

Public Agenda Item #7a

Review, Discussion and Consideration of the ERS Private Equity Program: Market Update and Program Overview

August 16, 2016

ERS Presenters

Wesley Gipson, Director of Private Equity

Ricardo Lyra, Private Equity Portfolio Manager

Davis Peacock, Private Equity Portfolio Manager

Altius Associates Presenters

Brad Young, Co-CEO & Head of Investments

William (Billy) Charlton, Ph. D. , CFA, Partner & Head of
the Americas

Chason Beggerow, Partner

ERS Private Equity Program Overview

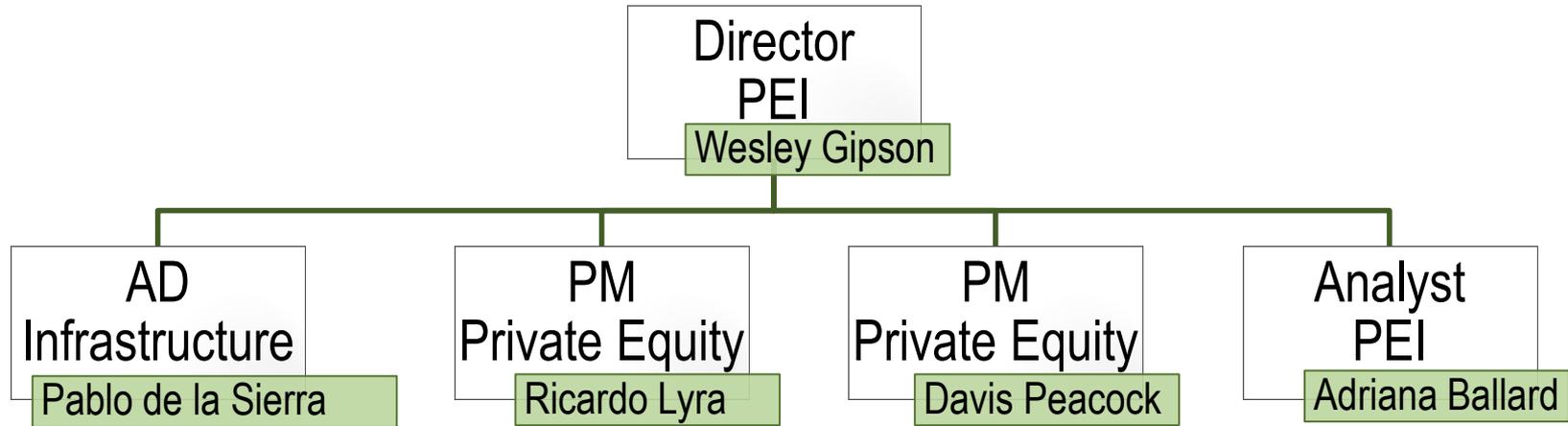


Agenda - Key Topics

- Private Equity Team
- Portfolio Update
- Portfolio Diversification
- Portfolio Performance
- Savings
- Goals and Objectives for FY 2016/17
- Long-Term Goals

ERS Private Equity Program Overview

Team



ERS Private Equity Program Overview

Portfolio Update as of 06/30/16



	Inception-FY15	FYTD FY16	Inception-6/30/16
Committed	\$5.4 billion	\$744 million	\$6.2 billion
Called	\$3.2 billion	\$711 million	\$4.0 billion
Distributed	\$1.5 billion	\$1.1 billion ²	\$2.5 billion
Net Asset Value (NAV)	\$2.8 billion	\$(217) million	\$2.5 billion
% of Trust	11.0%	(70) bps	10.3%
Total Value Paid in Capital (TVPI) ¹	1.29x	(0.02x)	1.27x
Distributions Paid in Capital (DPI) ¹	0.45x	0.19x	0.64x
Internal Rate of Return (IRR) ¹	12.02%	(106) bps	10.9%

1. TVPI, or Total Value to Paid in Capital, is equal to (NAV + Distributions) / Paid in Capital; DPI is equal to Distributions / Paid in Capital;

2. Includes secondary sale deferral

All values are internally determined by ERS and not the General Partners

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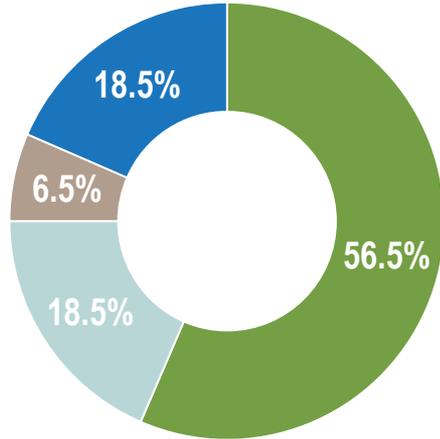
ERS Private Equity Program Overview

Pro Forma Portfolio Diversification by Strategy

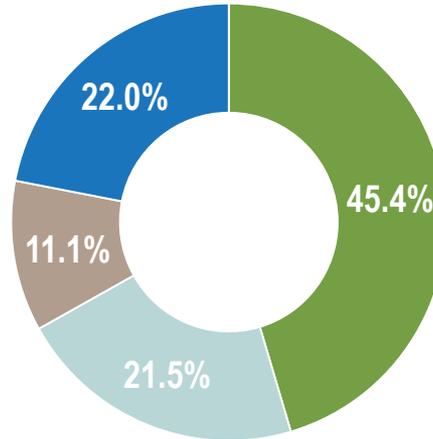
Target vs. NAV vs. Economic Exposure



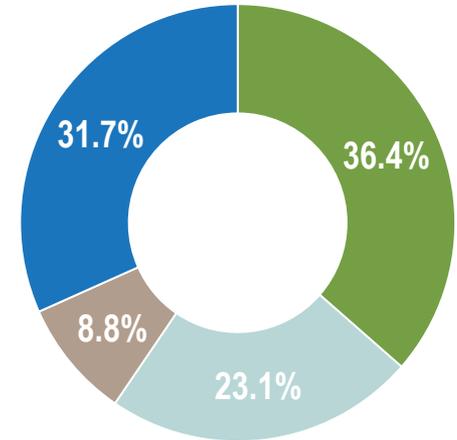
Target Strategy Diversification



NAV by Strategy – 06/30/16



EE* by Strategy – 06/30/16



■ Buyout ■ VC & Growth ■ Debt ■ Special Situations

* Economic Exposure ("EE") = NAV + Uncalled Commitments;
EE at 06/30/16 is based on 03/31/16 valuations

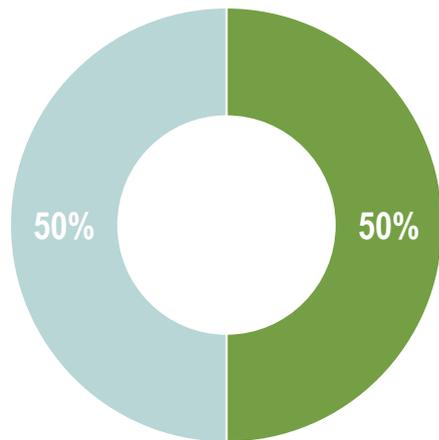
ERS Private Equity Program Overview

Pro Forma Portfolio Diversification by Geography

Target vs. NAV vs. Economic Exposure

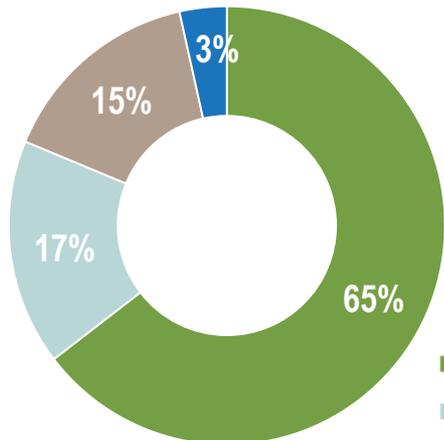


Geography Guideline



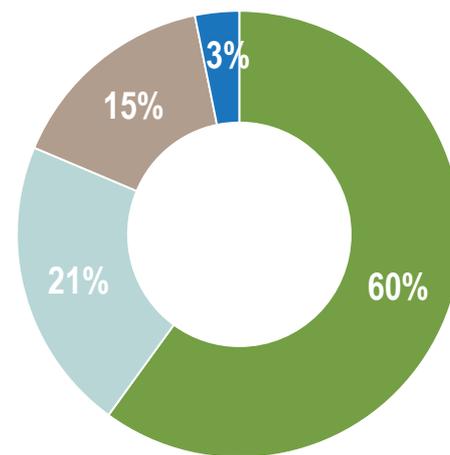
■ US
■ International

NAV by Geography



■ US
■ Europe
■ Asia
■ Latin America

EE* by Geography



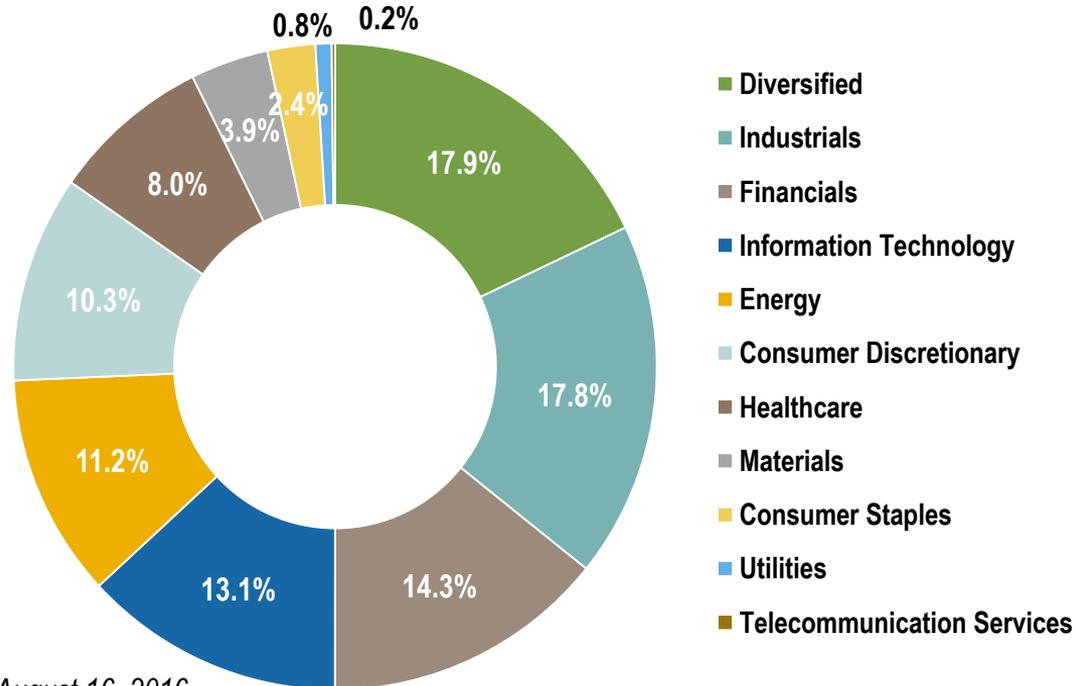
* Economic Exposure ("EE") = NAV + Uncalled Commitments;
EE at 06/30/16 is based on 03/31/16 valuations

ERS Private Equity Program Overview

Pro Forma Portfolio Diversification by Sector

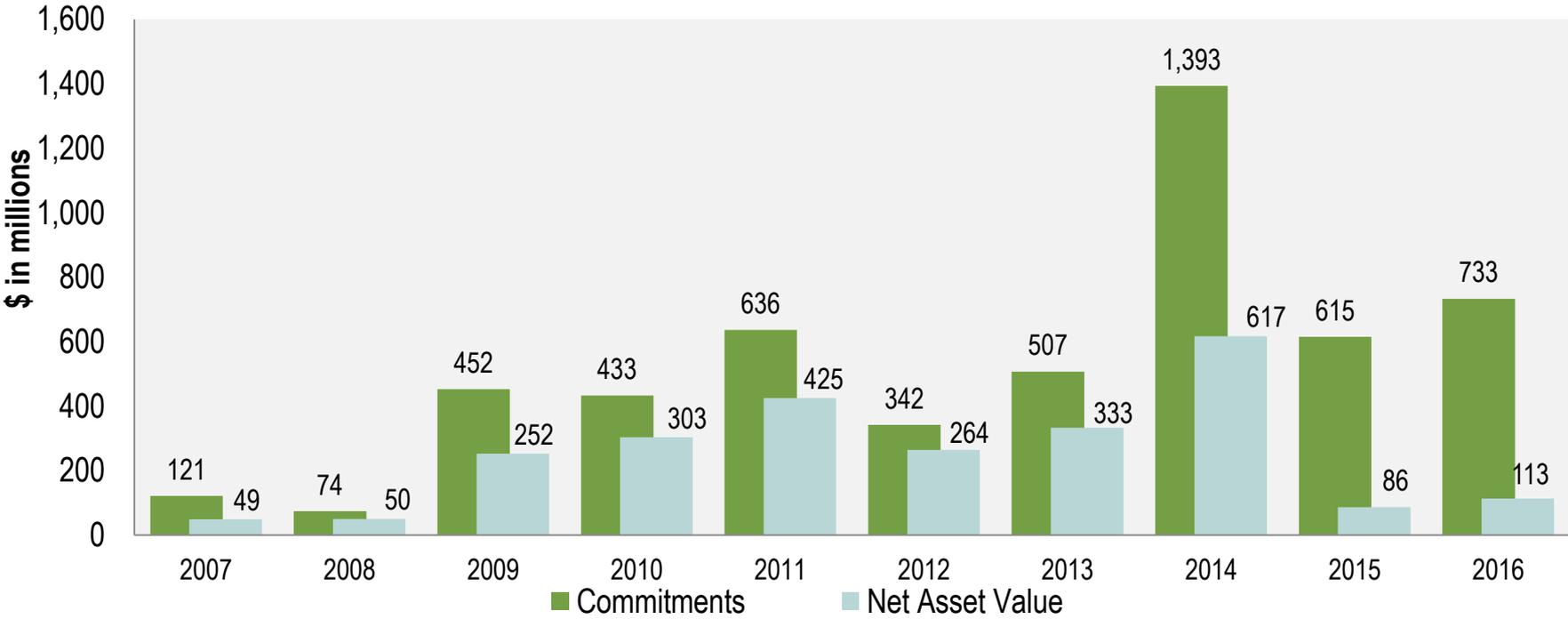


NAV by Sector – 03/31/2016



ERS Private Equity Program Overview

Portfolio Diversification by Vintage Year



ERS Private Equity Program Overview

Portfolio Diversification by General Partner



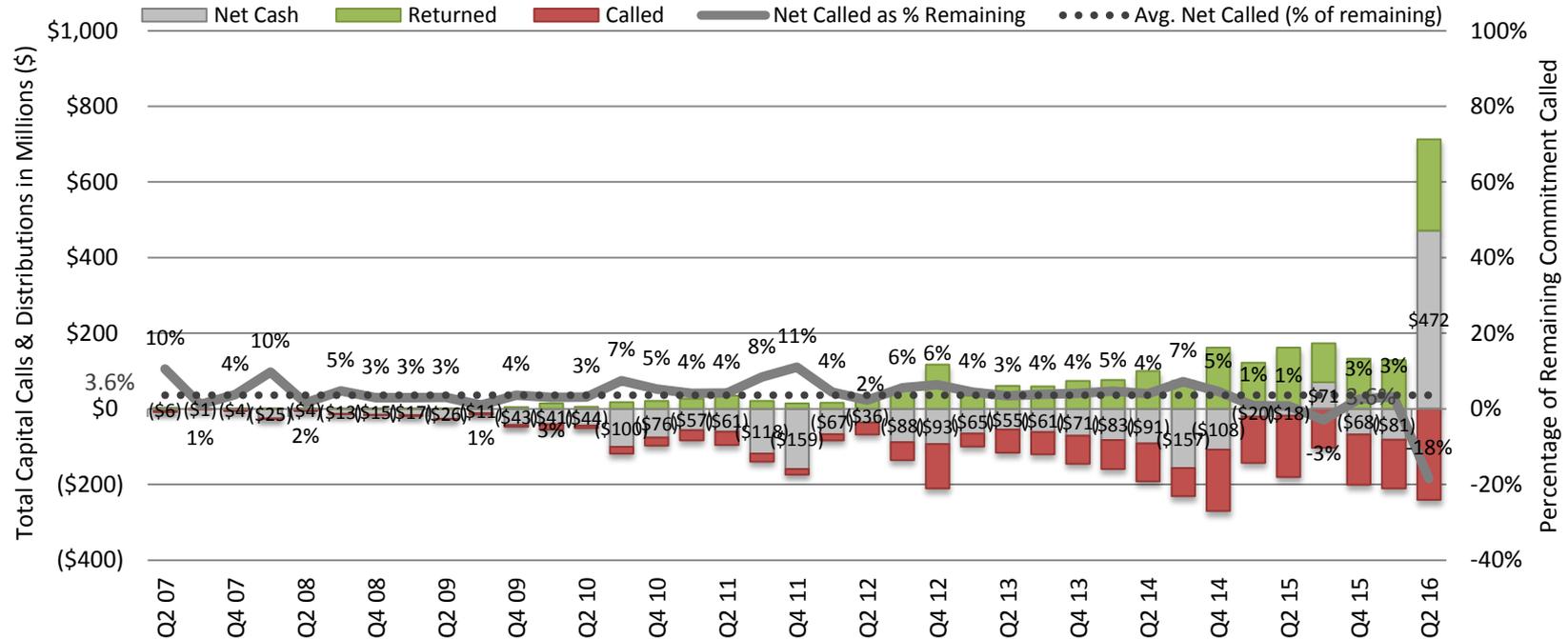
	General Partner	# of Funds	Commitment (\$mm)	Uncalled Capital (\$mm)	Net Asset Value (\$mm)	Economic Exposure (\$mm)	Economic Exposure (%)
1	Altius Associates	2	465	296	161	457	9.01%
2	LGT Capital Partners	4	475	359	85	444	8.77%
3	Castlelake	4	295	71	260	332	6.55%
4	Advent International	4	297	132	169	300	5.94%
5	Landmark Partners	2	300	217	79	296	5.84%
6	KSL Capital Partners	3	270	187	59	245	4.85%
7	Carlyle Group	4	246	155	87	242	4.78%
8	Quantum Partners	5	230	122	118	240	4.73%
9	TA Associates	4	238	87	127	214	4.23%
10	Navis Capital Partners	2	185	51	144	195	3.86%
Total Top 10		34	3,000	1,677	1,289	2,965	58.56%
Total		88	5,306	2,570	2,493	5,064	100.0%

Notes:

- Amounts in USD (Source – eFront)
- Funds as of 06/30/16; Valuations as of 03/31/16
- Totals include active funds and co-investments

ERS Private Equity Program Overview

Cash Flow and “J-curve” since Inception

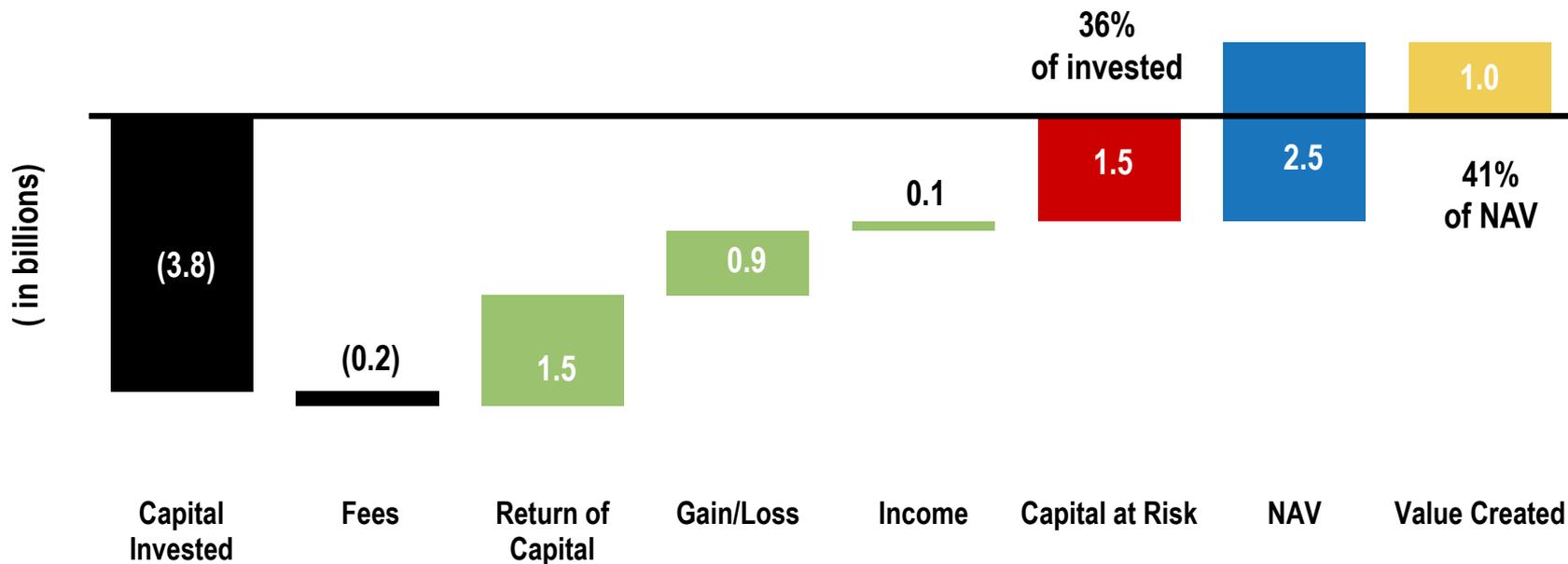


All values are internally determined by ERS and not the General Partners
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* Chart does not include Texas Growth Fund commitment

ERS Private Equity Program Overview

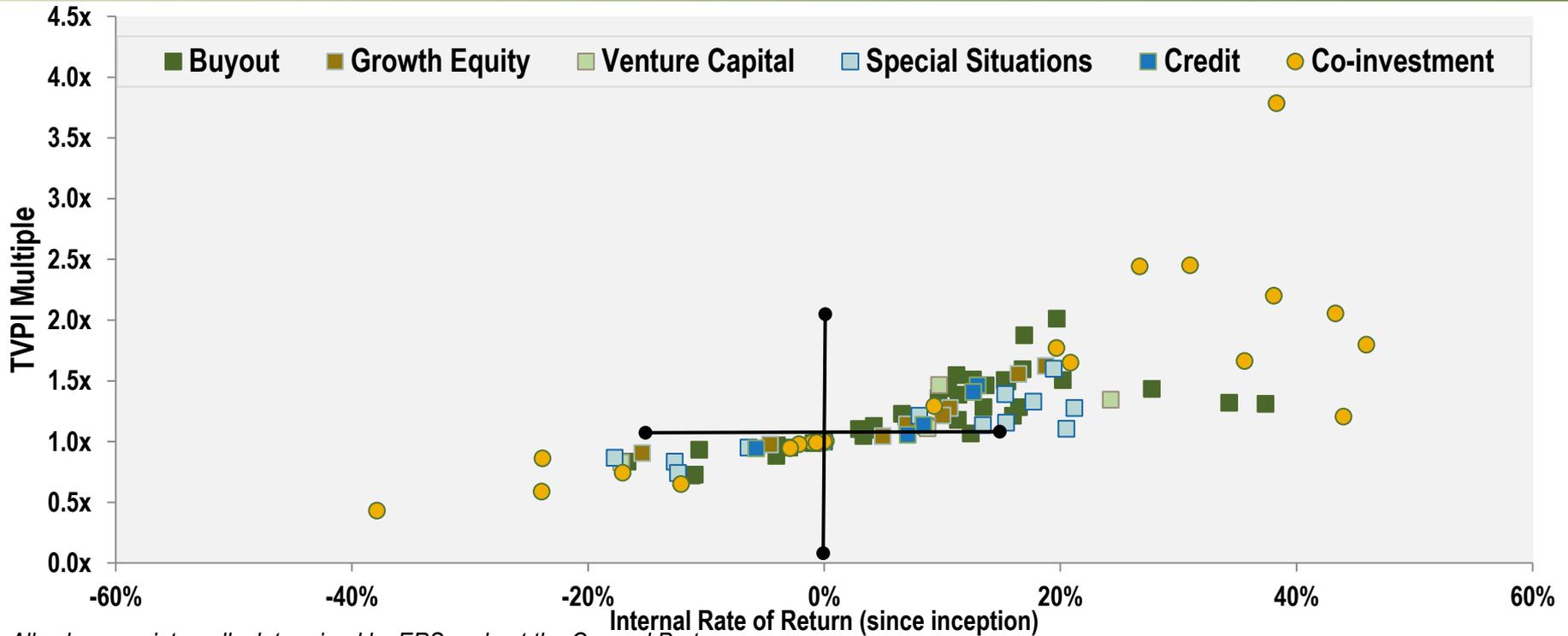
Value Creation Ladder Since Inception



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ERS Private Equity Program Overview

Performance by Strategy as of June 30, 2016

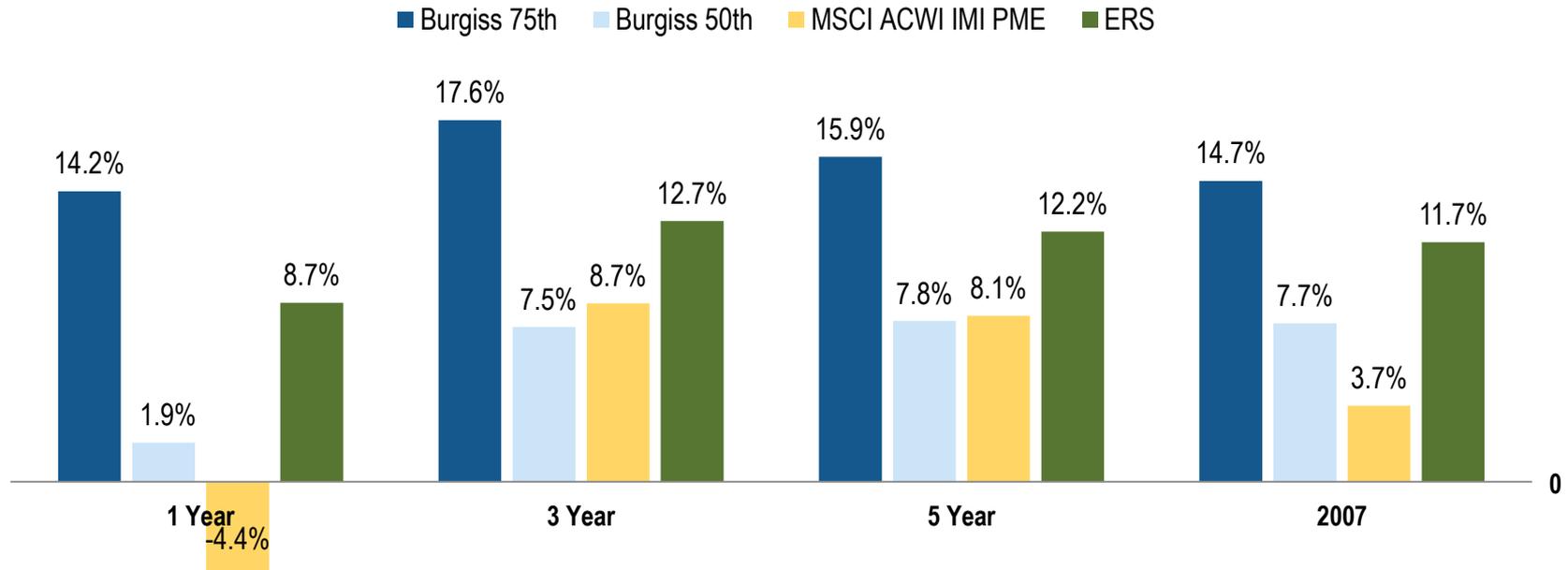


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ERS Private Equity Program Overview

Benchmark Comparison as of March 31, 2016



* Chart does not include Texas Growth Fund commitment

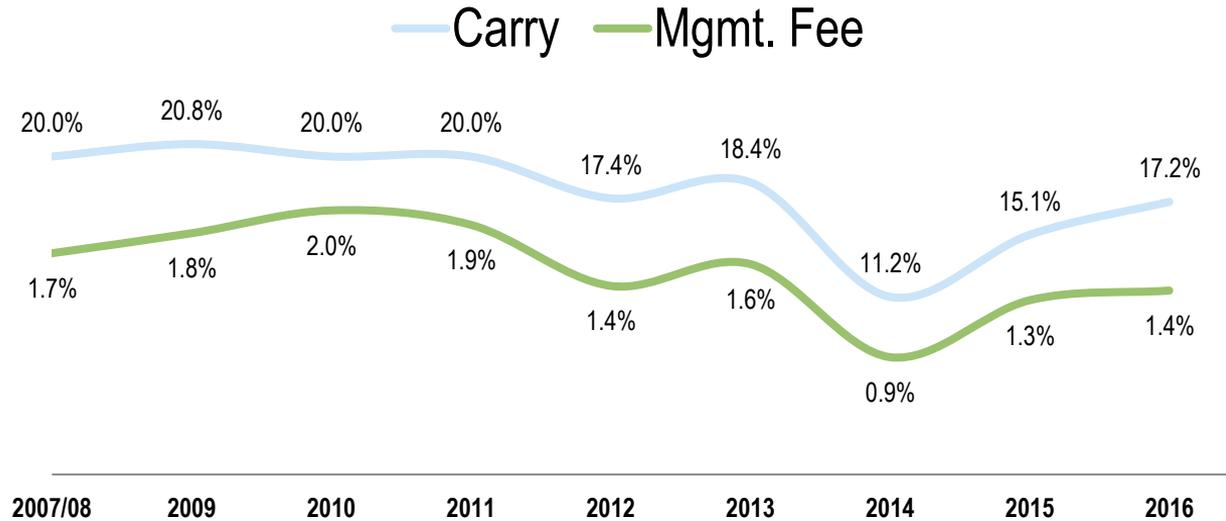
ERS' returns are net of all fees; PME comparison indices do not account for transaction costs
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ERS Private Equity Program Overview

Economic Terms Evolution by Fiscal Year



Weighted Economic Terms - Buyouts



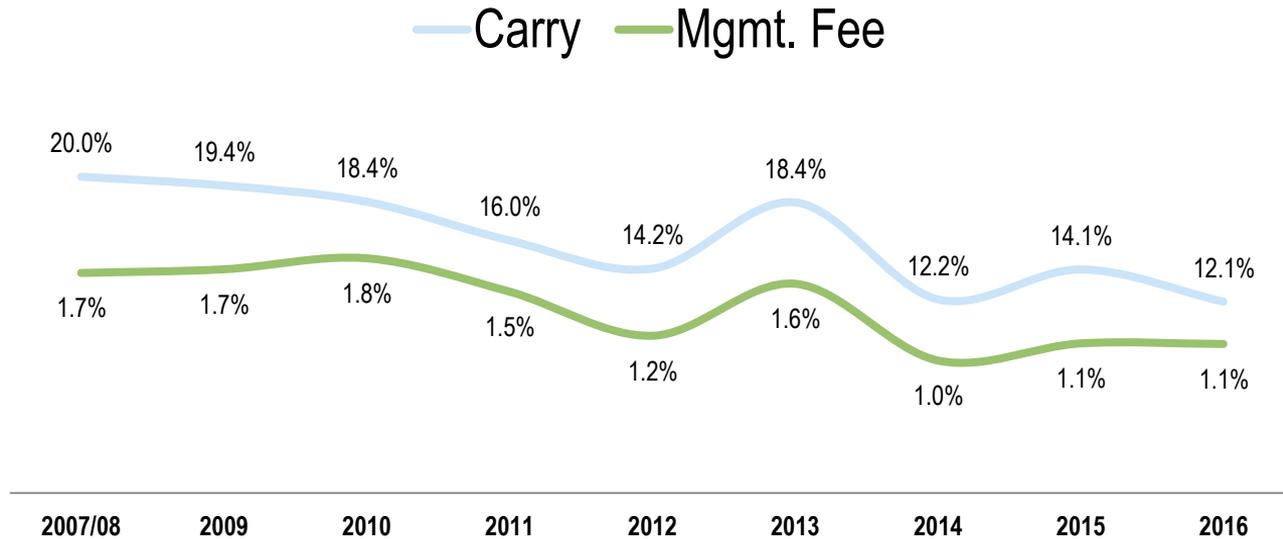
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ERS Private Equity Program Overview

Economic Terms Evolution by Fiscal Year



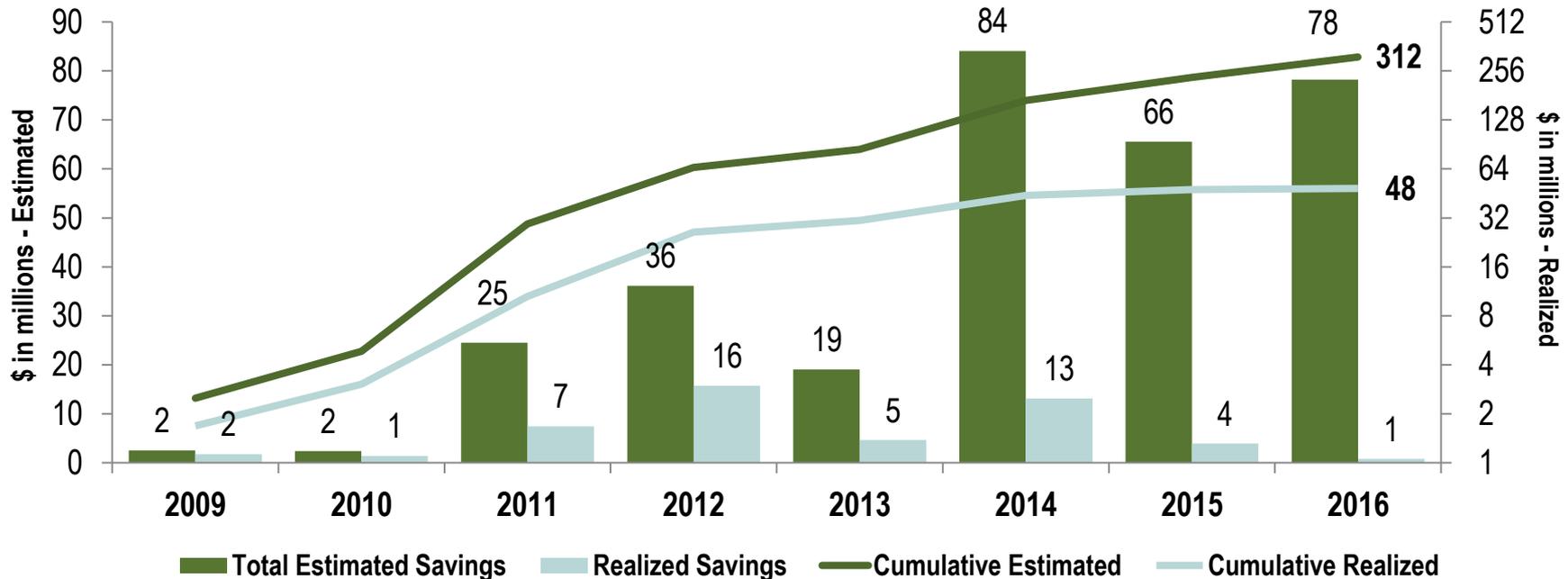
Weighted Economic Terms - All PE



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ERS Private Equity Program Overview

Savings by Fiscal Year



ERS Private Equity Program Overview

Goals and Objectives for FY 2016 and FY 2017



FY 2016

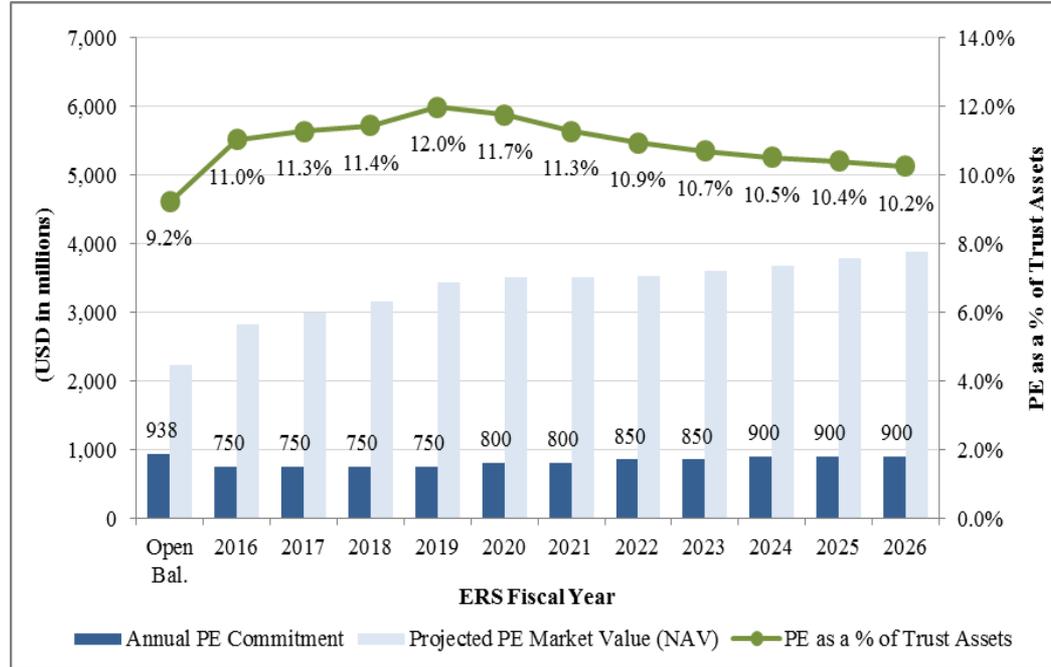
- Hire analyst (real asset focused)
- 2nd secondaries mandate
- Re-ups and co-investments
- Tactical plan
 - Tactical exposure management

FY 2017

- Hire analyst (real asset focused)
- Rebuild buyout portfolio
- Continue Co-investments Program

ERS Private Equity Program Overview

Long Term Goals and Objectives



Questions?

AUGUST 16, 2016

ALTIUS ASSOCIATES LTD

EMPLOYEES RETIREMENT SYSTEM OF TEXAS

PE PROGRAM REVIEW & MARKET OUTLOOK 2016



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ALTIUS
ASSOCIATES®

ATTENDING TODAY

- **Brad Young**
Co-CEO & Head of Investments

- **William (Billy) Charlton, Ph.D., CFA**
Partner & Head of the Americas

- **Chason Beggerow**
Partner

AGENDA

- I. Altius Update
- II. ERS Private Equity Program Update
- III. Private Equity Market Statistics & Outlook
- IV. Private Equity Fees
- V. Summary

I. ALTIUS UPDATE



PAVILION FINANCIAL CORPORATION

Pavilion's current businesses cover a range of specialized investment services

Pavilion Financial Corporation

An employee owned, diversified investment services firm offering advice and execution services to institutional and other investors

- 170 employees (85 shareholders)
- Global client base with combined AUA of USD560 billion
- Offices in Canada: Winnipeg (headquarters), Montreal, Toronto, Edmonton, and Vancouver
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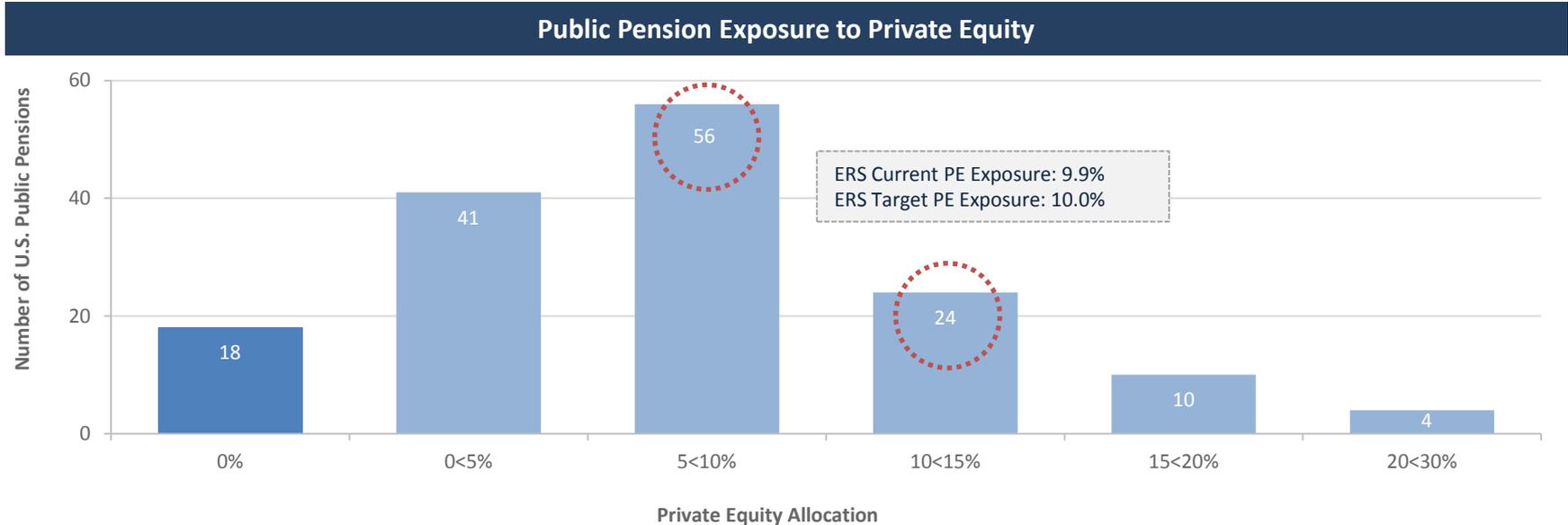
(1) Includes three employees of LPCA affiliates: Pavilion Advisory Group Ltd. and Pavilion Advisory Group Inc.

II. ERS PRIVATE EQUITY PROGRAM UPDATE



PRIVATE EQUITY ALLOCATION OF PUBLIC PENSIONS

- 89% of U.S. public pensions have exposure to private equity
- The current ERS portfolio exposure (9.9%) and targeted allocation (10.0%) are consistent with other U.S. public pensions
 - 53% of U.S. public pensions allocate between 5% and 15% to private equity
- On a dollar-weighted basis, U.S. public pensions funds invest 9.3% of their portfolios in private equity



Source: Private Equity Growth Capital Council, Public Pension Fund Analysis, December 2015.

PRIVATE EQUITY PERFORMANCE

Net Internal Rate of Return (“IRR”) ¹

Vintage	Buyout/Acquisitions		Growth/Venture		Debt/Distressed		Special Situations ²		Co-Investments		Total	
	Commit. (USD mm)	IRR	Commit. (USD mm)	IRR	Commit. (USD mm)	IRR	Commit. (USD mm)	IRR	Commit. (USD mm)	IRR	Commit. (USD mm)	IRR
2007	\$221	16.0%	-	-	-	-	-	-	-	-	\$221	16.0%
2008	\$182	14.8%	-	-	-	-	-	-	-	-	\$182	14.8%
2009	\$145	9.9%	-	-	-	-	\$250	13.1%	-	-	\$395	10.4%
2010	\$208	6.2%	\$100	17.8%	\$50	12.2%	\$50	19.2%	-	-	\$408	10.6%
2011	\$287	10.5%	\$100	15.2%	\$75	14.2%	\$235	1.2%	\$18	31.5%	\$715	10.7%
2012	\$150	5.1%	-	-	-	-	\$100	19.2%	\$17	61.5%	\$267	10.4%
2013	\$378	7.2%	\$90	22.9%	-	-	-	-	\$101	10.3%	\$570	11.1%
2014	\$157	(1.8%)	-	-	\$193	7.9%	\$925	4.7%	\$69	5.0%	\$1,391	4.1%
2015	\$343	(28.0%)	\$123	7.1%	\$125	(0.9%)	\$105	8.0%	\$30	(7.7%)	\$725	(3.2%)
2016	\$220	0.0%	\$95	n/m	\$100	0.0%	\$438	n/m	\$36	n/m	\$793	0.0%
Total	\$2,289	10.2%	\$460	17.1%	\$543	11.9%	\$2,103	10.9%	\$271	19.0%	\$5,666	11.1%

(1) Fund strategy classifications per ERS.

(2) Special Situations includes Credit, Real Assets (excluding infrastructure), and Primary & Secondary Fund-of-Funds strategies.

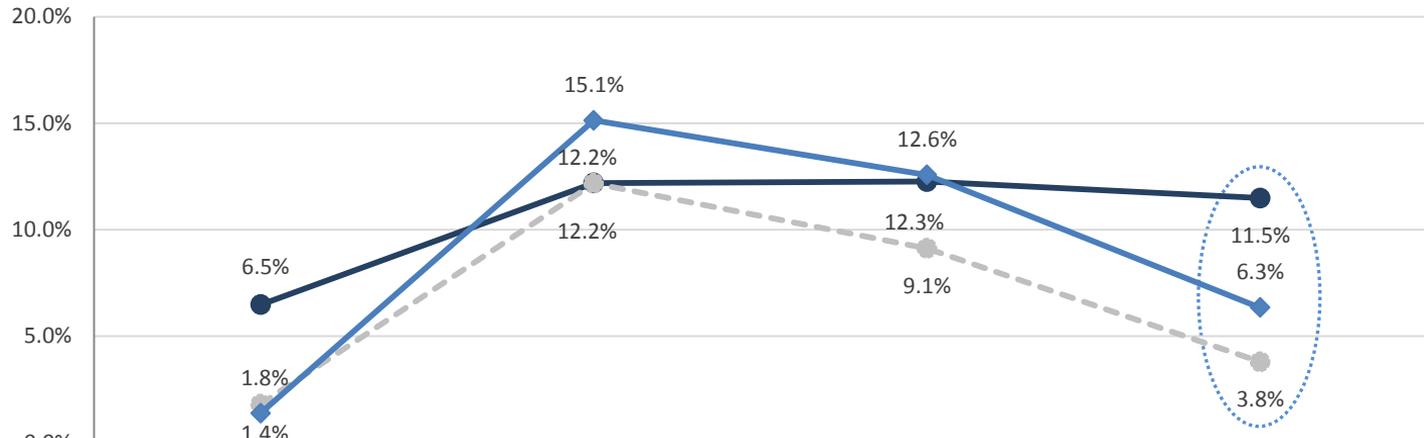
Portfolio valuations as of March 31, 2016 (interim figures); performance by vintage calculated effective of first drawdown date.

Note: Additional performance metrics (TVPI and DPI) are provided in the Appendix.

COMPARISON TO PUBLIC MARKET PERFORMANCE

Despite strong interim public market performance, ERS' private equity portfolio has outperformed public market equivalents since inception

Portfolio Performance Compared to Public Market Equivalents ("PME")



	1 Year	3 Year	5 Year	Since Inception ¹
Portfolio IRR	6.5%	12.2%	12.3%	11.5%
PE MSCI ACWI	1.8%	12.2%	9.1%	3.8%
S&P 500	1.4%	15.1%	12.6%	6.3%

(1) The ERS Private Equity program began in 2007.

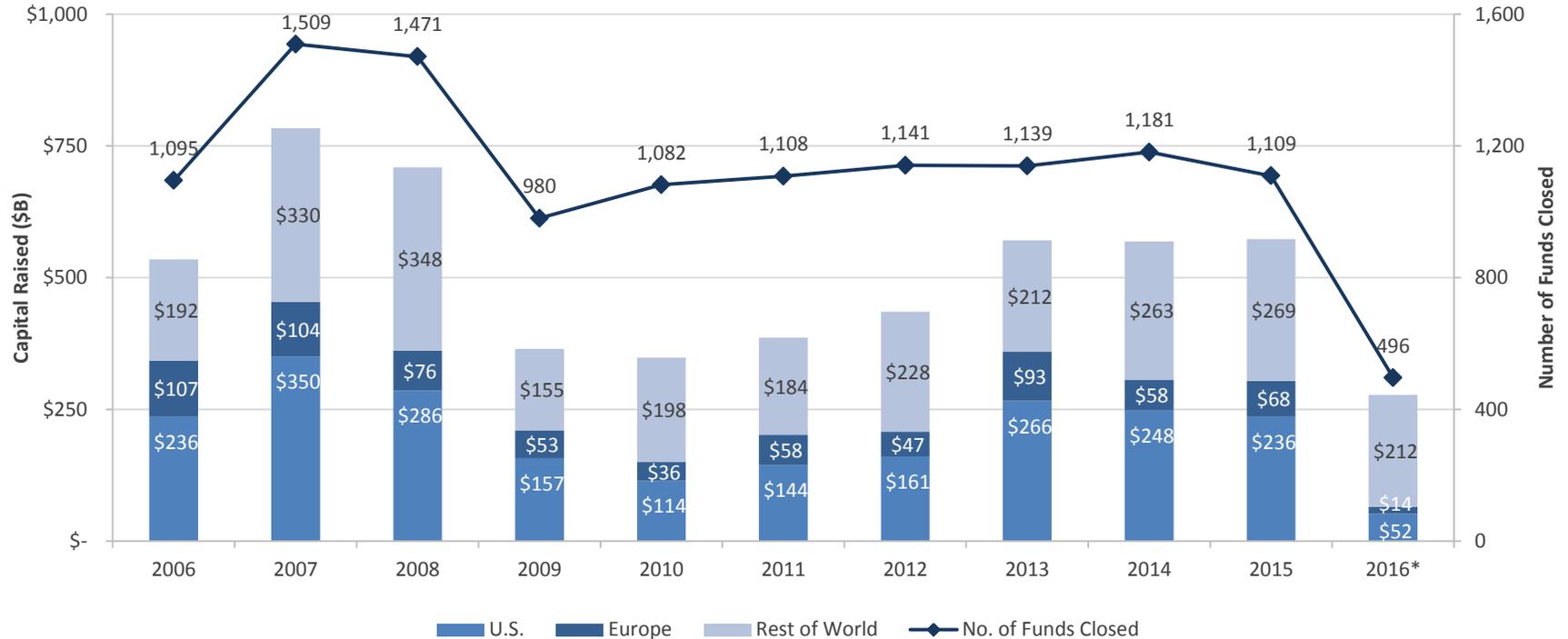
Portfolio and market performance as of December 31, 2015.

III. PRIVATE EQUITY MARKET STATISTICS & OUTLOOK



GLOBAL: PRIVATE EQUITY FUNDRAISING

Fundraising by Capital (\$B), Number of Funds, and Fund Sizes

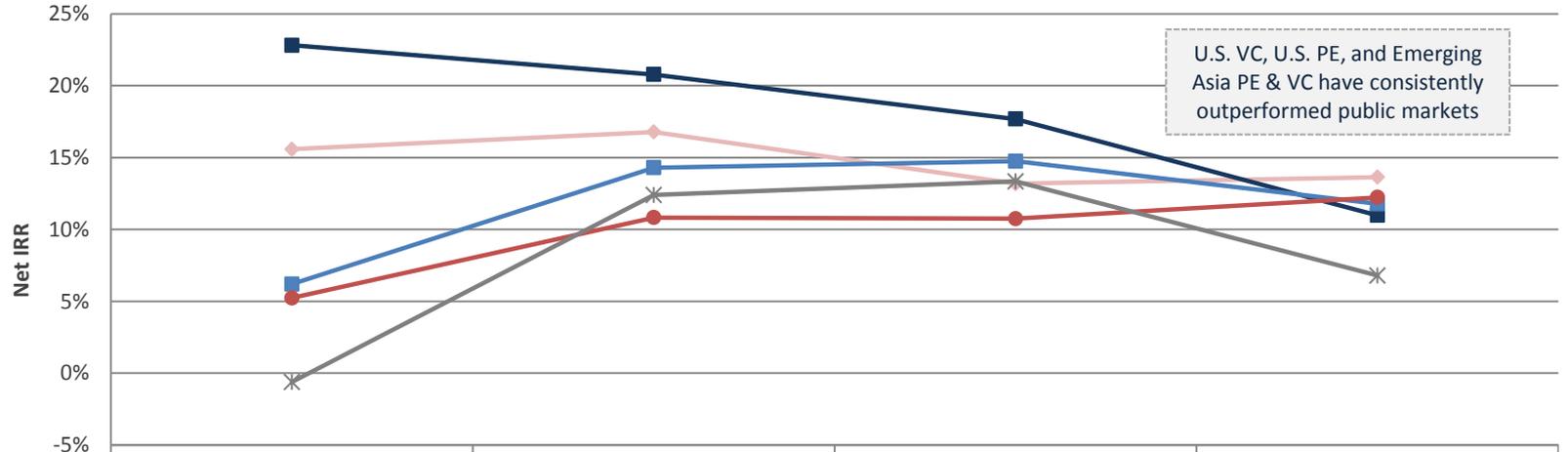


Source: Pitchbook as of Q1 2016.

*2016 value represents capital raised thru Q1 2016.

GLOBAL: PRIVATE EQUITY PERFORMANCE COMPARISON

Global Private Equity & Public Market Performance



	1-Year	3-Year	5-Year	10-Year
Emerging Asia PE & VC	15.6%	16.8%	13.2%	13.6%
US VC	22.8%	20.8%	17.7%	11.0%
US PE	6.2%	14.3%	14.8%	11.8%
Western Europe PE	5.2%	10.8%	10.8%	12.2%
S&P 500	-0.6%	12.4%	13.3%	6.8%

Source: EMPEA Industry Statistics Q1 2016 (data represents pooled end-to-end returns from Cambridge Associates as of September 30, 2015 net of fees, expenses, and carried interest).

U.S.: MARKET SUMMARY & OUTLOOK

Observations

- Buyout
 - While 2015 US fund raising was below that of the last two years, it was still strong by historical standards
 - US fund managers generated substantial exits in 2015
 - Purchase prices have decreased slightly from the highs of 2014 but are still near historic highs
- Venture Capital & Growth
 - The increase in Venture Capital (VC) fundraising has slowed (by both amount and number of funds)
 - Deal flow in 2015 continued the upward trend that started in 2014
 - VC valuations “cracked,” especially in later stage deals
- Distressed
 - Markets have seen high volatility in combination with weak economic growth
 - Cracks are starting to show in credit markets
 - Private equity purchase and debt multiples remain near historical highs while quality credit issuances are at historic lows

Altius View & Strategy

- US Private Equity continues to generate attractive exits even with less than cooperative public equity markets
- Important to identify and invest with disciplined managers that have differentiated strategies and insights with longer-term views of markets and investment cycles
- Secondary distressed opportunity is episodic and largely a timing play (although it is difficult to forecast/time the next distressed cycle, current credit availability and quality may be setting up for next cycle)

Source: Private iQ.

Note: More detailed information is provided in the Appendix.

EUROPE: MARKET SUMMARY & OUTLOOK

Observations

- 2016 is expected to have both the largest number of funds and the fastest fundraisings in many years
 - Significant capital is being raised for Pan European as well as country specific funds
 - This leads to the expectation that dry powder will increase in 2017
- Proceeds from exits remain strong
 - Divestments significantly outweigh new investments
 - Excellent returns being made
- The unexpected Brexit vote has increased uncertainty in European private equity markets in general
 - Deal volumes were down before the UK referendum and are likely to remain down due to increased uncertainty created by decision to leave EU
 - For deals completed in 2016, prices have been high
 - Short term, the uncertainty may raise borrowing costs and result in fewer IPOs
 - However, the sterling depreciation may be beneficial to UK exporters

Altius View & Strategy

- LPs have significant choices
 - Remain focused and only invest with top tier managers
- Continue with a consistent investment strategy regardless of political uncertainty
- The uncertainty in markets may lead to price reductions and be an opportunity for quality managers
- Historically, private equity managers have been able to capitalize on uncertainty

Source: Private iQ.

Note: More detailed information is provided in the Appendix.

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ASIA: MARKET SUMMARY & OUTLOOK

Observations

- Asia-Pacific growth will be led by the two titans, China and India
 - Growth in Asia-Pacific in 2016 is expected to slowdown to around 5.3%
 - Growth in China has slowed but is still expected to exceed 6% (estimated 6.5%)
 - Growth in India is expected to be the highest in the region at 7.5%
- Domestic consumption is expected to continue driving growth as global demand remains sluggish
 - Healthy disposable income growth
 - Robust labor market conditions

Altius View & Strategy

- Remain highly disciplined and selective in building key relationships with top-performing managers
 - Increasingly difficult to access top managers
- Investors should take a core-satellite approach to Asia-Pacific portfolio
 - Broad exposure to core Pan-Asian funds
 - Portfolio of country-specific funds with demonstrated cash-on-cash returns

Source: Focus Economics, IMF and Altius research.

Note: More detailed information is provided in the Appendix.

SUMMARY

Observations

- Globally, private equity fund raising and exits are continuing at the healthy pace established over the past several years
- US buyout fund raising has slowed slightly recently, but exits continue to be strong
- US venture capital fund raising has slowed and valuations are down, especially for late stage companies
- Fund raising by European private equity fund managers is expected to be strong in 2016
 - The Brexit has increased uncertainty in Europe, but that may be an opportunity for well positioned managers
- Asian markets, particularly China and India, are expected to exhibit attractive growth dynamics

Approach to Private Equity in Current Market Environment

- Apply a long-term and balanced perspective to investment pacing and portfolio diversification
 - Strong managers exist in all private equity sub-segments and managed exposure to each segment provides portfolio diversification
 - Preference to experienced managers with established track records
 - Prioritize investments in the smaller and lower middle-markets
- In an environment of increasing competition, it is critical to select fund managers with a differentiated strategy / approach
 - GDP growth and multiple expansion may not supply the boost they did (which means that fund managers must create value to achieve superior returns)
 - Portfolio returns are enhanced through allocations to specialized and differentiated strategies
 - Favor value-add / operationally intensive managers

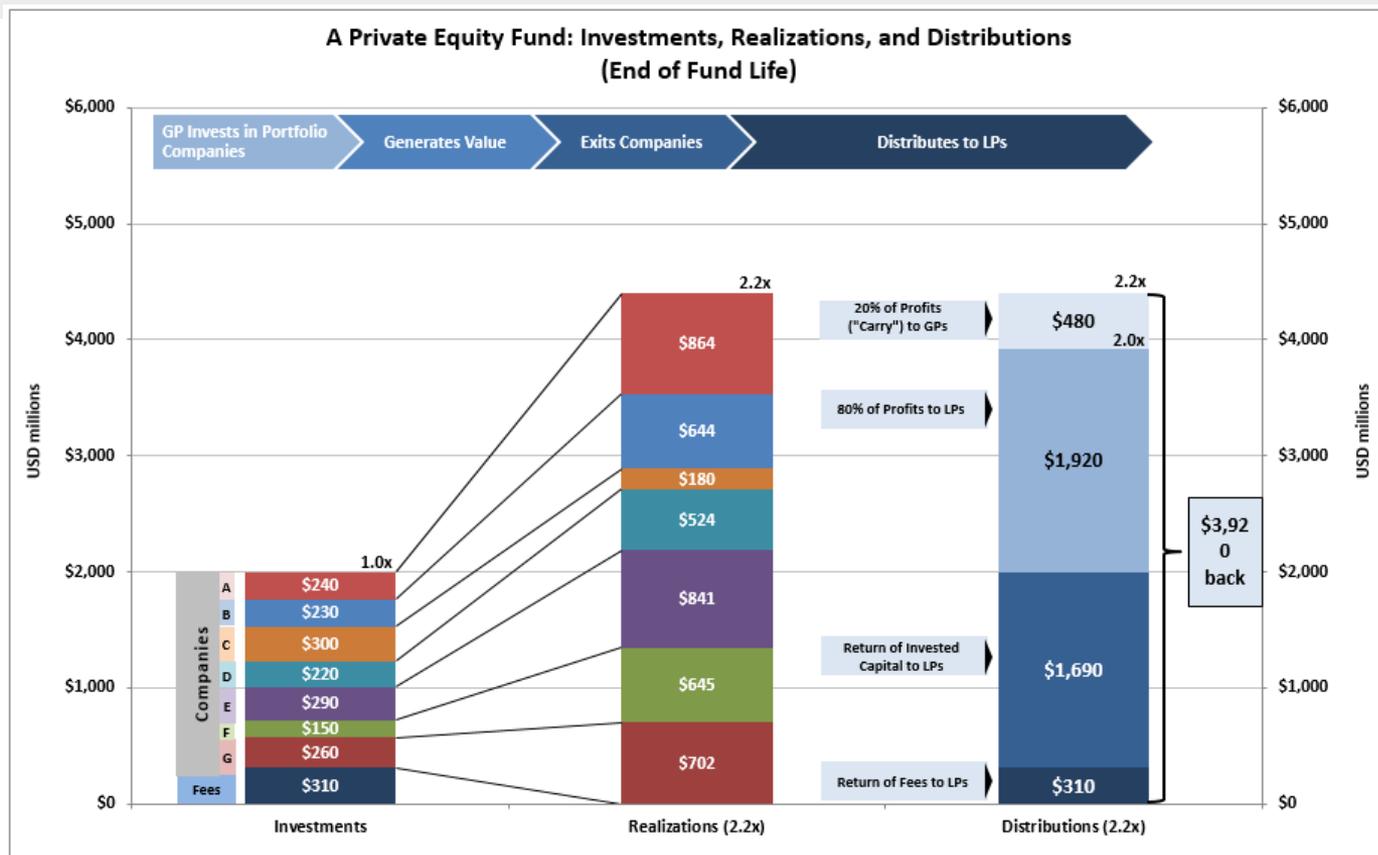
IV. PRIVATE EQUITY FEES



TYPES OF FEES

- Organizational and Administrative Fees
 - Fees that are paid to raise and operate the Fund
 - Capital is drawn by the GP from LPs against their commitment
- Management Fees
 - Fees that the GP uses to pay salaries and non-reimbursed expenses while investing and harvesting the Fund
 - Capital is drawn by the GP from LPs against their commitment
 - **All management fees must be paid back to the LPs before the GP receives carry distributions**
- Portfolio Company Fees
 - Fees that the GP charges its portfolio companies for various services
 - **Capital is NOT drawn from LPs**
- Carried Interest (frequently mischaracterized as a fee)
 - Profit sharing between the LPs and the GP
 - **Capital is NOT drawn from LPs**

CARRY AT THE END OF LIFE OF A HYPOTHETICAL FUND*



*The assumptions for this hypothetical fund model are provided in the Appendix.

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Questions?