FEG INSIGHT

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PRIVATE INVESTING AND THE J-CURVE

Short-Term Pain for Long-Term Gain

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> *" There are only two options regarding commitment. You're either in or out. There is no such thing as life in-between."*
>
> – PAT RILEY

I am an avid golfer and spent the summer of 2017 changing my putting stroke and alignment in an effort to improve my game. I spent countless hours practicing my new putting routine—both on the course and at home—and gradually began to see positive results. To test my abilities, I signed up for the U.S. Amateur qualifier, hoping my newly-improved putting capabilities would help me qualify. As I stepped out on to the first green of the tournament, however, uncertainty crept into my brain. That uncertainty led to a lack of commitment, which led to three putts on the first hole, and two missed putts from inside four feet on the first three holes. I eventually re-committed myself, but the damage was done. After reflecting on this event in conjunction with recent conversations surrounding allocations to private strategies, I realized that going through a swing change in golf has many parallels to investing in private markets.

In both cases:

1. Circumstances can worsen before they improve.
2. Results may take time to bear fruit.
3. Investors (and golfers) are always trying to improve (whether total portfolio investment returns or score on the golf course).

CIRCUMSTANCES CAN WORSEN BEFORE THEY IMPROVE

One could take several months, or even years, to become completely comfortable with a swing change in golf, and completing the construction of a private equity program can take even longer. This is a true test of patience and commitment. For investors that are new to private strategies, here is a brief summary of the headwinds the strategy produces in the first few years of development. For private investments, the first several years consist of mostly negative cash flow. After an investor "commits" to a private vehicle, generally speaking, the capital is gradually "called" by the investment manager and is used to cover management fees, startup costs, and investment purchases. Much like starting a new business, the early stages are cost-intensive before returns are realized. Over the course of several years, however, the fund manager seeks to improve those investments through operational enhancements and growth initiatives. Once fully mature, those early investments are sold and capital is returned to the original investor.

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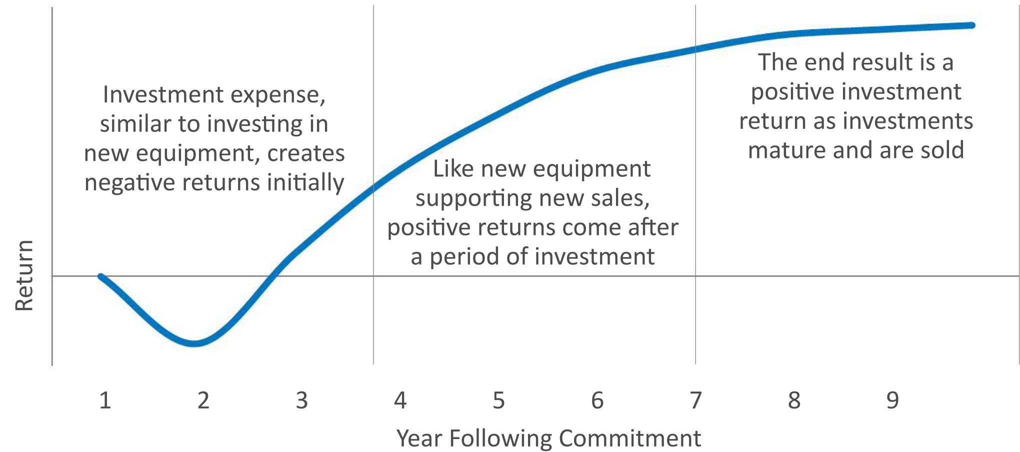
As a consequence of the negative early cash flow pattern, what is termed the J-curve typically affects an investor's realized performance. Although private equity has shown the ability to outperform public markets over the long term, returns for private equity fund investments are negative in earlier periods for the reasons previously outlined: investments take time to mature and early capital calls are used for management fees and other startup expenses. Thus, not only do these initial costs provide downward pressure on an investor's initial return, but investments made by a private equity manager could take time to be fully integrated into the target business, delaying positive long-term results.

THEORETICAL PERFORMANCE "J-CURVE"



Source: FEG; for illustrative purposes only

Anyone that has taken a golf lesson knows that the first few attempts of a new golf swing can produce a wild array of results. There are no shortage of chunks, skulls, and chili dips in the days, weeks, and months following the incorporation of a swing change. Allocating to private equity is no different. From a return standpoint, the J-curve is a headwind that investors must be comfortable with when beginning to invest or increasing an allocation to private strategies. In addition, the J-curve can be even more painful—both psychologically and on a returns basis—in raging bull markets; not only do investors see weak results from the private portfolio due to the initial costs and expenses, but the rest of their risk assets are likely surging.

To put some numbers behind this, the following chart details the median IRR for private equity mandates by vintage year as of December 31, 2017. The average IRR across vintage years 2012-2014, i.e., the more mature funds, is 14%. The average IRR across vintage years 2015-2017, i.e., the younger funds, is 1%. Investors that have increased their commitment pacing over the last three years, or are just starting to allocate to private equity, may be feeling as though they have been dealt a bad hand. Not to mention, the annualized return of the S&P 500 for calendar years 2015-2017 was over 11%.

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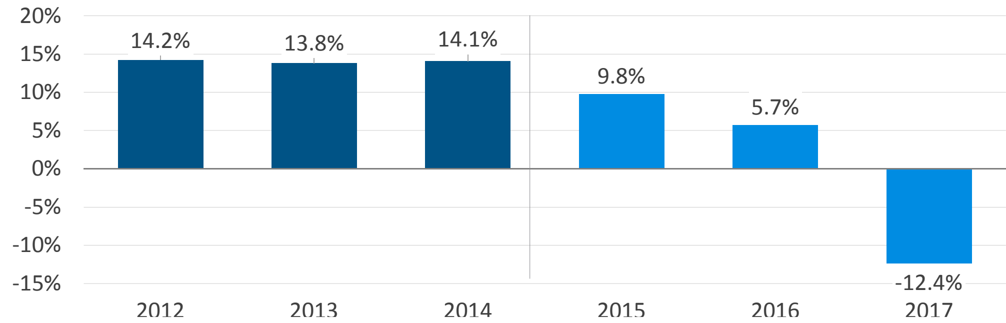
MEDIAN IRR BY VINTAGE YEAR
As of December 31, 2017



Data source: ThomsonOne

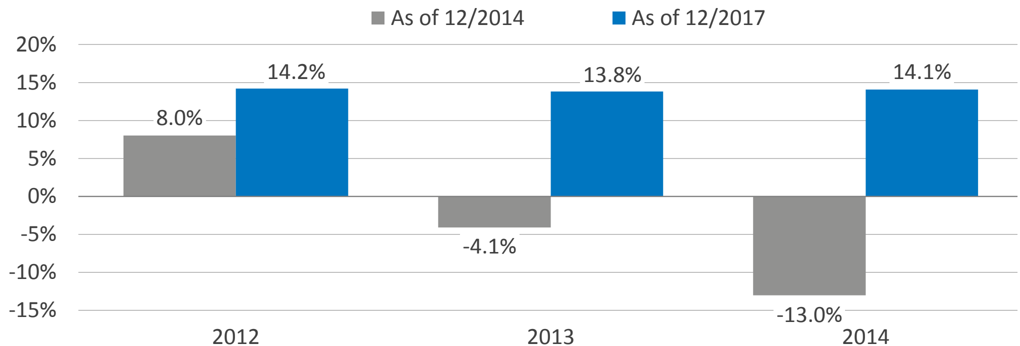
Given the amount of capital raised in private strategies in recent years, it is likely that investors are facing these challenges:

1. Private portfolios are producing underwhelming or even negative returns due to the impact of the J-curve.
2. Funding sources—likely public equities such as the S&P 500 Index—have produced above average results.
3. Private portfolios are underperforming the more mature private indices.
4. Little to no progress has been made in reaching targets to private strategies, given the increase in value across the rest of the portfolio.

Before making a rash decision and giving up on private investments because of short-term performance, however, it is helpful to review the performance of those 2012-2014 vintage year funds—but not as of 2017. Instead, examining the performance of those strong vintage years as of 2014 indicates that investors who committed capital from 2012-2014 would have felt similarly to how some investors feel today after suffering the impacts of the J-curve.

The following chart shows the median IRR for private equity mandates by vintage year as of 2014 and 2017 and clearly demonstrates the headwind that the J-curve produces in private equity in the short term. While the exceptional results produced by private equity commitments across 2012-2014 are evident as of 2017, investors who reviewed performance of those investments in 2014 were likely underwhelmed and distraught.

MEDIAN IRR BY VINTAGE YEAR



Data source: ThomsonOne

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RESULTS MAY TAKE TIME TO BEAR FRUIT

Given that the majority of investment portfolios continue to be allocated to traditional investments in public markets, and most institutions have little control on the timing of when they receive bequests, time-weighted returns are typically used for reviewing the performance of the total portfolio.

These annualized results aggregate the performance information of all the underlying investments in a portfolio and summarize a point-to-point, time-weighted gain or loss from the investment portfolio.

			ANNUALIZED		
	QTR	1 YR	3 YR	5 YR	10 YR
Total Fund	-0.2%	7.5%	6.2%	7.2%	6.1%

For illustrative purposes only

The amount of drag the J-curve can have on an investor's total portfolio performance and the length of that drag can vary depending on how aggressive the institution has been in committing capital to reach its target allocation. As an example, the table below includes calendar year, time-weighted returns of an institution's actual private portfolio in its first four years of existence. In the example, the institution was moving methodically toward a 5% target to private capital.

	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Private Capital Return	-19.6%	-23.4%	5.0%	16.4%
Allocation	0.6%	0.8%	1.6%	2.1%
Contribution to Total Portfolio	-0.1%	-0.2%	0.1%	0.3%

For illustrative purposes only

Even though the allocation to private strategies is very small relative to the total portfolio, the negative absolute return generated is still a meaningful on an absolute basis. If the institution had moved more aggressively towards an even larger target, the J-curve impact would have been even more significant. An investor moving towards a target to private capital that is 10 percentage points higher than the current allocation should not be surprised to see a drag of over 50 to 100 basis points in aggregate on their total portfolio return for the first two to three years on an absolute basis. Generally, investors should expect to make their way out of the J-curve three to five years after commitment pacing begins or is increased to reach a higher target, at which point investors should have positive contribution from the private portfolio.

Imagine if the table results in Year 1 and Year 2 occurred during a period such as 2016 and 2017. In those two years, the S&P 500 produced a compound return of 36% and mature private equity portfolios—measured by the ThomsonOne Private Equity Index—produced a compound return of 34%. Thus, not only can investors have doubts about the private allocation after reviewing the first two years of time-weighted returns in isolation, but the opportunity cost of not investing in the S&P 500, or not already having a mature private equity portfolio, can crystallize the investors' hindsight bias. When comparing to those institutions with mature private equity portfolios or a higher allocation to public stocks—the alternative to private equity in this example—relative performance can suffer. This may not be an easy thing to explain to stakeholders. A lag of this magnitude could very easily move a portfolio from top quartile to below median in any fiscal year.

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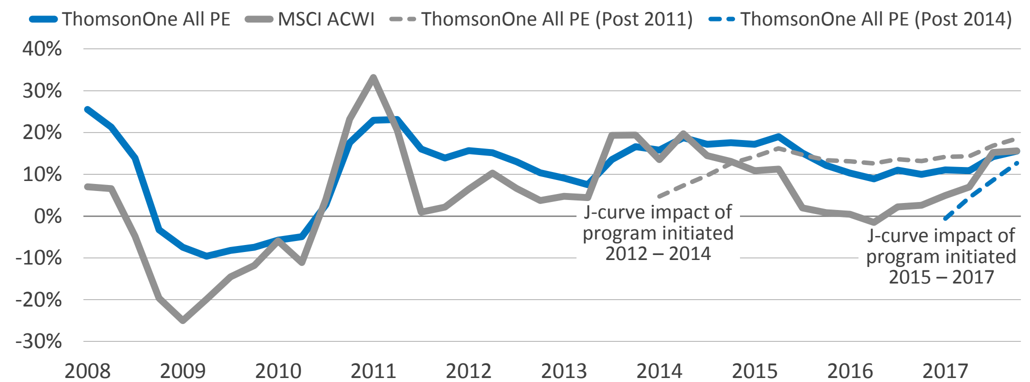
To round out this point, the Rolling Two-Year Performance chart shows returns for four separate time series:

1. ThomsonOne All Private Equity – An all-encompassing, global, asset-weighted time series of private equity strategies.
2. MSCI All Country World Index (MSCI ACWI) – A global, market capitalization-weighted public equity index.
3. ThomsonOne All Private Equity (Post-2011) – Similar to the ThomsonOne All PE index, but including only funds raised after 2011.
4. ThomsonOne All Private Equity (Post-2014) – Similar to the ThomsonOne All PE index, but including only funds raised after 2014.

ROLLING TWO-YEAR PERFORMANCE
As of December 31, 2017



Data sources: ThomsonOne, MSCI

This chart depicts a few of the concepts that have previously been discussed. Over the majority of rolling time periods, mature private equity portfolios have outperformed the public market index. In addition, the early returns of private equity portfolios tend to be underwhelming. When reviewing the gray dashed line, in the first two-year period of reported performance—remember, this only includes vintage years starting in 2012—the line is below that of a more mature private portfolio and global public equities. By 2016, the impact of the J-curve was reduced, and the time-series outperformed public markets. The blue-dashed line is the return series of those private strategies raised starting in vintage year 2015, which corresponds with many investors' timing for increasing private strategies. Once again, the returns of these investments have not only underperformed the mature private equity index, but public markets as well. Although this has likely been a painful period for some, this chart is intended to show that it will likely not last indefinitely, underperformance has happened before, and it was resolved with time.

By employing diligence and patience in the commitment pacing process, an investor should only have to experience this short-term pain in the early years of the private program, or after a major increase in the allocation to private capital. The chart shows an example IRR path for an institution that was through the J-curve, but recently made a material increase to its target allocations to private capital. The institution has experienced the success of a strong private capital program and understands that it is sowing seeds for future success. If done properly, the short-term ramifications of increasing the private capital program today will lead to larger successes when these investments mature.

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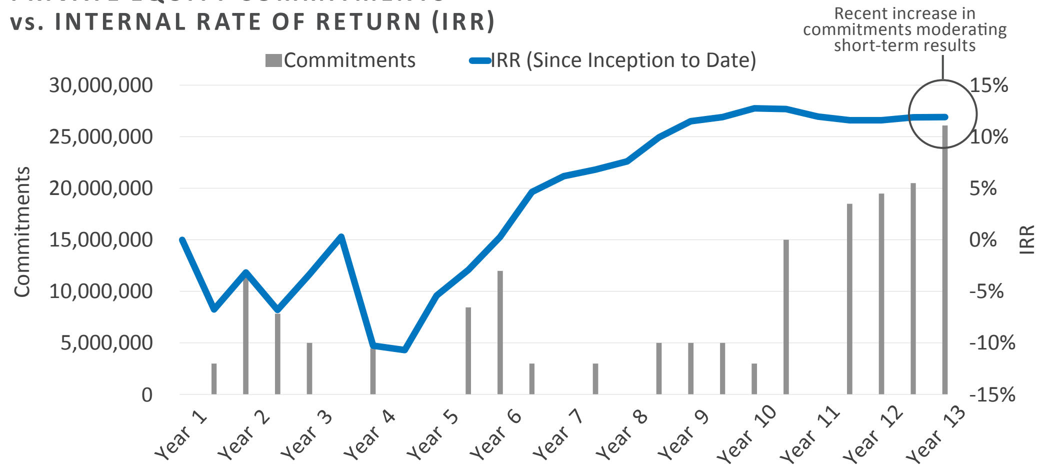
PRIVATE EQUITY COMMITMENTS vs. INTERNAL RATE OF RETURN (IRR)

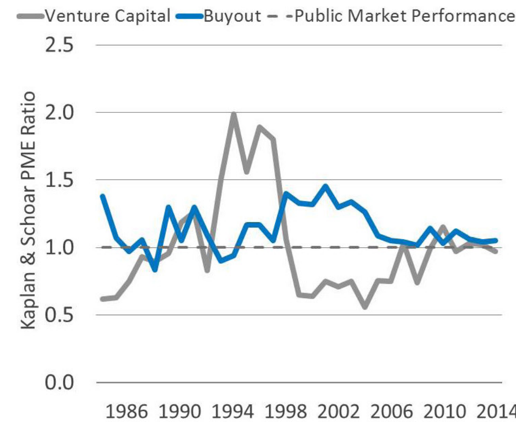


Source: FEG; for illustrative purposes only

INVESTORS ARE ALWAYS TRYING TO IMPROVE

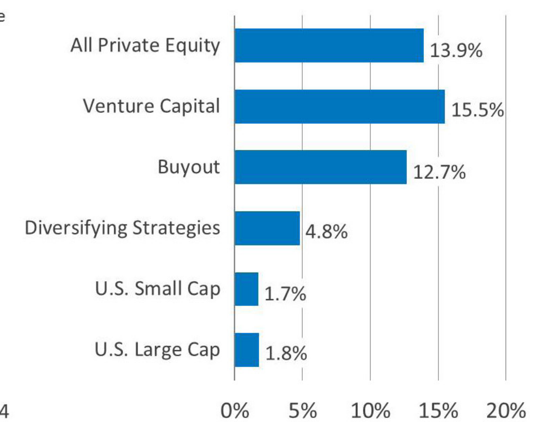
In the process of changing my putting routine, there were times when I thought it may make sense just to go back to my old habits. I had to constantly remind myself that things were going to get better, and that before undertaking the change, my putting had resembled Happy Gilmore's. Many investors who have recently increased allocations to private equity may be questioning themselves the same way that I did in the midst of my changes. One should remember that, in addition to the themes highlighted above, private equity has shown the ability to outperform public markets over the long term, and the objective is to produce the highest risk-adjusted return for the portfolio over the long term. The charts below highlight the ability of private strategies to outperform public markets and the importance of devoting time and attention to selecting the highest quality managers.

PRIVATE EQUITY PERFORMANCE vs. PUBLIC MARKETS
Public Market Equivalent (PME) Ratios



Data sources: Dr. Steven Kaplan, Burgiss; K&S PME calculates the future value of contributions and distributions, as if they were invested in the relevant index, and evaluates the future values, along with the NAV, as a ratio

PERFORMANCE DIFFERENCE BETWEEN TOP AND BOTTOM QUARTILE
Ten Years Ending September 30, 2017



Data sources: Lipper, HFRI, Thomson One; Private Equity Data for vintage years 2005 through 2014, performance available through September 30, 2017, returns in USD, net of fees

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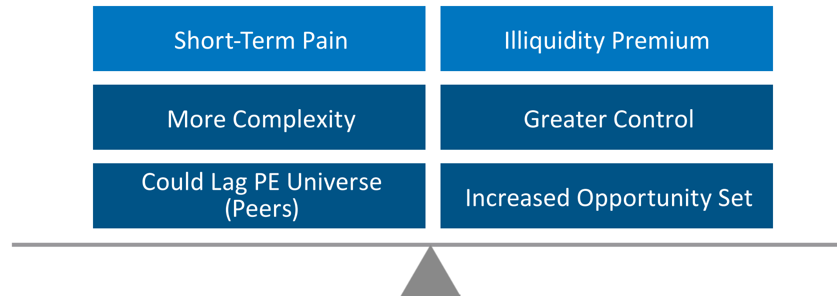
Incorporating private capital can be a balancing act of short-term risks such as underperformance and career risk versus the long-term rewards of potential outperformance and greater impact for mission of institution. Understanding these risks is important for investors assessing the efficacy of private capital within their investment program. The J-curve can make even those most committed investors question the merits of certain asset classes, especially in periods where public markets are exceeding expectations.



In summary:

- Circumstances can worsen before they improve—private equity may look bad when public equity markets are roaring, but that will not likely last forever.
- Results may take time to bear fruit—it may take three to four years for there to be a positive impact from private strategies.
- Investors are always trying to improve—private strategies have shown the ability to outperform over the long term, and those institutions with higher allocations to private strategies have historically produced some of the best results.

In the process of building a private program, or making a swing change in golf, there may be times when you consider changing course. Things may get worse before they get better. Returns in public markets may have you considering why you undertook this endeavor in the first place. Remember, private equity is a long-term investment, and your focus is on generating long-term success. I spent a considerable amount of time working on my putting abilities in 2017, only to let a brief stint of uncertainty and doubt unwind all of my progress. There is no guarantee the private strategies will outperform, however those investors that have experienced the most success historically have been disciplined in their commitment pacing, understood the themes outlined above, and not allowed these topics to overly impact their investment strategy.

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APPENDIX

Time-Weighted Returns vs. Internal Rate of Return

It is important to understand the different metrics that are used in judging investment performance. More specifically, the difference between a time-weighted return (TWR) and the internal rate of return (IRR). As a reminder, time-weighted returns eliminate the impact of cash flows on the return stream in an effort to show traditional manager performance on an apples-to-apples basis. Time-weighted returns are most appropriate for comparisons of managers/strategies that do not control the impact of inflows/outflows into the fund. This is the most commonly used metric for measuring total portfolio performance and judging the managerial skill of non-private investment managers—i.e., where the investor controls the inflows and outflows.

On the other hand, the internal rate of return (IRR) measures the impact of cash flows on the investment return. Consider an investor that commits $10 to a private equity fund and receives an initial capital call of $2 on 1/1/2017. In this example, the capital call is nearly entirely used for startup costs and operating expenses, therefore the investor's net asset value remains primarily unchanged. This is the only capital called in the first year. At the end of the year, the investor receives a statement reflecting the current account value of $0.20—remember, nearly all the capital call was used for startup fees and expenses. Given that only a single cash flow has occurred, the IRR and TWR are identical at the end of 2017, and equal to -90%.

	INVESTOR CASH FLOW	ANNUALIZED TIME-WEIGHTED RETURN	IRR
Initial Investment 1/1/2017	$ 2.00		
Ending Value 12/31/2017	$ 0.20	-90%	-90%
Subsequent $8.00 Investment 1/1/2018	$ 8.20		
ENDING VALUE 12/31/2018	**$16.20**	**-56%**	**48%**

On January 1, 2018, the investment manager calls a subsequent $8 from the investor to purchase an underperforming company. After just one year, the company is well above expectations and can be sold for over $16. Over the course of the two-year period, the investor sent $10 to the investment manager and was returned $16.20. On a TWR basis, the initial year ($2 called) produced a return of -90%, and the second year ($8 called) produced a return of 97%. For TWRs, a large initial loss requires a much greater percentage point gain for the portfolio to recover. In total, the annualized time-weighted return for the two-year period is -56%. However, by incorporating the impact of cash flows, the IRR shows a return of 48%, rewarding the investment manager for their ability to generate superior results after "calling" a much larger amount from the investor to begin the second year.

PERCENT GAINS NEEDED TO RECOVER FROM LOSSES

Initial Loss	Gain Needed
8%	8.7%
25%	33%
30%	43%
40%	67%
50%	100%

Data source: Investor's Business Daily

For simplicity purposes:

- Time-weighted return – Eliminates the impact of cash flows; easy to calculate; commonly referenced; easily comparable.
- IRR – Incorporates the impact of cash flows; harder to calculate; also known as dollar-weighted return.

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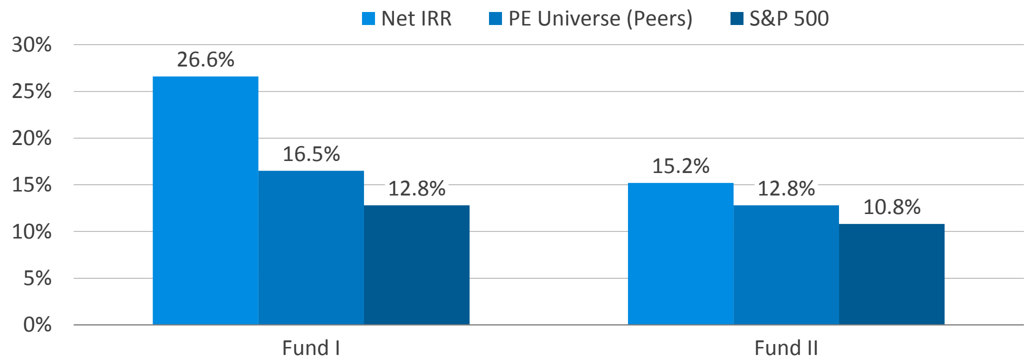
Most investors will agree that it makes more sense to review the results of individual private managers and composites such as private equity, private debt, etc., using the internal rate of return methodology for the reasons previously outlined. For evaluation and purposes, those figures can be compared against peers, along with a "public-market equivalent" IRR.

IRR vs. PE UNIVERSE (PEERS) AND PUBLIC MARKET EQUIVALENT
As of September 30, 2017



Data sources: FEG, S&P, ThomsonOne

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