



UNIVERSITY OF CALIFORNIA

Office of the Chief Investment Officer

Growing Portfolios Building Partnerships

Working Capital

Investment Review as of September 30, 2017

UC Investments

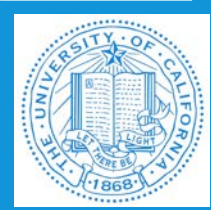


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Office of the Chief Investment Officer

The **investment objective** of the **Total Return Investment Pool (“TRIP”)** is to 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.

It is appropriate for longer-term investors who can accept this volatility in exchange for a higher long-term expected return than high quality, short duration fixed income products such as STIP.

The **investment objective** of the **Short Term Investment Pool (“STIP”)** is to maximize returns consistent with safety of principal, liquidity, and cash-flow requirements.

Investment maturities are structured to ensure an adequate flow of funds to meet the University’s cash needs as well as to provide the liquidity needed to facilitate asset class rebalancing and other major liquidity events.



Office of the CIO at a glance

Office of the Chief Investment Officer

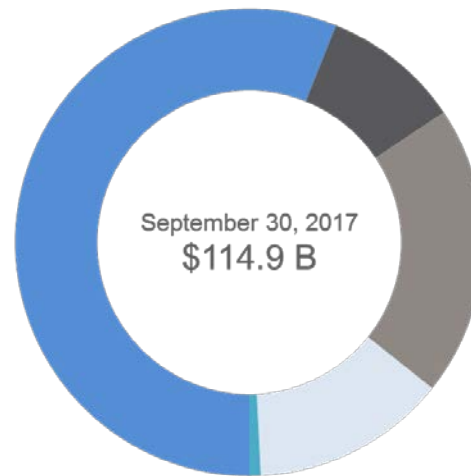
Growing Portfolios. Building Partnerships.

Delivering value through values.

Office of the CIO Facts

- ▶ Working Capital assets: \$15.5 billion (as of 9/30/17)
- ▶ Investing Endowment assets since 1933 (84 years)
- ▶ Investing pension assets since 1961 (56 years)
- ▶ Investing defined contribution assets since 1967 (50 years)
- ▶ Serving more than 150,000 pension members
- ▶ Serving more than 300,000 DC participants

\$114.9 billion across 6 products



- Working Capital: 13%, \$15.5B
TRIP: \$9.0B
STIP: \$6.5B
- Endowment: 10%, \$11.0B
- Pension: 56%, \$64.4B
- Retirement Savings: 20%, \$23.1B
- Fiat Lux: 1%, \$0.9B

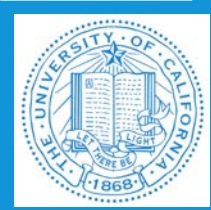


The team managing your money





Working Capital Executive Summary



TRIP at a Glance

Global Markets

- Global equities closed at new all time highs, first time in decade synchronized expansions.
- High Yield spreads continue to tighten driving strong performance. Yield curve slightly shifted upward.

Assets Under Management

- Assets of \$9.0 billion, 58% of our working capital
- \$100 million outflow driven by annual distribution and campus redemptions

Asset Allocation

- Overweight Public Growth with a 100% passive implementation
- Overweight Cash
- Underweight Income

Risk Allocation

- Close to target risk allocation

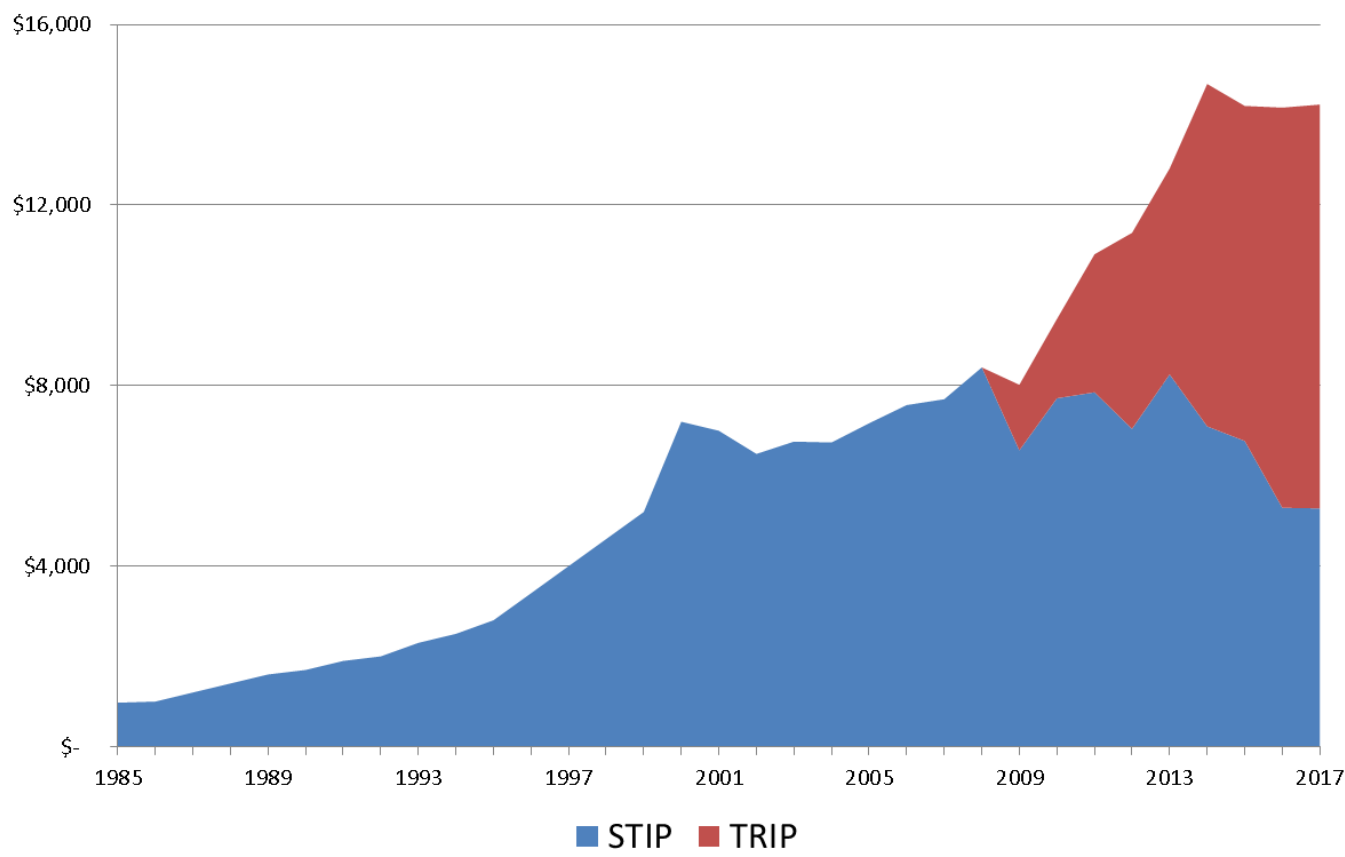
Performance

- Healthy absolute performance driven by growth assets
- TRIP “outperformed” STIP by 2.1% for the Fiscal Year to date



Working Capital: 60% TRIP, 40% STIP

Working Capital Assets 1985 - 2017



5 Year Growth

September 30, 2017
\$15.5 billion

September 30, 2016
\$15.2 billion

September 30, 2012
\$12.0 billion



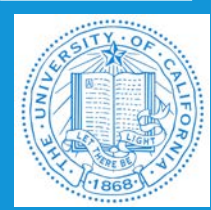
Total Return Assets

Assets Under Management Attribution





Assets Under Management June 30, 2017	\$8.9 billion
Market Gains	\$0.2 billion
Value Added	\$0.0 billion
Net Cash Flow	(\$0.1 billion)
Assets Under Management September 30, 2017	\$9.0 billion



How is TRIP Positioned?

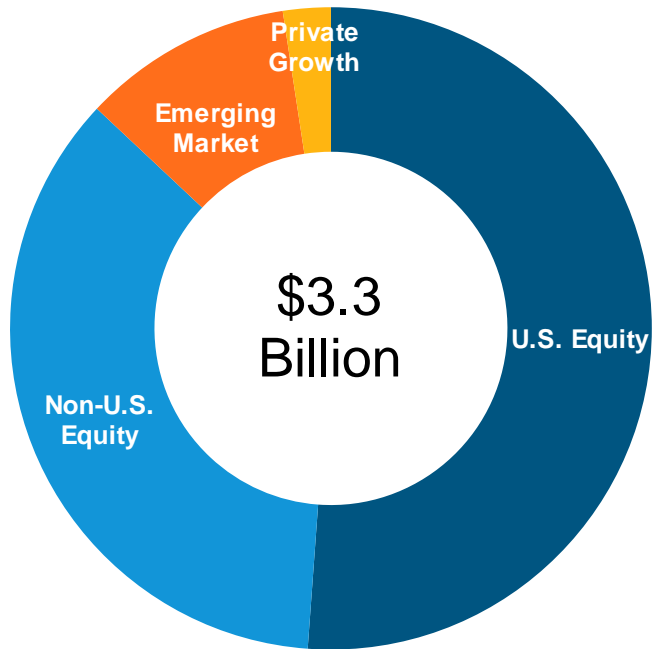


Total Return Asset Allocation

Relative Weight	As of September 30, 2017	Market Value in \$ Billions	Percentage	Over/Underweight Relative to Policy	Policy Weight
	Growth	3.3	36.7%	1.7%	35.0%
	Public Growth	3.2	35.8%		
	Private Growth	0.1	0.9%		
	Income	4.3	48.0%	-2.0%	50.0%
	Public Income	3.9	43.4%		
	Private Income	0.4	4.6%		
	Absolute Return	1.3	14.6%	-0.4%	15.0%
	Absolute Return	1.3	14.6%	-0.4%	
	Cash	0.1	0.7%	0.7%	0.0%
	Total TRIP	9.0	100.0%	0.0%	100.0%



Growth Portfolio: Public Equity 100% passive

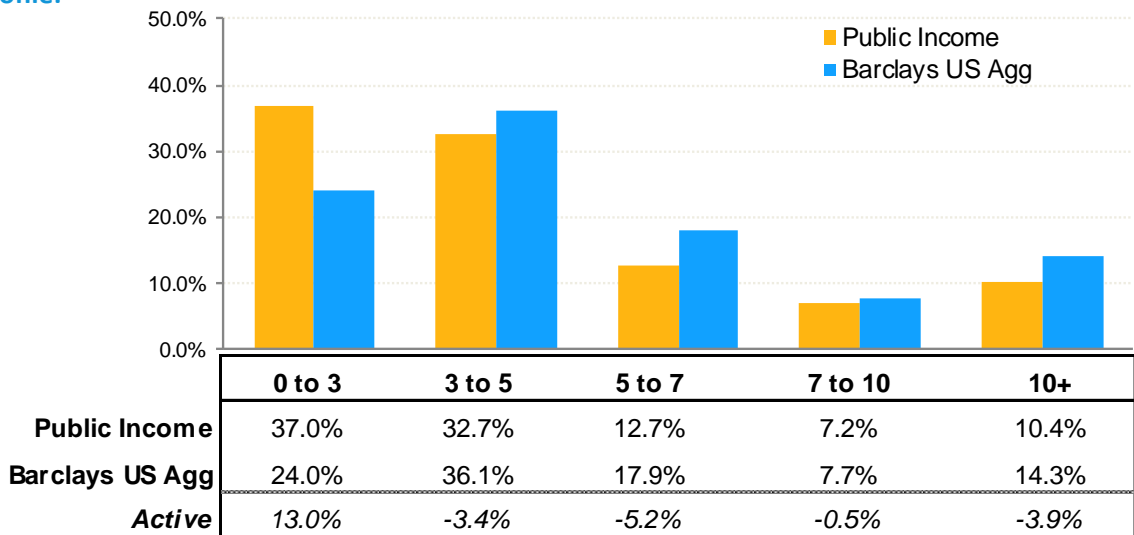


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- U.S. Equity: 51%
\$1.7B
 - Non-U.S. Equity: 36%
\$1.2B
-
- Emerging Market: 11%
\$0.4B
 - Private Growth: 2%
\$0.1B

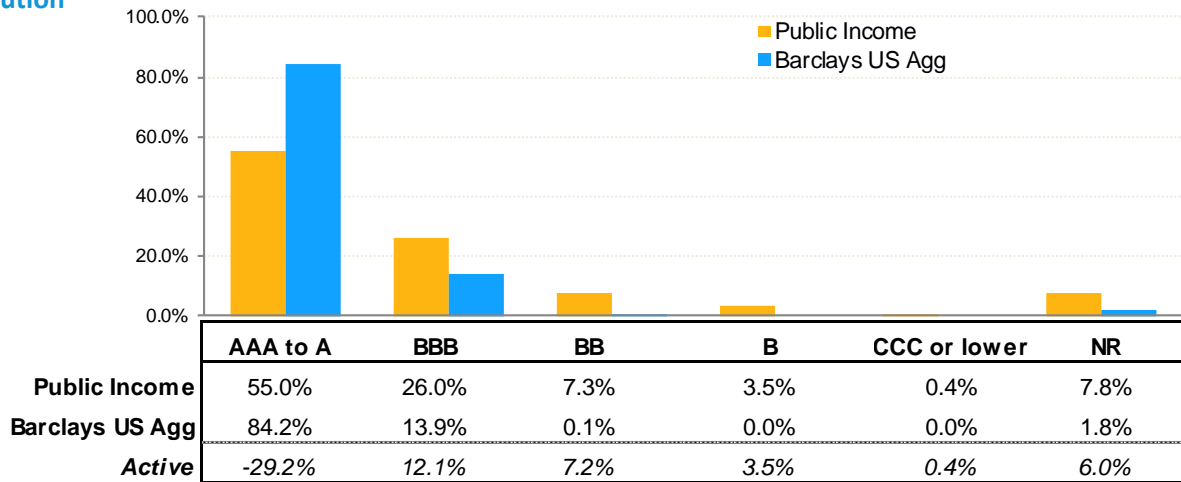


Public Income Portfolio

Maturity Profile:

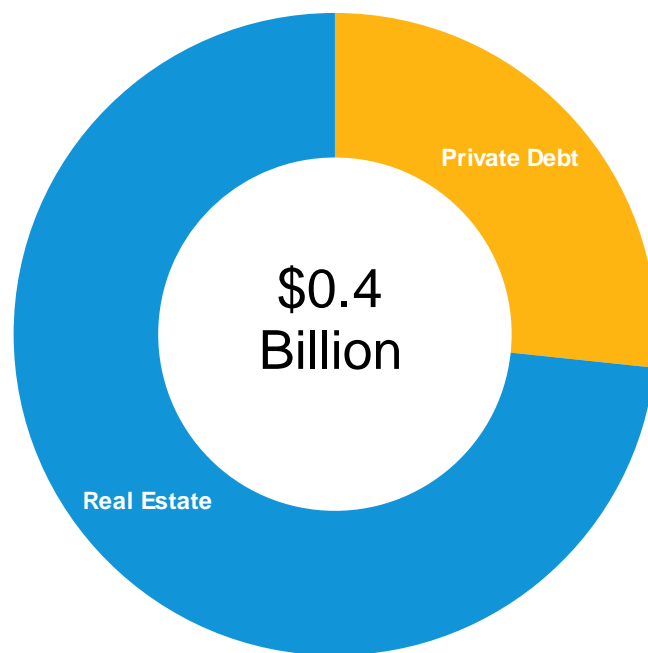


Rating Distribution





Private Income Portfolio



● Private Debt: 26%
\$0.1B

● Real Estate: 74%
\$0.3B



How did TRIP Perform?



Total Return Performance

Net Returns (%) As of September 30, 2017	Annualized Returns						Since Inception (August 2008)
	3 Month	YTD	1 Year	3 Year	5 Year	7 Year	
Total Return	2.5	8.1	7.8	4.8	6.3	6.8	7.1
Total Return Benchmark	2.6	8.0	6.8	4.4	6.0	6.4	6.7
Value Added	(0.1)	0.1	1.0	0.4	0.3	0.4	0.4

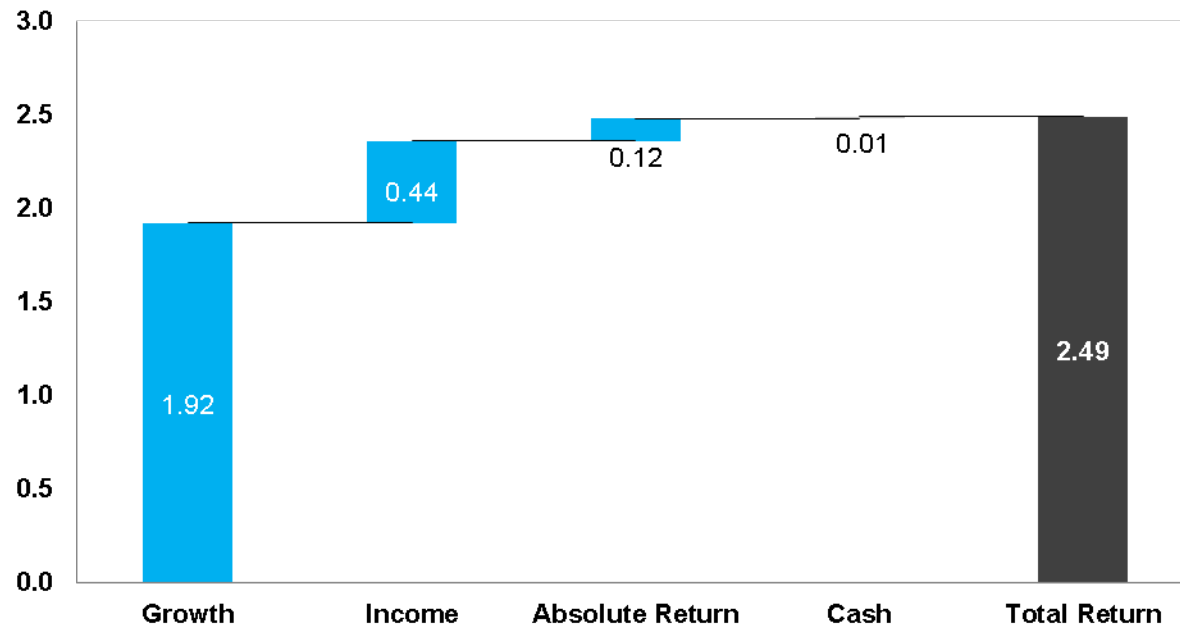
Net Returns (%) As of June 30	One Year Returns							
	2017	2016	2015	2014	2013	2012	2011	2010
Total Return	7.7	0.3	2.7	14.6	8.3	6.7	11.3	14.0
Total Return Benchmark	6.5	1.4	1.2	14.5	8.0	5.8	11.4	14.6
Value Added	1.2	(1.1)	1.5	0.1	0.3	0.9	(0.1)	(0.6)

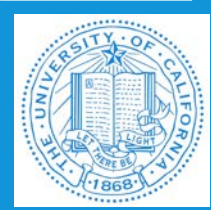
Policy benchmark as of July 1, 2015 is 50% Barclays US Aggregate Index + 35% MSCI All Country World Investible Markets Index + 15% HFRX Absolute Return Index. Prior is a weighted average composite of the historical policy benchmarks and targets.



Total Return Performance

FYTD Contribution to Return - Percentage (%)





Performance Attribution – Fiscal YTD

As of September 30, 2017	Average Weight	Average Active Weight	Allocation Attribution	Selection Attribution	Total Attribution
Equity					
Public Growth	35.7	+0.7	+0.0	+0.0	+0.0
Private Growth	1.0	+1.0	+0.0	+0.0	+0.0
Income					
Public Income	43.1	-6.9	+0.1	+0.1	+0.2
Private Income	4.8	+4.8	-0.1	+0.0	-0.1
Absolute Return					
Absolute Return	14.7	-0.3	+0.0	-0.2	-0.2
Cash	0.7	0.7	+0.0	+0.0	+0.0
Total TRIP	100%	0.0%	+0.0%	-0.1%	-0.1%



Growth Performance

Net Returns (%) As of September 30, 2017	Market Value		3 Month	YTD	1 Year	Annualized Returns			Since Inception
	(\$ Million)	% Allocation				3 Year	5 Year	7 Year	
Growth	3,329	100%	5.3	17.6	19.1	7.5	11.9	10.8	7.4
MSCI All Country World IMI TF Index (net dividends)			5.5	17.3	18.9	9.5	12.9	9.3	6.2
<i>Value Added</i>			(0.2)	0.3	0.2	(2.0)	(1.0)	1.5	1.2
Public Growth	3,249	98%	5.5	17.6	19.1	7.5	11.9	10.8	7.4
Private Growth	80	2%	(1.5)	14.9	16.7	-	-	-	20.4

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.



Income Performance

Net Returns (%) As of September 30, 2017	Market Value		3 Month	YTD	1 Year	Annualized Returns			Since Inception
	(\$ Million)	% Allocation				3 Year	5 Year	7 Year	
Income	4,291	100%	0.9	3.7	1.7	3.3	3.1	4.5	6.0
Barclays U.S. Aggregate Bond Index			0.8	3.1	0.1	2.7	2.1	3.0	4.2
<i>Value Added</i>			<i>0.1</i>	<i>0.6</i>	<i>1.6</i>	<i>0.6</i>	<i>1.0</i>	<i>1.5</i>	<i>1.8</i>
Public Income	3,874	90%	1.0	3.8	1.4	3.4	3.1	4.5	6.1
Private Income	417	10%	0.3	3.0	4.5	-	-	-	2.8

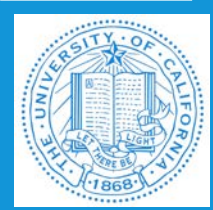
Policy benchmark as of July 1, 2015 is Barclays US Aggregate Index and is shown for all periods. There was no total TRIP income performance composite and total income policy benchmark didn't exist prior to July 1, 2015. Policy would be a weighted average composite of the historical policy benchmarks and targets. Inception date is August 1, 2008



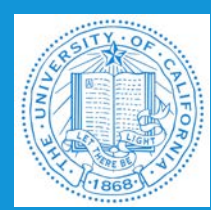
Absolute Return Performance

Net Returns (%) As of September 30, 2017	Market Value		Annualized Returns		Annualized Returns		Since Inception
	(\$ Million)	% Allocation	3 Month	YTD	1 Year	3 Year	
Absolute Return	1,318	100%	0.9	0.7	2.5	0.8	2.4
HFRX Absolute Return			1.9	3.3	2.9	2.1	2.9
<i>Value Added</i>			<i>(1.0)</i>	<i>(2.6)</i>	<i>(0.4)</i>	<i>(1.3)</i>	<i>(0.5)</i>
Alternative Risk Premia	1,318	100%	0.9	0.7	2.2	(1.9)	(2.3)

* 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 August 2013.



How are we Managing Risk in our Working Capital?

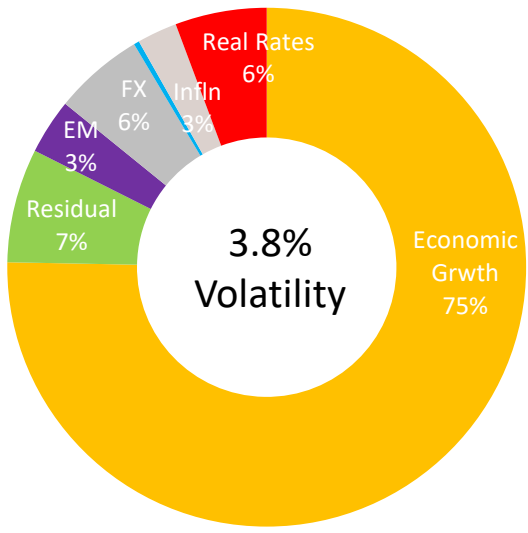


Total Return Risk Measurement

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		3.8	<i>(0.3)</i>	3.3	<i>(0.5)</i>	0.9	<i>(0.2)</i>
Income	0.77	2.5	<i>(0.3)</i>	2.9	<i>(0.5)</i>	1.3	<i>(0.3)</i>
Growth	1.00	9.1	<i>(1.5)</i>	9.1	<i>(1.5)</i>	0.4	<i>(0.1)</i>
Absolute Return	0.33	2.9	<i>(1.5)</i>	1.2	<i>(0.0)</i>	3.0	<i>(1.6)</i>
Cash	0.00	0.3	<i>(0.1)</i>	0.0	<i>0.0</i>	0.3	<i>(0.1)</i>



High Level Macroeconomic Risk Factors



Portfolio Standalone Risk Factor Decomposition

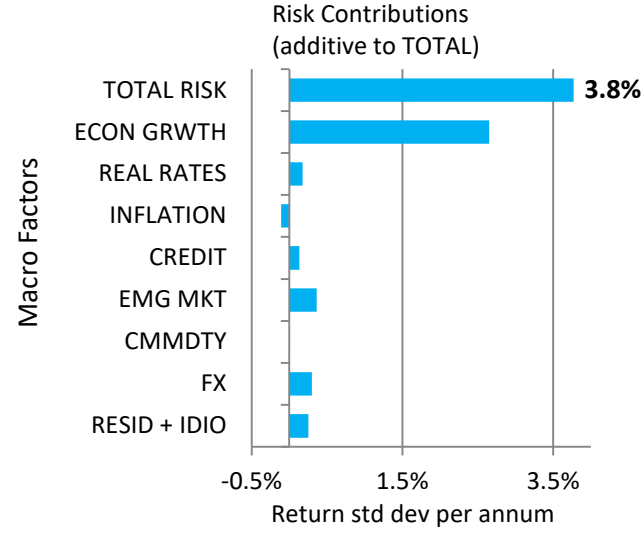
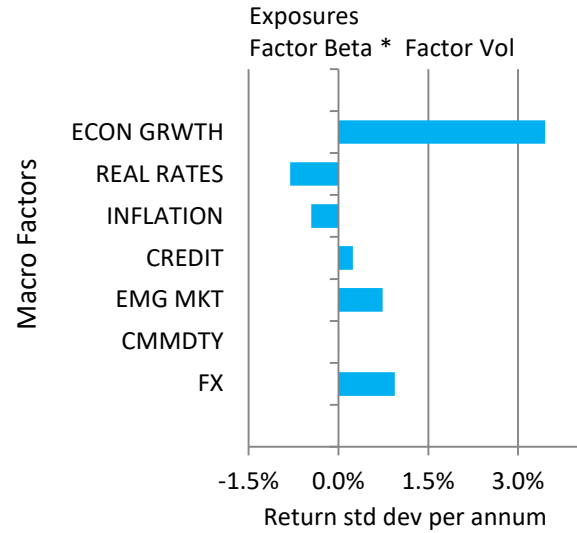
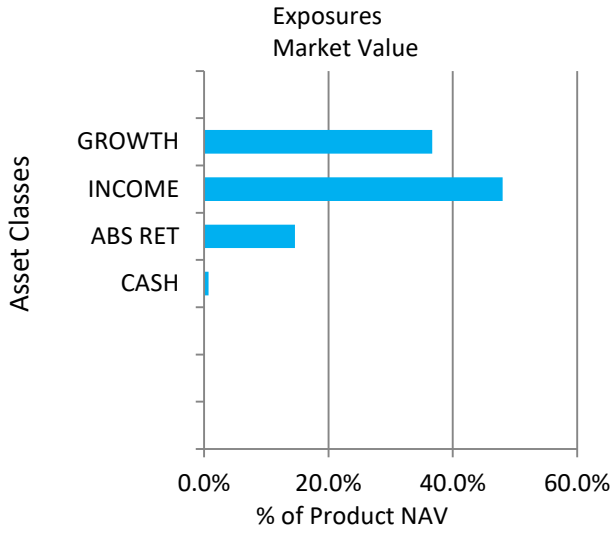
Factor Name	Factor Description
Economic Growth	Proxied by broad, developed market equity index returns
Real Rates	Inflation-linked bond returns
Inflation	Return of long nominal bonds, short inflation-linked bonds portfolio
Credit	Return of long corporate bonds, short nominal bonds portfolio
Commodity	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 generally 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.

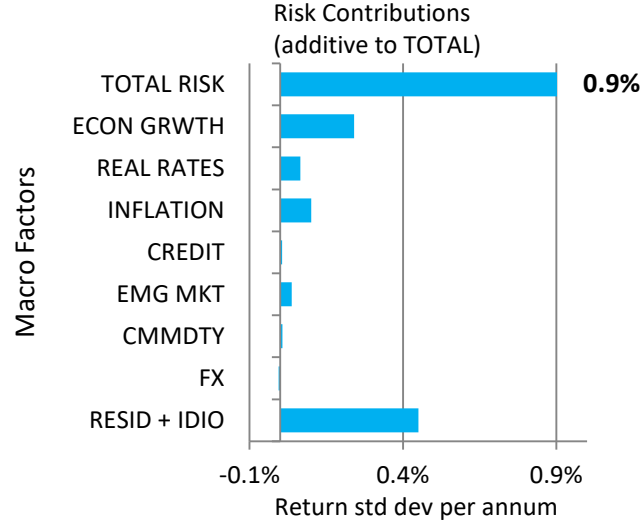
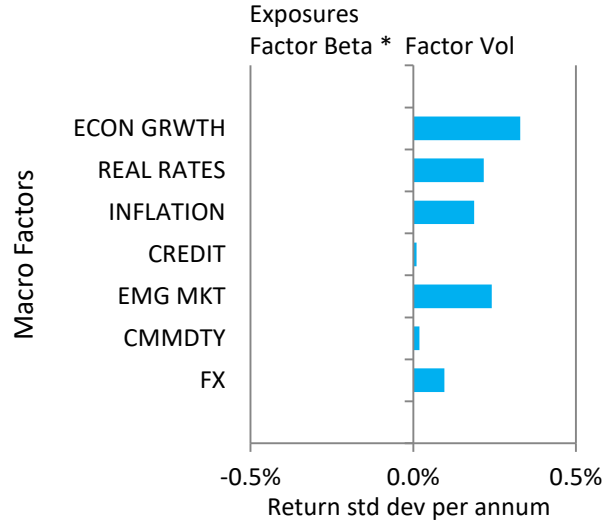
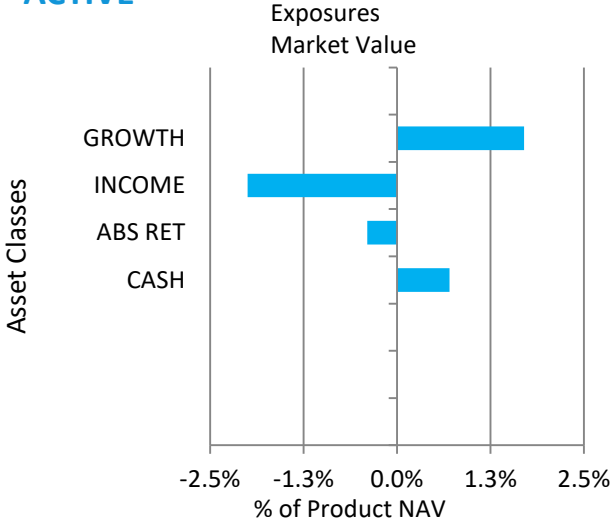


Asset Allocation vs Macroeconomic Risk Factors

PORTFOLIO



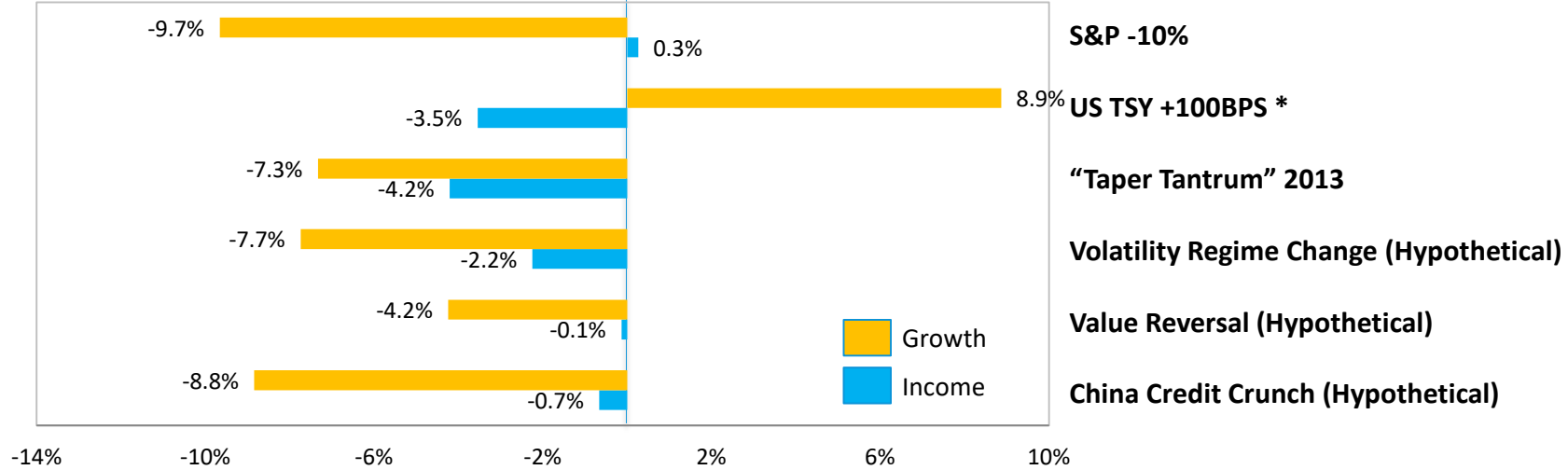
ACTIVE



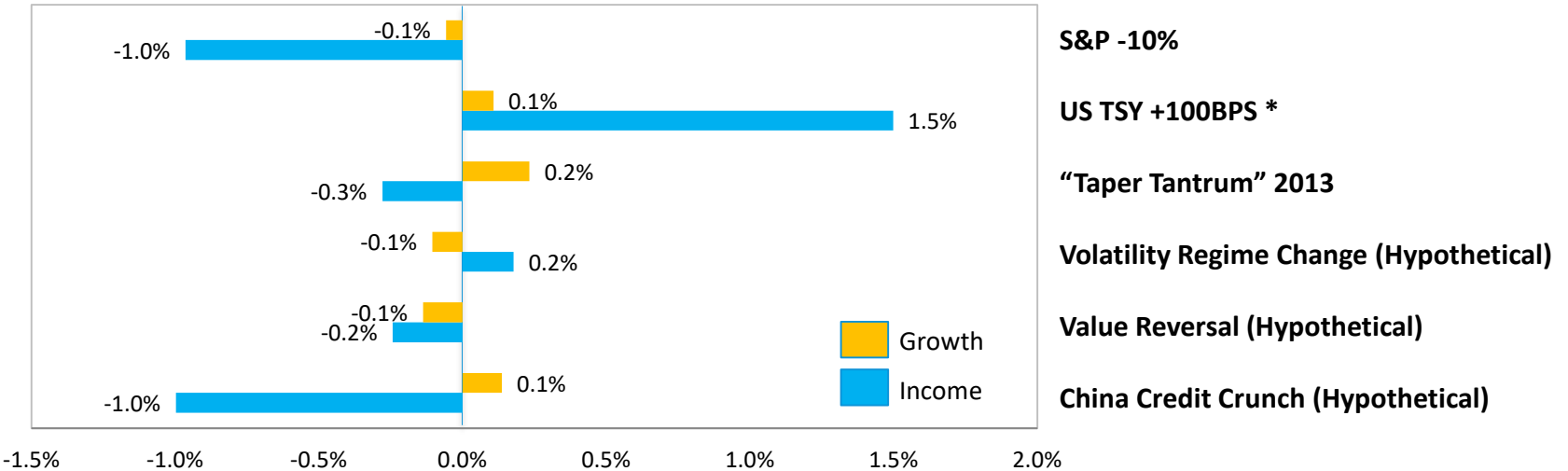


Stress Tests and Scenario Analysis

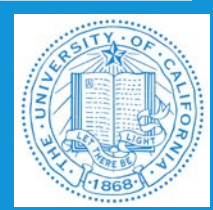
PORTFOLIO



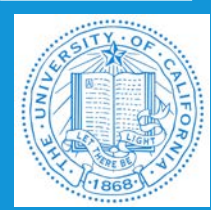
ACTIVE



• Public Equity P&L driven by more recent strong correlation between rates and : financials, IT, consumer discretionary and industrials. The rates/equity beta and correlation may not be robust across time or interest rate levels, cf. "reflation" versus "inflation" / "stagflation"



How is STIP Positioned?



STIP Assets

Assets Under Management Attribution

Assets Under Management June 30, 2017	\$5.3 billion
Market Gains	\$0.0 billion
Value Added	\$0.0 billion
Net Cash Flow	\$1.2 billion
Assets Under Management September 30, 2017	\$6.5 billion

Asset Allocation

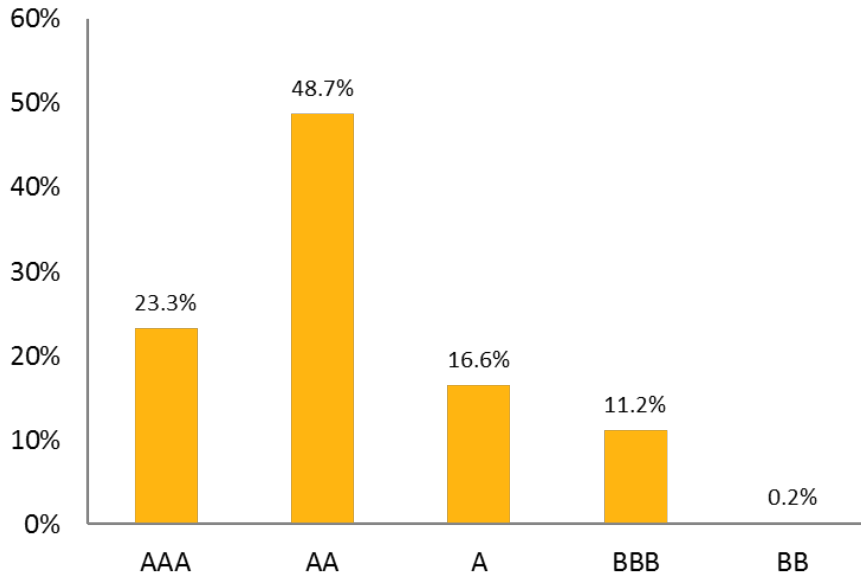
As of September 30, 2017

Corporates	\$1.6	24.6%
Commercial Paper	\$3.2	49.2%
Governments	\$1.5	23.1%
Cash	\$0.2	3.1%
Total	\$6.5 billion	100.0%

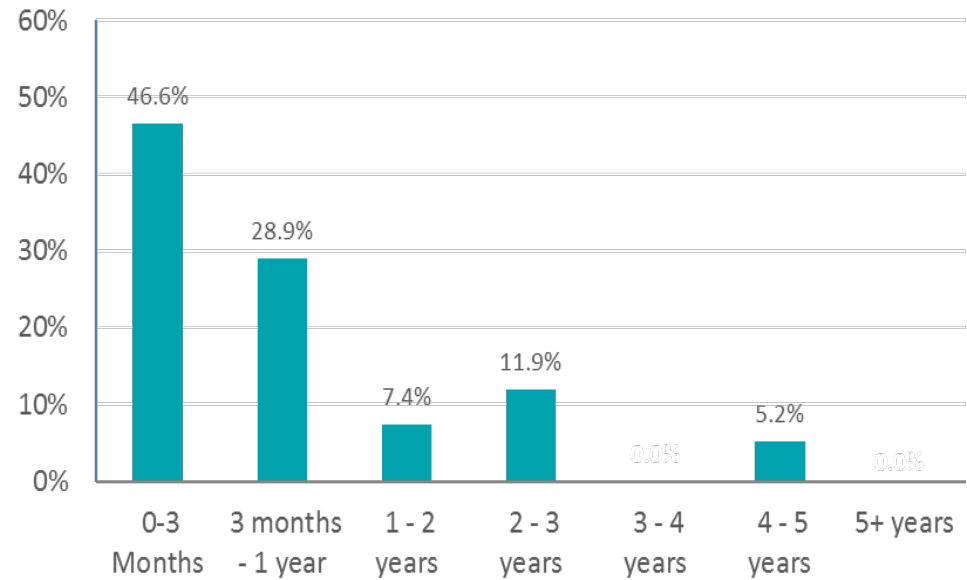


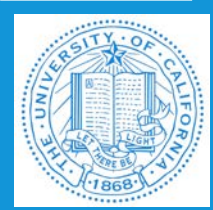
Portfolio Composition

Rating Distribution

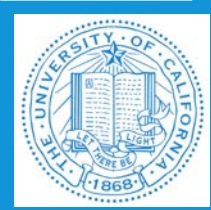


Maturity Profile





How did STIP Perform?

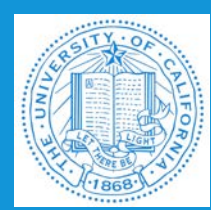


STIP Performance: Added value across all time horizons

Net Returns (%) As of September 30, 2017	Annualized Returns							
	3 Month	YTD	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year
Short Term	0.4	1.0	1.3	1.3	1.5	1.7	2.3	3.6
Policy Benchmark	0.3	0.7	0.9	0.6	0.5	0.4	0.8	2.5
<i>Value Added</i>	<i>0.1</i>	<i>0.3</i>	<i>0.4</i>	<i>0.7</i>	<i>1.0</i>	<i>1.3</i>	<i>1.5</i>	<i>1.1</i>

Net Returns (%) As of June 30	Annual Fiscal Year Returns									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Short Term	1.3	1.3	1.4	1.6	2.1	2.4	2.6	2.8	3.7	4.8
Policy Benchmark	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>0.6</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



Working Capital Policy Benchmark

Total Return Investment Pool

Asset Class	Benchmark Component	Target
Total Equity (Growth)	MSCI All Country IMI World Index ex Tobacco (Net)	35.00%
Total Income	Barclays U.S. Aggregate Index	50.00%
Absolute Return	HFRX Absolute Return Index	15.00%

Short-Term Investment Pool

Asset Class	Benchmark Component
Short-Term Fixed Income	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