Private Equity Insights

SEVENTH EDITION | Q1 2017

CURRENT QUARTER PERFORMANCE SUMMARY

The State Street Private Equity Index (GXPEI) posted an overall return of 3.95% in the first quarter of 2017, the highest quarterly return since Q3 of 2015. The performance of Buyout funds remained strong this quarter and a significant improvement in the performance of Venture Capital funds helped lift overall returns (see Exhibit 1).

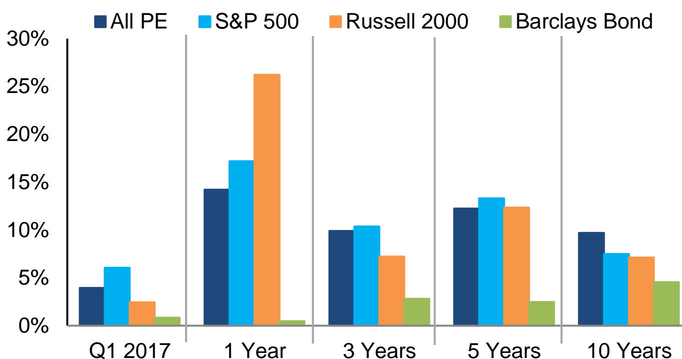
Exhibit 1: Private Equity Performance by Strategy

	All PE	Buyout	VC	Private Debt
2017 Q1	3.95%	4.23%	3.50%	3.10%
2016 Q4	2.58%	3.07%	0.47%	3.04%
2016	10.36%	12.52%	2.84%	10.39%

Source: State Street Global Exchange[SM], as of Q1 2017.

As Shown in Exhibit 2, compared to major public market indices, GXPEI outperformed the Barclays Bond Index over all horizons and the US equity market, proxied by the S&P500, over the ten-year horizon. At shorter horizons, the GXPEI underperformed the S&P500; however, it has much less return volatility than small cap stocks. (See Exhibit 2)

Exhibit 2: Investment Horizon Returns



Source: State Street Global Exchange[SM], DataStream, Bloomberg Barclays US Aggregate Bond Index (total returns as of Q1 2017).

Continued on page 4.

PERSISTENCE OF PRIVATE PERFORMANCE – HERE TODAY … GONE TOMORROW?

Insights from Harvard University And the Private Capital Research Institute

By Leslie Jeng and Josh Lerner

In an increasingly competitive world, investors are increasingly asking themselves if there is persistence in private capital investments, and, if so, how does one find it: in other words, do groups that are top performers continue to perform attractively in subsequent funds?

Academic studies suggest that the once-robust persistence of performance across buyout funds has weakened, along with the historical outperformance of private equity relative to the public markets. An important academic study using Burgiss data[1] finds a strong persistence in the pre-2000 period for buyout funds, and particularly, for venture funds. This trend generally holds across multiple performance measures, including internal rate of return, multiple of invested capital, and public market equivalent. Post-2000, however, the research finds that there is little evidence of persistence for buyout funds, except at the lower end of the performance distribution: poorly performing funds continue to do badly, but top performers regress to the mean. When the funds are segmented into quartiles based on the performance of previous funds, the performance of subsequent funds after 2000 were statistically indistinguishable. However, for venture capital, performance in post-2000 funds remained as persistent as pre-2000.

Continued on page 2.

[1] Harris, Robert, Tim Jenkinson, Steven Kaplan, and Rüdiger Stucke, "Has Persistence Persisted in Private Equity? Evidence From Buyout and Venture Capital Funds, " Darden Business School Working Paper, August 2014

When we use State Street data from 1988-2011 to replicate that study, we find very similar results. Exhibit 3 looks at the quartile of the previous fund relative to its peers against the quartile of the subsequent fund in the pre-2000 period. The results show that there was strong persistence. For buyout funds, 41% of the top-quartile funds were in the top quartile in their next fund (if there was no persistence, it would be 25%). Similarly, second- and third-quartile buyout funds are disproportionately likely to subsequently fall into the same performance band. Venture funds also display persistence: for instance, 39% of the top-quartile venture funds repeat.

Exhibit 3: New Fund IRR Quartile (1988-2000)

Strategy	Prev Quartile	Current Quartile			
		1	2	3	4
Buyout	1	41%	35%	12%	12%
	2	29%	36%	29%	7%
	3	7%	36%	36%	21%
	4	25%	38%	13%	25%
Venture Capital	1	39%	24%	20%	17%
	2	27%	24%	22%	27%
	3	31%	23%	23%	23%
	4	17%	25%	38%	21%

Source: State Street Global Exchange℠, as of Q1 2017.

Exhibit 4: New Fund IRR Quartile (2001-2011)

Strategy	Prev Quartile	Current Quartile			
		1	2	3	4
Buyout	1	30%	35%	18%	18%
	2	24%	24%	34%	17%
	3	27%	27%	27%	18%
	4	13%	17%	33%	38%
Venture Capital	1	45%	26%	14%	15%
	2	28%	33%	30%	9%
	3	13%	27%	31%	29%
	4	18%	27%	31%	24%

Source: State Street Global Exchange℠, as of Q1 2017.

Exhibit 4 looks at the same pattern for funds established post-2000. The persistence of buyout funds falls markedly. For instance, only 30% of top-quartile buyout funds repeat, and 24% of the second-tier funds do. The only strong persistence is at the low end, among the worst-performing groups. On the other hand, the persistence of venture funds appears to have gotten stronger rather than weaker with 45% of top-quartile funds repeating.

At a recent roundtable held in Chicago and sponsored by the Notre Dame Institute for Global Investing and the Private Capital Research Institute, a group of limited partners, general partners, and academics gathered to discuss these patterns. Everyone strongly agreed that persistence is harder to find than ever. Therefore, going back to the "usual suspects", such as large VC firms on Sand Hill Road, may no longer be the best play. One LP observer noted that to find consistent performance, it is important to see which partners had the successful deals and to see whether they are still active at the firm.

Academic research supports this observation by finding evidence that investing should be at the partner level. Analyzing close to 1,600 VC firms and 5,000 VC partners, two academic researchers, Mike Ewens and Matt Rhodes-Kropf[2] find that there is strong partner-level performance persistence, i.e., a partner's past investment success does predict future success. In addition, using a database with over 20,000 investments that track VC partners who switch VC firms, the researchers find that the identity of the partner's human capital is two to five times more important than the VC firm in explaining performance. Further, the partner's performance is persistent over time, even after controlling for a large set of individual and VC firm characteristics. This suggests that the partners have some time-invariant skill that is transferable when the partner moves to a new VC firm.

Other roundtable participants suggested that consistent, successful performance often results from advantaged sourcing or is the product of a special, proprietary skill. According to these discussants, product proliferation can sometimes be the enemy of performance. Another participant observed that the best investment firms have a clear understanding of what attributes have made them successful and are proactive in adapting to changing market conditions. One discussant added that is better to avoid specialist funds and to focus more on a "core generalist and satellite specialist" strategy, thus not investing in a highly

[2] Ewens, Michael, and Matthew Rhodes-Kropf, "Is a VC partnership greater than the Sum of its Partners?", *Journal of Finance*, June 2015

focused distressed manager, but seeking that exposure through a generalist with demonstrated capabilities to transact in a distressed situation.

Next, the participants added that it is extremely critical to find private equity firms who take the time to get out there and do the upfront work to decide what to buy. Thus, one discussant stated that there has been a need to re-think the operating-partner role, which historically was viewed more as a second-tier role. Now, the role has evolved to be more important early in the investment evaluation process, as the need for strategic and technical skills has grown. Also, one discussant emphasized the importance of finding private equity firms that have consistently maintained the cultural and social factors of their firm. Another discussant highlighted the need to hire good managers, but recognized that while a variety of tools are used to assess talent, predicting individual success is still extremely difficult.

Lastly, the discussants acknowledged that sometimes luck and getting in early are extremely important factors for success. Following this idea, using a theoretical model, William Cong from the University of Chicago and Yizhou Xiao from Chinese University of Hong Kong[3] demonstrate how luck induces and amplifies fund heterogeneity. If a manager is lucky in her current fund, she may find it easier to raise the next fund on more favorable terms. Also, the good performance may in turn lead investors to being more tolerant towards failures and experimentation, leading to better deals that perpetuate her good performance. Therefore, an initial temporary and random shock (luck) could have a persistent impact on long-run performance, even when the managers do not differ in skills. In fact, one recent empirical paper suggested that to accurately distinguish skill from luck, one would need to examine the performance of at least 25 funds![4]

Persistence of performance has long been a unique aspect of private equity. Given the challenging investment environment, it is more important than ever to understand the phenomenon from a quantitative and qualitative basis.

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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.

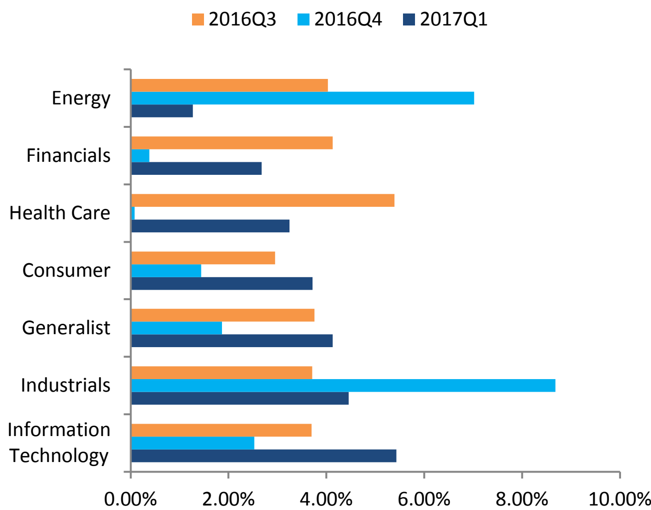
[3] Cong, Lin William and Yizhou Xiao, "Persistent Blessings of Luck", Working paper, June 2017

[4] Korteweg, Arthur, and Morten Sorensen, 2017, Skill and luck in private equity performance, Journal of Financial Economics

CURRENT QUARTER PERFORMANCE SUMMARY – CONTINUED FROM PAGE 1

Looking across sectors, Information Technology led other sectors with a quarterly return of 5.43%, above the 2.53% rate in the previous quarter, as shown in Exhibit 5. Close to 40% of Venture Capital funds belong to the Information Technology sector (Source: State Street Global Exchange[SM], as of Q1 of 2017), which drove the improved Venture Capital performance. Industrials had the second highest return with 4.46%, followed by the Generalist and Consumer sectors (see Exhibit 5).

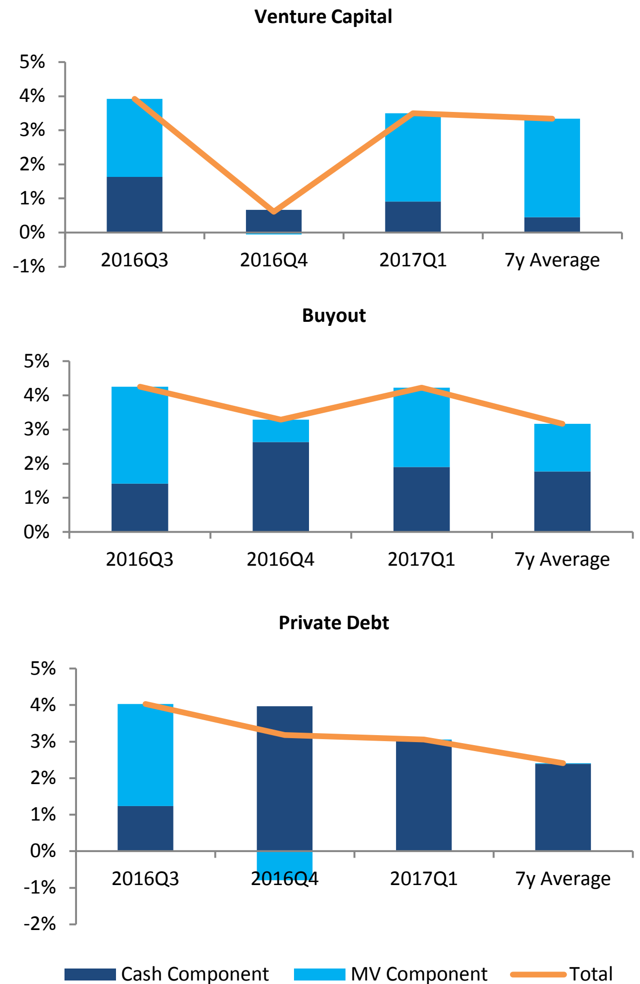
Exhibit 5: Private Equity Sector Returns



Source: State Street Global Exchange[SM], as of Q1 2017.

Over long-term horizons, the cash flows from PE investments determine overall performance. Over shorter horizons, such as a quarter, PE performance is driven by both cash flows and valuation changes. The quarterly IRR can be approximately decomposed into: (1) a net cash flow component, defined as net cash flow divided by the beginning asset value of the quarter, and (2) a delta in remaining market value component, defined as the change in remaining asset value divided by the beginning asset value of the quarter. In Exhibit 6, we examine the decomposed returns of the main strategies in recent quarters and compare them to their averages of the last 7 years between Q1 of 2010 and Q1 of 2017 capturing post crisis period. This reveals that, over the past 7 years, venture capital funds generated a 3.34% return on a quarterly basis; however, most of that gain came from unrealized valuation increases (see Exhibit 8). On the other hand, private debt funds returned 2.41% per quarter on average, mostly in the form of realized cash flows. Buyout funds had a balanced mix of realized cash flow returns and unrealized NAV increases. Returns in each individual quarter could deviate from the average, as we see with the venture capital funds, which posted better returns in Q1 of 2017 driven by NAV increases.

Exhibit 6: Return Decomposition by Strategy (2010Q1 – 2017Q1)



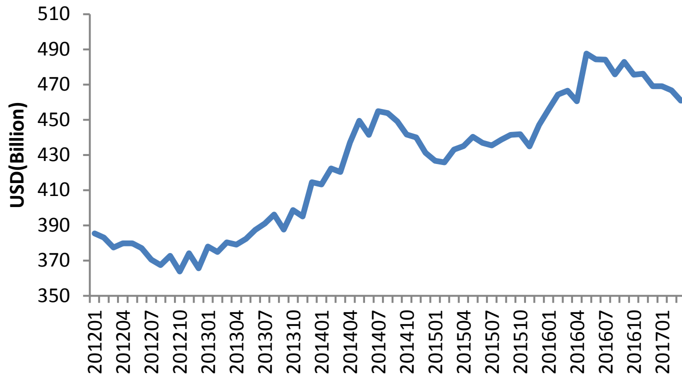
Source: State Street Global Exchange[SM], as of Q1 2017.

Cash Flow Activity

Since mid-2012, there has been an overall trend towards an increase in dry powder. However, an early sign of that trend's reversal started in May 2016 and continued into Mar 2017. During that time, total dry powder dropped from a peak of $488 Billion down to $461 Billion (see Exhibit 7). This was

driven by contributions during these months that outweighed the size of new funds. It is still too early to say whether this is a temporary phenomenon, like what happened during the second half of 2014, or if it will develop into a new trend. But it will be closely monitored in the months ahead.

Exhibit 7: Monthly Dry Powder (Jan 2012 – Mar 2017)

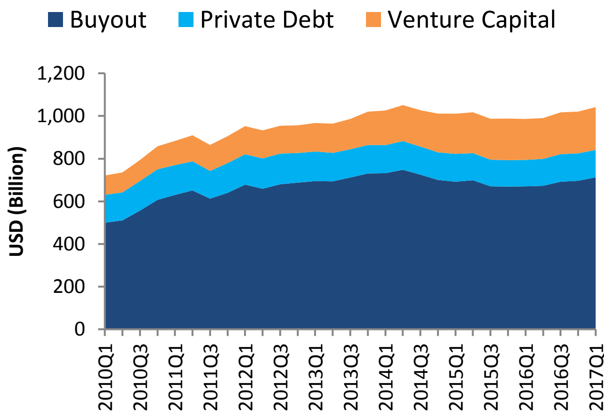


Source: State Street Global Exchange[SM], as of Q1 2017.

Valuations

The net asset value of the Buyout funds peaked in 2014 at $750 Billion followed by a decline for 2 years to $670 billion. From Q1 of 2016, the net asset value rose again and breached the $700-Billion line in Q1 of 2017. The net asset value of the Venture Capital funds continued the same upward trend we saw a few quarters ago. Now it has grown to $200 Billion in Q1 of 2017 (see Exhibit 8).

Exhibit 8: Net Asset Value by Strategy (2010Q1 – 2017Q1)



Source: State Street Global Exchange[SM], as of Q1 2017.

ABOUT THE GX 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 GX Private Equity Index ("GXPEI") 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, GXPEI 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 GXPEI 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 2,600 funds representing more than $2.5 trillion in capital commitments as of Q1 2017.
- Global daily cash-flow data back to 1980.
- The Index has generated quarterly results since Q3 2004.
- Published approximately 100 days after quarter-end.

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