Global Exchange

STATE STREET.

Private Equity Insights

SEVENTH EDITION | Q3 2017

CURRENT QUARTER PERFORMANCE SUMMARY

The State Street Private Equity Index (GXPEI) continued its strong momentum by posting a 3.85% return in the third quarter of 2017. Buyout funds continue to lead all three strategies with a gain of 4.11%. Private Debt saw a moderate increase of 2.84%. Venture Capital fund posted a gain of 3.57%, up from 1.84% in Q2 (see Exhibit 1).

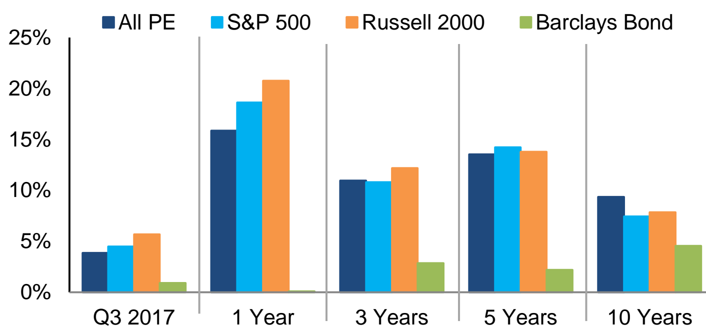
Exhibit 1: Private Equity Performance by Strategy

	All PE	Buyout	VC	Private Debt
2017 Q3	3.85%	4.11%	3.57%	2.84%
2017 Q2	3.96%	4.73%	1.84%	3.08%
2017 Q1	3.95%	4.23%	3.50%	3.10%
YTD	12.05%	13.41%	9.13%	9.23%

Source: State Street Global Exchange[SM], as of Q3 2017.

As shown in Exhibit 2, GXPEI outperformed the Barclays Bond Index over all horizons and the S&P500 – a proxy for the US equity market – over the three- and ten-year horizons. Over shorter horizons (quarterly, one-year) and the five year horizon, the GXPEI underperformed the S&P500 (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 2017).

Continued on page 3.

PRIVATE CAPITAL AND TAXES: A LOOK BACKWARDS AND FORWARDS

Insights from Harvard University and the Private Capital Research Institute

By Leslie Jeng and Josh Lerner

2018 began with the private capital industry, along with individuals and corporations more generally, scrambling to understand the implications of the Tax Cuts and Jobs Act signed by President Donald Trump on December 22, 2017. As the soaring equity indices suggested, the changes in the tax plan appear favorable to business in general, with a 14 percentage-point reduction in the corporate tax rate to 21 percent and a more favorable treatment for many pass-through entities.

Much of this enthusiasm has stemmed from the reduction in the business tax rates. This reduction is likely to increase the profitability of many companies and therefore boost valuations, as we have seen in the public markets. For investors with large equity holdings (whether public or private) this has been good news. (Of course, these changes suggest that future investment will be more expensive.)

The reception from private equity and venture capital investors to the new legislation has been more mixed. The American Investment Council (the trade association for a significant portion of the private equity industry) has applauded the bill, in part because the much discussed recharacterization of carried interest as ordinary income was largely avoided. But concerns have been voiced about the changes to the tax benefits from interest payments, most notably an interest expense deductibility cap.

Continued on page 2.

It thus seems a propitious time to review the academic literature about the impact of tax policy on private capital. In this newsletter, we will look at what the existing research has to tell us, and what the lessons for the impact of the recent reform may be. While there are fewer papers on this important topic than might be desired (or anticipated), the literature does provide us some lessons, which we highlight below.

Lesson 1: Tax Policy Matters!

The academic literature finds evidence that taxes may indeed have an impact on private capital activity. Probably most persuasive is the work of Jeng and Wells, which looks at how the level of investment activity varies across countries and time.[1] They argue—and show empirically--that tax structure can play a major role in venture capital development. They cite Germany in the 1990s as an example where the unfavorable tax structure (such as no capital gains tax preferences, the 56% corporate tax rate, trade taxes, and capital transaction taxes) impaired the country's ability to reach the level of activity of countries such as the United States.

Gompers and Lerner,[2] in their examination of activity across the fifty states, come to a similar conclusion. Differences in state tax rates, along with other considerations, affect the attractiveness of venture capital activities. These factors explain much of both the willingness of investors to commit money and the desire of entrepreneurs to launch new firms.

Lesson 2: Capital Gains Taxes are Particularly Important

Researchers have highlighted one set of taxes in particular: capital gains taxes. The fact that capital gains taxes impact private capital activity might initially seem surprising since limited partnerships are flow-through entities, where the taxes are paid by the investors, and not the limited partnership. Moreover, many investors in private capital funds are largely tax exempt, such as endowments and pensions.

Nonetheless, capital gains have long been perceived as a major determinant of venture capital activity. For instance, Gompers and Lerner's study finds a negative relationship between capital gains taxes and commitments (i.e., increasing capital gains taxes consistently reduces venture capital commitments). They find evidence that is consistent with an earlier conjecture by Jim Poterba[3] who finds that the effect is driven more by changes in the demand for venture capital, rather than by the willingness of investors to provide capital. As we noted above, many of the critical providers of capital to venture capital funds are unaffected by shifts in the capital gains tax rate. But the attractiveness of a decision to leave a senior position in a corporation for a start-up is likely to be very much affected by the relative tax rates on capital gains and ordinary income. If capital gains were taxed at a dramatically lower rate, the after-tax proceeds that an entrepreneur would receive in the event of a successful exit would be more substantial. Gompers and Lerner's evidence suggests that lower capital gains taxes (relative to those on ordinary income) make it more attractive for high-quality managers and technologists to start their own companies, thus increasing the demand for venture capital. This is consistent with Bock and Watzinger (2017)[4], who find evidence that higher capital gains are associated with fewer start-ups financed and a lower probability of an investor receiving follow-up funding.

Thus, to the extent that the new tax plan narrows the gap between ordinary income (which has fallen for the top bracket from 39.6% to 37%) and capital gains, whose taxation remains unchanged, the tax law may affect the supply of high caliber entrepreneurs. But the effect is likely to be muted by the relatively small size of the change, as well as the complexity of the new caps on the deductibility of state taxes, which treat capital gains and ordinary income in a myriad of different ways.

Lesson 3: The Tax Deductibility of Interest is a Major Consideration for Buyouts

Research has also highlighted the importance of taxes for the success of the buyout industry. The seminal paper here is the analysis of Steve Kaplan[5], who shows that the benefits of interest expense deductions are an important source of wealth gains in management buyout transactions. This study calculates that in pubic-to-private transactions, the value from

[1] Jeng, Leslie and Philippe Wells, "The determinants of venture capital funding: Evidence across countries," *Journal of Corporate Finance*, 6, 2000, 241-289.
[2] Gompers, Paul and Josh Lerner, "What drives venture capital fundraising?," *Brookings Papers on Economic Activity, Microeconomics*, 1998, pp. 149-204.

[3] Poterba, James M., "Venture capital and capital gains taxation," in *Tax Policy and the Economy*, ed. Lawrence H. Summers, 3, 1989, 47–67.
[4] Bock, Carolin, and Martin Watzinger, "The capital gains tax: A curse but also a blessing for venture capital investment," *Journal of Small Business Management,* forthcoming, 2017.
[5] Kaplan, Steven, "Management buyouts: Evidence on taxes as a source of value," *Journal of Finance*, 24, 1989, 217-254

the tax deductibility of interest is between 14% and 129% of the premium paid to the pre-buyout shareholders, with a median of 40.2%[6]. Similar conclusions emerge on the value gains actually created by 395 middle-market buyouts which Acharya and his co-authors calculated to find that almost half of the total gains are driven by tax savings from the deductibility of interest in the additional debt taken on by the transactions.[7] To the extent that interest deductions are less valuable (due to the lower marginal tax rates), the tax policy changes will erode the "private equity advantage."[8]

The new tax law also limits the deductibility of interest payments. In particular, corporations would only be able to deduct corporate interest expenses that totaled 30% of EBITDA (earnings before interest, taxes and depreciation and amortization expense) in the first four years after the law's enactment, and only 30% of EBIT (earnings before interest and taxes) afterwards. Thus, in the case of US buyouts, such a change would increase tax payments and decrease net income. According to Moody's Investors Service Inc., "Around a third of all leveraged buyouts are expected to be worse off under the new tax system."[9] The share of transactions impacted would grow if interest rates continue to rise. One likely consequence is more limited use of leverage in buyouts going forward, with a consequent decrease in valuations, which appear to track leverage closely.[10]

Of course, this reduction in leverage use is not just confined to buyouts. According to John Graham and Young Jun Song of Duke's Fuqua School of Business, while larger businesses may only lose 5% of their deductions, the "typical business" is projected to lose 41% of its interest deductions.[11] S&P Global Ratings estimate that almost 70% of companies have debt levels that are more than five times EBITDA and would be negatively impacted by the interest deductibility cap.[12]

Conclusion

Given the long-term nature of private equity investments, the full impact of the new tax laws will not be immediately realized. But the academic literature suggests a variety of impacts. While the impact on venture capital is likely to be muted, for buyout firms that historically have relied on the tax deductibility of debt, the consequences will be more dramatic. Interest deductibility will become less valuable, due to the lower marginal corporate tax rates, and the extent of interest that can be deducted will be capped in many cases. It is likely that this policy change will accelerate the transition of the private equity industry from financial engineering to an operational emphasis that is already well underway at many groups.

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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.

[6] Assumes a marginal tax rate of 46%. Assuming a marginal tax rate of 30% and 15%, the median premium paid is 26.2% and 13.1%, respectively.

[7] Acharya, Viral, Oliver Gottschalg, Moritz Hahn, and Conor Kehoe, "Corporate governance and value creation: Evidence from private equity," *Review of Financial Studies,* 26, 2013, 368-402.

[8] A similar point has been frequently made in analyses of earlier tax reforms, such as by Greenwald Bruce C. and Joseph E. Stiglitz, "Impact of the changing tax environment on investments and productivity: Financial structure and the corporation income tax," *Journal of Accounting, Auditing and Finance*, 4, 1989, 281-297.

[9] Franklin, Joshua, "US Tax curbs on debt deduction to sting buyout barons," *Business News,* December 21, 2017

[10] Axelson, Ulf, Tim Jenkinson, Per Strömberg, and Michael Weisbach, "Borrow cheap, buy high? The determinants of leverage and pricing in buyouts," *Journal of Finance*, 68, 2013, 2223–67.

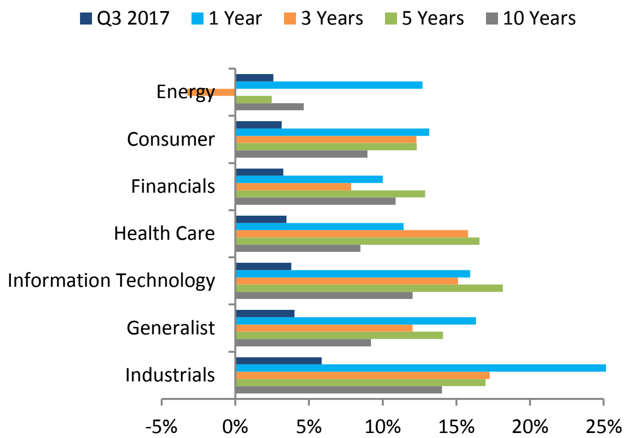
[11] Lahart, Justin, "The one tax change that really bites businesses," *Wall Street Journal,* December 19, 2017.

[12] Franklin, Joshua, "US tax curbs on debt deduction to sting buyout barons," *Business News,* December 21, 2017.

CURRENT QUARTER PERFORMANCE SUMMARY – CONTINUED FROM PAGE 1

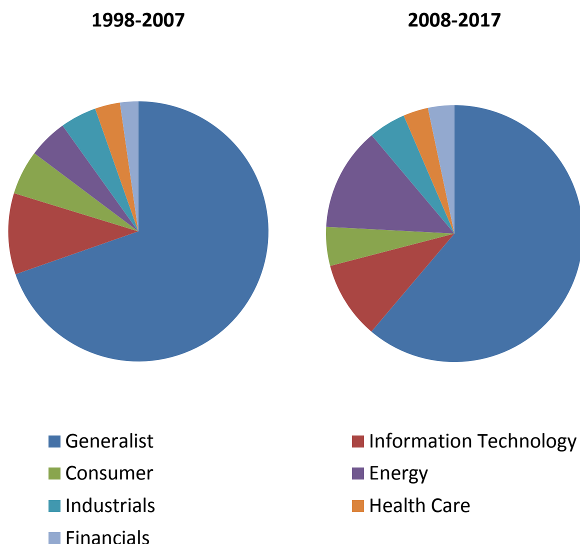
This quarter, Industrial-focused funds continued to lead other sectors with the highest return of 5.87% as shown in Exhibit 3, followed by Information Technology with a 3.80% gain. Energy-focused funds continued to be the worst performing sector in Q3 even though their return rose to 2.59% from 0.26% of Q2.

Exhibit 3: Return of Sector Focused Private Equity Funds



Source: State Street Global Exchange℠, as of Q3 2017.

Exhibit 4: Capital Raised by Fund Sector Focus (Vintage Year 1998-2007 vs. Vintage Year 2008-2017)



Source: State Street Global Exchange℠, as of Q3 2017.

Despite the relatively poor performance in recent years, Energy-focused funds have raised the most capital compared to other sectors in the past ten years (see Exhibit 4). Their share of total funds raised nearly doubled between 2008 and 2017 compared to the previous decade. Ex-Energy, share of funds raised was largely flat. Information Technology and Consumer continue to be the top sectors PE funds focus on; Industrial, Financial and Health Care sectors remain relatively small and stable.

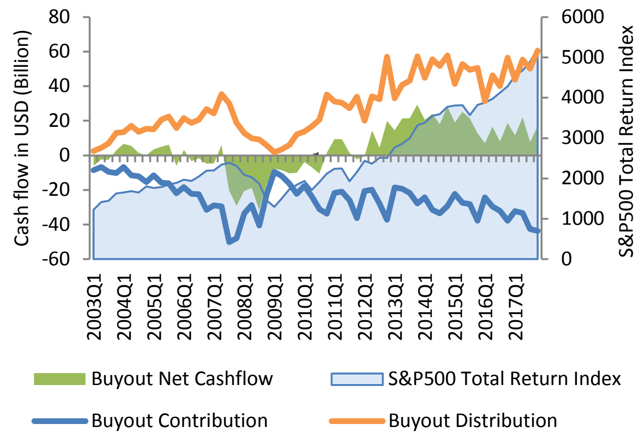
Cash Flow Activity

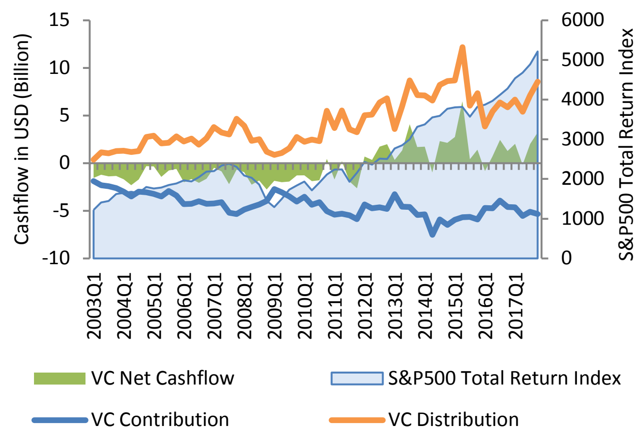
Looking at 2017, both capital call and distribution cash flow activity increased after a minor slowdown within 2015 and 2016, coinciding with the public market movements. The gap between distributions and capital calls also widened, maintaining the upward trend of positive net cash flow to investors that has been evident since 2012.

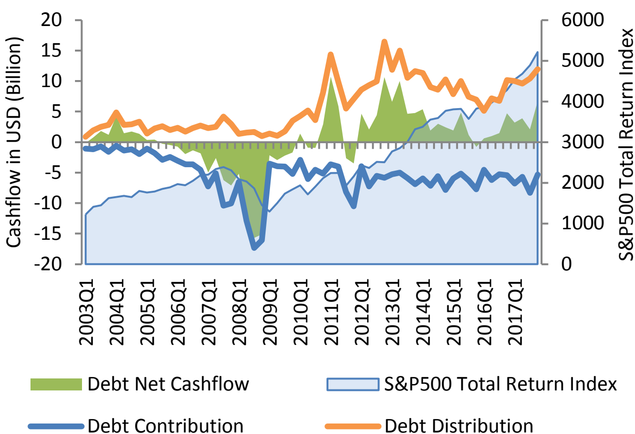
The co-cyclicality between private equity cash flows and the broader market conditions has been documented by Robinson and Sensoy (2016) using data between 1984 and 2010[13]. Including the latest data up to 2017Q4, Exhibit 5 shows the aggregated capital call, distribution, net cash flow (i.e. distribution – capital call) in recent 15 years and S&P500 total return index as a proxy for the broader market. Similar to Robinson and Sensoy (2016), we observe the co-cyclicality between private equity cash flow activities and public market conditions. Both distributions and capital calls ramped up during the private equity boom years of 2003-2007, followed by a bust during the financial crisis but recovering thereafter. The distributions seem more sensitive to public market movements than capital calls, resulting in negative net cash flows in market downturns and positive net cash flows in the upturns. The net cash flows of Buyout and Debt funds, in particular, appear to be more cyclical than Venture Capital funds in the past 15 years.

[13] *Robinson, David T., Sensoy, Berk A. "Cyclicality, performance measurement, and cash flow liquidity in private equity" Journal of Financial Economics, Volume 122, Issue 3, December 2016, 521-543*

Exhibit 5: Net Cash Flow (Left) vs. S&P500 Total Return Index (Right) (2013Q1 – 2017Q3)







Source: State Street Global Exchange[SM], DataStream, as of Q3 2017.

Valuations

Europe Buyout funds exhibited a strong performance in the past few quarters, with a USD-denominated return of 6.36% in Q3 of 2017. As EUR/USD continues to climb, it is interesting to observe how the foreign exchange rate contributes to returns compared to the local market. We measure the FX impact as the difference between their USD-denominated quarterly IRR and EUR-denominated counterpart, and calculate Long-Nickels Public Market Equivalent (PME) using MSCI Europe Index. The FX impact and the local equity index separately explained 67% and 8%, respectively, of the volatility in USD-denominated returns during the period from 2010Q1 to 2017Q3 (see Exhibit 6). Combined together, these two factors explain close to 75% of the volatility. Thus the foreign exchange rate is playing a larger role than the European equity market in determining the USD-denominated return of the Europe Buyout funds. Other factors such as private equity sector allocation and illiquidity premium contributes to the remaining volatility and the 3.19% alpha of Europe Buyout funds.

Exhibit 6: Regression Analysis: Europe Buyout USD-Denominated Quarterly IRR vs. FX Impact and Europe PME (2010Q1 to 2017Q3)

Model	1	2	3
Intercept	3.77	2.67	3.19
t-stats	7.07	2.84	6.43
EURO FX Impact	0.80		0.78
t-stats	7.80		8.83
Europe PME		0.27	0.24
t-stats		1.90	3.23
Adj R-Squared	66.60%	8.02%	74.80%

Source: State Street Global Exchange[SM], as of Q3 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 2,800 funds representing more than $2.7 trillion in capital commitments as of Q3 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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