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2015 SEP 17 PM 12: 47

AGENDA REPORT

TO:

Sabrina B. Landreth

City Administrator

FROM:

Katano Kasaine

Treasurer

SUBJECT:

Informational Report on PFRS'

Investment Portfolio

DATE: September 05, 2015

City Administrator Approval

Date:

RECOMMENDATION

Staff Recommends That The Council Accept:

An Informational Report On The Oakland Police and Fire Retirement System ("PFRS") Investment Portfolio As Of June 30, 2015.

EXECUTIVE SUMMARY

The attached Quarterly Performance report provided by the PFRS Investment Consultant, Pension Consulting Alliance, and (PCA) summarizes the performance of the PFRS investment portfolio for the quarter ended June 30, 2015 as Appendix A, herein. This report is being provided in accordance with the funding agreement between the City and the PFRS Board pursuant to the issuance of the Taxable Pension Obligation Bonds Series 2012 ("2012 POB").

During the most recent quarter, the PFRS Total Portfolio generated an absolute return of 0.0 percent, gross of fees, underperforming its policy benchmark by (30) basis points. This underperformance was mainly due to the poor relative performance of PFRS' Real Return manager as they suffered heavy losses at the end of the second quarter due to the market's heightened concern over a possible Greek exit from the Euro zone. The portfolio has matched its benchmark over the latest one year period (and fiscal year-to-date), while outperforming over the three and five year periods.

	Quarter	Fiscal YTD	1 Year	3 Year	5 Year
Total Portfolio ¹	0.0	4.0	4.0	9.7	10.8
Policy Benchmark ²	0.3	4.0	4.0	8.5	10.0
Excess Return	(0.3)	0.0	0.0	1.2	0.8
Reference: Median Fund ³	0.2	3.1	3.1	10.8	11.0
Reference: Total Net of Fees ⁴	(0.1)	3.6	3.6	9.3	10.4

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Gross of Fees. Performance since 2005 includes securities lending. Evolving Policy Benchmark consists of 48% Russell 3000, 12% MSCI ACWI ex U.S., 20% BC Universal, 10% CBOE BXM and 10% CPI+3%. Mellon Total Funds Public Universe.

Net of fee returns are estimated based on OPFRS manager fee schedule

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BACKGROUND / LEGISLATIVE HISTORY

The Oakland Police and Fire Retirement System (the "System") is a closed defined benefit plan established by the City of Oakland's (the "City") Charter. PFRS is governed by a board of seven trustees (the "PFRS Board"). The System covers the City's sworn police and fire employees hired prior to July 1, 1976. The System was closed to new members on June 30, 1976. As of June 30, 2015, the System had 961 members and all of the members of the System are retired.

The System's investment portfolio is governed by the investment policy set by the PFRS Board. The PFRS Board sets an investment policy that authorizes investments in a variety of domestic and international equity and fixed income securities. The System's portfolio is currently managed by 12 external investment managers. The majority of the portfolio is held in custody at Northern Trust. In accordance with the City Charter, the PFRS Board makes investment decisions in accordance with the prudent person standard as defined by applicable court decisions and as required by the California Constitution.

In March 1997, the City issued Taxable Pension Obligation Bonds, Series 1997 ("1997 POBs") and as a result deposited \$417 million into the System to pay the City's contributions through June 2011. In accordance with the funding agreement entered into at the time the 1997 POBs were issued, City payments to PFRS were suspended from February 25, 1997 to June 30, 2011. The City of Oakland resumed contributing to PFRS effective July 1, 2011 and contributed \$45.5 million for the fiscal year (FY) ended June 30, 2012.

In July 2012, the City issued \$212.5 million of Taxable Pension Obligation Bonds, Series 2012. The City subsequently deposited \$210 million into the System and entered into a funding agreement with the PFRS Board. As a result, no additional contributions are required until July 1, 2017.

As of July 1, 2014, the System's Unfunded Actuarial Liability is approximately \$230.16 million and the System had a Funded Ratio of 71.2 percent on a Market Value of Assets (MVA) basis. The next required City contribution is projected to be approximately \$35.1 million in FY 2017-2018.

<u>ANALYSIS</u>

PFRS Membership

The City Charter establishes plan membership, contribution, and benefit provisions. The System serves the City's sworn employees hired prior to July 1, 1976 who have not transferred to the California Public Employees' Retirement System ("CalPERS").

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Finance and Ma	nagement Committee
	September 29, 2015

As of June 30, 2015, the System's membership was 961, which included 558 retirees and 403 beneficiaries as shown on **Table 1**.

Table 1 PFRS Membership as of June 30, 2015						
Membership	POLICE	FIRE	TOTAL			
Retiree	407	265	672			
Beneficiary 151 138 289						
Total Membership	558	403	961			

Portfolio Valuation

As of June 30, 2015, the City of Oakland PFRS portfolio had an aggregate value of \$423.9 million. This represents a (\$17) million decrease in value over the quarter. During the previous one-year period, the PFRS Total Portfolio decreased by (\$44.3) million, including (\$60) million in withdrawals to pay retiree pension payments during the same one-year period.

Investment Portfolio Valuation as of June 30, 2015*

	June 30,	March 31,	Quarterly	Percentage	June 30,	Annual	Percentage
	2015	2015	Change	Change	2014	Change	Change
PFRS	\$423.9	\$440.9	(\$17)	(3.9%)	\$468.2	(\$44.3)	(9.5%)

^{*}The calculations listed above represent change in dollar value and \underline{not} investment returns.

PFRS Investment Portfolio

Table 2 below shows PFRS Investment Portfolio as of June 30, 2015.

Table 2 PFRS Investment Portfolio as of June 30, 2015					
Investment	Fair Value				
Domestic Equities	\$208,892,656				
International Equities	49,551,236				
Fixed Income	77,201,307				
Covered Calls	44,375,344				
Real Return	40,823,991				
Cash Equivalents	3,048,832				
Total Portfolio	\$423,893,366				

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PFRS Investment Performance

Over the one year period ending June 30, 2015, the PFRS Total Portfolio generated a return of 4.0 percent, gross of fees, which matched its policy benchmark target. The Portfolio has outperformed the policy benchmark over the three and five year time periods, gross of fees.

Relative to the actuarial expected rate of return, the PFRS Total Portfolio underperformed the actuarial expected rate for the one year time period. However, the investment portfolio exceeded its actuarial expected rate of return over the three and five year periods as shown in **Table 3**. The Actuarial Rate of Return was gradually lowered from 8.0 percent in FY 2008 to a blended rate with a single discount equivalent rate of 6.54 percent in 2014. **Table 3** below compares PFRS Total Portfolio performance to other pension funds and benchmarks.

Table 3
PFRS TOTAL FUND PERFORMANCE
as of June 30, 2015

			ı;	_
	Quarter	1 Year	3 Year	5 Year
PFRS Total Portfolio	0.0%	4.0%	9.7%	10.8%
Comparisons:				
PFRS Actuarial Expected Rate of Return (blend) (a) (b)	1.7%	7.0%	6.8%	6.9%
Policy Target (blend) (c)	0.3%	4.0%	8.5%	10.0%
Median Fund (d)	0.2%	3.1%	10.8%	11.0%
CalPERS Investment Returns	1.2%	2.6%	11.2%	10.9%
CalSTRS Investment Returns	0.7%	4.8%	12.3%	12.1%
East Bay Mud Investment Returns	0.0%	4.8%	13.0%	13.0%
Colorado F&P Investment Returns	0.5%	5.4%	11.2%	11.2%

- (a) The actuarial expected rate of return was 8% through 6/30/2009, 7.5% through 6/30/2010, 7% through 6/30/2011, and 6.75% through 6/30/2014. Beginning 7/1/2014 a blended rate with a single discount equivalent rate of 6.54%.
- (b) The quarterly actuarial expected rate of return is calculated based on the 7.00% return assumption for payments during the 2015 fiscal year.
- (c) The Policy Benchmark consists of 48% Russell 3000, 12% MSCI ACWI ex U.S., 20% BC Universal, 10% CBOE BXM and 10% CPI+3%.
- (d) Mellon Total Fund Public Universe Fund.

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FISCAL IMPACT

Since this is an informational report, there are no budget implications associated with the report.

PUBLIC OUTREACH / INTEREST

This item did not require any additional public outreach other than the required posting on the City's website.

COORDINATION

This informational report was prepared in coordination with the PFRS' Investment Consultant (PCA).

SUSTAINABLE OPPORTUNITIES

Economic: Whenever possible, the PFRS Board seeks to benefit the local Oakland based economy. In 2006, the Board, along with staff, created the PFRS Local Broker provision. This provision mandates that the PFRS Investment Managers consider using Oakland based brokers for all trades conducted on behalf of the fund based on best execution. This program aims to regenerate some of the commissions generated by the System into the Oakland economy.

Environmental: There are no environmental opportunities associated with this report.

Social Equity: There are no social equity opportunities associated with this report.

Sabrina B. Landreth, City Administrator

Subject: Informational Report on PFRS' Investment Portfolio

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ACTION REQUESTED OF THE CITY COUNCIL

Staff recommends that the Council accept this informational report on the Oakland Police and Fire Retirement System ("PFRS") Investment Portfolio as of June 30, 2015.

For questions regarding this report, please contact Katano Kasaine, Treasurer, at (510) 238-2989.

Respectfully submitted,

KATANO KASAINE

Treasurer

Prepared by:

Téir Jenkins, Investment Officer

Retirement Division

Attachments: Appendix A: PFRS Performance Report as of June 30, 2015

Item: ______
Finance and Management Committee
September 29, 2015

ATTACHMENT A: PFRS INVESTMENT PERFORMANCE AS OF JUNE 30, 2015

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20 2015 OAKLAND POLICE & FIRE RETIREMENT SYSTEM QUARTERLY PERFORMANCE REPORT

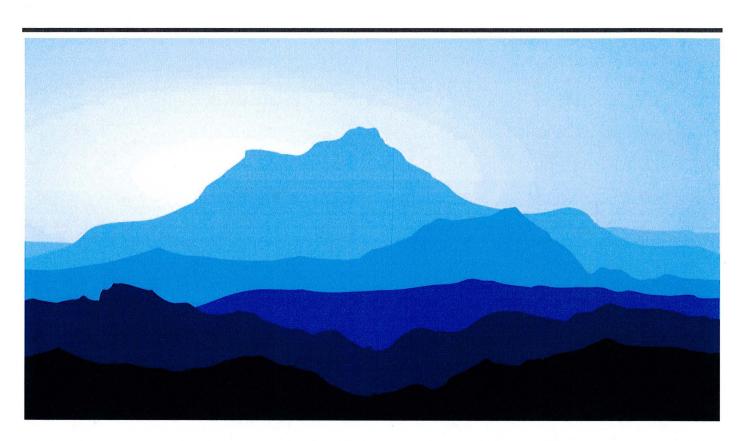


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F	INDIVIDUAL MANAGER PERFORMANCE
	Appendix



TOTAL PORTFOLIO SUMMARY

As of June 30, 2015, the City of Oakland Police and Fire Retirement System (OPFRS) portfolio had an aggregate value of \$423.9 million. This represents a (\$17) million decrease in value over the quarter. During the previous one-year period, the OPFRS Total Portfolio decreased by (\$44.3) million, including (\$60) million in withdrawals during the period.

Asset Allocation Trends

The asset allocation targets (see table on page 19) reflect those as of June 30, 2015. Target weightings reflect the Plan's evolving asset allocation (effective 3/31/2014).

With respect to policy targets, the portfolio ended the latest quarter overweight Domestic Equity, Covered Calls, and cash, while underweight International Equity, Fixed Income, and Real Return.

Recent Investment Performance

During the most recent quarter, the OPFRS Total Portfolio generated an absolute return of 0.0%, gross of fees, underperforming its policy benchmark by (30) basis points. The portfolio has matched its benchmark over the latest 1-year period (and fiscal year-to-date), while outperforming over the 3- and 5-year periods,

The Total Portfolio underperformed the Median fund's return over the most recent quarter, outperformed the Median fund's return over the fiscal year-to-date and 1-year period, and underperformed the Median fund return over the 3- and 5-year periods. Performance differences with respect to the Median Fund continue to be attributed largely to differences in asset allocation.

	Quarter	Fiscal YTD	1 Year	3 Year	5 Year
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Excess Return	(0.3)	0.0	0.0	1.2	0.8
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¹ Gross of Fees. Performance since 2005 includes securities lending.

² Evolving Policy Benchmark consists of 48% Russell 3000, 12% MSCI ACWI ex U.S., 20% BC Universal, 10% CBOE BXM and 10% CPI+3%.

³ Mellon Total Funds Public Universe.

⁴ Net of fee returns are estimated based on OPFRS manager fee schedule.

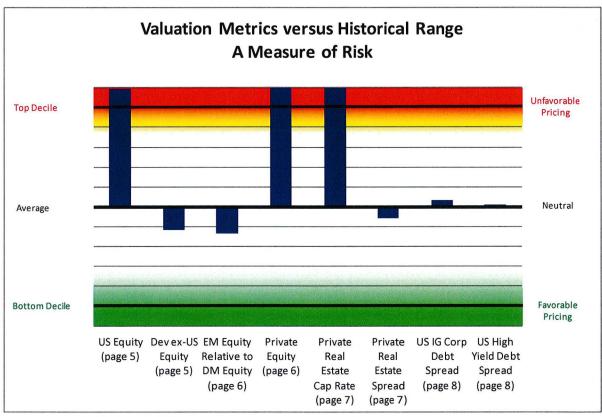
INVESTMENT MARKET RISK METRICS

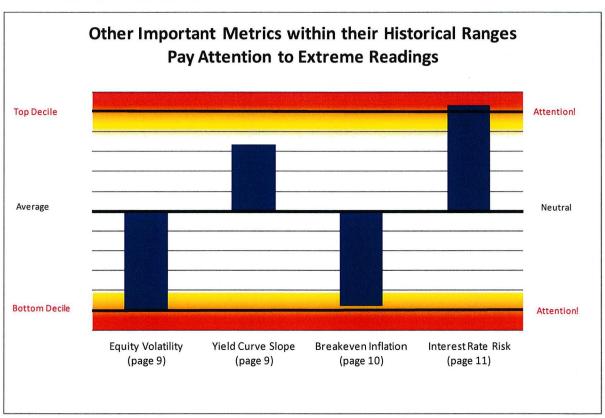
Takeaways

- U.S. growth oriented assets; equity, private equity, and private real estate (on a cap rate basis), are all registering top decile valuation levels relative to their histories.
- Although recent economic events (e.g., China and Greece) have triggered spikes in equity volatility, the VIX still remains below the long-term average level of roughly 20.
- U.S. credit spreads widened during June and July.
- International equity valuations remain near or below their historical average valuation levels.
- Interest rate risk, as measured by the duration of the U.S. 10-year Treasury Note, remains near historic highs.
- Commodity prices and breakeven inflation levels indicate that inflation is under control.
- The PCA Market Sentiment Indicator remained neutral in June.

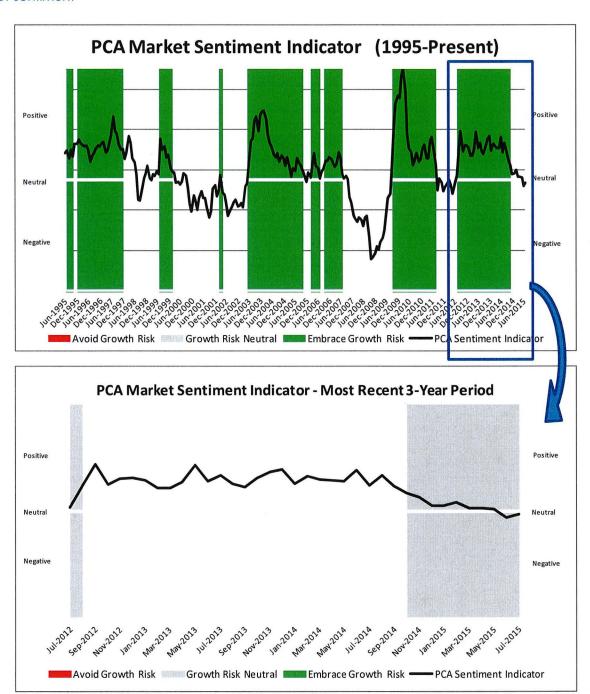


Risk Overview





Market Sentiment

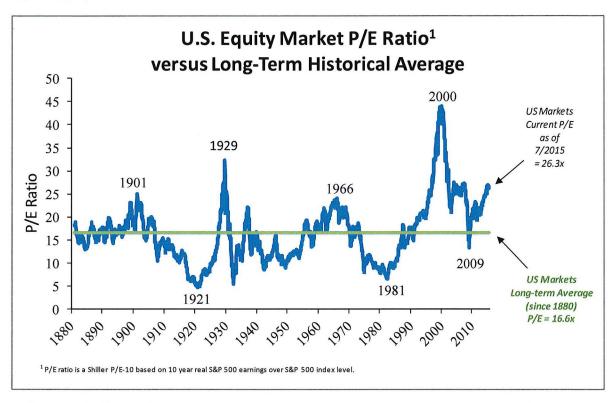


Information Behind Current Sentiment Reading

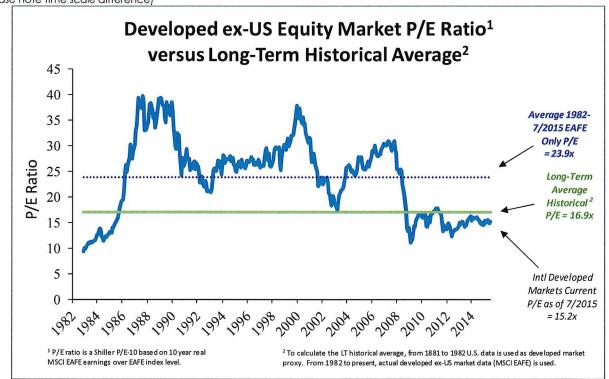
Growth Risk Visibility (Current Overall Sentiment)	Neutral	
Agreement Between Bond Spread and Equity Spread Momentum Measures?	Disagree	
Equity Return Momentum Trailing-Twelve Months	Positive	
Bond Spread Momentum Trailing-Twelve Months	Negative	



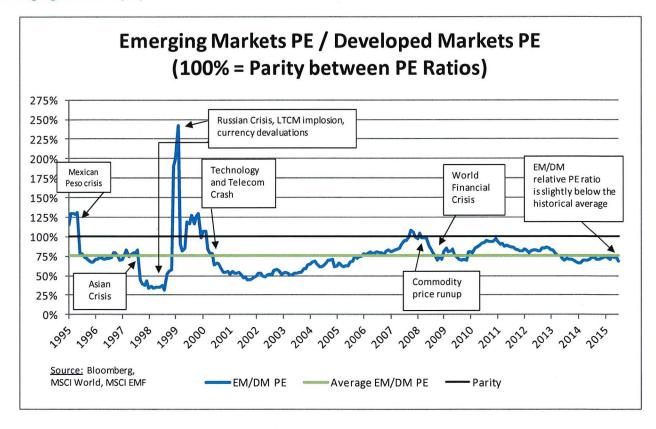
Developed Equity Markets



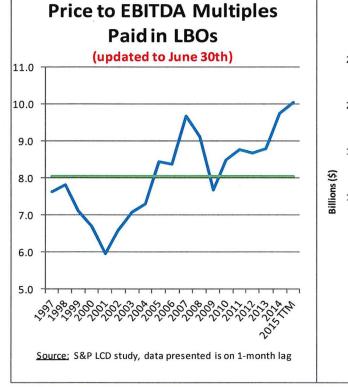
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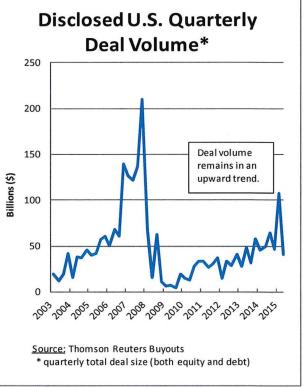


Emerging Market Equity Markets



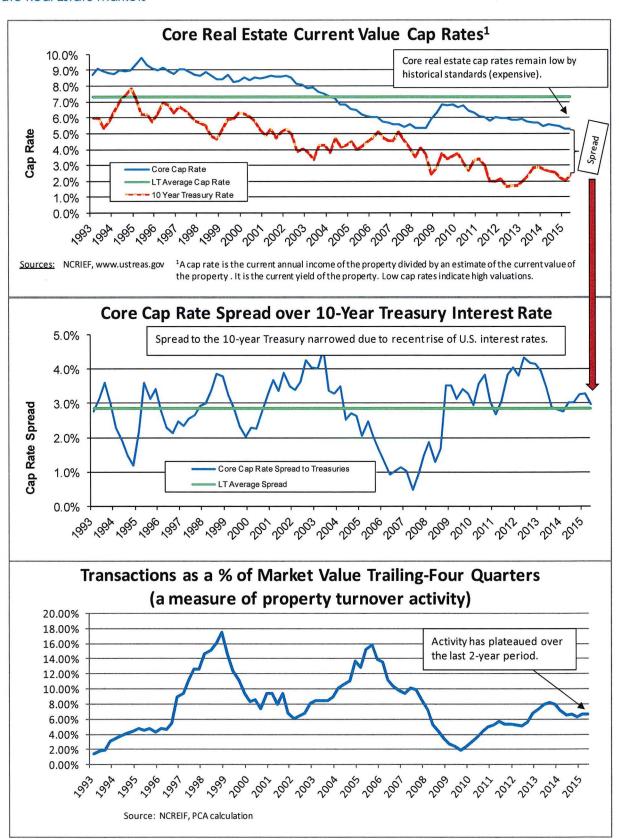
US Private Equity





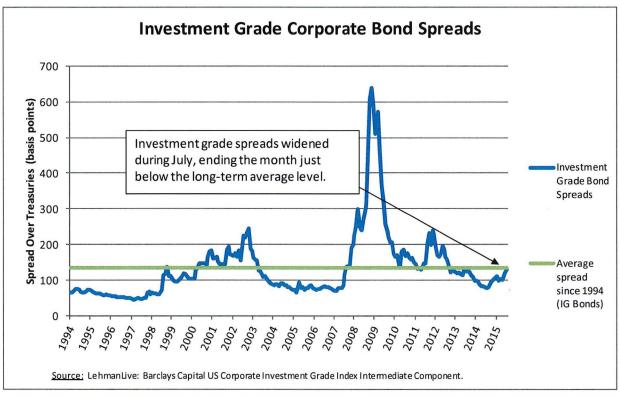


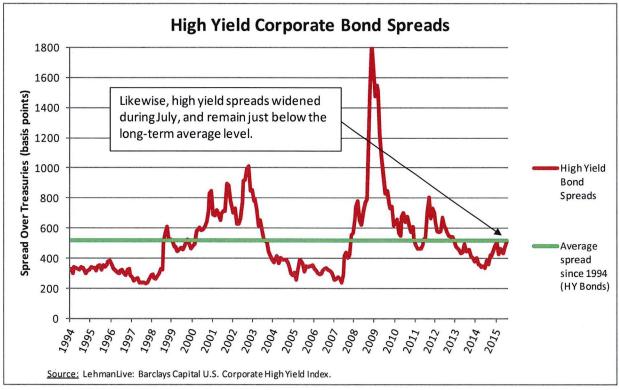
Private Real Estate Markets



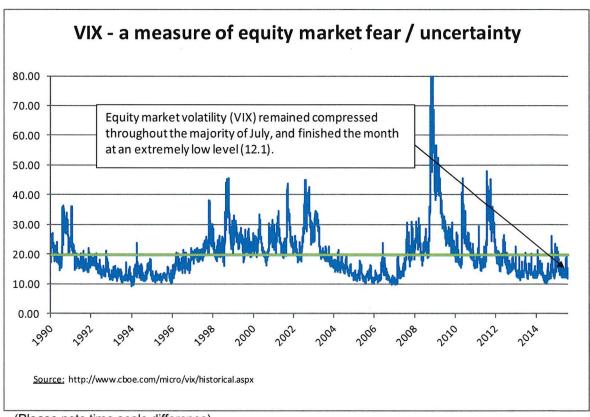


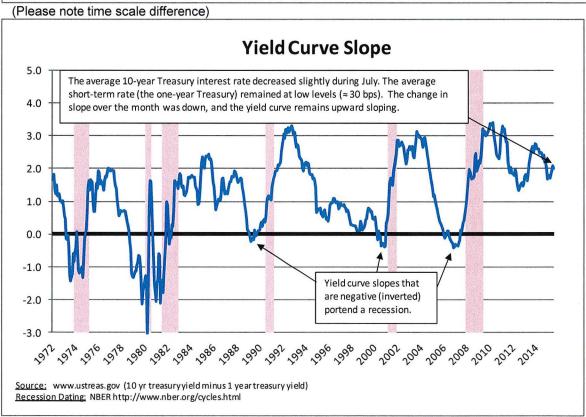
US Fixed Income



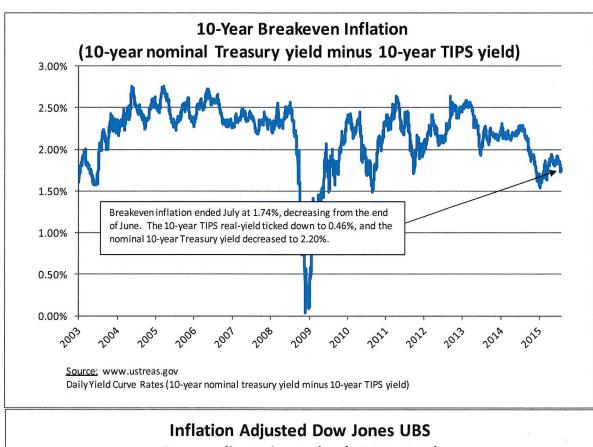


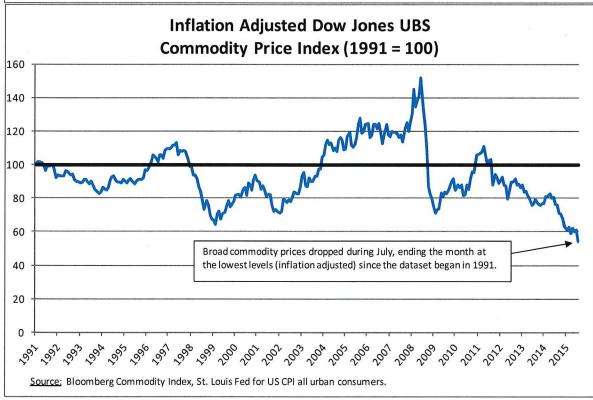
Other Market Metrics





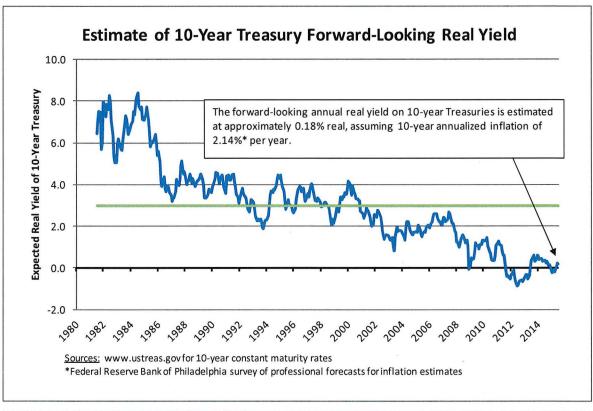
Measures of Inflation Expectations

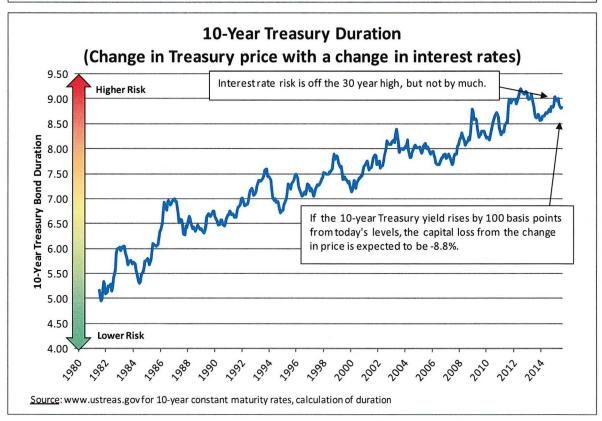






Measures of US Treasury Interest Rate Risk





ECONOMIC OVERVIEW

US GDP growth for the second quarter (advanced estimate) rebounded from a stagnant first quarter with an increase of 2.3%, driven mostly by an increase in consumer spending. The unemployment rate reached 5.3% as of the quarter end, continuing its downward trend over the last 2+ years. The Consumer Price Index for All Urban Consumers posted its largest quarterly increase since the third quarter of 2012 as it rose by 3.5%. Commodities reversed its recent downward trend by increasing 4.7% after a decline of (27%) over the previous three quarters. The US dollar also changed path as it depreciated (3.9%) against the Euro after appreciating by 22% over the previous four quarters. US Equities finished the quarter positively at 0.3% and reached 1.2% year-to-date while Global Equities were slightly higher at 0.5% and 3.0% year-to-date. The BC Universal Index declined by (1.4%) during the quarter and remained slightly positive year-to-date at 0.3%.

Economic Growth

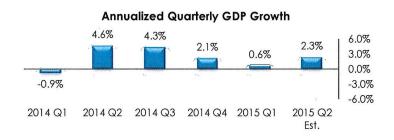
- Real GDP increased at an annualized rate of 2.3 percent in the second quarter of 2015 after increasing at an annualized rate of 0.6 percent in the first quarter of 2015.
- An increase in consumer spending on both durable goods, and nondurable goods had the largest impact on GDP.
- Residential fixed investment, exports, and local government spending also contributed to an increase in GDP during the quarter.

Inflation

- The Consumer Price Index for All Urban Consumers (CPI-U) increased by 3.5 percent in the quarter on an annualized basis, after seasonal adjustment.
- Quarterly percent changes may be adjusted between data publications due to periodic updates in seasonal factors.
- Core CPI-U increased by 2.3 percent for the quarter on an annualized basis.
- Over the last 12 months, core CPI-U increased 1.8 percent after seasonal adjustment.

Unemployment

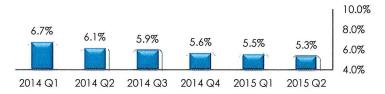
- The US economy gained approximately 664,000 jobs in the quarter.
- The official unemployment rate dropped to 5.3% at quarter end.
- The majority of jobs gained occurred in professional and business services, health care, retail, financial and transportation and warehousing.



CPI-U After Seasonal Adjustment

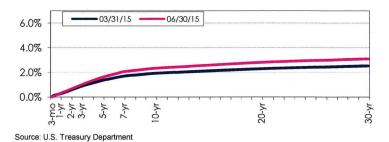


Unemployment Rate



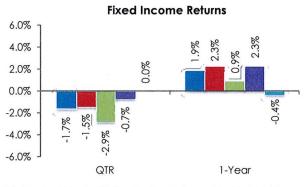
- US Treasury yields rose on average over the quarter.
- The Federal Reserve has maintained the federal funds rate between 0.00 percent and 0.25 percent since December 2008.
- The US dollar appreciated against the Yen by 2.0% and depreciated against the Euro and British Pound by 3.9% and 6.0% respectively.

Treasury Yield Curve Changes



Fixed Income

- US bond markets delivered negative returns for the quarter, with the exception of high yield, which had a
 return of 0%.
- High yield trailed all other bond sectors over the trailing 1-year period (-0.4%). Governments and Mortgage led during the same period with 2.3% each.



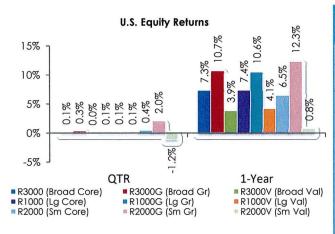
■BC Agg ■BC Govt	BC Credit	BC Mortgage	BC High Yield
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U.S. Fixed Income Sector Performance (BC Aggregate Index)								
Sector	Weight	QTR	1 Year					
Governments*	40.5%	-1.5%	2.3%					
Agencies	4.9%	-0.7%	2.1%					
Inv. Grade Credit	23.9%	-2.9%	0.9%					
MBS	28.1%	-0.7%	2.3%					
ABS	0.6%	0.2%	1.6%					
CMBS	2.0%	-1.1%	1.9%					

*U.S. Treasuries and Government Related

U.S. Equities

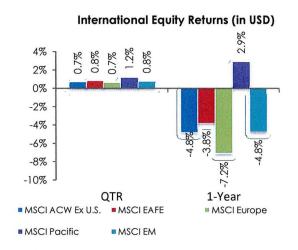
- Small cap US equities outperformed large cap stocks during the quarter with the exception of small value.
- During the 1-year period, growth outperformed value and core stocks across all market capitalizations. Small growth performed the best overall in both the quarter and 1-year periods.



U.S. Equity Sector Performance (Russell 3000 Index)							
Sector	Weight	QTR	1 Year				
Information Tech.	19.0%	0.2%	11.2%				
Financials	17.9%	1.1%	9.1%				
Health Care	15.2%	3.4%	26.5%				
Consumer Disc.	13.4%	1.4%	14.7%				
Industrials	10.8%	-2.5%	1.7%				
Consumer Staples	8.1%	-1.6%	9.5%				
Energy	7.2%	-1.9%	-24.3%				
Materials	3.5%	-1.0%	-2.3%				
Utilities	2.9%	-6.3%	-3.9%				
Telecomm. Serv.	2.0%	1.6%	1.7%				

International Equities

- International markets yielded slightly positive returns across the board for the second quarter of 2015.
- One year returns remained negative in broad developed market equities, while the Pacific maintained positive returns at 2.9%.



International Equity Region Performance (in USD) (MSCI ACW Index ex U.S.)								
Sector	Weight	QTR	1 Year					
Europe Ex. UK	31.9%	-0.3%	-6.7%					
Emerging Markets	22.0%	0.8%	-4.8%					
Japan	16.4%	3.1%	8.6%					
United Kingdom	14.6%	3.0%	-8.2%					
Pacific Ex. Japan	8.4%	-2.4%	-6.7%					
Canada	6.7%	-0.8%	-14.7%					

Market Summary – Long-term Performance*

Indexes	1 Year	3 Year	5 Year	10 Year	20 Year
Global Equity			STATISTICAL AND ASSESSMENT		
MSCI All Country World	1.2%	13.6%	12.5%	7.0%	7.1%
Domestic Equity			Andrews and the state of the state of		
S&P 500	7.4%	17.3%	17.3%	7.9%	8.9%
Russell 3000	7.3%	17.7%	17.5%	8.2%	9.1%
Russell 3000 Growth	10.7%	18.2%	18.6%	9.2%	8.1%
Russell 3000 Value	3.9%	17.2%	16.4%	7.0%	9.5%
Russell 1000	7.4%	17.7%	17.6%	8.1%	9.1%
Russell 1000 Growth	10.6%	18.0%	18.6%	9.1%	8.2%
Russell 1000 Value	4.1%	17.3%	16.5%	7.0%	9.5%
Russell 2000	6.5%	17.8%	17.1%	8.4%	9.2%
Russell 2000 Growth	12.3%	20.1%	19.3%	9.9%	7.5%
Russell 2000 Value	0.8%	15.5%	14.8%	6.9%	10.3%
CBOE BXM	3.6%	7.6%	10.0%	5.1%	7.6%
nternational Equity	317,1				
MSCI All Country World ex US	-4.8%	9.9%	8.2%	6.0%	5.9%
MSCI EAFE	-3.8%	12.5%	10.0%	5.6%	5.6%
MSCI Pacific	2.9%	11.4%	9.0%	5.6%	2.7%
MSCI Europe	-7.2%	13.0%	10.7%	5.6%	7.6%
MSCI EM (Emerging Markets)	-4.8%	4.1%	4.0%	8.5%	6.4%
Fixed Income			(4, 11, 11, 11, 11, 11, 11, 11, 11, 11, 1		
BC Universal Bond	1.6%	2.3%	3.8%	4.7%	5.8%
BC Global Agg – Hedged	3.0%	3.3%	3.7%	4.3%	5.7%
BC Aggregate Bond	1.9%	1.8%	3.3%	4.4%	5.6%
BC Government	2.3%	0.9%	2.6%	4.0%	5.3%
BC Credit Bond	0.9%	3.0%	4.9%	5.1%	6.2%
BC Mortgage Backed Securities	2.3%	1.9%	2.9%	4.6%	5.6%
BC High Yield Corporate Bond	-0.4%	6.8%	8.6%	7.9%	7.4%
BC WGILB - Hedged	3.3%	1.9%	4.2%	4.5%	N/A
BC Emerging Markets	0.2%	4.4%	6.8%	7.6%	10.5%
Real Estate	0.270	7.770	0.076	7.076	10.5/6
NCREIF (Private RE)	13.0%	11.6%	12.7%	8.2%	9.8%
NAREIT (Public RE)	3.7%	9.0%	14.1%	6.4%	10.4%
Commodity Index	0.770	7.070	17.170	0.470	10.476
Bloomberg Commodity (formerly DJUBS)	-23.7%	-8.8%	-3.9%	-2.6%	3.0%

^{*} Performance is annualized for periods greater than one year.



TOTAL PORTFOLIO REVIEW

OPFRS Portfolio Performance

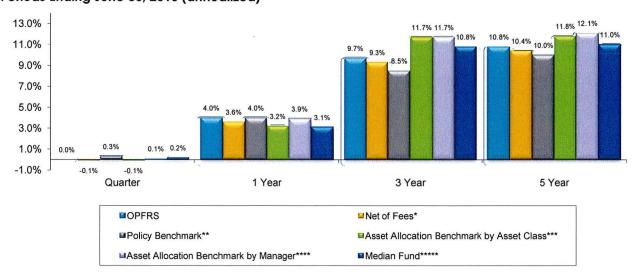
This section includes an overview of the performance of the OPFRS investment portfolio, as well as a detailed analysis of asset classes and specific mandates.

Portfolio Performance Overview

During the latest quarter ending June 30, 2015, the OPFRS Total Portfolio generated a return of 0.0%, gross of fees, underperforming its benchmark by (30) basis points. The Plan's Domestic and International Equity both outperformed their respective benchmarks by 10 and 30 basis points, respectively. The Plan's Fixed Income allocation outperformed its benchmark by 30 basis points, while Real Return and Covered Calls both underperformed their respective benchmarks by (400) and (10) basis points, respectively.

The Total Portfolio produced negative relative results versus the policy benchmark over the quarter, while matching the benchmark over the 1-year period. The Total Portfolio outperformed over the 3- and 5-year periods, gross of fees. Relative to the Median Fund, the Total Portfolio underperformed over the quarter, 3-, and 5-year time periods, but beat the median fund over the most recent 1-year period and fiscal year-to-date. Relative performance with respect to the Median Fund can be largely attributed to differences in asset allocation.

Periods Ending June 30, 2015 (annualized)



Net of fee returns are estimated based on OPFRS manager fee schedule.

^{**} The Evolving Policy Benchmark consists of 48% Russell 3000, 12% MSCI ACWI ex U.S., 20% BC Universal, 10% CBOE BXM and 10% CPI+3%.

^{***} Asset Allocation Benchmark by Asset Class is calculated using actual weightings of the broad asset classes.

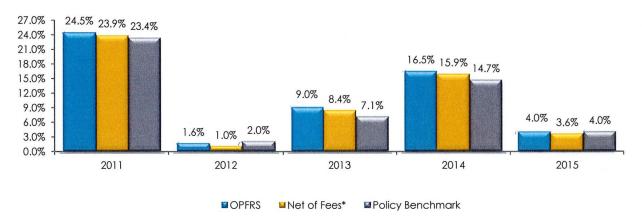
^{****} Asset Allocation Benchmark by Manager consists of weighted average return of individual manager benchmarks, based on managers' actual allocations.

^{*****} Median Fund is the Mellon Total Public Funds Universe.



Absolute performance results have been positive in each of the last five 12-month periods ending June 30. The Plan also outperformed or matched its policy benchmark in four out of the last five periods, gross of fees.

12-Month Performance – Periods Ending June 30



*Net of fee returns are estimated based on OPFRS manager fee schedule

Portfolio Valuation

The OPFRS portfolio had an aggregate value of \$423.9 million as of June 30, 2015. During the latest quarter, the portfolio decreased by (\$17) million. Over the latest year, the portfolio decreased by (\$44.3) million, including (\$60) million in net benefit payments.

Investment Portfolio Valuation as of June 30, 2015*

	June 30,	March 31,	Quarterly	Percentage	June 30,	Annual	Percentage
	2015	2015	Change	Change	2014	Change	Change
OPFRS	\$423.9	\$440.9	(\$17)	(3.9%)	\$468.2	(\$44.3)	(9.5%)

^{*}The calculations listed above represent change in dollar value and not investment returns.



Actual vs. Target Allocations

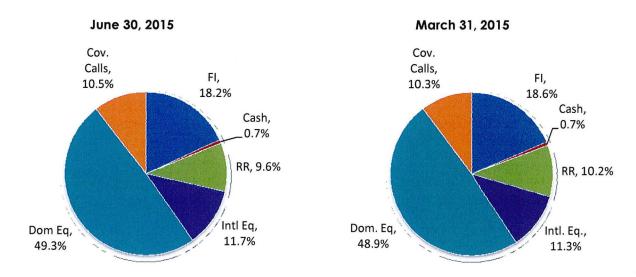
With respect to policy targets, the portfolio ended the latest quarter overweight Domestic Equity, Covered Calls, and cash, while underweight International Equity, Fixed Income, and Real Return. Target weightings reflect the Plan's evolving asset allocation (effective 3/31/2014).

As of June 30, 2015				
<u>Segment</u>	<u> Actual \$(000)</u>	<u>Actual %*</u>	<u>Target %</u>	<u>Variance</u>
Total Investment Portfolio	423,875	100.0%	100.0%	***
Domestic Equity Large Cap Equity Mid Cap Equity Small Cap Equity	208,918 152,882 32,824 23,212	49.3% 36.1% 7.7% 5.5%	48.0% 34.0% 8.0% 6.0%	1.3% 2.1% -0.3% -0.5%
International Equity	49,552	11.7%	12.0%	-0.3%
Total Equity	258,470	61.0%	60.0%	1.0%
Fixed Income	77,201	18.2%	20.0%	-1.8%
Covered Calls	44,375	10.5%	10.0%	0.5%
Real Return	40,824	9.6%	10.0%	-0.4%
Cash	3,005	0.7%	0.0%	0.7%

^{*} In aggregate, asset class allocations equal 100% of total investment portfolio. Differences due to rounding.

During the latest quarter, Domestic Equity increased its weighting by 0.4%, Fixed Income decreased its weighting by (0.4%), and International Equity's weighting increased by 0.4%. Actual weighting for Covered Calls increased by 0.2%, while the acual weighting for Real Return decreased by (0.6%). The weighting for Cash remained constant.

Investment Portfolio Actual Asset Allocation Comparison





Asset Class Performance

The **Domestic Equity** asset class slightly outperformed its benchmark by 10 basis points over both the most recent quarter and 1-year periods. Over the longer term, the Domestic Equity portfolio outperformed its benchmark over the 3- and 5-year periods by 20 and 40 basis points, respectively.

The **International Equity** portfolio continues its solid recent performance, outperforming its policy benchmark by 0.3% during the most recent quarter and by 4.0% over the 1-year period. The International Equity portfolio also outperformed over the 3- and 5-year periods by 1.6% and 0.9%, respectively.

The **Fixed Income** asset class outperformed its benchmark by 30 basis points over the most recent quarter, and by 70 basis points over the 1-year period. The fixed income portfolio matched its benchmark over the 3-year period, and outperformed by 10 basis points over the 5-year period.

The **Covered Calls** asset class underperformed by (0.1%) over the most recent quarter, but has outperformed over the 1-year period by 1.2%.

the **Real Return** asset class performance continues to trail its benchmark, underperforming by (4.0%) over the most recent quarter, and by (7.3%) over the 1-year period.

Periods ending June 30, 2015

Asset Class	Quarter	1-Year	3-Year	5-Year
Total Investment Portfolio	0.0	4.0	9.7	10.8
Policy Benchmark ¹	0.3	4.0	8.5	10.0
Public Equity	0.4	5.8	16.6	15.9
Policy Benchmark ²	0.3	4.8	16.0	15.4
Domestic Equity	0.2	7.4	17.9	17.9
Blended Benchmark ⁴	0.1	7.3	17.7	17.5
Large Cap	0.2	7.4	17.4	17.6
Russell 1000	0.1	7.4	17.7	17.6
Mid Cap	0.2	6.9	18.1	17.3
Russell Midcap	-1.5	6.6	19.3	18.2
Small Cap	0.7	8.5	21.5	21.6
Russell 2000	0.4	6.5	17.8	17.1
International Equity	1.0	-0.8	11.5	9.1
Blended Benchmark⁵	0.7	-4.8	9.9	8.2
Fixed Income	-1.1	2.3	2.3	3.9
BC Universal (blend) ⁶	-1.4	1.6	2.3	3.8
Covered Calls	1.8	4.8		
CBOE BXM	1.9	3.6		
Real Return	-2.2	-4.2		
CPI + 3%	1.8	3.1		

¹ The Evolving Policy Benchmark consists of 48% Russell 3000, 12% MSCI ACWI ex U.S., 20% BC Universal, 10% CBOE BXM, and 10% CPI+3%.

² The Public Equity benchmark consists of 80% Russell 3000 and 20% MSCI ACWI ex U.S.

⁴ Domestic Equity Benchmark consists of S&P 500 thru 3/31/98, 29% R1000, 57% R1000V, 14% RMC from 4/1/98 - 12/31/04, and Russell 3000 from 1/1/05 to the present.

⁵ International Equity Benchmark consists of MSCI EAFE thru 12/31/04, and MSCI ACWI x U.S. thereafter.

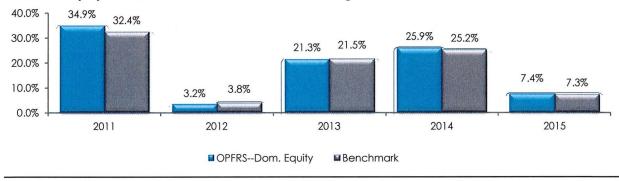
⁶ Fixed Income Benchmark consists of BC Aggregate prior to 4/1/06, BC Universal prior to 7/1/2012, and a blend of 75%tbills, 25% BC Universal thereafter.



Asset Class Performance

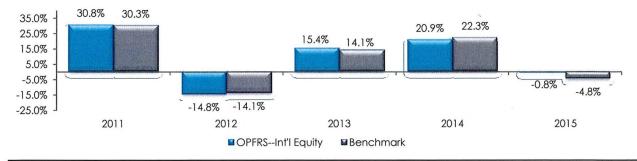
The Domestic Equity portfolio outperformed the policy benchmark in three out of five of latest 12-month periods. The Plan finished the latest 12-month period ending June 30, 2015, with a return of 7.4%, outperforming the policy benchmark by 10 basis points.

Domestic Equity 12-Month Performance – Periods Ending June 30



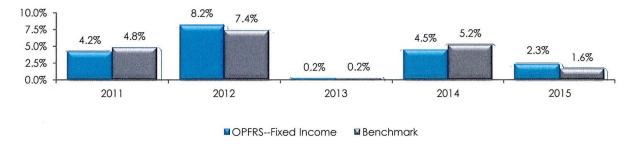
The International Equity portfolio outperformed or matched the policy benchmark in three of the five latest 12-month periods. The Plan finished the latest 12-month period ending June 30, 2015, with a return of (0.8%), outperforming the policy benchmark by 4.0%.

International Equity 12-Month Performance – Periods Ending June 30



The Fixed Income portfolio outperformed or matched the policy benchmark in three of the last five 12-month periods. The Plan finished the latest 12-month period ending June 30, 2015, with a return of 2.3%, outperforming the policy benchmark by 70 basis points.

Fixed Income 12-Month Performance – Periods Ending June 30





Manager Performance

Domestic Equity – Periods ending June 30, 2015

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Northern Trust R1000 Index	92,697	Large Cap Core	0.2	7.5	17.7	17.5	14.8	5/2010
Russell 1000 Index		<u> </u>	0.1	7.4	17.7	17.6	13.8	
SSgA Russell 1000 Value	29,367	Large Cap Value	0.1				2.1	10/2014
Russell 1000 Value Index			0.1				2.0	
SSgA Russell 1000 Growth	30,818	Large Cap Growth	0.1				6.1	10/2014
Russell 1000 Growth Index			0.1				6.1	X -1-
Earnest	32,824	Mid Cap Core	0.2	6.9	18.1	17.3	8.5	3/2006
Russell MidCap	<u></u> -		-1.5	6.6	19.3	18.2	8.6	
NWQ	12,293	Small Cap Value	-1.2	4.9	20.8	20.8	7.5	1/2006
Russell 2000 Value Index	<u> </u>	<u> </u>	-1.2	0.8	15.5	14.8	6.0	
Lord Abbett	10,919	Small Cap Growth	3.0	12.7	22.8	22.5	22.5	6/2010
Russell 2000 Growth Index			2.0	12.3	20.1	19.3	19.3	

^{*} Performance is calculated based on the first full month of performance since funding.

During the latest three-month period ending June 30, 2015, two of OPFRS' three active domestic equity managers outperformed their respective benchmarks, while the other manager matched its benchmark.

Northern Trust, the Plan's passive large cap core transition account continues to perform in-line with its benchmark over all time periods measured. This performance is within expectations for a passive mandate.

SSgA Russell 1000 Value, the Plan's new passive large cap value account was funded in October 2014 and has continued to perform within expectations for a passive mandate.

SSgA Russell 1000 Growth, the Plan's new passive large cap growth account was funded in October 2014 and has continued to perform within expectations for a passive mandate.

Earnest Partners, the Plan's mid cap core manager, completed the quarter with an 0.2% return, outperforming the Russell Midcap Index by 1.7%. Over the latest 1-year period, Earnest outperformed its benchmark by 0.3%, while underperforming over the 3- and 5-year periods by (1.2%), and (0.9%), respectively.

NWQ, the Plan's small cap value manager, matched the Russell 2000 Value Index return of (1.2%) over the latest 3-month period. NWQ's continues to handily beat its benchmark over the longer-term as it outperformed by 4.1%, 5.3%, and 6.0% over the 1-, 3-, and 5-year periods, respectively.

Lord Abbett, the Plan's small cap growth manager, outperformed the Russell 2000 Growth Index by 1.0% over the quarter. Over the 1-year period, Lord Abbett outperformed the benchmark by 0.4% while outperforming over the 3- and 5-year periods by 2.7% and 3.2%, respectively.

^{**} Inception date reflects the month when portfolio received initial funding.



International Equity – Periods ending June 30, 2015

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
SSgA	14,124	International	0.8	-4.0	12.3	9.8	8.0	7/2002
MSCI EAFE Index		<u></u>	0.8	-3.8	12.5	10.0	8.1	
Hansberger	17,491	International	2.9	1.4	11.5	8.5	4.7	1/2006
MSCI ACWI x US		-	0.7	-4.8	9.9	8.2	4.6	
Fisher	17,937	International	-0.6	0.0	11.2		4.3	4/2011
MSCI ACWI x US	<u> </u>		0.7	-4.8	9.9		3.3	

^{*} Performance is calculated based on the first full month of performance since funding.

During the latest three-month period ending June 30, 2015, one of OPFRS' two active International Equity managers outperformed its benchmark.

The **SSgA** account has performed roughly in-line with its benchmark over all time periods measured. This performance is within expectations for a passive mandate.

Hansberger, one of OPFRS' active international equity managers, outperformed the MSCI ACWI x US Index during the quarter by 2.2%. The portfolio has also outperformed over the 1-, 3-, and 5-year periods by 6.2%, 1.6%, and 0.3%, respectively.

Fisher, one of OPFRS' active international equity managers, underperformed the MSCI ACWI x US Index by (1.1%) during the quarter. Over the latest 1-year period, Fisher beat its benchmark target by 4.8%, and outperformed by 1.3% over the 3-year period.

^{**} Inception date reflects the month when portfolio received initial funding.



Fixed Income - Periods ending June 30, 2015

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception	Inception Date ***
Reams	25,000	Core Plus	-1.0	2.2	2.6	4.5	6.1	1/1998
BC Universal Index (blend)*	<u></u>	<u></u>	-1.4	1.6	2.3	3.8	5.3	
T. Rowe Price	41,936	Core	-1.6	1.9	2.4		3.5	5/2011
BC Aggregate Index	<u></u>	<u></u>	-1.7	1.9	1.8		3.3	
DDJ	10,265	H.Y. / B.L.	1.0				2.9	1/2015
BofAML US HY Master II		_	0.0				1.8	

^{*} Previously the benchmark for Reams was the BC Aggregate; this was changed to the BC Universal beginning 4/1/2006.

During the latest three-month period ending June 30, 2015, both of OPFRS' two active Fixed Income managers outperformed their respective benchmarks.

Reams, the Plan's core plus fixed income manager, produced a quarterly return of (1.0%), outperforming the BC Universal (blend) Index by 40 basis points. During the latest 1-year period, the portfolio beat its benchmark by 60 basis points while also outperforming over the 3- and 5-year periods by 30 and 70 basis points, respectively.

T. Rowe Price, the Plan's core fixed income manager, produced a quarterly return of (1.6%), outperforming the BC Aggregate Index by 10 basis points. The portfolio matched its benchmark over the most recent 1-year period, and outperformed its benchmark by 60 basis points over the 3-year period.

DDJ, the Plan's High Yield & Bank Loan manager, outperformed its benchmark, the BofAML US High Yield Master II index, by 1.0% over the 1-year period and by 1.1% since inception.

Covered Calls & Total Real Return – Periods ending June 30, 2015

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception	Inception Date ***
Parametric	44,375	Covered Calls	1.8	4.8			6.7	3/2014
CBOE BXM	<u> </u>		1.9	3.6			5.5	
Wellington	40,824	Total Real Return	-2.2	-4.2			-0.2	1/2014
CPI + 3%	<u> </u>		1.8	3.1			4.5	

^{**} Performance is calculated based on the first full month of performance since funding.

During the latest three-month period ending June 30, 2015, both OPFRS' Covered Calls and Real Return managers underperformed their respective benchmarks.

Parametric, the Plan's Covered Calls manager, produced a quarterly return of 1.8%, underperforming its benchmark by (10) basis points. Over the most recent 1-year period, the portfolio has outperformed by 1.2%.

Wellington, the Plan's Total Real Return manager, produced a quarterly return of (2.2%), underperforming its benchmark by (4.0%). The portfolio also trailed its benchmark by (7.3%) over the 1-year period.

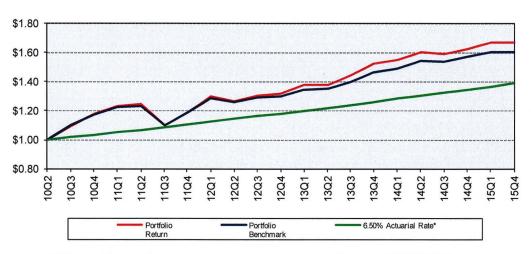
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^{***} Inception date reflects the month when portfolio received initial funding.

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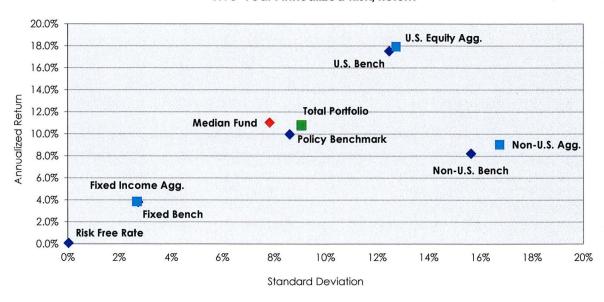
OPFRS Risk/Return Analysis Period ending June 30, 2015

Growth of a Dollar Past 5 Years



* The actuarial expected rate of return was 8% through 6/30/2009, 7.5% through 6/30/2010, 7% through 6/30/2011, 6.75% through 6/30/2014, and 6.5% currently

Five-Year Annualized Risk/Return





City of Oakland Police & Fire Retirement, Asset Allocation as of June 30, 2015

Manager	Style	Market Value \$(000)	Target	Actual ¹	Difference
Total Plan		\$423,875	100.0%	100.0%	0.0%
Public Equity		\$258,470	60.0%	61.0%	1.0%
Domestic Equity		\$208,918	48.0%	49.3%	1.3%
Large Cap Equity					
Northern Trust	Large Cap Core	92,697	19.2%	21.9%	2.7%
SSgA Russell 1000 Value	Large Cap Value	29,367	7.4%	6.9%	-0.5%
SSgA Russell 1000 Growth	Large Cap Growth	30,818	7.4%	7.3%	-0.1%
Mid Cap Equity					
Earnest Partners	Mid Cap Core	32,824	8.0%	7.7%	-0.3%
Small Cap Equity					
NWQ	Small Cap Value	12,293	3.0%	2.9%	-0.1%
Lord Abbett	Small Cap Growth	10,919	3.0%	2.6%	-0.4%
International Equity		\$49,552	12.0%	11.7%	-0.3%
SSgA	International	14,124	3.6%	3.3%	-0.3%
Hansberger	International	17,491	4.2%	4.1%	-0.1%
Fisher	International	17,937	4.2%	4.2%	0.0%
Fixed Income		\$77,201	20.0%	18.2%	-1.8%
Reams	Core Plus	25,000	8.0%	5.9%	-2.1%
T. Rowe Price	Core	41,936	10.0%	9.9%	-0.1%
DDJ	High Yield/Bank Loans	10,265	2.0%	2.4%	0.4%
Transition (Reams) ³	Transition Portfolio	0	0.0%	0.0%	
Covered Calls		\$44,375	10.0%	10.5%	0.5%
Parametric (Eaton Vance)	Active/Replication	44,375	_	10.5%	-
Real Return		\$40,824	10.0%	9.6%	-0.4%
Wellington		40,824	_	9.6%	_
Total Cash ²		\$3,005	0.0%	0.7%	0.7%

In aggregate, asset class allocations equal to 100% of total investment portfolio.

^{2.} Includes cash balance with City Treasury and Torrey Pines Bank as of 3/31/2015.

^{3.} Includes a residual \$84 in the Reams transition account.



MANAGER MONITORING / PROBATION LIST

Monitoring/Probation Status

As of June 30, 2015 Return vs. Benchmark since Corrective Action

Portfolio	Status	Concern	Months Since Corrective Action	Performance^ Since Corrective Action	Date of Corrective Action*
Hansberger	On Watch	Organizational	13	1.9%	5/28/2014
MSCI ACWI ex-US			13	-3.0	<u></u>

[^] Annualized performance if over one year.

Investment Performance Criteria For Manager Monitoring/Probation Status

Asset Class	Short-term (rolling 12 mth periods)	Medium-term (rolling 36 mth periods)	Long-term (60 + months)	
Active Domestic Equity	Fd return < bench return – 3.5%	Fd annlzd return < bench annlzd return – 1.75% for 6 consecutive months	VRR < 0.97 for 6 consecutive months	
Active International Equity	Fd return < bench return – 4.5%	Fd annlzd return < bench annlzd return – 2.0% for 6 consecutive months	VRR < 0.97 for 6 consecutive months	
Passive International Equity	Tracking Error > 0.50%	Tracking Error > 0.45% for 6 consecutive months	Fd annizd return < bench annizd return – 0.40% for 6 consecutive months	
Fixed Income Fd return < bench return – 1.5%		Fd annlzd return < bench annlzd return – 1.0% for 6 consecutive months	VRR < 0.98 for 6 consecutive months	

All critelized basis.

VRR - Value Relative Ratio - is calculated as: manager cumulative return / benchmark cumulative return.

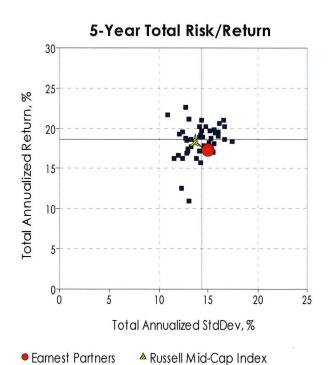
^{*} Approximate date based on when Board voted to either monitor a manager at a heightened level or place it on probation.

Oakland Police & Fire Performance Summary and Universe Rankings Period Ending June 30, 2015

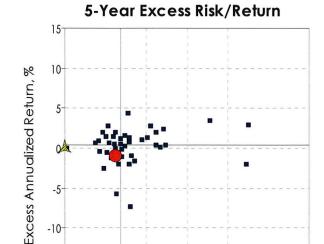
Mellon Total Funds - Public Un	THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.	1 Voor	2 Vocas	E Voer
	Quarter	1- Year	3-Year	5-Year
Maximum	2.2	7.7	15.8	13.0
Percentile 25	0.5	4.1	11.8	11.5
Median	0.2	3.1	10.8	11.0
Percentile 75	-0.2	2.2	9.5	10.0
Minimum	-5.8	-3.1	-0.6	1.6
Number of Portfolios	107	106	93	86
Oakland Police & Fire Total				
Return	0.0	4.0	9.7	10.8
Quartile Rank	3rd	2nd	3rd	3rd



Oakland Mid Cap Core Manager Comparisons as of June 30, 2015



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Earnest Partners	17.33	14.97	1.16
Russell Mid-Cap Index	18.23	13.71	1.33
Mid Cap Core Universe Median	18.65	14.27	1.29



	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Earnest Partners	-0.90	3.12	-0.29
Russell Mid-Cap Index	0.00	0.00	NA
Mid Cap Core Universe Median	0.42	3.43	0.08

Excess Annualized StdDev, %

10

13

15

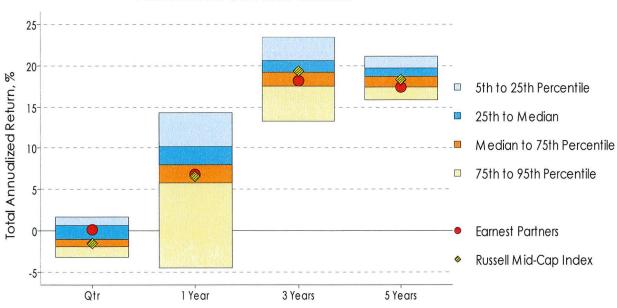
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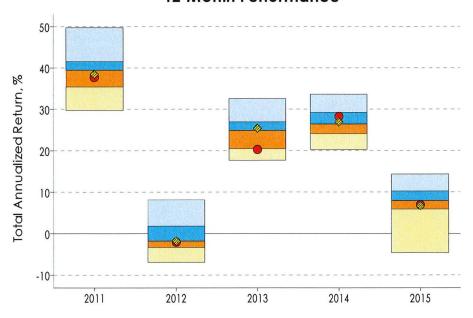


Oakland Mid Cap Core Manager Comparisons as of June 30, 2015

Annualized Universe Returns

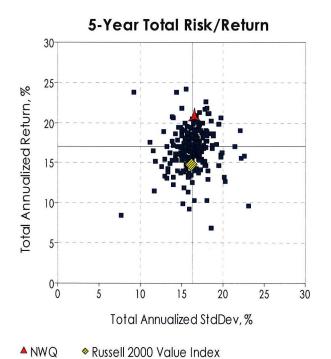


12-Month Performance





Oakland Small Cap Value Manager Comparisons as of June 30, 2015



	Annualized Return, %	Annualized Std Dev, %	Sharp e Ratio
NW Q	20.76	16.53	1.26
Russell 2000 V alue Index	14.81	16.21	0.91
Small Cap Value Universe Median	16.99	16.22	1.06

	15	5-Ye	ar Ex	ces	s Risk	/Ret	urn	
d Return, %	15						•	
Excess Annualized Return, %	-5	**					•	
	-1000	2 E	4 xcess /	6 Annual	8 ized Sto	10 dDev, %	12	14

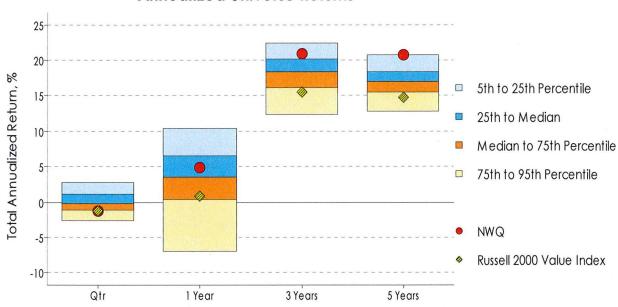
Russell 2000 Value Index

▲ NWQ

	Excess Return, %	Excess StDev, %	Ratio, Excess
NWQ	5.95	4.69	1.27
Russell 2000 V alue Index	0.00	0.00	NA
Small Cap Value Universe Median	2.18	4.38	0.50

Oakland Small Cap Value Manager Comparisons as of June 30, 2015

Annualized Universe Returns

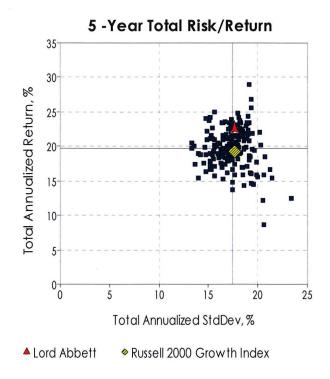


12-Month Performance

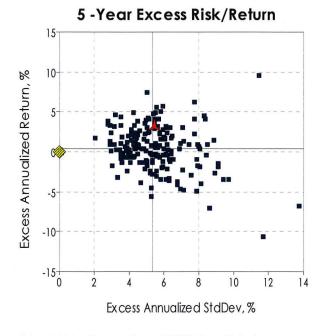




Oakland Small Cap Growth Manager Comparisons as of June 30, 2015



	Annualized Return, %	Annualized Std Dev, %	Sharp e Ratio
Lord Abbett	22.52	17.64	1.28
Russell 2000 Grow th Index	19.33	17.65	1.09
Small Cap Grow th Universe Median	19.74	17.38	1.16

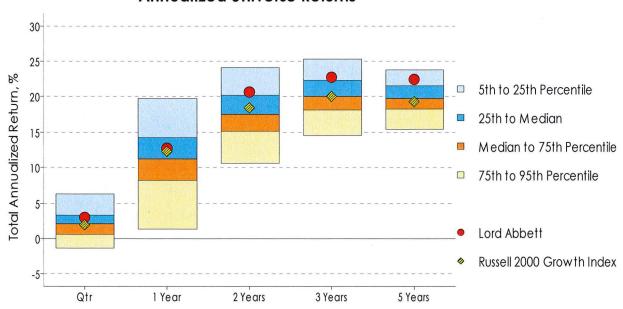


	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Lord Abbett	3.19	5.43	0.59
Russell 2000 Grow th Index	0.00	0.00	NA
Small Cap Grow th Universe Median	0.41	5.33	0.09

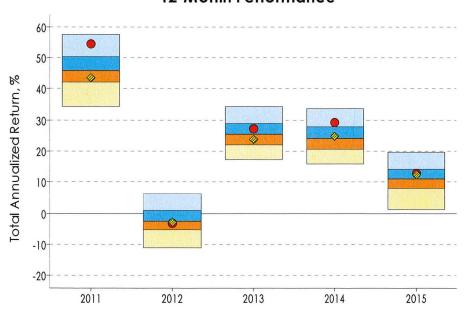


Oakland Small Cap Growth Manager Comparisons as of June 30, 2015



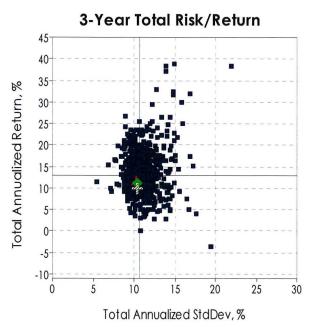


12-Month Performance



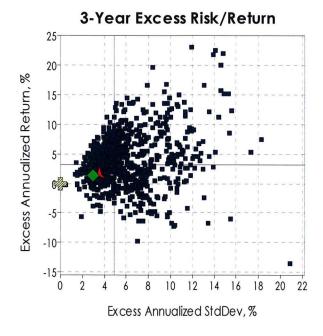


Oakland International Equity Manager Comparisons as of June 30, 2015



▲ Hansberger ◆ Fisher 参 M SCI AC World Index ex USA

	Annualized Return, %	Annualized Std Dev, %	Sharp e Ratio
Hansberger	11.48	10.30	1.11
Fisher	11.21	10.42	1.08
MSCI AC W orld Index ex USA	9.92	10.35	0.96
International Equity Universe Median	13.03	10.63	1.23

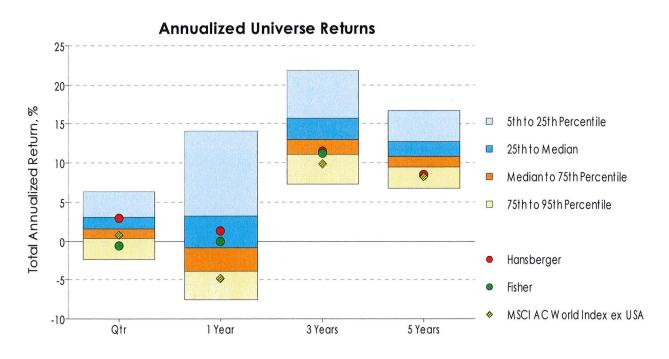


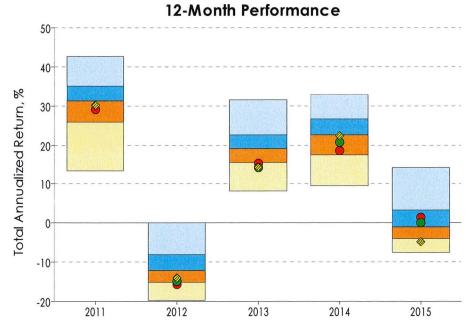
Hansberger	Fisher	₱ MSCI AC World Index ex USA	
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	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Hansberger	1.56	3.53	0.44
Fisher	1.30	2.99	0.43
MSCI AC W orld Index ex USA	0.00	0.00	NA
International Equity Universe Median	3.12	4.88	0.73

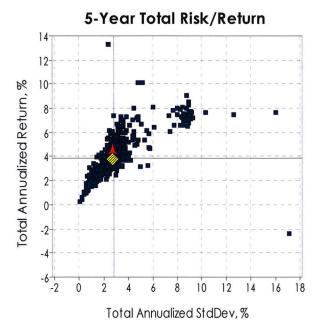


Oakland International Equity Manager Comparisons as of June 30, 2015



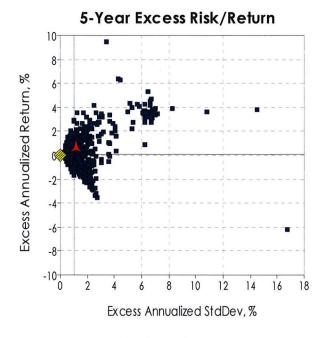






	Annualized Return, %	Annualized Std Dev, %	Sharp e Ratio
Reams	4.46	2.70	1.65
Oakland BC Universal Blend	3.81	2.73	1.39
U.S. Fixed Income Universe Median	3.89	2.78	1.47

Reams	Oakland BC Universe	al Blend
110 011110	o character be of the order	



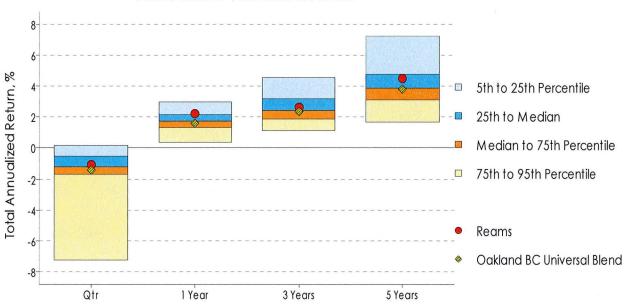
120 32 2	Annualized Excess Return, %	Annualized Excess StDev, %	Sharpe Ratio, Excess
Reams	0.66	1.18	0.55
Oakland BC Universal Blend	0.00	0.00	NA
U.S. Fix ed Income Universe Median	0.08	1.02	0.09

▲ Reams

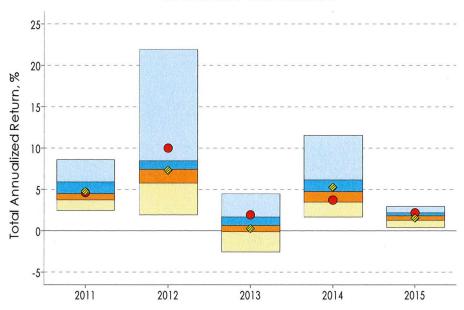
 Oakland BC Universal Blend



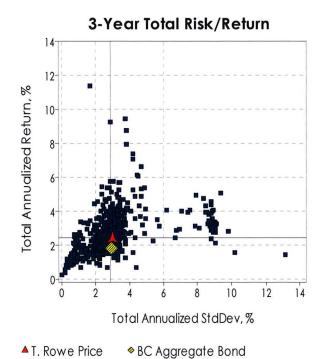
Annualized Universe Returns



12-Month Performance







	Annualized Return, %	Annualized Std Dev, %	Sharp e Ratio
T. Row e Price	2.36	2.98	0.79
BC Aggregate Bond	1.83	2.95	0.62
U.S. Fix ed Income Universe Median	2.44	2.87	0.93

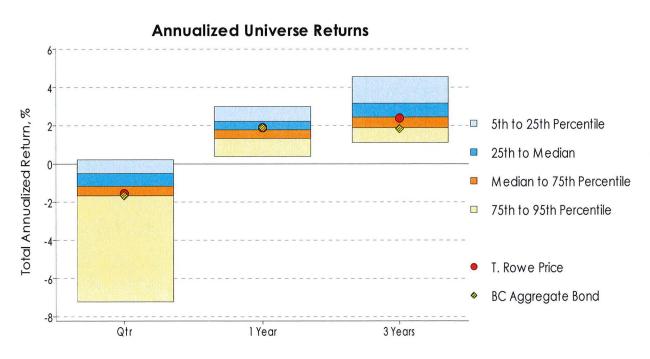
		3-Yec	ır Exc	ess Ri	sk/Re	eturn	
	10	-		1			
8%	8		••				
eturn	6		 4_				
Excess Annualized Return, %	4	Ţ.					
nualiz	2-	ŀ		1			
ss Anı		H					
Exce	-2						
	-4 0	2	4	6	8	10	12
		Exc	cess Anr	nualized	StdDev	,%	

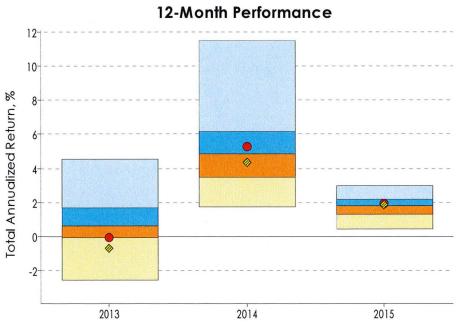
BC Aggregate Bond

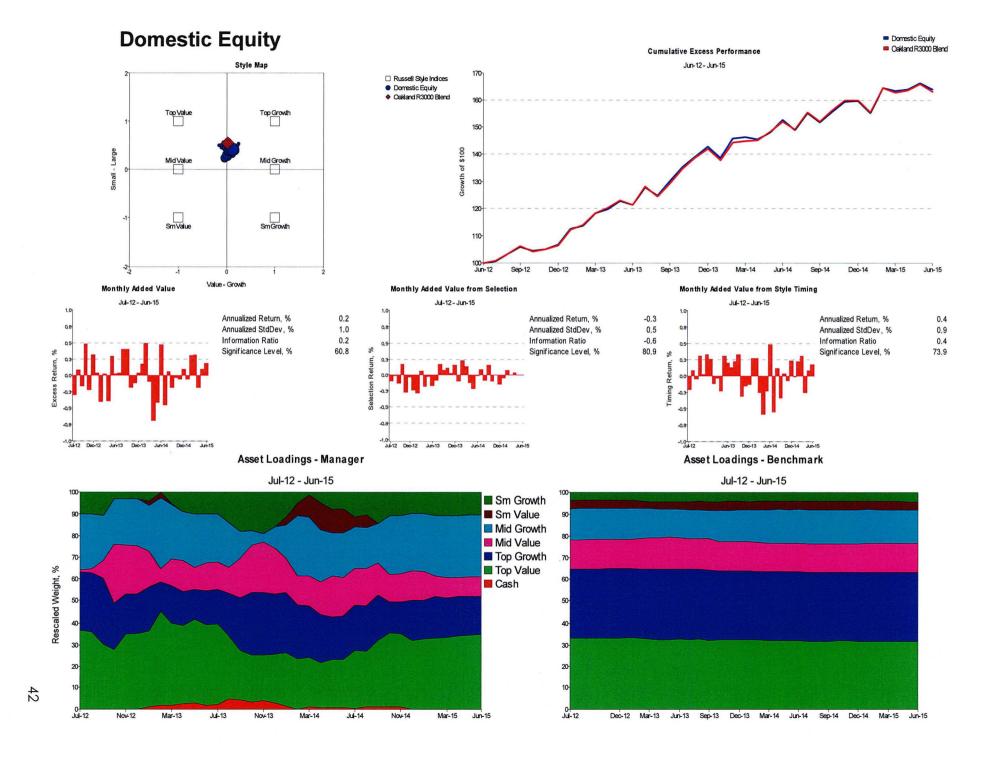
▲ T. Rowe Price

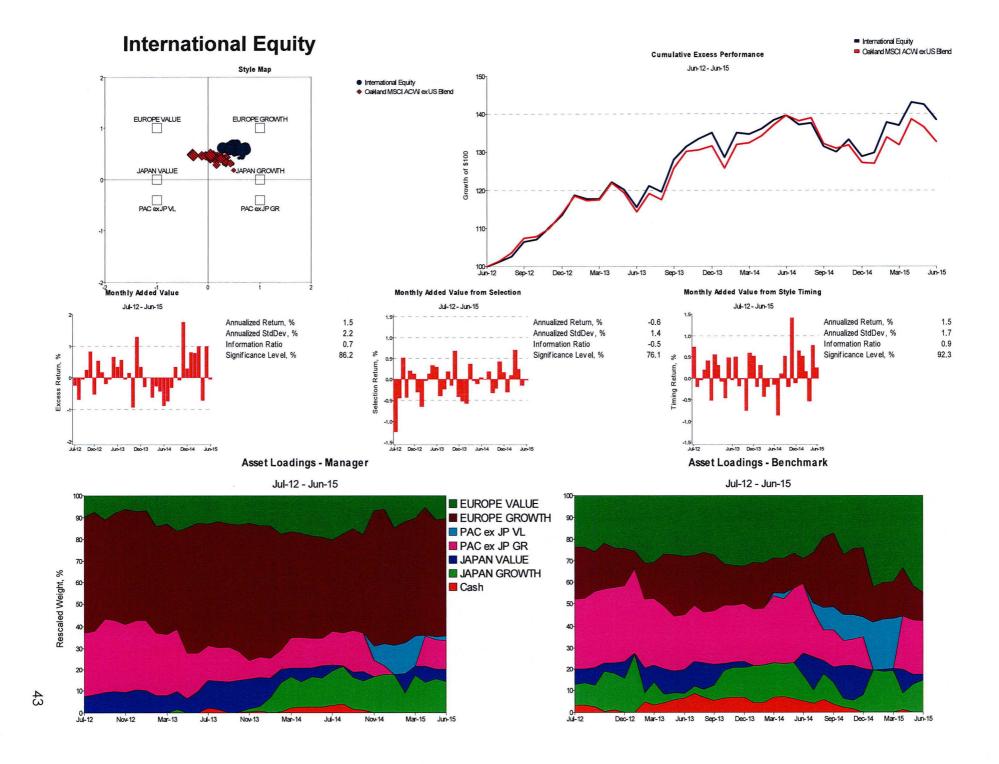
	Annualized Excess Return, %	Annualized Excess StDev, %	Sharp e Ratio, Excess
T. Row e Price	0.53	0.40	1.32
BC Aggregate Bond	0.00	0.00	NA
U.S. Fix ed Income Universe Median	0.62	1.09	0.51

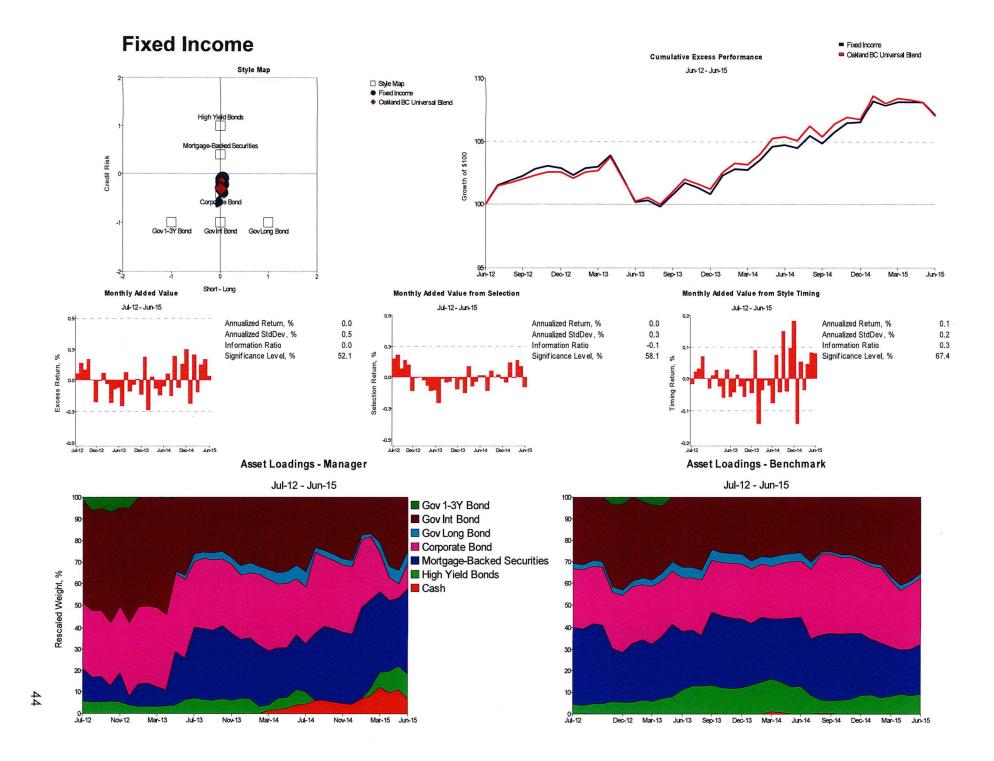












Appendix

Glossary

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 exces s 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 port folio 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 stocks.

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 r eturn 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 explaine d by the variability of one or more other series 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.



Benchmark Definitions

Barclays Capital 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, in that order 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.

MSCI ACWI x US: MSCI ACWI (All Country World Index) Free excluding US (gross dividends): is a free-floating adjusted market capitalization index designed to measure equity performance in the global developed and emerging markets. As of April 2002, the index consisted of 49 developed and emerging market country indices.

MSCI EAFE (Europe, Australasia, Far East): is a free float-adjusted market capitalization index that is designed to measure developed market equity performance, excluding the US & Canada.

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 MidCap: measures the performance of the smallest 800 companies in the Russell 1000 Index, as ranked by total market capitalization.

Russell 2000: measures the performance of the 2,000 smallest securities in the Russell 3000 Index. Russell 2000 is market capitalization-weighted.

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.

CBOE BXM: measures the performance of a hypothetical buy-write strategy on the S&P 500 Index.

CPI + 3%: measures changes in the price level of the Consumer Price Index (CPI) with the addition of an additional 300 basis points. The CPI is a sample estimate which tracks the price level changes of a market basket of consumer goods and services purchased by households.

RISK METRIC DESCRIPTION - Rationale for selection and calculation methodology

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 http://www.econ.yale.edu/~shiller/data.htm. We have used his data as the base for our calculations. Details of the theoretical justification behind the measure can be found in his book Irrational Exuberance [Princeton University Press 2000, Broadway Books 2001, 2nd ed., 2005].

Developed Equity Markets Excluding the US:

Metric: P/E 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.

U.S Private Real Estate Markets:

Metrics: US Cap rates and Annual US Real Estate Deal Volume

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 date is published by NCREIF. We chose to use current value cap rate. These are capitalization rates from properties that were revalued during the quarter. While this data does rely on estimates of value and therefore tends to be lagging, (estimated prices are slower to rise and slow to fall than transaction prices), the data series goes back to 1979, providing a long data series for valuation comparison. Data is published quarterly.

Annual US real estate deal volume is the total deal transaction volume in \$ billions (both equity and debt) reported by Real Capital Analytics during the trailing-twelve months. This metric gives the level of activity in the market. Data is published monthly.

Measure of Equity Market Fear / Uncertainty

Metric: VIX – Measure of implied option volatility for U.S. 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.

Definition of "extreme" metric readings

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

Credit Markets US 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.

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 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.



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 (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. 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.

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.

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