



# UNIVERSITY OF CALIFORNIA

Office of the Chief Investment Officer

**Growing Portfolios** Building Partnerships

## Working Capital

Investment Review as of June 30, 2016

UC Investments



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Office of the Chief Investment Officer

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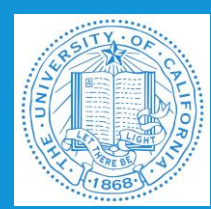


# Office of the Chief Investment Officer



# Our Products: \$14.2 Billion Working Capital represents 14% of our \$98 Billion of assets

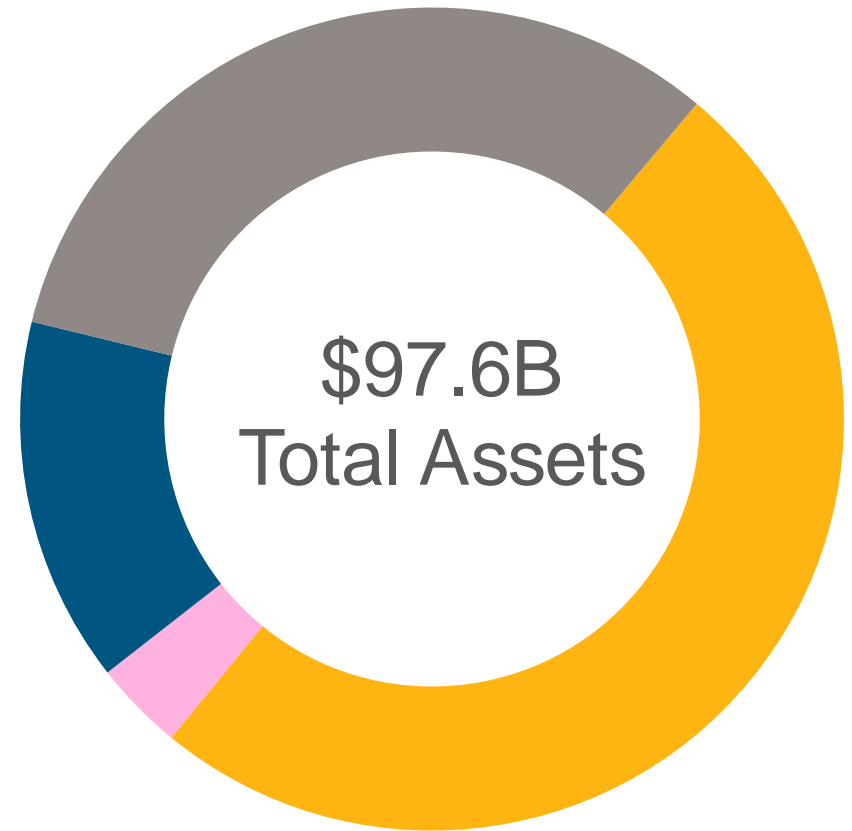
	Market Value in Billions (\$)		
	June 30, 2016	1 Year Ago June 30, 2015	5 Years Ago June 30, 2011
Endowment	\$9.1	\$8.9	\$6.7
Pension	\$54.1	\$55.0	\$41.5
Retirement Savings	\$20.2	\$20.1	\$13.9
Working Capital Total Return	\$8.9	\$7.4	\$3.1
Short Term	\$5.3	\$6.8	\$7.9
<b>Total</b>	<b>\$97.6B</b>	<b>\$98.2B</b>	<b>\$73.1B</b>



# How we invest our assets

As of June 30, 2016

●	Public Equity: \$48.5B	50%
●	Fixed Income: \$31.4B	32%
●	Other Investments: \$14.1B	14%
	Absolute Return: \$5.3B	5%
	Private Equity: \$4.0B	4%
	Real Estate: \$3.6B	4%
	Real Asset: \$1.2B	1%
●	Cash: \$3.6B	4%



**\$97.6 Billion**

**100%**



# How we invest our assets: Fixed Income primarily internally managed and all other investments externally managed

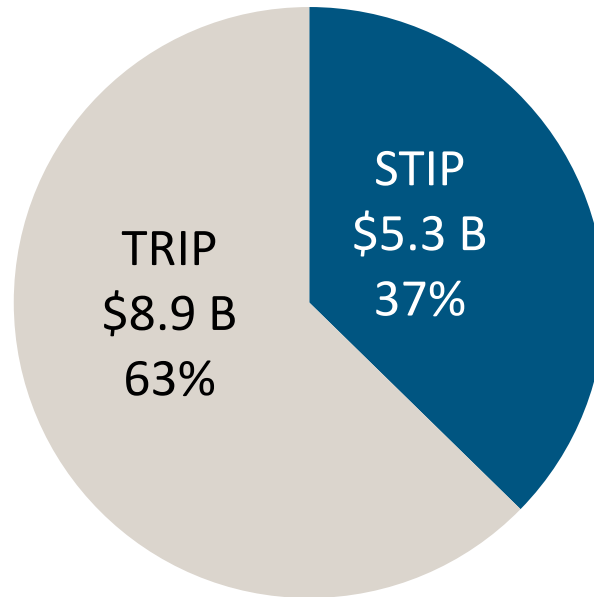
			Active		Passive		External		Internal	
	\$ Billions	% of Entity	\$ Billions	%	\$ Billions	%	\$ Billions	%	\$ Billions	%
<b>Public Equity</b>	\$ 48.5	50%	\$27.2	56%	\$21.3	44%	\$48.5	100%	\$0.0	0%
<b>Fixed Income</b>	\$ 31.4	32%	\$30.7	98%	\$0.7	2%	\$2.1	7%	\$29.3	93%
<b>Other Investments</b>	\$ 14.1	14%	\$14.1	100%	\$0.0	0%	\$14.1	100%	\$0.0	0%
<b>Absolute Return</b>	\$ 5.3	5%	\$5.3	100%	\$0.0	0%	\$5.3	100%	\$0.0	0%
<b>Private Equity</b>	\$ 4.0	4%	\$4.0	100%	\$0.0	0%	\$4.0	100%	\$0.0	0%
<b>Real Estate</b>	\$ 3.6	4%	\$3.6	100%	\$0.0	0%	\$3.6	100%	\$0.0	0%
<b>Real Assets</b>	\$ 1.2	1%	\$1.2	100%	\$0.0	0%	\$1.2	100%	\$0.0	0%
<b>Cash</b>	\$ 3.6	4%	\$3.6	0%	\$0.0	100%	\$0.0	0%	\$3.6	100%
<b>Total</b>	<b>\$97.6</b>	<b>100%</b>	<b>\$75.6</b>	<b>77%</b>	<b>\$22.0</b>	<b>23%</b>	<b>\$64.7</b>	<b>66%</b>	<b>\$32.9</b>	<b>34%</b>



# Working Capital



# Our Working Capital Assets: 63% TRIP and 37% STIP

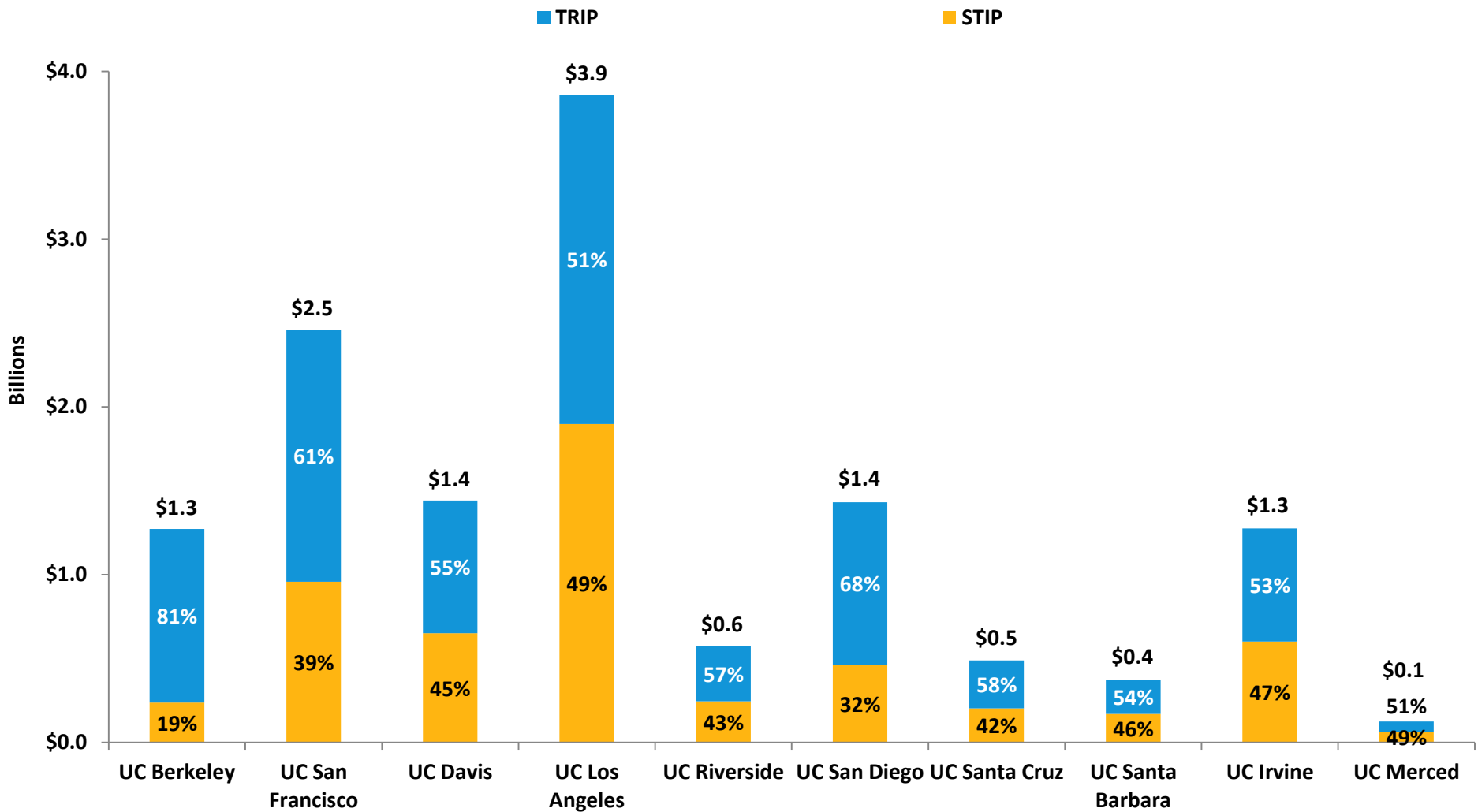


Working Capital	Market Value in Billions (\$)			
	June 30, 2016	1 Year Ago June 30, 2015	5 Years Ago June 30, 2011	Since TRIP Inception August 1, 2008
Total Return Investment Pool	\$8.9	\$7.4	\$3.1	\$1.5
Short Term Investment Pool	\$5.3	\$6.8	\$7.9	\$6.3
<b>Total</b>	<b>\$14.2B</b>	<b>\$14.2B</b>	<b>\$11.0B</b>	<b>\$7.8B</b>





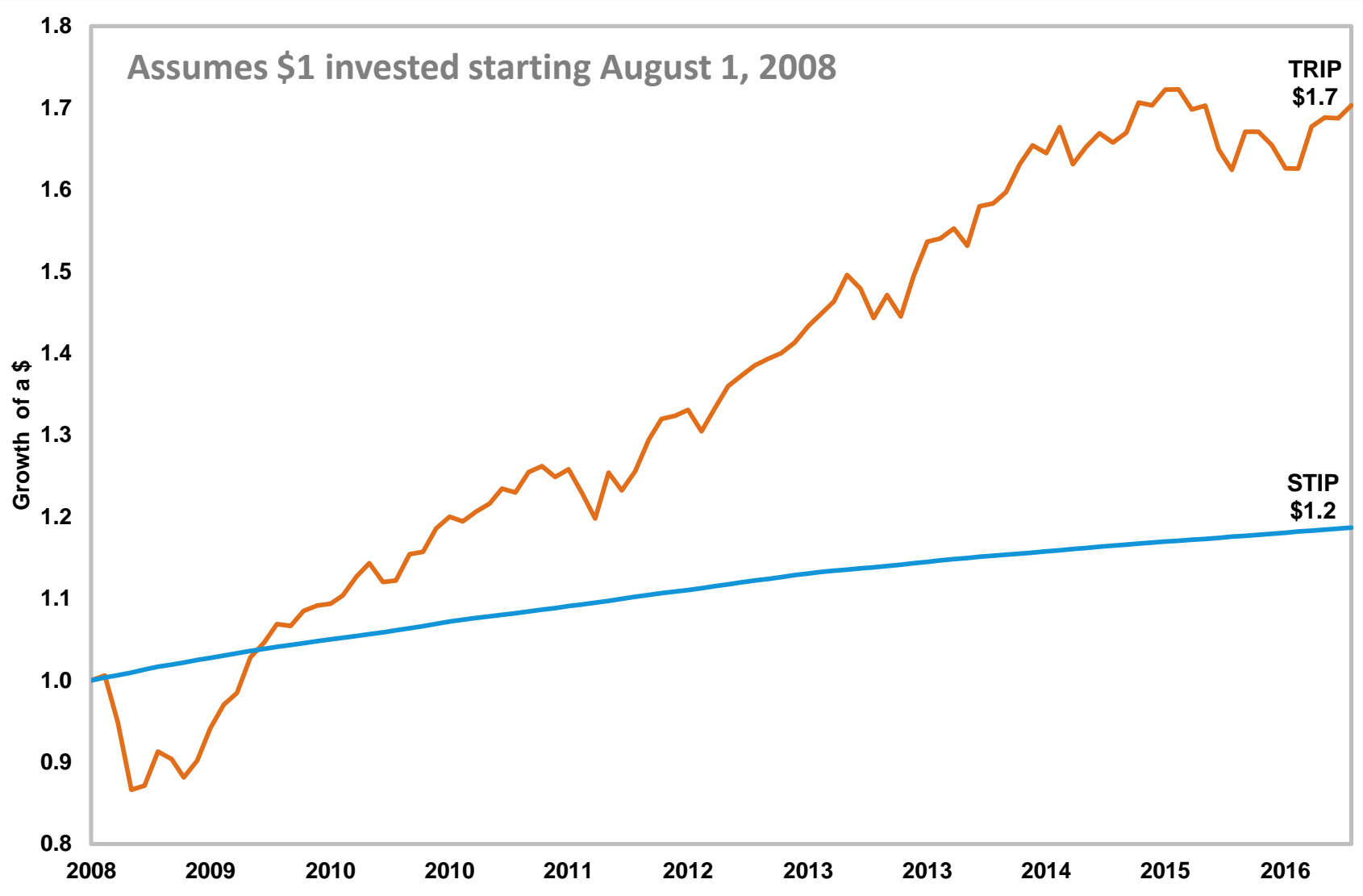
# Working Capital by Campus



Excludes amounts held by Foundations or other affiliated entities. As of June 30, 2016



# Investing in TRIP over the long term





**TRIP has earned 7.0% annually since inception versus 2.2% for STIP over the last 8 years.**



# UNIVERSITY OF CALIFORNIA

Office of the Chief Investment Officer

## Total Return Investment Pool

Investment Review as of June 30, 2016

**Growing Portfolios** Building Partnerships

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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.

As its name implies, TRIP is managed according to a total-return objective, and will be subject to interest-rate risk, credit risk, and equity risk.

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

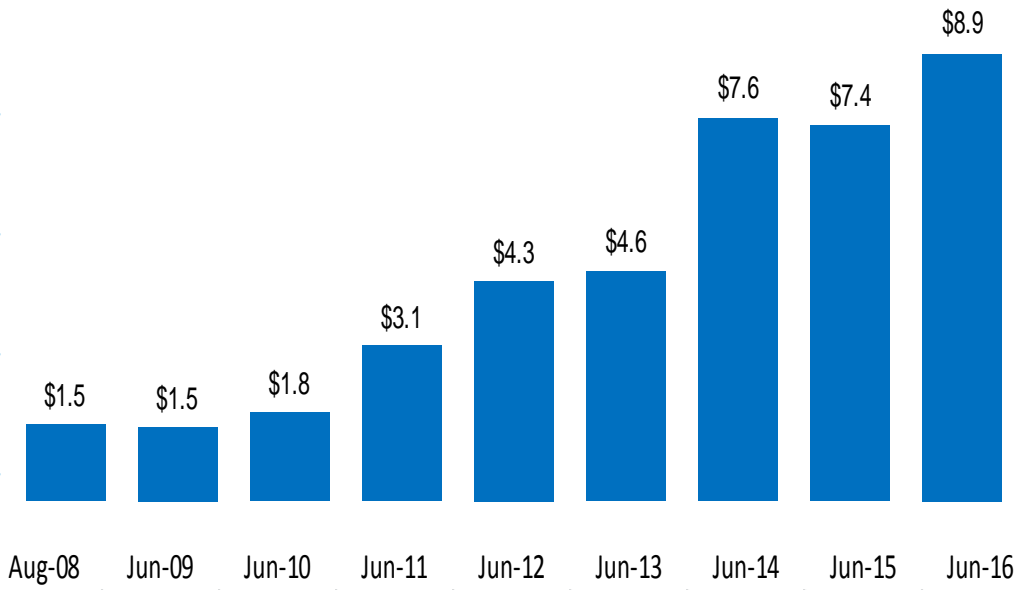


# Total Assets: \$8.9 B, increase driven by \$1.4 B cash inflows from Working Capital Optimization

## Assets Under Management Attribution

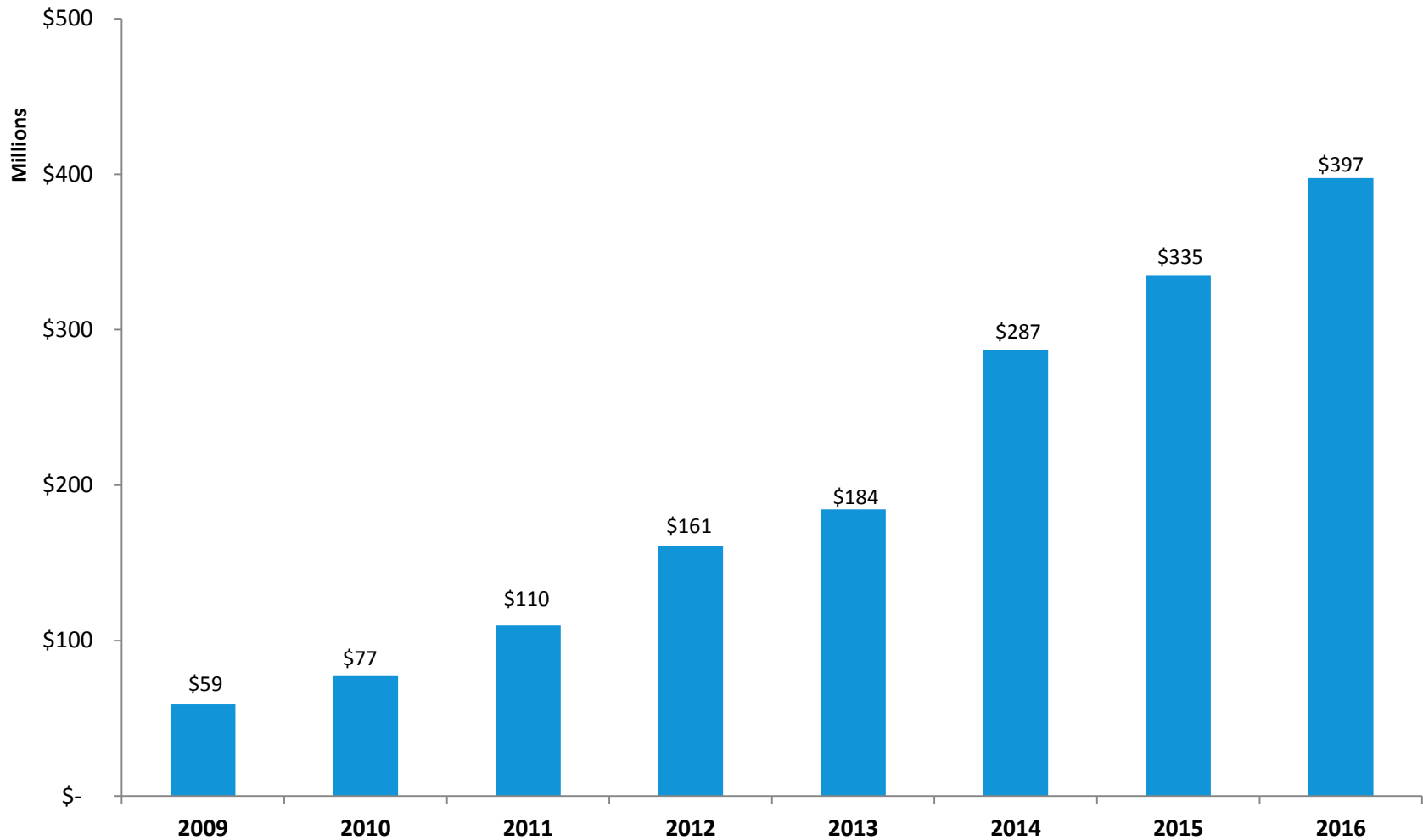
Assets Under Management June 30, 2015	\$7.43 billion
Market Gains	\$0.16 billion
Value Added	(\$0.09 billion)
Net Cash Flow	\$1.37 billion
<b>Assets Under Management June 30, 2016</b>	<b>\$8.87 billion</b>

## Growth in Assets





# Total Payout (Income + Distribution) of \$397 M for 2016, total payout since inception (August 2008) of \$1.6 B

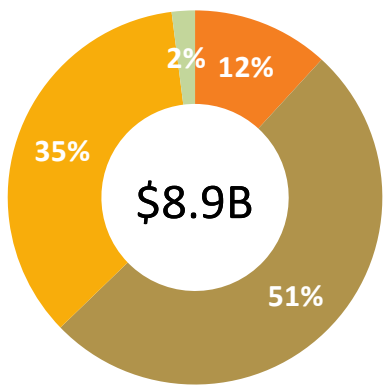




# We de-risked the TRIP portfolio in FY 2015-16

## Current

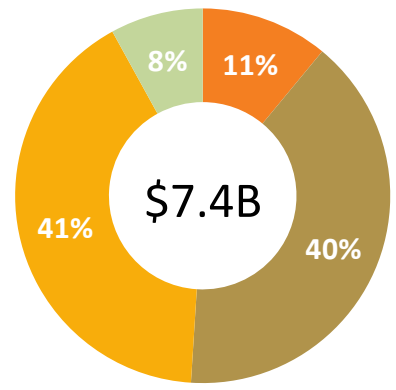
June 30, 2016



● Equity

## 1 Year Ago

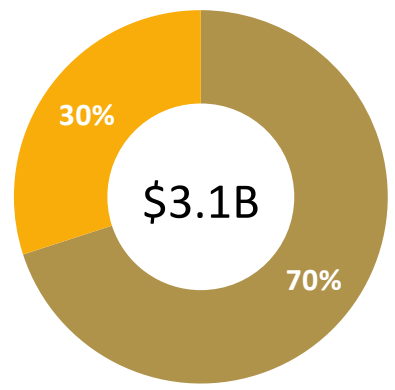
June 30, 2015



● Fixed Income

## 5 Years Ago

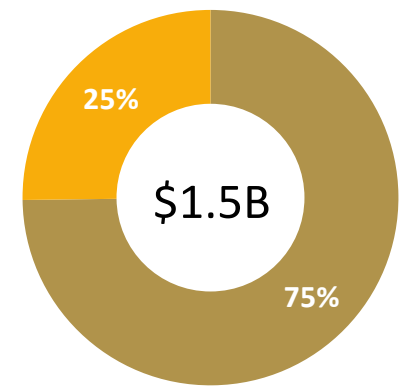
June 30, 2011



● Absolute Return

## Inception

August 30, 2008



● Cash





# Total Return Asset Allocation

As of June 30, 2016

	Market Value in \$ Billions	Percentage	Over/Underweight Relative to Policy	Policy Weight
<b>Equity</b>	<b>3.1</b>	<b>35.2%</b>	<b>0.2%</b>	<b>35.0%</b>
Public Equity	3.0	34.4%	-0.6%	35.0%
U.S. Equity	1.6	18.8%	0.1%	18.7%
Non-U.S. Equity	0.7	7.8%	-2.2%	9.9%
Emerging Market Equity	0.7	7.8%	2.5%	5.3%
Private Growth	0.1	0.8%	0.8%	0.0%
<b>Income</b>	<b>4.5</b>	<b>50.9%</b>	<b>0.9%</b>	<b>50.0%</b>
Core	3.3	37.7%	-12.3%	50.0%
High Yield	0.4	4.6%	4.6%	0.0%
Emerging Market Debt	0.3	3.4%	3.4%	0.0%
Private Income	0.5	5.2%	5.2%	0.0%
<b>Absolute Return</b>	<b>1.0</b>	<b>11.8%</b>	<b>-3.2%</b>	<b>15.0%</b>
<b>Cash</b>	<b>0.2</b>	<b>2.1%</b>	<b>2.1%</b>	<b>0.0%</b>

Approved investment policy weights reflect 35% Equity, 50% Income and 15% Absolute Return. At the end of the fiscal year we held 6% in private investments, 4% below our policy limit in private investments of 10% on the total portfolio . The sub policy weights reflect the public market benchmark policies and their exposure to the corresponding sub sector below.



# Total Return Performance

## Net Returns (%)

## Annualized Returns

As of June 30, 2016	3 Month	6 Month	1 Year	3 Year	5 Year	7 Year	Since Inception (August 2008)
Total Return	1.6	3.0	0.3	5.7	6.4	8.1	7.0
Total Return Benchmark	1.5	3.1	1.4	5.5	6.0	8.0	6.6
<i>Value Added</i>	<i>0.1</i>	<i>(0.1)</i>	<i>(1.1)</i>	<i>0.2</i>	<i>0.4</i>	<i>0.1</i>	<i>0.4</i>

## Net Returns (%)

## Fiscal Year Returns

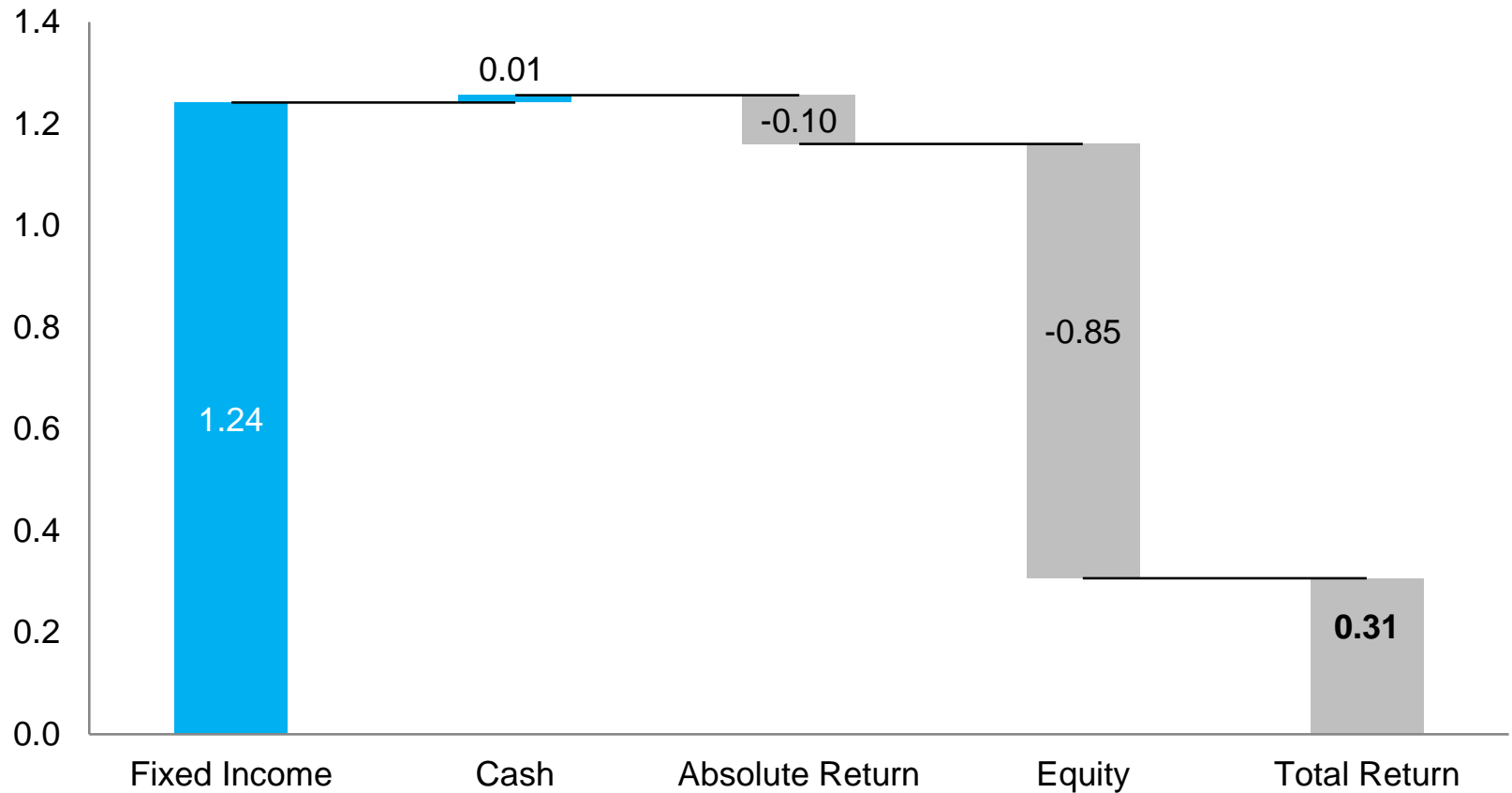
As of June 30	2016	2015	2014	2013	2012	2011	2010
Total Return	0.3	2.7	14.6	8.3	6.7	11.3	14.0
Total Return Benchmark	1.4	1.2	14.5	8.0	5.8	11.4	14.6
<i>Value Added</i>	<i>(1.1)</i>	<i>1.5</i>	<i>0.1</i>	<i>0.3</i>	<i>0.9</i>	<i>(0.1)</i>	<i>(0.6)</i>

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



# Performance: Primary contributor is fixed income and detractor is global equities for the fiscal year

## 1 Year Contribution to Return - Percentage (%)





# Performance Attribution

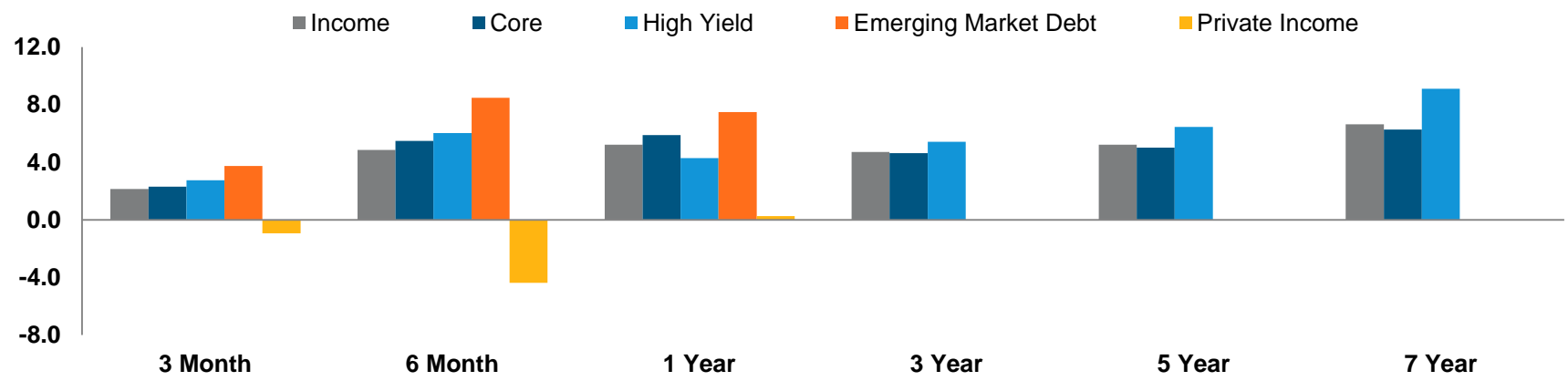
As of June 30, 2016	Average Weight	Active Weight	Allocation Attribution	Selection Attribution	Total Attribution
<b>Equity</b>	35.4	+0.4	+0.0	-0.5	-0.5
<b>Income</b>	49.4	-0.6	+0.1	-0.4	-0.3
<b>Absolute Return</b>	11.7	-3.3	+0.1	-0.3	-0.2
<b>Cash</b>	3.5	+3.5	-0.1	+0.0	-0.2
<b>Total TRIP</b>	<b>100.0%</b>	<b>-0.0%</b>	<b>+0.1%</b>	<b>-1.2%</b>	<b>-1.1%</b>



# Income Returns

Net Returns (%) As of June 30, 2016	Market Value (\$ Million)	% Allocation	Annualized Returns							Since Inception
			3 Months	6 Months	1 Year	3 Year	5 Year	7 Year		
<b>Income</b>	4,517	100%	2.1	4.9	5.2	4.7	5.2	6.6	6.6	
Barclays U.S. Aggregate Bond Index			2.2	5.3	6.0	4.1	3.8	4.6	4.8	
<i>Value Added</i>			<i>(0.1)</i>	<i>(0.4)</i>	<i>(0.8)</i>	<i>0.6</i>	<i>1.4</i>	<i>2.0</i>	<i>1.8</i>	
Core	3,347	74%	2.3	5.5	5.9	4.6	5.0	6.3	6.4	
High Yield	408	9%	2.8	6.0	4.3	5.4	6.5	9.1	8.3	
Emerging Market Debt	298	7%	3.7	8.5	7.5	-	-	-	5.6	
Private Income	464	10%	(0.9)	(4.4)	0.3	-	-	-	0.3	
Barclays U.S. Aggregate Bond Index			2.2	5.3	6.0	4.1	3.8	4.6	4.8	

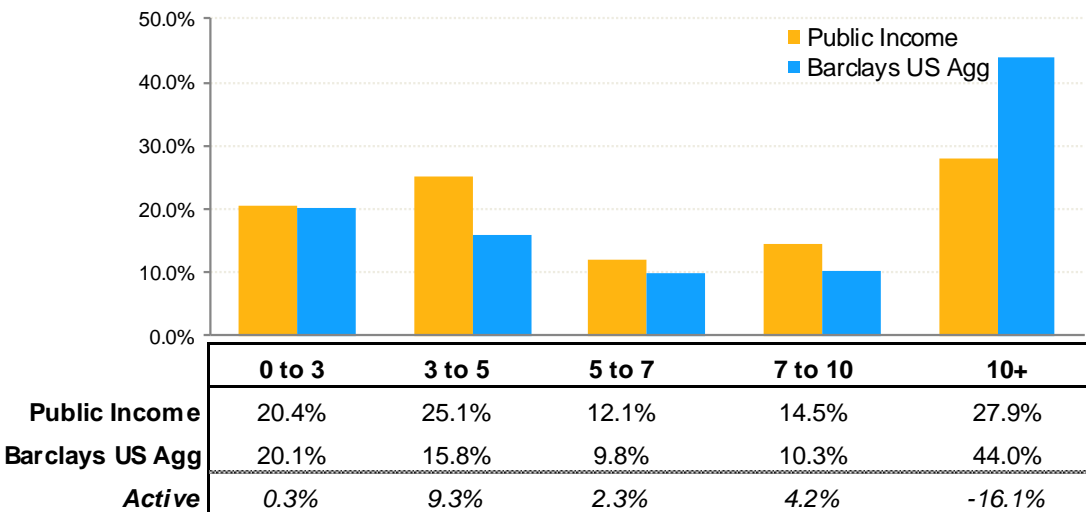
Policy benchmark as of July 1, 2015 is Barclays US Aggregate Index and is shown for all periods. There was no total TRIP income performance composite and total income policy benchmark didn't exist prior to July 1, 2015. Policy would be a weighted average composite of the historical policy benchmarks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



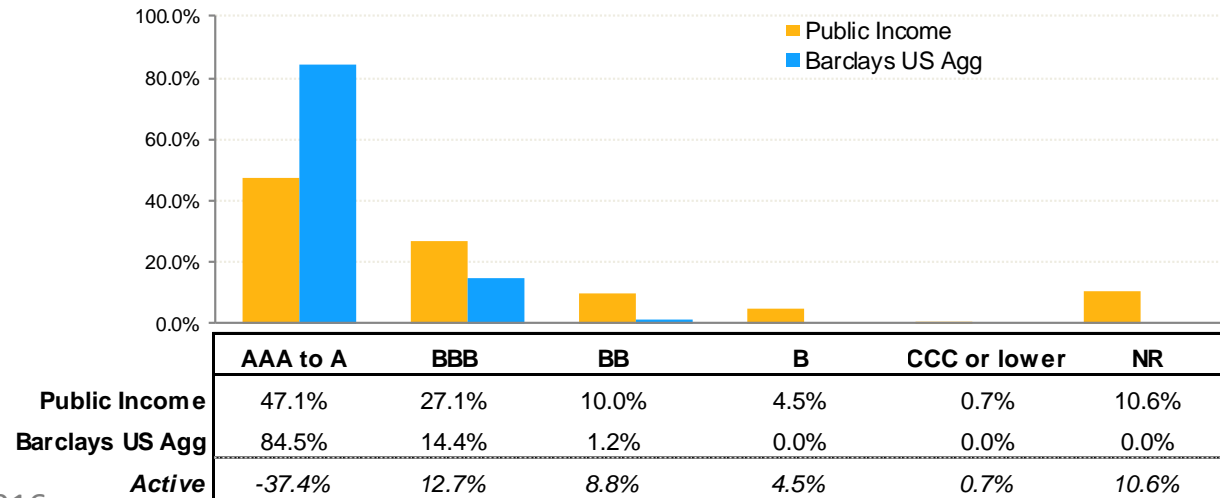


# Public Income Portfolio Composition

## Maturity Profile:

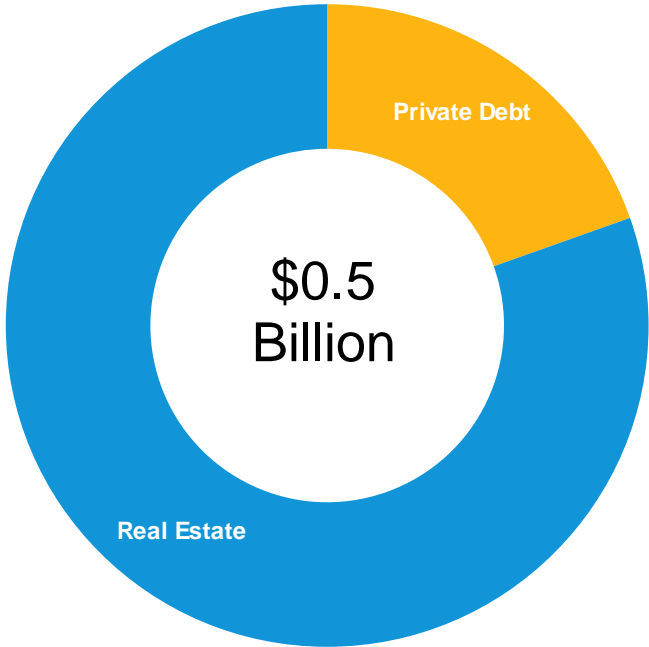


## Rating Distribution





# Private Income Portfolio



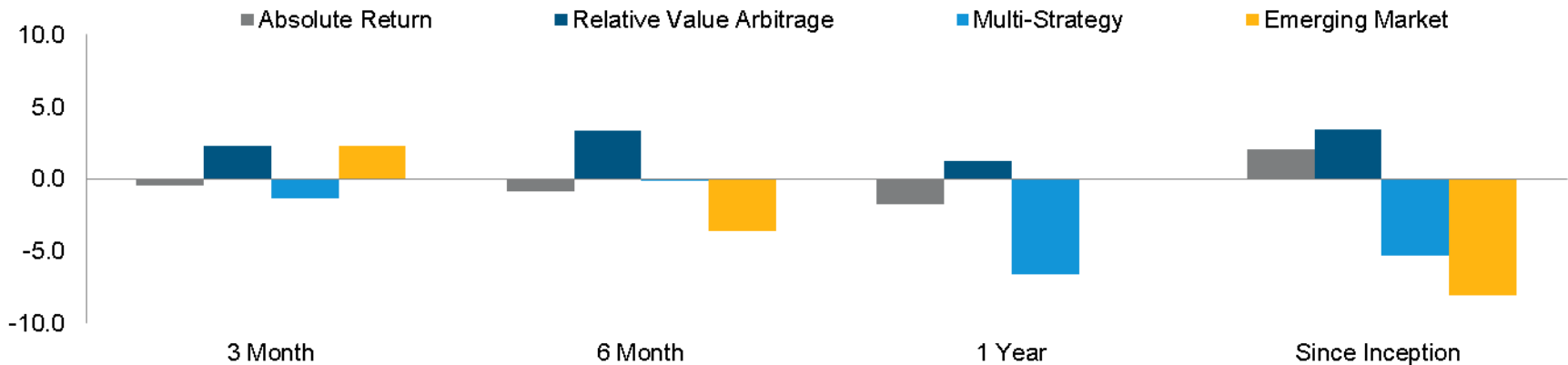
● Private Debt: 20%  
\$0.1B

● Real Estate: 80%  
\$0.4B



# Absolute Return Performance

Net Returns (%) As of June 30, 2016	Market Value		Annualized Returns			
	(\$ Million)	% Allocation	3 Months	6 Months	1 Year	Since Inception
Absolute Return	1,048	100%	(0.5)	(0.9)	(1.8)	2.0
HFRX Absolute Return			0.3	(0.2)	0.6	2.9
<i>Value Added</i>			<i>(0.8)</i>	<i>(0.7)</i>	<i>(2.4)</i>	<i>(0.9)</i>
Relative Value Arbitrage	157	15%	2.3	3.3	1.2	3.5
Multi-Strategy	788	75%	(1.3)	(0.1)	(6.6)	(5.3)
Emerging Market	103	10%	2.3	(3.6)	-	(8.1)

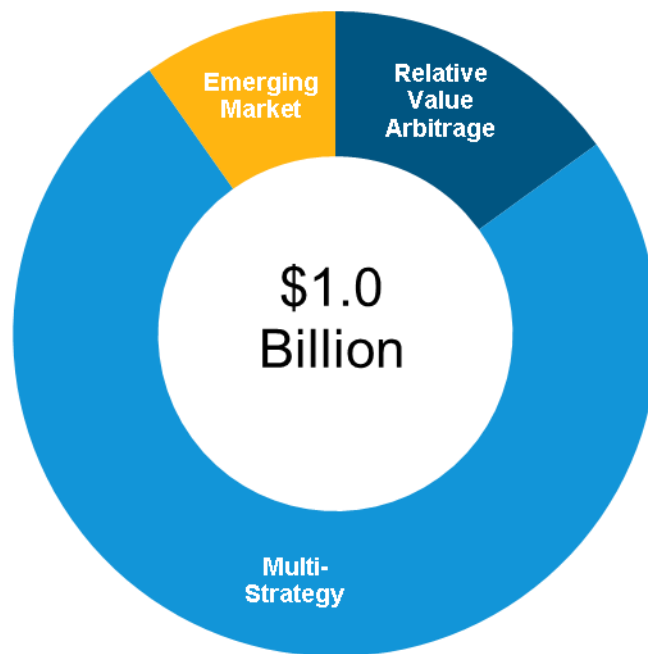


\* Prior to July 1, 2015, the portfolio benchmark was 50% HFRX Absolute Return + 50% HFRX Market Directional. Thereafter the benchmark has been the HFRX Absolute Return.





# Absolute Return Portfolio



- 
- Relative Value Arbitrage: 15%  
\$0.1B
  - Multi-Strategy: 75%  
\$0.8B
- 
- Emerging Market: 10%  
\$0.1B

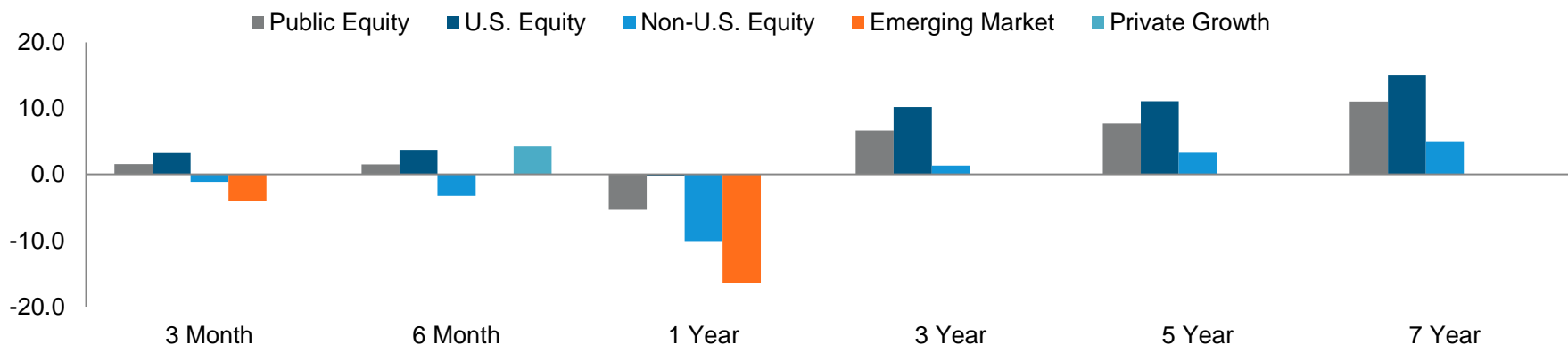


# Equity Returns

Net Returns (%) As of June 30, 2016	Market Value		Annualized Returns					Since Inception	
	(\$ Million)	% Allocation	3 Months	6 Months	1 Year	3 Year	5 Year		7 Year
<b>Equity</b>	<b>3,125</b>	<b>100%</b>	<b>1.6</b>	<b>1.5</b>	<b>(5.4)</b>	<b>6.6</b>	<b>7.7</b>	<b>11.0</b>	<b>5.7</b>
MSCI All Country World IMI TF Index (net dividends)			1.0	1.2	(4.2)	7.8	7.1	8.5	4.4
<i>Value Added</i>			<i>0.6</i>	<i>0.3</i>	<i>(1.2)</i>	<i>(1.2)</i>	<i>0.6</i>	<i>2.5</i>	<i>1.3</i>
U.S. Equity	1,616	52%	3.2	3.7	(0.2)	10.2	11.1	15.1	8.9
Non-U.S. Equity	1,009	32%	0.0	(7.0)	(13.6)	0.0	2.5	5.2	1.4
Emerging Market	430	14%	(4.0)	(10.3)	(25.0)	-	-	-	(7.2)
Private Growth	70	2%	0.0	4.2	-	-	-	-	12.3
MSCI All Country World IMI TF Index (net dividends)			1.0	1.2	(4.2)	7.8	7.1	8.5	4.4
<i>Value Added</i>			<i>(1.0)</i>	<i>3.0</i>	<i>4.2</i>	<i>(7.8)</i>	<i>(7.1)</i>	<i>(8.5)</i>	<i>7.9</i>

\* Emerging Market started July 2013 \*\* Private Growth started November 1, 2015

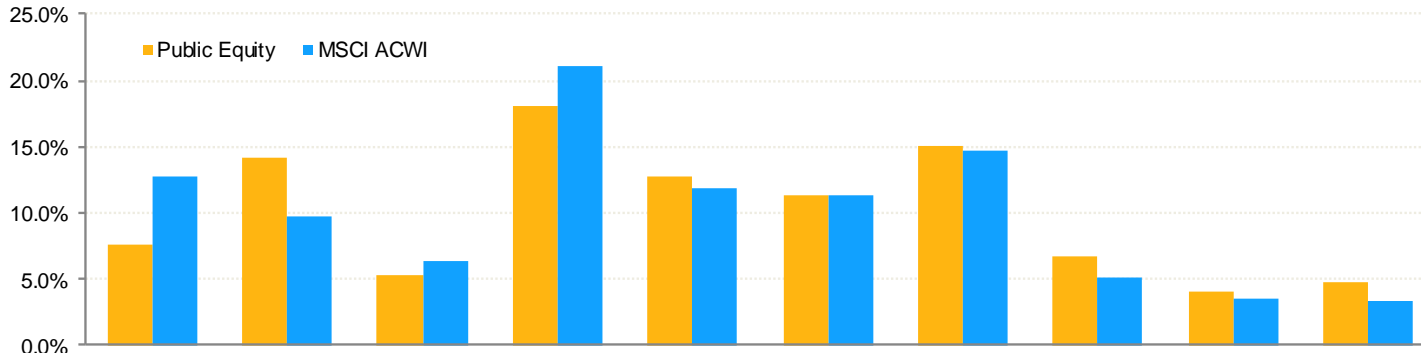
Policy benchmark as of July 1, 2015 is MCSI ACWI IMI TF and is shown for all periods. There was no total TRIP public equity performance composite and equity policy benchmark didn't exist prior to July 1, 2015. Policy would be a weighted average composite of the historical policy benchmarks and targets. Inception date is August 1, 2008





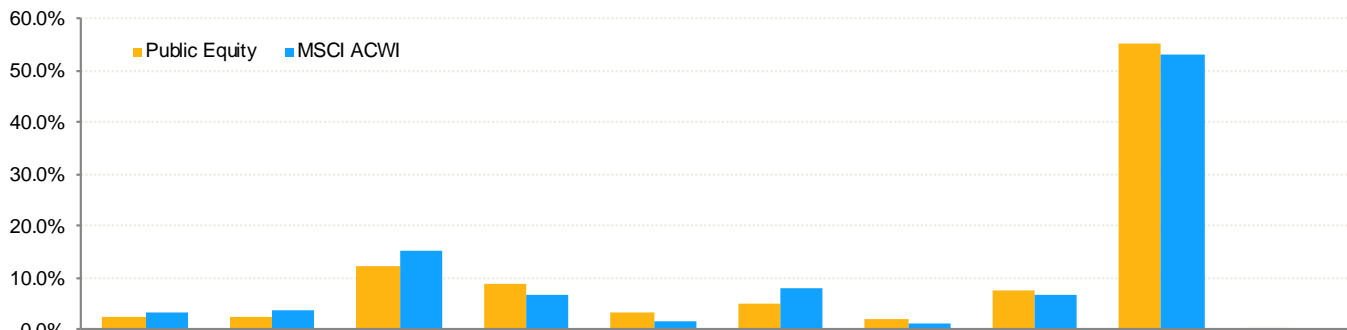
# Public Equity Portfolio Composition: Active Management underperformed in the first half of the year

## Sector Exposure:



	Cons Disc	Cons Staples	Energy	Financials	Health Care	Industrials	Info Tech	Materials	Telecom	Utilities
<b>Public Equity</b>	7.7%	14.1%	5.4%	18.1%	12.7%	11.3%	15.1%	6.8%	4.1%	4.7%
<b>MSCI ACWI</b>	12.8%	9.8%	6.3%	21.1%	11.8%	11.4%	14.7%	5.2%	3.5%	3.4%
<b>Active</b>	-5.1%	4.3%	-0.9%	-3.0%	0.9%	-0.1%	0.4%	1.6%	0.6%	1.3%

## Regional Exposure:

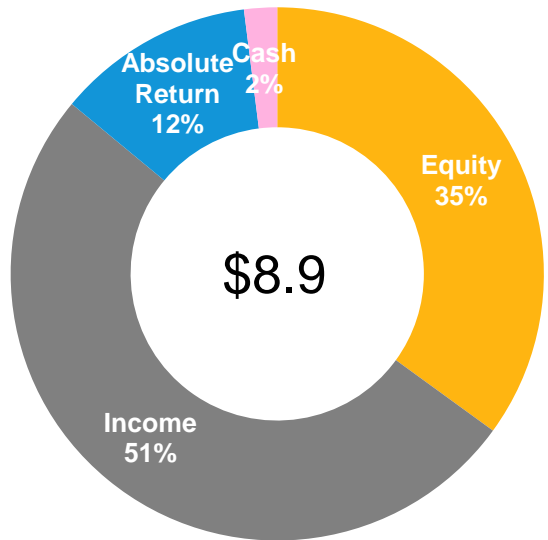


	Canada	Asia ex-JP	Europe ex-UK	Emerg Asia	Emerg EU	Japan	Latin Amer	UK	US	Rest of World
<b>Public Equity</b>	2.7%	2.6%	12.2%	8.9%	3.5%	5.2%	1.9%	7.7%	55.1%	0.2%
<b>MSCI ACWI</b>	3.2%	3.9%	15.1%	7.0%	1.6%	8.1%	1.2%	6.6%	53.3%	0.0%
<b>Active</b>	-0.5%	-1.3%	-2.9%	1.9%	1.9%	-2.9%	0.7%	1.1%	1.8%	0.2%

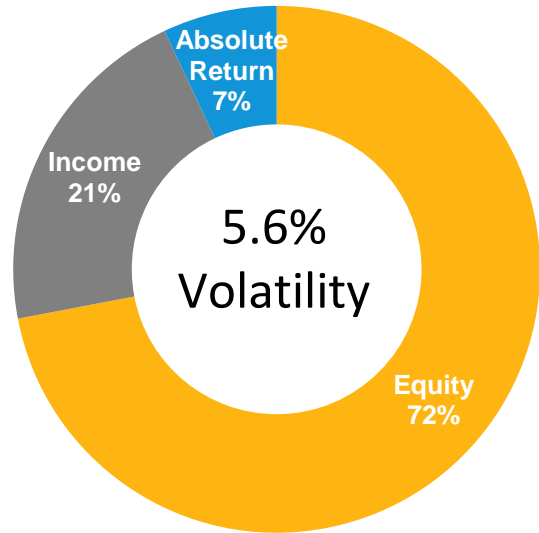


# Risk Exposure and Factors: 5.6% volatility driven in large part by equity risk

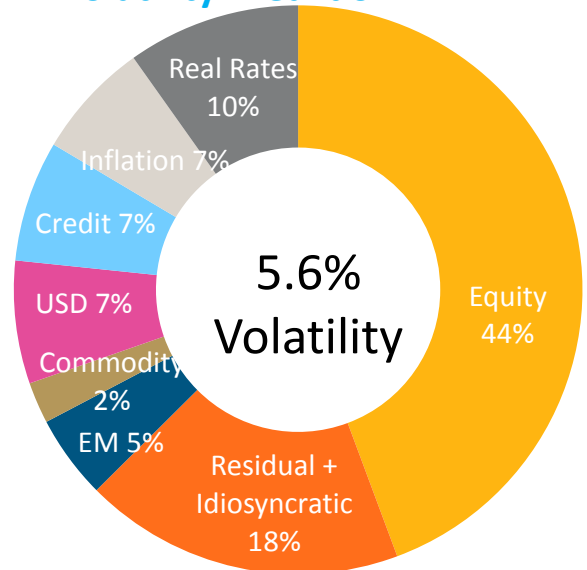
## 1. Asset Allocation



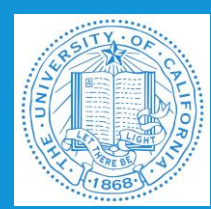
## 2. Asset Allocation adjusted for Standalone Volatility



## 3. Macro Factor Standalone Volatility Breakdown



1. The Asset allocation mix between Fixed Income and Equity provides the lowest order view of risk, implying dominance of Fixed Income, or safety.
2. Adjusting the asset allocation for the standalone volatility of each asset class shows the dominance of Equity risk.
3. Alternatively, decomposing the risk of the portfolio into seven fundamental “macroeconomic factors”, with “Equity” interpreted as proxy for general economic growth, provides a more nuanced view of the factors contributing to the total risk of the portfolio.



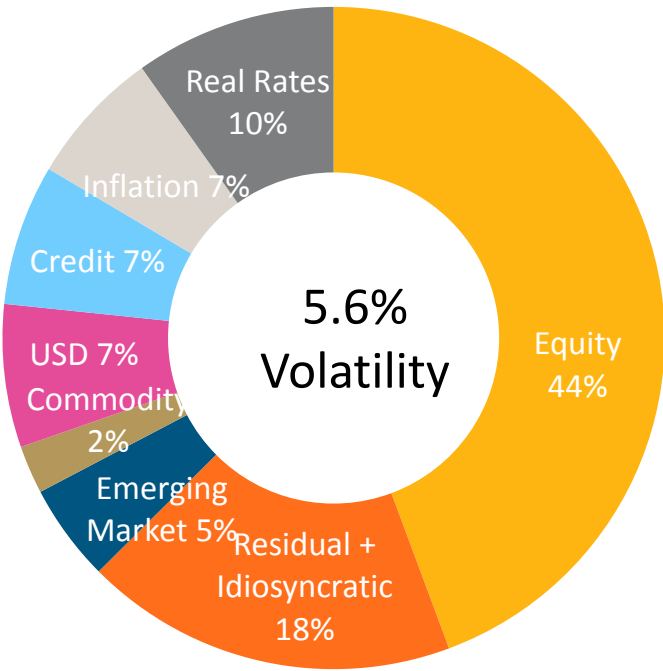
# Risk Measurement: Less than market beta, with modest active risk

Name	Beta vs Benchmark	Benchmark Risk (%)	Portfolio Risk (%)		Active Risk (%)	
		Standalone Volatility	Standalone Volatility	Volatility Contributions*	Tracking Error TE	TE Contributions*
<b>TRIP Total</b>	<b>0.93</b>	<b>5.9</b>	<b>5.6</b>	<b>5.6</b>	<b>0.9</b>	<b>0.9</b>
Equity	0.94	14.8	14.0	4.8	1.9	0.4
Income	0.91	3.1	2.8	0.7	0.4	0.2
Absolute Return	0.30	1.9	4.4	0.1	4.6	0.3
Cash	0	0.0	0.0	0.0	0.0	0.0

*\* additive to total*



# Describing the Macro Factors

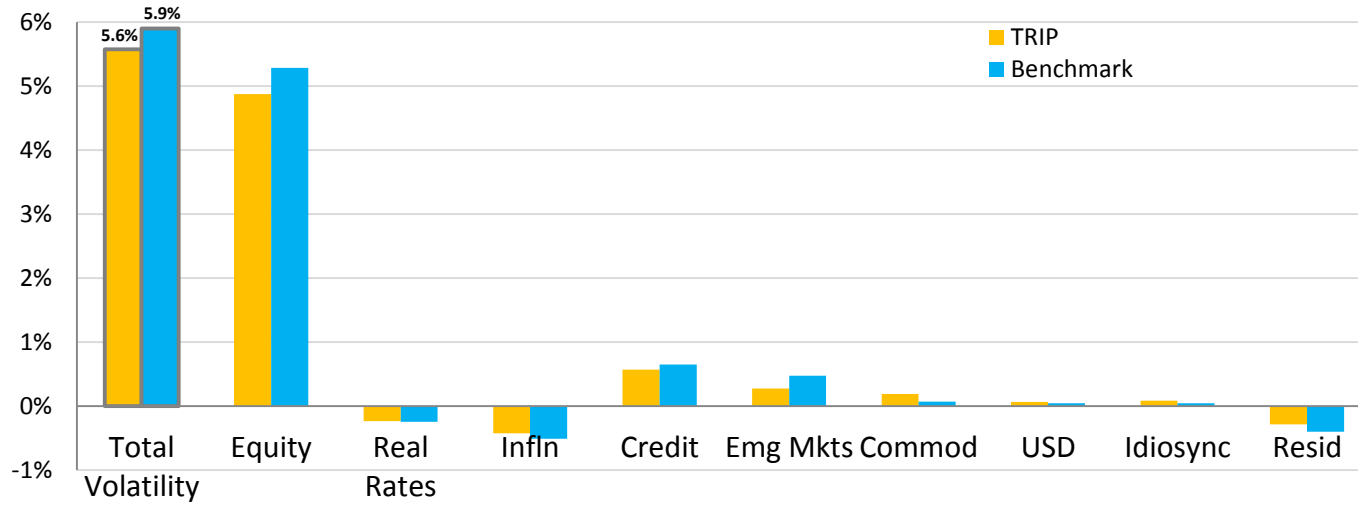


<b>Factor Name</b>	<b>Factor Description</b>
Equity	Broad-market equity index returns
Real Rates	Inflation-linked bond returns
Inflation	Return of long nominal bonds, short inflation-linked bonds portfolio
Credit	Return of long corporate bonds, short nominal bonds portfolio
Commodity	Weighted GSCI Commodity index returns
Emerging Markets	Equally weighted basket of EM Assets



# Total Return Factors and Stress Tests: Drives understanding of portfolio behavior

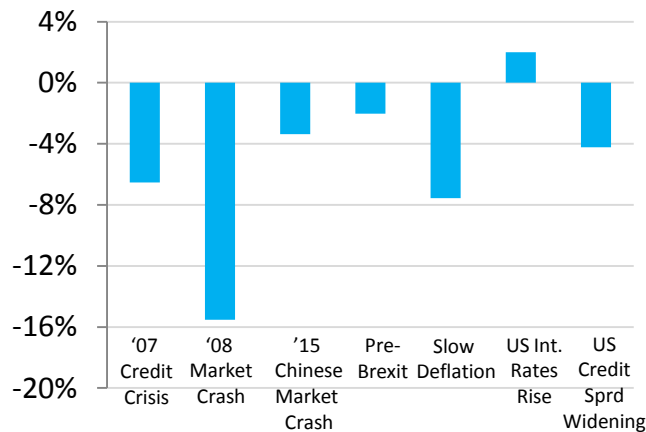
## Macro Factor Volatility Contributions



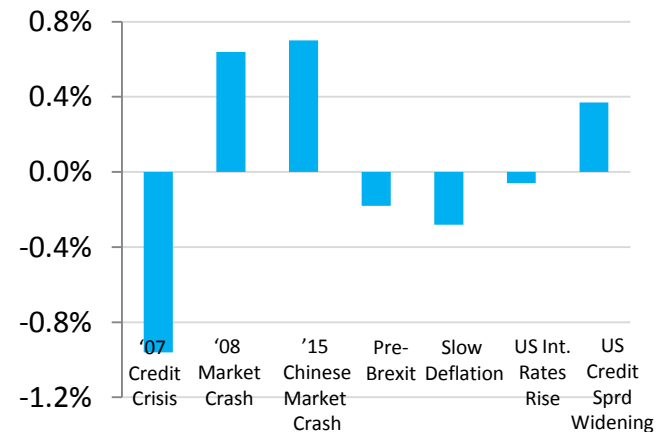
\*Each color additive to Total Volatility

## Historical Stress Tests and Scenario Analysis

### Portfolio



### Active





# UNIVERSITY OF CALIFORNIA

Office of the Chief Investment Officer

## Short Term Investment Pool (STIP)

Investment Review as of June 30, 2016

**Growing Portfolios** Building Partnerships

**UC Investments**





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

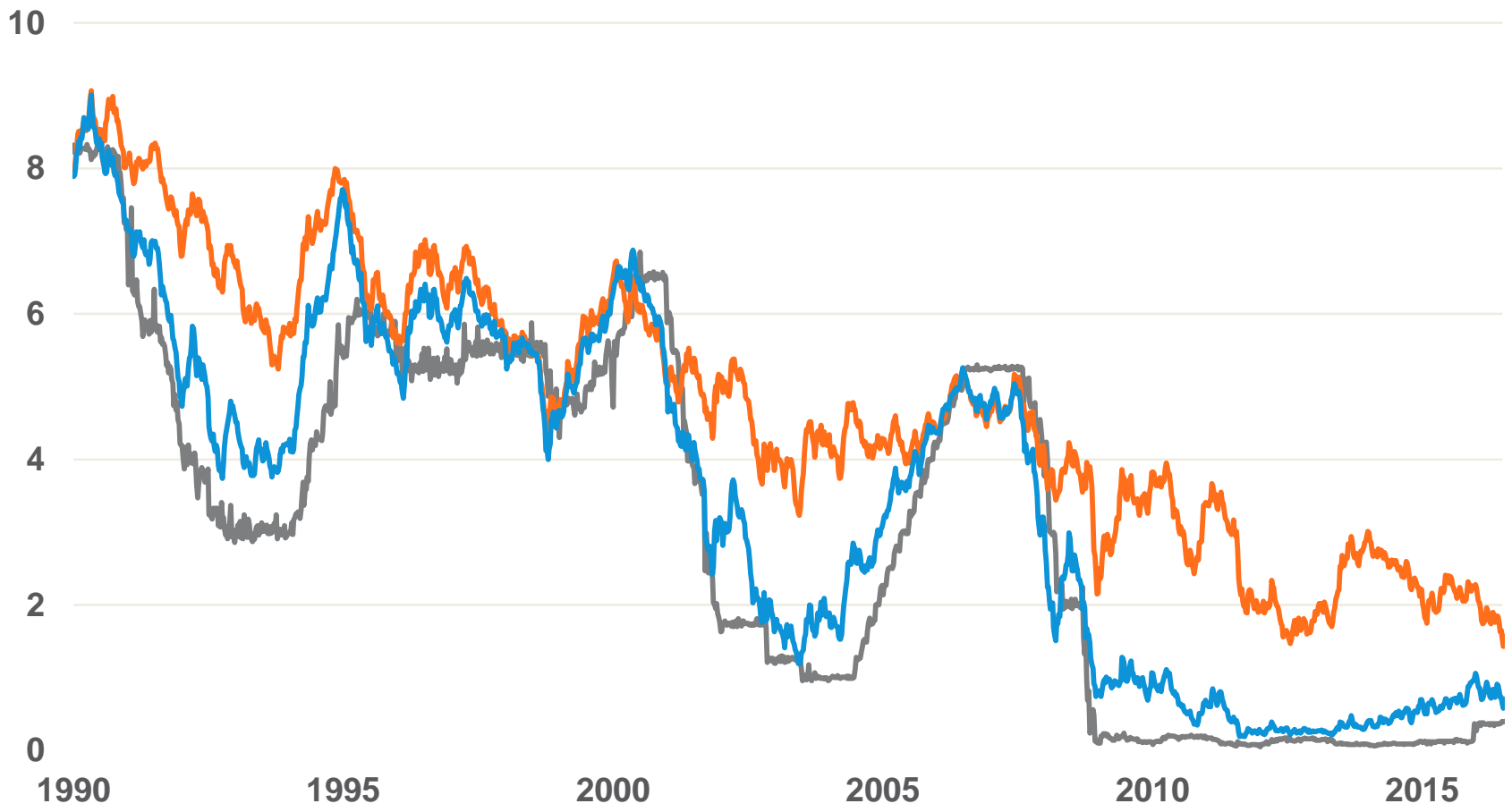
STIP investments managed by the Office of the Chief Investment Officer include a broad spectrum of high quality money-market and fixed-income instruments with a maximum maturity of five-and-a-half years.

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.



# U.S. Rates

— Federal Funds Rate    — 10 Year Treasury    — 2 Year Treasury





# STIP Performance: Consistently added value across all time horizons

## Net Returns (%)

As of June 30, 2016

## Annualized Returns

	3 Month	6 Month	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year
Short Term	0.3	0.6	1.3	1.4	1.7	2.0	2.7	3.9
Policy Benchmark	0.2	0.3	0.6	0.4	0.3	0.4	1.3	2.8
<i>Value Added</i>	<i>0.1</i>	<i>0.3</i>	<i>0.7</i>	<i>1.0</i>	<i>1.4</i>	<i>1.6</i>	<i>1.4</i>	<i>1.1</i>

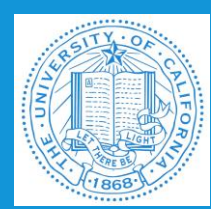
## Net Returns (%)

As of June 30

## Annual Fiscal Year Returns

	2016	2015	2014	2013	2012	2011	2010	2009	2008
Short Term	1.3	1.4	1.6	2.1	2.4	2.6	2.7	2.7	4.8
Policy Benchmark	0.6	0.4	0.2	0.2	0.2	0.5	0.8	1.6	3.4
<i>Value Added</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>1.9</i>	<i>1.1</i>	<i>1.4</i>

STIP Policy Benchmark is 66% 2 Year Treasury Income Note + 34% 30-Day Treasury Bill



# STIP Assets: Net Cash Flow driven by Working Capital Optimization

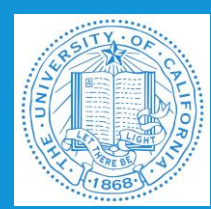
## Assets Under Management Attribution

Assets Under Management June 30, 2015	\$6.77 billion
Market Gains	\$0.03 billion
Value Added	\$0.07 billion
Net Cash Flow	(\$1.58 billion)
<b>Assets Under Management June 30, 2016</b>	<b>\$5.29 billion</b>

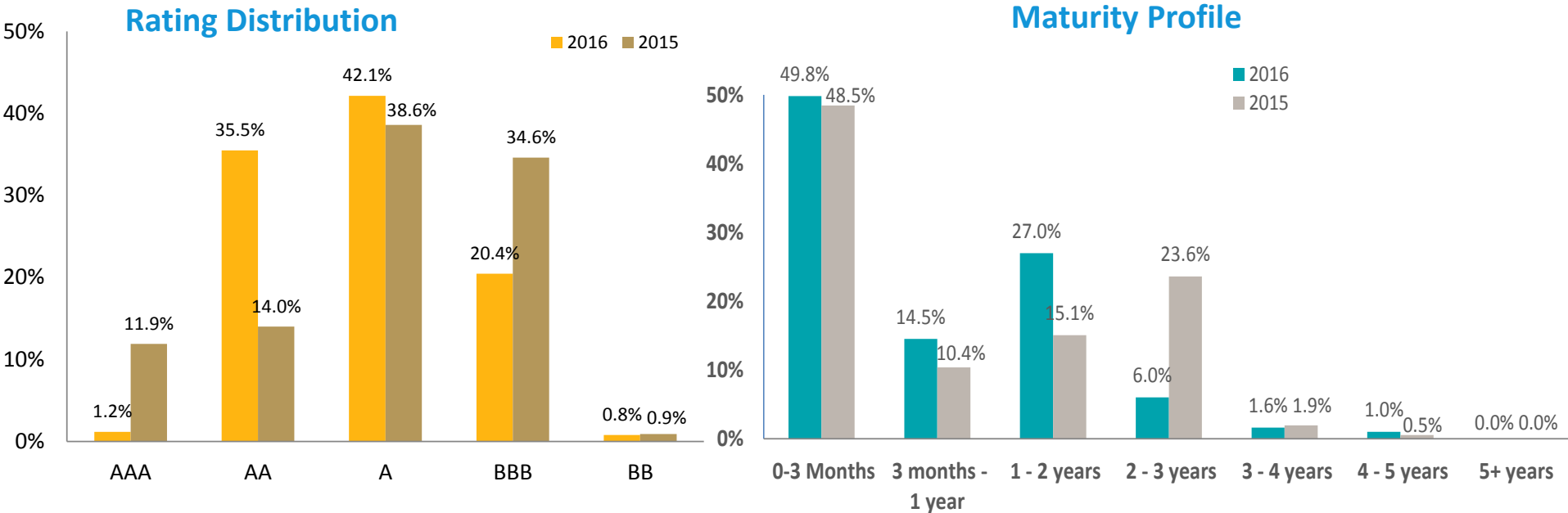
## Asset Allocation

As of June 30, 2016

Corporates	\$2.26	42.7%
Commercial Paper	\$1.74	32.9%
Governments	\$1.23	23.2%
Cash	\$0.06	1.2%
<b>Total</b>	<b>\$5.29 billion</b>	<b>100.0%</b>



# Portfolio Composition: Shorter duration, higher credit quality relative to 2015



Over the past fiscal year STIP portfolio credit quality has improved. Investments rated BBB declined by 15% of portfolio assets, while those rated A and above rose by 15% of portfolio assets.

STIP's average portfolio maturity profile declined by approximately one year during 2015 - 2016, with a significant increase in maturities of two years and shorter.

The duration of the portfolio is currently 0.8 and is down from 1.25 in 2015.



### **How might FED rate hikes impact the portfolio?**

The duration of the portfolio is 0.8 years with close to 50% of the portfolio in investments that have a maturity date of less than 3 months. As a result, the portfolio is protected from rising interest rates. Higher rates will, in fact, help the portfolio earn a higher yield when short maturity investments are reinvested.

### **How much has UCRP borrowed from STIP to bridge pension funding gaps?**

The total amount of money transferred from STIP to UCRP to date is about \$3.2 billion as part of the borrowing program which includes \$563 million for Fiscal Year 2015-16. The Regents have approved an additional \$481 million for fiscal year 2016-2017 and \$392 million for fiscal year 2017 - 2018.

### **When was TRIP started and how much money has moved from STIP to TRIP?**

TRIP was funded in 2008 with \$1.5 billion from STIP. During Fiscal Year 2015 - 2016, \$1.26 billion was transferred, bringing the cumulative total since inception to \$5.8 billion. Total market value of TRIP currently stands at \$8.9 billion. Since inception, TRIP has earned 7.0% versus STIP at 2.2%, generating an additional \$76.5 Million over what would have been earned in STIP.

### **What do cash flows typically look like over a fiscal year?**

Over the past 5 years, a monthly average of \$50 million net flows into STIP from the different campuses.