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PRIVATE EQUITY NAVIGATOR

Private Equity Analysis from INSEAD's Global Private Equity Initiative

October 2016

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INSEAD GLOBAL PRIVATE EQUITY INITIATIVE

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The Global Private Equity Initiative (GPEI) drives teaching, research and events in the field of private equity and related alternative investments at INSEAD, a world-leading business school. It was launched in 2009 to combine the rigour and reach of the school's research capabilities with the talents of global professionals in the private equity industry. The GPEI aims to enhance the productivity of the capital deployed in this asset class and to facilitate the exchange of ideas and best practice.

INSEAD's global presence – with campuses in France, Singapore and the UAE – offers a unique advantage in conducting research into established markets for private equity, while at the same time exploring new frontiers in emerging markets to arrive at a truly global perspective on this asset class. The GPEI also focuses attention on newer areas shaping the industry such as operational value creation, responsible investing and growth equity, and specific groups of LPs like family offices and sovereign wealth funds.

The GPEI looks to partner with stakeholders in the private equity industry to collaborate on research ideas and projects. Its core supporters are:

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Pevara is a division of eFront (www.efront.com), a leading software provider of end-to-end solutions dedicated to the financial services industry with a recognized expertise in alternative investments, enterprise risk management, and customer relationship management. eFront's solutions serve more than 800 customers in 48 countries, including companies in the private equity, real estate investment, banking and insurance sectors. eFront's primary product suites offer tightly integrated solutions for streamlining the management of alternative investments and corporate risk. Founded in 1999, eFront services clients worldwide from offices in Asia, Europe, the Middle East and North America.

Pevara's data is obtained from actual LP cash flows as opposed to surveys or relying on the Freedom of Information Act to source data. LPs who wish to contribute data to the Pevara Private Equity Index can do so by sending an email to data@pevara.com, after which a Pevara data specialist will discuss the process with them.

THE ABRAAJ GROUP | GENERAL ATLANTIC

This report is authored by Bowen White, Associate Director, GPEI and Siddharth Poddar, Research Associate at GPEI; under the supervision of Claudia Zeisberger, Academic Director of the GPEI, Senior Affiliate Professor of Decision Sciences and Entrepreneurship & Family Enterprise at INSEAD. We thank Christopher McGaughnea from Pevara and Hazel Hamelin, Senior Editor at INSEAD, for their invaluable support.

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The Private Equity Navigator seeks to balance the presentation of raw data and minimal accompanying commentary with a more engaging (if less rigorous) approach to illustrate key concepts in private equity. Our findings are presented in five sections:

Executive Summary

Welcome to the ninth edition of the INSEAD-Pevara Private Equity Navigator. In this edition we provide a breakdown of private equity (PE) fund activity and industry performance, as well as an update on PE-related research and events at INSEAD. As ever, our findings are drawn from data on nearly 3,000 funds reported to Pevara eFront.

In addition to our biannual analysis of industry calls & distributions and IRR & MIRR performance, we have added two new sections to this report. Entering the sixth year of what is broadly **considered an industry exit supercycle**, we take a closer look at fundraising, investment and divestment activity in the current and previous industry cycles. Expanding on research first conducted six months ago, we also present a geography-by-geography **comparison of PE and public equity returns** to test PE's proposition of outperformance.

The key findings, based on our LP data-set, include:

- *PE investment activity has fallen to its lowest level globally since the financial crisis, and its lowest level in the US and Europe since 2005*
- *The exit supercycle continues, with fund managers distributing 2.36x more capital than they called*
- *PE outperforms public markets at the global level, but not in the US*

The PE investment slowdown is set to continue in 2016. The escalation in acquisition multiples for both leveraged buyouts and mergers & acquisitions since 2009 has steadily dampened capital calls in recent years, with the uncertain global economic outlook and Brexit exacerbating the slowdown.

As a result, **exits continued to dominate PE activity** in H1 2016, with more than twice the amount of capital distributed than called. While half-year exits hit a low over the past four years, the amount of capital distributed to industry LPs far exceeds any half-yearly total in our dataset prior to 2012.

In a new section on PE fund cycles, we see that the current exit supercycle follows on the heels of an extended **investment supercycle** that stretched from 2006 to 2010. From a regional perspective, our data suggests that the current exit supercycle peaked in the US during 2013/14 but has only just peaked in Europe and Asia.

Shifting to performance, we find that global PE returns broadly outperform its comparable public market index over the last 15 years; the same holds true in Europe and Asia. In the US, however, performance generated by the **public index is broadly comparable with PE over the past 15 years** and outperforms PE over periods of the last 8 years.

As always, we endeavour to provide thought-provoking analysis and commentary on the issues faced by institutional LPs and Family Offices, and welcome your feedback.

Claudia Zeisberger

Senior Affiliate Professor of Decision Sciences and Entrepreneurship & Family Enterprise, Academic Director, GPEI

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Detailed Market Analysis – INSEAD & Pevara Database

The following pages provide an update on the PE market during the first half of 2016.

We first review PE capital call and distribution activity through the first half, and follow that with an analysis of the main PE fundraising, investment and divestment cycles witnessed over the last decade and a half.

We then compare PE and public market returns over the past 15 years and examine recent and long-term industry returns across performance quartiles.

PE Market Update

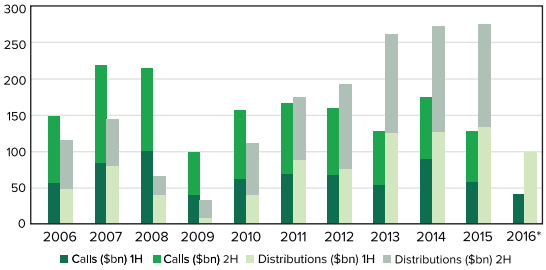
(Activity in H1 2016)

As in previous issues of the *Private Equity Navigator*, we begin with a look at PE investment and divestment activity over the past decade, with a focus on the last six months. These two key indicators are represented by the amount of capital called and the amount distributed by funds in our dataset.

The analysis that follows is based on data provided by 2,934 PE funds investing globally, with total assets under management (AUM) of $2.41 trillion, a more-than-adequate proxy for industry activity levels.[1] In line with the global PE industry, our dataset is weighed towards developed markets—the US in particular, as well as Europe—with Asia and the rest of the world making a relatively small contribution.[2] Our analysis is based on a dataset of 107 more funds than in our April 2016 edition.

2016 investments are off to a slow start

Fig 1 Annual Global Capital Calls and Distributions



The 2016 figures are until 30 June.

The first half of 2016 saw markedly lower investment activity but continued robust exit activity. PE funds in our dataset called just $41.9 billion in H1 2016, 29.7% less than the $59.6 billion called in H1 2015. This marked the lowest global total called during a six-month period since H1 2009. Investment activity in Europe and the United States was weaker still on a historical basis, with calls in both geographies marking their lowest half-year totals since H1 2005. With high M&A valuations persisting into the first half of 2016 despite a poor economic outlook and the uncertain impact of Brexit, PE fund managers were understandably cautious in deploying fresh capital.

Nevertheless, the PE industry has continued to capitalize on high M&A valuations and strategic buyers with strong balance sheets as the exit supercycle—which produced record distributions of $261.5 billion, $272.5 billion and $275.6 billion in 2013, 2014 and 2015 respectively—persisted into H1 2016, albeit at a slower pace. Despite a 26.7% pullback in distributions between H1 2015 ($135.1 billion) and H1 2016 ($99.0 billion), this is shaping up to be another solid year for exits. At this point, the question is: how many buyers will continue to pay premium valuations in the face of a slowdown in emerging market growth and continued stagnation in developed markets?

Looking at both measures combined, the ratio of capital distributed to capital called in H1 2016 is 2.36x, marginally higher than the 2.27x posted in the same period a year ago. This suggests that while there was an absolute drop in both investment and divestment activity in H1 2016, the PE industry continues to be a significant net seller relative to other phases in the PE cycle (the ratio stood at 0.56x for the period 2006-2010). While the global PE industry has been a net seller since 2011, the trend has been pronounced for the last three and a half years.

Perhaps a better comparison (and proxy for industry performance) is to examine current distributions relative to capital called in the past. If we assume a holding period of five and a half years[3] and compare H1 2016 distributions ($99.0 billion) with H2 2010 calls ($95.4 billion), we arrive at a multiple of 1.04x, which is less than half the 2.16x figure reported in the previous edition of this report. The evolution of this lagged ratio will be covered in the next edition of the PE Navigator.

[1] While the PE industry is larger and the data in this report is representative, our dataset is obtained directly from LPs and is hence more accurate than data obtained from a range of other sources.
[2] Comprised of North America (53.7% of funds and 62.7% of AUM in the Pevara dataset); Europe (36.5% of funds and 30.4% of AUM); Asia (6.4% of funds and 5.7% of AUM); and other regions.
[3] The average holding period of portfolio companies by PE funds has increased over the years from 4.1 years for companies exited in 2008, to 5 years for companies exited in 2012, and to 5.9 years for companies exited in 2014. For companies exited until May 2015, however, the average holding period has decreased to 5.5 years, according to data provider Preqin.

PE Supercycles

Long-term trends of fundraising, investment and divestment activity in PE are naturally interrelated, as capital commitments secured during fundraising are called, invested, and exited within the life of a fund. Unsurprisingly, as seen in Figure 2a, fundraising and capital calls follow a similar cyclical pattern over the past 15 years, with the capital raised called after a brief lag.[4] Similarly, we see periods of robust investment, for example from 2005 to 2008, ultimately followed by robust exit activity, as seen in global PE since 2011.

Of course, these trends are impacted by market dynamics. PE investors choose or may be forced to delay or abandon investments or exits due to the reality of M&A activity on the ground. This is apparent from the sharp drop in fundraising, investment and divestment activity in 2008 and 2009 during the global financial crisis, and the extended holding periods thereafter, as funds struggled to exit investments and distribute capital to their LPs. The large amounts of capital raised just prior to the crisis and the subsequent stagnation in investment activity are responsible for the large capital overhang in the industry, as managers who had raised capital struggled to deploy it.

Fig 2a PE Industry Activity - Global

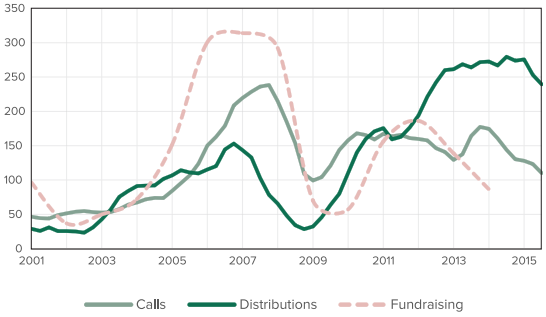


Fig 2b PE Activity - North America

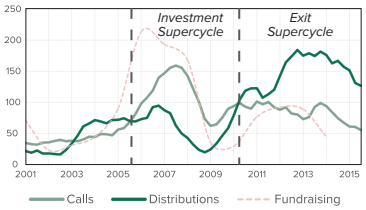


Fig 2c PE Activity - Europe

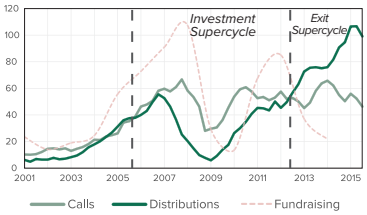
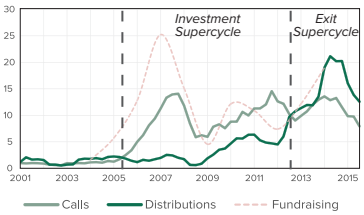


Fig 2d PE Activity - Asia



If we take a closer look at investment and divestment activity over the last fifteen years in North America, Europe and Asia, two distinct cycles emerge. We name periods in which capital calls outstrip distributions as 'investment supercycles', and periods in which distributions outstrip capital calls as 'exit supercycles'. During the most recent investment supercycle in North America (Figure 2b)—from Q3 2006 to Q1 2011—$508.1 billion was invested by funds in our dataset and $275.0 billion distributed, producing a ratio of capital distributed to capital called of 0.54x. During the current exit supercycle, $441.8 billion has been called relative to distributions of $822.0, a ratio of 1.86x. As indicated earlier, the timing of these trends reflects the freeing up of exit markets over the last five—and particularly the last three—years.

In Europe, the most recent investment supercycle also began in Q3 2006 but lasted two years longer than in the US, ending in Q2 2013. During this period, the European PE funds in our dataset invested $347.2 billion and distributed $228.8 billion, a ratio of 0.66x. In the ongoing exit supercycle, $170.8 billion has been invested compared to distributions of $281.9 (a 1.65x ratio). The longer investment supercycle in Europe may be explained by the impact of the European sovereign debt crisis on exit markets.

The recent investment supercycle ran the longest in Asia, lasting more than seven years from Q2 2006 to Q3 2013. During this period, Asian PE funds in our dataset invested $70.1 billion and distributed only $28.7 billion (a 0.41x ratio). In the current exit supercycle, $33.2 billion has been called and $44.7 billion distributed (a 1.35x ratio). Asian funds in our dataset produced the lowest ratios of capital distributed to capital called in both supercycles, reflecting the challenging exit market in the region and the disappointing returns generated by Asian PE.

With competitive investment markets, high valuations and subdued expectations for global growth, we expect investment activity to remain subdued and the exit supercycle to persist, though not necessarily at the levels seen in 2013-2015. However, with more than a trillion dollars of 'dry powder' and ample fundraising activity in the marketplace, at some point fund managers will need to deploy capital – or risk falling short of LP expectations.

[4] All datapoints for fundraising, capital calls and distributions in Figures 2a-2d are based on one-year rolling totals.

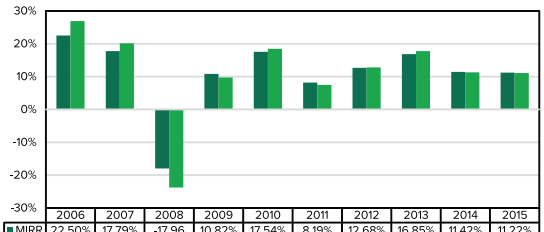
PE Returns & Variance

This section analyzes the returns generated by our dataset of PE funds both on an absolute and relative basis. In the first section we assess annual performance generated by global funds in our dataset over the past decade. We then present a comparison of returns generated by the PE industry and public equity markets on both a global and regional level. We conclude with an analysis of global PE fund performance by quartile and vintage year.

While the performance metric of choice in the PE industry is the internal rate of return (IRR), the metric we reference throughout this section is the modified internal rate of return (MIRR). The MIRR more accurately reflects the real cash flow performance realized by PE LPs, in particular moderating returns generated by an IRR in instances of extreme out- and underperformance.[5] The IRR generated by our global dataset is also presented in Figure 3 for the purpose of comparison.[6]

Returns continue trending lower...

Fig 3 Annual Global PE Returns



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
MIRR	22.50%	17.79%	-17.96	10.82%	17.54%	8.19%	12.68%	16.85%	11.42%	11.22%
IRR	26.90%	20.14%	-23.76	9.74%	18.48%	7.46%	12.79%	17.75%	11.31%	11.07%

With full year 2015 performance—both cash flow and NAV reporting—now available, we analyze the performance of funds in our dataset as a proxy for broad industry performance.[7] The global PE industry recorded an MIRR of 11.2% in 2015, marginally lower than the 11.4% return generated a year earlier, and significantly lower than the 16.8% MIRR registered in 2013. In fact, this is the fourth lowest annual return generated by the industry over the past 13 years.

Comparing MIRR and IRR performance, we see similar returns generated over the past two years, with IRRs in 11.1% and 11.3% in 2015 and 2014 respectively. The moderating impact of assessing PE performance via an MIRR can be seen explicitly in years such as 2006 and 2008.

Given the subdued global economic and market environment in 2016, with financial markets still waiting for the proverbial silver lining, it may be some time before we see an uptick in PE returns.

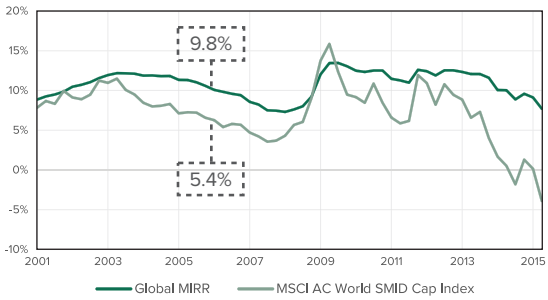
...but 'low' is a relative term

PE fund managers have long touted their ability to produce outsize returns in the PE asset class relative to public equity markets. We put that claim to the test by comparing MIRRs[8] generated by our dataset with returns produced by a family of indicies (the MSCI SMID Cap Indices) covering small and midcap companies.[9]

Figure 4a shows that the performance generated by the global PE industry exceeds that of a comparable public market index across nearly all periods except for a brief period immediately following the global financial crisis.

The manner in which we generate the performance statistics in this section merits comment. Each point along the lines in Figure 4a represents the annualized performance generated by PE or public equity from a given date through Q1 2016.[10]

Fig 4a Annualized Returns - PE vs Public Market - Global



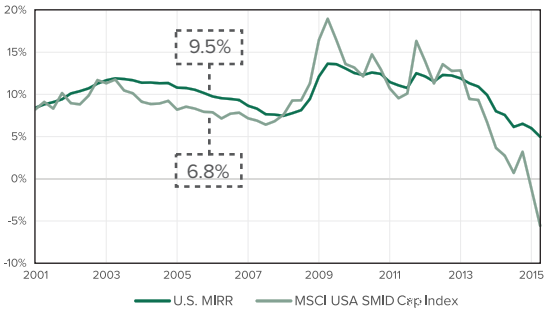
[5] The MIRR calculation is net of fees. Unless otherwise specified, the MIRR uses a discount rate for capital calls of 12.0% with a 10-year horizon, and equally assumes a re-investment rate of 12.0%. For more details, refer to the December 2013 issue of Private Equity Navigator.
[6] The two main issues with IRR are the re-investment hypothesis on intermediary distributions and the cost of uncalled capital. For more details, refer to the inaugural December 2013 issue.
[7] H1 2016 performance will be reported in the next edition, as NAVs for funds in the Pevara dataset are reported with a 3-month lag.
[8] MIRR discount and reinvestment rates are set equal to the average annualized performance of the comparable index over the assessed time period. For example, in Figure 4a, the discount and reinvestment rates were set equal 7.27%, the average annualized performance produced by the MSCI AC World SMID Index since 2000.
[9] The global and regional MSCI SMID Cap Indices are used for reference only. SMID Cap Indices are comprised of a blend of small and midcap stocks which are broadly comparable to PE portfolio companies.
[10] Annualized performance for PE is generated by treating the quarterly MIRRs generated by our dataset as a quarterly return on investment figures for the asset class.

For instance, over the 10-year period from Q1 2006 through Q1 2016 PE generated an annualized return of 9.8%; the public market index generated an annualized return of only 5.4% over the same period. While this approach does not take into account the time required to build a mature PE portfolio—it assumes an immediate, 100% exposure to average industry returns from a given date—and reflects average performance in an industry with significant variance across funds, it allows a straightforward comparison of performance.

The story of PE outperformance persists when we compare industry returns and appropriate public market indices in Europe and Asia.

The story in the US is different

Fig 4b Annualized Returns - PE vs Public Market - USA



When comparing PE and public equity performance in the US, we find significantly less deviation in annualized returns (see Figure 4b). For example, US PE generated annualized returns of 9.5% from Q1 2006 through Q1 2016—the same 10-year period considered above—while the comparable public market index generated an annualized return of 6.8%. This outperformance of 2.7% falls short of the 4.4% outperformance of PE relative to public markets at the global level. In fact, the comparable public index frequently outperforms PE returns in the US over the assessed period.

We also note that the divergence in performance between PE and public equity markets over the last three years has been less sharp in the US than in our global comparison (and in the cases of Asia and Europe). This has been driven both by stronger public market performance and weaker PE performance in the US compared to their global counterparts.

The gap between top quartile and bottom quartile funds persists over the years

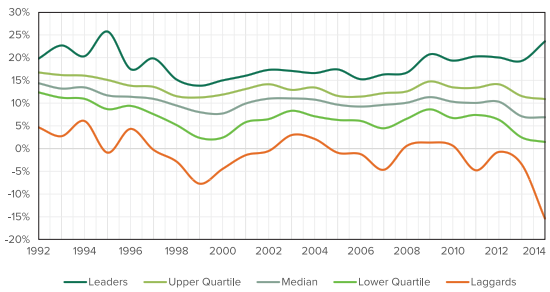
In this section we examine the variance in PE performance across different performance quartiles over the last twenty years. As Figure 5 makes clear, the spread in performance between top and bottom performers is significant and persistent. This consistent trend underscores a wide range of points, including the importance of gaining access to top-performing managers, the wide range of performance realized by LPs' PE allocation, and the importance of manager selection.

The range in PE performance in our dataset is greater for funds from more recent vintages. For example, for 1992 vintage funds, the 95th percentile fund (Leaders) has an MIRR of 19.8%, while the 5th percentile fund (Laggards) an MIRR of 4.7%, a difference in performance of 15.1%. For funds of 2013 and 2014 vintages, the difference in performance between the Leaders and the Laggards increases to 22.8% and 38.9% respectively.

The wide dispersion in performance for recent vintages can be attributed to the fact that younger fund vintages have immature portfolios. MIRRs from these funds are based on a smaller set of underlying cash flows than fully invested and exited funds. As a result, a particularly successful or unsuccessful exit early in a fund's life will have a magnified impact on its MIRR, resulting in the wide gap seen in 2013 and 2014 vintages. Consistent with past industry performance, we expect 2013 and 2014 vintages to stabilize over time and produce performance ranges similar to previous vintages.

Some vintages in our dataset performed poorly across all quartiles—these include funds of vintage 1999 and 2000 that were raised just before the dot.com bubble burst. Another dip in performance can be seen for all funds of vintage 2007 (raised just before the onset of the global financial crisis). These two instances demonstrate the importance of timing in fundraising. Had these funds been raised and started investing just after the crises, their stories would have been different.

Fig 5 PE Fund Quartile Performance by Vintage Year



Insights from GPEI's Model Portfolios

In this section, we track the evolution of our two model portfolios to provide insights into their construction and management and the challenges associated with a growing and maturing portfolio.

Model Portfolios

When we launched the *Private Equity Navigator* in December 2013, we decided to include a section that explains how real PE portfolios are managed by large institutional investors. To do so, we created two hypothetical, billion-dollar PE portfolios consisting of real funds selected from the Pevara database.[11]

Each portfolio was constructed with a unique mandate. The target allocation for Portfolio 1 broadly reflects the concentration of PE activity across the global industry, with a focus on the US and a strategy focus on buyouts. Target allocations for Portfolio 2 provide larger exposure to European and emerging market (mainly Asian) managers and to the growth capital investment strategy.[12]

We made fresh commitments to one fund in Portfolio 1 and three funds in portfolio 2 during H1 2016, bringing the total number of funds in the two portfolios to 27 and 34 respectively. The sections that follow detail the evolution of these portfolios over the years.

Key Insights

Looking back at how the geographic and strategy allocations of each portfolio have evolved since their inception, **the actual exposure of our portfolios diverged from their target allocations** despite a conscious effort to maintain our targets and unfettered access to any fund in our dataset.[13] While exposure in Portfolio 1 varied marginally, with a slightly elevated exposure to the US and to buyout funds, the evolution of Portfolio 2 underscores the challenge of maintaining a target allocation faced by LPs.

The current exposure of Portfolio 2 has diverged from its target allocation both in terms of geography and strategy. Exposure to North America—consisting predominantly of US funds—has risen 7.0% above its target at the expense of European and emerging market ex-Asia funds (see Figure 6a). Portfolio 2's current exposure to venture capital has also increased sharply by 10.0% at the expense of buyout and other niche strategies (see Figure 6b). **These divergences were caused principally by a single U.S. venture capital fund,** which has produced a total-value-to-paid-in-capital (TVPI) multiple of 5.2x to date.[14]

Rebalancing this portfolio via upcoming new fund offerings in our dataset will take time, and is compounded by the sporadic availability of funds investing in a specific geography and strategy in a given vintage, despite the 'carte blanche' assumption that we can commit capital to any fund of our choosing.

In addition to rebalancing through new allocations, LPs also manage portfolio exposure through the **sale and purchase of fund stakes on the secondaries market.** Such transactions enable LPs to manage a ballooning portfolio and avoid spreading their resources too thin. In addition to the sale of an LP interest—which explicitly reduces the number of GP relationships—an LP can purchase a secondary stake in a fund in which it has an existing commitment or with a manager with whom it has an existing relationship, reducing the burden on LP resources.

Given the continued ballooning of our fund portfolios and the divergence of portfolio exposures from target allocation, we will execute a series of secondaries in H2 2016 to rationalize and rebalance our portfolios.

Fig 6a Portfolio 1 - Allocation by Geography

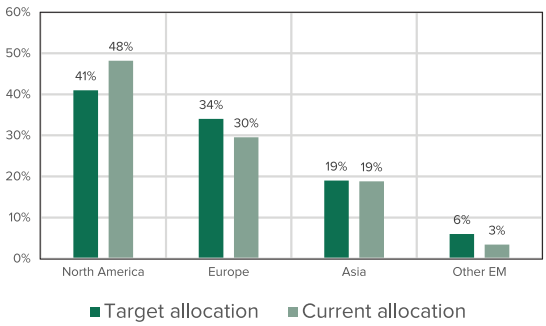
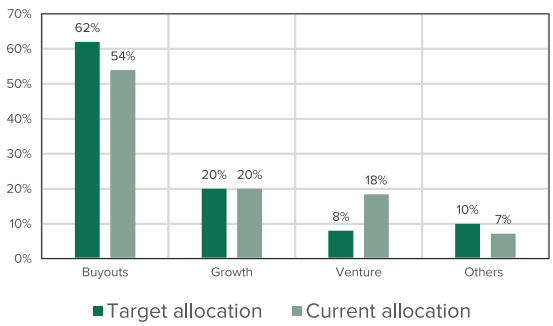


Fig 6b Portfolio 2 - Allocation by Strategy



[11] A detailed summary of the current geographic and strategy spread of our two portfolios is given in the Appendix, including the IRR, MIRR, TVPI and NAV of each fund and the portfolio.
[12] While the funds in each portfolio were selected at random from the Pevara database based on the criteria listed above, we excluded all bottom quartile funds to mimic skill in manager selection and to augment portfolio returns. For a more detailed look at how the portfolio was created and is managed, as well as the portfolio allocation strategies, refer to the *Private Equity Navigator* Methodology on GPEI's website.
[13] In order to maintain exposures in-line with the portfolios' target allocations, we reinvest distributions received from funds in new fund offerings with the same geographic and strategy focus, with the assumption that we can always access a new fund offering and commit the dollar amount of our choosing.
[14] See Appendix; the relevant fund is Fund 27 in Portfolio 2.

J-Curves and Portfolio Returns

The cash flows associated with our two hypothetical portfolios and the resulting net cash positions (the J-curve) of each are illustrated in Figures 7a and 7b below. The bars in each chart represent quarterly calls and distributions for the portfolios, with calls generating capital outflows and distributions generating cash inflows. To present the development of a classic portfolio J-curve, the cash flows and the net cash position in the figures track only the original 20 funds in each portfolio.

The J-curves for both portfolios show upward momentum in H1 2016, continuing the trend seen in the second half of 2015. Portfolio 1 generated capital calls of $39.8 million in H1 2016 (Q1 2016: $33.8 million; Q2 2016: $6.0 million), compared to distributions of $43.4 million (Q1 2016: $13.5 million; Q2 2016: $29.9 million), extending the roughly sideways trend in the curve over the last three and a half years. The small difference between the amounts of capital called and distributed means that the portfolio's net drawdown decreased marginally from $435.3 million in H2 2015 to $431.7 million in H1 2016.

The J-curve for Portfolio 2 continues the strong upward momentum produced over the last two years. In H1 2016, Portfolio 2 generated capital calls of $20.2 million (Q1 2016: $9.3 million; Q2 2016: $10.9 million) and robust distributions of $81.4 million (Q1 2016: $34.6 million; Q2 2016: $46.8 million). It has now distributed more capital than it has called for eight successive quarters, taking the net drawdown from $569.0 million as of June 2014 to $311.1 million as of June 2016. This is reflected in the formation of a classic "J" in the accumulated cash-flow curve.

Fig 7a Portfolio 1 - Cash Flows and J-curve

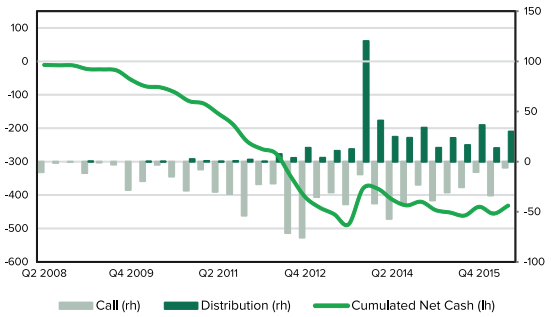
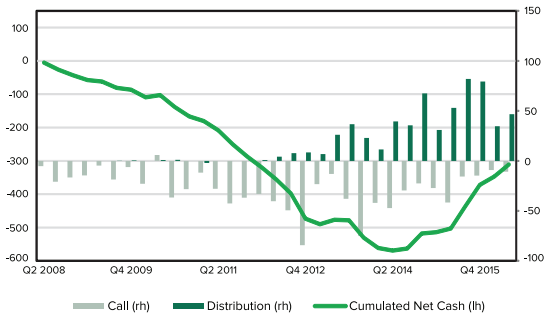


Fig 7b Portfolio 2: Cash Flows and J-curve

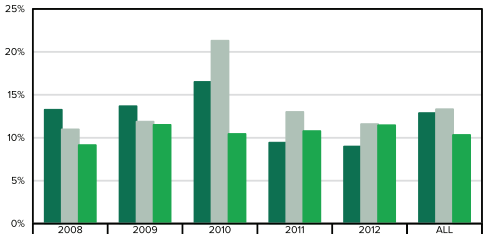


Comparison of portfolio returns

When compared side-by-side, the performance of our portfolios is quite similar, with Portfolio 1 generating a TVPI of 1.42x (an MIRR of 12.8%) and Portfolio 2 generating a TVPI of 1.49x (an MIRR of 13.0%). However, with unrealized returns accounting for 63% and 68% of TVPI in Portfolios 1 and 2 respectively, the jury is still out regarding cash-on-cash performance. The high level of unrealized returns also reflects the immaturity of both portfolios.

When we compare returns of the original 20 funds in our portfolios, a divergence in performance emerges (see Figure 8). While the original funds in Portfolio 1 have an MIRR of 12.9%, their counterparts in Portfolio 2 have an MIRR of 13.3%, suggesting that our Asia/ Europe and growth-focused strategy seems to be paying off, at least for now. We also see that the MIRRs of funds of vintages 2008-2012 for both portfolios are significantly higher than the 10.3% return provided by the market (all funds in the Pevara data set of these vintages).

Fig 8 MIRR Comparison for Original Portfolios by Vintage Year



	2008	2009	2010	2011	2012	ALL
Portfolio 1	13.25%	13.67%	16.49%	9.42%	8.98%	12.86%
Portfolio 2	10.97%	11.88%	21.30%	13.00%	11.58%	13.32%
Pevara all funds	9.13%	11.50%	10.43%	10.76%	11.45%	10.31%

Research by INSEAD's PE Centre

INSEAD's PE Centre regularly engages in research covering a wide range of topics salient to the private equity industry. The next few pages contain summaries of the latest research activity and findings from INSEAD.

Operational Improvement the Private Equity Way

By Graham Oldroyd, INSEAD MBA '89D on September 7, 2016

The private equity approach to operational improvement is selective and takes place in phases.

"Operational improvement" is a much hailed significant source of value creation by private equity (PE) firms in PE-backed companies. Although operational improvement can immediately be understood as a process of making a business run more efficiently, what it actually involves is seldom articulated in any detail.

Operational improvement can be addressed on multiple dimensions. 22 areas of possible focus listed in the matrix below range from the integration of a large acquisition to improving sales force effectiveness, to overhead reduction, to optimizing financial reporting and management information systems (see full matrix here).

Each area has the potential to deliver different levels of value creation, shown in the matrix as the typical increase that might be generated in the money multiple of the PE firm's equity investment. An IT system upgrade, while perhaps critical for business operations and maintenance of competitiveness, will typically act to preserve rather than enhance value; increasing sales force effectiveness on the other hand can be immediately value accretive. Each area of focus is, however, likely to require differing degrees of senior management attention and to entail different levels of implementation complexity and delivery risk.

A program to reduce purchasing costs should have relatively low delivery risk and require less senior management time in comparison to, for instance, a decision to adopt lean manufacturing. Different operational improvement activities can have very different consequences in terms of how they may be perceived inside and outside a business. Improving energy efficiency will be likely to be positively perceived internally and externally. In contrast, offshoring or outsourcing production can have major HR and public relations implications. These different considerations and their relative magnitudes are shown by ticks and crosses in the matrix.

Focus on value creation

While all of the operational improvement areas have the potential to add value, they should not be considered a shopping list applied in every situation. Rather, PE is typically very selective, choosing to concentrate on three or four areas at most in any given business at any one time. Experience shows that attempting to tackle any more than this will overburden management and produce poor outcomes. Once initial areas have been covered, further improvements can be delivered in subsequent and successive phases.

In judging operational improvement's contribution to PE investment returns, it can be difficult to disentangle with precision the value creation generated by operational improvement compared to that from underlying earnings growth, de-leveraging and exit earnings multiple enhancement. At the same time as increasing earnings, operational improvement should also improve cash generation and by this contribute to de-leveraging. Operational improvement which increases the rate of EBITDA growth and EBITDA margins will also likely lead to the business value set on a higher earnings multiple in a sale or IPO. Operational improvement's contribution to PE investment returns is nevertheless significant. On a PE investment which delivered a 2.0x to 2.5x money multiple on equity invested, half or more of the 1.5x uplift in equity value may have come from operational improvement.

Operational Improvement Measures: Investment Return vs. Implementation Risks

Operational Improvement	Typical Money Multiple Uplift	Complexity	Delivery Risk	Senior Executive Time Commitment	Adverse (×) or Favorable (✓) PR
Major Acquisition Integration	0.5x-2.0x	×××××	××××	×××××	×××
Minor Acquisition Integration	0.1x-0.5x	××	××	××	××
Factory Closure/Relocation	0.5x-1.0x	××××	×××	×××	××××

** This article has been modified to fit the layout of this report. For the full version, please visit here.*

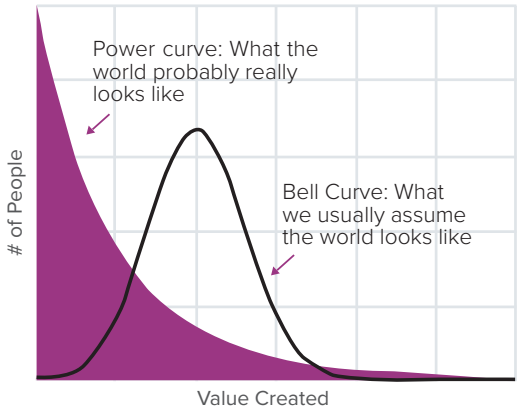
The Factors That Create Outperforming Stars:

By Avi Turetsky, Alumni Board Member GPEI on September 13, 2016

A small number of people account for the vast majority of value creation in private equity.

What do basketball player Kareem Abdul-Jabbar, actress Cloris Leachman and Microsoft founder Bill Gates have in common? Research conducted over the past 15 years or so has found that, across industries, jobs and fields of human endeavor, a small number of people are responsible for the vast majority of value creation. Whether we call it the 80/20 rule, the "1%" of the world's wealthiest people, or use the formal statistical term "power curve", whenever we measure the outcomes of human behavior some version of this phenomenon seems to apply.

Power Curve vs. Bell Curve



In the case of the people listed above, Abdul-Jabbar's 38,000+ career points make him the all-time NBA points leader, Leachman's eight U.S. Emmy Awards make her history's most awarded TV actor, and Bill Gates's US$75 billion makes him the world's richest person. Each of these individuals has performed so far above average that they have made the concept of "average" meaningless in their fields. In other words, they and people like them account for a far greater portion of success than a bell curve would predict.

In my paper, "Competencies, Clusters, and Star Performance at a Leading PE Firm", published in the Journal of Private Equity, I found that the more "competencies" a person has, the more these competencies reinforce each other. For example, exceptional strategic thinkers may be very valuable to their organizations. However, if they lack the energy to drive change, their impact will be limited. Now, if you take the strong strategic thinker and add high energy to the mix, you achieve "multiplicative reinforcement", that is the two competencies build upon each other such that each one makes the other more powerful. If you then take the same person and give them strong influencing skills, they benefit from multiplicative reinforcement again, moving closer to the outperforming tail of the power curve, and closer to becoming "stars".

Not all value levers are created equal

INSEAD recently published a look at private equity's value creation levers, called Value Creation 2.0. These levers are the different ways that private equity firms create value for the companies that they own, and include sales growth, margin growth, multiple expansion, debt pay-down and the leverage effect. My study indicates that not all value levers are created equal. Specifically, at least within this private equity firm, extreme outperforming companies differentiate from the pack primarily on the basis of sales growth.

Then, similar to the phenomenon of competencies, sales growth helps to pull the other levers and to reinforce them, creating an "interdependent-multiplicative" effect. Interdependency means that the better you are at one value lever, the better you will be at the others. For example, rapid sales growth can lead to higher margins, and higher sales growth can also lead to a higher valuation multiple if the company is sold. Multiplicativeness has the same effect on value levers as is described above for competencies.

Just like in private equity, it seems clear that across industries, different ways of creating value are more powerful than others (e.g. sales growth is more important than cost cutting in PE) and that the interactions between the levers are important too. When investing in new projects, companies can take advantage of this phenomenon by looking for opportunities that can create value through multiple levers (e.g. a project that will both grow sales and increase margins). On the flip side, companies should, perhaps, be suspicious of projects that can only pull one lever.

** This article has been shortened to fit the layout of this report. For the full version, please visit here.*

Case Studies

"Since 2013, Pro-invest had made huge strides: refining its investment thesis, building its team, beginning construction, and holding a first closing. However, with three projects underway, funding was tight and meeting the group's obligations and payroll each month was becoming a challenge."

"Pro-invest: How to Launch a Private Equity Real Estate Fund" describes how the Pro-invest Group, a boutique investment firm specializing in private equity real estate and real estate asset management, built its business and raised a first-time private equity fund. The Pro-invest founders had boot-strapped the business since its inception in 2013, but in-house funds were running out by mid-2014 and they needed third-party capital to take the venture to the next level. After deciding on a suitable fund structure, the Pro-invest team hits the fundraising trail.

The case traces the course of the firm's founding partners, providing insight into the dynamics and challenges of private equity fundraising. After securing funding from an anchor investor and breaking ground on two projects, Pro-invest receives a blow when their dream investor turns down the opportunity to invest. The team – and students completing the case study – is forced to revisit seven potential funding options and decide which to pursue next.

The case will be featured in INSEAD's Private Equity elective in Singapore. For more information, please visit the case site *here*.

"Time was short and George had some tough decisions to make and solutions to find before presenting his plan to Ivanishvili. The task was daunting with the vast number of opportunities to be considered."

"Private Equity in Frontier Markets: Creating a Fund in Georgia" explores the various challenges of forming and raising a private equity fund in frontier markets. While a $1 billion commitment from a former Prime Minister provides legitimacy and a degree of political cover, GCF founders must match the broader development goals the PM's investment requires with an appropriate fund structure and strategy to attract additional investors.

The case follows the activity of GCF's deputy-CEO through the early fund formation and fundraising process. Despite an improving business and economic environment in Georgia at the time of GCF's founding, investment activity in the country has not kept pace. In a country with few private equity managers and limited financial services sector activity, GCF has little precedence to gauge investor's interest in a private equity investment strategy, devise the most attractive fund structure or decide which investors to target during fundraising. The deputy-CEO is left to devise and execute an appropriate strategy.

For more information, please visit the case site *here*.

Partner Research: Exits in Brazilian PE and VC Deals

By Insper Institute of Education and Research and Spectra Investments in August 2016

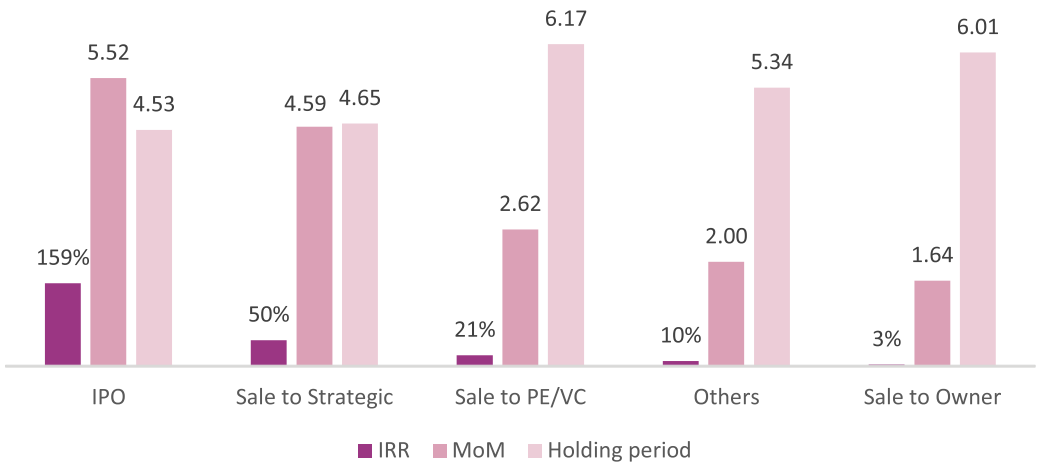
A PE firm's ability to successfully exit its fund investments is a crucial ingredient to developing a sustainable fund management business. Only when an investment is liquidated is it possible to observe its true performance and the return generated for investors. When considering regional or country-level returns, many publications fail to isolate the returns generated through different exit paths. What do returns look like for IPOs versus trade sales in a specific environment, or perhaps secondary sales relative to sales of a stake in a business back to its majority owner? The challenge of conducting this differentiated analysis is often compounded further in emerging markets, where robust exit data may not be readily available.

A recent report published by our research partner Insper Institute of Education and Research, a leading Brazilian Business and Economics School, and Spectra Investments, a Brazilian investor in PE and VC funds, shines a spotlight on industry exit activity in Brazil. The report analyzes a sample of 242 deals originated between 1982 and 2013 and exited between 1984 and 2014 from the Insper-Spectra database, a private dataset. The figure below provides summary statistics from the analysis.

Report highlights:

- The most common type of exit in Brazil over the last 30 years is sale to strategic buyers, followed closely by IPOs.
- IPOs as a whole provided the highest returns among the different exit paths, highlighting the importance of a healthy public equity market. Sales to strategic buyers also delivered robust returns for fund investors.
- With the shortest average holding periods in the sample and the highest MoM (multiple of money or cash-on-cash returns), IPOs and strategic sales generated robust IRRs.
- Sponsor-to-sponsor exits in Brazil have been rare over the last 30 years. This exit path generated neither extreme losses nor extreme outperformance, but was notable for its long holding periods.
- Sales to owners more frequently represent losses or mediocre returns, although there are some exceptions of successful exits.
- There is a high correlation between the stock market price/earnings ratio, the number of exits and the performance measured by MoM.

Performance and Holding Period by Exit-type



** The full report can be found here.*

PE News @ INSEAD

This section presents a roundup of the latest in private equity at INSEAD, from what is happening in our classrooms to an update on PE-related events and activities.

Partner Event: AVCJ ESG Forum 2016

The 2nd Annual AVCJ ESG Forum held on 5 September 2016 in Singapore gathered more than 110 of the industry's leading figures for a day of education, benchmarking and exchanging ideas on how GPs operating in Asia can drive value creation through ESG principles. This event was co-hosted with the United Nations-supported Principles for Responsible Investment (PRI) and presented in collaboration with PRI in Person 2016, the world's leading responsible investment event, which marked its 10th anniversary with a return to Asia after an eight-year hiatus.

Attendees hailed from 17 different countries around the world and heard from 30 experienced, successful ESG practitioners from across the globe. The Forum featured a keynote speech, interactive workshops, insightful case

studies, practical sessions and roundtable discussions. Topics at the Forum centered around driving tangible results via a focus on ESG and included:

- Value creation via a focus on ESG
- The business case for ESG transaction due diligence
- Securing buy-in at portfolio companies to address ESG principles
- ESG frameworks that promote sustainable operations, and
- LPs' expectations related to ESG when investing in Asia

The Forum opened with a keynote address from Christopher J. Ailman, Chief Investment Officer, California State Teachers' Retirement System, who shared his organization's approach to ESG

and how it has evolved over the last 10 years. The day featured two LP panels in which participants discussed how performance related to ESG impacts manager selection and their long-term allocation strategy to private equity; speakers included professionals from HESTA, Second Swedish National Pension Fund, ABP, PGGM, USS Investment Management and CalPERS.

In addition to panel discussions, the Forum included a candid and informative case study on solutions investing, featuring KKR and the Santanol Group, that covered the portfolio company's focus on using sustainable management practices. Attendees also had the chance to delve into the practicalities of identifying and managing ESG transaction risk in an extended workshop led by ERM and featuring TPG Capital and PAI Partners.

The Forum concluded with specialist roundtables on some of the most pressing ESG challenges for investors, including safeguarding against corruption, incorporating carbon and climate change in an ESG strategy and setting measurable KPIs to assess ESG performance.

PE Recruitment @ INSEAD

134 PE hires direct from INSEAD's MBA program since 2012

INSEAD ranked #1 for emerging markets PE recruitment among MBA programs with dedicated campuses in emerging markets, and #3 among global programs.

EMPEA

INSEAD has more than 1,800 alumni in the private equity industry with both GP and LP organizations. Many of these alumni are in senior roles and, in some cases, were founding members of what would become large and influential investment firms. INSEAD prepares students for a career in Private Equity through a unique curriculum and maintains an ecosystem for continued engagement through the INSEAD Private Equity Club. Notable alumni (small selection) include:

Adam Barron (Founder Bregal Capital), Alex Fortescue (Chief Investment Partner Electra Partners), Andrew Sillitoe (Co-CEO Apax Partners), Christoph Ruebeli (Co-CEO Partners Group), Conni Jonnson (Founder EQT), Eric Siew (Chief Investment Officer IFC), Graham Wrigley (Chairman CDC), Ian Riley and Mark Harford (Founders Vitruvian), John Singer (former Chairman Advent International Europe), Justin Bateman (Managing Partner BC Partners), Kurt Bjoerklund (Co-Managing Partner Permira), Nicholas Bloy (Co-Managing Partner Navis Capital), Richard Anton (Partner Amadeus Capital Partners), and Rod Richards (Managing Partner Graphite Capital)

Recruiting PE and VC Professionals at INSEAD

- Off-campus recruitment: job board, targeted search in CV database, hosting treks (small groups of students coming over to your office for a presentation of the fund), Sector-specific Private Equity CV Book
- On-campus recruitment, Fall & Spring: Company presentation, Networking Nights, Coffee Chats and Interviews
- Through the two intakes and the 48,400+ alumni pool, you will find candidates for all your needs:
  - MBA/EMBA/MFIN Graduates available for full-time roles
  - MBA Students available for summer internships
  - Experienced PE professionals in the alumni community
  - Experienced business profiles for operational roles in your portfolio companies

Contact the INSEAD Career Development Centre

Please do not hesitate to contact us if you would like to know more about recruitment at INSEAD:

- Financial Services, Europe Campus:
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PE Events @ INSEAD

Future PE Events

8th Annual INSEAD Asian Private Equity Conference, Singapore, 2016

INSEAD's Private Equity Club (IPEC) will again host its annual conference in Singapore under the theme "Achieving Outsized Returns in Asian Private Markets." This year's conference will feature insights from some of the most prominent GPs and LPs active in the region on topics including LP-GP relationships, regional investment trends, and value creation. The conference will be held at INSEAD's Asia campus on 4 November 2016. Learn more *here*.

INSEAD Forum Asia, Singapore, 2016

INSEAD Asia Forum is coming to Singapore this November. The specially designed event brings together the global alumni community for a weekend of education, idea sharing, and networking. The program includes a conference on the theme of "The Future of Business: Ideas, Innovation & Technology", networking dinners and cocktails, social activities for the family, and an INSEAD-styled party. The Forum will be held on 18-20 November 2016. Learn more *here*.

29th Annual AVCJ Private Equity & Venture Forum, Hong Kong, 2016

The 29th Annual AVCJ Private Equity & Venture Forum is the largest and most influential gathering of private equity and venture professionals in Asia. The AVCJ Forum brings together over 1,000 of the world's leading GPs, LPs and other professionals for three days of quality discussions, speeches and networking. It will be held at the Four Seasons in Hong Kong on 15-17 November 2016. Use discount code INSEAD_HK16 to enjoy a 15% discount off the regular price. Learn more *here*.

INVEST EUROPE
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INFRASTRUCTURE
LONG TERM INVESTORS

Invest Europe - INSEAD Single Family Office Day, Geneva, 2017

Invest Europe and INSEAD will co-host an invitation-only Single Family Office Day on 28 March 2017, the day prior to Invest Europe's Investors Forum. At last year's event, attendees shared their experiences investing in PE and discussed the latest trends in European PE. The event featured speakers from South American and Asian single family offices who shared their perspective on investing in an emerging markets context. Learn more about the upcoming event *here*.

Past PE Events

CFA Institute

69th CFA Institute Annual Conference, 2016

The Annual Conference is the CFA's flagship event each year and one of the largest and the longest running educational gatherings of investment professionals, attracting between 1,100 and 1,800 attendees from 70 countries in prior years. GPEI's Academic Director Claudia Zeisberger attended and taught a Masterclass on Private Equity at the event, held in Montreal, Quebec, Canada on 8-11 May 2016. Learn more *here*.

2nd Annual AVCJ PRI ESG Forum, Singapore, 2016

The 2nd Annual AVCJ PRI ESG Forum was held at The Westin, Singapore on 5 September. It gathered more than 110 of the industry's leading figures in Singapore for a day of education, benchmarking and an exchange of ideas on how GPs operating in Asia can utilize ESG principles. The forum featured interactive workshops, insightful case studies, practical sessions, roundtable discussions and a keynote speech. Learn more *here*.

INSEADAlum Ventures Founder Fireside Chat with Roger Egan III, 2016

INSEADAlum Ventures held a Founder Fireside Chat with one of Singapore's most accomplished entrepreneurs, Roger Egan III, Co-founder & CEO at RedMart. Roger shared his experience translating a vision into an actual business, managing product and tech development, establishing a core team and growing a business in a fiercely competitive market. The event was held at INSEAD's Asia campus on 6 October 2016. Learn more *here*.

APPENDIX

Portfolio 1:

- Strategy: Buyouts 81.6%; Growth 2.7%; Venture 4.4%; Others (Distressed & Mezzanine) 11.3%
- Geography: North America 66.0%; Europe 26.9%; Asia 4.2%; Other Emerging Markets 2.9%

Fund	Vintage	Strategy	Geography	Committed	Called	Remaining	Distributed	NAV	TVPI	IRR	MIRR	Quartile
Fund 1	2008	Buyout	US	90.00	(86.58)	3.42	129.90	48.69	2.06x	23.26%	17.09%	1st
Fund 2	2009	Buyout	US	90.00	(76.46)	13.54	44.29	107.22	1.98x	18.29%	3.94%	3rd
Fund 3	2010	Buyout	US	90.00	(91.69)	0.00	58.07	90.79	1.62x	22.90%	10.40%	1st
Fund 4	2010	Buyout	US	180.00	(79.02)	100.98	93.19	48.19	1.79x	29.56%	7.57%	1st
Fund 5	2011	Buyout	US	90.00	(53.81)	36.19	9.47	55.88	1.21x	7.52%	10.14%	3rd
Fund 6	2012	Buyout	US	90.00	(63.36)	26.64	4.54	80.71	1.35x	16.82%	15.46%	1st
Fund 7	2008	Buyout	W. Europe	70.00	(64.32)	5.68	20.43	66.91	1.36x	8.84%	14.18%	2nd
Fund 8	2009	Buyout	W. Europe	70.00	(62.10)	7.90	17.59	70.85	1.42x	11.11%	0.75%	3rd
Fund 9	2011	Buyout	W. Europe	70.00	(57.76)	12.24	0.01	61.41	1.06x	2.41%	4.30%	3rd
Fund 10	2008	Venture Capital	R.o.W	10.00	(10.00)	0.00	1.80	8.19	1.00x	(0.02%)	11.80%	4th
Fund 11	2008	Venture Capital	US	15.00	(13.88)	1.12	8.58	11.22	1.43x	8.97%	(5.11%)	2nd
Fund 12	2008	Venture Capital	W. Europe	15.00	(14.70)	0.30	4.88	12.09	1.15x	3.55%	15.78%	2nd
Fund 13	2012	Venture Capital	W. Europe	15.00	(10.75)	4.25	0.00	12.70	1.18x	8.42%	12.80%	2nd
Fund 14	2012	Buyout	Asia/Pacific	15.00	(14.26)	0.74	0.44	21.06	1.51x	17.31%	16.17%	2nd
Fund 15	2012	Late/Expansion	R.o.W	20.00	(19.71)	0.29	6.46	20.81	1.38x	16.39%	18.92%	2nd
Fund 16	2010	Late/Expansion	Asia/Pacific	20.00	(8.44)	11.56	0.96	6.70	0.91x	(2.15%)	18.91%	4th
Fund 17	2012	Opportunistic	Asia/Pacific	20.00	(14.79)	5.21	0.09	15.32	1.04x	1.36%	12.46%	3rd
Fund 18	2009	Distressed Deb	US	40.00	(41.20)	0.00	31.76	20.09	1.26x	11.45%	12.43%	3rd
Fund 19	2012	Mezzanine Cap	US	40.00	(53.73)	0.00	1.52	36.76	0.71x	(15.63%)	8.38%	4th
Fund 20	2011	Distressed Deb	W. Europe	40.00	(29.14)	10.86	0.02	42.81	1.47x	13.16%	9.75%	2nd
Fund 42	2013	Buyout	US	50.00	(29.83)	20.17	9.08	30.27	1.32x	29.68%	3.71%	1st
Fund 45	2013	Buyout	US	50.00	(36.35)	13.65	0.01	44.32	1.22x	12.75%	14.27%	2nd
Fund 46	2013	Buyout	US	50.00	(38.57)	11.43	21.22	23.25	1.15x	12.96%	16.19%	1st
Fund 47	2013	Buyout	US	50.00	(32.55)	17.45	3.16	31.78	1.07x	5.42%	15.01%	3rd
Fund 59	2015	Buyout	US	40.00	(11.39)	28.61	0.00	11.63	1.02x	2.05%	10.47%	
Fund 61	2015	Buyout	W. Europe	20.00	(5.87)	14.13	0.00	6.92	1.18x	17.73%	11.52%	
Fund 66	2014	Buyout	US	60.00	(27.30)	32.70	1.34	30.21	1.16x	17.10%	6.45%	1st
All				1,410.00	(1,047.55)	379.07	468.81	1,016.80	1.42x	14.34%	12.78%	

Portfolio 2:

- Strategy: Buyouts 53.9%; Growth 20.5%; Venture 18.4%; Others (Distressed & Mezzanine) 7.2%
- Geography: North America 48.2%; Europe 29.6%; Asia 18.8%; Other Emerging Markets 3.4%

Fund	Vintage	Strategy	Geography	Committed	Called	Remaining	Distributed	NAV	TVPI	IRR	MIRR	Quartile
Fund 21	2008	Buyout	US	90.00	(95.56)	0.00	90.65	54.61	1.52x	9.38%	10.35%	2nd
Fund 22	2010	Buyout	US	90.00	(79.02)	10.98	93.19	48.19	1.79x	29.56%	18.92%	1st
Fund 23	2012	Buyout	US	90.00	(88.69)	1.31	6.24	109.91	1.31x	11.05%	11.31%	2nd
Fund 24	2008	Buyout	W. Europe	70.00	(59.48)	10.52	68.80	23.67	1.55x	12.40%	12.19%	2nd
Fund 25	2009	Buyout	W. Europe	70.00	(67.25)	2.75	49.81	53.06	1.53x	11.10%	11.48%	3rd
Fund 26	2009	Buyout	Asia/Pacific	60.00	(57.91)	2.09	42.63	27.06	1.20x	5.16%	8.18%	2nd
Fund 27	2010	Venture Capital	US	30.00	(31.80)	0.00	8.18	158.38	5.24x	62.95%	41.99%	1st
Fund 28	2011	Venture Capital	US	30.00	(25.80)	4.20	23.86	18.86	1.66x	32.84%	19.35%	1st
Fund 29	2009	Late/Expansion	US	30.00	(30.42)	0.00	35.05	29.77	2.13x	21.02%	16.92%	1st
Fund 30	2011	Venture Capital	R.o.W	20.00	(17.30)	2.70	31.74	16.08	2.76x	77.27%	31.77%	1st
Fund 31	2012	Buyout	W. Europe	70.00	(39.20)	30.80	1.47	48.10	1.26x	9.20%	10.04%	3rd
Fund 32	2011	Buyout	R.o.W	40.00	(22.14)	17.86	0.40	19.86	0.91x	(3.04%)	3.46%	4th
Fund 33	2011	Late/Expansion	Asia/Pacific	30.00	(16.58)	13.42	1.15	15.31	0.99x	(0.19%)	1.43%	4th
Fund 34	2010	Late/Expansion	Asia/Pacific	30.00	(11.69)	18.31	0.09	11.58	1.00x	(0.02%)	1.91%	4th
Fund 35	2009	Late/Expansion	Asia/Pacific	30.00	(40.90)	0.00	25.35	37.16	1.53x	12.68%	12.33%	2nd
Fund 36	2011	Late/Expansion	W. Europe	40.00	(34.30)	5.70	0.00	37.24	1.09x	3.87%	7.94%	3rd
Fund 37	2008	Late/Expansion	W. Europe	40.00	(38.73)	1.27	32.13	25.96	1.50x	9.47%	10.55%	2nd
Fund 38	2010	Distressed Deb	US	50.00	(39.59)	10.41	19.25	39.96	1.50x	12.77%	12.42%	1st
Fund 39	2012	Buyout	Asia/Pacific	40.00	(36.60)	3.40	11.05	37.22	1.32x	15.49%	13.75%	3rd
Fund 40	2011	Distressed Deb	W. Europe	50.00	(72.47)	0.00	53.30	31.55	1.17x	10.39%	11.45%	3rd
Fund 41	2013	Buyout	W. Europe	30.00	(21.27)	8.73	1.16	22.38	1.11x	8.65%	10.33%	2nd
Fund 43	2013	Buyout	US	50.00	(29.83)	20.17	9.08	30.27	1.32x	29.68%	18.91%	1st
Fund 44	2013	Late/Expansion	Asia/Pacific	10.00	(6.04)	3.96	0.41	5.15	0.92x	(4.80%)	0.73%	3rd
Fund 48	2013	Buyout	W. Europe	50.00	(25.87)	24.13	0.01	26.20	1.01x	0.81%	5.13%	3rd
Fund 49	2013	Distressed Deb	US	40.00	(5.88)	34.12	1.42	3.86	0.90x	(4.84%)	1.23%	3rd
Fund 50	2013	Buyout	Asia/Pacific	20.00	(6.39)	13.61	0.00	6.40	1.00x	0.08%	2.44%	2nd
Fund 60	2015	Buyout	US	30.00	(11.89)	18.11	0.00	11.64	0.98x	(2.35%)	2.78%	
Fund 62	2015	Late/Expansion	Asia/Pacific	40.00	(13.72)	26.28	0.11	11.60	0.85x	(20.20%)	(8.28%)	
Fund 63	2015	Late/Expansion	Asia/Pacific	30.00	(9.60)	20.40	0.00	8.94	0.93x	(10.42%)	(4.07%)	
Fund 64	2015	Late/Expansion	Asia/Pacific	25.00	(8.55)	16.45	0.06	9.01	1.06x	10.36%	10.99%	
Fund 65	2015	Buyout	W. Europe	30.00	(21.83)	8.17	0.00	22.67	1.04x	5.78%	6.25%	
Fund 67	2014	Buyout	Asia/Pacific	60.00	(6.98)	53.02	1.54	5.17	0.96x	(2.62%)	1.36%	2nd
Fund 68	2014	Buyout	W. Europe	60.00	(20.64)	39.36	7.71	19.12	1.30x	16.87%	15.41%	1st
Fund 69	2014	Late/Expansion	Asia/Pacific	40.00	(25.18)	14.82	0.31	22.94	0.92x	(5.51%)	0.88%	4th
All				1,515.00	(1,119.09)	437.06	616.14	1,048.89	1.49x	14.64%	12.99%	

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