



NEPC, LLC

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City Of Hartford Municipal Employees'

Retirement Fund

Second Quarter 2015

Investment Performance Analysis - Board

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NEPC Update



NEPC Updates

June 30, 2015

Highlights of Second Quarter Happenings at NEPC

NEPC Research Recent White Papers

- 2015 2nd Quarter Market Thoughts
- *Rising Rates and Implications for Credit Investors* (April 2015) – Seth Bancroft, Senior Research Analyst, Traditional Research
- *Socially Responsible Investing in Action* (May 2015) – Sheila Healy Berube, CFA, Senior Consultant.
- *A Dynamic Approach to Pension Glide Paths* (May 2015) - Christopher A. Levell, ASA, CFA, CAIA, Partner, Client Strategy



NEPC Client Recognitions

- NEPC is pleased to announce that two of our clients recently won *Institutional Investor Intelligence Awards*. Ruth Ryerson, Executive Director at Wyoming Retirement System, was a co-winner of the Executive Director of the Year award, along with Steve Yoakum from Public School and Education Employee Retirement Systems of Missouri. Dave Underwood, Deputy CIO and Portfolio Manager – Equities at Arizona State Retirement System, won the *Institutional Investor Intelligence Award: Innovator*.

NEPC Recognitions

- We are pleased to announce that **NEPC has won two Alternative Investment Awards for 2015** from *Wealth & Finance International*, one for Sustained Excellence in Client Investment Management and the other for Macro Strategy Specialist of the Year – USA. Awards Coordinator Peter Rujcev commented, "The caliber of the 2015 nominees was simply outstanding and this ensured that the judging process was more than a little demanding. Put simply, our winners represent the very best of the best and with such a tremendous amount of competition, it is an honor to acknowledge them and wish them well for another award winning year ahead."

News from NEPC

- **Doris Ewing honored by the NASP.** Please join us in congratulating retired NEPC Partner, Doris Ewing, who was honored as the first female African-American Partner of an Investment Consulting Firm at the NASP Women's Legends Tea on June 14 in Chicago. Congratulations Doris!

Recent Events

- **NEPC Clients Invited to the White House.** A diverse group of NEPC clients were invited to the White House on June 16 for the Clean Energy Investment Summit. The goal of the event was to help address the fundraising gap for scalable investments in clean energy and catalyze more institutional investment. Attendees engaged with senior members of the Administration to discuss recent or potential clean energy investments.



Market Environment

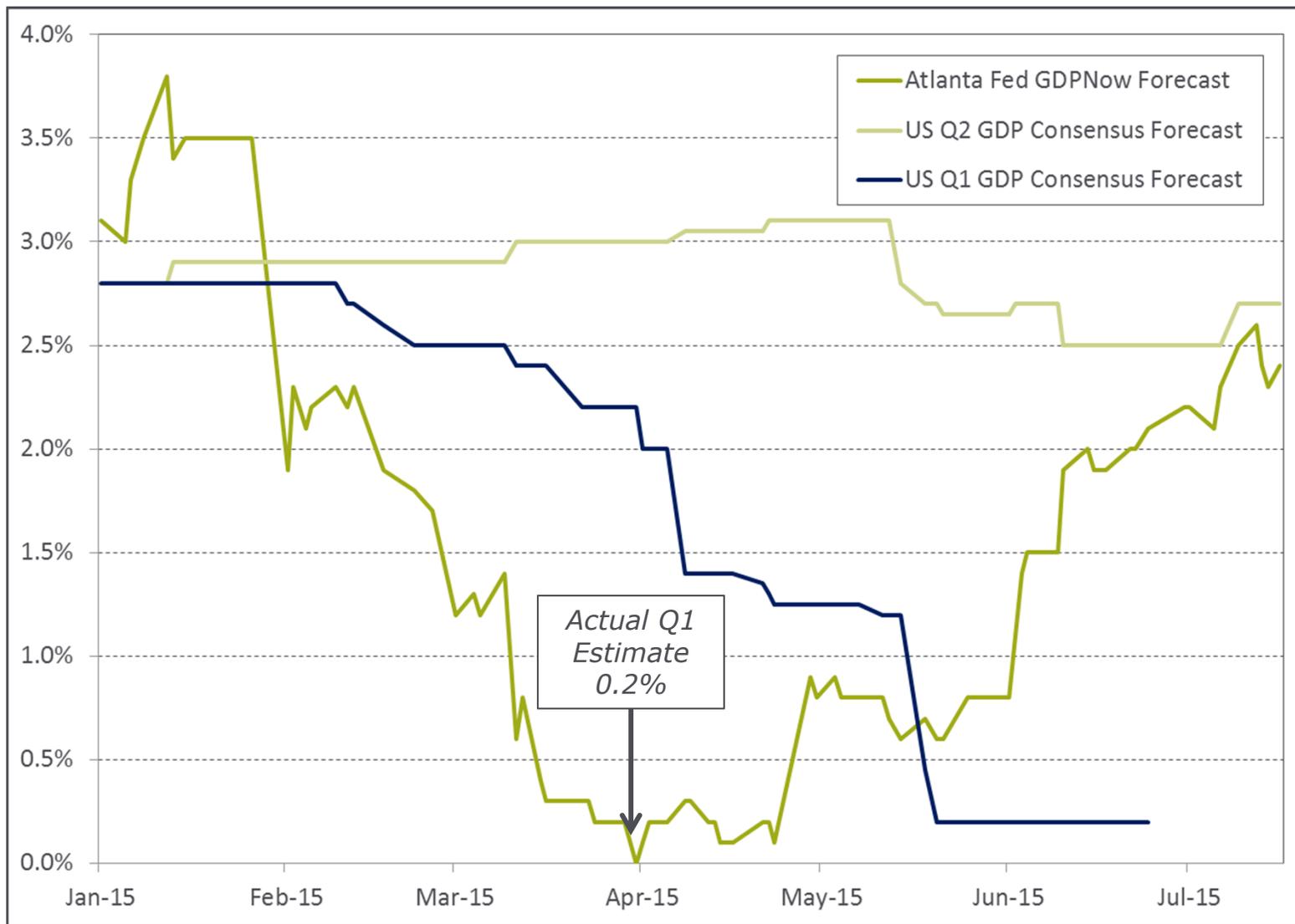


- **US equities face headwinds but without major concerns**
 - Cautiously optimistic on US economy but Fed rate hike remains on the horizon
 - Dollar strength likely to slow earnings growth and valuations above average
- **Recommend an overweight exposure to developed market equities**
 - Suggest investors opportunistically exploit potential volatility to add to the overweight
 - Long-term opportunity remains as earnings improve off cyclical lows in Europe/Japan
 - We continue to recommend a 50% hedge for developed market currency exposure
- **Recommend investors maintain a benchmark neutral weight in emerging market equities**
 - Long-term EM fundamentals remain attractive but risks and divergences across countries are significant
 - Encourage the use of benchmark agnostic investment strategies with a bias towards emerging market countries undertaking both economic and political reforms
- **Encourage investors to shift from benchmark-focused global bond strategies to US duration exposures**
 - Global interest rate volatility enhanced by QE programs and central bank activity
 - Consider a small allocation to long duration treasuries, long gov/credit, or long TIPS to fill US duration exposure
- **Encourage investors to be patient with evolving opportunities in commodity markets as volatility is high**
 - Limited distress so far but credit conditions likely to weaken

- **Greece's long-term participation in the Eurozone remains precarious but events over the last quarter have provided a temporary reprieve**
 - June 28: Greece declares a "bank holiday" and capital controls introduced to prevent cash transfers out of the country and collapse of banking system
 - June 30: Greece fails to make required €2 billion payment to the IMF
 - July 13: Greece/Eurozone agree to a framework for a €86 billion bailout, contingent on passage of tax, fiscal, labor, and pension reform package by Greek Parliament
 - July 16: Greek banks to reopen, capital controls to remain in place indefinitely
 - July 16: European Union approves €7 billion bridge loan to repay IMF and ECB loans
 - **Next:** Greece/Eurozone negotiations to finalize terms of €86 billion bailout package
- **Challenges remain for Greece and volatility likely to continue**
 - Eurozone position is clear: Implement broad economic reform or exit the Euro
 - Greek government debt is unsustainable at 177% of GDP
 - No Eurozone legal provision exists to reduce or "haircut" debt
 - Greek Parliament has yet to address pension reform, required under bailout terms
 - Eurozone partners have little patience or political bond with Greek government
- **Contagion risk of a Greek exit from the Euro is largely contained**
 - Greece represents only 1.7% of total Eurozone GDP
 - Periphery bond yields relatively unchanged compared to prior Greek crisis
 - \$700 billion European Stability Mechanism (ESM) in place to backstop Eurozone risks
 - \$1 trillion ECB QE program compressing sovereign yields and risk premium
 - Clear path of reforms underway in Italy, Spain, and Portugal are providing tangible economic improvement and political commitment from Eurozone partners

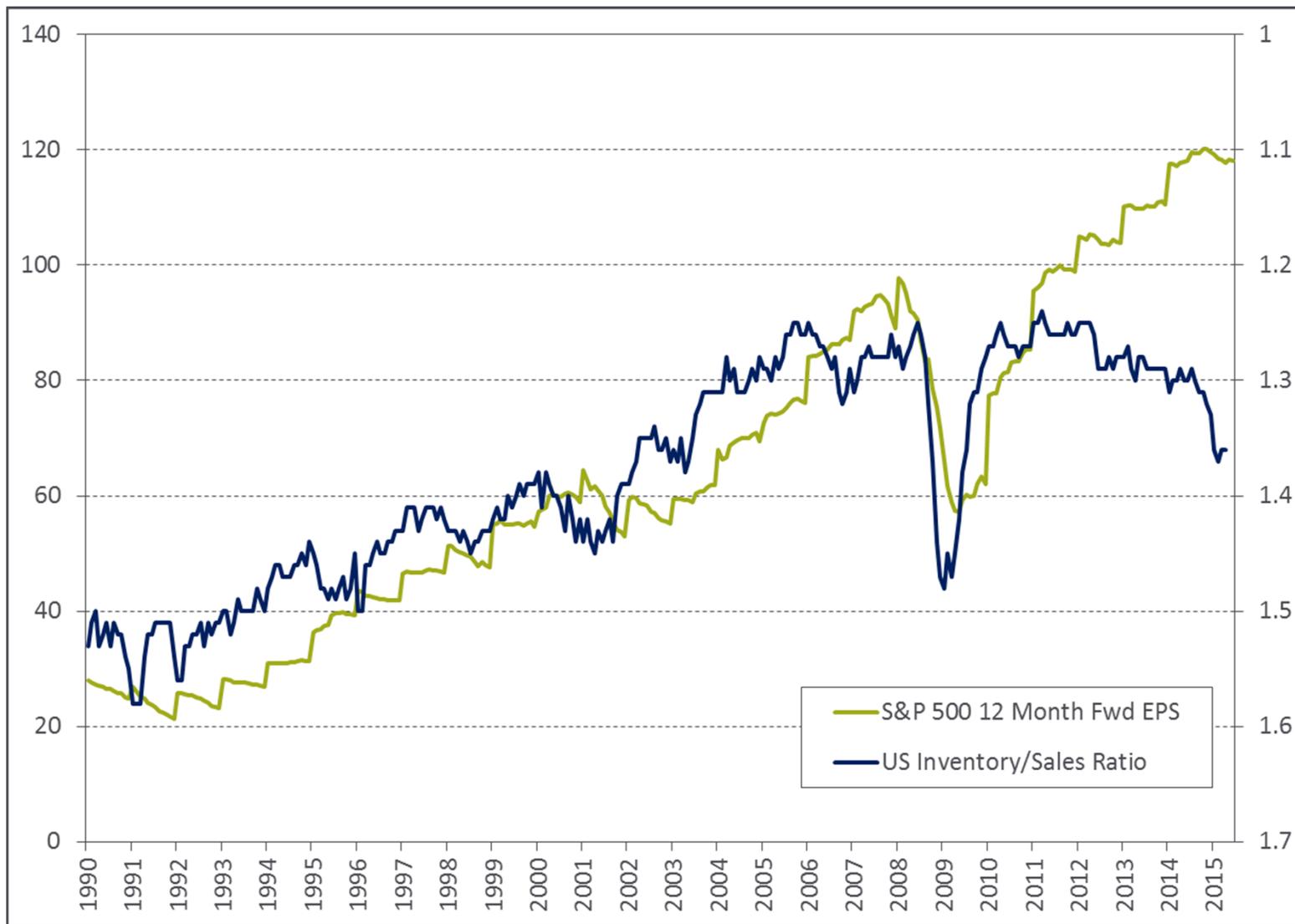
- **China's equity markets are the 2nd largest in the world and largely inaccessible to foreign investors**
 - Shanghai and Shenzhen are the two primary stock exchanges and mainland companies in China often issue A-shares, B-shares, and H-shares
 - A-Shares: Listed on the Shanghai/Shenzhen exchanges primarily accessible only to local investors with some exception (RQFII, Shanghai-HK Connect)
 - B-Shares: Listed on the Shanghai/Shenzhen exchanges and often quoted in USD, accessible to foreign investors
 - H-shares: Mainland companies listed in Hong Kong, heavily dominated by Financials
- **China equity markets, primarily A-shares, increased nearly 150% over 1-year period and fell 30% in a span of weeks**
 - Shanghai and Shenzhen exchanges reached highs on June 12 and subsequently declined over 30% by July 8
 - Rally was fueled by a massive increase in margin debt and levered investors
 - Estimated individual investors represent more than 80% of daily trading volumes
 - $\approx 2/3$ of individuals opening new accounts had less than a high school education
- **A 30% decline in equity markets and extreme volatility may filter into general economy of China and impede economic growth**
 - Government has taken aggressive actions to stem losses: Interest rates cut by 25 bps, suspension of IPOs, and providing liquidity support to finance margin loans
 - Significant levels of margin debt remain in the financial system and volatility is likely to remain high with the government's intervention in equity markets
 - Slowdown in the world's second-largest economy has broad implications for many emerging market economies, specifically commodity producers

US Economy Appears Poised to Rebound After Lackluster First Quarter



Source: Atlanta Fed, Bloomberg

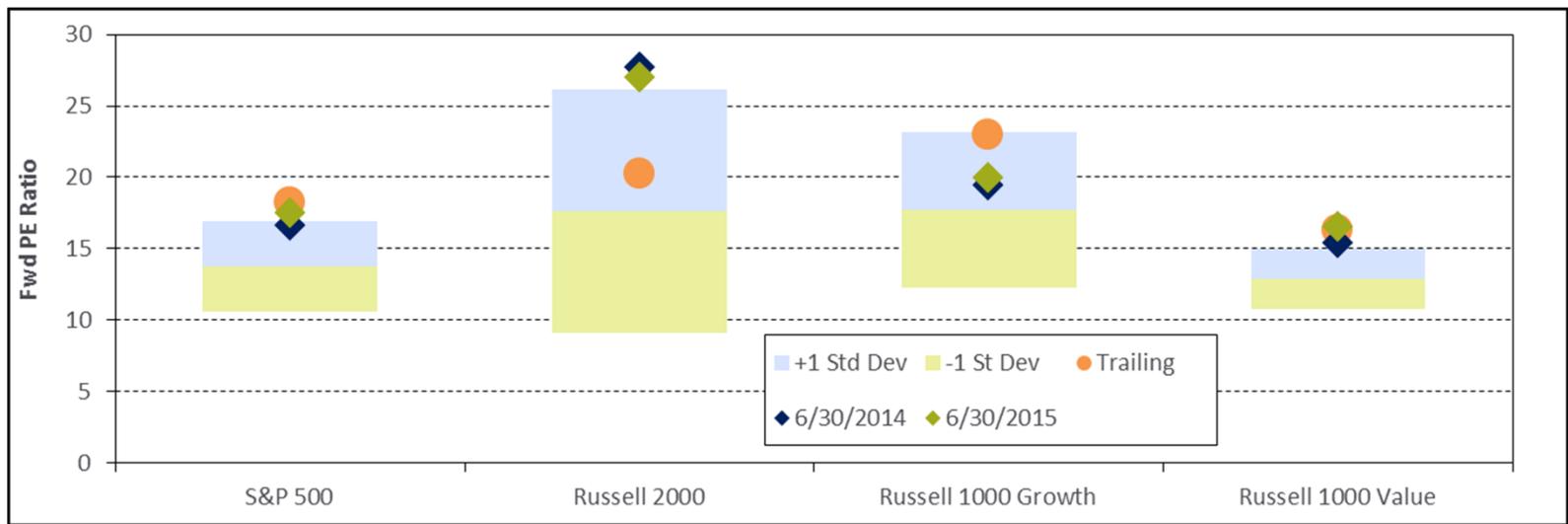
Strong Earnings Forecasts Contradicts Inventory Build-Up



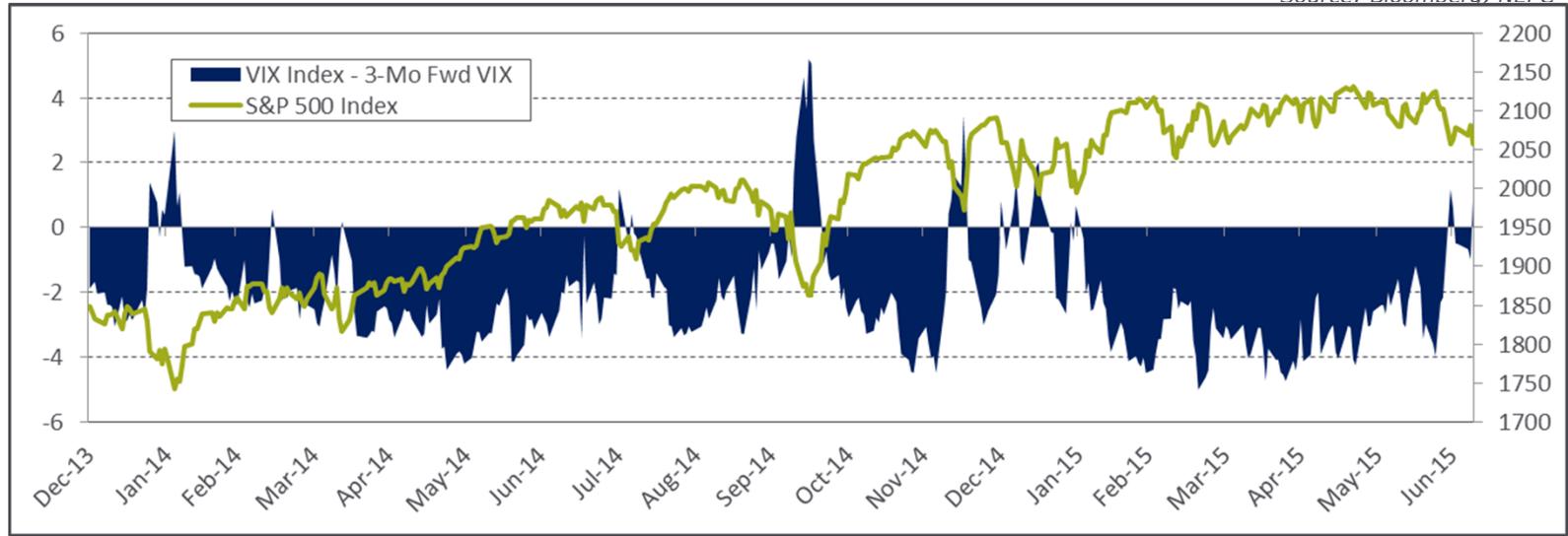
Source: Standard and Poors, US Census Bureau, Bloomberg



Higher Valuations Supported by Expectations of Low Volatility

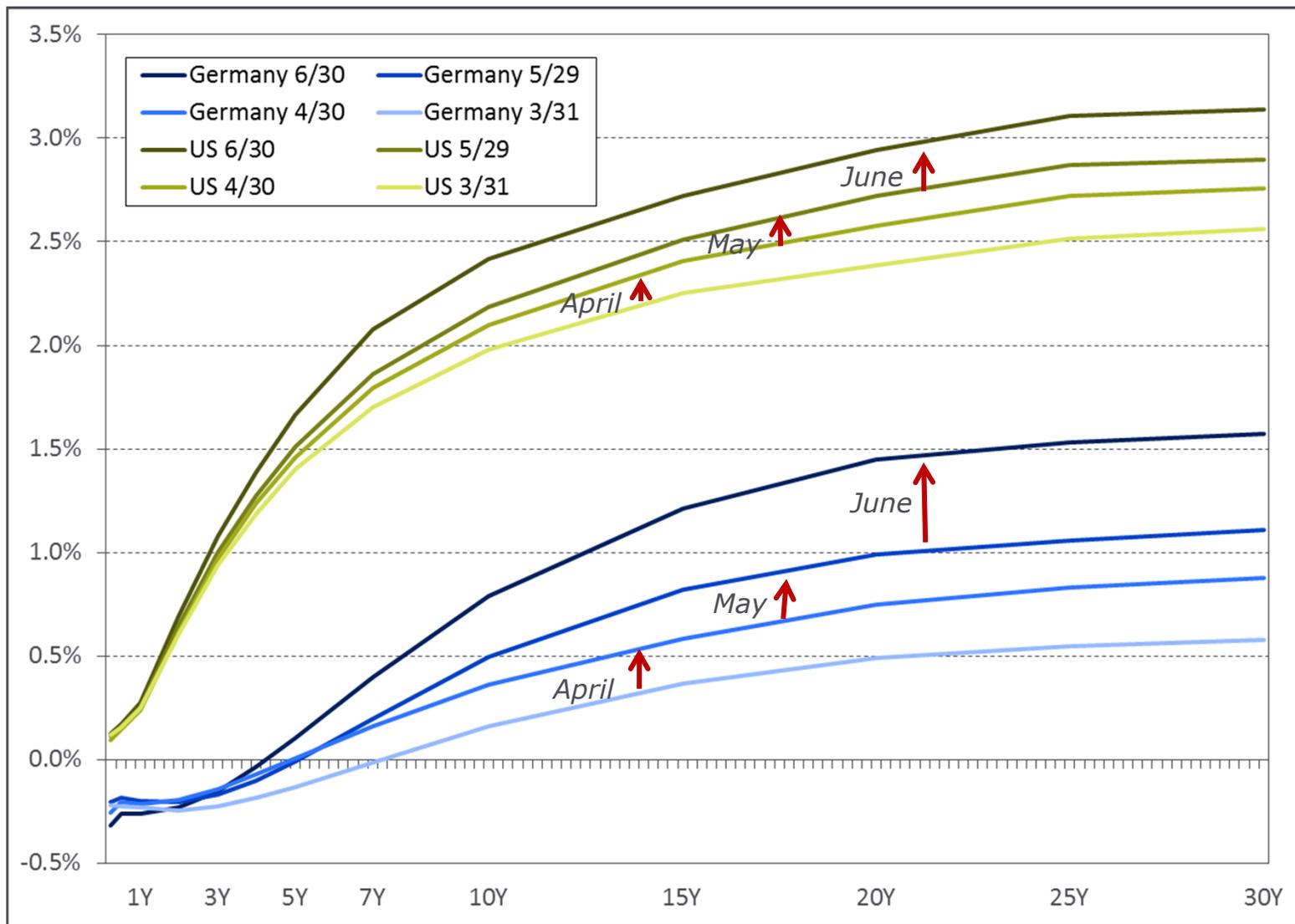


Source: Bloomberg, NEPC



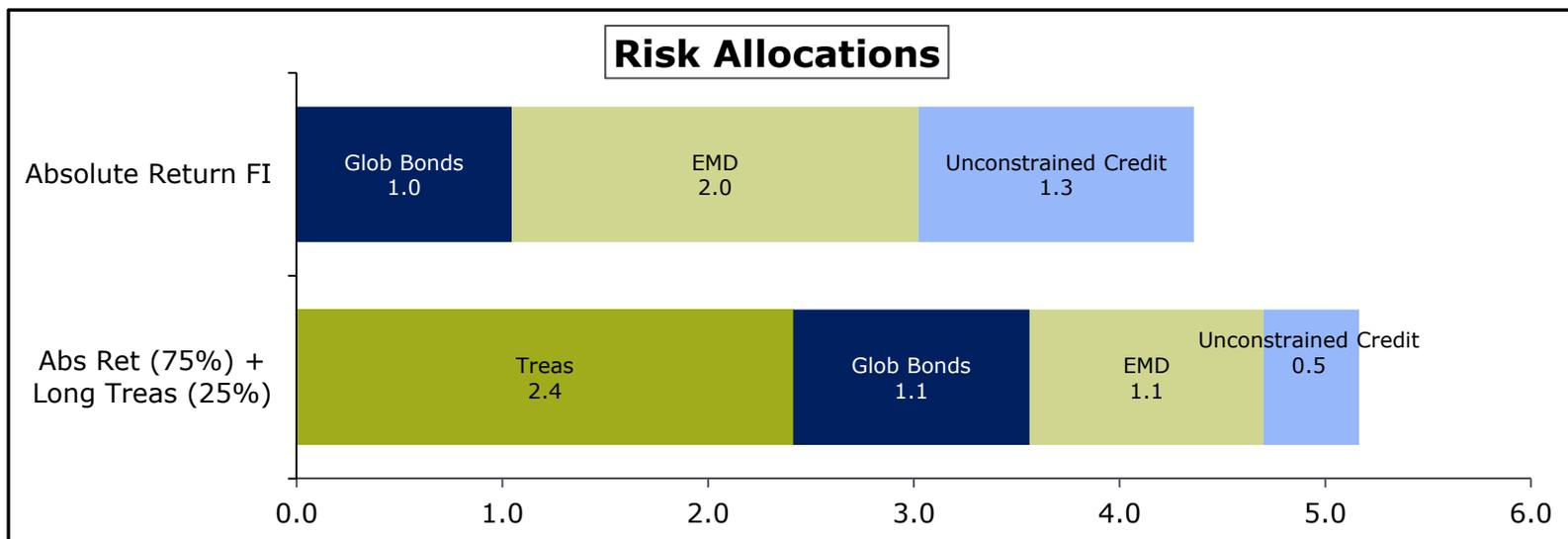
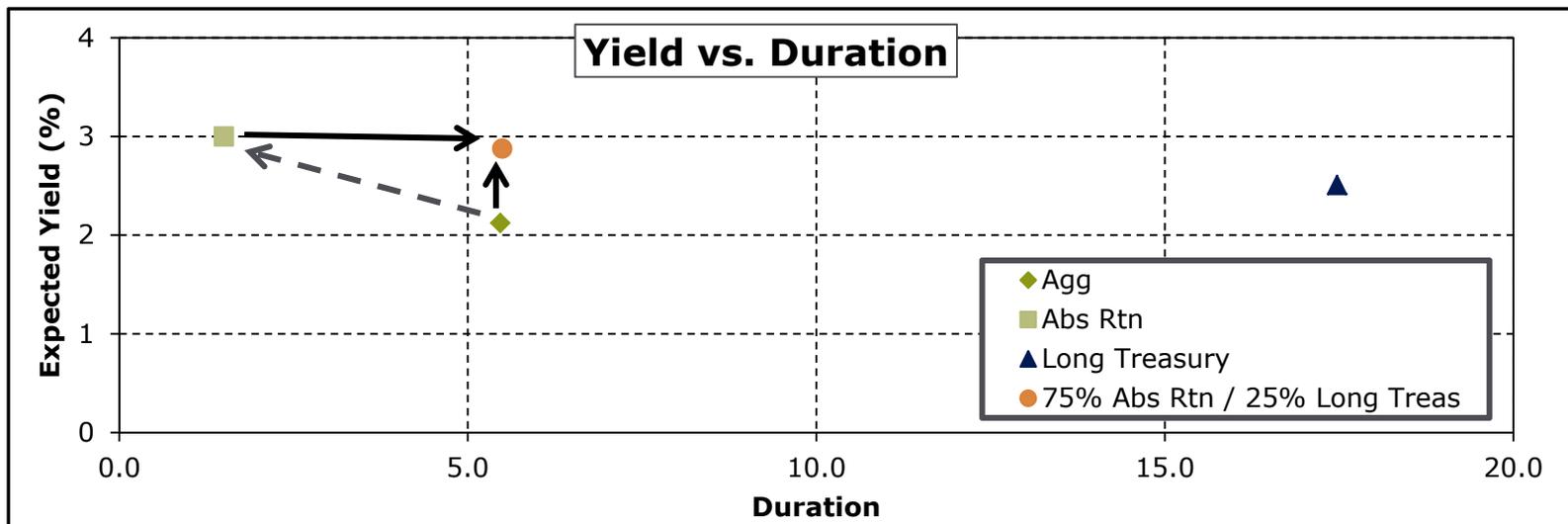
Source: Chicago Board Options Exchange, Bloomberg

German Yields Experienced Their Own 'Tantrum' while US Yields Rose Incrementally



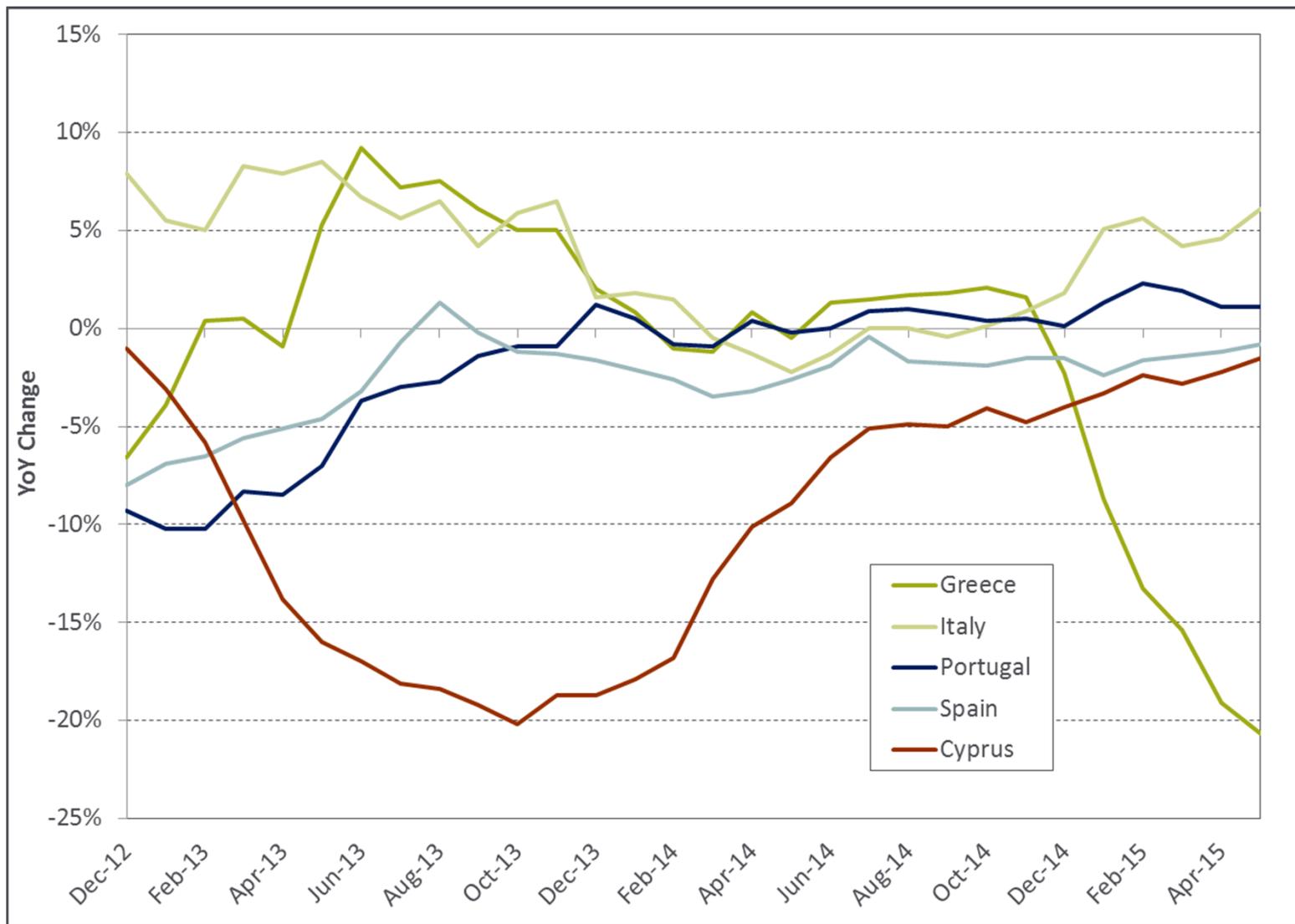
Source: US Treasury, Bloomberg

Consider Pairing Long Treasuries and Unconstrained Bonds as a US Fixed Income Alternative



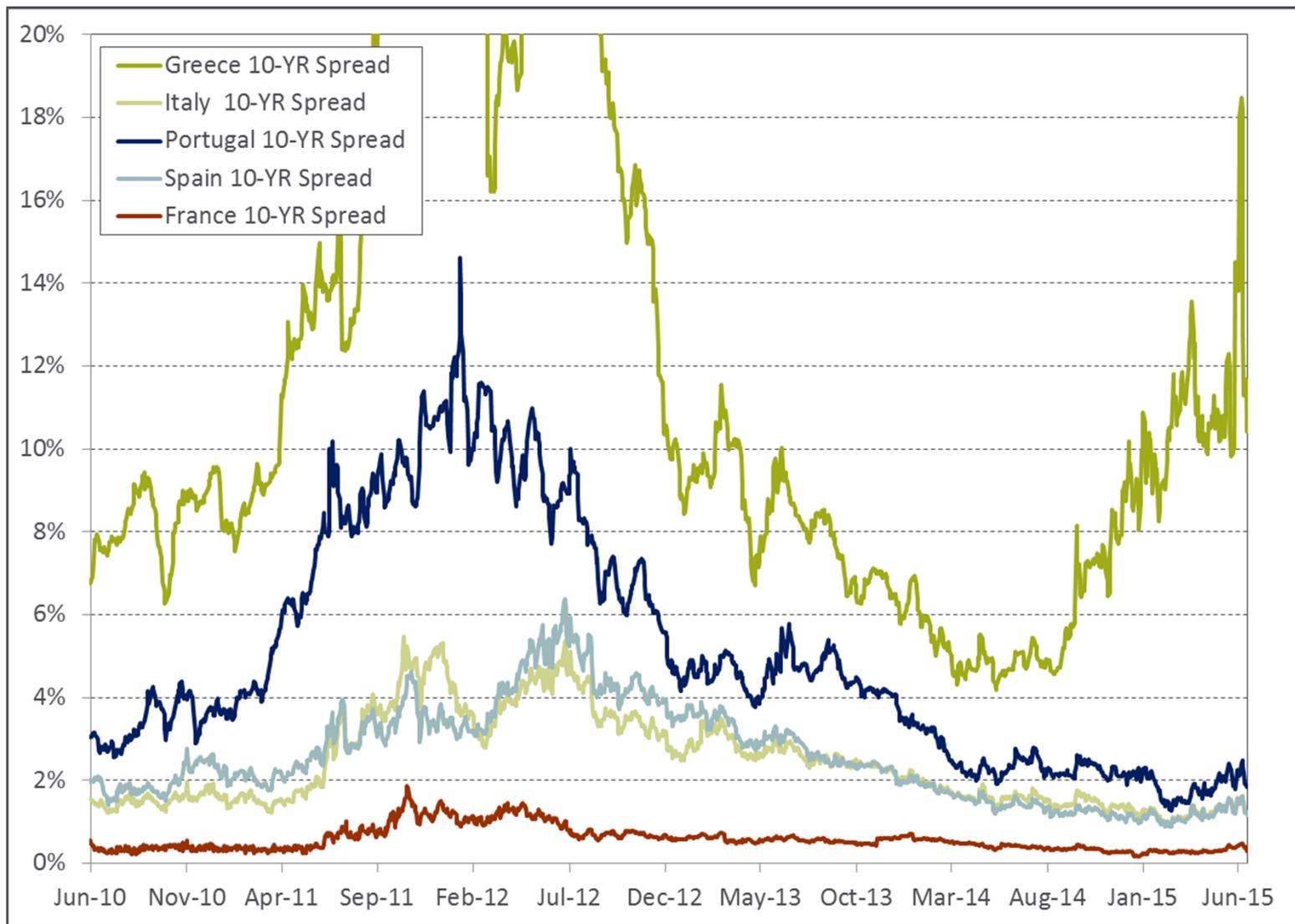
Sources: Barclays Live, NEPC

Change in Bank Deposits – European Banks Unaffected By Greek Deposit Flight



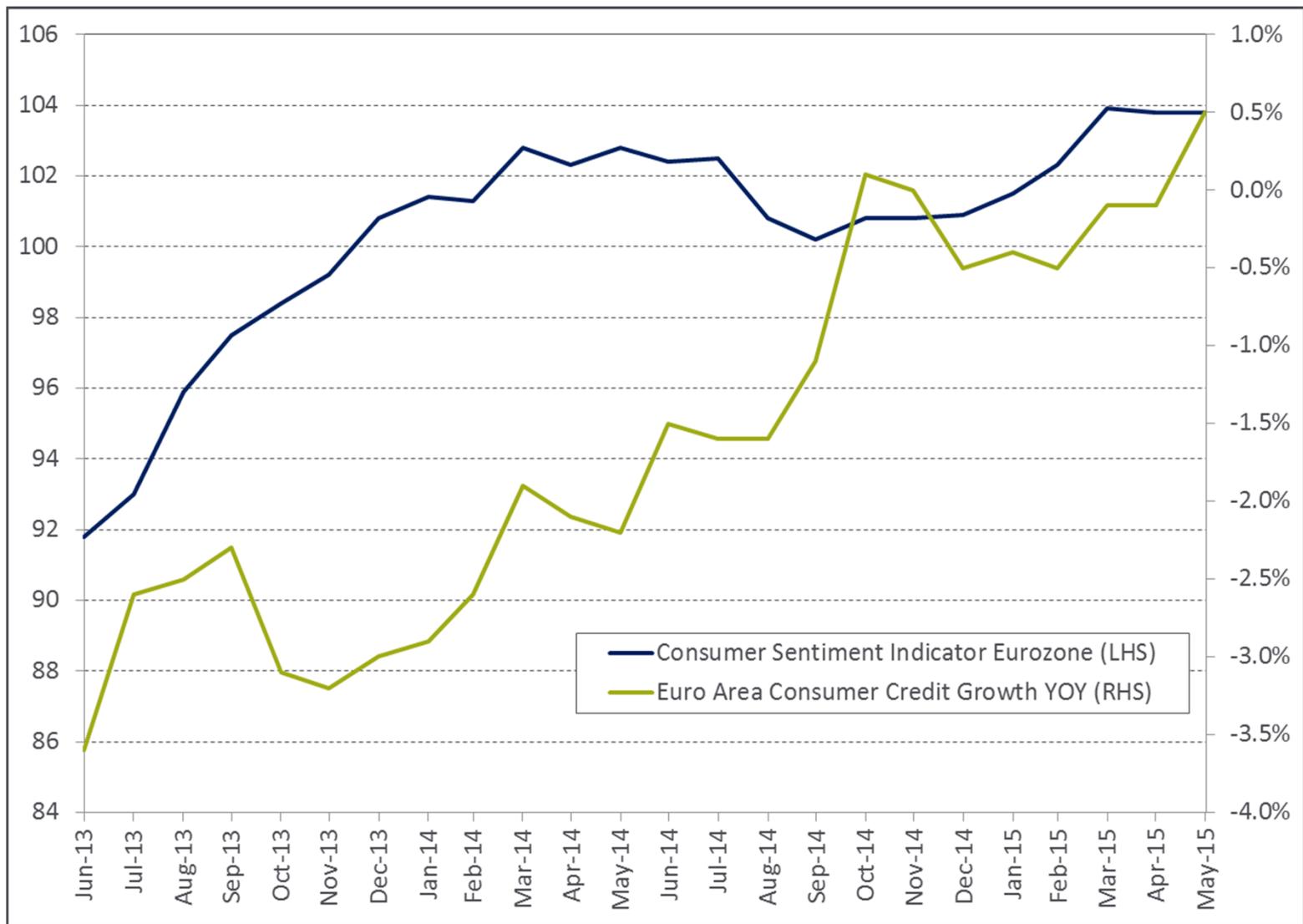
Source: European Central Bank, Bloomberg

Contagion Risks Appear Contained – Spread Over German Yields Relatively Unchanged



Source: Bloomberg, NEPC

Improved Consumer Outlook in Europe Supports Future Earnings Growth



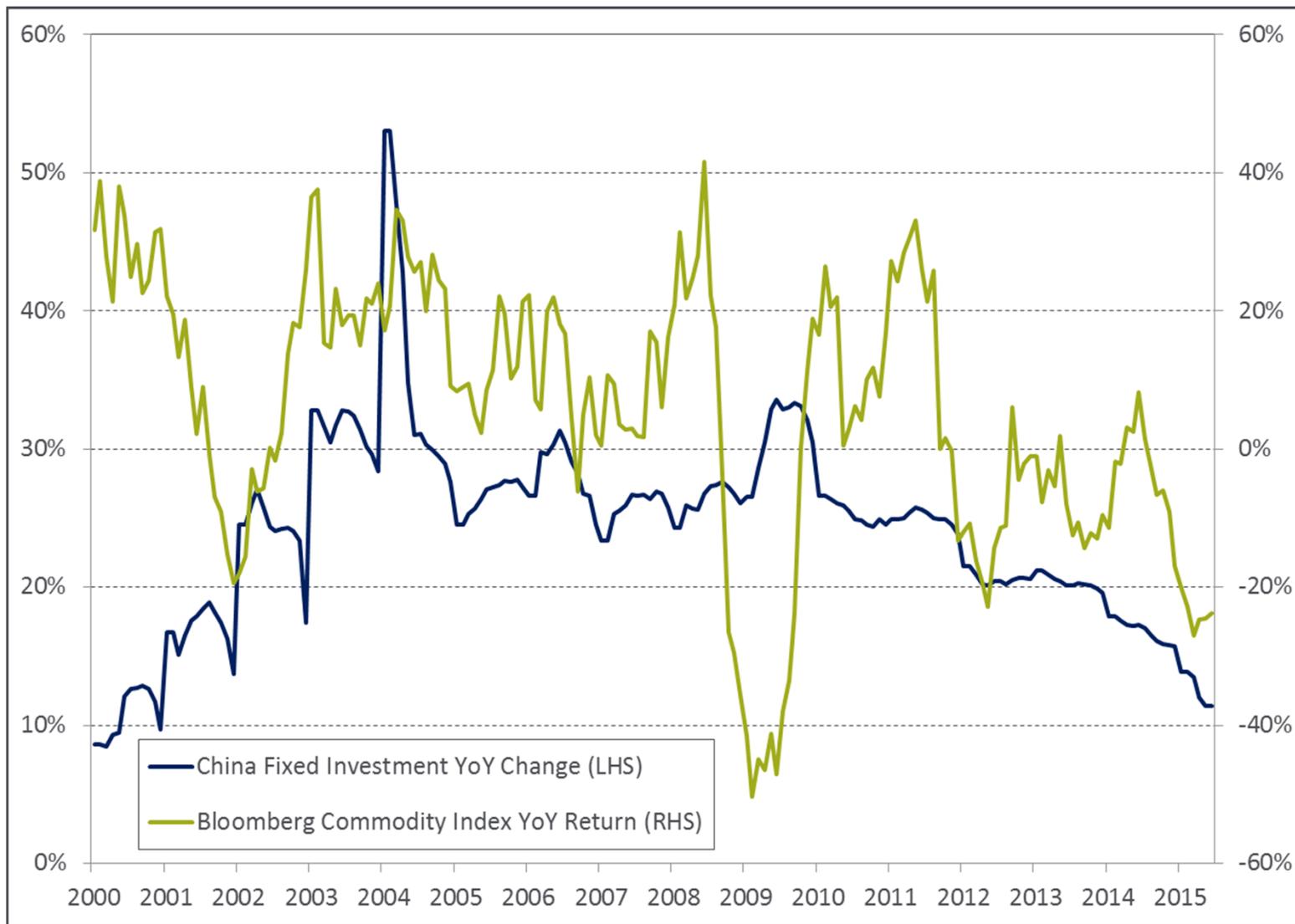
Source: European Commission, European Central Banks, Bloomberg

Slowing China Import Demand Has Repercussions for Emerging Currencies



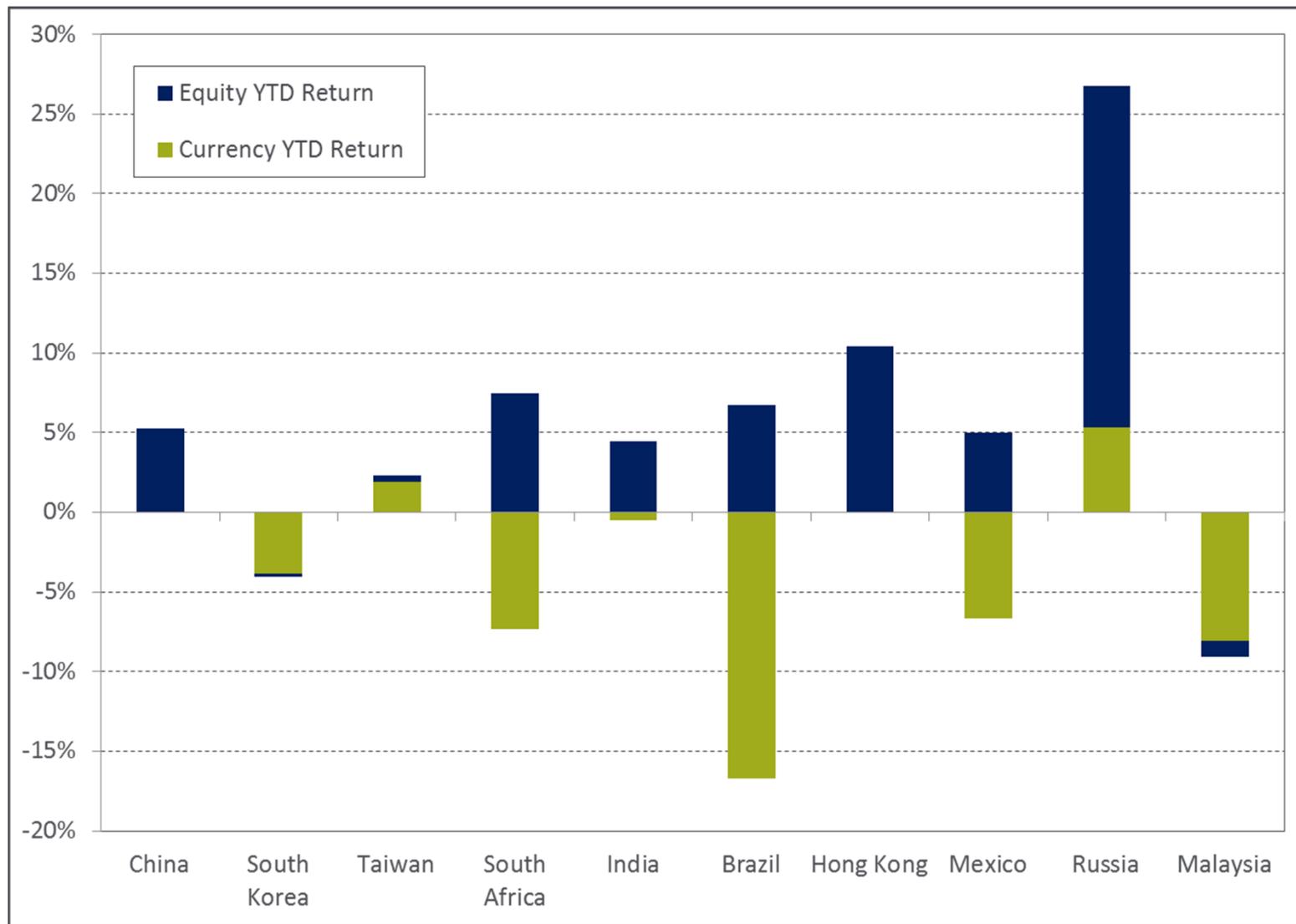
Source: MSCI, National Bureau of Statistics of China, Bloomberg

Decline in Commodity Prices Coincides with Slowing Fixed Asset Investment in China



Source: Bloomberg, National Bureau of Statistics of China

Major Emerging Markets Still Experiencing Currency Headwinds



Source: MSCI, Bloomberg
Note: Chart representative of top 10 country weights

Executive Summary



Investment Summary

Portfolio Commentary

- Goals & Objectives**
 - The portfolios investment objective is to achieve a rate of return consistent with that of the set asset allocation, while maintaining a long term investment horizon for the Fund.
 - As of June 30, 2015 the long term target allocation of the fund is 32% equities, 30.5% fixed income, 7% GAA, 29% alternatives, and 1.5% to cash.
- Recent Decisions and Ongoing Activities**
 - NEPC will assist staff in further implementing the asset allocation and rebalancing recommendation
- Total Fund Performance**
 - The Fund returned 0.8% for the Quarter, which ranked in the 10th percentile in the IF Public DB Fund Universe.
 - Active management was additive to performance in the quarter as the fund's long/gov't credit and private equity managers outperformed their benchmarks by 410 bps and 810 bps, respectively.
- Total Fund Asset Allocation**
 - Currently, the Fund is overweight to Domestic Equity, International Equity, Core Fixed Income, High Yield, Global Bonds, Emerging Market Debt, TIPS, Private Equity and cash. The fund is underweight to Emerging Market Equity, Long Government/Credit, Private Debt, Hedge Funds, and Commodities relative to long term targets.

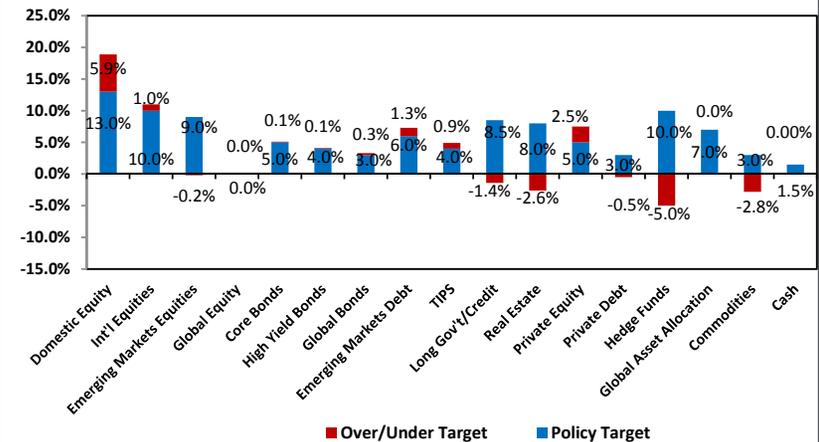
Total Return

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Total Composite	0.8	2.1	8.4	9.0
Rank	10	74	90	82
Median Public Funds	0.0	3.2	10.2	10.3
Policy Index	-0.1	0.3	7.5	9.0

Periods longer than one year are annualized

*Rankings versus total Public Fund s1=best, 100=worst.

Current Allocation Total Composite vs. Long Term Policy Targets

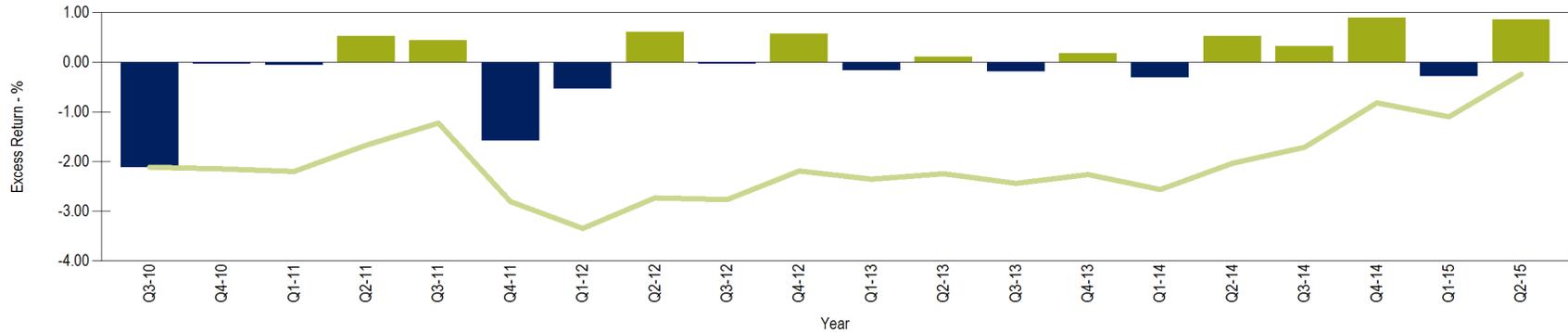


City of Hartford Municipal Employees Retirement Fund

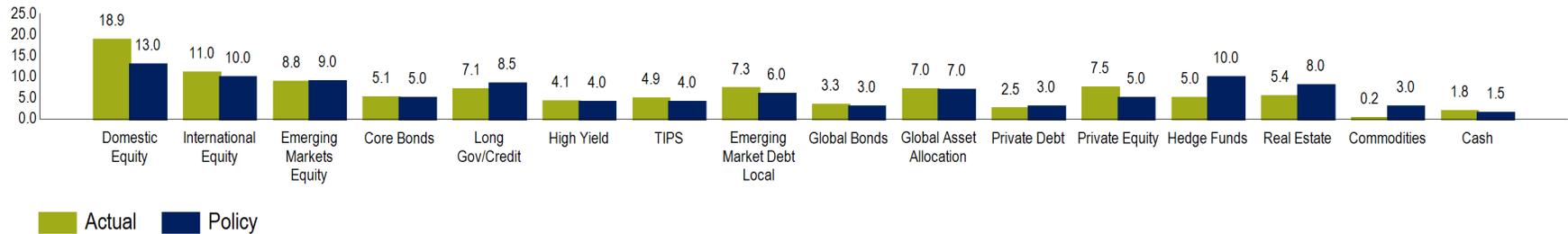
Total Fund Performance Summary

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
Composite	\$1,024,052,820	0.8%	10	2.4%	50	2.1%	74	8.4%	90	9.0%	82
<i>Policy Index</i>		-0.1%	63	1.8%	78	0.3%	96	7.5%	93	9.0%	83
<i>Allocation Index</i>		-0.3%	78	2.1%	65	1.6%	84	8.9%	83	9.1%	80
<i>InvestorForce Public DB Gross Median</i>		0.0%		2.4%		3.2%		10.2%		10.3%	

Quarterly and Cumulative Excess Performance



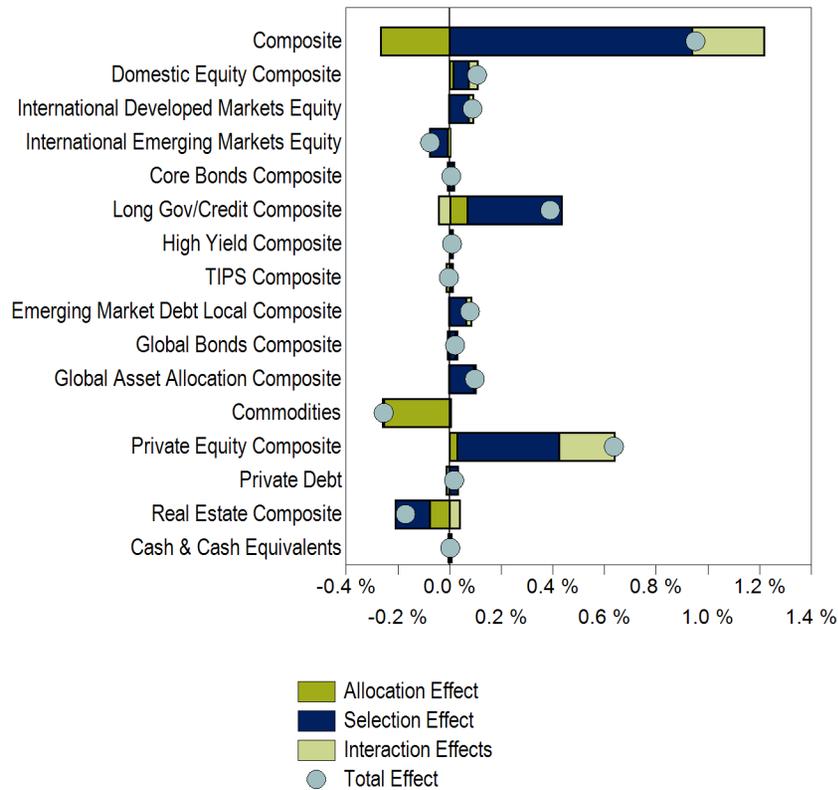
Actual vs Target Allocation (%)



City of Hartford Municipal Employees Retirement Fund

Total Fund Attribution Analysis

Attribution Effects Relative to Policy Index
3 Months Ending June 30, 2015



Attribution Summary
3 Months Ending June 30, 2015

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Domestic Equity Composite	0.6%	0.1%	0.5%	0.1%	0.0%	0.0%	0.1%
International Developed Markets Equity	1.0%	0.2%	0.8%	0.1%	0.0%	0.0%	0.1%
International Emerging Markets Equity	0.1%	0.7%	-0.6%	-0.1%	0.0%	0.0%	-0.1%
Core Bonds Composite	-1.4%	-1.7%	0.3%	0.0%	0.0%	0.0%	0.0%
Long Gov/Credit Composite	-3.5%	-7.6%	4.1%	0.4%	0.1%	0.0%	0.4%
High Yield Composite	0.4%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%
TIPS Composite	-0.9%	-1.1%	0.2%	0.0%	0.0%	0.0%	0.0%
Emerging Market Debt Local Composite	0.7%	-0.3%	1.0%	0.1%	0.0%	0.0%	0.1%
Global Bonds Composite	-0.4%	-1.2%	0.8%	0.0%	0.0%	0.0%	0.0%
Global Asset Allocation Composite	0.9%	-0.4%	1.3%	0.1%	0.0%	0.0%	0.1%
Commodities	8.8%	8.7%	0.1%	0.0%	-0.3%	0.0%	-0.3%
Private Equity Composite	9.0%	0.9%	8.1%	0.4%	0.0%	0.2%	0.6%
Private Debt	1.8%	0.8%	1.0%	0.0%	0.0%	0.0%	0.0%
Real Estate Composite	1.5%	3.1%	-1.6%	-0.1%	-0.1%	0.0%	-0.2%
Cash & Cash Equivalents	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
Total	0.8%	-0.1%	0.9%	0.9%	-0.3%	0.3%	1.0%

City of Hartford Municipal Employees Retirement Fund

Total Fund Attribution Analysis

Performance Attribution

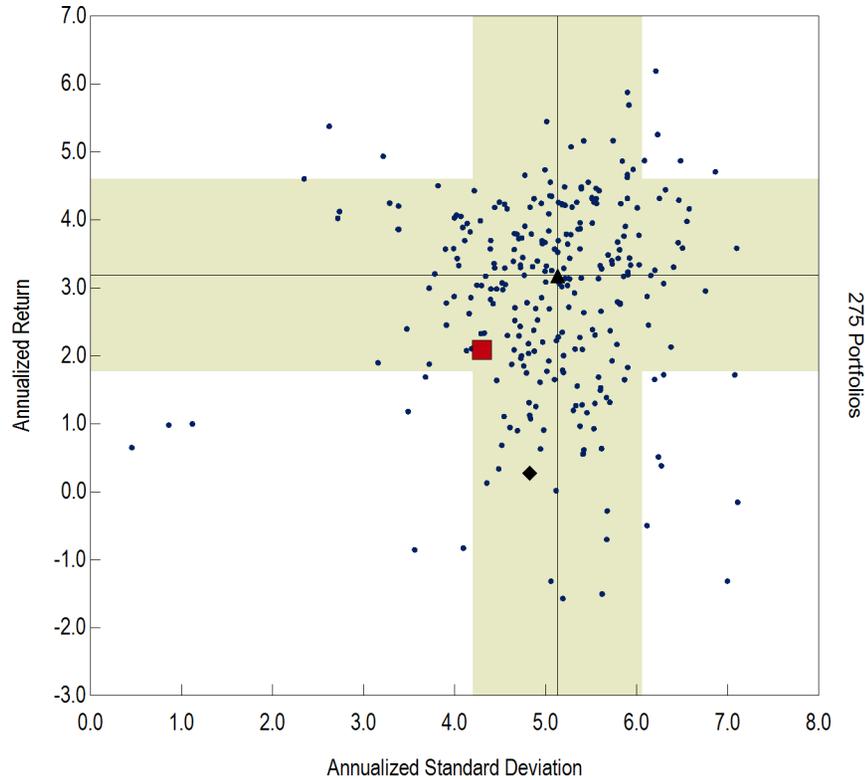
	Last 3 Mo.	1 Yr
Wtd. Actual Return	0.8%	2.1%
Wtd. Index Return *	-0.1%	0.1%
Excess Return	0.9%	2.1%
Selection Effect	0.9%	0.7%
Allocation Effect	-0.3%	1.1%
Interaction Effect	0.3%	0.4%
Asset Class Returns		
Composite	0.8%	2.1%
Total Equity Composite	0.6%	0.4%
Global Equity Composite	-0.7%	-15.8%
Domestic Equity Composite	0.6%	6.8%
International Equity Composite	0.6%	-5.1%
International Developed Markets Equity	1.0%	-1.4%
International Emerging Markets Equity	0.1%	-9.4%
Total Fixed Income Composite	-1.0%	0.2%
Domestic Fixed Income Composite	-1.6%	0.1%
Core Bonds Composite	-1.4%	1.9%
Long Gov/Credit Composite	-3.5%	-1.1%
High Yield Composite	0.4%	1.4%
TIPS Composite	-0.9%	-1.1%
International Fixed Income Composite	0.4%	0.4%
Emerging Market Debt Local Composite	0.7%	3.3%
Global Bonds Composite	-0.4%	-5.5%
Global Asset Allocation Composite	0.9%	1.6%
Commodities	8.8%	-33.2%
Total Alternatives Composite	4.0%	10.0%
Private Equity Composite	9.0%	18.0%
Private Debt	1.8%	7.5%
Real Estate Composite	1.5%	7.7%
Hedge Funds	0.2%	2.4%
Cash & Cash Equivalents	0.2%	0.7%
Passive Portfolios Composite	-1.4%	-1.2%

*Calculated from benchmark returns and weightings of each component.



Total Fund Risk/Return - 1 Years

1Year Ending June 30, 2015



- Composite
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB Gross

1 Years Ending June 30, 2015

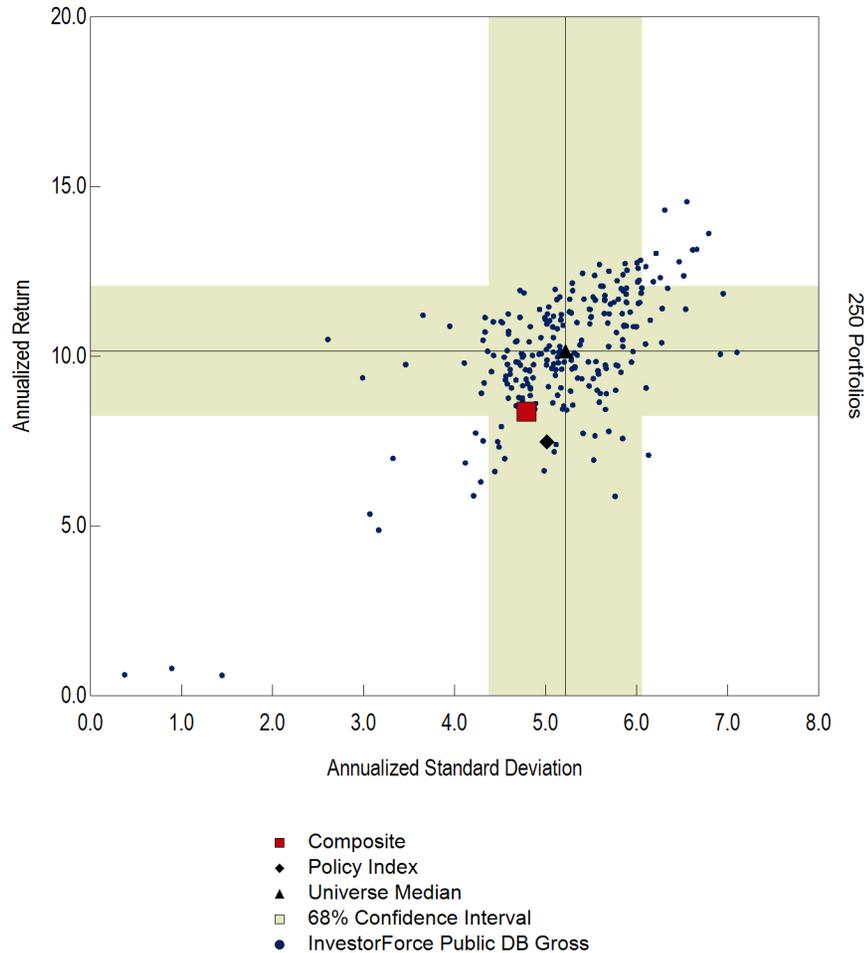
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Composite	2.09%	74	4.30%	17
Policy Index	0.27%	96	4.83%	36
Allocation Index	1.62%	84	5.21%	56

1 Years Ending June 30, 2015

	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Composite	0.48	69	1.06	66
Policy Index	0.05	96	0.10	96
Allocation Index	0.31	84	0.52	85

Total Fund Risk/Return - 3 Years

3 Years Ending June 30, 2015



3 Years Ending June 30, 2015

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Composite	8.37%	90	4.79%	27
Policy Index	7.48%	93	5.01%	36
Allocation Index	8.88%	83	5.56%	66

3 Years Ending June 30, 2015

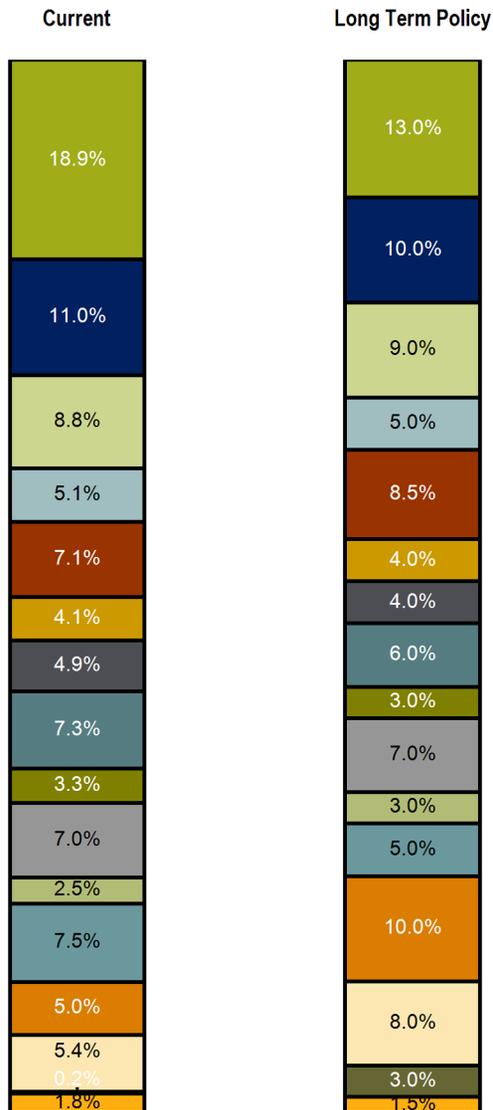
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Composite	1.74	78	3.51	77
Policy Index	1.48	93	3.09	87
Allocation Index	1.59	90	2.87	92

Asset Allocation



City of Hartford Municipal Employees Retirement Fund

Total Fund Asset Allocation vs. Policy Targets

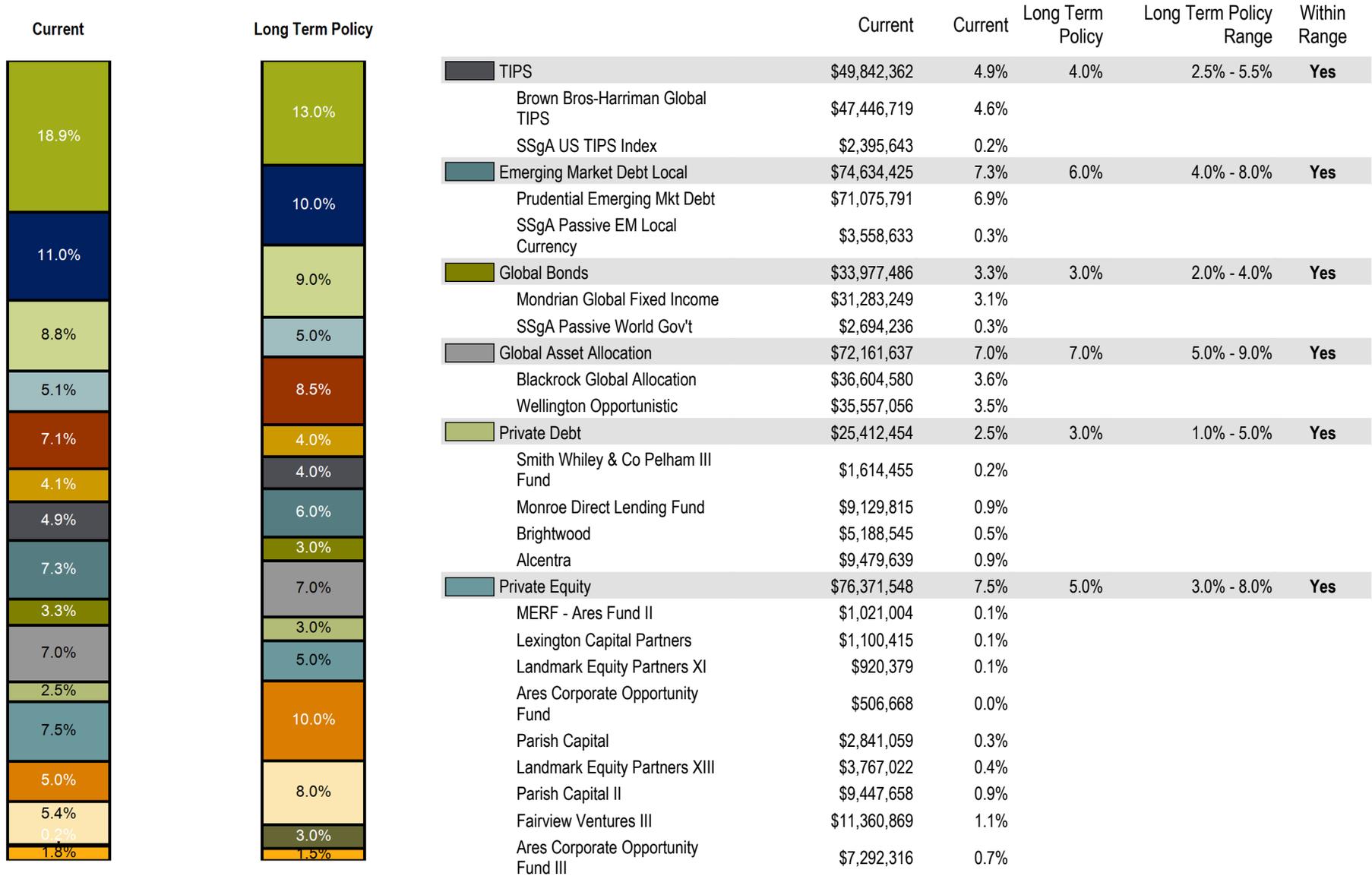


Asset Allocation vs. Target

	Current	Current	Long Term Policy	Long Term Policy Range	Within Range
Domestic Equity	\$193,571,321	18.9%	13.0%	10.0% - 16.0%	No
Atlanta Capital Large Growth	\$59,036,759	5.8%			
Eagle Capital Large Value	\$61,128,523	6.0%			
Southern Sun SMID Value	\$33,645,566	3.3%			
Voya	\$24,519,889	2.4%			
SSgA Russell 3000 Index	\$15,240,584	1.5%			
International Equity	\$112,784,056	11.0%	10.0%	8.0% - 12.0%	Yes
SSgA Daily MSCI CAD Index	\$540,113	0.1%			
Walter Scott Large Growth	\$57,242,536	5.6%			
First Eagle All Cap Value	\$49,204,660	4.8%			
SSgA EAFE Index	\$5,796,747	0.6%			
Emerging Markets Equity	\$90,463,934	8.8%	9.0%	7.0% - 11.0%	Yes
Parametric Emerging Markets	\$49,984,704	4.9%			
Mondrian Emerging Markets	\$34,590,134	3.4%			
SSgA Daily MSCI EM Index	\$5,889,070	0.6%			
SSgA Emerging Markets	\$26	0.0%			
Core Bonds	\$52,231,221	5.1%	5.0%	3.5% - 6.5%	Yes
Hartford Investment Core Plus Fixed	\$42,492,908	4.1%			
Columbia Core Plus Fixed	\$754,053	0.1%			
SSgA Barclays Aggregate Index	\$8,984,260	0.9%			
Long Gov/Credit	\$72,816,598	7.1%	8.5%	6.5% - 10.5%	Yes
Aetna GICS	\$425,442	0.0%			
PIMCO Long Duration Fixed	\$67,289,273	6.6%			
SSgA Long US Gov't Credit	\$5,101,884	0.5%			
High Yield	\$42,424,932	4.1%	4.0%	3.5% - 5.5%	Yes
Shenkman Capital High Yield Fixed	\$40,050,905	3.9%			
SSgA High Yield Bond	\$2,374,027	0.2%			

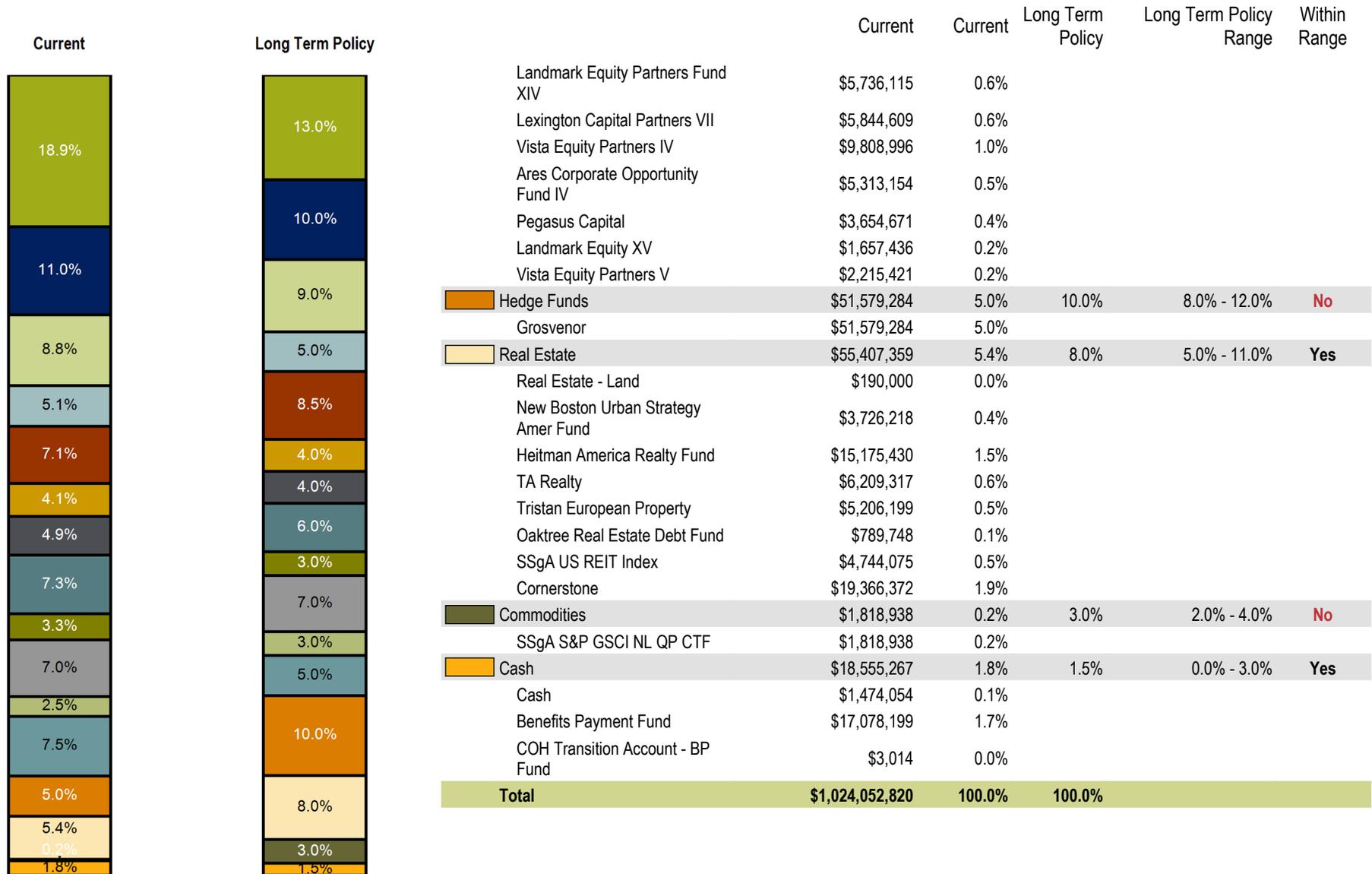
City of Hartford Municipal Employees Retirement Fund

Total Fund Asset Allocation vs. Policy Targets



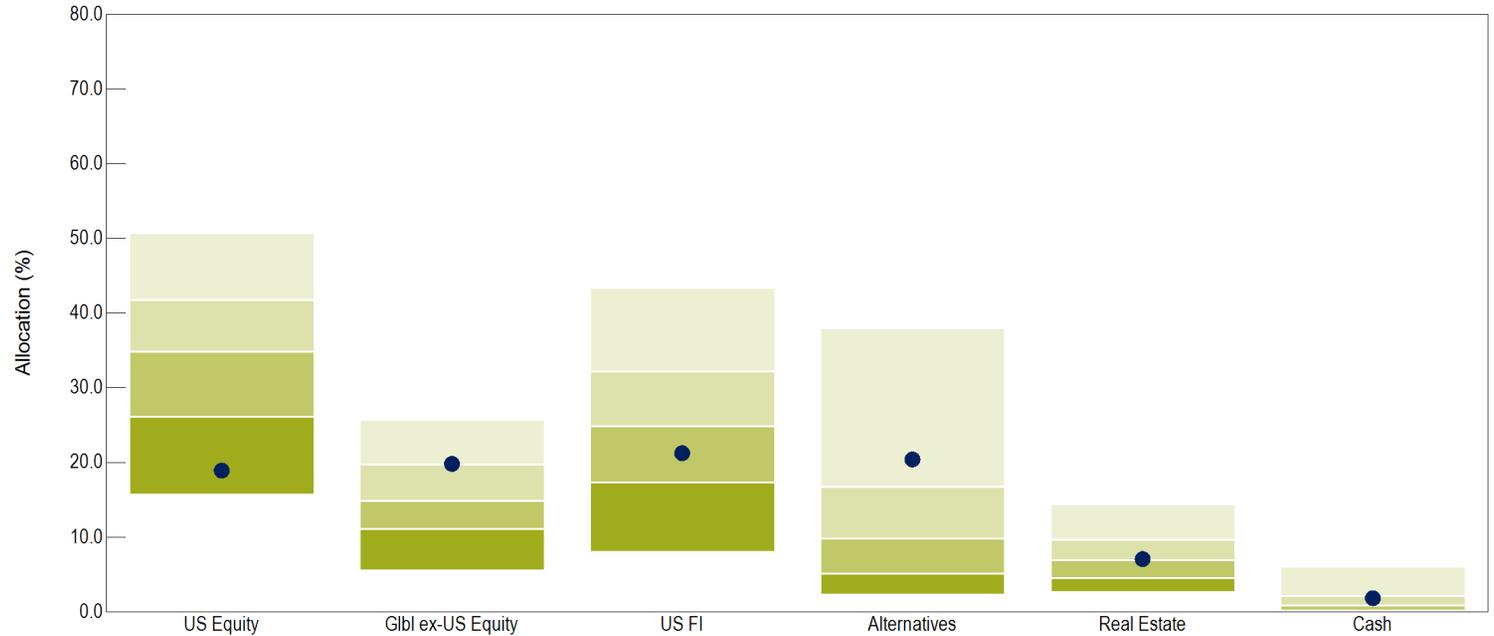
City of Hartford Municipal Employees Retirement Fund

Total Fund Asset Allocation vs. Policy Targets



Total Fund Allocations vs. Peer Universe

Total Plan Allocation vs. InvestorForce Public DB Gross

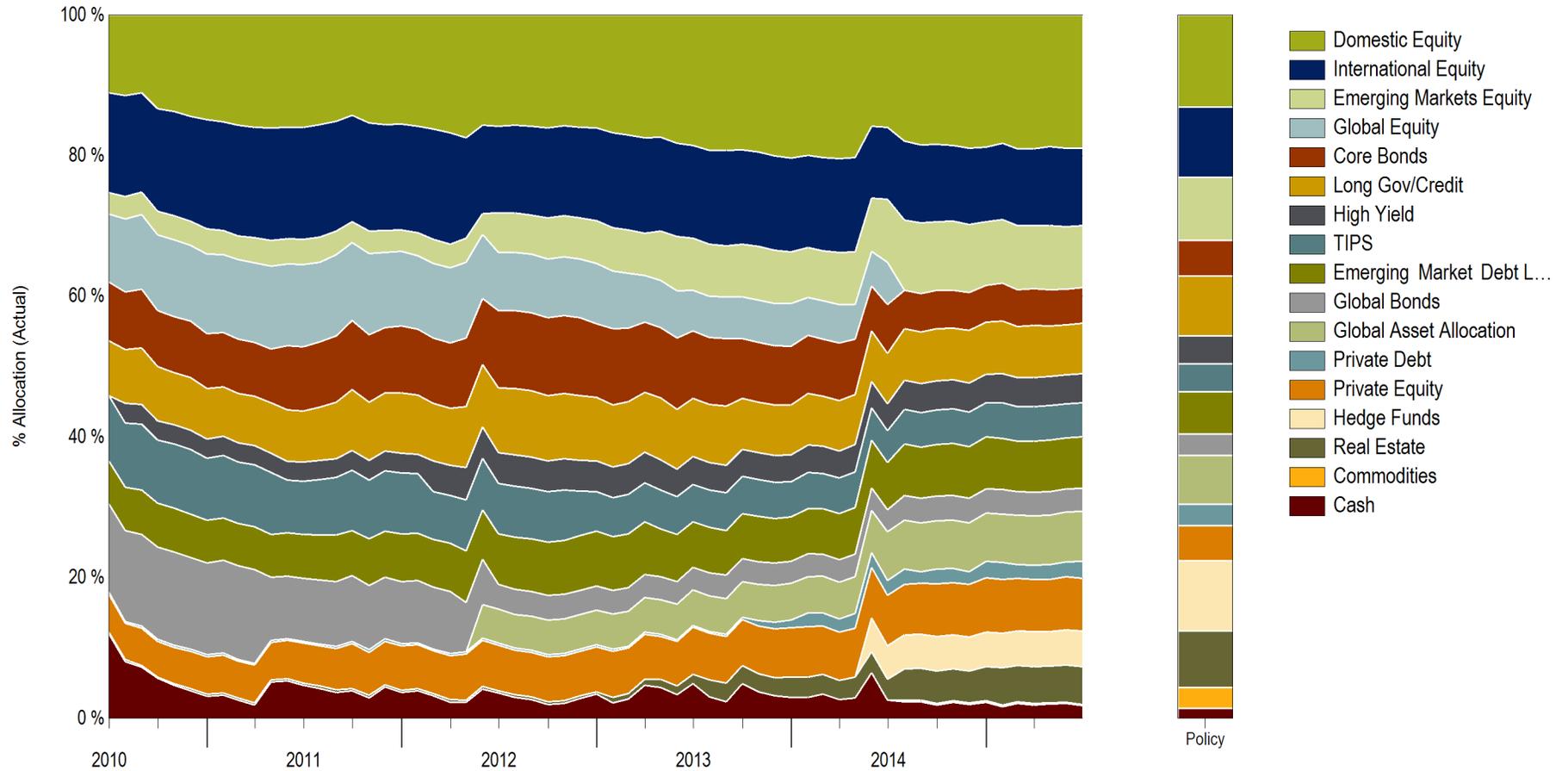


Allocation (Rank)

5th Percentile	50.7	25.6	43.3	38.0	14.4	6.1
25th Percentile	41.8	19.8	32.2	16.8	9.7	2.2
Median	34.9	15.0	24.9	9.9	6.9	1.0
75th Percentile	26.2	11.1	17.4	5.2	4.6	0.2
95th Percentile	15.8	5.6	8.1	2.4	2.7	0.0
# of Portfolios	270	262	227	141	177	237
• Composite	18.9 (93)	19.8 (25)	21.2 (64)	20.4 (18)	7.0 (50)	1.8 (31)

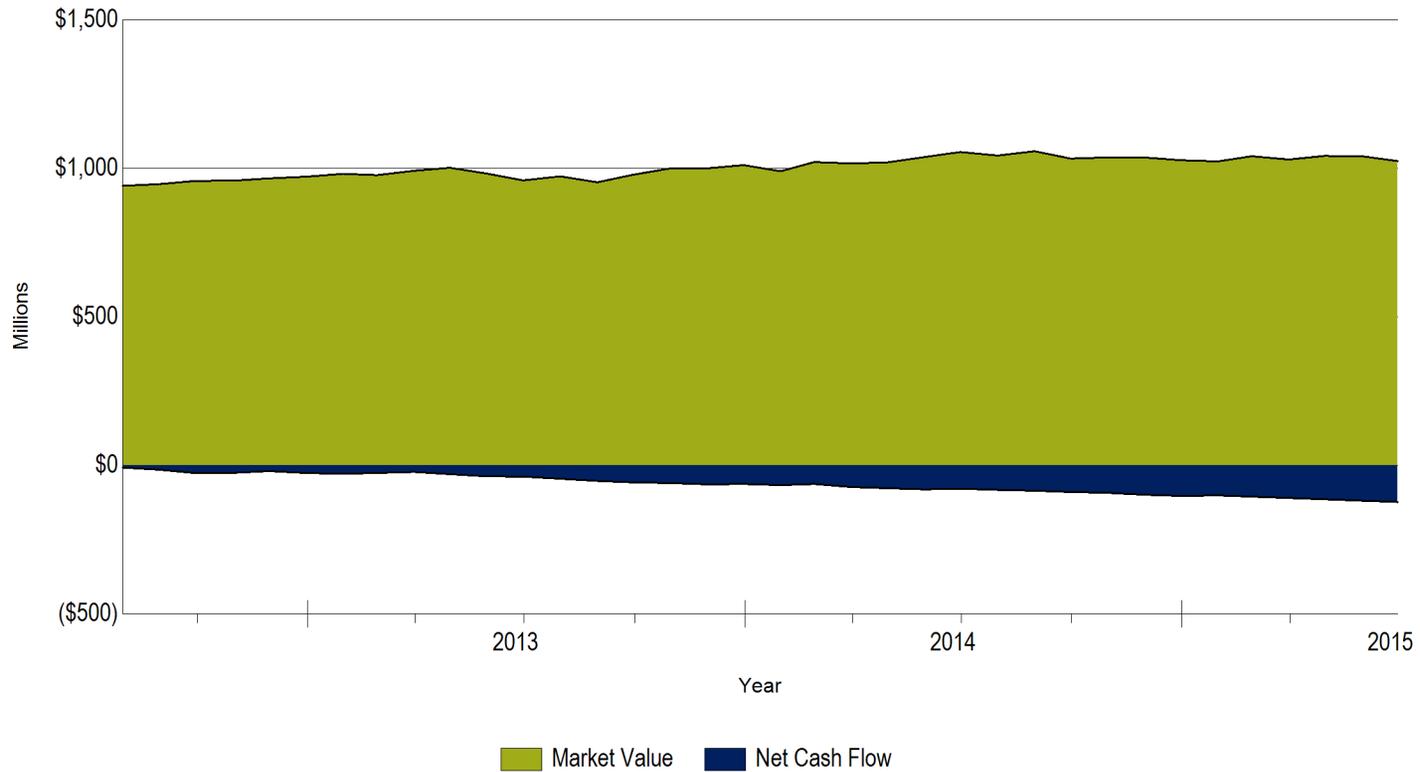
Total Fund Asset Allocation History

Asset Allocation History



Total Fund Asset Growth Summary

3 Years Ending June 30, 2015



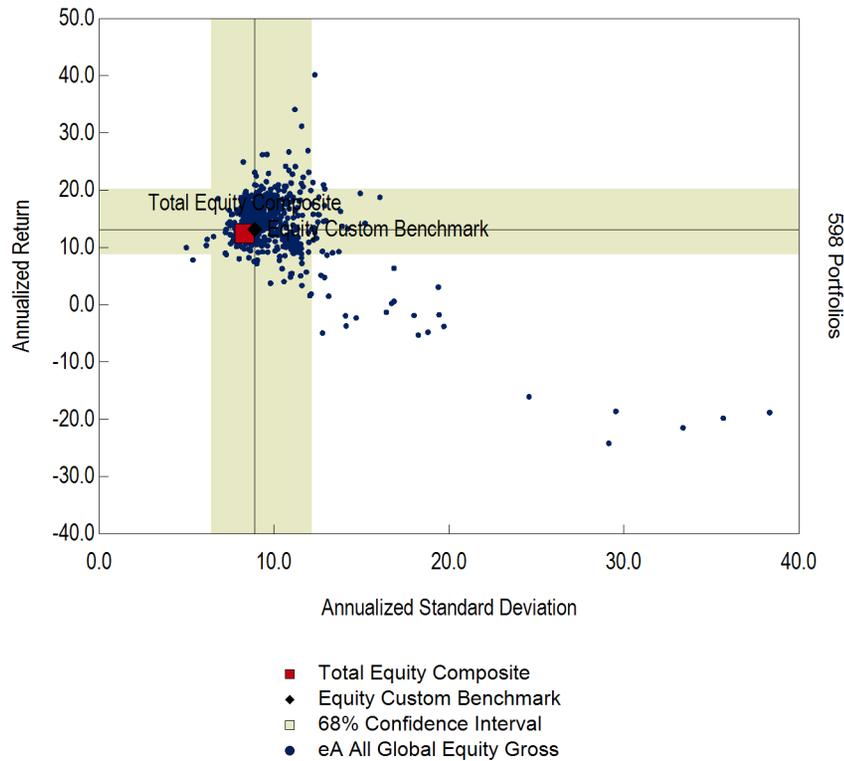
Sources of Portfolio Growth	Last Three Months	Year-To-Date	One Year	Three Years
Beginning Market Value	\$1,029,411,767	\$1,020,541,103	\$1,054,636,475	\$933,327,300
Net Additions/Withdrawals	-\$12,322,419	-\$18,188,352	-\$40,818,284	-\$128,210,225
Investment Earnings	\$6,963,472	\$21,700,069	\$10,234,629	\$218,935,745
Ending Market Value	\$1,024,052,820	\$1,024,052,820	\$1,024,052,820	\$1,024,052,820

Manager Pages

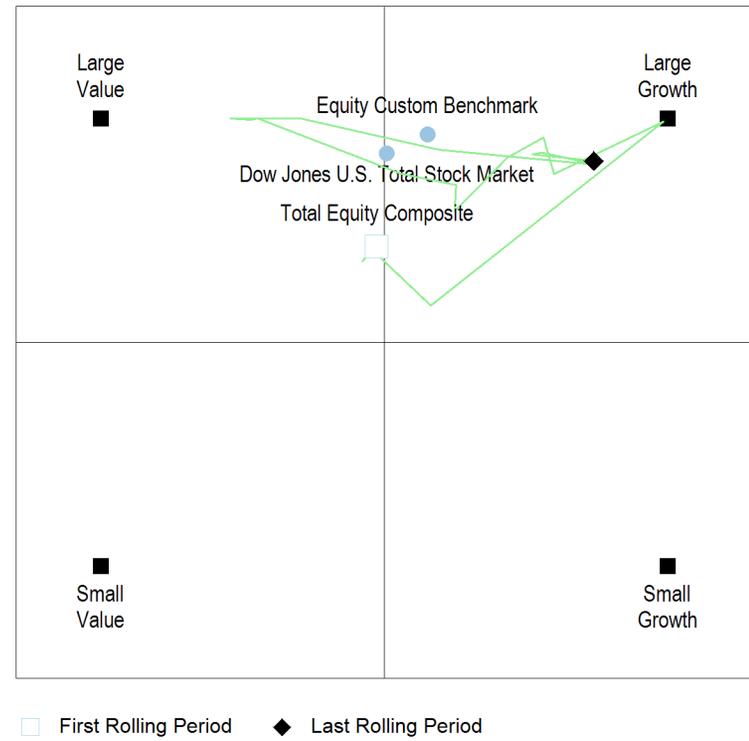


Total Equity Composite

3 Year Risk Return



3 Year Style Analysis



Style Analysis: Analytic is based on historical returns

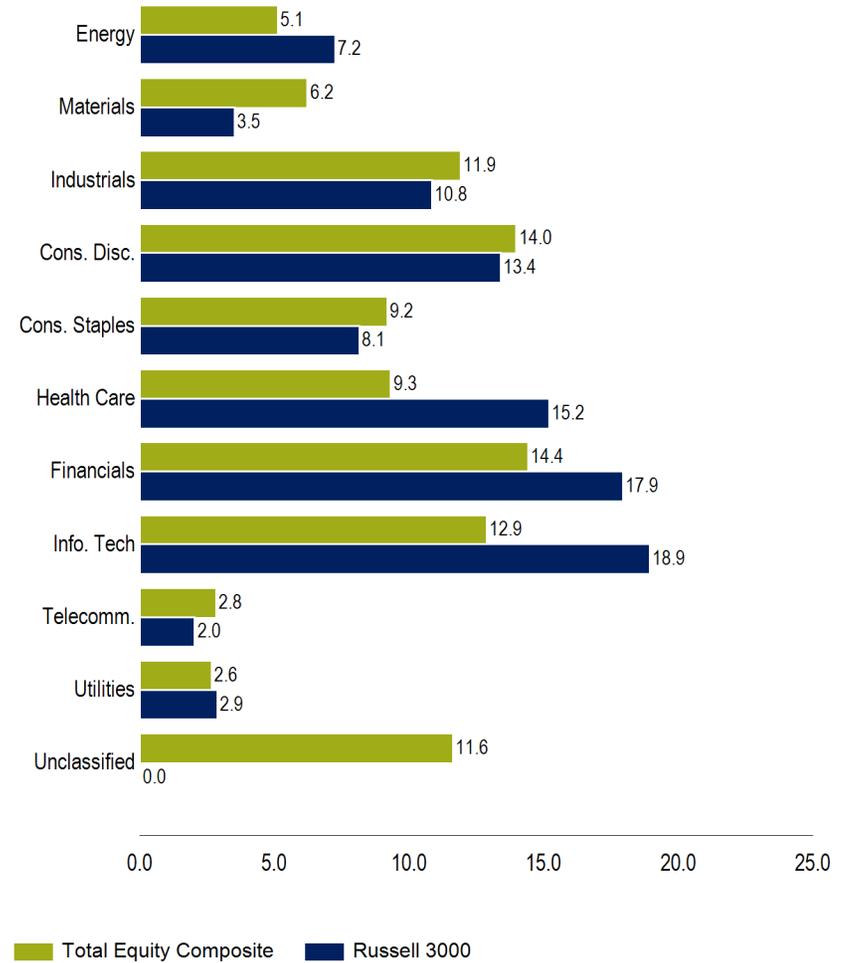
City of Hartford Municipal Employees Retirement Fund

Total Equity Composite

Characteristics

	Portfolio	Russell 3000
Number of Holdings	4,205	3,005
Weighted Avg. Market Cap. (\$B)	54.6	103.2
Median Market Cap. (\$B)	3.0	1.6
Price To Earnings	22.9	22.8
Price To Book	4.1	3.9
Price To Sales	3.3	3.0
Return on Equity (%)	18.7	17.2
Yield (%)	2.0	1.9
Beta	0.9	1.0
R-Squared	0.8	1.0

Equity Sector Allocation



City of Hartford Municipal Employees Retirement Fund

Total Equity Composite

Top Ten Holdings

CASH - USD	5.4%
SSGA RUSSELL 3000 INDEX NON-LENDING	3.9%
DAILY MSCI EAFE INDX NL FUND ZV31NON	1.5%
GOOGLE 'C'	1.2%
LIBERTY GLOBAL SR.C	1.2%
ORACLE	1.1%
ECOLAB	0.8%
COCA COLA	0.8%
BERKSHIRE HATHAWAY 'B'	0.8%
CITIGROUP	0.8%

Top Positive Contributors

	Relative Contribution %	Return %
GILEAD SCIENCES	0.1%	19.7%
BG GROUP	0.1%	36.5%
AGCO	0.1%	19.5%
MICROSOFT	0.1%	9.3%
CENTENE	0.1%	13.7%
AMAZON.COM	0.1%	16.7%
SYNGENTA	0.1%	23.6%
MONDELEZ INTERNATIONAL CL.A	0.1%	14.4%
STARBUCKS	0.1%	13.6%
CITIGROUP	0.1%	7.3%

Top Negative Contributors

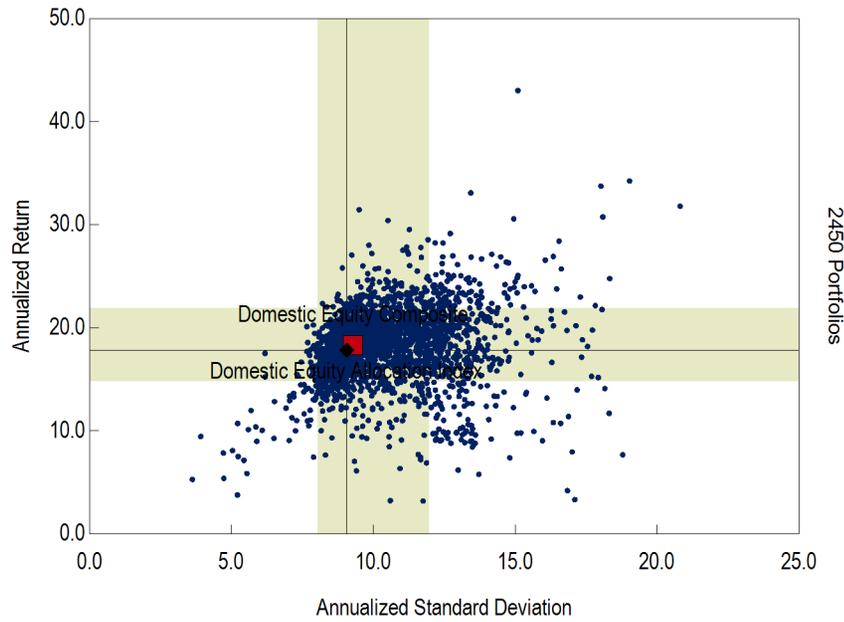
	Relative Contribution %	Return %
ADT	-0.1%	-18.7%
ORACLE	-0.1%	-6.3%
MURPHY USA	-0.1%	-22.9%
TRINITY INDUSTRIES	-0.1%	-25.4%
NOBLE ENERGY	-0.1%	-12.4%
MICHAEL KORS HOLDINGS	-0.1%	-36.0%
SAMSUNG ELECTRONICS	-0.1%	-12.5%
GOOGLE 'C'	-0.1%	-4.8%
BERKSHIRE HATHAWAY 'B'	0.0%	-5.7%
LOWE'S COMPANIES	0.0%	-9.7%

Equity Sector Attribution

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.3%	0.3%	0.0%	0.0%	2.9%	-1.9%	6.2%	7.3%			
Materials	0.0%	0.0%	0.0%	0.0%	0.0%	-1.0%	6.1%	3.6%			
Industrials	0.1%	0.0%	0.0%	0.1%	-1.9%	-2.5%	12.4%	11.3%			
Cons. Disc.	-0.1%	-0.1%	0.0%	0.0%	0.6%	1.4%	15.4%	13.2%			
Cons. Staples	0.1%	0.0%	0.0%	0.1%	-0.1%	-1.8%	9.6%	8.4%			
Health Care	0.0%	0.1%	-0.2%	0.0%	4.4%	3.3%	9.5%	14.5%			
Financials	0.1%	0.1%	0.0%	0.0%	1.7%	1.1%	14.9%	17.7%			
Info. Tech	-0.1%	-0.1%	0.0%	0.0%	-0.4%	0.2%	13.6%	19.0%			
Telecomm.	0.0%	0.0%	0.0%	0.0%	0.3%	1.3%	3.1%	2.0%			
Utilities	0.2%	0.2%	0.0%	0.0%	-1.5%	-6.3%	2.7%	3.0%			
Cash	0.0%	0.0%	0.0%	0.0%	0.0%	--	5.7%	0.0%			
Portfolio	0.5%	=	0.4%	+	-0.2%	+	0.3%	0.6%	0.1%	99.3%	100.0%

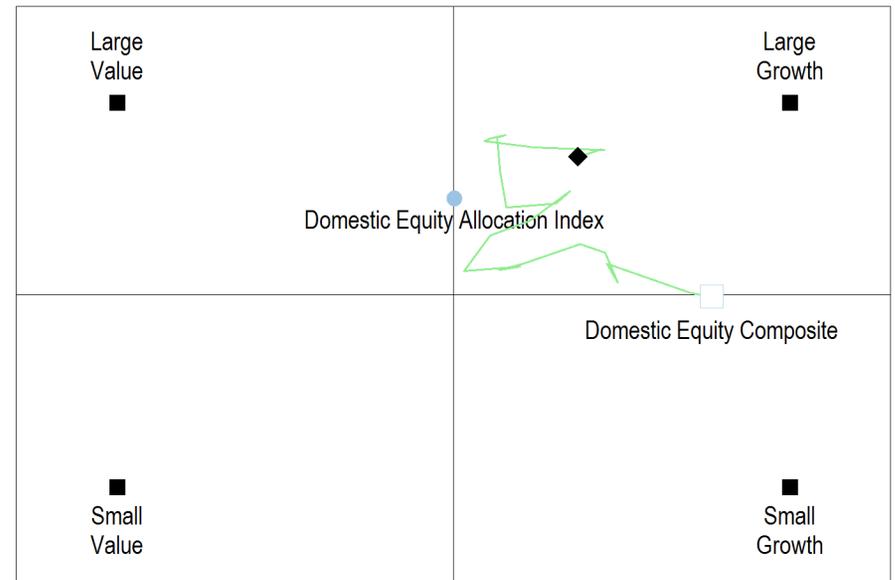
Domestic Equity Composite

3 Year Risk Return



- Domestic Equity Composite
- ◆ Domestic Equity Allocation Index
- 68% Confidence Interval
- eA All US Equity Gross

3 Year Style Map



- First Rolling Period
- ◆ Last Rolling Period

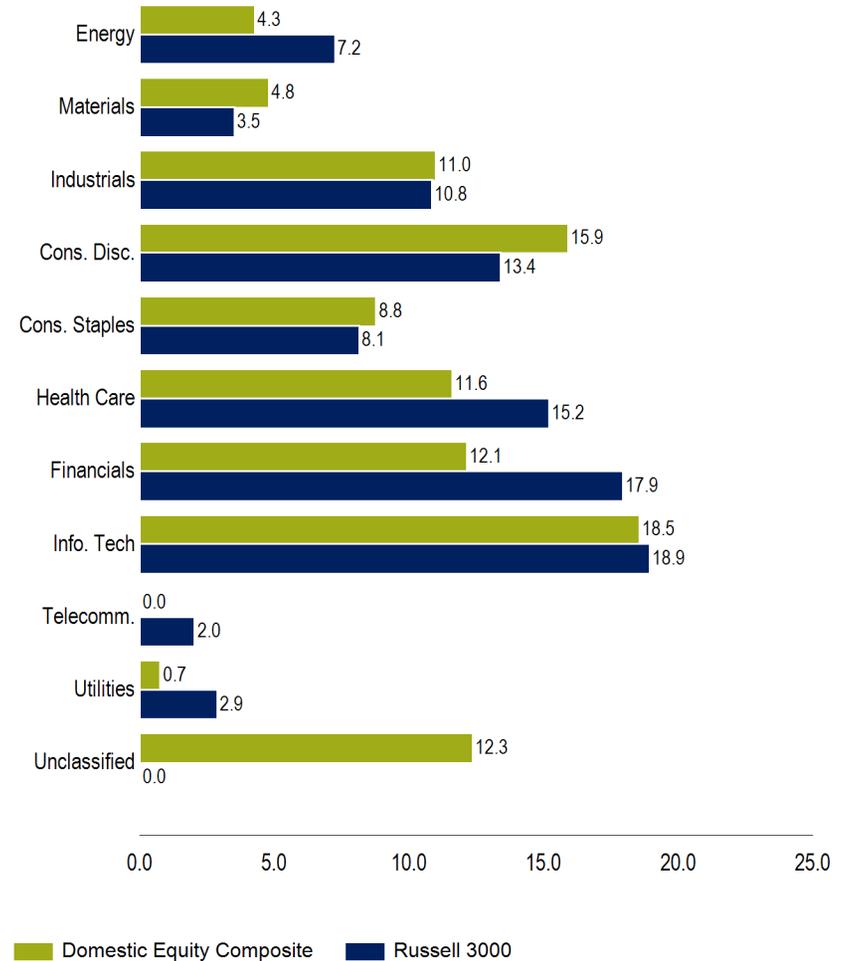
Style Analysis: Analytic is based on historical returns

Domestic Equity Composite

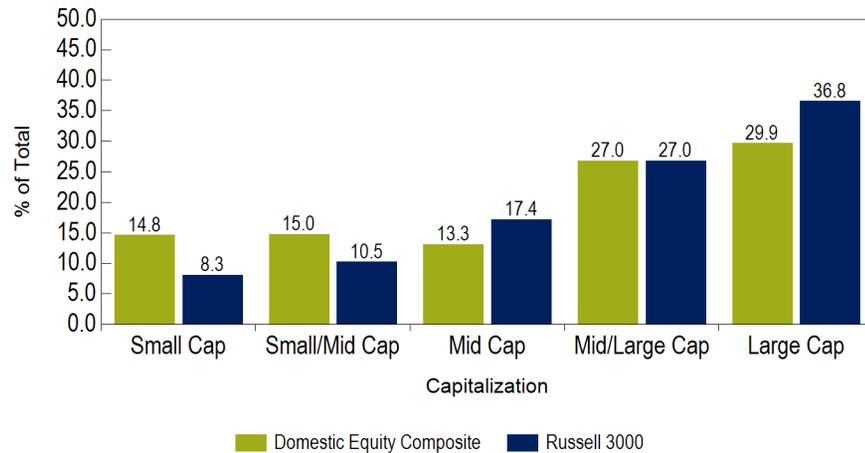
Characteristics

	Portfolio	Russell 3000
Number of Holdings	258	3,005
Weighted Avg. Market Cap. (\$B)	77.2	103.2
Median Market Cap. (\$B)	3.7	1.6
Price To Earnings	24.9	22.8
Price To Book	4.7	3.9
Price To Sales	3.3	3.0
Return on Equity (%)	19.5	17.2
Yield (%)	1.2	1.9
Beta	1.0	1.0
R-Squared	1.0	1.0

Equity Sector Allocation



Market Capitalization
As of June 30, 2015



City of Hartford Municipal Employees Retirement Fund

Domestic Equity Composite

Top Ten Holdings

SSGA RUSSELL 3000 INDEX NON-LENDING	7.9%
CASH - USD	4.3%
GOOGLE 'C'	2.5%
LIBERTY GLOBAL SR.C	2.3%
ORACLE	2.2%
ECOLAB	1.7%
COCA COLA	1.7%
BERKSHIRE HATHAWAY 'B'	1.7%
CITIGROUP	1.7%
AON CLASS A	1.6%

Top Positive Contributors

	Relative Contribution %	Return %
AGCO	0.2%	19.5%
CENTENE	0.1%	13.7%
GILEAD SCIENCES	0.1%	19.7%
VALEANT PHARMS. (NYS) INTL.	0.1%	11.8%
ALTERA	0.1%	19.8%
TIDEWATER	0.1%	20.0%
MONDELEZ INTERNATIONAL CL.A	0.1%	14.4%
DEALERTRACK TECHNOLOGIES	0.1%	63.0%
STARBUCKS	0.1%	13.6%
MORGAN STANLEY	0.1%	9.1%

Top Negative Contributors

	Relative Contribution %	Return %
ADT	-0.2%	-18.7%
MURPHY USA	-0.1%	-22.9%
TRINITY INDUSTRIES	-0.1%	-25.4%
ORACLE	-0.1%	-6.3%
NOBLE ENERGY	-0.1%	-12.4%
MICHAEL KORS HOLDINGS	-0.1%	-36.0%
JP MORGAN CHASE & CO.	-0.1%	12.6%
TIMKEN	-0.1%	-12.7%
GOOGLE 'C'	-0.1%	-4.8%
WHOLE FOODS MARKET	-0.1%	-23.8%

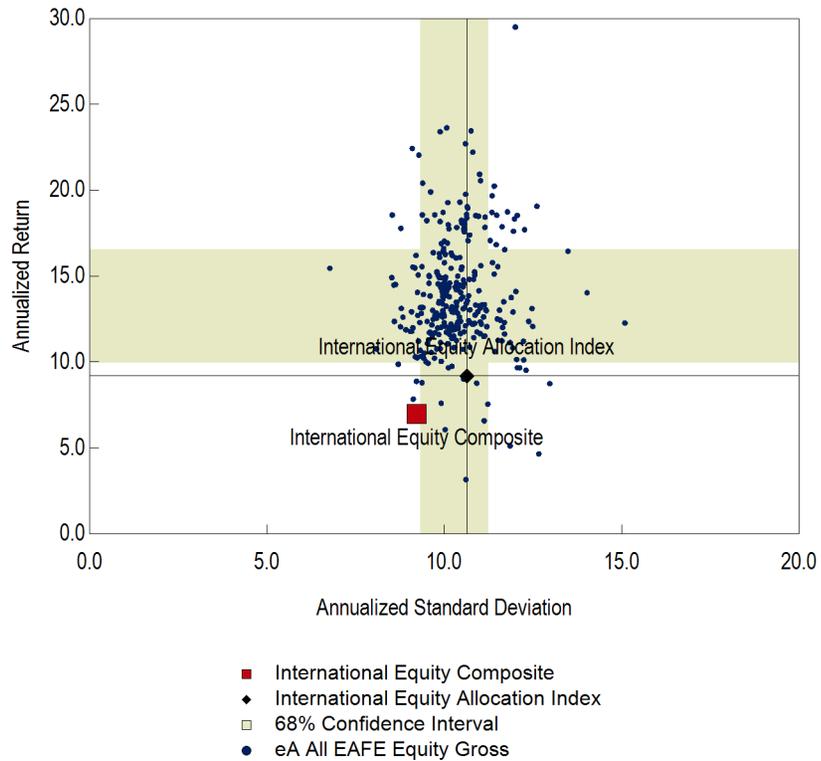
Equity Sector Attribution

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.2%	0.3%	0.1%	-0.1%	1.7%	-1.9%	4.7%	7.3%			
Materials	-0.1%	-0.1%	0.0%	0.0%	-2.4%	-1.0%	5.2%	3.6%			
Industrials	-0.1%	-0.1%	0.0%	0.0%	-3.2%	-2.5%	12.5%	11.3%			
Cons. Disc.	-0.2%	-0.2%	0.1%	-0.1%	-0.2%	1.4%	18.4%	13.2%			
Cons. Staples	0.0%	0.0%	0.0%	0.0%	-1.3%	-1.8%	9.4%	8.4%			
Health Care	0.4%	0.5%	-0.1%	-0.1%	6.8%	3.3%	12.3%	14.5%			
Financials	0.2%	0.4%	0.0%	-0.1%	3.2%	1.1%	13.0%	17.7%			
Info. Tech	-0.1%	-0.1%	0.0%	0.0%	-0.1%	0.2%	19.3%	19.0%			
Telecomm.	0.0%	--	0.0%	--	--	1.3%	0.0%	2.0%			
Utilities	0.1%	-0.1%	0.2%	0.1%	-8.9%	-6.3%	0.7%	3.0%			
Cash	0.0%	0.0%	0.0%	0.0%	0.0%	--	4.5%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	2.0%	--	0.1%	0.0%			
Portfolio	0.5%	=	0.7%	+	0.1%	+	-0.3%	0.6%	0.1%	100.0%	100.0%

Attribution calculation is based on quarterly buy and hold methodology which does not take into account portfolio turnover and can differ from actual performance.

International Equity Composite

3 Year Risk Return



3 Year Style Analysis



Style Analysis: Analytic is based on historical returns

International Equity Composite

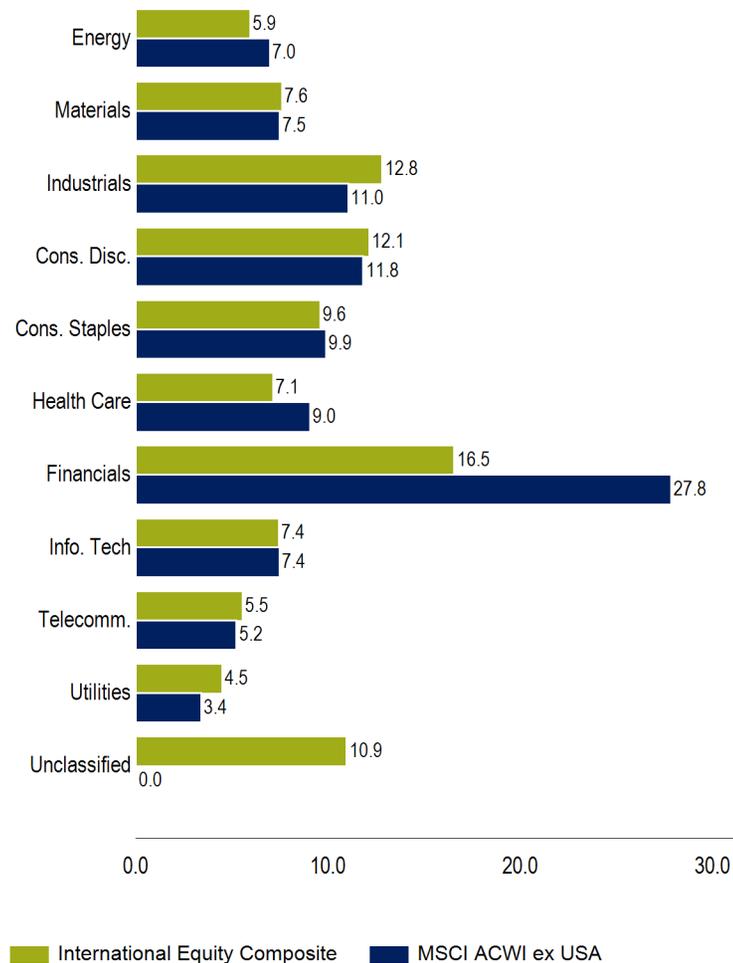
Characteristics

	Portfolio	MSCI ACWI ex USA
Number of Holdings	2,864	1,843
Weighted Avg. Market Cap. (\$B)	32.4	52.2
Median Market Cap. (\$B)	1.1	7.1
Price To Earnings	21.1	20.0
Price To Book	3.7	2.5
Price To Sales	3.1	2.2
Return on Equity (%)	17.9	15.2
Yield (%)	2.7	2.9
Beta	0.9	1.0
R-Squared	0.9	1.0

Regional Allocation

	International Equity Composite	MSCI ACWI ex USA
Region Weighting		
North America ex U.S.	1.56	6.65
United States	11.94	0.00
Europe Ex U.K.	16.24	31.83
United Kingdom	6.38	14.58
Pacific Basin Ex Japan	9.13	8.37
Japan	11.54	16.35
Emerging Markets	38.96	21.57
Other	4.25	0.65

Equity Sector Allocation



City of Hartford Municipal Employees Retirement Fund

International Equity Composite

Top Ten Holdings		Top Positive Contributors		Top Negative Contributors			
			Relative Contribution %	Return %		Relative Contribution %	Return %
CASH - USD	6.5%	GRUPO TELEVISA SPN.ADR 1:5	0.1%	17.9%	HYUNDAI MOBIS	-0.1%	-14.5%
DAILY MSCI EAFE INDX NL FUND ZV31NON	2.9%	BG GROUP	0.1%	36.5%	BANK RAKYAT INDONESIA	-0.1%	-23.5%
CHINA MOBILE	1.3%	CHINA RES.POWER HDG.	0.1%	14.8%	FANUC	-0.1%	-6.4%
SPDR GOLD SHARES	1.3%	BAJAJ AUTO	0.1%	23.9%	TENAGA NASIONAL	-0.1%	-13.0%
KEYENCE	1.2%	SYNGENTA	0.1%	23.6%	BANK MANDIRI	-0.1%	-21.0%
FANUC	1.2%	YUM! BRANDS	0.1%	15.0%	FIBRA UNO ADMINISTRACION REIT	-0.1%	-9.2%
DANONE	0.9%	BERKELEY GROUP HDG.(THE)	0.1%	34.3%	CAIRN INDIA	-0.1%	-16.6%
NESTLE 'R'	0.8%	CIELO ON	0.1%	18.4%	DAITO TST.CONSTRUCTION	0.0%	-7.4%
TAIWAN SEMICON.MNFG.	0.8%	EXPERIAN	0.1%	11.5%	GRUPO FINANCIERO STDR. MEX.SR.B ADR 1:5	0.0%	-14.7%
AIA GROUP LTD HELD BY HSBC HONG KONG ISIN:HK0000069689 SEDOL:B4TX8S1	0.8%	EMAAR MALLS GROUP ORD	0.1%	14.4%	CHINA CON BANK 'H'	0.0%	15.5%

Equity Sector Attribution									
	Attribution Effects					Returns		Sector Weights	
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark	
Energy	0.1%	0.2%	0.0%	-0.2%	3.4%	2.7%	7.5%	6.9%	
Materials	0.1%	0.2%	0.0%	-0.1%	1.7%	-0.3%	7.0%	7.6%	
Industrials	0.0%	0.0%	0.0%	0.0%	-0.7%	-0.2%	12.4%	11.0%	
Cons. Disc.	0.3%	0.3%	0.0%	0.0%	1.8%	-0.4%	12.7%	11.8%	
Cons. Staples	0.0%	0.0%	0.0%	0.0%	0.8%	0.8%	9.8%	10.0%	
Health Care	0.1%	0.2%	0.1%	-0.2%	0.6%	-0.9%	7.2%	9.3%	
Financials	-0.6%	0.0%	-0.2%	-0.5%	0.5%	2.3%	16.3%	27.2%	
Info. Tech	0.1%	0.1%	0.0%	0.0%	-0.9%	-2.5%	8.1%	7.7%	
Telecomm.	-0.2%	-0.1%	0.0%	-0.1%	0.2%	3.7%	5.9%	5.1%	
Utilities	-0.1%	0.0%	0.0%	-0.1%	-0.5%	1.2%	4.6%	3.4%	
Cash	0.1%	0.0%	0.1%	0.0%	0.0%	--	7.1%	0.0%	
Unclassified	0.0%	0.0%	0.0%	0.0%	-1.1%	--	1.3%	0.0%	
Portfolio	-0.1%	=	1.0%	+	0.0%	+	-1.2%	0.6%	0.7%
							100.0%	100.0%	

Attribution calculation is based on quarterly buy and hold methodology which does not take into account portfolio turnover and can differ from actual performance. MSCI ACWI ex USA used for attribution.

City of Hartford Municipal Employees Retirement Fund

International Equity Composite

Country Allocation

Versus MSCI ACWI ex USA - Quarter Ending June 30, 2015

	Manager Allocation (USD)	Index Allocation (USD)	Manager Return (USD)	Index Return (USD)
Americas				
Argentina**	0.2%	0.0%	-13.9%	-13.6%
Brazil*	2.9%	1.6%	5.1%	7.0%
Canada	1.7%	6.8%	-4.8%	-0.7%
Chile*	1.3%	0.3%	-1.8%	-3.0%
Colombia*	0.4%	0.1%	1.8%	3.4%
Mexico*	3.1%	1.0%	-0.7%	0.4%
Peru*	0.6%	0.1%	0.7%	0.8%
United States	2.6%	0.0%	2.6%	0.2%
Total-Americas	12.8%	9.9%	0.6%	0.6%
Europe				
Austria	0.1%	0.1%	-0.6%	2.6%
Belgium	0.1%	0.9%	3.9%	1.1%
Czech Republic*	0.3%	0.0%	7.5%	14.3%
Denmark	0.9%	1.2%	2.4%	2.4%
Finland	0.6%	0.6%	-8.5%	-3.1%
France	6.3%	7.0%	1.1%	1.0%
Germany	2.1%	6.9%	-1.1%	-4.7%
Greece*	0.4%	0.1%	-2.5%	5.6%
Hungary*	0.3%	0.0%	9.1%	11.0%
Ireland	0.0%	0.2%	--	8.5%
Italy	0.2%	1.6%	-8.1%	2.8%
Luxembourg	0.0%	0.0%	8.4%	0.7%
Netherlands	0.4%	1.9%	20.2%	2.3%
Norway	0.1%	0.5%	7.9%	3.9%
Poland*	0.8%	0.3%	-0.8%	-0.4%
Portugal	0.0%	0.1%	--	2.9%
Russia*	1.7%	0.8%	8.4%	7.7%
Spain	0.6%	2.5%	2.0%	-2.1%
Sweden	0.9%	2.2%	-3.1%	-2.4%
Switzerland	4.3%	6.7%	1.4%	1.3%
United Kingdom	7.0%	14.2%	5.7%	2.9%
Total-Europe	27.3%	48.0%	2.6%	0.8%

Country Allocation

Versus MSCI ACWI ex USA - Quarter Ending June 30, 2015

	Manager Allocation (USD)	Index Allocation (USD)	Manager Return (USD)	Index Return (USD)
AsiaPacific				
Australia	1.6%	5.2%	-6.7%	-5.9%
Bangladesh**	0.2%	0.0%	2.5%	-1.7%
China*	4.6%	5.0%	2.9%	7.1%
Hong Kong	5.3%	2.1%	2.2%	5.9%
India*	3.6%	1.6%	-2.0%	-3.4%
Indonesia*	1.6%	0.6%	-15.6%	-13.6%
Japan	12.9%	16.0%	0.6%	3.0%
Korea*	3.6%	3.2%	-2.5%	-3.7%
Malaysia*	2.1%	0.8%	-7.9%	-7.8%
Pakistan**	0.2%	0.0%	10.4%	10.8%
Philippines*	1.2%	0.3%	-4.1%	-4.7%
Singapore	1.5%	1.0%	5.0%	0.0%
Sri Lanka**	0.2%	0.0%	2.5%	0.6%
Taiwan*	4.6%	2.8%	-0.1%	1.2%
Thailand*	1.2%	0.5%	-1.0%	-3.4%
Total-AsiaPacific	44.3%	39.2%	-0.7%	0.8%
Other				
Bahrain**	0.2%	0.0%	-1.0%	13.7%
Bulgaria**	0.0%	0.0%	-8.4%	-7.9%
Croatia**	0.2%	0.0%	8.1%	5.8%
Egypt*	0.4%	0.1%	-8.1%	-6.1%
Estonia**	0.0%	0.0%	-0.2%	-2.1%
Israel	0.1%	0.4%	0.5%	-1.2%
Jordan**	0.2%	0.0%	6.0%	5.1%
Kazakhstan**	0.3%	0.0%	-11.5%	-8.6%
Kenya**	0.2%	0.0%	-10.5%	-10.9%
Kuwait**	0.4%	0.0%	-1.6%	-1.4%
Lebanon**	0.1%	0.0%	-1.1%	2.8%
Mauritius**	0.2%	0.0%	9.0%	9.6%
Morocco**	0.2%	0.0%	-2.2%	-4.4%
Nigeria**	0.2%	0.0%	6.7%	4.9%
Oman**	0.2%	0.0%	1.8%	4.1%

City of Hartford Municipal Employees Retirement Fund

International Equity Composite

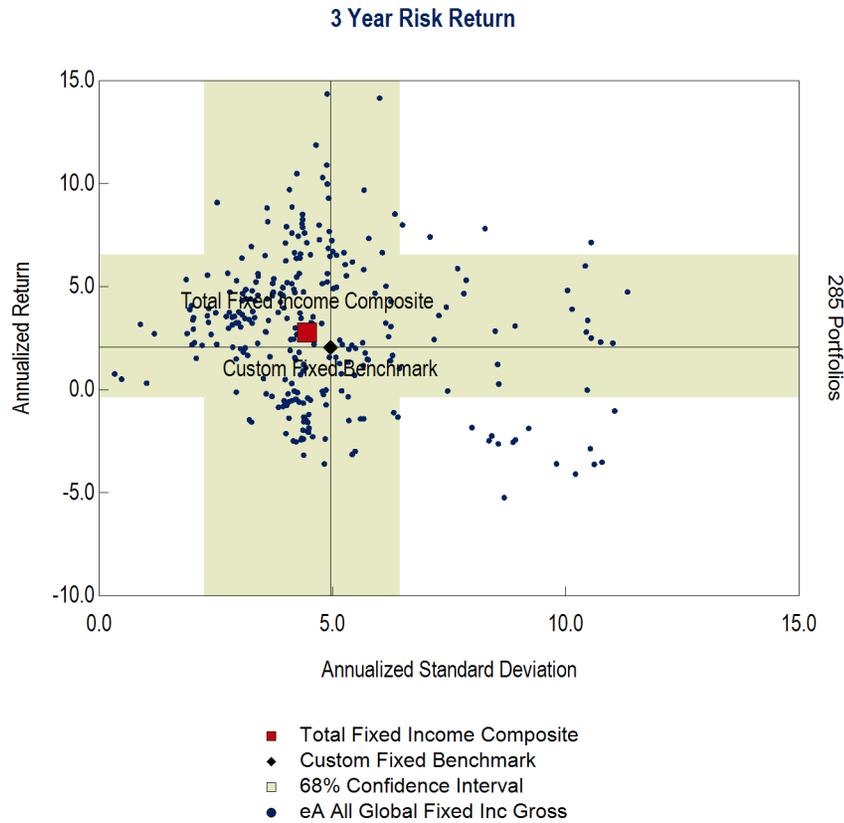
International Equity Performance Attribution

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	-0.6%	2.6%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	3.9%	1.1%	0.1%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	7.5%	14.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Denmark	2.4%	2.4%	0.9%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	-8.5%	-3.1%	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
France	1.1%	1.0%	6.3%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Germany	-1.1%	-4.7%	2.1%	6.9%	0.2%	0.3%	-0.2%	-0.2%	0.3%
Greece*	-2.5%	5.6%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Hungary*	9.1%	11.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ireland	--	8.5%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Italy	-8.1%	2.8%	0.2%	1.6%	-0.2%	0.0%	-0.1%	0.1%	-0.1%
Luxembourg	8.4%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	20.2%	2.3%	0.4%	1.9%	0.3%	0.0%	-0.1%	-0.3%	0.0%
Norway	7.9%	3.9%	0.1%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	-0.8%	-0.4%	0.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Portugal	--	2.9%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Russia*	8.4%	7.7%	1.7%	0.8%	0.0%	0.0%	0.0%	0.0%	0.1%
Spain	2.0%	-2.1%	0.6%	2.5%	0.1%	0.1%	-0.1%	-0.1%	0.0%
Sweden	-3.1%	-2.4%	0.9%	2.2%	0.0%	0.1%	0.0%	0.0%	0.0%
Switzerland	1.4%	1.3%	4.3%	6.7%	0.0%	0.0%	-0.1%	0.0%	0.0%
United Kingdom	5.7%	2.9%	7.0%	14.2%	0.4%	0.1%	-0.4%	-0.2%	-0.1%
Americas									
Argentina**	-13.9%	-13.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Brazil*	5.1%	7.0%	2.9%	1.6%	0.0%	0.1%	0.0%	0.0%	0.1%
Canada	-4.8%	-0.7%	1.7%	6.8%	-0.2%	0.1%	-0.1%	0.2%	-0.1%
Chile*	-1.8%	-3.0%	1.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Colombia*	1.8%	3.4%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Mexico*	-0.7%	0.4%	3.1%	1.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Peru*	0.7%	0.8%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United States	2.6%	0.2%	2.6%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%

International Equity Performance Attribution

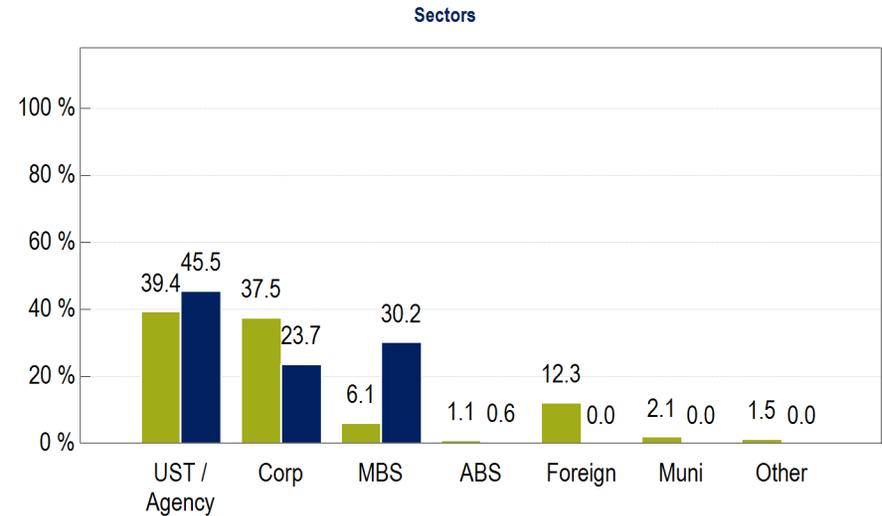
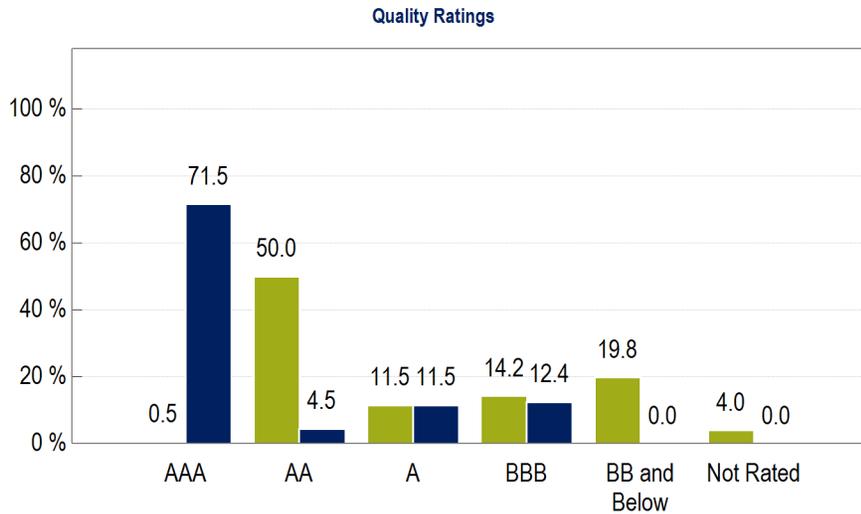
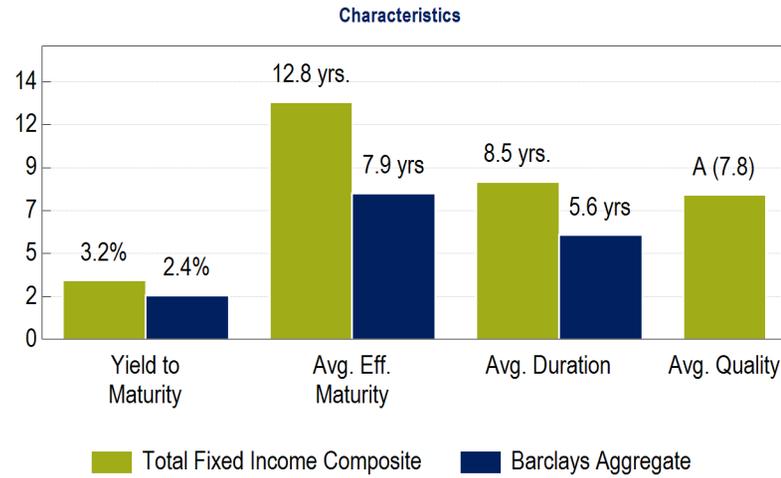
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	-6.7%	-5.9%	1.6%	5.2%	0.0%	0.2%	0.0%	0.0%	0.2%
Bangladesh**	2.5%	-1.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
China*	2.9%	7.1%	4.6%	5.0%	-0.2%	0.0%	0.0%	0.0%	-0.2%
Hong Kong	2.2%	5.9%	5.3%	2.1%	-0.1%	0.2%	0.0%	-0.1%	0.0%
India*	-2.0%	-3.4%	3.6%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Indonesia*	-15.6%	-13.6%	1.6%	0.6%	0.0%	-0.1%	0.0%	0.0%	-0.2%
Japan	0.6%	3.0%	12.9%	16.0%	-0.4%	-0.2%	0.1%	0.1%	-0.4%
Korea*	-2.5%	-3.7%	3.6%	3.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Malaysia*	-7.9%	-7.8%	2.1%	0.8%	0.0%	-0.1%	0.0%	0.0%	-0.1%
New Zealand	--	-12.7%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Pakistan**	10.4%	10.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Philippines*	-4.1%	-4.7%	1.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	5.0%	0.0%	1.5%	1.0%	0.1%	0.0%	0.0%	0.0%	0.1%
Sri Lanka**	2.5%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Taiwan*	-0.1%	1.2%	4.6%	2.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Thailand*	-1.0%	-3.4%	1.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Other									
Bahrain**	-1.0%	13.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bulgaria**	-8.4%	-7.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Croatia**	8.1%	5.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Egypt*	-8.1%	-6.1%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Estonia**	-0.2%	-2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Israel	0.5%	-1.2%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Jordan**	6.0%	5.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kazakhstan**	-11.5%	-8.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kenya**	-10.5%	-10.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kuwait**	-1.6%	-1.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lebanon**	-1.1%	2.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mauritius**	9.0%	9.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Morocco**	-2.2%	-4.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Total Fixed Income Composite



Style Analysis: Analytic is based on historical returns

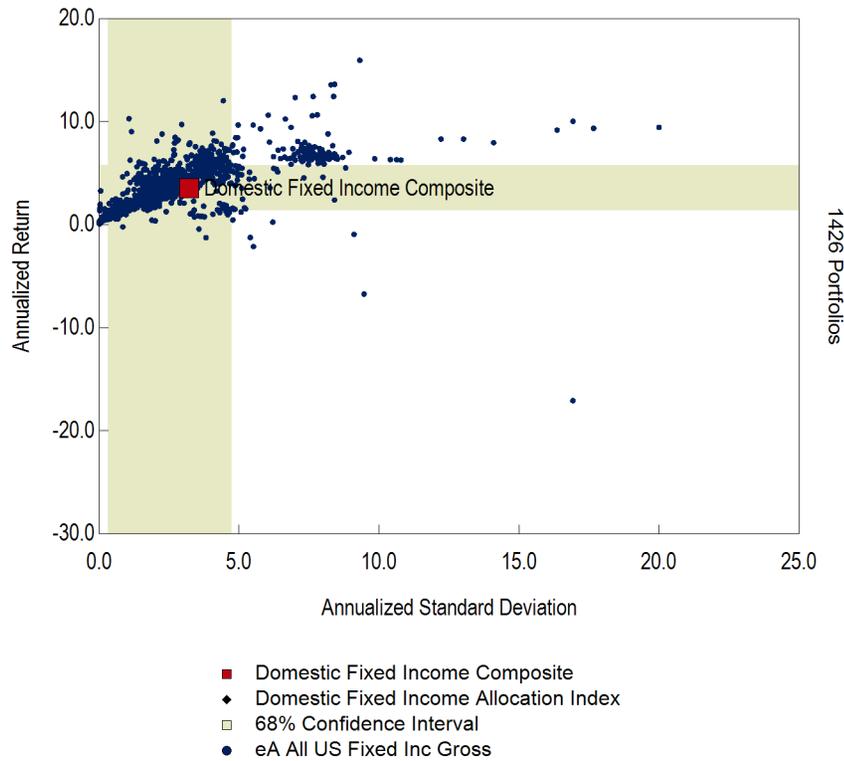
Total Fixed Income Composite



Characteristic, Quality, and Sector information not available for the Custom Fixed Income benchmark

Domestic Fixed Income Composite

2 Year Risk Return

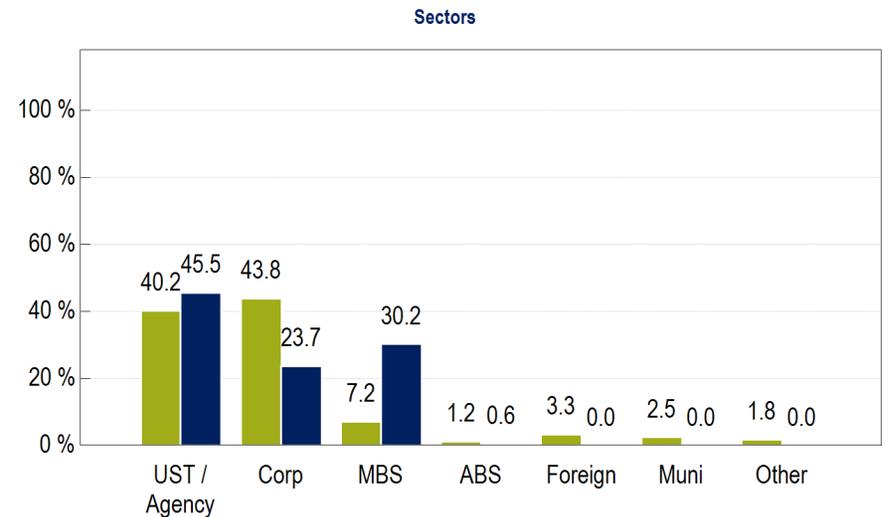
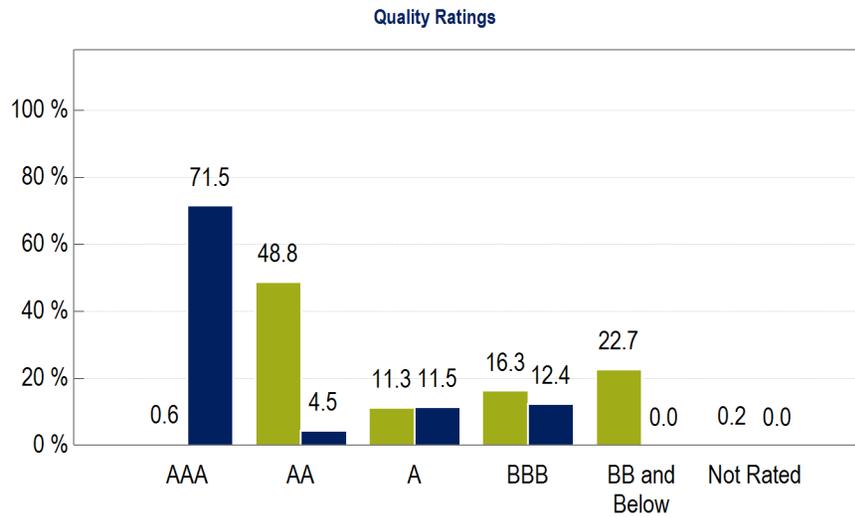
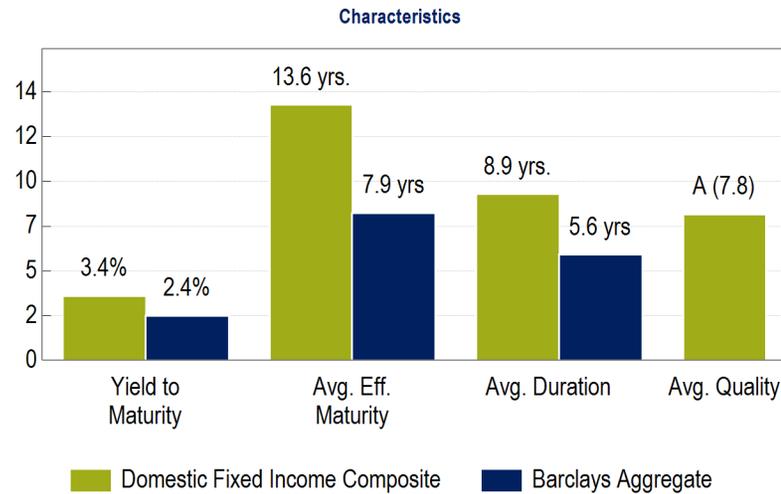


2 Year Style Analysis



Style Analysis: Analytic is based on historical returns

Domestic Fixed Income Composite



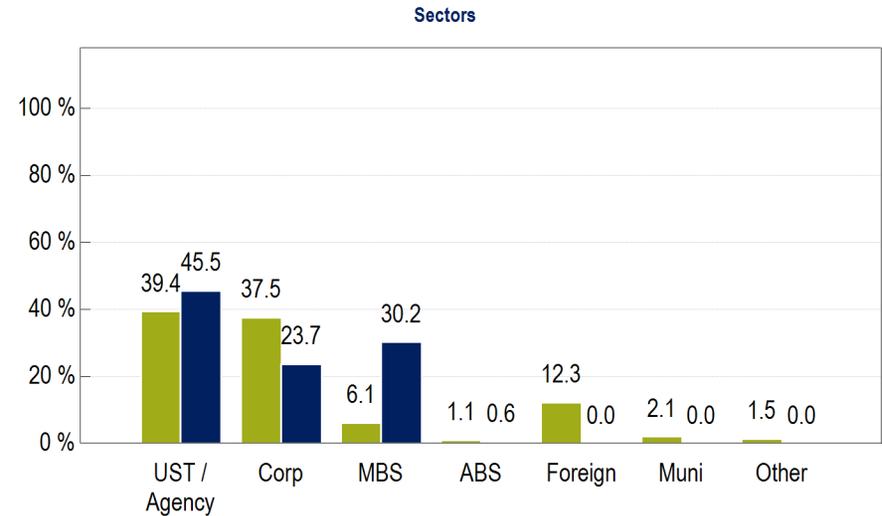
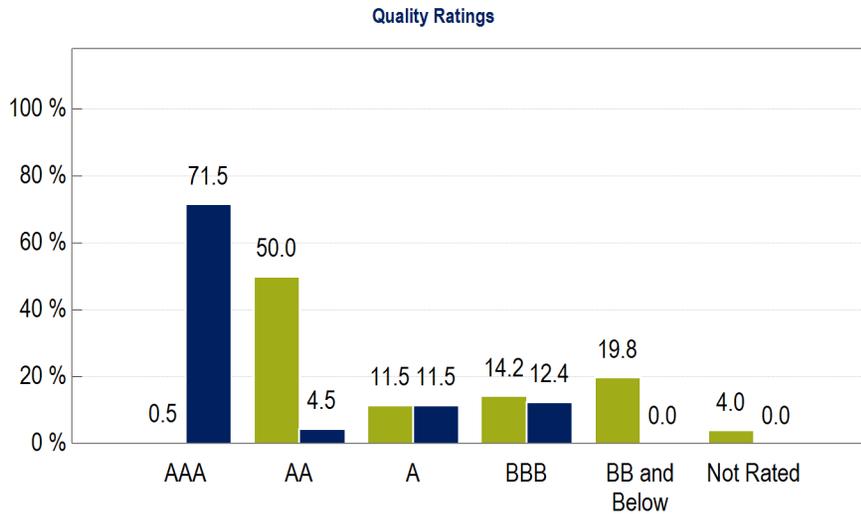
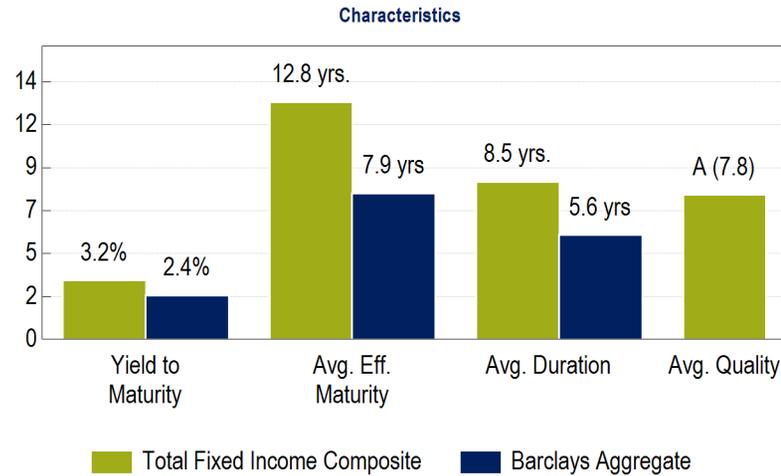
Characteristic, Quality, and Sector information not available for the Custom Domestic Fixed Income benchmark

Total Fixed Income Composite



Style Analysis: Analytic is based on historical returns

Total Fixed Income Composite



Characteristic, Quality, and Sector information not available for the Custom Fixed Income benchmark

Q1 Private Debt





August, 2015

Office of the City Treasurer
City of Hartford
 250 Constitution Plaza, 2nd Floor
 Hartford, CT 06103

RE: Private Markets Strategy – 1st Quarter 2015

Dear Investment Committee Members,

We are pleased to present the March 31, 2015 Private Markets Report for the City of Hartford’s private debt Plan. The report provides a variety of performance analysis for the overall portfolio. The reports include trailing performance, performance by lifecycle, vintage year, and strategy.

The portfolio experienced a positive quarter, earning a nominal IRR of 1.08%. The annualized IRR of the private markets portfolio since inception was 7.96% at quarter end. Since inception, the Total Value to Paid in Capital multiple (current valuation plus cumulative distributions, divided by total capital calls) was 1.12.

The following table presents the status of the private markets portfolio as of March 31, 2015:

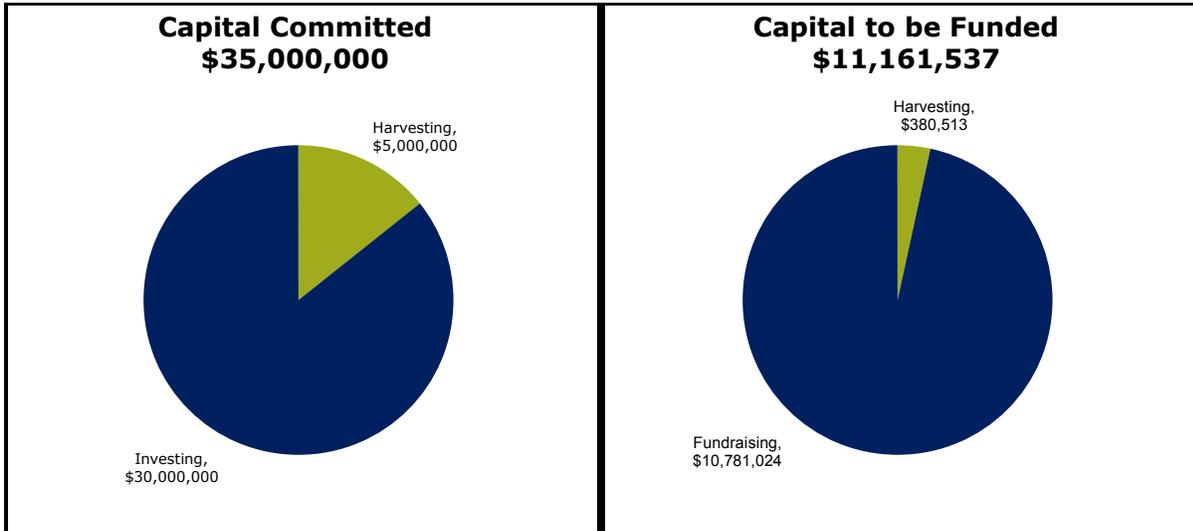
Commitments	Terminated Commitments	Amount Funded	Amount Distributed	Reported Value	Call Ratio	Distribution Ratio
\$35,000,000	\$0	\$23,838,463	\$5,788,871	\$21,539,438	68.11%	24.28%

Unfunded Commitments	Market Exposure (Reported Value + Unfunded Commitments)	Total Fund Composite as of 3/31/2015	Private Debt Target	Reported Value as a % of Total Fund	Market Exposure as a % Total Fund
\$11,161,537	\$32,700,975	\$1,029,411,767	3%	2.09%	3.18%

Total Value (Reported Value + Distributions)	Total Value To Paid In Capital	Internal Rate of Return IRR, Since Inception (Nov. 2010)
\$27,328,309	1.12	7.96%



As of March 31, 2015, the City of Hartford had commitments totaling \$35.0 million to 4 private debt funds. Of the 4 funds, 3 funds are in the investing stage and 1 fund is in the harvesting stage. The following charts illustrate the program's current life cycle:

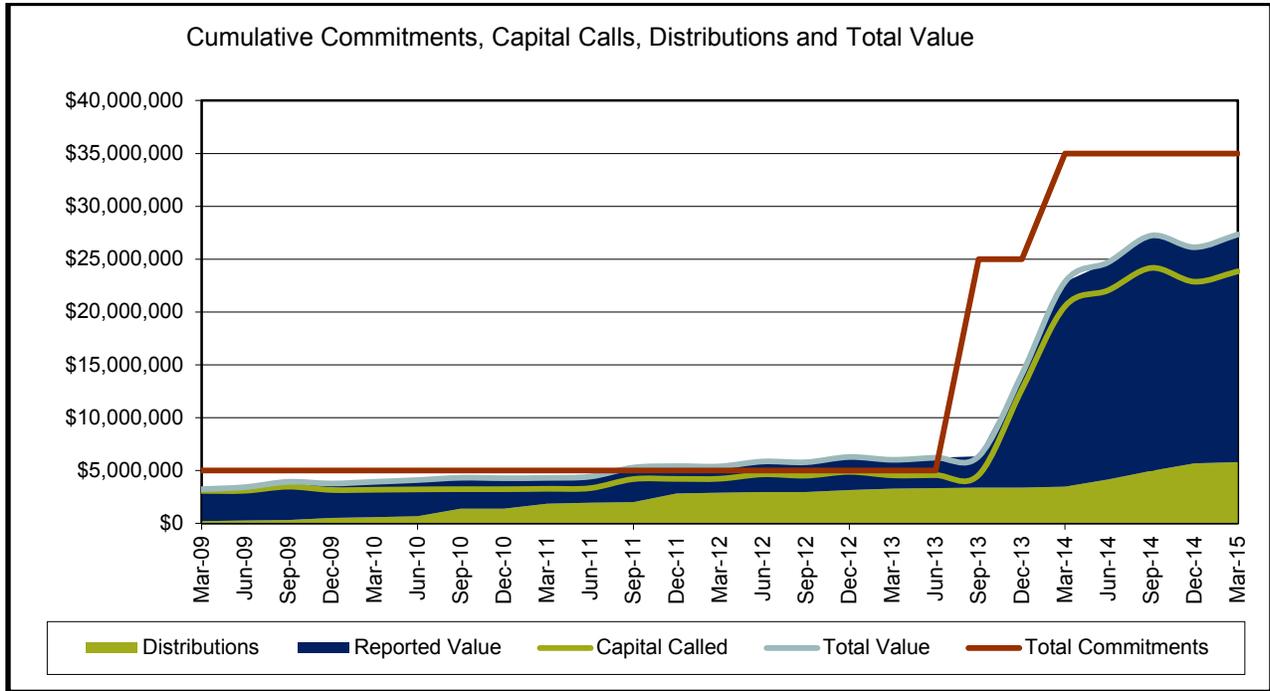


The following chart illustrates the commitment history of the private markets program through the quarter end:

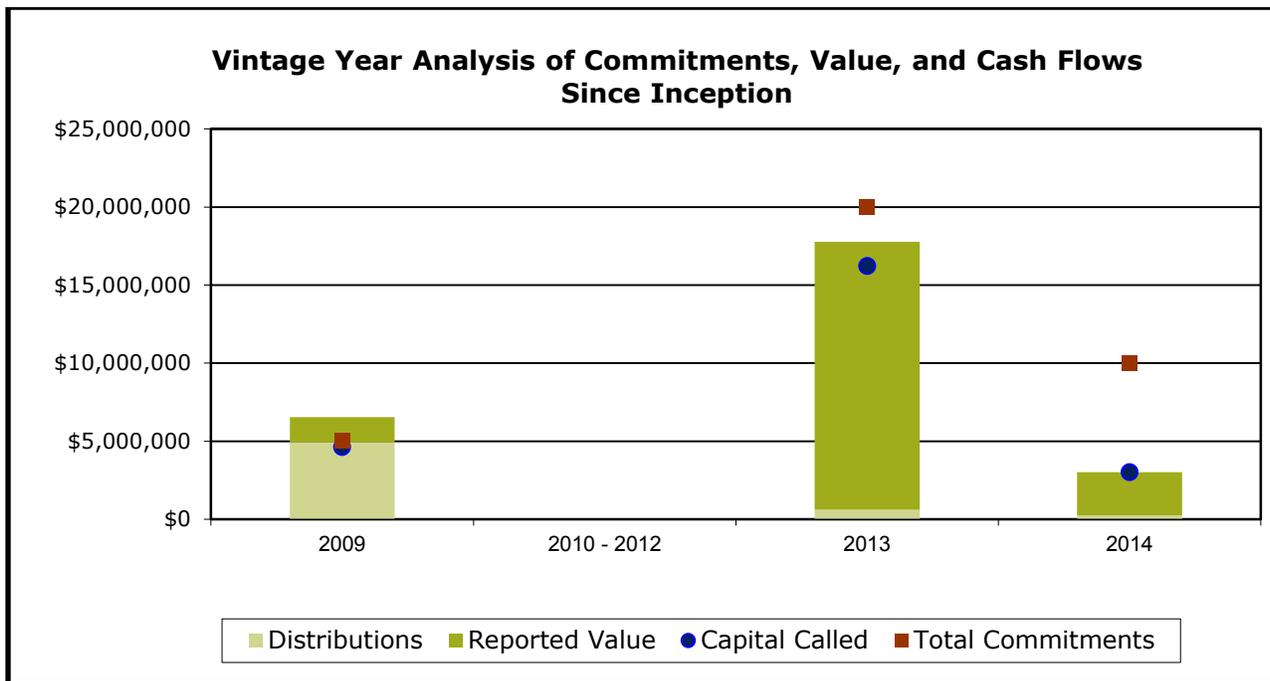




The following chart illustrates the cumulative commitment history, cumulative capital calls, cumulative distributions and reported value:



The following chart provides an analysis of the vintage year performance comparing the capital calls to the distributions and reported value:

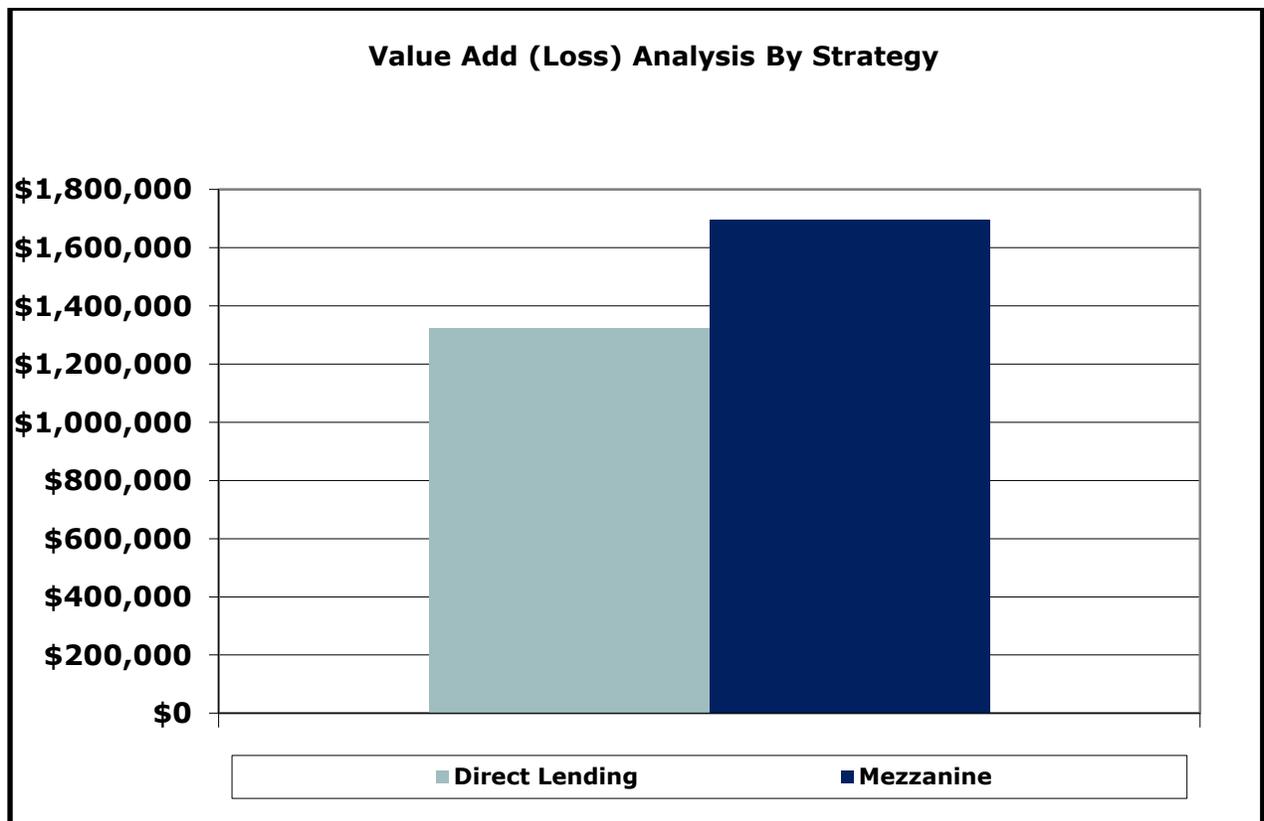




During the quarter, the City of Hartford’s private debt portfolio funded capital calls and expenses for 1 investment and received distributions from 2 investments. The summary of the cash flows follows:

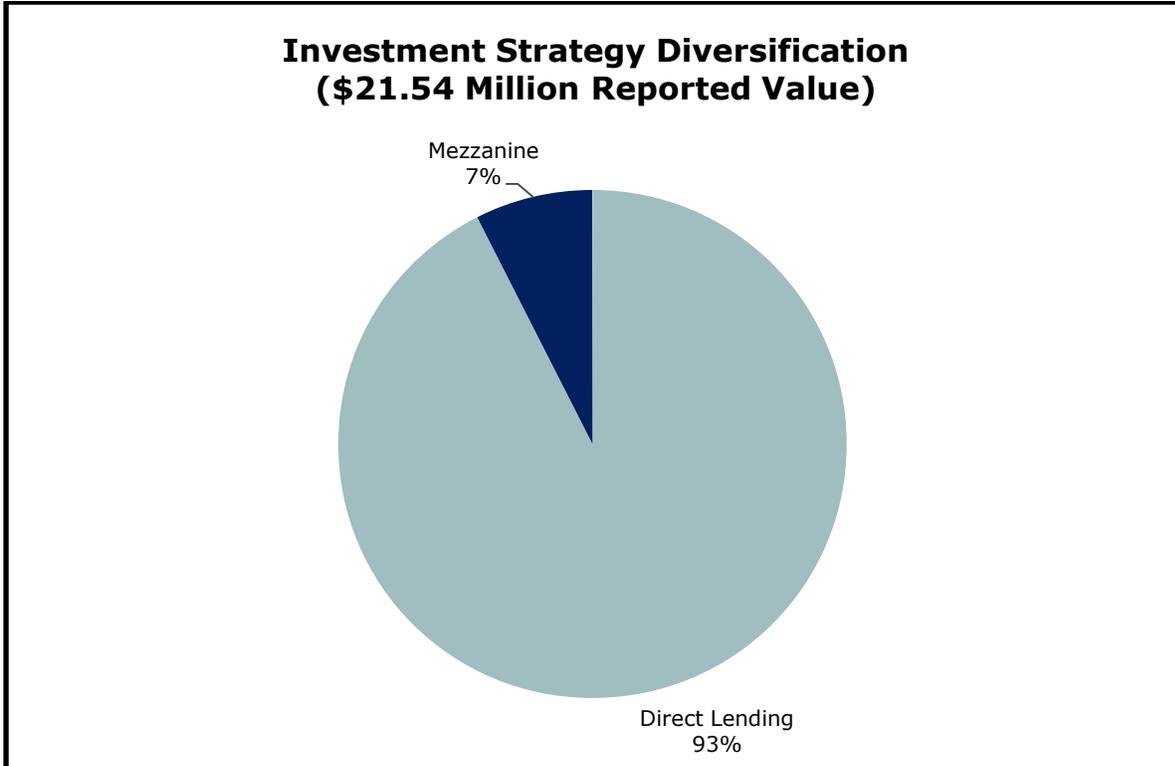
Calls & Expenses Funded for the Quarter	Number of Funds Calling Capital & Expenses	Distributions for the Quarter	Number of Funds Making Distributions	Net Cash/Stock Flows for the Quarter
\$974,616	1	\$114,894	2	\$859,722

Since inception, the private debt program has gained \$3,018,572 in value for the City of Hartford.





As of March 31, 2015, the private debt valuation is as follows:



We thank you for the opportunity to work with the City of Hartford and look forward to continued success in the future.

Best regards,

Kristin Finney-Cooke
Senior Consultant

Doug Moseley
Partner

Q1 Real Estate





August, 2015

Office of the City Treasurer
City of Hartford
 250 Constitution Plaza, 2nd Floor
 Hartford, CT 06103

RE: Real Estate Strategy – 1st Quarter 2015

Dear Investment Committee Members,

We are pleased to present the March 31, 2015 Private Markets Report for the City of Hartford’s real estate Plan. The report provides a variety of performance analysis for the overall portfolio. The reports include trailing performance, performance by lifecycle, vintage year, and strategy.

The portfolio experienced a positive quarter, earning a nominal IRR of 1.69%. The annualized IRR of the private markets portfolio since inception was 5.01% at quarter end. Since inception, the Total Value to Paid in Capital multiple (current valuation plus cumulative distributions, divided by total capital calls) was 1.09.

The following table presents the status of the private markets portfolio as of March 31, 2015:

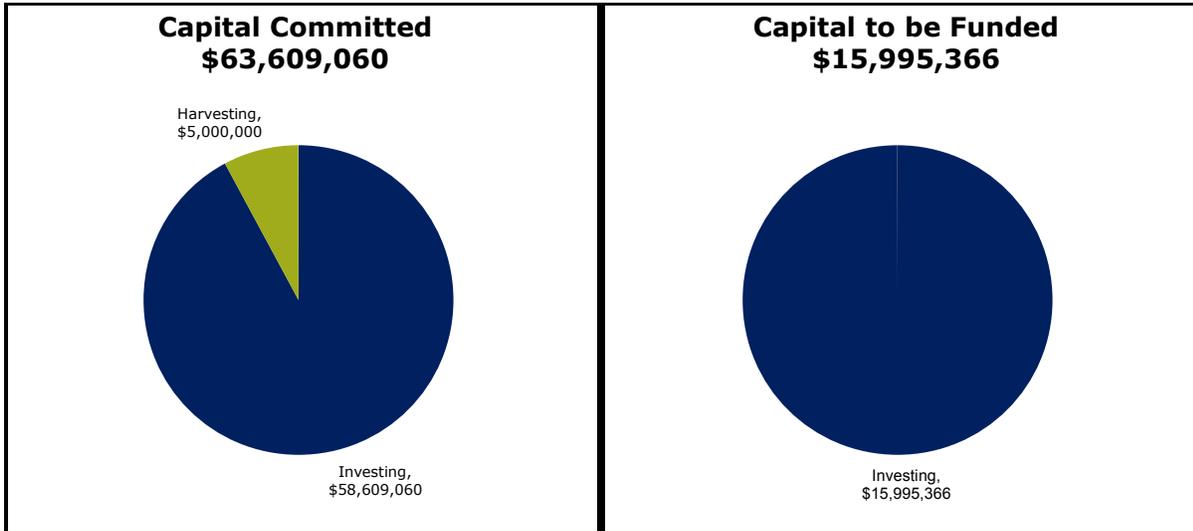
Commitments	Terminated Commitments	Amount Funded	Amount Distributed	Reported Value	Call Ratio	Distribution Ratio
\$63,609,060	\$0	\$47,613,694	\$2,602,730	\$49,207,532	74.85%	5.47%

Unfunded Commitments	Market Exposure (Reported Value + Unfunded Commitments)	Total Fund Composite as of 3/31/2015	Real Estate Target	Reported Value as a % of Total Fund	Market Exposure as a % Total Fund
\$15,995,366	\$65,202,898	\$1,029,411,767	8%	4.78%	6.33%

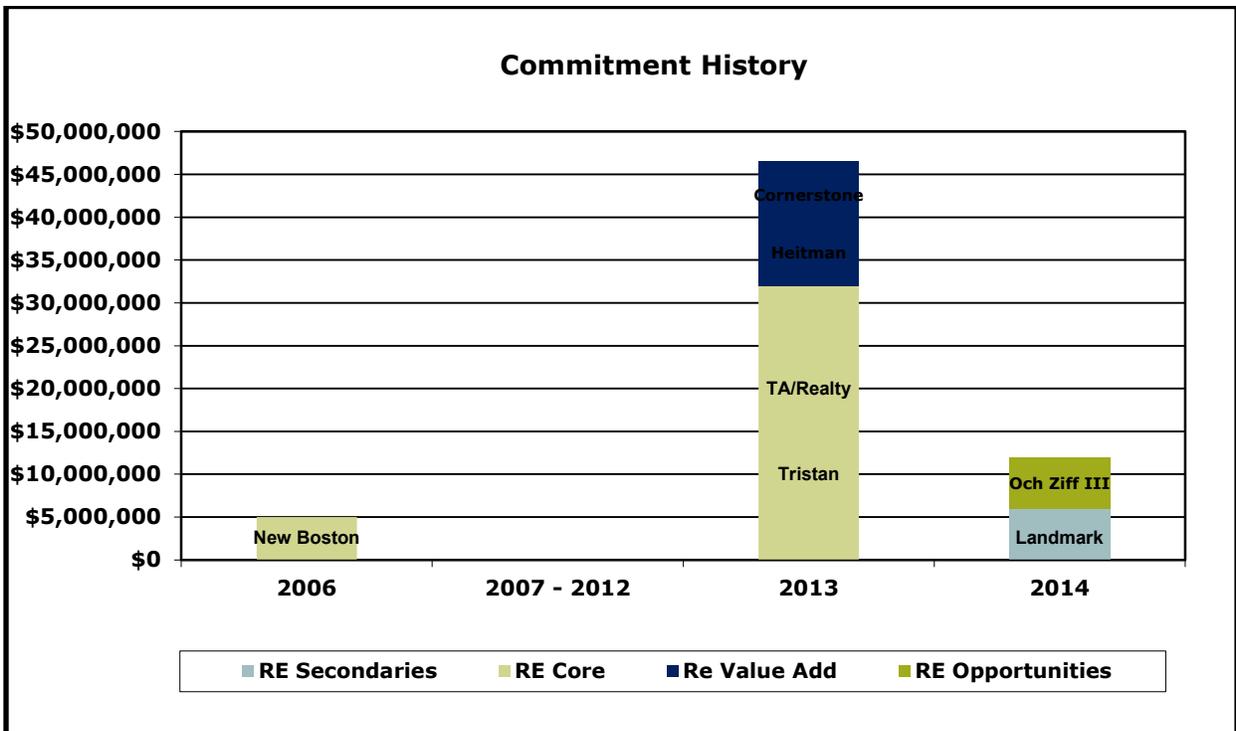
Total Value (Reported Value + Distributions)	Total Value To Paid In Capital	Internal Rate of Return IRR, Since Inception
\$51,810,262	1.09	5.01%



As of March 31, 2015, the City of Hartford had commitments totaling \$63.61 million to 7 real estate funds. Of the 7 funds, 6 are in the investing stage and 1 fund is in the harvesting stage. The following charts illustrate the program's current life cycle:

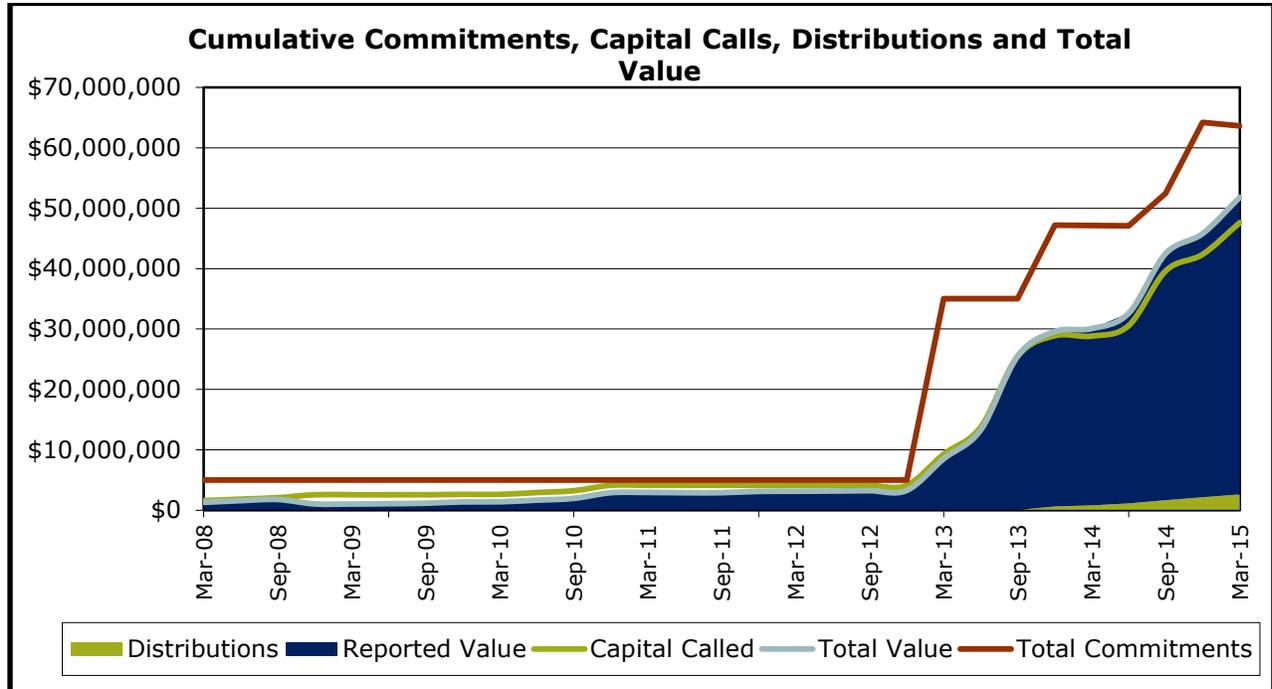


The following chart illustrates the commitment history of the private markets program through the quarter end:

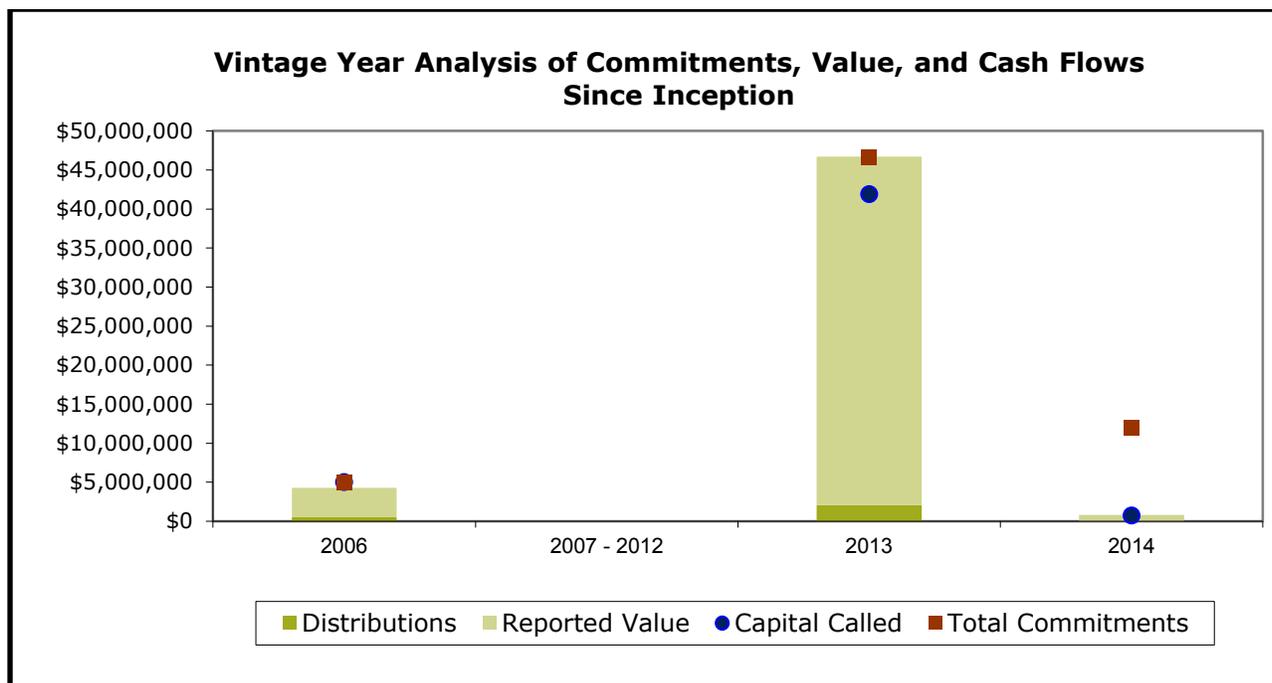




The following chart illustrates the cumulative commitment history, cumulative capital calls, cumulative distributions and reported value:



The following chart provides an analysis of the vintage year performance comparing the capital calls to the distributions and reported value:

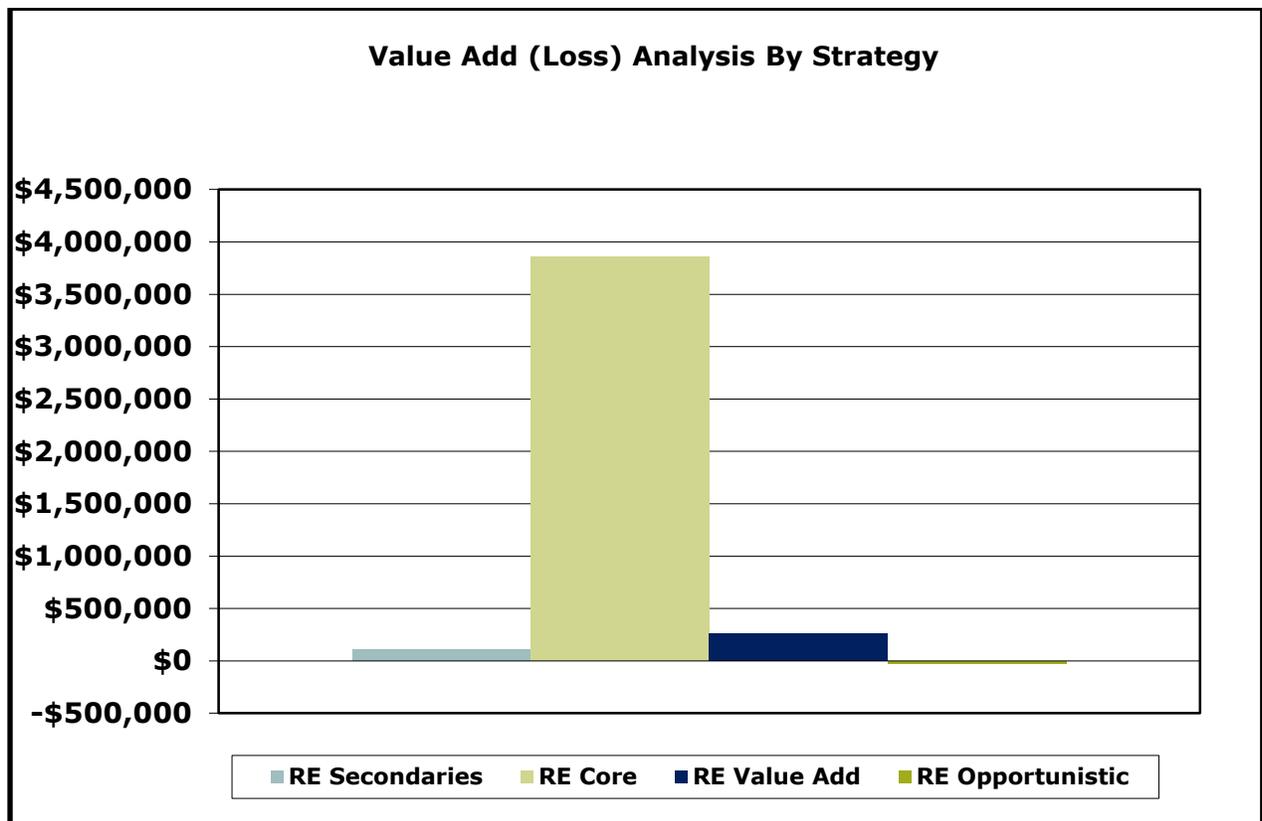




During the quarter, the City of Hartford’s real estate portfolio funded capital calls & expenses for 4 investments and received distributions from 4 investments. The summary of the cash flows follows:

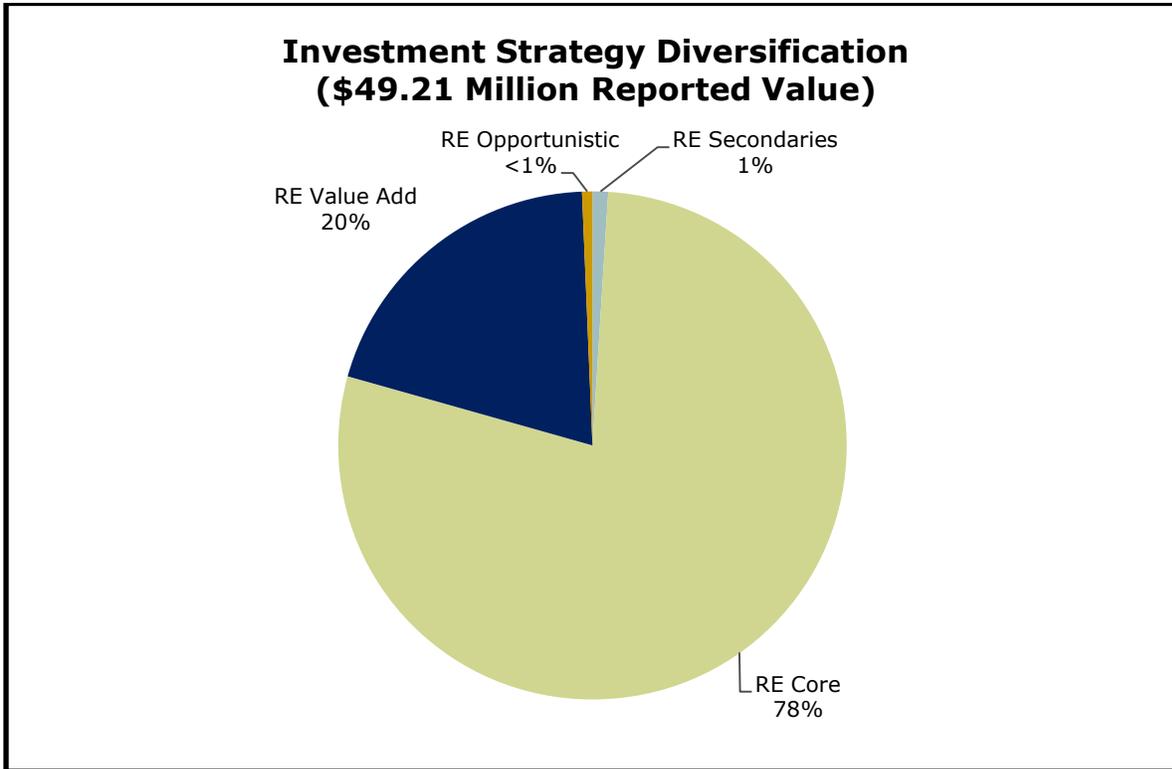
Calls & Expenses Funded for the Quarter	Number of Funds Calling Capital & Expenses	Distributions for the Quarter	Number of Funds Making Distributions	Net Cash/Stock Flows for the Quarter
\$5,242,604	4	\$457,647	4	(\$4,784,957)

Since inception, the real estate program has added \$4,196,568 in value for the City of Hartford. RE Secodaries has gained \$106,306, RE Core has gained \$3,860,191 and RE Value Add has added \$256,099. RE Opportunistic has lost -\$26,028.





As of March 31, 2015, the 7 real estate funds in the real estate portfolio were diversified by investment strategy. The real estate valuation by strategy is as follows:



We thank you for the opportunity to work with the City of Hartford and look forward to continued success in the future.

Best regards,

Kristin Finney-Cooke
Senior Consultant

Doug Moseley
Partner

Appendix



It is important to note the following characteristics of many non-traditional investment strategies including hedge funds and private equity:

1. Performance can be volatile and investors could lose all or a substantial portion of their investment
2. Leverage and other speculative practices may increase the risk of loss
3. Past performance may be revised due to the revaluation of investments
4. These investments can be illiquid, and investors may be subject to lock-ups or lengthy redemption terms
5. A secondary market may not be available for all funds, and any sales that occur may take place at a discount to value
6. These funds are not subject to the same regulatory requirements as registered investment vehicles
7. Managers are not required to provide periodic pricing or valuation information to investors
8. These funds may have complex tax structures and delays in distributing important tax information
9. These funds often charge high fees
10. Limited partnership agreements often give the manager authority to trade in securities, markets or currencies that are not within the manager's realm of expertise or contemplated investment strategy

Glossary of Terms

Alpha - Measures the relationship between the fund performance and the performance of another fund or benchmark index and equals the excess return while the other fund or benchmark index is zero.

Alpha Jensen - The average return on a portfolio over and above that predicted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return. Also known as the abnormal return or the risk adjusted excess return.

Annualized Excess Return over Benchmark - Annualized fund return minus the annualized benchmark return for the calculated return.

Annualized Return - A statistical technique whereby returns covering periods greater than one year are converted to cover a 12 month time span.

Beta - Measures the volatility or systematic risk and is equal to the change in the fund's performance in relation to the change in the assigned index's performance.

Information Ratio - A measure of the risk adjusted return of a financial security, asset, or portfolio.

Formula:
 $(\text{Annualized Return of Portfolio} - \text{Annualized Return of Benchmark}) / \text{Annualized Standard Deviation}(\text{Period Portfolio Return} - \text{Period Benchmark Return})$. To annualize standard deviation, multiply the deviation by the square root of the number of periods per year where monthly returns per year equals 12 and quarterly returns is four periods per year.

R-Squared - Represents the percentage of a fund's movements that can be explained by movements in an index. R-Squared values range from 0 to 100. An R-Squared of 100 denotes that all movements of a fund are completely explained by movements in the index.

Sharpe Ratio - A measure of the excess return or risk premium per unit of risk in an investment asset or trading strategy.

Sortino Ratio - A method to differentiate between good and bad volatility in the Sharpe Ratio. The differentiation of up and down volatility allows the calculation to provide a risk adjusted measure of a security or fund's performance without upward price change penalties.

Formula:
 $\text{Calculation Average } (X-Y) / \text{Downside Deviation } (X-Y) * 2$
Where X=Return Series Y = Return Series Y which is the risk free return (91 day T-bills)

Standard Deviation - The standard deviation is a statistical term that describes the distribution of results. It is a commonly used measure of volatility of returns of a portfolio, asset class, or security. The higher the standard deviation the more volatile the returns are.

Formula:
 $(\text{Annualized Return of Portfolio} - \text{Annualized Return of Risk Free}) / \text{Annualized Standard Deviation (Portfolio Returns)}$

Tracking Error - Tracking error, also known as residual risk, is a measure of the degree to which a portfolio tracks its benchmark. It is also a measure of consistency of excess returns. Tracking error is computed as the annualized standard deviation of the difference between a portfolio's return and that of its benchmark.

Formula:
 $\text{Tracking Error} = \text{Standard Deviation } (X-Y) * \sqrt{\# \text{ of periods per year}}$
Where X = periods portfolio return and Y = the period's benchmark return
For monthly returns, the periods per year = 12
For quarterly returns, the periods per year = 4

Treynor Ratio - A risk-adjusted measure of return based on systematic risk. Similar to the Sharpe ratio with the difference being the Treynor ratio uses beta as the measurement of volatility.

Formula:
 $(\text{Portfolio Average Return} - \text{Average Return of Risk-Free Rate}) / \text{Portfolio Beta}$

Up/Down Capture Ratio - A measure of what percentage of a market's returns is "captured" by a portfolio. For example, if the market declines 10% over some period, and the manager declines only 9%, then his or her capture ratio is 90%. In down markets, it is advantageous for a manager to have as low a capture ratio as possible. For up markets, the higher the capture ratio the better. Looking at capture ratios can provide insight into how a manager achieves excess returns. A value manager might typically have a lower capture ratio in both up and down markets, achieving excess returns by protecting on the downside, whereas a growth manager might fall more than the overall market in down markets, but achieve above-market returns in a rising market.

$\text{Upside Capture} = \text{Total Return}(\text{Fund Returns}) / \text{Total Returns}(\text{BM Return})$ when Period Benchmark Return is $> = 0$

$\text{Downside Capture} = \text{Total Return}(\text{Fund Returns}) / \text{Total Returns}(\text{BM Return})$ when Benchmark < 0

Data Source: InvestorForce

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