

RVKuhns

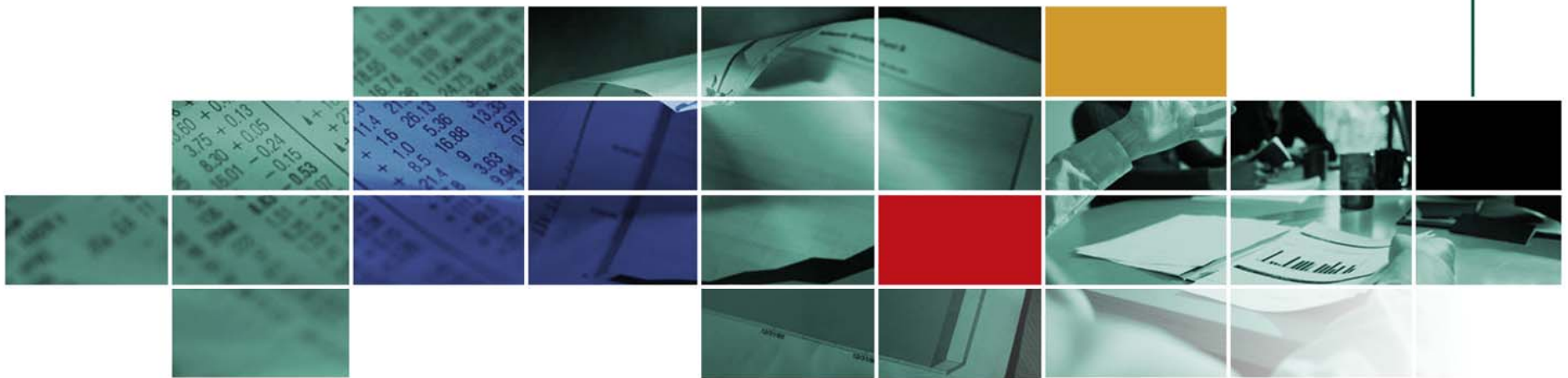
▶▶▶ & ASSOCIATES, INC.

Commonwealth of Pennsylvania State Employees' Retirement System

Quarterly Investment Performance Analysis
March 31, 2013

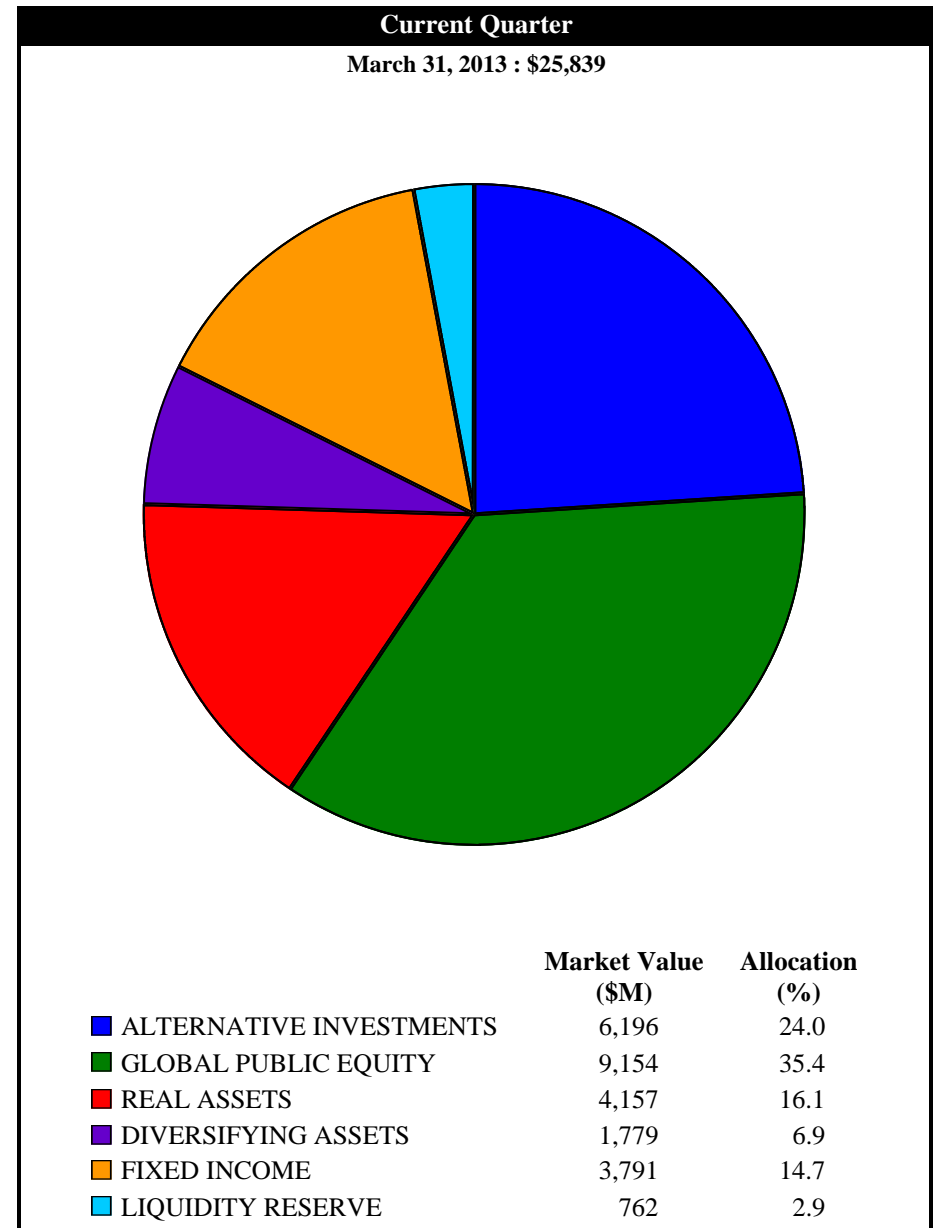
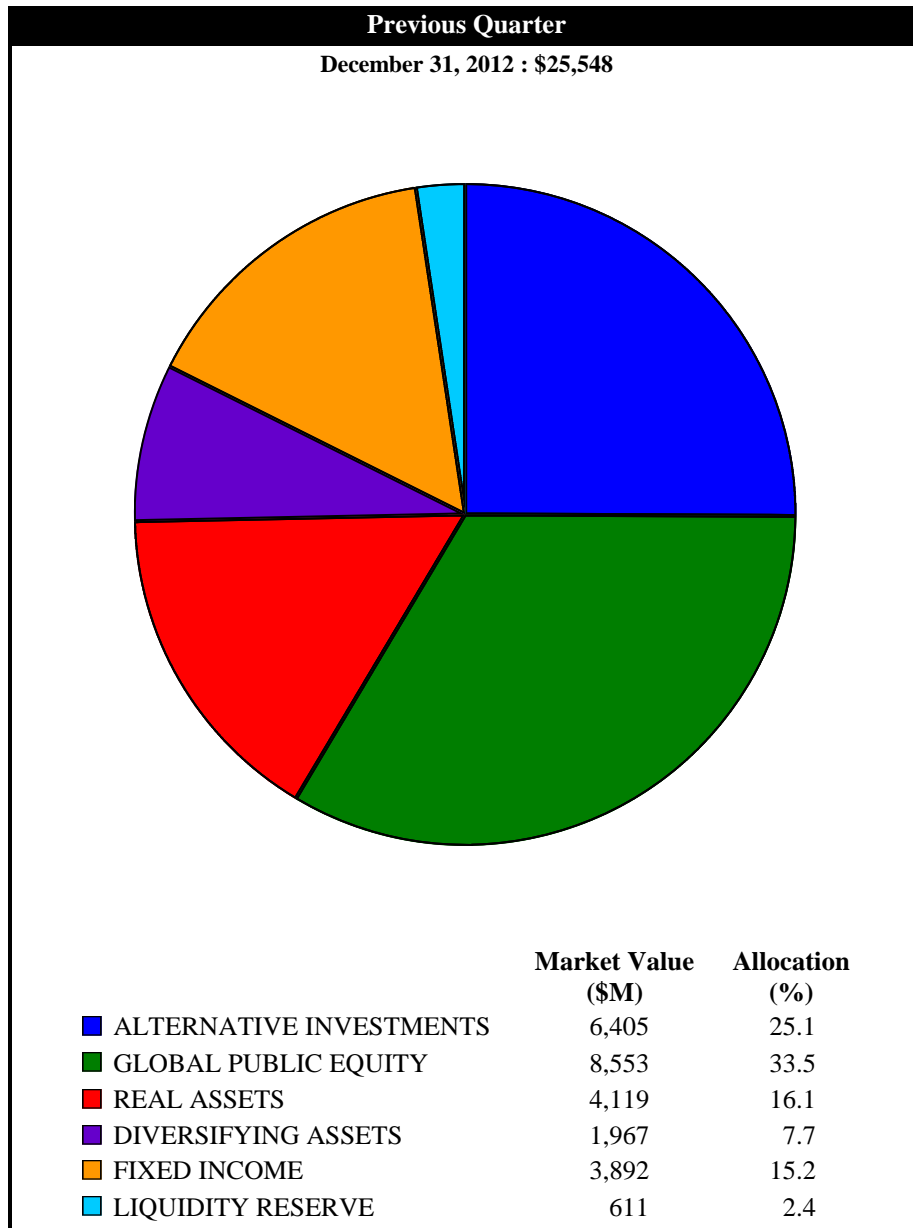
Prepared By:

Robert Palmeri, Anthony Johnson, Jim Voytko
Mikaylee O'Connor, Ian Bray, & Alex Williams



Total Fund Composite

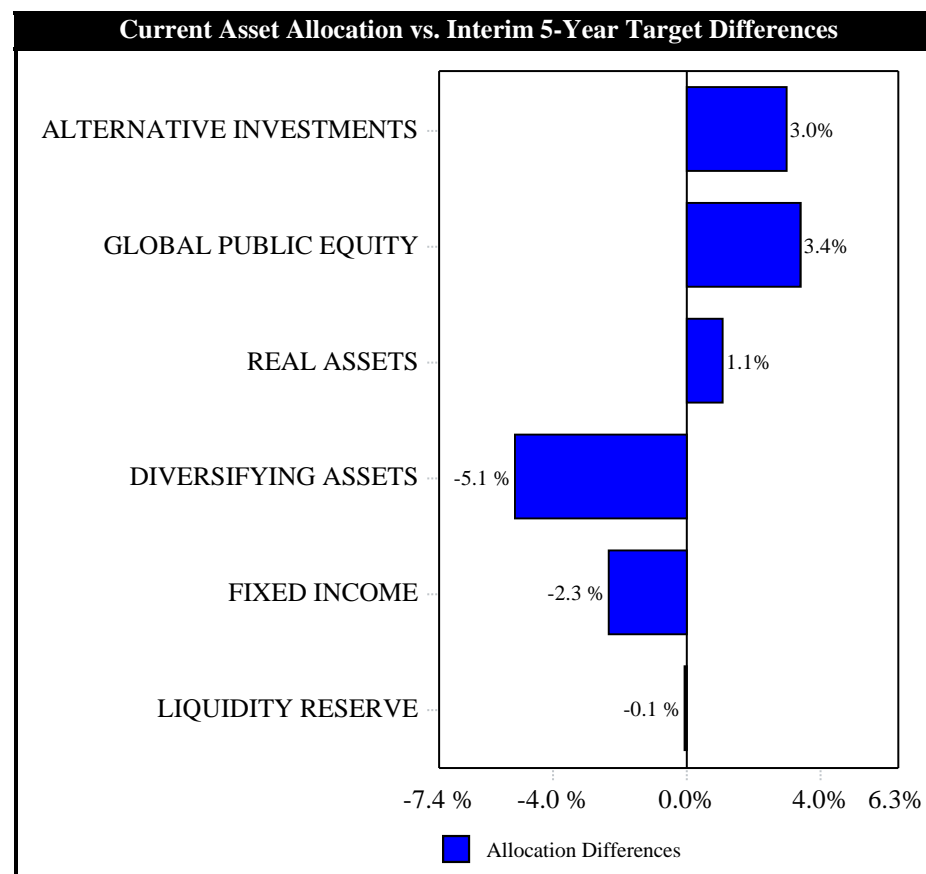
Commonwealth of Pennsylvania State Employees' Retirement System
Asset Allocation by Composite
As of March 31, 2013



Allocations shown may not sum up to 100% exactly due to rounding.

Commonwealth of Pennsylvania State Employees' Retirement System
Asset Allocation vs. Target Allocation & Schedule of Investable Assets
As of March 31, 2013

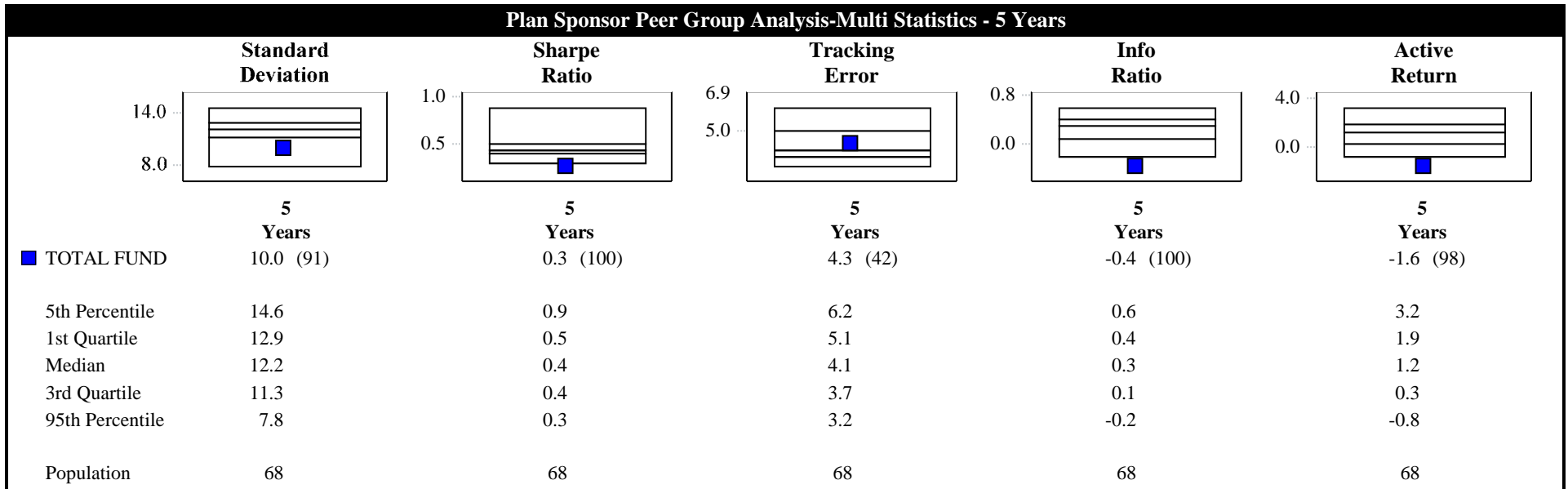
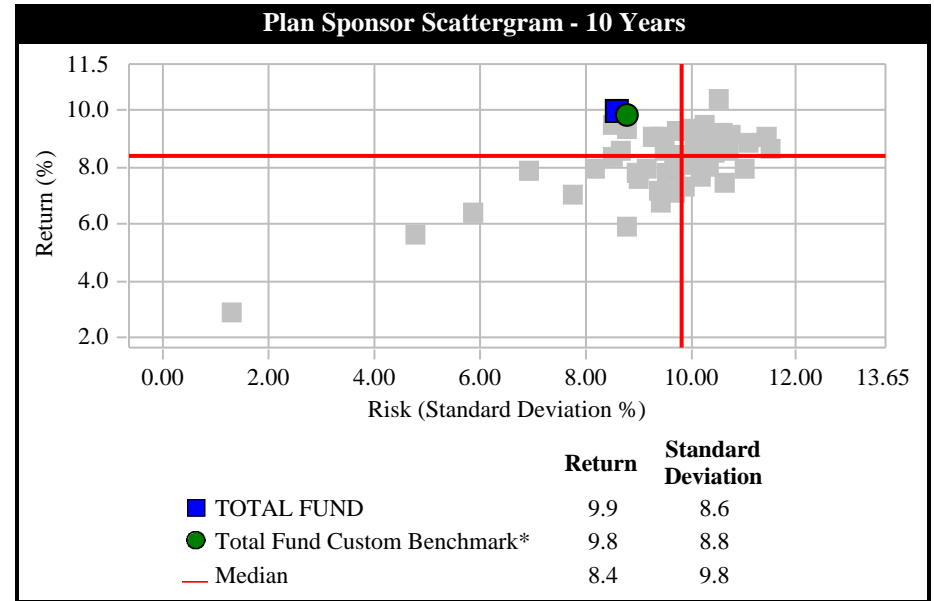
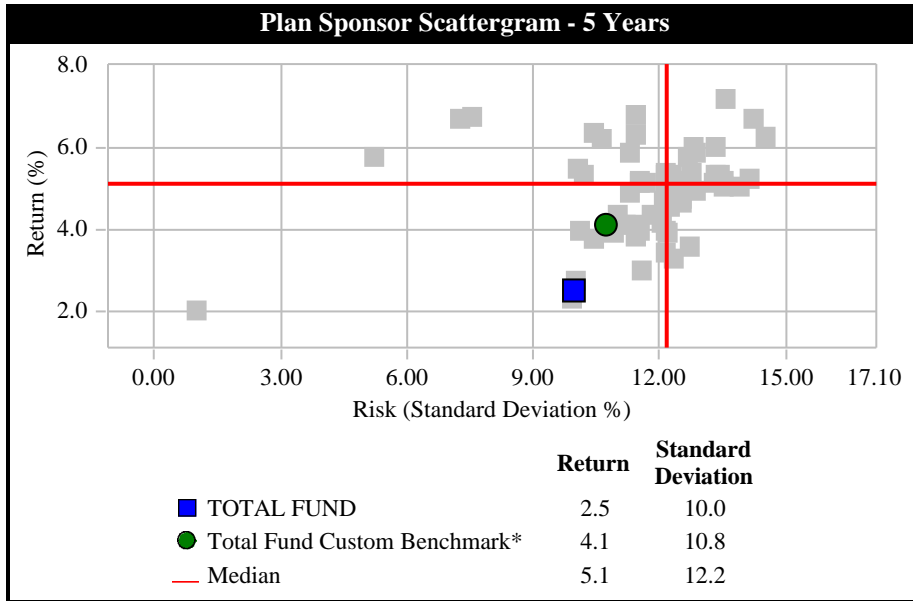
Current Asset Allocation vs. Interim 5-Year Target			
	Market Value (\$M)	Allocation (%)	Target (%)
ALTERNATIVE INVESTMENTS	6,196	24.0	21.0
GLOBAL PUBLIC EQUITY	9,154	35.4	32.0
REAL ASSETS	4,157	16.1	15.0
DIVERSIFYING ASSETS	1,779	6.9	12.0
FIXED INCOME	3,791	14.7	17.0
LIQUIDITY RESERVE	762	2.9	3.0
Total Fund	25,839	100.0	100.0



Schedule of Investable Assets						
Periods Ending	Beginning Market Value (\$M)	Net Cash Flow (\$M)	Gain/Loss (\$M)	Ending Market Value (\$M)	%Return	Unit Value
CYTD	25,548	-635	926	25,839	3.6	103.7

Performance shown is net of fees. Allocations shown may not sum up to 100% exactly due to rounding. Target allocations represent Interim 5-Year Targets which have been updated to reflect Non-Core Real Estate and Private Energy's move to the Real Assets composite from Alternative Investments.

**Commonwealth of Pennsylvania State Employees' Retirement System
TOTAL FUND vs. All Public Plans > \$1B-Total Fund
As of March 31, 2013**



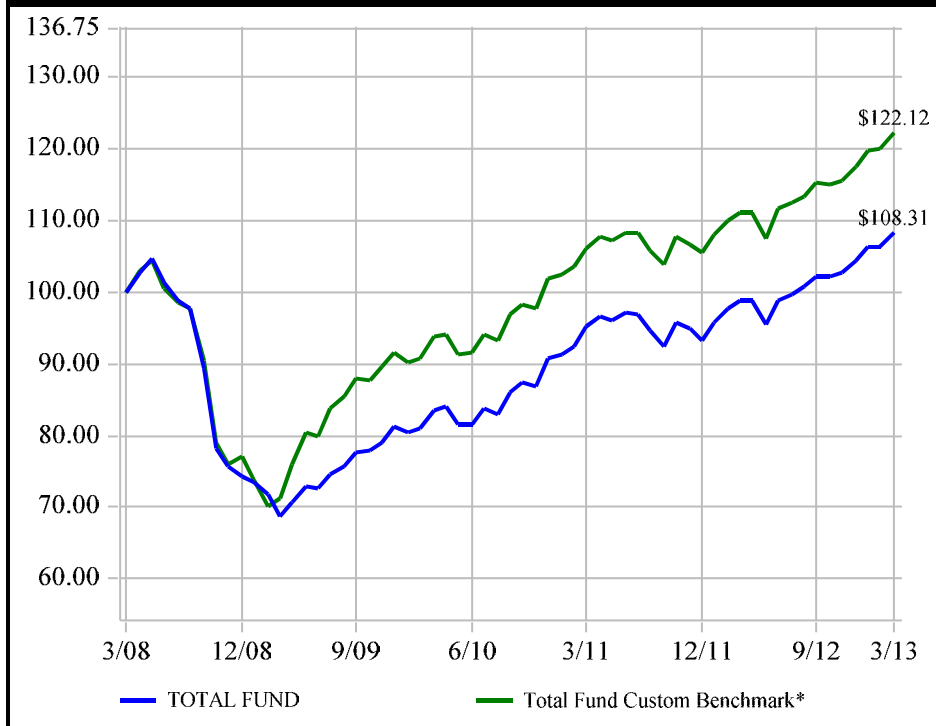
Performance shown is gross of fees. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks. An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index.

Commonwealth of Pennsylvania State Employees' Retirement System
TOTAL FUND Statistics
As of March 31, 2013

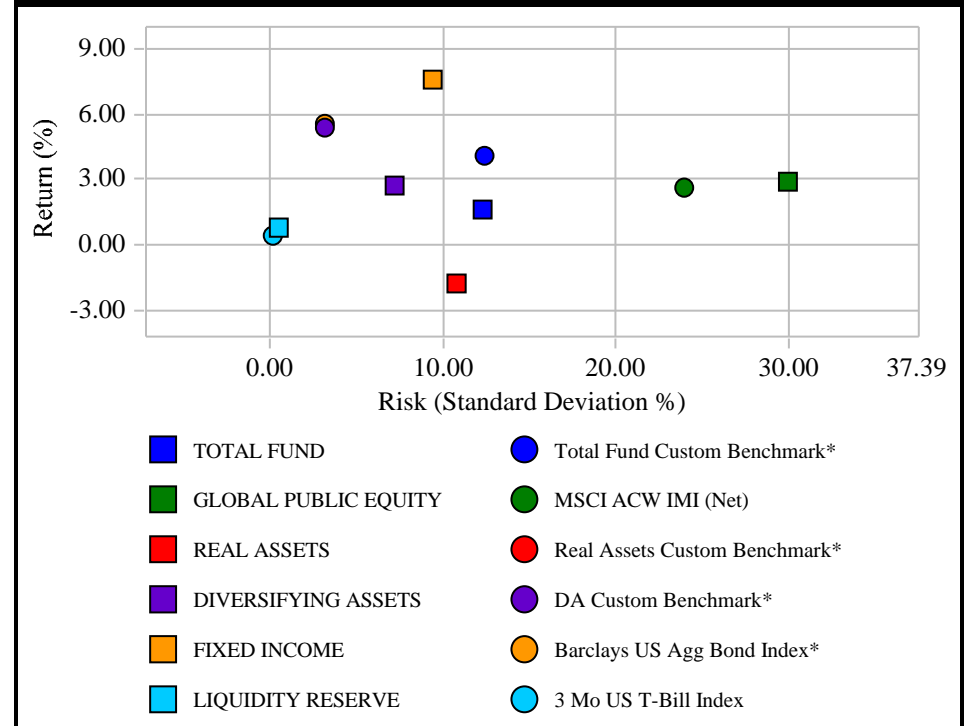
Plan Sponsor Peer Group Analysis - All Public Plans > \$1B-Total Fund

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
■ TOTAL FUND (Gross)	3.8 (80)	3.8 (80)	10.3 (53)	9.9 (39)	2.5 (98)	5.2 (57)	9.9 (9)
5th Percentile	6.5	6.5	12.3	11.0	7.2	7.0	10.5
1st Quartile	5.4	5.4	11.2	10.1	5.8	5.8	9.1
Median	4.7	4.7	10.4	9.6	5.1	5.3	8.4
3rd Quartile	3.9	3.9	9.6	8.8	4.3	4.8	7.8
95th Percentile	2.0	2.0	8.3	7.5	3.1	3.9	6.4
Population	72	72	70	69	68	66	60

Growth of \$100 - 5 Years



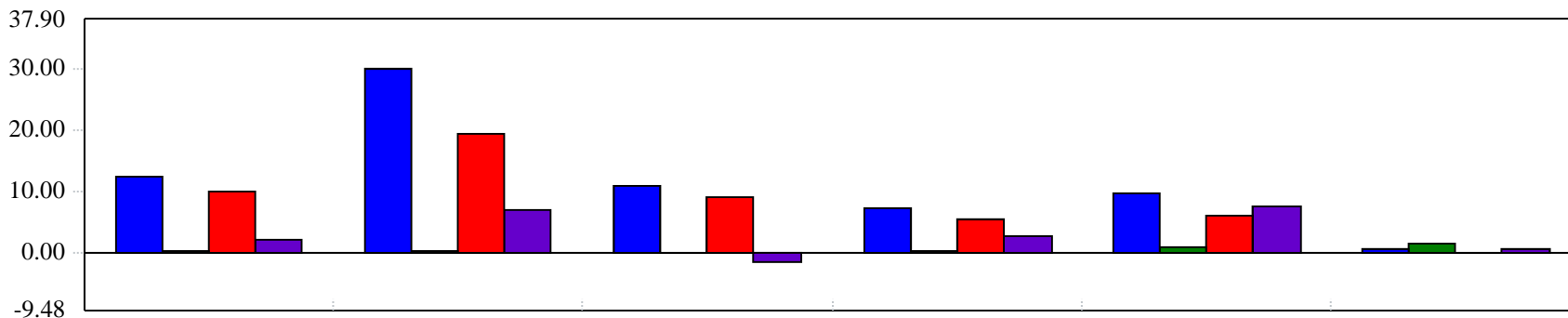
Risk and Return - 5 Years



Performance shown is net of fees unless otherwise noted. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. An index marked by an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index. Composites with less history than the specified time period will not appear in the chart. Quarter lagged composites are not shown in risk and return chart.

Commonwealth of Pennsylvania State Employees' Retirement System
Historical Statistics - 5 Years
As of March 31, 2013

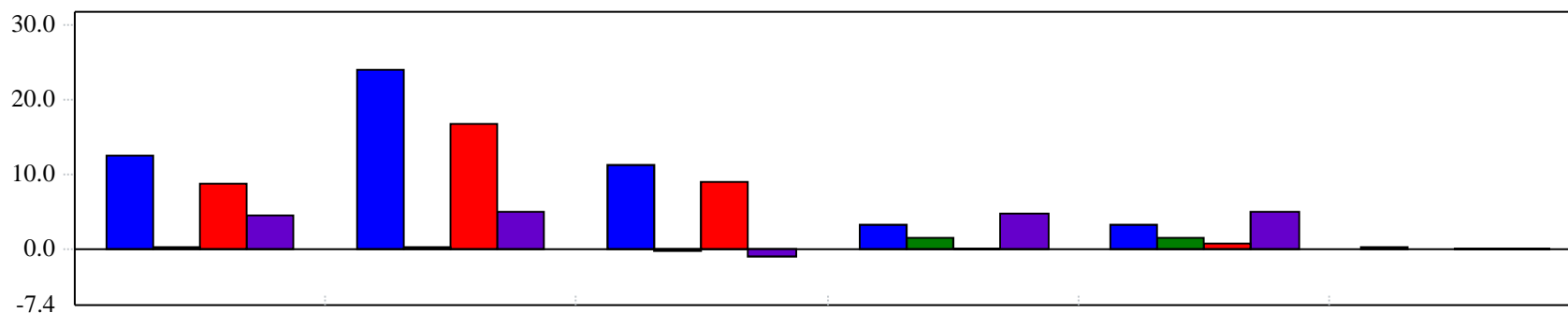
Composites



■ Standard Deviation
■ Sharpe Ratio
■ Downside Risk
■ Excess Return

	TOTAL FUND	GLOBAL PUBLIC EQUITY	REAL ASSETS	DIVERSIFYING ASSETS	FIXED INCOME	LIQUIDITY RESERVE
Standard Deviation	12.4	30.0	10.9	7.2	9.5	0.5
Sharpe Ratio	0.2	0.2	-0.1	0.3	0.8	1.5
Downside Risk	10.1	19.4	9.1	5.4	6.0	0.0
Excess Return	2.1	6.9	-1.6	2.6	7.5	0.4

Benchmarks

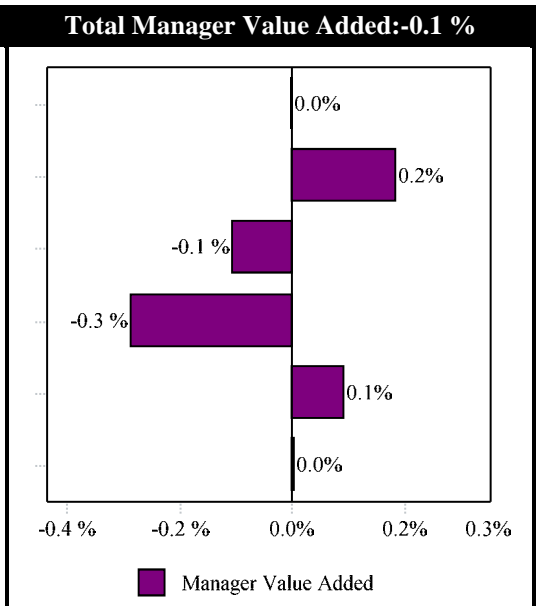
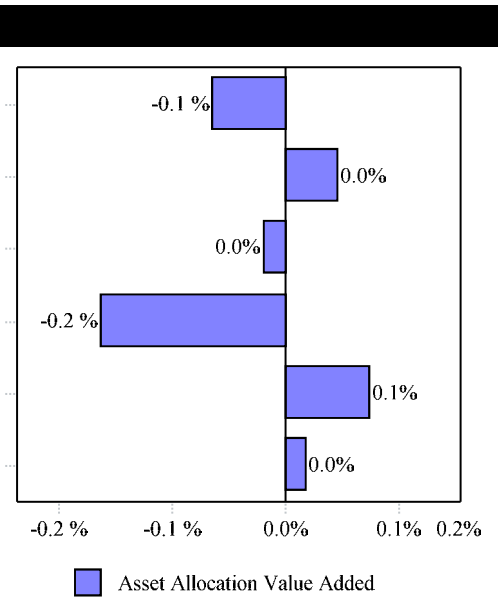
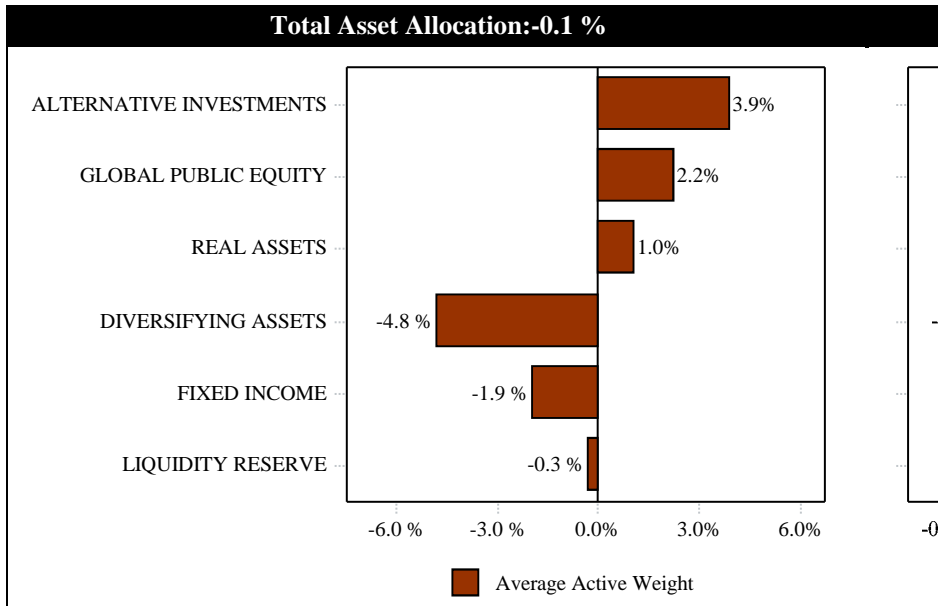
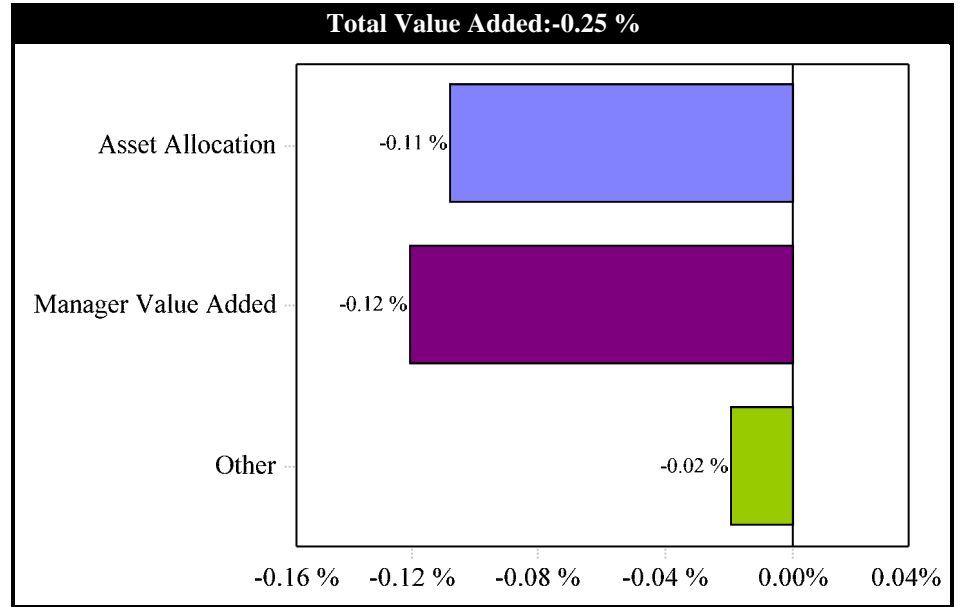
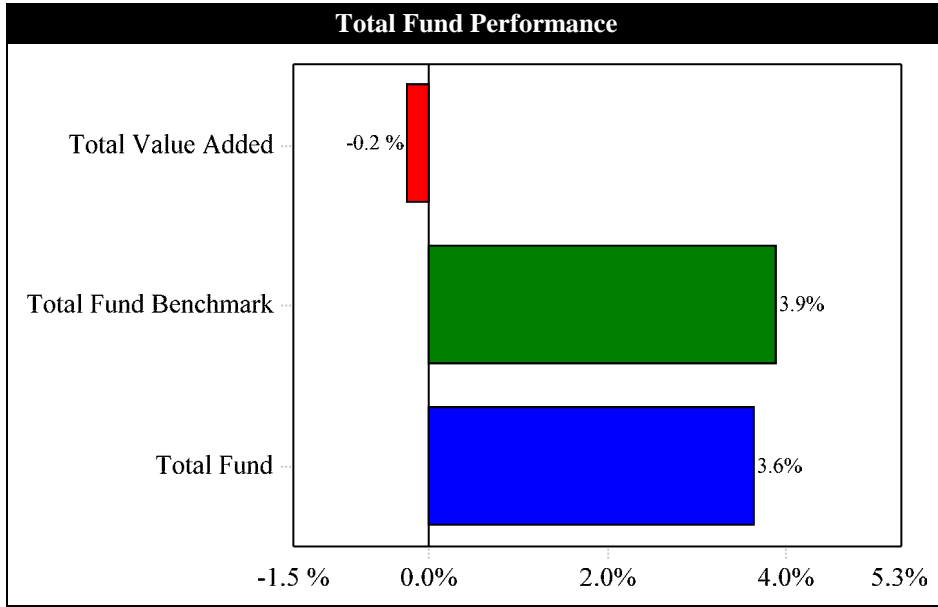


■ Standard Deviation
■ Sharpe Ratio
■ Downside Risk
■ Excess Return

	Total Fund Custom Benchmark*	MSCI ACW Investable Mkt Index (Net)	Real Assets Custom Benchmark*	Diversifying Assets Custom Benchmark*	Barclays US Agg Bond Index	3 Mo US T-Bill Index
Standard Deviation	12.5	24.0	11.4	3.2	3.3	0.3
Sharpe Ratio	0.4	0.2	-0.1	1.5	1.5	N/A
Downside Risk	8.9	16.7	9.2	0.0	0.8	0.0
Excess Return	4.5	5.2	-0.9	4.9	5.1	0.0

Statistics shown are based on net of fees returns. Calculation is based on quarterly periodicity.
 An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index.
 Excess Return statistic is calculated against the BofA ML 3 Mo US T-Bill Index. Quarter lagged composites are not shown in historical statistic charts.

Commonwealth of Pennsylvania State Employees' Retirement System
TOTAL FUND vs. Total Fund Custom Benchmark*
Total Fund Attribution
1 Quarter Ending March 31, 2013



Performance shown is net of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution calculation. An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index.

Commonwealth of Pennsylvania State Employees' Retirement System
Composites - NET OF FEES
Asset Allocation & Performance
As of March 31, 2013

	Allocation		Performance (%)								
	Market Value (\$M)	%	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
TOTAL FUND	25,839	100.0	3.6	3.6	9.5	9.0	1.6	4.3	9.0	10.0	01/01/1981
<i>Total Fund Custom Benchmark*</i>			3.9	3.9	9.8	9.2	4.1	5.8	9.8	N/A	
<i>Total Fund Public Mkt Equiv Benchmark*</i>			3.6	3.6	11.3	9.5	4.2	6.0	9.8	N/A	
ALTERNATIVE INVESTMENTS	6,196	24.0	2.3	2.3	10.8	12.2	4.1	10.0	12.5	11.0	01/01/1986
<i>ThomsonOne Private Equity All Index</i>			3.3	3.3	14.1	9.3	3.5	7.1	9.5	N/A	
<i>R 3000 Index + 3% (Qtr Lag)</i>			1.0	1.0	19.9	14.5	5.1	7.5	10.9	N/A	
GLOBAL PUBLIC EQUITY	9,154	35.4	7.4	7.4	12.0	9.3	2.8	3.9	10.1	6.5	01/01/2002
<i>MSCI ACW Investable Mkt Index (Net)</i>			6.9	6.9	11.0	8.1	2.6	3.7	9.9	6.4	
REAL ASSETS	4,157	16.1	1.5	1.5	6.3	9.2	-1.8	3.7	8.3	7.6	01/01/1984
<i>Real Assets Custom Benchmark*</i>			2.2	2.2	9.5	11.1	-1.2	3.4	7.0	6.4	
<i>Consumer Price Index + 3%</i>			2.1	2.1	4.5	5.3	4.8	5.3	5.4	6.0	
DIVERSIFYING ASSETS	1,779	6.9	3.4	3.4	8.2	4.7	2.7	N/A	N/A	2.3	07/01/2007
<i>Diversifying Assets Custom Benchmark*</i>			7.4	7.4	13.5	6.7	5.3	5.3	4.4	5.3	
FIXED INCOME	3,791	14.7	0.5	0.5	7.3	8.2	7.5	7.1	7.3	9.6	01/01/1981
<i>Barclays US Agg Bond Index</i>			-0.1	-0.1	3.8	5.5	5.5	5.9	5.0	8.7	
LIQUIDITY RESERVE	762	2.9	0.1	0.1	0.4	0.3	0.8	2.0	2.0	4.3	01/01/1987
<i>BofA ML 3 Mo US T-Bill Index</i>			0.0	0.0	0.1	0.1	0.3	1.6	1.8	4.0	

Performance shown is net of fees. Performance is annualized for periods greater than one year. Allocations shown may not sum to 100% exactly due to rounding. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. ThomsonOne Index data has been provided by StepStone and is as of December 31, 2012. An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index.

Commonwealth of Pennsylvania State Employees' Retirement System
Composites - NET OF FEES
Comparative Performance
As of March 31, 2013

	Performance (%)									
	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
TOTAL FUND	12.0	2.7	11.9	9.2	-28.7	17.2	16.4	14.5	15.1	24.3
<i>Total Fund Custom Benchmark*</i>	<i>11.4</i>	<i>3.6</i>	<i>11.3</i>	<i>18.7</i>	<i>-25.4</i>	<i>14.3</i>	<i>16.2</i>	<i>13.6</i>	<i>14.2</i>	<i>22.3</i>
ALTERNATIVE INVESTMENTS	11.4	12.7	16.5	-7.8	-6.8	35.8	18.4	27.1	17.0	3.0
<i>ThomsonOne Private Equity All Index</i>	<i>14.9</i>	<i>7.1</i>	<i>16.3</i>	<i>13.8</i>	<i>-25.9</i>	<i>20.9</i>	<i>30.6</i>	<i>21.4</i>	<i>22.0</i>	<i>18.4</i>
<i>R 3000 Index + 3% (Qtr Lag)</i>	<i>34.1</i>	<i>3.6</i>	<i>14.3</i>	<i>-3.6</i>	<i>-19.2</i>	<i>20.0</i>	<i>13.5</i>	<i>18.0</i>	<i>17.7</i>	<i>29.7</i>
GLOBAL PUBLIC EQUITY	17.6	-7.0	15.4	47.6	-48.6	12.8	21.6	11.7	16.9	36.5
<i>MSCI ACW Investable Mkt Index (Net)</i>	<i>16.4</i>	<i>-7.9</i>	<i>14.3</i>	<i>36.4</i>	<i>-42.3</i>	<i>11.2</i>	<i>20.9</i>	<i>11.5</i>	<i>16.4</i>	<i>35.5</i>
REAL ASSETS	8.6	6.0	7.4	-15.8	-13.0	24.8	18.4	29.9	14.5	10.6
<i>Real Assets Custom Benchmark*</i>	<i>11.5</i>	<i>7.3</i>	<i>9.2</i>	<i>-19.8</i>	<i>-10.1</i>	<i>20.7</i>	<i>13.0</i>	<i>21.1</i>	<i>13.8</i>	<i>10.9</i>
<i>Consumer Price Index + 3%</i>	<i>4.8</i>	<i>6.1</i>	<i>4.5</i>	<i>5.8</i>	<i>3.1</i>	<i>7.2</i>	<i>5.6</i>	<i>6.5</i>	<i>6.4</i>	<i>4.9</i>
DIVERSIFYING ASSETS	8.6	-1.8	6.3	13.7	-15.9	N/A	N/A	N/A	N/A	N/A
<i>Diversifying Assets Custom Benchmark*</i>	<i>6.6</i>	<i>3.3</i>	<i>3.4</i>	<i>3.8</i>	<i>3.1</i>	<i>5.3</i>	<i>5.2</i>	<i>3.6</i>	<i>1.7</i>	<i>1.2</i>
FIXED INCOME	10.0	6.2	11.7	31.9	-17.4	6.1	7.7	4.9	7.7	12.9
<i>Barclays US Agg Bond Index</i>	<i>4.2</i>	<i>7.8</i>	<i>6.5</i>	<i>5.9</i>	<i>5.2</i>	<i>7.0</i>	<i>4.3</i>	<i>2.4</i>	<i>4.3</i>	<i>4.1</i>
LIQUIDITY RESERVE	0.4	0.2	0.3	0.5	3.4	5.1	4.9	2.9	1.7	1.3
<i>BofA ML 3 Mo US T-Bill Index</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.2</i>	<i>2.1</i>	<i>5.0</i>	<i>4.8</i>	<i>3.1</i>	<i>1.3</i>	<i>1.1</i>

Performance shown is net of fees. Allocations shown may not sum to 100% exactly due to rounding. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index.

Commonwealth of Pennsylvania State Employees' Retirement System
ALTERNATIVE INVESTMENTS - NET OF FEES
Asset Allocation & Performance
As of March 31, 2013

	Allocation		Performance (%)										
	Market Value (\$M)	%	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2012	2011	Since Incep.	Inception Date
ALTERNATIVE INVESTMENTS	6,196	24.0	2.3	2.3	10.8	12.2	4.1	10.0	12.5	11.4	12.7	11.0	01/01/1986
<i>ThomsonOne Private Equity All Index</i>			3.3	3.3	14.1	9.3	3.5	7.1	9.5	14.3	7.1	N/A	
<i>R 3000 Index + 3% (Qtr Lag)</i>			1.0	1.0	19.9	14.5	5.1	7.5	10.9	34.1	3.6	N/A	
Private Equity	3,829	14.8	3.1	3.1	13.1	13.0	4.5	11.3	15.3	13.8	11.6	13.1	04/01/1986
<i>ThomsonOne Private Equity Index</i>			3.5	3.5	15.7	10.9	3.7	7.9	11.0	14.9	12.0	N/A	
Special Situations	973	3.8	4.0	4.0	13.0	12.9	5.7	12.9	15.6	8.3	13.0	13.4	01/01/1995
<i>ThomsonOne Private Equity All Index</i>			3.3	3.3	14.1	9.3	3.5	7.1	9.5	14.3	7.1	N/A	
Venture Capital	1,394	5.4	-0.8	-0.8	3.4	9.6	1.9	4.5	2.4	7.7	16.5	6.2	01/01/1986
<i>ThomsonOne Venture Capital Index</i>			1.4	1.4	8.6	4.3	0.6	3.6	4.4	7.1	15.4	N/A	

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Commonwealth of Pennsylvania State Employees' Retirement System
GLOBAL PUBLIC EQUITY - NET OF FEES
Asset Allocation & Performance
As of March 31, 2013

	Allocation		Performance (%)										
	Market Value (\$M)	%	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2012	2011	Since Incep.	Inception Date
GLOBAL PUBLIC EQUITY	9,154	35.4	7.4	7.4	12.0	9.3	2.8	3.9	10.1	17.6	-7.0	6.5	01/01/2002
<i>MSCI ACW Investable Mkt Index (Net)</i>			6.9	6.9	11.0	8.1	2.6	3.7	9.9	16.4	-7.9	6.4	
Global Mandates	560	2.2	6.0	6.0	12.4	10.0	5.8	N/A	N/A	20.2	-6.4	5.8	11/01/2006
<i>MSCI World Index (Net)</i>			7.7	7.7	11.8	8.5	2.2	3.2	8.9	15.8	-5.5	2.3	
Walter Scott & Ptnrs Gbl Gr Eq (SA)	560	2.2	6.0	6.0	12.6	9.5	6.7	N/A	N/A	19.0	-3.2	7.0	10/01/2006
<i>MSCI World Index (Net)</i>			7.7	7.7	11.8	8.5	2.2	3.2	8.9	15.8	-5.5	2.8	
U.S. Equity	4,714	18.2	11.0	11.0	15.2	13.8	3.4	3.5	8.8	17.4	2.1	10.5	01/01/1981
<i>R 3000 Index*</i>			11.1	11.1	14.6	13.0	6.3	5.1	9.2	16.4	1.0	10.6	
U.S. Mid/Large Cap Equity	4,118	15.9	10.7	10.7	14.6	13.8	3.2	4.0	8.8	17.2	3.5	8.6	01/01/1994
<i>R 1000 Index</i>			11.0	11.0	14.4	12.9	6.2	5.2	9.0	16.4	1.5	8.7	
Cornerstone LC Growth (SA)	279	1.1	5.9	5.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11.0	07/01/2012
<i>R 1000 Growth Index</i>			9.5	9.5	10.1	13.1	7.3	6.1	8.6	15.3	2.6	14.7	
Diamond Hill LC (SA)	307	1.2	11.9	11.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21.4	07/01/2012
<i>R 1000 Index</i>			11.0	11.0	14.4	12.9	6.2	5.2	9.0	16.4	1.5	18.1	
Epoch LC Value (SA)	294	1.1	10.0	10.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14.8	07/01/2012
<i>R 1000 Value Index</i>			12.3	12.3	18.8	12.7	4.8	4.2	9.2	17.5	0.4	21.4	
Iridian Asset Mgmt MCV (SA)	285	1.1	12.8	12.8	21.7	18.7	11.0	10.2	15.2	26.7	-1.3	14.1	03/01/1995
<i>R Mid Cap Index</i>			13.0	13.0	17.3	14.6	8.4	6.2	12.3	17.3	-1.5	11.1	
MCM Russell 1000 Index (SA)	2,954	11.4	11.0	11.0	14.1	N/A	N/A	N/A	N/A	16.0	N/A	22.4	01/01/2012
<i>R 1000 Index</i>			11.0	11.0	14.4	12.9	6.2	5.2	9.0	16.4	1.5	22.7	
U.S. Small Cap Equity	596	2.3	12.9	12.9	19.0	14.4	8.2	4.1	10.7	19.0	-3.5	9.6	01/01/1994
<i>R 2500 Index*</i>			12.8	12.8	17.7	14.6	9.0	5.8	12.3	17.9	-2.5	10.5	
Emerald Adv PA Sm Cap Core Eq (SA)	375	1.5	12.3	12.3	17.1	13.4	8.5	6.5	14.5	18.0	-2.6	13.2	10/01/1994
<i>R 2500 Index*</i>			12.8	12.8	17.7	14.6	9.0	5.8	12.5	17.9	-2.5	9.3	
Mellon Cap Mgmt PA Quant Eq (SA)	221	0.9	13.9	13.9	22.3	16.0	8.8	6.2	11.8	20.5	-4.4	12.5	10/01/1994
<i>R 2500 Index*</i>			12.8	12.8	17.7	14.6	9.0	5.8	12.3	17.9	-2.5	11.0	

Performance shown is net of fees. Allocations shown may not sum up to 100% exactly due to rounding. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index.

Commonwealth of Pennsylvania State Employees' Retirement System
GLOBAL PUBLIC EQUITY - NET OF FEES
Asset Allocation & Performance
As of March 31, 2013

	Allocation		Performance (%)										Inception Date
	Market Value (\$M)	%	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2012	2011	Since Incep.	
Non-U.S. Equity	3,712	14.4	3.6	3.6	8.9	5.7	-2.2	1.0	9.9	18.3	-13.2	6.6	11/01/1995
<i>MSCI ACW Ex US IMI (Net)*</i>			3.6	3.6	8.6	4.8	-0.2	2.7	11.7	17.0	-14.3	6.0	
Non-U.S. Developed Markets Equity	3,093	12.0	5.2	5.2	11.1	7.1	-1.8	1.1	9.8	18.5	-10.2	6.3	01/01/2002
<i>MSCI ACW Ex US IMI (Net)</i>			3.6	3.6	8.6	4.7	0.0	2.8	11.3	17.0	-14.3	8.0	
Non-U.S. Dev Mid/Large Cap Equity	2,655	10.3	4.9	4.9	11.8	7.1	-3.0	0.4	8.8	18.3	-8.5	5.4	01/01/2002
<i>MSCI World Ex US Index (Net)</i>			4.7	4.7	10.4	4.8	-0.7	1.9	10.0	16.4	-12.2	6.4	
Artisan Int'l Growth Eq (SA)	372	1.4	7.1	7.1	16.4	11.4	3.0	5.2	11.3	25.4	-6.1	11.3	04/01/2003
<i>MSCI ACW Ex US Index (Net)*</i>			3.2	3.2	8.4	4.4	-1.1	1.4	10.5	16.8	-13.7	10.5	
MCM MSCI World Ex US Index (SA)	1,336	5.2	4.9	4.9	11.0	N/A	N/A	N/A	N/A	17.2	N/A	17.9	01/01/2012
<i>MSCI World Ex US Index (Net)</i>			4.7	4.7	10.4	4.8	-0.7	1.9	10.0	16.4	-12.2	17.1	
Morgan Stanley Inv Mgmt Int'l Eq (SA)	390	1.5	6.5	6.5	14.0	7.6	2.4	4.4	10.7	20.1	-7.4	7.2	12/01/1999
<i>MSCI EAFE Index (Net)*</i>			5.1	5.1	11.3	5.0	-0.9	1.6	9.9	17.3	-12.1	3.0	
Templeton Int'l Eq (SA)	557	2.2	2.4	2.4	9.6	5.5	-0.2	3.0	10.8	18.1	-9.0	7.7	01/01/1995
<i>MSCI ACW Ex US Index (Net)*</i>			3.2	3.2	8.4	4.4	-1.1	1.4	10.2	16.8	-13.7	5.3	
Non-U.S. Dev Small Cap Equity	438	1.7	7.5	7.5	6.6	7.1	3.2	3.5	14.1	19.0	-17.8	7.1	10/01/1993
<i>MSCI Wrld Ex US Sm Cap Index (Net)</i>			7.2	7.2	10.9	7.8	2.0	2.1	13.1	17.5	-15.8	N/A	
Harris Assoc Int'l SCV (SA)	438	1.7	7.5	7.5	6.6	8.1	7.3	5.6	N/A	19.2	-15.5	13.7	07/01/2003
<i>MSCI Wrld Ex US Sm Cap Index (Net)</i>			7.2	7.2	10.9	7.8	2.0	2.1	13.1	17.5	-15.8	10.9	
Emerging Markets Equity	620	2.4	-2.7	-2.7	1.0	0.9	-3.7	1.5	11.1	17.0	-21.7	9.4	01/01/2002
<i>MSCI Emg Mkts Index (Net)</i>			-1.6	-1.6	2.0	3.3	1.1	6.4	17.1	18.2	-18.4	13.7	
BlackRock Emg Mkts Index (CF)	620	2.4	-1.9	-1.9	1.6	2.3	N/A	N/A	N/A	18.0	-20.0	10.0	07/01/2009
<i>MSCI Emg Mkts Index (Net)</i>			-1.6	-1.6	2.0	3.3	1.1	6.4	17.1	18.2	-18.4	11.0	
Transition Management - Equities													
Northern Trust Equity Transition (SA)	168	0.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01/01/2012

Performance shown is net of fees. Allocations shown may not sum up to 100% exactly due to rounding. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index.

Commonwealth of Pennsylvania State Employees' Retirement System
REAL ASSETS - NET OF FEES
Asset Allocation & Performance
As of March 31, 2013

	Allocation		Performance (%)										Inception Date
	Market Value (\$M)	%	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2012	2011	Since Incep.	
REAL ASSETS	4,157	16.1	1.5	1.5	6.3	9.2	-1.8	3.7	8.3	8.6	6.0	7.6	01/01/1984
<i>Real Assets Custom Benchmark*</i>			2.2	2.2	9.5	11.1	-1.2	3.4	7.0	11.5	7.3	6.4	
<i>Consumer Price Index + 3%</i>			2.1	2.1	4.5	5.3	4.8	5.3	5.4	4.8	6.1	6.0	
Private Real Assets	1,034	4.0	3.1	3.1	11.5	14.1	-3.1	3.0	8.8	12.5	16.0	8.3	01/01/1984
<i>Private Real Assets Custom Benchmark*</i>			2.2	2.2	12.7	13.8	-0.4	3.7	6.5	15.9	14.1	6.3	
<i>Consumer Price Index + 3%</i>			2.1	2.1	4.5	5.3	4.8	5.3	5.4	4.8	6.1	6.0	
Private Energy	236	0.9	0.9	0.9	4.5	13.1	6.6	13.3	N/A	13.2	16.2	21.4	04/01/2005
<i>R 3000 Index + 3% (Qtr Lag)</i>			1.0	1.0	19.9	14.5	5.1	7.5	10.9	34.1	3.6	7.7	
Non-Core Real Estate	798	3.1	3.8	3.8	13.7	14.3	-6.8	-0.4	6.0	12.0	15.5	7.4	01/01/1984
<i>All-Open End Funds Index (Qtr Lag)</i>			2.6	2.6	10.9	14.3	-2.9	2.0	5.4	11.2	18.2	5.9	
Public Real Assets	3,123	12.1	1.0	1.0	4.6	7.6	-1.8	3.6	7.9	7.3	3.1	6.5	07/01/1986
<i>Public Real Assets Custom Benchmark*</i>			2.2	2.2	8.4	10.2	-1.7	3.1	7.2	10.1	5.3	6.0	
<i>Consumer Price Index + 3%</i>			2.1	2.1	4.5	5.3	4.8	5.3	5.4	4.8	6.1	5.9	
Core Real Estate	1,698	6.6	1.6	1.6	5.7	8.2	-4.5	0.9	4.9	5.6	11.6	5.5	07/01/1986
<i>Custom Core Index (Qtr Lag)</i>			3.0	3.0	10.5	12.7	-2.1	2.6	5.7	10.1	15.7	5.5	
REITs	382	1.5	5.2	5.2	24.3	13.0	3.9	6.8	12.3	27.8	-3.6	11.1	04/01/1996
<i>Custom Public Index (Qtr Lag)</i>			6.0	6.0	28.9	14.0	1.3	4.8	11.3	29.7	-5.3	10.7	
Commodities & Infrastructure	1,043	4.0	-1.3	-1.3	-3.5	4.1	-1.8	2.5	7.6	3.1	-6.5	9.5	11/01/2001
<i>Commodities & Infrastructure Custom Benchmark*</i>			-0.2	-0.2	-1.4	4.7	-4.0	0.1	5.5	3.7	-5.2	7.2	
BAAM Custom Commodities Fund LP	557	2.2	-2.1	-2.1	-5.8	4.2	1.1	N/A	N/A	1.7	-4.7	4.8	05/01/2007
<i>BAAM Custom Index</i>			-0.8	-0.8	-3.7	3.7	-4.5	N/A	N/A	1.6	-6.4	-0.5	
Wellington Inf Protection (CF)	485	1.9	-0.5	-0.5	-0.7	4.0	-2.6	3.3	N/A	4.8	-8.5	7.0	01/01/2005
<i>Wellington Dvfd Infl Hedge Comp Index</i>			0.3	0.3	1.0	5.7	0.7	5.5	N/A	5.7	-4.1	8.0	

Performance shown is net of fees. Allocations shown may not sum up to 100% exactly due to rounding. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index.

Commonwealth of Pennsylvania State Employees' Retirement System
DIVERSIFYING ASSETS - NET OF FEES
Asset Allocation & Performance
As of March 31, 2013

	Allocation		Performance (%)										
	Market Value (\$M)	%	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2012	2011	Since Incep.	Inception Date
DIVERSIFYING ASSETS HISTORY	1,779	6.9	3.4	3.4	8.2	4.7	2.7	3.5	5.0	8.6	-1.8	4.7	01/01/2002
DIVERSIFYING ASSETS	1,779	6.9	3.4	3.4	8.2	4.7	2.7	N/A	N/A	8.6	-1.8	2.3	07/01/2007
<i>Diversifying Assets Custom Benchmark*</i>			7.4	7.4	13.5	6.7	5.3	5.3	4.4	6.6	3.3	5.3	
Absolute Return	426	1.6	0.5	0.5	2.4	2.8	1.6	N/A	N/A	5.8	-1.8	1.3	07/01/2007
<i>3 Mo LIBOR Index + 3%*</i>			0.8	0.8	3.4	3.4	3.4	3.9	3.4	3.5	3.3	3.6	
Arden Inst'l LP	110	0.4	2.2	2.2	5.5	4.0	1.3	N/A	N/A	6.9	0.4	2.1	10/01/2006
<i>3 Mo LIBOR Index + 3%*</i>			0.8	0.8	3.4	3.4	3.4	3.9	3.4	3.5	3.3	3.8	
BAAM Custom ARS Fund LP	133	0.5	1.5	1.5	0.4	3.6	1.8	3.6	5.1	3.6	-1.0	5.0	01/01/2002
<i>3 Mo LIBOR Index + 3%*</i>			0.8	0.8	3.4	3.4	3.4	3.9	3.4	3.5	3.3	3.2	
Mesirow Multi-Manager Fund III LP	66	0.3	-4.7	-4.7	1.1	3.0	1.5	3.4	4.9	10.2	2.2	5.0	10/01/2002
<i>3 Mo LIBOR Index + 3%*</i>			0.8	0.8	3.4	3.4	3.4	3.9	3.4	3.5	3.3	3.3	
MSAIP Inst'l LP	26	0.1	3.4	3.4	6.4	4.1	1.0	2.4	4.1	6.7	-1.0	4.0	07/01/2002
<i>3 Mo LIBOR Index + 3%*</i>			0.8	0.8	3.4	3.4	3.4	3.9	3.4	3.5	3.3	3.3	
PAAMCO Newport Sequoia Fund LLC	47	0.2	-2.2	-2.2	-2.3	-6.2	-4.1	-0.1	2.4	-6.4	-12.7	2.4	07/01/2002
<i>3 Mo LIBOR Index + 3%*</i>			0.8	0.8	3.4	3.4	3.4	3.9	3.4	3.5	3.3	3.3	
Rock Creek Penn Quarter LP	43	0.2	2.2	2.2	5.0	3.5	1.2	N/A	N/A	7.7	-3.5	1.9	10/01/2006
<i>3 Mo LIBOR Index + 3%*</i>			0.8	0.8	3.4	3.4	3.4	3.9	3.4	3.5	3.3	3.8	
Robeco-Sage River Road Fund (SA)	1	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.4	0.8	N/A	04/01/2007
Hedged Strategies	1,353	5.2	4.5	4.5	10.2	N/A	N/A	N/A	N/A	N/A	N/A	10.2	04/01/2012
<i>R 3000 Index</i>			11.1	11.1	14.6	13.0	6.3	5.1	9.2	16.4	1.0	14.6	
Blackstone Keystone Fund	826	3.2	5.3	5.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16.2	07/01/2012
<i>R 3000 Index</i>			11.1	11.1	14.6	13.0	6.3	5.1	9.2	16.4	1.0	18.3	
Entrust Keystone Fund	272	1.1	4.4	4.4	8.6	N/A	N/A	N/A	N/A	N/A	N/A	8.6	04/01/2012
<i>R 3000 Index</i>			11.1	11.1	14.6	13.0	6.3	5.1	9.2	16.4	1.0	14.6	
Tiger Keystone Partners, L.P.	256	1.0	2.2	2.2	2.2	N/A	N/A	N/A	N/A	N/A	N/A	2.2	04/01/2012
<i>R 3000 Index</i>			11.1	11.1	14.6	13.0	6.3	5.1	9.2	16.4	1.0	14.6	

Performance shown is net of fees. Allocations shown may not sum up to 100% exactly due to rounding. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index. Performance for DIVERSIFYING ASSETS HISTORY is for reference purposes only. Robeco-Sage River Road Fund (SA) is currently undergoing liquidation.

Commonwealth of Pennsylvania State Employees' Retirement System
FIXED INCOME - NET OF FEES
Asset Allocation & Performance
As of March 31, 2013

	Allocation		Performance (%)										
	Market Value (\$M)	%	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2012	2011	Since Incep.	Inception Date
FIXED INCOME	3,791	14.7	0.5	0.5	7.3	8.2	7.5	7.1	7.3	10.0	6.2	9.6	01/01/1981
<i>Barclays US Agg Bond Index</i>			-0.1	-0.1	3.8	5.5	5.5	5.9	5.0	4.2	7.8	8.7	
Core Plus Fixed Income	1,084	4.2	2.2	2.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.8	10/01/2012
Brandywine Global Opp (SA)	178	0.7	-0.4	-0.4	10.1	N/A	N/A	N/A	N/A	13.8	N/A	10.1	02/01/2011
<i>Citigroup Wrld Gov't Bond Index</i>			-2.8	-2.8	-0.7	3.9	2.8	5.8	5.4	1.6	6.3	2.3	
Pyramis Gbl Adv HY CMBS (SA)	251	1.0	5.1	5.1	22.8	20.2	11.4	7.1	8.6	23.1	10.9	9.7	04/01/1997
<i>Barclays US CMBS Ex AAA Index</i>			0.9	0.9	10.4	14.5	1.6	-2.2	N/A	15.5	7.5	N/A	
SEI Struc Cred: HY Bank Loans (CF)	188	0.7	2.3	2.3	18.9	19.6	N/A	N/A	N/A	25.3	12.5	20.2	05/01/2008
<i>Citigroup High Yield Market Index</i>			2.8	2.8	12.6	11.1	11.1	8.9	9.8	15.2	5.5	10.3	
Stone Harbor EMD (SA)	148	0.6	-2.1	-2.1	12.8	12.3	11.7	10.5	N/A	22.4	6.5	11.1	04/01/2005
<i>JPM Emg Mkt Bond Index</i>			-2.3	-2.3	10.4	10.6	9.8	9.2	10.6	18.5	8.5	9.8	
Stone Harbor Gbl HY (SA)	156	0.6	3.6	3.6	13.9	10.2	10.5	8.4	9.5	15.9	2.3	9.2	07/01/2000
<i>Citigroup High Yield Market Index</i>			2.8	2.8	12.6	11.1	11.1	8.9	9.8	15.2	5.5	8.2	
Waterfall Asset Mgmt ABS (SA)	142	0.6	3.2	3.2	14.5	13.5	N/A	N/A	N/A	15.0	7.5	13.5	03/01/2010
<i>3 Mo LIBOR Index + 8%</i>			2.0	2.0	8.4	8.4	8.9	10.2	10.3	8.5	8.4	8.4	
WR Huff HY Bond Fund (SA)	16	0.1	2.1	2.1	5.0	18.8	17.9	13.2	13.3	15.0	2.4	10.7	07/01/1986
<i>Citigroup High Yield Market Index</i>			2.8	2.8	12.6	11.1	11.1	8.9	9.9	15.2	5.5	8.8	
Berwind PA Cap Fund LP	3	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	61.1	27.2	N/A	07/01/2000

Berwind PA Cap Fund LP is currently undergoing liquidation.

Performance shown is net of fees. Allocations shown may not sum up to 100% exactly due to rounding. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index.

Commonwealth of Pennsylvania State Employees' Retirement System
FIXED INCOME - NET OF FEES
Asset Allocation & Performance
As of March 31, 2013

	Allocation		Performance (%)										
	Market Value (\$M)	%	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2012	2011	Since Incep.	Inception Date
Core Fixed Income	1,098	4.2	0.0	0.0	6.1	7.4	7.2	6.6	5.6	8.1	7.1	6.0	01/01/2002
<i>Barclays US Agg Bond Index</i>			-0.1	-0.1	3.8	5.5	5.5	5.9	5.0	4.2	7.8	5.5	
Mellon Cap Mgmt Bond Index (SA)	668	2.6	-0.2	-0.2	3.3	5.3	5.2	5.8	4.9	3.8	7.8	8.2	04/01/1984
<i>Barclays US Agg Bond Index*</i>			-0.1	-0.1	3.8	5.5	5.5	5.9	5.0	4.2	7.8	8.5	
PIMCO Core Bond Fund (SA)	250	1.0	0.3	0.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.3	01/01/2013
<i>Barclays US Agg ex Trsy</i>			-0.1	-0.1	4.1	5.7	5.9	6.1	5.2	5.5	6.9	-0.1	
Taplin, Canida & Habacht Corp FI (SA)	180	0.7	0.3	0.3	8.6	8.5	8.7	7.1	6.4	10.5	7.9	7.0	12/01/2000
<i>Barclays US Credit Index</i>			-0.2	-0.2	7.0	7.9	7.5	6.9	6.0	9.4	8.4	6.9	
Global TIPS	801	3.1	-0.4	-0.4	3.3	5.1	4.1	5.7	4.6	5.0	7.4	4.6	02/01/2003
<i>Barclays US Trsy: US TIPS Index</i>			-0.4	-0.4	5.7	8.6	5.9	7.0	6.3	7.0	13.6	6.4	
Brown Brothers TIPS (SA)	213	0.8	-0.1	-0.1	6.4	N/A	N/A	N/A	N/A	N/A	N/A	4.3	02/01/2012
<i>Barclays US Trsy: US TIPS Index</i>			-0.4	-0.4	5.7	8.6	5.9	7.0	6.3	7.0	13.6	3.6	
New Century Global TIPS (SA)	105	0.4	-1.2	-1.2	4.3	N/A	N/A	N/A	N/A	N/A	N/A	3.4	02/01/2012
<i>Barclays Wrld Gov Infl-Lnkd Index (Unhedged)</i>			-0.7	-0.7	3.6	7.5	3.7	6.5	6.9	6.9	10.7	3.1	
NISA Inv Adv TIPS (SA)	482	1.9	-0.4	-0.4	1.7	4.7	3.9	N/A	N/A	3.8	7.3	5.4	04/01/2007
<i>NISA Custom Index*</i>			-0.4	-0.4	1.8	4.7	3.9	N/A	N/A	3.8	7.2	N/A	
Nominal U.S. Treasuries	512	2.0	-0.3	-0.3	6.1	N/A	N/A	N/A	N/A	4.2	N/A	3.8	09/01/2011
<i>Barclays US Trsy Bellwethers: 10 Yr</i>			-0.3	-0.3	6.2	9.2	6.1	7.2	5.4	4.1	17.2	5.0	
PIMCO US Treasuries (SA)	257	1.0	-0.3	-0.3	6.0	N/A	N/A	N/A	N/A	3.9	N/A	3.9	09/01/2011
<i>Barclays US Trsy Bellwethers: 10 Yr</i>			-0.3	-0.3	6.2	9.2	6.1	7.2	5.4	4.1	17.2	5.0	
Wellington US Treasuries (SA)	256	1.0	-0.3	-0.3	6.3	N/A	N/A	N/A	N/A	4.5	N/A	2.3	10/01/2011
<i>Barclays US Trsy Bellwethers: 10 Yr</i>			-0.3	-0.3	6.2	9.2	6.1	7.2	5.4	4.1	17.2	3.4	
Transition Management - Fixed Income													
Northern Trust Fixed Income Transition (SA)	298	1.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12/01/2012

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Commonwealth of Pennsylvania State Employees' Retirement System
LIQUIDITY RESERVE - NET OF FEES
Asset Allocation & Performance
As of March 31, 2013

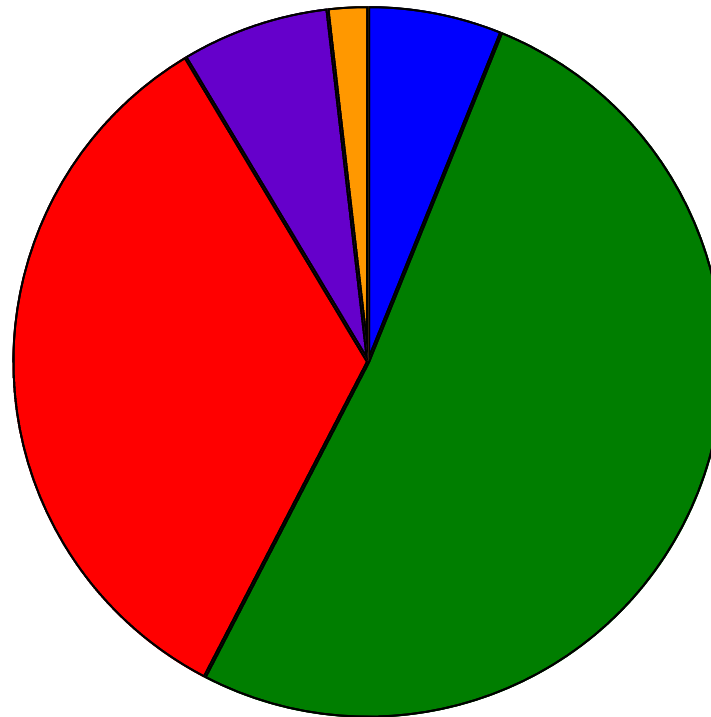
	Allocation		Performance (%)										
	Market Value (\$M)	%	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2012	2011	Since Incep.	Inception Date
LIQUIDITY RESERVE	762	2.9	0.1	0.1	0.4	0.3	0.8	2.0	2.0	0.4	0.2	4.3	01/01/1987
Cash Equivalent	511	2.0	0.1	0.1	0.4	0.3	0.8	2.0	2.0	0.4	0.2	4.3	01/01/1987
<i>BofA ML 3 Mo US T-Bill Index</i>			<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.3</i>	<i>1.6</i>	<i>1.8</i>	<i>0.1</i>	<i>0.1</i>	<i>4.0</i>	
Cash Management (SA)	506	2.0	0.1	0.1	0.4	0.3	0.8	2.0	2.0	0.4	0.2	4.3	01/01/1987
<i>BofA ML 3 Mo US T-Bill Index</i>			<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.3</i>	<i>1.6</i>	<i>1.8</i>	<i>0.1</i>	<i>0.1</i>	<i>4.0</i>	
Overnight Cash (SA)	6	0.0	0.0	0.0	0.1	0.1	0.6	N/A	N/A	0.1	0.1	0.8	12/01/2007
<i>BofA ML 3 Mo US T-Bill Index</i>			<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.3</i>	<i>1.6</i>	<i>1.8</i>	<i>0.1</i>	<i>0.1</i>	<i>0.5</i>	
Short-Term Notes	250	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04/01/2013
<i>Barclays US Government/Credit: 1-3 Year Bond Index</i>			<i>0.2</i>	<i>0.2</i>	<i>1.1</i>	<i>1.6</i>	<i>2.4</i>	<i>3.6</i>	<i>3.1</i>	<i>1.3</i>	<i>1.6</i>	<i>N/A</i>	
PNC Short Duration (SA)	150	0.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04/01/2013
<i>Barclays US Gov't/Credit: 1-3 Yr Bond Index</i>			<i>0.2</i>	<i>0.2</i>	<i>1.1</i>	<i>1.6</i>	<i>2.4</i>	<i>3.6</i>	<i>3.1</i>	<i>1.3</i>	<i>1.6</i>	<i>N/A</i>	
StoneRidge Short Duration (SA)	100	0.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04/01/2013
<i>Barclays US Gov't/Credit: 1-3 Yr Bond Index</i>			<i>0.2</i>	<i>0.2</i>	<i>1.1</i>	<i>1.6</i>	<i>2.4</i>	<i>3.6</i>	<i>3.1</i>	<i>1.3</i>	<i>1.6</i>	<i>N/A</i>	

Performance shown is net of fees. Allocations shown may not sum up to 100% exactly due to rounding. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index.

Sub-Composites

Commonwealth of Pennsylvania State Employees' Retirement System
GLOBAL PUBLIC EQUITY
Asset Allocation by Sub-Composite
As of March 31, 2013

March 31, 2013 : \$9,154



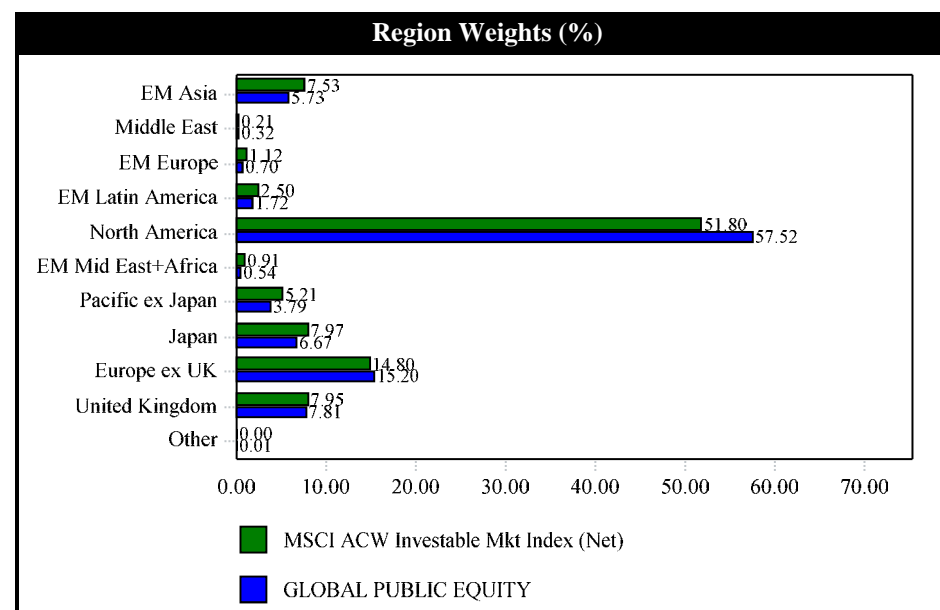
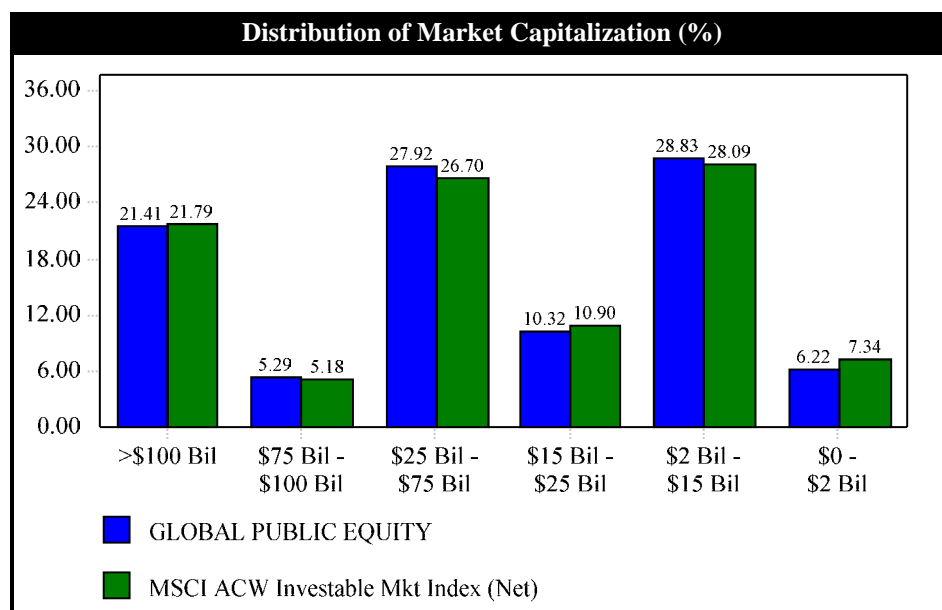
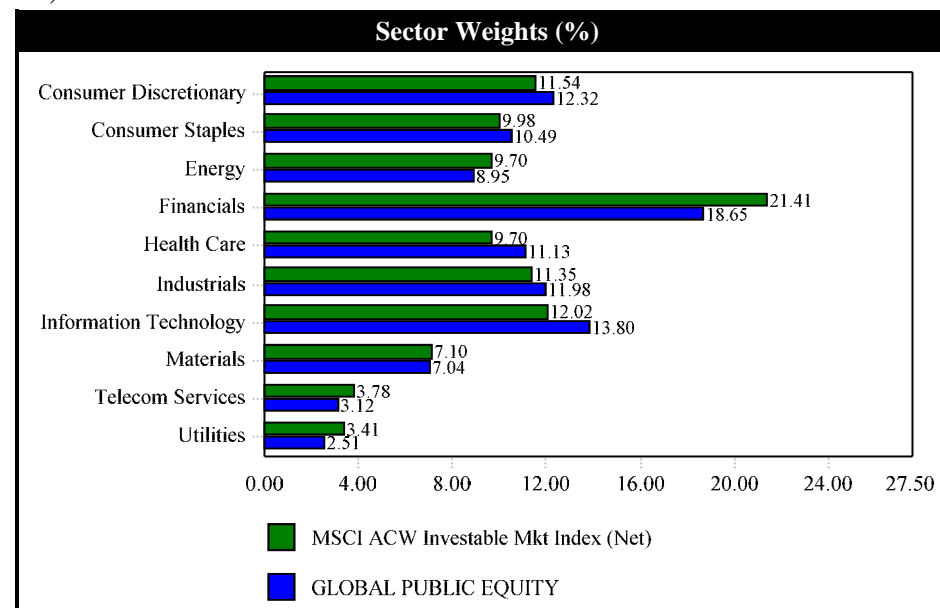
	Market Value (\$M)	Allocation (%)
■ Global Mandates	560	6.12
■ U.S. Equity	4,714	51.50
■ Non-U.S. Developed Markets Equity	3,093	33.79
■ Emerging Markets Equity	620	6.77
■ Transition Management - Equities	168	1.83

Allocations shown may not sum up to 100% exactly due to rounding.

**Commonwealth of Pennsylvania State Employees' Retirement System
GLOBAL PUBLIC EQUITY vs. MSCI ACW Investable Mkt Index (Net)**

**Portfolio Characteristics
As of March 31, 2013**

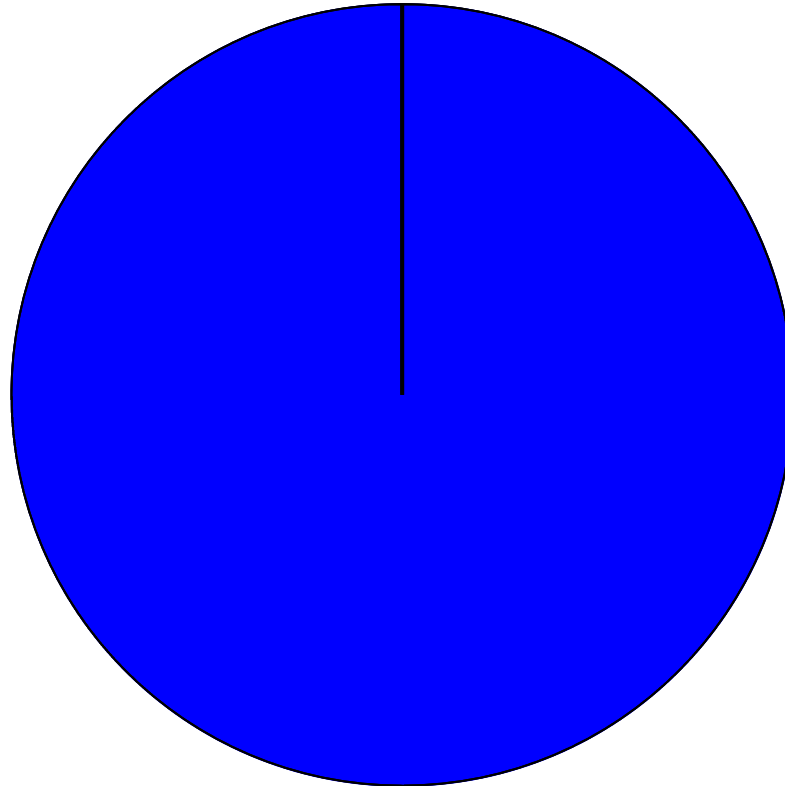
Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	64,198	65,174
Median Mkt. Cap (\$M)	6,087	1,196
Price/Earnings Ratio	15.92	15.31
Price/Book Ratio	2.40	2.32
5 Yr. EPS Growth Rate (%)	3.79	3.95
Current Yield (%)	2.31	2.53
Beta (5 Years, Monthly)	1.22	1.00
Number of Securities	2,987	8,453



Allocation to "Other" consists of holdings domiciled in countries/regions that do not meet economic development, size, liquidity, or market accessibility criteria as defined by the MSCI region standards.

Commonwealth of Pennsylvania State Employees' Retirement System
Global Mandates
Asset Allocation by Manager
As of March 31, 2013

March 31, 2013 : \$560



	Market Value	Allocation
	(\$M)	(%)
■ Walter Scott & Ptnrs Gbl Gr Eq (SA)	560	100.00

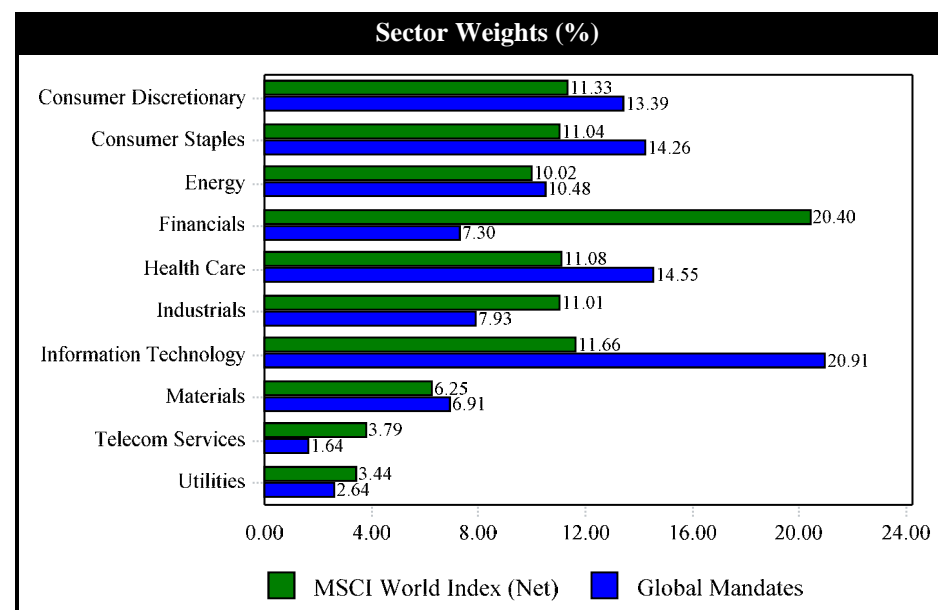
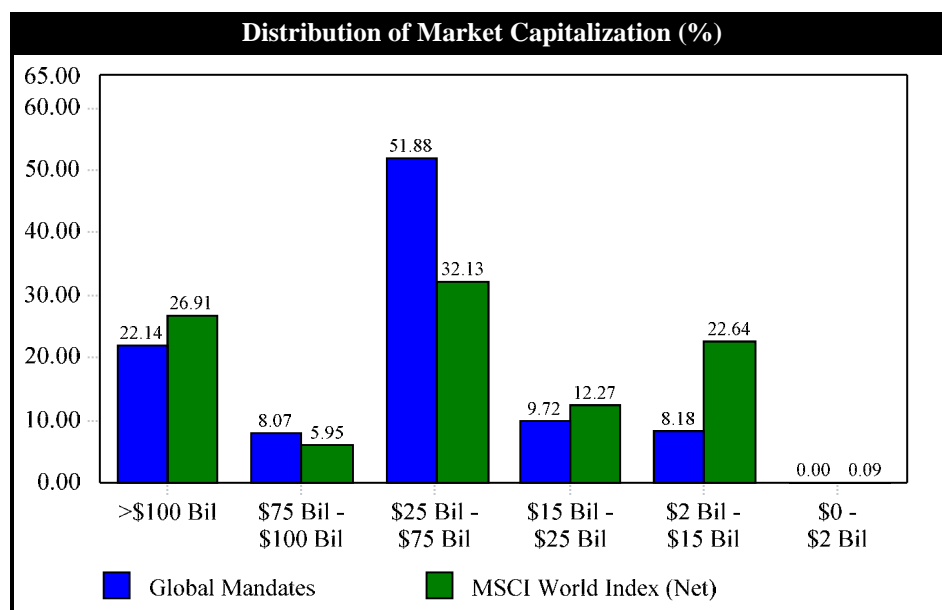
Allocations shown may not sum up to 100% exactly due to rounding.

**Commonwealth of Pennsylvania State Employees' Retirement System
Global Mandates vs. MSCI World Index (Net)**

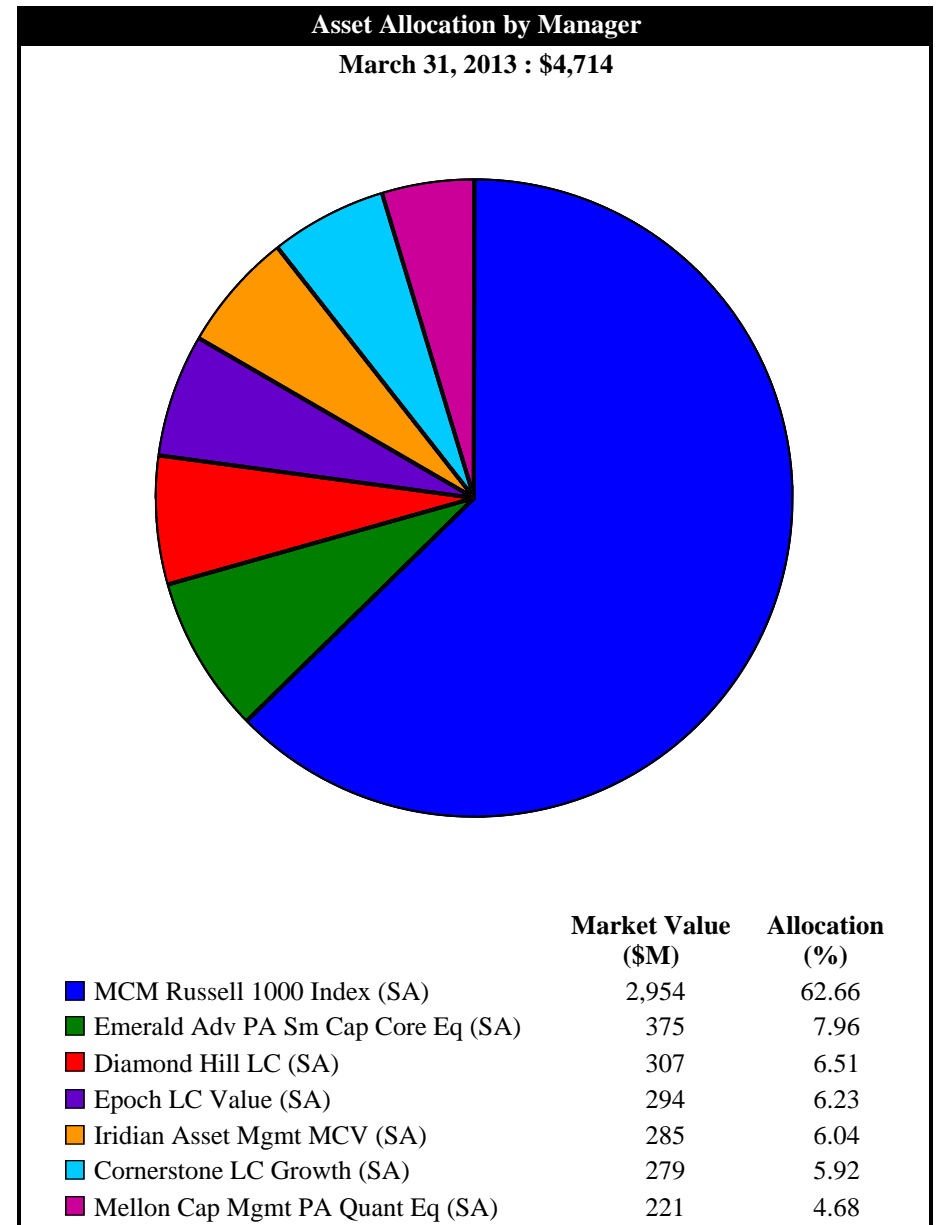
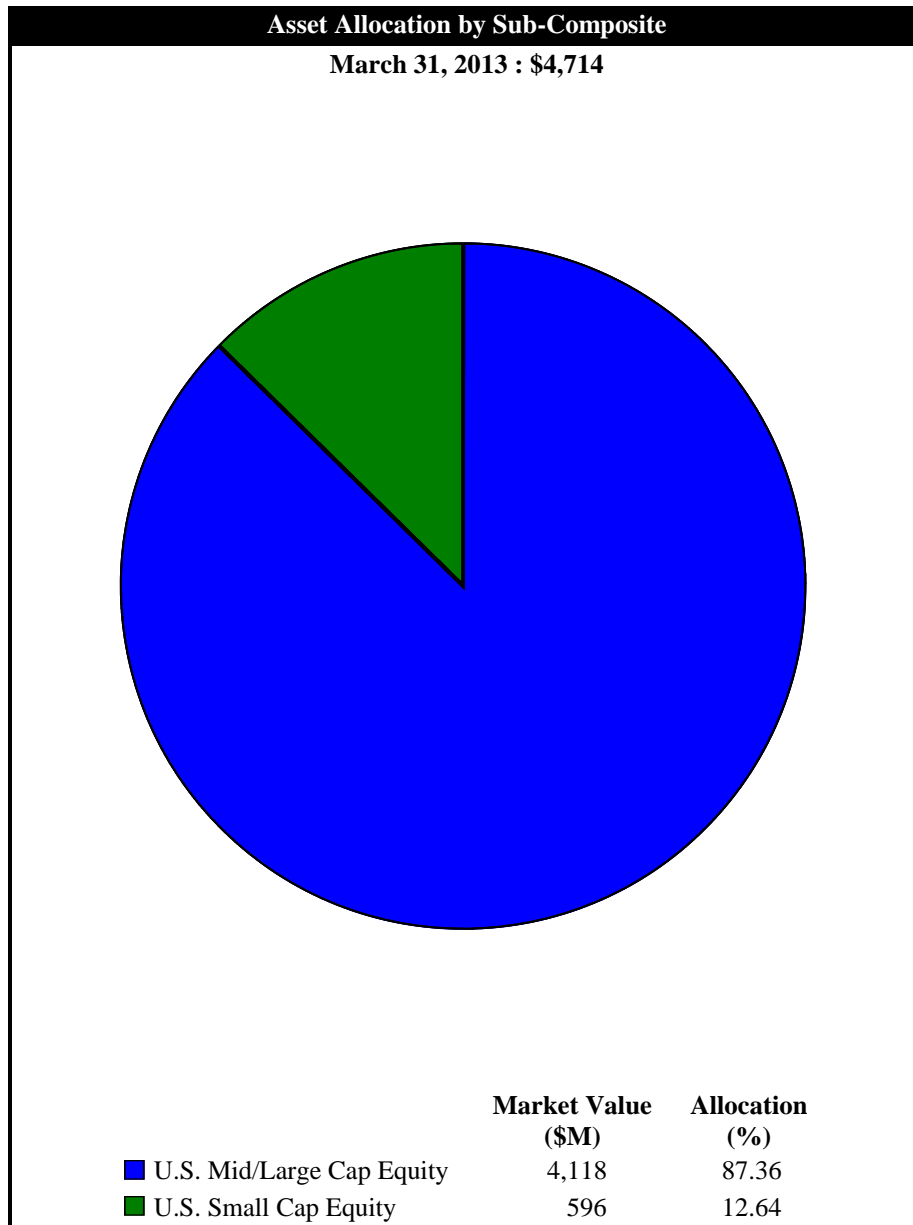
**Portfolio Characteristics
As of March 31, 2013**

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Nike Inc	2.79	0.16	2.63	14.80
MasterCard Inc	2.77	0.21	2.56	10.21
Precision Castparts Corp.	2.74	0.10	2.64	0.12
CIE Generale D'Optique Es Int'l SA	2.70	0.08	2.62	10.94
TJX Companies Inc (The)	2.55	0.12	2.43	10.41
Industria De Diseno Textil Inditex SA	2.53	0.11	2.42	-4.72
Novo Nordisk A/S	2.52	0.24	2.28	2.25
Colgate-Palmolive Co	2.45	0.20	2.25	13.55
DBS Group Holdings Ltd	2.37	0.09	2.28	6.18
Google Inc	2.36	0.77	1.59	12.27
% of Portfolio	25.78	2.08		

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	75,402	79,585
Median Mkt. Cap (\$M)	45,585	9,546
Price/Earnings Ratio	18.65	15.75
Price/Book Ratio	2.87	2.37
5 Yr. EPS Growth Rate (%)	6.57	3.37
Current Yield (%)	2.01	2.59
Beta (5 Years, Monthly)	0.94	1.00
Number of Securities	55	1,608



Commonwealth of Pennsylvania State Employees' Retirement System
U.S. Equity
Asset Allocation by Sub-Composite & Manager
As of March 31, 2013

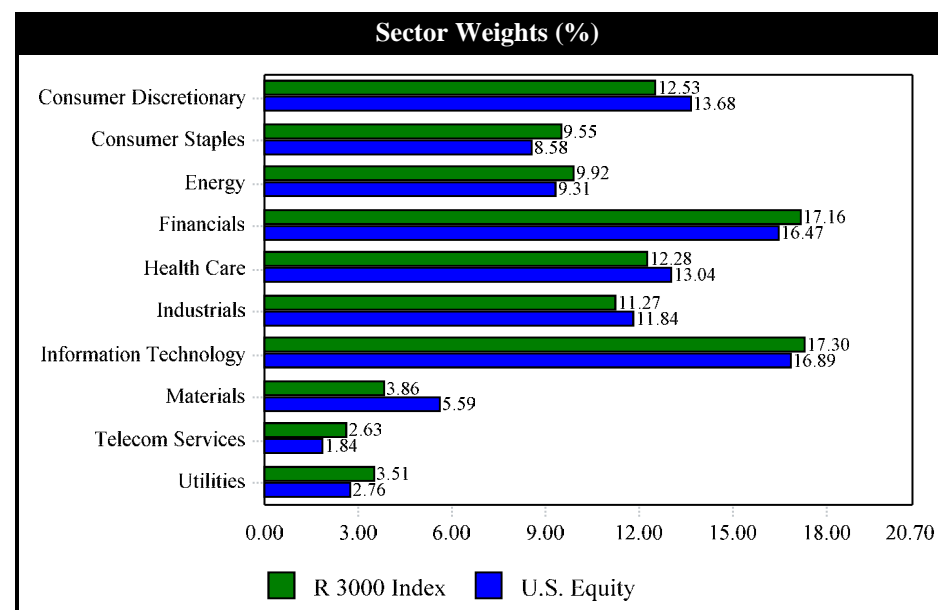
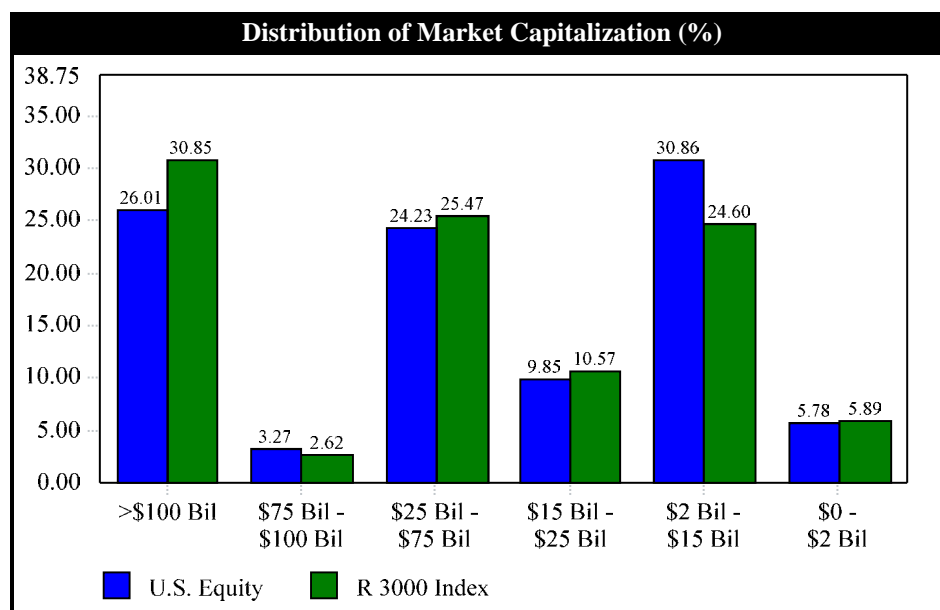


Allocations shown may not sum up to 100% exactly due to rounding. Asset Allocation by Manager excludes liquidating accounts.

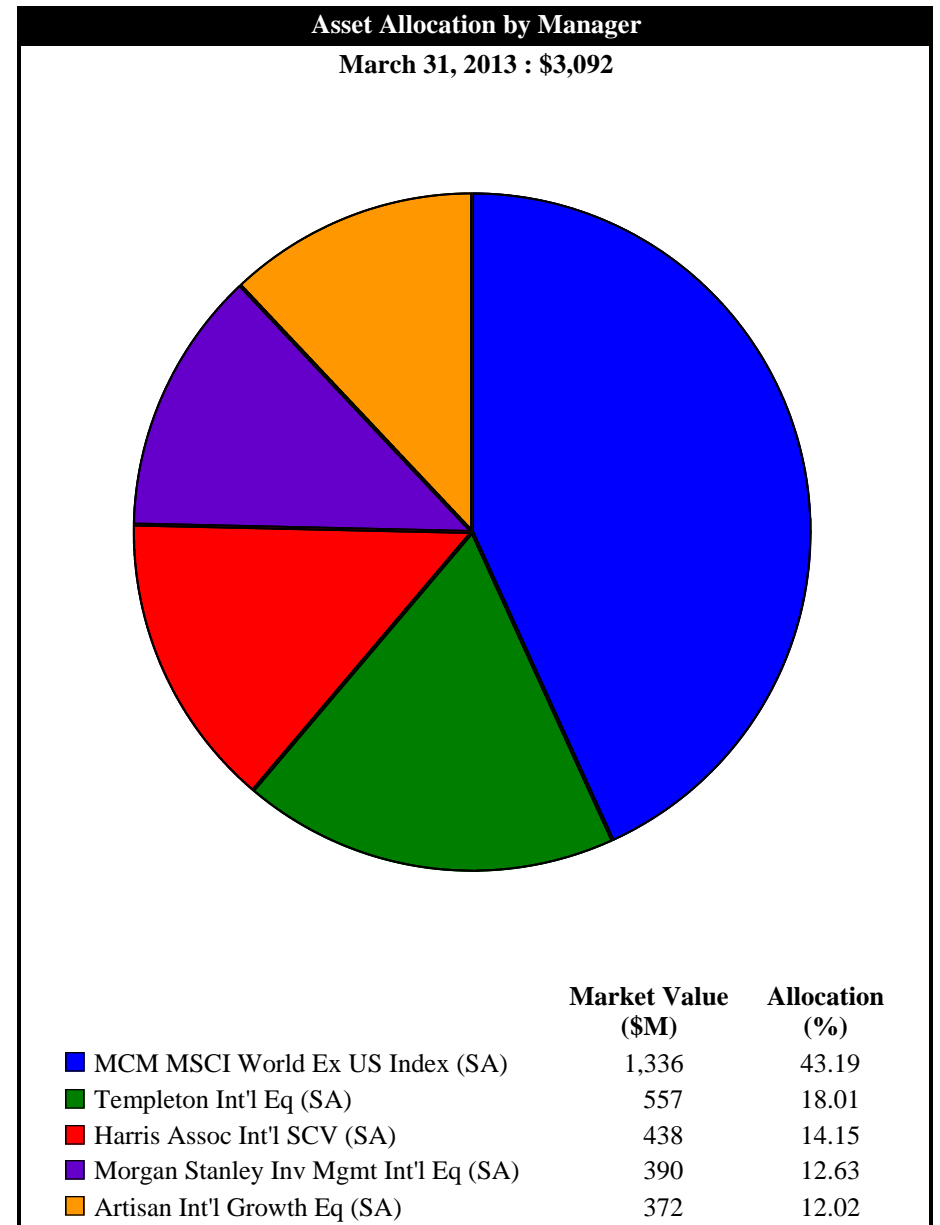
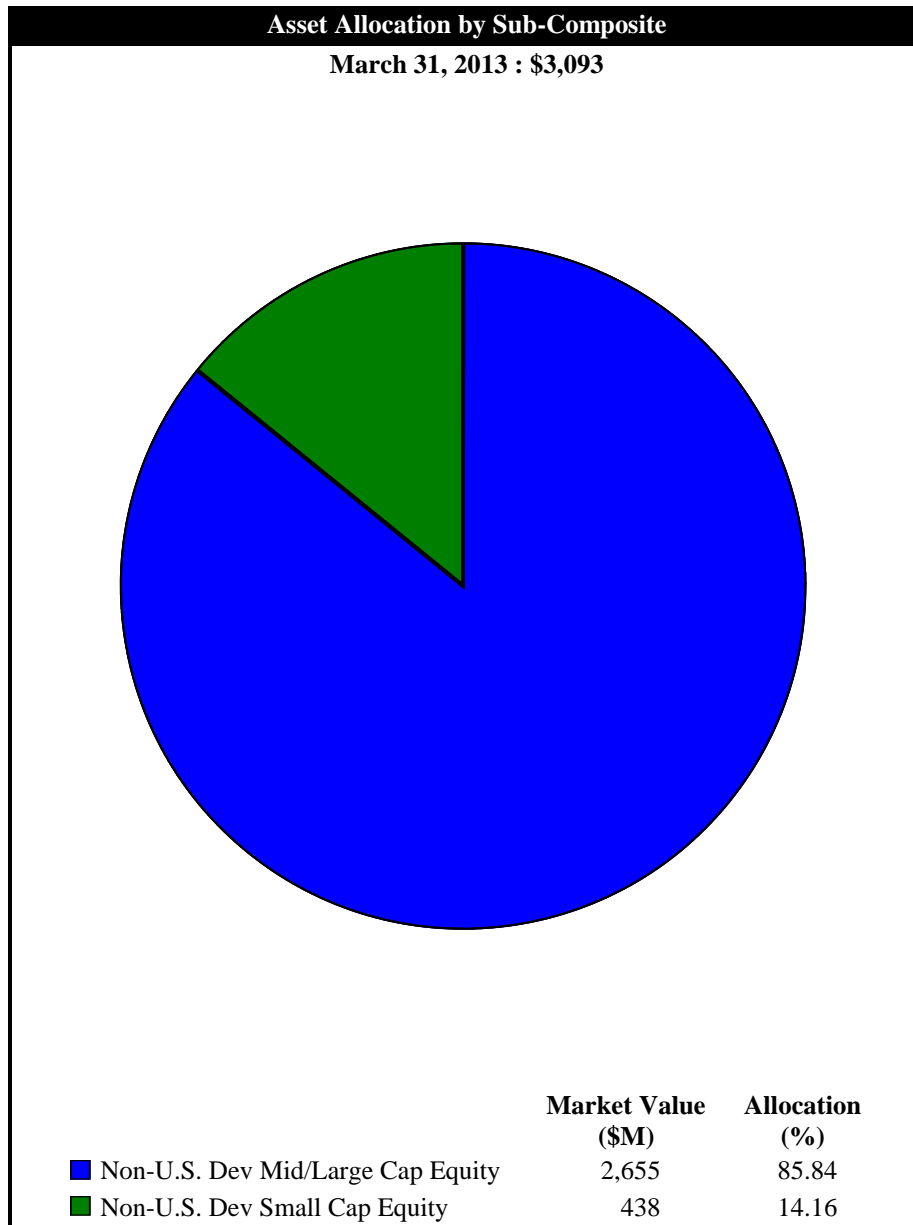
Commonwealth of Pennsylvania State Employees' Retirement System
U.S. Equity vs. R 3000 Index
Portfolio Characteristics
As of March 31, 2013

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Exxon Mobil Corp	1.82	2.43	-0.61	4.78
Apple Inc	1.80	2.38	-0.58	-16.35
Microsoft Corp	1.33	1.24	0.09	7.98
Pfizer Inc	1.25	1.24	0.01	16.08
Procter & Gamble Co (The)	1.20	1.22	-0.02	14.43
Google Inc	1.14	1.18	-0.04	12.27
JPMorgan Chase & Co	1.09	1.04	0.05	8.66
General Electric Co	0.96	1.41	-0.45	11.05
Chevron Corp	0.92	1.35	-0.43	10.73
Citigroup Inc	0.92	0.75	0.17	11.86
% of Portfolio	12.43	14.24		

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	74,055	86,751
Median Mkt. Cap (\$M)	5,691	1,162
Price/Earnings Ratio	16.60	16.75
Price/Book Ratio	2.64	2.63
5 Yr. EPS Growth Rate (%)	6.26	6.15
Current Yield (%)	1.87	2.01
Beta (5 Years, Monthly)	1.08	1.00
Number of Securities	1,107	2,942



Commonwealth of Pennsylvania State Employees' Retirement System
Non-U.S. Developed Markets Equity
Asset Allocation by Sub-Composite & Manager
As of March 31, 2013



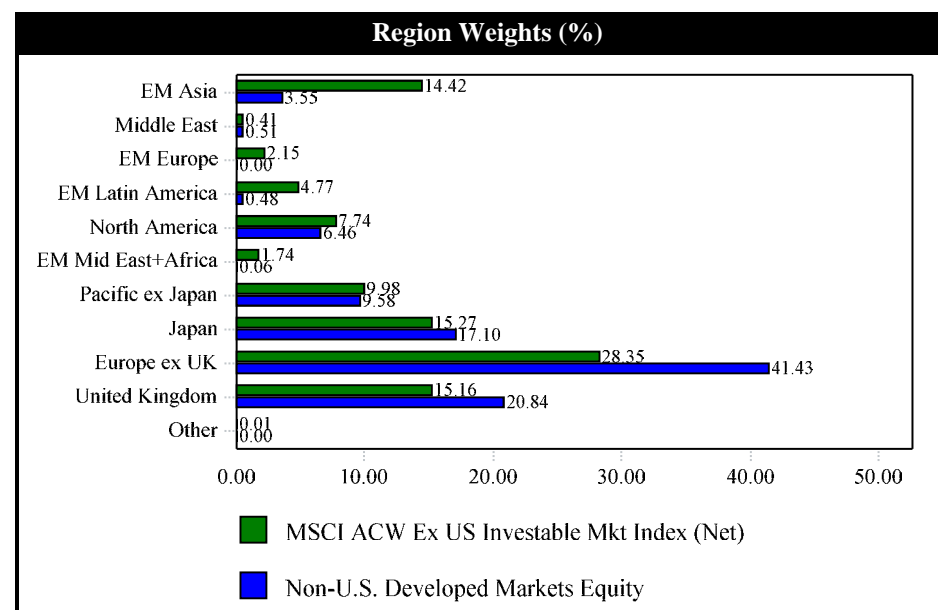
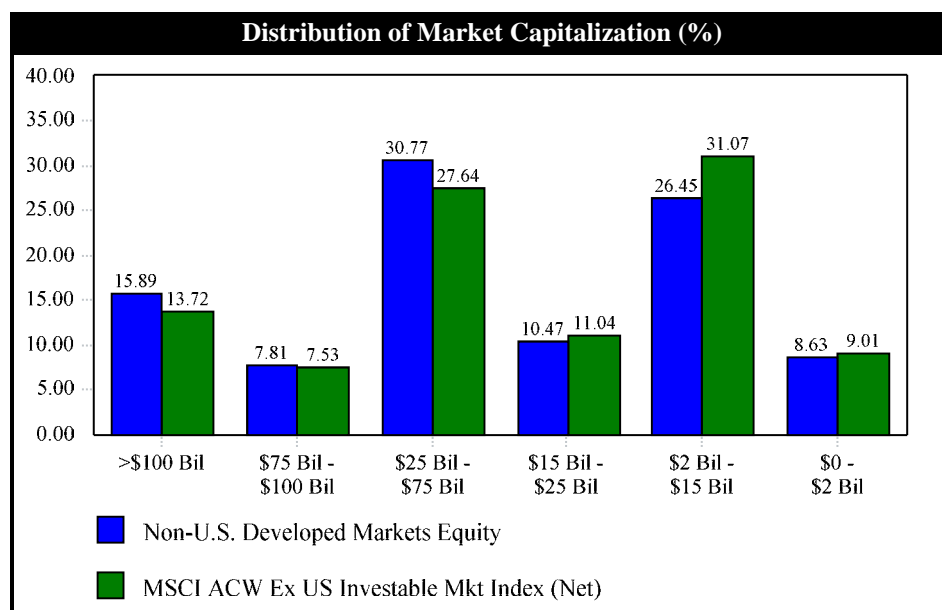
Allocations shown may not sum up to 100% exactly due to rounding. Asset Allocation by Manager excludes liquidating accounts.

Commonwealth of Pennsylvania State Employees' Retirement System
Non-U.S. Developed Markets Equity vs. MSCI ACW Ex US Investable Mkt Index (Net)

Portfolio Characteristics
As of March 31, 2013

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Nestle SA, Cham Und Vevey	2.09	1.24	0.85	11.08
Roche Holding AG	1.54	0.87	0.67	19.80
Sanofi	1.50	0.65	0.85	7.95
HSBC Holdings PLC	1.29	1.05	0.24	3.21
Unilever NV	1.23	0.36	0.87	8.63
Novartis AG	1.21	0.87	0.34	17.40
Toyota Motor Corp	1.20	0.76	0.44	12.11
Bayer AG	1.19	0.45	0.74	8.82
Vodafone Group PLC	1.08	0.74	0.34	12.94
British American Tobacco PLC	0.98	0.55	0.43	8.44
% of Portfolio	13.31	7.54		

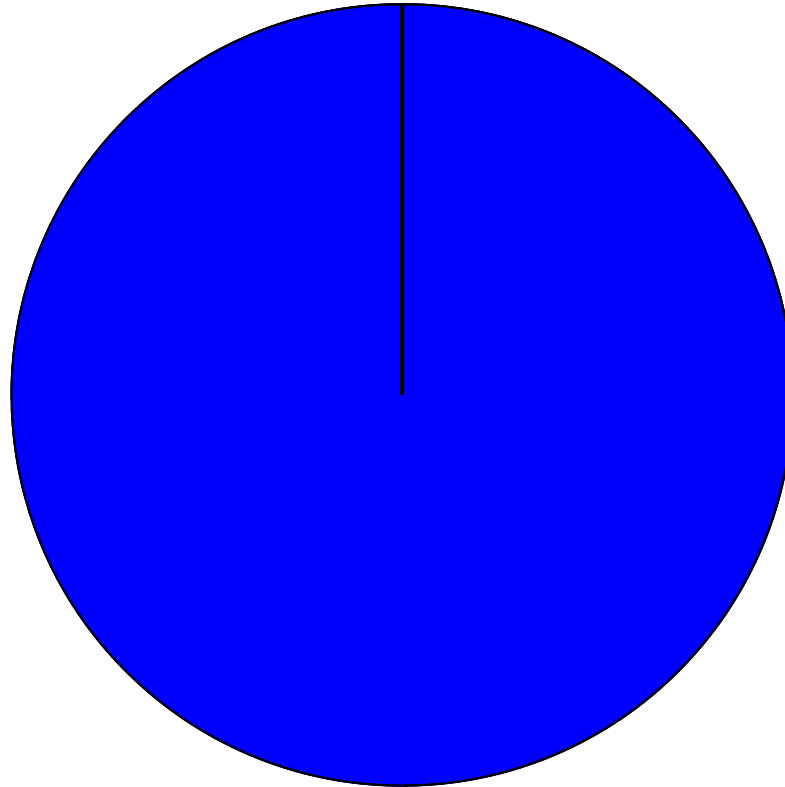
Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	51,836	46,002
Median Mkt. Cap (\$M)	7,817	1,051
Price/Earnings Ratio	15.39	14.08
Price/Book Ratio	2.02	2.04
5 Yr. EPS Growth Rate (%)	-2.16	1.14
Current Yield (%)	2.96	3.00
Beta (5 Years, Monthly)	0.99	1.00
Number of Securities	1,084	6,003



Allocation to "Other" consists of holdings domiciled in countries/regions that do not meet economic development, size, liquidity, or market accessibility criteria as defined by the MSCI region standards.

Commonwealth of Pennsylvania State Employees' Retirement System
Emerging Markets Equity
Asset Allocation by Manager
As of March 31, 2013

March 31, 2013 : \$620



	Market Value (\$M)	Allocation (%)
■ BlackRock Emg Mkts Index (CF)	620	100.00

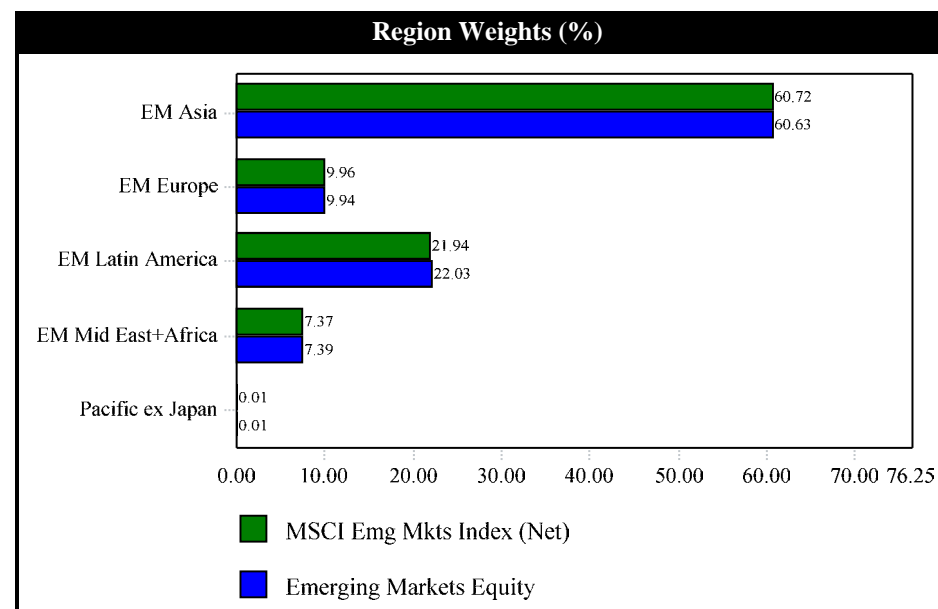
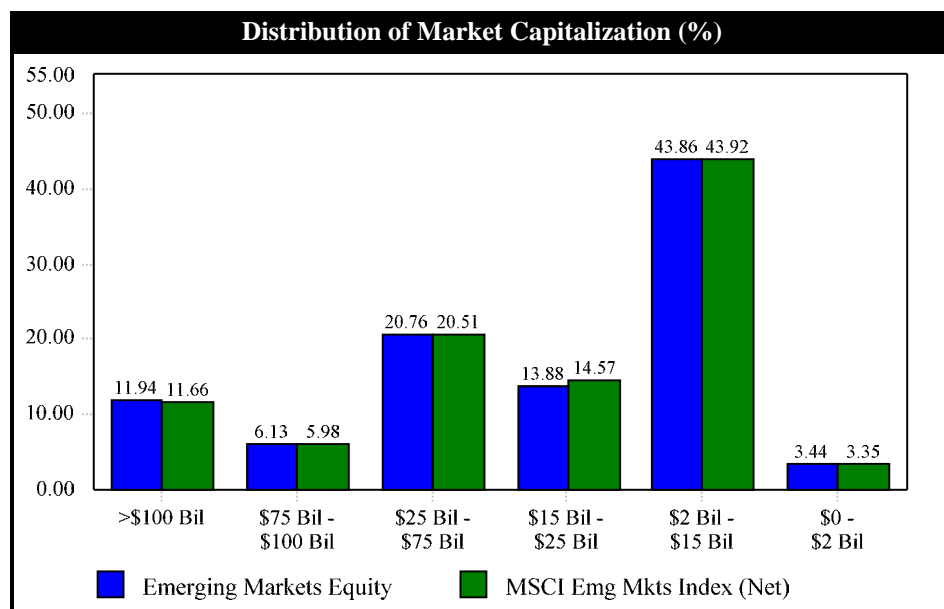
Allocations shown may not sum up to 100% exactly due to rounding and exclude liquidating accounts.

**Commonwealth of Pennsylvania State Employees' Retirement System
Emerging Markets Equity vs. MSCI Emg Mkts Index (Net)**

**Portfolio Characteristics
As of March 31, 2013**

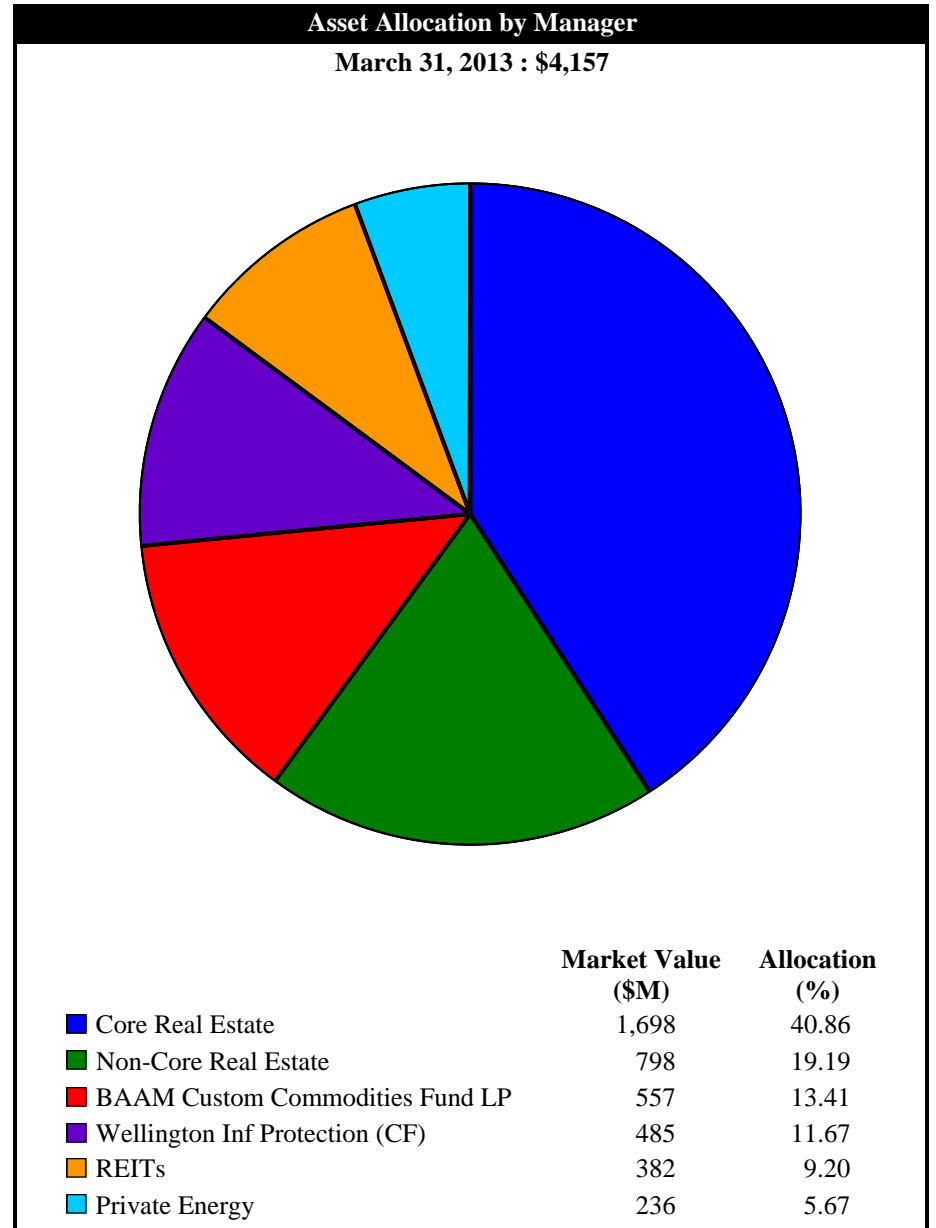
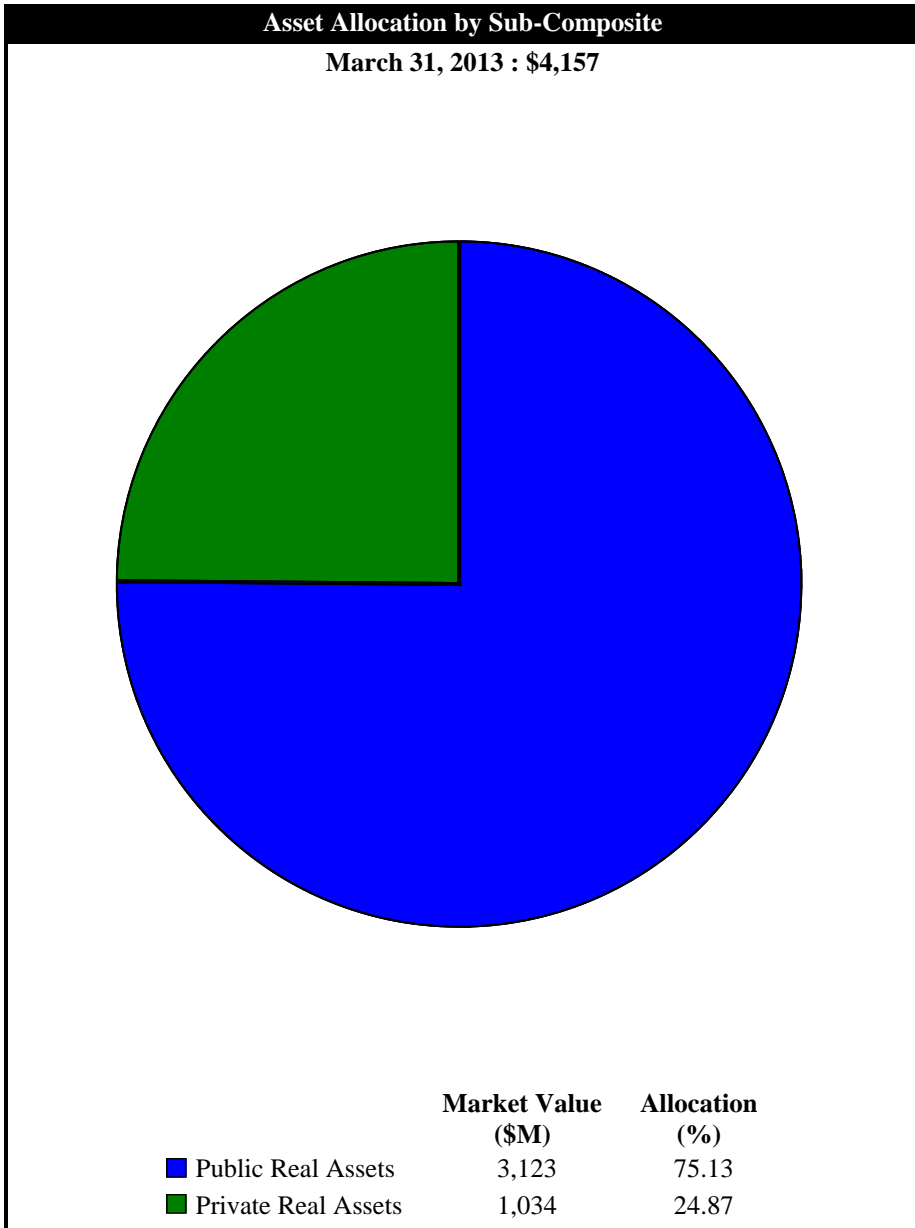
Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Samsung Electronics Co Ltd	3.98	3.98	0.00	-3.88
Taiwan Semiconductor Mfg	2.17	2.17	0.00	0.87
China Mobile Ltd	1.67	1.67	0.00	-9.06
China Construction Bank Corp	1.54	1.54	0.00	1.78
Gazprom OAO	1.20	1.21	-0.01	-8.65
Industrial & Commercial Bank of China Ltd	1.20	1.20	0.00	-1.24
America Movil SA De CV, Mexico	1.09	1.08	0.01	-7.36
Itau Unibanco Holding SA	1.06	1.06	0.00	10.40
Petroleo Brasileiro Sa Petrobras Petr	1.00	1.00	0.00	-4.86
Banco Bradesco Sa Brad	0.93	0.93	0.00	8.47
% of Portfolio	15.84	15.84		

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	38,918	39,286
Median Mkt. Cap (\$M)	4,688	4,784
Price/Earnings Ratio	11.66	11.70
Price/Book Ratio	2.14	2.15
5 Yr. EPS Growth Rate (%)	10.42	10.54
Current Yield (%)	2.74	2.74
Beta (5 Years, Monthly)	0.97	1.00
Number of Securities	827	823



Commingled Index Fund, which is excluded from Iran/Sudan restrictions.

Commonwealth of Pennsylvania State Employees' Retirement System
REAL ASSETS
Asset Allocation by Sub-Composite & Manager
As of March 31, 2013



Allocations shown may not sum up to 100% exactly due to rounding.

Commonwealth of Pennsylvania State Employees' Retirement System

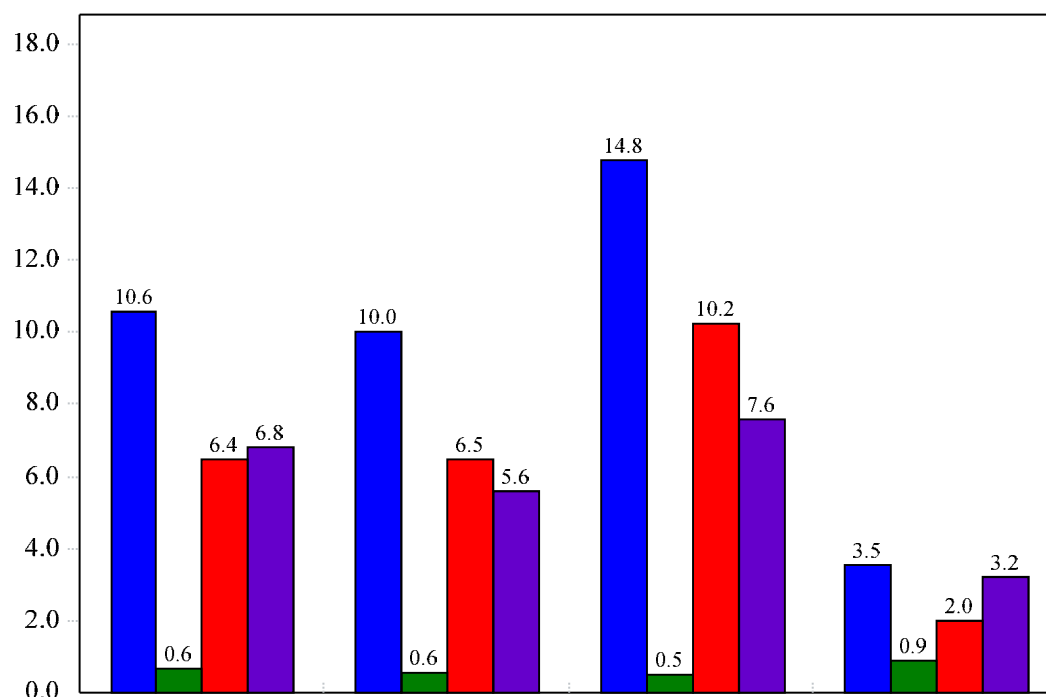
REAL ASSETS

As of March 31, 2013

Comparative Performance

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2012	2011	2010	Since Incep.	Inception Date
REAL ASSETS	1.5	1.5	6.3	9.2	-1.8	3.7	8.3	8.6	6.0	7.4	7.6	01/01/1984
Real Assets Custom Benchmark*	2.2	2.2	9.5	11.1	-1.2	3.4	7.0	11.5	7.3	9.2	6.4	
Difference	-0.7	-0.7	-3.2	-1.9	-0.6	0.3	1.3	-2.9	-1.3	-1.8	1.2	

Historical Statistics - 10 Years



	REAL ASSETS	Real Assets Custom Benchmark*	S&P 500 Index (Cap Wtd)	Barclays US Agg Bond Index
Standard Deviation	10.6	10.0	14.8	3.5
Sharpe Ratio	0.6	0.6	0.5	0.9
Downside Risk	6.4	6.5	10.2	2.0
Excess Return	6.8	5.6	7.6	3.2

Actual Correlation - 10 Years

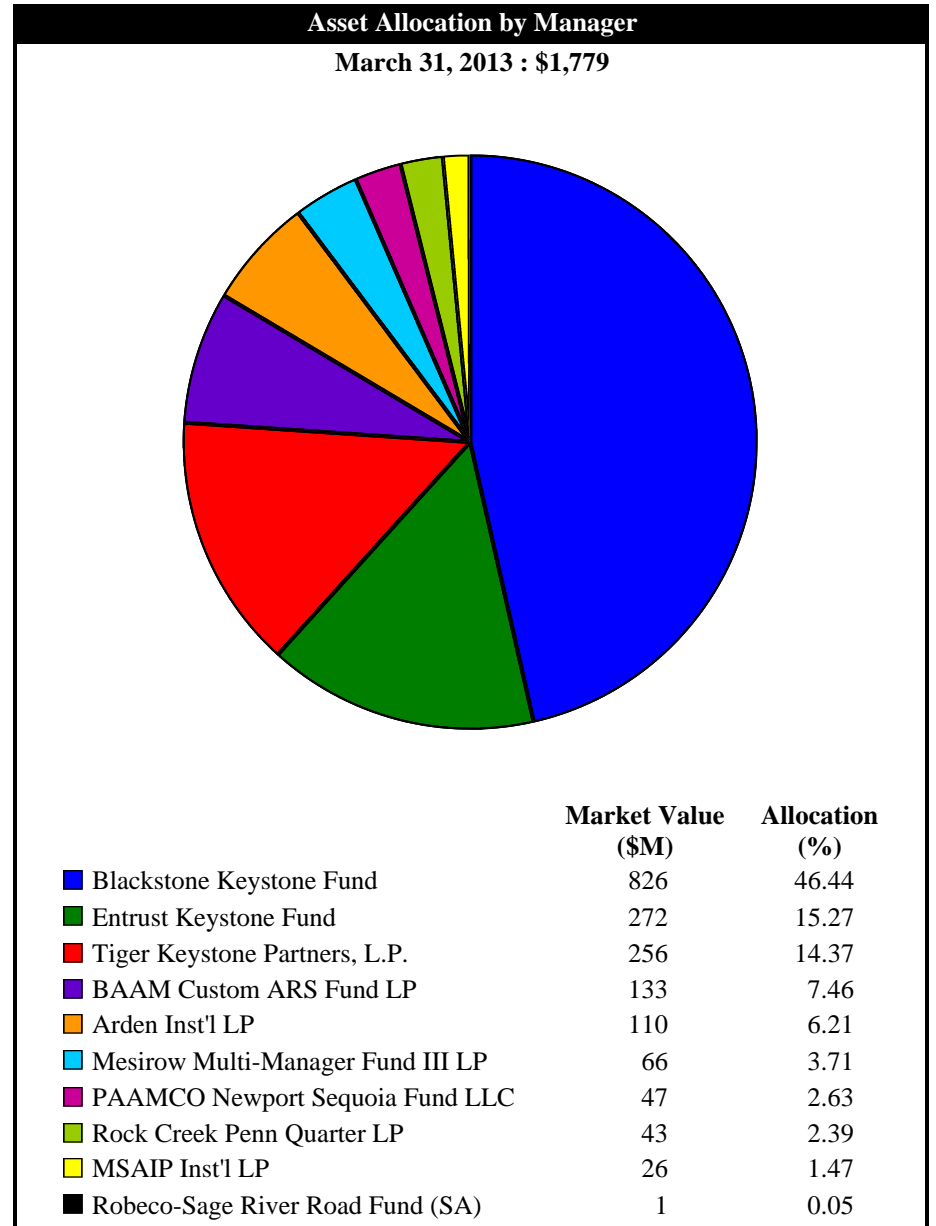
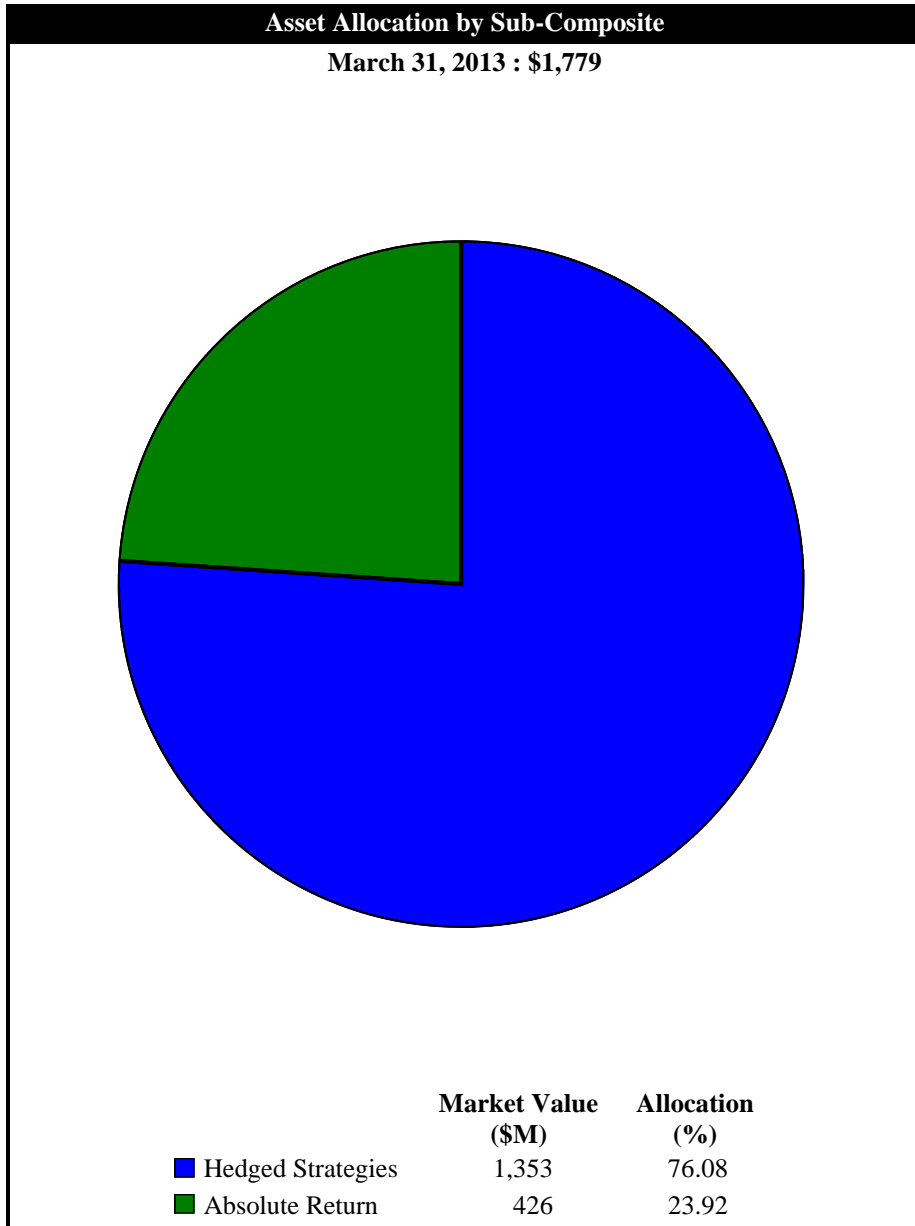
	Actual Correlation
Real Assets Custom Benchmark*	0.94
S&P 500 Index (Cap Wtd)	-0.02
R 2000 Index	-0.03
MSCI EAFE Index (Gross)	0.06
MSCI Emg Mkts Index (Gross)	0.02
Barclays US Agg Bond Index	-0.25
Barclays US Trsy: US TIPS Index	-0.21
Wilshire US REIT Index	-0.12
HFN FOF Multi-Strat Index (Net)	0.25
DJ-UBS Cmnty Index (TR)	0.20
3 Mo US T-Bill Index	0.21
Consumer Price Index	0.27

Performance shown is net of fees. Calculation is based on monthly periodicity.

An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index.

Excess Return statistic is calculated against the BofA ML 3 Mo US T-Bill Index.

Commonwealth of Pennsylvania State Employees' Retirement System
DIVERSIFYING ASSETS
Asset Allocation by Sub-Composite & Manager
As of March 31, 2013



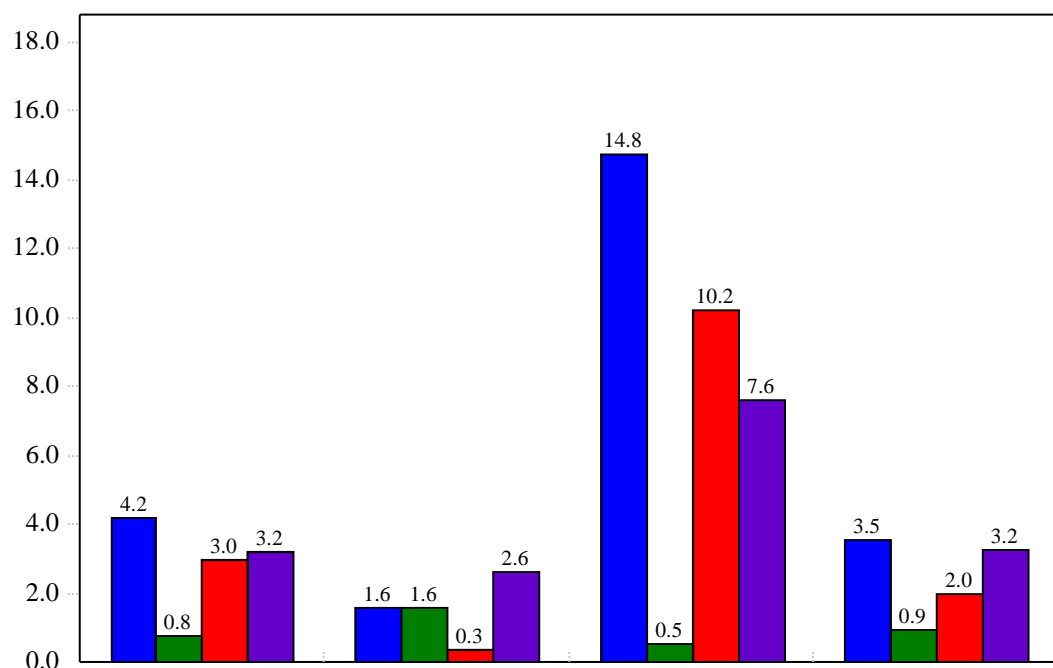
Allocations shown may not sum up to 100% exactly due to rounding.

Commonwealth of Pennsylvania State Employees' Retirement System
DIVERSIFYING ASSETS HISTORY
As of March 31, 2013

Comparative Performance

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2012	2011	2010	Since Incep.	Inception Date
DIVERSIFYING ASSETS HISTORY	3.4	3.4	8.2	4.7	2.7	3.5	5.0	8.6	-1.8	6.3	4.7	01/01/2002
Diversifying Assets Custom Benchmark*	7.4	7.4	13.5	6.7	5.3	5.3	4.4	6.6	3.3	3.4	4.1	
Difference	-4.0	-4.0	-5.3	-2.0	-2.6	-1.8	0.6	2.0	-5.1	2.9	0.6	

Historical Statistics - 10 Years



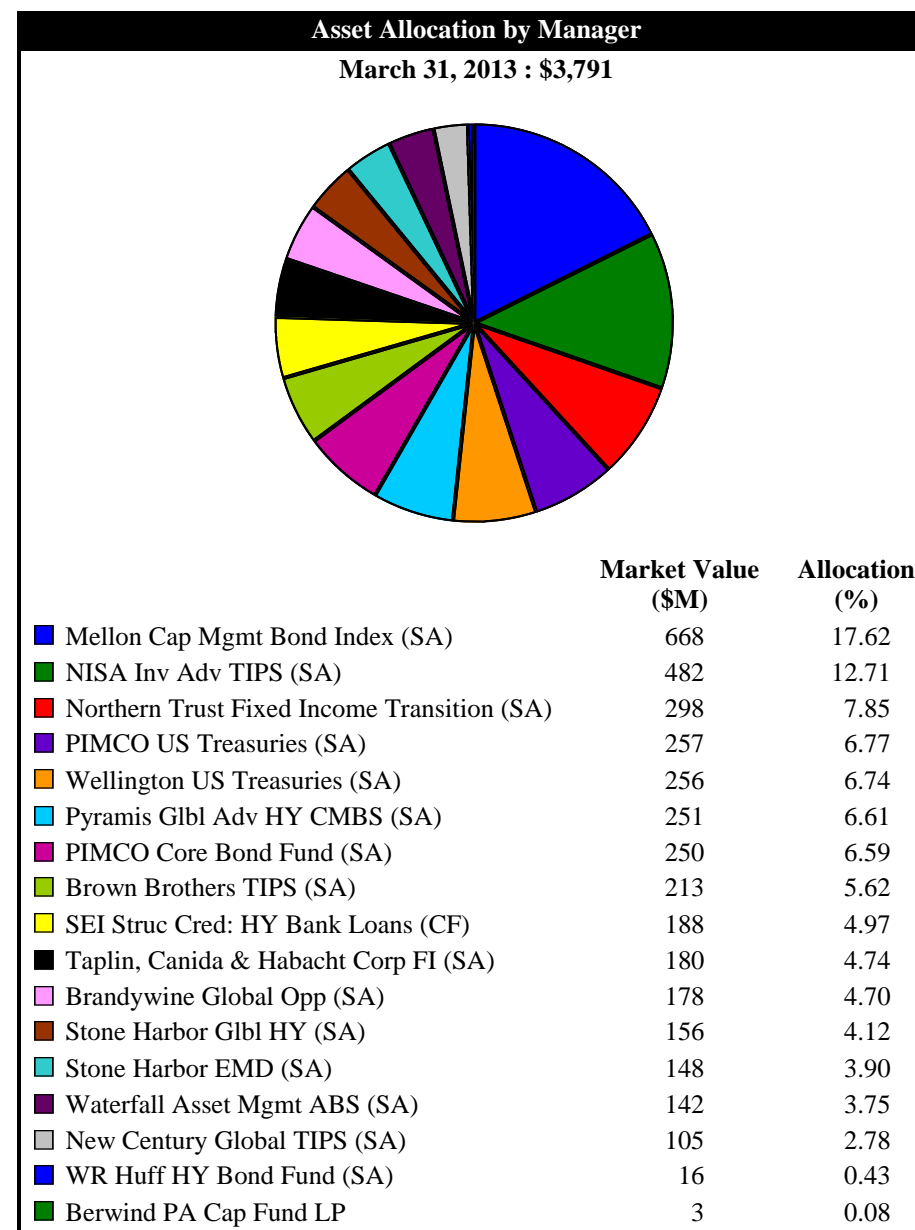
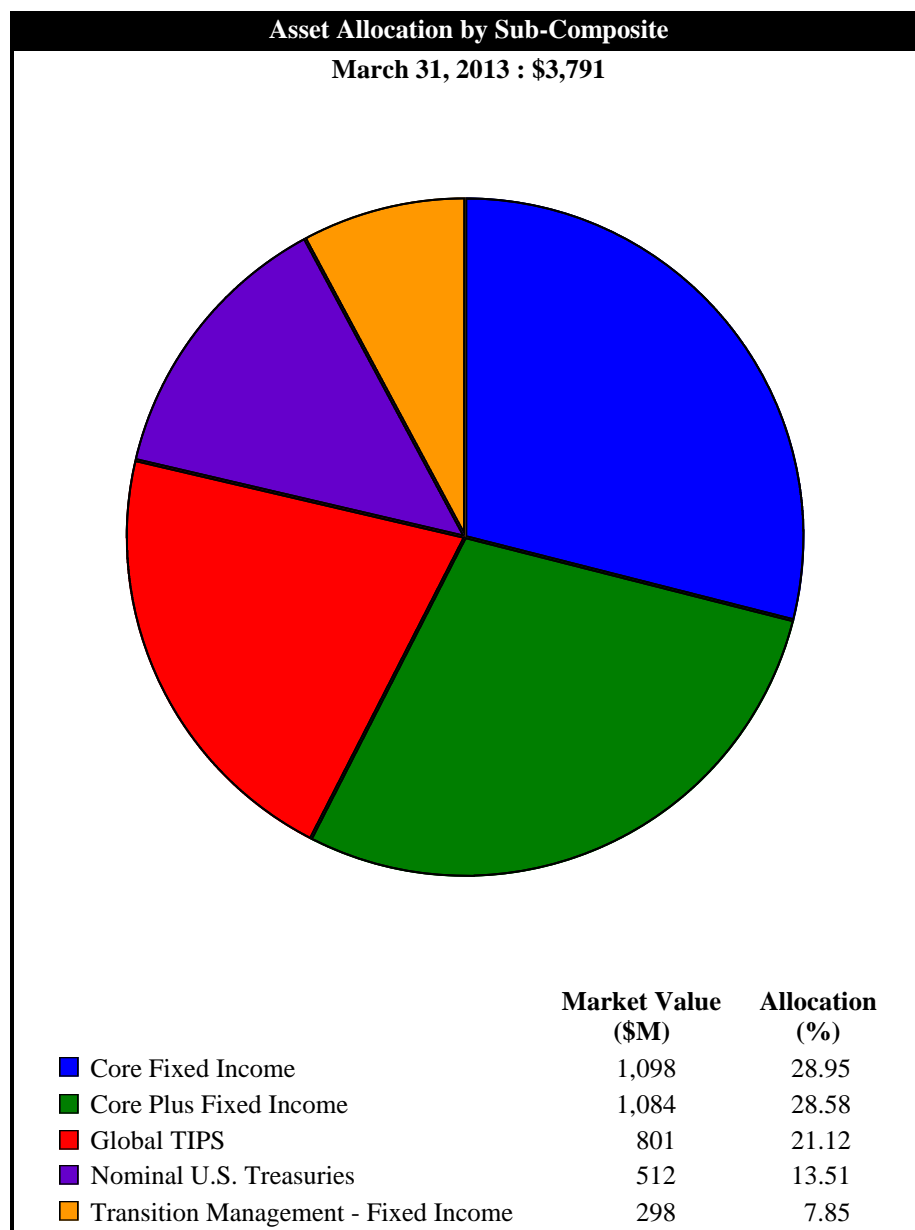
	DIVERSIFYING ASSETS HISTORY	Diversifying Assets Custom Benchmark*	S&P 500 Index (Cap Wtd)	Barclays US Agg Bond Index
Standard Deviation	4.2	1.6	14.8	3.5
Sharpe Ratio	0.8	1.6	0.5	0.9
Downside Risk	3.0	0.3	10.2	2.0
Excess Return	3.2	2.6	7.6	3.2

Actual Correlation - 10 Years

	Actual Correlation
DA Custom Benchmark*	0.17
S&P 500 Index (Cap Wtd)	0.60
R 2000 Index	0.55
MSCI EAFE Index (Gross)	0.69
MSCI Emg Mkts Index (Gross)	0.70
Barclays US Agg Bond Index	-0.06
Barclays US Trsy: US TIPS Index	0.17
Wilshire US REIT Index	0.32
HFN FOF Multi-Strat Index (Net)	0.94
DJ-UBS Cmdty Index (TR)	0.60
3 Mo US T-Bill Index	-0.06
Consumer Price Index	0.25

Performance shown is net of fees. Calculation is based on monthly periodicity. An index marked with an asterisk (*) represents the current benchmark. See the Addendum for the complete historical composition of the custom index. Excess Return statistic is calculated against the BofA ML 3 Mo US T-Bill Index. Performance for DIVERSIFYING ASSETS HISTORY is for reference purposes only.

Commonwealth of Pennsylvania State Employees' Retirement System
FIXED INCOME
Asset Allocation by Sub-Composite & Manager
As of March 31, 2013



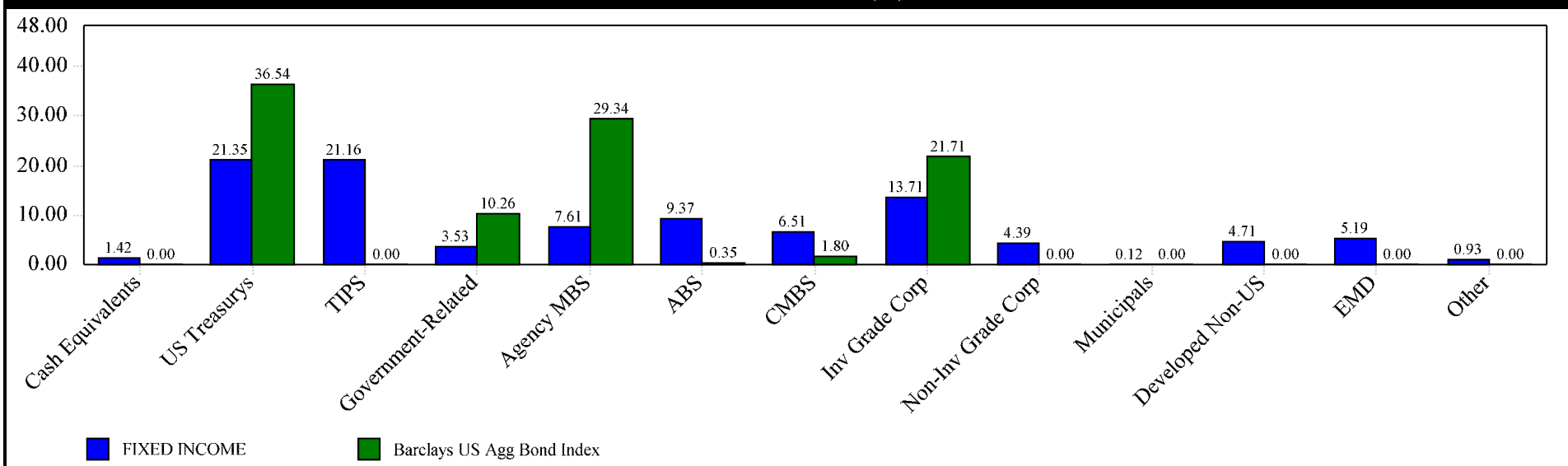
Allocations shown may not sum up to 100% exactly due to rounding. Asset Allocation by Manager excludes liquidating accounts.

Commonwealth of Pennsylvania State Employees' Retirement System
FIXED INCOME vs. Barclays US Agg Bond Index
Portfolio Characteristics
As of March 31, 2013

Portfolio Characteristics

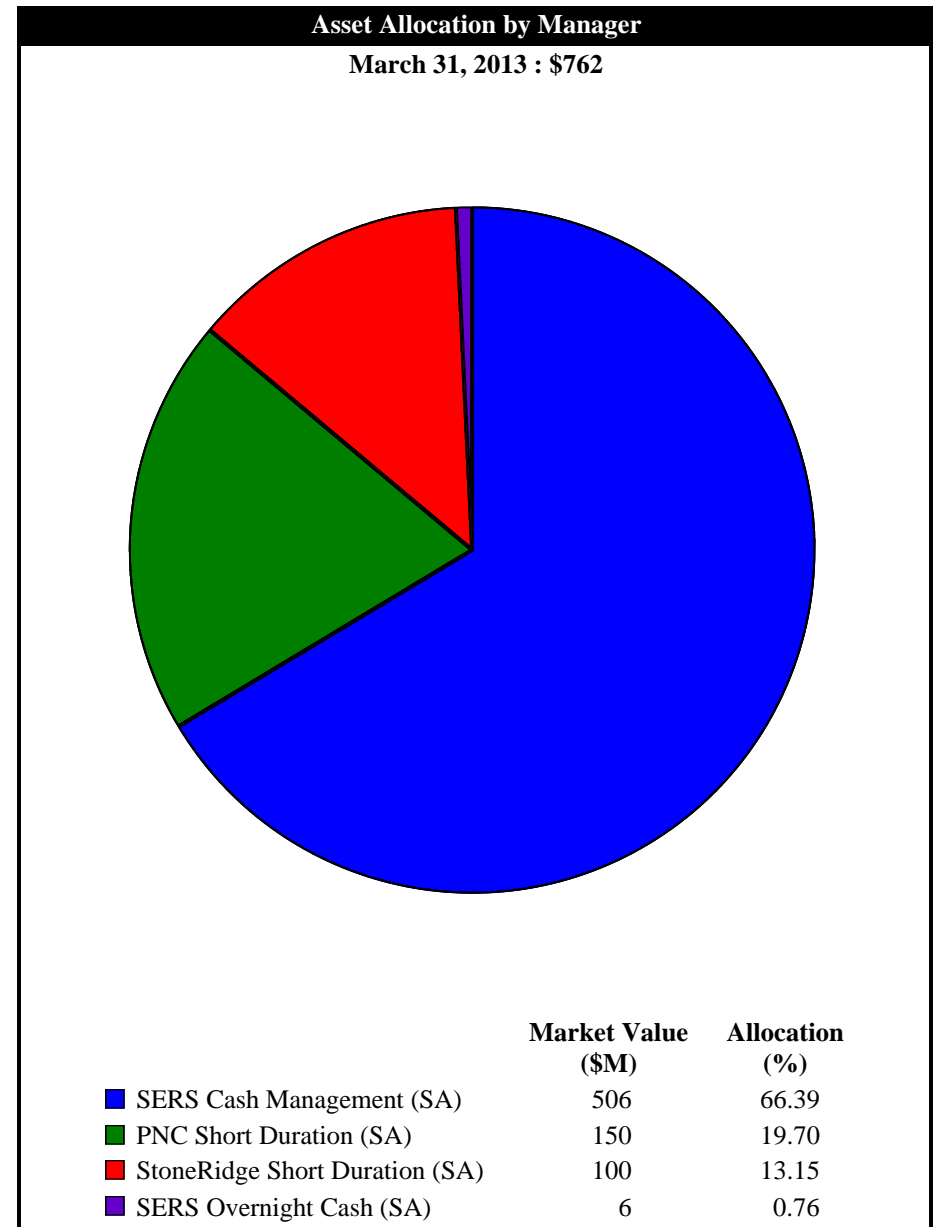
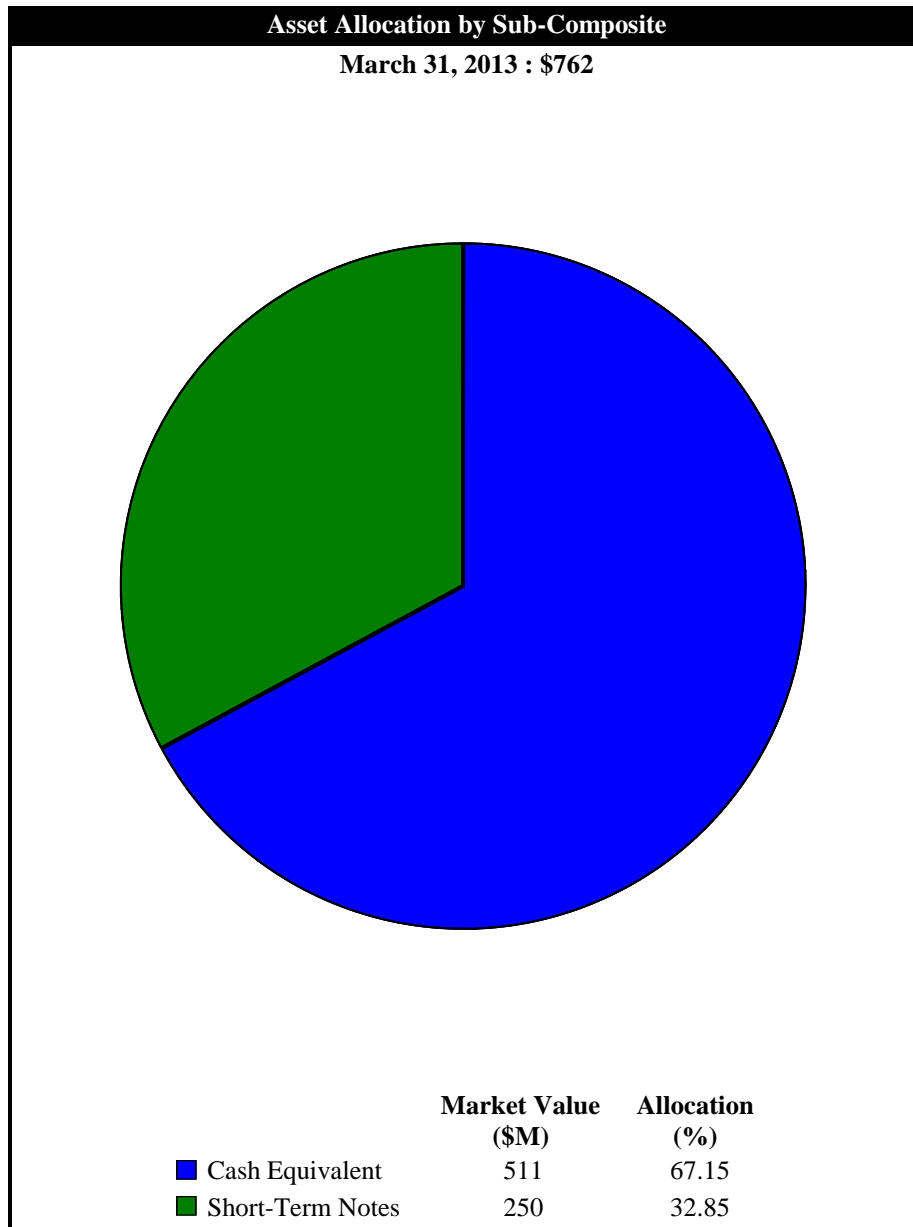
	Portfolio	Benchmark
Effective Duration	6.44	5.26
Avg. Quality	A+	Aa1/Aa2
Yield To Maturity (%)	2.95	1.87

Sector Distribution (%)



Allocation to "Other" consists of Euro/Yankee bonds, real estate preferred stock, real estate bonds, accrued interest, and unrealized G/L on forwards. Data shown does not include liquidating accounts and fixed income transition accounts.

Commonwealth of Pennsylvania State Employees' Retirement System
LIQUIDITY RESERVE
 Asset Allocation by Sub-Composite & Manager
 As of March 31, 2013



Allocations shown may not sum up to 100% exactly due to rounding.

Capital Markets Review

Capital Markets Review As of March 31, 2013

First Quarter Economic Environment

Equity markets made significant and broad-based gains on the quarter, despite political uncertainty in the US and Europe, and continued weakness in the global economy. Domestically, the Bureau of Economic Analysis first estimate of real GDP growth was 2.5% annualized for the first quarter, above the fourth quarter rate of 0.4%. Job growth in the first quarter remained modest, as the economy added a monthly average of 168,000 jobs and the unemployment rate inched down to 7.6%. Political uncertainty continued to dominate headlines, as the spending cuts known as the Sequester took effect in March. Agreement has yet to be reached on the debt ceiling, currently scheduled to be reinstated in May. Regardless, consumer sentiment, as measured by the University of Michigan survey, increased to 78.6 in March. The Institute for Supply Management manufacturing index ended the quarter at 51.3, indicating continued expansion in the manufacturing sector, albeit at a slower rate than January and February.

Internationally, the bailout deal in Cyprus dominated headlines as the quarter came to a close. After the Cypriot parliament rejected an initial deal that would have imposed losses on small depositors, the country agreed to terms on a €10 billion loan. Cyprus was forced to impose capital controls to prevent a bank run following the deal, a first in the history of the Eurozone. Spanish, Italian and Greek debt spreads rose significantly in response to the deal, but remain below last year's highs. European stocks lost significant ground while still managing to stay in positive territory for the quarter. Euro area economic conditions remain bleak, with unemployment holding at a record high of 12%, including youth unemployment above 20%. Elsewhere, the Bank of Japan named a new head, Haruhiko Kuroda, who has promised to do "whatever it takes" to end deflation in the country, pledging to achieve the nation's 2% inflation target within two years. Japanese markets continue to rally, and closed the quarter up over 44% in local currency terms since November lows.

Domestic Equities

- Equities made gains each month of the quarter, with significant rallies in January and March. This was the third consecutive quarter that the Russell 3000 posted gains.
- Value significantly outperformed growth, marking the fourth consecutive quarter that value stocks have been in favor, as the Russell 3000 Value Index returned 12.26% versus 9.82% for the Russell 3000 Growth Index.
- Mid-cap stocks outperformed small cap and large cap stocks, as the Russell 2500 returned 12.85% compared with 12.39% and 10.96% for the Russell 2000 and Russell 1000, respectively.
- All sectors posted positive returns this quarter. Health care posted a 15.81% return on the quarter, and was the highest performing sector.

International Equities

- Although not as strong as domestic equities, broad international indices made solid gains for the third consecutive quarter.
- Gains were driven by the developed world, as the MSCI EAFE returned 5.23% on the quarter, while the MSCI Emerging Markets returned -1.57%.

Fixed Income

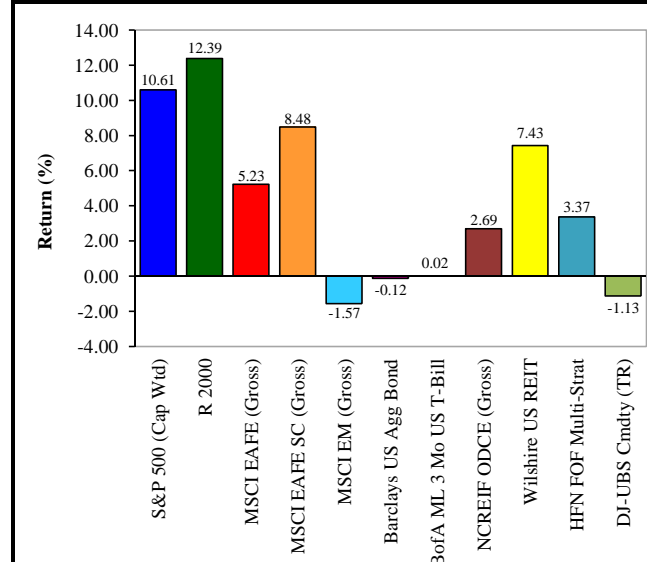
- The Barclays US Aggregate Bond Index posted its first negative quarter since 2010, as the "risk on" environment and increased optimism had investors seeking higher returns.
- Long duration bond returns suffered this quarter as investor appetite for return remained high. Treasury long and Corporate long bonds were the lowest performing sectors this quarter, posting returns of -2.38% and -1.85% respectively.

Trailing-Period Performance

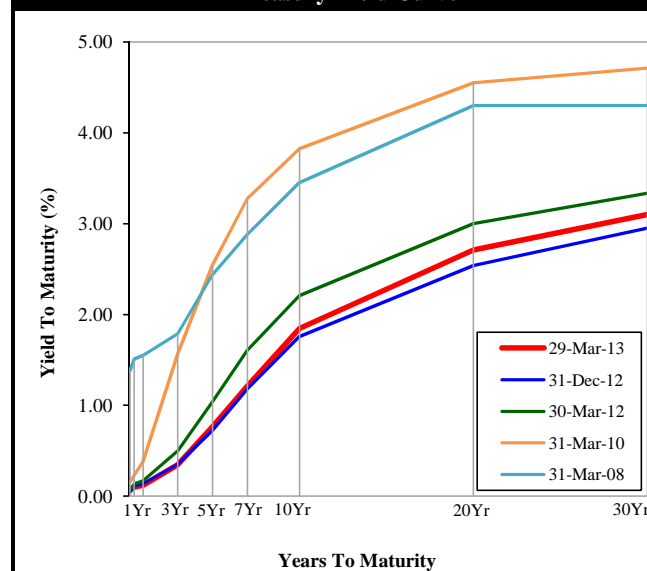
	Mth End Jan-2013	Mth End Feb-2013	MTD	QTD	CYTD	1 Year	2 Years	3 Years	5 Years	10 Years
S&P 500 (Cap Wtd)	5.18	1.36	3.75	10.61	10.61	13.96	11.22	12.67	5.81	8.53
R 2000	6.26	1.10	4.62	12.39	12.39	16.30	7.74	13.45	8.24	11.52
MSCI EAFE (Gross)	5.29	-0.92	0.88	5.23	5.23	11.79	2.89	5.49	-0.40	10.19
MSCI EAFE SC (Gross)	5.24	1.12	1.95	8.48	8.48	13.66	3.42	8.76	2.41	13.56
MSCI EM (Gross)	1.39	-1.24	-1.70	-1.57	-1.57	2.31	-3.26	3.59	1.40	17.41
Barclays US Agg Bond	-0.70	0.50	0.08	-0.12	-0.12	3.77	5.73	5.52	5.47	5.02
BofA ML 3 Mo US T-Bill	0.00	0.00	0.02	0.02	0.02	0.12	0.09	0.11	0.34	1.75
NCREIF ODCE (Gross)	N/A	N/A	N/A	2.69	2.69	10.79	12.71	15.13	-0.84	6.80
Wilshire US REIT	3.54	0.95	2.78	7.43	7.43	14.02	13.71	17.35	6.32	12.23
HFN FOF Multi-Strat	2.04	0.38	0.92	3.37	3.37	5.13	0.80	1.90	-0.55	3.57
DJ-UBS Cmdty (TR)	2.40	-4.09	0.67	-1.13	-1.13	-3.03	-9.90	1.42	-7.11	3.67

Performance is annualized for periods greater than one year.
Treasury data courtesy of the U.S. Department of the Treasury.

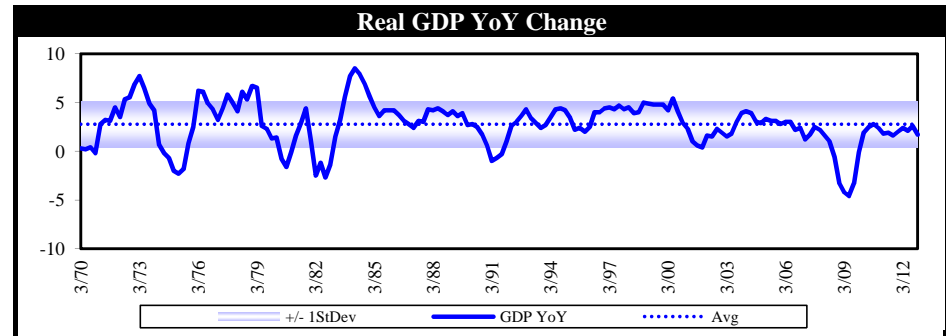
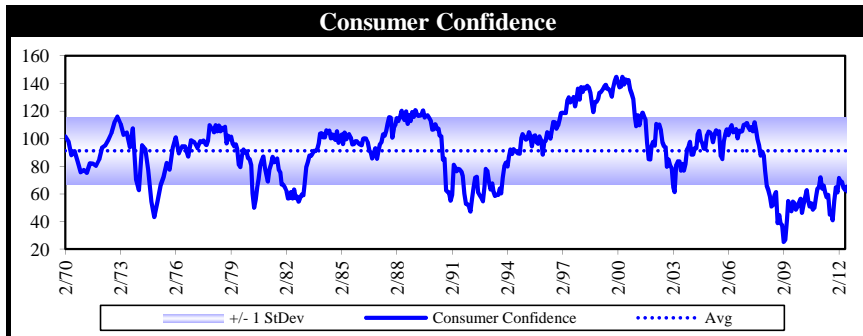
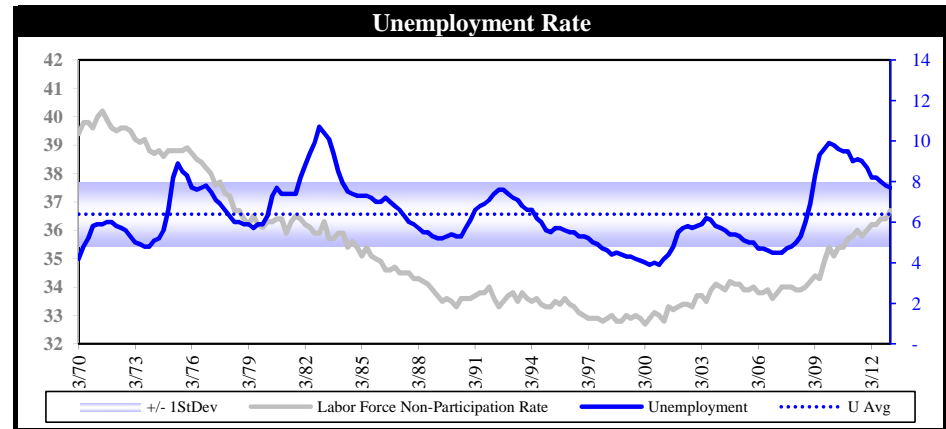
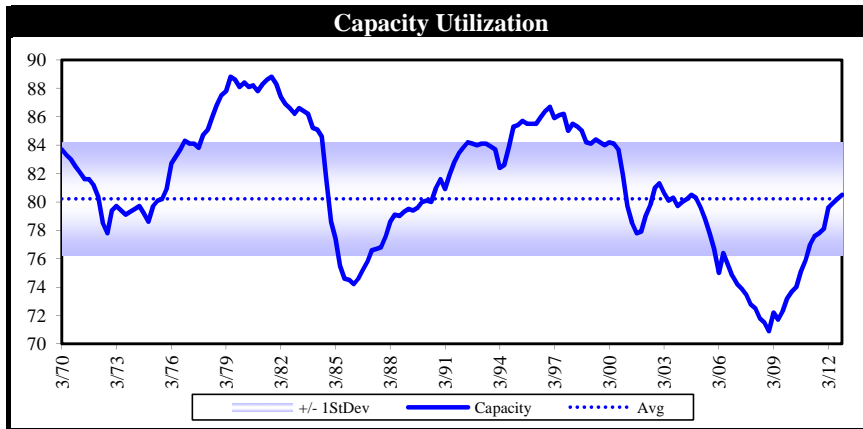
QTD



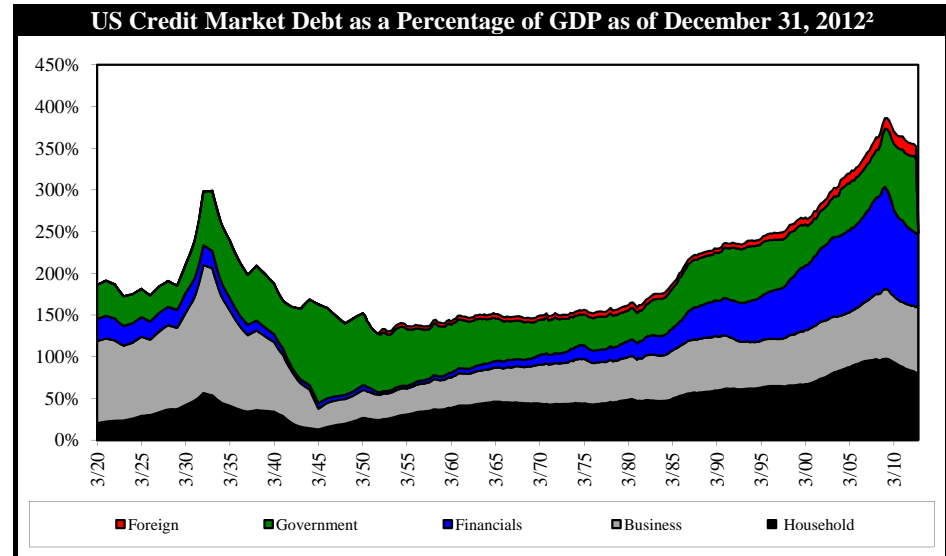
Treasury Yield Curve



Economic Measures ¹
As of March 31, 2013



	3/31/2013		12/31/2012	20 Year	40 Year
Capacity Utilization	78.50	▲	77.70	79.10	80.10
Unemployment Rate	7.60%	▼	7.80%	6.00%	6.40%
Shiller 20 City YoY - Housing	N/A		6.84%	2.94%	N/A
PMI - Manufacturing	51.30	▲	50.20	52.10	52.10
Baltic Dry Index - Shipping	910	▲	699	2,425	2,077
Real GDP YoY	N/A		1.70%	2.60%	2.80%
Consumer Confidence (Conf. Bd.)	59.70	▼	66.70	93.13	91.54
Breakeven Inflation - 10 Year	2.52	▲	2.45	N/A	N/A
CPI YoY (Headline) ⁴	1.50%	▼	1.70%	2.50%	4.40%
CPI YoY (Core) ⁴	1.90%	—	1.90%	2.30%	4.20%
PPI YoY	1.10%	▼	1.30%	2.30%	4.00%
M2 YoY	6.80%	▼	7.90%	5.70%	6.70%
Personal Savings	N/A		6.50%	4.00%	6.40%
Disposable Personal Income	N/A		2.70%	0.40%	0.50%
Prsnl Consumption Expenditures	N/A		1.50%	2.10%	3.90%
US Dollar Total Weighted Index	76.23	▲	73.44	87.44	95.22
WTI Crude Oil per Barrel	\$97	▲	\$92	\$43	\$39
Gold Spot per Oz ⁵	\$1,599	▼	\$1,675	\$310	\$332

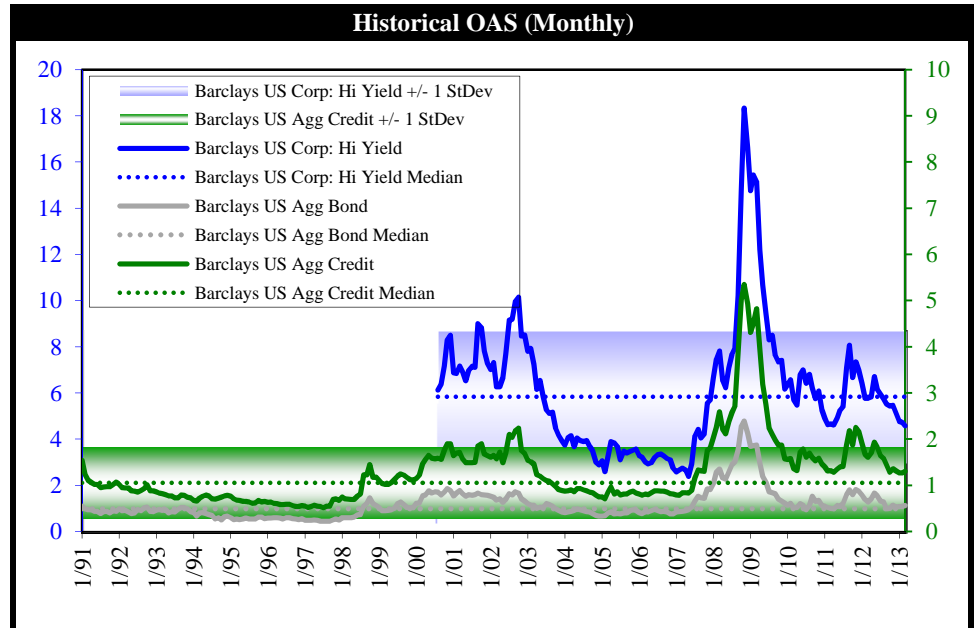
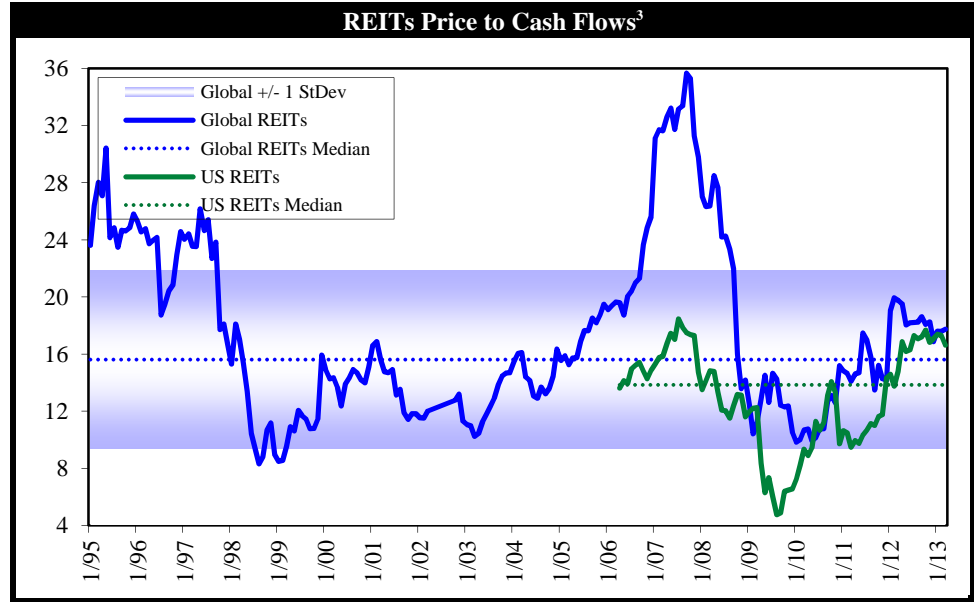
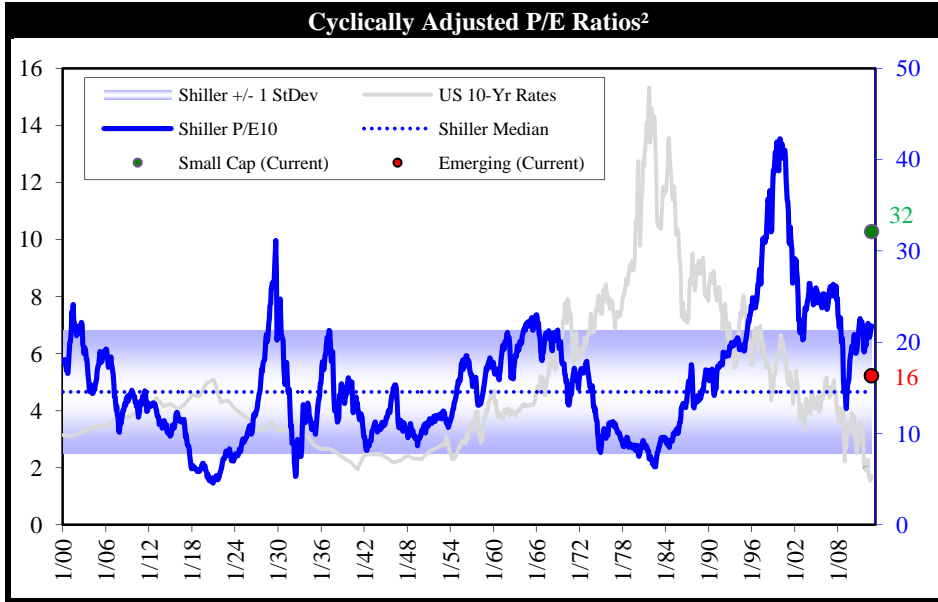


¹ All data courtesy of Bloomberg Professional Service, except as noted below.

² Data prior to 1952 is from "The Statistical History of the United States, From Colonial Times to the Present", by Ben Wattenberg, Morgan Stanley Research.

³ "N/A" is shown for data that is not yet available. ⁴ CPI figures are cyclically adjusted. ⁵ 20- and 40-year average Gold spot prices are adjusted for inflation.

Valuation Metrics ¹ As of March 31, 2013

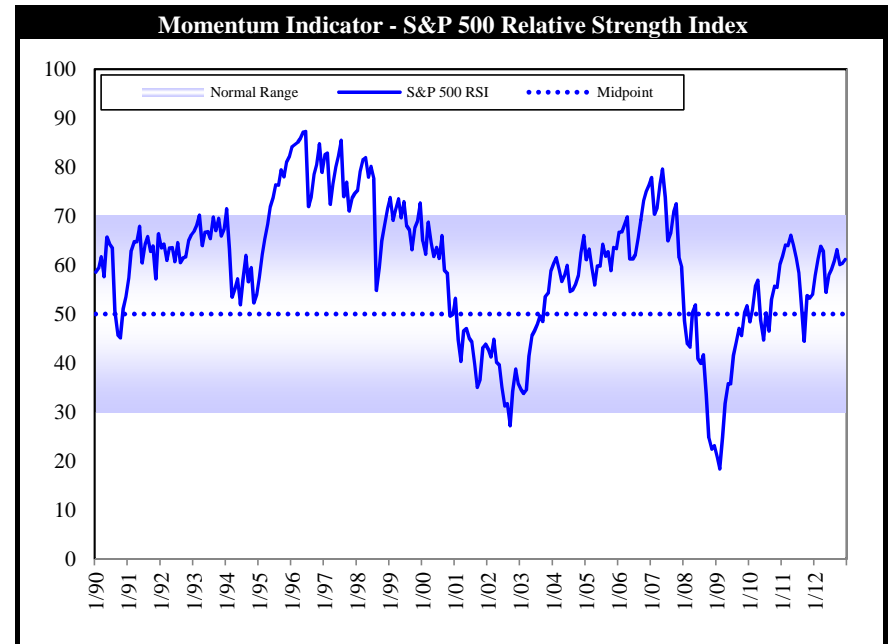
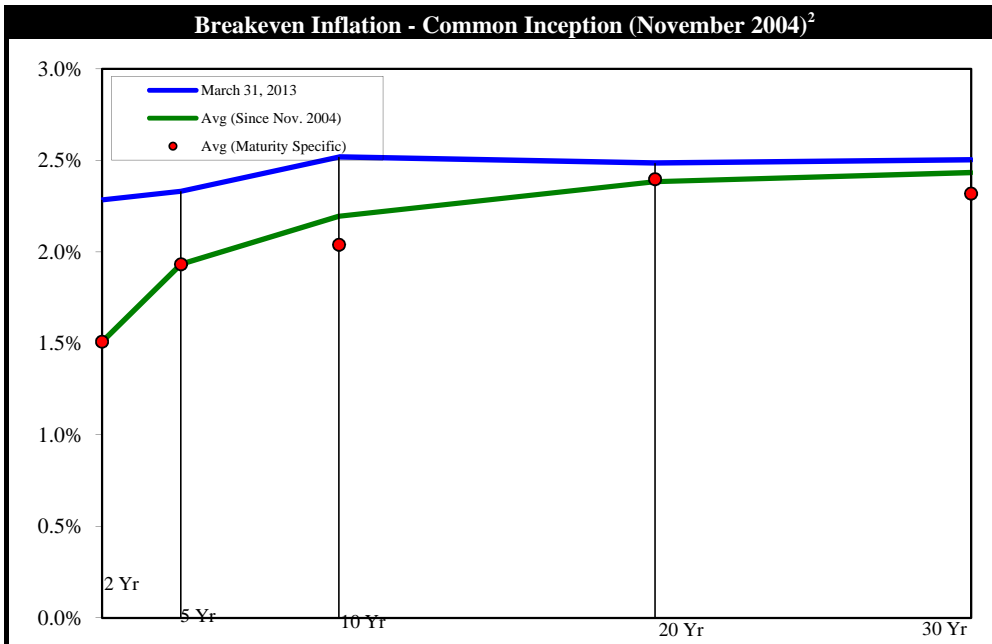
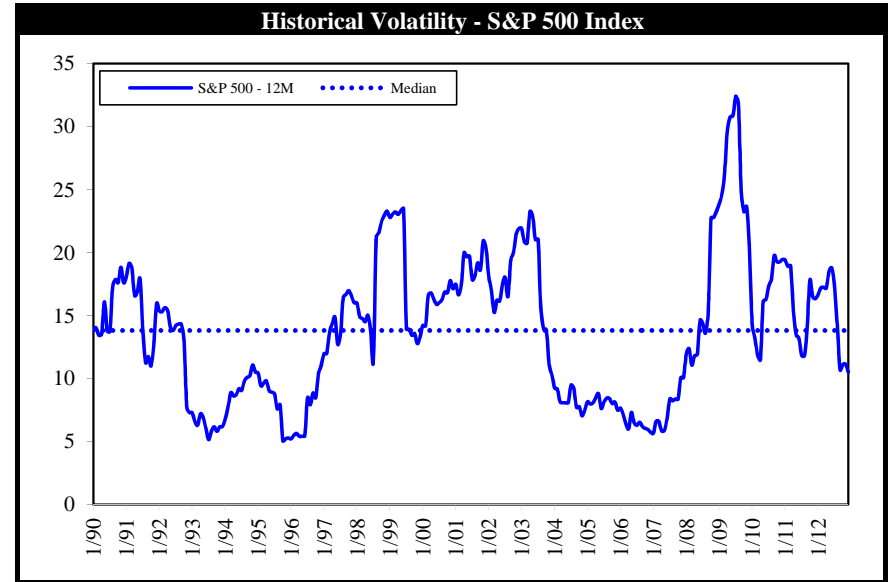
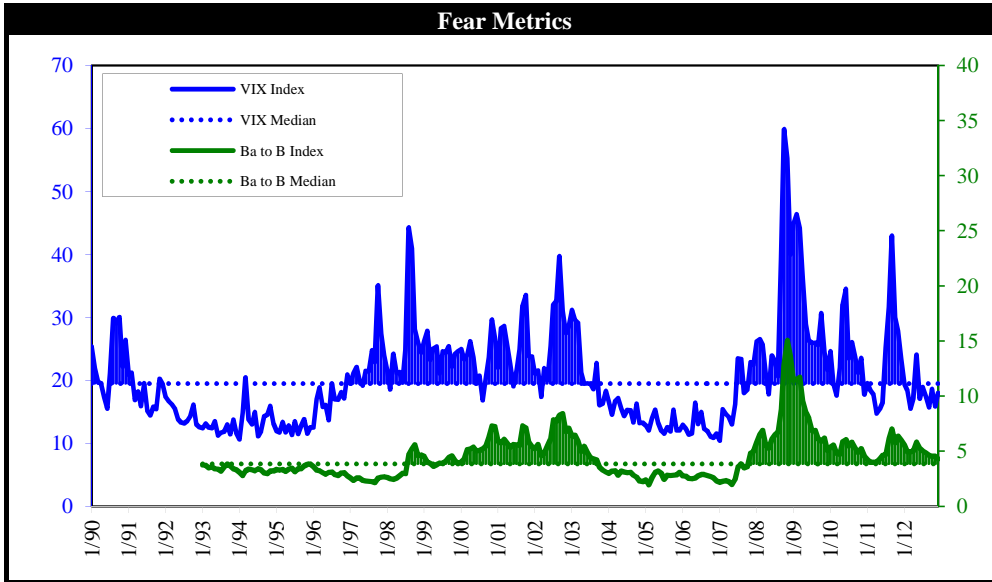


¹ All data courtesy of Bloomberg Professional Service.

² Source: Bloomberg and Robert J. Shiller, Irrational Exuberance, Second Edition. P/E for the S&P 500 Index is based on 10-year trailing real earnings. Small Cap is represented by the S&P 600 Small Cap Index, and Emerging is represented by the MSCI Emerging Markets Index. Due to limited history, only the current 10-year P/E is shown for Small Cap and Emerging.

³ US REITs is represented by the MSCI US REITs Index and Global REITs is represented by the MSCI World Real Estate Index.

Risk Metrics ¹
As of March 31, 2013



¹ All data courtesy of Bloomberg Professional Service.

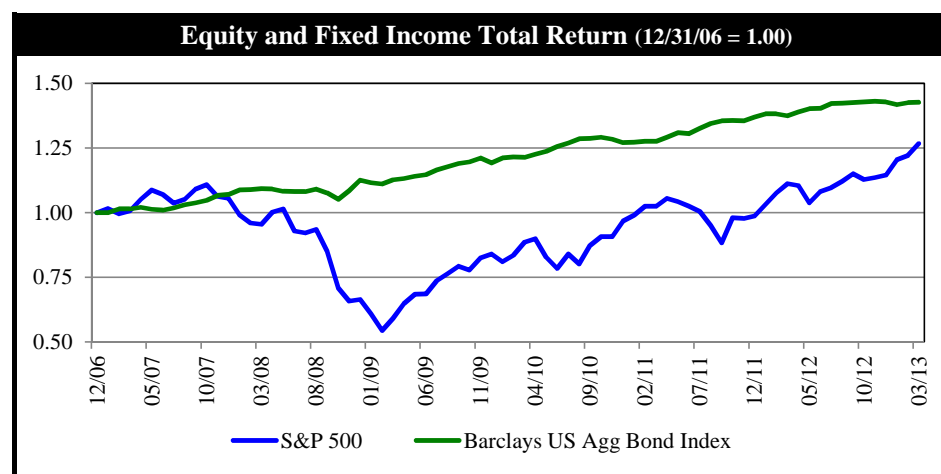
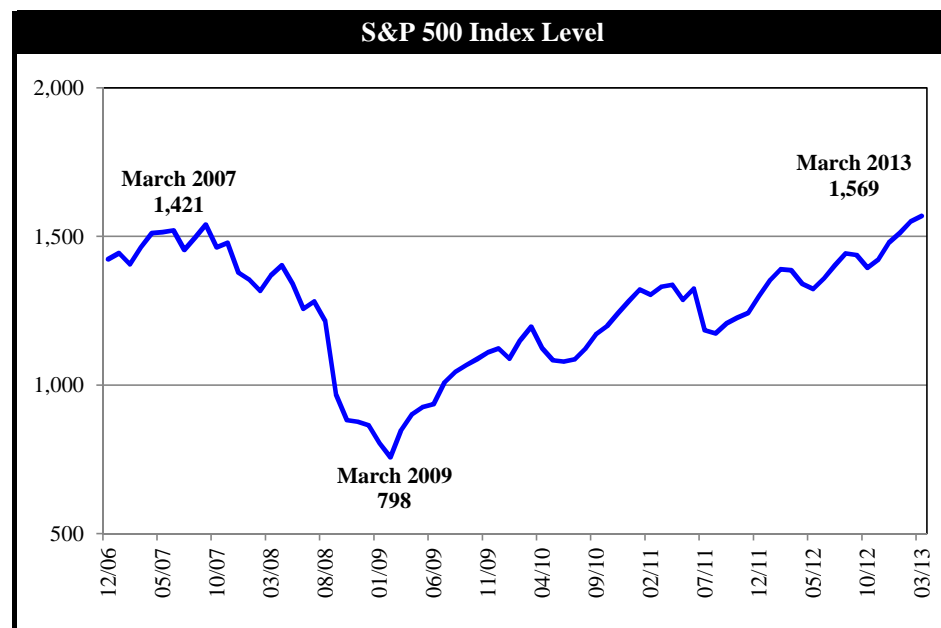
² Common inception of November 2004 is based on historical data availability. Specific inception dates are as follows: 2- and 20-year (2004), 5-year (2002), 10- and 30-year (1998).

A Tale of Three Marches¹
As of March 31, 2013

Market	3/31/07	3/31/09	3/31/13
S&P 500 Index	1,421	798	1,569
Volume (Bil shares/Month)	29.3	34.8	10.7
Trailing EPS	87.3	60.9	101.6
Trailing P/E	16.3	13.1	15.4
Price/Book Value	2.8	1.8	2.3
Dividend Yield	1.8%	3.6%	2.1%
10-Year Treasury Yield	4.7%	2.7%	1.9%
3-Month Treasury Bill	5.0%	0.2%	0.1%
VIX (S&P 500 Volatility)	14.64	44.14	12.7
Gold	664	919	1,599

Economy	3/31/07	3/31/09	3/31/13
GDP (\$Tr chained 2005)	13.1	12.7	13.7 ²
GDP Growth (YoY)	1.2%	-4.2%	1.7% ²
CPI (3/31/2007 = 100)	100	104	113
Credit Market Debt (% GDP) ³	344.5%	385.5%	358.8% ²
Unemployed Americans (Mil)	6.7	13.4	11.7
Unemployment Rate	4.4%	8.7%	7.6%
Labor Force Participation	66.2%	65.6%	63.3%
Consumer Conf (Conf Board)	108.2	26.9	59.7

Federal Gov't	3/31/07	3/31/09	3/31/13
Fed Balance Sheet (\$Bil)	874	2,073	3,204
Federal Funds Rate	5.3%	0.2%	0.2%
U.S. Deficit (\$Bil)	161	1,413	973 ²
U.S. Deficit (% GDP) ³	1.17%	10.15%	6.2% ²
Total U.S. Debt (\$Tr)	8.8	11.1	16.4 ²
U.S. Debt (% GDP) ³	64.3%	79.9%	104.6% ²



¹ Data courtesy of Bloomberg, FRED, U.S. Dept. of Treasury, BEA, and BLS.

² Data is shown as of 12/31/2012.

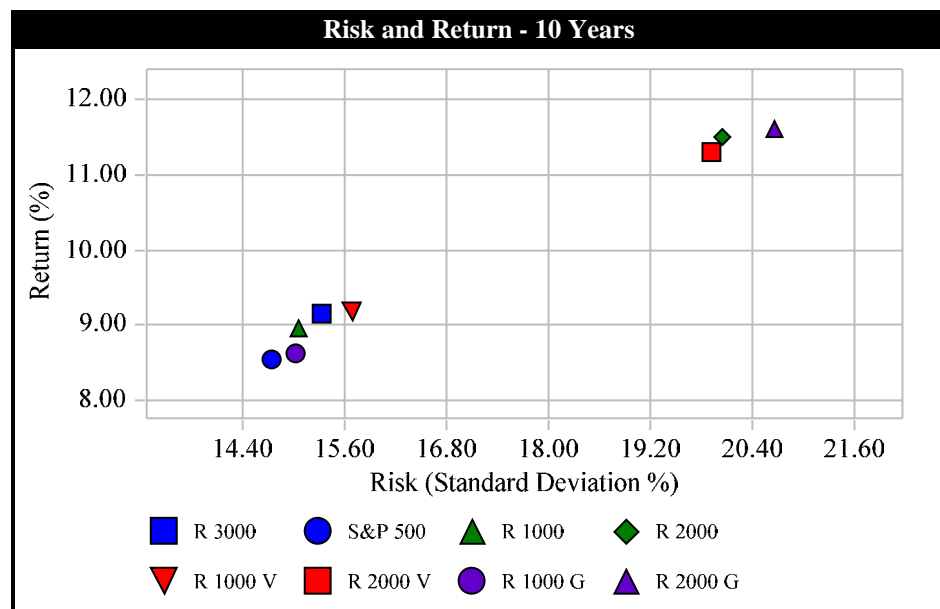
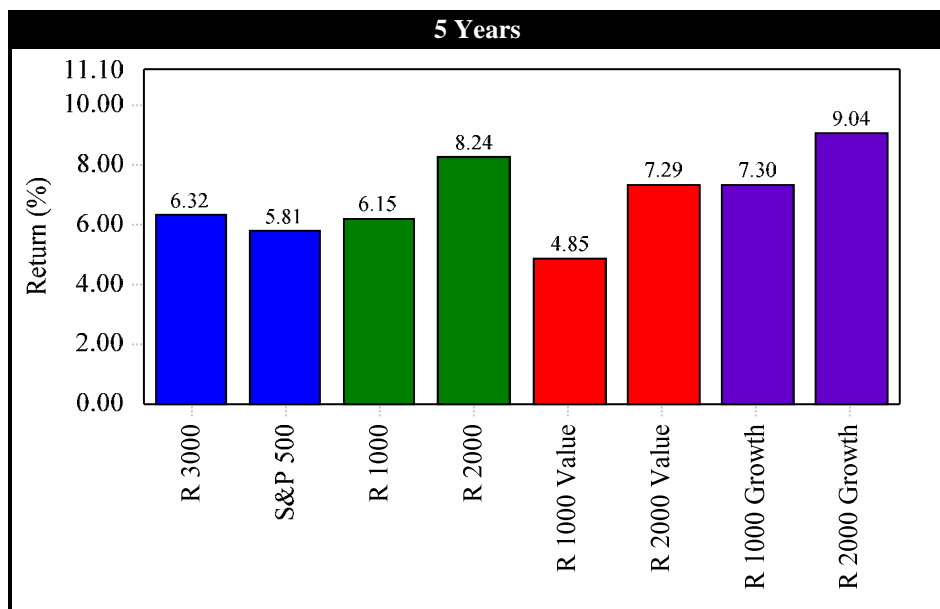
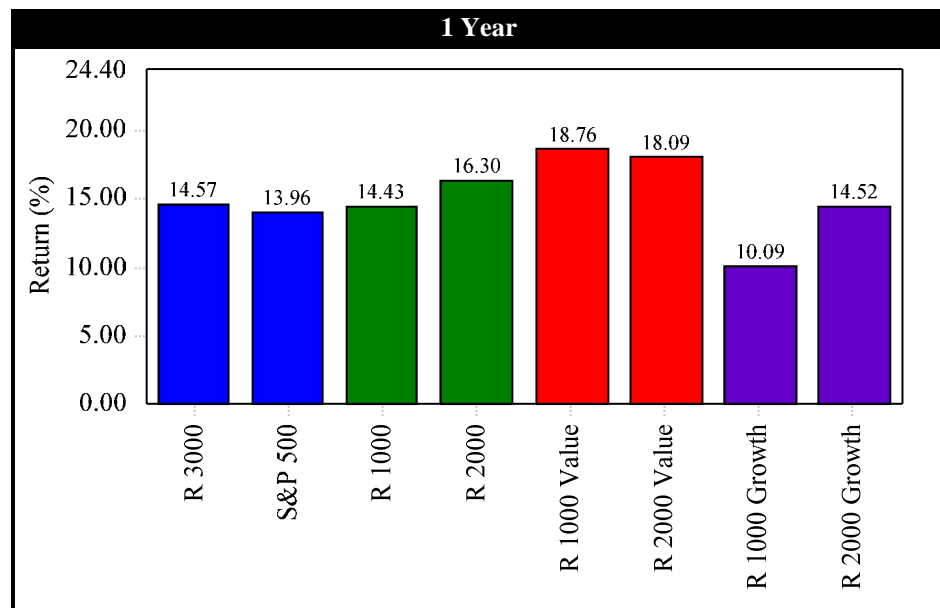
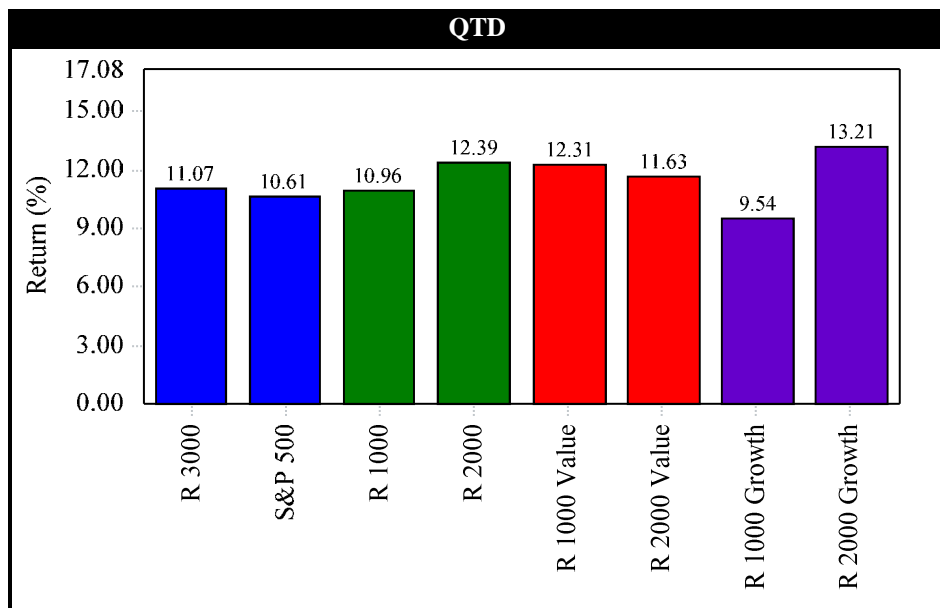
³ Percentage of GDP calculations are shown unadjusted for inflation (nominal GDP).

Annual Asset Class Performance
As of March 31, 2013

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YTD
Best	66.42	31.84	12.35	25.91	62.14	33.16	34.54	35.97	39.78	8.44	79.02	28.60	22.49	20.42	12.39
	27.31	31.04	8.44	16.56	56.28	31.27	26.65	32.59	16.23	5.24	58.21	26.86	15.99	18.64	10.61
	24.69	16.16	7.89	14.81	47.25	25.95	21.39	26.86	15.97	2.06	47.32	22.40	13.56	17.90	8.48
	24.34	14.28	7.28	10.25	39.17	20.70	21.36	19.67	11.63	-2.35	32.46	19.20	9.24	17.59	7.43
	21.26	13.15	6.61	5.54	36.18	18.33	14.02	18.37	11.63	-10.01	28.60	16.83	7.84	16.34	5.23
	21.04	12.40	5.64	3.58	28.97	13.06	13.82	16.32	9.91	-20.47	27.18	16.36	4.98	16.00	3.37
	20.19	11.63	5.28	3.12	28.68	11.13	6.75	15.79	6.97	-26.16	26.46	15.12	2.11	15.81	2.89
	13.17	6.18	4.42	1.78	23.93	10.88	5.33	11.85	6.60	-33.79	18.91	15.06	0.10	10.94	2.69
	4.85	-3.02	2.49	-1.41	11.93	9.15	4.91	9.85	5.49	-35.65	11.41	10.16	-4.18	8.82	0.02
	2.40	-5.86	-2.37	-6.00	9.28	8.56	4.55	4.85	5.00	-37.00	9.72	8.21	-5.55	6.98	-0.12
	2.39	-7.22	-11.89	-7.44	8.39	8.46	3.07	4.33	1.87	-39.20	5.93	6.54	-11.73	4.80	-0.36
	-0.82	-9.10	-12.11	-15.66	5.87	6.79	2.84	2.71	1.79	-43.06	1.92	6.31	-13.32	4.21	-1.13
	-2.58	-13.96	-19.51	-20.48	4.10	4.34	2.74	2.07	-1.57	-46.78	0.21	4.77	-15.66	0.11	-1.57
Worst	-7.65	-30.61	-21.21	-22.10	1.15	1.33	2.43	0.41	-17.55	-53.18	-29.76	0.13	-18.17	-1.06	-1.98

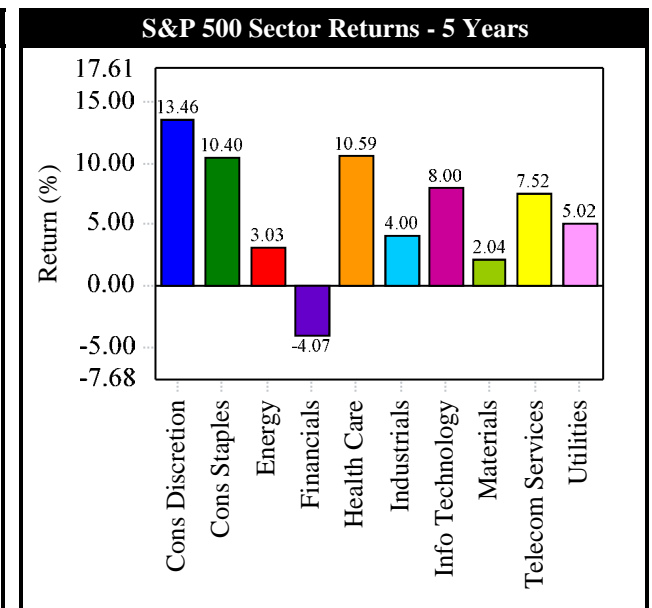
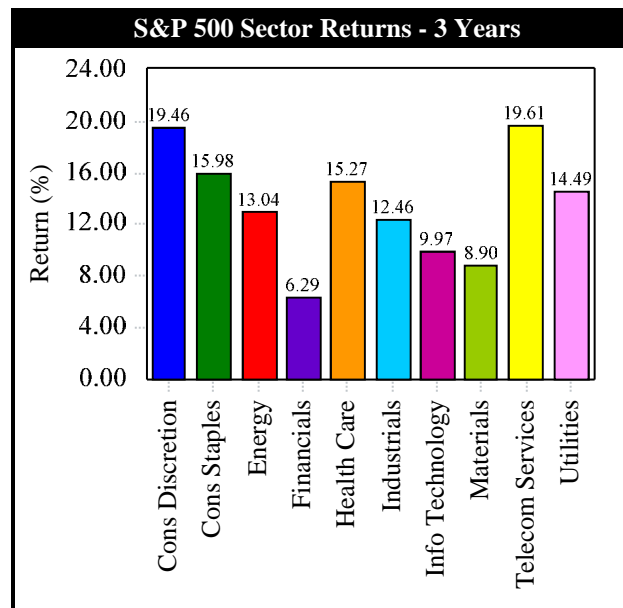
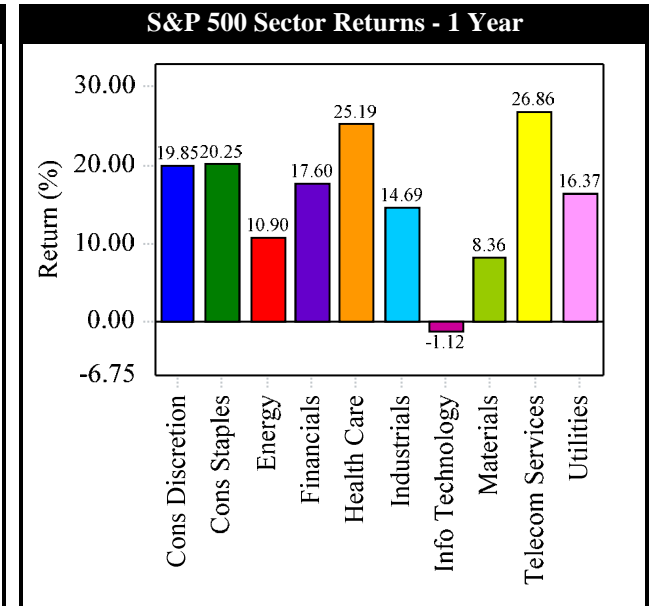
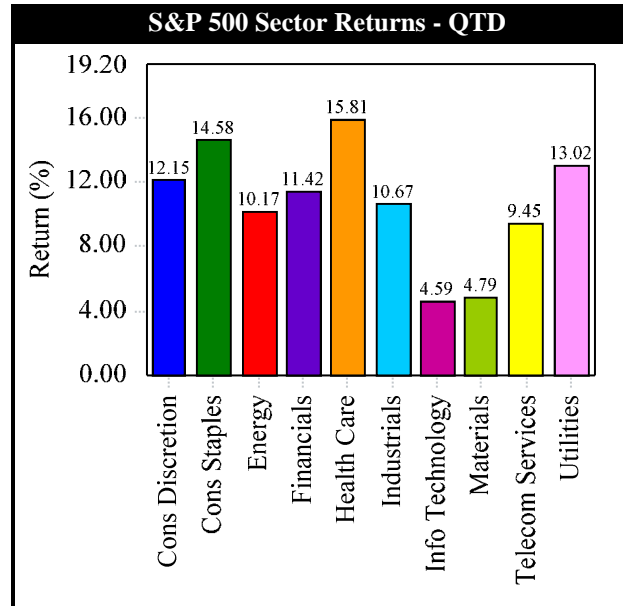
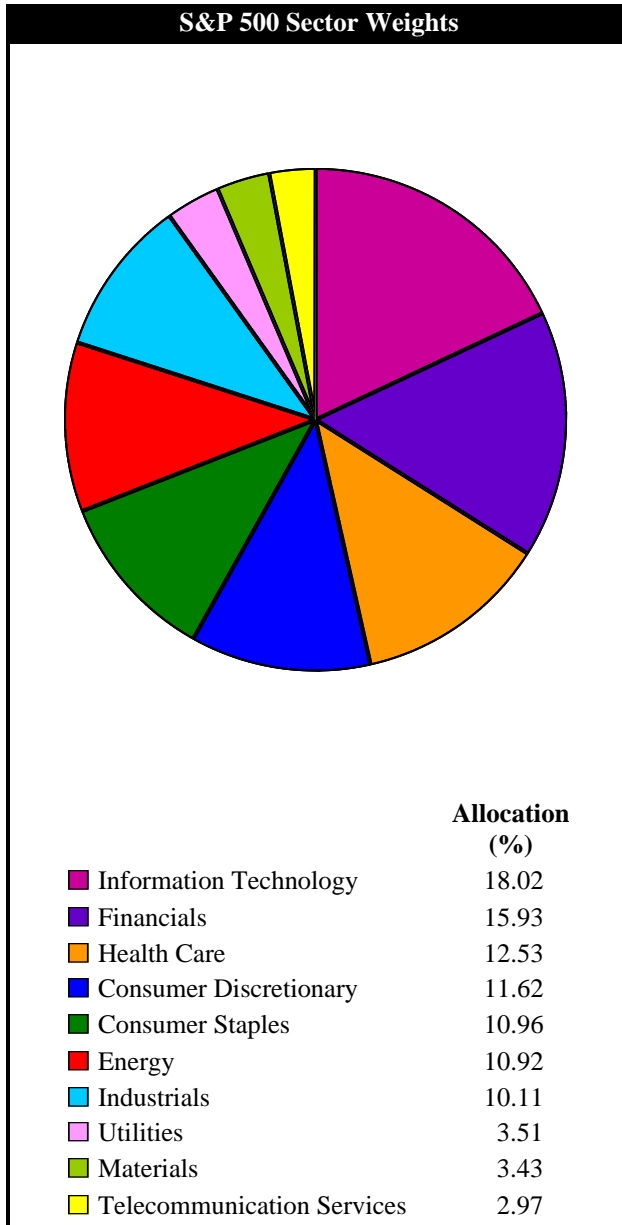
S&P 500 - US Large Cap	R 2000 - US Small Cap	MSCI EAFE (Gross) - Int'l Dev.	MSCI EAFE SC (Gross) - Int'l SC	MSCI EM (Gross) - Int'l Emg Mkts	Barclays US Agg Bond - FI	Barclays US Corp: Hi Yield - FI	Barclays US Trsy: US TIPS - FI	Barclays US Gov/Credit: Lng - FI	NCREIF ODCE (Gross) - Real Estate	Wilshire US REIT - REITs	HFN FOF Multi-Strat (Net) - ARS	DJ-UBS Cmdty (TR) - Commod.	BofA ML 3 Mo T-Bill - Cash Equiv
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Domestic Equity Market Performance and Risk
As of March 31, 2013



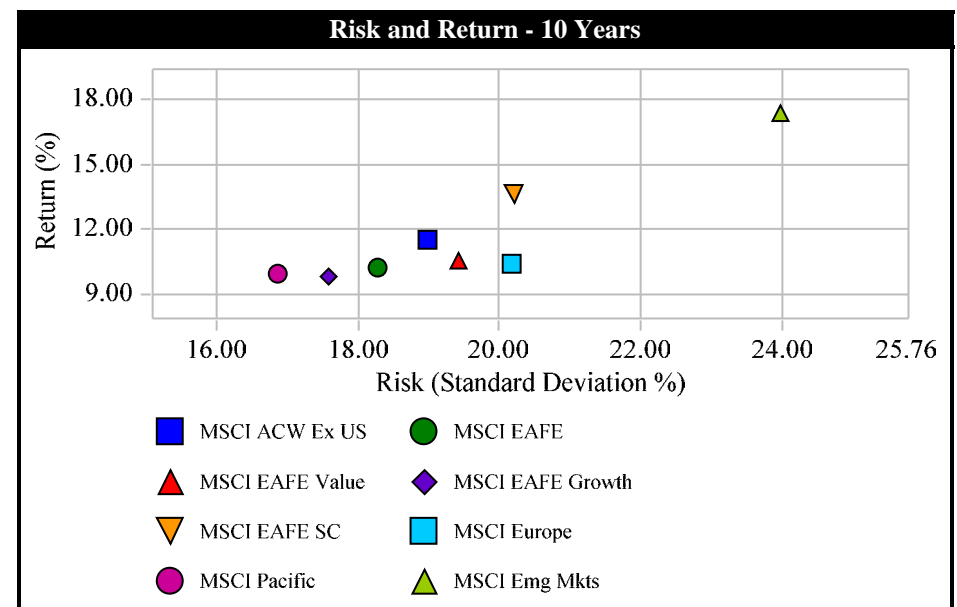
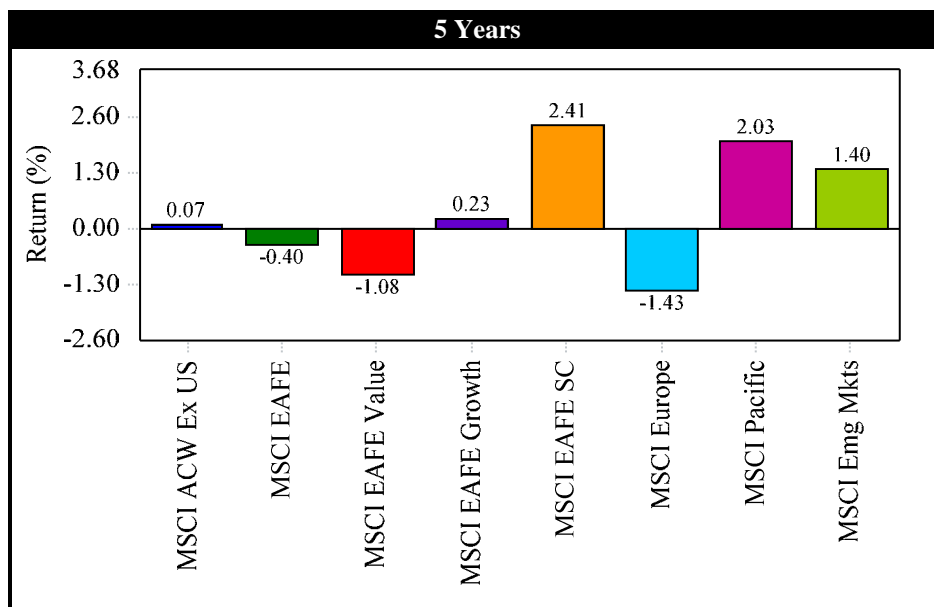
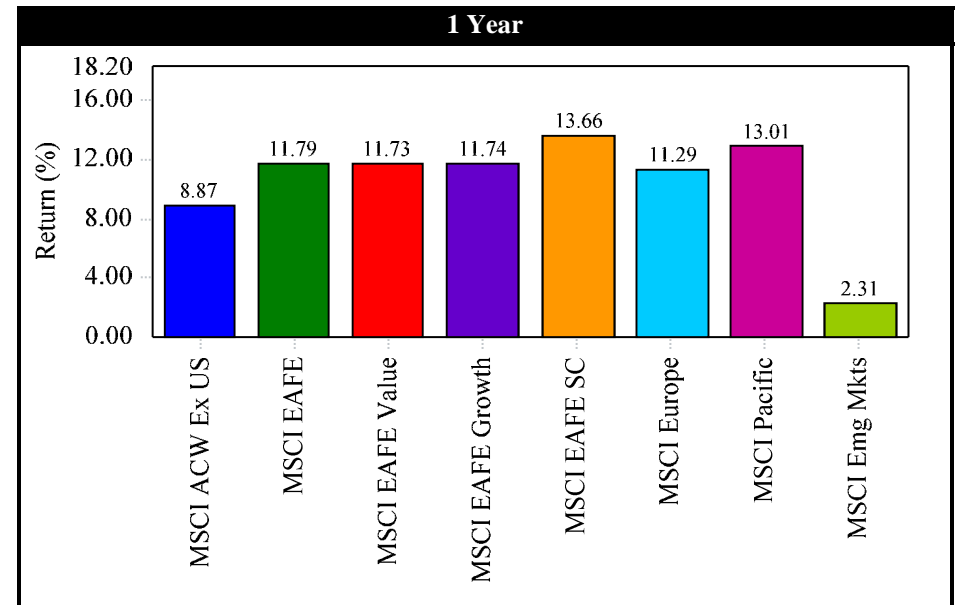
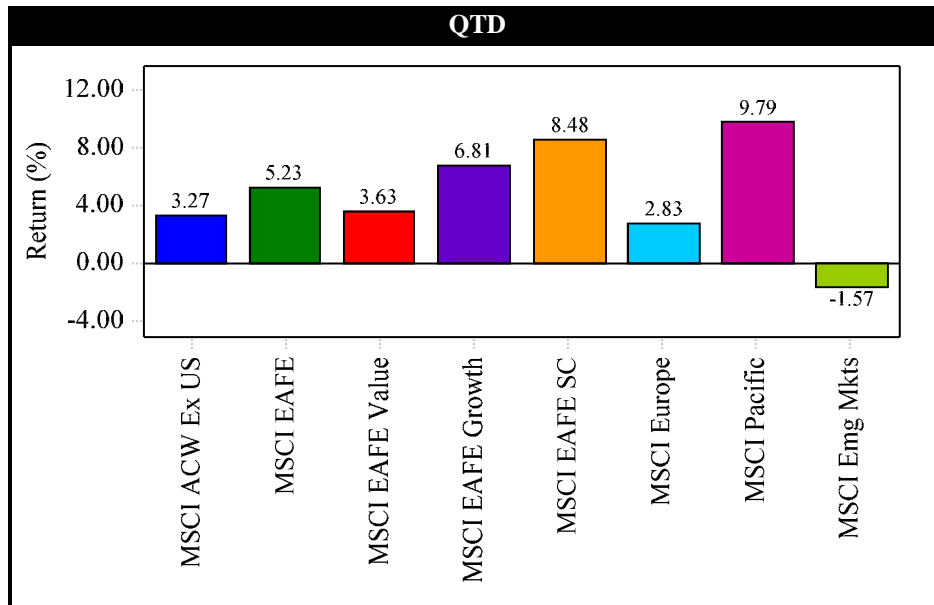
Performance is annualized for periods greater than one year. Calculation is based on monthly periodicity.

Domestic Equity Sector Weights and Returns
As of March 31, 2013



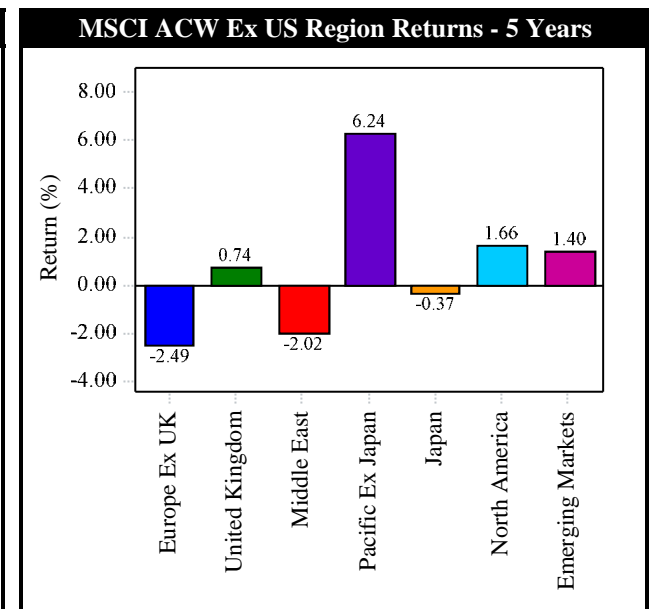
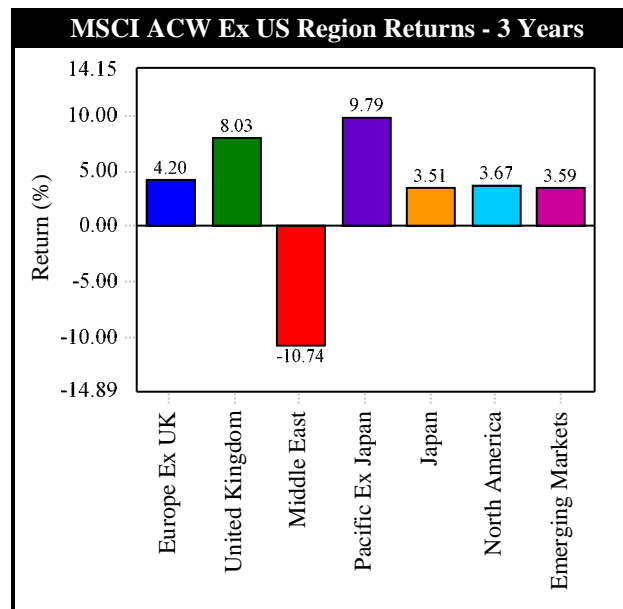
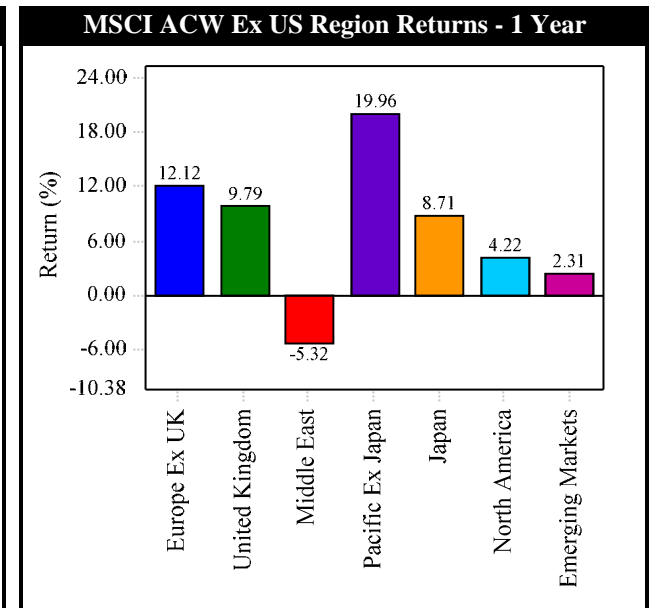
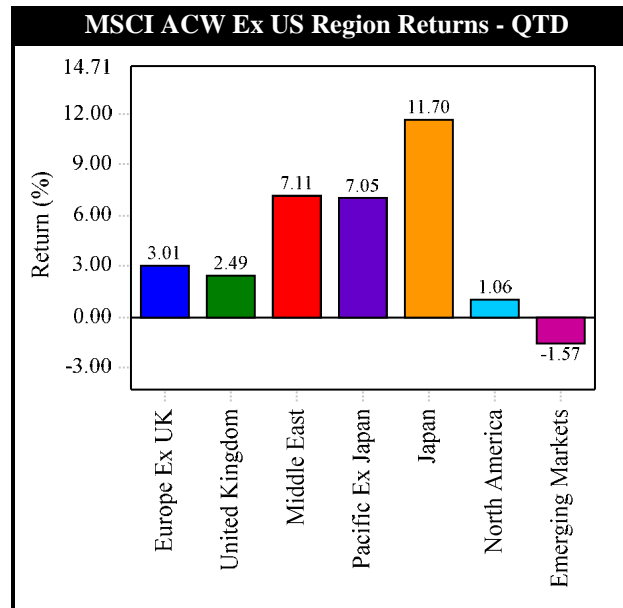
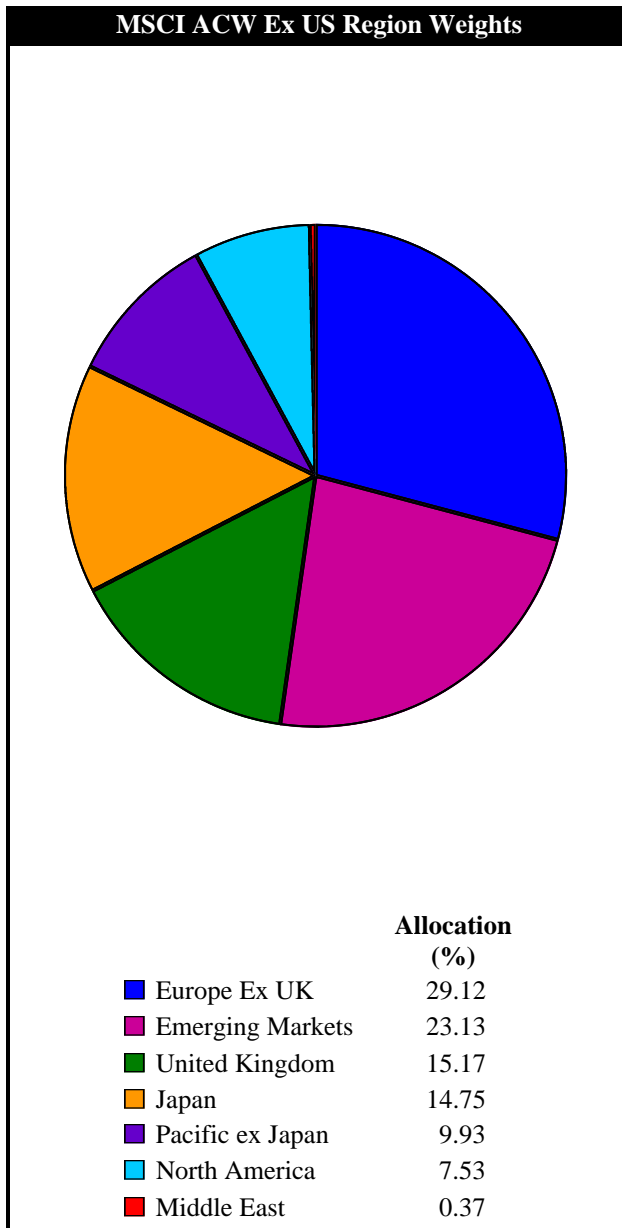
Allocations shown may not sum up to 100% exactly due to rounding. Performance is annualized for periods greater than one year. Returns provided by Morningstar, allocations provided by Standard & Poor's.

International Equity Market Performance and Risk
As of March 31, 2013



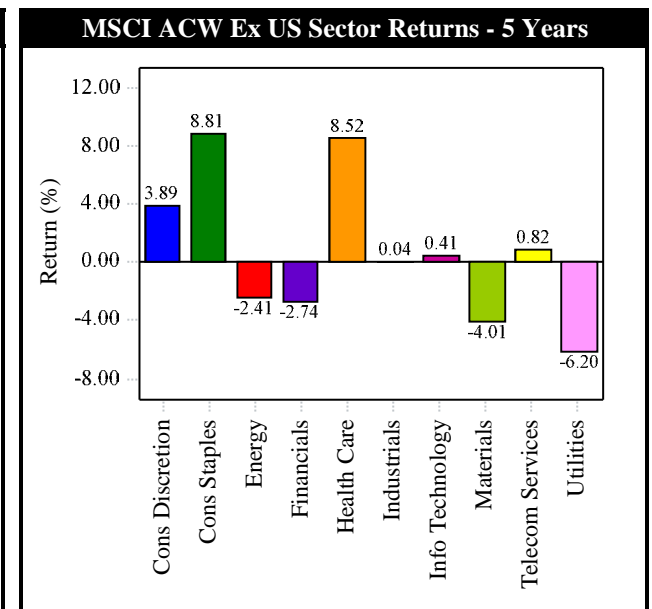
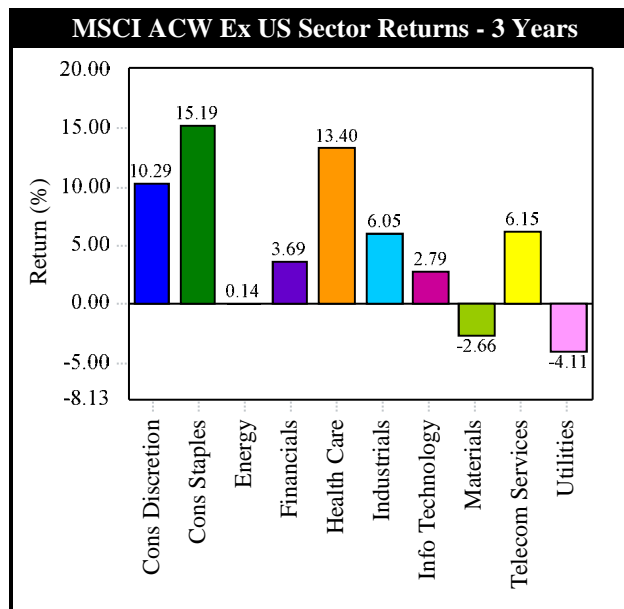
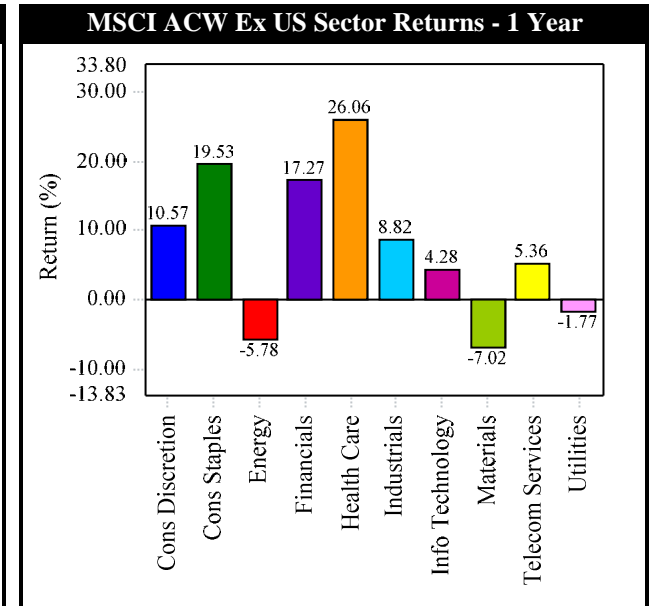
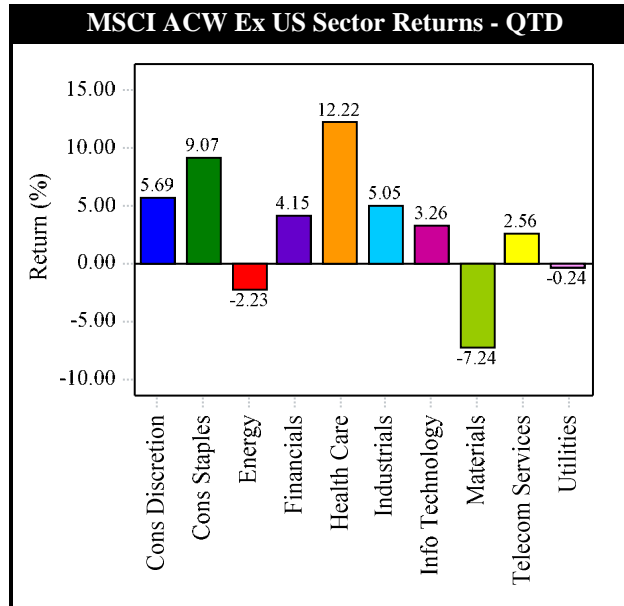
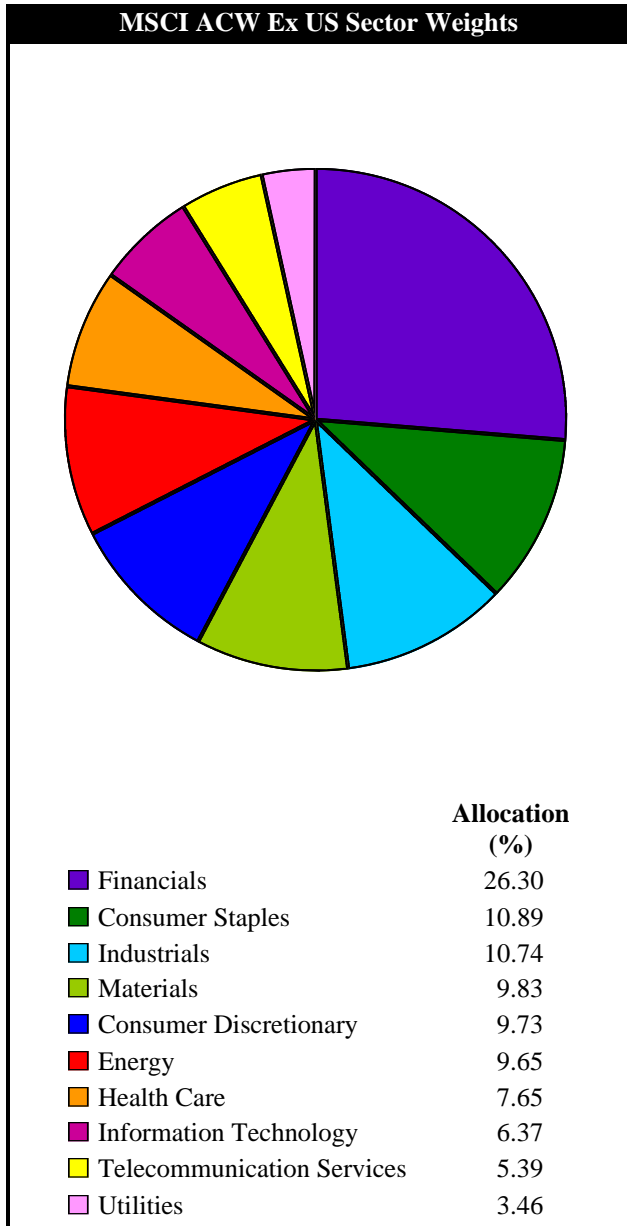
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International Equity Region Weights and Returns
As of March 31, 2013



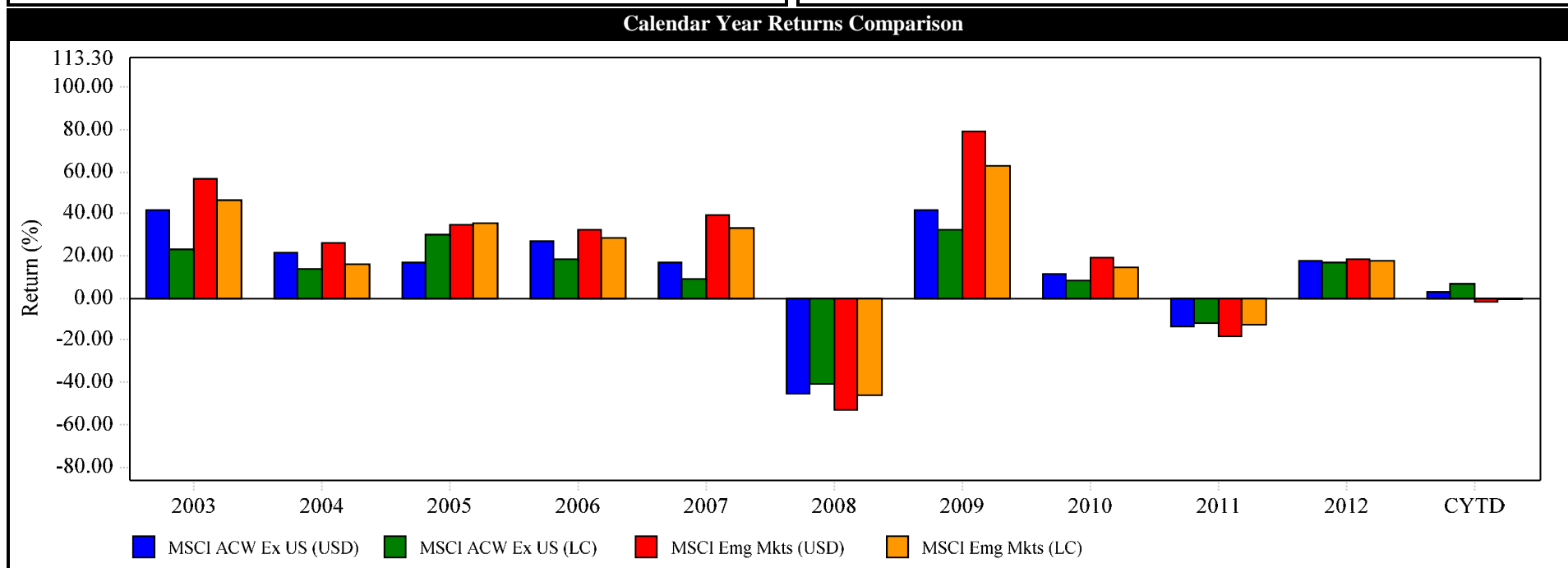
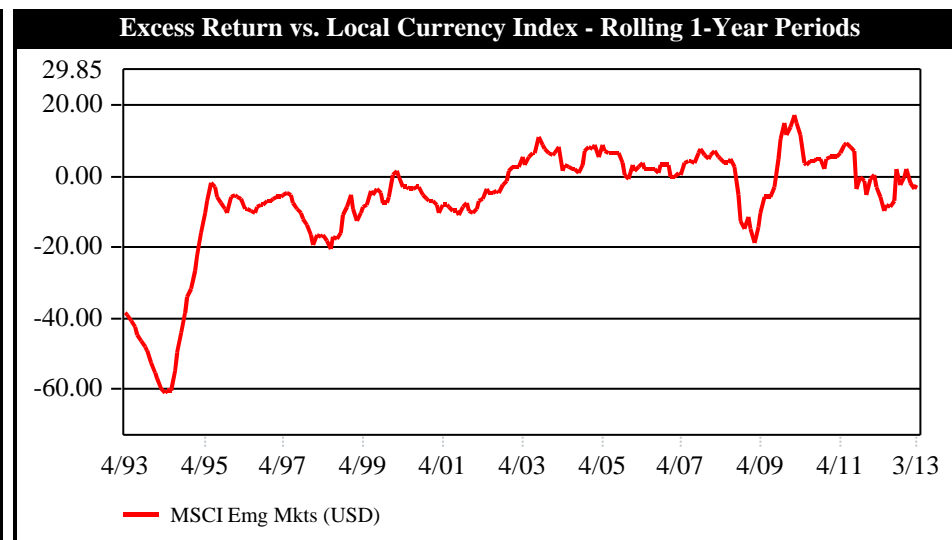
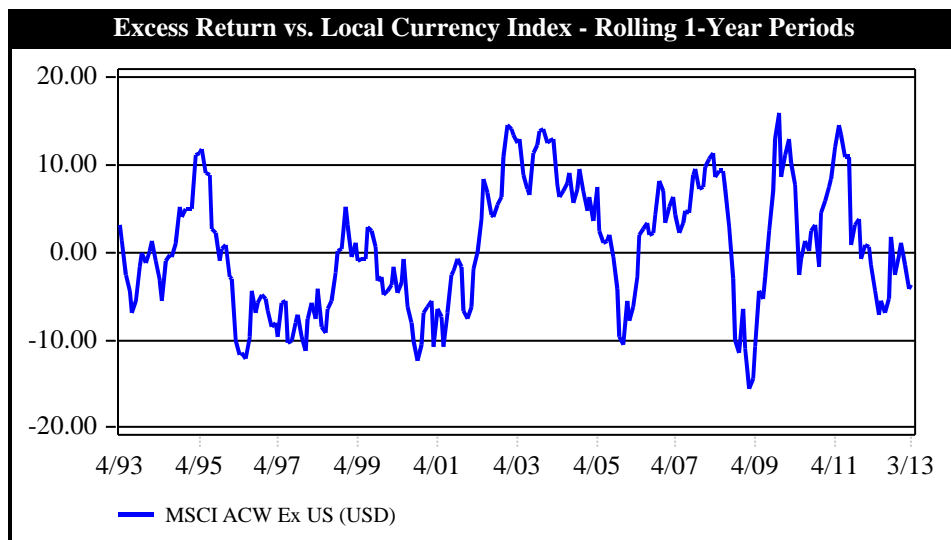
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International Equity Sector Weights and Returns
As of March 31, 2013



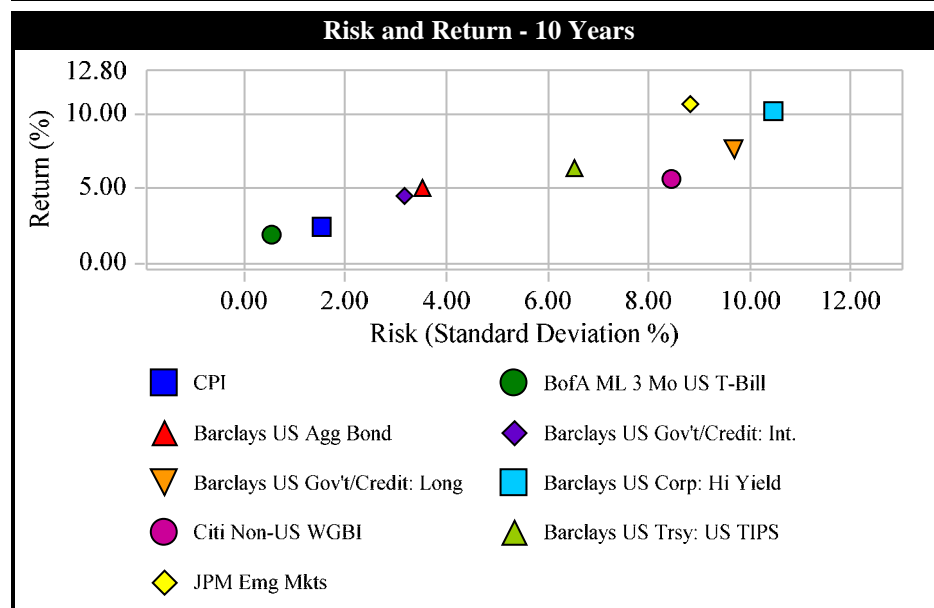
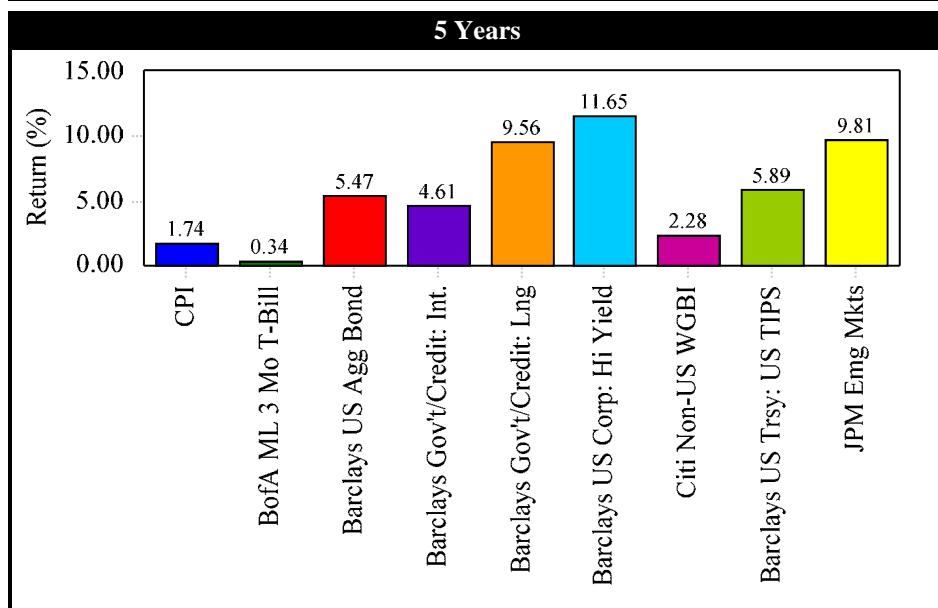
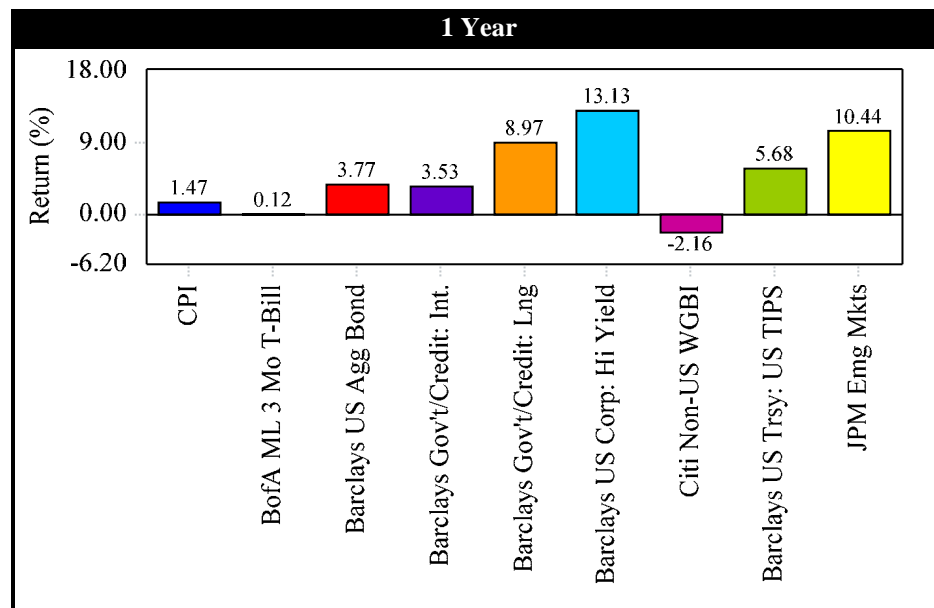
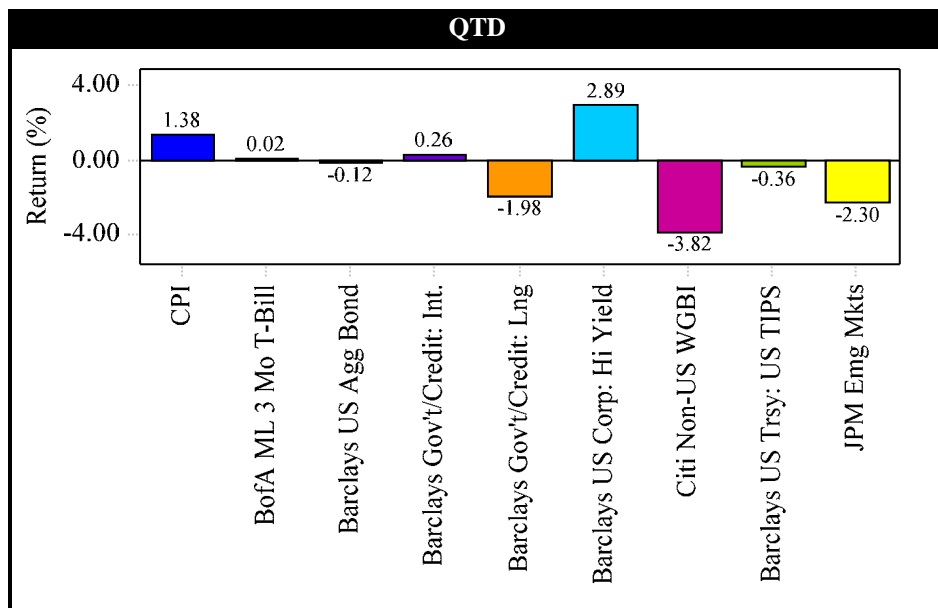
Allocations shown may not sum up to 100% exactly due to rounding. Performance is annualized for periods greater than one year. Returns provided by Morningstar, allocations provided by MSCI Barra. All returns are shown gross of foreign taxes on dividends.

Effect of Currency on International Equity Performance
As of March 31, 2013



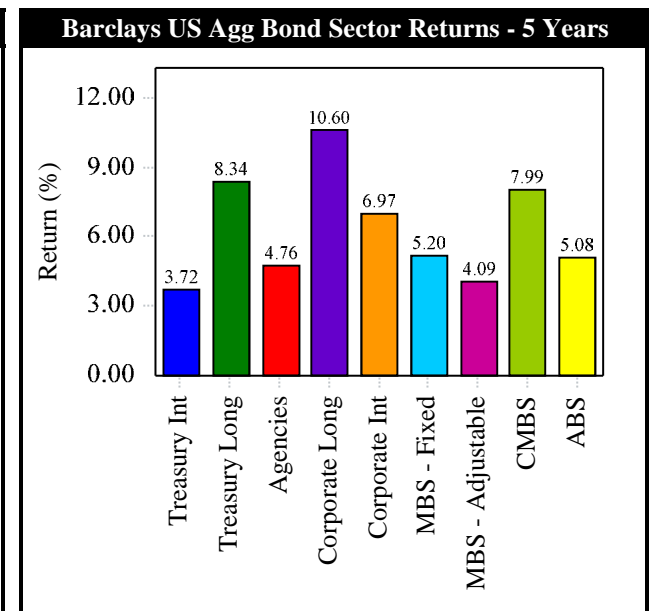
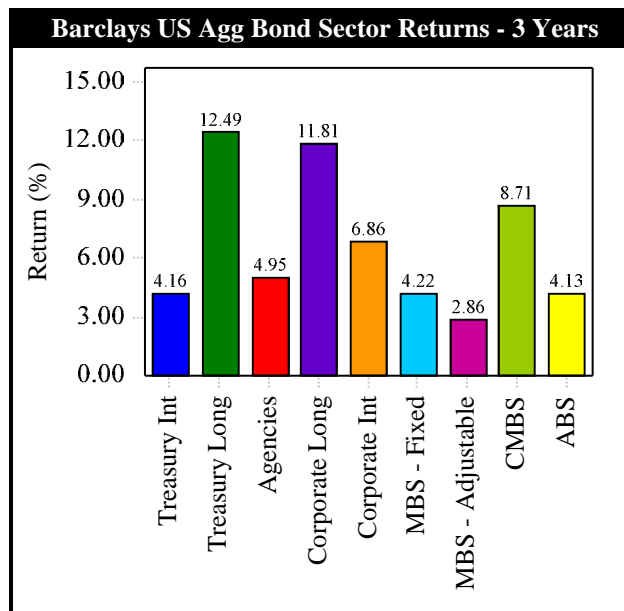
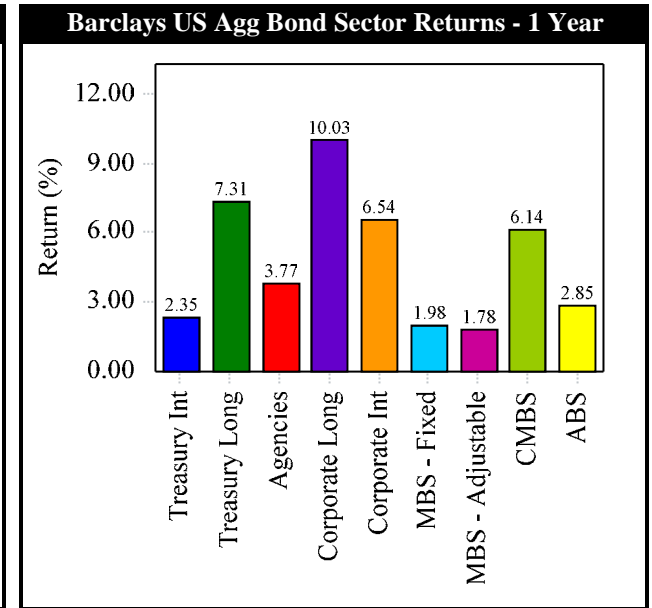
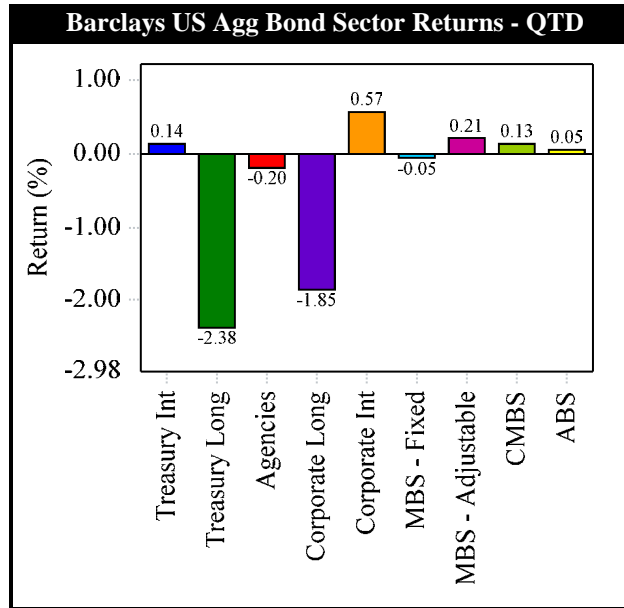
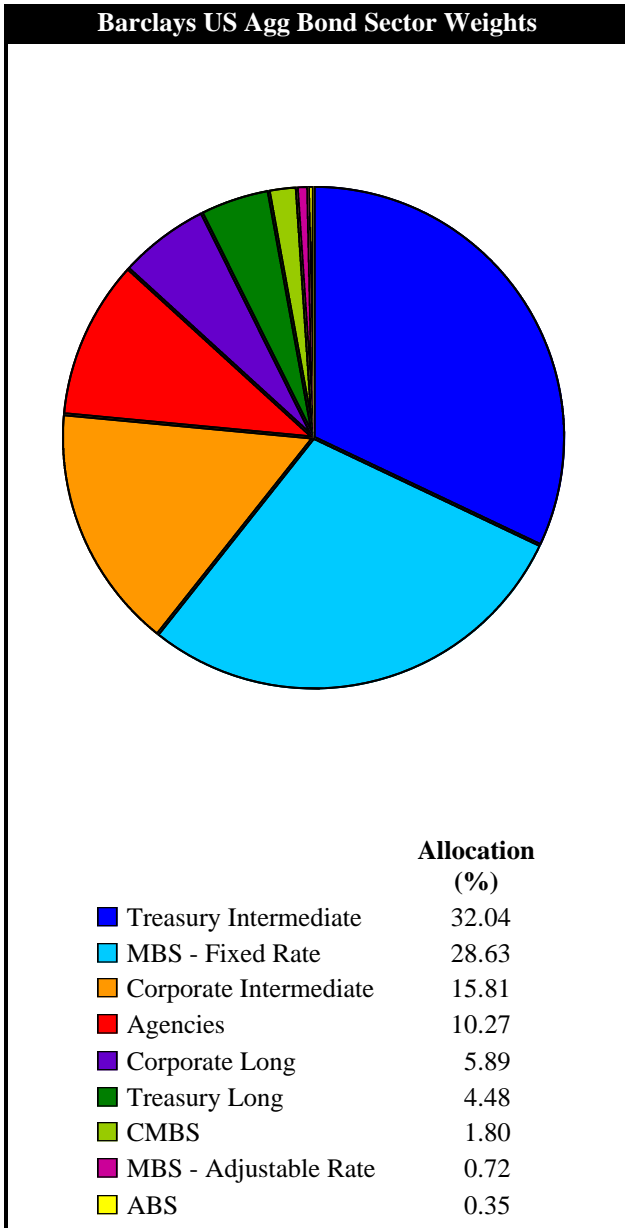
Performance is annualized for periods greater than one year. Calculation is based on monthly periodicity.
All returns are shown gross of foreign taxes on dividends.

Fixed Income Market Performance and Risk
As of March 31, 2013



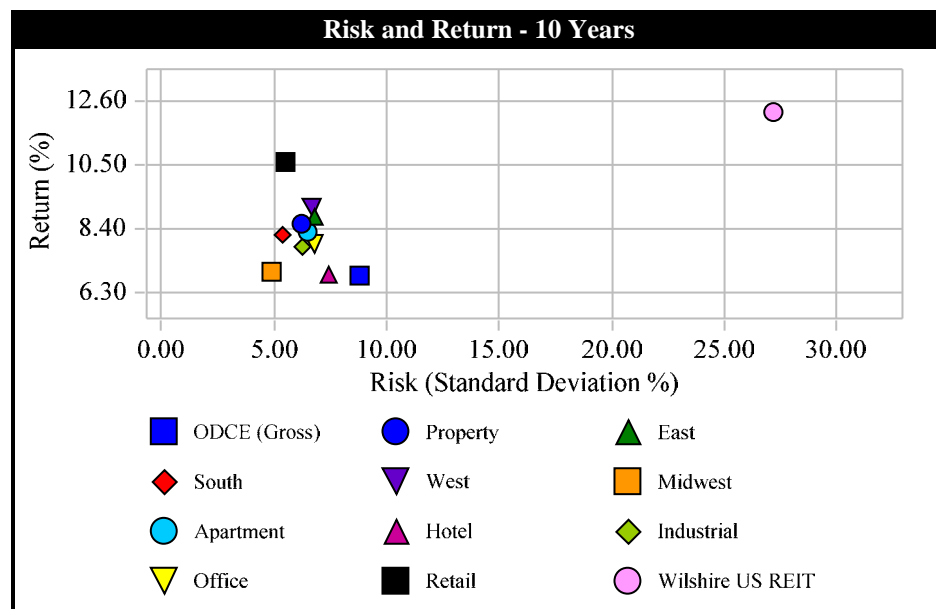
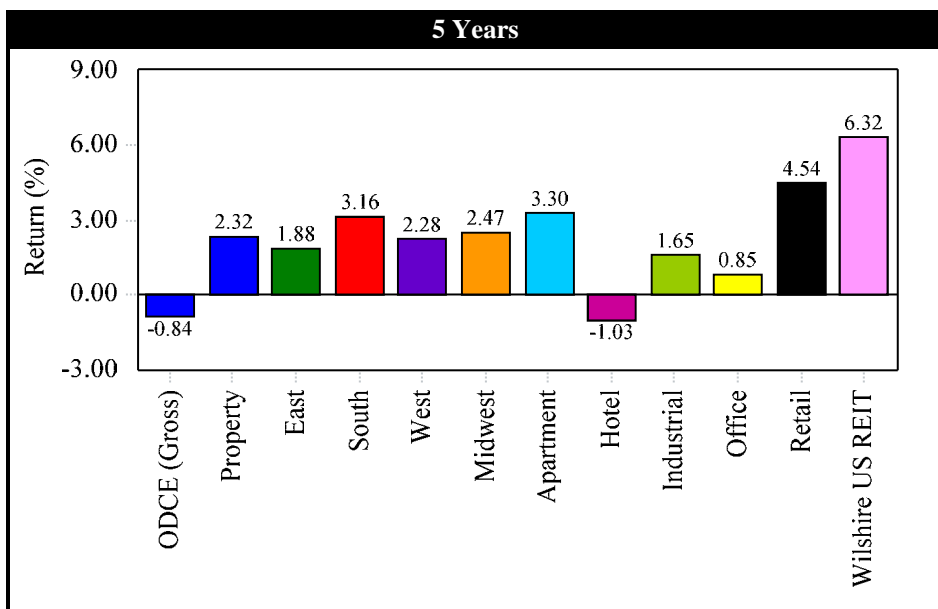
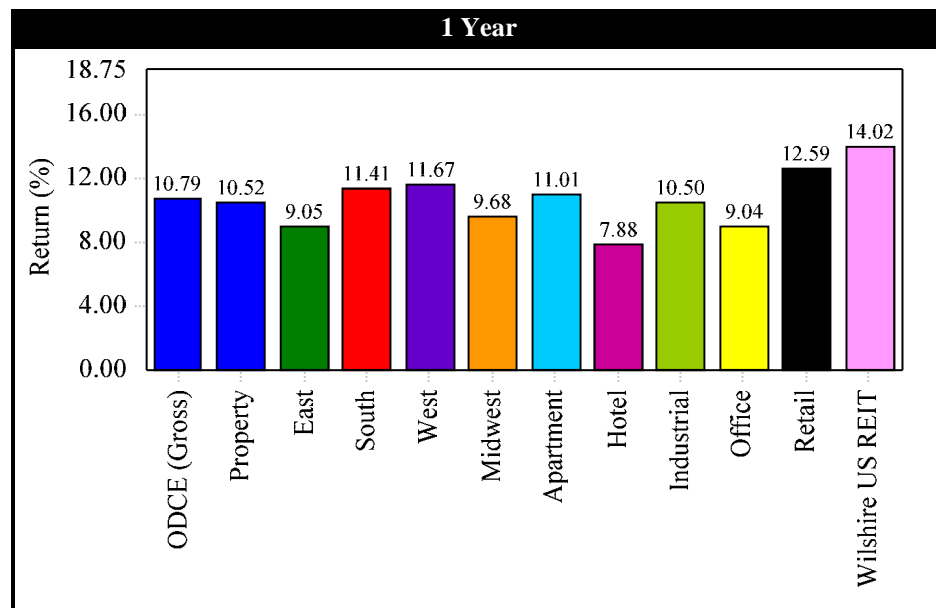
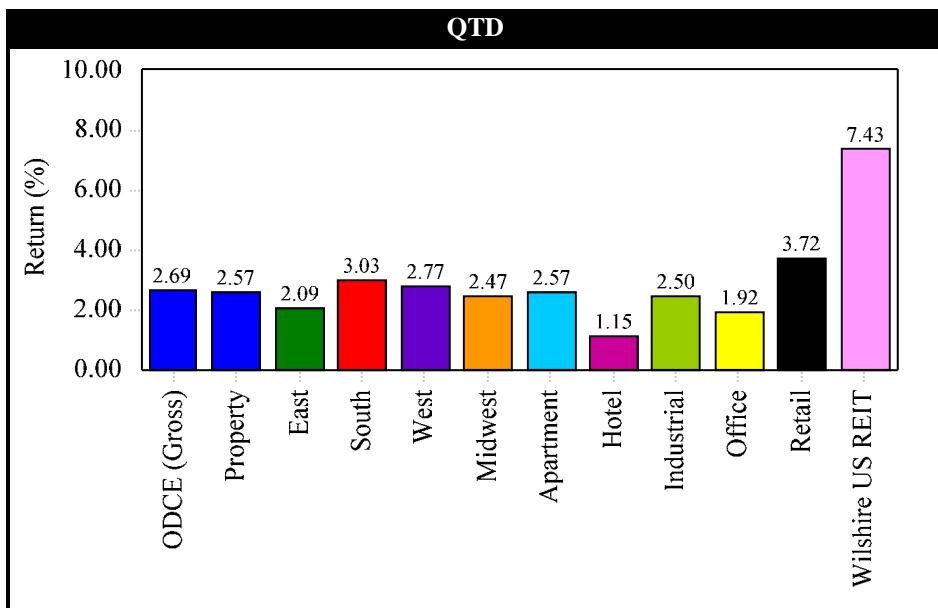
Performance is annualized for periods greater than one year. Calculation is based on monthly periodicity.

Domestic Fixed Income Sector Weights and Returns
As of March 31, 2013



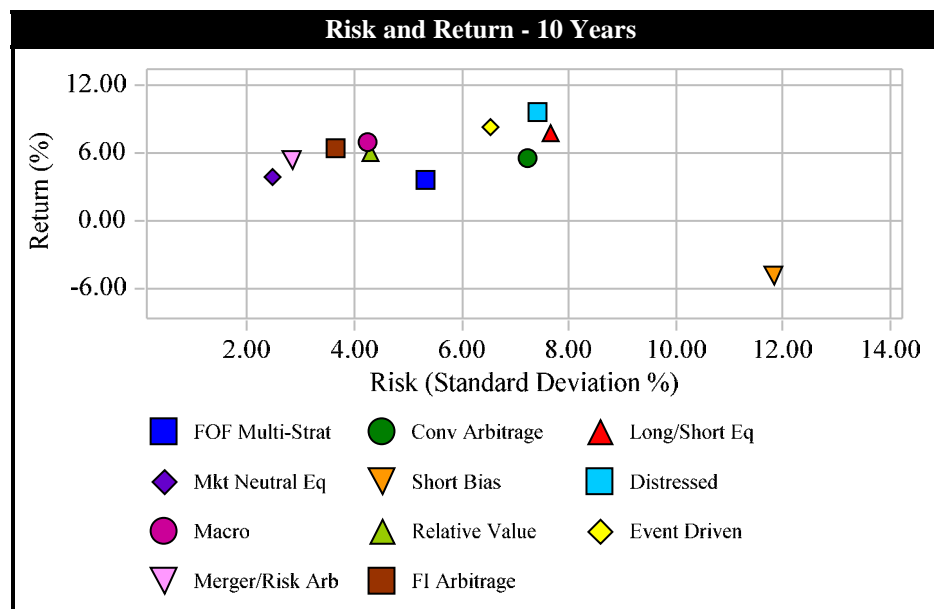
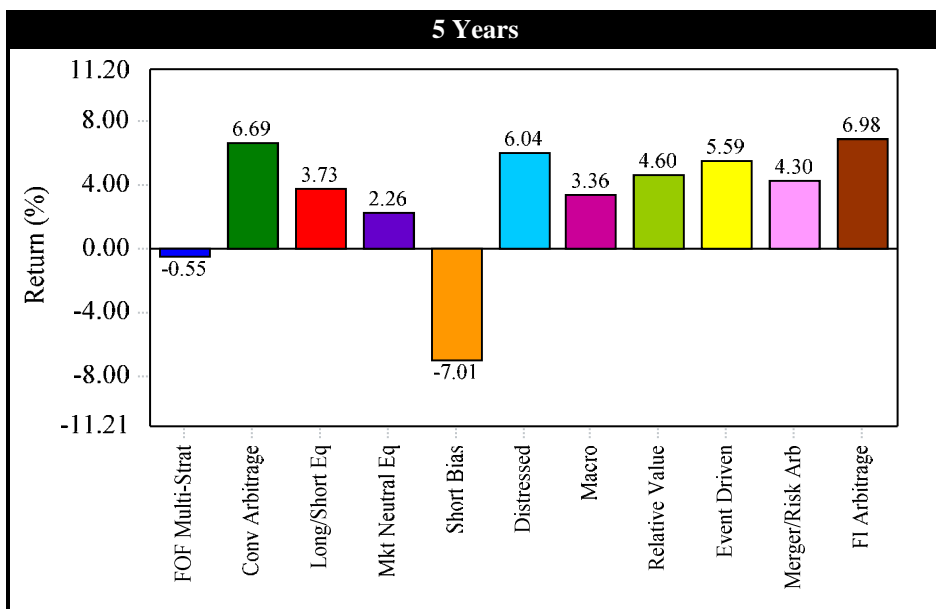
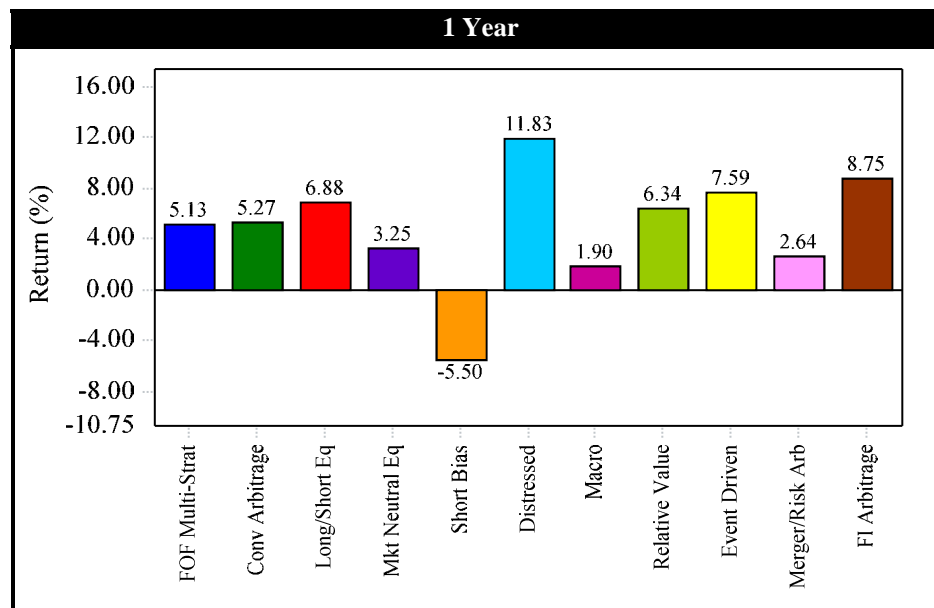
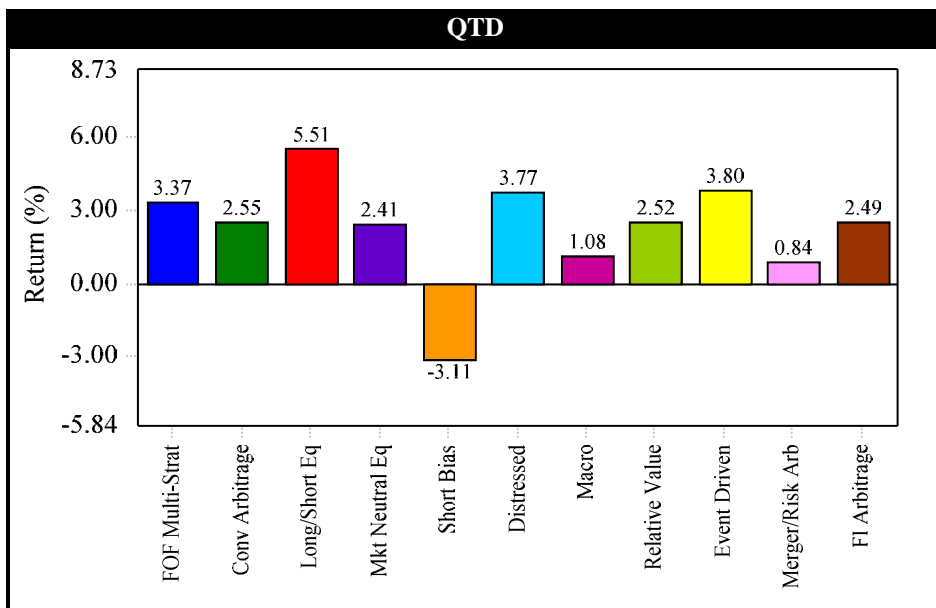
Allocations shown may not sum up to 100% exactly due to rounding. Performance is annualized for periods greater than one year. Returns and allocations provided by Barclays Indices.

Real Estate Market Performance and Risk
As of March 31, 2013



Performance is annualized for periods greater than one year. Calculation is based on quarterly periodicity. All data shown represent NCREIF indices unless otherwise noted. Region and sector data represent the Property Index.

Hedge Fund Market Performance and Risk As of March 31, 2013



Performance is annualized for periods greater than one year. Calculation is based on monthly periodicity. All data shown represent HFN indices, net of fees. Values are preliminary and subject to change.

Addendum & Glossary

Commonwealth of Pennsylvania State Employees' Retirement System

Addendum

As of March 31, 2013

Performance Related Comments

- Performance shown is net of fees except where noted.
- Allocations shown may not sum up to 100% exactly due to rounding.
- R.V. Kuhns & Associates, Inc. began monitoring the assets of the Commonwealth of Pennsylvania State Employees' Retirement System as of October 1, 2011. Prior historical data was provided by BNY Mellon and Rocat. Subsequent restructuring of composites during Q4 2012 caused staff to direct BNY to recalculate select composites. This updated history was provided to RVK from inception through 12/31/2012 and cannot be independently verified by RVK due to the absence of accounting history related to newly created historical composites.
- Gross performance shown for the Total Fund Composite is calculated by BNY Mellon by adding the estimated annual expense ratio to the net return stream.
- Manager-reported performance may differ from custodian-reported performance for Diversifying Asset managers due to cash flows and valuation revisions.
- Due to the nature of the fund, the market value and performance for SEI Struc Cred: HY Bank Loans (CF) is lagged by one month.
- Beginning in Q2 2012, PAAMCO Newport Sequoia Fund LLC will report performance on a two month lag.
- Due to the nature of the asset classes, performance for the Private Equity Composite, Venture Capital Composite, and Real Estate Composite are lagged by one quarter.
- R.V. Kuhns & Associates, Inc. calculates performance beginning with the first full month following inception.
- Total Fund Composite performance shown for calendar years 1981-1984 was updated to be consistent with the 1983-1985 CAFR letters as directed by SERS staff. RVK received the updated calendar year performance for 1981-1984 directly from BNY Mellon. Each calendar year return was converted to twelve equal monthly returns so that the linked performance matches each total calendar year performance. It is important to note that the methodology used to derive these monthly returns may affect the accuracy of risk measures for periods including 1981-1984. The updated calendar year performance and all linked performance shown has not been independently reviewed by RVK.

Peer Group and Index Comments

- The All Public Plans > \$1 Billion-Total Fund plan sponsor universe includes public funds with total fund market values over \$1 billion in the Investment Metrics (IM) and BNY Mellon universe.
- An index marked by an asterisk (*) represents the current benchmark. See the following pages for the complete historical composition of the custom index.
- Indices show N/A for since inception returns when the fund contains more history than the corresponding benchmark.
- Products with less than \$1M are not shown individually but are reflected in the composite-level market values.
- Effective May 1, 2012 the Wellington Diversified Inflation Hedges Composite Index consists of 25% MSCI World Energy >\$3B, 5% MSCI World Metals & Mining >\$3B, 7% MSCI World Agriculture Products, Fertilizers & Agricultural Chemicals, and Forest Products, 3% MSCI World Construction & Farm Machinery, Packaged Food & Meats, and Paper Product, 3% MSCI World Utilities, 1% MSCI World Oil & Gas, Storage & Transport, 0.5% MSCI World Telecommunications, 0.5% MSCI World Air Freight, Logistics, and Airlines, 3.5% MSCI ACW IMI Gold & Precious Metals, 1.5% S&P GSCI Precious Metals Total Return, 25% S&P GSCI Commodity Equal Sector Weight, 20% Barclays US TIPS 1-10 Year, and 5% Barclays Emerging Markets Tradable Government Inflation-Linked Bond.

Plan Sponsor Peer Groups - RVK utilizes the Mellon Analytical Solutions Trust Universe along with the Investment Metrics Plan Sponsor Universe. The combined Mellon Analytical Solutions Trust Universe and Investment Metrics Plan Sponsor Universe is used for comparison of total fund composite results and utilizes actual client returns compiled from consultant and custodial data. The Plan Sponsor Peer Group database includes performance and other quantitative data for over 1,273 plans which include corporate, endowment, foundation, public, and Taft Hartley plans, across 6 standard peer groups. Plan Sponsor Peer Groups are gross of fees.

Indices - All indices and related information are considered intellectual property and are licensed by each index provider. The indices may not be copied, used or distributed without the index provider's prior written approval. Index providers make no warranties and bear no liability with respect to the indices, any related data, their quality, accuracy, suitability and/or completeness.

**Commonwealth of Pennsylvania State Employees' Retirement System
Custom Benchmark Composition
As of March 31, 2013**

<u>Manager/Composite/Benchmark Name</u>	<u>Benchmark Composition</u>	<u>Since</u>
Total Fund Custom Benchmark* (Historical performance through 9/30/2011 was provided by Rocaton)	The custom index is calculated monthly using January 1st and December 31st actual plan weights of the asset allocation structure.	Inception
	The custom index is calculated using the Strategic Target Weights.	8/1/2007
	The custom index is calculated using 12/31/2009 actual plan weights and the 2010 target weights.	1/1/2010
	The custom index is calculated using 2011 target weights, and consists of:	10/1/2011
	24.5% SERS - Alternative Investment Composite Returns 3.9% MSCI World Index (Net) 9.6% R 3000 Index 16.5% MSCI ACW Ex US IMI (Net) 15.5% 3 Mo LIBOR Index + 3% 9.5% Townsend Stylized Benchmark 3% Commodities & Infrastructure Custom Benchmark* 17.5% Fixed Income Custom Index*	
	The custom index is calculated using Interim 5-Year target weights, and currently consists of:	7/1/2012
	21% SERS - Alternative Investment Composite Returns 32% MSCI ACW IMI Index (Net) 15% Real Assets Custom Benchmark* 12% Diversifying Assets Custom Benchmark* 17% Barclays US Agg Bond Index 3% BofA Merrill Lynch 3 Month US Treasury Bill Index	
Total Fund Public Mkt Equiv Benchmark* (Historical performance through 9/30/2011 was provided by Rocaton)	The custom index is calculated monthly using January 1st and December 31st actual plan weights of the asset allocation structure.	Inception
	The custom index is calculated using the Strategic Target Weights.	8/1/2007
	The custom index is calculated using 12/31/2009 actual plan weights and the 2010 target weights.	1/1/2010
	The custom index is calculated using 2011 target weights, and consists of:	10/1/2011
	24.5% R 3000 Index + 3% (Qtr Lag) 3.9% MSCI World Index (Net) 9.6% R 3000 Index 16.5% MSCI ACW Ex US IMI (Net) 15.5% 3 Mo LIBOR Index + 3% 9.5% Consumer Price Index + 3% 3% Consumer Price Index + 3% 17.5% Fixed Income Custom Index*	
	The custom index is calculated using Interim 5-Year target weights, and currently consists of:	7/1/2012
	21% R 3000 Index + 3% (Qtr Lag) 32% MSCI ACW IMI Index (Net) 15% Consumer Price Index + 3% 12% Diversifying Assets Custom Benchmark* 17% Barclays US Agg Bond Index 3% BofA Merrill Lynch 3 Month US Treasury Bill Index	

**Commonwealth of Pennsylvania State Employees' Retirement System
Custom Benchmark Composition
As of March 31, 2013**

<u>Manager/Composite/Benchmark Name</u>	<u>Benchmark Composition</u>	<u>Since</u>
Real Assets Custom Benchmark	Provided by Townsend	
Private Real Assets Custom Benchmark	Provided by Townsend	
Public Real Assets Custom Benchmark	Provided by Townsend	
Custom Core Index (Qtr Lag)	Composed of NFI All Open-end Funds Index and NFI Timber Index in proportion to the Open-end funds plus IMAs and Timber of SERS' Core Portfolio.	
Custom Public Index (Qtr Lag)	Wilshire Real Estate Securities Index S&P Citigroup Global Index	Inception 1/1/2006
Commodities & Infrastructure Custom Benchmark	100% S&P GS Commodity Index	Inception
	71.4% S&P GS Commodity Index 28.6% Wellington DvF'd Inf Hedge Comp Index	1/1/2005
	28.6% S&P GS Commodity Index 35.7% Wellington DvF'd Inf Hedge Comp Index 35.7% BAAM Custom Index	5/1/2007
	50% Wellington DvF'd Inf Hedge Comp Index 50% BAAM Custom Index	2/1/2010
Diversifying Assets Custom Benchmark	3 Mo LIBOR Index	Inception
	3 Mo LIBOR Index + 3%	1/1/2009
	65% R 3000 Index 35% 3 Mo LIBOR Index + 3%	7/1/2012
Absolute Return Composite & Underlying Managers	3 Mo LIBOR Index	Inception
	3 Mo LIBOR Index + 3%	1/1/2009
Fixed Income Custom Index (Historical performance through 12/31/2009 was provided by Rocaton)	80% SERS Custom Bond	
	20% S&P/Citigroup World Gov Ex US (50% Hedged)	Inception
	80% SERS Custom Bond 20% S&P/Citigroup World Gov Ex US (50% Hedged) while allocating a percentage of the Citigroup High Yield	6/1/1993
	48% Barclays US Agg Bond Index 24% SERS Custom Intermediate Bond Index 20% Citigroup High Yield Market 7+ Index 8% S&P/Citigroup World Gov Ex US (50% Hedged)	1/1/2003
	50% Barclays US Agg Bond Index 37% Citigroup High Yield Market 7+ Index 13% SERS Custom Intermediate Bond Index	12/1/2004
	33% Barclays US Agg Bond Index 28% Citigroup High Yield Market Index 22% JP Morgan EMB Index 17% SERS Custom Intermediate Bond Index	1/1/2005
	26.7% Barclays US Agg Bond Index 33.3% Citigroup High Yield Market Index 26.7% JP Morgan EMB Index 13.3% NISA Custom Index	7/1/2007
	34.8% Barclays US Agg Bond Index 22.2% Citigroup High Yield Market Index 23.0% JP Morgan EMB Index 20.0% NISA Custom Index	1/1/2010

**Commonwealth of Pennsylvania State Employees' Retirement System
Custom Benchmark Composition
As of March 31, 2013**

<u>Manager/Composite/Benchmark Name</u>	<u>Benchmark Composition</u>	<u>Since</u>
NISA Inv Adv TIPS (SA)	<p>The Custom TIPS Benchmark is a custom blend of TIPS determined monthly based on the following rules of inclusion and weighting:</p> <ol style="list-style-type: none"> 1. Identify all TIPS with real durations between 4 and 6 years and find the average duration of all such securities. 2. Identify all TIPS with real durations between 2 and 4 years and find the average duration of all such securities. 3. Weight each of the buckets created in steps 1 and 2 such that the weighted average real duration of all included securities is 4.0 years. <p>If there are less than two securities identified in #1 above, the two TIPS with real durations immediately above 4 years will be identified. If there are less than two securities identified in #2 above, the two TIPS with real durations immediately below 4 years will be identified.</p>	Inception
Mellon Cap Mgmt Bond Index (SA)	<p>20% Barclays US Gov: Intermediate Term Bond Index 30% Barclays US Gov: Long Term Bond Index 25% Barclays US Corp: Investment Grade Index 25% Barclays US MBS Index</p> <p>100% Barclays US Agg Bond Index</p>	Inception 1/1/2003
WR Huff HY Bond Fund (SA)	<p>100% Citigroup High Yield Market Index</p> <p>90% Citigroup High Yield Market 7+ Years Index 10% JP Morgan EMB Index</p> <p>100% Citigroup High Yield Market Index</p>	Inception 7/1/2000 1/1/2005
Townsend Stylized Benchmark Index returns are received from Townsend, and weighted in proportion to the private, public, and timber components of SERS' Real Estate Portfolio.	<p>Private: NFI All Open-End Funds Index Public: Wilshire Real Estate Securities Index from inception until 12/31/2005; S&P Citigroup Global Index thereafter Timber: NPI Timber</p>	Inception

Glossary

Alpha - A measure of the difference between a portfolio's actual returns and its expected performance, given its level of risk as measured by beta. It is a measure of the portfolio's historical performance not explained by movements of the market or a portfolio's non-systematic return.

Alpha Ratio - A measure of a portfolio's non-systematic return per unit of downside risk. It is measured by dividing the alpha of a portfolio by the downside risk. The non-systematic return is a measure of a portfolio's historical performance not explained by movements of the market.

Average Quality - Bond quality ratings are reported using the investment managers' and the index providers' preferred rating agency. There are two primary rating agencies in the US. *Moody's* assigns ratings on a system that employs up to four symbols (consisting of letters and numbers) such as, Aaa, Aa2, etc., with Aaa being the highest or safest rating. *Standard & Poor's (S&P)* employs a system that uses + and - along with letters such as AAA, AA+, etc. The two rating agencies' systems are summarized below:

<u>S&P</u>	<u>Moody's</u>	<u>Explanation</u>	<u>S&P</u>	<u>Moody's</u>	<u>Explanation</u>
Higher Credit Quality – Investment Grade			Lower Credit Quality – Below Investment Grade		
AAA	Aaa	Prime/Highest credit quality	BB+	Ba1	Speculative/Low credit quality
AA+	Aa1	High credit quality	BB	Ba2	
AA	Aa2		BB-	Ba3	
AA-	Aa3		B+	B1	Highly speculative
A+	A1	Upper-medium credit quality	B	B2	
A	A2		B-	B3	
A-	A3		CCC+	Caa1	Substantial credit/default risk
BBB+	Baa1	Lower-medium credit quality	CCC	Caa2	Extremely speculative
BBB	Baa2		CCC-	Caa3	
BBB-	Baa3		CC	Ca	Vulnerable to default
			C	Ca	
			D	C	In default

Beta - A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of a portfolio's non-diversifiable or systematic risk.

Buy and Hold Attribution - At the beginning of the time period under analysis, the manager and benchmark portfolios are broken down into segments (i.e., styles, sectors, countries, and regions) based on the desired type of attribution. The formula assumes zero turn-over to the manager and benchmark portfolios throughout the period and calculates the segment returns ("buy and hold returns") to arrive at performance attribution. Due to portfolio turnover, buy and hold attribution may not accurately represent quarterly performance relative to the benchmark. Country, region, sector, and style allocations are as of the date one quarter prior to the reporting date, and the returns shown are for those segments throughout the quarter reported. Due to disclosure guidelines set by each investment manager, equity characteristics shown are as of the most recent date available. The following is the methodology for segment classification:

Sector - Attribution is calculated using the Global Industry Classification Standard (GICS) which is a detailed and comprehensive structure for sector and industry analysis. Stocks are classified by their primary sector, as defined by S&P Capital IQ data.

Country/Region - Attribution is calculated using the Morgan Stanley Capital International (MSCI) region standards. Stocks are classified by their domicile country/region, as defined by S&P Capital IQ data.

Style - Stocks are classified into the following style boxes: large/mid/small vs. growth/neutral/value. Stocks are classified along large/mid/small categories at the time of the Russell index rebalancing, using the index market cap boundaries as cutoff points. Stocks are classified along growth/neutral/value categories at the time of the Russell index rebalancing, using the price/book ratio as supplied by S&P Capital IQ. Stocks in the Russell 3000 Index portfolio are sorted by price/book ratio; names with the highest price/book ratio that make up 1/3 of the total market capitalization are assigned to the growth category, names that make up the subsequent 1/3 of the total market capitalization are assigned to the neutral category, while the balance of the names are assigned to the value category.

Portfolio Characteristics and Buy and Hold Attribution reports utilize product-specific data for all mutual funds and commingled funds.

Glossary

Capital Markets Review -

Baltic Dry Index - Measures the demand for shipping capacity versus the supply of dry bulk carriers. As the supply of cargo ships is inelastic, the Baltic Dry Index provides an assessment of the price of moving major raw materials by sea.

Breakeven Inflation - Measures the expected inflation rate at each stated maturity by taking the difference between the real yield of the inflation-linked maturity curve and the yield of the closest nominal Treasury maturity.

Capacity Utilization - Measures the extent to which a country efficiently utilizes installed productive capacity. It measures the difference between the output that is produced using the installed equipment versus the output that *could* be produced using the installed equipment.

Consumer Confidence - Measures domestic consumer confidence as defined by the degree of optimism on the state of the economy that consumers express through saving and spending.

Consumer Price Index (CPI) - Measures the change in the price level of consumer goods and services.

Disposable Personal Income - The difference between total personal income and personal income tax payments.

Disposable Producer Price Index (PPI) - Measures the average change in selling prices received by US producers for their output.

M2 - Measures the amount of money in circulation and is often used as an indicator for forecasting inflation.

Option-Adjusted Spread - Measures the flat spread of an index or bond to the Treasury yield curve after removing the effect of any embedded options.

Personal Consumption Expenditures - Measures the average increase in prices for all domestic personal consumption.

Personal Savings - Percentage of personal saving within the US as a percentage of disposable personal income.

Purchasing Managers Index (PMI) - Measures economic activity by surveying purchasing managers on a monthly basis as to whether business conditions have improved, worsened, or stayed the same.

Relative Strength Index (RSI) - Measures the current and historical strength or weakness of a stock market based on the closing prices of the most recent 14-day period. RSI is classified as a momentum oscillator and measures the velocity and magnitude of directional price movements. RSI levels at or above 70 may indicate that a market is "overbought" while RSI levels below 30 may indicate that a market is "oversold."

Shiller 20 City YoY - Measures the yearly change in housing prices for 20 major metropolitan areas within the US.

US Credit Market Debt as a Percentage of GDP -

Business - Non-financial corporate business and non-corporate business.

Financials - Commercial banks, savings institutions and credit unions, government-sponsored enterprises, agency- and GSE-backed mortgage pools, ABS issuers, life insurance companies, REITs, and financial companies.

Foreign - US credit market instruments owed by non-US entities and debt issued by foreign companies in the US.

Government - Savings bonds, Treasury securities, budget agency securities, insurance reserves, and non-marketable securities held by retirement plans.

Household - Home mortgages, consumer credit, municipal securities, bank loans, and commercial mortgages.

US Dollar Total Weighted Index - Measures the value of the US Dollar relative to a basket of other world currencies. It is calculated as the weighted geometric mean of the dollar's value versus the EUR, GBP, CAD, SEK, CHF, and JPY.

VIX - Measures the implied volatility of S&P 500 Index options by looking at the market's expectation of the S&P 500 Index volatility over the next 30 day period. Commonly referred to as the "fear index" or the "fear gauge."

Consistency - The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. The higher the consistency figure, the more value a manager has contributed to the product's performance.

Convexity - A measure of the shape of the curve that describes the relationship between bond prices and bond yields.

Correlation - A statistical measure of the relationship between asset class returns. A value of 1.00 is a perfect correlation; that is, the asset classes always move in the same direction. A value of -1.00 indicates a perfect negative correlation, in which the asset classes always move in opposite directions of each other. A value of 0 indicates there is no relationship between the direction of returns of the two asset classes. Correlation calculations only consider the direction of changes relative to two variables and not the magnitude of those changes.

Coupon Rate - The percentage rate of interest paid on a bond or fixed income security; it is typically paid twice per year.

Glossary

Current Yield - The annual income of a security divided by the security's current price.

Down Market Capture - Down market by definition is negative benchmark return and down market capture represents the ratio in % terms of the average portfolios return over the benchmark during the down market period. The lower the value of the down market capture the better the product's performance.

Downside Risk - A measure similar to standard deviation, but focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. The higher the factor, the riskier the product.

Earnings Per Share - It is backward looking, calculated using the one year current EPS divided by the one year EPS five years ago.

Effective Duration - The weighted average duration of all the bonds in a given portfolio, weighted by their dollar values.

Excess Return vs. Market - Average of the monthly arithmetic difference between the manager's return and the benchmark return over a specified time period, shown on an annualized basis.

Excess Return vs. Risk Free - Average of the monthly arithmetic difference between the manager's return and the risk-free return (i.e., BofA ML 3 Mo US T-Bill Index unless specified otherwise) over a specified time period, shown on an annualized basis.

Excess Risk - A measure of the standard deviation of a portfolio's performance relative to the risk free return.

Expense Ratios - Morningstar is the source for mutual fund expense ratios.

Gain/Loss - The net increase or decrease in the market value of a portfolio excluding its Net Cash Flow for a given period.

Indices - All indices and related information are considered intellectual property and are licensed by each index provider. The indices may not be copied, used or distributed without the index provider's prior written approval. Index providers make no warranties and bear no liability with respect to the indices, any related data, their quality, accuracy, suitability and/or completeness.

Information Ratio - Measured by dividing the active rate of return by the tracking error. The higher the information ratio, the more value-added contribution by the manager.

Liability Driven Investing (LDI) - A method to optimally structure asset investments relative to liabilities. The change in liabilities is estimated by the Ryan Labs Generic PPA Index of appropriate duration for that Plan. This benchmark is based on generic data and is therefore an approximation. RVK is not an actuarial firm, and does not have actuarial expertise.

Estimated Funded Status - The estimated ratio of a Plan's assets relative to its future liabilities. This is calculated by dividing the Plan's asset market value by the estimated present value of its liabilities. The higher the estimated funded status, the better the Plan's ability to cover its projected benefit obligations. An estimated funded status of 100% indicates a Plan that is fully funded.

Estimated PV of Liabilities - An estimate of a Plan's future liabilities in present value terms. The beginning of the period liability is provided by the Plan's actuary. The period-end present value liability estimate provided in this report is derived by applying the estimated percentage change generated using the Ryan Labs Generic PPA Index with duration similar to that reported on the most recent actuarial valuation report.

Duration of Liabilities - The sensitivity of the value of a Plan's liabilities to changes in interest rates, as calculated by the Plan's actuary.

Duration of Assets - The dollar-weighted average duration of all the individual Plan assets.

Estimated Plan Hedge Ratio - The estimate of how well a Plan's investment portfolio is hedged against changes in interest rates - a primary driver of funded status movements. This is calculated by dividing the dollar-weighted values of both the Plan asset duration by the liability duration and multiplying by the estimated funded status. An estimated plan hedge ratio of zero indicates that the Plan's liabilities have not been hedged, whereas a value of one indicates fully hedged.

Modified Duration - The approximate percentage change in a bond's price for a 100 basis point change in yield.

Net Cash Flow - The sum, in dollars, of a portfolio's contributions and withdrawals. This includes all management fees and expenses only when performance shown is gross of fees.

Glossary

Peer Groups -

Plan Sponsor Peer Groups - RVK utilizes the Mellon Analytical Solutions Trust Universe along with the Investment Metrics Plan Sponsor Universe. The combined Mellon Analytical Solutions Trust Universe and Investment Metrics Plan Sponsor Universe is used for comparison of total fund composite results and utilizes actual client returns compiled from consultant and custodial data. The Plan Sponsor Peer Group database includes performance and other quantitative data for over 2,100 plans which include corporate, endowment, foundation, public, and Taft Hartley plans. Plan Sponsor Peer Groups are gross of fees.

Institutional Peer Groups (Separate Account and Commingled Fund) - RVK utilizes the Investment Metrics Separate Account and Commingled Fund Manager Peer Groups for peer comparison and rankings. The Separate Account and Commingled Fund Peer Group database includes performance and other quantitative data for over 1,000 investment management firms, 6,400 investment products, across 100 standard peer groups. Separate Account and Commingled Fund Peer Groups are gross of fees.

Mutual Fund (MF) Peer Groups - RVK utilizes the Lipper Mutual Fund Manager Peer Groups for peer comparison and rankings. The Lipper Manager Peer Group database includes performance and other quantitative data for over 700 investment management firms and 24,500 investment products, across more than 140 standard peer groups. Mutual Fund Peer Groups are net of fees.

Percentile Rankings - Percentile rank compares an individual fund's performance with those of other funds within a defined peer group of managers possessing a similar investment style. Percentile rank identifies the percentage of a fund's peer group that has a higher return (or other comparative measurement) than the fund being ranked. Conversely, 100 minus the individual fund's ranking will identify the percentage of funds within the peer group that have a lower return than the fund being ranked.

1 - Highest Statistical Value

100 - Lowest Statistical Value

Example: American Funds AMCP;R-4 (RAFEX) is ranked in the 4th percentile within the IM US Equity Large-Cap Growth Funds (MF) Peer Group for the Sharpe Ratio. Within the IM US Equity Large-Cap Growth Funds peer group, 4% of the other funds performed better than American Funds AMCP;R-4 (RAFEX), while 96% of the funds performed worse.

Performance Methodology - RVK endorses the Global Investment Performance Standards (GIPS) and calculates performance for investment managers and composites using different methodologies. Investment manager performance is calculated by revaluing the portfolio on the date of all large external cash flows while composite performance is calculated using the Modified Dietz calculation methodology. According to the CFA Institute, "Only investment management firms that actually manage assets can claim compliance with the Standards. Plan Sponsors and consultants cannot make a claim of compliance unless they actually manage assets for which they are making a claim of compliance. They can claim to endorse the Standards and/or require that their investment managers comply with the Standards."

Investment Managers - Performance is calculated for interim periods between all large external cash flows for a given month and geometrically linked to calculate period returns. An external cash flow is defined as cash, securities, or assets that enter or exit a portfolio. RVK defines a "large cash flow" as a net aggregate cash flow of $\geq 10\%$ of the beginning-period portfolio market value or any cash flow that causes RVK calculated performance to deviate from manager/custodian reported performance in excess of 5 basis points for a given month.

Composites - The Modified Dietz methodology is utilized to calculate asset class, sub-asset class, and total fund composite performance. The Modified Dietz method calculates a time-weighted total rate of return that considers the timing of external cash flows; however, it does not utilize interim period performance to mitigate the impact of significant cash in- and outflows to the composite.

RVK calculates performance beginning with the first full month following inception. Since inception performance may vary from manager reported performance due to RVK using the first full month of returns as the inception date. Performance for both managers and composites is annualized for periods greater than one year.

Portfolio Characteristics - Due to disclosure guidelines set by each investment manager, portfolio characteristics shown are as of the most recent date available.

Private Equity Quartile Ranks - Private Equity quartile ranks are generated using vintage year peer group data provided by Thomson Reuters, and are based on each fund's annualized, since inception internal rate of return (IRR). Three Private Equity peer groups are available via Thomson Reuters: Buyout, Venture, and All Private Equity. Ranks are available quarterly, at a one-quarter lag.

Return - Compounded rate of return for the period.

%Return - The time-weighted rate of return of a portfolio for a given period.

Glossary

R-Squared - The percentage of a portfolio's performance explained by the behavior of the appropriate benchmark. High R-Squared means a higher correlation of the portfolio's performance to the appropriate benchmark.

Risk Free Benchmark - BofA ML 3 Mo US T-Bill Index unless specified otherwise.

RVK Liquidity Rating - A qualitative method for determining the relative amount of liquidity in a portfolio. The characteristics considered when determining relative liquidity include trading volume, gates for redemption, leverage, nature of transactions, and pricing mechanisms. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating.

<u>Asset Class</u>	<u>RVK Liquidity Rating</u>	<u>Asset Class</u>	<u>RVK Liquidity Rating</u>
<u>Liquid Investments</u>			
T-Bills and Treasuries	100	<u>Less Liquid Investments</u>	
Cash Equivalents	98	Fixed Income Plus Sector	50
TIPS	95	Diversified Real Return	50
US Large Cap Equity	95	Global Tactical Asset Allocation	50
Stable Value (Participant Directed)	91	Stable Value (Plan Sponsor Directed)	50
Non-US Large Cap Equity	90	Absolute Return Strategies	35
US Small Cap Equity	85	<u>Not Liquid Investments</u>	
REITS	85	Core Real Estate	25
Non-US Small Cap Equity	85	Core Plus Real Estate	15
Emerging Markets Equity	85	Plus Only Real Estate	5
Core Fixed Income	85	Private Equity Funds of Funds	5
Core Plus Fixed Income	80		

Sharpe Ratio - Represents the excess rate of return over the risk-free return (i.e., BofA ML 3 Mo US T-Bill Index unless specified otherwise), divided by the standard deviation of the excess return. The result is the absolute rate of return per unit of risk. The higher the value, the better the product's historical risk-adjusted performance.

Simple Alpha - The difference between the manager's return and the benchmark's return.

Spread Duration - A measure of the price sensitivity of a bond to a 100 basis-point movement of the bond's spread relative to Treasuries.

Standard Deviation - A statistical measure of the range of a portfolio's performance. The variability of a return around its average return over a specified time period.

Time Period Abbreviations - **QTD** - Quarter-to-Date. **CYTD** - Calendar Year-to-Date. **FYTD** - Fiscal Year-to-Date. **YOY** - Year Over Year.

Glossary

Thematic Classification - Represents dedicated manager allocations; as such, thematic allocations are approximations. RVK categorizes the following asset classes as Alpha, Capital Appreciation, Capital Preservation, and Inflation:

<u>Alpha</u>	<u>Capital Appreciation</u>	<u>Capital Preservation</u>	<u>Inflation</u>
Absolute Return Strategies	Public Equity	Core Fixed Income	TIPS
Currency Overlay	Private Equity	CMBS Fixed Income	Core Real Estate
	Preferred Securities	Asset Backed Fixed Income	Real Return
	High Yield	Domestic Core Plus Fixed Income	Inflation Hedges
	Convertible Fixed Income	Mortgage Backed Fixed Income	REITS
	TALF Funds	International Developed Fixed Income	Commodities
	Distressed Debt	Cash Equivalents	
	Emerging Market Fixed Income	Stable Value	
	Value Added Real Estate		
	Opportunistic Real Estate		

Total Fund Attribution - A method for identifying the sources of a total fund's over- or underperformance relative to its benchmark. The calculation identifies the contributions of positive or negative total fund excess return caused by allocation differences relative to the total fund's custom benchmark, and performance differences of the investment managers relative to the benchmark components that represent them.

Total Fund Performance -

Total Fund - The percentage return of the total fund for the specified time period.

Total Fund Benchmark - The percentage return of the total fund benchmark for the specified time period; calculated using the target asset allocation and the corresponding benchmark returns.

Total Value Added - The percentage of over- or underperformance of the total fund as compared to the total fund benchmark.

Total Value Added -

Asset Allocation - Shows how the variance of the total fund's actual allocation from its target allocation added to or subtracted from fund performance.

Manager Value Added - The portion of the total value added attributable to the outperformance or underperformance of the fund's investment managers, relative to the individual benchmarks that represent them in the total fund benchmark.

Market Timing/Other - The contribution of other residual factors, including estimation error and transaction timing.

Total Fund Beta - Total Fund Beta is calculated using the S&P 500 as the benchmark. It represents a measure of the sensitivity of the total fund to movements in the S&P 500 and is a measure of the Total Fund's non-diversifiable or systematic risk.

Tracking Error - A measure of the standard deviation of a portfolio's performance relative to the performance of an appropriate market benchmark.

Treynor Ratio - Similar to Sharpe ratio, but focuses on beta rather than excess risk (standard deviation). Treynor ratio represents the excess rate of return over the risk-free rate (i.e., BofA ML 3 Mo US T-Bill Index unless specified otherwise) divided by the beta. The result is the absolute rate of return per unit of risk. The higher the value, the better historical risk-adjusted performance.

Unit Value - The dollar value of a portfolio, assuming an initial nominal investment of \$100, growing at the compounded rate of %Return for a given period.

Up Market Capture - Up market by definition is positive benchmark return and up market capture represents the ratio in % terms of the average portfolios return over the benchmark during the up market period. The higher the value of the up market capture the better the product's performance.

Yield to Maturity - The rate of return achieved on a bond or other fixed income security assuming the security is bought and held to maturity and that the coupon interest paid over the life of the bond will be reinvested at the same rate of return.

Yield to Worst - The bond yield calculated by using the worst possible yield taking into consideration all call, put, and optional sink dates.