FUND EVALUATION REPORT

Plymouth County Retirement Association

Investment Review
December 19, 2018

MEKETA INVESTMENT GROUP

BOSTON MASSACHUSETTS | CHICAGO ILLINOIS | MIAMI FLORIDA | PORTLAND OREGON | SAN DIEGO CALIFORNIA | LONDON UNITED KINGDOM

www.meketagroup.com

1. **Current Market Update**
2. **Interim Update as of November 30, 2018**
3. **Global Unconstrained Fixed Income RFP Respondent Review**
4. **Short Duration Fixed Income Manager Finalist Overview**
5. **Disclaimer, Glossary, and Notes**

Current Market Update

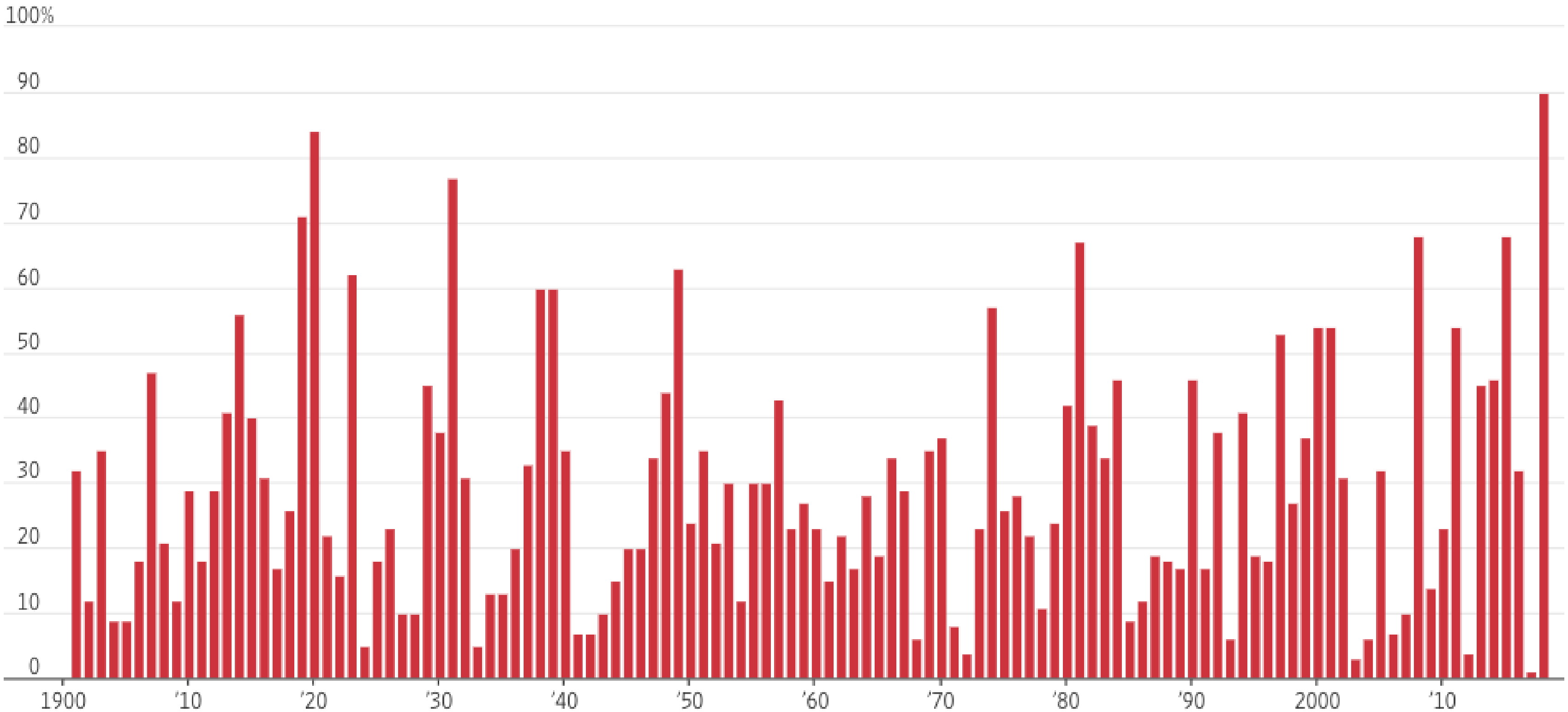
Recent Market Conditions

- The recent market volatility has reminded us that when markets are priced for perfection, it does not take much to tip the scales.
  - While many in the marketplace have been expecting a pullback, it is always difficult to predict what will cause it.
- The recent volatility was not triggered by an “obvious” event. The media has largely reported that the decline was driven by investors coming to terms with rising rates, but this is difficult to say for sure.
  - Along with the normalization of interest rates, slowing global growth and increased trade tensions have also been on investors’ minds.
- Despite the uncertain cause of the recent market pullback, we feel that given its magnitude and timing (during a period of rising rates and with geopolitical tensions high) it is worth noting.
- All eyes will be on the markets over the next several months, to see whether this is the beginning of a sustained drawdown, or simply a short correction.

It's Been a Rough Year with Few Places to Hide

Under Pressure

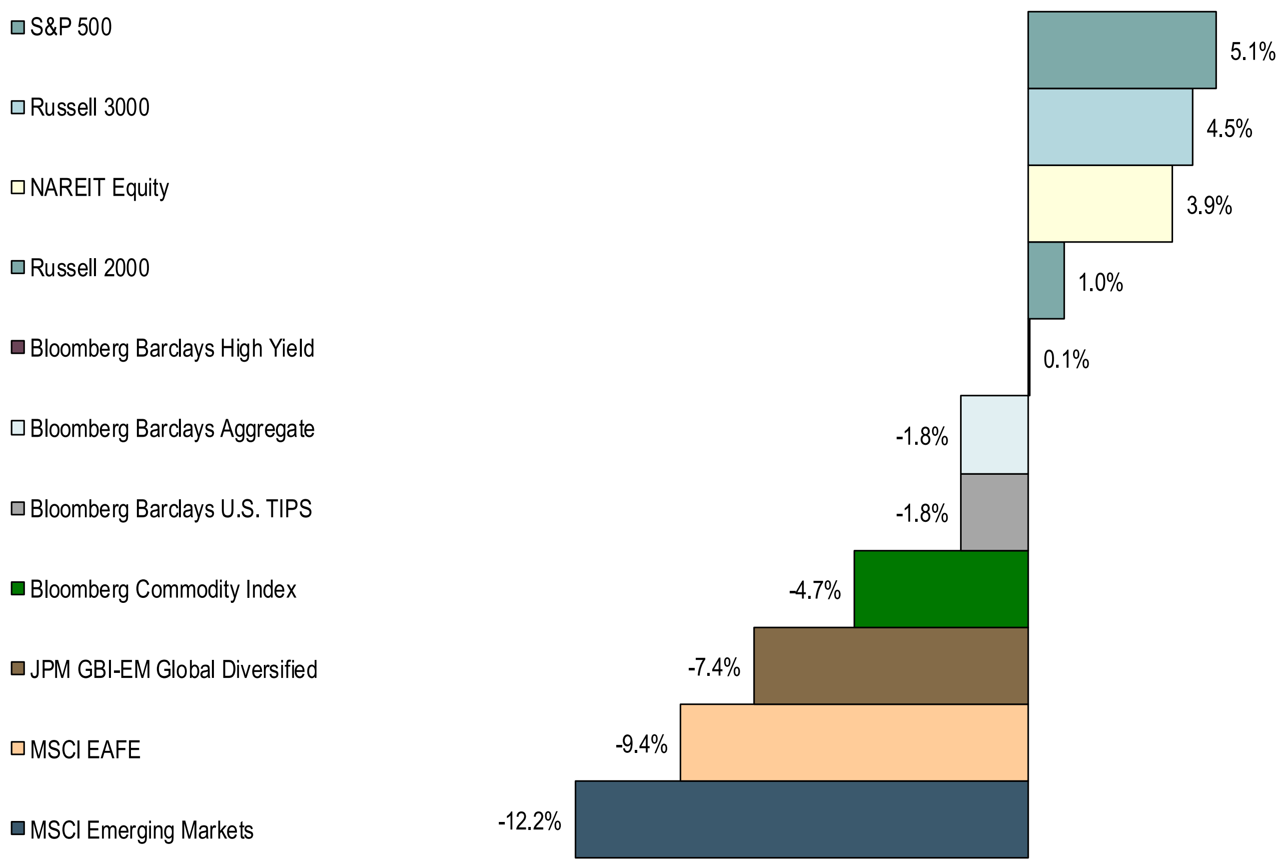
A record share of asset classes have posted negative total returns this year, according to Deutsche Bank data going back to 1901.



Note: Returns are in U.S. dollars. Data for 2018 are as of mid-November.

Sources: Deutsche Bank; Bloomberg Finance LP; GFD

The World Markets[1]
YTD Through November 2018



[1] Source: InvestorForce.

Index Returns[1]

	November 2018 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Domestic Equity						
Russell 3000	2.0	5.1	6.3	12.2	11.1	14.3
Russell 1000	2.0	4.8	5.9	11.9	10.9	14.6
Russell 1000 Growth	1.1	7.8	8.6	14.0	13.0	16.5
Russell 1000 Value	3.0	1.5	3.0	9.8	8.7	12.5
Russell MidCap	2.5	1.0	1.9	9.8	9.1	15.7
Russell MidCap Growth	2.5	4.8	5.3	11.2	10.2	16.6
Russell MidCap Value	2.4	-2.0	-0.8	8.9	8.4	14.8
Russell 2000	1.6	1.0	0.6	10.1	7.5	14.4
Russell 2000 Growth	1.6	2.7	2.8	10.0	8.2	15.6
Russell 2000 Value	1.6	-0.9	-1.8	10.1	6.7	12.5
Foreign Equity						
MSCI ACWI (ex. U.S.)	0.9	-10.6	-8.5	5.5	2.0	8.1
MSCI EAFE	-0.1	-9.4	-7.9	4.1	1.8	7.5
MSCI EAFE (Local Currency)	-0.2	-5.5	-4.3	3.7	5.4	8.3
MSCI EAFE Small Cap	-0.7	-12.2	-9.9	6.3	4.9	12.0
MSCI Emerging Markets	4.1	-12.2	-9.1	9.4	1.9	9.1
MSCI Emerging Markets (Local Currency)	3.0	-7.8	-5.4	9.3	5.3	10.4
Fixed Income						
Bloomberg Barclays Universal	0.5	-1.8	-1.4	1.9	2.3	4.3
Bloomberg Barclays Aggregate	-0.8	-2.4	-2.1	1.0	1.8	3.9
Bloomberg Barclays U.S. TIPS	-1.4	-2.3	-1.2	1.5	1.0	4.1
Bloomberg Barclays High Yield	-1.6	0.9	1.0	6.6	4.7	11.2
JPM GBI-EM Global Diversified	2.8	-7.4	-5.6	4.7	-1.3	4.3
Other						
NAREIT Equity	4.7	3.9	3.7	6.5	9.7	15.0
Bloomberg Commodity Index	-0.6	-4.7	-1.8	1.6	-7.3	-3.5

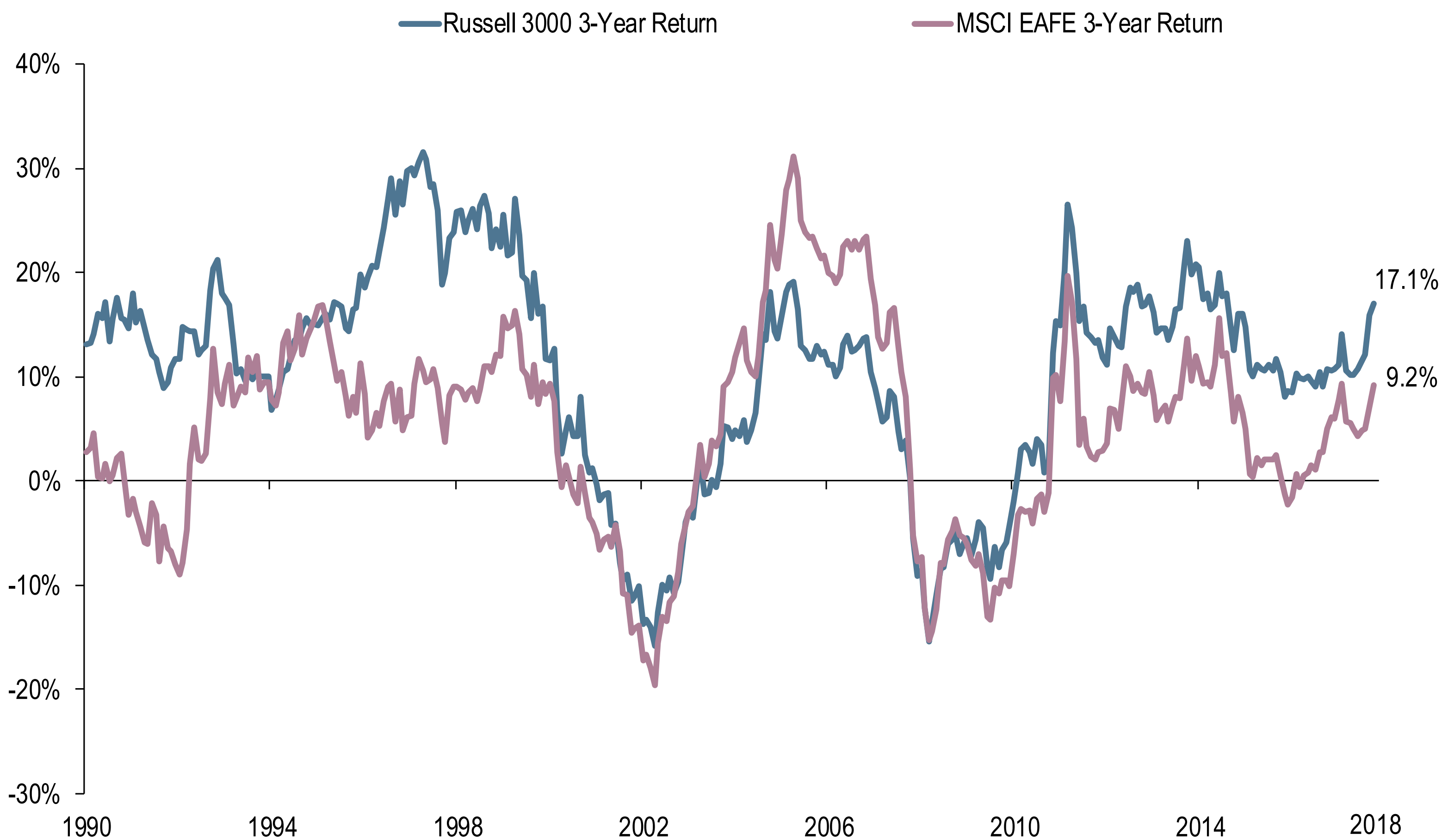
[1] Source: InvestorForce.

Relative Price Performance: US vs. World Equities

Chart 49: US vs. World ex-US equities

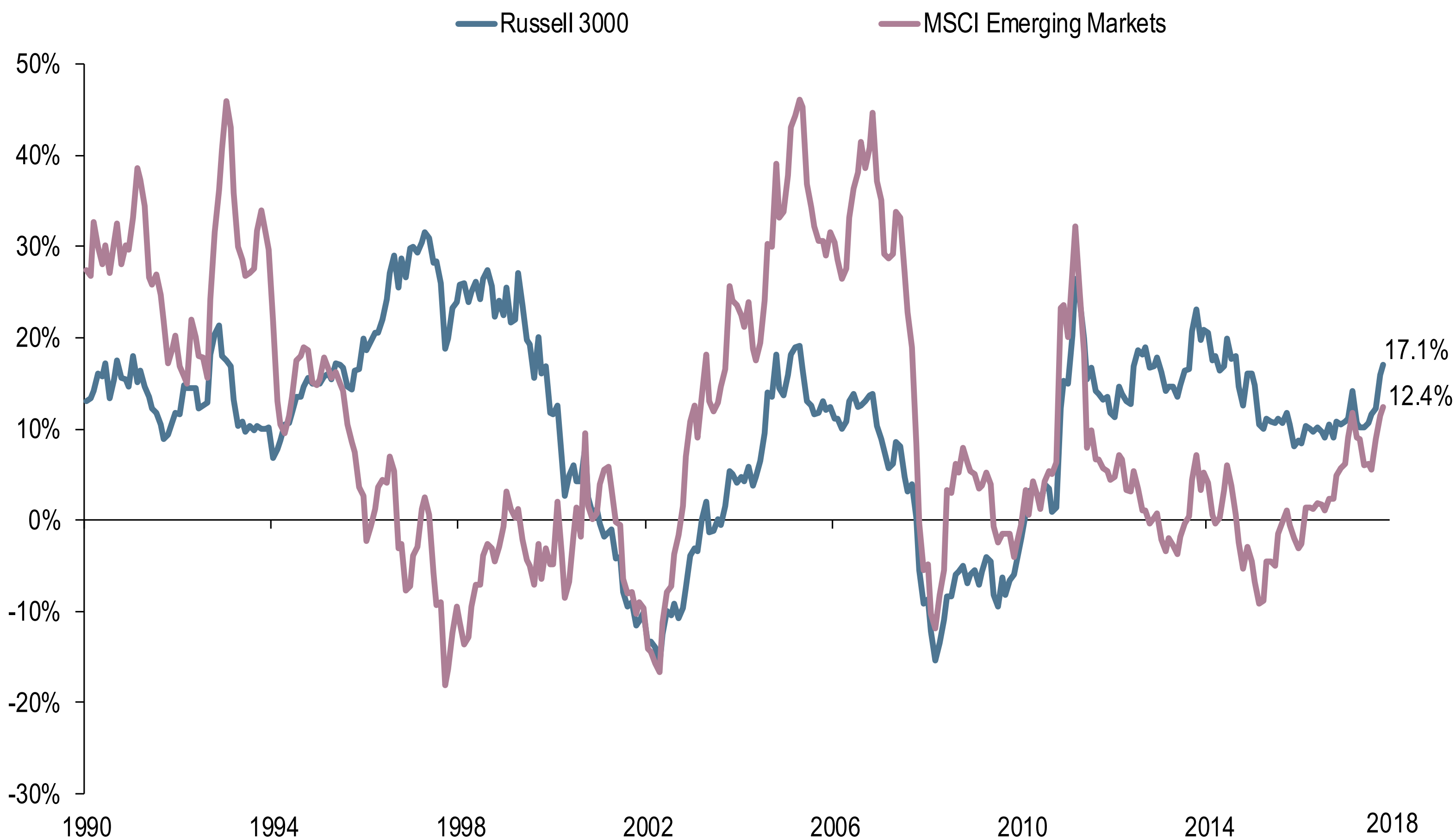
Monthly data
Source: BofA Merrill Lynch Global Investment Strategy, Global Financial Data

U.S. and Developed Market Foreign Equity Rolling Three-Year Returns[1]



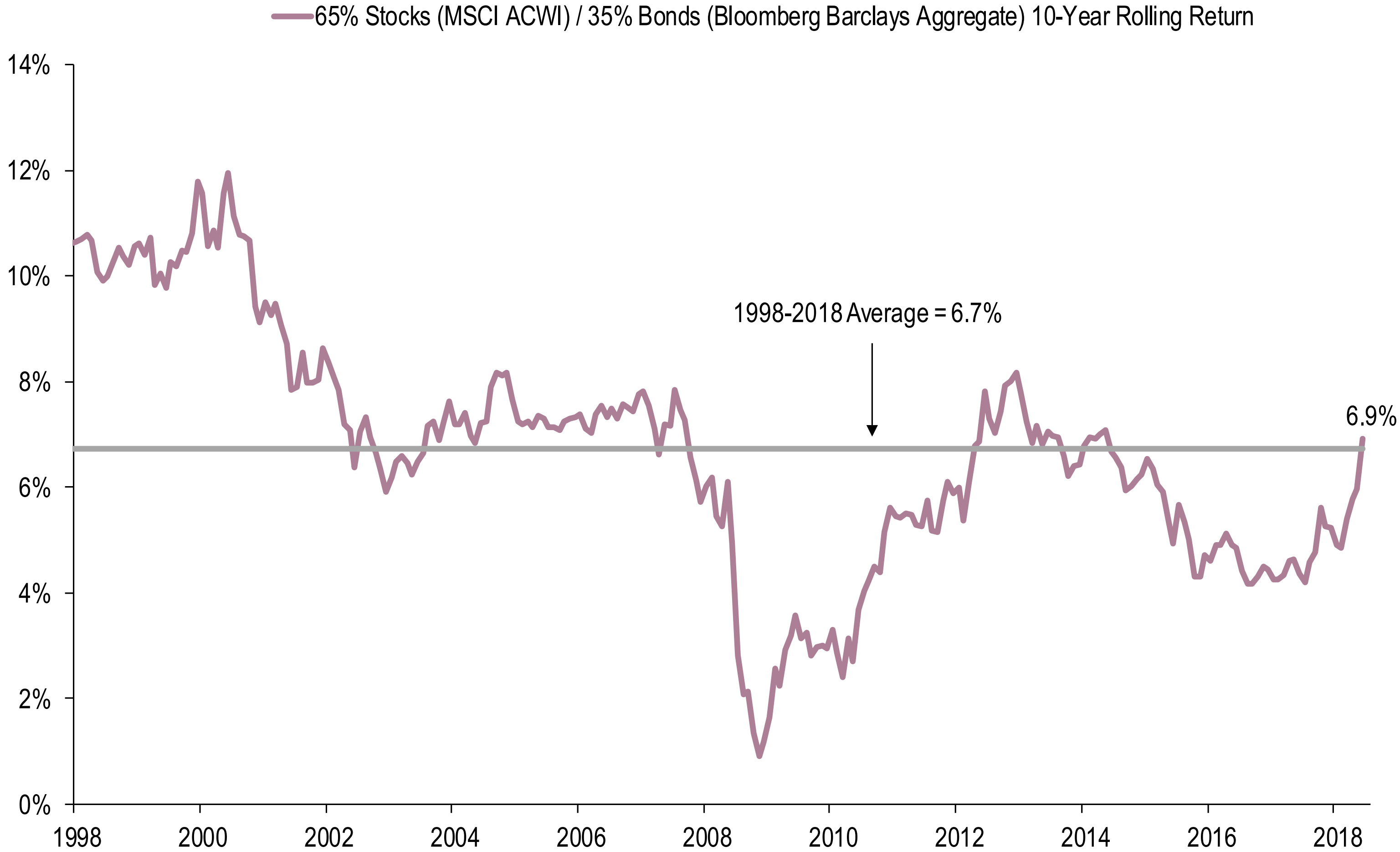
[1] Source: InvestorForce.

U.S. and Emerging Market Equity Rolling Three-Year Returns[1]



[1] Source: InvestorForce.

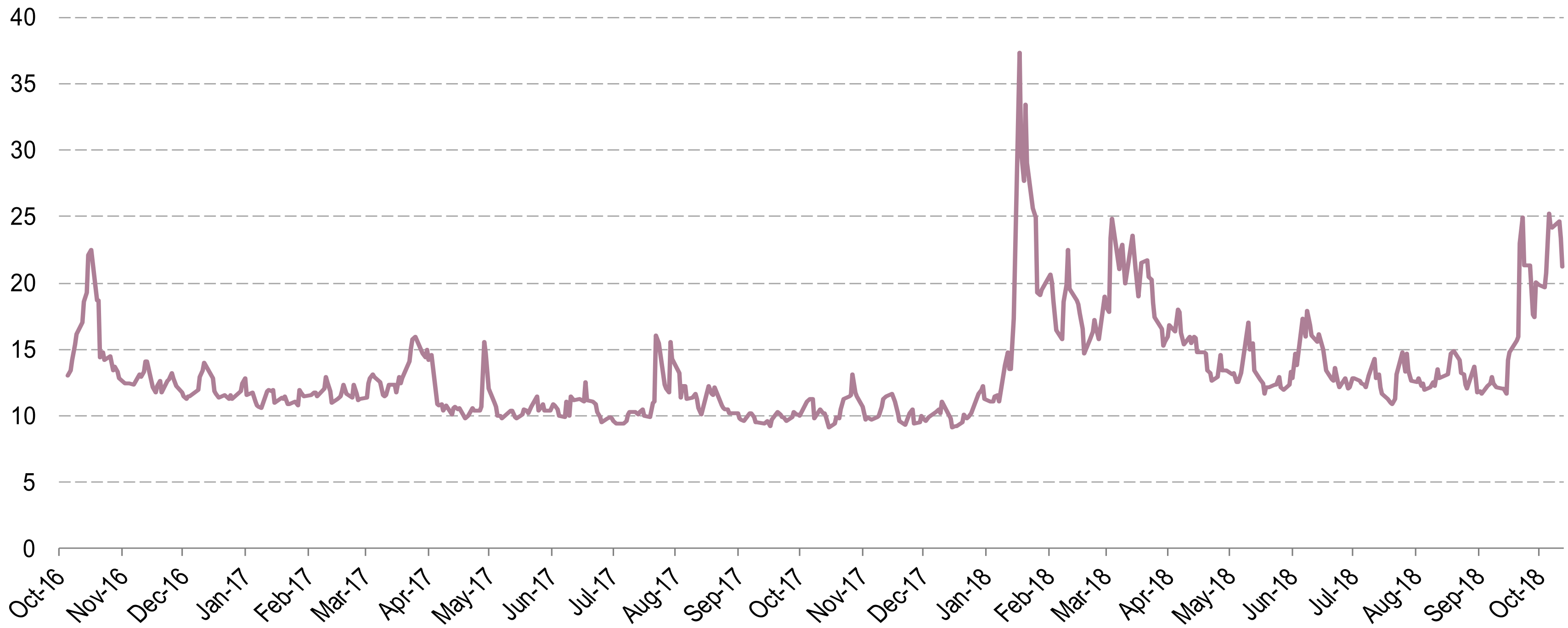
Rolling Ten-Year Returns: 65% Stocks and 35% Bonds[1]



[1] Source: InvestorForce.

Volatility[1]

Daily VIX



[1] Bloomberg. Data is through October 31, 2018.

"The really extremely accommodative low interest rates that we needed when the economy was quite weak, we don't need those anymore. They're not appropriate anymore," Powell said. "Interest rates are still accommodative, but we're gradually moving to a place where they will be neutral," he added. "We may go past neutral, but we're a long way from neutral at this point, probably."[1]

Jerome Powell, Federal Reserve Chairman
October 3, 2018

"Interest rates are still low by historical standards, and they remain just below the broad range of estimates of the level that would be neutral for the economy--that is, neither speeding up nor slowing down growth."[2]

Jerome Powell, Federal Reserve Chairman
November 28, 2018

[1] Source: PBS News Hour interview with Judy Woodruff on October 3, 2018
[2] Source: federalreserve.gov

Key Issues Going Forward

- Increased Volatility
- Late Cycle Dynamics
- Potential for Coordinated Monetary Tightening
- Trade Tensions
- Heightened Political Unrest/Change

What Should We Do?

- Maintain a Diversified Allocation
- Rebalance the Portfolio as Appropriate
- Maintain a Long-Term Time Horizon

Maintain a Diversified Allocation

- No single asset class consistently outperforms from one year to the next.
  - Trying to time the markets is a fool's errand.
- Having a diversified portfolio with exposure to several asset classes creates a more stable return pattern.
- By virtue of its diversification, a "Global Balanced" portfolio of 60% stocks / 40% bonds always performs in the middle of its components.

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD 10/31
Emerging Equity 34.0%	Emerging Equity 32.2%	Emerging Equity 39.4%	Bonds 5.2%	Emerging Equity 78.5%	Emerging Equity 18.9%	TIPS 14.1%	Emerging Equity 18.2%	US Equity 32.4%	US Equity 13.7%	US Equity 1.4 %	High Yield 17.1%	Emerging Equity 37.3%	US Equity 2.4%
EAFE Equity 13.5%	EAFE Equity 26.3%	TIPS 11.6%	TIPS -1.1%	High Yield 58.2%	High Yield 15.1%	Bonds 7.8%	EAFE Equity 17.3%	EAFE Equity 22.8%	Bonds 6.0%	Bonds 0.5%	US Equity 12.0%	EAFE Equity 25.0%	High Yield 0.9%
US Equity 4.9%	US Equity 15.8%	EAFE Equity 11.2%	Global Balanced -25.9%	EAFE Equity 31.8%	US Equity 15.1%	High Yield 5.0%	US Equity 16.0%	Global Balanced 12.1%	TIPS 3.6%	Global Balanced -2.5%	Emerging Equity 11.2%	US Equity 21.8%	TIPS -2.3%
Global Balanced 4.6%	Global Balanced 15.1%	Global Balanced 10.9%	High Yield -26.2%	US Equity 26.5%	Global Balanced 10.2%	US Equity 2.1%	High Yield 15.8%	High Yield 7.4%	Global Balanced 2.8%	EAFE Equity -0.8%	Global Balanced 5.7%	Global Balanced 17.3%	Bonds -2.4%
TIPS 2.8%	High Yield 11.9%	Bonds 7.0%	US Equity -37.0%	Global Balanced 23.3%	EAFE Equity 7.8%	Global Balanced -2.1%	Global Balanced 11.5%	Bonds -2.0%	High Yield 2.5%	TIPS -1.4%	TIPS 4.7%	High Yield 7.5%	Global Balanced -3.8%
High Yield 2.7%	Bonds 4.3%	US Equity 5.5%	EAFE Equity -43.4%	TIPS 10.0%	Bonds 6.5%	EAFE Equity -12.1%	TIPS 7.3%	Emerging Equity -2.6%	Emerging Equity -2.2%	High Yield -4.5%	Bonds 2.7%	Bonds 3.5%	EAFE Equity -9.3%
Bonds 2.4%	TIPS 0.5%	High Yield 1.9%	Emerging Equity -53.3%	Bonds 5.9%	TIPS 6.3%	Emerging Equity -18.4%	Bonds 4.2%	TIPS -9.4%	EAFE Equity -4.9%	Emerging Equity -14.9%	EAFE Equity 1.0%	TIPS 3.0%	Emerging Equity -15.7%

Rebalance the Portfolio as Appropriate

- Rebalancing to asset class targets allows portfolios to remain diversified and has delivered better results for investors over the long term.
  - While there are multiple ways to rebalance, the act of rebalancing is more important than the approach.

Rebalancing Results[1]

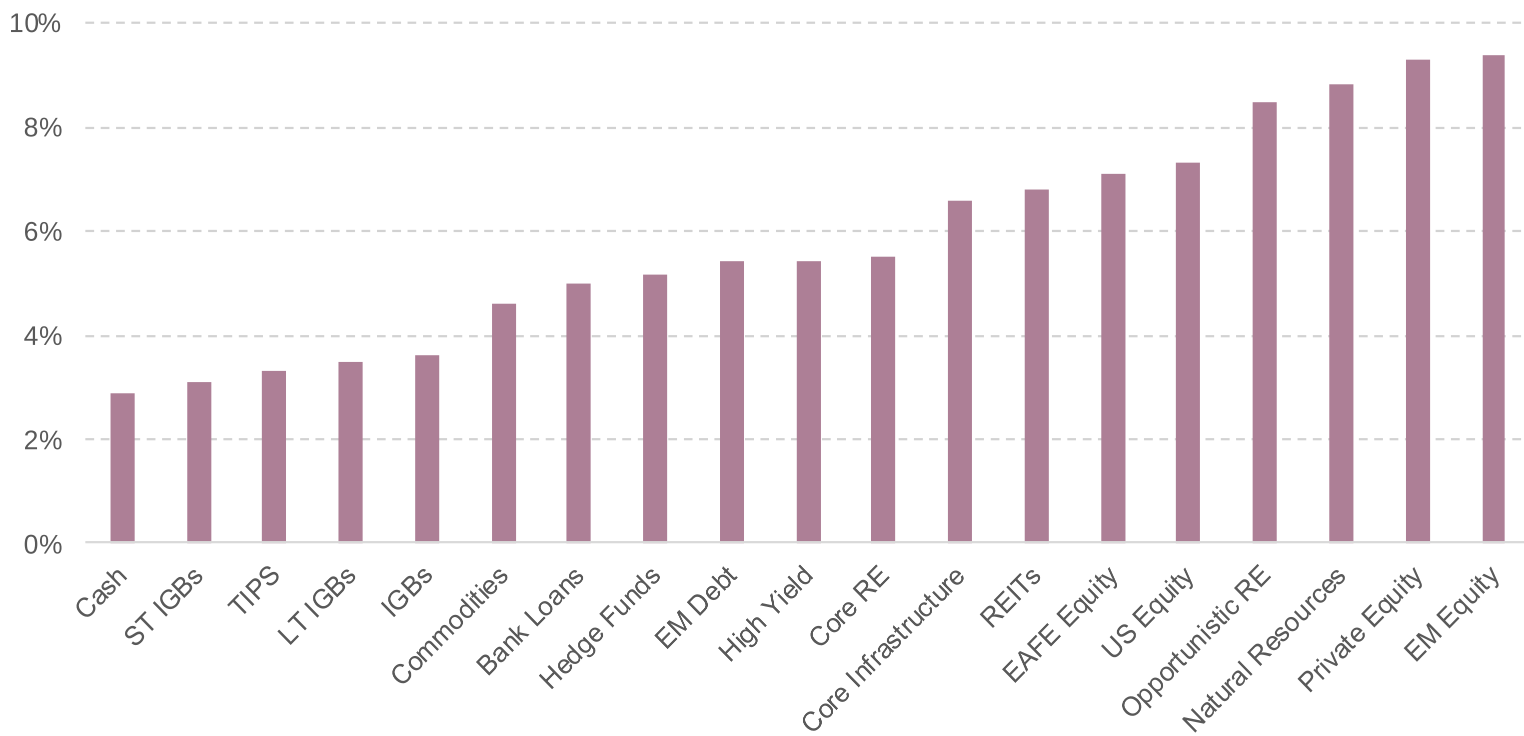
Rebalancing Range	Rebalancing Point	Annualized Return (%)	Cost-Adjusted Annualized Return (%)	Standard Deviation (%)	Cost-Adjusted Sharpe Ratio (%)	Number of Rebalancing Actions (%)
Range + / - 5%	Target	9.22	9.21	9.56	0.50	18
	Midpoint	9.30	9.28	9.57	0.50	26
	Endpoint	9.30	9.25	9.64	0.50	85
Range + / - 10%	Target	9.27	9.27	9.75	0.49	5
	Midpoint	9.33	9.33	9.73	0.50	58
	Endpoint	9.15	9.14	9.89	0.47	25
Buy-and-Hold	NA	9.11	9.11	10.89	0.43	0

[1] Meketa Investment Group constructed a policy portfolio consisting of 60% equities and 40% domestic bonds, as represented by the MSCI ACWI and Barclays Aggregate Bond Index respectively. Data collected were from January 1979 through March 2018 and include a variety of market and economic conditions. For simplicity, we applied a flat fee of two basis points during any month in which rebalancing was required to account for transaction and commission costs.

Maintain a Long-Term Time Horizon

- Markets are difficult to predict over the short term. As a Fund with long-term goals, it is important to remain focused on a longer-time horizon.
- Some of the most volatile asset classes in the short-term are the ones that are priced to produce the highest returns in the long run.

Long-Term Outlook (20 Years)[1]



[1] Twenty-year expected returns based upon Meketa Investment Group's 2018 Annual Asset Study.

Interim Update
As of November 30, 2018

DRAFT

Asset Class Net Performance Summary

	Market Value ($)	% of Portfolio	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement Association	**971,974,510**	**100.0**	**1.0**	**-2.6**	**-1.6**	**5.8**	**5.2**	**8.9**	**7.7**	**Nov-89**
Custom Benchmark - Policy Benchmark (Net)			*1.0*	*0.4*	*2.1*	*7.3*	*6.1*	*9.4*	*--*	*Nov-89*
Domestic Equity Assets	**229,894,495**	**23.7**	**1.5**	**3.5**	**4.2**	**--**	**--**	**--**	**13.1**	**Jan-16**
Russell 3000			*2.0*	*4.5*	*5.5*	*11.8*	*10.6*	*14.5*	*13.0*	*Jan-16*
International Developed Market Equity Assets	**145,335,198**	**15.0**	**0.0**	**-13.2**	**-12.1**	**--**	**--**	**--**	**4.2**	**Jan-16**
MSCI EAFE			*-0.1*	*-9.4*	*-7.9*	*4.1*	*1.8*	*7.5*	*4.7*	*Jan-16*
International Emerging Market Equity Assets	**85,845,167**	**8.8**	**4.1**	**-14.1**	**-10.8**	**--**	**--**	**--**	**8.4**	**Jan-16**
MSCI Emerging Markets			*4.1*	*-12.2*	*-9.1*	*9.4*	*1.9*	*9.1*	*10.5*	*Jan-16*
Global Equity Assets [1]	**95,831,247**	**9.9**	**2.5**	**--**	**--**	**--**	**--**	**--**	**-5.4**	**Feb-18**
MSCI ACWI			*1.5*	*-2.6*	*-1.0*	*8.6*	*6.2*	*10.7*	*-7.8*	*Feb-18*
Domestic Fixed Income	**77,356,615**	**8.0**	**0.5**	**-1.5**	**-1.0**	**--**	**--**	**--**	**2.0**	**Jan-16**
75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year			*0.5*	*-1.5*	*-1.1*	*1.4*	*1.7*	*3.6*	*1.6*	*Jan-16*
Value Added Fixed Income [1]	**68,747,274**	**7.1**	**-1.0**	**1.1**	**1.3**	**--**	**--**	**--**	**6.2**	**Jan-16**
50% BBgBarc US High Yield/ 50% Credit Suisse Leveraged Loans			*-0.8*	*1.8*	*2.1*	*6.3*	*4.2*	*10.2*	*7.1*	*Jan-16*
International Fixed Income	**36,251,466**	**3.7**	**0.3**	**-1.6**	**-0.8**	**--**	**--**	**--**	**5.5**	**Jan-16**
Custom Benchmark - Global Fixed Income			*-0.4*	*-5.5*	*-5.1*	*3.6*	*2.7*	*--*	*3.8*	*Jan-16*
Hedge Funds [2]	**48,652,854**	**5.0**	**-0.1**	**-2.9**	**-2.8**	**2.9**	**3.4**	**--**	**4.3**	**Feb-10**
HFRI Fund of Funds Composite Index			*0.2*	*-1.8*	*-0.9*	*1.9*	*2.1*	*3.2*	*2.6*	*Feb-10*
Real Estate [3]	**98,523,381**	**10.1**	**0.8**	**2.7**	**2.6**	**--**	**--**	**--**	**4.0**	**Jan-16**
NCREIF ODCE			*0.0*	*6.5*	*8.7*	*8.8*	*10.7*	*5.6*	*7.8*	*Jan-16*
Private Equity [3]	**38,971,166**	**4.0**	**0.0**	**4.1**	**9.5**	**--**	**--**	**--**	**5.0**	**Jan-16**
Cambridge Associates Fund of Funds Composite 1-Quarter Lag			*0.0*	*12.7*	*16.5*	*9.8*	*12.5*	*8.3*	*10.1*	*Jan-16*
Real Assets [3]	**45,089,793**	**4.6**	**0.0**	**-0.2**	**-0.9**	**--**	**--**	**--**	**-2.6**	**Jan-16**
CPI+3%			*0.3*	*4.7*	*5.2*	*5.0*	*4.6*	*4.7*	*5.1*	*Jan-16*
Cash and Cash Equivalent	**1,475,855**	**0.2**								

1: The market value and performance is based on preliminary data.
2: The market value and performance is based on an estimate.
3: The market value and performance is one quarter lagged.

Total Retirement Association

As of November 30, 2018

Trailing Net Performance

	Market Value ($)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement Association	**971,974,510**	**100.0**	**--**	**1.0**	**-2.6**	**-1.6**	**5.8**	**5.2**	**8.9**	**7.7**	**Nov-89**
Custom Benchmark - Policy Benchmark (Net)				*1.0*	*0.4*	*2.1*	*7.3*	*6.1*	*9.4*	*--*	*Nov-89*
Domestic Equity Assets	**229,894,495**	**23.7**	**23.7**	**1.5**	**3.5**	**4.2**	**--**	**--**	**--**	**13.1**	**Jan-16**
Russell 3000				*2.0*	*4.5*	*5.5*	*11.8*	*10.6*	*14.5*	*13.0*	*Jan-16*
Rhumbline Russell 1000 Value	33,927,226	3.5	14.8	3.0	1.5	2.8	9.7	8.5	--	10.0	Apr-13
Russell 1000 Value				*3.0*	*1.5*	*3.0*	*9.8*	*8.7*	*12.5*	*10.2*	*Apr-13*
Rhumbline Russell 1000 Growth	33,893,242	3.5	14.7	1.1	7.7	8.6	13.9	12.9	--	15.3	Jul-09
Russell 1000 Growth				*1.1*	*7.8*	*8.6*	*14.0*	*13.0*	*16.5*	*15.4*	*Jul-09*
Fisher Midcap Value	43,207,248	4.4	18.8	1.7	-2.1	-1.1	9.7	8.2	15.1	7.3	Apr-07
Russell MidCap Value				*2.4*	*-2.0*	*-0.8*	*8.9*	*8.4*	*14.8*	*6.8*	*Apr-07*
Boston Company Small Cap Growth	48,317,840	5.0	21.0	-0.8	10.8	11.9	14.0	10.9	--	14.6	Aug-09
Russell 2000 Growth				*1.6*	*2.7*	*2.8*	*10.0*	*8.2*	*15.5*	*13.9*	*Aug-09*
LMCG Small Cap Value	70,169,661	7.2	30.5	2.6	-3.8	-3.6	8.0	6.8	--	8.2	Mar-11
Russell 2000 Value				*1.6*	*-0.9*	*-1.8*	*10.1*	*6.7*	*12.5*	*8.8*	*Mar-11*
International Developed Market Equity Assets	**145,335,198**	**15.0**	**15.0**	**0.0**	**-13.2**	**-12.1**	**--**	**--**	**--**	**4.2**	**Jan-16**
MSCI EAFE				*-0.1*	*-9.4*	*-7.9*	*4.1*	*1.8*	*7.5*	*4.7*	*Jan-16*
KBI Master Account	69,434,068	7.1	47.8	-0.1	-12.4	-10.6	2.8	0.4	6.3	3.2	Jul-05
MSCI EAFE				*-0.1*	*-9.4*	*-7.9*	*4.1*	*1.8*	*7.5*	*4.1*	*Jul-05*
HGK TS International Equity	43,007,079	4.4	29.6	2.1	-11.0	-11.0	5.2	2.4	--	5.4	Feb-11
MSCI EAFE				*-0.1*	*-9.4*	*-7.9*	*4.1*	*1.8*	*7.5*	*3.4*	*Feb-11*
Copper Rock International Small Cap	32,894,051	3.4	22.6	-2.3	-17.2	-15.8	--	--	--	-15.8	Nov-17
MSCI EAFE Small Cap				*-0.7*	*-12.2*	*-9.9*	*6.3*	*4.9*	*12.0*	*-9.9*	*Nov-17*
International Emerging Market Equity Assets	**85,845,167**	**8.8**	**8.8**	**4.1**	**-14.1**	**-10.8**	**--**	**--**	**--**	**8.4**	**Jan-16**
MSCI Emerging Markets				*4.1*	*-12.2*	*-9.1*	*9.4*	*1.9*	*9.1*	*10.5*	*Jan-16*
LMCG Emerging Markets	85,845,167	8.8	100.0	4.1	-14.1	-10.8	7.2	0.6	--	0.8	Sep-13
MSCI Emerging Markets				*4.1*	*-12.2*	*-9.1*	*9.4*	*1.9*	*9.1*	*2.5*	*Sep-13*

Total Retirement Association

As of November 30, 2018

	Market Value ($)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Global Equity Assets	**95,831,247**	**9.9**	**9.9**	**2.5**	**--**	**--**	**--**	**--**	**--**	**-5.4**	**Feb-18**
MSCI ACWI				*1.5*	*-2.6*	*-1.0*	*8.6*	*6.2*	*10.7*	*-7.8*	*Feb-18*
First Eagle Global Value Fund	18,532,002	1.9	19.3	0.6	--	--	--	--	--	-7.3	Feb-18
MSCI ACWI				*1.5*	*-2.6*	*-1.0*	*8.6*	*6.2*	*10.7*	*-7.8*	*Feb-18*
Kopernik Global All Cap Fund	17,430,519	1.8	18.2	-0.5	--	--	--	--	--	-12.8	Feb-18
MSCI ACWI				*1.5*	*-2.6*	*-1.0*	*8.6*	*6.2*	*10.7*	*-7.8*	*Feb-18*
Lee Munder Global Multi-Cap Strategy	27,472,525	2.8	28.7	1.9	--	--	--	--	--	-3.7	Mar-18
MSCI ACWI				*1.5*	*-2.6*	*-1.0*	*8.6*	*6.2*	*10.7*	*-3.7*	*Mar-18*
Wellington Durable Enterprises, L.P. *	32,396,201	3.3	33.8	5.8	--	--	--	--	--	8.0	Mar-18
MSCI ACWI				*1.5*	*-2.6*	*-1.0*	*8.6*	*6.2*	*10.7*	*-3.7*	*Mar-18*
Domestic Fixed Income	**77,356,615**	**8.0**	**8.0**	**0.5**	**-1.5**	**-1.0**	**--**	**--**	**--**	**2.0**	**Jan-16**
75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year				*0.5*	*-1.5*	*-1.1*	*1.4*	*1.7*	*3.6*	*1.6*	*Jan-16*
IR&M Core Bonds	77,356,615	8.0	100.0	0.5	-1.6	-1.2	1.5	1.9	4.7	3.9	Nov-04
75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year				*0.5*	*-1.5*	*-1.1*	*1.4*	*1.7*	*3.6*	*3.6*	*Nov-04*
Value Added Fixed Income	**68,747,274**	**7.1**	**7.1**	**-1.0**	**1.1**	**1.3**	**--**	**--**	**--**	**6.2**	**Jan-16**
50% BBgBarc US High Yield/ 50% Credit Suisse Leveraged Loans				*-0.8*	*1.8*	*2.1*	*6.3*	*4.2*	*10.2*	*7.1*	*Jan-16*
Eaton Vance High Yield	33,532,427	3.4	48.8	-0.8	-0.3	-0.1	5.8	4.3	11.5	6.7	Apr-06
ICE BofAML US High Yield TR				*-0.9*	*0.0*	*0.3*	*7.1*	*4.4*	*12.0*	*7.0*	*Apr-06*
THL Bank Loan Select Fund *	35,214,847	3.6	51.2	-1.1	2.6	2.9	5.3	4.3	--	5.4	Sep-10
Credit Suisse Leveraged Loans				*-0.8*	*3.5*	*3.9*	*5.5*	*3.9*	*8.1*	*4.9*	*Sep-10*
International Fixed Income	**36,251,466**	**3.7**	**3.7**	**0.3**	**-1.6**	**-0.8**	**--**	**--**	**--**	**5.5**	**Jan-16**
Custom Benchmark - Global Fixed Income				*-0.4*	*-5.5*	*-5.1*	*3.6*	*2.7*	*--*	*3.8*	*Jan-16*
Franklin Templeton Emerging Market Bonds	36,251,466	3.7	100.0	0.3	-1.6	-0.2	6.2	3.8	9.4	6.7	May-06
JP Morgan EMBI Global Diversified				*-0.4*	*-5.5*	*-4.8*	*4.2*	*4.6*	*8.8*	*6.6*	*May-06*

* The performance and market value are based on preliminary data.

Total Retirement Association

As of November 30, 2018

	Market Value ($)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Hedge Funds	**48,652,854**	**5.0**	**5.0**	**-0.1**	**-2.9**	**-2.8**	**2.9**	**3.4**	**--**	**4.3**	**Feb-10**
HFRI Fund of Funds Composite Index				*0.2*	*-1.8*	*-0.9*	*1.9*	*2.1*	*3.2*	*2.6*	*Feb-10*
ABS Offshore SPC - Global Segregated Portfolio*	20,495,894	2.1	42.1	-0.2	-3.8	-3.7	1.1	2.9	--	4.8	Aug-10
HFRI Fund of Funds Composite Index				*0.2*	*-1.8*	*-0.9*	*1.9*	*2.1*	*3.2*	*2.8*	*Aug-10*
Entrust Special Opportunities Fund III, Ltd.*	23,370,977	2.4	48.0	0.2	-2.5	-1.2	--	--	--	14.8	Oct-16
HFRI Fund of Funds Composite Index				*0.2*	*-1.8*	*-0.9*	*1.9*	*2.1*	*3.2*	*3.1*	*Oct-16*
Old Farm Partners Master Fund, L.P.*	4,785,982	0.5	9.8	-0.7	--	--	--	--	--	-4.3	Oct-18
HFRI Fund of Funds Composite Index				*0.2*	*-1.8*	*-0.9*	*1.9*	*2.1*	*3.2*	*-2.7*	*Oct-18*
Real Estate	**98,523,381**	**10.1**	**10.1**	**0.8**	**2.7**	**2.6**	**--**	**--**	**--**	**4.0**	**Jan-16**
NCREIF ODCE				*0.0*	*6.5*	*8.7*	*8.8*	*10.7*	*5.6*	*7.8*	*Jan-16*
Core Real Estate	**76,531,965**	**7.9**	**77.7**	**1.0**	**4.8**	**5.9**	**7.8**	**10.0**	**4.4**	**--**	
PRISA I				0.0	5.5	7.6	8.8	10.5	3.8	6.7	Sep-04
NCREIF-ODCE				*0.0*	*6.5*	*8.7*	*8.8*	*10.7*	*5.6*	*7.9*	*Sep-04*
Invesco REIT				4.6	2.6	2.2	6.2	9.3	13.9	11.1	Dec-02
Wilshire REIT				*4.7*	*3.9*	*3.7*	*5.8*	*9.9*	*15.0*	*10.4*	*Dec-02*
TA Realty Core Property Fund, L.P.				0.0	--	--	--	--	--	8.5	Apr-18
NCREIF-ODCE				*0.0*	*6.5*	*8.7*	*8.8*	*10.7*	*5.6*	*4.2*	*Apr-18*
Non-Core Real Estate	**21,991,416**	**2.3**	**22.3**	**0.0**	**-4.0**	**-8.4**	**--**	**--**	**--**	**-5.1**	**Jan-16**

* The performance and market value are based on an estimate.
Invesco REIT: The performance is based on real time.

Total Retirement Association

As of November 30, 2018

	Market Value ($)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Equity	**38,971,166**	**4.0**	**4.0**	**0.0**	**4.1**	**9.5**	**--**	**--**	**--**	**5.0**	**Jan-16**
Cambridge Associates Fund of Funds Composite 1-Quarter Lag				*0.0*	*12.7*	*16.5*	*9.8*	*12.5*	*8.3*	*10.1*	*Jan-16*
Private Equity	**30,620,142**	**3.2**	**78.6**	**0.0**	**4.2**	**7.8**	**--**	**--**	**--**	**3.1**	**Jan-16**
Venture Capital	**8,351,024**	**0.9**	**21.4**	**0.0**	**3.0**	**14.6**	**--**	**--**	**--**	**10.7**	**Jan-16**
Real Assets	**45,089,793**	**4.6**	**4.6**	**0.0**	**-0.2**	**-0.9**	**--**	**--**	**--**	**-2.6**	**Jan-16**
CPI+3%				*0.3*	*4.7*	*5.2*	*5.0*	*4.6*	*4.7*	*5.1*	*Jan-16*
Cash and Cash Equivalent	**1,475,855**	**0.2**	**0.2**								
Cash	1,475,855	0.2	100.0								

As of November 30, 2018

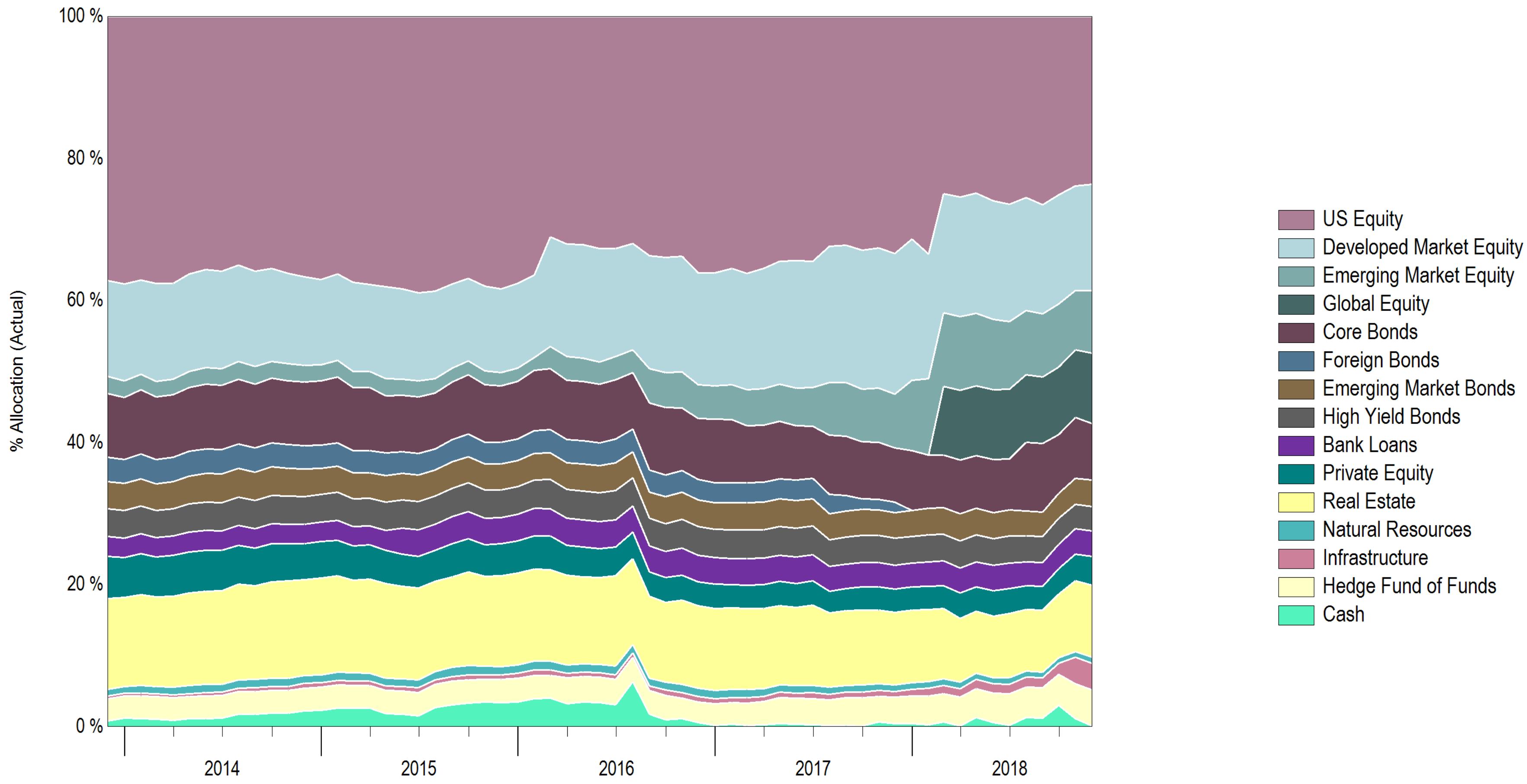
Allocation vs. Target

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
US Equity	$229,894,482	24%	26%	21% - 36%	Yes
Developed Market Equity	$145,335,198	15%	6%	1% - 16%	Yes
Emerging Market Equity	$85,845,167	9%	10%	5% - 20%	Yes
Global Equity	$95,990,073	10%	10%	5% - 20%	Yes
Core Bonds	$77,356,615	8%	9%	4% - 14%	Yes
Emerging Market Bonds	$36,156,814	4%	2%	0% - 7%	Yes
High Yield Bonds	$33,532,427	3%	2%	0% - 7%	Yes
Bank Loans	$35,325,225	4%	2%	0% - 7%	Yes
Private Equity	$38,971,166	4%	13%	8% - 18%	No
Real Estate	$98,531,464	10%	10%	5% - 15%	Yes
Natural Resources	$8,326,191	1%	2%	0% - 4%	Yes
Infrastructure	$36,763,602	4%	4%	2% - 6%	Yes
Hedge Fund of Funds	$48,866,872	5%	4%	2% - 6%	Yes
Cash	$1,475,855	0%	0%	0% - 3%	Yes
Total	**$971,974,510**	**100%**	**100%**		

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Total Equity	$644,530,113	66%	69%	60% - 80%	Yes
Total Fixed Income	$182,355,355	19%	15%	5% - 25%	Yes
Total Real Assets	$143,613,174	15%	16%	13% - 19%	Yes
Cash	$1,475,855	0%	0%	0% - 3%	Yes

Plymouth County Retirement Association adopted a new asset allocation as of May 2017.

Asset Allocation History
5 Years Ending November 30, 2018



Annual Investment Expense Analysis

As Of November 30, 2018

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Domestic Equity Assets		**$229,894,495**		
Rhumbline Russell 1000 Value	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	$33,927,226	$16,071	0.05%
Rhumbline Russell 1000 Growth	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	$33,893,242	$16,057	0.05%
Fisher Midcap Value	0.80% of First 25.0 Mil, 0.75% of Next 25.0 Mil, 0.67% Thereafter	$43,207,248	$336,554	0.78%
Boston Company Small Cap Growth	0.45% of Assets	$48,317,840	$217,430	0.45%
LMCG Small Cap Value	0.90% of Assets	$70,169,661	$631,527	0.90%
International Developed Market Equity Assets		**$145,335,198**		
KBI Master Account	0.65% of Assets	$69,434,068	$451,321	0.65%
HGK TS International Equity	1.00% of Assets	$43,007,079	$430,071	1.00%
Copper Rock International Small Cap	0.85% of Assets	$32,894,051	$279,599	0.85%
International Emerging Market Equity Assets		**$85,845,167**		
LMCG Emerging Markets	0.75% of Assets	$85,845,167	$643,839	0.75%
Global Equity Assets		**$95,831,247**		
First Eagle Global Value Fund	0.75% of Assets	$18,532,002	$138,990	0.75%
Kopernik Global All Cap Fund	0.80% of First 50.0 Mil, 0.75% of Next 150.0 Mil, 0.70% of Next 250.0 Mil, 0.65% of Next 350.0 Mil	$17,430,519	$139,444	0.80%
Lee Munder Global Multi-Cap Strategy	0.45% of Assets	$27,472,525	$123,626	0.45%
Wellington Durable Enterprises, L.P.	0.60% of Assets	$32,396,201	$194,377	0.60%
Domestic Fixed Income		**$77,356,615**		
IR&M Core Bonds	0.25% of First 50.0 Mil, 0.20% of Next 50.0 Mil, 0.15% Thereafter	$77,356,615	$179,713	0.23%
Value Added Fixed Income		**$68,747,274**		
Eaton Vance High Yield	0.50% of Assets	$33,532,427	$167,662	0.50%
THL Bank Loan Select Fund	0.40% of Assets	$35,214,847	$140,859	0.40%
International Fixed Income		**$36,251,466**		
Franklin Templeton Emerging Market Bonds	0.99% of Assets	$36,251,466	$358,890	0.99%

Total Retirement Association

As of September 30, 2018

Private Equity	Commitment	Total Contributions	Total Distributions	Adjusted Value
Ascend Ventures II, L.P.	2,500,000	2,324,355	925,962	69,137
Ascent Venture Partners IV, L.P.	2,500,000	2,502,219	388,970	179,397
Ascent Venture Partners V, L.P.	5,000,000	4,954,731	3,432,862	4,437,392
Audax Mezzanine Fund IV, L.P.	10,000,000	3,213,445	968,694	2,402,772
Charles River Partnership XI, L.P.	1,839,000	1,820,323	1,996,788	92,929
DN Partners II, L.P.	5,000,000	2,351,918	0	905,412
Euro Choice II, L.P.	5,544,472	5,513,805	7,695,275	170,561
Euro Choice V, L.P.	6,104,105	5,406,598	1,504,116	5,598,526
Globespan Capital Partners V, L.P.	5,000,000	4,852,500	6,514,112	3,665,098
HarbourVest Partners Co-Investment V	12,000,000	0	0	0
Ironsides Direct Co-Investment V	12,000,000	0	0	0
Landmark Equity Partners XIV, L.P.	6,000,000	6,267,601	6,196,382	1,420,227
Leeds Equity Partners IV, L.P.	5,000,000	5,042,908	6,162,066	54,564
Leeds Equity Partners V, L.P.	2,500,000	3,570,815	3,511,052	1,878,344
Levine Leichtman Capital Partners Deep Value Fund,	3,000,000	4,877,662	5,074,538	-2,157
Lexington Capital Partners VII, L.P.	10,000,000	10,472,973	12,197,935	3,153,562
LLR Equity Partners V, L.P.	12,000,000	2,400,000	433,003	1,842,965
Mesirow Financial Capital Partners IX, L.P.	4,000,000	3,840,731	1,861,056	265,163
Ridgemont Equity Partners III, L.P.	12,000,000	0	0	0
Rimco Production Company, Inc	2,000,000	2,000,000	7,486,401	1
Siguler Guff Distressed Opportunities Fund III, L.	6,000,000	5,820,000	8,077,618	1,030,337
Summit Partners Growth Equity Fund IX, L.P.	10,000,000	4,738,000	997,650	5,430,367
Summit Partners Growth Equity Fund X, L.P.	12,000,000	0	0	0
TRG Growth Partnership II, L.P.	7,500,000	7,405,074	6,833,263	2,134,098
Trilantic Capital Partners VI (North America), L.P	12,000,000	2,073,552	3,276	2,073,552
Wellspring Capital Partners VI, L.P.	12,000,000	611,767	0	404,237
Total Plymouth County - PE	**183,487,577**	**92,060,977**	**82,261,019**	**37,206,485**

Real Assets	Commitment	Total Contributions	Total Distributions	Adjusted Value
Basalt Infrastructure Partners II	10,000,000	1,558,621	49,561	1,253,048
BTG Pactual Global Timberland Resources Fund, LLC	5,413,138	5,043,536	229,998	3,129,900
Global Infrastructure Partners III, L.P.	10,000,000	7,513,352	334,819	8,427,418
IFM Global Infrastructure (US), L.P.	20,000,000	0	0	0
JPMorgan Global Maritime Investment	10,000,000	9,186,014	861,613	6,729,562
Timbervest Partners III, L.P.	5,000,000	5,000,000	1,041,500	5,196,291
Total Plymouth County - RA	**60,413,138**	**28,301,522**	**2,517,492**	**24,736,219**

Real Estate	Commitment	Total Contributions	Total Distributions	Adjusted Value
1921 Realty, Inc.	5,000,000	5,378,194	0	933,768
AEW Partners Real Estate Fund VIII, L.P.	25,000,000	7,663,248	1,410,695	5,003,723
Carlyle Realty Partners VIII, L.P.	18,000,000	1,319,110	487	1,121,830
DSF Capital Partners IV, L.P.	5,000,000	5,000,000	3,904,502	2,140,004
DSF Multi-Family Real Estate Fund III, L.P.	15,000,000	8,991,856	729,551	8,762,545
Hunt Redevelopment and Renovation Fund, LLC	10,000,000	8,971,078	11,562,740	168,092
Invesco Equity Real Estate Securities Trust	22,000,000	23,908,825	27,000,000	16,354,820
New Boston Institutional Fund, L.P. VII	5,000,000	3,012,998	3,747,492	320,647
PRISA I	14,995,000	17,227,013	0	39,687,182
Real Estate International Partnership Fund I, L.P.	15,000,000	12,674,617	9,197,754	3,291,285
TA Realty Core Property Fund, L.P.	25,000,000	13,527,668	0	14,677,241
Total Plymouth County - RE	**159,995,000**	**107,674,608**	**57,553,222**	**92,461,137**

Plymouth County Retirement Association

Global Multisector Fixed Income
RFP Respondent Review

Introduction

Selecting strong and appropriate investment managers is a key determinant of the overall success of the Fund. Investment managers are expected to operate within a client's investment guidelines and are given a large degree of latitude to achieve the investment objectives.

Manager selection is a nuanced process and requires extensive due diligence. When selecting prospective active managers, Meketa Investment Group evaluates the following areas:

- Organization
- Investment team
- Investment philosophy
- Investment process
- Investment performance
- Management fees

In addition, all managers are evaluated within the context of the Fund's overall investment policy.

Manager Evaluation Criteria

Organization

While there is no single “correct” way to organize an asset management effort, we believe that the ideal investment management organization possesses most of the following elements:

- Focused on a single investment style or a focused team within a larger organization.
- Appropriately sized for the firm’s assets under management, with a reasonable growth plan and a willingness to close capacity-constrained strategies.
- Stable, investment driven, independent, and employee-owned (or majority employee-owned).
- Performance driven with a team-oriented, supportive culture.
- Organized in such a way to ensure that information flows efficiently so that investment decisions can be made easily and, if necessary, quickly.
- Financially and operationally sound.

Manager Evaluation Criteria (continued)

Investment Team

Members of the investment team responsible for managing the strategy are evaluated in order to assess their competitive "edge" and to determine if they will be able to add value in the future. In a profession where intellectual capital is the greatest differentiator between managers, an investment strategy is only as good as the people behind it.

During the course of our due diligence, we review the background of each member of the team. We want to know what motivated these individuals to work in the equity management business, what experience they bring, and how long they have been in the industry.

Specific qualities that we believe make a good investor are intelligence, inquisitiveness, analytical ability, and natural skepticism. A command of the details and an ability to assimilate lots of information, yet tie the information together and make a decision, are valued. Deep industry knowledge, an ability to articulate their reasons for buying or selling a stock, a non-consensus thought process, and strong decision-making skills are especially important. Through the interview process, we seek to understand how a manager thinks about growth or value stocks and their portfolio.

Significant time is spent evaluating how the investment team interacts, their tenure together and their depth. Although some firms have been successful using the generalist model, we prefer specialization. Our belief is that there is value in having analysts with specific sector expertise who have followed an industry through multiple cycles.

Compensation structure and incentives are also analyzed. The investment team should be incented to place the interests of the client first and to maximize performance while assuming an appropriate level of risk.

Manager Evaluation Criteria (continued)

Investment Philosophy

An investment philosophy is a set of beliefs about what factors drive changes in stock prices, what factors cause securities to be mispriced, and how security mispricing can be exploited through active management. A manager's investment philosophy also incorporates their beliefs about what their competitive edge is and how they distinguish themselves from their peers.

We try to find managers who have a clear investment philosophy, and who can articulate how they are able to identify undervalued stocks and take advantage of the opportunities they uncover. Understanding where this philosophy comes from, how it has evolved over time, and how the manager identifies and selects attractive investments using their research process are very important. Some managers may not have formally thought about their philosophy, and are therefore not able to articulate what they believe. Their philosophy often becomes evident when they explain their investment process and discuss the stocks they own in their portfolio.

Another element of a manager's philosophy is how they think about the benchmark they are evaluated against. Most managers we recommend are either benchmark aware or believe in managing portfolios in a benchmark-agnostic manner. We are biased toward managers who have conviction in their ideas and reflect that conviction by establishing relatively large positions in their portfolios.

Manager Evaluation Criteria (continued)

Investment Process

Every analysis of an investment manager must entail an examination of how they pick securities for their portfolio, why they sell securities from the portfolio, and how their portfolio is constructed. We like investment processes that are straightforward and easy to understand. Although we want to see consistency in the process, there is considerable art to investing. A repeatable process, in and of itself, does not guarantee good investment results. It is in the execution of the process where managers differentiate themselves and add value.

In our analysis, we determine whether the portfolio is bottom-up driven, or if there is a significant top-down element to the process. Themes can also play a role in how portfolios are managed.

With this information as a backdrop, our analysis of the investment process initially focuses on how new ideas are generated and how these ideas find their way into the portfolio. Once the opportunity set has been identified, we seek to understand what kind of fundamental research a manager performs. Superior managers generally perform intensive due diligence and their level of understanding of the businesses in which they invest often gives them a research edge. We want to make sure they know what they own in their portfolios.

Once the research on an idea has been completed, an investment decision must be made. Ultimately, successful active equity management requires exercising good judgment. We always want to know how managers make investment decisions and who makes them. It is important to us that investment ideas are thoroughly vetted. We also want the decision-making process to be efficient and responsive to changing dynamics in the market. How managers construct their portfolios, and think about, as well as control, risk is also evaluated.

Manager Evaluation Criteria (continued)

Investment Performance

Just because a manager has performed well in the past does not guarantee they will be able to continue to do so in the future. We do feel that if we can find strong organizations with bright, motivated, knowledgeable, and experienced people, combined with a history of long-term, consistent success, we significantly increase the chances that managers we recommend to clients will add value in the future. If we are correct in our assessment of the quality of the organization and the people, then the performance should follow.

Portfolio performance over multiple time horizons is evaluated. We review calendar-year results over as long a period as possible. We also examine rolling time periods to eliminate the impact of end point bias. We do not expect a manager to outperform the relevant index every year, but we do believe they should outperform over a full market cycle. What we are looking for is consistency. In addition, we analyze each manager's risk-adjusted returns. We want to make sure that our clients are being compensated for the risk the manager is taking. For each manager, we also look at the standard deviation, beta, tracking error, and correlation with the benchmark. Our analysis of upside and downside capture gives us a sense of which managers can be expected to perform well in up and down markets. We have a bias toward equity managers who protect their clients on the downside because of the compounding effect of returns over time.

We review the portfolio holdings of each manager to verify their investment style, to assess where their biases are, and to determine where they have been able to add value. We always look at security-level performance attribution. This analysis tells us what helped and hurt the portfolio, and in which industries a manager is particularly adept. We also look at the distribution of returns within the portfolio. Avoiding bad stocks, or minimizing their impact, is an important part of successfully managing a diversified portfolio.

Manager Evaluation Criteria (continued)

Management Fees

The final step in our analysis is evaluating an investment manager's fees and the expenses they incur in managing the portfolio. Minimizing fees and expenses is important because these costs reduce the return to our clients. This effect can be very pronounced over time, so we seek to negotiate lower fees whenever possible.

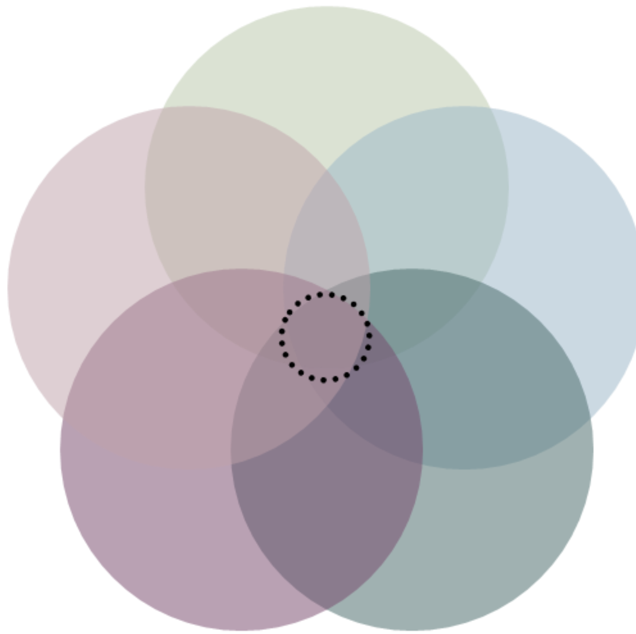
Trading costs are another hidden expense to investors and must also be evaluated. In general, portfolio managers with high turnover trading less liquid stocks will incur the highest trading costs.

The Five Key Areas of the Meketa Investment Manager Evaluation Process

Organization
- Stability
- Focus
- Employee ownership
- Investment driven culture
- Operationally sound

Performance & Fees
- Validates process
- Long-term record
- Risk-adjusted returns
- Reasonable fees

Investment Process & Risk Management
- Straightforward
- Level of due diligence
- Thought process assessment
- Communication
- Decision-making and portfolio construction
- Self-evaluation / lessons learned
- Risk controls



Investment Team
- Experience
- Depth of resources
- Team-oriented, performance driven
- Security selection ability
- Investment intuition

Investment Philosophy
- Set of beliefs
- Security price determinants
- Reasons for mispricings
- How to add value
- Competitive edge

Background

- On September 13, 2018, Meketa Investment Group issued an RFP on behalf of the Retirement Association.
  - Subsequently, the search was posted to Meketa's website, sent to PERAC, and picked up by a variety of news sources.
- Meketa requested that all respondents submit the RFP by September 27, 2018.
- The following pages are completed in accordance with PERAC regulations, and follow the revised search process provided in the new Chapter 176 regulations enacted at the end of 2011.
  - The ratings reflect Meketa Investment Group's opinions on each manager within the context of the Plymouth County Retirement Association's overall plan.
- Meketa received sixteen responses; these responses are reviewed on the following pages.

RFP Respondents

Manager	Headquarters	Strategy	Overall Rating
Invesco Advisers	Atlanta, Georgia	Invesco Multi-Sector Credit	Highly Advantageous
Loomis, Sayles & Co	Boston, Massachusetts	World Credit Asset Trust	Highly Advantageous
Manulife Asset Management (US)	Boston, Massachusetts	Strategic Fixed Income Opportunities	Highly Advantageous
Amundi Pioneer Asset Management	Boston, Massachusetts	Amundi Pioneer Multi-Sector Fixed Income	Advantageous
Brandywine Global Asset Management	Philadelphia, Pennsylvania	Global Multi-Sector Income	Advantageous
First State Investments	Louisville, Kentucky	Global Fixed Income	Not Advantageous
Franklin Templeton	San Mateo, California	Templeton Global Multisector Plus	Advantageous
Lazard Asset Management	New York, New York	Lazard Global Core Plus	Advantageous
LMCG Investments	Boston, Massachusetts	Serenitas Relative Value Credit	Advantageous
Newfleet Asset Management	Hartford, Connecticut	Newfleet Multi-Sector Opportunistic	Not Advantageous
Octagon Credit Investors	New York, New York	Octagon Senior Secured Credit Fund	Advantageous
Putnam Investments	Boston, Massachusetts	Putnam Fixed Income Global Alpha	Advantageous
Thornburg Investment Management	Santa Fe, New Mexico	Multisector Opportunistic	Advantageous
Voya Investment Management	New York, New York	Voya Unconstrained Fixed Income	Advantageous
Wellington Management Company	Boston, Massachusetts	Opportunistic Fixed Income	Advantageous
Western Asset Management Company	Pasadena, California	Global Multi Asset Credit	Advantageous

Invesco Advisers

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Advantageous	• Invesco Advisers is located in Atlanta, Georgia and has $963 billion assets under management. The firm is an indirectly owned subsidiary of Invesco Ltd., a publicly traded company (NYSE:IVZ) and employees hold approximately a 7% stake. • The Invesco Multi-Sector Credit Strategy was established in 2013 and currently has $787 million assets under management.
Team	Advantageous	• The Invesco Multi-Sector Credit Strategy is managed by Joseph Portera, who has managed the strategy since inception, along with Jennifer Hartyiksen, Ayi Hooper, and Ken Hill. All portfolio managers have other strategy responsibilities.
Investment Philosophy	Advantageous	• The strategy seeks to capture excess returns through macroeconomic risk positioning, risk budgeting, tactical sector rotation, and fundamental credit selection. • There is an emphasis on four core global credit sectors, and limits the sector exposures in the following way: global investment grade at 40%, hard currency emerging market debt at 15%, bank loans at 30%, and global high yield at 15%. Additionally, the team has the ability to invest up to 15% of the portfolio opportunistically. Portfolio weights are reexamined every year.
Investment Process	Advantageous	• The investment process consists of four steps. First, the strategic asset allocation is considered, which ensures that the portfolio is diversified across asset classes and sources of risk. Then the team conducts a tactical asset allocation where they modify the four core credit asset classes. After tactical allocations are considered, the team delves into security selection, which is fundamentally driven. Finally, holistically risk management is applied across the portfolio. • The decision making body consists of the four portfolio managers for the strategy. However, Joe Portera has the final say when making investment decisions.
Performance	Highly Advantageous	• Invesco Advisers has outperformed the benchmark over one- and three-year periods, as well as since inception, with 1.62%, 3.01%, and 1.56% respectively.
Fees	Highly Advantageous	• Institutional Retirement Trust: Effective fee of 0.46%. Ranks in the 1st quartile of respondents.

Loomis Sayles & Company

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Advantageous	• Loomis Sayles & Company is based out of Boston Massachusetts and it has an extensive history tracing back to 1926. The firm is a wholly owned subsidiary of Natixis Investment Managers. • The firm has $264 billion assets under management, of which close to $2 billion are invested in the World Credit Asset strategy.
Team	Advantageous	• The portfolio managers for the strategy are Kevin Kearns, Tom Fahey, and Andrea DiCenso. The team is supported by other assigned subsector portfolio managers, 30 senior credit analysts and 14 credit analysts and research associates.
Investment Philosophy	Highly Advantageous	• The investment philosophy rests on the premise that markets are inefficient because of investor's tendency to overreact to market events. Both fundamental and quantitative analysis help the team to identify attractive investment opportunities. • The strategy seeks to outperform its benchmark by allocating in the credit space. The strategy also has the ability to protect from rising rates through futures and interest rate derivatives.
Investment Process	Highly Advantageous	• The investment process begins with an analysis of the macroeconomic and capital market environment to identify key factors. Following this analysis, the Macro Strategies team shares the view with all strategies, keeping a consistent house view of what is going on in the world. Then the team conducts bottom up security analysis where they seek to identify security mispricing. One important step is that the team also decompose the portfolio to see what the alpha drivers are and identify why something is working or not. After that the portfolio is analyzed to determine optimal weights, sizing and appropriate risk management procedures. • Decision making is a collaborative process between portfolio managers, who stick to Loomis Sayles investment discipline as well as client objectives and guidelines.
Performance	Highly Advantageous	• Loomis Sayles & Company has outperformed the benchmark over one-, three-, five-year, and since inception trailing periods, with excess returns of 1.63%, 2.84%, 1.71% and 1.67% respectively.
Fees	Advantageous	• New Hampshire Investment Trust: Effective fee of 0.50%. Ranks in the 2nd quartile of respondents.

Manulife Asset Management (US)

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Advantageous	• Manulife Asset Management (US) is a wholly owned subsidiary of Manulife Financial Corporation, a publicly traded company (NYSE:MFC) that traces its roots back to the 1800s. Manulife Asset Management (US) is located in Boston, Massachusetts and was fist organized in 1968. The firm has $392 billion in assets under management. • The Strategic Fixed Income Opportunities strategy was established in 2010 and has $9 billon assets under management.
Team	Highly Advantageous	• The strategy is run by four portfolio managers including Daniel Janis III and Tomas Goggins who have been managing the strategy since inceptions. Kisoo Park and Christopher Chapman joined the strategy as portfolio managers in 2011 and 2017, respectively. • Portfolio managers are supported by Global Multi-Sector Fixed Income team members Peter Azzinaro, global macro strategist, investment analysts Kelly Lim, Joseph Rothwell, and Charles Tomes, and portfolio specialist David Zielinski.
Investment Philosophy	Advantageous	• The investment philosophy is reliant upon global relative value and seeks to add value through sector rotation, security selection, and opportunistic currency investments .The strategy primarily invests in global government bonds, corporate bonds, emerging markets and high yield bonds. • The investment team expects performance to be attributed 40% to sector allocation, 20% security selection, 20% currency management, 10% yield curve management, 5% duration, and 5% trading/execution.
Investment Process	Advantageous	• Macroeconomic analysis is the first step in the investment process, where the team determines bond and currency scenarios as well as political trends. Then the team identifies relative-value opportunities within and across sectors within an investment universe of developed governments, developed corporates, securitized assets and emerging markets. Once relative-value is determined currency management is employed to determine the impact of currency exposure and volatility. The last step is to run pre-trade compliance checks, test portfolio risk factors and to execute buy/sell positions. Portfolios limit the use of derivatives. • Daniel Janis, lead portfolio manager for the strategy, has final decision-making authority regarding assets, country, and sector allocations.
Performance	Highly Advantageous	• Manulife Asset Management has outperformed the benchmark over the three- and five-year, as well as since inception trailing periods, with excess returns of 1.20%, 1.08%, and 2.17% respectively. The strategy has underperformed in the short run with excess returns of -0.55% over the one-year period.
Fees	Advantageous	• Separate Account: Effective fee of 0.40%. Ranks in the 1st quartile of respondents.

Amundi Pioneer Institutional Asset Management

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Amundi Pioneer is located in Boston Massachusetts, tracing back its history to 1928. The firm's assets under management currently exceed $1.7 trillion while the Amundi Pioneer Multi-Sector Fixed Income strategy, incepted in 1999, has more than $11 billion in assets. • The parent company, Amundi Asset Management, owns 100% of Amundi Pioneer.
Team	Advantageous	• Ken Taubes and Andy Feltus have been managing the strategy since inception in 1999, and Jonathan Scott joined as co-portfolio manager in 2012. All three portfolio managers have additional responsibilities outside of this strategy. • The team is supported by 15 analysts and 4 traders. Credit analysts focus on three to four main industries, but analysts may rotate coverage to allow a more robust understanding of relative value.
Investment Philosophy	Not Advantageous	• Amundi Pioneer is a value-oriented manager that places emphasis on a fundamental approach to investing and risk management. The team believes that fixed income is mean reverting and that investors are rewarded by identifying market inefficiencies. • The strategy can be invested in non-benchmark sectors and allows up to 60% in non-investment grade sectors including, high yield bonds, bank loans, non-agency MBS and ABS, emerging market debt and currencies.
Investment Process	Advantageous	• The investment process begins with all portfolio managers discussing the macroeconomic environment and central bank policy with a focus on the Federal Reserve. The macro view is used to make decisions on the positioning of portfolios. The Multi-Sector team meets separately to determine appropriate risk levels and to calibrate sector allocations. Once target sector allocations are determined, analysts have the responsibility to present appropriate investment ideas to the team. • Portfolio managers hold final authority and decision-making power for the strategy.
Performance	Highly advantageous	• Amundi Pioneer has outperformed the index consistently over the trailing one-, three-, five-, ten-year, and since inception periods with excess returns of 1.00%, 2.05%, 1.11%, 2.33%, and 2.05% respectively.
Fees	Advantageous	• Collective Investment Trust: Effective fee of 0.52%. Ranks in the 2nd quartile of respondents.

Brandywine Global Asset Management

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Brandywine is located in Philadelphia, Pennsylvania and was founded in 1986. The firm is a wholly owned subsidiary of Legg Masson but operates independently and preserves investment autonomy. • Total firm assets under management exceed \$75 billion; the Global Multi-Sector Income strategy has close to \$970 million in assets.
Team	Highly Advantageous	• The Global Multi-Sector investment team consists of Gerhardt Herbert, Brain Kloss, Tracy Chen, Jack McIntyre, and Anunjeet Sareen. • There are 12 analysts and 6 traders that support the investment team. There is a strong mentorship process by which senior professionals help analysts hone their skill sets.
Investment Philosophy	Advantageous	• The investment philosophy is value driven and rests upon the idea that currencies, spreads and interest rates serve as economic regulators. These changes in economic behavior show mean reversion qualities, thus revealing exploitable opportunities and providing the potential to capture alpha. • The team values macroeconomic research and fundamental analysis equally as the investable universe incorporates securities with a higher default rate than sovereigns and investment grade securities.
Investment Process	Highly Advantageous	• Brandywine's investment process is twofold, combining macroeconomic and fundamental analysis. Quantitative screens help identify sectors and issuers with higher relative value based on macroeconomic views and factors such as sector economics and risks, yield and option adjusted spread analysis, as well as the probability of credit default. Then the team focuses on analyzing the quality of the company's earnings, covenants, capital structure of the issuer as well as value of a firm's assets through a wide variety of scenarios. • Decisions are implemented by portfolio managers after the team has built a consensus around a particular investment idea. Position sizes typically reflect level of agreement and conviction level. Smaller positions are taken when a smaller majority reaches a consensus and a bigger position when everyone on the team reaches an agreement.
Performance	Highly Advantageous	• Brandywine has outperformed the benchmark net of fees over one-, three-, five- and since inception trailing periods, with excess returns of 0.65%, 3.59%, 1.45% and 1.72% respectively.
Fees	Not Advantageous	• Mutual Fund (IS Class): Effective Fee of 1.21%. Ranks in the 4th quartile of respondents.

First State Investments

Rating Criteria	Rating	Rationale
Overall	Not Advantageous	
Organization	Advantageous	• First State Investments is a Louisville based asset manager with $157 billion assets under management across all strategies. The firm is currently 100% owned by the Commonwealth Bank of Australia. • The Global Fixed Income strategy was launched in 2015 and has $131 million in assets under management.
Team	Advantageous	• Ken Bowling, Head of Portfolio Management, serves as the lead portfolio manager for the Global Fixed Income strategy, and he is supported by Steve Willer and Jon Salstorm. Portfolio managers spend 90% of their time on the proposed strategy.
Investment Philosophy	Advantageous	• The investment team believes specialists, acting independently are best equipped to capture alpha by exploiting adjustments in valuation. They are confident that skill can produce positive and repeatable investment outcomes. • The strategy is expected to generate alpha through country allocation, yield curve positioning, allocations between sovereign and quasi-sovereigns, duration and off-benchmark allocations.
Investment Process	Advantageous	• Analysts are free to invest according to their own views of the macroeconomic environment as long as they meet specified skill targets, called "unconstraint decision making." • Ken Bowling has ultimate responsibility for the portfolio. Portfolio managers may authorize transactions in line with product design, which is driven and designed by Mr. Bowling.
Performance	Not Advantageous	• First State Investments has underperformed the index over the trailing one-, three-year, and since inception periods with excess returns of -0.78%, -0.62% and -0.35% respectively.
Fees	Advantageous	• Separate Account: Effective Fee of 0.10%, operating expenses were not specified. Ranks in the 1st quartile of respondents.

Franklin Templeton

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Franklin Templeton, headquartered in San Mateo, CA, is one of the largest public investment managers in the world (NYSE:BEN). The firm traces its history back to 1947 and currently has $724 billion assets under management. • Templeton Global Multisector Plus strategy started in 2003 and it currently has $37 billion in assets under management.
Team	Advantageous	• Dr. Michael Hasenstab has been the lead portfolio manager for the strategy since inception. Christine Zhu joined as co-portfolio manager since 2013. • Portfolio Managers are supported by 142 research analysts and 17 traders.
Investment Philosophy	Advantageous	• Franklin Templeton's ultimate goal is to identify countries and securities undervalued by the market. The team believes that markets are efficient in the long term and they are willing to wait for fundamentals and sentiments to reassert themselves. They consider themselves benchmark contrarian as they look beyond benchmark constituents for investment opportunities. • The strategy has three potential sources of return during all phases of the investment cycle including interest rates, currency and credit risk.
Investment Process	Advantageous	• The investment process combines macroeconomic themes with country analysis to find market inefficiencies. The team has at its disposal proprietary tools to identify misvalued interest rates, currencies and risk premiums. Research combines different avenues to build an opinion including country visits, macroeconomic models, evaluation of ESG factors, and insights coming from portfolio managers. • Dr. Michael Hasenstab is ultimately responsible for all investment decisions.
Performance	Not Advantageous	• Franklin Templeton underperformed over one- and five- year trailing periods with -2.51% and -0.82% respectively. They outperformed over the three-year and since inception periods by 1.91% and 1.32% respectively.
Fees	Advantageous	• Commingled Trust: Effective Fee of 0.57%. Ranks in the 3rd quartile of respondents.

Lazard Asset Management

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Lazard has an extensive history, going back to the 1840s. Asset management capabilities started almost 100 years later in 1953 in London and 1970 in New York, where the firm currently has its headquarters. Lazard Asset Management is a wholly-owned subsidiary of LF&Co which only has one member, Lazard Group LLC, listed on the New York Stock Exchange under "LAZ." • The asset manager has close to $214 billion assets spread across strategies and close to $3 billion in the Lazard Global Core Plus strategy, launched in 2002.
Team	Advantageous	• The investment team that manages the strategy consists of eight investment professionals. The team has three portfolio managers, Yvette Klevan who has been working with Lazard since 2002, Jared Daniels, and Dr. Benjamin Dietrich, who joined Lazard in 1998 and 2007, respectively. Portfolio managers are supported by four portfolio analysts and one client portfolio manager.
Investment Philosophy	Advantageous	• The investment team seeks to manage risk through diversification while taking advantage of a flexible opportunity set. The team's goal is to outperform the benchmark by exploiting abnormalities in spread relationships and undervalued markets as well as specific securities. • The strategy invests in securities both in and outside of the benchmark to enhance returns and diversify risk in the portfolio. Some out of benchmark investments come from emerging markets and high yield.
Investment Process	Advantageous	• The investment process begins with idea generation supported by original research. Analysts often meet with top management to gather information about debt instruments and fundamental/credit developments, giving them an information and perspective edge. Credit research is guided by screening where analysts focus on specific factors to narrow down the investable universe and to identify pricing abnormalities. Lazard also makes use of third party services such as Creditsights, FactSet, Compustat and Bloomberg to reinforce internal research. ESG factors are also incorporated into the investment process by incorporating ESG Rating Reports produced by the Global Risk Management team. After that, the team engages in country research and portfolio construction and currency management. • The global fixed income team discusses all investment decisions for the strategy. Yvette Klevan as lead portfolio manager for the strategy and head of the Global Fixed Income team has the authority to make final decisions.
Performance	Not Advantageous	• Lazard has underperformed the index over the trailing one-, three-, five-, and ten-year and since inception periods with excess returns of -1.11%, -0.24%, -1.94%, -1.51% and -0.16%.
Fees	Advantageous	• Collective Investment Trust: Effective fee of 0.63%. Ranks in the 3rd quartile of respondents.

LMCG Investments

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• LMCG is based in Boston, Massachusetts and was established in 2000. In 2015, the Royal Bank of Canada ("RBC") acquired City National Corporation, a majority stake owner in LMCG. Currently, RBC owns 68% of the firm, while employees own 18% and Lee Munder, founder and board member, owns 14%. LMCG acquired the Serenitas Capital Investment team in 2015 as well. • LMCG has close to $8 billion assets under management, of which $165 million is invested in this strategy.
Team	Advantageous	• The four portfolio managers running the Serenitas strategy are Ajit Kumar, Edwin Tsui, Andreas Eckner, and Guillaume Horel. The portfolio managers have worked together for more than a decade, prior to founding Serenitas, they previously worked together as a team at Merrill Lynch. There are no analysts supporting the team but all portfolio managers have research responsibilities.
Investment Philosophy	Advantageous	• The Serenitas investment team has a relative value investment philosophy where they seek to buy investments with a significant margin of safety while hedging credit spread and interest rate exposure. The team seeks to minimize volatility by using CDS hedges and convexity positions to minimize drawdowns. • The strategy aims to achieve attractive returns with a low correlation to traditional indices by focusing on structured credit securities. Some of the assets that the team delves into are non-agency residential MBS, CLOs, CSOs and index tranches, allowing for both long and short positions as well as public and private securities.
Investment Process	Advantageous	• The investment process involves evaluating collateral, by employing proprietary tools to analyze different scenarios. The team also projects cash flows, determines fair value and risk measures and establish margins of safety. • The team attempts to build consensus when making investment decisions. After discussion with members of the team David Weeks has ultimate authority to set strategy allocations and portfolio managers have the ability to buy and sell securities within the approved strategies.
Performance	Highly Advantageous	• LMCG has significantly outperformed over the one-, three-, five-, and since inception trailing periods with excess returns of 12.95%, 8.67%, 6.88% and 8.17% respectively.
Fees	Not Advantageous	• Fund: Effective fee of 2.0%. Ranks in the 4th quartile of respondents.

Newfleet Asset Management

Rating Criteria	Rating	Rationale
Overall	Not Advantageous	
Organization	Advantageous	• Newfleet Asset Management is based out of Hartford, Connecticut and manages $11 billion in assets. The firm was founded in 1989 and is a wholly-owned affiliate of Virtus Investment Partners, a public investment advisor (NYSE:VRTS). • The Multi-Sector Opportunistic strategy inception was in 2002 and it has $633 million assets under management.
Team	Advantageous	• The Multi-Sector portfolio management team consists of David Albrycht, Benjamin Caron, Steve Hooker, Lisa Bairbault, and Christine Ouellette. In addition, there are other eight investment professionals that act as sector managers/analysts for the strategy.
Investment Philosophy	Advantageous	• The investment philosophy is driven by the belief that inefficiencies within the credit market allow for greater return potential as well as mitigation from interest rate risk. The team seeks to add value through sector rotation, security selection, and risk management. • The Multi-Sector Opportunistic strategy has the flexibility to invest up to 65% in non-investment grade and 50% non-U.S. securities.
Investment Process	Advantageous	• The team analyzes 14 sectors to determine relative value based on yield spread analysis, supply and demand, as well as the investment environment. Then the team focuses on credit research, specifically credit risk, management quality, issue structure and technical market conditions. Credit research is 70-80% generated in house and the rest is gathered through external sources such as Bloomberg, FactSet, and CreditSights. • The investment team makes all final investment decisions by consensus.
Performance	Highly Advantageous	• Newfleet Asset Management has outperformed the benchmark over the one-, three-, five-, ten-year and since inception trailing periods, with excess returns of 1.22%, 3.48%, 1.48%, 3.27%, and 2.12% respectively.
Fees	Not Advantageous	• Mutual Fund (VMFRX): Effective fee of 1.18%. Ranks in the 4th quartile of respondents.

Octagon Credit Investors

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Octagon Credit Investors was founded in 1998 and its headquarters are located in New York, New York. The ownership structure consist of Conning & Company holding a majority interest of 82.1% and seven employees owning the remaining 17.9%. • Octagon manages $19.7 billion assets across various strategies. The Senior Secured Credit Fund was launched in 2012 and manages $94 million assets.
Team	Advantageous	• Michael Nechamkin, Senior Portfolio Manager and CO-CIO, has been managing the strategy since inception. • The investment committee, which serves as a credit committee, has worked together for more than 14 years. The Investment Research Professionals include Chief Executive Officer Andrew Gordon, Head of Research Matthew Lee, Senior Portfolio Managers Lauren Basmadjian, Gretchen Lam, and Portfolio Manager Lauren Law.
Investment Philosophy	Advantageous	• The strategy seeks to identify attractive investment opportunities and focused on capital preservation. The team does this through fundamental credit analysis, relative value analysis, and active management. • The fund invest primarily in below investment grade senior secured floating rate loans and can allocate up to 10% of the portfolio in high yield bonds, second lien leveraged loans, and other corporate credit instruments.
Investment Process	Advantageous	• Octagon uses screens to identify interesting ideas. Then the investment team comes up with credit judgements and investment recommendations that incorporate competitive positions, ability to generate cash flow, management team, capital structure, and covenant protections, among other factors. The idea is then presented to the investment committee. • Approval for new investment ideas require a majority vote by the investment committee, while position sizes are determined by Michael Nechamkin.
Performance	Highly Advantageous	• Octagon Credit Investors has significantly outperformed over one-, three-, five-year and since inception periods, with excess returns of 7.72%, 4.35%, 2.73% and 3.69% respectively.
Fees	Advantageous	• Commingled Fund: Effective fee of 0.55%. Ranks in the 3rd quartile of respondents.

Putnam Investments

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Putnam is an investment services company based out of Boston, Massachusetts. It traces back its history to 1937 and has $172 billion assets under management across various asset classes. Putnam is privately owned by Great-West Lifeco, which is a subsidiary of Power Financial Corporation, the financial arm of the Power Corporation of Canada. Up to 10% of Putnam's ownership may be held by employees through Putnam's Equity Incentive Plan. • Putnam Fixed Income Global Alpha strategy's inception took place in 2008 and it currently manages close to $10 billion assets.
Team	Advantageous	• There are four portfolio managers: head of Portfolio Construction, D. William Kohli, as well as Michael Salm, Paul Scanlon, and Albert Chan. Portfolio managers have sector responsibilities and do not have individual portfolio assignments, thus decisions made in a specific sector are made across all applicable portfolios.
Investment Philosophy	Advantageous	• The investment philosophy rests on the idea that inefficiencies exist in all areas of the fixed income market and through a disciplined investment processes active management is in a better position to identify those inefficiencies. The team believes that the greatest opportunities occur in security selection and in more complex markets. • The strategy takes a benchmark-agnostic and unconstrained fixed income approach. Instead of allocating by sector the team seeks to allocate to sources of risk.
Investment Process	Advantageous	• The process begins with idea generation based on relative value and trading activity, among other things. Then the team works to select the best ideas by assessing several factors including confidence in alpha potential, correlation to risk types, business cycle, and liquidity. They pursue opportunities in various spectrums of risk such as credit risk, prepayment risk, liquidity risk and term structure risk. • D. William Kohli has ultimate decision-making authority, but he collaborates with other portfolio managers who also contribute to the decision making process.
Performance	Not Advantageous	• Putnam has underperformed in the long run over five- and ten-year, as well as since inception trailing periods, with excess returns of -0.20%, -0.80%, and -1.14%. However, they have outperformed in the short run over one- and three-year trailing periods with excess returns of 4.51% and 1.77%, respectively.
Fees	Highly Advantageous	• Commingled Fund: Effective fee of 0.45%. Ranks in the 1st quartile of respondents.

Thornburg Investment Management

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Thornburg Investment Management was founded in 1982 in Santa Fe, New Mexico. It is a privately held investment management firm with Thornburg family members and revocable trust owning 29%, Thornburg irrevocable family trust holding 44%, Brian McMahon CIO and director holding 17% and the remaining 10% held by other Thornburg employees. It is also important to note that Founder Garret Thornburg owns all voting shares. • The firm has close to $47 billion assets under management across all strategies, and the Multisector Opportunistic strategy, launched in 2008, has $1 billion assets.
Team	Advantageous	• Jason Brady has been managing the strategy since inception. Lon Erickson and Jeff Klingelhofer joined as portfolio managers in 2015 and Christian Hoffmann was promoted to portfolio manager in 2018. In total, there are 38 investment professionals who contribute to all of the firm's strategies. • There are eight fixed income members of the investment team that focus on the strategy. However, all investment team members contribute to multiple strategies.
Investment Philosophy	Advantageous	• The investment philosophy rests on the premise that markets are inefficient with respect to the assessment of risk and reward. The team seeks to deliver a strong and consistent income stream that preserves the investor's purchasing power by capitalizing on their investment framework. • Thornburg is benchmark aware, but they do not use it as a guideline to build their portfolios. There are no guidelines on how much the strategy can invest in below investment grade securities.
Investment Process	Not Advantageous	• Both the global fixed income universe and the income-producing equity universe are considered when searching for investment opportunities. The team then delves into fundamental research in which they conduct qualitative and quantitative security analysis to grasp a holistic view of the securities and potential valuations. Finally, the portfolio is constructed with a view to duration, yield curve positioning, credit quality, sector allocation, risk tolerance, and forward looking views. • Jason Brady, Lon Erickson, Jeff Klingelhofer, and Christian Hoffmann share the responsibility of making decisions for the strategy. When reaching a course of action the team aims for consensus.
Performance	Highly Advantageous	• Thornburg Investment Management has consistently outperformed the benchmark over one-, three-, five-, ten-year and since inception trailing periods, with excess returns of 2.85%, 3.05%, 1.40%, 3.39% and 2.23% respectively.
Fees	Advantageous	• Collective Investment Trust: Effective fee of 0.50%. Ranks in the 2nd quartile of respondents.

Voya Investment Management

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Voya Investment Management began in 1973 and its headquarters are in New York, New York. The firm is the asset management arm of Voya Financial a publicly traded company (NYSE:VOYA) and it manages $209 billion in assets. • The Voya Unconstrained Fixed Income strategy was established in 2013 and it has $614 million assets under management
Team	Advantageous	• The portfolio managers for the strategy are Matt Toms, Sean Banai, and Brain Timberlake. They also are involved in other strategies including but not limited to Core and Core Plus Fixed Income, Global Bond, and Private Credit.
Investment Philosophy	Advantageous	• The investment philosophy rests on the idea that unconstrained fixed income should be value driven, that managers should use duration as a risk management tool, and that unconstrained fixed income mangers should be free from style bias and demonstrate low correlation to rates and equities. • The team focuses solely on fixed income investment opportunities in cash and related derivative markets.
Investment Process	Advantageous	• The investment process begins with asset allocation to construct a model portfolio that is free from any restrictions. After the Asset Allocation Team makes its recommendations, the Multi-Sector Management Team discusses themes and constructs a model portfolio incorporating the strategy's guidelines and objectives. Once the model portfolio is vetted by both the Asset Allocation team and the Multi-Sector Management Team, security selection is entrusted to specialist sector teams. • Matt Toms has ultimate asset allocation decision-making authority, but he collaborates extensively with other professionals and seeks a team-based approach.
Performance	Highly Advantageous	• Voya Investment Management has consistently outperformed the benchmark over one-, three-, five-year, and since inception trailing periods, with excess returns of 4.68%, 3.06%, 2.38% and 2.03% respectively.
Fees	Not Advantageous	• Mutual Fund (IISIX): Effective fee of 1.38%. Ranks in the 4th quartile of respondents.

Wellington Management Company

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Wellington Trust Company is an affiliate of Wellington Management Group, which traces back to 1928. The parent company is a private liability partnership owned by 156 active partners. • Firm assets total more than $1 trillion. The Opportunistic Fixed Income strategy was launched in 2000 and has close to $3 billion in assets under management.
Team	Advantageous	• Brian Garvey and Brij Khurana serve as co-portfolio managers for the strategy. They are supported by 12 sector specialists and market neutral investors who are responsible for security selection, idea generation, and dedicated assets within their areas of expertise.
Investment Philosophy	Advantageous	• There are three beliefs core to Wellington's investment philosophy: fixed income inefficiencies exist and are more pronounced outside of the core sectors, a differentiated perspective is needed for long-term success, and diversification is of crucial importance in risk management. • The strategy invests in global government, inflation-linked, corporate, securitized, high yield, bank loans, emerging markets and convertible securities. The team also seeks to provide a volatility profile in line with core fixed income primarily through diversification.
Investment Process	Advantageous	• The main point of the investment process is to identify economies, countries, industries or individual securities that are benefiting from structural tailwinds. • Brian Garvey has been the primary decision maker for the strategy since he took responsibility for managing the portfolio in 2008.
Performance	Advantageous	• Wellington has outperformed the benchmark over one-, three- , five- and ten-year trailing periods with excess returns of 1.85%, 2.91%, 1.18% and 1.33% respectively. However, it has underperformed since inception with an excess return of -0.34%.
Fees	Advantageous	• Commingled Fund: Effective fee of 0.50%. Ranks in the 2nd quartile of respondents.

Western Asset Management Company

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	• Western Asset Management Company was established in 1971 and later acquired by Legg Mason In 1986. Currently, Western Asset is a wholly owned subsidiary of Legg Mason, a publicly traded firm (NYSE:LM). • The firm is based in Pasadena, California and it has $420 billion assets under management. The Multi-Asset Credit strategy ("MAC"), launched in 2010, has close to $6 billion in assets under management.
Team	Advantageous	• Michael Buchanan, Mark Lindbloom, S. Kenneth Leech, and Annabel Rudebeck all serve as portfolio managers for the strategy. All portfolio managers have other strategy responsibilities.
Investment Philosophy	Advantageous	• The investment philosophy rests on the premises that markets often misprice securities and that the firm has the ability to identify them. The team also believes that the greater the confidence in a particular security, the greater the allocation it should have in appropriate portfolios. • The strategy currently has no weight restrictions on sector, industry, or geography, but the team employs volatility guardrails between 5% and 7%.
Investment Process	Advantageous	• In the first step of the investment process, the Global Investment Strategy Committee provides an outlook on global growth, inflation, interest rates, yield curves, country, currency, and sector allocation. Then the team assess the views of the Unconstrained Asset Committee, which compares global credit sector fundamentals, valuations, and technical conditions. The MAC team determines allocations and incorporates bottom-up views from different sector teams. They also work with risk management and portfolio analytics to construct portfolios. • Portfolio managers have veto power and are responsible for managing sector and portfolio allocations.
Performance	Advantageous	• Western Asset Management has outperformed the benchmark over one-, three-, five-year, and since inception trialing periods, with excess returns of 0.02%, 2.40%, 1.20%, and 2.11% respectively.
Fees	Advantageous	• Collective Investment Fund (R1 Share Class): Effective fee of 0.59%. Ranks in the 3rd quartile of respondents.

Manager Trailing Performance (Net of Fees)[1]
As of September 30, 2018

Manager	Inception Date	1 Year Excess Returns (%)	3 Year Excess Return (%)	5 Year Excess Return (%)	10 Year Excess Return (%)	Since Inception Excess Return (%)
Invesco Advisers	09/2013	1.62	3.01	-	-	1.56
Loomis, Sayles & Co	08/2013	1.63	2.84	1.71	-	1.67
Manulife Asset Management	03/2010	-0.55	1.20	1.08	-	2.17
Amundi Pioneer Asset Management	06/1999	1.00	2.05	1.11	2.33	2.05
Brandywine Global Asset Management	04/2013	0.65	3.59	1.45	-	1.72
First State Investments	06/2015	-0.78	-0.62	-	-	-0.35
Franklin Templeton	08/2003	-2.51	1.91	-0.82	-	1.32
Lazard Asset Management	07/1990	-1.11	-0.24	-1.94	-1.51	-0.16
LMCG Investments	01/2013	12.95	8.67	6.88	-	8.17
Newfleet Asset Management	03/1994	1.22	3.48	1.48	3.27	2.12
Octagon Credit Investors	02/2012	7.72	4.35	2.73	-	3.69
Putnam Investments	08/2008	4.51	1.77	-0.20	-0.80	-1.14
Thornburg Investment Management	12/2008	2.85	3.05	1.40	3.39	2.23
Voya Investment Management	01/2013	4.68	3.06	2.38	-	2.03
Wellington Management Company	03/2000	1.85	2.91	1.18	1.33	-0.34
Western Asset Management Company	02/1995	0.02	2.40	1.20	-	2.11

1 Benchmark is the Bloomberg Barclays Universal Index.

Proposed Fees

Manager	Vehicle Type	Estimated Effective Fee (%)[1]	Rank (Quartile)
Invesco Advisers	Institutional Retirement Trust	0.46	1st
Loomis, Sayles & Co	New Hampshire Investment Trust	0.50	2nd
Manulife Asset Management (US)	Separate Account	0.40	1st
Amundi Pioneer Asset Management	Collective Investment Trust	0.52	2nd
Brandywine Global Asset Management	Mutual Fund (IS Class)	1.21	4th
First State Investments	Separate Account	0.10	1st
Franklin Templeton	Commingled Trust	0.57	3rd
Lazard Asset Management	Collective Investment Trust	0.63	3rd
LMCG Investments	Fund	2.00	4th
Newfleet Asset Management	Mutual Fund (VMFRX)	1.18	4th
Octagon Credit Investors	Commingled Fund	0.55	3rd
Putnam Investments	Commingled Fund	0.45	1st
Thornburg Investment Management	Collective Investment Trust	0.50	2nd
Voya Investment Management	Mutual Fund (IISIX)	1.38	4th
Wellington Management Company	Commingled Fund	0.50	2nd
Western Asset Management Company	Collective Investment Fund	0.59	3rd

[1] Assumes a mandate size of $30 million. In certain cases operating expenses for commingled fund/collective investment trust vehicles and separate accounts were unspecified. Operating expenses for separate accounts are subject to price proposals from the custodian bank.

Summary

- A total of sixteen managers submitted responses to this search. Based upon our review and evaluation of each respondent, Meketa Investment Group has Invesco, Loomis Sayles, and Manulife, rated as "Highly Advantageous." Nine managers were ranked as "Advantageous" and three managers were ranked as "Not Advantageous."

Short Duration Fixed Income Manager Finalist Overview

Table of Contents

Short Duration Manager Search Background

Background

- On September 13, 2018, Meketa Investment Group issued a $30 million Short Duration Credit Fixed Income RFP on behalf of the Plymouth County Retirement Association.
  - Subsequently, the search was posted to Meketa's website, sent to PERAC and picked up by a variety of news sources.
- Meketa requested that all respondents submit the RFP by September 27, 2018
- During the November 27th meeting, the Association was presented with eighteen responses.
- Lord Abbett, Income Research & Management (IR&M), and Macquarie were invited to interview.

Manager Candidates

Lord Abbett
As of November 30, 2018

Lord Abbett	
Firm Location	Jersey City, New Jersey
Firm Inception	1929
Ownership Structure	Private Partnership
Assets Under Management (Firm)	$167 billion
Strategy Inception	2008
Assets Under Management	$45 billion

Firm Overview

- Lord Abbett is located in Jersey City, New Jersey and is 100% employee owned, with no single person owning more than 25%. The firm now has 61 partners led by Douglass B. Sieg, who has a 24-year career at Lord Abbett and has been involved in strategic and management initiatives.
- The firm was founded in 1929 and currently manages $167 billion in assets across equity and fixed income strategies. The Short Duration Credit strategy was instituted in 2008 and now has $45 billion.

Lord Abbett (continued)

Investment Team

- The Short Duration Credit strategy was developed by Robert Gerber, former Partner and Chief Investment Officer, and Robert Lee, current Partner and Chief Investment Officer. Currently, Portfolio Manager Andrew O'Brien is responsible for the day to day management of the strategy. He started in the industry in 1998 and has a 20 year tenure with at the firm. Mr. O'Brien has been managing the strategy since inception in January 2008.
- The global credit research team is led by Gregory Parker, who has 27 years of industry experience. He directs a team of 23 analysts that provide coverage on the corporate bond sector for all fixed income strategies, including the Short Duration Credit strategy. Analysts are industry specialists which allows them to cover credits across the capital structure efficiently.

Investment Philosophy

- When developing the Short Duration strategy the team conducted in depth research that was used as guidance for strategic design. Their research findings supported the idea that persistent yield advantage within a risk managed short duration strategy provided more opportunity to outperform relative to lower yielding government securities or strategies based on interest rate anticipation. Therefore the strategy tends to have an overweight to non-government sectors with an emphasis on yield.
- The team is focused on three main sectors to add yield, including investment grade corporate credit, commercial mortgage-backed securities and high yield corporate credit.

Investment Process

- The investment process begins with an evaluation of the global economic and financial market environment by the portfolio management team in order to set sector allocation targets. The team employs proprietary models that recommend optimal sector allocations based on historical and inter-sector spread relationships as a starting point for discussion. Once attractive sectors are determined, the analyst team conducts in-depth fundamental analysis for security selection decisions.
- Portfolio manager Andrew O’Brien holds all final decision making authority for the Short Duration strategy.

Income Research & Management
As of November 30, 2018

Income Research & Management	
Firm Location	Boston, Massachusetts
Firm Inception	1987
Ownership Structure	Privately Owned
Assets Under Management (Firm)	$73 billion
Strategy Inception	2012
Assets Under Management (Strategy)	$415 million

Firm Overview

- IR&M is located in Boston, Massachusetts and is 87% employee owned, with ownership distributed among 52 employees. The remaining 13% is family owned. Founder John Sommers transferred a portion of his shares to his two sons not involved in the business. The firm was founded in 1987 and has close to $73 billion in assets under management. The 1-3 Year Credit strategy was incepted in 2012 and has $415 million in assets under management.

Income Research & Management (continued)

Investment Team

- The investment team consists of 41 professionals, of which 14 are portfolio managers. Portfolio managers' involvement in the strategy varies depending on the extent that their sector expertise is utilized within portfolio guidelines. Since portfolio managers are not assigned specific portfolios or mandates, they have buy and sell authority within the bounds of their respective sectors.
- The team is also supported by 18 analysts, who are responsible for credit analysis within their respective sectors, 5 traders, and 4 directors

Investment Philosophy

- The investment philosophy is centered on bottom-up security selection, diversification, risk control, and a value orientation. The team believes that they can add value in the long run through security selection and active portfolio risk management. They also look into sub-sectors of the market for issues that may offer structural or price advantages.

Investment Process

- New ideas are sourced from new issues, secondary market activity, management meetings, conferences, or team conversations. Then securities are evaluated on an issue by issue basis, placing heavy emphasis on credit fundamentals, structural features, volatility, and liquidity. Analysts layer top-down analysis by going through different testing methodologies, giving special attention to downside risk under extreme scenarios. The team opts to maintain a duration and yield curve neutral stance, while setting overall sector exposure targets. Portfolio managers, who act as sector specialists, are responsible for determining sub-sector exposure that must fall within limit bands.
- Portfolio managers are ultimately responsible for buy and sell decisions within their respective areas of expertise.

Macquarie Investment Management
As of November 30, 2018

Macquarie Investment Management	
Firm Location	Philadelphia, Pennsylvania
Firm Inception	1929
Ownership Structure	Subsidiary
Assets Under Management (Firm)	$253 billion
Strategy Inception	2008
Assets Under Management (Strategy)	$3 billion

Firm Overview

- Macquarie is a Philadelphia based asset manager and subsidiary of Macquarie Group Limited, a publicly traded firm that traces back to 1929 (ASX:MQG). Macquarie currently holds a 95% interest in the firm and the remaining 5% is owned by employees.
- The firm's assets under management total $253 billion. The Limited Term Fixed Income strategy has close to $3 billion in assets.

Macquarie Investment Management (continued)

Investment Team

- The portfolio managers responsible for the strategy are Roger Early, David Hillmever, and Cynthia Isom.
- Portfolio managers are supported by 15 analysts and 7 quantitative analysts who are divided into sectors and industries. The firm does not utilize a global research platform, as they believe will lead to deterioration of style purity.
- All portfolio managers are encouraged to invest in the products they manage. They also receive part of their compensation through a profit sharing plan, which exclusively invests in Macquarie Investment Management mutual funds.

Investment Philosophy

- The team believes that the market misprices credit, prepayment, and liquidity risks. One way that they seek to add value is by emphasizing issue selection from sound corporations while staying away from making decisions based on macroeconomic assumptions.
- Macquarie may utilize out of benchmark allocations if they generate correlation benefits and present potential alpha opportunities.

Investment Process

- The twofold investment process emphasizes the idea that security selection is the best way to generate alpha. First, cash flow and balance sheet models are developed to determine whether a company has the ability and willingness to pay future coupon payments. Analysts also conduct stress tests under various market environments as well as growth scenarios. Second, the team uses relative value factors to determine how a credit trades relative to its peers and the industry in general. After that, analysts set price targets and entry points. The ultimate decision making authority lies with the lead portfolio manager.

Historical Performance, Portfolio Characteristics, and Management Fees

Portfolio Characteristics
As of November 30, 2018

	Lord Abbett	Income Research & Management	Macquarie Investment Management	Bloomberg Barclays 1-3 Yr. Credit
Portfolio Profile:				
Effective Duration (years)	2.05	1.78	2.84	1.89
Yield to Maturity	4.18	3.60	4.11	3.61
Number of Holdings	1556	110	131	1145
Annual Turnover	45	43	109	N/A
Average Credit Quality	A	A-	BBB	A
Credit Quality Breakdown:				
AAA	42	10	0	1
AA	7	3	6	15
A	9	36	41	42
BBB	29	50	50	42
BB	6	1	2	0
B	4	0	0	0
Bellow B	2	0	0	0
Unrated	0	0	0	0
Cash	0	0	0	0
Sector Exposure:				
Treasury	1	0	0	0
Agency	0	0	0	0
Corporate	38	87	99	100
Municipal	0	3	0	0
MBS	1	0	0	0
CMBS	29	3	0	0
ABS	27	7	0	0
Sovereign	1	0	0	0
Non-Corporate	0	0	1	0
Other (Gov't Related)	2	0	0	0
Cash and Equivalents	1	0	0	0

Historical Risk (net of fees)[1]

Common Period, as of November 30, 2018

	Lord Abbett	Income Research & Management	Macquarie Investment Management	Bloomberg Barclays 1-3Yr Credit
Common Period Performance:				
Common Period Performance (%)	2.7	1.2	2.7	1.5
Best 3 Months (%)	2.3	1.3	2.3	1.4
Worst 3 Months (%)	-0.8	-0.4	-1.9	-0.3
Risk Measures:				
Standard Deviation (%)	1.2	0.7	2.1	0.8
Tracking Error (%)	0.7	0.2	1.4	N/A
Beta	1.34	0.93	2.36	1.00
Correlation to Benchmark	0.84	0.97	0.88	1.00
Downside Deviation (%)	0.9	0.5	1.4	0.5
Upside Capture (%)	158	86	208	100
Downside Capture (%)	102	112	306	100
Risk-Adjusted Performance:				
Jensen's Alpha (%)	0.8	-0.3	-0.3	N/A
Sharpe Ratio	1.77	1.00	1.07	1.40
Information Ratio	1.58	-1.73	0.80	N/A

- Based on the Sharpe Ratio, Lord Abbett offers the most attractive risk-adjusted returns over the common period.
- Lord Abbett also has the highest Information Ratio, indicating that it has been the most consistent at delivering excess returns relative to the benchmark, over the common period.

[1] Common period is from March 2012 to November 2018.

Trailing and Calendar Year Performance (net of fees) [1]
As of November 30, 2018

	Lord Abbett	Income Research & Management	Macquarie Investment Management	Bloomberg Barclays 1-3Yr. Credit
Trailing Period Returns (%):				
1 Year	1.4	0.8	-0.1	1.0
3 Years	2.6	1.1	2.2	1.5
5 Years	2.2	1.0	2.5	1.3
7 Years	3.0	-	3.0	1.7
10 Years	5.1	-	5.1	3.1
Calendar Year Returns (%):				
2017	2.7	1.5	3.6	1.7
2016	4.4	1.4	3.5	2.1
2015	0.8	0.8	1.6	0.9
2014	2.1	0.8	4.4	1.1
2013	2.0	0.9	2.0	1.5
2012	7.0	-	6.5	3.9
2011	3.5	-	4.4	1.8
2010	6.8	-	7.4	4.2
2009	17.6	-	17.2	11.6

[1] Common period is from March 2012 to September 2018. Due to performance breaks in the IR&M 1-3 Year Credit composite, net monthly returns for 03/2016 and 02/2017 were taken from the IR&M Short Credit Mutual Fund.

Management Fees

	Lord Abbett	Income Research + Management	Macquarie Investment Management
Vehicle Name	Lord Abbett Short Duration Credit Trust II	IR&M Short Credit Fund LLC	Short Duration Credit
Investment Vehicle	Collective Investment Trust	Private Investment Fund	Separate Account
Minimum Investment	N/A	$5 million	N/A
Fee Schedule	0.19% on all assets.	0.22%[1] on first $50 million, 0.18% next $50 million, 0.15% thereafter	0.18% on all assets
Liquidity	Daily	Daily	Daily

[1] Includes operating expenses.

Comparative Manager Assessment

Comparative Manager Assessment

	Lord Abbett	Income Research & Management	Macquarie Investment Management
Organization	• 100% employee owned. • Currently manages $167 billion in total assets and $45 billion in the Short Duration Credit strategy.	• 87% employee owned, with ownership distributed among 52 employees. The remaining 13% is family owned. • The firm has close to $73 billion in assets under management. • Strategy incepted in 2012 and has $415 million in assets under management.	• Subsidiary of Macquarie Group Limited, a publicly traded firm that traces back to 1929 (ASX:MQG). Macquarie currently holds a 95% interest in the firm and the remaining 5% is owned by employees. • Total firm assets are $253 billion. Limited Term Fixed Income strategy has $3 billion in assets.
Investment Team	• Portfolio Manager Andrew O'Brien is responsible for day to day management since inception in January 2008.	• Portfolio managers have buy and sell authority within the bounds of their respective sectors.	• Portfolio managers are Roger Early, David Hillmever, and Cynthia Isom. • Supported by 15 fundamental analysts and 7 quantitative analysts divided into sectors and industries.
Investment Philosophy	• Seek to add value by taking advantage of dislocations in valuations across sectors through sector rotation. • Seek to capture inefficiencies in bond prices using qualitative and quantitative methods.	• Focused on bottom-up security selection, diversification, risk control, and a value orientation. • Seek to add value through security selection and active portfolio risk management. • Look into sub-sectors of the market for issues that may offer structural or price advantages.	• The market misprices credit, prepayment, and liquidity risks. • Seek to add value by emphasizing issue selection from sound corporations while staying away from making decisions based on macroeconomic assumptions.

Comparative Manager Assessment (Continued)

	Lord Abbett	Income Research & Management	Macquarie Investment Management
Investment Process	• Begins with an evaluation of the global economic and financial market environment in order to set sector allocation targets. • Proprietary models recommend optimal sector allocations based on historical and inter-sector spread relationships. • Once attractive sectors are determined, analyst team conducts in-depth fundamental analysis for security selection decisions.	• Securities are evaluated on an issue by issue basis, placing heavy emphasis on credit fundamentals, structural features, volatility, and liquidity. • Analysts layer top-down analysis by going through different testing methodologies, giving special attention to downside risk under extreme scenarios. • Maintain a duration and yield curve neutral stance.	• Emphasizes security selection as the best way to generate alpha. • Cash flow and balance sheet models determine whether a company has the ability and willingness to pay future coupon payments. • Analysts conduct stress tests under various market environments as well as growth scenarios. • Team uses relative value factors to determine how a credit trades relative to its peers and the industry in general. Analysts set price targets and entry points.
Performance	• Outperformed the Bloomberg Barclays 1-3 Year Credit index over the one-, three-, five-, seven- and ten-year trailing periods.	• Underperformed the Bloomberg Barclays 1-3 Year Credit index over the one-, three- and five-year trailing periods.	• Slight underperformance versus the Bloomberg Barclays 1-3 Year Credit index over the one-year trailing period. In the remainder of the periods the strategy outperformed, including three-, five-, seven- and ten-year trailing periods.
Management Fees	• Collective Investment Trust: Effective Fee of 0.19%.	• Private Investment Fund: Effective Fee of 0.22%.[1]	• Separate Account: Effective Fee of 0.18%.

[1] Includes operating expenses.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

Tracking Error: This statistic measures the standard deviation of excess returns relative to a benchmark. Tracking error is calculated by multiplying the standard deviation of the monthly excess returns of a portfolio relative to a benchmark by the square root of twelve in order to annualize. The higher the tracking error, the greater the volatility of excess returns relative to a benchmark.

Sources: www.businessdictionary.com

Investment Terminology, International Foundation of Employee Benefit Plans, 1999.

Modern Investment Management, Litterman, Bob, 2003.

The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991.

Investment Manager Analysis, Travers, Frank J., 2004

Disclaimer, Glossary, and Notes

WE HAVE PREPARED THIS REPORT (THIS “REPORT”) FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE “RECIPIENT”).

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE “FORWARD - LOOKING STATEMENTS,” WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS “MAY,” “WILL,” “SHOULD,” “EXPECT,” “AIM”, “ANTICIPATE,” “TARGET,” “PROJECT,” “ESTIMATE,” “INTEND,” “CONTINUE” OR “BELIEVE,” OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

Duration: Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. Portfolio Return- [Risk Free Rate+Beta*(market return-Risk Free Rate)].

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

Prepayment Risk: The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about is future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

Quality Rating: The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

Style: The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Yield to Maturity: The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a "basis book." For example, a 5% bond pays $5 a year interest on each $100 par value. To figure its current yield, divide $5 by $95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay $100 for the bond that can be bought now for $95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\%\text{ (discount)}}{5\text{ (yrs. to maturity)}} = \begin{array}{c}1\%\text{ pro rata, plus}\\ 5.26\%\text{ (current yield)}\end{array} = 6.26\%\text{ (yield to maturity)}$$

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999.
The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991.

The Russell Indices®, TM, SM are trademarks/service marks of the Frank Russell Company.

Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.