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Private Equity Partners
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On the Historical Outperformance of Private Equity

An evaluation of private equity returns compared to their respective public market equivalents

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1. Introduction

Alternative to traditional asset classes

Institutional investors have increasingly turned to private markets to meet their return requirements. As a result, private equity, being one of the more mature and established components of the private markets universe, has seen phenomenal growth and is now considered less “alternative” and more “core” to an institutional investor’s overall portfolio [BII 2017, BII 2019].

Offering consistent outperformance

Typically, investors allocate to private equity to achieve a higher return than obtained in public or listed equity. Such outperformance is often attributed to a combination of operational improvements, active ownership, more direct corporate governance, better alignment of interests, longer investment horizons and financial leverage [Puche 2015].

Across a variety of time periods and regions

This article studies the outperformance or alpha of private equity funds and finds materials outperformance across the board. All results shown here are objective market data, and no assumptions or amendments were made to the data[1].

[1] Private equity funds are defined as buyout, venture capital (late stage) and expansion capital (growth), and all returns are net of management and performance fees. Source: Burgiss, vintages 2001-2017, 2,134 funds, USD 2,197billion in market capitalization as of 30 September 2019.

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2. Absolute and relative performance

Figure 1 shows the value, on 30 September 2019, of USD 100 invested in five different financial instruments on 1 January 2001[2], assuming reinvestment of all proceeds. Private equity clearly shows the highest returns with an ending value of USD 753, equating to an annual time-weighted return of 10.9% - an outperformance of 5.9% and 4.5% over the MSCI World and S&P 500 indices, respectively.

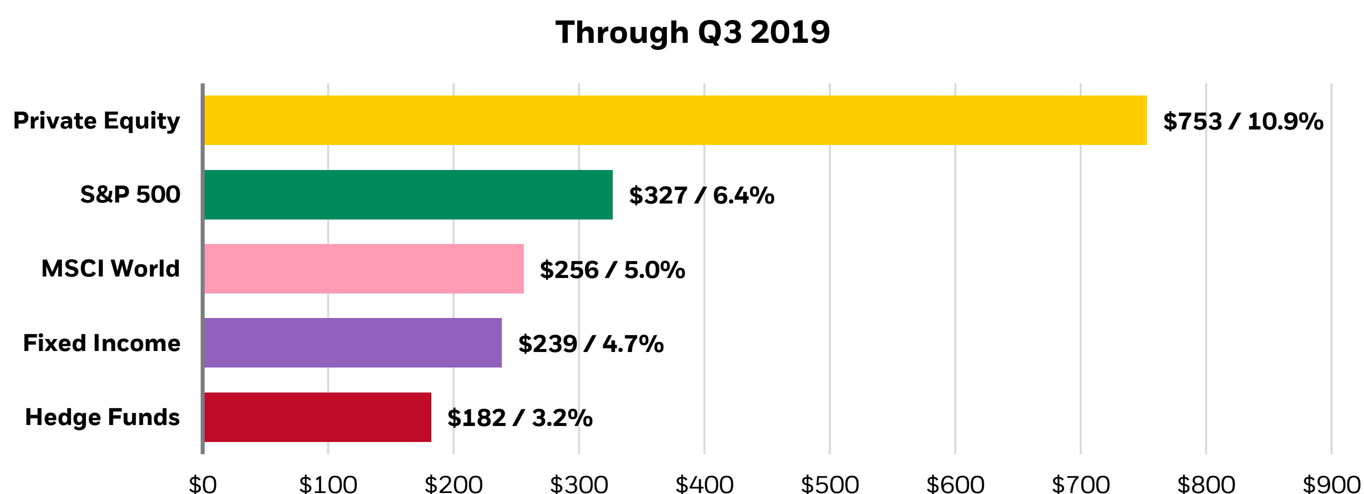

Figure 1: Value of USD 100 invested into five financial instruments on 1 January 2001. Private equity: Burgiss[1]; Fixed income: Barclays US Aggregated Bond index; Hedge funds: HFRI FOF index; both MSCI World and S&P500 represent total return indices. Private Equity data sourced from Burgiss covers vintages 2001-2017, 2,134 funds, and USD 2,197 billion in market capitalization. Private equity strategies include: Buyout, VC (Late), VC (Generalist), and Expansion Capital. All dollar figures are USD. Indexes are unmanaged and one cannot invest directly in an index. ***Past performance does not guarantee future returns.***

However, as opposed to public equity investments where the investor is immediately fully invested, private equity managers call committed capital from their investors over time as they find investment opportunities and distribute principal and gains as investments are exited. For this reason, the timing and size of cash flows is more important than in more traditional asset classes. Private equity practitioners do not typically report time-weighted returns as in Figure 1 but analyze and report performance in a money-weighted performance metric, such as the internal rate of return (IRR). The money-weighted mechanic of the IRR better reflects the timing and size of the underlying cash flows. In addition, TVPI and other multiples are used to reflect cash-on-cash returns.

[2] All data is sourced as of 30 September 2019

Various methods can be used to estimate the outperformance of private equity; however, the direct alpha method is the generally accepted method, yielding the most reliable and accurate results [Gredil 2014][3].

Figure 2 shows the IRR (black bars) of all funds within each of 17 vintage years as of 30 September 2019. Also shown are four different pooled IRRs for the aggregate of all the underlying funds, three different point-to-point IRRs for 5, 10 and 15 years, and one for the total time period. The IRR of the MSCI World index[4] (red bars) is calculated using the actual cash flows of the private equity funds. Each contribution is invested into the public index and each distribution is treated as a sale out of the public index on the exact same day as the actual cash flow occurs. As a result, the buying and selling characteristics mimic the actual cash flows of the private equity investment and the return tracks the return of the public index. The pooled outperformance, or direct alpha, of each vintage year and each pooled aggregate is shown in the green boxes. Table 1 tabulates those IRRs and shows the TVPI and outperformance over the same index.

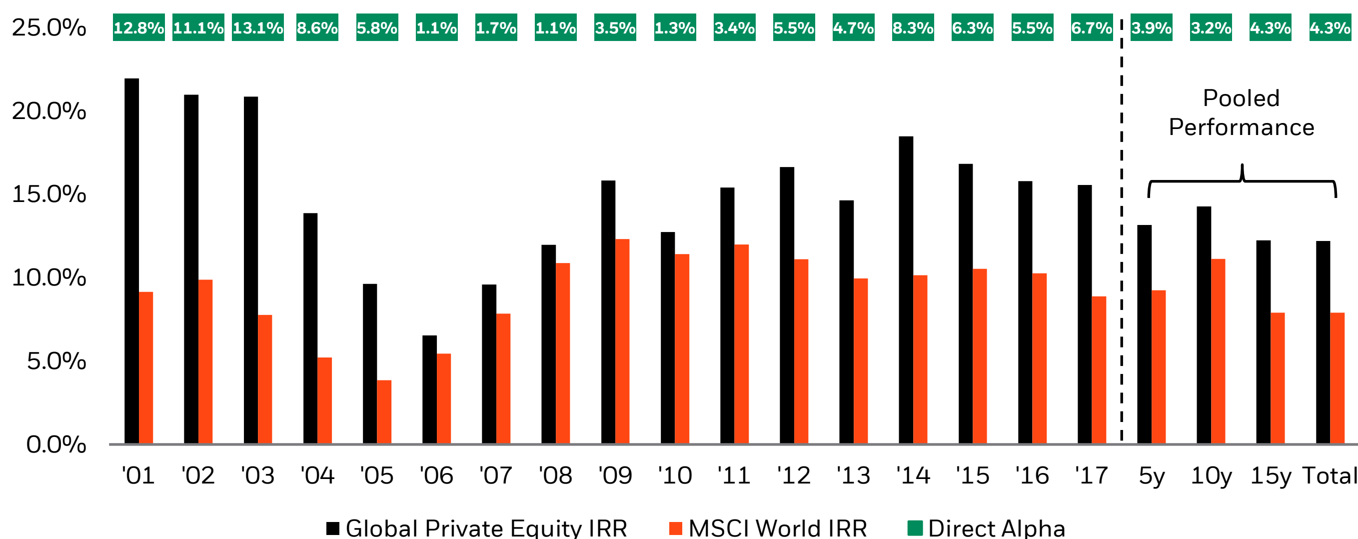

Figure 2: Global private equity fund pooled, absolute and relative performance against the MSCI World index for 17 vintage years and 4 pooled aggregates – all in USD. MSCI world IRR is inferred from the absolute performance and the direct alpha. Total is representative of the since inception figures. Private Equity data sourced from Burgiss covers vintages 2001-2017, 2,134 funds, and USD 2,197 billion in market capitalization. Private equity strategies include: Buyout, VC (Late), VC (Generalist), and Expansion Capital. Indexes are unmanaged and one cannot invest directly in an index. ***Past performance does not guarantee future returns****.*

[3] The Direct Alpha method proposed by Gredil, Griffiths, and Stucke is both a robust and a reliable measure, formalizing the calculation of the exact alpha that a portfolio has generated relative to the chose reference benchmark. It provides a direct calculation of the portfolio alpha compared to alternative public market equivalent methods which estimate performance indirectly. The equivalent of the direct alpha method for Total Value to Paid-in (TVPI) is the KS-PME method, proposed by Kaplan and Schoar. For instance, a 1.16x means that the PE investment has generated a 16% outperformance over the listed index over the whole holding period.
[4] All indices used in this work are total return indices

Detailed performance of Global Private equity Funds as of 30 September 2019																					
	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	5-year	10-yr	15-yr	Total
Global IRR	22.0%	21.0%	20.9%	13.9%	9.6%	6.5%	9.6%	12.0%	15.8%	12.7%	15.4%	16.6%	14.6%	18.5%	16.8%	15.8%	15.6%	13.2%	14.3%	12.2%	12.2%
Direct Alpha[1]	**12.8%**	**11.1%**	**13.1%**	**8.6%**	**5.8%**	**1.1%**	**1.7%**	**1.1%**	**3.5%**	**1.3%**	**3.4%**	**5.5%**	**4.7%**	**8.3%**	**6.3%**	**5.5%**	**6.7%**	**3.9%**	**3.2%**	**4.3%**	**4.3%**
Global TVPI	1.95x	1.93x	1.99x	1.73x	1.61x	1.45x	1.60x	1.61x	1.86x	1.72x	1.78x	1.69x	1.48x	1.61x	1.41x	1.28x	1.18x	1.34x	1.60x	1.52x	1.57x
KS-PME[2]	**1.45x**	**1.43x**	**1.54x**	**1.37x**	**1.28x**	**1.05x**	**1.07x**	**1.04x**	**1.15x**	**1.06x**	**1.14x**	**1.18x**	**1.13x**	**1.25x**	**1.14x**	**1.09x**	**1.07x**	**1.09x**	**1.11x**	**1.16x**	**1.16x**

Table 1: Tabular representation of figure 2. Direct Alpha and KS-PME are both based on the MSCI World index. Private Equity data sourced from Burgiss covers vintages 2001-2017, 2,134 funds, and USD 2,197 billion in market capitalization. Private equity strategies include: Buyout, VC (Late), VC (Generalist), and Expansion Capital. Indexes are unmanaged and one cannot invest directly in an index. ***Past performance does not guarantee future returns.***

First and foremost, the direct alpha or pooled outperformance over the MSCI World index in all 17 vintages is positive, clearly demonstrating that private equity funds outperformed this public equity market. Vintage years '05, '06 and '07 are generally considered difficult private equity vintages with record capital raised and, partially because of that, disappointing performance (high single digit IRRs). However, these vintages still show a clear outperformance over listed equity. In aggregate and since inception, the direct alpha over these 17 vintage years (2001-2017) is 4.3%. This pooled outperformance is also substantial, when looking at different time windows and ranges from 3.9% for 5 year to 4.3% for 15 years. The equivalent outperformance on an absolute basis for TVPI ranges from 9% for 5 year to 16% for 15 years.

Figure 2 showed the performance of a global universe of private equity funds against a global equity market index. However, does that strong performance persists when looking at different regions separately? Table 2 shows the same outperformance analysis but now for US private equity funds benchmarked against the S&P 500 and for European funds benchmarked against the MSCI Europe index.

	Direct Alpha [%]			
Region	**5-year**	**10-year**	**15-year**	**Since Inception**
United States (USD)	**3.2%**	**1.6%**	**3.0%**	**3.0%**
Europe (EUR)	**9.5%**	**7.6%**	**7.0%**	**6.5%**

Table 2: Regional outperformance of private equity funds over different time windows[1]. US private equity sample consists of 1,247 funds, representing a total capitalization of USD 1.3tn. Europe private equity sample consists of 480 funds, representing a total capitalization of €454.7bn. Data covers vintages 2001-2017 and strategies: Buyout, VC (Late), VC (Generalist), and Expansion Capital. ***Past performance is not indicative of future results.***

Table 2 demonstrates that the outperformance of private equity funds remains substantial also on a regional level when benchmarked against the respective regional indices. It should be noted that European private equity funds are benchmarked against the MSCI Europe index in EUR and outperformance appears

to be even stronger than shown in Figure 1. For US private equity funds, the S&P 500 was the most relevant US-focused benchmark, and Figure 1 already showed that the performance of the S&P 500 is higher than the MSCI World index and hence the outperformance to the S&P 500 is expected to be slightly lower than shown in Figure 2.

3. Dispersion of outperformance across funds

All results in section 2 represent the pooled performance of thousands of private equity funds. It is well-documented that the dispersion between the returns of these different private equity funds is 3 to 4 times larger than that of funds investing in listed equity [BII 2017]. For this reason, the selection of individual managers is of paramount importance when investing in private equity. Additionally, performance persistence is slowly dissipating, especially for buyout managers, making selection even more crucial. [Harris 2014].

Figure 3 shows the outperformance of the same universe of private equity funds as in Figure 2. However, in addition to showing the pooled outperformance (+), it also depicts the median (-) and each vertical bar represents the interquartile range between the 25th and 75th percentile performing funds.

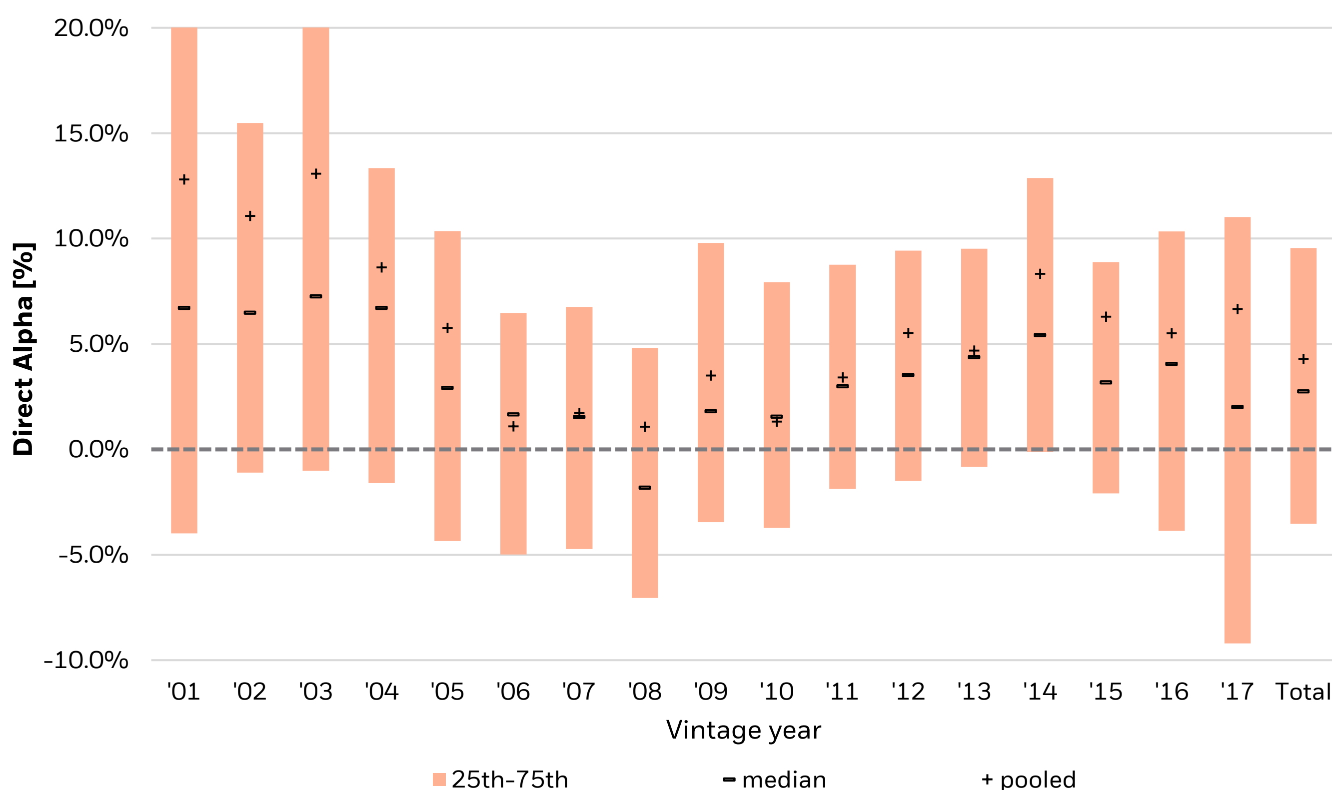

Figure 3: Dispersion of outperformance over the MSCI world index per vintage years and in aggregate – all in USD[1]. Private Equity data sourced from Burgiss covers vintages 2001-2017, 2,134 funds, and USD 2,197 billion in market capitalization. Private equity strategies include: Buyout, VC (Late), VC (Generalist), and Expansion Capital. ***Past performance is not indicative of future results.***

As it can be seen, pooled outperformance in each bar is the same as in Figure 2, however the dispersion between bottom and top quartile performing funds can be as large as 24%. Since the mid-2000s the dispersion of performance seems to have stabilized - dispersion in younger vintages is amplified and is

expected to reduce in the coming years. The total pooled and median outperformance equal 4.3% and 2.8%, respectively. Private equity professionals use their own lexicon and comparing performance can often be confusing for investors less familiar with the asset class. Percentiles such as the median and mean or average performance are unweighted performance metrics. In a capital weighted or pooled metric all cash flows are aggregated by paid-in capital when calculating performance. The pooled metric is deemed more relevant as it is more robust against small funds with under- or outperformance. A capital weighted or pooled metric is also less influenced by funds that are still in their J-curve as these funds are still calling capital and hence have a relatively small weight in the aggregate. This is certainly not the case for a median or simple mean. This is the reason why in Figure 3 in most vintages the pooled outperformance is higher than the median, indicating that larger funds show on average a better performance compared to smaller funds. This is amplified by the fact that returns in private equity are skewed to the right [Braun 2019]. On the other hand, in a pooled metric, the cash flows are discounted to inception and hence, especially when aggregating over a long-time horizon, more recent investments have a smaller weight and hence the metric might be interpreted as less relevant for the current performance.

4. Outperformance across market cycles

The empirical results shown thus far represent the historical outperformance of a universe of private equity funds aggregated per vintage year as of 30 September 2019, however, the variation or volatility of this outperformance over time is not displayed. Figure 4 displays the direct alpha over time across the same universe. The universe shown is growing over time when new funds are raised and invested. The endpoints of Figure 3 and Figure 4 are the same, i.e. a pooled and median outperformance of 4.3% and 2.8%, respectively.

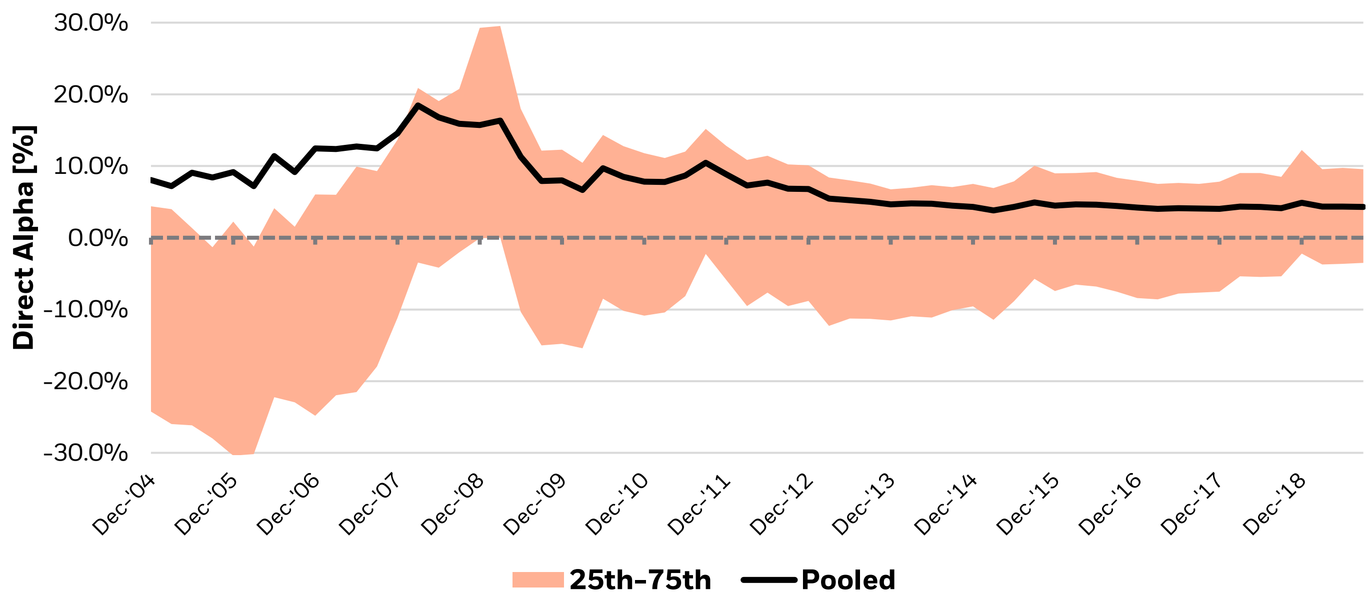

Figure 4: Time-evolution of direct alpha and dispersion thereof over time – all in USD[1]. Private Equity data sourced from Burgiss covers vintages 2001-2017, 2,134 funds, and USD 2,197 billion in market capitalization. Private equity strategies include: Buyout, VC (Late), VC (Generalist), and Expansion Capital. ***Past performance does not guarantee future returns.***

As shown in Figure 4 the outperformance over the MSCI World index is volatile and is especially high during times that public equity markets declined, i.e. during the global financial crisis (2008-2009) and the European debt crisis (2011) where outperformance peaked at 18.5% and 10.5%, respectively. It is well-known that private equity valuations are smoothed and delayed [Jenkinson 2013], which explains some of this increased outperformance. Over recent years the outperformance has stabilized and is decreasing moderately mostly due to the lasting public equity rally fueled by monetary policies. Early years show that a pooled or capital weighted metric and an unweighted percentile can indeed behave very differently. The early 2000s are characterized by the dotcom bubble and disappointing performance for venture capital. Venture funds are typically smaller than buyout funds and hence their weight in a capital weighted metric is reduced compared to unweighted metrics such as median or other percentiles. This explains the large

difference between pooled returns and percentiles in the mid-2000s. For the same reason the unweighted outperformance will typically be lower than the weighted, pooled outperformance as seen across the analyzed time horizon, a result of young funds being continuously added to the universe. These funds go through their J-curve and because they have called only a small amount capital relative to their size, they do not weigh that strongly in a pooled metric as compared to percentiles.

5. The critics

While the aforementioned analyses demonstrate outperformance of private equity over a broad index of listed companies, critics often challenge this alpha and there is ongoing debate, with a significant divergence, on risk-adjusted performance of private equity.

Certainly, these privately-owned companies are on the smaller end of the capitalization spectrum, and the enterprise value can easily be one or two orders of magnitude lower than that of companies in listed equity indices. The analysis below shows the outperformance of US private equity funds over several indices measuring the performance of US listed companies. The second column indicates the median market capitalization of the companies that make up the listed index. Roughly, the total enterprise value of mid/large-market buyout deals ranges from USD 50m to USD 1,000m[5]. Recent market data shows debt-to-equity ratios of roughly 1.0x - 1.4x, implying the equity invested (market cap) ranges from USD 21m to USD 500m[6]. This puts private equity closer to the Russell 2000 and Russell Microcap indices.

		Direct Alpha [%]			
Index	**Median Market Cap (USD)**	**5-year**	**10-year**	**15-year**	**Since Inception**
S&P 500	$23,590m	3.2%	1.6%	3.0%	3.0%
Russell 1000	$10,500m	3.3%	1.6%	2.9%	2.9%
Russell 2000	$818m	5.1%	3.0%	3.8%	3.5%
Russell Microcap	$246m	6.9%	4.1%	5.2%	4.9%

Table 3: Direct alpha and market capitalization by respective index. Direct alpha data provided by Burgiss Private iQ as of 30 September 2019. Market cap data for the Russell 1000, Russell 2000 and Russell Microcap provided by FTSE Russell as of 10 May 2019. Market cap data for the S&P 500 provided by S&P Dow Jones Indices as of 31 December 2019. Private Equity data sourced from Burgiss covers vintages 2001-2017, 1,247 funds, and USD 1,250 billion in market capitalization in the North America Region. Private equity strategies include: Buyout, VC (Late), VC (Generalist), and Expansion Capital. Indexes are unmanaged and one cannot invest directly in an index. ***Past performance does not guarantee future returns.***

As it can be seen, the outperformance over small cap indices is either similar or higher than the outperformance over large cap indices, raising the question if private equity returns are at all subject to a small-cap premium. Other scholars [L'Her 2017] have reported that a large component of the outperformance in aggregate in certain vintage years is explained by adjusting for capitalization. Yet, the

[5] Source: Bain & Company "Global Private Equity Report 2019," and European Private Equity and Venture Capital Association ("EVCA") "European Mid-Market Private Equity – Delivering The Goods."
[6] Source: McKinsey Global Private Markets Review 2018 – "The rise and rise of private markets." Data from the McKinsey report was sourced from PitchBook.

volatility of such small cap indices is significantly larger and such analysis depends strongly on which vintage years are included and which reporting date is used [Brown 2019].

Other scholars also adjust such small cap indices for leverage and sector biases and claim to replicate private equity returns through value investing and longer holding periods [Stafford 2016]. In such case, a portion of the total alpha of private equity, depending on the time window, may be replicated. However, one should put important caveats when pursuing such investment strategies.

First, such strategies aim to replicate the average, or median return of private equity. As outlined in section 3, an investor in private equity does not aim to obtain an average return, even though such an average is already significantly outperforming all listed markets considered in this article. Instead, investors aim to generate additional alpha through manager selection and generate above average returns.

Second, investors do not have access to these privately-owned firms other than through private equity funds. Companies that are too small or unsuitable for public ownership, as well as businesses in the early and growth stages, can only be accessed through private equity. Market data shows that the universe of private companies is growing, whereas the universe of listed companies is decreasing [BII 2017]. By allocating to private equity, an investor expands the opportunity set and diversifies the overall universe of underlying investments and hence should expect enhanced risk-adjusted returns.

Third, investors can further add incremental alpha and increase net returns by allocating to tactical investment strategies such as secondaries and co-investments that are now an integral and well-established component of the private equity market [BlackRock PEP 2019].

Additionally, some scholars and industry practitioners claim private equity performs poorly during times of financial duress because of increased leverage in conjunction with the highly cyclical private equity fundraising cycle. However, market data from the 2008 recession suggests the opposite is true. It is shown that private equity-backed companies cut investments less than their peers during the crisis and experienced higher asset growth and market share. In addition, private companies experience resiliency during downturns as they have greater access to external funding when financial markets are dysfunctional. During the crisis, net equity contributions and debt issuances were larger for private equity backed companies; however, leverage was not materially increased due to improvements in profitability and

market share. The aforementioned analysis suggests private equity firms alleviated financing constraints of portfolio companies during the financial crisis, allowing them to invest more when credit markets were frozen and economic uncertainty was high. Companies financed by private equity funds with high dry powder levels had greater debt issuances and more importantly, larger equity injections given the availability of capital. Altogether, these results are inconsistent with the hypothesis that private equity contributed to the fragility of the economy in the last financial crisis [Bernstein 2017].

In the current market environment, a larger percentage of equity and lower cost of debt found in capital structures reduce the risks facing privately owned companies compared to those in 2008. In addition, private equity funds are shifting portfolio companies to less cyclical markets and industries. Instead of treating a contraction as a time to pull back, well positioned private equity backed companies use this time to advance their market position, embrace new investments, and fast-track business and operating model improvements. In a downturn, the number of carve-outs often rises, as corporations refocus on their core business [Ketels 2019].

6. Wrapping up

This work lays out the empirical outperformance of private equity across various benchmarks and market cycles. In a search for alpha, institutional investors have increased allocations to private equity in order to meet return targets. Some practitioners have doubted outperformance related to private equity after accounting for leverage and size biases in the representative benchmarks. However, this paper evaluated private equity against benchmarks representative of the asset class and demonstrates material outperformance in various performance metrics across different time periods and public equity indices.

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Appendix

Risks
Capital at risk. All financial investments involve an element of risk. Therefore, the value of the investment and the income from it will vary and the initial investment amount cannot be guaranteed.

The investor may not get back the amount originally invested. Past performance is not a reliable indicator of current or future results and should not be the sole factor of consideration when selecting a product or strategy. Changes in the rates of exchange between currencies may cause the value of investments to diminish or increase. Fluctuation may be particularly marked in the case of a higher volatility fund and the value of an investment may fall suddenly and substantially. Levels and basis of taxation may change from time to time.

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