



2H | 2015

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM (CalPERS)
PRIVATE EQUITY PROGRAM SEMI-ANNUAL PERFORMANCE REPORT



INTRODUCTION

Private equity is a long-term asset class with performance results influenced by various factors. This report concentrates on several key exposures that contribute to performance results, including sector, geography, structure, and vintage year. In addition, the broad industry trends highlighted herein may affect future performance results.

EXECUTIVE SUMMARY

Portfolio Highlights

- **The PE Program outperformed the Policy Benchmark over the latest one- and three-year periods, while underperforming the Policy Benchmark over the longer five- and ten-year periods.** Despite trailing the Policy Benchmark over the latest ten-year period, the PE Program's average annual return as of December 31, 2015 has exceeded CalPERS' expected return for the private equity asset class, the total fund's assumed rate of return and the peer-based State Street Private Equity Index (SSPEI).
- Including a public market index in the PE Program Policy Benchmark continues to result in questions about comparable performance results, particularly over shorter time periods, though most private equity investors use this type of benchmark and PCA believes it to be reasonable in measuring long-term performance. **We generally expect private equity to underperform rising public equity markets and outperform falling ones.**
- The PE Program has been **net cash flow positive by approximately \$23 billion** (i.e., distributions received exceeded capital contributions made) since 2011.
- **The performance of the portfolio is primarily driven by investments** (a) in the **Buyout** strategy, (b) in the **United States** and (c) utilizing **partnership structures**. This is true over nearly all measured time periods.
- The **PE Program's managers have approximately \$11 billion of "dry powder"** (i.e., unfunded commitments), approximately 17% of which is from the 2006-2008 vintage years, and while the investment period for these funds has expired, a significant amount of capital from these vintage years can still be recalled by managers.
- Although the PE Program is in its 25th year, **93% of value and performance are attributable to commitments made in the last ten years.** Commitments made in the 2006-2008 vintage years represent nearly 60% of the PE Program's aggregate fair market value.
- **The PE Program's five largest GP relationships represent 35% of net exposure**, which is defined as cost plus unfunded commitments.

Industry Trends

- **While U.S. private equity fundraising in 2015 trailed that of 2014 by roughly 8%**, the fundraising environment remains strong, as domestic commitments totaled over \$250 billion and most top performing funds are over-subscribed.
- **Commitments to buyout funds totaled approximately \$190 billion**, accounting for 75% of total U.S. fundraising activity in 2015.
- **Risk metrics in the U.S. leveraged buyout market demonstrated an uptick in purchase price multiples** (from 9.7x in 2014 to 10.3x in 2015) and slight decline in average debt multiples (from 5.7x to 5.6x).
- **U.S. purchase price multiples continue to exceed those in 2007** while debt multiples remain slightly below 2007 levels.
- **Venture capital deal volume was robust and near 2014 levels**, while venture capital IPO volume decreased relative to 2014.
- **The outlook for distressed debt investment strategies continues to be mixed**, as default rates remain very low but a turn in the cycle could materially increase the opportunity set. The recent downturn in the public markets may contribute to a more active distressed investment environment later in 2016 and leveraged loan bids are now at their lowest levels since 2011.
- **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. This issue has garnered significant media attention though it is unclear yet whether it will result in greater transparency.

OVERALL PRIVATE EQUITY PROGRAM PERFORMANCE

Performance vs. Policy Benchmarks

	1-Year	3-Year	5-Year	10-Year
CalPERS' PE Program¹	5.5%	12.9%	12.7%	11.2%
<i>PE Program Policy Benchmark²</i>	(2.0%)	12.5%	13.2%	12.9%
<i>Pro Forma Current Policy Benchmark</i>	(2.0%)	12.5%	12.5%	8.9%
<i>State Street Private Equity Index (SSPEI)³</i>	6.1%	12.0%	11.8%	10.5%
Excess Return				
<i>v. Policy Benchmark</i>	7.5%	0.4%	(0.5%)	(1.7%)
<i>v. Pro Forma Current Policy Benchmark</i>	7.5%	0.4%	0.2%	2.3%
<i>v. SSPEI</i>	(0.6%)	0.9%	0.9%	0.7%

Source: Wilshire Associates, State Street, CalPERS, PCA

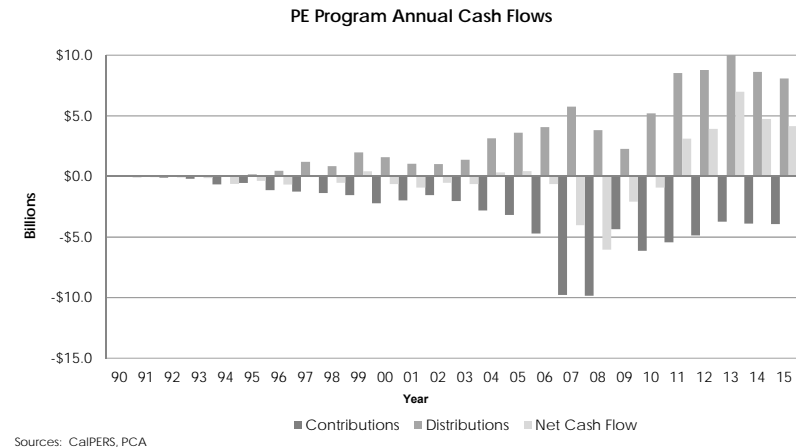
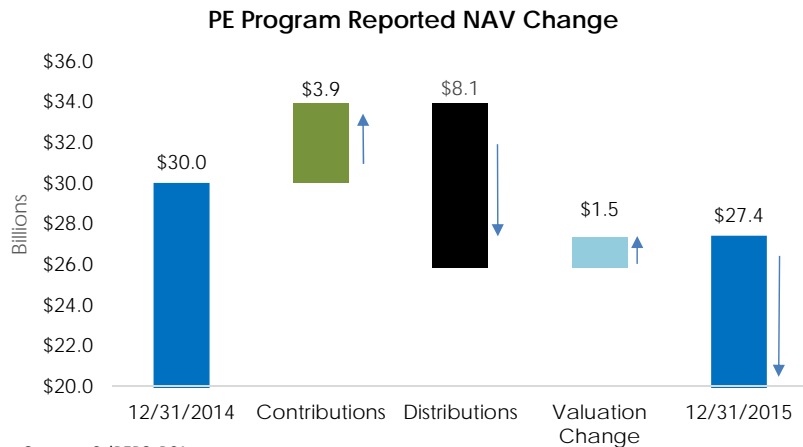
- o As of December 31, 2015, the PE Program represented 9.5% of the overall portfolio, which is 0.5% below the PE Program's interim target of 10% and 2.5% below the long-term target of 12%.
- o The PE Program outperformed the Policy Benchmark by 7.5% over the latest year, largely attributable to declining public markets. The one-year PE Program return of 5.5%, down from 8.9% as of June 30, 2015, is generally reflective of broad market movements as the SSPEI declined from a 1-year return of 7.6% to 6.1% between June 30 and December 31, 2015. Similarly, the Policy Benchmark's 1-year return declined from 11.1% as of June 30, 2015 to -2.0%, demonstrating lower public equity returns over the same period.
- o Over the 10-year period, the PE Program underperformed the Policy Benchmark by 1.7% despite generating an 11.2% annual return.
- o If the current (public market) Policy Benchmark had been used historically, the PE Program would have outperformed in all periods.
- o The PE Program has posted a return above CalPERS' expected return for the asset class (9.3%) and above the total fund's actuarial rate of return (7.5%) over the latest 3-, 5- and 10-year periods. Given the long term nature of private equity, the 3-, 5- and 10-year results are more instructive in analyzing overall performance than is the 1-year return.
- o The PE Program outperformed the State Street Private Equity Index (a peer based, industry benchmark) over the 3-, 5- and 10-year time periods, while underperforming the SSPEI by 60 basis points over the last year.

¹ The net asset value of CalPERS' PE Program portfolio is lagged one quarter with adjustments for current cash flows through the reporting period

² Currently equals (67% FTSE US TMI + 33% FTSE A.W. x-US TMI) + 3% 1-quarter lagged from and since September 2011; previous benchmark was the Wilshire 2500 ex-tob + 3% between July 2009 and August 2011. Prior to July 2009 the PE Program Policy Index was linked historically to the Custom Young Fund Index.

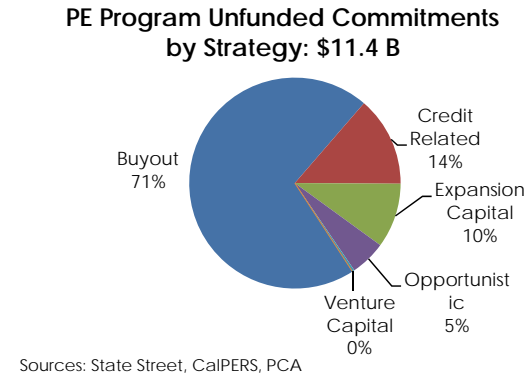
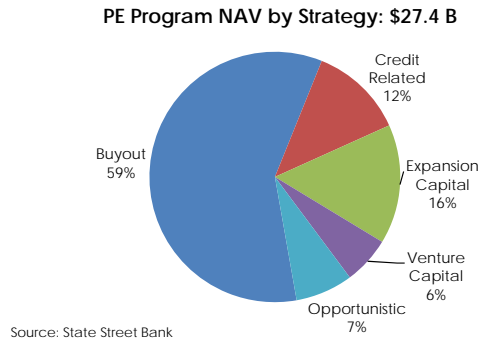
³ Time-weighted return calculated by linking quarterly return, 1-quarter lagged

NET ASSET VALUE CHANGE AND CASH FLOWS



- o The PE Program's net asset value (NAV) decreased by \$2.6 billion in 2015 due to strong distributions of capital from managers, totaling \$8.1 billion, which exceeded the program's total contributions of \$3.9 billion. Net cash flow was \$4.2 billion for the year.
- o Net cash flow in the fourth quarter of 2015 was \$395 million, which marks only the second sub-\$1 billion quarter since Q2 2012. The PE Program has been cash flow positive every quarter since Q2 2012.
- o Over the three-year period ending December 31, 2015, the PE Program received \$27.4 billion in distributions while contributing \$11.5 billion, resulting in a positive net cash flow of \$15.9 billion.
- o Distributions from managers have been high due to an attractive exit market (including a reasonably active IPO environment for both venture capital and leveraged buyout transactions) and more friendly credit markets resulting in material utilization of the dividend recapitalization. In addition, the PE Program's sales on the secondary market have generated distributions and contributed to the positive net cash flows.

PORTFOLIO STRATEGY COMPOSITION



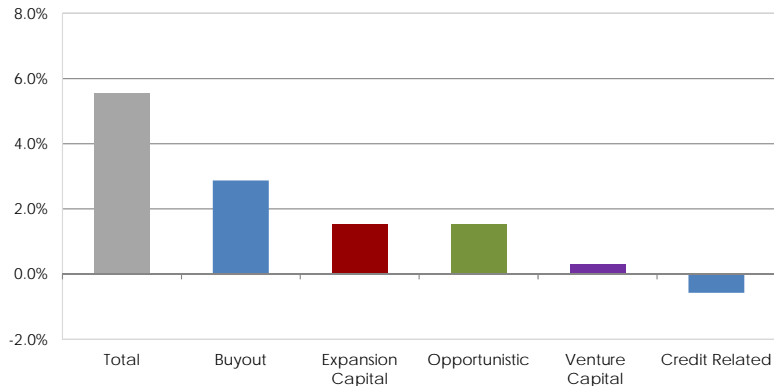
Target Strategy Allocations

Strategy	Target	Range	Actual
Buyout	60%	50%-70%	59%
Credit Related	15%	10%-25%	12%
Venture Capital	1%	0%-7%	6%
Growth/Expansion	15%	5%-20%	16%
Opportunistic	10%	0%-15%	7%

- o All strategy allocations are within target ranges.
- o The Buyout strategy represents the greatest proportion of the PE Program’s unfunded commitments and will therefore continue to be its largest exposure prospectively.
- o Venture Capital, which comprises 6% of the PE Program’s overall NAV, represents less than 1% of unfunded commitments, demonstrating the PE Program’s pivot from this strategy in recent years.
- o Conversely, Credit Related investments currently represent 12% of the PE Program’s overall NAV but 14% of unfunded commitments, representing an increased focus on new commitments to this strategy in recent years.
- o The PE Program’s largest industry exposures are, in approximate order, consumer discretionary, financials, information technology, healthcare, industrials, and energy, ranging from a high of roughly 17% of the portfolio to a low of 9%. The energy sector, which struggled in 2015, had a negative impact on the PE Program’s returns.

PORTFOLIO STRATEGY PERFORMANCE

PE Program One-Year Return Contribution* by Strategy



* Sector return weighted by proportion of NAV.
Source: State Street Bank, PCA

Performance Summary: by strategy

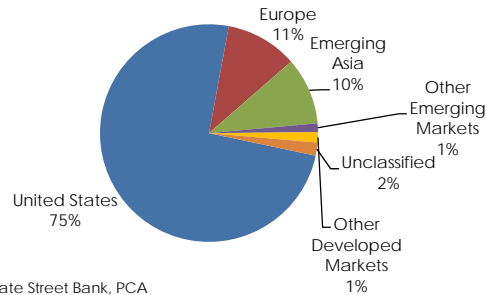
	1 Year	3 Year	5 Year	10 Year
PE Program	5.5%	12.9%	12.7%	11.2%
<i>Buyout</i>	4.9%	12.7%	12.9%	12.7%
<i>Credit Related</i>	(4.7%)	10.2%	13.1%	12.0%
<i>Expansion Capital</i>	10.0%	14.9%	11.9%	8.6%
<i>Venture Capital</i>	5.1%	10.7%	9.5%	6.7%
<i>Opportunistic</i>	20.8%	14.0%	12.7%	6.3%

Sources: Wilshire, State Street Bank

- o All major strategies of the PE Program except Credit Related contributed positive results over the last twelve months, with Buyout being the largest contributor to overall performance. Opportunistic had the highest 1-year performance of the five strategies but represents a small proportion of the portfolio and is therefore a lesser contributor to the Program's overall performance.
- o Though all strategies except Credit Related contributed positive performance, the one-year returns of seven of the ten largest Buyout holdings lagged their corresponding one-year returns from the first half of 2015 by a non-cap weighted average of 7.4%.
- o In generating a -4.7% one-year return, four of the PE Program's five largest Credit Related holdings had lower returns relative to the previous reporting period. Distressed credit, in general, exhibited material declines as spreads widened.
- o 23 of the 30 largest holdings generated a lower one-year return during the second half of 2015 as compared to the first half. A majority of these positions are in Buyout strategies but the decline also affected Credit Related, Growth and Venture Capital.
- o The breadth of the decline in performance indicates macroeconomic factors were the primary contributors, including the struggling energy sector, rising interest rates and the falling public markets.
- o All strategies have demonstrated volatility over the time periods measured, with the Credit Related and Opportunistic strategies having the largest ranges of performance.
- o The Buyout strategy has generated attractive results over the longer ten-year period, posting an average annual return of 12.7%.

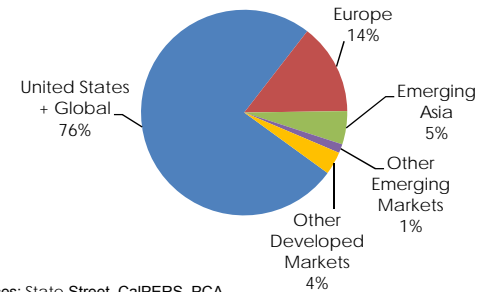
PORTFOLIO GEOGRAPHIC COMPOSITION AND PERFORMANCE

PE Program NAV by Geography: \$27.4 B



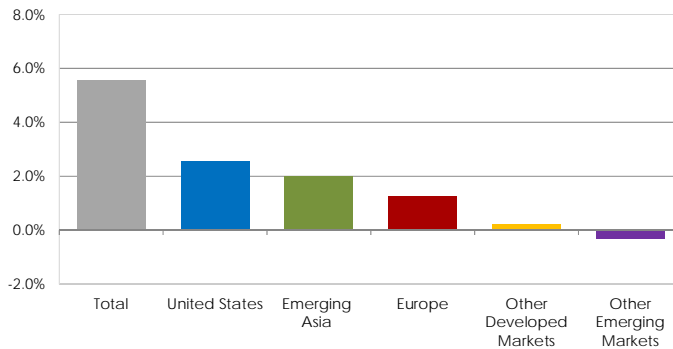
Source: State Street Bank, PCA

PE Program Unfunded Commitments by Geography: \$11.4 B



Sources: State Street, CalPERS, PCA

PE Program One-Year Return Contribution* by Geography



* Geographic return weighted by proportion of NAV.
Source: State Street Bank, PCA

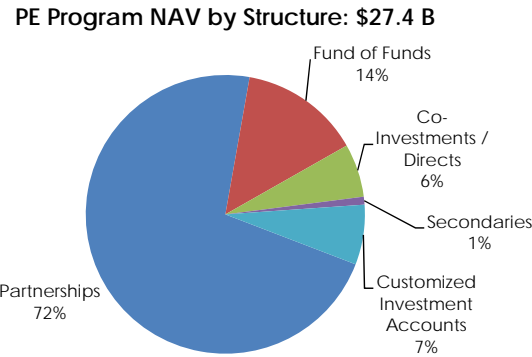
Performance Summary: by geography

	1 Year	3 Year	5 Year	10 Year
PE Program	5.5%	12.9%	12.7%	11.2%
United States	3.5%	12.8%	13.2%	11.0%
International-Developed World	11.1%	13.8%	11.8%	11.9%
International-Emerging Markets	14.3%	13.7%	11.5%	13.0%

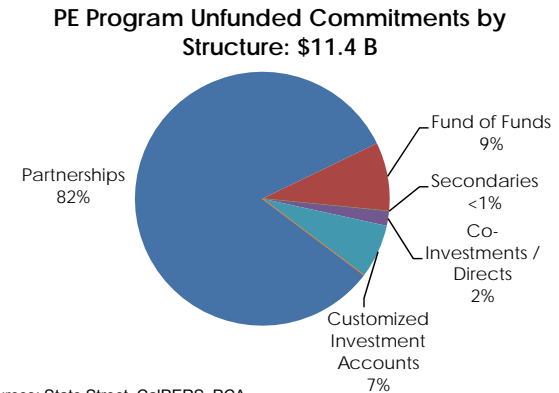
Sources: Wilshire, State Street Bank

- o Performance results were positive across all major geographic sectors and time periods.
- o Approximately 75% of the PE Program’s NAV is invested in the United States (based on the location of the investment firm) with 12% invested in developed markets (primarily Europe at 11%) and 11% in emerging markets (primarily Asia at 10%). Unclassified holdings represent recent transactions that have not been categorized, though the majority of these are with U.S. and European managers.
- o European private equity performed better over the second half of 2015 than did the PE Program’s domestic holdings.

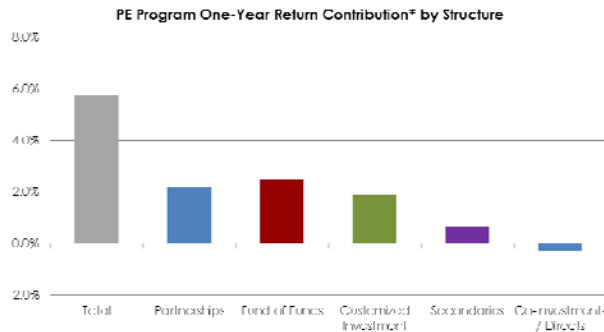
PORTFOLIO STRUCTURE COMPOSITION AND PERFORMANCE



Source: State Street Bank



Sources: State Street, CalPERS, PCA



* Sector return weighted by proportion of NAV.
Source: State Street Bank, PCA

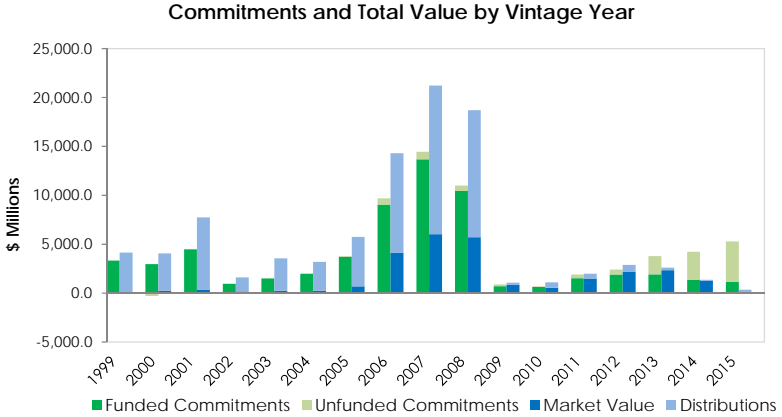
Performance Summary: by structure

	1 Year	3 Year	5 Year	10 Year
PE Program	5.5%	12.9%	12.7%	11.2%
<i>Partnerships</i>	<i>3.1%</i>	<i>12.2%</i>	<i>12.8%</i>	<i>11.2%</i>
<i>Customized Investment Accounts</i>	<i>26.8%</i>	<i>14.5%</i>	<i>8.4%</i>	<i>4.1%</i>
<i>Fund of Funds</i>	<i>17.9%</i>	<i>14.3%</i>	<i>12.6%</i>	<i>8.8%</i>
<i>Co-Investments/Directs</i>	<i>(4.8%)</i>	<i>4.7%</i>	<i>(3.3%)</i>	<i>1.0%</i>
<i>Secondaries</i>	<i>73.3%</i>	<i>40.2%</i>	<i>27.8%</i>	<i>10.7%</i>

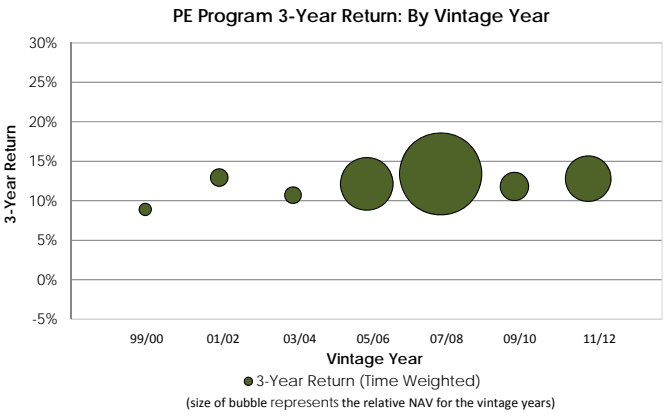
Sources: Wilshire, State Street Bank

- o Partnership structures, despite being the most prevalent in the portfolio, had a lesser impact on overall performance than did funds of funds, given the latter structure’s 17.9% one-year return.
- o Performance results are net positive across all structures over the latest year with the exception of Co-Investments/Directs, which posted a loss of 4.8% over the year ending on December 31, 2015, primarily attributed to a direct investment in a general partner.
- o The PE Program’s bias toward Partnerships is also demonstrated in that 82% of unfunded commitments relate to Partnerships, though a number of large commitments have been made to Customized Investment Accounts recently.
- o Co-investments, though representing 6% of the PE Program’s NAV, comprise only 2% of unfunded commitments, largely due to the fact that co-investments are frequently funded (or substantially funded) upon closing.
- o Funds of funds had a strong year, particularly secondaries, venture capital funds of funds and Asian funds of funds.

PORTFOLIO VINTAGE YEAR COMPOSITION AND PERFORMANCE

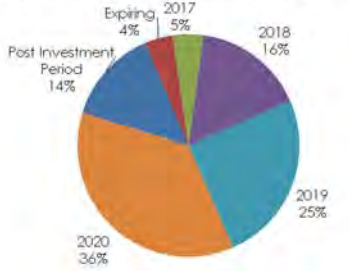


Sources: CalPERS, PCA



Source: State Street Bank, PCA

PE Program Unfunded Commitments by Maturity



Source: State Street Bank, CalPERS, PCA

- o The Program currently has \$58.3 billion in active commitments⁴, \$11.4 billion of unfunded commitments, \$27.4 billion in NAV and \$39.5 billion in net exposure (cost + unfunded commitments).
- o A majority of active commitments and NAV are currently represented by the 2006 to 2008 vintage years at \$35.1 billion and \$15.7 billion, respectively, which are driving performance results.
- o Near-term expirations are smaller due to slower commitment activity between 2009 and 2011. Recent commitment activity has increased the longer-dated expirations.

⁴ Active commitments only include commitments that have drawn capital as of the reporting date.

ANNUAL COMMITMENT ACTIVITY AND MANAGER CONCENTRATION

PE Program Commitment Activity: fiscal year 2015/2016

Partnership/Firm	Commitment (\$M)	Sector	Relationship
Blackstone Kensington Co-Investment	54	Opportunistic	Existing
Bridgepoint Secondary Purchase	100	Buyout	Existing
Carlyle Havasu Co-Investment	75	Buyout	Existing
Carlyle U.S. Equity Opportunity Fund II	200	Buyout	Existing
Clearlake Capital Partners IV	56.7	Buyout	Graduate
Clearlake Opportunities I	56.7	Opportunistic	Graduate
CVC Capital Partners Strategic Opportunities	1,000	Compounding Capital	Existing
GSO Energy Partners C	250	Credit Related	Existing
PAG Asia Co-Investment	54	Buyout	Existing
Permira Ithaca Co-Investment	75	Buyout	Existing
Stone Point Alliant Co-Investment	63	Buyout	Existing
TowerBrook Structured Opportunities Fund	250	Opportunistic	Existing
Total	\$2,234		

Source: CalPERS, PCA

Largest PE Program Relationships by Net Exposure

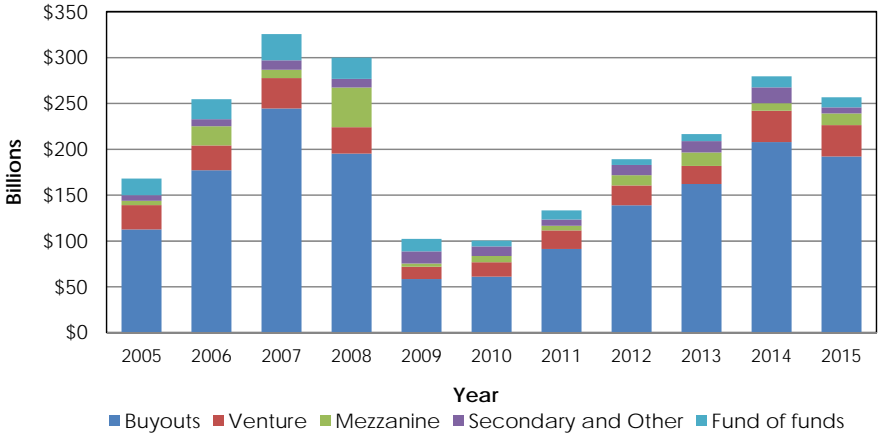
Firm	Investments	Net Exposure (\$M)	% of Program
Apollo Global Management	12	\$2,237	6%
Blackstone Group	22	\$4,649	12%
Carlyle	28	\$3,255	8%
Grove Street/California Emerging Ventures	4	\$1,729	4%
TPG Capital	17	\$1,914	5%

Source: CalPERS, PCA

- o The PE Program authorized capital commitments totaling approximately \$2.2 billion across 12 opportunities with 10 different managers during the first half of the 2015-2016 fiscal year.
- o PE Program's five largest relationships, based on net exposure (defined as cost of investments plus unfunded commitments) represent approximately 35% of the program's overall net exposure with capital allocated across over active 80 investments (partnerships, funds of funds and direct investments) and targeting multiple strategies and geographies.

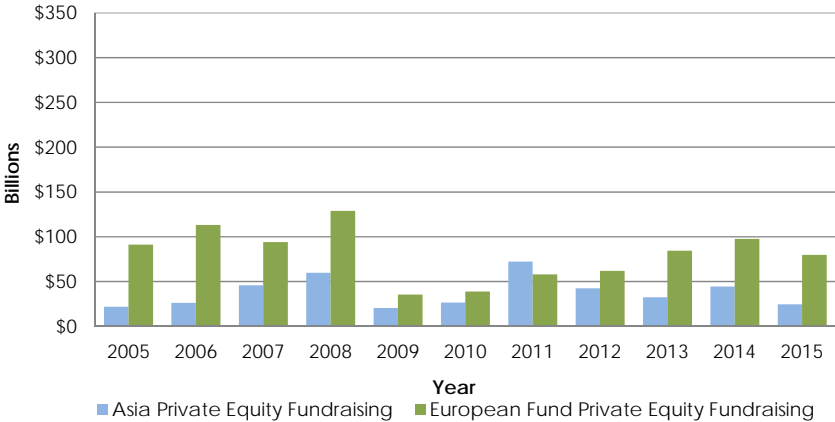
PRIVATE EQUITY MARKET OVERVIEW

Commitments to U.S. Private Equity Partnerships



Source: Private Equity Analyst through December 2015

Commitments to Non-U.S. Private Equity



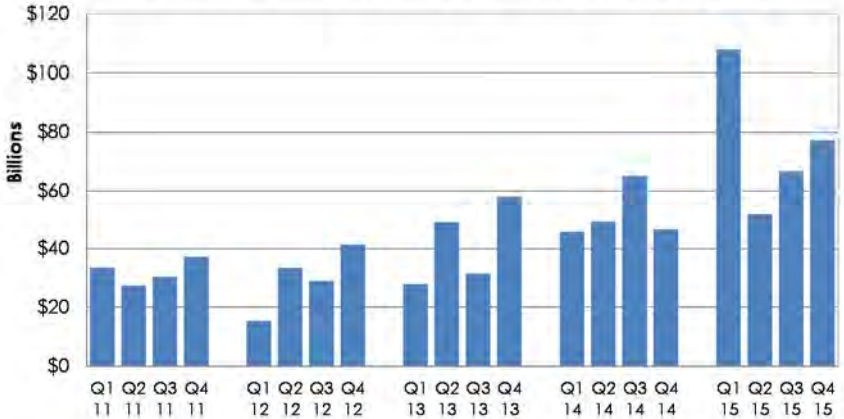
Source: Thomson Reuters, through December 2015

U.S. Purchase Price Multiples: Large vs Middle Market



Source: S&P Capital IQ

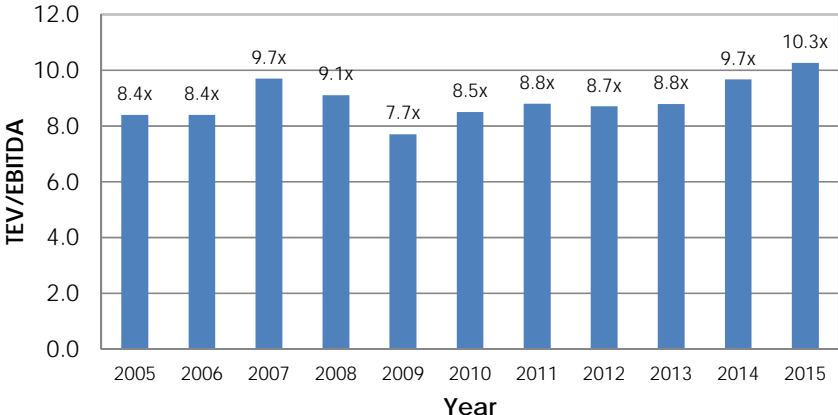
Announced and Disclosed U.S. Quarterly LBO Deal Value*



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

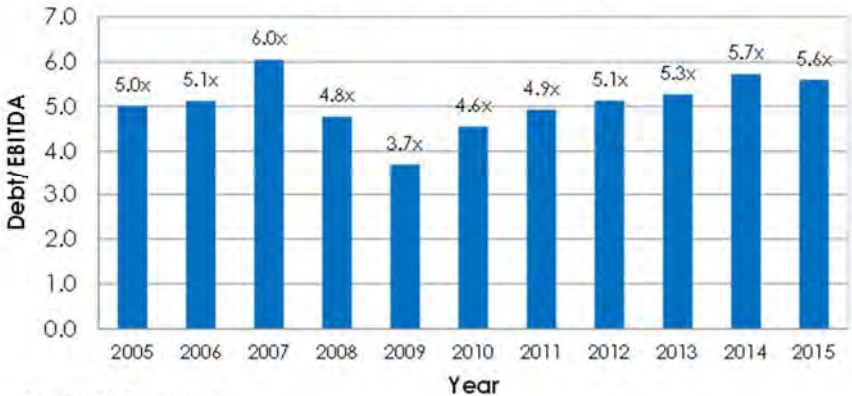
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Average U.S. Purchase Price Multiples



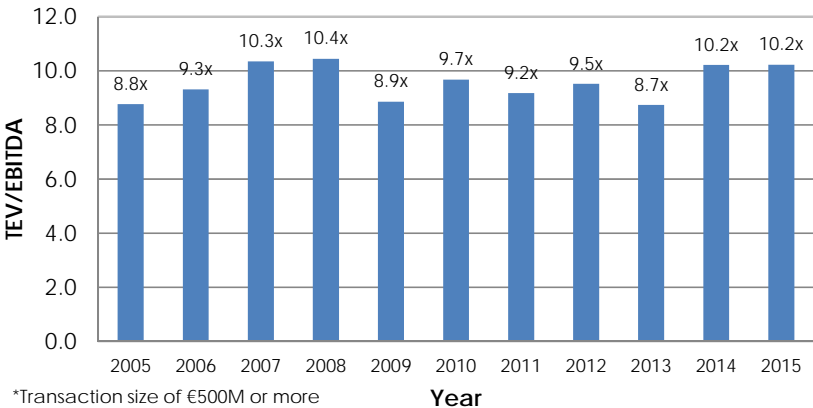
Source: S&P Capital IQ

Average U.S. Debt Multiples



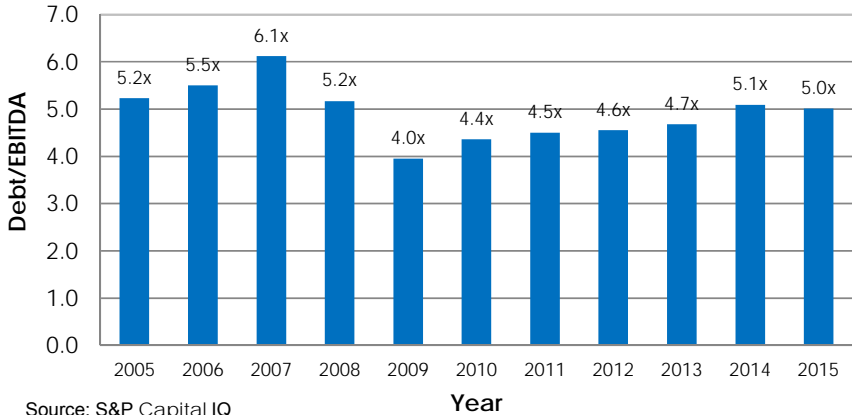
Source: S&P Capital IQ

Average European Purchase Price Multiples



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

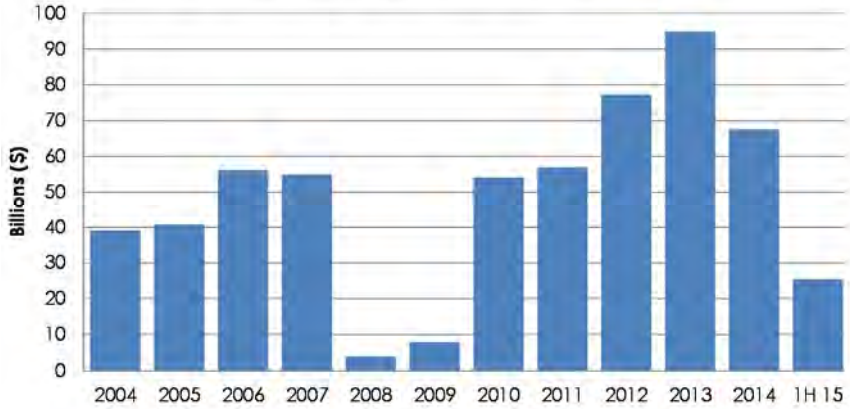
Average European Debt Multiples



Source: S&P Capital IQ

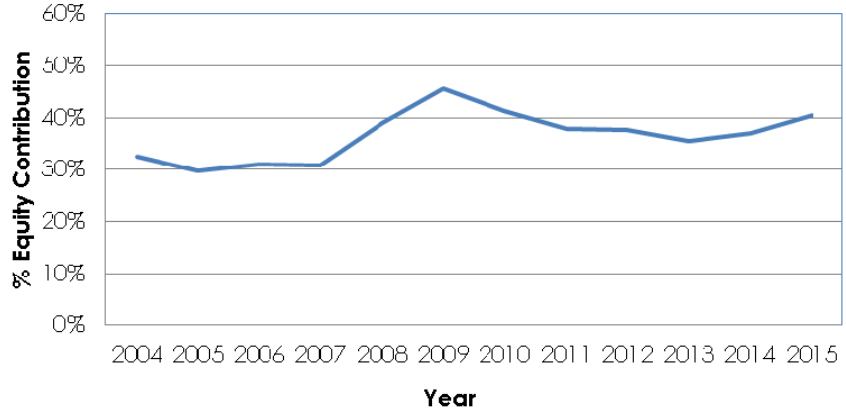
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Dividend/Stock Repurchase Loan Volume



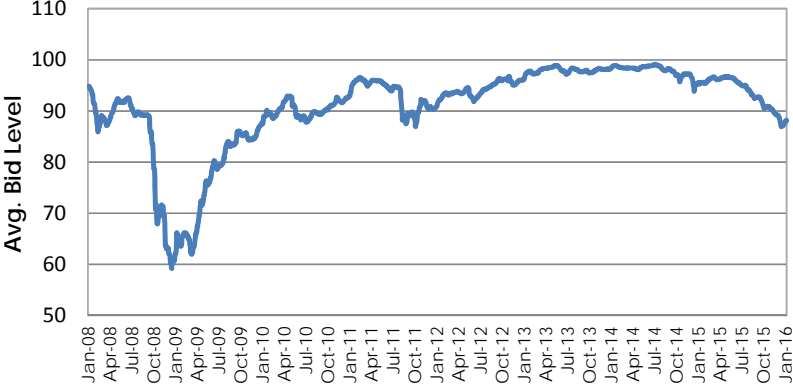
Source: S&P Capital IQ LCD, Bank of America Merrill Lynch

U.S. Equity Contribution



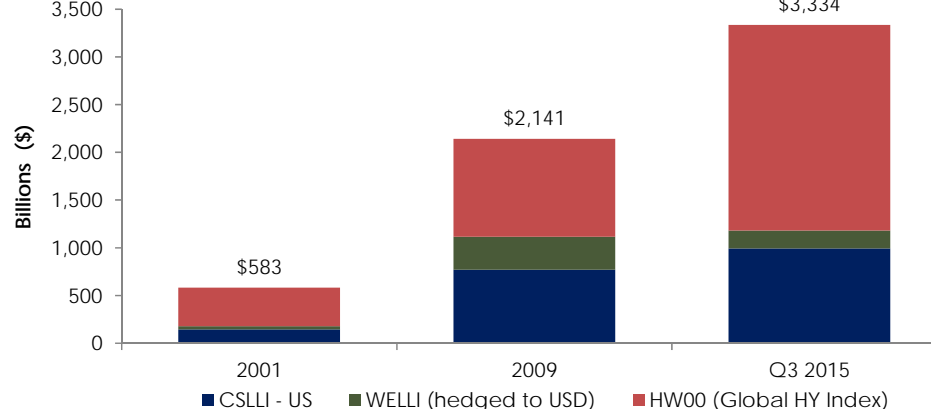
Source: S&P Capital IQ

Leveraged Loan Index



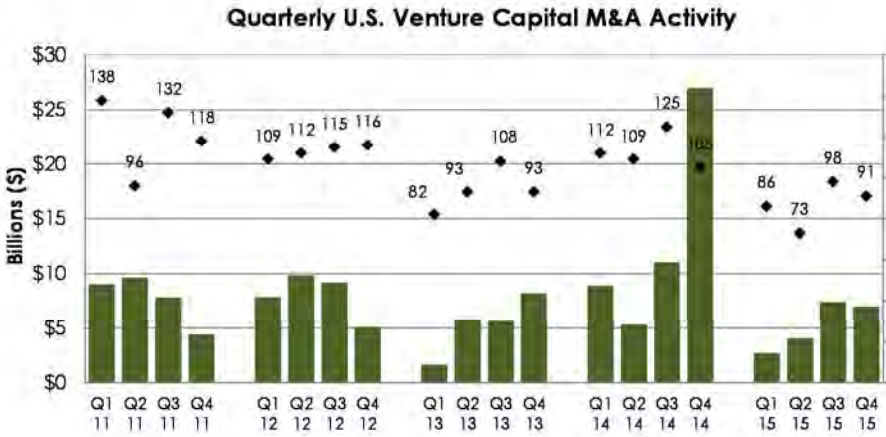
Source: Loan Syndications and Trading Association (LSTA)

Global Leveraged Credit Market Size

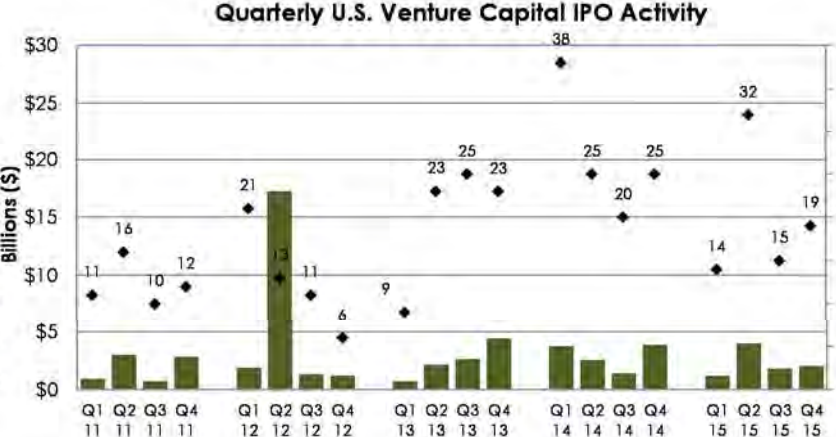


1. Face value of Credit Suisse Leveraged Loan Index (CSLLI), Western European CSLLI (hedged to USD) and BAML Global High Yield Index as of September 30, 2015
 2. Source: Ares Management

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Source: Thomson Reuters



Source: Thomson Reuters



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

Appendix 1: PE Program Relationships by Net Exposure (Cost plus Unfunded Commitments)

<u>Firm</u>	<u>Net Exposure (\$M)</u>	<u>% of Program</u>	<u>Firm (continued)</u>	<u>Net Exposure (\$M)</u>	<u>% of Program</u>
Blackstone Group	4,649	12%	Khosla Ventures	213	1%
Carlyle Group	3,255	8%	Lombard Investments	211	1%
Apollo Global Management	2,237	6%	Francisco Partners	211	1%
TPG	1,914	5%	Birch Hill Equity Partners	210	1%
Grove Street	1,729	4%	Madison Dearborn Partners	208	1%
Kohlberg Kravis Roberts & Co.	1,521	4%	Tailwind	206	1%
CVC Capital Partners	1,470	4%	CDH	198	1%
Riverstone	1,269	3%	Wellspring Capital Partners	178	<1%
First Reserve	1,123	3%	Levine Leichtman Capital	178	<1%
Bridgepoint Capital	1,041	3%	SAIF Partners	174	<1%
Advent Partners	994	3%	Clearlake Capital Group	163	<1%
Cerberus	993	3%	Arclight	157	<1%
Hellman & Friedman	983	2%	Palladium	153	<1%
TowerBrook Capital Partners	970	2%	Thomas H. Lee Company	153	<1%
Silver Lake Partners	925	2%	Centerbridge Capital	150	<1%
Yucaipa	684	2%	Patria Investmentos S.A.	150	<1%
57 Stars	682	2%	Polish Enterprise	144	<1%
GCM	670	2%	The Jordon Company	143	<1%
Welsh Carson Anderson & Stowe	623	2%	Aisling Capital	142	<1%
Insight Venture Partners	580	1%	OCM	141	<1%
Standard Life	501	1%	KPS	131	<1%
Sankaty Advisors	500	1%	Lion Capital	127	<1%
Capital Dynamics	434	1%	Clessidra Capital	150	<1%
Permira	411	1%	PAG	126	<1%
Onex	410	1%	Lime Rock	120	<1%
GCM Grosvenor	378	1%	VantagePoint Venture Partners	117	<1%
KMCP	378	1%	Coller Capital	112	<1%
Hamilton Lane	364	1%	Avenue Capital Partners	110	<1%
Ares	359	1%	Essex Woodlands Health Ventures	102	<1%
New Mountain Capital	328	1%	Riverwood Capital Partners	102	<1%
MHR	319	1%	W Capital Partners	99	<1%
WL Ross & Co. LLC	298	1%	Affinity Equity Partners	92	<1%
Providence Equity Partners	283	1%	Triton Partners	85	<1%
AACP	283	1%	EM Alternative Investments	83	<1%
Oak Hill Capital Partners	262	1%	Baring	82	<1%
Lindsay Goldberg & Co.	250	1%	Rhone Partners	81	<1%
GSO Capital Partners	250	1%	Vicente Capital	77	<1%
Trident	250	1%	Clarus Ventures	76	<1%
Green Equity Investors	219	1%	Siris Capital Partners	75	<1%
Jasper Ridge	215	1%	OTHER	820	2%

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