



Global Investment Research | Equities

Private Equity: Characteristics and implications for liquid portfolios

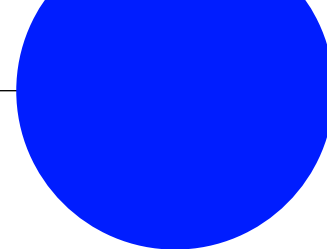
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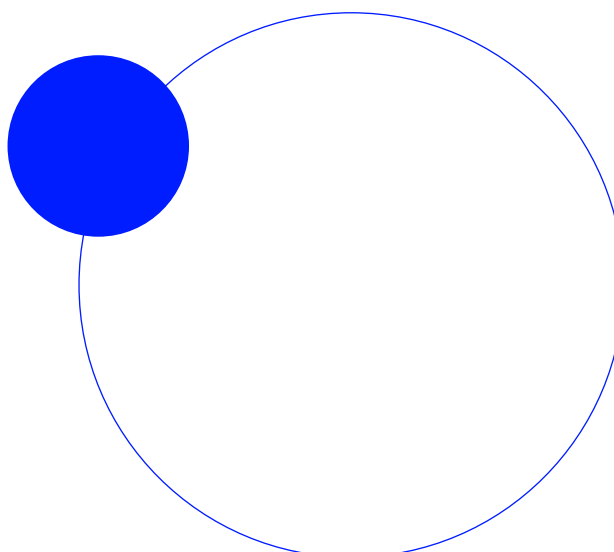
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Executive summary

- Private equity investments are attractive for investors due to their expected pattern of having relatively high returns, low volatility, and low correlation to public equities.
- This pattern is at least partially driven by private equity being illiquid and not being marked to market at a regular frequency.
- While private equity assets are generally difficult for retail investors to access, investment vehicles are emerging that are relatively more liquid and marked to market, and open up this asset class for retail investors. While this change and other choices in index construction methodology can alter their expected performance pattern, particularly on the volatility and diversification front, their typically continuing higher returns could be attractive for retail investors.



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Introduction

Private equity has become an increasingly important asset class as the market for private equity has matured along two dimensions: at the same time that private equity assets under management have increased, investors in the asset class have expanded from institutional investors to retail investors.

In this paper, we review some of the characteristics of private equity that make the asset class attractive for investors. These characteristics imply some ways that private equity could be used effectively in a multi-asset portfolio. However, one important characteristic of private equity is that it is not as easy to include in a portfolio as is publicly-traded equity. In the last section we look at one particular investment vehicle that gives retail investors access to private equity.

Three of the private equity characteristics that are generally attractive for investors are:

- Higher returns
- Lower volatility
- Lower correlation to public assets

In the next section, we explain why these characteristics are tied fundamentally to the private market nature of private equity. We then look at some representative private equity data that provides some evidence for this characterization of private equity. In the last section, we describe a private equity index that can be implemented in investor portfolios and explain why there is divergence in the return patterns of this index from those of the underlying asset class.

Relationship of private equity to public equity

Private equity is, of course, tightly connected to public equity in the sense that investment in both gives investors ownership in a company, rather than, say, a payment stream from a bond issued by the company. This means that the payoff stream of public and private equity should be linked to the profitability of a company, which in turn will be impacted by secular trends, the economics of the company's sector, and macroeconomic shocks, as well as the idiosyncratic efficiency of the company. From this standpoint, it is important to highlight two important differences between private equity and public equity: liquidity and being marked to market.

Liquidity: Because private equity is not traded continuously, as is public equity, investors typically give up their ability to withdraw their capital on demand. Depending on the liquidity needs of the investors, this may be a trade-off they are willing to make to gain access to the return profile of private equity. However, its illiquidity should give private equity an illiquidity premium over public equity in the sense that, in equilibrium, investors should expect higher returns to reward them for giving up liquidity, or they would not invest in the asset class. This higher expected return makes the asset class more attractive for some investors, but liquidity demands become an important part of private equity investment implementation.

Marked-to-market: The second difference is that because private equities are not traded continuously, they are valued intermittently (usually quarterly), and the valuations come from the managers' estimates rather than from market clearing prices. The returns that we use for comparing these asset classes are impacted by these differences in valuation methodology.

Private equity return characteristics

To get a general idea of the performance patterns we see in private equity and how those compare to public equities, we use returns from the FTSE StepStone US Buyout Daily Cash-Adjusted Index [hereafter US Buyout].¹ While this is just one part of the global private equity market, the US is the largest market in the private equity space, and the Buyout segment is the largest category of US private equity.

¹ See data note at end for details on the return data. All returns are in USD.

Exhibit 1 compares the US Buyout returns to those of the Russell 1000 and Russell 2000 for the 20-year period 2006:Q2-2026:Q1. A few observations:

- Over this period, the US Buyout returns were higher than both the large cap Russell 1000 and the small cap Russell 2000 indices. During this period, the Russell 1000 outperformed the Russell 2000 as large Tech stocks did particularly well. Even so, the private equity index outperformed the Russell 1000 by 1.95% (all numbers are annualized).
- The volatility of the US Buyout index was dramatically lower than that of the public indices, a well-known by-product of private equity valuations not being marked to market.
- The third row shows the return to volatility ratio, which was more than twice as high for the US Buyout index than it was for the Russell 1000, and even more so versus the Russell 2000.
- The last two columns show statistics for the US Buyout index in excess of the Russell 1000 and Russell 2000, as if the US Buyout index had been benchmarked to those two public indices. In this context, the Return/Vol number would be interpreted as an Information Ratio, and they were quite low during this period, which can be attributed to the very large tracking errors shown in the middle row.

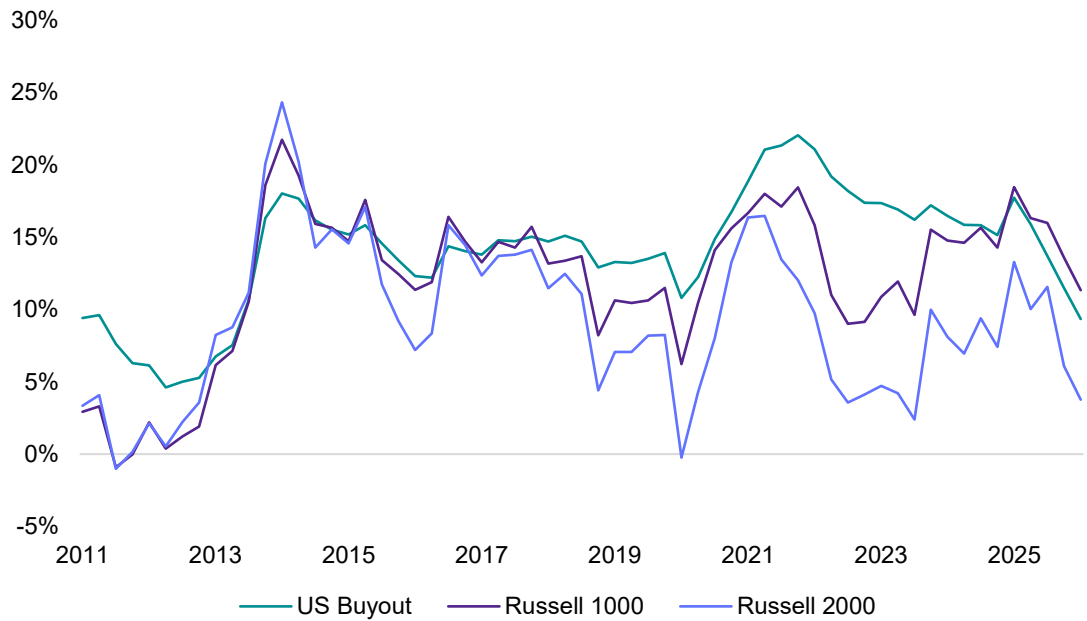
Exhibit 1: Annualized geometric mean return and standard deviation, and return/volatility ratios.

	Absolute return			US Buyout excess return	
	US Buyout	Russell 1000	Russell 2000	Russell 1000	Russell 2000
Annualized Return	12.41%	10.46%	7.54%	1.95%	4.87%
Annualized Volatility	9.05%	16.44%	20.82%	10.67%	15.22%
Return/Vol	1.37	0.64	0.36	0.18	0.32

Source: FTSE Russell/LSEG Data from 2006:Q2 – 2026:Q1. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

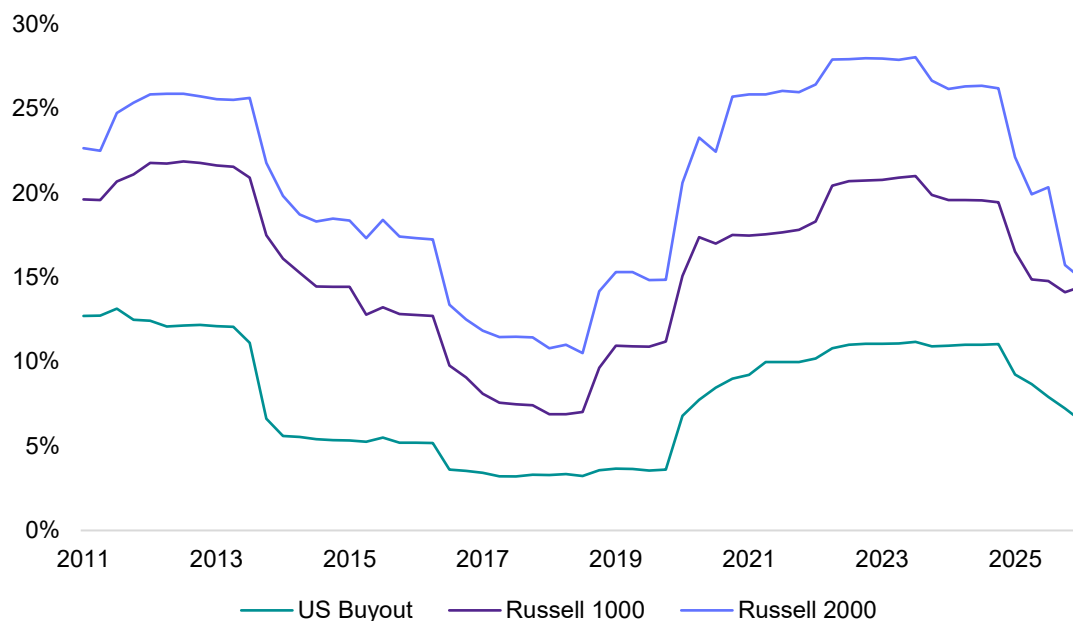
Exhibit 2 gives an idea of time variation of the returns by showing a 5-year rolling annualized return. The first observation of the time series is the average for the period 2006:Q2-2011:Q1 and so included the poor performance during the Global Financial Crisis (GFC). For that period, the 5-year averages for the public indices were negative but still positive for the US Buyout index. As the GFC dropped out of the rolling window, all three averages rose and peaked with the 2014:Q1 observation that included the period starting in 2009:Q2 (GFC rebound) at which point the public index averages were higher. Nevertheless, over the entire period, the private equity index tended to be above the public equity markets.

Exhibit 2: 5-year rolling annualized return



Source: FTSE Russell/LSEG. Data from 2006:Q2 – 2026:Q1. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

The stability of the US Buyout rolling returns relative to the Russell indices is reflected in the lower volatility seen in Exhibit 1. The time variability of the volatility can be seen in Exhibit 3. The entire period is book-ended by high volatility during the GFC and Covid-period, although the rolling volatility dropped recently as the Covid shock dropped out of the window. The US Buyout volatility closely mirrored the volatility pattern of the public indices, but at a much lower level of volatility.

Exhibit 3: 5-year rolling annualized standard deviation of returns

Source: FTSE Russell/LSEG Data from 2006:Q2 – 2026:Q1. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

In addition to having higher expected returns and lower volatilities, private equity is generally described as having relatively low correlations to public equities. Exhibit 4 shows the correlations over the full 20-year period. US Buyout did have lower correlations compared to both public indices with slightly lower correlations to the small cap Russell 2000 index. While historically private equity has often been associated with small caps, this table indicates that the correlation has been slightly higher with larger caps.

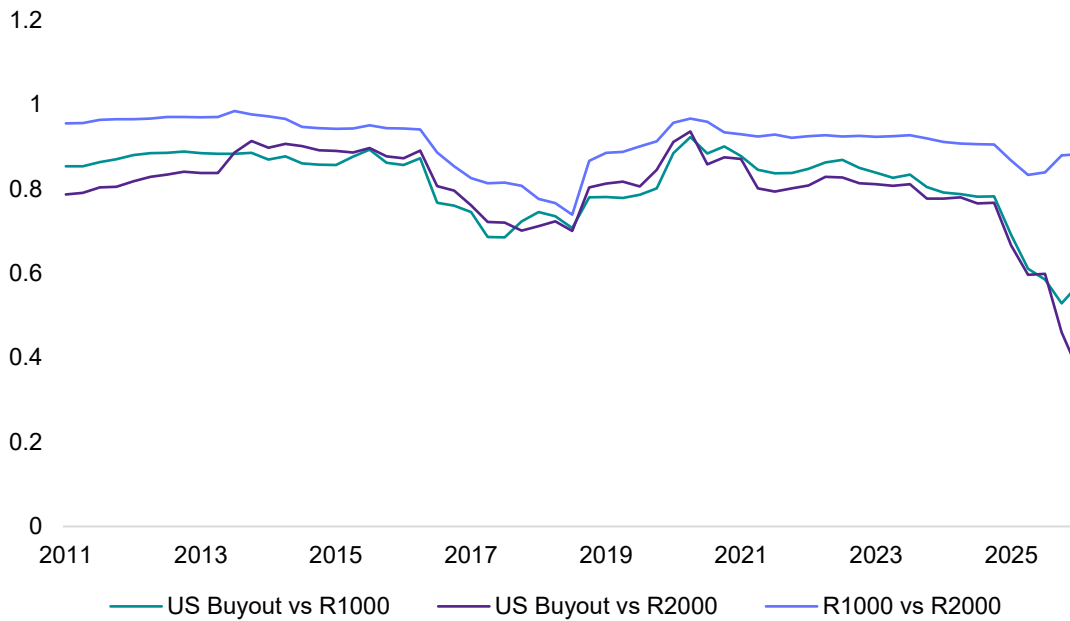
Exhibit 4: Correlations of quarterly returns over 20-year period

	US Buyout	Russell 1000	Russell 2000
US Buyout	1.00	0.81	0.76
Russell 1000	0.81	1.00	0.92
Russell 2000	0.76	0.92	1.00

Source: FTSE Russell/LSEG. Data from 2006:Q2 – 2026:Q1. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

To get a better idea of whether this has changed over time, Exhibit 5 shows rolling 5-year correlations. For the most part, the correlations of US Buyout to the two Russell indices were very similar but they were slightly higher during the 5-year period including the GFC and at the very end of the longer period. The overall pattern is interesting in that the correlations dipped in the mid-2010s, as did the correlation between the Russell indices but the largest deviation was at the very end of period beginning when the window included the Covid shock.

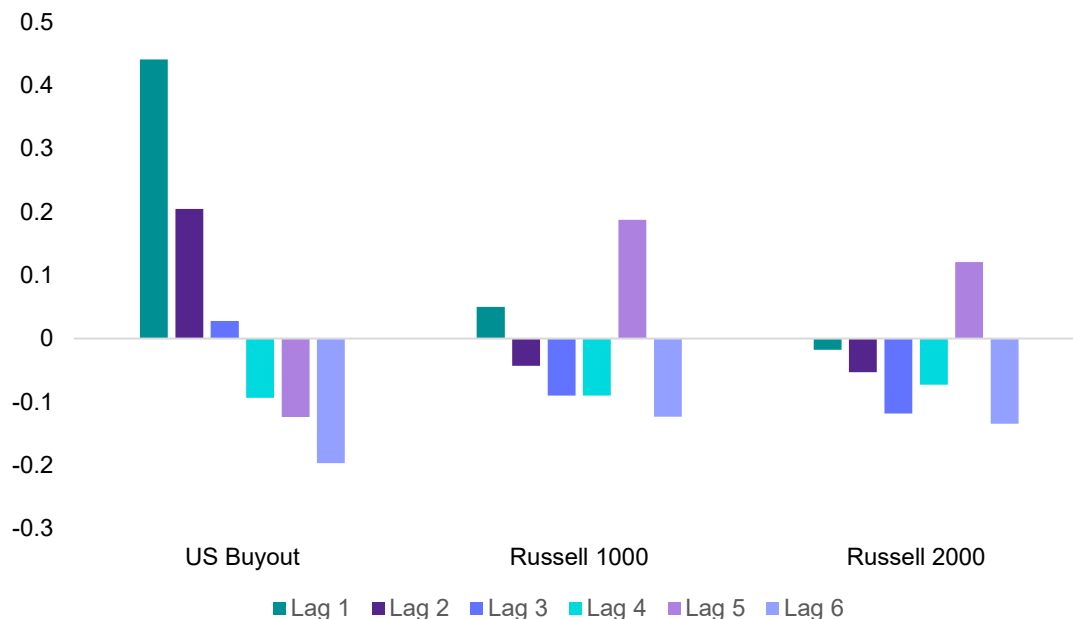
Exhibit 5: 5-year rolling correlations of returns



Source: FTSE Russell/LSEG. Data from 2006:Q2 – 2026:Q1. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

One of the reasons for the low correlation of private equity returns to public equity returns is precisely because private assets are not regularly marked to market. Because private equity managers self-report valuations, they can look past the volatility of what may be considered noise in public markets. However, this “smoothing” of valuations gives the self-reported private equity returns lower volatility and an autocorrelation of returns that is quite different from autocorrelations observed in public markets (the autocorrelations are the correlation of the return series with itself at different quarterly lags). Exhibit 6 shows the autocorrelations of the three index returns at up to six quarter lags. A strong autocorrelation is an indication of predictability that should be arbitrated away in an actively traded market, and the two public indices show the standard pattern of autocorrelations being close to zero. The US Buyout index, however, demonstrated positive autocorrelations for the first three quarterly lags, and then negative autocorrelations for the next three quarters. This illustrates the standard private equity return pattern of little volatility quarter-by-quarter and then longer term mean reversion as large market moves are reflected at a lower frequency.

Exhibit 6: Autocorrelation of quarterly returns



Source: FTSE Russell/LSEG. Data from 2006:Q2 – 2026:Q1. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Portfolio considerations

Based on the statistics above, the use case seems simple: private equity offered higher returns, lower volatility, and relatively low correlations to public equities. In fact, over this period the US Buyout returns dominated the public market returns, and if these numbers were simplistically used to build portfolios, investors might put 100% of their capital in private equity. However, things are not so simple for the two reasons of not marking to market and the illiquidity of private market investing.

As discussed above, the quarterly reported private equity returns are likely smoothed. We know that this will bias downward the reported volatility of private equity returns and their correlations to public equities relative to what they would be if they were marked to market. Returns are more nuanced. The long-term stated returns should be approximately correct because assets are valued at market prices when private investment capital is finally returned to investors. Even if there is some uncertainty over the higher frequency history of stated private returns, the long-term returns should be a more accurate reflection of returns, and those are shown to be higher than for public equities. The higher frequency quarterly returns, however, have an impact on volatility and correlation of returns.

This brings in the second fundamental characteristic of private equity, its illiquidity. We would expect private equity returns to be higher than public equity returns because in equilibrium private equity investors must be compensated for illiquidity. The value that investors place on liquidity can vary from investor to investor, which means that each investor will decide how much of their portfolio to allocate to illiquid assets, which will depend on their expected time path of demand for liquidity. For some investors with only long-term liquidity demands, illiquid allocations can form a big part of the portfolio.

Implementation

The discussion so far has focused on general issues related to understanding private equity return patterns, and how these impact the incentive to invest in private equity. However, actual implementation in the private space is more challenging than in public markets. The FTSE Stepstone US Buyout Index used in the analysis above provides a good indicator of the behavior of the US buyout segment of the private equity universe, but it is an aggregation of data from private equity managers. As such, it can be used as a reference benchmark for private investors or for understanding risks and rewards in the private equity space. However, as of now, there is no direct way to invest in such an aggregation that is comparable to investing in an ETF to get exposure to Russell 1000 stocks. Investors can invest in individual private equity funds or build a portfolio of funds that gives them the more diversified exposure they want. However, the market is starting to see the emergence of investment vehicles that give specific kinds of exposure to private equities, but the exact implementation will determine the return behavior of the investment vehicle and how it differs from the broad private equity aggregates.

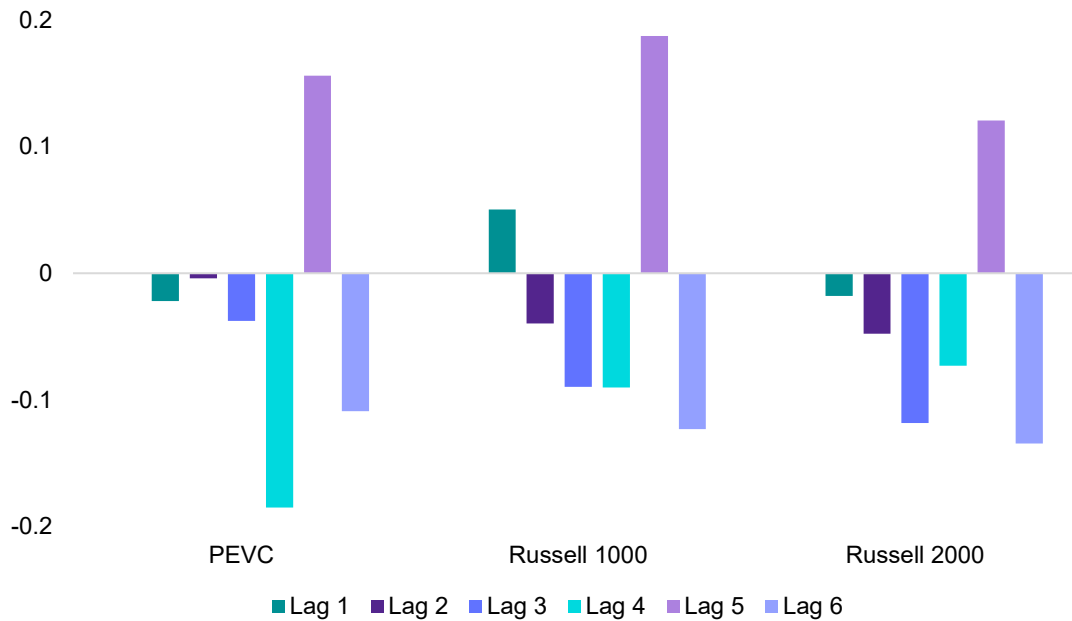
In this section we look at an example of an index that is implementable in the sense that the index is composed of publicly traded instruments but is designed to retain some characteristics of the underlying private equity universe. While building an index with publicly traded constituents gives the liquidity and marked-to-market characteristics that many investors want, this can also change the performance pattern of the index since the lack of liquidity and mark-to-market valuation are two fundamental characteristics of private equity indices.

The index we consider here is the FTSE DSC PE/VC Index (hereafter PEVC) which is a combination of the FTSE DSC Private Equity Buyout Index and the FTSE DSC Venture Capital Index. The specific methodology is described in the index documentation,² and here we focus on the ramifications of using publicly traded securities to construct an index reflective of private equity assets.

Because the index is composed of publicly traded securities, they are marked-to-market on a daily basis and so have transparent market valuations. Exhibit 7 shows that return autocorrelations for PEVC were close to zero, with little sign of return predictability, and the general pattern is similar to what we saw in the public equity indices.

² All returns are in USD. See data note at end for details on the return data.

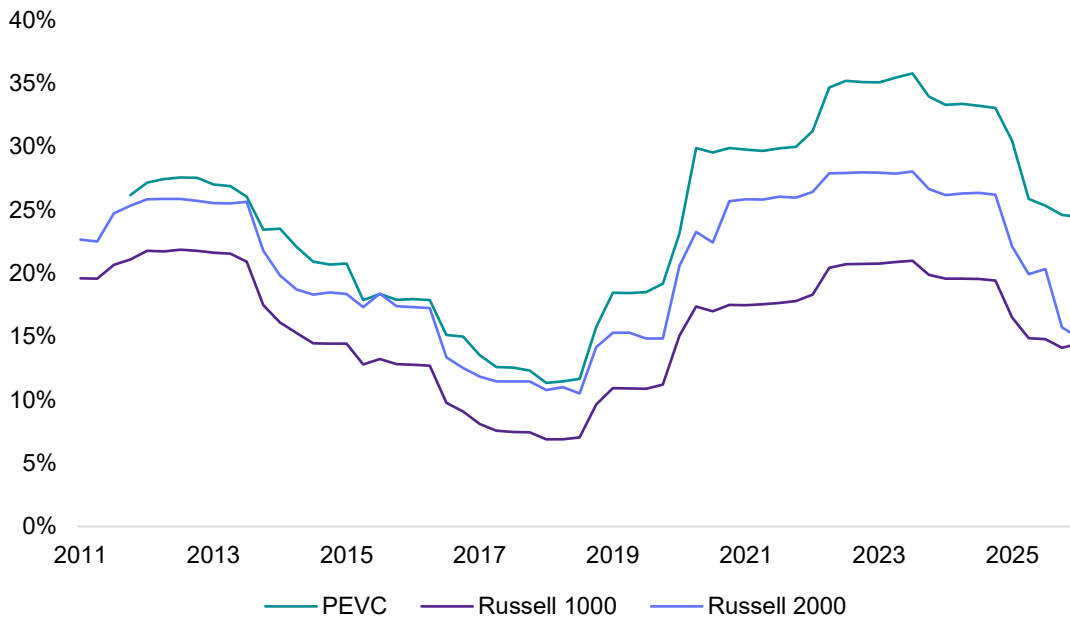
Exhibit 7: Autocorrelations of quarterly returns



Source: FTSE Russell/LSEG. Data from 2007:Q1 – 2026:Q1. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

In addition to affecting correlations, we expect marked-to-market returns to show less smoothing and higher volatility. In the specific case of the PEVC implementation, this change is augmented by various methodology choices that included using leverage to match gross private equity risk and return characteristics, matching the underlying private equity universe sector characteristics, and choosing the Private Equity Buyout and Venture Capital combination weights to maximize the expected return/volatility ratio. All of these methodology choices combine with marking-to-market to increase the realized volatility of this index, as seen in Exhibit 8.

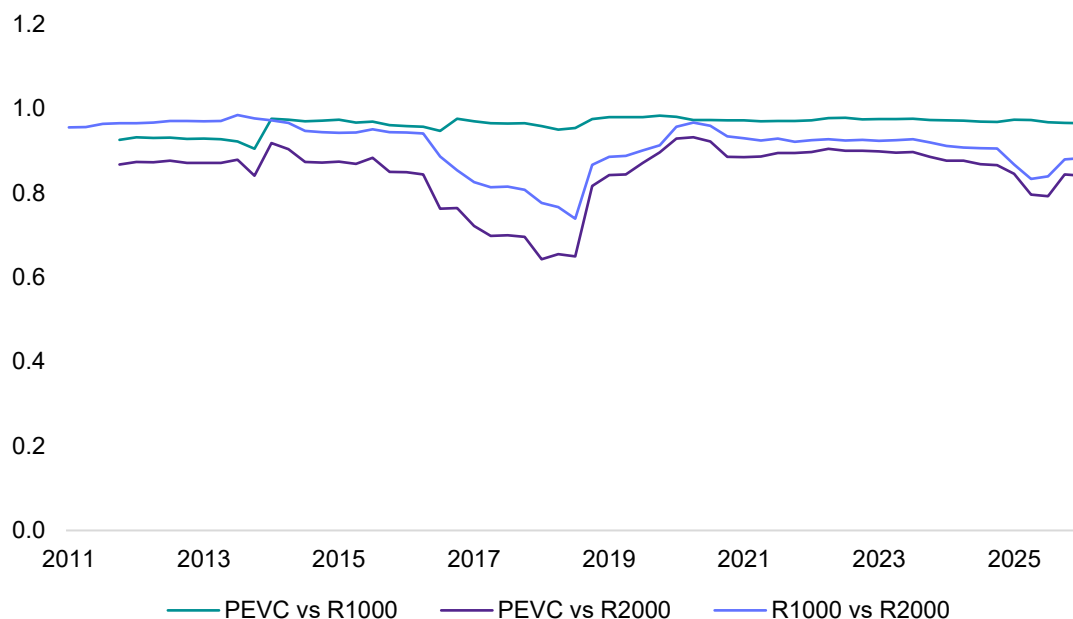
Exhibit 8: 5-year rolling annualized standard deviation of returns



Source: FTSE Russell/LSEG. Data as of Q1 2026. Russell index data starts 2006:Q2. PEVC data starts 2007:Q1. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

The third interesting aspect of the PEVC implementation choice is that the publicly traded securities are specifically chosen from a universe of liquid, large-cap US equities. As is the case in general, the implementation choices will have an impact on the final index behavior. We can see this in Exhibit 9 that shows that the PEVC index is highly correlated with the Russell 1000 index, and much less so with the smaller cap Russell 2000 index. Because the index constituents are publicly traded, they will be subject to the same market and macro shocks, and will likely have many of the same stocks as the Russell 1000 (the PEVC index has approximately 200 securities).

Exhibit 9: 5-year rolling correlations of PEVC with Russell 1000 and Russell 2000



Source: FTSE Russell/LSEG. Data as of Q1 2026. Russell index data starts 2006:Q2. PEVC data starts 2007:Q1. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Finally, to put this all together, Exhibit 10 compares the PEVC performance to that of the Russell 1000 and Russell 2000. A combination of private equity performance and index construction methodology resulted in higher returns and higher volatility than the Russell indices over this time period.

Exhibit 10: Annualized geometric mean return and standard deviation, and return/vol ratios

	Absolute return			PEVC excess return	
	PEVC	Russell 1000	Russell 2000	Russell 1000	Russell 2000
Annualized Return	17.67%	10.31%	7.64%	7.36%	10.03%
Annualized Volatility	25.23%	16.69%	21.10%	10.78%	15.39%
Return/Vol	0.70	0.62	0.36	0.68	0.65

Source: FTSE Russell/LSEG. Data from 2007:Q1 – 2026:Q1. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Summary

As interest in private equity investing has grown, so has interest in using the still scarce private equity data for providing useful reference benchmarks to investors. In this paper we discuss characteristics of private equity that are expected to affect private equity performance and show that we find these attributes in the data when using the FTSE Stepstone US Buyout index which is an aggregation of private equity data. Because it is an aggregation, it can provide a summary of how private equity funds have behaved broadly, and could be used, for example, in benchmarking or risk analysis. It may not serve, however, as a precise indication of investors' returns because private equity is illiquid and not marked-to-market.

If investors are interested in getting liquid and marked-to-market exposure to private equity, they can use investment vehicles that translate private market characteristics to public market securities, but this will most likely alter the performance pattern. In this case, exactly how the implementation is done will determine how the performance characteristics differ from those of the underlying private equity universe. In the example shown here, The PEVC index uses US large cap securities intended to reflect private market characteristics, but the methodology choices combined with the effects of using liquid, marked-to-market securities gave it higher volatility and correlations while retaining higher returns over the nearly 20-year period analyzed.

Data note

The FTSE StepStone US Buyout Daily Cash-Adjusted Index is one of the indices in the [FTSE StepStone Global Private Market Indices](#) series. In this analysis we use the cash-adjusted index rather US Buyout Daily Market Index which adjusted the index intramonth to account for daily public market moves. Because the NAVs are adjusted on a quarterly basis, we use quarterly returns and adjust non-business day quarter-ends to include the NAV adjustment for that quarter. The dataset has 20 years of quarterly data for the time period 2006:Q2-2026:Q1. All returns are in USD.

The implementation index we analyze here is the FTSE DSC PE/VC Index which is a combination of the [FTSE Private Equity Buyout Indices | LSEG](#) and the [FTSE Venture Capital Indices | LSEG](#). See those links for factsheets and methodologies. The dataset has almost 20 years of quarterly data for the time period 2007:Q1-2026:Q1. All returns are in USD.

The authors would like to thank Rohan Desai for assistance with the data. All errors and omissions are the authors'.

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