



UNIVERSITY OF CALIFORNIA

Office of the Chief Investment Officer

Working Capital

Investment Review as of March 31, 2019

Growing Portfolios. Building Partnerships.

UC Investments



UC Working Capital

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

Investment Objective

Total Return Investment Pool

- Generate a rate of return, after all costs and fees, in excess of the policy benchmark, and consistent with liquidity, cash flow requirements, and risk budget

Short Term Investment Pool

- Maximize returns consistent with safety of principal, liquidity, and cash-flow requirements



UC Investments

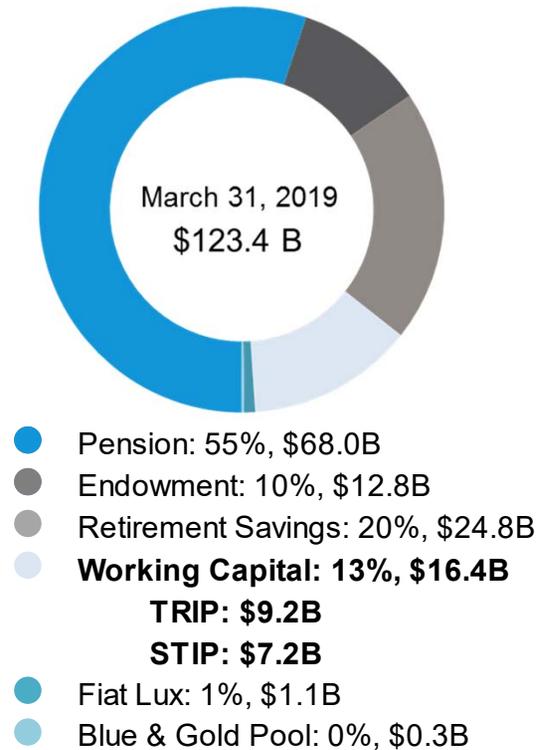
Mission

Growing Portfolios. Building Partnerships.
Delivering value through values.

Investment Products

- ▶ **Working Capital** assets: \$16.4 billion (as of 3/31/19)
- ▶ Investing **Endowment** assets since 1933 (86 years)
- ▶ Investing **Pension** assets since 1961 (58 years)
- ▶ Investing **Retirement Savings** assets since 1967 (52 years)
- ▶ Investing **Working Capital** since 1976 (43 years)
- ▶ Investing **Captive Insurance** assets since 2017 (2 years)
- ▶ Investing in **Blue & Gold** assets since 2019 (0 Years)

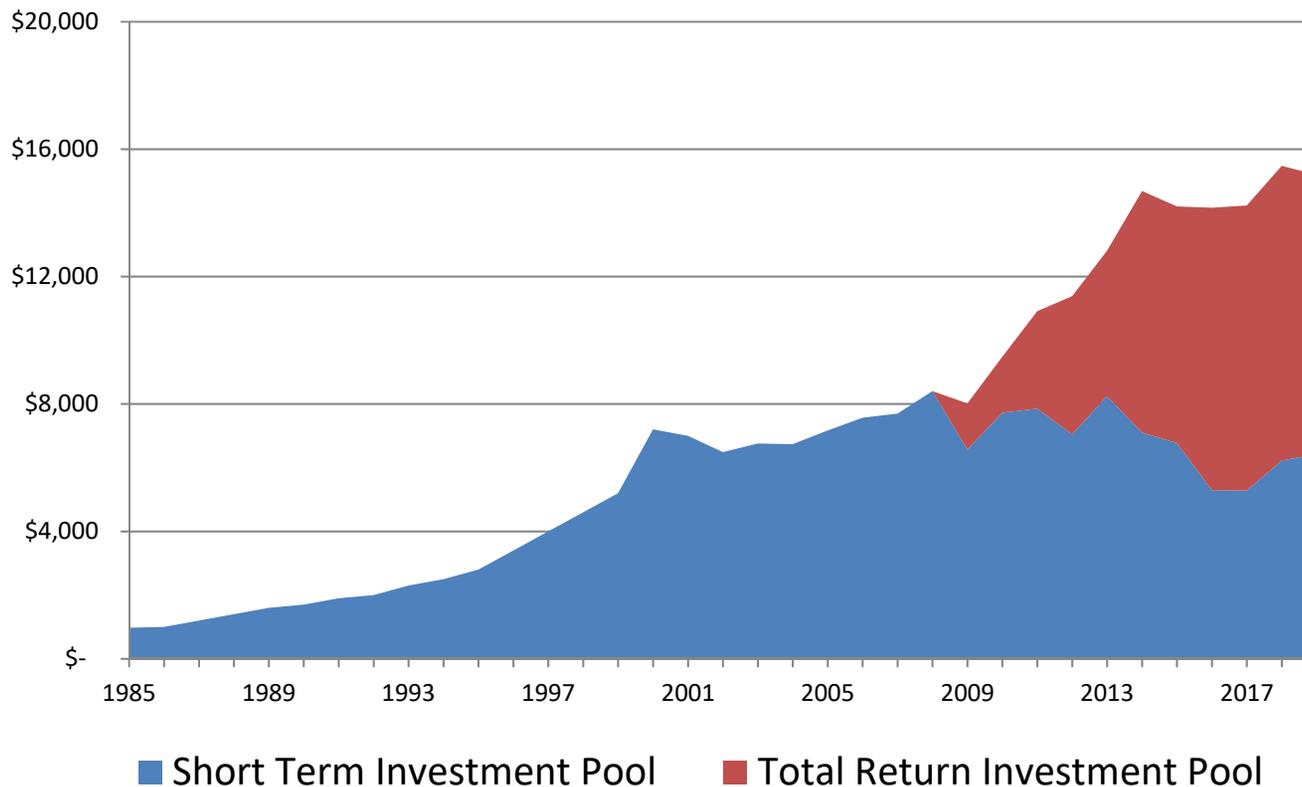
\$123.4 billion across 7 products





Working Capital Growth: 56% Total Return and 44% Short Term

Working Capital Assets 1985 - 2019



5 Year Growth

March 31, 2019
\$16.4 billion

1 Year ago
\$15.0 billion

5 Years ago
\$15.2 billion



Assets Under Management

	Total Return	Short Term	Total
December 31, 2018	\$8.8 billion	\$6.4 billion	\$15.2 billion
Market Gains / (Losses)	\$0.5 billion	\$0.0 billion	\$0.5 billion
Value Added	\$0.0 billion	\$0.0 billion	\$0.0 billion
Net Cash Flow	(\$0.1 billion)	\$0.8 billion	\$0.7 billion
March 31, 2019	\$9.2 billion	\$7.2 billion	\$16.4 billion



Total Return Investment Pool



Total Return: Assets Under Management

Assets Under Management Attribution

December 31, 2018	\$8.8 billion
Market Gains / (Losses)	\$0.5 billion
Value Added	\$0.0 billion
Net Cash Flow	(\$0.1 billion)
March 31, 2019	\$9.2 billion



Total Return: Asset Allocation

Relative Weight

	As of March 31, 2019	Market Value in \$ Billions	Percentage	Over/Underweight Relative to Policy	Policy Weight
	Growth	3.4	36.8%	1.8%	35.0%
	Public Growth	3.3	35.7%		
	Private Growth	0.1	1.1%		
	Income	4.6	49.7%	(0.3%)	50.0%
	Public Income	4.2	45.5%		
	Private Income	0.4	4.2%		
	Absolute Return	1.1	12.0%	(3.0%)	15.0%
	Cash	0.1	1.5%	1.5%	0.0%
	Total	9.2	100.0%	0.0%	100.0%



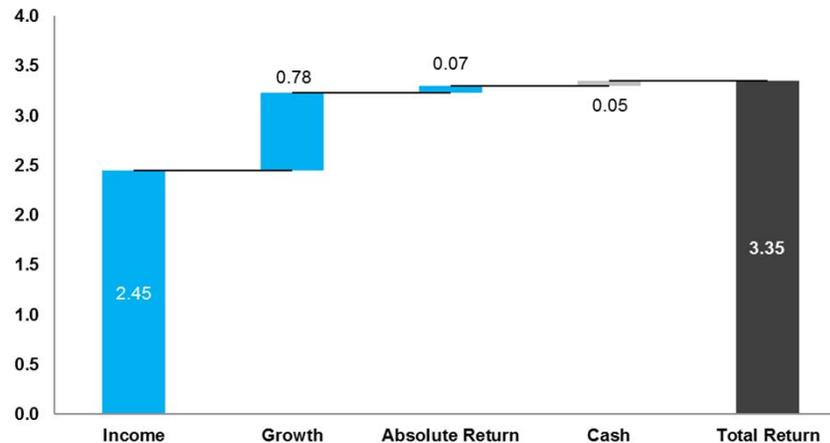
Total Return: Performance

Net Returns (%) As of March 31, 2019	Market Value		Annualized Returns						
	(\$ Million)	% Allocation	3 Month	Fiscal YTD	1 Year	3 Year	5 Year	10 Year Since Incept	
Total Return	9,231	100%	6.1	3.4	3.7	5.7	4.6	8.2	6.6
Total Return Policy Benchmark *			5.8	2.8	3.1	5.0	4.1	8.0	6.2
Value Added			0.3	0.6	0.6	0.7	0.5	0.2	0.4

Net Returns (%) As of June 30, 2018	One Year Returns								
	2018	2017	2016	2015	2014	2013	2012	2011	2010
Total Return	4.5	7.6	0.3	2.7	14.6	8.3	6.7	11.3	14.0
Total Return Benchmark *	4.3	6.5	1.4	1.2	14.5	8.0	5.8	11.4	14.6
Value Added	0.2	1.1	(1.1)	1.5	0.1	0.3	0.9	(0.1)	(0.6)

* Policy benchmark as of July 1, 2015 is 50% Barclays US Aggregate Index + 35% MSCI All Country World Investible Markets Index + 15% HFRX Absolute Return Index. Prior is a weighted average composite of the historical policy benchmarks and targets.

Fiscal Contribution to Return





Total Return: Attribution – FY 2018/2019

As of March 31, 2019

	Average Weight	Average Active Weight	Allocation Attribution	Selection Attribution	Total Attribution
Equity	36.6	1.6	(0.9)	0.0	(0.9)
Income	50.0	0.0	1.7	0.0	1.7
Absolute Return	11.9	-3.1	(0.3)	0.0	(0.3)
Cash	1.5	1.5	0.0	0.0	0.0
Total	100%	0.0%	0.6%	0.0%	0.6%



Total Return: Policy Benchmark

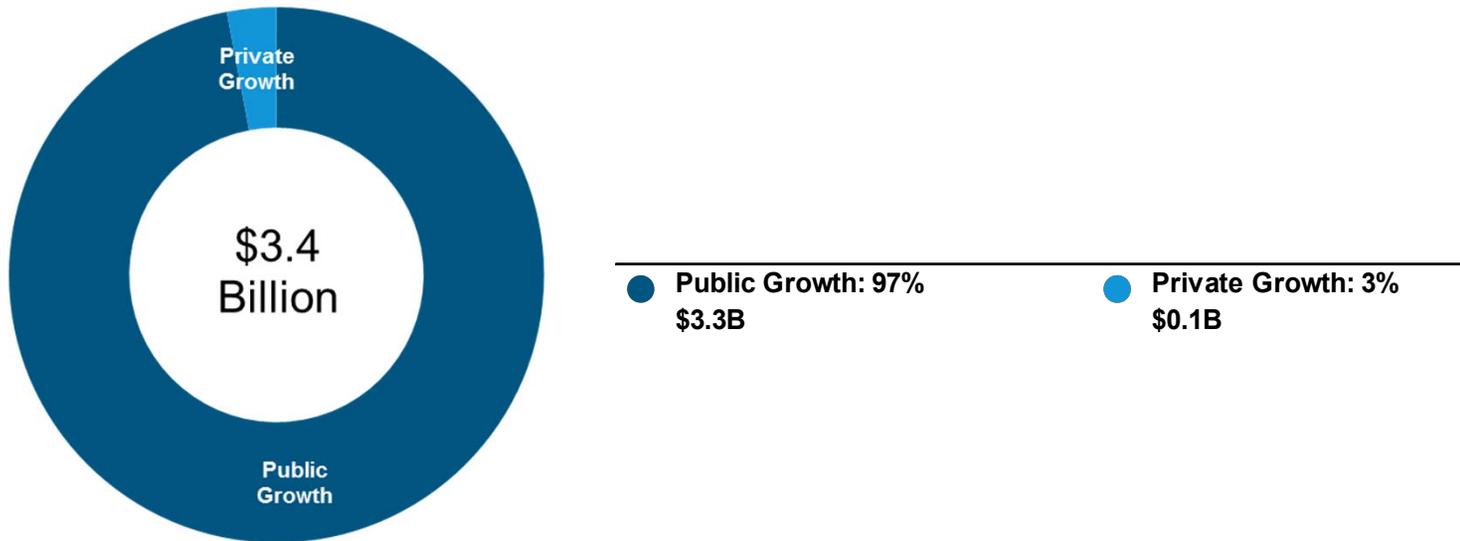
Asset Class	Benchmark Component	Target	Allowable Ranges	
			Min	Max
Total Equity (Growth)	MSCI All Country World Index Net IMI Tobacco Free	35.0%	30.0%	40.0%
Total Income	Barclays U.S. Aggregate Bond Index	50.0%	45.0%	55.0%
Absolute Return	HFRX Absolute Return Index	15.0%	5.0%	25.0%



Total Return: Growth

Net Returns (%) As of March 31, 2019	Market Value (\$ Million)	% Allocation	Annualized Returns					
			3 Month	FYTD	1 Year	3 Year	5 Year	10 Year
Growth	3,398	100%	12.2	2.1	3.2	11.1	6.6	12.6
Total Return Policy Benchmark *			12.2	1.2	2.0	10.7	8.0	10.8
<i>Value Added</i>			0.0	0.9	1.2	0.4	(1.4)	1.8
Public Growth	3,297	97%	12.3	1.6	2.6	10.7	6.6	12.6
Private Growth	101	3%	9.4	23.6	23.0	23.9	-	-

* Policy benchmark as of July 1, 2015 is MCSI ACWI IMI TF. Prior to that, policy would be a weighted average composite of the historical policy benchmarks and targets. Inception date for Public Growth is August 1, 2008; inception date for Private Growth November 1, 2015.





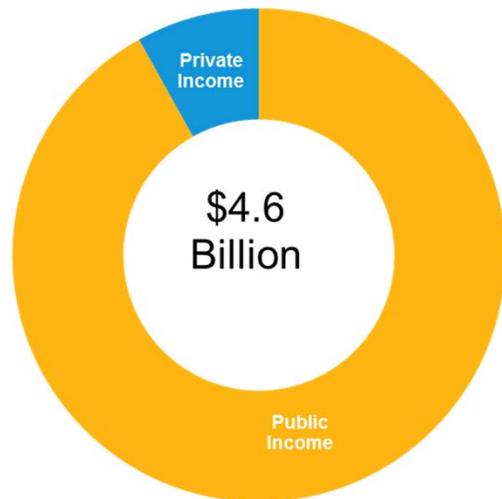
Total Return: Income and Cash

Net Returns (%) As of March 31, 2019	Market Value (\$ Million)	% Allocation	Annualized Returns					
			3 Month	FYTD	1 Year	3 Year	5 Year	10 Year
Income	4,577	100%	3.4	5.0	4.9	3.2	3.3	6.1
Total Return Policy Benchmark *			2.9	4.6	4.5	2.0	2.7	3.8
<i>Value Added</i>			<i>0.5</i>	<i>0.4</i>	<i>0.4</i>	<i>1.2</i>	<i>0.6</i>	<i>2.3</i>
Public Income	4,210	92%	3.4	4.8	4.6	3.0	3.3	6.0
Private Income	368	8%	4.1	6.9	7.3	5.1	-	-

* Policy benchmark as of July 1, 2015 is Barclays U.S. Aggregate Index and is shown for all periods. There was no total TRIP income performance composite and total income policy benchmark did not exist prior to July 1, 2015. Inception date is August 1, 2008 for Public Income, and November 1, 2015 for Private Income.

Net Returns (%) As of March 31, 2019	Market Value (\$ Million)	% Allocation	Annualized Returns				
			3 Month	Fiscal YTD	1 Year	3 Year	5 Year
Cash *	144	100%	0.6	1.7	2.2	1.7	1.5

* Does not include income received from participation in securities lending.



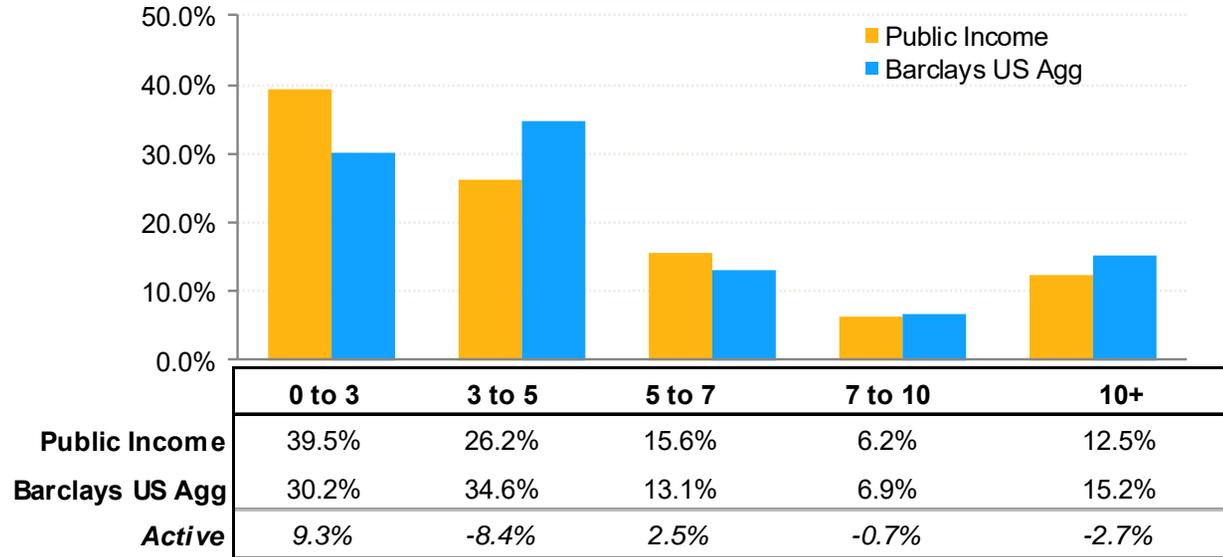
● Public Income: 92%
\$4.2B

● Private Income: 8%
\$0.4B

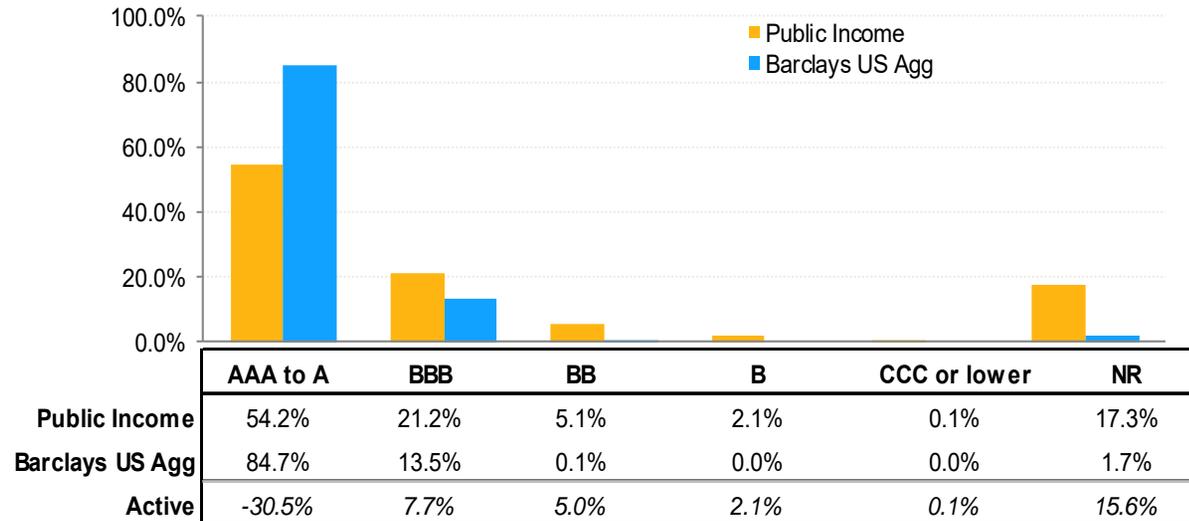


Total Return: Public Income Composition

Maturity Profile



Rating Distribution

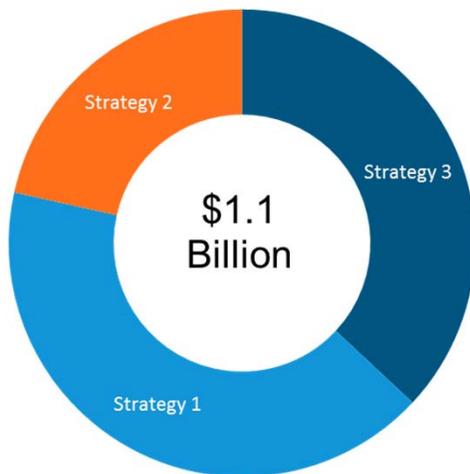




Total Return: Absolute Return

Net Returns (%) As of March 31, 2019	Market Value (\$ Million)	% Allocation	Annualized Returns					
			3 Month	FYTD	1 Year	3 Year	5 Year Since Incept	
Absolute Return	1,112	100%	0.4	0.6	0.9	0.9	1.1	1.6
Total Return Policy Benchmark *			0.6	(1.0)	(0.2)	1.4	1.6	2.2
<i>Value Added</i>			<i>(0.2)</i>	<i>1.6</i>	<i>1.1</i>	<i>(0.5)</i>	<i>(0.5)</i>	<i>(0.6)</i>

* Prior to July 1, 2015, the portfolio benchmark was 50% HFRX Absolute Return + 50% HFRX Market Directional. Thereafter the benchmark has been the HFRX Absolute Return. Since inception date of Absolute Return is August 2013.



● Strategy 1: 41%
\$0.5B

● Strategy 2: 22%
\$0.2B

● Strategy 3: 37%
\$0.4B

Risk 1.0 : Risk Measurement

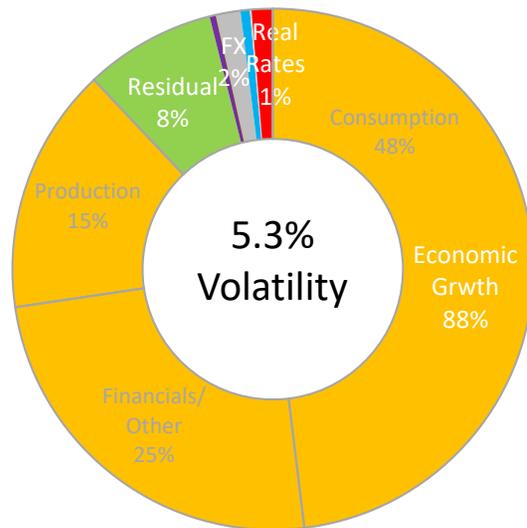
*Portfolio volatility drops slightly, quarter on quarter, after a large spike in Q4 2018.
Tracking error also drops over the same period.*

Name	Benchmark	Weight (%)	Portfolio Risk (%)		Benchmark Risk (%)		Active Risk (%)	
			Standalone Volatility	QoQ Change	Standalone Volatility	QoQ Change	Tracking Error	QoQ Change
TRIP Total	Policy (Blend)	100	5.3	↓ (0.3)	4.8	(0.1)	0.8	(0.5)
Income	Barclay's Aggregate	50	2.3	↑ 0.2	2.6	0.0	1.1	(0.1)
Growth	MSCI ACWI ex Tobacco	37	13.3	↓ (0.7)	13.1	(0.7)	0.5	(0.0)
Absolute Return	HFRXARUCR	12	2.2	↓ (5.5)	1.9	(0.0)	2.2	(5.3)
Cash		2	0.3	↓ (0.1)	0.0	0.0	0.3	(0.1)

Macroeconomic Risk Factors

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

Working Capital



Portfolio Standalone
Risk Factor Decomposition

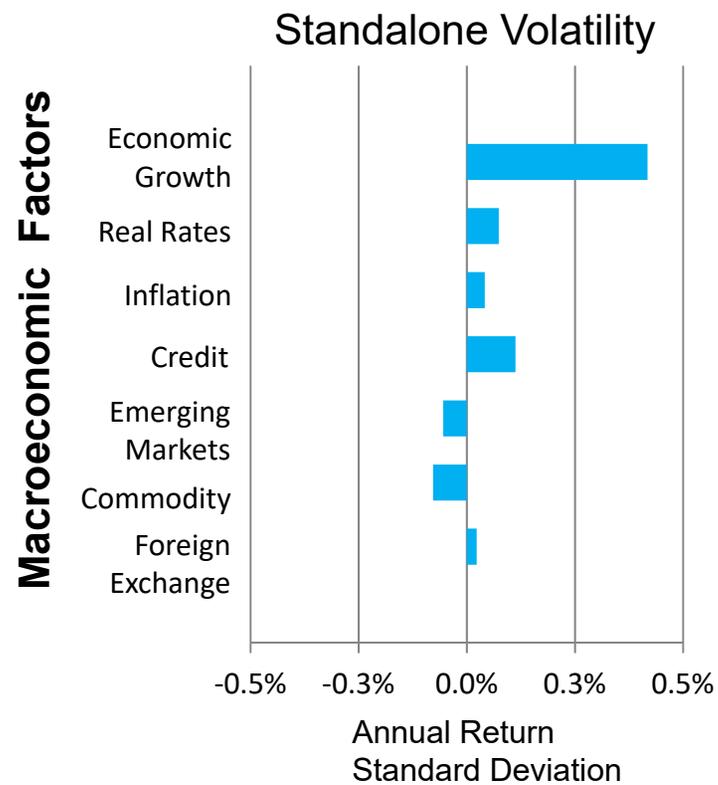
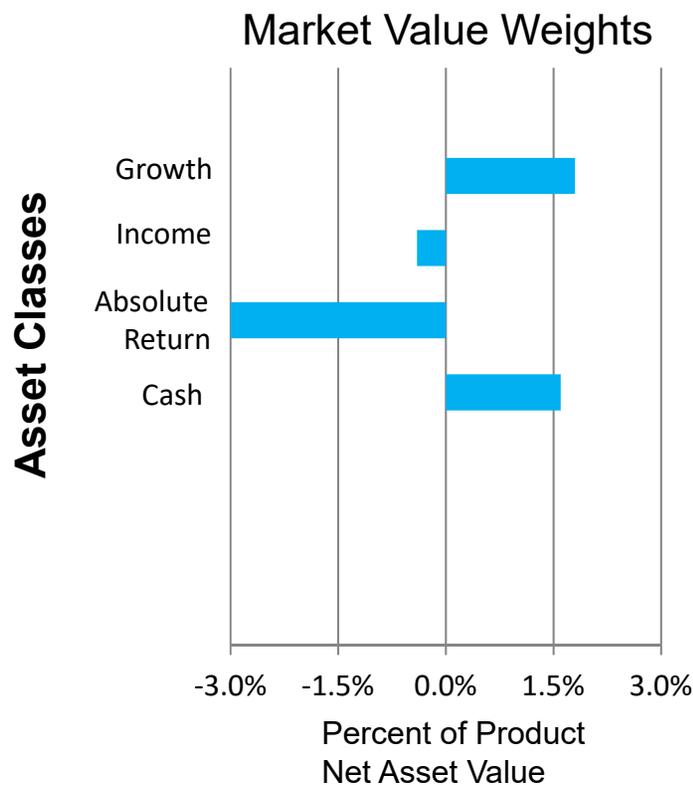
Factor Name	Factor Description
Economic Growth	Proxied by broad, developed market equity index returns
Real Rates	Inflation-linked bond returns
Inflation	Return of long nominal bonds, short inflation-linked bonds portfolio
Credit	Return of long corporate bonds, short nominal bonds portfolio
Commodity	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 loads mainly on Economic Growth on an active basis (consistent with Asset Allocation)

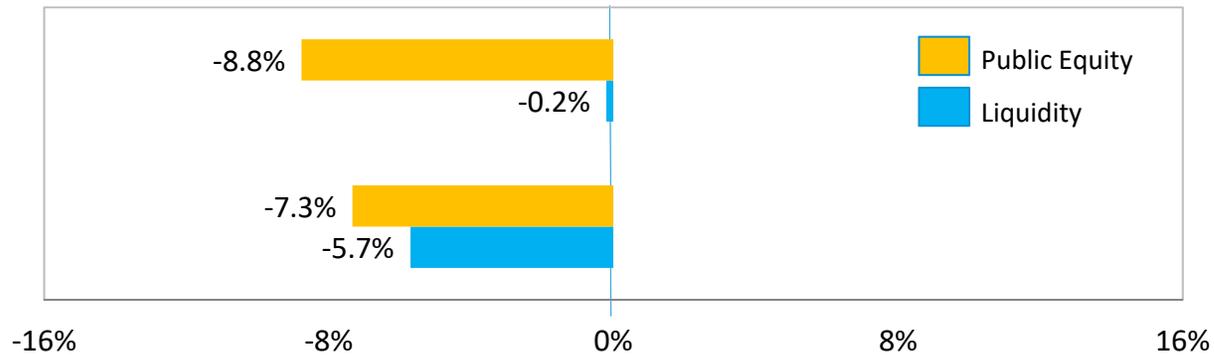
Working Capital Active Exposures



Risk 2.0 : Stress Tests

Working Capital indicative stressed P&L for public markets investments

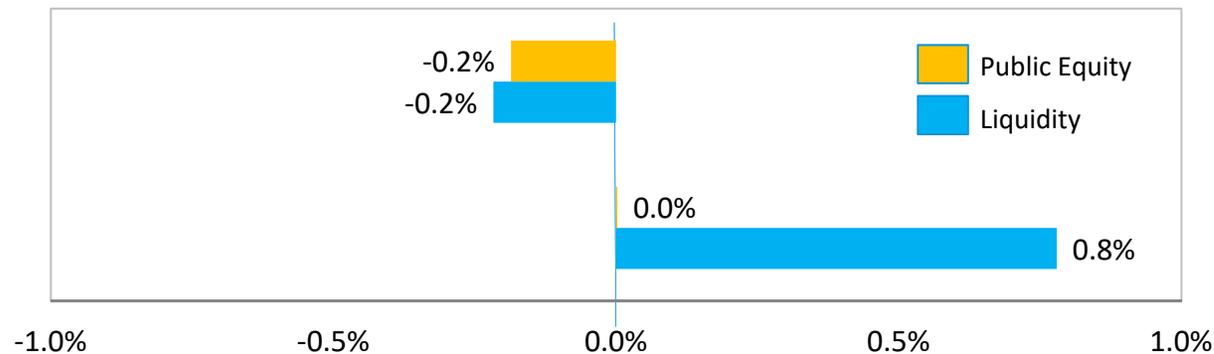
PORTFOLIO



S&P -10%

**US Interest Rates
+100bps**

ACTIVE



S&P -10%

**US Interest Rates
+100bps**

Risk 3.0 : Scenario Analysis

src : BlackRock



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

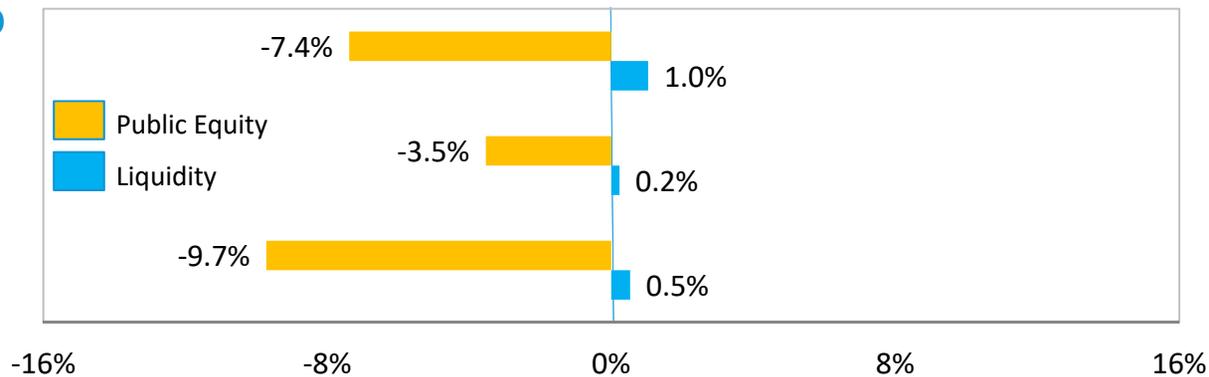
Market Technical Scenarios

- Volatility Regime Change
- Tech Calamity
- Value Reversal

Risk 3.0 : Scenario Analysis

Working Capital indicative stressed P&L for public markets investments

PORTFOLIO

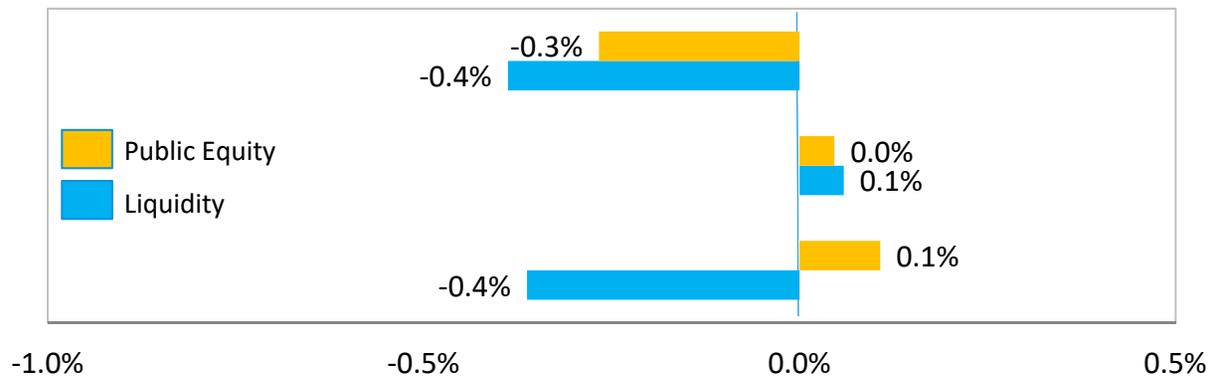


**US Fed Rate Pause :
Growth Concerns**

Brexit : No Deal

**US-China Trade :
Global Protectionism**

ACTIVE



**US Fed Rate Pause :
Growth Concerns**

Brexit : No Deal

**US-China Trade :
Global Protectionism**



Short Term Investment Pool



STIP: Assets Under Management

Assets Under Management

December 31, 2018	\$6.4 billion
Market Gains	\$0.0 billion
Value Added	\$0.0 billion
Net Cash Flow	\$0.8 billion
March 31, 2019	\$7.2 billion

Asset Allocation

As of March 31, 2019

Corporates	\$1.7	22.9%
Commercial Paper	\$3.0	42.7%
Governments	\$2.5	34.4%
Total *	\$7.2 billion	100.0%

*STIP Assets exclude:

- (a) approximately \$3.4 billion internal receivable from campuses and medical centers for funds transferred to the Retirement Plan,
- (b) approximately \$2.6 billion held on behalf of the Retirement Plan,
- (c) approximately \$325 million held on behalf of the General Endowment Pool,
- (d) approximately \$168 million held on behalf of the UC Retirement Savings Program,
- (e) approximately \$711.5 million receivable from certain eligible University employees who have received loans under the University's Mortgage Origination Program, and
- (f) approximately \$135.8 million held on behalf of the Total Return Investment Pool.



STIP: Performance

Net Returns (%) As of March 31, 2019	Market Value		Annualized Returns							
	(\$ Million)	% Allocation	3 Month	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	20 Year	25 Year
Short Term	7,197	100%	0.6	1.7	2.2	1.7	1.5	2.0	3.3	3.9
Policy Benchmark *			0.6	1.9	2.4	1.4	1.0	0.7	2.2	3.0
<i>Value Added</i>			0.0	(0.2)	(0.2)	0.3	0.5	1.3	1.1	0.9

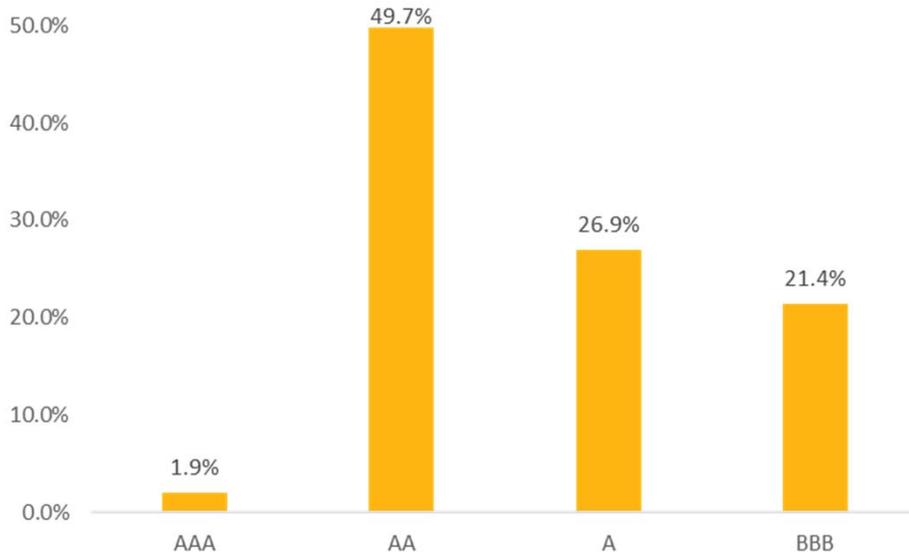
Net Returns (%) As of June 30, 2018	One Year Returns										
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Short Term	1.7	1.3	1.3	1.4	1.6	2.1	2.4	2.6	2.8	3.7	4.8
Policy Benchmark *	1.6	0.7	0.6	0.4	0.2	0.2	0.2	0.5	0.8	1.6	3.4
<i>Value Added</i>	0.1	0.6	0.7	1.0	1.4	1.9	2.2	2.1	2.0	2.1	1.4

* STIP Policy Benchmark is based on a weighted average of the 2 Year Treasury Income Note + 30-Day Treasury Bill

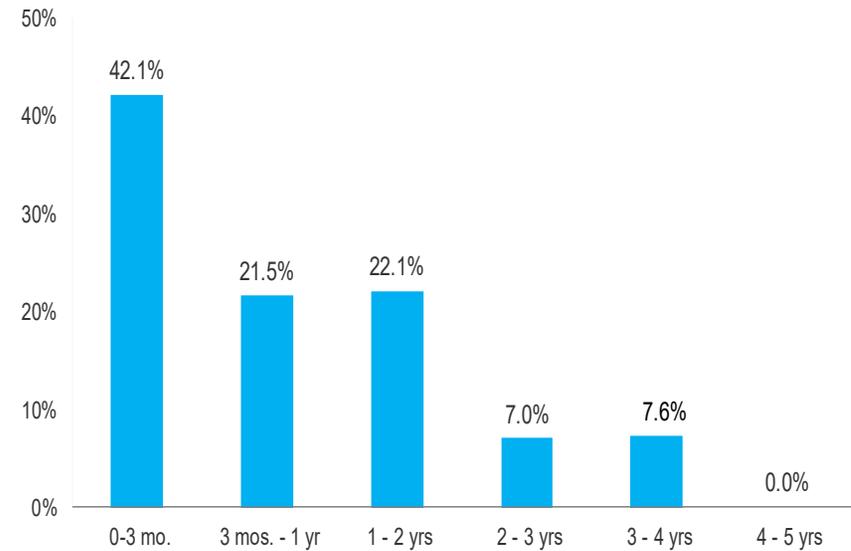


STIP: Portfolio Composition

Rating Distribution



Maturity Profile





Short Term Policy Benchmark

Short Term	Benchmark Component
Short Term	Weighted Average of Income Return on a Constant Maturity Two-Year U.S. Treasury Note and the Return on U.S. 30-Day Treasury Bills