

A decorative banner image showing a close-up, high-angle view of a stone or concrete architectural surface with a grid-like pattern of recessed rectangular panels.

Private Equity Portfolio Review

Los Angeles • New York

Prepared for the Rhode Island State Investment Commission

March 23, 2016



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Portfolio Summary

Review of Second Half of 2015 Activity and Performance

Long Term Performance

Portfolio Construction and Exposures

Appendix: First Quarter 2016 Market Outlook

Note: Not all private equity partnerships have reported December 31, 2015 valuations. For those partnerships the report uses estimated market values.

Overview of Private Equity Portfolio as of December 31, 2015 (estimate)

Portfolio Summary Since Inception

- Inception Date: December 20, 1982
- Total Commitments: \$2.0 billion
- Number of Partnerships
 - Committed: 123 partnerships
 - Liquidated: 45 partnerships
 - Active: 78 partnerships
- Cash Flows (millions)
 - Commitments: \$1,998
 - Contributions: \$1,833
 - Distributions: \$2,200
 - Unfunded: \$316
 - Market Value: \$519

ERSRI Private Equity Portfolio Performance

Net of Fees

Since Inception Annualized IRR	13.5%
Total Value to Paid in Capital	1.5x

Mature private equity portfolio that has distributed more than invested

Cash Flows and Commitments Second Half of 2015 (estimate)

Commitments (000)

June 30, 2015		\$1,984,063
Net New Commitments (Closed)	\$20,000 Nautic Partners VIII	\$20,000
Commitment Adjustments		-\$5,681
December 31, 2015		\$1,998,382

Cash Flows (000)

June 30, 2015 Market Value		\$560,222
Contributions	\$50,789	
Distributions	(\$82,825)	
Gains	(\$9,268)	
December 31, 2015 Market Value		\$518,920

- Committed to 1 fund which closed in 2nd half of 2015
- Portfolio experienced investment loss of \$9.3 million
- Portfolio was cash flow positive with distributions exceeding contributions by \$32.0 million

Since Inception Performance as of December 31, 2015- estimate

Performance	Jun 2015	Dec 2015	Change
Since Inception Annualized IRR	13.7%	13.5%	-0.2%
Total Value to Paid in Capital	1.51x	1.48x	-0.03

- Long term performance remains strong

Commitments to Vintage Year 2015 Funds

Fund	Sector	Strategy	Commitment
Baring Asia Fund VI	Asia Private Equity	Middle Market Buyouts	\$15,000,000
Centerbridge Capital Partners III	US Buyouts	Middle Market Value Buyouts	\$30,000,000
EnCap Energy Fund X	Energy	Upstream	\$25,000,000
Garrison Opportunity IV	Debt	Direct Lending	\$30,000,000
Industry Ventures III - Coinvestment	Venture Capital	Primaries/Secondaries	\$15,000,000
Paine & Partners IV	US Buyouts	Sector Focus: Food and Ag	\$30,000,000
Nautic Partners VIII	US Buyouts	Middle Market Buyouts	\$20,000,000

Performance Drivers in 2nd Half of 2015 based on Change in Est. Cumulative Gains

Second Half of 2015 Positive Drivers

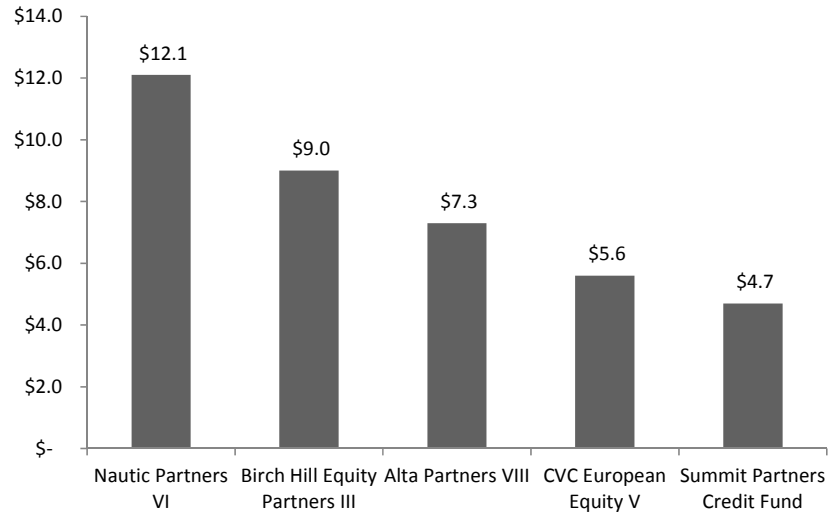
Partnership	Sector	Vintage Year	Change in Cumulative Gains (millions)
Nautic Partners VI	US Buyouts	2007	\$4.1
Nautic Partners VII	US Buyouts	2014	\$2.4
OCM Europe Principal Fund III	Distressed	2011	\$0.9
Braemer Energy Ventures III	Venture Capital	2011	\$0.9
Riverside Capital Appreciation VII	US Buyouts	2013	\$0.6

Second Half of 2015 Disappointing Drivers

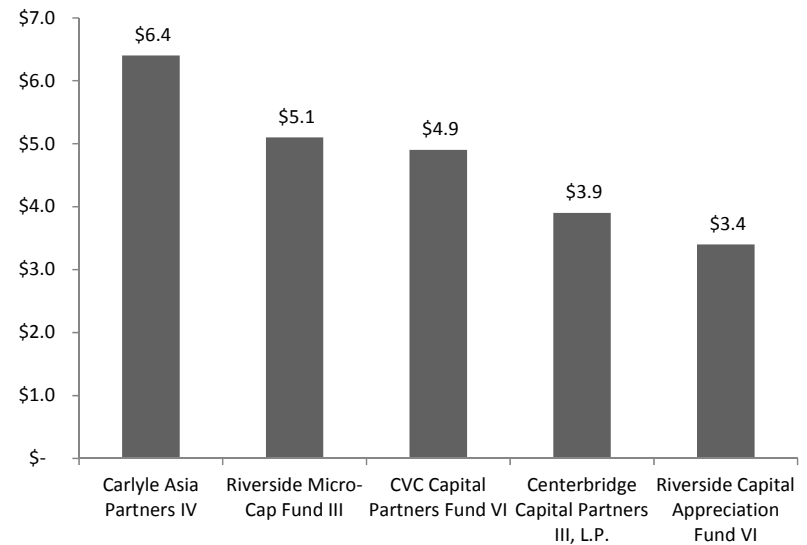
Partnership	Sector	Vintage Year	Change in Cumulative Gains (millions)
Birch Hill Equity Partners III	Canadian Buyouts	2005	-\$2.9
MHR Institutional Partners III	Distressed	2006	-\$2.2
Granite Global III	Venture Capital	2006	-\$2.0
First Reserve XI	Energy	2006	-\$1.8
Granite Global II	Venture Capital	20074	-\$1.4

Partnership Cash Flows during Second Half of 2015

Top Five Fund Distributions in 2nd Half 2015



Top Five Fund Contributions in 2nd Half 2015

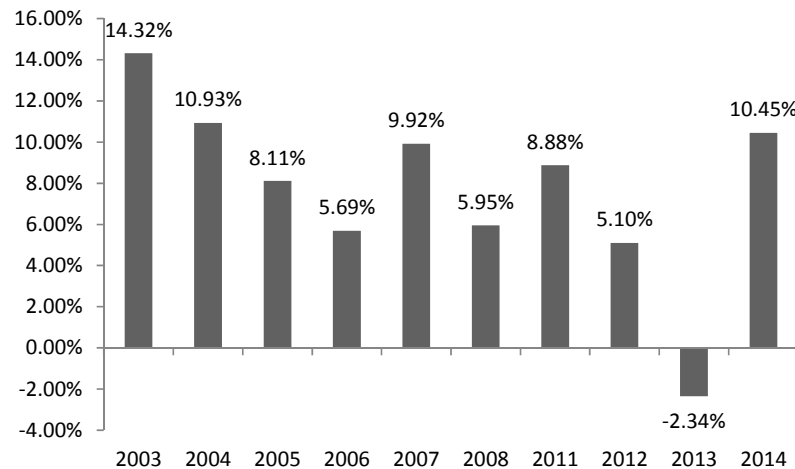


Long Term Performance Drivers (Vintage Years 2003-2015 excluding liquidated funds/ estimate)

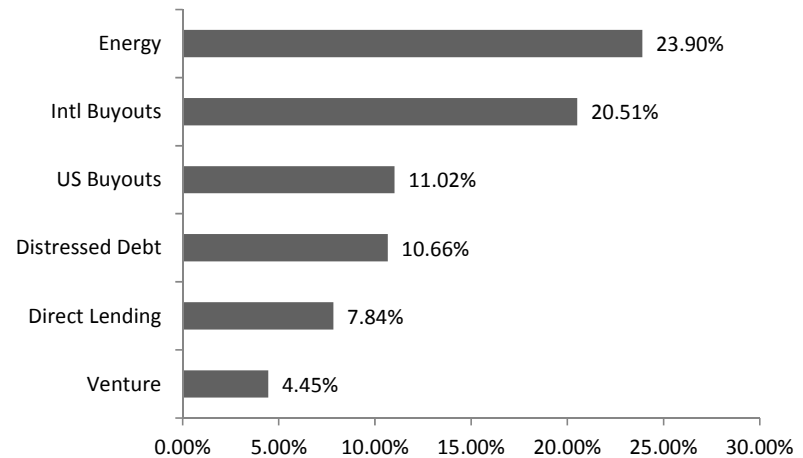
Top Five Performing Partnerships based on Since Inception IRR through December 31, 2015 (est)

Partnership	Sector	Vintage Year	Commitment Amount	Since Inception Annual IRR
Nautic Partners VII	US Buyout	2014	\$20.0	108.7%
CVC European Equity III	European Buyout	2001	\$20.0	41.1%
First Reserve X	Energy	2004	\$20.0	31.1%
Providence Equity Partners IV	US Buyout	2001	\$25.0	23.9%
Nordic Capital Fund V	European Buyout	2003	\$15.9	21.1%

Returns by Vintage Year



Returns by Sector

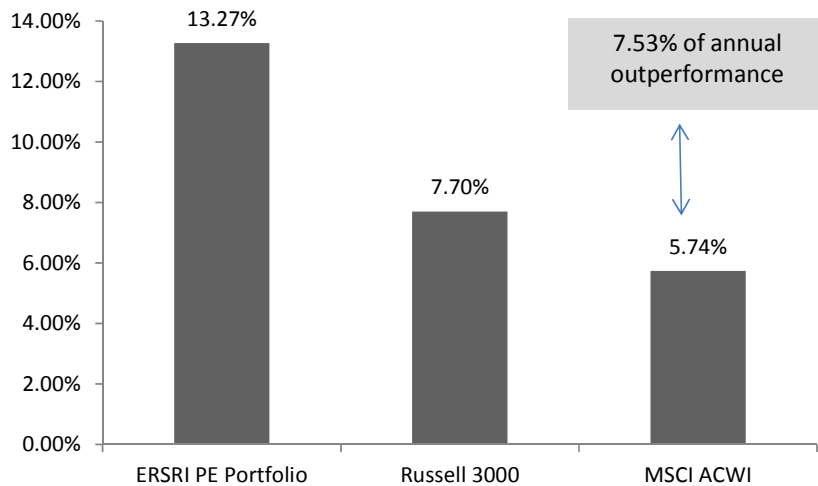


Notes: All returns are since inception annualized IRRs net of fees. For Vintage Year returns, no commitments were made in 2009-10 and 2013-14 returns are too early to be meaningful.

Relative Performance as of December 31, 2015 (estimate)

Performance versus Public Equities*

Since inception annualized internal rate of returns net of fees



* Public index returns are calculated as private market equivalents where actual PE cash flows are applied to the index return. Note that this is a quarterly IRR calculation. The IRR for the portfolio using a daily calculation is 13.5%. Index IRRs assume reinvestment in respective index.

Performance versus Private Equity Universe**

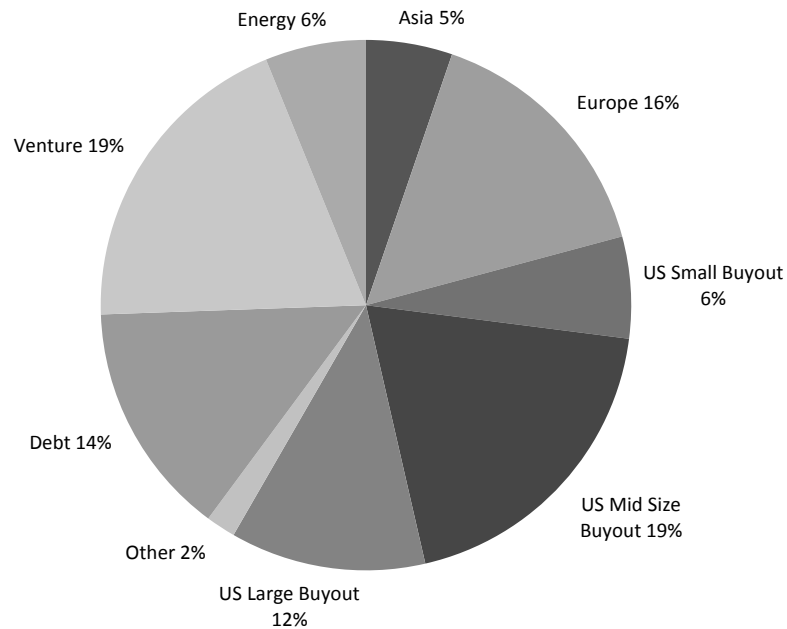
Since inception annualized returns net of fees

	Vintage Year	ERSRI PE Portfolio	Universe Median Return
Outperformance	1998	10.87%	8.16%
	1999	9.97%	0.34%
	2000	14.75%	3.15%
	2001	31.62%	8.49%
	2002	17.87%	9.71%
	2003	14.32%	9.67%
Under performance	2004	10.93%	8.07%
	2005	8.11%	7.40%
	2006	5.69%	7.35%
	2007	9.92%	9.76%
Young investments	2008	5.95%	9.95%
	2011	8.88%	11.27%
	2012	5.10%	10.36%
	2013	-2.34%	4.67%
	2014	10.45%	-0.88%

** Cambridge Global Private Equity/Venture Capital Universe

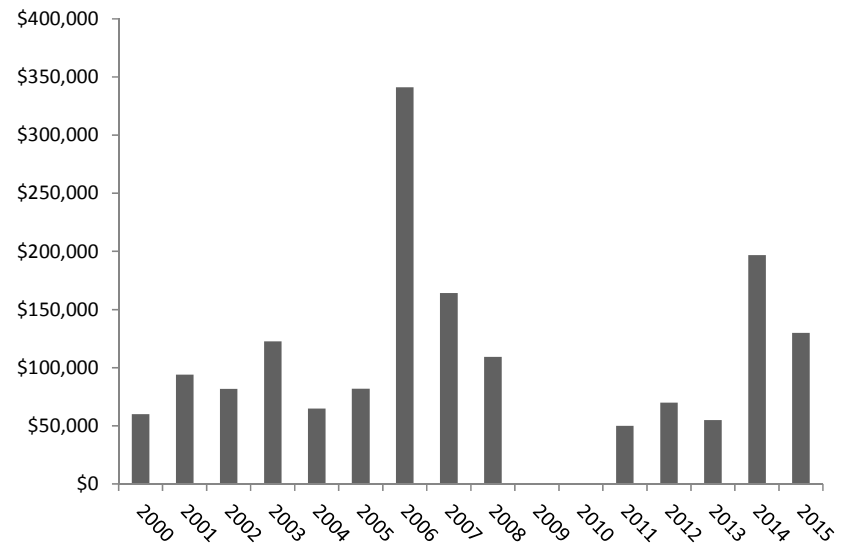
Exposures by Strategy Sector and Vintage Year as of December 31, 2015

Exposure by Fund Sector Strategy
(exposure equals market value plus undrawn capital)



Portfolio is diversified by strategy

Commitments by Vintage Year
In millions of dollars



Some vintage year concentration with large exposure to 2006 and no exposure to 2009/10

Exposures by Fund and Manager as of December 31, 2015

Exposure by Fund

(exposure equals market value plus undrawn capital)

Fund	\$ Exposure	% Exposure
Garrison Opportunity Fund IV, LLC	30,686,237	3.82%
Paine & Partners Capital Fund IV	28,829,077	3.59%
Sorenson Capital Partners III, L.P.	28,234,280	3.52%
Carlyle Asia Partners IV, LP	27,478,665	3.42%
Industry Ventures Partnership Holdings III, LP	25,874,516	3.22%

Portfolio is diversified by fund with largest exposure less than 4% of total

Larger fund exposures are represented by newer commitments that have yet to reach distribution stage

Exposure by Manager

(exposure equals market value plus undrawn capital)

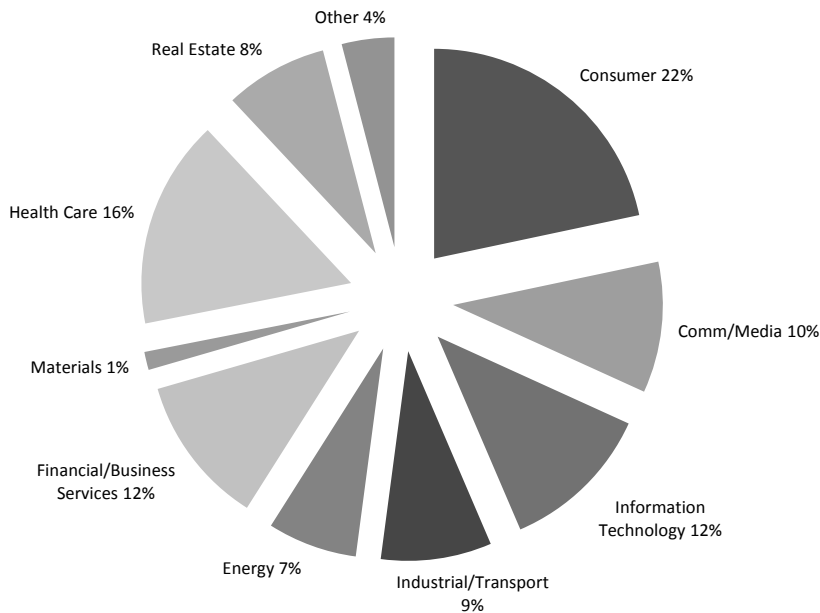
Firm	\$ Exposure	% Exposure
Nautic Partners	59,453,268	7.40%
Centerbridge Capital Partners	55,546,227	6.92%
Providence Equity Partners	48,519,951	6.04%
Nordic Capital	46,552,680	5.80%
EnCap Energy Capital	42,771,143	5.33%

Portfolio is diversified by manager with largest exposure at 7.4% of total

Larger manager exposures represent managers who have performed well and commitments have been made to multiple funds over time

Exposures by Industry and Company as of September 30, 2015

Exposure by Industry
Based on market value



Portfolio is diversified by industry

Examples of Largest Company Holdings

Company	Sector	Partnership
Griffin Holdings	Real Estate	Oaktree European Principal Fund III
Sleep Country Canada	Consumer	Birch Hill Equity Partners III
Lionsgate	Comm/Media	MHR Institutional Partners III
Veracode	Information Technology	Point 406 Ventures I
ConvaTec Group	Health Care	Nordic Capital Fund VII
Shred-it International	Business Services	Birch Hill Equity Partners III
Tate's Holding	Consumer	Riverside Micro-Cap Fund III
ConvaTec Group	Health Care	Nordic Capital Fund VII
Esperion Therapeutics	Health Care	Alta Partners VIII
CradlePoint Inc	Information Technology	Sorenson Capital III

Portfolio consists of over 950 companies with no company larger than 2% of total market value



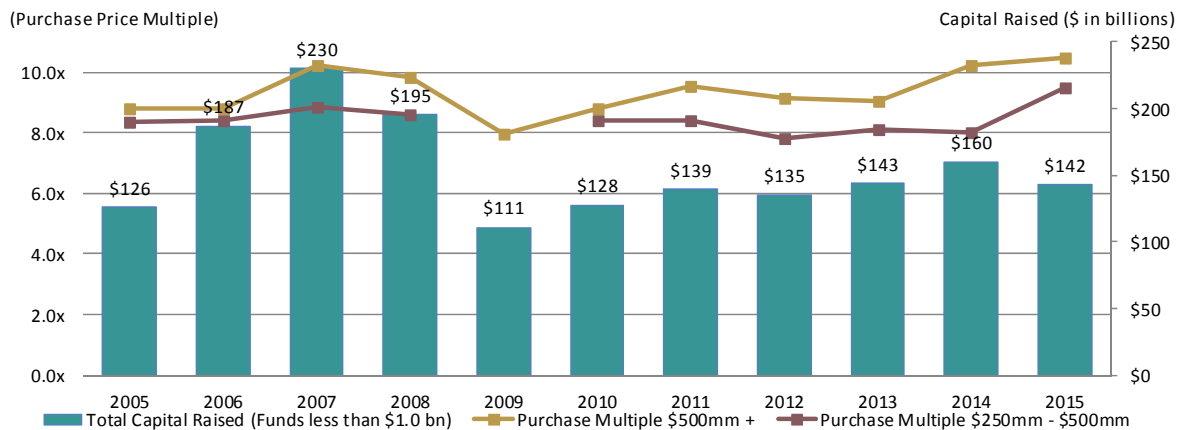
First Quarter 2016 Private Equity Outlook

Private Assets Outlook – Investment Environment is Becoming More Attractive

U.S. Large Buyout	Company pricing remains high given the availability of equity capital.	Neutral
U.S. Mid/Small Buyout	A low equity capital overhang compared to historical levels is leading expectations of more attractive deal pricing.	Positive
Distressed	Increasing high yield spreads suggest the beginning of a distressed cycle.	Positive
Private Debt	Market volatility has created greater opportunities for private lenders to drive terms.	Positive
Venture	High-quality firms are actively fundraising, though exit opportunities remain limited.	Neutral
Europe	Weaker growth expectations relative to the U.S. is expected to drive purchase multiples lower than domestic companies.	Neutral
Asia	Slowing growth in China has reinforced the need for investment selectivity by managers and the potential to employ distressed or turnaround strategies.	Negative
Latin America	Weakness in Brazil may create lower company prices. Attractive opportunities remain in Colombia, Peru, Mexico, and Chile, driven by domestic consumption.	Neutral
Energy	Managers without adequate reserves are showing signs of distress.	Positive
Infrastructure	Buying opportunities are increasing as large companies divest of assets.	Neutral
Agriculture & Timber	Land prices are declining in certain regions.	Neutral
Real Estate – Equity	Forecasts of interest rates and cap rate normalization are offset by demand and supply equilibrium in most markets.	Neutral
Real Estate – Debt	Limited financing is available for development and transitional properties despite strong property cash flows and occupancies.	Positive

High Quality Small and Middle Market Funds Perform Favorably

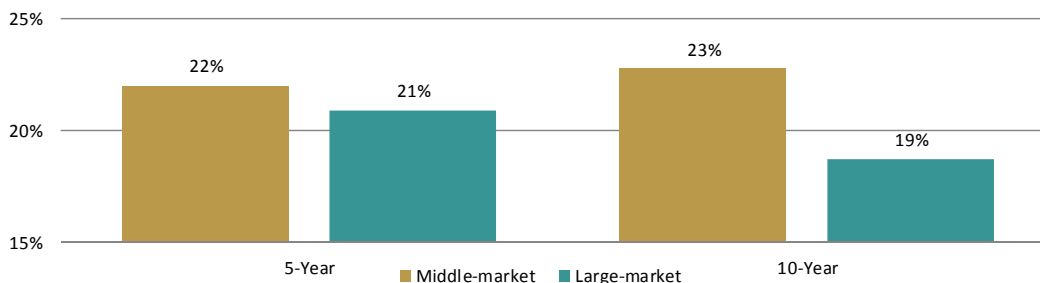
U.S. Middle Market Deal Pricing and Fundraising



Source: Pitchbook, S&P LCD

Note: The 2009 sample size for \$250mm to \$500mm S&P LCS purchase price data was not large enough for a complete dataset.

U.S. Middle & Large-Market Above-Median Performance



Source: Cambridge U.S. buyout benchmarks as of 6/30/2015; funds ranking within the first or second quartile.

Note: Large-market defined as fund size above \$1.0 billion; Middle-market defined as fund size below \$1.0 billion.

Buyout Fundraising Expected to Slow by Summer 2016

Sector Focused	
Arbor (1Q 2016)	<ul style="list-style-type: none"> • Food, beverage and distribution companies • Stable team, limited competition
Thoma Bravo XII (current)	<ul style="list-style-type: none"> • Software focused buyouts • Strong net performance consistently at or above 20% net IRR
Vista VI (current)	<ul style="list-style-type: none"> • Software focused buyouts • Low loss ratio
Vista Foundation Fund III (current)	<ul style="list-style-type: none"> • Lower middle-market software focused buyouts • Strong performance relative to private equity benchmarks

Diversified	
Green Equity VII (current)	<ul style="list-style-type: none"> • Consumer and diversified fund • Stable team, consistent performance
OnCap (1H16)	<ul style="list-style-type: none"> • Diversified small-cap U.S. and Canada • Stable team, performance ranking above the first quartile across three prior funds
Parthenon (current)	<ul style="list-style-type: none"> • Diversified across business services, financial services, and healthcare • Recent strong sales
Kinderhook (2Q16)	<ul style="list-style-type: none"> • Diversified small-cap buyouts • High performing winners

More Attractive Pricing Exists in European Mid-Market and Smaller Buyouts

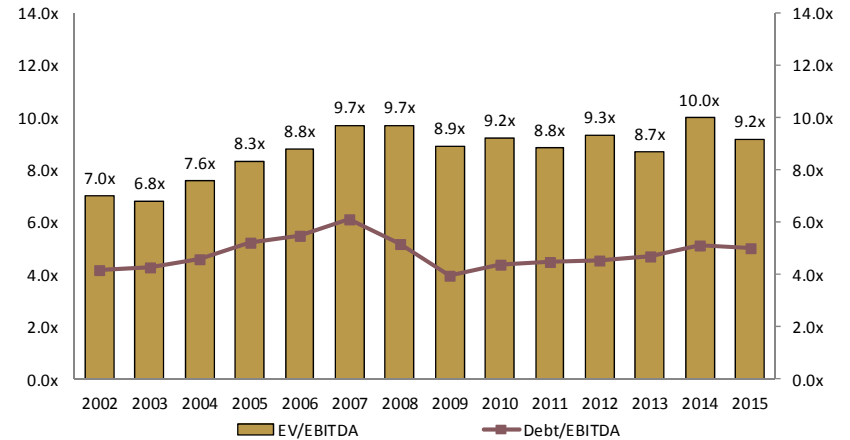
Greater investment opportunity in 2016 with established pan-European managers

Groupe Alpha VII (current)	<ul style="list-style-type: none"> • Mid-market deals in France, Italy, Benelux and German-speaking Europe • All prior funds first or second quartile • 22-year investment history
Permira VI (February 2016)	<ul style="list-style-type: none"> • Prior 5 funds first or second quartile, with since inception TVPI of 1.6x and net IRR of 23% • Large investment team of 87 professionals
Summit Europe II (2Q 2016)	<ul style="list-style-type: none"> • Fund I had three strong liquidity events • The team has been investing out of Europe since 2001

High quality regional funds will be in market during 1H 2016

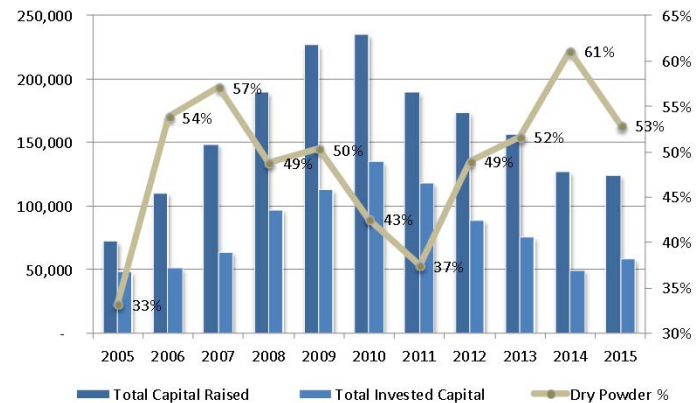
Bencis V (April 2016)	<ul style="list-style-type: none"> • Lower mid-market investor in Netherlands and Belgium with 15 year history • Strong overall track record • Stable transaction sizes in past few funds
DBAG VII (April 2016)	<ul style="list-style-type: none"> • Germany focus. Large team with long tenure • Control investments in industrial companies • Net IRR consistently above 20%
Gilde Healthcare IV (current)	<ul style="list-style-type: none"> • Growth capital focused on healthcare companies in the Benelux and in U.S. • >2.0x gross return in prior two funds • Over 15-year investment history
FSN V (April 2016)	<ul style="list-style-type: none"> • Nordic mid-market firm established in 1999, with a 21-person investment team • Fund I MOIC 3.2x, Fund II MOIC 2.5 and Fund III MOIC 1.9x. Fund IV is valued at 1.2x • Blue-chip LP base

European LBO Purchase Price & Debt Multiples As of December 31, 2015



Source: S&P LCD Europe

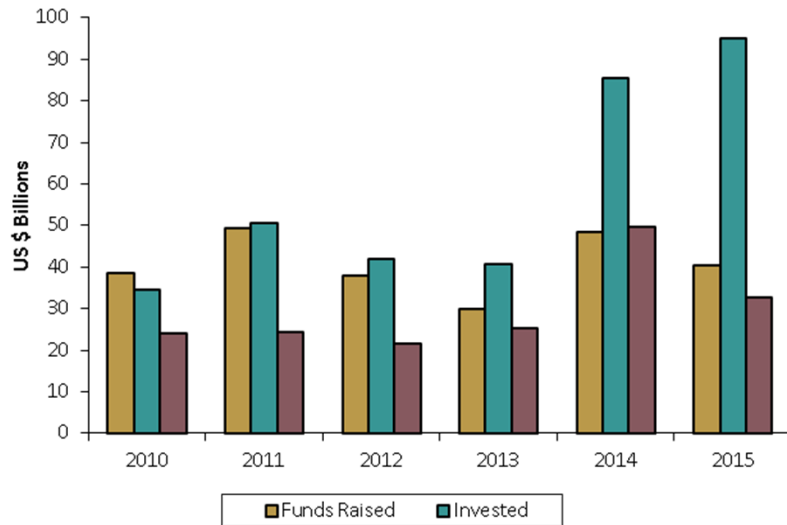
European Buyout Capital Overhang As of June 30, 2015



Source: Cambridge Associates European private equity benchmarks as of June 30, 2015
 Total capital raised and invested capital represent capital over the last six years.
 Dry Powder % = uninvested capital over total capital raised.

China Slowdown and Volatility Underscores Importance of Regional Diversification

Asia Private Equity Activity Year-Over-Year



Source(s): APER

Fund sizes continue to increase dramatically and valuations pressures remain high for trophy assets in key jurisdictions such as China, Korea, Japan, Australia and India

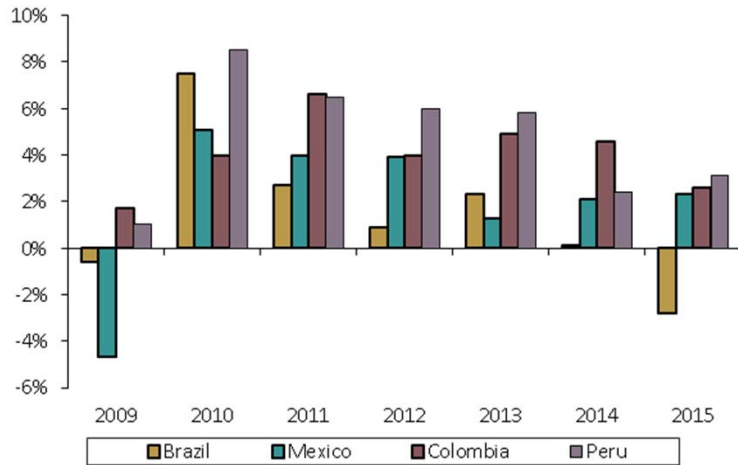
Cobalt Equity Partners (1H 2016)	<ul style="list-style-type: none"> Focus on industrial and healthcare investments across Asia, with an emphasis on more mature geographies Core team from GE's Asia Pacific investment group
Carlyle Asia Partners V (2H 2016)	<ul style="list-style-type: none"> Pan-regional buyouts and growth capital investments Consistent performance and steady exit pace Top China team with strong regional coverage
MBK IV (1H 2016)	<ul style="list-style-type: none"> Focus on Korea, China, and Japan Strong franchise and deal flow in Korea

In a period dominated by a slowing Chinese economy, regional public market volatility, and low commodity prices, investors need to target pockets of growth such as tech, media and healthcare or structural opportunities such as corporate spinouts and succession-driven asset sales

CMC Capital II (current)	<ul style="list-style-type: none"> Focused on media and Internet related opportunities Firm founded by one of China's top media executives
Banyan Capital III (2H 2016)	<ul style="list-style-type: none"> Early-stage and expansion-stage venture capital in China Spinout of top junior partners from IDG Capital
Shoreline China Value IV (1H 2016)	<ul style="list-style-type: none"> Distressed debt and structured capital investments in China Unique emphasis and expertise in NPL portfolios

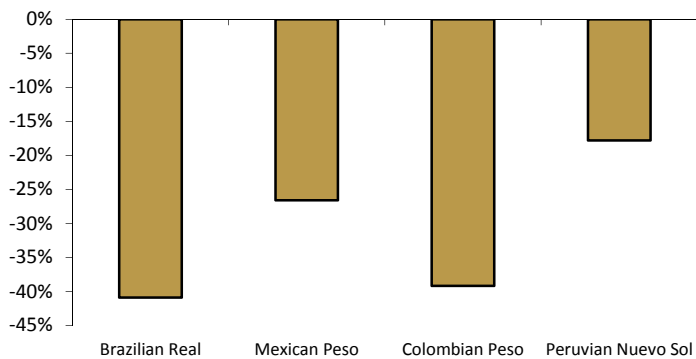
Brazil's Current Issues Present Long-Term Opportunities for Investors

Latin American GDP Growth Rates



Source(s): EIU, respective central banks

Currency Devaluations from January 2014 to January 2016



Source(s): Bloomberg, Yahoo! Finance, XE.com

Cliffwater maintains its focus on top-tier pan-regional funds in Latin America due to country-level macroeconomic, political, and currency risks. The ability to dynamically allocate capital across the region remains a key risk management tool

Victoria South America III (2H 2016 / 1H 2017)

- Former DLJ Merchant Banking platform
- Strong reputation as conservative and disciplined investors
- Outperformance in Fund I, strong early results in Fund II

Country or sub-regional funds should be added to investor portfolios on an opportunistic basis, with a focus on differentiated exposures along deal sizes and sectors and unique sourcing angles

Nexus VII (2H 2016)

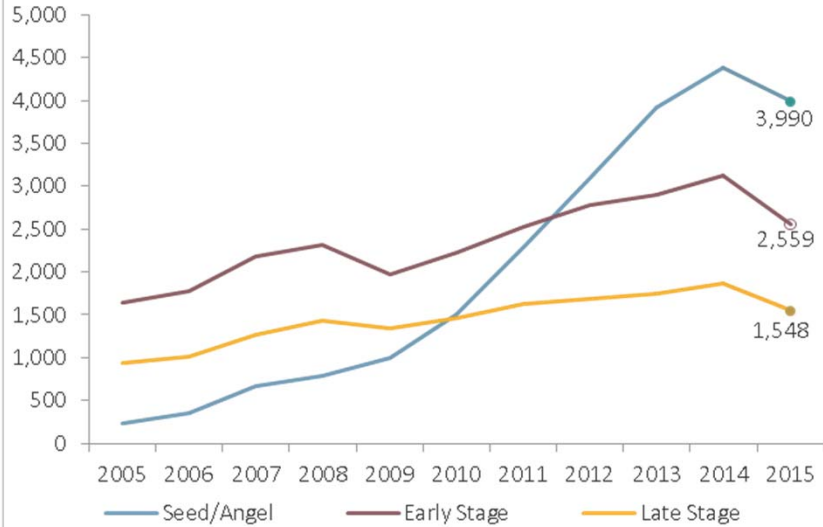
- Extensive track record in Mexico across multiple economic cycles
- Focus on family-owned businesses and platform investments

Patria VI (2017/2018)

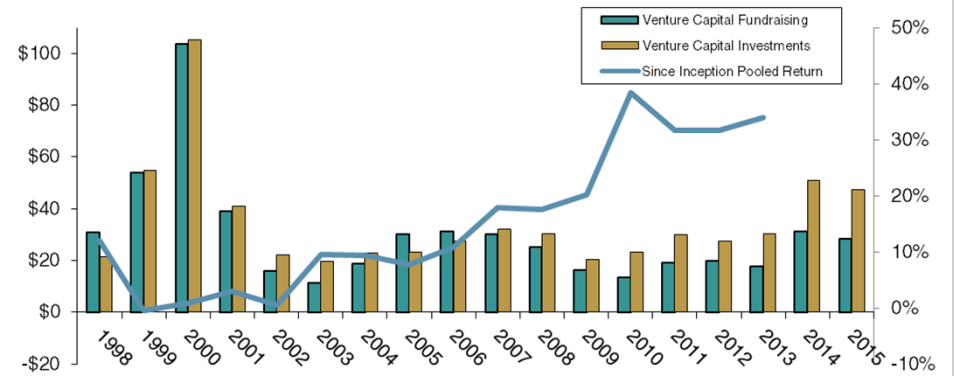
- Large-cap Brazil fund with strong control orientation and emphasis on deep operating value-add
- Strong performance across four mature funds

Venture Capital Fundraising, Investing, and Exits Slowed in Late 2015

VC Activity by Stage and Year \$ (Thousands)



U.S. Venture Capital Fundraising and Investments as of December 31, 2015 (\$ Billions)



Early-stage funds supported by a large increase in number of seed stage investors in the past five years. Funds are less impacted by higher VC valuations

Lightspeed XI	<ul style="list-style-type: none"> • Thematic-based early stage technology investor • Strong track record developed by deep and experienced team
Spark Capital V	<ul style="list-style-type: none"> • Early stage technology with emphasis on consumer Internet deals • Strong track record and experienced team. Investments include Twitter, Oculus, and Tumblr.

Life science venture focused funds are taking advantage of strong scientific innovations and accommodative public markets.

The Column Group III	<ul style="list-style-type: none"> • Focused on formation of early stage biotech companies based on firm research and network • Strong scientific and operating team led by former Chief Scientist at Genentech
Third Rock IV	<ul style="list-style-type: none"> • Early stage life science company investments and company creation • Strong and broad-based track record

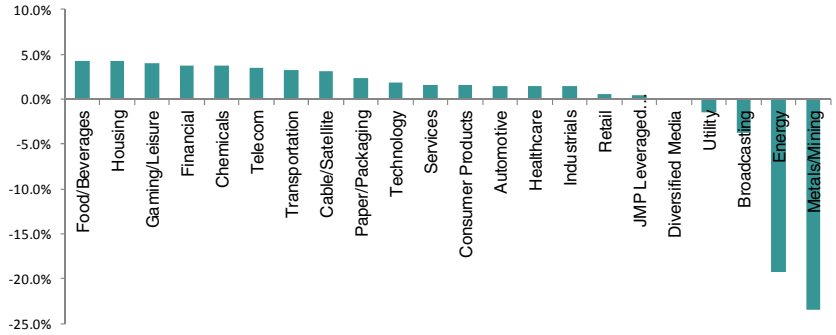
Source: National Venture Capital Association, Cambridge Associates

Decline in Loan Issuance and Sector Distress Creates Opportunities

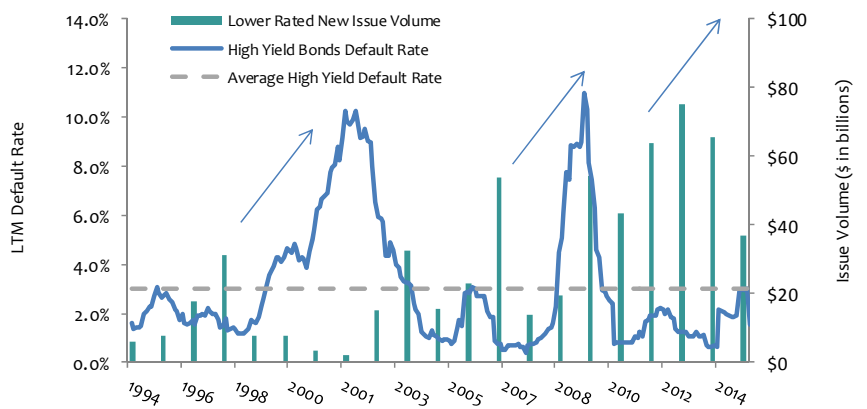
Underperforming sectors such as energy and metals & mining create opportunities for distressed managers	
Centerbridge Special Credit III (current)	<ul style="list-style-type: none"> • Non-control investments in distressed securities and undervalued credits globally. • Strong market positioning and unique strategy
OHA Strategic Credit II (current)	<ul style="list-style-type: none"> • Distressed corporate, structured products, real estate, and hard assets • Energy and Metals & Mining are among the sectors of focus for the fund

Historical trends and the current market environment indicate a near term distressed cycle	
Anchorage Illiquid Opportunities Fund IV (current)	<ul style="list-style-type: none"> • Illiquid distressed and special situation credit investments globally • Established platform and strong performance
Alchemy Special Opportunities Fund IV (4Q 2016)	<ul style="list-style-type: none"> • Debt-for-control investments in the European lower middle market • Strong and consistent performance

**Loan Performance by Industry
As of December 31, 2015**



**High Yield Default Rate & Lower Rated Issue Volume
As of December 31, 2015**



Source: JPMorgan

Market Volatility and Outflows of High Yield Bonds Creates Opportunities

Outflows of capital from the U.S. High Yield market and overall market volatility creates opportunities for lenders to drive more attractive terms and pricing

Crescent Capital BDC (current)

- Primary originations of debt across the capital structure with a senior secured focus
- Experienced credit manager and opportunity for incremental return through advisor economics

Golub Capital Partners X (current)

- Directly originate loans to private equity sponsored U.S. middle market companies
- Consistent performance and large market presence

Differentiated strategies providing current income with a focus on downside protection are compelling in the current environment

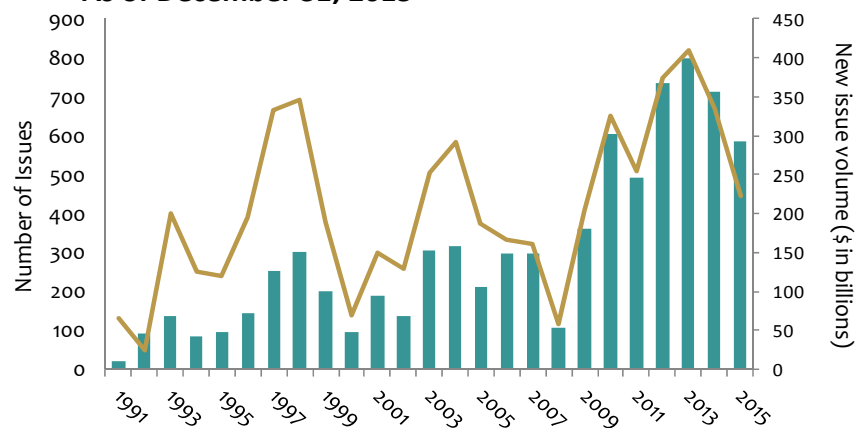
Atalaya Asset Income Fund III (1H 2016)

- Origination of loans backed by financial assets and purchases of portfolios of short duration performing loans
- Unique sourcing model and rapid return of capital

Athyrium Opportunities Fund III (3Q 2016)

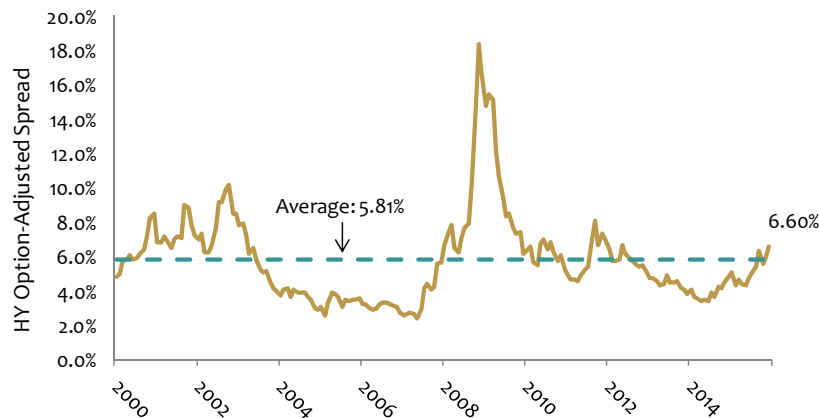
- Structured debt, royalty and equity investments in life science companies
- Strong track record and unique strategy

U.S. High Yield New Issuance As of December 31, 2015



Source: J.P. Morgan

U.S. High Yield Bonds Option Adjusted Spread As of December 31, 2015

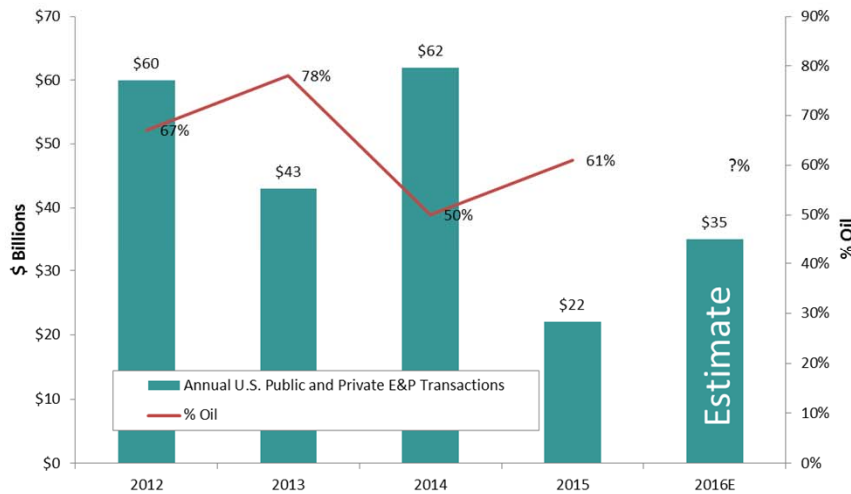


Source: Barclays

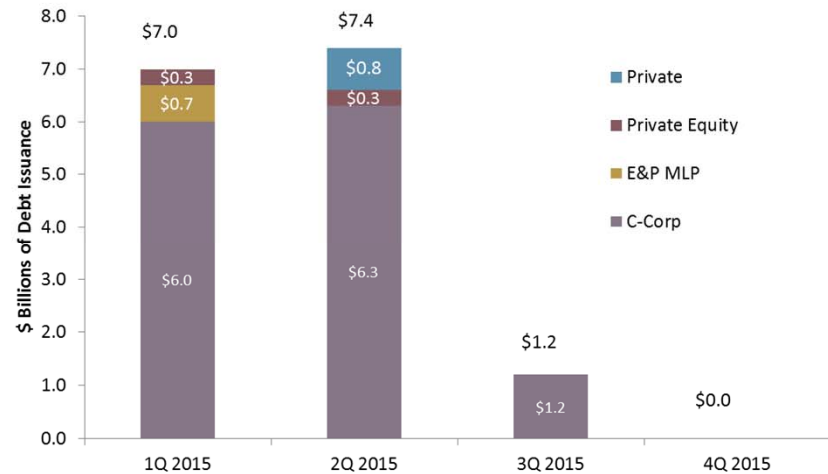
Private Energy Transactions Reach 10 Year Low; Private Equity is Primary Source of Capital

- Energy transactions during 2015 reached lows with the 10 largest deals accounted for almost 50% of 2015 total activity. Continued weak commodity pricing, expiring hedge positions, and further bank pressure will create more pressure on cash flow and illiquidity.
- Companies who's debt is trading below 50 are likely bankruptcy and restructuring candidates, companies who's debt is trading between 50 and 70 are actively seeking alternative sources of capital. ~60% of public energy companies are reaching some level of distress.
- Debt markets for energy companies are shut down, investments in private energy credit can provide a high risk adjusted opportunity.

Annual U.S. Upstream Transaction Activity



U.S. Upstream Debt Issuance



Source: RBC Capital Markets Richardson Barr