WILSHIRE ASSOCIATES

Wilshire Consulting

Employees' Retirement Fund of the City of Dallas

Executive Summary of Performance

Third Quarter 2018

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Capital Market Overview

U.S. Equity Market

The U.S. stock market, represented by the Wilshire 5000 Total Market Index, was up 7.27% for the third quarter of 2018, the strongest quarter in nearly five years. The quarter began with very strong corporate earnings reports and a vast majority of public companies beating consensus earnings estimates. Operating earnings on S&P 500 companies were up 8% during the first quarter of 2018 and showed 6% growth during the second quarter. Economic data continues to be strong including the largest increase in real GDP in four years at 4.2%. Although global trade continues to be a major issue, the U.S. made positive strides during the quarter with a preliminary, renegotiated trade deal with the European Commission and a finalized deal with South Korea, the first completed pact under the current administration.

Large capitalization stocks far outperformed small caps as the Wilshire Large-Cap Index was up +7.68% versus a gain of +3.65% for the Wilshire US Small-Cap Index. The large-cap segment of the market leads small-caps for the past twelve months, as well. The Wilshire US Micro-Cap Index was up +1.33% for the quarter and 12.92% for the one-year. Growth stocks have been generally outpacing value for both the recent quarter and for the past twelve months.

Nearly all of the eleven major sectors were in positive territory during the third quarter. The best performing sector was Health Care (+14.1%) with Technology (+9.7%) and Industrials (+9.2%) making significant gains.

Fixed Income Market

The U.S. Treasury yield curve rose across all maturities during the quarter with the biggest increases occurring in the short to intermediate segment of the curve. The bellwether 10-year Treasury yield ended the quarter at 3.05%, up 20 basis points from June. The Federal Open Market Committee decided to increase its overnight rate by 25 basis points in September to a range of 2.00% to 2.25%. The committee expects to raise rates one more time this year and the Fed chair Jerome Powell said it was a "particularly bright moment" for the U.S. economy. 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. produced mixed results during the third quarter of 2018 while generally trailing the U.S. equity market. Trade tensions weighed heavily on foreign markets while political turmoil in Italy was cause for concern just as the quarter ended. The Italian government released their official budget for 2019 that includes a deficit of 2.4% of GDP, above the 2% target set by the European Union and worsening the country's debt outlook. Emerging Markets continue to underperform and, in fact, entered a technical bear market during the quarter, down -20% since late January. Much of the weakness comes from securities domiciled in China, which now comprises 30% of the index. While China-U.S. trade relations are certainly a major factor in the underperformance, the country's central bank has communicated a lack of desire to offer monetary stimulus and liquidity issues have led to a number of corporate bond defaults.

Real Assets Markets

Real estate securities produced a minor gain after a near 10% jump during the second quarter. Results for the year are positive but trail the broader equity market. Commodity results were mixed for the quarter as crude oil fell -1.2% to $73.25 per barrel. Natural gas prices were up +2.9%, ending the quarter at $3.01 per million BTUs. MLP returns were in positive territory for the quarter (+6.57%) and also have turned positive for the past twelve months (+4.89%). Finally, gold prices were down and finished at approximately $1,196 per troy ounce, down -4.6% from last quarter.

Summary of Index Returns

For Periods Ended September 30, 2018

	Quarter	One Year	Three Years	Five Years	Ten Years
Domestic Equity					
Standard & Poor's 500	7.71%	17.92%	17.31%	13.95%	11.96%
Wilshire 5000	7.27	17.60	17.27	13.63	12.02
Wilshire 4500	4.15	15.55	16.67	11.93	12.61
Wilshire Large Cap	9.17	24.41	19.61	16.16	13.69
Wilshire Small Cap	3.65	14.94	16.52	11.31	12.79
Wilshire Micro Cap	1.33	12.92	16.06	10.36	11.92
Domestic Equity					
Wilshire Large Value	6.31%	11.80%	14.96%	11.67%	10.19%
Wilshire Large Growth	9.17	24.41	19.61	16.16	13.69
Wilshire Mid Value	3.43	12.55	14.68	11.65	11.90
Wilshire Mid Growth	5.37	17.28	15.65	11.38	13.47
Wilshire Small Value	2.00	11.44	15.38	11.15	11.96
Wilshire Small Growth	5.34	18.42	17.37	11.26	13.50
International Equity					
MSCI All World ex U.S. (USD)	0.71%	1.76%	9.97%	4.12%	5.18%
MSCI All World ex U.S. (local currency)	2.55	6.10	11.03	8.59	7.45
MSCI EAFE	1.36	2.74	9.23	4.42	5.38
MSCI Europe	0.80	-0.30	7.71	3.70	4.85
MSCI Pacific	2.28	8.21	12.35	5.77	6.55
MSCI Emerging Markets Index	-1.09	-0.81	12.36	3.61	5.40
Domestic Fixed Income					
Barclays Aggregate Bond	0.02%	-1.22%	1.31%	2.16%	3.77%
Barclays Credit	0.89	-1.10	2.98	3.40	5.94
Barclays Mortgage	-0.12	-0.92	0.98	2.02	3.33
Barclays Treasury	-0.59	-1.62	0.23	1.34	2.68
Citigroup High Yield Cash Pay	2.36	3.18	8.04	5.17	9.02
Barclays US TIPS	-0.82	0.41	2.04	1.37	3.32
91-Day Treasury Bill	0.49	1.58	0.84	0.52	0.34
International Fixed Income					
Citigroup Non-U.S. Gov. Bond	-2.19%	-1.57%	2.39%	-0.23%	1.99%
Citigroup World Gov. Bond	-1.62	-1.54	1.68	0.20	2.21
Citigroup Hedged Non-U.S. Gov.	-0.55	2.29	2.97	3.98	4.08
Currency*					
Euro vs. $	-0.52%	-1.75%	1.33%	-3.02%	-1.88%
Yen vs. $	-2.48	-0.90	1.78	-2.88	-0.67
Pound vs. $	-1.23	-2.80	-4.87	-4.24	-3.08
Real Estate					
Wilshire REIT Index	0.72%	3.99%	7.08%	9.25%	7.38%
Wilshire RESI	0.73	4.11	7.52	9.58	7.51
NCREIFC Property Index	1.87	7.38	7.82	9.62	6.44

*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	531.1	14.8	5.48	8.85	15.72	16.73	13.10	11.73
International Equity	506.0	14.1	0.35	-4.15	0.39	10.82	5.28	7.14
Global Equity	255.9	7.1	4.09	5.35	11.13	13.34	8.18	-.-
Global Low Volatility	373.2	10.4	5.69	4.65	9.75	12.21	-.-	-.-
Real Estate	405.4	11.3	1.35	3.53	5.29	6.46	8.99	7.42
Global Fixed Income	476.0	13.2	0.01	-1.33	-0.68	2.06	2.79	4.57
High Yield	362.9	10.1	2.19	1.98	2.35	6.80	4.97	7.81
Credit Opportunities	184.5	5.1	1.99	1.05	2.42	-.-	-.-	-.-
MLPs	261.3	7.3	5.92	10.14	9.77	6.33	1.89	-.-
Private Equity	215.7	6.0	1.78	8.77	12.40	10.49	11.63	-.-
Cash Equivalents	26.6	0.7	0.49	1.30	1.58	0.83	0.51	0.34
Total Fund	**3,598.8**	**100.0**	**2.78**	**3.54**	**6.66**	**9.38**	**7.14**	**8.42**
Asset Allocation Policy			**3.26**	**3.43**	**6.51**	**9.31**	**6.74**	**8.04**
Value Added vs Policy			*-0.48*	*0.11*	*0.15*	*0.07*	*0.40*	*0.38*
Actuarial Rate			1.94	5.94	8.00	8.00	8.06	8.16
Wilshire 5000 Index			7.27	10.53	17.60	17.27	13.63	12.02
S&P 500 Index			7.71	10.57	17.92	17.31	13.95	11.96
MSCI ACWI x-U.S. IMI Index			0.39	-3.27	1.78	10.14	4.39	5.60
MSCI EAFE Index			1.36	-1.43	2.74	9.23	4.42	5.38
Bloomberg Aggregate Bond Index			0.02	-1.60	-1.22	1.31	2.16	3.77
Citigroup High Yield Cash Pay			2.36	2.66	3.18	8.04	5.17	9.02
Wilshire RE Securities Index			0.73	2.35	4.11	7.52	9.58	7.51
91-Day Treasury Bill			0.49	1.30	1.58	0.84	0.52	0.34

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	1.85%
3Q18	3,544.4	31.6	75.1	3.3	101.0	3,598.8	2.78%

- At the end of the third quarter of 2018, the Fund's market value was $3,598.8 million, which represented an increase of $54.3 million in total net asset value over the previous quarter. The change in the Fund's value was driven by $31.6 million in net contributions and a $101.0 million gain on investments. Meanwhile, $75.1 million in net distributions and $3.3 million in investment management fees flowed out of the Fund.

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	15.1	5.48	15.0	7.27	0.14	-1.79	0.00	0.00	-0.26	-0.26
International Equity	14.2	0.35	15.0	0.39	-0.78	-0.04	0.02	0.00	-0.01	0.01
Global Equity	6.4	4.09	7.5	4.28	-1.10	-0.18	-0.02	0.01	-0.01	-0.03
Global Low Volatility	10.2	5.69	10.0	5.77	0.19	-0.08	0.00	0.00	-0.01	0.00
Public REITs	4.8	0.96	5.0	0.73	-0.18	0.23	0.00	0.00	0.01	0.01
Direct Core Real Estate	6.4	1.64	5.0	1.46	1.41	0.18	-0.03	0.00	0.01	-0.02
Global Fixed Income	13.3	0.01	15.0	0.02	-1.71	0.00	0.05	0.00	0.00	0.05
High Yield	10.0	2.19	10.0	2.36	-0.01	-0.18	0.00	0.00	-0.02	-0.02
Credit Opportunities	5.1	1.99	5.0	2.20	0.09	-0.21	0.00	0.00	-0.01	-0.01
MLPs	7.7	5.92	7.5	6.57	0.18	-0.65	0.02	0.00	-0.05	-0.03
Private Equity	5.9	1.78	5.0	5.37	0.93	-3.59	0.02	-0.03	-0.18	-0.19
Cash Equivalents	0.8	0.49	0.0	0.49	0.84	0.00	-0.03	0.00	0.00	-0.03
Monthly Linked Return	**100.0**	**2.75**	**100.0**	**3.26**		**-0.52**	**0.04**	**-0.03**	**-0.52**	**-0.52**
Trading/Hedging		*0.04*		*0.00*		*0.04*				***0.04***
Total		**2.78**		**3.26**		**-0.48**				**-0.48**

3.26	**Asset Allocation Policy**
0.04	Actual/Tactical Asset Allocation
-0.52	Active Management
-0.03	Interaction
0.04	Trading
2.78	**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	15.0	15.72	15.0	17.60	0.0	-1.88	-0.01	0.00	-0.26	-0.27
International Equity	15.3	0.39	15.0	1.78	0.3	-1.39	0.04	0.00	-0.22	-0.17
Global Equity	5.5	11.13	5.6	9.77	-0.1	1.36	-0.01	0.01	0.06	0.06
Global Low Volatility	10.3	9.75	10.0	10.46	0.3	-0.70	0.00	0.00	-0.07	-0.07
Public REITs	4.6	4.06	5.0	4.11	-0.4	-0.05	-0.03	0.00	-0.01	-0.03
Direct Core Real Estate	6.4	6.17	5.0	6.02	1.4	0.15	-0.01	0.00	0.01	0.00
Global Fixed Income	13.4	-0.68	15.0	-1.22	-1.6	0.53	0.11	-0.01	0.08	0.18
High Yield	11.9	2.35	11.7	3.18	0.2	-0.83	0.00	0.00	-0.10	-0.10
Credit Opportunities	3.2	2.42	3.3	2.05	-0.1	0.37	0.00	0.00	0.00	0.00
MLPs	7.5	9.77	9.4	4.89	-1.9	4.88	0.07	-0.15	0.51	0.42
Private Equity	6.1	12.40	5.0	16.21	1.1	-3.81	0.08	-0.02	-0.17	-0.11
Cash	1.0	1.58	0.0	1.58	1.0	0.00	-0.05	0.00	0.00	-0.05
Monthly Linked Return	**100.0**	**6.37**	**100.0**	**6.51**		**-0.14**	**0.18**	**-0.16**	**-0.17**	**-0.14**
Trading		0.29		0.00		0.29				**0.29**
Total		***6.66***		***6.51***		***0.15***				***0.15***

6.51	**Strategic Policy Allocation**
0.18	Actual/Tactical Asset Allocation
-0.17	Active Management
-0.16	Interaction
0.29	Trading
6.66	Total Return

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

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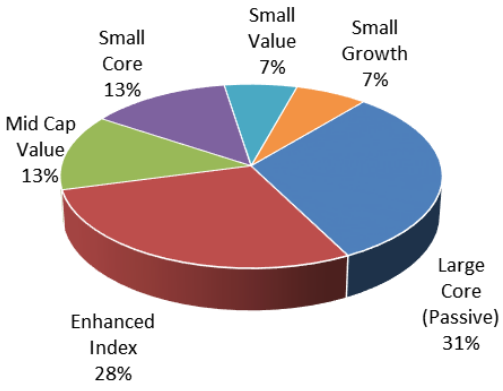
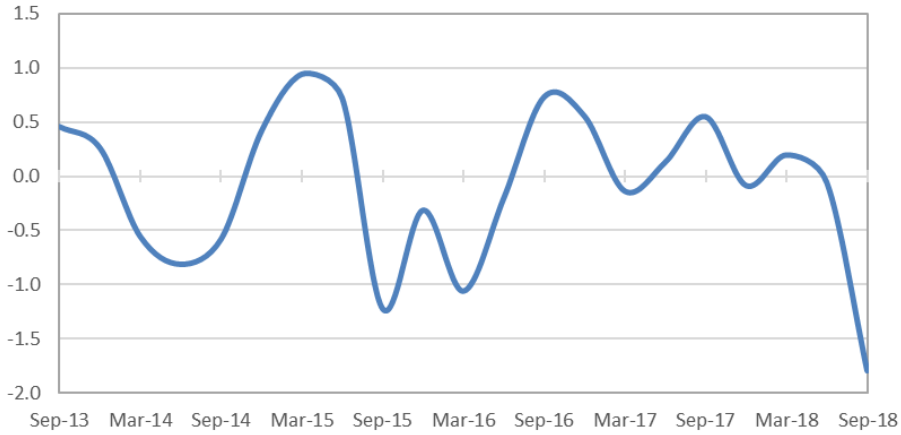
- ***Interaction:*** Captures the interaction of managers' performance and asset class weighting differences.
- ***Actual Return:*** The actual return of the asset classes if allocations to them were static during the quarter. These returns will not match exactly with the actual segment returns since 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)	QTR	YTD	1-year	3-year	5-year	10-year
		Performance					
Total U.S. Equity (Gross)	**$ 531.1**	**5.58**	**9.17**	**16.15**	**17.14**	**13.50**	**12.11**
Total U.S. Equity (Net)		**5.48**	**8.85**	**15.72**	**16.73**	**13.10**	**11.73**
Custom Benchmark [1]		7.27	10.53	17.60	17.27	13.63	12.02
Net of Fee Value Added vs Benchmark		*-1.79*	*-1.68*	*-1.88*	*-0.54*	*-0.53*	*-0.29*
Small Cap Composite	**$ 142.4**	2.66	6.46	11.85	16.50	11.54	11.99
Wilshire 5000 Index		7.27	10.53	17.60	17.27	13.63	12.02
S&P 500 Index		7.71	10.57	17.92	17.31	13.95	11.96
Russell 2000 Index		3.58	11.51	15.24	17.12	11.07	11.11

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)	**$ 166.1**	**7.73**	**10.58**	**17.93**	**17.33**	**13.99**	**10.25**	**Dec-94**
Northern Trust S&P 500 (Net)		**7.73**	**10.58**	**17.92**	**17.33**	**13.98**	**10.23**	**Dec-94**
S&P 500 Index		7.71	10.57	17.92	17.31	13.95	10.18	Dec-94
Net of Fee Value Added vs Benchmark		*0.02*	*0.01*	*0.00*	*0.02*	*0.03*	*0.05*	
Enhanced Index								
T. Rowe Price (Gross)	**$ 150.8**	**7.19**	**11.16**	**18.58**	**18.30**	**14.71**	**9.85**	**Mar-06**
T. Rowe Price (Net)		**7.11**	**10.91**	**18.23**	**17.93**	**14.34**	**9.53**	**Mar-06**
S&P 500 Index + 1%		7.96	11.32	18.92	18.31	14.95	9.98	Mar-06
Net of Fee Value Added vs Objective		*-0.85*	*-0.41*	*-0.69*	*-0.38*	*-0.61*	*-0.45*	
S&P 500 Index		7.71	10.57	17.92	17.31	13.95	8.98	Mar-06
Net of Fee Value Added vs Benchmark		*-0.60*	*0.34*	*0.31*	*0.62*	*0.39*	*0.55*	
Information Ratio				**0.27**	**0.41**	**0.31**		
Sharpe Ratio				**1.82**	**1.81**	**1.42**		

[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)	**$ 70.1**	**1.40**	**5.56**	**12.93**	**19.97**	**14.64**	**12.60**	**Jun-03**
Systematic Financial (Net)		**1.19**	**4.90**	**12.01**	**18.96**	**13.67**	**11.80**	**Jun-03**
Russell 2000 Index + 1.25%		3.89	12.45	16.49	18.37	12.32	11.44	Jun-03
Net of Fee Value Added vs Objective		*-2.70*	*-7.55*	*-4.48*	*0.59*	*1.35*	*0.36*	
Russell 2000 Index		3.58	11.51	15.24	17.12	11.07	10.19	Jun-03
Net of Fee Value Added vs Benchmark		*-2.39*	*-6.61*	*-3.23*	*1.84*	*2.60*	*1.61*	
Information Ratio				**-0.73**	**0.41**	**0.61**		
Sharpe Ratio				**0.99**	**1.44**	**1.03**		
Small Value - Active								
Channing Capital Management (Gross) *	**$ 36.2**	**3.27**	**6.72**	**9.43**	**14.95**	**-.-**	**9.20**	**Oct-13**
Channing Capital Management (Net) *		**3.03**	**5.98**	**8.43**	**13.87**	**-.-**	**8.21**	**Oct-13**
Russell 2000 Value Index + 1.25%		1.92	8.07	10.58	17.37	-.-	9.93	Oct-13
Net of Fee Value Added vs Objective		*1.11*	*-2.09*	*-2.15*	*-3.50*		*-1.72*	
Russell 2000 Value Index		1.60	7.14	9.33	16.12	-.-	8.68	Oct-13
Net of Fee Value Added vs Benchmark		*1.43*	*-1.16*	*-0.90*	*-2.25*		*-0.47*	
Information Ratio				**-0.18**	**-0.48**	**-.-**		
Sharpe Ratio				**0.85**	**0.92**	**-.-**		
Small Growth - Active								
Redwood Investments (Gross) *	**$ 36.0**	**5.56**	**10.55**	**15.34**	**-.-**	**-.-**	**15.13**	**Sep-16**
Redwood Investments (Net) *		**5.38**	**9.98**	**14.54**	**-.-**	**-.-**	**14.54**	**Sep-16**
Russell 2000 Growth Index + 1.50%		5.90	16.88	22.56	-.-	-.-	22.52	Sep-16
Net of Fee Value Added vs Objective		*-0.52*	*-6.90*	*-8.02*			*-7.98*	
Russell 2000 Growth Index		5.52	15.76	21.06	-.-	-.-	21.02	
Net of Fee Value Added vs Benchmark		*-0.14*	*-5.78*	*-6.52*			*-6.48*	
Information Ratio				**-0.90**	**-.-**	**-.-**		
Sharpe Ratio				**1.00**	**-.-**	**-.-**		
Mid Cap Value - Active								
Smith Graham Mid Cap Value (Gross) *	**$ 71.2**	**2.63**	**5.50**	**-.-**	**-.-**	**-.-**	**5.50**	**Dec-17**
Smith Graham Mid Cap Value (Net) *		**2.44**	**5.05**	**-.-**	**-.-**	**-.-**	**5.05**	**Dec-17**
Russell Midcap Index + 2%		5.49	8.96	-.-	-.-	-.-	8.96	**Dec-17**
Net of Fee Value Added vs Objective		*-3.05*	*-3.91*				*-3.91*	
Russell Midcap Index		5.00	7.46	-.-	-.-	-.-	7.46	
Net of Fee Value Added vs Benchmark		*-2.56*	*-2.41*				*-2.41*	
Information Ratio				**-.-**	**-.-**	**-.-**		
Sharpe Ratio				**-.-**	**-.-**	**-.-**		

- The Fund's domestic equity composite generated a return of 5.48% (net of fees) during the third quarter of 2018, trailing the Wilshire 5000 Total Market Index, which returned 7.27%. Overall, relative performance was weak amongst the domestic equity lineup as Channing was the lone active manager that delivered performance above its respective benchmark for the period. Following this quarter's results, the domestic equity composite is currently trailing its custom 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 7.11% (net of fees) during the third quarter, trailing its benchmark index (S&P 500) which returned 7.71%. While stock selection and sector positioning relative to the benchmark were slightly positive during the period, the effect of trading and timing detracted from the portfolio's return during the period. During the period stock selection was strongest within the portfolios energy and health care sectors while financials and technology holdings detracted modestly. 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 highly concentrated in large-capitalization stocks (with an average market cap of $240,985 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 1.19% (net of fees) during the third quarter, underperforming its benchmark (Russell 2000) which returned 3.58%. During the period small cap stocks as represented by the Russell 2000 Index posted weaker returns relative to their larger capitalization counterparts. Against this backdrop, the Systematic portfolio trailed its benchmark as a result of unfavorable individual stock selection decisions. Stock selection suffered in 7 of the 11 GICS sectors during the quarter. Most notably, the portfolio's consumer discretionary and technology holdings significantly trailed those of the respective benchmark holdings. Strategic sector positioning also weighed on performance during the period led by an underweight (4% portfolio weight vs. 16% benchmark weight) to the health care sector, which delivered strong positive returns during the period. The Systematic portfolio continues to hold relatively cheaper (or undervalued) stocks when compared to benchmark, with a current average P/E ratio of 21 (Russell 2000 P/E ratio is 47). The portfolio also continues to exhibit a large historical overweight allocation to financials, albeit smaller in the most recent period, which accounts for around 22% of the portfolio's total net asset value compared to approximately 17% for the benchmark. Despite this quarter's relative underperformance, the Systematic portfolio is outperforming against its benchmark over the three- and five-year periods as well as since inception (6/03).

Channing Capital Management (Small-Cap Value)

- Channing Capital manages the Fund's small-cap value portfolio. The Channing portfolio returned 3.03% (net of fees) during the third quarter, outpacing its benchmark (Russell 2000 Value) which returned 1.60%. Large contributions from stock selection led to this period's outperformance relative to the benchmark. Particularly large gains were incurred within the health care and materials sectors. Here, the portfolio's holdings returned 19.75% and 8.34% versus 7.75% and 1.37% for the respective benchmark holdings. Several positions within the portfolio (very concentrated), posted double-digit returns in what was a mixed period in the small cap value space. Most notably, Ingevity Corporation, which returned +26.0% was the best performer in the portfolio. Several other positions followed suit posting sizable returns in the current period. Sector weighting decisions were also positive for the period providing an additional boost to the portfolio's return relative to the benchmark. To date, the Channing portfolio is consistently positioned with an underweight allocation to consumer discretionary (7% portfolio weight vs. 11% benchmark weight)

U.S. Equity Overview (Continued)

with significant overweight allocation to industrials (19% portfolio weight vs 12% benchmark weight). The Channing portfolio is currently underperforming against its benchmark since inception (12/13).

Redwood Investments (Small-Cap Growth)

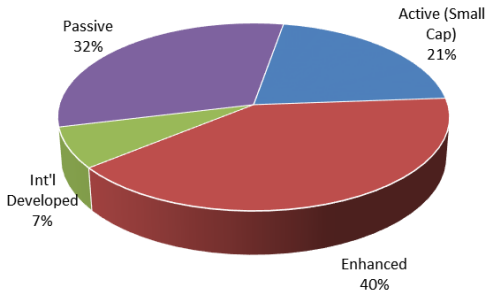
- Redwood Investments manages the Fund's small-cap growth portfolio, which was funded in late 2016. The Redwood portfolio returned 5.38% during the third quarter, slightly underperforming its benchmark on a net of fee basis (Russell 2000 Growth) which returned 5.52%. The portfolio currently holds 53 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 returns in excess of 20%. Within the health care sector alone, the portfolio's holdings returned 12.9% vs. 7.9% for the respective benchmark holdings. Conversely, stock selection was detractive within the materials and financials sectors. From a sector positioning standpoint, the portfolio benefitted from an underweight to energy stocks as well as an overweight exposure to technology stocks. The largest detractors to performance during the period were Weight Watchers and Puma Biotech, both down over 20% in the third quarter. The Redwood portfolio is currently underperforming against its benchmark since inception (09/16).

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

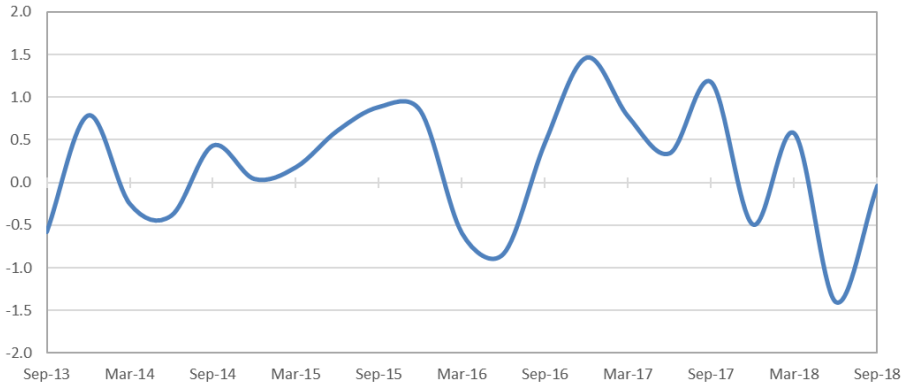
- Smith, Graham & Co. manages the Fund's mid-cap value portfolio, which was funded in December of 2017. The mid-cap portfolio returned 2.44% (net of fees) during the third quarter, underperforming its benchmark (Russell 2000 Growth) which returned 5.00%. Stock selection drove this quarter's underperformance relative to the benchmark. The stocks that detracted the most from performance were Westlake Chemical, Western Digital, Bed Bath & Beyond, Lear Corp, and AutoNation, all of which were down sharply during the period. During the quarter, two new positions were established: CBRE Group and Jones Lang Lasalle and two positions were eliminated: Andeavor and Convergys Corporation. At the end of September, the portfolio was diversified among 68 securities, none exceeding a 2.6% 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. Cash represented approximately 1.1% of the portfolio on September 30th. Portfolio turnover during the quarter was approximately 4.3%; for the trailing twelve months, portfolio turnover was approximately 11.7%. After completing its third quarter 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)	**$ 506.0**	**0.48**	**-3.81**	**0.86**	**11.33**	**5.73**	**7.61**
Total International Equity (Net)		**0.35**	**-4.15**	**0.39**	**10.82**	**5.28**	**7.14**
Custom Benchmark [1]		0.39	-3.27	1.78	10.14	4.39	5.42
Net of Fee Value Added vs Benchmark		*-0.04*	*-0.88*	*-1.39*	*0.68*	*0.89*	*1.72*
MSCI ACWI x-US IMI (Net)		0.39	-3.27	1.78	10.14	4.39	5.60
MSCI ACWI x-US (Net)		0.71	-3.09	1.76	9.97	4.12	5.18
MSCI EAFE (Net)		1.36	-1.43	2.74	9.23	4.42	5.38
MSCI Emerging Markets		-1.09	-7.68	-0.81	12.36	3.61	5.40

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)	**$ 106.7**	**-0.70**	**-4.15**	**0.29**	**15.34**	**8.40**	**9.14**	**Mar-89**
Acadian International (Net)		**-0.98**	**-4.67**	**-0.39**	**14.70**	**7.83**	**8.69**	**Mar-89**
Custom Benchmark + 2%		-1.02	-2.91	3.86	13.24	8.14	8.09	Mar-89
Net of Fee Value Added vs Objective		*0.04*	*-1.76*	*-4.25*	*1.46*	*-0.31*	*0.60*	
Custom Benchmark		-1.51	-4.41	1.86	11.24	6.14	6.09	Mar-89
Net of Fee Value Added vs Benchmark		*0.53*	*-0.26*	*-2.25*	*3.46*	*1.69*	*2.60*	
Information Ratio				**-0.51**	**0.84**	**0.46**		
Sharpe Ratio				**-0.19**	**1.19**	**0.64**		

[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)	**$ 204.0**	**0.75**	**-4.44**	**0.14**	**11.01**	**5.71**	**4.13**	**Mar-06**
AQR Capital Management (Net)		**0.60**	**-4.86**	**-0.44**	**10.38**	**5.10**	**3.61**	**Mar-06**
Custom Benchmark + 1.5%		1.08	-1.97	3.26	11.47	5.62	4.43	Mar-06
Net of Fee Value Added vs Objective		*-0.48*	*-2.89*	*-3.70*	*-1.09*	*-0.52*	*-0.82*	
Custom Benchmark		0.71	-3.09	1.76	9.97	4.12	2.93	Mar-06
Net of Fee Value Added vs Benchmark		*-0.11*	*-1.77*	*-2.20*	*0.41*	*0.98*	*0.68*	
Information Ratio				**-0.86**	**0.16**	**0.43**		
Sharpe Ratio				**-0.19**	**0.87**	**0.42**		
Int'l Developed								
Ativo International Developed (Gross) *	**$ 35.6**	**1.34**	**0.90**	**-.-**	**-.-**	**-.-**	**0.90**	**Dec-17**
Ativo International Developed (Net) *		**1.18**	**0.56**	**-.-**	**-.-**	**-.-**	**0.56**	**Dec-17**
MSCI EAFE Index + 2%		1.85	0.06	-.-	-.-	-.-	0.06	
Net of Fee Value Added vs Objective		*-0.67*	*0.50*				*0.50*	
MSCI EAFE Index		1.36	-1.43	-.-	-.-	-.-	-1.43	
Net of Fee Value Added vs Benchmark		*-0.18*	*1.99*				*1.99*	
Information Ratio				**-.-**	**-.-**	**-.-**		
Sharpe Ratio				**-.-**	**-.-**	**-.-**		
Passive International Equity								
BlackRock ACWI Ex-U.S. (Gross)	**$ 159.7**	**0.75**	**-.-**	**-.-**	**-.-**	**-.-**	**-1.14**	**May-18**
BlackRock ACWI Ex-U.S. (Net)		**0.74**	**-.-**	**-.-**	**-.-**	**-.-**	**-1.14**	**May-18**
MSCI ACWI x-US (Net)		0.71	-.-	-.-	-.-	-.-	-1.19	
Net of Fee Value Added vs Benchmark		*0.03*					*0.05*	

- The Fund's international equity composite returned 0.35% (net of fees) during the third quarter of 2018, just below the MSCI ACWI x-US Investable Market Index (IMI) which returned 0.39%. During the period the Ativo and AQR strategies struggled to keep pace with their respective benchmarks but posted positive returns overall. The lone bright spot within the composite was the program's small cap exposure managed by Acadian, which delivered strong performance in relative terms. Meanwhile, the composite's passive exposure managed by BlackRock continues to perform in-line with expectations closely tracking the risk/return profile of the benchmark. The international equity composite is outperforming against its benchmark for the three-, five- and ten-periods periods, as well as since inception (12/89).

[4] Baring Custom Benchmark: MSCI ACWI x-US (2q02 – Present); PMSCI ACWI x-US (G) (3q01 – 1q02); MSCI ACWI x-US (2q99 – 2q01); Wilshire Non-US/Non-SA (2q96 – 1q99); MSCI EAFE (2q88 – 1q96) . Performance objective: Custom Benchmark + 2%.

[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 third quarter the Acadian portfolio returned -0.98% (net of fees), outperforming against its benchmark (MSCI ACWI x-U.S. Small Cap) which returned -1.51% for the period. For the third quarter, the portfolio outperformed its benchmark, as losses incurred from stock selection were more than offset by value added from country allocations. Key sources of positive active return included an overweight position in Thailand, a combination of stock selection and an underweight position in the U.K., and a combination of stock selection and an overweight position in Japan. Less successful investments included stock selection in Canada, a combination of stock selection and an underweight position in Sweden, and an overweight position in China. Key sources of positive active return included shares of U.K.-listed mining company Evraz which climbed as zinc prices rallied late in the quarter amid falling Chinese stockpiles of the metal. Thanachart Capital also rose after the Thai financial services provider reported generally positive second quarter results and Fujitsu advanced after the Japanese technology company inked a significant outsourcing deal on behalf of the Dutch region of Groningen. 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 Enhanced)

- AQR Capital manages the Fund's enhanced international equity portfolio. The AQR portfolio returned 0.60% (net of fees) during the third quarter, underperforming its benchmark (MSCI ACWI x-US) which returned 0.71%. During the third quarter, the portfolio found itself on the wrong side of the trade in several cases, ultimately leading to this period's relative underperformance. Stock selection suffered the most within several of the large global equity markets including Japan, Germany and the United Kingdom. Here, the portfolio's holdings delivered performance well below that of their respective benchmark holdings. Currency hedging decisions detracted an additional layer of value, pushing the portfolio's performance lower in the third quarter. At the end of the period the portfolio held underweight allocations to Japan and China with overweights to Switzerland and Germany. Overall, country weighting decisions were detractive in nature providing an additional drag on performance. Despite this quarter's results, the AQR portfolio is outperforming against its benchmark for three-, five-, and ten-year periods as well as since inception (03/06).

Ativo (International Developed)

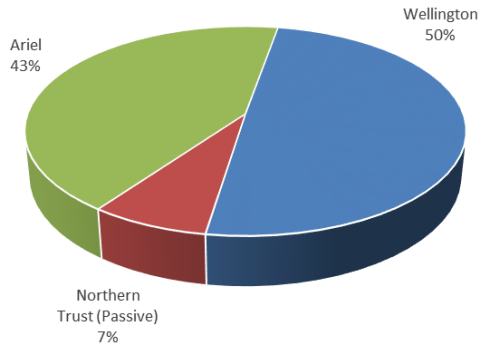
- Ativo manages the Fund's enhanced international developed equity portfolio. During the third quarter the Ativo portfolio returned 1.18% underperforming the MSCI EAFE Index, which returned 1.36%. The strategy was well ahead of the index heading into September. However, the sharp rally in non-U.S. value stocks that occurred late in the period culminated in modest underperformance for the full period, as the portfolio has a slight bias toward growth stocks. In addition, stock selection in Pacific ex-Japan, Canada and the Materials sector was weak, reflecting the poor performance of several Hong Kong REITs and Canadian commodity producers. An underweight to Health Care also detracted. These negative effects were mitigated by several areas of relative strength. These included stock selection in Europe ex-EMU and the Energy and Telecommunication Services sectors, as well as an overweight in industrials. The only major changes to portfolio positioning during the quarter were reducing the underweight in Europe ex-EMU and moving from a modest overweight to an essentially neutral weight in the EMU region. After completing its third quarter of performance within the Fund the Ativo portfolio currently leads its benchmark comfortably since inception (12/17).

BlackRock (ACWI Ex-U.S. Passive)

- BlackRock manages the Fund's passive international equity exposure. The BlackRock MSCI ACWI Ex-U.S. Fund is an index fund designed to track the performance of the MSCI All-Country World Ex-U.S. Index. This fund will provide broad equity exposure and diversification benefits as it holds large-, mid-, and small-capitalization stocks across the world's developed and emerging market regions.

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)	**$ 255.9**	**4.22**	**5.73**	**11.62**	**13.76**	**8.75**	**-.-**
Total Global Equity (Net)		**4.09**	**5.35**	**11.13**	**13.34**	**8.18**	**-.-**
MSCI ACWI (Net)		4.28	3.83	9.77	13.40	8.66	-.-
Net of Fee Value Added vs Index		*-0.19*	*1.52*	*1.36*	*-0.06*	*-0.48*	
MSCI ACWI IMI (Net)		3.88	3.70	9.63	13.47	8.69	8.49
MSCI ACWI (Net)		4.28	3.83	9.77	13.40	8.66	8.19
MSCI World (Net)		4.98	5.43	11.24	13.54	9.28	8.56

Global Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Global Equity - Active								
Wellington (Gross)	**$ 127.1**	**3.23**	**4.97**	**10.67**	**12.75**	**10.57**	**13.82**	**Jan-00**
Wellington (Net)		**3.12**	**4.54**	**10.05**	**12.09**	**9.95**	**13.20**	**Aug-12**
MSCI ACWI (Net) + 2%		4.77	5.32	11.77	15.40	10.66	12.54	Aug-12
Net of Fee Value Added vs Objective		*-1.65*	*-0.78*	*-1.72*	*-3.31*	*-0.71*	*0.66*	
MSCI ACWI (Net)		4.28	3.83	9.77	13.40	8.66	10.54	Aug-12
Net of Fee Value Added vs Benchmark		*-1.16*	*0.71*	*0.28*	*-1.31*	*1.29*	*2.66*	
Information Ratio				**0.08**	**-0.39**	**0.37**		
Sharpe Ratio				**0.95**	**1.08**	**0.91**		
Global Equity - Active								
Ariel (Gross) *	**$ 109.6**	**5.47**	**7.06**	**-.-**	**-.-**	**-.-**	**7.06**	**Dec-17**
Ariel (Net) *		**5.31**	**6.68**	**-.-**	**-.-**	**-.-**	**6.68**	**Dec-17**
MSCI ACWI (Net) + 1.5%		4.65	4.95	-.-	-.-	-.-	4.95	
Net of Fee Value Added vs Objective		*0.66*	*1.73*				*1.73*	
MSCI ACWI (Net)		4.28	3.83	-.-	-.-	-.-	3.83	
Net of Fee Value Added vs Benchmark		*1.03*	*2.85*				*2.85*	
Global Equity - Passive								
Northern Trust (Gross)	**$ 19.2**	**3.94**	**4.06**	**10.07**	**13.98**	**-.-**	**13.98**	**Oct-15**
Northern Trust (Net)		**3.91**	**4.03**	**10.04**	**13.92**	**-.-**	**13.92**	**Oct-15**
MSCI ACWI IMI (Net)		3.88	3.70	9.63	13.47	-.-	13.47	Oct-15
Net of Fee Value Added vs Benchmark		*0.03*	*0.33*	*0.41*	*0.45*		*0.45*	

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 third full quarter of performance. The new structure favors active management (currently 93% active/7% passive) versus the previous 50%/50% allocation between active and passively managed funds within the composite. During the third quarter the newly funded Ariel strategy outperformed the benchmark while the Wellington strategy struggled to keep pace with the benchmark. The global equity composite is currently outperforming over the one-year period but continues to trail its benchmark since inception (9/12).

Wellington (Active)

- Wellington manages one of the Fund's active global equity portfolio. During the third quarter, the Wellington portfolio returned 3.12% (net of fees), underperforming its benchmark (MSCI ACWI Index) which returned 4.28%. The Global Opportunities portfolio underperformed the benchmark during the third quarter driven by negative stock selection in consumer discretionary and information technology. Overall, sector allocations were neutral to relative performance, with modest positive contributions due to the portfolio's overweight to information technology and underweight to materials. In consumer discretionary, Delphi Technologies was a key detractor. The stock price fell over the quarter reflecting the shorter-term weaker industry trend in internal combustion engine-related businesses. In information technology, an underweight to Apple detracted. The stock price rose as the company reported better-than expected third-quarter earnings driven mainly by an improvement in their iPhone price mix. The portfolio's underperformance was partially offset by positive stock selection in communication services and industrials. During the period, Wellington initiated several positions in the health care while reducing their overweight exposure to technology. The Wellington portfolio is outperforming for the one- and five-year periods as well as since inception (09/12).

Ariel (Active)

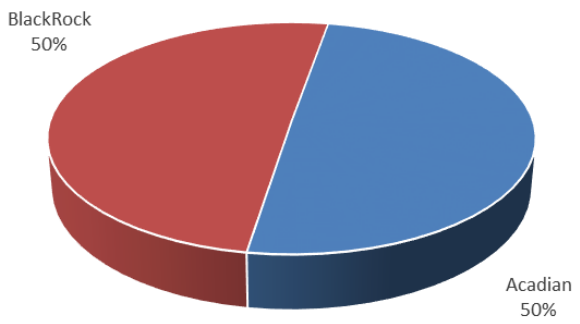
- Ariel manages the Fund's second active global equity portfolio. During the period the Ariel portfolio returned 5.31% (net of fees), outperforming its benchmark (MSCI ACWI Index) which returned 4.28%. While many investors gravitated toward the high-flying FANG stocks, Ariel instead invested in Microsoft, finding its superior business model, diversified lines of business and dominance in enterprise software provide a more attractive risk/reward ratio. Their patience has been rewarded as Microsoft climbed over +30% this year and was again a top contributor in the global portfolio for the quarter. Another significant contributor during the quarter was China Mobile, the world's biggest wireless telephone company. The company reported strong results despite a slowdown in revenue growth resulting from government regulations on pricing. As the dominant player in China it has an enviable market position and continues to grow both its mobile and wireline broadband businesses. Baidu, the Chinese technology behemoth, was the largest detractor from performance during the third quarter. The stock price fell sharply in sympathy with the weak performance of Chinese equities more broadly. The team remains confident in their philosophy of owning undervalued, out-of-favor, franchise-quality companies that are misunderstood and therefore mispriced by the market. Meanwhile management continues to find many such companies in the telecom and health care sectors. After completing its third quarter 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 7% of the segment's total value. After its second full year of performance, the Northern Trust portfolio continues to closely track the risk profile while modestly outperforming its benchmark index MSCI ACWI (+45) basis points since inception.

Global Low Volatility Equity Overview

Global Low Volatility Structure



Global Low Volatility Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total Global Low Volatility (Gross)	**$ 373.2**	**5.70**	**4.76**	**9.91**	**12.40**	**-.-**	**-.-**
Total Global Low Volatility (Net)		**5.69**	**4.65**	**9.75**	**12.21**	**-.-**	**-.-**
MSCI ACWI Minimum Volatility (Net)		5.77	5.44	10.46	11.98	-.-	-.-
Net of Fee Value Added vs Index		*-0.08*	*-0.79*	*-0.71*	*0.23*		
MSCI ACWI Minimum Volatility (Net)		5.77	5.44	10.46	11.98	9.55	9.03
MSCI World x-US Minimum Volatility (Net)		2.42	1.50	5.37	9.14	7.07	7.16
MSCI ACWI (Net)		4.28	3.83	9.77	13.40	8.66	8.19

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)	**$ 185.7**	**5.48**	**3.66**	**8.81**	**12.20**	**-.-**	**9.94**	**Jun-15**
Acadian Global Low Vol (Net)		**5.48**	**3.47**	**8.52**	**11.84**	**-.-**	**9.62**	**Jun-15**
MSCI ACWI (Net) + 2%		4.77	5.32	11.77	15.40	-.-	10.93	Jun-15
Net of Fee Value Added vs Objective		*0.71*	*-1.85*	*-3.25*	*-3.56*		*-1.31*	
MSCI ACWI (Net)		4.28	3.83	9.77	13.40	-.-	8.93	Jun-15
Net of Fee Value Added vs MSCI ACWI		*1.20*	*-0.36*	*-1.25*	*-1.56*		*0.69*	
MSCI ACWI Min Vol (Net)		5.77	5.44	10.46	11.98	-.-	9.50	Jun-15
Net of Fee Value Added vs MSCI ACWI Min Vol		*-0.29*	*-1.97*	*-1.94*	*-0.14*		*0.12*	
Information Ratio				**-0.86**	**-0.05**	**-.-**		
Sharpe Ratio				**0.90**	**1.35**	**-.-**		
Global Low Volatility - Passive								
BlackRock Global Low Vol (Gross)	**$ 187.5**	**5.93**	**5.85**	**11.00**	**12.58**	**-.-**	**10.07**	**Jun-15**
BlackRock Global Low Vol (Net)		**5.92**	**5.81**	**10.96**	**12.56**	**-.-**	**10.06**	**Jun-15**
MSCI ACWI Min Vol (Net)		5.77	5.44	10.46	11.98	-.-	9.50	Jun-15
Net of Fee Value Added vs Benchmark		*0.15*	*0.37*	*0.50*	*0.58*		*0.56*	

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 outperforming the MSCI ACWI Minimum Volatility Index.

Acadian (Global Low Volatility – Active)

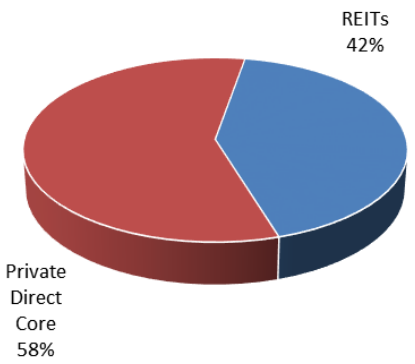
- Acadian manages the Fund's active global low volatility equity portfolio. The strategy was funded during June of 2015 and has recently completed its third year of performance within the Fund. During the third quarter, the Acadian portfolio returned 5.48% (net of fees). The portfolio's primary benchmark 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 outperformed the MSCI ACWI but slightly trailed the MSCI ACWI Minimum Volatility index. From a sector perspective, the portfolio benefitted from stock selection in financials and an emphasis on health care. IRB Brasil RE was a key source of positive return differential. Shares jumped after the Brazilian reinsurer posted strong Q2 and first-half results, bolstered by rising premiums. From a country perspective, the portfolio benefitted from a combination of stock selection and a relatively smaller weighting in China. A lack of exposure to Tencent Holdings added notable value. Shares slid after Credit Suisse lowered its price target for the internet company, predicting a bigger-than-expected slowdown in Q2 profit growth. The Acadian portfolio is currently outperforming its primary benchmark since inception (+69 bps) (07/15). The portfolio has also outpaced its secondary minimum volatility benchmark since inception (+12 bps).

BlackRock (Global Low Volatility – Passive)

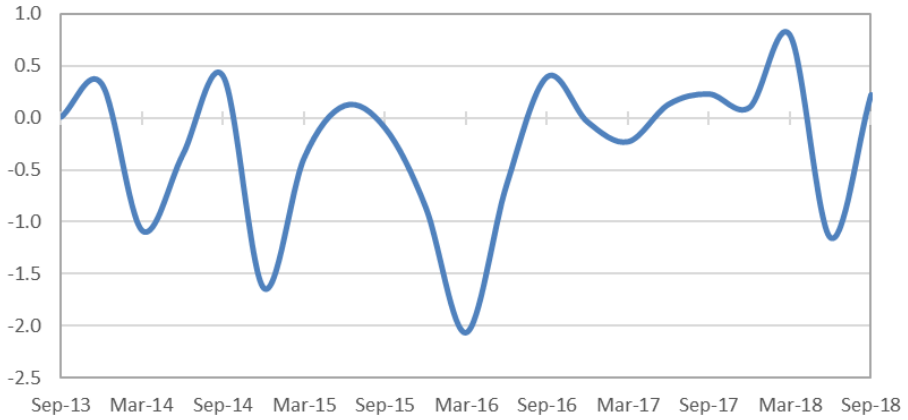
- BlackRock manages the Fund's passive global volatility equity strategy. Like Acadian above, this strategy is *relatively* new within the Fund having been funded at the end of June 2015. The BlackRock portfolio is intended to provide a low-cost, highly diversified global equity investment strategy focused 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 (+56 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)	**$ 405.4**	**1.48**	**3.93**	**5.86**	**7.11**	**9.72**	**8.16**
Total Real Estate (Net)		**1.35**	**3.53**	**5.29**	**6.46**	**8.99**	**7.42**
Custom Benchmark [1]		1.13	3.57	5.23	6.95	8.80	7.53
Net of Fee Value Added vs Benchmark		*0.22*	*-0.04*	*0.06*	*-0.49*	*0.19*	*-0.11*
REIT Strategies	$ 172.0	0.96	1.99	4.06	6.24	9.08	7.09
Private Core Real Estate	$ 233.4	1.64	4.64	6.17	6.50	8.84	-.-
Wilshire Real Estate Securities Index		0.73	2.35	4.11	7.52	9.58	7.51
NCREIF Open Diversified Core Equity (Net)		1.87	5.76	7.71	7.83	9.71	-.-

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)	**$ 86.9**	**0.76**	**1.32**	**3.69**	**6.43**	**9.82**	**10.40**	**Sep-01**
Adelante Capital Management (Net)		**0.62**	**0.90**	**3.11**	**5.82**	**9.20**	**9.82**	**Sep-01**
Wilshire Real Estate Securities + 1%		0.98	3.09	5.11	8.52	10.58	11.31	Sep-01
Net of Fee Value Added vs Objective		*-0.36*	*-2.19*	*-2.00*	*-2.70*	*-1.38*	*-1.49*	
Wilshire Real Estate Securities		0.73	2.35	4.11	7.52	9.58	10.31	Sep-01
Net of Fee Value Added vs Index		*-0.11*	*-1.45*	*-1.00*	*-1.70*	*-0.38*	*-0.49*	
Information Ratio				**-0.50**	**-0.84**	**-0.20**		
Sharpe Ratio				**0.13**	**0.42**	**0.68**		
CenterSquare (Gross)	**$ 85.2**	**1.37**	**-.-**	**-.-**	**-.-**	**-.-**	**6.02**	**May-18**
CenterSquare (Net)		**1.32**	**-.-**	**-.-**	**-.-**	**-.-**	**5.96**	**May-18**
Wilshire Real Estate Securities + 1%		0.98	-.-	-.-	-.-	-.-	5.52	May-18
Net of Fee Value Added vs Objective		*0.34*					*0.44*	
Wilshire Real Estate Securities		0.73	-.-	-.-	-.-	-.-	5.19	May-18
Net of Fee Value Added vs Index		*0.59*					*0.77*	

[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)	**$ 93.6**	**2.23**	**6.68**	**8.87**	**9.22**	**10.83**	**12.81**	**Aug-10**
Heitman America Real Estate Trust (Net)		**2.00**	**5.97**	**7.90**	**8.26**	**9.86**	**11.75**	**Aug-10**
NCREIF Open-End Diversified Core (Net)		1.87	5.76	7.71	7.83	9.71	11.24	Aug-10
Net of Fee Value Added vs Index		*0.13*	*0.21*	*0.19*	*0.43*	*0.15*	*0.51*	
Invesco Core Real Estate USA (Gross)	**$ 76.6**	**2.77**	**7.73**	**10.41**	**10.06**	**11.85**	**12.68**	**Aug-10**
Invesco Core Real Estate USA (Net)		**2.59**	**7.08**	**9.50**	**9.13**	**10.89**	**11.70**	**Aug-10**
NCREIF Open-End Diversified Core (Net)		1.87	5.76	7.71	7.83	9.71	11.24	Aug-10
Net of Fee Value Added vs Index		*0.72*	*1.32*	*1.79*	*1.30*	*1.18*	*0.46*	
Invesco II	**$ 63.2**	**0.00**	**0.02**	**0.04**	**-0.38**	**-0.22**	**-0.22**	**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 1.35% (net of fees) during the third quarter, outperforming its benchmark (split 50% Wilshire Real Estate Securities Index, 39% NCREIF Open-End Diversified Core Index and 11% Invesco II Custom Benchmark) which returned 1.13%. On the public side, the Adelante portfolio underperformed the Wilshire Real Estate Securities Index mostly as a result of unfavorable stock selection decisions. Meanwhile the CenterSquare REIT was funded in May and has performed well in its first few months of performance. On the private side, both the Invesco and Heitman portfolio's managed to outperform relative to the NCREIF Open-End Diversified Core Index accruing positively to the composite's total return. Currently, the Fund's total real estate composite is outperforming its benchmark over the one- and five-year periods 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 third quarter, the Adelante portfolio returned 0.62% (net of fees), underperforming its benchmark index (Wilshire Real Estate Securities) which returned 0.73%. After five consecutive quarters of outperformance, the Fund's performance trailed is benchmark for the second quarter in a row. Security selection was most detractive within the apartment, industrial and "other" segments of the REIT market. Here the portfolio holdings delivered returns significantly lower than the respective benchmark holdings. Similarly, albeit on a lesser scale the portfolio's local retail holdings posted returns below that of their respective benchmark holdings. From a sector positioning standpoint, the portfolio benefitted from an underweight to the poorly performing storage and industrial sectors. During the period the portfolio purchased four new issues (Pebblebrook Hotel, Americold Realty Trust, Jbg Smith Properties, & Cushman Wakefield.) and sold four securities (Dct Industrial Trust, Ggp Inc., Corporate Office Properties & American Campus Community). Following this quarter's underperformance the portfolio is now underperforming its benchmark over the one-, three-, 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. Stock selection contributed to alpha while sector selection detracted. Cash contributed 1 basis point, and the combined effect of intraday trading, rounding and other factors contributed 44 basis points over the period. This large "other" impact was largely due to modifications from the benchmark provider. From a sector perspective, stock selection was strongest in hotel, data center, and diversified. Highlights included an overweight to

data center name, CyrusOne Inc., a long-term hold in the strategy, hotel Park Hotels and Resorts, and suburban office name Mack-Cali Realty Corp, which continues to perform well after a slow start this year and benefit from its desirable waterfront locations and attractive valuations. The largest detractors in stock selection were due to picks in healthcare, including overweights to Ventas and Healthcare Trust of America. Positive sector selection was driven by an underweight to the self-storage sector, which underperformed strongly due to concerns of supply and slow earnings growth. The largest detractors for the quarter were overweights to office infill and suburban office; recent California voting results hurt West Coast selections as additional tax impacts and legislations are anticipated. From a positioning perspective, alternative housing, suburban office, and office infill continue to be the portfolio's largest overweights. Centersquare currently leads its benchmark since its inception earlier in the year.

Heitman (Direct Core Real Estate)

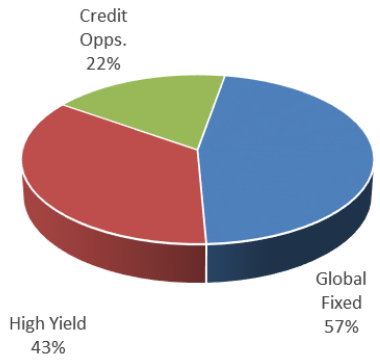
- Heitman manages one of the Fund's three direct core real estate portfolios. The Heitman portfolio returned 2.00% (net of fees) during the third quarter, outperforming its benchmark (NCREIF Open End Diversified Core Index) which returned 1.87%. The appreciation return for the period was comprised of 85 basis points related to property valuation and approximated 30 basis points related to the valuation of the Fund's debt. The portfolio continues to remain well leased with an overall leasing level of 95% at quarter end. Year over year same-property net operating income decreased 1.3% through the third quarter of 2018 reflecting downtime related to recent leasing activity. The Fund anticipates paying a dividend in October of around $12.57 per share, providing investors with additional yield. At quarter end the portfolio's allocation is well diversified across the apartment (22% allocation), office (26%), retail (20%), self-storage (21%) and industrial (11%) segments of the market. The portfolio is also well diversified across the U.S. geographical landscape allocating 34% of the portfolio to the Western region of the U.S., 23% to the Southern region, 18% to the Midwest region and 25% to the Eastern region of the country. Three acquisitions were completed during the quarter at a total equity cost of $367.9 million at HART's share. The new investments included two student housing assets in Atlanta, Georgia and Minneapolis, Minnesota, and a self-storage portfolio with properties located across the U.S. The Heitman portfolio is currently outperforming its benchmark over all measured periods greater than one-year including since inception (08/10).

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

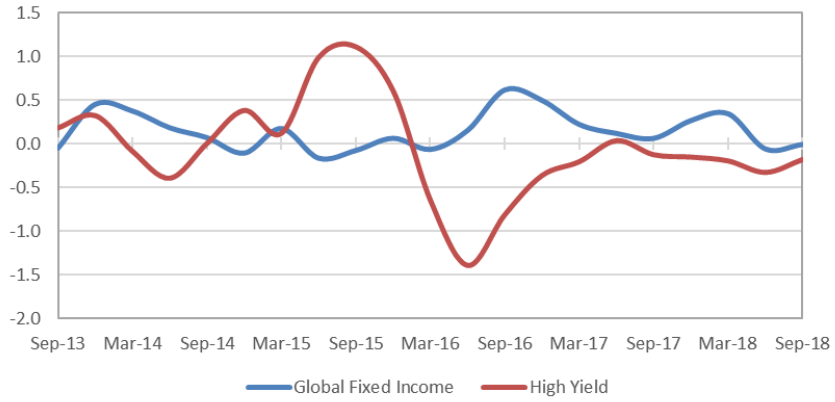
- Invesco manages two of the Fund's three direct core real estate portfolios. The Invesco Core Real Estate-USA portfolio returned 2.59% (net of fees) during the third quarter, leading its benchmark (NCREIF Open End Diversified Core Index) which returned 1.87%. The total return comprised of 0.95% income and 1.62% appreciation. The Fund produced gross unlevered property appreciation of 129 bps on the total portfolio for the quarter, driven primarily by the office sector Total Portfolio percentage leased increased 20 bps from the prior quarter to 93.3% primarily as a result of continued leasing within assets recently migrated to Core. Core Portfolio net operating income remains on track through the third quarter to deliver 12.6% growth for 2018. During the quarter, the Fund closed on six acquisitions for a total gross purchase price of $165.3M: an industrial property in the Inland Empire, an office property in Cambridge, MA (Boston MSA), land for the future development of an office property in Portland, OR and three self-storage assets located in Campbell, CA (San Jose MSA), Austin, TX and Raleigh, NC. The Fund recast its unsecured credit facility for a new four year term (maturing September 2022) and increased its total capacity from $500 million to $550 million ($150 million term note and $400 million revolver). The Invesco portfolio is currently outperforming its benchmark over all measured 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)	**$ 476.0**	**0.07**	**-1.17**	**-0.47**	**2.28**	**2.98**	**4.77**
Global Fixed Income (Net)		**0.01**	**-1.33**	**-0.68**	**2.06**	**2.79**	**4.57**
Bloomberg Aggregate Bond Index		0.02	-1.60	-1.22	1.31	2.16	3.77
Net of Fee Value Added vs Benchmark		*-0.01*	*0.27*	*0.54*	*0.75*	*0.63*	*0.80*
High Yield (Gross)	**$ 362.9**	**2.32**	**2.36**	**2.85**	**7.32**	**5.47**	**8.32**
High Yield (Net)		**2.19**	**1.98**	**2.35**	**6.80**	**4.97**	**7.81**
Custom Benchmark [1]		2.36	2.66	3.18	8.04	5.17	9.02
Net of Fee Value Added vs Benchmark		*-0.17*	*-0.68*	*-0.83*	*-1.24*	*-0.20*	*-1.21*
Bloomberg Aggregate		0.02	-1.60	-1.22	1.31	2.16	3.77
Citigroup High Yield Cash Pay		2.36	2.66	3.18	8.04	5.17	9.02
BofA ML High Yield Master II		2.42	2.50	2.90	8.18	5.54	9.37

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)	**$ 204.5**	**0.32**	**-0.82**	**-0.09**	**2.72**	**3.41**	**4.57**	**May-07**
Securian Asset Mgmt. (Net)		**0.28**	**-0.95**	**-0.27**	**2.54**	**3.24**	**4.39**	**May-07**
Bloomberg Aggregate + 0.5%		0.14	-1.22	-0.72	1.81	2.66	4.44	**May-07**
Net of Fee Value Added vs Objective		*0.14*	*0.27*	*0.45*	*0.73*	*0.58*	*-0.05*	
Bloomberg Aggregate		0.02	-1.60	-1.22	1.31	2.16	3.94	**May-07**
Net of Fee Value Added vs Benchmark		*0.26*	*0.65*	*0.95*	*1.23*	*1.08*	*0.45*	
Information Ratio				**1.79**	**2.30**	**2.22**		
Sharpe Ratio				**-0.98**	**0.70**	**1.07**		
Aberdeen (Gross)	**$ 203.0**	**-0.16**	**-1.87**	**-1.25**	**1.85**	**2.45**	**4.58**	**Apr-07**
Aberdeen (Net)		**-0.22**	**-2.04**	**-1.48**	**1.61**	**2.27**	**4.37**	**Apr-07**
Bloomberg Aggregate + 0.5%		0.14	-1.22	-0.72	1.81	2.66	4.28	Apr-07
Net of Fee Value Added vs Objective		*-0.36*	*-0.82*	*-0.76*	*-0.20*	*-0.39*	*0.09*	
Bloomberg Aggregate		0.02	-1.60	-1.22	1.31	2.16	3.78	Apr-07
Net of Fee Value Added vs Benchmark		*-0.24*	*-0.44*	*-0.26*	*0.30*	*0.11*	*0.59*	
Information Ratio				**-0.26**	**0.30**	**0.13**		
Sharpe Ratio				**-1.73**	**0.29**	**0.67**		

[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)	**$ 68.4**	**-0.02**	**-0.09**	**0.79**	**2.26**	**-.-**	**3.12**	**Oct-13**
Garcia Hamilton (Net)		**-0.08**	**-0.29**	**0.53**	**2.00**	**-.-**	**2.87**	**Oct-13**
Bloomberg Aggregate + 0.5%		0.14	-1.22	-0.72	1.81	-.-	2.53	Oct-13
Net of Fee Value Added vs Objective		*-0.22*	*0.93*	*1.25*	*0.19*		*0.34*	
Bloomberg Aggregate		0.02	-1.60	-1.22	1.31	-.-	2.03	Oct-13
Net of Fee Value Added vs Benchmark		*-0.10*	*1.31*	*1.75*	*0.69*		*0.84*	
Information Ratio				**2.36**	**0.68**	**-.-**		
Sharpe Ratio				**-0.59**	**0.48**	**-.-**		

- The Fund's global fixed income segment returned 0.01% (net of fees) during the third quarter of 2018, performing in-line with the Bloomberg Aggregate Bond Index, which returned 0.02%. 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, one (Securian) of the three portfolios managed to outperform the Bloomberg Aggregate Index. Securian and Aberdeen (both with early 2007 inception dates) manage roughly the same level of assets for the Fund, the newer Garcia Hamilton portfolio (late 2013 inception) 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. The global fixed income composite is outperforming against the Bloomberg Aggregate over the one-, 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 third quarter, the Securian portfolio returned 0.28% (net of fees), outperforming its benchmark (Bloomberg Aggregate) which returned 0.02% for the quarter. The portfolio's overweight allocations to the utility and financial institutions sectors were the biggest contributors to performance versus the benchmark during the quarter. In particular the portfolio benefited from its overweight positions in domestic banks and electric and natural gas utility companies. The portfolio's overweight allocation to the debt of local authorities also contributed to performance. Meanwhile, results from security selection decisions were negative during the quarter. Positions in longer-dated local authorities and short-dated utilities performed poorly relative to the index. Positively, the portfolio benefited from positions in the energy sector, particularly in the midstream space, as well as in longer-dated financial companies. The portfolio's duration was less than that of the benchmark throughout the quarter and this produced positive results as rates rose. Overall exposure to corporate bonds fell slightly during the quarter, most notably in industrials and utilities. In the industrials sector, management sold positions in energy and non-cyclicals. Management also sold positions in utilities on relative value concerns and added to exposures in financials, particularly in the banking sector. The Fund remains overweight financials, utilities and to a lesser extent, industrials. 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 third quarter the Aberdeen portfolio returned -0.22% (net of fees), underperforming its benchmark the Bloomberg Aggregate Index which returned 0.02% during the period. The strategy's international exposure to both bonds and currencies significantly hampered performance for the quarter. The strategy's investments in the commodity market segment were the main source of its underperformance, as local currency government bonds in South Africa and Russia experienced substantial declines. Local currency Norwegian government bonds lagged comparable-duration U.S. Treasuries, while the benefits from the currency exposure in Chile was not enough to cushion losses from the Colombian peso and Australian dollar. The strategy's investments in its U.S. core market contributed to the performance relative to the benchmark index for the quarter. Sector allocation decisions produced significant positive results, particularly from underweight allocations to U.S. Treasuries and agency mortgage-backed securities (MBS), with concurrent overweights to corporate bonds and commercial mortgage-backed securities (CMBS). Overall security selection also generated positive alpha, with corporate bonds posting strong performance largely from banks and energy names, which was augmented by gains from CMBS down in capital structure plays in high- quality loans and an emphasis on short-maturity asset-backed securities (ABS). Despite mild underperformance in the past two periods, the Aberdeen portfolio is outperforming against its benchmark over the three- and five-year periods, as well as since inception (06/07).

Garcia Hamilton (Core Fixed Income)

- Garcia Hamilton is the Fund's third global fixed income manager. During the third quarter, the portfolio returned -0.08% (net of fees), underperforming its benchmark index (Bloomberg Aggregate Index) which returned 0.02%. Unlike the two other strategies in the Fund's global fixed income segment (Securian and Aberdeen), the Garcia Hamilton portfolio has typically maintained exposure to government and agency bonds (predominantly Treasuries) at a level that is greater than or equal to the benchmark. As of quarter end, the account held approximately 38% in the corporate sector versus the index weighting of 25%. In the agency and agency MBS sectors, the account held approximately 7% and 10% versus the benchmark weightings of 6% and 28%, respectively. Although the portfolio remains shorter in duration relative to the benchmark index, management utilized the rise in interest rates in September as an opportunity to increase duration modestly to reduce this underweight. However, the team still believes rates have the bias to move higher from here as the market is underestimating the impact of future Fed rate hikes and quantitative tightening. Additionally the team cited that spreads offer little value at these levels and have the bias to widen from here. Thus maintaining an underweight to fixed rate spread products. The Garcia Hamilton portfolio is currently outperforming against its benchmark over the one-year and three-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)	**$ 179.9**	**2.32**	**2.09**	**2.33**	**7.44**	**5.00**	**7.31**	**Dec-96**
Oaktree Capital Management (Net)		**2.17**	**1.69**	**1.81**	**6.90**	**4.48**	**6.79**	**Dec-96**
Performance Objective		2.61	3.41	4.18	9.04	6.17	7.94	Dec-96
Net of Fee Value Added vs Objective		*-0.44*	*-1.72*	*-2.37*	*-2.14*	*-1.69*	*-1.15*	
Custom Benchmark		2.36	2.66	3.18	8.04	5.17	6.94	Dec-96
Net of Fee Value Added vs Benchmark		*-0.19*	*-0.97*	*-1.37*	*-1.14*	*-0.69*	*-0.15*	
Information Ratio				**-3.46**	**-1.39**	**-0.95**		
Sharpe Ratio				**0.11**	**1.25**	**0.80**		
BlackRock High Yield (Gross)	**$ 183.0**	**2.33**	**2.63**	**3.37**	**7.20**	**5.48**	**6.91**	**Sep-06**
BlackRock High Yield (Net)		**2.20**	**2.27**	**2.90**	**6.71**	**4.98**	**6.43**	**Sep-06**
Citigroup High Yield Cash Pay + 1%		2.61	3.41	4.18	9.04	6.17	8.06	Sep-06
Net of Fee Value Added vs Objective		*-0.41*	*-1.14*	*-1.28*	*-2.33*	*-1.19*	*-1.63*	
Citigroup High Yield Cash Pay		2.36	2.66	3.18	8.04	5.17	7.06	Sep-06
Net of Fee Value Added vs Benchmark		*-0.16*	*-0.39*	*-0.28*	*-1.33*	*-0.19*	*-0.63*	
Information Ratio				**-0.77**	**-0.99**	**-0.10**		
Sharpe Ratio				**0.64**	**1.42**	**1.01**		
Credit Opportunities								
Neuberger Berman (Gross)	**$ 184.5**	**2.03**	**1.29**	**2.77**	**-.-**	**-.-**	**8.17**	**Jan-16**
Neuberger Berman (Net)		**1.99**	**1.05**	**2.42**	**-.-**	**-.-**	**7.92**	**Jan-16**
Custom Benchmark + 1%		2.45	1.89	3.05	-.-	-.-	9.12	Jan-16
Net of Fee Value Added vs Objective		*-0.46*	*-0.84*	*-0.63*			*-1.20*	
Custom Benchmark		2.20	1.14	2.05	-.-	-.-	8.12	Jan-16
Net of Fee Value Added vs Benchmark		*-0.21*	*-0.09*	*0.37*			*-0.20*	
Information Ratio				**0.33**	**-.-**	**-.-**		
Sharpe Ratio				**0.30**	**-.-**	**-.-**		

- The high yield composite returned 2.19% (net of fees) during the third quarter, underperforming against the Citigroup High Yield Cash Pay Index, which returned 2.36%. The composite is currently split equally between the two actively-managed strategies. During the period, neither of the Fund's high yield exposures managed to keep pace with the benchmark. The high yield composite is currently underperforming its benchmark over extended time periods greater than one year including since inception (03/97).

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 2.17% (net of fees) during the third quarter, underperforming its benchmark (Citigroup High Yield Cash Pay) which returned 2.36%. During the period Oaktree benefited from good credit selection in the telecom sector, but consistent with their disciplined approach, the portfolio didn't hold enough risky higher-spread securities to gain an edge. After a lackluster first half, high yield bonds were back in favor in the third quarter, benefiting from solid credit fundamentals and positive investor sentiment. The dearth of new issuance, which forced yield-starved investors to bid up prices in the secondary market, also helped lift

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

returns. In a pattern that's held all year, investors embraced the riskiest segment of the market, underscored by the strong performance of CCC-rated bonds. For the quarter, the bottom tier returned 3.4%,trouncing the BB and B-rated tier by over 1% and extending CCCs' year-to-date performance advantage over their higher-rated counterparts to a whopping 5%. In the intermediate term, the team plans to maintain their stance, emphasizing caution over aggressiveness. 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 third quarter, the BlackRock portfolio returned 2.20%, underperforming its benchmark (Citigroup High Yield Cash Pay) which returned 2.36%. The portfolio underperformed the benchmark during the period as a result of unfavorable individual sector/issue selection and positioning relative to the benchmark. In a continuation of previous periods, lower quality issues (CCC) within the high yield space outperformed higher rated issues. Despite exhibiting a slightly lower credit quality (B) relative to the benchmark (BB), the portfolio did not hold enough CCC issues to keep pace with the benchmark. The portfolio maintains a more defensive posture relative to the benchmark, similar to that of its companion strategy managed by Oaktree. The portfolio is exhibiting a slightly higher current yield relative to the benchmark while the effective duration of the portfolio sits moderately above that of the benchmark, pointing to increase price sensitivity to sudden changes in the prevailing interest rates. The BlackRock portfolio is currently underperforming over the one-, three- and five-year periods as well as since inception period (-63 bps) (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 second year of performance the portfolio returned 1.99% for the period, 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 2.20%. Sector positioning within U.S. high yield credit, loans, and emerging markets were the main drivers of this period's relative underperformance. Meanwhile, security selection was also modestly negative overall creating an additional drag to performance relative to the benchmark. 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 one-year period but is slightly underperforming its custom benchmark since inception (-20 bps) (01/16).

Private Equity Overview

Private Equity Composite

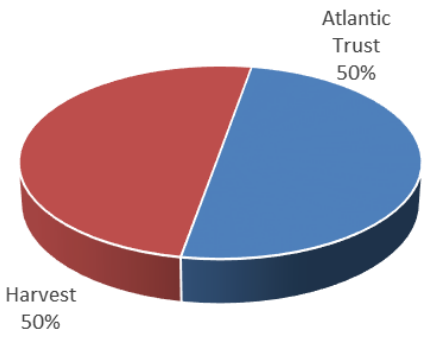
	Total Commitment	Cumulative Capital Called		Cumulative Distributions	Capital Balance	Multiple	Calculated IRR
Hamilton Lane Fund VII LP (Series A)	30,000,000	25,297,247	84.3%	18,391,835	19,233,689	1.49	10.1%
Hamilton Lane Fund VII LP (Series B)	20,000,000	17,695,467	88.5%	6,792,033	12,910,345	1.11	2.6%
Hamilton Lane Fund VII LP (Total)	*50,000,000*	*42,992,714*	86.0%	*25,183,868*	*32,144,034*	1.33	7.1%
Hamilton Lane Secondary Fund II LP	25,000,000	22,848,181	91.4%	26,183,409	2,188,704	1.24	8.8%
Hamilton Lane Secondary Fund III LP	30,000,000	17,762,479	59.2%	14,434,456	14,092,664	1.61	21.6%
Hamilton Lane Secondary Fund IV LP	30,000,000	7,624,815	25.4%	204,691	12,092,201	1.61	-
Hamilton Lane Fund VIII LP (Global)	30,000,000	16,078,923	53.6%	2,568,375	21,487,075	1.50	12.9%
GCM Grosvenor - Partnership, L.P.	75,000,000	79,460,373	105.9%	73,074,602	53,876,000	1.60	15.6%
GCM Grosvenor - Partnership II, L.P. (2014)	60,000,000	51,764,471	86.3%	14,722,707	45,025,032	1.15	7.4%
GCM Grosvenor - Partnership II, L.P. (2015)	20,000,000	21,215,456	106.1%	1,146,409	21,988,793	1.09	7.9%
GCM Grosvenor - Partnership II, L.P. (2017)	30,000,000	1,481,766	4.9%	-	1,505,376	1.02	-
Fairview Capital III *	40,000,000	20,164,365	50.4%	1,630,828	20,777,530	1.11	8.8%
Total Private Equity Program	**390,000,000**	**281,393,543**	**72.2%**	**159,149,345**	**215,739,671**	**1.33**	**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.

- GCM capital balances obtained from third quarter manager PCAP statements. Values may differ from custodian. Factors may not sum to total.

MLP Overview

MLP Structure



MLP Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total MLPs (Gross)	**$ 261.3**	**6.08**	**10.67**	**10.48**	**7.03**	**2.55**	**-.-**
Total MLPs (Net)		**5.92**	**10.14**	**9.77**	**6.33**	**1.89**	**-.-**
Alerian MLP Index		6.57	5.90	4.89	4.43	-2.72	-.-
Net of Fee Value Added vs Index		*-0.65*	*4.24*	*4.88*	*1.90*	*4.61*	
Alerian MLP Index		6.57	5.90	4.89	4.43	-2.72	9.18
S&P MLP Index		6.39	7.46	7.15	4.90	-1.73	9.97
Bloomberg Commodities Index		-2.02	-2.03	2.59	-0.11	-7.18	-6.24

Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
MLPs								
Harvest Fund Advisors (Gross)	**$ 130.7**	**6.35**	**11.49**	**11.31**	**6.76**	**2.32**	**7.12**	
Harvest Fund Advisors (Net)		**6.17**	**10.89**	**10.50**	**5.98**	**1.61**	**6.39**	**Dec-11**
Alerian MLP Index + 1.5%		6.94	7.02	6.39	5.93	-1.22	3.01	Dec-11
Net of Fee Value Added vs Objective		*-0.77*	*3.87*	*4.11*	*0.05*	*2.83*	*3.38*	
Alerian MLP Index		6.57	5.90	4.89	4.43	-2.72	1.51	Dec-11
Net of Fee Value Added vs Benchmark		*-0.40*	*4.99*	*5.61*	*1.55*	*4.33*	*4.88*	
Information Ratio				**2.04**	**0.51**	**1.05**		
Sharpe Ratio				**0.44**	**0.27**	**0.06**		
Atlantic Trust CIBC (Gross)	**$ 130.6**	**5.81**	**9.86**	**9.66**	**7.29**	**2.06**	**7.90**	
Atlantic Trust CIBC (Net)		**5.67**	**9.41**	**9.05**	**6.69**	**1.49**	**7.31**	**Dec-11**
Alerian MLP Index + 1.5%		6.94	7.02	6.39	5.93	-1.22	3.01	Dec-11
Net of Fee Value Added vs Objective		*-1.27*	*2.39*	*2.66*	*0.76*	*2.71*	*4.30*	
Alerian MLP Index		6.57	5.90	4.89	4.43	-2.72	1.51	Dec-11
Net of Fee Value Added vs Benchmark		*-0.90*	*3.51*	*4.16*	*2.26*	*4.21*	*5.80*	
Information Ratio				**1.36**	**0.59**	**1.05**		
Sharpe Ratio				**0.37**	**0.29**	**0.05**		

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. The midstream energy sector continued its positive performance for the third quarter of 2018. For the period, the market cap-weighted Alerian MLP Index produced a +6.6% total return, while the equal-weighted Cushing 30 MLP Index produced a +4.6% total return. This marks the first time since the first quarter of 2017 that these two midstream indexes each posted consecutive positive quarterly returns.

Harvest Fund Advisors (MLPs)

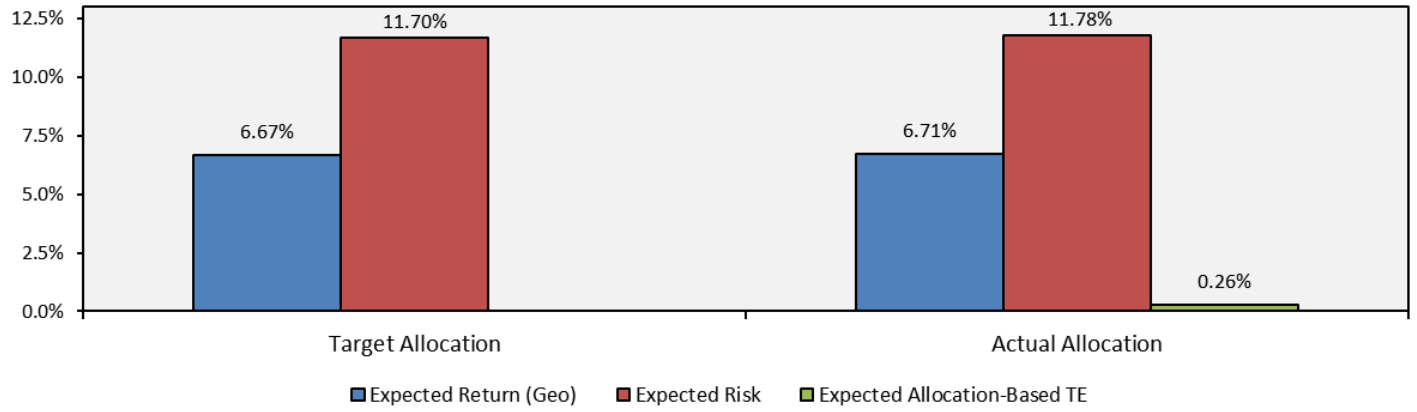
- Harvest Fund Advisors manages one of the Fund's two MLP portfolios. During the third quarter the Harvest portfolio returned 6.17% (net of fees), underperforming its benchmark (Alerian MLP Index) which returned 6.57%. Since the Harvest portfolio typically has approximately anywhere from 96% to 100% of its value invested in energy sector MLPs, sector weighting has not historically been a meaningful source of added or detracted value. However, given the continued unpredictability in the energy market over the past few years coupled with high degrees of performance dispersion across different segments of the market, sector weighting is playing an increasingly important role. As of quarter end the portfolio maintained a small out-of-benchmark position in the materials (less than 1% weight) segment of the market. The ongoing wide dispersion in performance among different midstream companies is at least partially driven by balance sheet strength – those carrying lest debt burden have been able to maintain dividend growth investors expect, which in turn helps to somewhat buoy the market price of the stock. During the period the portfolio's energy holdings delivered performance below that of the benchmark leading to underperformance relative to the benchmark in Q3. The portfolio has a lower current yield along with the expectation of lower dividend growth over the five-year period relative to the benchmark. 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)

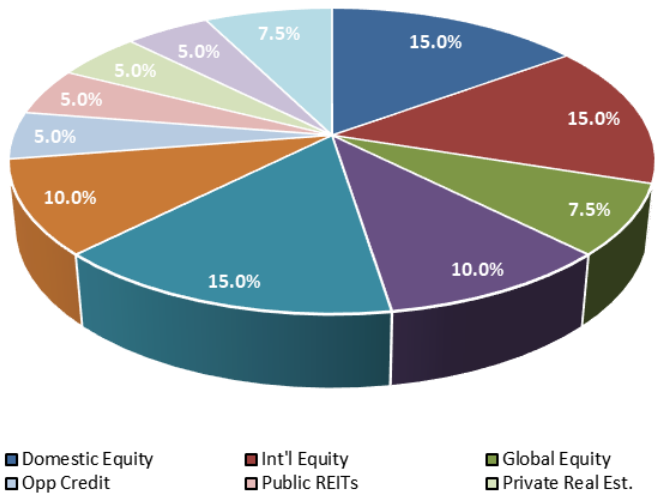
- Atlantic Trust CIBC (formerly Invesco) manages the Fund's other MLP portfolio. During the third quarter, the Atlantic Trust portfolio returned 5.67% (net of fees), underperforming its benchmark (Alerian MLP Index) which returned 6.57%. It is important to note that the Atlantic Trust portfolio (containing 26 stocks) is more concentrated than the Harvest portfolio (34 stocks) as well as the benchmark (55 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 underperformance during the period was primarily as a result of unfavorable stock selection, which was confined to the energy segment (this is of course the dominant segment in the market space, comprising over 96% of the benchmark's total asset value). The portfolio's energy-focused MLP stocks generated a 5.83% return for the period underperforming the respective benchmark holdings which returned 6.82%. This was driven at least in part by the fact that a few of the portfolio's larger holdings were among its worst performers during the period. Most notably, Semgroup Corporation (2.5% weight), returned -11.51% 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 losses it experienced elsewhere in the portfolio. The portfolio has 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

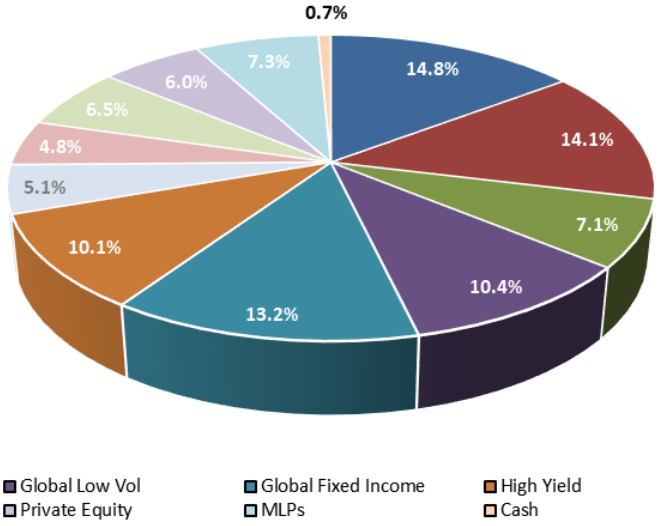
Expected Return and Risk



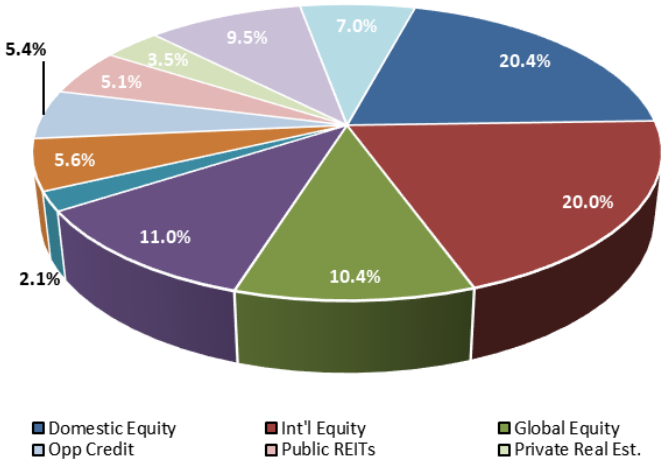
Target Asset Allocation



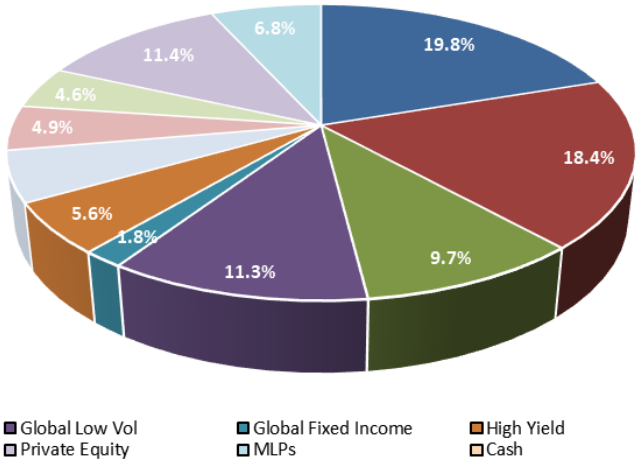
Actual Asset Allocation



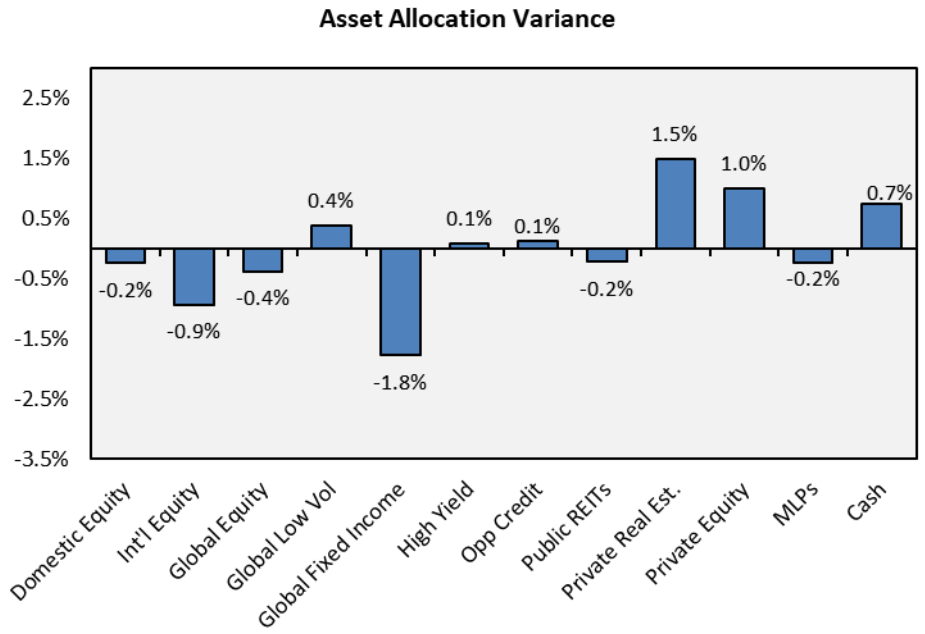
Contribution to Total Risk - Target Allocation

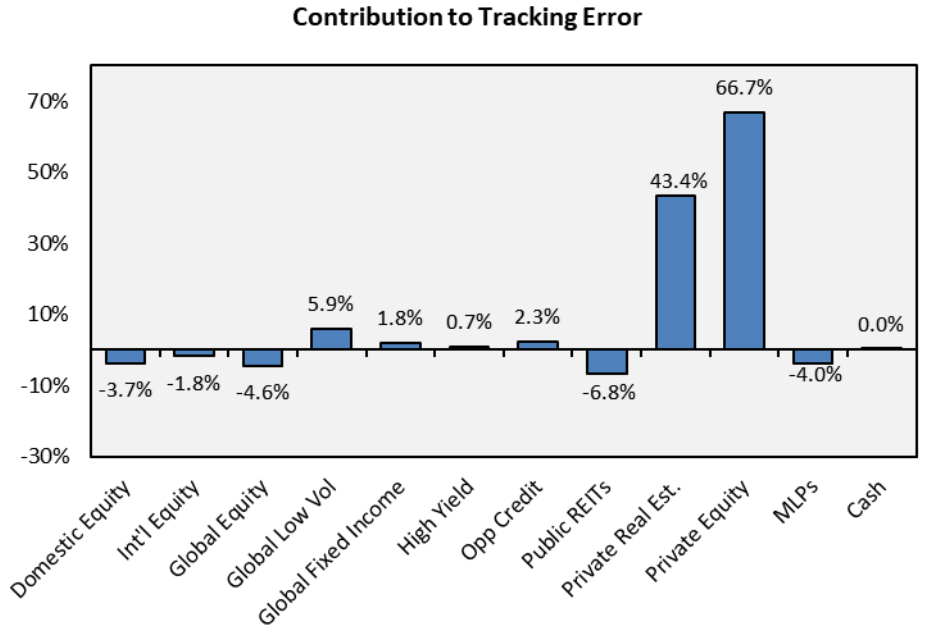


Contribution to Total Risk - Actual Allocation



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 0.26% (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	9.02	9.37	9.67	14.44
Standard Deviation (Index)	9.11	9.18	9.55	14.40
Sharpe Ratio	1.82	1.81	1.42	0.83
Sharpe Ratio (Index)	1.77	1.78	1.40	0.80
Excess Risk	1.01	1.29	1.12	1.10
Information Ratio	0.27	0.41	0.31	0.35

Systematic (Small Core)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	10.33	12.50	12.74	19.72
Standard Deviation (Index)	9.36	13.11	13.47	19.39
Sharpe Ratio	0.99	1.44	1.03	0.68
Sharpe Ratio (Index)	1.44	1.23	0.78	0.55
Excess Risk	3.86	3.84	3.83	3.59
Information Ratio	-0.73	0.41	0.61	0.69

Channing Capital (Small Value)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	7.96	14.07	*n/a*	*n/a*
Standard Deviation (Index)	9.47	13.58	*n/a*	*n/a*
Sharpe Ratio	0.85	0.92	*n/a*	*n/a*
Sharpe Ratio (Index)	0.80	1.12	*n/a*	*n/a*
Excess Risk	4.57	4.05	*n/a*	*n/a*
Information Ratio	-0.18	-0.48	*n/a*	*n/a*

Non-U.S. Equity				
Acadian (Int'l Small Cap)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	10.50	11.57	11.31	18.94
Standard Deviation (Index)	8.64	10.83	10.74	18.17
Sharpe Ratio	-0.19	1.19	0.64	0.62
Sharpe Ratio (Index)	0.03	0.95	0.52	0.43
Excess Risk	4.35	3.70	3.49	3.55
Information Ratio	-0.51	0.84	0.46	1.00

AQR (Int'l Enhanced Index)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	10.77	10.92	10.81	18.07
Standard Deviation (Index)	9.74	10.88	11.20	17.34
Sharpe Ratio	-0.19	0.87	0.42	0.32
Sharpe Ratio (Index)	0.02	0.83	0.32	0.25
Excess Risk	2.52	2.28	2.19	2.34
Information Ratio	-0.86	0.16	0.43	0.56

Redwood (Small Growth)(U.S.)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	12.70	n/a	n/a	n/a
Standard Deviation (Index)	9.95	n/a	n/a	n/a
Sharpe Ratio	1.00	n/a	n/a	n/a
Sharpe Ratio (Index)	1.93	n/a	n/a	n/a
Excess Risk	6.00	n/a	n/a	n/a
Information Ratio	-0.90	n/a	n/a	n/a

Global Equity				
Wellington (Global Equity)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	8.72	10.30	10.36	*n/a*
Standard Deviation (Index)	8.61	9.37	9.78	*n/a*
Sharpe Ratio	0.95	1.08	0.91	*n/a*
Sharpe Ratio (Index)	0.94	1.33	0.83	*n/a*
Excess Risk	3.02	2.96	3.2	*n/a*
Information Ratio	0.08	-0.39	0.37	*n/a*

Acadian (Global Low Volatility)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	7.58	8.10	*n/a*	*n/a*
Standard Deviation (Index)	6.59	7.58	*n/a*	*n/a*
Sharpe Ratio	0.90	1.35	*n/a*	*n/a*
Sharpe Ratio (Index)	1.32	1.46	*n/a*	*n/a*
Excess Risk	2.04	2.65	*n/a*	*n/a*
Information Ratio	-0.86	-0.05	*n/a*	*n/a*

Fixed Income (Core)				
Securian (Core Fixed Income)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	1.86	2.42	2.54	3.23
Standard Deviation (Index)	2.25	2.66	2.70	3.24
Sharpe Ratio	-0.98	0.70	1.07	1.40
Sharpe Ratio (Index)	-1.22	0.18	0.61	1.06
Excess Risk	0.54	0.53	0.48	1.58
Information Ratio	1.79	2.30	2.22	0.67

Aberdeen (Core Fixed Income)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	1.74	2.61	2.62	3.66
Standard Deviation (Index)	2.25	2.66	2.70	3.24
Sharpe Ratio	-1.73	0.29	0.67	1.13
Sharpe Ratio (Index)	-1.22	0.18	0.61	1.06
Excess Risk	1.05	0.96	0.81	1.37
Information Ratio	-0.26	0.30	0.13	0.51

Garcia Hamilton (Core Fixed Income)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	1.75	2.39	*n/a*	*n/a*
Standard Deviation (Index)	2.25	2.66	*n/a*	*n/a*
Sharpe Ratio	-0.59	0.48	*n/a*	*n/a*
Sharpe Ratio (Index)	-1.22	0.18	*n/a*	*n/a*
Excess Risk	0.75	0.99	*n/a*	*n/a*
Information Ratio	2.36	0.68	*n/a*	*n/a*

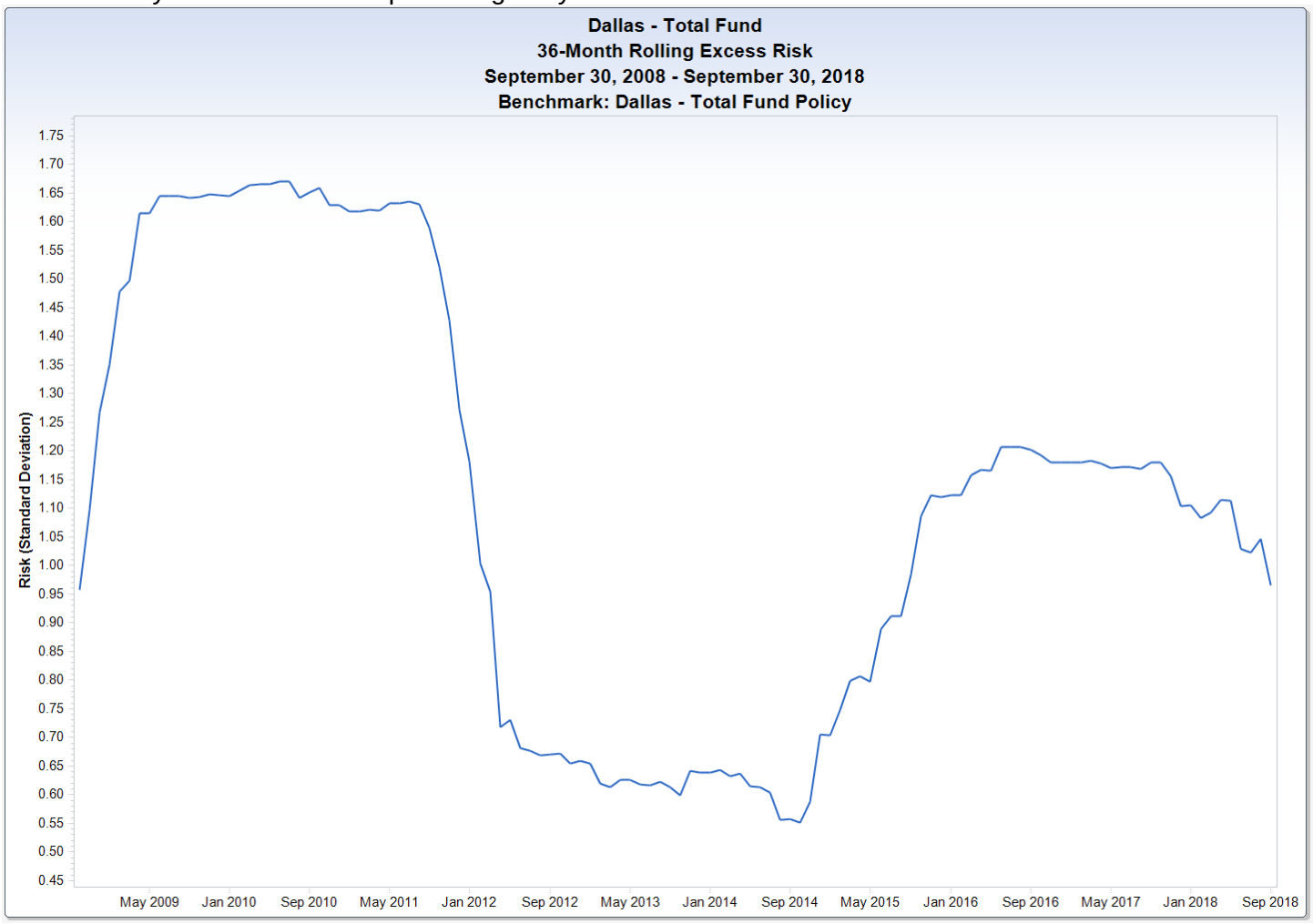
High Yield Fixed Income				
BlackRock (High Yield)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	2.03	4.11	4.40	8.20
Standard Deviation (Index)	2.06	5.14	5.18	9.86
Sharpe Ratio	0.64	1.42	1.01	0.90
Sharpe Ratio (Index)	0.76	1.39	0.89	0.88
Excess Risk	0.36	1.25	1.67	2.66
Information Ratio	-0.77	-0.99	-0.10	-0.44

Oaktree (High Yield)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	2.04	4.82	4.92	8.58
Standard Deviation (Index)	2.06	5.14	5.18	9.86
Sharpe Ratio	0.11	1.25	0.80	0.85
Sharpe Ratio (Index)	0.76	1.39	0.89	0.88
Excess Risk	0.38	0.76	0.69	2.40
Information Ratio	-3.46	-1.39	-0.95	-0.52

Master Limited Partnerships				
Harvest (MLP)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	19.79	18.91	18.45	*n/a*
Standard Deviation (Index)	19.67	18.46	18.27	*n/a*
Sharpe Ratio	0.44	0.27	0.06	*n/a*
Sharpe Ratio (Index)	0.17	0.19	-0.18	*n/a*
Excess Risk	2.62	2.92	4.24	*n/a*
Information Ratio	2.04	0.51	1.05	*n/a*

Atlantic Trust CIBC (MLP)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	19.73	19.81	19.03	*n/a*
Standard Deviation (Index)	19.67	18.46	18.27	*n/a*
Sharpe Ratio	0.37	0.29	0.05	*n/a*
Sharpe Ratio (Index)	0.17	0.19	-0.18	*n/a*
Excess Risk	2.92	3.66	4.14	*n/a*
Information Ratio	1.36	0.59	1.05	*n/a*

Real Estate Investment Trusts				
Adelante (REIT)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	11.12	11.76	12.67	24.00
Standard Deviation (Index)	12.63	12.55	13.42	25.62
Sharpe Ratio	0.13	0.42	0.68	0.29
Sharpe Ratio (Index)	0.20	0.53	0.67	0.28
Excess Risk	1.94	1.87	1.78	2.74
Information Ratio	-0.50	-0.84	-0.20	-0.09

Neuberger Berman (Credit Opps)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	2.78	*n/a*	*n/a*	*n/a*
Standard Deviation (Index)	2.18	*n/a*	*n/a*	*n/a*
Sharpe Ratio	0.30	*n/a*	*n/a*	*n/a*
Sharpe Ratio (Index)	0.21	*n/a*	*n/a*	*n/a*
Excess Risk	1.11	*n/a*	*n/a*	*n/a*
Information Ratio	0.33	*n/a*	*n/a*	*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: