



# 2016 PRIVATE EQUITY PROGRAM REVIEW

Kentucky Retirement Systems

**PCA**

PENSION  
CONSULTING  
ALLIANCE

October 2016

# Section 1: Private Equity Market Overview

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# Private Equity Market Overview

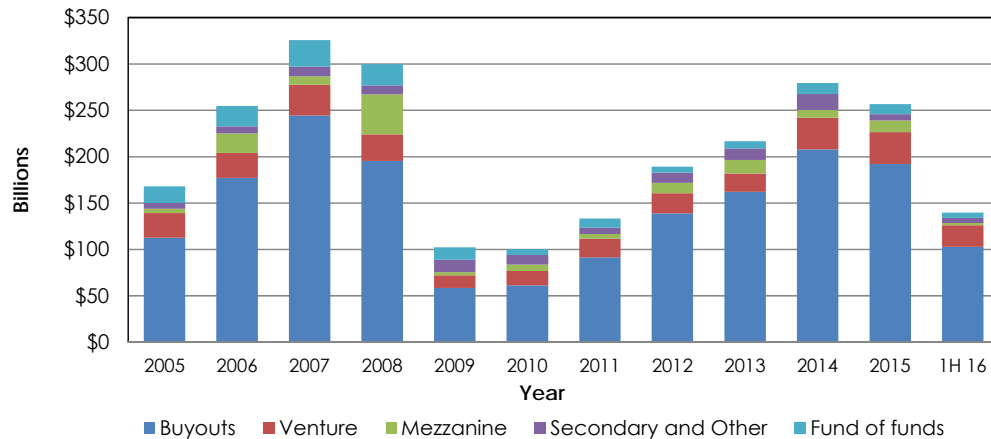
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## Industry Trends

- **Fundraising activity increased in 1H 2016.** After slight declines in annual fundraising activities in 2015 from near-term highs in 2014, 2016 is on pace to match 2014 levels. Buyouts continue to represent the largest proportion of commitments at approximately 73% year-to-date. It continues to be an environment of the “haves” and the “have nots” as the most sought after managers are quickly achieving established hard caps.
- **Announced U.S. buyout deal volume remains strong in 1H 2016.** Total announced U.S. buyout deal volume was \$312.0 billion in 2015 (the highest annual level over the past eight years), up from \$206.8 billion in 2014. Consistent with a longer-term upward trend, 1H 2016 announced U.S. buyout deal volume was \$156.2 billion and is on pace to match last year's levels.
- **Risk metrics in the buyout market remain high** as both purchase price multiples and debt multiples are above their 10-year averages. The average purchase price multiple in 1H 2016, at 10.1x, decreased from 10.3x in 2015 but was still well above the 10-year average of 9.0x. Debt multiples in 1H 16 were at 5.5x, below the 5.7x level for the 2015 calendar year but still above the 10-year average of 5.3x.
- **Venture capital investment activity is on pace to trail 2015 levels.** Approximately \$28.0 billion was invested across 1,972 companies in 1H 2016, trailing the \$31.0 billion across 2,318 in 1H 2015. Calendar year activity in 2015, at \$59.8 billion, exceeded 2014 activity, which was \$51.0 billion.
- **Exit activity for venture capital investments was mixed in 1H 2016.** The value of merger and acquisition (M&A) transactions increased in the 1H2016 and is on track to exceed 2015 yet still trailing 2014 levels. The initial public offering (IPO) market remained sluggish in 1H 2016 and is on track to exhibit continued declines from recent highs in 2014.
- **The outlook for distressed debt investment strategies may be improving.** Debt pricing has declined (according to the Leveraged Loan Index produced by the Loan Syndications and Trading Association), potentially increasing the near-term opportunity set for trading strategies. The high yield and leveraged loan markets are large, but default rates have remained low, dampening the situations for distressed-for-control opportunities.
- **The S.E.C. has continued its heightened scrutiny on private equity,** particularly with respect to general partners' fee and expense allocation practices and conflicts of interest.

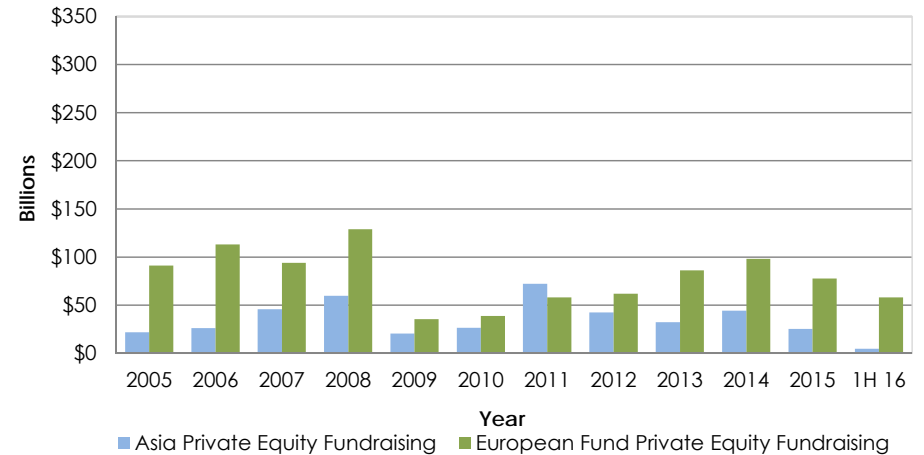
# Private Equity Market Overview

Commitments to U.S. Private Equity Partnerships



Source: Private Equity Analyst through June 2016

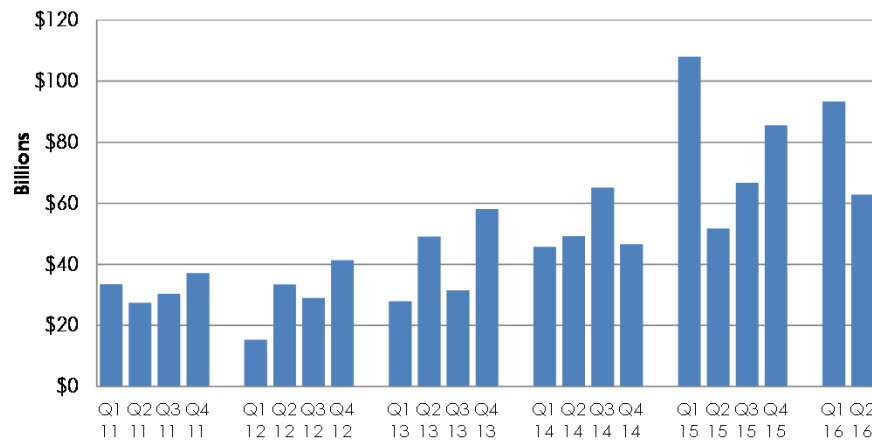
Commitments to Non-U.S. Private Equity



Source: Thomson Reuters, through March 2016

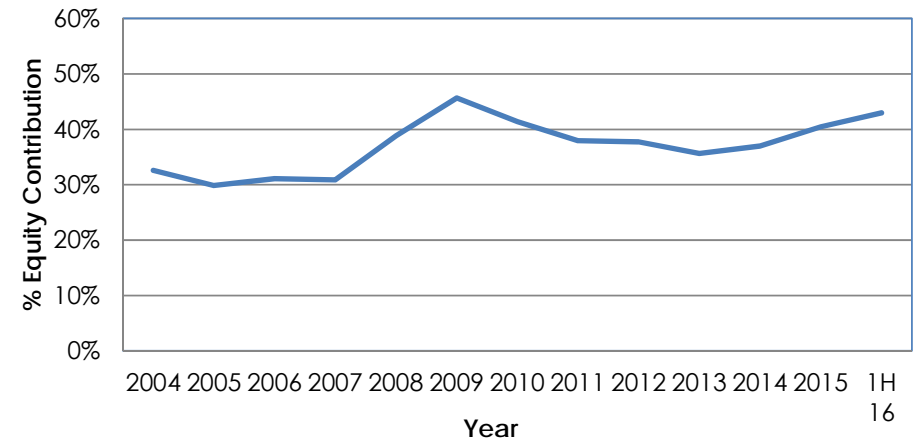
- Fundraising activities in 2015 trailed 2014 levels with 1H 2016 on pace to match 2014.

Announced and Disclosed U.S. Quarterly LBO Deal Value\*



\* Total deal size (both equity and debt).  
Source: Thomson Reuters Buyouts

Equity Contribution

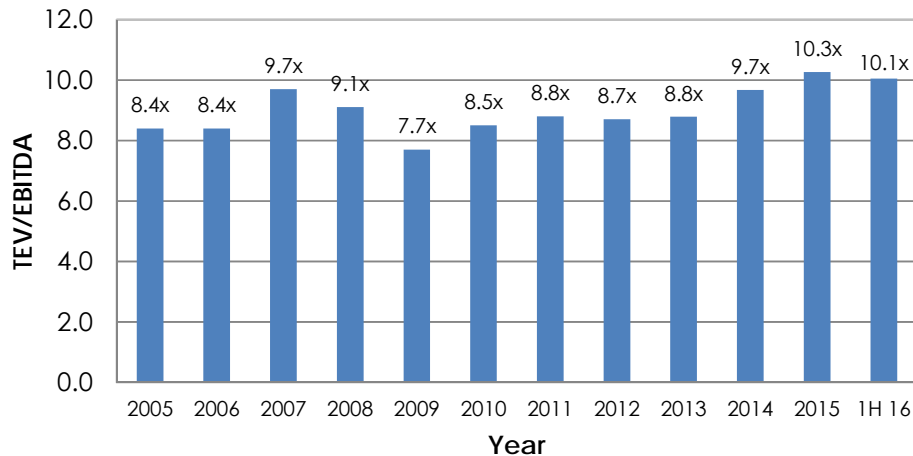


Source: S&P Capital IQ

- Buyout transaction activity continues to increase with equity contributions rising.

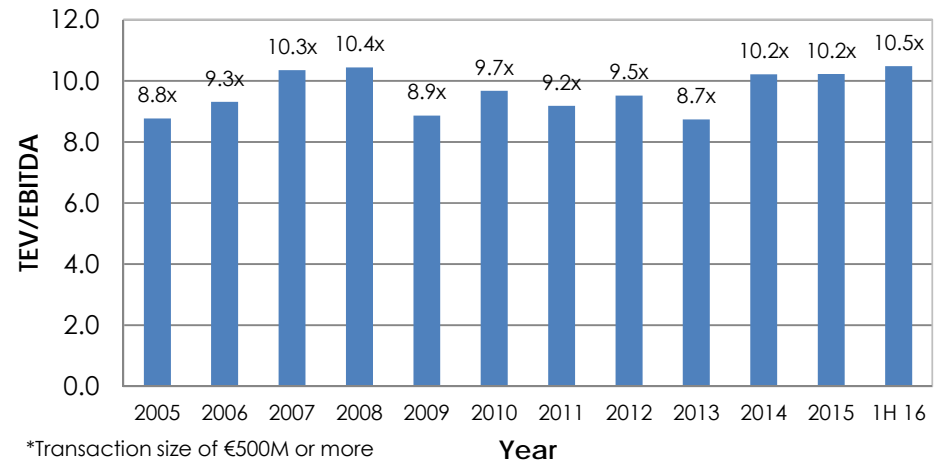
# Private Equity Market Overview

Average U.S. Purchase Price Multiples



Source: S&P Capital IQ

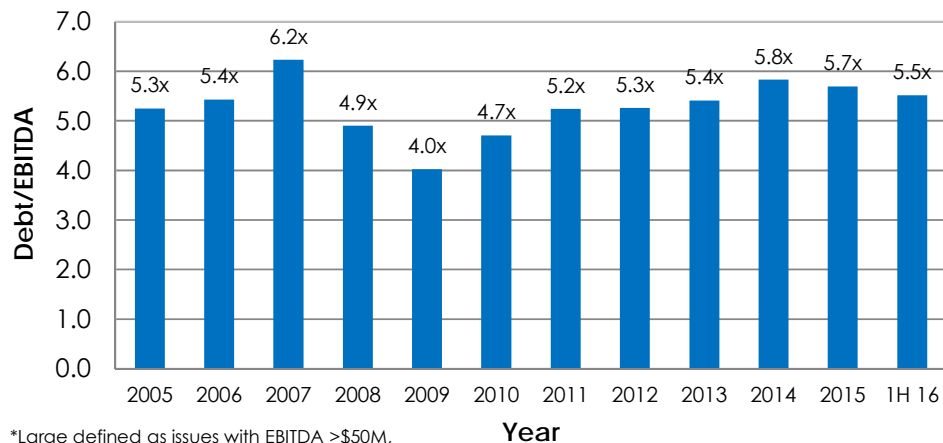
Average European Purchase Price Multiples



\*Transaction size of €500M or more  
Source: S&P Capital IQ

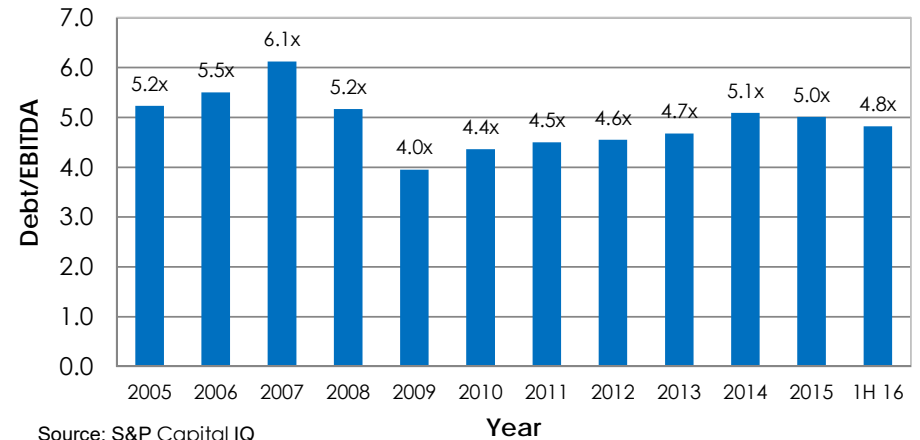
- *LBO transactions continue to be expensive, above pre-crisis levels...*

Average U.S. Large LBO Debt Multiples



\*Large defined as issues with EBITDA >\$50M.  
Source: S&P Capital IQ

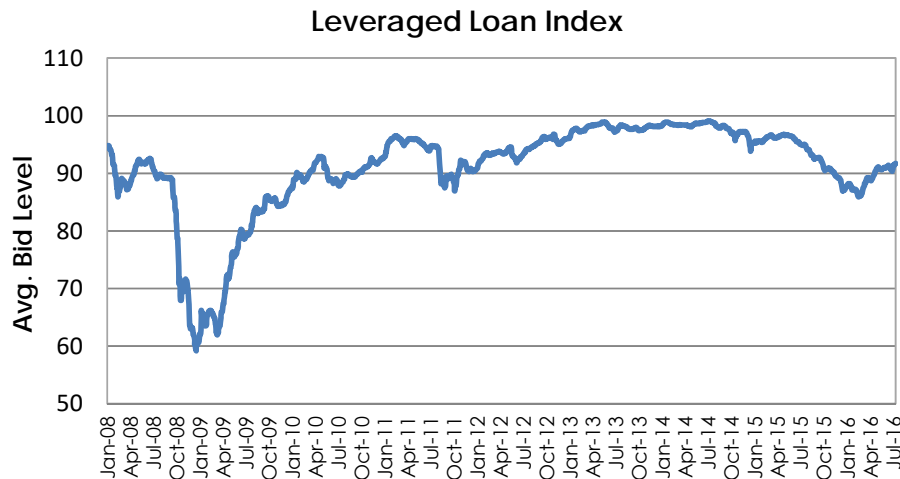
Average European Debt Multiples



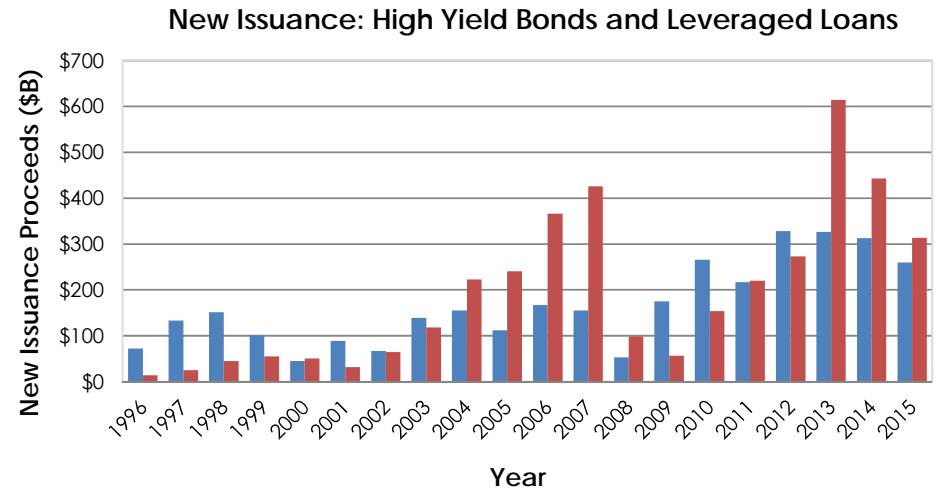
Source: S&P Capital IQ

- *...while use of leverage also continues to be high, but down slightly.*

# Private Equity Market Overview

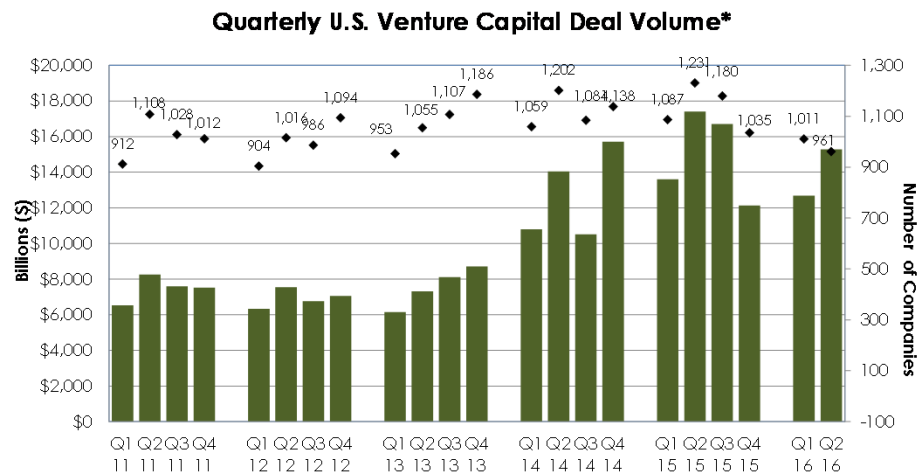


Source: Loan Syndications and Trading Association (LSTA)



Source: UBS Capital Markets, Credit Suisse Leveraged Finance Strategy, GLC

- *Opportunity for distressed investing may be increasing as the market continues to grow and pricing is off recent highs.*

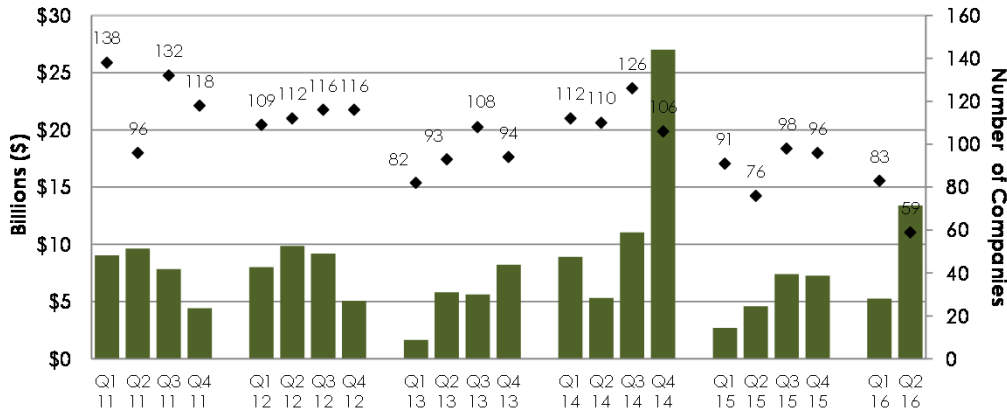


\* Only includes equity portion of deal value.  
Source: Thomson Reuters

- *Venture capital investment activity slowed in 1H 2016 and is currently on pace to trail 2015 levels.*

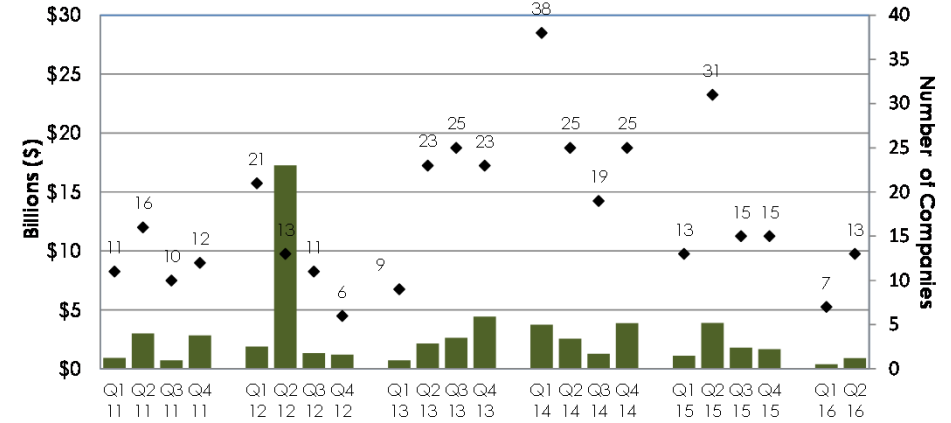
# Private Equity Market Overview

Quarterly U.S. Venture Capital M&A Activity



Source: Thomson Reuters

Quarterly U.S. Venture Capital IPO Activity



Source: Thomson Reuters

- Exit environment for venture capital has been mixed in 1H 2016.

## Cambridge Associates Horizon Summary Report

as of March 31, 2016

Fund Type	1 Yr	3 Yr	5 Yr	10 Yr	15 Yr	20 Yr
Venture Capital	6.6%	20.6%	15.0%	10.4%	5.3%	23.2%
Growth Equity	6.0%	12.7%	10.5%	11.1%	10.3%	13.9%
Buyout	9.7%	12.8%	11.5%	10.9%	12.3%	12.7%
Mezzanine	8.0%	9.3%	10.2%	9.6%	8.5%	9.4%
Distressed	0.4%	7.8%	8.3%	9.3%	10.6%	10.6%
Private Equity Energy	-17.9%	-6.3%	-1.1%	4.8%	8.1%	8.5%
Upstream Energy & Royalties	-34.9%	-20.7%	-7.0%	0.5%	10.4%	10.8%
Timber	-0.2%	3.6%	4.2%	4.2%	4.4%	4.6%
Real Estate	11.1%	13.0%	11.2%	5.0%	6.7%	7.2%
Infrastructure	14.9%	9.4%	7.3%	6.7%	6.5%	6.0%
Fund of Funds	7.6%	13.0%	10.1%	9.1%	7.9%	9.0%
Secondary Funds	7.0%	11.5%	10.6%	10.6%	11.8%	12.5%
<b>Total</b>	<b>6.4%</b>	<b>11.7%</b>	<b>10.5%</b>	<b>9.3%</b>	<b>9.5%</b>	<b>12.0%</b>

## Public Market Performance Comparison, as of March 31, 2016

Fund Type	1 Yr	3 Yr	5 Yr	10 Yr	20 Yr
All Private Equity	6.4%	11.7%	10.5%	9.3%	12.0%
Russell 3000	-0.3%	11.2%	11.0%	6.9%	8.0%
Russell 2000	-9.8%	6.8%	7.2%	5.3%	7.7%
MSCI EAFE	-7.9%	2.7%	2.8%	2.3%	4.5%
BC Aggregate	2.0%	2.5%	3.8%	4.9%	5.6%

- Private equity is outperforming over most time periods.

- Private equity energy/upstream energy & royalties have exhibited material declines.

## Section 2: Pension Plan Portfolio Review

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# KRS Private Equity Pension Plan Overview

## One-Year Change: as of June 30, 2016

As of:	Active Partnerships	Active Commitments (\$M)	Contributed (\$M)	Distributed (\$M)	Market Value (\$M)	Investment Multiple	Since Inception IRR*
6/30/2015	58	2,261	2,329	2,214	1,154	1.45x	10.0%
6/30/2016	59	2,299	2,481	2,445	1,113	1.43x	9.6%
<b>One-Year Change</b>	<b>1</b>	<b>38</b>	<b>152</b>	<b>231</b>	<b>(41)</b>	<b>(0.02x)</b>	<b>(0.4%)</b>

\* Initial capital call made on August 20<sup>th</sup>, 2002

- Over the latest year, since inception results declined slightly
  - only one new active partnership, with several new additions yet to begin deploying capital
  - cash flow positive with \$79 million of net cash flows out of the portfolio

## Horizon Performance vs. Customized Benchmark: as of June 30, 2016

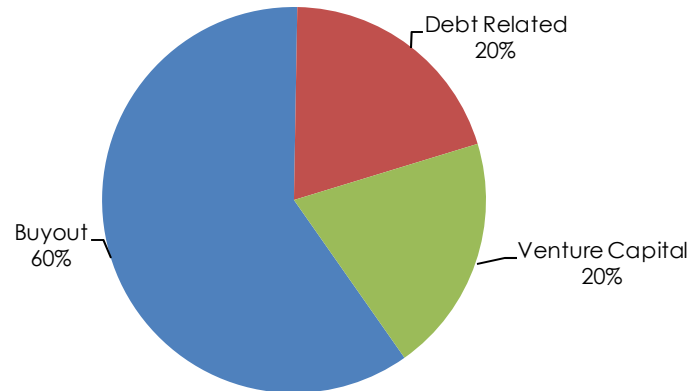
	One-Year IRR	Three-Year IRR	Five-Year IRR	Ten-Year IRR	Since Inception IRR
KRS Pension Plan	3.3%	12.0%	10.6%	9.4%	9.6%
R3000 + 300 bps*	4.8%	14.5%	13.9%	10.1%	10.1%
<b>Variance</b>	<b>(1.5%)</b>	<b>(2.5%)</b>	<b>(3.3%)</b>	<b>(0.7%)</b>	<b>(0.5%)</b>

- The KRS Pension portfolio's results are below the customized benchmark
  - Pension portfolio results materially dampened by secondary sale in 2011
    - while necessary, partnerships continued to rebound subsequent to secondary sale
    - removing the effects of the secondary sale, the since inception performance improves to 10.7%
  - challenging period to outperform a public market plus a premium benchmark over latest cycle
    - public equity returns have been above long-term expectations over the past five years

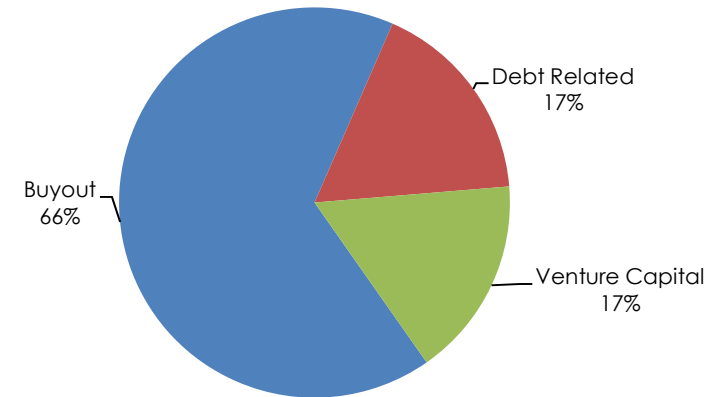
\* Customized benchmark assuming the portfolio cash flows were invested in/out of a Russell 3000 +300 basis point index (Index Comparison Method).

# Sector Exposures and Targets

## Target Exposures

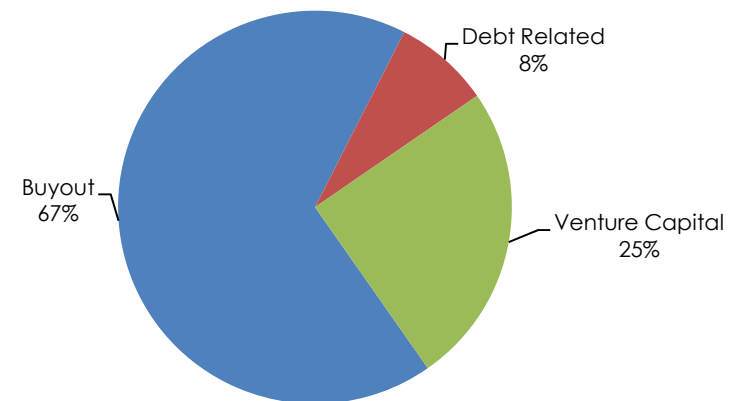


## Active Commitments (\$2,299 M)



- The KRS Pension portfolio is near target exposures by sub-sector
  - slightly above target for venture capital and buyout, while below target in debt related, on a market value basis
  - allowing the venture capital exposure to decline over time while targeting a lower long-term venture capital allocation

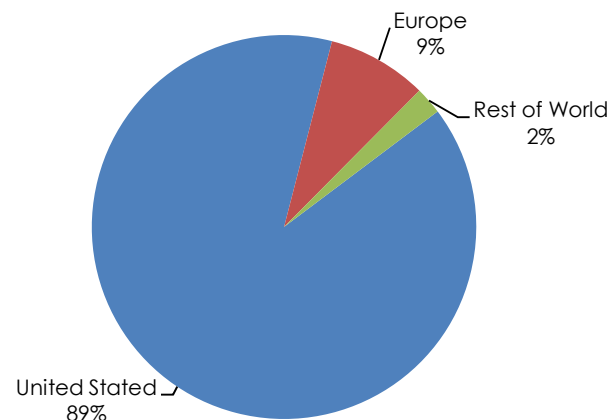
## Market Value (\$1,113 M)



# Geographic and Industry Exposure

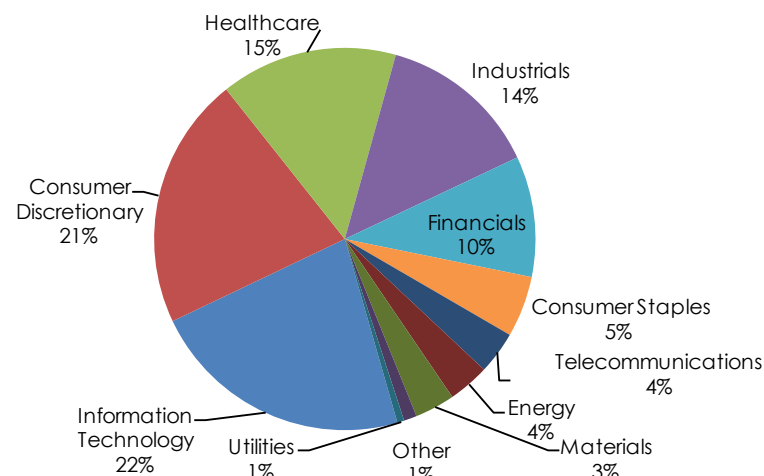
- Based on partnership geographic definitions, the KRS Pension portfolio is domestically-oriented at 89%
  - many partnerships that are located in the U.S. invest globally, increasing the portfolio's actual non-U.S. exposure

Market Value\* (\$1,113 M)



- The KRS Pension portfolio is diversified across industry, led by consumer discretionary/staples at 26%, information technology (22%), healthcare (15%), and industrials (14%)
  - the five largest industries in the Russell 3000 Index are consumer staples/discretionary (23%), financial services (20%), information technology (16%), healthcare (14%) and producer durables (11%)

Market Value\*\*



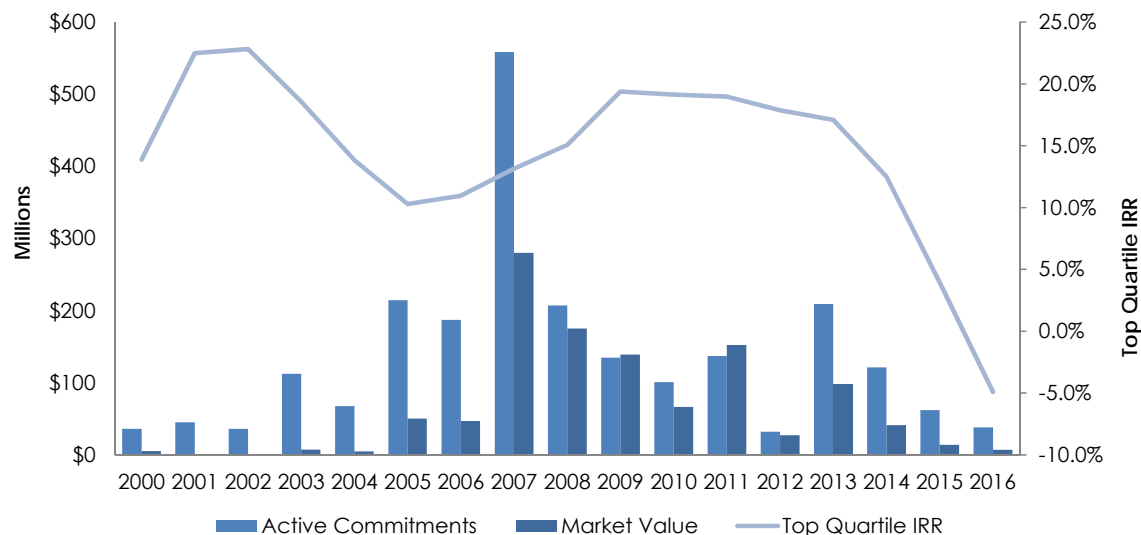
\* Geographic exposure defined by partnership strategy

\*\* Industry exposure excludes fund of funds and distressed debt holdings

# Vintage Year Exposure

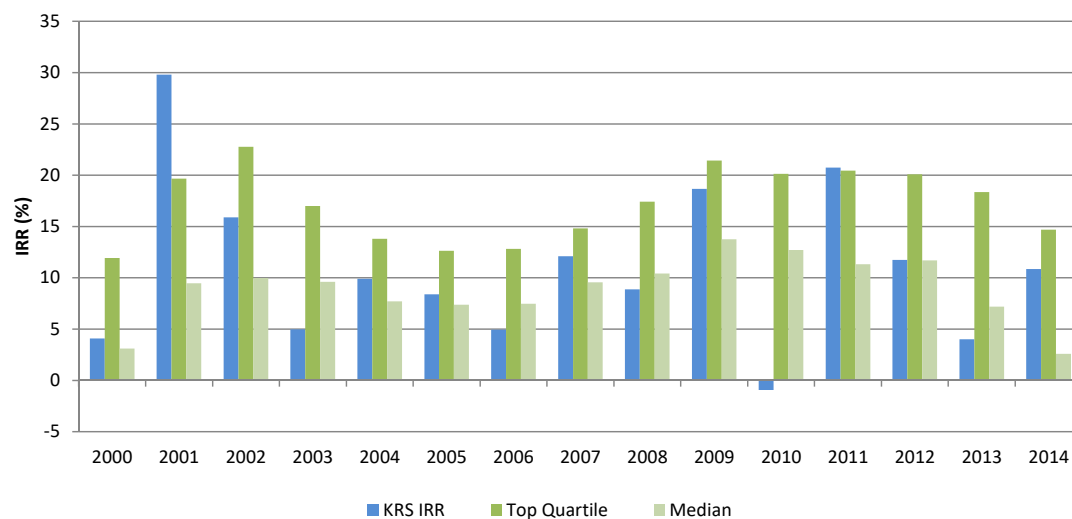
- Performance largely driven by commitments made in the 2005 to 2008 period
  - representing 51% of commitments and 50% of market value
  - hindered by lower return environment
  - continuing to diversify over time

Active Commitments and Market Value by Vintage Year



- The KRS Pension portfolio has placed above median in 10 of 15 vintage years and in the top quartile for two vintages\*
  - performance of younger investments is less material

Vintage Year IRR vs. Median and Top Quartile

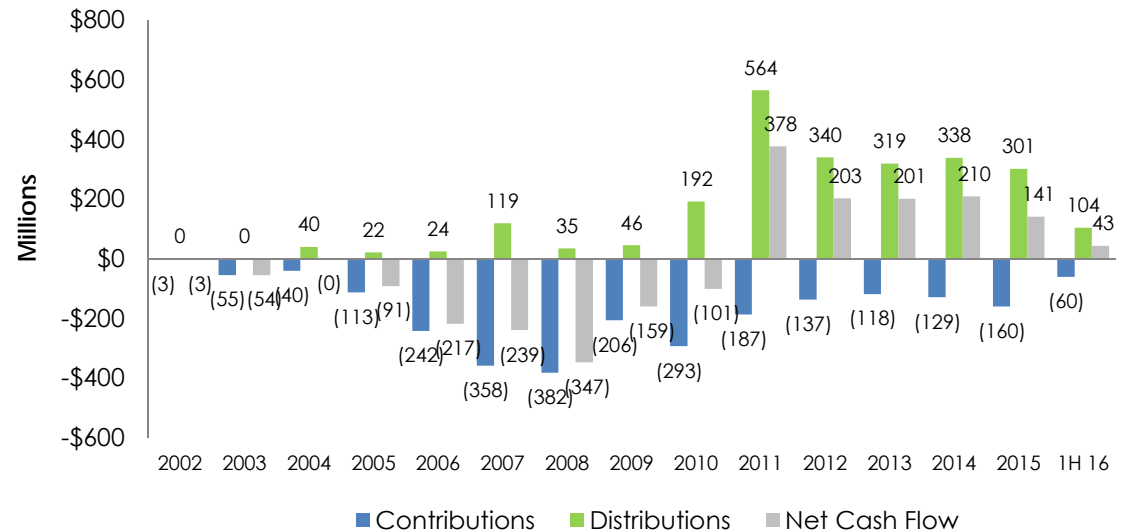


\* Source: Cambridge Associates Benchmark data (accessed via Thomson ONE) as of March 31, 2016 including Buyout & Growth Equity, Mezzanine & Distressed, and Venture Capital asset classes.

# Program Cash Flows

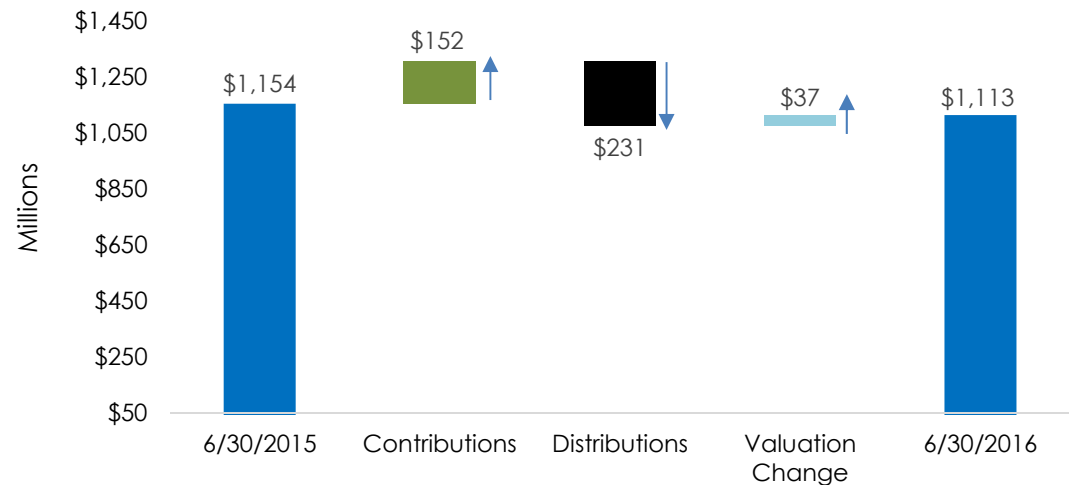
- The KRS Pension portfolio has been cash flow positive since 2011
  - generating \$1.2 billion of net cash over the past five and a half years
  - proceeds from secondary sale in 2011 categorized as distributions
  - distribution activity has slowed slightly over the past year and a half

Program Cash Flows by Calendar Year



- The KRS Pension portfolio value declined by \$41 million over the past year as distributions outpaced contributions and appreciation
  - underlying holdings appreciated by \$37 million over the past year

One-Year Cash Flow Activity and Market Value



# Sector Horizon Performance

Horizon Performance by Sector: as of June 30, 2016

Sector	Sub Sector	Commitment	1 Year	3 Year	5 Year	10 Year	Inception
Buyout	Sub Total	1,543,169,064	5.8	12.9	12.8	11.1	11.0
	Large Buyout	265,592,022	2.0	15.8	7.2	6.8	6.8
	Upper Mid Buyout	687,737,844	7.4	13.9	16.0	13.2	12.8
	Lower Mid Buyout	123,500,000	10.6	19.1	18.4	N/A	18.4
	Small Buyout	85,000,000	3.3	16.7	15.0	N/A	16.6
	Fund of Funds	285,939,198	4.4	17.0	15.2	N/A	16.7
	Real Assets	27,000,000	(2.8)	(2.2)	(2.6)	N/A	(1.8)
	Secondary	48,400,000	7.6	(15.6)	(11.7)	N/A	(8.0)
Debt Related	Sub Total	394,272,000	(8.3)	2.1	7.0	6.9	8.0
	Distressed	367,272,000	(13.5)	0.0	6.3	6.6	7.8
	Mezzanine	27,000,000	33.1	17.8	12.8	10.3	9.6
Venture Capital	Sub Total	381,500,000	0.8	13.5	6.4	6.4	6.9
	Venture	336,500,000	(2.5)	11.9	5.4	5.8	6.3
	Fund of Funds	45,000,000	20.7	28.0	20.1	N/A	18.2
All	Total	2,298,941,064	3.3	12.0	10.6	9.4	9.6

- The Buyout sector has been the strongest performer over the long-term
  - representing the largest component of the portfolio
- Debt Related exposure has posted mixed results
  - longer-term, stabilizing and complementary exposure to buyout and venture capital
  - underperforming over latest year as spreads widened and energy positions declined
- Venture Capital has exhibited relatively volatile results
  - has underperformed over longer periods

# Largest Relationships

KRS Pension's Ten Largest Relationships: based on Market Value

Family	Sector	Commitment	Market Value	One Year	Three Year	Five Year	Since Inception
Bay Hills Capital Management, LLC	Buyout	208,750,000	145,490,030	5.0	11.8	16.3	15.2
Duff Ackerman & Goodrich LLC	Venture Capital	152,000,000	130,431,380	-1.8	14.3	6.4	5.9
Leonard Green & Partners, L.P.	Buyout	189,500,000	93,468,445	4.6	14.8	16.0	13.4
Blackstone Group LP	Buyout	107,500,000	76,403,298	3.7	16.8	9.1	5.5
Vista Equity Partners	Buyout	97,000,000	58,216,662	18.7	21.3	24.9	28.6
Crestview Partners	Buyout	106,500,000	54,533,719	-3.3	6.9	9.8	11.3
Horsley Bridge Partners LLC	Venture Capital	45,000,000	51,391,132	20.7	28.0	20.1	18.2
New Mountain Capital, LLC	Buyout	91,550,000	46,545,937	24.0	17.6	20.5	10.9
Harvest Partners, L.P.	Buyout	64,400,000	41,944,458	11.8	22.4	20.0	19.7
Levine Leichtman Capital Partners	Buyout	46,000,000	35,409,992	10.7	N/A	N/A	11.6

- Ten largest relationships represent approximately 66% of market value
  - representing \$1.1 billion of commitments across 23 partnerships
  - largest relationships generally have been strong contributors to performance
    - recently passed on “re-up” opportunities with some underperformers

# Commitment Pacing/Future Activities

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- Target annual commitment pacing of approximately \$250 million in 2017 and 2018
  - ranging from \$225 million to \$275 million per year
    - targeting four to five commitments annually
  - allocations approximately 70% to the Pension Plan and 30% to the Insurance Plan
- Areas of further portfolio development should include:
  - continuation of disciplined investment pacing and commitment sizing
    - larger commitments to fewer managers
  - consideration of opportunistic commitments to take advantage of market dislocations / undercapitalized segments of the market
  - evolution of approach to venture capital exposure
    - allow the venture capital exposure to decline over time
    - consider utilization of fund of funds for ongoing strategic exposure to the segment
  - exploration of cost-effective approaches to deploying capital, such as co-investing



# Partnership Listing

## KRS Pension's Partnership Listing, as of June 30, 2016

Investment	Vintage	Sector	Commitment	Value (\$)	Multiple	IRR	Quartile*
Arbor Capital II, L.P.	2006	Buyout	22,500,000	3,958,925	2.4x	19.7%	First
Arcano KRS Fund I, L.P.	2010	Buyout	36,000,000	25,404,845	1.0x	1.3%	Fourth
Ares Special Situations Fund IV, L.P.	2015	Debt Related	26,192,000	5,001,292	0.6x	-42.2%	Fourth
Bay Hills Capital I, L.P.	2007	Buyout	67,500,000	44,199,575	1.8x	13.6%	Second
Bay Hills Capital II, L.P.	2009	Buyout	90,000,000	87,495,354	1.6x	19.0%	Second
Bay Hills Capital III, L.P.	2013	Buyout	51,250,000	13,795,101	1.0x	1.3%	Third
BDCM Opportunity Fund IV, L.P.	2015	Debt Related	35,580,000	8,843,628	0.9x	-9.9%	Fourth
Blackstone Capital Partners V, L.P.	2006	Buyout	47,500,000	18,670,033	1.3x	4.8%	Third
Blackstone Capital Partners VI, L.P.	2011	Buyout	60,000,000	57,733,265	1.3x	9.8%	Third
CM Growth Capital Partners, L.P.	2010	Buyout	23,400,000	12,584,345	0.6x	-10.5%	Fourth
Columbia Captal Equity Partners IV, L.P.	2005	Venture Capital	27,000,000	20,742,904	2.1x	11.4%	First
Crestview Partners II, L.P.	2008	Buyout	67,500,000	46,885,716	1.4x	11.9%	Second
Crestview Partners III, L.P.	2014	Buyout	39,000,000	7,648,003	0.9x	-15.0%	Fourth
CVC European Equity Partners VI, L.P.	2014	Buyout	24,342,022	9,437,822	1.0x	-1.4%	Third
DAG Ventures II, L.P.	2006	Venture Capital	27,000,000	7,091,894	0.6x	-5.5%	Fourth
DAG Ventures III, L.P.	2007	Venture Capital	27,000,000	6,526,660	1.6x	9.3%	Third
DAG Ventures IV, L.P.	2008	Venture Capital	90,000,000	88,474,539	1.3x	5.5%	Third
DAG Ventures V, L.P.	2011	Venture Capital	8,000,000	28,338,287	4.1x	48.9%	First
DCM VI, L.P.	2010	Venture Capital	13,500,000	15,182,353	1.5x	10.0%	Third
Essex Woodlands Fund VIII, L.P.	2008	Venture Capital	22,500,000	17,233,889	1.0x	0.5%	Fourth
Green Equity Investors IV, L.P.	2003	Buyout	67,500,000	5,344,101	2.0x	11.2%	Third
Green Equity Investors V, L.P.	2007	Buyout	90,000,000	61,055,299	1.9x	17.4%	First
Green Equity Investors VI, L.P.	2012	Buyout	32,000,000	27,069,045	1.2x	11.7%	Second
GTCR Fund IX-A, L.P.	2006	Buyout	63,000,000	5,471,662	1.8x	13.9%	First
H.I.G. BioVentures II, L.P.	2011	Venture Capital	13,500,000	3,830,714	0.9x	-3.1%	Fourth
H.I.G. Capital Partner V, L.P.	2013	Buyout	13,100,000	2,475,729	0.9x	-8.5%	Fourth
H.I.G. Ventures II, L.P.	2005	Venture Capital	18,000,000	8,881,871	1.3x	4.0%	Third
Harvest Partners V, L.P.	2007	Buyout	36,000,000	13,704,246	1.8x	18.4%	First
Harvest Partners VI, L.P.	2011	Buyout	28,400,000	28,240,212	1.6x	23.5%	First
Hellman and Friedman Capital Partners VI, L.P.	2007	Buyout	20,000,000	5,011,543	1.4x	9.6%	Second

\* Source: Cambridge Associates Benchmark data (accessed via Thomson ONE) as of March 31, 2016 including Buyout & Growth Equity, Mezzanine & Distressed, and Venture Capital asset classes.

# Partnership Listing (continued)

## KRS Pension's Partnership Listing, as of June 30, 2016 (continued)

Investment	Vintage	Sector	Commitment	Value (\$)	Multiple	IRR	Quartile*
Horsley Bridge International Fund V, L.P.	2009	Venture Capital	45,000,000	51,391,132	1.6x	18.2%	Second
Institutional Venture Partners XII, L.P.	2007	Venture Capital	27,000,000	12,567,834	2.6x	26.7%	First
JW Childs Equity Partners III, L.P.	2002	Buyout	36,000,000	366	2.0x	15.9%	Third
Keyhaven Capital Partners Fund III, L.P.	2010	Buyout	28,019,205	13,468,624	1.1x	3.0%	Fourth
Keyhaven Capital Partners Fund IV, L.P.	2016	Buyout	13,169,993	3,836,432	0.9x	-26.7%	NA
Levine Leichtman Capital Partners V, L.P.	2013	Buyout	46,000,000	35,409,992	1.1x	11.6%	Second
MatlinPatterson Global Opportunities Partners	2001	Debt Related	45,000,000	0	1.8x	29.8%	First
MatlinPatterson Global Opportunities Partners II	2003	Debt Related	45,000,000	1,829,162	0.6x	-21.9%	Fourth
MatlinPatterson Global Opportunities Partners III	2007	Debt Related	45,000,000	30,343,721	1.2x	4.5%	Third
Merit Mezzanine Fund IV, L.P.	2005	Debt Related	27,000,000	13,183,901	1.6x	9.6%	First
Mill Road Capital I, L.P.	2008	Buyout	27,000,000	23,008,498	2.0x	14.7%	Second
New Mountain Partners II, L.P.	2005	Buyout	25,000,000	391,753	1.7x	11.7%	Second
New Mountain Partners III, L.P.	2007	Buyout	33,750,000	28,435,844	1.4x	9.1%	Third
New Mountain Partners IV, L.P.	2014	Buyout	32,800,000	17,718,340	1.2x	25.4%	First
Oak Hill Capital Partners II, L.P.	2004	Buyout	67,500,000	4,642,182	1.7x	9.9%	Third
Oak Hill Capital Partners III, L.P.	2007	Buyout	33,750,000	21,928,664	1.1x	3.5%	Third
Riverside Capital Appreciation Fund VI, L.P.	2013	Buyout	35,500,000	22,754,662	1.1x	9.2%	Second
Secondary Opportunities Fund III, L.P.	2014	Buyout	25,000,000	6,264,984	1.3x	41.1%	First
Tenaska Power Fund II, L.P.	2007	Buyout	27,000,000	1,419,693	0.9x	-1.8%	Fourth
Triton Fund IV, L.P.	2013	Buyout	27,937,844	9,096,679	0.9x	-4.5%	Fourth
VantagePoint Venture Partners 2006, L.P.	2006	Venture Capital	27,000,000	11,520,372	0.5x	-14.2%	Fourth
VantagePoint Venture Partners IV, L.P.	2000	Venture Capital	36,000,000	4,985,280	1.3x	4.1%	First
Vista Equity Partners III, L.P.	2007	Buyout	45,000,000	20,924,583	2.6x	29.8%	First
Vista Equity Partners IV, L.P.	2011	Buyout	27,000,000	34,263,486	1.8x	21.9%	First
Vista Equity Partners VI, L.P.	2016	Buyout	25,000,000	3,028,593	1.0x	1.0%	NA
Warburg, Pincus Private Equity IX, L.P.	2005	Buyout	50,000,000	6,002,320	1.5x	7.9%	Third
Warburg, Pincus Private Equity X, L.P.	2007	Buyout	38,750,000	19,697,255	1.2x	5.4%	Third
Wayzata Opportunities Fund, L.P.	2005	Debt Related	67,500,000	130,5090	1.429087	0.0841	First
Wayzata Opportunities Fund II, L.P.	2007	Debt Related	67,500,000	14,068,544	1.8x	16.3%	First
Wayzata Opportunities Fund III, L.P.	2013	Debt Related	35,500,000	13,440,383	0.9x	-4.6%	Fourth

\* Source: Cambridge Associates Benchmark data (accessed via Thomson ONE) as of March 31, 2016 including Buyout & Growth Equity, Mezzanine & Distressed, and Venture Capital asset classes.

## Section 3: Insurance Plan Portfolio Review

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# KRS Private Equity Insurance Plan Overview

## One-Year Change: as of June 30, 2016

As of:	Active Partnerships	Committed (\$M)	Contributed (\$M)	Distributed (\$M)	Market Value (\$M)	Investment Multiple	Since Inception IRR*
6/30/2015	64	669	386	279	292	1.48x	12.0%
6/30/2016	65	703	474	336	345	1.44x	11.5%
<b>One-Year Change</b>	<b>1</b>	<b>34</b>	<b>88</b>	<b>57</b>	<b>53</b>	<b>(0.04x)</b>	<b>(0.5%)</b>

\* Initial capital call made on August 20<sup>th</sup>, 2002

- The KRS Insurance portfolio has exhibited strong since inception results
  - however, it declined by 50 basis points over the latest one-year period

## Horizon Performance vs. Customized Benchmark: as of June 30, 2016

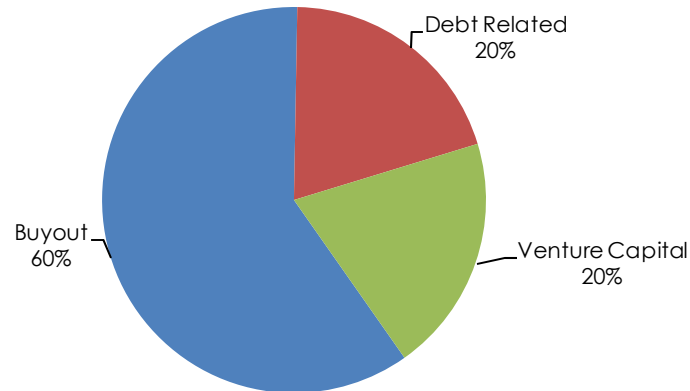
	One-Year IRR	Three-Year IRR	Five-Year IRR	Ten-Year IRR	Since Inception IRR
KRS Insurance Trust	6.8%	14.7%	13.1%	11.4%	11.5%
Russell 3000 + 300 bps*	5.4%	13.3%	13.5%	10.6%	10.6%
<b>Variance</b>	<b>1.4%</b>	<b>1.4%</b>	<b>(0.4%)</b>	<b>0.8%</b>	<b>0.9%</b>

- KRS Insurance portfolio's results outperformed the custom benchmark over most periods
  - difficult to outperform a public market plus a premium benchmark over the latest five years
    - public equity returns have been above long-term expectations over the past five years
    - outperformed public equity but did not achieve the targeted premium
    - KRS' experience is consistent with institutional investors utilizing a similar benchmark

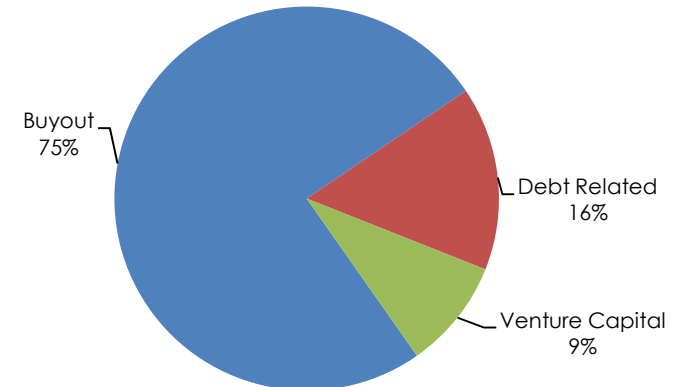
\* Customized benchmark assuming the portfolio cash flows were invested in/out of a Russell 3000 +300 basis point index (Index Comparison Method).

# Sector Exposures and Targets

## Target Exposures

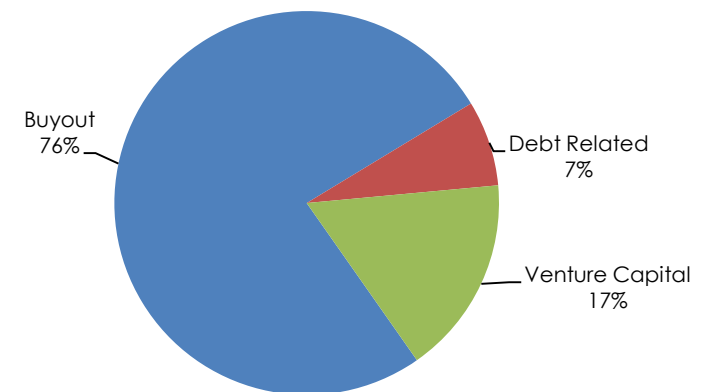


## Active Commitments (\$703 M)



- The KRS Insurance portfolio exhibited deviations from target sub-sector exposures
  - overweight buyout, while below target in debt related and venture capital
  - sub-sector exposures have been a residual of the Pension portfolio's construction with the target asset class allocation taking priority

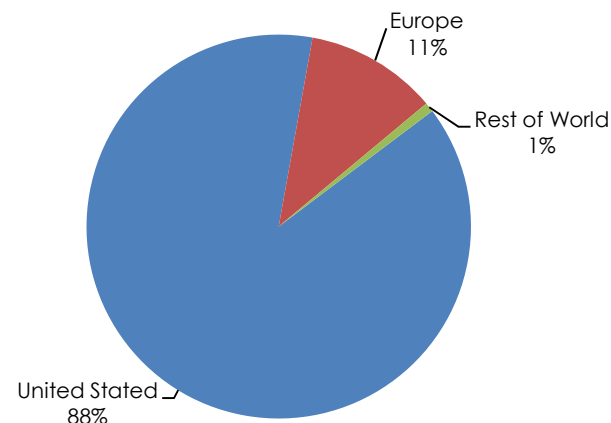
## Market Value (\$345 M)



# Geographic and Industry Exposure

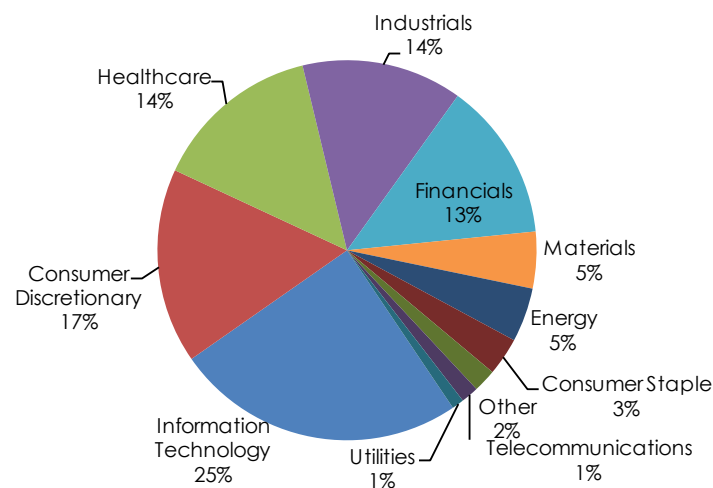
- Based on partnership geographic definitions, the KRS Insurance portfolio is domestically-oriented at 88%
  - many partnerships that are located in the U.S. invest globally, increasing the portfolio's actual non-U.S. exposure

Market Value\* (\$345 M)



- The KRS Insurance portfolio is diversified across industry, led by information technology at 25%, consumer discretionary/staples (20%), healthcare (14%), and industrials (14%)
  - the five largest industries in the Russell 3000 Index are consumer staples/discretionary (23%), financial services (20%), information technology (16%), healthcare (14%) and producer durables (11%)

Market Value\*\*



\* Geographic exposure defined by partnership strategy

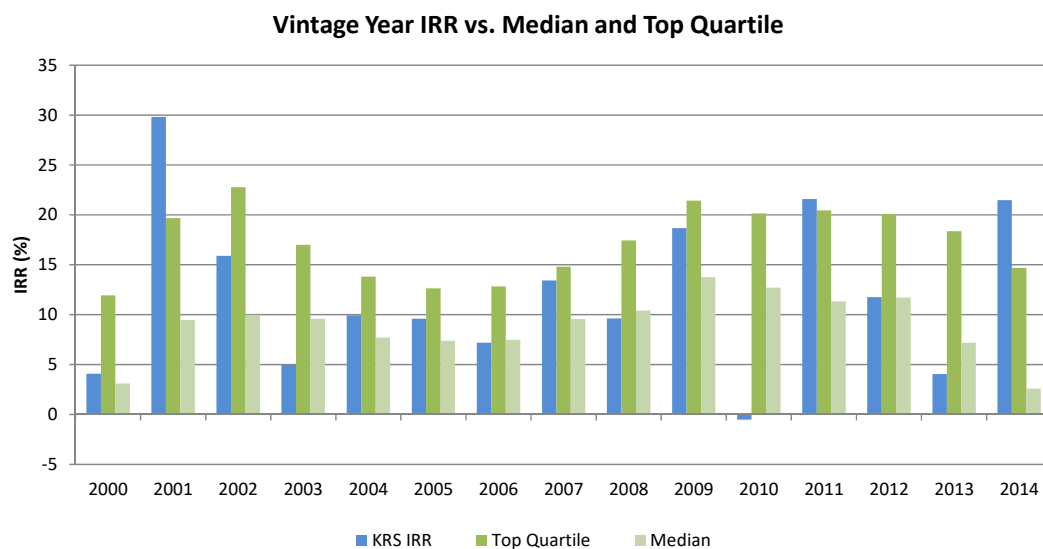
\*\* Industry exposure excludes fund of funds and distressed debt holdings

# Vintage Year Exposure

- The KRS Insurance portfolio has exhibited some volatility in annual commitment activity
  - ceased static 90/10 allocation between Retirement/Insurance in 2011
  - recent commitment peaks due to efforts to progress towards the 10% target allocation
  - 2011 to 2014 commitments benefitting from strong return environment



- The KRS Insurance portfolio has placed above median in 10 of 15 vintage years and in the top quartile for three vintages\*
  - performance of younger investments is less material

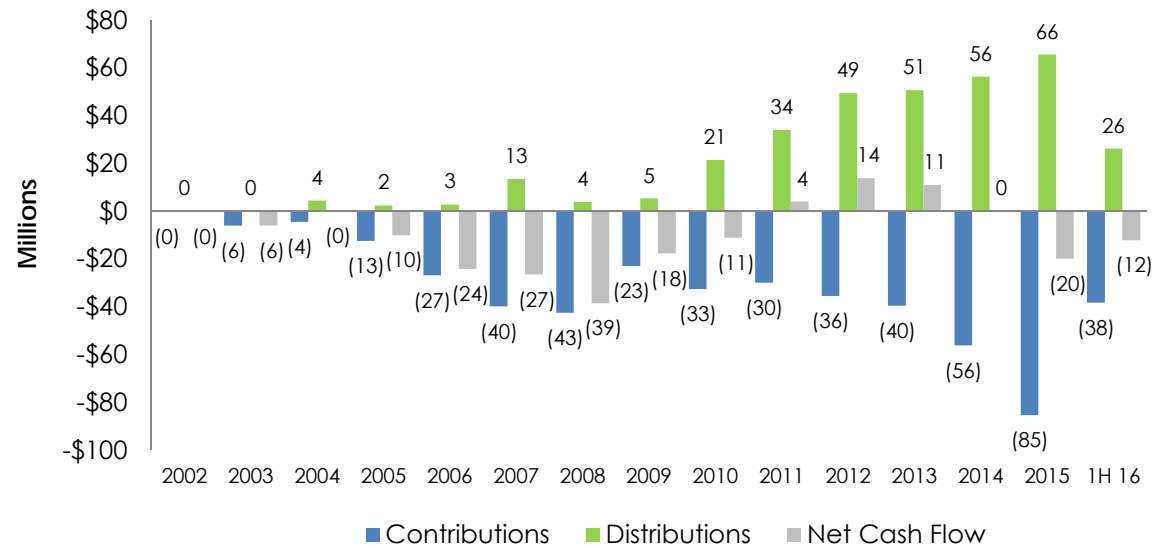


\* Source: Cambridge Associates Benchmark data (accessed via Thomson ONE) as of March 31, 2016 including Buyout & Growth Equity, Mezzanine & Distressed, and Venture Capital asset classes.

# Program Cash Flows

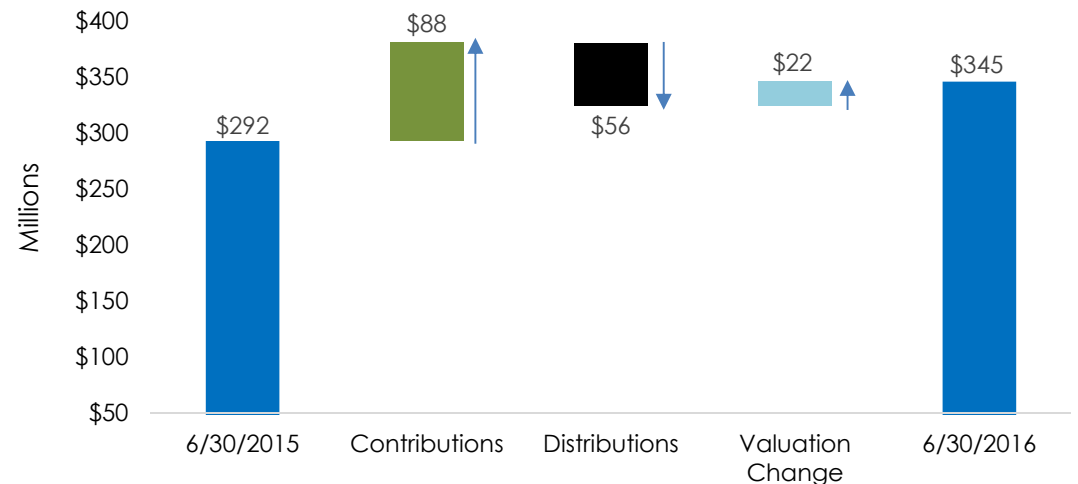
- The KRS Insurance portfolio has been cash flow negative for the past year and a half
  - contribution activity has increased as strides towards the target allocation have been made with larger relative commitments over recent periods
  - distribution activity during the recovery had been strong but declined slightly in the first six months of 2016

Program Cash Flows by Calendar Year



- The KRS Insurance portfolio value increased by \$53 million over the past year as contributions plus appreciation outpaced distributions

One-Year Cash Flow Activity and Market Value





# Sector Horizon Performance

Horizon Performance by Sector: as of June 30, 2016

Sector	Sub Sector	Commitment	1 Year	3 Year	5 Year	10 Year	Inception
Buyout	Sub Total	548,721,324	9.7	14.9	14.7	12.5	12.3
	Large Buyout	115,936,724	3.6	14.6	10.3	9.5	9.4
	Upper Mid Buyout	179,073,726	12.0	15.9	18.1	14.1	13.7
	Lower Mid Buyout	46,500,000	13.7	18.3	17.8	N/A	17.8
	Small Buyout	24,212,500	10.5	13.6	13.6	N/A	15.4
	Fund of Funds	82,398,375	1.6	8.3	11.4	N/A	11.4
	Real Assets	3,000,000	(2.8)	(2.2)	(2.6)	N/A	(1.8)
	Secondary	77,600,000	25.8	17.5	11.4	N/A	13.3
Debt Related	Sub Total	108,940,500	(13.6)	-3.7	3.3	7.8	8.7
	Distressed	105,940,500	(15.9)	(5.2)	2.6	7.6	8.7
	Mezzanine	3,000,000	33.1	17.8	12.8	10.3	9.6
Venture Capital	Sub Total	65,000,000	4.3	22.4	12.3	10.4	10.8
	Venture	60,000,000	2.8	22.0	11.9	10.1	10.5
	Fund of Funds	5,000,000	20.7	28.0	20.1	N/A	18.2
All	Total	702,661,825	6.8	14.7	13.1	11.4	11.5

- The Buyout sector has been the strongest performer over the long-term
  - representing the largest component of the portfolio
- Debt Related exposure has posted mixed results
  - longer-term, stabilizing and complementary exposure to buyout and venture capital
  - underperforming over latest year as spreads widened and energy exposures declined
- Venture Capital has generated attractive results
  - benefiting from larger commitments to more recent, and strong performers

# Largest Relationships

KRS Insurance's Ten Largest Relationships: based on Market Value

Family	Sector	Commitment	Market Value	One Year	Three Year	Five Year	Since Inception
Blackstone Group LP	Buyout	52,500,000	43,401,757	3.5	13.8	12.6	8.9
Duff Ackerman & Goodrich LLC	Venture Capital	23,000,000	36,139,656	6.5	32.5	17.9	13.8
Vista Equity Partners	Buyout	53,000,000	34,540,946	25.1	25.6	22.9	N/A
Leonard Green & Partners, L.P.	Buyout	45,500,000	31,063,126	8.3	13.9	14.7	13.3
Bay Hills Capital Management, LLC	Buyout	66,250,000	26,488,533	2.8	9.8	14.3	N/A
Deutsche Alternative Asset Manag	Buyout	75,000,000	18,794,952	28.3	N/A	N/A	N/A
Levine Leichtman Capital Partners	Buyout	24,000,000	18,474,779	10.7	N/A	N/A	N/A
New Mountain Capital, LLC	Buyout	29,700,000	15,688,747	24.8	18.6	20.5	14.5
Harvest Partners, L.P.	Buyout	35,600,000	13,057,440	20.0	24.6	21.6	N/A
Riverside Company	Buyout	18,712,500	11,994,285	14.8	9.2	N/A	N/A

- Ten largest relationships represent approximately 73% of market value
  - representing \$403 million of commitments across 22 partnerships
  - relationship level results, in most part, are strong contributors to performance

# Partnership Listing

## KRS Insurance's Partnership Listing, as of June 30, 2016

Investment	Vintage	Sector	Commitment	Value (\$)	Multiple	IRR	Quartile*
Arbor Capital II, L.P.	2006	Buyout	2,500,000	439,881	2.4x	19.7%	First
Arcano KRS Fund I, L.P.	2010	Buyout	4,000,000	2,822,761	1.0x	1.3%	Fourth
Ares Special Situations Fund IV, L.P.	2015	Debt Related	13,808,000	2,636,601	0.6x	-42.2%	Fourth
Avenue Special Situations Fund V, L.P.	2007	Debt Related	7,500,000	37,360	1.3x	11.0%	Second
Bay Hills Capital I, L.P.	2007	Buyout	7,500,000	4,911,064	1.8x	13.3%	Second
Bay Hills Capital II, L.P.	2009	Buyout	10,000,000	9,721,706	1.6x	19.0%	Second
Bay Hills Capital III, L.P.	2013	Buyout	48,750,000	11,855,763	1.0x	2.3%	Third
BDCM Opportunity Fund IV, L.P.	2015	Debt Related	24,420,000	6,069,739	0.9x	-9.9%	Fourth
Blackstone Capital Partners V, L.P.	2006	Buyout	12,500,000	4,912,914	1.7x	8.0%	Second
Blackstone Capital Partners VI, L.P.	2011	Buyout	40,000,000	38,488,843	1.3x	9.9%	Third
CM Growth Capital Partners, L.P.	2010	Buyout	2,600,000	1,398,258	0.6x	-10.5%	Fourth
Columbia Capital Equity Partners IV, L.P.	2005	Venture Capital	3,000,000	2,304,768	2.1x	11.4%	First
Crestview Partners II, L.P.	2008	Buyout	7,500,000	5,209,519	1.4x	11.9%	Second
Crestview Partners III, L.P.	2014	Buyout	21,000,000	4,118,154	0.9x	-15.0%	Fourth
CVC European Equity Partners VI, L.P.	2014	Buyout	13,436,724	4,986,921	1.0x	-1.4%	Third
DAG Ventures II, L.P.	2006	Venture Capital	3,000,000	787,979	0.6x	-5.5%	Fourth
DAG Ventures III, L.P.	2007	Venture Capital	3,000,000	725,172	1.6x	9.3%	Third
DAG Ventures IV, L.P.	2008	Venture Capital	10,000,000	9,830,504	1.3x	5.5%	Third
DAG Ventures V, L.P.	2011	Venture Capital	7,000,000	24,796,001	4.1x	48.9%	First
DCM VI, L.P.	2010	Venture Capital	1,500,000	1,686,928	1.5x	10.0%	Third
Essex Woodlands Fund VIII, L.P.	2008	Venture Capital	5,000,000	3,829,758	1.1x	1.9%	Fourth
Green Equity Investors IV, L.P.	2003	Buyout	7,500,000	593,789	2.0x	11.2%	Third
Green Equity Investors V, L.P.	2007	Buyout	10,000,000	6,783,922	1.9x	17.4%	First
Green Equity Investors VI, L.P.	2012	Buyout	28,000,000	23,685,415	1.2x	11.7%	Second
GTCR Fund IX-A, L.P.	2006	Buyout	7,000,000	607,953	1.8x	13.9%	First
H.I.G. BioVentures II, L.P.	2011	Venture Capital	11,500,000	3,263,202	0.9x	-3.1%	Fourth
H.I.G. Capital Partner V, L.P.	2013	Buyout	6,900,000	1,304,011	0.9x	-8.5%	Fourth
H.I.G. Ventures II, L.P.	2005	Venture Capital	2,000,000	986,874	1.3x	4.0%	Third
Harvest Partners V, L.P.	2007	Buyout	4,000,000	1,522,700	1.8x	18.4%	First
Harvest Partners VI, L.P.	2011	Buyout	11,600,000	11,534,740	1.6x	23.5%	First
Hellman and Friedman Capital Partners VI, L.P.	2007	Buyout	7,500,000	1,879,338	1.8x	13.0%	Second
Horsley Bridge International Fund V, L.P.	2009	Venture Capital	5,000,000	5,710,123	1.6x	18.2%	Second
Institutional Venture Partners XI, L.P.	2005	Venture Capital	1,500,000	39,329	1.1x	1.1%	Third

\* Source: Cambridge Associates Benchmark data (accessed via Thomson ONE) as of March 31, 2016 including Buyout & Growth Equity, Mezzanine & Distressed, and Venture Capital asset classes.

# Partnership Listing (continued)

## KRS Insurance's Partnership Listing, as of June 30, 2016 (continued)

Investment	Vintage	Sector	Commitment	Value (\$)	Multiple	IRR	Quartile*
Institutional Venture Partners XII, L.P.	2007	Venture Capital	3,000,000	1,396,324	2.6x	26.7%	First
JW Childs Equity Partners III, L.P.	2002	Buyout	4,000,000	41	2.0x	15.9%	Third
Keyhaven Capital Partners Fund III, L.P.	2010	Buyout	3,109,273	1,498,506	1.1x	4.2%	Fourth
Keyhaven Capital Partners Fund IV, L.P.	2016	Buyout	9,039,101	2,633,097	0.9x	-26.7%	NA
Levine Leichtman Capital Partners V, L.P.	2013	Buyout	24,000,000	18,474,779	1.1x	11.6%	Second
MatlinPatterson Global Opportunities Partners	2001	Debt Related	5,000,000	0	1.8x	29.8%	First
MatlinPatterson Global Opportunities Partners II	2003	Debt Related	5,000,000	203,239	0.6x	-21.9%	Fourth
MatlinPatterson Global Opportunities Partners III	2007	Debt Related	5,000,000	3,371,590	1.2x	4.5%	Third
Merit Mezzanine Fund IV, L.P.	2005	Debt Related	3,000,000	1,464,878	1.6x	9.6%	First
MHR Institutional Partners III, L.P.	2006	Debt Related	4,000,000	1,610,192	1.4x	6.5%	Third
Mill Road Capital I, L.P.	2008	Buyout	3,000,000	2,556,499	2.0x	14.7%	Second
New Mountain Partners II, L.P.	2005	Buyout	5,000,000	78,355	1.9x	13.7%	Second
New Mountain Partners III, L.P.	2007	Buyout	7,500,000	6,319,071	1.6x	11.9%	Second
New Mountain Partners IV, L.P.	2014	Buyout	17,200,000	9,291,321	1.2x	25.6%	First
Oak Hill Capital Partners II, L.P.	2004	Buyout	7,500,000	515,798	1.7x	9.9%	Third
Oak Hill Capital Partners III, L.P.	2007	Buyout	12,500,000	8,121,727	1.5x	10.0%	Second
OCM Opportunities Fund VIIIb, L.P.	2008	Debt Related	7,500,000	707,782	1.7x	16.3%	Second
Riverside Capital Appreciation Fund VI, L.P.	2013	Buyout	18,712,500	11,994,285	1.1x	9.2%	Second
Secondary Opportunities Fund III, L.P.	2014	Buyout	75,000,000	18,794,952	1.3x	41.1%	First
Sun Capital Partners IV	2005	Buyout	2,000,000	1,046,813	1.5x	7.4%	Third
TCV VI, L.P.	2005	Venture Capital	2,500,000	659,515	1.6x	14.0%	First
Tenaska Power Fund II, L.P.	2007	Buyout	3,000,000	157,746	0.9x	-1.8%	Fourth
Triton Fund IV, L.P.	2013	Buyout	14,373,726	4,795,057	0.9x	-4.5%	Fourth
VantagePoint Venture Partners 2006, L.P.	2006	Venture Capital	3,000,000	1,280,042	0.5x	-14.2%	Fourth
VantagePoint Venture Partners IV, L.P.	2000	Venture Capital	4,000,000	553,920	1.3x	4.1%	First
Vista Equity Partners III, L.P.	2007	Buyout	5,000,000	2,324,954	2.6x	29.8%	First
Vista Equity Partners IV, L.P.	2011	Buyout	23,000,000	29,187,399	1.8x	21.9%	First
Vista Equity Partners VI, L.P.	2016	Buyout	25,000,000	3,028,593	1.0x	1.0%	NA
Warburg, Pincus Private Equity IX, L.P.	2005	Buyout	10,000,000	1,200,464	1.8x	10.0%	Second
Warburg, Pincus Private Equity X, L.P.	2007	Buyout	7,500,000	3,812,379	1.4x	7.6%	Third
Wayzata Opportunities Fund, L.P.	2005	Debt Related	7,500,000	145,048	1.4x	8.4%	First
Wayzata Opportunities Fund II, L.P.	2007	Debt Related	7,500,000	1,563,171	1.8x	16.3%	First
Wayzata Opportunities Fund III, L.P.	2013	Debt Related	18,712,500	7,084,600	0.9x	-4.6%	Fourth

\* Source: Cambridge Associates Benchmark data (accessed via Thomson ONE) as of March 31, 2016 including Buyout & Growth Equity, Mezzanine & Distressed, and Venture Capital asset classes.

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