Global PE & VC Fund Performance Report

as of 2Q 2018

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Introduction

Private market strategies showed varied results in 2Q 2018, with PE ceding the top performance spot—for the first time in nine quarters—to VC. Looking more broadly, private capital funds in aggregate achieved a one-year horizon IRR of 13.8%. Secondaries funds and funds-of-funds (FoFs)—which provide a different access route to private market funds yet are often compared due to their analogous diversification benefits—posted 15.5% and 14.8% one-year horizon IRRs, respectively, and showed comparable performance numbers over trailing one-, three-, and five-year horizons. Real assets and debt were the worst-performing strategies over the past 12 months; however, these two strategies exhibited the lowest standard deviation of rolling IRRs when looking at trailing one-, three-, five-, and 10-year periods.

PE returns exhibited little difference when broken out by geography and size bucket. Performance in Europe dipped the most, though results fell in North America and rest of world (RoW) too. Rolling one-year horizon IRRs for all size buckets above $250 million declined in the quarter as well, with the smallest cohort posting the sole gains. In terms of cash multiples, PE vintages dating back to 2010 continue to show steady gains in DPI and TVPI. Over the past 12 months, 2015 vintage PE funds posted the highest TVPI gains at 0.16x. Finally, GPs continue distributing capital at breakneck speed, distributing nearly $200 billion to LPs through the first half of 2018—though this is a slowdown from 2017's record-breaking pace.

Looking to VC performance, the rolling one-year horizon IRR topped all other private market strategies at 18.1%. Larger funds continued to outperform their smaller counterparts on a rolling one-year IRR basis, thanks in part to ever-growing valuations among larger, late-stage companies. In terms of cash multiples, 2010 and 2011 vintages saw the greatest one-year growth in TVPI. With the proliferation of mega-deals ($100M+ for VC), VCs have drawn down capital at an incredible rate. Contributions to venture funds in the first half of 2018 outpaced annual values for all preceding years since 2000, aside from 2017. Regarding distributions to LPs, outsized exits have helped to keep net cash flows positive, a dynamic we expect to persist.

Wylie Fernyhough
Analyst, PE

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Analyst, VC

IRR by fund type

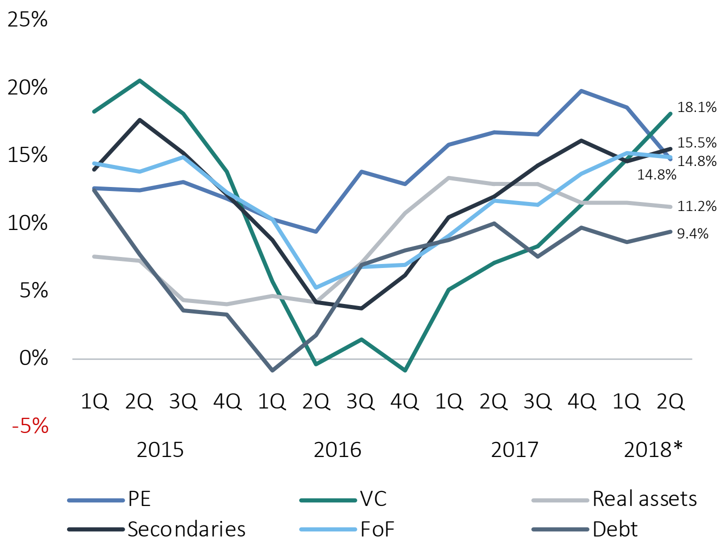
One-year performance through 2Q 2018 saw varied results, with PE—posting a 14.8% one-year horizon IRR—abdicating its performance throne to VC after a nine-quarter reign. The top performer over the trailing 12 months has been VC, achieving a one-year horizon IRR of 18.1%, a considerable turnaround after posting negative one-year horizon IRRs twice in 2016. The staggering leap was driven by the mountains of cash deployed in recent years, driving median deal sizes and valuations upward across all investment stages and series in 2018.

Secondaries, posting a one-year horizon IRR of 15.5%, was the second-best performing asset class over the past 12 months. Years of outperformance, coupled with diversification benefits and J-curve mitigation, have pushed investors into this space at a pace rarely witnessed in private markets, with transaction volume nearly doubling over the past two years.[1] As unprecedented amounts of capital are seeking deals, industry insiders are starting to worry about mispricing, putting future outperformance in doubt. FoFs, which are also seen as a method of diversified private markets investing, performed similarly, earning a 14.8% return. Debt (9.4%) and real assets (11.2%) lagged the other asset classes. Performance in the coming quarters may be challenged. Debt markets seized up in 4Q 2018 due to investor concerns over less central-bank stimulus globally and corporate indebtedness, and real assets returns were negatively affected as energy prices (energy makes up a substantial portion of the real assets category) fell precipitously in the fourth quarter because of global supply and demand worries.

Looking at longer timeframes, the nuances and more holistic performance picture of each asset class become clearer. PE, while not the top performer over the past one-year horizon, has outperformed all other asset classes spanning three-, five-, and 10-year horizons. This longer-term view also shows the variability of venture returns. Just as venture returns are more volatile than other asset classes over the past 10 years, returns within VC vary widely, with the difference between top quartile and bottom quartile often spanning 15 percentage points or more. FoFs and secondaries have nearly mirrored each other across the past one-, three-, five-, and 10-year horizons. This similar level of performance contrasts with a dramatic rise in secondaries fundraising and fall in FoFs.

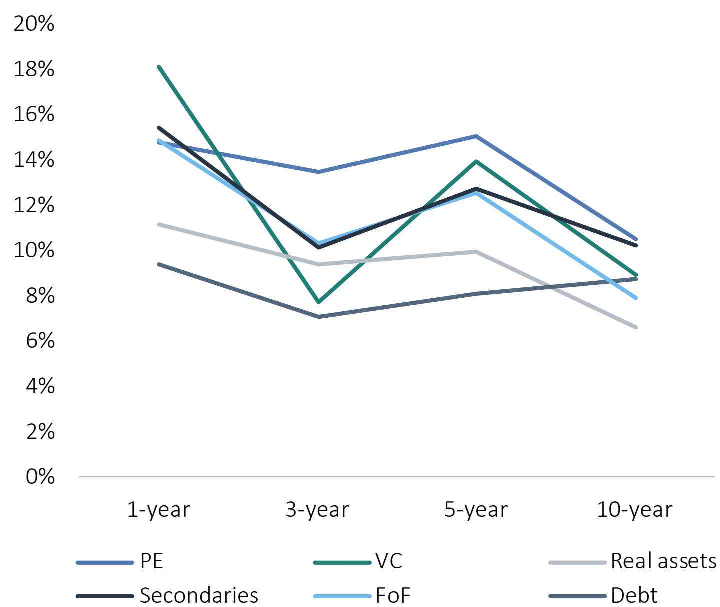
Not only did real assets and debt lag in the most recent one-year horizon, these strategies have both landed in the bottom half for performance spanning the past three-, five-, and 10-year horizons. However, during a period of economic expansion—when equity typically performs best—it is not surprising that debt would fall behind. Additionally, debt has generally seen higher cash distributions than PE funds across vintages, providing an incongruent return profile. Overall, these asset classes have exhibited stability and typically outperform in a recessionary environment, which we have not seen in the years following the global financial crisis (GFC).

Global rolling one-year horizon IRRs by fund type



Source: PitchBook
*As of June 30, 2018

Global horizon IRRs by fund type



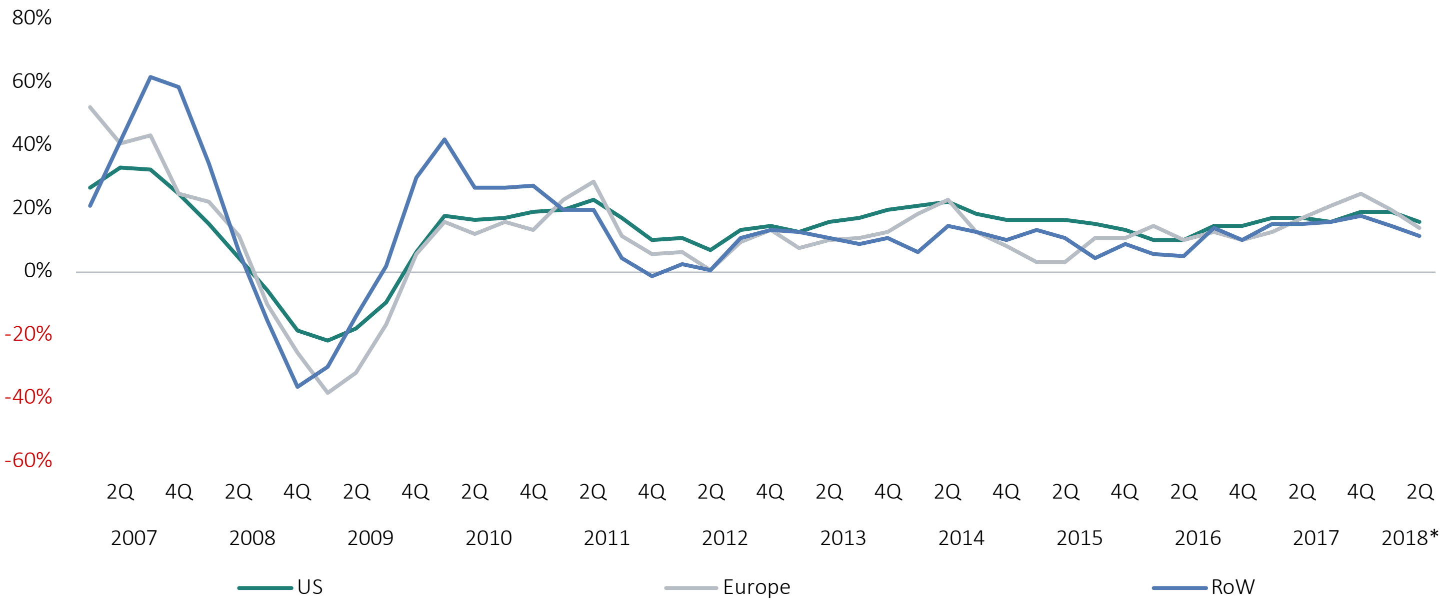
Source: PitchBook
*As of June 30, 2018

1: "The Private Equity Secondary Market," Coller Capital, 2019

PitchBook

PE fund performance

Global PE rolling one-year horizon IRRs by region



Source: PitchBook
*As of June 30, 2018

Rolling one-year horizon IRRs for PE receded in all global regions in 2Q 2018. North America outperformed Europe and RoW for the first one-year look-back window since 2Q 2017. North American returns clocked in at 15.7%, marginally outperforming public markets during that time.[2] 2Q saw North American markets march upward while indices returned to stability, a hallmark of North America's near-decade-long recovery. Public markets in Europe were less forgiving over that timeframe, posting approximately flat performance while gyrating substantially. In this light, the performance of European PE is even more impressive. Over the previous 12 months, European PE returned 14.0%, just outperforming the trailing five-year average of 13.3%. Competition for prime assets drove up PE pricing and multiples across the region, contributing to gains rather than mark-to-market increases.

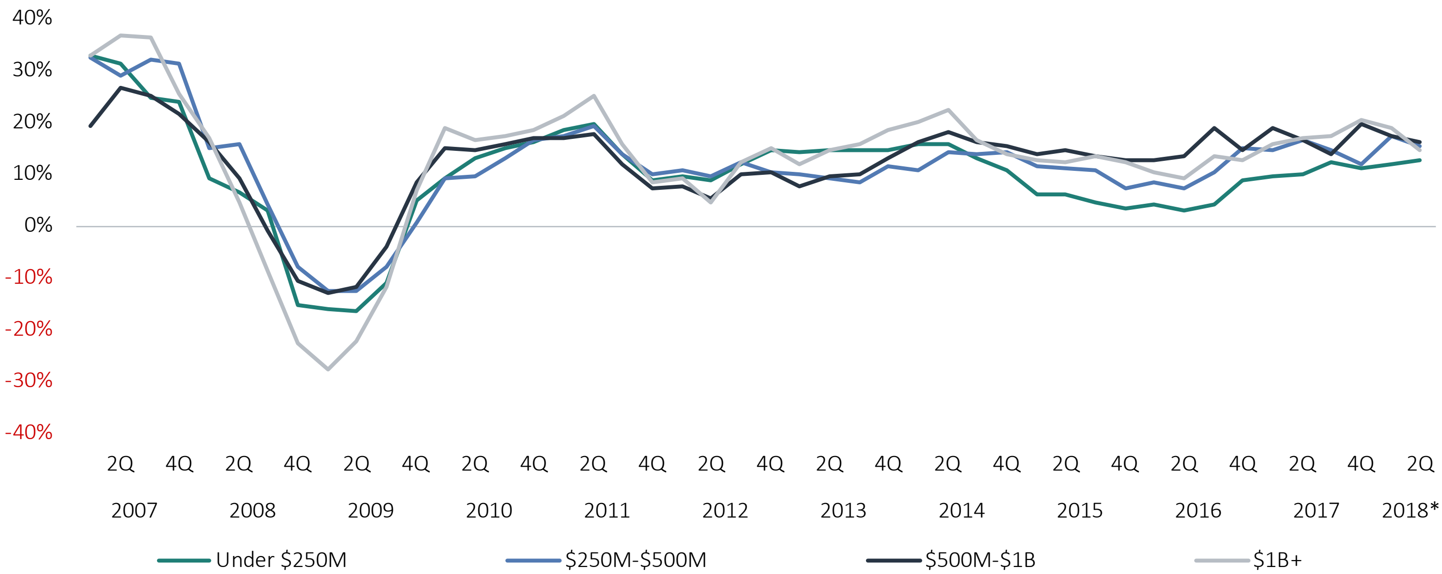
Both European and North American returns once again outperformed RoW, which has generally lagged the other regions over the past five years and posted an 11.1% return. A look back over the past five years shows the true extent of North America's outperformance. Not only did North America post the highest average returns over the past five years (16.3% versus 13.3% for Europe and 11.0% for RoW), but North American PE returns had the lowest standard deviation of rolling horizon IRRs.

Performance among size buckets converged in 2Q 2018, posting the narrowest range of returns in four years with the spread between the best- and worst-performing funds dipping below 4%. Returns in the largest size bucket ($1 billion+) dropped the most compared to the previous quarter, causing this cohort to relinquish its top performance spot for the first time in four quarters. Funds $1 billion and above posted a 14.6% one-year horizon IRR, falling shy of the 16.1% IRR seen in $500 million-$1 billion funds—the top performer over the past 12 months. Funds under $250 million posted the sole increase in one-year horizon IRRs, rising to 12.5%. This may be partly due to small cap stocks slightly outperforming large cap stocks during that timeframe, as mark-to-market practices play a large role in the IRR calculation.[3]

Looking ahead, performance will likely remain challenged in the back half of 2018. Intense market volatility in North American and European markets in recent quarters, especially the fourth quarter, will likely play out in future performance reports. While these bouts of downward equity prices will likely have knock-on effects for PE returns, previous PitchBook research has showed that PE returns exhibit less volatility when compared with public markets, both in bear and bull markets. It is in market conditions similar to what we have witnessed in recent quarters that we expect to see PE post strong levels of relative performance.

2: Morningstar data
3: Ibid.

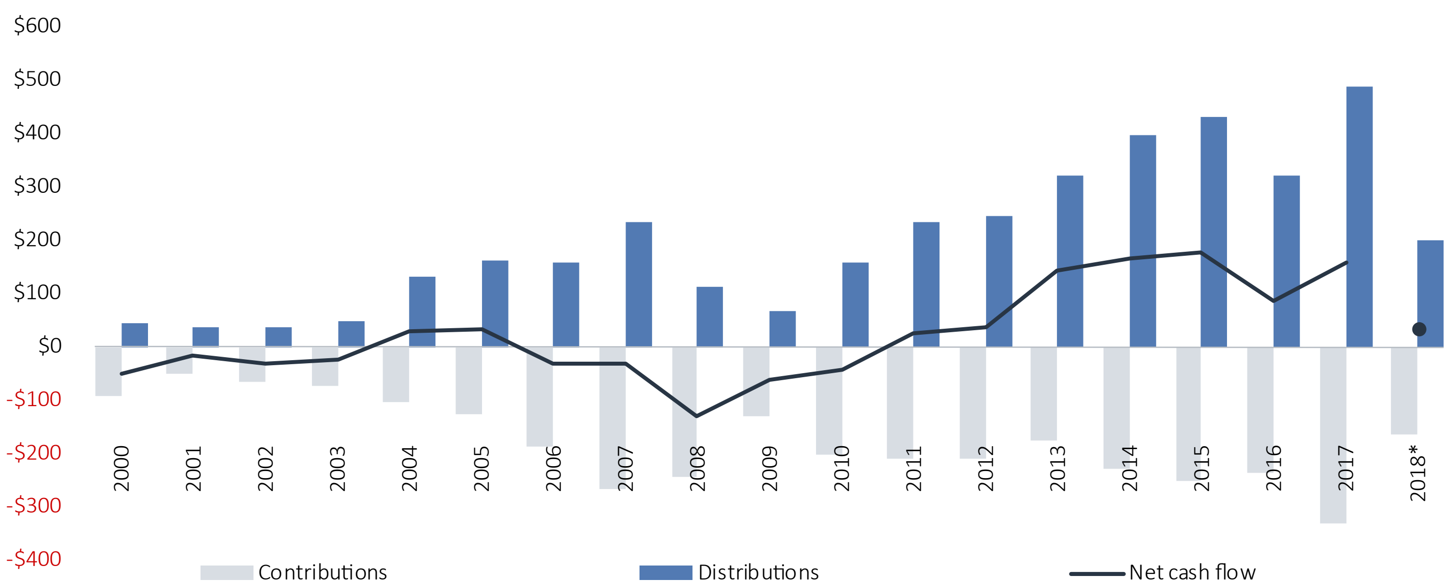
Global PE rolling one-year horizon IRRs by fund size bucket



Source: PitchBook
*As of June 30, 2018

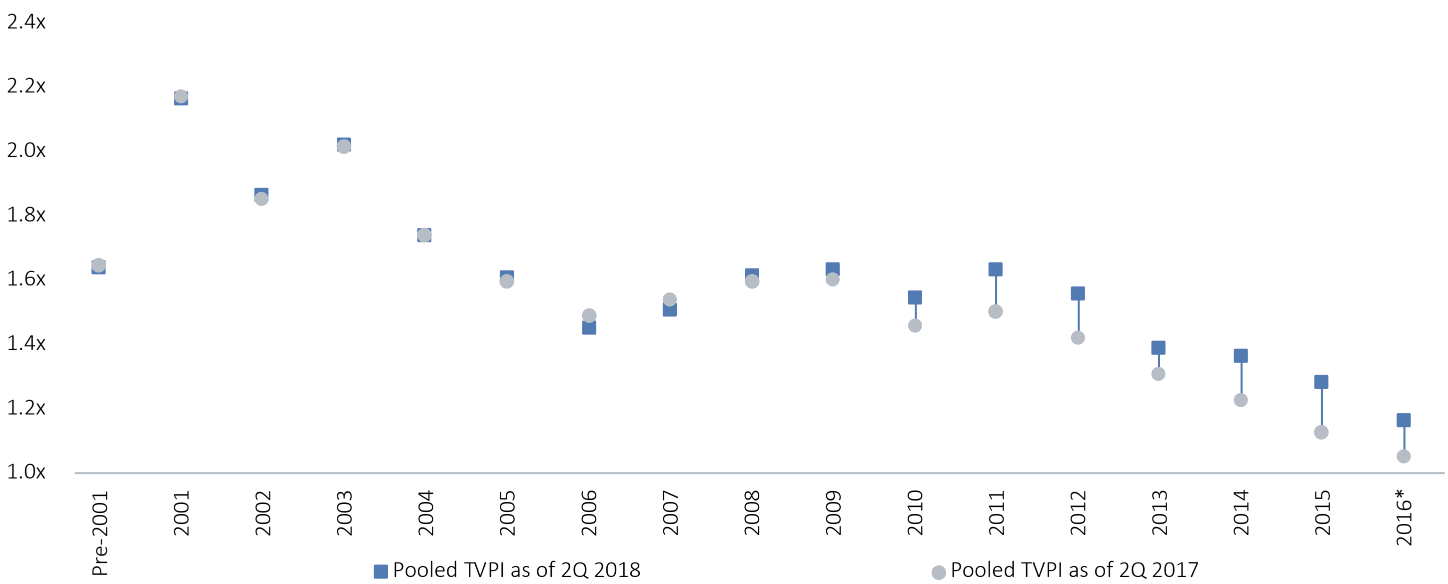
After a record-setting $486.0 billion was distributed to LPs in 2017, cash distributions appear to be continuing this trend, albeit at a slightly slower rate. Through the first two quarters of 2017, we had tracked $243.1 billion in distributions to LPs. Through 2Q 2018, we are showing $199.1 billion in distributions. Driven by fervent exit activity and partial liquidity events—such as dividend recaps and minority sales—GPs may distribute $400 billion or more to LPs for just the third time on record. While distributions are likely to fall shy of 2017's record, contributions are on track to match the highest levels. GPs continue calling down capital at a breakneck rate after years of robust fundraising, and 2018 saw the highest deal count on record, so we expect fund contributions will continue apace.

Global PE fund cash flows ($B)



Source: PitchBook
*As of June 30, 2018

Global PE one-year change in pooled TVPI multiples by vintage

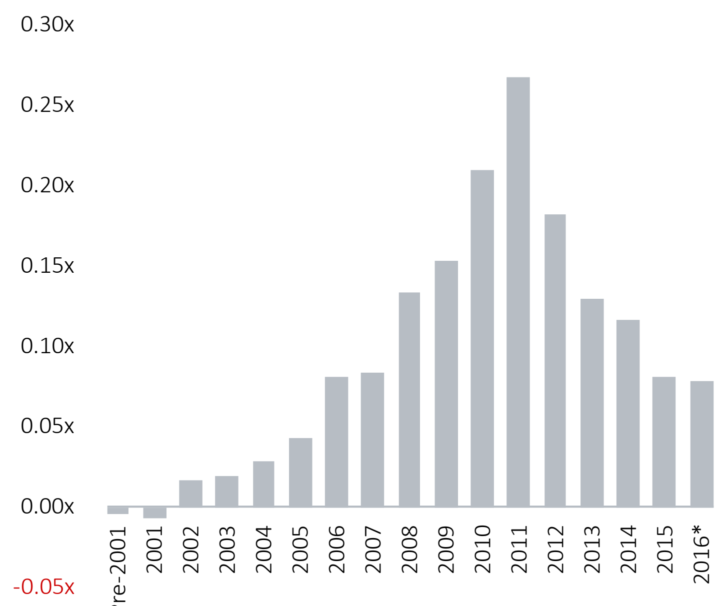


Source: PitchBook
*As of June 30, 2018

TVPI gains from 2010-2016 vintages were robust over the past 12 months. These post-crisis funds all posted TVPI increases of at least 0.08x, with all vintages but 2010 and 2013 posting TVPI gains of 0.10x or more. For the past year, 2015 vintage funds posted a lift of 0.16x in TVPI, the highest of any vintage. More recent vintages posted gains primarily thanks to increases in RVPI (NAV), while cash multiple increases were driven by distributions (i.e. DPI) in older vintages. Interestingly, TVPI saw declines in 2006 and 2007 vintage funds despite each posting a DPI of 0.08x. These funds—raised at the height of the pre-crisis boom in PE—likely experienced negative TVPI growth due to sales of companies at valuations below carrying value.

Looking forward, the healthy returns exhibited in PE have emboldened existing LPs and enticed new allocators, which bodes well for the future of fundraising. LPs are forecasted to increase their target allocation for private market strategies more than any other asset class, as we detailed in our 2018 Annual Institutional Investors Survey. Respondents expected to lift their average private market strategy allocation from 30.9% to 32.5%. While this will be a boon for the PE industry, increased cash and competition will likely further pressure returns. TVPI gains in recent vintages have fallen below what was expected from PE a decade ago. We have also seen PMEs decline as PE's significant levels of outperformance of public market indices have diminished since the levels seen in the early 2000s.

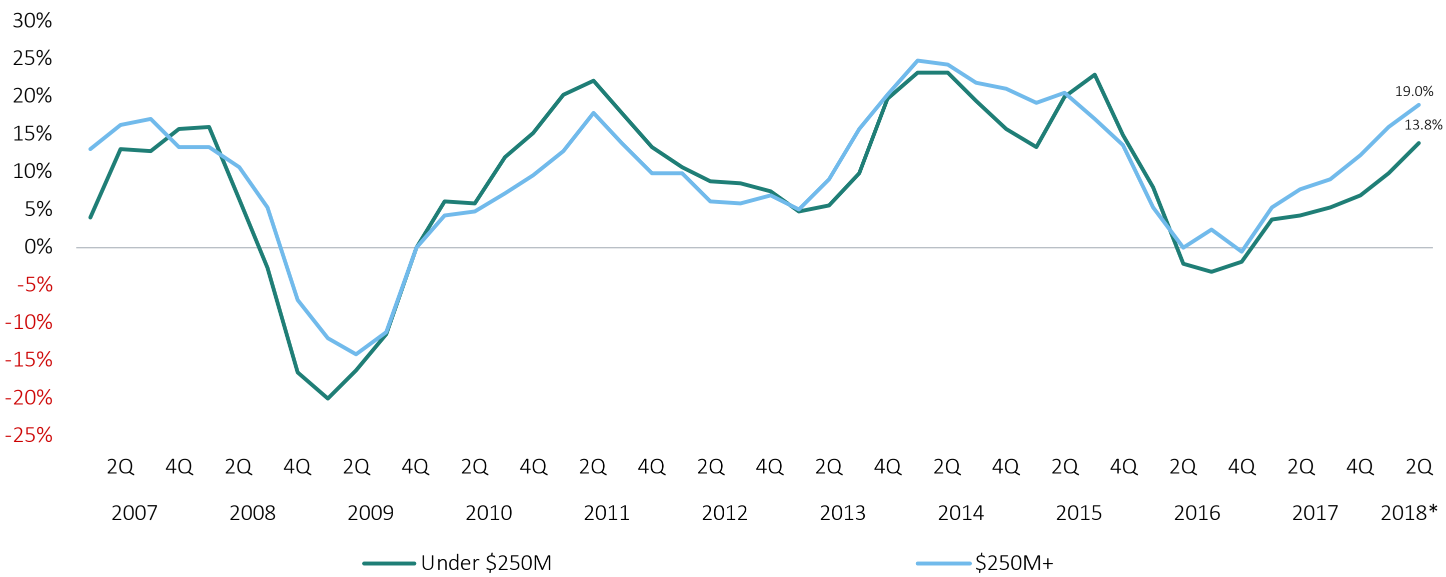
Global PE one-year change in pooled DPI multiples by vintage



Source: PitchBook
*As of June 30, 2018

VC fund performance

Global VC rolling one-year horizon IRRs by fund size bucket



Source: PitchBook
*As of June 30, 2018

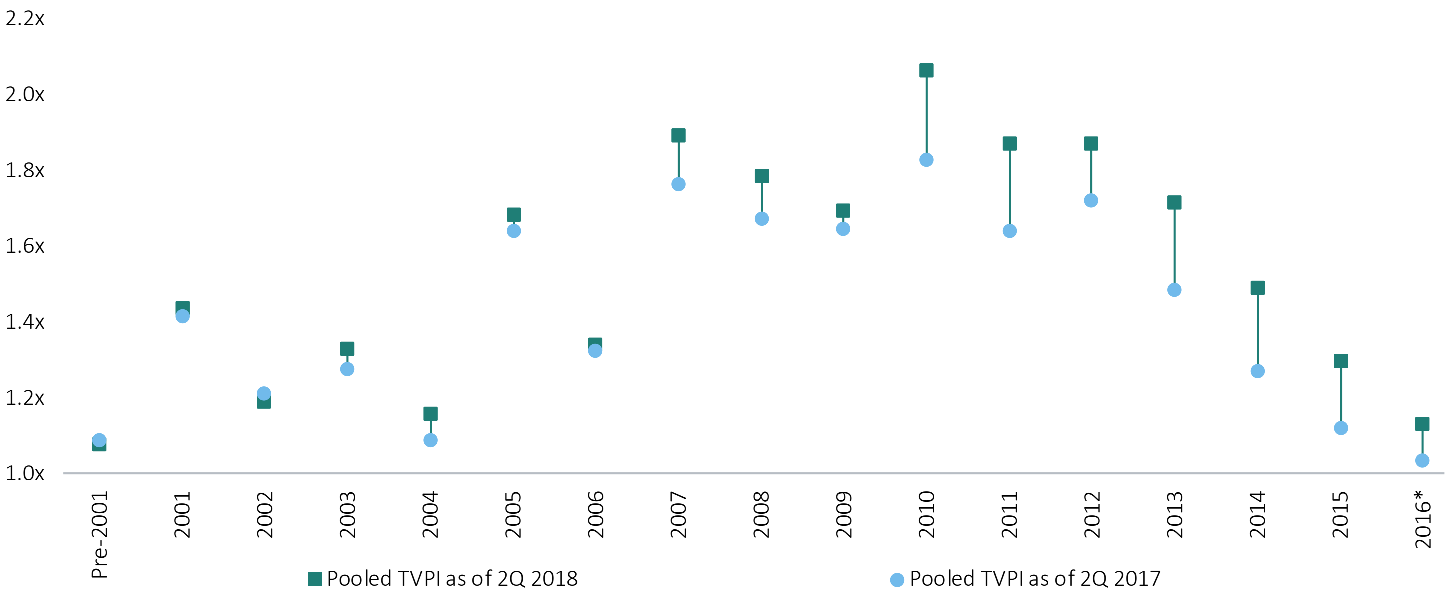
VC fund returns maintained their upward momentum in 2Q 2018, as the rolling one-year rolling IRR hit 18.1%, the highest point in 10 quarters. While PE has tended to outperform VC in recent years, the most recent metric marks the first time VC has been the top performer since 4Q 2015. In terms of fund size, larger VC funds ($250 million or greater) significantly outperformed their smaller peers, consistent with trends from recent quarters. The gap in performance between large and smaller vehicles continues to be pronounced, as vehicles $250 million or greater have outperformed by at least five percentage points for the last three consecutive quarters. Given that IRR calculations include unrealized valuation gains, the recent growth in outperformance may be attributed to ever-growing valuations and late-stage activity. As venture markets have become increasingly saturated with capital, larger funds have been able to leverage larger check sizes as a competitive tool to secure stakes in leading companies, which has fueled the valuation growth.

Looking at broader time horizons, 2018's outstanding one-year horizon IRR appears as an anomaly in comparison to historical data. The economic backdrop for the 12 months leading up to 2Q 2018 was one of extraordinary health and optimism, leading to a relative high for venture valuations and consequently, short-term performance.

Three- and 10-year look-back periods, however, show little growth in rolling horizon IRRs. Though this can be attributed in part to the volatility of the VC strategy, particularly for the shorter-term horizon, the onset of the GFC is a key factor in understanding underwhelming 10-year performance. In the coming quarters, we expect the 10-year return to rise as the most challenging quarters of the GFC roll out of the calculation and reflect the positive long-term growth of equity investments.

The effects of a healthy economic backdrop and rising venture valuations can also be seen in changes in pooled cash multiples from 2Q 2017 to 2Q 2018. Older vehicles with maturing assets appear to have seen handsome benefits from upward market momentum in the 12 months leading up to 2Q 2018. The pooled TVPI for 2010 vintage funds, for instance, saw significant gains from the previous year, rising 0.23x to 2.06x in 2Q 2018. (It is worth noting that 2010 is the top-performing vintage in our venture database). More recent vintages such as 2013 and 2014, however, have not benefited in the same way, as investments began with higher valuations and have had less runway for growth.

Global VC one-year change in pooled TVPI multiples by vintage

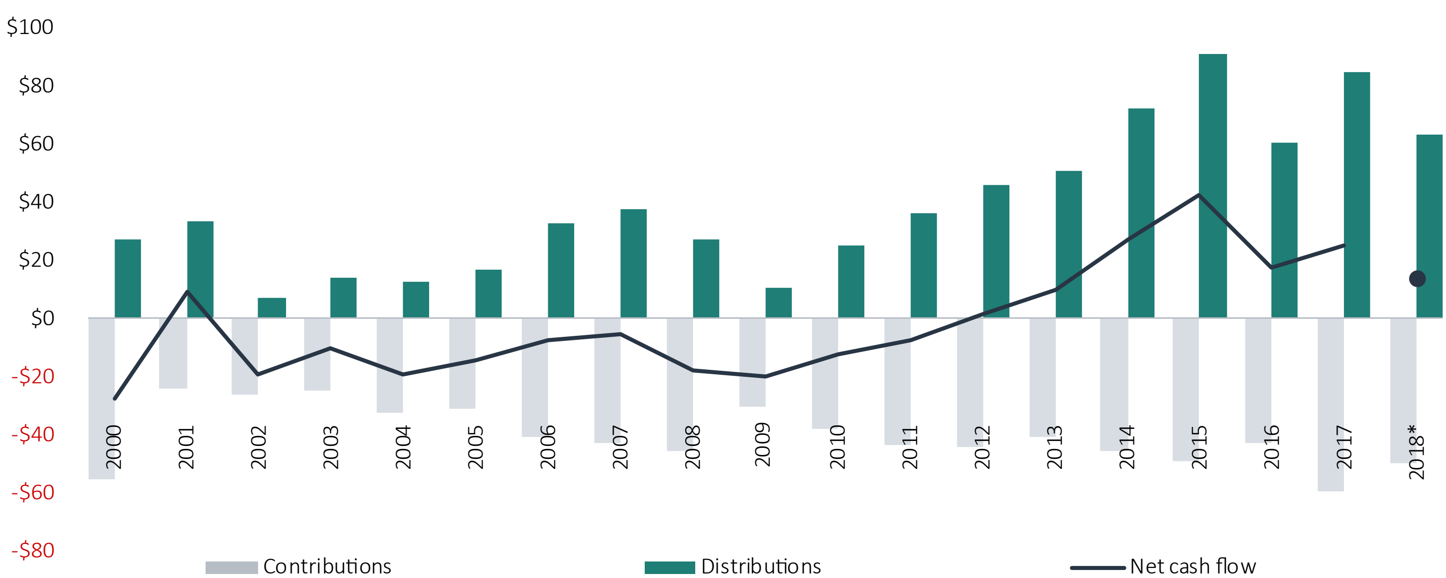


Source: PitchBook
*As of June 30, 2018

In terms of cash flows to LPs, 2018 is on track to mark the sixth consecutive year that distributions to LPs have outpaced contributions to venture funds, with net cash flows to LPs sitting at $14.1 billion at the midway point of 2018. Similar to PE, GPs called down capital at a breakneck pace into the second quarter, with the $49.4 billion in contributions already exceeding year-end values for each year since 2000, aside from 2017.

The proliferation of mega-deals in venture markets is no doubt responsible for elevated contribution levels. GPs have taken to raising ever-larger funds, as capital availability has become a competitive advantage in competition for deals, with the likes of the near-$100 billion SoftBank Vision Fund pushing round sizes and valuations at all stages to new heights.

Global VC fund cash flows ($B)



Source: PitchBook
*As of June 30, 2018

Spotlight: Inflated IRRs

This case study, written by James Gelfer, senior strategist, originally appeared in PitchBook Benchmarks, which provide the most comprehensive, transparent and accurate way to assess the performance of private market investment strategies.

Key takeaways

- Despite worries that subscription credit lines are inflating IRR, we do not find any evidence that the IRR of newer vintages is being manipulated by these facilities or other means. The reported IRR of more recent vintages can appear to be "inflated" relative to cash-on-cash returns when compared to historical performance, but we find this apparent inflation dissipates when controlling for the age of the funds.

- If aggressive markups early in the holding period were historically inflating IRR, we would expect to see IRRs peak early in a fund's life and to subsequently fall as the holding period extends. While we do find that most funds tend to hit their peak IRR around year seven, the median fund historically has been able to maintain that level through liquidation. But that still means roughly half of managers eventually are revising their IRRs lower in the end stages of a fund's life.

- Aside from the current debate about subscription lines, we think it is important to emphasize that IRR tends to be relatively overstated relative to cash-on-cash returns early in a fund's life due to the mechanics of the calculation. Furthermore, IRR metrics tend to be highly volatile in the early years through the investment period. As such, we suggest that industry professionals deemphasize the importance of IRR, at least until the fund is fully invested.

Overview

When it comes to evaluating PE funds, IRR has been the performance metric of choice for decades, yet it consistently draws scrutiny from industry professionals for its litany of flaws and shortcomings, including its susceptibility to abuse. Most recently, the reliability of IRR has been called into question due to the raised awareness in the LP community about the use of subscription credit lines, also referred to as capital call lines/facilities, which is a financing tool used by GPs to meet near-term funding obligations. GPs have utilized subscription lines for decades as an administrative tool to streamline capital calls between their funds and LPs, but more attention is being paid to them as the terms are beginning to loosen. Even when best practices are employed, these facilities still accrue interest expenses that negatively (albeit generally negligibly) affect net returns, but now some GPs are reportedly taking advantage of the increasing flexibility of subscription lines to intentionally and artificially boost IRRs, in some cases at the detriment to cash-on-cash returns.

The Abraaj Group currently serves as the case study for when things go wrong, after it defaulted on its subscription lines in 2018. This event served as a major catalyst of the recent debate about these facilities, which are secured by LPs capital commitments to the fund, as bankers have sought for Abraaj's LPs to cover the default.[4] We have certainly heard alarming anecdotes since then, such as subscription lines with terms of years (as opposed to weeks or months) or even the use of a subscription line to distribute cash to LPs before an exit is finalized. But while the most egregious practices are assumed to be outliers, concerns persist that widespread changes in the terms and usage of these facilities has led to a systematic inflation of IRR figures. While the lenders and borrowers associated with these facilities certainly know the intimate details of the terms, detailed data linking them to specific funds is lacking. Many analysts have resorted to back-of-the-envelope calculations to quantify their potential impact. These efforts produce a broad range of results depending on the assumptions, with the purported effect on IRR ranging from virtually nothing to several hundred basis points over the life of a fund.

Outside the debate on subscription facilities, we also hear frequent worries about the reliability of performance metrics, particularly when it comes to mark-to-market practices for existing investments. Many LPs worry that GPs are too sanguine in their portfolio valuations, which could lead to write-downs, extended hold times or other knock-on effects further down the road. Recent equity market volatility has only stoked these worries and reinvigorated the debate around the validity of PE fund performance.

4: "Abraaj: A Test Case for Broken Credit Lines," Private Funds Management, Toby Mitchenall, November 23, 2018

Rather than try to measure the precise impact of subscription credit lines on specific funds, here we examine if IRRs of more recent funds are being categorically inflated—whether through subscription credit lines or some other means—to determine if the metric can be trusted by investors. With many private market professionals evaluated and compensated based on IRR performance, the efficacy of the metric has meaningful implications.

"You can't eat IRR"

After IRR, cash multiples (i.e. DPI, RVPI and TVPI) are the most popular way to assess the performance of PE funds. Cash multiples are more straightforward than virtually any other metric and are quite difficult to manipulate because the timing of cash flows is not a factor. As such, we would expect any inflation of the IRR metric to be discernable by comparing its relationship to cash multiples across individual funds. If IRRs are in fact being inflated, we should see a shift in the relationship between IRR and cash multiples such that a specified TVPI value of newer funds is correlated with a higher IRR value than has been the case historically.

Newer vintage IRRs can appear inflated compared to cash multiples

PE IRR and TVPI by vintage bucket with linear regression

Source: PitchBook
*As of June 30, 2018

Apparent IRR inflation disappears when observing funds of similar age

PE IRR and TVPI at three-year mark by vintage bucket with linear regression

Source: PitchBook
*As of June 30, 2018

In aggregate, we do not find any evidence that IRR is being distorted for funds of more recent vintages.

Younger funds consistently exhibit relatively higher IRRs for given TVPI

PE IRR and TVPI by time (years) since inception

Source: PitchBook
*As of June 30, 2018

> We think it is important for capital allocators to appreciate how the relationship between IRR and cash multiples evolves over the life of a fund.

At first blush, the data seems to strongly corroborate the notion that PE IRRs are being inflated. For 2012-2015 vintage bucket, based on a simple linear regression, an IRR of 15% corresponds to a TVPI value of 1.39x, which compares to values ranging from 1.63x to 1.81x for the other vintage buckets. But we know that even without manipulation, younger funds will exhibit higher IRRs for a given TVPI level than older funds. For example, if two funds are each reporting a TVPI of 1.5x but one is a 2015 vintage and the other is a 2012 vintage, we would naturally expect the IRR of the former to be higher because it had produced the same cash return in a shorter period. Going out to the 12-year mark of a fund's life (which inherently limits us to the 2006 vintage), we find a clear evolution of lower reported IRRs lining up with higher TVPI values as the fund ages. The shorter timeframe and wide variability of drawdown rates in the very early stages of fund life also lead to a high standard deviation of reported IRRs between funds, which dissipate as funds age.

Knowing these characteristics of younger funds, the next question is whether the apparent IRR inflation observed in the newer vintages was unique or simply a function of the younger nature of those funds. We started by isolating funds at their three-year mark and found no discernable difference in the IRR to TVPI relationship across vintage years. In other words, the apparent inflation in the IRR values of the 2012-2015 vintage bucket essentially disappears when you observe funds at similar stages of their life. Using a 15% IRR as the baseline, like our previous example, we find the corresponding TVPI value for all of the vintage buckets is in a tight range of 1.17x-1.22x. This correlation consistency across vintage buckets proved true when examining the relationship at the five-, seven-, 10- and 12-year marks as well.

In aggregate, we do not find any evidence that IRR is being distorted for funds of more recent vintages. However, we think it is important for capital allocators to appreciate how the relationship between IRR and cash multiples evolves over the life of a fund. As we have shown, a particular IRR will correspond to a relatively lower TVPI early in a fund's life, which can make IRR appear inflated compared to older funds. It is important to note that this is not unique to the current environment and is consistently observed across vintage years going back more than two decades, so it does not appear that IRR is being distorted (at least not any more than it has been in the past). Even if IRRs are not being inflated in the current environment, there is still the question of whether the metric has ever been trustworthy. Aside from the pure mechanics of the IRR calculation discussed previously, additional factors need to be considered when analyzing the metric for funds that are not yet fully liquidated.

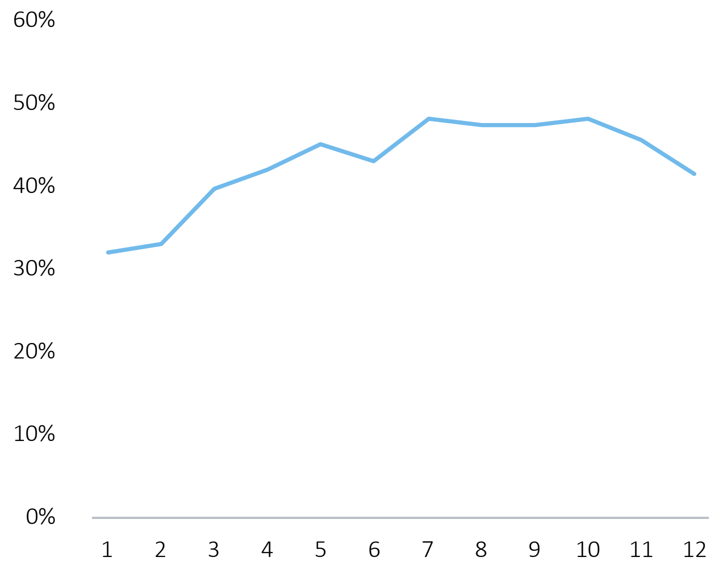
One factor is that quick distributions back to LPs—whether through full exits, dividend recaps or other means—can have a large and lasting impact on IRR. Another important consideration is that performance metrics are much more volatile early in a fund's life when less capital has deployed. For example, if a fund charges a management fee on committed capital, the IRR naturally goes deeply negative at first until an initial investment is made. As a result, early in funds' lives we observe extremely high levels of standard deviation—both in individual fund reporting and in the variation of performance figures reported by funds of a given vintage.

Mark-to-market practices can also play a pivotal role in the IRR calculation. Most of the value in more recent vintages is still held in unrealized investments; as such, while IRRs do not currently appear to be inflated, much of that conclusion is predicated on the assumption that GPs will be able to realize investments at (at least) their current carrying value. Regardless of whether current portfolio valuations are fair, an implicit assumption in the IRR calculation for funds that are not yet fully liquidated is that any remaining value can simply be treated as a terminal cash flow in the most recent reporting period. It does not take detailed analysis to ascertain that this practice has the potential to inflate IRRs for younger funds if the GP marks up investments too eagerly in the early days and is unable to maintain that growth rate going forward.

Indeed, a primary concern today for many investors—particularly in VC funds—is that GPs over-aggressively mark up their portfolios early in the holding period, leading to outsized "paper gains." Prior research into mark-to-market practices of private market funds has produced mixed results. Some researchers have found that "fund valuations are inflated during the fundraising period,"[5] while others assert that "fund managers time fundraising with strong current fund performance instead of manipulating interim performance estimates."[6] Our own findings suggest that GPs in aggregate historically have been relatively conservative when adjusting valuations relative to public market activity—both on the upside and the downside.

Nearly half of funds revise IRR lower at later stage of fund life ...

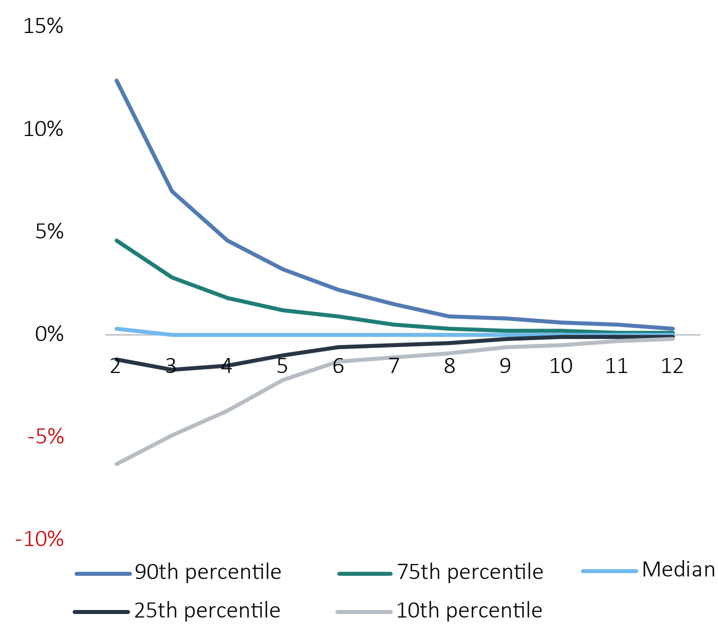
Proportion of PE funds reporting lower IRR compared to prior reporting period by time (years) since inception



Source: PitchBook
*As of June 30, 2018

... but downward revisions tend to be relatively small

Range of QoQ changes in IRR by time (years) since inception (all vintages)

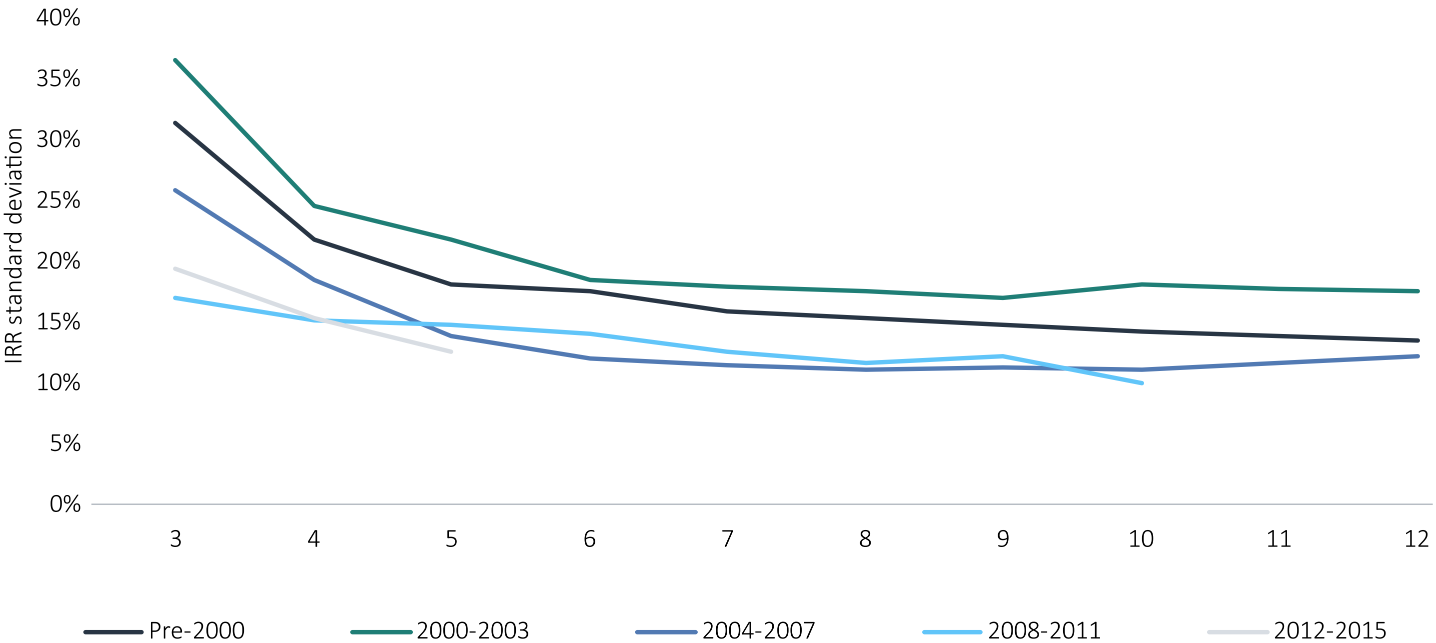


Source: PitchBook
*As of June 30, 2018

5: "Interim Fund Performance and Fundraising in Private Equity," Brad M. Barber, October 31, 2014
6: "Raising Funds on Performance: Are Private Equity Returns Too Good to Be True," Niklas Hüther, January 27, 2016

Range of reported IRRs for given vintage falls as funds age

Standard deviation of reported IRRs for PE funds by vintage bucket and time (years) since inception



Source: PitchBook
*As of June 30, 2018

If aggressive markups early in the holding period were a persistent issue, we would expect to see IRRs peak early in a fund's life and to subsequently fall as the holding period extends. While we do find that most funds tend to hit their peak IRR around year seven, the median fund historically has been able to maintain that level through liquidation. But that still means roughly half of managers eventually report lower IRRs in the end stages of a fund's life.

Of course, there's a big difference between an IRR falling by a few basis points and a GP being forced to take a large write-down on an entire position. To that end, when we look at the absolute QoQ change in IRR at these later stages of a fund's life, we find the distribution is similar for both positive and negative markups. For example, when we examine the distribution of quarterly IRR changes in year nine of a fund's life, the top decile is 2.5% while the bottom decile is -2.4%.

Can IRR be trusted?

To be sure, subscription credit lines can alter the relationship between "true" cash-on-cash returns and IRR, but the data does not show any systematic changes in the more recent vintages that would indicate widespread issue has taken hold. This suggests that imprudent use of credit facilities and other mechanisms to meaningfully boost IRRs are relatively isolated. For those concerned about subscription lines, the best remedy is to be informed about how the GP intends to use these facilities and to ensure those terms are detailed in the limited partnership agreement. The ILPA has established specific considerations for both GP and LPs.[7]

Aside from the current debate about subscription lines, we think it is important to emphasize that IRR tends to be relatively overstated relative to cash-on-cash returns early in a fund's life due to the mechanics of the calculation. Furthermore, IRR metrics tend to be highly volatile in the early years through the investment period. As such, we suggest that industry professionals deemphasize the importance of IRR, at least until the fund is fully invested.

7: "Subscription Lines of Credit and Alignment of Interests: Considerations and Best Practices for Limited and General Partners," Institutional Limited Partners Association, June 2017

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