



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

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## **Quarterly Report Executive Summary**

Creation Date: February 15, 2013

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## 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 December 31, 2012, the WPERP Total Retirement Plan had an aggregate value of \$7.8 billion. This represents a \$130.8 million increase in value over the last quarter. During the most recent 1-year period, the WPERP Total Retirement Plan increased by \$794.0 million. The fourth quarter of 2012 was spotlighted by political discord and turbulence. Despite the constant headlines regarding the presidential election and ensuing fiscal cliff, the markets shrugged off most of these events and provided investors with modest returns over the quarter in aggregate. Although domestic equities were roughly flat for the period, international equities were able to escape from their overly depressed state and provide investors with considerable returns for the quarter. Similar to domestic equities, returns within fixed income markets were flat-to-marginal. Overall, 2012 was a strong year for nearly all asset classes. The macroeconomic picture continues to remain the same; broad data continues to show improvements on multiple fronts, and policy makers remain extremely accommodative in hopes of improving economic growth and decreasing unemployment.

As of December 31, 2012, the WPERP Total Health Plan had an aggregate value of \$1.3 billion. This represents an \$18.6 million increase in value over the last quarter. During the most recent 1-year period, the WPERP Total Health Plan increased by \$167.9 million.

### Strategic Allocation Trends

The Retirement Plan strategic allocation targets reflect the evolving allocation targets for the 4/1/2012-6/30/2013 period. As of December 31, 2012, the WPERP Total Retirement Portfolio had a 56% allocation in Equities, 27% in Fixed Income, 5% in Covered Calls, 5% in Real Return, 2% in Private Equity, 3% in Real Estate, and 2% in Cash. The Health Plan strategic allocation targets reflect the evolving allocation targets for the 4/1/2012-6/30/2013 period. The WPERP Total Health Plan had a 57% allocation in Equities, 29% in Fixed Income, 5% in Covered Calls, 5% in Real Return, 1% in Private Equity, 1% in Real Estate, and 1% in Cash. The new interim policy targets are structured in a series of phased allocation targets that initially began in 4Q 2011.

### Recent Investment Performance of Major WPERP Investment Plans

Period ending December 31, 2012

#### WPERP Total Retirement Plan

	Quarter	1 Year	3 Year	5 Year	10 Year
Total Portfolio <sup>1</sup>	1.6	11.7	7.6	2.5	6.6
<i>Policy Benchmark<sup>2</sup></i>	<i>1.7</i>	<i>12.6</i>	<i>8.5</i>	<i>2.7</i>	<i>7.4</i>
<b>Excess Return</b>	<b>-0.1</b>	<b>-0.9</b>	<b>-0.9</b>	<b>-0.2</b>	<b>-0.8</b>
Reference: Median Fund <sup>3</sup>	2.0	13.0	9.0	2.9	7.5
Reference: Net of Fees <sup>4</sup>	1.5	11.5	7.4	2.3	6.4

#### WPERP Total Health Plan

	Quarter	1 Year	3 Year	5 Year
Total Portfolio <sup>1</sup>	1.5	11.2	7.7	3.7
<i>Policy Benchmark<sup>2</sup></i>	<i>1.6</i>	<i>12.2</i>	<i>8.4</i>	<i>3.2</i>
<b>Excess Return</b>	<b>-0.1</b>	<b>-1.0</b>	<b>-0.7</b>	<b>0.5</b>

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

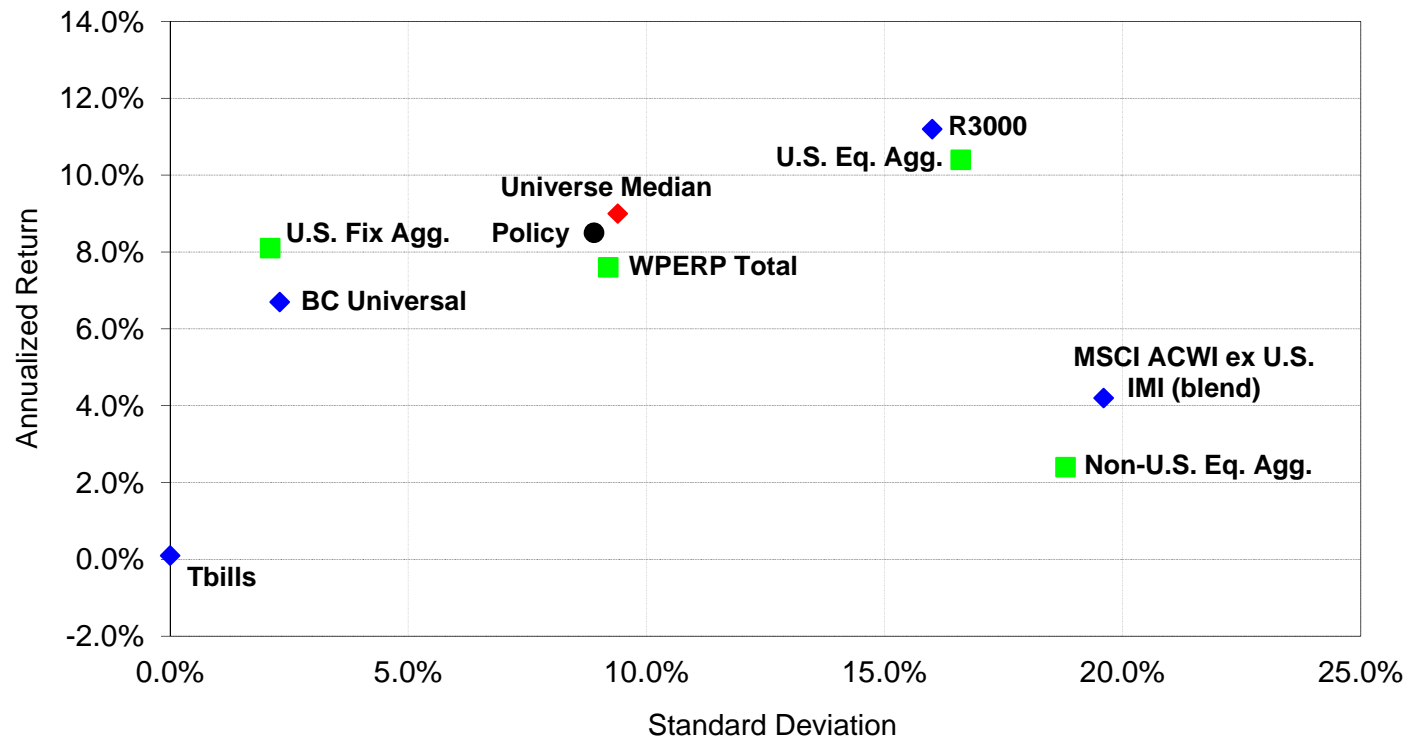
<sup>2</sup> See appendix for policy benchmark descriptions.

<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

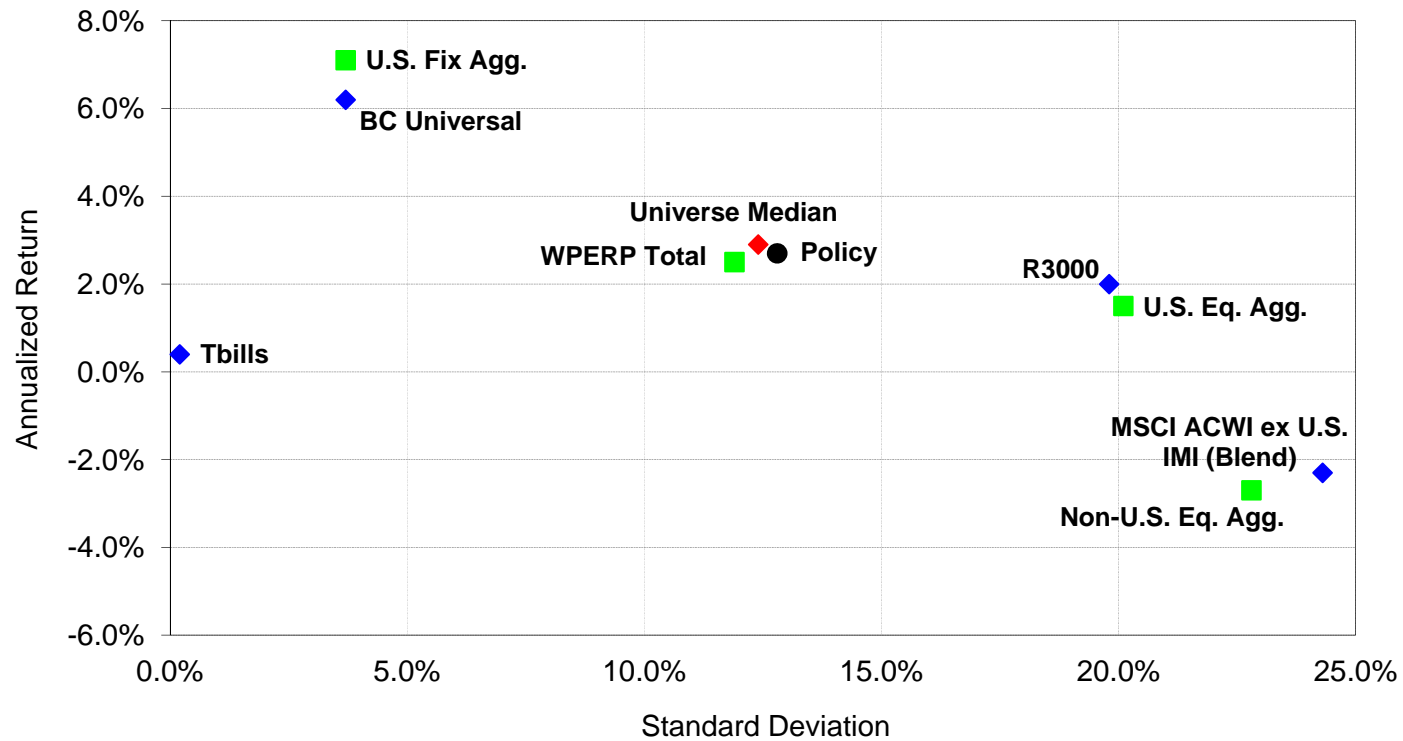
Period ending December 31, 2012



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

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

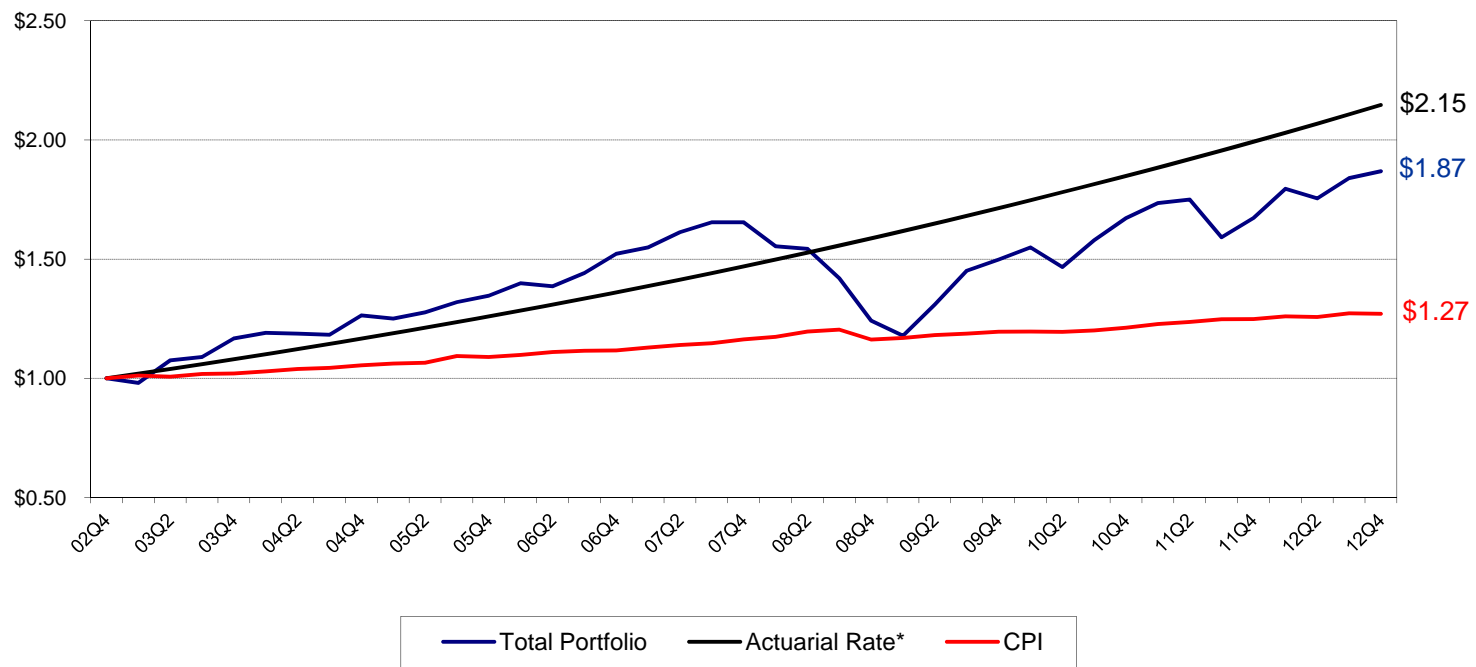
Period ending December 31, 2012



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

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

Period ending December 31, 2012



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

## Investment Market Risk Metrics

### Takeaways

- Markets continued to be in a risk seeking mode, even prior to the fiscal cliff deal in January.
- Equity market volatility (VIX) remained near or below average (<20), and fell significantly following the fiscal cliff deal at the onset of 2013.
- Credit spreads are below long-term averages, with investment grade spreads lower than anytime since the summer of 2007.
- While valuations of growth exposed assets are cheap relative to bonds, they are only neutral relative to their historical valuation levels.
- The PCA Market Sentiment Indicator “PMSI” continued to read **green** in December.

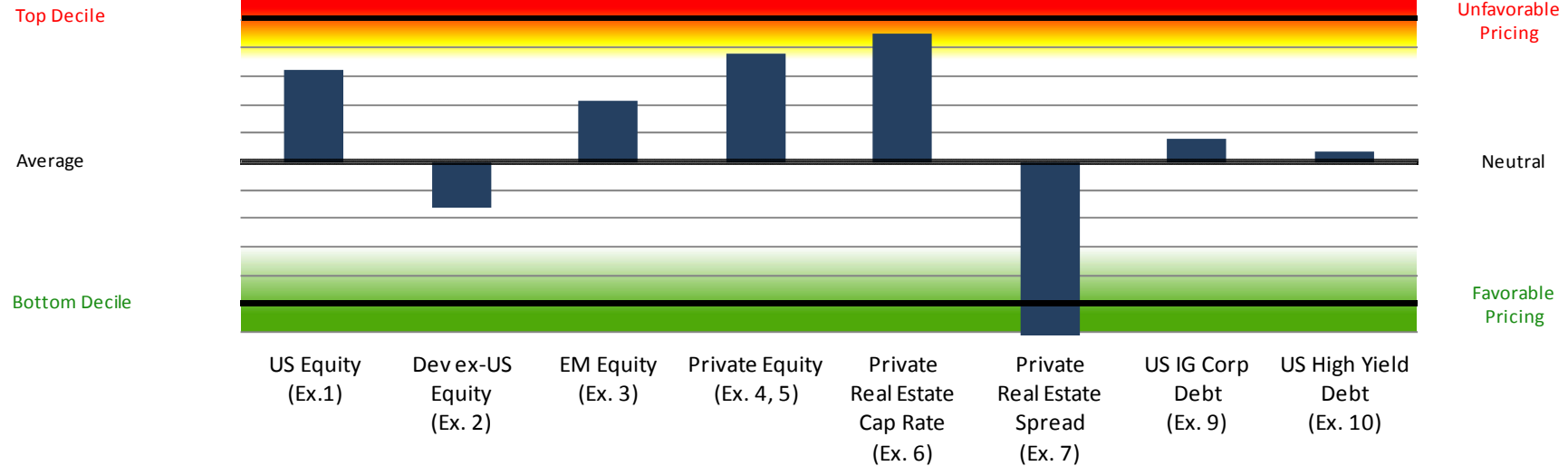
The positive sentiment indication results from:

1. positive returns to US stocks year-over-year, and
  2. narrowing of credit spreads year-over-year.
- Interest rate risk remains high:
    - The 10-year Treasury yield ended December at 1.78%, rising further in the first days of January to above 1.90%.
    - Bond sensitivity to interest rates (duration) remains near 30 year highs, and real yields are at all time lows (negative out to nearly 20 years for government issues).

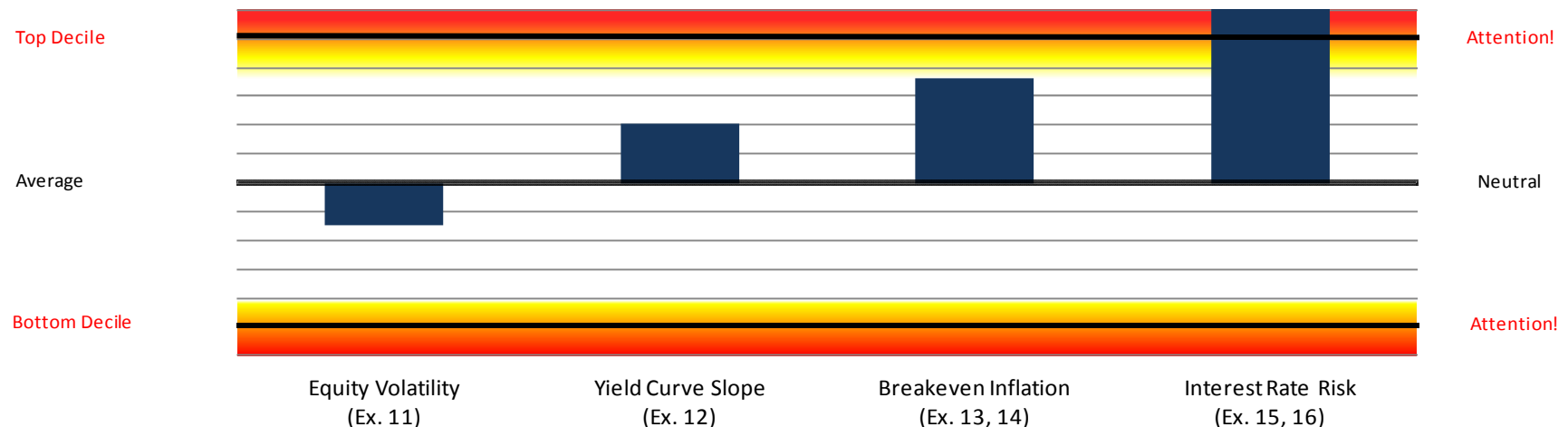
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<sup>1</sup> See Appendix for the rationale for selection and calculation methodology used for the risk metrics.

## Valuation Metrics versus Historical Range A Measure of Risk

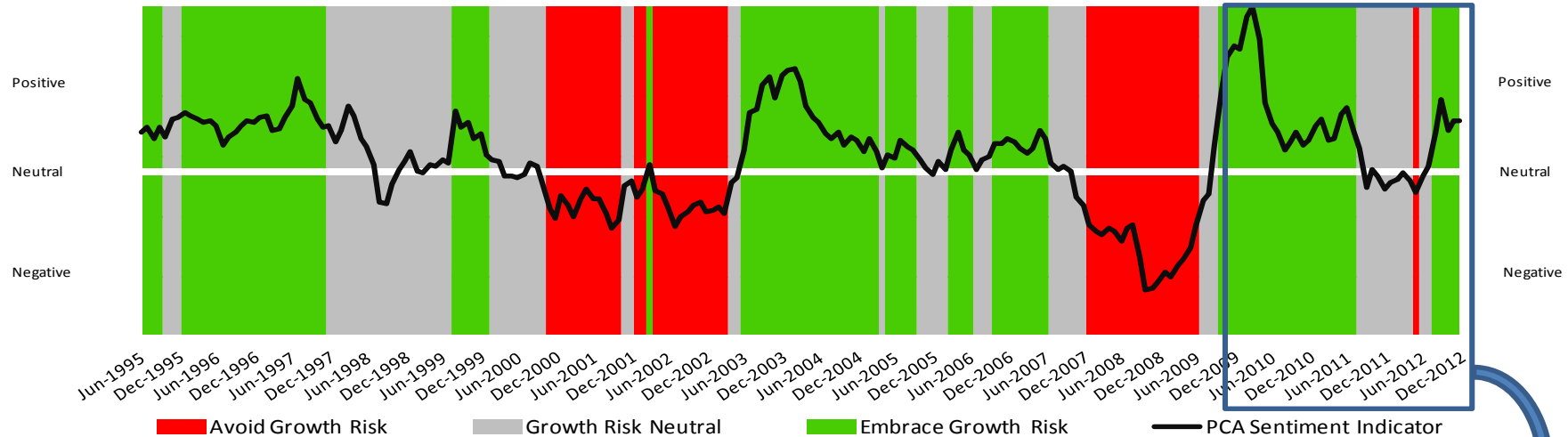


## Other Important Metrics within their Historical Ranges Pay Attention to Extreme Readings

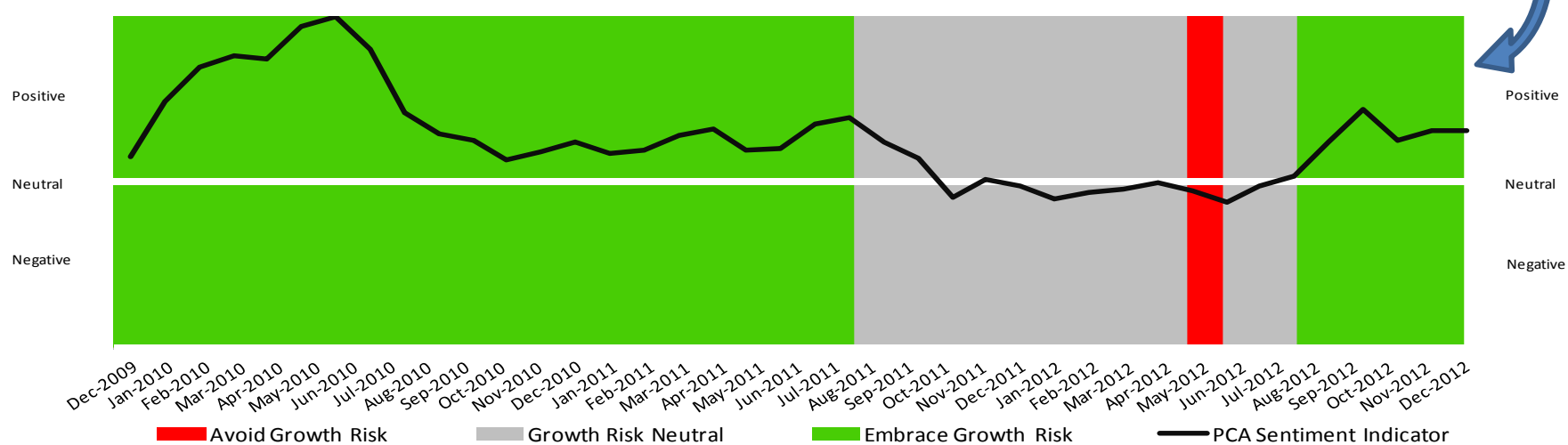




## PCA Market Sentiment Indicator (1995-Present)



## 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

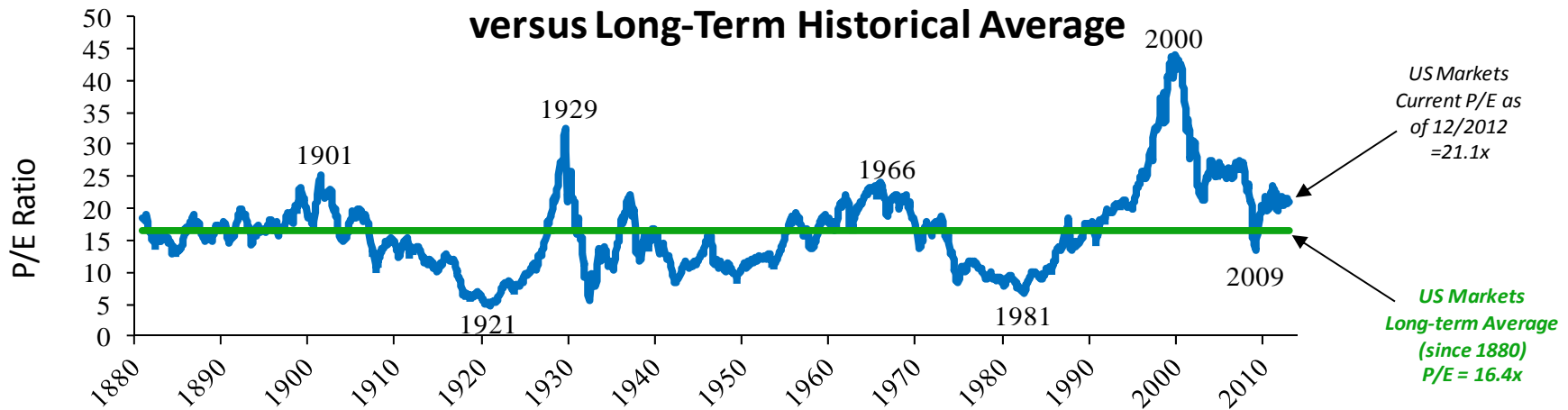
### Growth Risk Visibility (Current Overall Sentiment)

Positive

## Developed Public Equity Markets

Exhibit 1

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

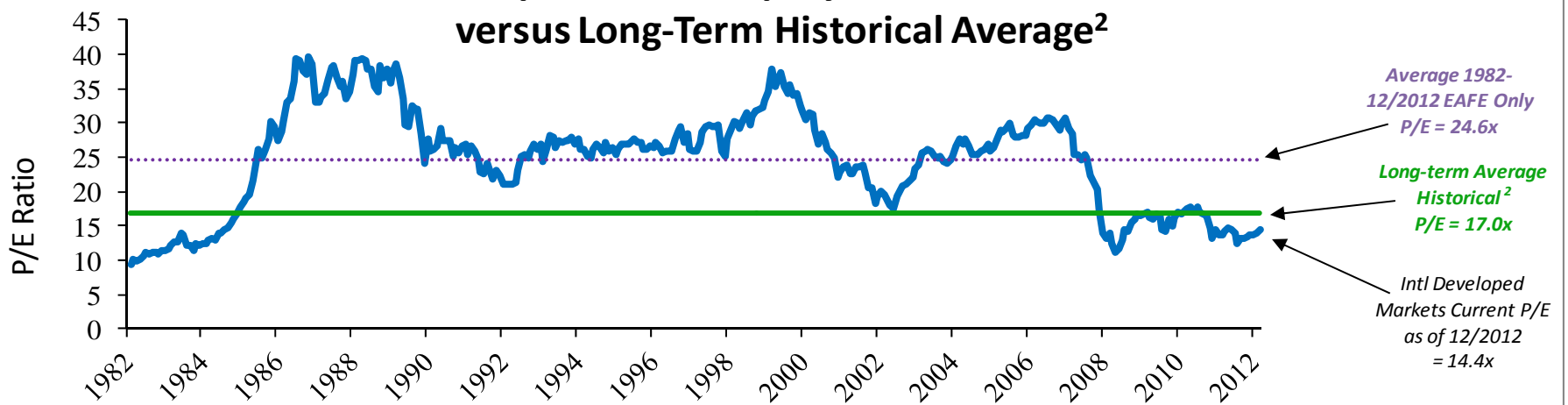


<sup>1</sup> P/E ratio is a Shiller P/E-10 based on 10 year real S&P 500 earnings over S&P 500 index level.

(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>



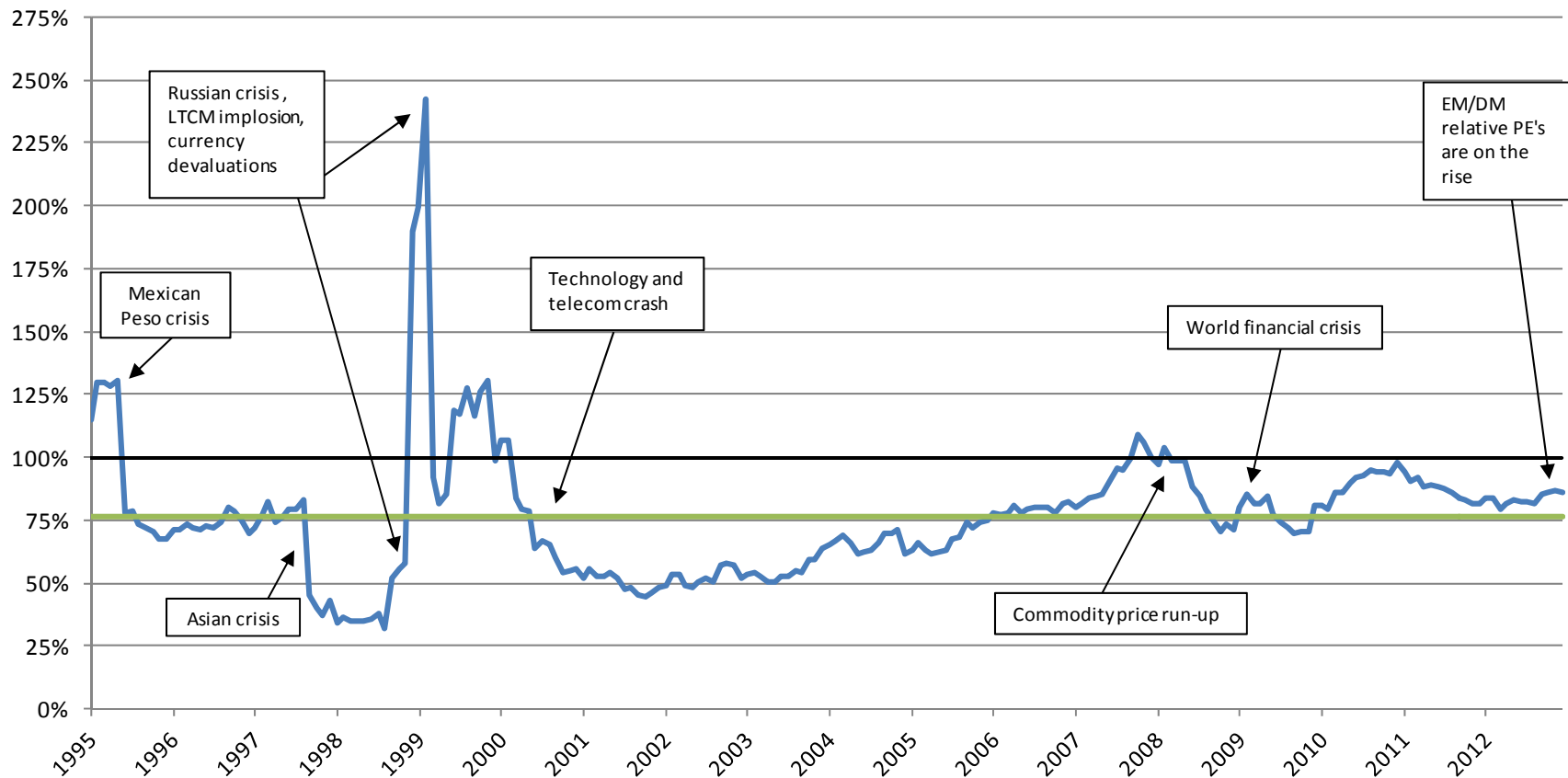
<sup>1</sup> P/E ratio is a Shiller P/E-10 based on 10 year real MSCI EAFE earnings over EAFE index level.

<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)



Source: Bloomberg, MSCI World, MSCI EMF

— EM/DM PE

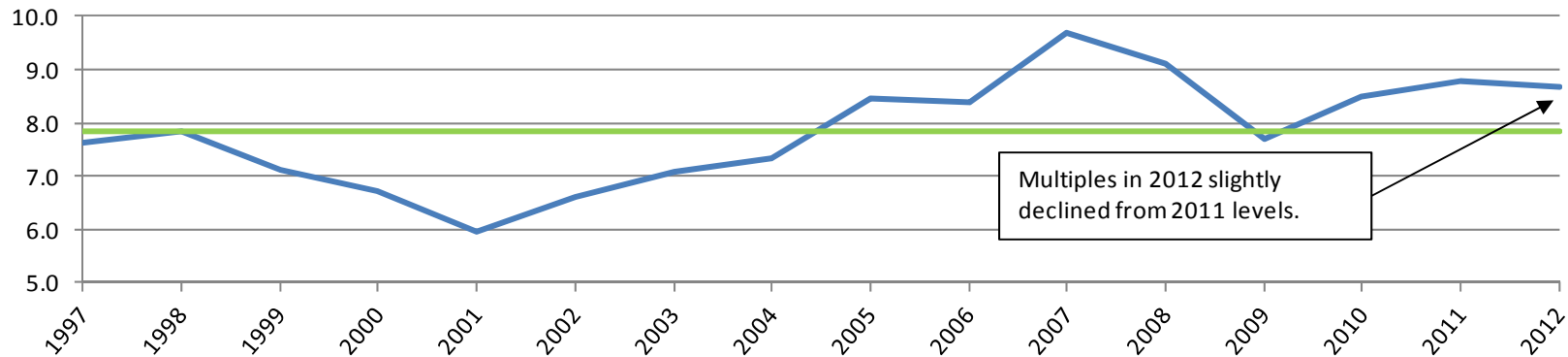
— Average EM/DM PE

— Parity

## US Private Equity Markets

Exhibit 4

### Price to EBITDA Multiples Paid in LBOs

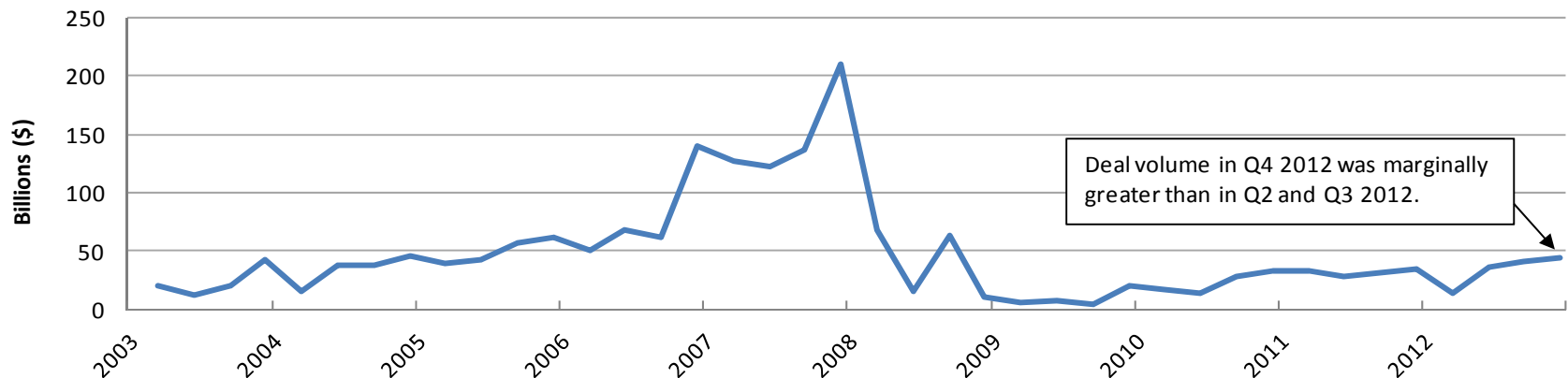


Source: S&P LCD study

(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 December 31st

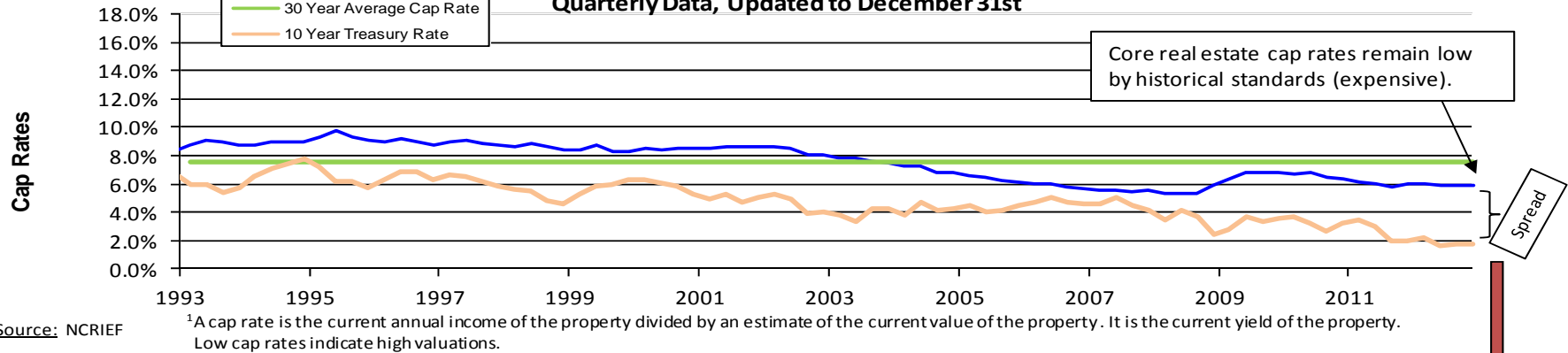


Exhibit 7

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

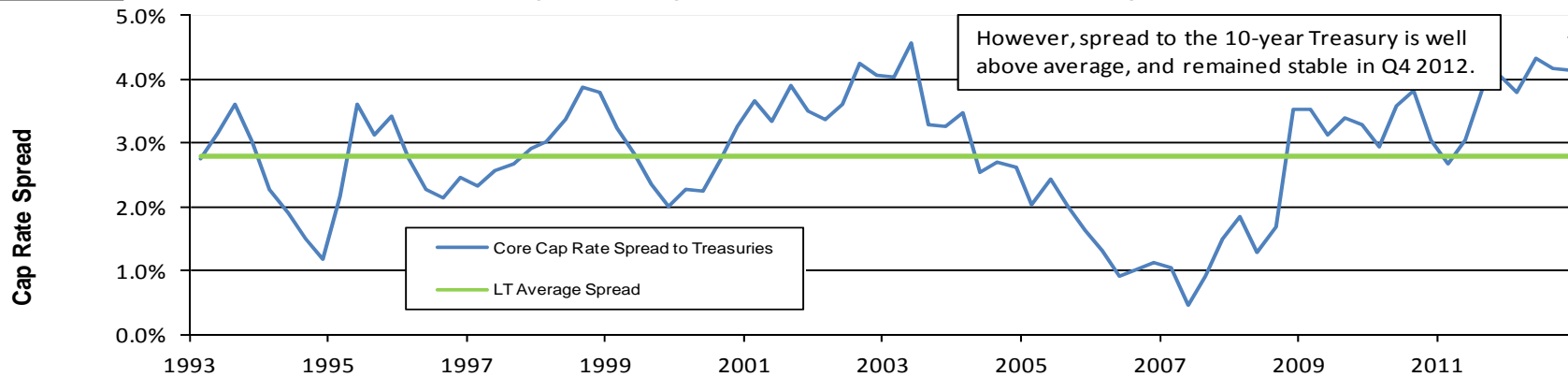
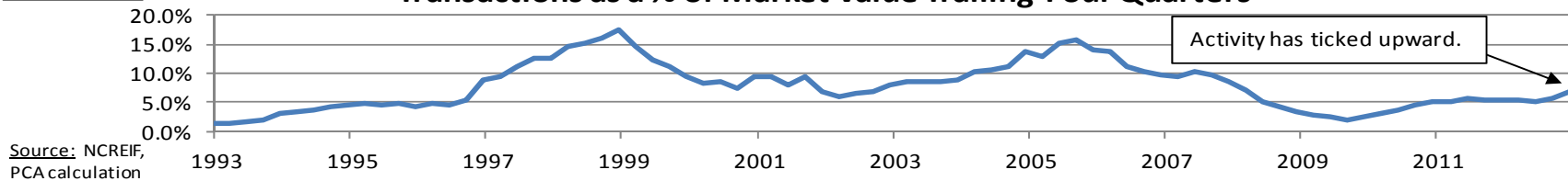


Exhibit 8

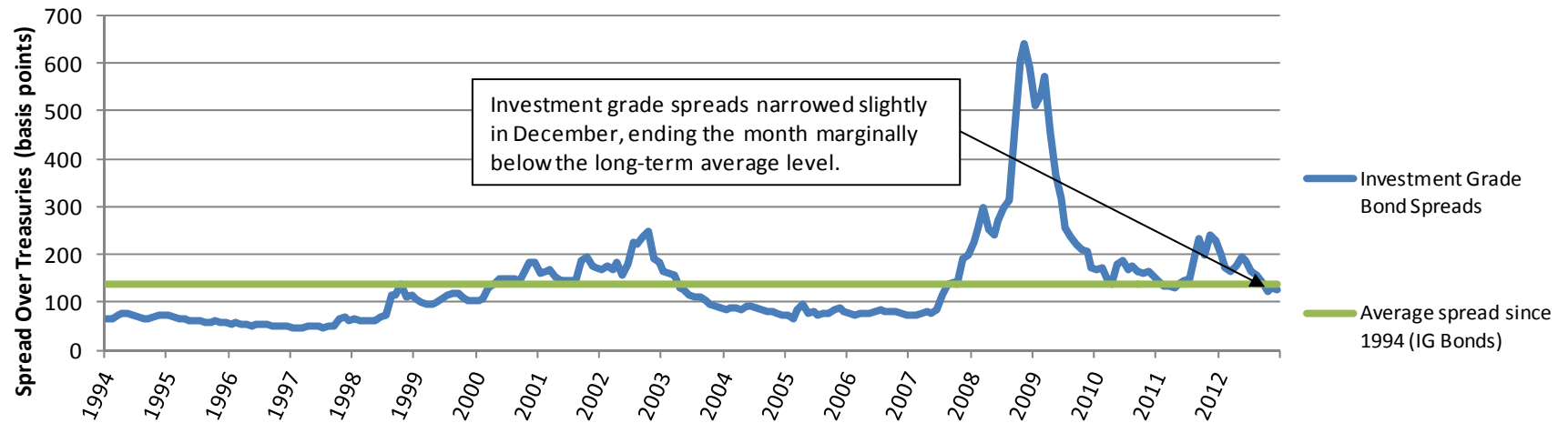
### Transactions as a % of Market Value Trailing-Four Quarters



## Credit Markets US Fixed Income

Exhibit 9

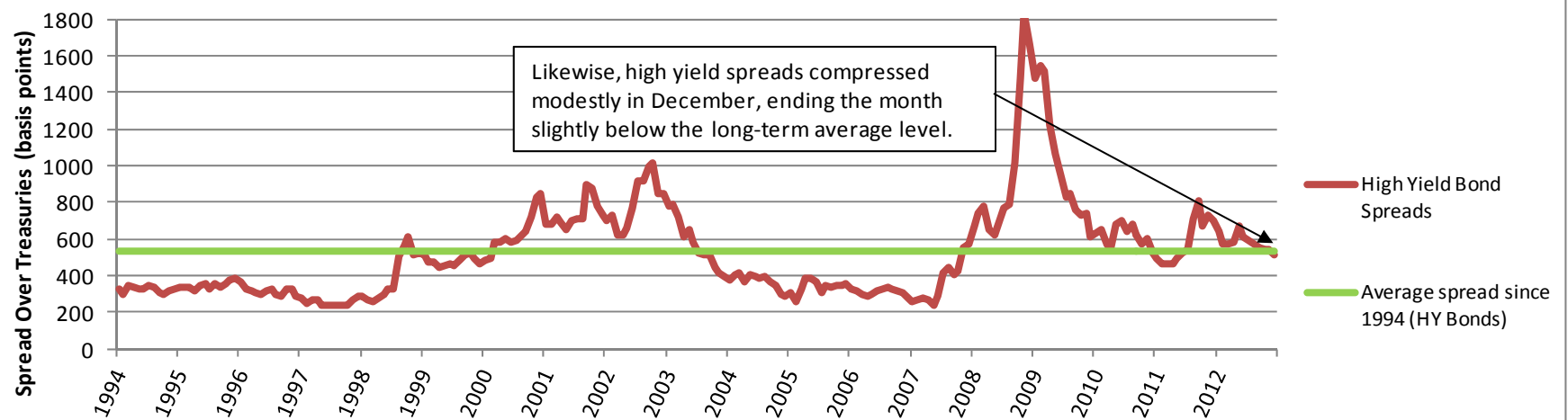
### Investment Grade Corporate Bond Spreads



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

Exhibit 10

### High Yield Corporate Bond Spreads

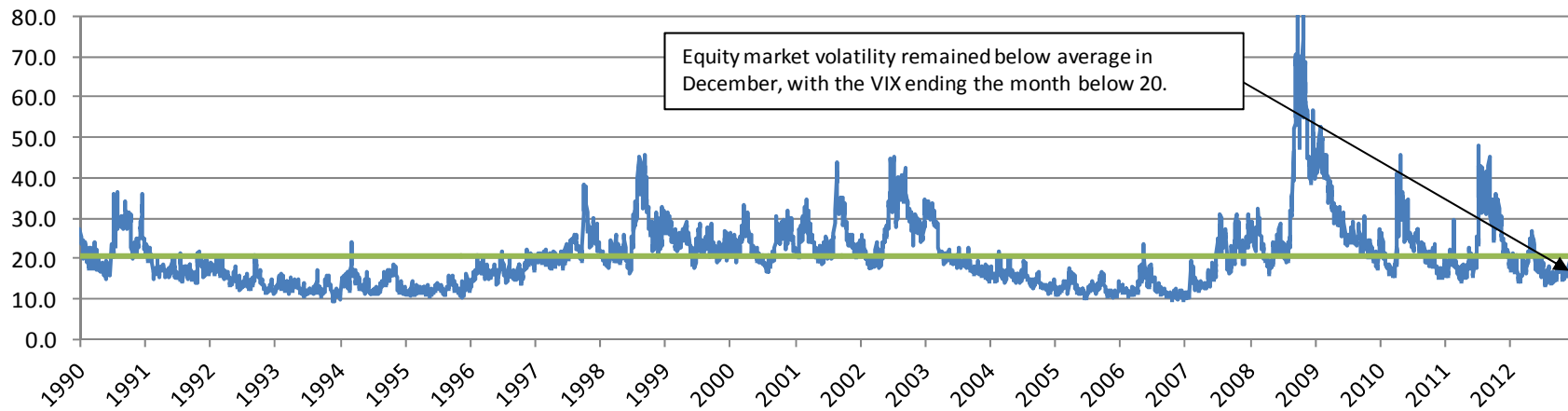


Source: LehmanLive: Barclays Capital U.S. Corporate High Yield Index.

## Other Market Metrics

Exhibit 11

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

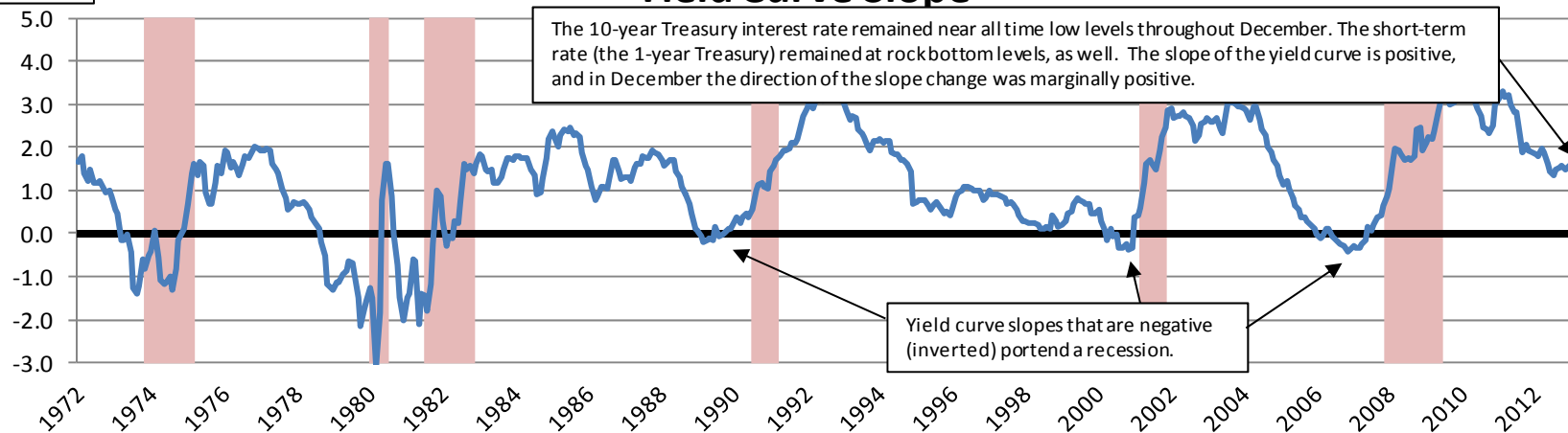


Source: <http://www.cboe.com/micro/vix/historical.aspx>

(Please note different time scales)

Exhibit 12

### Yield Curve Slope



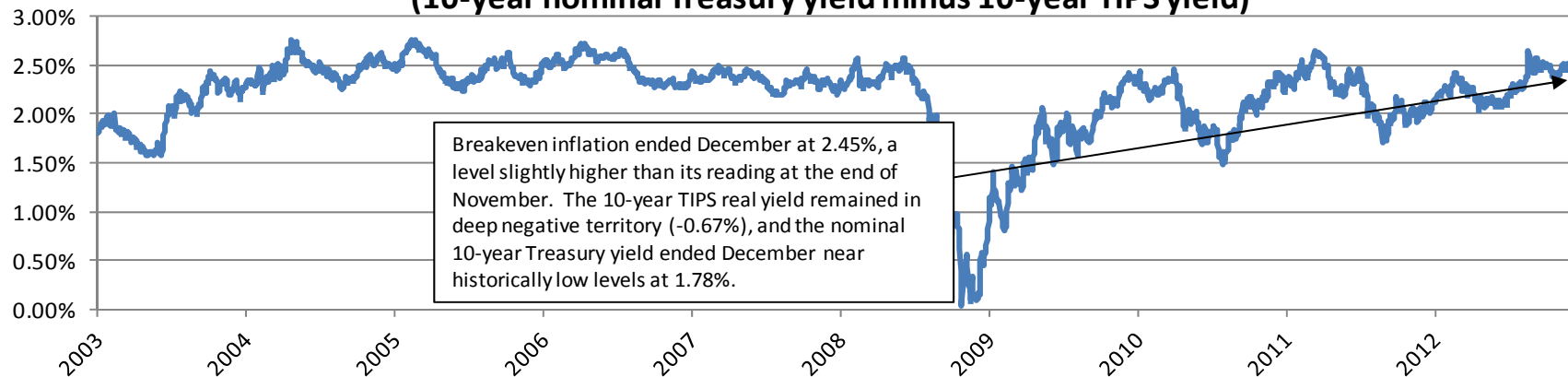
Source: [www.ustreas.gov](http://www.ustreas.gov) (10-year treasury yield minus 1-year treasury yield)

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)



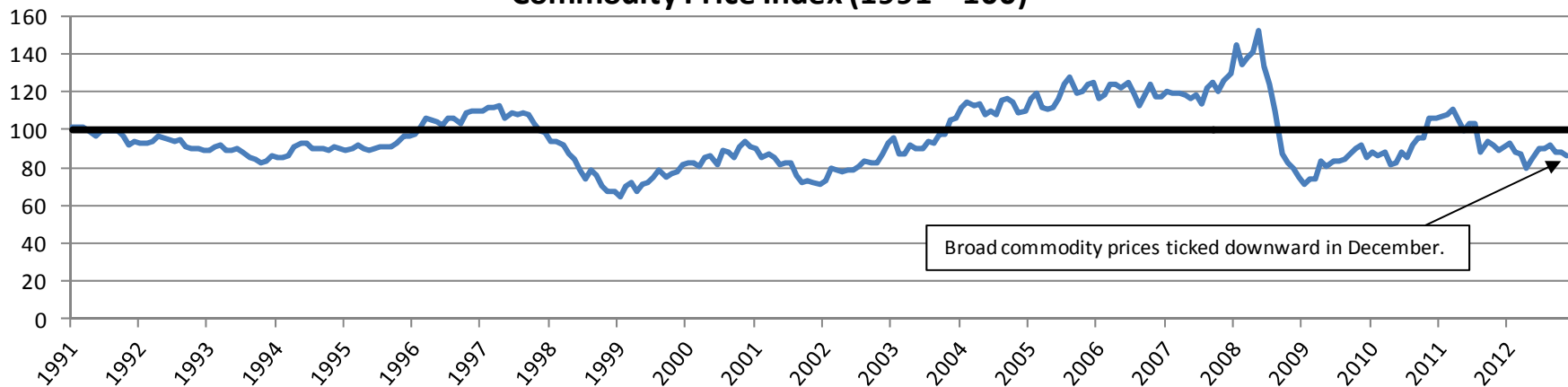
Source: [www.ustreas.gov](http://www.ustreas.gov)

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)



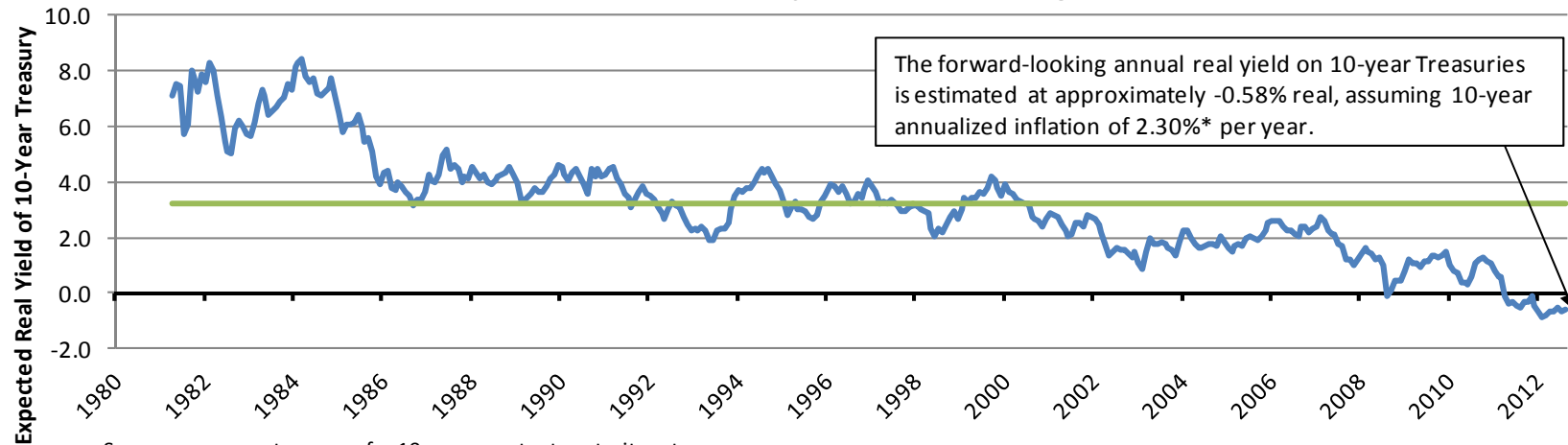
Source: Bloomberg DJUBS Index, St. Louis Fed for US CPI all urban consumers.



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

Exhibit 15

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

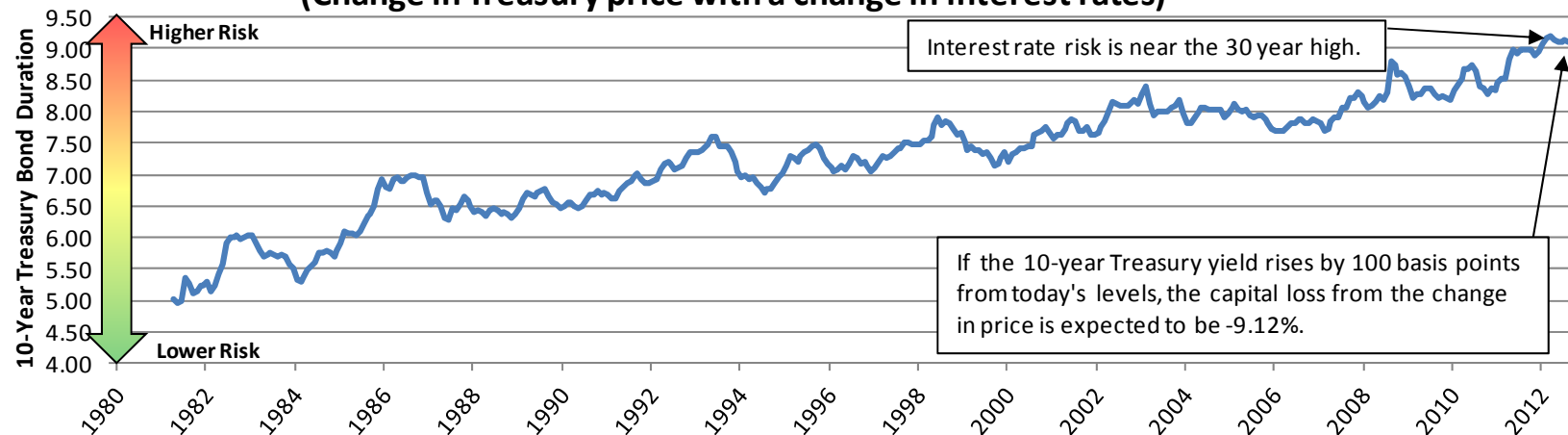


Sources: [www.ustreas.gov](http://www.ustreas.gov) for 10-year constant maturity rates

\*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)



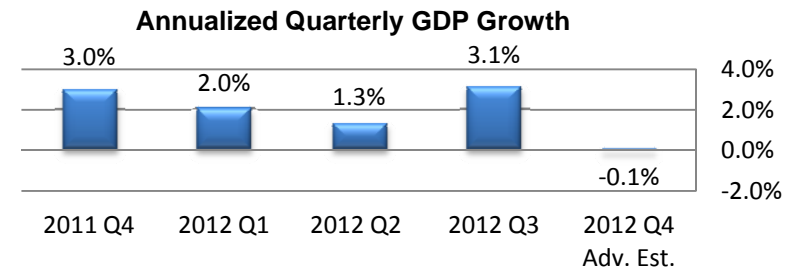
Source: [www.ustreas.gov](http://www.ustreas.gov) for 10-year constant maturity rates, calculation of duration

## ECONOMIC & MARKET OVERVIEW

**Overview:** After a positive third quarter, U.S. equities produced mixed results to wrap up the year as Hurricane Sandy, the presidential election, and concerns regarding the “fiscal cliff” weighed on the markets. Following the end of the quarter, an agreement was reached by lawmakers to make a detour around the cliff. Strong signs of recovery in the U.S. housing market continued as sales of new and existing homes increased. Economic data from most regions indicated sustained moderate improvements, resulting in positive reactions by global equities. The Fed continued its accommodative monetary policy through additional bond purchases, as well as through suppressed interest rates. Despite Europe moving to the background, a new deal was reached with Greece, effectively bringing more bailout funds and allowing the country to stay in the Euro.

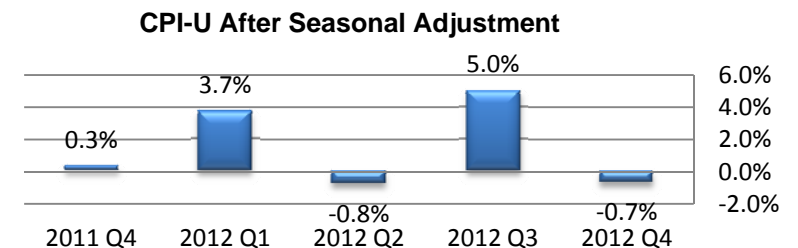
### Economic Growth

- Real GDP decreased at an annualized rate of (0.1) percent in the fourth quarter of 2012, falling from 3.1 percent in the third quarter of 2012.
- Inventory investment turned down, mainly due to declines in the manufacturing industries. Federal government spending fell significantly due to a downturn in defense spending, as well.
- Positive movements included business investment turning up as spending on equipment and software rebounded, and an uptick in consumer spending driven mainly by financial services, autos and parts.



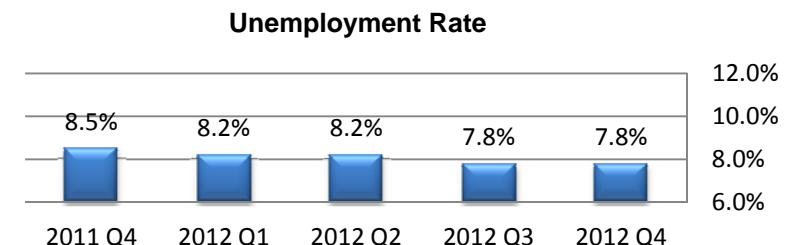
### Inflation

- The Consumer Price Index for All Urban Consumers (CPI-U) declined by (0.7) 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 1.7 percent before seasonal adjustment.



### Unemployment

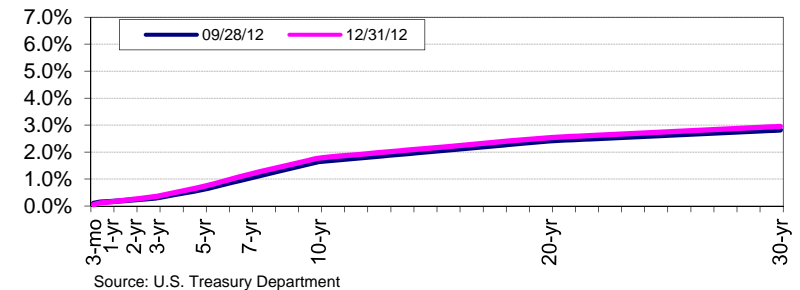
- The U.S. economy gained 472,000 jobs in the quarter.
- The official unemployment rate was essentially unchanged from the third quarter at 7.8%.
- The majority of jobs gained occurred in health care, professional and business services, and retail trade.



## Interest Rates & U.S. Dollar

- U.S. Treasury yields slightly 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 Euro and the Sterling by 2.6% and 0.5%, respectively, while appreciating against the Yen by 11.3%.
- Subsequent to quarter end, rates remained near low historic levels.

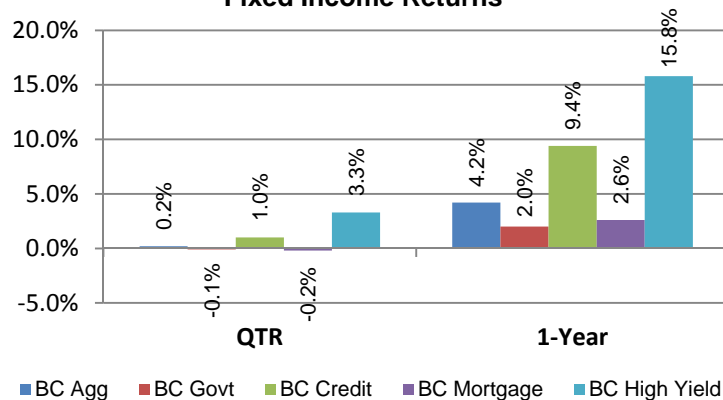
### Treasury Yield Curve Changes



## Fixed Income

- The bond markets provided mixed results during the quarter, and were again led by high yield, which produced the best performance over the quarter and trailing one-year periods.
- The Governments and MBS sectors produced slightly negative returns over the quarter while all other sectors increased slightly. All sectors remained positive over the one-year period.

### Fixed Income Returns



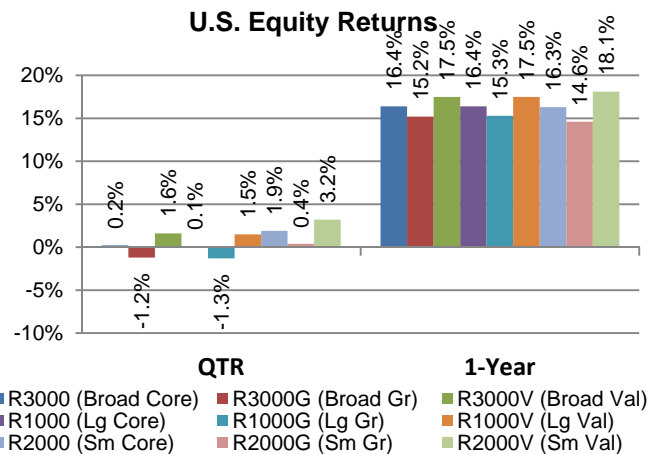
### U.S. Fixed Income Sector Performance (BC Aggregate Index)

Sector	Weight	QTR	1 Year
Governments*	40.4%	-0.1%	2.0%
Inv. Grade Credit	21.5%	1.0%	9.4%
Agencies	6.3%	0.2%	2.4%
MBS	29.6%	-0.2%	2.6%
ABS	0.4%	0.2%	3.7%
CMBS	1.8%	1.2%	9.7%

\*U.S. Treasuries and Government Related

## U.S. Equities

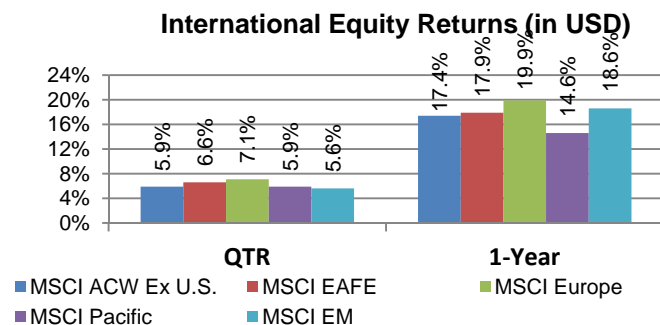
- Like the bond markets, the U.S. stock market provided mixed results over the fourth quarter while staying positive for the year. Investors remained relatively cautious during the quarter while U.S. Consumer Confidence decreased to near July levels.
- During the quarter, value indices outperformed growth throughout all market capitalizations. Six of ten sectors produced negative returns during the quarter as only Financials, Consumer Discretionary, Industrials, and Materials produced positive returns. All ten sectors produced positive returns for the trailing one-year period.



U.S. Equity Sector Performance (Russell 3000 Index)			
Sector	Weight	QTR	1 Year
Information Tech	18.2%	-4.7%	14.0%
Financials	16.8%	4.9%	26.2%
Consumer Disc	12.5%	2.9%	24.8%
Health Care	11.8%	-0.6%	19.4%
Industrials	11.3%	5.3%	17.2%
Energy	9.9%	-2.6%	3.9%
Consumer Staples	9.3%	-1.4%	10.9%
Materials	4.1%	3.5%	17.5%
Utilities	3.4%	-2.4%	2.1%
Telecom Svc	2.7%	-5.5%	18.8%

## International Equities

- International equity markets produced positive returns during the fourth quarter and over the trailing one-year period. Canada produced the lowest return over the quarter.
- During the quarter financial markets in Europe showed improved signs of stabilization, as yields continued to decline in the most distressed countries in a steady response to the ECB government bond buying program.
- Emerging markets trailed developed markets over the quarter, but only lagged the MSCI Europe over the trailing one-year period.



International Equity Region Performance (in USD) (MSCI ACW Index ex U.S.)			
Sector	Weight	QTR	1 Year
Emerging Markets	24.2%	5.6%	18.6%
Europe Ex. UK	29.2%	8.6%	22.5%
Japan	13.7%	5.8%	8.4%
Pacific Ex. Japan	9.6%	6.1%	24.7%
United Kingdom	15.4%	4.2%	15.3%
Canada	7.9%	0.9%	9.9%

# Quarterly Report

Q4-12

## Market Summary – Long-term Performance\*

Indexes	1 Year	3 Year	5 Year	10 Year	20 Year
<b>Global Equity</b>					
MSCI All Country World	16.8%	7.2%	-0.6%	8.7%	7.5%
<b>Domestic Equity</b>					
S&P 500	16.0%	10.9%	1.7%	7.1%	8.2%
Russell 3000	16.4%	11.2%	2.0%	7.7%	8.3%
Russell 3000 Growth	15.2%	11.5%	3.2%	7.7%	7.0%
Russell 3000 Value	17.5%	10.9%	0.8%	7.5%	9.1%
Russell 1000	16.4%	11.1%	1.9%	7.5%	8.3%
Russell 1000 Growth	15.3%	11.4%	3.1%	7.5%	7.1%
Russell 1000 Value	17.5%	10.9%	0.6%	7.4%	9.1%
Russell 2000	16.3%	12.2%	3.6%	9.7%	8.4%
Russell 2000 Growth	14.6%	12.8%	3.5%	9.8%	6.2%
Russell 2000 Value	18.1%	11.6%	3.5%	9.5%	10.2%
CBOE BXM	5.2%	5.6%	1.1%	5.6%	8.0%
<b>International Equity</b>					
MSCI All Country World ex US	17.4%	4.3%	-2.4%	10.2%	7.2%
MSCI EAFE	17.9%	4.0%	-3.2%	8.7%	6.5%
MSCI Pacific	14.6%	4.7%	-1.8%	8.3%	3.4%
MSCI Europe	19.9%	3.9%	-3.7%	9.0%	8.7%
MSCI EM (Emerging Markets)	18.6%	5.0%	-0.6%	16.9%	8.8%
<b>Fixed Income</b>					
BC Universal Bond	5.5%	6.7%	6.2%	5.6%	6.5%
BC Global Agg – Hedged	5.7%	5.2%	5.3%	4.8%	6.3%
BC Aggregate Bond	4.2%	6.2%	5.9%	5.2%	6.3%
BC Government	2.0%	5.5%	5.2%	4.7%	6.1%
BC Credit Bond	9.4%	8.7%	7.7%	6.2%	7.0%
BC Mortgage Backed Securities	2.6%	4.7%	5.7%	5.1%	6.2%
BC High Yield Corporate Bond	15.8%	11.9%	10.3%	10.6%	8.2%
BC WGILB - Hedged	5.6%	7.3%	6.2%	6.1%	NA
BC Emerging Markets	17.9%	12.5%	10.3%	11.6%	11.7%
<b>Real Estate</b>					
NCREIF (Private RE)	10.5%	12.6%	2.1%	8.4%	8.9%
NAREIT (Public RE)	20.1%	18.0%	5.6%	11.0%	10.6%
<b>Commodity Index</b>					
DJ-UBS Commodity	-1.1%	0.1%	-5.2%	4.1%	5.4%

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

## Actual vs. Target Allocations

The strategic allocation targets reflect the evolving allocation targets for the 4/1/2012-6/30/2013 period.

With respect to its strategic allocation targets, the Total Retirement Portfolio ended the latest quarter **overweight Fixed Income**, while **underweight Private Equity**. **Domestic Equity, International Equity, Covered Calls, Real Return, Real Estate, and Cash** were at or closely in-line with target allocations. The Board approved its current long-term investment policy plan in June 2011. The investment policy is being implemented over a series of phased asset allocation targets that initially began in 4Q 2011.

## As of December 31, 2012

Segment	Actual (\$MM)	Actual % <sup>1</sup>	Target% <sup>2</sup>	Variance	Min.	Max.
Total Portfolio <sup>3</sup>	9,167	100	<b>100</b>	---	---	---
Total Retirement <sup>4</sup>	7,798	100	<b>100</b>	---	---	---
Domestic Equity	2,679	34	<b>34</b>	---	<b>29</b>	<b>39</b>
International Equity	1,738	22	<b>21</b>	1	<b>17</b>	<b>25</b>
Fixed Income	2,066	27	<b>25</b>	2	<b>21</b>	<b>29</b>
Covered Calls	410	5	<b>5</b>	---	<b>4</b>	<b>6</b>
Real Return	374	5	<b>6</b>	-1	---	---
Private Equity	128	2	<b>4</b>	-2	---	---
Real Estate	219	3	<b>4</b>	-1	---	---
Cash	181	2	<b>1</b>	1	<b>0.5</b>	<b>1.5</b>

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

<sup>2</sup> 4/1/2012-6/30/2013 strategic allocation policy targets.

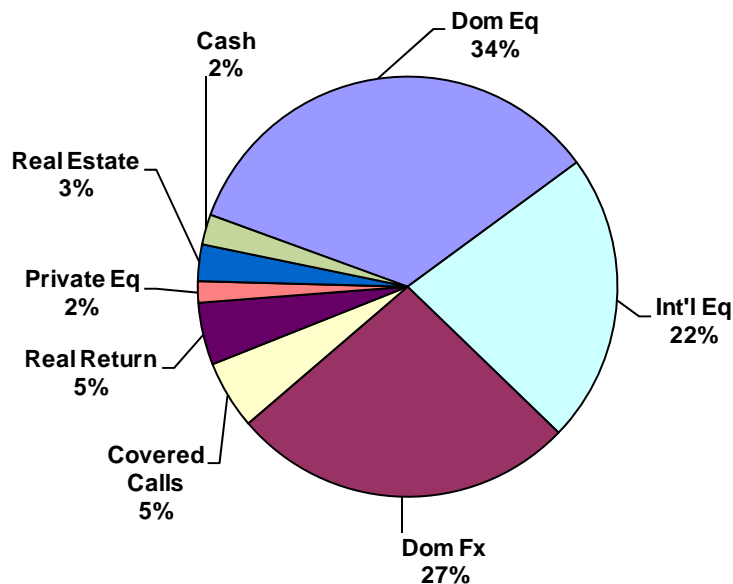
<sup>3</sup> Total Portfolio includes assets from the Retirement, Health, Disability, and Death Plans.

<sup>4</sup> Including \$9.0 million in transition assets and a negative balance of (\$5.2) million in securities lending.

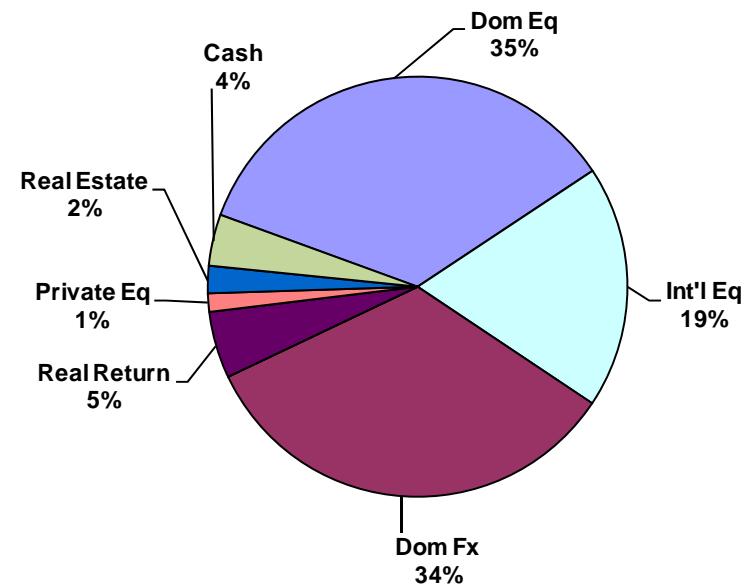
## Actual Strategic Allocation Comparison

As of December 31, 2012, the WPERP Total Retirement Portfolio had a 56% allocation in Equities, 27% in Fixed Income, 5% in Covered Calls, 5% in Real Return, 2% in Private Equity, 3% in Real Estate, and 2% in Cash. During the latest 1-year period, the actual weightings of International Equity, Private Equity, and Real Estate increased by 3%, 1%, and 1%, respectively. The actual weightings of Domestic Equity, Fixed Income, and Cash decreased by (1%), (7%), and (2%), respectively. The significant decrease in the Fixed Income allocation was the result of the recent WPERP Total Retirement Portfolio restructuring, per the evolving investment policy. Additionally, the actual weighting of Real Return remained the same, and the Covered Calls class was funded during the second quarter of 2012, and thus does not have a 12/31/11 point of reference. As previously noted, the Board approved its current long-term investment policy in June 2011. The new policy is being implemented over a series of phased asset allocation targets that initially began in 4Q 2011 (see Appendix for a description of the new policy benchmark composition).

December 31, 2012



December 31, 2011



## WPERP RETIREMENT PLAN PERFORMANCE

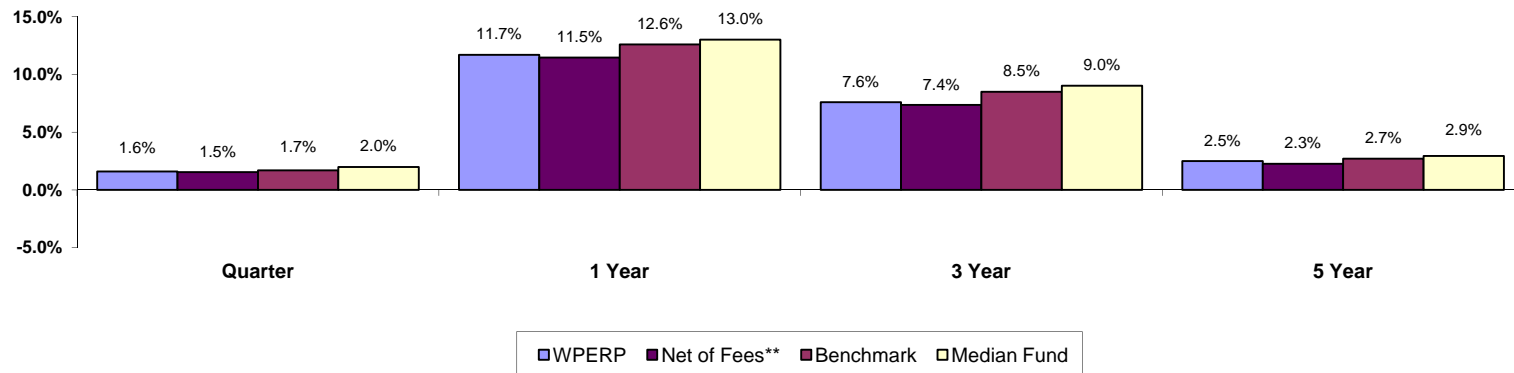
This section includes an overview of the performance of WPERP's Total Retirement Portfolio and a detailed analysis of strategic classes and specific mandates.

### Portfolio Performance Overview (Gross of Fees)

The Total Retirement Portfolio performed in-line with its policy benchmark over the most recent quarter, lagging by (10) basis points. Over both the latest 1- and 3-year periods, the Total Retirement Portfolio trailed its policy benchmark by (90) basis points. Over the trailing 5-year period, the Total Retirement Portfolio underperformed its policy benchmark by (20) basis points.

The Total Retirement Portfolio trailed the Median Public Fund over the most recent quarter by (40) basis points. Over the latest 1-, 3-, and 5-year periods, the Total Retirement Portfolio underperformed the Median Public Fund by (1.3%), (1.4%), and (0.4%), respectively. Underperformance relative to the Median Public Fund over the trailing 1- and 3-year periods can be largely attributed to underperforming active managers within the Public Equity classes; in particular the International Equity segment.

### Periods ending December 31, 2012 (annualized)\*



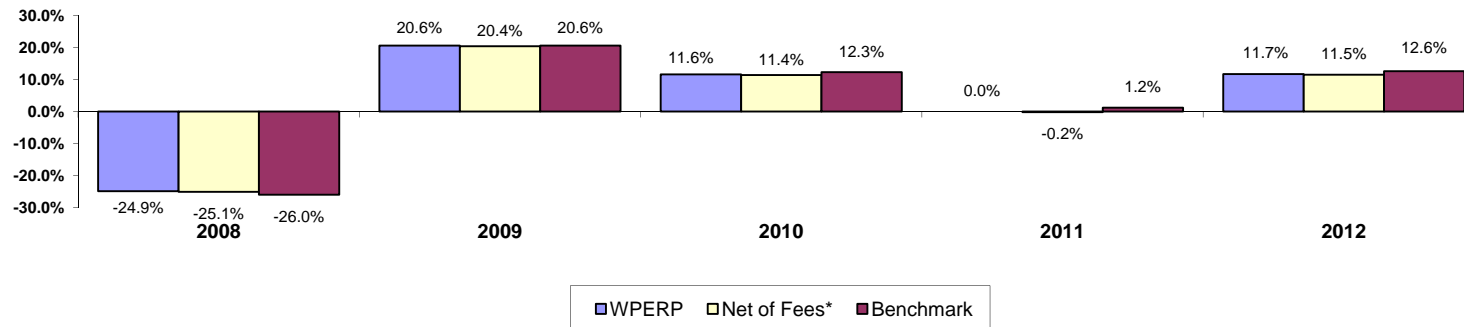
\* WPERP performance reported gross of fees.

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



The Total Retirement Portfolio generated positive absolute performance results over four of the five trailing 12-month periods. The Total Retirement Portfolio matched or outperformed its policy benchmark two times over the same 12-month periods, gross of fees.

## 12-month Performance – Periods ending December 31



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

## Portfolio Valuation

As of December 31, 2012, the Total Retirement Portfolio had an aggregate value of \$7.8 billion. This represents a \$130.8 million increase in value over last quarter, including \$10.0 million in net inflows. During the previous 1-year period, the Total Retirement Plan increased by \$794.0 million.

## Portfolio Valuation as of December 31, 2012, Gross of Fees\*

### Cash Flow Performance

	<u>4Q 2012</u>		<u>1-Year</u>		<u>3-Year</u>		<u>5-Year</u>	
Beginning Market Value	\$7,666.8		\$7,003.6		\$6,408.9		\$7,497.7	
Net Flow	10.0		-25.4		-186.4		-685.4	
<b>Investment Return in \$ (in%)</b>	<b>120.8</b>	<b>1.6%</b>	<b>819.4</b>	<b>11.7%</b>	<b>1,575.1</b>	<b>7.6%</b>	<b>985.3</b>	<b>2.5%</b>
Ending Market Value	\$7,797.6		\$7,797.6		\$7,797.6		\$7,797.6	

\*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

## PERFORMANCE ATTRIBUTION – RETIREMENT PLAN VS. POLICY BENCHMARK

### Performance Attribution - 4Q 2012

	Policy		Portfolio		Impact on Return			
	Allocation	Return	Allocation*	Return	Weighting	Selection	Interaction	Total
Domestic Equity	34.0%	0.3	35.0%	0.7	(0.0)	0.1	0.0	0.1
International Equity	21.0%	5.7	21.7%	5.1	0.0	(0.1)	(0.0)	(0.1)
Fixed Income	25.0%	0.6	27.0%	0.9	(0.0)	0.1	0.0	0.1
Covered Calls	5.0%	(2.5)	5.5%	(1.9)	(0.0)	0.0	0.0	0.0
Real Return	6.0%	0.8	4.8%	1.1	0.0	0.0	(0.0)	0.0
Private Equity	4.0%	7.0	1.6%	1.8	(0.1)	(0.2)	0.1	(0.2)
Real Estate	4.0%	2.3	2.7%	3.4	(0.0)	0.0	(0.0)	0.0
Cash	1.0%	0.0	1.7%	0.0	(0.0)	0.0	0.0	(0.0)
Total	100.0%	1.7	100.0%	1.6	(0.2)	(0.0)	0.1	(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	34.3%	16.4	35.1%	17.0	(0.0)	0.2	(0.0)	0.1
International Equity	21.3%	17.0	21.9%	14.0	(0.2)	(0.6)	0.1	(0.8)
Fixed Income	27.0%	5.5	28.3%	7.5	0.1	0.5	0.0	0.7
Covered Calls**	3.8%	4.1	4.1%	4.6	(0.1)	0.2	(0.2)	(0.1)
Real Return	5.8%	3.1	4.9%	6.7	0.0	0.2	(0.0)	0.2
Private Equity	3.5%	34.0	1.6%	8.8	(0.5)	(0.8)	0.4	(0.8)
Real Estate	3.5%	11.0	2.6%	14.0	(0.1)	0.1	(0.0)	0.0
Cash	1.0%	0.1	1.6%	0.2	(0.3)	0.0	0.0	(0.3)
Total	100.0%	12.6	100.0%	11.7	(1.0)	(0.2)	0.3	(0.9)

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

\*\*Partial period return.

- During the most recent quarter, the Total Retirement Portfolio performed in-line with its policy benchmark, trailing it by (10) basis points. In regard to asset classes, International Equity and Private Equity were marginal detractors from the relative performance, whereas Domestic Equity and Fixed Income were marginal contributors to the relative performance. Weighting differences, specifically an underweight in Private Equity, slightly detracted from the relative performance throughout the portfolio.
- During the trailing 12-month period, the Total Retirement Portfolio underperformed its policy benchmark. The primary detractors from the relative performance were the International and Private Equity classes, as well as weighting within Cash. WPERP completed the final stages of restructuring its International Equity portfolio in the fourth quarter, effectively aiming to address the poor relative performance within the asset class. The Fixed Income and Real Return classes were the largest positive contributors to the relative performance. Weighting differences versus the benchmark detracted from the Total Retirement Portfolio's relative performance throughout most of the portfolio.

# Quarterly Report

Q4-12

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

### Performance Attribution - 4Q 2012

	Median Public Fund		Portfolio		Impact on Return			
	Allocation	Return	Allocation*	Return	Weighting	Selection	Interaction	Total
Domestic Equity	32.3%	0.7	35.0%	0.7	(0.0)	0.0	0.0	(0.0)
International Equity	17.8%	6.1	21.7%	5.1	0.2	(0.2)	(0.0)	(0.1)
Fixed Income	25.9%	0.8	27.0%	0.9	(0.0)	0.0	0.0	0.0
Covered Calls	0.0%	(2.5)	5.5%	(1.9)	(0.2)	0.0	0.0	(0.2)
Real Estate	6.3%	2.6	2.7%	3.4	(0.0)	0.1	(0.0)	(0.0)
Alternative Investments	16.1%	2.1	6.5%	1.3	(0.0)	(0.1)	0.1	(0.1)
Cash	1.7%	0.0	1.7%	0.0	0.0	0.0	0.0	0.0
Total	100.0%	2.0	100.0%	1.6	(0.2)	(0.2)	0.0	(0.4)

\*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	37.0%	16.5	35.1%	17.0	(0.1)	0.2	(0.0)	0.1
International Equity	17.6%	18.8	21.9%	14.0	0.3	(0.9)	(0.2)	(0.8)
Fixed Income	27.0%	7.3	28.3%	7.5	(0.1)	0.0	0.0	(0.0)
Covered Calls**	0.0%	4.1	4.1%	4.6	(0.4)	0.0	0.0	(0.3)
Real Estate	6.5%	10.7	2.6%	14.0	0.1	0.2	(0.1)	0.2
Alternative Investments	10.1%	9.7	6.4%	7.2	0.1	(0.3)	0.1	(0.0)
Cash	1.7%	0.2	1.6%	0.2	0.0	(0.0)	0.0	0.0
Total	100.0%	13.0	100.0%	11.7	(0.0)	(0.7)	(0.2)	(1.0)

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

\*\*Partial period return.

- During the most recent quarter, the Total Retirement Portfolio underperformed the Median Public Fund. Weighting within Covered Calls, as well as selection within International Equity, were the largest detractors from relative performance. A relative overweight to the International Equity asset class aided relative performance.
- During the trailing 12-month period, the Total Retirement Portfolio underperformed the Median Public Fund. Selection within the International Equity class was the largest, and primary, detractor from relative performance. WPERP completed the final stages of restructuring its International Equity portfolio in the fourth quarter, effectively aiming to address this issue. The Real Estate and Domestic Equity asset classes marginally contributed to the Total Retirement Portfolio's relative performance.

<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 40 basis points with a 0.7% return. Over the latest 1-year period, the portfolio bested its policy benchmark by 60 basis points. The portfolio trailed its policy benchmark by (80) and (50) basis points over the latest 3- and 5-year periods, respectively.

The **International Equity** portfolio posted a 5.1% quarterly return, underperforming its policy benchmark by (60) basis points. Over the latest 1-year period, the portfolio trailed its policy benchmark by (3.0%). Over the longer 3- and 5-year periods, the portfolio underperformed its policy benchmark by (1.8%) and (0.4%), respectively. WPERP completed the final stages of restructuring its International Equity portfolio in the fourth quarter of 2012. Underperformance over the trailing time periods can be attributed to active managers throughout the portfolio. Many of these managers have been replaced due to the restructuring.

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 applicable time periods. The Plan's other high yield manager underperformed its benchmark across each of the examined periods, due in large part to its more conservative holdings relative to its benchmark.

The **Covered Calls** class produced its second full quarter of performance, outperforming its benchmark by 60 basis points.

### Periods ending December 31, 2012

Asset Class	Quarter	1 Year	3 Year	5 Year
Total Retirement	1.6	11.7	7.6	2.5
<i>Policy Benchmark<sup>1</sup></i>	<i>1.7</i>	<i>12.6</i>	<i>8.5</i>	<i>2.7</i>
Domestic Equity	0.7	17.0	10.4	1.5
<i>Russell 3000 (blend)<sup>3</sup></i>	<i>0.3</i>	<i>16.4</i>	<i>11.2</i>	<i>2.0</i>
International Equity	5.1	14.0	2.4	-2.7
<i>MSCI ACWI ex U.S. IMI ND (blend)<sup>4</sup></i>	<i>5.7</i>	<i>17.0</i>	<i>4.2</i>	<i>-2.3</i>
Fixed Income	0.9	7.5	8.1	7.1
<i>BC Universal</i>	<i>0.6</i>	<i>5.5</i>	<i>6.7</i>	<i>6.2</i>
Covered Calls	-1.9	---	---	---
<i>CBOE BXM</i>	<i>-2.5</i>	<i>---</i>	<i>---</i>	<i>---</i>
Real Return <sup>2</sup>	1.1	6.7	7.2	3.5
<i>Tbill + 3%<sup>2</sup></i>	<i>0.8</i>	<i>3.1</i>	<i>3.1</i>	<i>3.7</i>
Private Equity <sup>2</sup>	1.8	8.8	16.7	5.4
<i>Russell 3000 + 3% (PE blend)<sup>2,5</sup></i>	<i>7.0</i>	<i>34.0</i>	<i>16.6</i>	<i>6.5</i>
Real Estate <sup>2</sup>	3.4	14.0	15.0	-0.6
<i>NCREIF<sup>2</sup></i>	<i>2.3</i>	<i>11.0</i>	<i>10.9</i>	<i>2.3</i>
Cash	0.0	0.2	0.3	0.7
<i>Citigroup T-bills</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.4</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

Q4-12

## WPERP RETIREMENT PLAN MANAGER PERFORMANCE

### Domestic Equity – Periods ending December 31, 2012

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	709,735	Large Cap Core	0.1	16.5	11.2	1.9	6.4	8/2003
<i>Russell 1000 Index</i>	---	---	<i>0.1</i>	<i>16.4</i>	<i>11.1</i>	<i>1.9</i>	<i>6.3</i>	---
MFS	440,542	Large Cap Value	0.7	16.7	9.8	1.8	6.6	2/2004
<i>Russell 1000 Value Index</i>	---	---	<i>1.5</i>	<i>17.5</i>	<i>10.9</i>	<i>0.6</i>	<i>4.8</i>	---
T. Rowe Price	443,139	Large Cap Value	2.0	18.1	10.9	2.4	6.2	9/2004
<i>Russell 1000 Value Index</i>	---	---	<i>1.5</i>	<i>17.5</i>	<i>10.9</i>	<i>0.6</i>	<i>4.9</i>	---
Fred Alger	421,521	Large Cap Growth	-0.8	16.2	10.0	0.9	6.2	2/2004
<i>Russell 1000 Growth Index</i>	---	---	<i>-1.3</i>	<i>15.3</i>	<i>11.4</i>	<i>3.1</i>	<i>5.1</i>	---
T. Rowe Price	442,554	Large Cap Growth	-0.2	19.8	---	---	9.0	4/2010
<i>Russell 1000 Growth Index</i>	---	---	<i>-1.3</i>	<i>15.3</i>	---	---	<i>10.5</i>	---
Earnest Partners	112,522	Small Cap Value	5.8	15.5	12.8	4.0	5.6	11/2004
<i>Russell 2000 Value Index</i>	---	---	<i>3.2</i>	<i>18.1</i>	<i>11.6</i>	<i>3.5</i>	<i>4.4</i>	---
Frontier	108,487	Small Cap Growth	4.4	14.6	---	---	8.5	4/2010
<i>Russell 2000 Growth Index</i>	---	---	<i>0.4</i>	<i>14.6</i>	---	---	<i>9.7</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 fourth quarter of 2012, 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 0.1% quarterly return. **MFS**, one of the Plan's two active large cap value managers, generated a 0.7% quarterly return, trailing the Russell 1000 Value Index return by (80) basis points. **T. Rowe Price LCV**, the Plan's other active large cap value manager, outperformed the Russell 1000 Value Index by 50 basis points with a 2.0% quarterly return. **Fred Alger**, one of the Plan's two active large cap growth managers, completed the quarter with a minus (0.8%) return, besting the Russell 1000 Growth Index by 50 basis points. **T. Rowe Price LCG**, the Plan's other active large cap growth manager, posted a quarterly return of minus (0.2%) and outperformed the Russell 1000 Growth Index by 1.1%. Stock selection within Information Technology, Telecommunication Services, and Consumer Discretionary aided relative outperformance. **Earnest Partners**, WPERP's active small cap value manager, ended the quarter with a 5.8% return, outperforming the Russell 2000 Value Index by 2.6%. Security selection within Consumer Discretionary, Health Care, and Information Technology, as well as an overweight in Industrials, benefited relative performance. **Frontier**, the Plan's active small cap growth manager, posted a quarterly return of 4.4%, outperforming the Russell 2000 Growth Index by 4.0%. Selections within Health Care, Producer Durables, Financials, and Technology were significant contributors to relative performance.

## Latest Year

During the latest 1-year period, **BlackRock** slightly outperformed its benchmark by 10 basis points with a return of 16.5%. **MFS** posted a 16.7% return and underperformed its benchmark by (80) basis points. **T. Rowe Price LCV** generated an 18.1% return, outperforming its benchmark by 60 basis points. **Fred Alger** posted a 16.2% return, besting its benchmark by 90 basis points. **T. Rowe Price LCG** posted a 19.8% return and outperformed the Russell 1000 Growth Index by 4.5%. Selection within Information Technology, Health Care, and Telecommunication Services, as well as tactical weighting in Consumer Staples and Energy, aided relative performance. **Earnest Partners** completed the latest 1-year period with a 15.5% return, underperforming its benchmark by (2.6%). Security selection within Energy, Financials, and Utilities detracted from the relative performance. **Frontier** posted a 14.6% return, matching the Russell 2000 Growth Index.

## Latest Three Years

During the latest 3-year period, **BlackRock** bested its benchmark by 10 basis points with a return of 11.2%. **MFS** trailed its benchmark by (1.1%) with a 9.8% return. Selection within Financial Services, Health Care, and Energy detracted from the relative performance. **T. Rowe Price LCV** matched its benchmark with a 10.9% return. **Fred Alger** posted a 10.0% return, underperforming its benchmark by (1.4%). The Consumer Discretionary, Financials, and Energy sectors were significant detractors from relative performance over the period. **Earnest Partners'** latest 3-year return of 12.8% bested its benchmark by 1.2%. Selection within Consumer Discretionary, Energy, Industrials, and Telecommunication Services aided relative outperformance.

## Latest Five Years

During the latest 5-year period, **BlackRock** matched its benchmark with a 1.9% return. **MFS** finished the period surpassing the Russell 1000 Value Index return by 1.2% with a 1.8% return. Stock selection within Technology, Consumer Staples, and Industrials, as well as a relative underweight to Financials, largely aided relative outperformance. **T. Rowe Price LCV** outperformed its benchmark by 1.8% with a 2.4% return, due primarily to an underweight allocation and stock selection in Financials, as well as stock selection within Health Care, Consumer Staples, and Industrials. **Fred Alger** posted a 0.9% return, trailing its benchmark by (2.2%). Selection within Information Technology, Consumer Staples, and Financials detracted from relative performance. **Earnest Partners** generated a 4.0% return, outperforming its benchmark by 50 basis points.

## International Equity – Periods ending December 31, 2012

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	432,147	Developed Markets	5.8	---	---	---	5.8	9/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	<i>5.8</i>	---	---	---	<i>5.8</i>	---
Invesco^	207	Developed Markets	---	---	---	---	---	6/2004
Interim Account^	510	Developed Markets	---	---	---	---	---	2/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	---	---	---	---	---	---
MFS	427,273	Developed Markets	2.1	---	---	---	7.9	7/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	<i>5.8</i>	---	---	---	<i>12.3</i>	---
The Boston Company^	689	Developed Markets	---	---	---	---	---	3/2005
<i>MSCI World ex US IMI ND Index</i>	---	---	---	---	---	---	---	---
Pyramis	460,725	Developed Markets	6.5	18.3	5.6	-2.1	5.5	11/2004
<i>MSCI World ex US IMI ND Index (blend – Pyramis)<sup>3</sup></i>	---	---	<i>5.8</i>	<i>16.5</i>	<i>4.0</i>	<i>-2.9</i>	<i>4.6</i>	---
L.A. Capital	210,614	Emerging Markets	6.5	---	---	---	6.5	9/2012
<i>MSCI EMF IMI ND Index</i>	---	---	<i>5.5</i>	---	---	---	<i>5.5</i>	---
Vontobel***	205,283	Emerging Markets	---	---	---	---	---	12/2012
Interim Account^	<1	Emerging Markets	---	---	---	---	---	2/2012
<i>MSCI EMF IMI ND Index</i>	---	---	---	---	---	---	---	---

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

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

\*\*\* Received funding during the fourth quarter of 2012.

^ 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 in the final stages of liquidation.

<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.

## Latest Quarter

During the fourth quarter of 2012, three of WPERP's four currently funded international equity managers matched or outperformed their respective benchmarks. Vontobel received funding during the fourth quarter.

**BlackRock**, the Plan's passive developed international manager, matched the benchmark's quarterly return of 5.8%. **MFS**, the Plan's active international relative value manager, trailed the MSCI World ex US IMI ND Index by (3.7%) with a 2.1% quarterly return. Overweight positions and stock selection in Telecommunication Services and Consumer Staples, as well as an underweight position and stock selection in Consumer Discretionary, detracted from relative performance. **Pyramis**, the Plan's active international growth manager, bested the MSCI World ex US IMI ND Index (blend) by 70 basis points with a 6.5% quarterly return. **L.A. Capital**, one of the Plan's active emerging markets managers, outperformed the MSCI Emerging Markets IMI ND Index by 1.0% with a 6.5% quarterly return. Sector tilts added value, with overweights to Financials and Consumer Staples, as well as an underweight to Energy, aiding relative performance. Additionally, higher yielding stocks rebounded in the fourth quarter and added to their relative return.

## Latest Year

**Pyramis** completed the period with an 18.3% return, outperforming its benchmark by 1.8%. Stock selection within Materials, Consumer Discretionary, and Industrials added to relative performance.

## Latest Three Years

**Pyramis** bested its benchmark by 1.6%, returning 5.6% for the period. The regional portfolios in Europe, Japan, and Canada aided the relative outperformance.

## Latest Five Years

**Pyramis** returned minus (2.1%), outperforming its benchmark by 80 basis points.



## Fixed Income – Periods ending December 31, 2012

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
JP Morgan	887,279	Core	0.4	5.8	---	---	6.7	4/2010
<i>BC Aggregate Index</i>	---	---	<i>0.2</i>	<i>4.2</i>	---	---	<i>5.9</i>	---
Wells	917,411	Core	0.7	6.6	7.8	7.9	6.8	7/2004
<i>BC Aggregate Index</i>	---	---	<i>0.2</i>	<i>4.2</i>	<i>6.2</i>	<i>5.9</i>	<i>5.5</i>	---
Loomis	138,136	High Yield	5.0	22.8	13.9	11.3	10.1	3/2005
<i>BC High Yield Index</i>	---	---	<i>3.3</i>	<i>15.8</i>	<i>11.9</i>	<i>10.3</i>	<i>9.0</i>	---
Wells High Yield	123,065	High Yield	2.6	13.1	10.5	9.4	7.9	11/2004
<i>BC High Yield Index</i>	---	---	<i>3.3</i>	<i>15.8</i>	<i>11.9</i>	<i>10.3</i>	<i>8.6</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 fourth quarter of 2012, three of WPERP's four reporting fixed income managers outperformed their respective benchmarks.

**JP Morgan**, one of the Plan's two core fixed income managers, bested the BC Aggregate Index by 20 basis points with a quarterly return of 0.4%. **Wells**, the Plan's other core fixed income manager, outperformed the BC Aggregate Index by 50 basis points with a quarterly return of 0.7%. **Loomis Sayles**, one of the Plan's two high yield managers, produced a quarterly return of 5.0%, outperforming the BC High Yield Index by 1.7%. The portfolio's relative outperformance was largely driven by lower quality securities, out-of-benchmark assets, and strong security selection. 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 2.6% quarterly return.

### Latest Year

**JP Morgan** finished the latest 1-year period with a 5.8% return, outperforming the benchmark by 1.6%. A relative underweight to Treasuries, as well as the portfolio's allocations to ABS, MBS, and CMBS, aided relative outperformance. **Wells** generated a 6.6% return and outperformed its benchmark by 2.4%, due primarily to security selection and sector positioning. **Loomis Sayles** generated a 22.8% return and outperformed its benchmark by 7.0%. The portfolio's relative outperformance was largely driven by security selection within the high yield market, as well as positions further out on the yield curve. **Wells High Yield** finished the period returning 13.1%, underperforming its benchmark by (2.7%). The portfolio's relative underperformance was mostly driven by its more conservative holdings than the broad market.

### Latest Three Years

**Wells** finished the latest 3-year period posting a 7.8% return and outperformed its benchmark by 1.6%, due primarily to security selection and sector positioning. **Loomis Sayles** generated a 13.9% return and outperformed its benchmark by 2.0%. Strong security selection, and specifically a lower credit quality bias, aided relative performance during the period. **Wells High Yield** posted a 10.5% 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 7.9% return and outperformed its benchmark by 2.0%, driven mainly by security selection. **Loomis Sayles** completed the period with an 11.3% return, outperforming its benchmark by 1.0%. Security selection and yield curve positioning aided the relative performance. **Wells** High Yield posted a 9.4% return, underperforming its benchmark by (90) basis points.

## Covered Calls – Periods ending December 31, 2012

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Gateway (replication)	325,998	Covered Calls	-2.5	---	---	---	3.9	5/2012
Gateway (non-replication)	84,114	Covered Calls	0.3	---	---	---	7.2	5/2012
<i>CBOE BXM Index</i>	---	---	-2.5	---	---	---	4.1	---

\* 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 fourth quarter of 2012, the Covered Calls manager, Gateway, performed within expectations, with the non-replication portfolio besting the benchmark by 2.8% and the replication portfolio performing in-line with the benchmark. The outperformance of the non-replication portfolio can be attributed to management taking the opportunity to incrementally rebalance the call option portfolio during the large market swings within the quarter, particularly in November.

## Real Return – Periods ending December 31, 2012

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception**	Inception Date***
Aetos Capital* (net of fees)	37,343	Hedge FOFs	2.4	7.2	4.9	2.2	2.4	2/2007
<i>Tbills + 3 %*</i>	---	---	0.8	3.1	3.1	3.7	4.2	---
<i>HFRI FOF Diversified Index*</i>	---	<i>Hedge FOFs</i>	2.2	2.8	1.7	-1.4	-0.2	---
WAMCO* (gross of fees)	336,410	GILS	1.0	6.7	---	---	6.9	4/2010
<i>BC WGILB Index* ****</i>	---	---	1.0	7.0	---	---	7.3	---

\* 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 B).

The WPERP Board recently selected a Commodities manager, Invesco, to add to the Real Return class, and funding is anticipated to occur in the near-term. Additionally, the Board is in the process of conducting a search for Hedge Fund-of-Funds managers, and is considering expanding the Real Return class to include Timber, as well.

### Latest Quarter

**Aetos** posted a 2.4% return for the quarter, outperforming the Tbill+3% by 1.6%, as well as the HFRI FOF Diversified Index by 20 basis points. **WAMCO**, the Plan's GILS (Global Inflation-Linked Securities) manager, posted a quarterly return of 1.0%, matching the BC WGILB Index.

### Latest Year

Over the latest 1-year period, **Aetos** returned 7.2%, outperforming the Tbill+3% by 4.1%, as well as the HFRI FOF Diversified Index by 4.4%. **WAMCO** generated a 6.7% return, trailing its benchmark by (30) basis points.

### Latest Three Years

**Aetos** finished the latest 3-year period with a 4.9% return, outperforming the Tbill+3% by 1.8%, and outperforming the HFRI FOF Diversified Index by 3.2%.

### Latest Five Years

**Aetos** finished the latest 5-year period with a 2.2% return, underperforming the Tbill+3% by (1.5%), but outperforming the HFRI FOF Diversified Index by 3.6%.

## Private Equity and Real Estate - Periods ending December 31, 2012

Asset Class	Mkt Value (\$000)	Quarter	1 YR	3 YR	5 YR	Since Inception***	Inception Date****
Private Equity*	127,944	1.8	8.8	16.7	5.4	9.0	6/2006
<i>Russell 3000 + 3% (PE blend)***</i>	---	<i>7.0</i>	<i>34.0</i>	<i>16.6</i>	<i>6.5</i>	<i>9.7</i>	---
Real Estate*	219,269	3.4	14.0	15.0	-0.6	2.0	1/2007
<i>NCREIF*</i>	---	<i>2.3</i>	<i>11.0</i>	<i>10.9</i>	<i>2.3</i>	<i>4.0</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 ten investments including **Lexington VI**, **Lexington VII**, **Landmark XIII**, **Landmark XIV**, **Capital Dynamics** (previously HRJ Capital), **Fisher Lynch**, **Oaktree V**, **Energy Cap**, **Audax Mezz**, and **Vista Equity IV**. The private equity portfolio outperformed the Russell 3000 + 3% (PE Blend) across the trailing 3-year period, but underperformed the benchmark across all other trailing time periods, due in large part to the strong recent performance within the public markets.

The **Real Estate** portfolio currently consists of thirteen 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**, and **ARS VI**. 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

Q4-12

## WPERP RETIREMENT PLAN MANAGERS ON WATCH

### Return vs. Benchmark Since Watch

As of December 31, 2012

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	Ongoing HF Search	Results will be presented in PCA's Real Return performance report					
<i>Tbills + 3 %^</i>					---	---	---	---	---	---
Aetos vs. Target	<i>Tbills + 3 %</i>				---	---	---	---	---	---
Fred Alger	Large Cap Growth	Performance	6/1/2012	5/23/2012	2.3	6.3	6.8	---	---	7.7
Russell 1000 Growth					2.7	6.9	7.6	---	---	7.6
Fred Alger vs. Target	Russell 1000 Growth				N/M	N/M	N/M	---	---	N/M
Frontier	Small Cap Growth	Performance	6/1/2012	5/23/2012	2.7	4.1	7.5	---	---	10.8
Russell 2000 Growth					5.2	7.0	7.6	---	---	10.7
Frontier vs. Target	Russell 2000 Growth				N/M	N/M	N/M	---	---	N/M
Loomis Sayles	High Yield	Performance	6/1/2012	5/23/2012	2.1	6.2	11.4	---	---	14.3
BC High Yield					2.1	5.3	8.5	---	---	10.2
Loomis Sayles vs. Target	BC High Yield				N/M	N/M	N/M	---	---	N/M
MFS	Large Cap Value	Performance	9/1/2012	8/8/2012	3.0	2.5	---	---	---	3.8
Russell 1000 Value					3.2	2.6	---	---	---	4.7
MFS vs. Target	Russell 1000 Value				N/M	N/M	---	---	---	N/M

\*Performance data provided by Mellon and LDZ.

^Results will be presented in PCA's Real Return performance report.

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.

Periods marked as "N/M" indicate returns are not meaningful enough to fairly judge investment performance.

## Managers on Watch

**Aetos** was placed on watch status beginning 12/1/2011 due to long-term performance.

**Fred Alger** was placed on watch status beginning 6/1/2012 due to short-term performance.

**Frontier** was placed on watch status beginning 6/1/2012 due to short-term performance.

**Loomis Sayles** was placed on watch status beginning 6/1/2012 due to short-term performance.

**MFS** was placed on watch status beginning 9/1/2012 due to medium-term performance.

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

**T. Rowe Price (Large Cap Growth)** was placed on watch status beginning 2/1/2012 due to short-term performance. The manager was removed from watch status on 10/24/12 due to improved performance.

**MFS** was placed on watch status beginning 9/1/2010 due to short-term performance. The manager was removed from watch on 7/11/11 due to improved performance results over the watch period.

**Wells HY** was placed on watch status beginning 2/1/2010 due to short-term performance. PCA recommended extending the watch on 1/13/2011 and completed an on-site visit review on 4/29/2011. In July 2011, PCA recommended WPERP begin a formal RFP process to review the options of replacing the manager. At the 11/9/2011 Board meeting, the WPERP Board opted to continue to retain **Wells HY**. The manager's status in regard to watch will be calculated based on the new contract date.

**Invesco** was placed on watch due to performance issues beginning 9/1/2011. Invesco was previously placed on watch status beginning 9/1/2010 due to organizational issues. PCA recommended removing the manager from watch as the investment team remained stable during the observation period. As a result of the 2011 International Equity Structure Review, the Plan has liquidated Invesco in order to fund a passive manager.

**The Boston Company (Developed Markets)** was placed on watch status beginning 12/1/2010 due to short-term performance. As a result of the 2011 International Equity Structure Review, the manager has been terminated, and the Plan has transitioned the funds to **MFS**.

**Pyramis** was placed on watch status beginning 5/1/2010 due to short-term performance. On 4/15/2011, PCA recommended removing Pyramis from watch status due to improved performance. Subsequent to removal, PCA recommended Pyramis again be placed on watch, beginning 5/1/2011, for organizational issues resulting from a recent portfolio manager change. Pyramis was removed from watch status on 5/9/2012 after thorough organizational monitoring and analysis over the watch period.

## WPERP Retirement Plan Estimated Performance Results Net and Gross of Fees Comparison For Quarter Ending 12/31/2012

Asset Class	Manager	Market Value <sup>2</sup>	Performance, % <sup>2</sup>		Difference	
			Net	Gross	Percentage	Market Value
Domestic Equity						
Large Core Passive	BlackRock	709,735,351	0.09%	0.10%	-0.01%	-70,974
Large Value	MFS	440,541,775	0.62%	0.70%	-0.08%	-348,028
Large Value	T. Rowe Price	443,139,039	1.91%	2.00%	-0.09%	-387,747
Large Growth	Fred Alger	421,521,374	-0.88%	-0.80%	-0.08%	-347,755
Large Growth	T. Rowe Price	442,554,113	-0.29%	-0.20%	-0.09%	-387,235
Small Value	Earnest Partners	112,521,869	5.64%	5.80%	-0.16%	-180,035
Small Growth	Frontier	108,487,050	4.15%	4.40%	-0.25%	-271,218
	Transition	876	---	---	---	---
		\$2,678,501,447				
International Equity						
Developed Passive	BlackRock	432,146,960	5.79%	5.80%	-0.01%	-43,215
Developed Markets	MFS	427,273,349	2.00%	2.10%	-0.10%	-442,228
Developed Markets	Pyramis	460,725,029	6.42%	6.50%	-0.09%	-391,616
Emerging Markets	L.A. Capital	210,613,988	6.31%	6.50%	-0.19%	-394,901
Emerging Markets	Vontobel	205,283,095	---	---	---	---
	Interim / residual	1,597,942	---	---	---	---
		\$1,737,640,363				
Domestic Fixed Income						
Core	JP Morgan	887,279,240	0.38%	0.40%	-0.03%	-221,820
Core	Wells	917,411,069	0.67%	0.70%	-0.03%	-275,223
High Yield	Loomis Sayles	138,136,067	4.88%	5.00%	-0.13%	-172,670
High Yield	Wells	123,065,073	2.49%	2.60%	-0.12%	-141,525
		\$2,065,891,449				
Covered Calls						
Replication	Gateway	325,997,982	-2.55%	-2.50%	-0.05%	-162,999
Non-replication	Gateway	84,113,803	0.20%	0.30%	-0.10%	-84,114
		\$410,111,785				
Real Return <sup>3</sup>						
	Aetos	37,342,593	2.40%	2.59%	-0.19%	-70,149
	WAMCO	336,410,445	0.95%	1.00%	-0.05%	-168,289
		\$373,753,038				
Private Equity <sup>3</sup>						
	Aggregate*	127,944,185	1.80%	2.11%	-0.31%	-397,503
		\$127,944,185				
Real Estate <sup>3</sup>						
	Aggregate	219,269,411	3.40%	3.63%	-0.23%	-498,629
		\$219,269,411				
Cash						
		180,828,917	---	0.00%	---	---
TOTAL PORTFOLIO <sup>1</sup>						
		\$7,797,604,039	1.53%	1.60%	-0.07%	-\$5,457,872
Total Fund Policy						
			---	1.70%	---	---

<sup>1</sup> Total portfolio market value includes \$8.8 million in transition assets and a negative balance of (\$5.2) 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.

# Quarterly Report

Q4-12

## WPERP DISABILITY PLAN REVIEW

The WPERP Disability Portfolio ended the fourth quarter of 2012 with an aggregate value of approximately \$38.7 million.

### Portfolio Performance Overview

Periods ending December 31, 2012, Gross of Fees

Asset Class	Quarter	1 Year	3 Year	5 Year	Since Inception**	Inception Date***
Total Portfolio	0.7	6.8	7.7	7.4	---	---
<i>Policy Benchmark*</i>	<i>0.1</i>	<i>3.9</i>	<i>5.9</i>	<i>5.7</i>	<i>---</i>	<i>---</i>
Wells	0.7	6.9	8.1	7.9	6.8	7/2004
<i>BC Aggregate</i>	<i>0.2</i>	<i>4.2</i>	<i>6.2</i>	<i>5.9</i>	<i>5.5</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.

**4Q 2012** – During the quarter, the Disability Plan posted a 0.7% return and outperformed its policy benchmark by 60 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 2.9%, 1.8%, and 1.7%, respectively.

### Portfolio Strategic Allocation (as of 12/31/12)

Segment	Actual \$(000)	Actual %	Target %	Variance
Total Portfolio	\$38,711	100	100	---
Fixed Income	37,693	97	95	2
Wells	37,693	97	95	2
Cash	1,018	3	5	-2

**Strategic allocation** – The Disability Plan target allocation consists of 95% fixed income investments and 5% cash. At the close of 4Q 2012, there was one fixed income manager, Wells. The total fund was 97% invested in this manager.



# Quarterly Report

Q4-12

## WPERP DEATH PLAN REVIEW

The WPERP Death Portfolio ended the fourth quarter of 2012 with an aggregate value of approximately \$26.2 million.

### Portfolio Performance Overview

Periods ending December 31, 2012, Gross of Fees

Asset Class	Quarter	1 Year	3 Year	5 Year	Since Inception**	Inception Date***
Total Portfolio	0.7	6.7	7.2	7.0	---	---
<i>Policy Benchmark*</i>	<i>0.1</i>	<i>4.0</i>	<i>5.9</i>	<i>5.7</i>	---	---
Wells	0.7	6.9	8.1	7.9	6.8	7/2004
<i>BC Aggregate</i>	<i>0.2</i>	<i>4.2</i>	<i>6.2</i>	<i>5.9</i>	<i>5.5</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.

**4Q 2012** – During the quarter, the Death Plan posted a 0.7% return and outperformed its policy benchmark by 60 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 2.7%, 1.3%, and 1.3%, respectively.

### Portfolio Strategic Allocation (as of 12/31/12)

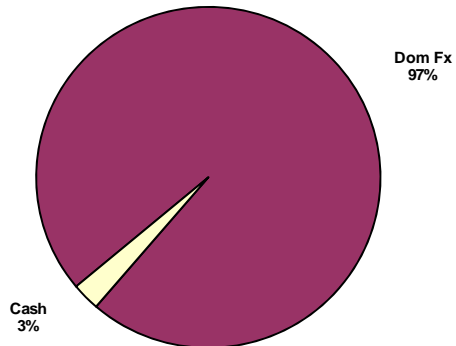
Segment	Actual \$(000)	Actual %	Target %	Variance
Total Portfolio	\$26,238	100	100	---
Fixed Income	25,521	97	96	1
Wells	25,521	97	96	1
Cash	717	3	4	-1

**Strategic allocation** – The Death Benefit Plan target allocation consists of 96% fixed income investments and 4% cash. At the close of 4Q 2012, there was one fixed income manager, Wells. The total fund was 97% invested in this manager.

## Actual Strategic Allocation Comparison – Disability and Death Plans

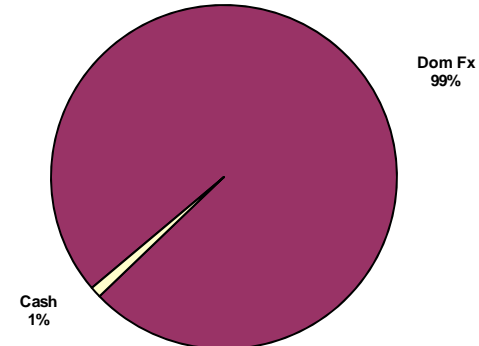
December 31, 2012

Disability

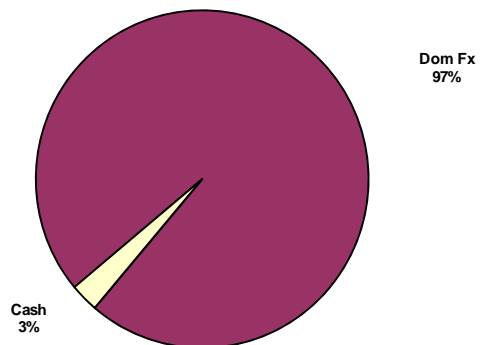


December 31, 2011

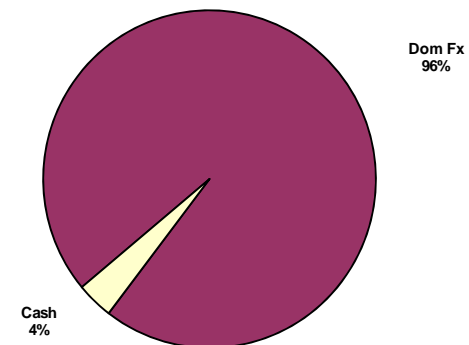
Disability



Death



Death



## HEALTH PLAN REVIEW

The WPERP Health Plan ended the fourth quarter of 2012 with an aggregate value of approximately \$1.3 billion.

### Portfolio Performance Overview

Periods ending December 31, 2012, Gross of Fees

Asset Class	Quarter	1 Year	3 Year	5 Year	Since Inception*	Inception Date**
Total Health	1.5	11.2	7.7	3.7	4.1	12/2006
<i>Policy Benchmark<sup>1</sup></i>	<i>1.6</i>	<i>12.2</i>	<i>8.4</i>	<i>3.2</i>	<i>3.8</i>	---
Domestic Equity	0.7	16.9	10.7	1.6	2.3	1/2007
<i>Russell 3000 (blend)<sup>2</sup></i>	<i>0.3</i>	<i>16.4</i>	<i>11.2</i>	<i>1.9</i>	<i>2.6</i>	---
International Equity	4.6	13.6	2.4	---	3.8	9/2009
<i>MSCI ACWI ex U.S. IMI ND</i>	<i>5.7</i>	<i>17.0</i>	<i>4.2</i>	---	<i>6.5</i>	---
Fixed Income	0.7	6.8	7.6	7.9	7.8	1/2007
<i>BC Universal (blend)<sup>3</sup></i>	<i>0.6</i>	<i>5.5</i>	<i>6.7</i>	<i>6.3</i>	<i>6.4</i>	---
Covered Calls	-1.9	---	---	---	4.6	5/2012
<i>CBOE BXM</i>	<i>-2.5</i>	---	---	---	<i>4.1</i>	---
Real Return <sup>4</sup>	1.1	6.7	---	---	7.7	7/2010
<i>Tbill + 3%<sup>4</sup></i>	<i>0.8</i>	<i>3.1</i>	---	---	<i>3.1</i>	---
Private Equity <sup>4</sup>	2.3	13.1	21.4	---	22.7	9/2008
<i>Russell 3000 + 3% (PE blend)<sup>4,5</sup></i>	<i>7.0</i>	<i>34.0</i>	<i>16.6</i>	---	<i>9.3</i>	---
Real Estate <sup>4</sup>	4.5	14.2	---	---	8.8	1/2010
<i>NCREIF<sup>4</sup></i>	<i>2.3</i>	<i>11.0</i>	---	---	<i>12.8</i>	---
Cash	0.0	0.2	0.2	0.7	1.4	12/2006
<i>Citigroup T-bills</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.4</i>	<i>1.1</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 underperformed its policy benchmark over the latest quarter by (10) basis points with a 1.5% return. Over the latest 1-year period, the portfolio trailed its policy benchmark by (1.0%), returning 11.2%. Over the latest 3-year period, the portfolio underperformed its policy benchmark by (70) basis points with a 7.7% return. Over the latest 5-year period, the portfolio outperformed its policy benchmark by 50 basis points with a 3.7% 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

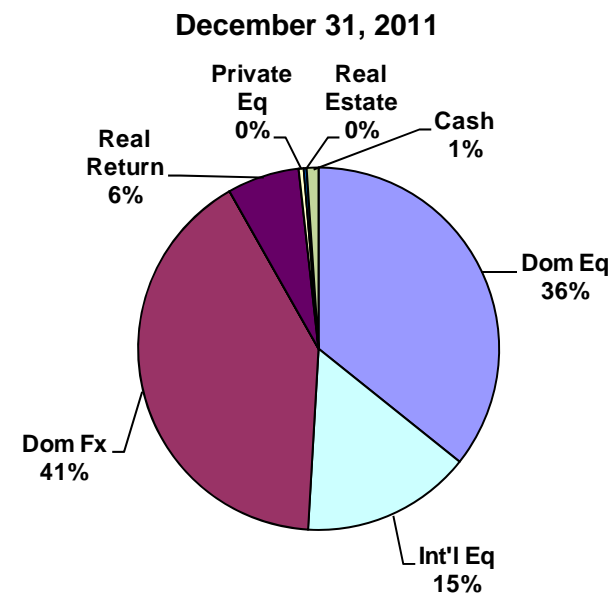
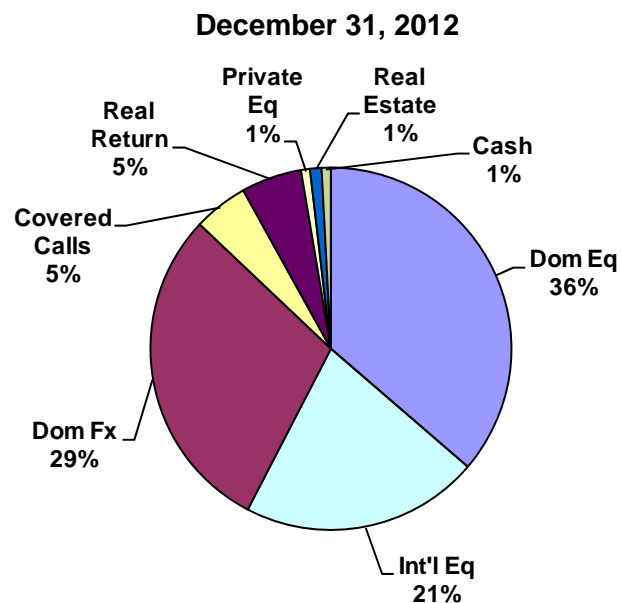
Q4-12

## Portfolio Strategic Allocation (as of 12/31/12)

Segment	Actual (\$MM)	Actual %	Target %	Variance
Health Plan*	1,304	100	100	---
Domestic Equity	472	36	35	1
International Equity	277	21	21	---
Fixed Income	383	29	26	3
Covered Calls	63	5	5	---
Real Return	71	5	6	-1
Private Equity	10	1	3	-2
Real Estate	13	1	3	-2
Cash	11	1	1	---

\* Includes a balance of \$3.4 million in transition assets and a negative balance of (\$33,437) in securities lending.

As of December 31, 2012, the Total Health Portfolio had a 57% allocation in Equities, 29% in Fixed Income, 5% 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 weightings of Fixed Income and Real Return decreased by (12%) and (1%), respectively, while International Equity, Private Equity, and Real Estate increased by 6%, 1%, and 1%, respectively. Domestic Equity and Cash allocations remained unchanged. The Covered Calls class was funded during the second quarter of 2012, and thus does not have a 12/31/11 point of reference.



# Quarterly Report

Q4-12

## PERFORMANCE ATTRIBUTION – HEALTH PLAN

### Performance Attribution - 4Q 2012

	Policy		Portfolio		Impact on Return			
	Allocation	Return	Allocation*	Return	Weighting	Selection	Interaction	Total
Domestic Equity	35.0%	0.3	36.4%	0.7	(0.0)	0.2	0.0	0.2
International Equity	21.0%	5.7	20.8%	4.6	(0.0)	(0.2)	0.0	(0.2)
Fixed Income	26.0%	0.6	29.8%	0.7	(0.0)	0.0	0.0	0.0
Covered Calls	5.0%	(2.5)	5.0%	(1.9)	(0.0)	0.0	0.0	0.0
Real Return	6.0%	0.8	5.4%	1.1	0.0	0.0	(0.0)	0.0
Private Equity	3.0%	7.0	0.8%	2.3	(0.1)	(0.1)	0.1	(0.2)
Real Estate	3.0%	2.3	0.9%	4.5	(0.0)	0.1	(0.0)	0.0
Cash	1.0%	0.0	0.9%	0.0	0.0	0.0	0.0	0.0
Total	100.0%	1.6	100.0%	1.5	(0.2)	(0.0)	0.1	(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	35.3%	16.4	36.5%	16.9	(0.2)	0.2	(0.0)	(0.1)
International Equity	20.8%	17.0	20.5%	13.6	(0.2)	(0.7)	0.1	(0.8)
Fixed Income	28.5%	5.5	31.2%	6.8	(0.2)	0.4	0.1	0.2
Covered Calls**	3.8%	4.1	3.8%	4.6	(0.1)	0.2	(0.2)	(0.1)
Real Return	5.8%	3.1	5.5%	6.7	(0.1)	0.2	0.0	0.2
Private Equity	2.5%	34.0	0.7%	13.1	(0.4)	(0.4)	0.3	(0.5)
Real Estate	2.5%	11.0	0.8%	14.2	(0.0)	0.1	(0.1)	(0.0)
Cash	1.0%	0.1	1.1%	0.2	(0.1)	0.0	0.0	(0.1)
Total	100.0%	12.2	100.0%	11.2	(1.3)	(0.0)	0.2	(1.1)

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

\*\*Partial period return.

- During the most recent quarter, the Total Health Portfolio performed in-line with its policy benchmark, trailing it by (10) basis points. In regard to asset classes, International Equity and Private Equity were marginal detractors from the relative performance, whereas Domestic Equity was a marginal contributor to the relative performance. Weighting differences, specifically an underweight in Private Equity, slightly detracted from the relative performance throughout the portfolio.
- During the trailing 12-month period, the Total Health Portfolio underperformed its policy benchmark. The primary detractors from the relative performance were the International and Private Equity classes. WPERP completed the final stages of restructuring its International Equity portfolio in the fourth quarter, effectively aiming to address the poor relative performance within the asset class. The Fixed Income and Real Return classes were marginal positive contributors to the relative performance. Weighting differences versus the benchmark detracted from the Total Health Portfolio's relative performance throughout most of the portfolio.

# Quarterly Report

Q4-12

## WPERP HEALTH PLAN MANAGER PERFORMANCE

### Domestic Equity - Periods ending December 31, 2012

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	144,759	Large Cap Core	0.1	16.5	11.3	2.0	2.6	1/2007
<i>Russell 1000 Index</i>	---	---	<i>0.1</i>	<i>16.4</i>	<i>11.1</i>	<i>1.9</i>	<i>2.5</i>	---
MFS	73,365	Large Cap Value	0.7	16.5	9.7	---	10.5	9/2009
<i>Russell 1000 Value Index</i>	---	---	<i>1.5</i>	<i>17.5</i>	<i>10.9</i>	---	<i>11.4</i>	---
T. Rowe Price	73,609	Large Cap Value	2.0	18.1	10.9	---	11.8	9/2009
<i>Russell 1000 Value Index</i>	---	---	<i>1.5</i>	<i>17.5</i>	<i>10.9</i>	---	<i>11.4</i>	---
Fred Alger	70,267	Large Cap Growth	-0.8	15.3	9.8	---	11.4	9/2009
<i>Russell 1000 Growth Index</i>	---	---	<i>-1.3</i>	<i>15.3</i>	<i>11.4</i>	---	<i>13.1</i>	---
T. Rowe Price	73,991	Large Cap Growth	-0.2	19.7	---	---	9.0	4/2010
<i>Russell 1000 Growth Index</i>	---	---	<i>-1.3</i>	<i>15.3</i>	---	---	<i>10.5</i>	---
Earnest Partners	18,448	Small Cap Value	5.8	14.5	12.2	---	13.4	9/2009
<i>Russell 2000 Value Index</i>	---	---	<i>3.2</i>	<i>18.1</i>	<i>11.6</i>	---	<i>11.9</i>	---
Frontier	17,813	Small Cap Growth	4.4	14.6	---	---	8.5	4/2010
<i>Russell 2000 Growth Index</i>	---	---	<i>0.4</i>	<i>14.6</i>	---	---	<i>9.7</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 December 31, 2012

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	63,546	Developed Markets	5.8	---	---	---	5.8	9/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	<i>5.8</i>	---	---	---	<i>5.8</i>	---
Invesco^	32	Developed Markets	---	---	---	---	---	9/2009
Interim Account^	74	Developed Markets	---	---	---	---	---	2/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	---	---	---	---	---	---
MFS	74,149	Developed Markets	2.1	---	---	---	7.9	7/2012
<i>MSCI World ex US IMI ND Index</i>	---	---	<i>5.8</i>	---	---	---	<i>12.3</i>	---
The Boston Company^	99	Developed Markets	---	---	---	---	---	9/2009
<i>MSCI World ex US IMI ND Index</i>	---	---	---	---	---	---	---	---
Pyramis	68,641	Developed Markets	6.4	18.4	5.6	---	6.2	9/2009
<i>MSCI World ex US IMI ND Index</i>	---	---	<i>5.8</i>	<i>16.5</i>	<i>4.0</i>	---	<i>4.4</i>	---
L.A. Capital	35,847	Emerging Markets	6.5	---	---	---	6.5	9/2012
<i>MSCI EMF IMI ND Index</i>	---	---	<i>5.5</i>	---	---	---	<i>5.5</i>	---
Vontobel***	35,017	Emerging Markets	---	---	---	---	---	2/2012
Interim Account^	<1	Emerging Markets	---	---	---	---	---	---
<i>MSCI EMF IMI ND Index</i>	---	---	---	---	---	---	---	---

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

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

\*\*\* Received funding during the fourth quarter of 2012.

^ In process of liquidation/transfer.

## Fixed Income - Periods ending December 31, 2012

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
JP Morgan	168,177	Core	0.3	5.4	---	---	6.5	4/2010
<i>BC Aggregate Index</i>	---	---	<i>0.2</i>	<i>4.2</i>	---	---	<i>6.1</i>	---
Wells	170,078	Core	0.7	6.6	7.8	8.0	7.9	1/2007
<i>BC Aggregate Index</i>	---	---	<i>0.2</i>	<i>4.2</i>	<i>6.2</i>	<i>5.9</i>	<i>6.1</i>	---
Wells High Yield	44,418	High Yield	2.6	13.6	10.5	---	10.6	9/2009
<i>BC High Yield Index</i>	---	---	<i>3.3</i>	<i>15.8</i>	<i>11.9</i>	---	<i>13.0</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 December 31, 2012

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Gateway (replication)	50,398	Covered Calls	-2.5	---	---	---	4.0	5/2012
Gateway (non-replication)	12,992	Covered Calls	0.2	---	---	---	7.0	5/2012
<i>CBOE BXM Index</i>	---	---	-2.5	---	---	---	4.1	---

\* 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 December 31, 2012

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Aetos Capital*** (net of fees)	8,103	Hedge FOFs	2.4	7.2	---	---	3.5	9/2010
<i>Tbills + 3 %***</i>	---	---	0.8	3.1	---	---	3.1	---
WAMCO*** (gross of fees)	62,498	GILS	0.9	6.6	---	---	6.5	4/2010
<i>BC WGILB Index***</i>	---	---	1.0	7.0	---	---	7.2	---

\* 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 December 31, 2012

Asset Class	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Private Equity***	10,321	Private Equity	2.3	13.1	21.4	---	22.7	9/2008
<i>R3000 + 3% (PE blend)*** ****</i>	---	---	7.0	34.0	16.6	---	9.3	---
Real Estate***	13,451	Real Estate	4.5	14.2	---	---	8.8	1/2010
<i>NCREIF***</i>	---	---	2.3	11.0	---	---	12.8	---

\* 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.

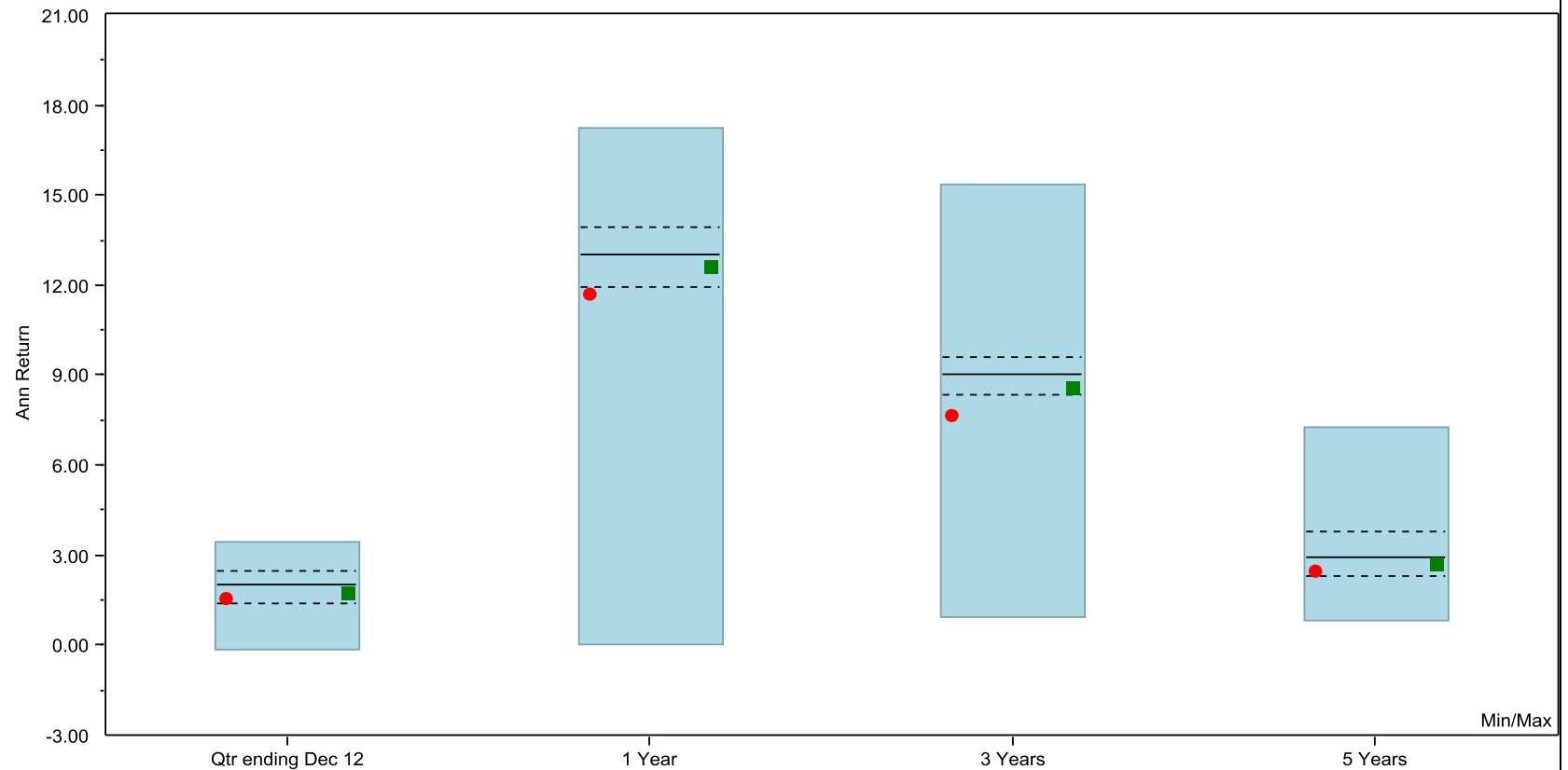


# Water and Power Employees' Retirement Plan

TOTAL FUNDS - PUBLIC (USD) - Monthly

As of December 31, 2012

Cumulative Performance Comparisons



	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank
Maximum	3.47			17.22			15.38			7.24		
25th Percentile	2.46			13.95			9.59			3.79		
Median Percentile	1.99			13.01			9.03			2.94		
75th Percentile	1.39			11.95			8.33			2.30		
Minimum	-0.17			0.04			0.94			0.81		
# of Portfolios	112			108			99			97		
• Total Fund	1.57	72	82	11.72	79	86	7.64	87	87	2.47	68	67
■ Policy Benchmark	1.72	65	73	12.61	63	69	8.55	71	71	2.69	62	60

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**.

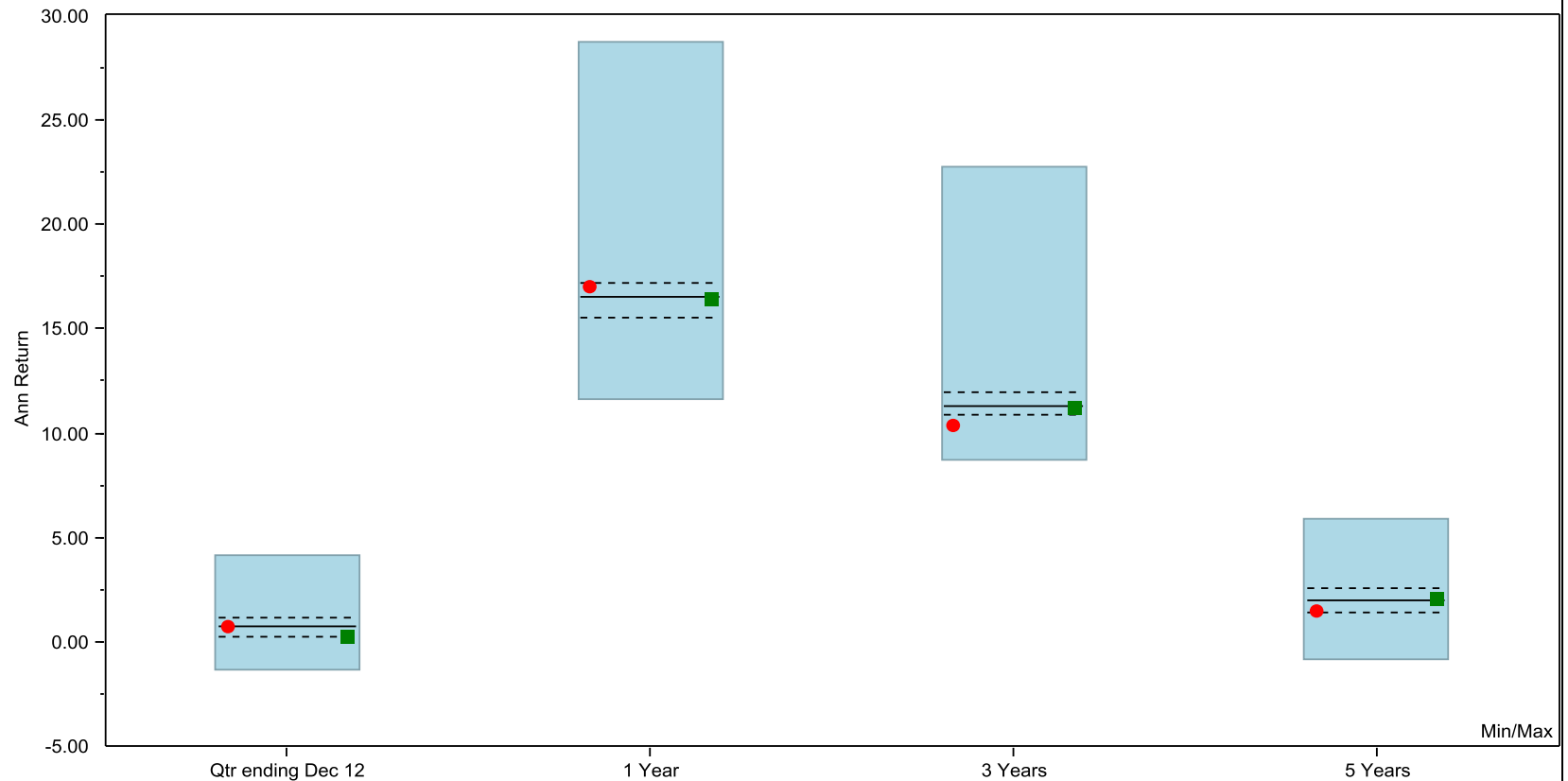


# Water and Power Employees' Retirement Plan

US Equity Segment - Public (USD) - Monthly

As of December 31, 2012

Cumulative Performance Comparisons



	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank
<b>Maximum</b>	4.12			28.71			22.80			5.93		
<b>25th Percentile</b>	1.14			17.17			11.95			2.55		
<b>Median Percentile</b>	0.70			16.53			11.29			1.97		
<b>75th Percentile</b>	0.27			15.51			10.87			1.43		
<b>Minimum</b>	-1.38			11.62			8.72			-0.82		
<b># of Portfolios</b>	87			85			75			57		
<b>Domestic Equity</b>	0.72	50	44	16.99	35	30	10.42	84	64	1.47	74	43
<b>Russell 3000 (blend)</b>	0.25	76	67	16.43	54	47	11.21	54	41	2.04	47	27

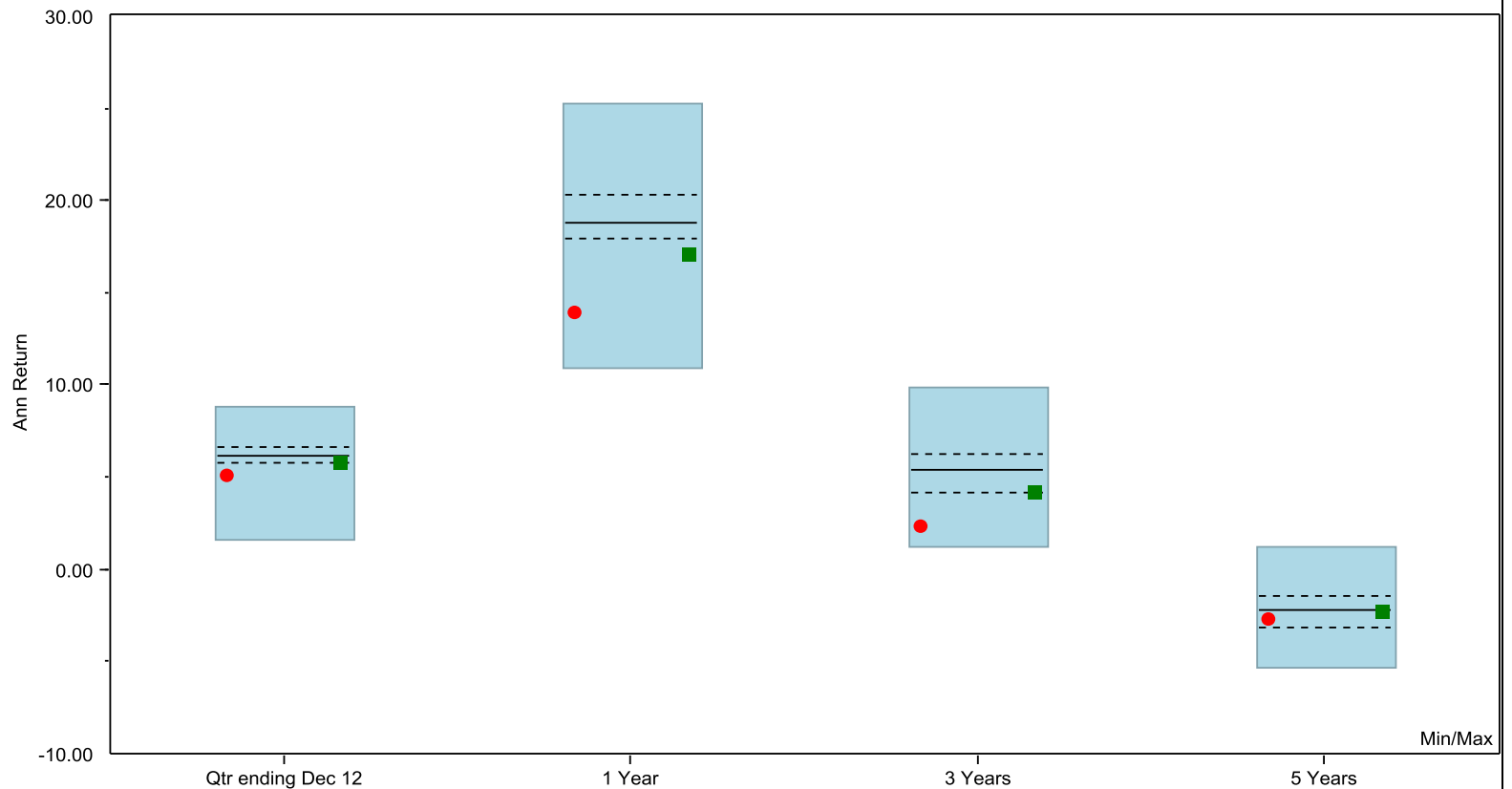
Universe Source: The Bank of New York Mellon Corporation; Universe Status: Final

# Water and Power Employees' Retirement Plan

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

As of December 31, 2012

Cumulative Performance Comparisons



	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank
Maximum	8.86			25.27			9.82			1.20		
25th Percentile	6.62			20.28			6.20			-1.41		
Median Percentile	6.11			18.80			5.40			-2.18		
75th Percentile	5.78			17.94			4.18			-3.18		
Minimum	1.57			10.92			1.25			-5.35		
# of Portfolios	76			73			65			51		
● International Equity	5.12	90	69	13.96	97	72	2.38	95	63	-2.66	66	35
■ MSCI ACWI ex US IMI (blend)	5.74	77	59	17.04	86	64	4.18	76	50	-2.33	54	28

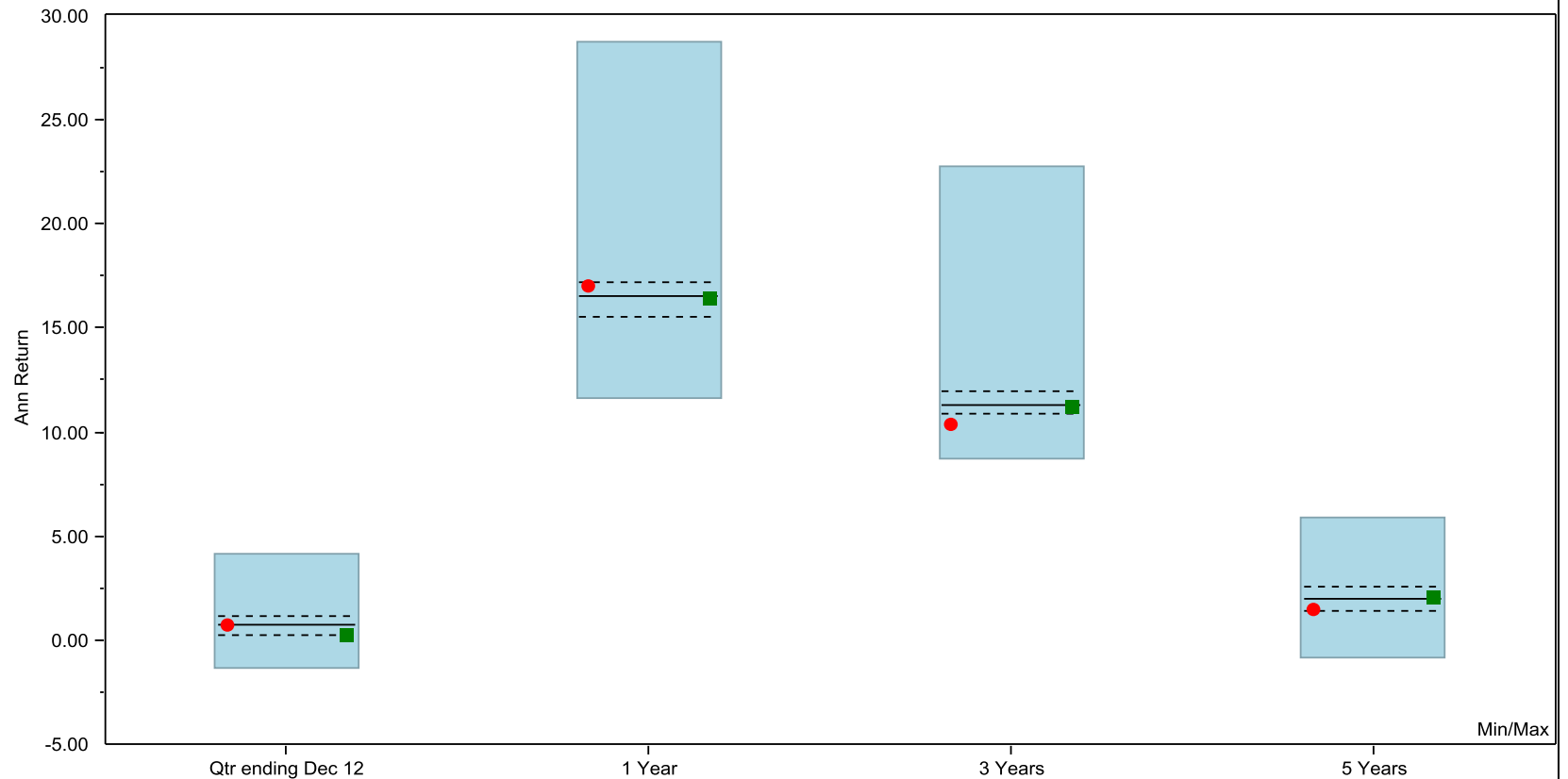
Universe Source: The Bank of New York Mellon Corporation; Universe Status: Final

# Water and Power Employees' Retirement Plan

US Equity Segment - Public (USD) - Monthly

As of December 31, 2012

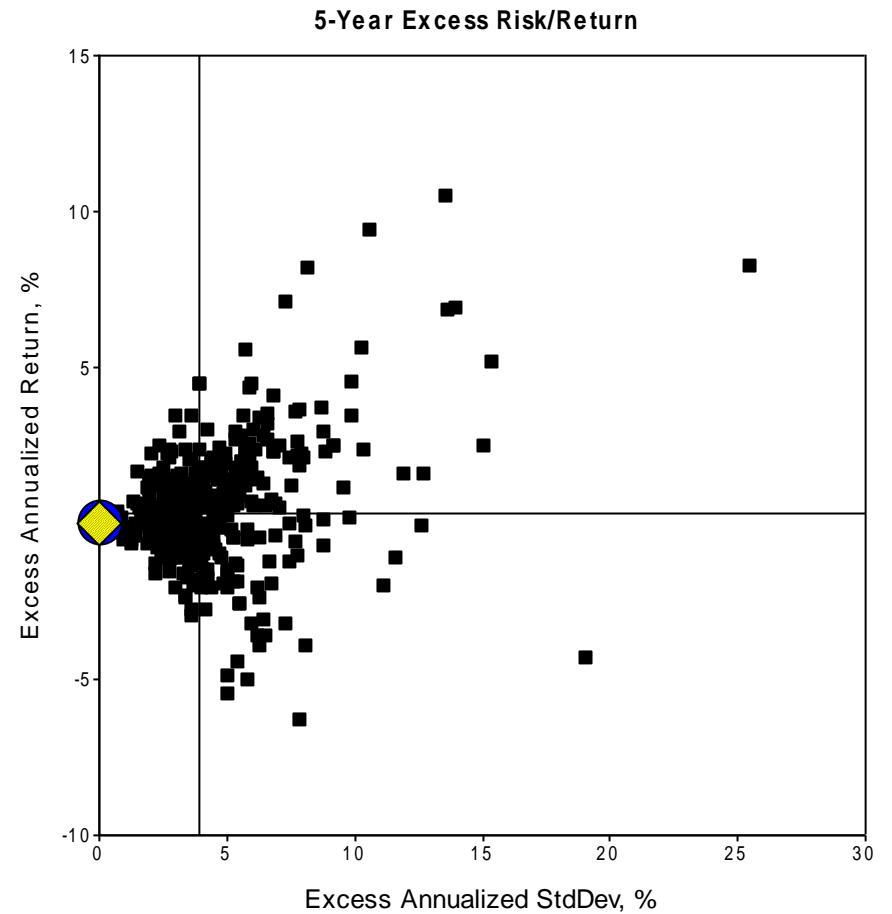
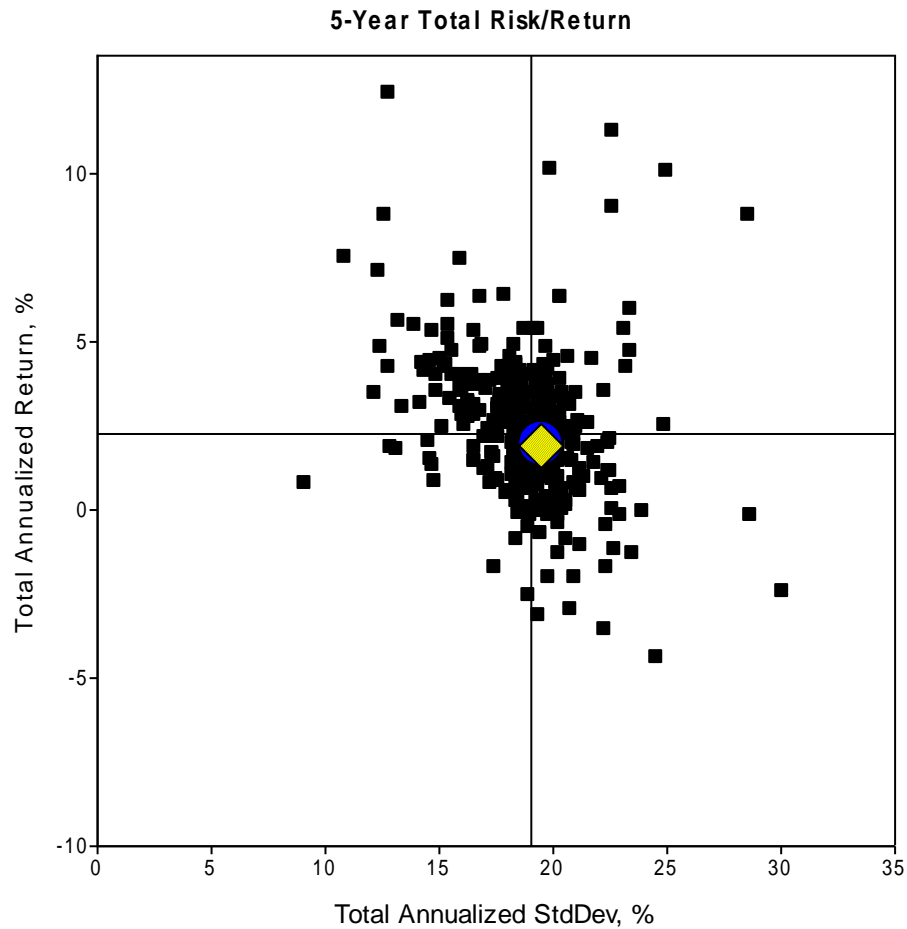
Cumulative Performance Comparisons



	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank	Value	%Tile	Rank
<b>Maximum</b>	4.12			28.71			22.80			5.93		
<b>25th Percentile</b>	1.14			17.17			11.95			2.55		
<b>Median Percentile</b>	0.70			16.53			11.29			1.97		
<b>75th Percentile</b>	0.27			15.51			10.87			1.43		
<b>Minimum</b>	-1.38			11.62			8.72			-0.82		
<b># of Portfolios</b>	87			85			75			57		
<b>Domestic Equity</b>	0.72	50	44	16.99	35	30	10.42	84	64	1.47	74	43
<b>Russell 3000 (blend)</b>	0.25	76	67	16.43	54	47	11.21	54	41	2.04	47	27

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

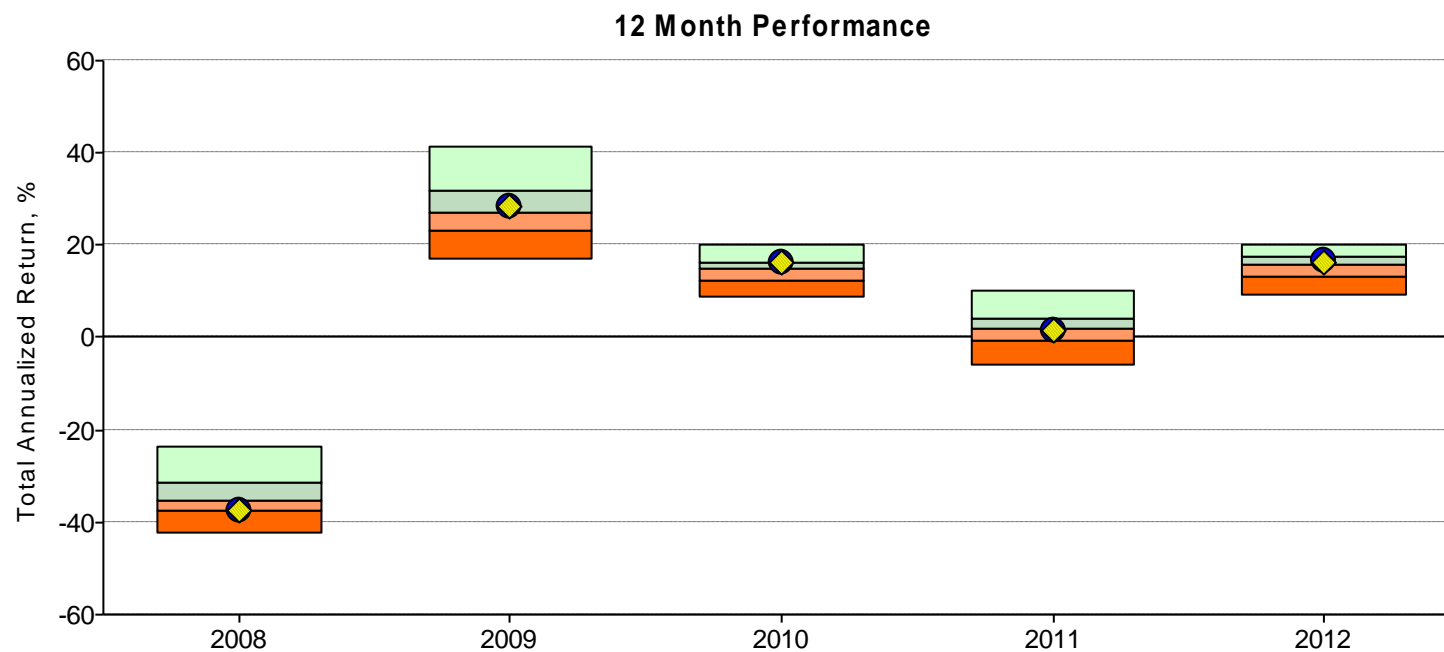
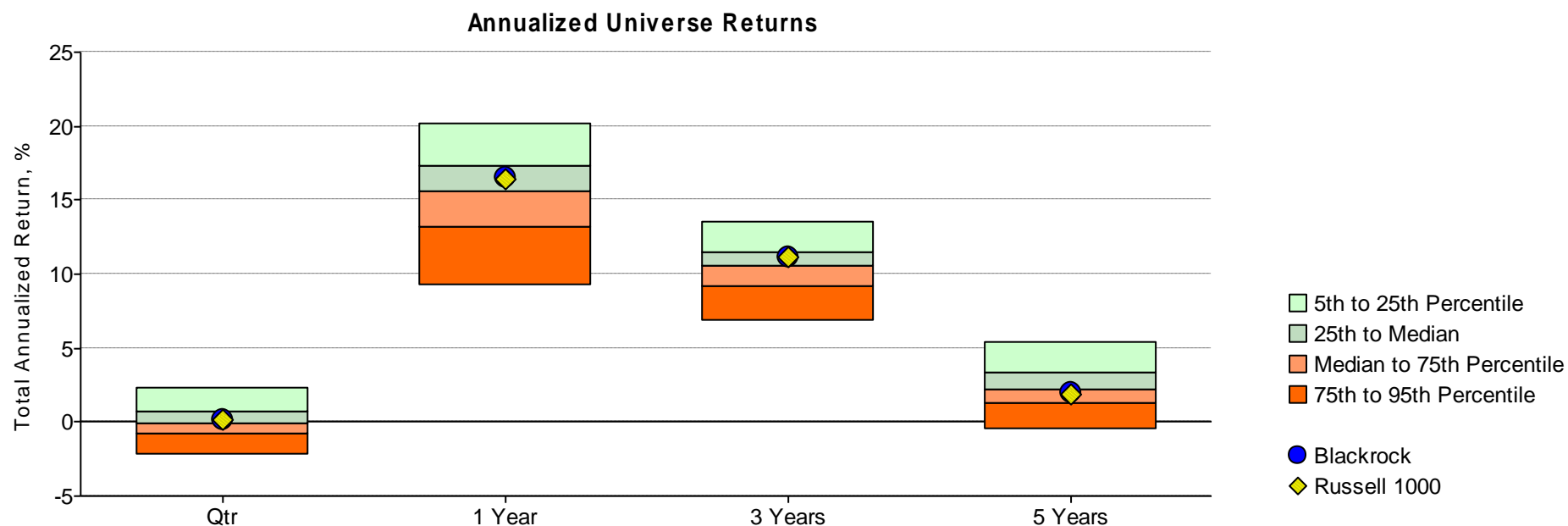
# WPERP Large Cap Core Manager Comparisons as of December 31, 2012



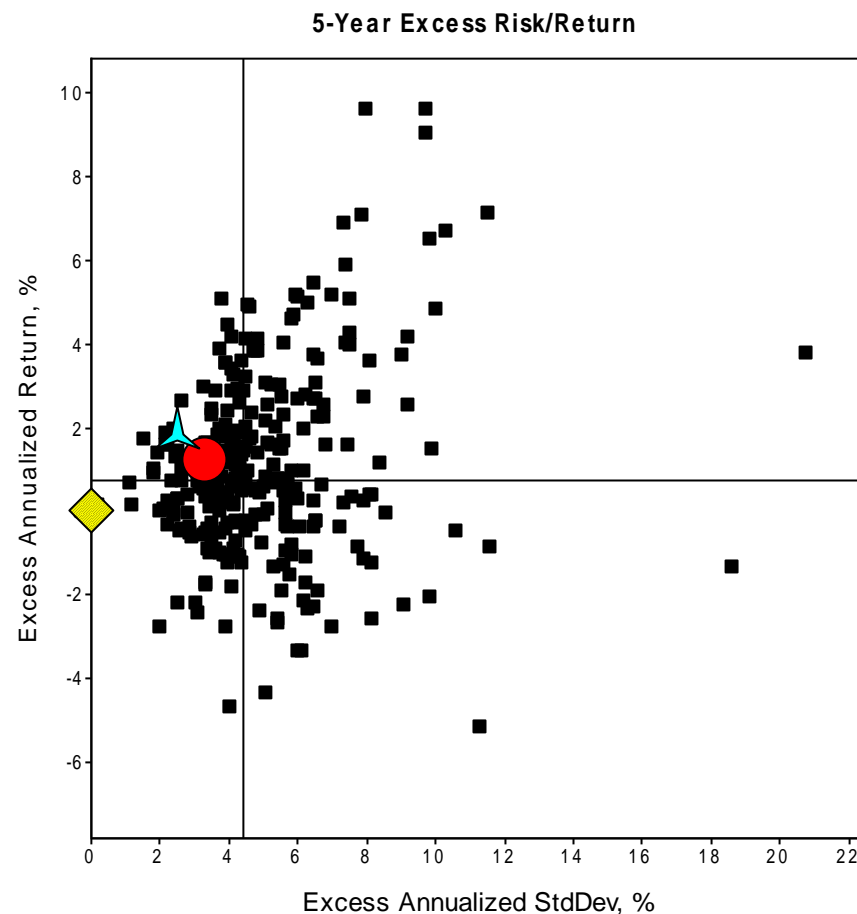
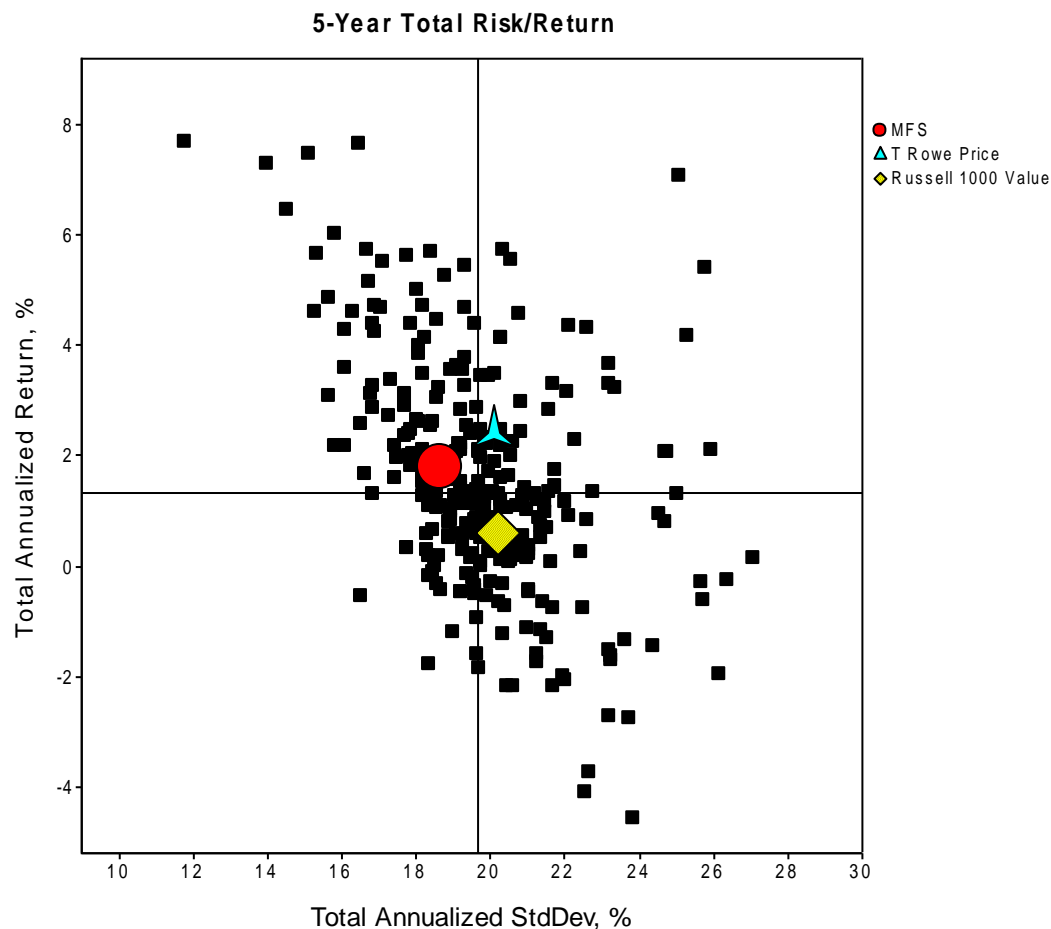
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Blackrock	1.95	19.46	0.10
Russell 1000	1.92	19.45	0.10
Large Cap Manager Universe Median	2.24	19.02	0.12

	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Blackrock	0.03	0.10	0.33
Russell 1000	0.00	0.00	NA
Large Cap Manager Universe Median	0.32	3.93	0.11

# WPERP Large Cap Core Manager Comparisons as of December 31, 2012



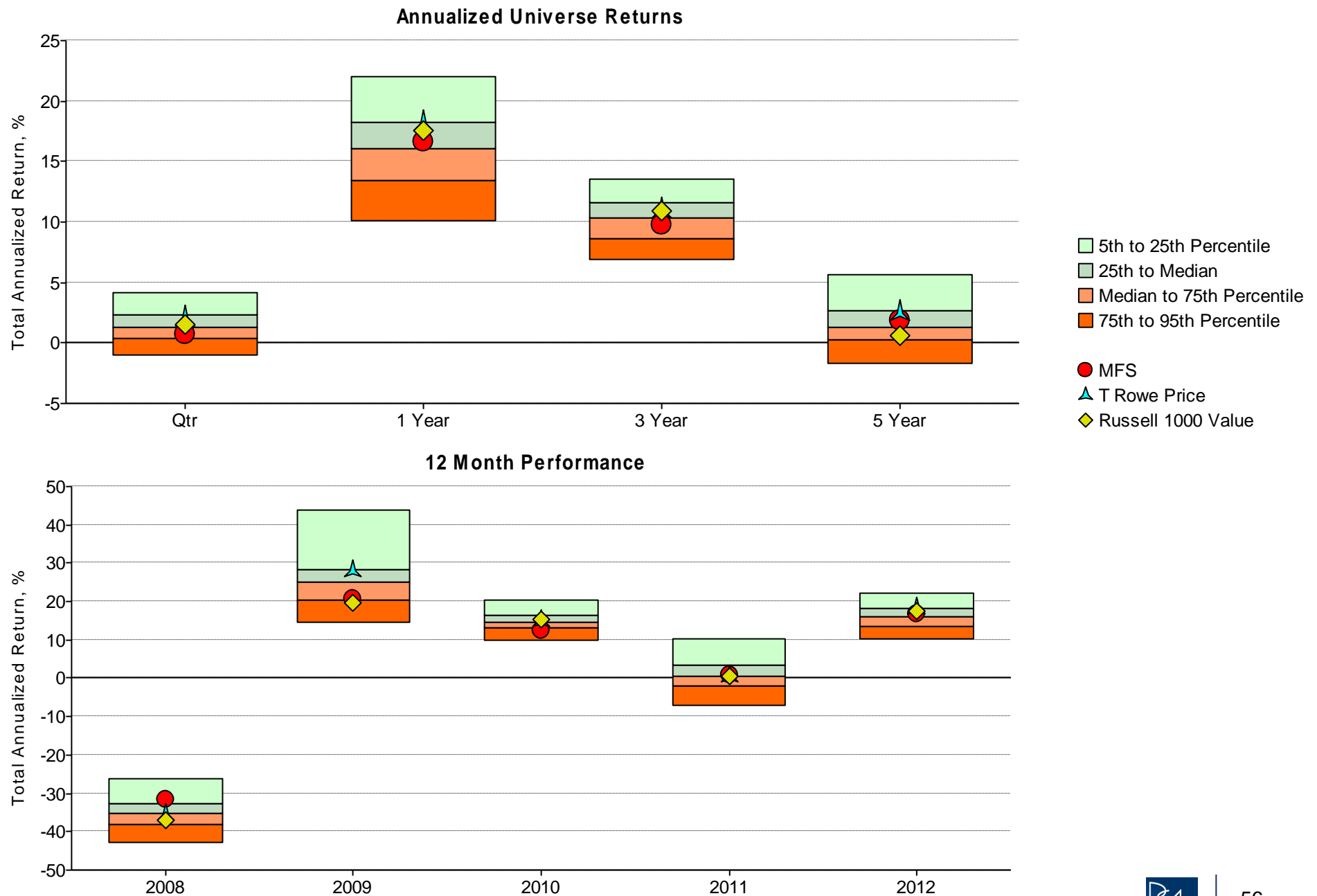
# WPERP Large Cap Value Manager Comparisons as of December 31, 2012



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
MFS	1.82	18.62	0.10
T Rowe Price	2.41	20.11	0.12
Russell 1000 Value	0.59	20.18	0.03
Large Value Manager Universe Median	1.34	19.64	0.07

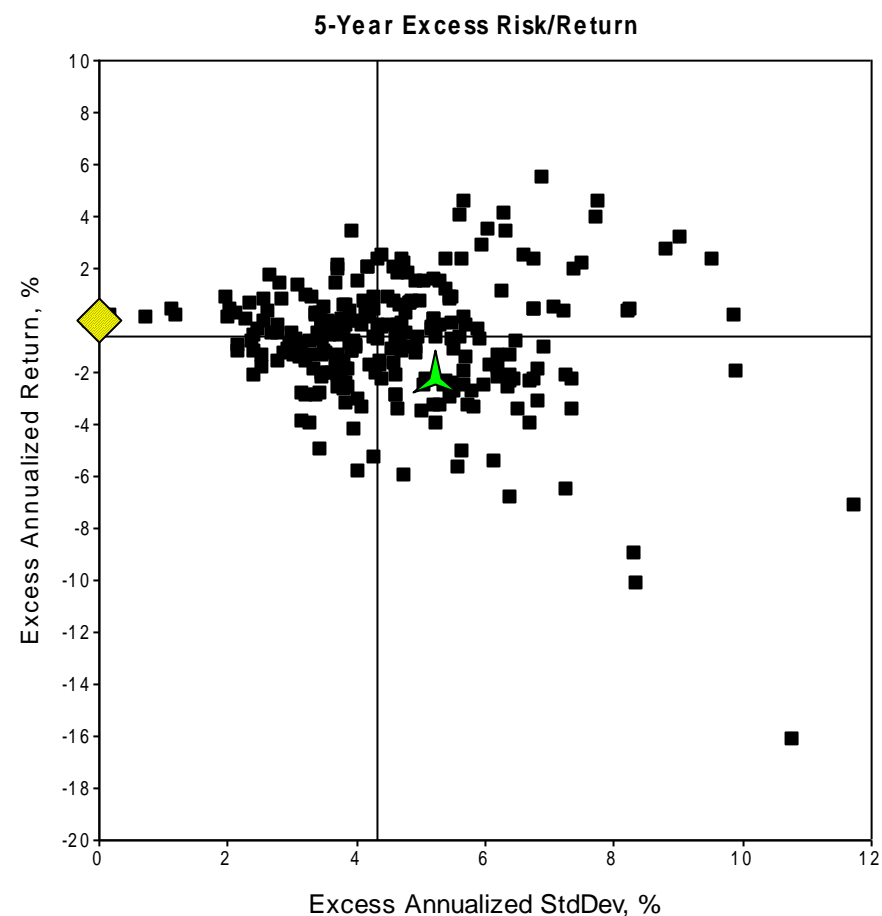
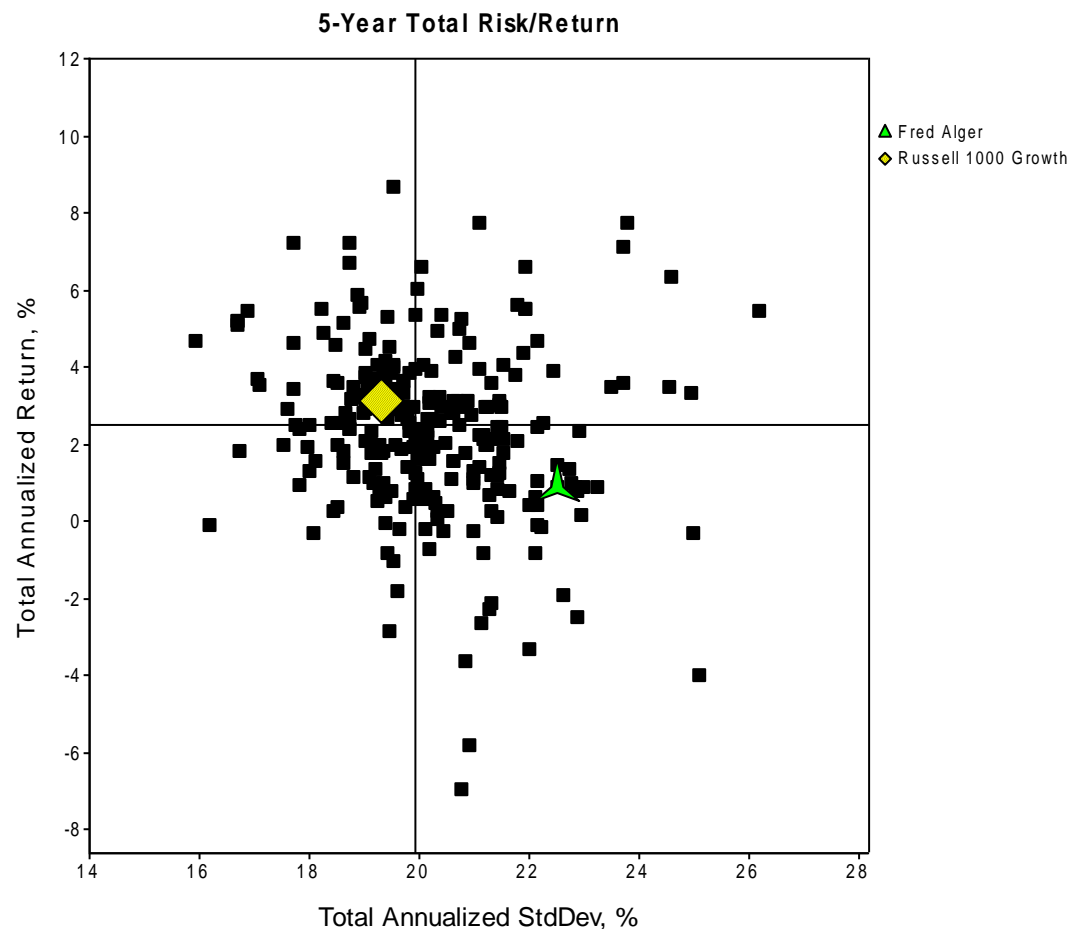
	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
MFS	1.22	3.31	0.37
T Rowe Price	1.82	2.50	0.73
Russell 1000 Value	0.00	0.00	NA
Large Value Manager Universe Median	0.75	4.44	0.18

# WPERP Large Cap Value Manager Comparisons as of December 31, 2012





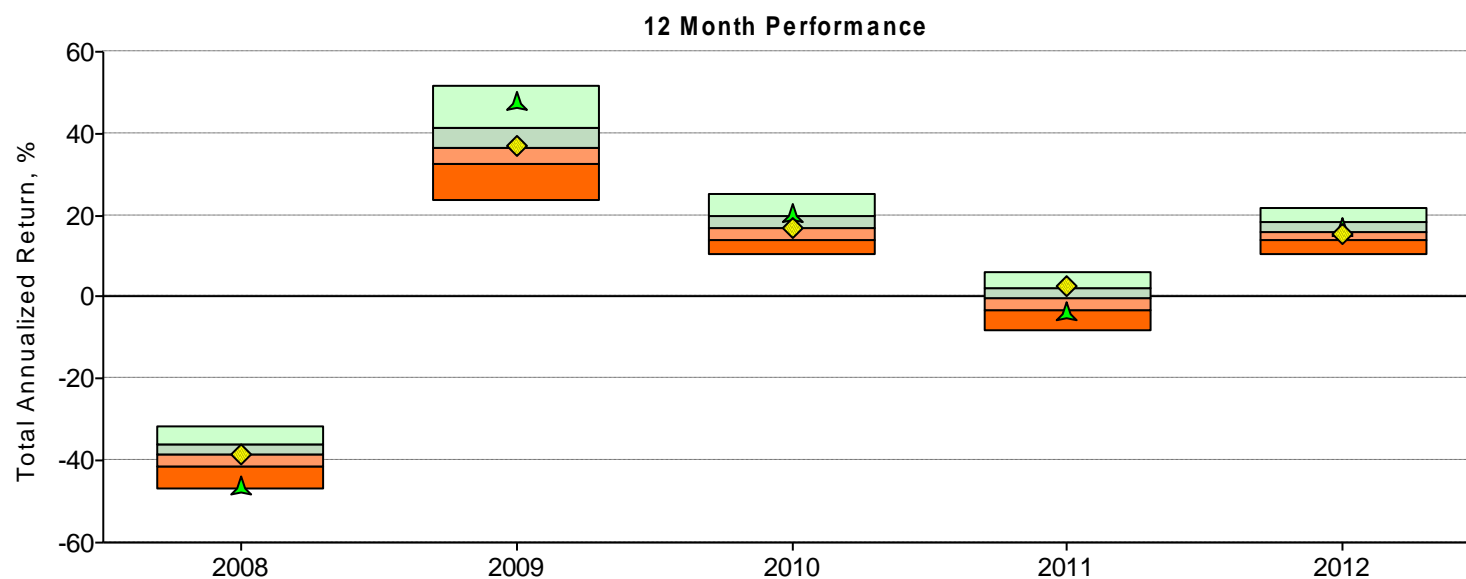
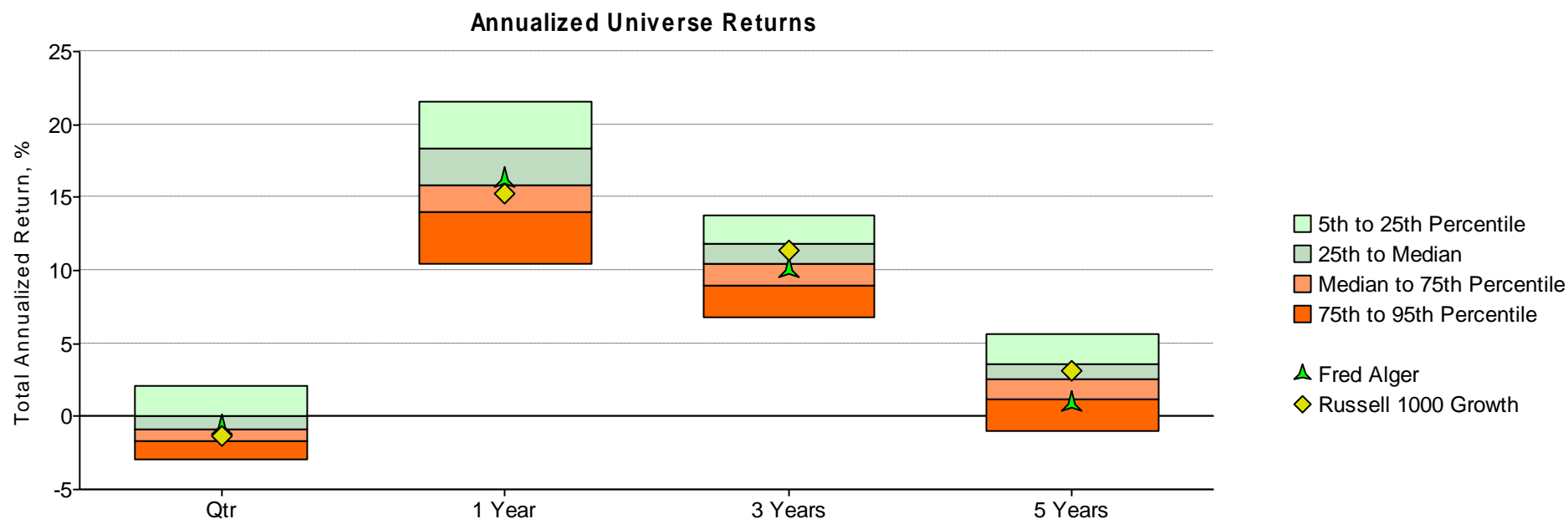
# WPERP Large Cap Growth Manager Comparisons as of December 31, 2012



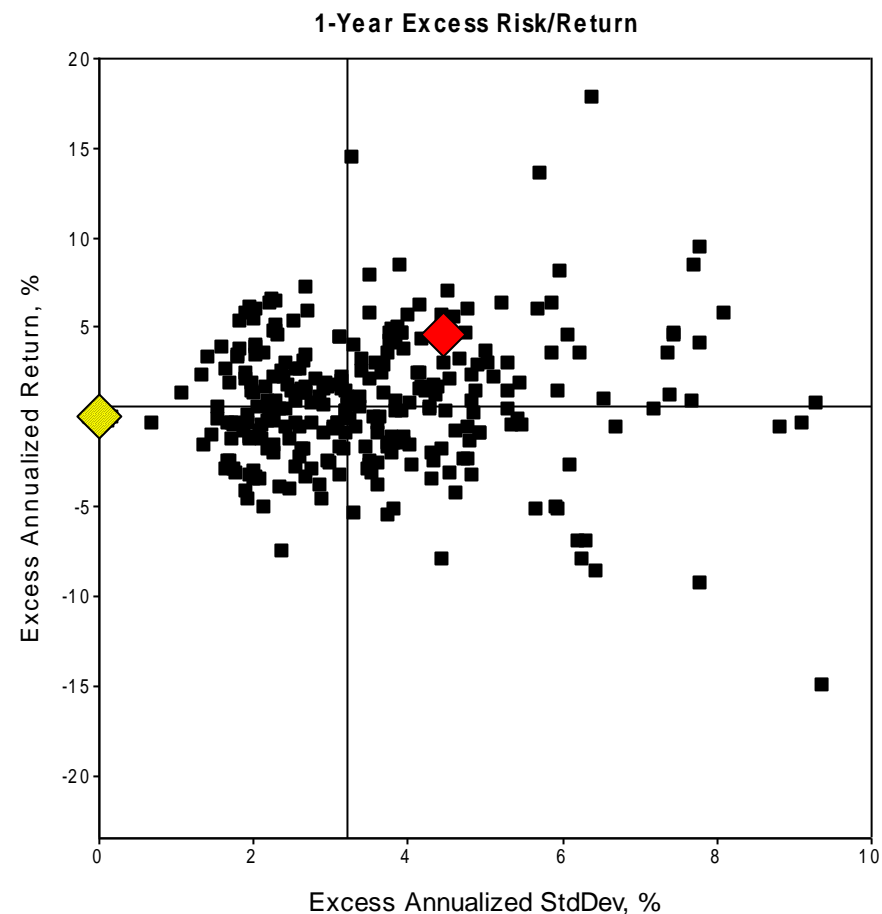
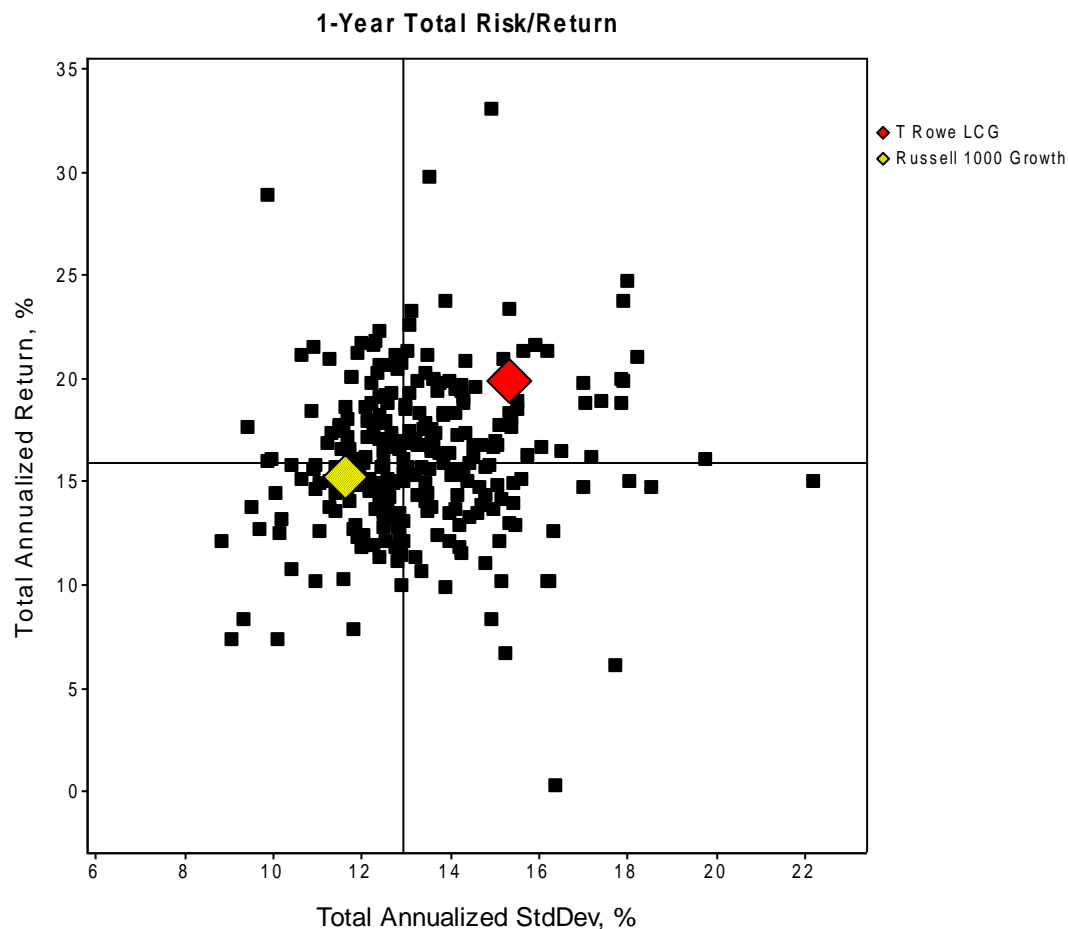
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Fred Alger	0.90	22.50	0.04
Russell 1000 Growth	3.12	19.32	0.16
Large Growth Manager Universe Median	2.52	19.95	0.13

	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
Fred Alger	-2.23	5.23	-0.43
Russell 1000 Growth	0.00	0.00	NA
Large Growth Manager Universe Median	-0.61	4.32	-0.14

# WPERP Large Cap Growth Manager Comparisons as of December 31, 2012



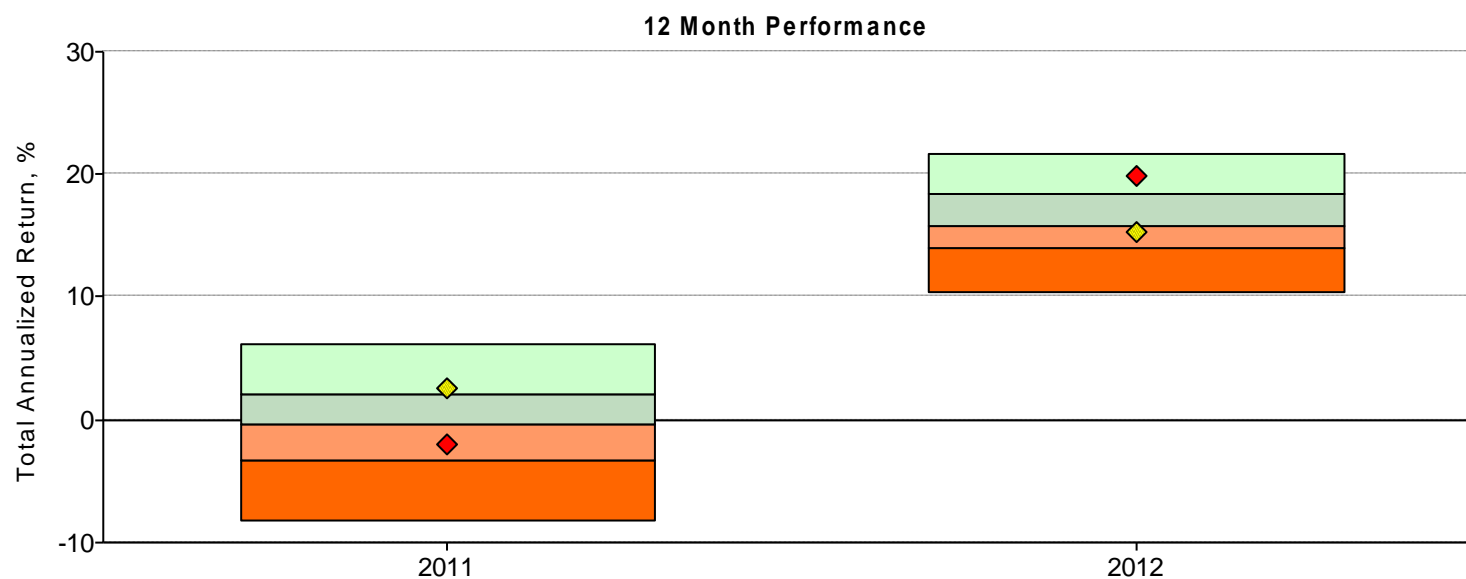
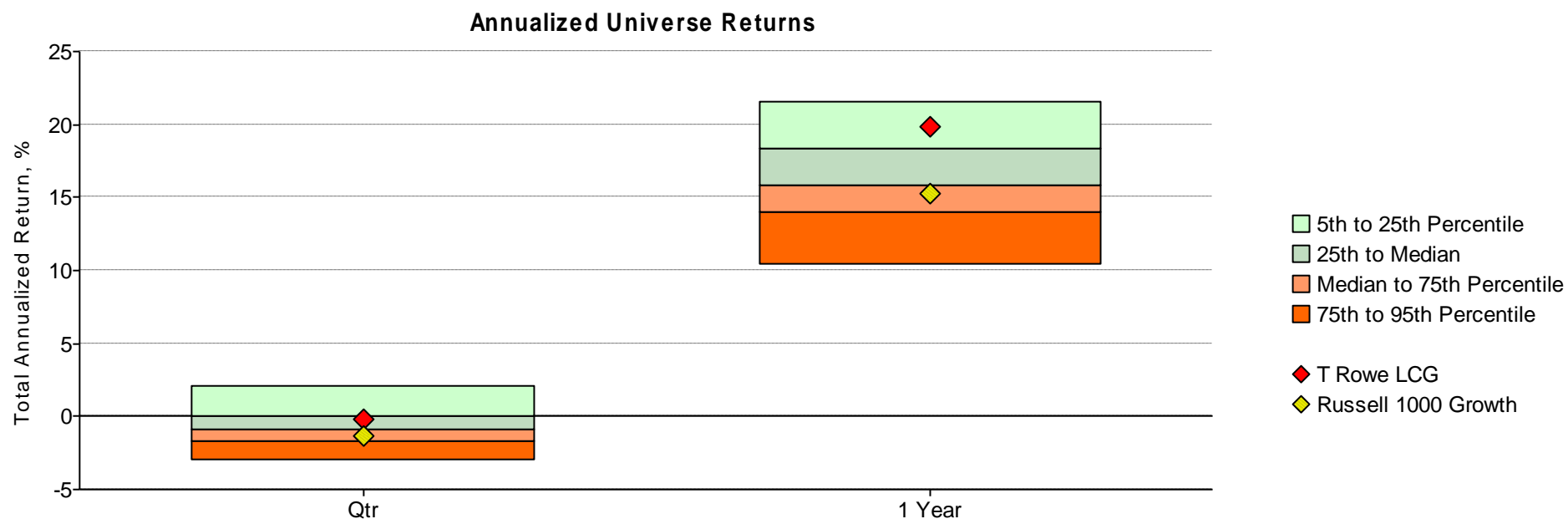
# WPERP Large Cap Growth Manager Comparisons as of December 31, 2012



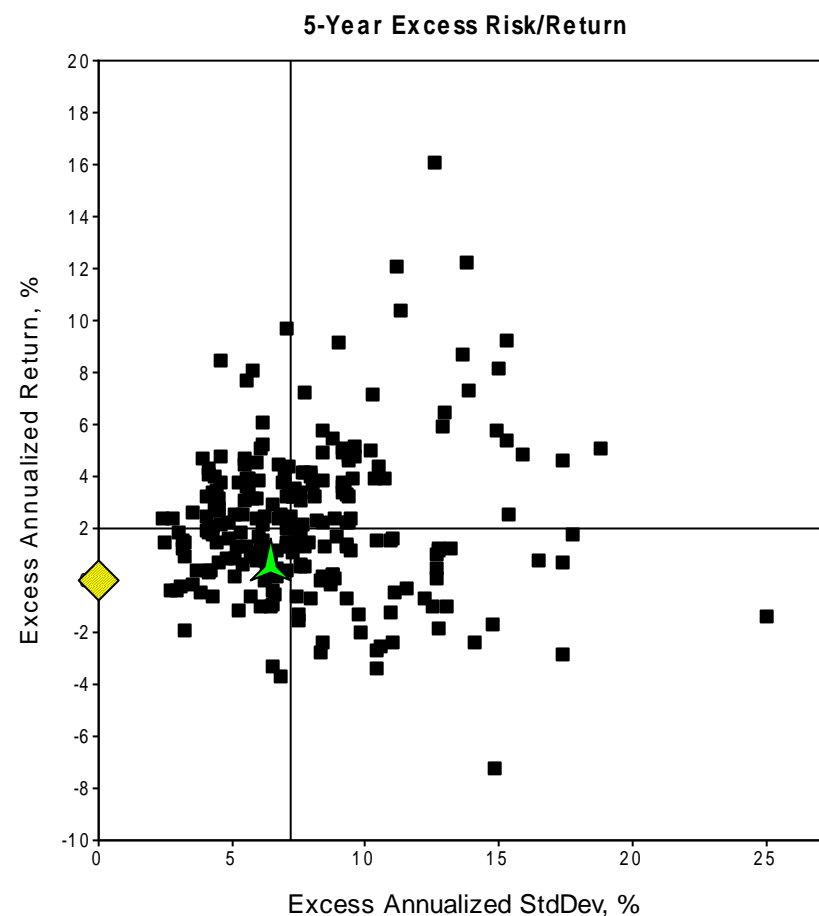
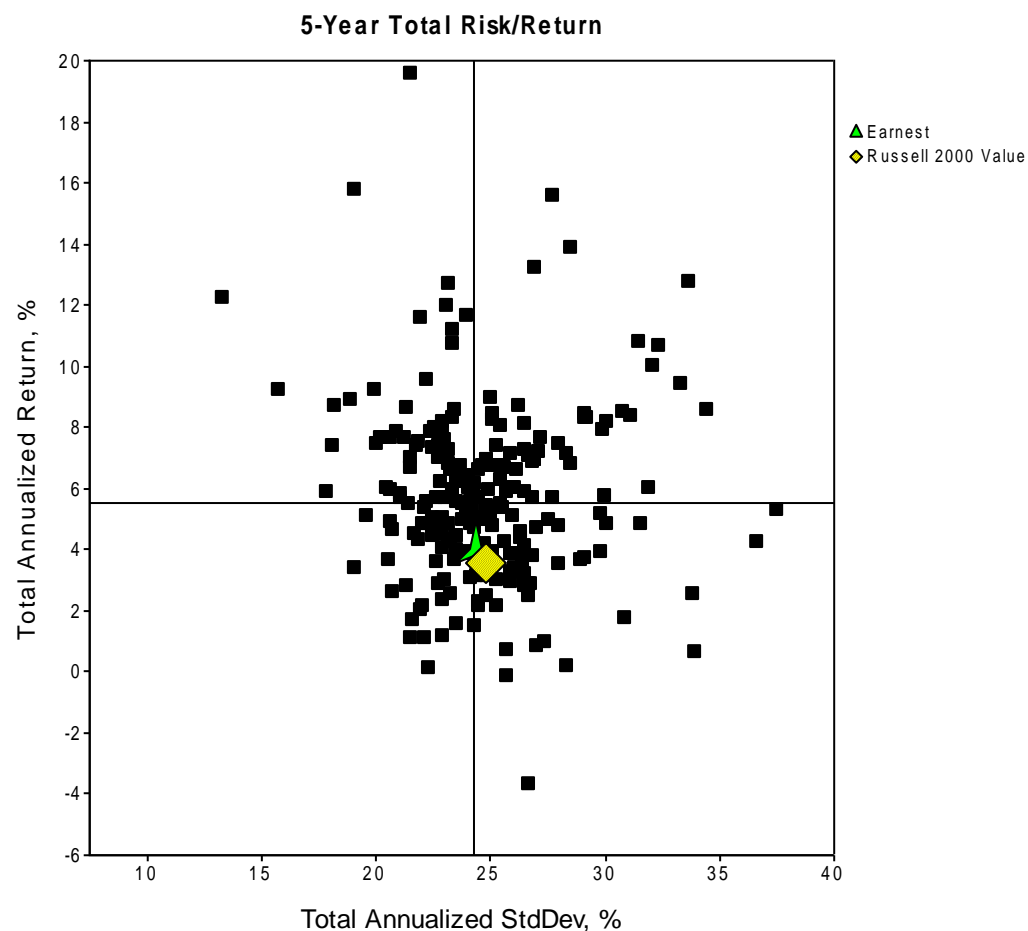
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
T Rowe LCG	19.84	15.32	1.29
Russell 1000 Growth	15.26	11.61	1.31
Large Growth Manager Universe Median	15.87	12.92	1.24

	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
T Rowe LCG	4.58	4.44	1.03
Russell 1000 Growth	0.00	0.00	NA
Large Growth Manager Universe Median	0.61	3.21	0.21

# WPERP Large Cap Growth Manager Comparisons as of December 31, 2012



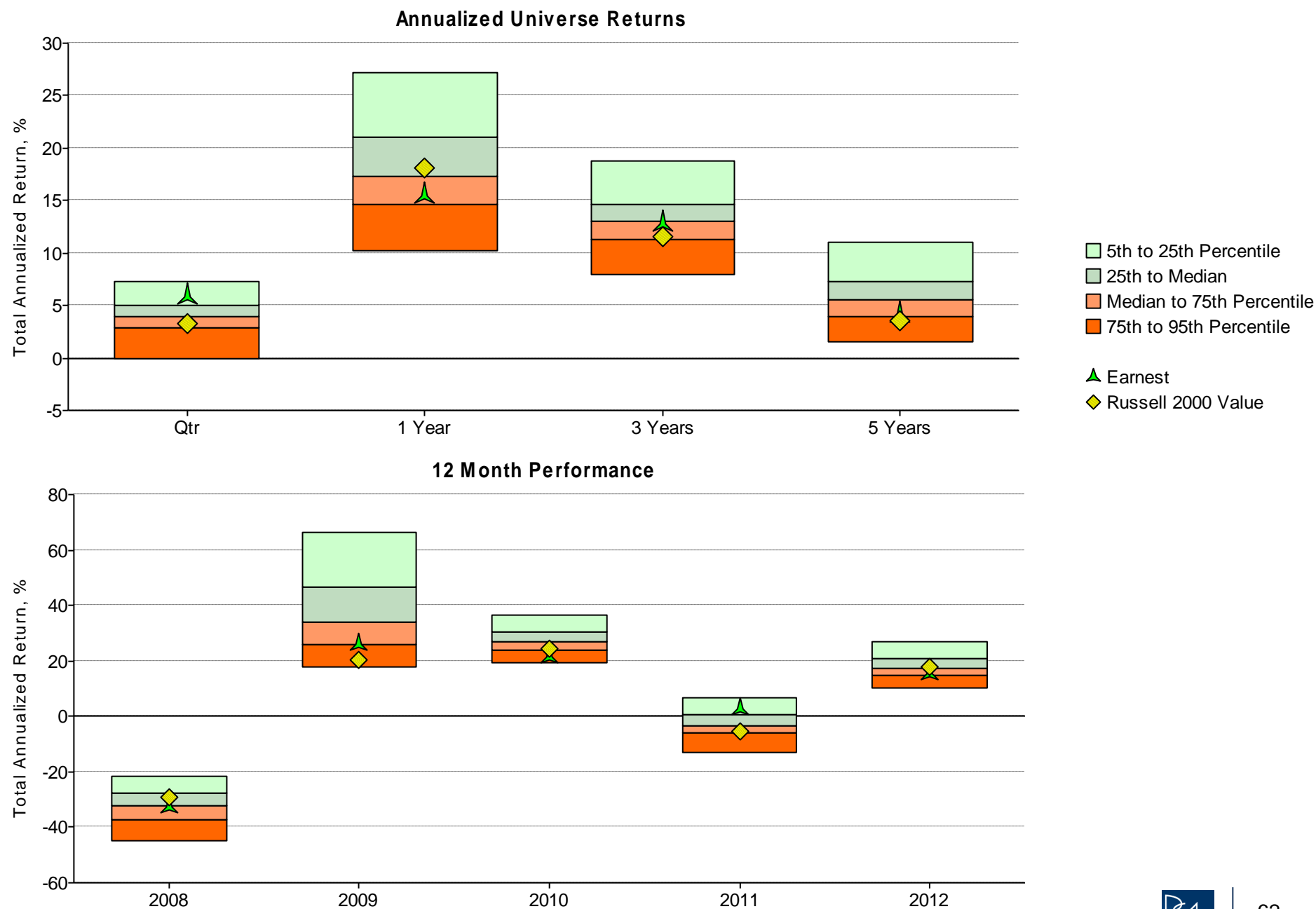
# WPERP Small Cap Value Manager Comparisons as of December 31, 2012



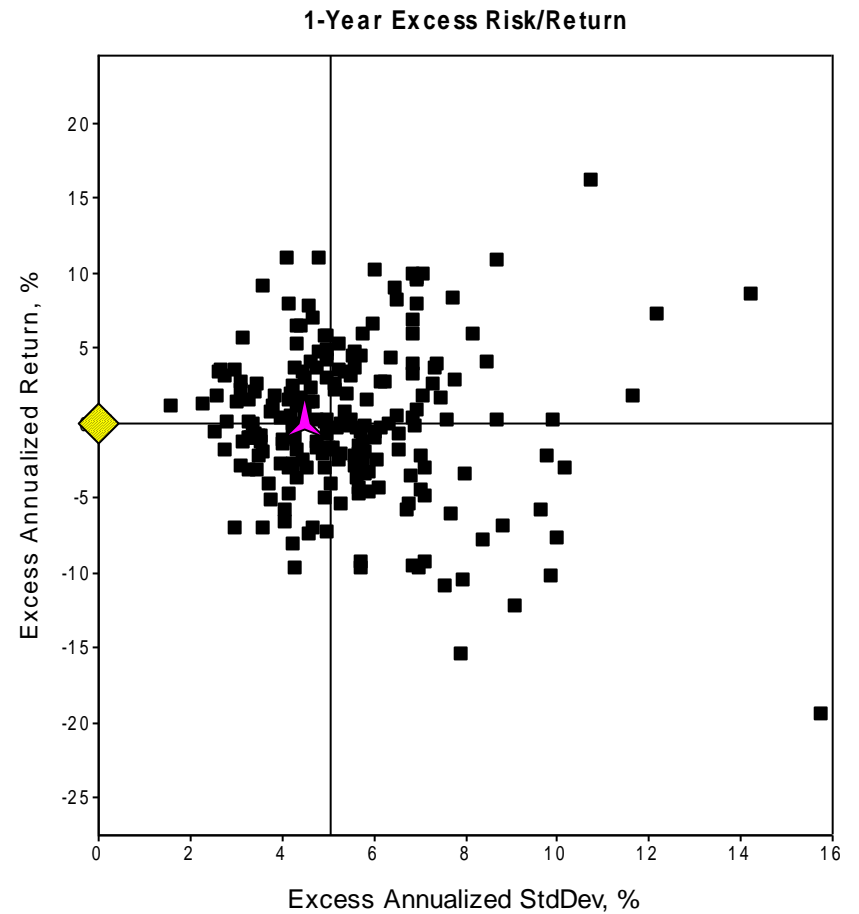
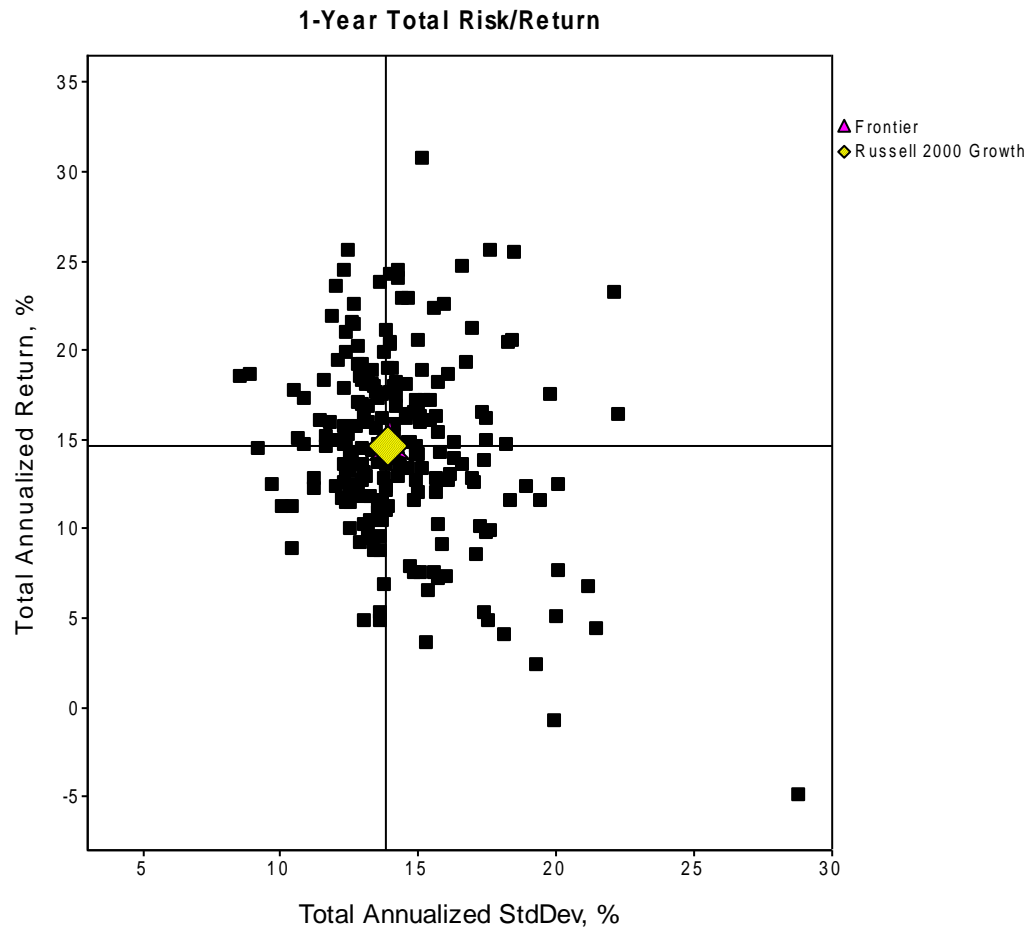
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Earnest	4.05	24.36	0.17
Russell 2000 Value	3.55	24.81	0.14
Small Cap Value Universe Median	5.54	24.28	0.22

	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
Earnest	0.50	6.41	0.08
Russell 2000 Value	0.00	0.00	NA
Small Cap Value Universe Median	1.99	7.16	0.29

# WPERP Small Cap Value Manager Comparisons as of December 31, 2012



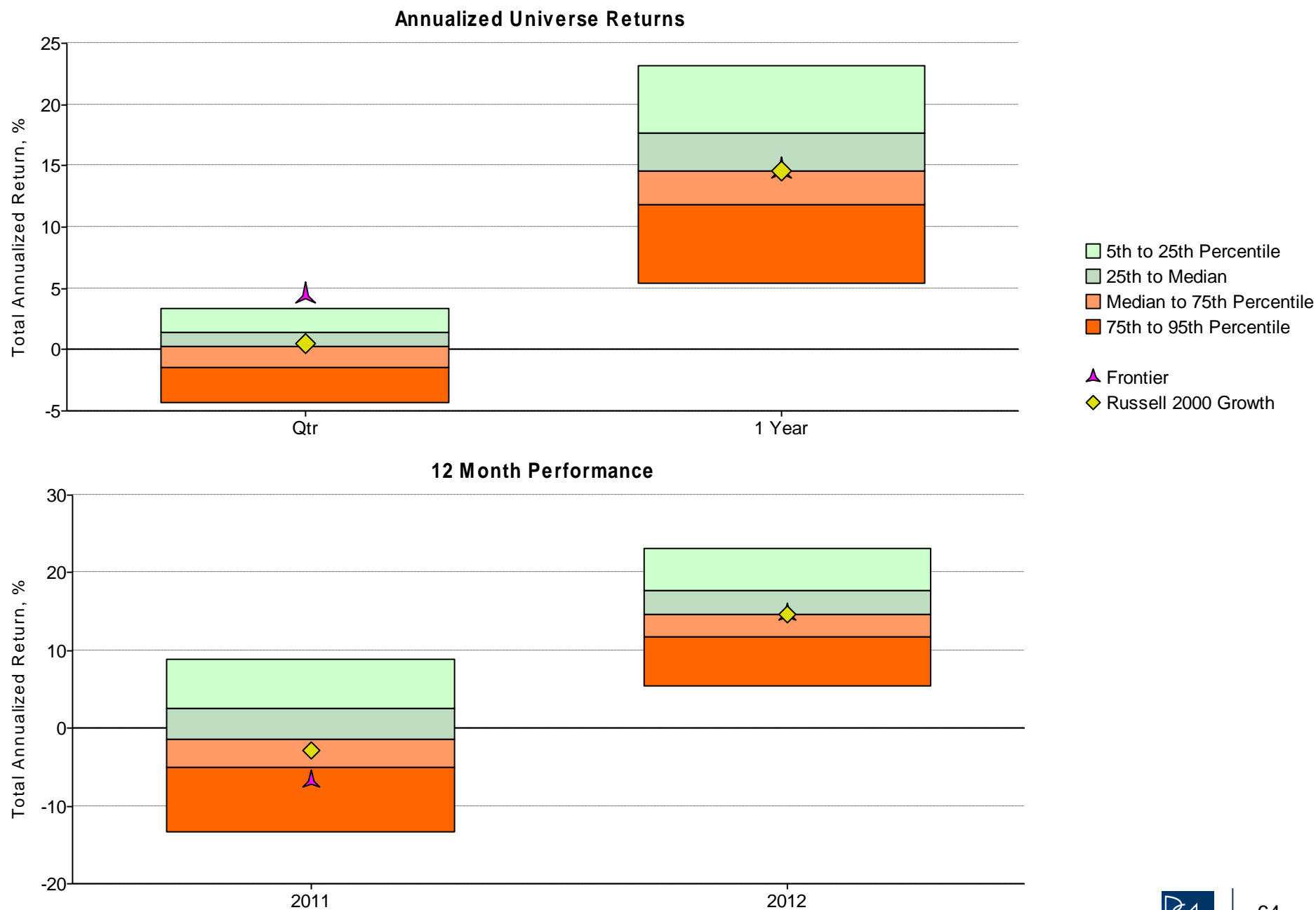
# WPERP Small Cap Growth Manager Comparisons as of December 31, 2012



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Frontier	14.59	13.93	1.05
Russell 2000 Growth	14.59	13.89	1.05
Small Cap Growth Universe Median	14.60	13.82	1.06

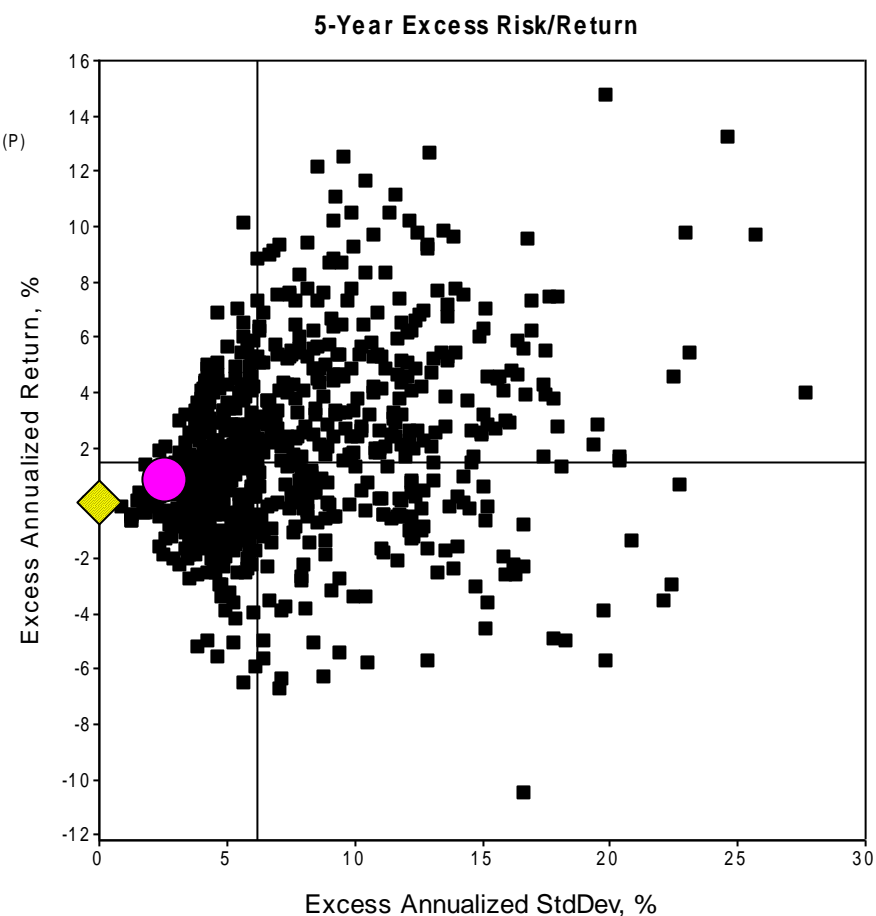
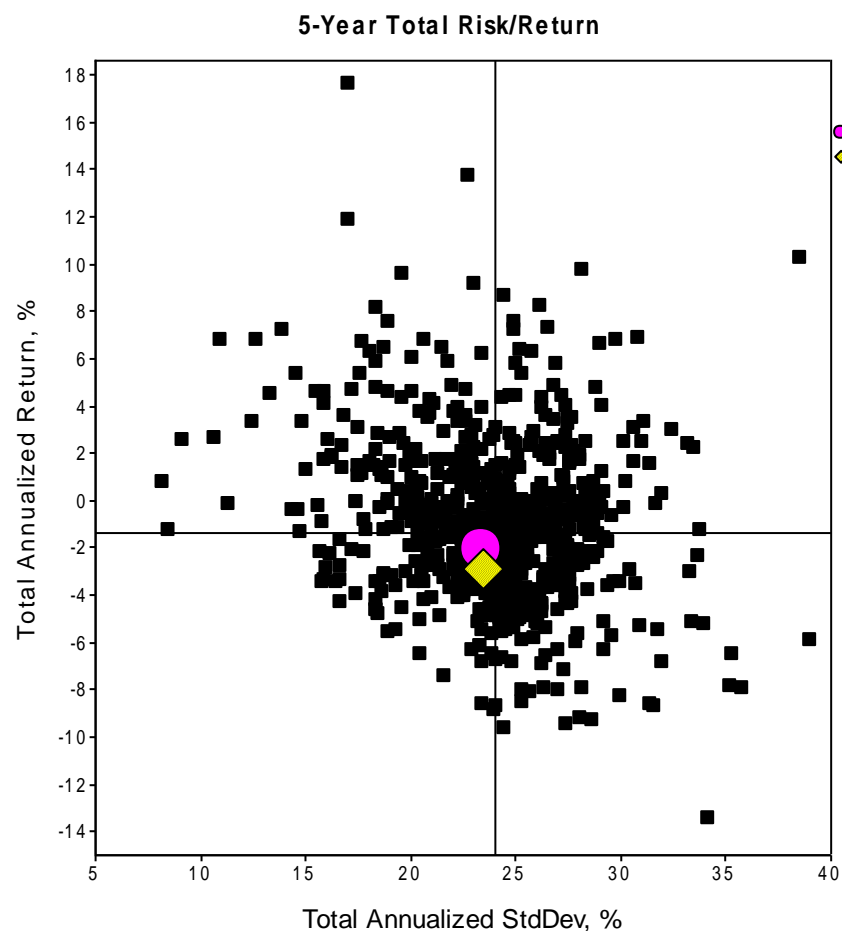
	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Frontier	0.00	4.50	0.00
Russell 2000 Growth	0.00	0.00	NA
Small Cap Growth Universe Median	0.02	5.07	0.00

# WPERP Small Cap Growth Manager Comparisons as of December 31, 2012





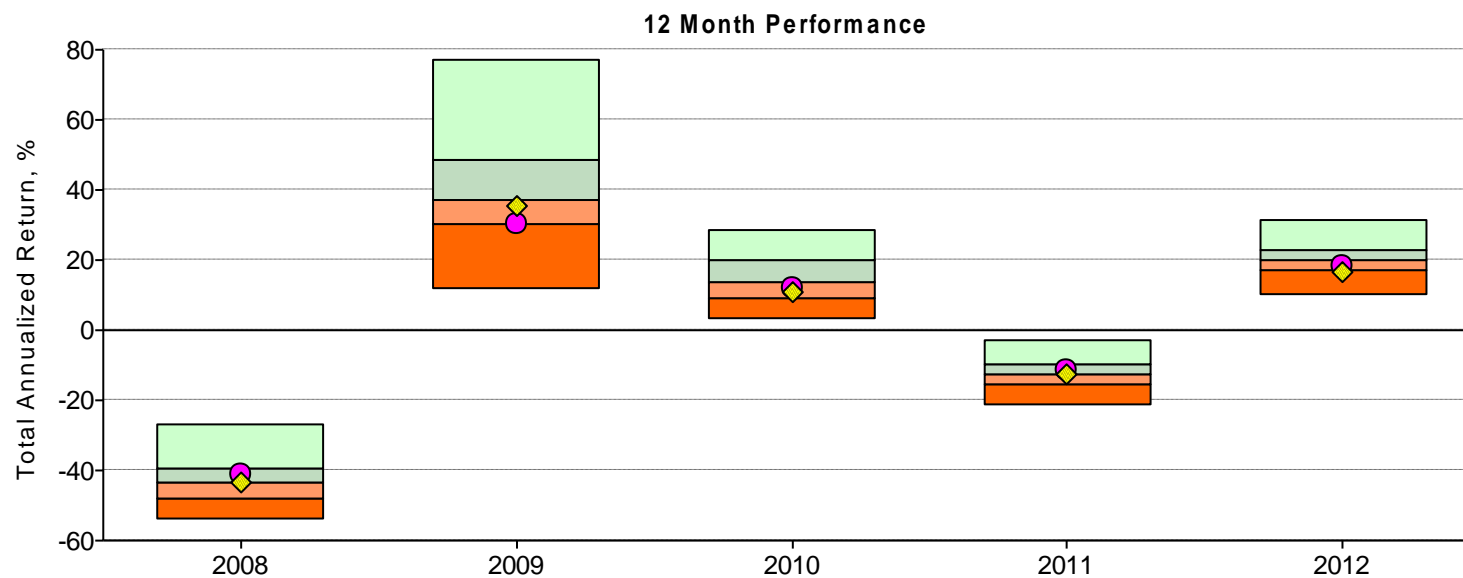
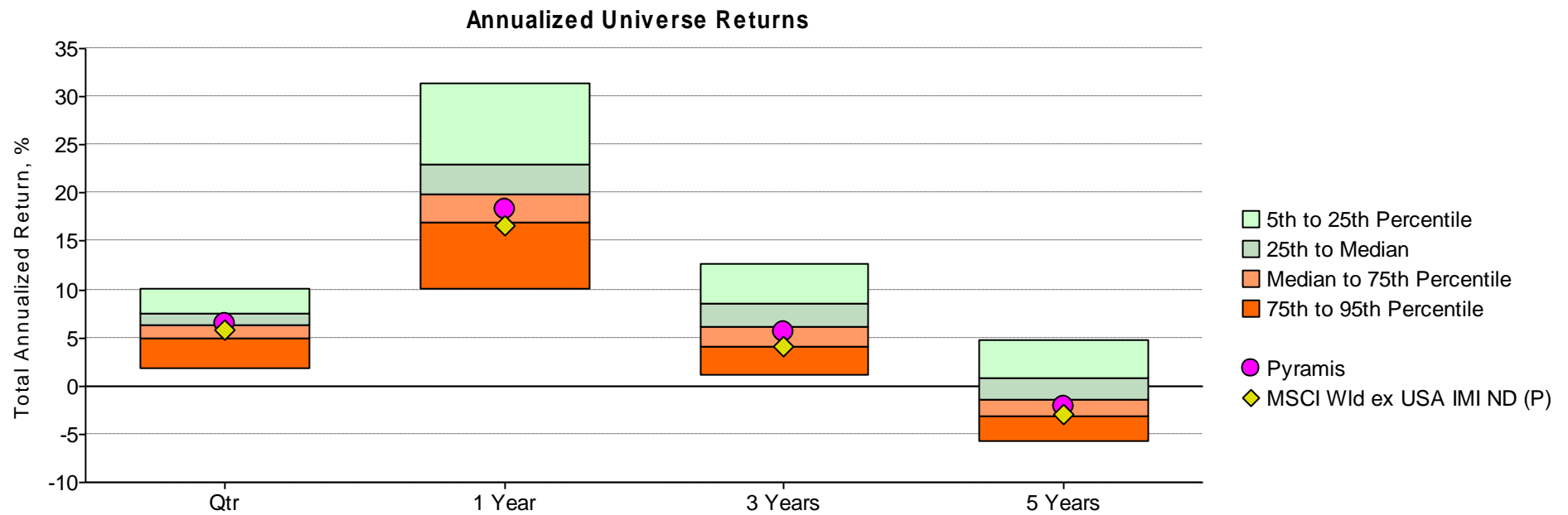
# WPERP International Equity Manager Comparisons as of December 31, 2012



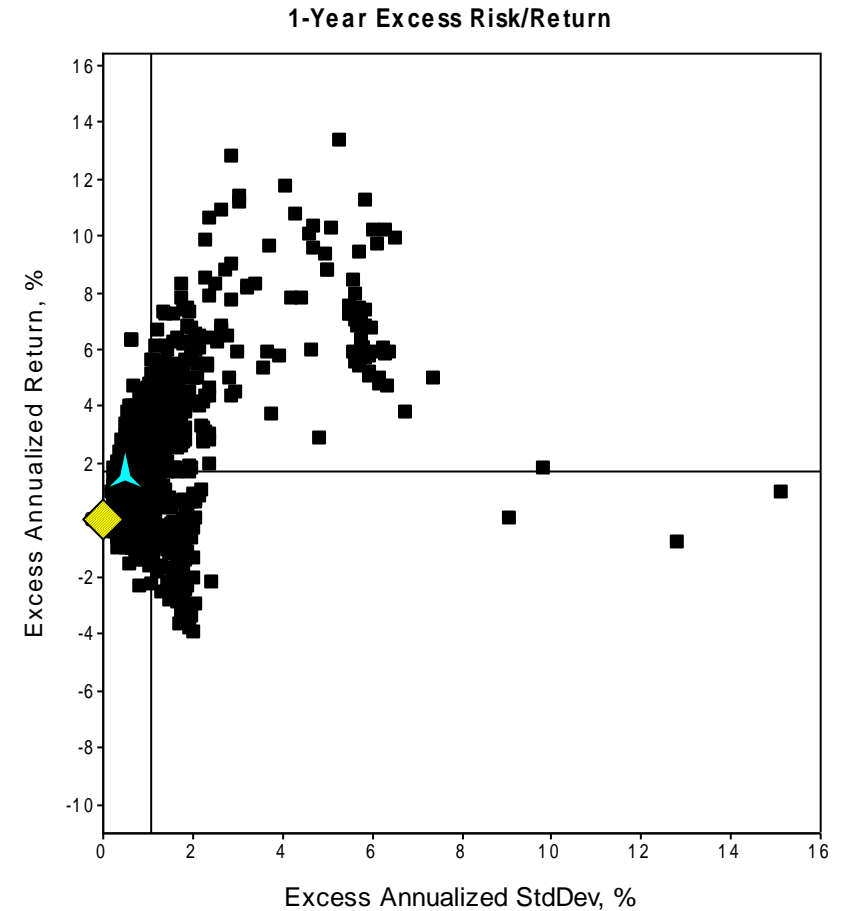
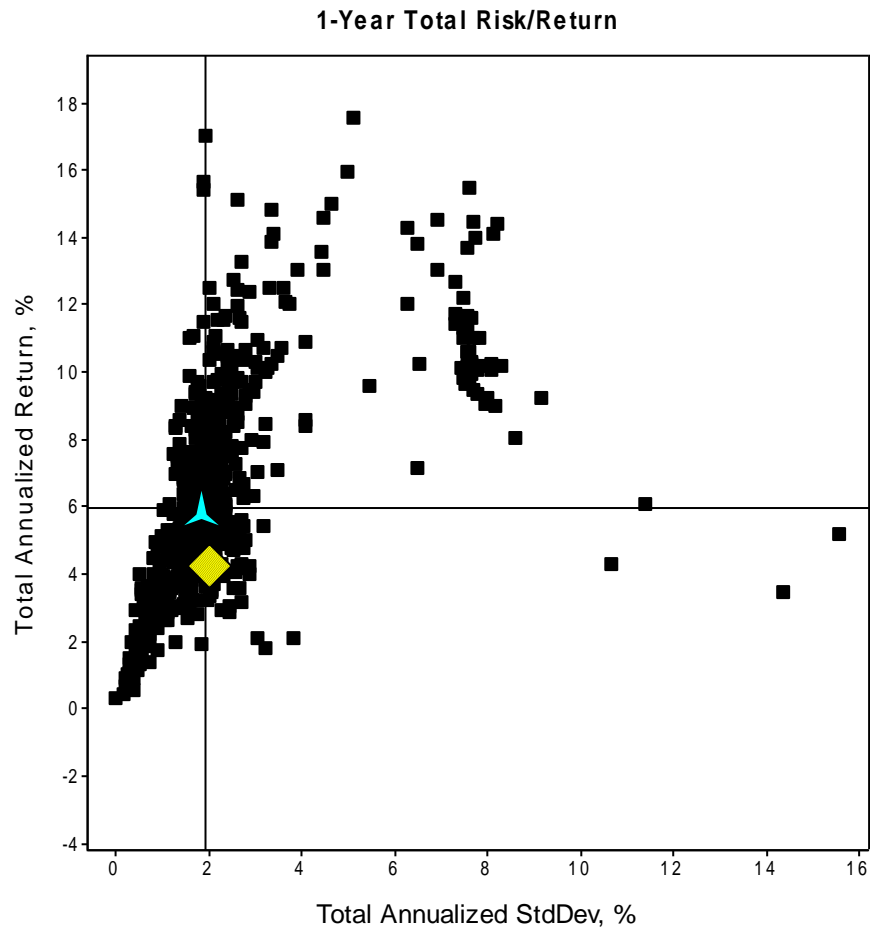
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Pyramis	-2.06	23.35	-0.09
MSCI Wld ex USA IMI ND (P)	-2.90	23.42	-0.12
International Equity Universe Median	-1.41	24.03	-0.06

	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Pyramis	0.84	2.59	0.32
MSCI Wld ex USA IMI ND (P)	0.00	0.00	NA
International Equity Universe Median	1.49	6.16	0.22

# WPERP International Equity Manager Comparisons as of December 31, 2012



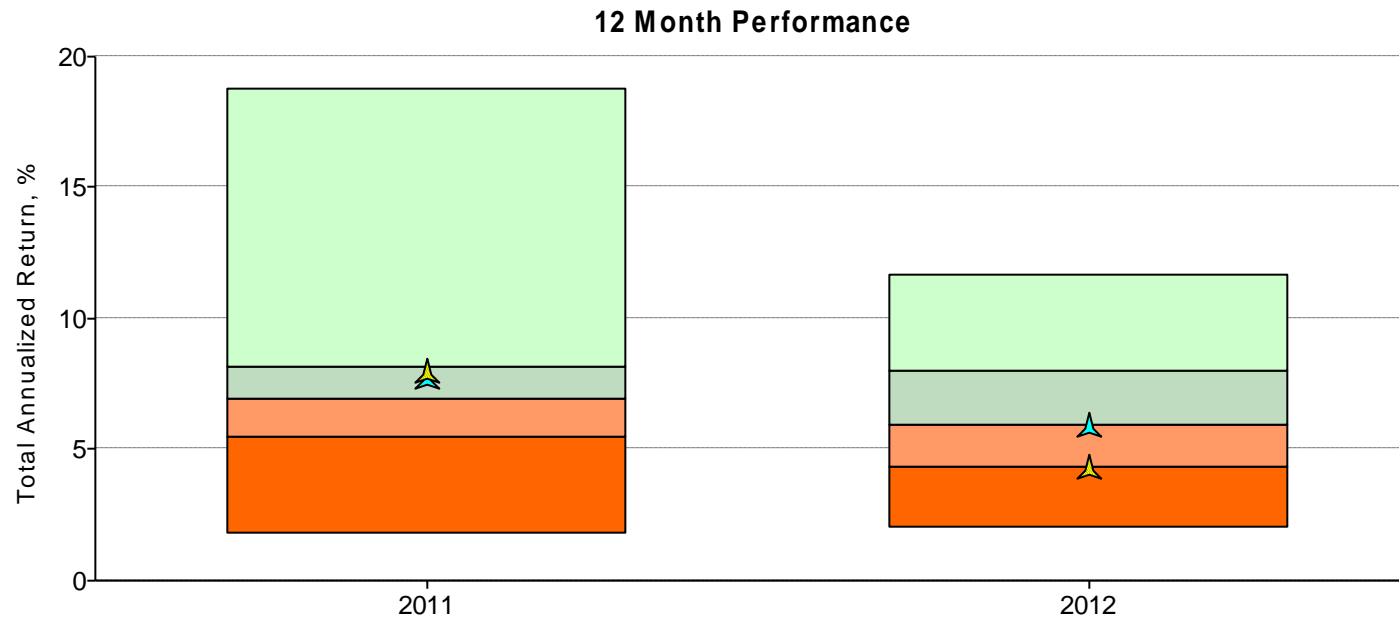
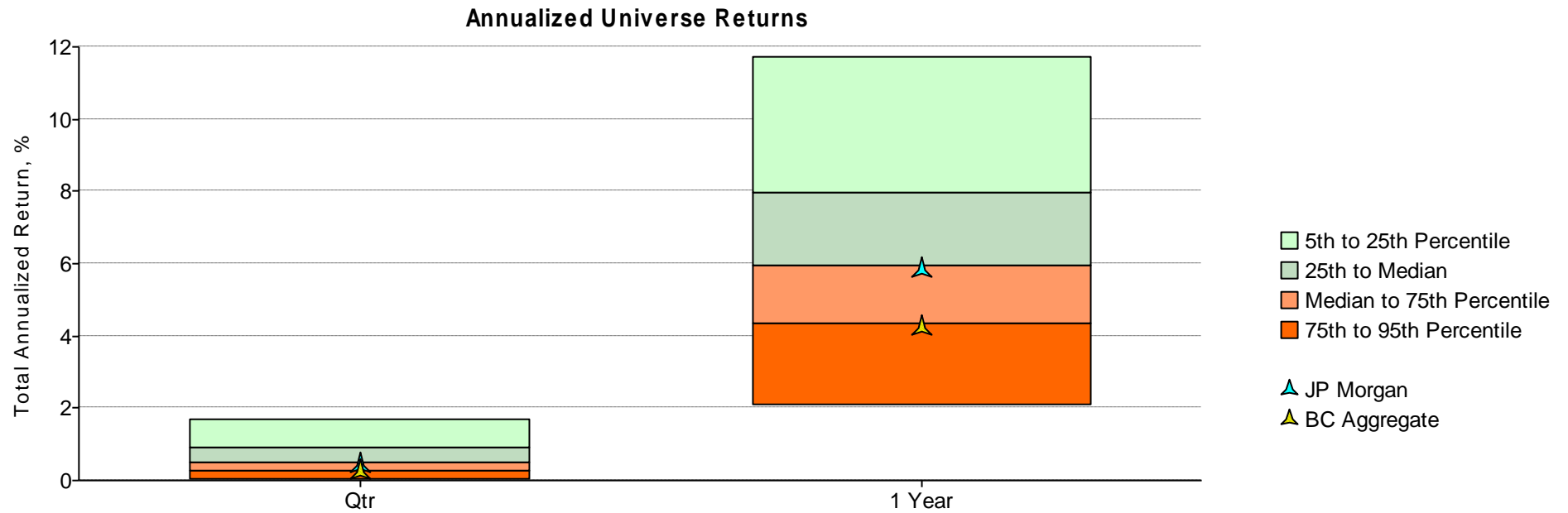
# WPERP Fixed Income Manager Comparisons as of December 31, 2012



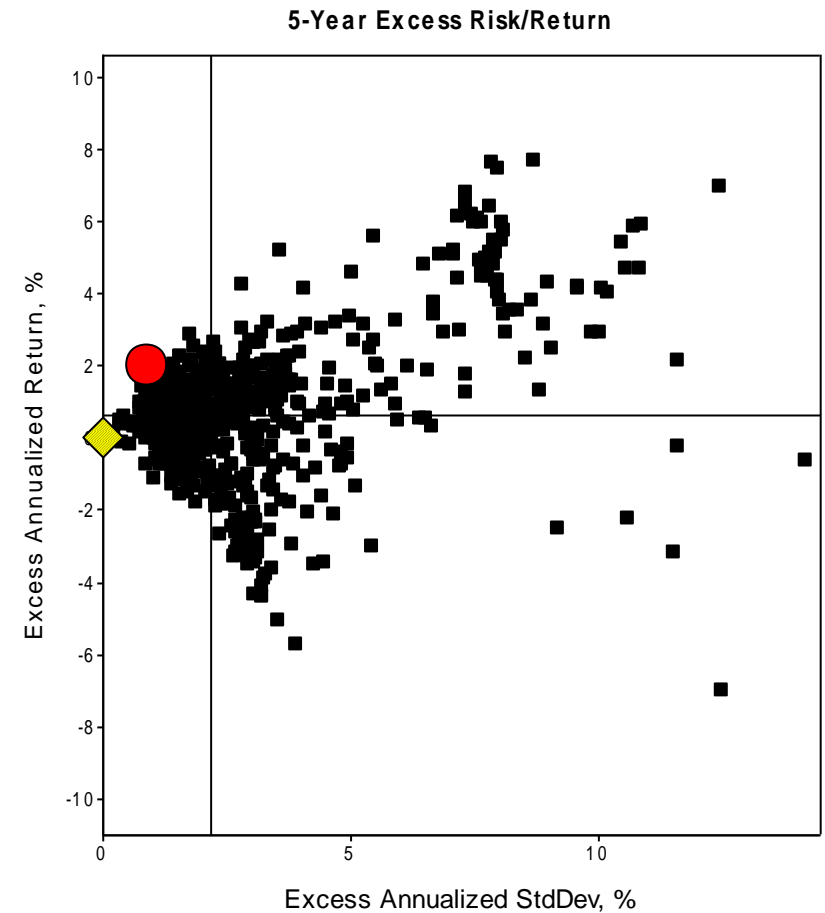
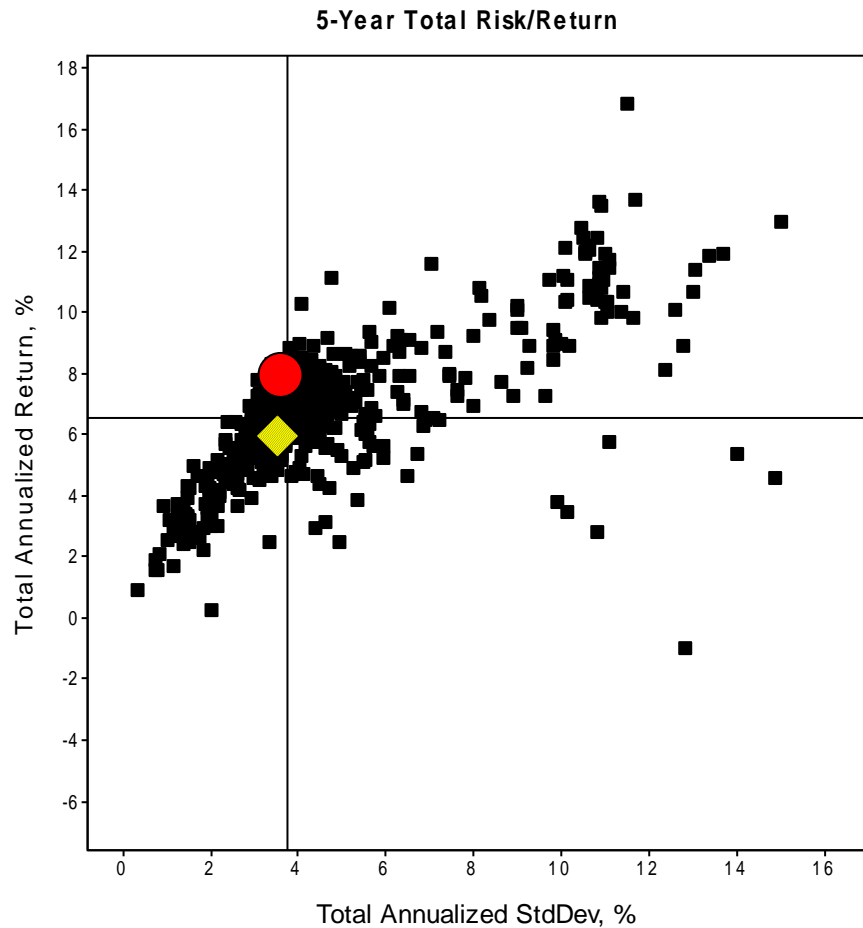
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
JP Morgan	5.81	1.86	3.12
BC Aggregate	4.22	2.01	2.10
Fixed Income Manager Universe Median	5.95	1.95	3.13

	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
JP Morgan	1.60	0.51	3.12
BC Aggregate	0.00	0.00	NA
Fixed Income Manager Universe Median	1.74	1.05	1.63

# WPERP Fixed Income Manager Comparisons as of December 31, 2012



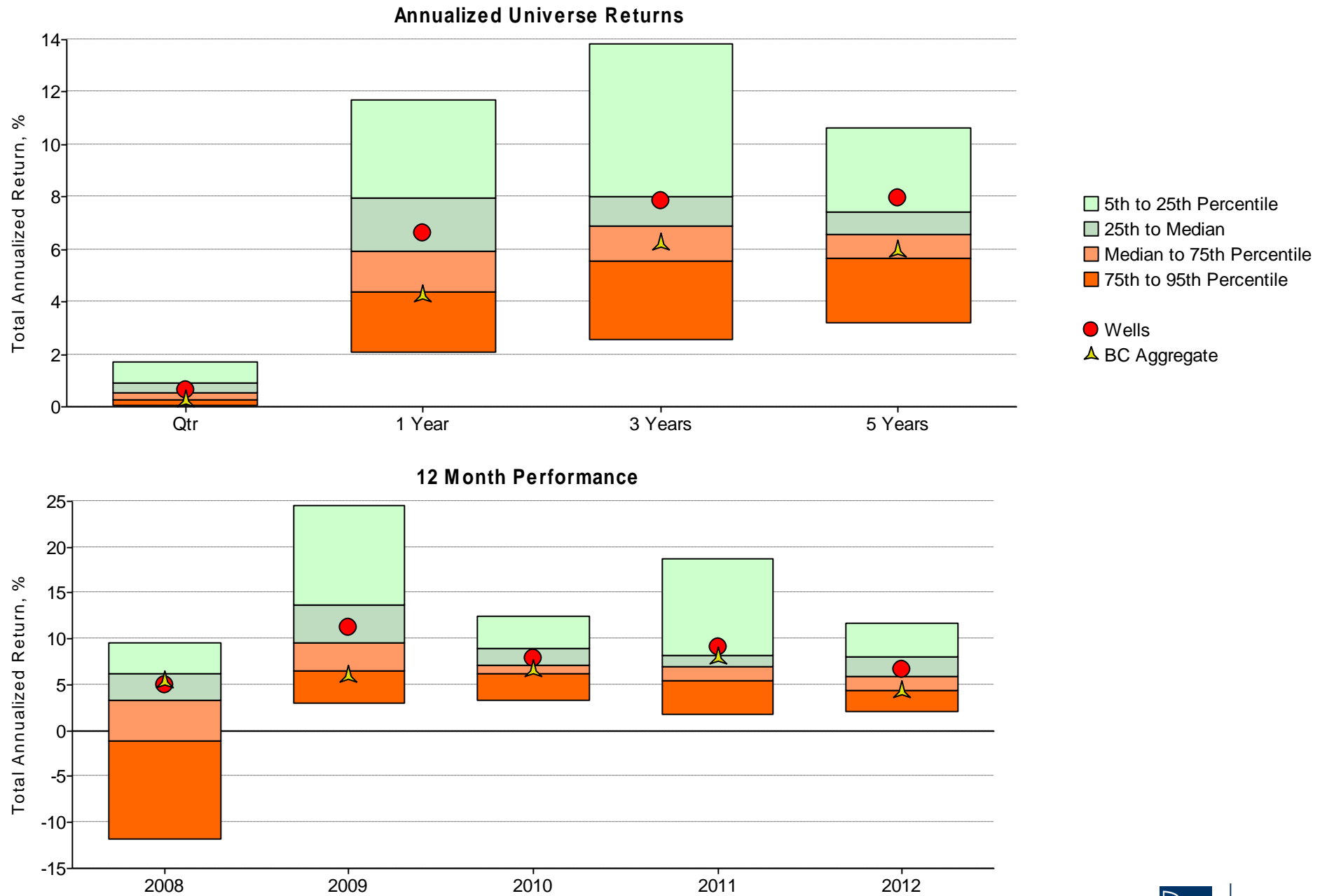
# WPERP Fixed Income Manager Comparisons as of December 31, 2012



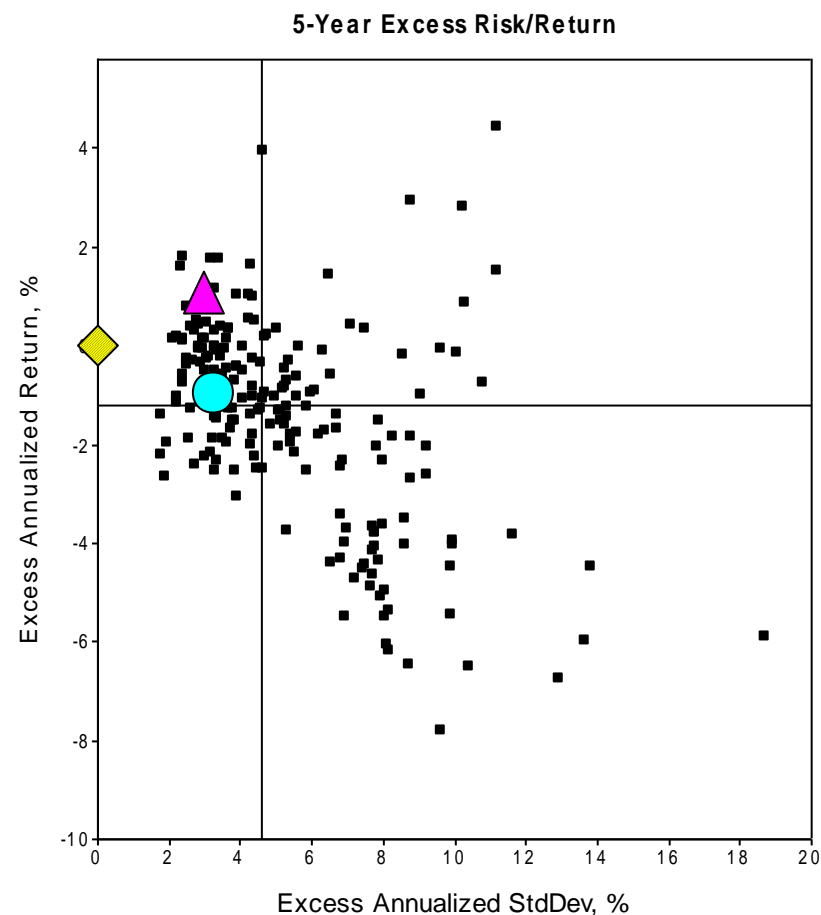
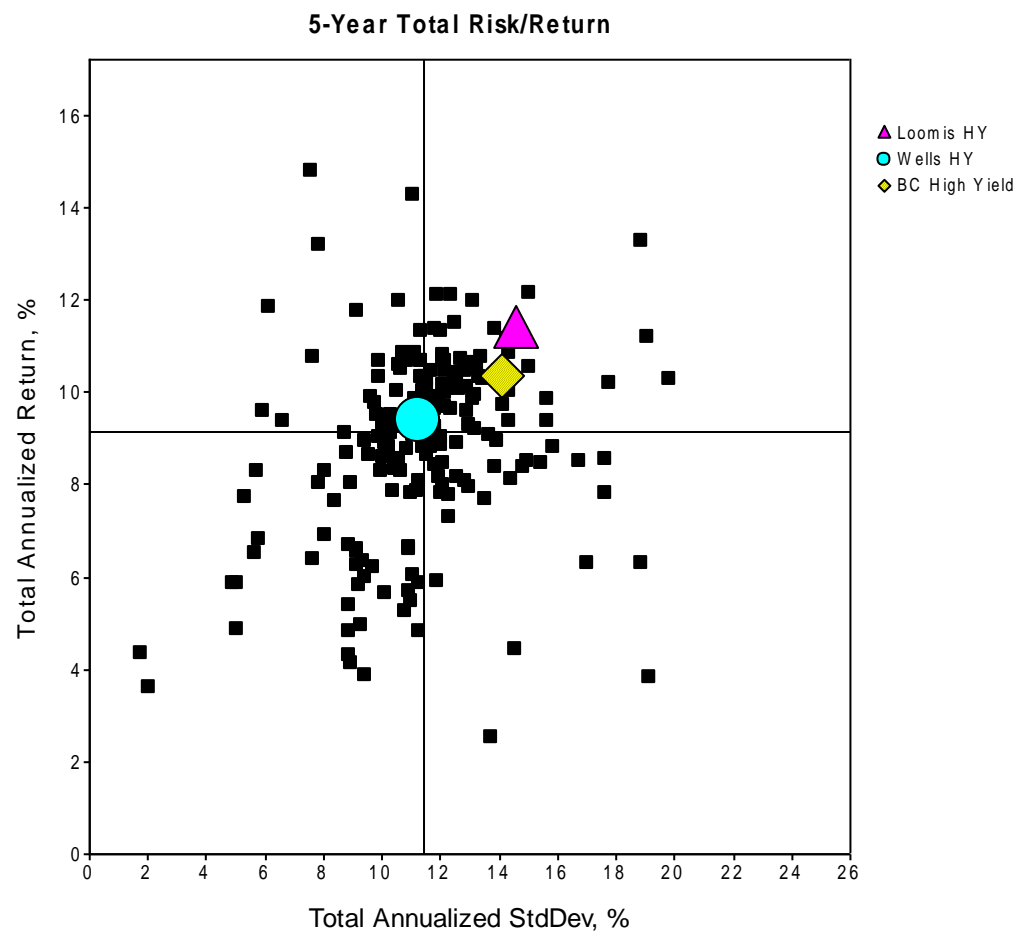
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Wells	7.95	3.64	2.19
BC Aggregate	5.95	3.53	1.68
Fixed Income Manager Universe Median	6.55	3.77	1.70

	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
Wells	2.00	0.90	2.21
BC Aggregate	0.00	0.00	NA
Fixed Income Manager Universe Median	0.61	2.20	0.32

# WPERP Fixed Income Manager Comparisons as of December 31, 2012



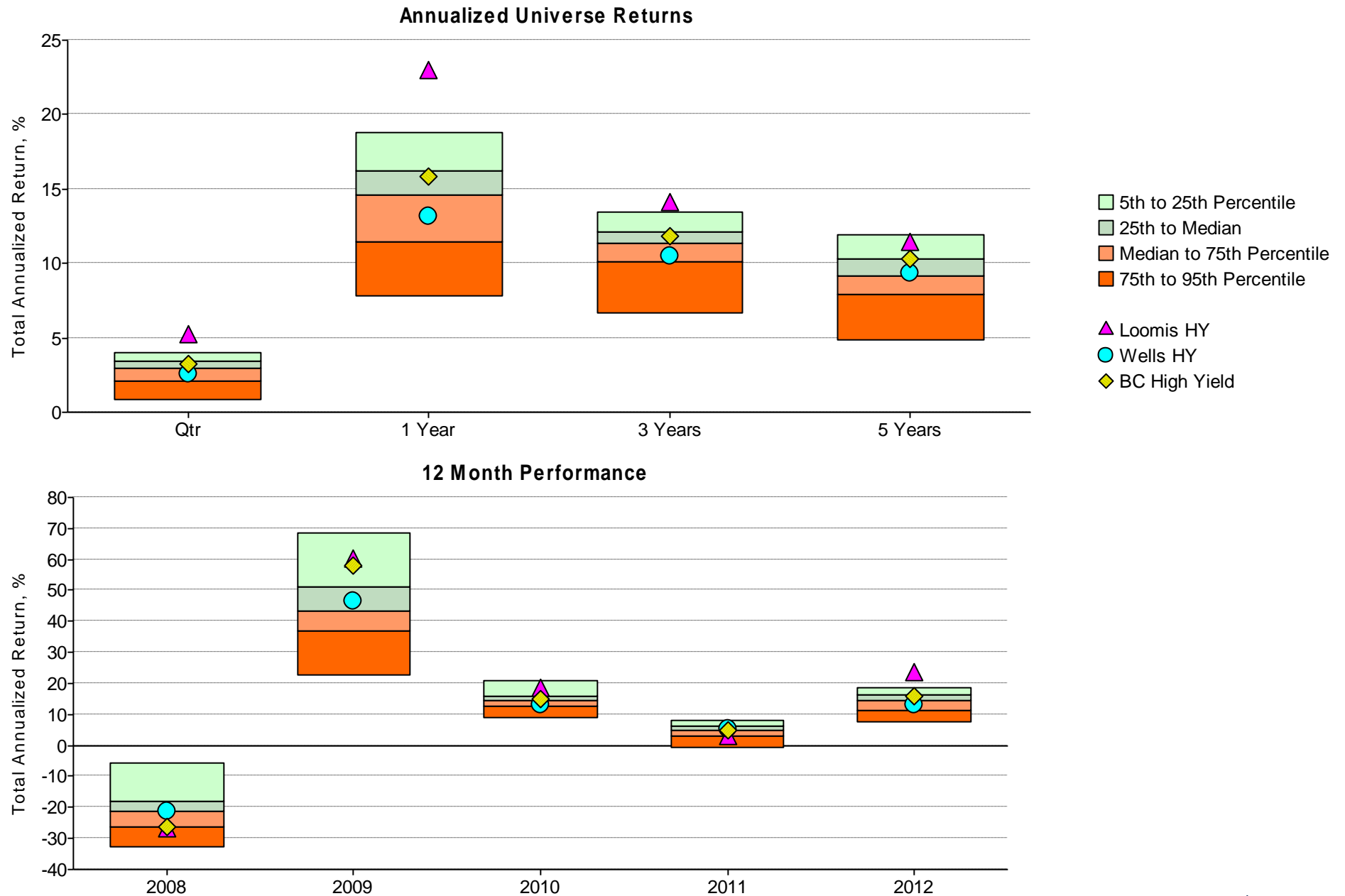
# WPERP High Yield Manager Comparisons as of December 31, 2012



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Loomis HY	11.28	14.56	0.77
Wells HY	9.38	11.20	0.84
BC High Yield	10.34	14.06	0.73
U.S. High Yield Universe Median	9.15	11.41	0.81

	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
Loomis HY	0.94	2.95	0.32
Wells HY	-0.95	3.24	-0.29
BC High Yield	0.00	0.00	NA
U.S. High Yield Universe Median	-1.19	4.62	-0.24

# WPERP High Yield Manager Comparisons as of December 31, 2012







# 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	---
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	---

## 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

## 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

**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.



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## **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.



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## 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.



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## 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.



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## 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