

CITY OF OAKLAND

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AGENDA REPORT

TO: John A. Flores
Interim City Administrator

FROM: Katano Kasaine
Treasurer

SUBJECT: Informational Report on PFRS' Investment Portfolio as of December 31, 2014

DATE: February 9, 2015

City Administrator
Approval

Date

2/23/15

COUNCIL DISTRICT: City-Wide

RECOMMENDATION

Staff recommends that the Council accept:

An informational report on the Oakland Police and Fire Retirement System ("PFRS") Investment Portfolio as of December 31, 2014.

OUTCOME

This is an informational report with no direct fiscal impact or outcome.

EXECUTIVE SUMMARY

The attached report provided by the PFRS Investment Consultant summarizes the performance of the PFRS investment portfolio for the quarter ended December 31, 2014 (*Attachment A*). This report is being provided in accordance with the funding agreement between the City and the PFRS Board pursuant to the issuance of the 2012 Pension Obligation Bonds ("2012 POB").

BACKGROUND/LEGISLATIVE HISTORY

The Oakland Police and Fire Retirement System (PFRS) (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 Plan was closed to new members on June 30, 1976. All of the members of the System are retired. As of December 31, 2014, the System had 990 members.

Item: _____
Finance and Management Committee
March 10, 2015

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 twelve 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 Pension Obligation Bonds ("POBs") and as a result deposited \$417 million into the Plan to pay the City's contributions through June 2011. In accordance with the funding agreement entered into at the time the POBs were issued in 1997, 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. The City of Oakland contributed \$45,507,996 in the fiscal year ended June 30, 2012.

In July 2012, the City issued \$212,540,000 Taxable Pension Obligation Bonds, Series 2012. The City subsequently deposited \$210 million in Pension Obligation Bond proceeds into the System and entered into a funding agreement with the PFRS Board. As a result of a funding agreement, no additional contributions are required until July 1, 2017.

As of June 30, 2014, the System's Net Pension Liability is approximately \$176.5 million and the System had a Fiduciary Net Position as percentage of Total Pension Liability is 72.4 percent. The next required City contribution is projected to be approximately \$35.6 million in fiscal year 2017-2018.

ANALYSIS

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"). As of December 31, 2014, the System's membership was 990, which included 691 retirees and 299 beneficiaries.

Membership	POLICE	FIRE	TOTAL
Retiree	415	276	691
Beneficiary	157	142	299
Total Membership	572	418	990

Asset Allocation

At its September 26, 2012 meeting, the PFRS Board conducted an asset allocation strategy review. The PFRS Board elected to adjust the strategic investment allocations for the Retirement Plan. The new approved allocation is presented in the table below. The most significant change is the inclusion of new Covered Calls and Real Return classes that will each represent ten percent (10%) of the strategic allocation policy for both portfolios long-term. The PFRS Board also elected to include a five percent (5%) allocation to Private Equity, pending educational reviews of the asset class in 2014. After Request for Proposal (RFP) processes, the PFRS Board recently hired Eaton Vance as a new Covered Calls Investment Manager and Wellington Management Company LLP as the new Real Return Manager. Based on the illiquidity of the asset class, the PFRS Board decided at their April 30, 2014 meeting to no longer pursue an investment in Private Equity and to seek other investment opportunities to fulfill the five percent Private Equity allocation. A reallocation of the Private Equity five percent allocation has yet to be determined. On August 27, 2014, the PFRS Board diversified their fixed income portfolio by hiring DDJ Capital Management as their High Yield / Bank Loan Fixed Income Asset Manager. Table 2 below shows the PFRS Board approved Investment Allocation.

Asset Class	Long-Term Target Allocation
Fixed Income	20%
Real Return	10
Covered Calls	10
Domestic Equity	43
International Equity	12
Private Equity	5

PFRS Investment Portfolio

Table 3 below shows the PFRS Investment Portfolio as of December 31, 2014.

Table 3	
PFRS Investment Portfolio	
as of December 31, 2014	
Investment	Fair Value
Equities	\$224,525,002
Fixed Income	77,651,061
International Equities	50,925,647
Real Return	42,714,060
Covered Calls	44,877,861
Cash Equivalents	3,316,841
Total Portfolio	\$444,010,472

PFRS Investment Performance

Over the one year period ending December 31, 2014, the PFRS Total Portfolio generated a return of 6.48 percent, gross of fees, which was less than its policy benchmark target of 7.63 percent and lower than the blended Actuarial Expected Rate of Return of 6.63 percent. 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 Total Portfolio outperformed the actuarial expected rate for the 3 and 5-year time periods. The Actuarial Rate of Return was gradually lowered from eight percent (8.0%) in FY 2008 to 6.50 percent in fiscal year 2014-2015.

Table 4
PFRS TOTAL FUND PERFORMANCE
 as of December 31, 2014

	Quarter	1 Year	3 Year	5 Year
PFRS Fund	2.23%	6.48%	10.98%	9.56%
Comparisons:				
PFRS Actuarial Expected Rate of Return (blend) (a) (b)	1.63%	6.63%	6.71%	6.85%
Policy Target (blend) (c)	2.23%	7.63%	9.98%	8.73%
Median Fund (d)	1.49%	6.48%	11.62%	9.87%
CalPERS Investment Returns	0.78%	6.84%	12.17%	9.99%
CalSTRS Investment Returns	1.89%	8.11%	13.46%	10.99%
East Bay Mud Investment Returns	2.90%	8.05%	14.59%	11.56%
Colorado F&P Investment Returns	1.93%	6.83%	11.34%	9.59%

- (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 and 6.5% currently.
- (b) The quarterly actuarial expected rate of return is calculated based on the 6.50% annual return assumption.
- (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.

PUBLIC OUTREACH/INTEREST

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

COORDINATION

This report was prepared in coordination with the PFRS' Investment Consultant, Pension Consulting Alliance (PCA).

COST SUMMARY/IMPLICATIONS

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

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.

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

Respectfully submitted,



KATANO KASAINÉ
Treasurer

Prepared by:
Téir Jenkins, Investment Officer
Oakland Police and Fire Retirement System

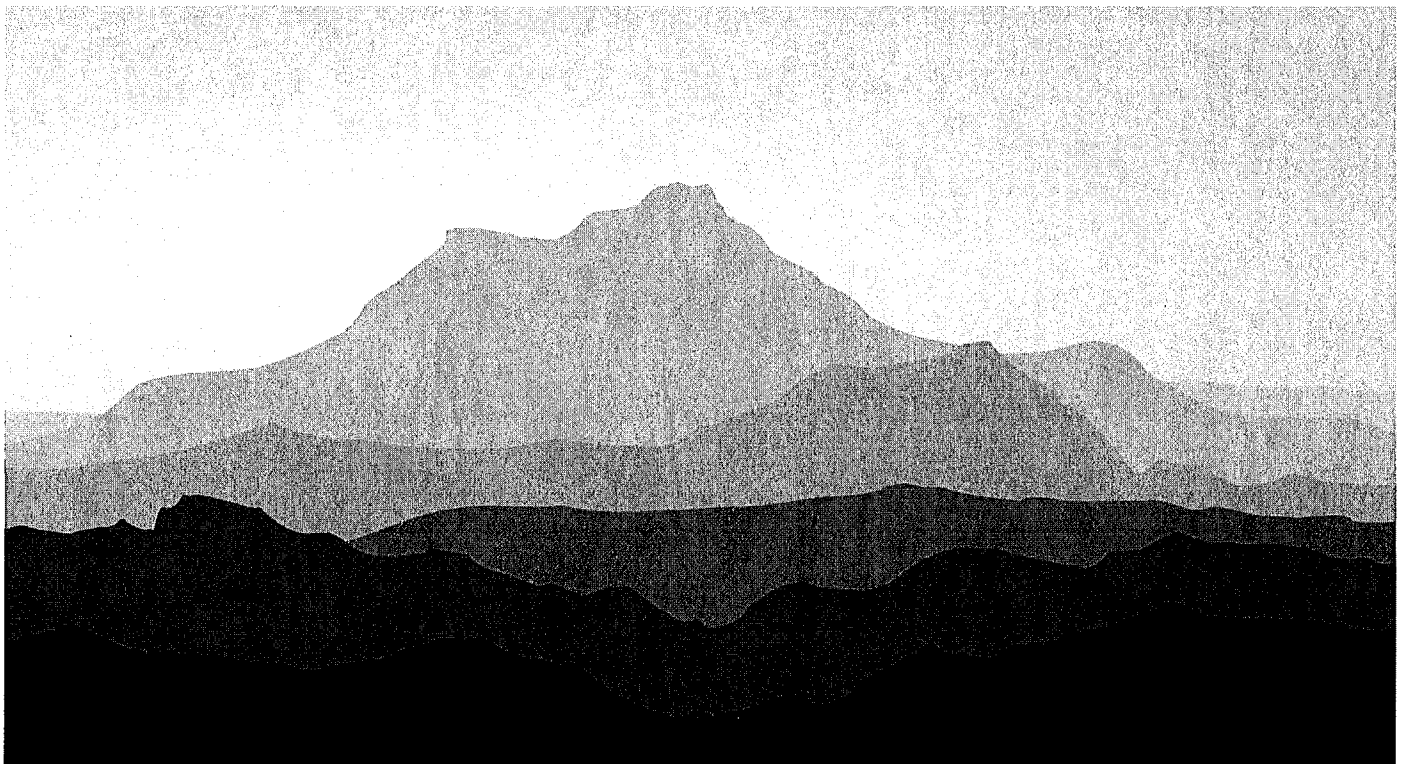
Attachment A: *PFRS Performance Report as of December 31, 2014*

**ATTACHMENT A:
PFRS PERFORMANCE REPORT
AS OF DECEMBER 31, 2014**

4Q

2014

OAKLAND POLICE & FIRE RETIREMENT SYSTEM
QUARTERLY PERFORMANCE REPORT



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

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

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B	INVESTMENT MARKET RISK METRICS
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F	INDIVIDUAL MANAGER PERFORMANCE

TOTAL PORTFOLIO SUMMARY

As of December 31, 2014, the City of Oakland Police and Fire Retirement System (OPFRS) portfolio had an aggregate value of \$444.0 million. This represents a (\$7.0) million decrease in value over the quarter. During the previous one-year period, the OPFRS Total Portfolio decreased by (\$32.4) 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 December 31, 2014. Target weightings reflect the Plan's evolving asset allocation (effective 3/31/2014).

With respect to policy targets, the portfolio ended the latest quarter slightly **overweight Domestic Equity and Covered Calls 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 2.2%, gross of fees, matching its policy benchmark. The portfolio has underperformed its benchmark over the latest fiscal year-to-date and 1-year period while outperforming over the 3- and 5-year periods.

The Total Portfolio outperformed the Median fund's return over the most recent quarter and fiscal year-to-date while underperforming over the 1-, 3- and 5-year period. 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
Total Portfolio ¹	2.2	1.1	6.5	11.0	9.6
Policy Benchmark ²	2.2	1.8	7.6	10.0	8.7
Excess Return	0.0	(0.7)	(1.1)	1.0	0.9
Reference: Median Fund ³	1.5	0.6	8.5	11.6	9.9
Reference: Total Net of Fees ⁴	2.1	0.9	6.1	10.6	9.2

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.

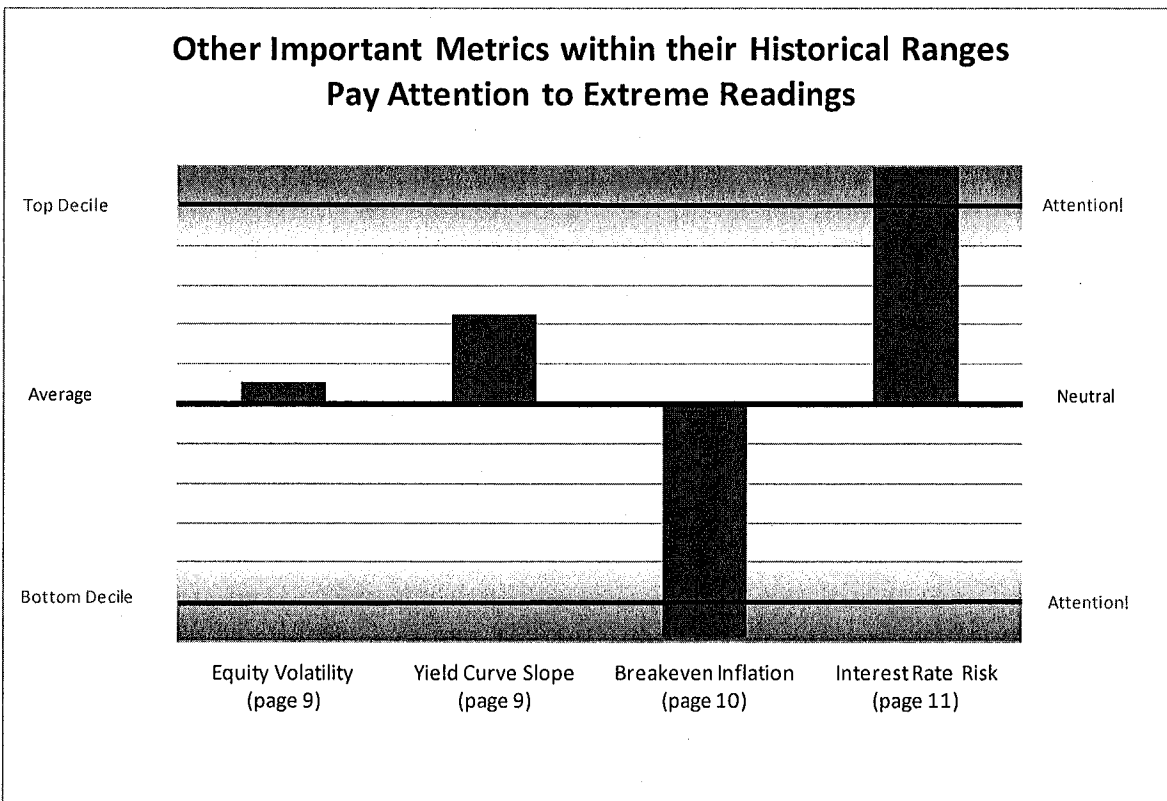
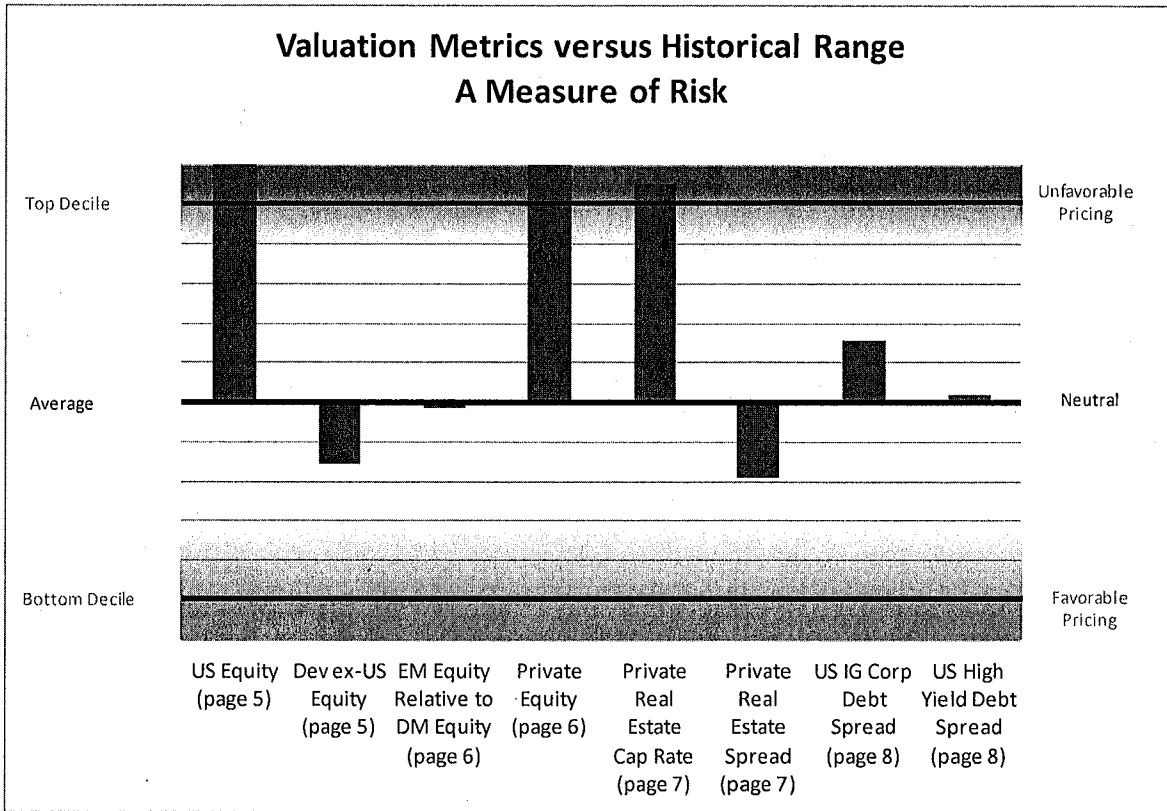
⁴ Net of fee returns are estimated based on OPFRS manager fee schedule.

INVESTMENT MARKET RISK METRICS

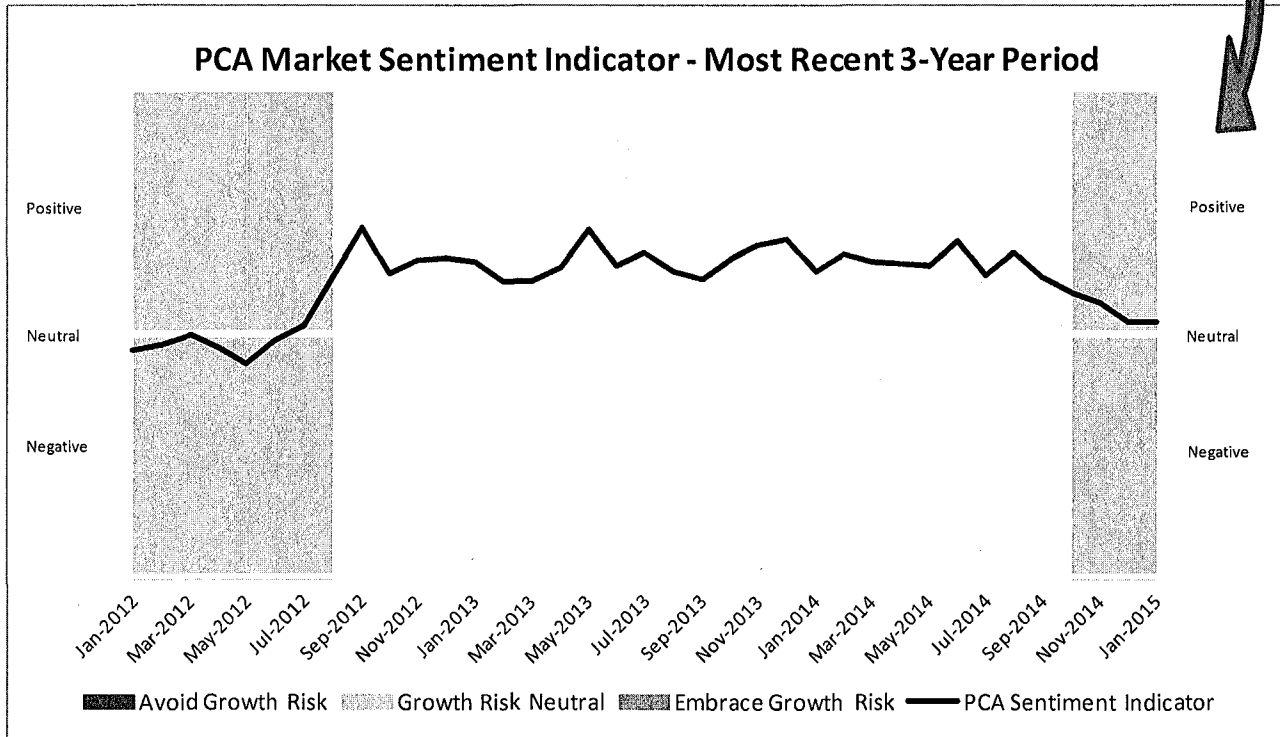
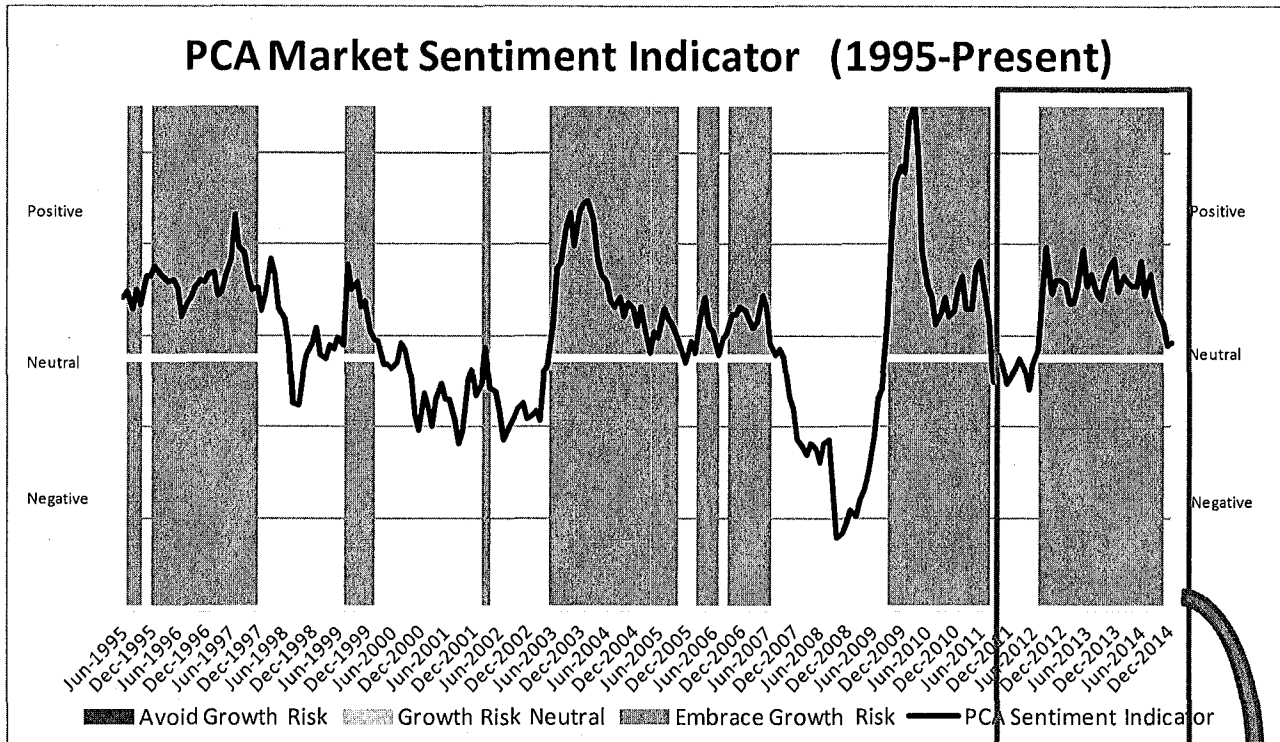
Takeaways

- U.S. equity valuation metrics hit new post-financial-crisis highs and remain within top decile valuation levels.
- Commodity prices remain in freefall (oil <\$50), hitting lowest inflation-adjusted levels since index inception. Oil prices declined almost 30% in one month.
- Breakeven inflation continued to drop, declining to a reading of below 1.7% for the first time since the Euro crisis and bailouts of 2010.
- The yield on the 10-year Treasury declined below 2% after month end.
- The yield curve slope flattened (bearish), as long-term rates declined.
- The PCA Market Sentiment Indicator "PMSI" remained **neutral** in December, after turning neutral in November. The trend is down.
 - This change was driven by year-over-year credit spread widening
 - While, year-over-year equity returns remain comfortably positive
 - Conflicting signals result in a grey (inconclusive / neutral) sentiment reading
- Commodity price declines, low inflation expectations, and falling interest rates point to global growth concerns, particularly outside of the United States.
- U.S. stock markets rose. Stock markets outside the U.S. broadly declined.
- Private equity valuations remain at top decile levels.
- U.S. equity volatility (VIX) rose, but only to 19, near long-term average levels.

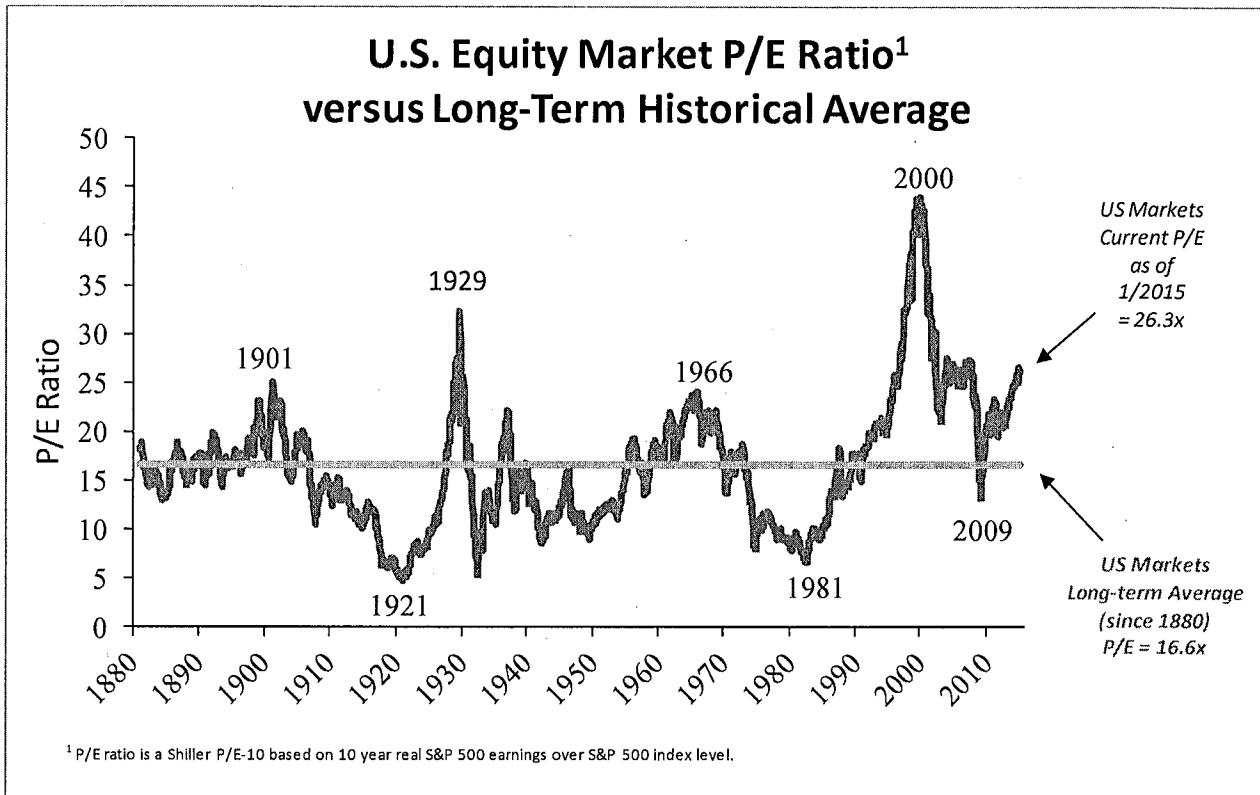
Risk Overview



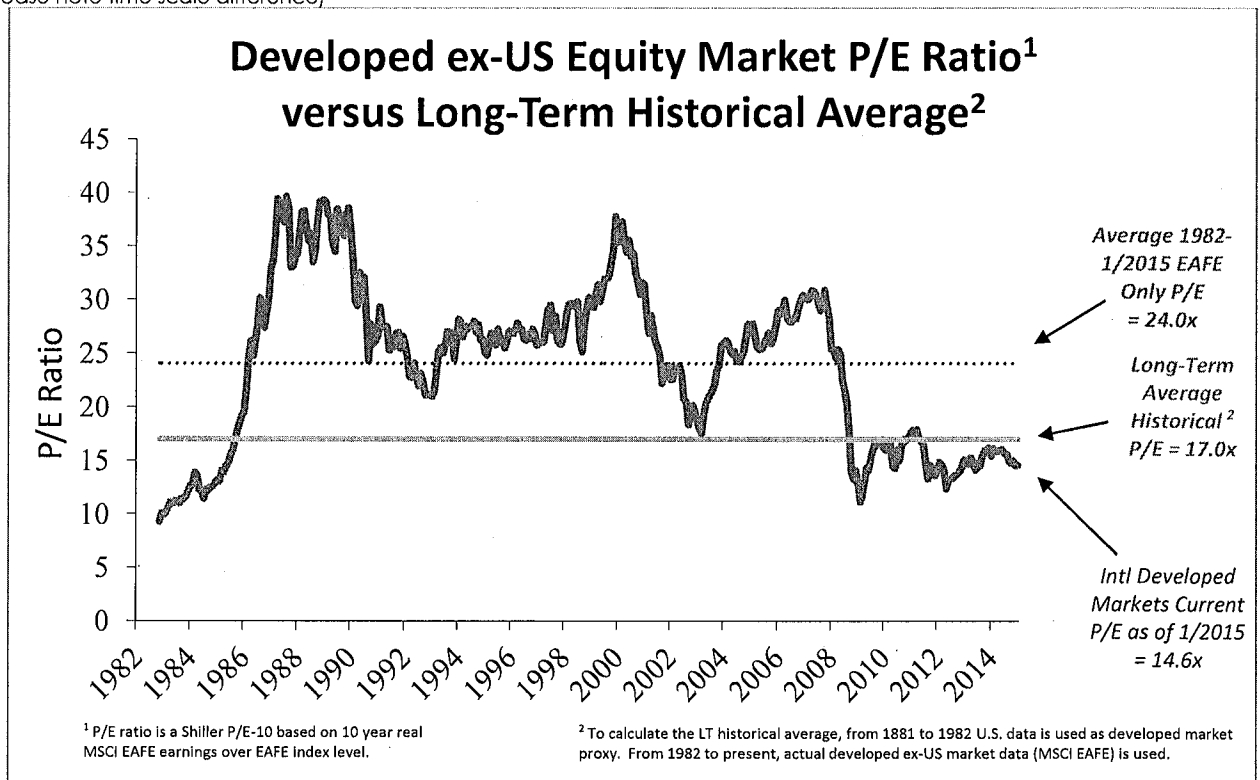
Market Sentiment



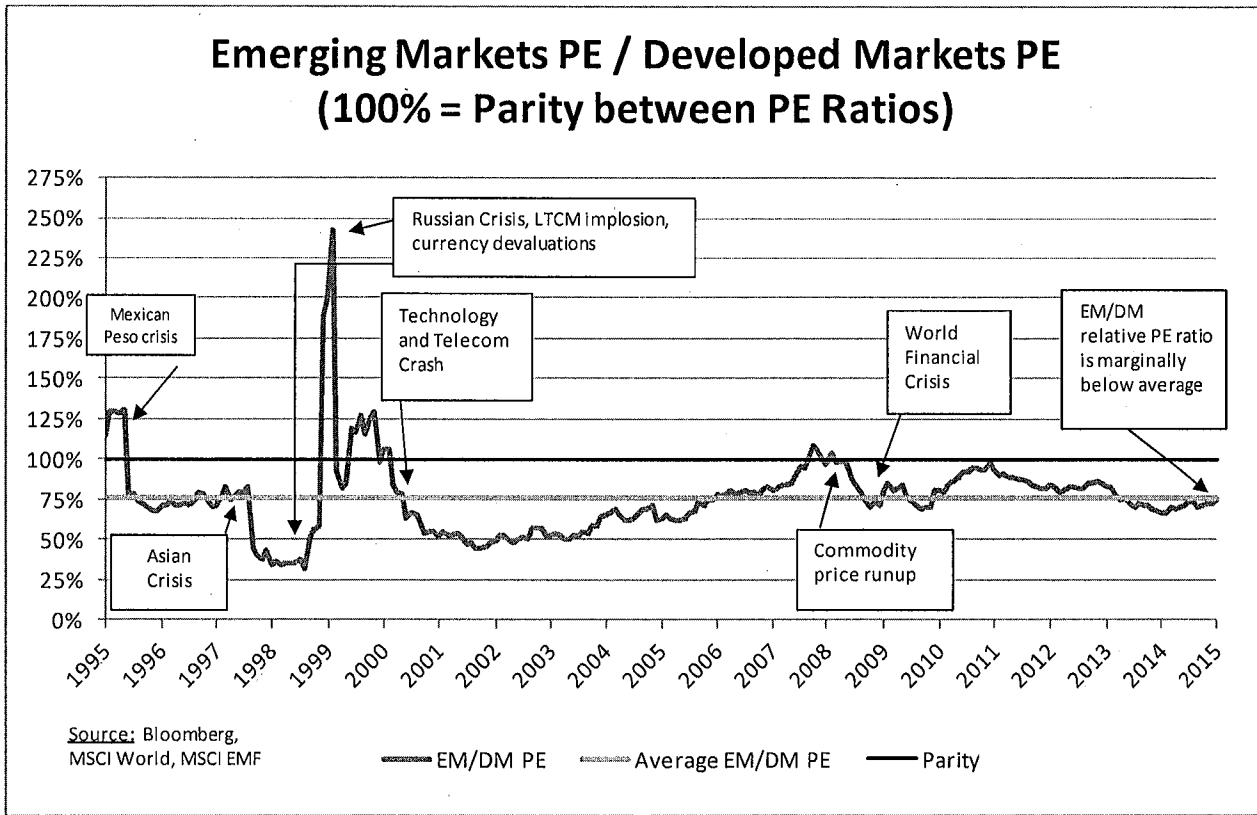
Developed Equity Markets



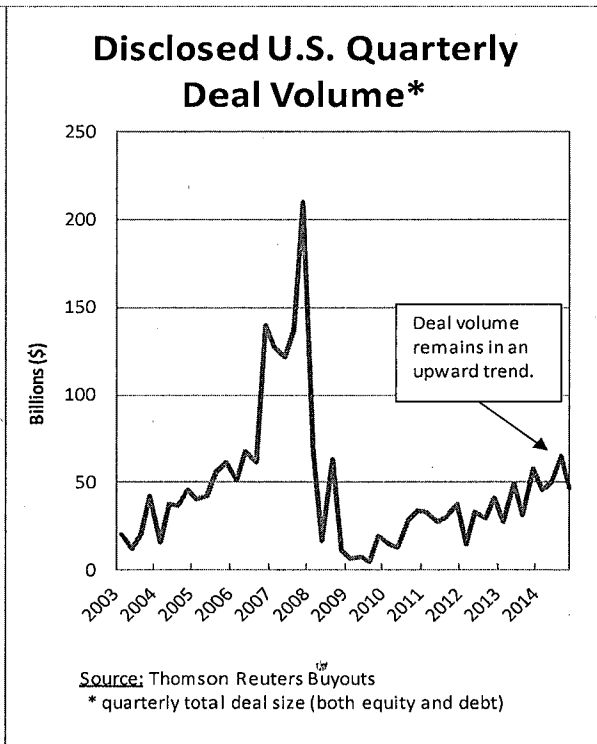
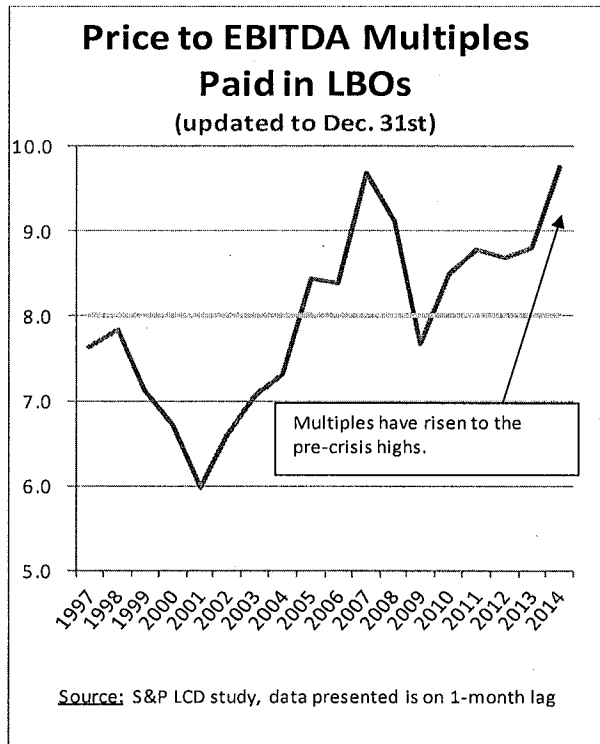
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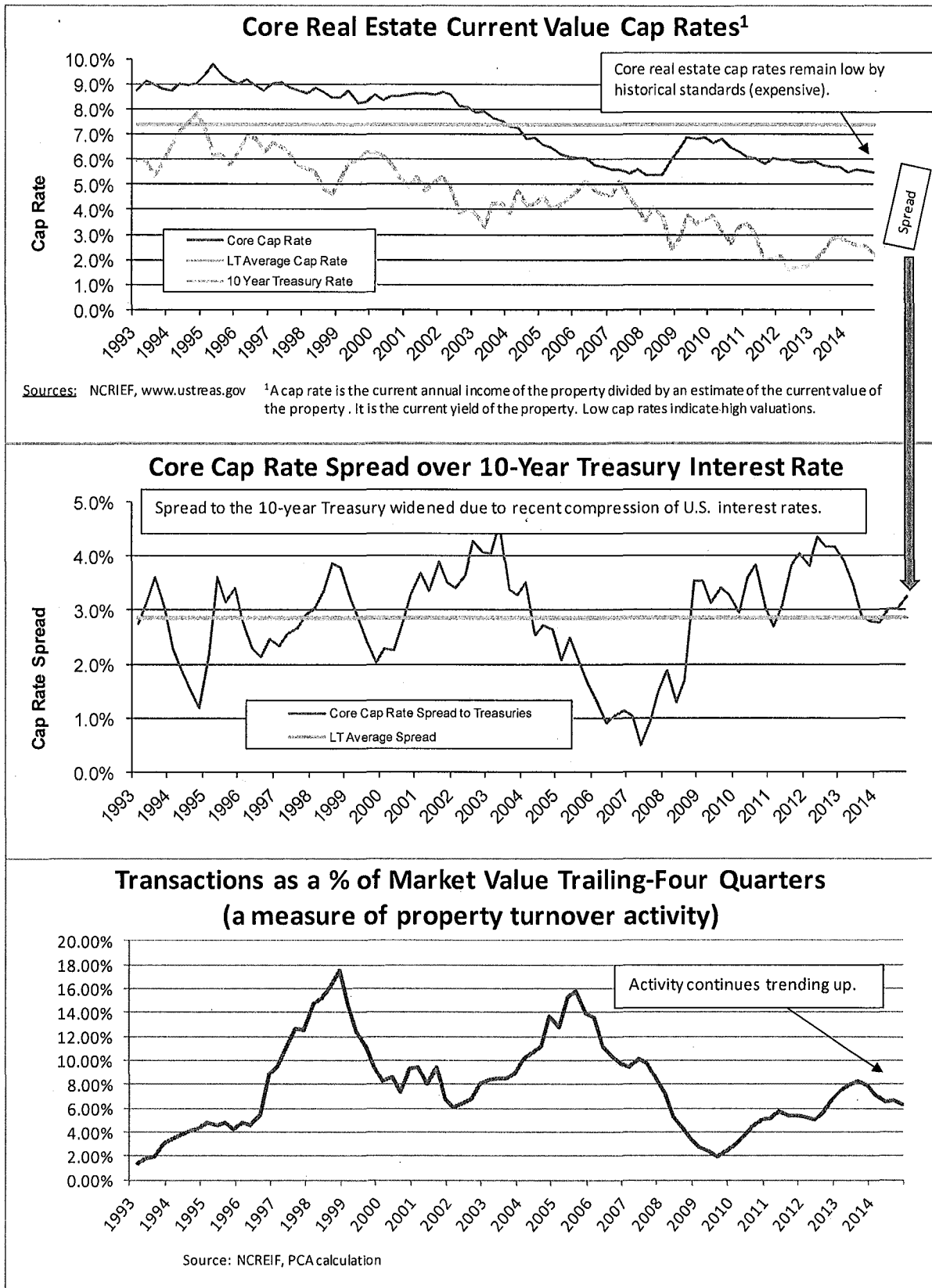
Emerging Market Equity Markets



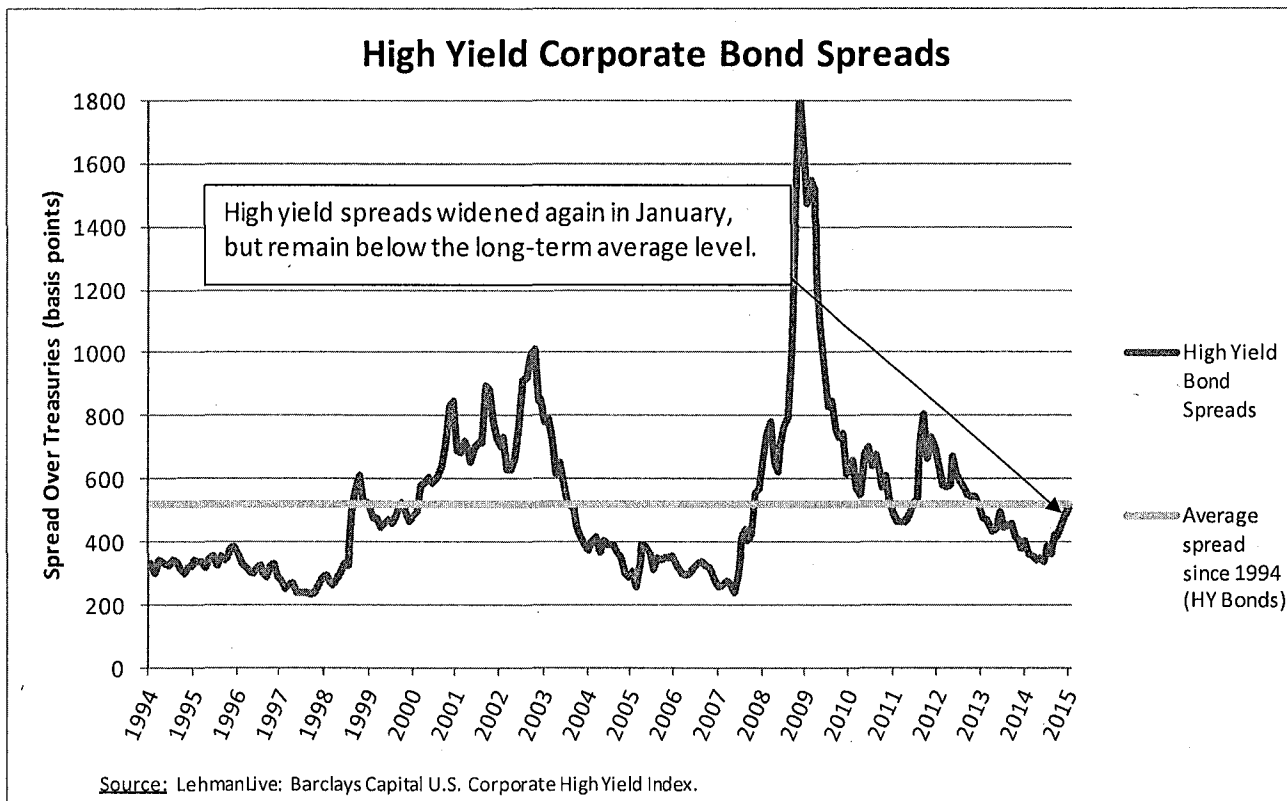
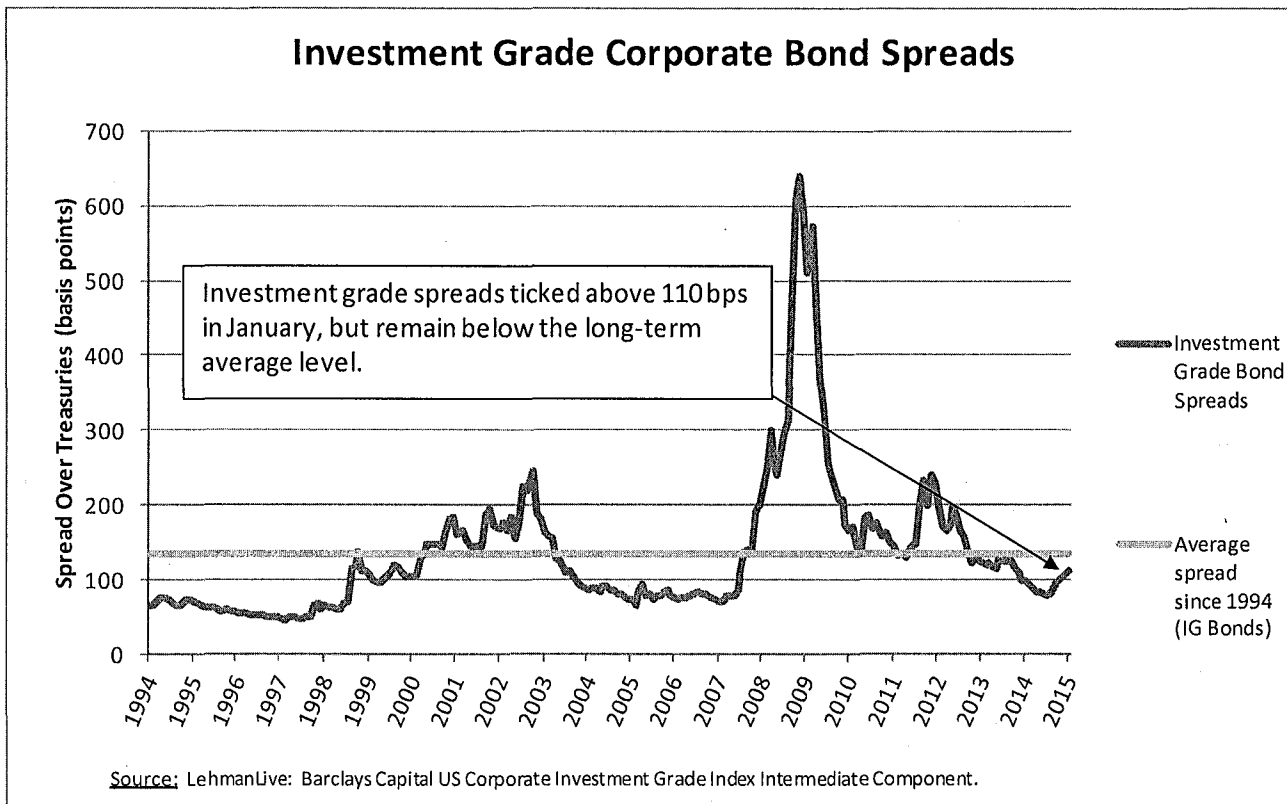
US Private Equity



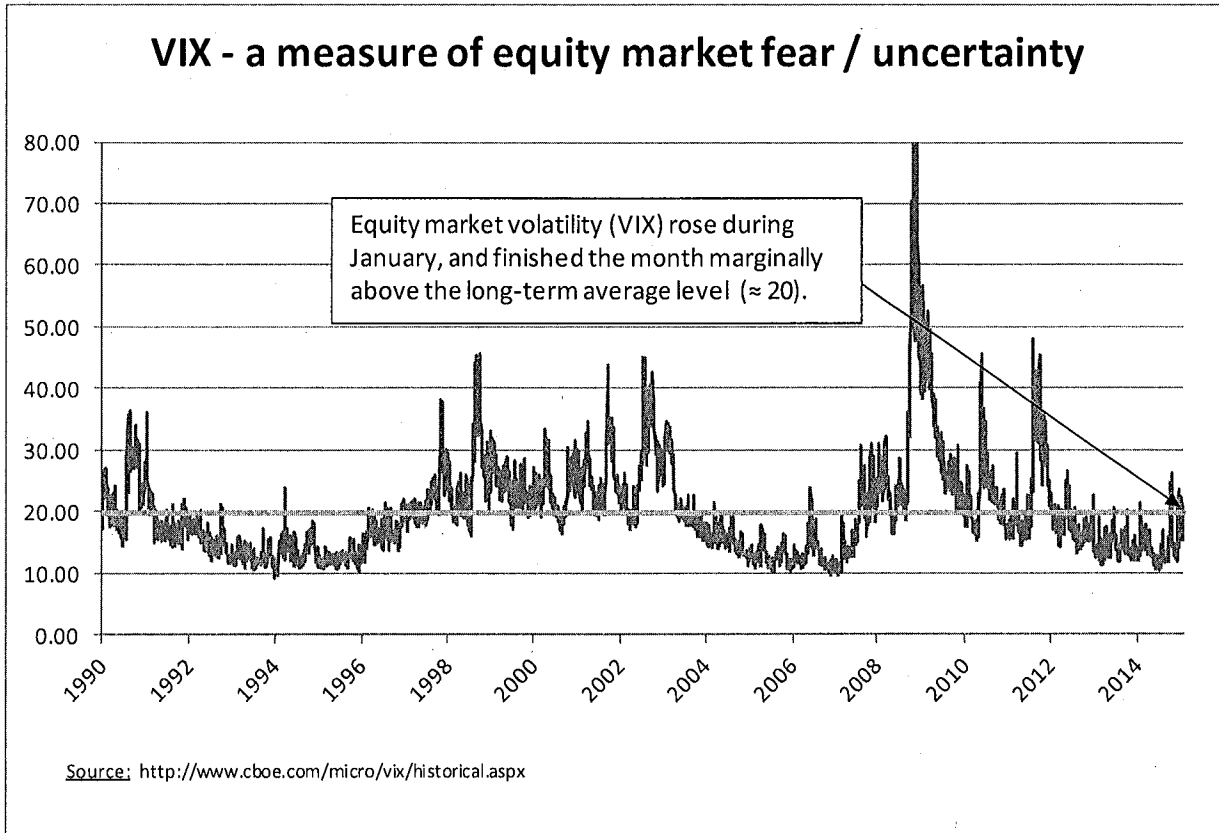
Private Real Estate Markets



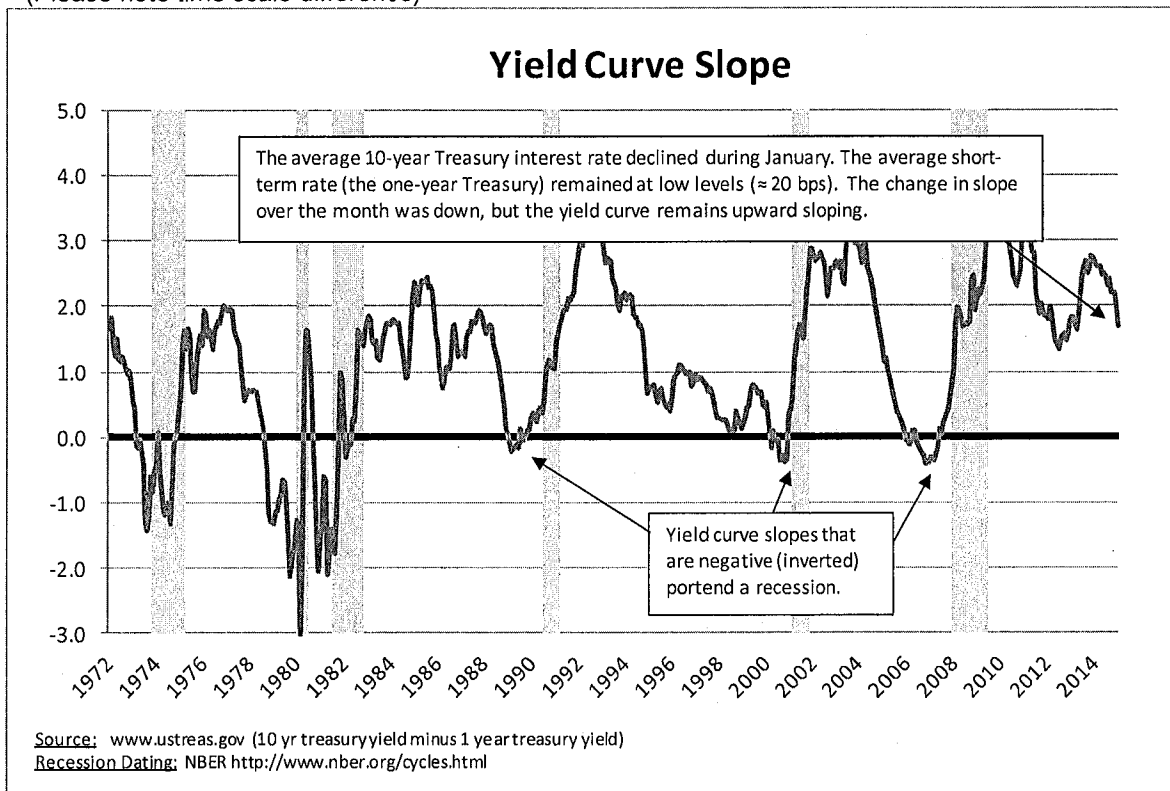
US Fixed Income



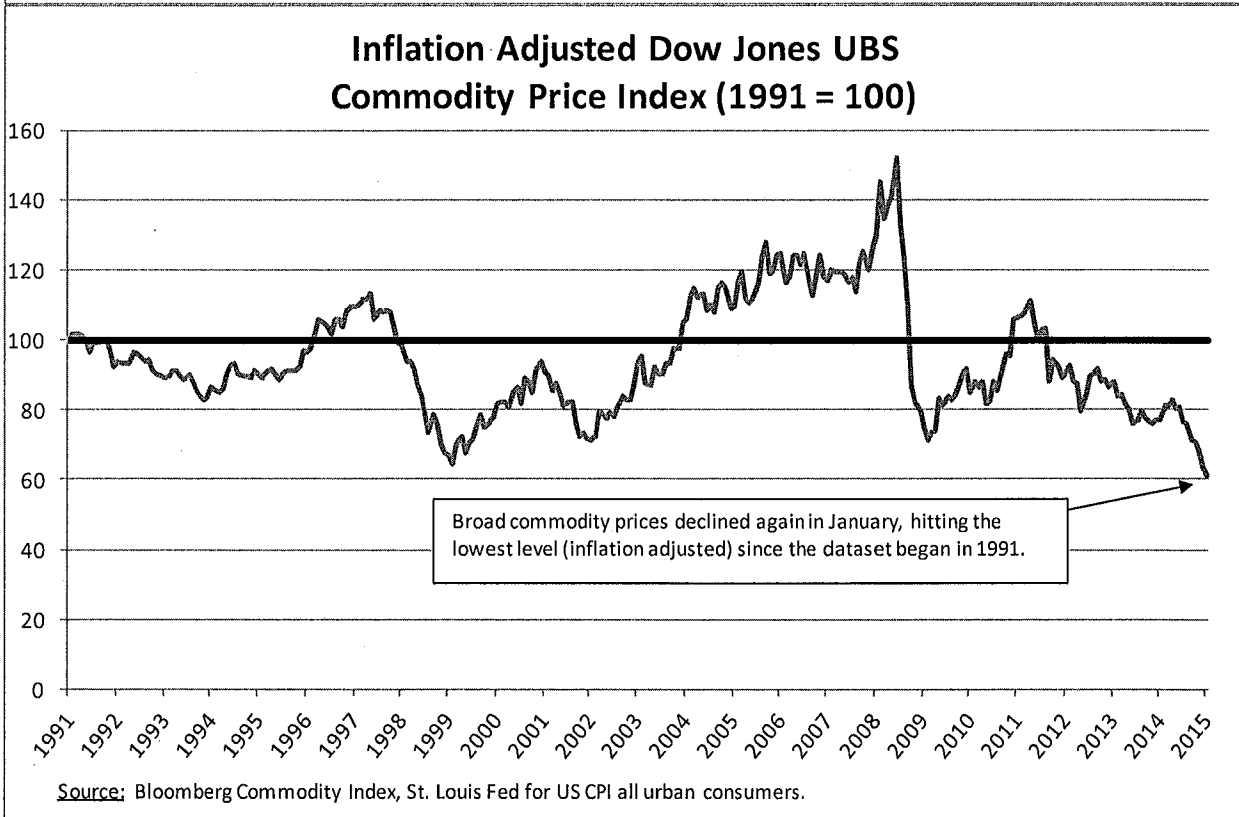
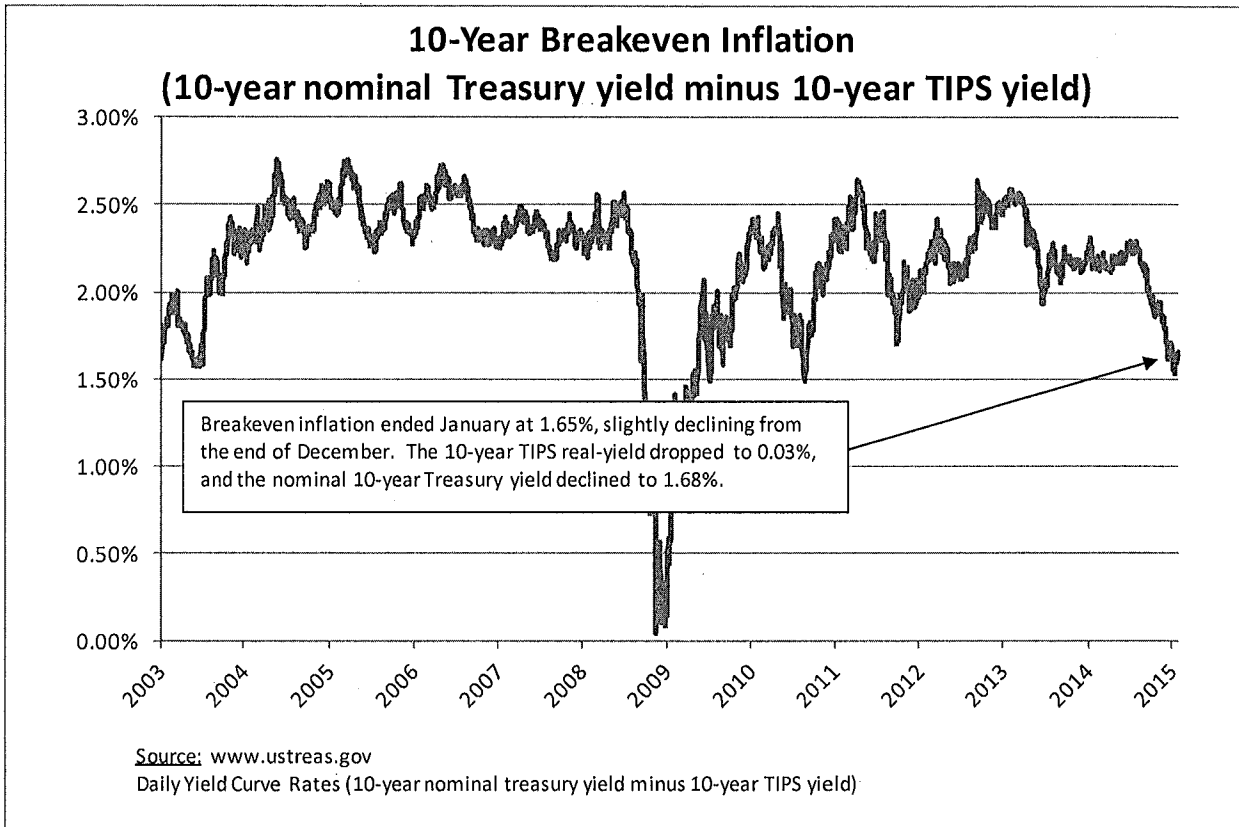
Other Market Metrics



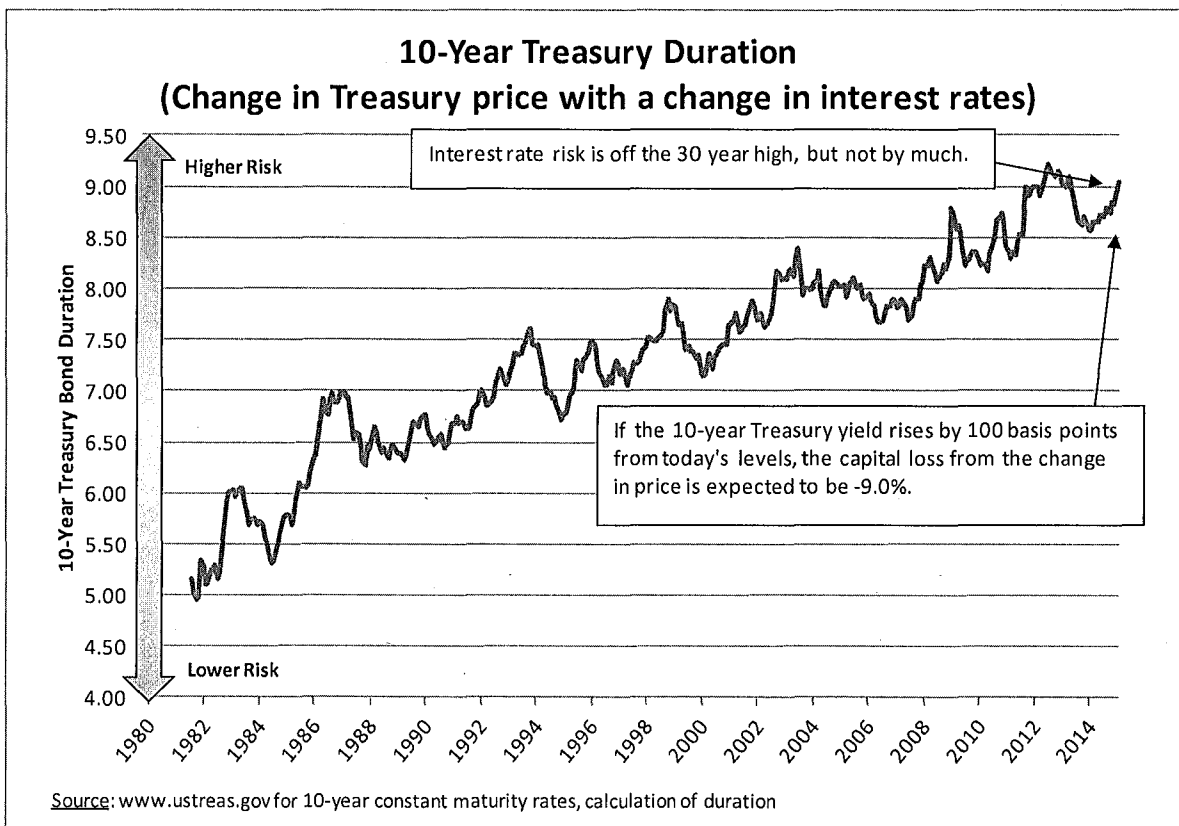
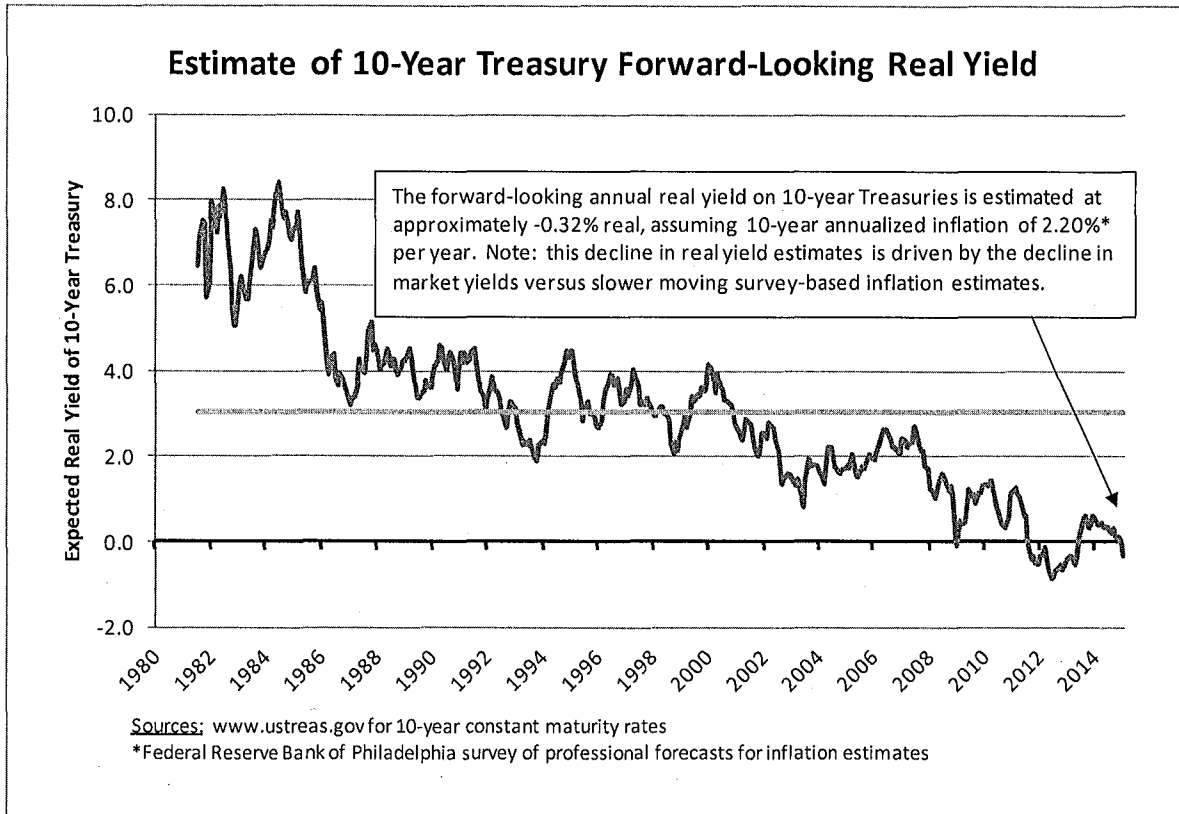
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Measures of Inflation Expectations



Measures of US Treasury Interest Rate Risk



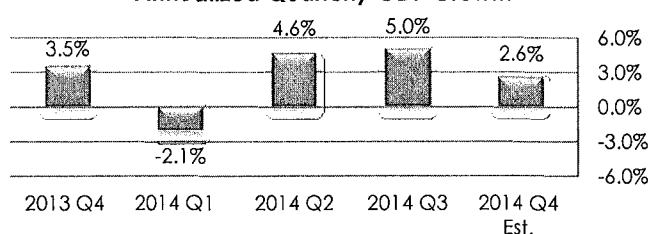
ECONOMIC OVERVIEW

US Equities recovered from sharp selloffs in October and December to reach all time highs near the end of 2014. International equities faced economic growth concerns and deflationary pressures, causing equities to post their second consecutive negative quarter and pushing them into negative territory for the year. US GDP (advanced estimate) continued to grow in the fourth quarter but decelerated from the third quarter, primarily due to an upturn in imports, a downturn in federal government spending, and declines in nonresidential fixed investment and in exports. The unemployment rate continued its gradual decline hitting 5.6% at the end of the quarter. Inflation also declined during the quarter and finished <1% for the year. In October, the Fed followed through and ended its bond-buying program in addition to assuring investors that they are taking a cautious approach to raising short-term interest rates in 2015. The US dollar continued to rally against the Euro, acting as a headwind for international and emerging markets, as it appreciated another 4.2% during the quarter ending at +12.0% for the year. Commodities suffered a double digit decline for the second straight quarter as oil prices ended the quarter near \$50 a barrel, a level not seen since 2009.

Economic Growth

- Real GDP increased at an annualized rate of 2.5 percent in the fourth quarter of 2014 after increasing at an annualized rate of 5.0 percent in the third quarter of 2014.
- GDP growth deceleration was accounted for by an upturn in imports, a downturn in federal government spending, and declines in nonresidential fixed investment and in exports.
- Private inventory investment and an acceleration in personal consumption expenditures were two of the main contributors to GDP growth during the quarter.

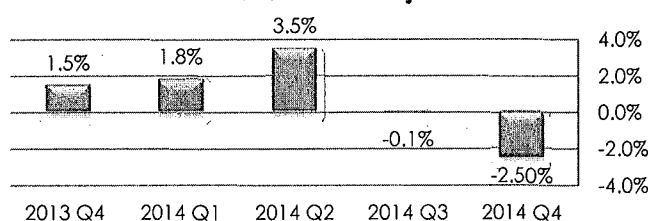
Annualized Quarterly GDP Growth



Inflation

- The Consumer Price Index for All Urban Consumers (CPI-U) decreased by 2.5 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 1.1 percent for the quarter on an annualized basis.
- Over the last 12 months, CPI-U increased 1.6 percent after seasonal adjustment.

CPI-U After Seasonal Adjustment

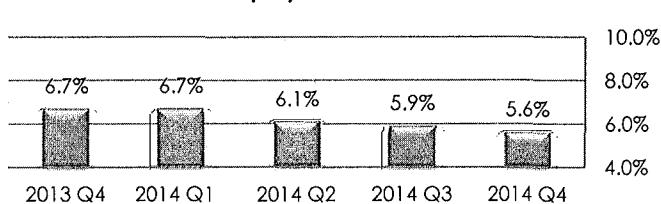


Unemployment

- The US economy gained approximately 866,000 jobs in the quarter.
- The official unemployment rate dropped to 5.6% at quarter end.

The majority of jobs gained occurred in professional and business services, education and health services, and leisure and hospitality.

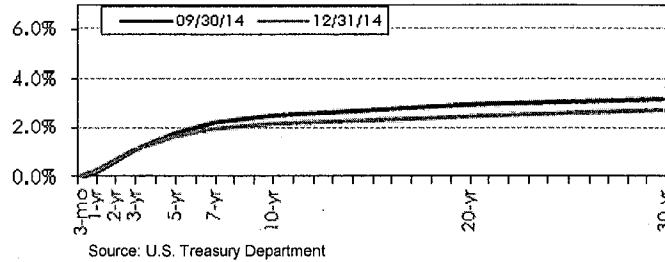
Unemployment Rate



Interest Rates & U.S. 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 4.2%, 9.2%, and 3.9%, respectively.

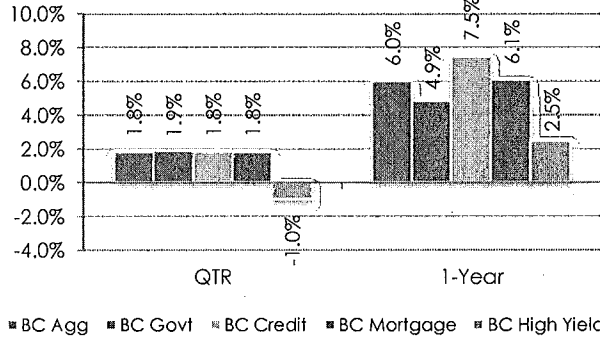
Treasury Yield Curve Changes



Fixed Income

- US bond markets delivered positive returns during the quarter excluding high yield.
- Investment grade credit led positive bond market returns in all sectors over the trailing 1-year period.

Fixed Income Returns



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

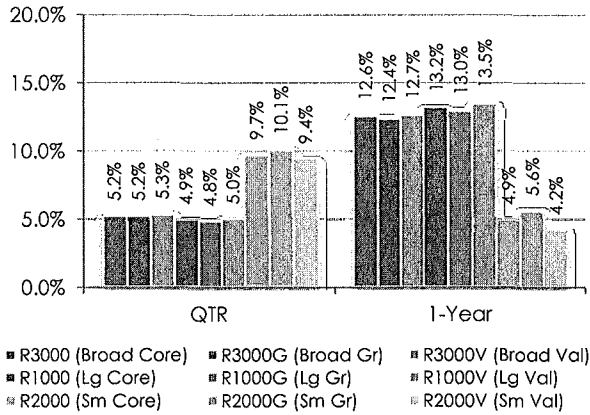
Sector	Weight	QTR	1 Year
Governments*	40.3%	1.9%	4.9%
Agencies	5.0%	0.7%	3.6%
Inv. Grade Credit	23.3%	1.8%	7.5%
MBS	28.8%	1.8%	6.1%
ABS	0.6%	0.5%	1.9%
CMBS	2.0%	1.4%	3.9%

*U.S. Treasuries and Government Related

U.S. Equities

- Large cap US equities were outpaced by small cap stocks during the quarter but remained ahead during the longer 1-year period.
- During the quarter and 1-year periods, value outperformed growth in large cap stocks, while growth outperformed value in small cap stocks.

U.S. Equity Returns

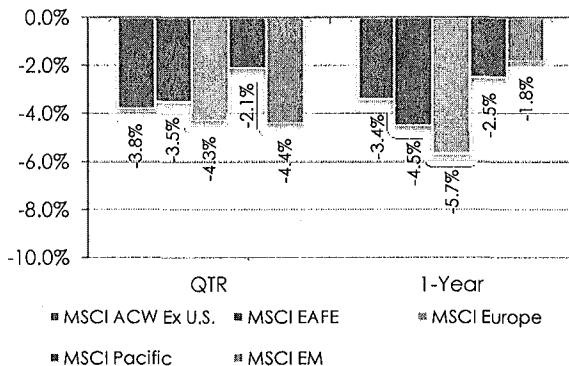


Sector	Weight	QTR	1 Year
Information Tech.	19.0%	5.4%	17.8%
Financials	18.0%	7.8%	14.4%
Health Care	14.0%	8.6%	25.1%
Consumer Disc.	12.8%	8.9%	9.2%
Industrials	11.4%	7.0%	8.0%
Consumer Staples	8.5%	8.4%	15.9%
Energy	7.5%	-13.1%	-10.0%
Materials	3.6%	-0.8%	5.7%
Utilities	3.2%	13.0%	26.9%
Telecomm. Serv.	2.0%	-3.9%	2.5%

International Equities

- International markets performed poorly during the quarter partially due to the strengthening US dollar.
- One year returns also performed poorly as most markets finished in negative territory.

International Equity Returns (in USD)



Sector	Weight	QTR	1 Year
Europe Ex. UK	31.8%	-4.3%	-5.8%
Emerging Markets	21.7%	-4.4%	-1.8%
United Kingdom	15.0%	-4.2%	-5.4%
Japan	15.1%	-2.4%	-3.7%
Pacific Ex. Japan	8.8%	-1.5%	-0.3%
Canada	7.6%	-4.6%	2.2%

Market Summary – Long-term Performance*

Indexes	1 Year	3 Year	5 Year	10 Year	20 Year
Global Equity					
MSCI All Country World	4.7%	14.7%	9.7%	6.6%	7.4%
Domestic Equity					
S&P 500	13.7%	20.4%	15.5%	7.7%	9.9%
Russell 3000	12.6%	20.5%	15.6%	7.9%	10.0%
Russell 3000 Growth	12.4%	20.3%	15.9%	8.5%	8.9%
Russell 3000 Value	12.7%	20.7%	15.3%	7.3%	10.5%
Russell 1000	13.2%	20.6%	15.6%	8.0%	10.0%
Russell 1000 Growth	13.0%	20.3%	15.8%	8.5%	9.0%
Russell 1000 Value	13.5%	20.9%	15.4%	7.3%	10.5%
Russell 2000	4.9%	19.2%	15.5%	7.8%	9.6%
Russell 2000 Growth	5.6%	20.1%	16.8%	8.5%	7.8%
Russell 2000 Value	4.2%	18.3%	14.3%	6.9%	11.0%
CBOE BXM	5.6%	8.0%	7.1%	4.8%	8.0%
International Equity					
MSCI All Country World ex US	-3.4%	9.5%	4.9%	5.6%	5.8%
MSCI EAFE	-4.5%	11.6%	5.8%	4.9%	5.4%
MSCI Pacific	-2.5%	9.8%	5.8%	4.4%	2.0%
MSCI Europe	-5.7%	12.5%	5.9%	5.2%	8.0%
MSCI EM (Emerging Markets)	-1.8%	4.4%	2.1%	8.8%	6.0%
Fixed Income					
BC Universal Bond	5.6%	3.2%	4.8%	4.9%	6.4%
BC Global Agg – Hedged	7.6%	4.3%	4.6%	4.7%	6.3%
BC Aggregate Bond	6.0%	2.7%	4.4%	4.7%	6.2%
BC Government	4.9%	1.4%	3.7%	4.3%	5.9%
BC Credit Bond	7.5%	4.8%	6.3%	5.5%	6.9%
BC Mortgage Backed Securities	6.1%	2.4%	3.7%	4.7%	6.1%
BC High Yield Corporate Bond	2.5%	8.4%	9.0%	7.7%	7.9%
BC WGILB - Hedged	9.0%	2.9%	5.0%	4.9%	NA
BC Emerging Markets	4.8%	5.8%	7.4%	7.8%	10.7%
Real Estate					
NCREIF (Private RE)	11.8%	11.1%	12.1%	8.4%	9.6%
NAREIT (Public RE)	27.2%	16.4%	16.6%	7.5%	11.1%
Commodity Index					
DJ-UBS Commodity	-17.0%	-9.4%	-5.5%	-1.9%	3.2%

* Performance is annualized for periods greater than one year.

TOTAL PORTFOLIO REVIEW

OPFRS Portfolio Performance

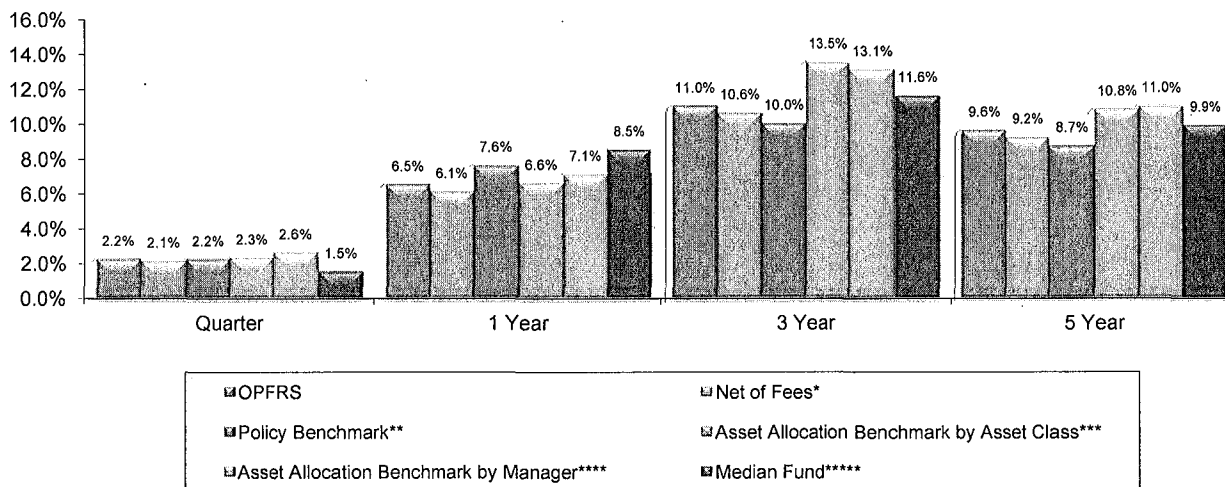
This section includes an overview of the performance of the OPFRS investment portfolio, as well as a detailed analysis of asset classes and specific mandates.

Portfolio Performance Overview

During the latest quarter ending December 31, 2014, the OPFRS Total Portfolio generated a return of 2.2%, gross of fees, matching its benchmark target. The Plan's Domestic Equity, International Equity, and Fixed Income asset classes all outperformed their respective benchmarks by 0.1%, 1.9%, and 0.4%, respectively. The Covered Calls asset class outperformed its benchmark while Real Return failed to beat its benchmark over the latest quarter.

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

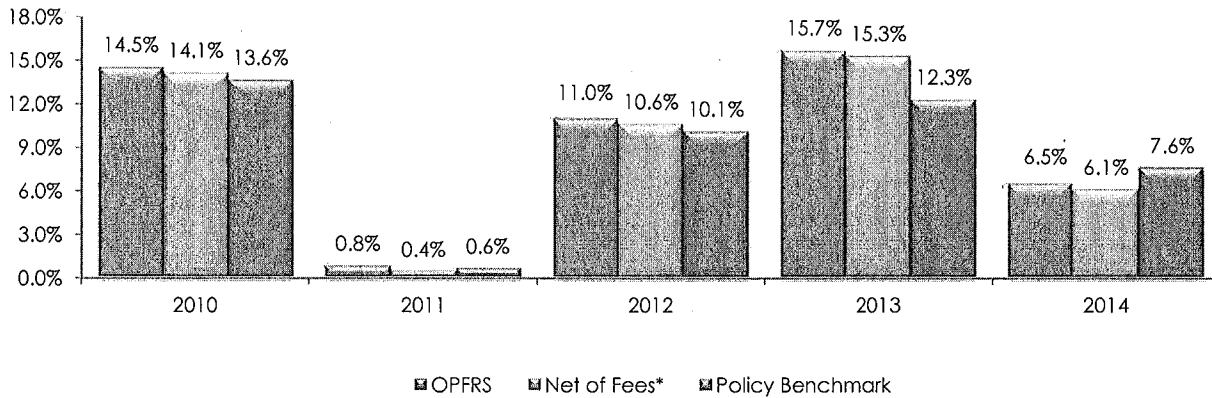
Periods Ending December 31, 2014 (annualized)



* 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 December 31. The Plan also outperformed its policy benchmark in four out of the last five periods, gross of fees.

12-Month Performance – Periods Ending December 31



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

Portfolio Valuation

The OPFRS portfolio had an aggregate value of \$444.0 million as of December 31, 2014. During the latest quarter, the portfolio decreased by (\$7.0) million. Over the latest year, the portfolio decreased by (\$32.4) million, including (\$60) million in net benefit payments.

Investment Portfolio Valuation as of December 31, 2014*

	December 31, 2014	September 30, 2014	Quarterly Change	Percentage Change	December 31, 2013	Annual Change	Percentage Change
OPFRS	\$444.0	\$451.0	(\$7.0)	(1.6%)	\$476.4	(\$32.4)	(6.8%)

*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).

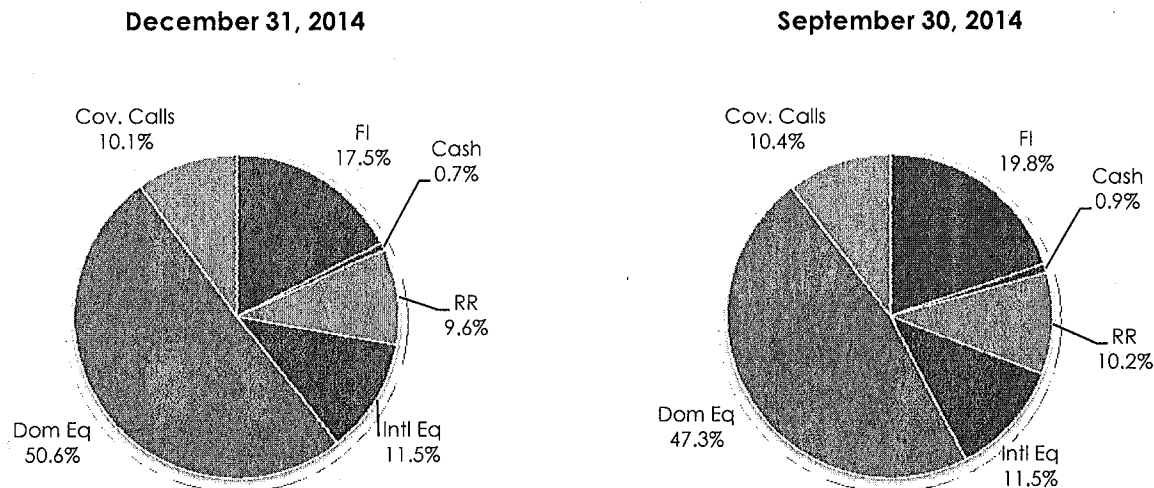
As of December 31, 2014

<u>Segment</u>	<u>Actual \$(000)</u>	<u>Actual %*</u>	<u>Target %</u>	<u>Variance</u>
Total Investment Portfolio	444,011	100.0%	100.0%	---
Domestic Equity	224,525	50.6%	48.0%	2.6%
Large Cap Equity	162,220	36.5%	34.0%	2.5%
Mid Cap Equity	33,527	7.6%	8.0%	-0.4%
Small Cap Equity	28,778	6.5%	6.0%	0.5%
International Equity	50,926	11.5%	12.0%	-0.5%
Total Equity	275,451	62.0%	60.0%	2.0%
Fixed Income	77,651	17.5%	20.0%	-2.5%
Covered Calls	44,878	10.1%	10.0%	0.1%
Real Return	42,714	9.6%	10.0%	-0.4%
Cash	3,317	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 3.3%, Fixed Income decreased its weighting by (2.3%), and International Equity's weighting remained constant. Actual weighting for Covered Calls and Real Return both decreased by 0.3% and 0.6%, respectively, while Cash's weighting also decreased by (20) basis points.

Investment Portfolio Actual Asset Allocation Comparison



Asset Class Performance

The **Domestic Equity** asset class outperformed the policy benchmark by 10 basis points over the most recent quarter, but underperformed by (70) and (30) basis points over the 1- and 3-year periods, respectively. The fund outperformed over the 5-year period by 50 basis points.

The **International Equity** portfolio outperformed its policy benchmark by 1.9% during the most recent quarter but underperformed by (1.2%) over the 1-year period. Over the 3-year period, the International Equity portfolio outperformed the benchmark by 80 basis points and underperformed over the 5-year period by (10) basis points.

The **Fixed Income** asset class outperformed its policy benchmark over all periods measured. The Fixed Income portfolio outperformed over the quarter, 1-, 3-, and 5-year periods by 40, 20, 10, and 10 basis points, respectively.

The **Covered Calls** asset class outperformed its benchmark by 1.2% over the most recent quarter, while the **Real Return** asset class underperformed its benchmark by (4.9%) over the same time period.

Periods ending December 31, 2014

Asset Class	Quarter	1-Year	3-Year	5-Year
Total Investment Portfolio	2.2	6.5	11.0	9.6
<i>Policy Benchmark¹</i>	2.2	7.6	10.0	8.7
Public Equity	3.9	8.4	18.1	13.6
<i>Policy Benchmark²</i>	3.4	9.1	18.1	13.2
Domestic Equity	5.3	11.9	20.2	16.1
<i>Blended Benchmark⁴</i>	5.2	12.6	20.5	15.6
Large Cap	4.7	13.2	20.2	15.4
<i>Russell 1000</i>	4.9	13.2	20.6	15.6
Mid Cap	5.4	10.4	19.0	16.3
<i>Russell Midcap</i>	5.9	13.2	21.4	17.2
Small Cap	8.4	6.3	22.3	20.0
<i>Russell 2000</i>	9.7	4.9	19.2	15.5
International Equity	-1.9	-4.6	10.3	4.8
<i>Blended Benchmark⁵</i>	-3.8	-3.4	9.5	4.9
Fixed Income	1.7	5.8	3.3	4.9
<i>BC Universal (blend)⁶</i>	1.3	5.6	3.2	4.8
Covered Calls	0.4	---	---	---
CBOE BXM	-0.8	---	---	---
Real Return	-4.8	---	---	---
CPI + 3%	0.1	---	---	---

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.

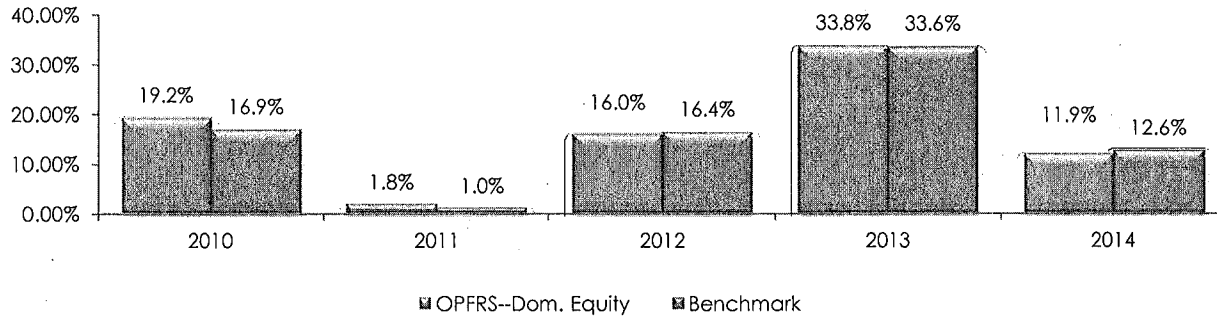
⁵ International Equity Benchmark consists of MSCI EAFE thru 12/31/04, and MSCI ACWI x U.S. thereafter.

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%t-bills, 25% BC Universal thereafter.

Asset Class Performance

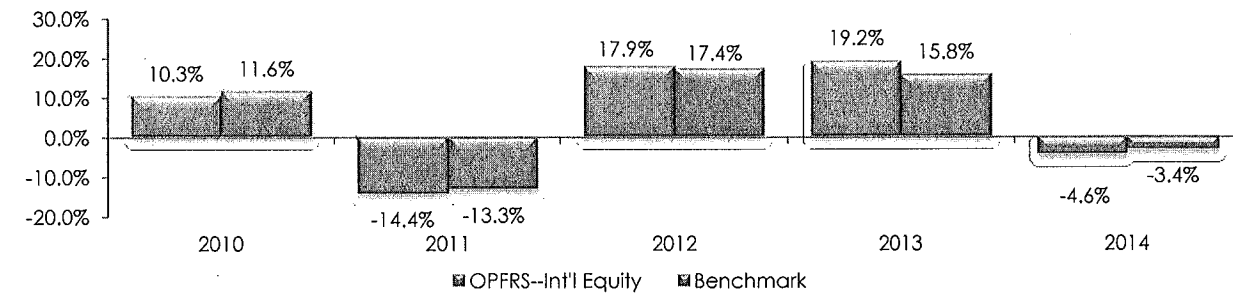
The Domestic Equity portfolio outperformed the policy benchmark in three out of five of latest 12-month periods. The Plan finished the latest 12-month period ending December 31, 2014, with a return of 11.9%, underperforming the policy benchmark by 70 basis points.

Domestic Equity 12-Month Performance – Periods Ending December 31



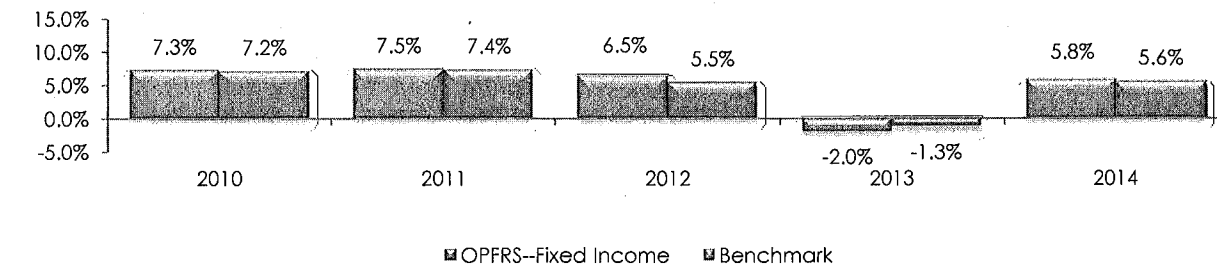
The International Equity portfolio outperformed or matched the policy benchmark in two of the five latest 12-month periods. The Plan finished the latest 12-month period ending December 31, 2014, with a return of (4.6%), underperforming the policy benchmark by (1.2%).

International Equity 12-Month Performance – Periods Ending December 31



The Fixed Income portfolio outperformed or matched the policy benchmark in four of the last five 12-month periods. The Plan finished the latest 12-month period ending December 31, 2014, with a return of 5.8%, outperforming the policy benchmark by 20 basis points.

Fixed Income 12-Month Performance – Periods Ending December 31



Manager Performance**Domestic Equity – Periods ending December 31, 2014**

Manager	Mkt Value (\$000)	Asset Class	Quarter	1-YR	3-YR	5-YR	Since Inception*	Inception Date**
Northern Trust R1000 Index	103,057	Large Cap Core	4.9	13.2	20.5	---	16.0	5/2010
Russell 1000 Index	---	---	4.9	13.2	20.5	---	15.0	---
SSgA Russell 1000 Value	29,652	Large Cap Value	---	---	---	---	2.7	10/2014
Russell 1000 Value Index	---	---	---	---	---	---	2.7	---
SSgA Russell 1000 Growth	29,511	Large Cap Growth	---	---	---	---	2.1	10/2014
Russell 1000 Growth Index	---	---	---	---	---	---	2.1	---
Earnest	33,527	Mid Cap Core	5.4	10.4	19.0	16.3	8.5	3/2006
Russell MidCap	---	---	5.9	13.2	21.4	17.2	8.8	---
NWQ	14,003	Small Cap Value	8.9	8.6	22.2	20.0	7.6	1/2006
Russell 2000 Value Index	---	---	9.4	4.2	18.3	14.3	6.3	---
Lord Abbett	14,775	Small Cap Growth	8.0	4.2	22.5	---	22.6	6/2010
Russell 2000 Growth Index	---	---	10.1	5.6	20.1	---	19.4	---

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

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

During the latest three-month period ending December 31, 2014, none of OPFRS' three active domestic equity managers outperformed their respective benchmarks.

Northern Trust, the Plan's passive large cap core transition account continues to perform roughly 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 so far performed 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 so far performed within expectations for a passive mandate.

Earnest Partners, the Plan's mid cap core manager, completed the quarter with an 5.4% return, underperforming the Russell Midcap Index by (50) basis points. Over the latest 1-, 3-, and 5-year periods, Earnest underperformed its benchmark by (280), (240), and (90) basis points, respectively.

NWQ, one of the Plan's small cap value managers, underperformed the Russell 2000 Value Index by (50) basis points over the latest 3-month period. However, NWQ continues to beat its benchmark over the longer-term as it outperformed over the 1-, 3-, and 5-year periods by 4.4%, 3.9%, and 5.7%, respectively.

Lord Abbett, one of the Plan's small cap growth managers, underperformed the Russell 2000 Growth Index by (2.1%) for the quarter. Over the 1-year period, Lord Abbett underperformed the benchmark by (1.4%) while outperforming over the 3-year period by 2.4%.

International Equity – Periods ending December 31, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
SSgA	15,219	International	-3.6	-4.6	11.4	6.0	7.9	7/2002
MSCI EAFE Index	---	---	-3.5	-4.5	11.6	5.8	7.9	---
Hansberger	17,867	International	-2.1	-7.1	9.8	3.8	3.9	1/2006
MSCI ACWI x US	---	---	-3.8	-3.4	9.5	4.9	4.4	---
Fisher	17,840	International	-0.2	-2.3	10.2	---	3.2	4/2011
MSCI ACWI x US	---	---	-3.8	-3.4	9.5	---	2.6	---

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

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

During the latest three-month period ending December 31, 2014, both of OPFRS' two active International Equity managers outperformed their benchmarks.

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 1.7%. During the latest 1- and 5-year periods, the portfolio underperformed its benchmark by (3.7%) and (1.1%), respectively. During the latest 3-year period, the portfolio returned 9.8%, outperforming its benchmark by 30 basis points.

Fisher, one of OPFRS' active international equity managers, outperformed the MSCI ACWI x US Index by 3.6% during the quarter. Over the latest 1-year period, Fisher beat its benchmark target by 1.1% while outperforming over the 3-year period by 70 basis points.

Fixed Income – Periods ending December 31, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception **	Inception Date ***
Reams	26,828	Core Plus	1.6	4.8	4.1	5.8	6.2	1/1998
BC Universal Index (blend)*	---	---	1.3	5.6	3.2	4.8	5.4	---
T. Rowe Price	50,823	Core	1.7	6.3	3.3	---	4.0	5/2011
BC Aggregate Index	---	---	1.8	6.0	2.7	---	3.8	---

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

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

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

During the latest three-month period ending December 31, 2014, one of OPFRS' two active Fixed Income managers outperformed its respective benchmark.

Reams, the Plan's core plus fixed income manager, produced a quarterly return of 1.6%, outperforming the BC Universal (blend) Index by 30 basis points. During the latest 1-year period, the portfolio trailed its benchmark by (0.8%) while outperforming the benchmark over the 3- and 5-year periods by 0.9% and 1.0%, respectively.

T. Rowe Price, the Plan's core fixed income manager, produced a quarterly return of 1.7%, underperforming the BC Aggregate Index by (10) basis points. Over both of the most recent 1- and 3-year periods, the fund outperformed its benchmark by 30 and 60 basis points, respectively.

Covered Calls & Total Real Return – Periods ending December 31, 2014

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception **	Inception Date ***
Parametric	44,878	Covered Calls	0.4	---	---	---	4.9	3/2014
CBOE BXM	---	---	-0.8	---	---	---	3.1	---
Wellington	42,714	Total Real Return	-4.8	---	---	---	-2.9	1/2014
CPI + 3%	---	---	0.1	---	---	---	3.3	---

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

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

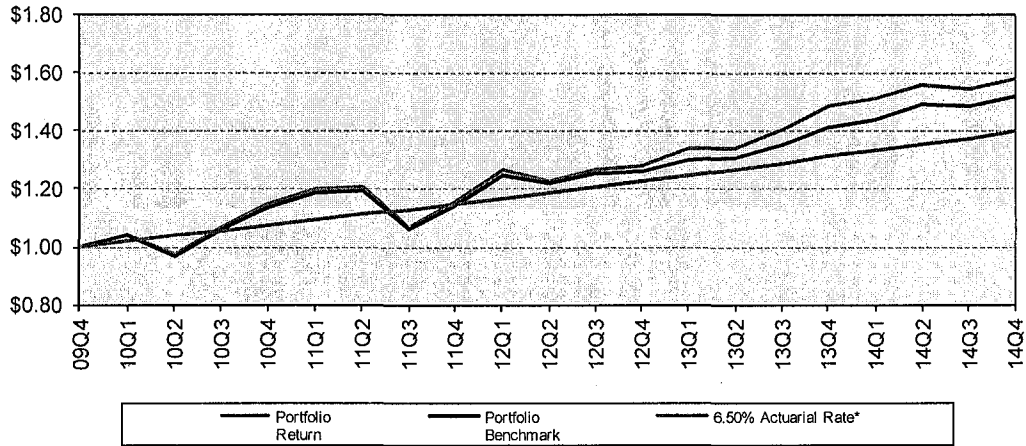
During the latest three-month period ending December 31, 2014, OPFRS' Covered Calls manager outperformed its benchmark while OPFRS' Real Return manager underperformed its benchmark.

Parametric, the Plan's Covered Calls manager, produced a quarterly return of 0.4%, outperforming the CBOE BXM Index by 120 basis points.

Wellington, the Plan's Total Real Return manager, produced a quarterly return of (4.8%), underperforming its CPI + 3% benchmark by (4.9%).

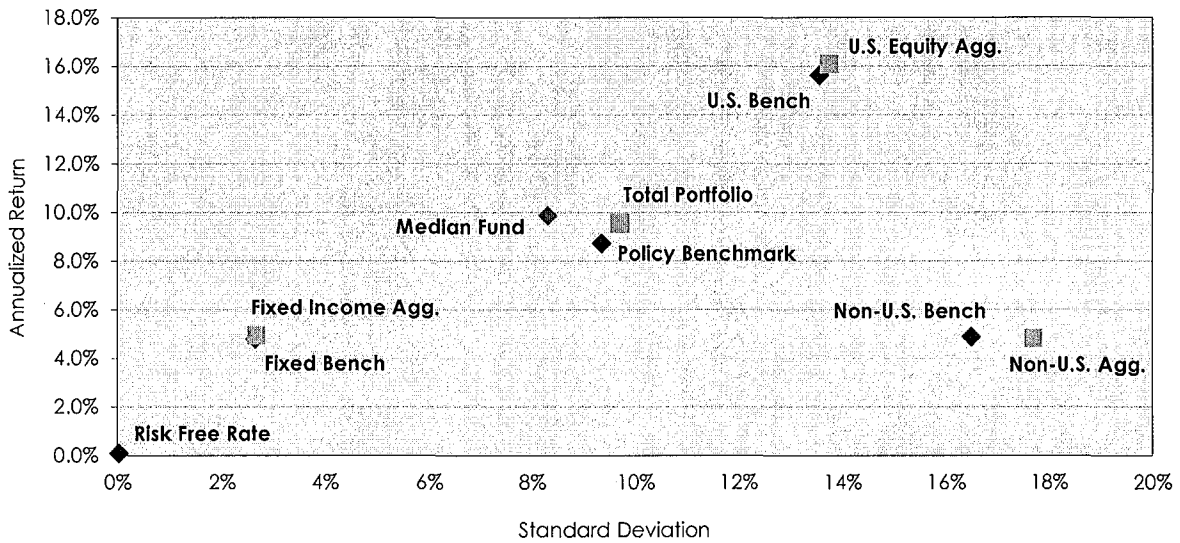
OPFRS Risk/Return Analysis
Period ending December 31, 2014

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 12/31/15**

Manager	Style	Market Value \$(000)	Target	Actual ¹	Difference
Total Plan		\$444,011	100.0%	100.0%	0.0%
Public Equity		\$275,451	60.0%	62.0%	2.0%
Domestic Equity		\$224,525	48.0%	50.6%	2.6%
Large Cap Equity					
Northern Trust	Large Cap Core	103,057	19.2%	23.2%	4.0%
SSgA Russell 1000 Value	Large Cap Value	29,652	7.4%	6.7%	-0.7%
SSgA Russell 1000 Growth	Large Cap Growth	29,511	7.4%	6.6%	-0.8%
Mid Cap Equity					
Earnest Partners	Mid Cap Core	33,527	8.0%	7.6%	-0.4%
Small Cap Equity					
NWQ	Small Cap Value	14,003	3.0%	3.2%	0.2%
Lord Abbett	Small Cap Growth	14,775	3.0%	3.3%	0.3%
International Equity		\$50,926	12.0%	11.5%	-0.5%
SSgA	International	15,219	3.6%	3.4%	-0.2%
Hansberger	International	17,867	4.2%	4.0%	-0.2%
Fisher	International	17,840	4.2%	4.0%	-0.2%
Fixed Income		\$77,651	20.0%	17.5%	-2.5%
Reams	Core Plus	26,828	9.0%	6.0%	-3.0%
T. Rowe Price	Core	50,823	11.0%	11.4%	0.4%
Transition (Reams) ³	Transition Portfolio	0	0.0%	0.0%	—
Covered Calls		\$44,878	10.0%	10.1%	0.1%
Parametric (Eaton Vance)	Active/Replication	44,878	—	10.1%	—
Real Return		\$42,714	10.0%	9.6%	-0.4%
Wellington		42,714	—	9.6%	—
Total Cash²		\$3,317	0.0%	0.7%	0.7%

1. 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 9/30/2014.
3. Includes a residual \$84 in the Reams transition account.

MANAGER MONITORING / PROBATION LIST

Monitoring/Probation Status

As of December 31, 2014
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	7	-7.4	5/28/2014
MSCI ACWI ex-US	---	---	7	-7.2	---

[^] Annualized performance if over one year.

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

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 annlzd return < bench annlzd 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.

**Oakland Police & Fire
Performance Summary and Universe Rankings
Period Ending December 31, 2014**

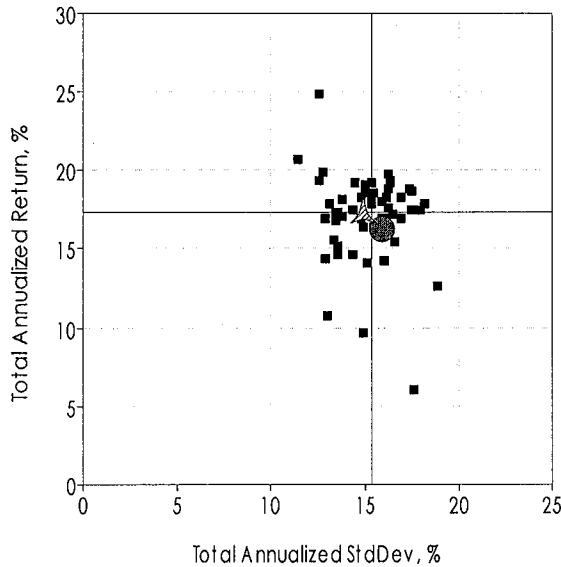
Mellon Total Funds - Public Universe				
	Quarter	1- Year	3-Year	5-Year
Maximum	4.2	11.8	16.2	12.1
Percentile 25	2.3	7.4	12.9	10.6
Median	1.5	6.5	11.6	9.9
Percentile 75	1.0	5.2	10.2	8.9
Minimum	-0.6	0.1	0.0	1.5
Number of Portfolios	99	94	80	75
Oakland Police & Fire Total				
Return	2.2	6.5	11.0	9.6
Quartile Rank	2nd	2nd	3rd	3rd

Notes:

Source: Mellon Total Public Funds Universe
All performance is shown **gross of fees**.

Oakland Mid Cap Core Manager Comparisons as of December 31, 2014

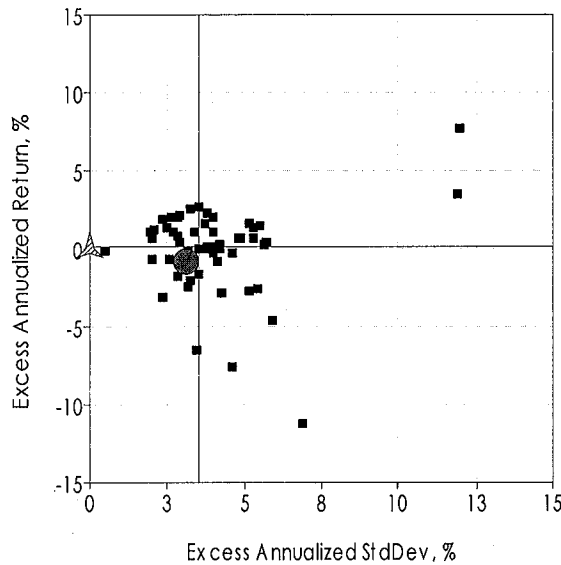
5-Year Total Risk/Return



● Earnest Partners ▲ Russell Mid-Cap Index

	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Earnest Partners	16.34	15.98	1.02
Russell Mid-Cap Index	17.19	14.88	1.16
Mid Cap Core Universe Median	17.30	15.44	1.12

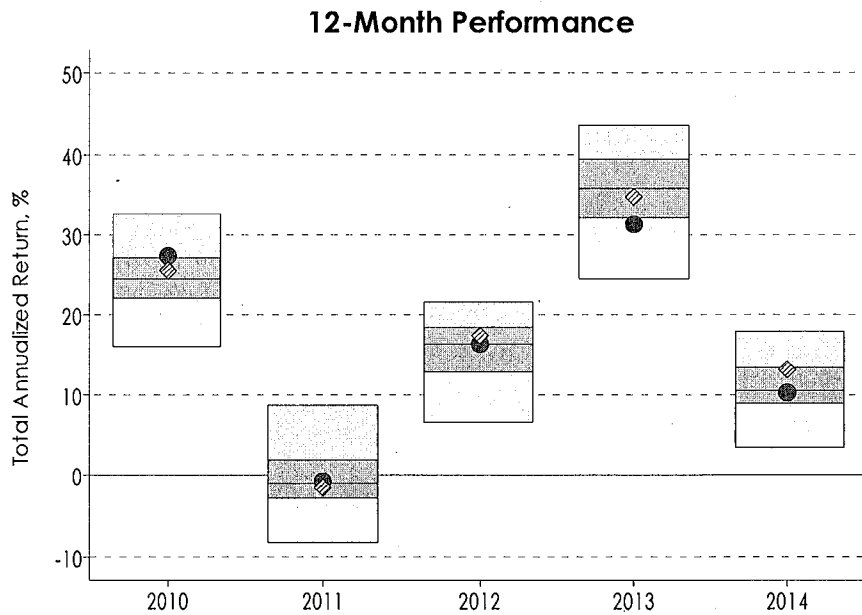
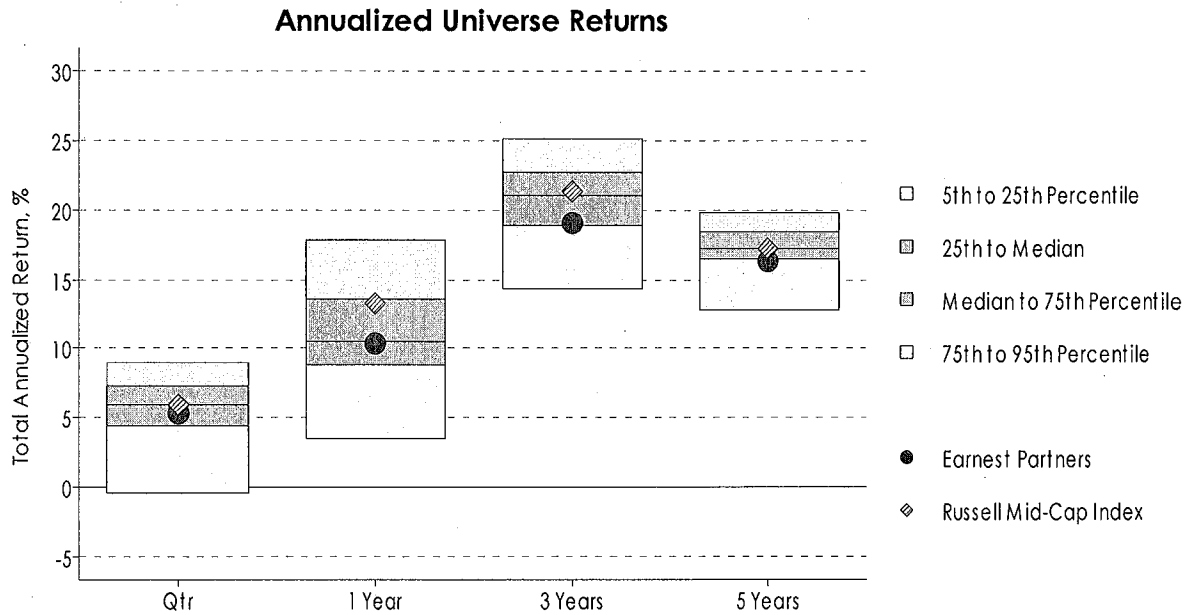
5-Year Excess Risk/Return



● Earnest Partners ▲ Russell Mid-Cap Index

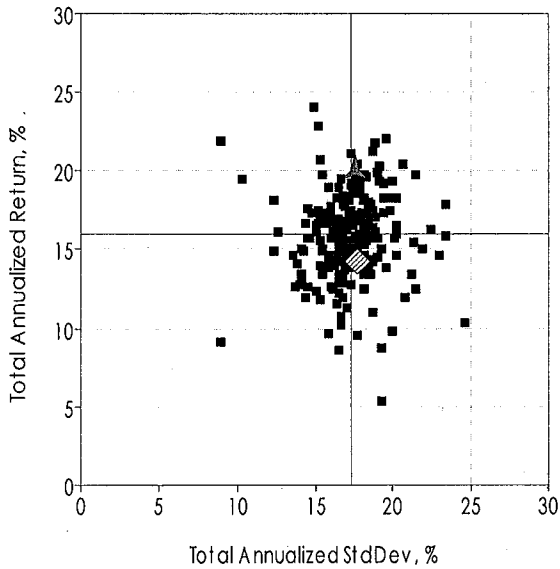
	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
Earnest Partners	-0.85	3.07	-0.28
Russell Mid-Cap Index	0.00	0.00	NA
Mid Cap Core Universe Median	0.10	3.53	0.03

Oakland Mid Cap Core Manager Comparisons as of December 31, 2014



Oakland Small Cap Value Manager Comparisons as of December 31, 2014

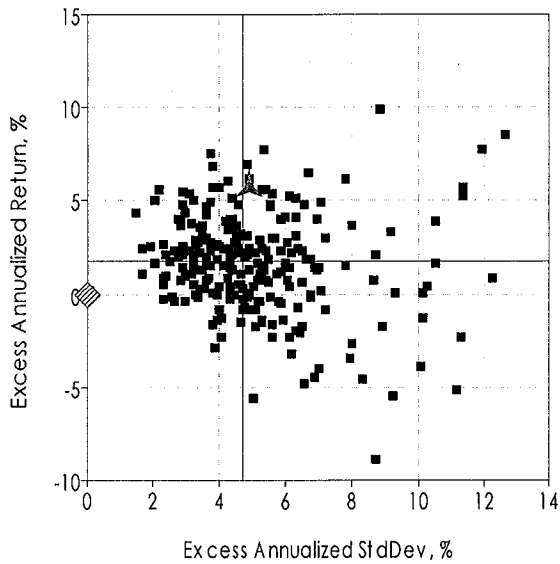
5-Year Total Risk/Return



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
NW Q	20.01	17.70	1.13
Russell 2000 Value Index	14.26	17.72	0.80
Small Cap Value Universe Median	16.00	17.34	0.93

▲ NW Q ◆ Russell 2000 Value Index

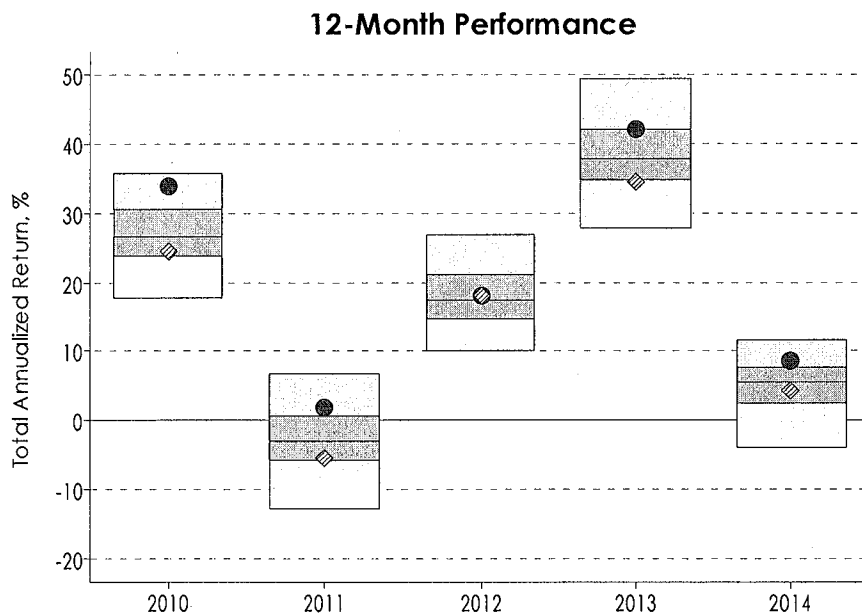
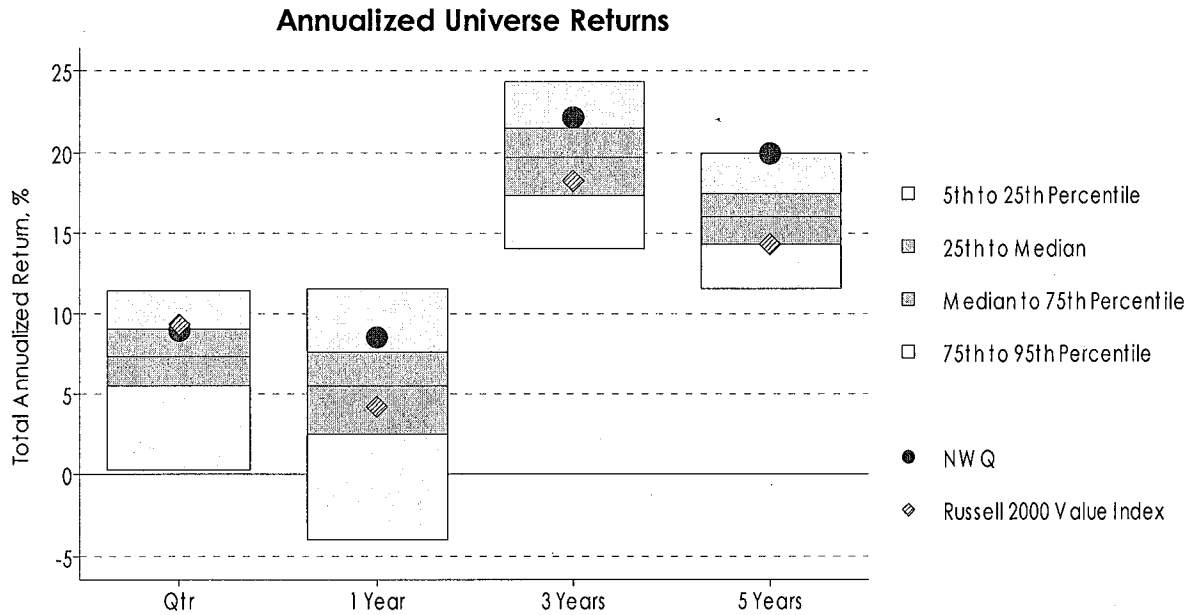
5-Year Excess Risk/Return



	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
NW Q	5.75	4.90	1.18
Russell 2000 Value Index	0.00	0.00	NA
Small Cap Value Universe Median	1.75	4.67	0.39

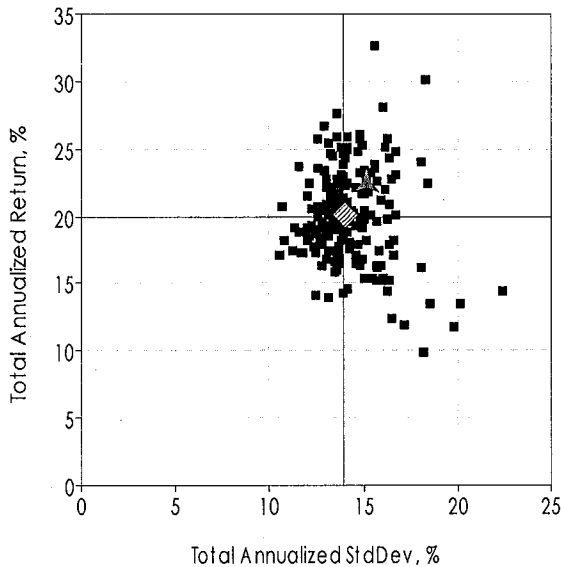
▲ NW Q ◆ Russell 2000 Value Index

Oakland Small Cap Value Manager Comparisons as of December 31, 2014



Oakland Small Cap Growth Manager Comparisons as of December 31, 2014

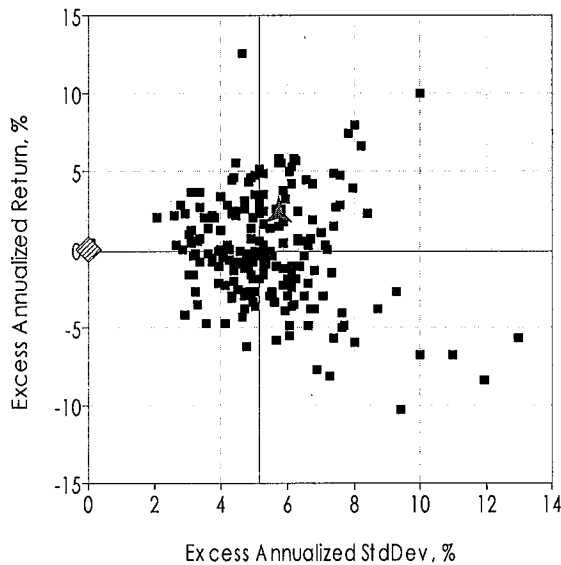
3 -Year Total Risk/Return



▲ Lord Abbett ◆ Russell 2000 Growth Index

	Annualized Return, %	Annualized Std Dev, %	Sharpe Ratio
Lord Abbett	22.49	15.16	1.48
Russell 2000 Growth Index	20.14	14.02	1.44
Small Cap Growth Universe Median	19.99	13.87	1.47

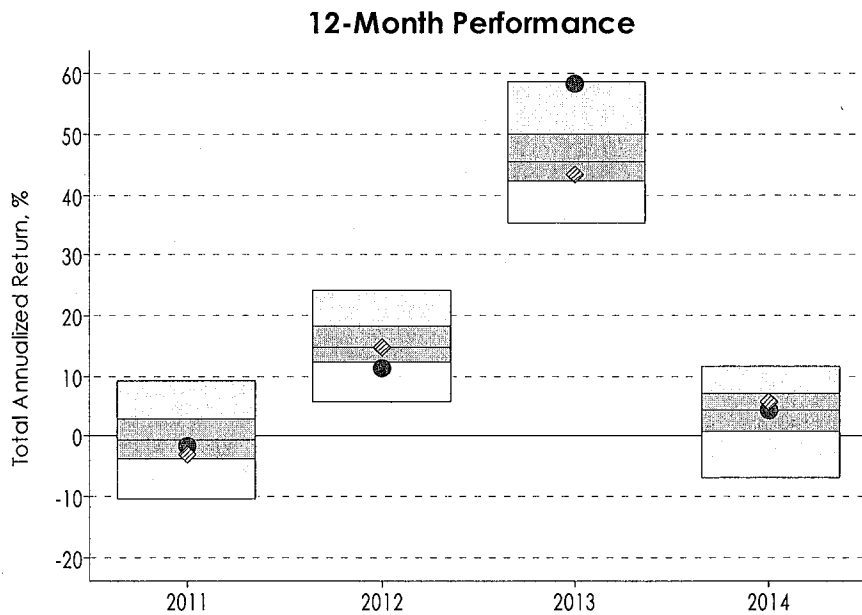
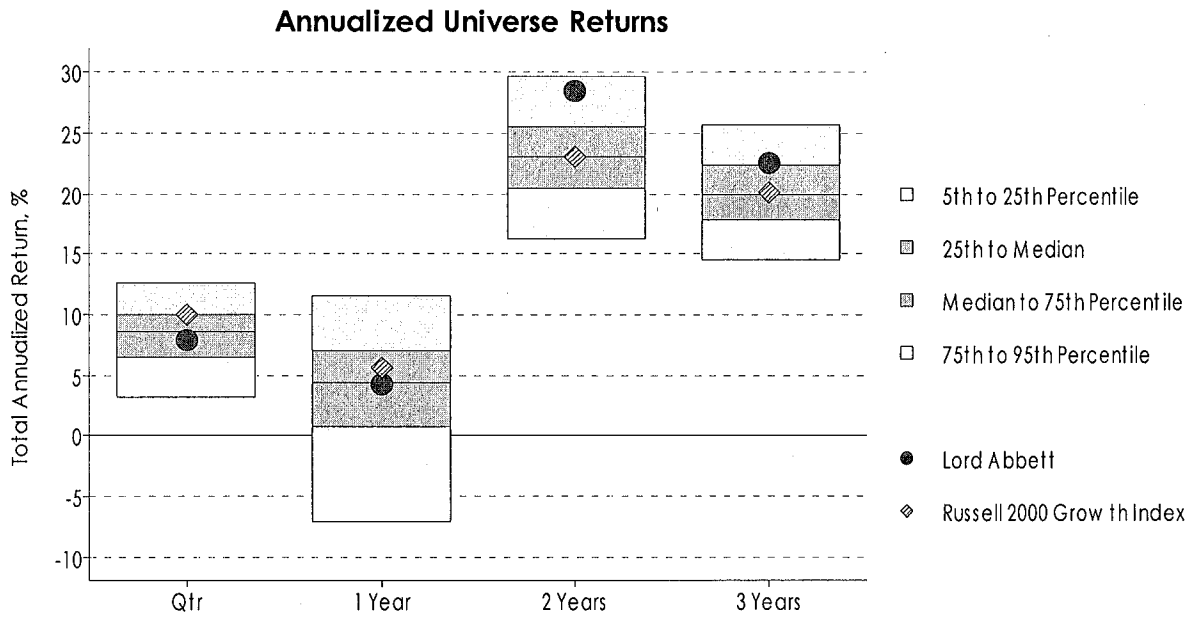
3 -Year Excess Risk/Return



▲ Lord Abbett ◆ Russell 2000 Growth Index

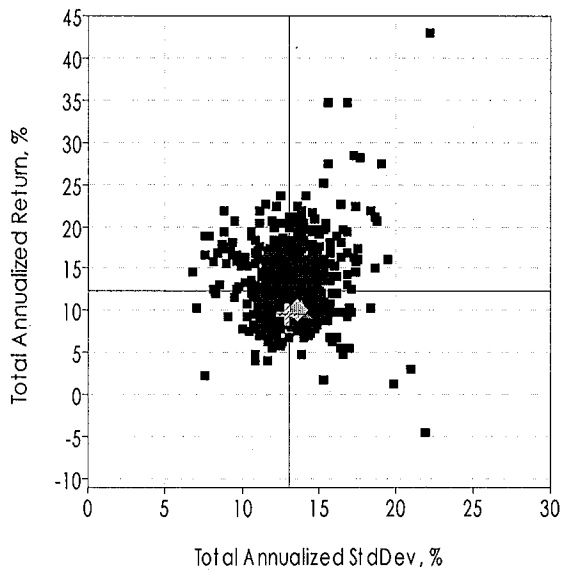
	Annualized Excess Return, %	Annualized Excess Std Dev, %	Sharpe Ratio, Excess
Lord Abbett	2.35	5.72	0.41
Russell 2000 Growth Index	0.00	0.00	NA
Small Cap Growth Universe Median	-0.15	5.14	-0.05

Oakland Small Cap Growth Manager Comparisons as of December 31, 2014



Oakland International Equity Manager Comparisons as of December 31, 2014

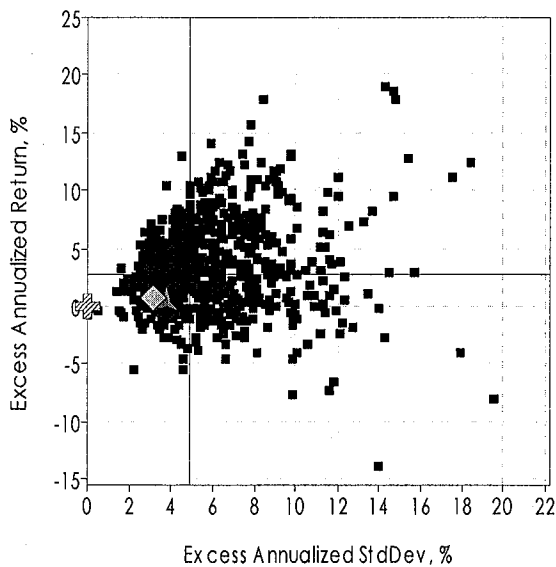
3-Year Total Risk/Return



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Hansberger	9.79	13.85	0.71
Fisher Investments	10.20	13.59	0.75
MSCI AC World Index ex USA	9.49	12.96	0.73
International Equity Universe Median	12.31	13.07	0.94

▲ Hansberger ◆ Fisher Investments ◻ MSCI AC World Index ex USA

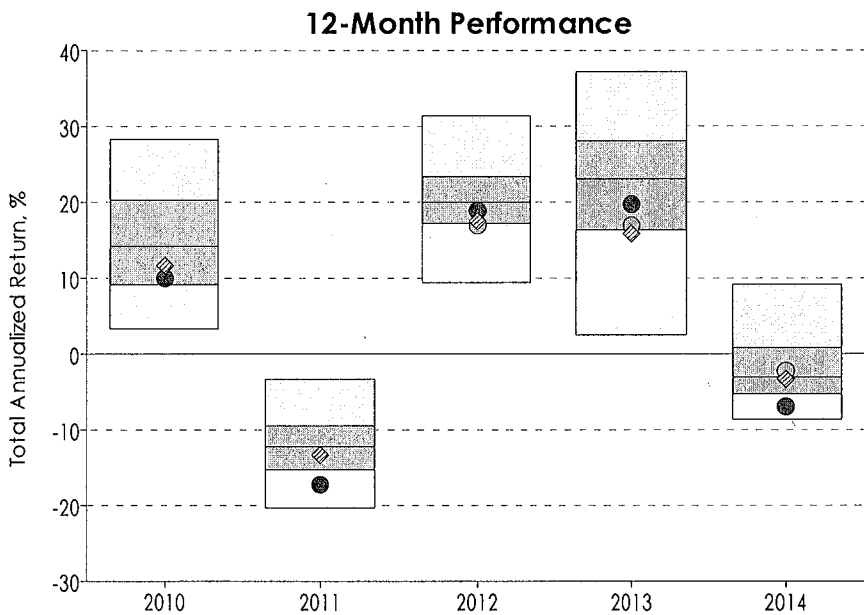
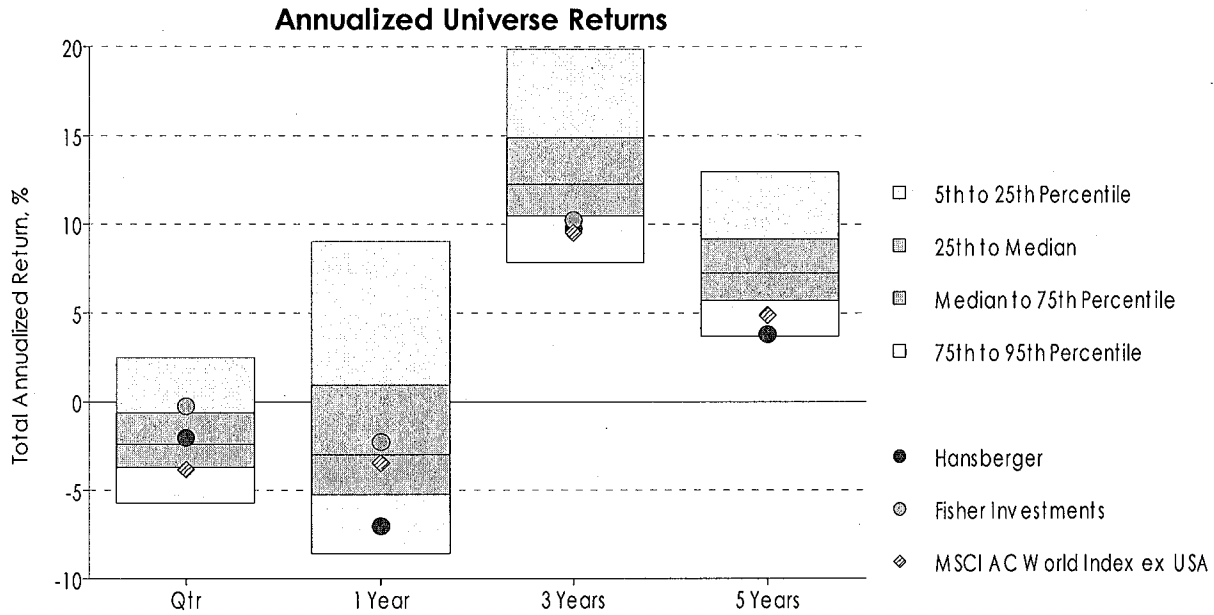
3-Year Excess Risk/Return



	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio Excess
Hansberger	0.31	3.81	0.08
Fisher Investments	0.71	3.17	0.22
MSCI AC World Index ex USA	0.00	0.00	NA
International Equity Universe Median	2.83	4.86	0.64

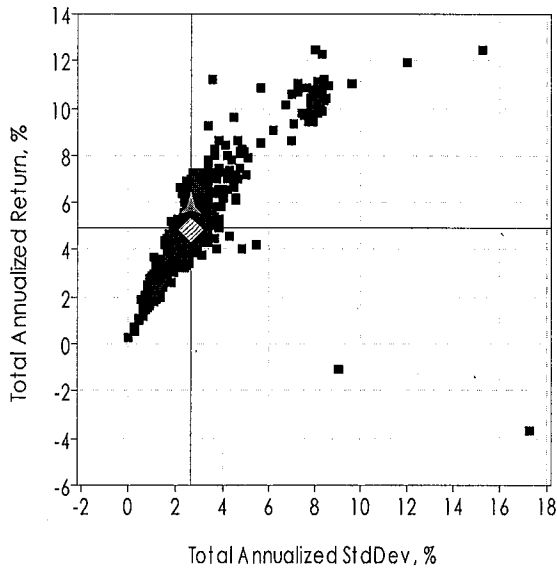
▲ Hansberger ◆ Fisher Investments ◻ MSCI AC World Index ex USA

Oakland International Equity Manager Comparisons as of December 31, 2014



Oakland Fixed Income Manager Comparisons as of December 31, 2014

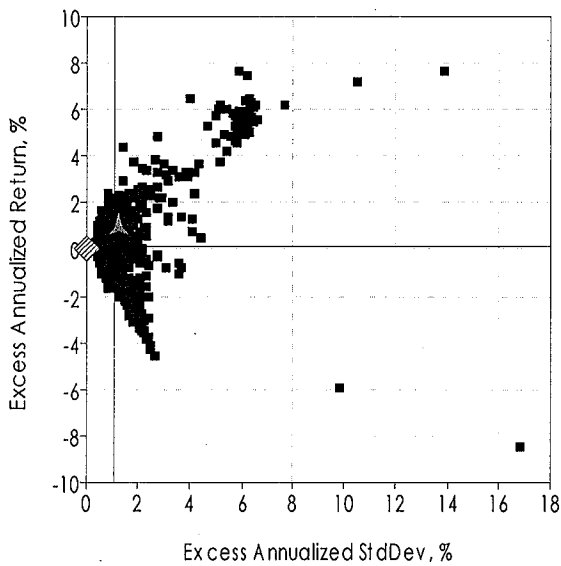
5-Year Total Risk/Return



▲ Reams ◆ Oakland BC Universal Blend

	Annualized Return, %	Annualized Std Dev, %	Sharpe Ratio
Reams	5.81	2.65	2.19
Oakland BC Universal Blend	4.81	2.64	1.82
U.S. Fixed Income Universe Median	4.93	2.68	1.85

5-Year Excess Risk/Return

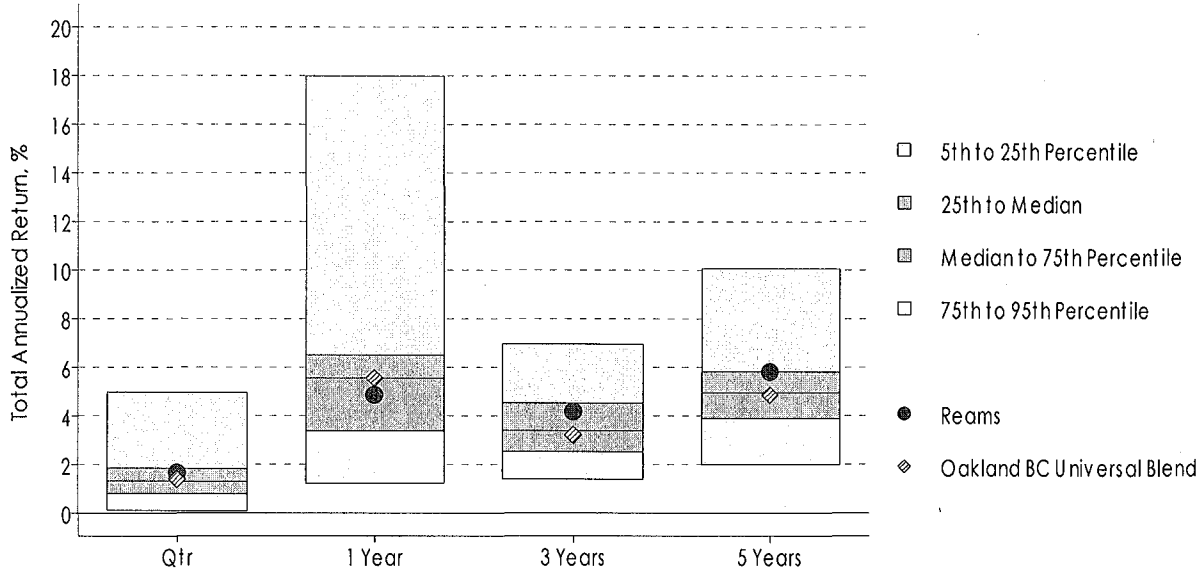


▲ Reams ◆ Oakland BC Universal Blend

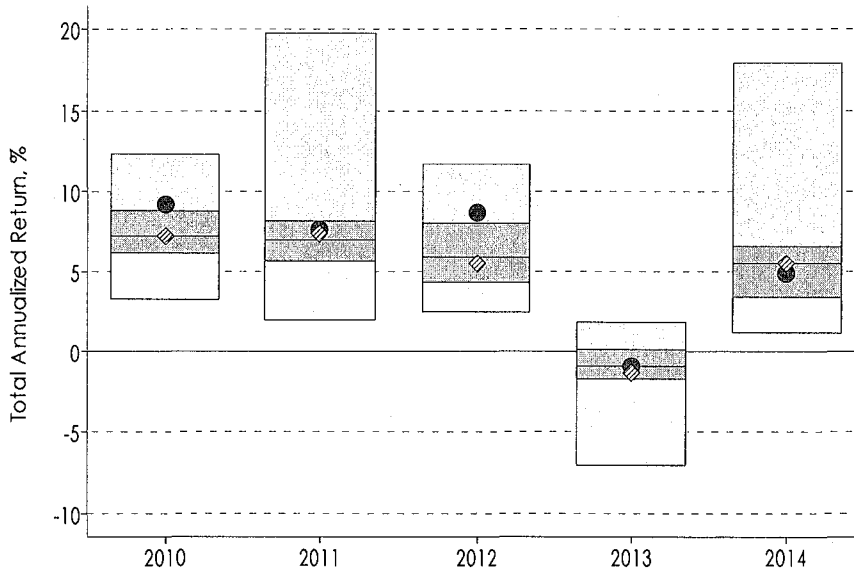
	Annualized Excess Return, %	Annualized Excess Std Dev, %	Sharpe Ratio, Excess
Reams	0.99	1.21	0.82
Oakland BC Universal Blend	0.00	0.00	NA
U.S. Fixed Income Universe Median	0.12	1.04	0.12

Oakland Fixed Income Manager Comparisons as of December 31, 2014

Annualized Universe Returns

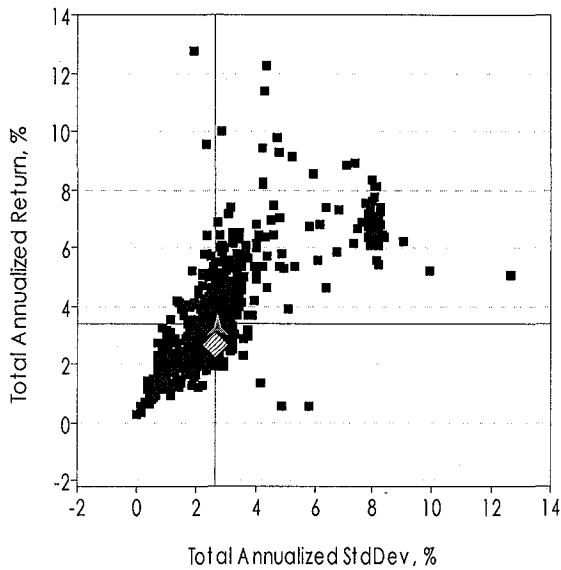


12-Month Performance



Oakland Fixed Income Manager Comparisons as of December 31, 2014

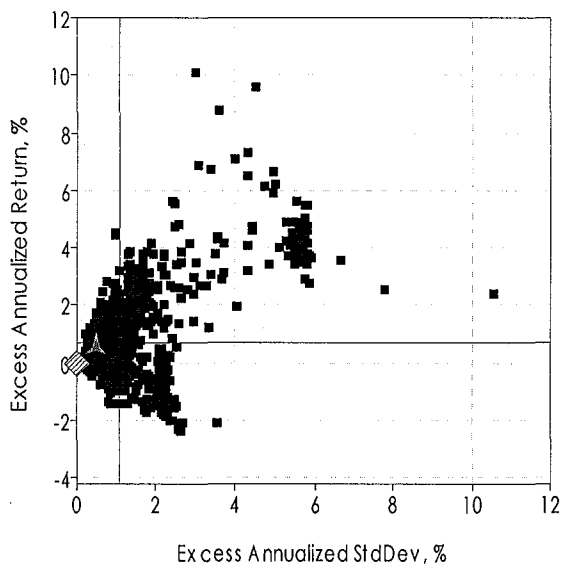
3-Year Total Risk/Return



▲ T. Rowe Price ◆ BC Aggregate Bond

	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
T. Rowe Price	3.26	2.72	1.20
BC Aggregate Bond	2.66	2.67	1.00
U.S. Fixed Income Universe Median	3.39	2.67	1.35

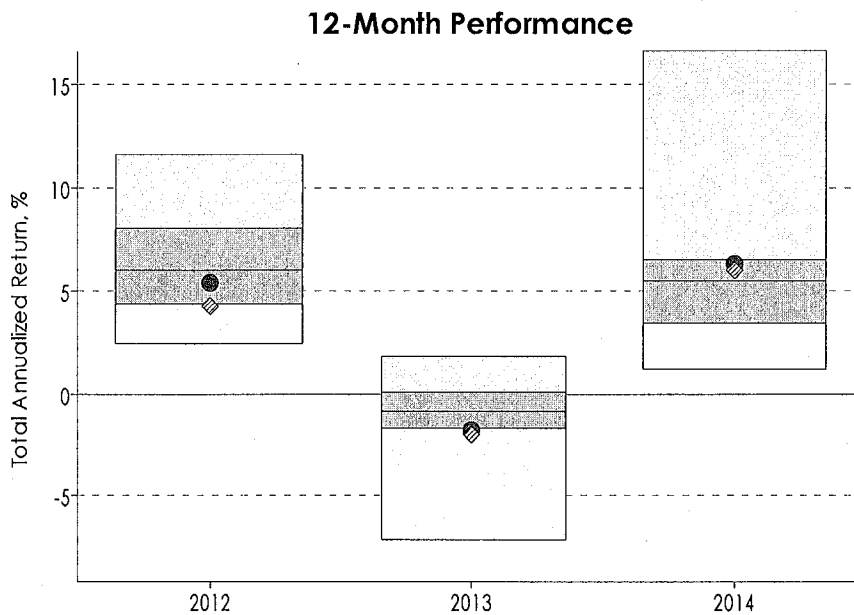
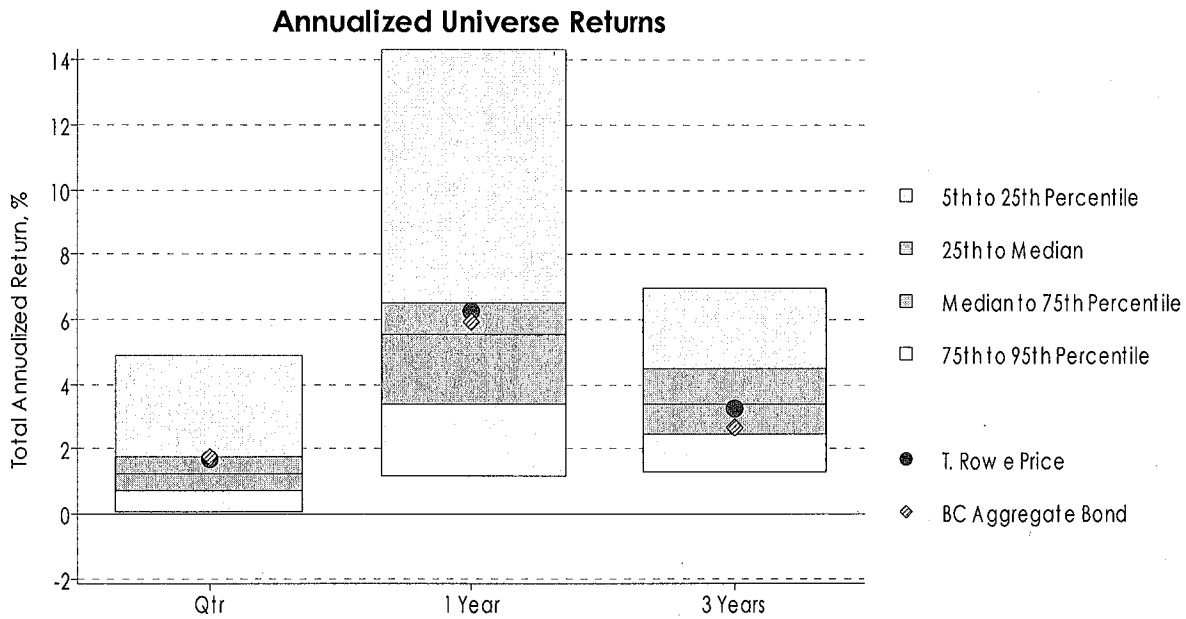
3-Year Excess Risk/Return



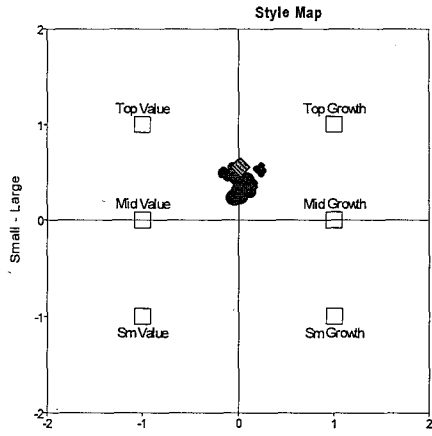
▲ T. Rowe Price ◆ BC Aggregate Bond

	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio Excess
T. Rowe Price	0.59	0.47	1.26
BC Aggregate Bond	0.00	0.00	NA
U.S. Fixed Income Universe Median	0.73	1.10	0.74

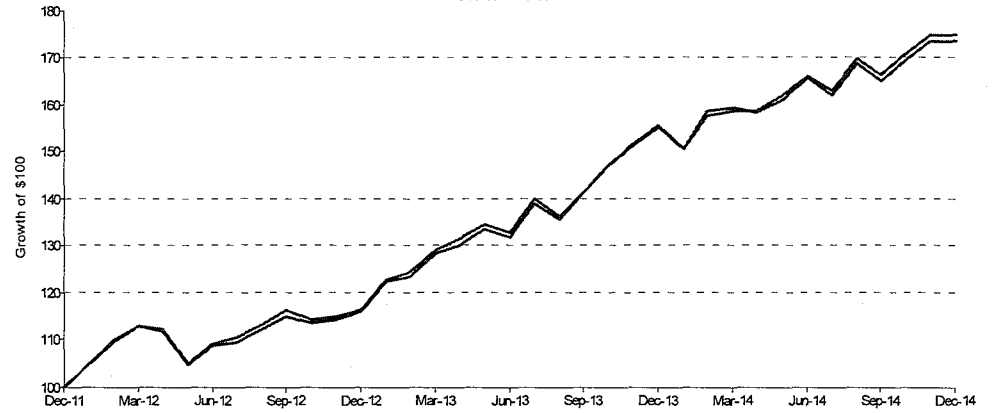
Oakland Fixed Income Manager Comparisons as of December 31, 2014



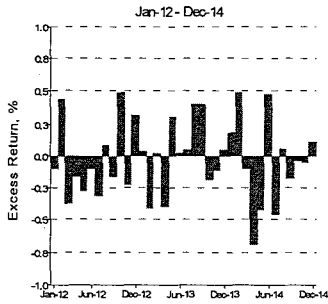
Domestic Equity



Cumulative Excess Performance

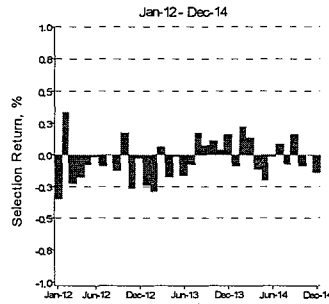


Monthly Added Value



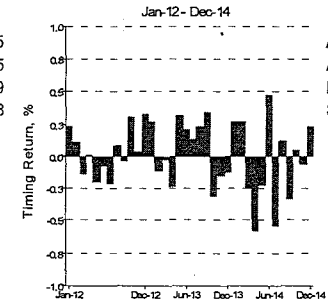
Annualized Return, % -0.3
 Annualized StdDev, % 1.0
 Information Ratio -0.3
 Significance Level, % 66.3

Monthly Added Value from Selection



Annualized Return, % -0.5
 Annualized StdDev, % 0.5
 Information Ratio -0.9
 Significance Level, % 90.8

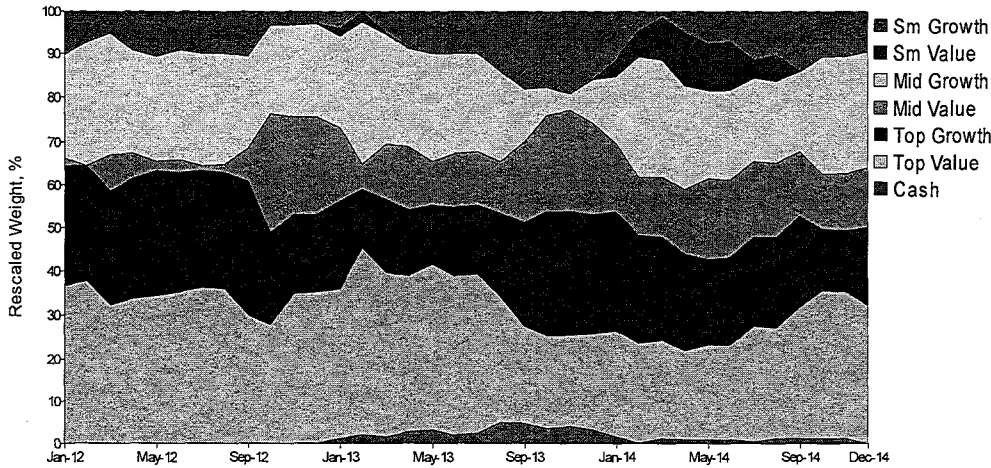
Monthly Added Value from Style Timing



Annualized Return, % 0.2
 Annualized StdDev, % 0.9
 Information Ratio 0.2
 Significance Level, % 60.1

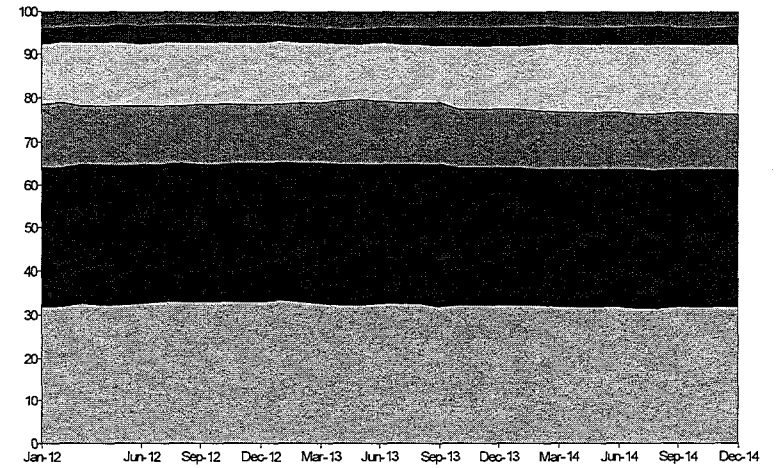
Asset Loadings - Manager

Jan-12 - Dec-14

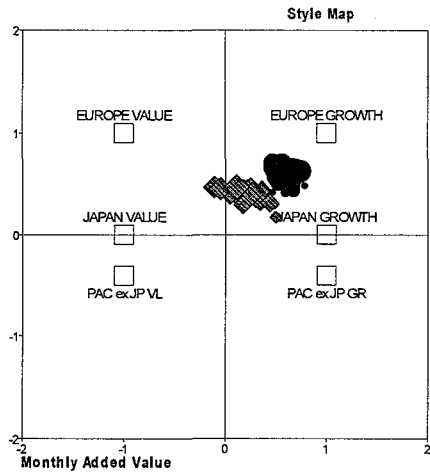


Asset Loadings - Benchmark

Jan-12 - Dec-14

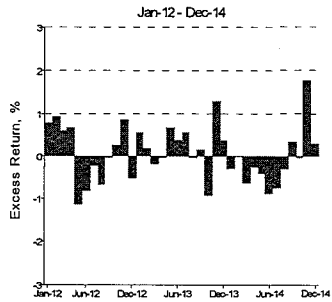
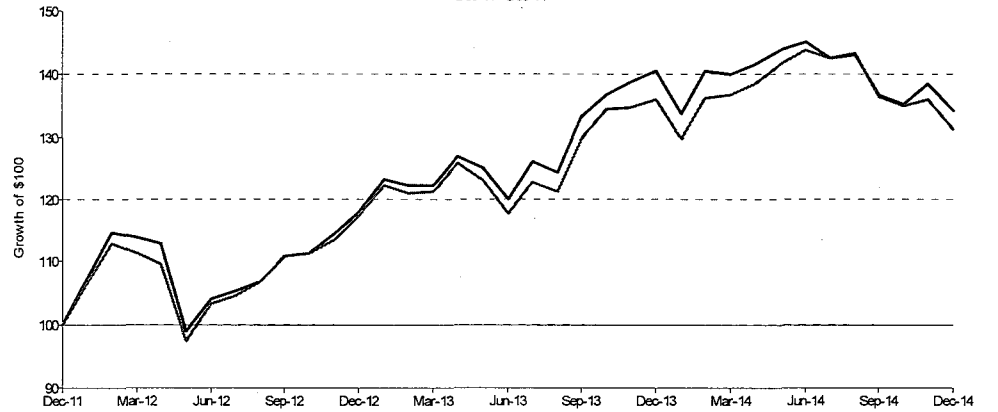


International Equity



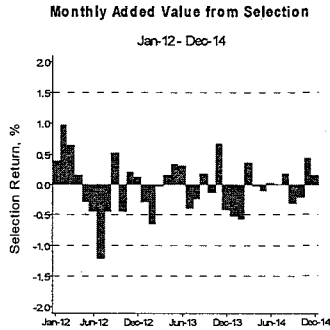
● International Equity
◆ Oakland MSCI ACWI ex US Blend

Cumulative Excess Performance



Annualized Return, %
Annualized StdDev, %
Information Ratio
Significance Level, %

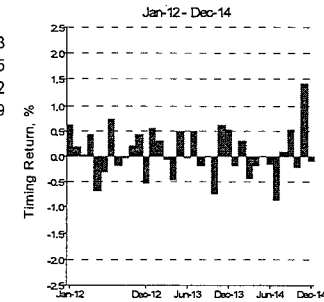
0.8
2.3
0.3
70.7



Annualized Return, %
Annualized StdDev, %
Information Ratio
Significance Level, %

-0.3
1.5
-0.2
63.9

Monthly Added Value from Style Timing

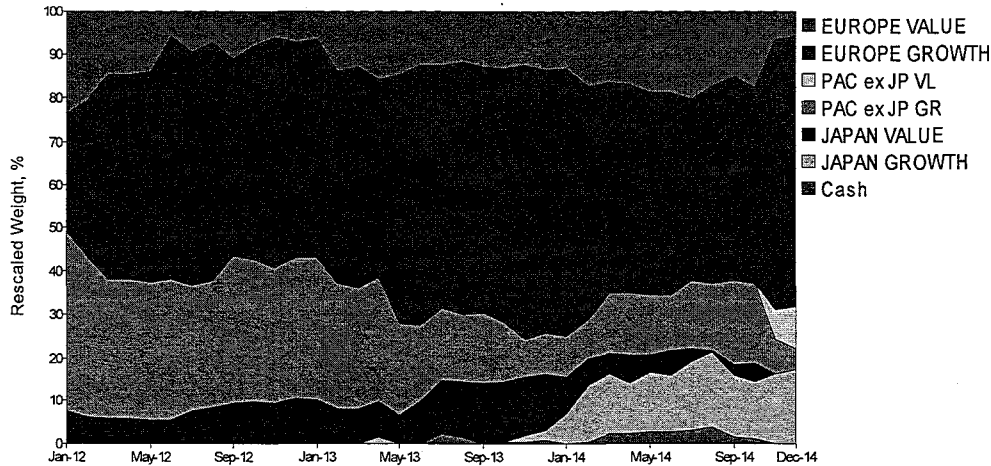


Annualized Return, %
Annualized StdDev, %
Information Ratio
Significance Level, %

0.9
1.6
0.6
80.5

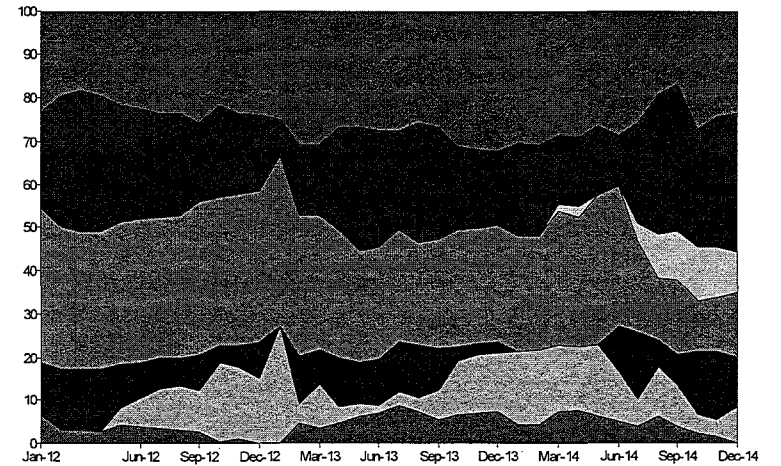
Asset Loadings - Manager

Jan-12 - Dec-14

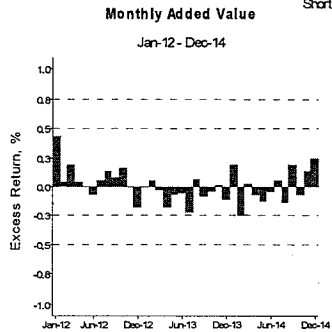
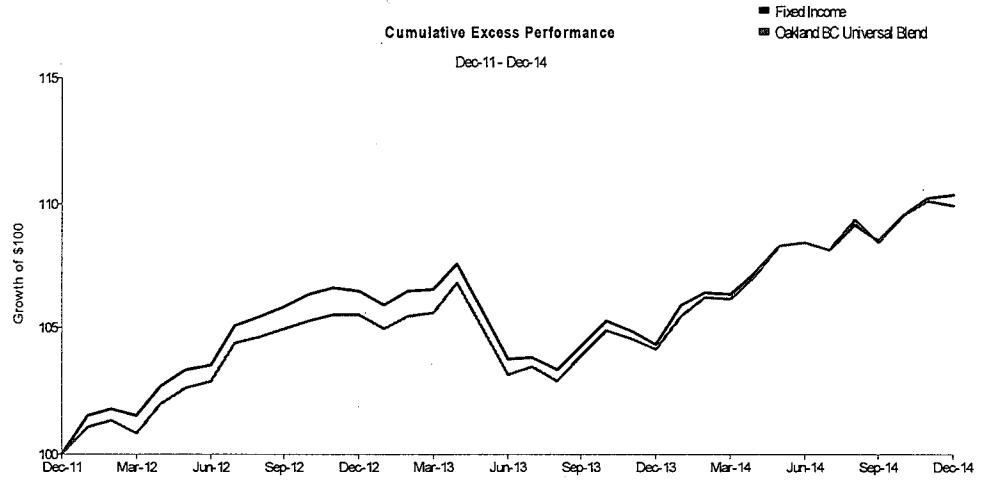
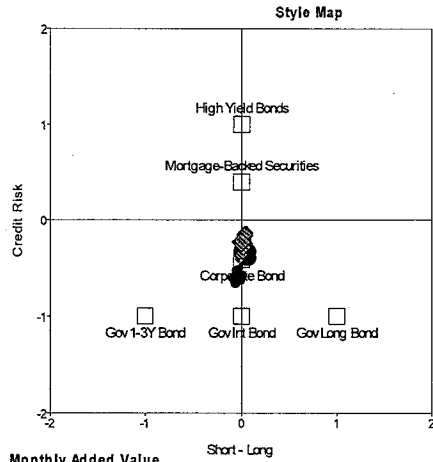


Asset Loadings - Benchmark

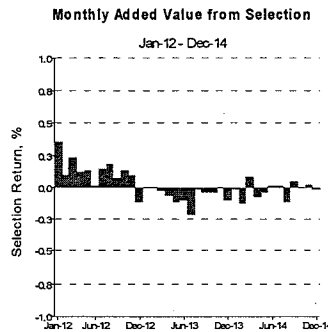
Jan-12 - Dec-14



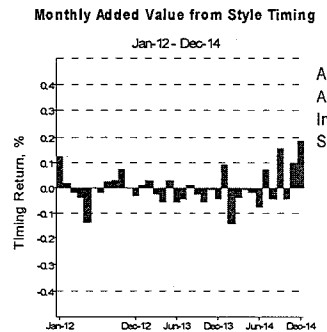
Fixed Income



Annualized Return, % 0.1
Annualized StdDev, % 0.5
Information Ratio 0.3
Significance Level, % 68.1



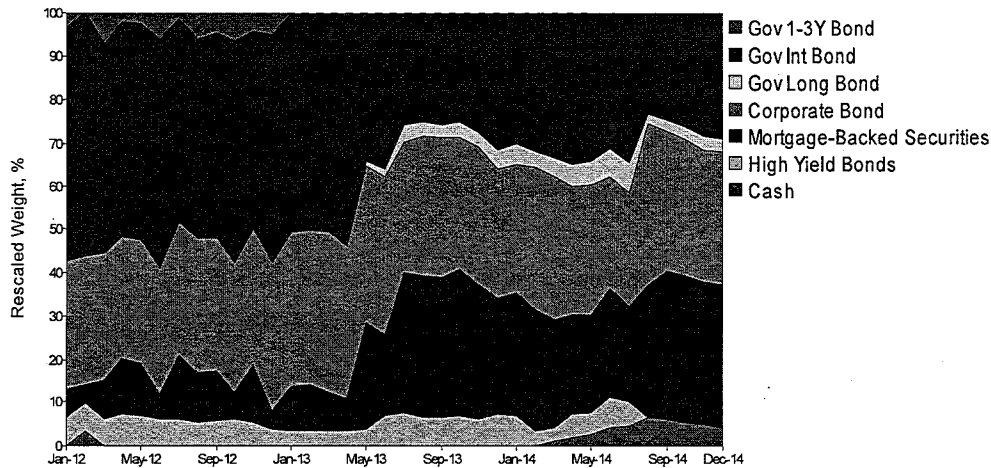
Annualized Return, % 0.2
Annualized StdDev, % 0.4
Information Ratio 0.6
Significance Level, % 82.3



Annualized Return, % 0.0
Annualized StdDev, % 0.2
Information Ratio 0.1
Significance Level, % 54.3

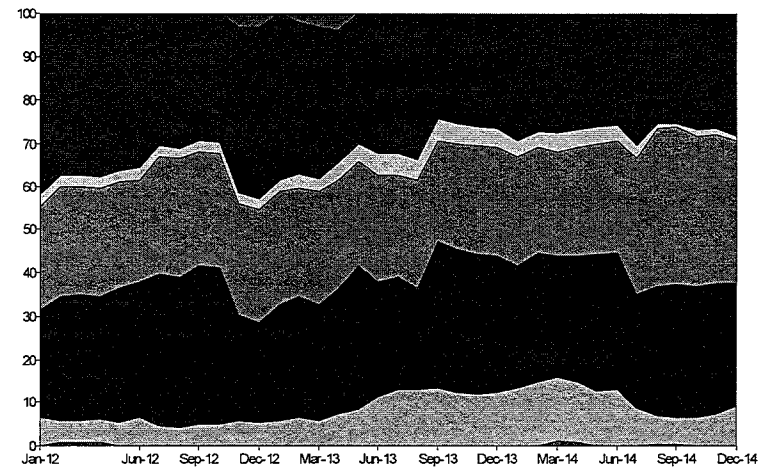
Asset Loadings - Manager

Jan-12 - Dec-14



Asset Loadings - Benchmark

Jan-12 - Dec-14



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 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 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 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 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 certainty of receiving their nominal cash flows. PCA estimates the expected annualized real yield by subtracting an estimate of expected 10 year inflation (produced by the Survey of Professional Forecasters as collected by the Federal Reserve Bank of Philadelphia), from the 10 year Treasury constant maturity interest rate.

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

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, Setton, March, 2005.

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