WILSHIRE ASSOCIATES

Wilshire Consulting

Employees' Retirement Fund of the City of Dallas

Executive Summary of Performance

First Quarter 2019

Wilshire Associates Incorporated
1299 Ocean Avenue, Suite 700
Santa Monica, CA 90401
Phone: 310-451-3051
contactconsulting@wilshire.com

Capital Market Overview

U.S. Equity Market

The U.S. stock market, represented by the Wilshire 5000 Total Market Index, was up 14.11% for the first quarter of 2019. This marks the strongest quarter for U.S. equities since 2009 when the market was rebounding from the 2008 recession. Concerns about global growth were dwarfed by the Fed's updated forecast for no rate increases in 2019 and a looser stance on unwinding quantitative easing enacted during the recovery. While gains early in the year are welcome, markets this year are likely to retain the volatility that was present in 2018.

Large capitalization stocks underperformed small caps for the quarter as the Wilshire Large-Cap Index was up 13.96% versus a gain of 15.51% for the Wilshire US Small-Cap Index. The large-cap segment of the market leads small-caps, however, for the past twelve months. The Wilshire US Micro-Cap Index was up 15.18% for the quarter and -2.49% for the one-year. Growth stocks led value during the first quarter and outperformed, generally, during the past twelve months.

All eleven major sectors were in positive territory during the first quarter, most by double-digits. The strongest performing sectors were Information Technology (+20.8%), Real Estate (+17.3%) and Industrials (+17.0%).

Fixed Income Market

The U.S. Treasury yield curve fell across most maturities during the quarter with the biggest decreases occurring in the 5 to 10-year portion of the curve. The bellwether 10-year Treasury yield ended the quarter at 2.41%, down 28 basis points from December. The Federal Open Market Committee left its overnight rate unchanged during the quarter at a range of 2.25% to 2.50%. The committee adjusted their forecast for future rates, communicated through their "dot plot," from two rate increases in 2019 to zero. The FOMC also adopted a more dovish position on unwinding their balance sheet. Credit spreads tightened during the quarter within both the investment grade and high yield markets.

Non-U.S. Markets

Equity markets outside of the U.S. enjoyed a strong start to 2019, although they generally underperformed the U.S. equity market. While there are signs of an economic slowdown in Europe, by far the biggest unknown is the result of the U.K.'s Brexit. The latest draft proposal to exit the European Union (EU), agreed upon by Prime Minister Theresa May and EU officials, was again rejected by the U.K. Parliament. While the final exit date has been delayed, a failure to reach an agreement on a transition period would mean significant uncertainty for markets. The current situation in Japan is similar to the rest of the world, several signs of an economic slowdown but strong equity returns during the first quarter. Trade talks between the U.S. and China continue with occasional signs of progress. Any completed agreement would help clarify a huge unknown and could have a positive effect on global markets and economies.

Real Assets Markets

U.S. real estate securities outperformed broader equities during the quarter and were one of the best performing sectors. Global real estate securities were up double-digits for the best performing quarter in more than four years. Commodity results were positive for the quarter as crude oil rose 32.4% to $60.14 per barrel. Natural gas prices were down -9.5%, ending the quarter at $2.66 per million BTUs. MLPs rebounded during the quarter and finished up 16.82%. Finally, gold prices were up and finished at approximately $1,299 per troy ounce, up +1.3% from last quarter.

Summary of Index Returns

For Periods Ended March 31, 2019

	Quarter	One Year	Three Years	Five Years	Ten Years
Domestic Equity					
Standard & Poor's 500	13.65%	9.50%	13.51%	10.91%	15.92%
Wilshire 5000	14.11	8.93	13.59	10.52	16.00
Wilshire 4500	16.17	5.23	13.71	8.48	16.71
Wilshire Large Cap	13.96	9.52	13.73	10.92	15.86
Wilshire Small Cap	15.51	3.75	12.35	7.22	17.08
Wilshire Micro Cap	15.18	-2.49	12.03	4.56	15.83
Domestic Equity					
Wilshire Large Value	12.44%	8.97%	11.06%	9.16%	14.77%
Wilshire Large Growth	15.69	10.12	16.44	12.64	16.93
Wilshire Mid Value	13.73	6.99	10.03	8.50	16.82
Wilshire Mid Growth	18.71	4.81	14.56	7.98	17.06
Wilshire Small Value	14.63	3.87	9.91	6.99	16.46
Wilshire Small Growth	16.35	3.59	14.74	7.26	17.55
International Equity					
MSCI All World ex U.S.	10.31%	-4.22%	8.09%	2.57%	8.85%
MSCI All World ex U.S. (LC)	10.54	1.9	9.2	6.17	9.72
MSCI EAFE	9.98	-3.71	7.27	2.33	8.96
MSCI Europe	10.84	-3.72	6.56	1.04	8.95
MSCI Pacific	8.53	-3.86	8.82	4.96	9.11
MSCI Emerging Markets Index	9.93	-7.41	10.68	3.68	8.94
Domestic Fixed Income					
Bloomberg Aggregate Bond	2.94%	4.48%	2.03%	2.74%	3.77%
Bloomberg Credit	4.87	4.89	3.48	3.61	6.22
Bloomberg Mortgage Back Sec.	2.17	4.42	1.77	2.65	3.11
Bloomberg Treasury	2.11	4.22	1.04	2.16	2.43
Citigroup High Yield Cash Pay	7.35	5.87	8.55	4.33	10.68
Bloomberg US TIPS	3.19	2.70	1.70	1.94	3.41
91-Day Treasury Bill	0.60	2.13	1.19	0.74	0.43
International Fixed Income					
Citigroup Non-U.S. Gov. Bond	1.52%	-4.55%	0.87%	-0.06%	2.02%
Citigroup World Gov. Bond	1.74	-1.57	0.95	0.59	2.20
Currency*					
Euro vs. $	-1.78%	-8.70%	-0.49%	-4.02%	-1.68%
Yen vs. $	-0.88	-3.92	0.51	-1.43	-1.13
Pound vs. $	2.32	-7.11	-3.21	-4.81	-0.95
Real Estate					
Wilshire REIT Index	16.02%	19.34%	5.45%	9.00%	18.69%
Wilshire RESI	16.01	19.29	5.77	9.33	18.90

*Positive values indicate dollar depreciation.

Total Fund Overview

Asset Class Performance

	Assets ($Mil)	Assets (%)	Performance (%) QTR	YTD	1-year	3-year	5-year	10-year
U.S. Equity	476.8	13.5	13.47	13.47	4.21	12.56	9.48	15.34
International Equity	488.3	13.9	11.48	11.48	-7.40	8.14	3.20	10.65
Global Equity	247.5	7.0	12.31	12.31	1.18	10.73	6.08	-.-
Global Low Volatility	357.8	10.2	9.13	9.13	6.37	8.72	-.-	-.-
Real Estate	414.1	11.7	7.38	7.38	11.07	5.66	8.58	18.49
Global Fixed Income	496.2	14.1	3.30	3.30	4.07	2.67	3.14	5.02
High Yield	356.6	10.1	6.99	6.99	4.69	7.08	3.96	9.36
Credit Opportunities	176.8	5.0	5.91	5.91	4.29	6.85	-.-	-.-
MLPs	254.2	7.2	20.42	20.42	17.92	9.26	-1.20	-.-
Private Equity	234.0	6.6	0.20	0.20	11.93	11.80	12.07	-.-
Cash Equivalents	21.9	0.6	0.60	0.60	2.13	1.19	0.74	0.43
Total Fund	**3,524.2**	**100.0**	**8.90**	**8.90**	**5.20**	**8.33**	**5.69**	**11.62**
Asset Allocation Policy			**8.96**	**8.96**	**6.11**	**8.10**	**5.33**	**11.45**
Value Added vs Policy			*-0.06*	*-0.06*	*-0.91*	*0.23*	*0.36*	*0.17*
Actuarial Rate			1.94	1.94	8.00	8.00	8.04	8.14
Wilshire 5000 Index			14.11	14.11	8.93	13.59	10.52	15.99
S&P 500 Index			13.65	13.65	9.50	13.51	10.91	15.92
MSCI ACWI x-U.S. IMI Index			10.31	10.31	-4.96	7.94	2.66	9.20
MSCI EAFE Index			9.98	9.98	-3.71	7.27	2.33	8.96
Bloomberg Aggregate Bond Index			2.94	2.94	4.48	2.03	2.74	3.77
Citigroup High Yield Cash Pay			7.35	7.35	5.87	8.55	4.33	10.68
Wilshire RE Securities Index			16.01	16.01	19.29	5.77	9.33	18.90
91-Day Treasury Bill			0.60	0.60	2.13	1.19	0.74	0.43

Total Fund Asset Growth

($Millions)	Beg. Mkt Value	Net Contrib.	Net Distrib.	Investment Fees	Investment Gain/Loss	End Mkt Value	Total Return
1Q15	3,402.5	36.1	73.5	3.5	85.2	3,446.8	2.40%
2Q15	3,446.8	44.4	83.3	3.7	6.5	3,410.6	0.08%
3Q15	3,410.6	29.6	69.6	3.4	(202.7)	3,164.5	-6.08%
4Q15	3,164.5	49.4	82.5	3.2	71.0	3,199.2	2.12%
1Q16	3,199.2	89.0	127.7	3.0	40.9	3,198.3	1.28%
2Q16	3,198.3	70.8	105.2	2.8	116.2	3,277.3	3.54%
3Q16	3,277.3	32.9	67.4	2.9	117.3	3,357.2	3.48%
4Q16	3,357.2	28.1	66.0	3.0	21.4	3,337.8	0.62%
1Q17	3,337.8	36.2	74.6	2.6	140.0	3,436.7	4.15%
2Q17	3,436.7	24.9	68.7	3.2	86.6	3,476.4	2.46%
3Q17	3,476.4	47.8	84.0	3.5	110.0	3,546.6	3.10%
4Q17	3,546.6	31.1	74.1	3.3	107.5	3,607.8	3.02%
1Q18	3,607.8	31.9	74.7	3.1	(37.9)	3,524.0	-1.09%
2Q18	3,524.0	27.2	71.0	3.6	68.0	3,544.4	1.83%
3Q18	3,544.4	31.6	75.1	3.3	101.0	3,598.8	2.74%
4Q18	3,598.8	27.5	73.9	3.5	(274.6)	3,274.3	-7.66%
1Q19	3,274.3	32.4	71.8	3.2	292.5	3,524.2	8.90%

- At the end of the first quarter of 2019, the Fund's market value was $3,524.2 million, which represented an increase of $249.9 million in total net asset value over the previous quarter. The change in the Fund's value was driven by $32.4 million in net contributions and a $292.5 million gain on investments. Meanwhile, $71.8 million in net distributions and $3.2 million in investment management fees flowed out of the Fund during the period.

Quarterly Total Fund Attribution vs. Policy

Asset Class	Assets (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
U.S. Equity	13.3	13.47	15.0	14.11	-1.74	-0.64	-0.10	0.00	-0.09	-0.18
International Equity	13.6	11.48	15.0	10.31	-1.35	1.18	-0.02	-0.02	0.18	0.13
Global Equity	6.9	12.31	7.5	12.18	-0.63	0.13	-0.02	0.00	0.01	-0.01
Global Low Volatility	10.3	9.13	10.0	9.96	0.25	-0.83	0.00	0.00	-0.08	-0.08
Public REITs	5.0	16.91	5.0	16.01	0.01	0.90	-0.01	0.00	0.04	0.03
Direct Core Real Estate	6.9	0.90	5.0	0.94	1.86	-0.04	-0.17	0.00	0.00	-0.17
Global Fixed Income	14.2	3.30	15.0	2.94	-0.75	0.36	0.03	0.00	0.05	0.08
High Yield	10.1	6.99	10.0	7.35	0.12	-0.35	0.00	0.00	-0.04	-0.04
Credit Opportunities	5.1	5.91	5.0	6.10	0.09	-0.20	0.00	0.00	-0.01	-0.01
MLPs	6.8	20.42	7.5	16.82	-0.67	3.60	-0.08	-0.03	0.26	0.15
Private Equity	6.9	0.20	5.0	-3.16	1.94	3.37	-0.25	0.07	0.17	-0.01
Cash Equivalents	0.9	0.60	0.0	0.60	0.87	0.00	-0.08	0.00	0.00	-0.08
Monthly Linked Return	**100.0**	**8.76**	**100.0**	**8.96**		**-0.20**	**-0.71**	**0.01**	**0.50**	**-0.20**
Trading/Hedging		*0.13*		*0.00*		*0.13*				***0.13***
Total		**8.90**		**8.96**		**-0.07**				**-0.07**

8.96	**Asset Allocation Policy**
-0.71	Actual/Tactical Asset Allocation
0.50	Active Management
0.01	Interaction
0.13	Trading
8.90	**Total Fund Return**

**Note: factors may not sum exactly to total return due to rounding.*

The Total Fund attribution table, shown above, displays the return contribution of each asset class to the Total Fund's overall return. The attribution provides some insights as to whether tactical allocation and active management within asset classes helped or hurt performance during the quarter.

- ***Strategic Policy:*** The contribution to total return from each asset class, calculated as the percentage allocated to each asset class multiplied by the benchmark for that asset class.
- ***Actual Allocation:*** The return contribution during the quarter due to differences in the actual allocation from the policy allocation (i.e.: the actual allocation to U.S. equity was higher than the policy allocation). A positive number would indicate an overweight allocation benefited performance, and vice versa.
- ***Active Management:*** The return contribution from active management. This number would be positive if the asset class outperformed the designated policy index and vice versa (i.e.: the U.S. equity segment outperformed the policy index, the Wilshire 5000 Index, during the quarter and contributed positively to active management).
- ***Interaction:*** Captures the interaction of managers' performance and asset class weighting differences.
- ***Actual Return:*** The actual return of the asset classes if allocations to them were static during the quarter. These returns will not match exactly with the actual segment returns since asset class allocations change during the quarter due to market movement, cash flows, etc.

One-Year Total Fund Attribution vs. Policy

Asset Class	Assets (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
U.S. Equity	14.4	4.21	15.0	8.93	-0.6	-4.71	-0.02	0.01	-0.68	-0.69
International Equity	14.2	-7.40	15.0	-4.96	-0.8	-2.44	0.05	0.01	-0.40	-0.34
Global Equity	6.3	1.18	6.9	2.60	-0.5	-1.42	-0.02	0.01	-0.11	-0.11
Global Low Volatility	10.3	6.37	10.0	9.04	0.3	-2.67	0.00	-0.01	-0.26	-0.27
Public REITs	4.8	19.53	5.0	19.29	-0.2	0.23	-0.05	0.01	0.01	-0.04
Direct Core Real Estate	6.6	5.27	5.0	5.37	1.6	-0.10	-0.04	0.00	-0.01	-0.04
Global Fixed Income	13.6	4.07	15.0	4.48	-1.4	-0.41	-0.03	0.01	-0.07	-0.09
High Yield	10.7	4.69	10.4	5.87	0.3	-1.18	0.00	0.00	-0.12	-0.13
Credit Opportunities	4.5	4.29	4.6	4.41	-0.1	-0.12	-0.01	0.00	-0.02	-0.02
MLPs	7.2	17.92	8.1	15.11	-0.9	2.81	-0.30	-0.08	0.28	-0.10
Private Equity	6.4	11.93	5.0	1.82	1.4	10.11	-0.15	0.19	0.50	0.53
Cash	0.9	2.13	0.0	2.13	0.9	0.00	-0.02	0.00	0.00	-0.02
Monthly Linked Return	**100.0**	**4.79**	**100.0**	**6.11**		**-1.32**	**-0.59**	**0.14**	**-0.88**	**-1.32**
Trading		0.41		0.00		0.41				**0.40**
Total		***5.20***		***6.11***		***-0.91***				***-0.91***

6.11	**Strategic Policy Allocation**
-0.59	Actual/Tactical Asset Allocation
-0.88	Active Management
0.14	Interaction
0.40	Trading
5.20	Total Return

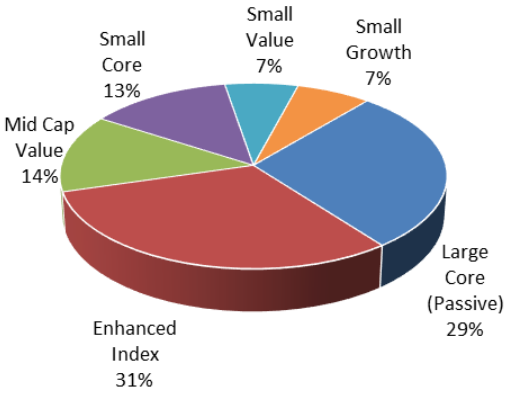
**Note: factors may not sum exactly to total return due to rounding.*

The Total Fund attribution table, shown above, displays the return contribution of each asset class to the Total Fund's overall return. The attribution provides some insights as to whether tactical allocation and active management within asset classes helped or hurt performance during the quarter.

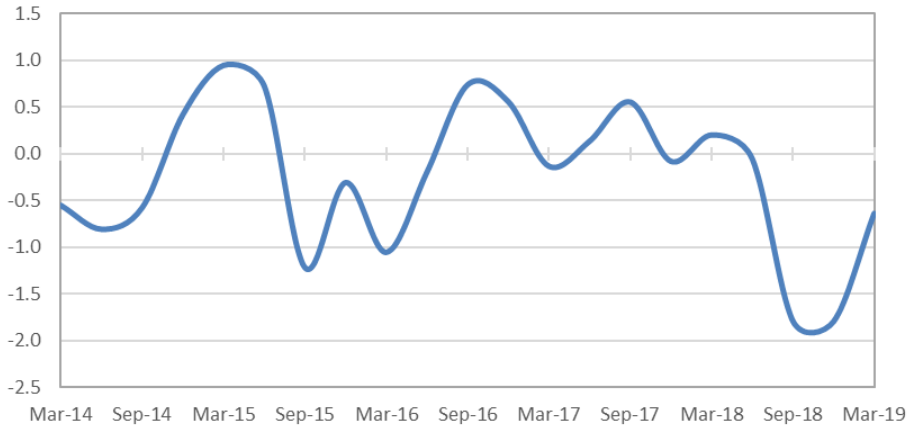
- ***Strategic Policy:*** The contribution to total return from each asset class, calculated as the percentage allocated to each asset class multiplied by the benchmark for that asset class.
- ***Actual Allocation:*** The return contribution during the quarter due to differences in the actual allocation from the policy allocation (i.e.: the actual allocation to U.S. equity was higher than the policy allocation). A positive number would indicate an overweight allocation benefited performance, and vice versa.
- ***Active Management:*** The return contribution from active management. This number would be positive if the asset class outperformed the designated policy index and vice versa (i.e.: the U.S. equity segment outperformed the policy index, the Wilshire 5000 Index, during the quarter and contributed positively to active management).
- ***Interaction:*** Captures the interaction of managers' performance and asset class weighting differences.
- ***Actual Return:*** The actual return of the asset classes if allocations to them were static during the quarter. These returns will not match exactly with the actual segment returns since asset class allocations change during the quarter due to market movement, cash flows, etc.

U.S. Equity Overview

U.S. Equity Structure



U.S. Equity Composite
Quarterly Excess Return



Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total U.S. Equity (Gross)	**$ 476.8**	**13.59**	**13.59**	**4.66**	**12.96**	**9.87**	**15.74**
Total U.S. Equity (Net)		**13.47**	**13.47**	**4.21**	**12.56**	**9.48**	**15.34**
Custom Benchmark [1]		14.11	14.11	8.93	13.59	10.52	15.99
Net of Fee Value Added vs Benchmark		*-0.64*	*-0.64*	*-4.72*	*-1.03*	*-1.04*	*-0.65*
Small Cap Composite	**$ 128.9**	13.21	13.21	-2.39	11.52	7.04	15.65
Wilshire 5000 Index		14.11	14.11	8.93	13.59	10.52	15.99
S&P 500 Index		13.65	13.65	9.50	13.51	10.91	15.92
Russell 2000 Index		14.58	14.58	2.05	12.92	7.05	15.36

U.S. Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Large Core - Passive								
Northern Trust S&P 500 (Gross)	**$ 135.9**	**13.69**	**13.69**	**9.55**	**13.52**	**10.95**	**9.96**	**Dec-94**
Northern Trust S&P 500 (Net)		**13.69**	**13.69**	**9.55**	**13.52**	**10.95**	**9.93**	**Dec-94**
S&P 500 Index		13.65	13.65	9.50	13.51	10.91	9.89	Dec-94
Net of Fee Value Added vs Benchmark		*0.04*	*0.04*	*0.05*	*0.01*	*0.04*	*0.04*	
Enhanced Index								
T. Rowe Price (Gross)	**$ 147.1**	**14.59**	**14.59**	**10.11**	**14.83**	**11.88**	**9.37**	**Mar-06**
T. Rowe Price (Net)		**14.50**	**14.50**	**9.78**	**14.49**	**11.53**	**9.05**	**Mar-06**
S&P 500 Index + 1%		13.90	13.90	10.50	14.51	11.91	9.48	Mar-06
Net of Fee Value Added vs Objective		*0.60*	*0.60*	*-0.72*	*-0.02*	*-0.38*	*-0.43*	
S&P 500 Index		13.65	13.65	9.50	13.51	10.91	8.48	Mar-06
Net of Fee Value Added vs Benchmark		*0.85*	*0.85*	*0.28*	*0.98*	*0.62*	*0.57*	
Information Ratio				**0.25**	**0.72**	**0.50**		
Sharpe Ratio				**0.46**	**1.20**	**0.94**		

[1] Domestic Equity Custom Benchmark: Wilshire 5000 Index (3q99 – Present); S&P 500 Index (1q90 – 2q99).

U.S. Equity Overview (Continued)

U.S. Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Small Core - Active								
Systematic Financial (Gross)	**$ 63.2**	**11.22**	**11.22**	**-4.17**	**13.27**	**9.46**	**11.46**	**Jun-03**
Systematic Financial (Net)		**10.97**	**10.97**	**-5.00**	**12.31**	**8.53**	**10.67**	**Jun-03**
Russell 2000 Index + 1.25%		14.90	14.90	3.30	14.17	8.30	10.47	Jun-03
Net of Fee Value Added vs Objective		*-3.93*	*-3.93*	*-8.30*	*-1.86*	*0.23*	*0.20*	
Russell 2000 Index		14.58	14.58	2.05	12.92	7.05	9.22	Jun-03
Net of Fee Value Added vs Benchmark		*-3.61*	*-3.61*	*-7.05*	*-0.61*	*1.48*	*1.45*	
Information Ratio				**-1.89**	**-0.14**	**0.36**		
Sharpe Ratio				**-0.34**	**0.73**	**0.52**		
Small Value - Active								
Channing Capital Management (Gross) *	**$ 32.5**	**15.32**	**15.32**	**-2.54**	**10.04**	**5.58**	**6.21**	**Oct-13**
Channing Capital Management (Net) *		**15.03**	**15.03**	**-3.49**	**9.00**	**4.58**	**5.24**	**Oct-13**
Russell 2000 Value Index + 1.25%		12.24	12.24	1.42	12.11	6.84	7.20	Oct-13
Net of Fee Value Added vs Objective		*2.79*	*2.79*	*-4.91*	*-3.11*	*-2.26*	*-1.96*	
Russell 2000 Value Index		11.93	11.93	0.17	10.86	5.59	5.95	Oct-13
Net of Fee Value Added vs Benchmark		*3.10*	*3.10*	*-3.66*	*-1.86*	*-1.01*	*-0.71*	
Information Ratio				**-0.56**	**-0.35**	**-0.22**		
Sharpe Ratio				**-0.22**	**0.44**	**0.22**		
Small Growth - Active								
Redwood Investments (Gross) *	**$ 33.2**	**16.06**	**16.06**	**4.93**	**-.-**	**-.-**	**8.45**	**Sep-16**
Redwood Investments (Net) *		**15.87**	**15.87**	**4.17**	**-.-**	**-.-**	**7.84**	**Sep-16**
Russell 2000 Growth Index + 1.50%		17.52	17.52	5.35	-.-	-.-	14.06	Sep-16
Net of Fee Value Added vs Objective		*-1.65*	*-1.65*	*-1.18*			*-6.22*	
Russell 2000 Growth Index		17.14	17.14	3.85	-.-	-.-	12.56	
Net of Fee Value Added vs Benchmark		*-1.27*	*-1.27*	*0.32*			*-4.72*	
Information Ratio				**0.06**	**-.-**	**-.-**		
Sharpe Ratio				**0.08**	**-.-**	**-.-**		
Mid Cap Value - Active								
Smith Graham Mid Cap Value (Gross) *	**$ 65.0**	**11.46**	**11.46**	**-4.72**	**-.-**	**-.-**	**-3.50**	**Dec-17**
Smith Graham Mid Cap Value (Net) *		**11.25**	**11.25**	**-5.45**	**-.-**	**-.-**	**-4.13**	**Dec-17**
Russell Midcap Index + 2%		17.03	17.03	8.47	-.-	-.-	6.76	**Dec-17**
Net of Fee Value Added vs Objective		*-5.78*	*-5.78*	*-13.92*			*-10.89*	
Russell Midcap Index		16.54	16.54	6.47	-.-	-.-	4.76	
Net of Fee Value Added vs Benchmark		*-5.29*	*-5.29*	*-11.92*			*-8.89*	
Information Ratio				**-2.29**	**-.-**	**-.-**		
Sharpe Ratio				**-0.36**	**-.-**	**-.-**		

- The Fund's domestic equity composite generated a return of 13.47% (net of fees) during the first quarter of 2018, trailing the Wilshire 5000 Total Market Index, which returned 14.11%. Relative performance was mixed during the quarter with outperformance from the program's enhanced index and small cap value exposures and underperformance from the program's small-cap core, mid-cap value and small-cap growth exposures. Following this quarter's results, the domestic equity composite is trailing its benchmark over the one-, three-, five- and ten-year periods.

U.S. Equity Overview (Continued)

Northern Trust (Passive)

- Northern Trust manages a passive large-cap core equity portfolio for the Fund, which is designed to track the S&P 500 Index and replicate the performance of overall market. To date, the passive large-cap core portfolio is performing in line with expectations, mirroring the risk and return profile of the benchmark index and exhibiting very low tracking error over all time periods.

T. Rowe Price (Enhanced)

- T. Rowe Price manages the Fund's enhanced equity index portfolio. The T. Rowe Price portfolio returned 14.50% (net of fees) during the first quarter, leading its benchmark index (S&P 500) which returned 13.65%. During the period stock selection was a positive contributor while sector positioning relative to the benchmark was modestly detractive, the effect of trading and timing also slightly added to the portfolio's return during the period. During the period stock selection was strongest within the portfolio's technology and communication services sectors, both of which posted returns above that of their respective benchmark holdings. Stock selection was weakest within consumer discretionary and energy. Historically, the portfolio's overall sector allocation does not deviate too broadly from the Standard & Poor's 500 (approximately +/- 1%) which means the bulk of the value-added will come from stock selection. The T. Rowe portfolio remains concentrated in large-capitalization stocks (with an average market cap of $227,314 million). The portfolio is currently outperforming against its benchmark over the one-, three-, and five-year periods as well as since inception (3/06).

Systematic Financial (Small-Cap Core)

- Systematic Financial manages the Fund's small-cap core portfolio. The Systematic portfolio returned 10.97% (net of fees) during the first quarter, underperforming its benchmark (Russell 2000) which returned 14.58%. Stock selection was the main driver of this period's underperformance as has been the case for the strategy over the past year. From an attribution perspective, stock selection within Information technology and health care was especially challenging in Q1 and over the past twelve months. Selection in information technology was most challenged by the market's disregard of valuation during the 12-month period. Positive stock picking in industrials was largely offset by an overweight to the sector, which was among the worst-performing sectors in the Russell 2000 universe. Another negative allocation effect worth calling out is the portfolio's overweight to the underperforming bank industry, which hurt relative performance in the first quarter. Lastly, unfavorable sector allocation also hurt relative performance by approximately 25 basis points in Q1. The Systematic portfolio is currently outperforming against its benchmark over the five- and ten-year periods as well as since inception despite its recent struggles relative to the benchmark.

Channing Capital Management (Small-Cap Value)

Channing Capital manages the Fund's small-cap value portfolio. The Channing portfolio returned 15.03% (net of fees) during the first quarter, outperforming its benchmark (Russell 2000 Value) which returned 11.93%. During the period, stock selection was the main driver of relative results. Particularly large gains were incurred within the financials and consumer discretionary sectors. Here, the portfolio's holdings returned 12.94% and 17.10% versus 7.96% and 8.59% for the respective benchmark holdings. In total, stock picking decisions were positive in 8 of the 11 GICS sectors. Meanwhile, sector weighting decisions were slightly negative for the period largely due to underweights to technology and energy. To date, the Channing portfolio is consistently positioned with an underweight allocation to consumer discretionary (7% portfolio weight vs. 10% benchmark weight) with significant overweight allocation to industrials (20% portfolio weight vs 12% benchmark weight). The Channing portfolio is currently underperforming against its benchmark over all extended time periods including since inception (12/13).

U.S. Equity Overview (Continued)

Redwood Investments (Small-Cap Growth)

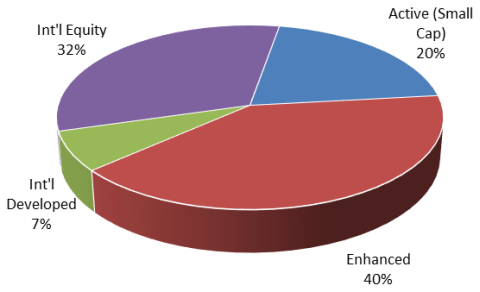
- Redwood Investments manages the Fund's small-cap growth portfolio, which was funded in late 2016. The Redwood portfolio returned 15.87% during the first quarter, trailing its benchmark (Russell 2000 Growth) which returned 17.14%. The portfolio currently holds 53 securities which is considerably more concentrated than the benchmark, as such, individual stock selection typically emerges as the predominant driver of relative performance in any given period. During the quarter, several stocks within the portfolio delivered strong returns relative to the benchmark. Of note, from a stock selection perspective the portfolio was aided by contributions from its consumer discretionary and information technology holdings. These two sectors are two of the largest weighted sectors in the portfolio, as such, success within these segments accrued positively to performance as a whole. Success in these segments was mitigated by poor stock picking results in financials, industrials and consumer staples which led to this period's underperformance. The largest individual detractors to performance during the period were Green Dot Corp (-24%) and Inogen (-23%). During the period management increased its exposure to consumer companies focused on lifestyle, health and experiences with less volatile earnings while maintaining underweight exposures to macro-driven sectors like real estate, materials and energy. The Redwood portfolio is currently leading its benchmark for the one-year period but continues to underperform against its benchmark since inception (09/16).

Smith, Graham & Co. (Mid-Cap Value)

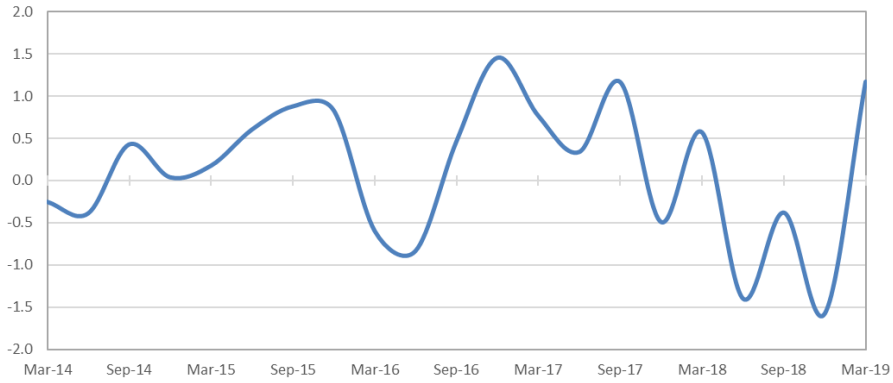
- Smith, Graham & Co. manages the Fund's mid-cap value portfolio, which was funded in December of 2017. The mid-cap portfolio returned 11.25% (net of fees) during the first quarter, underperforming its benchmark (Russell Mid Cap Index) which returned 16.54%. During the quarter, the portfolio's strongest sector performance relative to the Russell Midcap Index sectors was in utilities and consumer staples. The portfolio sectors with the weakest performance compared to the Russell Midcap Index sectors were energy, health care and consumer discretionary. The stocks that contributed the most to absolute performance during the quarter were: Stericycle, Bed Bath & Beyond, Lumentum Holdings, Western Digital and Synopsys. The stocks that detracted the most from absolute performance were: Cigna, Chico's FAS, Macy's, Goodyear Tire & Rubber and Humana. During the quarter, one new position was established: Synnex Corporation; and one position was eliminated: PerkinElmer. At the end of March, the portfolio was diversified among 68 securities, none exceeding a 2.4% position. The 10 largest holdings represented approximately 20% of the total portfolio. Sector weightings were within plus/minus five percentage points of the Russell Midcap Index and cash represented approximately 0.8% of the portfolio. After completing its first full year of performance within the Fund the Smith Graham portfolio trails its benchmark since inception (12/17).

International Equity Overview

International Equity Structure



International Equity Composite
Quarterly Excess Return



International Equity Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total International Equity (Gross)	**$488.3**	**11.60**	**11.60**	**-6.99**	**8.63**	**3.64**	**11.12**
Total International Equity (Net)		**11.48**	**11.48**	**-7.40**	**8.14**	**3.20**	**10.65**
Custom Benchmark [1]		10.31	10.31	-4.96	7.94	2.66	9.04
Net of Fee Value Added vs Benchmark		*1.17*	*1.17*	*-2.44*	*0.20*	*0.54*	*1.61*
MSCI ACWI x-US IMI (Net)		10.31	10.31	-4.96	7.94	2.66	9.20
MSCI ACWI x-US (Net)		10.31	10.31	-4.22	8.09	2.57	8.85
MSCI EAFE (Net)		9.98	9.98	-3.71	7.27	2.33	8.96
MSCI Emerging Markets		9.93	9.93	-7.41	10.68	3.68	8.94

International Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Int'l Small Cap - Active								
Acadian International (Gross)	**$100.0**	**12.22**	**12.22**	**-10.68**	**10.42**	**5.21**	**8.75**	**Mar-89**
Acadian International (Net)		**12.06**	**12.06**	**-11.30**	**9.81**	**4.65**	**8.30**	**Mar-89**
Custom Benchmark + 2%		10.76	10.76	-7.49	9.01	5.26	7.78	Mar-89
Net of Fee Value Added vs Objective		*1.30*	*1.30*	*-3.81*	*0.80*	*-0.61*	*0.52*	
Custom Benchmark		10.26	10.26	-9.49	7.01	3.26	5.78	Mar-89
Net of Fee Value Added vs Benchmark		*1.80*	*1.80*	*-1.81*	*2.80*	*1.39*	*2.52*	
Information Ratio				**-0.46**	**0.67**	**0.39**		
Sharpe Ratio				**-0.77**	**0.66**	**0.29**		

[2] International Equity Custom Benchmark: MSCI ACWI x-US IMI (2q10 – Present); MSCI ACWI x-US (1q99 – 1q10); Wilshire Non-US/Non-SA (2q96 – 4q98); MSCI EAFE (4q89 – 1q96)

[3] Acadian Custom Benchmark: MSCI ACWI x-US Small Cap (3q09 – Present); MSCI EAFE Small Cap (4q99 – 2q09); S&P/Citigroup Eur/Pac EMI Index (2q96 – 3q99); MSCI EAFE (2q89 – 1q96). Performance Objective: Custom Benchmark +2% (1q05 – Present); +1% (2q89 – 4q04).

International Equity Overview (Continued)

International Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Int'l Enhanced Index								
AQR Capital Management (Gross)	**$ 196.8**	**11.93**	**11.93**	**-8.41**	**8.00**	**3.56**	**3.64**	**Mar-06**
AQR Capital Management (Net)		**11.77**	**11.77**	**-8.95**	**7.38**	**2.94**	**3.12**	**Mar-06**
Custom Benchmark + 1.5%		10.69	10.69	-2.72	9.59	4.07	4.13	Mar-06
Net of Fee Value Added vs Objective		*1.08*	*1.08*	*-6.23*	*-2.21*	*-1.13*	*-1.01*	
Custom Benchmark		10.31	10.31	-4.22	8.09	2.57	2.63	Mar-06
Net of Fee Value Added vs Benchmark		*1.46*	*1.46*	*-4.73*	*-0.71*	*0.37*	*0.49*	
Information Ratio				**-1.56**	**-0.26**	**0.15**		
Sharpe Ratio				**-0.67**	**0.51**	**0.18**		
Int'l Developed								
Ativo International Developed (Gross) *	**$ 34.1**	**10.16**	**10.16**	**-1.58**	**-.-**	**-.-**	**-2.63**	**Dec-17**
Ativo International Developed (Net) *		**10.00**	**10.00**	**-2.19**	**-.-**	**-.-**	**-3.14**	**Dec-17**
MSCI EAFE Index + 2%		10.47	10.47	-1.71	-.-	-.-	-2.17	
Net of Fee Value Added vs Objective		*-0.47*	*-0.47*	*-0.48*			*-0.97*	
MSCI EAFE Index		9.98	9.98	-3.71	-.-	-.-	-4.17	
Net of Fee Value Added vs Benchmark		*0.02*	*0.02*	*1.52*			*1.03*	
Information Ratio				**0.55**	**-.-**	**-.-**		
Sharpe Ratio				**-0.29**	**-.-**	**-.-**		
Int'l Equity (Active)								
Baillie Gifford (Gross)	**$ 78.6**	**-.-**	**-.-**	**-.-**	**-.-**	**-.-**	**-.-**	**Mar-19**
Baillie Gifford (Net)		**-.-**	**-.-**	**-.-**	**-.-**	**-.-**	**-.-**	**Mar-19**
Int'l Equity (Active)								
Earnest Partners (Gross) *	**$ 78.8**	**-.-**	**-.-**	**-.-**	**-.-**	**-.-**	**-.-**	**Mar-19**
Earnest Partners (Net) *		**-.-**	**-.-**	**-.-**	**-.-**	**-.-**	**-.-**	**Mar-19**

- The Fund's international equity composite returned 11.48% (net of fees) during the first quarter of 2019, outpacing the MSCI ACWI x-US Investable Market Index (IMI) which returned 10.31%. Active management was strong across the board for the Fund's international equity program with AQR and Acadian leading their respective benchmarks by a sizeable margin. The program's newly funded International Developed exposure managed by Ativo also led its benchmark and has performed well relative to its benchmark since its inclusion in the fund. Meanwhile, the composite added two new actively managed exposures during the period. Performance tracking for these two exposures will begin in 2Q19. The international equity composite is currently outperforming against its benchmark for the three-, five- and ten-periods periods, as well as since inception (12/89).

[5] AQR Custom Benchmark: MSCI ACWI x-US (2q10 – Present); MSCI EAFE (1q06 – 1q10); Performance Objective: Custom Benchmark + 1.5%.

Acadian (International Small-Cap)

- Acadian International manages the Fund's active small-cap international equity portfolio. During the first quarter the Acadian portfolio returned 12.06% (net of fees), outperforming against its benchmark (MSCI ACWI x-U.S. Small Cap) which returned 10.26%. For the first quarter, the portfolio outperformed its benchmark, as gains realized from stock selection were partially reduced by value lost from country allocations. Key sources of positive active return included a combination of stock selection and overweight positions in China and Israel, along with stock selection in Brazil. Less successful investments included stock selection in Canada and France, as well as a combination of stock selection and an overweight position in Japan. Notable contributors during the period included CyberArk, Deutz, Apeloa Pharmaceutical, and PetroRio. Notable decliners during the period included Canfor, Leopalace21, Criteo and AU Optronics. As of quarter-end, the Acadian portfolio is outperforming against its benchmark for the three- and five-year periods as well as since inception (3/89).

AQR Capital Management (International-ACWI X-US)

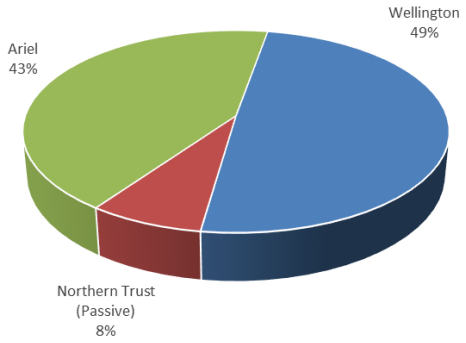
- AQR Capital manages the Fund's international equity portfolio. The AQR portfolio returned 11.77% (net of fees) during the first quarter, outperforming its benchmark (MSCI ACWI x-US) which returned 10.31%. Gains during the period were driven by currency selection and stock selection while country selection detracted from performance. Within stock selection, the momentum, quality, and sentiment themes contributed positively to performance for the quarter. Value detracted over the period; however, losses were offset by gains from other themes. An overweight position in health care and materials were the main positive contributors over the quarter while an underweight position in Industrials was the largest negative contributor. Sector selection also contributed positively to performance. Gains were driven by underweight positions in communication services and financials, as well as an overweight position in energy. Within country selection, developed countries drove losses over the quarter. Japan was the largest detractor and Australia was the largest positive contributor. Finally, within currency selection, developed currencies were the main driver of performance. Positions in the Swedish Krona and Euro were the largest positive contributors. Following this quarter's results, the AQR portfolio is outperforming against its benchmark for five-, and ten-year periods as well as since inception (03/06).

Ativo (International Developed)

- Ativo manages the Fund's international developed equity portfolio. During the first quarter the Ativo portfolio returned 10.00% slightly leading the MSCI EAFE Index, which returned 9.98%. Relative outperformance was muted by sharp declines in two stocks, both of which were sold during the period. The first was a UK financial services firm that issued a profit warning because of tighter government regulation of its business. The second was a European bank impacted by the media report alleging it had facilitated suspicious cross-border transactions. Consistent with the poor performance of these holdings, stock selection in the UK, Developed Europe/Middle East ex-UK and the Financials sector hurt results relative to the benchmark. On the plus side, the major source of relative strength was stock selection in Japan. Other notable contributors included stock selection in the Communications Services sector and an overweight in real estate. During the quarter, Ativo added exposure in Develop Europe/Middle East ex-UK and the Health Care and Technology sectors and trimmed exposure in Japan and Consumer staples. The largest overweights at quarter-end were in Pacific ex-Japan and the real estate and industrials sectors. The largest underweights were in Japan, materials, and consumer staples. After completing its first full year of performance within the Fund the Ativo portfolio currently leads its benchmark comfortably since inception (12/17).

Global Equity Overview

Global Equity Structure



Global Equity Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total Global Equity (Gross)	**$ 247.5**	**12.47**	**12.47**	**1.73**	**11.18**	**6.59**	**-.-**
Total Global Equity (Net)		**12.31**	**12.31**	**1.18**	**10.73**	**6.08**	**-.-**
MSCI ACWI (Net)		12.18	12.18	2.60	10.67	6.45	-.-
Net of Fee Value Added vs Index		*0.13*	*0.13*	*-1.42*	*0.06*	*-0.37*	
MSCI ACWI IMI (Net)		12.29	12.29	1.89	10.58	6.33	12.27
MSCI ACWI (Net)		12.18	12.18	2.60	10.67	6.45	11.98
MSCI World (Net)		12.48	12.48	4.01	10.68	6.78	12.38

Global Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Global Equity - Active								
Wellington (Gross)	**$ 122.5**	**14.97**	**14.97**	**0.28**	**10.58**	**8.10**	**12.13**	**Jan-00**
Wellington (Net)		**14.80**	**14.80**	**-0.29**	**9.93**	**7.49**	**11.51**	**Aug-12**
MSCI ACWI (Net) + 2%		12.67	12.67	4.60	12.67	8.45	11.35	Aug-12
Net of Fee Value Added vs Objective		*2.13*	*2.13*	*-4.89*	*-2.74*	*-0.96*	*0.16*	
MSCI ACWI (Net)		12.18	12.18	2.60	10.67	6.45	9.35	Aug-12
Net of Fee Value Added vs Benchmark		*2.62*	*2.62*	*-2.89*	*-0.74*	*1.04*	*2.16*	
Information Ratio				**-0.70**	**-0.20**	**0.30**		
Sharpe Ratio				**-0.14**	**0.73**	**0.54**		
Global Equity - Active								
Ariel (Gross) *	**$ 106.3**	**9.74**	**9.74**	**3.44**	**-.-**	**-.-**	**3.30**	**Dec-17**
Ariel (Net) *		**9.56**	**9.56**	**2.79**	**-.-**	**-.-**	**2.75**	**Dec-17**
MSCI ACWI (Net) + 1.5%		12.55	12.55	4.10	-.-	-.-	2.79	
Net of Fee Value Added vs Objective		*-2.99*	*-2.99*	*-1.31*			*-0.04*	
MSCI ACWI (Net)		12.18	12.18	2.60	-.-	-.-	1.29	
Net of Fee Value Added vs Benchmark		*-2.62*	*-2.62*	*0.19*			*1.46*	
Information Ratio				**0.05**	**-.-**	**-.-**		
Sharpe Ratio				**0.05**	**-.-**	**-.-**		
Global Equity - Passive								
Northern Trust (Gross)	**$ 18.7**	**12.39**	**12.39**	**2.10**	**11.06**	**-.-**	**11.09**	**Oct-15**
Northern Trust (Net)		**12.35**	**12.35**	**2.04**	**11.00**	**-.-**	**11.03**	**Oct-15**
MSCI ACWI IMI (Net)		12.29	12.29	1.89	10.58	-.-	10.60	Oct-15
Net of Fee Value Added vs Benchmark		*0.06*	*0.06*	*0.15*	*0.42*		*0.43*	

Global Equity Overview (Continued)

- The global equity composite is comprised of an actively-managed strategy (with a U.S. bias relative to the benchmark) managed by Wellington. This strategy is complemented by a passively-managed strategy provided by Northern Trust. The composite also recently added an exposure to the Ariel Global Product strategy which has recently completed its first full year of performance. The new structure favors active management (currently 92% active/8% passive) versus the previous 50%/50% allocation between active and passively managed funds within the composite. During the first quarter the newly funded Ariel strategy underperformed the benchmark while the Wellington strategy outperformed the benchmark. The global equity composite is currently outperforming over the three-year period but continues to trail its benchmark over longer time periods including since inception (9/12).

Wellington (Active)

- Wellington manages one of the Fund's active global equity portfolio. During the first quarter, the Wellington portfolio returned 14.80% (net of fees), outperforming its benchmark (MSCI ACWI Index) which returned 12.18%. The Global Opportunities portfolio outperformed the benchmark during the first quarter of 2019 due to positive stock selection in information technology and consumer discretionary. Sector allocation effects modestly detracted from relative performance along with frictional cash which dragged in a strong market. The portfolio's strong performance for the quarter was modestly offset by weak stock selection in real estate and energy. During the quarter, the biggest changes in sector positioning were found in information technology, consumer staples and health care. Within the information technology sector, Wellington made a number of changes to positioning following the volatility in the latter part of 2018. They added back to several semiconductor stocks, including Micron Technology and Advanced Micro Devices, to take advantage of Q4 weakness. Elsewhere in information technology, the Fund established a position in Keyence Corp, a Japanese company that develops, manufactures, and sells industrial automation and inspection equipment, including sensors. In consumer staples and health care management trimmed and eliminated positions lowering exposure to each sector. The Wellington portfolio is currently underperforming over the one- and three-year periods but continues to outperform the benchmark since inception (09/12).

Ariel (Active)

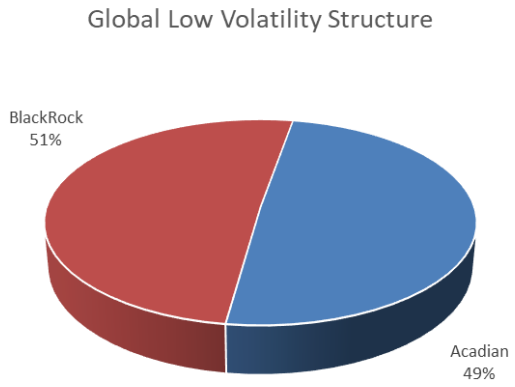
- Ariel manages the Fund's second active global equity portfolio. During the period the Ariel portfolio returned 9.56% (net of fees), trailing its benchmark (MSCI ACWI Index) which returned 12.18%. On an aggregate basis, holdings within consumer staples and energy were the strongest contributors to performance in the quarter. By comparison, stock selection within information technology and communication services detracted from results. From a bottom up perspective, Philip Morris International was the top contributor for the quarter. Its share price rebounded as investors realized concerns related to competition and regulation were premature—if not unwarranted—as the company reaffirmed its medium-term earnings guidance. Berkshire Hathaway, one of the least risky and best managed businesses in the portfolio, was the single largest source of underperformance in the first quarter, underscoring the team's view that the swift market rebound was driven by a recovery in riskier assets. Berkshire's weak relative performance reflects near term concerns related to the cyclicality of business trends at BNSF railroad operations coupled with pricing and margin pressures within Berkshire's insurance operations. Overall, the team views these issues as transitory and continues to hold the shares. Lastly, China Mobile detracted from performance in the period, despite its share price rising +6%, as investors gravitated toward risk and overlooked the high quality and defensive characteristics of the company's cash flow. After completing its first full year of performance within the Fund the Ariel portfolio leads its benchmark since inception (12/17).

Northern Trust (Passive)

- In late 2015 the Fund added a new global equity manager to the segment. Managed by Northern Trust, this strategy gives the Fund broadly diversified exposure to global stocks via a passively managed investment vehicle, which will result in lower turnover and costs incurred. At quarter-end the strategy represented approximately 8% of the segment's total value. After its third full year of performance, the Northern Trust

portfolio continues to closely track the risk profile while modestly outperforming its benchmark index MSCI ACWI (+43) basis points since inception.

Global Low Volatility Equity Overview



Global Low Volatility Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total Global Low Volatility (Gross)	**$ 357.8**	**9.18**	**9.18**	**6.58**	**8.90**	**-.-**	**-.-**
Total Global Low Volatility (Net)		**9.13**	**9.13**	**6.37**	**8.72**	**-.-**	**-.-**
MSCI ACWI Minimum Volatility (Net)		9.96	9.96	9.04	9.01	-.-	-.-
Net of Fee Value Added vs Index		*-0.83*	*-0.83*	*-2.67*	*-0.29*		
MSCI ACWI Minimum Volatility (Net)		9.96	9.96	9.04	9.01	9.02	12.47
MSCI World x-US Minimum Volatility (Net)		8.60	8.60	2.25	6.33	6.20	10.33
MSCI ACWI (Net)		12.18	12.18	2.60	10.67	6.45	11.98

Global Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Global Low Volatility - Active								
Acadian Global Low Vol (Gross)	**$ 176.3**	**8.23**	**8.23**	**3.47**	**8.20**	**-.-**	**8.22**	**Jun-15**
Acadian Global Low Vol (Net)		**8.14**	**8.14**	**3.11**	**7.86**	**-.-**	**7.89**	**Jun-15**
MSCI ACWI (Net) + 2%		12.67	12.67	4.60	12.67	-.-	9.08	Jun-15
Net of Fee Value Added vs Objective		*-4.53*	*-4.53*	*-1.49*	*-4.81*		*-1.19*	
MSCI ACWI (Net)		12.18	12.18	2.60	10.67	-.-	7.08	Jun-15
Net of Fee Value Added vs MSCI ACWI		*-4.04*	*-4.04*	*0.51*	*-2.81*		*0.81*	
MSCI ACWI Min Vol (Net)		9.96	9.96	9.04	9.01	-.-	8.94	Jun-15
Net of Fee Value Added vs MSCI ACWI Min Vol		*-1.82*	*-1.82*	*-5.93*	*-1.15*		*-1.05*	
Information Ratio				**-1.84**	**-0.37**	**-.-**		
Sharpe Ratio				**0.08**	**0.77**	**-.-**		
Global Low Volatility - Passive								
BlackRock Global Low Vol (Gross)	**$ 181.5**	**10.12**	**10.12**	**9.71**	**9.57**	**-.-**	**9.50**	**Jun-15**
BlackRock Global Low Vol (Net)		**10.11**	**10.11**	**9.66**	**9.54**	**-.-**	**9.48**	**Jun-15**
MSCI ACWI Min Vol (Net)		9.96	9.96	9.04	9.01	-.-	8.94	Jun-15
Net of Fee Value Added vs Benchmark		*0.15*	*0.15*	*0.62*	*0.53*		*0.54*	

***Acadian Info Ratio/Sharpe Ratio statistics based on MSCI ACWI Min Vol benchmark.**

Global Low Volatility Equity Overview (Continued)

- In 2015, the Board elected to transfer assets from existing strategies elsewhere in the Fund into two new global low volatility equity portfolios. The first portfolio is actively-managed and run by Acadian. Its primary mandate is to provide the Fund with a better risk/return profile relative to the broad MSCI ACWI, its primary benchmark (the Acadian portfolio's performance is also measured against the MSCI ACWI Minimum Volatility as a secondary benchmark). The second portfolio is a passively-managed index fund provided through BlackRock. Taken together, both funds will add diversification benefits to the existing suite of public equity managers. Since its inception within the Fund, the global low volatility equity composite is slightly trailing the MSCI ACWI Minimum Volatility Index.

Acadian (Global Low Volatility – Active)

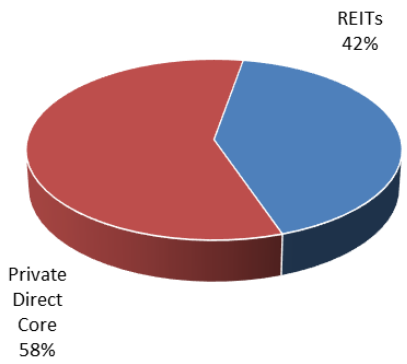
- Acadian manages the Fund's active global low volatility equity portfolio. The strategy recently completed its third year of performance within the Fund. During the first quarter, the Acadian portfolio returned 8.14% (net of fees). The portfolio's primary benchmark is the traditional cap-weighted MSCI All-Country World Index (ACWI). In addition, the portfolio is viewed in comparison to its secondary benchmark, the MSCI ACWI Minimum Volatility. The Acadian portfolio has wide dispersion in its economic sector allocations as compared to the cap-weighted index, potentially leading to a higher degree of tracking error (this difference is reduced when comparing against the secondary minimum volatility benchmark). During the quarter, the Acadian portfolio underperformed both the MSCI ACWI and MSCI ACWI Minimum Volatility index. Stock selection in communication services detracted from results during the period, owing primarily to an investment in Korean wireless carrier KT Corp. An underweight position in information technology also detracted, driven by a lack of exposure to U.S. tech giant Apple. Offsetting these results to a degree was combination of stock selection and an underweight position in financials, led by a lack of exposure to U.S. financial services provider JPMorgan Chase. The Acadian portfolio is currently outperforming its primary benchmark since inception (+81 bps) (07/15). Following this quarter's results the portfolio now trails its secondary minimum volatility benchmark since inception (-105 bps).

BlackRock (Global Low Volatility – Passive)

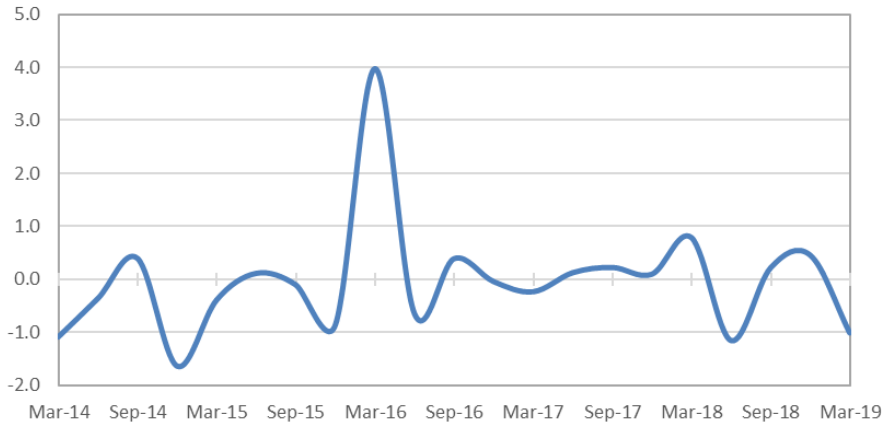
- BlackRock manages the Fund's passive global volatility equity strategy. The BlackRock portfolio is intended to provide a low-cost, highly diversified global equity investment strategy focused on minimizing volatility. The BlackRock portfolio is benchmark against the MSCI ACWI Minimum Volatility. To date, the portfolio continues to perform in line with expectations, closely tracking the risk profile of the benchmark index while outperforming the benchmark (+54 bps) since inception.

Real Estate Overview

Real Estate Structure



Total Real Estate Composite
Quarterly Excess Return



Real Estate Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total Real Estate (Gross)	**$ 414.1**	**7.53**	**7.53**	**11.68**	**6.30**	**9.29**	**19.30**
Total Real Estate (Net)		**7.38**	**7.38**	**11.07**	**5.66**	**8.58**	**18.49**
Custom Benchmark [1]		8.38	8.38	12.54	5.82	8.52	18.63
Net of Fee Value Added vs Benchmark		*-1.00*	*-1.00*	*-1.47*	*-0.16*	*0.06*	*-0.14*
REIT Strategies	$ 179.4	16.91	16.91	19.53	5.61	8.96	18.59
Private Core Real Estate	$ 234.7	0.90	0.90	5.27	5.66	8.14	-.-
Wilshire Real Estate Securities Index		16.01	16.01	19.29	5.77	9.33	18.90
NCREIF Open Diversified Core Equity (Net)		1.20	1.20	6.55	7.01	9.17	-.-

Real Estate Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Real Estate Securities - Public								
Adelante Capital Management (Gross)	**$ 90.3**	**17.58**	**17.58**	**19.43**	**6.51**	**9.80**	**10.70**	**Sep-01**
Adelante Capital Management (Net)		**17.41**	**17.41**	**18.76**	**5.90**	**9.18**	**10.11**	**Sep-01**
Wilshire Real Estate Securities + 1%		16.26	16.26	20.29	6.77	10.33	11.48	Sep-01
Net of Fee Value Added vs Objective		*1.15*	*1.15*	*-1.53*	*-0.87*	*-1.15*	*-1.37*	
Wilshire Real Estate Securities		16.01	16.01	19.29	5.77	9.33	10.48	Sep-01
Net of Fee Value Added vs Index		*1.40*	*1.40*	*-0.53*	*0.13*	*-0.15*	*-0.37*	
Information Ratio				**-0.22**	**0.06**	**-0.07**		
Sharpe Ratio				**0.98**	**0.36**	**0.60**		
CenterSquare (Gross)	**$ 79.1**	**16.53**	**16.53**	**-.-**	**-.-**	**-.-**	**14.79**	**May-18**
CenterSquare (Net)		**16.40**	**16.40**	**-.-**	**-.-**	**-.-**	**14.45**	**May-18**
Wilshire Real Estate Securities + 1%		16.26	16.26	-.-	-.-	-.-	14.51	May-18
Net of Fee Value Added vs Objective		*0.14*	*0.14*				*-0.06*	
Wilshire Real Estate Securities		16.01	16.01	-.-	-.-	-.-	13.51	May-18
Net of Fee Value Added vs Index		*0.39*	*0.39*				*0.94*	

[6] Real Estate Custom Benchmark: 50% Wilshire RESI / 39% NCREIF ODCE NOF/11% Invesco Custom Benchmark (4q13 – Present); Wilshire RESI (4q89 – 4q10).

Real Estate Overview (Continued)

Real Estate Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Direct Core Real Estate - Private								
Heitman America Real Estate Trust (Gross)	**$ 93.8**	**1.55**	**1.55**	**6.84**	**7.82**	**10.10**	**12.30**	**Aug-10**
Heitman America Real Estate Trust (Net)		**1.33**	**1.33**	**5.89**	**6.86**	**9.14**	**11.26**	**Aug-10**
NCREIF Open-End Diversified Core (Net)		1.20	1.20	6.55	7.01	9.17	10.89	Aug-10
Net of Fee Value Added vs Index		*0.13*	*0.13*	*-0.66*	*-0.15*	*-0.03*	*0.37*	
Invesco Core Real Estate USA (Gross)	**$ 77.8**	**1.33**	**1.33**	**8.87**	**9.84**	**11.56**	**12.38**	**Aug-10**
Invesco Core Real Estate USA (Net)		**1.11**	**1.11**	**7.97**	**8.90**	**10.60**	**11.40**	**Aug-10**
NCREIF Open-End Diversified Core (Net)		1.20	1.20	6.55	7.01	9.17	10.89	Aug-10
Net of Fee Value Added vs Index		*-0.09*	*-0.09*	*1.42*	*1.89*	*1.43*	*0.51*	
Invesco II	**$ 63.2**	**0.00**	**0.00**	**1.25**	**-0.41**	**-0.18**	**-0.20**	**Oct-13**

- The Fund's total real estate composite is comprised of both public market real estate securities (REITs) and private investment in direct core real estate. The total segment returned 7.38% (net of fees) during the first quarter, trailing its benchmark (split 50% Wilshire Real Estate Securities Index, 39% NCREIF Open-End Diversified Core Index and 11% Invesco II Custom Benchmark) which returned 8.38%. On the public side, both REIT exposures outperformed the Wilshire Real Estate Securities Index mostly as a result of favorable stock selection decisions. On the private side, Heitman led the benchmark during the period while Invesco was unable to keep pace with the NCREIF ODCE Index. Currently, the Fund's total real estate composite is outperforming its benchmark over the five-year period but continues to trail the benchmark since inception (12/89).

Adelante Capital Management (REIT)

- Adelante Capital manages one of the Fund's real estate securities (REIT) portfolios. During the first quarter, the Adelante portfolio returned 17.41% (net of fees), outperforming its benchmark index (Wilshire Real Estate Securities) which returned 16.01%. For the second quarter in a row, security selection was the main driver of this period's outperformance relative to the benchmark. Stock selection was most additive within the industrials, office and storage segments of the market. Here the portfolio holdings delivered returns ahead of the respective benchmark holdings. Similarly, albeit on a lesser scale the portfolio's hotels and apartments holdings posted returns above that of their respective benchmark holdings. From a sector positioning standpoint, the portfolio benefitted from an overweight to the office and hotels sectors. During the period the portfolio purchased one new issue (HCP, Inc.) and sold four securities (Invitation Homes, Inc., Digital Realty Trust, Welltower, Inc. and The Macerich Company). Despite two consecutive quarter's of strong performance the portfolio is underperforming its benchmark over the one-, five- and ten-year periods as well as since inception (09/01).

CenterSquare (REIT)

- CenterSquare manages the Fund's recently hired real estate securities (REIT) portfolio. For the quarter stock selection contributed to alpha while sector selection detracted. Performance was largely positive across all sectors during the first quarter, with the strongest contributions coming from health care and suburban office. The only detractors from a sector perspective for the period came from data center and specialty, of which the portfolio was neutral and underweight, respectively. Cash and the combined effect of intraday trading, rounding and other factors detracted 10bps and 1bp, respectively. Stock selection was particularly strong in net lease, where management's decision to add to positions in WP Carey and Store Capital served the portfolio well. Elsewhere, in the office infill and self-storage sectors, stock selection also

contributed to alpha via the addition of Vornado Realty Trust, an overweight to Kilroy Realty Corp and a decreased overweight to Cubesmart. From a positioning perspective, alternative housing and net lease were the largest overweights at quarter end. Additionally, CenterSquare moved from an underweight to modestly overweight in net lease given the change in economic outlook and Federal Reserve tone, as the sector is historically more defensive and has bond-like characteristics. This was accomplished by adding to positions in Realty Income Corp., WP Carey and Store Capital, which are higher quality names and more attractive in low-interest rate environments. Following this quarter's results, the CenterSquare portfolio is currently leading its benchmark since inception (04/18).

Heitman (Direct Core Real Estate)

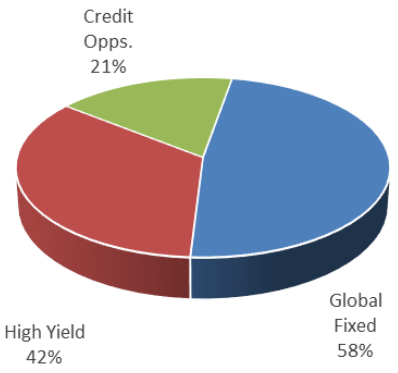
- Heitman manages one of the Fund's three direct core real estate portfolios. The Heitman portfolio returned 1.33% (net of fees) during the first quarter, outperforming its benchmark (NCREIF Open End Diversified Core Index) which returned 1.20%. Heitman achieved a gross return of 1.55% in the first quarter of 2019, comprised of 1.11% in income and 0.44% in appreciation. The appreciation return included 65 basis points of property valuation and -21 basis points of debt valuation. In order of magnitude, the industrial, apartment, self-storage and office asset valuations increased, offset by a decrease in valuation for the retail assets. The Fund anticipates paying a dividend in April of around $12.56 per share, providing investors with additional yield. At quarter end the portfolio's allocation is well diversified across the apartment (22% allocation), office (27%), retail (21%), self-storage (20%) and industrial (10%) segments of the market. The portfolio is also well diversified across the U.S. geographical landscape allocating 37% of the portfolio to the Western region of the U.S., 21% to the Southern region, 18% to the Midwest region and 24% to the Eastern region of the country. No transactions were completed during the quarter. The Fund has an industrial building in the Dallas market under contract, which is expected to close during the third quarter. Following this quarter's results, the Heitman portfolio is currently trailing its benchmark over the one-, three- and five-year periods but continues to lead its benchmark since inception (08/10).

Invesco Core Real Estate-USA (Direct Core Real Estate)

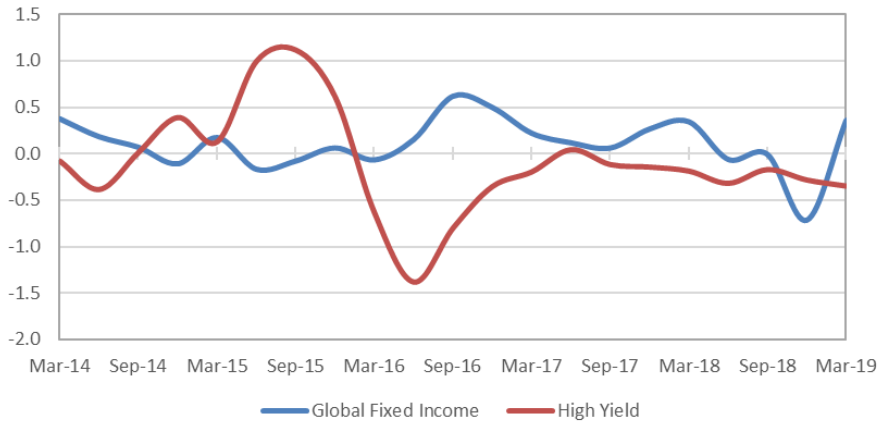
- Invesco manages two of the Fund's three direct core real estate portfolios. The Invesco Core Real Estate-USA portfolio returned 1.11% (net of fees) during the first quarter, trailing its benchmark (NCREIF Open End Diversified Core Index) which returned 1.20%. The total gross return comprised of 0.92% income and 0.19% appreciation. Due to the decline in interest rates during the quarter, debt mark-to-market had a negative 14 bps impact on the first quarter return. The Fund produced gross unlevered property appreciation of 19 bps on the total portfolio for the quarter, driven primarily by the office and industrial sectors. Eight assets within the retail and apartment sectors experienced appreciation headwinds, largely driven by softening market rents in the retail sector and increased expenses in the apartment sector. Total Portfolio percentage leased increased 40 bps from the prior quarter to 92.0% primarily as a result of continued leasing within assets recently migrated to Core. Leasing momentum is expected to continue with active negotiations on a few large retail suites and continued lease-up in the recently completed apartment assets and self storage portfolio. The Core Portfolio is budgeted to deliver NOI growth of over 8% in 2019. During the quarter, the Fund closed on six acquisitions (total gross purchase price $380.8M: Three assets in Boston MSA – multifamily, office and self-storage; two land sites for future self-storage development in San Francisco and Los Angeles; land for future office development in Charlotte). Further, the Fund purchased the minority interest partner equity on 131-137 Spring retail in New York City for total equity proceeds of $15 million. The Invesco portfolio is currently outperforming its benchmark over all extended time periods including since inception (08/10).

Fixed Income Overview

Fixed Income Structure



Global Fixed Income and High Yield Quarterly Excess Return



Fixed Income Composites

	Assets (Millions)	QTR	YTD	1-year	3-year	5-year	10-year
		Performance					
Global Fixed Income (Gross)	**$496.2**	**3.35**	**3.35**	**4.29**	**2.89**	**3.34**	**5.22**
Global Fixed Income (Net)		**3.30**	**3.30**	**4.07**	**2.67**	**3.14**	**5.02**
Bloomberg Aggregate Bond Index		2.94	2.94	4.48	2.03	2.74	3.77
Net of Fee Value Added vs Benchmark		*0.36*	*0.36*	*-0.41*	*0.64*	*0.40*	*1.25*
High Yield (Gross)	**$356.6**	**7.12**	**7.12**	**5.20**	**7.59**	**4.45**	**9.87**
High Yield (Net)		**6.99**	**6.99**	**4.69**	**7.08**	**3.96**	**9.36**
Custom Benchmark [1]		7.35	7.35	5.87	8.55	4.33	10.68
Net of Fee Value Added vs Benchmark		*-0.36*	*-0.36*	*-1.18*	*-1.47*	*-0.37*	*-1.32*
Bloomberg Aggregate		2.94	2.94	4.48	2.03	2.74	3.77
Citigroup High Yield Cash Pay		7.35	7.35	5.87	8.55	4.33	10.68
BofA ML High Yield Master II		7.40	7.40	5.95	8.69	4.70	11.24

Global Fixed Income Managers

	Assets (Millions)	QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
		Performance (%)						
Global Fixed Income								
Securian Asset Mgmt. (Gross)	**$213.1**	**3.46**	**3.46**	**4.72**	**3.43**	**3.76**	**4.75**	**May-07**
Securian Asset Mgmt. (Net)		**3.41**	**3.41**	**4.53**	**3.25**	**3.59**	**4.57**	**May-07**
Bloomberg Aggregate + 0.5%		3.07	3.07	4.98	2.53	3.24	4.67	**May-07**
Net of Fee Value Added vs Objective		*0.34*	*0.34*	*-0.45*	*0.72*	*0.35*	*-0.10*	
Bloomberg Aggregate		2.94	2.94	4.48	2.03	2.74	4.17	**May-07**
Net of Fee Value Added vs Benchmark		*0.47*	*0.47*	*0.05*	*1.22*	*0.85*	*0.40*	
Information Ratio				**0.06**	**1.82**	**1.44**		
Sharpe Ratio				**0.80**	**0.75**	**1.06**		
Aberdeen (Gross)	**$212.4**	**3.55**	**3.55**	**3.94**	**2.54**	**2.92**	**4.79**	**Apr-07**
Aberdeen (Net)		**3.49**	**3.49**	**3.70**	**2.30**	**2.71**	**4.58**	**Apr-07**
Bloomberg Aggregate + 0.5%		3.07	3.07	4.98	2.53	3.24	4.51	Apr-07
Net of Fee Value Added vs Objective		*0.42*	*0.42*	*-1.28*	*-0.23*	*-0.53*	*0.07*	
Bloomberg Aggregate		2.94	2.94	4.48	2.03	2.74	4.01	Apr-07
Net of Fee Value Added vs Benchmark		*0.55*	*0.55*	*-0.78*	*0.27*	*-0.03*	*0.57*	
Information Ratio				**-0.56**	**0.30**	**-0.03**		
Sharpe Ratio				**0.45**	**0.37**	**0.69**		

[7] High Yield Custom Benchmark: Citigroup High Yield Cash Pay (4q99 – Present); Citigroup High Yield Composite Index (1q97 – 3q99).

Fixed Income Overview (Continued)

Global Fixed Income Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Global Fixed Income								
Garcia Hamilton (Gross)	**$ 70.7**	**2.48**	**2.48**	**4.07**	**2.36**	**3.33**	**3.49**	**Oct-13**
Garcia Hamilton (Net)		**2.42**	**2.42**	**3.80**	**2.10**	**3.05**	**3.24**	**Oct-13**
Bloomberg Aggregate + 0.5%		3.07	3.07	4.98	2.53	3.24	3.20	Oct-13
Net of Fee Value Added vs Objective		*-0.65*	*-0.65*	*-1.18*	*-0.43*	*-0.19*	*0.04*	
Bloomberg Aggregate		2.94	2.94	4.48	2.03	2.74	2.70	Oct-13
Net of Fee Value Added vs Benchmark		*-0.52*	*-0.52*	*-0.68*	*0.07*	*0.31*	*0.54*	
Information Ratio				**-0.56**	**0.07**	**0.29**		
Sharpe Ratio				**0.73**	**0.38**	**0.82**		

- The Fund's global fixed income segment returned 3.30% (net of fees) during the first quarter of 2019, outperforming with the Bloomberg Aggregate Bond Index, which returned 2.94%. The segment is comprised of three actively managed strategies: (1) Securian Asset Management (previously Advantus Capital Management), (2) Aberdeen Asset Management, and (3) Garcia Hamilton. During the period, two of the three portfolios led the Bloomberg Aggregate Index. Securian and Aberdeen (both with early 2007 inception dates) manage roughly the same level of assets for the Fund while the Garcia Hamilton portfolio has a smaller mandate. Therefore, quarter to quarter performance is largely driven by the results of the Securian and Aberdeen accounts while the Garcia Hamilton account does not have the ability to move the needle as much, so to speak, on account of its smaller size. Following this period's results the global fixed income composite continues to outperform against the Bloomberg Aggregate over the three-, five- and ten-year periods.

Securian Asset Management (Core Fixed Income)

- Securian Asset Management (*formerly Advantus*) manages one of the Fund's three global fixed income portfolios. During the first quarter, the Securian portfolio returned 3.41% (net of fees), outperforming its benchmark (Bloomberg Aggregate) which returned 2.94% for the quarter. The portfolio's overweight positioning to corporate bonds was rewarded, as corporate spreads rallied in the first quarter and retraced much of the widening that we experienced toward the end of 2018. In addition, an overweight to CMBS and local authorities had a positive impact on performance. Security selection was strong across all spread sectors. A modestly defensive interest rate positioning during the quarter was a slight detractor from performance. Overall exposure to corporate bonds increased by just under one percent during the quarter. The Fund remains overweight financials, utilities and industrials. Exposure to the securitized sector declined one percent during the quarter. The portfolio is overweight ABS, CMBS and non-Agency MBS, while it remains underweight Agency MBS. Lastly, Securian shortened the portfolio's duration during the quarter from just shy to approximately a quarter of a year short of the benchmark's duration. The Securian portfolio is currently outperforming against its benchmark over the one-, three- and five-year periods as well as since inception (06/07).

Fixed Income Overview (Continued)

Aberdeen (Core Fixed Income)

- Aberdeen manages another of the Fund's global fixed income portfolios. During the first quarter the Aberdeen portfolio returned 3.49% (net of fees), outperforming its benchmark the Bloomberg Aggregate Index which returned 2.94% during the period. Investments in foreign bonds and currencies, particularly in emerging markets, produced the majority of the Fund's outperformance versus its benchmark for the quarter. Positive results from all alphas sources in the Fund's core U.S. segment rounded up the strong performance. In the Fund's core segment, U.S. Treasury yield-curve positioning, asset allocation and security selections all contributed to performance for the quarter. The Fund's slightly long duration position via an overweight to the intermediate part of the yield curve had a positive impact on performance. Fund performance was also bolstered by a sizeable underweight position in U.S. Treasuries versus the benchmark, along with overweight allocations to commercial mortgage-backed securities, agency mortgage-backed securities and taxable municipal bonds. Regarding security selection, the Fund's holdings in high-beta corporate bonds, TIPS, as well as CMBS and municipal bonds, had a positive impact on performance. The Aberdeen portfolio continues to outperform against its benchmark over the three-year and since inception periods (06/07).

Garcia Hamilton (Core Fixed Income)

- Garcia Hamilton is the Fund's third global fixed income manager. During the first quarter, the portfolio returned 2.42% (net of fees), underperforming its benchmark index (Bloomberg Aggregate Index) which returned 2.94%. As of quarter end, the account held approximately 53% in the corporate sector versus the index weighting of 25%. In the agency and agency MBS sectors, the account held approximately 17% and 8% versus the benchmark weightings of 6% and 28%, respectively. Duration positioning was the primary detractor from relative performance as the fund maintained a shorter duration than the benchmark during a period of declining rates. Fed funds futures implied probabilities are increasingly indicating a cut is more likely than a hike from the Fed despite solid economic data. Garcia Hamilton disagrees with the notion that the Fed is closer to cutting than hiking because the economy continues to grow, leading economic indicators are positive, and the labor market is very healthy. Therefore, the team believes rates have the bias to move higher as the economy continues to perform well giving the Fed the incentive to resume hiking rates. The Garcia Hamilton portfolio is currently outperforming against its benchmark over the three- and five-year periods as well as since inception (12/13).

Fixed Income Overview (Continued)

High Yield/Credit Opportunities Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
High Yield								
Oaktree Capital Management (Gross)	**$ 178.2**	**7.03**	**7.03**	**4.71**	**7.46**	**3.90**	**7.21**	**Dec-96**
Oaktree Capital Management (Net)		**6.90**	**6.90**	**4.18**	**6.93**	**3.38**	**6.69**	**Dec-96**
Performance Objective		7.60	7.60	6.87	9.55	5.33	7.89	Dec-96
Net of Fee Value Added vs Objective		*-0.70*	*-0.70*	*-2.69*	*-2.62*	*-1.95*	*-1.20*	
Custom Benchmark		7.35	7.35	5.87	8.55	4.33	6.89	Dec-96
Net of Fee Value Added vs Benchmark		*-0.45*	*-0.45*	*-1.69*	*-1.62*	*-0.95*	*-0.20*	
Information Ratio				**-4.53**	**-2.41**	**-1.31**		
Sharpe Ratio				**0.32**	**1.22**	**0.48**		
BlackRock High Yield (Gross)	**$ 178.5**	**7.21**	**7.21**	**5.69**	**7.72**	**4.55**	**6.82**	**Sep-06**
BlackRock High Yield (Net)		**7.09**	**7.09**	**5.20**	**7.23**	**4.05**	**6.34**	**Sep-06**
Citigroup High Yield Cash Pay + 1%		7.60	7.60	6.87	9.55	5.33	7.96	Sep-06
Net of Fee Value Added vs Objective		*-0.51*	*-0.51*	*-1.67*	*-2.32*	*-1.28*	*-1.62*	
Citigroup High Yield Cash Pay		7.35	7.35	5.87	8.55	4.33	6.96	Sep-06
Net of Fee Value Added vs Benchmark		*-0.26*	*-0.26*	*-0.67*	*-1.32*	*-0.28*	*-0.62*	
Information Ratio				**-1.58**	**-1.68**	**-0.16**		
Sharpe Ratio				**0.51**	**1.42**	**0.67**		
Credit Opportunities								
Neuberger Berman (Gross)	**$ 176.8**	**6.00**	**6.00**	**4.62**	**7.13**	**-.-**	**7.76**	**Jan-16**
Neuberger Berman (Net)		**5.91**	**5.91**	**4.29**	**6.85**	**-.-**	**7.49**	**Jan-16**
Custom Benchmark + 1%		6.35	6.35	5.41	7.74	-.-	8.74	Jan-16
Net of Fee Value Added vs Objective		*-0.44*	*-0.44*	*-1.12*	*-0.89*		*-1.25*	
Custom Benchmark		6.10	6.10	4.41	6.74	-.-	7.74	Jan-16
Net of Fee Value Added vs Benchmark		*-0.19*	*-0.19*	*-0.12*	*0.11*		*-0.25*	
Information Ratio				**-0.09**	**0.08**	**-.-**		
Sharpe Ratio				**0.41**	**1.40**	**-.-**		

- The high yield composite returned 6.99% (net of fees) during the first quarter, underperforming against the Citigroup High Yield Cash Pay Index, which returned 7.35%. The composite is currently split equally between the two actively-managed strategies. During the period, neither strategy was able to keep pace with the benchmark. The high yield composite is currently underperforming its benchmark over all extended time periods greater than one year including since inception (03/97).

[8] Oaktree Capital Management Performance Objective: Citigroup High Yield Cash Pay + 1% (4q99 – Present); Citigroup High Yield Composite Index + 1% (2q97 – Present).

Oaktree Capital Management (High Yield Fixed Income)

- Oaktree Capital manages one of the Fund's two high yield fixed income portfolios. The Oaktree portfolio returned 6.90% (net of fees) during the first quarter, underperforming its benchmark (Citigroup High Yield Cash Pay) which returned 7.35%. After a turbulent end to 2018, high yield bonds snapped back in the first quarter, earning positive returns each month. While there was no single factor that explains the reversal of fortune, the combination of the Fed's policy shift; optimism over a U.S.-China trade deal; and a still growing U.S. economy all helped lift the asset class out of the doldrums. The slow new issue supply, which kept the secondary market well bid for, also fueled the rally. Although the portfolio delivered a strong absolute return in the first quarter, Oaktree came up a bit short of the benchmark. Management recognizes that the more defensively positioned portfolio isn't built to outperform in exceptional return periods. Modest cash balances also detracted. The Oaktree portfolio is currently underperforming over the one-, three- and five-year periods, as well as since inception (03/97).

BlackRock (High Yield Fixed Income)

- BlackRock manages the Fund's other high yield fixed income portfolio. During the first quarter, the BlackRock portfolio returned 7.09%, trailing its benchmark (Citigroup High Yield Cash Pay) which returned 7.35%. Similar to its companion strategy managed by Oaktree, the BlackRock portfolio exhibits a more defense structure relative to the benchmark. From a returns standpoint the first quarter resembled much of what we experienced in the high yield market during the first 3 quarters of 2018 with lower quality issues leading the way. Despite exhibiting a slightly lower credit quality (B) relative to the benchmark (BB), the portfolio does not hold many CCC-D rated issues which weakened performance during the quarter. The portfolio's more defensive posture relative to the benchmark should perform better in an environment where quality issues are in favor. Despite modest contributions from sector/issue selection the portfolio lost value from the effects of intra quarter trading which detracted from results leading the portfolio return lower than that of the benchmark during the Q1. The BlackRock portfolio is currently underperforming over the one-, three- and five-year periods as well as since inception period (09/06).

Neuberger Berman (Credit Opportunities)

- Neuberger Berman manages the Fund's credit opportunities portfolio. During the beginning of 2016 the Neuberger Berman Credit Opportunities portfolio was funded to further diversify the plan's fixed income basket. Now in its third year of performance the portfolio returned 5.91% for the period, slightly trailing its custom benchmark (*33% ML High Yield Master II Index/33% S&P LSTA Leveraged Loan Index/33% JPM EMBI Global Diversified Index*) which returned 6.10%. Sector positioning within U.S. high yield credit and loans markets were the main detractors this period relative to the benchmark. Meanwhile, security selection was negative with emerging markets and loan exposures modestly detracting from results. Contributors during the period included sector positioning in investment grade credit, CLOs and emerging markets. As of quarter end, the portfolio maintained a notable overweight to Latin America with underweight positions to the U.S. and Asia Ex-Japan regions. Meanwhile, the credit quality of the portfolio (BB) matched that of the benchmark, such that this was not a meaningful source of added or detracted value. The Neuberger Berman portfolio is currently leads its benchmark over the three-year period but is slightly underperforming its custom benchmark since inception (01/16).

Private Equity Overview

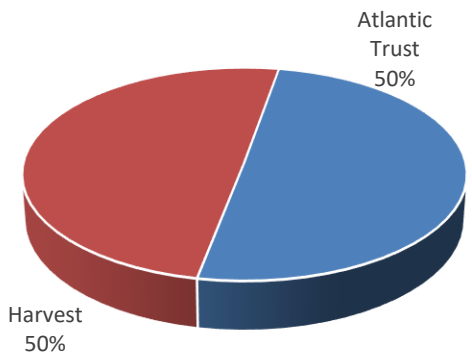
Private Equity Composite

	Total Commitment	Cumulative Capital Called		Cumulative Distributions	Capital Balance	Multiple	Calculated IRR
Hamilton Lane Fund VII LP (Series A)	30,000,000	25,297,247	84.3%	20,928,814	17,455,474	1.52	10.0%
Hamilton Lane Fund VII LP (Series B)	20,000,000	17,695,467	88.5%	7,202,630	11,893,064	1.08	1.8%
Hamilton Lane Fund VII LP (Total)	*50,000,000*	*42,992,714*	86.0%	*28,131,444*	*29,348,538*	1.34	6.8%
Hamilton Lane Secondary Fund II LP	25,000,000	22,848,181	91.4%	26,504,594	1,871,708	1.24	8.7%
Hamilton Lane Secondary Fund III LP	30,000,000	17,762,479	59.2%	16,616,862	13,205,479	1.68	21.5%
Hamilton Lane Secondary Fund IV LP	30,000,000	12,310,713	41.0%	204,691	17,034,562	1.40	47.1%
Hamilton Lane Fund VIII LP (Global)	30,000,000	16,412,837	54.7%	2,568,375	22,412,676	1.52	12.0%
GCM Grosvenor - Partnership, L.P.	75,000,000	80,660,373	107.5%	81,743,333	46,319,612	1.59	15.6%
GCM Grosvenor - Partnership II, L.P. (2014)	60,000,000	56,918,206	94.9%	18,421,090	46,087,988	1.13	11.3%
GCM Grosvenor - Partnership II, L.P. (2015)	20,000,000	23,485,133	117.4%	1,428,044	23,866,650	1.08	11.0%
GCM Grosvenor - Partnership II, L.P. (2017)	30,000,000	4,668,370	15.6%	66,378	4,507,682	0.98	-11.1%
Fairview Capital III *	40,000,000	27,254,684	68.1%	1,630,828	29,299,544	1.13	9.8%
Total Private Equity Program	**390,000,000**	**305,313,690**	**78.3%**	**177,315,639**	**233,954,439**	**1.35**	**12.4%**

- Multiple calculation = (market value + distributions) / capital called
- Internal Rate of Return shown here is calculated by Wilshire based on cumulative cash flows and annualized since inception.

MLP Overview

MLP Structure



MLP Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total MLPs (Gross)	**$ 254.2**	**20.62**	**20.62**	**18.71**	**9.97**	**-0.56**	**-.-**
Total MLPs (Net)		**20.42**	**20.42**	**17.92**	**9.26**	**-1.20**	**-.-**
Alerian MLP Index		16.82	16.82	15.11	5.69	-4.73	-.-
Net of Fee Value Added vs Index		*3.60*	*3.60*	*2.81*	*3.57*	*3.53*	
Alerian MLP Index		16.82	16.82	15.11	5.69	-4.73	10.12
S&P MLP Index		18.75	18.75	17.50	8.84	-3.86	11.00
Bloomberg Commodities Index		6.32	6.32	-5.25	2.22	-8.92	-2.56

Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
MLPs								
Harvest Fund Advisors (Gross)	**$ 126.4**	**21.38**	**21.38**	**18.25**	**9.49**	**-0.98**	**6.18**	
Harvest Fund Advisors (Net)		**21.15**	**21.15**	**17.35**	**8.69**	**-1.67**	**5.44**	**Dec-11**
Alerian MLP Index + 1.5%		17.19	17.19	16.61	7.19	-3.23	2.42	Dec-11
Net of Fee Value Added vs Objective		*3.96*	*3.96*	*0.74*	*1.50*	*1.56*	*3.02*	
Alerian MLP Index		16.82	16.82	15.11	5.69	-4.73	0.92	Dec-11
Net of Fee Value Added vs Benchmark		*4.33*	*4.33*	*2.24*	*3.00*	*3.06*	*4.52*	
Information Ratio				**0.48**	**0.88**	**0.73**		
Sharpe Ratio				**0.59**	**0.38**	**-0.12**		
Atlantic Trust CIBC (Gross)	**$ 127.8**	**19.87**	**19.87**	**19.17**	**10.45**	**-0.84**	**7.02**	
Atlantic Trust CIBC (Net)		**19.70**	**19.70**	**18.49**	**9.84**	**-1.39**	**6.44**	**Dec-11**
Alerian MLP Index + 1.5%		17.19	17.19	16.61	7.19	-3.23	2.42	Dec-11
Net of Fee Value Added vs Objective		*2.51*	*2.51*	*1.88*	*2.65*	*1.84*	*4.02*	
Alerian MLP Index		16.82	16.82	15.11	5.69	-4.73	0.92	Dec-11
Net of Fee Value Added vs Benchmark		*2.88*	*2.88*	*3.38*	*4.15*	*3.34*	*5.52*	
Information Ratio				**1.04**	**1.17**	**0.84**		
Sharpe Ratio				**0.68**	**0.44**	**-0.10**		

MLP Overview (Continued)

- The Fund's Master Limited Partnership (MLP) program is comprised of two individual managers, Harvest Fund Advisors and Atlantic Trust (formerly Invesco), with the mandates essentially split evenly between the two. After a volatile Q4 in which MLPs were pushed down due to aggressive tax-loss selling, global growth concerns, falling oil prices, and weak equity market conditions, MLPs have enjoyed a strong recovery in early 2019. The market cap-weighted Alerian MLP Index produced a 16.82% total return in the first quarter as compared to the 13.65% total return of the S&P 500 Index over the same time period.

Harvest Fund Advisors (MLPs)

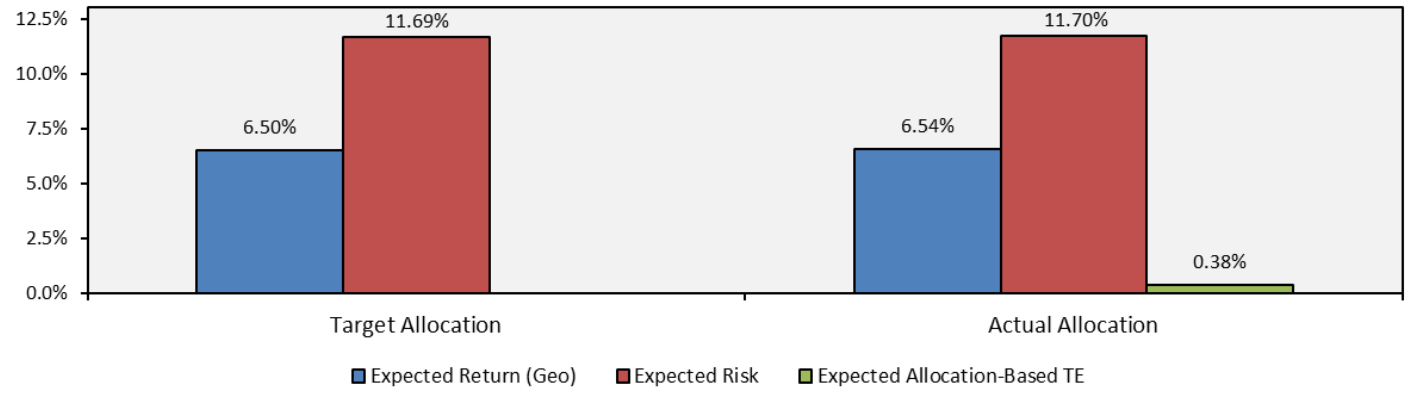
- Harvest Fund Advisors manages one of the Fund's two MLP portfolios. During the first quarter the Harvest portfolio returned 21.15% (net of fees), outperforming its benchmark (Alerian MLP Index) which returned 16.82%. Since the Harvest portfolio typically has approximately anywhere from 96% to 100% of its value invested in energy sector MLPs, sector weighting has not historically been a meaningful source of added or detracted value. During the period the portfolio's energy holdings delivered performance well above that of the benchmark leading to outperformance relative to the benchmark in Q1. Several of the large-cap Canadian names performed well in Q1, including the heavyweights of the Alerian Index, Enbridge and Transcanada. In a similar vein, Harvest benefited from ownership of Kinder Morgan (KMI), which outperformed the index by more than 14% this quarter. KMI saw strong gas fundamentals in Q1, as continued growth in Permian natural gas production drove transportation demand on KMI's pipelines and the LNG market saw additional projects approved that will likely utilize KMI's Gulf Coast. NuStar Energy is another name that performed well in Q1, outperforming the index by 14% this quarter. This strong result was driven by substantial year-over-year growth across business segments, corporate actions taken in 2018 to reduce leverage and increase distribution coverage, and a strong fundamental outlook for the remainder of 2019. Following this quarter's results the Harvest Fund Advisors MLP portfolio continues to outperform against its benchmark for the one-, three- and five-year periods, as well as since inception (12/11)

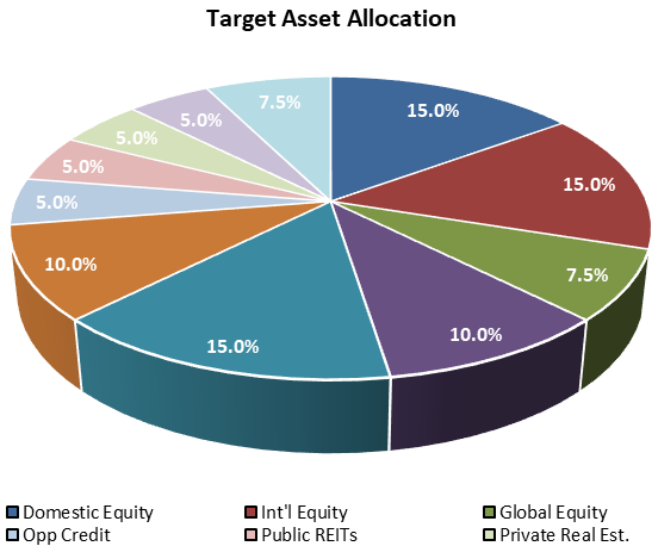
Atlantic Trust (MLPs)

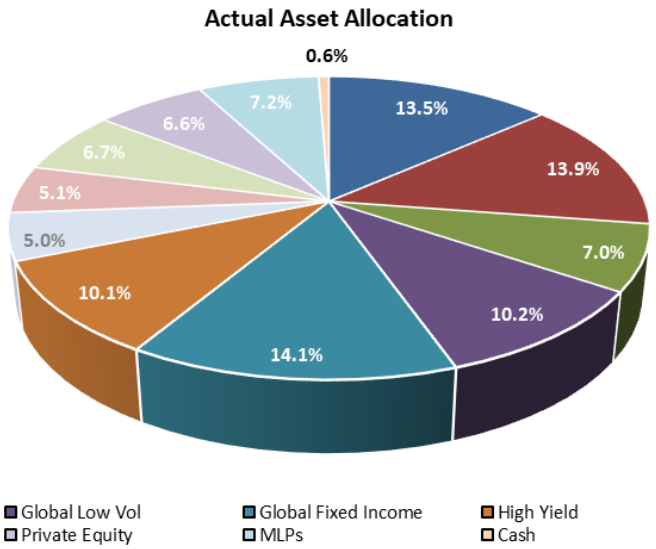
- Atlantic Trust CIBC (formerly Invesco) manages the Fund's other MLP portfolio. During the first quarter, the Atlantic Trust portfolio returned 19.70% (net of fees), outperforming its benchmark (Alerian MLP Index) which returned 16.82%. It is important to note that the Atlantic Trust portfolio (containing 22 stocks) is more concentrated than the Harvest portfolio (27 stocks) as well as the benchmark (77 stocks). As a result, many of its position sizes are relatively much larger and have a greater impact on the overall return. The portfolio's performance during the period was primarily as a result of favorable stock selection, which was confined to the energy segment (this is of course the dominant segment in the market space, comprising over 98% of the benchmark's total asset value). The portfolio's energy-focused MLP stocks generated a 20.33% return for the period outpacing the respective benchmark holdings which returned 16.72%. This was driven at least in part by the fact that a few of the portfolio's larger holdings were among its strongest performers during the period. Most notably, Williams Companies (8.8% weight), returned 32.1% in the current period. The portfolio continues to succeed in retaining a mix of higher quality names from within this segment, which has allowed it to recoup some of the relative losses it experienced elsewhere in the portfolio. The portfolio has a lower current yield with the expectation of slightly lower dividend growth over the five-year period relative to the benchmark. The Atlantic Trust MLP portfolio is outperforming against its benchmark for the one-, three- and five-year periods as well as since inception (12/11)

Appendix: Risk Analysis

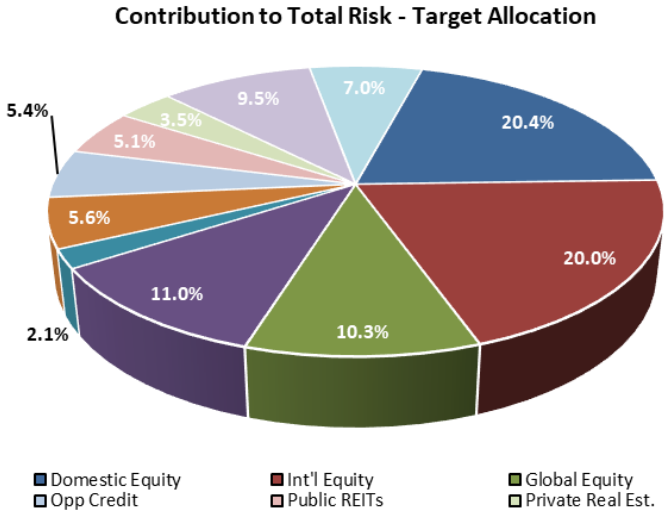
Expected Return and Risk

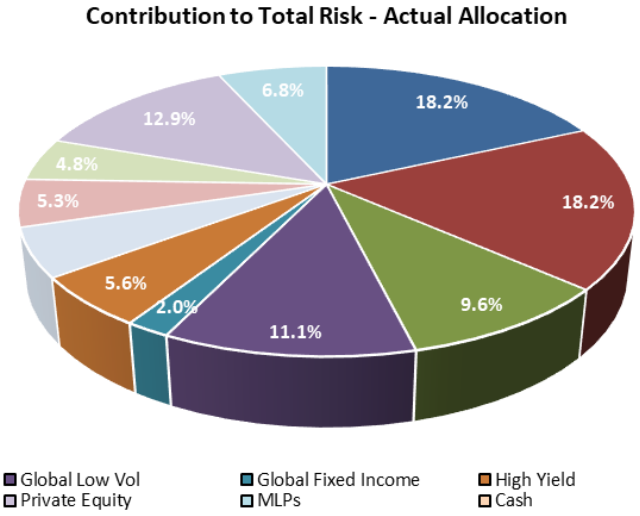






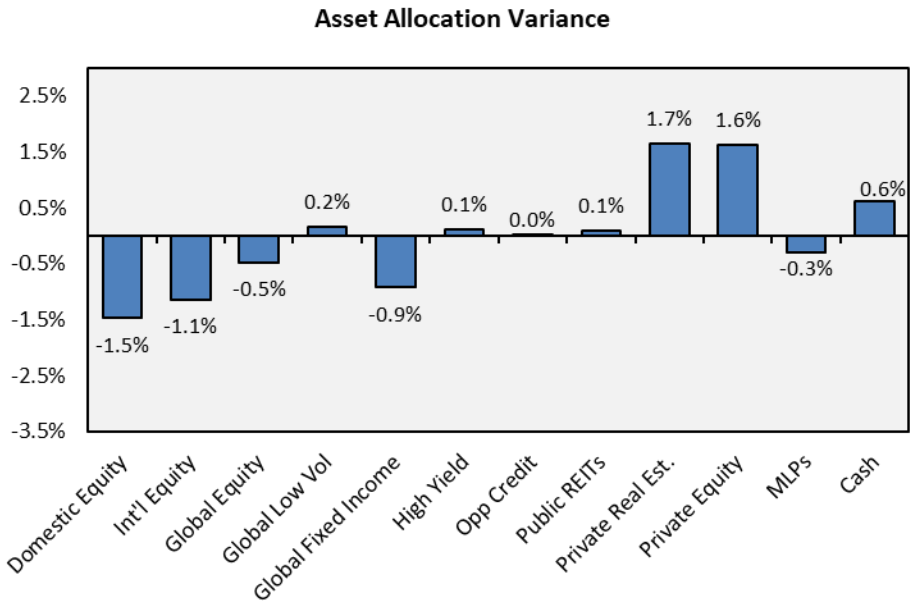
Domestic Equity | Int'l Equity | Global Equity | Global Low Vol | Global Fixed Income | High Yield
Opp Credit | Public REITs | Private Real Est. | Private Equity | MLPs | Cash

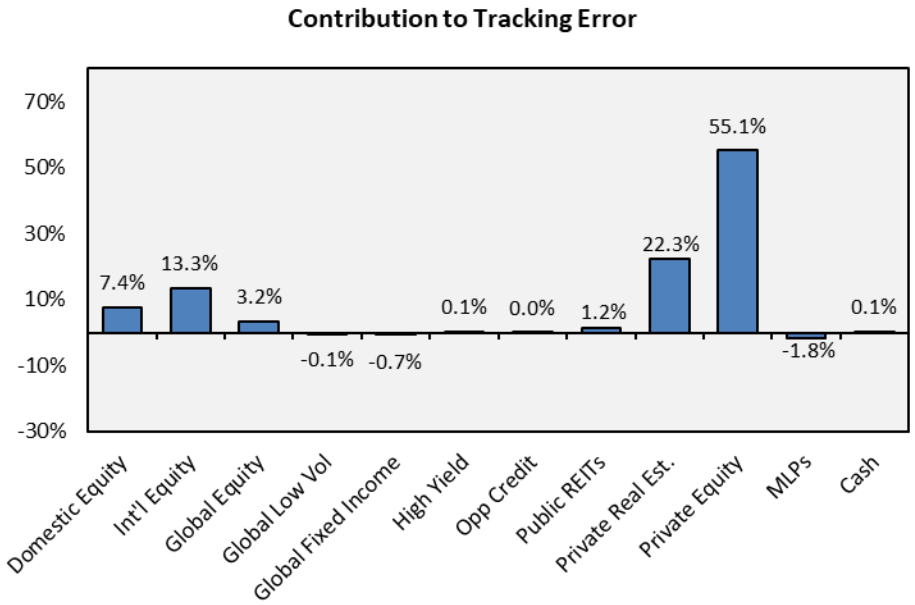




Domestic Equity | Int'l Equity | Global Equity | Global Low Vol | Global Fixed Income | High Yield
Opp Credit | Public REITs | Private Real Est. | Private Equity | MLPs | Cash

Expected Return and Tracking Error based on Wilshire's Asset Assumptions





- The variance between the Fund's actual asset allocation and the target allocation is a source of tracking error for the Fund. This "asset allocation tracking error" is currently forecasted to be 0.38% (for the one-year period) at quarter-end. Overweight allocations to private real estate and private equity provided the largest contributions to tracking error at the total fund level.

Manager Risk Statistics

U.S. Equity				
T. Rowe Price (Enhanced Index)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	16.35	10.94	11.45	12.90
Standard Deviation (Index)	15.94	10.73	11.19	12.69
Sharpe Ratio	0.46	1.20	0.94	1.22
Sharpe Ratio (Index)	0.45	1.13	0.90	1.22
Excess Risk	1.02	1.19	1.12	1.00
Information Ratio	0.25	0.72	0.50	0.22

Systematic (Small Core)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	20.45	15.03	14.92	18.11
Standard Deviation (Index)	22.96	15.90	16.15	17.71
Sharpe Ratio	-0.34	0.73	0.52	0.94
Sharpe Ratio (Index)	0.00	0.73	0.39	0.84
Excess Risk	3.66	3.85	3.85	3.63
Information Ratio	-1.89	-0.14	0.36	0.50

Channing Capital (Small Value)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	24.76	17.40	17.12	*n/a*
Standard Deviation (Index)	21.50	16.12	15.81	*n/a*
Sharpe Ratio	-0.22	0.44	0.22	*n/a*
Sharpe Ratio (Index)	-0.09	0.59	0.30	*n/a*
Excess Risk	6.57	4.8	4.46	*n/a*
Information Ratio	-0.56	-0.35	-0.22	*n/a*

Redwood (Small Growth)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	24.02	*n/a*	*n/a*	*n/a*
Standard Deviation (Index)	24.71	*n/a*	*n/a*	*n/a*
Sharpe Ratio	0.08	*n/a*	*n/a*	*n/a*
Sharpe Ratio (Index)	0.07	*n/a*	*n/a*	*n/a*
Excess Risk	4.85	*n/a*	*n/a*	*n/a*
Information Ratio	0.06	*n/a*	*n/a*	*n/a*

Smith Graham (Mid-Cap)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	20.79	*n/a*	*n/a*	*n/a*
Standard Deviation (Index)	18.85	*n/a*	*n/a*	*n/a*
Sharpe Ratio	-0.35	*n/a*	*n/a*	*n/a*
Sharpe Ratio (Index)	0.23	*n/a*	*n/a*	*n/a*
Excess Risk	4.93	*n/a*	*n/a*	*n/a*
Information Ratio	-2.23	*n/a*	*n/a*	*n/a*

Real Estate Investment Trusts				
Adelante (REIT)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	16.55	13.08	13.98	18.40
Standard Deviation (Index)	16.95	13.65	14.58	19.42
Sharpe Ratio	0.98	0.36	0.60	0.98
Sharpe Ratio (Index)	0.99	0.33	0.58	0.95
Excess Risk	2.03	1.86	1.78	2.00
Information Ratio	-0.22	0.06	-0.07	-0.14

Non-U.S. Equity				
Acadian (Int'l Small Cap)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	17.15	12.99	13.20	16.95
Standard Deviation (Index)	14.63	11.41	12.13	16.25
Sharpe Ratio	-0.77	0.66	0.29	0.88
Sharpe Ratio (Index)	-0.78	0.50	0.21	0.68
Excess Risk	4.33	3.90	3.42	3.45
Information Ratio	-0.46	0.67	0.39	1.01

AQR (Int'l Equity)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	16.12	11.89	12.12	16.35
Standard Deviation (Index)	13.60	10.56	12.01	15.75
Sharpe Ratio	-0.67	0.51	0.18	0.57
Sharpe Ratio (Index)	-0.46	0.64	0.15	0.53
Excess Risk	3.16	2.50	2.37	2.69
Information Ratio	-1.56	-0.26	0.15	0.31

Ativo (Int'l Developed)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	13.85	*n/a*	*n/a*	*n/a*
Standard Deviation (Index)	13.15	*n/a*	*n/a*	*n/a*
Sharpe Ratio	-0.29	*n/a*	*n/a*	*n/a*
Sharpe Ratio (Index)	-0.43	*n/a*	*n/a*	*n/a*
Excess Risk	3.31	*n/a*	*n/a*	*n/a*
Information Ratio	0.55	*n/a*	*n/a*	*n/a*

Global Equity				
Wellington (Global Equity)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	17.22	11.78	12.29	*n/a*
Standard Deviation (Index)	14.36	10.01	11.06	*n/a*
Sharpe Ratio	-0.14	0.73	0.54	*n/a*
Sharpe Ratio (Index)	0.03	0.94	0.51	*n/a*
Excess Risk	4.00	3.28	3.25	*n/a*
Information Ratio	-0.70	-0.20	0.30	*n/a*

Ariel (Global Equity)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	13.60	*n/a*	*n/a*	*n/a*
Standard Deviation (Index)	14.36	*n/a*	*n/a*	*n/a*
Sharpe Ratio	0.05	*n/a*	*n/a*	*n/a*
Sharpe Ratio (Index)	0.03	*n/a*	*n/a*	*n/a*
Excess Risk	3.79	*n/a*	*n/a*	*n/a*
Information Ratio	0.05	*n/a*	*n/a*	*n/a*

Global Low Volatility				
Acadian (Global Low Volatility)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	11.37	8.60	*n/a*	*n/a*
Standard Deviation (Index)	10.37	8.17	*n/a*	*n/a*
Sharpe Ratio	0.08	0.77	*n/a*	*n/a*
Sharpe Ratio (Index)	0.65	0.94	*n/a*	*n/a*
Excess Risk	2.97	2.85	*n/a*	*n/a*
Information Ratio	-1.84	-0.37	*n/a*	*n/a*

Manager Risk Statistics

High Yield Fixed Income				
BlackRock (High Yield)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	5.90	4.21	4.91	6.15
Standard Deviation (Index)	6.04	4.62	5.67	7.34
Sharpe Ratio	0.51	1.42	0.67	1.47
Sharpe Ratio (Index)	0.61	1.57	0.63	1.39
Excess Risk	0.40	0.72	1.67	1.85
Information Ratio	-1.58	-1.68	-0.16	-0.56

Oaktree (High Yield)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	6.20	4.64	5.44	6.36
Standard Deviation (Index)	6.04	4.62	5.67	7.34
Sharpe Ratio	0.32	1.22	0.48	1.34
Sharpe Ratio (Index)	0.61	1.57	0.63	1.39
Excess Risk	0.35	0.62	0.69	1.60
Information Ratio	-4.53	-2.41	-1.31	-0.94

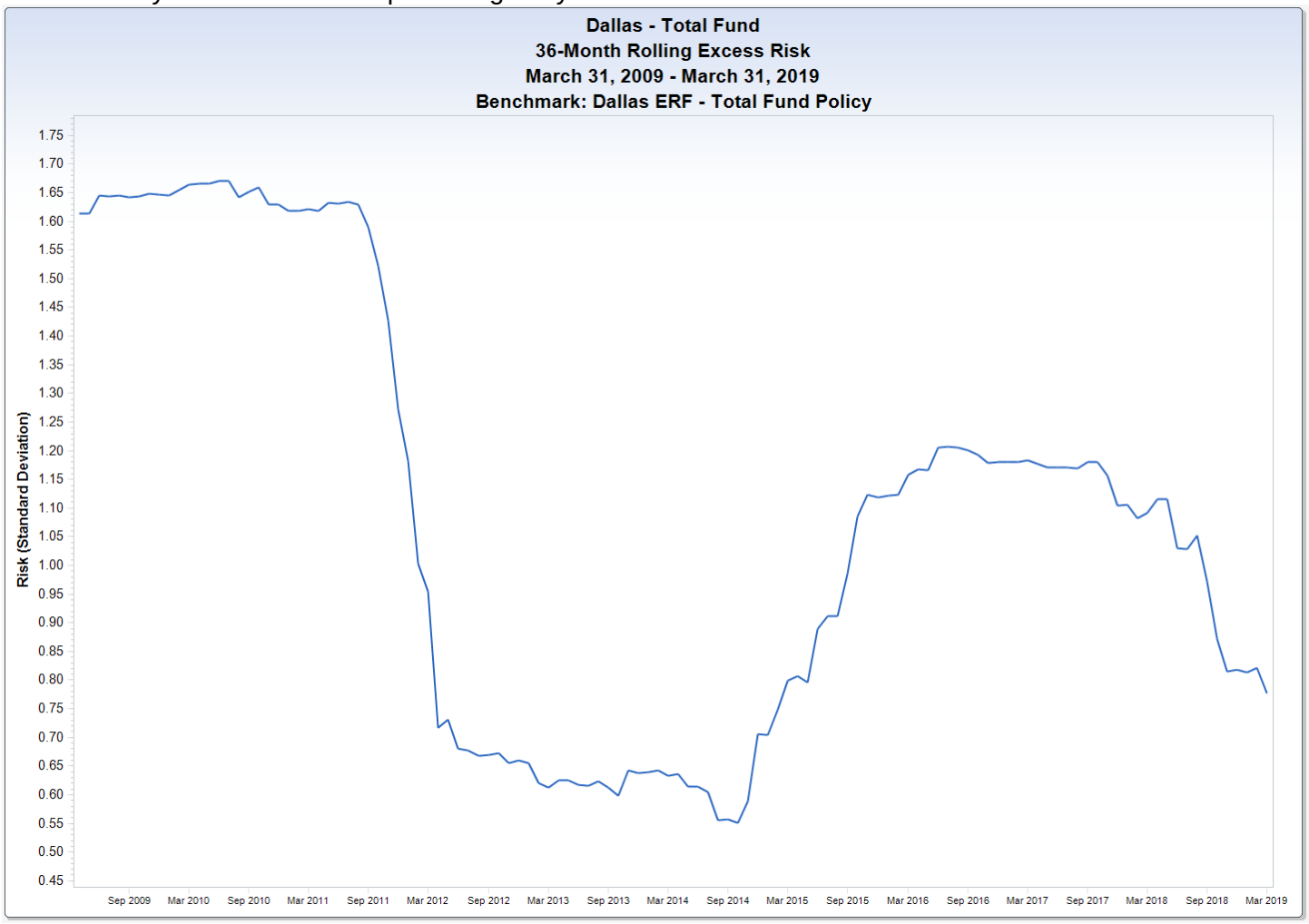
Neuberger Berman (Credit Opps)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	5.20	4.00	*n/a*	*n/a*
Standard Deviation (Index)	4.94	3.73	*n/a*	*n/a*
Sharpe Ratio	0.41	1.40	*n/a*	*n/a*
Sharpe Ratio (Index)	0.45	1.47	*n/a*	*n/a*
Excess Risk	1.26	1.34	*n/a*	*n/a*
Information Ratio	-0.09	0.08	*n/a*	*n/a*

Fixed Income (Core)				
Securian (Core Fixed Income)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	2.93	2.70	2.66	2.92
Standard Deviation (Index)	3.21	2.97	2.86	2.84
Sharpe Ratio	0.80	0.75	1.06	1.72
Sharpe Ratio (Index)	0.72	0.28	0.69	1.17
Excess Risk	0.78	0.66	0.57	0.87
Information Ratio	0.06	1.82	1.44	1.88

Aberdeen (Core Fixed Income)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	3.38	2.94	2.85	3.09
Standard Deviation (Index)	3.21	2.97	2.86	2.84
Sharpe Ratio	0.45	0.37	0.69	1.33
Sharpe Ratio (Index)	0.72	0.28	0.69	1.17
Excess Risk	1.35	0.89	0.89	1.26
Information Ratio	-0.56	0.30	-0.03	0.76

Garcia Hamilton (Core Fixed Income)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	2.25	2.35	2.81	*n/a*
Standard Deviation (Index)	3.21	2.97	2.86	*n/a*
Sharpe Ratio	0.73	0.38	0.82	*n/a*
Sharpe Ratio (Index)	0.72	0.28	0.69	*n/a*
Excess Risk	1.16	1.00	1.05	*n/a*
Information Ratio	-0.56	0.07	0.29	*n/a*

Master Limited Partnerships				
Harvest (MLP)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	25.38	19.37	20.70	*n/a*
Standard Deviation (Index)	21.98	18.04	19.91	*n/a*
Sharpe Ratio	0.59	0.38	-0.12	*n/a*
Sharpe Ratio (Index)	0.58	0.25	-0.27	*n/a*
Excess Risk	4.02	3.21	4.4	*n/a*
Information Ratio	0.48	0.88	0.73	*n/a*

Atlantic Trust CIBC (MLP)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	23.55	19.38	20.87	*n/a*
Standard Deviation (Index)	21.98	18.04	19.91	*n/a*
Sharpe Ratio	0.68	0.44	-0.10	*n/a*
Sharpe Ratio (Index)	0.58	0.25	-0.27	*n/a*
Excess Risk	2.83	3.36	4.15	*n/a*
Information Ratio	1.04	2.02	1.89	*n/a*

- Below is a historical visualization of realized tracking error ("ex-post") for the Employees' Retirement Fund of the City of Dallas over the preceding ten years: