



Endowment

Investment Review as of June 30, 2019

UC INVESTMENTS

UC Endowment

1. Asset Allocation
2. Performance
3. Asset Classes
4. Risk

INVESTMENT OBJECTIVES

- Maximize real, long-term total returns (income plus capital appreciation adjusted for inflation), while assuming the appropriate levels of risk
- Maintain the liquidity necessary to meet the investment goals of the Endowment, which are to provide a stable and continuously growing stream of income, all while preserving the real (inflation-adjusted) purchasing power of assets.

UC Investments

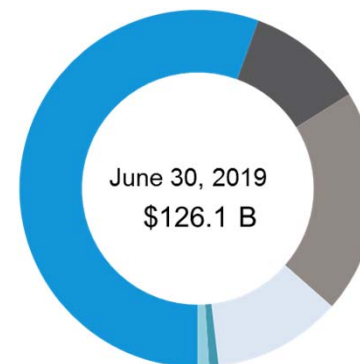
MISSION: Growing Portfolios. Building Partnerships. Delivering value through values.

INVESTMENT PRODUCTS

- **Endowment** assets: \$13.4 billion (as of 6/30/19)
- Investing **Endowment** assets since 1933 (87 years)
- Investing **Pension** assets since 1961 (59 years)
- Investing **Retirement Savings** assets since 1967 (53 years)
- Investing **Working Capital** since 1976 (44 years)
- Investing **Captive Insurance** assets since 2016 (3 years)
- Investing in **Blue & Gold** assets since 2019 (0 Years)

\$126.1 billion across 7 products

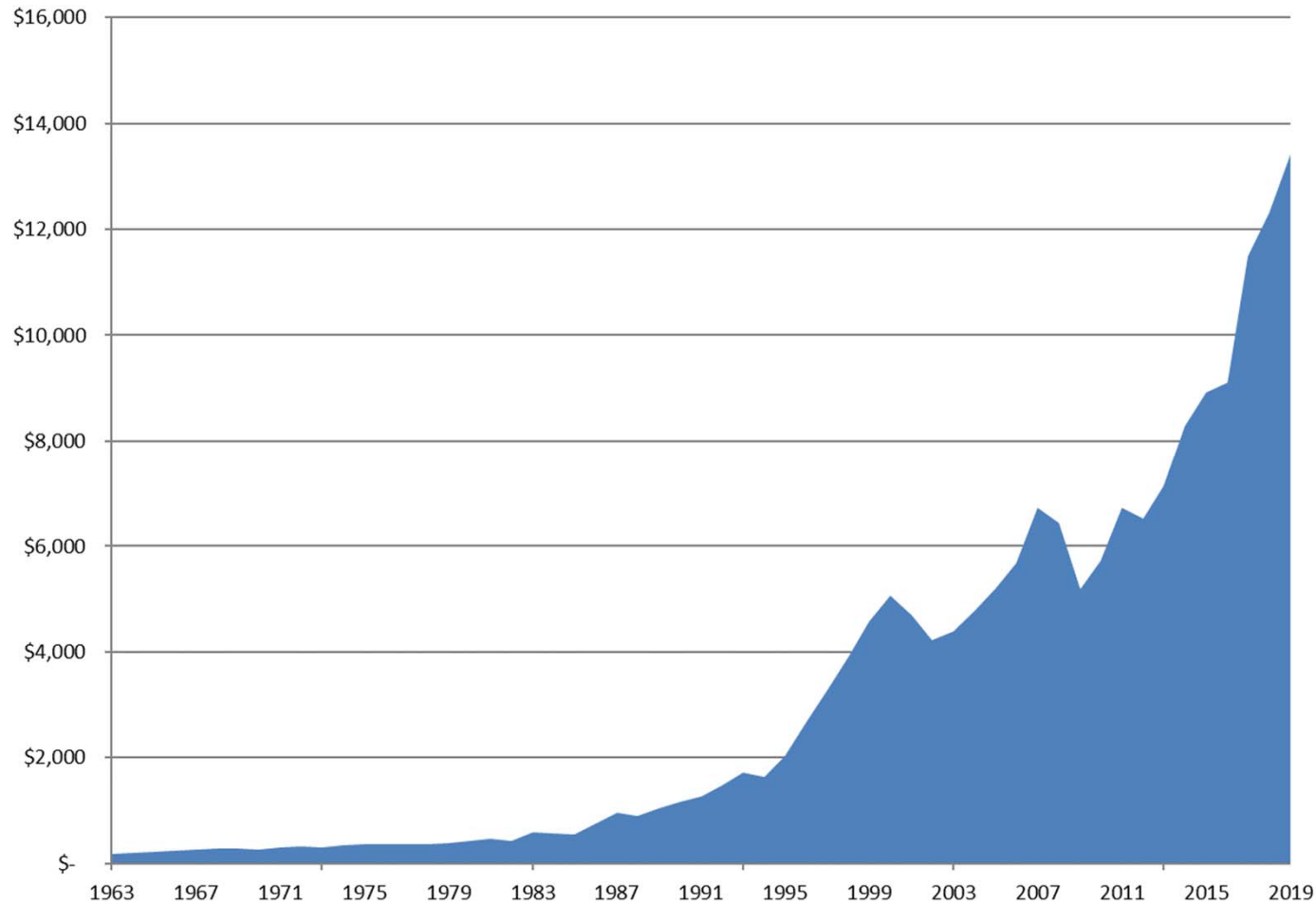
As of June 30, 2019



- Pension: 55%, \$70.0B
- **Endowment: 11%, \$13.4B**
- Retirement Savings: 20%, \$25.6B
- Working Capital: 12%, \$14.7B
- TRIP: \$9.2B
- STIP: \$5.6B
- Fiat Lux: 1%, \$1.1B
- Blue & Gold Pool: 1%, \$1.3B

Endowment Asset Growth

ENDOWMENT ASSETS 1963 – 2019



5 Year Growth

June 30, 2019
\$13.4 billion




1 Year Ago
\$12.3 billion

5 Years Ago
\$8.3 billion

Assets Under Management

June 30, 2018	\$12.3 billion
Market Gains	\$0.7 billion
Value Added	\$0.3 billion
Net Cash Flow	\$0.1 billion
June 30, 2019	\$13.4 billion

Endowment Asset Allocation

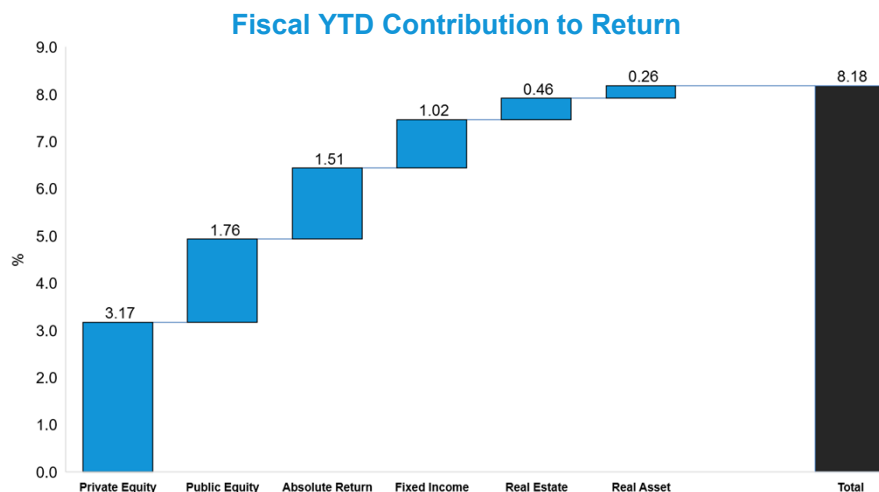
	As Of June 30, 2019	Market Value in \$ Billions	Percentage	Over/Underweight Relative to Interim Policy	Interim Policy Weight	Long-Term Policy Weight
	Public Equity	5.0	37.2%	(2.4%)	39.6%	30.0%
	Liquidity (Fixed Income)	2.0	15.1%	2.0%	13.1%	10.0%
	Other Investments	6.4	47.7%	0.4%	47.3%	60.0%
	Absolute Return	3.0	22.0%	(0.3%)	22.3%	25.0%
	Private Equity	1.9	14.5%	0.1%	14.4%	22.5%
	Real Estate	0.9	6.9%	0.6%	10.6%	12.5%
	Real Asset	0.6	4.3%			
	Total	13.4	100.0%	0.0%	100.0%	100.0%

Endowment Performance

Net Returns (%) As of June 30, 2019	Market Value (\$ Billion)	% Allocation	Annualized Returns					
			3 Month	1 Year	3 Year	5 Year	10 Year	20 Year
UC Endowment	13.4	100%	4.8	8.2	10.7	6.8	9.4	6.3
Endowment Policy Benchmark*			3.2	5.7	8.9	5.6	7.8	5.5
<i>Value Added</i>			1.6	2.5	1.8	1.2	1.6	0.8

Net Returns (%) As of June 30, 2019	One Year Returns									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
UC Endowment	8.2	8.9	15.1	(3.5)	6.1	19.0	12.0	(0.7)	20.2	11.3
Endowment Policy Benchmark*	5.7	8.5	12.5	(1.7)	3.7	16.6	10.1	(2.4)	17.9	9.1
<i>Value Added</i>	2.5	0.4	2.6	(1.8)	2.4	2.4	1.9	1.7	2.3	2.2

*The UC Endowment Benchmark is a weighted average of investment policy targets.



Endowment Attribution – FY 2018/19

As of June 30, 2019	Average Weight	Average Active Weight	Allocation Attribution	Selection Attribution	Total Attribution
Public Equity	40.7	(0.2)	(0.1)	(0.1)	(0.2)
Liquidity	16.4	1.4	(0.0)	(0.1)	(0.1)
Other Investments					
Absolute Return	21.0	0.0	(0.0)	1.3	1.3
Private Equity	12.1	(1.3)	(0.2)	1.8	1.6
Real Estate (Real Assets)	6.1	(0.9)	(0.0)	0.0	0.0
Non-Real Estate (Real Assets)	3.7	0.9	0.0	(0.0)	0.0
Total	100.0%	0.0%	(0.4%)	2.9%	2.5%

Endowment Policy Benchmark

Asset Class	Policy Benchmark Component	Target	Allowable Ranges	
			Min	Max
Total Public Equity	MSCI All Country World Index Net IMI Tobacco Free	39.6%	30.0%	63.0%
Liquidity (Income)	Barclays US Aggregate Bond Index	13.1%	3.0%	21.0%
Total Other Investments				
Absolute Return	HFRI Fund of Funds Composite	22.3%	12.0%	29.0%
Private Equity	Russell 3000 + 1.5%	14.4%	2.0%	25.0%
Real Estate	NCREIF ODCE Index	10.6%	1.0%	16.0%
Real Assets	Actual Real Assets Portfolio Return			

As of June 30th, 2019.

Public Equity

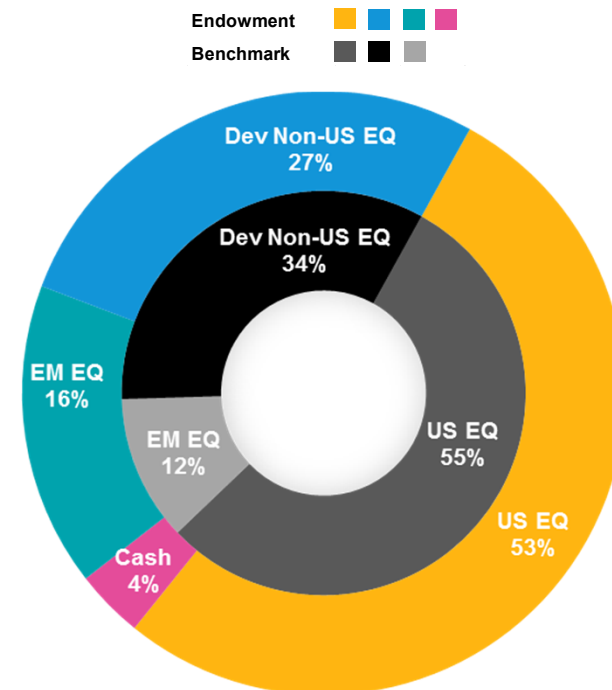
Net Returns (%) As of June 30, 2019	Market Value		Annualized Returns					
	(\$ Billion)	% Allocation	3 Month	1 Year	3 Year	5 Year	10 Year	20 Year
Public Equity	5.0	100%	3.8	4.6	13.0	6.3	10.7	4.8
Endowment Policy Benchmark*			3.5	4.7	11.9	6.2	10.4	5.5
<i>Value Added</i>			0.3	(0.1)	1.1	0.1	0.3	(0.7)

*Total public equity benchmark is an aggregate of benchmarks for equity portfolios in the pool prior to Jul 1, 2017; thereafter MSCI ACWI IMI Tobacco Free.

Active Managers	# of funds	Weight
Global Generalist	4	19.7%
USA	1	17.1%
Developed Non-USA	3	16.2%
Global Sector Specialist	3	6.5%
Emerging Markets	2	5.9%
	13	65.3%

Passive Index Exposure	Strategy	Weight
S&P 500 Tobacco Free	US Passive	26.3%
MSCI ACWI IMI Tobacco Free	Global Passive	8.4%

Regional Lookthrough Exposure



Public Equity (cont.)

Attribution:

GEP underperformance FYTD 2019 driven by weak returns for several of largest funds, with only modest contributions from outperforming funds.

Top 3 Contributors FYTD	FYTD return	Weight
1. China large cap manager	17.3%	6.4%
2. Global large cap manager	8.6%	9.7%
3. European large cap manager	6.9%	7.7%

Top 3 Detractors FYTD	FYTD return	Weight
1. Japan small cap manager	-8.7%	4.4%
2. Global Value Manager	-1.6%	3.4%
3. Global large cap manager	1.5%	2.9%

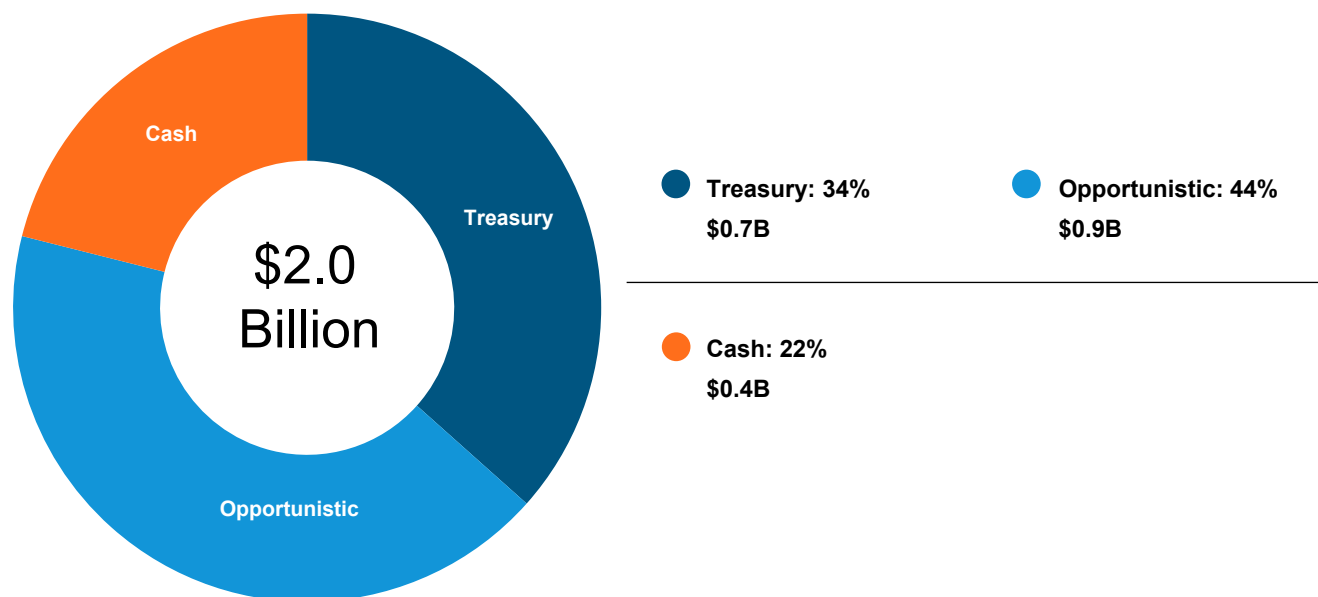
Geographic Exposures	Policy	Benchmark
US Equity	52.7%	54.8%
Developed Non-US Equity	27.3%	33.5%
Emerging Market Equity	16.3%	11.6%
Cash	3.7%	0.0%

Liquidity (Income) and Cash

Net Returns (%) As of June 30, 2019	Market Value		Annualized Returns					
	(\$ Billion)	% Allocation	3 Month	1 Year	3 Year	5 Year	10 Year	20 Year
Liquidity (Income)	2.0	100%	2.6	6.9	3.4	2.5	4.8	5.8
Endowment Policy Benchmark*			3.1	7.9	3.3	3.2	5.2	5.9
<i>Value Added</i>			<i>(0.5)</i>	<i>(1.0)</i>	<i>0.1</i>	<i>(0.7)</i>	<i>(0.4)</i>	<i>(0.1)</i>
Treasury	0.7	34%	2.4	6.2	2.0	2.1	3.8	5.1
Opportunistic	0.9	44%	3.6	8.5	6.1	4.3	7.9	-
Cash	0.4	22%	0.4	3.3	2.0	1.7	2.1	-

* Starting July 1, 2017, the benchmark is the Barclay's US Aggregate Bond Index.

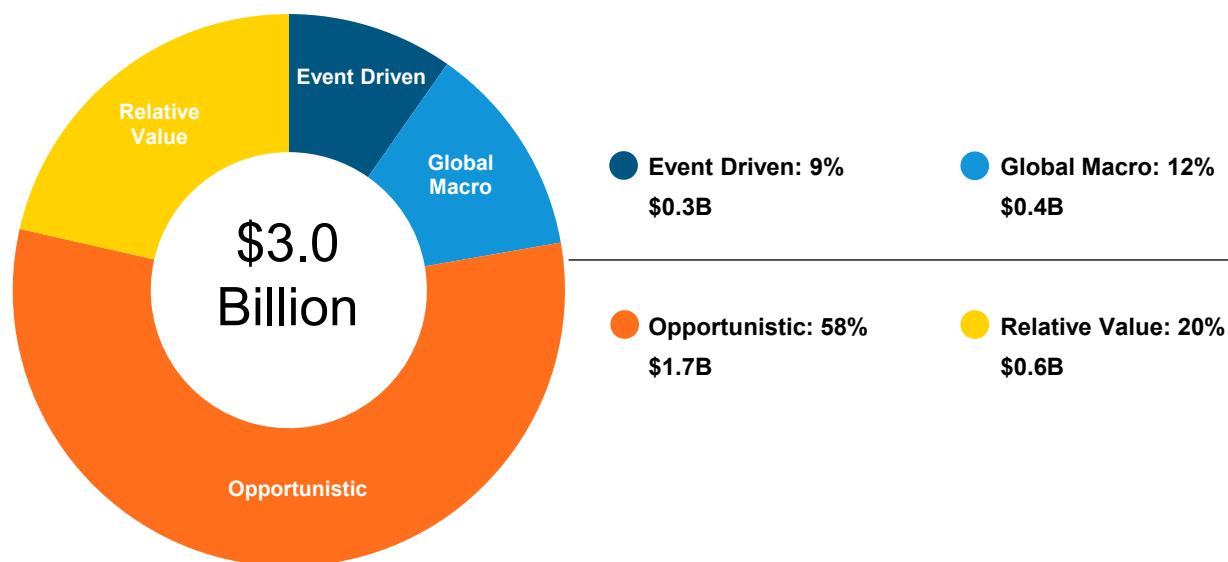
Policy benchmark for Liquidity (Income) prior to July 1, 2017 was a weighted average composite of the historical policy benchmarks and targets.



Absolute Return

Net Returns (%) As of June 30, 2019	Market Value		Annualized Returns				
	(\$ Billion)	% Allocation	3 Month	1 Year	3 Year	5 Year	10 Year
Absolute Return	3.0	100%	3.2	7.2	6.1	3.9	6.2
Endowment Policy Benchmark*			1.7	1.1	2.8	0.2	1.1
<i>Value Added</i>			<i>1.5</i>	<i>6.1</i>	<i>3.3</i>	<i>3.8</i>	<i>5.1</i>
Opportunistic	1.7	58%	3.0	8.8	10.8	7.3	-
Relative Value	0.6	20%	3.2	7.3	8.4	7.8	8.5
Global Macro	0.4	12%	5.7	6.8	0.2	2.3	0.1
Event Driven	0.3	9%	1.5	1.5	9.8	3.8	7.8

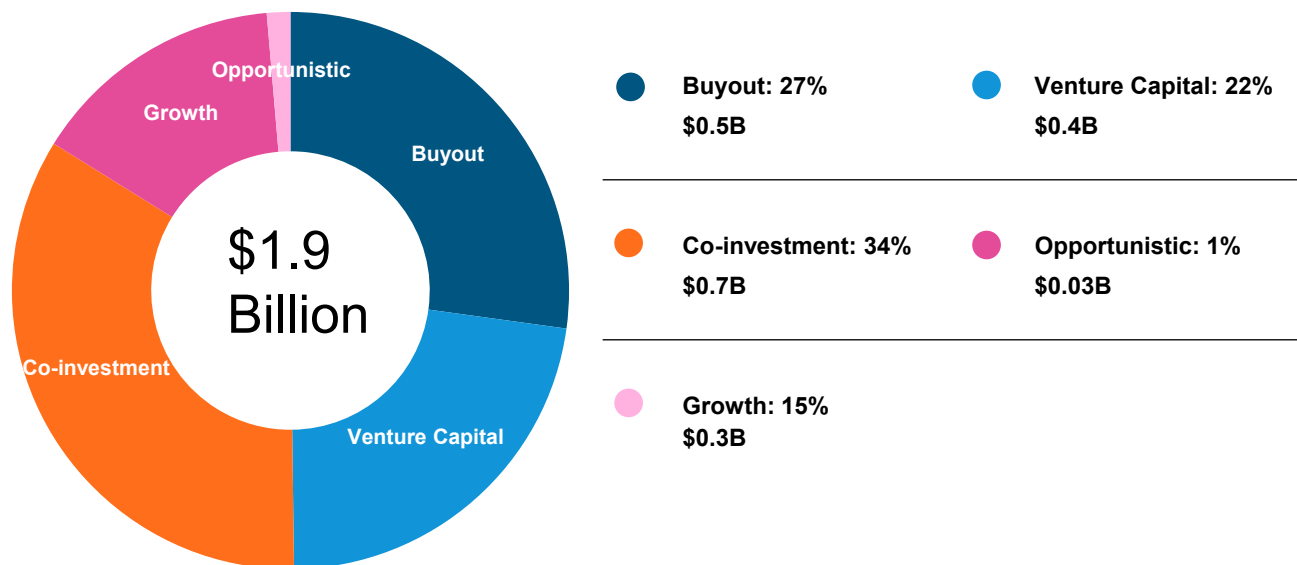
* From April 1, 2003 to March 1, 2009, the portfolio benchmark was 1 Month T-Bill+4.5%; thereafter the benchmark changed to 50% HFRX Absolute Return/50% HFRX Market Directional until February 2016 when it became HFRX Absolute Return. As of July 1, 2017, the benchmark is HFRX Fund of Funds Composite.



Private Equity

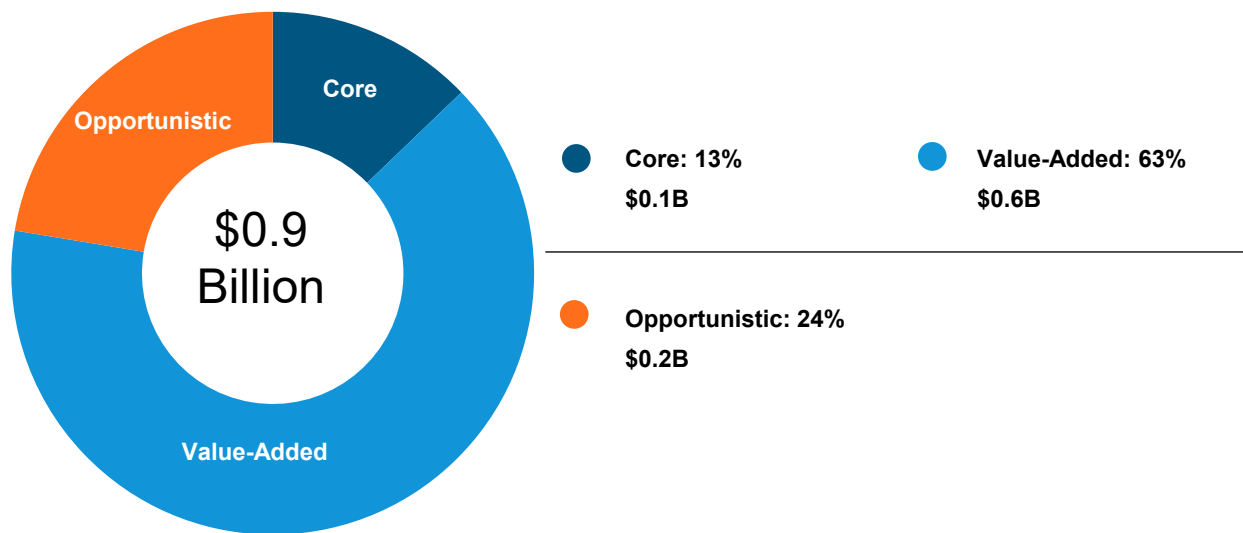
Net Returns (%) As of June 30, 2019	Market Value (\$ Billion)	% Allocation	Annualized Returns							
			3 Month	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year	25 Year
Private Equity	1.9	100%	13.5	27.4	23.7	21.6	21.1	19.2	16.5	20.4
Endowment Policy Benchmark*			4.4	10.5	15.9	16.9	17.8	16.9	9.0	13.6
<i>Value Added</i>			<i>9.2</i>	<i>16.9</i>	<i>7.8</i>	<i>4.7</i>	<i>3.3</i>	<i>2.3</i>	<i>7.5</i>	<i>6.8</i>
Buyout	0.5	27%	7.2	10.8	23.4	21.5	19.6	17.9		
Venture Capital	0.4	22%	19.1	38.5	22.3	18.8	19.5	16.6		
Co-investment	0.7	34%	18.1	39.9	30.6	28.2	32.4	-		
Growth	0.3	15%	9.0	22.0	10.9	7.2	10.0	15.9		
Opportunistic	0.0	1%	15.7	28.7	13.8	9.0	20.2	20.4		

* As of July 1, 2017, the Private Equity policy benchmark is the Russell 3000 +1.5%. From March 2005 to June 2017, the Private Equity benchmark was the actual private equity return. From January 2001 to February 2005, the Private Equity benchmark was Russell 3000 + 3% lagged one quarter. Prior to that, it was the S&P 500 + 5% lagged by a quarter.



Real Estate

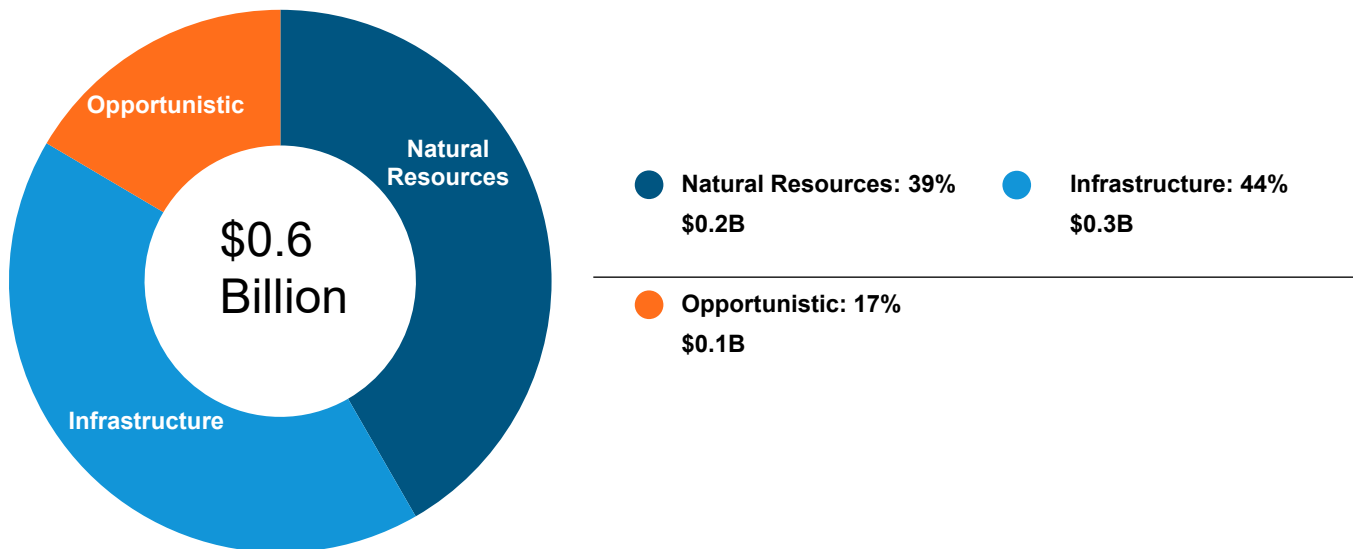
Net Returns (%) As of June 30, 2019	Market Value		Annualized Returns				
	(\$ Billion)	% Allocation	3 Month	1 Year	3 Year	5 Year	10 Year
Real Estate	0.9	100%	3.0	7.0	8.5	10.7	7.4
Endowment Policy Benchmark*			1.2	6.5	7.0	9.3	7.0
<i>Value Added</i>			<i>1.9</i>	<i>0.5</i>	<i>1.5</i>	<i>1.4</i>	<i>0.4</i>
Core	0.1	13%	5.8	11.7	8.7	11.1	12.5
Value-Added	0.6	63%	3.7	6.3	6.6	10.3	6.9
Opportunistic	0.2	24%	0.1	6.0	5.9	8.4	7.3



Real Assets

Net Returns (%) As of June 30, 2019	Market Value (\$ Billion)	% Allocation	Annualized Returns					
			3 Month	1 Year	3 Year	5 Year	7 Year	Since Incept
Real Assets	0.6	100%	6.9	6.2	6.1	(0.9)	1.6	4.3
Natural Resources	0.2	39%	6.1	2.3	2.9	(7.5)	(3.3)	0.3
Infrastructure	0.3	44%	7.8	9.4	11.1	11.9	12.4	9.7
Opportunistic	0.1	17%	6.6	8.0	5.9	5.0	4.9	5.0

* Inception date for Real Assets is April 1, 2010.



Risk 1.0 : Risk Measurement

Portfolio volatility drops for the second straight quarter, after a spike in Q4 2018
Tracking error increases slightly QoQ.

			Portfolio Risk (%)		Benchmark Risk (%)		Active Risk (%)	
		Weight (%)	Standalone Volatility	QoQ Change	Standalone Volatility	QoQ Change	Tracking Error	QoQ Change
Endowment	Policy (Blend)	100	8.8	(0.8)	7.9	(0.8)	2.2	0.2
Public Equity	MSCI ACWI ex Tobacco	37	12.5	(0.7)	12.2	(0.9)	2.3	(0.3)
Liquidity	Barclay's Aggregate	15	1.8	0.4	2.6	(0.0)	2.7	0.7
Absolute Return	HFRI FOF	22	3.2	(0.8)	2.6	(0.3)	2.1	(0.3)
Private Equity	Russell 3000	14	20.7	(2.4)	14.1	(1.3)	11.6	(0.2)
Real Estate	NFI-ODCE	7	13.1	0.1	10.3	0.5	8.7	(0.2)
Real Assets	Real Assets	4	13.6	(4.0)	13.6	(4.0)	0.0	0.0

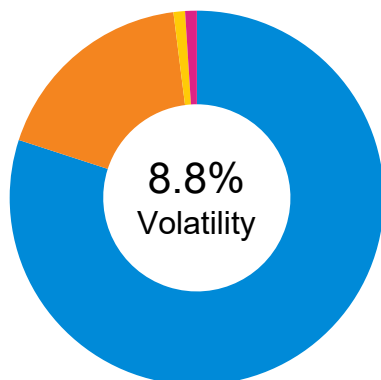
Macroeconomic Risk Factors

Portfolio systematic risk generally dominated by “Economic Growth” risk.
Within Economic Growth, “Consumption” dominates.

ENDOWMENT

Portfolio Standalone Risk Factor Decomposition

As of June, 2019



- **Economic Growth 80%**
Consumption 43
Financials/Other 27
Production 11
- **Residual 18%**
- **Emerging Markets 1%**
- **FX 1%**

Factor Name	Factor Description
Economic Growth	Proxied by broad, developed market equity index returns
Real Rates	Inflation-linked bond returns
Inflation	Return of long nominal bonds, short inflation-linked bonds portfolio
Credit	Return of long corporate bonds, short nominal bonds portfolio
Commodity	Weighted GSCI Commodity index returns
Emerging Markets (EM)	Equally weighted basket of EM Assets

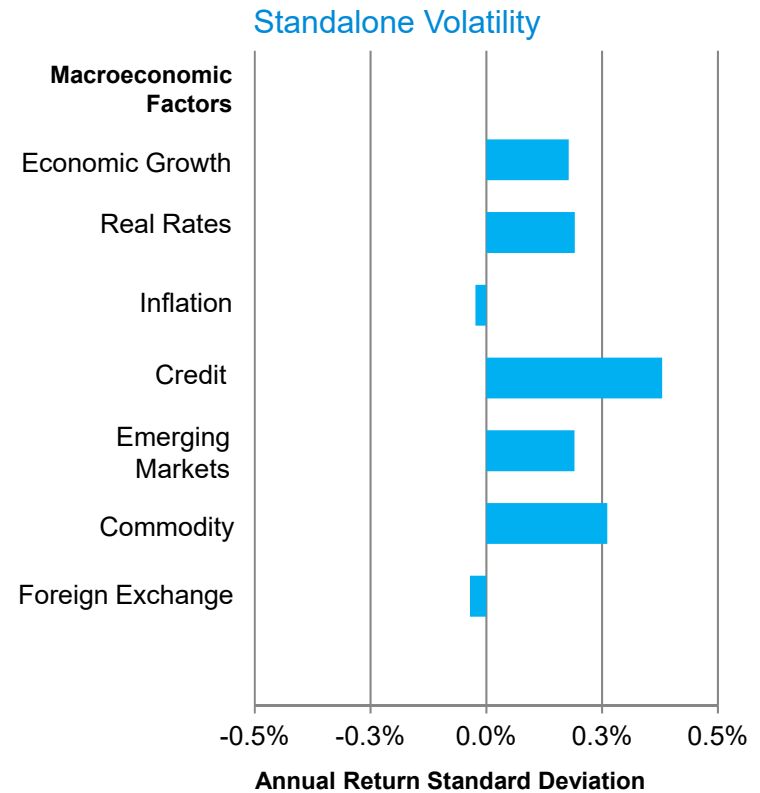
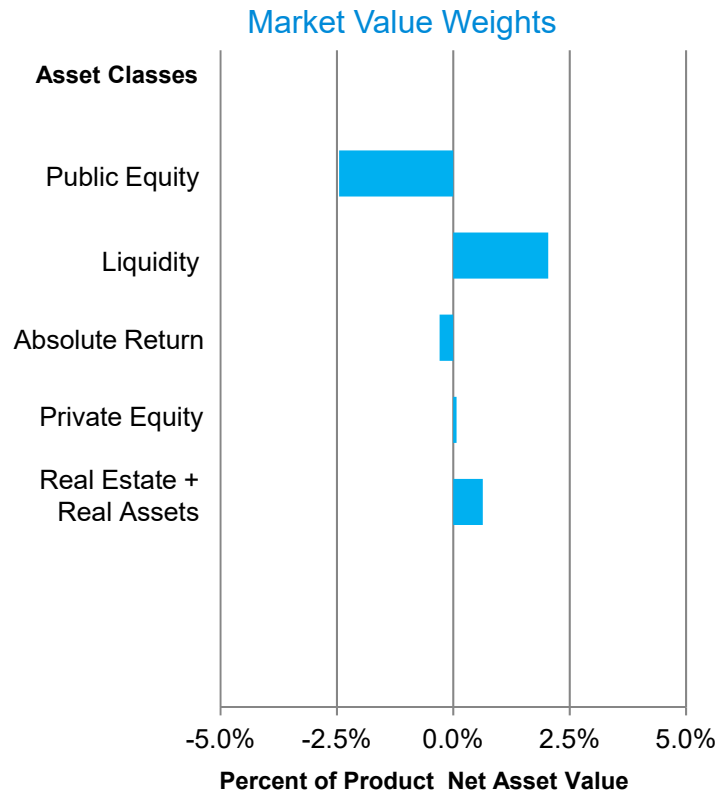
Risk 1.0: Two Views of Risk

Asset Classes versus Macroeconomic Factors

Portfolio slightly overweight Economic Growth, despite active underweight to Public /Private Equities

ENDOWMENT ACTIVE EXPOSURES

As of June, 2019 Reference scale: active risk (tracking error) : 2.2%



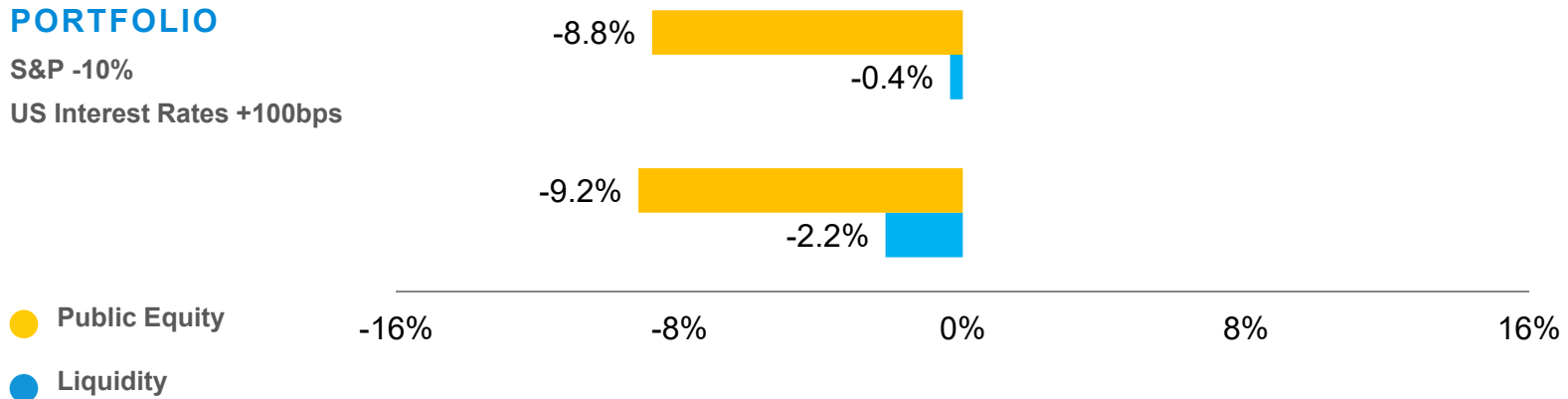
Risk 2.0: Stress Tests

Endowment indicative stressed P&L for public markets investments

PORTFOLIO

S&P -10%

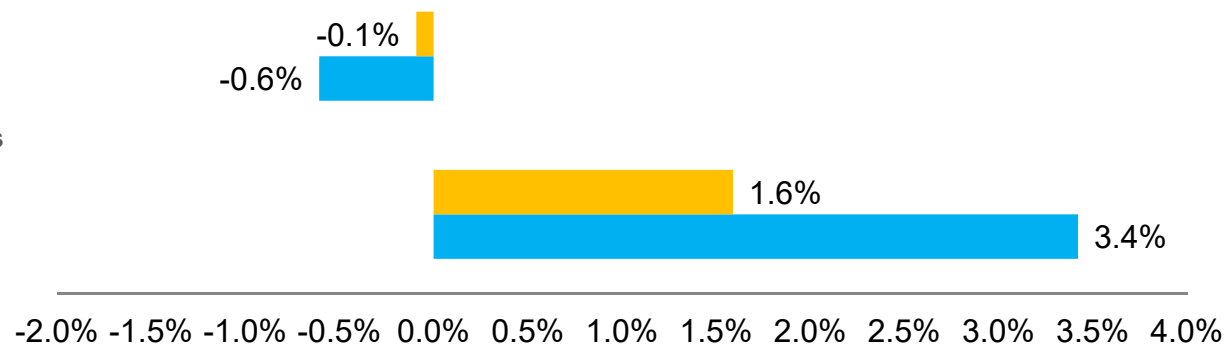
US Interest Rates +100bps



ACTIVE

S&P -10%

US Interest Rates +100bps



Risk 3.0: Scenario Analysis

US Scenarios

Federal Reserve Rate Regimes
Fiscal Policy Stance
Tax Reform

Global Scenarios

Central Bank Policy
Peak Oil
Gulf Tensions

European Scenarios

Brexit Negotiations
Europe Fragmentation/Breakup
Eurozone Populist Elections

Interest Rate Scenarios

US Rates Paradigm Shift
Reflation – Deflation
Rising Inflation – Global Rate Hikes

Emerging Markets /Asia Scenarios

US-China Trade Relations
Abenomics- Helicopter Money
North Korea Tensions

Market Technical Scenarios

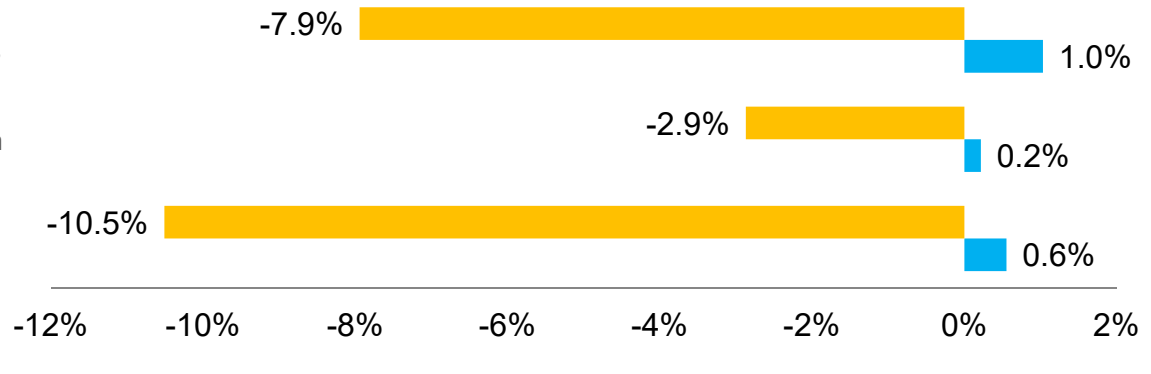
Volatility Regime Change
Tech Calamity
Value Reversal

Risk 3.0: Scenario Analysis

Endowment indicative stressed P&L for public markets investments

PORTFOLIO

- US Fed Rate Pause: Growth Concerns
- Brexit: No Deal
- US-China Trade: Global Protectionism



ACTIVE

- US Fed Rate Pause: Growth Concerns
- Brexit: No Deal
- US-China Trade: Global Protectionism

