Private Equity Insights

TWENTIETH EDITION | Q3 2020

CURRENT QUARTER PERFORMANCE SUMMARY

The State Street® Private Equity Index (SSPEI) posted its highest quarterly return since 2006 at 10.56 percent return in the third quarter of 2020, continuing on the path of recovery since 2020 Q2. Venture Capital funds rallied 12.85 percent, followed by a 10.75 percent return from Buyout funds and 4.51 percent return from Private Debt funds. (See Exhibit 1).

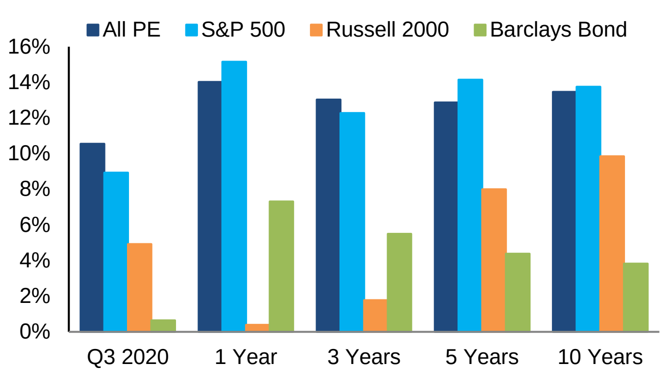
Exhibit 1. Private Equity Performance by Strategy

	All PE	Buyout	VC	Private Debt
2020 Q3	10.56%	10.75%	12.85%	4.51%
2020 Q2	9.55%	9.15%	12.66%	5.73%
2020 Q1	-9.99%	-11.57%	-4.23%	-11.10%
YTD	9.40%	7.37%	21.69%	-0.42%

Source: State Street®, as of Q3 2020.

As shown in Exhibit 2, SSPEI performed on par with the US public equity market (proxied by the S&P 500) in all horizons and outperformed the small-cap stocks (proxied by the Russell 2000) and the US debt market (proxied by Barclays US Aggregate Bond Index).

Exhibit 2. Investment Horizon Returns



Source: State Street®, DataStream, Bloomberg Barclays US Aggregate Bond Index (total returns as of Q3 2020).

Continued on page 4.

NEW INSIGHTS INTO PRIVATE EQUITY ALTERNATIVE VEHICLES

Insights from Harvard University and the Private Capital Research Institute

By Josh Lerner

The last two decades have seen a significant transformation of the structure of the private equity (PE) industry. Not only has the amount of capital under management by buyout, venture, and private debt funds grown dramatically, but general partnerships (GPs) have increasingly offered alternatives to their traditional monolithic large funds, such as co-investment vehicles, parallel funds, feeder funds, and more. Using novel data from State Street, recent research by Antoinette Schoar of MIT, Nan Zhang and Jason Mao of State Street, and myself documents for the first time several key facts about the growth of these alternative vehicles (AVs) over the last four decades. We show that by 2017, alternative vehicles constituted almost 40% of all capital raised in private equity, and were especially prevalent for buyout firms.

Our analysis suggests that the rapid rise of alternative vehicles answers some of the most enduring puzzles in private capital. The prior literature has highlighted three puzzles in the relationship between limited and general partners. The first is the tendency of many partnerships not to drastically increase fund sizes or assets under management, despite the presence of superior performance and high demand. The second is the bunching of management fees across funds, seemingly independent of their performance. The final dimension is the apparent homogeneity of returns offered to different LPs, even if these investors have dramatically different characteristics or bargaining power vis-a-vis the GPs. Our results suggest that many of these seeming anomalies disappear once the impact of AVs are considered: the differentiation in bargaining power

Continued on page 2.

and outside opportunities across LPs and GPs are much more evident in these AVs.

We examine these questions using a data set covering all investment vehicles organized by private equity funds—whether groups specializing in buyouts (including growth capital), venture, or private debt—invested in by 108 asset owners with PE holdings and for whom State Street Corporation acts as a custodian. The data captures all cash flows between the LPs and the PE managers in their portfolios. Together, they represent one half-trillion dollars of commitments and twenty thousand investments. We highlight four sets of findings.

First, we show that over the last two decades, larger and later-stage partnerships set up more AVs and raised more capital in AVs relative to other GPs. The relative performance of AVs, benchmarked against the main funds of the associated partnership, was below their main funds. We also find that the average AVs offered by partnerships with high performance (measured using public market equivalents, or PMEs) outperformed low PME partnerships.

Second, our evidence is consistent with the hypothesis that the returns investors can achieve in alternative vehicles reflect a bargaining process between GPs and LPs. Earlier papers have questioned why net-of-fee returns (and fees themselves) in private equity have been so uniform across LPs, even when there is large heterogeneity in the attractiveness, sophistication, and bargaining power among LPs. For example, LPs may be more attractive to GPs if they have abundant financial resources, greater value added, or an ability to provide GPs with “liquidity insurance” in bad times. A key prediction of the bargaining hypothesis is that GPs should match the return of the AVs they offer to the outside options of the LPs.

To test this hypothesis, we classify GPs and LPs by the average past performance of their portfolios across all PE investments. We find that LPs with better past performance invest in alternative vehicles that had above-average market performance, often even outperforming the main fund of the GP sponsoring them. LPs with worse past performance invest in AVs with lower PMEs. In line with a matching story between LPs and GPs, we show that the access to AVs and their performance varies significantly with the match between the LP and the GP. Access to AVs of top-tier GPs is twice as likely for top LPs than lower-tier LPs. In contrast, access to AVs of lower-tier GPs is slightly more balanced between top-tier and lower-tier LPs.

Moreover, even when different LPs can get access to AVs associated with a given partnership, we find that top LPs have slightly better performance than lower-tier LPs holding constant the GPs. This result is only significant for LPs investing with top GPs, and particularly in discretionary AVs. For LPs investing with lower-tier GPs, the difference in outcomes is not significant. These performance results, which we term match-specific performance, also support the idea that top GPs take into consideration the outside options of their LPs when offering them access to AVs.

This match-specific performance does not appear to be driven solely by the inability of some LPs to understand their investment opportunities. We find that the investments that lower-performance LPs make in the AVs of top GPs still perform as well as the rest of these LPs’ PE portfolios. It appears that LPs realistically assess the relative performance between different opportunities presented to them. In addition, we show that the match-specific differences in performance are not explained by some LPs and GPs having prior relationships that could reduce information asymmetries: the results are unchanged even when controlling for any prior investment.

Third, we classify AVs into two broad sub-groups: discretionary vehicles and GP-directed vehicles. Discretionary vehicles include co-investment opportunities that are provided by a GP but in which the LP maintains discretion over which deals to invest in. Here the LP’s sophistication and understanding of the investment process significantly affect the quality of the decision. In contrast, GP-directed vehicles typically are funds that invest in similar deals as the main funds, where the GP retains all key decision-making powers. Practitioner accounts also suggest that certain large high-profile investors receive more co-investment opportunities and chances to access investments in other favored ways. We document that the biggest difference in access as well as returns between top versus lower-tier LPs is in discretionary vehicles. These findings again underscore that with the proliferation of AVs, the identity of the LP has become more important in the investment process.

In a final step, we ask what drives the match-specific performance that we document. Do the GPs alter the deal terms in the AVs? Alternatively, do they tailor either the systematic or idiosyncratic risk of the underlying deals included in the AVs differently? We show that AVs on average are smaller than main funds and thus have more idiosyncratic risk. However, we do not find that the level of idiosyncratic risk varies with AV returns in a meaningful way. To look at differences in systematic risk, we focus on the cash flows in and out of AVs and main funds. While we cannot see the exact deals that GPs invest in, we have the exact time stamp of cash in-flows and out-flows of the AVs and the associated main funds. This allows us to create a proxy of the overlap in investment between these vehicles. When looking at the set of AVs that have significant overlap with their main funds—and hence where the differences in systematic risk are likely to be small—we continue to see substantial match-specific performance. Similarly, using again the sample of AVs with significant overlap, we do not find evidence consistent with fee differentials between LPs driving the performance differences. In sum, it appears that a major factor in the performance differences between the AVs that top LPs versus lower-tier LPs invest in is driven by differences in the expected (idiosyncratic) returns or quality of the underlying deals.

One may wonder why GPs use AVs in the first place, instead of simply negotiating different fee and carry arrangements with those LPs with greater bargaining power. We believe that the private equity industry has a number of unique structural features that make the use of alternative vehicles a more desirable option. Most importantly, GP performance is typically assessed based on main funds. Minor performance differentials in main funds can have important influences on their ability to raise future funds. Indeed, the major data vendors (e.g., Burgiss and Preqin) have not gathered systematic data on alternative vehicles, so there is much less visibility about their performance than main funds. Thus, the consequences of underperformance in alternative vehicles are much lower. If private equity groups indeed face diminishing returns on their investment dollars, as earlier papers suggest, even the LPs in the main fund would prefer this differentiated strategy to just increases the size of the main fund. In addition, top-tier GPs might prefer having a homogenous set of fellow LPs to invest with, rather than opening up the main fund to lower-tier investors who might be less experienced or more likely to be subject to liquidity shocks. Finally, the industry has long-standing tradition of limited partnerships typically not treating their major investors differently. One common provision regarding fund economics is the "most favored nation" clause, which ensures that LPs who make similar-sized fund commitments will have equal economics in the main fund. Practitioners report that GPs frequently share their main fund partnership agreements (or relevant excerpts thereof) with other LPs, in order for them to ensure that no one else received better terms. So breaking out of this equilibrium for the main funds might be prohibitively difficult.

The paper[1] is posted at SSRN and is forthcoming in the *Journal of Financial Economics*.

Josh Lerner is Director of the Private Capital Research Institute and Jacob H. Schiff Professor of Investment Banking and Head of the Entrepreneurial Management Unit at Harvard Business School.

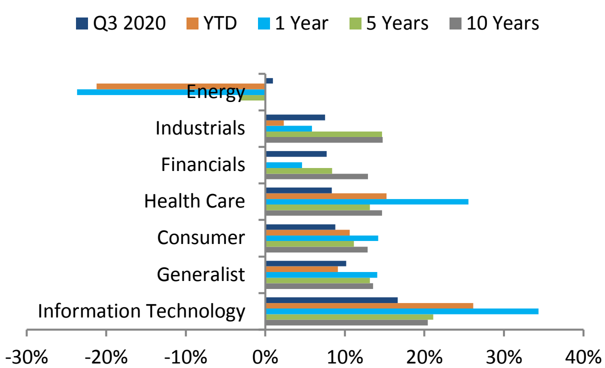
The Private Capital Research Institute is a not-for-profit 501(c)(3) corporation formed to further the understanding of private capital and its global economic impact through a commitment to the ongoing development of a comprehensive database of private capital fund and transaction-level activity supplied by industry participants. The PCRI, which grew out of a multi-year research initiative with the World Economic Forum, also sponsors policy forums.

[1] Investing Outside the Box: Evidence from Alternative Vehicles in Private Equity, Josh Lerner, Jason Mao, Antoinette Schoar, Nan R. Zhang, Journal of Financial Economics (Forthcoming)

CURRENT QUARTER PERFORMANCE SUMMARY – CONTINUED FROM PAGE 1

Among sectors, Information Technology funds led with a strong quarterly return at 16.66%, increasing by 3.69% from Q2. These were followed by Generalist funds which posted a 10.17% quarterly return, up from 9.19% in Q2. Energy funds remained lagging, now or consecutive 6 quarters, with 0.96% in Q3, down from 4.12% in Q2. (Exhibit 3).

Exhibit 3. Returns of Sector Focused Private Equity Funds



Source: State Street®, as of Q3 2020.

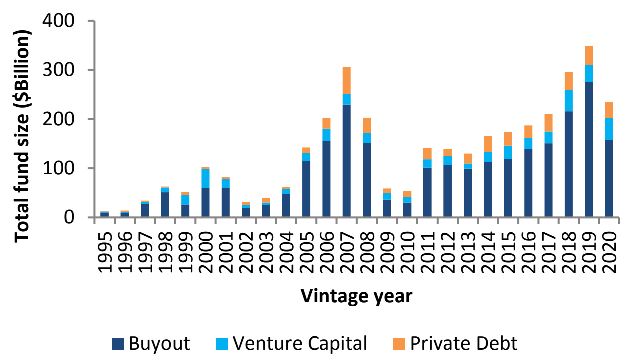
Fund Raising

Fund-raising activities so far in 2020 were mixed among the three private equity strategies. Venture Capital funds raised more than 44 billion up till 2020 Q3, which has already exceeded the total amount from venture funds in. On the contrary, activity for Buyout funds slowed with only 57% of the funds raised compared to 2019. By comparison, Private Debt funds maintained a steady pace in fund raising with $32.38 billion raised, nearly 83.8% of the funds raised in 2019 (see Exhibit 4(A)).

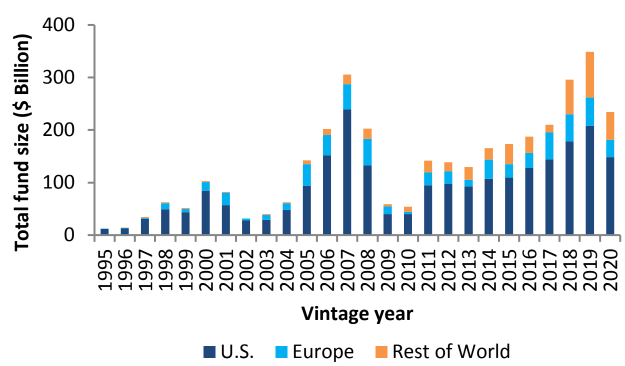
Across regions, US funds collected $148 billion, which was 71% of last year's total. European and the Rest of World raised $33 billion and $53 billion respectively, counting for 61.0% and 61.1% relative to last year (see Exhibit 4(B)). Since 2018, Rest of World saw a significant increase in capital raising.

The average fund size continued to rise for Buyout and Venture Capital funds. Average Buyout fund size is approaching 2.6 billion, and the average Venture Capital fund size reached 0.8 billion, up by 33% since 2019. However, Private Debt funds decreased to an average size of 1.35 billion compared to 1.68 billion in 2019 vintage year (see Exhibit 5).

Exhibit 4. Total Fund Size (USD Billion)
(A) By Strategy

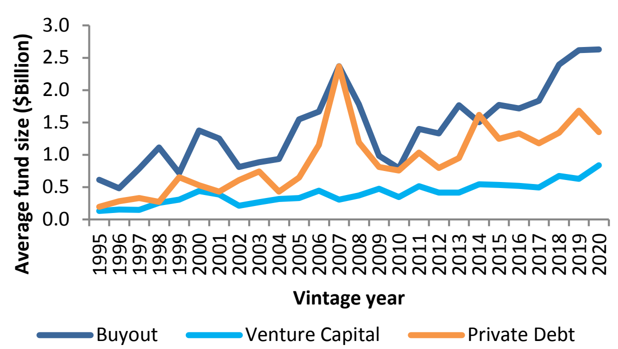


(B) By Region



Source: State Street ®, as of Q3 2020.

Exhibit 5. Average Fund Size (USD Billion)



Source: State Street®, as of Q3 2020.

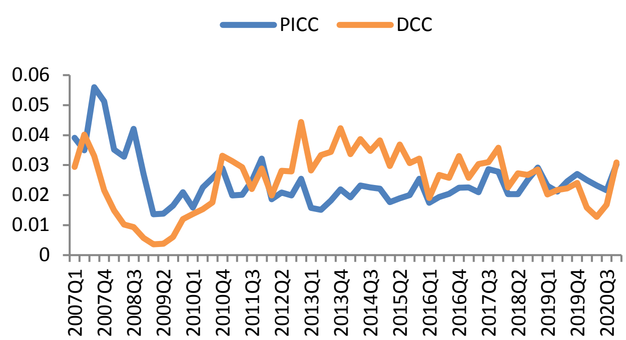
Cash Flow Activity

During the pandamic, capital contribution had less fluctuation than capital distribution. In the third and fourth quarter of 2020, we have observed cash flow recovery. Lingering in the negative territory since 2018 Q4, the net cash flow has returned to positive territory for the first time in 2020 Q4. It is notable that the net cash flow of Private Debt and Buyout funds rebounded from their respective low point of -1.8% and -1.1% in early 2020 to 0.2% and just over 0% (see Exhibit 6(B)).

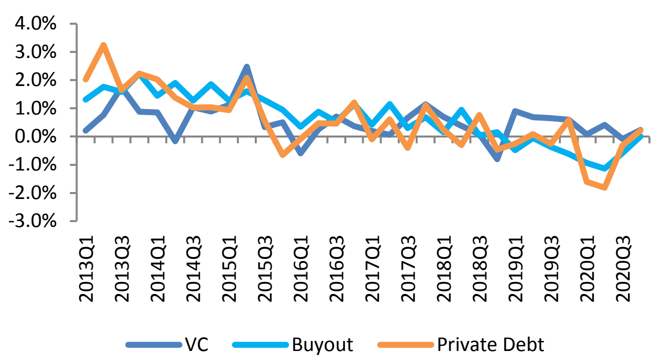
The distribution rate in 2020 Q4 has also bounced back to the highest point since the end of 2017 as shown in Exhibit 6(A).

Exhibit 6. Quarterly Cash Flow Ratios Normalized by Commitment

(A) Contribution and Distribution of All PE



(B) Net Cash Flow By Strategy (2013Q1 – 2020Q4)



Source: State Street ®, as of Q4 2020.

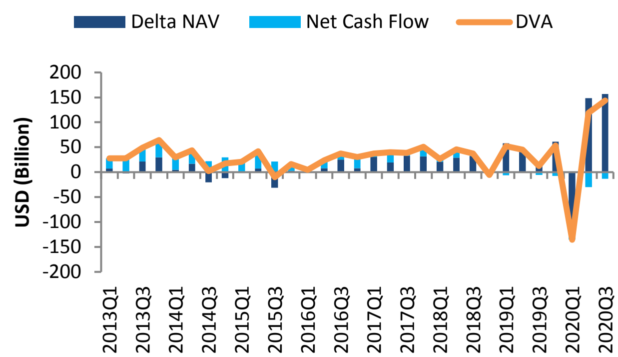
Valuations

The Dollar Value Added (DVA) is the sum of NAV changes and net cash flows. It measures the realized and unrealized gain and loss in dollar amounts.

$$DVA = EndingNAV - BeginningNAV + Distribution - Contribution$$

We saw the most dramatic fluctuation in valuation in the past decade. After being hit by the COVID panic in Q1, SSPEI recouped all its DVA losses in Q2 and posted stronger growth in Q3 (see Exhibit 7).

Exhibit 7. Dollar Value Added (2013 Q1 – 2020Q3)



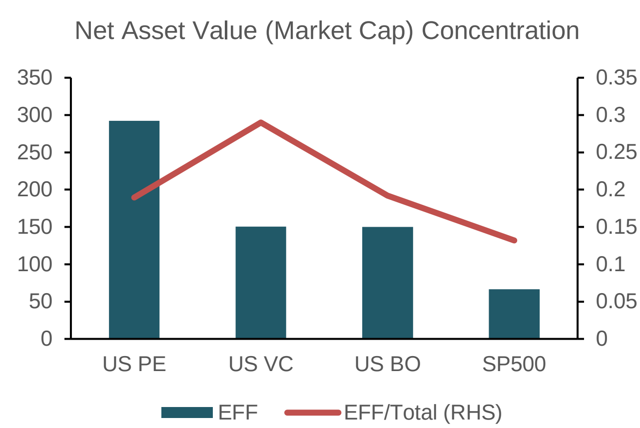
Source: State Street ®, as of Q3 2020.

DISCUSSION – THE CONCENTRATION RISK

Bae, Bailey and Kang (2021) showed that concentrated stock markets dominated by a small number of firms have adverse impacts on efficient capital allocation, initial public offering, innovation activity and future economic growth[1]. Historically, stock market volatility also increases as the market concentration increases[2].

Along with the surge of COVID-19, a bull run in technology stocks in 2020 sent the public equity market concentration to a record high. By the end of year, Information Technology sector rose to 27.6% of S&P 500 market capitalization, from 23.2% at the end of 2019; the top 5 mega-technology names, a.k.a. Apple, Microsoft, Amazon, Google and Facebook, represented more than one fifth (i.e. 21.9%) of total holdings in the index (Source: S&P, DataStream).

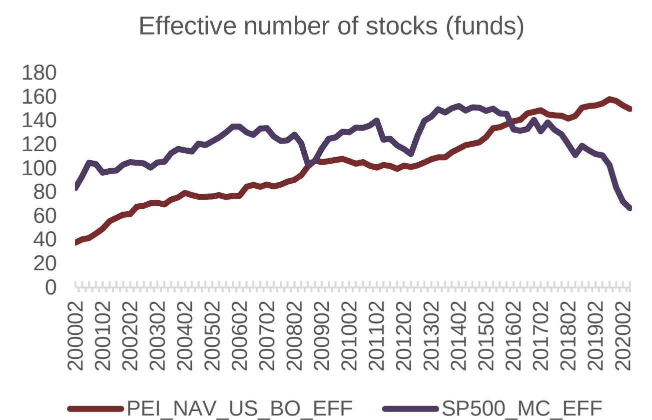
Exhibit 8. Effective number of funds or stocks by net asset value (SSPEI) or market cap (S&P500)



Source: State Street ®, DataStream, as of Q3 2020.

Herfindal index (HHI) is widely used as an indicator of industry concentration. The reciprocal of Herfindal index (i.e. 1/HHI) represents the effective number of equal weighted entities (EFF) in the sample. Exhibit 8 shows the EFF of S&P500 index by stock market cap weights, and EFF of US Buyout, VC and Private Equity (i.e. Buyout, VC and Private Debt) by fund NAV weights. As of 2020 Q3, S&P500 index has ~67 effective number of stocks, while the US Buyout sub-index of SSPEI has 150 effective number of funds. In another word, despite having 505 constituent stocks, S&P 500 index shows the level of concentration equivalent to an equal weighted index of only 67 stocks (EFF/Total ratio is 0.13), while the US Buyout sub index of SSPEI has the level of concentration equivalent to an equal weighted index of 150 funds (EFF/Total ratio is 0.19). According to this "naïve" measure, S&P500 index appears to be much more concentrated than the US Buyout SSPEI.

Exhibit 9. History of Effective number of stocks or funds (2000 Q1-2020 Q3)



Source: State Street ®, DataStream, as of Q3 2020.

Historical trends may help us understand how we get into the current situation. As shown in Exhibit 9, EFF of S&P500 had a slow increase prior to 2015 before it drastically plunged to the current historical low; while EFF of US Buyout SSPEI, on the other hand, has been mostly increasing throughout the last two decades.

Several factors probably contributed to the development of such a trend in Private Equity. The most obvious one is the sheer volume growth of Private Equity. In 2000 Q1, there are

[1] Kee-Hong Bae, Warren Bailey, Jisok Kang, Why is stock market concentration bad for the economy?, Journal of Financial Economics, 2021

[2] https://www.plantemoran.com/explore-our-thinking/insight/2020/10/what-does-the-current-concentration-in-the-us-stock

188 active US Buyout funds; by 2020 Q3, the number of active US buyout funds quadrupled to 782. Secondly, as discussed in our paper earlier about alternative vehicles, the tendency of many partnerships not to drastically increase fund sizes or assets under management, despite the presence of superior performance and high demand, might have helped further reduce the fund concentration.

ABOUT THE STATE STREET PRIVATE EQUITY INDEX

Participants in private capital markets need a reliable source of information for performance and analytics. Given the non-public nature of the private equity industry, collecting comprehensive and unbiased data for investment analysis can be difficult. The State Street Private Equity Index ("SSPEI") helps address the critical need for accurate and representative insight into private equity performance.

Derived from actual cash flow data of our Limited Partner clients who make commitments to private equity funds, SSPEI is based on one of the most detailed and accurate private equity data sets in the industry today. These cash flows, received as part of our custodial and administrative service offerings, are aggregated to produce quarterly Index results. Because the SSPEI does not depend on voluntary reporting of information, it is less exposed to biases common among other industry indexes. The end result is an index that reflects reliable and consistent client data, and a product that provides analytical insight into an otherwise opaque asset class.

- Currently comprises more than 3,200 funds representing more than $3.5 trillion in capital commitments as of Q3 2020
- Global daily cash-flow data back to 1980.
- The Index has generated quarterly results since Q3 2004.
- Published approximately 100 days after quarter-end.

AUTHORS

Taiyue Luo

TLuo2@StateStreet.com

Jiachen Zhao

JZhao8@StateStreet.com

Yaonan Zhang, CFA, PhD

YZhang2b4007@StateStreet.com

Nan R. Zhang, CFA, PhD

nzhang2@statestreet.com

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