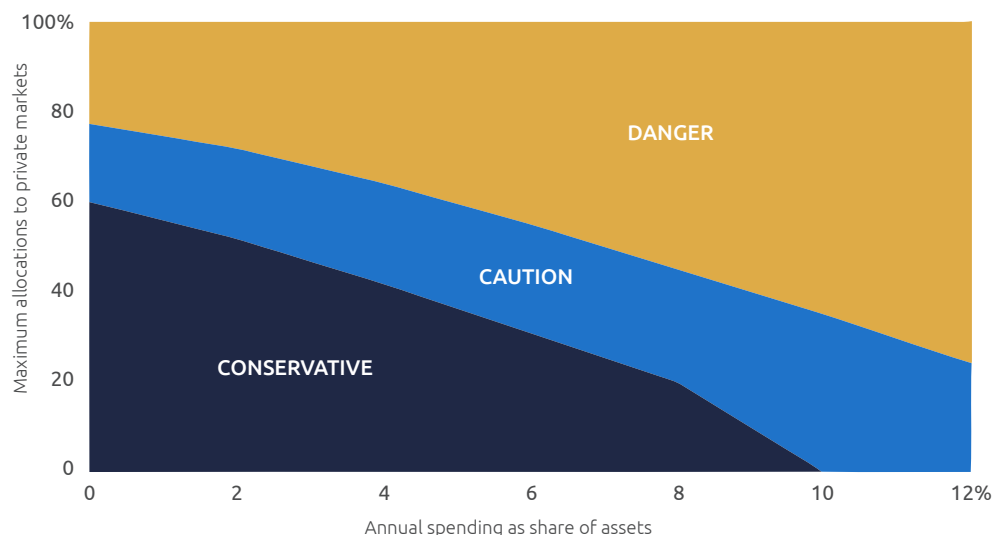
LIQUIDITY, STARTUPS, AND MANAGERS, OH MY!

This trifecta of objections justifying venture avoidance prove to be, much like Oz, not as daunting as they appear. Liquidity, or lack thereof in the case of venture, is often represented as a risk to the individual investor and an impediment to investment in a venture fund. Startups, the underlying portfolio companies of venture funds, are categorically described as risky with a high rate of failure thereby preventing the investor from making such a risky bet in a fund that holds these assets. Finally, it is widely accepted that venture returns are so manager-dependent that access to and selection of these managers represents a huge risk to the investment decision-maker.

We will start the debunking with the so-called necessary “illiquidity premium.” While there are a few points to make here, the most cogent comes from a thoroughly researched analysis by Blackrock, the result of which can be seen below. The analysis shows the liquidity needs of a High Net Worth Individual will almost never outstrip their ability to meet those needs. This holds true even for portfolios with high allocations to alternatives (upwards of 60%) and for portfolios undergoing economic condition stress (tested against global financial crisis years for validity).¹⁴

Assessing Liquidity Risks

Hypothetical maximum allocations to private markets depending on annual spending needs, March 2019



This information is not intended as recommendation to invest in any particular asset class or strategy or as a promise - or even an estimate - of future performance.

Source: Black Rock Investment Institute, March 2019. Notes: The chart shows different ranges for maximum allocations to private market assets depending on a hypothetical portfolio's annual spending needs, expressed as a share of the overall portfolio. The "conservative" zone shows the range of maximum allocations can start at 60% with no spending needs and falls to zero when spending needs reach 10% per year. The "caution" zone shows where maximum allocations would start hitting a 5% risk threshold described above. "Danger" is the zone where the maximum allocations result in a greater than 5% probability. We assume quarterly liquidity needs on the public assets. Annual liquidity needs would reduce the allocation to private markets. See the appendix for full methodology.

¹⁴<https://www.blackrock.com/institutions/en-xx/insights/portfolio-design/private-markets-in-modern-portfolios>



What the research and the chart also purport is that a High Net Worth Individual can effectively weigh their “lack of liquidity” against their spending needs. Notice the annual spending for a portfolio composed of 60% private market investments is still considered in the conservative region at 10% annually of total assets. As mentioned in Part I, the typical investor allocation to all alternatives (including liquid alternatives), is more in the 5%-10% range.

One possible viable objection to the illiquidity of the asset is the idea of opportunity cost – that the investor may not be able to capitalize on a significantly lucrative investment opportunity because capital is locked into a less lucrative illiquid venture fund. Fair point, but again, allocations to the class are so low, liquidity for special opportunities can be created easily with the rest of the portfolio, or low interest debt, leaving the more illiquid (but higher return profile assets) in place.

It should be obvious that some of these assertions are predicated on the investor understanding their own cash needs, spending habits, portfolio objectives, and the like. But it should be equally obvious that a high allocation to alternatives does not preclude an investor’s ability to meet capital needs.

Another common point of investment resistance: startups are risky. Startups fail. Startups need too much money to succeed. Estimates of startup failure in the U.S. range from 35%-90%, depending on the time horizon of measurement.¹⁵ But separating startup from venture risk allows us to dig a little deeper: The National Venture Capital Association estimates that 25% of venture backed companies fail. These ‘failures’ do not return any capital to investors.

As is commonly known, this failure rate is nearly intentional. No firm makes an investment with the expectation that it will fail, but the math behind a power-law distribution requires that capital be pumped into the high-growth, high-potential startups, and that the non-performing ones (or sometimes just the startups that cannot justify with their growth the ever-increasing rounds of funding and valuation) be cut off from the vine. That failure is acceptable to the venture firm – but it’s one failure among a portfolio of other companies in a fund.ⁱ The return of the fund itself is what matters to the investor. One underperforming stock in an equities portfolio wouldn’t receive more and more of your capital unless you had reason to believe it was a good value or had future growth prospects.

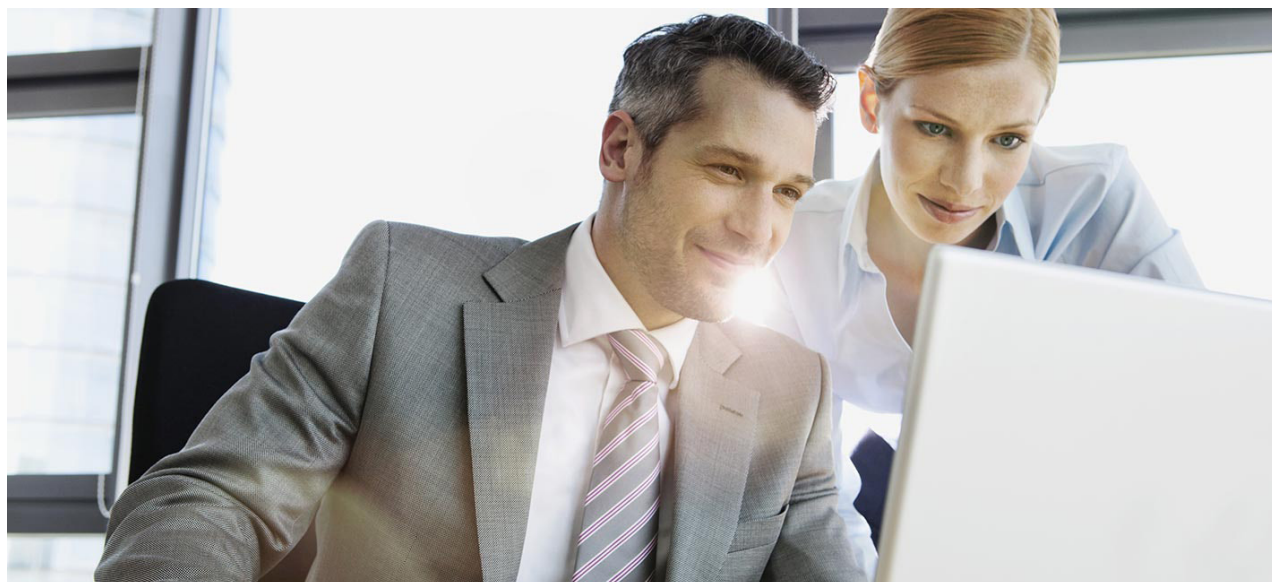
¹⁵<https://www.wsj.com/articles/SB10000872396390443720204578004980476429190>

But we're exploring the idea of risk in venture, so does the underlying portfolio company failure risk represent risk to the entire portfolio? The answer: not really. This is the effect of diversification.¹⁶

Finally, and my personal favorite, is managerial risk. To achieve those coveted top quartile returns, the argument goes, an investor really must select the superstar managers. And how do you get access to and then select these managers? While much ado is made about this selection, this sentiment appears to be loaded with a few beliefs. The underlying assumptions include:

- 1** Successful fund managers (top quartile performers), are more likely to be, with a subsequent fund, top quartile performers than emerging managers;
- 2** Established funds are better, and outsized returns cannot be achieved with emerging managers, or at the least, it is unlikely;
- 3** The wide dispersion of venture returns by fund must mean that manager selection is crucial in achieving returns above the mean.

To **the first assumption**. In venture, there is a key distinction to be made: persistence versus manager skill. Persistence is the phenomenon in venture capital that allows a venture *firm* (and sometimes a specific manager), by virtue of previous success in a fund, to have access to special deals. Namely, they can get the deals that everyone wants. You can see how this certainly can be an advantage, but it does not speak to managerial skill, nor would it require any investment decision-maker to assess the fund manager at all. This predictor of future success, which has been investigated and purported to be the only valid one,¹⁷ only requires an investor to vet the fund *brand* itself. In other words, research has found the established fund manager skill has nothing to do with established fund success. There is no clear evidence that superstar managers exist. Taking this point further, an examination of university endowment returns reveals that alpha can be generated, but the evidence shows that manager selection has nothing to do with it. Instead, the large allocation to alternative assets explains alpha in these portfolios!¹⁸



¹⁶<https://www.iselectfund.com/role-diversification-venture-investing/#.XraTUshKhO8>

¹⁷<https://hbswk.hbs.edu/item/the-persistent-effect-of-initial-success-evidence-from-venture-capital>

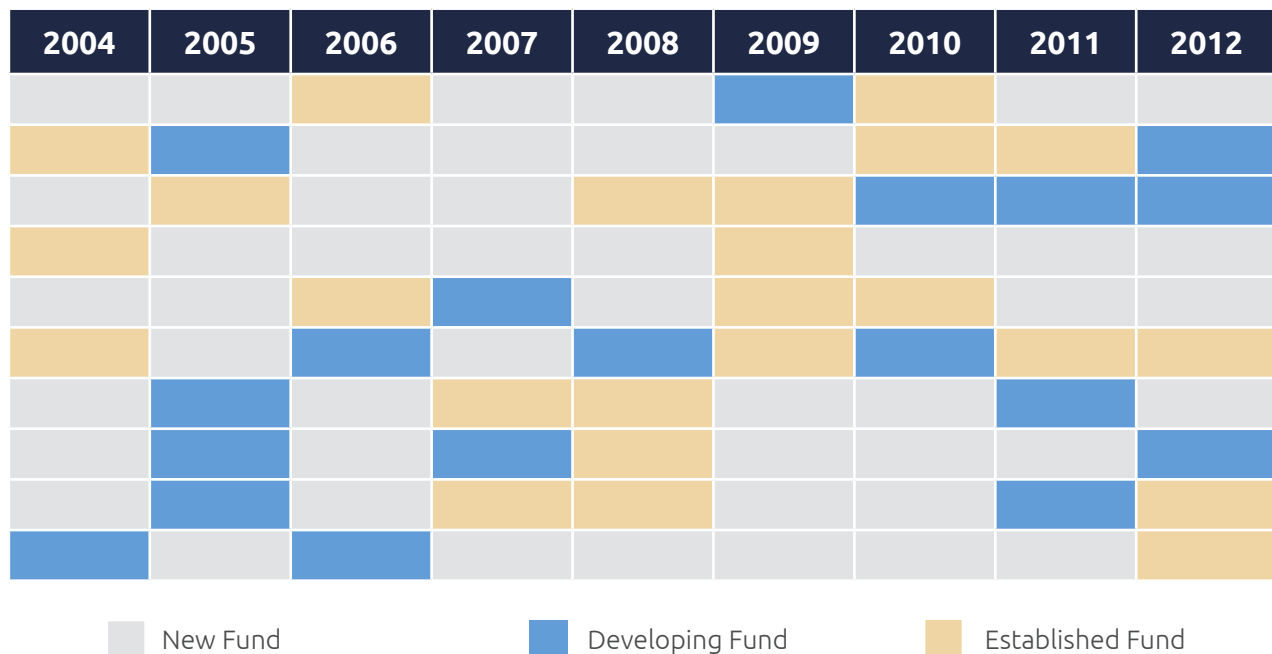
¹⁸<https://www.top1000funds.com/wp-content/uploads/2012/01/Do-Some-University-Endowments-earn-Alpha.pdf>

Simply put, investors do not need access to previously successful fund managers, new and emerging funds time and again account for approximately 70% of the value creation in the top 100 venture capital deals.¹⁹

The second assumption, that established funds are better, can be rebutted with one chart:

Top Ten Top Quartile US Venture Capital Funds by Vintage Year

As of September 2015 · Based on Net TVPI Multiple



Source: Cambridge Associates LLC Private Investments Database.

Note: Pooled total value to paid-in capital multiple is net of fees, expenses, and carried interests. Fund order is determined as funds raised under the same strategy and does not include friends and family funds. New fund is defined as the first or second fund, developing fund is the third or fourth fund, and established fund is the fifth fund and beyond. Vintage years formed since 2012 are too young to have produced meaningful returns. On average in the vintage years examined, established funds represent 30% of the universe and new and developing funds 70%. In years with fewer than 40 total funds, the top quartile is made up of fewer than ten funds.

Every year, the top ten funds are dominated by new and developing funds. This is quite a revelation because so much has been made of track record and established funds. But, even going back before the Global Financial Crisis, the data shows new and developing funds have consistently been in the top ten. This is a critical piece of information in fund selection because the concentration of capital in mega-funds has been partly predicated upon the idea that only these established funds perform!

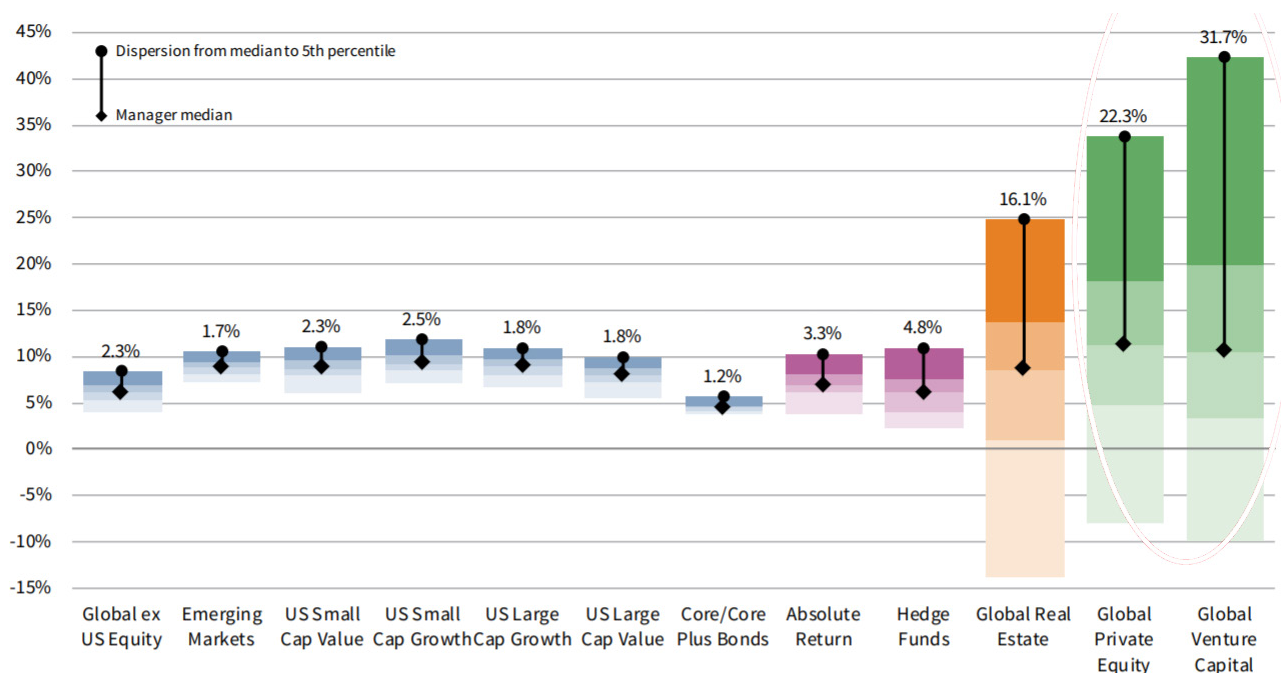
Finally, **the last assumption** with managerial risk cites the wide dispersion of manager returns within the asset class as the reason an investor must be able to identify and select top managers. Again, let's refer to the data.

¹⁹https://www.tiff.org/wp-content/uploads/2019/09/The-Case-for-Emerging-Fund-Managers_Private-Equity-1.pdf

Average Annual Manager Returns by Asset Class

Private Data: Inception to Date IRR for Vintage Years 2004-2015, as of September 30, 2018

Public Data: Public Market Returns from January 1, 2004 to December 31, 2018



Source: Cambridge Associates LLC.

Note: Returns for bond, equity, and hedge fund managers are average annual compound returns (AACRs) for the fifteen years ended December 31, 2018, and only managers with performance available for the entire period are included. Returns for private investment managers are horizon internal rates of return (IRRs) calculated since inception to September 30, 2018. Time-weighted returns (AACRs) and money-weighted returns (IRRs) are not directly comparable. Cambridge Associates LLC's (CA) bond, equity, and hedge fund manager universe statistics are derived from CA's proprietary investment Manager Database. Managers that do not report in US dollars, exclude cash reserves from reported total returns, or have less than \$50 million in product assets are excluded. Performance of bond and public equity managers is generally reported gross of investments management fees. Hedge fund managers generally report performance net of investment management fees and performance fees. CA derives its private benchmarks from the financial information contained in its proprietary database of private investment funds. The pooled returns represent the net end-to-end rates of return calculated on the aggregate of all cash flows and market values as reported to Cambridge Associates by the funds' general partners in their quarterly and annual audited financial reports. These returns are net of management fees, expenses, and performance fees that take the form of a carried interest.

Setting aside for the moment the fact that early stage investments will always have a higher standard deviation (completely irrespective of manager) because almost the entire life cycle of value creation of the company is captured in the calculation (zeros and unicorns), and setting aside the fact that a venture portfolio will not be as diversified in its underlying assets so will also exhibit a higher standard deviation, a wide dispersion means only that the average manager is delivering an 11% IRR, and the top quintile is delivering a 31.7% IRR. Notably, the average manager in venture capital still outperforms the top quintile for almost every other asset class.

What this dispersion reveals to me is that the highest performers in venture management are simply producing alpha, and that venture is one of the few classes where such a thing is possible. The dispersion also tells me (considering the aforementioned insight that established managers themselves aren't typically the consistent value creator)²⁰ that manager selection should go well beyond the "brand" of the venture firm. A risk exists that an investor may choose a poor manager, but one could just as easily choose a poor wealth manager, or chief investment officer – only the returns on a given year may not be as pronounced or noticeable. But their allocation decisions compound year after year and may represent substantial lost portfolio return.

²⁰<https://insights.som.yale.edu/insights/for-top-venture-capital-firms-success-breeds-success>

So, manager selection is not the risky endeavor investors believe. The previously successful manager is likely to see better deals, but the established funds top performers are not based on any demonstrable managerial acumen. Furthermore, investors of every kind have access to new and emerging managers that may easily outpace established funds.



DATA DRIVEN INVESTMENT DECISIONS

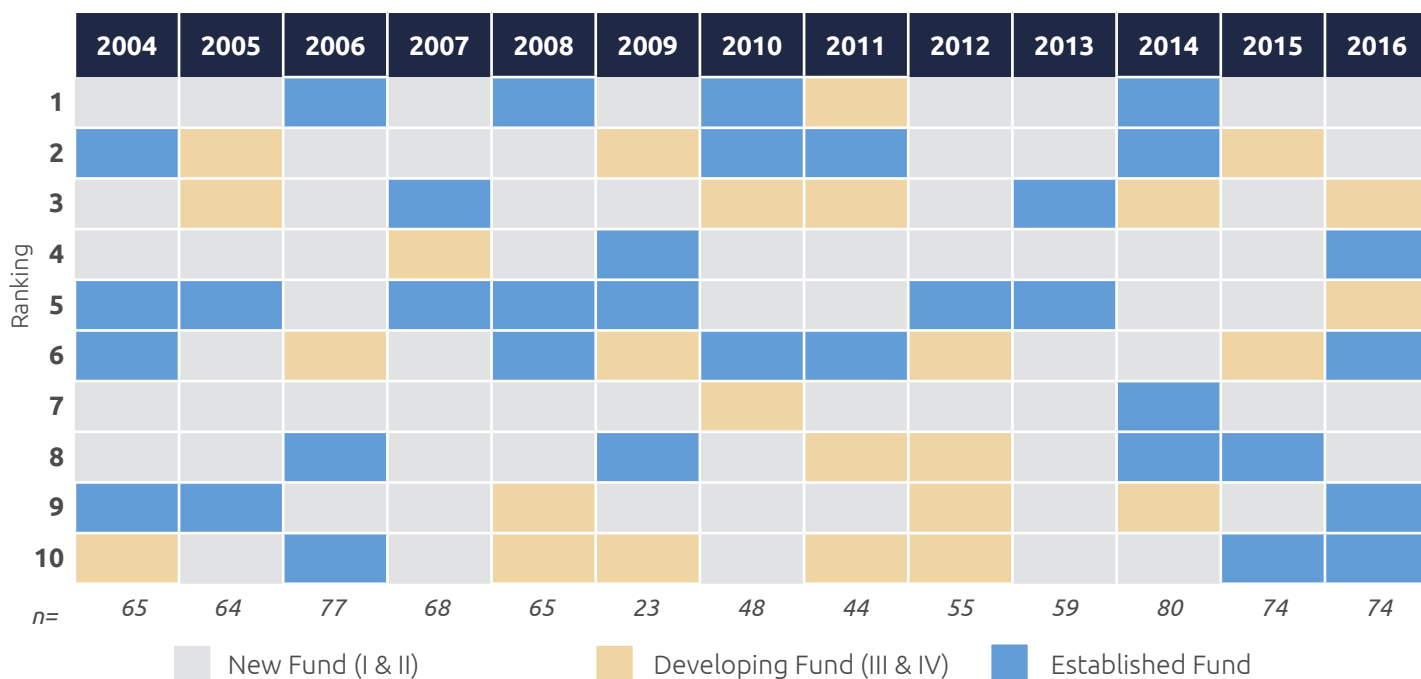
Our examination has established venture as not only a viable high-return asset class, and indispensable part of sophisticated modern portfolios, but also subject to far less risk than is typically thought. With the proliferation of funds, however, comes an even greater number of decisions to be made by allocation managers. The interplay of geography, track record, strategy and current portfolio are decision variables that can quickly become overwhelming.

Controlling for portfolio exposure and diversification, current data suggests strongly that allocation and selection lean toward emerging and developing managers, sector focused funds, and early stage investing.

CHANCES ARE GOOD

Investors do not need access to brand name Venture Capital firms to secure top quartile or top decile returns. The chances are better, in fact, that if the fund is a top decile performer, it is either new or developing.

Ranking as of June 30, 2019 · US VC Funds by Vintage Year · Based on Net TVPI



Source: Cambridge Associates LLC Private Investments Database.

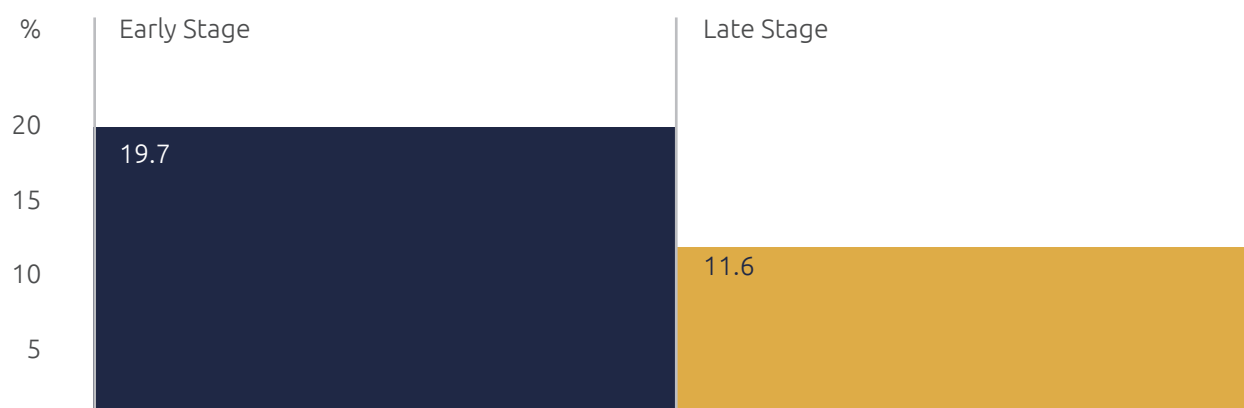
Note: Pooled total value to paid-in capital (TVPI) multiple is net of fees, expenses, and carried interests. Fund order is determined as funds raised under the same strategy and does not include friends and family funds. New fund is defined as the first or second fund, developing fund is the third or fourth fund, and established fund is the fifth fund and beyond. Vintage years formed since 2012 are too young to have produced meaningful returns. Vintage years with less than 40 funds in the sample have fewer than 10 funds in the first quartile, the first six funds are top-quartile, the last four funds are the second-quartile.

Unfortunately, no unlimited data set currently exists detailing specifics of every emerging manager performance and every established fund. The data clearly show, however, that emerging and developing managers can (and do!) easily outpace their more established counterparts in venture. There is no reason, then, that the myth of access should persist through the investment community. Top performing funds are accessible to the non-institutional investor. Emerging funds and managers are not difficult to find.

EARLY STAGE

Funds that invest in earlier stage companies tend to perform better. The previous chart indicates that the biggest returns are being delivered by new and developing funds more than established funds. As noted earlier, of the top 100 venture capital deals (by MOIC), 70% of those deals are being captured by new and emerging funds. The average pooled IRR also shows the advantage of early stage:

Average Pooled IRRs · Fund Strategy



Source: Cambridge Associates Global Venture by Strategy, as of Dec. 31, 2015, inclusive of all available vintage years dating from 1981-2015. Early stage data represents 1,278 funds and late stage data represents 214 funds. Past performance is not a guarantee of future results.

In short, the individual accredited investor has both the access and opportunity to incorporate venture into the portfolio and realize venture returns. Only one venture index subclass (by investment stage) beat the Nasdaq Composite Index, the S&P 500 Index, and Russell 1000 Index pooled returns on the 20-year, 15-year, 10-year, 5-year and 1-year time horizons. That was the Early Stage Venture Capital Index.²¹

Investing in early stage venture is lucrative for another, more subtle reason. Early stage allows the investing fund to capture the highest relative value growth of the startup, as noted in the figure below.²² Entry prices are lower because more uncertainty surrounds the startup, and high-growth capture is possible because the startup is still unproven. This is consistent with the finding that emerging and developing funds are found so often in the top decile and quartile of performers – these funds are typically investing earlier in the life of a company.

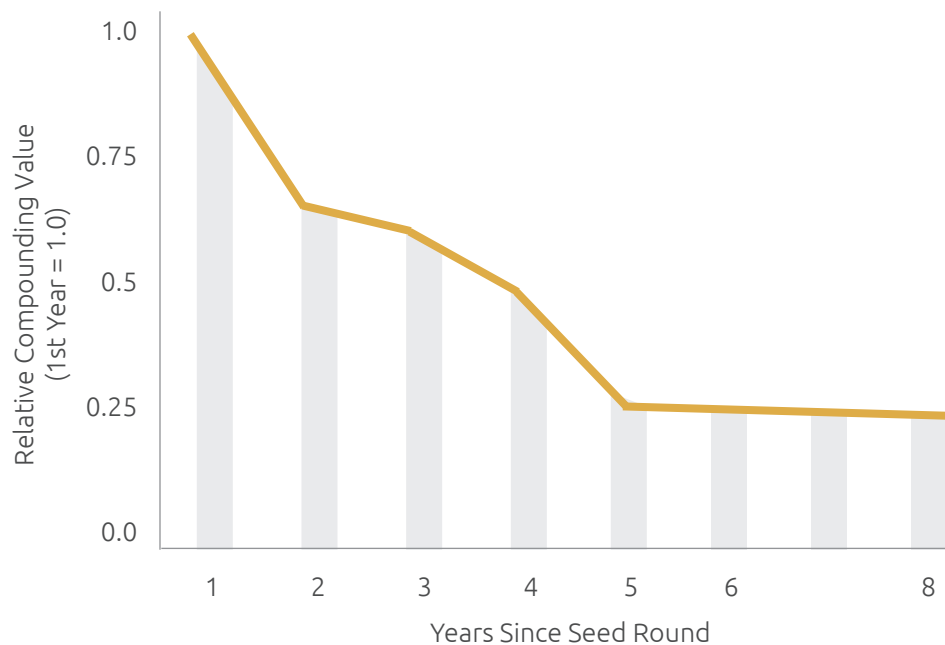


²¹<https://www.cambridgeassociates.com/wp-content/uploads/2020/02/WEB-2019-Q3-USVC-Benchmark-Book.pdf>

²²https://www.kauffmanfellows.org/journal_posts/venture-returns-with-abe-othman-of-angellist



Compounding Since Seed Round



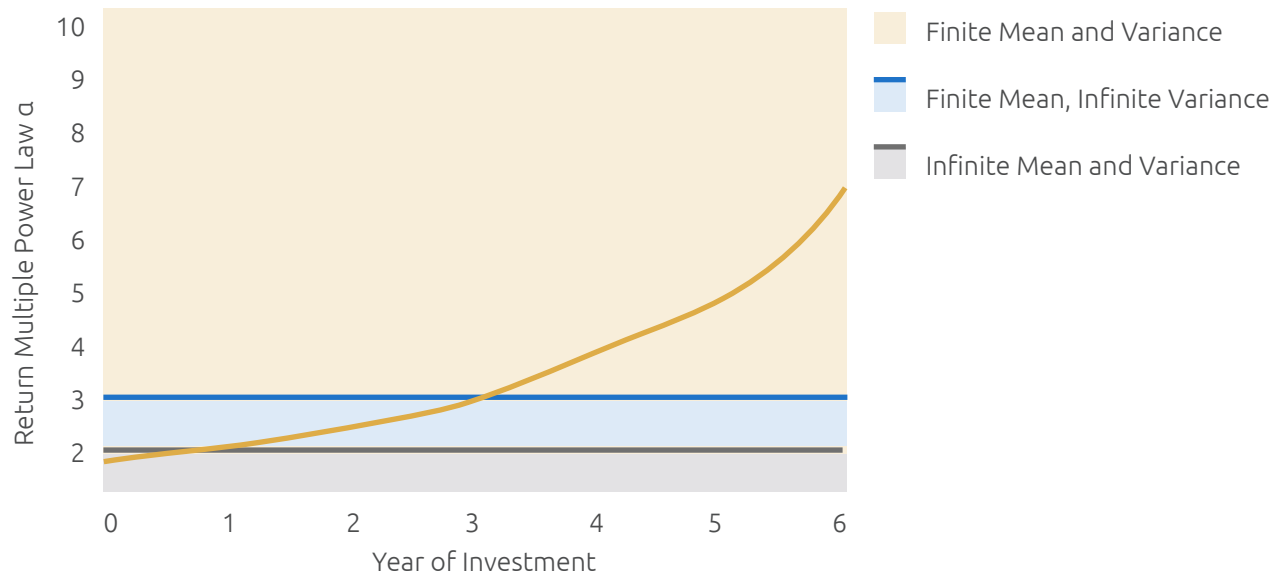
Furthermore, early stage funds that raised and deployed in the heart of the Global Financial Crisis (in 2008 and 2009) delivered a pooled internal rate of return of 12% and 16.2% respectively. Perhaps it would be more informative and relevant to look at the return of funds raised and invested just before the financial crisis, thereby accounting for any potential drop in value of deployed funds. Early stage funds with a 2007 vintage delivered a 17.6% pooled internal rate of return!²³

For those who want to go deeper down the early stage investing rabbit hole, see Abraham Otheman's Angel List report.²⁴ The investment strategy of early stage venture becomes more and more compelling as returns (in this case from the AngelList data set) an analysis of the data reveals that the earlier the stage of investment, the more likely the investor is to participate in the unbounded mean return multiple.

²³<https://www.cambridgeassociates.com/wp-content/uploads/2020/02/WEB-2019-Q3-USVC-Benchmark-Book.pdf>

²⁴<https://angel.co/pdf/growth.pdf>

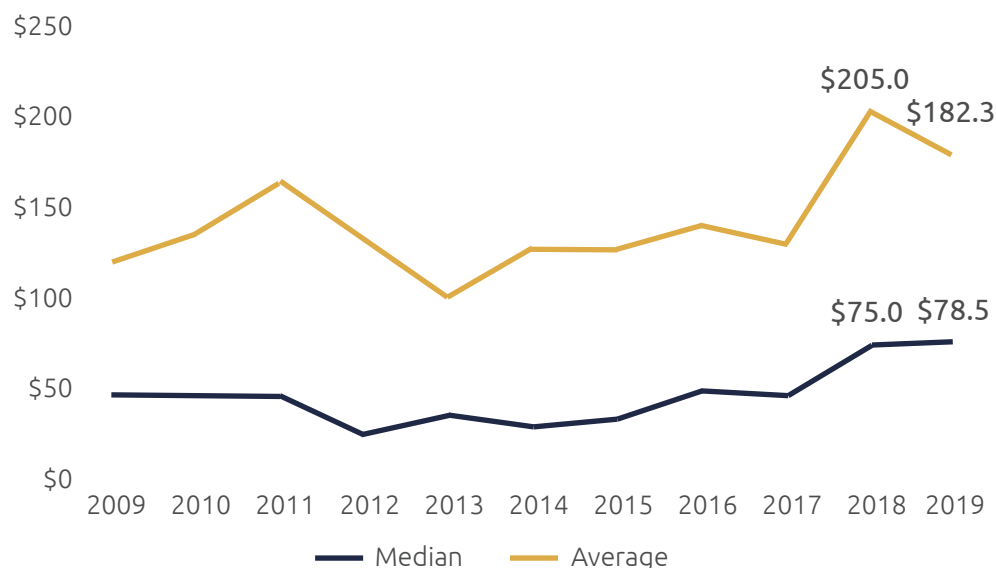
Power Law by Year of Investment



For simplicity's sake, the coveted exponential returns of venture that investors so readily seek, are most commonly found by investors willing to engage very early in the life of the startup.

Despite this, the average venture capital fund size has increased dramatically over the few years. And larger funds mean moving "downstream" to later stage investments as the capital to be deployed must be in bigger chunks. So, majority of capital invested in venture is in later stage and growth stage companies, not in seed or angel. Anecdotally, investors also seem to be more comfortable in these larger funds, probably believing it is a safer bet.

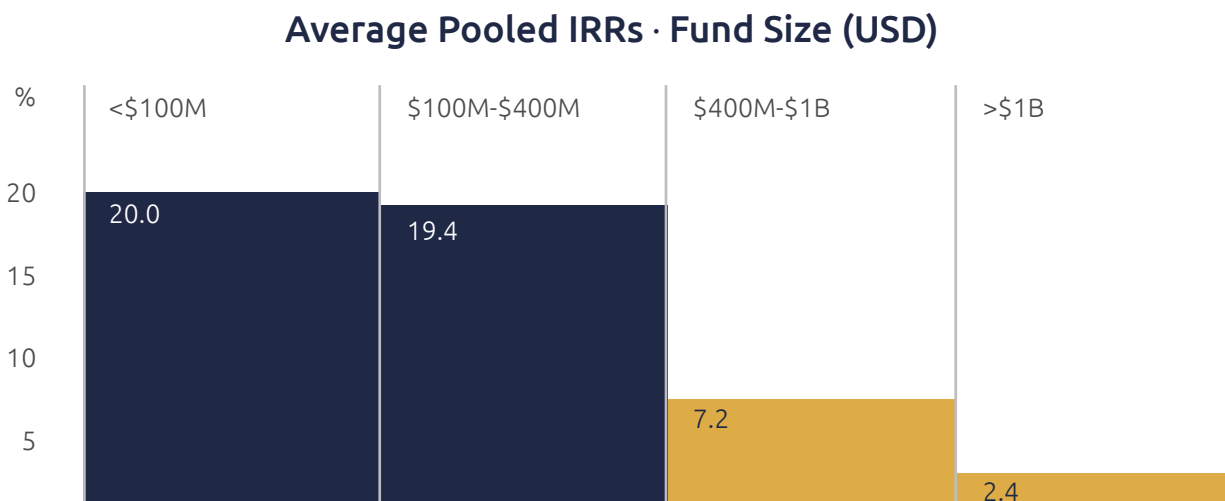
US VC Median and Average Fund Sizes (\$M)



PitchBook-NVCA Venture Monitor

CAPITALIZATION

However, as has often been found in the case of underdogs: “it’s not the size of the dog in the fight, but the size of the fight in the dog.” Undercapitalized funds perform as well or better than their larger counterparts:



Source: Preqin Global Venture Performance as of Dec. 31, 2015, inclusive of all available vintage years dating from 1969-2015. Sample size for <\$100M is 532; \$100M-\$400M is 365; \$400M-\$1B is 111; and >\$1B is 20. Past performance is not a guarantee of future results.

Smaller funds are also led by managers who typically have more at risk (in terms of livelihood and security), since there is not enough in the way of management fees to allow the GP to rest on their laurels. The ever-increasing size of venture funds allow managers to collect bigger management fees and hedge any potential losses if things go poorly.²⁵ This is a classic incentive issue, and should be considered, just as the General Partner commitment to his own fund is scrutinized for proper alignment.

**Internal rates of
return**
13.9%-26%

If investment minimums are a problem for the investor, or hurdle to access, there are still funds in the sub \$50M category (so-called Micro Funds) that deliver comparable returns, and sometimes even outperform their much larger counterparts. There are now over 900 Micro VC firms operating across the country.²⁶ A minimum investment for these funds can be as low as \$100K. From an allocation perspective, since these capital commitments are smaller, diversification across these funds and managers is a strategy worth considering.

Despite their capital, check size, and (most likely) new managers, these funds have pooled internal rates of return from 13.9% to 26% and consistently outperform the VC and equity indices.²⁷

²⁵<https://www.forbes.com/sites/forbesfinancecouncil/2018/05/07/venture-capitalists-and-their-capital-why-less-can-be-more/#7f35c1ac242f>

²⁶https://www.kauffmanfellows.org/journal_posts/lp-model-for-micro-vc-and-emerging-managers

²⁷<https://www.cambridgeassociates.com/wp-content/uploads/2020/02/WEB-2019-Q3-USVC-Benchmark-Book.pdf>

SECTOR FOCUSED

Sector focused funds tend to outperform multi-sector funds. Over the 10-year data set (from Cambridge Associates) ending in 2017, focused funds outperformed multi-industry funds 70% of the time.²⁸ As more investors participate in venture, it's likely that the number of industry focused funds will also increase at all levels of capitalization, allowing the average accredited investor greater access.

Possible reasons for the superior performance of sector focused funds include expertise of the managers as they evaluate and invest in deals in only one area. The skills required to make decisions about worthiness of investment, if not already possessed by the manager, may be acquired for that industry. Another possibility is the influence of experienced, specialized venture managers within their portfolio companies to create an "unfair advantage." It could also be the case that these funds, because of their focus, become the fund of choice for the best startups in that particular industry vertical, thereby improving deal flow.

Again, the returns are compelling. Venture backed software companies, for instance, have delivered pooled internal rates of return from 25% to 49% since 2009.²⁹



²⁸<https://www.cambridgeassociates.com/wp-content/uploads/2020/02/WEB-2019-Q3-USVC-Benchmark-Book.pdf>

²⁹<https://www.cambridgeassociates.com/wp-content/uploads/2020/02/WEB-2019-Q3-USVC-Benchmark-Book.pdf>

CONCLUSIONS

Venture has been shown, as an asset class to produce superior returns to every other asset class, throughout multiple time horizons, in both economic contraction and expansion. It's correlation to other assets is relatively low, and despite its capital loss ratio, remains a significant portion of the portfolio of sophisticated, proven asset managers because of the expected value of the class (not because the asset managers have special access to brand name firms).

Risk Mitigation in venture investing is not about staying away from the asset class altogether or allocating such a small portion of the portfolio that potential losses are immaterial. Risk management revolves around making good decisions in fund and manager selection, understanding sector exposure, geographic dispersion, illiquidity horizons, secondary market conditions, and of course how all these things balance the rest of your portfolio. Given the data, investors reading this report would do well to:

- » Invest in emerging funds and managers
- » Invest in industry/sector focused funds
- » Invest in undercapitalized funds
- » Invest in funds that focus on early stage ventures

Despite risk tolerance, despite liquidity concerns, investors with the requisite means should be investing in venture.



ENDNOTE

ⁱ Placed here as it seemed a significant digression from the report. It is worth noting that this has been a typical model of the last 25 years. As in all things, the industry is evolving, revealing an organism that only partly resembles what it once was. Many venture firms now emphasize capital efficiency, longer-term hold periods, slower growth but a clearer path to profitability, and resistance to bigger fundraising rounds while chasing unattainable valuation. Bottom line: Some venture firms have shifted their thinking to fewer failures, more base hits (return of capital and some small return). The idea here is the active management of the venture firm can help achieve a higher success rate of startups (doing more than simply writing a check), and that investment will go to startups that have a 'higher floor' (startups that have already shown some risk mitigation) and a high potential