



UNIVERSITY OF CALIFORNIA

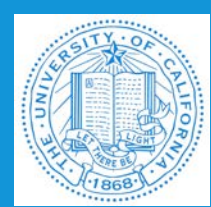
Office of the Chief Investment Officer

Working Capital

Investment Review as of June 30, 2018

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



Office of the Chief Investment Officer

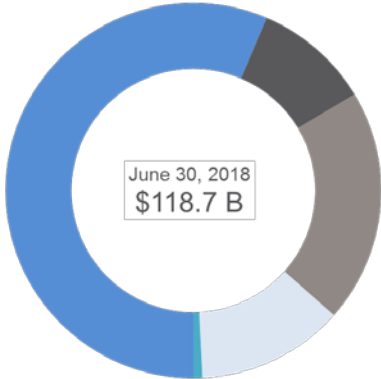
Mission

Growing Portfolios. Building Partnerships.
Delivering value through values.

Investment Products

- ▶ **Working Capital** assets: \$14.4 billion (as of 6/30/18)
- ▶ Investing **Endowment** assets since 1933 (85 years)
- ▶ Investing **Pension** assets since 1961 (57 years)
- ▶ Investing **Retirement Savings** assets since 1967 (51 years)
- ▶ Investing **Working Capital** since 1976 (42 years)
- ▶ Investing **Captive Insurance** assets since 2016 (2 years)

\$118.7 billion across 6 products



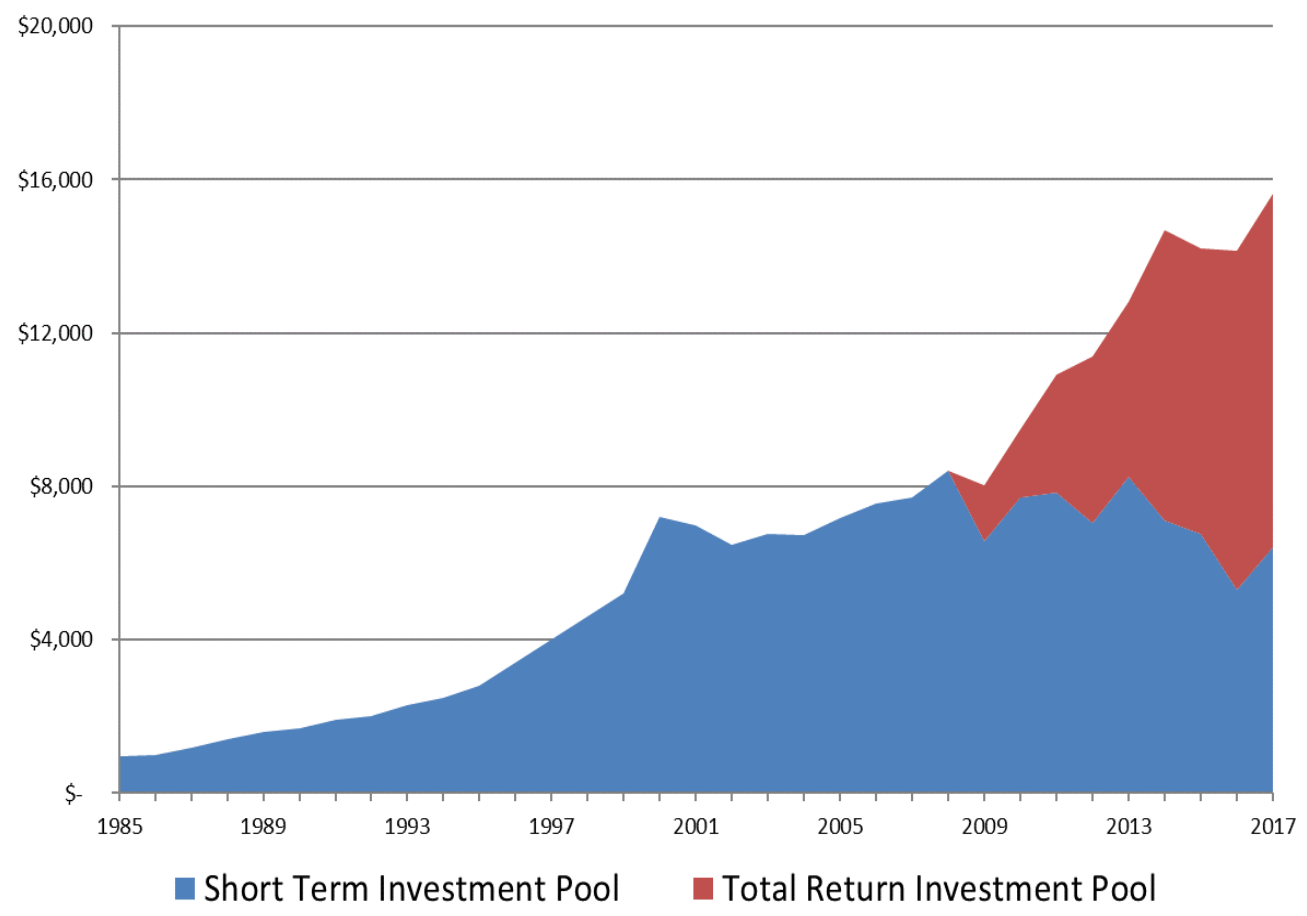
- Pension: 56%, \$66.8B
- Endowment: 10%, \$12.3B
- Retirement Savings: 20%, \$24.3B
- **Working Capital: 12%, \$14.4B**
- **TRIP: \$9.3B**
- **STIP: \$5.1B**
- Fiat Lux: 1%, \$0.9B



Working Capital Growth: 65% Total Return and 35% Short Term

Working Capital Assets 1985 - 2018

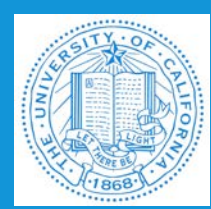
5 Year Growth



June 30, 2018
\$14.4 billion

1 Year ago
\$14.2 billion

5 Years ago
\$13.8 billion

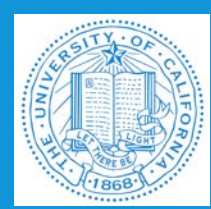


Assets Under Management

	Total Return	Short Term	Total
June 30, 2017	\$8.9 billion	\$5.3 billion	\$14.2 billion
Market Gains	\$0.4 billion	\$0.1 billion	\$0.5 billion
Value Added	\$0.0 billion	\$0.1 billion	\$0.1 billion
Net Cash Flow	\$0.0 billion	(\$0.4 billion)	(\$0.4 billion)
June 30, 2018	\$9.3 billion	\$5.1 billion	\$14.4 billion

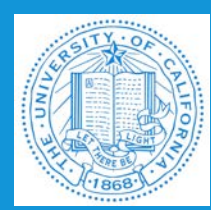


Total Return Investment Pool



Total Return: Assets Under Management

June 30, 2017	\$8.9 billion
Market Gains	\$0.4 billion
Value Added	\$0.0 billion
Net Cash Flow	\$0.0 billion
June 30, 2018	\$9.3 billion



Total Return: Asset Allocation

Relative Weight



	Market Value in \$ Billions	Percentage	Over/Underweight Relative to Policy	Policy Weight
Growth	3.4	36.4%	1.4%	35.0%
Public Growth	3.3	35.6%		
Private Growth	0.1	0.8%		
Income	4.4	47.7%	(2.3%)	50.0%
Public Income	4.0	43.7%		
Private Income	0.4	4.0%		
Absolute Return	1.1	11.8%	(3.2%)	15.0%
Cash	0.4	4.1%	4.1%	0.0%
Total TRIP	9.3	100.0%	0.0%	100.0%



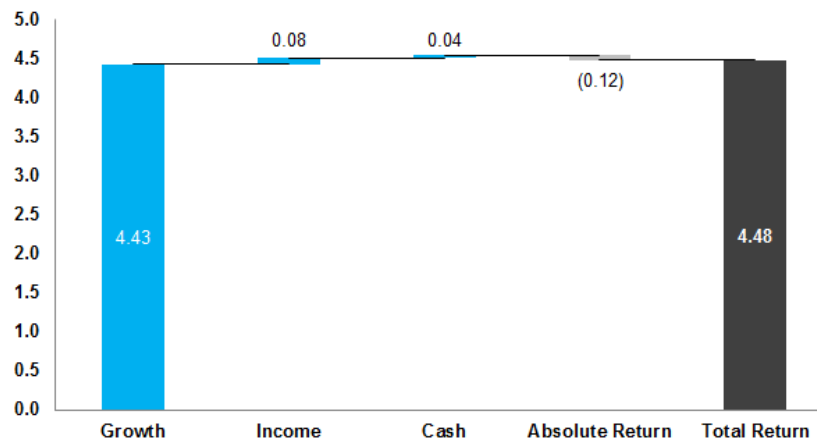
Total Return: Performance

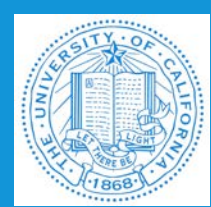
Net Returns (%) As of June 30, 2018	Annualized Returns					Since Inception (August 2008)
	3 Month	1 Year	3 Year	5 Year	7 Year	
Total Return	0.4	4.5	4.1	5.8	6.3	6.8
Total Return Benchmark	0.3	4.3	4.0	5.5	5.9	6.7
Value Added	0.1	0.2	0.1	0.3	0.4	0.1

Net Returns (%) As of June 30	One Year Returns								
	2018	2017	2016	2015	2014	2013	2012	2011	2010
Total Return	4.5	7.7	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	1.2	(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.

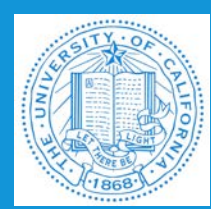
Fiscal Year Contribution to Return - Percentage (%)





Total Return: Attribution – FY 2017/18

As of June 30, 2018	Average Weight	Average Active Weight	Allocation Attribution	Selection Attribution	Total Attribution
Equity	36.9	1.9	0.0	0.3	0.3
Income	47.9	(2.1)	0.0	0.4	0.4
Absolute Return	14.2	(0.8)	0.0	(0.5)	(0.5)
Cash	1.0	1.0	0.0	0.0	0.0
Total TRIP	100.0%	0.0%	0.0%	0.2%	0.2%



Total Return: Policy Benchmark

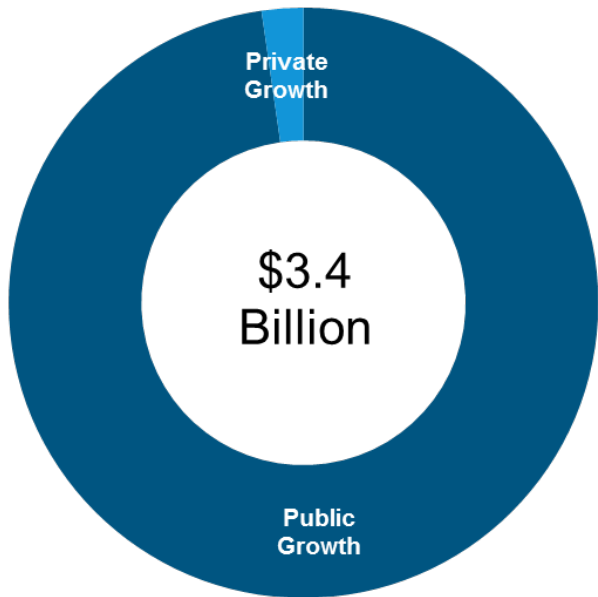
Asset Class	Benchmark Component	Target	Allowable Ranges	
			Min	Max
Total Equity (Growth)	MSCI All Country World Index Net IMI Tobacco Free	35.0%	30.0%	40.0%
Total Income	Barclays U.S. Aggregate Bond Index	50.0%	45.0%	55.0%
Absolute Return	HFRX Absolute Return Index	15.0%	5.0%	25.0%



Total Return: Growth

Net Returns (%) As of June 30, 2018	Market Value (\$ Million)	% Allocation	Annualized Returns					Since Inception
			3 Month	1 Year	3 Year	5 Year	7 Year	
Growth	3,373	100%	1.0	12.1	8.0	9.8	9.7	7.5
MSCI All Country World IMI TF Index (net dividends)			0.8	11.6	8.4	10.7	9.3	6.3
<i>Value Added</i>			<i>0.2</i>	<i>0.5</i>	<i>(0.4)</i>	<i>(0.9)</i>	<i>0.4</i>	<i>1.2</i>
Public Growth	3,296	98%	1.0	11.9	7.6	9.8	9.7	7.5
Private Growth	77	2%	(0.5)	19.4	-	-	-	22.8

* 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.



- **Public Growth: 98%**
\$3.3B
- **Private Growth: 2%**
\$0.1B



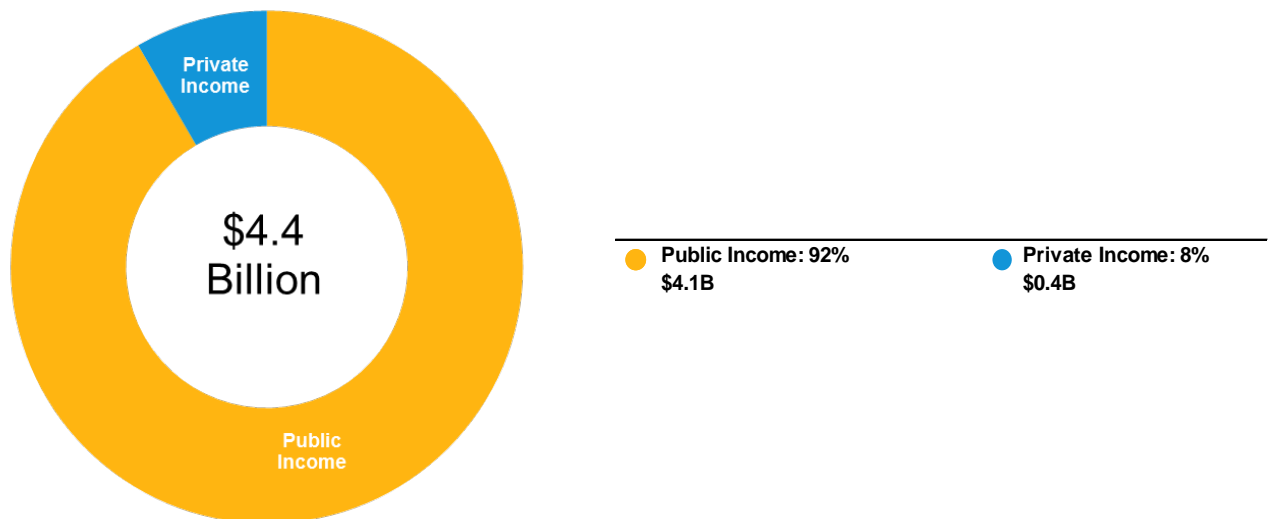
Total Return: Income and Cash

Net Returns (%) As of June 30, 2018	Market Value (\$ Million)	% Allocation	Annualized Returns					Since Inception
			3 Month	1 Year	3 Year	5 Year	7 Year	
Income	4,417	100%	(0.1)	0.4	2.5	3.3	4.0	5.5
Barclays U.S. Aggregate Bond Index			(0.2)	(0.4)	1.7	2.3	2.6	3.8
<i>Value Added</i>			<i>0.1</i>	<i>0.8</i>	<i>0.8</i>	<i>1.0</i>	<i>1.4</i>	<i>1.7</i>
Public Income	4,050	92%	(0.2)	0.0	2.5	3.3	4.0	5.5
Private Income	366	8%	0.4	3.6	3.2	-	-	3.2

* 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 June 30, 2018	Market Value (\$ Million)	% Allocation	Annualized Returns		
			3 Month	1 Year	3 Year
Cash	379	100%	0.5	1.5	1.3

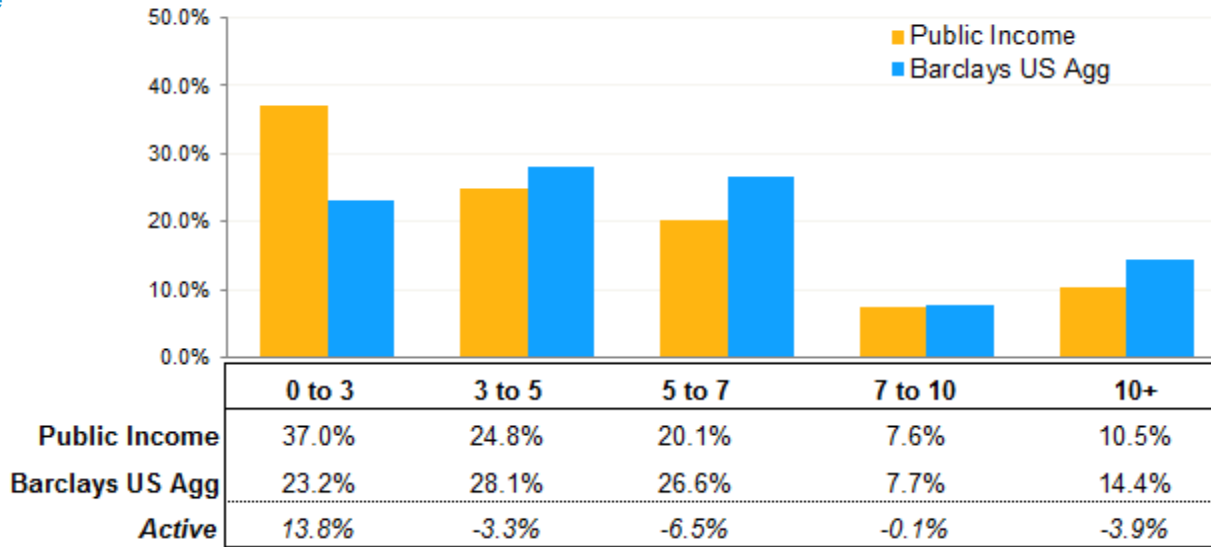
* Does not include income received from participation in securities lending.



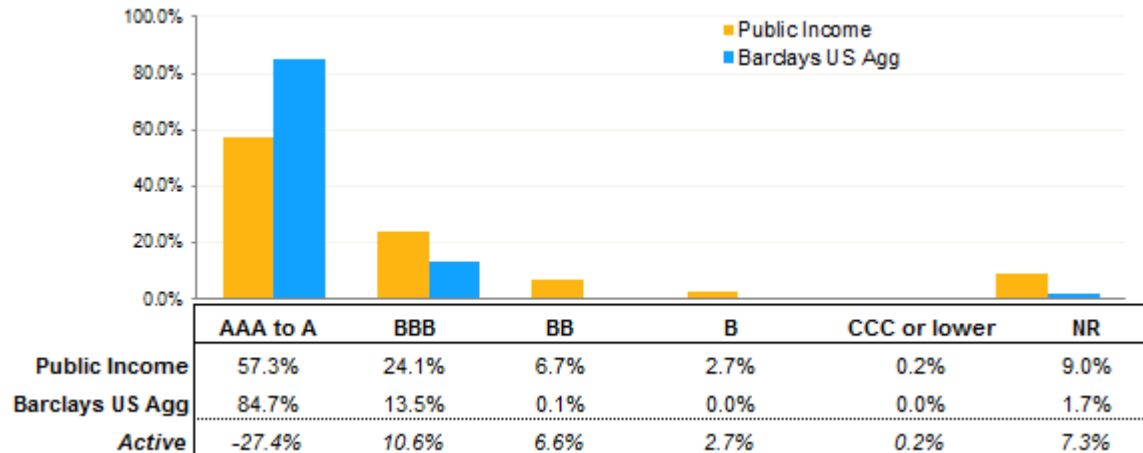


Total Return: Public Income Composition

Maturity Profile



Rating Distribution

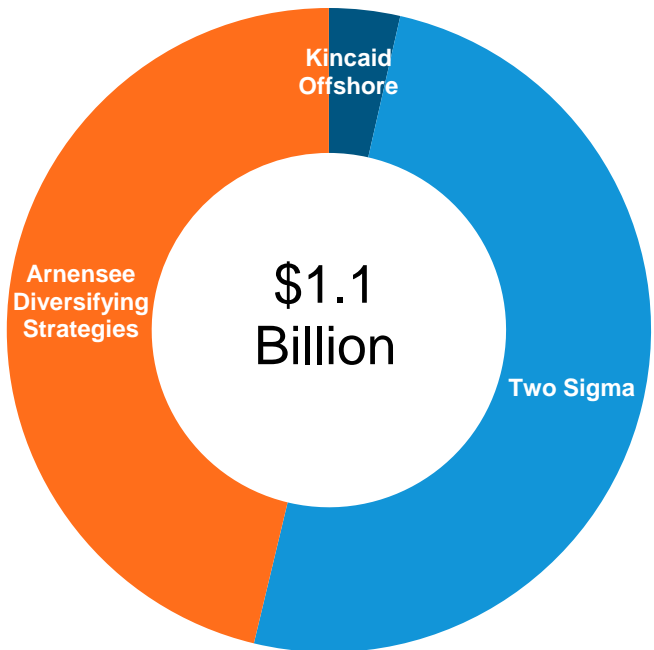




Total Return: Absolute Return

Net Returns (%) As of June 30, 2018	Market Value		3 Month	Annualized Returns		Since Inception
	(\$ Million)	% Allocation		1 Year	3 Year	
Absolute Return	1,089	100%	0.3	(0.5)	0.3	1.8
HFRX Absolute Return			0.7	3.0	1.9	2.7
<i>Value Added</i>			<i>(0.4)</i>	<i>(3.5)</i>	<i>(1.6)</i>	<i>(0.9)</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.



- Kincaid Offshore: 4%
\$38.8M
- Two Sigma: 50%
\$546.2M
- Arnensee Diversifying Strategies: 46%
\$503.5M

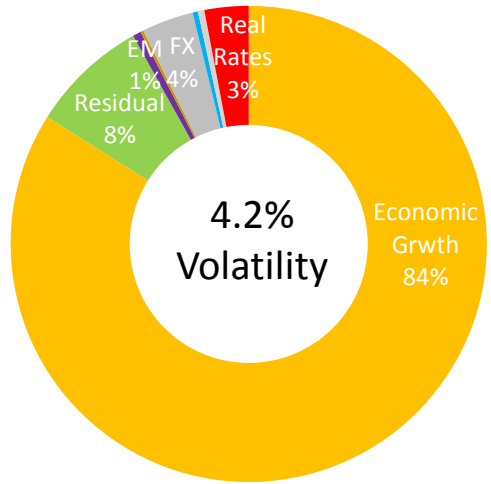


Total Return: Risk Measurement

Name	Beta vs Benchmark	Portfolio Risk (%)		Benchmark Risk (%)		Active Risk (%)	
	Current	Standalone Volatility	QoQ Change	Standalone Volatility	QoQ Change	Tracking Error	QoQ Change
TRIP Total		4.2	<i>(0.2)</i>	3.8	<i>(0.2)</i>	0.9	0.0
Income	0.85	2.7	0.2	3.1	0.1	1.0	<i>(0.1)</i>
Growth	1.00	10.2	<i>(0.2)</i>	10.1	<i>(0.2)</i>	0.4	<i>(0.0)</i>
Absolute Return	0.73	3.8	0.9	1.8	0.3	3.6	0.7
Cash	0.00	0.5	0.0	0.0	0.0	0.5	0.0



High Level Macroeconomic Risk Factors



Portfolio Standalone Risk Factor Decomposition

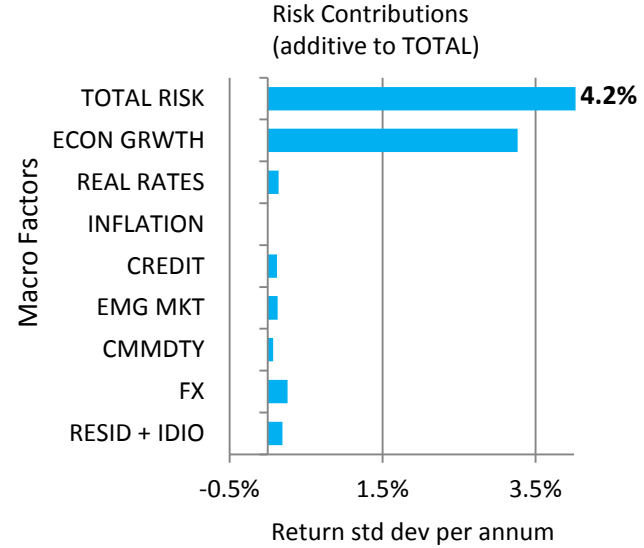
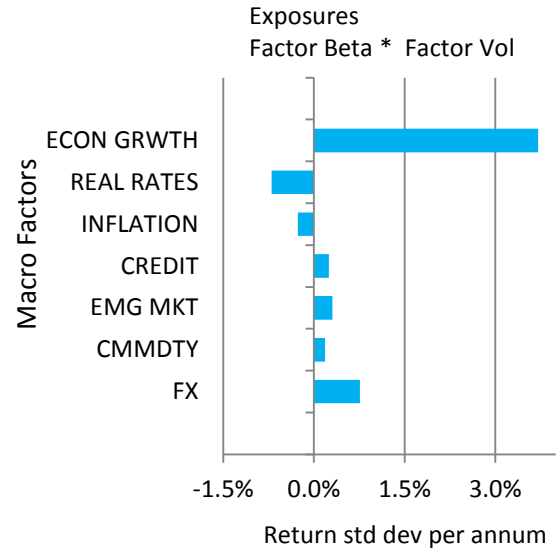
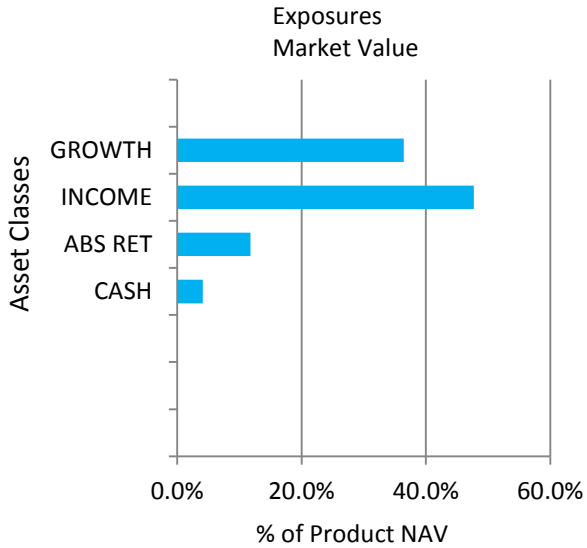
Factor Name	Factor Description
Economic Growth	Proxied by broad, developed market equity index returns
Real Rates	Inflation-linked bond returns
Inflation	Return of long nominal bonds, short inflation-linked bonds portfolio
Credit	Return of long corporate bonds, short nominal bonds portfolio
Commodity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

* "Residual Risk" is any risk which does not load on to the high level macro factors. This risk often corresponds to non-strategic, non-tactical level risk decisions, e.g. individual public equity manager sector tilts and stock selection decisions. This finer scale risk is captured separately, with more granular risk models.

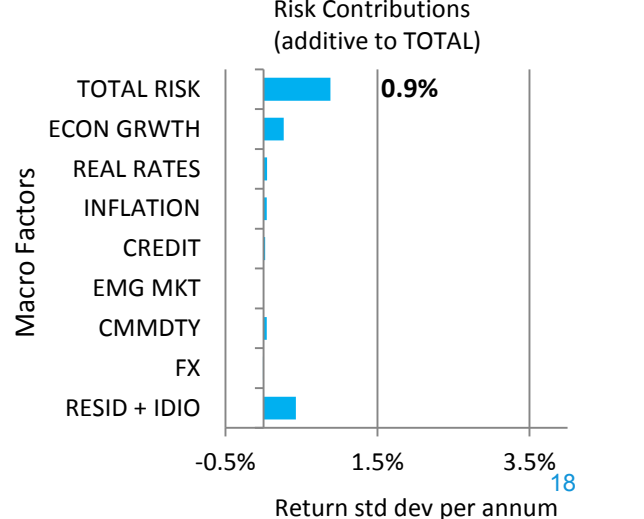
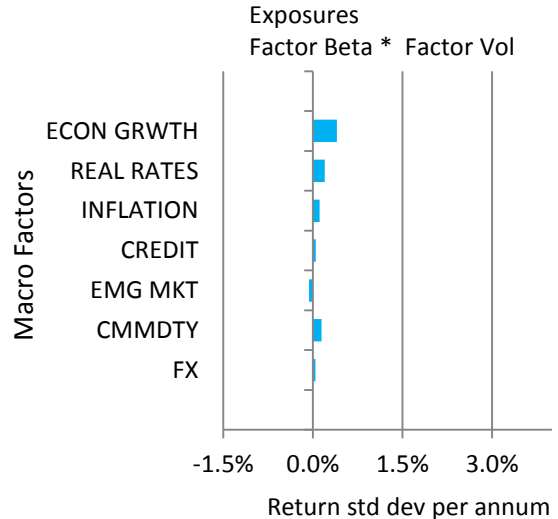
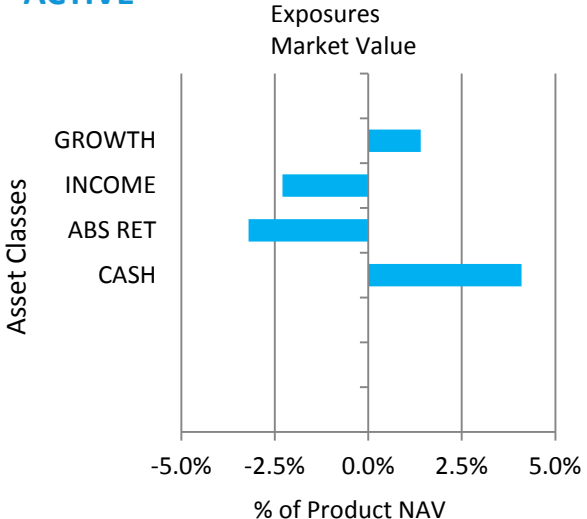


Asset Allocation vs Macroeconomic Risk Factors

PORTFOLIO



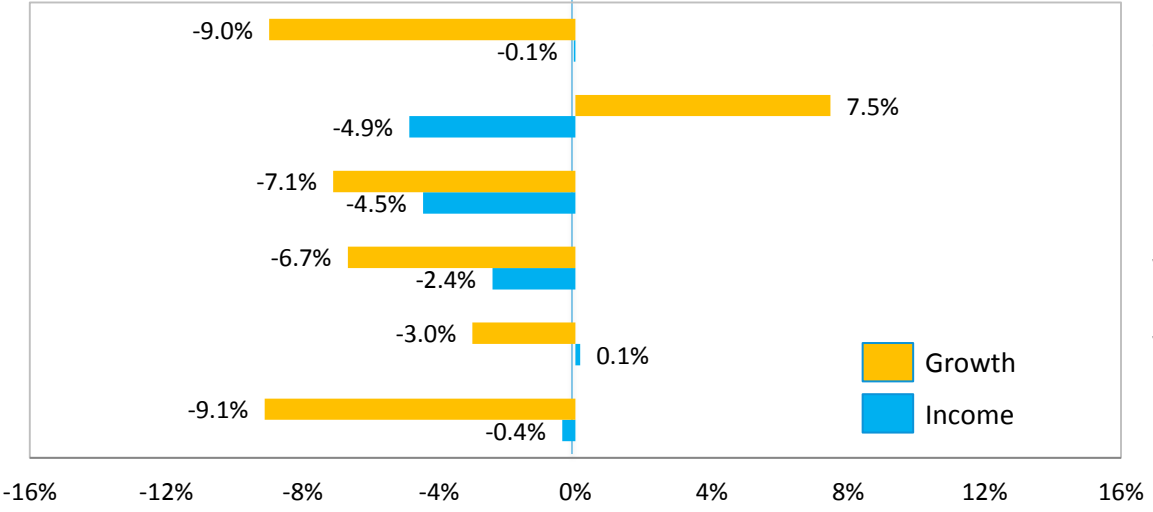
ACTIVE





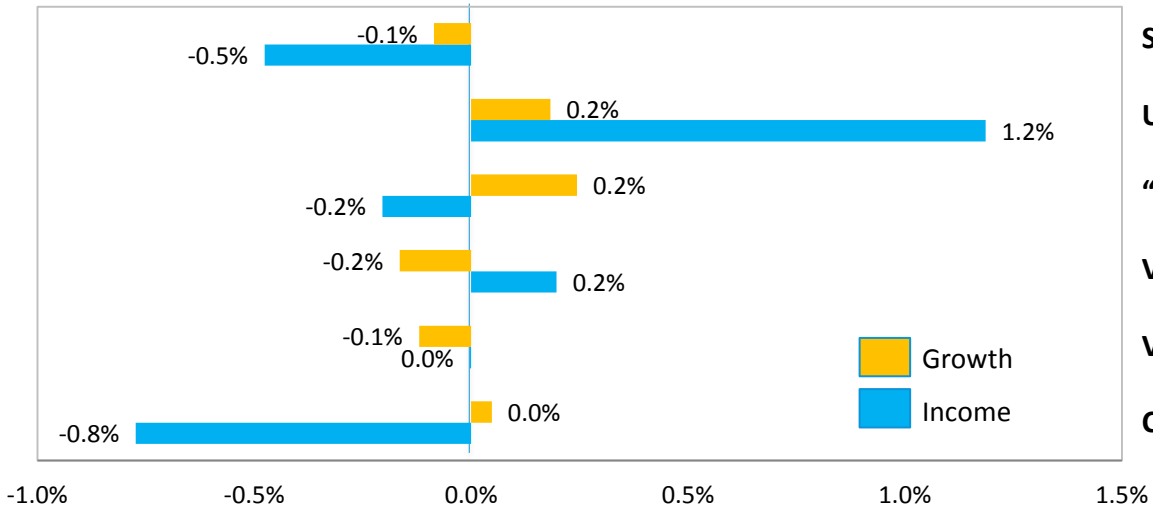
Stress Tests and Scenario Analysis

PORTFOLIO



- S&P -10%
- US TSY +100BPS
- "Taper Tantrum" 2013
- Volatility Regime Change (Hypothetical)
- Value Reversal (Hypothetical)
- China Credit Crunch (Hypothetical)

ACTIVE



- S&P -10%
- US TSY +100BPS
- "Taper Tantrum" 2013
- Volatility Regime Change (Hypothetical)
- Value Reversal (Hypothetical)
- China Credit Crunch (Hypothetical)



Short Term Investment Pool



STIP: Assets Under Management

Assets Under Management

June 30, 2017	\$5.3 billion
Market Gains	\$0.1 billion
Value Added	\$0.1 billion
Net Cash Flow	(\$0.4 billion)
June 30, 2018	\$5.1 billion

Asset Allocation

As of June 30, 2018

Corporates	\$1.2	23.4%
Commercial Paper	\$2.0	39.5%
Governments	\$1.9	37.1%
Total	\$5.1 billion	100.0%

* STIP Assets exclude:

- (a) approximately \$3.0 billion internal receivable from campuses and medical centers for funds transferred to the Retirement Plan,
- (b) approximately \$3.0 billion held on behalf of the Retirement Plan,
- (c) approximately \$1.1 billion held on behalf of the General Endowment Pool,
- (d) approximately \$490 million held on behalf of the UC Retirement Savings Program,
- (e) approximately \$420.5 million receivable from certain eligible University employees who have received loans under the University's Mortgage Origination Program, and
- (f) approximately \$379 million in TRIP.



STIP: Performance

Net Returns (%) As of June 30, 2018	Annualized Returns							
	3 Month	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year	25 Year
Short Term	0.5	1.7	1.4	1.4	1.7	2.1	3.4	4.0
Policy Benchmark	0.5	1.5	0.9	0.7	0.5	0.7	2.3	3.0
<i>Value Added</i>	<i>0.0</i>	<i>0.2</i>	<i>0.5</i>	<i>0.7</i>	<i>1.2</i>	<i>1.4</i>	<i>1.1</i>	<i>1.0</i>

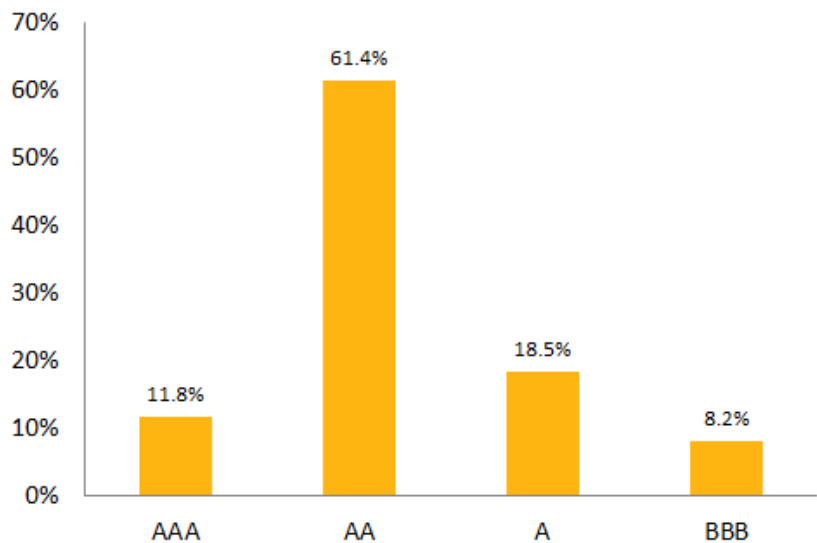
Net Returns (%) As of June 30	Annualized Returns										
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Short Term	1.7	1.3	1.3	1.4	1.6	2.1	2.4	2.6	2.8	3.7	4.8
Policy Benchmark	1.5	0.7	0.6	0.4	0.2	0.2	0.2	0.5	0.8	1.6	3.4
<i>Value Added</i>	<i>0.2</i>	<i>0.6</i>	<i>0.7</i>	<i>1.0</i>	<i>1.4</i>	<i>1.9</i>	<i>2.2</i>	<i>2.1</i>	<i>2.0</i>	<i>2.1</i>	<i>1.4</i>

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

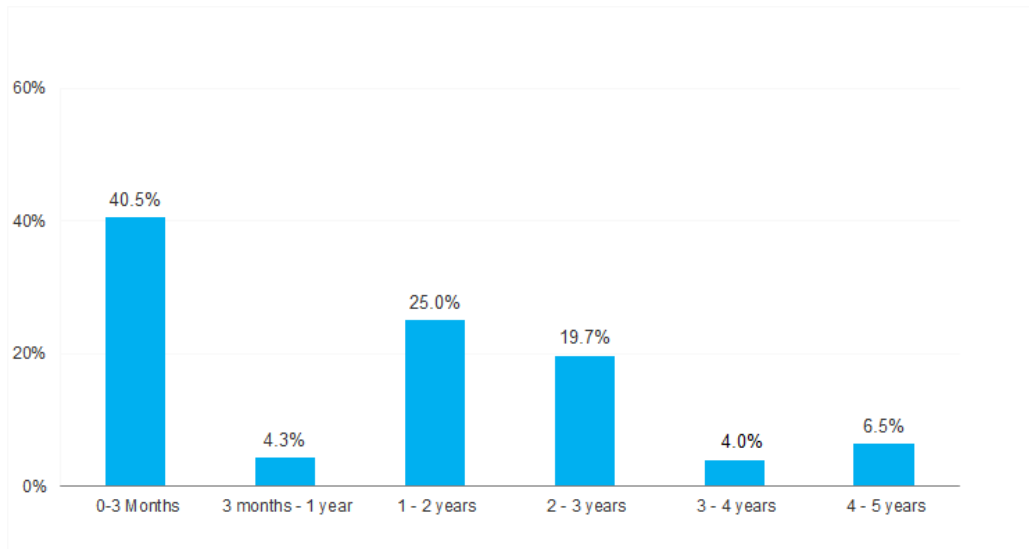


STIP: Portfolio Composition

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