

Private Equity Annual Program Review

Réal Desrochers
Managing Investment Director

Sarah Corr, Christine Gogan,
Scott Jacobsen & Mahboob Hossain
Investment Directors

November 16, 2015

Executive Summary

- Private Equity (PE) has met the return expectation of the Asset Liability Management (ALM) Assumptions
- PE is progressing with significant restructuring and portfolio rebalancing
 - Commingled fund model limits ability for alignment
- Private Equity Accounting and Reporting Solution (PEARS) went live on October 1, 2015 with Release 1
 - Increased transparency and improved reporting
- Overall, PE is making progress, reducing costs and complexity, in order to improve long-term performance

Private Equity Annual Program Review

Review Outline

Section	Pages	Investment Beliefs Map									
		1	2	3	4	5	6	7	8	9	10
Executive Summary	2										
Review Outline	3										
Investment Beliefs Key	4										
I. Program Overview	5										
Program Role	6		Green					Yellow	Yellow		
Program Investment Philosophy	7		Green						Yellow		Yellow
Policy Benchmark	8					Red				Yellow	
Portfolio Construction	9-10						Green			Yellow	
Program / Portfolio Characteristics	11-13						Green			Yellow	
Investment Process	14-15			Green							
II. Investment Review	16										
ALM Assumptions Validation	17	Green						Yellow			
Market Environment	18		Green								
Program Performance Review	19-21		Green			Red					
Risk Profile & Portfolio Risk	22-23							Yellow		Yellow	
Forward-Looking Commentary	24		Green		Green						
III. Business Review	25										
Business Model	26								Yellow		Yellow
Functional Organizational Chart	27				Green						
Staffing Overview	28				Green						
Strategic Initiatives	29-30		Green								
Strategic Projects Update	31		Green								
Sustainable Investment Practices	32		Green	Green	Green						
Program Expenses / AUM Mix	33								Yellow		
Conclusion	34										

- 1** Liabilities ↑
- 2** Long-Term Horizon
- 3** Stakeholders ↑
- 4** Three Forms of Capital ↑
- 5** Accountability
- 6** Strategic Allocation
- 7** Risk Reward
- 8** Costs Matter
- 9** Multi-faceted Risk
- 10** Resources/Process ↓

Investment Beliefs Key

	Short Name	Investment Belief
1	Liabilities	Liabilities must influence the asset structure.
2	Long-Term Horizon	A long time investment horizon is a responsibility and an advantage.
3	Stakeholders	CalPERS investment decisions may reflect wider stakeholder views.
4	Three Forms of Capital	Long-term value creation requires effective management of three forms of capital: financial, physical, and human.
5	Accountability	CalPERS must articulate its investment goals and performance measures and ensure clear accountability for their execution.
6	Strategic Allocation	Strategic asset allocation is the dominant determinant of portfolio risk and return.
7	Risk Reward	CalPERS will take risk only where we have a strong belief we will be rewarded.
8	Costs Matter	Costs matter and need to be effectively managed.
9	Multi-faceted Risk	Risk of CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error.
10	Resources / Process	Strong processes and teamwork and deep resources are needed to achieve CalPERS' goals and objectives.

I. Program Overview

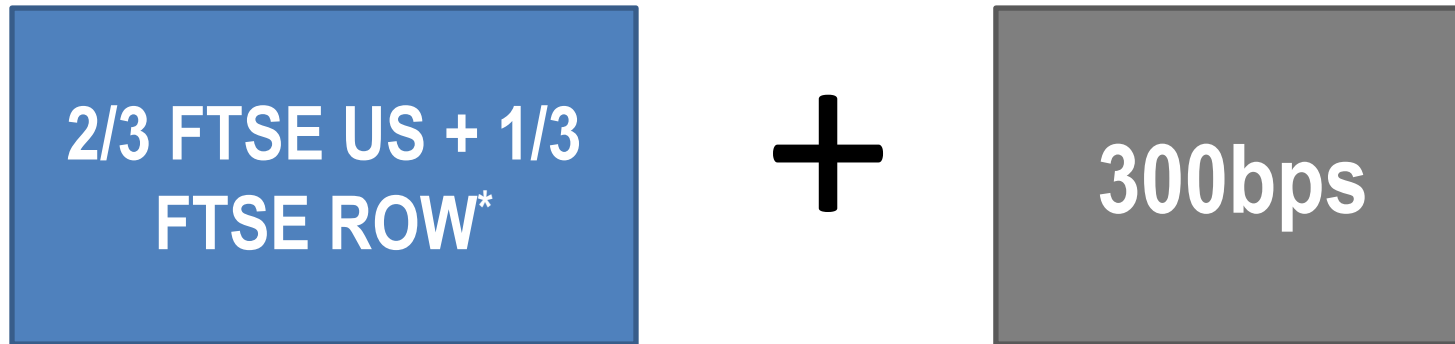
Private Equity: Program Role

- Primary Role
 - Private Equity allocations are a means of enhancing equity returns through a value-added approach to investment management of a diverse set of portfolio companies and to capture the illiquidity premium. The major driver for returns is appreciation, with negligible cash yield.
 - ALM Workshop 2013
- Driver of total performance
 - Price appreciation
- Risks
 - High growth risks
 - Illiquid
 - Leverage
 - Unfunded commitments

Program Investment Philosophy

- Long-term investor
- Manager selection and alignment of interest are important to PE's success
 - Commingled fund model limits ability for alignment
- Over-diversification negatively impacts performance
- Costs matter

Current Policy Benchmark



- The benchmark creates unintended active risk for the Program, as well as for the Total Fund.

**(2/3 FTSE U.S. Total Market Index + 1/3 FTSE All World ex-U.S. Total Market Index) + 300 bps lagged by one quarter.*

Portfolio Construction

PE Forecasted Commitments By Fiscal Year

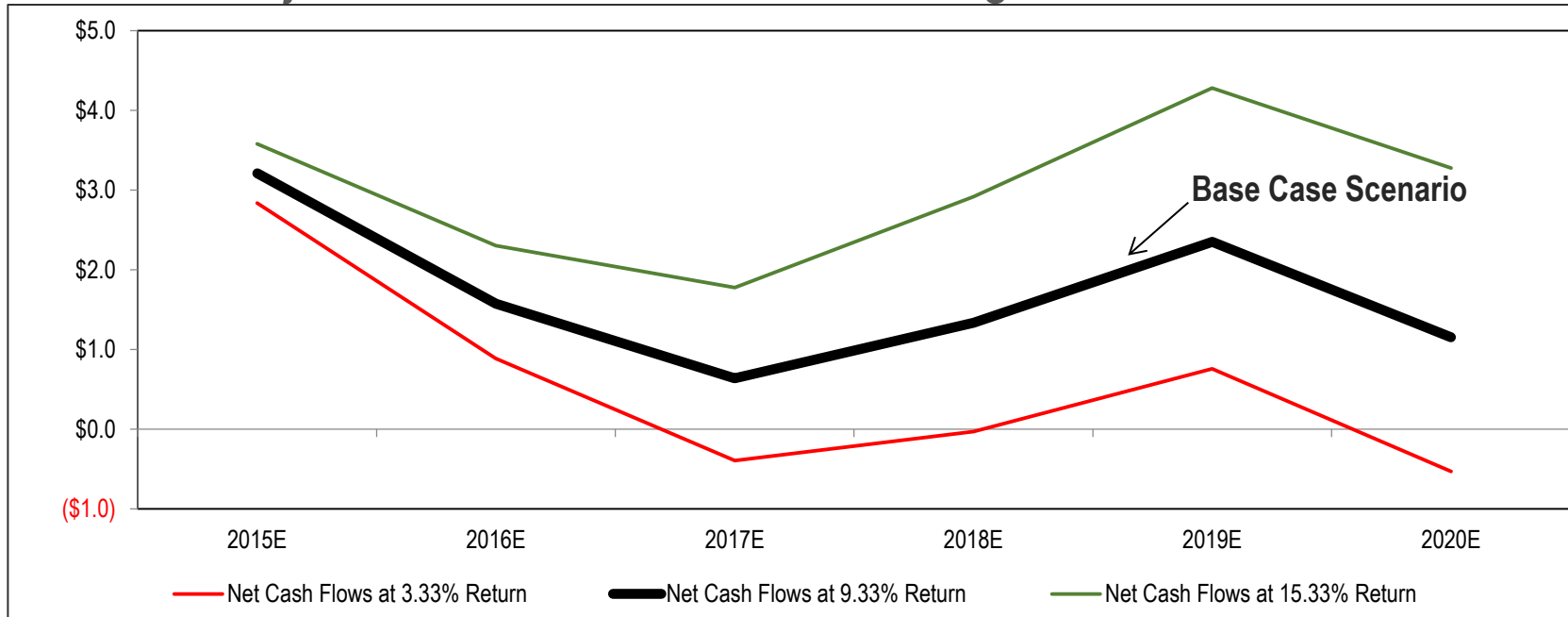
(\$'s in billions)

	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	Grand Total
Buyout	\$4.3	\$2.6	\$4.7	\$7.7	\$4.6	\$23.7
Credit	\$0.1	\$2.6	\$2.8	\$0.5	\$0.7	\$6.6
Opportunistic	\$0.5		\$0.5		\$0.7	\$1.7
Growth / Expansion	\$0.5		\$0.2		\$0.5	\$1.2
Co-Investments	\$0.5	\$0.7	\$0.7	\$0.7	\$0.7	\$3.3
Grand Total	\$5.8	\$5.8	\$8.8	\$8.9	\$7.2	\$36.5

Source: CalPERS Private Equity Staff

Portfolio Construction (Cont'd)

(\$'s in billions) Projected Net Cash Flows Assuming Return of 9.33%*

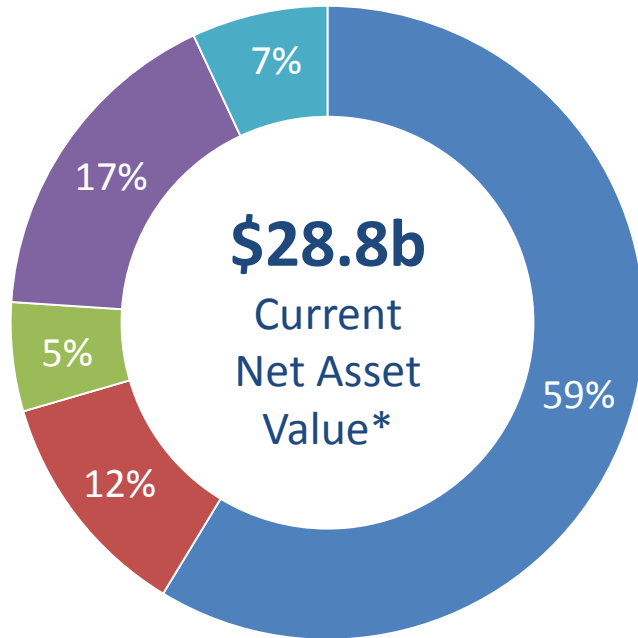


*Based on Expected Returns from 2013 Asset Liability Workshop

Cash Flows Assuming Private Equity return of 9.33% and PERF return of 7.12%							
\$'s in billions	2014	2015E	2016E	2017E	2018E	2019E	2020E
Vintage Year Commitments	\$3.8	\$5.8	\$5.8	\$8.8	\$8.9	\$7.2	\$7.0
PE NAV as % of Fund	10.4%	10.1%	10.3%	10.9%	11.4%	11.3%	11.6%
Net Cash Flow	\$4.6	\$3.2	\$1.6	\$0.6	\$1.3	\$2.4	\$1.2

Source: CalPERS Private Equity Staff

Program Characteristics

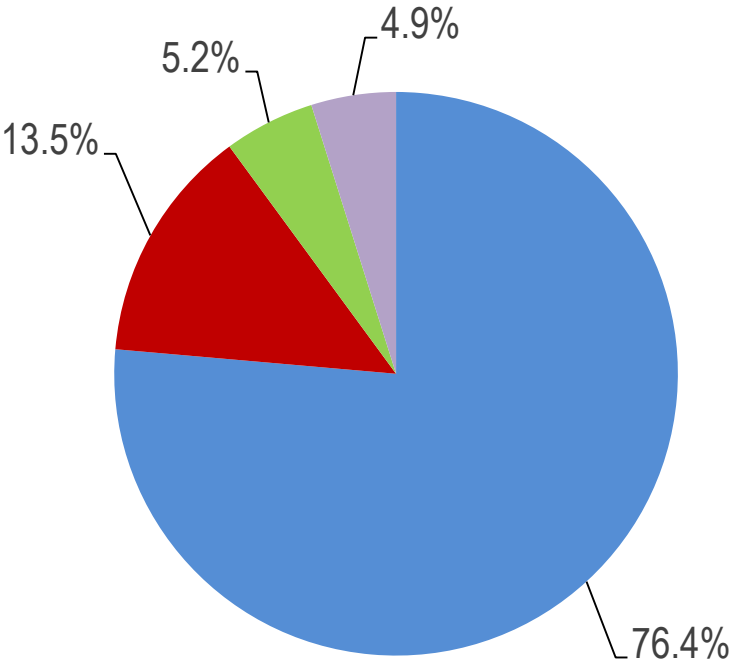


Strategy	Net Asset Value*	Current*	Target
Buyouts	\$16.9	59%	60%
Credit Related	\$3.4	12%	15%
Venture Capital	\$1.6	5%	<1%
Growth/Expansion	\$4.9	17%	15%
Opportunistic	\$2.0	7%	10%
Total	\$28.8	100%	100%

*Based on Net Asset Value (NAV) as of June 30, 2015; \$s in billions. Does not include currency and distributed securities in the amount of \$102mm.

Source: State Street

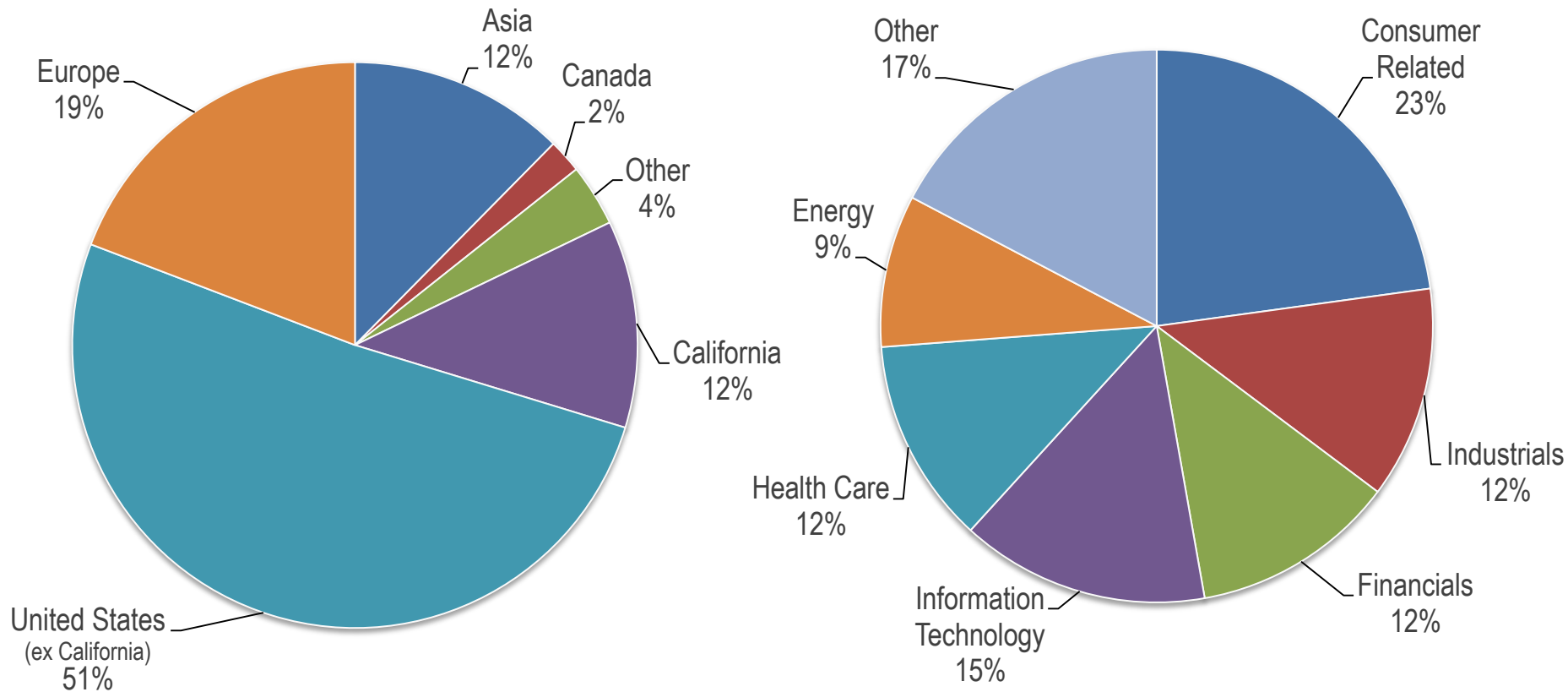
Program Characteristics (Cont'd)



Investment Type	Net Asset Value (NAV)*
Funds	\$22.0
Fund-of-Funds	\$3.9
Co-Investments/Direct Investments	\$1.5
Customized Investment Accounts	\$1.4
TOTAL	\$28.8

*Based on Net Asset Value (NAV) as of June 30, 2015; \$s in billions. Does not include currency and distributed securities in the amount of \$102mm.
Source: State Street

Portfolio Characteristics

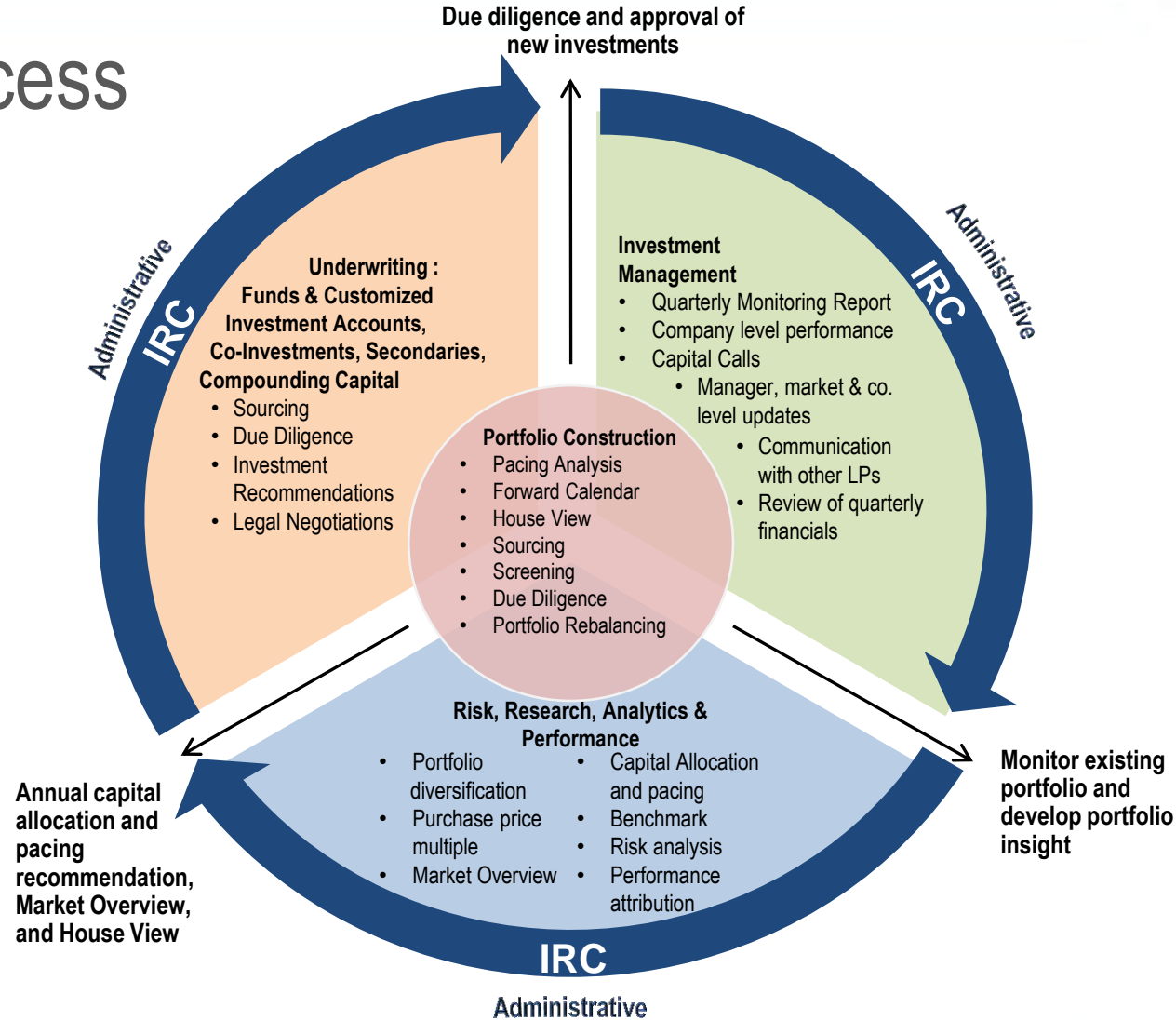


Net Asset Value (NAV) as of March 31, 2015; \$s in billions. June 30, 2015 data not currently available.

Investment Process

Investment Review Committee (IRC)

- Purpose: Consistent review of investments and portfolio
- Timing: Weekly
- Participants:
 - Managing Investment Director (MID), Investment Directors (IDs) (PE)
 - 1 MID; 1 Investment Manager (IM) (Real Assets)
 - 1 ID (Global Fixed Income)
 - 1 IM (Asset Allocation)
 - 1 IM (ICOR)
 - Board Consultant

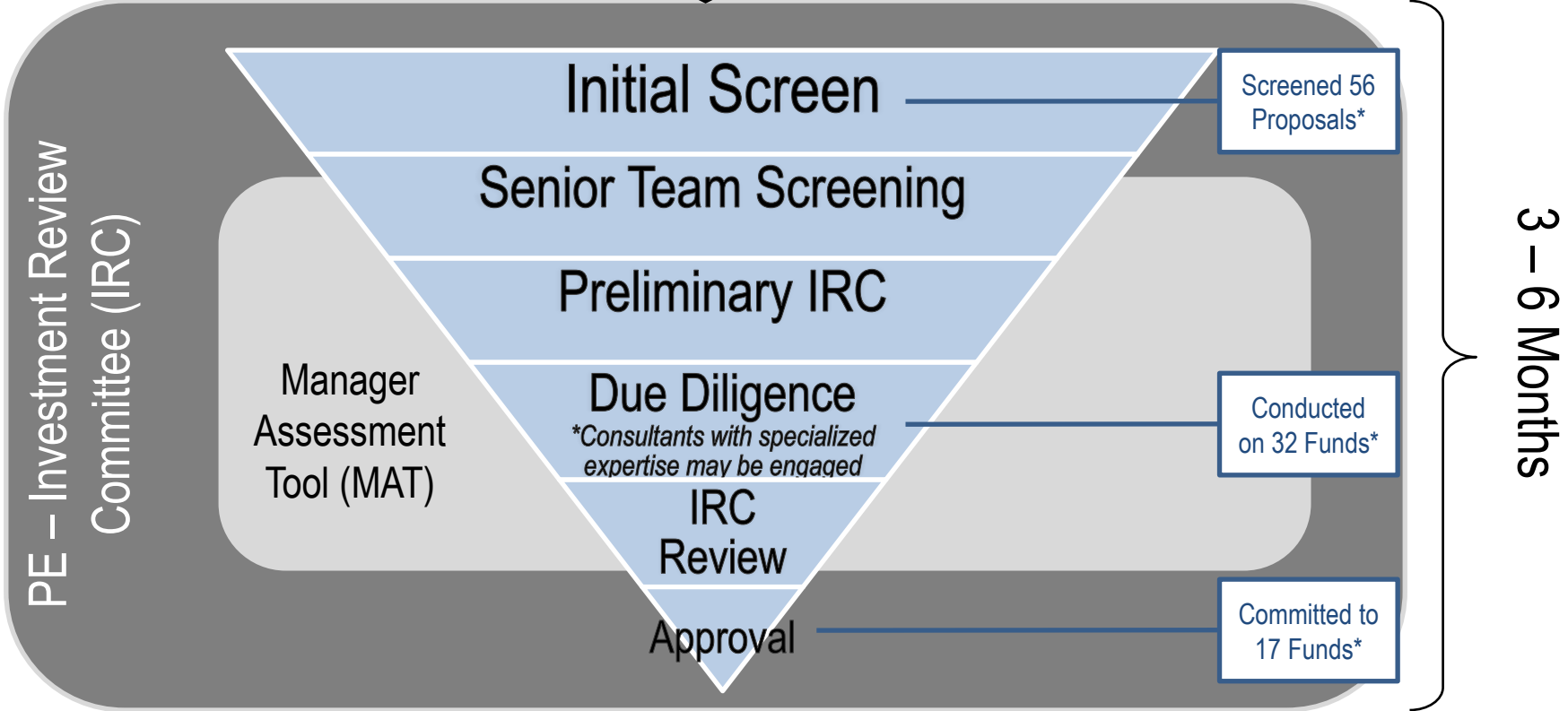


Investment Decision Process

Investment Proposal Tracking System (IPTS)



157 Proposals Submitted to IPTS*



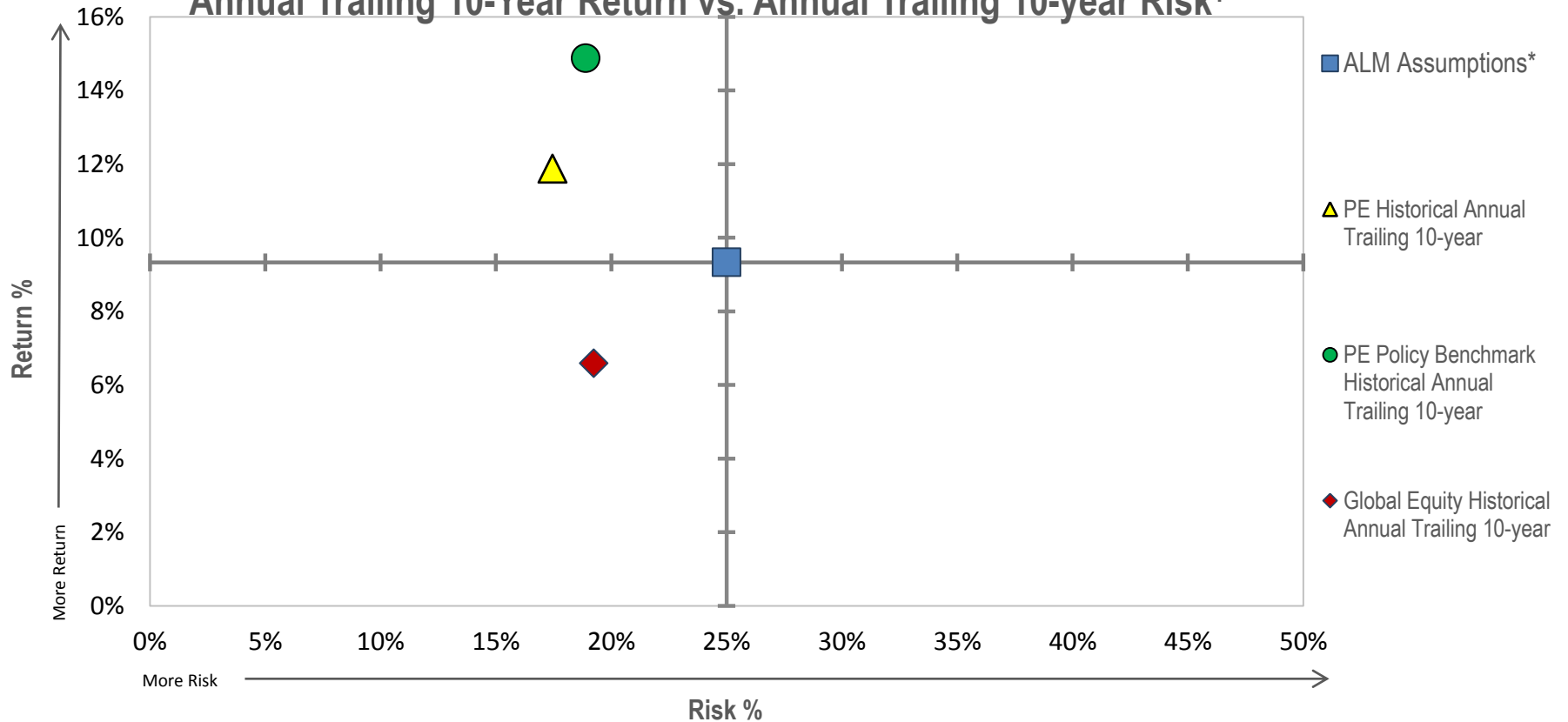
*Figures reflect proposals submitted in FY 14-15 (Includes 10 investments either approved but not committed or still in due diligence)

II. Investment Review

ALM Assumptions Validation

CalPERS Private Equity

Annual Trailing 10-Year Return vs. Annual Trailing 10-year Risk¹



*Capital Market Assumptions used in the 2013 ALM Workshop

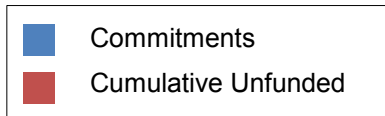
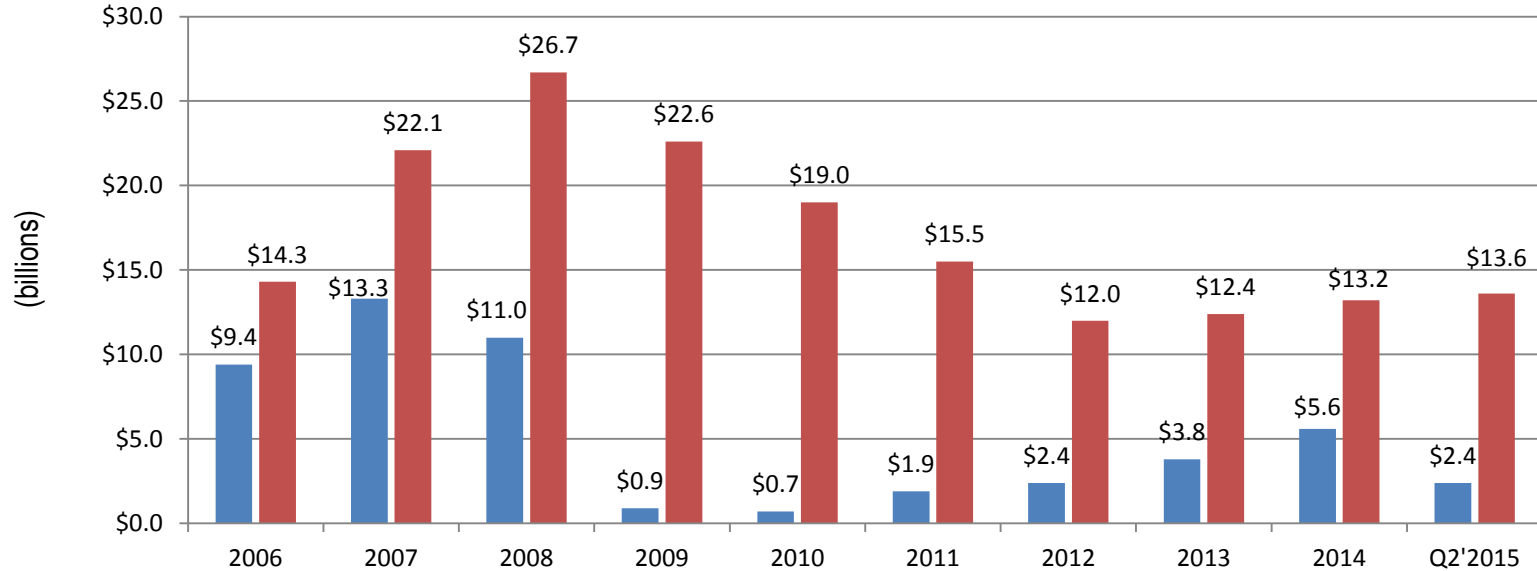
¹Trailing 10-year returns and risks were calculated based on fiscal year ending data at annual frequency from FY2004/05 to FY2014/15

Source: My State Street

Market Environment

- 2014 had a record amount of exits, with \$456 billion in distributions
- Purchase price multiples (ppm) in the U.S. and Europe at or near all-time record highs
 - Average ppm in 1H 2015 was 10.1x vs. a 15 year average of 8.3x

Program Performance Review



		Annual Cash Flow Grand Total									
		2006	2007	2008	2009	2010	2011	2012	2013	2014	Q2'15
Contributions		(\$4.7)	(\$9.8)	(\$9.8)	(\$4.4)	(\$6.1)	(\$5.4)	(\$4.9)	(\$3.7)	(\$4.3)	(\$1.8)
Distributions		\$4.1	\$5.8	\$3.8	\$2.3	\$5.2	\$8.5	\$8.8	\$10.7	\$8.9	\$4.4
Net Flow		(\$0.6)	(\$4.0)	(\$6.0)	(\$2.1)	(\$0.9)	\$3.1	\$3.9	\$7.0	\$4.6	\$2.6

As of June 30, 2015; \$ in billions

Program Performance Review (Cont'd)

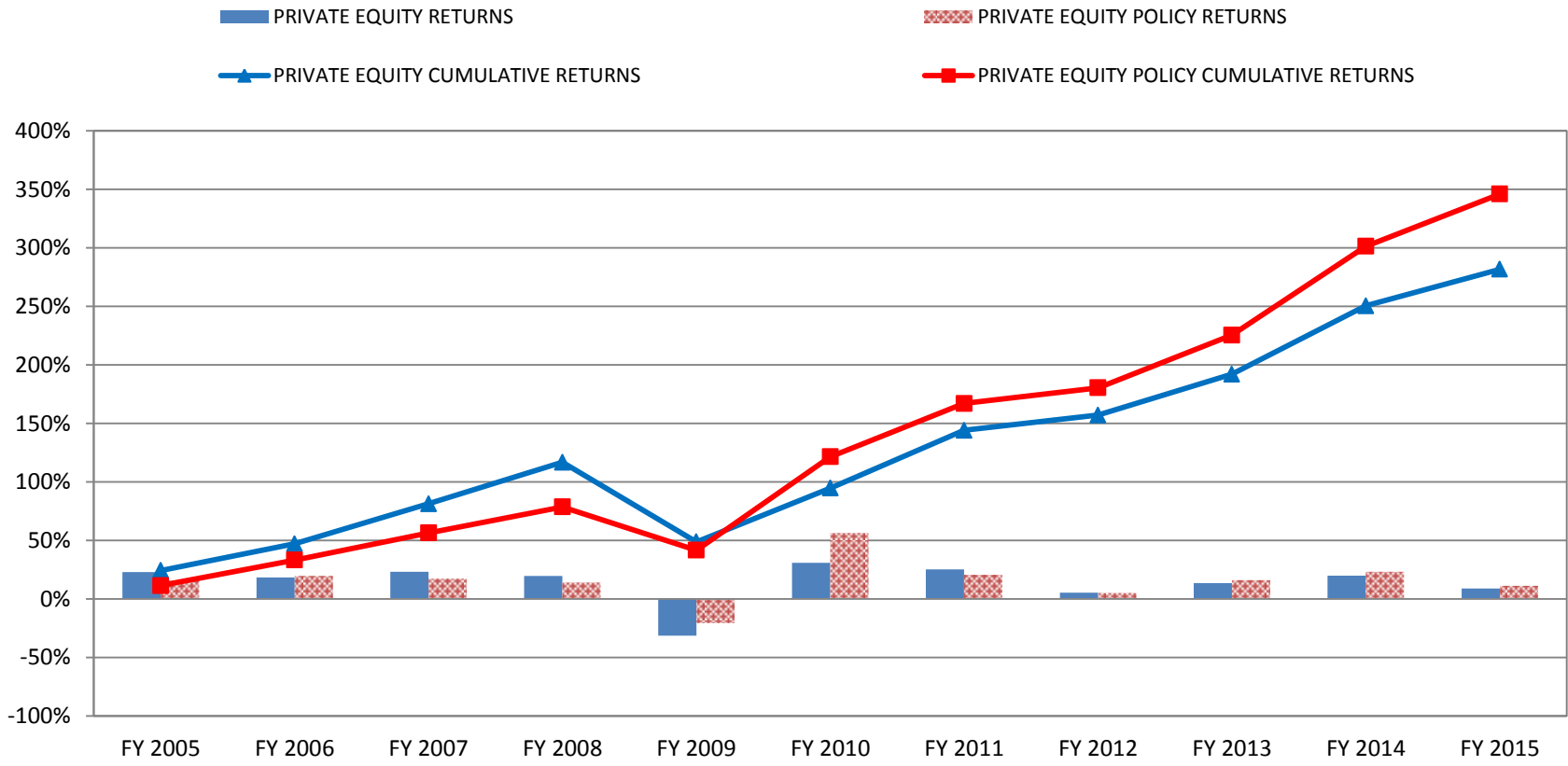
- Over a ten-year period:
 - Exceeded the ALM return expectation of the asset class by 2.6%
 - Underperformed the Private Equity policy benchmark by 3.0%
 - Exceeded the Global Equity portfolio performance by 5.3%

	1-YR	3-YR	5-YR	10-YR	20-YR
As of June 30, 2015*	Net Return (%)	Net Return (%)	Net Return (%)	Net Return (%)	Net Return (%)
PRIVATE EQUITY	8.9	14.1	14.4	11.9	12.3
ALM Return Expectation	9.3	9.3	9.3	9.3	9.3
Excess Return	(0.4)	4.8	5.1	2.6	3.0
PE POLICY BENCHMARK	11.1	16.7	15.0	14.9	11.4
Excess Return	(2.2)	(2.6)	(0.6)	(3.0)	0.9
CalPERS GLOBAL EQUITY	1.0	14.5	12.9	6.6	8.2
Excess Return	7.9	(0.4)	1.5	5.3	4.1

The Private Equity Benchmark contains four different benchmarks when looking the 3, 5, 10 and 20 year returns.

*Source: My State Street Monthly CIO Report & 2013 ALM Workshop

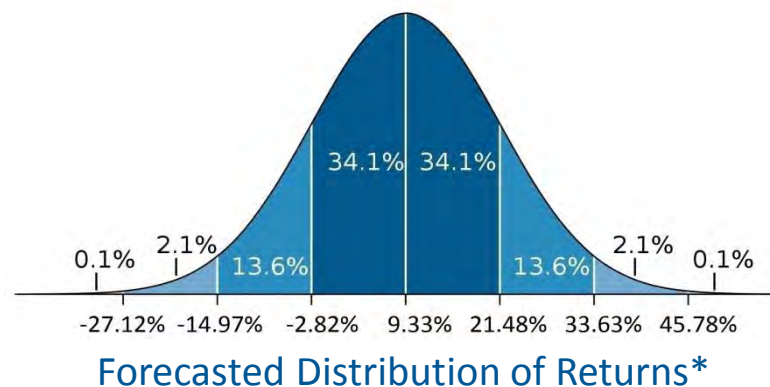
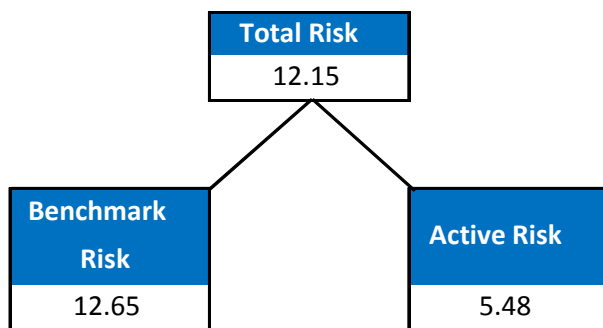
Program Performance Review (Cont'd)



Private Equity Risk Profile

As of June 30, 2015

- Private Equity Forecast Risk is 12.15%
- Forecast Tracking Error is 5.48%



*Based on Expected Returns from 2013 Asset Liability Workshop of 9.33% and BARRA Forecasted Risk of 12.15%

PE Portfolio Risk

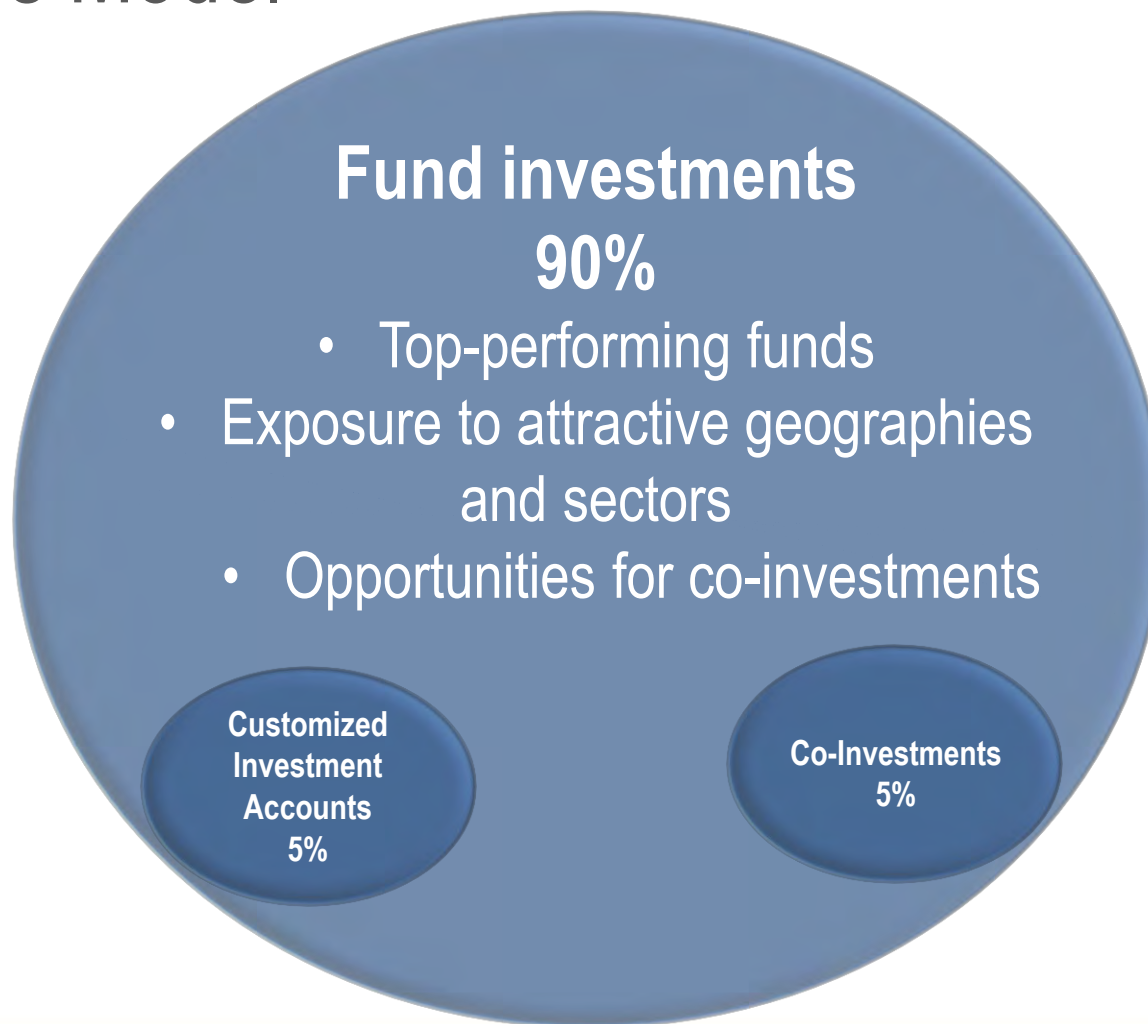
- Given low levels of contributions in recent years, the CalPERS Private Equity portfolio is expecting distributions to drop over the next five years
- Lack of vintage year diversification
 - 62.9% of the NAV is concentrated in Vintage Years 2006 - 2008
- Unfunded commitments of \$14.2 billion
- Fund of Funds exposure of \$3.9 billion of NAV

Forward-looking Commentary

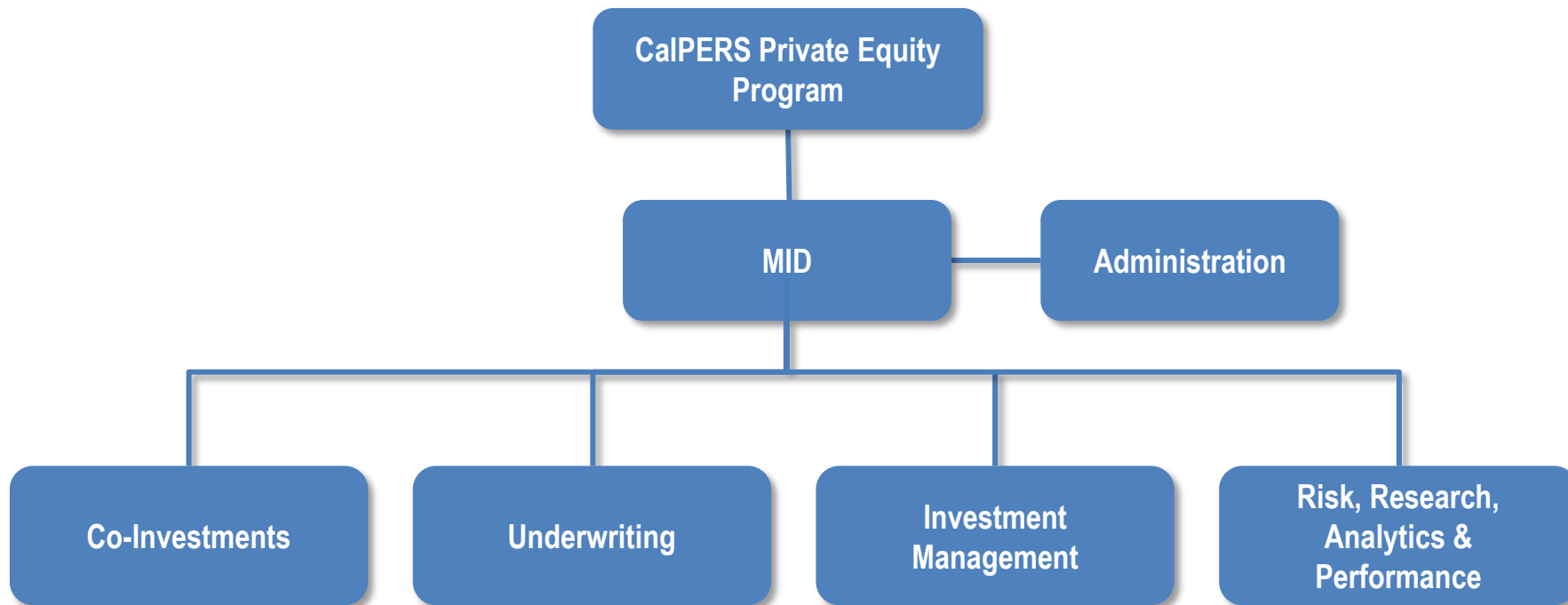
- Continued emphasis on reducing costs and complexity
- Focus on Customized Investment Accounts and Co-Investments
- Capitalize on CalPERS' long-term investment horizon
 - Compounding Capital
- Support industry-wide transparency initiatives through ILPA and other industry participants
- CalPERS will continue to partner with managers that deliver strong performance, and who want to work with CalPERS on both disclosure and transparency

III. Business Review

Business Model



Functional Organizational Chart



Staffing Overview

TOTAL PROGRAM

- 53 total positions within Private Equity

STAFFING UPDATES

- Hired 1 Investment Director
- Hired 6 Investment Officers
- Promoted 3 Investment Officers

CURRENT VACANCIES

- 2 Investment Managers
- 4 Investment Officers

DIVERSITY

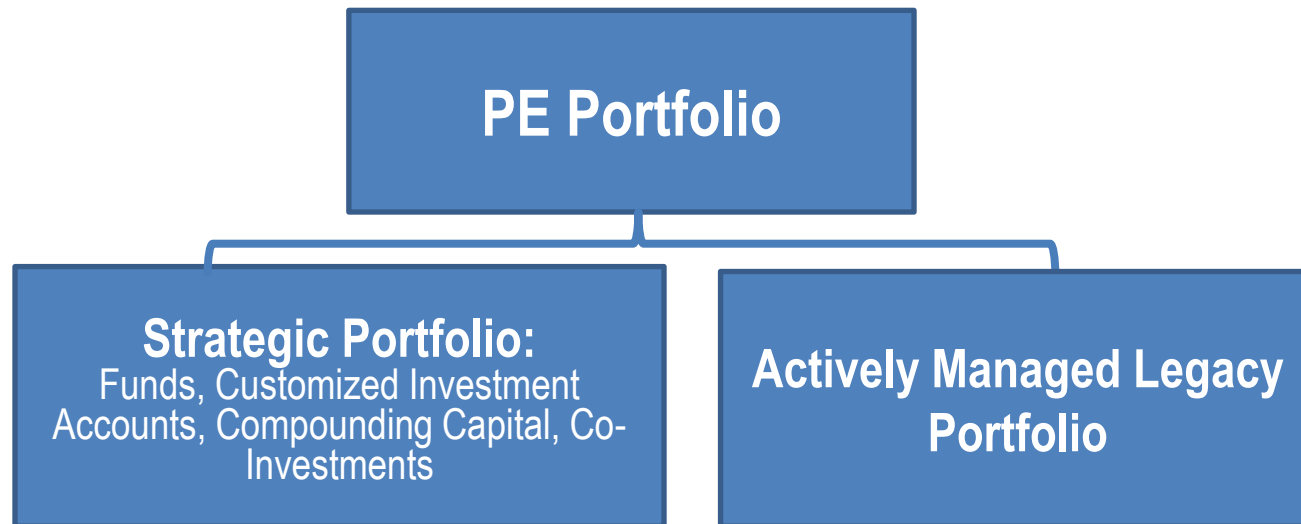
- 12 languages spoken
- 10+ countries of origin
- 20 women, 27 men
- Designations:
 - 14 CFA, 6 CPA, 5 CAIA
- Degrees:
 - 7 MA, 17 MBA, 2 JD, 2 PhD

Progress on 2011 Five-Year Strategic Plan

From	To	Result
Less control	More control (Customized Investment Accounts, Co-Investments, Secondaries)	<ul style="list-style-type: none"> Increased focus on CIAs & Co-Investments Hired Investment Director to focus on Co-Investments
Many General Partners	Fewer General Partners	<ul style="list-style-type: none"> Decreased relationships from 132 to 100 Evaluating Secondary Sales
28 PYs	46 PYs	<ul style="list-style-type: none"> 53 PYs
Multiple, inconsistent data & reporting sources	Consistent and reliable data & reporting from fewer sources	<ul style="list-style-type: none"> PEARS Now have one data & reporting source
Small staff based on strategies	Larger staff based on functional areas	<ul style="list-style-type: none"> Team has been built out and the organizational structure is now based on functional areas

Private Equity 2020

- Reduce complexity by concentrating the portfolio
- Focus on cost effective structures with better alignment
- Organize the portfolio into two categories:

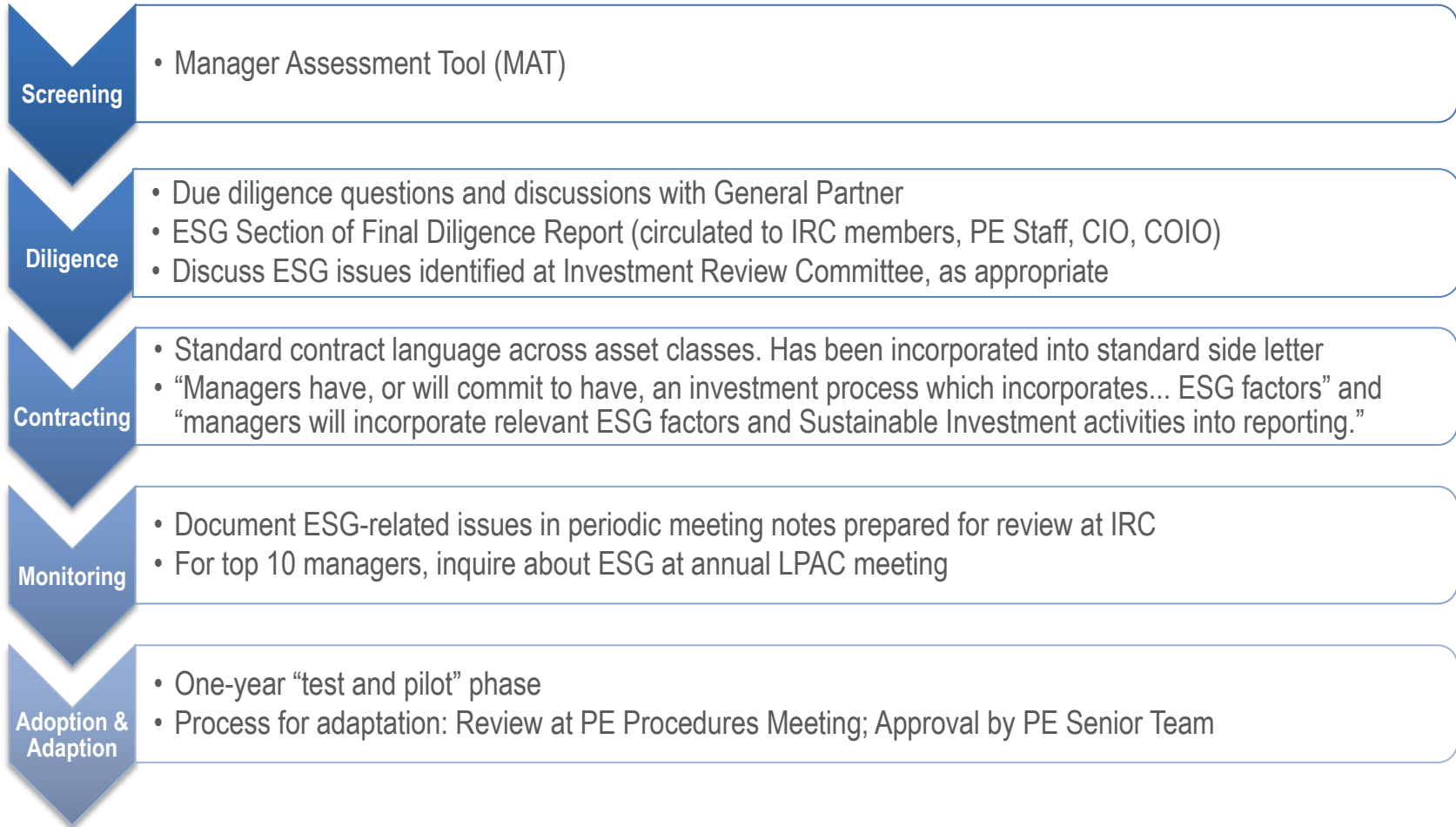


PE Projects Update

Project	Objectives	Accomplishments & Upcoming Activities
Transparency	Support industry-wide transparency initiatives through ILPA and other industry participants	Supported ILPA on Fee Transparency Initiative
PEARS*	Implement a new service and technology solution to manage and account for private equity (PE) portfolio data and activity while increasing PE data transparency through implementation of new data standards and an automated transmission process	<ul style="list-style-type: none"> • PEARS Release 1 Go-Live: October 1, 2015 • Release 2 Scope & Timeline Planning is currently underway. Additional details will be available in November, 2015.

*Private Equity Accounting and Reporting Solution

Summary of PE Sustainable Investment Practices



Program Expenses

	FY 2014-15			FY 2013-14		
	AUM (\$billions)	Fees Paid (\$millions)	Fees Paid ² (BPS)	AUM (\$billions)	Fees Paid (\$millions)	Fees Paid ² (BPS)
Internal Management	\$ 0	\$ 8	3	\$ 0	\$ 7	2
External Management ¹	\$ 28,958	\$ 414	143	\$ 31,543	\$ 441	140
Consultants Expense	N/A	\$ 2	1	N/A	\$ 2	1
Technology & Operating Expense	N/A	\$ 7	3	N/A	\$ 6	2
Total Program³	\$ 29	\$ 431	149	\$ 32	\$ 456	144

¹The external fee information does not include the GP's carried interest. The percentage of carried interest earned varies for each private equity partnership, but generally ranges from 10% - 20% of the net profits of the fund, after expenses.

²All BPS fees paid figures are calculated on Total Program AUM defined as NAV (Net Asset Value)

³Some totals may not reconcile due to rounding

Conclusion

- PE has met the return expectation of the ALM Assumptions
- PE is progressing with significant restructuring and portfolio rebalancing
- Private Equity Accounting and Reporting Solution (PEARS) went live on October 1, 2015 with Release 1
- Overall, PE is making progress, reducing costs and complexity, in order to improve long-term performance
 - The competitive landscape and excess demand from Limited Partners limits CalPERS ability to reduce cost and drive terms