

# Endowment Investment Performance for Periods ending June 30, 2015

Office of the Chief Investment Officer September 9, 2015

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Market Update

**Investment Highlights** 

Risk Management

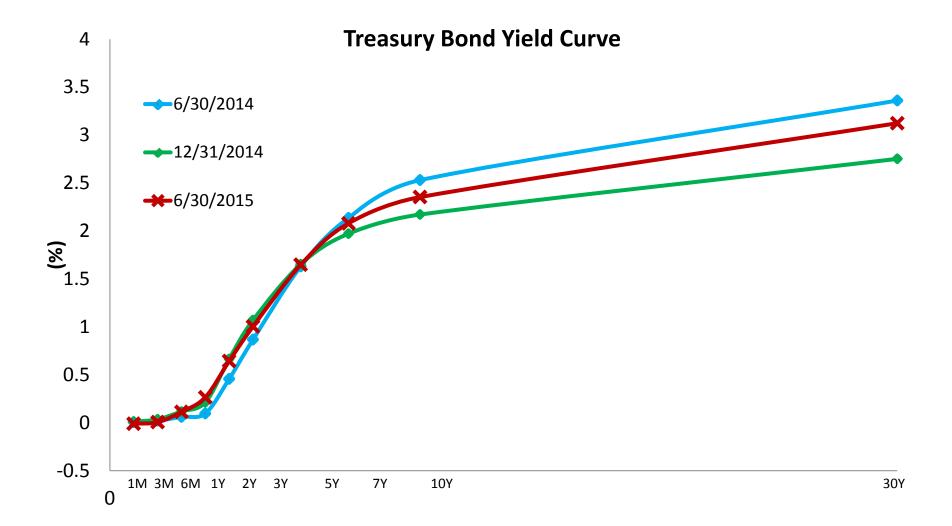
**Asset Class Summary** 



## Market Update

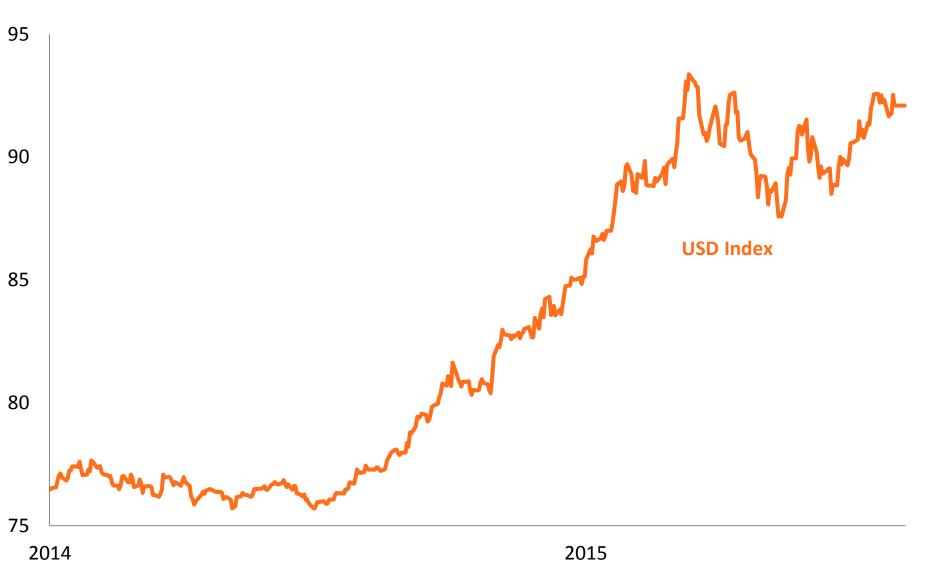


## Yield Curve



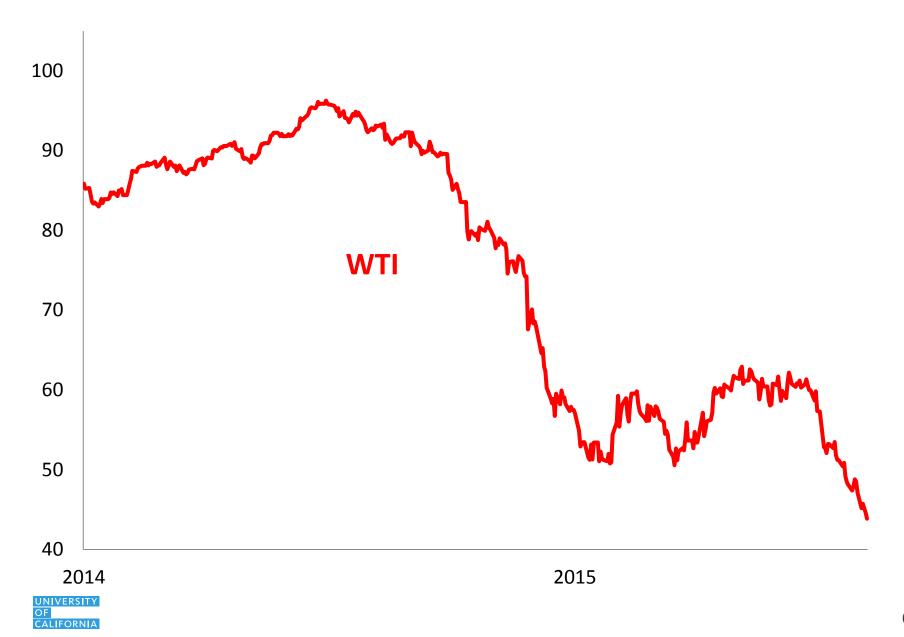


## **US** Dollar

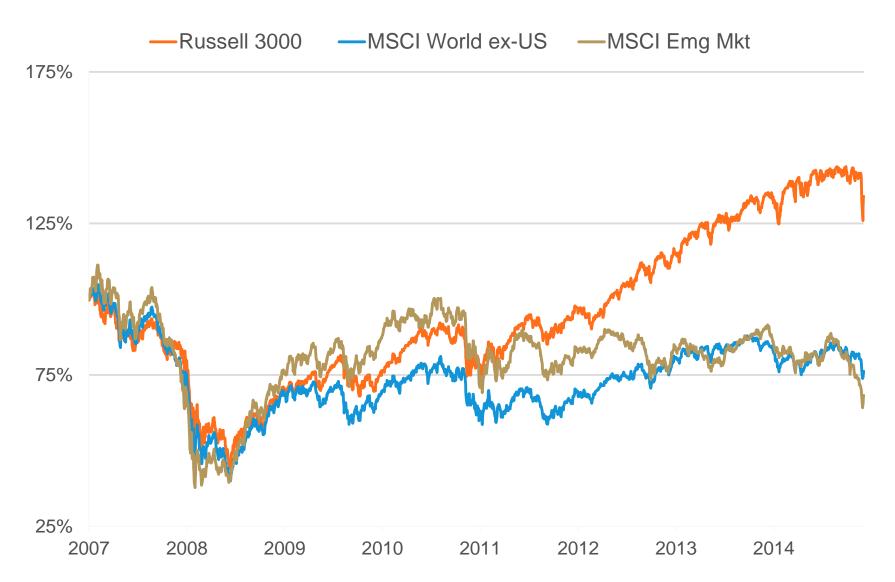




## Oil Prices



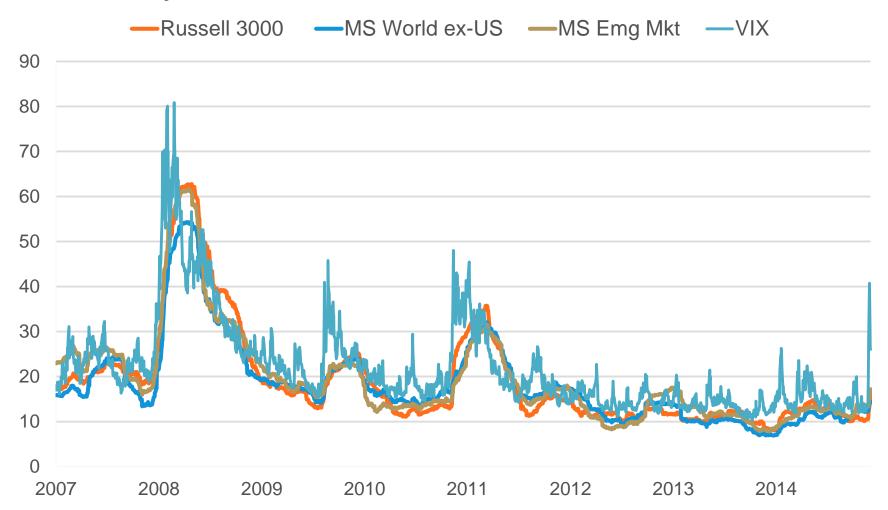
## **Equity Index Performance**





## **Equity Volatility**

#### **Market Volatility**

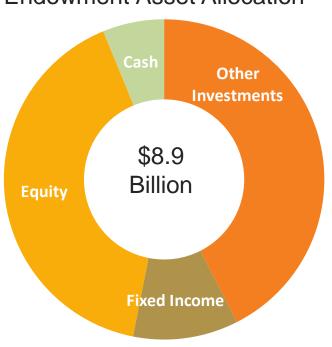


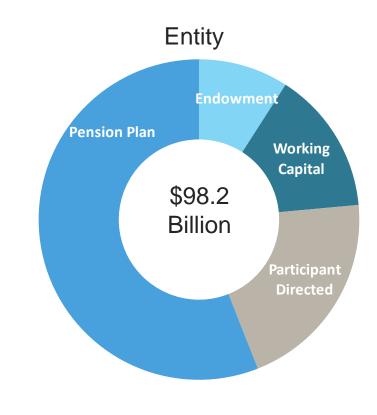


## Investment Highlights









Equity: 41%\$3.6B

• Fixed Income: 10% \$0.9B

Pension Plan: 56%\$55.0B

Endowment: 9%\$8.9B

- Other Investments: 43%\$3.8B
- Cash: 6% \$0.6B

- Participant Directed: 21%\$20.1B
- Working Capital: 14% \$14.2B

#### Investment Highlights

Assets Under Management June 30, 2014

\$8.3 billion

**Market Gains** 

\$0.3 billion

Value Added

\$0.3 billion

Cash Inflow

\$0.3 billion

Cash Outflow

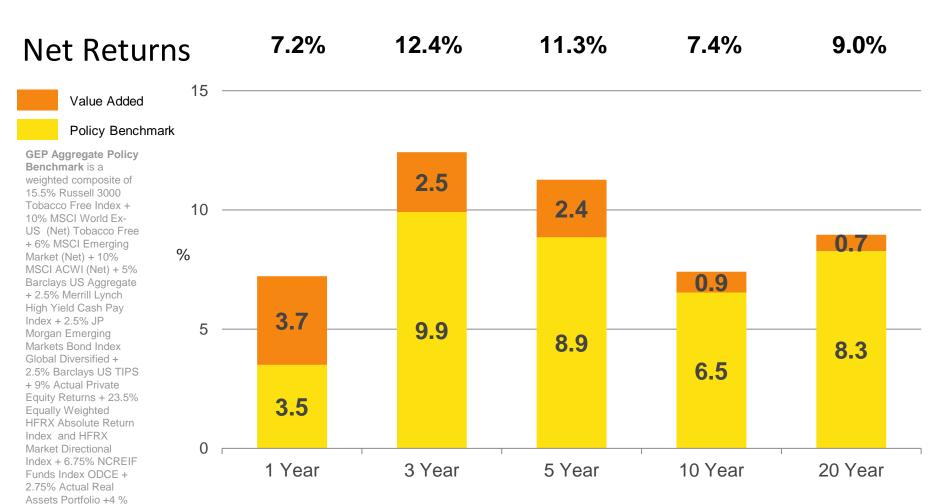
(\$0.3) billion

Assets Under Management June 30, 2015

\$8.9 billion



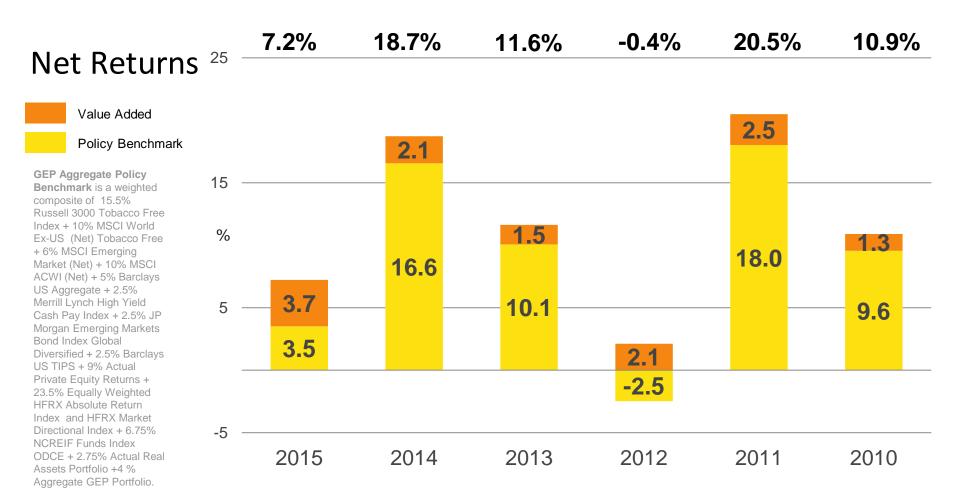
#### Performance





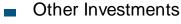
Aggregate GEP Portfolio.

#### Performance – Fiscal Year





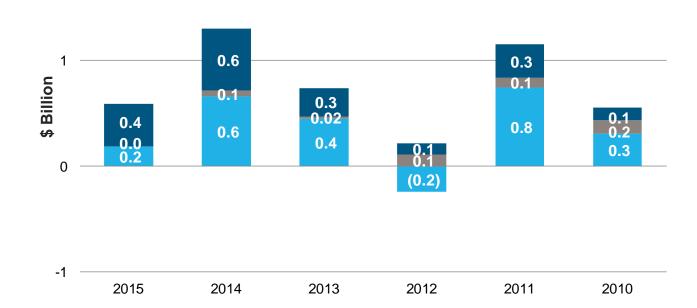
Fiscal Year Dollar Value Added (\$ Billion)



- Fixed Income & Cash
- Equity

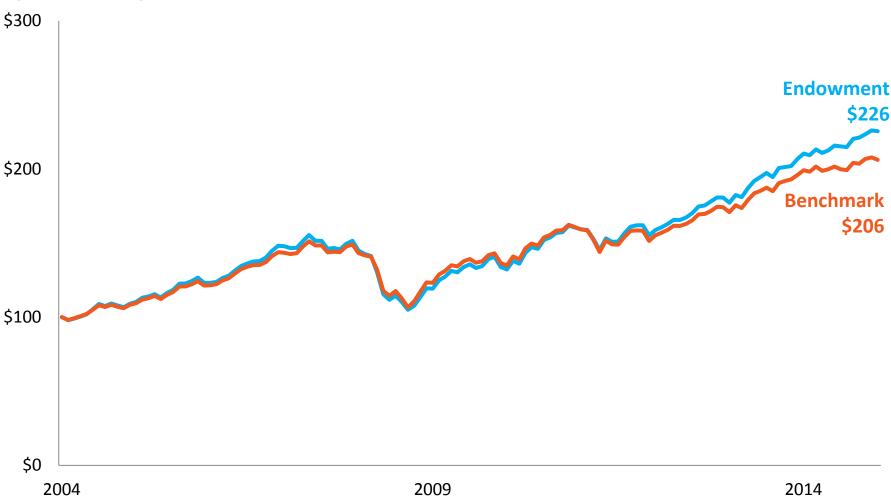
0.6 1.3 0.7 (0.03) 1.2 0.6 2

Added \$3.8 Billion over the past 5 years.





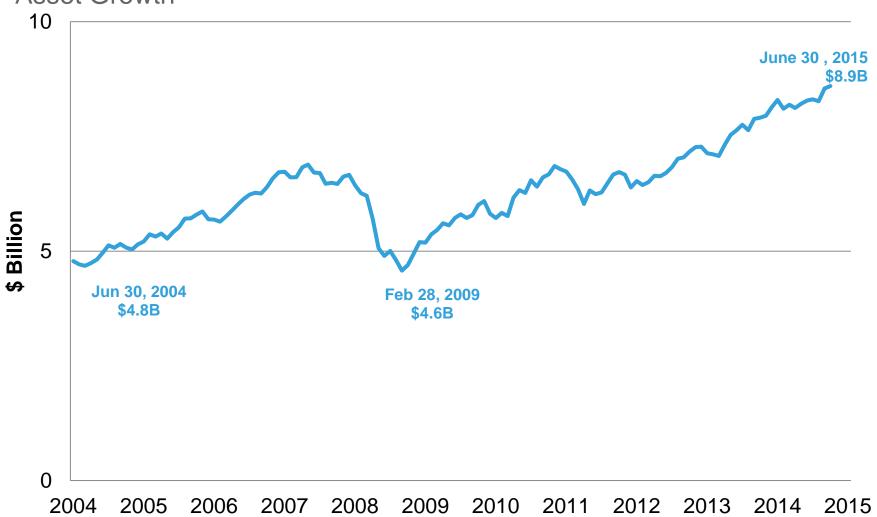
#### Growth of One Hundred Dollar



GEP Aggregate Policy Benchmark is a weighted composite of 15.5% Russell 3000 Tobacco Free Index+10% MSCI World Ex-US (Net) Tobacco Free+ 6% MSCI Emerging Market (Net) + 10% MSCI ACWI (Net) + 5% Barclays US Aggregate+2.5% Merrill Lynch High Yield Cash Pay Index+2.5% JP Morgan Emerging Markets Bond Index Global Diversified + 2.5% Barclays US TIPS + 9% Actual Private Equity Returns + 23.5% Equally Weighted HFRX Absolute Return Index and HFRX Market Directional Index +6.75% NCREIF Funds Index ODCE+2.75% Actual Real Assets Portfolio+4% Aggregate GEP Portfolio.



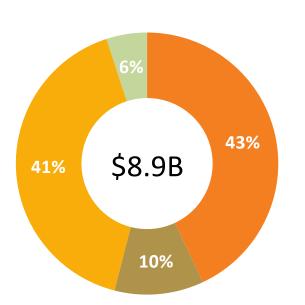




#### **Allocation Shifts**

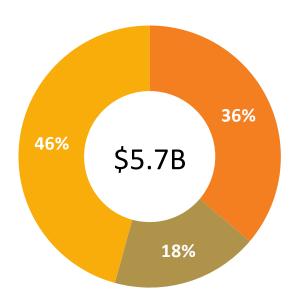
- Equity
- Fixed Income
- Other Investments
- Cash

June 30, 2015



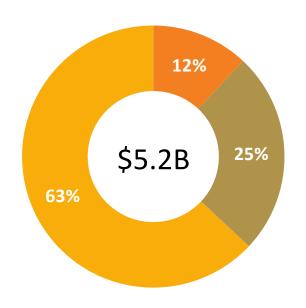
#### **5 Years Ago**

June 30, 2010



#### 10 Years Ago

June 30, 2005



#### **Asset Allocation**

	Market Value in \$ Billions	Percentage	Current Policy	Underweight Relative to Policy	Policy Allocation Range
Equity	3.6	40.5	41.5	(1.0%)	31.5% - 51.5%
Fixed Income	0.9	10.1	12.5	(2.4%)	7.5% - 17.5%
Other Investments	3.8	42.7	46.0	(3.3%)	36.0% - 56.0%
Cash	0.6	6.7	0.0	+6.7%	0.0% - 10.0%
Total	\$8.9 Billion	100.0%	100.0%	0.0%	100.0%

Over or

#### **Asset Allocation**

			Over/	<b>Quarter End</b>	<b>Fiscal Year End</b>
	<b>Market Value</b>		Underweight	<b>Changes since</b>	<b>Changes since</b>
	in \$ Billions	Percentage	Relative to Policy	March 31, 2015	June 30, 2014
Equity					
U.S.	1.1	12.4	(3.1)	(1.0)	(3.6)
Non-U.S. Developed	0.9	10.1	+0.1	+0.3	(1.0)
<b>Emerging Markets</b>	0.5	5.6	(0.4)	(0.5)	(0.9)
Opportunistic	1.1	12.4	+2.4	(0.3)	+3.1
Total	3.6	40.5%	(1.0%)	(1.5%)	(2.4%)
Fixed Income					
Core	0.3	3.5	(1.5)	(0.4)	(0.0)
High Yield	0.2	2.2	(0.3)	+0.2	(0.0)
Emerging Markets	0.2	2.2	(0.3)	(0.2)	(0.4)
TIPS	0.2	2.2	(0.3)	+0.4	+0.3
Total	0.9	10.1%	(2.4%)	0.0%	(0.2%)
Other Investments					
Absolute Return	2.1	23.6	+0.1	+1.1	+1.1
Private Equity	0.8	9.0	+0.0	(0.6)	(1.3)
Real Estate	0.7	7.9	+1.1	(0.1)	+0.1
Real Assets	0.2	2.2	(0.5)	(0.2)	(0.5)
Cross Asset Class	0.0	0.0	(4.0)	(0.8)	(2.7)
Total	3.8	42.7%	(3.3%)	(0.6%)	(3.3%)
Cash	0.6	6.7%	+6.7%	+2.1%	+5.9%
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Total	8.9	100.0%	0.0%	0.0%	0.0%



As of June 30, 2015

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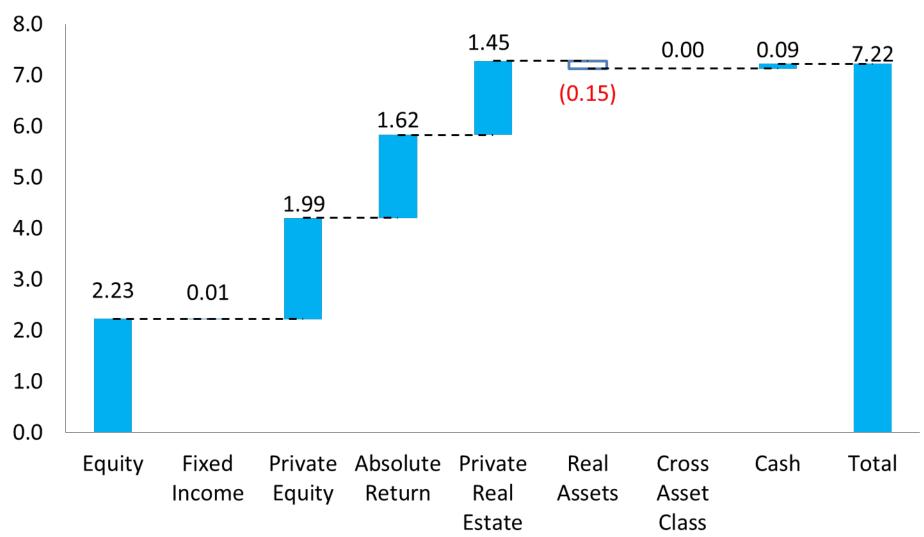
#### **Investment Performance**

	rket Value Billions (\$)	% Allocation	3 Month	6 Month	1 Year	3 Year	5 Year	10 Year	20 Year
UC Endowment	\$ 8.9	100.0%	2.0	4.8	7.2	12.4	11.3	7.4	9.0
UC Endowment Benchmark			1.3	3.2	3.5	9.9	8.9	6.5	8.3
Equity	\$ 3.6	40.5%	1.3	5.5	5.4	15.2	13.5	7.1	8.2
U.S.	\$ 1.1	12.4%	0.7	3.4	8.3	18.3	17.8	8.0	8.5
Non-U.S. Developed	\$ 0.9	10.1%	0.2	5.3	(2.8)	12.2	9.7	5.9	-
Emerging Markets	\$ 0.5	5.6%	3.4	6.0	1.1	5.8	5.7	8.7	7.8
Opportunistic	\$ 1.1	12.4%	1.7	8.1	11.6	-	-	-	-
Fixed Income	\$ 0.9	10.1%	(0.9)	0.8	(0.1)	3.0	5.2	4.4	6.8
Core	\$ 0.3	3.5%	(1.5)	0.1	1.7	2.7	3.8	4.3	6.8
High Yield	\$ 0.2	2.2%	(0.1)	2.4	0.1	7.4	9.0	-	-
Emerging Markets	\$ 0.2	2.2%	(1.0)	0.4	(1.8)	2.3	5.2	-	-
TIPS	\$ 0.2	2.2%	(0.8)	0.7	(1.4)	(0.6)	3.5	4.4	-
Other Investments	\$ 3.8	42.7%	3.6	5.5	11.3	12.7	11.1	7.1	20.2
Absolute Return	\$ 2.1	23.6%	1.5	3.3	6.7	10.1	8.0	6.4	-
Private Equity	\$ 0.8	9.0%	10.6	12.1	22.6	20.9	17.5	11.8	20.2
Real Estate	\$ 0.7	7.9%	4.8	10.2	17.7	14.1	15.6	4.1	-
Real Assets	\$ 0.2	2.2%	(6.3)	(12.9)	(6.3)	2.9	3.1	-	-
Cash	\$ 0.6	6.7%	0.3	0.7	1.4	1.5	2.1	-	

GEP Aggregate Policy Benchmark is a weighted composite of 15.5% Russell 3000 Tobacco Free Index+10% MSCI World Ex-US (Net) Tobacco Free+ 6% MSCI Emerging Market (Net) + 10% MSCI ACWI (Net) + 5% Barclays US Aggregate+2.5% Merrill Lynch High Yield Cash Pay Index+2.5% JP Morgan Emerging Markets Bond Index Global Diversified + 2.5% Barclays US TIPS + 9% Actual Private Equity Returns + 23.5% Equally Weighted HFRX Absolute Return Index and HFRX Market Directional Index +6.75% NCREIF Funds Index ODCE+2.75% Actual Real Assets Portfolio+4% Aggregate GEP. Numbers may not add due to rounding.



Total Return Contribution (12 Months)



#### Active Return Attribution (12 Months)

	Weight	Active Weight	1 Year Active Return	Allocation Attribution	Selection Attribution	Total Attribution	Allocation Attribution (%)	+ Selection Attribution (%)	= Total Attribution (%)
Equity									
U.S.	15.0	(0.5)	+1.0	+0.0	+0.1	+0.2	+0.6	+4.0	+4.6
Non-U.S. Developed	10.0	(0.7)	+2.5	+0.1	+0.3	+0.3	+1.8	+7.1	+8.9
<b>Emerging Markets</b>	6.2	+0.2	+6.2	+0.0	+0.4	+0.4	+0.1	+9.6	+9.8
Opportunistic	10.9	+1.6	+10.9	+0.1	+1.0	+1.1	+3.9	+26.4	+30.3
Total	42.1%	+0.6%	+1.0%	+0.2%	+1.8%	+2.0%	+6.4%	+47.2%	+53.5%
Fixed Income									
Core	3.6	(1.4)	(0.2)	+0.0	(0.0)	+0.0	+0.8	(0.3)	+0.6
High Yield	2.2	(0.3)	+0.7	+0.0	+0.0	+0.0	+0.4	+0.4	+0.8
<b>Emerging Markets</b>	2.5	(0.0)	(2.3)	+0.0	(0.1)	(0.1)	+0.2	(1.6)	(1.4)
TIPS	2.0	(0.5)	+0.3	+0.0	+0.0	+0.0	+0.7	+0.2	+0.9
Total	10.3%	(2.2%)	(0.5%)	+0.1%	(0.1%)	+0.0%	+2.0%	(1.2%)	+0.8%
Other Investments								_	_
Absolute Return	22.4	(1.1)	+3.1	+0.0	+0.7	+0.7	+0.9	+18.9	+19.8
Private Equity	10.0	+1.0	+0.0	+0.1	+0.0	+0.1	+3.9	+0.0	+3.9
Real Estate	8.2	+1.4	+5.2	+0.3	+0.3	+0.5	+6.7	+7.8	+14.5
Real Assets	2.6	(0.1)	+6.0	+0.0	+0.1	+0.2	+1.2	+3.4	+4.6
Cross Asset Class	1.6	(2.4)	+0.7	(0.0)	+0.0	+0.0	(0.2)	+0.8	+0.6
Total	44.8%	(1.2%)	+4.6%	+0.5%	+1.1%	+1.6%	+12.6%	+30.9%	+43.5%
Cash	2.8%	+2.8%	+1.2%	+0.1%	+0.0%	+0.1%	+2.2%	+0.0%	+2.2%
TOTAL	100%	0.0%	+3.7%	+0.9%	+2.8%	+3.7%	+23.2%	+76.8%	+100.0%

Active Return attribution describes the relative contribution of each asset class to the total plan. Allocation measures how decisions to under or overweight specific asset classes affect the overall plan. Selection measures how the asset classes' relative performance benefit or hurt the overall plan. Average weights shown.

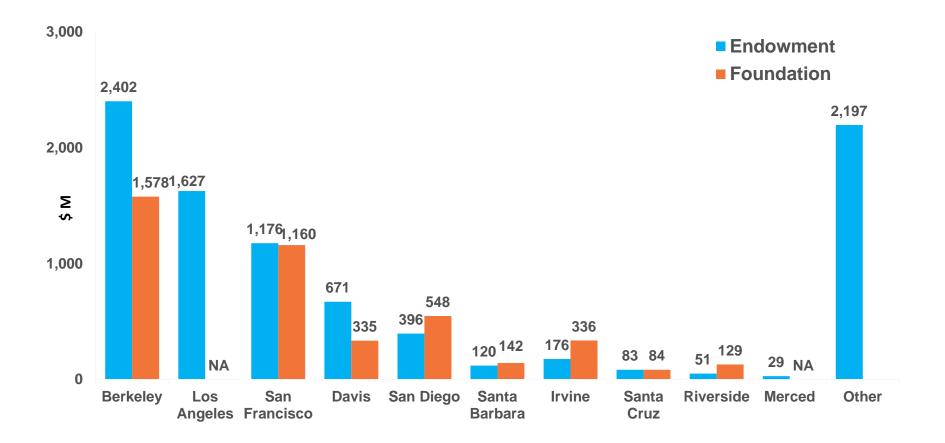
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### Policy Benchmark

Asset Class	Benchmark Component	Ranges	Target
Total Public Equity			41.50%
U.S. Equity	Russell 3000 Tobacco Free Index	+/-5%	15.50%
Developed Equity	MSCI World ex-U.S. (net dividends) Tobacco Free	+/-5%	10.00%
Emerging Market Equity	MSCI Emerging Market (net dividends)	+/-2%	6.00%
Opportunistic Equity	MSCI All Country World Index (net dividends)	+/-3%	10.00%
Total Fixed Income			12.50%
U.S. Core Fixed Income	Barclays U.S. Aggregate Bond Index	+/-3%	5.00%
High Yield Debt	Merrill Lynch High Yield Cash Pay Index	+/-1%	2.50%
Emerging Market Debt	JP Morgan Emerging Markets Bond Index Global Diversified	+/-1%	2.50%
TIPS	Barclays U.S. TIPS	+/-2%	2.50%
Total Other Investments			46.00%
Private Equity	Actual Private Equity Returns	+/-3%	9.00%
Absolute Return	50% HFRX Absolute Return Index + 50% HFRX Market Directional Index	+/-5%	23.50%
Real Estate (Private)	NCREIF Funds Index-Open End Diversified Core Equity Index (lagged 3 months)	+/-3%	6.75%
Real Assets	Commodities: S&P GSCI Reduced Energy Index; All other: Actual Real Assets Portfolio Returns	+/-1%	2.75%
Cross-Asset Class Strategy	Aggregate GEP Policy Benchmark	+/-3%	4.00%

## Endowment and Foundation Assets (\$ Millions)

Return Dispersion	1 Year	3 Years	5 Years	10 Years
UC Foundations, and Endowments (ending June 30, 2015)	0.4 – 7.4%	8.7 – 12.2%	8.3 - 11.0%	7.3 -10.6%
GEP (ending June 30, 2015)	7.2%	12.4%	11.3%	7.4%



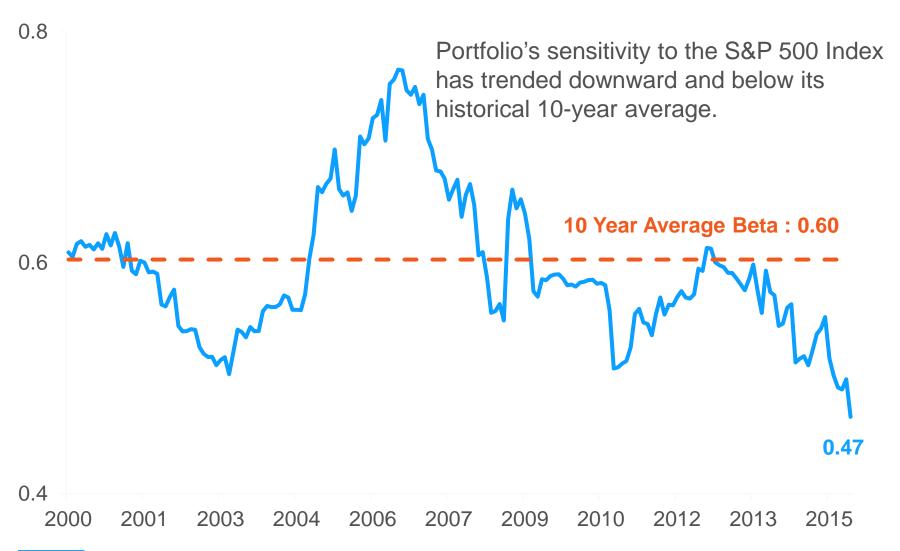


Assets as of June 30, 2015; Foundations' asset does not include separately invested assets, mortgages, real estate, operational accounts, receivables, and other.

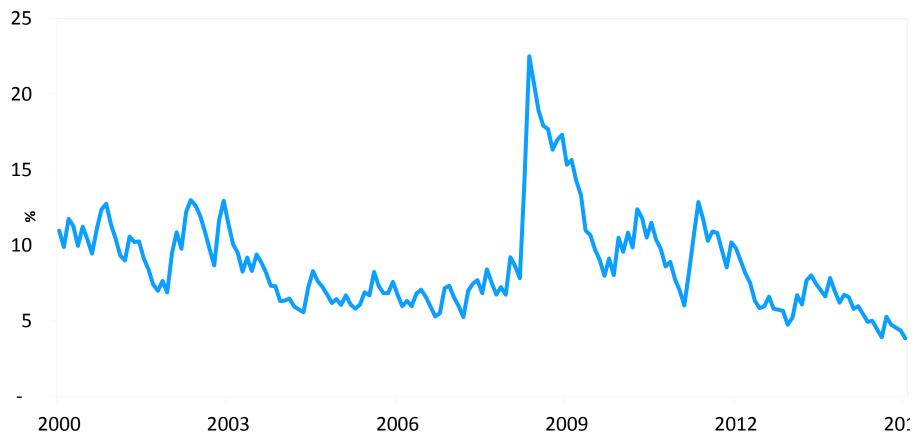
## Risk Management



Beta (S&P 500)



Risk Measures: Total

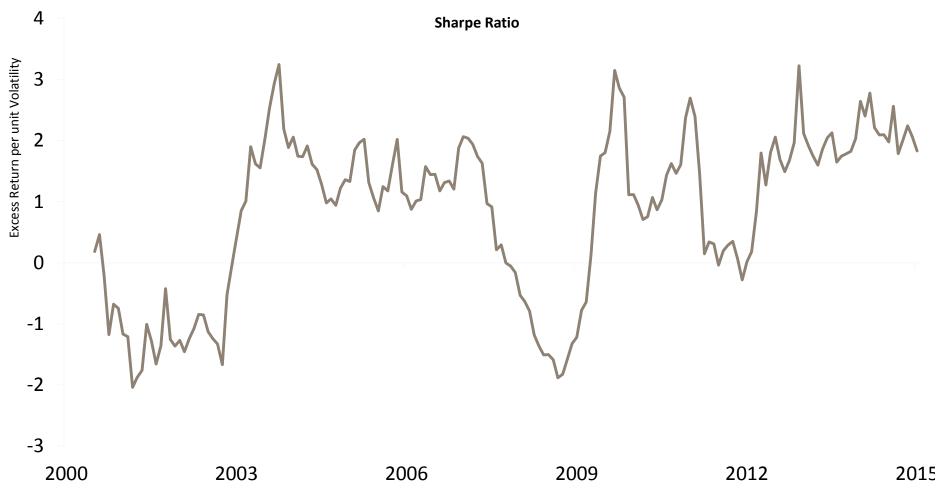


Total risk is measured by standard deviation of monthly **total** returns; each point or bar shows a 12 month measurement period. A standard deviation of 12% means that roughly 2/3 of the time, the realized return will be within  $\pm$  12% points from the average return.

At the end of the month total risk was 3.8% for the Endowment and 4.0% for the benchmark.



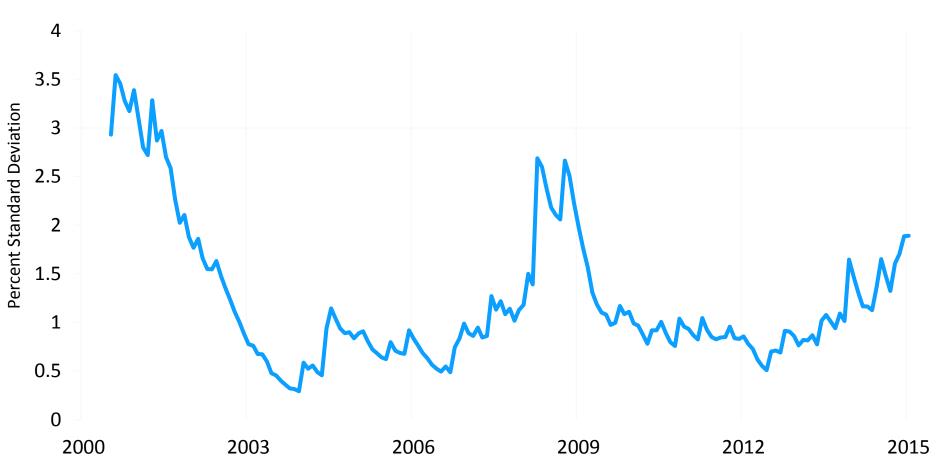
Risk Adjusted Total Return: Sharpe Ratio



Sharpe ratio is "excess" return (total return less risk-free rate) divided by total risk; each point or bar shows a 12 month measurement period.



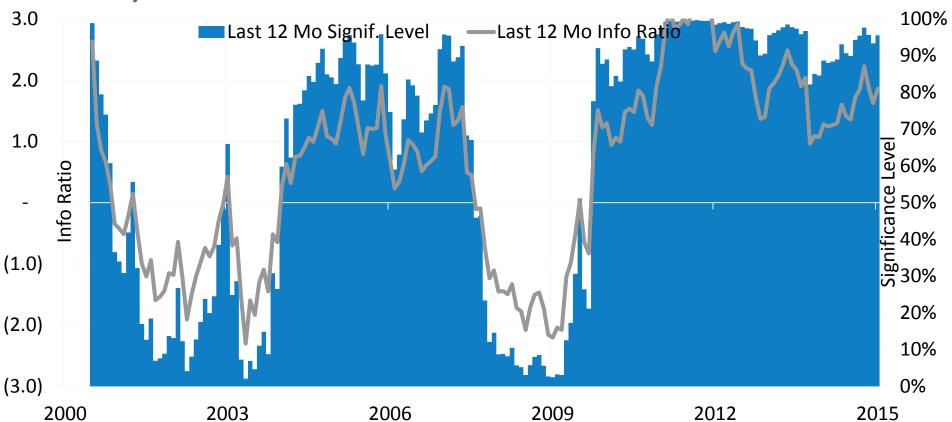
Risk Measures: Active



Active risk is measured by standard deviation of monthly **active** returns; each point or bar shows a 12 month measurement period. A standard deviation of 3% means that roughly 2/3 of the time, the realized active return will be within  $\pm$  3% points from the average active return.

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Risk Adjusted Active Return: Information Ratio



Information ratio is active return (total return less benchmark) divided by active risk; each point shows a 12 month measurement period. The Significance level is the probability that results are due to skill, with 50% being a neutral measure (e.g., "0% sure," "100% sure," "50/50").

Information ratio (risk adjusted active return) is the result of both asset weighting decisions and active selection performance. It is higher when the returns are more consistent (less volatile).

## **Asset Class Summary**



## Public Equity

Program inception 2004

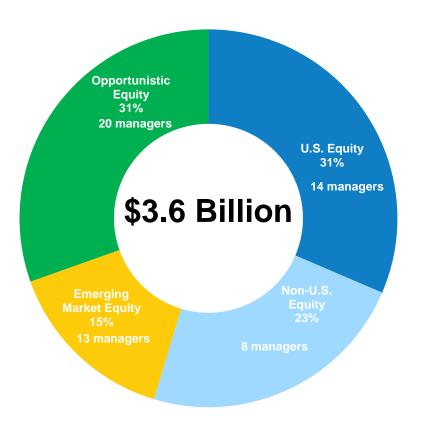
Top 20 active

52% of net asset value

managers

Top 20 companies 9% of net asset value

Active / Passive ~83% / ~17%



## Public Equity

GEP			Anr	nualized Perf	ormance(%)			
As of June 30,2015	Market Value (\$ Million)	% Allocation	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year
Public Equity	3,632	100%	5.4	15.2	13.5	6.2	7.1	8.2
U.S.	1,142	31%	8.3	18.3	17.8	9.9	8.0	8.5
Russell 3000 Tobacco Free Index			7.3	17.9	17.5	9.6	8.0	9.2
Value Added			1.0	0.5	0.4	0.3	-0.1	-0.7
Non-U.S. Developed	843	23%	-2.8	12.2	9.7	2.7	5.9	0.0
MSCI World ex-U.S.			-5.3	11.2	8.9	1.6	5.1	0.0
Value Added			2.5	1.0	0.9	1.1	0.8	0.0
Emerging Markets	541	15%	1.1	5.8	5.7	2.0	8.7	7.8
MSCI Emerging Market			-5.1	3.7	3.7	0.9	8.1	6.1
Value Added			6.2	2.1	2.0	1.2	0.5	1.7

30%

11.6

0.7

10.9

1,106

Numbers may not add due to rounding.

MSCI All Country World Index

Opportunistic

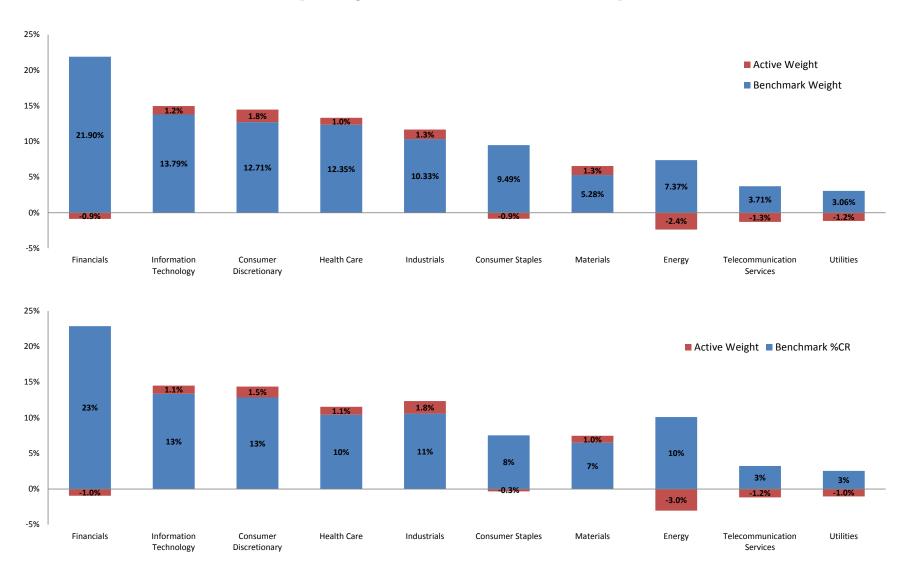
Value Added

## **GEP Public Equity**

GEP June 30, 2015	Dividend Yield	Dividend per Share	EPS	Price/ Book Value	P/CE	Price/Earning	Price/Sales	Payout Ratio	ROE
Total Public Equity	2.07%	1.39	4.44	2.15	11.94	20.38	1.32	35.74%	18.66%
US Equity	1.56%	1.00	4.05	2.93	13.85	24.62	1.57	32.54%	20.37%
Non-US Equity	2.92%	1.91	3.84	1.65	9.49	17.61	1.04	53.64%	15.36%
EM Equity	2.04%	0.79	4.81	2.23	12.15	17.49	1.50	21.43%	18.29%
Opportunistic Equity	1.77%	1.46	5.16	2.24	13.09	21.95	1.39	27.49%	20.44%
MSCI ACWI	2.47%	1.71	4.52	2.14	10.79	18.51	1.36	54.22%	22.06%
S&P 500	2.10%	1.54	4.51	2.83	12.24	19.73	1.76	56.13%	27.06%
MSCI EM	2.59%	1.12	6.64	1.55	8.43	14.19	1.02	36.97%	16.21%
MSCI ACWI ex U.S.	2.93%	1.94	4.67	1.69	9.27	16.93	1.07	54.17%	16.31%

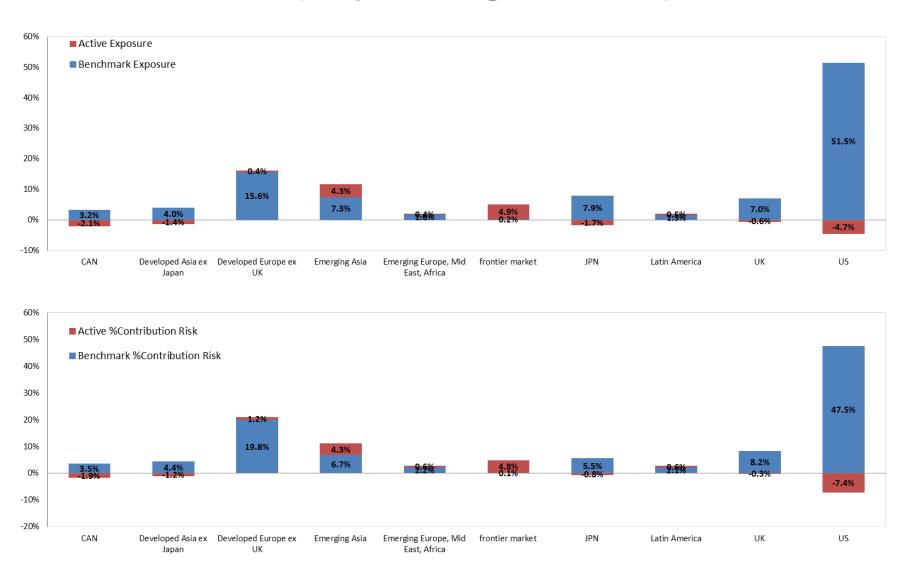


## GEP Public Equity – Sector Exposure





## GEP Public Equity – Regional Exposure





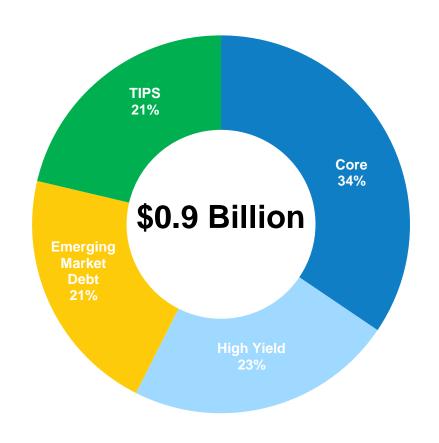
## **Fixed Income**

Program inception 1976

External managers 3

Internally managed 83%

Actively managed 95%



# **Fixed Income**

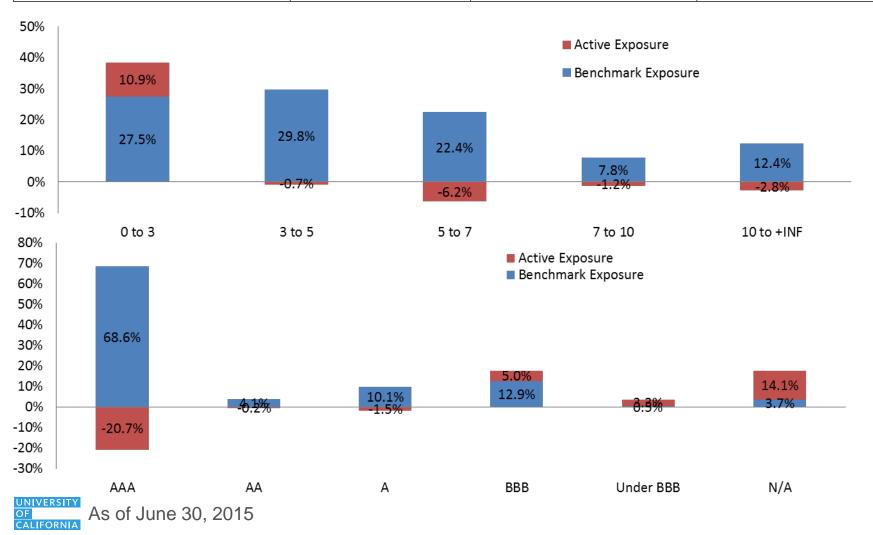
<b>GEP</b>	<b>Annualized Performance(%)</b>
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As of June 30,2015	Market Value (\$ Million)	% Allocation	1 Year	3 Year	5 Year	7 Year	10 Year
Core	327	34%	1.7	2.7	3.8	4.7	4.3
Barclays U.S. Aggregate Bond Index			1.9	1.8	3.3	4.8	4.4
Value Added			-0.2	0.9	0.4	-0.1	-0.1
High Yield	218	23%	0.1	7.4	9.0	9.1	-
Merrill Lynch High Yield Cash Pay			-0.5	6.7	8.4	9.0	-
Value Added	_		0.7	0.6	0.6	0.0	
Emerging Markets Debt	201	21%	-1.8	2.3	5.2	6.5	-
JP Morgan Emerging Markets Bond			0.5	4.2	6.2	7.5	-
Value Added	_		-2.3	-1.9	-1.0	-1.0	
TIPS	202	21%	-1.4	-0.6	3.5	3.9	4.4
Barclay U.S. TIPS			-1.7	-0.8	3.3	3.5	4.1
Value Added			0.3	0.1	0.2	0.3	0.3



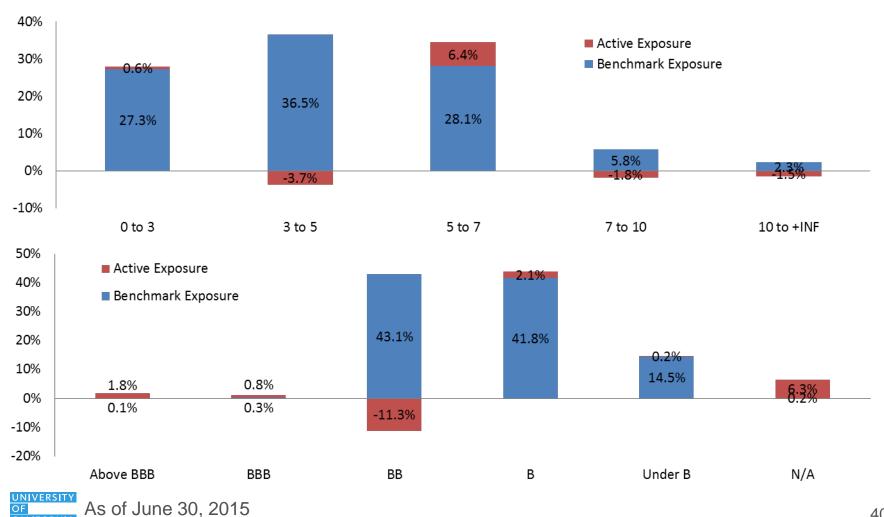
### **GEP Core Fixed Income**

GEP-Core	GEP - Core	Barclays Aggregate	Excess
Effective Duration	4.89	5.52	-0.63
Average Quality	AA/A	AA/A	



# **GEP High Yield**

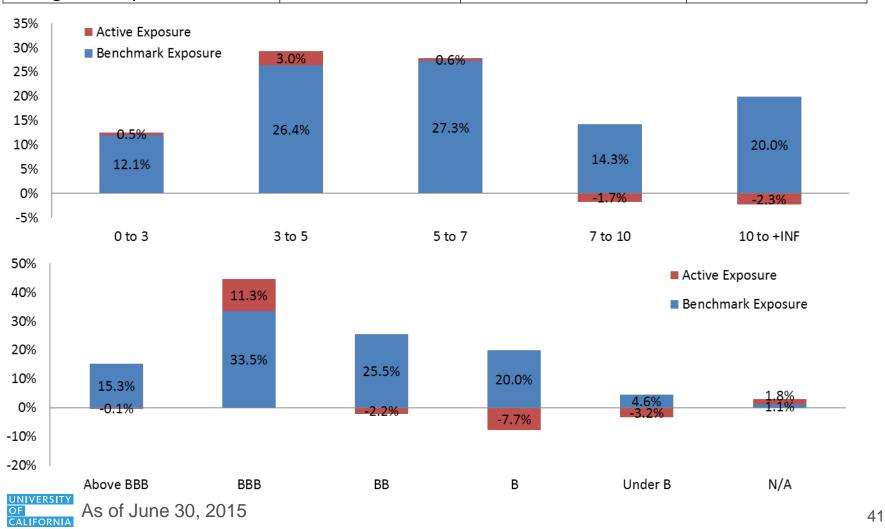
GEP-High Yield	GEP - High Yield	Merrill Lynch High Yield	Excess
Effective Duration	4.17	4.3	-0.13
Average Quality	BB/B	BB/B	



40

# **GEP Emerging Market Debt**

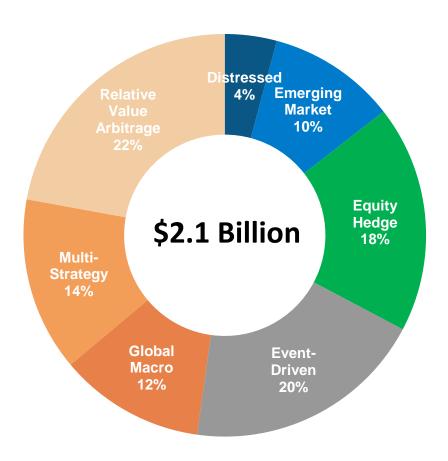
GEP-Emerging Market Debt	GEP - EM Debt	JP Morgan EM Bond	Excess
Effective Duration	6.26	6.64	-0.38
Average Quality	BBB/BB	BBB/BB	



## Absolute Return

Program inception April 2003

External managers 30



# Absolute Return

GEP				<b>Annualize</b>	d Performance	e (%)	
As of June 30, 2015	Market Value (\$ Million)	% Allocation	1 Year	3 Year	5 Year	7 Year	10 Year
Absolute Return	2,108	100%	6.7	10.1	8.0	4.9	6.4
50% HRFX Absolute Return + 50% HRFX Market Directional Value Add			2.3 4.4	4.9 5.2	1.4 6.6	2.8 2.0	4.4 2.0
Distressed	88	4%	-6.7	4.9	5.8	3.0	3.5
Emerging Market	217	10%	18.2	21.8	18.1	12.7	-
Equity Hedge	385	18%	10.9	11.7	8.6	3.9	-
Event-Driven	410	19%	4.8	13.4	10.2	7.7	8.2
Global Macro	246	12%	6.1	3.2	3.5	1.6	-
Multi-Strategy	295	14%	5.3	4.4	-	-	-
Relative Value Arbitrage	467	22%	4.7	8.0	6.1	6.5	-



# Private Equity

Program inception 1979

Top 20 managers 76% of net asset value

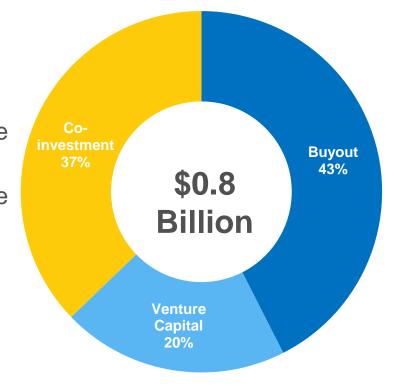
Top 20 companies 36% of net asset value

\$35m

Avg. fund commit \$50m

Avg. co-invest

commit





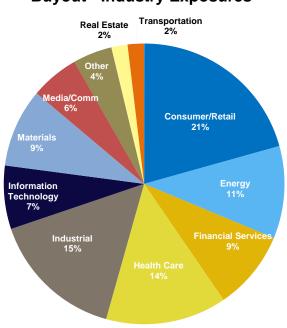
# Private Equity

GEP Annualized Performance (%							
As of June 30, 2015	Market Value (\$ Million)	% Allocation	1 Year	3 Year	5 Year	7 Year	10 Year
Private Equity	769	100%	22.6	20.9	17.5	11.7	11.8
Actual Private Equity Return			22.6	20.9	17.5	11.7	11.8
Value Added			0.0	0.0	0.0	0.0	0.0
Buyout	327	43%	10.9	11.3	11.5	7.8	10.2
Venture Capital	156	20%	11.9	18.6	16.5	11.1	9.8
Co-investment	286	37%	51.3	51.5	38.2	-	-

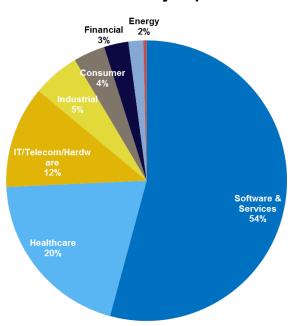


# **Private Equity**

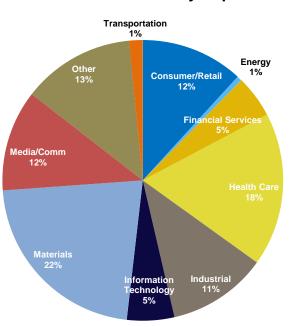
**Buyout - Industry Exposures** 



#### **Venture - Industry Exposures**



#### **Co-investment - Industry Exposures**





As of June 30, 2015 46

## Real Assets

Program inception **April 2010** 

External managers 24

Top 20 managers 96% of net

Avg. net asset value per manager

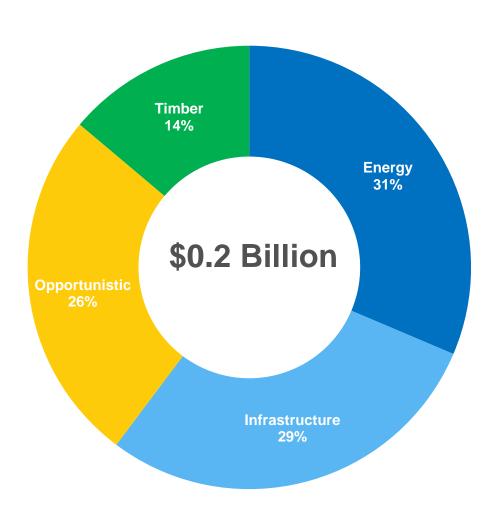
Avg. co-invest

commitment

asset value

\$60m

\$30m



## Real Assets

GEP		Annualized Performance (%)							
As of June 30, 2015	Market Value (\$ Million)	% Allocation	1 Year	3 Year	5 Year	10 Year	10 Year		
Real Assets	200	100%	-6.3	2.9	3.1	_	_		
S&P GSCI Reduced Energy + Actual Real Assets Return			-12.3	0.3	1.6	-	-		
Value Added	_		6.0	2.6	1.4	-	-		
Energy	63	31%	-34.6	-7.9	-1.7	-	-		
Infrastructure	58	29%	13.2	12.4	-	-	-		
Opportunistic	52	26%	7.8	6.1	-	-	-		
Timber	28	14%	20.5	6.6	4.8	-	_		



#### Real Estate

Program inception 2006

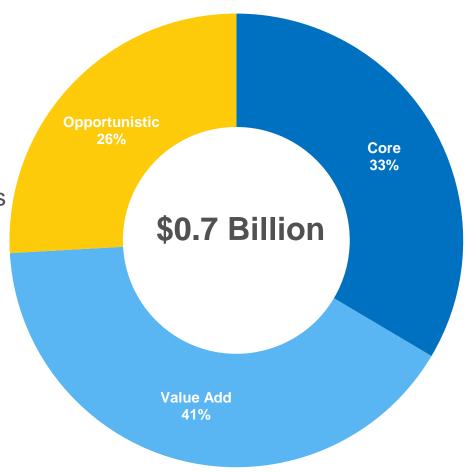
External managers 30 active

9 separate accounts

Commingled funds 44

Geographic 96% U.S.

Allocation 4% International



## Real Estate

GEP				Annualized Performance (%)				
As of June 30, 2015	Market Value (\$ Million)	% Allocation	1 Year	3 Year	5 Year	7 Year	10 Year	
Real Estate - Private	717	100%	17.7	14.1	15.6	-1.7	4.1	
NCREIF ODCE Index			12.4	11.6	14.2	-0.8	3.8	
Value Added			5.2	2.5	1.4	-0.9	0.3	
Core	240	34%	12.1	12.1	12.2	12.2	-	
Value	291	41%	13.2	12.7	13.9	13.9	-	
Opportunistic	186	26%	14.4	13.5	16.6	16.6	-	



## **GEP Private Real Estate**

