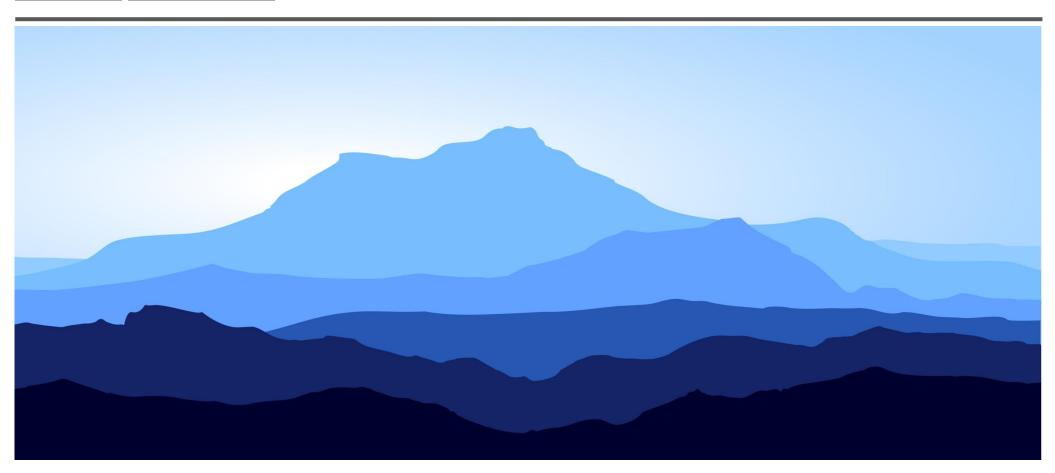


3Q 2014

# WATER & POWER EMPLOYEES' RETIREMENT SYSTEM

QUARTERLY REPORT



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#### PERFORMANCE SUMMARY OF MAJOR WPERP INVESTMENT PLANS

As of September 30, 2014, the WPERP Total Retirement Plan had an aggregate value of \$9.6 billion. This represents a (\$68.7) million decrease in value over the last quarter. During the most recent 1-year period, the WPERP Total Retirement Plan increased by \$893.7 million. After a very strong start to the first half of the year, the majority of global asset classes produced negative or marginally positive returns during the third quarter of 2014. US equities were roughly flat for the period, with large cap stocks producing marginally positive returns and small cap stocks generating negative returns. Developed international and emerging markets equities generated negative returns of between (3%) and (7%) during the quarter. Weakening growth outside of the US, coupled with tame inflation, continued to put pressure on the commodity markets, which broadly posted negative returns in the double-digits for the third quarter. The Federal Reserve remained on track to end quantitative easing in October, as bond markets, excluding credit, provided investors with meagerly positive returns. Throughout the remainder of 2014 and into 2015, central bank actions will remain a dominate influence within the global capital markets as monetary policy actions are either wound down, or further ratcheted up.

As of September 30, 2014, the WPERP Total Health Plan had an aggregate value of \$1.6 billion. This represents a (\$9.7) million decrease in value over the last quarter. During the most recent 1-year period, the WPERP Total Health Plan increased by \$150.7 million.

# Strategic Allocation Trends

The Retirement Plan strategic allocation targets reflect the current long-term policy allocation, effective 7/1/2013. As of September 30, 2014, the Retirement Portfolio had a 60% allocation in Equities, 21% in Fixed Income, 7% in Covered Calls, 6% in Real Return, 2% in Private Equity, 4% in Real Estate, and 1% in Cash. The Health Plan strategic allocation targets reflect the current long-term policy allocation, effective 7/1/2013. The WPERP Total Health Plan had a 61% allocation in Equities, 21% in Fixed Income, 7% in Covered Calls, 6% in Real Return, 1% in Private Equity, 2% in Real Estate, and 1% in Cash.

# Recent Investment Performance of Major WPERP Investment Plans Period ending September 30, 2014

#### WPERP Total Retirement Plan

	Quarter	1 Year	3 Year	5 Year	10 Year
Total Portfolio <sup>1</sup>	-0.5	10.7	13.2	9.7	7.0
Policy Benchmark <sup>2</sup>	-0.6	10.8	13.1	10.0	7.0
Excess Return	0.1	-0.1	0.1	-0.3	0.0
Reference: Median Fund <sup>3</sup>	-1.1	10.2	12.9	10.4	7.4
Reference: Net of Fees <sup>4</sup>	-0.6	10.5	13.0	9.5	6.8

#### WPERP Total Health Plan

	Quarter	1 Year	3 Year	5 Year
Total Portfolio <sup>1</sup>	-0.5	10.8	13.0	9.8
Policy Benchmark <sup>2</sup>	-0.6	10.8	13.0	9.9
Excess Return	0.1	0.0	0.0	-0.1

<sup>&</sup>lt;sup>1</sup> Gross of Fees.

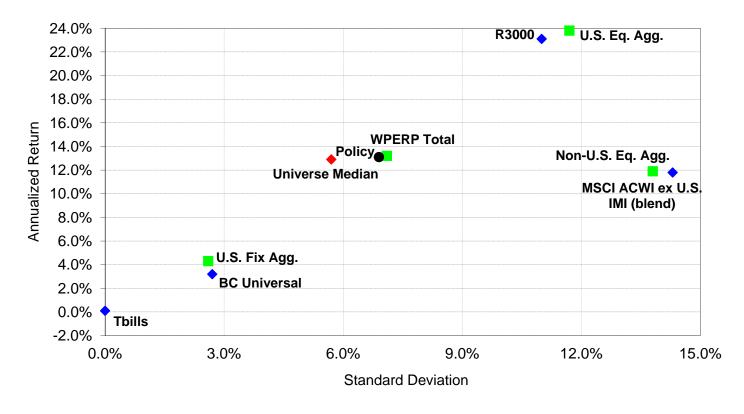
<sup>&</sup>lt;sup>2</sup> See appendix for policy benchmark descriptions.

<sup>&</sup>lt;sup>3</sup> Mellon Total Funds Public Universe.

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

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

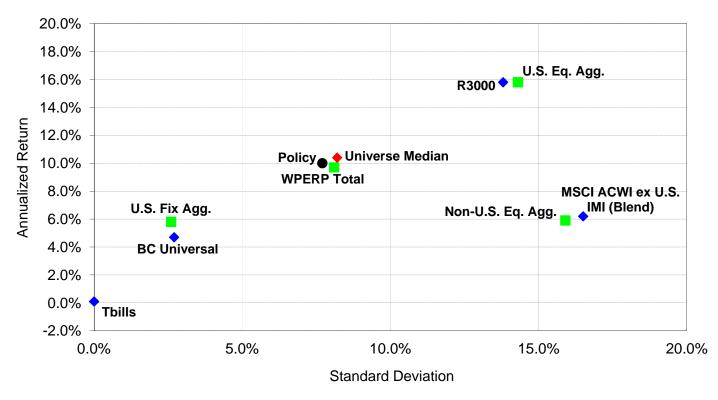
Period ending September 30, 2014



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

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

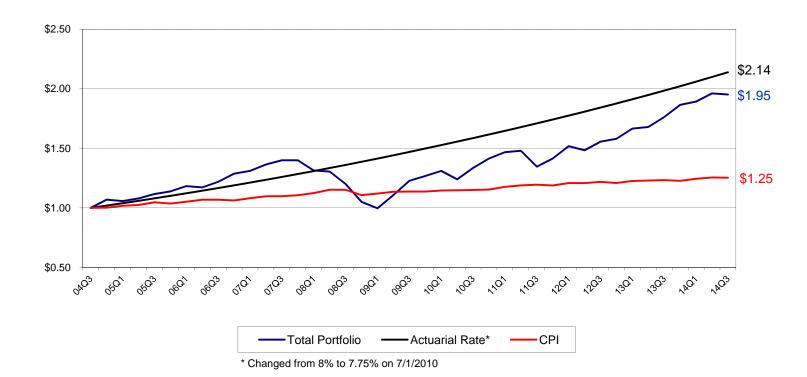
Period ending September 30, 2014



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

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

Period ending September 30, 2014

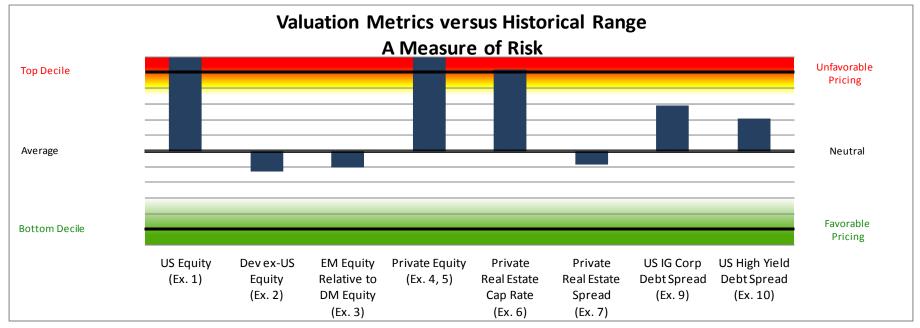


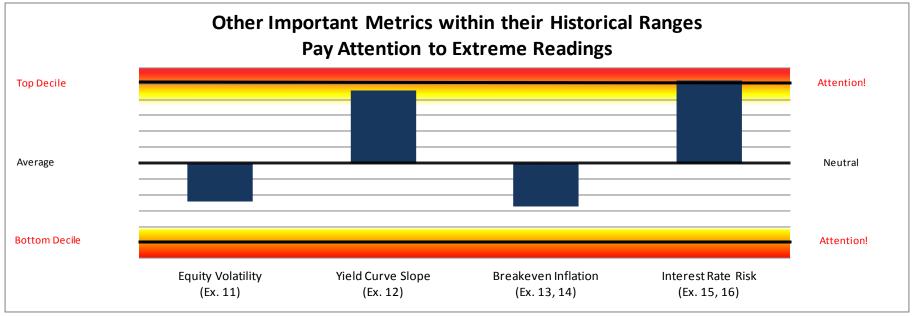
# **Investment Market Risk Metrics**

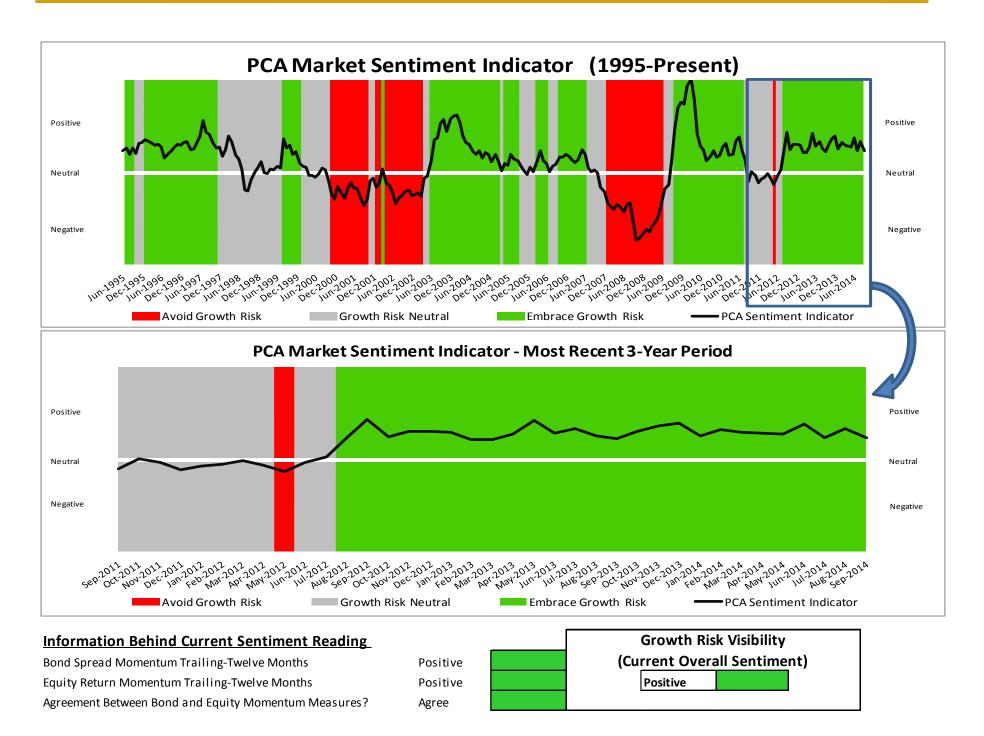
# **Takeaways**

- U.S. equity valuation metrics hit new post-financial-crisis highs, and remain within top decile valuation levels.
- Private equity valuation metrics have reached and marginally exceeded pre-financial-crisis highs.
- Non-U.S. equities are at below historical average valuation levels.
- Credit spreads have widened. High yield bond spreads are very close to breaking above their one-year-ago level; a negative technical sign.
- Interest rate risk also remains in top decile territory.
- The 10-year Treasury yield ended September at a level of 2.5%.
- Inflation expectations dropped significantly in September to below 2.0%.
- The commodities inflation metric also fell during the month.
- The PCA Market Sentiment Indicator "PMSI" continued to read green. However, PCA is monitoring the spread component of the indicator closely.
- Should credit spreads in both investment grade and high yield bonds increase year-over-year, this would turn the PCA Market Sentiment Indicator to neutral.

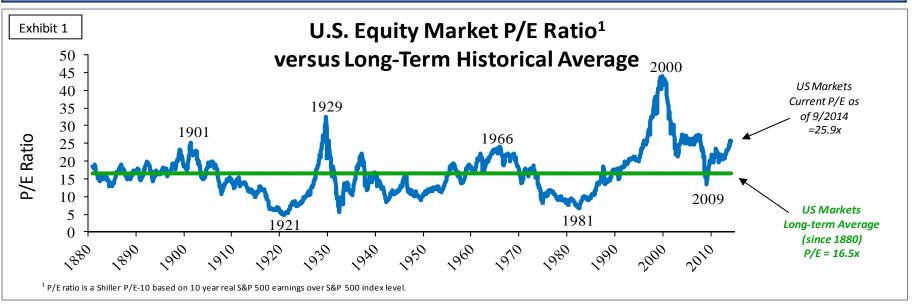
See Appendix for the rationale for selection and calculation methodology used for the risk metrics.



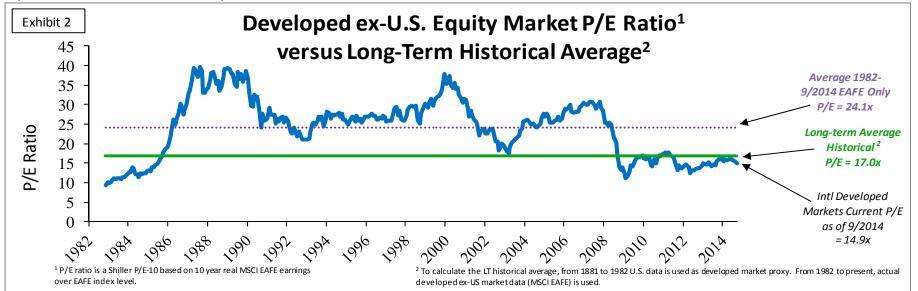




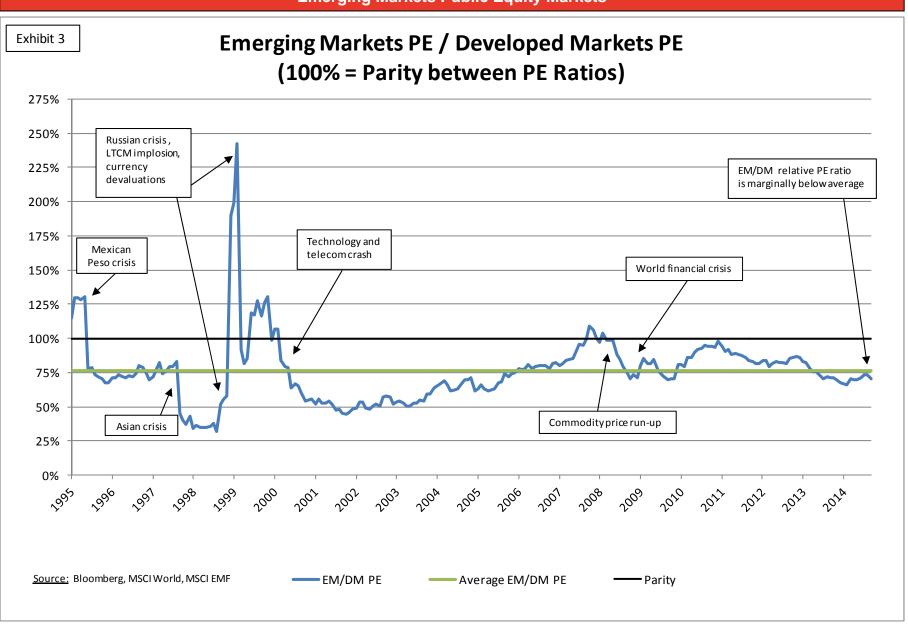
# **Developed Public Equity Markets**



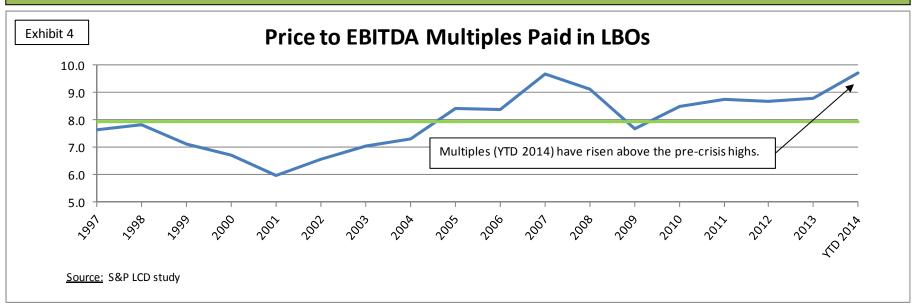
# (Please note different time scales)





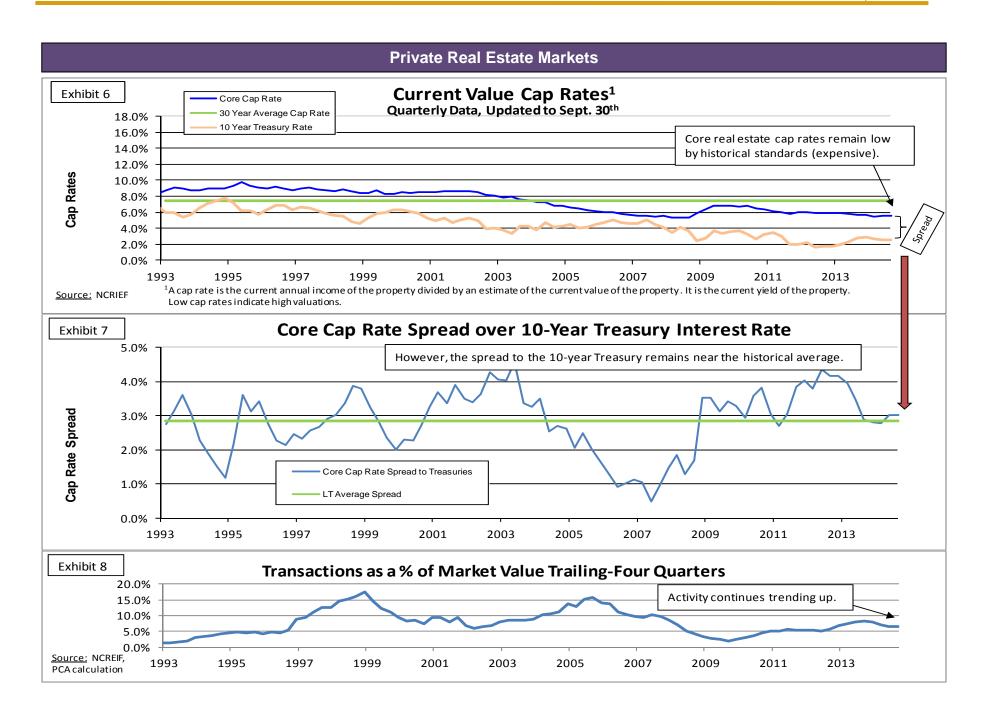


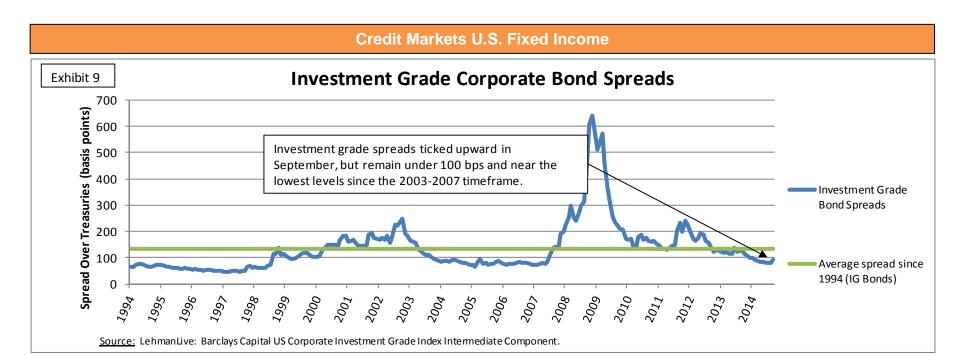
# **U.S. Private Equity Markets**

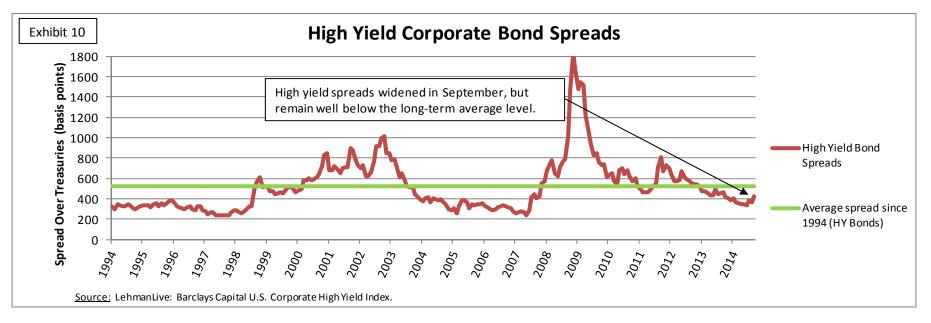


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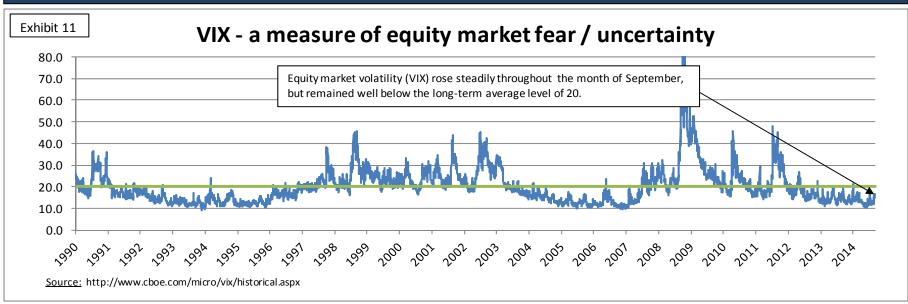




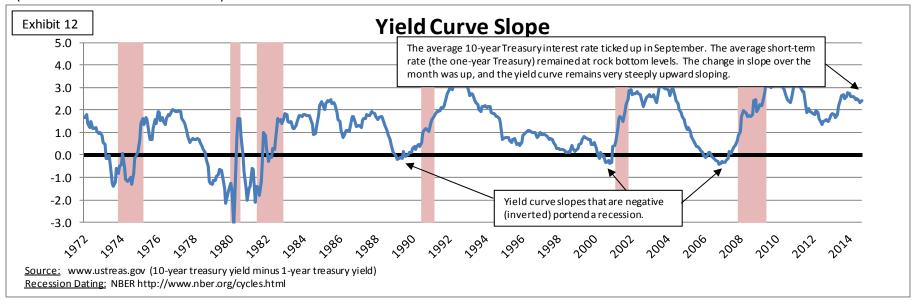


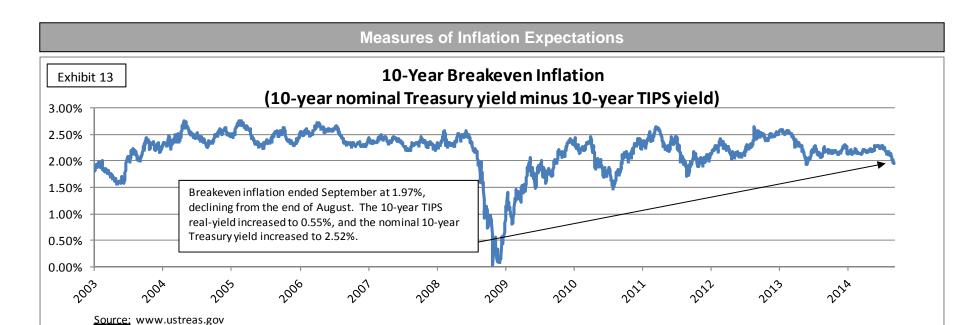






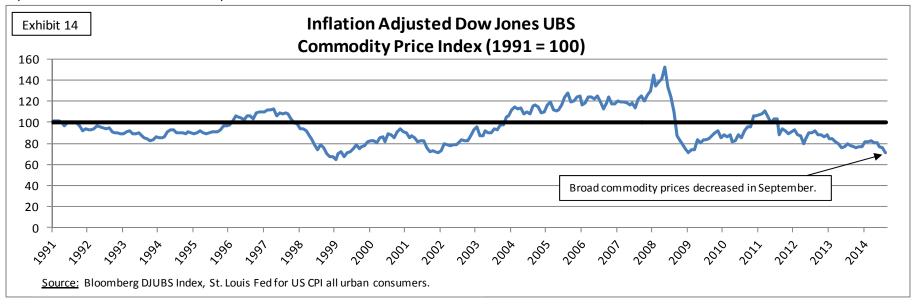
# (Please note different time scales)



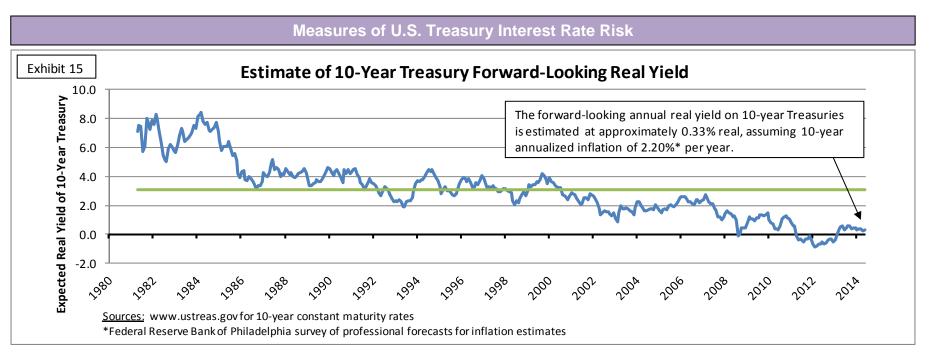


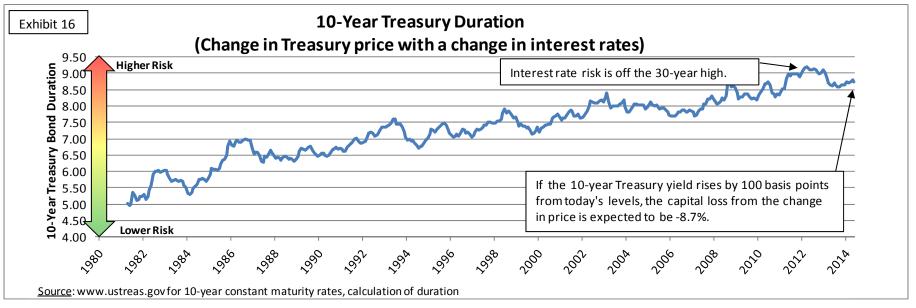
# (Please note different time scales)

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









#### **ECONOMIC & MARKET OVERVIEW**

Overview: Equity markets finished the quarter with mixed results as strong returns during August were offset by two surrounding negative months. US economic indicators showed continued growth contrasting with stagnant activity in the euro zone and a decline in Japan. US GDP decelerated from the second quarter but continued to grow, benefiting from consumer spending, business investment, and exports of goods. The unemployment rate also progressed, falling below 6.0% for the first time since mid-2008. At their September meeting, the Fed remained on track to phase out its bond-buying program and reassured investors that short-term interest rates would remain low. In contrast to the Fed which is winding down its quantitative easing program, European Central Bank president, Mario Draghi, implemented new interest rate cuts and bond purchases in an attempt to boost economic activity in the euro zone. This benefited the US dollar which rallied significantly versus most foreign currencies, most notably hitting a 2-year high versus the Euro and appreciating by 7.8% during the quarter.

## **Economic Growth**

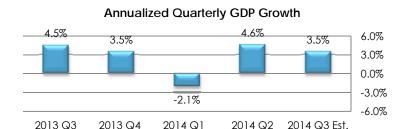
- Real GDP increased at an annualized rate of 3.5 percent in the third quarter of 2014 after increasing at an annualized rate of 4.6 percent in the second quarter of 2014.
- GDP growth deceleration was accounted for by inventory investment, which detracted from growth in the third quarter after being additive in the second quarter.
- Consumer spending, business investment and exports of goods and services all contributed to growth but decelerated from the second quarter.

#### Inflation

- The Consumer Price Index for All Urban Consumers (CPI-U) decreased by 0.1 percent in the guarter 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 1.0 percent for the guarter on an annualized basis.
- Over the last 12 months, CPI-U increased 1.7 percent before seasonal adjustment, an uncomfortably low level.

# **Unemployment**

- The US economy gained approximately 671,000 jobs in the quarter.
- The official unemployment rate dropped to 5.9% at quarter end.
- The majority of jobs gained occurred in professional and business services, education and health services, and leisure and hospitality.



## **CPI-U After Seasonal Adjustment**

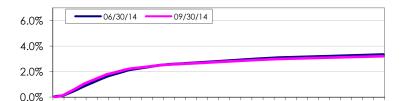


## **Unemployment Rate**



## **Interest Rates & US Dollar**

- US Treasury yields fell on average over the quarter.
- The Federal Reserve has maintained the federal funds rate between 0.00% and 0.25% since December 2008.
- The US dollar appreciated against the Euro, Yen and Sterling by 7.8%, 8.2%, and 5.2%, respectively.



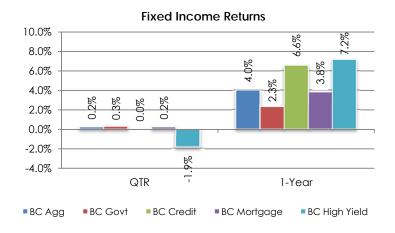
**Treasury Yield Curve Changes** 

20**-**yr

Source: US Treasury Department

## **Fixed Income**

- US bond markets delivered flat returns during the quarter excluding high yield.
- Despite a poor third quarter, high yield bonds continued to lead the way for fixed income markets over the trailing 1-year period.

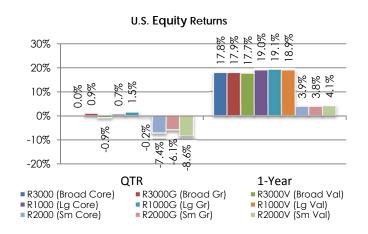


	ncome Secto C Aggregate	r Performance Index)	9
Sector	Weight	QTR	1 Year
Governments*	40.0%	0.3%	2.3%
Agencies	5.3%	0.3%	2.5%
Inv. Grade Credit	23.2%	0.0%	6.6%
MBS	28.9%	0.2%	3.8%
ABS	0.6%	0.0%	1.6%
CMBS	2.0%	-0.2%	2.9%

<sup>\*</sup>US Treasuries and Government Related

## **US Equities**

- Large cap US equities posted slight gains during the quarter while small cap stocks continued to struggle, posting negative returns for the quarter.
- During the quarter, growth outperformed value across the market cap spectrum. Individual sectors produced mixed results during the quarter but remained positive as a whole during the trailing 1-year period

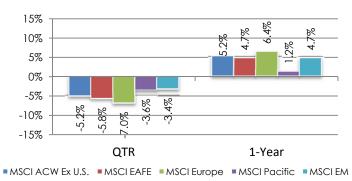


US E	quity Sector Pe (Russell 3000 II		
Sector	Weight	QTR	1 Year
Information Tech.	19.0%	3.6%	25.5%
Financials	17.4%	0.8%	16.2%
Health Care	13.6%	4.5%	26.5%
Consumer Disc.	12.4%	-0.7%	10.8%
Industrials	11.3%	-2.9%	14.2%
Energy	8.9%	-9.1%	11.7%
Consumer Staples	8.3%	1.5%	16.1%
Materials	3.9%	-1.6%	17.6%
Utilities	3.0%	-4.9%	15.9%
Telecomm. Serv.	2.2%	2.2%	13.9%

## **International Equities**

- International markets all finished in negative territory; however, emerging market equities fared relatively well during the quarter, losing less.
- During the trailing 1-year period international equity markets continued to trail US equities but remained in positive territory.

# International Equity Returns (in USD)



	International Equity Region Performance (in USD) (MSCI ACW Index ex US)												
Sector	Weight	QTR	1 Year										
Europe Ex. UK	32.0%	-7.4%	6.5%										
Emerging Markets	21.7%	-3.4%	4.7%										
United Kingdom	15.1%	-6.1%	6.2%										
Japan	14.9%	-2.2%	0.9%										
Pacific Ex. Japan	8.6%	-5.9%	1.5%										
Canada	7.7%	-4.3%	11.6%										

# <u>Market Summary – Long-term Performance\*</u>

Indexes	1 Year	3 Year	5 Year	10 Year	20 Year
Global Equity					
MSCI All Country World	11.9%	17.2%	10.6%	7.8%	7.3%
Domestic Equity					
S&P 500	19.7%	23.0%	15.7%	8.1%	9.6%
Russell 3000	17.8%	23.1%	15.8%	8.4%	9.6%
Russell 3000 Growth	17.9%	22.4%	16.4%	9.0%	8.7%
Russell 3000 Value	17.7%	23.7%	15.1%	7.8%	10.1%
Russell 1000	19.0%	23.2%	15.9%	8.5%	9.8%
Russell 1000 Growth	19.1%	22.4%	16.5%	8.9%	8.8%
Russell 1000 Value	18.9%	23.9%	15.3%	7.8%	10.2%
Russell 2000	3.9%	21.3%	14.3%	8.2%	9.0%
Russell 2000 Growth	3.8%	21.9%	15.5%	9.0%	7.3%
Russell 2000 Value	4.1%	20.6%	13.0%	7.3%	10.3%
CBOE BXM	14.1%	13.8%	8.9%	5.2%	8.2%
International Equity					
MSCI All Country World ex US	5.2%	12.3%	6.5%	7.5%	5.9%
MSCI EAFE	4.7%	14.2%	7.0%	6.8%	5.6%
MSCI Pacific	1.2%	10.5%	6.3%	6.0%	1.9%
MSCI Europe	6.4%	16.2%	7.5%	7.2%	8.3%
MSCI EM (Emerging Markets)	4.7%	7.6%	4.8%	11.0%	5.4%
Fixed Income					
BC Universal Bond	4.4%	3.2%	4.7%	4.9%	6.3%
BC Global Agg – Hedged	5.5%	3.9%	4.2%	4.6%	6.2%
BC Aggregate Bond	4.0%	2.4%	4.1%	4.6%	6.1%
BC Government	2.3%	1.1%	3.1%	4.1%	5.8%
BC Credit Bond	6.6%	4.8%	6.1%	5.4%	6.9%
BC Mortgage Backed Securities	3.8%	2.1%	3.5%	4.7%	6.1%
BC High Yield Corporate Bond	7.2%	11.1%	10.6%	8.3%	8.0%
BC WGILB - Hedged	4.8%	3.0%	4.7%	4.9%	NA
BC Emerging Markets	7.9%	8.1%	8.3%	8.5%	10.3%
Real Estate					
NCREIF (Private RE)	11.3%	11.1%	11.0%	8.6%	9.6%
NAREIT (Public RE)	13.4%	17.0%	15.7%	7.7%	10.4%
Commodity Index					
Bloomberg Commodity (formerly DJUBS)	-6.6%	-5.3%	-1.4%	-1.0%	4.0%
* Daufaura au a de aura, altar al fau a auta als ausanta a l					

<sup>\*</sup> Performance is annualized for periods greater than one year.

#### WPERP RETIREMENT PLAN REVIEW

# **Actual vs. Target Allocations**

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

With respect to its strategic allocation targets, the Total Retirement Portfolio ended the latest quarter *overweight Domestic Equity, International Equity, and Covered Calls*, while *underweight Fixed Income, Private Equity, and Real Estate*. *Real Return and Cash* were in-line with target allocations. Differences between actual and policy allocations are primarily the result of public market performance and the deliberate phased-in funding of the private markets classes. Following the 2011 Asset Allocation study, WPERP utilized a series of phased allocation targets, beginning in 4Q 2011, to transition towards the long-term policy targets. The Retirement Plan reached the long-term policy targets as of 7/1/2013.

# As of September 30, 2014

Segment	Actual (\$MM)	Actual %1	Target% <sup>2</sup>	Variance	Min.	Max.
Total Portfolio <sup>3</sup>	11,228	100	100			
Total Retirement <sup>4</sup>	9,563	100	100			
Domestic Equity	3,663	38	33	5	29	39
International Equity	2,095	22	21	1	17	25
Fixed Income	1,961	21	24	-3	21	29
Covered Calls	696	7	5	2	4	6
Real Return	535	6	6			
Private Equity	197	2	5	-3		
Real Estate	336	4	5	-1		
Cash	67	1	1		0.5	1.5

<sup>&</sup>lt;sup>1</sup> Differences due to rounding.

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

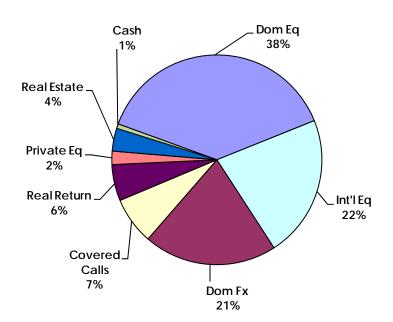
<sup>&</sup>lt;sup>3</sup> Total Portfolio includes assets from the Retirement, Health, Disability, and Death Plans.

<sup>&</sup>lt;sup>4</sup> Including a balance of \$13.0 million in transition accounts.

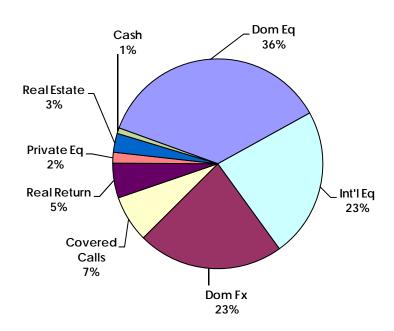
# **Actual Strategic Allocation Comparison**

As of September 30, 2014, the WPERP Total Retirement Portfolio had a 60% allocation in Equities, 21% in Fixed Income, 7% in Covered Calls, 6% in Real Return, 2% in Private Equity, 4% in Real Estate, and 1% in Cash. During the latest 1-year period, the actual weightings of Domestic Equity, Real Return, and Real Estate increased by 2%, 1%, and 1%, respectively. The actual weightings of International Equity and Fixed Income decreased by (1%) and (2%), respectively. The actual weightings of Covered Calls, Private Equity, and Cash remained the same. The allocation changes are primarily a result of performance within the global capital markets. The Board approved its current long-term investment policy in June 2011 as a result of the 2011 Asset Allocation study. The new policy was implemented over a series of phased asset allocation targets that initially began in 4Q 2011 (see Appendix for a description of the policy benchmark composition). The Retirement Plan reached the long-term policy target as of 7/1/2013.

September 30, 2014



**September 30, 2013** 



#### WPERP RETIREMENT PLAN PERFORMANCE

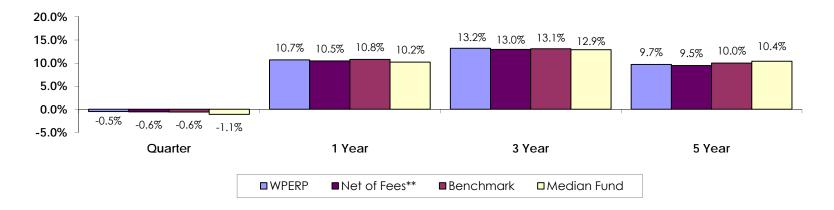
This section includes an overview of the performance of WPERP's Total Retirement Portfolio and a detailed analysis of strategic classes and specific mandates.

# Portfolio Performance Overview (Gross of Fees)

The Total Retirement Portfolio marginally outperformed its policy benchmark over the most recent quarter by 10 basis points. Over the latest 1-year period, the Total Retirement Portfolio slightly trailed its policy benchmark by (10) basis points with a 10.7% return. Over the trailing 3-year period, the Total Retirement Portfolio slightly outperformed its policy benchmark by 10 basis points with a 13.2% return. Over the trailing 5-year period, the Total Retirement Portfolio underperformed its policy benchmark by (30) basis points, generating a 9.7% return.

The Total Retirement Portfolio outperformed the Median Public Fund over the most recent quarter, 1-, and 3-year periods by 60, 50, and 30 basis points, respectively. Over the trailing 5-year period, the Total Retirement Portfolio underperformed the Median Public Fund by (70) basis points.

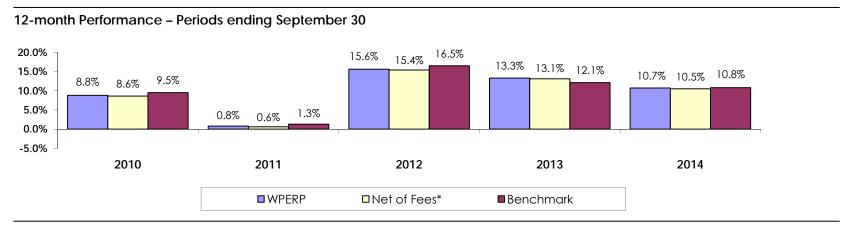
# Periods ending September 30, 2014 (annualized)\*



<sup>\*</sup> WPERP performance reported gross of fees.

<sup>\*\*</sup>Net of Fees performance estimated based on existing WPERP manager fee schedule.

The Total Retirement Portfolio generated positive absolute performance results over all five trailing 12-month periods. The Total Retirement Portfolio outperformed its policy benchmark one time over the same 12-month period.



<sup>\*</sup>Net of Fees performance estimated based on existing WPERP manager fee schedule.

## Portfolio Valuation

As of September 30, 2014, the WPERP Total Retirement Plan had an aggregate value of \$9.6 billion. This represents a (\$68.7) million decrease in value over the last quarter. During the most recent 1-year period, the WPERP Total Retirement Plan increased by \$893.7 million.

# Portfolio Valuation as of September 30, 2014, Gross of Fees\*

## **Cash Flow Performance**

	<u>3Q 2014</u>	<u>1-Year</u>	<u>3-Year</u>	<u>5-Year</u>	
Beginning Market Value	\$9,631.9	\$8,669.4	\$6,675.1	\$6,241.9	
Net Flow	-20.6	-33.9	-119.5	-353.2	
Investment Return in \$ (in%)	<u>-48.2</u>	-0.5% <u>927.6</u>	10.7% <u>3,007.6</u>	13.2% <u>3,674.4</u>	9.7%
Ending Market Value	\$9,563.2	\$9,563.2	\$9,563.2	\$9,563.2	

<sup>\*</sup>Dollar figures in millions (\$), differences due to rounding

<sup>\*\*</sup>Net flows estimated per PCA

#### PERFORMANCE ATTRIBUTION – RETIREMENT PLAN VS. POLICY BENCHMARK

## Performance Attribution - 3Q 2014

	Polic	У	Portfo	lio	Impact on Return						
	Allocation	Return	Allocation*	Return	Weighting	Selection	Interaction	Total			
Domestic Equity	33.0%	0.0	38.0%	0.2	0.0	0.1	0.0	0.1			
International Equity	21.0%	(5.5)	22.9%	(4.7)	(0.1)	0.2	0.0	0.1			
Fixed Income	24.0%	0.0	20.5%	0.2	(0.0)	0.0	(0.0)	0.0			
Covered Calls	5.0%	0.8	7.2%	1.1	0.0	0.0	0.0	0.1			
Real Return	6.0%	1.6	5.5%	2.3	(0.0)	0.0	(0.0)	0.0			
Private Equity	5.0%	5.6	1.8%	6.9	(0.2)	0.1	(0.0)	(0.2)			
Real Estate	5.0%	2.9	3.2%	4.5	(0.1)	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%	(0.6)	100.0%	(0.5)	(0.3)	0.5	(0.0)	0.1			

<sup>\*</sup>Portfolio allocation utilizes beginning-of-the period market values.

# Performance Attribution - Trailing 12-month

	Polic	У	Portfo	lio	Impact on Return						
	Allocation*	Return	Allocation*	Return	Weighting	Selection	Interaction	Total			
Domestic Equity	33.0%	17.8	38.0%	17.8	0.3	0.0	(0.0)	0.3			
International Equity	21.0%	4.7	22.5%	5.7	(0.1)	0.2	0.0	0.1			
Fixed Income	24.0%	4.4	20.8%	4.8	0.1	0.1	(0.0)	0.2			
Covered Calls	5.0%	14.1	7.2%	13.5	0.1	(0.0)	(0.0)	0.0			
Real Return	6.0%	5.1	5.6%	3.0	0.0	(0.1)	0.0	(0.0)			
Private Equity	5.0%	28.9	1.8%	23.3	(0.6)	(0.6)	0.4	(8.0)			
Real Estate	5.0%	11.2	3.2%	16.0	0.0	0.2	(0.1)	0.2			
Cash	1.0%	0.0	0.8%	0.1	0.0	0.0	(0.0)	0.0			
Total	100.0%	10.8	100.0%	10.7	(0.2)	(0.1)	0.3	0.0			

<sup>\*</sup>Portfolio allocation utilizes av erage market values ov er the trailing four quarters; Policy allocation utilizes av erage target allocations ov er the trailing four quarters.

- During the most recent quarter, the Total Retirement Portfolio marginally outperformed its policy benchmark by 10 basis points. Selection throughout most of the portfolio marginally aided relative performance, while weighting throughout most of the portfolio marginally detracted.
- During the trailing 12-month period, the Total Retirement Portfolio marginally lagged its policy benchmark by (10) basis points. An overweight to Domestic Equity, along with selection within International Equity, Fixed Income, and Real Estate, contributed to the relative performance. The Private Equity class was the primary detractor from the relative performance. The relative underperformance over the period by the Private Equity class is a result of very strong public equity market returns (i.e., the current Private Equity benchmark). The underweight of the Private Equity class is due to the deliberate phased-in funding of the class.

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

## Performance Attribution - 3Q 2014

	Median Pub	olic Fund	Portfo	lio	Impact on Return						
	Allocation	Return	Allocation*	Return	Weighting	Selection	Interaction	Total			
Domestic Equity	33.2%	(0.7)	38.0%	0.2	0.0	0.3	0.0	0.4			
International Equity	17.0%	(5.1)	22.9%	(4.7)	(0.2)	0.1	0.0	(0.1)			
Fixed Income	25.2%	0.0	20.5%	0.2	(0.1)	0.1	(0.0)	(0.0)			
Covered Calls	-	-	7.2%	1.1	0.1	0.0	0.1	0.2			
Real Return	-	-	5.5%	2.3	0.1	0.0	0.1	0.2			
Alternative Investments	16.7%	0.2	1.8%	6.9	(0.2)	1.1	(1.0)	(0.1)			
Real Estate	5.9%	2.2	3.2%	4.5	(0.1)	0.1	(0.1)	(0.0)			
Cash	2.0%	0.0	0.9%	0.0	(0.0)	0.0	0.0	(0.0)			
Total	100.0%	(1.1)	100.0%	(0.5)	(0.4)	1.7	(0.8)	0.5			

<sup>\*</sup>Portfolio allocation utilizes beginning-of-the period market values.

# Performance Attribution - Trailing 12-month

	Median Pub	lic Fund	Portfo	Portfolio		Impact on Return				
	Allocation*	Return	Allocation*	Return	Weighting	Selection	Interaction	Total		
Domestic Equity	33.6%	16.1	38.0%	17.8	0.3	0.6	0.1	0.9		
International Equity	18.5%	5.5	22.5%	5.7	(0.2)	0.0	0.0	(0.1)		
Fixed Income	24.4%	5.0	20.8%	4.8	0.2	(0.0)	0.0	0.1		
Covered Calls	-	-	7.2%	13.5	(0.7)	0.0	1.0	0.2		
Real Return	-	-	5.6%	3.0	(0.6)	0.0	0.2	(0.4)		
Alternative Investments	15.4%	14.4	1.8%	23.3	(0.6)	1.4	(1.2)	(0.4)		
Real Estate	6.0%	10.6	3.2%	16.0	(0.0)	0.3	(0.1)	0.2		
Cash	2.1%	0.1	0.8%	0.1	0.1	0.0	0.0	0.1		
Total	100.0%	10.2	100.0%	10.7	(1.5)	2.3	(0.1)	0.6		

<sup>\*</sup>Portfolio allocation utilizes av erage market v alues ov er the trailing four quarters; Median allocation utilizes av erage market v alues ov er the trailing four quarters.

- During the most recent quarter, the Total Retirement Portfolio outperformed the Median Public Fund by 60 basis points. Selection within Alternative Investments and Domestic Equity, along with allocations to Covered Calls and Real Return, were the primary contributors from the relative performance. Various weighting differences throughout the portfolio detracted from the relative performance.
- During the trailing 12-month period, the Total Retirement Portfolio surpassed the Median Public Fund by 50 basis points. The Domestic Equity class (weighting and selection) was a strong contributor, along with selection within Alternative Investments and Real Estate. Various weighting differences throughout the portfolio detracted from the 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.

#### WPERP RETIREMENT PLAN STRATEGIC CLASS PERFORMANCE

The **Domestic Equity** portfolio matched or outperformed its policy benchmark over all trailing time periods. Over the latest quarter and 3-year period, the portfolio outperformed its benchmark by 20 and 70 basis points, respectively. Over the trailing 1- and 5-year periods, the portfolio matched its policy benchmark with returns of 17.8% and 15.8%, respectively.

The International Equity portfolio outperformed its policy benchmark over the latest quarter, 1-, and 3-year periods, while marginally lagging over the trailing 5-year period. Over the most recent quarter, 1-, and 3-year periods, the portfolio bested its policy benchmark by 0.8%, 1.0%, and 0.1%, respectively. Over the latest 5-year period, the portfolio trailed its policy benchmark by (30) basis points.

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 outperformed over the shorter time periods, but lagged its benchmark across the longer time periods, due in large part to its more conservative holdings relative to its benchmark. The Fixed Income portfolio is currently being restructured to include Principal Protection and Global Credit components.

The Covered Calls portfolio produced its ninth full quarter of performance, besting its benchmark over the most recent quarter by 30 basis points while trailing its benchmark over the 1-year period by (60) basis points.

## Periods ending September 30, 2014

Asset Class	Quarter	1 Year	3 Year	5 Year
Total Retirement Policy Benchmark <sup>1</sup>	-0.5	10.7	13.2	9.7
	-0.6	<i>10.8</i>	<i>13.1</i>	10.0
Domestic Equity	0.2	17.8	23.8	15.8
Russell 3000 (blend) <sup>3</sup>	<i>0.0</i>	<i>17.8</i>	<i>23.1</i>	<i>15.8</i>
International Equity  MSCI ACWI ex U.S. IMI ND (blend) <sup>4</sup>	-4.7	5.7	11.9	5.9
	-5.5	<i>4.7</i>	<i>11.8</i>	<i>6.2</i>
Fixed Income	0.2	4.8	4.3	5.8
BC Universal	<i>0.0</i>	<i>4.4</i>	<i>3.2</i>	<i>4.7</i>
Covered Calls CBOE BXM	1.1 <i>0.8</i>	13.5 <i>14.1</i>		
Real Return <sup>2</sup>	2.3	3.0	3.4	5.7
CPI + 3% (blend) <sup>2,5</sup>	1.6	<i>5.1</i>	<i>3.8</i>	<i>3.5</i>
Private Equity <sup>2</sup>	6.9	23.3	14.7	18.2
Russell 3000 + 3% (PE blend) <sup>2,6</sup>	<i>5.6</i>	<i>28.9</i>	<i>19.9</i>	<i>20.3</i>
Real Estate <sup>2</sup>	4.5	16.0	15.7	13.0
NCREIF <sup>2</sup>	<i>2.9</i>	<i>11.2</i>	<i>11.3</i>	<i>9.7</i>
Cash Citigroup T-bills	0.0	0.1	0.2	0.3
	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>

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

<sup>&</sup>lt;sup>2</sup> Returns are lagged one quarter.

<sup>&</sup>lt;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>&</sup>lt;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>&</sup>lt;sup>5</sup> The policy benchmark for the Real Return asset class is T-bills + 3% thru 6/30/13, and CPI + 3% to present.

<sup>&</sup>lt;sup>6</sup> The policy benchmark for the PE asset class is a blended benchmark composed of Cambridge US PE Index and the Cambridge US Venture Capital Index thru 9/30/11, and Russell 3000 + 3% to present.

#### WPERP RETIREMENT PLAN MANAGER PERFORMANCE

# Domestic Equity - Periods ending September 30, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	1,078,094	Large Cap Core	0.7	19.0	23.3	16.0	8.8	8/2003
Russell 1000 Index			0.7	19.0	23.2	15.9	8.8	
MFS	554,539	Large Cap Value	0.1	16.7	23.4	14.8	9.2	2/2004
Russell 1000 Value Index			-0.2	18.9	23.9	15.3	7.5	
T. Rowe Price	567,781	Large Cap Value	0.4	19.1	24.9	16.0	9.2	9/2004
Russell 1000 Value Index			-0.2	18.9	23.9	15.3	7.8	
Fred Alger	603,872	Large Cap Growth	1.1	21.5	22.9	16.1	9.1	2/2004
Russell 1000 Growth Index			1.5	19.1	22.4	16.5	7.9	
T. Rowe Price	587,423	Large Cap Growth	0.9	17.9	25.6		15.7	4/2010
Russell 1000 Growth Index			1.5	19.1	22.4		15.4	
Earnest Partners	137,599	Small Cap Value	-4.5	8.7	22.7	15.8	7.9	11/2004
Russell 2000 Value Index			-8.6	4.1	20.6	13.0	6.3	
Frontier	133,633	Small Cap Growth	-6.5	3.3	20.6		12.5	4/2010
Russell 2000 Growth Index			-6.1	3.8	21.9		13.7	

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

## **Latest Quarter**

During the third quarter of 2014, four 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 0.7% quarterly return. MFS, one of the Plan's two active large cap value managers, generated a 0.1% quarterly return, besting the Russell 1000 Value Index return by 30 basis points. T. Rowe Price LCV, the Plan's other active large cap value manager, outperformed the Russell 1000 Value Index by 60 basis points, returning 0.4%. Fred Alger, one of the Plan's two active large cap growth managers, completed the quarter with a 1.1% return, lagging the Russell 1000 Growth Index by (40) basis points. T. Rowe Price LCG, the Plan's other active large cap growth manager, posted a quarterly return of 0.9% and lagged the Russell 1000 Growth Index by (60) basis points. Earnest Partners, WPERP's active small cap value manager, ended the quarter with a minus (4.5%) return, outperforming the Russell 2000 Value Index by 4.1%. Frontier, the Plan's active small cap growth manager, posted a quarterly return of minus (6.5%), underperforming the Russell 2000 Growth Index by (40) basis points.

#### Latest Year

During the latest 1-year period, **BlackRock** matched its benchmark with a 19.0% return. **MFS** posted a 16.7% return and trailed its benchmark by (2.2%). **T. Rowe Price LCV** generated a 19.1% return, besting its benchmark by 20 basis points. **Fred Alger** posted a 21.5% return, outperforming its benchmark by 2.4%. **T. Rowe Price LCG** posted a 17.9% return and underperformed the Russell 1000 Growth Index by (1.2%). **Earnest Partners** completed the latest 1-year period with an 8.7% return, outperforming its benchmark by 4.6%. **Frontier** posted a 3.3% return, lagging the Russell 2000 Growth Index by (50) basis points.

<sup>\*\*</sup> Inception date reflects the month when portfolio received initial funding.

## **Latest Three Years**

During the latest 3-year period, **BlackRock** performed in-line with its benchmark, producing a 23.3% return. **MFS** lagged its benchmark by (50) basis points with a return of 23.4% per annum during the period. **T. Rowe Price LCV** outperformed its benchmark by 1.0% with a 24.9% return. **Fred Alger** posted a 22.9% return, outperforming its benchmark by 50 basis points. **T. Rowe Price LCG** outperformed its benchmark by 3.2% with a return of 25.6%. **Earnest Partners**' latest 3-year return of 22.7% bested its benchmark by 2.1%. **Frontier** posted a 20.6% return, underperforming the Russell 2000 Growth Index by (1.3%).

## **Latest Five Years**

During the latest 5-year period, **BlackRock** performed in-line with its benchmark, producing a 16.0% return. **MFS** finished the period trailing the Russell 1000 Value Index return by (50) basis points with a 14.8% return. **T. Rowe Price LCV** outperformed its benchmark by 70 basis points with a 16.0% return. **Fred Alger** posted a 16.1% return, lagging its benchmark by (40) basis points. **Earnest Partners** generated a 15.8% return, outperforming its benchmark by 2.8%.

## International Equity - Periods ending September 30, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	544,030	Developed Markets	-6.0	5.0			13.3	9/2012
MSCI World ex US IMI ND Index			-6.1	4.7			12.9	
Invesco^	5	Developed Markets						6/2004
MFS	545,396	Developed Markets	-4.4	7.3			18.3	7/2012
MSCI World ex US IMI ND Index			-6.1	4.7			15.0	
The Boston Company^	3	Developed Markets						3/2005
Pyramis	537,945	Developed Markets	-5.5	3.9	14.5	8.2	6.7	11/2004
MSCI World ex US IMI ND Index (blend - Pyramis)³			-6.1	4.7	13.2	6.8	5.7	
L.A. Capital	225,462	Emerging Markets	-3.9	3.2			3.2	9/2012
MSCI EMF IMI ND Index			-3.2	4.9			3.1	
Vontobel	242,053	Emerging Markets	-0.8	10.2			2.3	12/2012
MSCI EMF IMI ND Index			-3.2	4.9			0.4	

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

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. Residual amounts still remain in old accounts.

#### **Latest Quarter**

During the third quarter of 2014, four of WPERP's five reporting international equity managers outperformed their respective benchmarks.

BlackRock, the Plan's passive developed international manager, performed in-line with the benchmark, generating a minus (6.0%) quarterly return. MFS, the Plan's active international relative value manager, outperformed its benchmark by 1.7% with a minus (4.4%) quarterly return. Pyramis, the Plan's active international growth manager, bested the MSCI World ex US IMI ND Index (blend) by 60 basis points with a minus (5.5%) return. L.A. Capital, one of the Plan's active emerging markets managers, trailed the MSCI Emerging Markets IMI ND Index by (70) basis points with a minus (3.9%) return. Vontobel, the Plan's other active emerging markets manager, surpassed the MSCI Emerging Markets IMI ND Index by 2.4% with a minus (0.8%) guarterly return.

#### **Latest Year**

During the latest 1-year period, BlackRock slightly outperformed its benchmark by 30 basis points with a return of 5.0%. MFS outperformed its benchmark by 2.6%, returning 7.3% for the period. Pyramis completed the period with a 3.9% return, trailing its benchmark by (80) basis points. L.A. Capital trailed its benchmark by (1.7%), generating a 3.2% return over the period. **Vontobel** bested its benchmark by 5.3% with a 10.2% return over the period.

<sup>\*\*</sup> Inception date reflects the month when portfolio received initial funding.

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

<sup>&</sup>lt;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 Three Years**

**Pyramis** bested its benchmark by 1.3%, returning 14.5% for the period.

# **Latest Five Years**

Pyramis returned 8.2%, outperforming its benchmark by 1.4%.

# Fixed Income - Periods ending September 30, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
JP Morgan	868,713	Core	0.5	4.3	3.3		4.7	4/2010
BC Aggregate Index			0.2	4.0	2.4		4.0	
Wells	892,995	Core	0.3	4.4	3.5	5.3	5.9	7/2004
BC Aggregate Index			0.2	4.0	2.4	4.1	4.8	
Loomis	101,736	High Yield	-1.6	10.8	13.5	12.6	9.7	3/2005
BC High Yield Index			-1.9	7.2	11.1	10.6	8.5	
Wells High Yield	97,895	High Yield	-1.0	7.9	9.6	9.3	7.6	11/2004
BC High Yield Index			-1.9	7.2	11.1	10.6	8.1	

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

The Fixed Income portfolio is currently being restructured to include Principal Protection and Global Credit components.

#### Latest Quarter

During the third quarter of 2014, all of WPERP's four reporting fixed income managers outperformed their respective benchmarks.

JP Morgan, one of the Plan's two core fixed income managers, outperformed the BC Aggregate Index by 30 basis points with a 0.5% quarterly return. Wells, the Plan's other core fixed income manager, marginally bested the BC Aggregate Index, generating a 0.3% quarterly return. Loomis Sayles, one of the Plan's two high yield managers, outperformed the BC High Yield Index by 30 basis points with a minus (1.6%) quarterly return. The Plan's other high yield manager, Wells High Yield, finished the augrter with a minus (1.0%) augrterly return, surpassing the BC High Yield Index by 90 basis points.

## **Latest Year**

JP Morgan finished the latest 1-year period with a 4.3% return, exceeding its benchmark by 30 basis points. Wells generated a 4.4% return and outperformed its benchmark by 40 basis points. Loomis Sayles generated a 10.8% return and outperformed its benchmark by 3.6%. Wells High Yield finished the period returning 7.9%, surpassing its benchmark by 60 basis points.

#### Latest Three Years

JP Morgan finished the latest 3-year period with a 3.3% return, outperforming the benchmark by 90 basis points. Wells finished the latest 3-year period posting a 3.5% return and outperformed its benchmark by 1.1%. Loomis Sayles generated a 13.5% return and outperformed its benchmark by 2.4%. Wells High Yield posted a 9.6% return, underperforming its benchmark by (1.5%).

#### **Latest Five Years**

Wells finished the latest 5-year period with a 5.3% return and outperformed its benchmark by 1.2%. Loomis Sayles completed the period with a 12.6% return, outperforming its benchmark by 2.0%. **Wells** High Yield posted a 9.3% return, underperforming its benchmark by (1.3%).

<sup>\*\*</sup> Inception date reflects the month when portfolio received initial funding.

# Covered Calls - Periods ending September 30, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Gateway (replication)	346,733	Covered Calls	0.8	13.9			10.1	5/2012
Gateway (non-replication)	348,794	Covered Calls	1.4	11.7			12.2	5/2012
CBOE BXM Index			0.8	14.1			10.2	

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

## **Latest Quarter**

During the third quarter of 2014, both of Gateway's portfolios performed within expectations. The replication portfolio matched the CBOE BXM Index return of 0.8%, while the active portfolio outperformed by 60 basis points.

## **Latest Year**

Over the latest 1-year period, Gateway's replication portfolio performed in-line with the benchmark, while the active portfolio underperformed by (2.4%). Underperformance over the period can be attributed to Gateway's more diversified options portfolio (multiple maturities and strike prices) versus the CBOE BXM Index's rules-based, concentrated options portfolio (singe maturity, single strike price).

<sup>\*\*</sup> Inception date reflects the month when portfolio received initial funding.

# Real Return - Periods ending September 30, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception**	Inception Date***
GAM* (gross of fees)	80,320	Hedge FOFs	0.6				0.8	11/2013
T-Bills + 3%*			0.8				1.8	
Morgan Stanley* (gross of fees)	81,144	Hedge FOFs	2.3				1.7	2/2014
T-Bills + 3%*			0.8				1.0	
WAMCO* (gross of fees)	269,227	GILS	3.0	4.8	4.0		4.3	4/2010
BC WGILB Index*,****			2.8	4.4	3.8		4.4	
Invesco*, (gross of fees)	102,229	Commodities	1.8				-3.2	8/2013
DJ-UBS Commodity Index*			0.1				3.3	
Hancock Timber*^ (net of fees)	2,476	Timber						4/2014

<sup>\*</sup> Returns are lagged one quarter.

The WPERP Board recently selected a Timber manager (Hancock), who produced a partial period of returns for this reporting period.

## **Latest Quarter**

**GAM** posted a 0.6% return for the quarter, underperforming the Tbills+3% by (20) basis points. **Morgan Stanley** produced a 2.3% return for the quarter, exceeding the Tbills+3% by 1.5%. **WAMCO**, the Plan's GILS (Global Inflation-Linked Securities) manager, posted a quarterly return of 3.0%, besting the BC WGILB Index by 20 basis points. **Invesco**, the Plan's commodities manager, outperformed its benchmark by 1.7% with a 1.8% quarterly return.

## **Latest Year**

Over the latest 1-year period, WAMCO generated a 4.8% return and outperformed its benchmark by 40 basis points.

#### **Latest Three Years**

**WAMCO** finished the latest 3-year period with a 4.0% return, surpassing its benchmark by 20 basis points.

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

<sup>\*\*\*</sup> Inception date reflects the month when portfolio received initial funding.

<sup>\*\*\*\*</sup> As of 1/1/2011, Barclays Capital World Govt Inflation-Linked All Maturities USA Hedged Bond Index (Series B); previously series L.

<sup>^</sup> Partial period.

# Private Equity and Real Estate - Periods ending September 30, 2014

Asset Class	Mkt Value (\$000)	Quarter	1 YR	3 YR	5 YR	Since Inception***	Inception Date***
Private Equity*	196,767	6.9	23.3	14.7	18.2	11.2	6/2006
Russell 3000 + 3% (PE blend)*,**		5.6	28.9	19.9	20.3	13.3	
Real Estate*	336.444	4.5	16.0	15.7	13.0	5.2	1/2007
NCREIF*		2.9	11.2	11.3	9.7	5.7	

<sup>\*</sup> Returns are lagged one quarter and net of fees.

The Private Equity portfolio consists of seventeen investments including Lexington VI, Lexington VII, Landmark XIV, Capital Dynamics (previously HRJ Capital), Fisher Lynch, Oaktree V, Energy Cap, Audax Mezz, Vista Equity IV, Ares IV, Energy Cap IX, Silver Lake IV, Landmark XV, Apollo VIII, CD&R IX, and Vista Equity V. The Private Equity portfolio outperformed the Russell 3000 + 3% (PE Blend) over the most recent quarter, but lagged over the longer time periods due in large part to strong performance within the public markets. This discrepancy warrants possible review of benchmark appropriateness.

The Real Estate portfolio currently consists of nineteen investments including Prisa, Prisa II, JP Morgan Strategic, CB Richard Ellis, Mesa West, Lone Star II, Lone Star VII, Invesco, DRA, AG Core, PCCP, Blackstone, ARS VI, Bristol II, DFA, Mesa West III, Torchlight Debt IV, Heitman, and Blackstone Europe. The portfolio outperformed the NCREIF Index across all trailing time periods.

<sup>\*\*</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.

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

<sup>\*\*\*\*</sup> Inception date reflects the month when portfolio received initial funding.

### WPERP RETIREMENT PLAN MANAGERS ON WATCH

### Return vs. Benchmark Since Watch

As of September 30, 2014

, w e. eepreee. e					Performance Since Begin Watch Status*					
Portfolio	Style Group	Concern	Begin Watch Status	Last Reviewed	First Month	First 3 Months	First 6 Months	First 9 Months	First 12 Months	Since Placed on Watch**
Frontier	Small Cap Growth	Performance	6/1/2012	11/13/2013	2.7	4.1	7.5	18.4	29.5	18.9
Russell 2000 Growth					5.2	7.0	7.6	19.3	30.9	19.7
Frontier vs. Target	Russell 2000 Growth				(2.5)	(2.9)	(0.1)	(0.9)	(1.4)	(0.8)
WAMCO^	Global Inflation-Linked	Performance	12/1/2013	10/28/2014	-1.4	0.7	3.8	6.2		5.3
BC WGILB					-1.5	0.6	3.8	3.8		4.7
WAMCO vs. Target	BC WGILB				0.1	0.1	0.0	2.4		0.6

<sup>\*</sup>Performance data provided by Mellon and LDZ.

Periods marked as '---' indicate that the manager in question has not been on watch status for these periods.

<sup>\*\*</sup>Annualized if longer than one-year.

<sup>^</sup>Performance for this manager is <u>not</u> lagged in this Managers On Watch report.

#### **Managers on Watch**

**Frontier** was placed on watch status beginning 6/1/2012 due to short-term performance. Watch status was extended at the 3/27/2013 Board meeting. WPERP will begin a formal RFP process to review the mandate in the near-term.

WAMCO was placed on watch status beginning 12/1/2013 due to long-term performance. Subsequent to quarter-end, watch status was extended for at least six months.

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

Fred Alger was placed on watch status beginning 6/1/2012 due to short-term performance. Watch status was extended at the 3/27/2013 Board meeting. Fred Alger was removed from watch status in November 2013.

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

Gateway was placed on watch status beginning 4/1/2013 due to organizational concerns. Gateway was removed from watch status in February 2014.

Pyramis was placed on watch status beginning 5/1/2013 due to organizational concerns. Pyramis was removed from watch status in April 2014.

### WPERP Retirement Plan Estimated Performance Results Net and Gross of Fees Comparison For Quarter Ending 9/30/2014

			Performa	nce, % <sup>2</sup>	Difference		
Asset Class	Manager	Market Value 2	Net	Gross	Percentage	Market Value	
Domestic Equity							
Large Core Passive	BlackRock	1,078,094,795	0.69%	0.70%	-0.01%	-107,809	
Large Value	MFS	554,538,818	0.02%	0.10%	-0.08%	-438,086	
Large Value	T. Rowe Price	567,781,277	0.31%	0.40%	-0.09%	-496,809	
Large Growth	Fred Alger	603,872,474	1.02%	1.10%	-0.08%	-498,19	
Large Growth	T. Rowe Price	587,422,938	0.81%	0.90%	-0.09%	-513,99	
Small Value	Earnest Partners	137,599,418	-4.66%	-4.50%	-0.16%	-220,15	
Small Growth	Frontier	133,633,084	-6.75%	-6.50%	-0.25%	-334,08	
omaii orowai	Trontion	\$3,662,942,804	0.7070	0.0070	0.2070	00 1,00	
International Equity		. , , ,					
Developed Passive	BlackRock	544,030,026	-6.01%	-6.00%	-0.01%	-54,40	
Developed Markets	MFS	545,396,386	-4.50%	-4.40%	-0.10%	-564,48	
Developed Markets	Pyramis	537,945,220	-5.59%	-5.50%	-0.08%	-457,25	
Emerging Markets	L.A. Capital	225,462,091	-4.09%	-3.90%	-0.19%	-422,74	
Emerging Markets	Vontobel	242,053,231	-1.03%	-0.80%	-0.23%	-544,62	
3 3 3 3	Interim / residual	8,913				- ,-	
		\$2,094,895,867					
Domestic Fixed Income							
Core	JP Morgan	868,713,391	0.48%	0.50%	-0.03%	-217,17	
Core	Wells	892,995,337	0.27%	0.30%	-0.03%	-267,89	
High Yield	Loomis Sayles	101,735,787	-1.73%	-1.60%	-0.13%	-127,17	
High Yield	Wells	97,894,790	-1.12%	-1.00%	-0.12%	-112,57	
		\$1,961,339,305					
Covered Calls							
Replication	Gateway	346,732,715	0.75%	0.80%	-0.05%	-173,36	
Non-replication	Gateway	348,793,541	1.30%	1.40%	-0.10%	-348,79	
		\$695,526,256					
Real Return	0.114	00.000.000	0.400/	0.000/	0.000/	100.01	
Hedge FoF	GAM	80,320,000	0.40%	0.60%	-0.20%	-160,64	
Hedge FoF	Morgan Stanley	81,143,558	2.10%	2.30%	-0.20%	-162,28	
GILS	WAMCO	269,226,956	2.95%	3.00%	-0.05%	-134,61	
Commodities	Invesco	102,229,139	1.75%	1.80%	-0.05%	-51,11	
Timber <sup>3</sup>	Hancock	2,476,456					
Private Equity <sup>3</sup>		\$535,396,109					
Frivate Equity	Aggregate*	196,767,399	6.90%	7.21%	-0.31%	-611,32	
	7.99.09a.0	\$196,767,399	0.0070	,	0.0.70	0,02	
Real Estate 3		<b>*</b> * * * * * * * * * * * * * * * * * *					
	Aggregate	336,444,224	4.50%	4.73%	-0.23%	-765,090	
		\$336,444,224					
Cash		\$66,884,183		0.00%			
TOTAL PORTFOLIO <sup>1</sup> Total Fund Policy		\$9,563,182,084	10.62% 	<b>10.70%</b> 10.80%	<b>-0.08%</b> 	<b>-\$7,784,69</b> 5	

<sup>&</sup>lt;sup>1</sup> Total portfolio market value includes a balance of \$13.0 million in transition accounts.

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

 $<sup>^{\</sup>rm 3}$  Timber, Private Equity, and Real Estate report net-of-fee returns.

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

#### WPERP DISABILITY PLAN REVIEW

The WPERP Disability Portfolio ended the third quarter of 2014 with an aggregate value of approximately \$34.8 million.

#### Portfolio Performance Overview

Periods ending September 30, 2014, Gross of Fees

Asset Class	Quarter	1 Year	3 Year	5 Year	Since Inception**	Inception Date***
Total Portfolio Policy Benchmark*	0.0 <i>0.2</i>	<b>4.3</b> <i>3.8</i>	3.6 2.3	5.3 3.9		
Wells BC Aggregate	0.0 <i>0.2</i>	<b>4.4</b> <i>4.0</i>	3.6 2.4	5.5 4.1	5.9 4.8	7/2004

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

**3Q 2014** – During the quarter, the Disability Plan posted a 0.0% return and underperformed its policy benchmark by (20) basis points. The benchmark portfolio consists of passively managed asset class portfolios held at the Disability Plan's policy weightings.

Longer Term – Over the latest 1-, 3-, and 5-year periods, the Disability Plan outperformed its policy benchmark by 0.5%, 1.3%, and 1.4%, respectively.

Portfolio Strategic Allocation (as of 9/30/14)

Segment		Actual \$(000)	Actual %	Target %	Variance
Total Portfolio		\$34,799	100	100	
Fixed Income	Wells	34,579 34,579	99 99	95 95	4
Cash		219	1	5	-4

**Strategic Allocation** – The Disability Plan target allocation consists of 95% fixed income investments and 5% cash. At the close of 3Q 2014, there was one fixed income manager, Wells. The total fund was 99% invested in this manager.

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

<sup>\*\*\*</sup> Inception date reflects the month when portfolio received initial funding.

#### WPERP DEATH PLAN REVIEW

The WPERP Death Portfolio ended the third quarter of 2014 with an aggregate value of approximately \$27.8 million.

#### Portfolio Performance Overview

Periods ending September 30, 2014, Gross of Fees

Asset Class	Quarter	1 Year	3 Year	5 Year	Since Inception**	Inception Date***
Total Portfolio Policy Benchmark*	0.0 <i>0.2</i>	<b>4.3</b> <i>3.8</i>	3.6 2.3	5.0 3.9		
Wells BC Aggregate	0.0 <i>0.2</i>	<b>4.4</b> <i>4.0</i>	3.7 2.4	5.5 4.1	5.9 4.8	7/2004

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

**3Q 2014** – During the quarter, the Death Plan posted a 0.0% return and underperformed its policy benchmark by (20) basis points. The benchmark portfolio consists of passively managed asset class portfolios held at the Death Plan's policy weightings.

Longer Term – Over the latest 1-, 3-, and 5-year periods, the Death Plan outperformed its policy benchmark by 0.5%, 1.3%, and 1.1%, respectively.

### Portfolio Strategic Allocation (as of 9/30/14)

Segment		Actual \$(000)	Actual %	Target %	Variance
Total Portfolio		\$27,804	100	100	
Fixed Income	Wells	26,585 26,585	96 96	96 96	 
Cash		1,218	4	4	

**Strategic Allocation** – The Death Benefit Plan target allocation consists of 96% fixed income investments and 4% cash. At the close of 3Q 2014, there was one fixed income manager, Wells. The total fund was 96% invested in this manager.

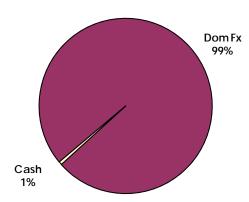
<sup>\*\*</sup> Performance is calculated based on the first full month of performance since funding.

<sup>\*\*\*</sup> Inception date reflects the month when portfolio received initial funding.

### Actual Strategic Allocation Comparison - Disability and Death Plans

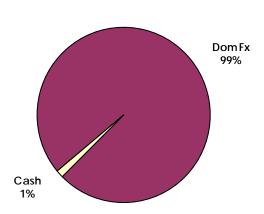
September 30, 2014

Disability

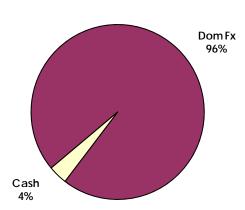


September 30, 2013

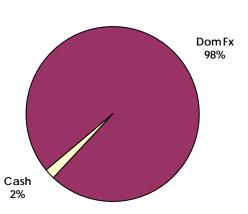
Disability



Death



Death



#### **HEALTH PLAN REVIEW**

The WPERP Health Plan ended the third quarter of 2014 with an aggregate value of approximately \$1.6 billion.

#### Portfolio Performance Overview

Periods ending September 30, 2014, Gross of Fees

Asset Class	Quarter	1 Year	3 Year	5 Year	Since Inception*	Inception Date**
Total Health Policy Benchmark <sup>1</sup>	-0.5 -0.6	10.8 <i>10.8</i>	13.0 <i>13.0</i>	9.8 <i>9.9</i>	6.0 5.6	12/2006
Domestic Equity Russell 3000 (blend) <sup>2</sup>	0.2 <i>0.0</i>	17.9 <i>17.8</i>	23.7 <i>23.1</i>	16.0 <i>15.8</i>	6.8 <i>6.8</i>	1/2007
International Equity  MSCI ACWI ex U.S. IMI ND	-4.6 -5.5	5.7 <i>4.7</i>	11.3 <i>11.8</i>	5.6 <i>6.2</i>	5.6 <i>6.2</i>	9/2009
Fixed Income BC Universal (blend) <sup>3</sup>	0.1 <i>0.0</i>	4.5 <i>4.4</i>	3.9 <i>3.2</i>	5.4 <i>4.7</i>	6.4 5.3	1/2007
Covered Calls CBOE BXM	1.1 <i>0.8</i>	13.6 <i>14.1</i>			10.5 <i>10.2</i>	5/2012
Real Return <sup>4</sup> CPI + 3% (blend) <sup>4,5</sup>	2.3 1.6	3.2 <i>5.1</i>	3.6 <i>3.8</i>		4.7 <i>3.7</i>	7/2010
Private Equity <sup>4</sup> Russell 3000 + 3% (PE blend) <sup>4,6</sup>	9.0 <i>5.6</i>	25.2 <i>28.9</i>	17.0 <i>19.9</i>	21.5 <i>20.3</i>	22.0 <i>14.2</i>	9/2008
Real Estate <sup>4</sup> NCREIF <sup>4</sup>	5.8 <i>2.9</i>	32.3 <i>11.2</i>	22.7 11.3		16.0 <i>12.2</i>	1/2010
Cash Citigroup T-bills	0.1 <i>0.0</i>	0.1 <i>0.0</i>	0.1 <i>0.1</i>	0.2 <i>0.1</i>	1.1 <i>0.9</i>	12/2006

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

The Health Plan Total Portfolio marginally outperformed its policy benchmark over the most recent quarter by 10 basis points. Over the latest 1- and 3-year periods, the Health Plan Total Portfolio matched its policy benchmark with returns of 10.8% and 13.0%, respectively. Over the trailing 5-year period, the Health Plan Total Portfolio underperformed its policy benchmark by (10) basis points, generating a 9.8% return.

<sup>\*\*</sup> Inception date reflects the month when portfolio received initial funding.

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

<sup>&</sup>lt;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>&</sup>lt;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>&</sup>lt;sup>4</sup> Returns are lagged one quarter.

<sup>&</sup>lt;sup>5</sup> The policy benchmark for the Real Return asset class is T-bills + 3% thru 6/30/13, and CPI + 3% to present.

<sup>&</sup>lt;sup>6</sup> The policy benchmark PE is a blended benchmark composed of Cambridge US PE Index and the Cambridge US Venture Capital Index thru 9/30/11, and Russell 3000 + 3% to present.

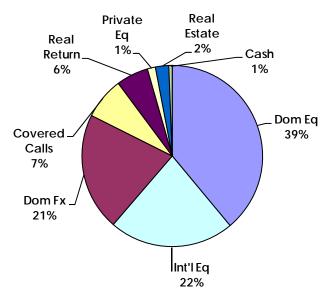
### Portfolio Strategic Allocation (as of 9/30/14)

Segment	Actual (\$MM)	Actual %	Target %	Variance
Health Plan*	1,602	100	100	
Domestic Equity	622	39	33	6
International Equity	358	22	21	1
Fixed Income	336	21	24	-3
Covered Calls	119	7	5	2
Real Return	92	6	6	
Private Equity	23	1	5	-4
Real Estate	38	2	5	-3
Cash	10	1	1	

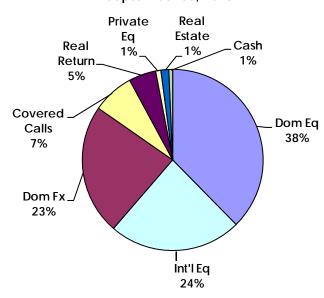
<sup>\*</sup> Includes a balance of \$4.4 million in transition assets.

As of September 30, 2014, the Total Health Plan had a 61% allocation in Equities, 21% in Fixed Income, 7% in Covered Calls, 6% in Real Return, 1% in Private Equity, 2% in Real Estate, and 1% in Cash. During the latest 1-year period, the actual weightings of International Equity and Fixed Income decreased by (2%) each, while the actual weightings of Domestic Equity, Real Return, and Real Estate increased by 1% each. The Covered Calls, Private Equity, and Cash allocations remained unchanged.





### September 30, 2013



#### PERFORMANCE ATTRIBUTION – HEALTH PLAN

#### Performance Attribution - 3Q 2014

	Polic	Policy Portfolio Impact on Return			n Return			
	Allocation	Return	Allocation*	Return	Weighting	Selection	Interaction	Total
Domestic Equity	33.0%	0.0	38.7%	0.2	0.0	0.1	0.0	0.1
International Equity	21.0%	(5.5)	23.4%	(4.6)	(0.1)	0.2	0.0	0.1
Fixed Income	24.0%	0.0	21.1%	0.1	(0.0)	0.0	(0.0)	0.0
Covered Calls	5.0%	0.8	7.3%	1.1	0.0	0.0	0.0	0.1
Real Return	6.0%	1.6	5.6%	2.3	(0.0)	0.0	(0.0)	0.0
Private Equity	5.0%	5.6	1.2%	9.0	(0.2)	0.2	(0.1)	(0.2)
Real Estate	5.0%	2.9	2.1%	5.8	(0.1)	0.1	(0.1)	(0.0)
Cash	1.0%	0.0	0.7%	0.1	(0.0)	0.0	(0.0)	(0.0)
Total	100.0%	(0.6)	100.0%	(0.5)	(0.4)	0.7	(0.2)	0.1

<sup>\*</sup>Portfolio allocation utilizes beginning-of-the period market values.

### Performance Attribution - Trailing 12-month

	Polic	У	Portfo	Portfolio		Impact on Return				
	Allocation*	Return	Allocation*	Return	Weighting	Selection	Interaction	Total		
Domestic Equity	33.0%	17.8	38.7%	17.9	0.3	0.0	0.0	0.3		
International Equity	21.0%	4.7	23.0%	5.7	(0.1)	0.2	0.0	0.2		
Fixed Income	24.0%	4.4	21.3%	4.5	0.0	(0.0)	0.0	0.0		
Covered Calls	5.0%	14.1	7.4%	13.6	0.1	(0.0)	(0.0)	0.1		
Real Return	6.0%	5.1	5.7%	3.2	0.0	(0.1)	0.0	(0.0)		
Private Equity	5.0%	28.9	1.2%	25.2	(0.7)	(0.4)	0.3	(8.0)		
Real Estate	5.0%	11.2	2.0%	32.3	(0.0)	1.0	(0.7)	0.3		
Cash	1.0%	0.0	0.7%	0.1	0.0	0.0	(0.0)	0.0		
Total	100.0%	10.8	100.0%	10.8	(0.3)	0.8	(0.3)	0.1		

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

- During the most recent quarter, the Total Health Portfolio marginally outperformed its policy benchmark by 10 basis points. Selection throughout most of the portfolio marginally aided relative performance, while weighting throughout most of the portfolio marginally detracted.
- During the trailing 12-month period, the Total Health Portfolio matched its policy benchmark. An overweight to Domestic Equity, along with selection within International Equity and Real Estate, contributed to the relative performance. The Private Equity class was the primary detractor from the relative performance. The relative underperformance over the period by the Private Equity class is a result of very strong public equity market returns (i.e., the current Private Equity benchmark). The underweight of the Private Equity class is due to the deliberate phased-in funding of the class.

### WPERP HEALTH PLAN MANAGER PERFORMANCE

### Domestic Equity - Periods ending September 30, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	182,885	Large Cap Core	0.7	19.1	23.3	16.0	6.8	1/2007
Russell 1000 Index			0.7	19.0	23.2	15.9	6.7	
MFS	94,914	Large Cap Value	0.1	16.7	23.4	14.7	14.7	9/2009
Russell 1000 Value Index			-0.2	18.9	23.9	15.3	15.3	
T. Rowe Price	97,170	Large Cap Value	0.4	19.3	24.9	16.0	16.0	9/2009
Russell 1000 Value Index			-0.2	18.9	23.9	15.3	15.3	
Fred Alger	103,477	Large Cap Growth	1.1	21.5	23.0	16.1	16.1	9/2009
Russell 1000 Growth Index			1.5	19.1	22.4	16.5	16.5	
T. Rowe Price	97,598	Large Cap Growth	0.9	17.9	25.5		15.7	4/2010
Russell 1000 Growth Index			1.5	19.1	22.4		15.4	
Earnest Partners	23,438	Small Cap Value	-4.5	8.7	22.1	15.4	15.4	9/2009
Russell 2000 Value Index			-8.6	4.1	20.6	13.0	13.0	
Frontier	22,765	Small Cap Growth	-6.5	3.3	20.6		12.4	4/2010
Russell 2000 Growth Index			-6.1	3.8	21.9		13.7	

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

<sup>\*\*</sup> Inception date reflects the month when portfolio received initial funding.

### International Equity - Periods ending September 30, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
BlackRock	92,541	Developed Markets	-6.0	5.0			13.4	9/2012
MSCI World ex US IMI ND Index			-6.1	4.7			12.9	
Invesco^	2	Developed Markets						9/2009
MFS	93,622	Developed Markets	-4.4	7.3			18.3	7/2012
MSCI World ex US IMI ND Index			-6.1	4.7			15.0	
Pyramis	91,646	Developed Markets	-5.3	4.0	14.4	8.2	8.2	9/2009
MSCI World ex US IMI ND Index			-6.1	4.7	13.2	6.8	6.8	
L.A. Capital	38,572	Emerging Markets	-3.9	3.2			3.2	9/2012
MSCI EMF IMI ND Index			-3.2	4.9			3.1	
Vontobel	41,418	Emerging Markets	-0.8	10.2			2.3	12/2012
MSCI EMF IMI ND Index			-3.2	4.9			0.4	

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

### Fixed Income - Periods ending September 30, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
JP Morgan	149,035	Core	0.0	3.7	3.0		4.4	4/2010
BC Aggregate Index			0.2	4.0	2.4		4.0	
Wells	153,288	Core	0.5	4.6	3.5	5.3	6.4	1/2007
BC Aggregate Index			0.2	4.0	2.4	4.1	5.0	
Wells High Yield	33,897	High Yield	-0.9	8.1	9.8	9.0	9.0	9/2009
BC High Yield Index			-1.9	7.2	11.1	10.6	10.6	

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

<sup>\*\*</sup> Inception date reflects the month when portfolio received initial funding.

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

<sup>\*\*</sup> Inception date reflects the month when portfolio received initial funding.

### Covered Calls - Periods ending September 30, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Gateway (replication)	59,139	Covered Calls	0.8	13.9			10.1	5/2012
Gateway (non-replication)	59,516	Covered Calls	1.4	11.7			12.2	5/2012
CBOE BXM Index			0.8	14.1			10.2	

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

### Real Return - Periods ending September 30, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception**	Inception Date***
GAM* (gross of fees)	13,052	Hedge FOFs	0.6				0.8	11/2013
T-Bills + 3%*			0.8				1.8	
Morgan Stanley* (gross of fees)	13,186	Hedge FOFs	2.3				2.5	2/2014
T-Bills + 3%*			0.8				1.0	
WAMCO* (gross of fees)	47,258	GILS	3.0	4.9	4.0		4.2	4/2010
BC WGILB Index****			2.8	4.4	3.8		4.4	
Invesco* (gross of fees)	17,868	Commodities	1.6				-3.3	8/2013
DJ-UBS Commodity Index*			0.1				3.3	
Hancock Timber*^ (net of fees)	619	Timber						4/2014

<sup>\*</sup> Returns are lagged one quarter.

<sup>\*\*</sup> Inception date reflects the month when portfolio received initial funding.

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

<sup>\*\*\*</sup> Inception date reflects the month when portfolio received initial funding.

<sup>\*\*\*\*</sup> As of 1/1/2011, Barclays Capital World Govt Inflation-Linked All Maturities USA Hedged Bond Index (Series B); previously series L.

<sup>^</sup> Partial period.

### Private Equity and Real Estate - Periods ending September 30, 2014

Asset Class	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Private Equity***	22,960	Private Equity	9.0	25.2	17.0	21.5	22.0	9/2008
R3000 + 3% (PE blend)***,***			5.6	28.9	19.9	20.3	14.2	
Real Estate***	38,172	Real Estate	5.8	32.3	22.7		16.0	1/2010
NCREIF***			2.9	11.2	11.3		12.2	

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

<sup>\*\*</sup> Inception date reflects the month when portfolio received initial funding.

<sup>\*\*\*</sup> Returns are lagged one quarter and net of fees.

<sup>\*\*\*\*</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.

#### Water and Power Employees' Retirement Plan **TOTAL FUNDS - PUBLIC (USD) - Monthly** As of September 30, 2014 **Cumulative Performance Comparisons** 20.00 15.00 10.00 Ann Return 5.00 0.00 Min/Max -5.00 Qtr ending Sep 14 1 Year 3 Years 5 Years Value %Tile Rank Value %Tile Rank Value %Tile Rank Value %Tile Rank Maximum 1.23 15.52 19.27 12.56 25th Percentile -0.46 11.09 14.18 10.91 **Median Percentile** -1.06 10.17 12.93 10.37 75th Percentile -1.53 9.00 11.54 9.47 Minimum -3.27 -0.02 0.00 1.11 # of Portfolios 100 98 88 82 26 32 26 33 Total Fund -0.48 10.72 37 36 13.19 44 39 9.72 71 59 33 40 57 ■ Policy Benchmark -0.58 10.85 13.14 45 9.96 Universe Source: The Bank of New York Mellon Corporation; Universe Status: Final

#### Notes:

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 September 30, 2014 **Cumulative Performance Comparisons** 30.00 25.00 20.00 15.00 Ann Return 10.00 5.00 0.00 Min/Max -5.00 Qtr ending Sep 14 1 Year 3 Years 5 Years %Tile %Tile Value Rank Value %Tile Rank Value %Tile Rank Value Rank Maximum 7.00 21.25 27.64 21.79 -0.03 17.44 23.29 16.11 25th Percentile **Median Percentile** -0.70 16.13 22.80 15.73 75th Percentile -1.18 15.12 21.74 14.96 13.22 Minimum -3.67 1.12 2.03 # of Portfolios 82 76 71 63 Domestic Equity 0.16 19 16 17.81 17 13 23.76 10 7 15.78 47 30 Russell 3000 (blend) 0.02 23 19 17.77 17 13 23.09 33 24 47 30 15.78

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

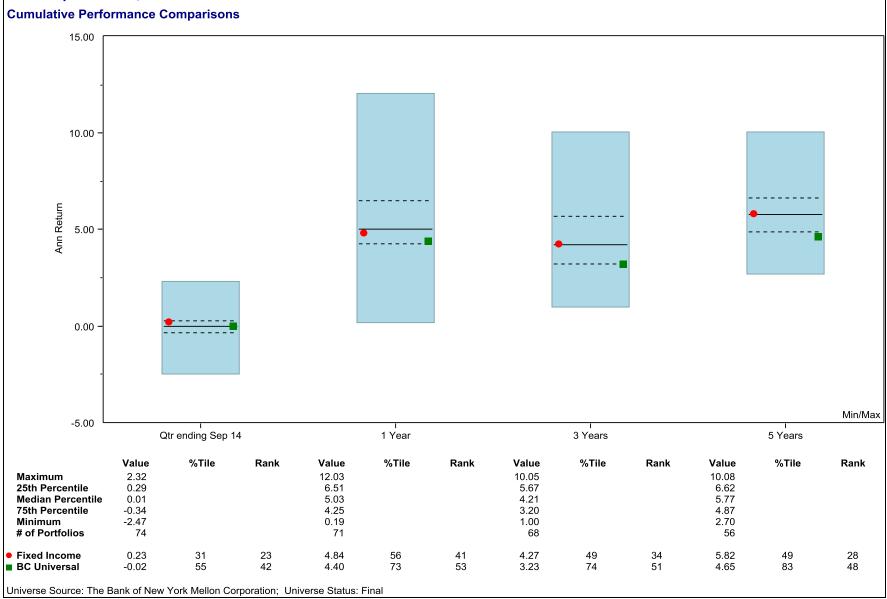


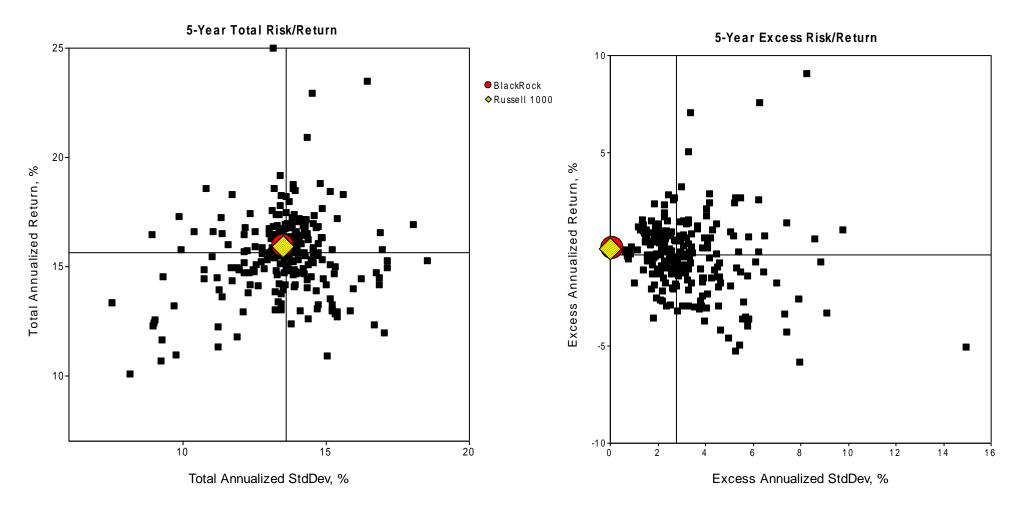
#### Water and Power Employees' Retirement Plan Non-US Equity Segment - Public (USD) - Monthly As of September 30, 2014 **Cumulative Performance Comparisons** 30.00 25.00 20.00 15.00 Ann Return 10.00 5.00 0.00 -5.00 Min/Max -10.00 Qtr ending Sep 14 1 Year 3 Years 5 Years %Tile %Tile %Tile %Tile Value Rank Value Rank Value Rank Value Rank Maximum -1.64 21.74 29.96 14.21 25th Percentile -4.57 6.53 14.74 8.30 5.50 7.57 **Median Percentile** -5.08 13.59 75th Percentile -5.45 4.69 12.47 6.86 -3.88 1.08 Minimum -7.24 -1.09 55 # of Portfolios 78 72 62 International Equity -4.67 28 22 5.65 43 32 11.95 88 56 5.92 89 50 MSCI ACWI ex US IMI (blend) 77 61 4.74 72 53 89 56 6.23 87 49 -5.46 11.76

### Water and Power Employees' Retirement Plan

**US Fixed Income Segment - Public (USD) - Monthly** 

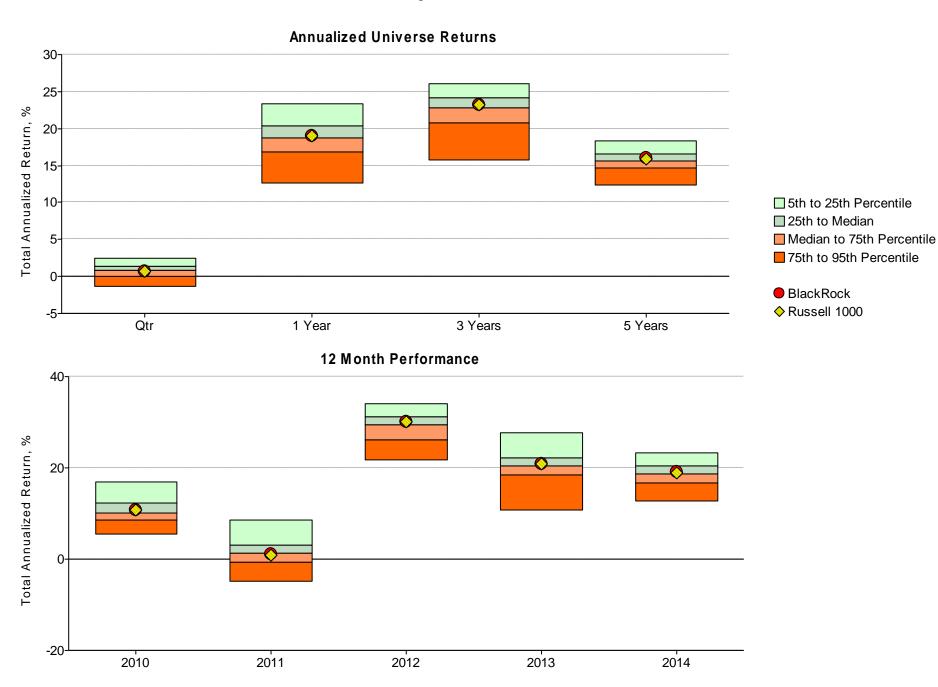
As of September 30, 2014

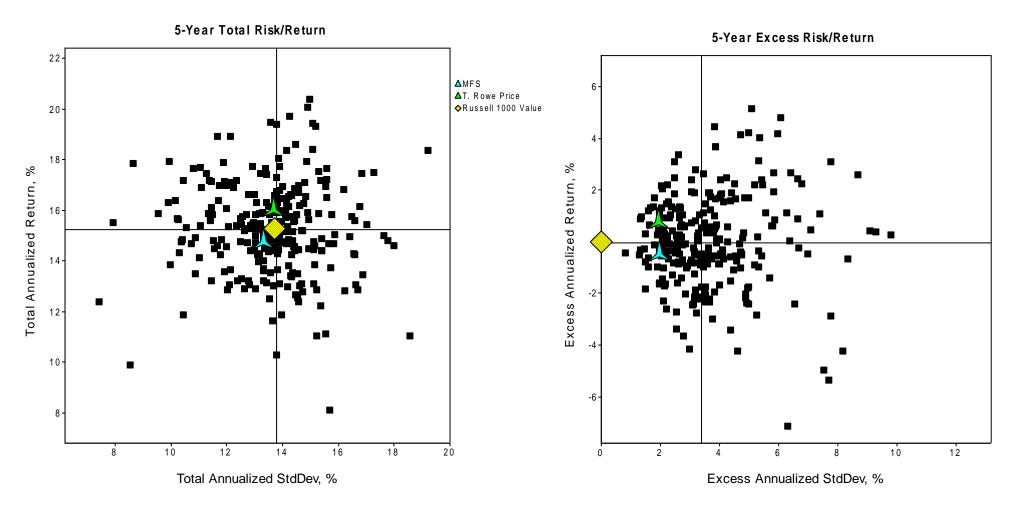




	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
BlackRock	15.96	13.49	1.18
Russell 1000	15.90	13.49	1.18
Large Cap Manager Universe Median	15.63	13.60	1.17

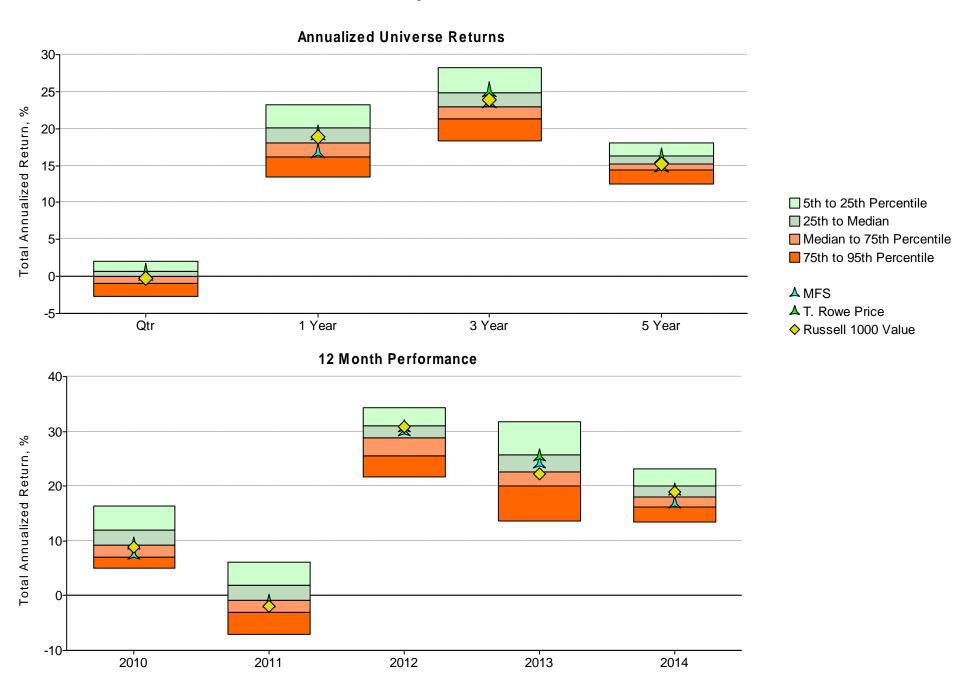
	Annualized	Annualized	Sharpe
	Excess	Excess	Ratio,
	Return, %	StDev, %	Excess
BlackRock	0.06	0.07	0.93
Russell 1000	0.00	0.00	NA
Large Cap Manager Universe Median	-0.27	2.77	-0.15

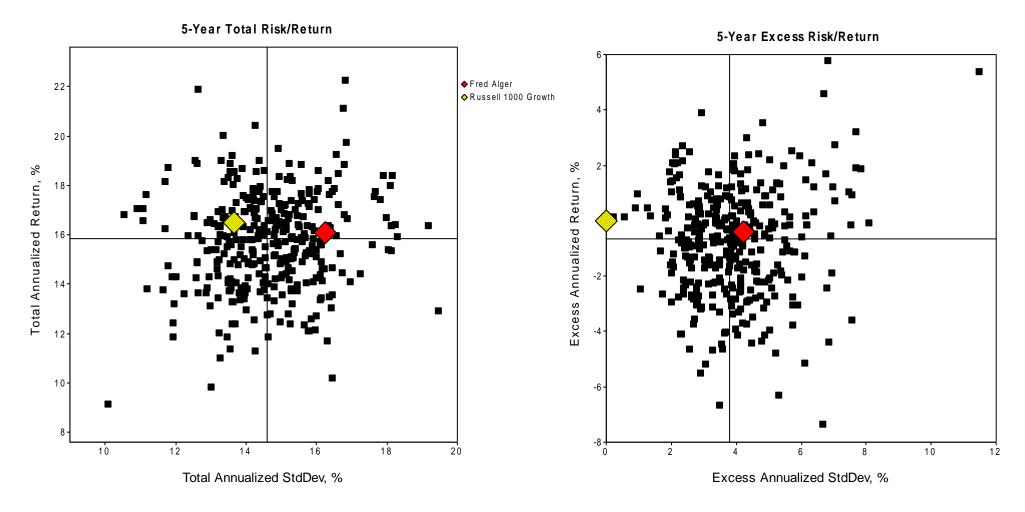




		Annualized	Sharpe
	Return, %	StdDev, %	Ratio
MFS	14.77	13.32	1.11
T. Rowe Price	16.03	13.66	1.17
Russell 1000 Value	15.26	13.71	1.11
Large Value Manager Universe Median	15.22	13.78	1.12

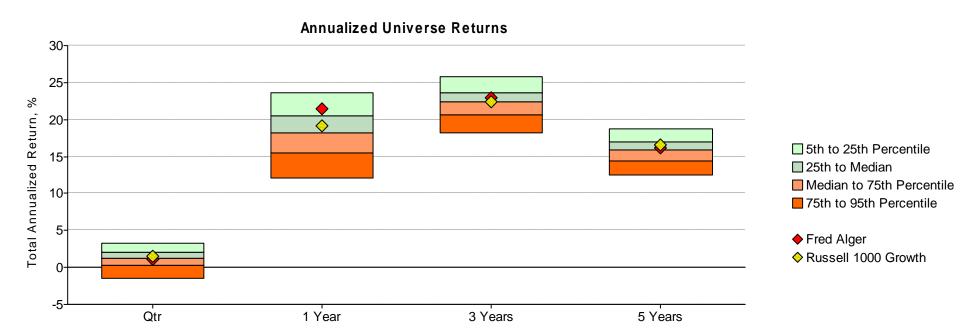
	Annualized	Annualized	Sharpe
	Excess	Excess	Ratio,
	Return, %	StDev, %	Excess
MFS	-0.48	1.98	-0.24
T. Rowe Price	0.77	1.94	0.40
Russell 1000 Value	0.00	0.00	NA
Large Value Manager Universe Median	-0.04	3.38	-0.02

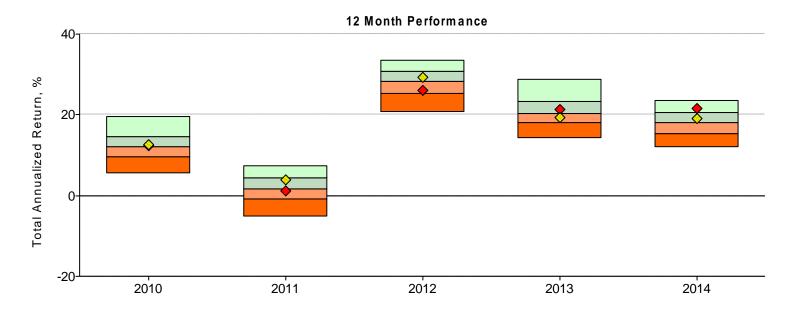


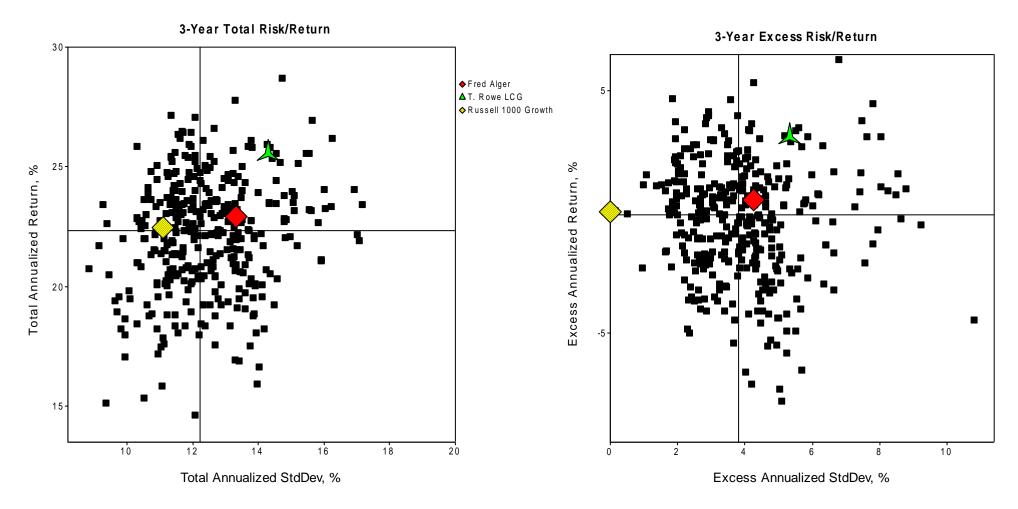


	Annualized	Annualized	Sharpe
	Return, %	StdDev, %	Ratio
Fred Alger	16.10	16.26	0.99
Russell 1000 Growth	16.50	13.66	1.21
Large Growth Manager Universe Median	15.85	14.61	1.08

	Annualized	Annualized	Sharpe
	Excess	Excess	Ratio,
	Return, %	StDev, %	Excess
Fred Alger	-0.40	4.23	-0.10
Russell 1000 Growth	0.00	0.00	NA
Large Growth Manager Universe Median	-0.65	3.81	-0.19

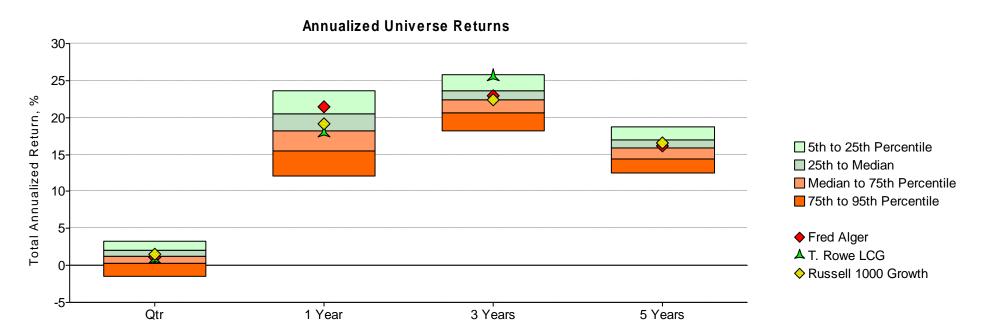


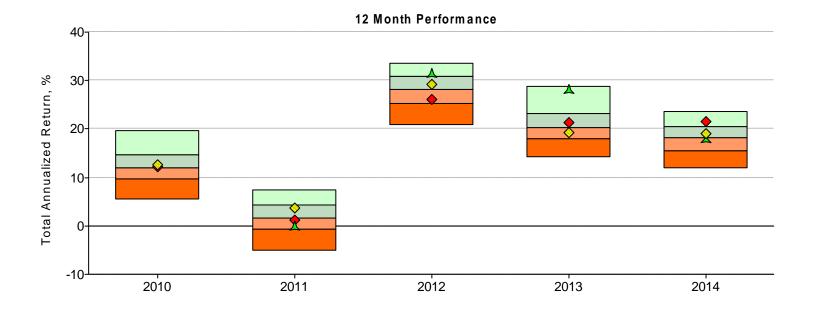




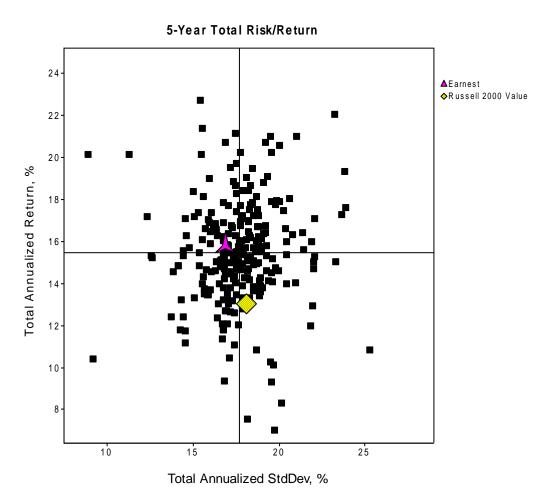
	Annualized	Annualized	Sharpe
	Return, %	StdDev, %	Ratio
Fred Alger	22.93	13.31	1.72
T. Rowe LCG	25.57	14.30	1.79
Russell 1000 Growth	22.45	11.09	2.02
Large Growth Manager Universe Median	22.34	12.23	1.80

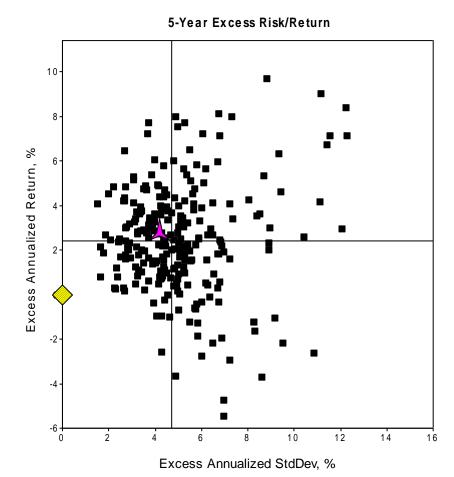
	Annualized	Annualized	Sharpe
	Excess	Excess	Ratio,
	Return, %	StDev, %	Excess
Fred Alger	0.49	4.27	0.11
T. Rowe LCG	3.12	5.32	0.59
Russell 1000 Growth	0.00	0.00	NA
Large Growth Manager Universe Median	-0.11	3.81	-0.05





## WPERP Small Cap Value Manager Comparisons as of September 30, 2014

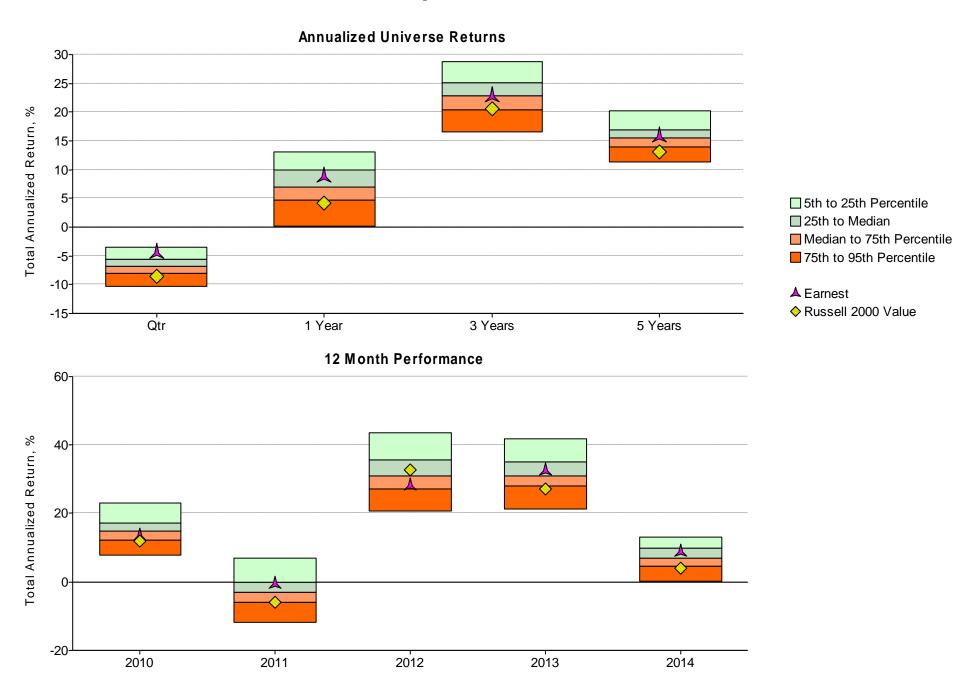


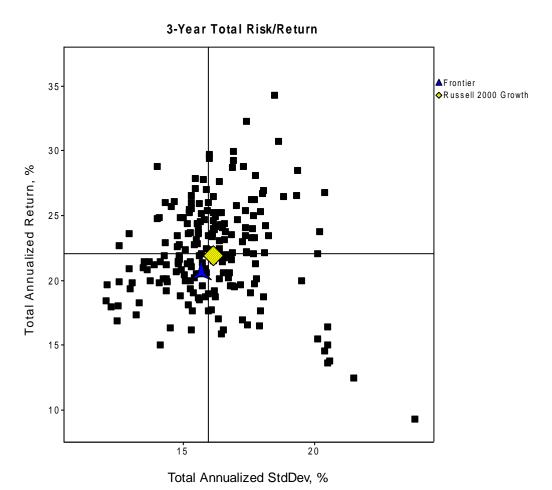


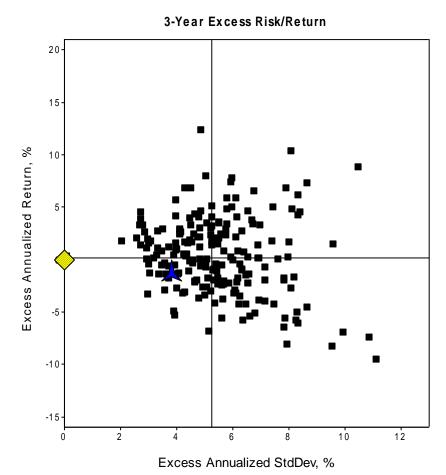
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Earnest	15.78	16.89	0.93
Russell 2000 Value	13.02	18.10	0.72
Small Cap Value Universe Median	15.45	17.67	0.87

	Annualized	Annualized	Sharpe
	Excess	Excess	Ratio,
	Return, %	StDev, %	Excess
Earnest	2.76	4.18	0.66
Russell 2000 Value	0.00	0.00	NA
Small Cap Value Universe Median	2.43	4.73	0.53

## WPERP Small Cap Value Manager Comparisons as of September 30, 2014

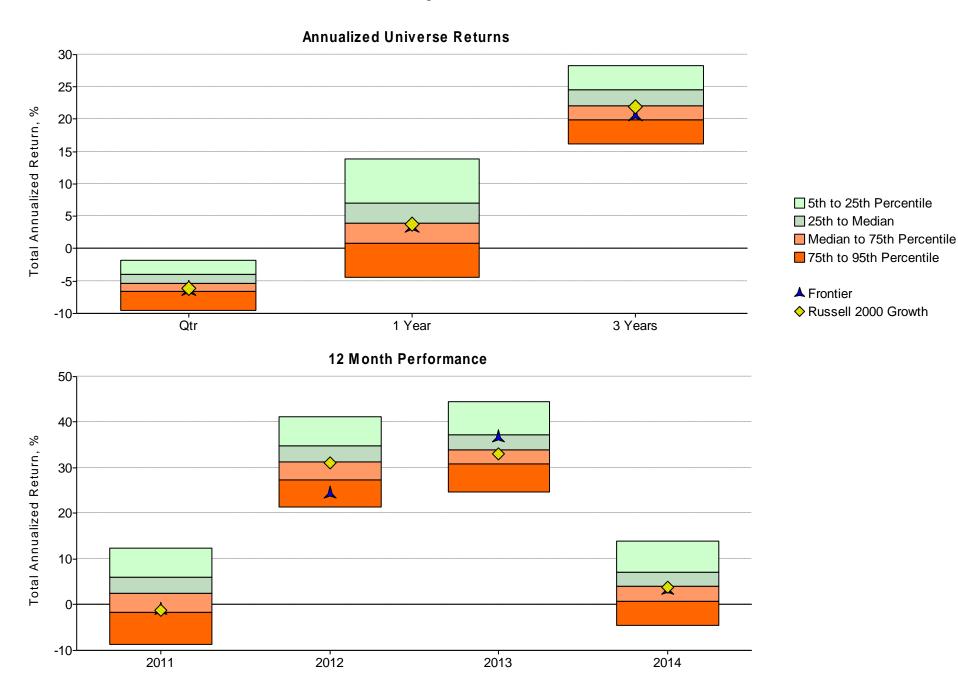


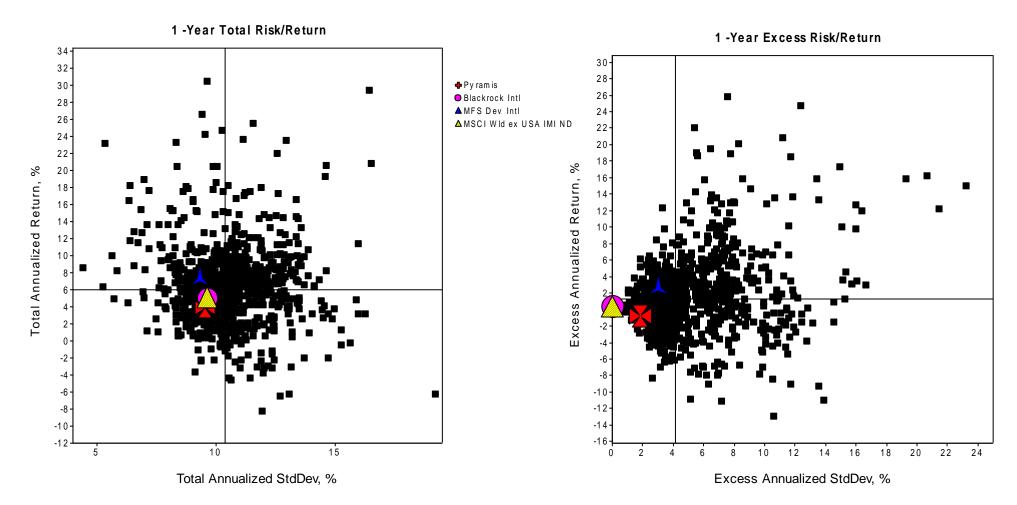




	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Frontier	20.57	15.69	1.31
Russell 2000 Growth	21.91	16.14	1.36
Small Cap Growth Universe Median	22.05	15.98	1.41

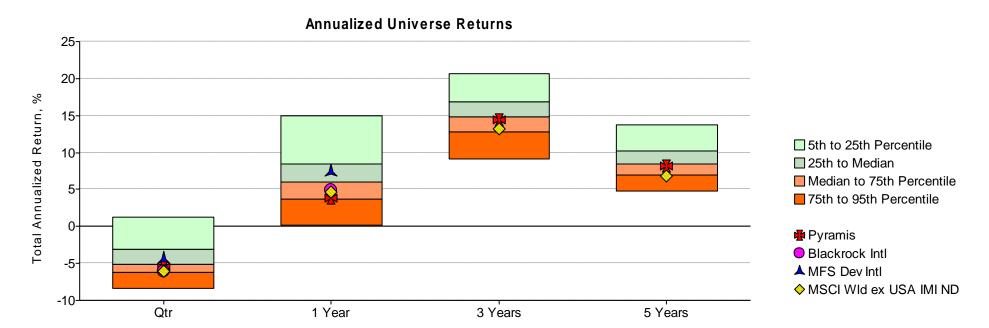
	Annualized Excess	Annualized Excess	Sharpe Ratio,
	Return, %	StDev, %	Excess
Frontier	-1.34	3.82	-0.35
Russell 2000 Growth	0.00	0.00	NA
Small Cap Growth Universe Median	0.15	5.26	0.03

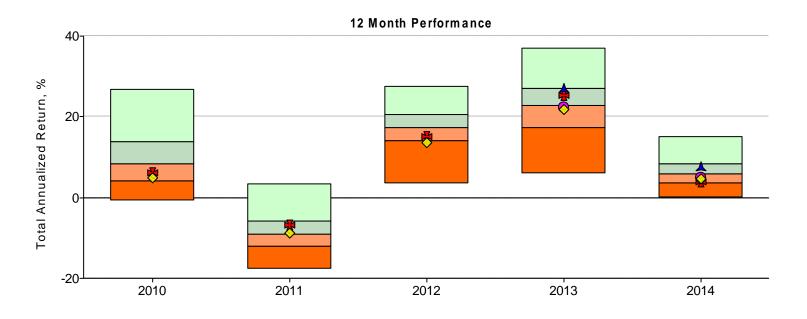


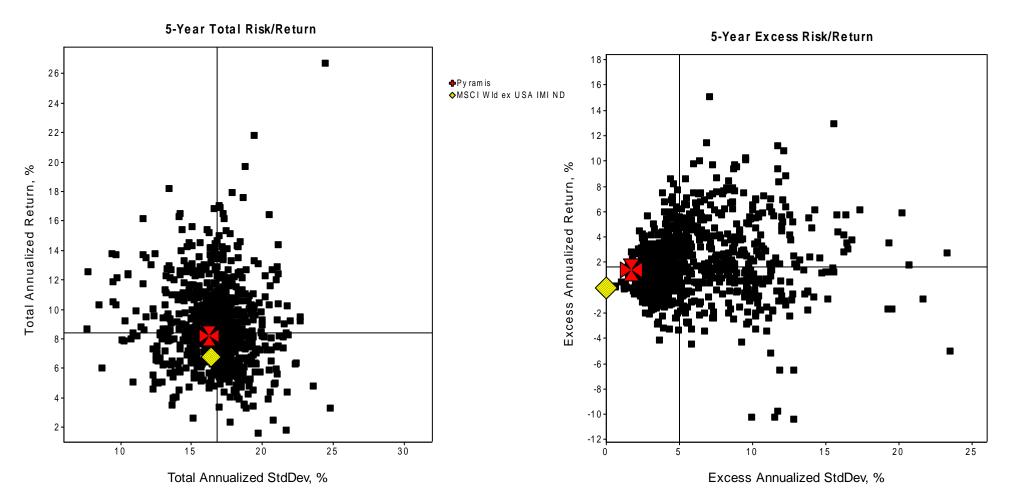


	Annualized	Annualized	Sharpe
	Return, %	StdDev, %	Ratio
Pyramis	3.85	9.55	0.40
Blackrock Intl	4.97	9.65	0.52
MFS Dev Intl	7.30	9.33	0.78
MSCI WId ex USA IMI ND	4.67	9.63	0.48
International Equity Universe Median	6.01	10.40	0.57

	Annualized	Annualized	Sharpe
	Excess	Excess	Ratio,
	Return, %	StDev, %	Excess
Pyramis	-0.82	1.84	-0.44
Blackrock Intl	0.30	0.09	3.35
MFS Dev Intl	2.63	3.01	0.87
MSCI WId ex USA IMI ND	0.00	0.00	NA
International Equity Universe Median	1.33	4.16	0.31

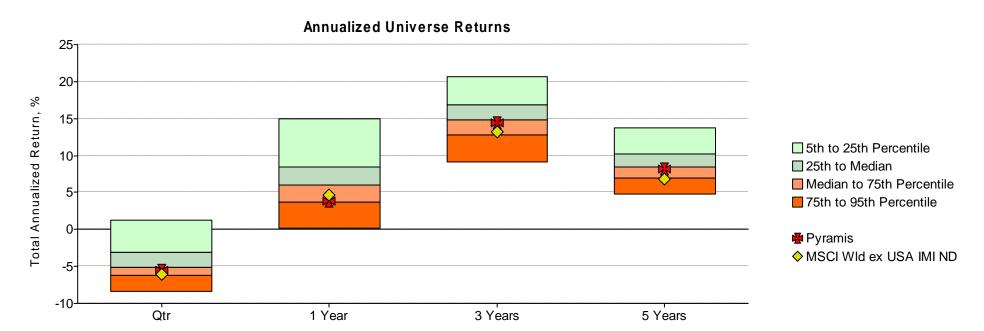


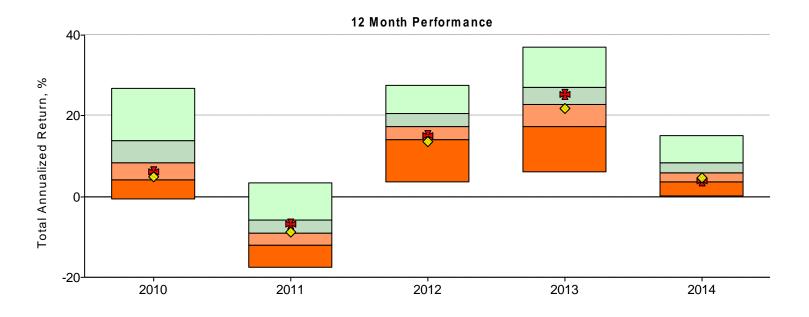




	Annualized	Annualized	Sharpe
	Return, %	StdDev, %	Ratio
Pyramis	8.20	16.28	0.50
MSCI WId ex USA IMI ND	6.78	16.37	0.41
International Equity Universe Median	8.41	16.82	0.51

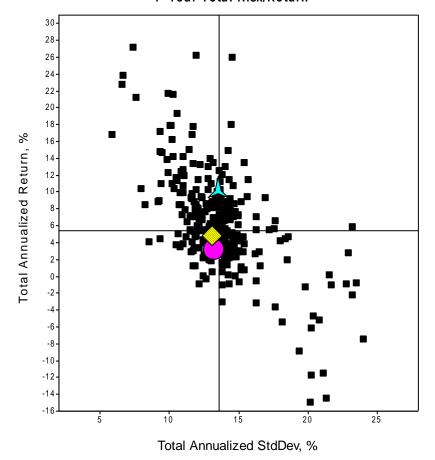
	Annualized	Annualized	Sharpe
	Excess	Excess	Ratio,
	Return, %	StDev, %	Excess
Pyramis	1.42	1.69	0.84
MSCI Wid ex USA IMI ND	0.00	0.00	NA
International Equity Universe Median	1.63	4.96	0.30



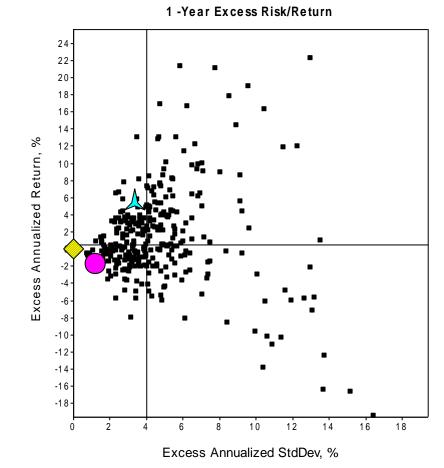


### WPERP Emerging Market Equity Manager Comparisons as of September 30, 2014





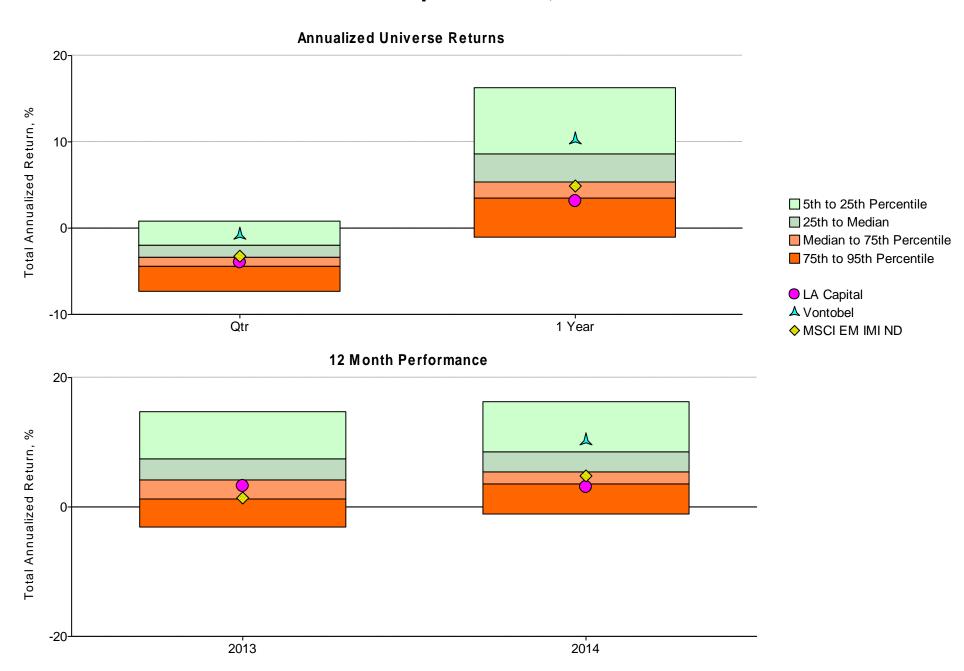




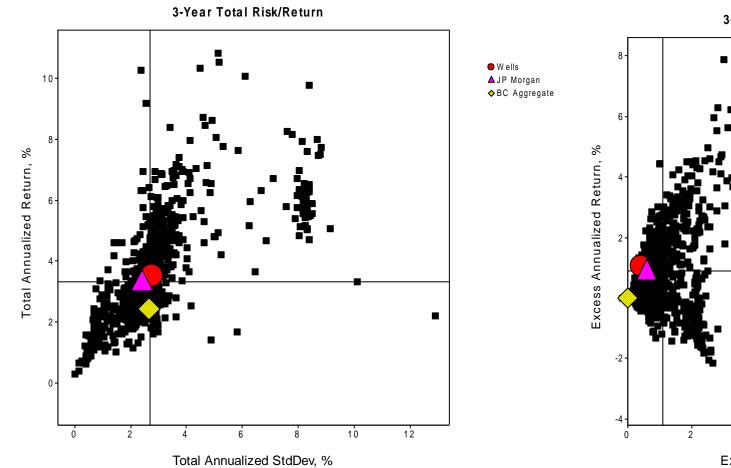
Annualized Annualized Sharpe Return, % StdDev, % Ratio LA Capital 3.18 13.25 0.24 Vontobel 10.21 0.76 13.49 MSCI EM IMI ND 4.87 13.06 0.37 Emerging Equity Universe Median 5.37 13.57 0.41

	Annualized Excess	Annualized Excess	Sharpe Ratio,
	Return, %	StDev, %	Excess
LA Capital	-1.69	1.18	-1.44
Vontobel	5.34	3.36	1.59
MSCI EM IMI ND	0.00	0.00	NA
Emerging Equity Universe Median	0.50	4.00	0.12

## WPERP Emerging Market Equity Manager Comparisons as of September 30, 2014



## WPERP Fixed Income Manager Comparisons as of September 30, 2014

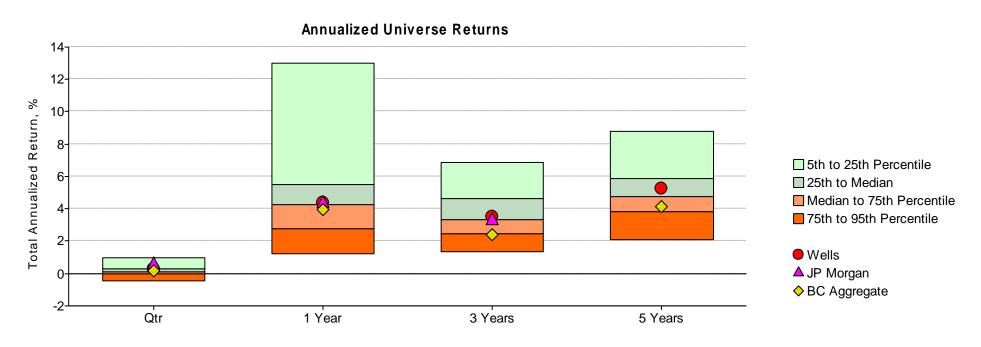


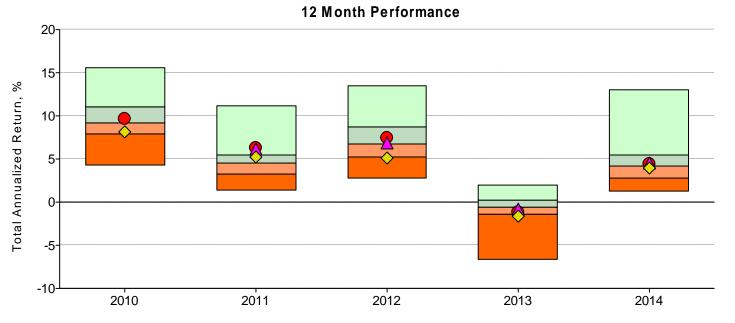
		3-Year Ex	cess Risk/R	Return	
8-	•	_	: .		
6 -			. ,		
Excess Annualized Return, %					
alized Re	Ž)	••	1		
ss Annus		•			
Exce		•			•
-2-					
-4 <b>-</b> 0	2	4	6	8	10
	Е	xcess An	nualized St	dDev, %	

	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Wells	3.51	2.77	1.27
JP Morgan	3.26	2.40	1.36
BC Aggregate	2.43	2.67	0.91
U.S. Fixed Income Universe Median	3.33	2.71	1.32

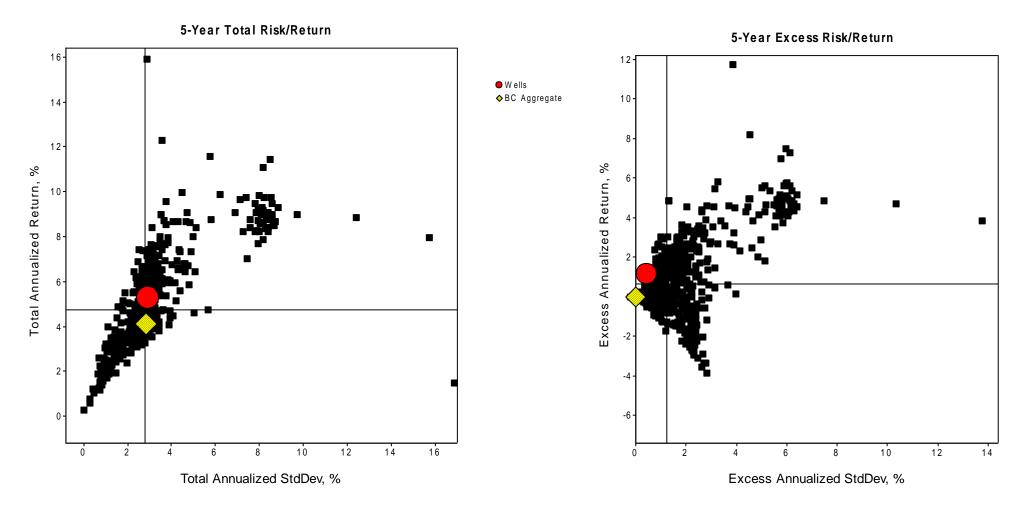
	Annualized	Annualized	Sharpe
	Excess	Excess	Ratio,
	Return, %	StDev, %	Excess
Wells	1.07	0.40	2.66
JP Morgan	0.83	0.61	1.34
BC Aggregate	0.00	0.00	NA
U.S. Fixed Income Universe Median	0.90	1.12	0.82

# WPERP Fixed Income Manager Comparisons as of September 30, 2014





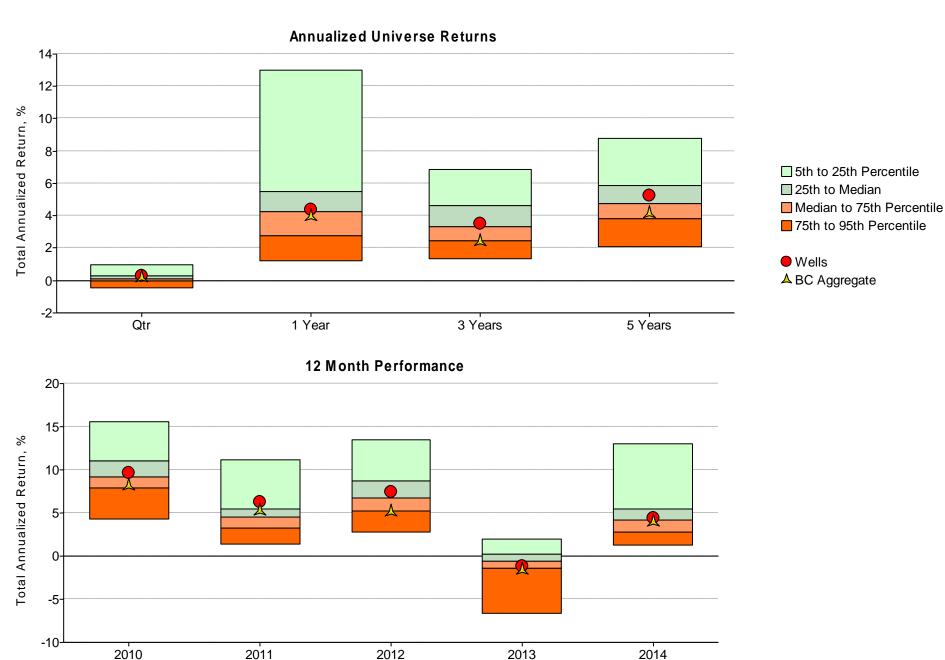
# WPERP Fixed Income Manager Comparisons as of September 30, 2014



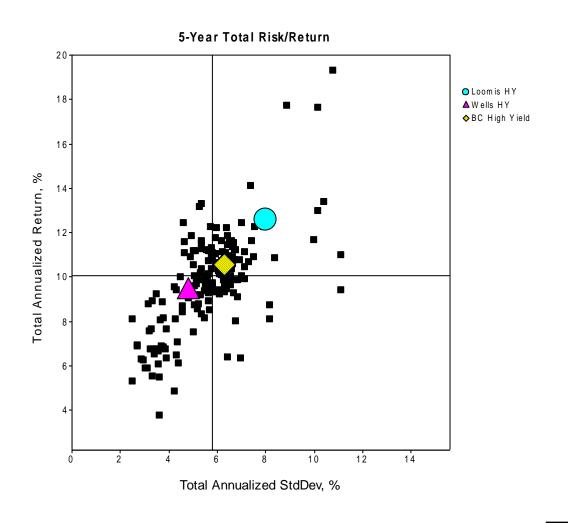
	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Wells	5.27	2.91	1.81
BC Aggregate	4.12	2.83	1.45
Fixed Income Manager Universe Median	4.75	2.80	1.75

	Annualized	Annualized	Sharpe
	Excess	Excess	Ratio,
	Return, %	StDev, %	Excess
Wells	1.15	0.45	2.58
BC Aggregate	0.00	0.00	NA
Fixed Income Manager Universe Median	0.63	1.23	0.63

# WPERP Fixed Income Manager Comparisons as of September 30, 2014



# WPERP High Yield Manager Comparisons as of September 30, 2014



	г			5-`	Year E	Exces	s Ris	k/Ret	urn			
	10-											
	8 -								•	-		
%	6 -											
eturn,	4 -											
ed Re	2-				_		•					
nualiz	$\Diamond$	<b>)</b>		_	<b>_</b>	•		•				
Excess Annualized Return, %	-2 -			. <u>.</u>				•				
Exces	-4 -		•				•					
	-6 -				. •	_		_				
	-8 -							-				
	-10 0	1	2	3	4	5	6	7	8	9	10	11
				Exc	cess A	Annua	lized	StdDe	ev, %			

	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Loomis HY	12.60	7.98	1.58
Wells HY	9.33	4.78	1.95
BC High Yield	10.57	6.30	1.68
U.S. High Yield Universe Median	10.06	5.78	1.73

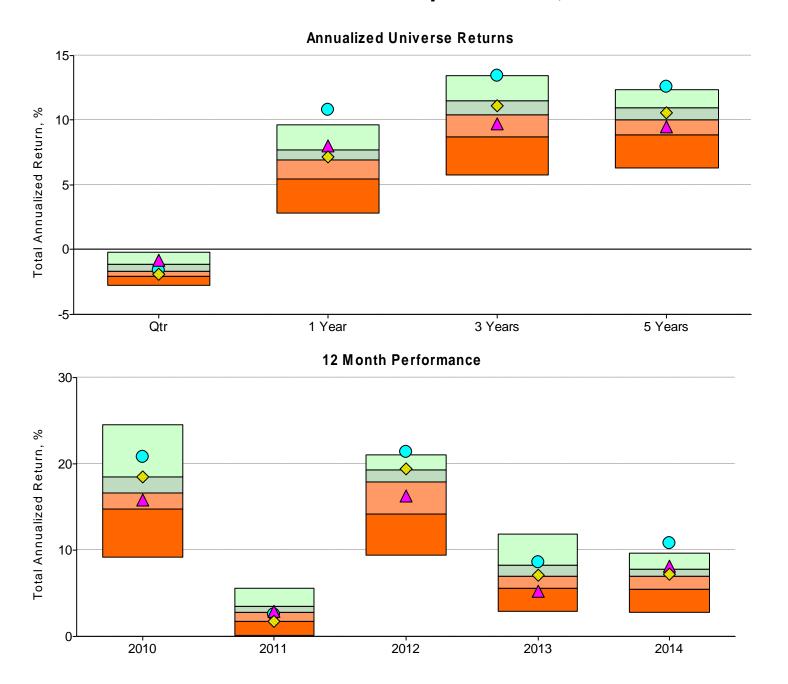
	Annualized	Annualized	Sharpe
	Excess	Excess	Ratio,
	Return, %	StDev, %	Excess
Loomis HY	2.03	2.59	0.78
Wells HY	-1.24	1.82	-0.68
BC High Yield	0.00	0.00	NA
U.S. High Yield Universe Median	-0.51	1.53	-0.39

☐ 5th to 25th Percentile ☐ 25th to Median

Loomis HY▲ Wells HY♦ BC High Yield

■ Median to 75th Percentile■ 75th to 95th Percentile

# WPERP High Yield Manager Comparisons as of September 30, 2014



# **APPENDIX**

# MANAGER WATCH CRITERIA

Asset Class	Short-term (Rolling 12 month periods)	Medium-term (Rolling 36 month periods)	Long-term
Active Domestic Equity	Portfolio Return < Benchmark Return - 3.0% at 2 consecutive calendar qtr end dates.	Portfolio AnnIzd. Return < Benchmark AnnIzd. 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 AnnIzd. Return < Benchmark AnnIzd. 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 Annizd. Return < Benchmark Annizd. 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.

<sup>\*</sup>All portfolio returns are gross of manager fees.

# SUMMARY OF WPERP RETIREMENT PLAN PORTFOLIO TRANSITIONS

BlackRock (formerly Merrill Lynch)   Passive Core   3Q 2003   1Q 2005	Manager	Mandate	Funded	Terminated				
Northern Trust								
Section   Sect		Passive Core						
Large Cap Growth	Northern Trust	Passive Core	3Q 2003	1Q 2005				
Intech	2004							
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            Wells Capital         Core Fixed Income         3Q 2004            Bank of New York         Small Cap Growth         4Q 2004            Earnest Partners         Small Cap Value         4Q 2004         1Q 2006           Earnest Partners         Small Cap Value         4Q 2004            Pyramis (formerly Fidelity)         International         4Q 2004            Pyramis (formerly Fidelity)         International         4Q 2004            Wells Capital         High Yield         4Q 2004            2005           Boston Company         International         1Q 2005         4Q 2011           Lomis Sayles         High Yield         1Q 2005            Boston Company         Emerging Markets         1Q 2005            T. Rowe Price         Emerging Markets         1Q 2005            Bos	Fred Alger							
Invesco				3Q 2009				
T. Rowe Price	MFS	Large Cap Value	1Q 2004					
NG/Aeltus	Invesco		2Q 2004	4Q 2011				
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            2005           Boston Company         International         1Q 2005         4Q 2011           Loomis Sayles         High Yield         1Q 2005         4Q 2011           Boston Company         Emerging Markets         1Q 2005         4Q 2011           T. Rowe Price         Emerging Markets         1Q 2005         3Q 2011           Boston Company         Large Cap Active          1Q 2005           2006           Lexington VI         Private Equity         3Q 2006         2Q 2009           Northpointe         Small Cap Growth         3Q 2006         2Q 2009           Paradigm         Small Cap Growth         3Q 2006         1Q 2010           Landmark XIII         Private Equity         4Q 2006            Real Estate	T. Rowe Price	Large Cap Value	3Q 2004					
Bank of New York   Earnest Partners   Small Cap Growth   4Q 2004   4Q 2005   4Q 2011   4Q 2005   4Q 2010   4Q 2005   4Q 2010   4Q 2010   4Q 2010   4Q 2010   4Q 2010   4Q 2006   4Q 2010	ING/Aeltus	Core Fixed Income	3Q 2004	4Q 2009				
Earnest Partners Pyramis (formerly Fidelity) Wells Capital  2005  Boston Company Loomis Sayles Boston Company Emerging Markets Boston Company Emerging Markets Large Cap Active  2005  2006  Lexington VI Northpointe Small Cap Growth Smal	Wells Capital	Core Fixed Income	3Q 2004					
Pyramis (formerly Fidelity)   International   High Yield   High Yiel	Bank of New York	Small Cap Growth	4Q 2004	1Q 2006				
High Yield   4Q 2004	Earnest Partners	Small Cap Value	4Q 2004					
Design	Pyramis (formerly Fidelity)	International	4Q 2004					
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   Roston Company   Emerging Markets   1Q 2005   3Q 2011   T. Rowe Price   Emerging Markets   1Q 2005   3Q 2011   T. Rowe Price   Emerging Markets   1Q 2005   3Q 2011   T. Rowe Price   Emerging Markets   1Q 2005   3Q 2011   T. Rowe Price   Emerging Markets   1Q 2005   3Q 2011   T. Rowe Price   Emerging Markets   1Q 2005   3Q 2011   T. Rowe Price   Emerging Markets   1Q 2005   3Q 2011   T. Rowe Price   Emerging Markets   1Q 2005   3Q 2011   T. Rowe Price   Emerging Markets   1Q 2005   3Q 2011   T. Rowe Price   Equity   3Q 2006   3Q 2009   T. Rowell Equity   4Q 2006   T. Rowell Equity	Wells Capital	High Yield	4Q 2004					
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	2005			•				
Boston Company   Emerging Markets   1Q 2005   4Q 2011   T. Rowe Price   Emerging Markets   1Q 2005   3Q 2011   1Q 2005   3Q 2016	Boston Company	International	1Q 2005	4Q 2011				
T. Rowe Price Boston Company  2006  Lexington VI Northpointe Private Equity Small Cap Growth Landmark XIII Private Equity	Loomis Sayles	High Yield	1Q 2005					
Large Cap Active	Boston Company	Emerging Markets	1Q 2005	4Q 2011				
Description   Color	T. Rowe Price	Emerging Markets	1Q 2005	3Q 2011				
Private Equity   3Q 2006	Boston Company	Large Cap Active		1Q 2005				
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            2007           Aetos         Hedge Fund         1Q 2007         2Q 2013           PAAMCO         Hedge Fund         1Q 2007         4Q 2010           Prisa II         Real Estate         2Q 2007            JPM Strategic         Real Estate         3Q 2007            2008           HRJ         Private Equity         1Q 2008            Fisher Lynch         Private Equity         2Q 2008            CB Richard Ellis         Real Estate         2Q 2008            Landmark XIV         Private Equity         3Q 2008								
Paradigm         Small Cap Growth         3Q 2006         1Q 2010           Landmark XIII         Private Equity         4Q 2006            Prisa         Real Estate         4Q 2006            2007           Aetos         Hedge Fund         1Q 2007         2Q 2013           PAAMCO         Hedge Fund         1Q 2007         4Q 2010           Prisa II         Real Estate         2Q 2007            JPM Strategic         Real Estate         3Q 2007            2008           HRJ         Private Equity         1Q 2008            Fisher Lynch         Private Equity         2Q 2008            CB Richard Ellis         Real Estate         2Q 2008            Landmark XIV         Private Equity         3Q 2008			3Q 2006					
Landmark XIII       Private Equity       4Q 2006          Prisa       Real Estate       4Q 2006          2007         Aetos       Hedge Fund       1Q 2007       2Q 2013         PAAMCO       Hedge Fund       1Q 2007       4Q 2010         Prisa II       Real Estate       2Q 2007          JPM Strategic       Real Estate       3Q 2007          2008         HRJ       Private Equity       1Q 2008          Fisher Lynch       Private Equity       2Q 2008          CB Richard Ellis       Real Estate       2Q 2008          Landmark XIV       Private Equity       3Q 2008			3Q 2006	2Q 2009				
Prisa         Real Estate         4Q 2006            2007           Aetos         Hedge Fund         1Q 2007         2Q 2013           PAAMCO         Hedge Fund         1Q 2007         4Q 2010           Prisa II         Real Estate         2Q 2007            JPM Strategic         Real Estate         3Q 2007            2008           HRJ         Private Equity         1Q 2008            Fisher Lynch         Private Equity         2Q 2008            CB Richard Ellis         Real Estate         2Q 2008            Landmark XIV         Private Equity         3Q 2008	Paradigm		3Q 2006	1Q 2010				
Aetos	Landmark XIII	Private Equity	4Q 2006					
Aetos         Hedge Fund         1Q 2007         2Q 2013           PAAMCO         Hedge Fund         1Q 2007         4Q 2010           Prisa II         Real Estate         2Q 2007            JPM Strategic         Real Estate         3Q 2007            2008           HRJ         Private Equity         1Q 2008            Fisher Lynch         Private Equity         2Q 2008            CB Richard Ellis         Real Estate         2Q 2008            Landmark XIV         Private Equity         3Q 2008	Prisa	Real Estate	4Q 2006					
PAAMCO         Hedge Fund         1Q 2007         4Q 2010           Prisa II         Real Estate         2Q 2007            JPM Strategic         Real Estate         3Q 2007            2008           HRJ         Private Equity         1Q 2008            Fisher Lynch         Private Equity         2Q 2008            CB Richard Ellis         Real Estate         2Q 2008            Landmark XIV         Private Equity         3Q 2008            2009	2007							
Prisa II         Real Estate         2Q 2007            JPM Strategic         Real Estate         3Q 2007            2008           HRJ         Private Equity         1Q 2008            Fisher Lynch         Private Equity         2Q 2008            CB Richard Ellis         Real Estate         2Q 2008            Landmark XIV         Private Equity         3Q 2008            2009								
JPM Strategic   Real Estate   3Q 2007		_		4Q 2010				
HRJ								
HRJ         Private Equity         1Q 2008            Fisher Lynch         Private Equity         2Q 2008            CB Richard Ellis         Real Estate         2Q 2008            Landmark XIV         Private Equity         3Q 2008			3Q 2007					
Fisher Lynch         Private Equity         2Q 2008            CB Richard Ellis         Real Estate         2Q 2008            Landmark XIV         Private Equity         3Q 2008            2009								
CB Richard Ellis         Real Estate         2Q 2008            Landmark XIV         Private Equity         3Q 2008	_							
Landmark XIV Private Equity 3Q 2008 2009								
2009								
	Landmark XIV	Private Equity	3Q 2008					
Oaktree V Private Equity 1Q 2009								
	Oaktree V	Private Equity	1Q 2009					

# (Continued)

Manager	Mandate	Funded	Terminated
2010			
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	
2011			
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	
2012			
AG Core	Real Estate	1Q 2012	
Gateway (replication)	Covered Calls	2Q 2012	
Gateway (non-replication)		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	
2013			
EnergyCap IX	Private Equity	1Q 2013	
DFA	Real Estate	1Q 2013	
Torchlight Debt Opp IV	Real Estate	3Q 2013	
Mesa West Fund III	Real Estate	3Q 2013	
Invesco Commodity	Commodities	3Q 2013	
Heitman	Real Estate	4Q 2013	
Silver Lake IV	Private Equity	4Q 2013	
GAM	Hedge Fund	4Q 2013	

# SUMMARY OF WPERP RETIREMENT PLAN PORTFOLIO TRANSITIONS

# (Continued)

Manager	Mandate	Funded	Terminated
	2014		
Brep Europe IV	Real Estate	1Q 2014	
Morgan Stanley	Hedge Fund	1Q 2014	
Apollo VIII	Private Equity	1Q 2014	
Landmark XV	Private Equity	1Q 2014	
CD&R IX	Private Equity	2Q 2014	
Vista Equity V	Private Equity	2Q 2014	
Hancock	Timber	2Q 2014	

# 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 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.
1/1/2007-2/28/2007	40% Russell 3000 15% MSCI ACWI ex U.S. 35% BC Universal 4% NCREIF Lag 4.25% Cambridge U.S. Private Equity Lag, 0.75% Cambridge U.S. Venture Capital Lag 1% T-Bill
3/1/2007-6/30/2008	40% Russell 3000 15% MSCI ACWI ex U.S. 35% BC Universal 4% NCREIF Lag 3.40% Cambridge U.S. Private Equity Lag, 0.60% Cambridge U.S. Venture Capital Lag 1% T-Bill + 3% Lag 1% T-Bill
7/1/2008-12/31/2008	40% Russell 3000 24% MSCI ACWI ex U.S. 30% BC Universal 2% NCREIF Lag 0.85% Cambridge U.S. Private Equity Lag, 0.15% Cambridge U.S. Venture Capital Lag 2% T-Bill + 3% Lag 1% T-Bill
1/1/2009-6/30/2009	40% Russell 3000 24% MSCI ACWI ex U.S. IMI 30% BC Universal 2% NCREIF Lag 0.85% Cambridge U.S. Private Equity Lag, 0.15% Cambridge U.S. Venture Capital Lag 2% T-Bill + 3% Lag 1% T-Bill

# WPERP RETIREMENT PLAN POLICY BENCHMARK DESCRIPTION - CONTINUED

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

# WPERP HEALTH PLAN POLICY BENCHMARK DESCRIPTION

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

WPERP EVOLVING INVESTMENT POLICY

**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 GLOSSARY

**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 <sub>i</sub> = portfolio segment weight W <sub>i</sub> = benchmark segment weight b <sub>i</sub> = 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 <sub>i</sub> = portfolio segment return b <sub>i</sub> = benchmark segment return W <sub>i</sub> = 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 <sub>i</sub> = portfolio segment return b <sub>i</sub> = benchmark segment return w <sub>i</sub> = portfolio segment weight W <sub>i</sub> = 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 (PlKs, 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 counties 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.

**US Equity Markets:** 

Metric: P/E ratio = Price / "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 <a href="http://www.econ.yale.edu/~shiller/data.htm">http://www.econ.yale.edu/~shiller/data.htm</a>. 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 ratio = Price / "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.

#### **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.

#### 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.

#### 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 certainly 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.

#### <u>Definition of "extreme" metric readings</u>

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

# 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