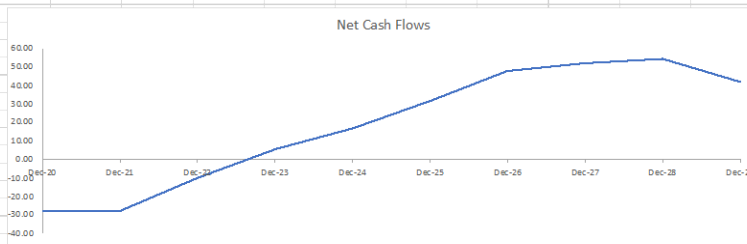


In response to Aanand's [Substack post/twitter thread](#) on VC, which is great (we, a community of LPs/GPs/entrepreneurs/and tech professionals all benefit when we test ideas like Aanand has, so please fire away at my response):

- 1) A 3x bar for VC seems too high, especially in today's market with high public equity and fixed income valuations
 - A 3x multiple on a ~10-year fund is producing a ~25% IRR using these assumptions:

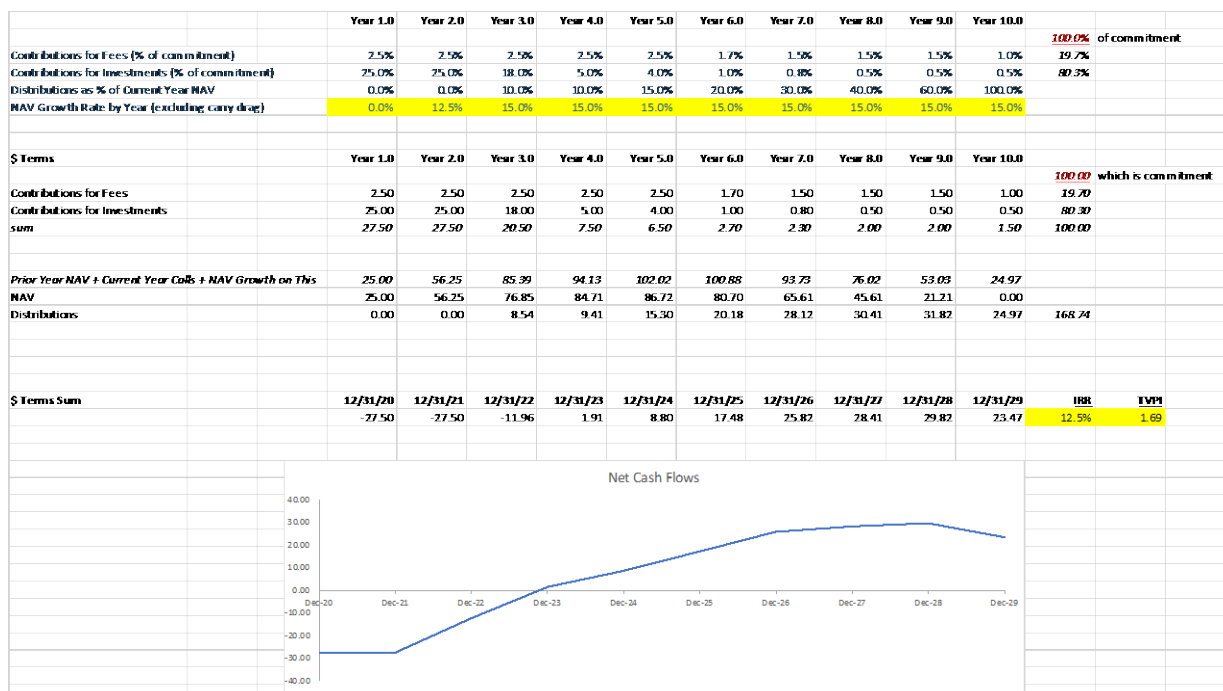
	Year 1.0	Year 2.0	Year 3.0	Year 4.0	Year 5.0	Year 6.0	Year 7.0	Year 8.0	Year 9.0	Year 10.0		
											100.0%	of commitment
Contributions for Fees (% of commitment)	2.5%	2.5%	2.5%	2.5%	2.5%	1.7%	1.5%	1.5%	1.5%	1.0%	19.7%	
Contributions for Investments (% of commitment)	25.0%	25.0%	18.0%	5.0%	4.0%	1.0%	0.8%	0.5%	0.5%	0.5%	80.3%	
Distributions as % of Current Year NAV	0.0%	0.0%	10.0%	10.0%	15.0%	20.0%	30.0%	40.0%	60.0%	100.0%		
NAV Growth Rate by Year (excluding carry drag)	0.0%	12.5%	40.0%	30.0%	30.0%	30.0%	30.0%	15.0%	15.0%	15.0%		
\$ Terms	Year 1.0	Year 2.0	Year 3.0	Year 4.0	Year 5.0	Year 6.0	Year 7.0	Year 8.0	Year 9.0	Year 10.0		
											100.00	which is commitment
Contributions for Fees	2.50	2.50	2.50	2.50	2.50	1.70	1.50	1.50	1.50	1.00	19.70	
Contributions for Investments	25.00	25.00	18.00	5.00	4.00	1.00	0.80	0.50	0.50	0.50	80.30	
sum	27.50	27.50	20.50	7.50	6.50	2.70	2.30	2.00	2.00	1.50	100.00	
Prior Year NAV + Current Year Calls + NAV Growth on This	25.00	56.25	103.95	128.12	155.10	172.69	166.74	134.80	93.59	43.63		
NAV	25.00	56.25	93.56	115.31	131.84	138.15	116.72	80.88	37.44	0.00		
Distributions	0.00	0.00	10.40	12.81	23.27	34.54	50.02	53.92	56.15	43.63	284.73	
\$ Terms Sum	12/31/20	12/31/21	12/31/22	12/31/23	12/31/24	12/31/25	12/31/26	12/31/27	12/31/28	12/31/29	IRR	TVP
	-27.50	-27.50	-10.11	5.31	16.77	31.84	47.72	51.92	54.15	42.13	25.8%	2.85



- It's incorrect to assume a VC fund calls 100% of capital on day 1 and then annualizes at 12% for 10 years before selling the entire NAV (which produces a ~3x):

		Year 1
100	12%	1
112	12%	2
125.44	12%	3
140.4928	12%	4
157.351936	12%	5
176.234168	12%	6
197.382269	12%	7
221.068141	12%	8
247.596318	12%	9
277.307876	12%	10

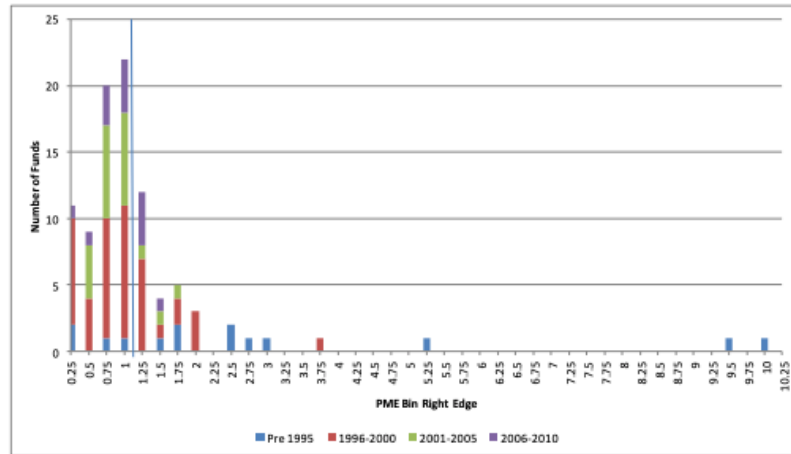
- A ~1.7x could be done with a ~13% IRR (I only reduced the annual NAV growth assumptions):



- In an environment in which equities are flat to negative over 10 years (which is very possible—ie, the US in the 1970s, Europe since the GFC, Japan since 1990—a mid-single digits IRR/~1.4x TVPI would be great for LPs, even if the cost is illiquidity.
 - What Eric Woo [points out](#) (though I'd emphasize that VC isn't a diversifier like fixed income or a lower beta/trading-oriented strategy that LPs can use to rebalance from into public equities)
 - In a low rate environment, GPs' businesses still probably work since most GPs, especially early-stage, charge carry on profit, not over a 8% hurdle
 - In contrast, GPs that have a hurdle (most of PE and growth equity, and to a lesser extent, late-stage VC) could face a lot of pressure in a world where they can't charge LPs for beta
 - However, GPs raising late-stage vehicles that are more likely to sell off in line with a broader market sell-off creates GP business risk ("Hi LP. I know your \$-weighted returns from investing in both our early and growth-stage funds are negative, but our early-stage fund generated a nice IRR/TVPI. So you're in for the next series of funds, right?")
- I also disagree with the notion that we can create expected returns for VC by summing expected returns for large US stocks + illiquid premium + additional risk premium; instead, I think VC is a bet on whether new tech companies will be innovative and be able to grow; if so, which has been the case in the US (and China), returns are good; if not, returns are bad. In essence, VC beta is much different than public equity beta.
 - We can only use historical returns to make weak estimates of future returns. Kauffman's prediction that >\$500mm funds would produce bad returns is a great example of relying too much on historical data.

- Alex Danco [explains](#) how VC pricing isn't economically sensible and is simply discounting terminal value that we can't estimate with any precision (but can collectively, make more likely to obtain if investors, entrepreneurs, and employees at start-ups buys into the hype). Early-stage VC breaks CAPM.
- 2) Returns for VC have actually been pretty good:
 - Harris, Jenkinson, Kaplan, and Stucke [data](#), which is as of June 2019 (so 9 more years than Kauffman's), shows that, for VC funds, "the average net IRR across the sample is roughly 15% per annum, with an average MOIC of 2.11. VC funds, overall, also have out-performed public markets with the average PME of 1.22 across the sample." **And** "it is worth noting that, across the whole sample, funds in the **top three** quartiles have average PMEs that exceed one. This, too, is at odds with the conventional wisdom that only top quartile VC funds have beaten the S&P 500" (Page 11)
 - In addition, "It is worth noting that VC funds in the **2nd quartile also have PMEs above 1.0, overall and for both pre-2001 and post-2000 vintages**. This goes against the conventional wisdom that only the top quartile or top decile VC funds outperform public markets." (Page 8)
- 3) VC returns aren't unique in having right skewness; the distribution of returns within the US stock-market is extremely right-skewed:
 - [Do Stocks Outperform Treasury Bills?](#)
 - Sequoia's Roelof Botha [pointing out this week](#) that if Sequoia had held onto their best companies post-IPO, they would have generated more profit for LPs than what they generated pre-IPO
 - In addition, I suspect the distribution of US equity manager returns also has a (right) skew that is similar to the distribution of VC fund returns. Several tech/SaaS funds have compounded at 30+% IRRs, for example.
- 4) While a LP might have exposure to 900 underlying companies via 30 funds, and may assume that the underlying GPs would have to own at least 18 home-run companies to get to a 3x LP VC program return, those 18 companies don't have to be distinct. Most unicorns have multiple seed investors.
- 5) The [2012 Kauffman report](#) is weak and may have hurt funding for emerging VCs more than any other report.
 - First, it's as of 2012, which was before "unicorns" were a thing—[literally](#).
 - Yes, Stripe and Coinbase may be overvalued at >\$100bn; even so, they are way different companies than the winners of 2010 (Isn't it crazy that FB bought Instagram for just \$1bn in 2012?)
 - Second, it's based on Kauffman's own performance, which doesn't represent the entire asset class (and Kauffman could have been bad at investing in funds)
 - Third, it's focused on 1996-2005 vintage years and this 10-year sample includes two recessions, which is rare:

PME is a more informative measure of performance than vintage year



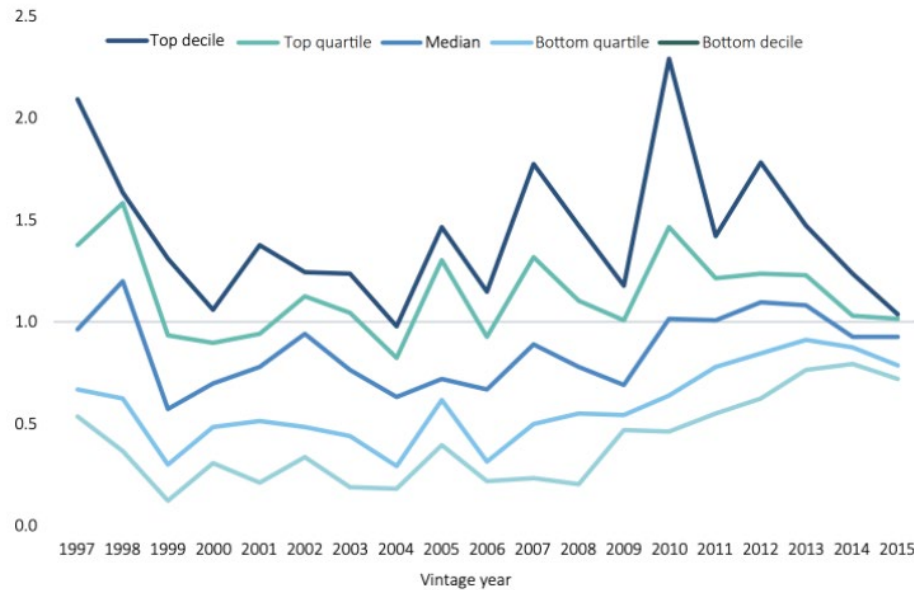
Source: Kauffman Foundation VC portfolio, 1989–2010. The Russell 2000 is the public benchmark.

- In addition, 2004–2006 VYs, and certainly 2006–2010, were young when they published the report
- 6) This PB report likely doesn't include the performance of good funds that don't have public pension LPs (the Harris report above is based on Burgess data):



CASE STUDY

Only the top VC funds tend to outperform
VC KS-PME percentiles



Source: Pitchbook

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- 7) The [study on persistence](#) is also based on super old data.

2. Data

We analyze data drawn from the VentureXpert database maintained by Thomson Reuters, which includes round-level information on venture capital investments around the world. VentureXpert has unique investor- and portfolio company-identifiers that allow us to trace the outcomes of individual portfolio companies and to construct the entire investment histories of nearly all VC firms. Although no data source offers complete coverage of all venture investments, [Kaplan and Lerner \(2017\)](#) note that VentureXpert has better coverage than the primary alternatives at the level of individual investment rounds.¹

- We limit our analysis to investments made between 1961 and 2008. Two factors
- 8) Instead of trying to back GPs spinning out of firms, I think a more useful heuristic for LPs wanting to build VC exposure is to try and avoid GPs that have a high chance of failing.
 - According to Harris (above), there is more persistence in VC than buyouts; however, the strongest persistence is in bottom quartile, especially for VC. So the goal for a LP should be avoiding bottom quartile, not picking top quartile, right?
 - Question I have: Why more persistence in bottom quartile? Because it takes 2 funds for LPs to determine the trajectory of a GP?
 - Investing in spinouts would have probably missed the last 15-year run of operator-turned-VCs (a16z, First Round, Founders Fund, many of the seed funds that are in FoFs like [Cendana](#)) and platform funds like YC that have done really well.
- 9) Data that suggests emerging managers outperform is decently strong:
 - [From TIFF](#):

When we limit the data set to venture capital funds, the return differential is even more pronounced at 580 bps.

Fund Number	# of Funds	Invested (\$000s)	Realized (\$000s)	NAV (\$000s)	Total Gross Value (\$000s)	Gross DPI	Gross TVPI	Gross IRR (USD)
1st-4th Funds	44	38,833	55,689	40,733	96,422	1.4x	2.5x	20.8%
5th+ Funds	33	26,507	26,590	15,719	42,309	1.0x	1.6x	15.0%
Total	77	65,340	82,279	56,452	138,731	1.3x	2.1x	19.0%

-
- From Harris (above):
 - “First-time funds perform at least as well as any of the groups based on prior fund quartile rankings.” (Page 2)
- Greenspring’s [findings](#), which Aanand cited:

those that have raised three or more funds prior to our first commitment. For the purposes of the analysis, we only examined mature funds (2015 vintages or earlier) to ensure that current performance is at least somewhat indicative of end-of-life performance, and that the effects of the J-Curve did not materially influence the results. Given the confidential nature of our underlying funds' performance, we can only compare the returns of the two categories to one another.

GA Emerging Manager Returns	
Net Multiple (amount above or below Established Managers)	+0.10x
Net IRR (amount above or below Established Managers)	+0.87%

■ As the data above reveals, in our experience investing across approximately 180 partnerships, emerging managers have outperformed relative to their established counterparts. We attribute this to a number of factors. First, attractive emerging firms, especially "spin-outs," are, in many

- The Cambridge's chart isn't that helpful because it doesn't account for the n of emerging managers growing substantially (and the more emerging managers, the more likely a % of emerging managers will be top performers)
 - I think this is what [David Clark \(VenCap\)](#) references and what Aanand acknowledges