STATE STREET.

Private Equity Insights

FIFTH EDITION | Q3 2016

CURRENT QUARTER PERFORMANCE SUMMARY

The State Street Private Equity Index (GXPEI) posted an overall return of 3.80% in the third quarter of 2016, with all three strategies generating their highest quarterly returns in 2016 (see Exhibit 1).

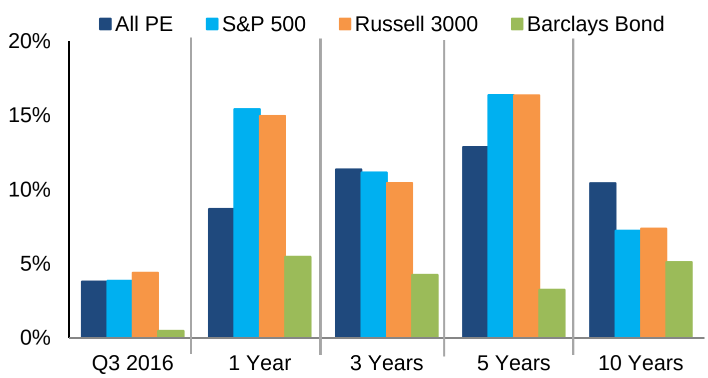
Exhibit 1: Private Equity Performance by Strategy

	All PE	Buyout	VC	Private Debt
2016 Q3	3.80%	3.86%	3.72%	3.60%
2016 Q2	2.70%	3.41%	0.28%	2.61%
2016 Q1	0.65%	1.25%	-1.49%	0.75%
2016 YTD	7.21%	8.74%	2.20%	6.95%

Source: State Street Global Exchange[SM], as of Q3 2016.

Compared to the major public market indices, GXPEI outperformed the Barclays Bond Index over all horizons and the US equity market over the ten-year horizon (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 Q3 2016).

Continued on page 3.

EMERGING MARKETS PRIVATE EQUITY IN THE TRUMP ERA

Insights from Harvard University And the Private Capital Research Institute

PCRI The Private Capital Research Institute

By Leslie Jeng and Josh Lerner

The surprise victory of Donald Trump has led to introspection and recalibration across asset classes—and emerging markets private equity is no exception. The expected limitations on movements of people and trade, combined with the new president's more general "America First" emphasis, are likely to have substantial implications for the health, industry profile, and strategic priorities of many emerging economies. While a thorough analysis of the implications of these changes is beyond the scope of this essay, this is a ripe time to re-examine the state of emerging markets private equity.

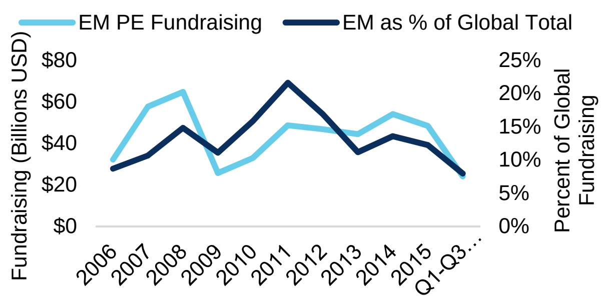
As Exhibit 3 shows overleaf, even before the presidential election the share of private equity going to emerging markets had fallen from the peaks seen in 2008 and 2011. Institutional and individual investors' enthusiasm for investing in many emerging economies has waned, particularly in markets that have experienced economic and/or political turmoil, such as Brazil, Russia, and Turkey.

In large part, this decline is an understandable response to the disappointing returns that limited partners (LPs) have garnered from these investments.

Continued on page 2.

EMERGING MARKETS PRIVATE EQUITY IN THE TRUMP ERA – CONTINUED FROM PAGE 1

Exhibit 3: Emerging Markets Private Equity Fundraising



Source: Emerging Markets Private Equity Association.
Note: Numbers include private equity, private credit, private infrastructure and real assets.

Exhibit 4 provides State Street's calculations of the returns of private equity funds domiciled in various geographies through September 30, 2016, the endpoint we use in all analyses presented here. It highlights that over the three-, five- and ten-year horizons, private equity returns in emerging markets have lagged those in the United States. Judging from this underperformance, many LPs have eschewed the currency and political risks that emerging markets pose.

Exhibit 4: Performance of Private Equity by Region

Region	Number of funds	1 year IRR (%)	3 year IRR (%)	5 year IRR (%)	10 year IRR (%)
U.S.	2003	8.00	11.86	13.72	10.64
Developed Europe + UK	333	10.82	9.50	10.91	9.73
EM	278	9.63	11.69	10.98	10.52
MSCI Emerging Markets		17.21	-0.21	3.39	4.28
S&P 500		15.43	11.16	16.37	7.24

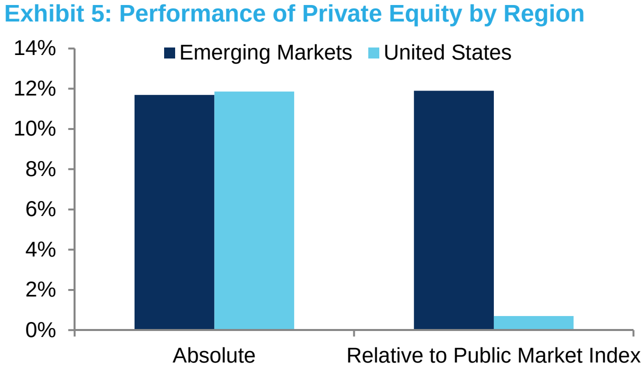
Source: State Street Global Exchange[SM], as of Q3 2016.

As one digs into these numbers, however, a more complex picture emerges. The history of private equity is littered with examples where markets have started with very modest returns, and then improved as LPs and general partners become more experienced and sophisticated. To cite one example, the limited available data suggests that the returns of the U.S. private equity industry were rather modest in the 1940s, 1950s, and 1960s, before improving substantially in subsequent decades. [1]

Emerging markets private equity has suffered from a boom-and-bust pattern, where investors have poured capital into emerging markets that were the "flavor of the moment" at exactly the wrong time. While all alternative investments have been subject to such an "overshooting" phenomenon to a greater or lesser extent, these patterns have been particularly dramatic in these markets. China, India and Brazil are just three examples. The same patterns hold on a more macro basis. When we look at the correlation between (a) the share of private equity raised in each vintage year that went to emerging markets and (b) the difference between the (pooled) internal rate of return for funds raised in that year domiciled in emerging markets and in the U.S., the correlation coefficient using State Street data between 2005 and 2016 is -0.22. When we look only at mature funds (for the years 2005—2011 from the same source), the correlation is -0.20.

The relative performance of emerging markets private equity looks very different when examined net of public market benchmarks. The public markets in the U.S. have been far more buoyant than the emerging market indices over the past decade (see Exhibit 4). Exhibit 5 compares the returns of emerging markets private equity and US private equity over the past three years on an absolute basis and net of a major benchmark (the MSCI Emerging Markets Index an2d the S&P 500, respectively). When examining net-of-market performance, there is a meaningful outperformance only in emerging markets! If we believe that (a) the outperformance by emerging markets private equity is sustainable (e.g., due to the inefficiency of the markets and the returns from operational interventions) and (b) emerging markets public equity returns will equilibrate to a level comparable to U.S. levels, then Exhibit 5 may lead to a very different conclusion from the initial one that Exhibit 3 suggested.

Exhibit 5: Performance of Private Equity by Region



Source: State Street Global Exchange[SM], as of Q3 2016.

[1] Lerner, Josh, Ann Leamon, and Felda Hardymon (2012), Venture Capital, Private Equity and the Financing of Entrepreneurship, Hoboken, NJ: John Wiley & Sons.

These analyses cannot answer, of course, the question of how emerging markets—and the funds that invest in them—will fare in what promises to be tumultuous next four years. But they do suggest the need for a careful consideration of this category.

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. **Leslie Jeng** is Director of Research of the Private Capital Research Institute.

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.

CURRENT QUARTER PERFORMANCE SUMMARY – CONTINUED FROM PAGE 1

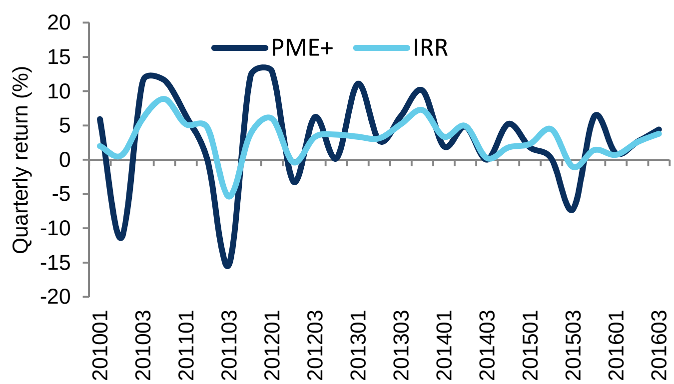
From Exhibit 2 we also see that private equity returns have lagged public equity market in the shorter horizon, particularly the one and five years. However, this may not be a fair comparison. To shed additional light, we regressed the GXPEI quarterly IRR against quarterly public market equivalent (PME+[2]), and derived the alpha of each PE strategy (see Exhibit 6). The PME+ is the opportunity cost had the PE cash flow been invested in the chosen public benchmark index. Exhibit 7 shows the quarterly IRR time series and quarterly PME+ of All PE since 2010.

Exhibit 6: Regression Analysis: PE Performance vs. Public Market Equivalent Returns (2010 Q1 – 2016 Q3)

	All PE	Buyout	VC	Private Debt
Alpha	1.95	1.95	2.39	1.35
t-stats	*(5.17)*	*(4.61)*	*(3.98)*	*(4.13)*
Beta	0.33	0.35	0.28	0.32
t-stats	*(6.58)*	*(6.16)*	*(3.82)*	*(7.32)*
R^2	0.63	0.60	0.37	0.68

Source: State Street Global Exchange[SM], as of Q3 2016. All PME+ are calculated using Russell 3000 total return index, except PME+ for VC, which is calculated using NASDAQ total return index for a higher R^2.

Exhibit 7: All PE Quarterly IRR and Public Market Equivalent Return (Q1 2010 – Q3 2016)



Source: State Street Global Exchange[SM], as of Q3 2016. PME+ is calculated using Russell 3000 total return index. Quarterly returns are not annualized.

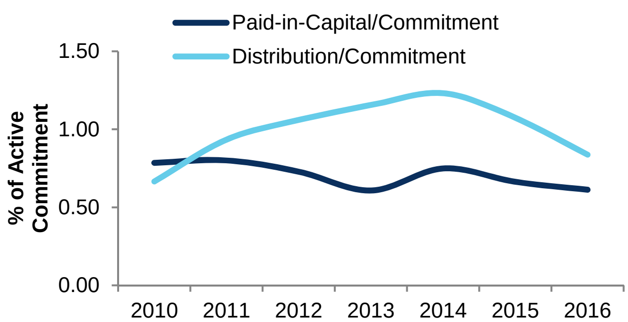
[2] Rouvinez (2003), Private Equity Benchmarking with PME+. *Venture Capital Journal*, August: 34-38.

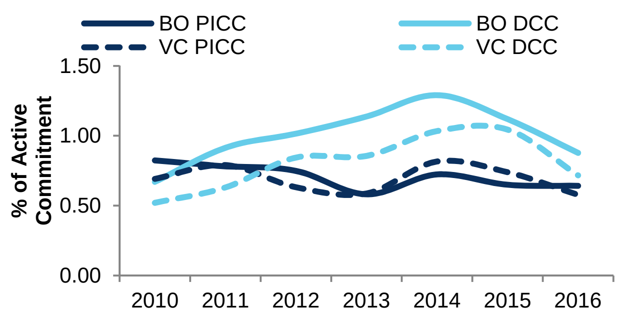
On a beta-adjusted basis, we find that all private equity strategies have positive and significant alpha of 1-2% quarterly during the period Q1 2010 through Q3 2016. Of course, while we recognize this is a simplistic approach that warrants further considerations (such as the extent of the reporting lag, smoothed valuation, leverage and fees in PE), hopefully, it provides further perspective in understanding recent PE performance.

Cash Flow Activity

The average monthly distribution to commitment has exceeded the paid-in-capital to commitment in the past 6 years (see Exhibit 8). This gap between distribution and contribution is more prominent in Buyout than Venture Capital. As exit activity has been on a decline in the recent two years after its peak around 2014 and 2015, this trend may be at an inflection point.

Exhibit 8: Average Monthly Cash Flow Activity Ratios (All PE, BO and VC)





Source: State Street Global Exchange[SM], as of Dec 2016.

Valuations

Movements in public markets can have both a direct and an indirect impact on private equity valuations and return. What fraction of this quarter's valuations and returns is attributable to the public market movements? Using the regression results in Exhibit 6, we calculated the expected PE return in Q3 2016. Public markets helped lift the returns of all private equity strategies in Q3 2016 (see Exhibit 9). Buyout and Private Debt performed slightly better than the expectation from public market equivalent regressions; Venture Capital, however, was 1.49% below its expectation (see Exhibit 9).

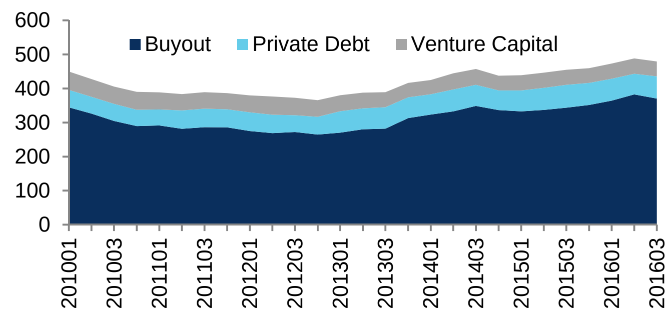
Exhibit 9: Expected PE Return Based on Co-movements with Public Markets

2016Q3	All PE	Buyout	VC	Private Debt
PME+	4.42%	4.42%	10.06%	4.43%
IRR	3.80%	3.86%	3.72%	3.60%
[IRR]	3.41%	3.50%	5.21%	2.77%
IRR- [IRR]	0.39%	0.36%	-1.49%	0.83%

Source: State Street Global Exchange[SM], as Q3 2016.

Since 2013, the unfunded commitment, especially in Buyout funds, has been rising gradually as a result of steady fund raising and GPs' cautious shift to making new and add-on investments (see Exhibit 10). The large pool of dry powder may continue to support valuations.

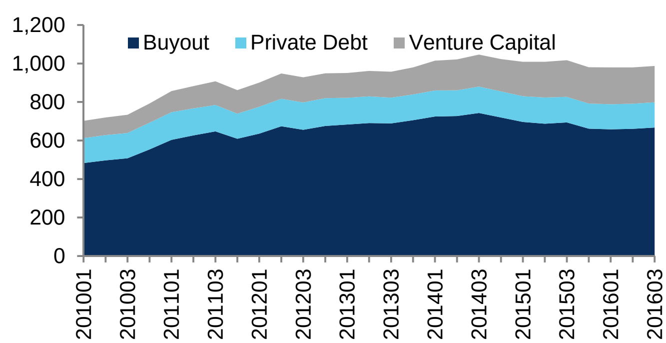
Exhibit 10: Dry Powder ($ Billions)



Source: State Street Global Exchange[SM], as of Q3 2016.

On the other hand, the net asset value of Buyout funds peaked in 2014 and has been on the decline over the last two years, while the net asset value of VC funds increased steadily from ~$90 Billion in Q1 2010 to ~$190 Billion in Q3 2016 (see Exhibit 11).

Exhibit 11: Net Asset Values ($ Billions)



Source: State Street Global Exchange[SM], as of Q3 2016.

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, consistent and unbiased 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 $2.47 trillion in capital commitments as of Q3 2016.
- Global daily cash-flow data back to 1980.
- The Index has generated quarterly results since Q3 2004.
- Published approximately 100 days after quarter-end.

Important Legal Information

State Street Global Exchange℠ and State Street Associates® are trademarks of State Street Corporation (incorporated in Massachusetts) and are registered or have registrations pending in multiple jurisdictions. This document and information herein (together, the “Content”) is subject to change without notice based on market and other conditions and in any event may not reflect the views of State Street Corporation and its subsidiaries and affiliates (“State Street”). The Content provided is for informational, illustrative and/or marketing purposes only and it does not constitute investment research or investment, legal, or tax advice. The Content provided has been prepared and obtained from sources believed to be reliable at the time of preparation, however it is provided “as-is” and State Street makes no guarantee, representation, or warranty of any kind including, without limitation, as to its accuracy, suitability, timeliness, merchantability, fitness for a particular purpose, non-infringement of third-party rights, or otherwise. State Street disclaims all liability, whether arising in contract, tort or otherwise, for any claims, losses, liabilities, damages (including direct, indirect, special or consequential), expenses or costs arising from or connected with the Content. The Content provided is not, nor should be construed as any offer or solicitation to buy or sell any product, service, or securities or any financial instrument, and it does not constitute any binding contractual arrangement or commitment for State Street of any kind. The Content provided is not intended for retail clients, nor is intended to be relied upon by any person or entity, and is not intended for distribution to or use by any person or entity in any jurisdiction where such distribution or use would be contrary to applicable law or regulation. The Content provided may contain certain statements that could be deemed forward-looking statements; any such statements or forecasted information are not guarantees or reliable indicators for future performance and actual results or developments may differ materially from those depicted or projected. Past performance is no guarantee of future results. No permission is granted to reprint, sell, copy, distribute, or modify the Content in any form or by any means without the prior written consent of State Street.

For additional disclaimers and disclosures, please reference the below link:
http://www.statestreet.com/utility/SSA-legal-disclosure.html

© 2017 STATE STREET CORPORATION, ALL RIGHTS RESERVED.