
Private equity benchmarks distort allocations

Our data shows widely-used PE benchmarks are biased and not investable.

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1. Welcome

Investors require a variety of mechanisms to assess performance. They can look at their performance relative to peers, relative to markets or even relative to an expectation. These relative comparisons are called benchmarks, and they are used throughout the world of institutional investment to develop, construct, implement and assess investment portfolios. A well-selected benchmark lets an investor know whether a strategy or manager is delivering alpha or simply providing a market return, which investors use to change and improve. Benchmarks are thus critical to investment decisions, but identifying useful benchmarks can be difficult, especially in illiquid asset classes.

For the private equity asset class, we have found that widely-used benchmarks are biased and not investable.¹ In fact, the most common complaint we hear from our clients is that their returns for private equity (PE) rarely match standard private capital market benchmarks. This client perception is confirmed in our data, as we find that the universe of private equity limited partners (LPs) on our platform are, on average, unable to meet prevailing industry benchmarks, which has left many clients frustrated that expectations aren't being met. The disconnect between average PE performance, as reported through industry benchmarks, and the average performance we see in our data inspired this Addepar Research Brief (ARB).

Our objective is to answer two questions: Are Addepar's investors, which include some of the world's most sophisticated family offices, unable to attain PE benchmarks because they lack

¹ According to CFA guidance (2013), the most important characteristic in the selection of a benchmark is that it be investable.



capabilities or insights in this asset class? Or is there something imprecise or incorrect about the way in which the PE benchmarks are constructed and communicated today? This ARB concludes that the problem is with the construction of PE benchmarks. This finding implies that trillions of dollars of private equity capital may have been allocated under false assumptions or with incorrect expectations. In what follows, we seek to explain our findings and offer some understanding of how Addepar can improve benchmarking in PE.

2. NTK

Here is the “need-to-know” from this ARB:

- **Non-Representative:** We find that there is a small overlap between the funds investors hold and what is captured in standard benchmarks, which means today’s clients (family offices, wealth managers, endowments, foundations) may require a different index that better matches their investment universe.
- **Partially Inflated:** We find compelling evidence that self-reported performance data, by managers to benchmark providers, has been inflated by as much as 320 basis points (bps) per year.
- **Old Data:** We find that there is a significant delay (up to 18 months) in which pricing in the PE market shows up in benchmarks.

In short, we find that the prevailing PE benchmarks are not investable, not representative of their risk profiles, not easily measurable, not timely and not transparent. The distortion this can create for limited partners (LPs) is worthy of significant concern.

3. Significance

Investors use benchmarks as a way of explaining, or putting in context, some past performance. Benchmarking is also a tool for making better decisions about the future, by helping investors to assess their own capabilities and reallocate capital to attractive, risk-adjusted return opportunities where they have confidence in their capabilities. A well-selected benchmark can inform that confidence by providing an insight about the quality of investment performance or whether a given



manager exceeds what the market would deliver for free. As this suggests, performance compensation is a function of benchmarks. A carry check, an annual bonus, securing a job or winning a mandate is usually a function of performance vis-a-vis a benchmark. Benchmarks are also key inputs to asset allocation strategy and pacing plans, where past performance is seen as a predictor of future performance.

Therefore, benchmark selection is crucial, and using unsuitable benchmarks to assess performance or set strategy can be quite damaging to an investor. It can create overexposures to unwanted types of risk while also leading investors to overpay managers.

Effective benchmarks are transparent, simple and serve to clarify what an average investor could expect to deliver in terms of performance for a given asset class (Clark and Monk, 2019). For public markets, benchmark selection is fairly straightforward; a broad market index will usually do the job. Most disagreements about benchmarks are for private or illiquid asset classes, where unique characteristics make benchmarking difficult.

This ARB offers a comparative case study of an anonymized PE benchmark² (what we will call “IPEB” for Industry PE Benchmark) versus data on the Addepar platform, which reflects nearly \$4 trillion of anonymized investor capital across thousands of investor-portfolios. The Addepar data demonstrates two key findings:

1. IPEB is biased because the performance is higher than can reasonably be expected or seen as average.
2. The benchmarks are not representative of the broader PE marketplace and there is little overlap with Addepar investor’s investments.

In what follows, we align our analysis with a deeper understanding of challenges of private market benchmarks. We then describe our methods and findings, while also offering some insights into how investors’ decision-making might be improved.

² We have chosen to anonymize this provider's identity in order to focus readers' attention on market dynamics rather than the actions of a specific firm. Our belief is that this benchmark provider is doing the best they can given the difficulties of collecting this data, and we expect to assist this provider and others in developing new methodologies based on our findings. This is meant to catalyze a constructive discussion about how we as a community should build benchmarks.



4. Context

In order to benchmark effectively, investors tend to use three different general forms:

- **Peer-Relative:** Evaluate performance relative to similar managers or portfolios; e.g., a fund that is “top quartile” is meant to be better than at least 75% of its peers. Peer benchmarks require transparent and verifiable data collection from the peer groups, which this ARB shows can be challenging.
- **Market-Relative:** The sign of a good market benchmark is its ability to proxy the market it represents. Market-based benchmarks are popular tools for assessing performance. Active managers will often be judged against some public index with a premium applied, such as S&P 500 + 300bps or CPI + 5%.
- **Absolute Return:** Many investment organizations are assessed simply against an absolute return target tethered to a policy goal. Pension funds, for example, can be given absolute return benchmarks that relate to the profile of their liabilities.

In scanning relevant research and speaking with clients, when selecting a benchmark, investors will often prioritize four key factors:³

- **Investable:** There is a low-cost mechanism to gain exposure to the benchmark;
- **Representative:** The benchmark reflects the expected risks and returns;
- **Measurable:** Measurement is timely, consistent and accurate; and
- **Well Defined:** Constituents and weights are known.

As these characteristics make clear, the challenges or disagreements related to benchmarks tend to be exacerbated within illiquid asset classes.

In private equity, significant challenges arise around: investability (the market is private); representation (managers can cherry-pick the results they report); measurement standards (there

³ A number of frameworks have been developed for benchmark selection. See “Private Equity Program Benchmarking” for an industry example.



are no regulated reporting frameworks for private managers); and lack of definition (the existing benchmarks are hard to pin down in terms of how they are created). It is for this reason that investors should be circumspect about how they use the industry PE benchmarks.

5. Approach

At Addepar, we have spent the last few years developing a security master for private assets. This is a central repository for reference data pertaining to portfolio assets, which allows for the creation of a single source of truth for all portfolio assets across the firm.⁴ This enables us to compare prominent third-party private capital data sources against our own portfolio data. We decided to use this data to compare and understand private equity benchmarks.

We subscribed to the cash flows dataset underlying the private capital benchmark provider previously cited as IPEB. The IPEB cash flow data covers the major private equity categories; roughly 80% of the data in the IPEB is sourced through Freedom of Information Act (FOIA) requests with U.S. institutional investors, typically public pensions. This also means that approximately 20% of the data is sourced from self-reporting general partners, i.e., the fund managers. Our data does not require FOIAs or self-reporting: We anonymize, sanitize and review portfolios on the Addepar platform, which makes our data complete and valid, as it is used by our clients for mission-critical functions, such as reporting to their clients.

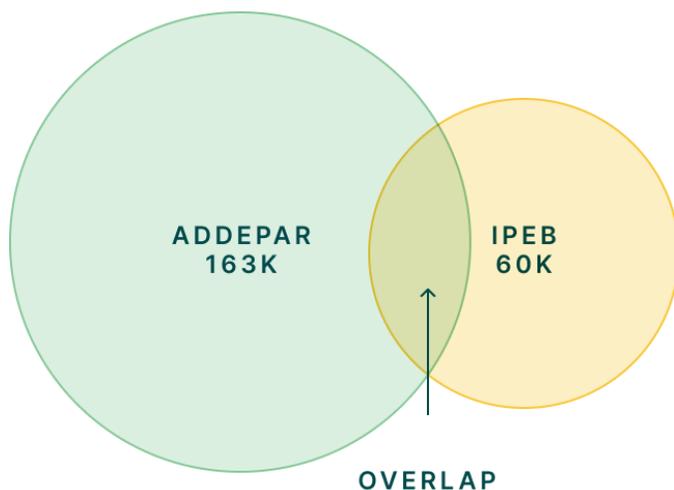
Figure 1 shows that there is overlap between the performance data recorded in Addepar and that available via IPEB. The size of the Addepar dataset is an order of magnitude larger, and we found it actually reflects a different ecosystem of investors. This is interesting as it pertains to the representative quality of the benchmark.⁵

⁴ The ability to uniquely identify securities, which is foundational for analytics.

⁵ IPEB tends to be made up of funds within larger institutional investors, such as pensions that can be FOIA'd, while Addepar tends to be wealth managers, family offices, foundations or endowments. See Figure 5 in the Appendix for comparison of fund sizes by source.

Figure 1

Fund-Quarters Performance in IPEB and Addepar Data
Q2 2016 - Q4 2021



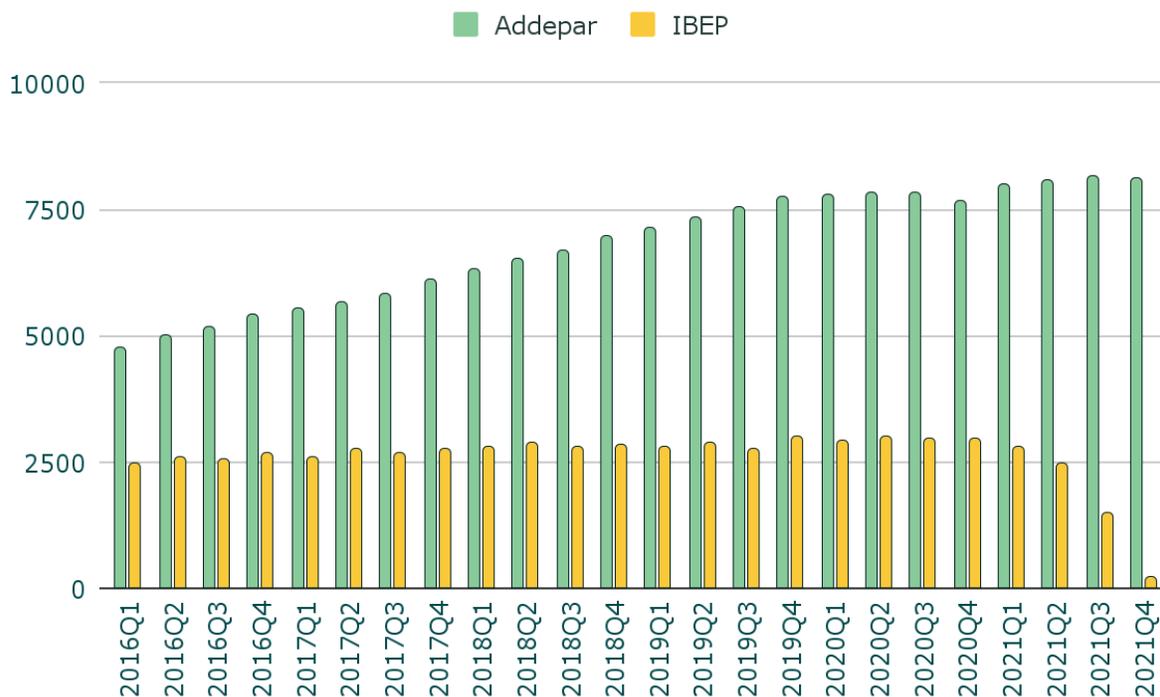
Source: IPEB, Addepar

Of the overlapping quarters (Q1 2016 through Q4 2021), we matched 27,087 fund-quarter observations across the two datasets. There are 60,197 fund-quarters that we observe in the aggregate IPEB cash flow data. There are 163,174 fund-quarters that we observe in the aggregate Addepar data. Figure 2 compares fund-quarter performance between Addepar and IPEB over time from Q2 2016 - Q4 2021. Data on the Addepar platform continues to increase in size over time due to the fact that Addepar continues to sign new clients and the alternatives security master continues to improve with time. The IPEB data remains relatively stable through time, with the number of data points declining starting in Q1 2021 due to a lack of reported data. This chart provides some evidence to show that there can be a 9-18 month delay in reporting of the industry benchmarks that rely on FOIA and self reporting. **For many investors, the delay alone is big enough to potentially make the value of benchmarking analysis irrelevant.**



Figure 2

Number of Performance Data Points by Source
Q2 2016 - Q4 2021



Source: IPEB, Addepar

The analysis herein is fairly simple: We seek to compare and contrast the IPEB benchmarks with our own. Specifically, we compare performance at the strategy level for the different parts of the overlap in fund-quarter observations. This allows us to evaluate whether the IPEB data reflects the picture we find in our data.

6. Findings

Our analysis shows that performance is lower among PE investors on the Addepar platform. Even where there is direct overlap, we consistently found Addepar's investors underperforming. While some of the difference can be attributed to differences in fees paid, the other key cause is manager self-reporting bias, which we examine later in the analysis. For now, we note that



self-reported managers are twice as common in the overlap (approximately 13%) as in our IPEB-excluding overlap.

Figure 3

Average Annualized Private Equity Performance Comparison by Source
Q2 2016 - Q4 2021

Source	Private Equity
Overlap - Addepar Data	13.2%
Overlap - IPEB Data	13.6%
Difference	-0.4%
Addepar Aggregate	10.8%
IPEB Aggregate	12.8%
Difference	-2.0%
Addepar ex-Overlap	10.0%
IPEB ex Overlap	12.0%
Difference	-2.0%

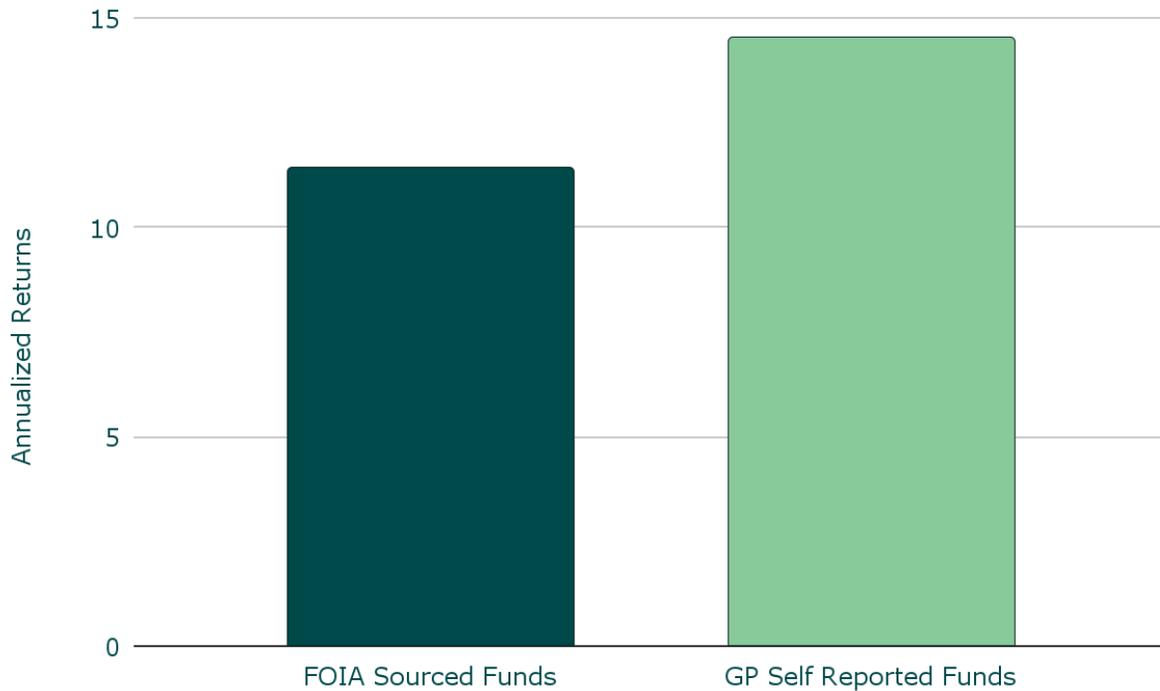
Median time-weighted rate of return (TWR) is taken for investors holding the same position in the Addepar dataset. All values are winsorized the top and bottom 0.05 percent of outliers and then averaged.

Source: IPEB, Addepar

IPEB's quarterly performance data is higher than the performance data on Addepar in the main private equity strategy. One potential source of bias in private capital returns that is well known is selective reporting. Although the source data provided by IPEB does not distinguish between data sourced from FOIA requests and voluntarily provided cash flow data, we learned that roughly 20 percent of the data is submitted by managers themselves.

**Figure 4**

Performance Comparison by Reporting Source
Q2 2016 - Q4 2021



Based on regression of quarterly data, winsorized at the top and bottom 0.5 percent. Assumes date, strategy and vintage fixed effects. Includes 143,000 observations with $r^2 = .23$ and (.96) 95% confidence interval. Quarterly returns are quoted in simple annual terms.

Source: IPEB

In short, for the data submitted by PE managers, quarterly performance is around 3.2 percentage points per year higher on average, relative to the performance of funds in the same strategy and vintage, on the same date, but whose performance was submitted by an investor, or another source that doesn't have the same name as the manager.

Comparing the funds that are represented in IPEB and Addepar also yields several interesting findings. There are over 2,000 funds with some data in both IPEB and Addepar, but more than half



of these funds have more performance observations reported in Addepar than in the IPEB data. This means that even for those funds within the IPEB dataset, Addepar's data is more consistent and significantly more timely. Again, this reflects some potential selection issues, as GPs choose which data to report and when.

The consequences from this are significant: If we consider that roughly 20% of the IPEB benchmark is self-reported, **these findings could, at a minimum, increase expected returns for the entire IPEB incorrectly by 62bps per year.**

7. The ARB-itrage

Readers of this brief may want to consider the following changes to their investment decision-making:

- **Beware Biases:** Investors should verify the source of the benchmark data they are using, as a significant component of private market benchmarks appears to be vulnerable to reporting biases.
- **Over-Allocating:** Since investors often use past performance of benchmarks to set future allocations, there is a risk of over-allocating to PE.
- **Under-Paying:** Investors may be under-paying internal staff, as many are compensating teams based on performance relative to the IPEB.

8. Coda

The collection of private equity benchmark data is difficult, as reporting is not standardized and vulnerable to distortion and manipulation. This ARB raises questions about the PE performance data that is being reported, finding that there are material discrepancies between our data and that of one of the industry's most-used benchmarks. Given what we've seen in this data, we can't help but think some public market equivalent would be more useful as a PE benchmark until we can create better data standards. Our private market equivalent (PME) approach in the Appendix (Figure 5) covers our preliminary analysis on the topic that we are developing into a future ARB.



We are also considering developing private capital benchmarks based on funds held by investors on the Addepar platform to improve upon some of the challenges highlighted in this ARB while the industry matures. Please reach out to us if you are interested in discussing this further.

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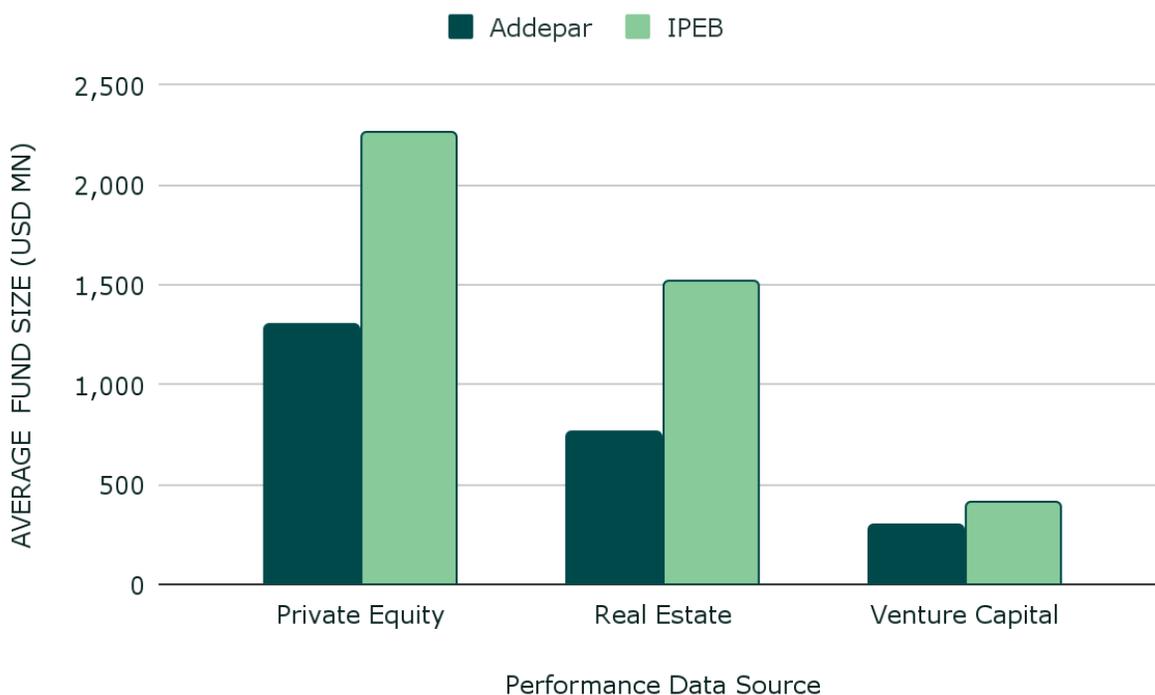
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Appendix

Figure 5

Performance Comparison by Reporting Source
Q2 2016 - Q4 2021



Source: IPEB, Addepar

Appendix: Reconsidering the Private Market Equivalent (PME) approach

In Figure 5, we compare the excess returns (returns above cash) of IPEB's quarterly private equity index against the excess returns of the four quarter average (1-year) of the S&P 500. Private equity does not have mark-to-market pricing. Appraisal-based or self-reported valuations are infrequent and are lagged relative to the daily fluctuations in public markets. This creates smoothed returns that hide underlying risk and correlation with public markets. For visual comparison purposes, 12-month smoothing approximately adjusts the measured volatility of the S&P 500 down to the level of the index. As you can see from the chart, the returns are extremely correlated (.8) indicating that public and private equities are quite similar and perhaps there are ways to use public equities as a proxy for their private cousins.

Figure 6

Private Equity Performance vs 12-Month Average S&P 500 Equity Returns
Q3 2001 - Q4 2021

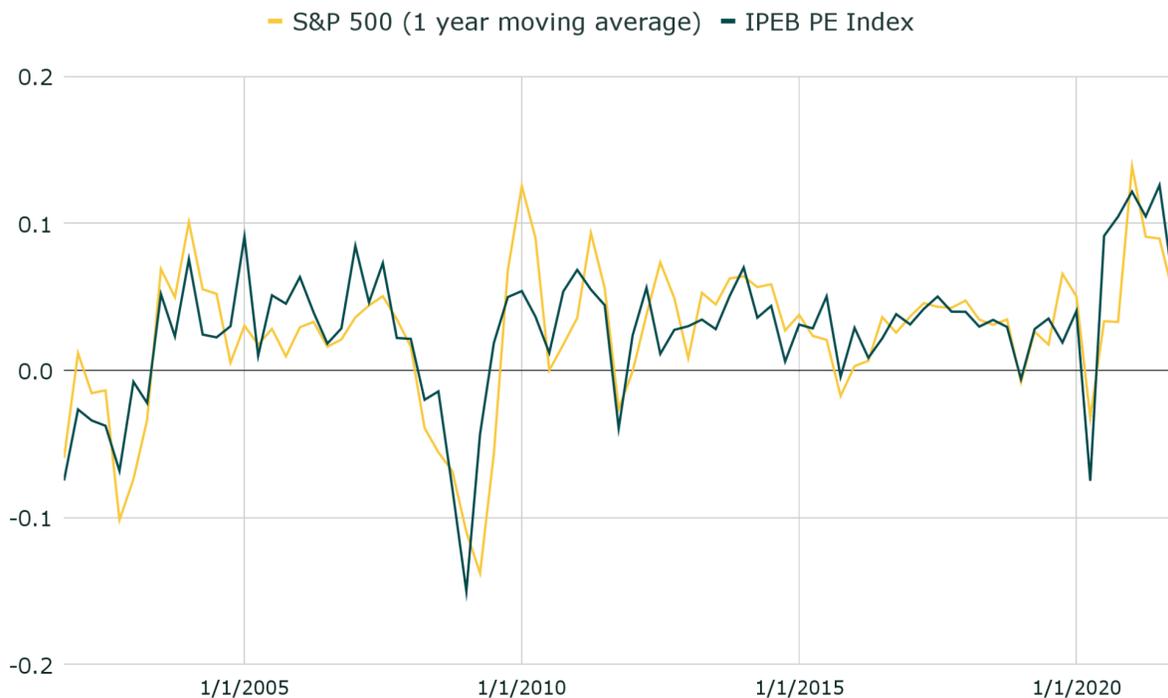


Figure 6 compares private capital performance to public market proxies and to leveraged and smoothed versions of the public market proxies. What we learn from this exercise is that the process of leveraging and smoothing returns bumps up the volatility, returns and Sharpe ratios of the public market benchmarks to the range of the private equity indices.

We also can see that we can create public market derived benchmarks that have high correlation and similar risk/return characteristics to private benchmarks. Note that Venture Capital underperforms. We believe this is because the venture index has a very low sample size and is not adequately represented.



Figure 7

Historical Performance Comparisons

December 2000 - September 2021

Asset Class	Stats	Public Index	Public Index Stats	Levered and Smoothed Stats
Private Equity	Excess Ret: 11.4% Vol: 9.4% Ratio: 1.2	S&P500 (U.S. Large Cap. Stocks)	Excess Ret: 9.0% Vol: 17.1% Ratio: .5	Excess Ret: 9.8% Vol: 9.0% Ratio: 1.1
Venture Capital	Excess Ret: 7.2% Vol: 11.4% Ratio: .6	Russel 2000 (Small & Mid-Cap. Stocks)	Excess Ret: 10.3% Vol: 22.6% Ratio: .5	Excess Ret: 9.9% Vol: 11.5% Ratio: .9
Real Estate	Excess Ret: 7.8% Vol: 9.2% Ratio: .8	MSCI US REIT	Excess Ret: 11.1% Vol: 21.8% Ratio: .5	Excess Ret: 9.1% Vol: 9.4% Ratio: 1.0

- Assumes PE leverage is 1.5, Venture Capital is 1.7, and Real Estate is 1.2
- Excess returns are average annualized returns
- Data is quarterly, December 2000 - September 2021
- Returns are smoothed, 2-years
- Assumes 1-month T-bill rate for cash

Source: IPEB, Addepar



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