



# **Water and Power Employees' Retirement Plan (WPERP) Investment Portfolio**

---

## **Quarterly Report Executive Summary**

Creation Date: November 26, 2013

This report is solely for the use of client personnel. No part of it may be circulated, quoted, or reproduced for distribution outside the client organization without prior written approval from Pension Consulting Alliance, Inc.

Nothing herein is intended to serve as investment advice, a recommendation of any particular investment or type of investment, a suggestion of the merits of purchasing or selling securities, or an invitation or inducement to engage in investment activity.

## Table of Contents

<b>Section</b>	<b>Tab</b>
<b>Performance Summary of Major WPERP Plans</b>	<b>A</b>
<b>Investment Market Risk Metrics</b>	<b>B</b>
<b>Economic Overview</b>	<b>C</b>
<b>WPERP Retirement Plan Review</b>	<b>D</b>
<b>WPERP Retirement Plan Managers on Watch</b>	<b>E</b>
<b>WPERP Disability, Death, and Health Plan Review</b>	<b>F</b>
<b>Total Fund &amp; Asset Class Universe Comparisons</b>	<b>G</b>
<b>Individual Manager Performance</b>	<b>H</b>
<b>Appendix</b>	
Managers' Watch Criteria	
Summary of WPERP Retirement Plan Portfolio Transitions	
WPERP Retirement Plan Policy Benchmark Description	
WPERP Health Plan Policy Benchmark Description	
WPERP Evolving Investment Policy	
Performance Attribution Glossary	
Glossary of Terms	
Definition of Benchmarks	
Risk Metrics Description	

## PERFORMANCE SUMMARY OF MAJOR WPERP INVESTMENT PLANS

As of September 30, 2013, the WPERP Total Retirement Plan had an aggregate value of \$8.7 billion. This represents a \$388.0 million increase in value over the last quarter. During the most recent 1-year period, the WPERP Total Retirement Plan increased by \$1,002.7 million. After a mixed second quarter, the third quarter brought improved performance as all major equity and fixed income markets saw positive returns. European markets were the strongest performer during the quarter as improvements in many economic indicators signals that the ongoing economic recovery, although modest, is gaining steam. After the Fed decided to delay the tapering of its quantitative easing program, U.S. equity markets hit all-time highs in mid-September. However, fears of a government shutdown dampened returns toward the end of the quarter. Asian markets followed the lead of Europe and the U.S. as the Japanese economy recorded another quarter of strong growth, and China, despite worrying trends in property prices, saw its economy continue to grow at a healthy clip.

As of September 30, 2013, the WPERP Total Health Plan had an aggregate value of \$1.5 billion. This represents a \$65.1 million increase in value over the last quarter. During the most recent 1-year period, the WPERP Total Health Plan increased by \$165.9 million.

### Strategic Allocation Trends

The Retirement Plan strategic allocation targets reflect the current long-term policy allocation, effective 7/1/2013. As of September 30, 2013, the WPERP Total Retirement Portfolio had a 59% allocation in Equities, 23% in Fixed Income, 7% in Covered Calls, 5% in Real Return, 2% in Private Equity, 3% in Real Estate, and 1% in Cash. The Health Plan strategic allocation targets reflect the current long-term policy allocation, effective 7/1/2013. The WPERP Total Health Plan had a 62% allocation in Equities, 23% in Fixed Income, 7% in Covered Calls, 5% in Real Return, 1% in Private Equity, 1% in Real Estate, and 1% in Cash. Following the 2011 Asset Allocation study, WPERP utilized a series of phased allocation targets, beginning in 4Q 2011, to transition towards the long-term policy targets. Both the Retirement and Health Plans reached their long-term policy targets as of 7/1/2013.

### Recent Investment Performance of Major WPERP Investment Plans

Period ending September 30, 2013

#### WPERP Total Retirement Plan

	Quarter	1 Year	3 Year	5 Year	10 Year
Total Portfolio <sup>1</sup>	5.0	13.3	9.7	8.0	6.8
<i>Policy Benchmark<sup>2</sup></i>	<i>4.9</i>	<i>12.1</i>	<i>9.8</i>	<i>7.9</i>	<i>7.1</i>
<b>Excess Return</b>	<b>0.1</b>	<b>1.2</b>	<b>-0.1</b>	<b>0.1</b>	<b>-0.3</b>
Reference: Median Fund <sup>3</sup>	4.9	12.3	10.3	8.2	7.3
Reference: Net of Fees <sup>4</sup>	4.9	13.1	9.5	7.8	6.6

#### WPERP Total Health Plan

	Quarter	1 Year	3 Year	5 Year
Total Portfolio <sup>1</sup>	4.9	13.1	9.8	8.5
<i>Policy Benchmark<sup>2</sup></i>	<i>4.9</i>	<i>11.9</i>	<i>9.5</i>	<i>7.9</i>
<b>Excess Return</b>	<b>0.0</b>	<b>1.2</b>	<b>0.3</b>	<b>0.6</b>

<sup>1</sup> Gross of Fees.

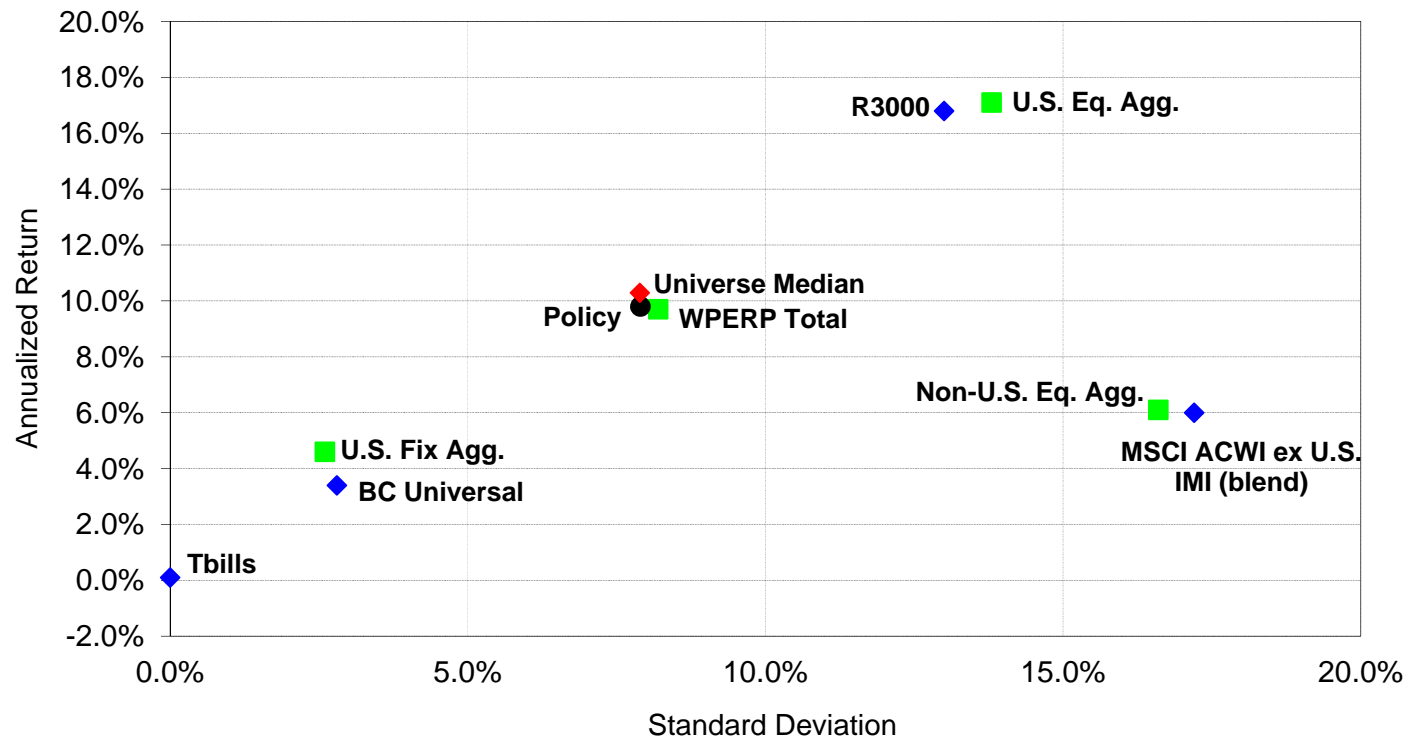
<sup>2</sup> See appendix for policy benchmark descriptions.

<sup>3</sup> Mellon Total Funds Public Universe.

<sup>4</sup> Net of Fees returns are estimated based on existing WPERP manager fee schedule.

## WPERP Retirement Plan Risk/Return Analysis – Last 3 Years

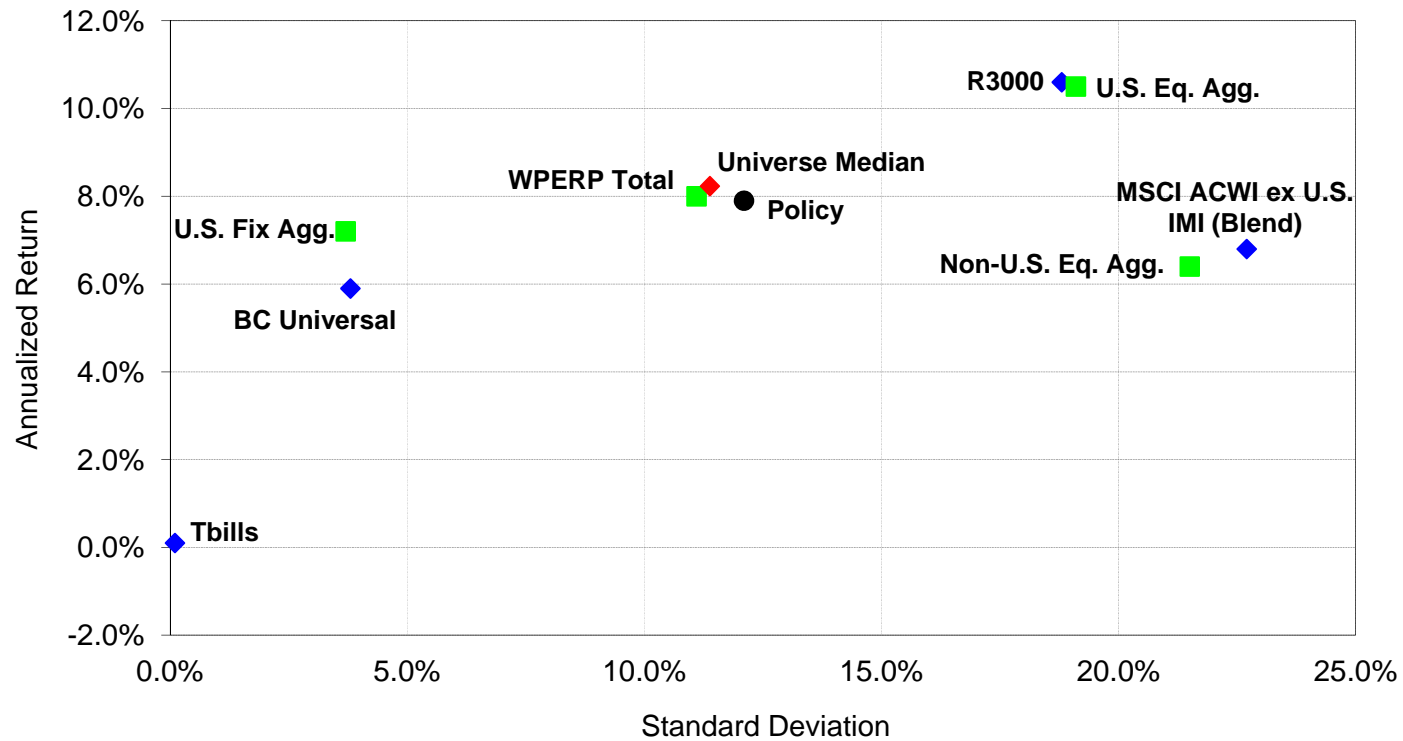
Period ending September 30, 2013



\*Median Fund in the Mellon Total Fund Public Universe.

## WPERP Retirement Plan Risk/Return Analysis – Last 5 Years

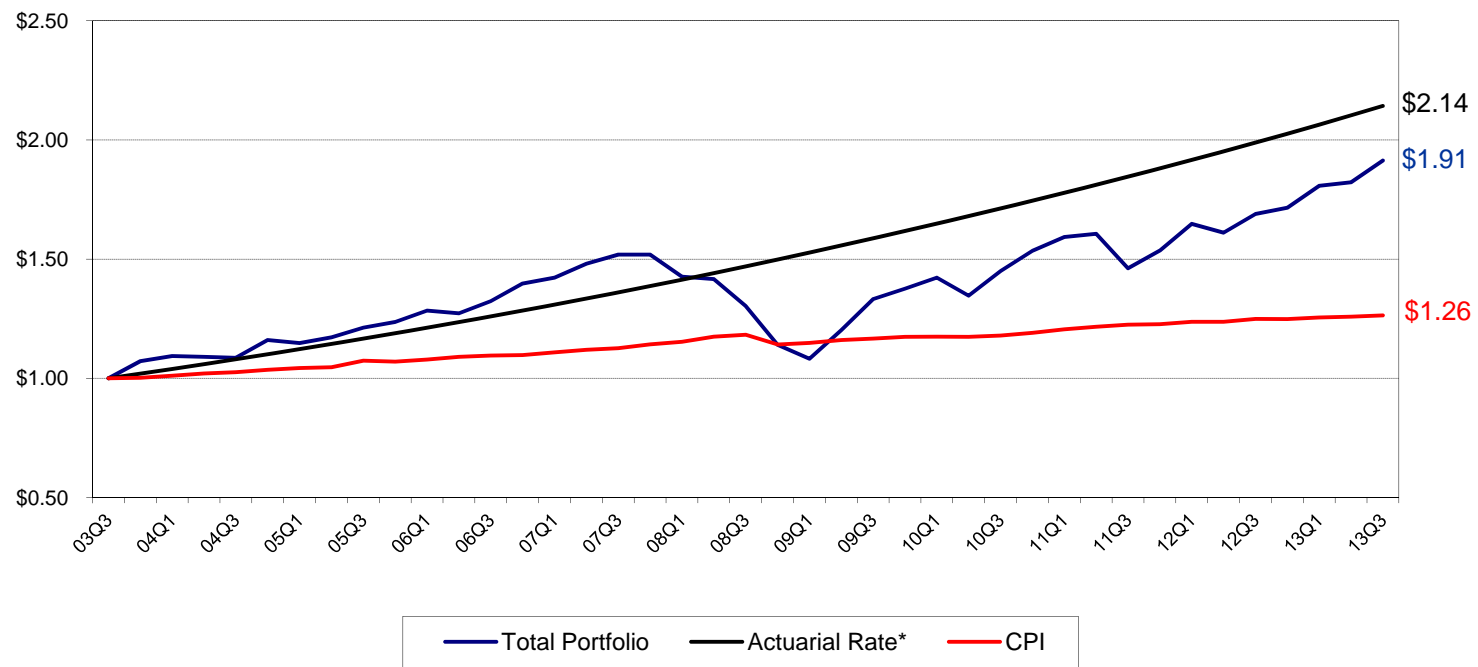
Period ending September 30, 2013



\*Median Fund in the Mellon Total Fund Public Universe.

## WPERP Retirement Plan Growth of a Dollar – Latest 10 Years

Period ending September 30, 2013



\* Changed from 8% to 7.75% on 7/1/2010

## Investment Market Risk Metrics

### Takeaways

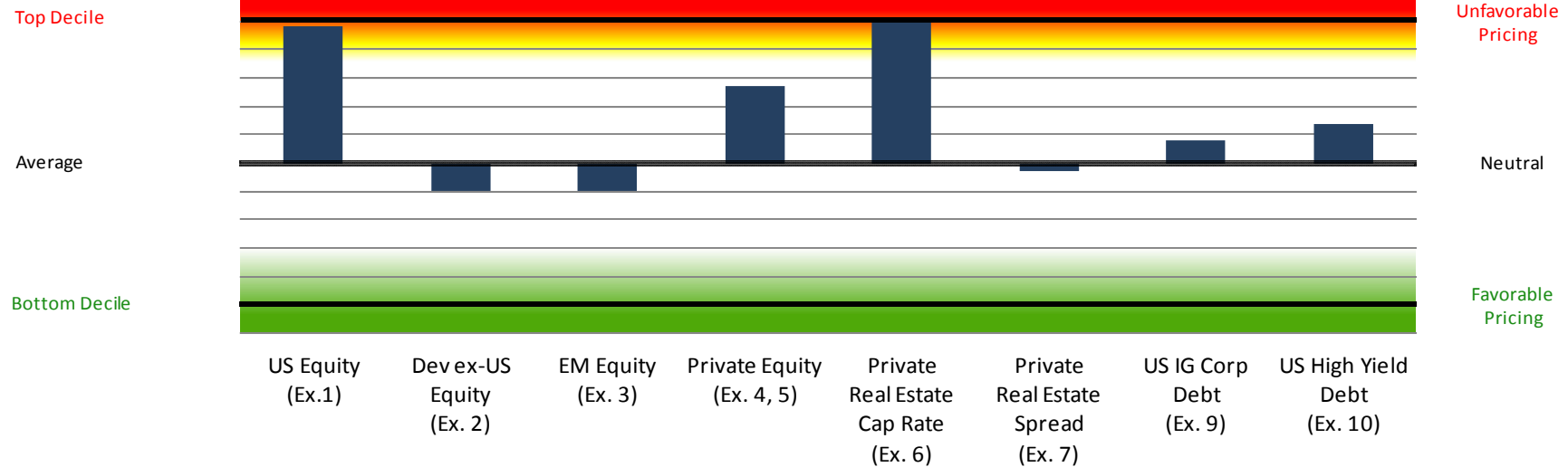
- Decisions regarding fiscal and monetary policy continue to impact global capital markets on a meaningful basis.
- The slope of the yield curve is extremely steep, indicating the recent rate rise may be overdone, if cash rates remain pinned at zero.
- Interest rate risk has fallen relative to the extremes of last year, but remains elevated.
- Equity volatility (VIX) remains below the long-term average level of 20.
- Equity valuations are elevated in the US, but not at extremes. Non-US equity valuations are below average.
- Credit spreads are at levels near long-term averages.
- Core real estate cap rates remain low (expensive) and the recent rise in interest rates has compressed the spread over the 10-year Treasury to the historical average, making core real estate pricing even less attractive.
- Inflation metrics point to inflation being under control.
- The PCA Market Sentiment Indicator “PMSI” continued to read **green** during the 3<sup>rd</sup> quarter.

---

<sup>1</sup> See Appendix for the rationale for selection and calculation methodology used for the risk metrics.

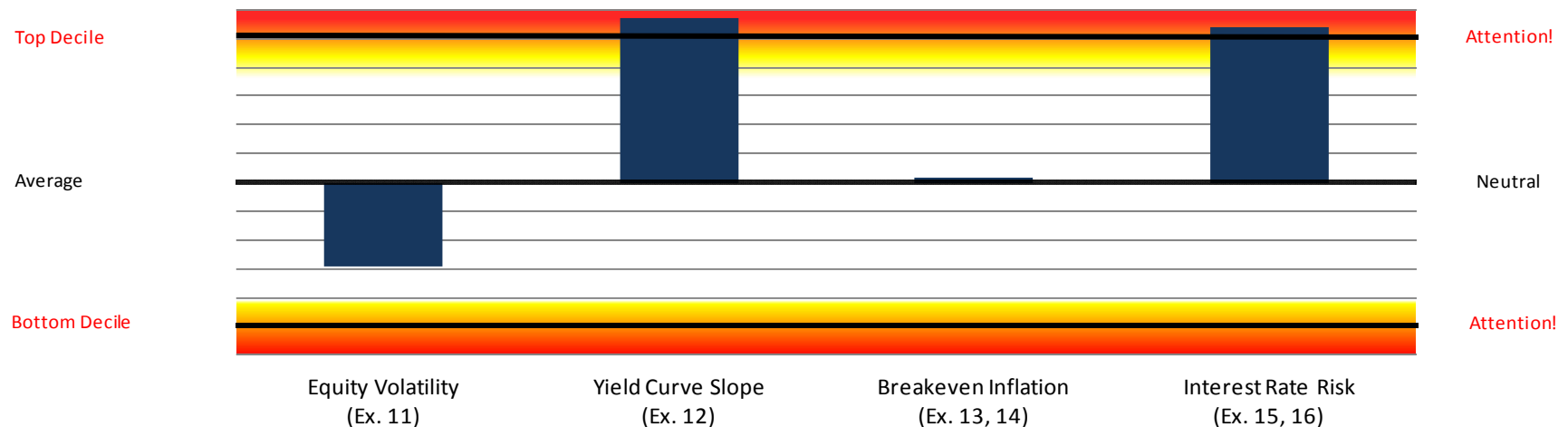
## Valuation Metrics versus Historical Range

### A Measure of Risk



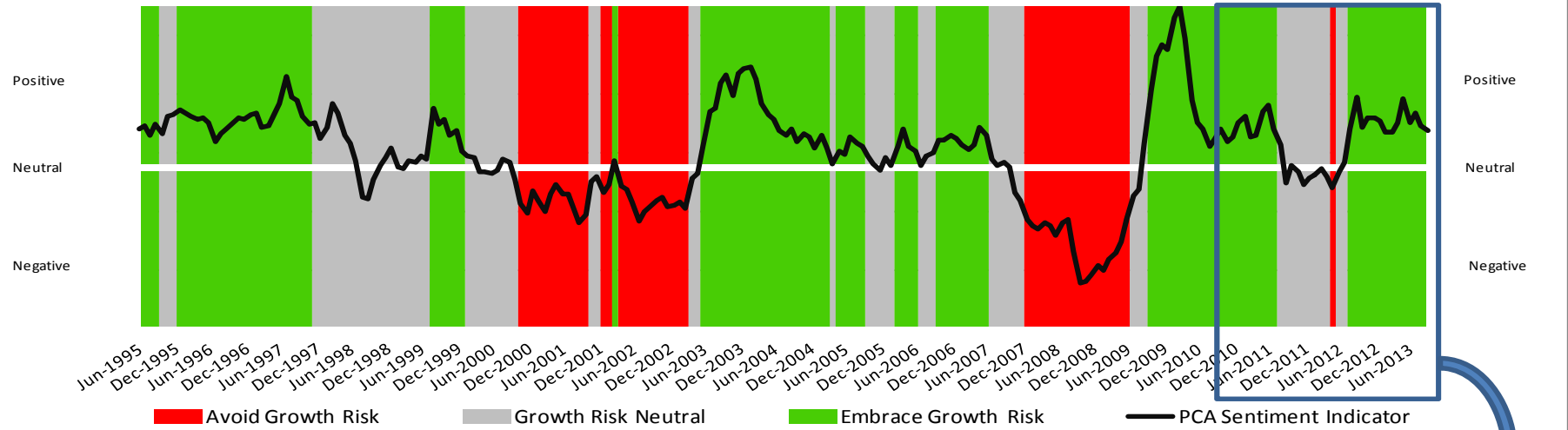
## Other Important Metrics within their Historical Ranges

### Pay Attention to Extreme Readings

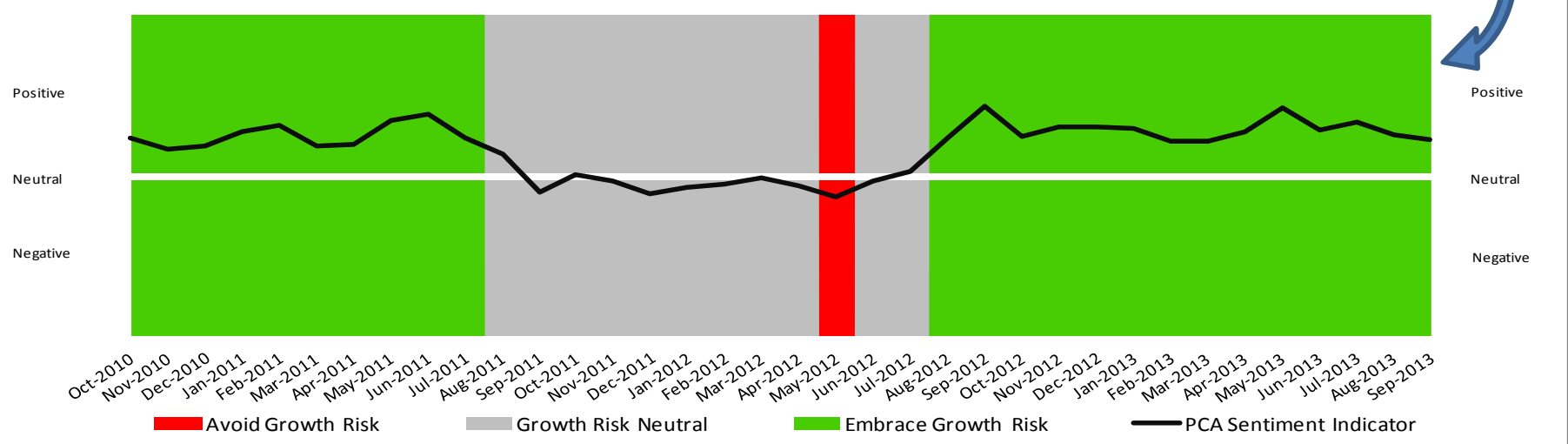




## PCA Market Sentiment Indicator (1995-Present)



## PCA Market Sentiment Indicator - Most Recent 3-Year Period



### Information Behind Current Sentiment Reading

Bond Spread Momentum Trailing-Twelve Months  
Equity Return Momentum Trailing-Twelve Months  
Agreement Between Bond and Equity Momentum Measures?

Positive  
Positive  
Agree



### Growth Risk Visibility (Current Overall Sentiment)

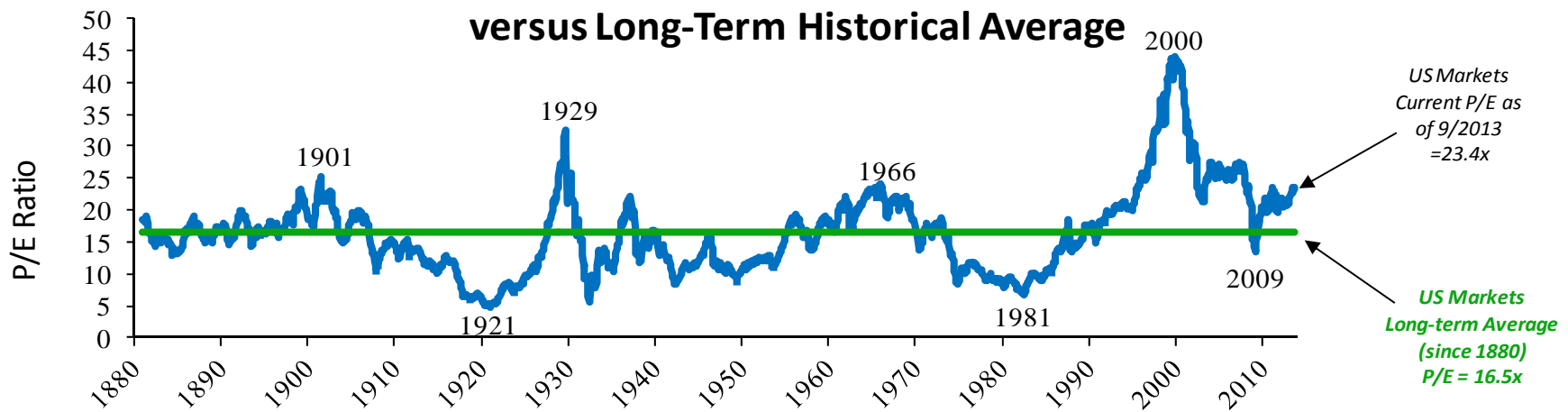
Positive



## Developed Public Equity Markets

Exhibit 1

### U.S. Equity Market P/E Ratio<sup>1</sup> versus Long-Term Historical Average

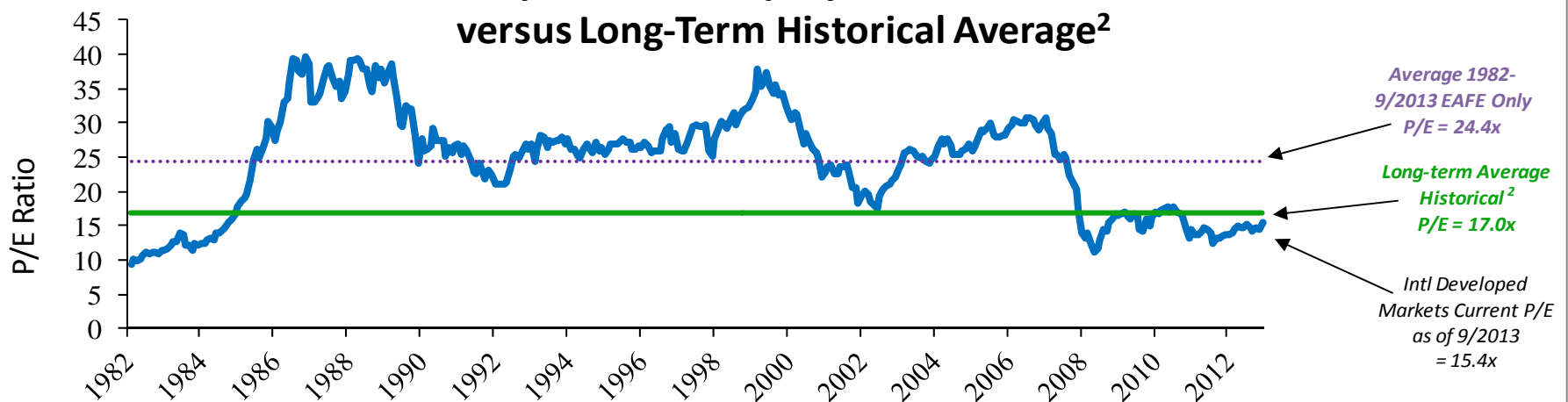


<sup>1</sup> P/E ratio is a Shiller P/E-10 based on 10 year real S&P 500 earnings over S&P 500 index level.

(Please note different time scales)

Exhibit 2

### Developed ex-U.S. Equity Market P/E Ratio<sup>1</sup> versus Long-Term Historical Average<sup>2</sup>



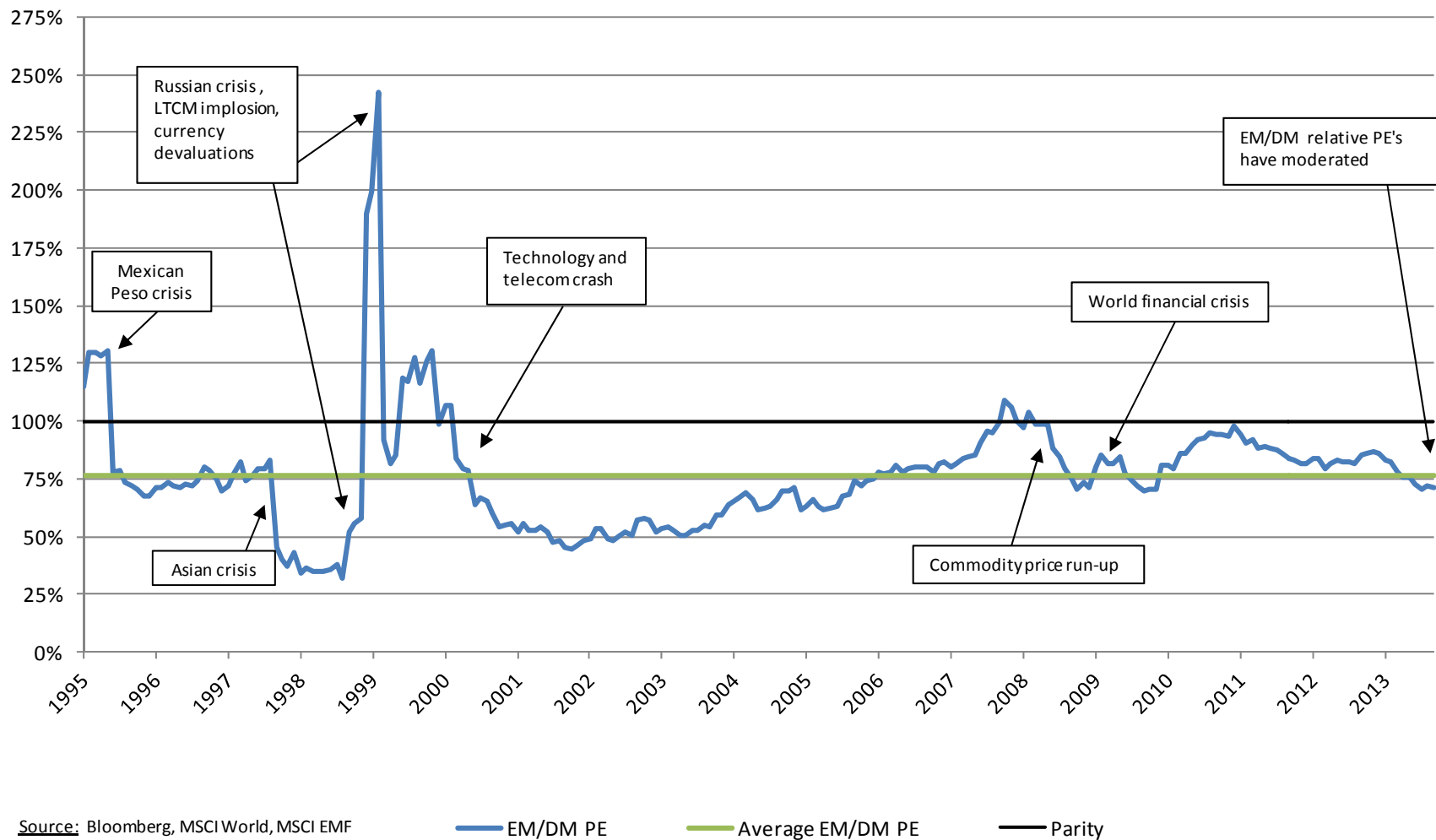
<sup>1</sup> P/E ratio is a Shiller P/E-10 based on 10 year real MSCI EAFE earnings over EAFE index level.

<sup>2</sup> To calculate the LT historical average, from 1881 to 1982 U.S. data is used as developed market proxy. From 1982 to present, actual developed ex-US market data (MSCI EAFE) is used.

## Emerging Markets Public Equity Markets

Exhibit 3

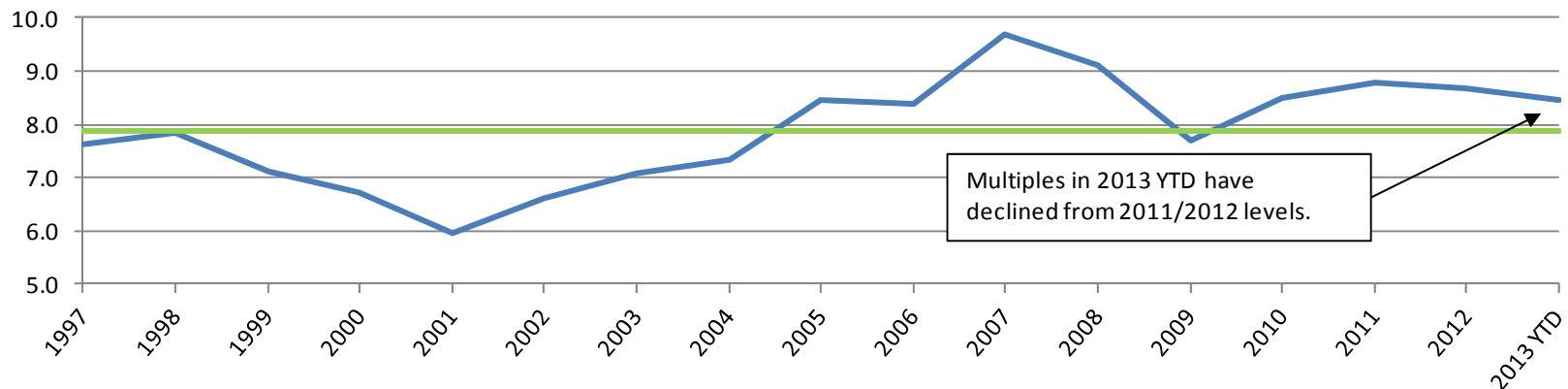
### Emerging Markets PE / Developed Markets PE (100% = Parity between PE Ratios)



## US Private Equity Markets

Exhibit 4

### Price to EBITDA Multiples Paid in LBOs

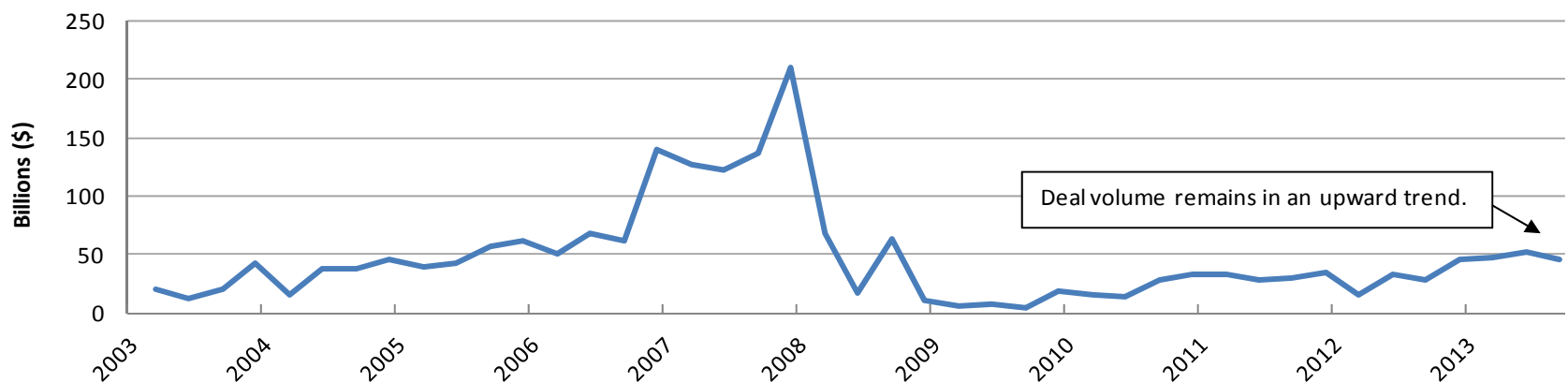


Source: S&P LCD study

(Please note different time scales)

Exhibit 5

### Disclosed U.S. Quarterly Deal Volume\*



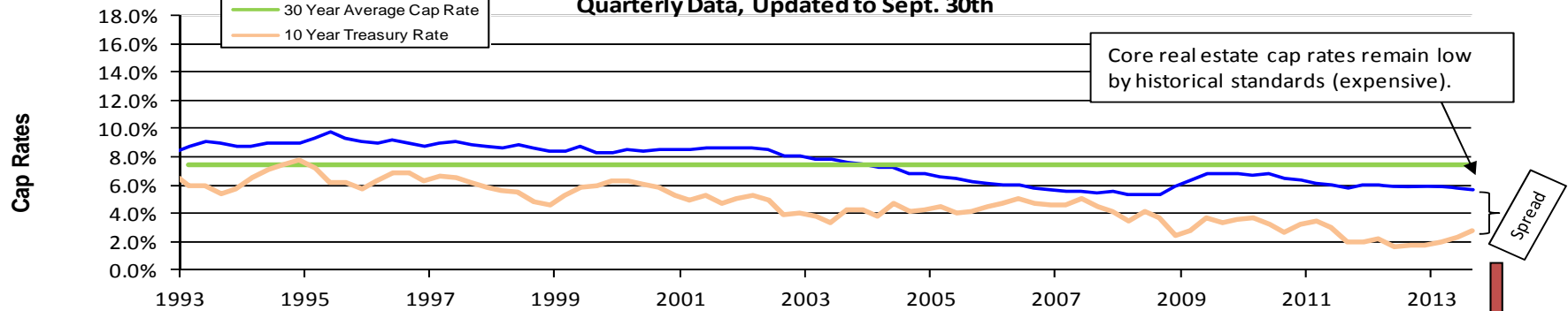
Source: Thomson Reuters Buyouts

\* quarterly total deal size (both equity and debt)

## Private Real Estate Markets

Exhibit 6

### Current Value Cap Rates<sup>1</sup> Quarterly Data, Updated to Sept. 30th



Source: NCREIF

<sup>1</sup>A cap rate is the current annual income of the property divided by an estimate of the current value of the property. It is the current yield of the property. Low cap rates indicate high valuations.

Exhibit 7

### Core Cap Rate Spread over 10-Year Treasury Interest Rate

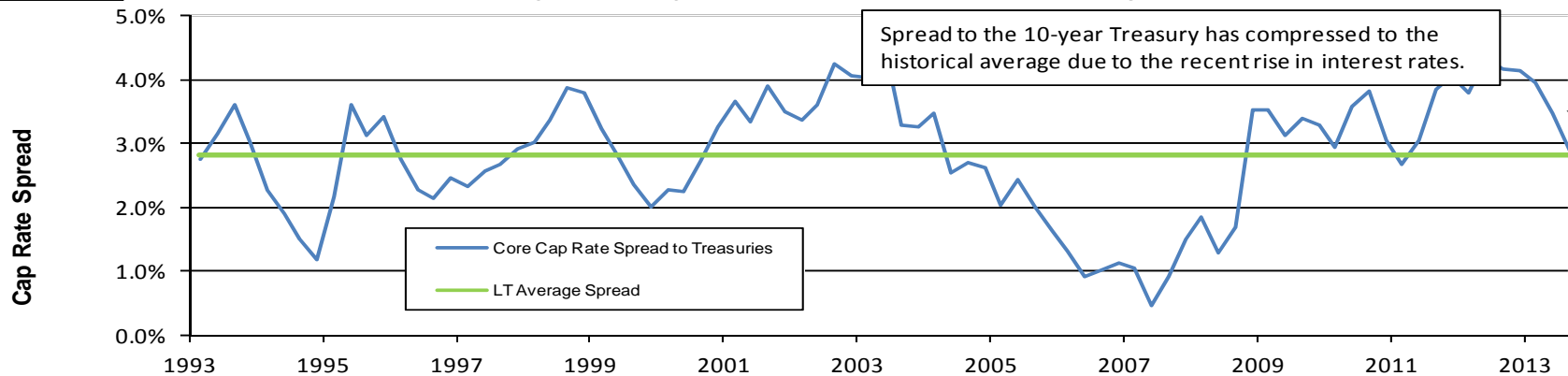
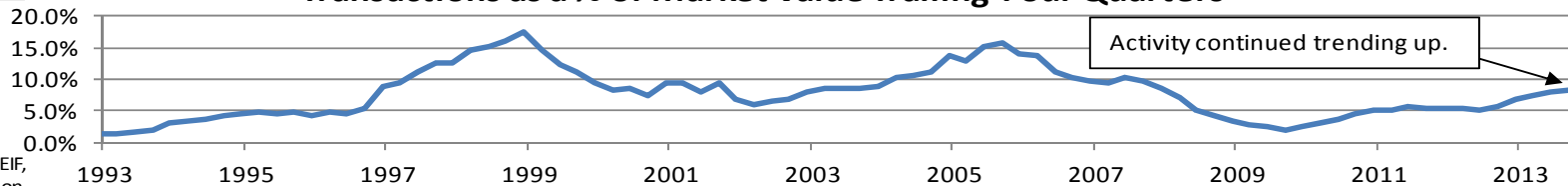


Exhibit 8

### Transactions as a % of Market Value Trailing-Four Quarters

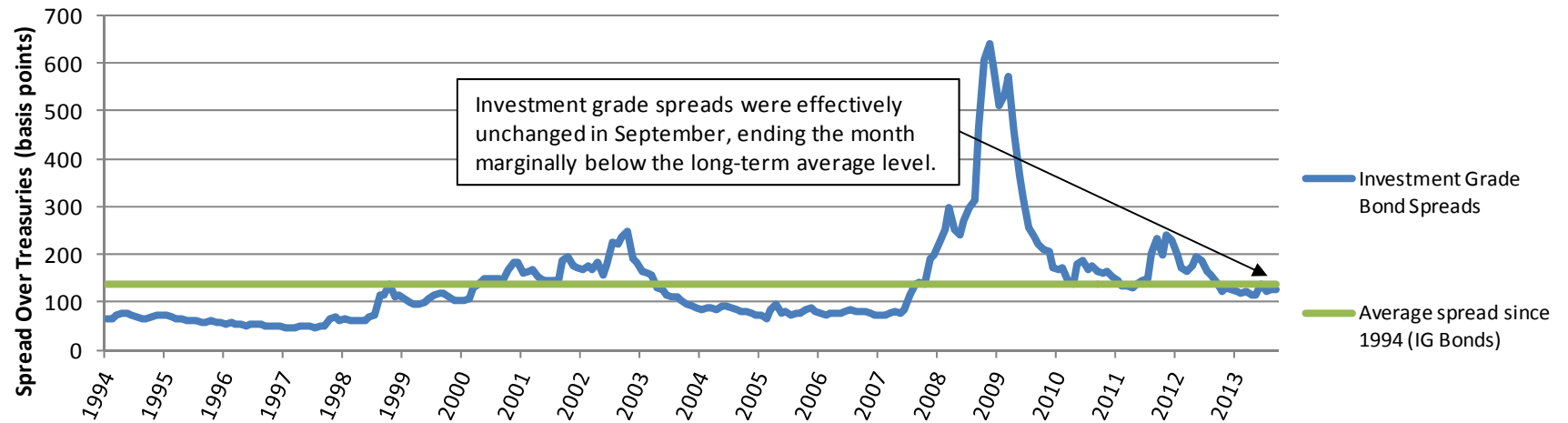


Source: NCREIF,  
PCA calculation

## Credit Markets US Fixed Income

Exhibit 9

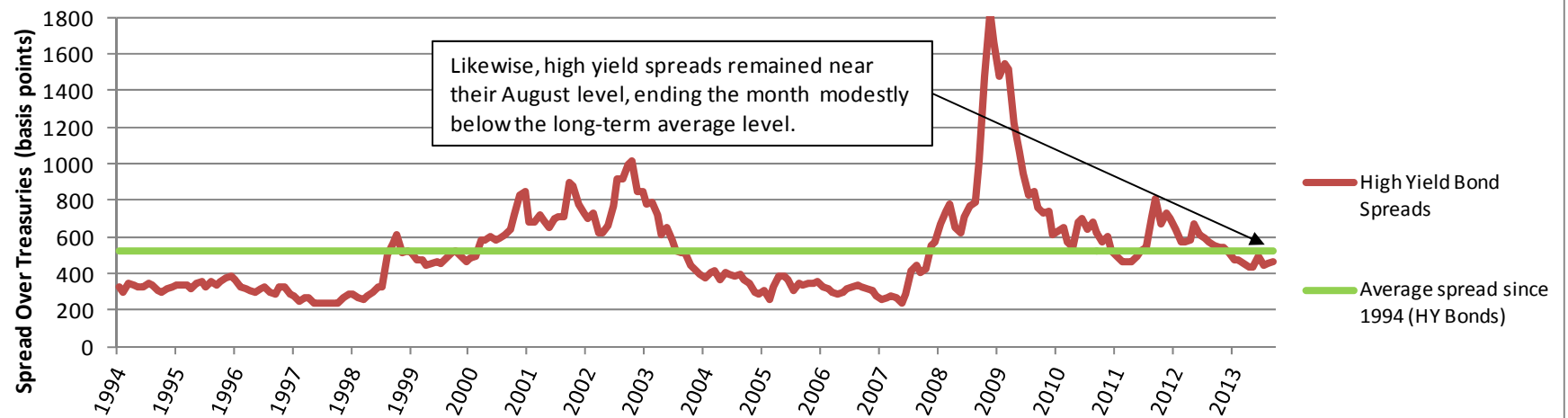
### Investment Grade Corporate Bond Spreads



Source: LehmanLive: Barclays Capital US Corporate Investment Grade Index Intermediate Component.

Exhibit 10

### High Yield Corporate Bond Spreads

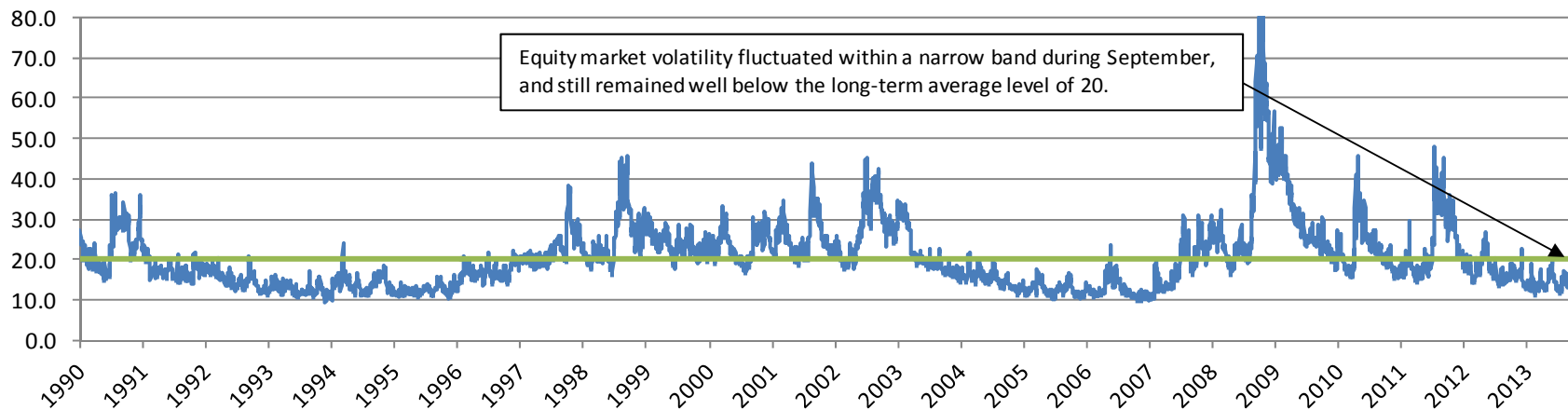


Source: LehmanLive: Barclays Capital U.S. Corporate High Yield Index.

## Other Market Metrics

Exhibit 11

### VIX - a measure of equity market fear / uncertainty

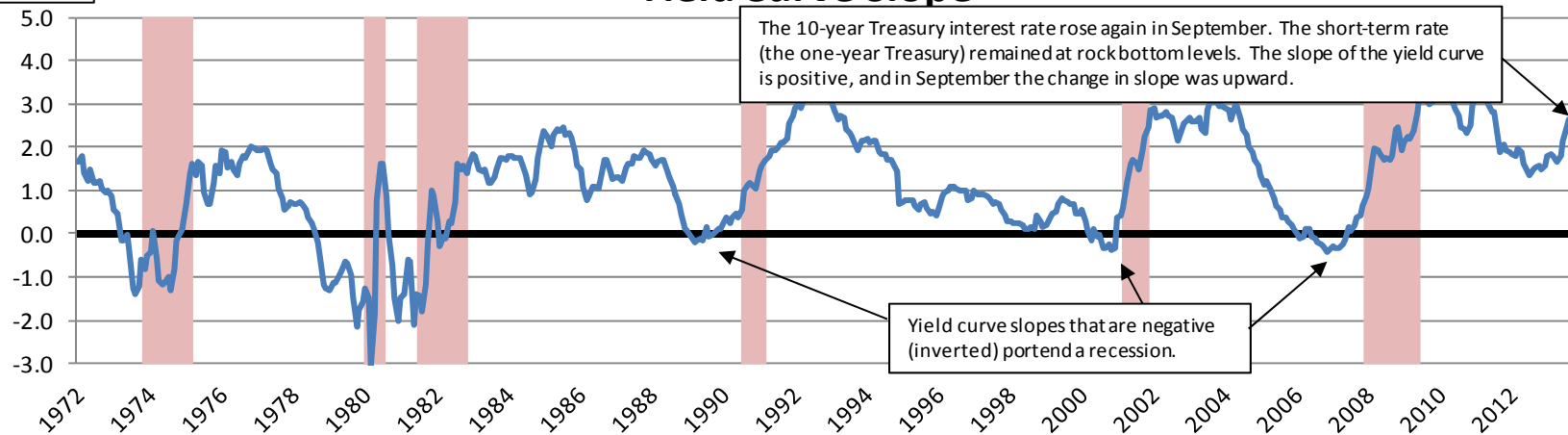


Source: <http://www.cboe.com/micro/vix/historical.aspx>

(Please note different time scales)

Exhibit 12

### Yield Curve Slope



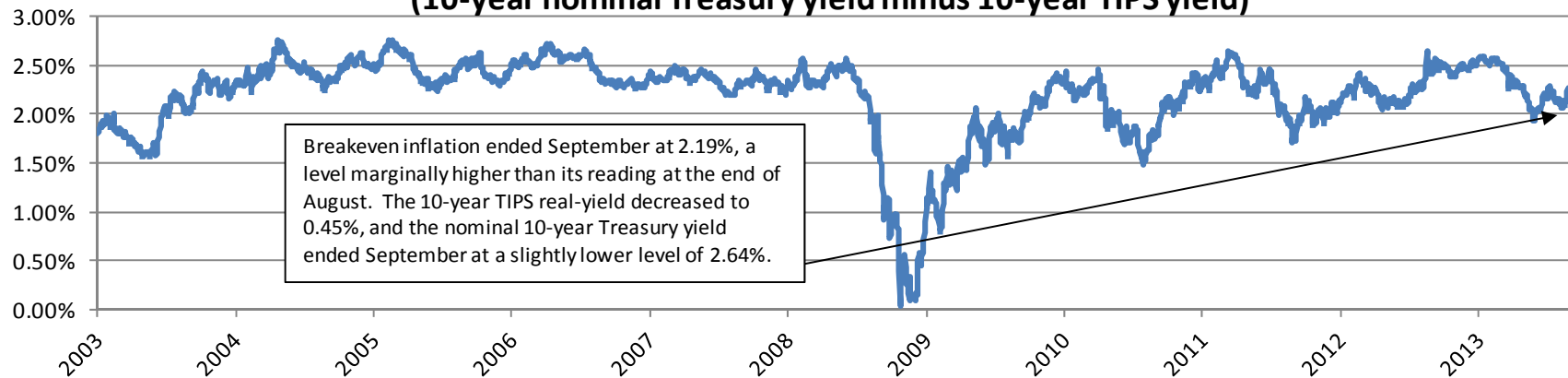
Source: [www.ustreas.gov](http://www.ustreas.gov) (10-year treasury yield minus 1-year treasury yield)

Recession Dating: NBER <http://www.nber.org/cycles.html>

## Measures of Inflation Expectations

Exhibit 13

### 10-Year Breakeven Inflation (10-year nominal Treasury yield minus 10-year TIPS yield)



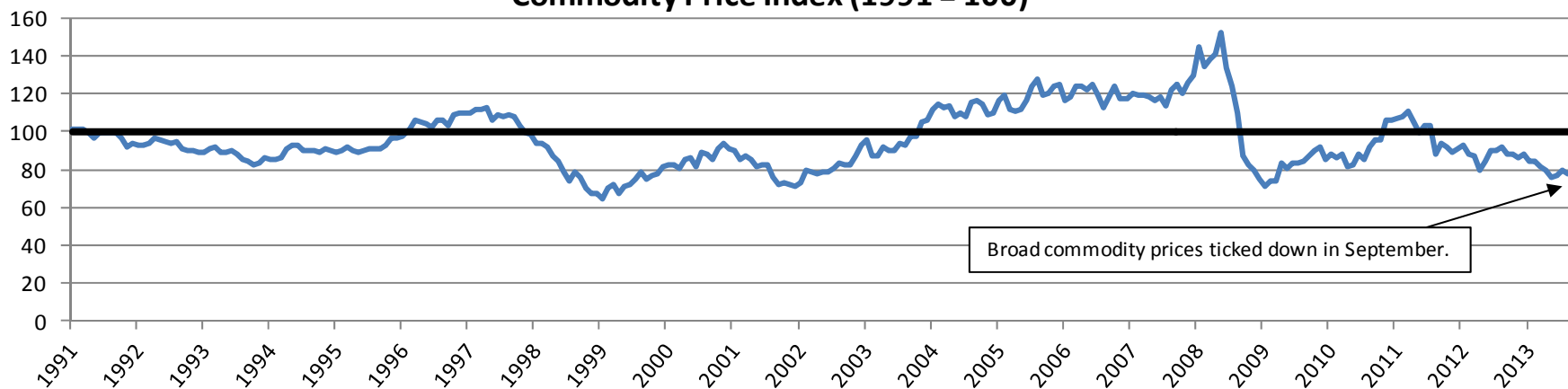
Source: [www.ustreas.gov](http://www.ustreas.gov)

Daily Yield Curve Rates (10-year nominal treasury yield minus 10-year TIPS yield)

(Please note different time scales)

Exhibit 14

### Inflation Adjusted Dow Jones UBS Commodity Price Index (1991 = 100)



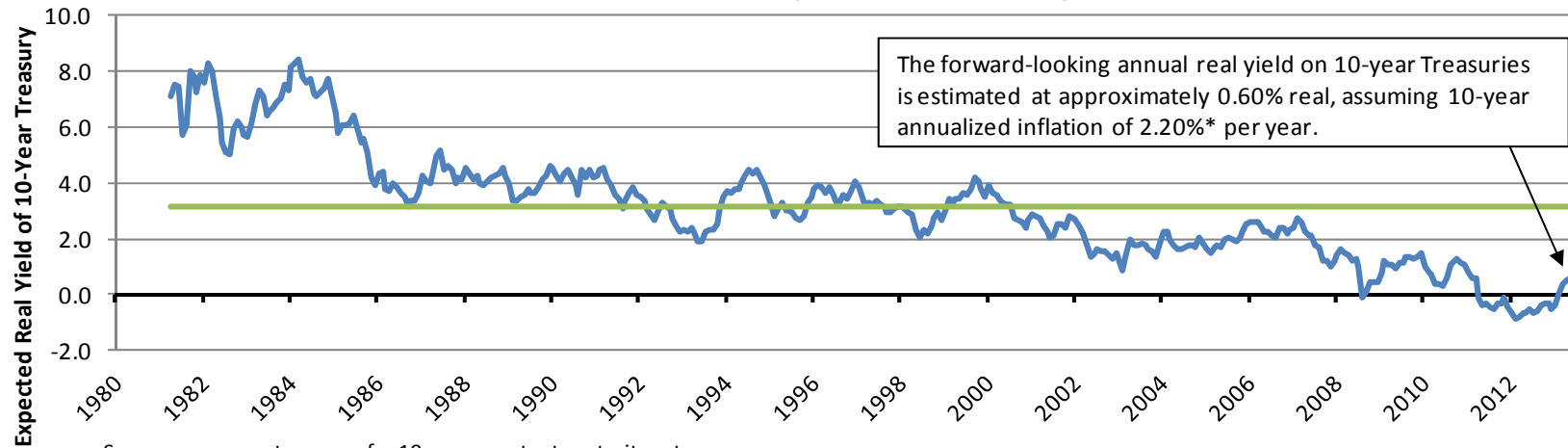
Source: Bloomberg DJUBS Index, St. Louis Fed for US CPI all urban consumers.



## Measures of U.S. Treasury Interest Rate Risk

Exhibit 15

### Estimate of 10-Year Treasury Forward-Looking Real Yield

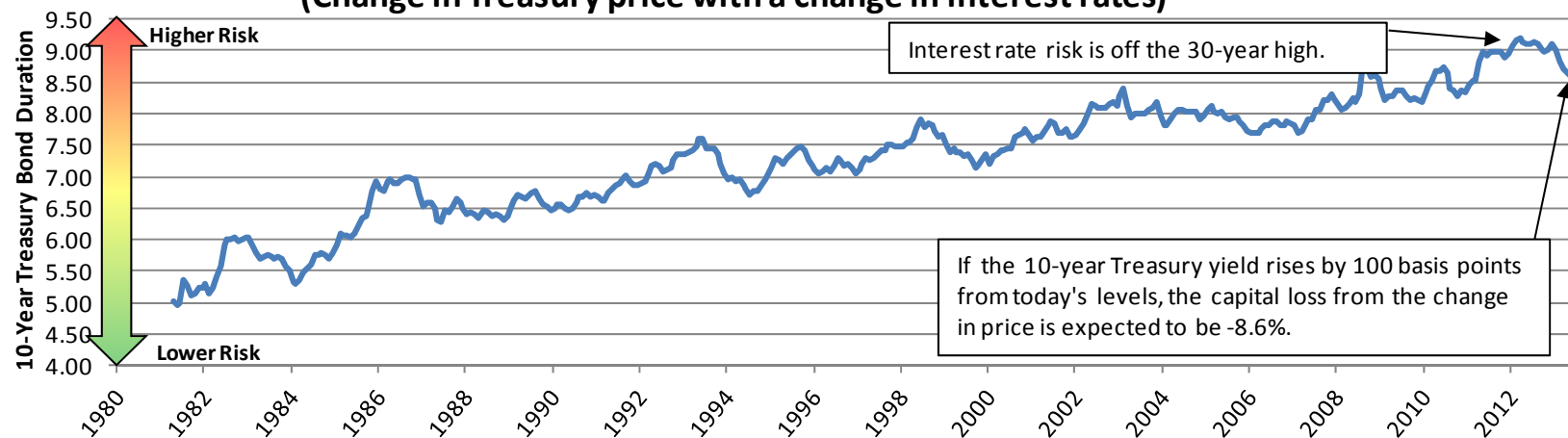


Sources: [www.ustreas.gov](http://www.ustreas.gov) for 10-year constant maturity rates

\*Federal Reserve Bank of Philadelphia survey of professional forecasts for inflation estimates

Exhibit 16

### 10-Year Treasury Duration (Change in Treasury price with a change in interest rates)



Source: [www.ustreas.gov](http://www.ustreas.gov) for 10-year constant maturity rates, calculation of duration

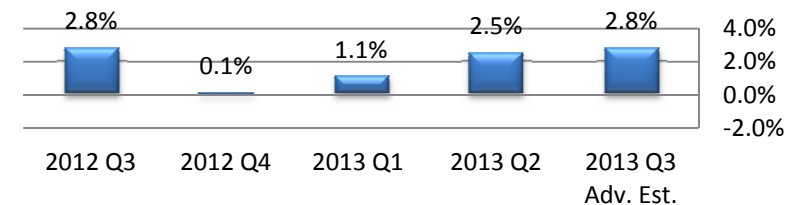
## ECONOMIC & MARKET OVERVIEW

**Overview:** In September, U.S. equity markets rose to new highs before pulling back as concerns regarding the October government shut down emerged. Real GDP increased at an annualized rate of 2.8 percent in the third quarter of 2013, rising from 2.5 percent in the second quarter of 2013. The Fed surprised investors by continuing its \$85 million level of monthly bond purchases; desiring more signs of economic growth before tapering begins. Unemployment continued its gradual decline, ending the quarter at 7.2%. The U.S. housing market maintained its upward march as home building activity reached its highest point since 2005. International markets also increased over the quarter as investor confidence continued to improve amid signs that the worst of the eurozone crisis may be over. U.S. investors in international markets also received additional benefits from the depreciation of the U.S. Dollar. Emerging Markets followed the trend, posting positive returns for the quarter that slightly trailed those of Developed Markets.

### Economic Growth

- Real GDP increased at an annualized rate of 2.8 percent in the third quarter of 2013, rising from 2.5 percent in the second quarter of 2013.
- Historical GDP numbers were revised during the second quarter, reflecting major changes in methods & concepts. This occurs approximately every five years.
- The increase in GDP was fueled mainly by an uptick in inventory investment acceleration in state and local government spending. Imports and exports decelerated during the quarter.

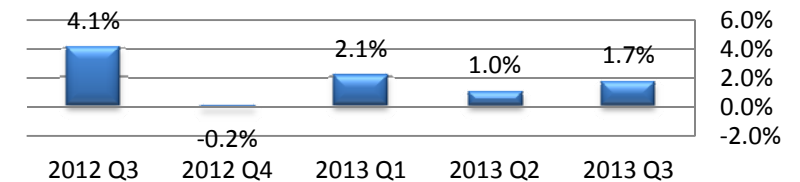
#### Annualized Quarterly GDP Growth



### Inflation

- The Consumer Price Index for All Urban Consumers (CPI-U) increased by 1.7 percent in the quarter on an annualized basis, after seasonal adjustment.
- Quarterly percent changes may be adjusted between data publications due to periodic updates in seasonal factors.
- Core CPI-U increased by 1.6 percent for the quarter on an annualized basis.
- Over the last 12 months, CPI-U increased 1.2 percent before seasonal adjustment.

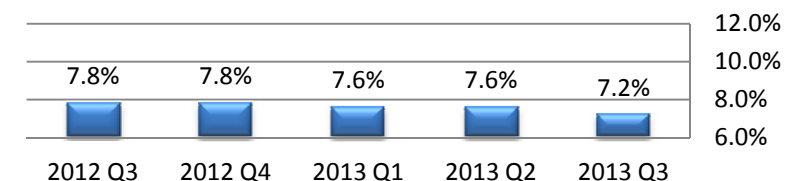
#### CPI-U After Seasonal Adjustment



### Unemployment

- The U.S. economy gained 479,000 jobs in the quarter.
- The official unemployment rate was improved to 7.2% at quarter end.
- The majority of jobs gained occurred in professional and business services, food services and drinking places, and retail trade.

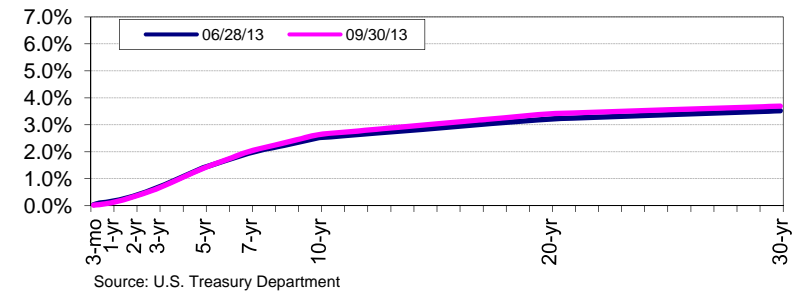
#### Unemployment Rate



## Interest Rates & U.S. Dollar

- U.S. Treasury yields increased over the quarter.
- The Federal Reserve has maintained the federal funds rate between 0.00% and 0.25% since December 2008.
- The U.S. dollar depreciated against the Yen, Euro, and Sterling by 4.0%, 0.9%, and 6.4%, respectively.
- Subsequent to quarter end, rates ticked up but remained near low historic levels.

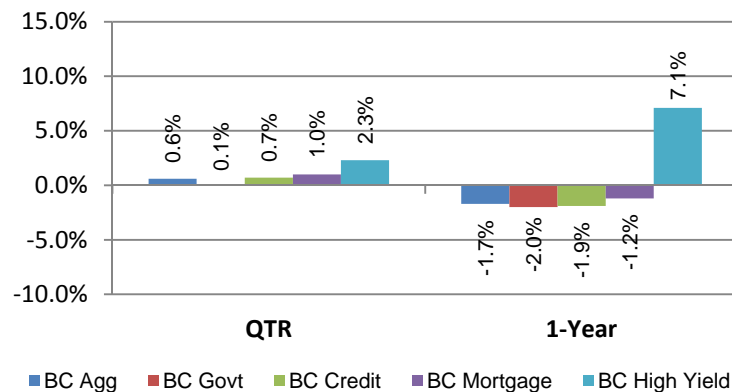
### Treasury Yield Curve Changes



## Fixed Income

- The bond markets provided slightly positive results across the board during the quarter. High Yield produced significant positive results over the one-year period, while most other segments produced negative returns.
- During the trailing one-year period Governments, Agencies, Investment Grade Credit, MBS and ABS produced negative returns while only CMBS remained positive.

### Fixed Income Returns



### U.S. Fixed Income Sector Performance (BC Aggregate Index)

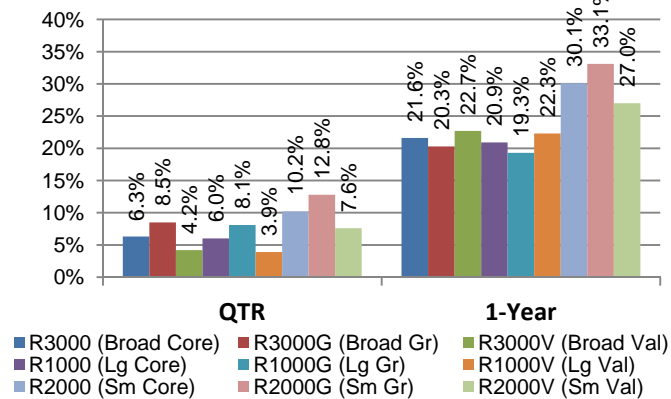
Sector	Weight	QTR	1 Year
Governments*	40.4%	0.1%	-2.0%
Agencies	6.1%	0.3%	-1.4%
Inv. Grade Credit	21.9%	0.7%	-1.9%
MBS	29.5%	1.0%	-1.2%
ABS	0.4%	0.2%	-0.4%
CMBS	1.7%	1.0%	0.9%

\*U.S. Treasuries and Government Related

## U.S. Equities

- Growth in U.S. equities regained momentum after a slow second quarter, producing positive results across the board.
- During the quarter, growth indices outperformed value throughout large & mid-cap stocks. Telecommunication Services was the only sector that produced a negative return during the quarter. All ten sectors produced positive results for the trailing one-year period.

U.S. Equity Returns

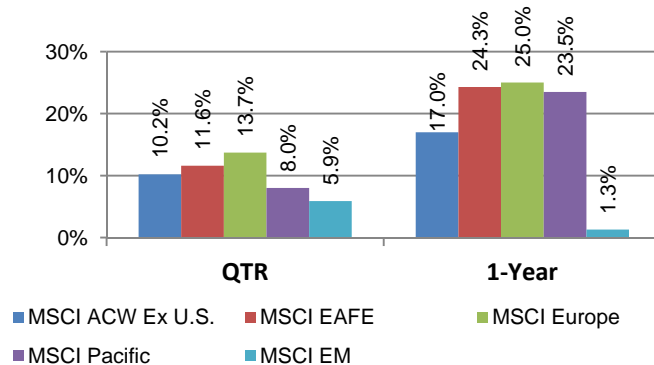


U.S. Equity Sector Performance (Russell 3000 Index)			
Sector	Weight	QTR	1 Year
Materials	3.8%	9.9%	16.5%
Industrials	11.4%	9.6%	32.4%
Information Tech	17.9%	9.0%	11.2%
Consumer Disc	13.4%	8.6%	34.6%
Health Care	12.6%	8.0%	29.3%
Energy	9.5%	6.5%	13.7%
Financials	17.4%	2.9%	27.1%
Consumer Staples	8.7%	1.5%	15.8%
Utilities	3.2%	0.4%	8.8%
Telec. Serv.	2.2%	-2.9%	1.6%

## International Equities

- Developed International equity markets rebounded from a slow second quarter, producing positive results across the board during the quarter and remained positive through the one-year period. Emerging Markets trailed Developed Markets over the quarter and trailing one-year period.

International Equity Returns (in USD)



International Equity Region Performance (in USD) (MSCI ACW Index ex U.S.)			
Sector	Weight	QTR	1 Year
Europe Ex. UK	31.3%	14.5%	29.3%
Emerging Markets	21.1%	5.9%	1.3%
United Kingdom	15.7%	12.1%	17.1%
Japan	15.6%	6.7%	31.7%
Pacific Ex. Japan	9.1%	10.4%	11.7%
Canada	7.2%	9.0%	3.0%

## Market Summary – Long-term Performance\*

Indexes	1 Year	3 Year	5 Year	10 Year	20 Year
<b>Global Equity</b>					
MSCI All Country World	18.4%	10.8%	8.3%	8.4%	7.2%
<b>Domestic Equity</b>					
S&P 500	19.3%	16.3%	10.0%	7.6%	8.8%
Russell 3000	21.6%	16.8%	10.6%	8.1%	8.9%
Russell 3000 Growth	20.3%	17.2%	12.2%	8.0%	8.1%
Russell 3000 Value	22.7%	16.3%	8.9%	8.1%	9.2%
Russell 1000	20.9%	16.6%	10.5%	8.0%	8.9%
Russell 1000 Growth	19.3%	16.9%	12.1%	7.8%	8.2%
Russell 1000 Value	22.3%	16.2%	8.9%	8.0%	9.2%
Russell 2000	30.1%	18.3%	11.2%	9.6%	9.0%
Russell 2000 Growth	33.1%	20.0%	13.2%	9.9%	7.1%
Russell 2000 Value	27.0%	16.6%	9.1%	9.3%	10.3%
CBOE BXM	3.1%	7.5%	4.3%	5.1%	7.7%
<b>International Equity</b>					
MSCI All Country World ex US	17.0%	6.4%	6.7%	9.2%	6.3%
MSCI EAFE	24.3%	9.0%	6.9%	8.5%	5.8%
MSCI Pacific	23.5%	8.5%	7.5%	7.4%	2.3%
MSCI Europe	25.0%	9.4%	6.7%	9.1%	8.6%
MSCI EM (Emerging Markets)	1.3%	0.0%	7.6%	13.2%	7.1%
<b>Fixed Income</b>					
BC Universal Bond	-1.0%	3.4%	5.9%	4.9%	5.9%
BC Global Agg – Hedged	0.5%	3.0%	5.0%	4.4%	5.8%
BC Aggregate Bond	-1.7%	2.9%	5.4%	4.6%	5.8%
BC Government	-2.0%	2.1%	4.0%	4.2%	5.4%
BC Credit Bond	-1.9%	4.1%	8.5%	5.2%	6.3%
BC Mortgage Backed Securities	-1.2%	2.6%	4.7%	4.8%	5.8%
BC High Yield Corporate Bond	7.1%	9.2%	13.5%	8.9%	7.8%
BC WGILB - Hedged	-2.5%	3.7%	5.0%	5.1%	NA
BC Emerging Markets	-2.1%	5.7%	10.4%	9.0%	10.2%
<b>Real Estate</b>					
NCREIF (Private RE)	11.0%	12.7%	3.4%	8.7%	9.2%
NAREIT (Public RE)	5.1%	12.6%	6.5%	8.8%	9.5%
<b>Commodity Index</b>					
DJ-UBS Commodity	-14.3%	-3.2%	-5.3%	2.1%	4.9%

\* Performance is annualized for periods greater than one year.

## WPERP RETIREMENT PLAN REVIEW

### Actual vs. Target Allocations

The strategic allocation targets reflect the current long-term policy allocation, effective 7/1/2013.

With respect to its strategic allocation targets, the Total Retirement Portfolio ended the latest quarter **overweight Domestic Equity, International Equity, and Covered Calls**, while **underweight Private Equity and Real Estate. Fixed Income, Real Return, and Cash** were at or closely in-line with target allocations. Following the 2011 Asset Allocation study, WPERP utilized a series of phased allocation targets, beginning in 4Q 2011, to transition towards the long-term policy targets. The Retirement Plan reached the long-term policy targets as of 7/1/2013.

### As of September 30, 2013

Segment	Actual (\$MM)	Actual % <sup>1</sup>	Target% <sup>2</sup>	Variance	Min.	Max.
Total Portfolio <sup>3</sup>	10,185	100	100	---	---	---
Total Retirement <sup>4</sup>	8,669	100	100	---	---	---
Domestic Equity	3,130	36	33	3	29	39
International Equity	1,983	23	21	2	17	25
Fixed Income	1,936	23	24	-1	21	29
Covered Calls	619	7	5	2	4	6
Real Return	461	5	6	-1	---	---
Private Equity	144	2	5	-3	---	---
Real Estate	251	3	5	-2	---	---
Cash	75	1	1	---	0.5	1.5

<sup>1</sup> Differences due to rounding.

<sup>2</sup> Long-term policy targets, effective 7/1/2013.

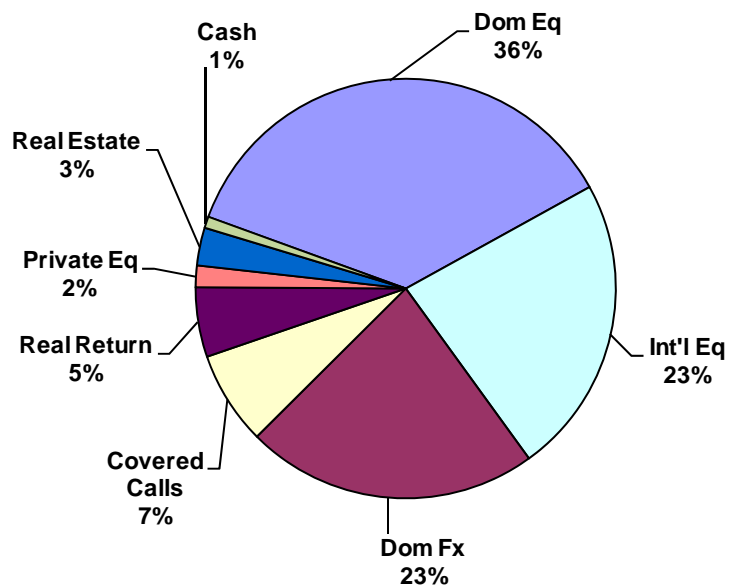
<sup>3</sup> Total Portfolio includes assets from the Retirement, Health, Disability, and Death Plans.

<sup>4</sup> Including a balance of \$73.4 million in transition accounts and a negative balance of (\$3.3) million in securities lending.

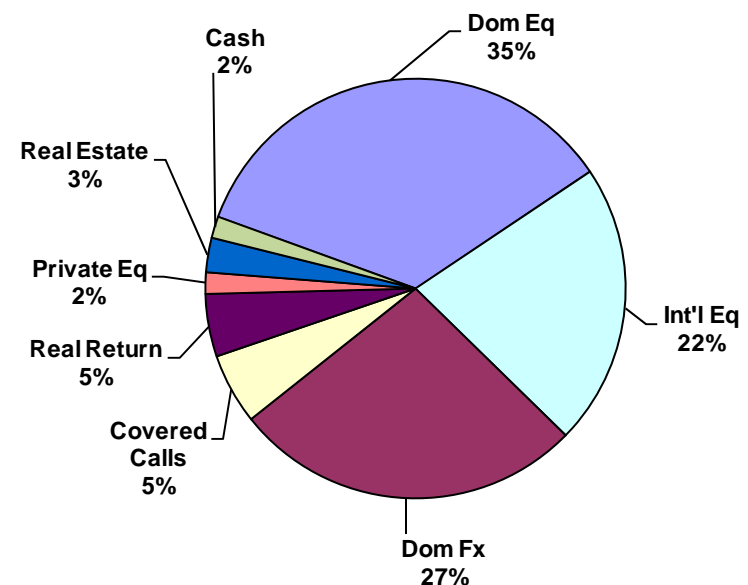
## Actual Strategic Allocation Comparison

As of September 30, 2013, the WPERP Total Retirement Portfolio had a 59% allocation in Equities, 23% in Fixed Income, 7% in Covered Calls, 5% in Real Return, 2% in Private Equity, 3% in Real Estate, and 1% in Cash. During the latest 1-year period, the actual weightings of Domestic Equity, International Equity, and Covered Calls increased by 1%, 1%, and 2%, respectively. The actual weightings of Fixed Income and Cash decreased by (4%) and (1%), respectively. The actual weightings of Real Return, Private Equity, and Real Estate remained the same. The allocation changes are primarily a result of the evolving investment policy. The Board approved its current long-term investment policy in June 2011 as a result of the 2011 Asset Allocation study. The new policy was implemented over a series of phased asset allocation targets that initially began in 4Q 2011 (see Appendix for a description of the policy benchmark composition). The Retirement Plan reached the long-term policy target as of 7/1/2013.

September 30, 2013



September 30, 2012



## WPERP RETIREMENT PLAN PERFORMANCE

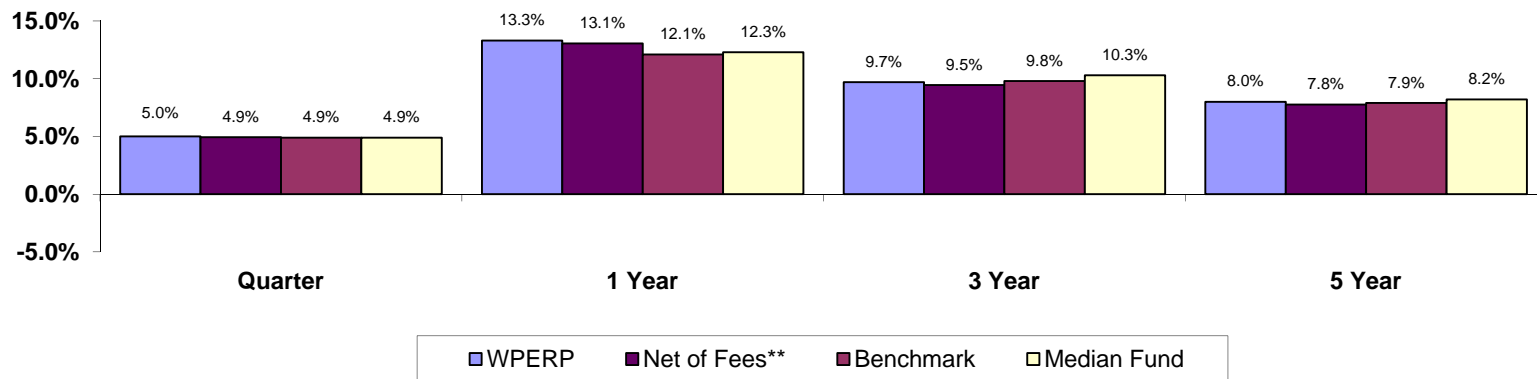
This section includes an overview of the performance of WPERP's Total Retirement Portfolio and a detailed analysis of strategic classes and specific mandates.

### Portfolio Performance Overview (Gross of Fees)

The Total Retirement Portfolio outperformed its policy benchmark over the most recent quarter by 10 basis points. Over the latest 1-year period, the Total Retirement Portfolio bested its policy benchmark by 1.2% with a 13.3% return. Over the trailing 3-year period, the Total Retirement Portfolio trailed its policy benchmark by (10) basis points. Over the trailing 5-year period, the Total Retirement Portfolio bested its policy benchmark by 10 basis points.

The Total Retirement Portfolio outperformed the Median Public Fund over the most recent quarter and trailing 1-year period by 10 and 100 basis points, respectively. Over the latest 3-year period, the Total Retirement Portfolio underperformed the Median Public Fund by (60) basis points. Over the trailing 5-year period, the Total Retirement Portfolio lagged the Median Public Fund by (20) basis points.

### Periods ending September 30, 2013 (annualized)\*



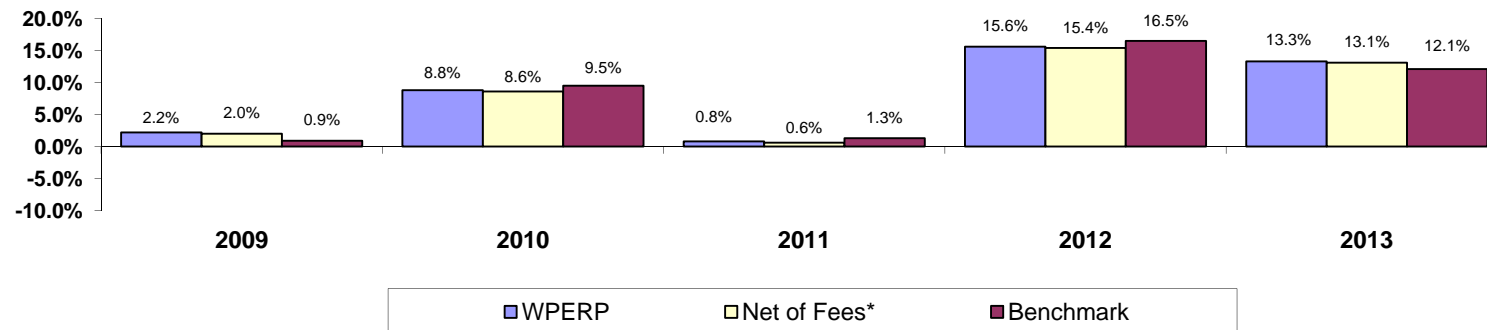
\* WPERP performance reported gross of fees.

\*\*Net of Fees performance estimated based on existing WPERP manager fee schedule.



The Total Retirement Portfolio generated positive absolute performance results over all five trailing 12-month periods. The Total Retirement Portfolio outperformed its policy benchmark twice over the same 12-month periods, gross and net of fees.

## 12-month Performance – Periods ending September 30



\*Net of Fees performance estimated based on existing WPERP manager fee schedule.

## Portfolio Valuation

As of September 30, 2013, the Total Retirement Portfolio had an aggregate value of \$8.7 billion. This represents a \$388.0 million increase in value over the last quarter, including (\$14.0) million in net outflows. During the previous 1-year period, the Total Retirement Plan increased by \$1,002.7 million.

## Portfolio Valuation as of September 30, 2013, Gross of Fees\*

### Cash Flow Performance

	<u>3Q 2013</u>		<u>1-Year</u>		<u>3-Year</u>		<u>5-Year</u>	
Beginning Market Value	\$8,281.4		\$7,666.8		\$6,681.1		\$6,312.7	
Net Flow	-14.0		-17.0		-150.5		-606.0	
<b>Investment Return in \$ (in%)</b>	<b>402.0</b>	<b>5.0%</b>	<b>1,019.7</b>	<b>13.3%</b>	<b>2,138.9</b>	<b>9.7%</b>	<b>2,962.7</b>	<b>8.0%</b>
Ending Market Value	\$8,669.4		\$8,669.4		\$8,669.4		\$8,669.4	

\*Dollar figures in millions (\$), differences due to rounding

\*\*Recent Quarter net flow per Mellon. 1-year, 3-year, 5-year net flow s estimated per PCA

# Quarterly Report

Q3-13

## PERFORMANCE ATTRIBUTION – RETIREMENT PLAN VS. POLICY BENCHMARK

### Performance Attribution - 3Q 2013

	Policy		Portfolio		Impact on Return			
	Allocation	Return	Allocation*	Return	Weighting	Selection	Interaction	Total
Domestic Equity	33.0%	6.4	36.5%	7.9	0.1	0.5	0.1	0.6
International Equity	21.0%	10.4	21.9%	8.8	0.0	(0.3)	(0.0)	(0.3)
Fixed Income	24.0%	0.7	24.0%	0.9	0.0	0.0	(0.0)	0.0
Covered Calls	5.0%	0.8	5.2%	1.1	(0.0)	0.0	0.0	0.0
Real Return	6.0%	0.7	5.9%	(5.7)	0.0	(0.4)	0.0	(0.4)
Private Equity	5.0%	3.4	1.7%	3.6	0.1	0.0	(0.0)	0.1
Real Estate	5.0%	2.9	3.0%	4.1	0.0	0.1	(0.0)	0.1
Cash	1.0%	0.0	1.8%	0.1	(0.0)	0.0	0.0	(0.0)
Total	100.0%	4.9	100.0%	5.0	0.1	(0.1)	0.0	0.1

\*Portfolio allocation utilizes beginning-of-the period market values.

### Performance Attribution - Trailing 12-month

	Policy		Portfolio		Impact on Return			
	Allocation*	Return	Allocation*	Return	Weighting	Selection	Interaction	Total
Domestic Equity	33.8%	21.6	35.9%	24.4	0.1	0.8	0.1	1.0
International Equity	21.0%	16.5	22.4%	19.3	0.0	0.5	0.0	0.6
Fixed Income	24.8%	(1.0)	24.5%	(0.1)	(0.1)	0.2	0.0	0.1
Covered Calls	5.0%	3.1	5.8%	4.2	(0.0)	0.1	0.0	0.0
Real Return	6.0%	3.1	5.2%	(0.8)	0.1	(0.2)	(0.0)	(0.2)
Private Equity	4.3%	25.1	1.7%	12.4	(0.3)	(0.6)	0.4	(0.6)
Real Estate	4.3%	10.7	2.9%	17.1	0.0	0.3	(0.1)	0.2
Cash	1.0%	0.1	1.6%	0.2	(0.1)	0.0	0.0	(0.1)
Total	100.0%	12.1	100.0%	13.3	(0.3)	1.0	0.4	1.1

\*Policy allocation utilizes average target allocations over the trailing four quarters; Portfolio allocation utilizes average market values over the trailing four quarters.

- During the most recent quarter, the Total Retirement Portfolio marginally outperformed its policy benchmark. Selection within Domestic Equity was the largest contributor to the relative outperformance. Selection within the International Equity and Real Return classes was the primary detractor from the relative performance.
- During the trailing 12-month period, the Total Retirement Portfolio outperformed its policy benchmark. Selection throughout the portfolio, excluding Private Equity and Real Return, effectively resulted in the relative outperformance. The Private Equity class (weighting and selection), along with selection in Real Return, were the primary detractors from the relative performance.

# Quarterly Report

Q3-13

## PERFORMANCE ATTRIBUTION – RETIREMENT PLAN VS. MEDIAN PUBLIC FUND<sup>1</sup>

### Performance Attribution - 3Q 2013

	Median Public Fund		Portfolio		Impact on Return			
	Allocation	Return	Allocation*	Return	Weighting	Selection	Interaction	Total
Domestic Equity	32.2%	6.7	36.5%	7.9	0.1	0.4	0.1	0.5
International Equity	19.0%	10.2	21.9%	8.8	0.2	(0.3)	(0.0)	(0.2)
Fixed Income	23.5%	0.8	24.0%	0.9	(0.0)	0.0	0.0	(0.0)
Covered Calls	0.0%	0.8	5.2%	1.1	(0.2)	0.0	0.0	(0.2)
Real Estate	6.2%	3.3	3.0%	4.1	0.0	0.0	(0.0)	0.1
Alternative Investments	16.7%	1.8	7.6%	(3.7)	0.3	(0.9)	0.5	(0.1)
Cash	2.4%	0.1	1.8%	0.1	0.0	0.0	0.0	0.0
Total	100.0%	4.9	100.0%	5.0	0.4	(0.7)	0.5	0.1

\*Portfolio allocation utilizes beginning-of-the period market values.

### Performance Attribution - Trailing 12-month

	Median Public Fund		Portfolio		Impact on Return			
	Allocation*	Return	Allocation*	Return	Weighting	Selection	Interaction	Total
Domestic Equity	32.9%	22.9	34.4%	24.4	0.2	0.5	0.0	0.7
International Equity	18.2%	19.1	22.3%	19.3	0.3	0.0	0.0	0.3
Fixed Income	25.3%	(0.6)	26.5%	(0.1)	(0.2)	0.1	0.0	(0.0)
Covered Calls	0.0%	3.1	5.3%	4.2	(0.5)	0.0	0.1	(0.4)
Real Estate	5.7%	11.8	2.8%	17.1	0.0	0.3	(0.2)	0.2
Alternative Investments	15.8%	5.0	6.4%	2.4	0.7	(0.4)	0.2	0.5
Cash	2.0%	0.2	2.3%	0.2	(0.0)	(0.0)	(0.0)	(0.0)
Total	100.0%	12.3	100.0%	13.3	0.5	0.5	0.2	1.2

\*Portfolio allocation utilizes beginning-of-the period weights; Median allocation utilizes average market values over the trailing four quarters.

- During the most recent quarter, the Total Retirement Portfolio marginally outperformed the Median Public Fund. Selection within Domestic Equity and a relative underweight to Alternative Investments were the largest contributors to relative performance. Selection within International Equity and Alternative Investments, along with weighting to Covered Calls, were the primary detractors from relative performance.
- During the trailing 12-month period, the Total Retirement Portfolio outperformed the Median Public Fund. The Domestic and International Equity classes, in addition to a relative underweight to Alternative Investments, were significant contributors to the relative outperformance. Weighting to Covered Calls and Fixed Income, along with selection within Alternative Investments, detracted from relative performance over the period.

<sup>1</sup> Mellon Total Funds Public Universe. For the Median Public Fund: Alternative Investments include allocations to Private Equity, Hedge Funds, and other investments; for WPERP, the asset class includes Private Equity and Real Return.

## WPERP RETIREMENT PLAN STRATEGIC CLASS PERFORMANCE

The **Domestic Equity** portfolio outperformed its policy benchmark during the quarter by 1.5% with a 7.9% return. Over the latest 1-year period, the portfolio outperformed its policy benchmark by 2.8% with a 24.4% return. Outperformance over the latest quarter and 1-year period was effectively due to strong returns by the Plan's six active domestic equity managers. Over the trailing 3-year period, the portfolio bested its benchmark by 30 basis points. Over the latest 5-year period, the portfolio trailed its benchmark by (10) basis points.

The **International Equity** portfolio posted an 8.8% quarterly return, underperforming its policy benchmark by (1.6%). All four of the Plan's active managers trailed their respective benchmarks over the quarter. Over the latest 1-year period, the portfolio bested its policy benchmark by 2.8%. The portfolio continued to be restructured during this period, and all three active managers with applicable track records outperformed their respective benchmarks. The portfolio outperformed its benchmark over the latest 3-year period by 10 basis points, but underperformed by (40) basis points over the trailing 5-year period.

The **Fixed Income** portfolio outperformed its policy benchmark across all trailing time periods. Both of the Plan's core fixed income managers, as well as one of the Plan's high yield managers, outperformed their benchmarks across all longer time periods. The Plan's other high yield manager underperformed its benchmark across all time periods, due in large part to its more conservative holdings relative to its benchmark.

The **Covered Calls** portfolio produced its fifth full quarter of performance, performing in-line with expectations for the most recent quarter, and outperforming its benchmark over the trailing 1-year period, due to active rebalancing of the call option portfolio within the non-replication account.

### Periods ending September 30, 2013

Asset Class	Quarter	1 Year	3 Year	5 Year
Total Retirement	5.0	13.3	9.7	8.0
<i>Policy Benchmark<sup>1</sup></i>	<i>4.9</i>	<i>12.1</i>	<i>9.8</i>	<i>7.9</i>
Domestic Equity	7.9	24.4	17.1	10.5
<i>Russell 3000 (blend)<sup>3</sup></i>	<i>6.4</i>	<i>21.6</i>	<i>16.8</i>	<i>10.6</i>
International Equity	8.8	19.3	6.1	6.4
<i>MSCI ACWI ex U.S. IMI ND (blend)<sup>4</sup></i>	<i>10.4</i>	<i>16.5</i>	<i>6.0</i>	<i>6.8</i>
Fixed Income	0.9	-0.1	4.6	7.2
<i>BC Universal</i>	<i>0.7</i>	<i>-1.0</i>	<i>3.4</i>	<i>5.9</i>
Covered Calls	1.1	4.2	---	---
<i>CBOE BXM</i>	<i>0.8</i>	<i>3.1</i>	<i>---</i>	<i>---</i>
Real Return <sup>2</sup>	-5.7	-0.8	4.2	2.1
<i>Tbill + 3%<sup>2</sup></i>	<i>0.7</i>	<i>3.1</i>	<i>3.1</i>	<i>3.2</i>
Private Equity <sup>2</sup>	3.6	12.4	15.0	8.7
<i>Russell 3000 + 3% (PE blend)<sup>2,5</sup></i>	<i>3.4</i>	<i>25.1</i>	<i>18.7</i>	<i>9.1</i>
Real Estate <sup>2</sup>	4.1	17.1	18.9	1.1
<i>NCREIF<sup>2</sup></i>	<i>2.9</i>	<i>10.7</i>	<i>13.1</i>	<i>2.8</i>
Cash	0.0	0.2	0.3	0.3
<i>Citigroup T-bills</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>

<sup>1</sup> See Appendix for a description of the Retirement Plan policy benchmark.

<sup>2</sup> Returns are lagged one quarter.

<sup>3</sup> The policy benchmark for the Domestic Equity asset class is S&P 500 thru 3/31/03, and Russell 3000 from 4/1/03 to the present.

<sup>4</sup> The policy benchmark for the International Equity asset class is MSCI ACWI ex US thru 12/31/08, and MSCI ACWI ex US IMI ND from 1/1/09 to the present.

<sup>5</sup> The policy benchmark for the Private Equity asset class is a blended benchmark composed of Cambridge US Private Equity Index and the Cambridge US Venture Capital Index thru 9/30/11, and Russell 3000 + 3% to present.

# Quarterly Report

Q3-13

## WPERP RETIREMENT PLAN MANAGER PERFORMANCE

### Domestic Equity – Periods ending September 30, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	916,553	Large Cap Core	6.0	21.0	16.7	10.6	7.9	8/2003
<i>Russell 1000 Index</i>	---	---	<i>6.0</i>	<i>20.9</i>	<i>16.6</i>	<i>10.5</i>	<i>7.8</i>	---
MFS	475,280	Large Cap Value	4.9	24.0	16.7	9.6	8.4	2/2004
<i>Russell 1000 Value Index</i>	---	---	<i>3.9</i>	<i>22.3</i>	<i>16.2</i>	<i>8.9</i>	<i>6.4</i>	---
T. Rowe Price	476,483	Large Cap Value	4.8	25.3	17.4	10.5	8.1	9/2004
<i>Russell 1000 Value Index</i>	---	---	<i>3.9</i>	<i>22.3</i>	<i>16.2</i>	<i>8.9</i>	<i>6.7</i>	---
Fred Alger	497,190	Large Cap Growth	10.8	21.4	15.7	11.4	7.9	2/2004
<i>Russell 1000 Growth Index</i>	---	---	<i>8.1</i>	<i>19.3</i>	<i>16.9</i>	<i>12.1</i>	<i>6.8</i>	---
T. Rowe Price	509,028	Large Cap Growth	13.0	28.0	18.8	---	15.0	4/2010
<i>Russell 1000 Growth Index</i>	---	---	<i>8.1</i>	<i>19.3</i>	<i>16.9</i>	---	<i>14.3</i>	---
Earnest Partners	126,560	Small Cap Value	8.8	32.5	19.0	11.0	7.8	11/2004
<i>Russell 2000 Value Index</i>	---	---	<i>7.6</i>	<i>27.0</i>	<i>16.6</i>	<i>9.1</i>	<i>6.5</i>	---
Frontier	129,396	Small Cap Growth	12.7	36.6	18.8	---	15.3	4/2010
<i>Russell 2000 Growth Index</i>	---	---	<i>12.8</i>	<i>33.1</i>	<i>20.0</i>	---	<i>16.7</i>	---

\* Performance is calculated based on the first full month of performance since funding.

\*\* Inception date reflects the month when portfolio received initial funding.

### Latest Quarter

During the third quarter of 2013, six of WPERP's seven reporting domestic equity managers matched or outperformed their respective benchmarks.

**BlackRock**, WPERP's passive large cap core manager, matched the Russell 1000 Index with a 6.0% quarterly return. **MFS**, one of the Plan's two active large cap value managers, generated a 4.9% quarterly return, besting the Russell 1000 Value Index return by 1.0%. Selection within Financials and Industrials contributed to the relative outperformance. **T. Rowe Price LCV**, the Plan's other active large cap value manager, outperformed the Russell 1000 Value Index by 90 basis points, returning 4.8%. **Fred Alger**, one of the Plan's two active large cap growth managers, completed the quarter with a 10.8% return, outperforming the Russell 1000 Growth Index by 2.7%. Selection within Information Technology, Consumer Staples, and Health Care aided relative performance. **T. Rowe Price LCG**, the Plan's other active large cap growth manager, posted a quarterly return of 13.0% and outperformed the Russell 1000 Growth Index by 4.9%. Selection within Consumer Discretionary, Health Care, and Information Technology added to relative performance. **Earnest Partners**, WPERP's active small cap value manager, ended the quarter with an 8.8% return, outperforming the Russell 2000 Value Index by 1.2%. Selection within Health Care, Utilities, and Industrials contributed to the outperformance. **Frontier**, the Plan's active small cap growth manager, posted a quarterly return of 12.7%, lagging the Russell 2000 Growth Index by (10) basis points.

## Latest Year

During the latest 1-year period, **BlackRock** slightly outperformed its benchmark by 10 basis points with a return of 21.0%. **MFS** posted a 24.0% return and bested its benchmark by 1.7%. Selection within Basic Materials, Industrials, and Financials provided the bulk of the outperformance. **T. Rowe Price LCV** generated a 25.3% return, outperforming its benchmark by 3.0%. Selection within Financials, Materials, and Industrials, along with incremental weighting decisions across the majority of sectors, largely aided relative performance. **Fred Alger** posted a 21.4% return, besting its benchmark by 2.1%. Information Technology, Consumer Staples, and Energy benefitted the portfolio on a relative basis. **T. Rowe Price LCG** posted a 28.0% return and outperformed the Russell 1000 Growth Index by 8.7%. Selection within Consumer Discretionary, Health Care, Information Technology, and Financials contributed to the relative outperformance. **Earnest Partners** completed the latest 1-year period with a 32.5% return, outperforming its benchmark by 5.5%. Security selection within Energy, Industrials, and Health Care aided relative performance. **Frontier** posted a 36.6% return, outperforming the Russell 2000 Growth Index by 3.5%. Selection within Health Care and Information Technology contributed to relative performance.

## Latest Three Years

During the latest 3-year period, **BlackRock** bested its benchmark by 10 basis points with a return of 16.7%. **MFS** outperformed its benchmark by 50 basis points with a return of 16.7% per annum during the period. **T. Rowe Price LCV** outperformed its benchmark by 1.2% with a 17.4% return. Selection and weighting decisions equally aided the portfolio over the period. **Fred Alger** posted a 15.7% return, underperforming its benchmark by (1.2%). The Energy, Consumer Discretionary, and Information Technology sectors detracted from relative performance. **T. Rowe Price LCG** outperformed its benchmark by 1.9% with a return of 18.8%. Selection within Health Care, Consumer Discretionary, Materials, Industrials, and Telecommunication Services contributed to the relative outperformance. **Earnest Partners'** latest 3-year return of 19.0% bested its benchmark by 2.4%. Selection within Energy, Industrials, Health Care, and Telecommunication Services aided relative outperformance.

## Latest Five Years

During the latest 5-year period, **BlackRock** bested its benchmark by 10 basis points with a return of 10.6%. **MFS** finished the period surpassing the Russell 1000 Value Index return by 70 basis points with a 9.6% return. **T. Rowe Price LCV** outperformed its benchmark by 1.6% with a 10.5% return, due primarily to an underweight allocation and stock selection in Financials, as well as stock selection within Industrials and Health Care, and an overweight to Consumer Discretionary. **Fred Alger** posted an 11.4% return, trailing its benchmark by (70) basis points. **Earnest Partners** generated an 11.0% return, besting its benchmark by 1.9%. Outperformance can be largely attributed to active decisions within the Energy, Telecommunication Services, and Industrials sectors.

## International Equity – Periods ending September 30, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	518,193	Developed Markets	11.7	22.2	---	---	22.2	9/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	<i>11.7</i>	<i>21.8</i>	---	---	<i>21.8</i>	---
Invesco <sup>^</sup>	22	Developed Markets	---	---	---	---	---	6/2004
Interim Account <sup>^</sup>	63	Developed Markets	---	---	---	---	---	2/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	---	---	---	---	---	---
MFS	508,791	Developed Markets	9.0	26.9	---	---	28.6	7/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	<i>11.7</i>	<i>21.8</i>	---	---	<i>24.7</i>	---
The Boston Company <sup>^</sup>	66	Developed Markets	---	---	---	---	---	3/2005
<i>MSCI World ex US IMI ND Index</i>	---	---	---	---	---	---	---	---
Pyramis	518,003	Developed Markets	11.4	25.4	10.4	7.6	7.0	11/2004
<i>MSCI World ex US IMI ND Index (blend – Pyramis)<sup>3</sup></i>	---	---	<i>11.7</i>	<i>21.8</i>	<i>8.1</i>	<i>7.0</i>	<i>5.9</i>	---
L.A. Capital	218,482	Emerging Markets	4.8	3.2	---	---	3.2	9/2012
<i>MSCI EMF IMI ND Index</i>	---	---	<i>5.5</i>	<i>1.4</i>	---	---	<i>1.4</i>	---
Vontobel	219,614	Emerging Markets	-1.2	---	---	---	-5.6	12/2012
Interim Account <sup>^</sup>	<1	Emerging Markets	---	---	---	---	---	2/2012
<i>MSCI EMF IMI ND Index</i>	---	---	<i>5.5</i>	---	---	---	<i>-3.9</i>	---

\* Performance is calculated based on the first full month of performance since funding.

\*\* Inception date reflects the month when portfolio received initial funding.

<sup>^</sup> In process of liquidation/transfer.

As a result of the 2011 International Equity Structure Review, significant changes have been implemented with regard to WPERP's International Equity portfolio; the emerging markets portion has been brought to a market weighting, Invesco has been replaced with a passive manager (BlackRock), MFS has replaced The Boston Company for developed markets, L.A. Capital has replaced The Boston Company for emerging markets, and T. Rowe Price has been terminated and replaced with Vontobel for emerging markets. Interim accounts were utilized to facilitate the transitions, and they are now all in the final stages of liquidation.

### Latest Quarter

During the third quarter of 2013, all four of WPERP's reporting active international equity managers underperformed their respective benchmarks.

**BlackRock**, the Plan's passive developed international manager, matched the benchmark with an 11.7% quarterly return. **MFS**, the Plan's active international relative value manager, underperformed the MSCI World ex US IMI ND Index by (2.7%) with a 9.0% quarterly return. An overweight

<sup>3</sup> Pyramis' benchmark is MSCI EAFE ND thru 12/31/08, and MSCI World ex US IMI ND from 1/1/09 to the present.

position to Consumer Staples, along with stock selection in Consumer Staples and Telecommunication Services, detracted from relative performance. **Pyramis**, the Plan's active international growth manager, trailed the MSCI World ex US IMI ND Index (blend) by (30) basis points, returning 11.4% for the quarter. **L.A. Capital**, one of the Plan's active emerging markets managers, underperformed the MSCI Emerging Markets IMI ND Index by (70) basis points with a 4.8% quarterly return. **Vontobel**, the Plan's other active emerging markets manager, trailed the MSCI Emerging Markets IMI ND Index by (6.7%) with a minus (1.2%) quarterly return. Stock selection within Financials, as well as an overweight position to Consumer Staples, largely detracted from relative performance over the quarter.

## Latest Year

During the latest 1-year period, **BlackRock** slightly outperformed its benchmark by 40 basis points with a return of 22.2%. **MFS** bested its benchmark by 5.1%, returning 26.9% for the period. Active weighting and stock selection within Materials and Information Technology aided relative performance. **Pyramis** completed the period with a 25.4% return, outperforming its benchmark by 3.6%. The Consumer Discretionary, Materials, and Financials sectors contributed to the relative outperformance. **L.A. Capital** outperformed its benchmark by 1.8%, generating a 3.2% return for the period. Positions within higher quality names, along with a small cap tilt, contributed to the relative outperformance.

## Latest Three Years

**Pyramis** bested its benchmark by 2.3%, returning 10.4% for the period. The regional portfolios in Europe, Japan, and Canada aided the relative outperformance.

## Latest Five Years

**Pyramis** returned 7.6%, outperforming its benchmark by 60 basis points.



## Fixed Income – Periods ending September 30, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
JP Morgan	869,036	Core	0.7	-1.0	3.8	---	4.8	4/2010
<i>BC Aggregate Index</i>	---	---	<i>0.6</i>	<i>-1.7</i>	<i>2.9</i>	---	<i>4.0</i>	---
Wells	873,394	Core	0.8	-1.2	4.1	7.3	6.0	7/2004
<i>BC Aggregate Index</i>	---	---	<i>0.6</i>	<i>-1.7</i>	<i>2.9</i>	<i>5.4</i>	<i>4.9</i>	---
Loomis	96,956	High Yield	2.0	8.6	10.6	14.7	9.6	3/2005
<i>BC High Yield Index</i>	---	---	<i>2.3</i>	<i>7.1</i>	<i>9.2</i>	<i>13.5</i>	<i>8.6</i>	---
Wells High Yield	96,398	High Yield	1.6	5.0	7.8	11.4	7.5	11/2004
<i>BC High Yield Index</i>	---	---	<i>2.3</i>	<i>7.1</i>	<i>9.2</i>	<i>13.5</i>	<i>8.3</i>	---

\* Performance is calculated based on the first full month of performance since funding.

\*\* Inception date reflects the month when portfolio received initial funding.

### Latest Quarter

During the third quarter of 2013, two of WPERP's four reporting fixed income managers outperformed their respective benchmarks.

**JP Morgan**, one of the Plan's two core fixed income managers, outperformed the BC Aggregate Index by 10 basis points with a 0.7% quarterly return. **Wells**, the Plan's other core fixed income manager, bested the BC Aggregate Index by 20 basis points with a 0.8% quarterly return. **Loomis Sayles**, one of the Plan's two high yield managers, trailed the BC High Yield Index by (30) basis points with a 2.0% quarterly return. The Plan's other high yield manager, **Wells High Yield**, finished the quarter underperforming the BC High Yield Index by (70) basis points with a 1.6% quarterly return.

### Latest Year

**JP Morgan** finished the latest 1-year period with a minus (1.0%) return, outperforming the benchmark by 70 basis points. **Wells** generated a minus (1.2%) return and outperformed its benchmark by 50 basis points. **Loomis Sayles** generated an 8.6% return and outperformed its benchmark by 1.5%. The portfolio's relative outperformance was largely driven by security selection, as higher yielding, higher beta securities tended to perform best. **Wells High Yield** finished the period returning 7.8%, underperforming its benchmark by (1.4%). The portfolio's relative underperformance was mostly driven by its more conservative holdings than the broad market, as well as from security selection.

### Latest Three Years

**JP Morgan** finished the latest 3-year period with a 3.8% return, outperforming the benchmark by 90 basis points. **Wells** finished the latest 3-year period posting a 4.1% return and outperformed its benchmark by 1.2%, due primarily to security selection and sector positioning. **Loomis Sayles** generated a 10.6% return and outperformed its benchmark by 1.4%. Strong security selection, and specifically a lower credit quality bias, aided relative performance during the period. **Wells High Yield** posted a 7.8% return, underperforming its benchmark by (1.4%). The portfolio's relative underperformance was largely driven by its more conservative holdings than the broad market.

## Latest Five Years

**Wells** finished the latest 5-year period with a 7.3% return and outperformed its benchmark by 1.9%, driven mainly by security selection. **Loomis Sayles** completed the period with a 14.7% return, outperforming its benchmark by 1.2%. Strong security selection, and specifically a lower credit quality bias, contributed to the relative outperformance. **Wells** High Yield posted an 11.4% return, underperforming its benchmark by (2.1%). The portfolio's relative underperformance was largely driven by its more conservative holdings than the broad market.

## Covered Calls – Periods ending September 30, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Gateway (replication)	493,610	Covered Calls	0.7	2.9	---	---	7.2	5/2012
Gateway (non-replication)	125,330	Covered Calls	2.5	9.4	---	---	12.4	5/2012
<i>CBOE BXM Index</i>	---	---	<i>0.8</i>	<i>3.1</i>	---	---	<i>7.4</i>	---

\* Performance is calculated based on the first full month of performance since funding.

\*\* Inception date reflects the month when portfolio received initial funding.

## Latest Quarter

During the third quarter of 2013, the Covered Calls manager, Gateway, performed in-line with expectations. The replication portfolio marginally trailed the benchmark return, while the active portfolio outperformed by 1.7%, due primarily to actively rebalancing the option portion to take advantage of higher levels of market volatility.

## Latest Year

Similarly, over the latest 1-year period, Gateway performed in-line with expectations. The replication portfolio marginally lagged the benchmark return, while the active portfolio outperformed by 6.3%, due primarily to actively rebalancing the option portion to take advantage of higher levels of market volatility, most notably in May and August.

## Real Return – Periods ending September 30, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception**	Inception Date***
Aetos Capital* (net of fees)	39,958	Hedge FOFs	1.6	10.4	6.0	3.4	3.3	2/2007
<i>Tbills + 3 %*</i>	---	---	0.7	3.1	3.1	3.2	4.0	---
<i>HFRI FOF Diversified Index*</i>	---	<i>Hedge FOFs</i>	0.1	7.2	3.1	-0.4	0.5	---
WAMCO* (gross of fees)	421,462	GILS	-6.3	-1.8	4.0	---	4.1	4/2010
<i>BC WGILB Index* ****</i>	---	---	-6.3	-2.0	4.5	---	4.4	---

\* Returns are lagged one quarter.

\*\* Performance is calculated based on the first full month of performance since funding.

\*\*\* Inception date reflects the month when portfolio received initial funding.

\*\*\*\* Barclays Capital World Govt Inflation-Linked All Maturities USA Hedged Bond Index (series L).

The WPERP Board recently selected a Commodities manager (Invesco), as well as a Timber manager (Hancock). These two managers will be added to the Real Return class. As of quarter-end, Invesco has been funded and will appear in the fourth quarter performance report. Funding for Hancock is anticipated to occur in the near-term. Additionally, the Board is in the process of funding the newly selected Hedge Fund-of-Funds managers (Morgan Stanley and GAM). Aetos has been terminated and will be replaced by Morgan Stanley.

### Latest Quarter

**Aetos** posted a 1.6% return for the quarter, outperforming the Tbill+3% by 90 basis points, as well as the HFRI FOF Diversified Index by 1.5%. **WAMCO**, the Plan's GILS (Global Inflation-Linked Securities) manager, posted a quarterly return of minus (6.3%), matching the BC WGILB Index.

### Latest Year

Over the latest 1-year period, **Aetos** returned 10.4%, outperforming the Tbill+3% by 7.3%, as well as the HFRI FOF Diversified Index by 3.2%. **WAMCO** generated a minus (1.8%) return, besting its benchmark by 20 basis points.

### Latest Three Years

**Aetos** finished the latest 3-year period with a 6.0% return, outperforming both the Tbill+3% and HFRI FOF Diversified Index by 2.9%. **WAMCO** generated a 4.0% return for the period, lagging its benchmark by (50) basis points.

### Latest Five Years

**Aetos** finished the latest 5-year period with a 3.4% return, outperforming the Tbill+3% by 20 basis points, and outperforming the HFRI FOF Diversified Index by 3.8%.

## Private Equity and Real Estate - Periods ending September 30, 2013

Asset Class	Mkt Value (\$000)	Quarter	1 YR	3 YR	5 YR	Since Inception***	Inception Date****
Private Equity*	143,663	3.6	12.4	15.0	8.7	9.5	6/2006
<i>Russell 3000 + 3% (PE blend)***</i>	---	<i>3.4</i>	<i>25.1</i>	<i>18.7</i>	<i>9.1</i>	<i>11.1</i>	---
Real Estate*	250,654	4.1	17.1	18.9	1.1	3.7	1/2007
<i>NCREIF*</i>	---	<i>2.9</i>	<i>10.7</i>	<i>13.1</i>	<i>2.8</i>	<i>4.8</i>	---

\* Returns are lagged one quarter and net of fees.

\*\* The policy benchmark for the Private Equity asset class is a blended benchmark composed of Cambridge US Private Equity Index and the Cambridge US Venture Capital Index thru 9/30/11, and Russell 3000 + 3% to present.

\*\*\* Performance is calculated based on the first full period of performance since funding.

\*\*\*\* Inception date reflects the month when portfolio received initial funding.

The **Private Equity** portfolio consists of twelve investments including **Lexington VI, Lexington VII, Landmark XIII, Landmark XIV, Capital Dynamics** (previously HRJ Capital), **Fisher Lynch, Oaktree V, Energy Cap, Audax Mezz, Vista Equity IV, Ares IV, and Energy Cap IX**. The Private Equity portfolio outperformed the Russell 3000 + 3% (PE Blend) over the previous quarter, but trailed the benchmark over the longer time periods, due in large part to strong performance within the public markets.

The **Real Estate** portfolio currently consists of fifteen investments including **Prisa, Prisa II, JP Morgan Strategic, CB Richard Ellis, Mesa West, Lone Star II, Lone Star VII, Invesco, DRA, AG Core, PCCP, Blackstone, ARS VI, Bristol II, and DFA**. The portfolio outperformed the NCREIF Index during the previous quarter and trailing 1- and 3-year periods, but underperformed the benchmark over the latest 5-year period.

# Quarterly Report

Q3-13

## WPERP RETIREMENT PLAN MANAGERS ON WATCH

### Return vs. Benchmark Since Watch

As of September 30, 2013

Portfolio	Style Group	Concern	Begin Watch Status	Last Reviewed	Performance Since Begin Watch Status*					
					First Month	First 3 Months	First 6 Months	First 9 Months	First 12 Months	Since Placed on Watch
Aetos	Hedge FOFs	Performance	12/1/2011	Terminated	Aetos has been terminated and will be replaced by Morgan Stanley					
<i>Tbills + 3 %<sup>^</sup></i>					---	---	---	---	---	---
Aetos vs. Target	<i>Tbills + 3 %</i>				---	---	---	---	---	---
Fred Alger	Large Cap Growth	Performance	6/1/2012	3/27/2013	2.3	6.3	6.8	13.2	21.7	23.0
Russell 1000 Growth					2.7	6.9	7.6	13.6	22.6	21.7
Fred Alger vs. Target	Russell 1000 Growth				(0.4)	(0.6)	(0.8)	(0.4)	(0.9)	1.3
Frontier	Small Cap Growth	Performance	6/1/2012	3/27/2013	2.7	4.1	7.5	18.4	29.5	32.1
Russell 2000 Growth					5.2	7.0	7.6	19.3	30.9	33.3
Frontier vs. Target	Russell 2000 Growth				(2.5)	(2.9)	(0.1)	(0.9)	(1.4)	(1.2)
MFS LCV	Large Cap Value	Performance	9/1/2012	5/15/2013	3.0	2.5	12.3	22.9	23.8	25.4
Russell 1000 Value					3.2	2.6	13.2	22.5	23.1	23.9
MFS vs. Target	Russell 1000 Value				(0.2)	(0.1)	(0.9)	0.4	0.7	1.5
Gateway - Replication	Covered Calls	Organizational	4/1/2013	3/27/2013	1.6	0.1	0.8	---	---	0.8
CBOE BXM Index					1.5	0.0	0.9	---	---	0.9
Gateway vs. Target	CBOE BXM Index				0.1	0.1	(0.1)	---	---	(0.1)
Gateway – Non-rep	Covered Calls	Organizational	4/1/2013	3/27/2013	1.1	1.5	4.1	---	---	4.1
CBOE BXM Index					1.5	0.0	0.9	---	---	0.9
Gateway vs. Target	CBOE BXM Index				(0.4)	1.5	3.2	---	---	3.2
Pyramis	Developed International	Organizational	5/1/2013	5/15/2013	(1.9)	0.3	---	---	---	6.0
MSCI World ex US IMI					(2.3)	(0.8)	---	---	---	5.1
Pyramis vs. Target	MSCI World ex US IMI				0.4	1.1	---	---	---	0.9

\*Performance data provided by Mellon and LDZ.

Periods marked as '---' do not indicate that returns are not available for these periods; only that the manager in question has not been on watch status for these periods.

## Managers on Watch

**Aetos** was placed on watch status beginning 12/1/2011 due to long-term performance, and ultimately terminated during the HFOF manager search process.

**Fred Alger** was placed on watch status beginning 6/1/2012 due to short-term performance. Watch status was extended at the 3/27/2013 Board meeting. Subsequent to quarter-end, PCA has recommended they be removed from watch status.

**Frontier** was placed on watch status beginning 6/1/2012 due to short-term performance. Watch status was extended at the 3/27/2013 Board meeting. Subsequent to quarter-end, PCA has recommended the WPERP begin a formal RFP process to review the mandate.

**MFS LCV** was placed on watch status beginning 9/1/2012 due to medium-term performance. Watch status was extended at the 5/15/2013 Board meeting.

**Gateway** was placed on watch status beginning 4/1/2013 due to organizational concerns.

**Pyramis** was placed on watch status beginning 5/1/2013 due to organizational concerns.

---

## Managers Removed/Terminated from Watch Status (Latest 1-year period)

None

## WPERP Retirement Plan Estimated Performance Results Net and Gross of Fees Comparison For Quarter Ending 9/30/2013

Asset Class	Manager	Market Value <sup>2</sup>	Performance, % <sup>2</sup>		Difference	
			Net	Gross	Percentage	Market Value
Domestic Equity						
Large Core Passive	BlackRock	916,553,486	5.99%	6.00%	-0.01%	-91,655
Large Value	MFS	475,280,138	4.82%	4.90%	-0.08%	-375,471
Large Value	T. Rowe Price	476,482,968	4.71%	4.80%	-0.09%	-416,923
Large Growth	Fred Alger	497,190,493	10.72%	10.80%	-0.08%	-410,182
Large Growth	T. Rowe Price	509,028,319	12.91%	13.00%	-0.09%	-445,400
Small Value	Earnest Partners	126,560,469	8.64%	8.80%	-0.16%	-202,497
Small Growth	Frontier	129,395,769	12.45%	12.70%	-0.25%	-323,489
	Transition	848	---	---	---	---
		\$3,130,492,490				
International Equity						
Developed Passive	BlackRock	518,192,525	11.69%	11.70%	-0.01%	-51,819
Developed Markets	MFS	508,791,007	8.90%	9.00%	-0.10%	-526,599
Developed Markets	Pyramis	518,003,230	11.32%	11.40%	-0.09%	-440,303
Emerging Markets	L.A. Capital	218,481,916	4.61%	4.80%	-0.19%	-409,654
Emerging Markets	Vontobel	219,613,632	-1.43%	-1.20%	-0.23%	-494,131
	Interim / residual	279,157	---	---	---	---
		\$1,983,361,467				
Domestic Fixed Income						
Core	JP Morgan	869,036,394	0.68%	0.70%	-0.03%	-217,259
Core	Wells	873,394,395	0.77%	0.80%	-0.03%	-262,018
High Yield	Loomis Sayles	96,956,363	1.88%	2.00%	-0.13%	-121,195
High Yield	Wells	96,398,179	1.49%	1.60%	-0.12%	-110,858
		\$1,935,785,331				
Covered Calls						
Replication	Gateway	493,609,549	0.65%	0.70%	-0.05%	-246,805
Non-replication	Gateway	125,330,363	2.40%	2.50%	-0.10%	-125,330
		\$618,939,912				
Real Return <sup>3</sup>						
	Aetos	39,957,682	1.60%	1.79%	-0.19%	-75,061
	WAMCO	421,461,639	-6.35%	-6.30%	-0.05%	-210,731
		\$461,419,321				
Private Equity <sup>3</sup>						
	Aggregate*	143,663,089	3.60%	3.91%	-0.31%	-446,339
		\$143,663,089				
Real Estate <sup>3</sup>						
	Aggregate	250,654,413	4.10%	4.33%	-0.23%	-570,000
		\$250,654,413				
Cash						
		75,152,916	---	0.00%	---	---
TOTAL PORTFOLIO <sup>1</sup>						
		\$8,669,435,417	4.92%	5.00%	-0.08%	-\$6,573,720
Total Fund Policy						
			---	4.90%	---	---

<sup>1</sup> Total portfolio market value includes a balance of \$73.4 million in transition accounts and a negative balance of (\$3.3) million in securities lending.

<sup>2</sup> Returns and market values calculated using data from Mellon and LDZ.

<sup>3</sup> Hedge FoFs, Private Equity, and Real Estate asset classes report net-of-fee returns.

\* Numerous partnerships are still in the investment period, and thus the true management fees are based on committed capital.

## WPERP DISABILITY PLAN REVIEW

The WPERP Disability Portfolio ended the third quarter of 2013 with an aggregate value of approximately \$37.5 million.

### Portfolio Performance Overview

Periods ending September 30, 2013, Gross of Fees

Asset Class	Quarter	1 Year	3 Year	5 Year	Since Inception**	Inception Date***
Total Portfolio	0.8	-1.1	4.2	7.0	---	---
<i>Policy Benchmark*</i>	<i>0.5</i>	<i>-1.7</i>	<i>2.7</i>	<i>5.1</i>	<i>---</i>	<i>---</i>
Wells	0.8	-1.2	4.2	7.5	6.0	7/2004
<i>BC Aggregate</i>	<i>0.6</i>	<i>-1.7</i>	<i>2.9</i>	<i>5.4</i>	<i>4.9</i>	<i>---</i>

\* Policy benchmark consists of 95% BC Aggregate Bond Index and 5% Citigroup T-Bill.

\*\* Performance is calculated based on the first full month of performance since funding.

\*\*\* Inception date reflects the month when portfolio received initial funding.

**3Q 2013** – During the quarter, the Disability Plan posted a 0.8% return and outperformed its policy benchmark by 30 basis points. The benchmark portfolio consists of passively managed asset class portfolios held at the Disability Plan's policy weightings.

**Longer Term** – Over the latest 1-, 3-, and 5-year periods, the Disability Plan outperformed its policy benchmark by 0.6%, 1.5%, and 1.9%, respectively.

### Portfolio Strategic Allocation (as of 9/30/13)

Segment	Actual \$(000)	Actual %	Target %	Variance
Total Portfolio	\$37,519	100	100	---
Fixed Income	37,000	99	95	4
Wells	37,000	99	95	4
Cash	519	1	5	-4

**Strategic allocation** – The Disability Plan target allocation consists of 95% fixed income investments and 5% cash. At the close of 3Q 2013, there was one fixed income manager, Wells. The total fund was 99% invested in this manager.



## WPERP DEATH PLAN REVIEW

The WPERP Death Portfolio ended the third quarter of 2013 with an aggregate value of approximately \$26.9 million.

### Portfolio Performance Overview

Periods ending September 30, 2013, Gross of Fees

Asset Class	Quarter	1 Year	3 Year	5 Year	Since Inception**	Inception Date***
Total Portfolio	0.8	-1.1	4.1	6.6	---	---
<i>Policy Benchmark*</i>	<i>0.6</i>	<i>-1.7</i>	<i>2.7</i>	<i>5.2</i>	<i>---</i>	<i>---</i>
Wells	0.8	-1.2	4.2	7.5	6.0	7/2004
<i>BC Aggregate</i>	<i>0.6</i>	<i>-1.7</i>	<i>2.9</i>	<i>5.4</i>	<i>4.9</i>	<i>---</i>

\* Policy benchmark consists of 96% BC Aggregate Bond Index and 4% Citigroup T-Bill.

\*\* Performance is calculated based on the first full month of performance since funding.

\*\*\* Inception date reflects the month when portfolio received initial funding.

**3Q 2013** – During the quarter, the Death Plan posted a 0.8% return and outperformed its policy benchmark by 20 basis points. The benchmark portfolio consists of passively managed asset class portfolios held at the Death Plan's policy weightings.

**Longer Term** – Over the latest 1-, 3-, and 5-year periods, the Death Plan outperformed its policy benchmark by 0.6%, 1.4%, and 1.4%, respectively.

### Portfolio Strategic Allocation (as of 9/30/13)

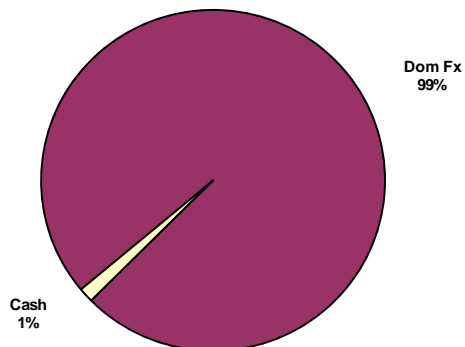
Segment	Actual \$(000)	Actual %	Target %	Variance
Total Portfolio	\$26,946	100	100	---
Fixed Income	26,428	98	96	2
Wells	26,428	98	96	2
Cash	518	2	4	-2

**Strategic allocation** – The Death Benefit Plan target allocation consists of 96% fixed income investments and 4% cash. At the close of 3Q 2013, there was one fixed income manager, Wells. The total fund was 98% invested in this manager.

## Actual Strategic Allocation Comparison – Disability and Death Plans

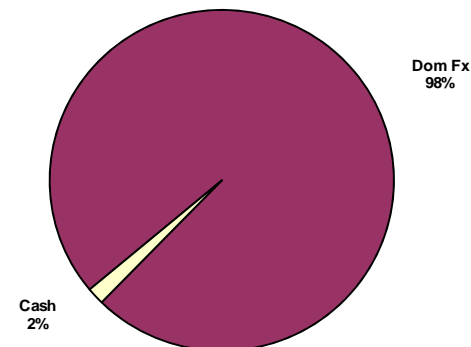
September 30, 2013

Disability

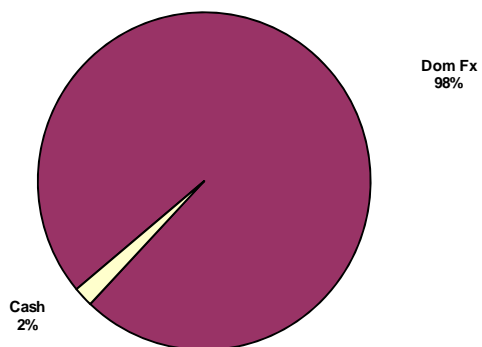


September 30, 2012

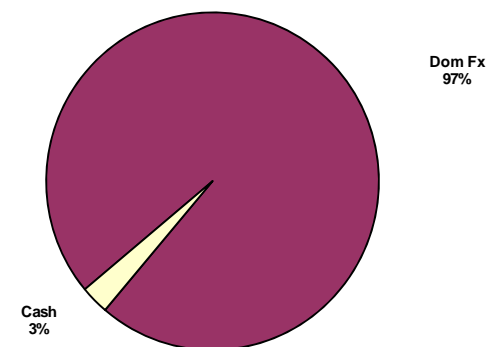
Disability



Death



Death



## HEALTH PLAN REVIEW

The WPERP Health Plan ended the third quarter of 2013 with an aggregate value of approximately \$1.5 billion.

### Portfolio Performance Overview

Periods ending September 30, 2013, Gross of Fees

Asset Class	Quarter	1 Year	3 Year	5 Year	Since Inception*	Inception Date**
Total Health	4.9	13.1	9.8	8.5	5.4	12/2006
<i>Policy Benchmark<sup>1</sup></i>	<i>4.9</i>	<i>11.9</i>	<i>9.5</i>	<i>7.9</i>	<i>4.8</i>	<i>---</i>
Domestic Equity	7.8	24.3	17.2	10.7	5.3	1/2007
<i>Russell 3000 (blend)<sup>2</sup></i>	<i>6.4</i>	<i>21.6</i>	<i>16.8</i>	<i>10.6</i>	<i>5.2</i>	<i>---</i>
International Equity	8.4	18.9	6.3	---	5.5	9/2009
<i>MSCI ACWI ex U.S. IMI ND</i>	<i>10.4</i>	<i>16.5</i>	<i>6.0</i>	<i>---</i>	<i>6.6</i>	<i>---</i>
Fixed Income	0.8	-0.4	4.3	7.4	6.7	1/2007
<i>BC Universal (blend)<sup>3</sup></i>	<i>0.7</i>	<i>-1.0</i>	<i>3.4</i>	<i>5.9</i>	<i>5.5</i>	<i>---</i>
Covered Calls	1.0	4.2	---	---	8.2	5/2012
<i>CBOE BXM</i>	<i>0.8</i>	<i>3.1</i>	<i>---</i>	<i>---</i>	<i>7.4</i>	<i>---</i>
Real Return <sup>4</sup>	-5.4	-0.5	5.2	---	5.2	7/2010
<i>Tbills + 3%<sup>4</sup></i>	<i>0.7</i>	<i>3.1</i>	<i>3.1</i>	<i>---</i>	<i>3.1</i>	<i>---</i>
Private Equity <sup>4</sup>	2.3	12.9	24.7	---	21.3	9/2008
<i>Russell 3000 + 3% (PE blend)<sup>4,5</sup></i>	<i>3.4</i>	<i>25.1</i>	<i>18.7</i>	<i>---</i>	<i>11.3</i>	<i>---</i>
Real Estate <sup>4</sup>	4.7	22.0	20.0	---	11.7	1/2010
<i>NCREIF<sup>4</sup></i>	<i>2.9</i>	<i>10.7</i>	<i>13.1</i>	<i>---</i>	<i>12.4</i>	<i>---</i>
Cash	0.0	0.1	0.2	0.3	1.3	12/2006
<i>Citigroup T-bills</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>1.0</i>	<i>---</i>

\* Performance is calculated based on the first full month of performance since funding.

\*\* Inception date reflects the month when portfolio received initial funding.

The Health Plan Total Portfolio matched its policy benchmark over the latest quarter with a 4.9% return. Over the latest 1-year period, the portfolio bested its policy benchmark by 1.2%, returning 13.1%. Over the latest 3-year period, the portfolio outperformed its policy benchmark by 30 basis points with a 9.8% return. Over the latest 5-year period, the portfolio outperformed its policy benchmark by 60 basis points with an 8.5% return.

<sup>1</sup> See Appendix for a description of the Health Plan policy benchmark.

<sup>2</sup> The policy benchmark for the Domestic Equity asset class is Russell 1000 thru 9/30/09, and Russell 3000 from 10/1/09 to the present.

<sup>3</sup> The policy benchmark for the Fixed Income asset class is BC Aggregate thru 9/30/09, and BC Universal from 10/1/09 to the present.

<sup>4</sup> Returns are lagged one quarter.

<sup>5</sup> The policy benchmark for the Private Equity asset class is a blended benchmark composed of Cambridge US Private Equity Index and the Cambridge US Venture Capital Index thru 9/30/11, and Russell 3000 + 3% to present.

# Quarterly Report

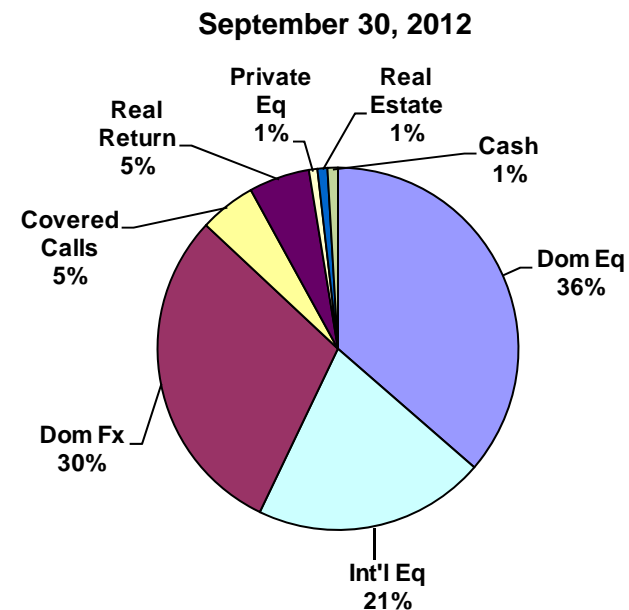
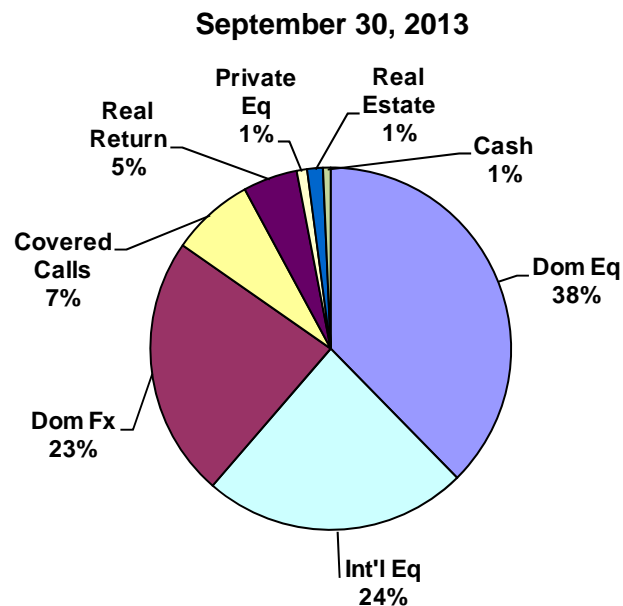
Q3-13

## Portfolio Strategic Allocation (as of 9/30/13)

Segment	Actual (\$MM)	Actual %	Target %	Variance
Health Plan*	1,452	100	100	---
Domestic Equity	537	38	33	5
International Equity	339	24	21	3
Fixed Income	333	23	24	-1
Covered Calls	106	7	5	2
Real Return	69	5	6	-1
Private Equity	13	1	5	-4
Real Estate	20	1	5	-4
Cash	10	1	1	---

\* Includes a balance of \$24.9 million in transition assets and a negative balance of (\$21,469) in securities lending.

As of September 30, 2013, the Total Health Portfolio had a 62% allocation in Equities, 23% in Fixed Income, 7% in Covered Calls, 5% in Real Return, 1% in Private Equity, 1% in Real Estate, and 1% in Cash. During the latest 1-year period, the actual weighting of Fixed Income decreased by (7%), while the actual weightings of Domestic Equity, International Equity, and Covered Calls increased by 2%, 3%, and 2%, respectively. The Real Return, Private Equity, Real Estate, and Cash allocations remained unchanged.



# Quarterly Report

Q3-13

## PERFORMANCE ATTRIBUTION – HEALTH PLAN

### Performance Attribution - 3Q 2013

	Policy		Portfolio		Impact on Return			
	Allocation	Return	Allocation*	Return	Weighting	Selection	Interaction	Total
Domestic Equity	33.0%	6.4	39.1%	7.8	0.1	0.5	0.1	0.6
International Equity	21.0%	10.4	20.9%	8.4	(0.0)	(0.4)	0.0	(0.4)
Fixed Income	24.0%	0.7	26.7%	0.8	(0.1)	0.0	0.0	(0.1)
Covered Calls	5.0%	0.8	4.8%	1.0	0.0	0.0	(0.0)	0.0
Real Return	6.0%	0.7	5.3%	(5.4)	0.0	(0.4)	0.0	(0.3)
Private Equity	5.0%	3.4	0.9%	2.3	0.1	(0.1)	0.0	0.1
Real Estate	5.0%	2.9	1.3%	4.7	0.1	0.1	(0.1)	0.1
Cash	1.0%	0.0	1.0%	0.0	0.0	0.0	0.0	0.0
Total	100.0%	4.9	100.0%	4.9	0.1	(0.3)	0.1	0.0

\*Portfolio allocation utilizes beginning-of-the period market values.

### Performance Attribution - Trailing 12-month

	Policy		Portfolio		Impact on Return			
	Allocation*	Return	Allocation*	Return	Weighting	Selection	Interaction	Total
Domestic Equity	34.5%	21.6	37.8%	24.3	0.3	0.8	0.1	1.2
International Equity	21.0%	16.5	21.8%	18.9	(0.0)	0.4	0.0	0.4
Fixed Income	25.5%	(1.0)	26.7%	(0.4)	(0.4)	0.2	0.0	(0.2)
Covered Calls	5.0%	3.1	5.5%	4.2	0.0	0.1	(0.0)	0.1
Real Return	6.0%	3.1	5.2%	(0.5)	0.1	(0.2)	0.0	(0.1)
Private Equity	3.5%	25.1	0.9%	12.9	(0.3)	(0.5)	0.4	(0.4)
Real Estate	3.5%	10.7	1.3%	22.0	0.1	0.4	(0.2)	0.2
Cash	1.0%	0.1	0.9%	0.1	0.0	0.0	0.0	0.0
Total	100.0%	11.9	100.0%	13.1	(0.3)	1.1	0.3	1.1

\*Policy allocation utilizes average target allocations over the trailing four quarters; Portfolio allocation utilizes average market values over the trailing four quarters.

- During the most recent quarter, the Total Health Portfolio matched its policy benchmark. Selection within Domestic Equity was the largest contributor to relative performance, while selection within International Equity and Real Return was the primary detractor from relative performance.
- During the trailing 12-month period, the Total Health Portfolio outperformed its policy benchmark. Selection throughout the portfolio, excluding Private Equity and Real Return, effectively resulted in the relative outperformance. The Private Equity class (weighting and selection), along with weighting to Fixed Income and selection in Real Return, were the primary detractors from the relative performance.

# Quarterly Report

Q3-13

## WPERP HEALTH PLAN MANAGER PERFORMANCE

### Domestic Equity - Periods ending September 30, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	158,164	Large Cap Core	6.0	20.9	16.8	10.7	5.0	1/2007
<i>Russell 1000 Index</i>	---	---	<i>6.0</i>	<i>20.9</i>	<i>16.6</i>	<i>10.5</i>	<i>4.9</i>	---
MFS	81,343	Large Cap Value	4.9	24.1	16.6	---	14.3	9/2009
<i>Russell 1000 Value Index</i>	---	---	<i>3.9</i>	<i>22.3</i>	<i>16.2</i>	---	<i>14.4</i>	---
T. Rowe Price	81,429	Large Cap Value	4.8	25.2	17.3	---	15.2	9/2009
<i>Russell 1000 Value Index</i>	---	---	<i>3.9</i>	<i>22.3</i>	<i>16.2</i>	---	<i>14.4</i>	---
Fred Alger	85,138	Large Cap Growth	10.8	21.4	15.7	---	14.8	9/2009
<i>Russell 1000 Growth Index</i>	---	---	<i>8.1</i>	<i>19.3</i>	<i>16.9</i>	---	<i>15.9</i>	---
T. Rowe Price	87,189	Large Cap Growth	12.9	28.0	18.7	---	15.0	4/2010
<i>Russell 1000 Growth Index</i>	---	---	<i>8.1</i>	<i>19.3</i>	<i>16.9</i>	---	<i>14.3</i>	---
Earnest Partners	21,555	Small Cap Value	8.8	32.4	18.4	---	17.2	9/2009
<i>Russell 2000 Value Index</i>	---	---	<i>7.6</i>	<i>27.0</i>	<i>16.6</i>	---	<i>15.4</i>	---
Frontier	22,038	Small Cap Growth	12.6	36.6	18.8	---	15.3	4/2010
<i>Russell 2000 Growth Index</i>	---	---	<i>12.8</i>	<i>33.1</i>	<i>20.0</i>	---	<i>16.7</i>	---

\* Performance is calculated based on the first full month of performance since funding.

\*\* Inception date reflects the month when portfolio received initial funding.

## International Equity - Periods ending September 30, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	88,146	Developed Markets	11.9	22.4	---	---	22.4	9/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	<i>11.7</i>	<i>21.8</i>	---	---	<i>21.8</i>	---
Invesco^	4	Developed Markets	---	---	---	---	---	9/2009
Interim Account^	9	Developed Markets	---	---	---	---	---	2/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	---	---	---	---	---	---
MFS	87,323	Developed Markets	9.1	26.9	---	---	28.6	7/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	<i>11.7</i>	<i>21.8</i>	---	---	<i>24.7</i>	---
The Boston Company^	10	Developed Markets	---	---	---	---	---	9/2009
<i>MSCI World ex US IMI ND Index</i>	---	---	---	---	---	---	---	---
Pyramis	88,094	Developed Markets	11.0	24.9	10.3	---	9.2	9/2009
<i>MSCI World ex US IMI ND Index</i>	---	---	<i>11.7</i>	<i>21.8</i>	<i>8.1</i>	---	<i>7.3</i>	---
L.A. Capital	37,378	Emerging Markets	4.8	3.2	---	---	3.2	9/2012
<i>MSCI EMF IMI ND Index</i>	---	---	<i>5.5</i>	<i>1.4</i>	---	---	<i>1.4</i>	---
Vontobel	37,590	Emerging Markets	-1.2	---	---	---	-5.6	2/2012
Interim Account^	<1	Emerging Markets	---	---	---	---	---	---
<i>MSCI EMF IMI ND Index</i>	---	---	<i>5.5</i>	---	---	---	<i>-3.9</i>	---

\* Performance is calculated based on the first full month of performance since funding.

\*\* Inception date reflects the month when portfolio received initial funding.

^ In process of liquidation/transfer.

## Fixed Income - Periods ending September 30, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
JP Morgan	149,650	Core	0.7	-1.0	3.6	---	4.6	4/2010
<i>BC Aggregate Index</i>	---	---	<i>0.6</i>	<i>-1.7</i>	<i>2.9</i>	---	<i>4.0</i>	---
Wells	149,552	Core	0.8	-1.2	4.1	7.3	6.7	1/2007
<i>BC Aggregate Index</i>	---	---	<i>0.6</i>	<i>-1.7</i>	<i>2.9</i>	<i>5.4</i>	<i>5.1</i>	---
Wells High Yield	33,318	High Yield	1.6	5.0	7.9	---	9.2	9/2009
<i>BC High Yield Index</i>	---	---	<i>2.3</i>	<i>7.1</i>	<i>9.2</i>	---	<i>11.4</i>	---

\* Performance is calculated based on the first full month of performance since funding.

\*\* Inception date reflects the month when portfolio received initial funding.

## Covered Calls - Periods ending September 30, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Gateway (replication)	84,606	Covered Calls	0.7	2.9	---	---	7.2	5/2012
Gateway (non-replication)	21,489	Covered Calls	2.5	9.3	---	---	12.3	5/2012
<i>CBOE BXM Index</i>	---	---	<i>0.8</i>	<i>3.1</i>	---	---	<i>7.4</i>	---

\* Performance is calculated based on the first full month of performance since funding.

\*\* Inception date reflects the month when portfolio received initial funding.

## Real Return - Periods ending September 30, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Aetos Capital*** (net of fees)	8,670	Hedge FOFs	1.6	10.4	---	---	5.3	9/2010
<i>Tbills + 3 %***</i>	---	---	<i>0.7</i>	<i>3.1</i>	---	---	<i>3.1</i>	---
<i>HFRI FOF Diversified Index***</i>	---	<i>Hedge FOFs</i>	<i>0.1</i>	<i>7.2</i>	---	---	<i>2.4</i>	---
WAMCO*** (gross of fees)	60,759	GILS	-6.4	-1.9	3.9	---	4.0	4/2010
<i>BC WGILB Index***</i>	---	---	<i>-6.3</i>	<i>-2.0</i>	<i>4.5</i>	---	<i>4.4</i>	---

\* Performance is calculated based on the first full month of performance since funding.

\*\* Inception date reflects the month when portfolio received initial funding.

\*\*\* Returns are lagged one quarter.

## Private Equity and Real Estate - Periods ending September 30, 2013

Asset Class	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Private Equity***	13,342	Private Equity	2.3	12.9	24.7	---	21.3	9/2008
<i>R3000 + 3% (PE blend)*** ****</i>	---	---	<i>3.4</i>	<i>25.1</i>	<i>18.7</i>	---	<i>11.3</i>	---
Real Estate***	20,119	Real Estate	4.7	22.0	20.0	---	11.7	1/2010
<i>NCREIF***</i>	---	---	<i>2.9</i>	<i>10.7</i>	<i>13.1</i>	---	<i>12.4</i>	---

\* Performance is calculated based on the first full month of performance since funding.

\*\* Inception date reflects the month when portfolio received initial funding.

\*\*\* Returns are lagged one quarter and net of fees.

\*\*\*\* The policy benchmark for the Private Equity asset class is a blended benchmark composed of Cambridge US Private Equity Index and the Cambridge US Venture Capital Index thru 9/30/11, and Russell 3000 + 3% to present.

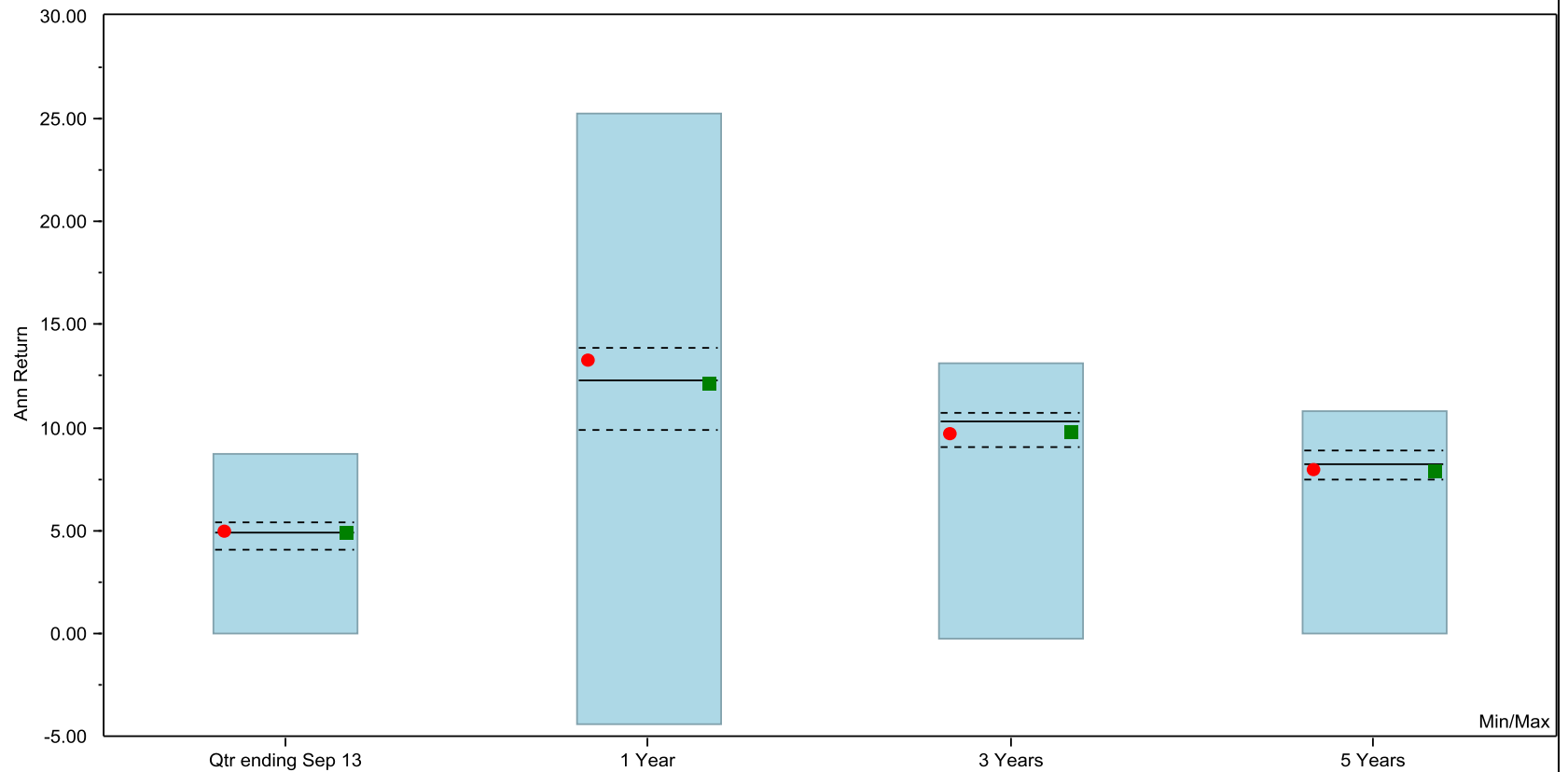


# Water and Power Employees' Retirement Plan

TOTAL FUNDS - PUBLIC (USD) - Monthly

As of September 30, 2013

Cumulative Performance Comparisons



	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank
Maximum	8.73			25.24			13.09			10.77		
25th Percentile	5.43			13.90			10.70			8.86		
Median Percentile	4.89			12.25			10.29			8.23		
75th Percentile	4.09			9.86			9.02			7.46		
Minimum	0.00			-4.43			-0.24			-0.02		
# of Portfolios	97			95			90			87		
• Total Fund	4.99	46	45	13.27	33	32	9.69	66	60	7.97	64	56
■ Policy Benchmark	4.86	54	52	12.11	56	54	9.80	65	59	7.90	66	59

Universe Source: The Bank of New York Mellon Corporation; Universe Status: Final

## Notes:

Performance and related statistics calculated using Mellon's Workbench E-Chart

All performance is shown **gross of fees**.

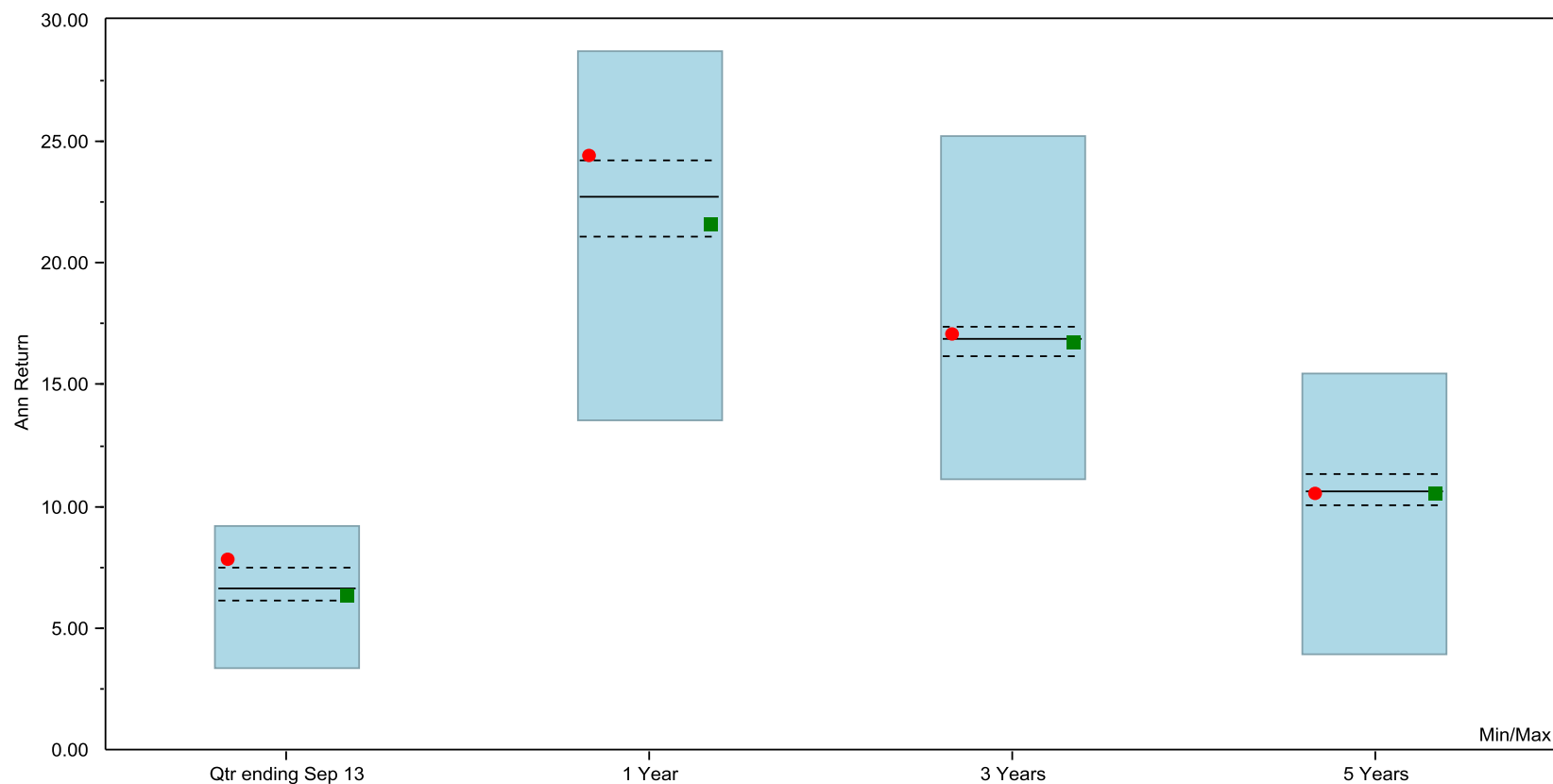


# Water and Power Employees' Retirement Plan

US Equity Segment - Public (USD) - Monthly

As of September 30, 2013

Cumulative Performance Comparisons



	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank
Maximum	9.16			28.69			25.23			15.50		
25th Percentile	7.47			24.20			17.42			11.33		
Median Percentile	6.61			22.73			16.91			10.60		
75th Percentile	6.10			21.08			16.19			10.03		
Minimum	3.34			13.54			11.10			3.90		
# of Portfolios	83			80			73			55		
● Domestic Equity	7.85	16	14	24.45	24	19	17.09	31	23	10.54	54	30
■ Russell 3000 (blend)	6.35	69	58	21.62	71	58	16.77	57	42	10.58	51	29

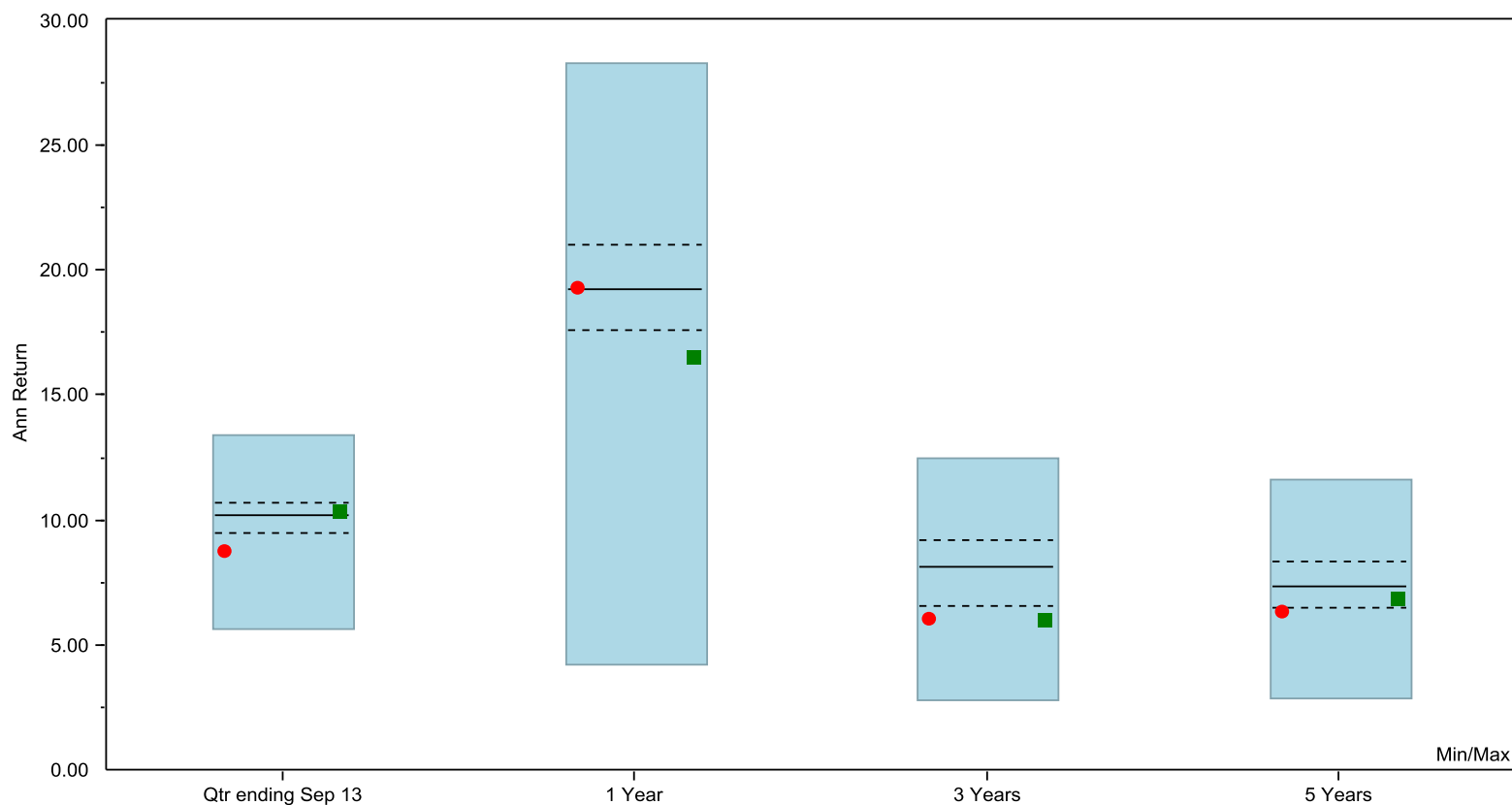
Universe Source: The Bank of New York Mellon Corporation; Universe Status: Final

# Water and Power Employees' Retirement Plan

Non-US Equity Segment - Public (USD) - Monthly

As of September 30, 2013

Cumulative Performance Comparisons



	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank
Maximum	13.38			28.31			12.50			11.63		
25th Percentile	10.72			21.01			9.16			8.32		
Median Percentile	10.17			19.26			8.12			7.34		
75th Percentile	9.46			17.62			6.57			6.50		
Minimum	5.62			4.22			2.79			2.84		
# of Portfolios	76			73			65			48		
● International Equity	8.77	89	69	19.31	48	36	6.05	86	57	6.37	78	38
■ MSCI ACWI ex US IMI (blend)	10.37	41	32	16.52	81	60	5.99	86	57	6.82	64	32

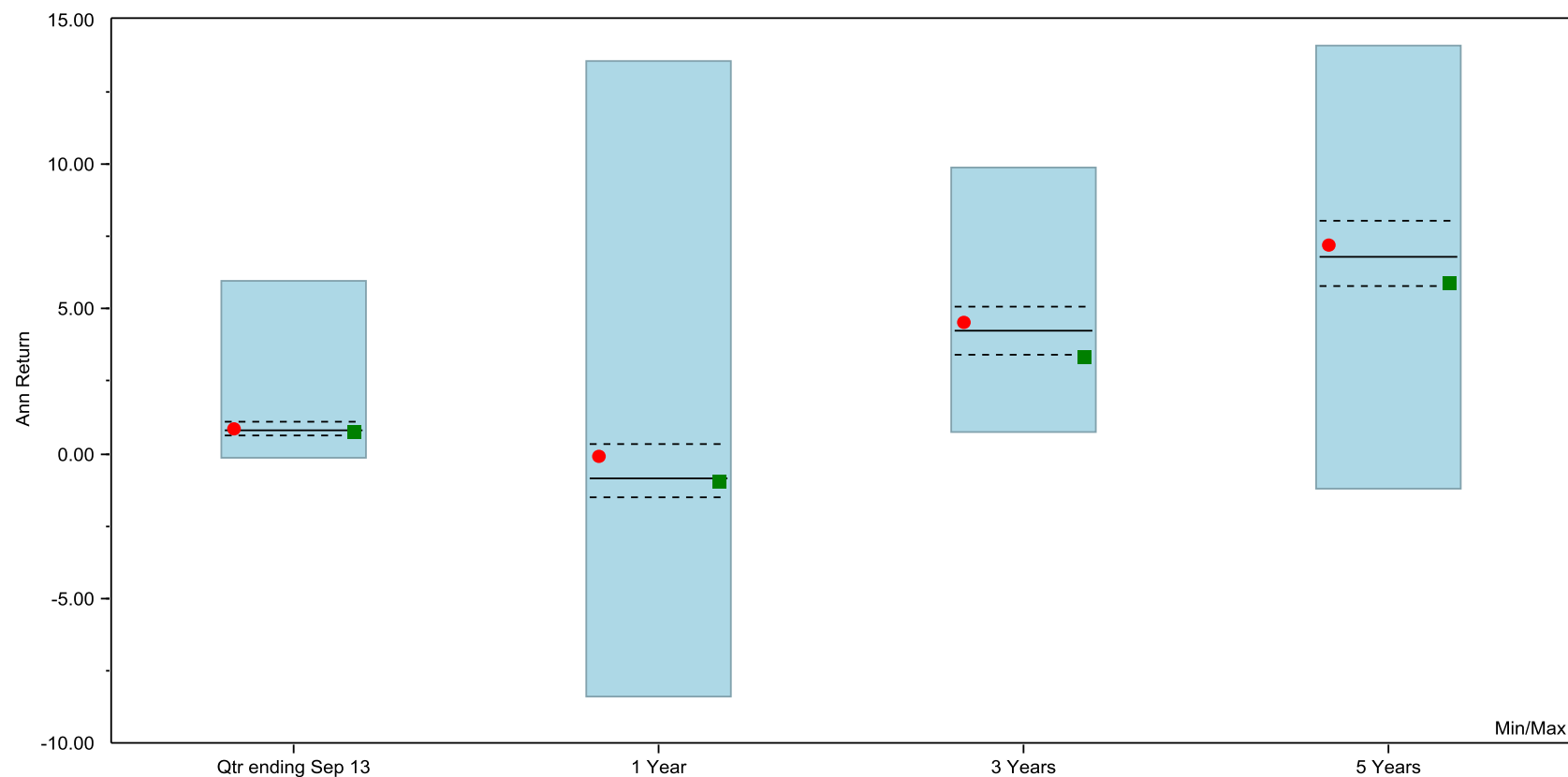
Universe Source: The Bank of New York Mellon Corporation; Universe Status: Final

# Water and Power Employees' Retirement Plan

US Fixed Income Segment - Public (USD) - Monthly

As of September 30, 2013

Cumulative Performance Comparisons

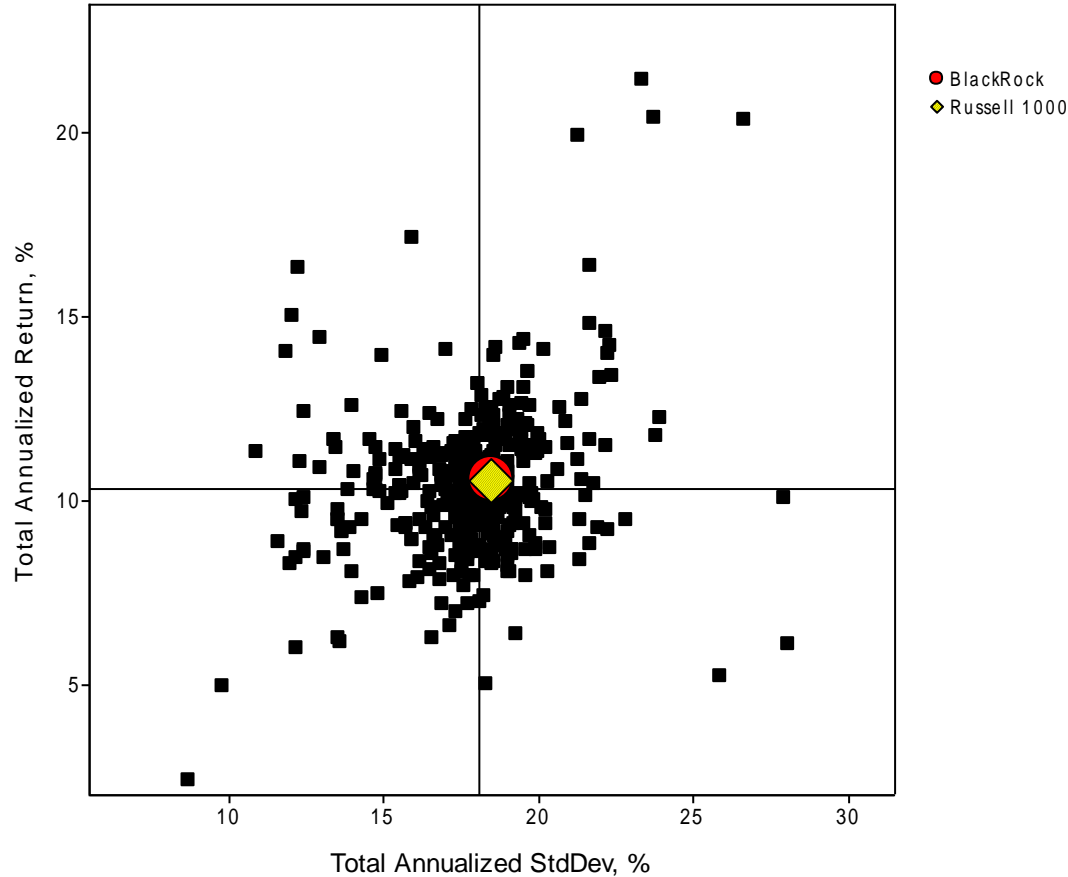


	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank
Maximum	5.98			13.57			9.90			14.09		
25th Percentile	1.08			0.36			5.07			8.04		
Median Percentile	0.80			-0.85			4.24			6.81		
75th Percentile	0.60			-1.49			3.44			5.81		
Minimum	-0.14			-8.38			0.78			-1.21		
# of Portfolios	82			80			71			55		
● Fixed Income	0.89	41	34	-0.11	35	28	4.57	39	28	7.23	40	23
■ BC Universal	0.75	58	48	-1.00	57	46	3.35	77	55	5.92	71	40

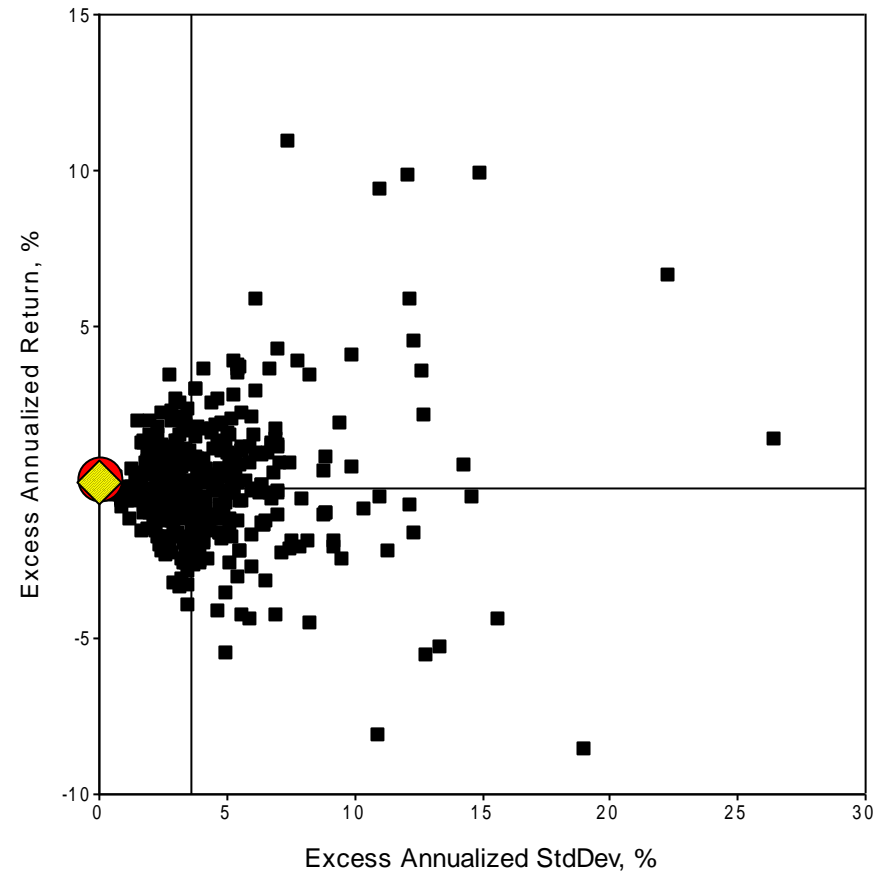
Universe Source: The Bank of New York Mellon Corporation; Universe Status: Final

# WPERP Large Cap Core Manager Comparisons as of September 30, 2013

5-Year Total Risk/Return



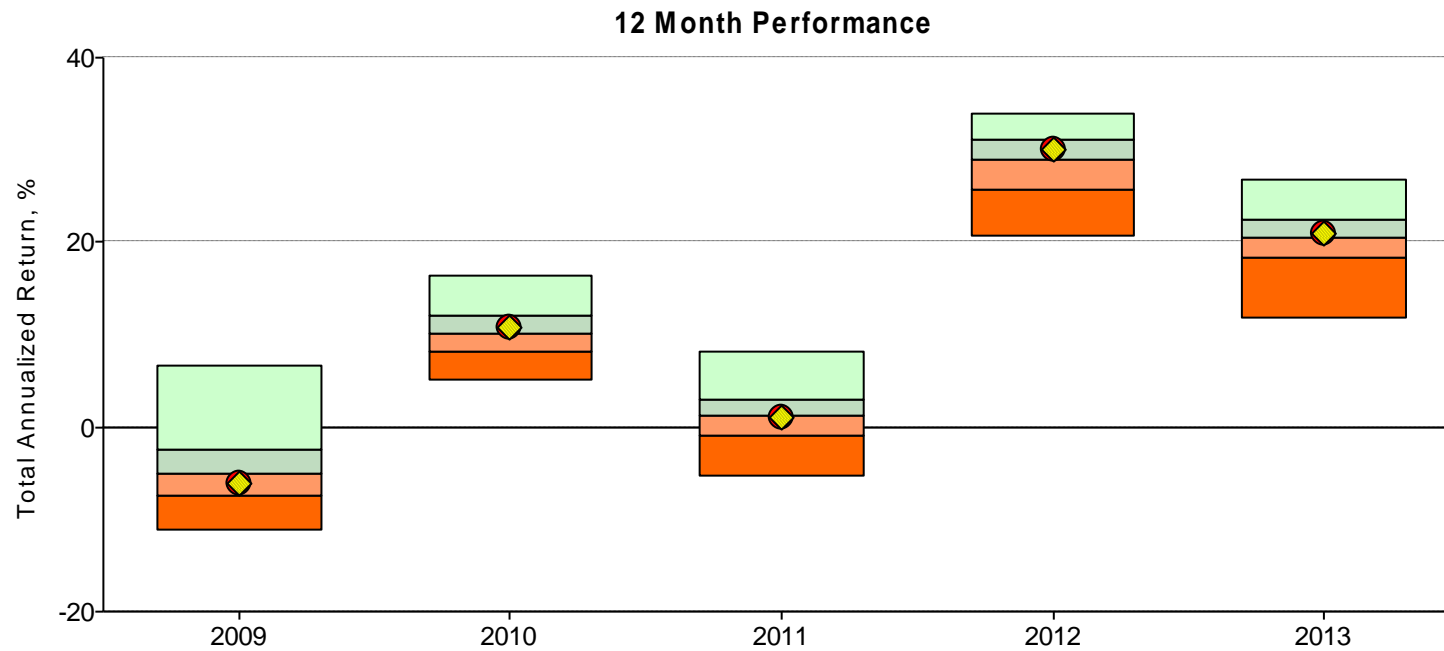
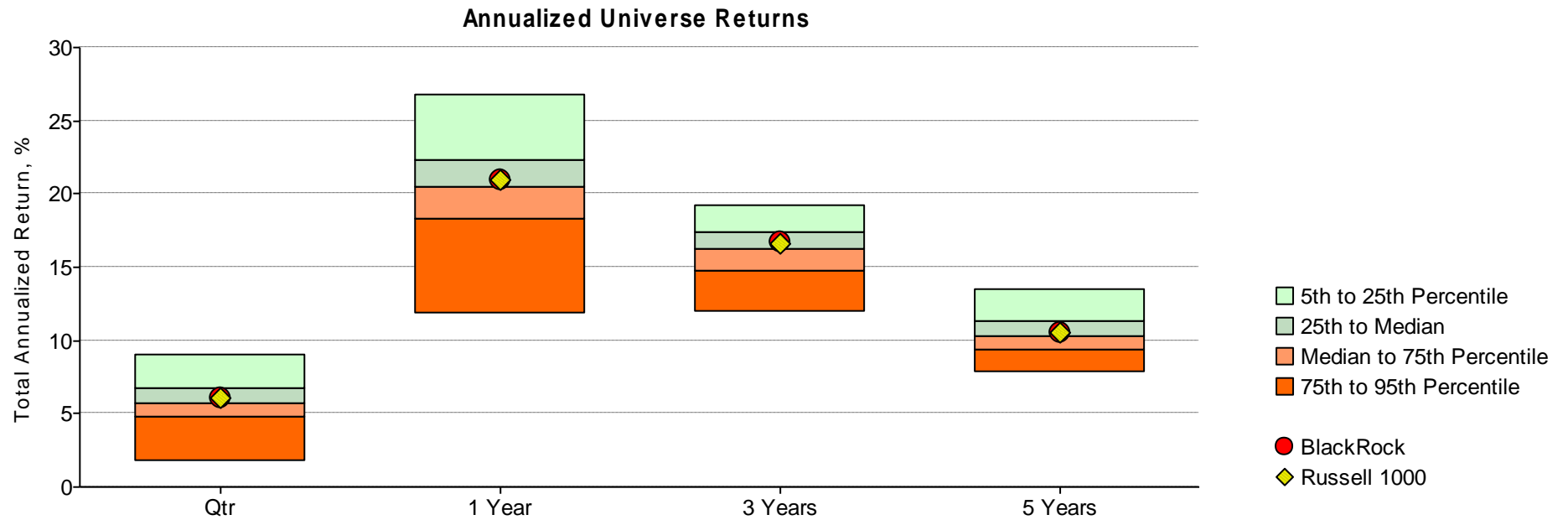
5-Year Excess Risk/Return



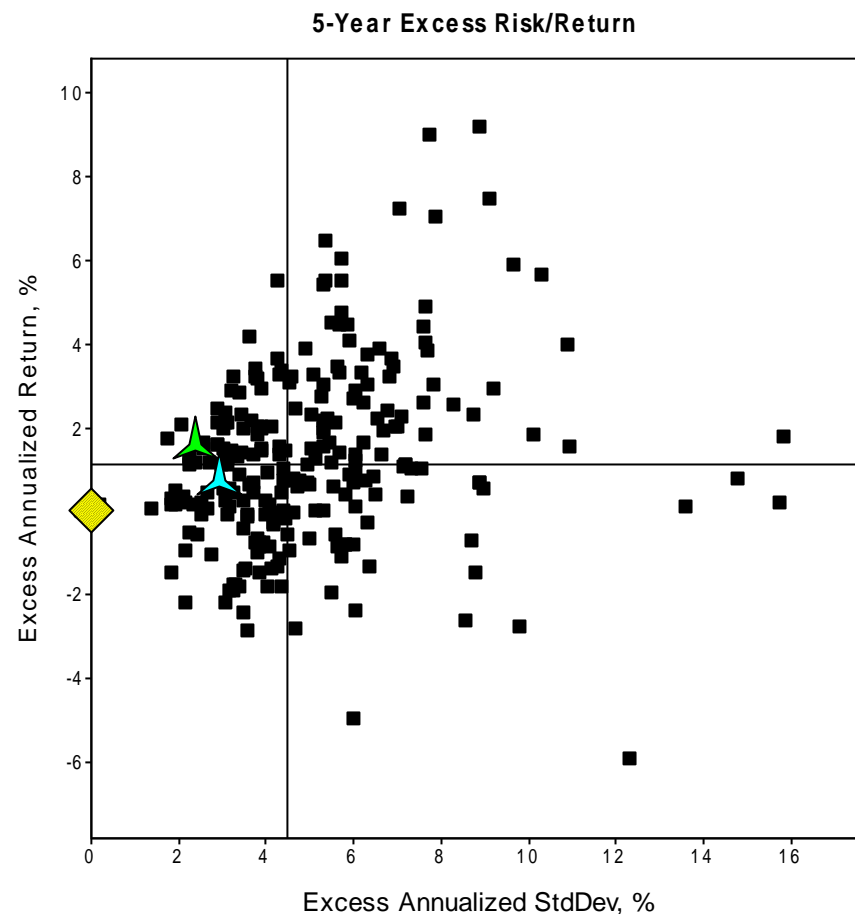
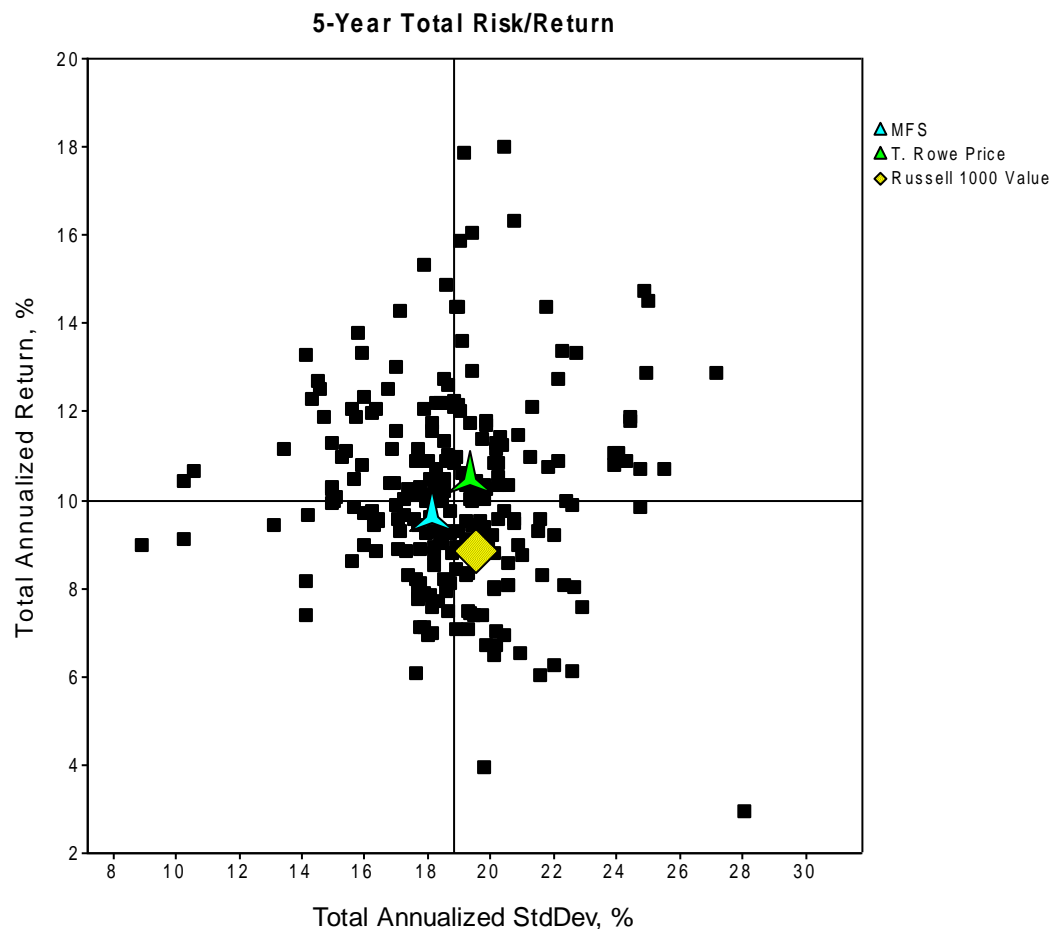
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
BlackRock	10.58	18.46	0.57
Russell 1000	10.53	18.46	0.57
Large Cap Manager Universe Median	10.32	18.05	0.58

	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
BlackRock	0.06	0.08	0.72
Russell 1000	0.00	0.00	NA
Large Cap Manager Universe Median	-0.21	3.59	-0.05

# WPERP Large Cap Core Manager Comparisons as of September 30, 2013



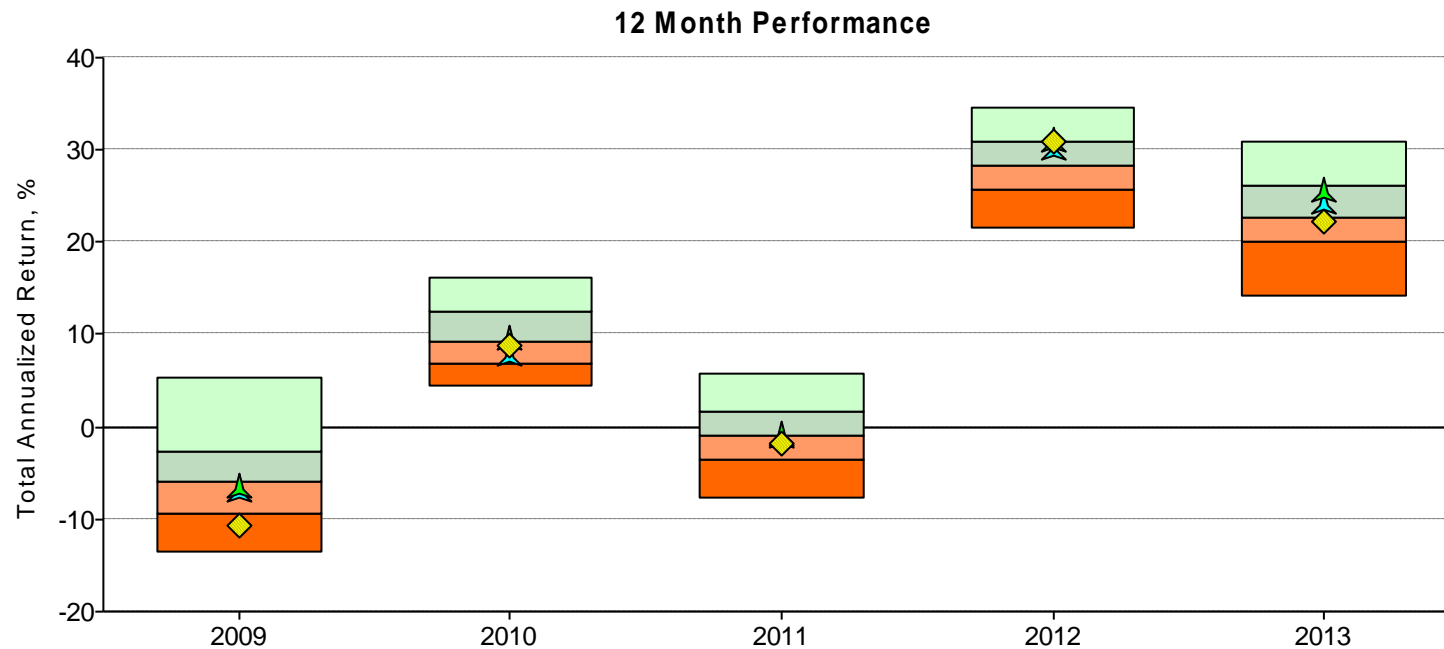
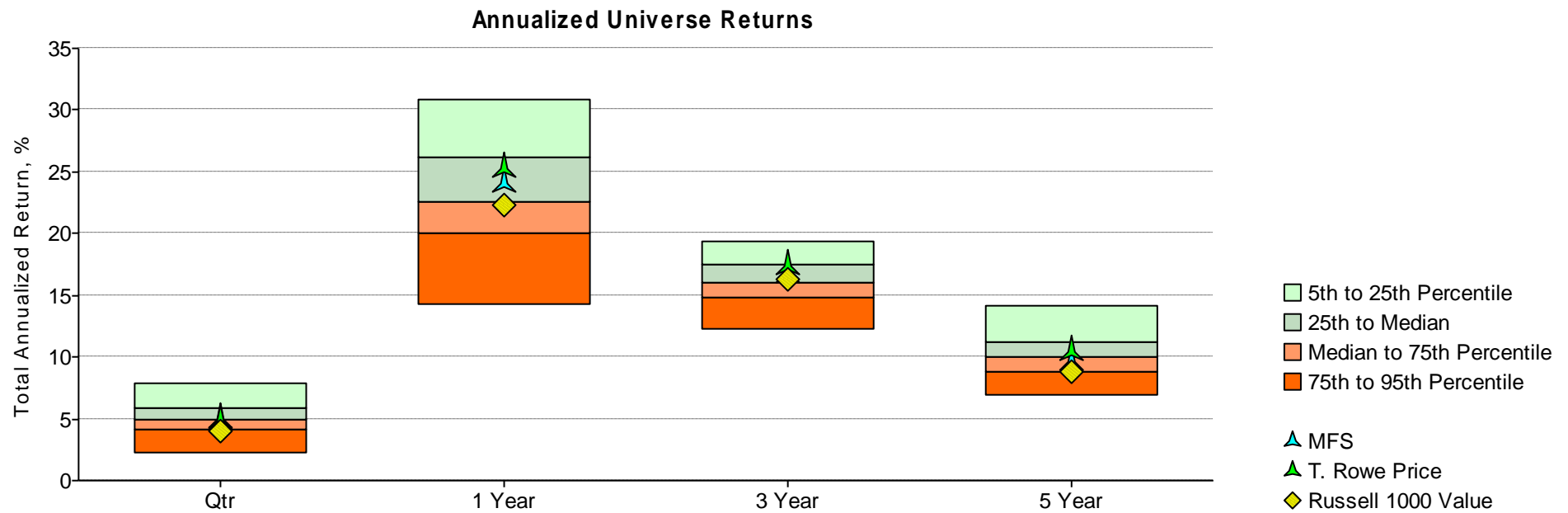
# WPERP Large Cap Value Manager Comparisons as of September 30, 2013



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
MFS	9.62	18.10	0.53
T. Rowe Price	10.47	19.35	0.54
Russell 1000 Value	8.86	19.52	0.45
Large Value Manager Universe Median	9.98	18.84	0.53

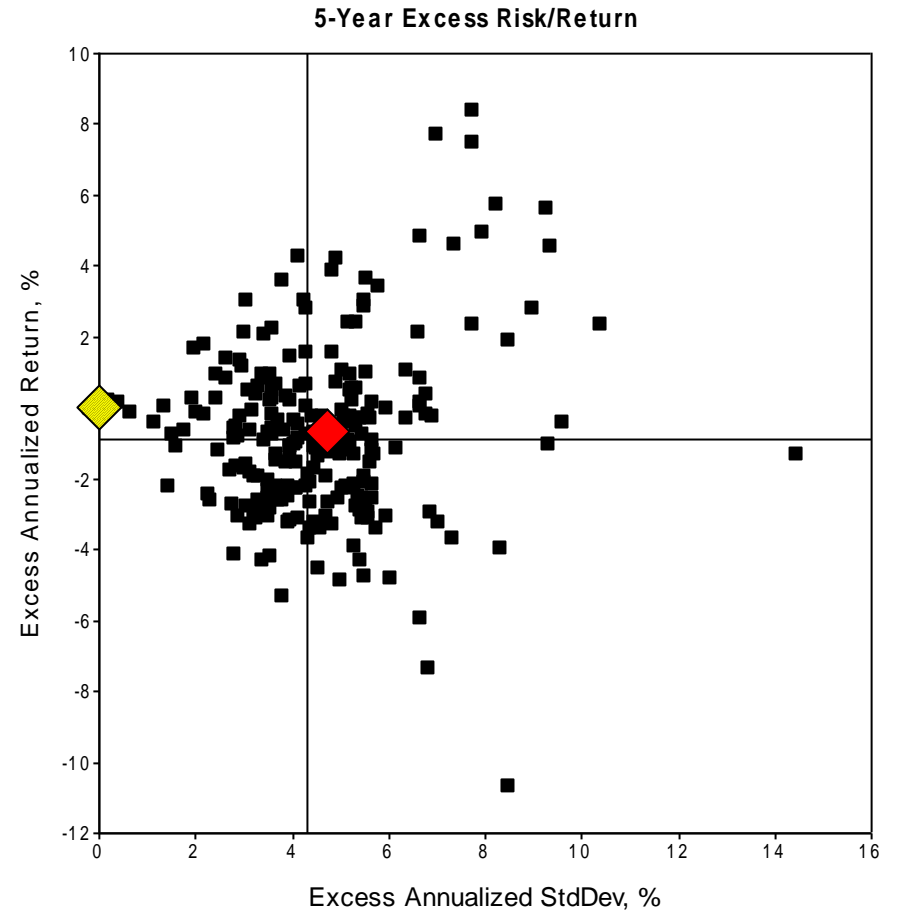
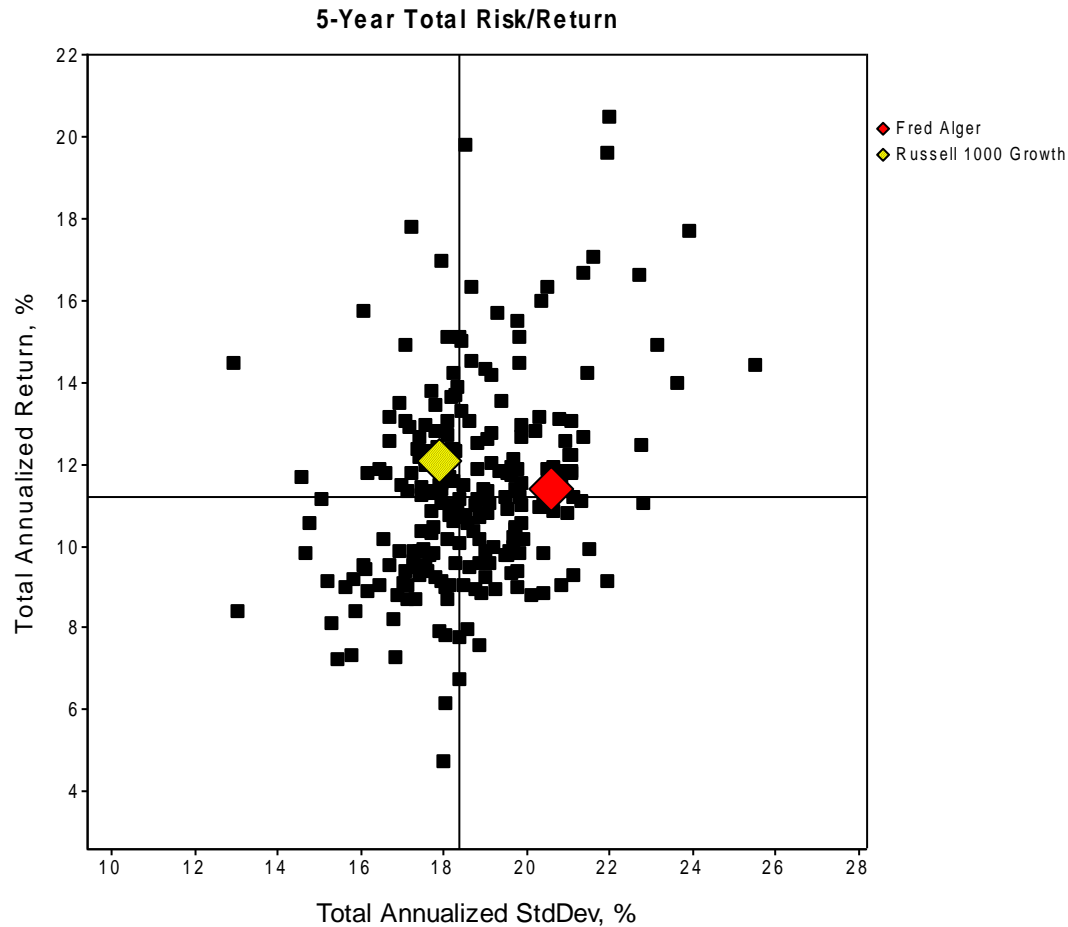
	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
MFS	0.76	2.94	0.26
T. Rowe Price	1.61	2.40	0.67
Russell 1000 Value	0.00	0.00	NA
Large Value Manager Universe Median	1.11	4.50	0.23

# WPERP Large Cap Value Manager Comparisons as of September 30, 2013





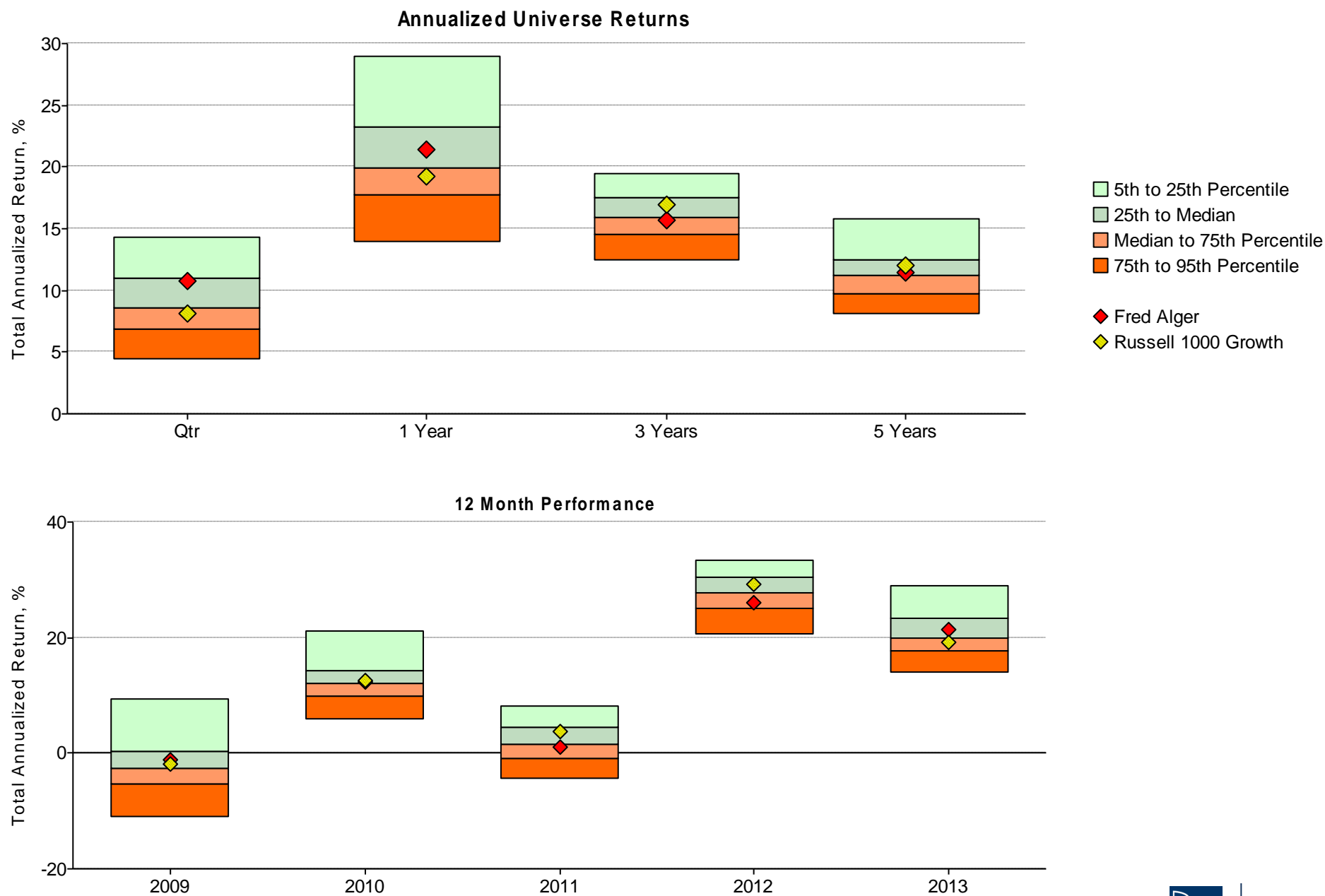
# WPERP Large Cap Growth Manager Comparisons as of September 30, 2013



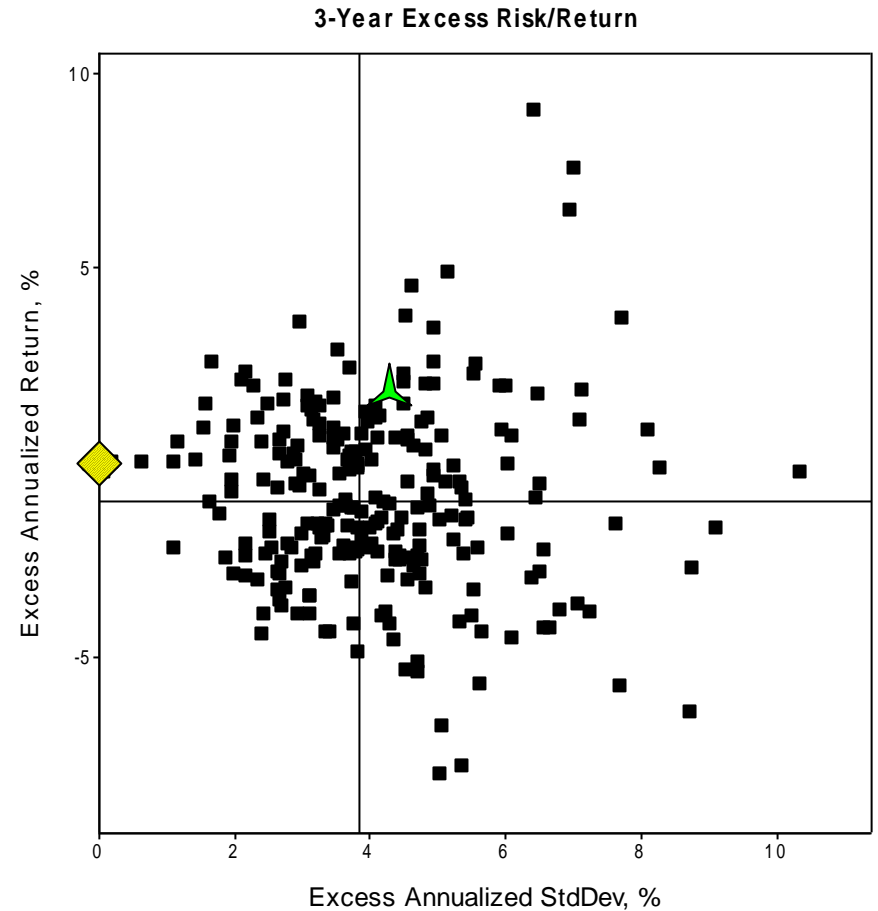
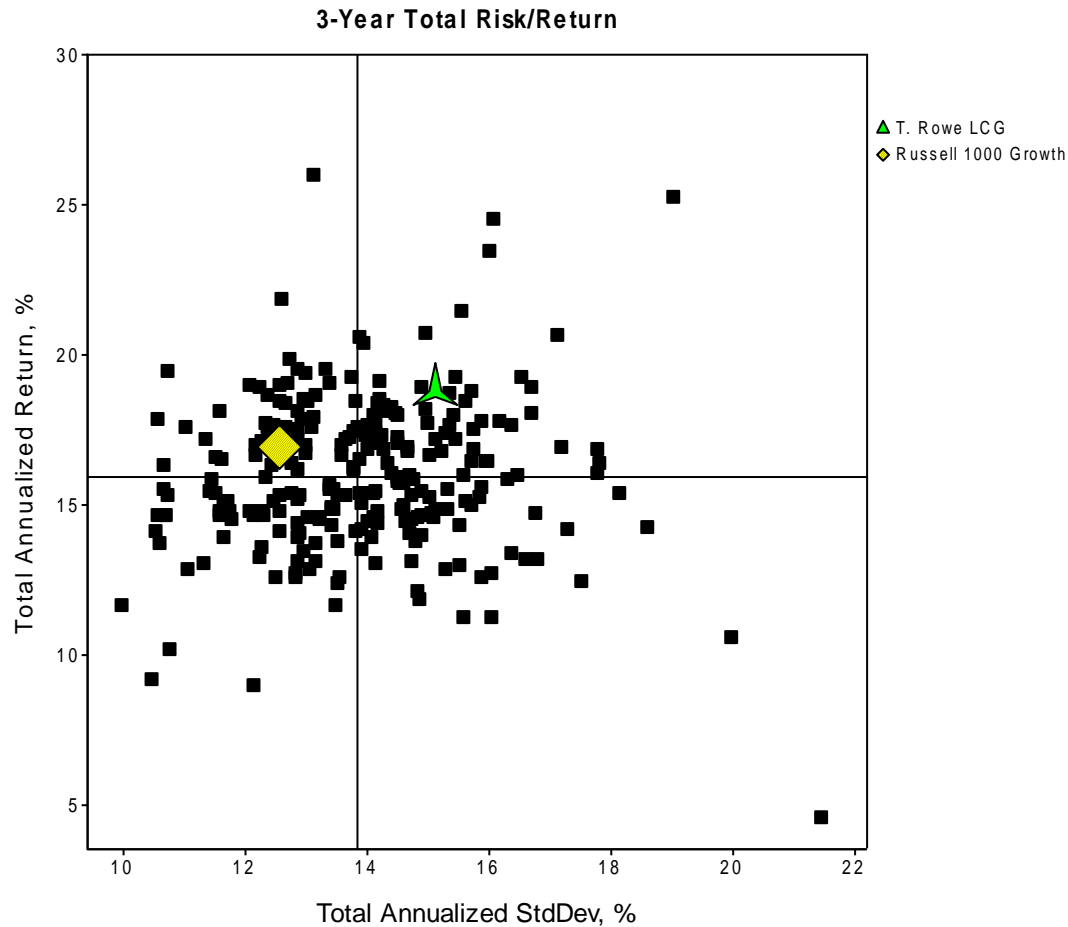
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Fred Alger	11.40	20.60	0.55
Russell 1000 Growth	12.07	17.89	0.67
Large Growth Manager Universe Median	11.21	18.38	0.59

	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Fred Alger	-0.68	4.72	-0.14
Russell 1000 Growth	0.00	0.00	NA
Large Growth Manager Universe Median	-0.86	4.32	-0.20

# WPERP Large Cap Growth Manager Comparisons as of September 30, 2013



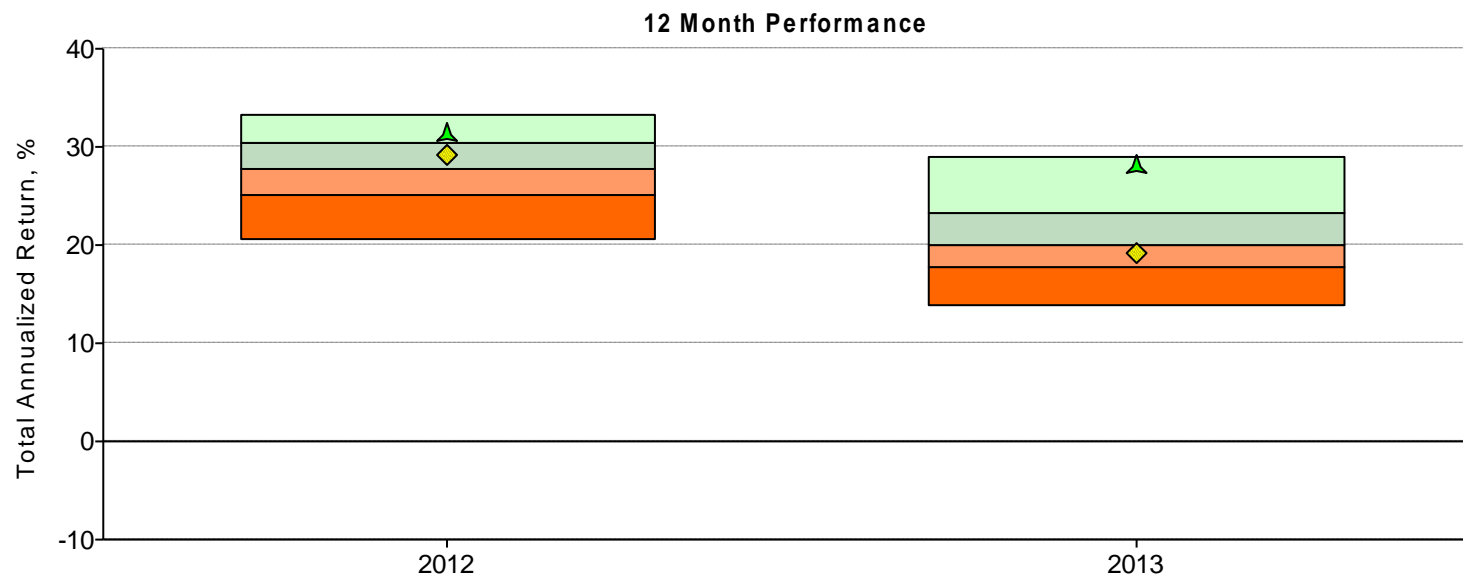
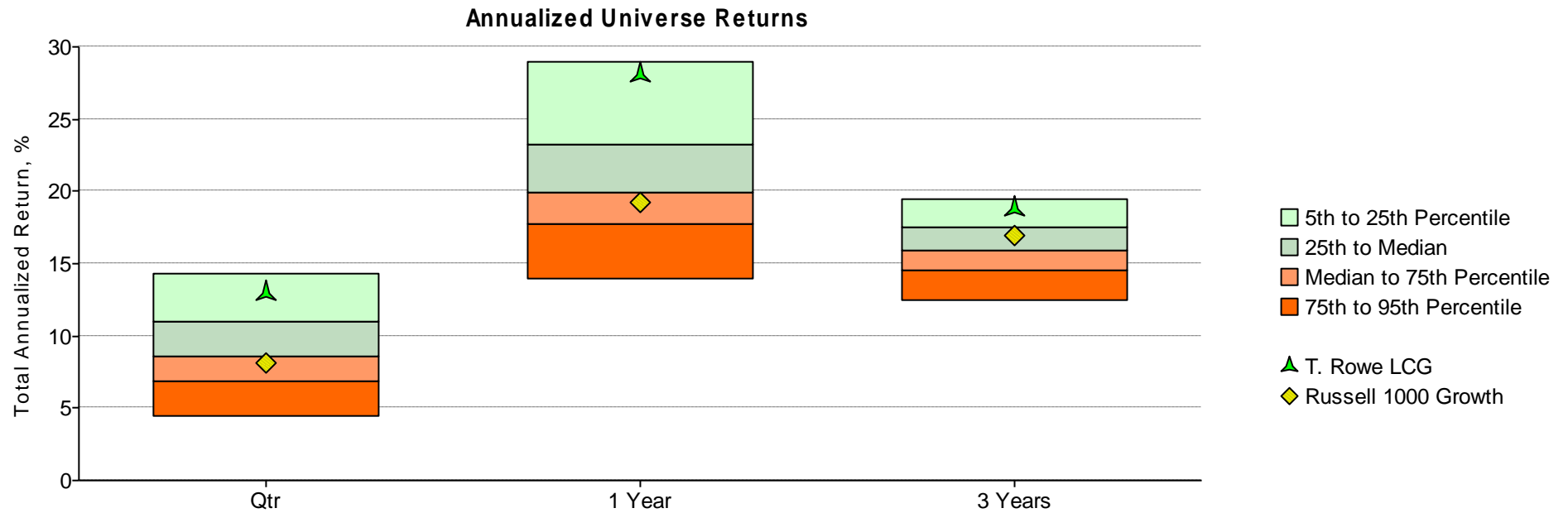
# WPERP Large Cap Growth Manager Comparisons as of September 30, 2013



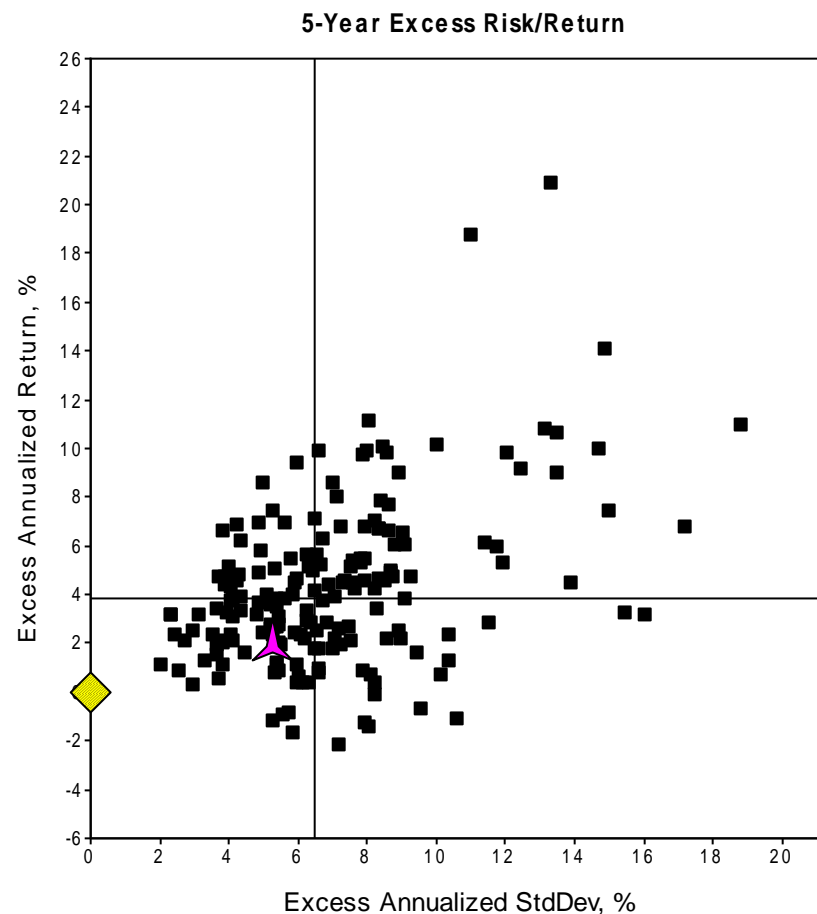
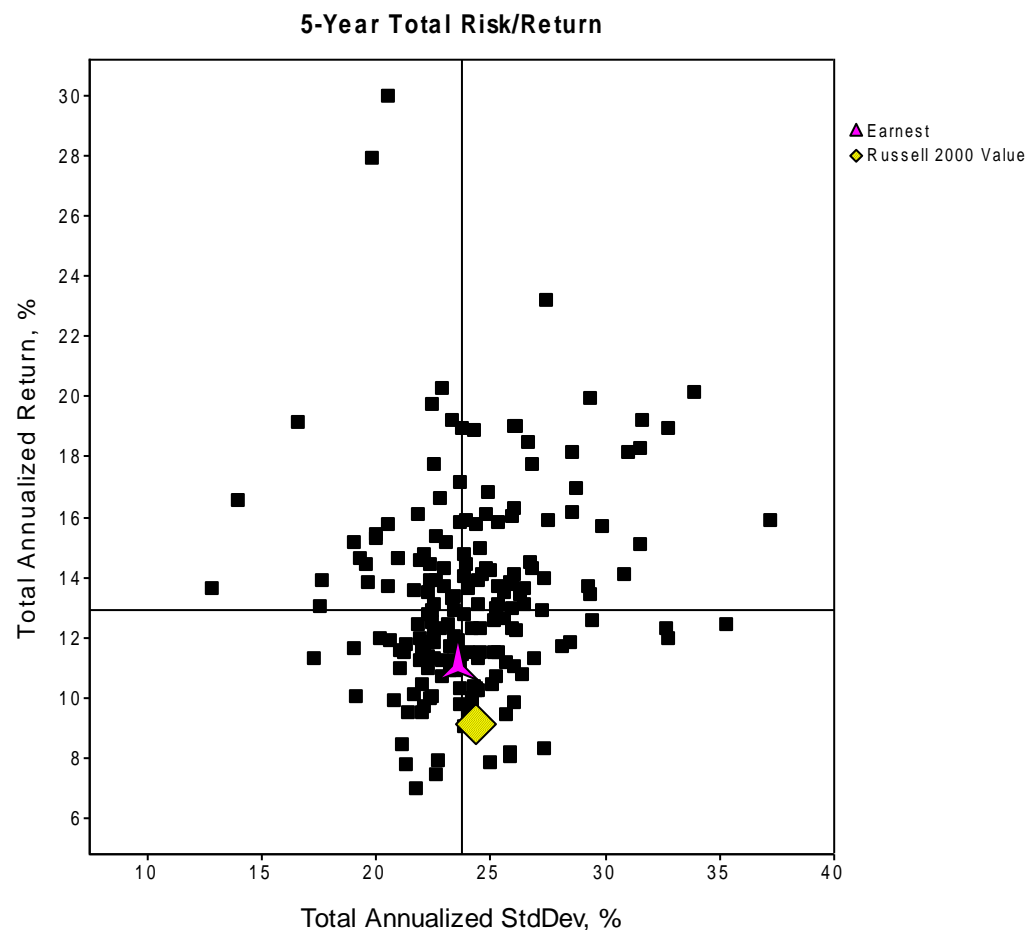
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
T. Rowe LCG	18.76	15.10	1.24
Russell 1000 Growth	16.94	12.56	1.35
Large Growth Manager Universe Median	15.93	13.83	1.17

	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
T. Rowe LCG	1.82	4.27	0.43
Russell 1000 Growth	0.00	0.00	NA
Large Growth Manager Universe Median	-1.00	3.84	-0.25

# WPERP Large Cap Growth Manager Comparisons as of September 30, 2013



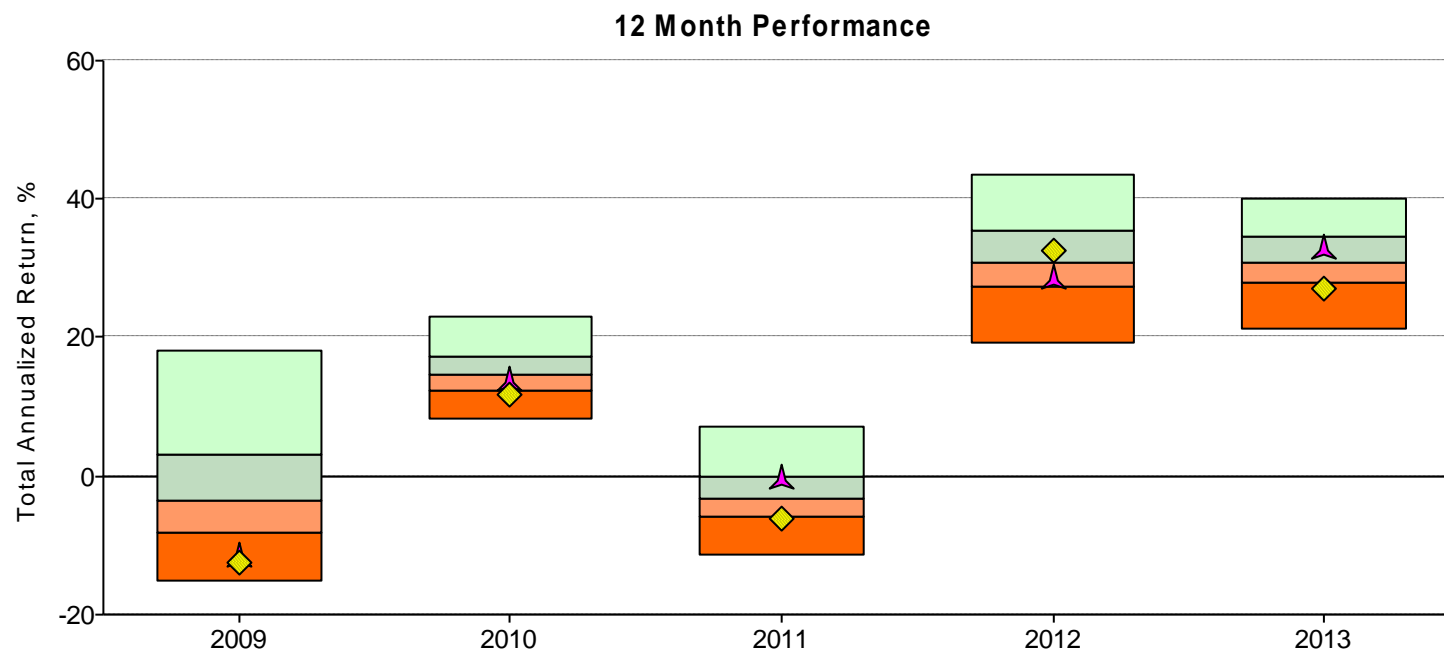
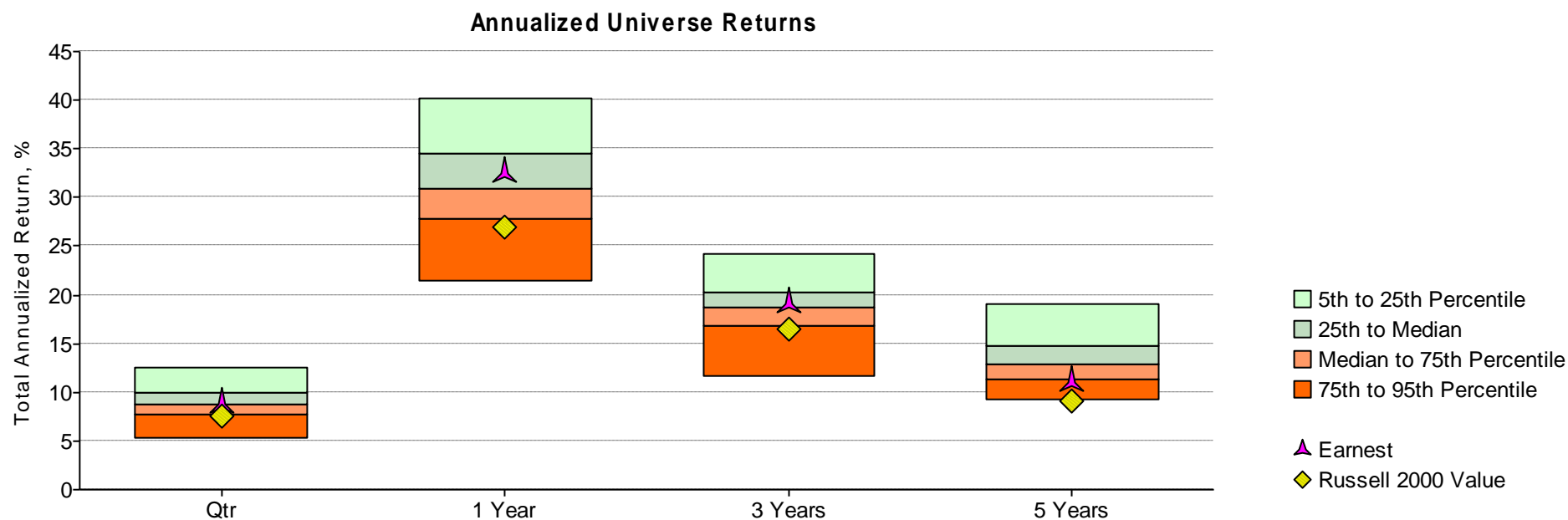
# WPERP Small Cap Value Manager Comparisons as of September 30, 2013



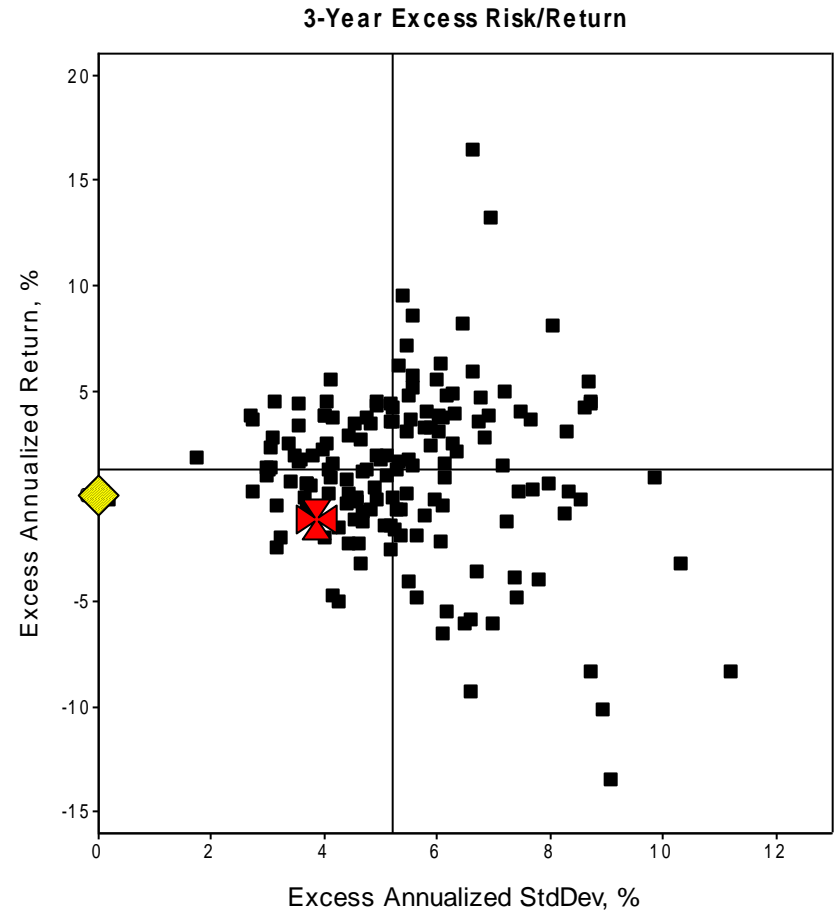
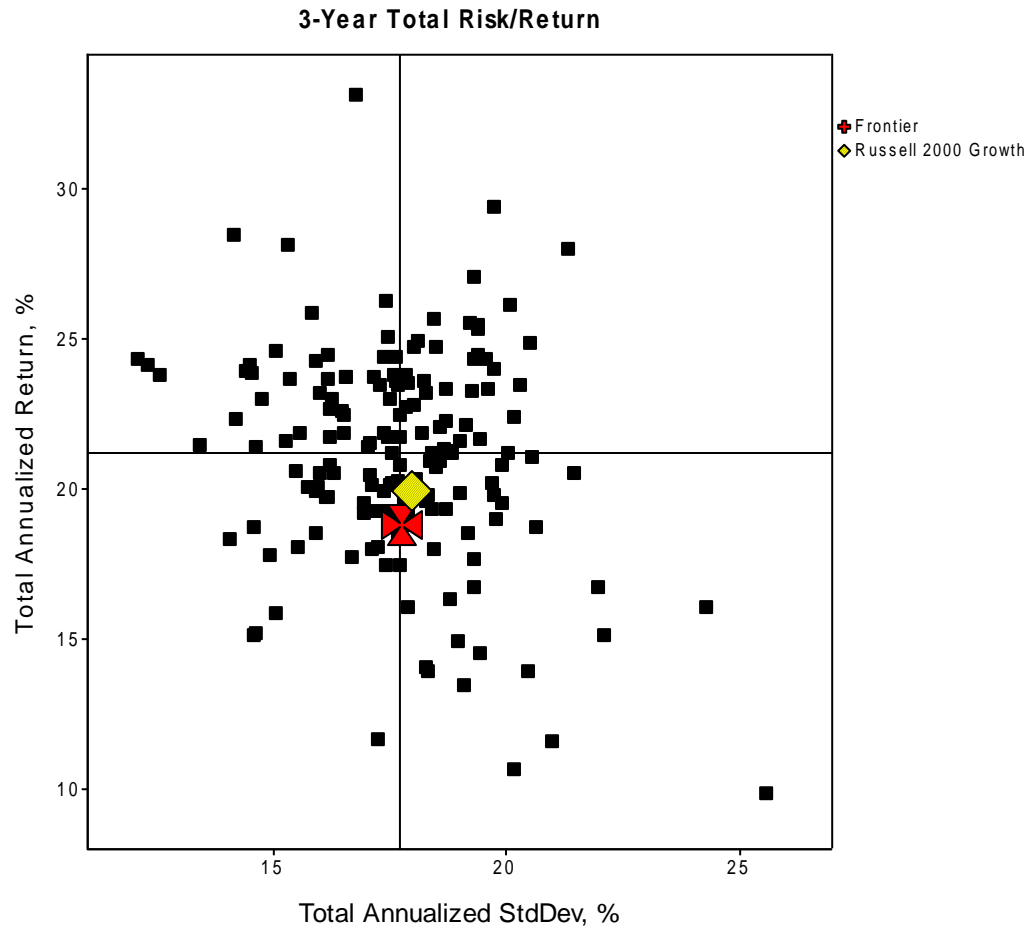
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Earnest	11.04	23.54	0.47
Russell 2000 Value	9.13	24.39	0.37
Small Cap Value Universe Median	12.95	23.75	0.54

	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
Earnest	1.91	5.27	0.36
Russell 2000 Value	0.00	0.00	NA
Small Cap Value Universe Median	3.81	6.49	0.58

# WPERP Small Cap Value Manager Comparisons as of September 30, 2013



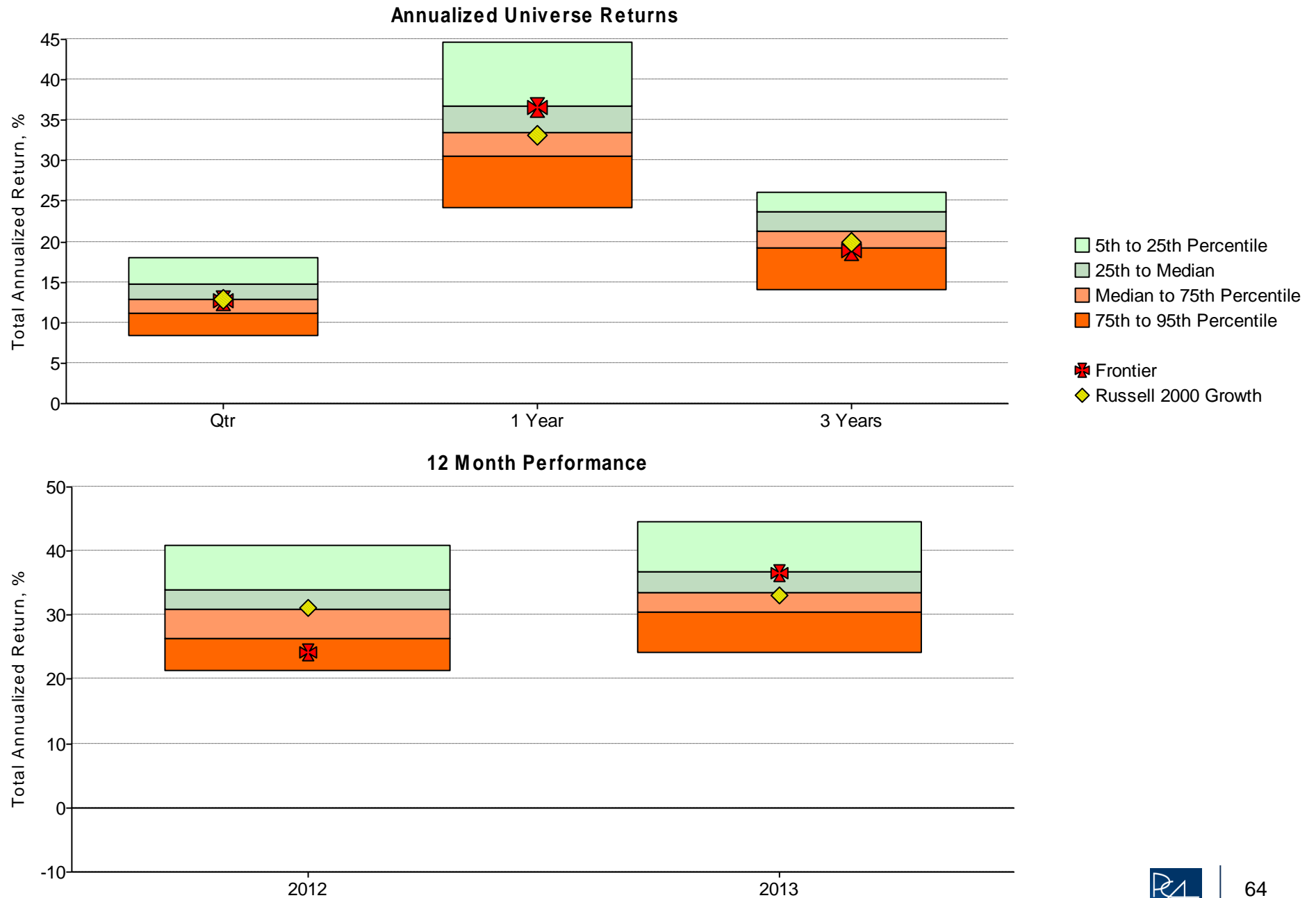
# WPERP Small Cap Growth Manager Comparisons as of September 30, 2013



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Frontier	18.84	17.75	1.06
Russell 2000 Growth	19.96	17.96	1.11
Small Cap Growth Universe Median	21.24	17.72	1.21

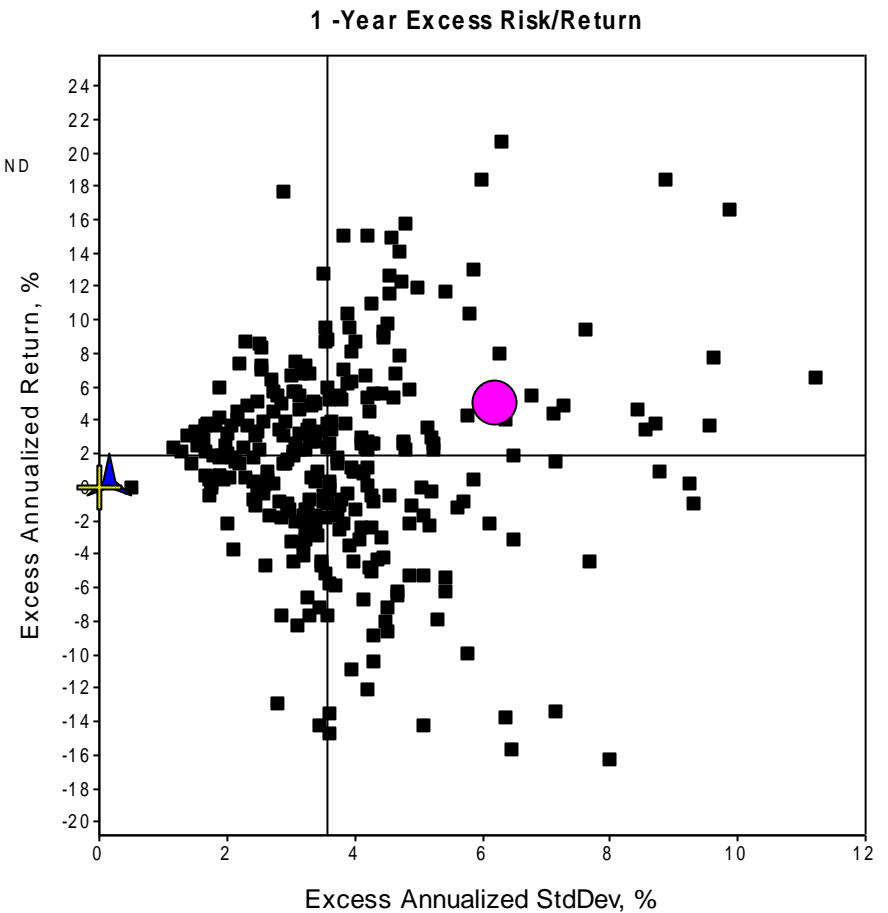
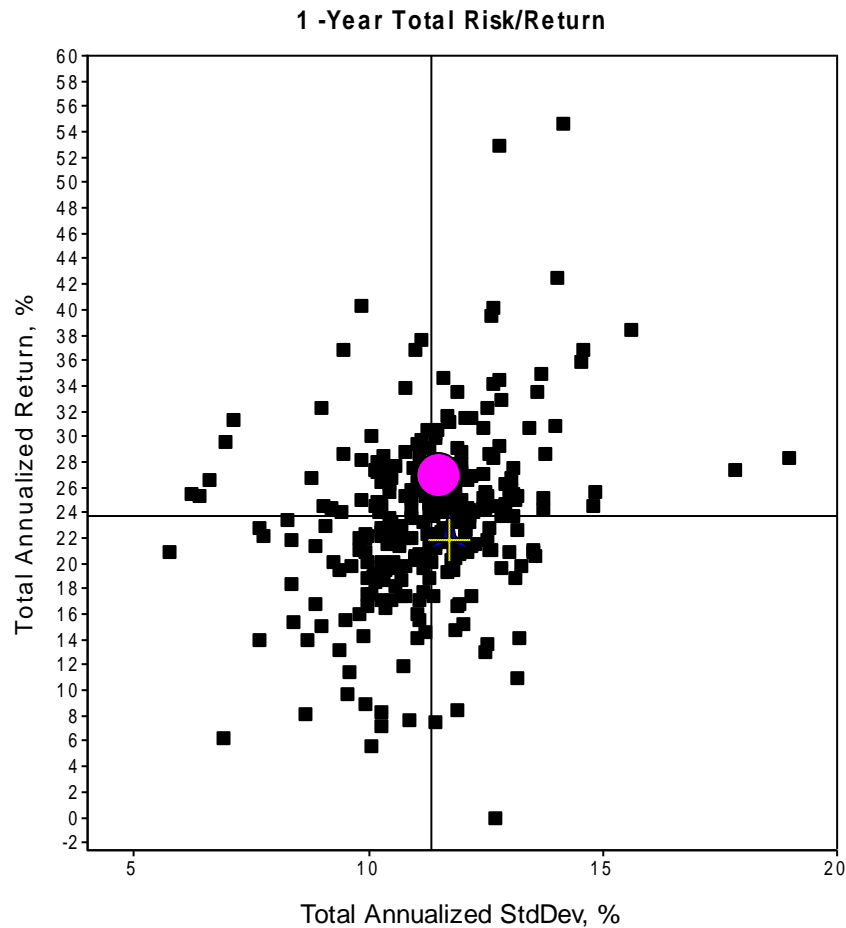
	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Frontier	-1.12	3.87	-0.29
Russell 2000 Growth	0.00	0.00	NA
Small Cap Growth Universe Median	1.29	5.21	0.31

# WPERP Small Cap Growth Manager Comparisons as of September 30, 2013





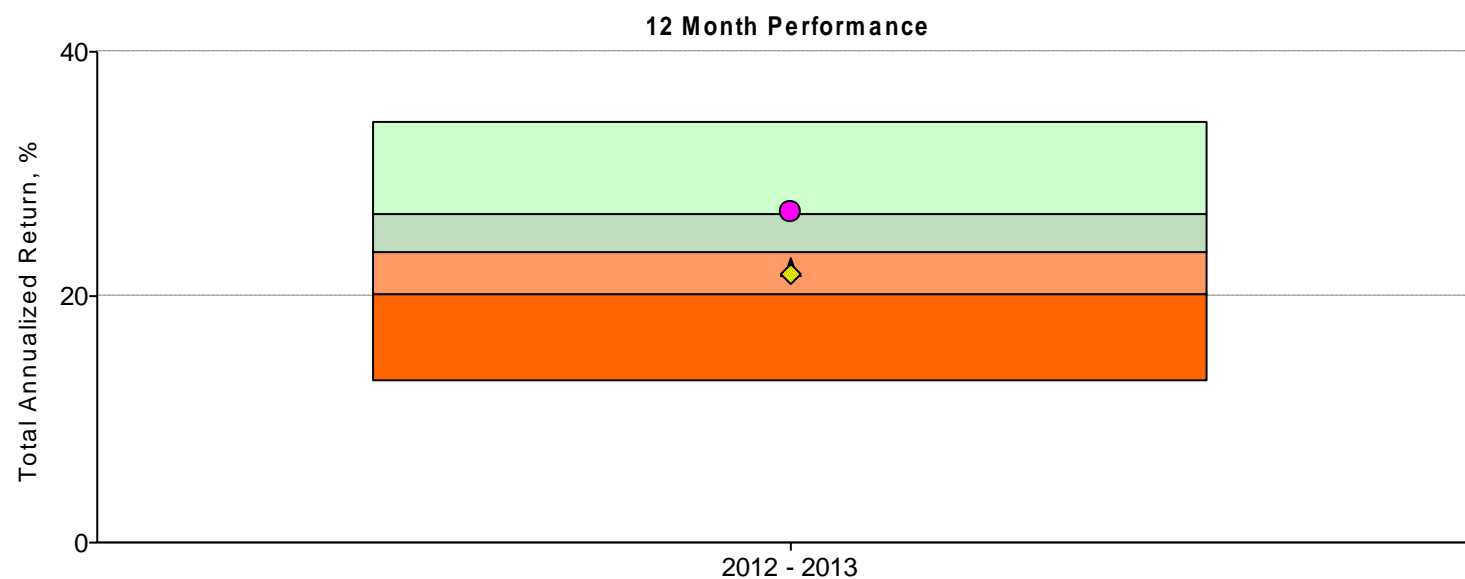
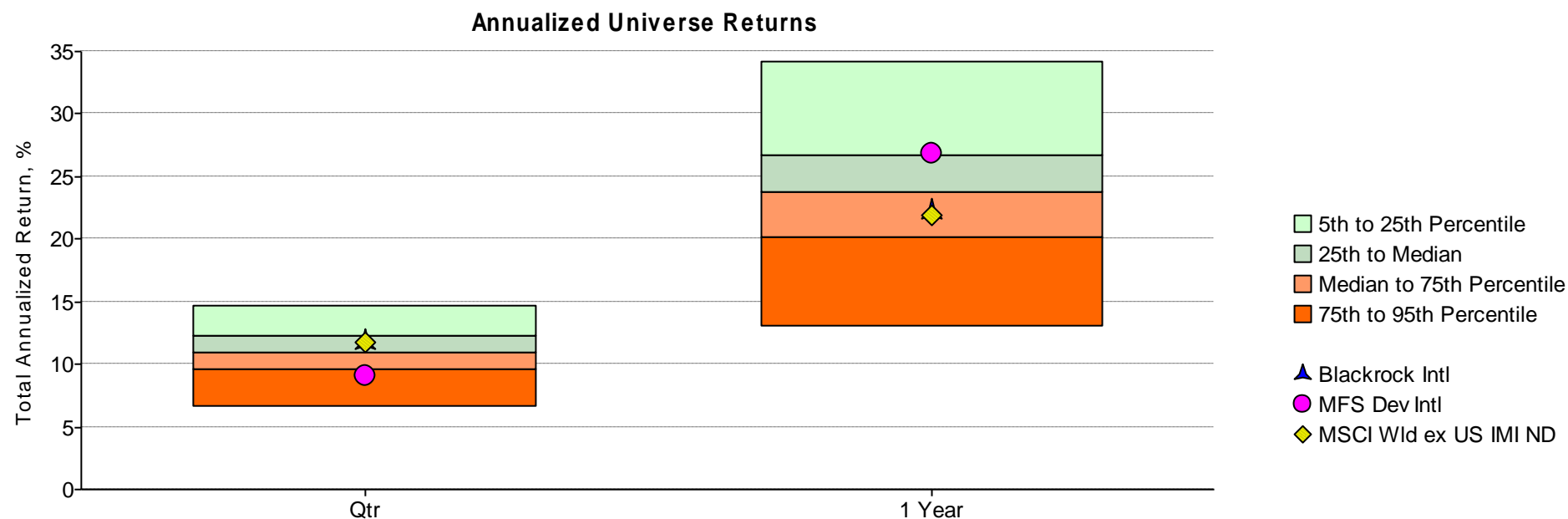
# WPERP International Equity Manager Comparisons as of September 30, 2013



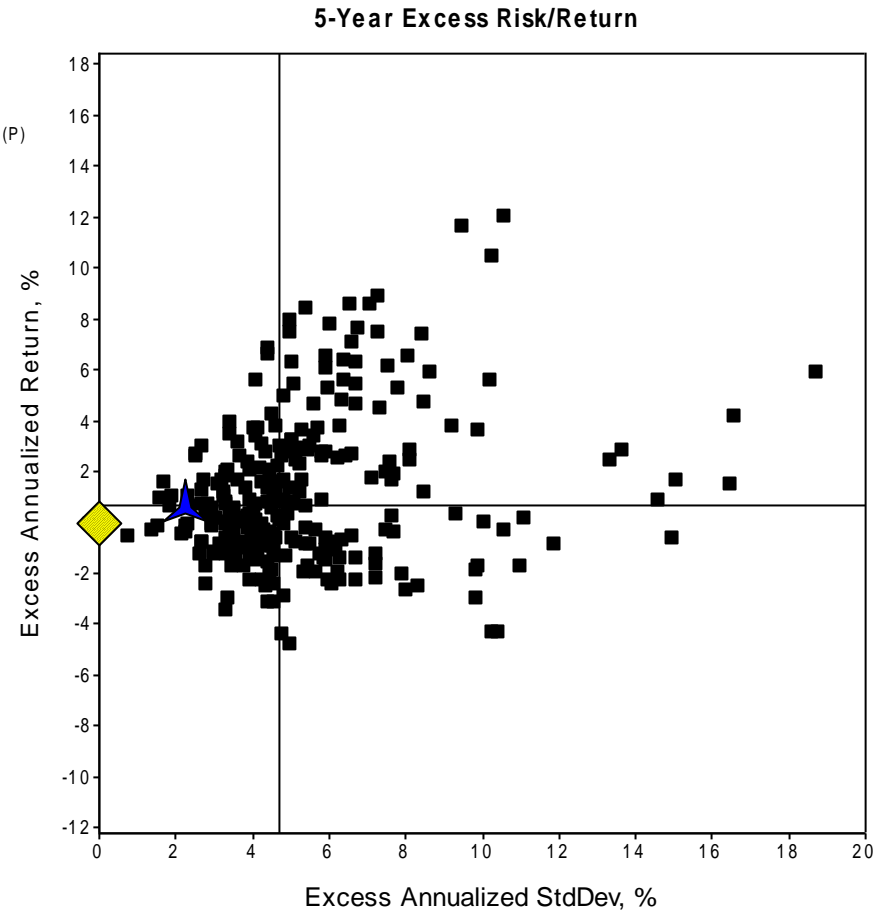
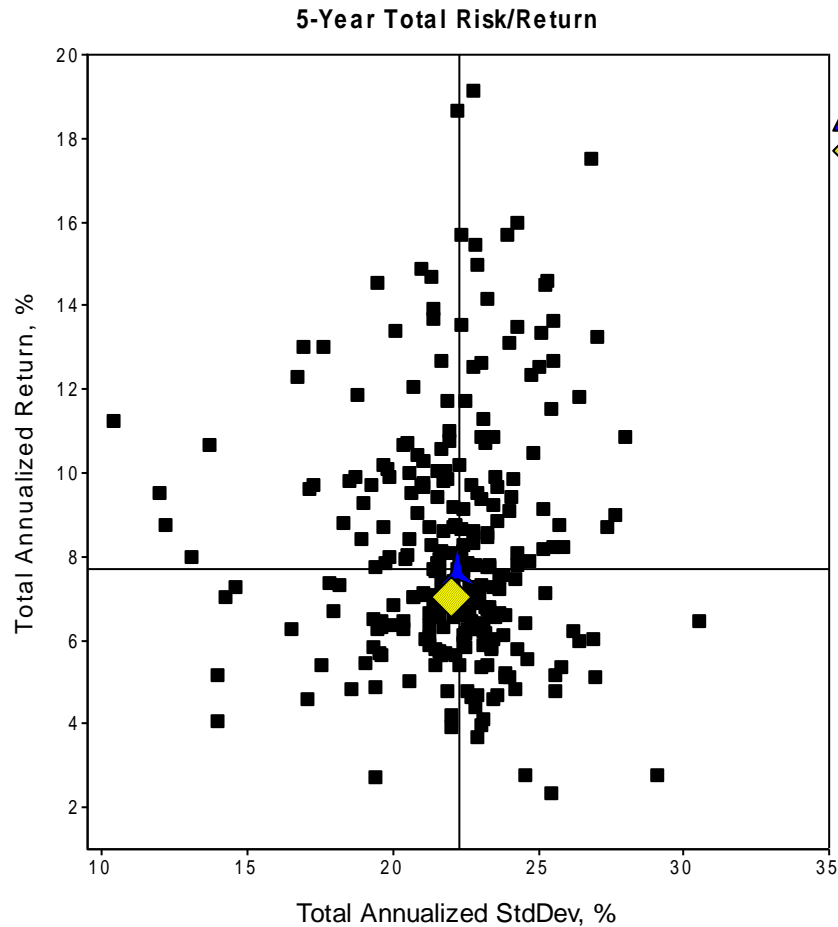
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Blackrock Intl	22.20	11.71	1.90
MFS Dev Intl	26.86	11.51	2.33
MSCI Wld ex US IMI ND	21.85	11.71	1.87
International Equity Universe Median	23.75	11.32	2.07

	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Blackrock Intl	0.35	0.14	2.49
MFS Dev Intl	5.01	6.19	0.81
MSCI Wld ex US IMI ND	0.00	0.00	NA
International Equity Universe Median	1.90	3.58	0.53

# WPERP International Equity Manager Comparisons as of September 30, 2013



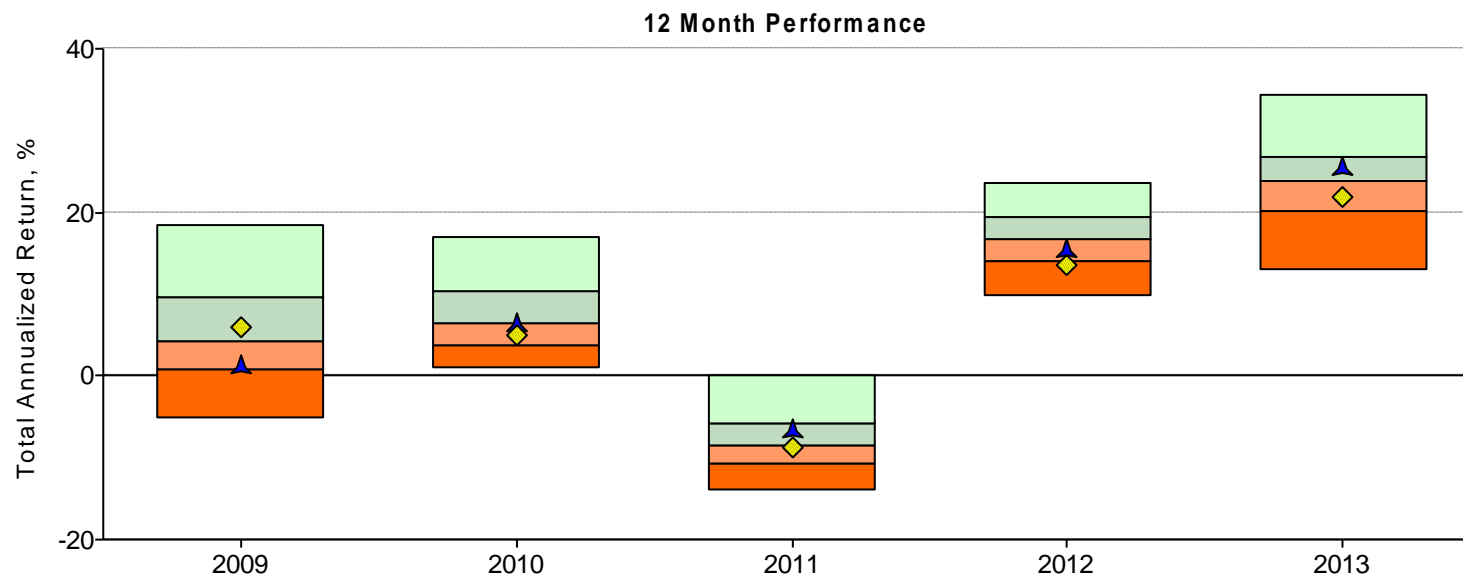
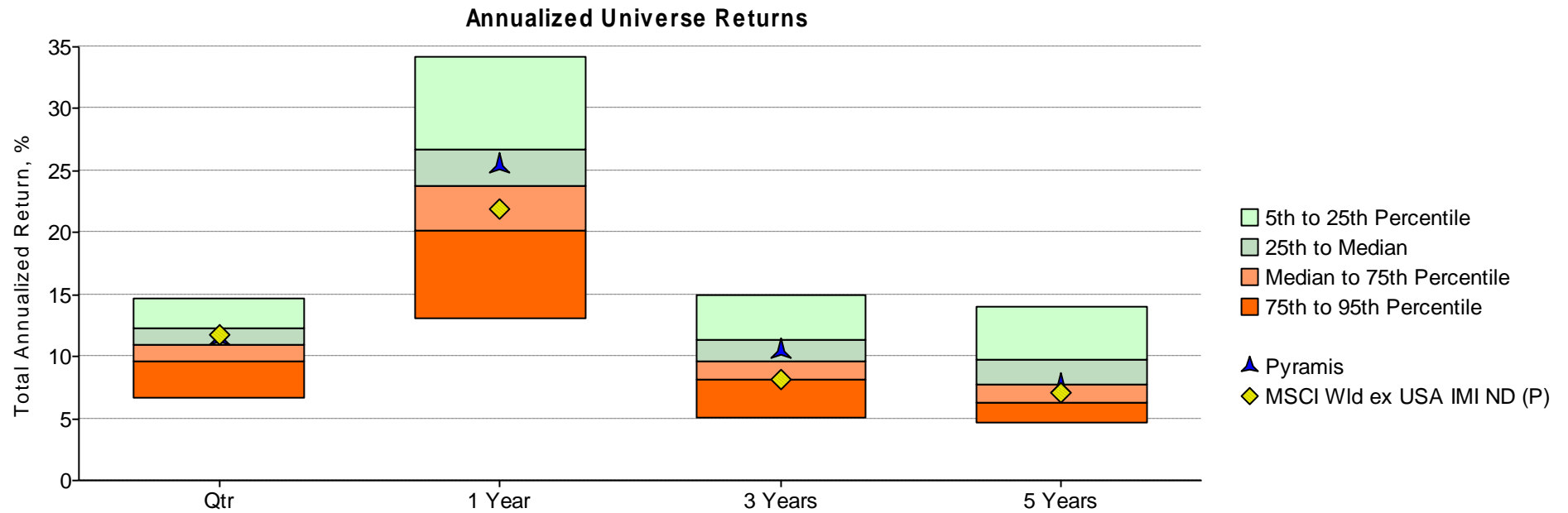
# WPERP International Equity Manager Comparisons as of September 30, 2013



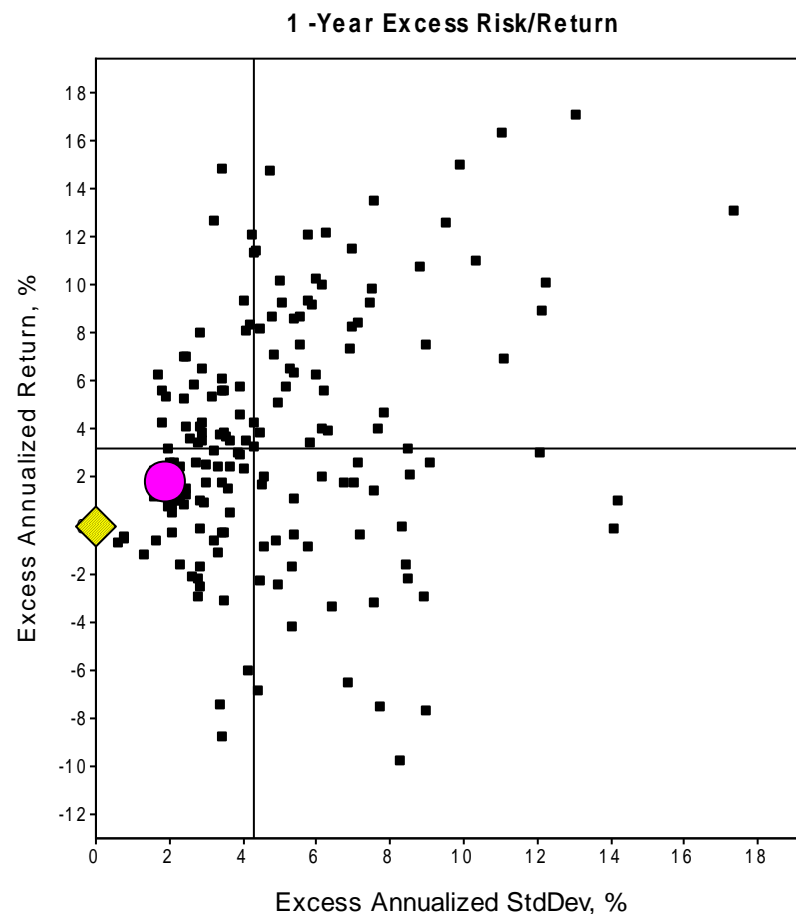
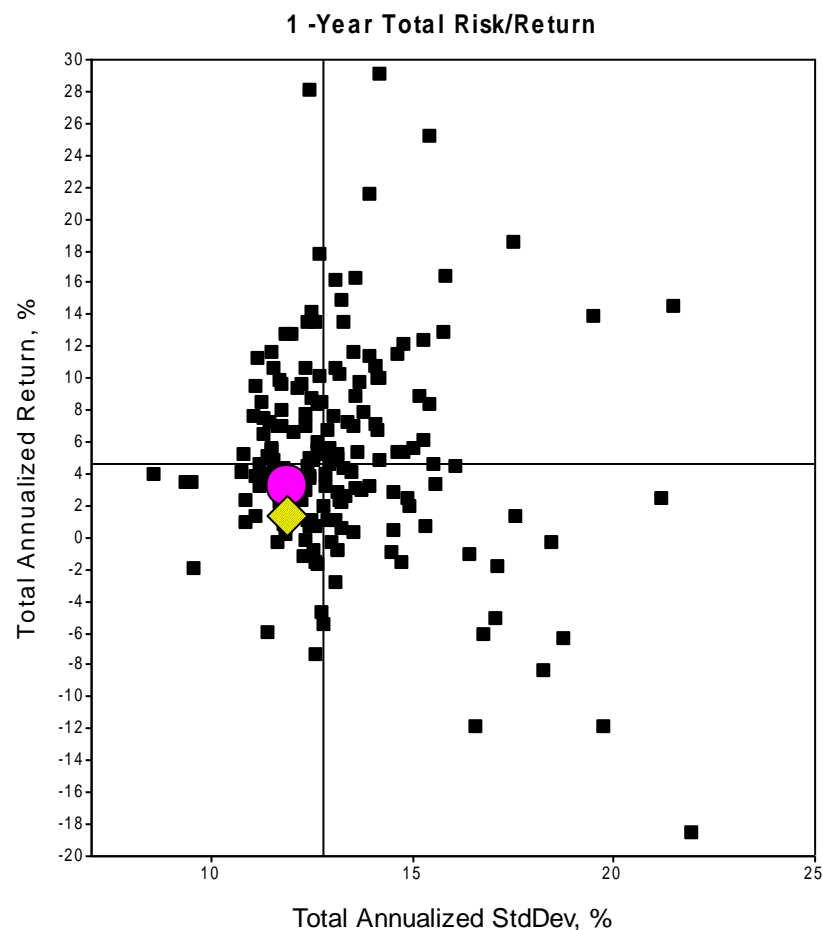
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Pyramis	7.61	22.23	0.34
MSCI Wld ex USA IMI ND (P)	7.05	22.03	0.32
International Equity Universe Median	7.70	22.29	0.34

	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Pyramis	0.57	2.25	0.25
MSCI Wld ex USA IMI ND (P)	0.00	0.00	NA
International Equity Universe Median	0.65	4.67	0.14

# WPERP International Equity Manager Comparisons as of September 30, 2013



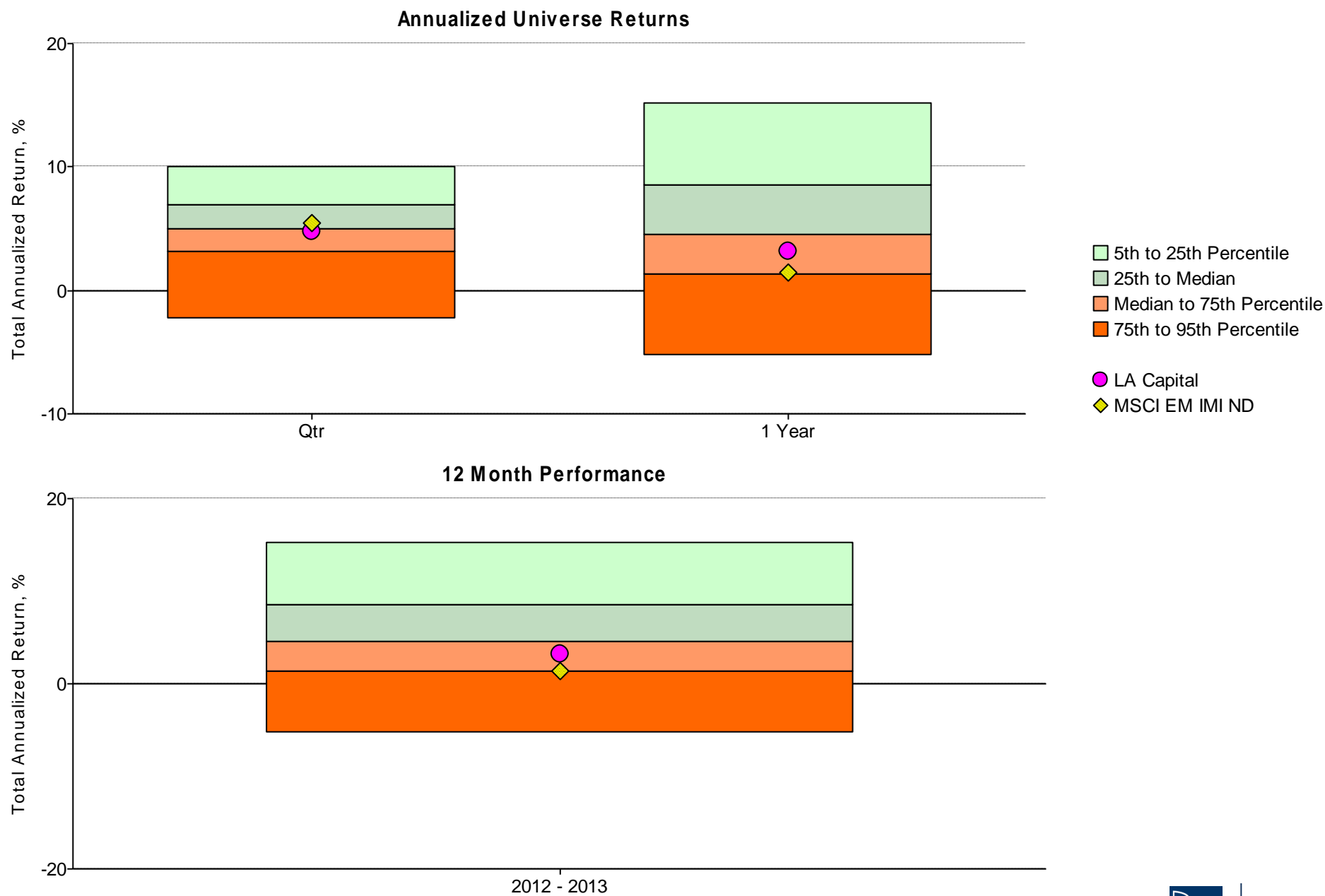
# WPERP Emerging Market Equity Manager Comparisons as of September 30, 2013



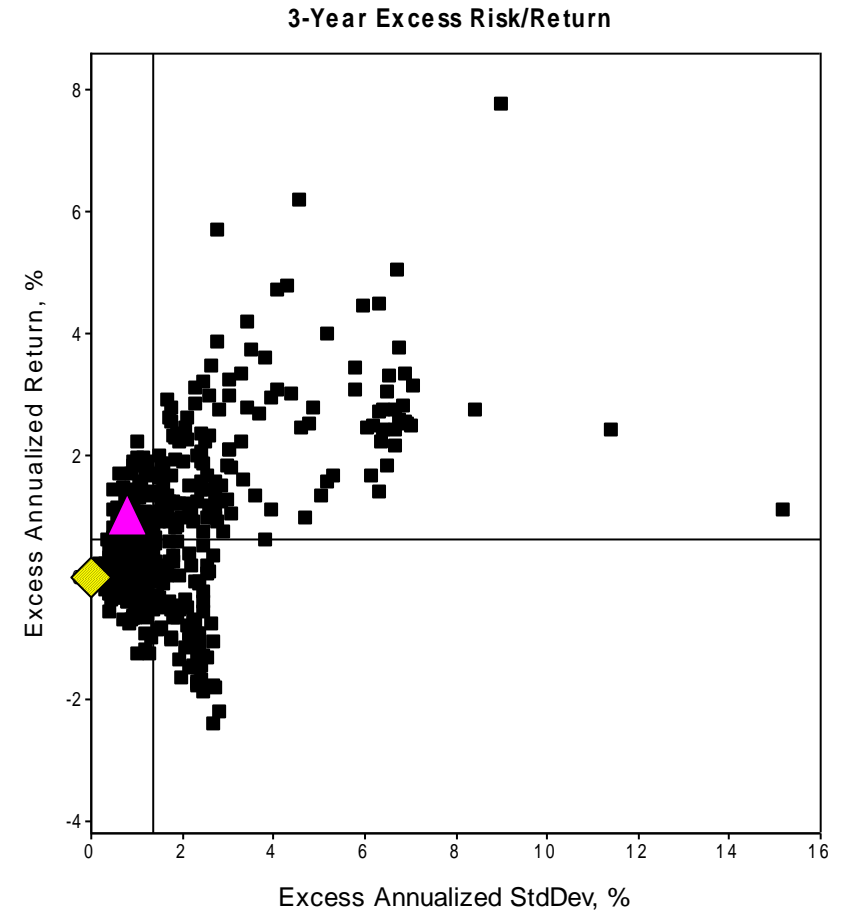
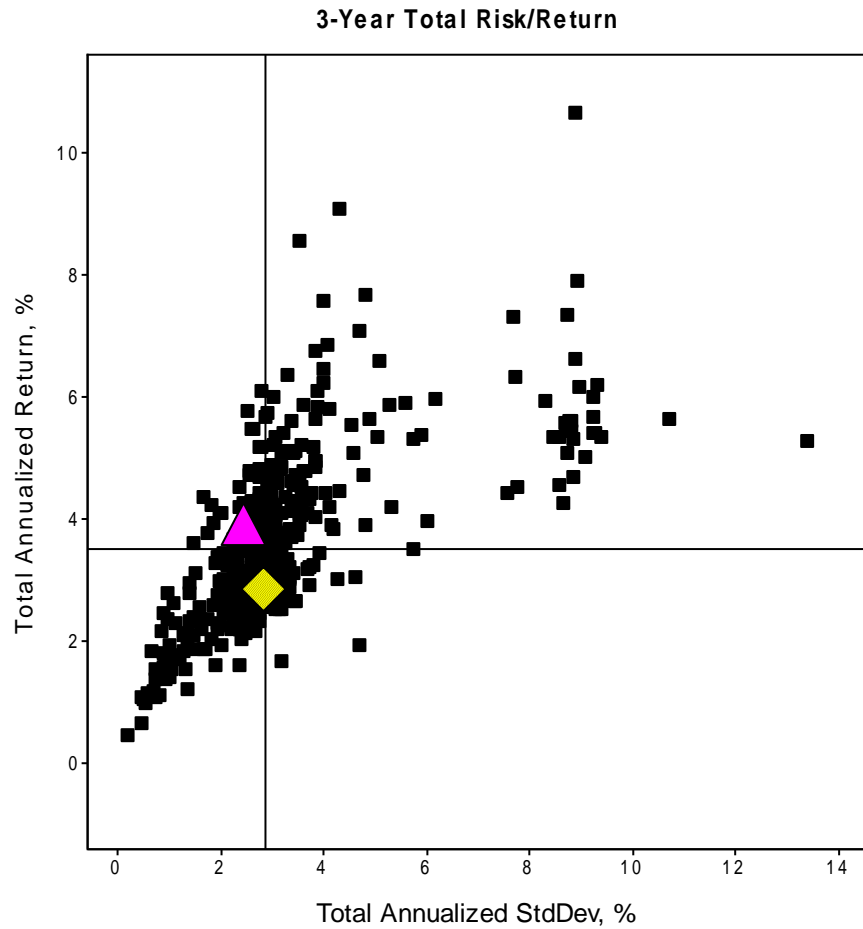
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
LA Capital	3.22	11.88	0.27
MSCI EM IMI ND	1.41	11.85	0.12
Emerging Equity Universe Median	4.60	12.76	0.37

	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
LA Capital	1.81	1.91	0.95
MSCI EM IMI ND	0.00	0.00	NA
Emerging Equity Universe Median	3.18	4.30	0.78

# WPERP Emerging Market Equity Manager Comparisons as of September 30, 2013



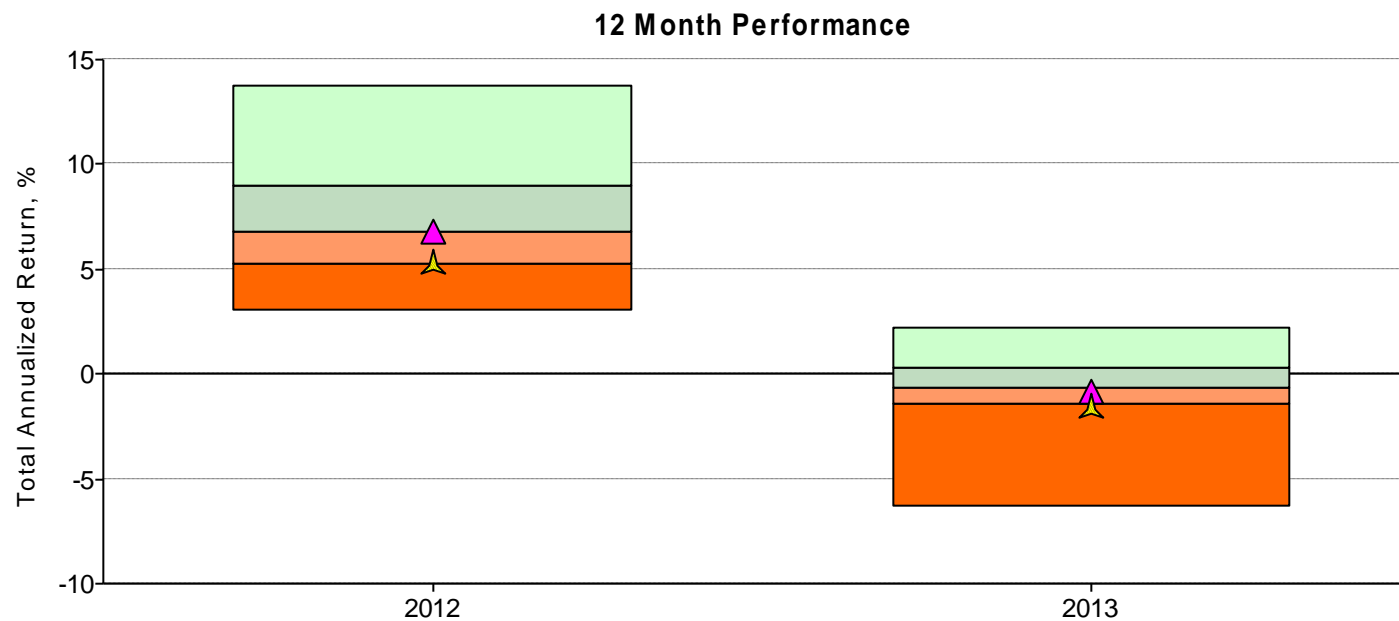
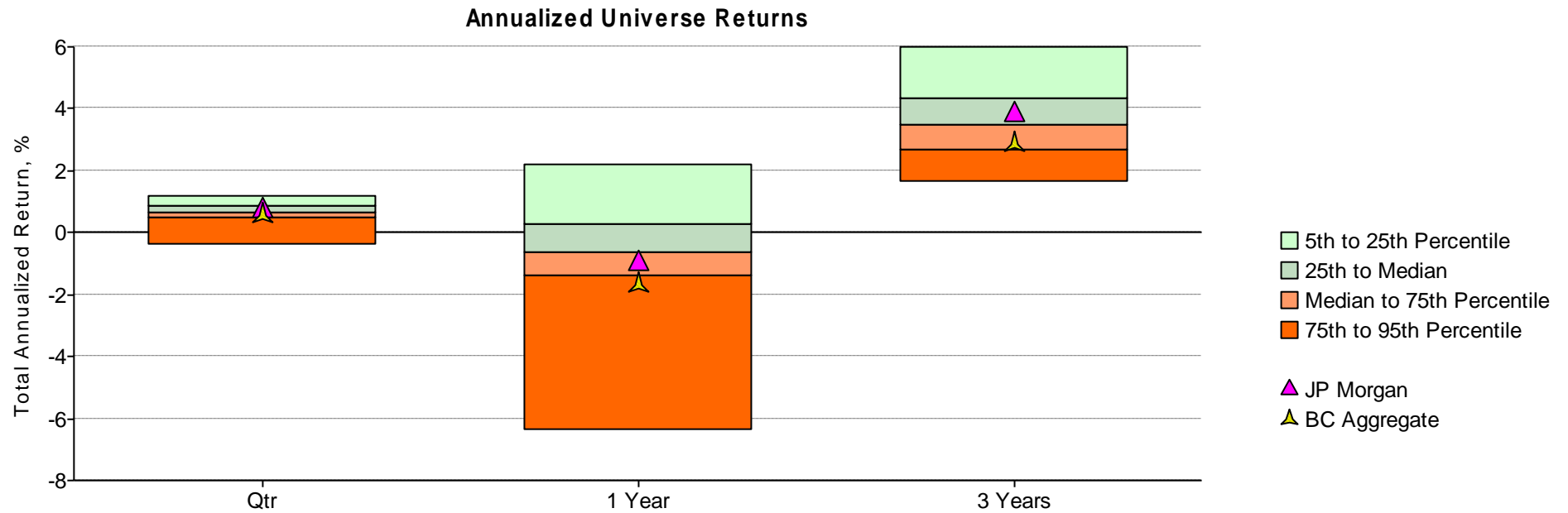
# WPERP Fixed Income Manager Comparisons as of September 30, 2013



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
JP Morgan	3.79	2.42	1.57
BC Aggregate	2.86	2.81	1.02
Fixed Income Manager Universe Median	3.50	2.85	1.25

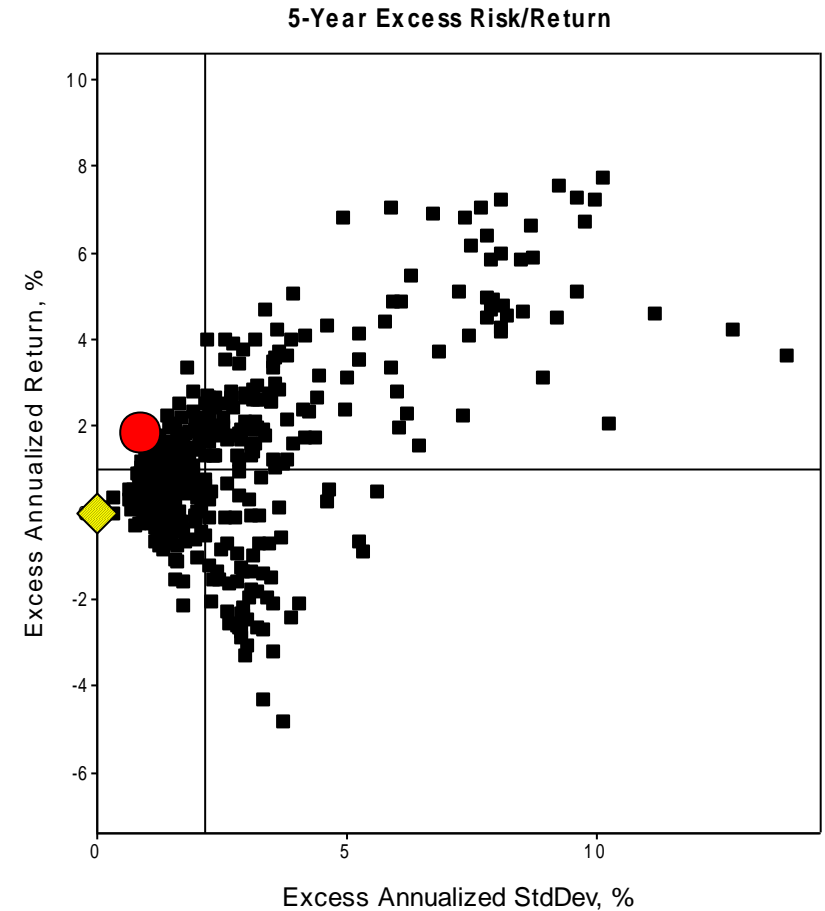
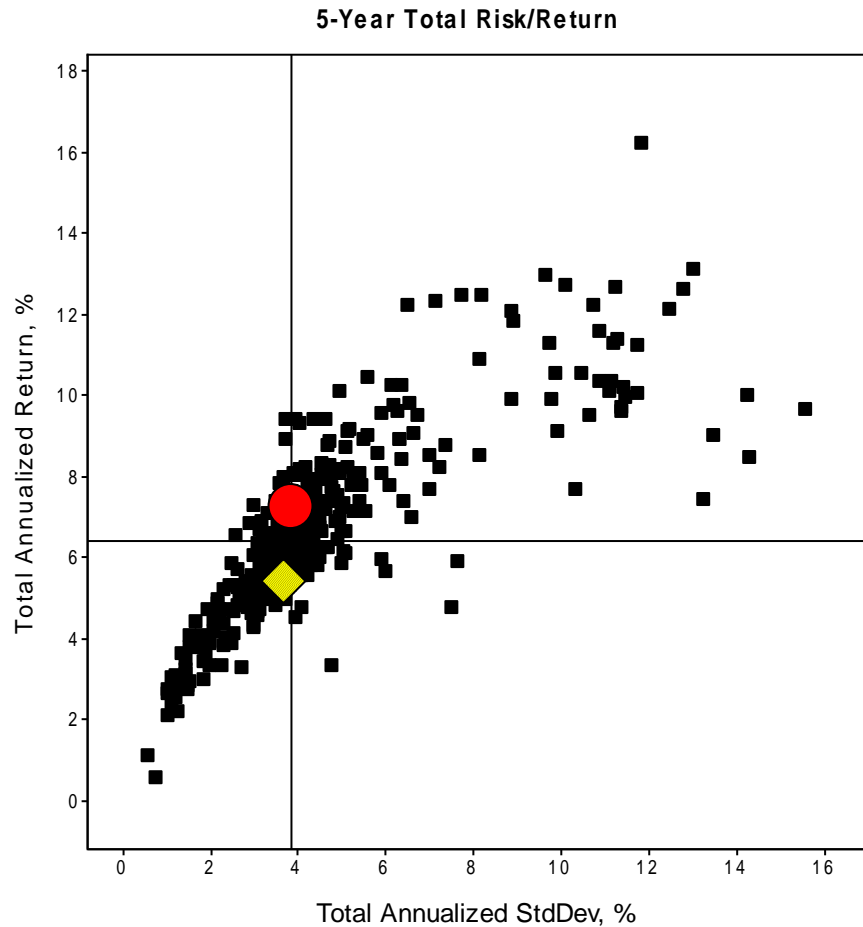
	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
JP Morgan	0.93	0.79	1.18
BC Aggregate	0.00	0.00	NA
Fixed Income Manager Universe Median	0.64	1.38	0.41

# WPERP Fixed Income Manager Comparisons as of September 30, 2013





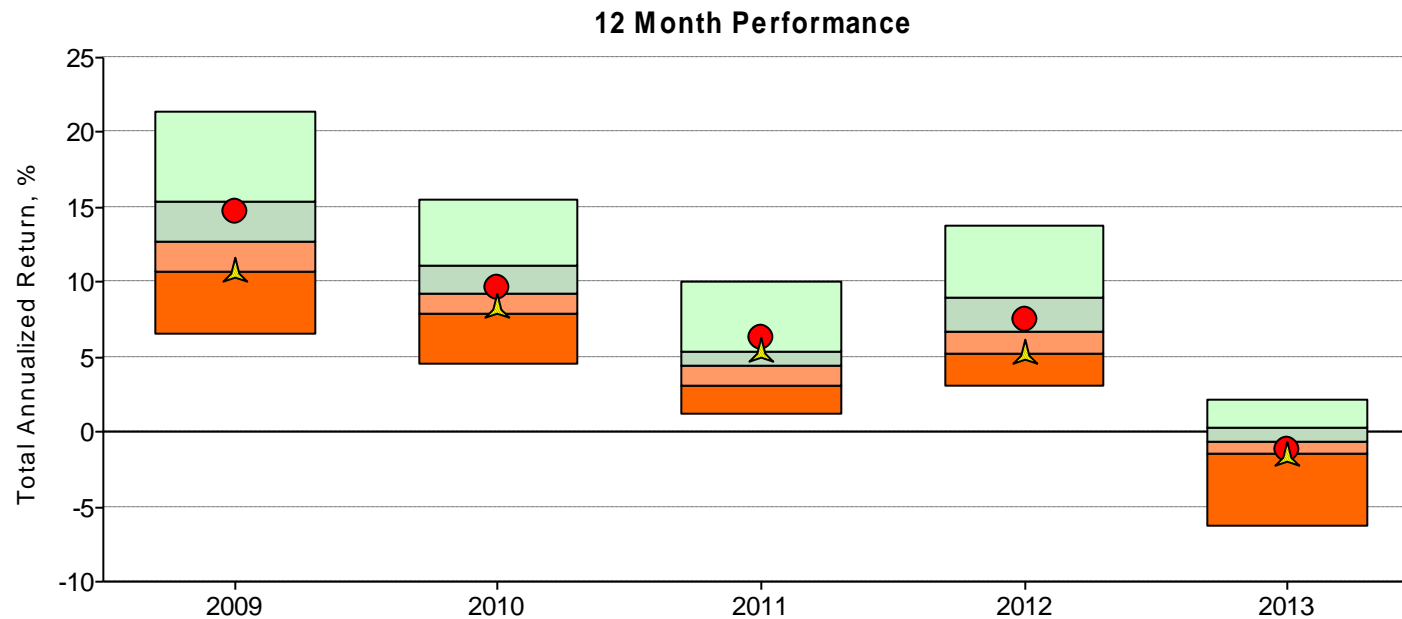
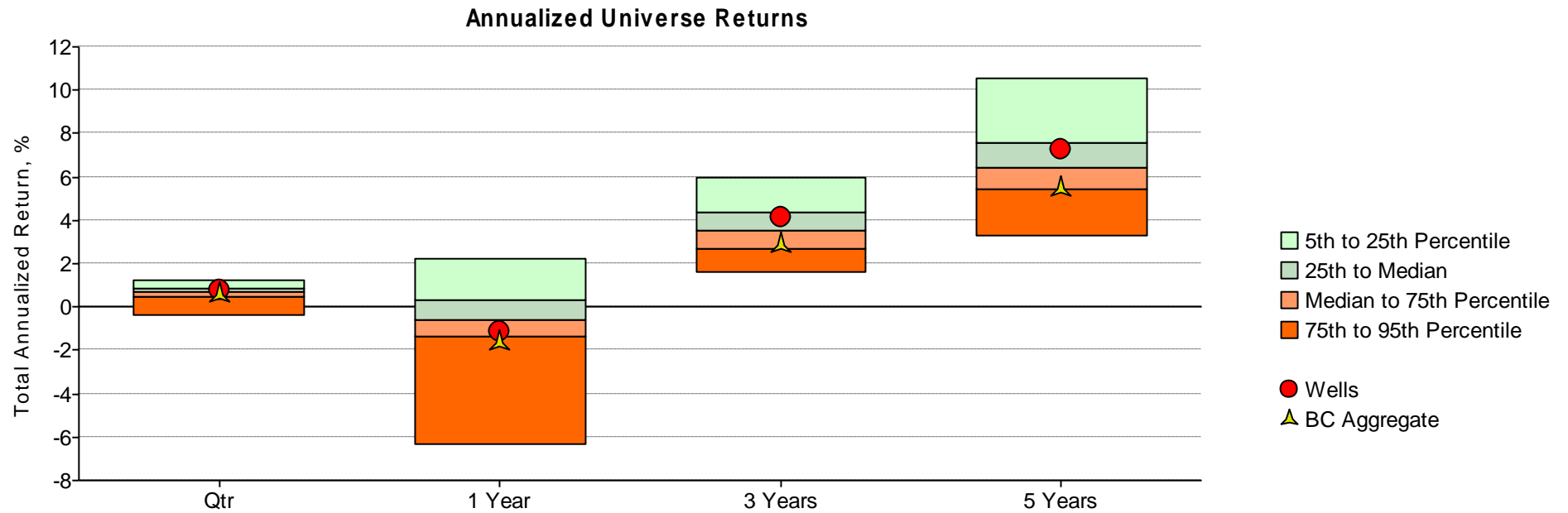
# WPERP Fixed Income Manager Comparisons as of September 30, 2013



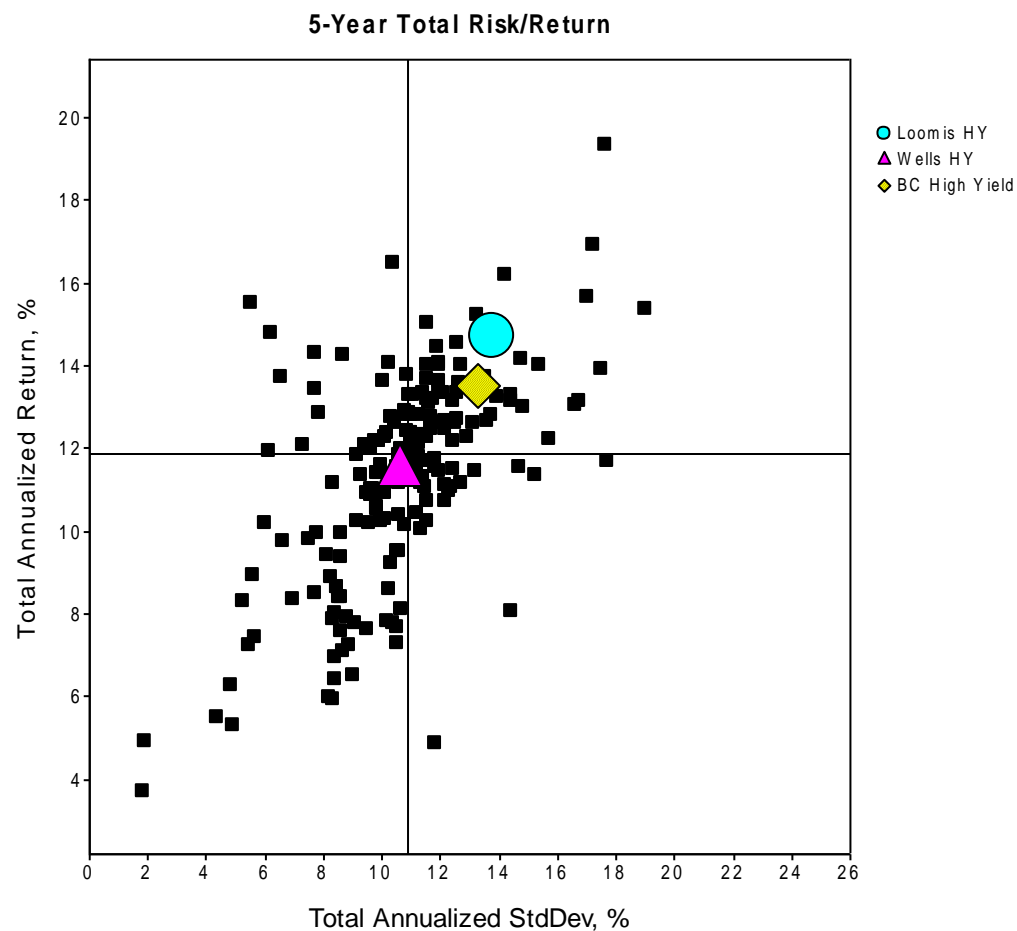
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Wells	7.26	3.85	1.89
BC Aggregate	5.41	3.66	1.48
Fixed Income Manager Universe Median	6.40	3.84	1.67

	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Wells	1.85	0.90	2.06
BC Aggregate	0.00	0.00	NA
Fixed Income Manager Universe Median	0.99	2.15	0.52

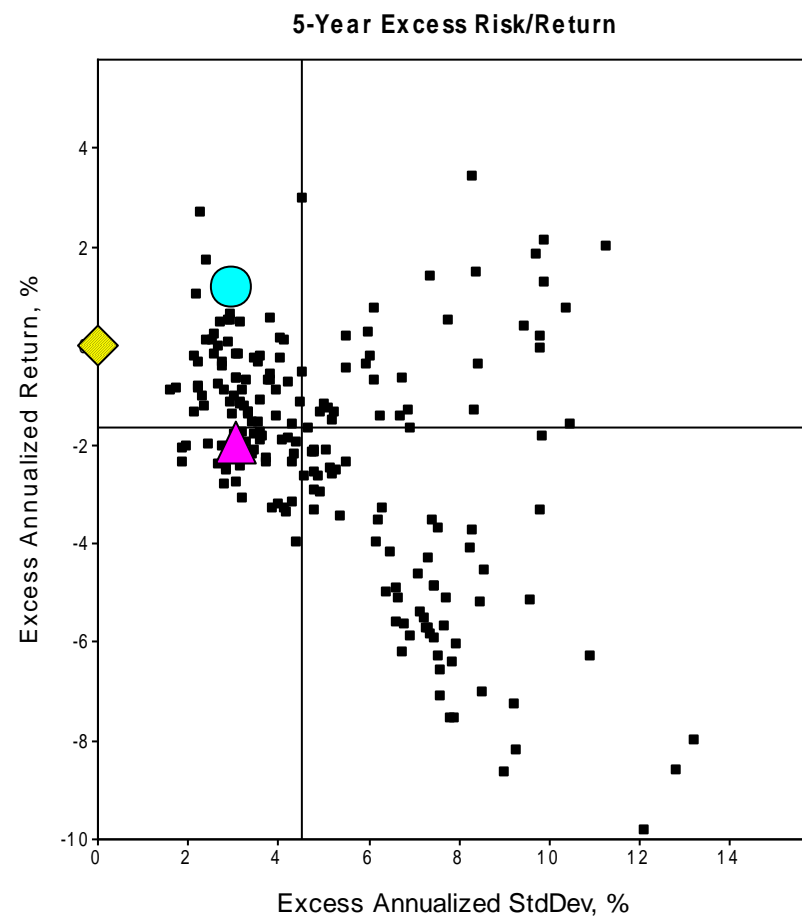
# WPERP Fixed Income Manager Comparisons as of September 30, 2013



# WPERP High Yield Manager Comparisons as of September 30, 2013

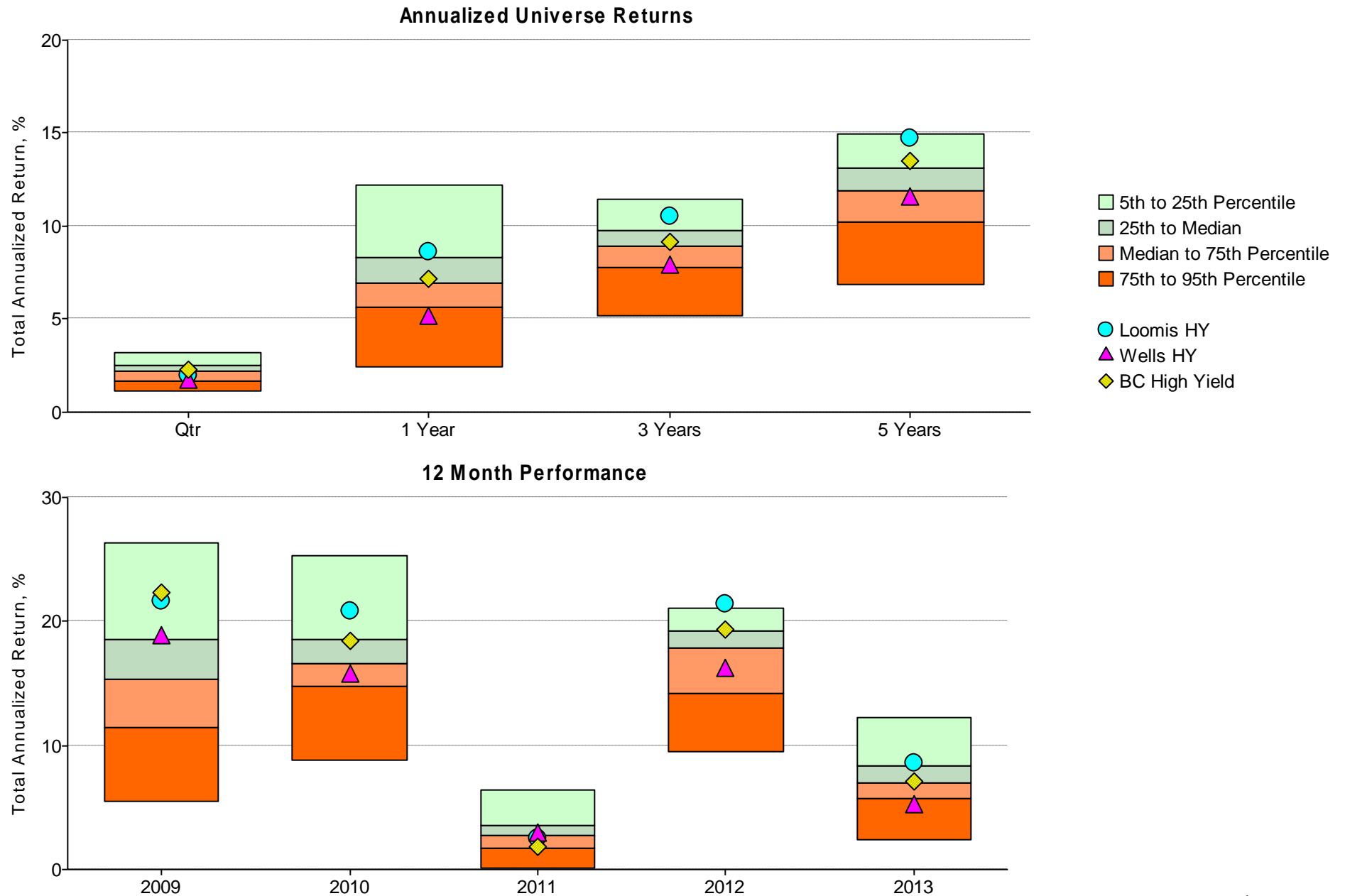


	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Loomis HY	14.71	13.74	1.07
Wells HY	11.43	10.61	1.08
BC High Yield	13.53	13.28	1.02
U.S. High Yield Universe Median	11.88	10.87	1.08



	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Loomis HY	1.17	2.95	0.40
Wells HY	-2.10	3.04	-0.69
BC High Yield	0.00	0.00	NA
U.S. High Yield Universe Median	-1.65	4.52	-0.44

# WPERP High Yield Manager Comparisons as of September 30, 2013





# APPENDIX

## MANAGER WATCH CRITERIA

<b>Asset Class</b>	<b>Short-term (Rolling 12 month periods)</b>	<b>Medium-term (Rolling 36 month periods)</b>	<b>Long-term</b>
Active Domestic Equity	Portfolio Return < Benchmark Return – 3.0% at 2 consecutive calendar qtr end dates.	Portfolio Annlzd. Return < Benchmark Annlzd. Return – 1.5% at 2 consecutive calendar qtr end dates.	VRR < 0.98 at 2 consecutive calendar qtr end dates.
Passive Domestic Equity	Tracking Error > 0.35% at 2 consecutive calendar qtr end dates	Tracking Error > 0.20% at 2 consecutive calendar qtr end dates.	Portfolio Annlzd. Return < Benchmark Annlzd. Return –0.10% at 2 consecutive calendar qtr end dates.
Active International Equity	Portfolio Return < Benchmark Return – 4.5% at 2 consecutive calendar qtr end dates.	Portfolio Annlzd. Return < Benchmark Annlzd. Return – 2.5% for 2 consecutive calendar qtr end dates.	VRR < 0.98 at 2 consecutive calendar qtr end dates.
Active Fixed Income	Portfolio Return < Benchmark Return – 1.0% at 2 consecutive calendar qtr end dates.	Portfolio Annlzd. Return < Benchmark Annlzd. Return – 0.6% at 2 consecutive calendar qtr end dates.	VRR < 0.99 at 2 consecutive calendar qtrs.
Fund of Hedge Funds (Real Return)	Portfolio Return < Benchmark Return – 3.5% at 2 consecutive calendar qtr end dates.	Portfolio Annlzd. Return < Benchmark Annlzd. Return – 2.5% at 2 consecutive calendar qtr end dates.	VRR < 1.00 at 2 consecutive calendar qtr end dates.
Global Inflation Linked Securities (Real Return)	Portfolio Return < Benchmark Return – 2.0% at 2 consecutive calendar qtr end dates.	Portfolio Annlzd. Return < Benchmark Annlzd. Return – 1.5% at 2 consecutive calendar qtr end dates.	VRR < 0.99 at 2 consecutive calendar qtr end dates.

\*All portfolio returns are gross of manager fees.

## SUMMARY OF WPERP RETIREMENT PLAN PORTFOLIO TRANSITIONS

Manager	Mandate	Funded	Terminated
<b>2003</b>			
BlackRock (formerly Merrill Lynch)	Passive Core	3Q 2003	---
Northern Trust	Passive Core	3Q 2003	1Q 2005
<b>2004</b>			
Fred Alger	Large Cap Growth	1Q 2004	---
Intech	Large Cap Growth	1Q 2004	3Q 2009
MFS	Large Cap Value	1Q 2004	---
Invesco	International	2Q 2004	4Q 2011
T. Rowe Price	Large Cap Value	3Q 2004	---
ING/Aeltus	Core Fixed Income	3Q 2004	4Q 2009
Wells Capital	Core Fixed Income	3Q 2004	---
Bank of New York	Small Cap Growth	4Q 2004	1Q 2006
Earnest Partners	Small Cap Value	4Q 2004	---
Pyramis (formerly Fidelity)	International	4Q 2004	---
Wells Capital	High Yield	4Q 2004	---
<b>2005</b>			
Boston Company	International	1Q 2005	4Q 2011
Loomis Sayles	High Yield	1Q 2005	---
Boston Company	Emerging Markets	1Q 2005	4Q 2011
T. Rowe Price	Emerging Markets	1Q 2005	3Q 2011
Boston Company	Large Cap Active	---	1Q 2005
<b>2006</b>			
Lexington VI	Private Equity	3Q 2006	---
Northpointe	Small Cap Growth	3Q 2006	2Q 2009
Paradigm	Small Cap Growth	3Q 2006	1Q 2010
Landmark XIII	Private Equity	4Q 2006	---
Prisa	Real Estate	4Q 2006	---
<b>2007</b>			
Aetos	Hedge Fund	1Q 2007	2Q 2013
PAAMCO	Hedge Fund	1Q 2007	4Q 2010
Prisa II	Real Estate	2Q 2007	---
JPM Strategic	Real Estate	3Q 2007	---
<b>2008</b>			
HRJ	Private Equity	1Q 2008	---
Fisher Lynch	Private Equity	2Q 2008	---
CB Richard Ellis	Real Estate	2Q 2008	---
Landmark XIV	Private Equity	3Q 2008	---
<b>2009</b>			
Oaktree V	Private Equity	1Q 2009	---

(Continued)

Manager	Mandate	Funded	Terminated
<b>2010</b>			
Mesa West	Real Estate	1Q 2010	---
Lexington VII	Private Equity	1Q 2010	---
T. Rowe Price	Large Cap Growth	2Q 2010	---
Frontier	Small Cap Growth	2Q 2010	---
JP Morgan	Core Fixed Income	2Q 2010	---
WAMCO	GILS	2Q 2010	---
<b>2011</b>			
EnergyCap VIII	Private Equity	1Q 2011	---
Audax Mezz III	Private Equity	1Q 2011	---
Lone Star II	Real Estate	2Q 2011	---
Lone Star VII	Real Estate	2Q 2011	---
Invesco	Real Estate	3Q 2011	---
Vista Equity Partners IV	Private Equity	4Q 2011	---
DRA	Real Estate	4Q 2011	---
<b>2012</b>			
AG Core	Real Estate	1Q 2012	---
Gateway (replication)	Covered Calls	2Q 2012	---
Gateway (non-replication)	Covered Calls	2Q 2012	---
BlackRock	Developed International	3Q 2012	---
MFS	Developed International	3Q 2012	---
L.A. Capital	Emerging Markets	3Q 2012	---
PCCP	Real Estate	3Q 2012	---
Blackstone	Real Estate	3Q 2012	---
ARS VI	Real Estate	3Q 2012	---
Bristol Value II	Real Estate	4Q 2012	---
AresCorp. Opp. IV	Private Equity	4Q 2012	---
Vontobel	Emerging Markets	4Q 2012	---
<b>2013</b>			
EnergyCap IX	Private Equity	1Q 2013	---
DFA	Real Estate	1Q 2013	---
Torchlight Debt Opp IV	Real Estate	3Q 2013	---
Invesco Commodity	Commodities	3Q 2013	---
Mesa West Fund III	Real Estate	3Q 2013	---

## WPERP RETIREMENT PLAN POLICY BENCHMARK DESCRIPTION

Time Period	Policy Benchmarks
Thru 3/31/2003	60% S&P 500 30% Citigroup BIG 10% Citigroup T-Bill
4/1/2003-12/31/2006	40% Russell 3000 15% MSCI ACWI ex U.S. 35% BC Universal 1% T-Bill <i>The Plan had allocated 5% to Alternatives and 4% to Real Estate asset classes. Since both of these asset classes were not funded until 1Q 2007, the policy benchmark was calculated on a pro-weighted basis (on total of 91%) during this period.</i>
1/1/2007-2/28/2007	40% Russell 3000 15% MSCI ACWI ex U.S. 35% BC Universal 4% NCREIF Lag 4.25% Cambridge U.S. Private Equity Lag , 0.75% Cambridge U.S. Venture Capital Lag 1% T-Bill
3/1/2007-6/30/2008	40% Russell 3000 15% MSCI ACWI ex U.S. 35% BC Universal 4% NCREIF Lag 3.40% Cambridge U.S. Private Equity Lag , 0.60% Cambridge U.S. Venture Capital Lag 1% T-Bill + 3% Lag 1% T-Bill
7/1/2008-12/31/2008	40% Russell 3000 24% MSCI ACWI ex U.S. 30% BC Universal 2% NCREIF Lag 0.85% Cambridge U.S. Private Equity Lag , 0.15% Cambridge U.S. Venture Capital Lag 2% T-Bill + 3% Lag 1% T-Bill
1/1/2009-6/30/2009	40% Russell 3000 24% MSCI ACWI ex U.S. IMI 30% BC Universal 2% NCREIF Lag 0.85% Cambridge U.S. Private Equity Lag , 0.15% Cambridge U.S. Venture Capital Lag 2% T-Bill + 3% Lag 1% T-Bill



## WPERP RETIREMENT PLAN POLICY BENCHMARK DESCRIPTION - CONTINUED

Time Period	Policy Benchmarks
7/1/2009-9/30/2010	33% Russell 3000 17% MSCI ACWI ex U.S. IMI 40% BC Universal 3% NCREIF Lag 1.70% Cambridge U.S. Private Equity Lag , 0.30% Cambridge U.S. Venture Capital Lag 3% T-Bills + 3% Lag 2% T-Bill
10/1/2010-9/30/2011	34% Russell 3000 20% MSCI ACWI ex U.S. IMI 33% BC Universal 4% NCREIF Lag 2.55% Cambridge U.S. Private Equity Lag , 0.45% Cambridge U.S. Venture Capital Lag 5% T-Bills + 3% Lag 1% T-Bill
10/1/2011-3/31/2012	35% Russell 3000 22% MSCI ACWI ex U.S. IMI 33% BC Universal 2% NCREIF Lag 2% Russell 3000 + 3% Lag 5% T-Bills + 3% Lag 1% T-Bill
4/1/2012-6/30/2013	34% Russell 3000 21% MSCI ACWI ex U.S. IMI 25% BC Universal 5% CBOE BXM 4% NCREIF Lag 4% Russell 3000 + 3% Lag 6% T-Bills + 3% Lag 1% T-Bill
7/1/2013 - Present	33% Russell 3000 21% MSCI ACWI ex U.S. IMI 24% BC Universal 5% CBOE BXM 5% NCREIF Lag 5% Russell 3000 + 3% Lag 6% T-Bills + 3% Lag 1% T-Bill

## WPERP HEALTH PLAN POLICY BENCHMARK DESCRIPTION

Time Period	Policy Benchmarks
Thru 9/30/2009	60% Russell 3000 40% BC Universal
10/1/09-6/30/10	37% Russell 3000 15% MSCI ACWI ex U.S. IMI 45% BC Universal 0.85% Cambridge U.S. Private Equity Lag , 0.15% Cambridge U.S. Venture Capital Lag 2% T-Bill
7/1/2010-9/30/2011	34% Russell 3000 18% MSCI ACWI ex U.S. IMI 42% BC Universal 0.85% Cambridge U.S. Private Equity Lag , 0.15% Cambridge U.S. Venture Capital Lag 3% T-Bill + 3% Lag 2% T-Bill
10/1/2011-3/31/2012	36% Russell 3000 20% MSCI ACWI ex U.S. IMI 36% BC Universal 1% NCREIF Lag 1% Russell 3000 + 3% Lag 5% T-Bill + 3% Lag 1% T-Bill
4/1/2012-6/30/2013	35% Russell 3000 21% MSCI ACWI ex U.S. IMI 26% BC Universal 5% CBOE BXM 3% NCREIF Lag 3% Russell 3000 + 3% Lag 6% T-Bills + 3% Lag 1% T-Bill
7/1/2013 - Present	33% Russell 3000 21% MSCI ACWI ex U.S. IMI 24% BC Universal 5% CBOE BXM 5% NCREIF Lag 5% Russell 3000 + 3% Lag 6% T-Bills + 3% Lag 1% T-Bill

**Retirement Plan Evolving Investment Policy Allocations**

Asset Class	10/1/2011- 3/31/2012	4/1/2012- 6/30/2013	7/1/2013- 6/30/2014
Domestic Equity	35	34	33
International Equity	22	21	21
Fixed Income	33	25	24
Covered Calls	0	5	5
Real Return	5	6	6
Private Equity	2	4	5
Real Estate	2	4	5
Cash	1	1	1

**Health Plan Evolving Investment Policy Allocations**

Asset Class	10/1/2011- 3/31/2012	4/1/2012- 6/30/2013	7/1/2013- 6/30/2014
Domestic Equity	36	35	33
International Equity	20	21	21
Fixed Income	36	26	24
Covered Calls	0	5	5
Real Return	5	6	6
Private Equity	1	3	5
Real Estate	1	3	5
Cash	1	1	1

**Performance Attribution** - the process of comparing a portfolio's performance with its benchmark, and identify and quantify sources of differential returns (also called active returns).

**Differential Returns / Active Returns / Value Added** – The difference between the return on a portfolio and the return on the benchmark.

#### Impact on Return

Attribution Segment	Definition	Formula	Where:
Weighting (also called allocation, sector allocation, or pure sector allocation)	The effects of portfolio manager decisions to over/underweight each sector	Allocation $(w_i - W_i) \times (b_i - b)$	$w_i$ = portfolio segment weight $W_i$ = benchmark segment weight $b_i$ = benchmark segment return $b$ = total benchmark return
Selection (also called within-sector selection)	The effects of portfolio manager decision to buy specific securities	Selection $(r_i - b_i) \times W_i$	$r_i$ = portfolio segment return $b_i$ = benchmark segment return $W_i$ = benchmark segment weight
Interaction (also called allocation/selection interaction)	The effects of portfolio managers decisions to security selection can inadvertently cause sector over/underweighting.	Interaction $(r_i - b_i) \times (w_i - W_i)$	$r_i$ = portfolio segment return $b_i$ = benchmark segment return $w_i$ = portfolio segment weight $W_i$ = benchmark segment weight



---

## GLOSSARY OF TERMS

**Alpha** - The premium an investment earns above a set standard. This is usually measured in terms of a common index (i.e., how the stock performs independent of the market). An Alpha is usually generated by regressing a security's excess return on the S&P 500 excess return.

**Annualized Performance** - The annual rate of return that when compounded  $t$  times generates the same  $t$ -period holding return as actually occurred from period 1 to period  $t$ .

**Batting Average** - Percentage of periods a portfolio outperforms a given index.

**Beta** - The measure of an asset's risk in relation to the Market (for example, the S&P 500) or to an alternative benchmark or factors. Roughly speaking, a security with a Beta of 1.5 will have moved, on average, 1.5 times the market return.

**Bottom-up** - A management style that de-emphasizes the significance of economic and market cycles, focusing instead on the analysis of individual securities.

**Dividend Discount Model** - A method to value the common stock of a company that is based on the present value of the expected future dividends.

**Growth Stocks** - Common stock of a company that has an opportunity to invest money and earn more than the opportunity cost of capital.

**Information Ratio** - The ratio of annualized expected residual return to residual risk. A central measurement for active management, value added is proportional to the square of the information ratio.

**R-Squared** - Square of the correlation coefficient. The proportion of the variability in one series that can be explained by the variability of one or more other series in a regression model. A measure of the quality of fit. 100% R-square means perfect predictability.

**Standard Deviation** - The square root of the variance. A measure of dispersion of a set of data from its mean.

**Sharpe Ratio** - A measure of a portfolio's excess return relative to the total variability of the portfolio.

**Style Analysis** - A returns-based analysis using a multi-factor attribution model. The model calculates a product's average exposure to particular investment styles over time (i.e., the product's normal style benchmark).

**Top-down** - Investment style that begins with an assessment of the overall economic environment and makes a general asset allocation decision regarding various sectors of the financial markets and various industries.

**Tracking Error** - The standard deviation of the difference between the performance of a portfolio and an appropriate benchmark.

**Turnover** - For mutual funds, a measure of trading activity during the previous year, expressed as a percentage of the average total assets of the fund. A turnover rate of 25% means that the value of trades represented one-fourth of the assets of the fund.

**Value Stocks** - Stocks with low price/book ratios or price/earnings ratios. Historically, value stocks have enjoyed higher average returns than growth stocks (stocks with high price/book or P/E ratios) in a variety of countries.



## DEFINITION OF BENCHMARKS

**BC Aggregate:** an index comprised of approximately 6,000 publicly traded investment-grade bonds including U.S. Government, mortgage-backed, corporate, and yankee bonds with an approximate average maturity of 10 years.

**BC High Yield:** covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (e.g., Argentina, Brazil, Venezuela, etc.) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included. Original issue zeroes, step-up coupon structures, 144-As and pay-in-kind bonds (PIKs, as of October 1, 2009) are also included. Must be rated high-yield (Ba1/BB+ or lower) by at least two of the following ratings agencies: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. All issues must have at least one year to final maturity regardless of call features and have at least \$150 million par amount outstanding.

**BC Multiverse Non-US Hedged:** provides a broad-based measure of the international fixed-income bond market. The index represents the union of the BC Global Aggregate Index and the BC Global High Yield Index. In this sense, the term "Multiverse" refers to the concept of multiple universes in a single macro index.


**BC U.S. Credit:** includes publicly issued U.S. corporate and foreign debentures and secured notes that which are rated investment grade or higher by Moody's Investor Services, Standard and Poor's Corporation, or Fitch Investor's Service, with all issues having at least one year to maturity and an outstanding par value of at least \$250 million. Issues must be publicly issued, dollar-denominated and non-convertible.

**BC U.S. Government:** includes treasuries (i.e., public obligations of the U.S. Treasury that have remaining maturities of more than one year) and agencies (i.e., publicly issued debt of U.S. Government agencies, quasi-federal corporations, and corporate or foreign debt guaranteed by the U.S. Government).

**BC Universal:** includes market coverage by the Aggregate Bond Index fixed rate debt issues, which are rated investment grade or higher by Moody's Investor Services, Standard and Poor's Corporation, or Fitch Investor's Service, with all issues having at least one year to maturity and an outstanding par value of at least \$100 million) and includes exposures to high yield CMBS securities. All returns are market value weighted inclusive of accrued interest.

**BC World Govt Inflation-Linked Bond (WGILB):** measures the performance of the major government inflation-linked bond markets. The index is designed to include only those markets in which a global government linker fund is likely and able to invest. To be included a market must have aggregate issuance of \$4 billion or more and have minimum rating of A3/A- for G7 and euro-zone issuers, Aa3/AA- otherwise, using the middle rating from Moody's, S&P and Fitch ("two out of three" rule). The index is available in local currency and in most major currencies hedged or un-hedged.

**CBOE S&P 500 BuyWrite Index (BXM):** is a benchmark index designed to track the performance of a hypothetical buy-write strategy on the S&P 500 Index. Announced in April 2002, the BXM Index was developed by the CBOE in cooperation with Standard & Poor's. To help in the development of the BXM Index, the CBOE commissioned Professor Robert Whaley to compile and analyze relevant data from the time period from June 1988 through December 2001. Data on daily BXM prices now is available from June 30, 1986, to the present time (see below). The BXM is a passive total return index based on (1) buying an S&P 500 stock index portfolio, and (2) "writing" (or selling) the near-term S&P 500 Index (SPXSM) "covered" call option, generally on the third Friday of each month. The SPX call written will have about one month remaining to expiration, with an exercise price just above the prevailing index level (i.e., slightly out of the money). The SPX call is held until expiration and cash settled, at which time a new one-month, near-the-money call is written. Please visit the BXM FAQ for more information about the construction of the index.



**Citigroup 3-Month Treasury Bills (T-bills):** tracks the performance of U.S. Treasury bills with 3-month maturity.

**MSCI ACWI ex US ND:** comprises both developed and emerging markets less the United States. As of August 2008, the index consisted of 23 countries classified as developed markets and 25 classified as emerging markets. This series approximates the minimum possible dividend reinvestment. The dividend is reinvested after deduction of withholding tax, applying the rate to non-resident individuals who do not benefit from double taxation treaties. MSCI Barra uses withholding tax rates applicable to Luxembourg holding companies, as Luxembourg applies the highest rates.

**MSCI EAFE Free (Europe, Australasia, Far East) ND:** is a free float-adjusted market capitalization index that is designed to measure developed market equity performance, excluding the US & Canada. This series approximates the minimum possible dividend reinvestment. The dividend is reinvested after deduction of withholding tax, applying the rate to non-resident individuals who do not benefit from double taxation treaties. MSCI Barra uses withholding tax rates applicable to Luxembourg holding companies, as Luxembourg applies the highest rates.

**MSCI EM (Emerging Markets) GD:** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. This series approximates the maximum possible dividend reinvestment. The amount reinvested is the entire dividend distributed to individuals resident in the country of the company, but does not include tax credits.

**MSCI Europe** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of the developed markets in Europe. As of June 2007, this index consisted of the following 16 developed market country indices: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**MSCI Pacific** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of the developed markets in the Pacific region. As of June 2007, this index consisted of the following 5 Developed Market countries: Australia, Hong Kong, Japan, New Zealand, and Singapore.


**NAREIT Index:** consists of all tax-qualified REITs listed on the New York Stock Exchange, American Stock Exchange, and the NASDAQ National Market System. The data is market weighted.

**NCREIF Property Index:** the NPI contains investment-grade, non-agricultural, income-producing properties which may be financed in excess of 5% gross market value; were acquired on behalf of tax exempt institutions; and are held in a fiduciary environment. Returns are gross of fees; including income, realized gains/losses, and appreciation/depreciation; and are market value weighted. Index is lagged one quarter.

**Russell 1000:** measures the performance of the 1,000 largest securities in the Russell 3000 Index. Russell 1000 is highly correlated with the S&P 500 Index and capitalization-weighted.

**Russell 1000 Growth:** measures the performance of those Russell 1000 securities with a greater-than-average growth orientation. Securities in this index tend to exhibit higher price-to-book and price-earnings ratios, lower dividend yields and higher forecasted growth values than the Value universe.

**Russell 1000 Value:** measures the performance of those Russell 1000 securities with a less-than-average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-earnings ratios, higher dividend yields and lower forecasted growth values than the Growth universe.



**Russell 2000:** measures the performance of the 2,000 smallest companies in the Russell 3000 Index, which represents approximately 8% of the total market capitalization of the Russell 3000 Index.

**Russell 2000 Growth:** measures the performance of those Russell 2000 securities with a greater-than-average growth orientation. Securities in this index tend to exhibit higher price-to-book and price-to-earnings ratios.

**Russell 2000 Value:** measures the performance of those Russell 2000 securities with a less-than-average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-to-earnings ratios.

**Russell 3000:** represents the largest 3,000 US companies based on total market capitalization, representing approximately 98% of the investable US equity market.





## **RISK METRICS DESCRIPTION – Rationale for selection and calculation methodology**

### US Equity Markets:

Metric:  $P/E \text{ ratio} = \text{Price} / \text{"Normalized" earnings for the S\&P 500 Index}$

To represent the price of US equity markets, we have chosen the S&P 500 index. This index has the longest published history of price, is well known, and also has reliable, long-term, published quarterly earnings. The price= $P$  of the  $P/E$  ratio is the current price of the market index (the average daily price of the most recent full month for the S&P 500 index). Equity markets are very volatile. Prices fluctuate significantly during normal times and extremely during periods of market stress or euphoria. Therefore, developing a measure of earnings power ( $E$ ) which is stable is vitally important, if the measure is to provide insight. While equity prices can and do double, or get cut in half, real earnings power does not change nearly as much. Therefore, we have selected a well known measure of real, stable earnings power developed by Yale Professor Robert Shiller known as the Shiller E-10. The calculation of E-10 is simply the average real annual earnings over the past 10 years. Over 10 years, the earnings shenanigans and boom and bust levels of earnings tend to even out (and often times get restated). Therefore, this earnings statistic gives a reasonably stable, slow-to-change estimate of average real earnings power for the index. Professor Shiller's data and calculation of the E-10 are available on his website at <http://www.econ.yale.edu/~shiller/data.htm>. We have used his data as the base for our calculations. Details of the theoretical justification behind the measure can be found in his book *Irrational Exuberance* [Princeton University Press 2000, Broadway Books 2001, 2nd ed., 2005].

### Developed Equity Markets Excluding the US:

Metric:  $P/E \text{ ratio} = \text{Price} / \text{"Normalized" earnings for the MSCI EAFE Index}$

To represent the price of non-US developed equity markets, we have chosen the MSCI EAFE index. This index has the longest published history of price for non-US developed equities. The price= $P$  of the  $P/E$  ratio is the current price of the market index (the average daily price of the most recent full month for the MSCI EAFE index). The price level of this index is available starting in December 1969. Again, for the reasons described above, we elected to use the Shiller E-10 as our measure of earnings ( $E$ ). Since 12/1972, a monthly price earnings ratio is available from MSCI. Using this quoted ratio, we have backed out the implied trailing-twelve month earnings of the EAFE index for each month from 12/1972 to the present. These annualized earnings are then inflation adjusted using CPI-U to represent real earnings in US dollar terms for each time period. The Shiller E-10 for the EAFE index (10 year average real earnings) is calculated in the same manner as detailed above.

However, we do not believe that the pricing and earnings history of the EAFE markets are long enough to be a reliable representation of pricing history for developed market equities outside of the US. Therefore, in constructing the Long-Term Average Historical  $P/E$  for developed ex-US equities for comparison purposes, we have elected to use the US equity market as a developed market proxy, from 1881 to 1982. This lowers the Long-Term Average Historical  $P/E$  considerably. We believe this methodology provides a more realistic historical comparison for a market with a relatively short history.



---

## RISK METRICS DESCRIPTION – Rationale for selection and calculation methodology

### Emerging Market Equity Markets:

Metric: Ratio of Emerging Market P/E Ratio to Developed Market P/E Ratio

To represent the Emerging Markets P/E Ratio, we have chosen the MSCI Emerging Market Free Index, which has P/E data back to January 1995 on Bloomberg. To represent the Developed Markets PE Ratio, we have chosen the MSCI World Index, which also has data back to January 1995 on Bloomberg. Although there are issues with published, single time period P/E ratios, in which the denominator effect can cause large movements, we feel that the information contained in such movements will alert investors to market activity that they will want to interpret.

### US Private Equity Markets:

Metrics: S&P LCD Average EBITDA Multiples Paid in LBOs and US Quarterly Deal Volume

The Average Purchase Price to EBITDA multiples paid in LBOs is published quarterly by S&P in their LCD study. This is the total price paid (both equity and debt) over the trailing-twelve month EBITDA (earnings before interest, taxes, depreciation and amortization) as calculated by S&P LCD. This is the relevant, high-level pricing metric that private equity managers use in assessing deals. Data is published monthly.

US quarterly deal volume for private equity is the total deal volume in \$ billions (both equity and debt) reported in the quarter by Thomson Reuters Buyouts. This metric gives a measure of the level of activity in the market. Data is published quarterly.

### US Private Real Estate Markets:

Metrics: US Cap Rates, Cap Rate Spreads, and Transactions as a % of Market Value

Real estate cap rates are a measure of the price paid in the market to acquire properties versus their annualized income generation before financing costs (NOI=net operating income). The data, published by NCREIF, describes completed and leased properties (core) on an unleveraged basis. We chose to use current value cap rates. These are capitalization rates from properties that were revalued during the quarter. This data relies on estimates of value and therefore tends to be lagging (estimated prices are slower to rise and slower to fall than transaction prices). The data is published quarterly.


Spreads between the cap rate (described above) and the 10-year nominal Treasury yield, indicate a measure of the cost of properties versus a current measure of the cost of financing.

Transactions as a % of Market Value Trailing Four Quarters is a measure of property turnover activity in the NCREIF Universe. This quarterly metric is a measure of activity in the market.

### Credit Markets Fixed Income:

Metric: Spreads

The absolute level of spreads over treasuries and spread trends (widening / narrowing) are good indicators of credit risk in the fixed income markets. Spreads incorporate estimates of future default, but can also be driven by technical dislocations in the fixed income markets. Abnormally narrow spreads (relative to historical levels) indicate higher levels of valuation risk, wide spreads indicate lower levels of valuation risk and / or elevated default fears. Investment grade bond spreads are represented by the Barclays Capital US Corporate Investment Grade Index Intermediate Component. The high yield corporate bond spreads are represented by the Barclays Capital US Corporate High Yield Index.



---

## RISK METRICS DESCRIPTION – Rationale for selection and calculation methodology

### Measure of Equity Market Fear / Uncertainty

Metric: VIX – Measure of implied option volatility for US equity markets

The VIX is a key measure of near-term volatility conveyed by implied volatility of S&P 500 index option prices. VIX increases with uncertainty and fear. Stocks and the VIX are negatively correlated. Volatility tends to spike when equity markets fall.

### Measure of Monetary Policy

Metric: Yield Curve Slope

We calculate the yield curve slope as the 10 year treasury yield minus the 1 year treasury yield. When the yield curve slope is zero or negative, this is a signal to pay attention. A negative yield curve slope signals lower rates in the future, caused by a contraction in economic activity. Recessions are typically preceded by an inverted (negatively sloped) yield curve. A very steep yield curve (2 or greater) indicates a large difference between shorter-term interest rates (the 1 year rate) and longer-term rates (the 10 year rate). This can signal expansion in economic activity in the future, or merely higher future interest rates.


### Measures of US Inflation Expectations

Metrics: Breakeven Inflation and Inflation Adjusted Commodity Prices

Inflation is a very important indicator impacting all assets and financial instruments. Breakeven inflation is calculated as the 10 year nominal treasury yield minus the 10 year real yield on US TIPS (treasury inflation protected securities). Abnormally low long-term inflation expectations are indicative of deflationary fears. A rapid rise in breakeven inflation indicates an acceleration in inflationary expectations as market participants sell nominal treasuries and buy TIPS. If breakeven inflation continues to rise quarter over quarter, this is a signal of inflationary worries rising, which may cause Fed action and / or dollar decline.

Commodity price movement (above the rate of inflation) is an indication of anticipated inflation caused by real global economic activity putting pressure on resource prices. We calculate this metric by adjusted in the Dow Jones UBS Commodity Index (formerly Dow Jones AIG Commodity Index) by US CPI-U. While rising commodity prices will not necessarily translate to higher US inflation, higher US inflation will likely show up in higher commodity prices, particularly if world economic activity is robust.

These two measures of anticipated inflation can, and often are, conflicting.



---

## RISK METRICS DESCRIPTION – Rationale for selection and calculation methodology

### Measures of US Treasury Bond Interest Rate Risk

Metrics: 10-Year Treasury Forward-Looking Real Yield and 10-Year Treasury Duration

The expected annualized real yield of the 10 year US Treasury Bond is a measure of valuation risk for US Treasuries. A low real yield means investors will accept a low rate of expected return for the certainty of receiving their nominal cash flows. PCA estimates the expected annualized real yield by subtracting an estimate of expected 10 year inflation (produced by the Survey of Professional Forecasters as collected by the Federal Reserve Bank of Philadelphia), from the 10 year Treasury constant maturity interest rate.

Duration for the 10-Year Treasury Bond is calculated based on the current yield and a price of 100. This is a measure of expected percentage movements in the price of the bond based on small movements in percentage yield. We make no attempt to account for convexity.

### Definition of “extreme” metric readings

A metric reading is defined as “extreme” if the metric reading is in the top or bottom decile of its historical readings. These “extreme” reading should cause the reader to pay attention. These metrics have reverted toward their mean values in the past.

## RISK METRICS DESCRIPTION – PCA Market Sentiment Indicator

### What is the PCA Market Sentiment Indicator (PMSI)?

The PMSI is a measure meant to gauge the market's sentiment regarding economic growth risk. Growth risk cuts across most financial assets, and is the largest risk exposure that most portfolios bear. The PMSI takes into account the momentum<sup>1</sup> (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

### How do I read the PCA Market Sentiment Indicator (PMSI) graph?

Simply put, the PMSI is a color coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the PMSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the PMSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.

### How is the PCA Market Sentiment Indicator (PMSI) Constructed?

The PMSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:

1. Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months)
2. Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration U.S. Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight). The scale of this measure is adjusted to match that of the stock return momentum measure.

The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure. The color reading on the graph is determined as follows:

1. If both stock return momentum and bond spread momentum are positive = GREEN (positive)
2. If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive)
3. If both stock return momentum and bond spread momentum are negative = RED (negative)

### What does the PCA Market Sentiment Indicator (PMSI) mean? Why might it be useful?

There is strong evidence that time series momentum is significant and persistent.<sup>2</sup> In particular, across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12 month period. The PMSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

<sup>1</sup> Momentum is defined as the persistence of relative performance. There is a significant amount of academic evidence indicating that positive momentum (e.g., strong performing stocks over the recent past continue to post strong performance into the near future) exists over near-to-intermediate holding periods. See, for example, "Understanding Momentum," *Financial Analysts Journal*, Scowcroft, Sefton, March, 2005.

<sup>2</sup> "Time Series Momentum" Moskowitz, Ooi, Pedersen, August 2010 <http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf>



## BENCHMARKS USED IN ECONOMIC AND MARKET OVERVIEW

US Equity = Russell 3000 Index

Non-US Equity = MSCI EAFE

Real Estate = NCREIF

Public Real Estate = NAREIT

US Debt = BC Universal Index

Domestic Large Cap = Russell 1000

Domestic Small Cap = Russell 2000

Growth = Russell 3000 Growth Index

Value = Russell 3000 Value Index

Pacific = MSCI Pacific

Europe = MSCI Europe

Emerging = MSCI Emerging Markets Free

Private Real Estate = NCREIF Index

Credit = BC U.S. Credit Index

Government = BC Government Index

Mortgage = BC Mortgage Index

High Yield = BC High Yield Index