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AGENDA REPORT

TO: FRED BLACKWELL
CITY ADMINISTRATOR

FROM: Katano Kasaine

SUBJECT: Informational Report on PFRS'
Investment Portfolio

DATE: March 25, 2014

City Administrator
Approval

Date

3/11/14

COUNCIL DISTRICT: City-Wide

RECOMMENDATION

Staff recommends that the Council accept this informational report on the Oakland Police and Fire Retirement System ("PFRS") Investment Portfolio as of December 31, 2013.

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, 2013. 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").

OUTCOME

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

BACKGROUND/LEGISLATIVE HISTORY

The Oakland Police and Fire Retirement 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, 2013, the System had 1,027 members.

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

Item: _____
Finance and Management Committee
March 25, 2014

managed by ten external investment managers, except for the two iShares accounts which are managed internally. 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.

On July 30, 2012, the City deposited \$210 million from the issuance of Pension Obligation Bonds into the System. Based on the most recent PFRS Actuarial Study dated July 1, 2012, without the POB proceeds the PFRS Fund was 39.1% funded and had an Unfunded Actuarial Liability of \$401.1 million. With the deposited POB proceeds of \$210 million, the funded status is approximately 68.2%, and the unfunded liability is \$203.7 million. As a result of a funding agreement entered into between the System's Board and the City of Oakland, no additional contributions are required until July 1, 2017. The next required City contribution is projected to be approximately \$35.1 million in FY 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, 2013, the System's membership was 1,027, which included 712 retirees and 315 beneficiaries.

Table 1			
PFRS Membership			
as of December 31, 2013			
Membership	POLICE	FIRE	TOTAL
Retiree	425	287	712
Beneficiary	167	148	315
Total Membership	592	435	1,027

PFRS Investment Portfolio

In July 2012, the City of Oakland deposited \$210 million in POB proceeds. These proceeds were used to fund new asset classes, fund existing investments as well as pay monthly retiree pension payments. As a result of the 2012 POBs, the value of the investment portfolio as of July 31, 2012 was \$481 million. As of December 31, 2013, the total PFRS investment portfolio value was \$475.9 million. During the past eighteen months (July 31, 2012 - December 31, 2013), the portfolio only decreased by \$6.0 million, despite approximately \$86 million in withdrawals to pay retiree benefit payments over the same 18 month period. Table 2 below shows the PFRS Investment Portfolio as of December 31, 2013.

Table 2	
PFRS Investment Portfolio	
as of December 31, 2013	
Investment	Fair Value
Fixed Income	\$ 165,370,100
Equities	240,745,687
International Equities	65,692,388
Cash Equivalents	4,116,204
Total Portfolio	\$ 475,924,379

PFRS Investment Performance

Over the one year period ending December 31, 2013, the PFRS Total Portfolio generated a return of 15.7%, gross of fees, outperforming both its policy benchmark target of 12.3% and its Actuarial Expected Rate of Return of 6.75%. The Portfolio has outperformed the policy benchmark over the 1, 3, and 5 year time periods, gross of fees.

Relative to the Actuarial Expected Rate of Return, the Total Portfolio outperformed the actuarial expected rate for the 1, 3 and 5-year time periods. The Actuarial Rate of Return was gradually lowered from 8.0% in FY 2008 to 6.75% in FY 2012.

Table 3				
PFRS TOTAL FUND PERFORMANCE				
as of December 31, 2013				
	Quarter	1 Year	3 Year	5 Year
PFRS Fund	5.5%	15.7%	9.0%	14.2%
<u>Comparisons:</u>				
PFRS Actuarial Expected Rate of Return (blend) (c) (d)	1.7%	6.8%	6.8%	7.2%
Policy Target (blend) (b)	4.5%	12.3%	7.5%	12.0%
Median Fund (a)	5.1%	15.8%	9.8%	12.6%
CalPERS Investment Returns	4.9%	16.1%	9.9%	10.8%
CalSTRS Investment Returns	5.6%	19.1%	11.4%	11.2%
East Bay Mud Investment Returns	7.0%	22.0%	11.9%	14.9%
Colorado F&P Investment Returns	5.4%	15.4%	9.2%	12.2%
(a) Mellon Total Fund Public Universe (b) The Evolving Policy Benchmark consists of 20% Russell 3000, 7% MSCI ACWI ex U.S., 18% BC Universal, and 55% t-bills. (c) 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% currently. (d) The quarterly actuarial expected rate of return is calculated based on the 6.75% annual return assumption				

Pension Obligation Bonds

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. These assets were temporarily invested in a short-term transition account managed by one of PFRS current fixed income managers and largely consist of high quality, short-duration fixed income assets. The 2012 POB proceeds were strategically rolled out into the broader investment portfolio over an 18 month period in conjunction with the broader goals of moving to the new long-term asset allocation. The primary drivers of the evaluation process consisted of capital preservation, liquidity, management and transition costs, and flexibility of the investment to meet long-term asset allocation goals.

On July 31, 2012, as a result of the deposit of the POB proceeds, the PFRS portfolio had an aggregate value of \$481 million. As of December 31, 2013, the PFRS portfolio had a value of \$475 million. Over the same 18 month period, the PFRS portfolio had approximately \$86 million in withdrawals to pay retiree pension payments.

Long-Term 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.

Asset Class	12/31/2012 Target Portfolio %	New Long-Term Target Allocation %
Fixed Income	30	20
Real Return	0	10
Covered Calls	0	10
Domestic Equity	53	43
International Equity	17	12
Private Equity	0	5

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), City Attorney's Office and Budget Office.

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, Retirement Systems Accountant
Retirement Division

Attachment: *Appendix A: PFRS Performance Report as of December 31, 2013*

Item: _____
Finance and Management Committee
March 25, 2014

**APPENDIX A – PFRS’ INVESTMENT
PERFORMANCE REPORT
as of 12/31/2013**

City of Oakland Police and Fire Retirement System



Quarterly Report Executive Summary

December 31, 2013

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

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



Table of Contents

<u>Section</u>	<u>Tab</u>
Total Portfolio Summary	A
Investment Market Risk Metrics	B
Economic Overview	C
Total Portfolio Review	D
Manager Monitoring/Probation List	E
Individual Manager Performance	F

INTRODUCTION

As of December 31, 2013, the City of Oakland Police and Fire Retirement System (OPFRS) portfolio had an aggregate value of \$476.4 million. This represents a \$9.6 million increase in value over the quarter. During the previous one-year period, the OPFRS Total Portfolio increased by \$6.2 million, including (\$60.0) million in withdrawals during the period.

Asset Allocation Trends

The asset allocation targets (see table on page 19) reflect those as of December 31, 2013. Target weightings reflect the Plan's current asset allocation (effective 6/30/2013).

With respect to policy targets, the portfolio ended the latest quarter **overweight Domestic and International Equity while underweight Fixed Income.**

Recent Investment Performance

During the most recent quarter, the OPFRS Total Portfolio generated a positive absolute return of 5.5%, gross of fees, outperforming its policy benchmark by 1.0%. The portfolio has outperformed its policy benchmark over all time periods measured.

The Total Portfolio has produced a positive return relative to the Median Fund over the quarter, Fiscal year-to-date, and 5-year time periods, while producing negative returns over the 1-, and 3-year time periods, gross of fees. Performance differences with respect to the Median Fund can be attributed largely to differences in asset allocation.

	Quarter	Fiscal YTD	1 Year	3 Year	5 Year
Total Portfolio ¹	5.5	10.6	15.7	9.0	14.2
Policy Benchmark ²	4.5	8.4	12.3	7.5	12.0
Excess Return	1.0	2.2	3.4	1.5	2.2
Reference: Median Fund ³	5.1	10.4	15.8	9.8	12.6
Reference: Total Net of Fees ⁴	5.3	10.3	15.1	8.4	13.6

¹ Gross of Fees Performance since 2005 includes securities lending

² Evolving Policy Benchmark consists of 40% Russell 3000, 10% MSCI ACWI ex U S , 17% BC Universal, and 33% tbtlls

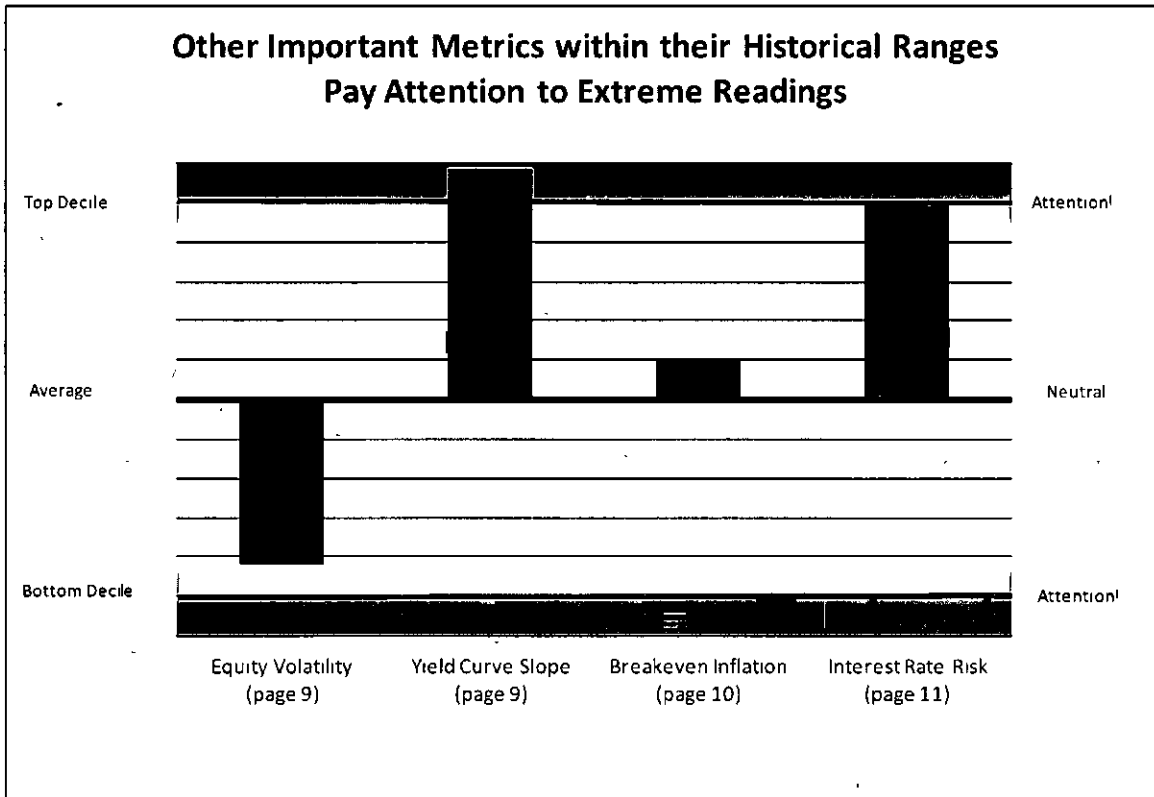
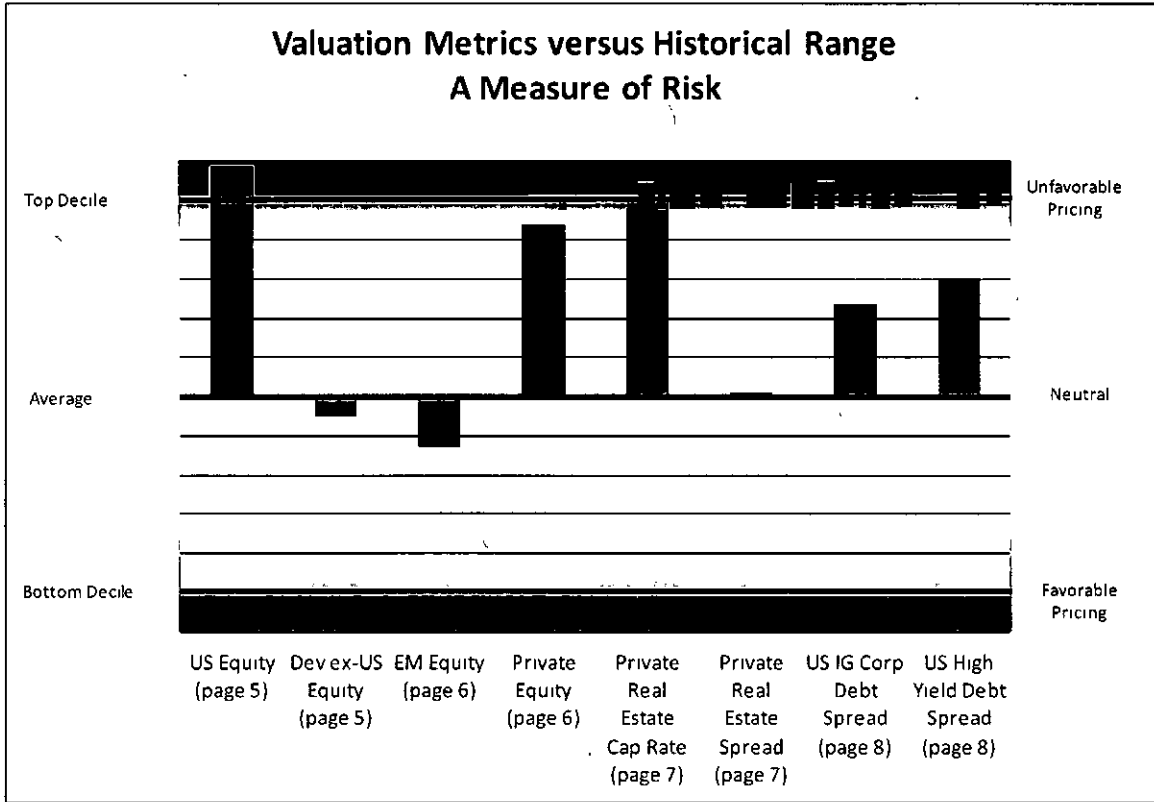
³ Mellon Total Funds Public Universe

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

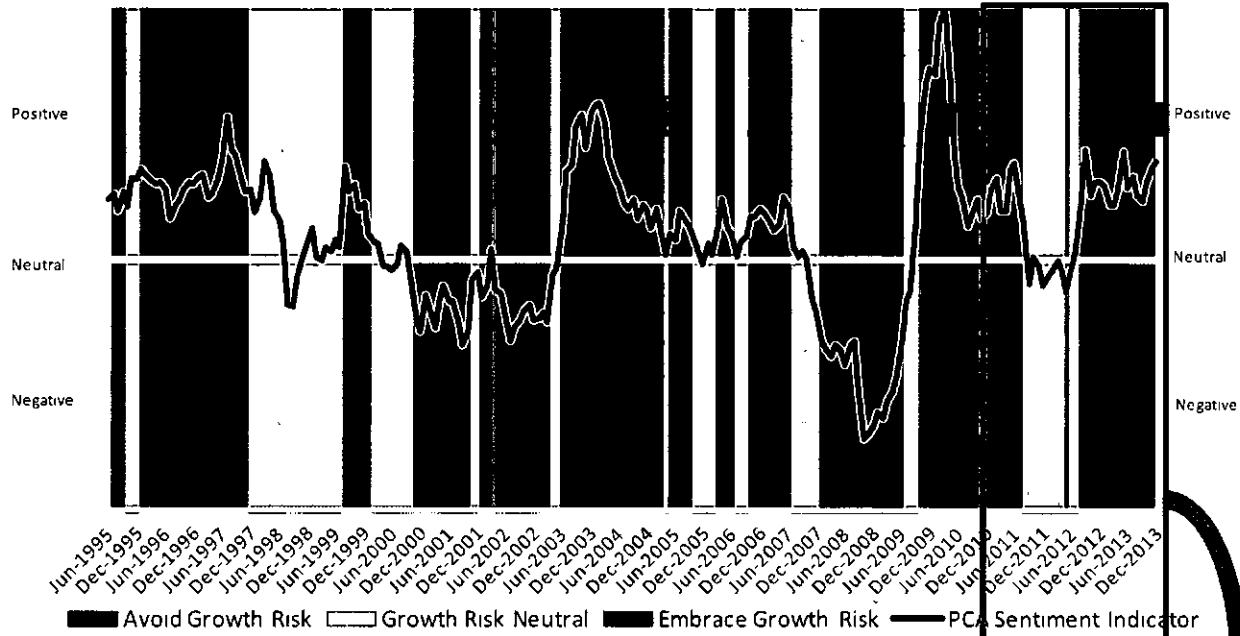
Investment Market Risk Metrics

Takeaways

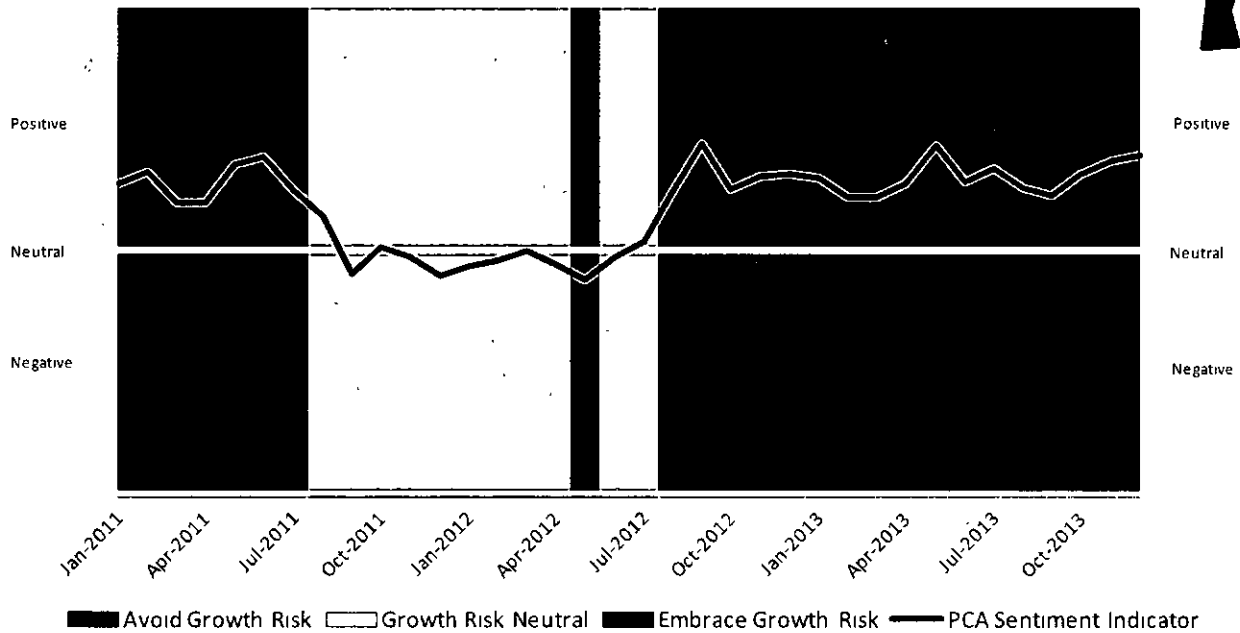
- Based on a cyclically adjusted earnings measure, the US equity markets are at top decile valuation levels.
- Equity volatility (VIX) remains near 14 (long-term average \approx 20).
- Non-US equity valuations remain near long-term averages, with Emerging Market equity valuations below average.
- Credit spreads are at 2007 levels, below long-term averages (expensive), and continuing to tighten.
- The slope of the yield curve is very steep, indicating higher future rates, but cash rates remain at zero due to Fed policy.
- Interest rate risk has fallen from top decile territory, but remains significant. The 10-year Treasury is trading near 2.7-3.0%.
- Inflation metrics point to inflation being well behaved.
- The PCA Market Sentiment Indicator ("PMSI") continued to read **green**.
- With valuations rising, spreads tightening and rates normalizing, risk taking behavior appears to be picking up.



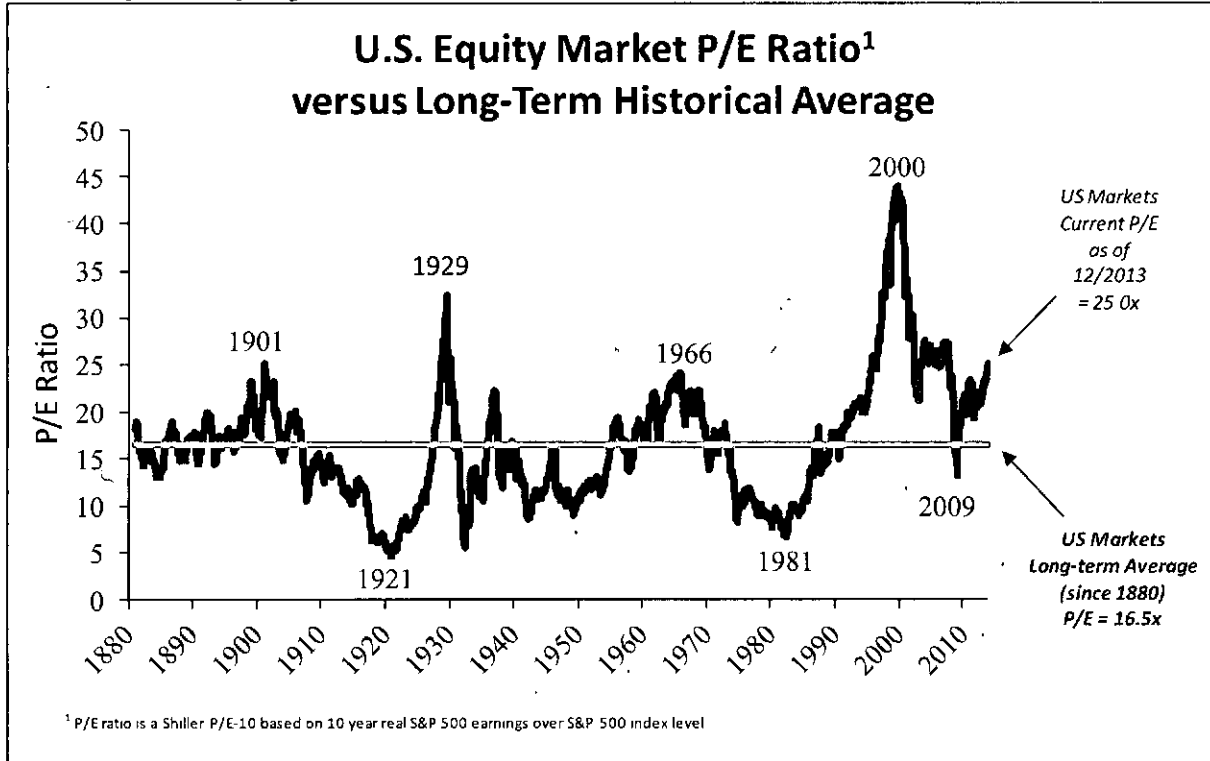
PCA Market Sentiment Indicator (1995-Present)



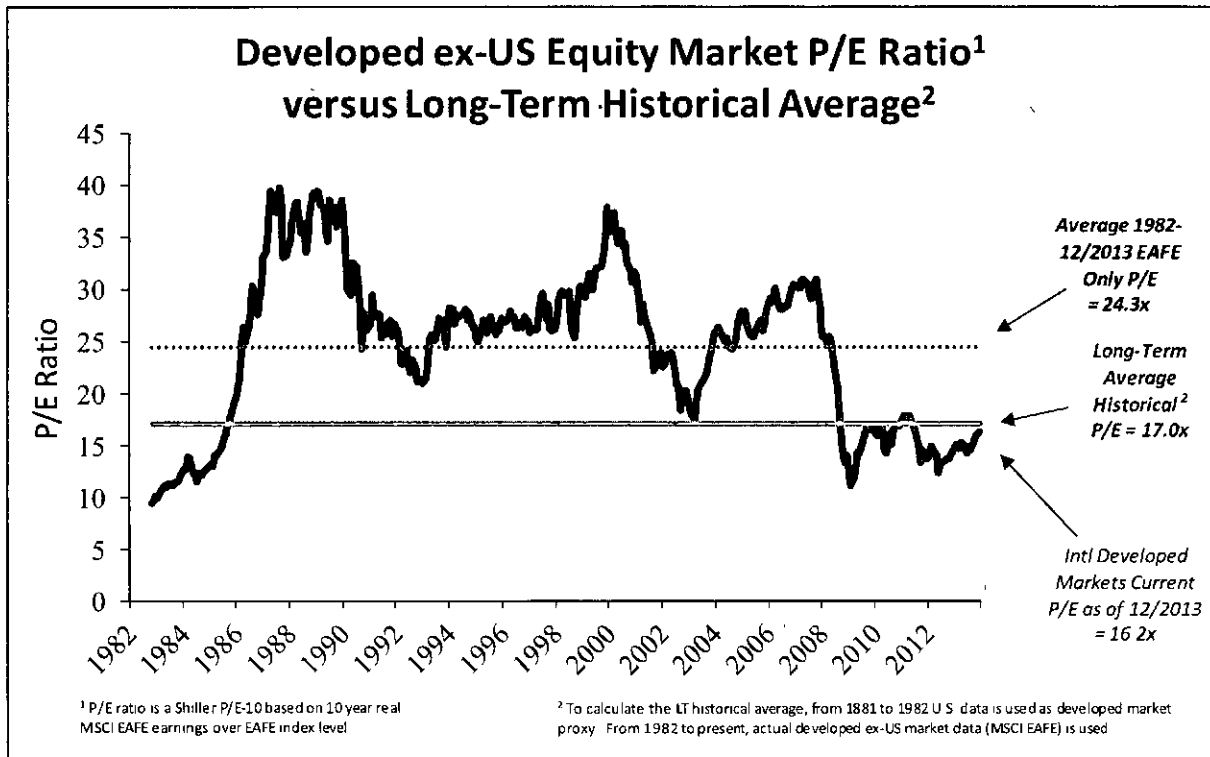
PCA Market Sentiment Indicator - Most Recent 3-Year Period



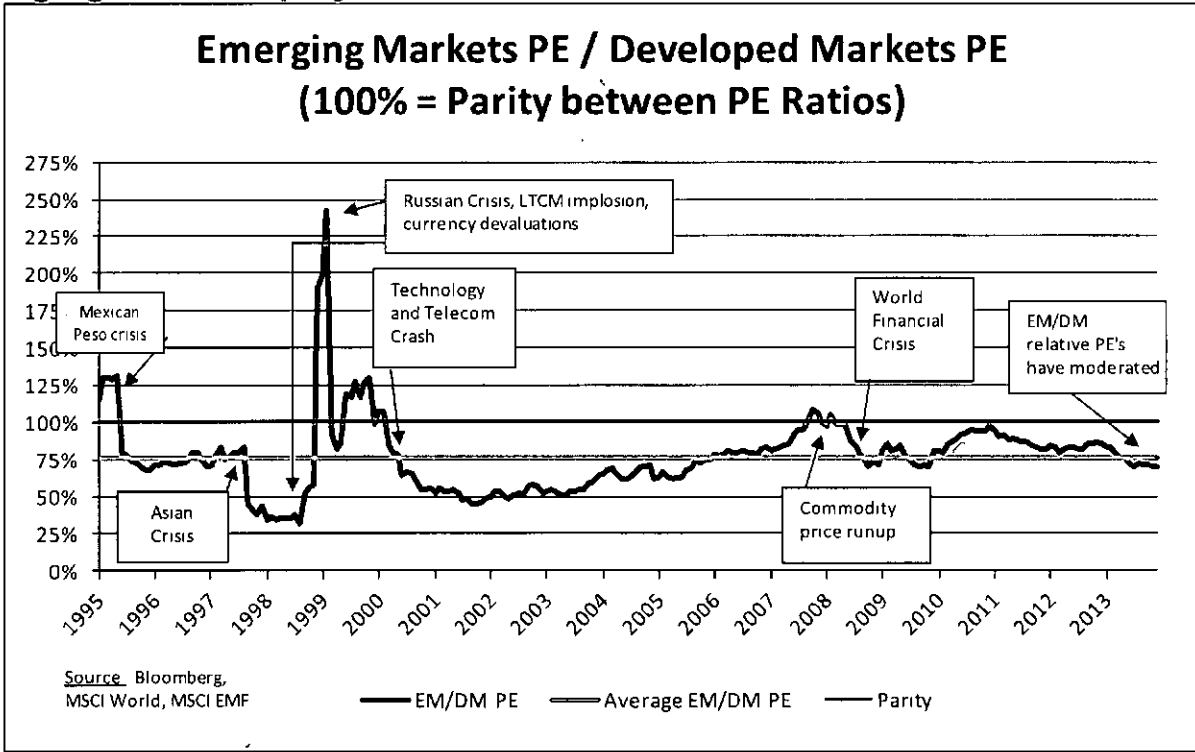
Developed Equity Markets



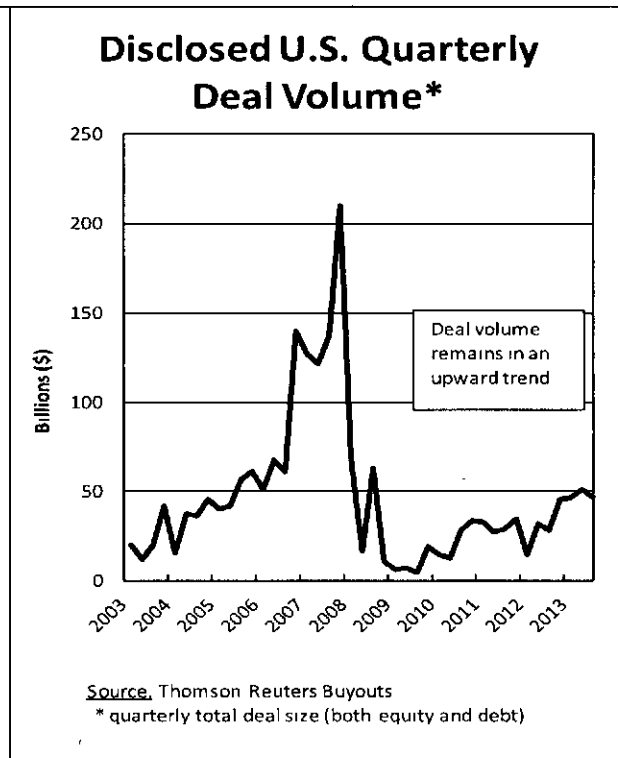
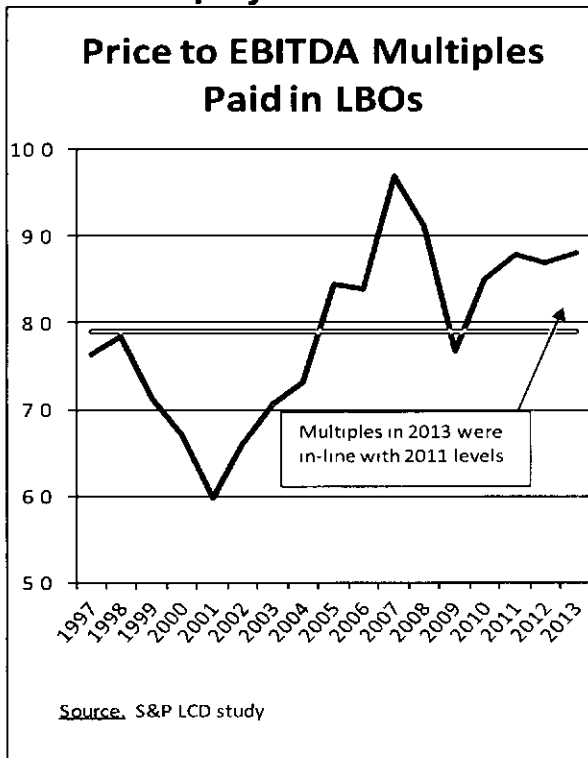
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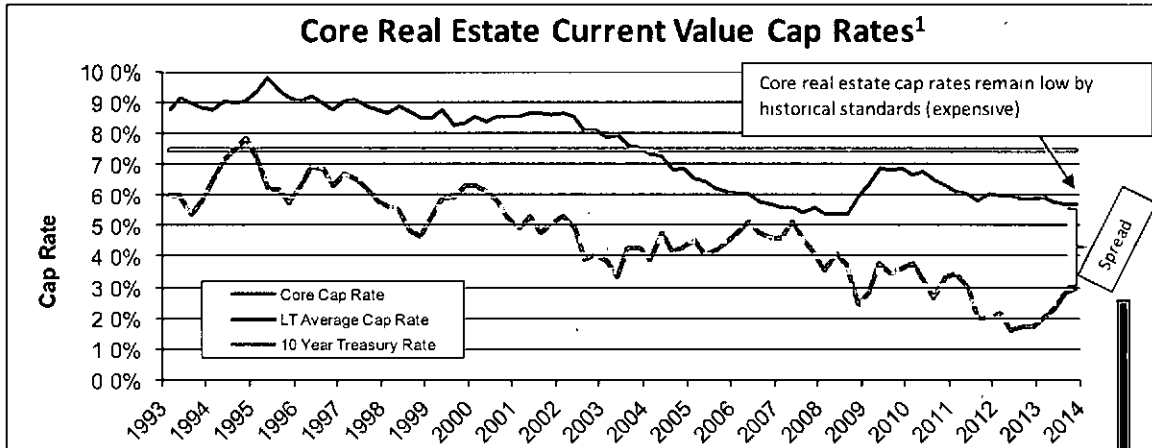
Emerging Market Equity Markets



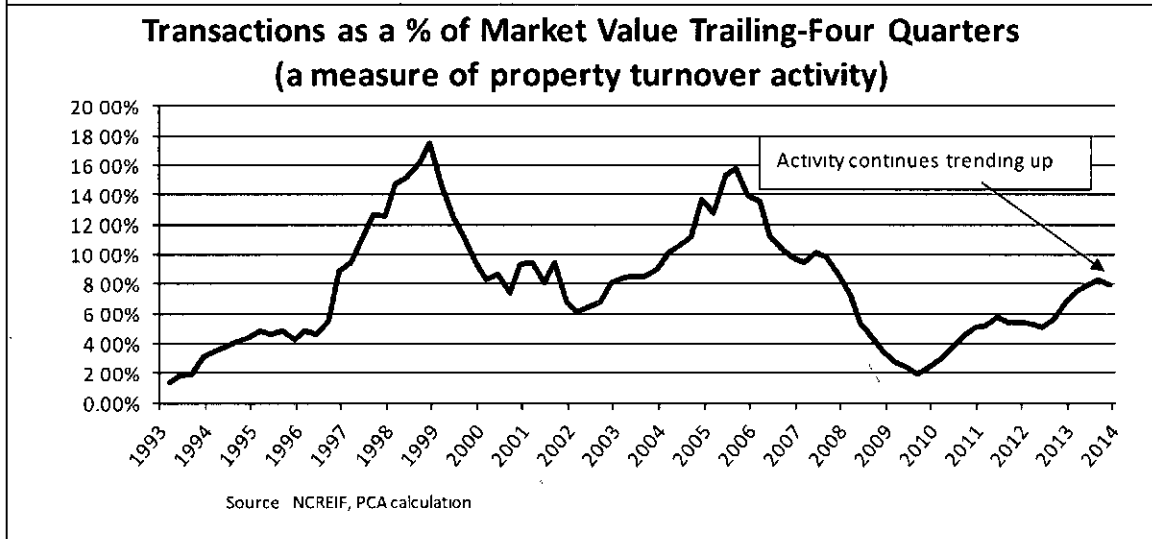
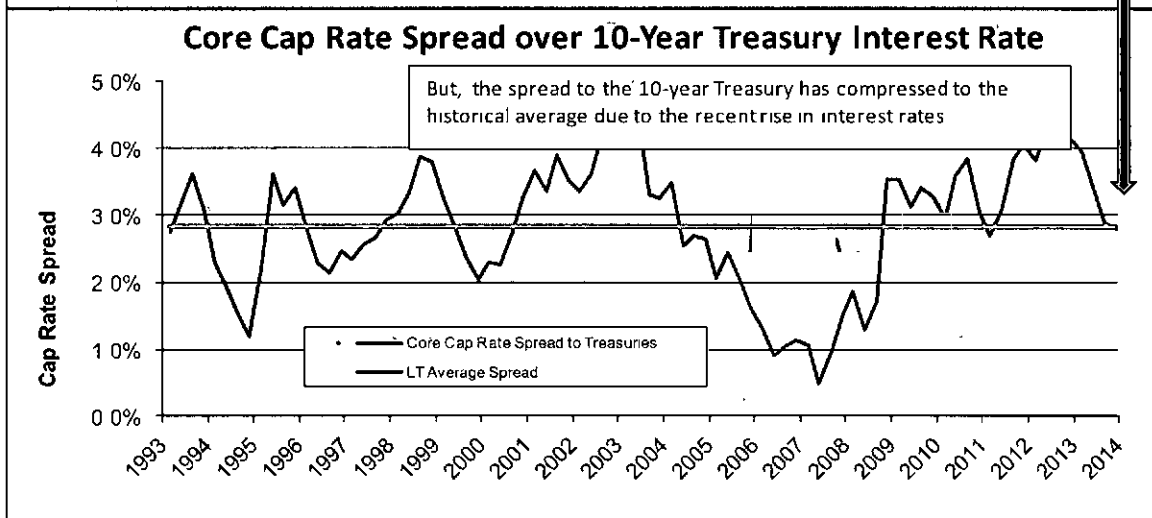
US Private Equity



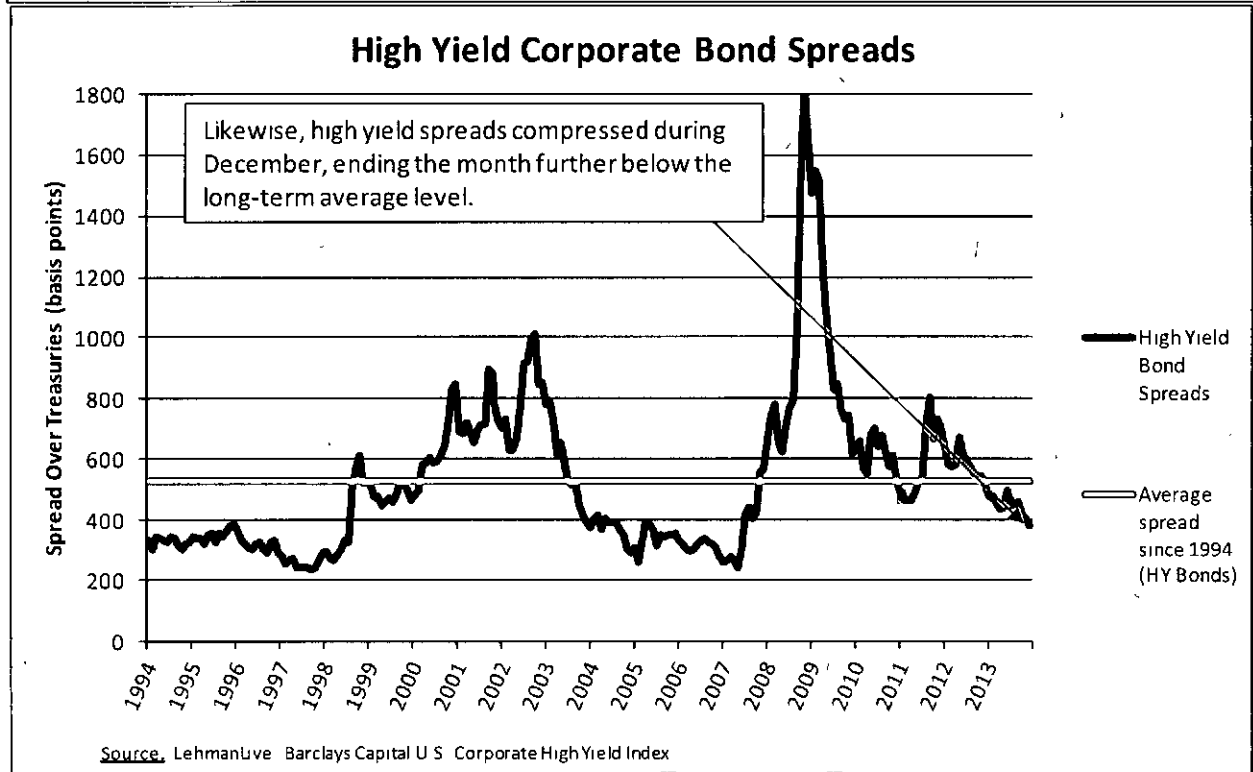
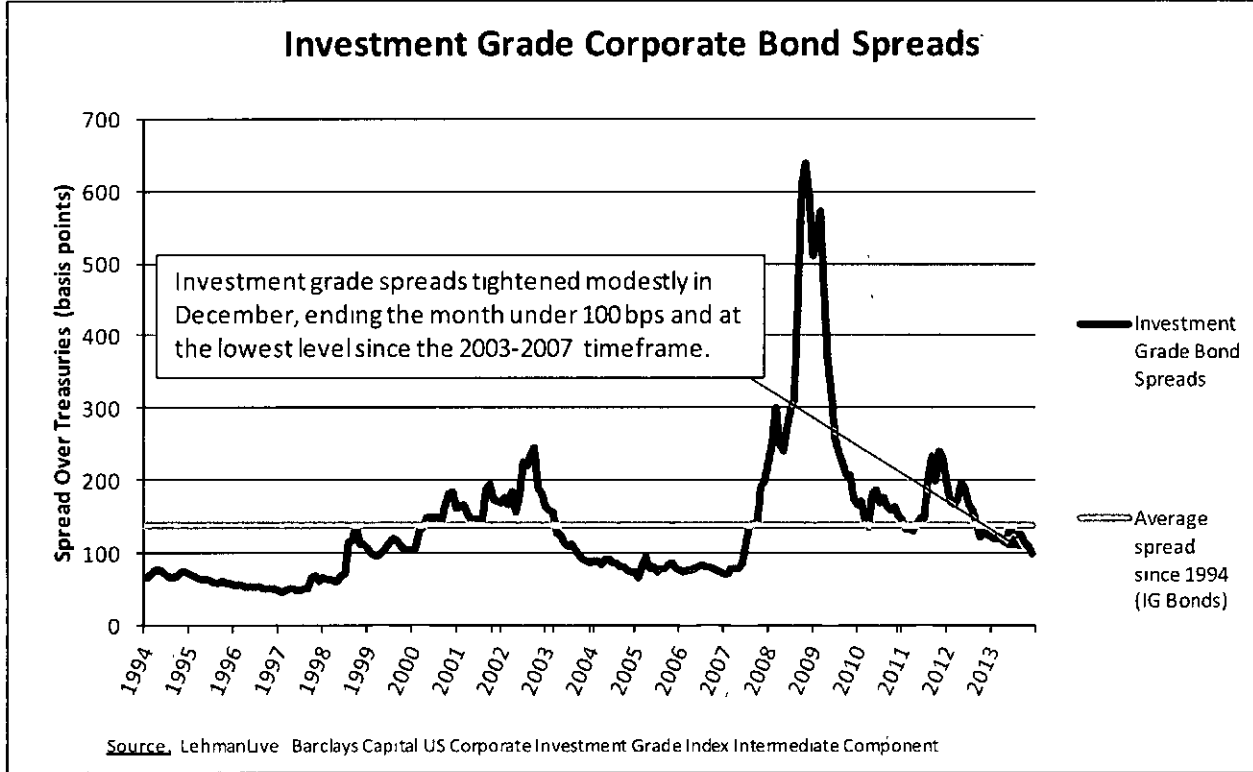
Private Real Estate Markets



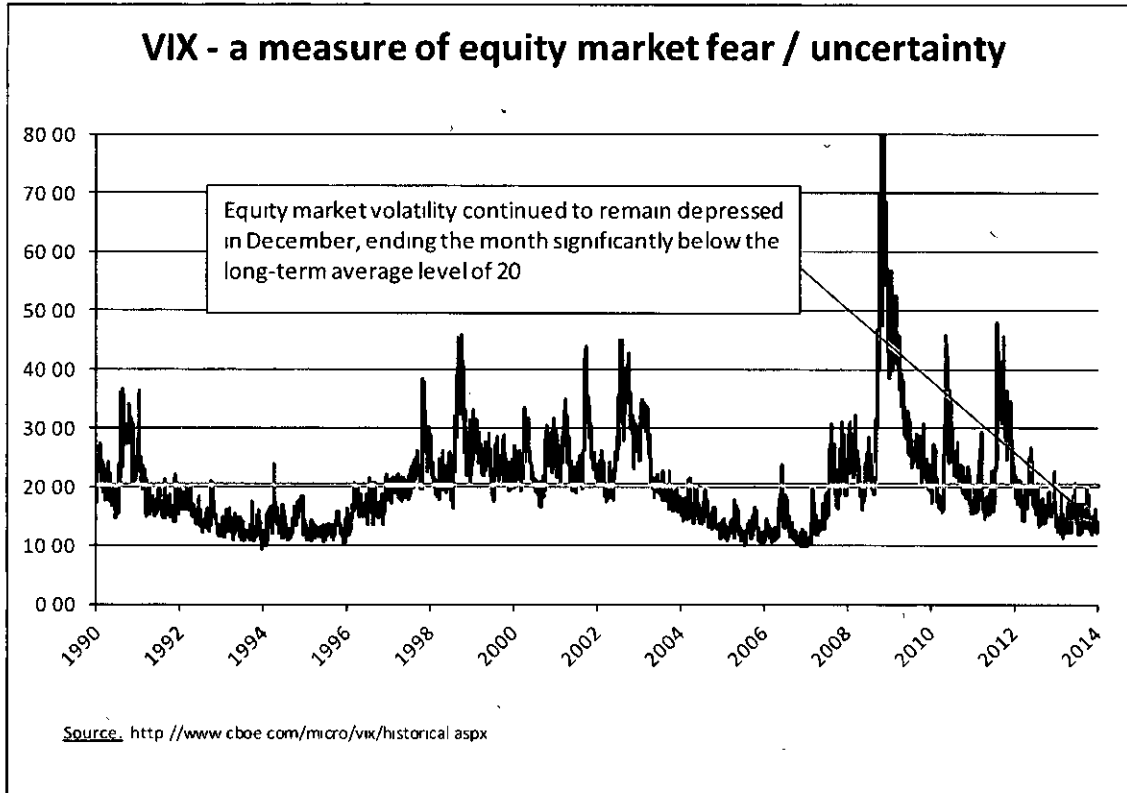
Sources: NCREIF, www.ustreas.gov ¹A cap rate is the current annual income of the property divided by an estimate of the current value of the property. It is the current yield of the property. Low cap rates indicate high valuations.



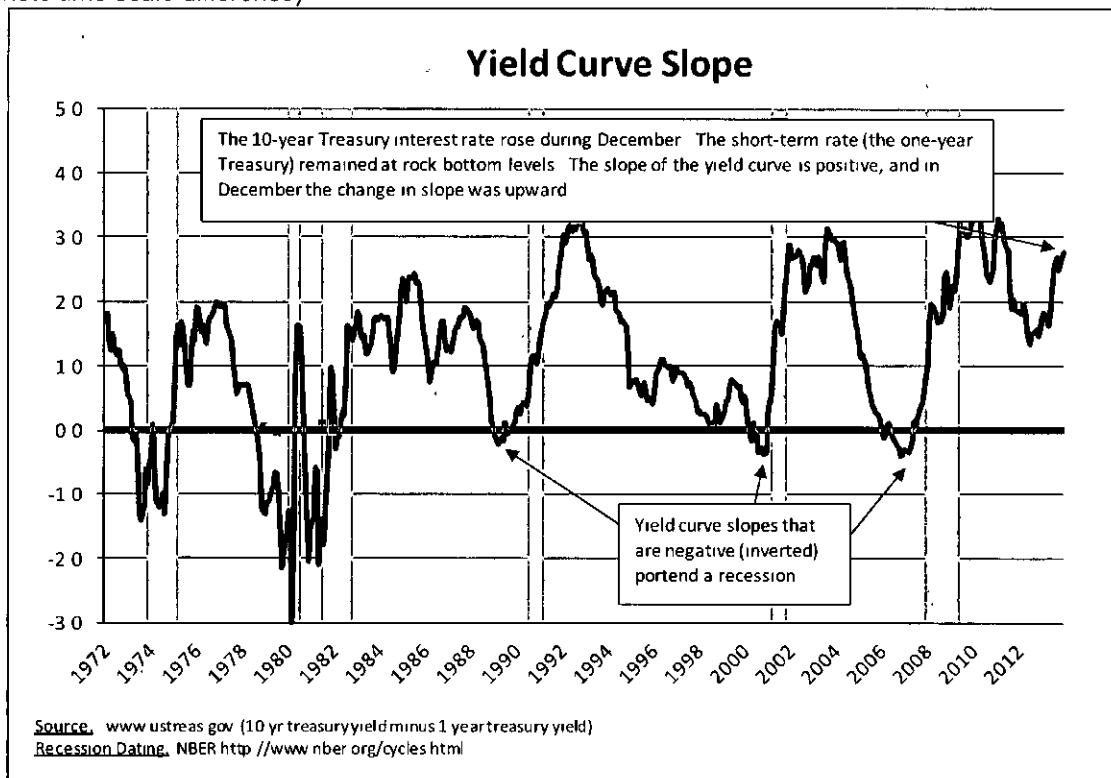
US Fixed Income



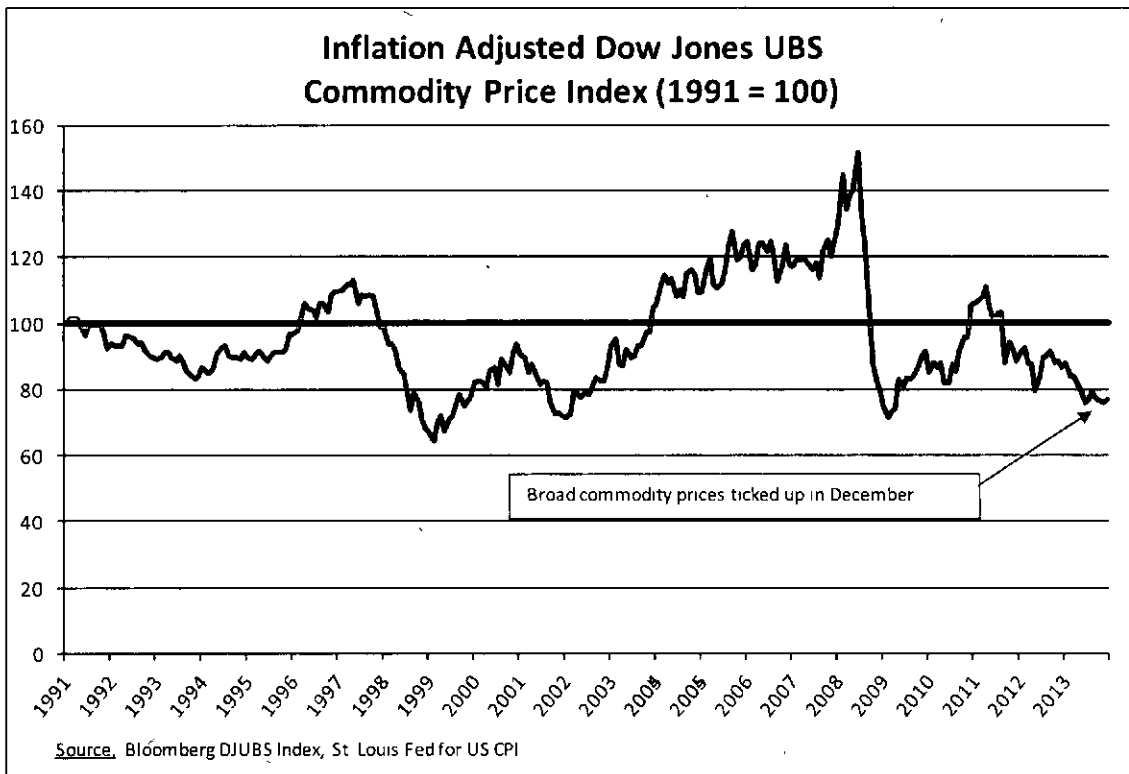
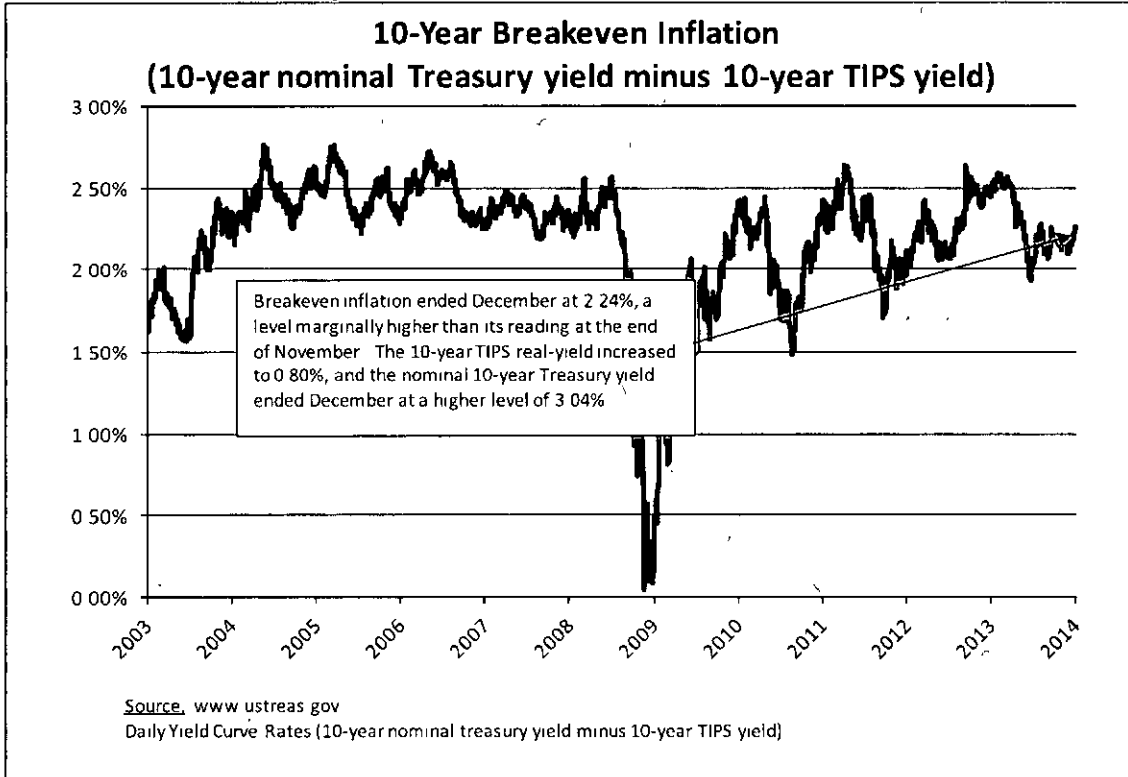
Other Market Metrics



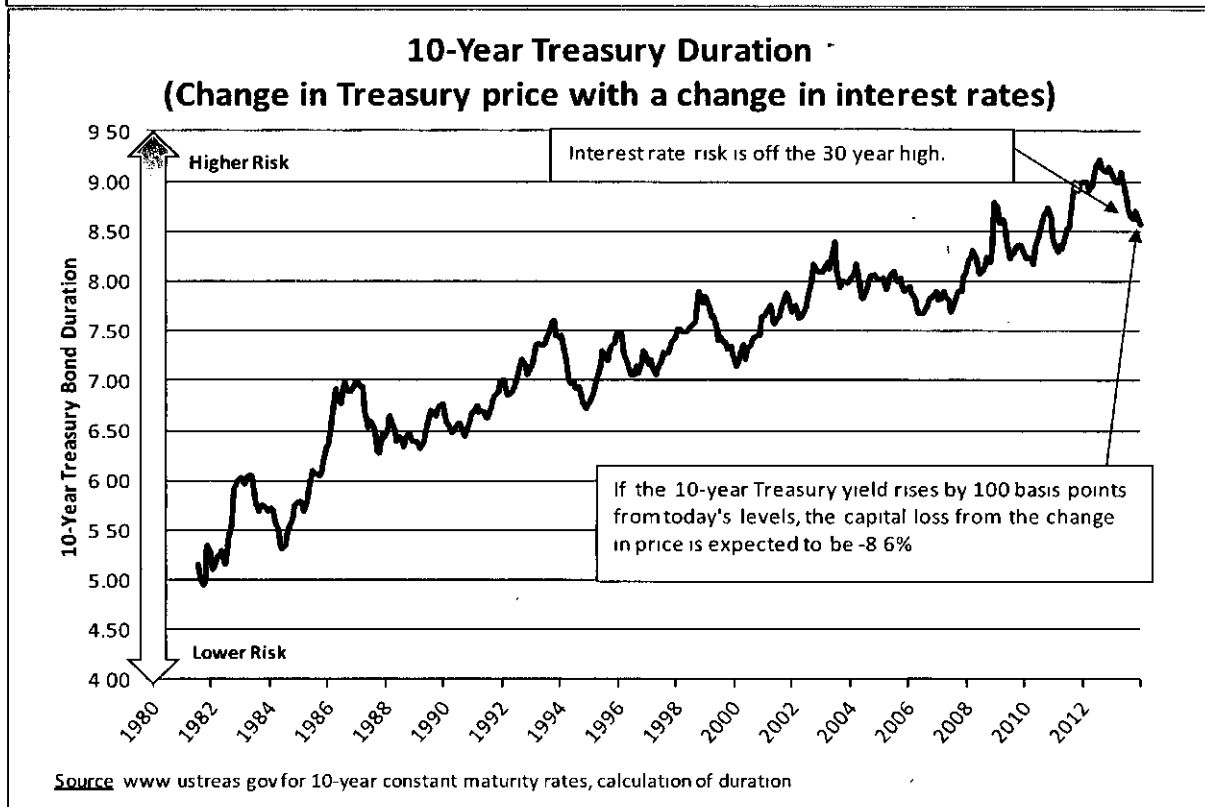
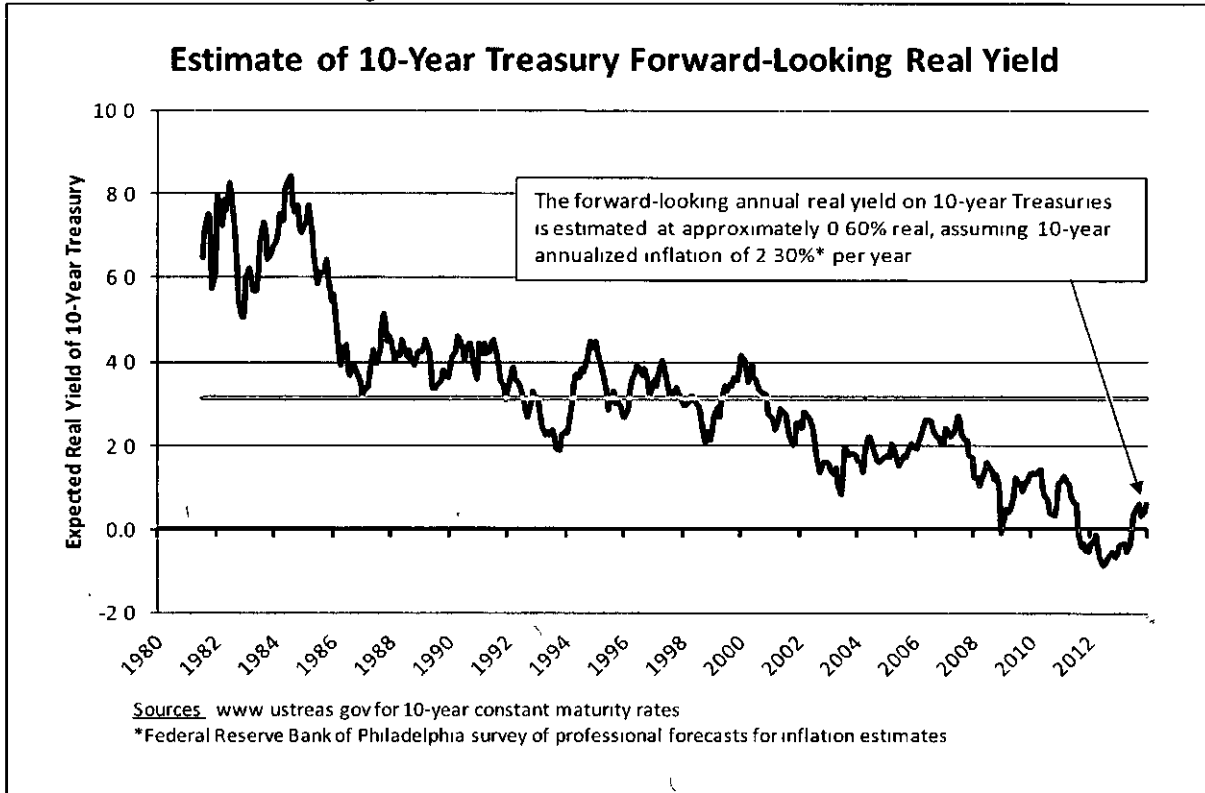
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Measures of Inflation Expectations



Measures of US Treasury Interest Rate Risk

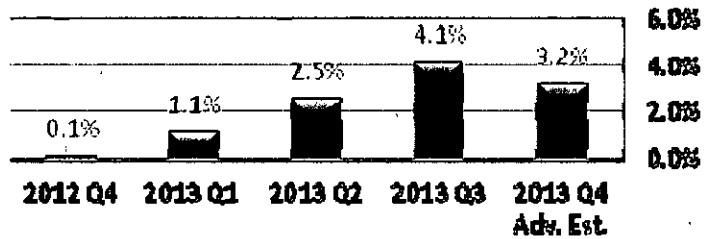


Overview: A near three week government shutdown at the beginning of the quarter created a temporary headwind for U.S. equity markets reaching new highs as of year-end 2013. Real GDP increased at an annualized rate of 3.2 percent in the fourth quarter of 2013, capping off the strongest second-half of the year growth since 2003. At the end of the year, the Fed announced it would begin to taper the current quantitative easing program, which began in January 2014 with a \$10 billion decrease in monthly bond purchases that will decrease again in February to \$65 billion. Unemployment continued its gradual decline ending the quarter at 6.7%. 2013 marked the first time since 1998 in which inflation was less than 2% for two consecutive years. International developed markets produced strong results benefiting from accommodative monetary policy and improving eurozone sentiment. The European Central Bank cut interest rates from 0.50% to 0.25% in November. Emerging markets continued to regain some of the losses from earlier in the year but headwinds from global liquidity concerns and current account deficits held down returns.

Economic Growth

- Real GDP increased at an annualized rate of 3.2 percent in the fourth quarter of 2013 after increasing at an annualized rate of 4.1 in the third quarter of 2013.
- Positive contributions from personal consumption expenditures, exports, nonresidential fixed investment, private inventory investment, and state and local government spending drove GDP increases in the fourth quarter.
- These positive contributions offset negative contributions from federal government spending and residential fixed investment.

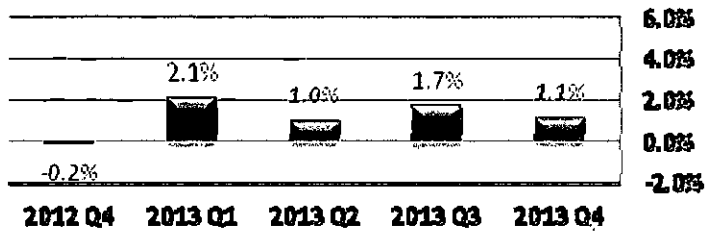
Annualized Quarterly GDP Growth



Inflation

- The Consumer Price Index for All Urban Consumers (CPI-U) increased by 1.1 percent in the quarter on an annualized basis, after seasonal adjustment.
- Quarterly percent changes may be adjusted between data publications due to periodic updates in seasonal factors.
- Core CPI-U increased by 1.6 percent for the quarter on an annualized basis.
- Over the last 12 months, CPI-U increased 1.6 percent before seasonal adjustment.

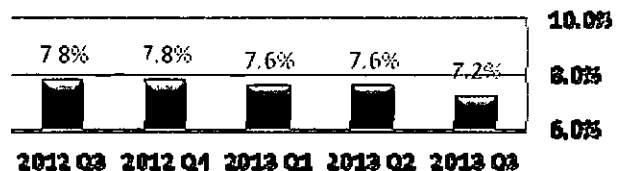
CPI-U After Seasonal Adjustment



Unemployment

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

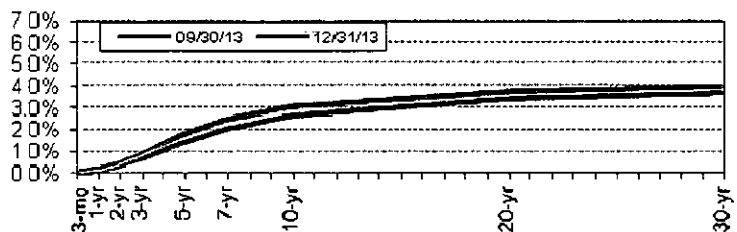
Unemployment Rate



Interest Rates & U.S. Dollar

- U.S. Treasury yields increased over the quarter.
- The Federal Reserve has maintained the federal funds rate between 0.00% and 0.25% since December 2008.
- The U.S. dollar appreciated against the Yen by 7.2% while depreciating against the Euro and Sterling by (1.6%) and (2.3%), respectively.
- Subsequent to quarter end, rates ticked up but remained near low historic levels.

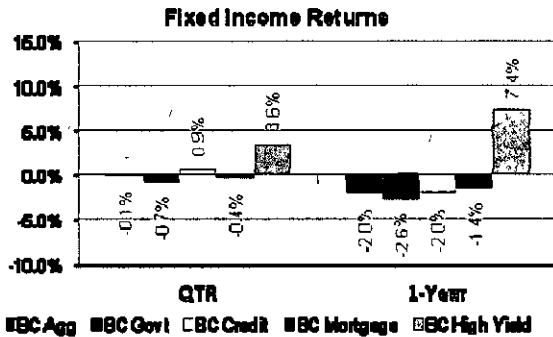
Treasury Yield Curve Changes



Source: U.S. Treasury Department

Fixed Income

- Most bond markets produced slightly negative returns during the quarter. High Yield however, produced relatively strong positive results during the quarter and trailing 1-year period.
- During the trailing 1-year period only CMBS produced positive returns, while Governments, Agencies, Investment Grade Credit, MBS, and ABS produced negative results.

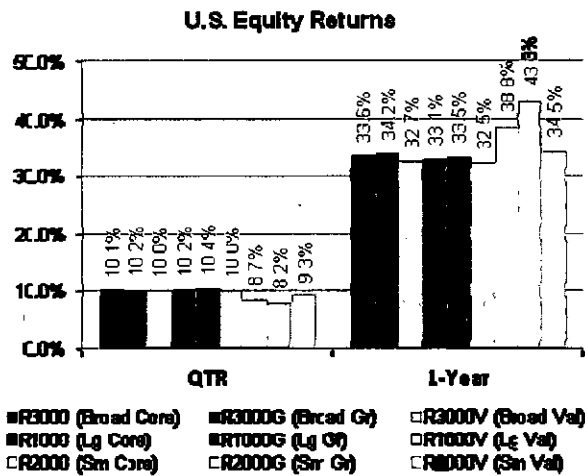


U.S. Fixed Income Sector Performance (IC Aggregate Index)			
Sector	Weight	QTR	1 Year
Governments*	40.0%	-0.7%	-2.6%
Inv. Grade Credit	5.7%	-0.2%	-1.8%
Agencies	22.3%	0.9%	-2.0%
MBS	29.8%	-0.4%	-1.4%
ABS	0.5%	0.3%	-0.3%
CMBS	1.7%	0.5%	0.2%

*U.S. Treasuries and Government Related

U.S. Equities

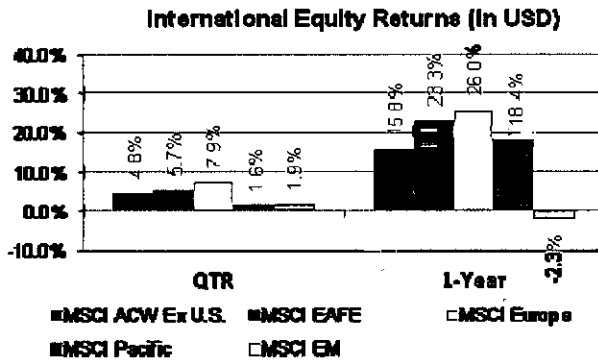
- U.S. equities ended the year on a strong note producing positive results across the board for the quarter, benefiting trailing 1-year returns.
- During the quarter, growth indices outperformed value throughout large & mid-cap stocks. All ten sectors produced positive results for the quarter and trailing one-year period.



U.S. Equity Sector Performance (Russell 3000 Index)			
Sector	Weight	QTR	1 Year
Materials	3.8%	10.4%	24.2%
Industrials	11.7%	13.1%	42.2%
Information Tech	18.2%	12.2%	30.9%
Consumer Disc	13.4%	10.5%	44.5%
Health Care	12.6%	9.8%	42.8%
Energy	9.3%	7.8%	25.9%
Financials	17.4%	9.5%	32.8%
Consumer Staples	8.5%	8.6%	27.6%
Utilities	2.9%	3.2%	15.0%
Telec Serv	2.1%	6.8%	14.9%

International Equities

- International developed equity markets benefited from accommodative monetary policy and improving eurozone sentiment, producing strong results for the trailing 1-year period. Emerging markets trailed developed markets during both time periods and produced negative results during the 1-year period.



International Equity Region Performance (in USD) (MSCI ACW Index ex U.S.)			
Sector	Weight	QTR	1 Year
Europe Ex UK	32.4%	8.2%	28.7%
Emerging Markets	20.8%	1.9%	-2.3%
United Kingdom	15.9%	7.4%	20.7%
Japan	15.1%	2.3%	27.4%
Pacific Ex Japan	8.6%	0.3%	5.6%
Canada	7.2%	4.2%	6.4%

Market Summary - Long-term Performance*

Indexes	1 Year	3 Year	5 Year	10 Year	20 Year
Global Equity					
MSCI All Country World	23.4%	10.3%	15.5%	7.7%	7.4%
Domestic Equity					
S&P 500	32.4%	16.2%	17.9%	7.4%	9.2%
Russell 3000	33.6%	16.2%	18.7%	7.9%	9.3%
Russell 3000 Growth	34.2%	16.5%	20.6%	8.0%	8.4%
Russell 3000 Value	32.7%	15.9%	16.7%	7.7%	9.7%
Russell 1000	33.1%	16.3%	18.6%	7.8%	9.4%
Russell 1000 Growth	33.5%	16.5%	20.4%	7.8%	8.5%
Russell 1000 Value	32.5%	16.1%	16.7%	7.6%	9.7%
Russell 2000	38.8%	15.7%	20.1%	9.1%	9.3%
Russell 2000 Growth	43.3%	16.8%	22.6%	9.4%	7.4%
Russell 2000 Value	34.5%	14.5%	17.6%	8.6%	10.6%
CBOE BXM	13.3%	8.0%	10.9%	5.0%	7.9%
International Equity					
MSCI All Country World ex US	15.8%	5.6%	13.3%	8.0%	6.3%
MSCI EAFE	23.3%	8.7%	13.0%	7.4%	6.1%
MSCI Pacific	18.4%	5.4%	11.1%	6.5%	2.7%
MSCI Europe	26.0%	10.6%	14.1%	7.9%	8.5%
MSCI EM (Emerging Markets)	-2.3%	-1.7%	15.1%	11.5%	5.7%
Fixed Income					
BC Universal Bond	-1.3%	3.8%	5.4%	4.9%	5.9%
BC Global Agg - Hedged	-0.1%	3.6%	4.1%	4.4%	5.7%
BC Aggregate Bond	-2.0%	3.3%	4.4%	4.5%	5.7%
BC Government	-2.6%	2.7%	2.3%	4.1%	5.4%
BC Credit Bond	-2.0%	5.1%	7.9%	5.2%	6.3%
BC Mortgage Backed Securities	-1.4%	2.4%	3.7%	4.6%	5.7%
BC High Yield Corporate Bond	7.4%	9.3%	18.9%	8.6%	7.7%
BC WGILB - Hedged	-5.5%	3.5%	4.9%	4.8%	N/A
BC Emerging Markets	-4.1%	6.5%	12.9%	8.5%	9.6%
Real Estate					
NCREIF (Private RE)	11.0%	11.9%	5.7%	8.6%	9.3%
NAREIT (Public RE)	3.2%	10.0%	16.7%	7.8%	9.8%
Commodity Ind					
DJ-UBS Commodity	-9.5%	-8.1%	1.5%	0.9%	4.9%

* Performance is annualized for periods greater than one year

OPFRS PORTFOLIO PERFORMANCE

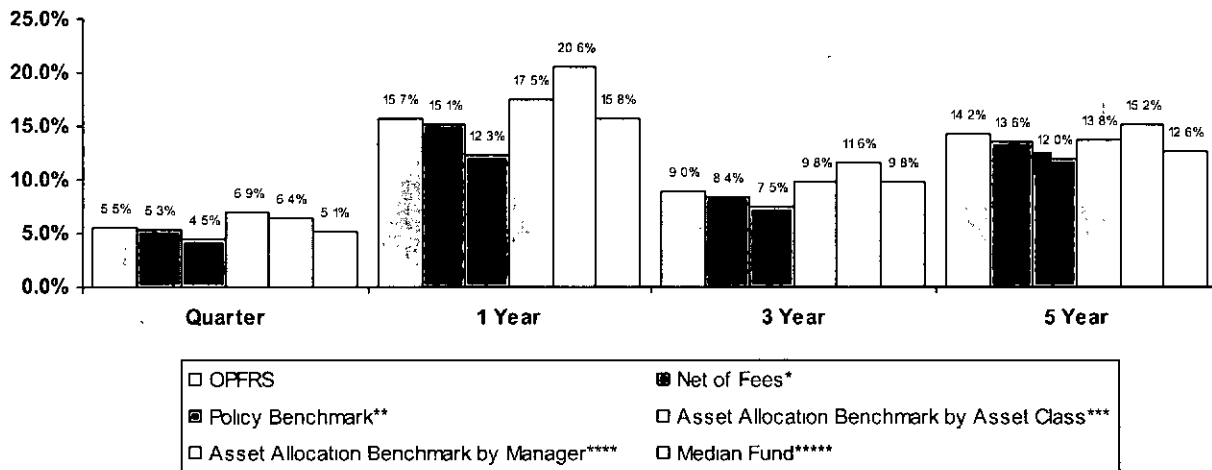
This section includes an overview of the performance of the OPFRS investment portfolio, as well as a detailed analysis of asset classes and specific mandates.

Portfolio Performance Overview

During the latest quarter ending December 31, 2013, the OPFRS Total Portfolio generated a return of 5.5%, gross of fees, outperforming its benchmark target by 1.0%. The Plan's Fixed Income and Domestic Equity asset classes slightly trailed their respective benchmarks, while International Equity outperformed its benchmark for the quarter.

The Total Portfolio produced positive relative results versus the policy benchmark over all time periods, gross of fees. Relative to the Median Fund, the Total Portfolio trailed the median for the 1-, and 3-year time periods while outperforming over the quarter and 5-year periods. Relative performance with respect to the Median Fund can be largely attributed to differences in asset allocation.

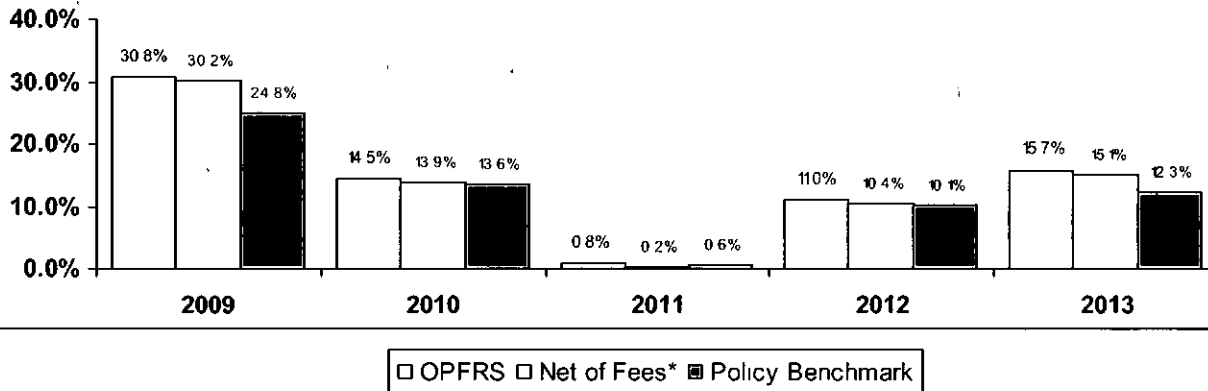
Periods Ending December 31, 2013 (annualized)



* Net of fee returns are estimated based on OPFRS manager fee schedule
 ** The Evolving Policy Benchmark consists of 40% Russell 3000, 10% MSCI ACWI ex U'S , 17% BC Universal, and 33% tbills
 *** 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 Melton 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 all of the 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 \$476.4 million as of December 31, 2013. During the latest quarter, the portfolio increased by \$9.6 million. Over the latest year, the portfolio increased by \$6.2 million, including (\$60.0) million in net benefit payments.

Investment Portfolio Valuation as of December 31, 2013*

	December 31, 2013	September 30, 2013	Quarterly Change	Percentage Change	December 31, 2012	Annual Change	Percentage Change
OPFRS	\$476.4	\$466.9	\$9.6	2.1%	\$470.3	\$6.2	1.3%

*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 and International Equity while underweight Fixed Income**. Target weightings reflect the Plan's current asset allocation (effective 6/30/2013).

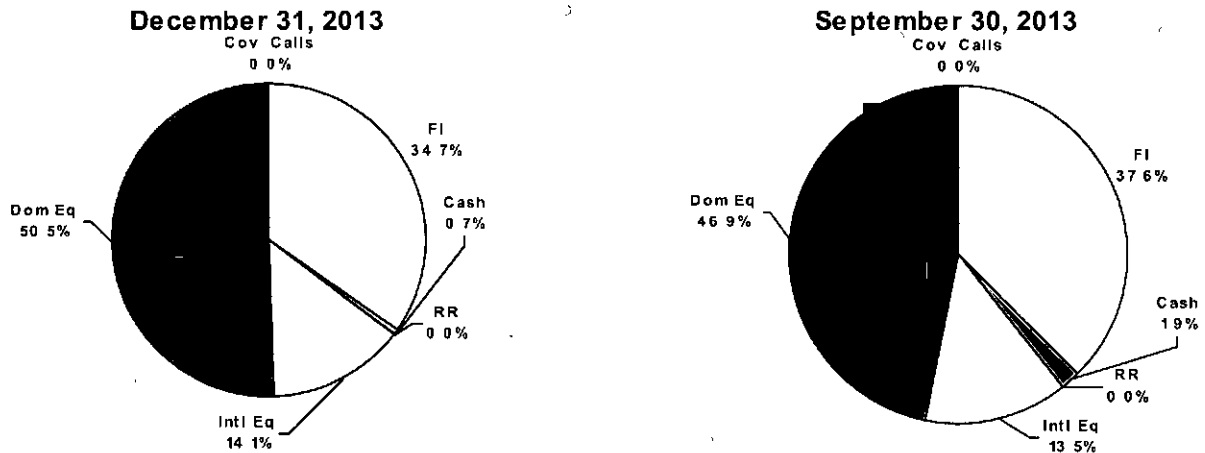
As of December 31, 2013

Segment	Actual \$(000)	Actual %*	Target %	Variance
Total Investment Portfolio	476,437	100.0%	100.0%	---
Domestic Equity	240,746	50.5%	40.0%	10.5%
Large Cap Equity	172,731	36.3%	29.0%	7.3%
Mid Cap Equity	40,900	8.6%	7.0%	1.6%
Small Cap Equity	27,115	5.7%	4.0%	1.7%
International Equity	67,041	14.1%	12.0%	2.1%
Total Equity	307,787	64.6%	52.0%	12.6%
Fixed Income	165,550	34.7%	38.0%	-3.3%
Covered Calls	0	0.0%	5.0%	-5.0%
Real Return	0	0.0%	5.0%	-5.0%
Cash	3,100	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, the actual weighting of Domestic Equity and International Equity increased by 3.6% and 0.6%, respectively. Fixed Income decreased by (2.9%) and Cash decreased by (1.2%).

Investment Portfolio Actual Asset Allocation Comparison



Asset Class Performance

The **Domestic Equity** asset class underperformed the policy benchmark by (30) basis points over the most recent quarter but outperformed over the 1-, 3-, and 5-year periods by 20, 30, and 100 basis points, respectively.

The **International Equity** portfolio outperformed its policy benchmark by 80 basis points during the quarter. Over the latest 1- and 3-year periods, the International Equity portfolio outperformed its policy benchmark by 3.4% and 0.7%, respectively. Over the latest 5-year period, the International Equity portfolio outperformed the benchmark by 40 basis points.

The **Fixed Income** asset class underperformed its policy benchmark by (10) basis points for the quarter and by (70) basis points over the 1-year period. The Fixed Income portfolio outperformed over the 3- and 5-year time periods by 0.1% and 2.5%, respectively.

Periods ending December 31, 2013

Asset Class	Quarter	1-Year	3-Year	5-Year
Total Investment Portfolio	5.5	15.7	9.0	14.2
<i>Policy Benchmark</i> ¹	4.5	12.3	7.5	12.0
Public Equity	8.9	30.5	14.1	18.4
<i>Policy Benchmark</i> ²	8.8	29.1	13.7	17.5
Domestic Equity	9.8	33.8	16.5	19.7
<i>Blended Benchmark</i> ⁴	10.1	33.6	16.2	18.7
Large Cap	10.0	32.2	16.4	18.5
<i>Russell 1000</i>	10.2	33.1	16.3	18.6
Mid Cap	9.8	31.3	14.9	21.5
<i>Russell Midcap</i>	8.4	34.8	15.9	22.4
Small Cap	8.8	50.0	19.9	25.5
<i>Russell 2000</i>	8.7	38.8	15.7	20.1
International Equity	5.6	19.2	6.3	13.7
<i>Blended Benchmark</i> ⁵	4.8	15.8	5.6	13.3
Fixed Income	0.1	-2.0	3.9	7.9
<i>BC Universal (blend)</i> ⁶	0.2	-1.3	3.8	5.4

¹ The Evolving Policy Benchmark consists of 40% Russell 3000, 10% MSCI ACWI ex U.S., 17% BC Universal, and 33% t-bills

² The Public Equity benchmark consists of 76% Russell 3000 and 24% 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

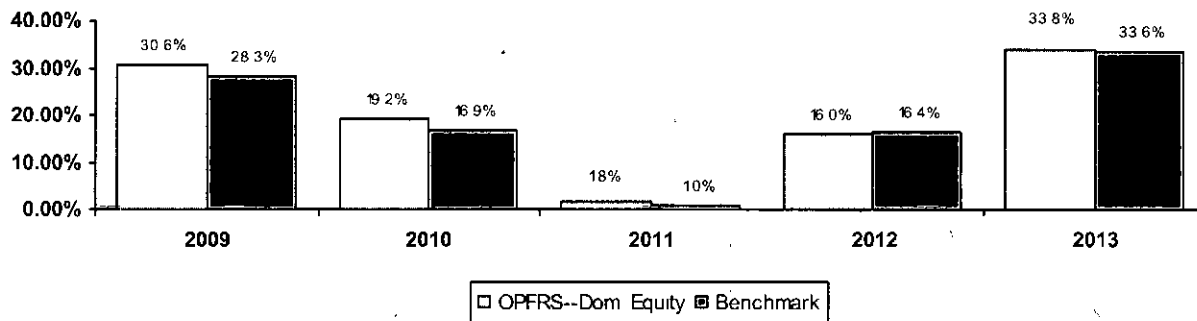
⁵ International Equity Benchmark consists of MSCI EAFE thru 12/31/04, and MSCI ACWI x U.S. thereafter

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

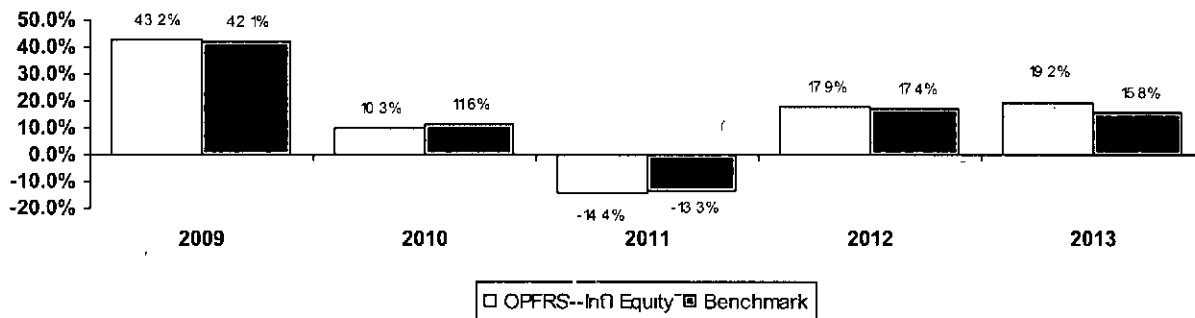
The Domestic Equity portfolio outperformed the policy benchmark in four out of five of latest 12-month periods. The Plan finished the latest 12-month period ending December 31, 2013, with a return of 33.8%, outperforming the policy benchmark by 0.2%.

Domestic Equity 12-Month Performance – Periods Ending December 31



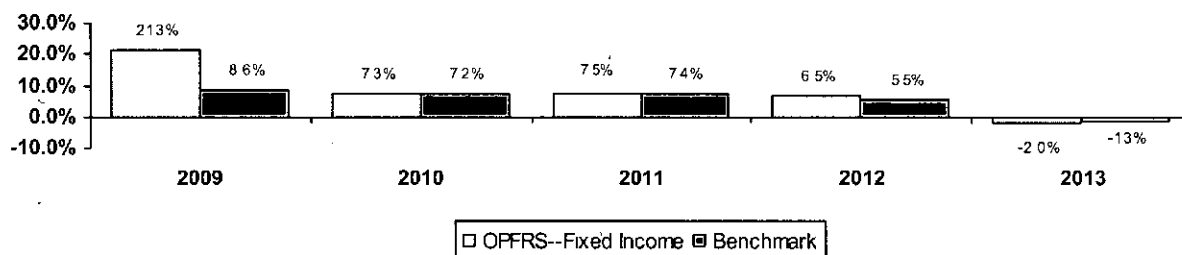
The International Equity portfolio outperformed the policy benchmark in three of the five latest 12-month periods. The Plan finished the latest 12-month period ending December 31, 2013, with a return of 19.2%, outperforming the policy benchmark by 3.4%.

International Equity 12-Month Performance – Periods Ending December 31



The Fixed Income portfolio matched or outperformed the policy benchmark in four of the last five 12-month periods. The Plan finished the latest 12-month period ending December 31, 2013, with a return of (2.0%), underperforming the policy benchmark by (70) basis points.

Fixed Income 12-Month Performance – Periods Ending December 31



Manager Performance

Domestic Equity – Periods ending December 31, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
Transition (Russell 1000 Growth ETF)	20,391	Large Cap Growth	---	---	---	---	---	5/2013
<i>Russell 1000 Growth Index</i>	---	---	---	---	---	---	---	---
Northern Trust R1000 Index	119,421	Large Cap Core	10.2	32.9	16.2	---	16.8	5/2010
<i>Russell 1000 Index</i>	---	---	10.2	33.1	16.3	---	15.5	---
Barrow Hanley	32,919	Large Cap Value	9.2	32.2	16.0	16.5	6.5	9/2005
<i>Russell 1000 Value Index</i>	---	---	10.0	32.5	16.1	16.7	6.5	---
Earnest	40,900	Mid Cap Core	9.8	31.3	14.9	21.5	8.3	3/2006
<i>Russell MidCap</i>	---	---	8.4	34.8	15.9	22.4	8.3	---
NWQ	12,897	Small Cap Value	11.9	42.3	19.6	24.8	7.5	1/2006
<i>Russell 2000 Value Index</i>	---	---	9.3	34.5	14.5	17.6	6.5	---
Lord Abbett	14,218	Small Cap Growth	6.2	58.5	20.2	---	28.4	6/2010
<i>Russell 2000 Growth Index</i>	---	---	8.2	43.3	16.8	---	23.7	---

* 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 30, 2013, two of OPFRS' active domestic equity managers outperformed their respective benchmarks.

Transition (Russell 1000 Growth ETF), the Plan's passive large cap growth transition account was initiated in May 2013 as a short-term placeholder until a search for a new domestic large cap growth manager can be conducted.

Barrow Hanley, OPFRS' large cap value manager, finished the quarter returning 9.2%, underperforming the Russell 1000 Value Index by (80) basis points. The portfolio slightly trailed its benchmark by (30) basis points over the latest 1-year period and slightly underperformed the benchmark by (10) basis points over the latest 3-year period. Over the latest 5-year period, Barrow Hanley underperformed its benchmark by (20) basis points.

Earnest Partners, the Plan's mid cap core manager, completed the quarter with an 9.8% return, outperforming the Russell Midcap Index by 1.4%. Over the latest 1-year period, Earnest underperformed its benchmark by (3.5%) and trailed its benchmark over the 3-year period by (1.0%). Over the 5-year period, Earnest underperformed its benchmark by (90) basis points.

NWQ, the Plan's small cap value manager, outperformed the Russell 2000 Value Index by 2.6% over the latest 3-month period. Over the 1-year period, NWQ outperformed its benchmark by 7.8%. Over the 3-year period, NWQ outperformed its benchmark by 5.1%, and by 7.2% over the 5-year period.

Lord Abbett, the Plan's small cap growth manager, underperformed the Russell 2000 Growth Index by (2.0%) for the quarter. Over the 1- and 3-year periods, Lord Abbett has outperformed by 15.2% and 3.4%, respectively.

International Equity – Periods ending December 31, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception*	Inception Date**
SSgA	20,263	International	5.7	23.1	8.5	13.1	9.1	7/2002
MSCI EAFE Index	---	---	5.7	23.3	8.7	13.0	9.1	---
Hansberger	20,718	International	5.0	19.7	5.6	15.1	5.3	1/2006
MSCI ACWI x US	---	---	4.8	15.8	5.6	13.3	5.4	---
Fisher	26,060	International	6.0	17.0	---	---	5.3	4/2011
MSCI ACWI x US	---	---	4.8	15.8	---	---	4.8	---

* 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, 2013, 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 20 basis points. During the latest 1-year period, the portfolio returned 19.7%, beating its benchmark by 3.9%. During the latest 3-year period, the portfolio matched its benchmark while outperforming over the 5-year period by 1.8%

Fisher, one of OPFRS' active international equity managers, outperformed the MSCI ACWI x US Index by 1.2% during the quarter. Over the latest 1-year period, Fisher beat its benchmark target by 1.2% with a return of 17.0%.

Fixed Income – Periods ending December 31, 2013

Manager	Mkt Value (\$000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Since Inception **	Inception Date ***
Reams	30,349	Core Plus	0.3	-0.9	5.0	10.0	6.3	1/1998
<i>BC Universal Index (blend)*</i>	---	---	0.2	-1.3	3.8	5.4	5.4	---
T Rowe Price	50,645	Core	0.2	-1.8	---	---	3.2	5/2011
<i>BC Aggregate Index</i>	---	---	-0.1	-2.0	---	---	3.0	---
BC TIPS (iShares)	7,146	TIPS	-2.0	-7.9	3.3	---	4.1	2/2010
<i>BC U.S. TIPS Index</i>	---	---	-2.0	-8.6	3.5	---	4.4	---
<i>Reams (Transition)</i>	77,410	<i>Transition</i>	0.1	0.2	---	---	0.3	8/2012
<i>90-day T-bill</i>	---	---	0.0	0.1	---	---	0.1	---

* 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, 2013, both of OPFRS' two active Fixed Income managers outperformed their respective benchmarks.

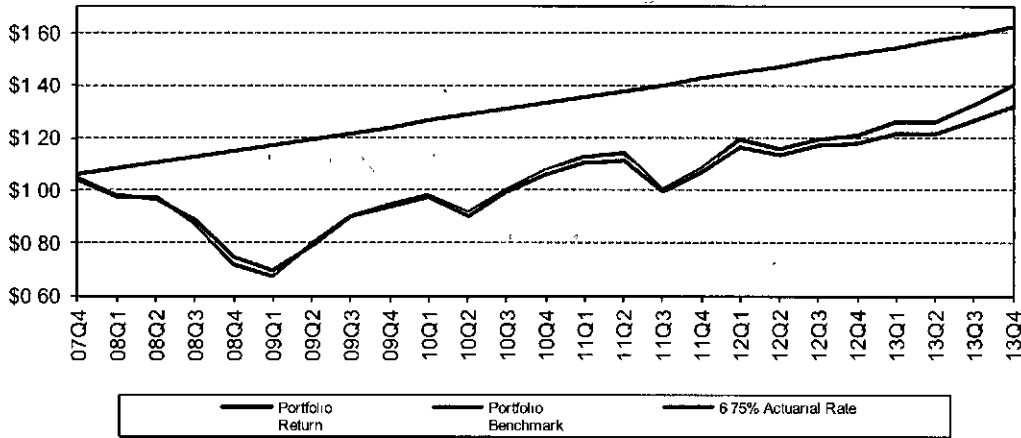
Reams, the Plan's core plus fixed income manager, produced a quarterly return of 0.3%, outperforming the BC Universal (blend) Index by 10 basis points. During the latest 1-year period, the portfolio outperformed its benchmark by 40 basis points. The portfolio topped its benchmark by 1.2% during the latest 3-year period and by 4.6% during the latest 5-year period, on an annualized basis.

T. Rowe Price, the Plan's core fixed income manager, produced a quarterly return of 0.2%, outperforming the BC Aggregate Index by 30 basis points. Over the most recent 1-year period, the fund slightly outperformed its benchmark by 20 basis points.

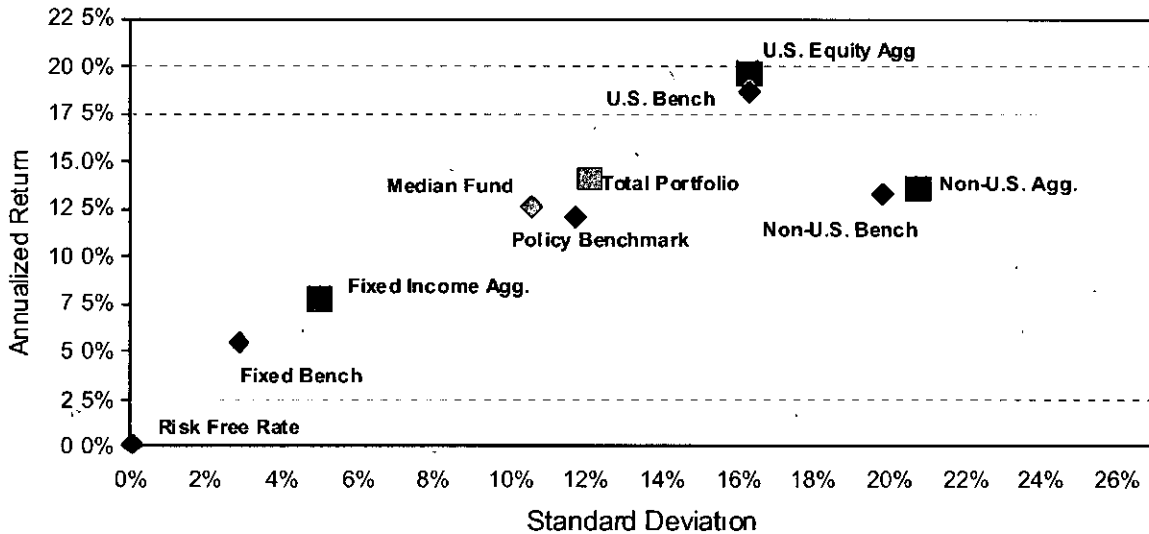
iShares BC TIPS, the Plan's Treasury Inflation-Protected Securities (TIPS) ETF, matched the BC TIPS Index with a -2.0% return during the quarter. The portfolio outperformed its benchmark over the 1-year period by 70 basis points, but trailed over the 3-year period by (20) basis points.

OPFRS --- Risk/Return Analysis
Period ending December 31, 2013

**Growth of a Dollar
 Past 5 Years**



Five-Year Annualized Risk/Return



City of Oakland Police & Fire Retirement, Asset Allocation as of 12/31/13

Manager	Style	Market Value \$(000)	Target	Actual ¹	Difference
Total Plan		\$476,437	100.0%	100.0%	0.0%
Public Equity		\$307,787	52.0%	64.6%	12.6%
Domestic Equity		\$240,746	40.0%	50.5%	10.5%
Large Cap Equity					
Northern Trust	Large Cap Core	119,421	18.2%	25.1%	6.9%
Barrow Hanley	Large Cap Value	32,919	5.4%	6.9%	1.5%
Russell 1000 Growth Index	Large Cap Growth	20,391	5.4%	4.3%	-1.1%
Mid Cap Equity					
Eamest Partners	Mid Cap Core	40,900	7.0%	8.6%	1.6%
Small Cap Equity					
NWQ	Small Cap Value	12,897	2.0%	2.7%	0.7%
Lord Abbett	Small Cap Growth	14,218	2.0%	3.0%	1.0%
International Equity		\$67,041	12.0%	14.1%	2.1%
SSgA	International	20,263	3.6%	4.3%	0.7%
Hansberger	International	20,718	4.2%	4.3%	0.1%
Fisher	International	26,060	4.2%	5.5%	1.3%
Fixed Income		\$165,550	38.0%	34.7%	-3.3%
Reams	Core Plus	30,349	5.5%	6.4%	0.9%
T Rowe Price	Core	50,645	9.9%	10.6%	0.7%
BC TIPS (iShares)	Inflation Linked	7,146	1.7%	1.5%	-0.2%
Transition (Reams)	Transition Portfolio	77,410	20.9%	16.2%	—
Covered Calls		\$0	5.0%	0.0%	-5.0%
Parametric (Eaton Vance)	Active/Replication	0	—	0.0%	—
Real Return		\$0	5.0%	0.0%	-5.0%
Wellington		0	—	0.0%	—
Total Cash²		\$3,100	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

Monitoring/Probation Status

As of December 31, 2013
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	11	14.6	1/31/2013
MSCI ACWI ex U.S.				11.2	

[^] Annualized performance if over one year

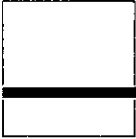
* Approximate date based on when Board voted to either monitor a manager at a heightened level or place it on probation

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



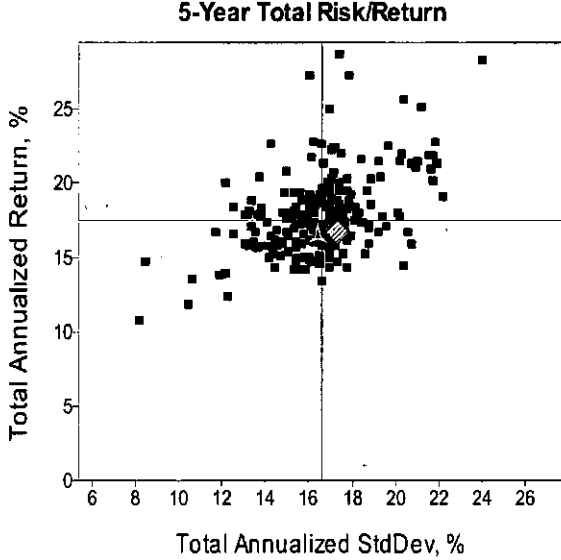
**Oakland Police & Fire
Performance Summary and Universe Rankings
Period Ending December 31, 2013**

Mellon Total Funds - Public Universe				
	<u>Quarter</u>	<u>1- Year</u>	<u>3-Year</u>	<u>5-Year</u>
Maximum	9.7	32.8	12.8	15.9
Percentile 25	5.9	18.2	10.5	13.4
Median	5.1	15.8	9.8	12.6
Percentile 75	4.1	12.4	8.9	11.5
Minimum	0.0	-1.4	0.0	1.2
Number of Portfolios	102	100	91	89
Oakland Police & Fire Total				
Return	5.5	15.7	9.0	14.2
Quartile Rank	2nd	3rd	3rd	1st

Notes:

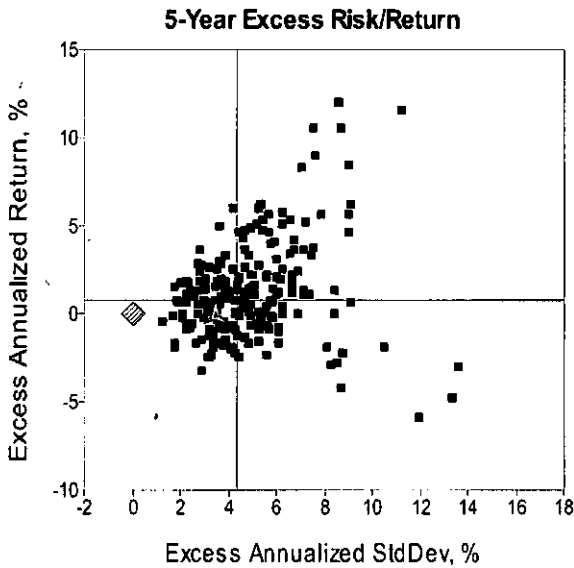
Source: Mellon Total Public Funds Universe
All performance is shown **gross of fees**

Oakland Large Cap Value Manager Comparisons as of December 31, 2013



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Barrow Hanley	16.51	16.45	1.00
Russell 1000 Value Index	16.67	17.34	0.96
LC Value Universe Median	17.46	16.64	1.06

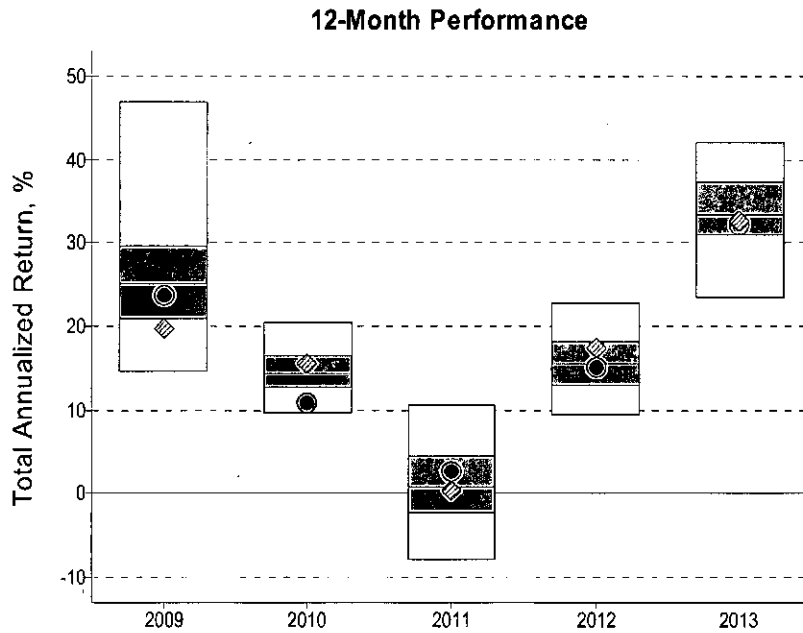
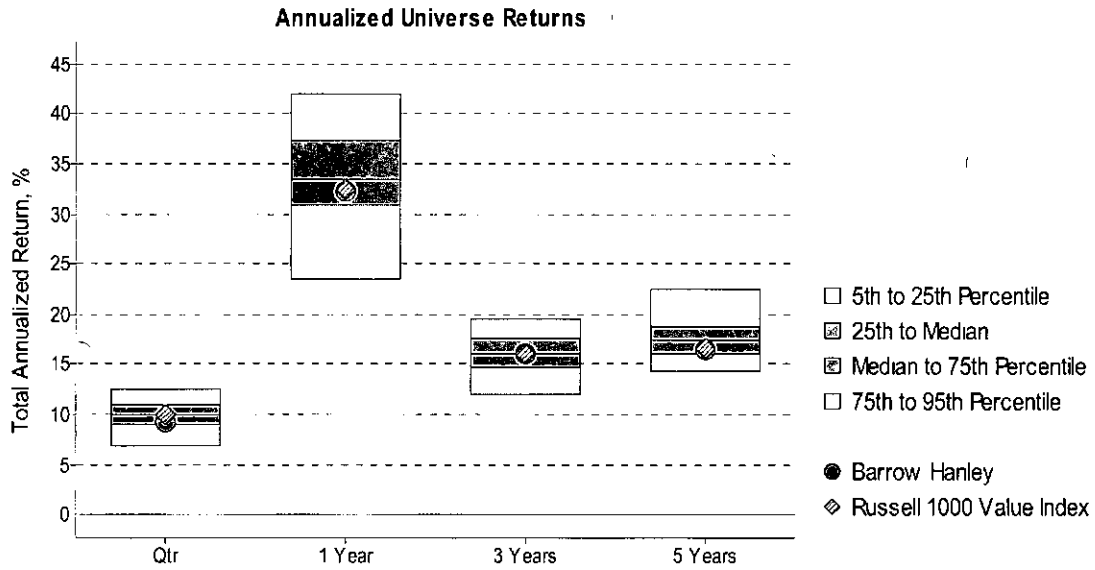
▲ Barrow Hanley ◆ Russell 1000 Value Index



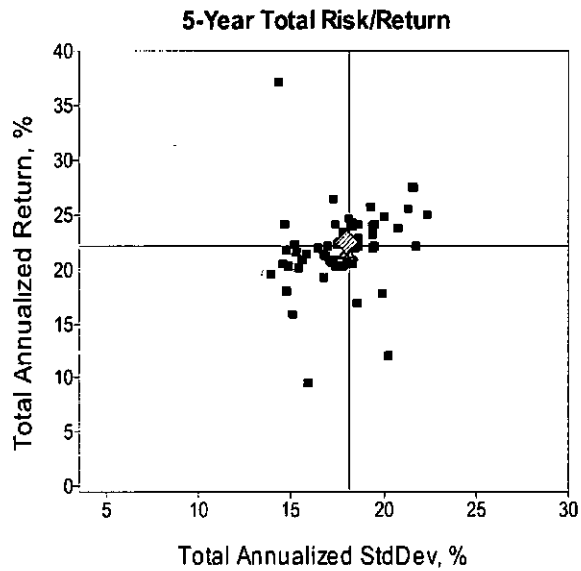
	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
Barrow Hanley	-0.16	3.46	-0.05
Russell 1000 Value Index	0.00	0.00	NA
LC Value Universe Median	0.79	4.40	0.21

▲ Barrow Hanley ◆ Russell 1000 Value Index

Oakland Large Cap Value Manager Comparisons as of December 31, 2013

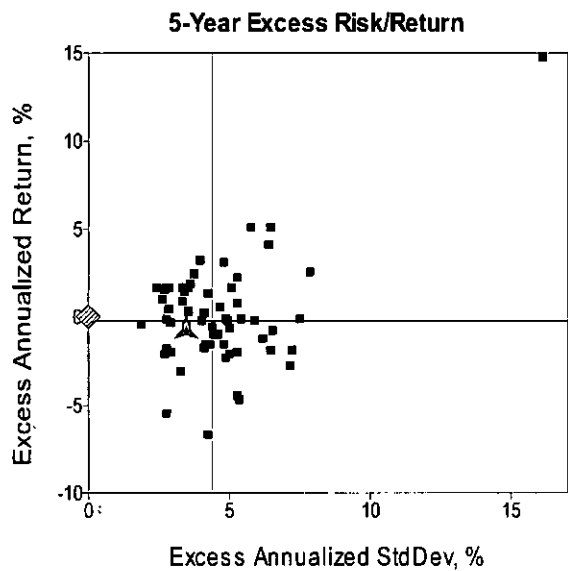


Oakland Mid Cap Core Manager Comparisons as of December 31, 2013



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Earnest Partners	21.55	18.06	1.19
Russell Mid-Cap Index	22.36	18.02	1.24
Mid Cap Core Universe Median	22.12	18.15	1.23

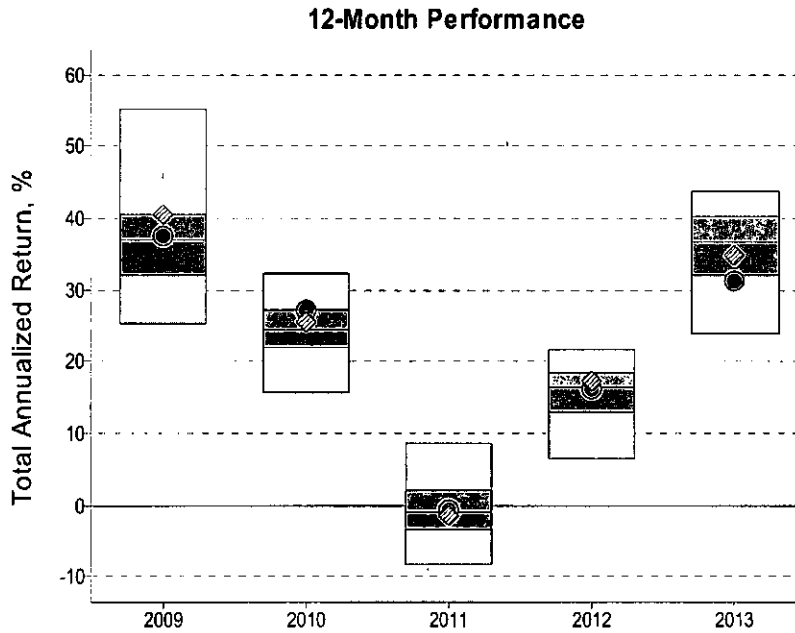
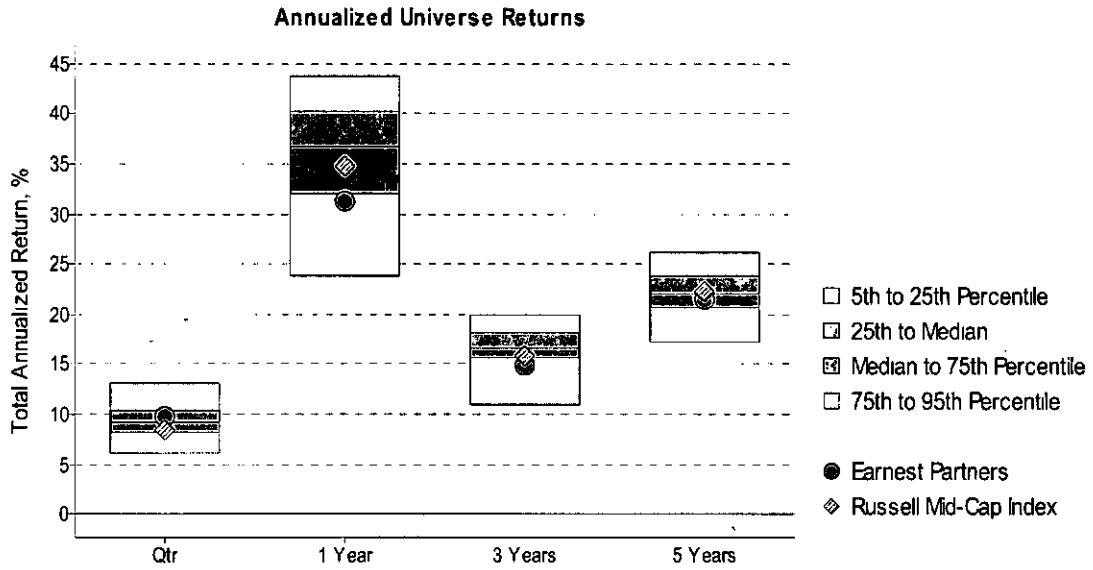
▲ Earnest Partners ◆ Russell Mid-Cap Index



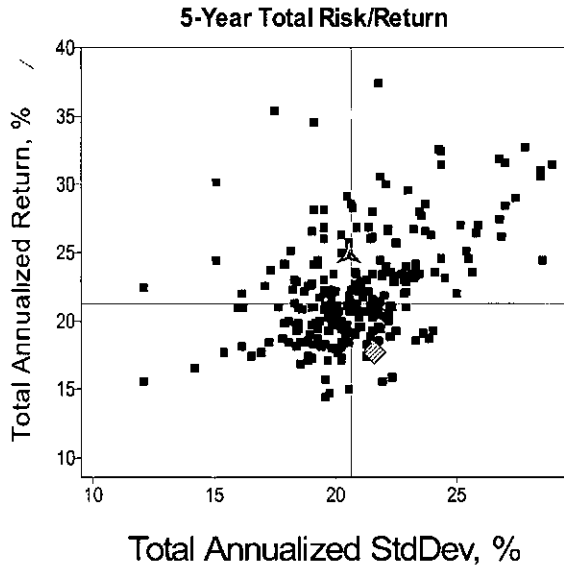
	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
Earnest Partners	-0.81	3.48	-0.23
Russell Mid-Cap Index	0.00	0.00	NA
Mid Cap Core Universe Median	-0.24	4.40	-0.06

▲ Earnest Partners ◆ Russell Mid-Cap Index

Oakland Mid Cap Core Manager Comparisons as of December 31, 2013

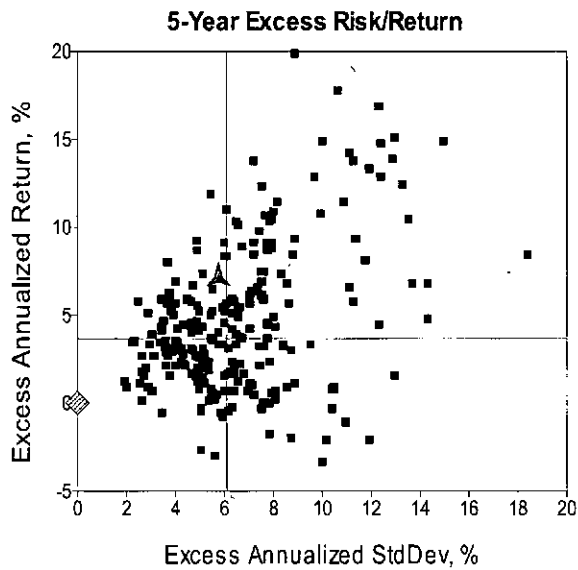


Oakland Small Cap Value Manager Comparisons as of December 31, 2013



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
NWQ	24.76	20.58	1.20
Russell 2000 Value Index	17.64	21.61	0.82
Small Cap Value Universe Median	21.29	20.62	1.03

▲ NWQ ◆ Russell 2000 Value Index

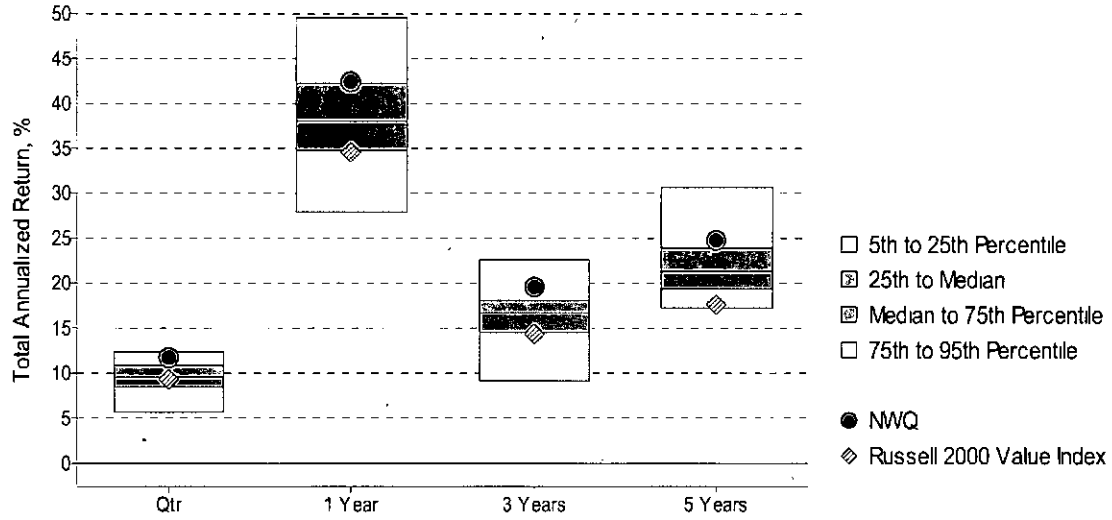


	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
NWQ	7.12	5.78	1.23
Russell 2000 Value Index	0.00	0.00	NA
Small Cap Value Universe Median	3.66	6.12	0.72

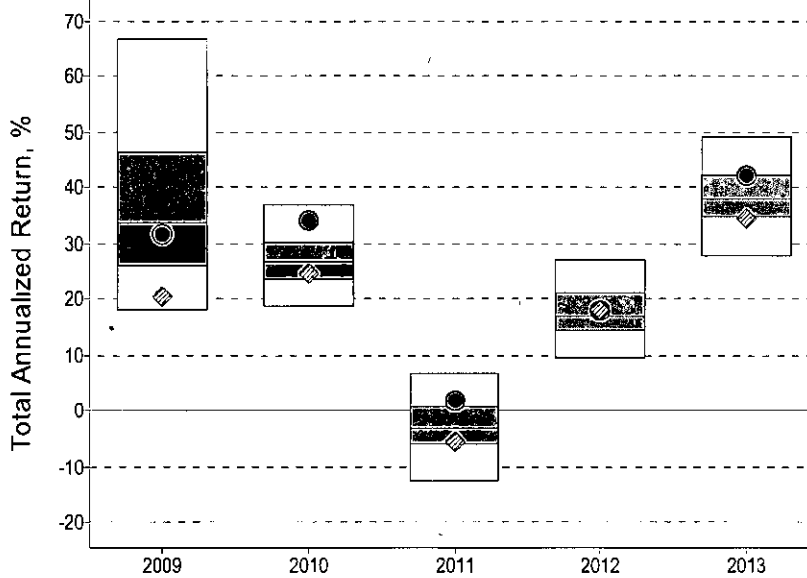
▲ NWQ ◆ Russell 2000 Value Index

Oakland Small Cap Value Manager Comparisons as of December 31, 2013

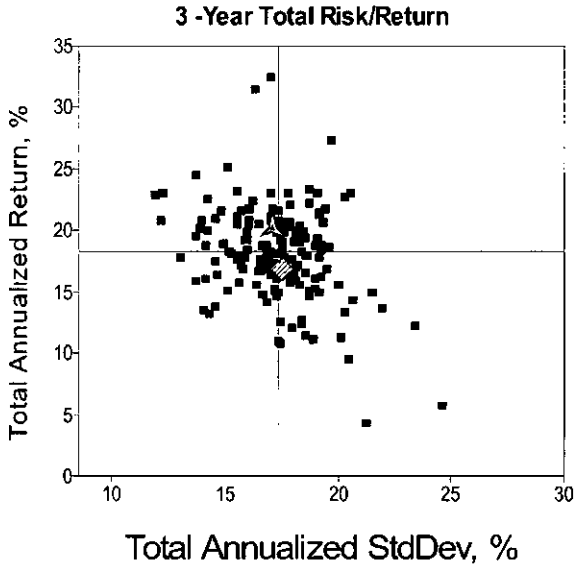
Annualized Universe Returns



12-Month Performance

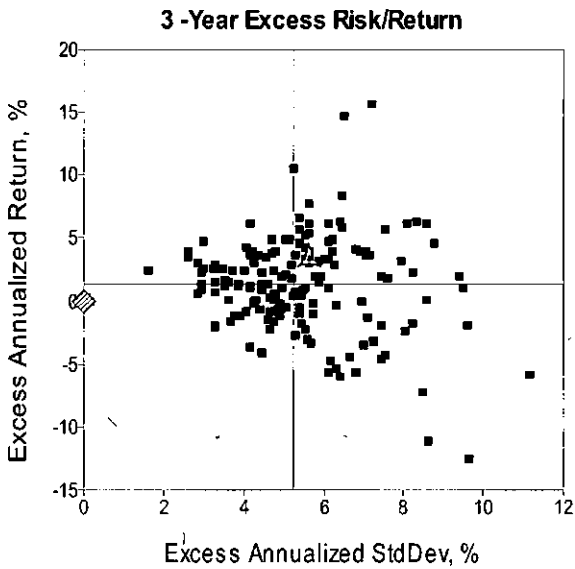


Oakland Small Cap Growth Manager Comparisons as of December 31, 2013



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Lord Abbett	20.19	17.05	1.18
Russell 2000 Growth	16.82	17.52	0.96
Small Cap Growth Universe Median	18.22	17.32	1.07

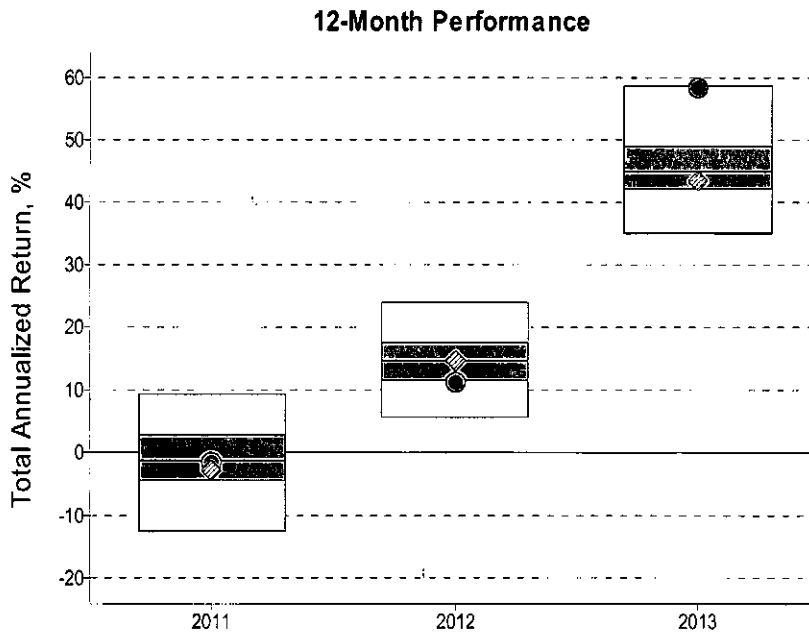
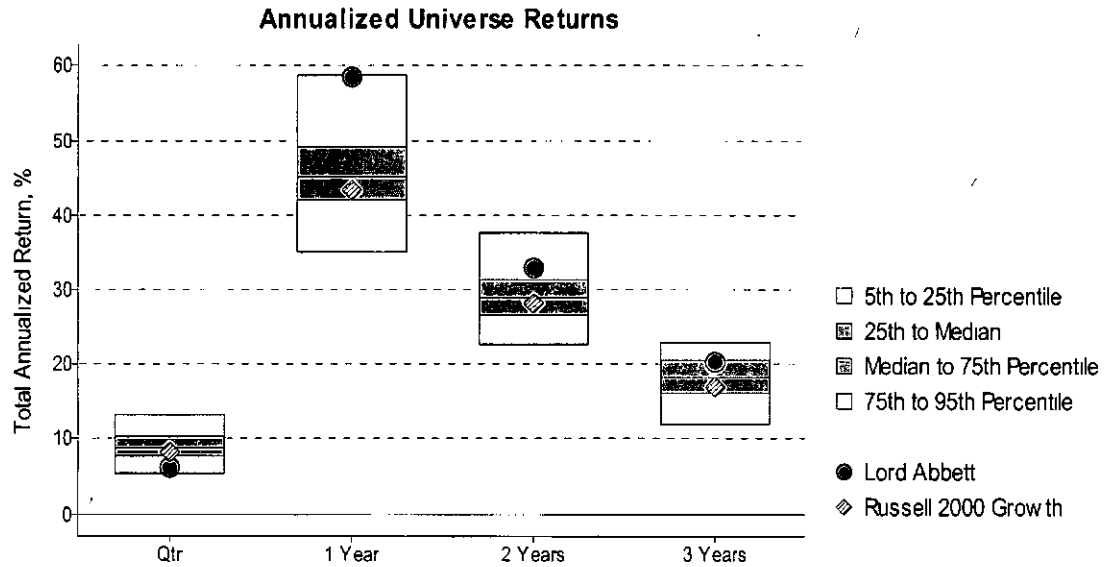
▲ Lord Abbett ◆ Russell 2000 Growth



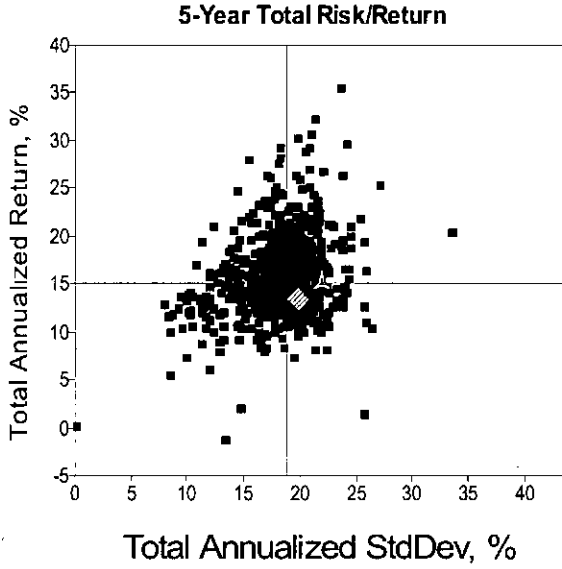
	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
Lord Abbett	3.37	5.64	0.60
Russell 2000 Growth	0.00	0.00	NA
Small Cap Growth Universe Median	1.40	5.26	0.31

▲ Lord Abbett ◆ Russell 2000 Growth

Oakland Small Cap Growth Manager Comparisons as of December 31, 2013

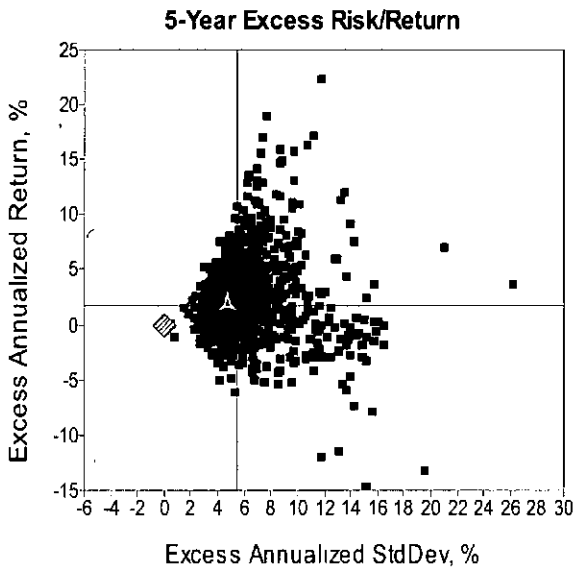


Oakland International Equity Manager Comparisons as of December 31, 2013



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Hansberger	15.13	21.90	0.69
MSCI AC World Index ex USA	13.32	19.80	0.67
International Equity Universe Median	15.01	18.80	0.84

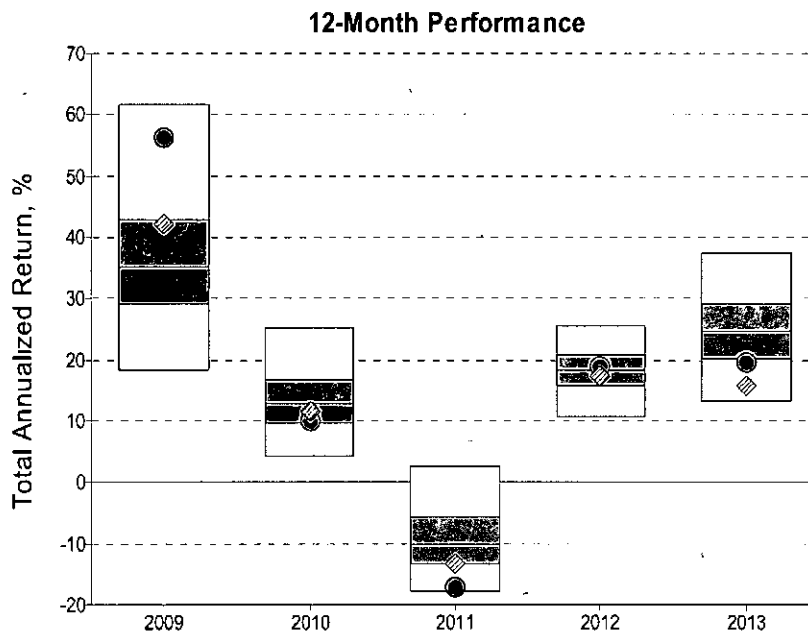
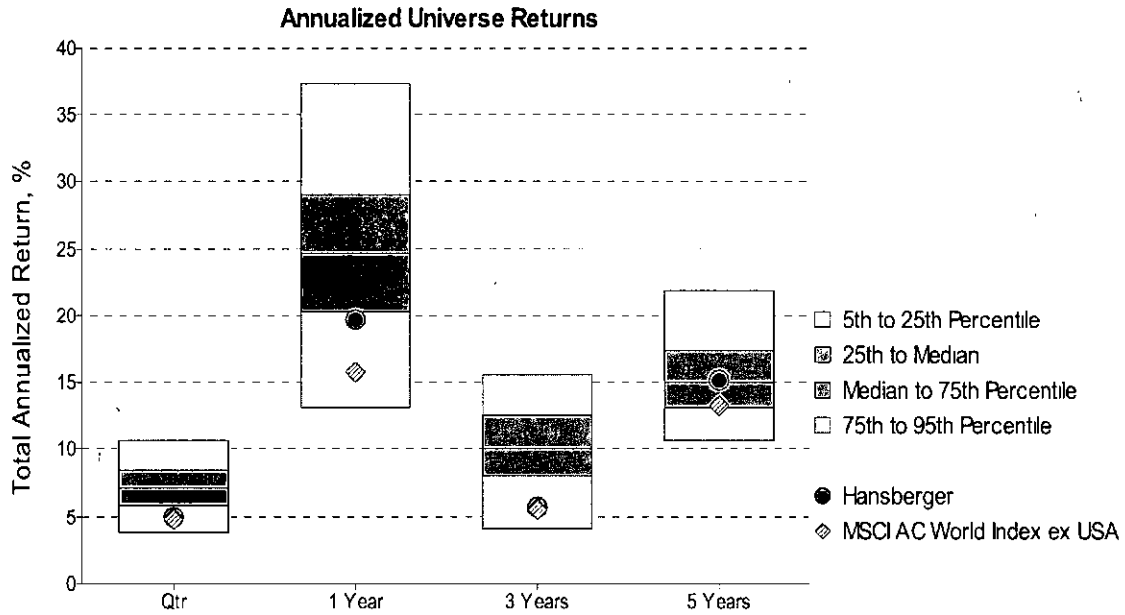
▲ Hansberger ◆ MSCI AC World Index ex USA



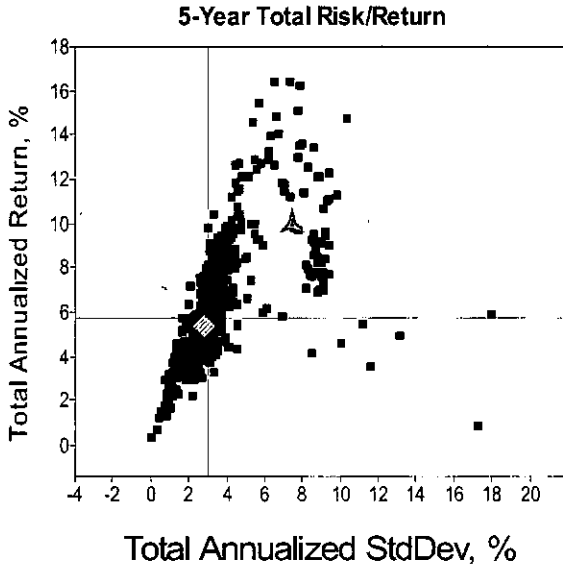
	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
Hansberger	1.81	4.69	0.39
MSCI AC World Index ex USA	0.00	0.00	NA
International Equity Universe Median	1.69	5.45	0.30

▲ Hansberger ◆ MSCI AC World Index ex USA

Oakland International Equity Manager Comparisons as of December 31, 2013

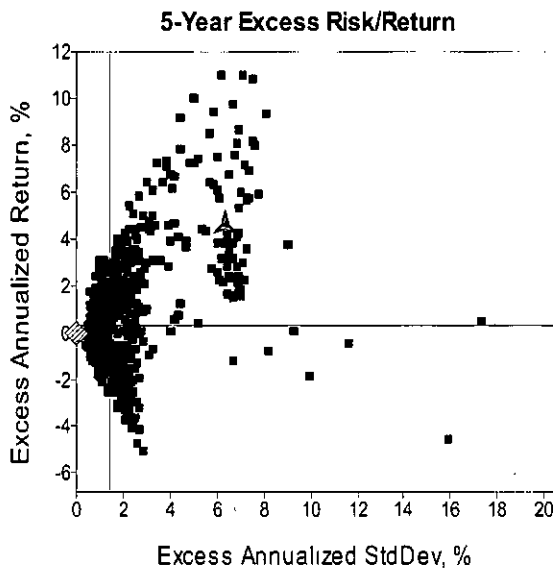


Oakland Fixed Income Manager Comparisons as of December 31, 2013



	Annualized Return, %	Annualized StdDev, %	Sharpe Ratio
Reams	9.99	7.49	1.33
Oakland BC Universal Blend	5.41	2.86	1.89
U.S. Fixed Income Universe Median	5.74	3.04	1.96

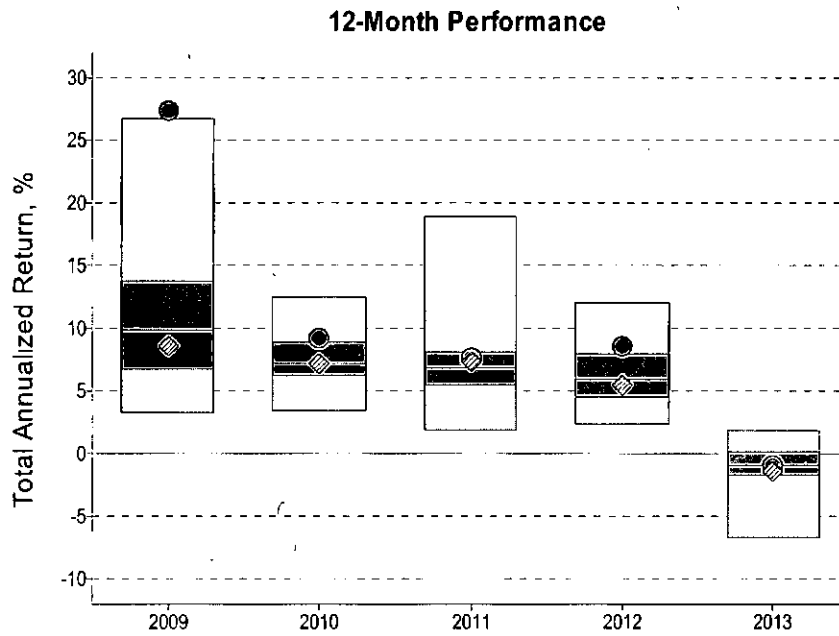
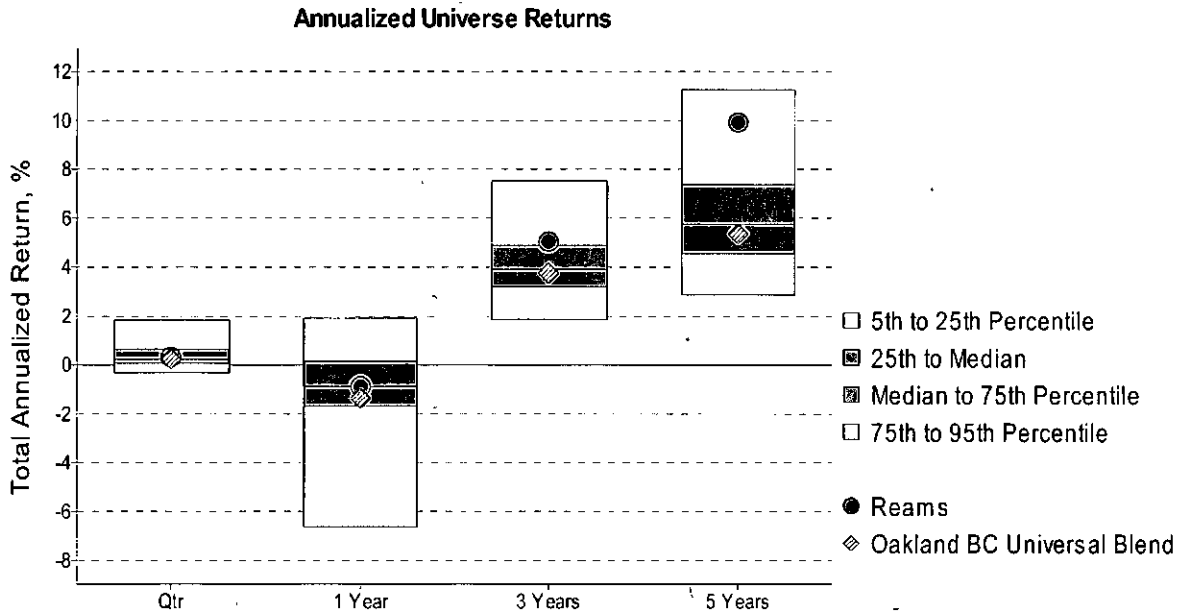
▲ Reams ◆ Oakland BC Universal Blend



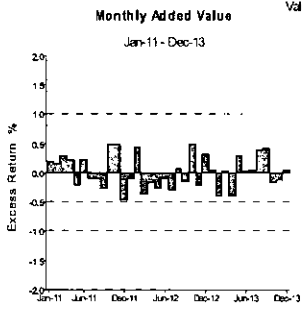
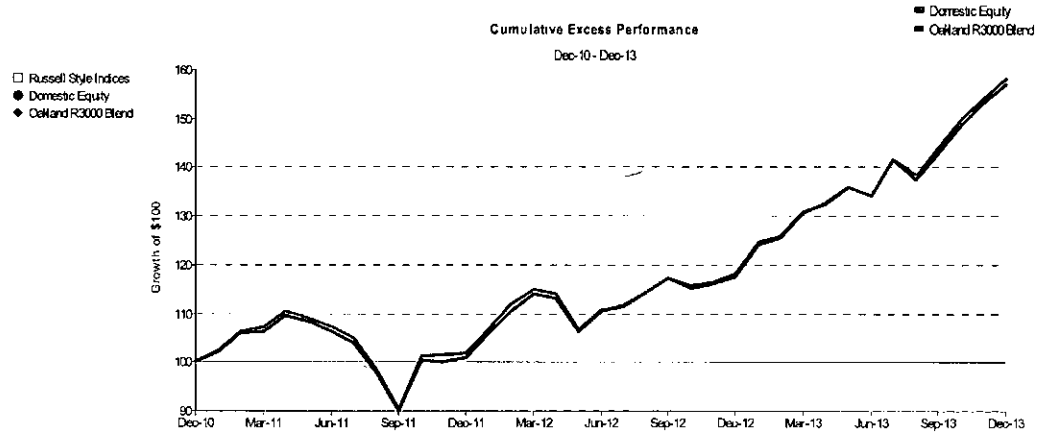
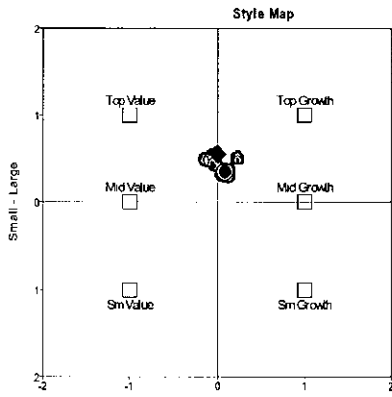
	Annualized Excess Return, %	Annualized Excess StdDev, %	Sharpe Ratio, Excess
Reams	4.58	6.34	0.72
Oakland BC Universal Blend	0.00	0.00	NA
U.S. Fixed Income Universe Median	0.33	1.41	0.30

▲ Reams ◆ Oakland BC Universal Blend

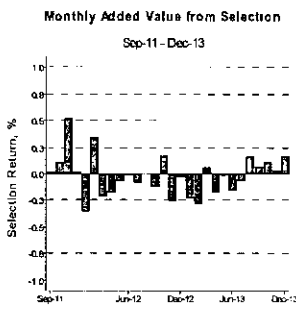
Oakland Fixed Income Manager Comparisons as of December 31, 2013



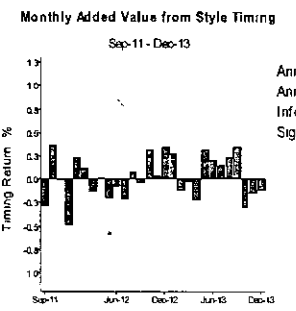
Domestic Equity



Annualized Return, %	0.3
Annualized StdDev, %	1.0
Information Ratio	0.3
Significance Level, %	65.3

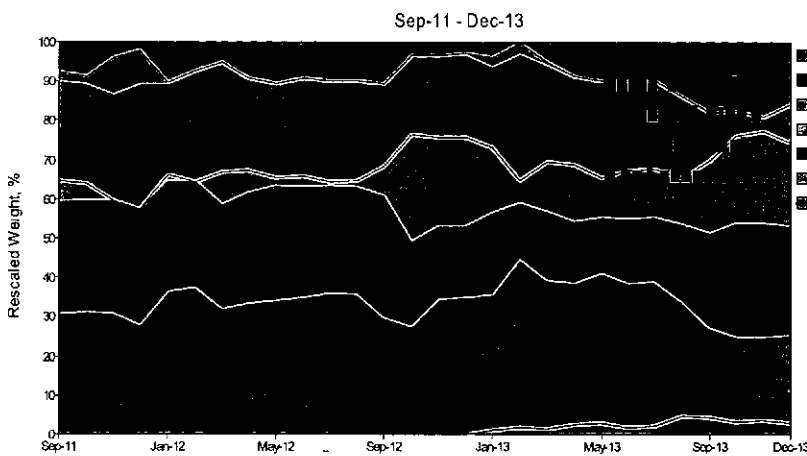


Annualized Return, %	-0.3
Annualized StdDev, %	0.7
Information Ratio	-0.4
Significance Level, %	69.2

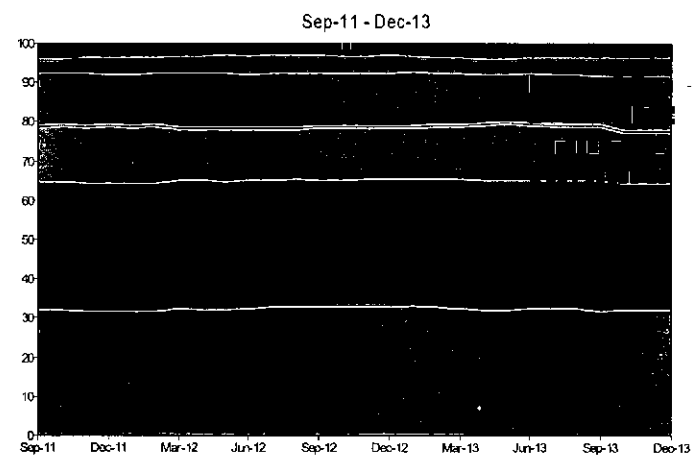


Annualized Return, %	0.3
Annualized StdDev, %	0.8
Information Ratio	0.3
Significance Level, %	66.2

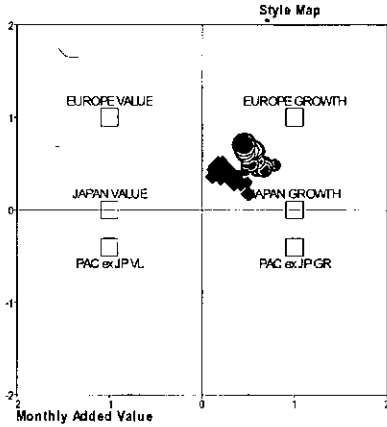
Asset Loadings - Manager



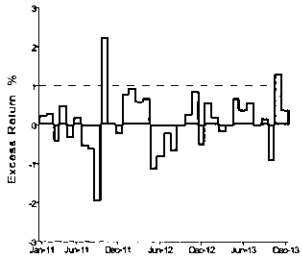
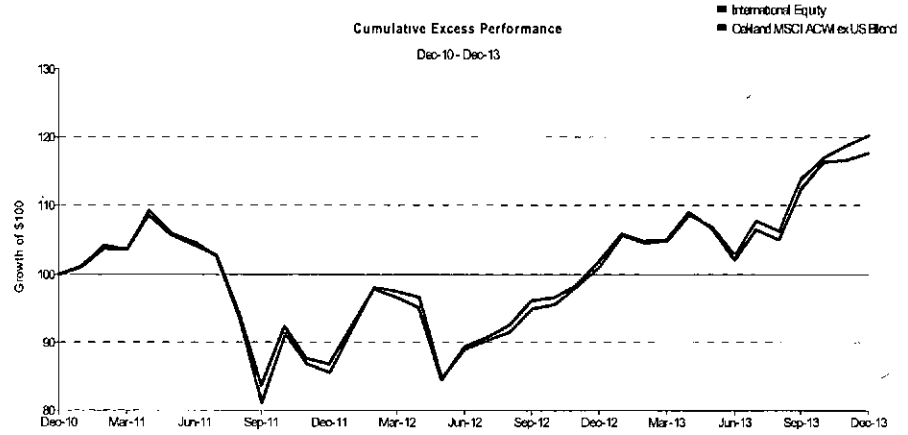
Asset Loadings - Benchmark



International Equity

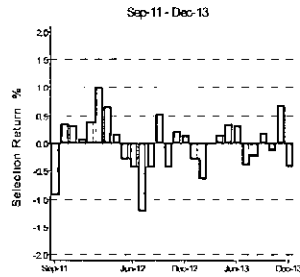


● International Equity
◆ CoFund MSCI ACWI ex US Blend



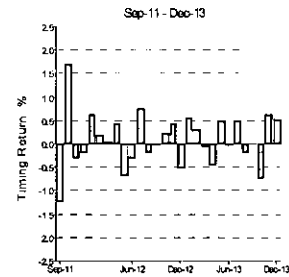
Annualized Return, % 0.7
Annualized StdDev, % 2.6
Information Ratio 0.3
Significance Level, % 67.4

Monthly Added Value from Selection



Annualized Return, % -0.3
Annualized StdDev, % 1.7
Information Ratio -0.2
Significance Level, % 60.5

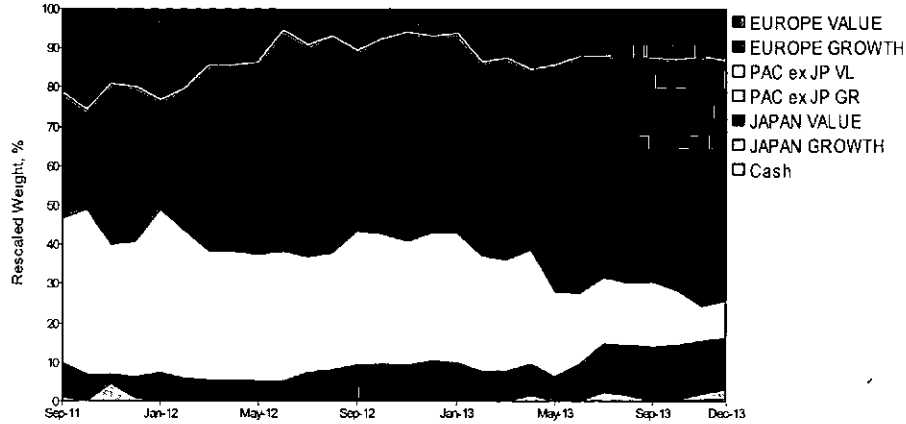
Monthly Added Value from Style Timing



Annualized Return, % 0.9
Annualized StdDev, % 2.0
Information Ratio 0.5
Significance Level, % 73.2

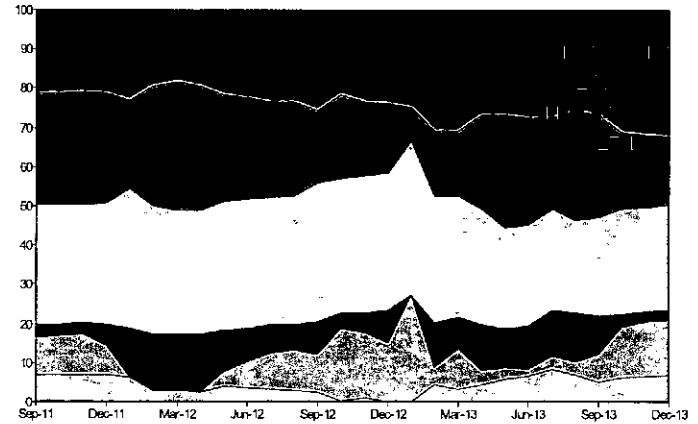
Asset Loadings - Manager

Sep-11 - Dec-13

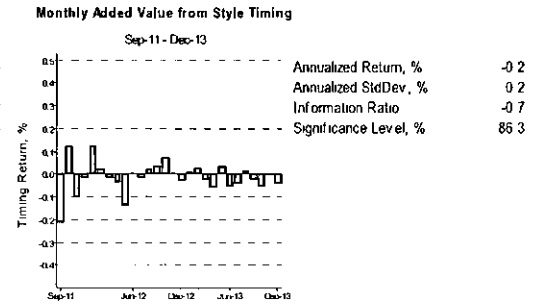
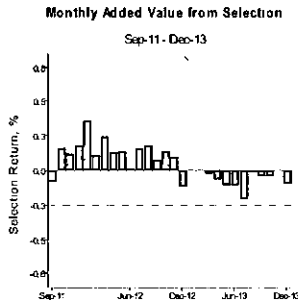
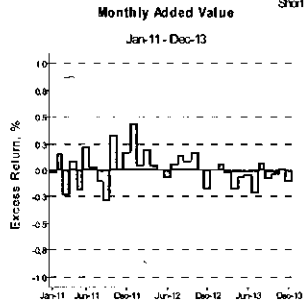
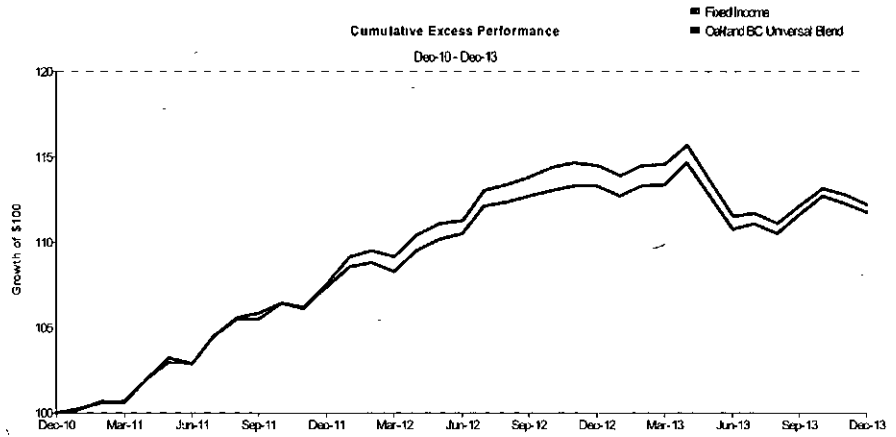
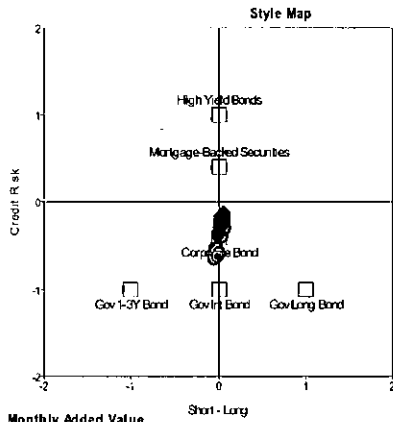


Asset Loadings - Benchmark

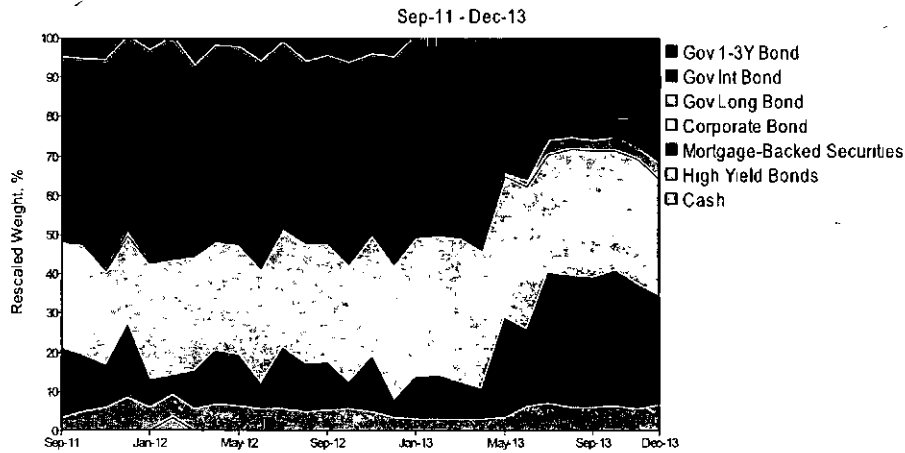
Sep-11 - Dec-13



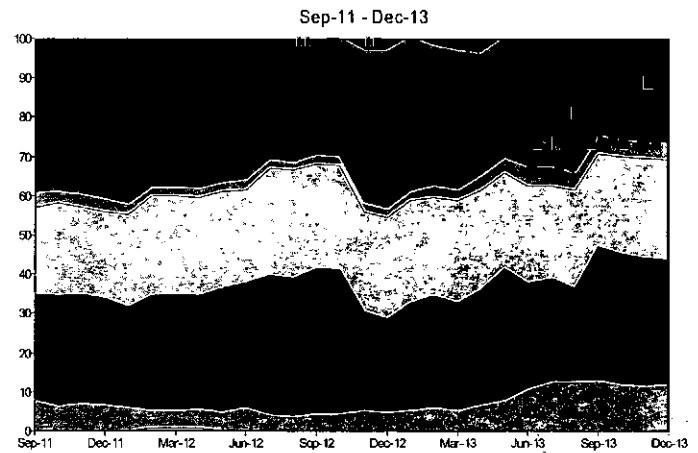
Fixed Income



Asset Loadings - Manager



Asset Loadings - Benchmark





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 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 in a regression model. A measure of the quality of fit. 100% R-squared means perfect predictability.

Standard Deviation

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

Sharpe Ratio

A measure of a portfolio's excess return relative to the total variability of the portfolio.

Style Analysis

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

Top-down

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

Tracking Error

The standard deviation of the difference between the performance of a portfolio and an appropriate benchmark.

Turnover

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

Value Stocks

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

Definition of Indices

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



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 data 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.

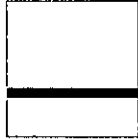
Measures of US Inflation Expectations

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, Sefton, March, 2005.

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