



UNIVERSITY OF CALIFORNIA

Office of the Chief Investment Officer

Pension

Investment Review as of March 31, 2016

May 2016

Growing Portfolios Building Partnerships

UC Investments



The overall **investment objective** for all University of California Retirement Plan (“UCRP”) assets is to maximize real, long-term total returns (income plus capital appreciation adjusted for inflation), while assuming appropriate levels of risk.

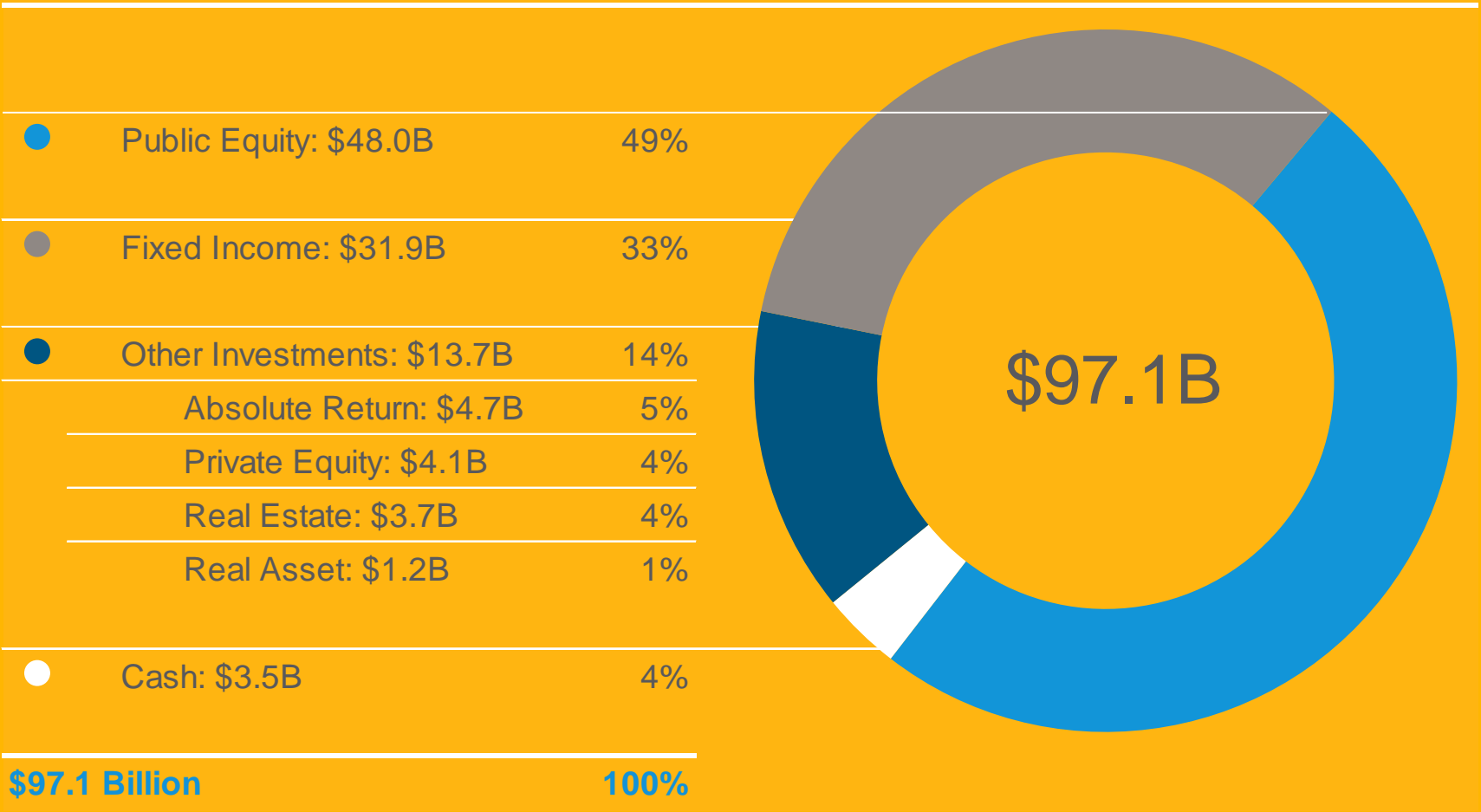
UCRP’s specific objective is to maximize the probability of meeting the Plan’s liabilities, subject to the Regents’ funding policy, and to preserve the real (inflation adjusted) purchasing power of assets.

**Delivering
value
through
values.**

OUR INVESTMENT BELIEFS

Our Products

As of March 31, 2016



1

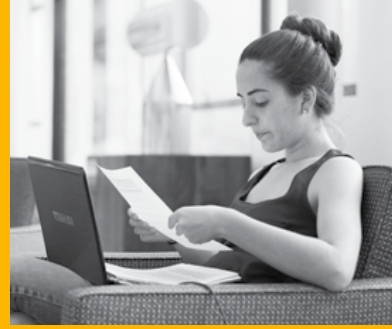
Invest for the long term. Where we can, we focus on investments over 10 years and beyond. This offers many more opportunities than those available to short- and intermediate- term investors. We aim to make the most of our scale and ability to be patient.

2

Invest in people. The contributions of talented people are among the most important drivers of success for any investment organization. So we've made the recruitment and retention of exceptional staff a cornerstone of our strategy.

3

Build a high-performance culture. Every organization needs a clearly defined culture to make sure everyone is working towards the same goals and speaking the same language. Our culture is one of responsibility, accountability and high performance. We are proud of our achievements but try to be humble, as markets sometimes surge and fall without warning or logic.



4

We are all risk managers. Our aim is simple: to earn the best risk-adjusted returns that meets the objectives of our various portfolios. But achieving that aim is complex. An effective risk-management function is critical, enabling the leadership to delegate authority to the investment team. Everyone on the team is in the risk-management business.

5

Allocate wisely. The key to investing, and the most important driver of performance, is asset allocation. To make effective investment decisions and achieve the appropriate combination of risk and return, we have to maintain a clear and balanced understanding of stakeholders' unique objectives, time horizon, risk tolerances, liquidity and other constraints. As a globally significant investor, we also aim to make the most of our scale and patience when we allocate assets.

6

Costs matter. High-quality advice comes at a cost. We get that. But we also believe fees and costs for external managers must be fully transparent and straightforward. Anything else creates potential problems — opaque fees can mask risk. Plus, cost savings can be considered a risk-free return. If we can save money through efficient, well-executed strategies, then we must. We intend to aggressively capture every dollar of this risk-free return that we can.



7

Diversify with care. Act with clarity. Diversification is invaluable, but it's not a cure-all. It allows us to spread risk and reduce the impact of any individual loss. But diversifying too broadly has the effect of producing returns that are index like and can draw investors into assets and products they don't fully understand. We prefer a more focused portfolio of assets and risks that we know extremely well. We also need to be keenly aware of our own strengths and weaknesses in the global context in order to act decisively when we believe markets are behaving irrationally or when we have a skill or knowledge advantage. That means keeping a constant, clear-eyed check on our evolving capabilities. It's not always an easy or painless process, but it's an essential one.

8

Sustainability impacts investing. Sustainability is not a "check box," but rather, a fundamental concern that we incorporate into decision making. We focus particularly on how sustainability can improve investment performance. Sustainable businesses are often more rooted in communities and resilient to future crises, which means investing in them makes good business sense. They are bound to affect portfolios in the future, and we need to consider them in our broader lens of investment decision making.



9

Collaborate widely. We are proud to be a part of the University of California, as well as the broader community of institutional investors. Through active collaboration, we aim to leverage the unique resources of the university. We also want to foster collaborative relationships with our peers to leverage our long-term competitive advantages.

10

Innovation counts. The best investors recognize that markets are constantly fluctuating and that no good idea lasts forever. We must always be innovating and identifying new opportunities. Getting in early brings rewards. Just as importantly, some of the best opportunities transcend asset-class silos. There are advantages in thinking differently and partnering with peers that are willing to work with us on innovative projects. Collaboration is one of the most powerful drivers of innovation.



Table of Contents

Market Review	8
Investment Highlights	14
Investment Performance	15
Asset Allocation	18
Performance Attribution	20
Risk Measures	21
Asset Class Summary	25
Public Equity	26
Fixed Income	32
Private Equity	27
Absolute Return	44
Real Estate	46
Real Assets	51
Policy Benchmark	55

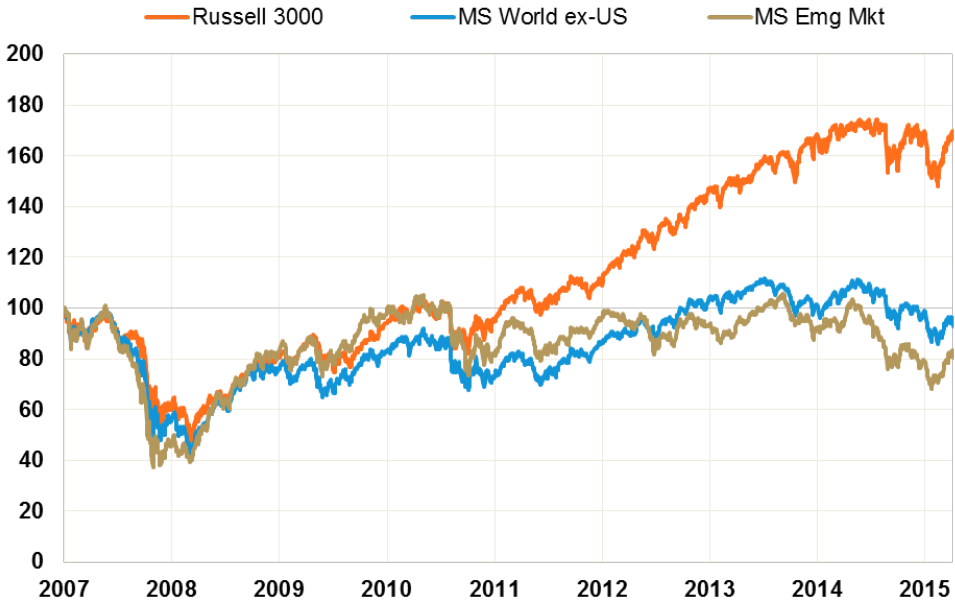


Market Review



Equity Markets

Performance



Highlights

Overall, global equity markets have struggled fiscal year to date with the MSCI ACWI down 4.7%. China, oil prices and central bank actions have all been key drivers of 'risk on' and 'risk off'.

Concerns over the health of the Chinese economy, a collapse in oil and other commodity prices, a Fed rate increase and the rising U.S. Dollar vis-à-vis most currencies initially led to a significant selloff in global markets. Risks from China have dominated headlines much of the year as it struggles through the largest economic transformation, including a stock market crash, currency devaluation, a rapidly deteriorating reserve base and slowing growth rates.

More recently, the markets have been recovering with segments that have sold off the most, beginning to rebound the most. For example, Emerging Europe, Canada and Latin America have risen on the back of rising oil prices and speculation surrounding a better political environment. In addition, coordinated global central bank decisions including a more gradual rate increase path in the U.S., a supportive European Central Bank, and the adoption of negative interest rates in Japan were viewed as catalysts for a rally in the last month.

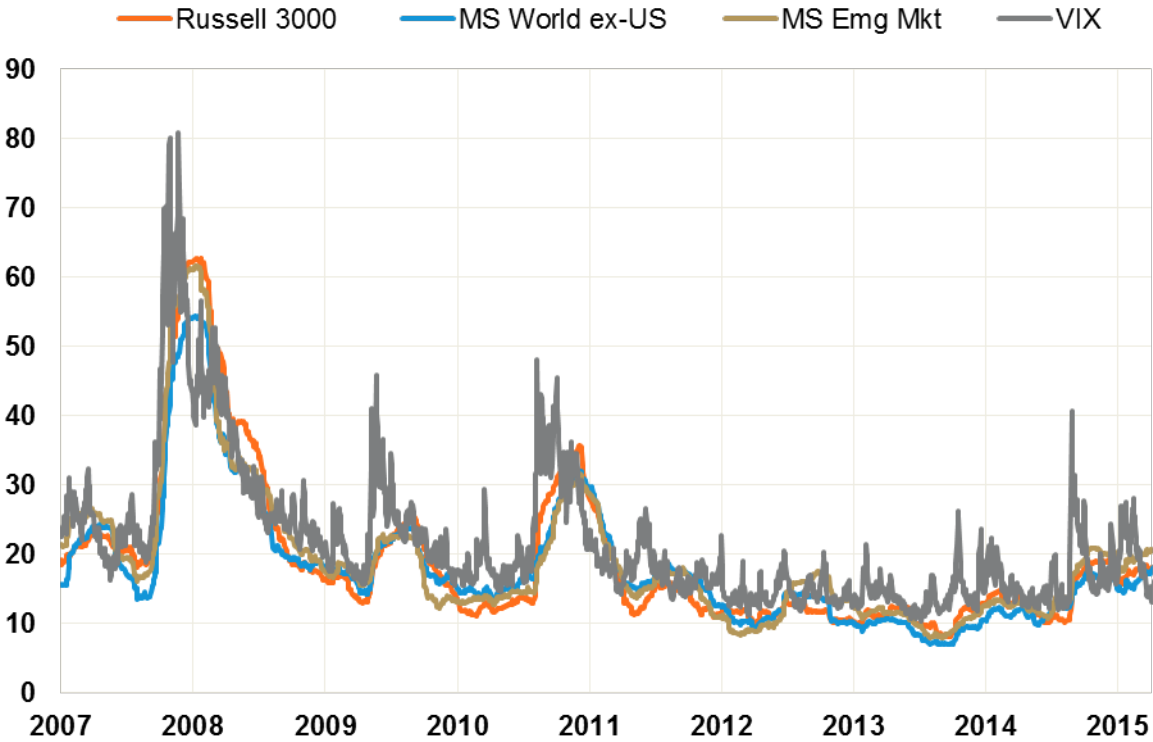
For most of the year, a sustained collapse in commodity prices, slower global GDP and a rising U.S. Dollar, led to a rout in emerging markets, which has begun to reverse with the notable exception of China.

Despite the selloff in global markets, developed market performance fared better with the U.S. and Europe down 0.8% and 6.6% respectively. However, Japan has struggled down 8.3% FYTD as the Yen has risen and lowered the forward earnings outlook.



Equity Markets

Volatility



Highlights

Equity values remain elevated at the same time the business cycle continues to mature and vulnerabilities and risks are rising. Many of the drivers of global growth appear to be slowing as stimulus in the form of low interest rates, quantitative easing and currency devaluation becomes less effective and China's economy continues to transition. Above average valuations and rising risks, coupled with expectations for slow global growth, should lead to much lower returns and higher volatility than that of the past six years.

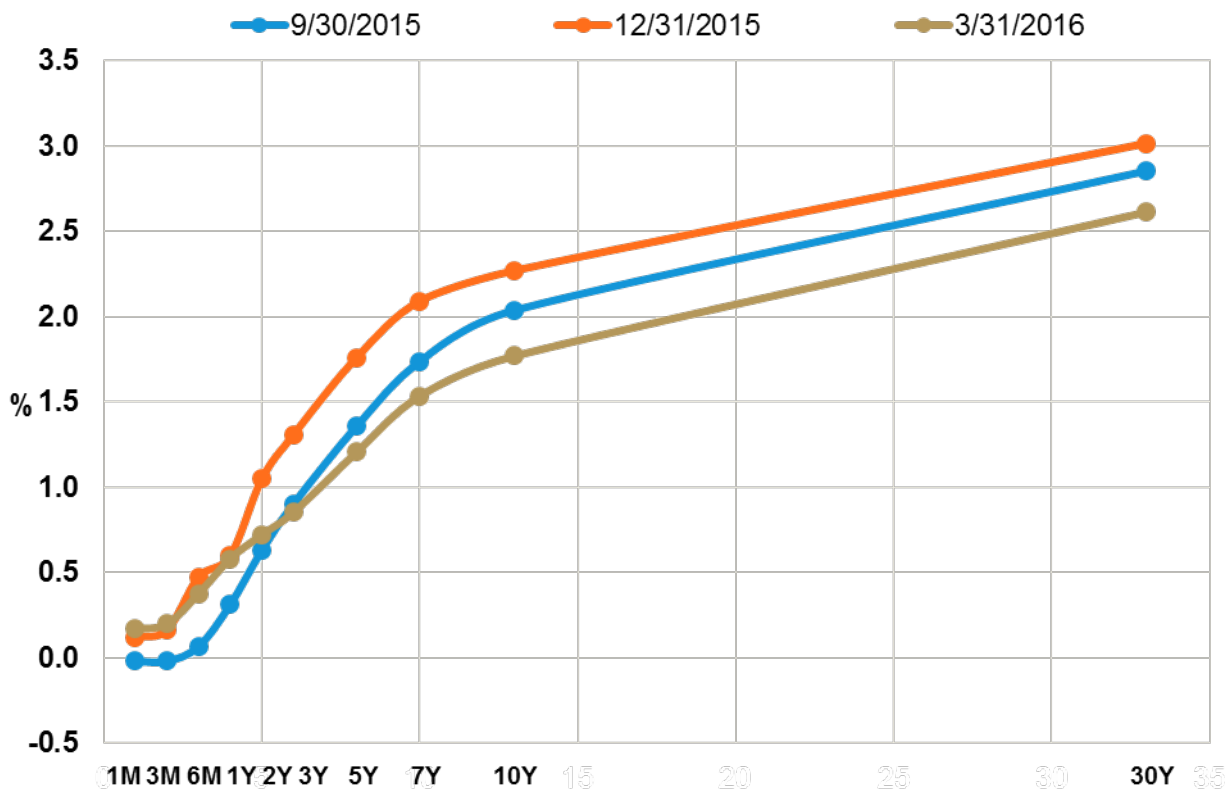
While volatility spiked from a long period of abnormally low levels, differentiation among stocks is low, creating a difficult stock picking environment. Despite high intra stock correlation levels, we have begun to see extreme volatility in equity factor or style risks (country/regions, sectors, currency, value (related to carry or high dividend) vs. growth, leverage/quality, liquidity, momentum, size (small/mid/large cap), volatility (often called low volatility or defensive) potentially due to a greater focus on 'smart beta' and equity risk premia.

Markets are likely to remain volatile while they adjust for the (slow) removal of crisis-era policies and there is the 'ebb' and 'flow' of the potential to raise interest rates versus stimulus. Over the medium term, central banks might migrate from being a source of stability to a source of instability. So to, sovereign funds once flush with cash may eventually become 'liquidity demanders' versus 'liquidity providers'.



Yields

US Treasury Bond Curve



Highlights

Treasury yields fell during the quarter and the yield curve flattened as the Federal Open Market Committee (FOMC) took a dovish shift at their March meeting. Treasury yields declined 35-55 basis points over the past quarter with the 5 to 7 year sector outperforming along the curve.

The latest round of projections at the March FOMC meeting suggests greater comfort with letting the labor markets continue to tighten and inflation to rise further. Moreover, the Fed's ongoing concern about global economic and financial developments suggests the FOMC is unlikely to tighten around events that could potentially destabilize the global economy.

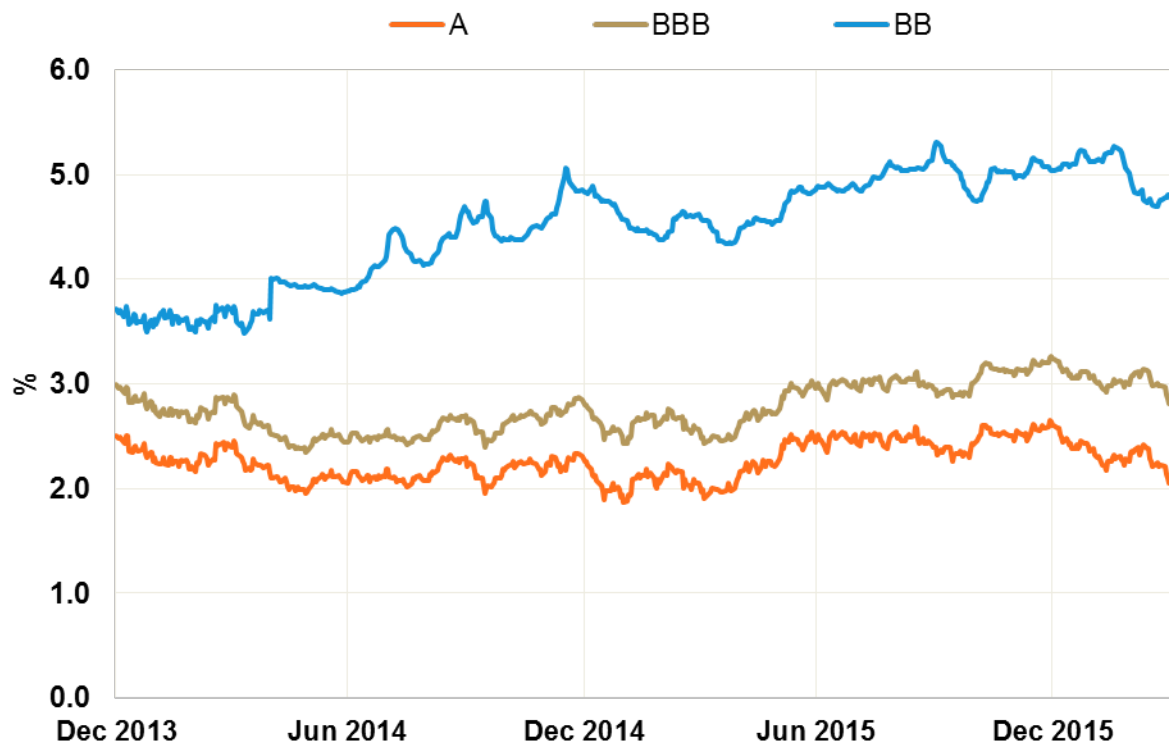
Markets remain skeptical of the Fed's ability to normalize rates and are pricing in one 25 basis point hike between now and year end 2017 – this runs counter to the median Fed projection of a cumulative 150 basis point increase in the Fed Funds target rate by year end 2017.

The Q1 2016 US economic data continues to come in weak – consensus estimates for Q1 real GDP growth are below 1%. Throughout this expansion real GDP has tended to be weak in the Q1 and stronger in Q2 – over the past 6 years, average real GDP in Q1 has been 0.8% while average growth in Q2 has been 3.1%.



Spreads

Credit Spreads by Ratings



Highlights

The credit widening that started in the 4th quarter of 2015 accelerated into 2016, taking spreads in February to levels not seen since 2011. Drivers of concern included Fed tightening, oil below \$30 per barrel, China currency devaluation, and recession fears.

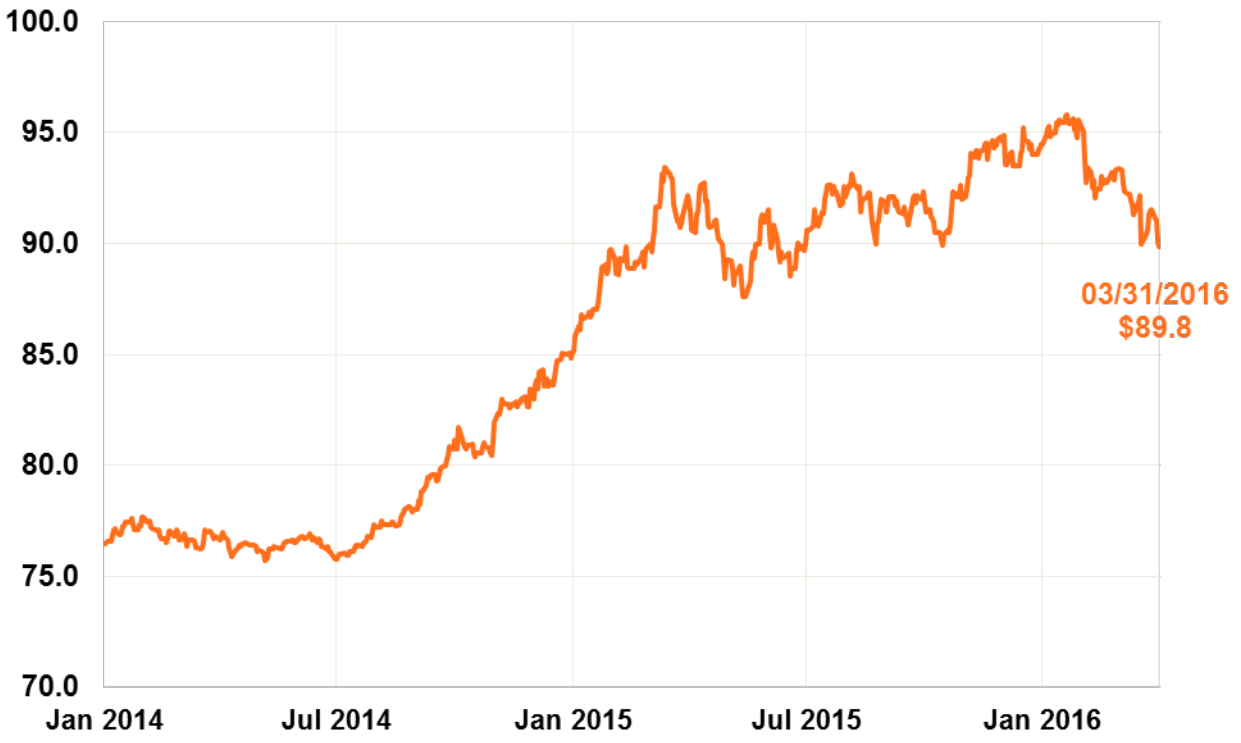
Since the mid-February market trough, risk assets have rallied tremendously with B and CCC rated securities, Metals & Mining and Energy sectors outperforming in what started with investors covering shorts and progressed into investors looking to add to exposure at lower prices. The spark for the turnaround came from signals from the Fed that they would remain accommodative and slow their normalization policy due to global economic concerns. The Fed signal in combination with diminishing fears of a major China devaluation and a bounce in energy re-priced the recession premium out of the market

Fundamentally, companies generally continued to engage in shareholder enhancing activity—share buybacks and re-leveraging of balance sheets with record corporate issuance year to date. Due to the risk off nature that started the year, mergers & acquisitions slowed down somewhat although there was an increase in M&A from Asia, a trend many believe will continue.



Currency

US Dollar Index



Highlights

During the second half of 2015, the U.S. dollar had been a channel to express investors' views as they adjusted to the Fed's first rate hike which finally occurred in December. Over that period, the U.S. Dollar strengthened as the Fed's tightening policy diverged from other central banks whom were embarking on policies to weaken their currencies as a means to stimulate their economies.

Since the beginning of 2016, the U.S. dollar has reversed this move as risk markets weakened, long dollar positions were unwound, and the probability of further Fed rate hikes declined. Additionally, after the February G20 meeting in Shanghai the ECB, BOJ, and the PBOC signaled that policies that had been leading to currency devaluations had run their course. This was followed by a dovish Fed statement after its March meeting, taking more steam out of the long dollar trade.



Investment Highlights



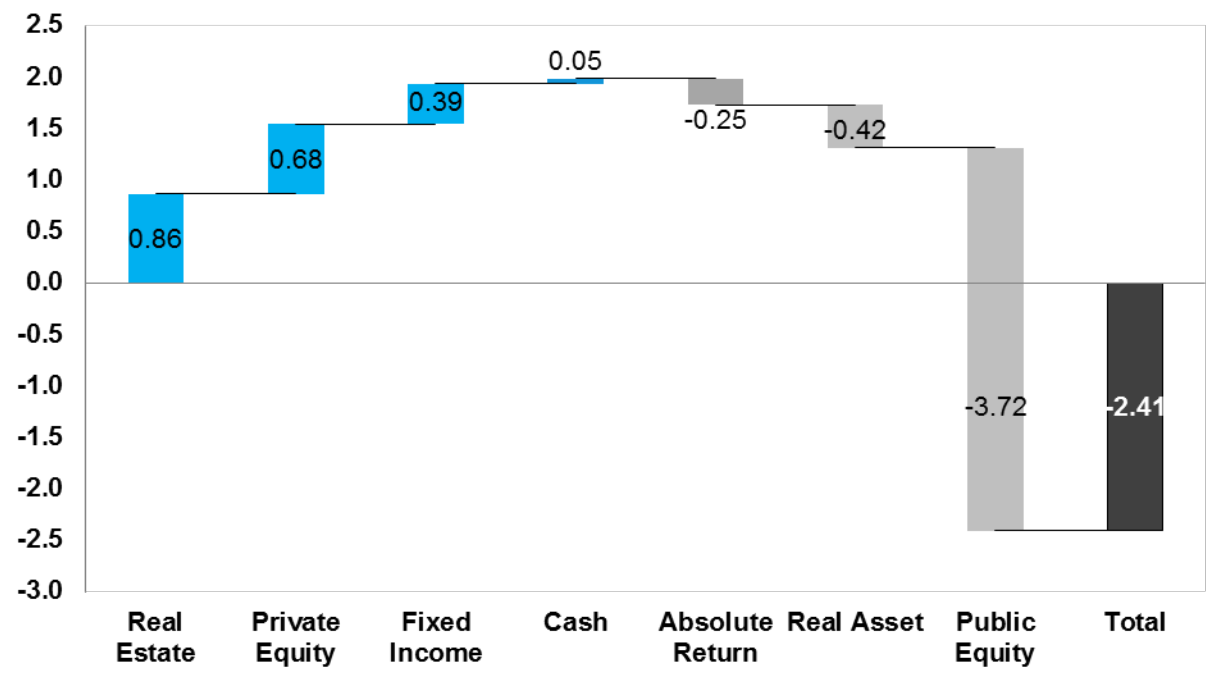
Investment Performance

Net Returns (%) As of March 31, 2016	Annualized Returns						
	9 Month	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year
UC Pension	-3.3	-2.4	5.6	6.2	11.0	5.1	7.4
UC Pension Benchmark	-2.0	-1.7	5.2	5.5	10.4	4.7	7.0
<i>Value Added</i>	<i>(1.3)</i>	<i>(0.7)</i>	<i>0.4</i>	<i>0.7</i>	<i>0.6</i>	<i>0.4</i>	<i>0.4</i>



Investment Performance

12 Months Contribution to Return - Percentage (%)



Highlights

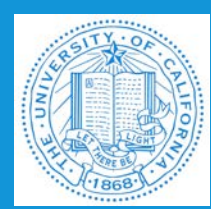
Over the 12 months ending March 31, 2016, the Pension returned -2.4% vs. -1.7% for our benchmark.

By far, the largest negative contributor was Public Equity. While Absolute Returns and Real Assets contributed negatively as well, their respective impact was much more muted.

On the other hand, Real Estate and Private Equity, as well as Fixed Income and Cash to a much lesser extent, contributed positively to our returns.

We continue to hold a rather defensive stance, expressed mainly through our overweight to Cash and Fixed Income, and underweight to Private Equity.

In terms of performance attribution, securities selection detracted -0.8%, with Public Equity responsible a majority of the negative added value. Our underweight to Private Equity also contributed negatively. Our allocation tilts added a total of +0.1%, mainly through our Cash and Real Estate overweights. Total value added return was -0.7% in the past 12 months, or about -\$400 Million.



Investment Performance

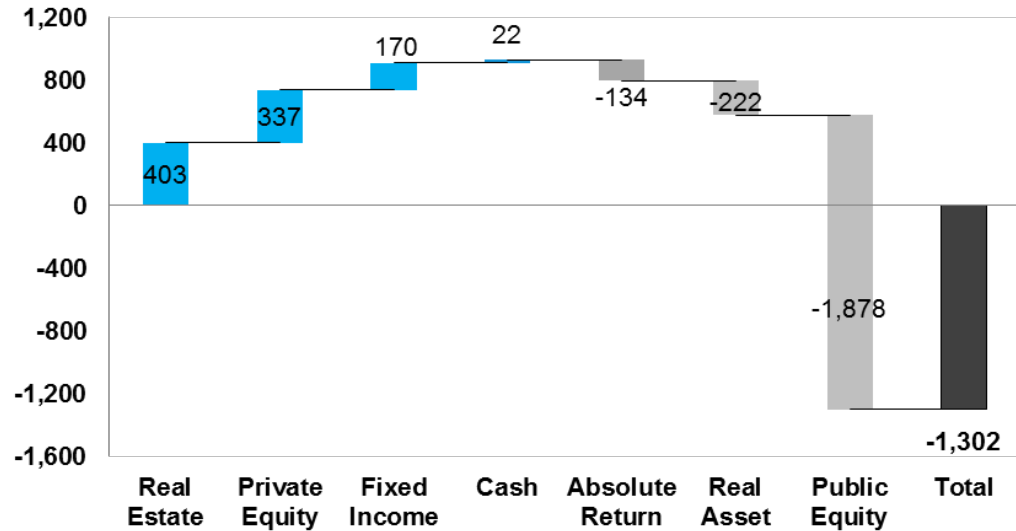
Assets Under Management Attribution

Assets Under Management March 31, 2015	\$54.7 billion
Market Gains	(\$0.9 billion)
Value Added	(\$0.4 billion)
Net Cash Flow	\$0.1 billion

Assets Under Management March 31, 2016	\$53.5 billion
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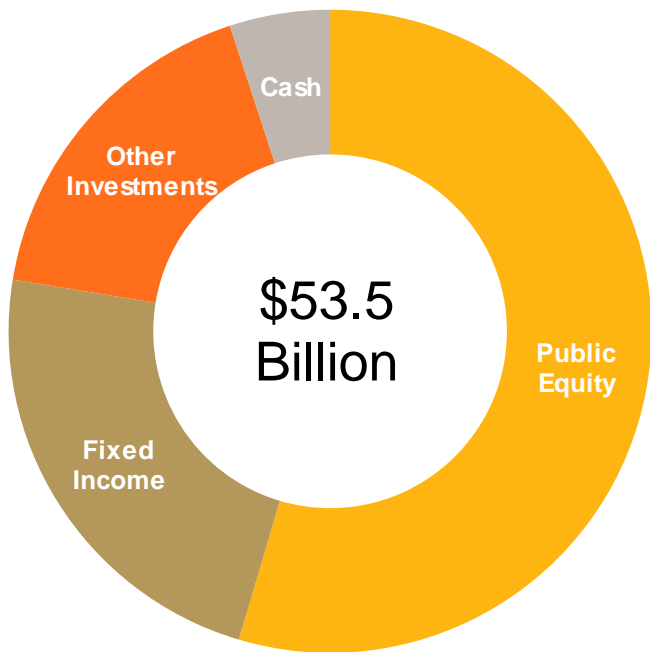
12 Months Contribution to Return - Millions (\$)

As of March 31, 2016





Asset Allocation



● Public Equity: 55%
\$29.2B

● Fixed Income: 23%
\$12.3B

● Other Investments: 17%
\$9.3B

● Cash: 5%
\$2.7B

Highlights

We continue to expect both lower returns and higher volatility over the intermediate to long-term. The main culprits include valuations, maturity of the business cycle, and geopolitical risks.

Historically low 10 year Treasury yields have anchored lower risk premiums across asset classes, making it difficult to achieve returns at or above the discount rate for the foreseeable future.

During the past 12 months, we continued to reposition the portfolio. Specifically, we rebalanced Public Equity to better align the allocation with the portfolio objectives and our investment beliefs.

The portfolio continues to be positioned to weather and take advantage of some volatility:

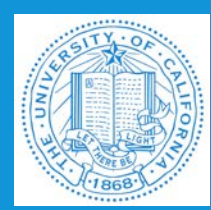
- 5.0% cash;
- Below target allocations to growth assets (Public and Private Equity) and slightly higher allocation to Fixed Income (mainly Core and Unconstrained);

Compared to our Endowment, the Pension allocation is much more sensitive to Equity (and to a much lesser extent, Fixed Income) returns. While this is not uncommon, it raises questions about potential drawdowns in times of stress.



Asset Allocation

	Market Value in \$ Billions	Percentage	Over/Underweight Relative to Policy
Public Equity	29.2	54.6%	-0.3%
Fixed Income	12.3	23.1%	0.8%
Core	7.4	13.9%	1.5%
High Yield	1.7	3.2%	0.6%
Emerging Market Debt	1.3	2.4%	-0.2%
TIPS	1.9	3.6%	-1.1%
Other Investments	9.3	17.3%	-5.5%
Absolute Return	2.3	4.3%	-1.9%
Private Equity	2.8	5.2%	-2.8%
Real Estate	3.2	6.0%	0.5%
Real Asset	1.0	1.8%	-1.3%
Cash	2.7	5.0%	5.0%
Total	53.5	100.0%	0.0%



Performance Attribution – 1 Year

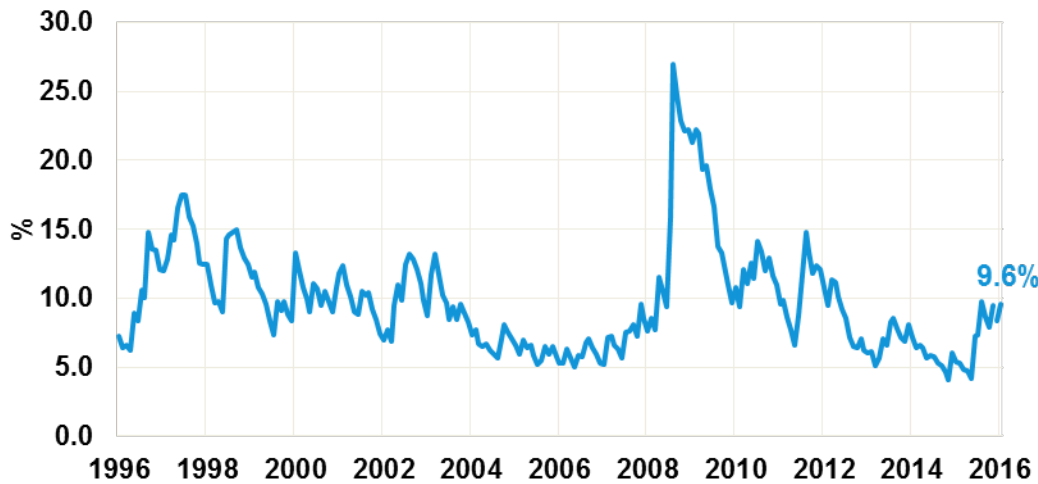
As of March 31, 2016	Average Weight	Active Weight	Allocation Attribution	Selection Attribution	Total Attribution
Public Equity	54.1	-0.8	+0.2	-1.1	-0.9
Fixed Income					
Core	13.3	+0.9	-0.1	+0.0	-0.1
High Yield	3.0	+0.4	+0.0	+0.1	+0.1
Emerging Market Debt	2.4	-0.2	+0.0	+0.0	+0.0
TIPS	4.1	-0.6	-0.1	+0.0	-0.1
Other Investments					
Absolute Return	5.9	-0.3	+0.1	+0.2	+0.3
Private Equity	5.4	-2.6	-0.3	+0.0	-0.3
Real Estate	6.0	+0.5	+0.1	+0.0	+0.1
Real Asset	2.1	-1.0	+0.1	+0.0	+0.1
Cash	3.7	3.7	+0.1	+0.0	+0.1
Total	100%	+0.0%	+0.1%	-0.8%	-0.7%

As of March 31, 2016

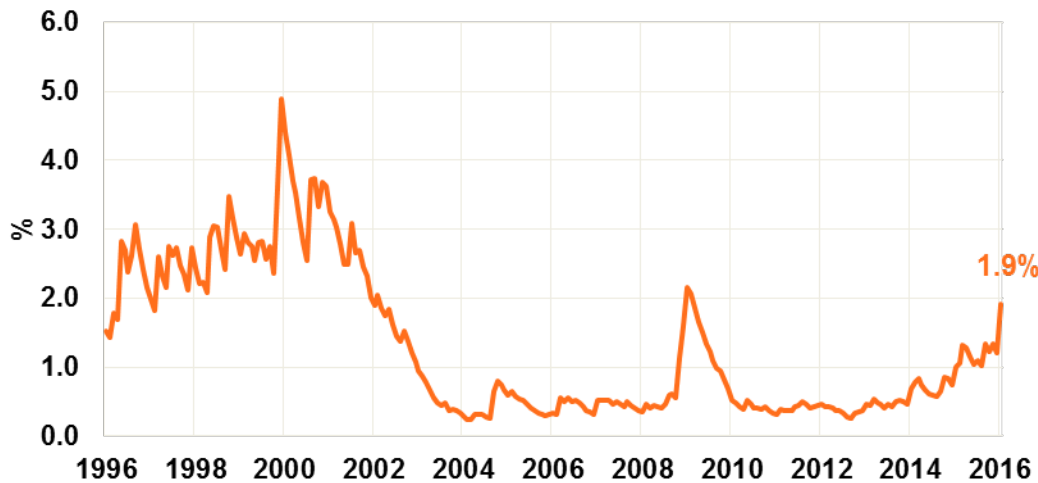


Risk Measures

Total Risk



Active Risk



Highlights

Total Risk (Volatility) is measured by standard deviation of monthly total returns; each point shows a 1-year measurement period. A standard deviation of 8% means that roughly two-thirds of the time, the realized return will be within 8% from the average return.

Total Risk was 9.6% at the end of March; which has been increasing from prior years when volatility was in the 5-7% range.

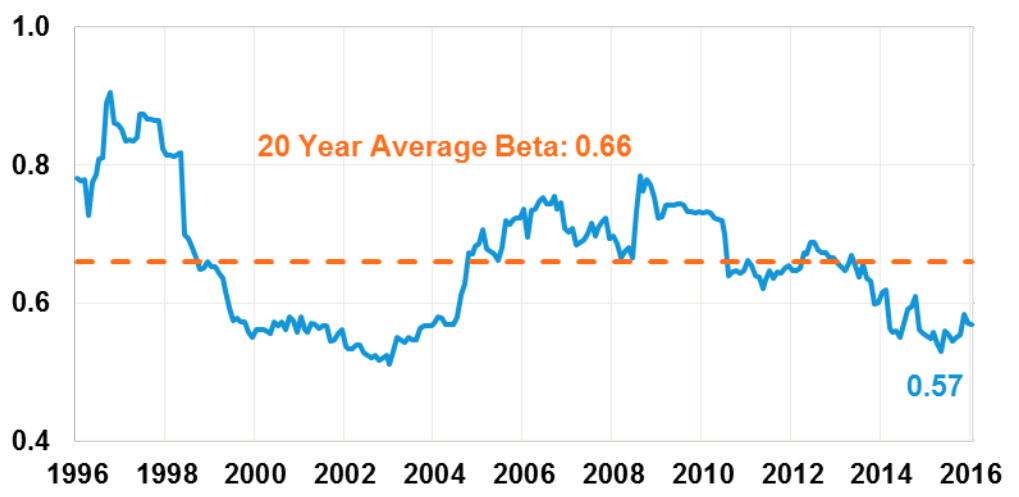
Active risk is measured by standard deviation of monthly active returns; each point or bar shows a 1-year measurement period. A standard deviation of 3% means that roughly two-thirds of the time, the realized active return will be within 3% from the average active return.

Most of the active risk is attributed to security and manager selection decisions that differ from the benchmark. The Active Risk was 1.9% at the end of March and has been trending upward as we have increased our tilts from the benchmark.

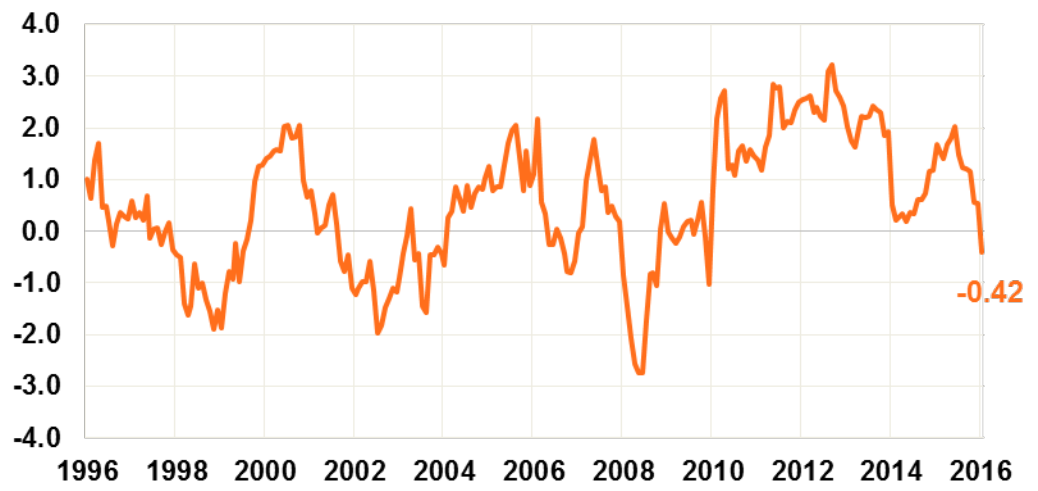


Risk Measures

Beta to S&P 500



Information Ratio



Highlights

Beta is a measure of the sensitivity of the total portfolio to the S&P 500 Index. Beta was 0.57 at the end of the March; which means that if the S&P 500 went down 10%, we would expect the portfolio to go down by 5.7%.

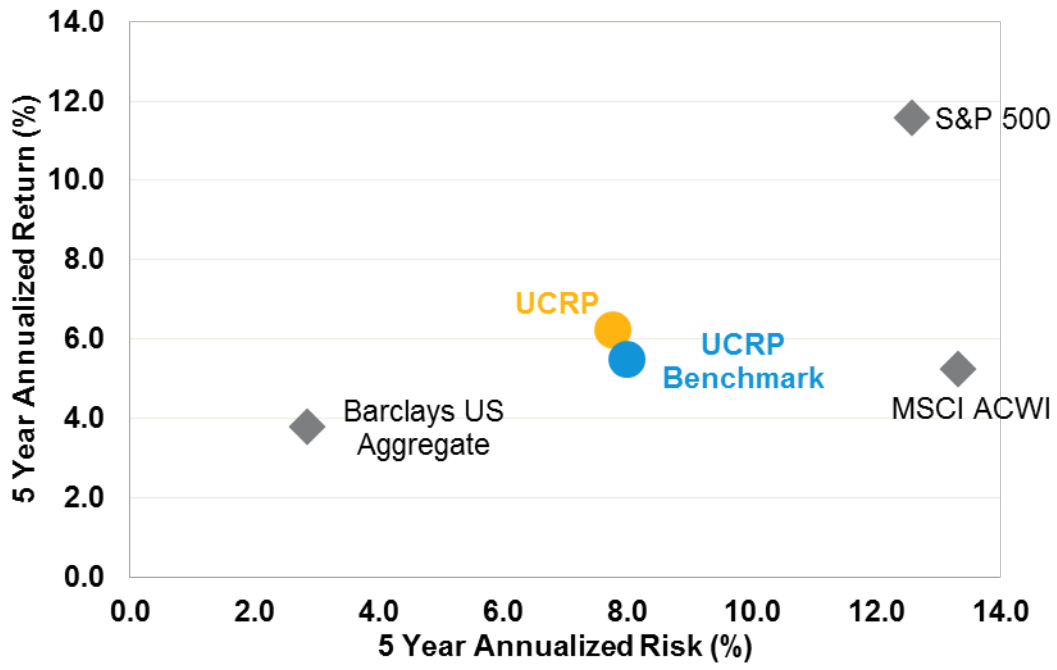
Information Ratio is a ratio of Active Return over Tracking Error; Tracking Error is the standard deviation of the active return over time. The higher the information ratio, the better the portfolio is able to achieve active return against the relative risk to the policy benchmark taken.

Information Ratio was -0.42 at the end of March, given our underperformance of -0.7% under the benchmark and tracking error (active risk) of 1.9%.



Risk Measures

Risk vs Return 5 Year	Return	Risk	Ratio
UCRP	6.18	7.80	0.79
UCRP Benchmark	5.47	8.01	0.68
S&P 500	11.58	12.59	0.92
MSCI ACWI	5.22	13.33	0.39
Barclays US Aggregate	3.78	2.87	1.32



As of March 31, 2016

Highlights

The Risk Return chart shows return and the amount of volatility taken to achieve it. The return to risk ratio reflects the reward per unit of risk we are achieving. For the past 5-years, for every unit of risk we took we were rewarded 0.79.

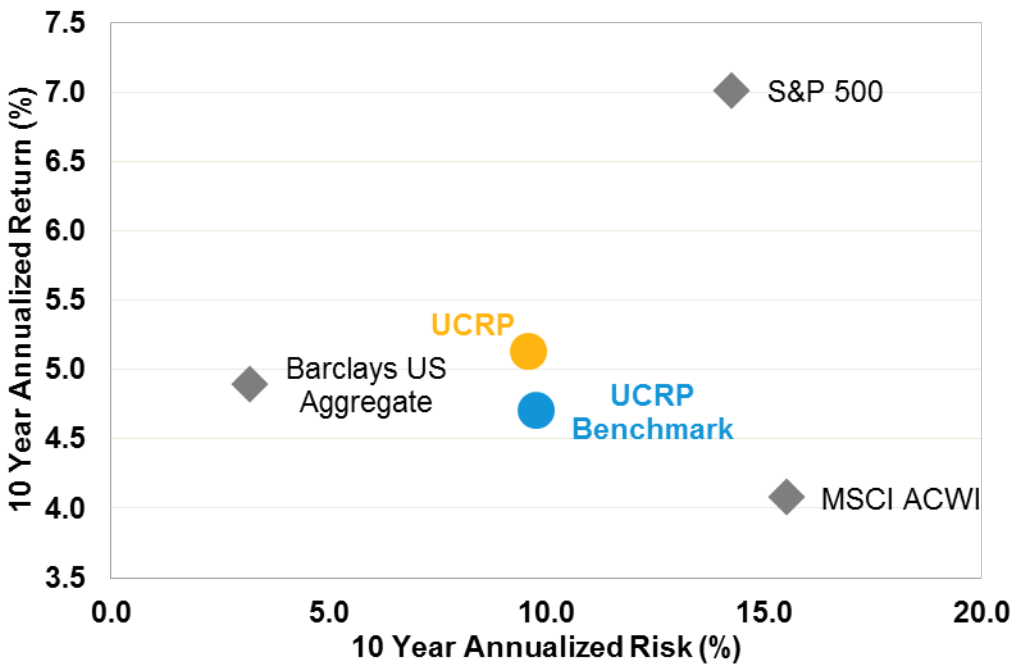
Our total risk is primarily related to our allocation between equity and bonds. At the end of March our allocation was underweight to public equity, private equity, real assets, absolute return, overweight to fixed income and real estate relative to the policy benchmark. Our total risk is similar to the benchmark but with a higher total return.

Over the past 5 years the portfolio has earned more than the global stock portfolio as measured by the MSCI ACWI and taken on less risk.



Risk Measures

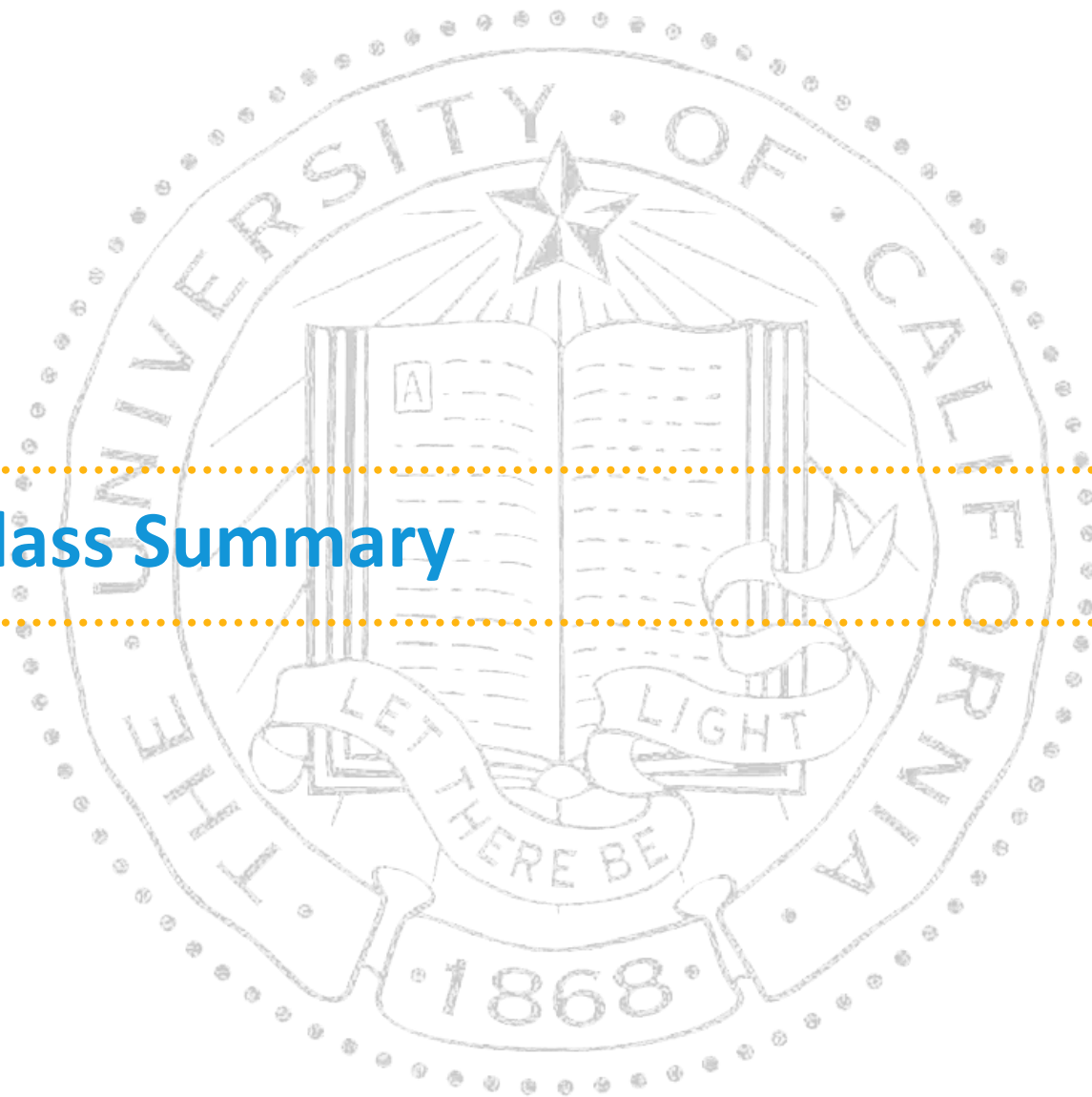
Risk vs Return 10 Year	Return	Risk	Ratio
UCRP	5.12	9.63	0.53
UCRP Benchmark	4.70	9.80	0.48
S&P 500	7.01	14.29	0.49
MSCI ACWI	4.08	15.55	0.26
Barclays US Aggregate	4.90	3.21	1.52



Highlights

Risk Return chart shows return and the amount of volatility taken to achieve it. The return to risk ratio reflects the reward per unit of risk we are achieving. For the past 10 years, for every unit of risk we took we were rewarded 0.53.

Over the past 10 years the portfolio has earned more than the global stock portfolio as measured by the MSCI ACWI and taken on less risk.

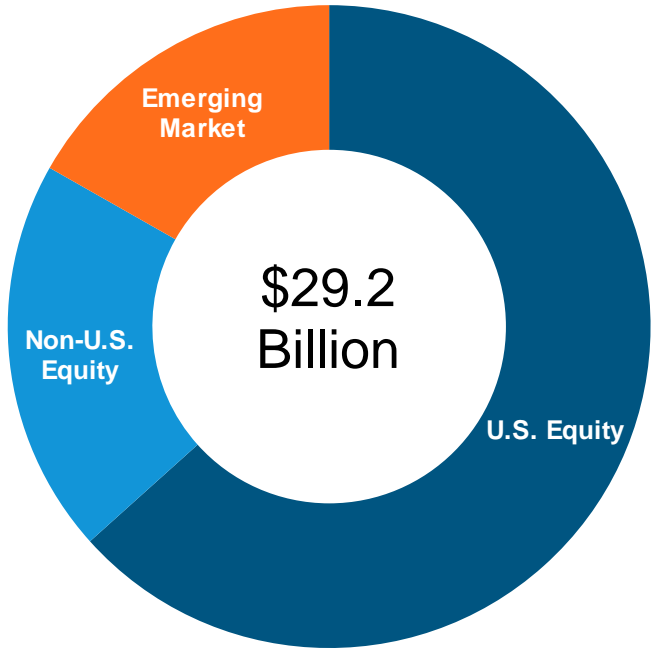


Asset Class Summary

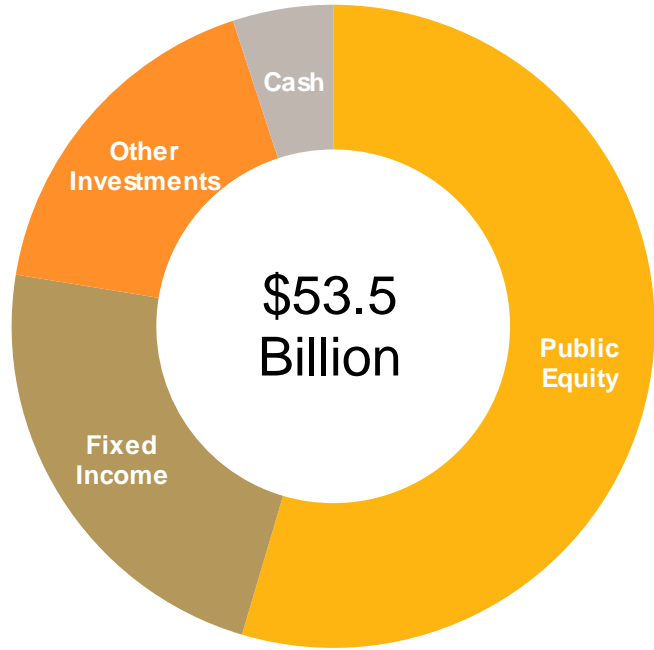


Public Equity

Public Equity



Pension



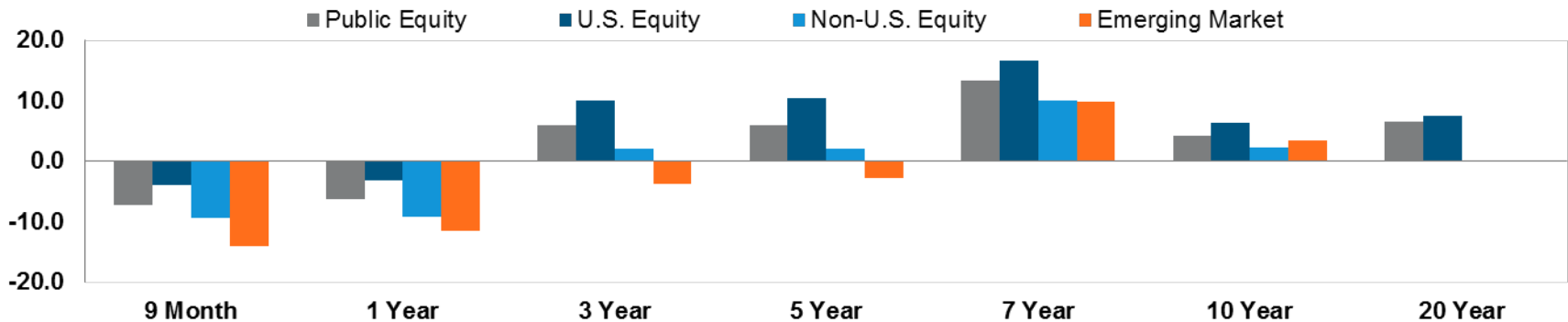
- **U.S. Equity: 63%**
\$18.5B
- **Non-U.S. Equity: 20%**
\$5.8B
- **Emerging Market: 17%**
\$4.9B
- **Public Equity: 55%**
\$29.2B
- **Other Investments: 17%**
\$9.3B
- **Fixed Income: 23%**
\$12.3B
- **Cash: 5%**
\$2.7B

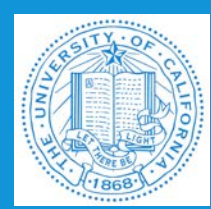
As of March 31, 2016



Public Equity

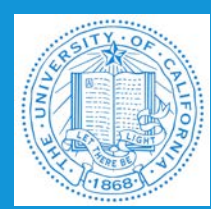
Net Returns (%) As of March 31, 2016	Market Value		Annualized Returns						
	(\$ Million)	% Allocation	9 Month	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year
Public Equity	29,199	100%	-7.2	-6.3	5.8	5.9	13.3	4.2	6.5
Policy Benchmark			-5.3	-4.9	4.7	5.0	12.5	3.7	6.8
<i>Value Added</i>			-1.9	-1.4	1.1	0.9	0.8	0.5	-0.3
U.S. Equity	18,520	63%	-3.9	-3.3	10.0	10.4	16.7	6.3	7.4
Russell 3000 Tobacco Free Index			-0.8	-0.7	11.1	10.9	17.0	6.8	8.2
<i>Value Added</i>			-3.1	-2.6	-1.1	-0.5	-0.3	-0.5	-0.8
Non-U.S. Equity	5,788	20%	-9.3	-9.1	2.1	2.1	9.9	2.2	-
MSCI World ex-U.S. (net dividends) Tobacco Free			-9.2	-8.9	1.5	1.5	9.3	1.7	-
<i>Value Added</i>			-0.1	-0.2	0.6	0.6	0.6	0.5	-
Emerging Market	4,891	17%	-14.0	-11.6	-3.7	-2.7	9.7	3.5	-
MSCI Emerging Market (net dividends)			-12.6	-12.0	-4.5	-4.1	8.2	3.0	-
<i>Value Added</i>			-1.4	0.4	0.8	1.4	1.5	0.5	-





Public Equity Highlights

- Returns across major equity markets were all negative FYTD with the global benchmark (MSCI ACWI Index) down 4.9%. Emerging markets, China, biotech and healthcare stocks, metals and mining, and small cap stocks were down the most.
- FY2016 has been among the most difficult years for active management for four reasons:
 - First, the extreme 'risk off' and 'risk on' periods caused by global macro risks (China, commodity price swings, central banks) produced a difficult environment.
 - Second, high intra stock correlation and low cross-sectional volatility has created a poor environment for stock selection. So while the environment has been more volatile, the dispersion amongst stocks has not.
 - Third, abnormal and excessive volatility in equity risk factors (regions / sectors / market cap / value / momentum / quality / growth / low volatility) possibly due to 'smart beta' products and the focus on equity risk premia.
 - Fourth, 'crowded trades' particularly with equity long/short funds began to unwind.
- Unfortunately, we believe this environment will continue and we expect higher than average equity valuations combined with rising risks will create an environment of low returns and higher volatility going forward.
- However, we expect this volatility will ultimately create investing opportunities and the opportunity for active management to increase as dispersion between stocks reverts to the mean.
- We have spent the past year preparing to reposition the portfolio to perform better in active management and importantly be in a better position to weather risks at lower costs.



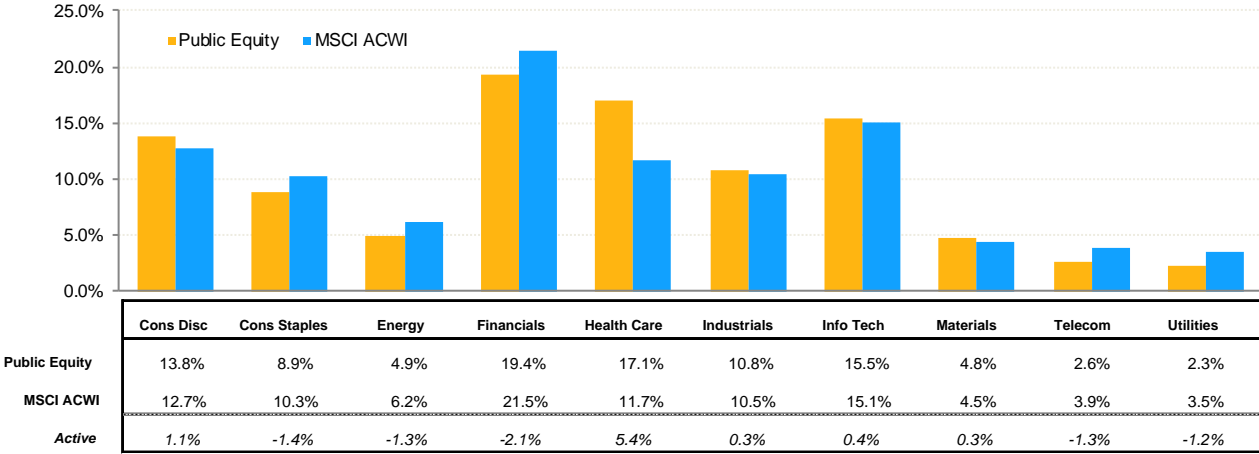
Public Equity Highlights

- The equity team completed a \$38 billion restructuring of the equity portfolios to accomplish the following:
 - Increase diversification across equity risk factors by creating and launching an overlay program at the end of April to maintain better diversification and hedge risk factors back to our policy benchmark.
 - Eliminate excess diversification (of idiosyncratic risks) by reducing the number of stocks in the active portfolio from 5100 to 3500 in UCRP.
 - Increase active returns by focusing on inefficient areas of the market and rationalizing the manager base from 52 to 28 in UCRP.
 - Re-negotiate fees, leading to an estimated \$86 million per year reduction across the portfolios.
- UCRP's exposure to systematic factor risks compared to the benchmark has declined from 82% to 45%, which is an important point considering the increased volatility we believe will continue among equity risk factors.
- Conversely UCRP's exposure to stock selection risk has increased to 55%. While it has been a difficult environment for active management, we are positioning for the opportunity for active management to increase as dispersion between stocks increases and reverts to the mean.
- Interestingly, our expected tracking error remains similar at 1.3%, indicating that optimizing the portfolio by reducing the number of managers and securities did not necessarily produce a tradeoff in increasing risk.
- Since the newly restructured portfolio was constructed in March and April, it has not yet been able to influence results.



Public Equity – Sectors

Sector Exposures



Highlights

Losses in the MSCI ACWI IMI Index were led by materials, healthcare, energy and financials sectors.

Underweight to consumer staples was a significant detractor FYTD as the sector has been propelled to high valuation levels due to mergers & acquisitions and corporate governance activities in the space.

Overweight to healthcare and poor stock selection in the sector was a significant detractor FYTD. Healthcare stocks and particularly small cap biotech fell significantly more than the market due to anti-trust issues, 'crowding' of hedge funds unwinding positions, pricing concerns and negative comments from presidential candidates during election primaries.

Underweight to financials sector was the largest contributor, more than offset by poor stock selection.

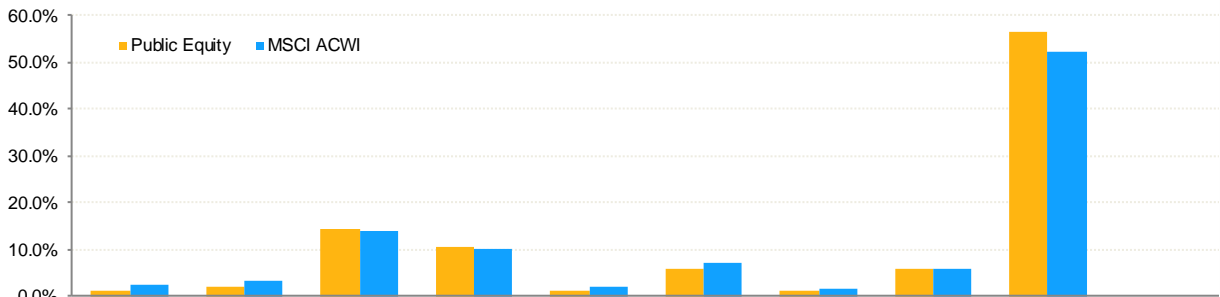
Underweight to energy sector was a significant contributor. While the energy sector has continued to fall significantly, we remain underweight as low commodity prices are not yet fully reflected in valuations. However, midstream energy infrastructure companies are beginning to look cheap.

Going forward we are positioning the portfolio to be more neutral (+/- 2%) to sector exposures compared to our policy benchmark with an underweight to consumer staples.



Public Equity – Regions

Regional Exposures



	Canada	Asia ex-JP	Europe ex-UK	Emerg Asia	Emerg EU	Japan	Latin Amer	UK	US	Rest of World
Public Equity	1.4%	2.2%	14.4%	10.8%	1.4%	6.1%	1.3%	5.9%	56.5%	0.0%
MSCI ACWI	2.6%	3.4%	14.1%	10.2%	2.3%	7.1%	1.7%	6.0%	52.4%	0.0%
Active	-1.2%	-1.2%	0.3%	0.6%	-0.9%	-1.0%	-0.4%	-0.1%	4.1%	0.0%

Highlights

Poor stock selection in the US was the largest detractor to performance, particularly in financials and consumer staples.

Our overweight to China compared to the MSCI ACWI (we are neutral to our policy benchmark) was the largest regional detractor with the MSCI China down 23%. However, superior stock selection by our managers mitigated losses. The continued missteps in the Chinese equity market, significant increase in debt this cycle, and currency policies continue to create uncertainty.

While we are neutral Japan, we continue to believe the focus on corporate governance has strong potential to create value for active management, given large cash balances and ample free cash flow generation of select companies. Superior stock selection in Japan was the largest contributor by region.

Our underweight to Canada was the second largest positive contributor to country allocation, primarily due to foreign exchange weakness.

Going forward we are positioning the portfolio to be more neutral to country exposures compared to our policy benchmark with a slight overweight to the US and a slight underweight to the UK.



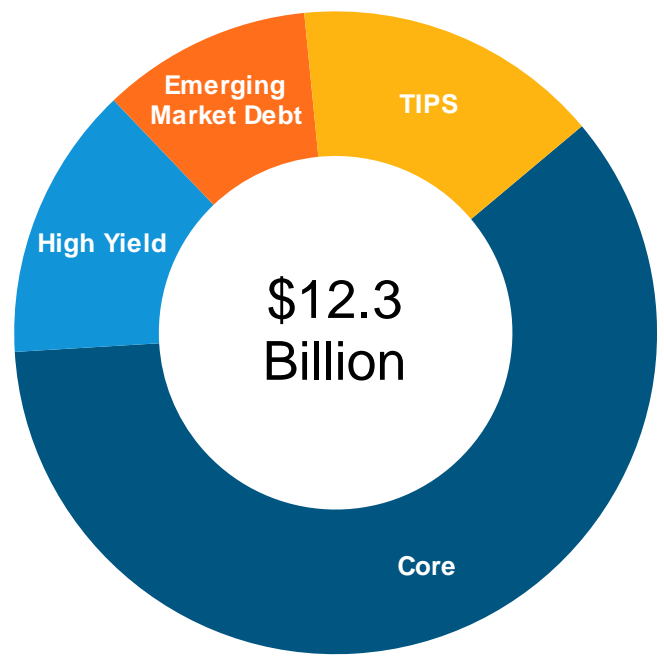
Public Equity – Characteristics

	Dividend Yield (%)	Dividend per Share	EPS	Price To Book Value	Price To Cash Earnings	Price To Earnings	Price To Sales	Payout Ratio	ROE
Public Equity	2.35	1.52	4.98	1.92	10.68	18.27	1.24	26.21	22.46
U.S. Equity	1.89	1.23	4.27	2.56	12.55	21.54	1.45	32.05	29.39
Non-U.S. Equity	3.32	2.19	4.60	1.44	8.72	15.95	0.97	11.92	15.64
EM Equity	2.23	1.00	6.90	1.67	9.48	14.92	1.15	24.90	16.29
MSCI ACWI	2.66	1.90	4.78	1.99	10.64	18.49	1.35	58.85	20.72
S&P 500	2.17	1.62	4.66	2.79	12.57	20.60	1.83	56.21	24.54
MSCI EM	2.79	1.21	7.35	1.40	8.00	13.49	1.02	38.74	15.70
MSCI ACWI ex U.S.	3.25	2.24	5.06	1.50	8.70	16.11	1.02	62.53	17.24

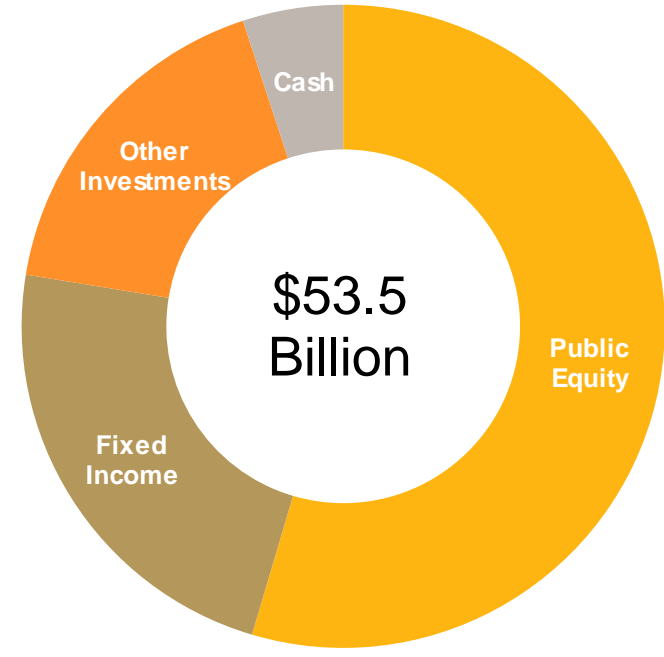


Fixed Income

Fixed Income



Pension



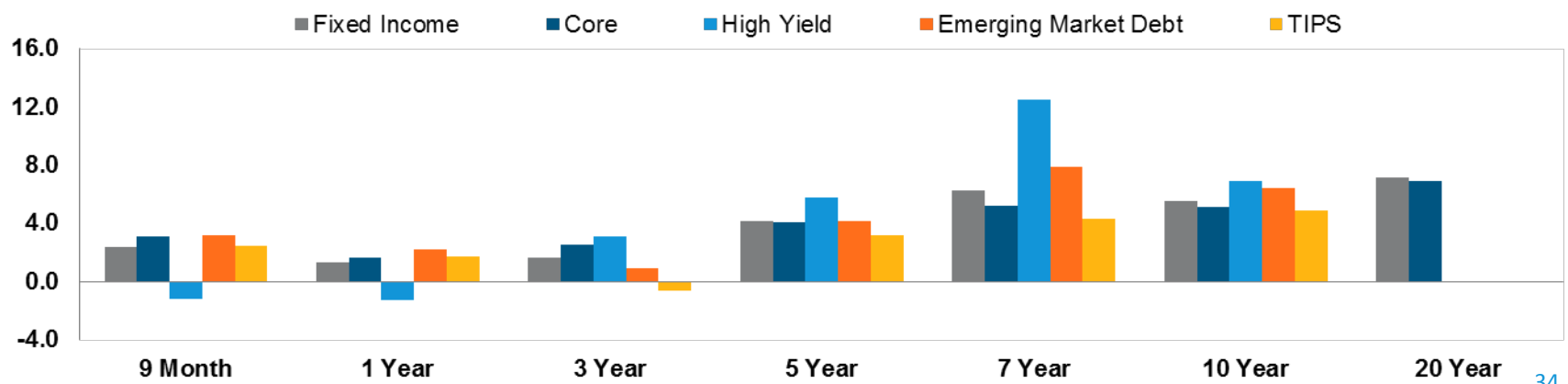
- **Core: 60%**
\$7.4B
- **High Yield: 14%**
\$1.7B
- **Public Equity: 55%**
\$29.2B
- **Fixed Income: 23%**
\$12.3B
- **Emerging Market Debt: 10%**
\$1.3B
- **TIPS: 16%**
\$1.9B
- **Other Investments: 17%**
\$9.3B
- **Cash: 5%**
\$2.7B

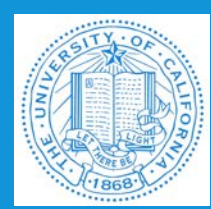
As of March 31, 2016



Fixed Income

Net Returns (%) As of March 31, 2016	Market Value		Annualized Returns						
	(\$ Million)	% Allocation	9 Month	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year
Fixed Income	12,331	100%	2.4	1.3	1.6	4.2	6.2	5.5	7.1
Policy Benchmark			2.7	1.5	1.7	4.0	5.8	5.4	6.4
<i>Value Added</i>			-0.3	-0.2	-0.1	0.2	0.4	0.1	0.7
Core	7,407	60%	3.1	1.7	2.5	4.1	5.2	5.2	6.9
Barclays U.S. Aggregate Bond Index			3.7	2.0	2.5	3.8	4.4	5.1	6.2
<i>Value Added</i>			-0.6	-0.3	0.0	0.3	0.8	0.1	0.7
High Yield	1,732	14%	-1.2	-1.3	3.1	5.8	12.5	6.9	-
Merrill Lynch High Yield Cash Pay Index			-3.9	-3.9	1.8	4.7	12.2	6.8	-
<i>Value Added</i>			2.7	2.6	1.3	1.1	0.3	0.1	-
Emerging Market Debt	1,268	10%	3.2	2.2	0.9	4.1	7.9	6.4	-
JP Morgan Emerging Markets Bond Index Global Diversified			4.5	4.2	3.4	5.6	9.3	7.2	-
<i>Value Added</i>			-1.3	-2.0	-2.5	-1.5	-1.4	-0.8	-
TIPS	1,924	16%	2.4	1.7	-0.6	3.2	4.4	4.9	-
Barclays U.S. TIPS			2.6	1.5	-0.7	3.0	4.2	4.6	-
<i>Value Added</i>			-0.2	0.2	0.1	0.2	0.2	0.3	-





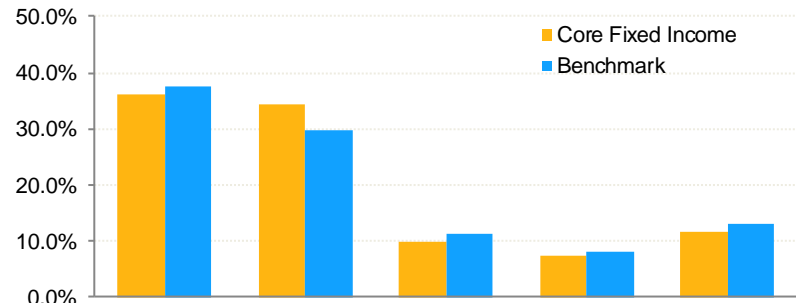
Fixed Income Highlights

- Concerns over U.S. and global growth led to somewhat dovish statements from the Fed and a rally in the Treasury market during the first quarter of 2016. Treasuries returned 3.92% in the first quarter, driving returns of 3.71% for the overall Barclay's Aggregate Index.
- We continue to have a bias to somewhat higher rates due to an uptick in inflation data. We expect the Fed to be very gradual in the normalization of rates with a terminal Fed Funds rate below the current Fed projection for 2017 and 2018. A lackluster global growth environment and very low to negative rates around the world limit the extent of any rise in U.S. rates.
- We believe that an environment of slowly rising rates and positive US GDP growth will lead to spread product outperforming Treasuries and as such we maintain an underweight versus our benchmark to Treasuries. With lower growth expectations and a Fed hiking cycle underway, volatility can be expected and credit selection will be critical.
- The High Yield market experienced a significant rally during March, producing the best one month returns since 1991. The market was led by a recovery in the energy, metals, and mining sectors. While we continue to believe that the current environment is favorable for selective sectors within high yield, any significant opportunity has been very quickly priced out of the market.
- The US inflation outlook improved in Q1 - transitory factors depressing inflation faded as energy prices firmed from January lows and the trade weighted US dollar fell from its mid-January peak. Both core and headline CPI and PCE inflation have risen significantly over the past half year and appear to fit the framework behind the FOMC's longstanding inflation view. Breakeven inflation rates expanded in Q1 but continue to remain below fair value measures and the Fed's target.



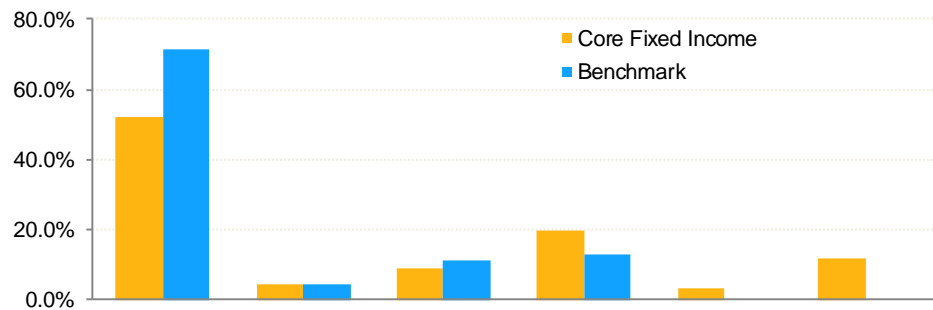
Fixed Income – Core

Summary of Duration Buckets



	0 to 3	3 to 5	5 to 7	7 to 10	10 to +INF
Core Fixed Income	36.3%	34.5%	10.0%	7.4%	11.8%
Benchmark	37.6%	29.6%	11.5%	8.2%	13.1%
Active	-1.3%	4.9%	-1.5%	-0.8%	-1.3%

Summary of Credit Rating



	AAA	AA	A	BBB	BB or lower	N/A
Core Fixed Income	51.9%	4.5%	8.7%	19.9%	3.4%	11.6%
Benchmark	71.5%	4.4%	11.4%	12.7%	0.0%	0.0%
Active	-19.6%	0.1%	-2.7%	7.2%	3.4%	11.6%

As of March 31, 2016

Highlights

Core fixed income underperformed its benchmark due to our 13% allocation to externally managed unconstrained fixed income. Internal Core assets were in-line with benchmark while unconstrained underperformed significantly.

Internal Core Fixed Income duration is approximately five years, or about one third of a year shorter than the benchmark.

Our shorter duration is mainly derived from an underweight to the five to seven year part of the Treasury curve.

The portfolio is underweight Treasury securities and overweight investment grade credit and structured product.

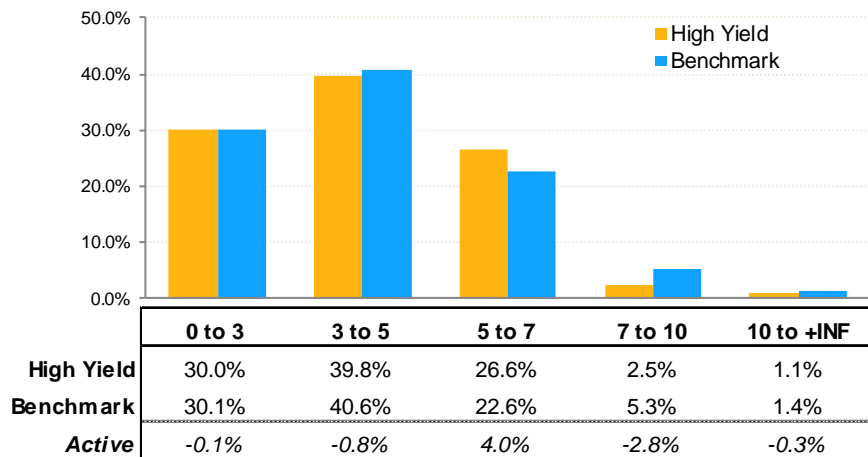
The spread product overweight leaves the portfolio underweight high quality AAA government and Agency securities and overweight lower credit quality.

After detracting from performance earlier in the fiscal year, the overweight to spread product benefited the portfolio due to the strong rally in risk assets that commenced in mid-February.

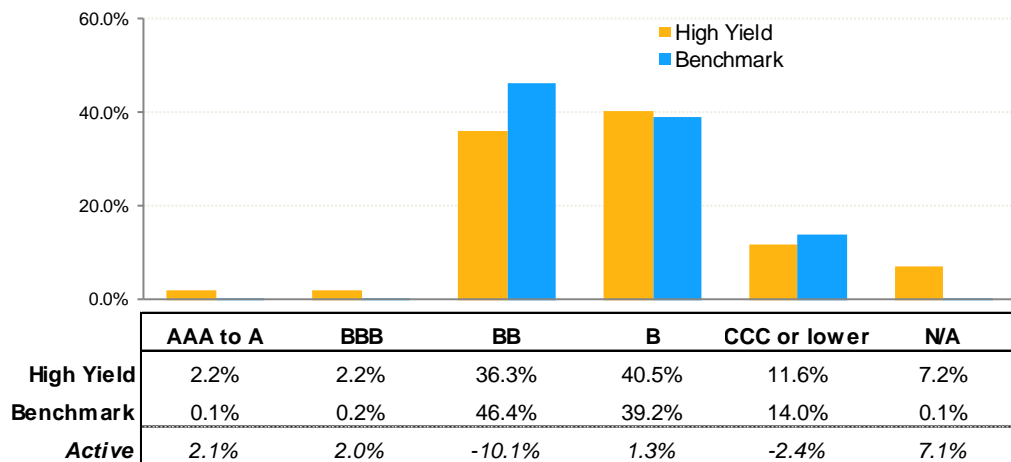


Fixed Income – High Yield

Summary of Duration Buckets



Summary of Credit Rating



Highlights

High yield is positioned in-line with the benchmark on overall duration with slightly less exposure to the longer end of the high yield curve.

Management is split approximately 52% external and 48% internal. Given our view that the market offered value early in 2016, we made a small tactical increase to our high yield allocation.

Internal performance added value fiscal year-to-date through security selection, an underweight to energy, metals, and mining, as well as a focus on higher quality B/BB rated securities. We continue to be positioned in stronger credits with less overall yield than the benchmark. Since mid-February, a strong rebound in energy and other beaten down high yield names and sectors has caused slippage in our performance versus benchmark. We continue to believe however that a more cautious positioning is warranted as GDP growth remains slow and energy may be prone to continued volatility.

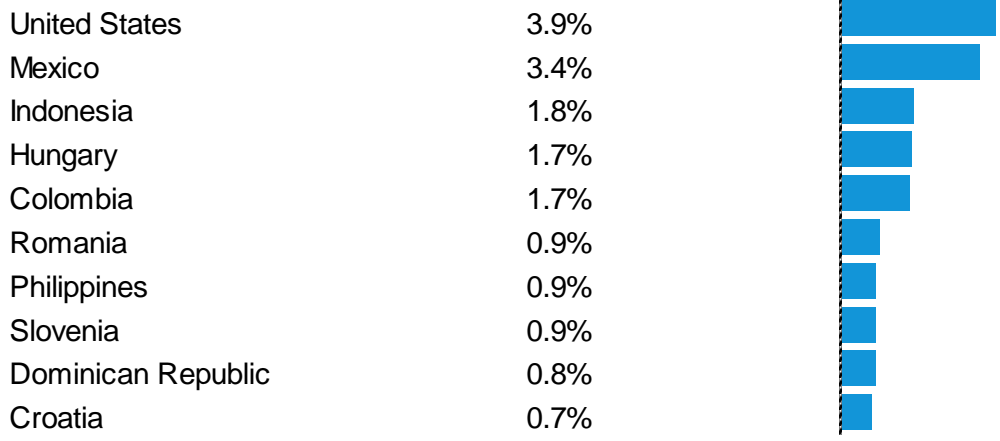
External managers have outperformed fiscal year-to-date and contributed to value added. Similar to our internal portfolio, performance lagged the rally in March.

We continue to believe that the high yield market offers an opportunity to make above average returns in what we believe will be a return constrained environment in fixed income over the next couple of years.

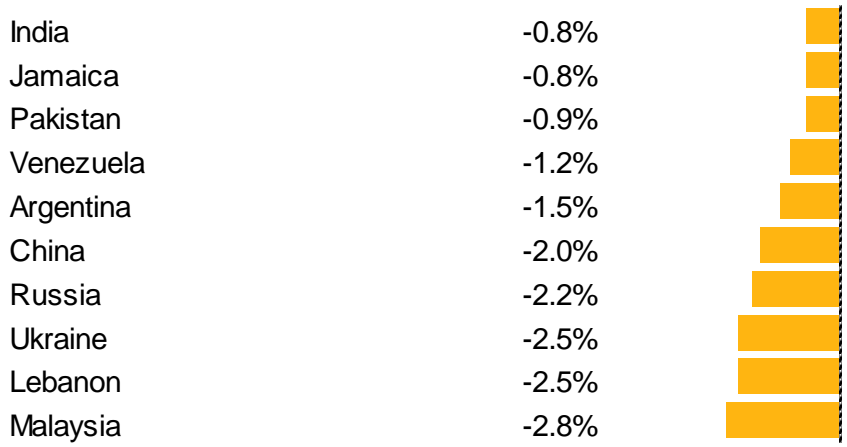


Fixed Income – Emerging Debt

Top 10 Country Exposures



Bottom 10 Country Exposures



As of March 31, 2016

Highlights

We continue to believe that emerging markets will continue to be volatile and struggle to adjust to lower long-term commodity prices, a slower global growth environment, and reduced demand from China.

In line with the above view, the Emerging Market Debt portfolio is positioned short of benchmark duration, is carrying more cash than typical, and is overweight in higher quality sovereigns such as Mexico and Indonesia and has out-of-index US high yield positions.

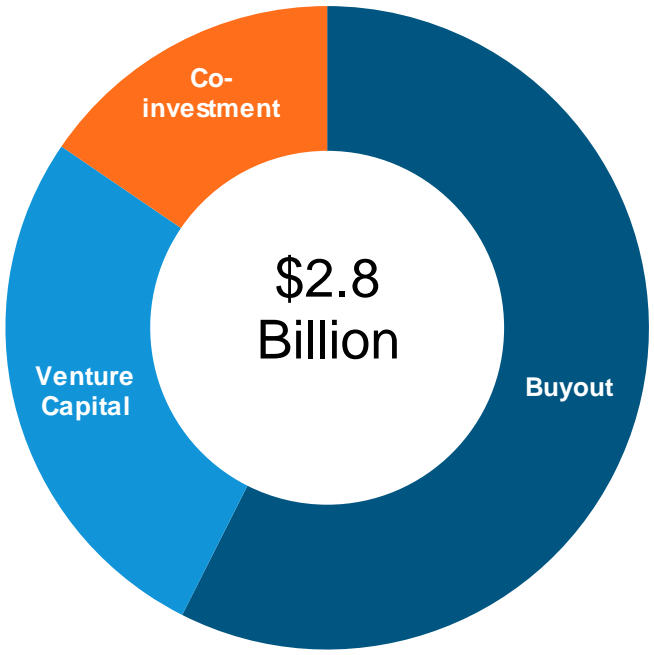
The portfolio is overweight to Mexico, Indonesia, and Hungary.

Significant underweights include Russia, Lebanon, and Ukraine.

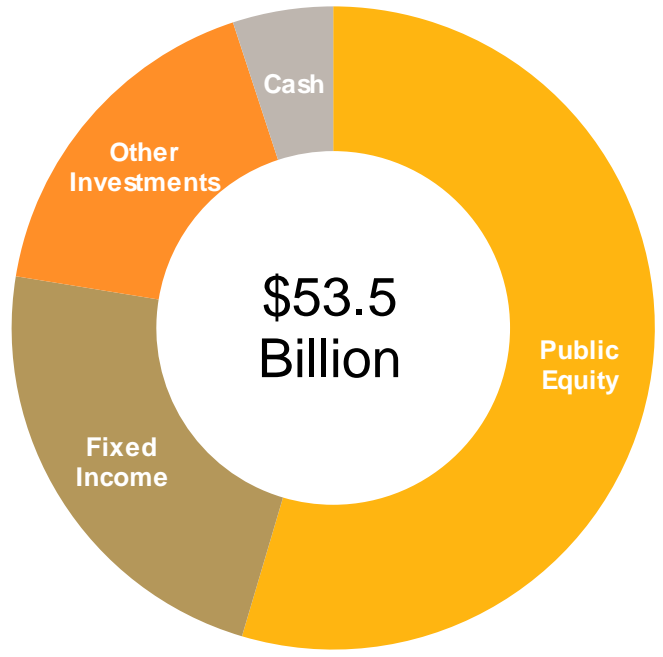


Private Equity

Private Equity



Pension



● **Buyout: 57%**
\$1.6B

● **Venture Capital: 27%**
\$0.8B

● **Public Equity: 55%**
\$29.2B

● **Fixed Income: 23%**
\$12.3B

● **Co-investment: 16%**
\$0.4B

● **Other Investments: 17%**
\$9.3B

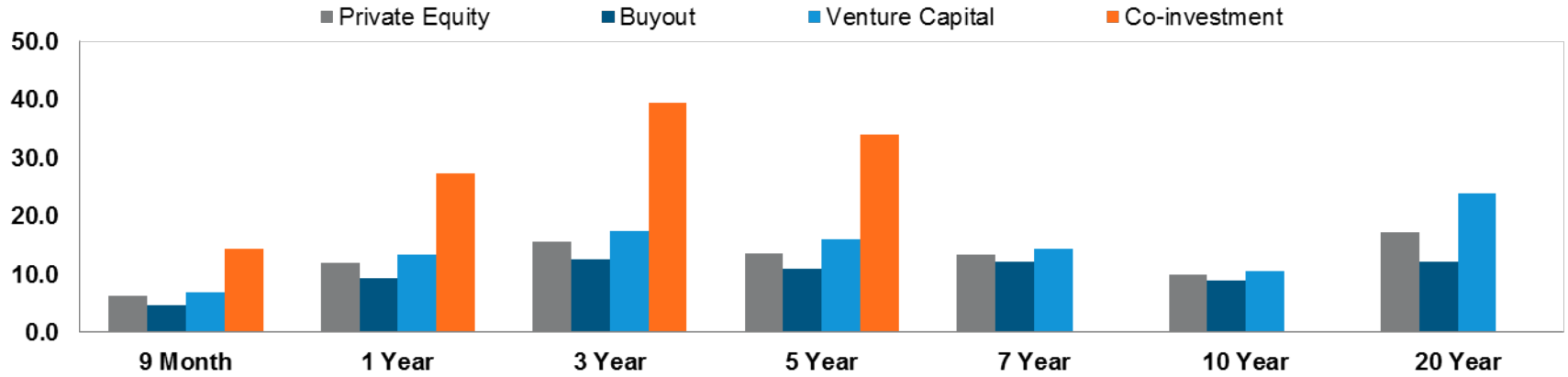
● **Cash: 5%**
\$2.7B

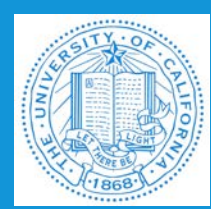
As of March 31, 2016



Private Equity

Net Returns (%) As of March 31, 2016	Market Value		Annualized Returns						
	(\$ Million)	% Allocation	9 Month	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year
Private Equity	2,789	100%	6.2	11.8	15.6	13.5	13.4	9.9	17.1
Actual Private Equity Returns			6.2	11.8	15.6	13.5	13.4	9.9	17.1
Value Added			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buyout	1,602	57%	4.6	9.2	12.5	10.9	12.0	8.9	12.0
Venture Capital	756	27%	6.9	13.3	17.3	15.9	14.4	10.4	23.9
Co-investment	431	16%	14.2	27.3	39.4	33.9	-	-	-





Private Equity

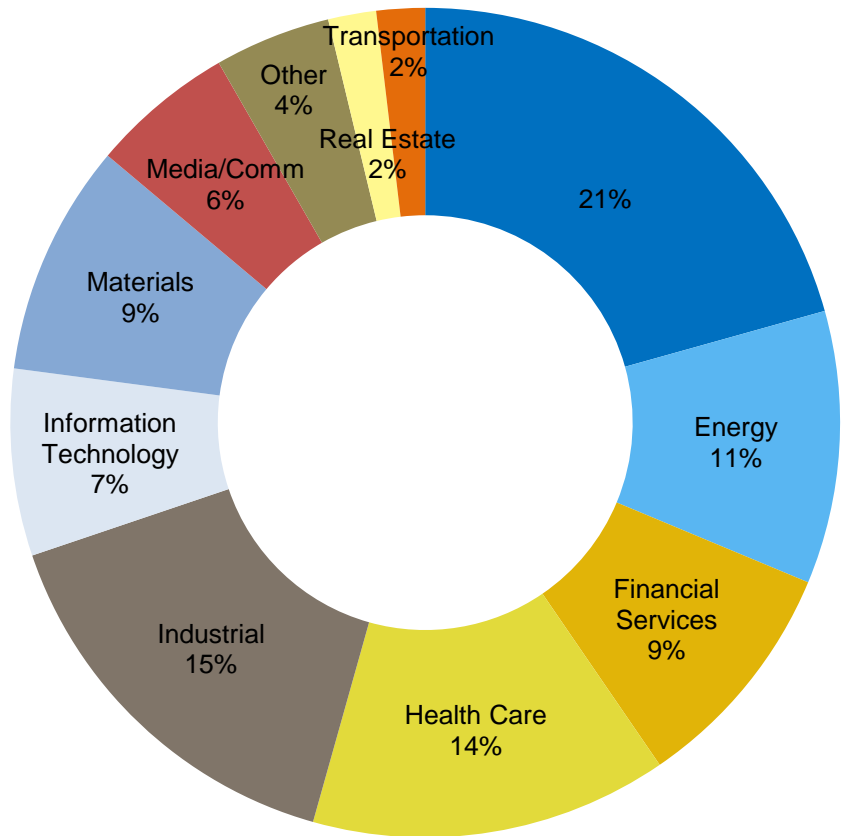
Performance and Attribution

- Major risk exposures and positioning have a structural bias toward growth with emphasis on single company risk exposures:
 - Key sector exposures continue to be Healthcare, Information Technology, Financial Service and Consumer
- Reallocated portfolio in November 2015 concentrating the portfolio in less than 30 managers and far fewer line items which improves risk management through concentration and idiosyncratic risk.
- Generated strong performance with an 11.8% return for the year through contributions from all segments, but led by co-investment returns:
 - Co-investments were the strongest contributor with a 27.3% return for the year
 - Venture Capital was also a strong contributor at 13.3% for the year
 - Buyouts contributed 9.2% for the year
- Generated more than \$587 million of cash flow in past year:
 - Received distributions of almost \$1.1billion
 - Invested almost \$0.5 billion



Private Equity – Buyout

Buyout - Industry Exposures



As of March 31, 2016

Highlights

Buyout returns were 9.2% for the year.

Buyout exposure of \$1,602 million represents approximately 57% of Private Equity and 3.0% of the overall portfolio.

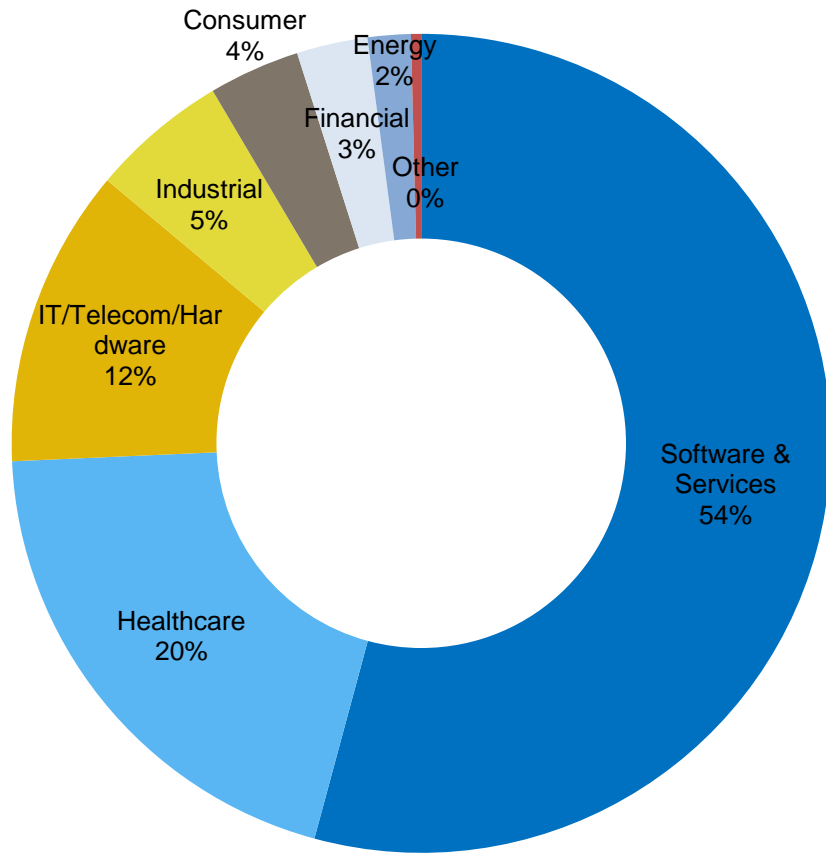
The buyout market pulled back in the second half of 2015 and had lower purchase prices as well as lower debt multiples on fewer transactions than 2014:

- Debt/EBITDA multiples average 5.1x, down from 6.6x in 2014
- Purchase price multiples now average 9.1x, down from 11.1x in 2014



Private Equity – Venture

Venture - Industry Exposures



As of March 31, 2016

Highlights

Venture returned 13.3% for the year.

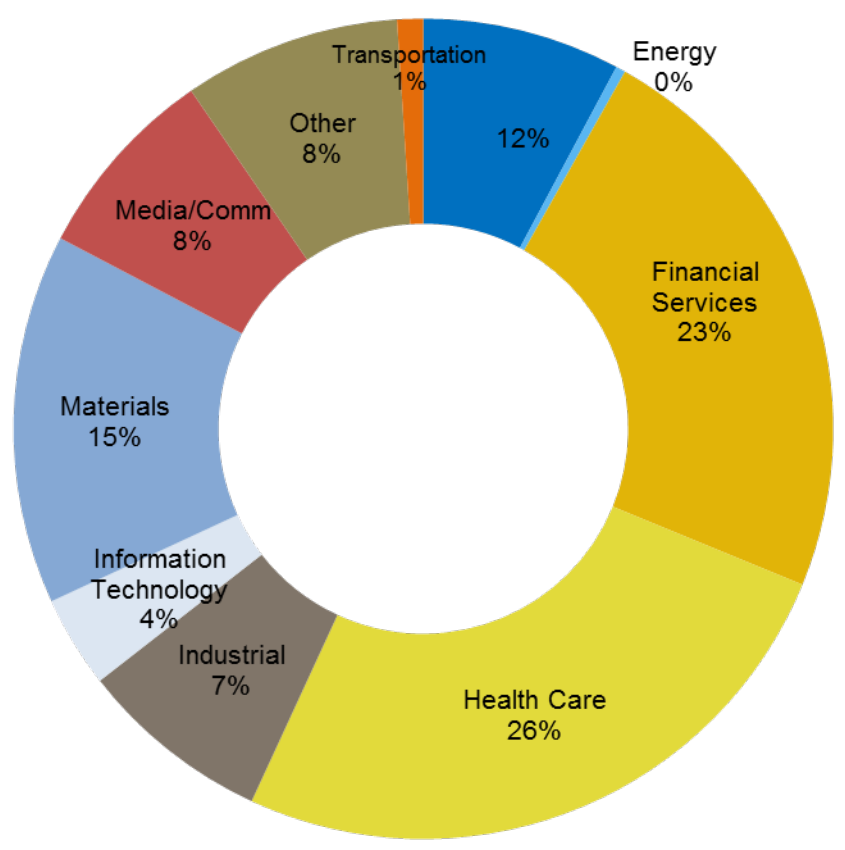
Venture exposure of \$756 million represents approximately 27% of Private Equity and 1.4% of the overall retirement plan.

We significantly reduced exposure to China and Tech-focused managers.



Private Equity – Co-Investment

Co-Investment - Industry Exposures



As of March 31, 2016

Highlights

Co-investments returned 27.3% for the year.

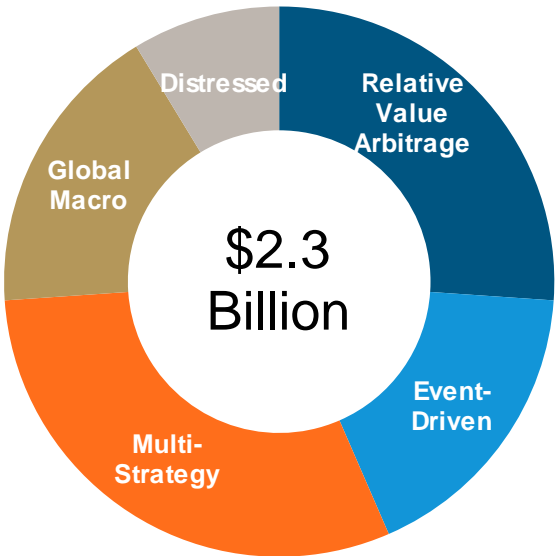
Co-investment exposure of \$431 million represents approximately 16% of Private Equity and 0.8% of the overall retirement plan.

Co-Investment portfolio consists of 17 investments with an average age of 2.7 years since investment.

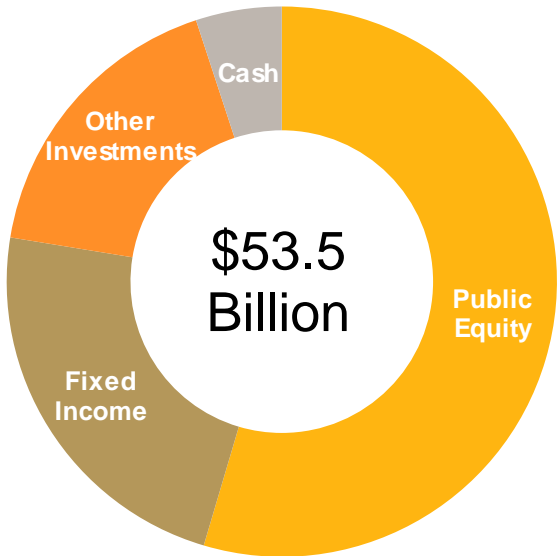


Absolute Return

Absolute Return



Pension



- **Relative Value Arbitrage: 27%**
\$0.6B
- **Event-Driven: 18%**
\$0.4B
- **Multi-Strategy: 30%**
\$0.7B
- **Global Macro: 19%**
\$0.4B
- **Distressed: 6%**
\$0.2B

- **Public Equity: 55%**
\$29.2B
- **Fixed Income: 23%**
\$12.3B
- **Other Investments: 17%**
\$9.3B
- **Cash: 5%**
\$2.7B



Absolute Return

Net Returns (%) As of March 31, 2016	Market Value		Annualized Returns				
	(\$ Million)	% Allocation	9 Month	1 Year	3 Year	5 Year	7 Year
Absolute Return	2,258	100%	-5.4	-3.9	4.6	4.3	7.0
50% HFRX Absolute Return Index + 50% HFRX Market Directional Index			-8.5	-7.8	0.1	-1.6	1.0
<i>Value Added</i>			<i>3.1</i>	<i>3.9</i>	<i>4.5</i>	<i>5.9</i>	<i>6.0</i>

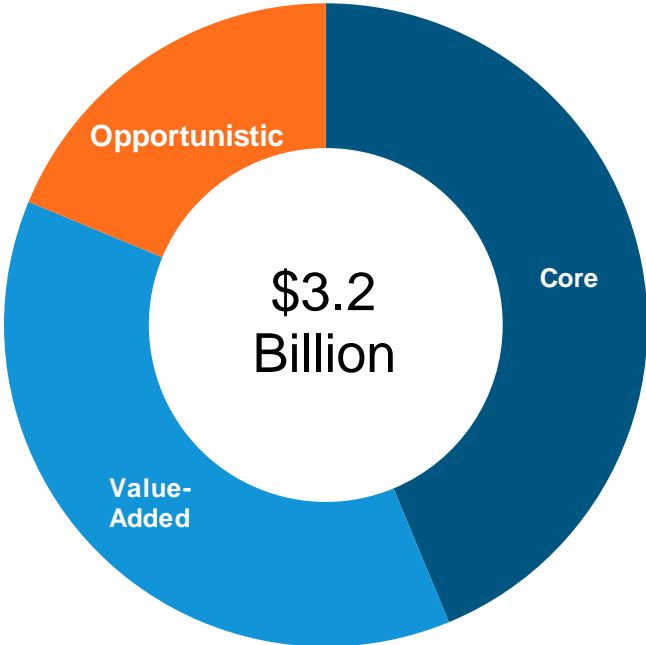
* Prior to March 1, 2009, the portfolio benchmark was 1 Month T-Bill+4.5%; thereafter it was 50% HFRX Absolute Return/50% HFRX Market Directional

- January and February 2016 saw an acceleration of a risk off trend that began in the prior quarter. This proved to be a challenging environment for hedge funds as many popular and crowded trades were unwound. Few hedge fund strategies were spared. In particular:
 - Long Short Equity and Event Driven strategies experienced outsized losses in a number of crowded long equity positions that were impacted by adverse events.
 - Emerging Market Strategies with exposure to China incurred losses as the China A Share and Hang Seng markets lost -22.6% and -10.2% respectively in January.
 - Global Macro managers were negatively impacted by the weakening of the US Dollar, reversals in energy commodities, and declines in the Japanese and European equity markets.
- For fiscal year to date, the Absolute Return portfolio returned -5.4%, outpacing its benchmark by 3.1%.

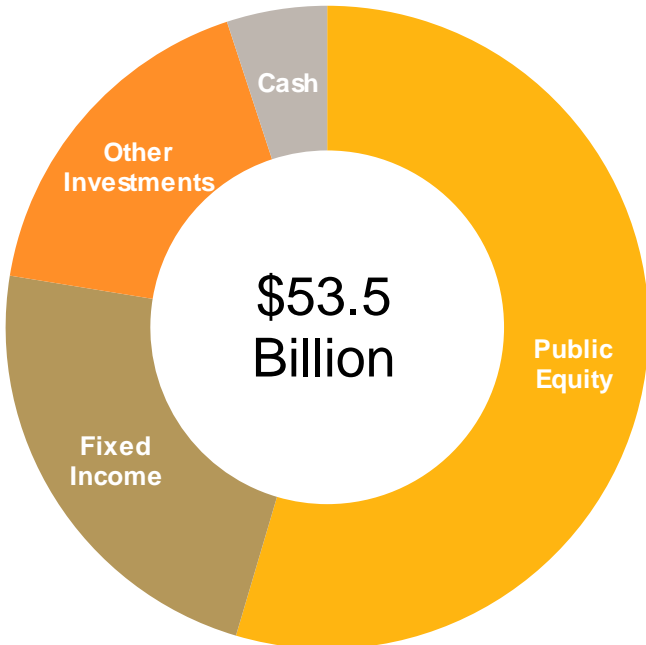


Real Estate

Real Estate



Pension



- Core: 45% \$1.4B
- Value-Added: 37% \$1.2B
- Opportunistic: 18% \$0.6B

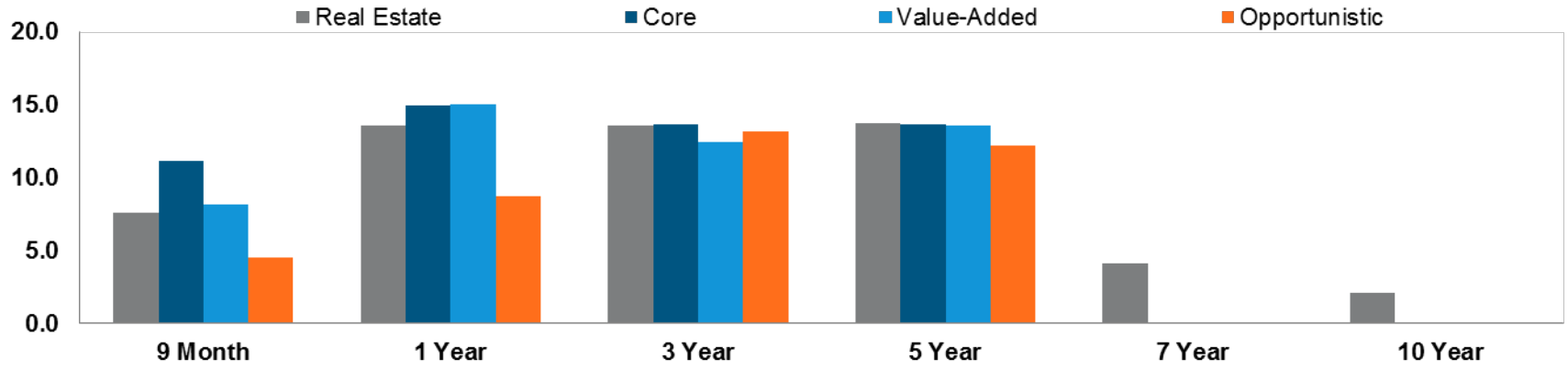
- Public Equity: 55% \$29.2B
- Fixed Income: 23% \$12.3B
- Other Investments: 17% \$9.3B
- Cash: 5% \$2.7B

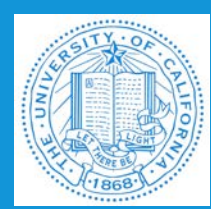
As of March 31, 2016



Real Estate

Net Returns (%) As of March 31, 2016	Market Value		Annualized Returns					
	(\$ Million)	% Allocation	9 Month	1 Year	3 Year	5 Year	7 Year	10 Year
Real Estate	3,216	100%	7.6	13.6	13.6	13.8	4.1	2.1
NCREIF Funds Index-Open End Diversified Core Equity Index (lagged 3 months)			10.5	14.0	12.8	12.6	3.8	1.9
<i>Value Added</i>			<i>-2.9</i>	<i>-0.4</i>	<i>0.8</i>	<i>1.2</i>	<i>0.3</i>	<i>0.2</i>
Core	1,462	45%	11.2	14.9	13.6	13.6	-	-
Value-Added	1,191	37%	8.2	15.0	12.4	13.6	-	-
Opportunistic	563	18%	4.6	8.7	13.2	12.2	-	-



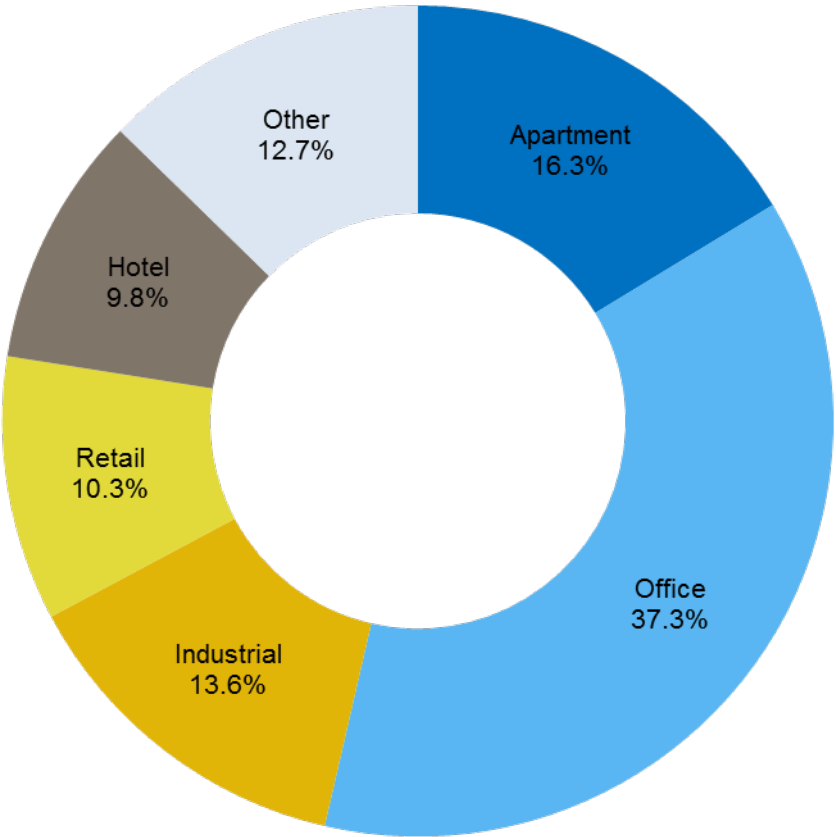


Real Estate Highlights

- **U.S. real estate market fundamentals remains attractive.** Construction remains low by historical standards, providing significant support for real estate fundamentals.
- Real estate continues to provide attractive yield spreads to bonds.
- Real estate debt markets do not appear overheated, with leverage and mortgage spreads at conservative levels.
- Strong rent growth across markets for most property type.
- While transaction volume has slowed, long term investment trends in real estate is strong as institutional investors have increased their real estate target allocations and the easing of FIRPTA is expected to increase foreign pension plan investment in the United States.
- Core real estate still offers the potential for attractive operating income, appreciation, inflation protection, low volatility, and diversification from traditional asset classes.
- The **separate account portfolio continues to deliver the highest returns on an annual basis** as value creation strategies were completed resulting in higher rents and occupancies, and asset value appreciation.
- **Dispositions** – Strategic sale of assets continued to harvest gains from value creation activities in the past 2-3 years.
- **Acquisitions** – Selective acquisitions in major markets with downside protection



Real Estate – Type



As of March 31, 2016

Highlights

Portfolio is well diversified by property type with office comprising slightly over a third of the portfolio. Property fundamentals were solid through year-end 2015 with occupancy at 93%- the highest level in 14 years – and trailing year NOI growth of 4.7% (including hotel) .All property types had rising occupancies for the quarter with industrial as the highest (95%) followed by apartment (94%) and retail (93%).

Industrial: Demand fundamentals are favorable, buoyed by growth in e-commerce, an expansion in same-day delivery service, a return of small business users and continued flow of goods through U.S. ports. Occupancy and rental rates should continue to trend higher, supporting healthy NOI growth. Supply pipeline growing, new construction concentrated on top – performing markets. Expansion of the Panama Canal should aid major southern and eastern U.S. ports, such as Miami, Houston, Northern New Jersey, etc.

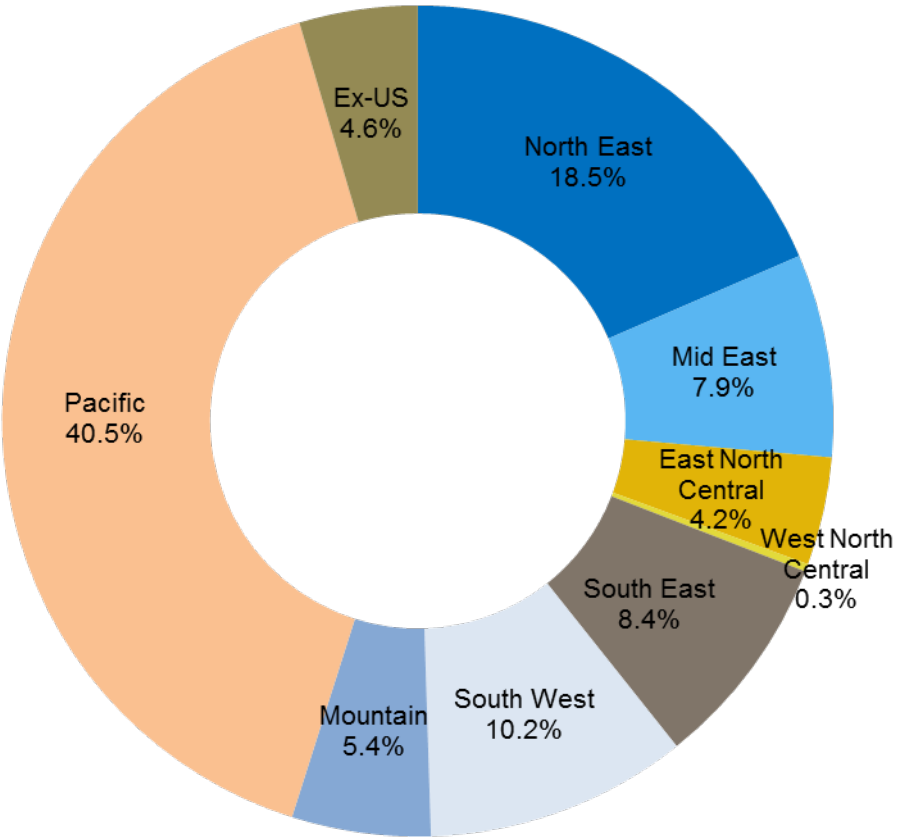
Office: Office-using jobs are expanding 50% faster than total employment since 2010, up 13.4% vs 9.6 %. Job growth is translating to substantial absorption now that “shadow space” has burned off and densification trends have ebbed. Construction remains low both as a share of inventory and relative to demand in most metros.

Apartment: Demographic and economic trends that have provided critical tailwinds for the sector will persist for foreseeable future. New supply growth moderating, up only 3.4% year over year. Vacancy rate is 4.5%, 70 bps below long-term average. According to Real Cap Analytics, capital has continued to pour into apartments with 2015 transaction volume up 32% over pervious year.

Retail : Retail continues to be impacted by e-commerce, urbanization, and income inequality. Consumer recovery has remained moderate, with overall retail trade in 2015 up 2.1% versus the prior year. New construction was approximately half the rate of the past ten year average. Outlet centers/stores continue to thrive and grow.



Real Estate – Region



As of March 31, 2016

Highlights

The portfolio is well diversified by region, with the Pacific region at 40 % of the portfolio. This strategic overweight reflects the compelling rental and value growth opportunities in the region’s diversified key metropolitan areas, including Los Angeles, San Diego, San Francisco, Seattle, Silicon Valley, and the Inland Empire.

The large coastal gateway markets (Los Angeles, San Francisco, Boston and New York) have had the strongest run since the financial crisis. The inherent advantages of these cities, including a well-educated population and constraints on development discourage over-supply, will likely foster better relative performance over the long run.

In a selection of regional markets (Portland, Oakland, Orange County and South Florida), higher relative yields, strong demographics, dynamic local economies, and low levels of new construction have created tactical opportunities. Riverside is notable not only for its strong showing among top ten markets, but also for rising into the top ten in the fourth quarter on robust industrial returns, nudging Denver down to the eleventh largest market by value.

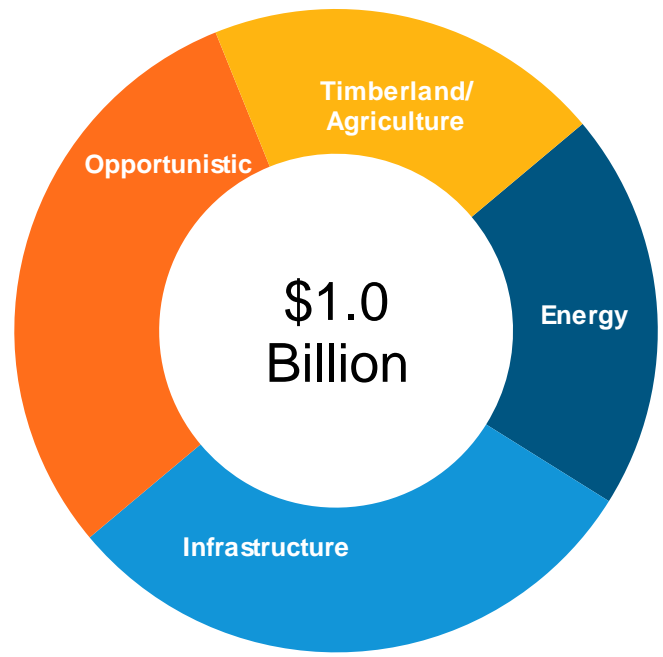
The energy sector is a major drag in the case of Houston, which was the worst performing market in the quarter and the only major market to see negative appreciation (although only slightly negative). The two largest markets in the index (New York and DC) were the next worst performing major markets. In the case of New York this was a shift from strong recent returns, but in the case of DC under-performance continues a trend seen since 3Q 2011.

Strong domestic capital flows, as well as foreign investment in commercial real estate focused on rule-of-law countries like the U.S., UK, Canada, and Australia, tempered by the stronger U.S. dollar, slowdown in China and emerging markets, continue to put upward pricing pressure on asset values and are keeping cap rates at historical lows in many markets.

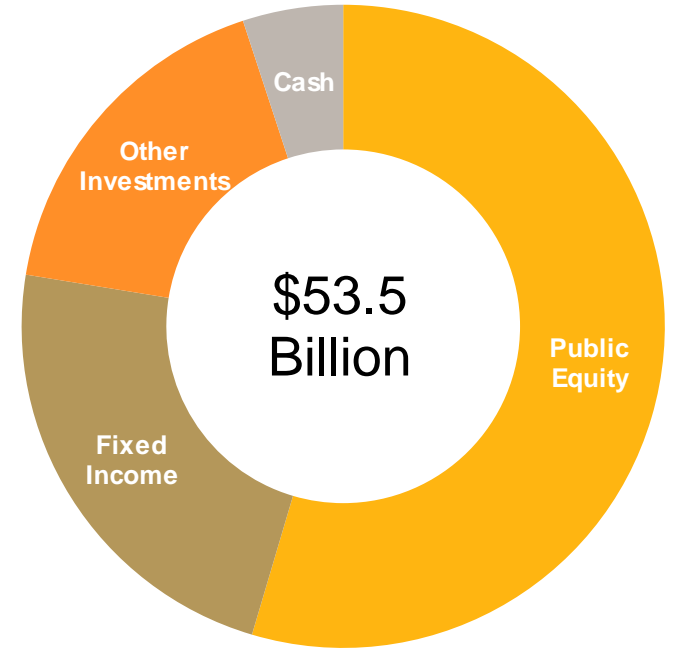


Real Assets

Real Assets



Pension



● Energy: 22%
\$0.2B

● Infrastructure: 33%
\$0.3B

● Public Equity: 55%
\$29.2B

● Fixed Income: 23%
\$12.3B

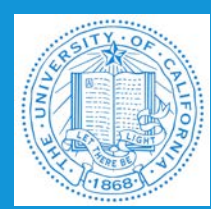
● Opportunistic: 30%
\$0.3B

● Timberland/Agriculture: 15%
\$0.2B

● Other Investments: 17%
\$9.3B

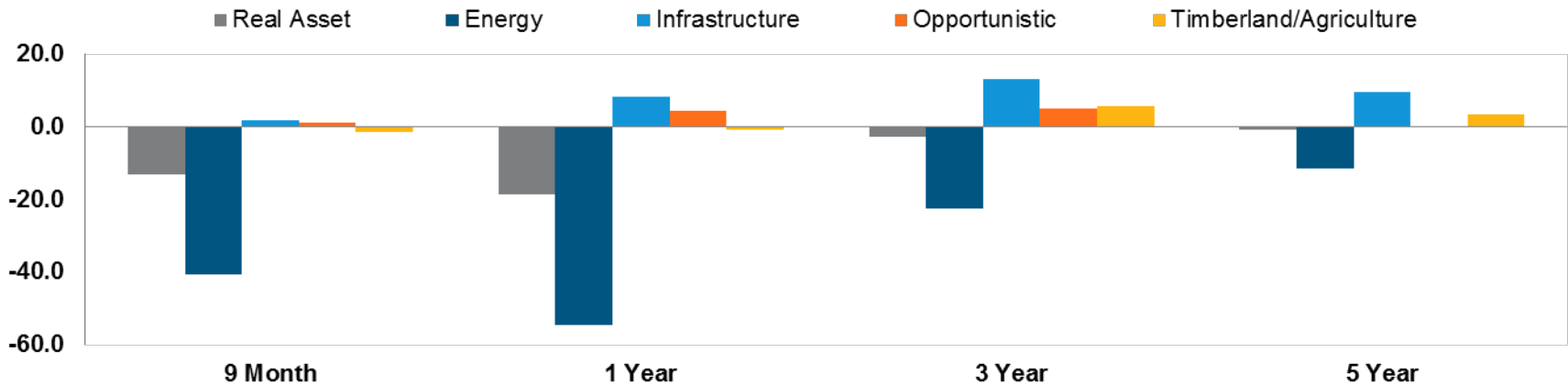
● Cash: 5%
\$2.7B

As of March 31, 2016



Real Assets

Net Returns (%) As of March 31, 2016	Market Value		Annualized Returns			
	(\$ Million)	% Allocation	9 Month	1 Year	3 Year	5 Year
Real Asset	968	100%	-13.1	-18.8	-2.8	-0.7
Actual Real Asset Returns			-13.1	-18.8	-4.3	-1.9
<i>Value Added</i>			0.0	0.0	1.5	1.2
Energy	209	22%	-40.5	-54.7	-22.4	-11.5
Infrastructure	319	33%	1.6	8.4	13.0	9.7
Opportunistic	289	30%	1.1	4.3	5.1	-
Timberland/Agriculture	151	15%	-1.5	-0.7	5.6	3.5



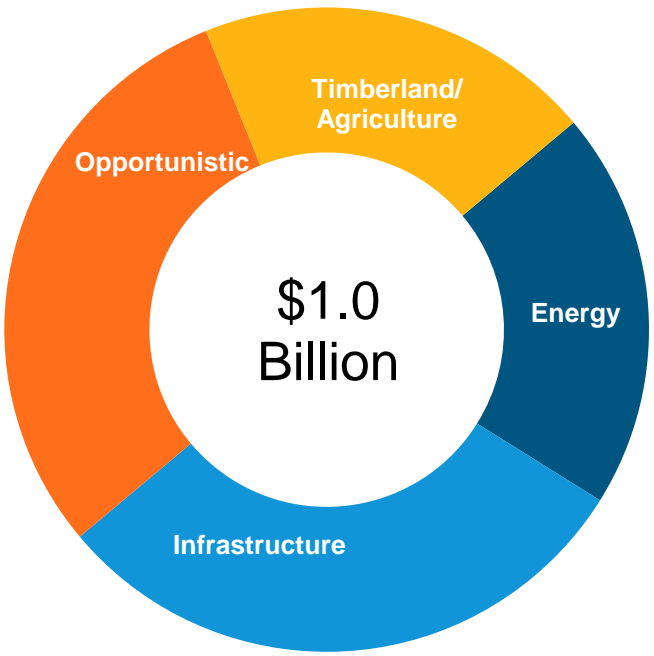


Real Assets Highlights

- The Real Assets portfolio returned -2.8% annualized over the past 3 years, outpacing the benchmark by 1.7%.
- Positive returns from Infrastructure, Opportunistic and Timber were offset by weakness in Upstream Energy.
- Commodities had an extremely challenging year in 2015 across all segments:
 - Oil prices declined more than 30% while Natural Gas prices also declined more than 20% in 2015 and both commodities continue to show weakness
 - Non-Precious Metals declined more than 25% for the year
 - Agricultural commodities declined more than 10% during 2015



Real Assets – Investment Strategies



\$1.0
Billion

Highlights

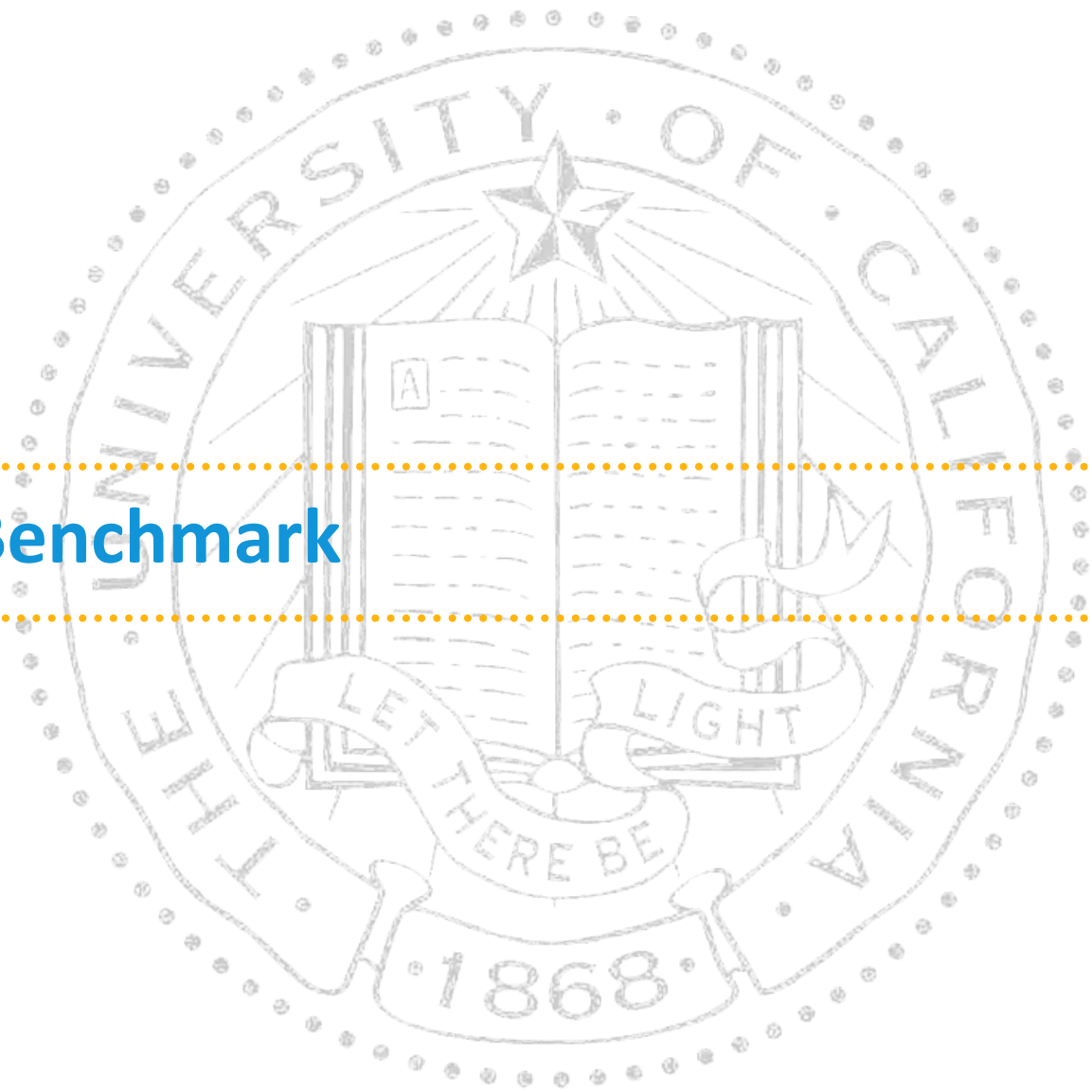
The portfolio continues to be heavily weighted towards natural resources which include oil & gas exploration and production and opportunistic mining investments.

Upstream Energy exposure represents about 1/3 of the portfolio and has been severely impacted by oil prices declining more than 30% in 2015 and natural gas prices falling more than 20% in 2015.

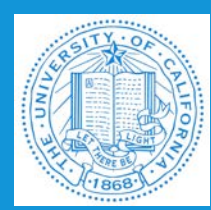
Midstream Energy exposure represents about 10% of the portfolio and has maintained positive performance despite the challenging commodity price environment.

Geographically, 75% of co-investments and funds are targeting North American opportunities or have North American exposure, partially driven by the energy focus.

Opportunistic strategies focused on agricultural credit, mine finance and drug royalties have shown resilience and downside protection in the current low commodity environment.



Policy Benchmark



Pension Policy Benchmark

Asset Class	Benchmark Component	Target	Ranges
Total Public Equity		54.92%	
U.S. Equity	Russell 3000 Tobacco Free Index	24.09%	+/-5%
Developed Equity	MSCI World ex-U.S. (net dividends) Tobacco Free	15.03%	+/-5%
Emerging Market Equity	MSCI Emerging Market (net dividends)	6.99%	+/-2%
Opportunistic Equity	MSCI All Country World Index (net dividends)	8.81%	+/-3%
Total Fixed Income		22.28%	
U.S. Core Fixed Income	Barclays U.S. Aggregate Bond Index	12.44%	+/-3%
High Yield Debt	Merrill Lynch High Yield Cash Pay Index	2.59%	+/-1%
Emerging Market Debt	JP Morgan Emerging Markets Bond Index Global Diversified	2.59%	+/-2%
TIPS	Barclays U.S. TIPS	4.66%	+/-1%
Total Other Investments		22.80%	
Absolute Return	50% HFRX Absolute Return Index + 50% HFRX Market Directional Index	6.22%	+/-5%
Private Equity	Actual Private Equity Returns	8.03%	+/-3%
Real Estate (Private)	NCREIF Funds Index-Open End Diversified Core Equity Index	5.44%	+/-3%
Real Assets	Actual Real Assets Portfolio Returns	3.11%	+/-1%