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EYE ON THE MARKET BIENNIAL ALTERNATIVE INVESTMENTS REVIEW 2023

It's Mostly a Paper Moon

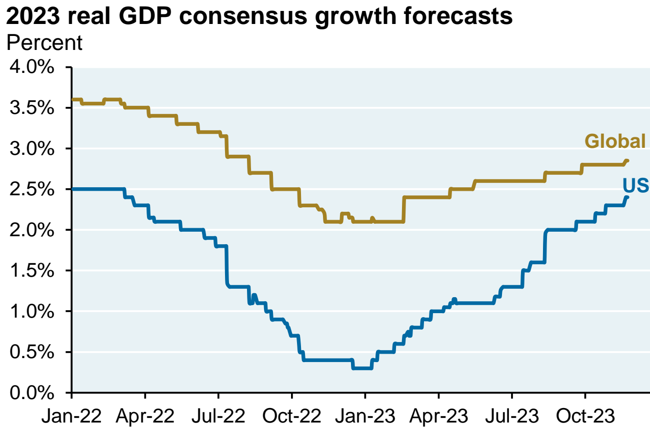
In our biennial Alternative Investments Review, we analyze industry returns in private equity, venture capital, hedge funds, commercial real estate, infrastructure and private credit. While private equity and venture capital managers have outperformed public markets, a lot of the gains for vintages since 2015 are still on paper, leaving investors exposed to how managers mark positions and prices at which companies are sold in a world of higher interest rates. Performance of diversified hedge fund portfolios has been better than expected. The debate on private credit: how different are its underwriting standards compared to broadly syndicated leveraged loans.

By **Michael Cembalest**
Chairman of Market and Investment Strategy for J.P. Morgan Asset & Wealth Management

It's Mostly a Paper Moon[1]: Alternative Investments Review

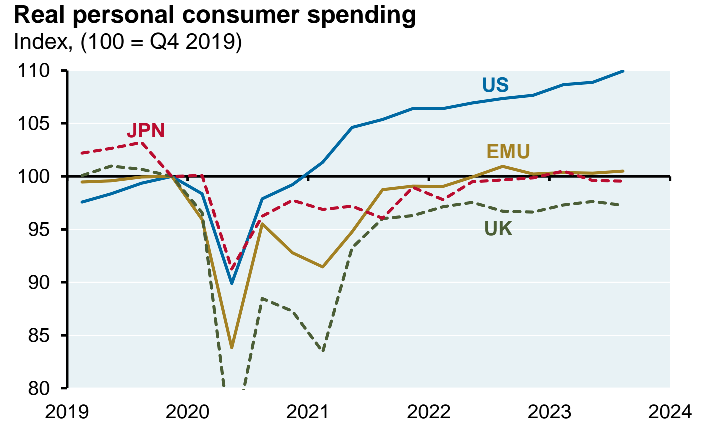
As 2023 comes to an end, a few things look better than they did a few months ago. US growth estimates for 2023 were just 0.5% back in January, and now they're almost 2.5%. US consumers kept on spending in 2023, although they're gradually running down accumulated savings. Rising consumer delinquencies (credit cards, subprime auto loans) indicate that higher interest rates are starting to have an impact.

2023 real GDP consensus growth forecasts
Percent



Source: Bloomberg, JPMAM, November 29, 2023

Real personal consumer spending
Index, (100 = Q4 2019)



Source: National sources, JP Morgan Economics, JPMAM, Q3 2023

Something else that looks better than I thought it would: performance of private equity, venture and hedge funds. However, a lot of the gains for private equity and venture investors are still on paper. As a result, there's still plenty of upside and downside risk left for LPs regarding how managers mark positions, and the prices at which companies are sold in a world of higher interest rates. That's the main theme of our biennial Alternative Investments Review. We also include an analysis of diversified hedge fund portfolio performance, a brief look at commercial real estate/BREIT, infrastructure returns and comments on private credit's "golden moment" due to Basel III proposals on banks.

The 2024 Eye on the Market Outlook will be released as usual on January 1st. Topics include the usual suspects, plus a deeper look at weight loss drugs and US debt sustainability. In case you missed it, November's Eye on the Market addressed questions on geopolitics and US politics (US election, Europe, China/Taiwan, Middle East, oil). The 2024 Energy paper will come out next March or April; one section will analyze what a "Marshall Plan" reconstruction of Gaza might look like, with a focus on possible contributions from rooftop solar power.

Michael Cembalest, JP Morgan Asset Management

Contents

Private Equity 2
Venture Capital 7
Hedge Funds 10
Commercial real estate, the office sector and BREIT 14
Infrastructure 16
Private credit, Basel III and the battle of the underwriters 17
Appendix: what are the systemic risks of more non-bank lending? 21

[1] "*It's Only a Paper Moon*", music by Harold Arlen and lyrics by Billy Rose and Yip Harburg, 1933. A "paper moon" refers to something that appears real and significant, but which is an illusion. The cover art was created using generative AI, which is why there are strange items added which I did not prompt for.

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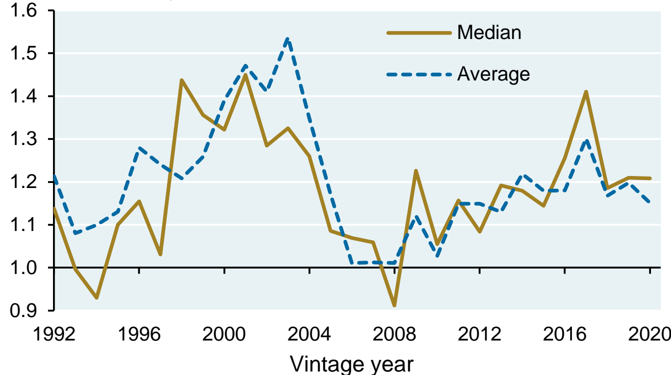
Private Equity

While multiple of invested capital and internal rates of return are interesting, neither measures performance vs a public equity benchmark. Our preferred performance measure is the Public Market Equivalent ratio, which in simple terms represents the **outperformance of private equity vs a public equity market benchmark**. When I received the latest update from Steve Kaplan at the University of Chicago, I was surprised. The last time we updated this two years ago, the relative performance of 2016 and 2017 private equity vintage years were barely above 1.0 (i.e., roughly equal to S&P 500 performance). As of Q2 2023, these vintage years were outperforming the S&P 500 by a larger amount.

US buyout outperformance
Public Market Equivalent ratio vs S&P 500

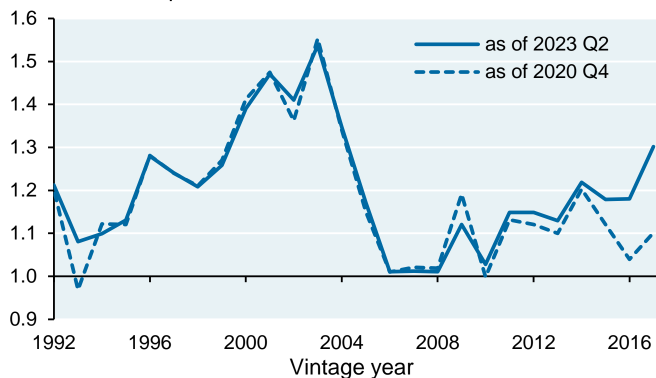


Source: Steve Kaplan (U Chicago), Burgiss, JPMAM, Q2 2023

The Public Market Equivalent ratio (PME) compares private equity capital calls and distributions to investments in public equity markets in the same exact time periods. The result is a ratio of private equity returns vs the public equity benchmark used. As shown, the average private equity manager has outperformed the S&P 500 for most of the last 30 vintage years

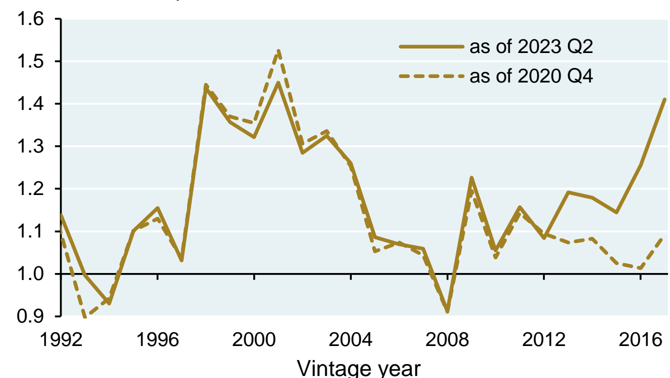
The charts below show how buyout outperformance for vintage years 2013-2017 improved since our last analysis a couple of years ago[2]. No material changes in vintages through 2012 since most investments for those vintage years have already been monetized.

US buyout outperformance, average managers
Public Market Equivalent ratio vs S&P 500



Source: Steve Kaplan (U Chicago), Burgiss, JPMAM

US buyout outperformance, median manager
Public Market Equivalent ratio vs S&P 500



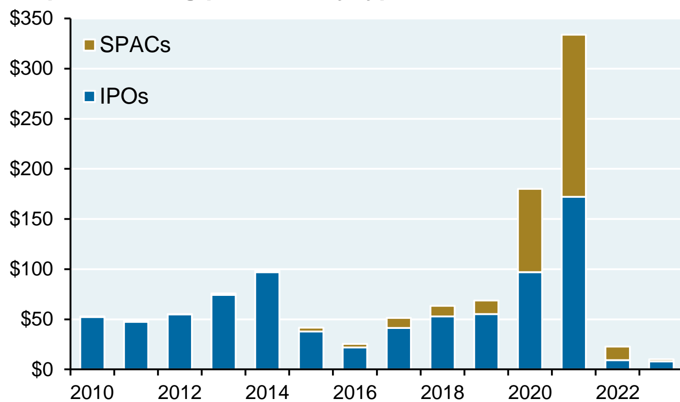
Source: Steve Kaplan (U Chicago), Burgiss, JPMAM

[2] "*Food Fight: Private equity performance vs public equity markets*", Eye on the Market, June 2021. This piece also included sections on different performance benchmarks; co-investment returns; the impact on IRR from subscription lines; buyout and venture manager dispersion; carried interest, management fees and net monitoring/transaction fees; and secondary GP-led funds.

Why did private equity outperformance improve for recent vintage years? Thank you notes are in order from private equity investors to IPO investors. The IPO boom allowed private equity firms to sell a lot of companies at inflated valuations. The first chart shows the surge in public listings, and the second chart shows how poorly IPOs and SPACs[3] issued in 2020/2021 performed relative to the S&P Small Cap Growth Index[4]. The third and fourth charts show rising private equity exit activity coinciding with rising private equity distributions. Bottom line: 2020/2021 was a great time for private equity firms to unload both good companies and bad, courtesy of Federal Reserve and Treasury stimulus which boosted investor risk appetite.

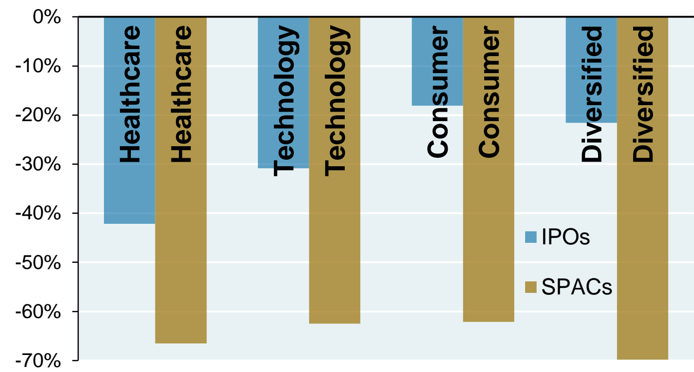
Improving private equity outperformance took place even though managers have been paying more and leveraging more. The median private equity enterprise value to EBITDA[5] ratio for 2017-2019 vintage years was ~11x compared to ~8x in 2010, and the median debt to EBITDA ratio was ~5.5x in 2017-2019 compared to ~4.5x in 2010. Even so, they benefitted substantially from selling while the real cost of money was still close to zero. **The only question I have is why private equity managers didn't sell even more of what they bought**.

US public listing proceeds by type, $ billions



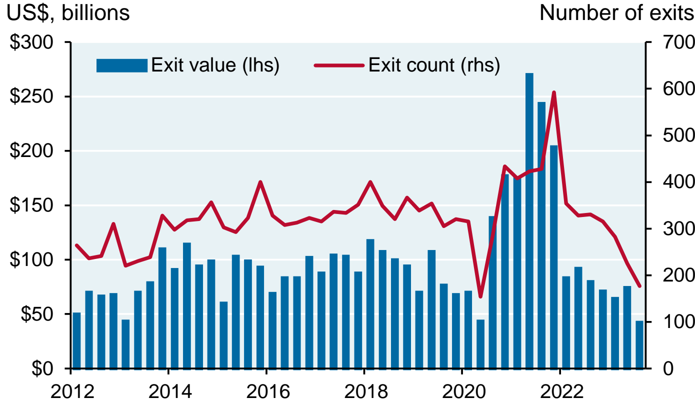
Source: Bloomberg, JPMAM, July 12, 2023

Average IPO/SPAC net returns by sector for vintage years 2020 and 2021, H=2 yr, Percent, vs Small Cap Growth Index



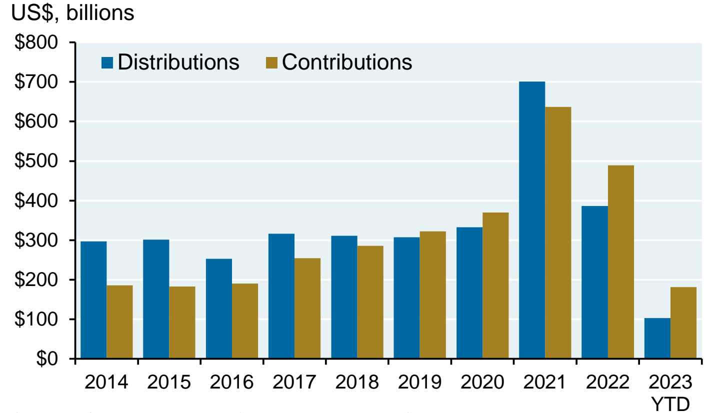
Source: Bloomberg, JPMAM, July 12, 2023

US private equity exit activity
US$, billions
Number of exits



Source: Pitchbook, Q3 2023

Global private equity cash flows by year
US$, billions



Source: Steve Kaplan (U Chicago), Burgiss, Q2 2023

[3] For what it's worth, I warned investors in 2021 that the SPAC boom was to be avoided: "*Hydraulic Spacking*", February 8 2021 Eye on the Market; "*Spaccine Hesitancy*", August 19 2021 Eye on the Market

[4] As per our July 2023 IPO paper "*Mr. Toad's Wild Ride*", a Small Cap Growth index comes closest to matching the tech and biotech sector composition of the new issue market and the size of companies brought public

[5] EBITDA = earnings before interest, taxes, depreciation and amortization

Despite the surge in private equity exits, for investors in vintage years 2016-2019, it's still mostly a paper moon: in other words, a lot of gains are still on paper:

- The fourth and fifth columns in the table show distributions and the remaining value of retained positions[6]. By taking the remaining value and dividing by the sum of remaining value and distributions, we can compute each vintage year's continued sensitivity to market conditions
- **For vintage years 2016-2019, more than 50% of the total value in private equity funds is still reliant on existing positions (i.e., where they are marked and where they eventually get sold)**[7]. Bain & Co estimates that buyout firms are sitting on $2.8 trillion of unsold investments, which is another way of understanding the paper moon metaphor
- For vintage years 2016-2019, there's also not much dry powder left (paid in capital to capital committed)

US buyout: average manager stats by vintage year

Vintage year	Paid in capital to capital committed	Total value to paid in capital	Distributions to paid in capital	Remaining value to paid in capital	Remaining value as % of fund value + distributions	Average Public Market Equivalent ratio vs S&P 500
2005	1.00x	1.67x	1.54x	0.13x	**8%**	1.17
2006	1.02x	1.62x	1.60x	0.03x	**2%**	1.01
2007	1.06x	1.75x	1.71x	0.04x	**2%**	1.01
2008	1.03x	1.65x	1.52x	0.14x	**8%**	1.01
2009	1.00x	2.12x	1.99x	0.13x	**6%**	1.12
2010	1.03x	1.90x	1.70x	0.20x	**11%**	1.03
2011	1.04x	1.96x	1.71x	0.26x	**13%**	1.15
2012	1.03x	1.90x	1.71x	0.19x	**10%**	1.15
2013	1.03x	2.02x	1.54x	0.48x	**24%**	1.13
2014	1.05x	2.00x	1.22x	0.79x	**39%**	1.22
2015	1.04x	1.82x	1.07x	0.75x	**41%**	1.18
2016	1.00x	2.05x	0.98x	1.07x	**52%**	1.18
2017	0.98x	1.95x	0.82x	1.13x	**58%**	1.30
2018	0.98x	1.57x	0.36x	1.21x	**77%**	1.17
2019	0.90x	1.48x	0.23x	1.25x	**84%**	1.20
2020	0.78x	1.35x	0.08x	1.27x	**94%**	1.15
2021	0.58x	1.16x	0.00x	1.16x	**100%**	NA
2022	0.34x	0.96x	0.00x	0.96x	**100%**	NA

Source: Burgiss, JPMAM, Q2 2023. Each value is based on the median of the peer group.

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[6] **Where does our data come from?** Burgiss sources private equity cash flow data directly from limited partners. Its investor universe includes 300 state and corporate pension fund, endowment and foundation limited partner investors in 1,400 private equity funds and contains net-of-fee cash flow data. Burgiss believes its universe represents at least 70% of all private equity funds ever raised. Burgiss return data is not subject to survivorship bias and selective reporting associated with Venture Economics and other private equity/venture data sources.

An example of the problems with Venture Economics. A 2013 paper from Rudiger Stucke at Oxford concluded the following: "A detailed analysis of its aggregate and individual numbers, however, reveals severe anomalies. Over 40% of the funds in the database stopped being updated during their active lifetime. Incomplete funds are missing over 60% of their cash distributions. The result is a significant downward bias of the whole benchmark with major implications for a large fraction of the established literature on private equity".

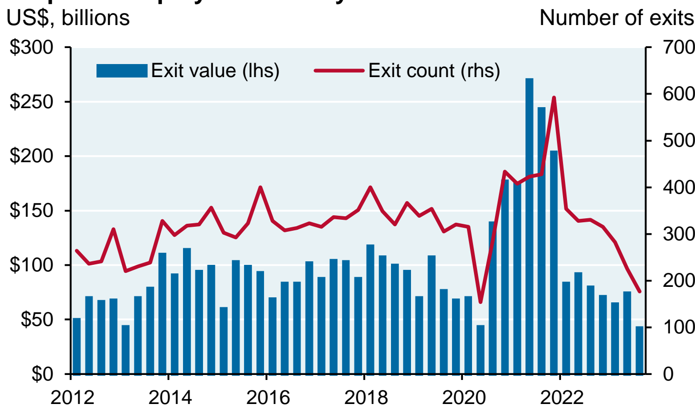
[7] Over the last decade, the remaining value-to-total fund value % for vintages that were 6.5 years old generally ranged from 54% to 65%, putting today's value at the lower of this range but not abnormally so. **The key difference**: this time around, the interest rate regime has changed a lot while unsold investments are pending

Where does private equity go from here in a world of higher interest rates?

Look at that first chart again. Rather than focusing on the surge in exits in 2020/2021, note how exits have recently dropped to their lowest levels since 2012. Carlyle's failed acquisition of Cotiviti (healthcare software) earlier this year is illustrative. Debt financing yields of ~12% reportedly hurt the economics of the potential transaction, and when Carlyle attempted to renegotiate the valuation downward, the seller walked away. **A trough in deal activity typically means that sellers have yet to adjust their expectations of where things can actually trade in a world of higher rates; that's the case in private equity, venture, office and residential real estate as well**. FWIW, I'm not a huge fan of what some private equity firms are doing to sustain distributions to LPs, such as borrowing against Net Asset Value to make payouts or resorting to payment-in-kind financing; both approaches obscure the fundamentals of what's actually happening inside the funds.

US private equity exit activity

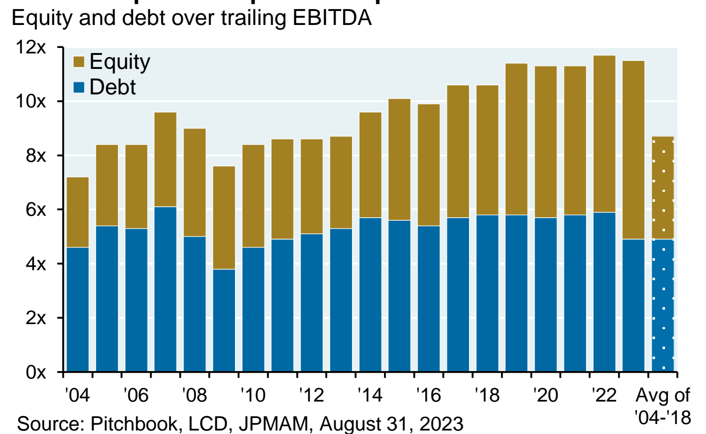
US$, billions



Source: Pitchbook, Q3 2023

US LBOs: purchase price multiples

Equity and debt over trailing EBITDA

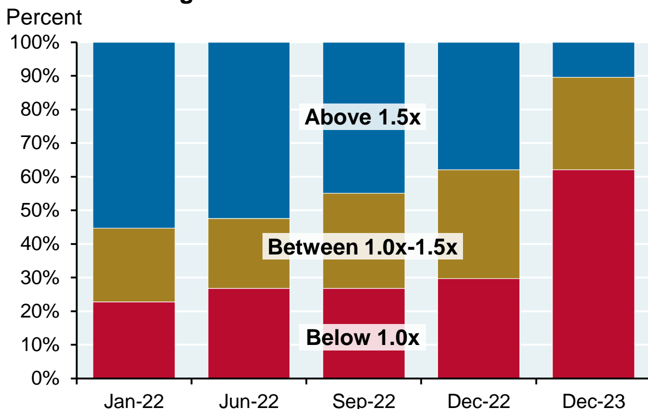


Source: Pitchbook, LCD, JPMAM, August 31, 2023

The 2016-2019 vintage years face challenges regarding financing of debt and need financial conditions to ease to sustain current multiples of invested capital. Triple-C rated bond and loan issuance is down ~80% from last year, and B/B- loan issuance is down 70% from 2021 levels. According to Moody's, more than half of all B- loan market borrowers will not generate enough cash flow to cover capital spending and debt service by the end of this year. "Amend and extend" activity is running at its fastest pace since 2009, we have seen an uptick in pre-emptive Selective Defaults[8], and lenders may be less willing now to allow "EBITDA adjustments" which artificially underestimate leverage ratios by 0.5x to 3.0x, depending on the sector[9].

Interest coverage for B- rated issuers in the US loan market

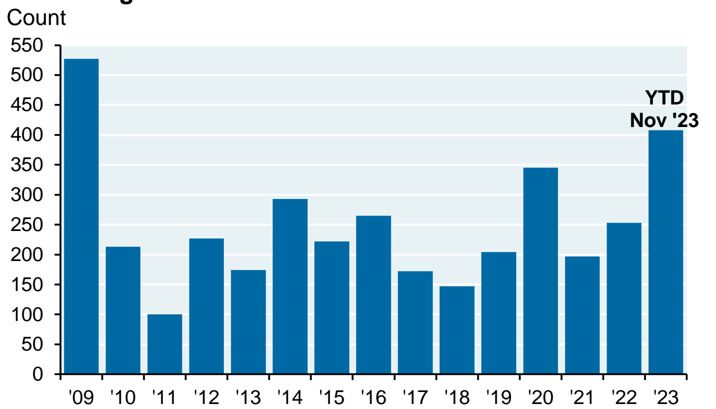
Percent



Source: Moody's Investors Service, 2023

US leveraged loans amendments and extensions

Count



Source: LCD, Pitchbook, JPMAM, November 2023

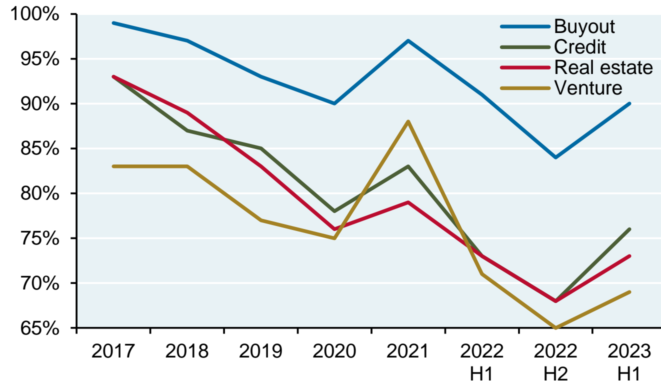
8 2023 Selective Defaults: Bausch Health, Community Health, Carvana, AMC Entertainment, Rackspace Technology, Telesat, Shutterfly, Curo Group (fintech) and US Renal Care

9 Covenant Review, 2023. See page 18 for more on EBITDA add-backs

How realistic are private equity current marks?

The secondary market for buyout funds was only 10% below Net Asset Value during the first half of 2023. However, this observation is based on pricing from the end of June when the 10-year Treasury was still below 4%. It will be informative to see what these discounts to NAV look like by year-end. There's also not a lot of information about the depth of these pricing estimates; a modest amount of demand to buy or sell could change them substantially.

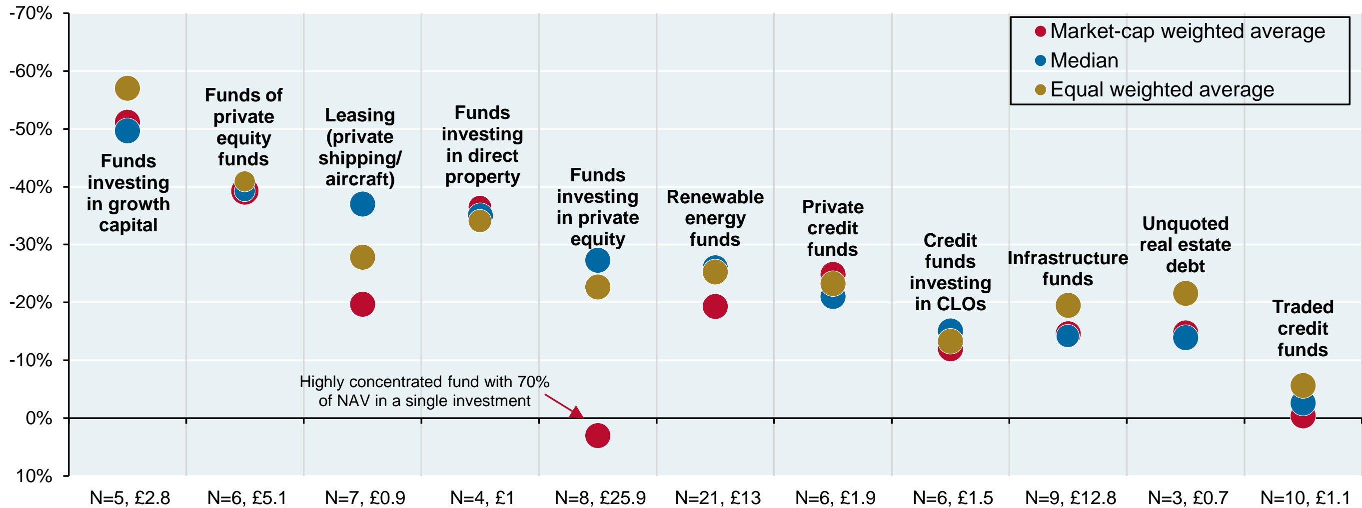
Secondary market pricing
Percent of Net Asset Value



Source: Jefferies, October 2023

Another imperfect measure: secondary market discounts in UK listed investment companies investing in alternative investments. Using this lens, valuation discounts are closer to 30% for buyout funds, the largest they have been since 2003 other than during the financial crisis when they reached 50%. However, this is not a large and liquid market and may exaggerate discounts. Note the 50%-60% discounts to NAV reportedly available for those buying into closed-ended growth equity funds in the UK market.

UK-listed investment companies discount to NAV
Percent discount, with # of funds and current market value (billions £)



Source: JP Morgan Investment Companies Research, November 17, 2023

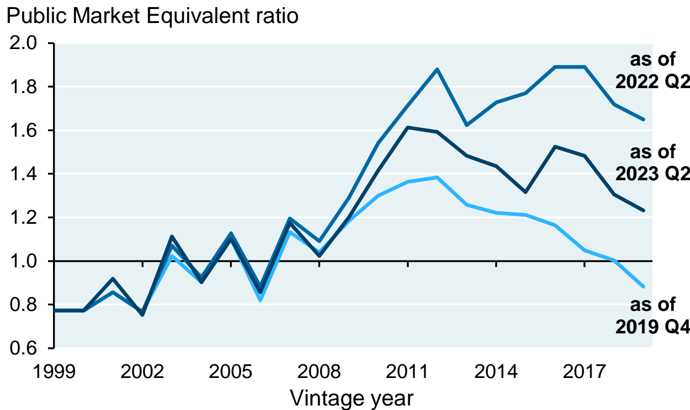
Venture Capital

Venture Capital excess returns also look better than they did a couple of years ago, in part due to the surge in exits shown in the second chart. As we reviewed in our deep dive IPO analysis in July, the performance of many technology, healthcare, biotech and renewable energy companies that went public in 2020 and 2021 was poor relative to the equity market. VC managers were fortunate to be able to unload many of them at the time.

Here's a look at the evolution of VC outperformance and the lags between public markets and private markets:

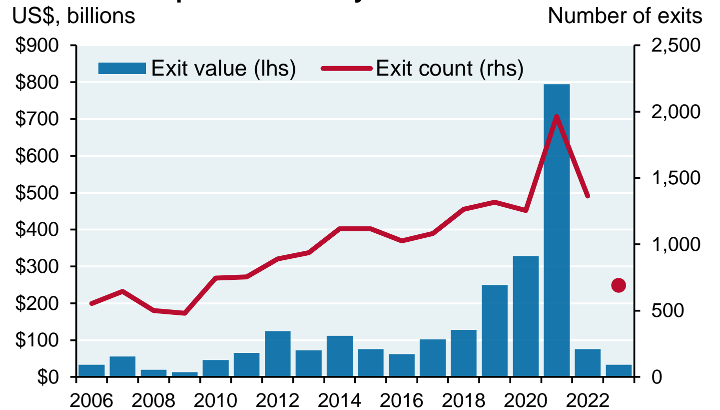
- In Q4 of 2019, excess returns for 2016 and 2017 vintages were barely above 1.0x given the strong rally in public equity markets used as a benchmark
- By Q2 of 2022 after the equity market correction, excess returns for 2016 and 2017 vintages looked much higher since most VC managers had not marked down positions yet
- By Q2 of 2023, VC managers started to mark positions down to reflect market conditions and comparables, and excess returns for 2016 and 2017 vintage years fell in half from their peak. The third chart suggests that there could be more markdowns to come

US VC fund excess returns vs S&P 500
Public Market Equivalent ratio



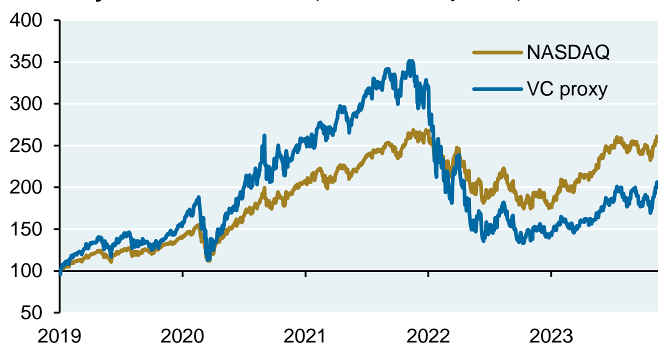
Source: Steve Kaplan (U Chicago), Burgiss, JPMAM

US venture capital exit activity
US$, billions
Number of exits



Source: Pitchbook, Q3 2023

Performance proxy for Venture Capital companies suggests sharp fall in valuations from peak levels, with a recovery in Q4 2023, Index (100 = January 2019)



Source: Refinitiv/Thomson Reuters, Bloomberg, November 17, 2023

The Refinitiv Venture Capital Index
Refinitiv starts by observing valuations of venture backed firms during funding rounds, acquisitions and exits. They then back into the estimated value of each venture backed firm over time. The Refinitiv VC proxy index is then created which uses publicly traded assets to replicate the derived performance of venture backed firms as closely as possible

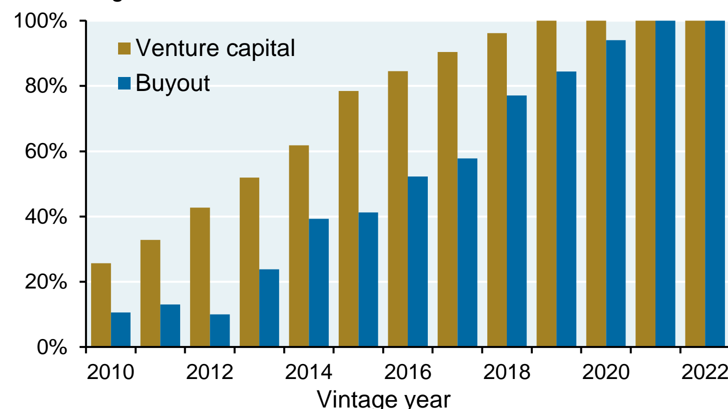
More paper moon effects: compared to private equity, recent venture capital vintage years are even more sensitive to market conditions. For vintage years 2013 to 2019, more than 50% of the total value in venture funds is still reliant on existing positions (i.e., where positions are marked and eventually sold). The chart at the bottom indicates that the market exposure of VC investors exceeds that of private equity.

US venture capital: average manager stats by vintage year

Vintage year	Paid in capital to capital committed	Total value to paid in capital	Distributions to paid in capital	Remaining value to paid in capital	Remaining value as % of fund value + distributions	Average Public Market Equivalent ratio vs S&P 500
2005	1.00x	1.29x	1.25x	0.04x	**3%**	1.10
2006	1.00x	1.23x	1.14x	0.09x	**7%**	0.86
2007	1.00x	1.66x	1.58x	0.08x	**5%**	1.17
2008	1.00x	1.64x	1.37x	0.27x	**16%**	1.02
2009	1.00x	2.29x	1.82x	0.47x	**21%**	1.20
2010	1.00x	2.38x	1.77x	0.61x	**26%**	1.41
2011	1.00x	2.38x	1.60x	0.78x	**33%**	1.61
2012	0.99x	2.83x	1.62x	1.21x	**43%**	1.59
2013	1.00x	2.40x	1.16x	1.25x	**52%**	1.48
2014	0.99x	2.20x	0.84x	1.36x	**62%**	1.44
2015	0.99x	2.23x	0.48x	1.75x	**78%**	1.32
2016	0.98x	2.20x	0.34x	1.86x	**85%**	1.52
2017	0.98x	2.20x	0.21x	1.99x	**90%**	1.48
2018	0.95x	1.85x	0.07x	1.78x	**96%**	1.31
2019	0.91x	1.40x	0.00x	1.40x	**100%**	1.23
2020	0.84x	1.22x	0.00x	1.22x	**100%**	NA
2021	0.59x	1.00x	0.00x	1.00x	**100%**	NA
2022	0.23x	0.90x	0.00x	0.90x	**100%**	NA

Source: Burgiss, JPMAM, Q2 2023. Each value is based on the median of the peer group.

Greater share of VC investments have yet to be monetized
Remaining value as a % of fund value + distributions



Source: Burgiss, JPMAM, Q2 2023. Each value based on peer group median.

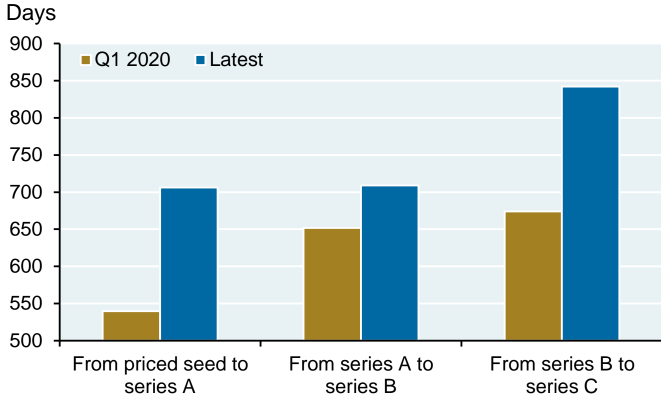
The venture capital landscape is shifting

The charts below illustrate how the venture capital landscape is shifting:

- the rising median time between venture rounds
- the increased number of startups terminated due to bankruptcy
- the large jump in "down rounds" between 2022 and 2023, and the decline in post-money valuations (i.e., the company's value after a new capital injection), particularly for Series C. For example, from 2022 to 2023, the incidence of down rounds rose from 8% to almost 20%, and when down rounds occurred, in 2023 they entailed post-money valuation declines of more than 50%

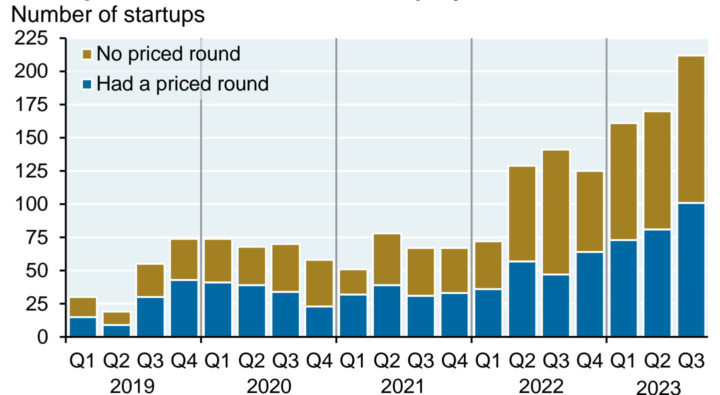
All of this is consistent with tightening financial conditions and a hangover from easy conditions prevailing in 2020 and 2021.

Median time between venture rounds is increasing



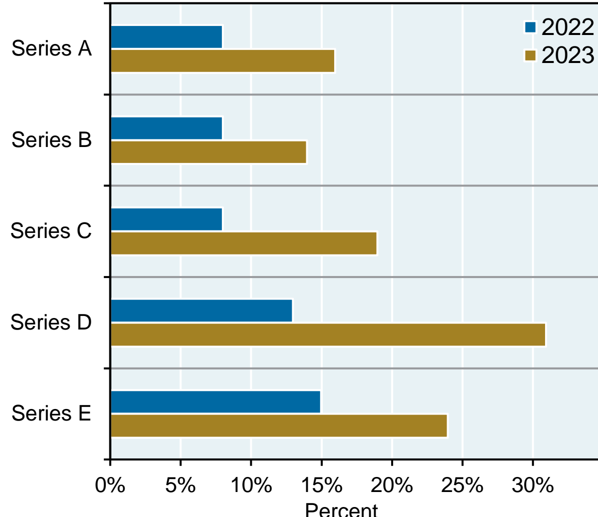
Source: Carta, JPMAM, Q3 2023

Startups shutdown due to bankruptcy/dissolution

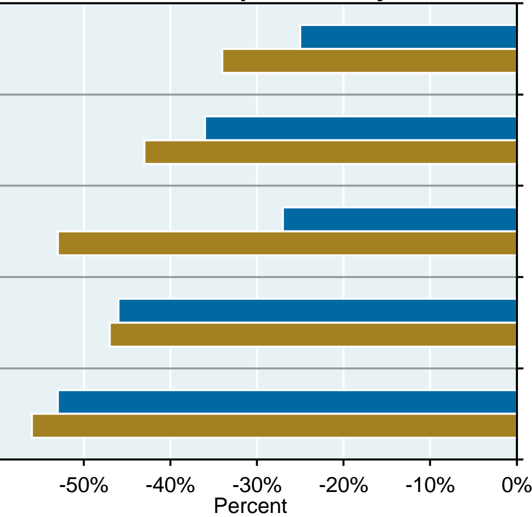


Source: Carta, JPMAM, September 2023

Percent of rounds that were down rounds



Median decline in post-money valuation



Source: Carta, JPMAM, September 2023

Hedge Funds

One of the most subjective things in investment finance is the evaluation of hedge fund performance. A few years ago, there was a lot of press coverage of a large state plan terminating its hedge fund investment platform due to perceptions of underperformance. When we looked at the details, the constraints the plan put on its hedge fund portfolio resulted in volatilities that were much closer to cash/bonds than equities. As a result, they should have used a performance benchmark that reflected that (and I'm not sure that they did).

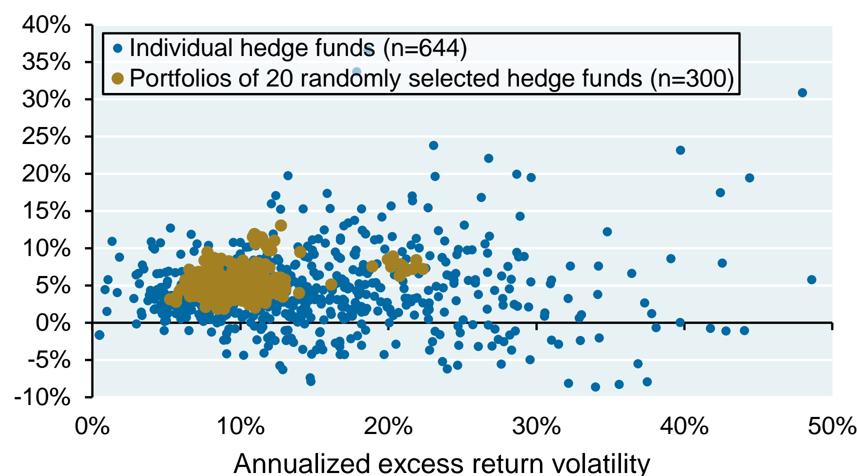
In any case, I wanted to get a sense for how hedge funds have performed over the last few years, including the drawdowns during COVID, from the perspective of an investor selecting their own funds in a diversified portfolio (as opposed to a plan exclusively investing in hedge fund of fund or multistrategy portfolios)[10].

Step #1: obtain performance for US-based hedge funds (relative value, equity hedge, event driven and macro) that report on a monthly basis to HFR, and which have 5 years of performance[11]. The blue dots shows each hedge fund's five-year annualized excess return over T-bills, and the volatility of this excess return

Step #2: create random portfolios of 20 individual hedge funds. We used a filter that required the hedge fund portfolio to be at least partially diversified by excluding any portfolio that had more than 10 funds of one type. The gold dots show the excess return and return volatility of these randomly constructed 20-fund portfolios

Individual hedge funds and 20-fund composites [HFR]

Annualized excess return vs T-bills since Jan 2018



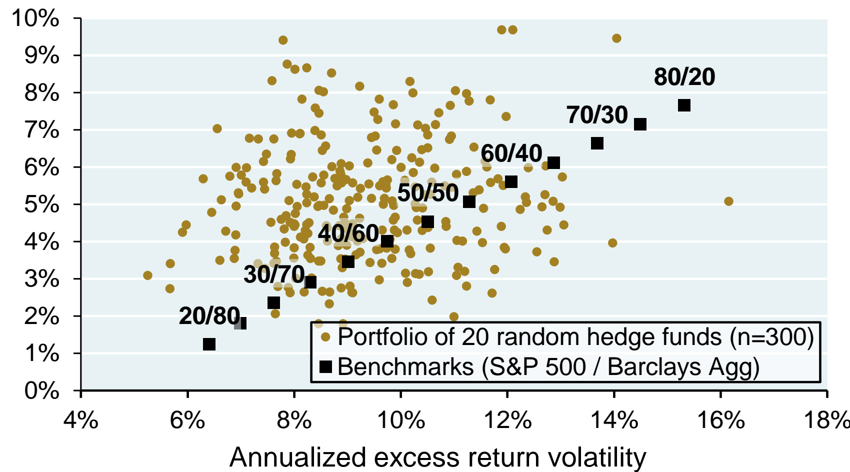
Source: JPMAM, HFR, September 2023

[10] This information is most relevant for diversified institutional investors that are not subject to taxation. After-tax analysis of hedge fund performance is complicated given the need to distinguish between different kinds of gains and income, and the need to incorporate tax loss carryforwards and carrybacks on a fund-specific basis

[11] **The HFR hedge fund inclusion waterfall**: start with database of 6,081 funds; eliminate 3,722 funds that are not US domiciled; eliminate 1,130 funds due to structure (not limited partnerships or limited liability companies); eliminate 208 funds that are not one of our 4 core strategy types; eliminate 251 funds that were launched after 2018; eliminate 44 funds that report quarterly or annually since we cannot compute comparable volatility; eliminate 82 funds that did not yet report data for August/September 2023; remainder: 644 funds

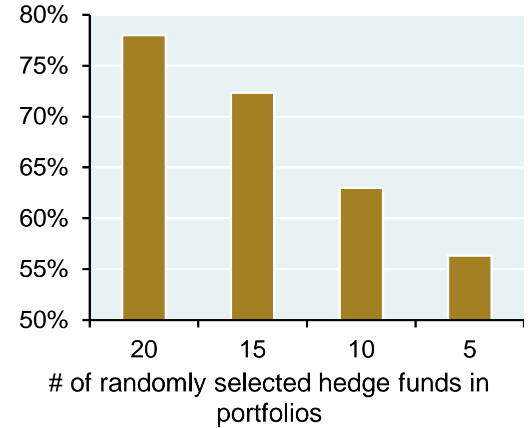
Step 3: What about a benchmark? The gold cluster shows the excess returns and volatilities for the randomly constructed portfolios from Step #2. The benchmark is the efficient frontier of excess returns over T-bills for different stock/bond combinations. So, for each hedge fund portfolio, the question is whether it generated a higher excess return than its corresponding risk-adjusted benchmark (i.e., is the gold dot above the benchmark curve). **For the five-year period in question, 78% of hedge fund portfolios outperformed the risk-adjusted benchmark**. That's higher than I expected, but the second chart shows the importance of diversification to the results: as the number of hedge funds in the composite portfolio declines, the share of composite portfolios outperforming declines sharply as well. In other words, randomly constructed portfolios with only 5 hedge funds had only a 55/45 chance of beating the stock/bond benchmark.

20-fund composites vs benchmarks [HFR]
Annualized excess return vs T-bills since Jan 2018



Source: JPMAM, HFR, September 2023

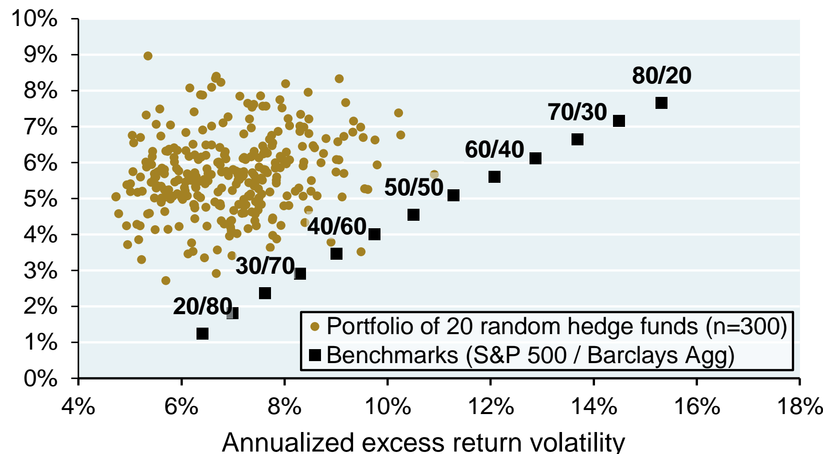
Outperformance of hedge fund portfolios declines with the number of funds included



Source: JPMAM, September 2023

We repeated this analysis using a different hedge fund performance database (Pivotal Path)[12], and the results were even better: almost every hedge fund composite outperformed the risk-adjusted benchmark.

20-fund composites vs benchmarks [PivotalPath]
Annualized excess return vs T-bills since Jan 2018



Source: JPMAM, PivotalPath, September 2023

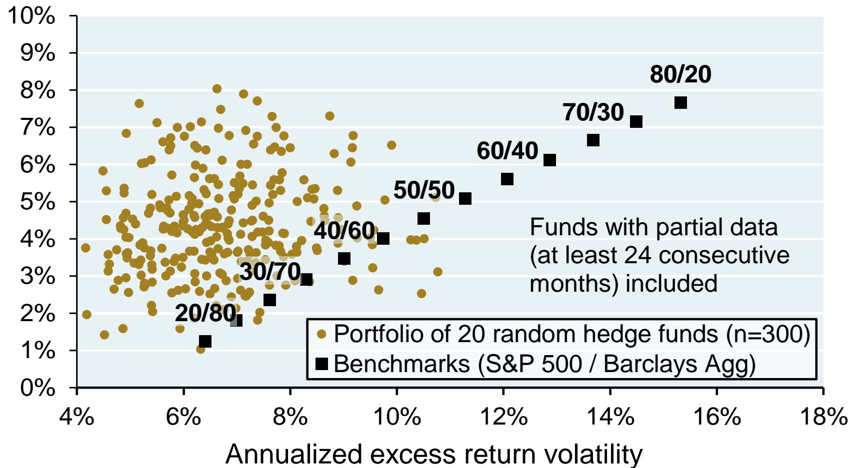
[12] **Pivotal Path hedge fund inclusion waterfall**: start with database of 2,200 funds; eliminate 716 funds that are not US domiciled; eliminate 59 funds that are not one of our 4 core strategy types; eliminate 327 funds launched after 2018; eliminate 567 funds that did not report for the entire period; eliminate 61 funds that did not yet report data for August/September 2023; remainder: 470 funds

What about survivorship bias?

Survivorship bias tends to inflate performance since funds that stop reporting usually underperform. The HFR and Pivotal Path analyses above only include funds that reported for each month of the 5-year analysis period. To capture the impact of partially reporting funds, we ran another iteration that included funds as long as they had at least 24 months of performance. After a fund stopped reporting, we assumed the prevailing monthly T-bill return (i.e., the position was assumed to be redeemed and converted to cash).

We were only able to perform this analysis for Pivotal Path since HFR does not include funds that existed as of December 2017 that stopped reporting afterwards. Pivotal Path does provide data for funds that partially reported: in addition to the original 470 funds with the full complement of monthly data, we allowed the composites to also randomly include 432 partially reporting funds. As shown below, while the cluster of composite returns shifts down, the vast majority of composites still outperform risk-adjusted benchmarks.

The big caveat. In real life, investors are also exposed to the period after a hedge fund stops reporting when it often sells its most illiquid positions. As a result, we're not capturing the full impact of survivorship bias on the return composites. The table on the right shows academic estimates of survivorship bias, defined as the decline in average annual hedge fund returns once the impact of dead funds is incorporated. While the range of estimates is high (some are also quite dated and reflect a hedge fund industry whose portfolio concentrations were generally higher and more volatile), the estimates are all positive. In other words, all studies agree that excluding dead funds overstates hedge fund returns. The shorter the analysis period (ours is only 5 years), the smaller the survivorship impact would presumably be.



Source: JPMAM, PivotalPath, September 2023

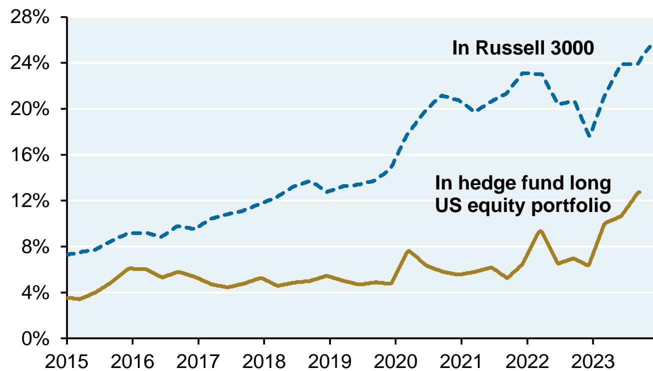
Study	Survivorship bias est.	Year
Ackerman	0.16%	1999
Yuen	0.54%	2018
Amin	2.00%	2003
Horst	2.10%	2007
Liang	2.24%	2000
Brown	3.00%	1999
Edwards	3.06%	2001
Fung	3.48%	1997
Malkiel	4.50%	2005
Aggarwal	5.00%	2010

Source: JPMAM

Some observations on hedge fund portfolios from prime brokers. The large prime brokers publish aggregated information sourced from the hedge funds they transact with. As a result, every prime broker has a different view of what hedge funds are doing in portfolios. The charts below represent the vantage point of one of the larger prime brokers (Goldman):

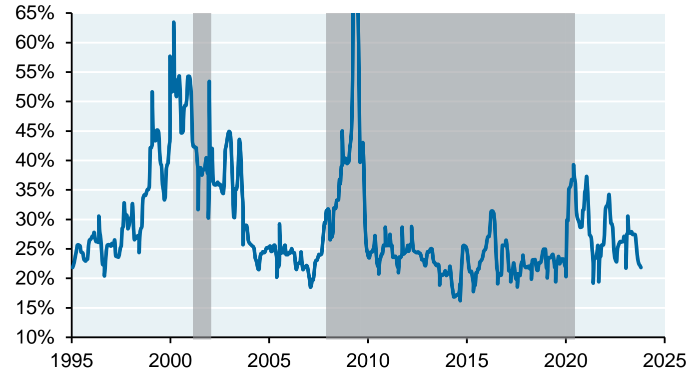
- For most of the last five years hedge funds were underweight Megacap stocks, adding exposure only in 2023. Even so, they were still underweight Megacaps relative to the Russell 3000 Index
- The stock picking opportunity set has not been much different from the barren landscape of 2010-2020, other than during the 2020 COVID selloff and recovery
- The average fund holds 70% of its long portfolio in its top 10 positions, close to the highest concentration on record. Similarly, hedge fund crowding in a small number of positions also hit a new high this year
- For the better part of a decade, hedge fund short books earned just 0-25 basis points in yield. Going forward, short books will earn positive returns if the Fed maintains a positive real cost of money

Weight of Big 7 Megacap Stocks (AAPL, AMZN, GOOGL, META, MSFT, NVDA, TSLA), Percent of portfolio



Source: GS Global Investment Research, November 20, 2023

Slim pickings for stock pickers other than 2020
S&P 500 3-month return dispersion

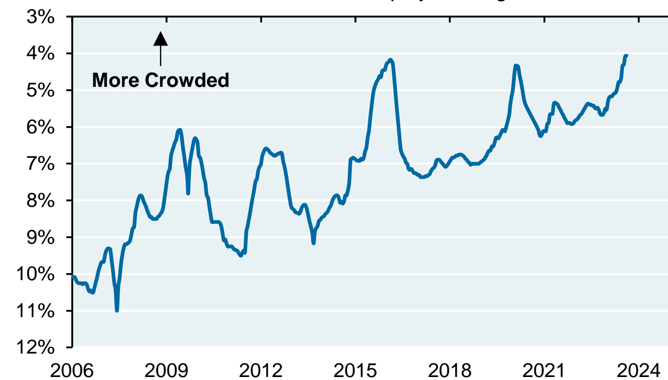


Source: GS Global Investment Research, November 20, 2023

Hedge fund portfolio density
Weight of top 10 positions in median long HF portfolio

Source: GS Global Investment Research, September 30, 2023

Most crowding across hedge fund portfolios since 2006
Percent, Effective N as % of distinct equity holdings



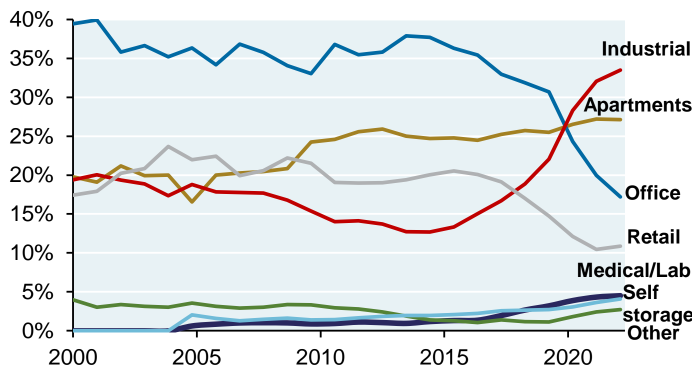
Source: GS Global Investment Research, Q3 2023

Commercial real estate, the office sector and BREIT

The good news on the office sector, if there is any, is that allocations in private real estate portfolios began to decline in 2015, five years before COVID. The office sector is now less than 20% of private commercial real estate portfolios according to MSCI estimates, and the lower the better: the latest data from Stanford show work-from-home days stuck at 30%-35% in many large urban areas (in 2019, work-from-home days were around 3% at a national level). Note how the Bay Area is the outlier, which is consistent with San Francisco's lowest ranking in our deep dive economic/demographic **analysis** of 22 major urban areas in October.

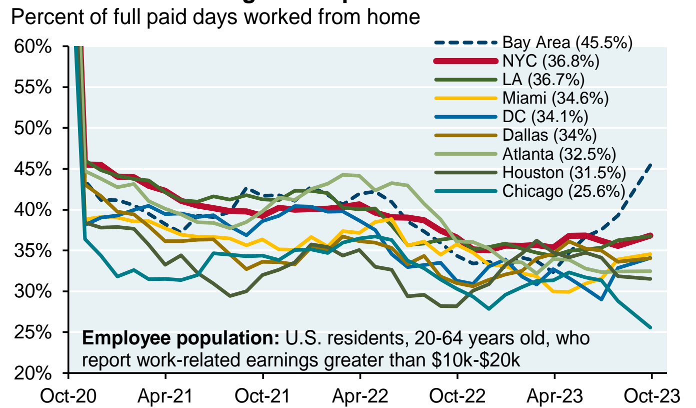
The third chart shows that aside from regional malls and office, most CMBS delinquency rates have actually been improving. The spike in special servicing rates for CMBS office loans point to a lot of pending modifications and is another example of how office stress exceeds other property types. I've heard of funds being raised for office-to-residential conversions. Good luck finding willing sellers; to make conversion economics work, properties might have to change hands at 60%-70% discounts to pre-pandemic values (see box).

MSCI commercial real estate core index property type allocations



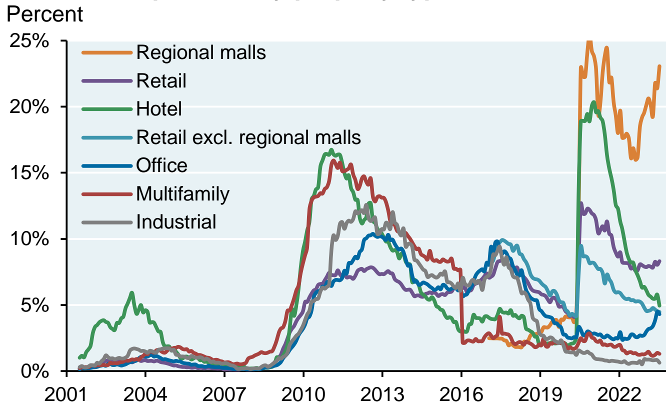
Source: MSCI, JPMAM, Q3 2023

Work from home: large metropolitan cities
Percent of full paid days worked from home



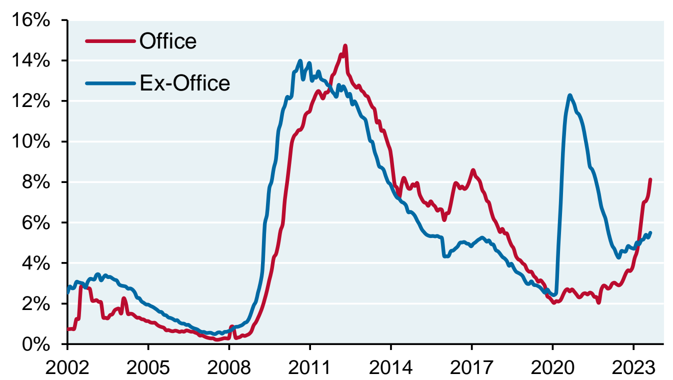
Source: "*Why working from home will stick*", Barrero, Bloom and Davis, NBER, Oct 2023

CMBS delinquencies by property type
Percent



Source: Moody's, JPMAM, September 2023

Special servicing rates for office and non-office CMBS loans
Percent

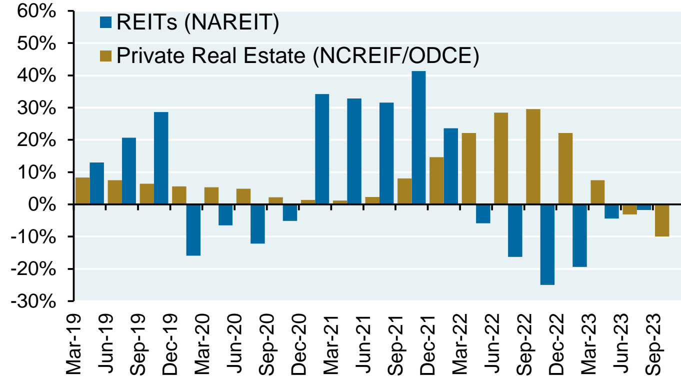


Source: JP Morgan CMBS Research, September 2023

On office to residential conversions. In our October 2023 Eye on the Market on New York City, we walked through pro-forma economics required for a sample conversion of a prewar Class B office building whose rents are now $3.50 psf per month. Assuming conversion costs of $320 psf plus $40 psf for green efficiency, a decline in post-conversion rentable space of 15%, new residential rents at the 90th percentile ($96 psf annually for an 875 sq foot 1 BR apartment), the buyer would still need to negotiate a sales price of just $175 psf to generate 15%-18% returns. This price represents around a 60% decline in price psf from pre-pandemic levels.

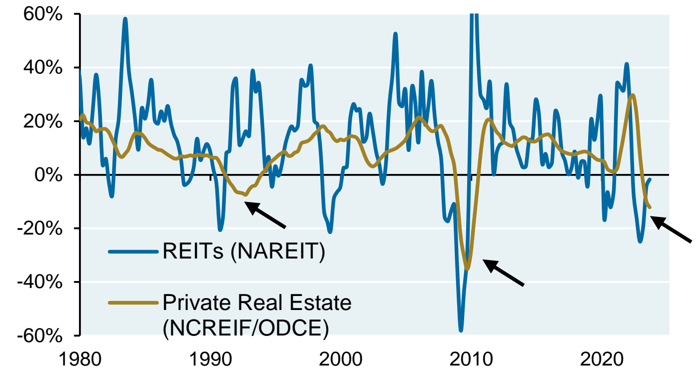
The same valuation lags seen in public vs private equity exist in public vs private real estate. The chart on the left shows how REIT returns (blue) recently led private real estate returns (gold) by a few quarters. That's typically the case in a downturn, as shown on the right. If that's the case, there could be some markdowns flowing through direct real estate valuations in the months ahead, even if interest rates stabilize around current levels. The other obvious point to make is that private real estate has much lower reported volatility due to the smoothed nature of appraisal-based returns[13].

Private vs public real estate total returns
Percent, rolling 4-quarter total return



Source: NAREIT, NCREIF, JPMAM, Q3 2023

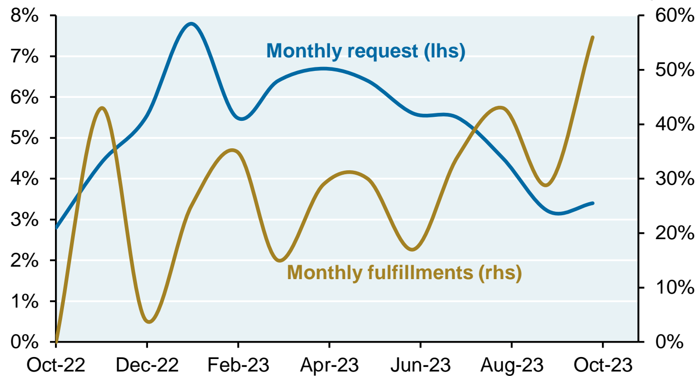
Private vs public real estate total returns
Percent, rolling 4-quarter total return



Source: Nareit, NCRIEF, JPMAM, Q3 2023

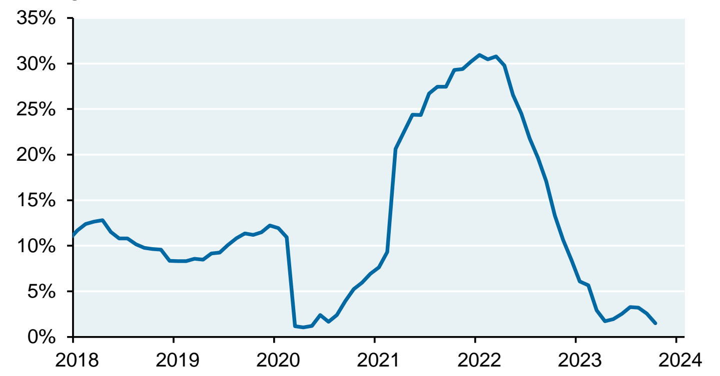
I thought this was interesting: the pressures on Blackstone's $114 billion BREIT fund subsided during 2023. The chart on the left shows redemption requests as a % of NAV, and the degree to which these requests were fulfilled. As the year came to a close, both looked better than they did earlier in the year. And while BREIT performance has been below cash this year, the fund's modest 3% exposure to the office sector should mitigate the risk of sudden large vacancy and NOI problems in the portfolio.

BREIT investor redemptions and fulfillments
Percent of NAV
Percent of total request



Source: BREIT, JPMAM, October 2023

BREIT performance
Rolling 12 month return



Source: BREIT, JPMAM, October 2023

13 Volatility-based arguments in favor of non-tradable asset classes are very strange in my opinion. My 2012 Jeep Wrangler has an infinite Sharpe ratio since it never trades, yet I would not recommend it on that basis as an investment. Non-public assets should be evaluated primarily on absolute return and the sacrifice of liquidity.

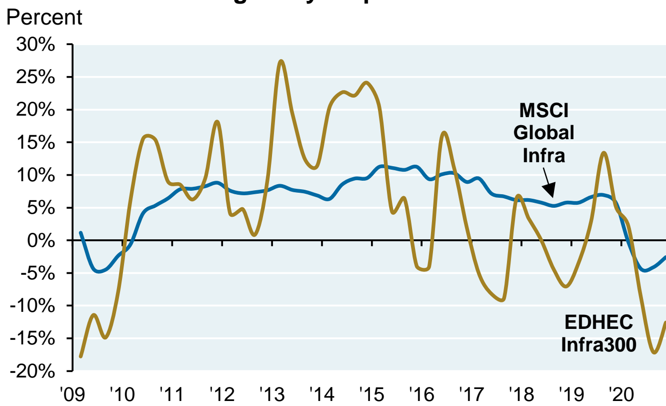
Infrastructure

Many investors allocate to infrastructure with a focus on transportation, energy/power, waste management and telecom. A decade ago, public private partnerships were a pillar of infrastructure investing but politics, challenges to existing projects and complexity were a problem and they've fallen out of favor. The archetype managers generally look for now: control positions in a pure-play asset; an investment grade capital structure; and earnings mostly derived from remuneration structures and regulator-approved capital investment. This approach can reduce uncertainty and result in more stable free cash flow for distributable yield. Sounds great, but what's a good proxy for the actual experience of infrastructure investing?

There's as much art as science required to create a private infrastructure return index. MSCI's approach: canvas the GPs who run infrastructure funds and aggregate their valuations of power, water, transport and communication assets. In contrast, EDHEC works with LPs to monitor cash flows of a pool of infrastructure assets. EDHEC then creates a total return index using a risk factor model drawing from actual transactions taking place in the industry. The respective assets differ, which partially explains why annualized returns differ (~13% for EDHEC and ~11% for MSCI for 2009-2020). **The larger difference: EDHEC's approach captures real-world interim valuations of illiquid infrastructure assets while MSCI does not**. This is an even more extreme example of the impact of appraisal smoothing than commercial real estate.

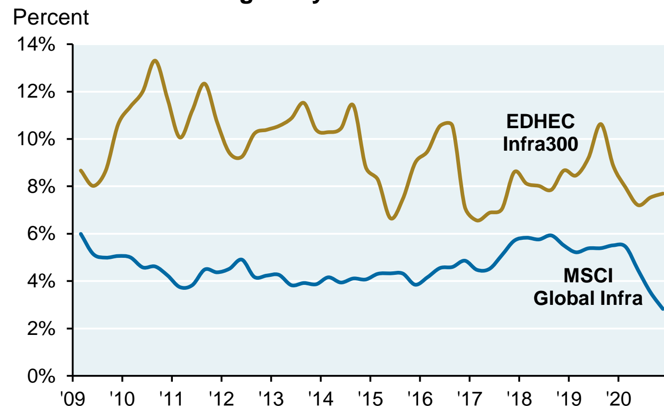
The index choice is an existential one: do LPs care more about the value of infrastructure assets as reported by managers and which flow through to return statements? Or do they care more about their real-world value if they wanted to or had to sell them periodically? MSCI and EDHEC allow investors to choose from either extreme. One thing's for sure: looking at Sharpe ratios, correlations or risk adjusted comparisons to publicly traded infrastructure equities using smoothed private infrastructure benchmarks is an extremely dubious exercise.

Infrastructure rolling one year price returns
Percent



Source: MSCI, EDHECinfra, JPMAM, Q4 2020

Infrastructure rolling one year income returns
Percent

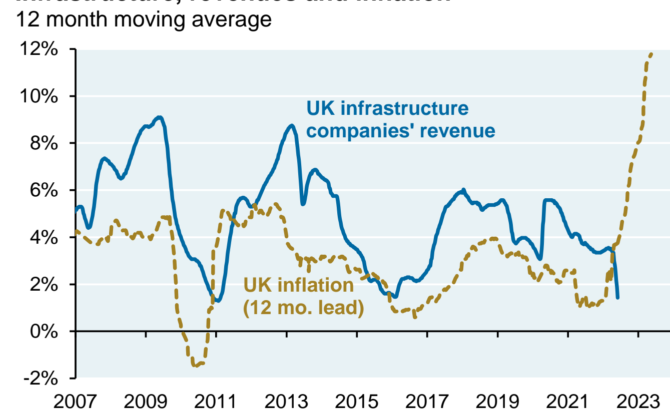


Source: MSCI, EDHECinfra, JPMAM, Q4 2020

Is infrastructure an inflation hedge?

That's a broad question made challenging by the fact that there haven't been many inflation spikes over the time frame of observable infrastructure returns. According to Ares Global Client Solutions, inflation does appear to result in higher infrastructure revenues one year later. The chart on the right is based on changes in UK inflation and revenues of UK-based infrastructure projects. A lot depends on the whether inflation-based adjustments are part of the contract, and/or if the contract allows for owners to pass along inflation increases to users.

Infrastructure, revenues and inflation
12 month moving average



Source: Ares, EDHEC, Q2 2022

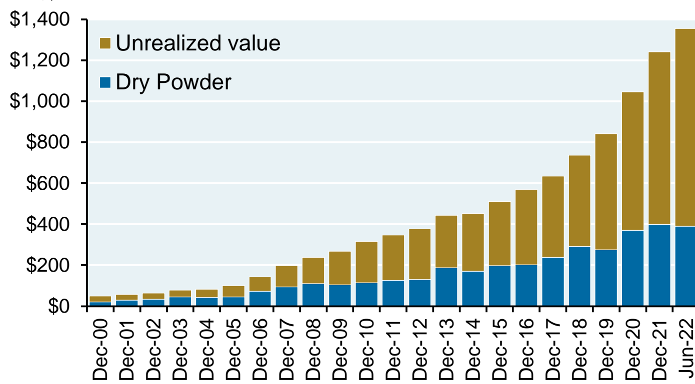
Private credit, Basel III and the battle of the underwriters

There's not much to say about private credit performance given its recent emergence and the lack of a prior default cycle. Assets under management are surging, allowing private credit managers to underwrite financing for large borrowers that used to rely on high yield bonds or broadly syndicated leveraged loans (BSL).

With respect to existing private credit vintages, a lot depends on how positions underwritten during the credit frenzy are impacted by higher rates. The second chart shows the increase in private credit coupon payments using BDCs as a proxy[14]. According to Cliffwater, trailing loss rates (i.e., default rate net of recovery) for private credit were 0.7% in mid-2023 compared to ~2% for BSLs. Separately, Proskauer Rose estimated a ~2% private credit default rate in July 2023, up from ~1.5% at the end of 2022. **While both sources suggest that private credit stress is low so far, we're hearing about more private credit modifications** such as equity injections by sponsors, covenant relief and a shift to payment-in-kind interest. It's hard to track in real time; private credit interest coverage has probably deteriorated in line with leveraged loans as shown on page 5.

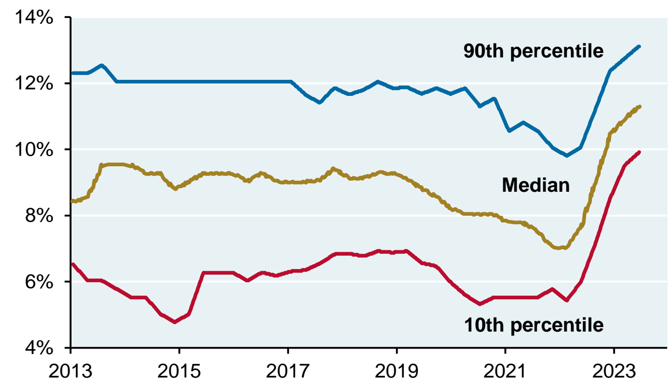
Did private credit lenders negotiate for stronger protections than BSL lenders over the last few years when underwriting standards weakened? First, let's review how institutional lenders surrendered to borrowers by 2020 by sacrificing covenant protections, which is illustrated in the third chart. Note that middle market BSL lenders did not embrace covenant lite[15] loans nearly as much as larger lenders.

Global private credit market
US$, billions



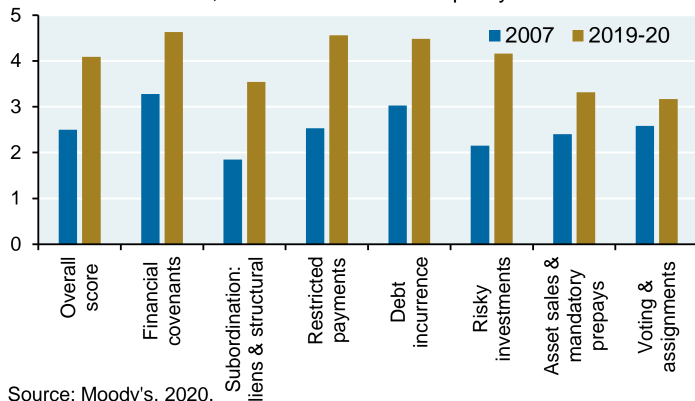
Source: Preqin, June 2022

Private credit: BDC coupon payments rising
Percent



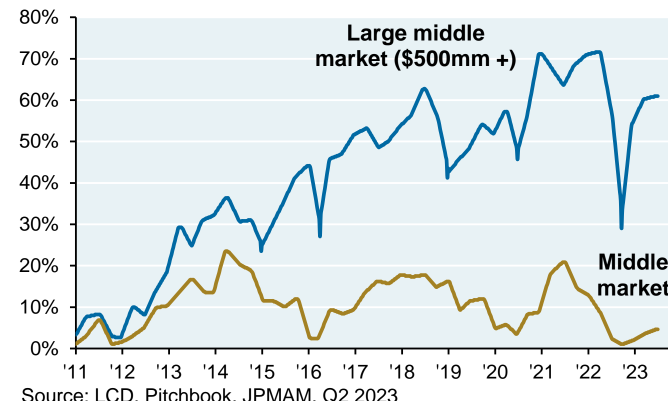
Source: GS Global Investment Research, November 2023

Lender surrender in the BSL market
Loan covenant score, 5 = weakest covenant quality



Source: Moody's. 2020.

Covenant-lite mostly a feature in larger BSL market
% of loans by category



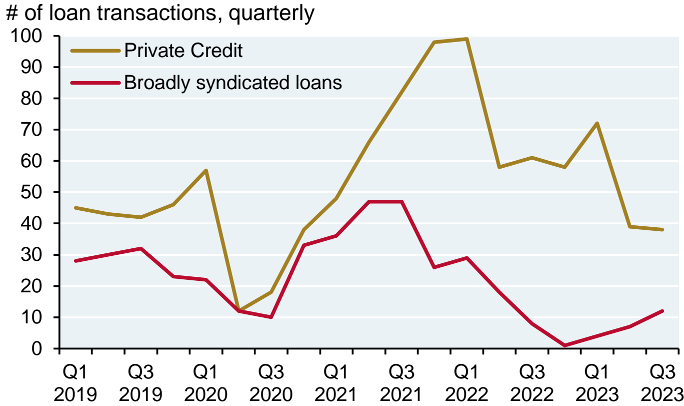
Source: LCD, Pitchbook, JPMAM, Q2 2023

[14] BDCs are the most transparent form of private credit lender and make up 20%-25% of direct lending

[15] Cov-lite doesn't mean *no* covenants, but typically restricts them to an "incurrence basis" meaning that they only apply when the borrower chooses to incur additional debt

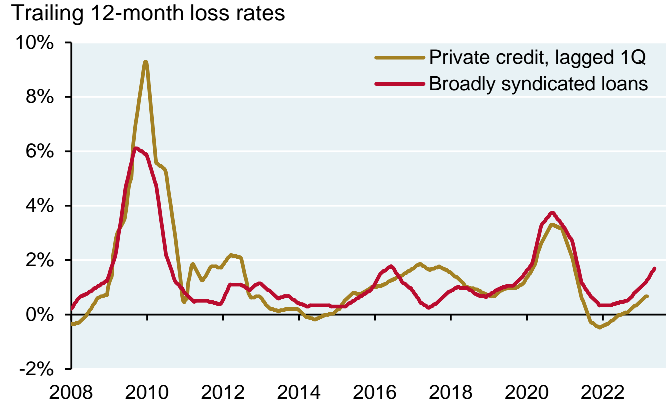
Since Q1 2021, private credit markets have remained open while BSL markets have been mostly closed. This suggests that private credit is taking advantage of scarcer credit conditions, but the ultimate experience of an investor in a loan fund depends on ex-post performance of these mostly single-B rated credits. **Observations from market participants suggest that private credit underwriting standards are tighter than in the BSL market, although as larger private credit firms compete for market share, their standards are declining**[16]. In other words, larger private credit loans are becoming commodified as they compete with BSLs. Loss experience during a default cycle will be the best arbiter of how private credit compares to BSLs and HY bonds.

Private credit: open for business
# of loan transactions, quarterly



Source: Pitchbook, LCD, JPMAM, Q3 2023

Loss rate estimates on BSLs and private credit
Trailing 12-month loss rates

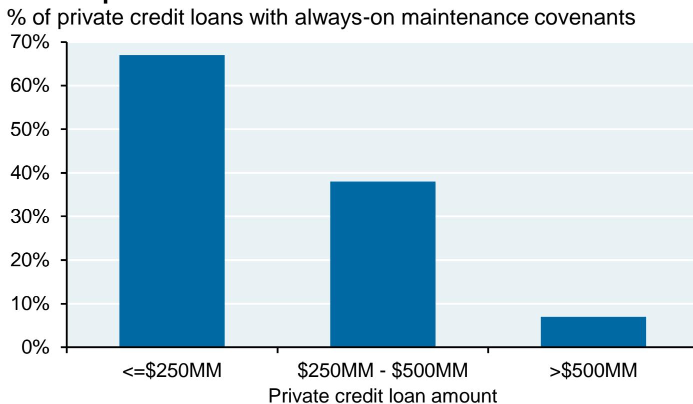


Source: Cliffwater, Moody's, GS Global Investment Research, Q2 2023

For a deeper dive, let's review Moody's analysis of 28 private credit loans and 15 BSLs made in 2023[17]:

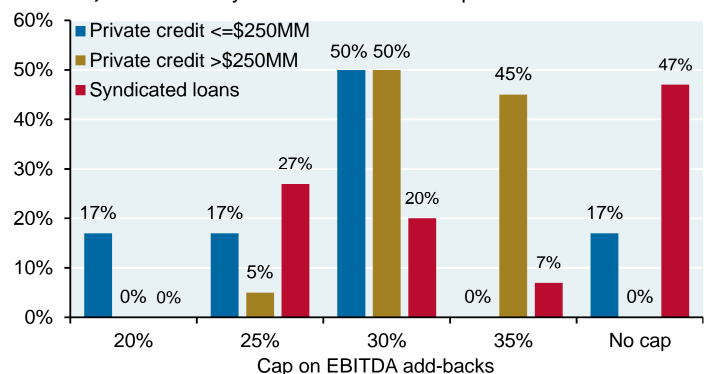
- Moody's found a correlation between increasing private credit loan size and the **loss of maintenance covenants**. While 67% of small private credit loans had "always-on" maintenance covenants, only 7% of large private credit loans did
- Smaller private credit loans had more restrictive **EBITDA add-back allowances** than larger ones, and were way more restrictive than BSLs. These caps on add-backs limit a borrower's ability to project operating cost and merger synergies that have not actually occurred; by extension they limit allowable leverage that is based on multiple of estimated EBITDA
- Similarly, smaller private credit loans had shorter periods over which these fanciful EBITDA projections can be made ("**look-forward periods**" of 15-24 months vs 24+ months for larger private credit loans)

Smaller private credit loans tend to favor lenders more
% of private credit loans with always-on maintenance covenants



Source: Moody's Investor Services, October 2023

Private credit more restrictive than BSLs on EBITDA make-believe, % of loans by EBITDA restriction cap



Source: Moody's Investor Services, October 2023

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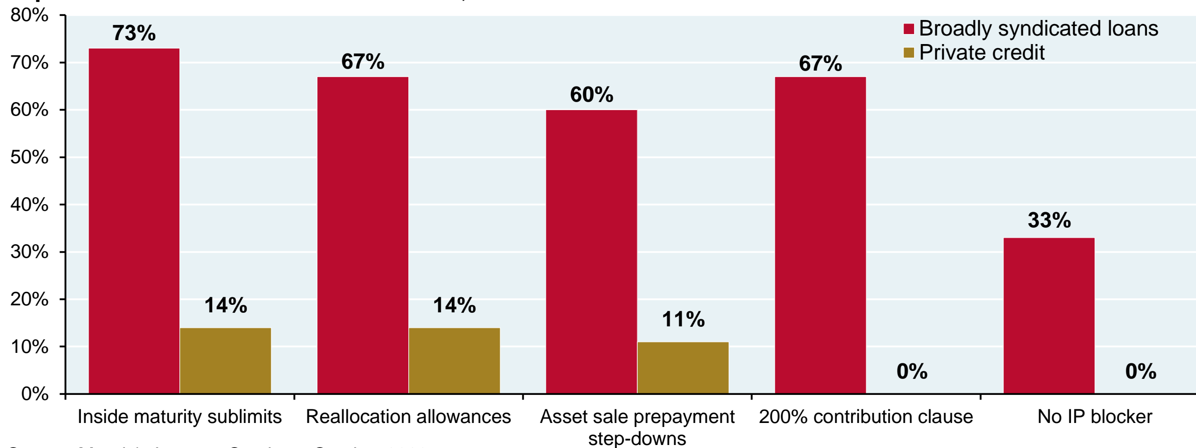
[16] "*Private credit deep dives*", Proskauer Rose, June 2023

[17] "*Private credit, syndicated loan protections will converge as competition grows*", Moody's, October 2023

Moody's also looked at other covenant comparisons of BSL and private credit markets, finding that private credit terms offer greater lender protections in some key areas. Warning: this section is geared towards people who enjoy reading and understanding loan documentation. If you invest in funds that participate in BSLs and private credit, this arguably should be you.

- *Inside maturity sublimits* reflect the degree to which existing lenders allow borrowers to take on new debt with shorter maturities, allowing new lenders to "prime in time". Lenders with shorter maturities can get paid out of a potentially troubled credit first and may have more leverage in restructurings that take place outside bankruptcy
- *Reallocation allowances.* Restricted payments clauses specify the circumstances under which borrowers can pay dividends, make acquisitions and engage in other asset transfers. Reallocation allowances permit borrowers to convert the restricted payment amounts, *if they are not made*, into additional debt capacity
- *Asset sale prepayment step-downs* allow borrowers to liquidate collateral and use less than 100% of the proceeds to prepay debt if certain leverage tests are met
- *The 200% contribution clause* allows borrowers to take on $2 in debt for every new $1 of equity contributed
- *No IP blocker* refers to the absence of express provisions preventing intellectual property from being transferred to unrestricted subsidiaries (often referred to as the "J Crew" provision based on what the sponsors did in that transaction)
- *More call protection.* Private credit lenders typically require call protection of 2-3 years with 2%-3% early call penalties compared to only 6-12 months of call protection and 1% penalties for BSLs

BSL market much less protective than private credit on key covenant features which become even more important in times of economic distress, Percent



Source: Moody's Investor Services, October 2023

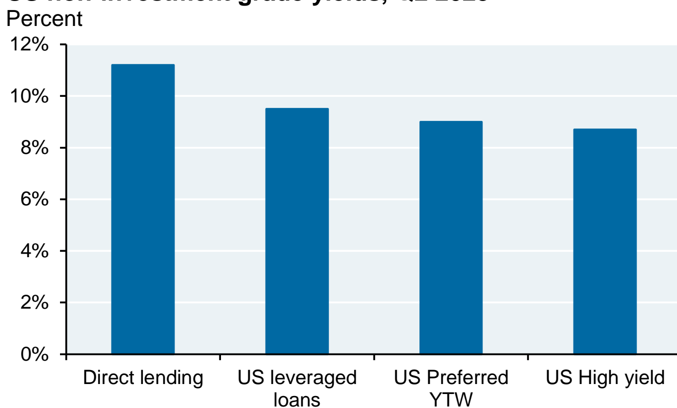
These clauses will become increasingly important should economic conditions weaken in 2024, leading some sponsors to try and move assets to unrestricted subsidiaries and to pursue equity-friendly restructurings against the consent of minority lenders.

What would a world with more private credit look like? First, it would probably drive the share of loans originated by banks to a new post-war low, and increase originations in a less regulated environment. After the SVB failure, banking system regulation is likely to increase given the Fed's mea culpa[18]. A world with more private credit would almost certainly entail a higher cost of debt. As shown below, we estimate that in Q2 2023 direct lending yields were 11.5% compared to 9.0%-9.5% for leveraged loans, preferred stock and high yield bonds. This represents a wealth transfer from private equity to private credit lenders.

The "golden moment for private credit" argument is partially based on the notion that new Basel III capital rules will force banks to curtail lending and other risk-taking activities, driving more borrowers to private credit. The third chart below shows estimates of possible Basel III impacts: a 25%-35% increase in risk-weighted assets for Category I and II US banks[19]. The US proposal applies to banks with more than $100 bn in consolidated assets and covers global operations of US banks with proposed compliance by July 2025. The comment period for Basel III has been extended to January 2024, so it's possible that changes will still be made.

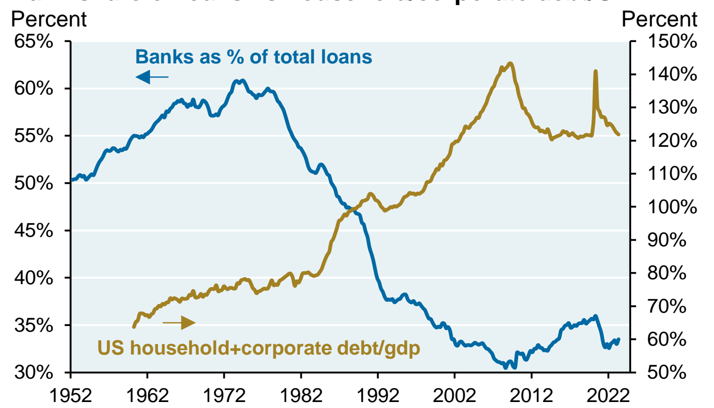
There could be some benefits to private credit; a smaller number of creditors may allow for faster distress resolution without always having to rely on bankruptcy courts; many private credit borrowers have just 2-3 lending counterparties. I'm also told that there is less "creditor on creditor violence" in the private credit market than in the US loan market, another byproduct of a smaller lending group. Still, there are concerns about the systemic risks associated with more non-bank lending, which is addressed in the Appendix.

US non-investment grade yields, Q2 2023
Percent



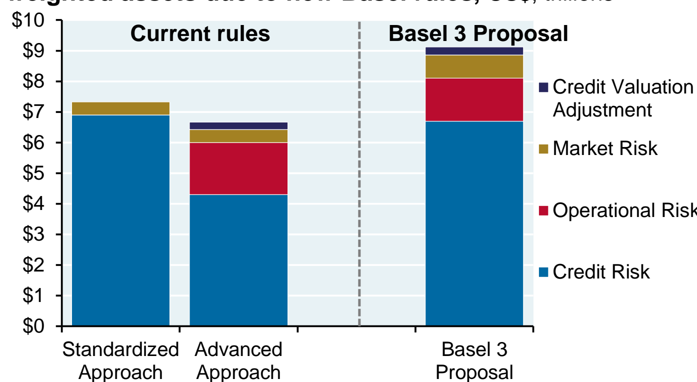
Source: Bloomberg, JPMAM, Q2 2023

Bank share of loans vs household/corporate debt/GDP
Percent | Percent



Source: Federal Reserve, JPMAM, Q2 2023

Projected increase in Category I and II US bank risk weighted assets due to new Basel rules, US$, trillions



Source: Morgan Stanley, Oliver Wyman, November 2023

[18] "*Fed admits some of the blame for Silicon Valley Bank's failure in scathing report*", NPR, April 28, 2023

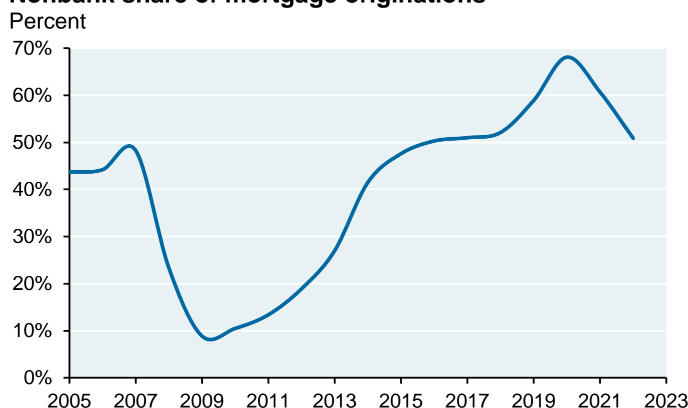
[19] Category I and II banks refer include JPM, BAC, C, WFC, GS, MS, BK, STT and NTRS. The next tier of Category III banks, which are not included in the RWA assessment above, includes USB, PNC, TFC, SCHW and COF

Appendix: what are the systemic risks of more non-bank lending?

I joined JP Morgan in 1987 when the banking share of loan originations first fell below 50%, as shown in the chart above. These are complex topics, but this origination shift coincided with a massive jump in US household and corporate debt as a share of GDP, and has also done little to reduce the volatility of equity markets or the severity of recessions. Now Basel III is poised to drive more credit creation outside the banking system.

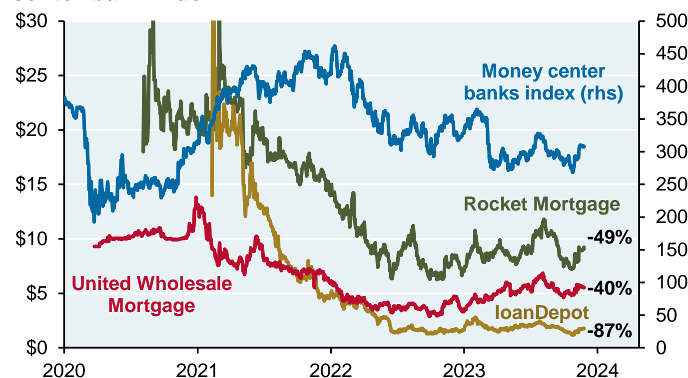
Another form of credit creation moving outside the banking system due to bank capital rules and regulatory arbitrage: **the rise of non-bank mortgage originators**. Regulators are still trying to figure out the implications of non-bank lenders dominating mortgage originations given questions about their special servicing capabilities and heavy reliance on wholesale funding. Their declining stock prices are mostly a reflection of rising interest rates so far, but new research and a 2022 report from the Treasury point to possibly inferior loan quality and an increase in systemic risk. **The surge in private credit, like most rapid capital mobilizations, will need to be navigated very carefully**.

Nonbank share of mortgage originations
Percent



Source: Inside Mortgage Finance, S&P Global, JPMAM, 2022

Largest non-bank mortgage lender stock prices vs money center bank index



Source: Bloomberg, JPMAM, November 28, 2023

On the risks of non-bank lending by mortgage originators

- "*Assessing the Impact of New Entrant Non-Bank Firms on Competition in Consumer Finance Markets*", US Dept of the Treasury Report, Nov 2022: "While new entrant non-bank firms appear to be contributing to competitive pressures, they are generally not subject to the same oversight for safety and soundness or consumer protection as insured depository institutions, raising public policy considerations"
- Consumers turning to Fintech lenders are more likely to spend beyond their means, sink further into debt and default more often than people with similar credit profiles borrowing from traditional banks. Source: DiMaggio (HBS) and Yao (Georgia State University), 2020
- An analysis of LendingClub found that borrower misinformation didn't negatively impact underwriting decisions as it should have, despite the fact that incomplete income verification on the Lending Club platform on loan applications negatively affected recovery rates. Source: "*Fintech platforms: Lax or careful borrowers' screening*", Serena Gallo (University of Campania), July 2021

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