



# UNIVERSITY OF CALIFORNIA

Office of the Chief Investment Officer

## Endowment

Investment Review as of December 31, 2015  
February 2016

Growing Portfolios Building Partnerships

UC Investments



The **mission** of the General Endowment Pool (“GEP”) is to provide a common investment vehicle, which will generate a stable and continuously growing income stream, for (most but not all of) the University’s endowments and quasi-endowments, for which the University is both trustee and beneficiary.

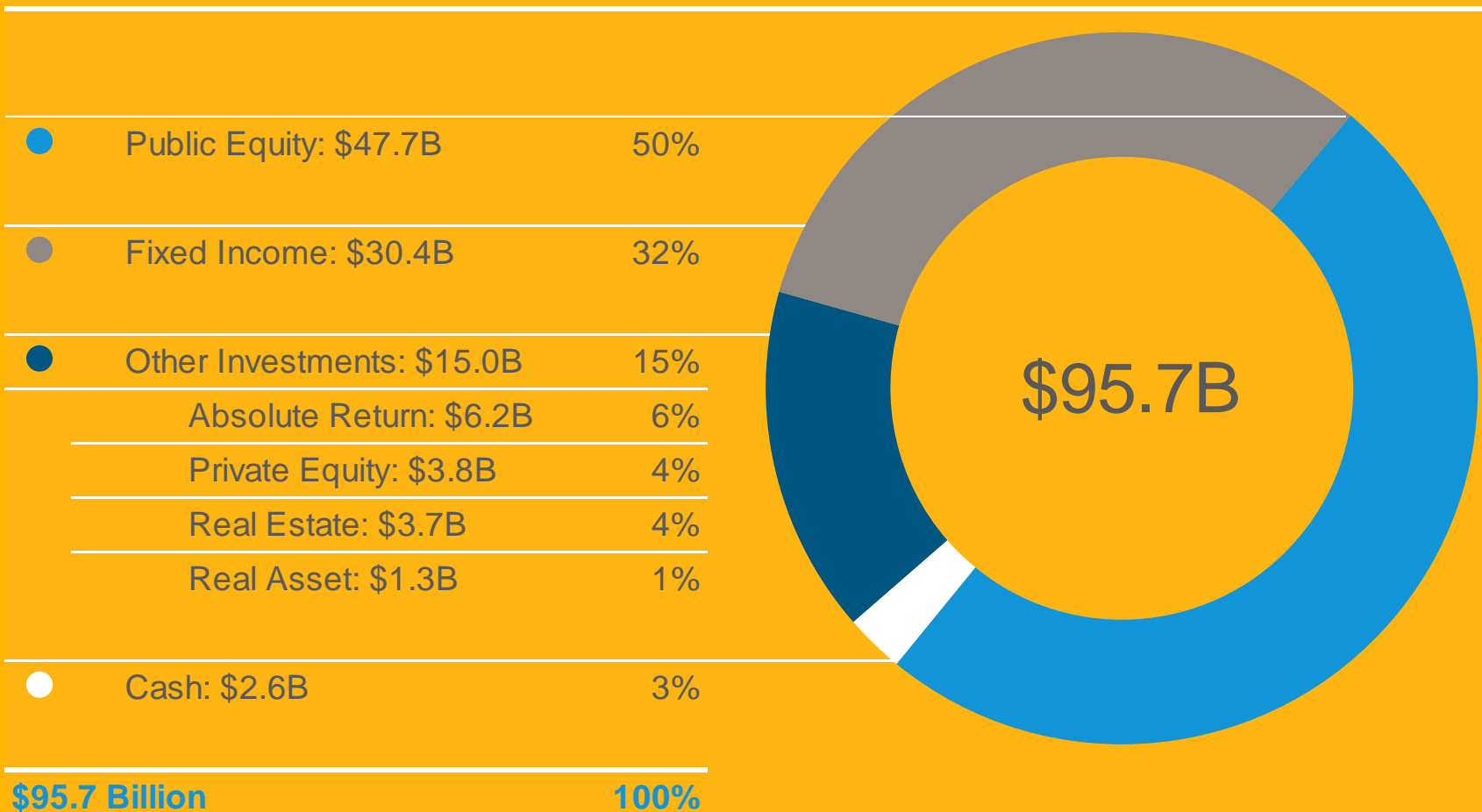
The overall investment goal of the GEP is to preserve the purchasing power of the future stream of endowment payout for those funds and activities supported by the endowments, and to the extent this is achieved, cause the principal to grow in value over time.

**Delivering  
value  
through  
values.**

OUR INVESTMENT BELIEFS

# Our Products

As of December 31, 2015



# Delivering value through values.

## 1

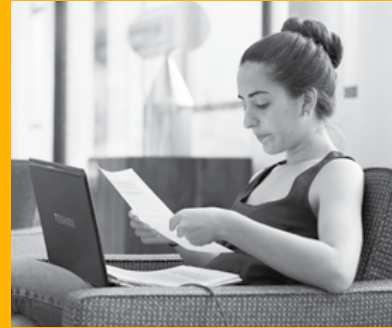
Invest for the long term.  
Where we can, we focus on investments over 10 years and beyond. This offers many more opportunities than those available to short- and intermediate- term investors. We aim to make the most of our scale and ability to be patient.

## 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.



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# Market Review

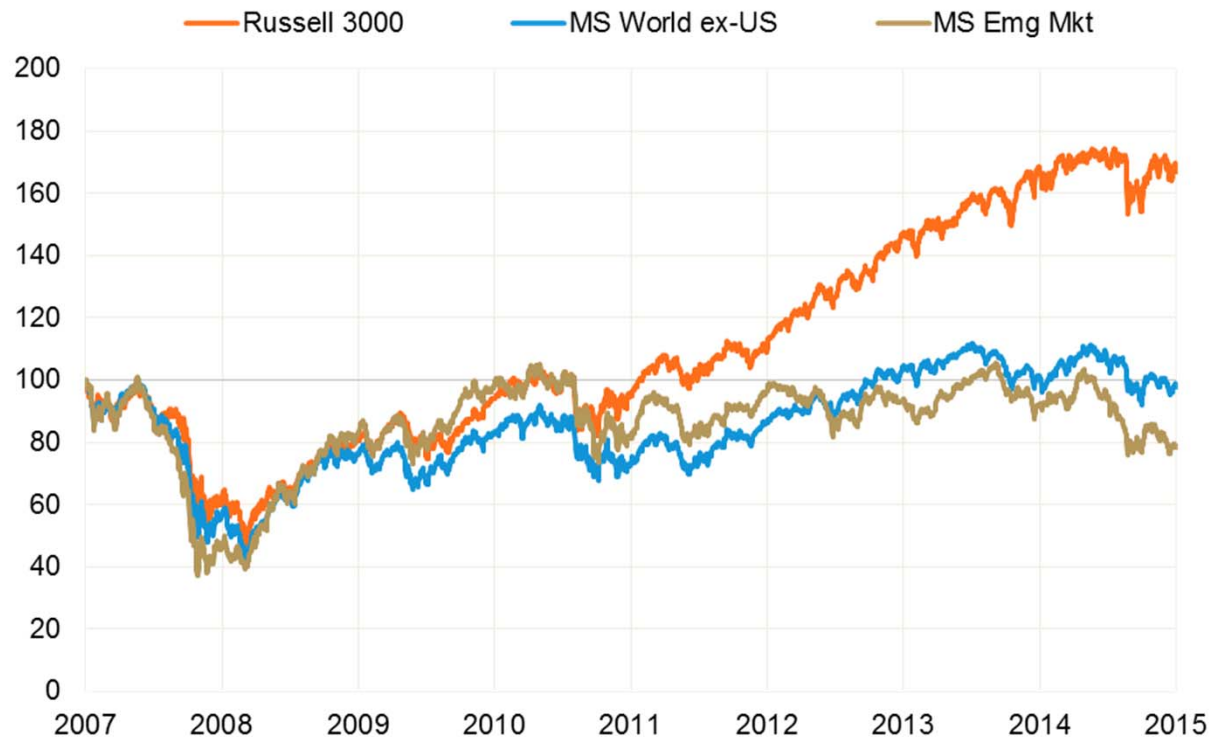






# Equity Markets

## Performance



## Highlights

China's stock market crash, the meltdown in commodities, the emerging market equity selloff, a Fed rate increase and the rising U.S. Dollar vis-à-vis most currencies, made the past six months memorable.

Risks from China are clearly top of mind as it attempts the largest economic transformation, morphing from a fixed asset / export driven economy to one that is consumer-led. While hiccups and policy mistakes are to be expected, two came to the forefront including: 1) A margin fueled stock market crash leading to a 20% selloff for the MSCI China; and 2) Miscommunication of foreign exchange policy leading to currency devaluation. China's transformation is also having huge global effects including contributing to decelerating global growth and much lower demand for commodities and materials.

A sustained collapse in commodity prices, slower global GDP and a rising U.S. Dollar, all helped spur the market rout in emerging markets, which were down 17.4%.

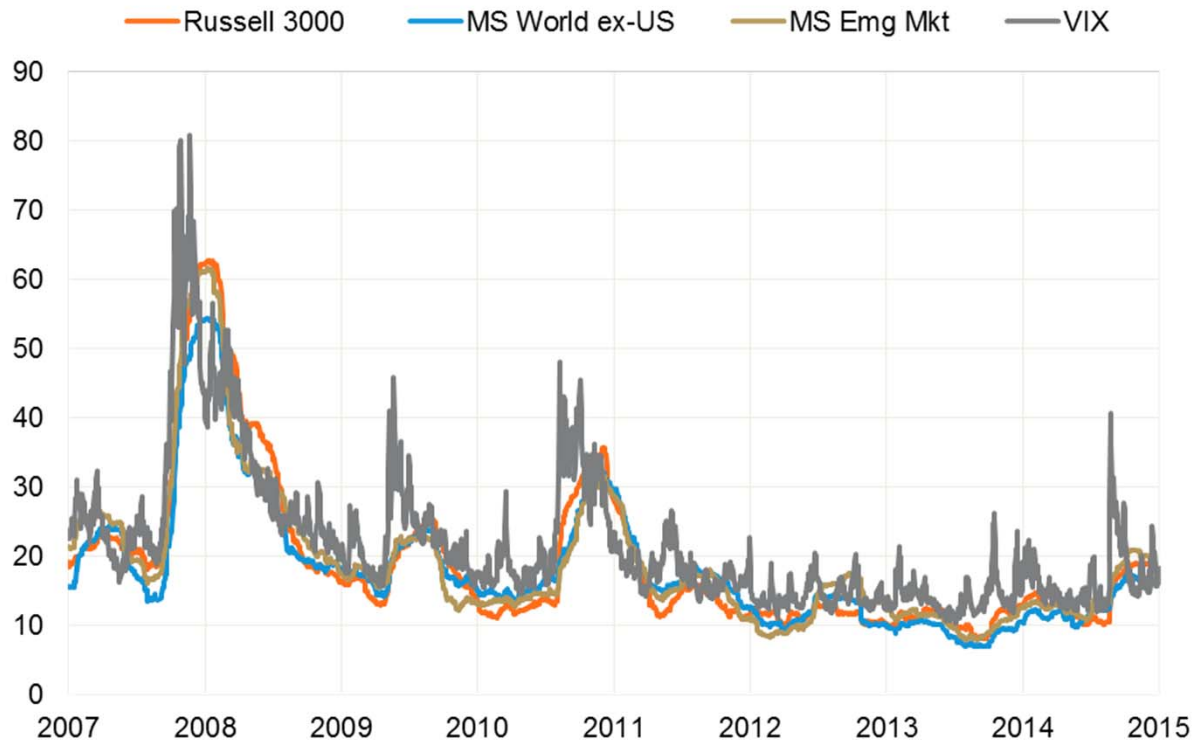
Despite a sharp selloff in August and September, developed market performance fared much better with the U.S., European and Japanese markets losing anywhere from -1.4% to -7.5%.

The business cycle continues to mature in the U.S., as evidenced by the Fed's willingness to raise rates. Compared to other developed markets, the U.S. and its equity drivers appear to be reaching peak levels such as quantitative easing, share buybacks, mergers & acquisitions, distributions, and operating margins.



# Equity Markets

## Volatility



## Highlights

Equity values remain elevated above historic averages 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 and 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.

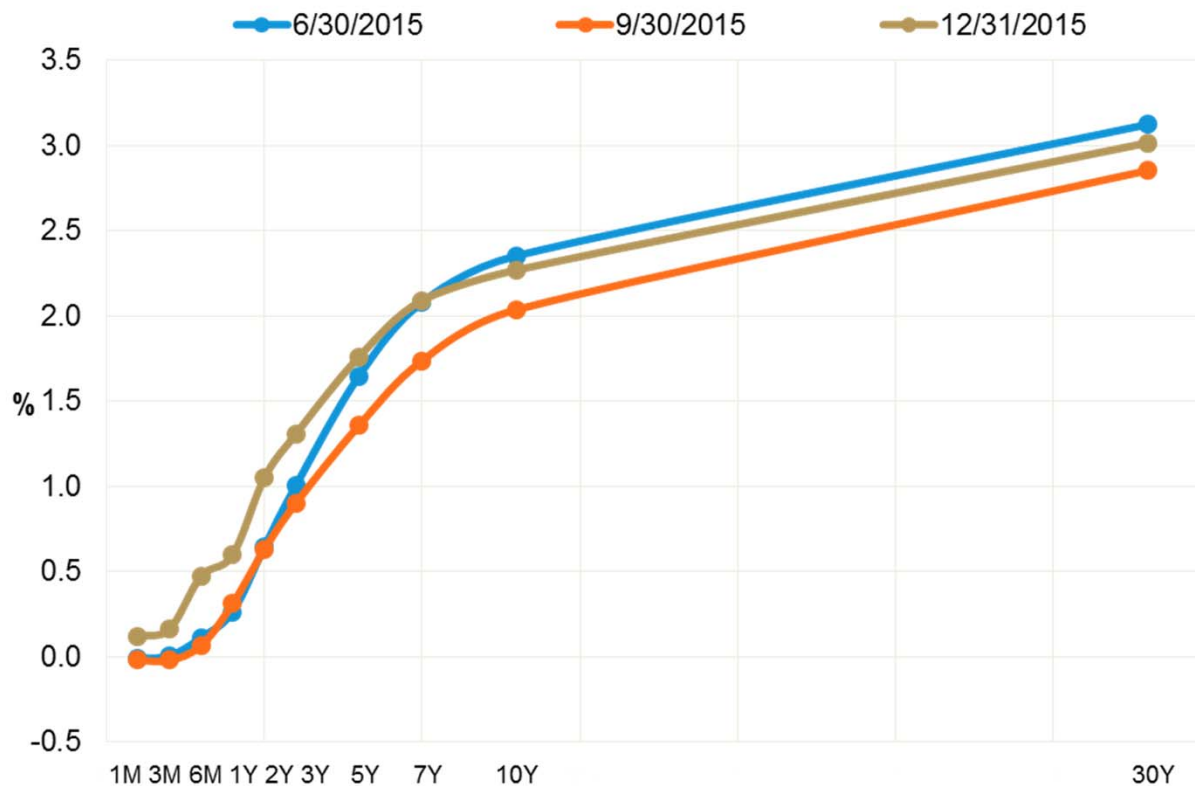
Markets are likely to remain volatile while they adjust for the (slow) removal of crisis-era policies. In other words, central banks might migrate from being a source of stability to a source of instability. So to, sovereign funds once flush with cash from high commodity prices may become 'liquidity demanders' versus 'liquidity providers'.

Volatility spiked from a long period of abnormally low levels. As we move into an average or higher level of volatility, equity investors will need to re-price risk. This has been leading to a transition in equity leadership and will likely lead to greater differentiation among stock, sector, and country selection going forward.



# Yields

## US Treasury Bond Curve



### Highlights

Treasury yields rose during the quarter and the yield curve flattened as the Federal Open Market Committee (FOMC) finally raised the Fed funds target range to 0.25% - 0.50% from 0.0% - 0.25%. Treasury yields increased 15 - 40 basis points over the past quarter with the 1 to 2 year sector underperforming along the curve.

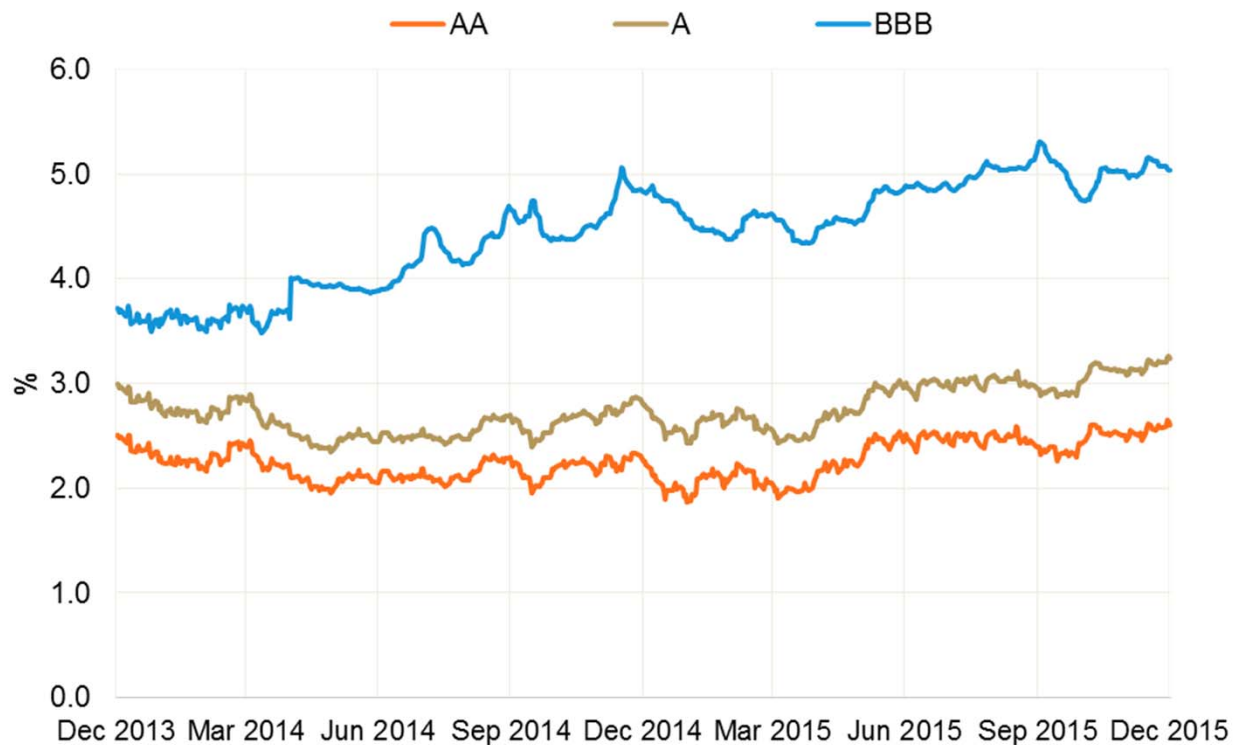
In aggregate, the FOMC's first rate hike since 2006 had a dovish quality – although their policy statement described the risks to the outlook as balanced and gave an upbeat assessment of labor market slack, it also suggested a higher threshold for progress toward inflation goals.

Economic data ended 2015 on a weak note. While the labor market continues to generate new jobs at a steady pace, retail sales and manufacturing slowed. Fourth quarter gross domestic product (GDP) growth expectations are now below 1%. If this weakness persists, 2016 GDP growth expectations of 2% may have to be revised lower.



# Spreads

## Credit Spreads by Ratings



### Highlights

After a brief relief rally in the early fall, spreads continued their march wider into the end of the year. Drivers of concern in the market include the Fed rate hiking cycle, destruction in the commodity sector, the slowdown in China, record new issue supply, and the deterioration in credit fundamentals.

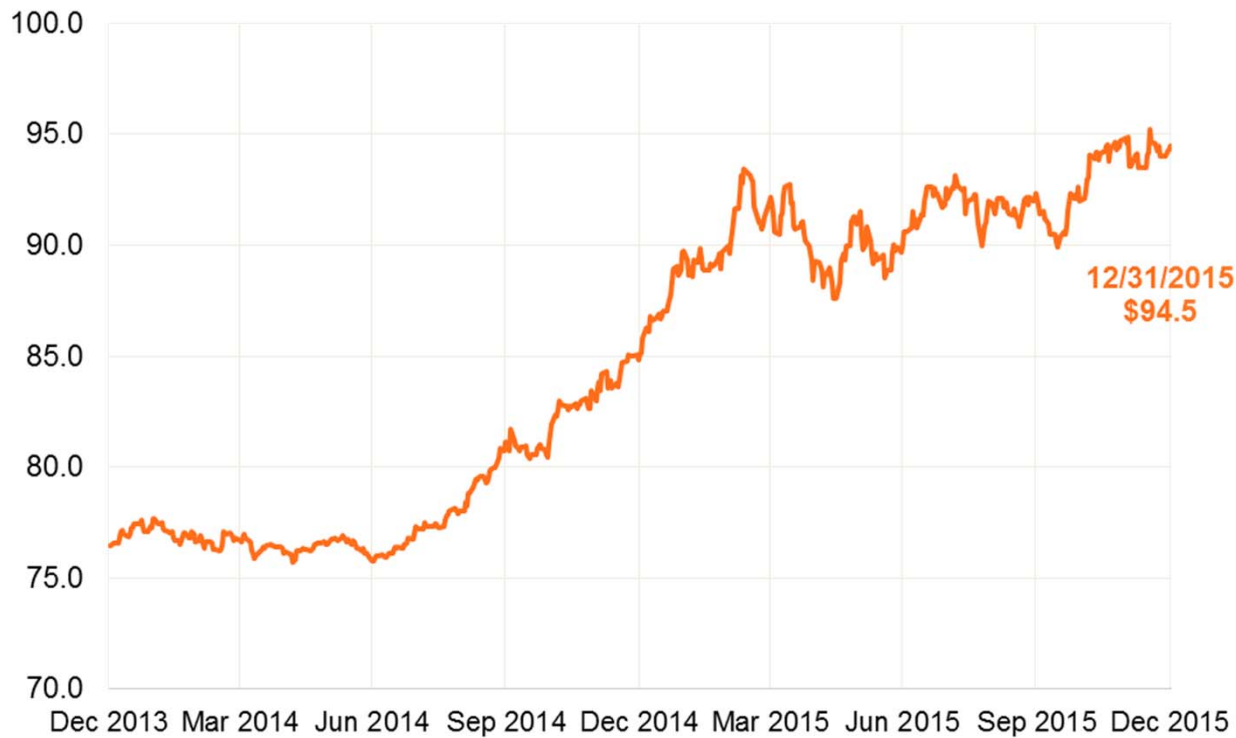
Higher quality credit continues to outperform lower rated securities. CCC rated securities have traded to distress levels and now yield approximately 20% on average.

Companies continued to engage in shareholder enhancing activity – mergers & acquisitions, share buybacks, and general re-leveraging of balance sheets.



# Currency

## US Dollar Index



### Highlights

The U.S. dollar has been the main channel to express investors' views as they adjusted to the first rate hike.

Over the past six months, the U.S. Dollar has strengthened versus many currencies.

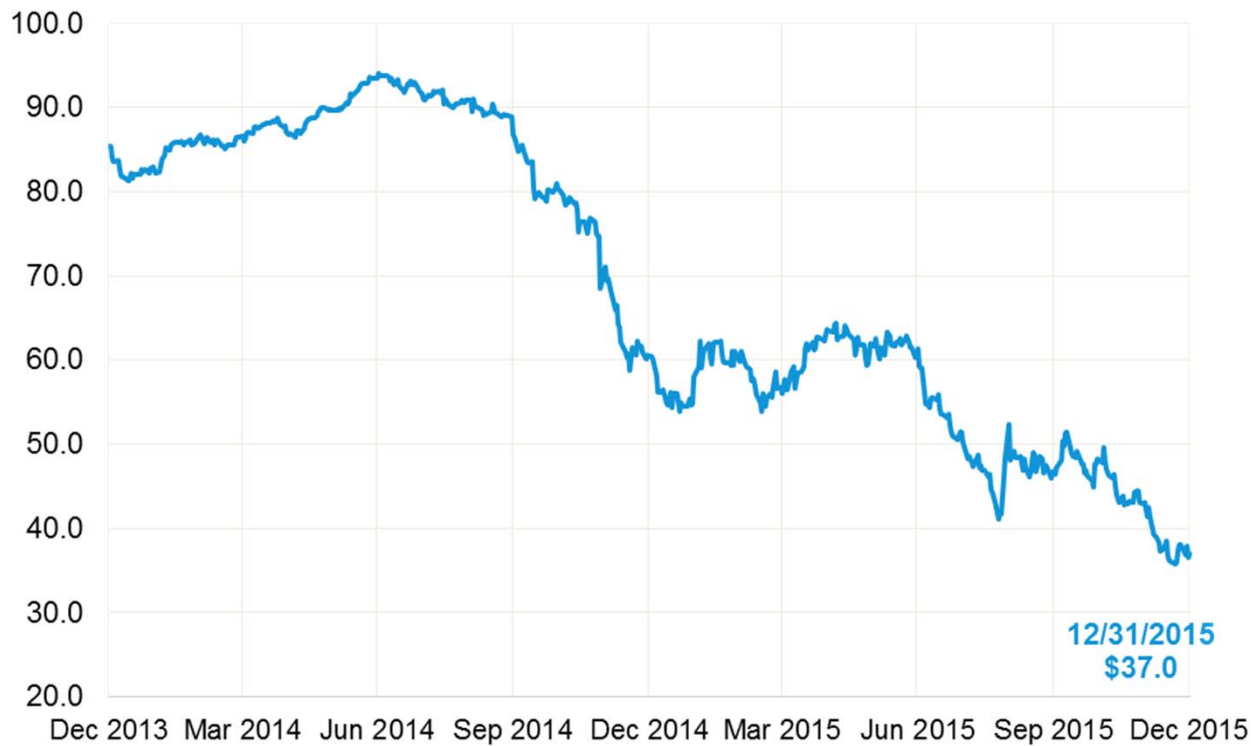
In November, the IMF included the Yuan in the SDR (Special Drawing Rights). Unfortunately, slowing growth, miscommunication of its currency strategy, and surprisingly rapid deterioration of reserves, led to a few devaluations of the Yuan compared to U.S. Dollar.

While the pace has slowed, quantitative easing driven by slow growth and very low inflation in both Japan and Europe, are expected to keep a lid on currencies vis-à-vis the U.S. Dollar.



# Crude Oil

## Crude Oil Price



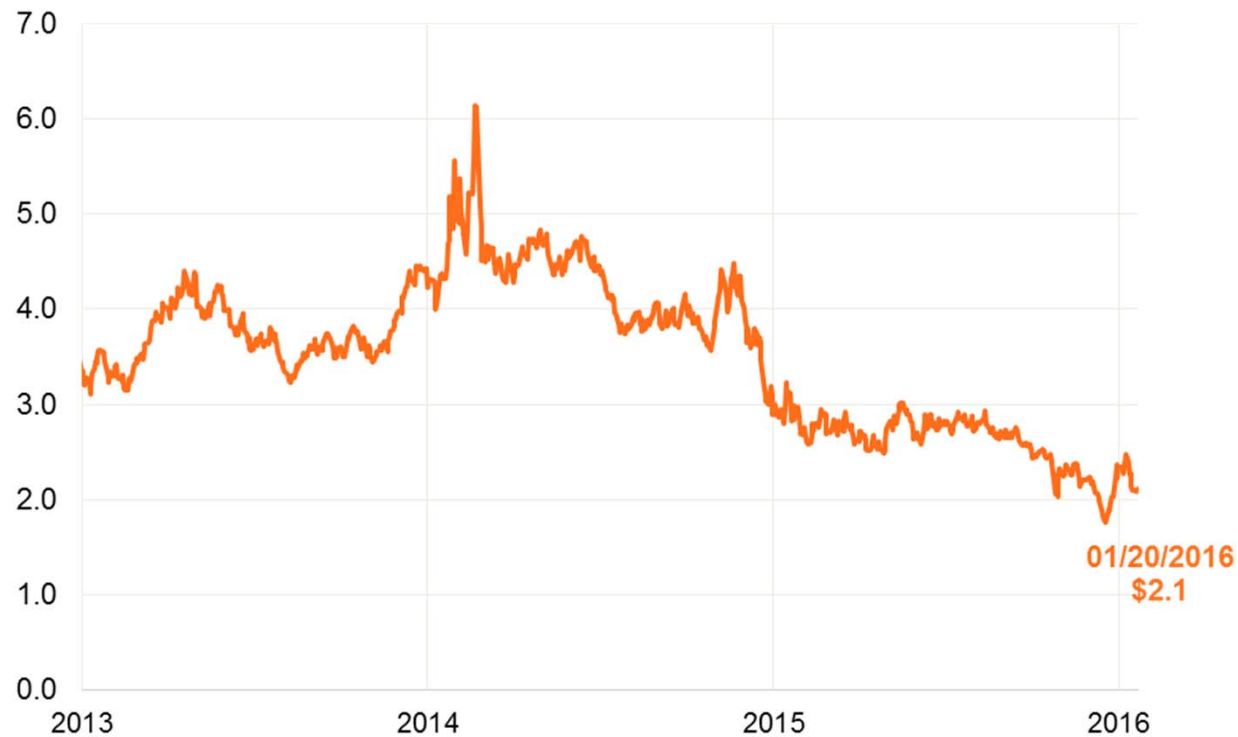
## Highlights

China's transition is having a profound impact on material prices and commodities as it demands far less of these goods. The resource and energy-intensive nature of Chinese economic growth in recent years caused a huge increase in the demand for, and the prices of, most commodities and energy, which is now unwinding at an accelerated pace.



# Natural Gas

## Natural Gas Price



### Highlights

Oil price declines have overshadowed significant declines in natural gas prices which is also having a significant impact on energy companies.

Increased production capabilities combined with a mild winter have resulted in lower natural gas prices.



# Investment Highlights







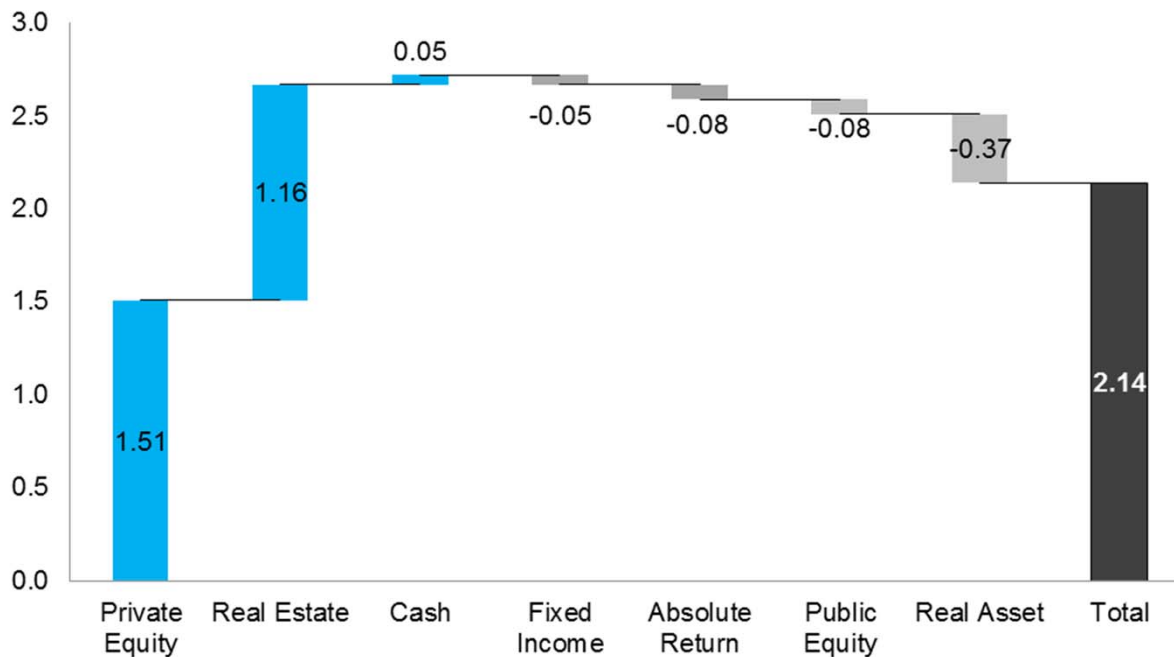
# Investment Performance

Net Returns (%) As of December 31, 2015	Annualized Returns						
	6 Month	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year
UC Endowment	-2.5	2.1	8.9	7.6	9.8	6.4	8.1
UC Endowment Benchmark	-3.3	-0.2	6.4	5.3	7.8	5.5	7.4
<i>Value Added</i>	<i>0.8</i>	<i>2.3</i>	<i>2.5</i>	<i>2.3</i>	<i>2.0</i>	<i>0.9</i>	<i>0.7</i>



# Investment Performance

## 12 Months Contribution to Return - Percentage (%)



### Highlights

Over the 12 months ending December 31, 2015, our portfolio returned +2.1% vs. -0.2% for our benchmark.

Largest positive contributors were Real Estate and Private Equity, while the largest detractors were Real Assets and Public Equity.

We navigated the year with a rather defensive stance, expressed mainly through our overweight to Cash and underweight to Public Equity. We were also underweight Absolute Return and Real Estate.

In terms of performance attribution, securities selection added +1.9% throughout the portfolio, with Public Equity responsible for almost half of the added value. Absolute Return also contributed positively (for about one third of the added value). Contribution from allocation was more modest at 0.4%, split evenly among Other Investments and our overweight in Cash. The only slight detractor (-0.1%) came from our Public Equity underweight. Total added return was +2.3% for the year or \$172 Million.

As of December 31, 2015



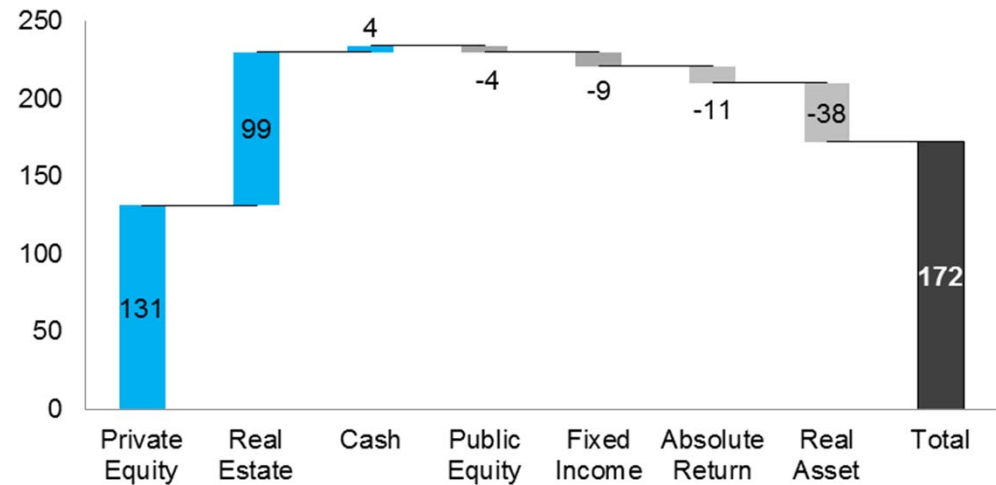
# Investment Performance

## Assets Under Management Attribution

Assets Under Management December 31, 2014	\$8.3 billion
Market Gains	(\$0.02 billion)
Value Added	\$0.2 billion
Net Cash Flow	\$0.3 billion
<b>Assets Under Management December 31, 2015</b>	<b>\$8.8 billion</b>

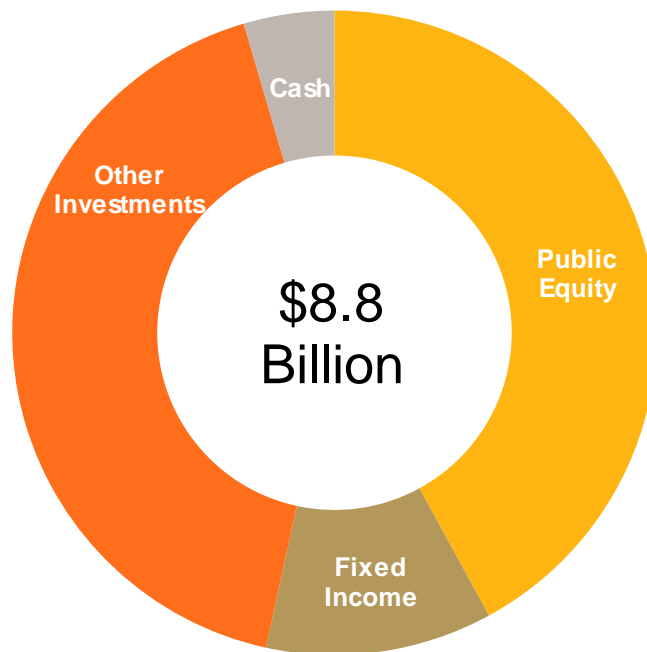
## 12 Months Contribution to Return - \$Millions

As of December 31, 2015





# Asset Allocation



● **Public Equity: 42%**  
**\$3.7B**

● **Fixed Income: 11%**  
**\$1.0B**

● **Other Investments: 42%**  
**\$3.7B**

● **Cash: 5%**  
**\$0.4B**

As of December 31, 2015

## Highlights

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

The 10 year Treasury, at 2.3%, has anchored risk premiums lower across asset classes, making it difficult to achieve returns at or above the discount rate for the foreseeable future.

We used the past year to reposition the portfolio. Rebalanced Private Equity and Real Estate to better align the allocation with the portfolio objectives and our investment beliefs. Mainly because of their valuations, we also took profits in Private Equity, Real Estate and REITs.

The portfolio continues to be positioned to weather and take advantage of some volatility. For the endowment, we use a “barbell approach,” which includes 1) 5% cash, and 2) a slightly above target allocations to growth assets mainly through Private Equity. The portfolio’s Beta is 0.48 and its volatility is 6.8%.

Compared to our Pension, the Endowment allocation is more sensitive to the strategies employed in our Absolute Return allocation.

Performance and results need to be taken in context:

- **Risk:** One measurement system, agent-based risk framework, and risk factor approaches
- **Public Equity:** Rationalize manager base, maximize active management and increase risk efficiency/eliminate excess diversification
- **Absolute Return:** Construct a non-directional absolute return portfolio, which can opportunistically take advantage of structural shifts such as private lending.
- **Private Equity and Real Estate:** Highly selective approach to identify 8-10 of the best private transactions each



# Asset Allocation

	Market Value in \$ Billions	Percentage	Over/Underweight Relative to Policy
<b>Public Equity</b>	<b>3.7</b>	<b>42.0%</b>	<b>-1.2%</b>
<b>Fixed Income</b>	<b>1.0</b>	<b>11.0%</b>	<b>-2.0%</b>
Core	0.3	3.7%	-1.5%
High Yield	0.3	2.9%	0.3%
Emerging Market Debt	0.2	2.2%	-0.4%
TIPS	0.2	2.2%	-0.4%
<b>Other Investments</b>	<b>3.7</b>	<b>42.5%</b>	<b>-1.3%</b>
Absolute Return	2.0	23.3%	-1.2%
Private Equity	1.0	11.0%	1.6%
Real Estate	0.5	5.9%	-1.1%
Real Asset	0.2	2.3%	-0.6%
<b>Cash</b>	<b>0.4</b>	<b>4.5%</b>	<b>4.5%</b>
<b>Total GEP</b>	<b>8.8</b>	<b>100.0%</b>	<b>0.0%</b>

As of December 31, 2015



# Performance Attribution – 1 Year

As of December 31, 2015	Average Weight	Active Weight	Allocation Attribution	Selection Attribution	Total Attribution
<b>Public Equity</b>	42.0	-1.2	-0.1	+1.0	+0.9
<b>Fixed Income</b>					
Core	3.7	-1.5	+0.0	+0.0	+0.0
High Yield	2.9	+0.3	+0.0	+0.1	+0.1
Emerging Market Debt	2.2	-0.4	+0.0	+0.0	+0.0
TIPS	2.2	-0.4	+0.0	+0.0	+0.0
<b>Other Investments</b>					
Absolute Return	23.3	-1.2	+0.1	+0.7	+0.8
Private Equity	11.0	+1.6	+0.1	+0.0	+0.1
Real Estate	5.9	-1.1	+0.1	+0.1	+0.2
Real Asset	2.3	-0.6	+0.1	+0.0	+0.1
Cash	4.5	4.5	+0.1	+0.0	+0.1
<b>Total GEP</b>	<b>100.0%</b>	<b>+0.0%</b>	<b>+0.4%</b>	<b>+1.9%</b>	<b>+2.3%</b>

As of December 31, 2015



# 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 7% means that roughly two-thirds of the time, the realized return will be within 7% from the average return.

Total Risk was 6.8% at the end of the December. The reduction of risk is due to the lower volatility environment over the past couple of years but more recently there have been increased upticks in volatility.

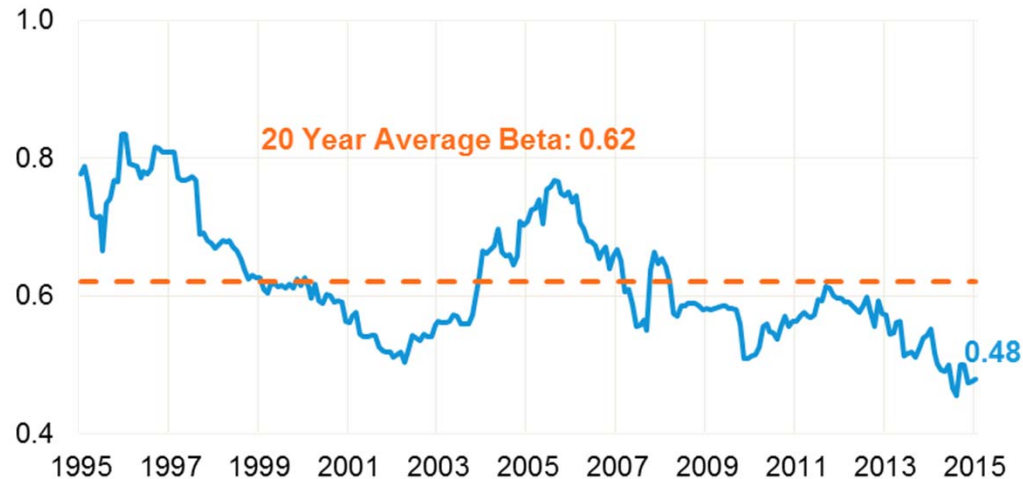
Active risk is measured by standard deviation of monthly active returns; each point or bar shows a 1-year measurement period. A standard deviation of 3% means that roughly two-thirds of the time, the realized active return will be within 3% from the average active return.

Most of the active risk is attributed to security and manager selection decisions that differ from the benchmark. The Active Risk was 2.1% at the end of December and has been trending upward as we have increased our concentration and tilts from the benchmark.

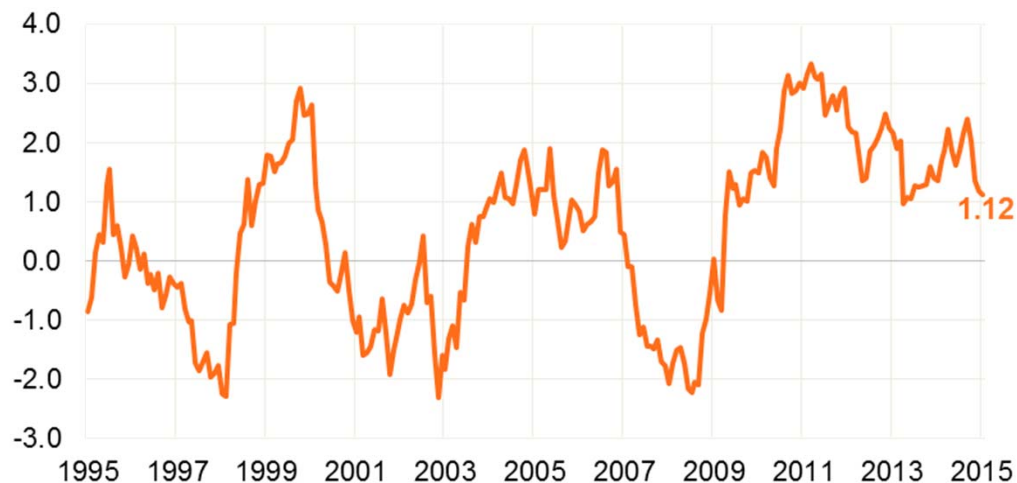


# Risk Measures

## 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 0.48 at the end of December; which means that if the S&P 500 went down 10%, we would expect the endowment portfolio to go down by about 5%.

Beta to the equity market is the lowest it has ever been partially explained by a more diversified Endowment portfolio as evidenced by the Asset Allocation changes over time.

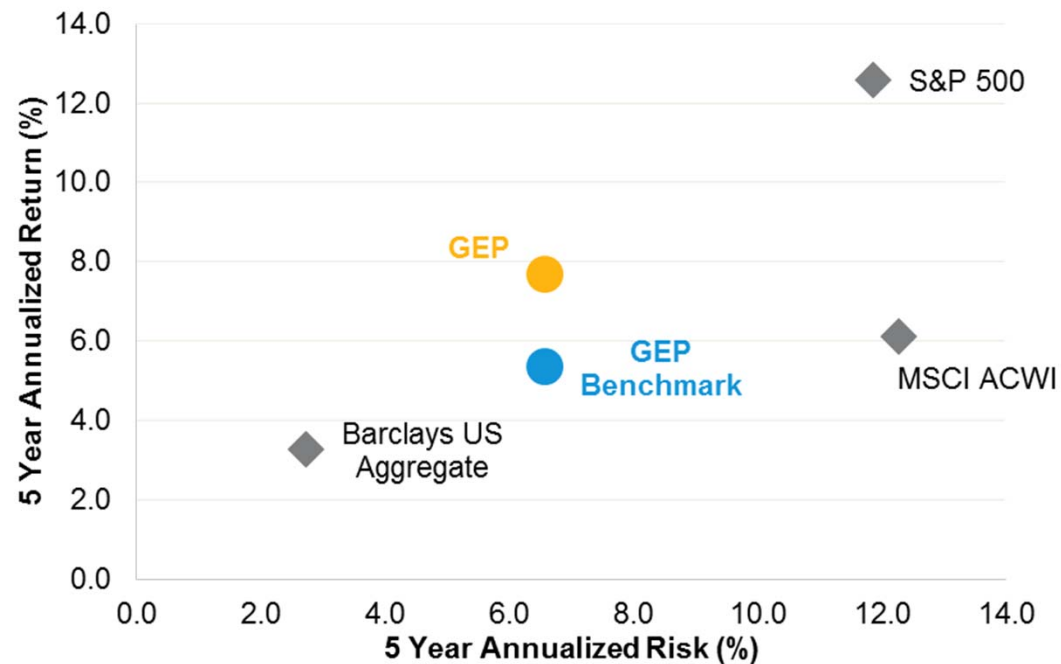
Information Ratio is a ratio of Active Return over Tracking Error; Tracking Error is the standard deviation of the active return over time. The higher the information ratio, the better the portfolios is able to achieve active return against the relative risk to the policy benchmark taken. Information Ratio was 1.12 at the end of December.





# Risk Measures

Risk vs Return 5 Year	Return	Risk	Ratio
GEP	7.65	6.60	1.16
GEP Benchmark	5.33	6.60	0.81
S&P 500	12.57	11.87	1.06
MSCI ACWI	6.09	12.29	0.50
Barclays US Aggregate	3.25	2.74	1.18



As of December 31, 2015

## 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 5 years, for every unit of risk we took we were rewarded 1.16.

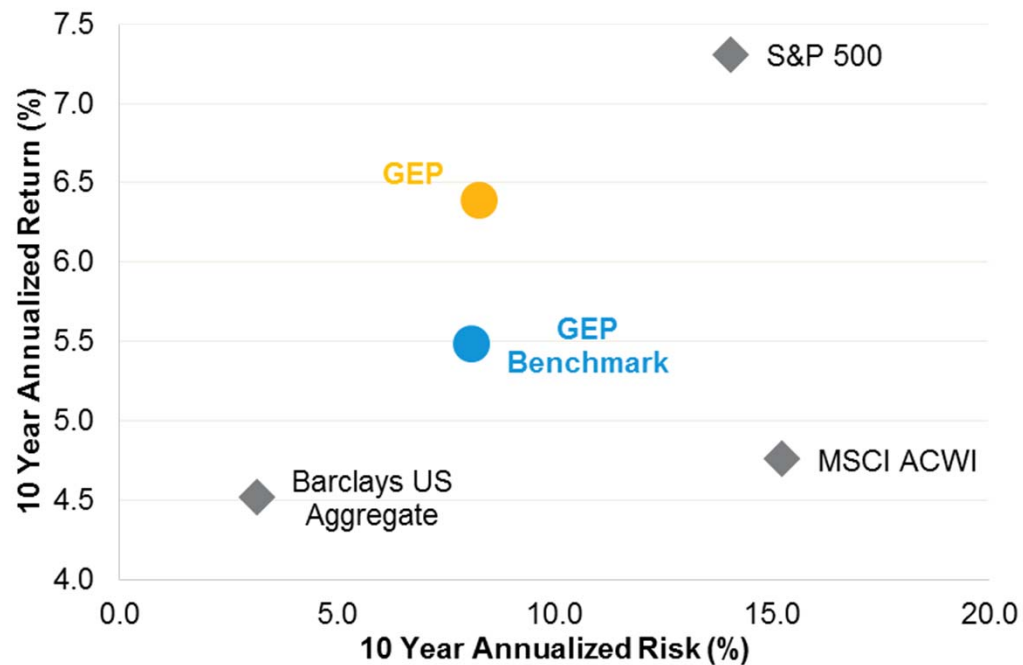
Our total risk is primarily related to our allocation between equity and bonds. At the end of December our allocation was underweight to public equity and fixed income and overweight to private equity relative to the policy benchmark. Our total risk is similar to the policy benchmark but our total return is ahead of the policy.

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
GEP	6.38	8.31	0.77
GEP Benchmark	5.48	8.12	0.67
S&P 500	7.31	14.07	0.52
MSCI ACWI	4.76	15.27	0.31
Barclays US Aggregate	4.51	3.18	1.42



As of December 31, 2015

## Highlights

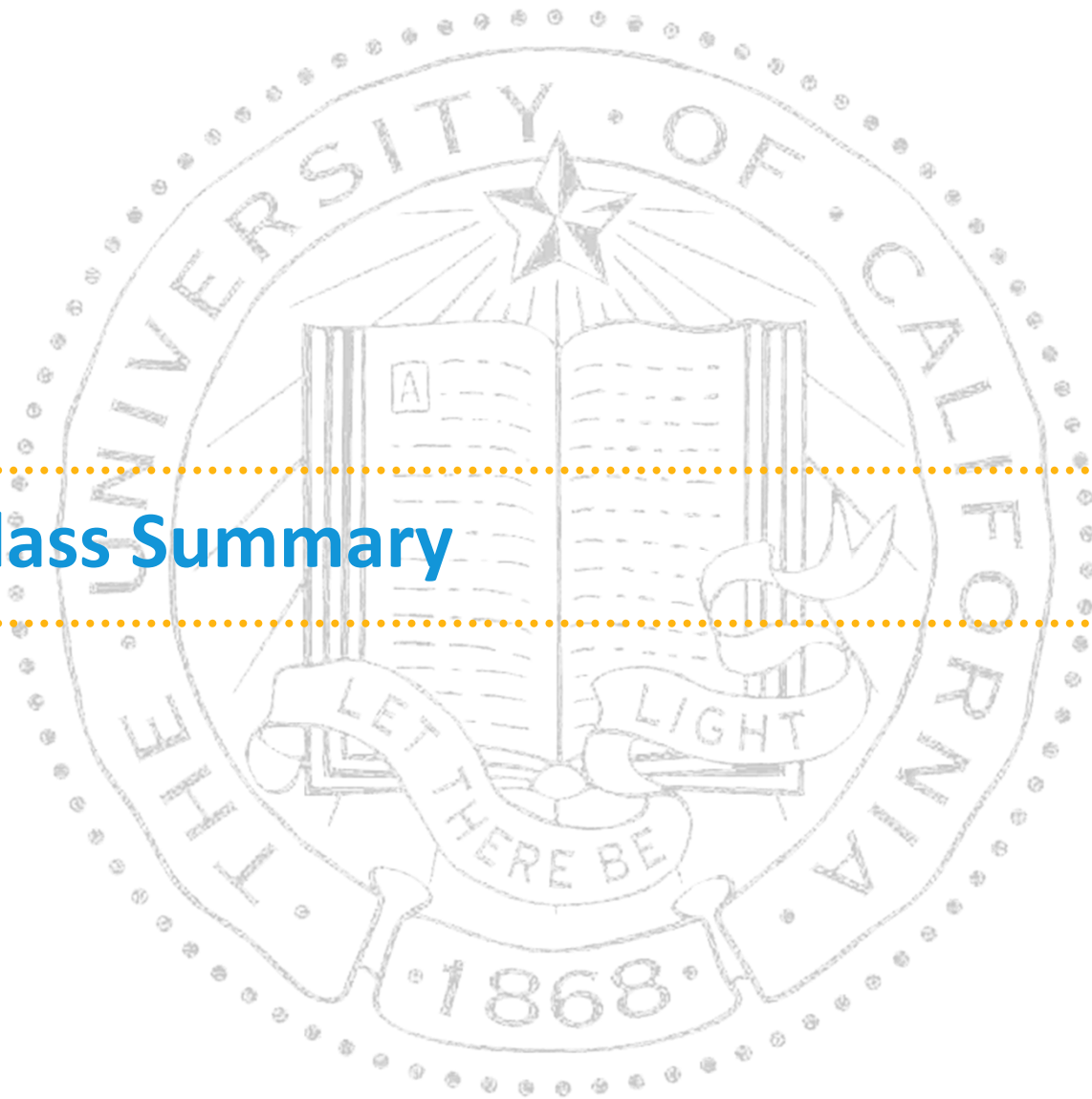
Risk Return chart shows return and the amount of volatility taken to achieve it. The return to risk ratio reflects the reward per unit of risk we are achieving.

For the past 10 years, for every unit of risk we took we were rewarded 0.77.

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.



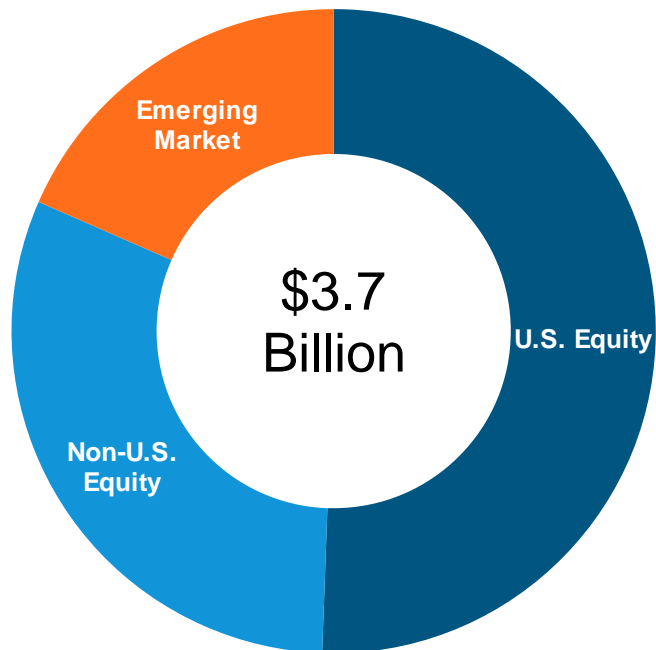
# Asset Class Summary



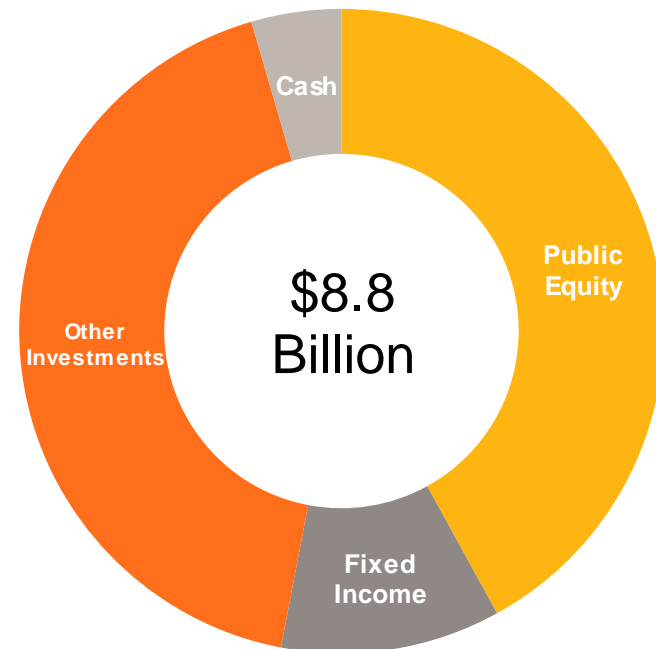


# Public Equity

Public Equity



Endowment



● U.S. Equity: 51%  
\$1.9B

● Non-U.S. Equity: 31%  
\$1.1B

● Public Equity: 42%  
\$3.7B

● Fixed Income: 11%  
\$1.0B

● Emerging Market: 18%  
\$0.7B

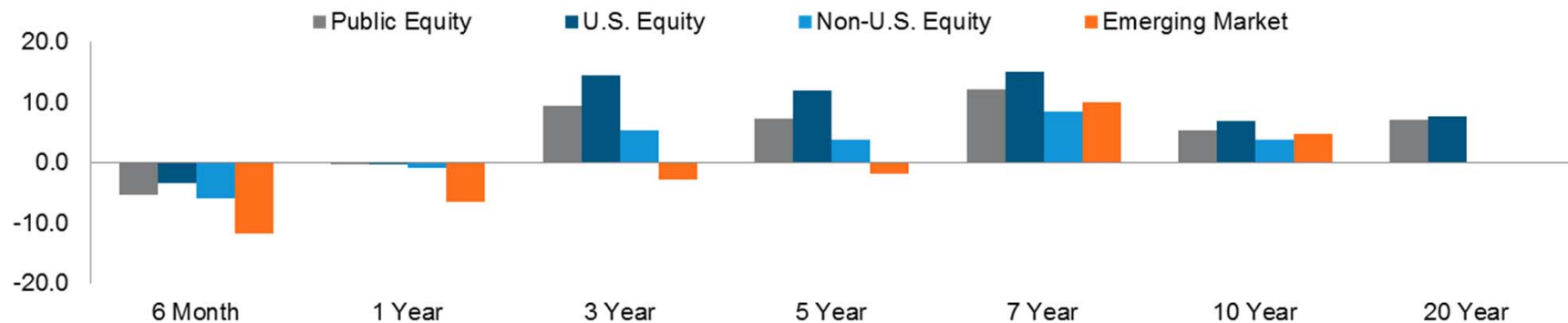
● Other Investments: 42%  
\$3.7B

● Cash: 5%  
\$0.4B



# Public Equity

Net Returns (%)	Market Value		Annualized Returns						
As of December 31, 2015	(\$ Million)	% Allocation	6 Month	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year
Public Equity	3,676	100%	-5.4	-0.2	9.4	7.4	12.2	5.4	7.2
MSCI All Country World Index (net dividends)			-4.9	-2.2	6.7	5.6	10.7	4.6	7.3
<i>Value Added</i>			-0.5	2.0	2.7	1.8	1.5	0.8	-0.1
U.S. Equity	1,859	51%	-3.4	-0.1	14.5	12.0	15.1	6.9	7.6
Russell 3000 Tobacco Free Index			-1.6	0.2	14.7	12.1	15.0	7.2	8.4
<i>Value Added</i>			-1.8	-0.3	-0.2	-0.1	0.1	-0.3	-0.8
Non-U.S. Equity	1,140	31%	-5.9	-0.9	5.3	3.8	8.5	3.8	-
MSCI World ex-U.S. (net dividends) Tobacco Free			-7.3	-3.3	3.8	2.7	7.5	2.8	-
<i>Value Added</i>			1.4	2.4	1.5	1.1	1.0	1.0	-
Emerging Market	677	18%	-11.8	-6.5	-2.8	-1.9	10.1	4.8	-
MSCI Emerging Market (net dividends)			-17.4	-14.9	-6.8	-4.8	7.5	3.6	-
<i>Value Added</i>			5.6	8.4	4.0	2.9	2.6	1.2	-





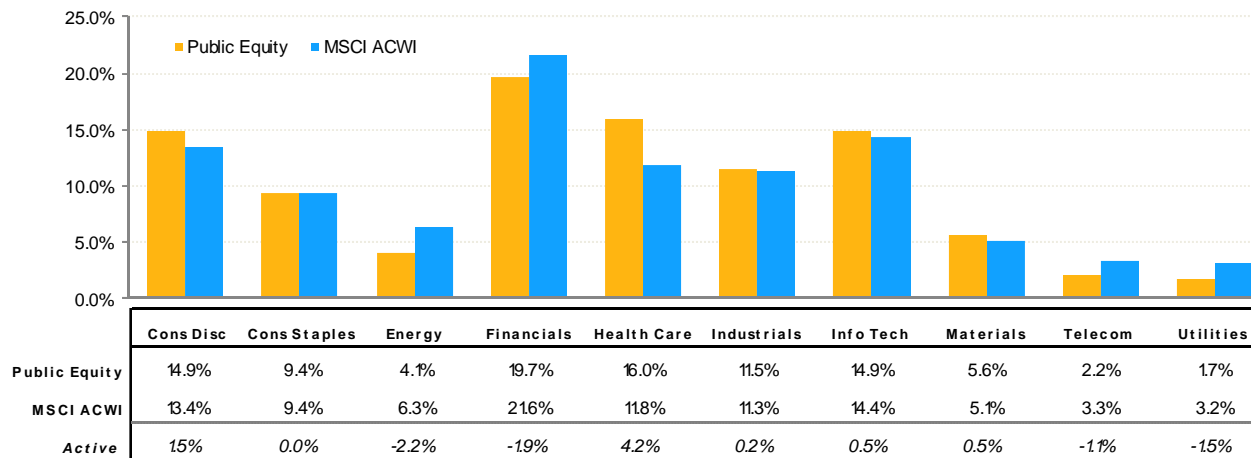
# Public Equity Highlights

- Returns across major equity markets were all negative over the past six months with the global benchmark (MSCI ACWI IMI Index) down -5.2%. Emerging markets, China, small cap biotech stocks and small cap stocks were down the most. The correlated move across regions and low cross-sectional volatility created a difficult environment for active management.
- We have been expecting higher than average equity valuations combined with rising risks would create an environment of low returns and higher volatility. So it is not surprising to see that we are transitioning from an abnormal period of extremely low volatility. Accordingly, risks across global equities are being re-priced during this transition phase.
- Ultimately, we expect this volatility to create investing opportunities, which it is beginning to do in select areas. We also expect the opportunity for active management to increase because differentiation amongst stocks increases at the end of cycles and near inflection points.
- Over the past six months, stock selection in the U.S. was the single largest detractor, particularly in the healthcare sector.
- The cumulative allocation effect of overweight and underweight positions across regions and sectors was approximately neutral to performance. Our underweight to energy was the largest contributor, whereas our overweight position to China was the largest detractor.



# Public Equity – Sectors

## Sector Exposures



## Highlights

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

Healthcare stock selection was the largest detractor over the past six months. Hospitals and healthcare insurers fell significantly more than the market due to anti-trust concerns and negative comments from presidential candidates during election primaries.

Consumer discretionary sector performed better than average, but our overweight was more than offset by poor stock selection.

Underweight to energy sector was the largest 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.

Strong stock selection by our managers in the materials segment generated the second largest positive contribution relative to benchmark, despite headwinds in the sector.

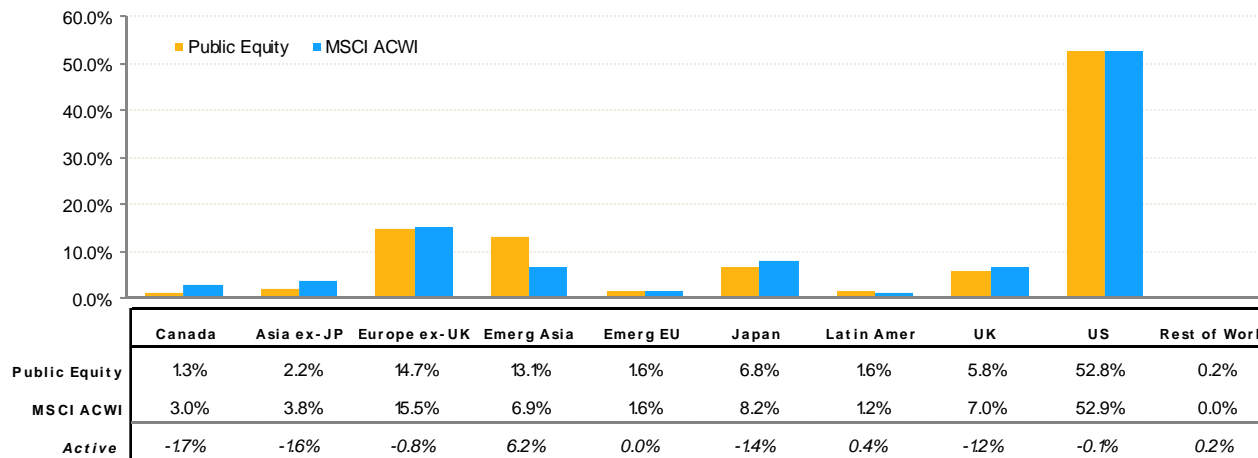
As the financial sector sold off, we removed some of the underweight to financials because solid balance sheets, affordable valuations, and the prospect of rising rates in the U.S. may create tailwinds.

As of December 31, 2015



# Public Equity – Regions

## Regional Exposures



## Highlights

Overweight to China was a detractor with MSCI China down 20%. We anticipated that much higher than average values in the Shenzhen index, tech stocks, and small cap stocks would deflate, but did not expect a stock market crash due to margin fueled leverage. Superior stock selection by our managers mitigated losses.

At slightly over 2% of the MSCI ACWI, the index does not adequately reflect China as the second largest stock market in the world. We believe the recent crisis has created stock specific opportunities with active managers. However, continued missteps in equity market and currency policies continue to create uncertainty.

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

While underweight to Japan was a slight positive contributor, we removed some of the underweight as the market sold off. Focus on corporate governance has strong potential to create value for active management, given large cash balances and ample free cash flow generation of companies.

As of December 31, 2015





# Public Equity – Characteristics

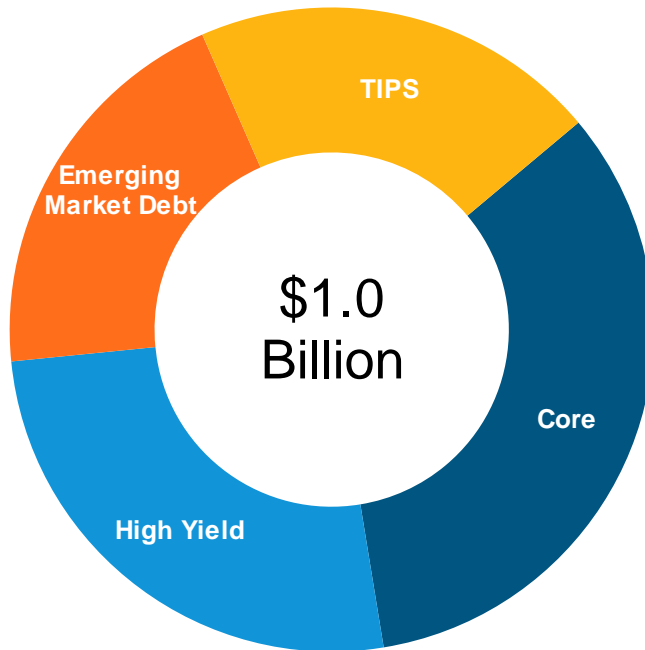
	Dividend Yield (%)	Dividend per Share	EPS	Price To Book Value	Price To Cash Earnings	Price To Earnings	Price To Sales	Payout Ratio	ROE
<b>Public Equity</b>	<b>2.01</b>	<b>1.31</b>	<b>4.55</b>	<b>2.04</b>	<b>11.45</b>	<b>19.53</b>	<b>1.16</b>	<b>16.29</b>	<b>19.49</b>
U.S. Equity	1.36	0.93	3.74	2.58	13.03	24.13	1.13	24.04	18.20
Non-U.S. Equity	2.90	1.89	4.11	1.55	9.48	16.79	1.01	13.78	15.29
EM Equity	2.02	0.78	5.06	1.94	10.86	16.61	1.27	16.39	16.21
MSCI ACWI	2.52	1.76	4.80	2.08	10.74	18.19	1.37	37.37	22.75
S&P 500	2.12	1.54	4.62	2.81	12.46	19.94	1.79	46.05	25.89
MSCI EM	2.81	1.22	7.71	1.43	7.87	13.02	0.99	31.66	16.03
MSCI ACWI ex U.S.	3.03	2.04	5.15	1.60	8.97	16.16	1.06	27.28	17.35

As of December 31, 2015

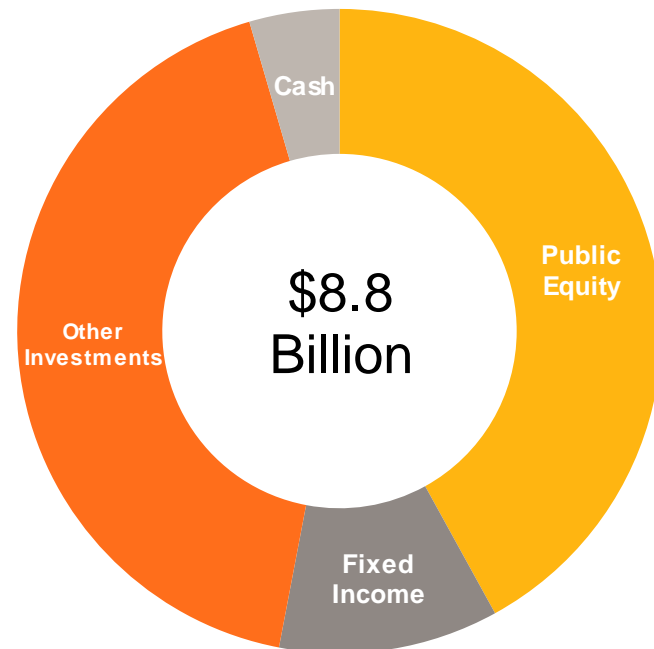


# Fixed Income

Fixed Income



Endowment

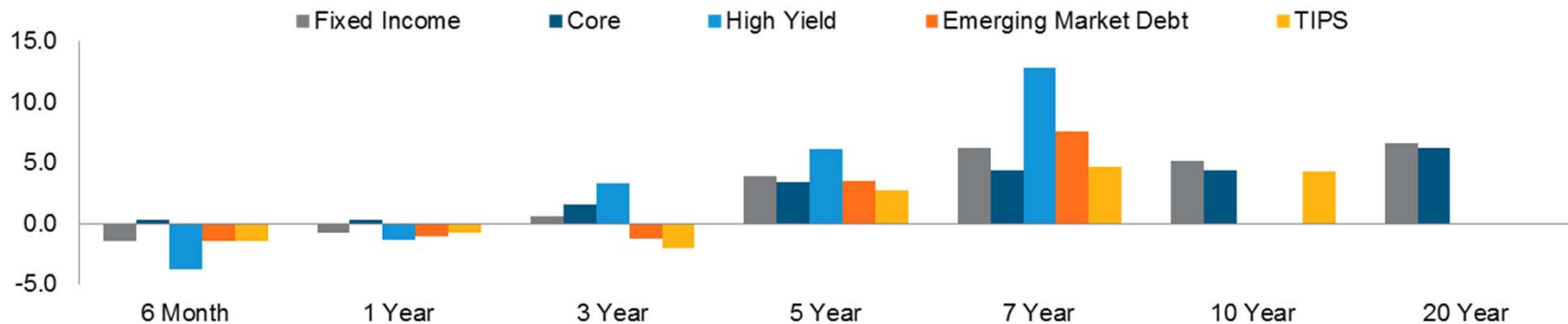


● Core: 34% \$0.3B	● High Yield: 26% \$0.3B	● Public Equity: 42% \$3.7B	● Fixed Income: 11% \$1.0B
● Emerging Market Debt: 20% \$0.2B	● TIPS: 20% \$0.2B	● Other Investments: 42% \$3.7B	● Cash: 5% \$0.4B



# Fixed Income

Net Returns (%)	Market Value		Annualized Returns						
As of December 31, 2015	(\$ Million)	% Allocation	6 Month	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year
Fixed Income	966	100%	-1.5	-0.7	0.6	3.9	6.3	5.2	6.6
Policy Benchmark			-1.6	-0.7	0.6	3.8	6.5	5.3	6.0
Value Added			0.1	0.0	0.0	0.1	-0.2	-0.1	0.6
Core	324	34%	0.3	0.3	1.6	3.4	4.3	4.4	6.2
Barclays U.S. Aggregate Bond Index			0.7	0.5	1.4	3.2	4.1	4.5	5.7
Value Added			-0.4	-0.2	0.2	0.2	0.2	-0.1	0.5
High Yield	251	26%	-3.8	-1.4	3.3	6.1	12.8	-	-
Merrill Lynch High Yield Cash Pay Index			-6.9	-4.6	1.6	4.8	12.5	-	-
Value Added			3.1	3.2	1.7	1.3	0.3	-	-
Emerging Market Debt	193	20%	-1.5	-1.1	-1.3	3.5	7.6	-	-
JP Morgan Emerging Markets Bond Index Global Diversified			-0.5	1.2	1.0	4.8	8.9	-	-
Value Added			-1.0	-2.3	-2.3	-1.3	-1.3	-	-
TIPS	198	20%	-1.5	-0.8	-2.1	2.8	4.6	4.3	-
Barclays U.S. TIPS			-1.8	-1.4	-2.3	2.5	4.3	3.9	-
Value Added			0.3	0.6	0.2	0.3	0.3	0.4	-





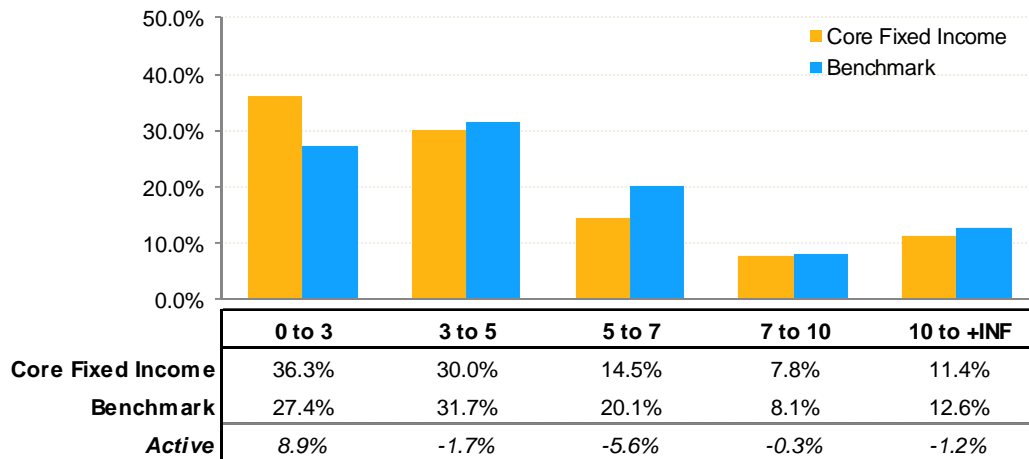
# Fixed Income Highlights

- We continue to have a bias to higher rates, although we expect the Fed to be very gradual in the normalization of rates.
- We have trimmed our growth and inflation targets for 2016 due to a weaker than anticipated Chinese economy and lower than expected energy prices. As such, we expect the rate movement higher to be well contained.
- We believe that an environment of slowly rising rates and 1.5% to 2% U.S. GDP growth will lead to spread product outperforming Treasuries on the carry advantage. With lower growth expectations and a Fed hiking cycle underway, volatility can be expected and credit selection will be critical.
- The High Yield market has sold off considerably, however, excluding the commodities sectors, we believe High Yield will continue to benefit from a slow growth economy and the higher yield now offered across the market.
- The start of 2016 has not been great for the U.S. inflation outlook with energy futures declining sharply, the U.S. dollar rising and concerns over global growth, particularly China hitting equities. Break-Even inflation rates have been trading like a risk asset and are down modestly since year end. We continue to believe that U.S. break-evens offers structural value and are likely to bounce if other markets stabilize.

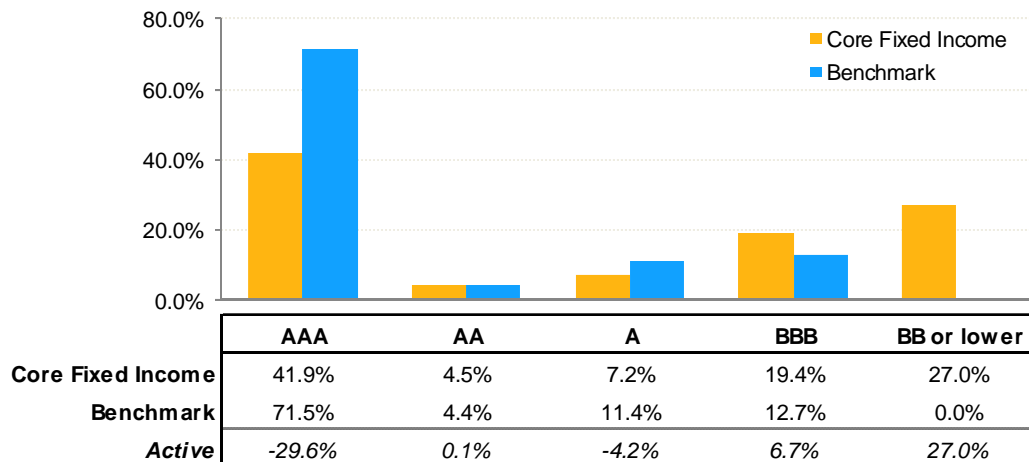


# Fixed Income – Core

## Summary of Duration Buckets



## Summary of Credit Rating



As of December 31, 2015

## Highlights

Core Fixed Income is positioned short of benchmark duration.

Curve exposure is weighted to the front end of the curve and underweight the long-end of the curve.

The portfolio is underweight Treasury securities and overweight spread product – 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.

The underweight to Treasury securities detracted from performance as government returns were higher than returns of corporate bonds.

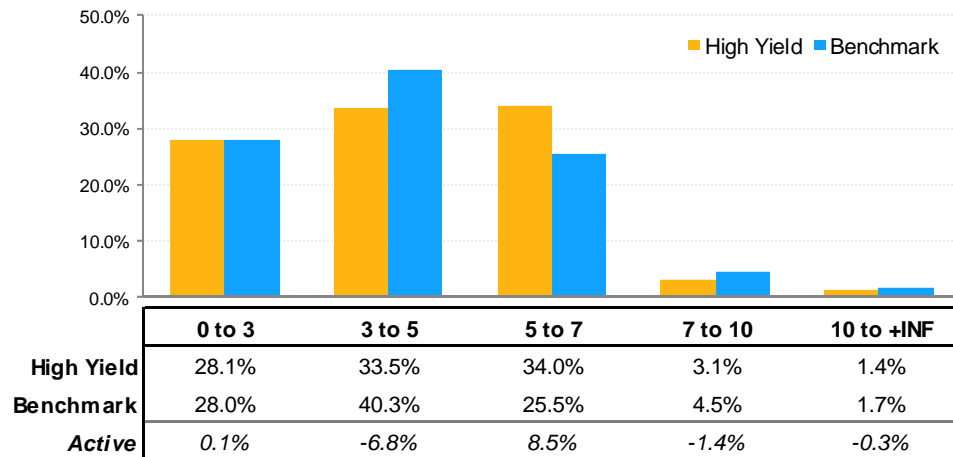
The underperformance due to the Treasury underweight was offset by outperformance in the credit and collateral portfolios.

The out-of-benchmark allocation to unconstrained fixed income detracted from performance due to very short duration and long credit exposure.

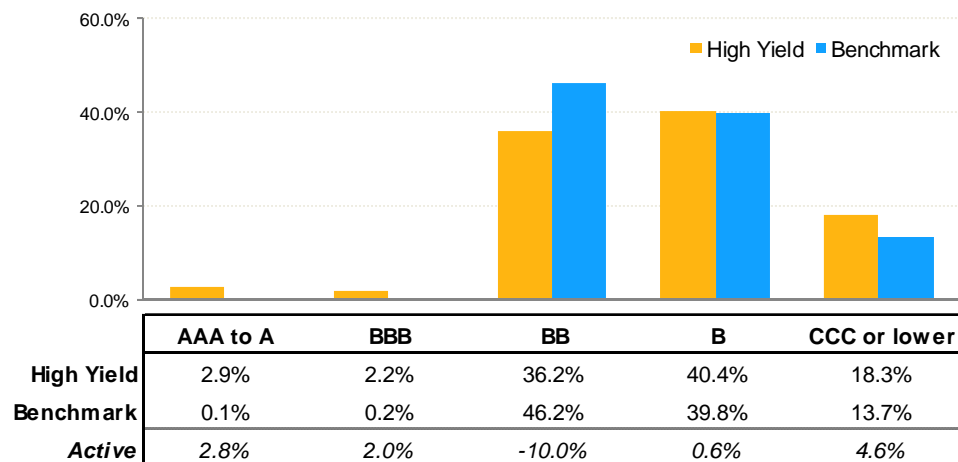


# Fixed Income – High Yield

## Summary of Duration Buckets



## Summary of Credit Rating



As of December 31, 2015

## 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 55% external and 45% internal.

Internal performance added significant value through security selection, a significant underweight to energy, metals, and mining, as well as a focus on higher quality B/BB rated securities which outperformed CCC's. We are positioned in stronger credits with less overall yield than the benchmark. This continues to enhance relative returns as higher quality continued to outperform lower quality.

External managers have outperformed fiscal year-to-date and contributed to value added.

Managers have generally repositioned portfolios over the past six months to reduce energy exposure and improve overall credit quality.

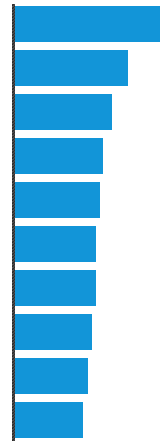
Given the selloff in High Yield and our expectations for a benign default scenario ex-energy, we believe there is value in the high yield market. Fundamental credit research and security selection will be the key to success in a volatile and at times illiquid market.



# Fixed Income – Emerging Debt

## Top 10 Country Exposures

Mexico	3.2%
Indonesia	2.3%
Hungary	2.0%
Panama	1.8%
Philippines	1.7%
Chile	1.7%
Slovenia	1.7%
Colombia	1.6%
U.S.	1.5%
Dominican Republic	1.4%



## Bottom 10 Country Exposures

Ivory Coast	-0.8%
India	-0.8%
Pakistan	-0.9%
Jamaica	-0.9%
China	-1.3%
Argentina	-1.4%
Malaysia	-2.1%
Lebanon	-2.7%
Ukraine	-2.7%
Russia	-3.0%



## Highlights

The Emerging Market Debt portfolio is positioned short of benchmark duration and is higher in credit quality.

Due to concerns about ramifications of the commodity sector on Emerging Market countries, the portfolio ended the quarter with over 4% cash and another 4% invested in U.S. high yield securities as a substitute for Emerging Market sovereigns.

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

Significant underweights include Russia, Lebanon, and Ukraine.

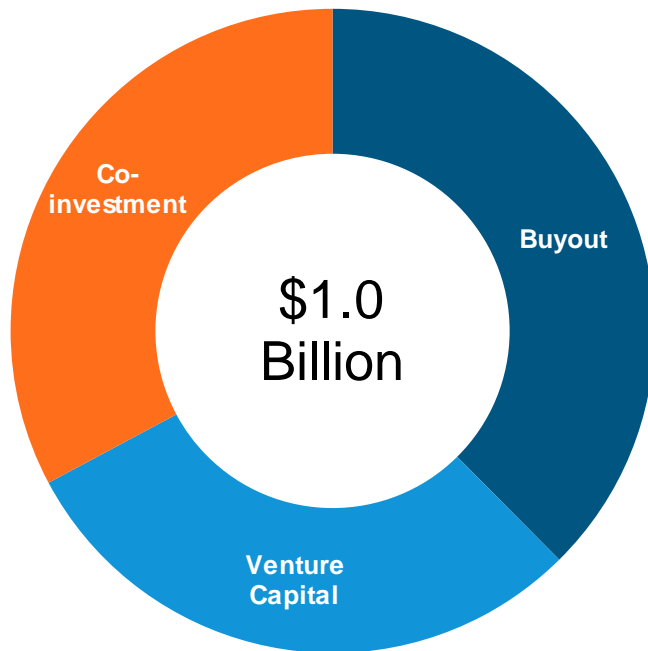
We believe that emerging markets will continue to be volatile and struggle to adjust to lower commodity prices, a strong U.S. dollar and a drawdown of liquidity.

As of December 31, 2015

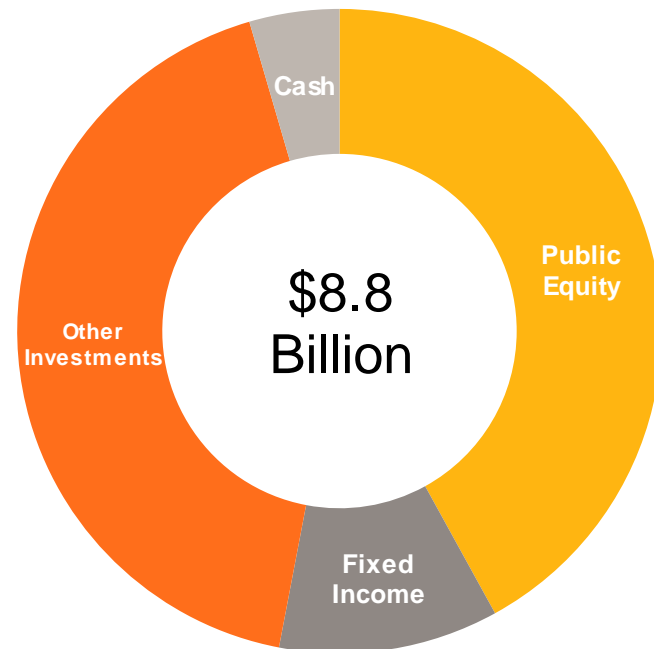


# Private Equity

Private Equity



Endowment



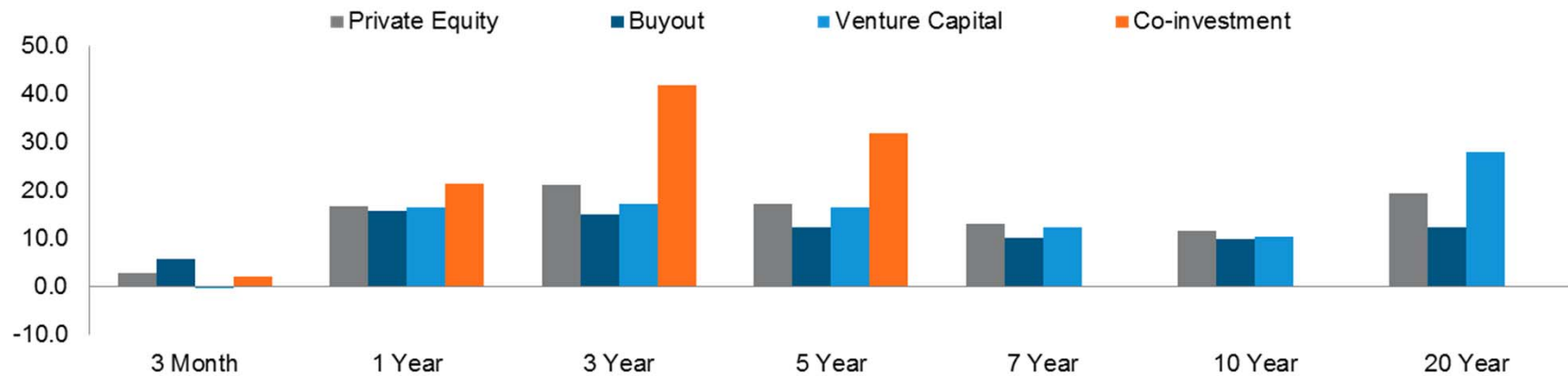
● Buyout: 37% \$0.4B	● Venture Capital: 30% \$0.3B	● Public Equity: 42% \$3.7B	● Fixed Income: 11% \$1.0B
● Co-investment: 33% \$0.3B	● Other Investments: 42% \$3.7B	● Cash: 5% \$0.4B	





# Private Equity

Net Returns (%)	Market Value		Annualized Returns						
As of December 31, 2015	(\$ Million)	% Allocation	6 Month	1 Year	3 Year	5 Year	7 Year	10 Year	20 Year
Private Equity	963	100%	4.2	16.8	21.3	17.1	13.0	11.7	19.4
Actual Private Equity Returns			4.2	16.8	21.3	17.1	13.0	11.7	19.4
Value Added			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buyout	362	37%	9.2	15.7	15.0	12.2	10.1	10.0	12.3
Venture Capital	285	30%	5.9	16.3	17.1	16.5	12.2	10.3	28.1
Co-investment	316	33%	-2.2	21.3	41.7	31.9	-	-	-





# Private Equity

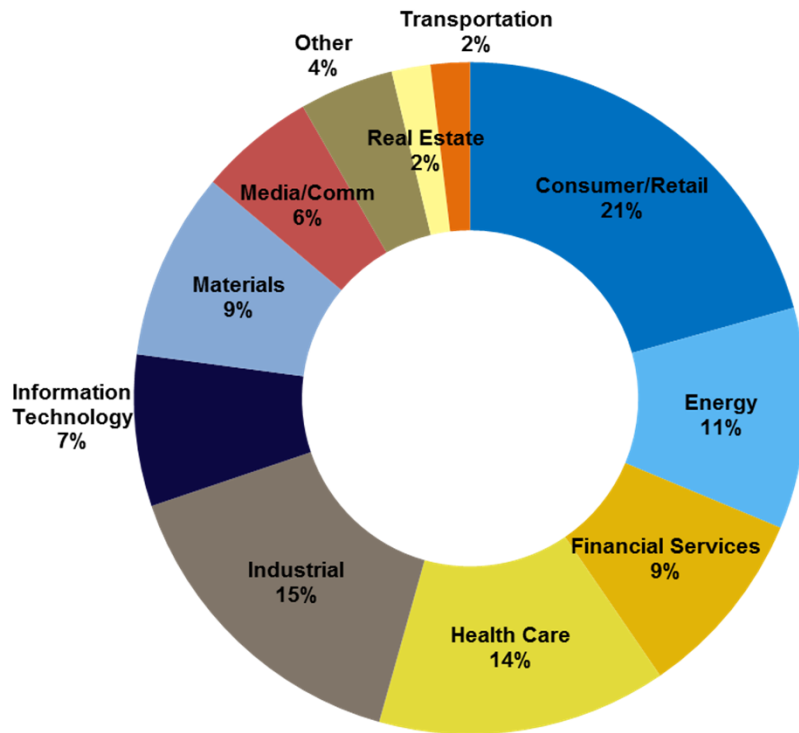
## Performance and Attribution

- 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 and Consumer
- Reallocated portfolio in November concentrating the portfolio in 8 managers and far fewer line items which improves risk management through concentration and idiosyncratic risk.
- Generated strong performance with a 16.8% return for the year through balanced performance across segments:
  - Co-investments were the strongest contributor with a 21.3% return for the year
  - Venture Capital was also a strong contributor at 16.3%
  - Buyouts contributed 15.7% for the year
- Generated more than \$100 million of cash flow in 2015:
  - Received distributions of more than \$200 million
  - Invested more than \$100 million



# Private Equity – Buyout

## Buyout - Industry Exposures



As of September 30, 2015

## Highlights

Buyout returns were 15.7% for the year.

Buyout exposure of \$362 million represents approximately 37% of Private Equity and 4.1% of the overall portfolio.

The buyout market benefitted from robust Merger & Acquisition activity and numerous indicators signal that we are in a frothy market environment:

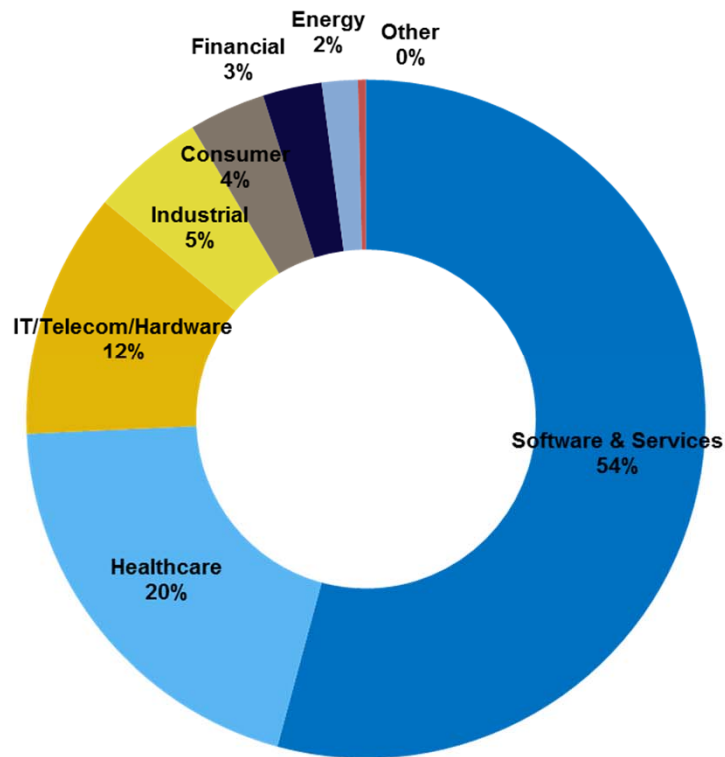
- Debt/EBITDA multiples average 5.7x, down slightly from 5.9x in 2014
- Purchase price multiples now average 10.3x, up from 9.7x in 2014

UC continues to benefit from robust distributions resulting in net cash inflow from the buyout portfolio.



# Private Equity – Venture

## Venture - Industry Exposures



As of September 30, 2015

### Highlights

Venture returned 16.3% for 2015.

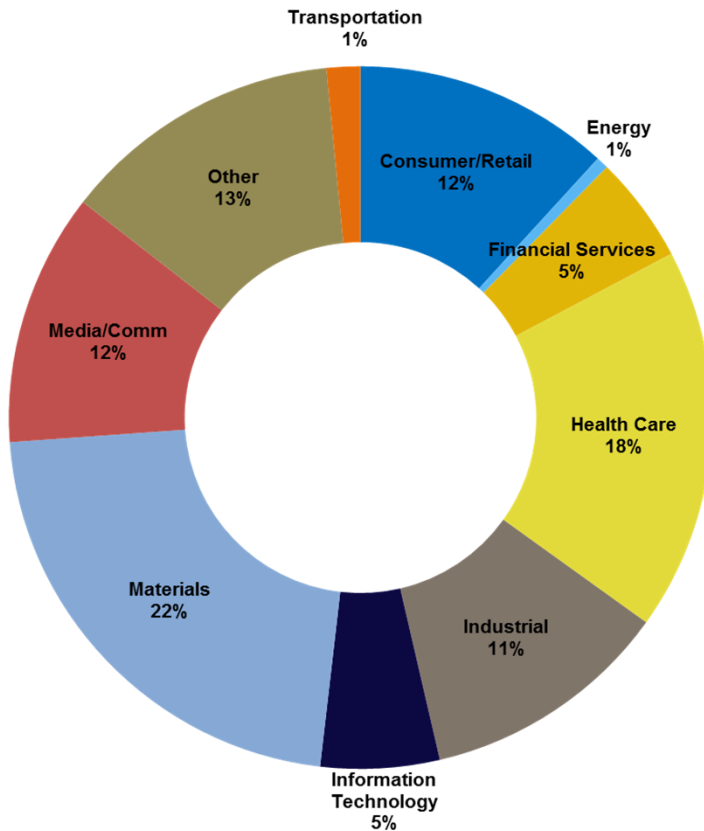
Venture exposure of \$285 million represents approximately 30% of Private Equity and 3.3% of the overall portfolio.

Rebalancing process increased exposure to venture capital.



# Private Equity – Co-Investment

## Co-investment - Industry Exposures



As of September 30, 2015

## Highlights

Co-investments returned 21.3% for the year.

Co-investment exposure of \$316 million represents approximately 33% of Private Equity and 3.4% of the overall portfolio.

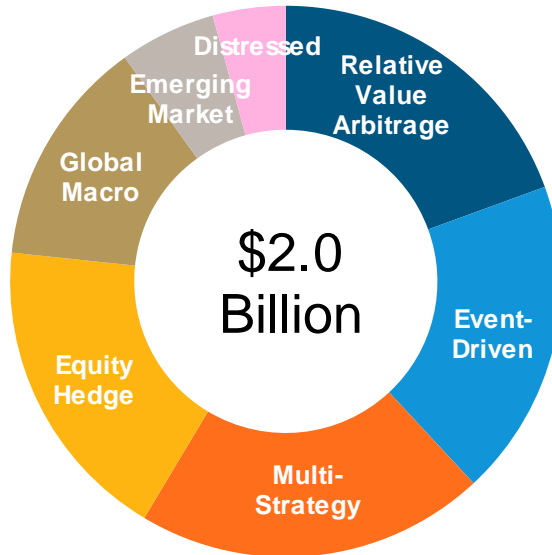
Co-Investment portfolio consists of 23 investments with an average age of 2.4 years since investment.

Since inception, the co-investment program has saved the endowment more than \$50M of management fees and carried interest.



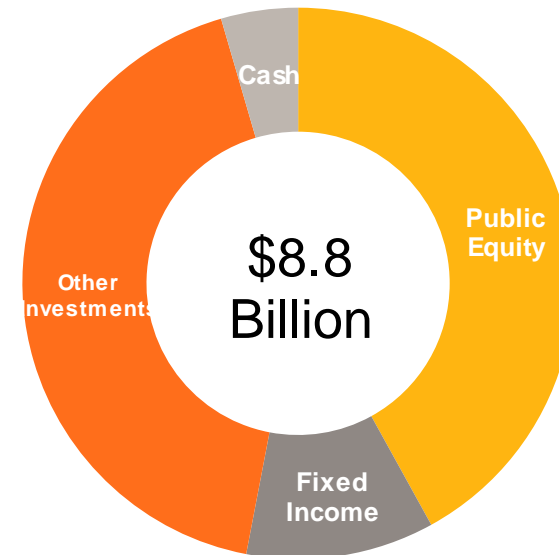
# Absolute Return

Absolute Return



● <b>Relative Value Arbitrage: 19%</b> \$0.4B	● <b>Event-Driven: 19%</b> \$0.4B
● <b>Multi-Strategy: 21%</b> \$0.4B	● <b>Equity Hedge: 18%</b> \$0.3B
● <b>Global Macro: 13%</b> \$0.3B	● <b>Emerging Market: 6%</b> \$0.1B
● <b>Distressed: 4%</b> \$0.1B	

Endowment



● <b>Public Equity: 42%</b> \$3.7B	● <b>Fixed Income: 11%</b> \$1.0B
● <b>Other Investments: 42%</b> \$3.7B	● <b>Cash: 5%</b> \$0.4B

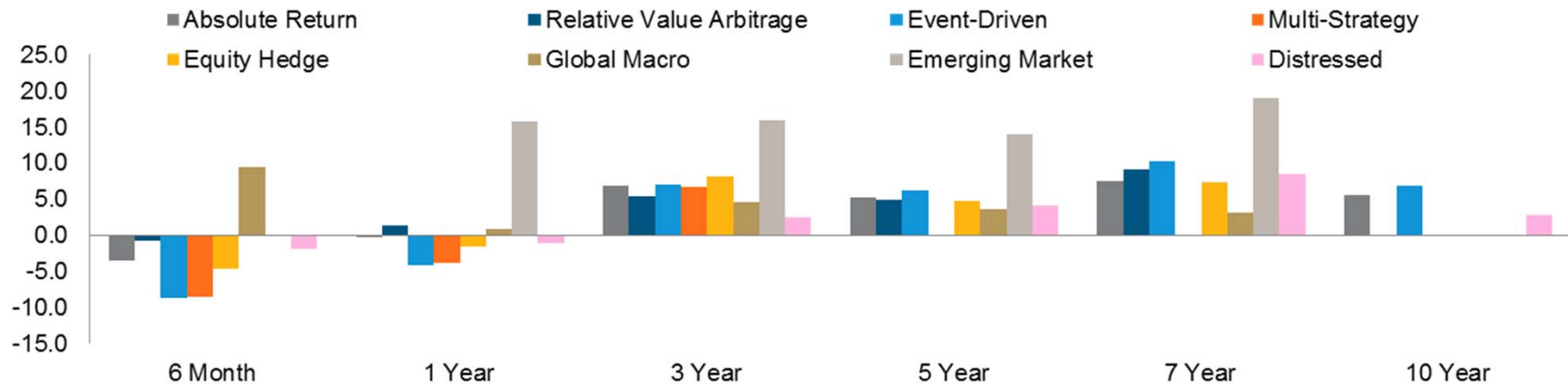
As of December 31, 2015



# Absolute Return

Net Returns (%)	Market Value		Annualized Returns					
As of December 31, 2015	(\$ Million)	% Allocation	6 Month	1 Year	3 Year	5 Year	7 Year	10 Year
<b>Absolute Return</b>	<b>2,040</b>	<b>100%</b>	<b>-3.5</b>	<b>-0.3</b>	<b>6.7</b>	<b>5.1</b>	<b>7.5</b>	<b>5.5</b>
50% HFRX Absolute Return Index + 50% HFRX Market Directional Index			-5.1	-2.9	2.1	-0.7	1.7	3.5
<i>Value Added</i>			<i>1.6</i>	<i>2.6</i>	<i>4.6</i>	<i>5.8</i>	<i>5.8</i>	<i>2.0</i>
Relative Value Arbitrage	396	19%	-0.8	1.4	5.4	4.8	9.1	-
Event-Driven	380	19%	-8.7	-4.1	7.0	6.2	10.2	6.7
Multi-Strategy	419	21%	-8.5	-3.8	6.6	-	-	-
Equity Hedge	369	18%	-4.6	-1.7	8.1	4.7	7.2	-
Global Macro	274	13%	9.4	0.9	4.5	3.6	3.1	-
Emerging Market	115	6%	-0.2	15.6	15.8	13.9	18.9	-
Distressed	87	4%	-1.8	-1.2	2.4	4.1	8.5	2.7

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





# Absolute Return Highlights

- The first half of the fiscal year was a notable period for markets; scores of assets registered outsized moves and a number of anomalous events were observed. Absolute return strategies were challenged in this environment.
- Risk positioning, crowding, exogenous and idiosyncratic events all culminated in a perfect storm.
- While markets rebounded during the second quarter of the fiscal year, it was not enough to recoup the losses from the first quarter. Similarly, absolute return strategies were not able to fully recoup their losses from the prior period.
- Nonetheless, for the trailing 3 years, the Absolute Return portfolio returned 6.7%, outpacing its benchmark by 460 basis points despite the recent challenging half.
- Nonetheless, the team will take this opportunity to reposition the portfolio and reduce its vulnerability to risk-off market environments:
  - Focusing on adding strategies with modest correlations to stocks and bonds





# Absolute Return – Investment Strategies



As of December 31, 2015

## Highlights

After beginning the fiscal year with relatively aggressive positioning, equity hedge and event driven strategies dramatically de-risked, reducing both leverage and net exposures. Crowded sectors and trades bore the brunt of this unwind.

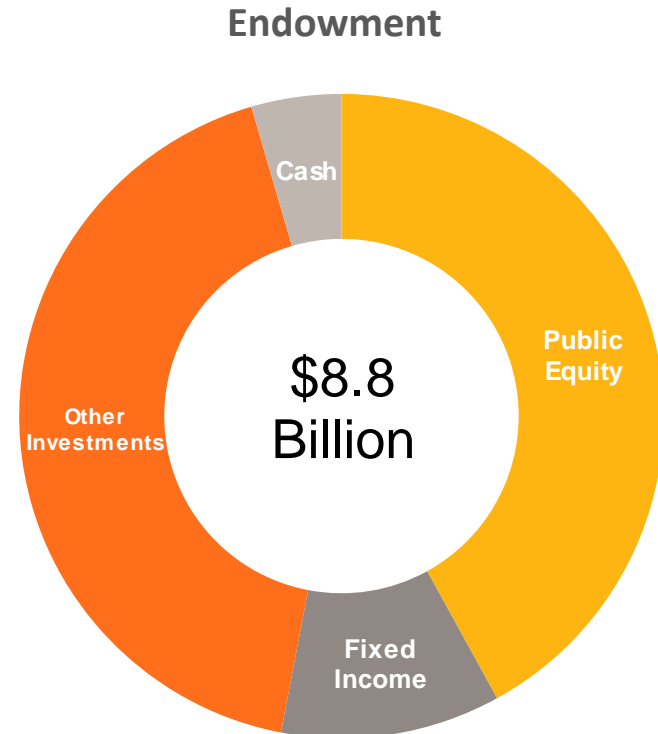
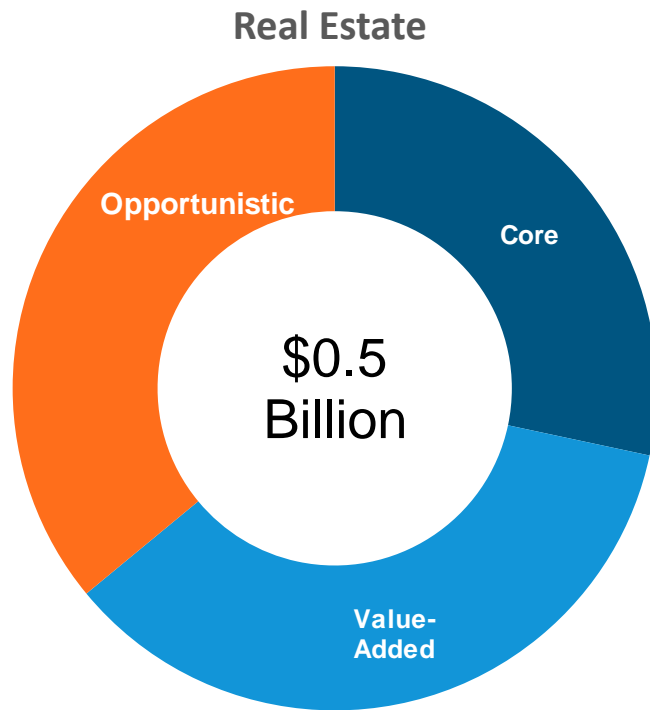
Relative value managers took advantage of technical dislocations in structured credit to add to risk. Overall, relative value managers managed the volatility well and were modestly down during the half.

Macro managers benefitted the most during this period of volatility and in particular from their positioning in select commodities within the energy and metals complexes as well as in currencies and rates.

Distressed investors are beginning to find opportunities on both the short and long side of the ledger.



# Real Estate



● Core: 28%  
\$0.1B

● Value-Added: 36%  
\$0.2B

● Public Equity: 42%  
\$3.7B

● Fixed Income: 11%  
\$1.0B

● Opportunistic: 36%  
\$0.2B

● Other Investments: 42%  
\$3.7B

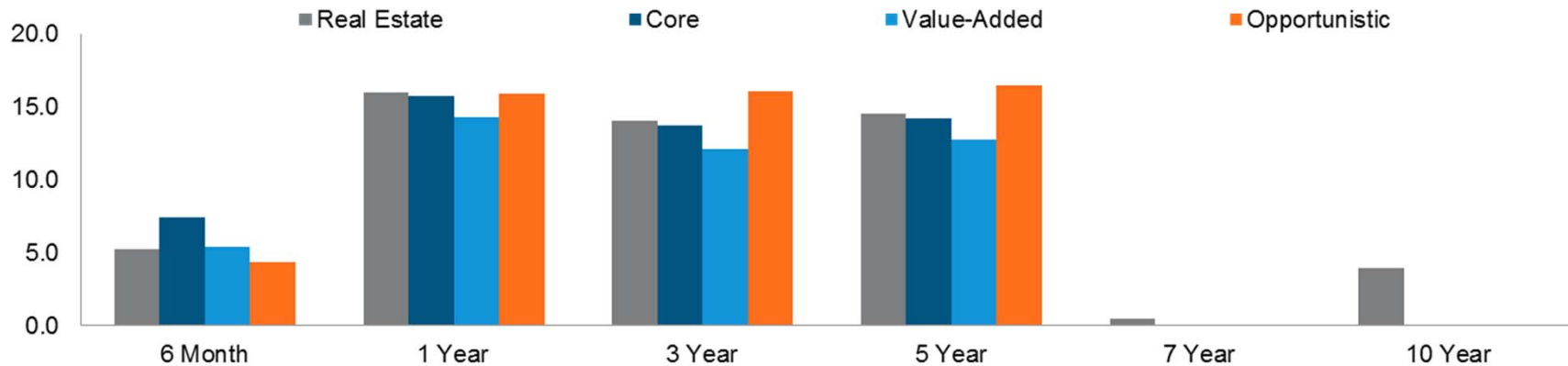
● Cash: 5%  
\$0.4B

As of December 31, 2015



# Real Estate

Net Returns (%)	Market Value		Annualized Returns					
As of December 31, 2015	(\$ Million)	% Allocation	6 Month	1 Year	3 Year	5 Year	7 Year	10 Year
Real Estate	514	100%	5.2	16.0	14.1	14.6	0.5	4.0
NCREIF Funds Index-Open End Diversified Core Equity Index (lagged 3 months)			7.1	14.0	12.5	13.7	1.3	3.6
<i>Value Added</i>			<i>-1.9</i>	<i>2.0</i>	<i>1.6</i>	<i>0.9</i>	<i>-0.8</i>	<i>0.4</i>
Core	146	28%	7.4	15.8	13.7	14.2	-	-
Value-Added	183	36%	5.4	14.3	12.1	12.8	-	-
Opportunistic	185	36%	4.3	15.9	16.1	16.5	-	-



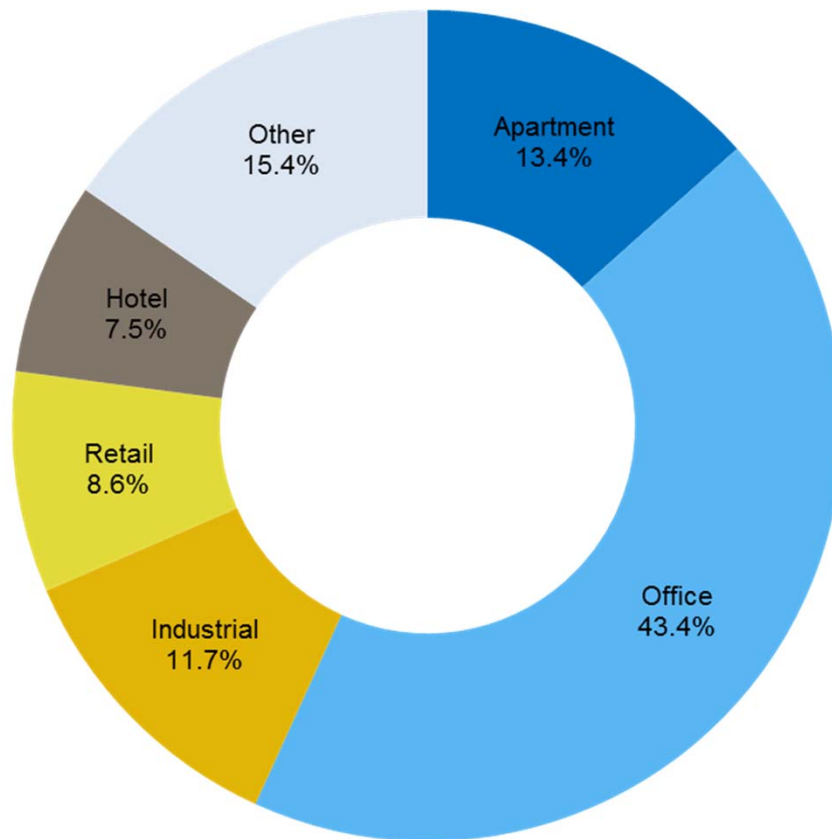


# Real Estate Highlights

- **Real estate market fundamentals continue to be strong.** However, real estate valuations may be vulnerable if a capital market correction occurs.
- **Core investments posted the strongest performance** with continued rent growth and increased occupancies. Foreign and domestic investors' demand for stabilized properties continues to drive pricing appreciation.
- 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** – Being very selective in acquiring assets in major markets will be critical in building the portfolio further.



# Real Estate – Type



As of December 31, 2015

## Highlights

Portfolio is well diversified by property type with office comprising a third of the portfolio.

All property types had rising occupancies for the quarter with industrial as the highest (95%) followed by multi-family (94.4%).

Industrial was the strongest performing sector for the 2nd quarter in a row with 3.67% total return. Fundamental conditions on the demand side for warehouses of all sizes continue to be healthy nationwide.

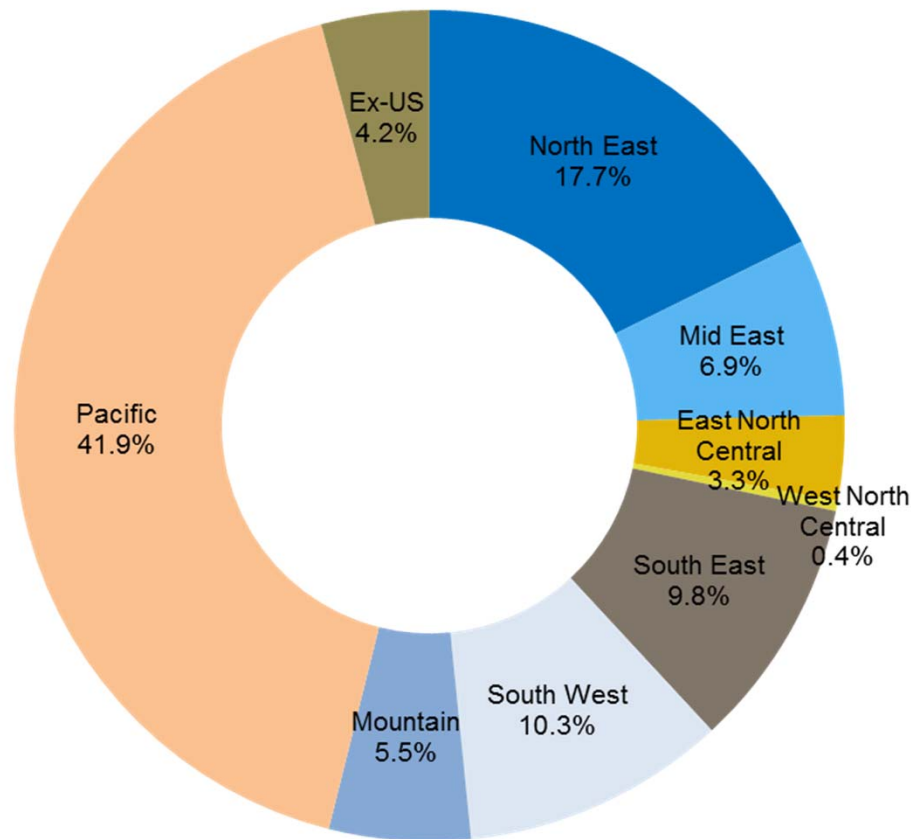
Office sector fundamentals strengthened due to sustained private sector office-using employment growth which is now above 2008 peak with national vacancy also at its lowest level since 3Q08

US multi-family sector fundamentals continue to be stronger than expected given a wave of new deliveries with overall effective rent levels at an all-time high across major markets. Multi-family demand largely stems from recovering household formation, favorable demographics, and improved labor market.

Retail fundamentals continued steadily across most segments. The consumer spending outlook for the next 6 months is positive, depending largely on the stability of financial markets and discretionary income. New supply and redevelopment of neighborhood/community centers remain at very low levels.



# Real Estate – Region



As of December 31, 2015

## Highlights

The portfolio is well diversified by region, with the Pacific region at 42% 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.

San Diego is benefitting from bio-tech growth (human genome – bioresearch), San Francisco, Seattle, and San Jose are benefitting from growth in digital and related technology, and Seattle has been transformed by e-commerce.

After a significant slowdown of new construction and healthy employment figures, all property sectors are reporting vacancy rates near, or below, their respective ten-year averages. With the exception of apartments, market supply and demand appear balanced. In apartments, construction is at levels exceeding the typical averages in several markets. A rise in vacancy rates and modestly increasing or flattening rents in metropolitan areas may arise. This could be a potential problem for Houston, Washington DC, Denver, Atlanta, and Los Angeles. But apartment markets such as Denver, Oakland, Orange County, and San Francisco are expected to have strong growth in the near term.

Cities with exposure to the three key industries driving the US economy (technology, housing, and healthcare) have out-performed the nation and attracted significant capital. Denver, New York, San Francisco, and Seattle are among these markets.

Pricing remains highly competitive for core or stabilized real estate in top-tier markets. Year-over-year percentage change in employment has been strongest in the top-tier markets of San Jose, San Francisco, Austin, Dallas, Orlando, and the Inland Empire.

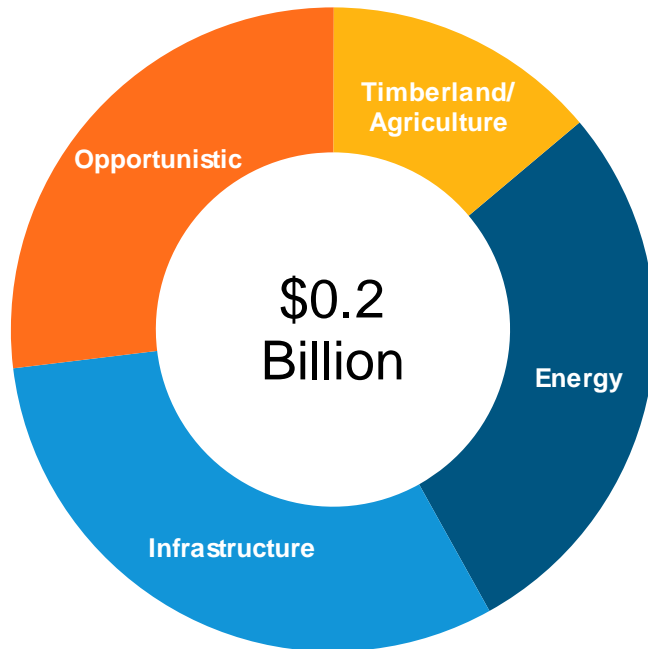
The impact of contraction in the energy sector is apparent in Houston. After leading all Metropolitan Statistical Areas ("MSA") in average gross job growth for the past ten years, Houston placed last in growth among the 20 largest MSAs this past year.

Strong domestic capital flows, as well as foreign investment in commercial real estate focused on rule-of-law countries like the US, UK, Canada, and Australia, tempered by the stronger US 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.

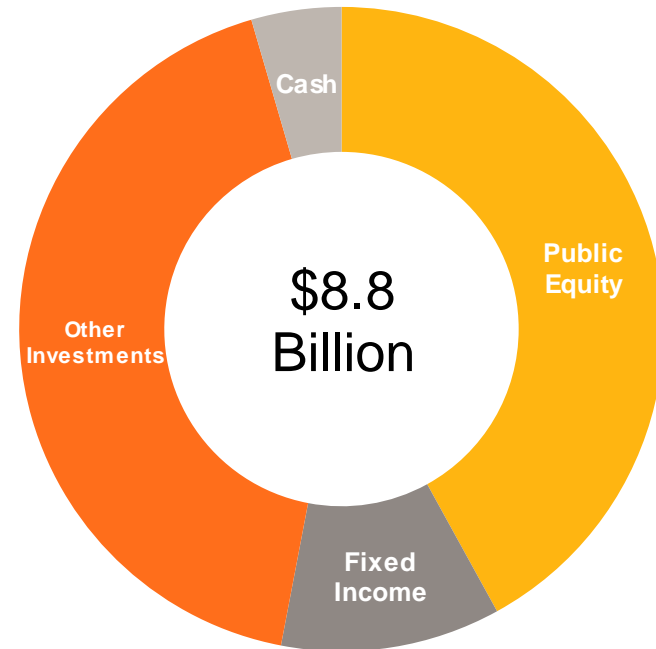


# Real Assets

Real Assets



Endowment



● Energy: 28%  
\$0.06B

● Infrastructure: 31%  
\$0.06B

● Public Equity: 42%  
\$3.7B

● Fixed Income: 11%  
\$1.0B

● Opportunistic: 27%  
\$0.05B

● Timberland/Agriculture: 14%  
\$0.03B

● Other Investments: 42%  
\$3.7B

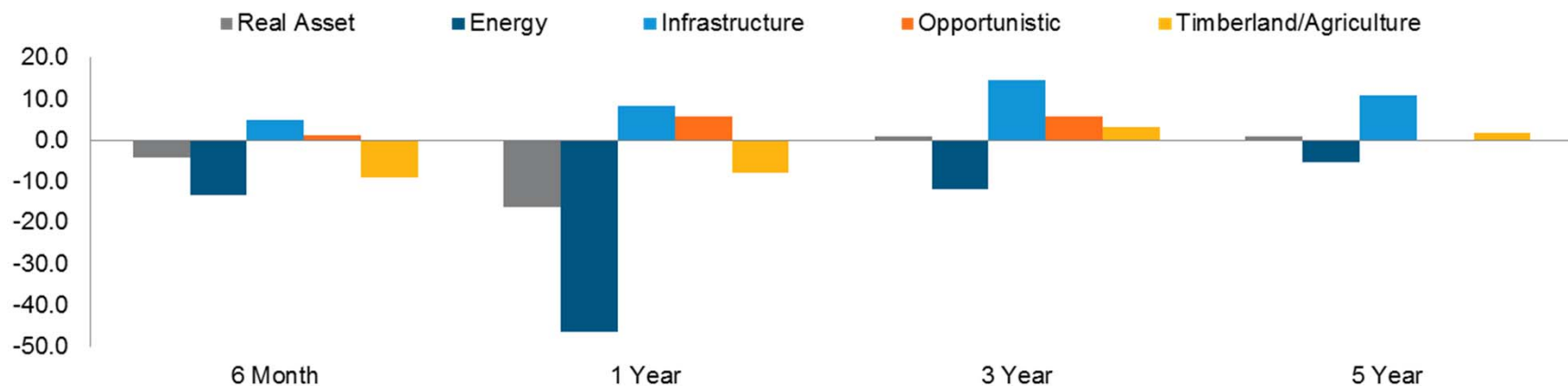
● Cash: 5%  
\$0.4B

As of December 31, 2015



# Real Assets

Net Returns (%) As of December 31, 2015	Market Value		Annualized Returns			
	(\$ Million)	% Allocation	6 Month	1 Year	3 Year	5 Year
Real Asset	203	100%	-4.2	-16.5	1.0	0.9
S&P GSCI Reduced Energy Index for Commodities: Actual Portfolio Returns for Others			-3.7	-17.6	-1.3	-0.1
<i>Value Added</i>			<i>-0.5</i>	<i>1.1</i>	<i>2.3</i>	<i>1.0</i>
Energy	57	28%	-13.1	-46.3	-11.9	-5.4
Infrastructure	63	31%	4.8	8.3	14.6	10.8
Opportunistic	55	27%	1.3	5.6	5.8	-
Timberland/Agriculture	28	14%	-9.0	-7.8	3.2	1.7





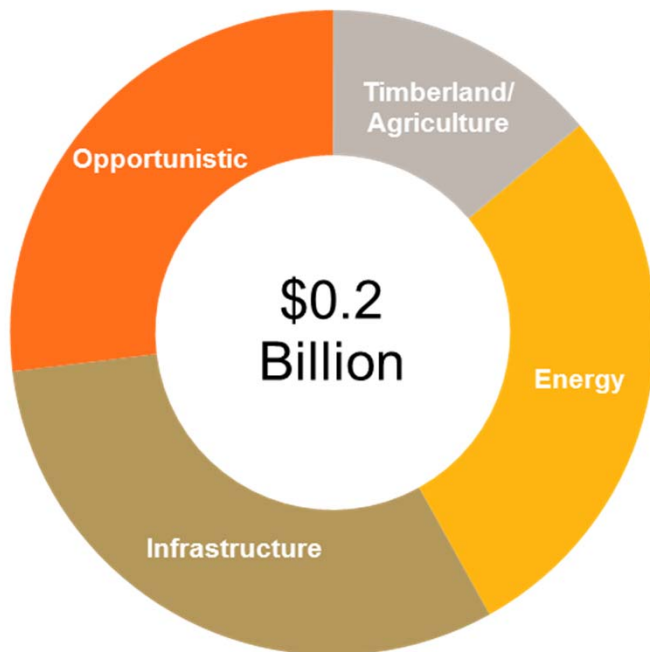


# Real Assets Highlights

- The Real Assets portfolio returned 1% annualized over the past 3 years, outpacing the benchmark by 2.3%.
- 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



As of December 31, 2015

## 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.

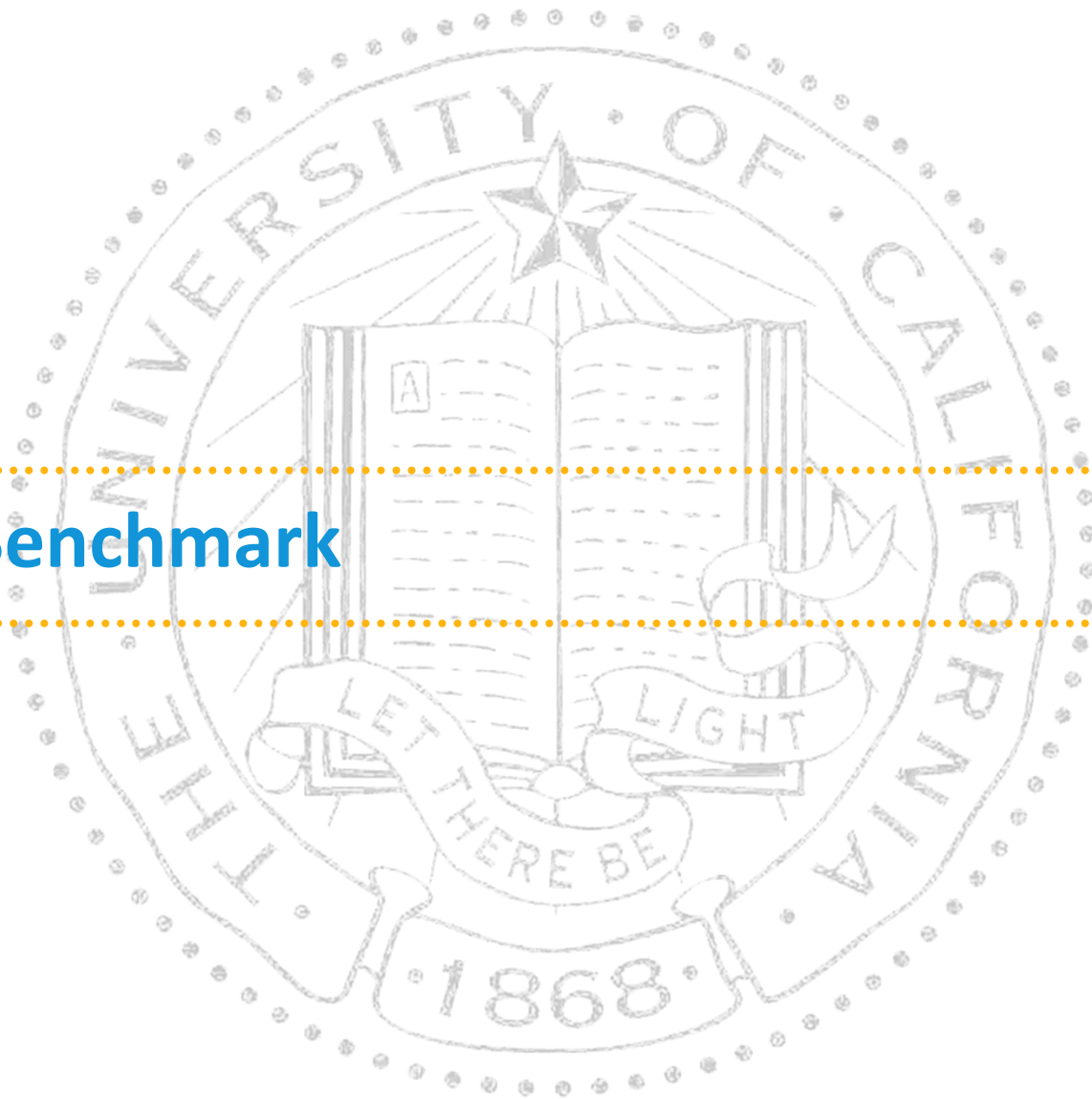
Midstream Energy exposure represents about 10% of the portfolio and has maintained positive performance despite the challenging commodity price environment.

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





# Endowment Policy Benchmark

Asset Class	Benchmark Component	Target	Ranges
<b>Total Public Equity</b>		<b>43.24%</b>	
U.S. Equity	Russell 3000 Tobacco Free Index	16.15%	+/-5%
Developed Equity	MSCI World ex-U.S. (net dividends) Tobacco Free	10.42%	+/-5%
Emerging Market Equity	MSCI Emerging Market (net dividends)	6.25%	+/-2%
Global Equity	MSCI All Country World Index (net dividends)	10.42%	+/-3%
<b>Total Fixed Income</b>		<b>13.01%</b>	
U.S. Core Fixed Income	Barclays U.S. Aggregate Bond Index	5.21%	+/-3%
High Yield Debt	Merrill Lynch High Yield Cash Pay Index	2.60%	+/-1%
Emerging Market Debt	JP Morgan Emerging Markets Bond Index Global Diversified	2.60%	+/-1%
TIPS	Barclays U.S. TIPS	2.60%	+/-2%
<b>Total Other Investments</b>		<b>43.76%</b>	
Absolute Return	50% HFRX Absolute Return Index + 50% HFRX Market Directional Index	24.48%	+/-5%
Private Equity	Actual Private Equity Returns	9.38%	+/-3%
Real Estate (Private)	NCREIF Funds Index-Open End Diversified Core Equity Index (lagged 3 months)	7.03%	+/-3%
Real Assets	Commodities: S&P GSCI Reduced Energy Index; All other: Actual Real Assets Portfolio Returns	2.87%	+/-1%