

Plymouth County Retirement Association

July 29, 2020

Fund Evaluation Report

Agenda

1. Estimated Retirement Association Performance As of June 30, 2020
2. Performance Update As of May 31, 2020
3. Current Issues
 - Capital Markets Expectations
 - Asset Allocation Review And Risk Analysis
 - Investing in a Low Rate Environment
4. Disclaimer, Glossary, and Notes

**Estimated Retirement Association Performance
As of June 30, 2020**

Estimated Aggregate Performance¹

	June ² (%)	QTD (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Total Retirement Association	2.0	11.8	-5.0	0.5	3.8	4.6	7.6
60% MSCI ACWI/40% Barclays Global Aggregate	2.3	12.9	-2.6	3.0	5.2	5.3	6.6
Policy Benchmark	2.0	11.2	-2.9	3.0	5.7	5.8	8.1

Benchmark Returns

	June (%)	QTD (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Russell 3000	2.3	22.0	-3.5	6.5	10.0	10.0	13.7
MSCI EAFE	3.4	14.9	-11.3	-5.1	0.8	2.1	5.7
MSCI Emerging Markets	7.4	18.1	-9.8	-3.4	1.9	2.9	3.3
Barclays Aggregate	0.6	2.9	6.1	8.7	5.3	4.3	3.8
Barclays TIPS	1.1	4.2	6.0	8.3	5.1	3.8	3.5
Barclays High Yield	1.0	10.2	-3.8	0.0	3.3	4.8	6.7
JPM GBI-EM Global Diversified (Local Currency)	0.5	9.8	-6.9	-2.8	1.1	2.3	1.6
S&P Global Natural Resources	2.1	20.5	-19.1	-16.8	-0.1	0.9	1.5

Estimated Total Assets

	Estimate
Total Retirement Association	\$999,008,211

¹ The June performance estimates are calculated using index returns as of June 30, 2020 for each asset class. No performance estimate was included for private equity, real estate, infrastructure, and private natural resources asset classes.

² As of June 30, 2020.

Performance Update
As of May 31, 2020

DRAFT

Asset Class Net Performance Summary											
	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement Association	985,371,418	100.0	3.2	9.6	-6.8	2.6	3.5	4.1	7.2	7.5	Nov-89
Custom Benchmark - Policy Benchmark (Net)			2.4	8.9	-4.7	5.1	5.3	5.2	7.8	--	Nov-89
Domestic Equity Assets	244,388,751	24.8	7.3	23.5	-6.3	8.8	8.5	--	--	10.8	Jan-16
Russell 3000			5.3	19.3	-5.6	11.5	9.5	9.2	12.8	11.2	Jan-16
International Developed Market Equity Assets	50,050,271	5.1	5.2	13.5	-18.9	-8.1	-3.6	--	--	1.1	Jan-16
MSCI EAFE			4.4	11.1	-14.3	-2.8	-0.4	0.8	5.3	3.0	Jan-16
International Emerging Market Equity Assets	93,617,386	9.5	1.7	11.3	-15.5	-4.6	-1.0	--	--	4.5	Jan-16
MSCI Emerging Markets			0.8	10.0	-16.0	-4.4	-0.2	0.9	2.5	6.1	Jan-16
Global Equity Assets	101,221,581	10.3	4.7	16.7	-7.9	4.0	--	--	--	-0.1	Feb-18
MSCI ACWI			4.3	15.5	-9.2	5.4	5.2	5.3	8.5	-0.6	Feb-18
Core Fixed Income	87,682,878	8.9	1.1	3.5	2.1	5.5	3.7	--	--	3.9	Jan-16
75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year			0.5	2.4	4.8	8.5	4.6	3.6	3.6	4.3	Jan-16
Value Added Fixed Income	97,646,280	9.9	3.8	6.2	-5.8	-1.4	1.9	--	--	5.0	Jan-16
Custom Benchmark (1)			3.7	7.1	-3.7	1.2	3.0	--	--	5.8	Jan-16
Hedge Funds (2)	57,393,562	5.8	1.4	3.3	-16.9	-9.7	-2.1	-0.2	2.9	2.8	Feb-10
Custom Benchmark			1.2	2.9	-0.1	2.4	2.5	1.5	2.7	2.7	Feb-10
Real Estate (3)	109,508,771	11.1	-0.2	-0.1	2.2	8.3	7.0	--	--	5.9	Jan-16
80% NCREIF ODCE / 20% Wilshire REIT			-0.1	1.6	-3.2	0.8	5.0	--	--	5.4	Jan-16
Private Equity (4)	71,264,666	7.2	0.0	0.0	2.2	9.4	8.1	--	--	4.8	Jan-16
Cambridge Associates FoF Composite 1Q Lagged			0.0	0.0	4.3	13.6	13.1	10.5	12.0	10.3	Jan-16
Real Assets (5)	68,194,292	6.9	0.1	0.2	-0.9	6.4	3.2	--	--	-0.6	Jan-16
CPI + 3%			0.2	-0.3	0.2	3.2	4.6	4.5	4.6	4.7	Jan-16
Cash and Cash Equivalent	4,402,980	0.4									

(1) The custom benchmark is comprised of 25% BBgBarc US High Yield/ 25% Credit Suisse Leveraged Loans/ 25% JP Morgan EMBI Global diversified/ 25% BBgBarc Multiverse TR

(2) The data for EntrustPermal Special Opportunities Evergreen Fund and Entrust Special Opportunities Fund III are based on March 31, 2020 market value, adjusted for subsequent cash flows.

(3) The market value and performance is one quarter lagged.

(4) The market value and performance is one quarter lagged.

(5) The market value and performance is one quarter lagged.

Trailing Net Performance												
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement Association	985,371,418	100.0	--	3.2	9.6	-6.8	2.6	3.5	4.1	7.2	7.5	Nov-89
<i>Custom Benchmark - Policy Benchmark (Net)</i>				2.4	8.9	-4.7	5.1	5.3	5.2	7.8	--	Nov-89
Domestic Equity Assets	244,388,751	24.8	24.8	7.3	23.5	-6.3	8.8	8.5	--	--	10.8	Jan-16
<i>Russell 3000</i>				5.3	19.3	-5.6	11.5	9.5	9.2	12.8	11.2	Jan-16
Rhumblin Russell 1000 Value	36,046,339	3.7	14.7	3.4	15.0	-15.6	-1.6	2.6	4.3	--	7.3	Apr-13
<i>Russell 1000 Value</i>				3.4	15.1	-15.7	-1.6	2.6	4.4	9.8	7.4	Apr-13
Rhumblin Russell 1000 Growth	45,842,117	4.7	18.8	6.7	22.4	5.3	26.2	17.2	14.4	16.0	15.9	Jul-09
<i>Russell 1000 Growth</i>				6.7	22.5	5.2	26.3	17.2	14.5	16.1	16.0	Jul-09
Fisher Midcap Value	44,021,499	4.5	18.0	8.0	25.9	-8.0	7.2	6.3	7.2	10.8	7.1	Apr-07
<i>Russell MidCap Value</i>				4.6	18.6	-19.0	-6.9	-0.4	2.6	9.5	5.3	Apr-07
Boston Company Small Cap Growth	61,428,867	6.2	25.1	14.3	35.3	14.1	27.3	21.5	14.3	15.8	16.0	Aug-09
<i>Russell 2000 Growth</i>				9.4	25.8	-6.6	7.3	7.7	6.3	11.7	12.4	Aug-09
LMCG Small Cap Value	57,049,929	5.8	23.3	2.9	17.0	-22.3	-9.3	-3.5	1.7	--	5.1	Mar-11
<i>Russell 2000 Value</i>				2.9	15.6	-25.6	-14.7	-4.2	0.7	6.5	4.7	Mar-11

Summary | As of May 31, 2020

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
International Developed Market Equity Assets	50,050,271	5.1	5.1	5.2	13.5	-18.9	-8.1	-3.6	--	--	1.1	Jan-16
MSCI EAFE				4.4	11.1	-14.3	-2.8	-0.4	0.8	5.3	3.0	Jan-16
KBI Master Account	18,510,778	1.9	37.0	3.1	10.6	-16.6	-6.5	-4.1	-2.1	3.5	2.4	Jul-05
MSCI EAFE				4.4	11.1	-14.3	-2.8	-0.4	0.8	5.3	3.7	Jul-05
HGK TS International Equity	20,830,231	2.1	41.6	6.2	14.2	-13.6	1.7	1.4	3.0	--	5.1	Feb-11
MSCI EAFE				4.4	11.1	-14.3	-2.8	-0.4	0.8	5.3	2.8	Feb-11
Copper Rock International Small Cap	10,709,262	1.1	21.4	7.2	17.7	-23.2	-14.5	--	--	--	-11.6	Nov-17
MSCI EAFE Small Cap				7.1	18.3	-14.3	-0.8	0.1	3.3	7.8	-4.0	Nov-17
International Emerging Market Equity Assets	93,617,386	9.5	9.5	1.7	11.3	-15.5	-4.6	-1.0	--	--	4.5	Jan-16
MSCI Emerging Markets				0.8	10.0	-16.0	-4.4	-0.2	0.9	2.5	6.1	Jan-16
LMCG Emerging Markets	33,509,452	3.4	35.8	0.0	8.2	-19.1	-9.7	-3.6	-2.2	--	-1.2	Sep-13
MSCI Emerging Markets				0.8	10.0	-16.0	-4.4	-0.2	0.9	2.5	1.4	Sep-13
ABS Emerging Markets	25,461,865	2.6	27.2	2.1	12.5	-13.9	-2.8	--	--	--	2.1	Dec-18
MSCI Emerging Markets				0.8	10.0	-16.0	-4.4	-0.2	0.9	2.5	-2.1	Dec-18
Copper Rock Emerging Markets Small Cap	9,093,347	0.9	9.7	3.6	17.1	-19.8	-11.7	--	--	--	-5.9	Dec-18
MSCI Emerging Markets Small Cap				2.4	16.6	-20.0	-13.1	-5.5	-4.0	1.0	-8.3	Dec-18
Driehaus Emerging Markets Growth	25,552,721	2.6	27.3	2.9	12.4	-11.1	3.3	--	--	--	1.2	Mar-19
MSCI Emerging Markets				0.8	10.0	-16.0	-4.4	-0.2	0.9	2.5	-7.0	Mar-19

Summary | As of May 31, 2020

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Global Equity Assets	101,221,581	10.3	10.3	4.7	16.7	-7.9	4.0	--	--	--	-0.1	Feb-18
MSCI ACWI				4.3	15.5	-9.2	5.4	5.2	5.3	8.5	-0.6	Feb-18
First Eagle Global Value Fund	19,198,542	1.9	19.0	2.4	11.9	-9.4	1.4	--	--	--	-1.7	Feb-18
MSCI ACWI Value NR USD				2.4	11.4	-18.8	-7.6	-1.0	1.1	5.7	-7.5	Feb-18
Kopernik Global All Cap Fund	20,564,158	2.1	20.3	8.7	32.4	8.1	13.9	--	--	--	1.2	Feb-18
MSCI ACWI Value NR USD				2.4	11.4	-18.8	-7.6	-1.0	1.1	5.7	-7.5	Feb-18
Lee Munder Global Multi-Cap Strategy	27,905,119	2.8	27.6	4.7	15.8	-11.7	2.1	--	--	--	-1.2	Mar-18
MSCI ACWI				4.3	15.5	-9.2	5.4	5.2	5.3	8.5	1.3	Mar-18
Wellington Durable Enterprises, L.P.	33,553,762	3.4	33.1	3.8	12.2	-12.0	1.6	--	--	--	5.1	Mar-18
MSCI ACWI				4.3	15.5	-9.2	5.4	5.2	5.3	8.5	1.3	Mar-18
Core Fixed Income	87,682,878	8.9	8.9	1.1	3.5	2.1	5.5	3.7	--	--	3.9	Jan-16
75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year				0.5	2.4	4.8	8.5	4.6	3.6	3.6	4.3	Jan-16
IR&M Core Bonds	52,602,713	5.3	60.0	0.9	3.2	4.2	7.8	4.4	3.6	3.9	4.4	Nov-04
75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year				0.5	2.4	4.8	8.5	4.6	3.6	3.6	4.2	Nov-04
Lord Abbett Short Duration Credit Trust II	35,080,165	3.6	40.0	1.5	4.1	-1.4	--	--	--	--	0.1	Aug-19
BBgBarc US Credit 1-3 Yr TR				0.9	2.7	2.0	4.4	3.0	2.4	2.4	3.7	Aug-19
Value Added Fixed Income	97,646,280	9.9	9.9	3.8	6.2	-5.8	-1.4	1.9	--	--	5.0	Jan-16
Custom Benchmark				3.7	7.1	-3.7	1.2	3.0	--	--	5.8	Jan-16
Eaton Vance High Yield	21,430,200	2.2	21.9	3.8	8.3	-4.5	1.5	2.8	3.9	6.6	6.4	Apr-06
ICE BofA US High Yield TR				4.6	8.5	-5.7	0.4	2.7	4.1	6.5	6.7	Apr-06

Summary | As of May 31, 2020

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
THL Bank Loan Select Fund <i>Credit Suisse Leveraged Loans</i>	20,653,044	2.1	21.2	3.7 3.8	7.3 8.3	-6.1 -6.0	-3.5 -3.4	1.2 1.7	2.7 2.6	-- 4.2	4.5 4.0	Sep-10 Sep-10
Franklin Templeton Emerging Market Bonds <i>JP Morgan EMBI Global Diversified</i>	15,634,247	1.6	16.0	6.0 6.1	3.8 8.5	-12.2 -6.1	-7.5 0.4	-0.4 2.4	2.6 4.2	4.1 5.9	5.7 6.6	May-06 May-06
Manulife Strategic Fixed Income <i>BBGBarc Multiverse TR</i>	30,568,789	3.1	31.3	1.9 0.7	5.1 2.7	-0.8 1.6	-- 5.2	-- 3.4	-- 3.3	-- 3.0	1.8 2.9	Jul-19 Jul-19
Mesirow High Yield <i>BBGBarc US Corporate High Yield TR</i>	9,360,000	0.9	9.6	7.2 4.4	7.8 9.1	-9.4 -4.7	-- 1.3	-- 3.0	-- 4.3	-- 6.7	-6.4 -1.5	Aug-19 Aug-19
Hedge Funds	57,393,562	5.8	5.8	1.4	3.3	-16.9	-9.7	-2.1	-0.2	2.9	2.8	Feb-10
<i>Custom Benchmark</i>				1.2	2.9	-0.1	2.4	2.5	1.5	2.7	2.7	Feb-10
ABS Offshore SPC - Global Segregated Portfolio <i>HFRI Fund of Funds Composite Index</i>	22,210,301	2.3	38.7	2.9 2.3	7.3 5.8	-3.4 -3.5	5.8 0.1	3.1 1.6	2.2 0.9	-- 2.5	4.9 2.6	Aug-10 Aug-10
Entrust Special Opportunities Fund III, Ltd. <i>HFRI FOF Composite (1-qtr lagged)</i>	17,023,785	1.7	29.7	0.0 0.0	0.0 0.0	-28.7 3.1	-24.2 4.6	-6.8 3.2	-- 2.0	-- 2.9	0.7 4.1	Oct-16 Oct-16
Old Farm Partners Master Fund, L.P. <i>HFRI Fund of Funds Composite Index</i>	5,031,381	0.5	8.8	3.4 2.3	7.0 5.8	-0.6 -3.5	2.8 0.1	-- 1.6	-- 0.9	-- 2.5	0.4 -0.3	Oct-18 Oct-18
EnTrustPermal Special Opportunities Evergreen Fund, Ltd. <i>HFRI FOF Composite (1-qtr lagged)</i>	13,128,095	1.3	22.9	0.0 0.0	0.0 0.0	-24.1 3.1	-9.4 4.6	-- 3.2	-- 2.0	-- 2.9	-2.3 2.1	Jan-19 Jan-19

Note: The data for EntrustPermal Special Opportunities Evergreen Fund and Entrust Special Opportunities Fund III are based on March 31, 2020 market value, adjusted for subsequent cash flows.

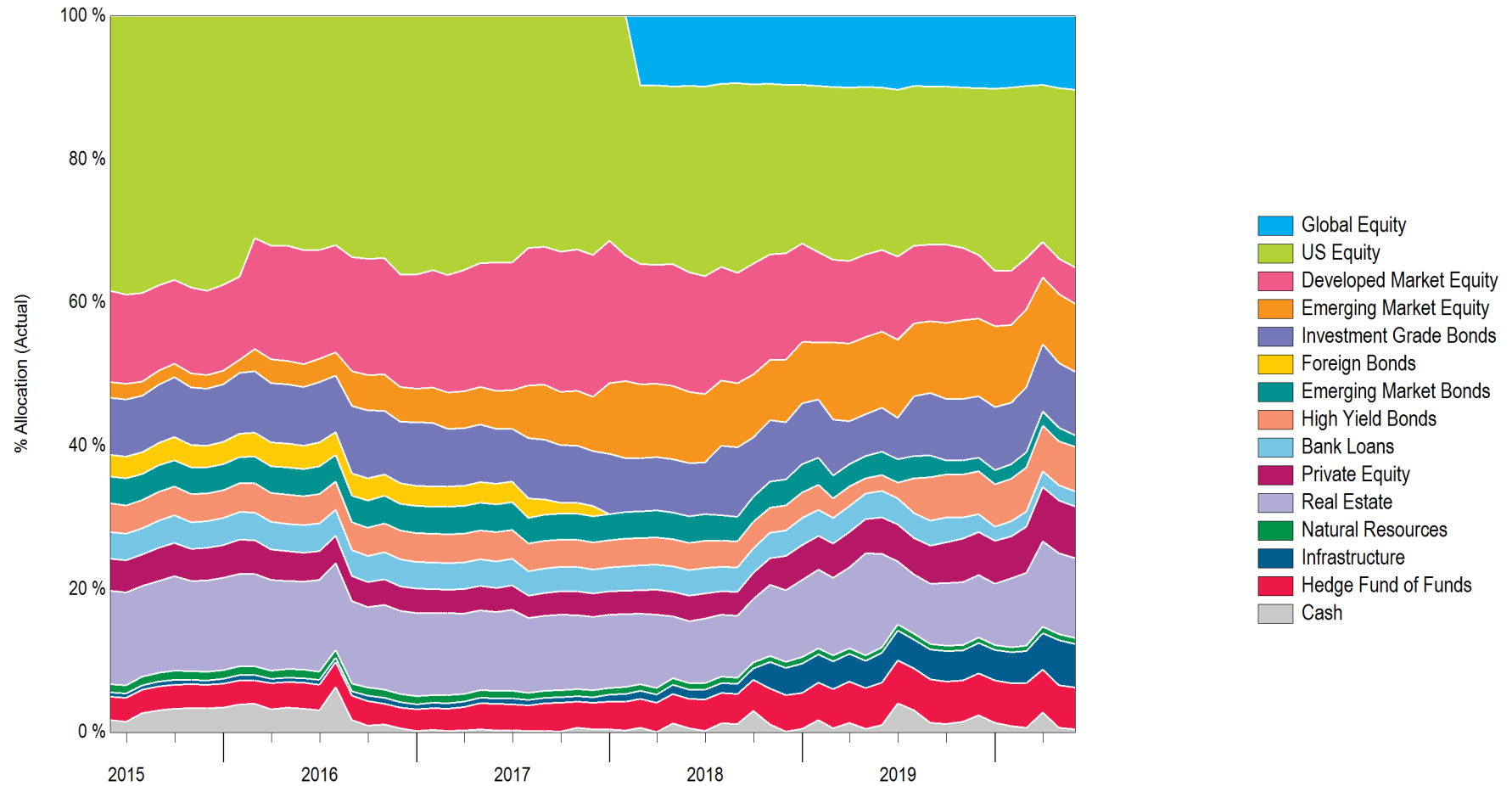
Summary | As of May 31, 2020

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Real Estate	109,508,771	11.1	11.1	-0.2	-0.1	2.2	8.3	7.0	--	--	5.9	Jan-16
80% NCREIF ODCE / 20% Wilshire REIT				-0.1	1.6	-3.2	0.8	5.0	--	--	5.4	Jan-16
Core Real Estate	67,381,479	6.8	61.5	-0.3	-0.2	1.1	5.9	6.9	--	--	7.0	Jan-16
NCREIF-ODCE				0.0	0.0	1.0	4.9	6.8	8.5	11.4	7.0	Jan-16
TA Realty Core Property Fund, L.P.	39,212,896	4.0	58.2	0.0	0.0	1.3	9.3	--	--	--	9.8	Apr-18
NCREIF ODCE				0.0	0.0	1.0	4.9	6.8	8.5	11.4	5.7	Apr-18
JPMorgan Strategic Property	28,168,583	2.9	41.8	-0.8	-0.6	0.7	3.2	--	--	--	3.1	Apr-19
NCREIF-ODCE				0.0	0.0	1.0	4.9	6.8	8.5	11.4	4.2	Apr-19
Non-Core Real Estate	42,127,293	4.3	38.5	0.0	0.0	4.1	12.3	5.4	--	--	1.7	Jan-16
Private Equity	71,264,666	7.2	7.2	0.0	0.0	2.2	9.4	8.1	--	--	4.8	Jan-16
Cambridge Associates FoF Composite 1Q Lagged				0.0	0.0	4.3	13.6	13.1	10.5	12.0	10.3	Jan-16
Private Equity	63,887,879	6.5	89.6	0.0	0.0	2.6	9.6	7.3	--	--	3.6	Jan-16
Venture Capital	7,376,788	0.7	10.4	0.0	0.0	-1.4	7.5	9.7	--	--	8.0	Jan-16
Real Assets	68,194,292	6.9	6.9	0.1	0.2	-0.9	6.4	3.2	--	--	-0.6	Jan-16
CPI + 3%				0.2	-0.3	0.2	3.2	4.6	4.5	4.6	4.7	Jan-16
IFM Global Infrastructure	37,226,164	3.8	54.6	0.2	0.4	-3.5	7.8	--	--	--	8.0	Oct-18
CPI+5% (1q Lagged)				0.7	1.5	2.8	9.0	--	--	--	6.7	Oct-18
Cash and Cash Equivalent	4,402,980	0.4	0.4									
Cash	4,402,980	0.4	100.0									

	Allocation vs. Target		Policy	Policy Range	Within IPS Range?
	Current Balance	Current Allocation			
Domestic Equity	\$244,388,751	25%	26%	21% - 36%	Yes
International Developed Market Equity	\$50,050,271	5%	6%	1% - 16%	Yes
International Emerging Market Equity	\$93,617,386	10%	10%	5% - 20%	Yes
Global Equity	\$101,221,581	10%	10%	5% - 20%	Yes
Core Bonds	\$87,682,878	9%	9%	4% - 14%	Yes
Value-Added Fixed Income	\$97,646,280	10%	6%	2% - 12%	Yes
Private Equity	\$71,264,666	7%	13%	4% - 18%	Yes
Real Estate	\$109,508,771	11%	10%	5% - 15%	Yes
Real Assets	\$68,194,292	7%	6%	2% - 10%	Yes
Hedge Fund of Funds	\$57,393,562	6%	4%	2% - 8%	Yes
Cash	\$4,402,980	0%	0%	0% - 3%	Yes
Total	\$985,371,418	100%	100%		

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Total Equity	\$617,674,050	63%	69%	60% - 80%	Yes
Total Fixed Income	\$185,329,158	19%	15%	5% - 25%	Yes
Total Real Assets and Real Estate	\$177,965,231	18%	16%	13% - 19%	Yes
Cash	\$4,402,980	0%	0%	0% - 3%	Yes

Asset Allocation History 5 Years Ending May 31, 2020



Annual Investment Expense Analysis As Of May 31, 2020				
Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Domestic Equity Assets		\$244,388,751		
Rhumblin Russell 1000 Value	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$36,046,339	\$16,919	0.05%
Rhumblin Russell 1000 Growth	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$45,842,117	\$20,837	0.05%
Fisher Midcap Value	0.80% of First 25.0 Mil, 0.75% of Next 25.0 Mil, 0.67% Thereafter	\$44,021,499	\$342,661	0.78%
Boston Company Small Cap Growth	0.45% of Assets	\$61,428,867	\$276,430	0.45%
LMCG Small Cap Value	0.90% of Assets	\$57,049,929	\$513,449	0.90%
International Developed Market Equity Assets		\$50,050,271		
KBI Master Account	0.65% of Assets	\$18,510,778	\$120,320	0.65%
HGK TS International Equity	1.00% of Assets	\$20,830,231	\$208,302	1.00%
Copper Rock International Small Cap	0.85% of Assets	\$10,709,262	\$91,029	0.85%
International Emerging Market Equity Assets		\$93,617,386		
LMCG Emerging Markets	0.64% of Assets	\$33,509,452	\$214,460	0.64%
ABS Emerging Markets	Performance-based 0.35 and 0.10	\$25,461,865	\$89,633	0.35%
Copper Rock Emerging Markets Small Cap	0.85% of Assets	\$9,093,347	\$77,293	0.85%
Driehaus Emerging Markets Growth	0.55% of Assets	\$25,552,721	\$140,540	0.55%

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Global Equity Assets		\$101,221,581		
First Eagle Global Value Fund	0.75% of Assets	\$19,198,542	\$143,989	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	\$20,564,158	\$164,513	0.80%
Lee Munder Global Multi-Cap Strategy	0.45% of Assets	\$27,905,119	\$125,573	0.45%
Wellington Durable Enterprises, L.P.	0.60% of Assets	\$33,553,762	\$201,323	0.60%
Core Fixed Income		\$87,682,878		
IR&M Core Bonds	0.25% of First 50.0 Mil, 0.20% of Next 50.0 Mil, 0.15% Thereafter	\$52,602,713	\$130,205	0.25%
Lord Abbett Short Duration Credit Trust II	0.19% of Assets	\$35,080,165	\$66,652	0.19%
Value Added Fixed Income		\$97,646,280		
Eaton Vance High Yield	0.42% of Assets	\$21,430,200	\$90,007	0.42%
THL Bank Loan Select Fund	0.40% of Assets	\$20,653,044	\$82,612	0.40%
Franklin Templeton Emerging Market Bonds	0.99% of Assets	\$15,634,247	\$154,779	0.99%
Manulife Strategic Fixed Income	0.40% of Assets	\$30,568,789	\$122,275	0.40%
Mesirow High Yield	0.40% of Assets	\$9,360,000	\$37,440	0.40%

Note: The value is based on December, 2019 FMV.

Private Equity	Commitment	Total Contributions	Total Distributions	Adjusted Value
Ascend Ventures II, L.P.	2,500,000	2,324,355	925,962	56,191
Ascent Venture Partners IV, L.P.	2,500,000	2,502,219	388,970	39,281
Ascent Venture Partners V, L.P.	5,000,000	5,154,731	3,432,862	4,425,266
Audax Mezzanine Fund IV, L.P.	10,000,000	5,818,076	2,846,964	3,480,714
Charles River Partnership XI, L.P.	1,839,000	1,820,323	2,532,884	145,152
Charlesbank Technology Opportunities Fund, L.P.	12,000,000	0	0	158,770
DN Partners II, L.P.	5,000,000	2,375,841	0	1,611,160
Euro Choice V, L.P.	5,041,890	5,688,459	2,588,015	4,486,872
FS Equity Partners VIII, L.P.	12,000,000	138,315	0	1,071,267
Globespan Capital Partners V, L.P.	5,000,000	4,852,500	8,008,564	2,856,050
HarbourVest Partners Co-Investment Fund V, L.P.	12,000,000	1,800,000	0	1,641,844
Ironsides Direct Investment Fund V, L.P.	12,000,000	12,604,233	824,306	13,108,156
Landmark Equity Partners XIV, L.P.	6,000,000	6,300,542	6,721,003	962,925
Leeds Equity Partners IV, L.P.	5,185,562	5,089,327	6,224,435	10,555
Leeds Equity Partners V, L.P.	2,500,000	3,570,815	3,981,623	2,551,576
Lexington Capital Partners VII, L.P.	10,000,000	10,556,021	13,254,638	2,302,308
LLR Equity Partners V, L.P.	12,000,000	7,440,000	1,084,578	7,412,905
Mesirow Financial Capital Partners IX, L.P.	4,000,000	3,840,731	1,897,056	222,777
Ridgemont Equity Partners III, L.P.	12,000,000	1,400,121	0	1,213,719
Rimco Production Company, Inc	2,000,000	2,000,000	7,651,066	1
Searchlight Capital III, L.P.	12,000,000	0	0	0
Siguler Guff Distressed Opportunities Fund III, L.P.	6,000,000	5,820,000	8,233,471	995,566
Summit Partners Growth Equity Fund IX, L.P.	10,000,000	8,968,000	2,762,801	9,853,496
TRG Growth Partnership II, L.P.	7,500,000	7,450,399	7,463,445	1,088,035
Trilantic Capital Partners VI (North America), L.P.	12,000,000	2,907,564	92,040	2,574,020
Wellspring Capital Partners VI, L.P.	12,000,000	4,106,244	0	3,689,260
Total Plymouth County - PE	198,066,452	114,528,816	80,914,682	65,957,866

Note: The value is based on December 31, 2019 FMV.

Real Assets	Commitment	Total Contributions	Total Distributions	Adjusted Value
Basalt Infrastructure Partners II	10,000,000	7,882,050	49,561	8,577,473
BTG Pactual Global Timberland Resources Fund, LLC	4,338,046	5,043,536	229,998	3,176,504
Global Infrastructure Partners III, L.P.	10,000,000	8,318,311	1,299,325	8,204,442
Global Infrastructure Partners IV, L.P.	10,000,000	87,500	0	0
IFM Global Infrastructure (U.S.), L.P.	35,000,000	35,000,000	300,523	37,226,164
JPMorgan Global Maritime Investment	10,000,000	9,186,014	938,504	6,069,400
Domain Timbervest Partners III, L.P.	5,000,000	5,000,000	1,551,771	5,167,067
Total Plymouth County - RA	84,338,046	70,517,411	4,369,683	68,421,050

Real Estate	Commitment	Total Contributions	Total Distributions	Adjusted Value
1921 Realty, Inc.	5,000,000	5,378,194	0	756,654
AEW Partners Real Estate Fund VIII, L.P.	25,000,000	16,405,217	4,834,875	13,784,524
Berkshire Value Fund V, L.P.	9,000,000	0	0	0
Carlyle Realty Partners VIII, L.P.	18,000,000	3,475,406	44,127	4,190,416
DSF Capital Partners IV, L.P.	5,000,000	5,000,000	6,005,200	0
DSF Multi-Family Real Estate Fund III, L.P.	15,000,000	15,499,746	1,439,779	16,703,718
JPMorgan Strategic Property	27,000,000	27,000,000	0	27,709,395
New Boston Institutional Fund VII, L.P.	5,000,000	3,012,998	3,985,095	26,254
Real Estate International Partnership Fund I, L.P.	15,000,000	12,675,476	11,147,161	1,834,826
Rockpoint Real Estate Fund VI, L.P.	9,000,000	82,621	0	20,547
TA Realty Core Property Fund, L.P.	35,000,000	35,337,300	660,145	39,212,896
Total Plymouth County - RE	168,000,000	123,866,959	28,116,380	104,239,230

Note: The value for IFM Global Infrastructure and JPMorgan Strategic Property is as of May 31, 2020.

Cash Flow Summary					
Month Ending May 31, 2020					
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
1921 Realty, Inc	\$756,654	\$0	\$0	\$0	\$756,654
ABS Emerging Markets	\$24,931,158	\$0	\$0	\$0	\$25,461,865
ABS Offshore SPC - Global Segregated Portfolio	\$21,577,247	\$0	\$0	\$0	\$22,210,301
AEW Partners Real Estate VIII	\$16,224,143	\$0	\$0	\$0	\$16,224,143
Ascend Ventures II	\$56,191	\$0	\$0	\$0	\$56,191
Ascent Ventures IV	\$39,281	\$0	\$0	\$0	\$39,281
Ascent Ventures V	\$4,425,266	\$0	\$0	\$0	\$4,425,266
Audax Mezzanine Debt IV	\$3,340,791	\$0	\$0	\$0	\$3,340,791
Basalt Infrastructure Partners II	\$8,577,473	\$0	\$0	\$0	\$8,577,473
Boston Company Small Cap Growth	\$53,745,423	\$0	\$0	\$0	\$61,428,867
BTG Pactual Global Timberland Resources	\$2,836,417	\$0	\$0	\$0	\$2,836,417
Carlyle Realty Partners VIII	\$5,795,371	\$0	\$0	\$0	\$5,795,371
Cash	\$6,334,279	\$0	-\$1,931,300	-\$1,931,300	\$4,402,980
Charlesbank Technology Opportunities Fund	\$0	\$262,167	\$0	\$262,167	\$262,167
Copper Rock Emerging Markets Small Cap	\$8,790,726	\$0	-\$20,452	-\$20,452	\$9,093,347
Copper Rock International Small Cap	\$10,026,452	\$0	-\$44,964	-\$44,964	\$10,709,262
DN Partners II, LP	\$1,611,160	\$0	\$0	\$0	\$1,611,160
Driehaus Emerging Markets Growth	\$24,829,932	\$0	\$0	\$0	\$25,552,721
DSF Multi-Family Real Estate Fund III	\$16,272,321	\$0	\$0	\$0	\$16,272,321
Eaton Vance High Yield	\$20,641,691	\$0	\$0	\$0	\$21,430,200
Entrust Special Opportunities Fund III, Ltd.	\$17,023,785	\$0	\$0	\$0	\$17,023,785
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	\$13,128,095	\$0	\$0	\$0	\$13,128,095

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
Euro Choice V Programme	\$4,265,745	\$0	\$0	\$0	\$4,265,745
First Eagle Global Value Fund	\$18,744,625	\$0	\$0	\$0	\$19,198,542
Fisher Midcap Value	\$40,722,388	\$0	\$0	\$0	\$44,021,499
Franklin Templeton Emerging Market Bonds	\$17,609,906	\$0	-\$3,000,000	-\$3,000,000	\$15,634,247
FS Equity Partners VIII, L.P.	\$3,305,219	\$0	\$0	\$0	\$3,305,219
Global Infrastructure Partners III	\$8,138,220	\$0	\$0	\$0	\$8,138,220
Global Infrastructure Partners IV, L.P.	\$179,011	\$0	\$0	\$0	\$179,011
Globespan Capital V	\$2,856,050	\$0	\$0	\$0	\$2,856,050
HarbourVest Partners Co-Investment V	\$2,841,844	\$1,200,000	\$0	\$1,200,000	\$4,041,844
HGK TS International Equity	\$19,594,918	\$0	\$0	\$0	\$20,830,231
IFM Global Infrastructure	\$37,152,384	\$0	\$0	\$0	\$37,226,164
IR&M Core Bonds	\$52,143,769	\$0	\$0	\$0	\$52,602,713
Ironsides Direct Investment Fund V, L.P.	\$11,477,951	\$0	-\$642,836	-\$642,836	\$10,835,116
JP Morgan Global Maritime Investment	\$6,069,400	\$0	\$0	\$0	\$6,069,400
JPMorgan Strategic Property	\$28,364,561	\$0	\$0	\$0	\$28,168,583
KBI Master Account	\$17,960,642	\$0	\$0	\$0	\$18,510,778
Kopernik Global All Cap Fund	\$18,921,795	\$0	\$0	\$0	\$20,564,158
Landmark Equity Partners XIV	\$960,624	\$0	\$0	\$0	\$960,624
Lee Munder Global Multi-Cap Strategy	\$26,646,499	\$0	\$0	\$0	\$27,905,119
Leeds Equity Partners IV	\$10,555	\$0	\$0	\$0	\$10,555
Leeds Equity Partners V	\$2,551,576	\$0	\$0	\$0	\$2,551,576
Lexington Capital Partners VII	\$2,127,346	\$0	\$0	\$0	\$2,127,346
LLR Equity Partners V, LP.	\$8,852,905	\$0	\$0	\$0	\$8,852,905
LMCG Emerging Markets	\$33,509,452	\$0	\$0	\$0	\$33,509,452
LMCG Small Cap Value	\$55,392,106	\$0	\$0	\$0	\$57,049,929

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
Lord Abbett Short Duration Credit Trust II	\$34,563,771	\$0	\$0	\$0	\$35,080,165
Manulife Strategic Fixed Income	\$29,999,928	\$0	\$0	\$0	\$30,568,789
Mesirow Financial Capital Partners IX, LP	\$222,777	\$0	\$0	\$0	\$222,777
Mesirow Financial International Real Estate Fund I	\$1,534,826	\$0	\$0	\$0	\$1,534,826
Mesirow High Yield	\$8,730,000	\$0	\$0	\$0	\$9,360,000
New Boston Institutional Fund, LP VII	\$26,254	\$0	\$0	\$0	\$26,254
Old Farm Partners Master Fund, L.P.	\$4,866,966	\$0	\$0	\$0	\$5,031,381
Rhumblin Russell 1000 Growth	\$42,963,266	\$0	\$0	\$0	\$45,842,117
Rhumblin Russell 1000 Value	\$34,856,670	\$0	\$0	\$0	\$36,046,339
Ridgemont Equity Partners III, L.P.	\$2,280,418	\$0	\$0	\$0	\$2,280,418
RIMCO Royalty Partners, LP	\$1	\$0	\$0	\$0	\$1
Rockpoint Real Estate Fund VI, L.P.	\$51,379	\$1,466,345	\$0	\$1,466,345	\$1,517,724
Siguler Guff Distressed Opportunities Fund III, LP	\$930,572	\$0	\$0	\$0	\$930,572
Summit Partners Growth Equity Fund IX	\$11,365,496	\$77,000	-\$504,748	-\$427,748	\$10,937,748
TA Realty Core Property Fund, L.P.	\$39,212,896	\$0	\$0	\$0	\$39,212,896
THL Bank Loan Select Fund	\$19,921,593	\$0	\$0	\$0	\$20,653,044
Timbervest Partners III, LP	\$5,167,607	\$0	\$0	\$0	\$5,167,607
TRG Growth Partnership II	\$1,088,035	\$0	\$0	\$0	\$1,088,035
Trilantic Capital Partners VI, L.P.	\$2,574,020	\$0	\$0	\$0	\$2,574,020
Wellington Durable Enterprises, L.P.	\$32,323,570	\$0	\$0	\$0	\$33,553,762
Wellspring Capital Partners VI	\$3,689,260	\$0	\$0	\$0	\$3,689,260
Total	\$957,732,655	\$3,005,512	-\$6,144,299	-\$3,138,787	\$985,371,418

Cash Flow Summary					
From December 31, 2019 through May 31, 2020					
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
1921 Realty, Inc	\$765,556	\$0	\$0	\$0	\$756,654
ABS Emerging Markets	\$27,737,225	\$0	\$0	\$0	\$25,461,865
ABS Offshore SPC - Global Segregated Portfolio	\$22,463,919	\$0	\$0	\$0	\$22,210,301
AEW Partners Real Estate VIII	\$13,298,694	\$3,252,825	-\$1,424,389	\$1,828,436	\$16,224,143
Ascend Ventures II	\$58,680	\$0	\$0	\$0	\$56,191
Ascent Ventures IV	\$39,975	\$0	\$0	\$0	\$39,281
Ascent Ventures V	\$4,323,395	\$0	\$0	\$0	\$4,425,266
Audax Mezzanine Debt IV	\$3,647,759	\$41,665	-\$488,925	-\$447,260	\$3,340,791
Basalt Infrastructure Partners II	\$7,958,038	\$0	\$0	\$0	\$8,577,473
Boston Company Small Cap Growth	\$52,309,944	\$0	\$0	\$0	\$61,428,867
BTG Pactual Global Timberland Resources	\$3,089,992	\$0	\$0	\$0	\$2,836,417
Carlyle Realty Partners VIII	\$3,888,111	\$1,846,905	-\$241,950	\$1,604,955	\$5,795,371
Cash	\$25,690,121	\$17,861,328	-\$39,148,469	-\$21,287,141	\$4,402,980
Charlesbank Technology Opportunities Fund	--	\$262,167	\$0	\$262,167	\$262,167
Copper Rock Emerging Markets Small Cap	\$10,531,587	\$0	-\$20,452	-\$20,452	\$9,093,347
Copper Rock International Small Cap	\$36,141,459	\$0	-\$20,044,964	-\$20,044,964	\$10,709,262
DN Partners II, LP	\$1,636,728	\$0	\$0	\$0	\$1,611,160
Driehaus Emerging Markets Growth	\$26,934,524	\$0	\$0	\$0	\$25,552,721
DSF Capital Partners IV	\$1,738	\$0	\$0	\$0	--
DSF Multi-Family Real Estate Fund III	\$15,609,800	\$0	-\$431,397	-\$431,397	\$16,272,321
Eaton Vance High Yield	\$22,051,174	\$0	\$0	\$0	\$21,430,200
EnTrust Special Opportunities Fund III, Ltd.	\$23,038,195	\$0	-\$914,634	-\$914,634	\$17,023,785
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	\$10,380,537	\$5,598,823	\$0	\$5,598,823	\$13,128,095

Summary | As of May 31, 2020

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
Euro Choice V Programme	\$5,173,768	\$0	-\$463,149	-\$463,149	\$4,265,745
First Eagle Global Value Fund	\$20,583,639	\$0	\$0	\$0	\$19,198,542
Fisher Midcap Value	\$46,574,759	\$0	\$0	\$0	\$44,021,499
Franklin Templeton Emerging Market Bonds	\$20,687,907	\$0	-\$3,000,000	-\$3,000,000	\$15,634,247
FS Equity Partners VIII, L.P.	\$1,103,669	\$2,233,952	\$0	\$2,233,952	\$3,305,219
Global Infrastructure Partners III	\$8,359,432	\$244,826	-\$459,422	-\$214,596	\$8,138,220
Global Infrastructure Partners IV, L.P.	\$87,500	\$91,511	\$0	\$91,511	\$179,011
Globespan Capital V	\$2,884,117	\$0	\$0	\$0	\$2,856,050
HarbourVest Partners Co-Investment V	\$1,011,070	\$3,000,000	\$0	\$3,000,000	\$4,041,844
HGK TS International Equity	\$26,001,207	\$0	-\$3,036,505	-\$3,036,505	\$20,830,231
IFM Global Infrastructure	\$22,086,965	\$15,000,000	-\$268,403	\$14,731,597	\$37,226,164
Invesco Equity Real Estate Securities Trust	\$821,268	\$0	-\$797,320	-\$797,320	--
IR&M Core Bonds	\$59,275,917	\$0	-\$9,000,000	-\$9,000,000	\$52,602,713
Ironsides Direct Investment Fund V, L.P.	\$11,913,080	\$646,963	-\$2,273,041	-\$1,626,078	\$10,835,116
JP Morgan Global Maritime Investment	\$6,243,947	\$0	\$0	\$0	\$6,069,400
JPMorgan Strategic Property	\$27,686,952	\$0	-\$138,530	-\$138,530	\$28,168,583
KBI Master Account	\$31,353,728	\$0	-\$10,000,000	-\$10,000,000	\$18,510,778
Kopernik Global All Cap Fund	\$17,960,748	\$0	\$0	\$0	\$20,564,158
Landmark Equity Partners XIV	\$956,609	\$0	-\$23,561	-\$23,561	\$960,624
Lee Munder Global Multi-Cap Strategy	\$30,470,796	\$0	\$0	\$0	\$27,905,119
Leeds Equity Partners IV	\$10,390	\$0	\$0	\$0	\$10,555
Leeds Equity Partners V	\$2,318,395	\$0	\$0	\$0	\$2,551,576
Lexington Capital Partners VII	\$2,389,862	\$0	-\$267,254	-\$267,254	\$2,127,346
LLR Equity Partners V, LP.	\$7,271,740	\$1,440,000	-\$651,575	\$788,425	\$8,852,905
LMCG Emerging Markets	\$48,900,002	\$0	-\$10,000,000	-\$10,000,000	\$33,509,452
LMCG Small Cap Value	\$70,889,625	\$0	\$0	\$0	\$57,049,929

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
Lord Abbett Short Duration Credit Trust II	\$30,443,787	\$5,000,000	\$0	\$5,000,000	\$35,080,165
Manulife Strategic Fixed Income	\$30,562,624	\$0	-\$53,467	-\$53,467	\$30,568,789
Mesirow Financial Capital Partners IX, LP	\$223,461	\$0	\$0	\$0	\$222,777
Mesirow Financial International Real Estate Fund I	\$2,178,911	\$0	-\$674,142	-\$674,142	\$1,534,826
Mesirow High Yield	\$10,120,000	\$0	\$0	\$0	\$9,360,000
New Boston Institutional Fund, LP VII	\$39,383	\$0	\$0	\$0	\$26,254
Old Farm Partners Master Fund, L.P.	\$4,950,410	\$0	\$0	\$0	\$5,031,381
Rhumblin Russell 1000 Growth	\$37,678,130	\$10,999,118	-\$6,500,854	\$4,498,264	\$45,842,117
Rhumblin Russell 1000 Value	\$37,767,522	\$10,996,747	-\$6,502,718	\$4,494,028	\$36,046,339
Ridgemont Equity Partners III, L.P.	\$1,400,121	\$1,066,699	\$0	\$1,066,699	\$2,280,418
RIMCO Royalty Partners, LP	\$1	-\$20,047	-\$18,082	-\$38,129	\$1
Rockpoint Real Estate Fund VI, L.P.	\$0	\$1,579,798	\$0	\$1,579,798	\$1,517,724
Siguler Guff Distressed Opportunities Fund III, LP	\$900,948	\$0	-\$64,994	-\$64,994	\$930,572
Summit Partners Growth Equity Fund IX	\$8,360,943	\$1,997,000	-\$1,034,803	\$962,197	\$10,937,748
TA Realty Core Property Fund, L.P.	\$28,006,971	\$10,000,000	\$0	\$10,000,000	\$39,212,896
THL Bank Loan Select Fund	\$26,547,049	\$0	-\$5,000,150	-\$5,000,150	\$20,653,044
Timbervest Partners III, LP	\$5,001,996	\$0	-\$125,000	-\$125,000	\$5,167,607
TRG Growth Partnership II	\$1,141,155	\$0	\$0	\$0	\$1,088,035
Trilantic Capital Partners VI, L.P.	\$2,620,624	\$0	\$0	\$0	\$2,574,020
Wellington Durable Enterprises, L.P.	\$37,065,668	\$0	\$0	\$0	\$33,553,762
Wellspring Capital Partners VI	\$3,101,445	\$703,927	\$0	\$703,927	\$3,689,260
Total	\$1,052,725,390	\$93,844,206	-\$123,068,150	-\$29,223,944	\$985,371,418

Current Issues

Capital Market Expectations

Updating our Capital Market Expectations

- Capital Markets Expectations are the inputs needed to conduct MVO.
 - MVO is the traditional starting point for determining asset allocation.
- Consultants (including Meketa) generally set them once a year.
 - Our results are normally published in January, based on December 31 data.
 - Due to recent market turbulence, a new set of expectations have been developed based on data as of June 30.
- We updated our long-term expectations for returns, but we did not modify Standard Deviation or Correlations (i.e., covariance).
- Our process relies on both quantitative and qualitative methodologies.
 - The updated version is based on slightly different models than those we used at year end.
 - Our Investment Policy Committee vetted the models' outputs and made judgment calls to make some changes, as they deemed prudent.

Communicating the Updated Expectations

- These changes reflect an “interim” update.
 - There is a greater amount of uncertainty about the economy and market pricing than usual.
 - There is likely a wider range of possible outcomes, both on the upside and downside, than has been experienced over the past decade.
 - Lower interest rates had the broadest and most meaningful impact.
- This update reflects a conservative re-estimate of certain key inputs, such as earnings and default rates.
 - Uncertainty surrounding the long-term impact of the pandemic led us to this approach.
- The changes do not reflect tactical views, nor do we believe they should be used to inform or drive tactical changes to portfolios.
 - Client/consultants should not feel compelled to conduct a new asset study based on the release of these interim CMEs.
 - If a client/consultant was already planning to conduct an asset study in the next six months, it makes sense to use these CMEs.

Comparing the Results from 2020 to Mid-year 2020

Fixed Income

	New 2020 E(R) (%)	2020 E(R) (%)	Δ from 2020 (%)
Cash Equivalents	1.3	2.4	-1.1
Short-term Investment Grade Bonds	1.7	2.6	-0.9
Investment Grade Bonds (core)	2.1	3.0	-0.9
Intermediate Government Bonds	1.5	2.4	-0.9
Long-term Government Bonds	2.4	3.2	-0.8
TIPS	2.1	2.9	-0.8
High Yield Bonds	4.9	5.2	-0.3
Bank Loans	4.5	5.0	-0.5
Foreign Bonds	2.3	2.4	-0.1
Emerging Market Bonds (major)	4.2	4.5	0.3
Emerging Market Bonds (local)	4.3	4.8	-0.5
Private Debt Composite	6.7	6.9	-0.2
Direct Lending – First Lien	6.1	6.2	-0.1
Direct Lending – Second Lien	7.3	7.5	-0.2
Mezzanine Debt	6.7	7.0	-0.3
Distressed Debt	6.7	7.0	-0.3

Comparing the Results from 2020 to Mid-year 2020

Equities

	New 2020 E(R) (%)	2020 E(R) (%)	Δ from 2020 (%)
US Equity	7.2	7.4	-0.2
US Large Cap	7.1	7.2	-0.1
US Mid Cap	7.4	7.6	-0.2
US Small Cap	7.6	7.9	-0.3
Dev. Market Equity (non-US)	7.8	7.9	-0.1
Developed Market Small Cap	7.3	7.8	-0.5
Emerging Market Equity	8.8	9.1	-0.3
Emerging Market Small Cap	8.7	9.0	-0.3
Frontier Market Equity	9.5	10.0	0.5
Global Equity	7.6	7.8	-0.2
Private Equity	9.1	9.4	-0.3
Buyouts	9.1	9.4	-0.3
Venture Capital	8.9	9.3	-0.4

Comparing the Results from 2020 to Mid-year 2020

Real Assets

	New 2020 E(R) (%)	2020 E(R) (%)	Δ from 2020 (%)
Real Estate	7.0	7.5	-0.5
REITs	6.5	7.0	-0.5
Core Private Real Estate	5.8	6.3	-0.5
Value-Added Real Estate	8.0	8.4	-0.4
Opportunistic Real Estate	9.3	9.9	-0.6
Natural Resources (Public)	7.2	8.3	-0.9
Natural Resources (Private)	7.7	8.8	-1.1
Commodities	3.9	4.3	-0.4
Infrastructure (Public)	7.2	7.5	-0.3
Infrastructure (Core Private)	6.4	6.7	-0.3
Infrastructure (Non-Core Private)	8.6	9.1	-0.5

Comparing the Results from 2020 to Mid-year 2020

Alternative Strategies (Other)

	New 2020 E(R) (%)	2020 E(R) (%)	Δ from 2020 (%)
Hedge Funds	4.3	4.9	-0.6
Long-Short	3.7	4.3	-0.6
Event Driven	5.1	5.8	-0.7
Global Macro	4.0	4.6	-0.6
CTA – Trend Following	4.1	4.8	-0.7
Fixed Income/L-S Credit	3.6	4.0	-0.4
Relative Value/Arbitrage	4.7	5.3	-0.6
Insurance Linked Strategies	3.6	4.1	-0.5
Risk Parity (10% vol)	4.4	5.2	-0.8
TAA	4.5	5.0	-0.5
US Inflation	2.2	2.6	-0.4

Horizon 2020 Peer Survey

- Annually, Horizon Actuarial Services, LLC publishes a survey of capital market assumptions that they collect from various investment advisors.¹
- The Horizon survey is a useful tool for Board members to determine whether their consultant's expectations for returns (and risk) are reasonable.

Asset Class	10-Year Average (%)	20-Year Average (%)	Meketa 20-Year (%)
Cash Equivalents	1.6	2.3	1.3
TIPS	2.0	2.7	2.1
US Core Bonds	2.6	3.6	2.1
US High Yield Bonds	4.9	5.6	4.9
Emerging Market Debt	5.2	5.9	5.3
Private Debt	7.8	7.9	6.7
US Equity (large cap)	6.2	7.1	7.2
Developed Non-US Equity	6.8	7.5	7.8
Emerging Non-US Equity	7.9	8.4	8.8
Private Equity	9.1	9.9	9.1
Real Estate	5.8	6.6	7.0
Infrastructure	6.9	7.3	6.4
Commodities	3.2	4.0	3.9
Hedge Funds	4.7	5.7	4.3
Inflation	2.0	2.2	2.2

¹ The 2020 survey included 39 respondents. The 10-year horizon included all 39 respondents, and the 20-year horizon included 18 respondents. Figures based on Meketa's 2020 interim CMEs.

Asset Allocation Review And Risk Analysis

Asset Allocation Policy Options¹

	PCRA Policy (%)	PCRA Current (%)	PRIT (%)	Public DB (%)
Growth/Equity	66	61	52	52
US Equity	26	25	21	31
Developed Market Equity (non-US)	6	5	14	6
Emerging Market Equity	10	11	6	6
Global Equity	10	10	0	0
Private Equity	13	7	13	10
Credit	6	9	6	8
High Yield/Bank Loans/Distressed	4	7	5	4
Emerging Market Bonds (major/local)	2	2	1	4
Rate Sensitive	9	8	17	19
Cash Equivalents	0	0	0	2
Investment Grade Bonds	7	6	10	13
Long-term Strips	0	0	3	0
TIPS	2	2	4	3
Real Assets	16	18	14	13
Core Real Estate	5	7	8	5
Value-Added / Opp. Real Estate	6	4	2	2
Nat. Res. / Timber / Commodities	2	2	4	4
Infrastructure (Core & Non-Core)	4	5	0	2
Other/Hedge Funds	4	6	11	8
<i>Expected Return (20 years)</i>	<i>7.83</i>	<i>7.52</i>	<i>6.91</i>	<i>6.66</i>
<i>Standard Deviation</i>	<i>15.0</i>	<i>14.1</i>	<i>11.9</i>	<i>12.1</i>
<i>Probability of Achieving 7.88% over 20 Years</i>	<i>48.8</i>	<i>44.9</i>	<i>35.2</i>	<i>32.1</i>

¹ Expected return and standard deviation are based upon Meketa Investment Group's 2020 Annual Asset Study. Throughout this document, returns for periods longer than one year are annualized.

Comparison to PRIT & Peers - Tracking Error

- The Association's target and current asset allocation policies are different from PRIT and the Peer Median.
 - The Peer Median represents U.S. Public Funds with greater than \$1 billion.
- The Association can expect long-term tracking error (i.e., over a 20-year period) for each policy as follows:

Policy	PRIT Tracking Error Per Annum (%)	Peer Median Tracking Error Per Annum (%)
PCRA Policy	3.7	3.4
PCRA Current	3.0	2.7

- For context, in 2/3 years the Association's return will be within 3.7% of PRIT's return and 3.4% of the Peer Median's return.
 - 1/3 years will be outside of 3.7% of PRIT's return and 3.4% of the Peer Median's return.
 - 1/6 years will be behind PRIT by more than 3.7% and the Peer Median by more than 3.4%.

MVO-Based Risk Analysis

Scenario	PCRA Policy (%)	PCRA Current (%)	PRIT (%)	Public DB (%)
Worst Case Returns (1)				
One Year	-21.7	-20.5	-17.3	-17.9
Three Years (annualized)	-10.4	-9.7	-7.8	-8.3
Five Years (annualized)	-6.6	-6.1	-4.7	-5.1
Ten Years (annualized)	-2.6	-2.3	-1.4	-1.8
Twenty Years (annualized)	0.3	0.5	0.9	0.6
Probability of Experiencing Negative Returns				
One Year	29.3	28.9	27.3	28.4
Three Years	17.3	16.7	14.8	16.1
Five Years	11.2	10.6	8.8	10.1
Ten Years	4.3	3.9	2.8	3.6
Twenty Years	0.7	0.6	0.3	0.5
Probability of Achieving at least a 7.88% Return				
One Year	49.7	48.9	46.6	45.9
Three Years	49.5	48.0	44.2	42.9
Five Years	49.4	47.5	42.5	40.8
Ten Years	49.1	46.4	39.4	37.1
Twenty Years	48.8	44.9	35.2	32.1

Value at Risk¹

Scenario	PCRA Policy	PCRA Current	PRIT	Public DB
VaR (%):				
1 month	-9.4	-8.8	-7.4	-7.5
3 months	-15.4	-14.4	-12.0	-12.3
6 months	-20.5	-19.1	-15.9	-16.3
VaR (\$ mm):				
1 month	-9	-9	-7	-8
3 months	-15	-14	-12	-12
6 months	-20	-19	-16	-16

Conditional Value at Risk¹

Scenario	PCRA Policy	PCRA Current	PRIT	Public DB
CVaR (%):				
1 month	-10.8	-10.1	-8.5	-8.7
3 months	-17.8	-16.7	-13.9	-14.3
6 months	-23.9	-22.4	-18.6	-19.1
CVaR (\$ mm):				
1 month	-11	-10	-9	-9
3 months	-18	-17	-14	-14
6 months	-24	-22	-19	-19

¹ Calculated with a 99% confidence level and based upon Meketa Investment Group's Annual Asset Study. cVaR represents the average loss past the 99th percentile.

Historical Negative Scenario Analysis¹ (Cumulative Return)

Scenario	PCRA Policy (%)	PCRA Current (%)	PRIT (%)	Public DB (%)
Taper Tantrum (May - Aug 2013)	0.7	0.3	-0.7	-0.4
Global Financial Crisis (Oct 2007 - Mar 2009)	-32.6	-32.0	-24.9	-27.1
2008 Calendar Year	-28.9	-28.7	-22.4	-24.5
Popping of the TMT Bubble (Apr 2000 - Sep 2002)	-16.3	-15.0	-8.7	-12.0
LTCM (Jul - Aug 1998)	-11.6	-11.9	-7.3	-9.6
Asian Financial Crisis (Aug 1997 - Jan 1998)	0.8	-0.4	3.5	2.3
Rate spike (1994 Calendar Year)	1.5	1.1	3.4	1.7
Crash of 1987 (Sep - Nov 1987)	-14.3	-14.6	-9.4	-12.5
Strong dollar (Jan 1981 - Sep 1982)	1.2	1.3	4.7	3.4
Stagflation (Jan - Mar 1980)	-4.6	-4.4	-4.4	-4.0
Stagflation (Jan 1973 - Sep 1974)	-25.7	-25.4	-20.7	-19.3

¹ See the Appendix for our scenario inputs. In periods where the ideal benchmark was not yet available we used the next closest benchmark(s) as a proxy.

Historical Positive Scenario Analysis¹ (Cumulative Return)

Scenario	PCRA Policy (%)	PCRA Current (%)	PRIT (%)	Public DB (%)
Global Financial Crisis Recovery (Mar 2009 - Nov 2009)	38.9	40.4	31.4	34.8
Best of Great Moderation (Apr 2003 - Feb 2004)	36.5	36.8	29.0	28.7
Peak of the TMT Bubble (Oct 1998 - Mar 2000)	54.1	51.8	40.5	42.3
Pre-Recession (Jun - Oct 1990)	-8.6	-9.1	-5.4	-5.6
Plummeting Dollar (Jan 1986 - Aug 1987)	55.7	56.1	51.5	48.9
Volcker Recovery (Aug 1982 - Apr 1983)	36.2	36.1	30.2	33.2
Bretton Wood Recovery (Oct 1974 - Jun 1975)	32.8	32.4	26.7	29.2

¹ See the Appendix for our scenario inputs. In periods where the ideal benchmark was not yet available we used the next closest benchmark(s) as a proxy.

Stress Testing: Impact of Market Movements
(Expected Return under Stressed Conditions)¹

Scenario	PCRA Policy (%)	PCRA Current (%)	PRIT (%)	Public DB (%)
10-year Treasury Bond rates rise 100 bps	5.7	5.6	3.6	4.3
10-year Treasury Bond rates rise 200 bps	2.0	2.1	-0.3	0.6
10-year Treasury Bond rates rise 300 bps	1.2	1.4	-3.7	-1.4
Baa Spreads widen by 50 bps, High Yield by 200 bps	-0.8	-0.9	0.6	0.1
Baa Spreads widen by 300 bps, High Yield by 1000 bps	-24.3	-24.0	-19.4	-20.8
Trade Weighted Dollar gains 10%	-3.4	-3.4	-2.0	-1.8
Trade Weighted Dollar gains 20%	-2.6	-2.6	-0.3	-1.1
US Equities decline 10%	-7.1	-6.8	-5.2	-5.5
US Equities decline 25%	-19.5	-19.0	-14.9	-16.1
US Equities decline 40%	-31.0	-30.7	-23.8	-26.1

¹ Assumes that assets not directly exposed to the factor are affected nonetheless. See the Appendix for further details.

Stress Testing: Impact of Positive Market Movements
(Expected Return under Stressed Conditions)¹

Scenario	PCRA Policy (%)	PCRA Current (%)	PRIT (%)	Public DB (%)
10-year Treasury Bond rates drop 100 bps	3.7	3.6	4.9	4.5
10-year Treasury Bond rates drop 200 bps	13.2	12.9	13.9	12.9
Baa Spreads narrow by 30bps, High Yield by 100 bps	8.7	8.5	7.5	7.7
Baa Spreads narrow by 100bps, High Yield by 300 bps	16.6	17.3	13.3	14.3
Trade Weighted Dollar drops 10%	7.6	7.7	6.9	6.8
Trade Weighted Dollar drops 20%	22.2	21.7	19.9	18.4
US Equities rise 10%	7.8	7.5	6.9	7.0
US Equities rise 30%	19.3	18.8	15.9	17.3

¹ Assumes that assets not directly exposed to the factor are affected nonetheless. See the Appendix for further details.

Investing in a Low Rate Environment

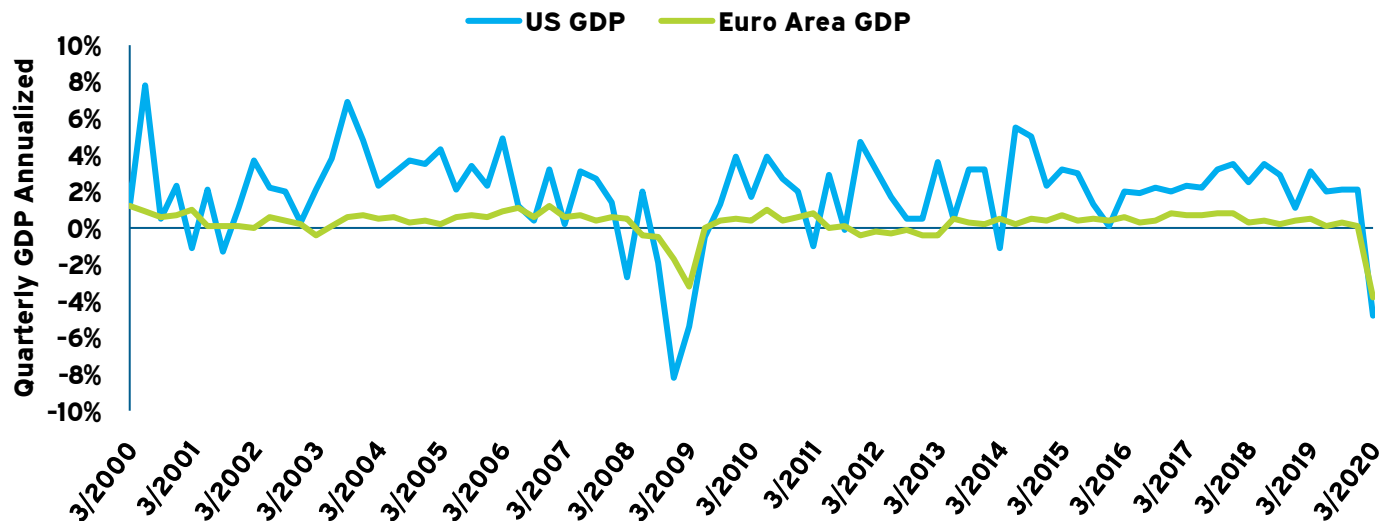
Introduction

- The coronavirus pandemic has had a greater impact on peoples' daily lives, the economy, and markets, than any event since World War II.
- What the total effect will be, both in the near term and long term, may not be known for quite some time.
- What is clear is that the world has changed from ten years ago, and what has worked for the past decade is not necessarily going to prove as effective going forward.

What the Pandemic has Wrought

- The coronavirus pandemic has caused unprecedented harm to the global economy.
- Bloomberg Economics estimates that second quarter global GDP could experience further declines and be as low as -9%.

GDP Data Shows First Signs of Crisis¹



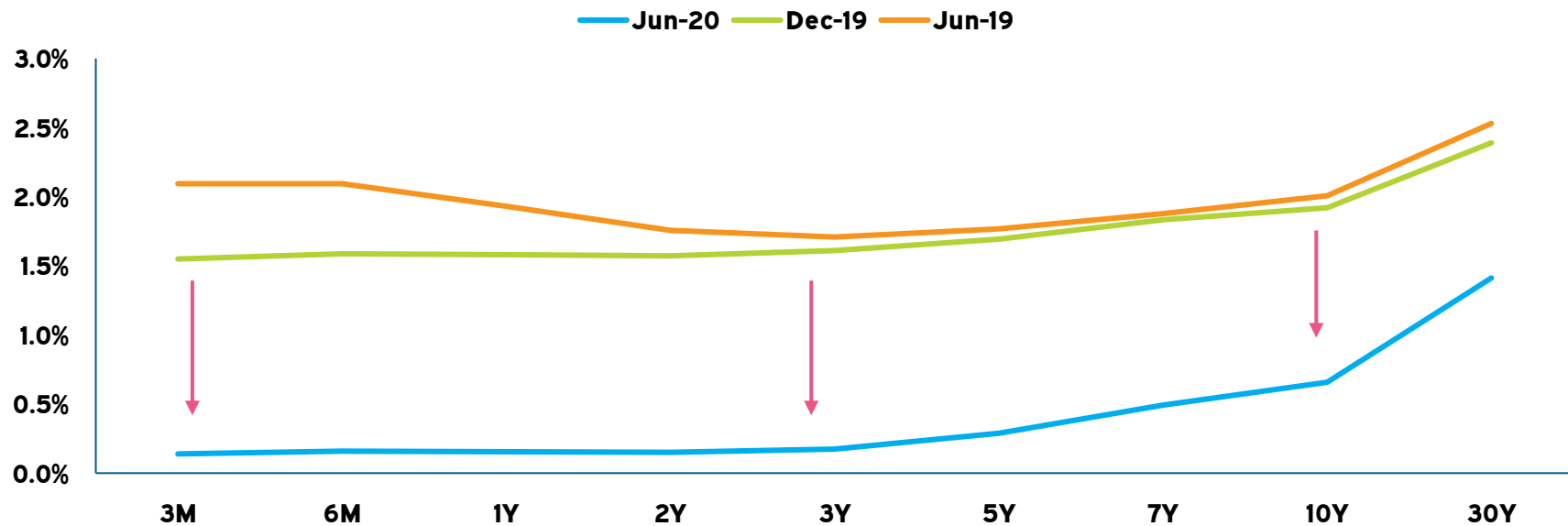
- The economic impact of the pandemic, and the reaction to it by policy makers and markets, is causing greater and more wide-spread upheaval than most investors have experienced.

¹ Source: Bloomberg. Q1 2020 data represents first estimate of GDP for Euro Area and United States.

A Low Interest Rate Environment

- Cuts in monetary policy rates lowered yields in shorter maturities, while flight-to-quality flows, low inflation, and lower growth expectations, particularly given indications that economic growth could slow by record amounts, have driven the changes in longer-dated maturities.
- The Federal Reserve's unlimited quantitative easing purchase program has provided further downward pressure on interest rates.

US Yield Curve Declines¹

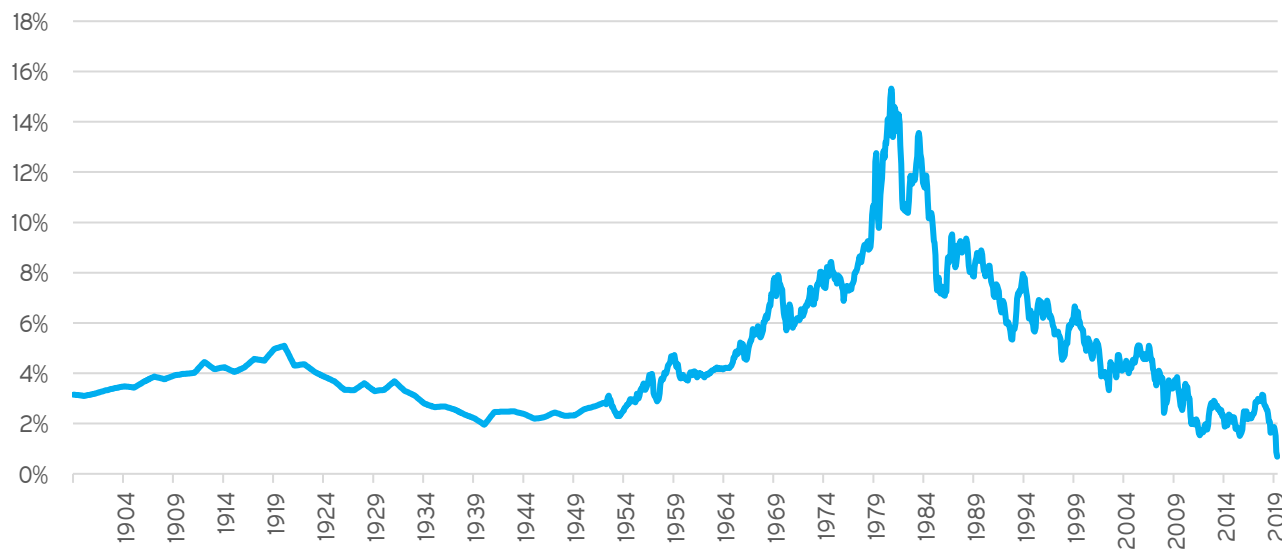


¹ Source: Bloomberg. Data is as of June 30, 2020.

How Low, and for How Long?

- US interest rates have essentially reached all-time lows.
- It is quite possible they are going to stay low.
 - If the Fed thinks this crisis will require low rates across the curve, they could intervene for an extended period.
 - The Fed actively managed the Treasury Yield Curve in the 1940s (during WWII)¹

US Treasury 10-Year Rates²



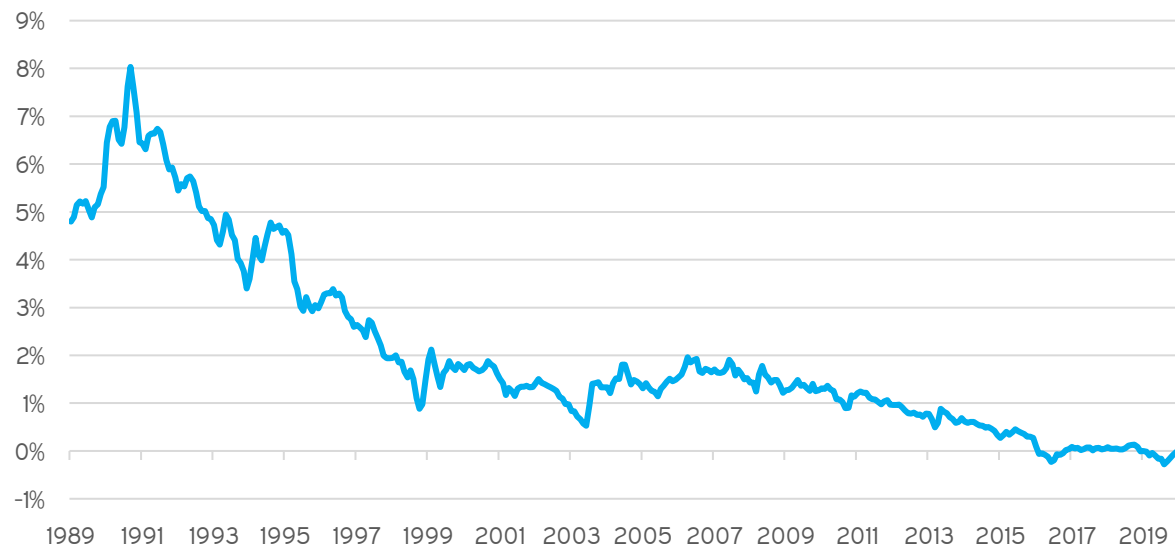
¹ Source: Kenneth D. Garbade, "How the Fed Managed the Treasury Yield Curve in the 1940s," Federal Reserve Bank of New York Liberty Street Economics, April 6, 2020, <https://libertystreeteconomics.newyorkfed.org/2020/03/how-the-fed-managed-the-treasury-yield-curve-in-the-1940s.html>

² Source: FRED, Multpl.com

How Low, and for How Long (continued)

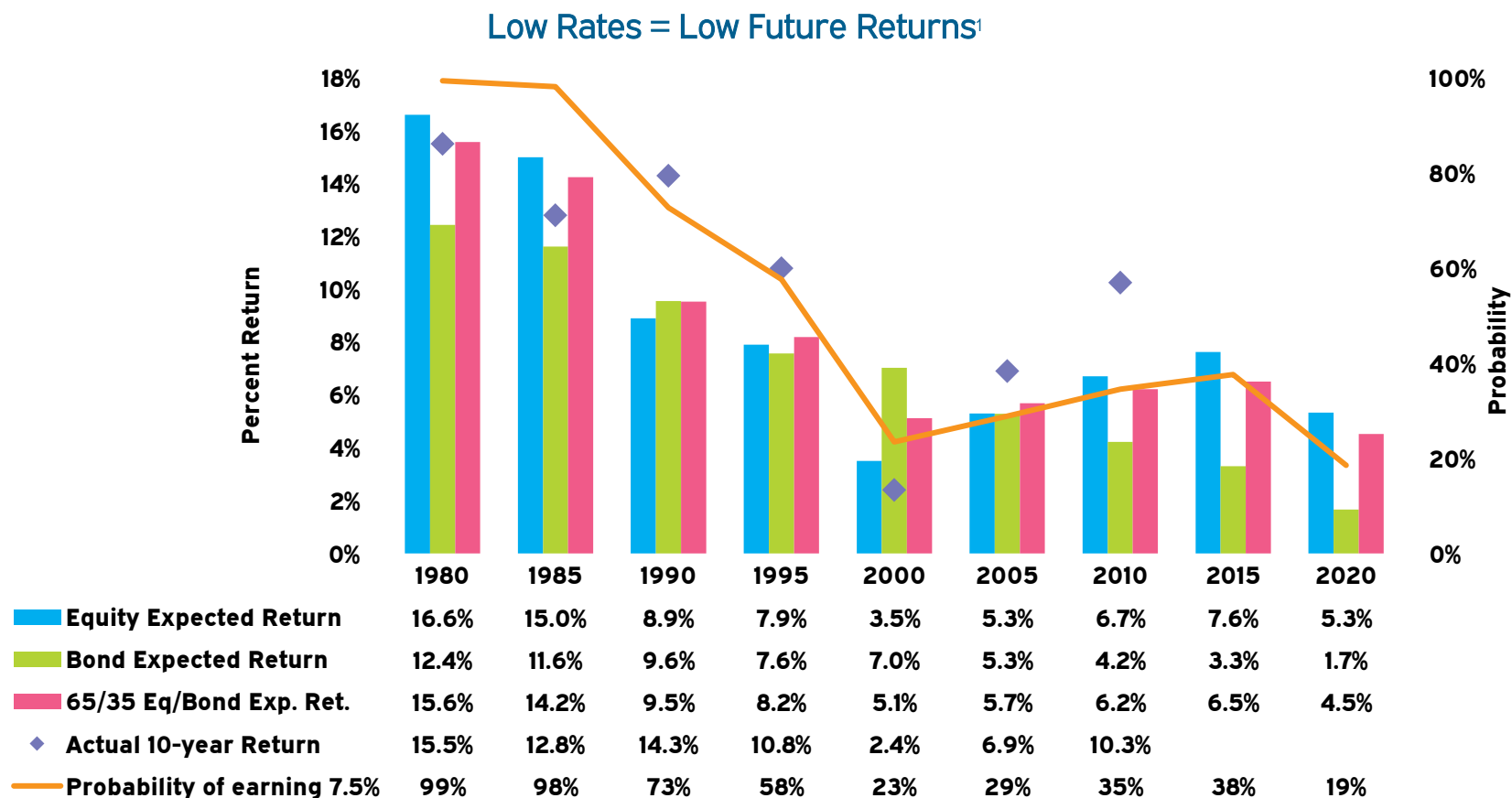
- There is global precedent for rates staying low for a long time.
- It may even be possible that rates move lower.
 - US rates could theoretically push past what many once considered a zero bound.
 - Foreign rates have gone negative in recent years, and not just in Japan.¹

Japanese 10-Year Rates



- The most likely reason for the Fed to reverse course on rates would be to fight inflation.
- Even still, there is some (unknown) tolerance for inflation that the Fed will probably be willing to accept.

¹ Germany, Japan, Denmark, Sweden, Switzerland, Spain, France, Ireland, Portugal, and Austria have all experienced negative rates at some point since 2016.



- A simple stock/bond mix has produced diminishing expected returns over the past 40 years.
- With rates having declined even further, it will be more difficult than ever for institutional investors to achieve their target returns.

¹ Expected return assumptions for 1) Bonds equals the yield of the ten-year Treasury plus 100 basis points, and 2) Equities equals the dividend yield plus the earnings yield of the S&P 500 index (using the inflation-adjusted trailing 10-year earnings). Probability calculation is for the subsequent ten years. Reflects yields and valuations as of June 30, 2020.

What Can You Do?

- Take a barbell approach to asset allocation
- Continue to accept risk
- Be opportunistic...and strategic
- Pivot in real estate
- Move forward selectively in infrastructure

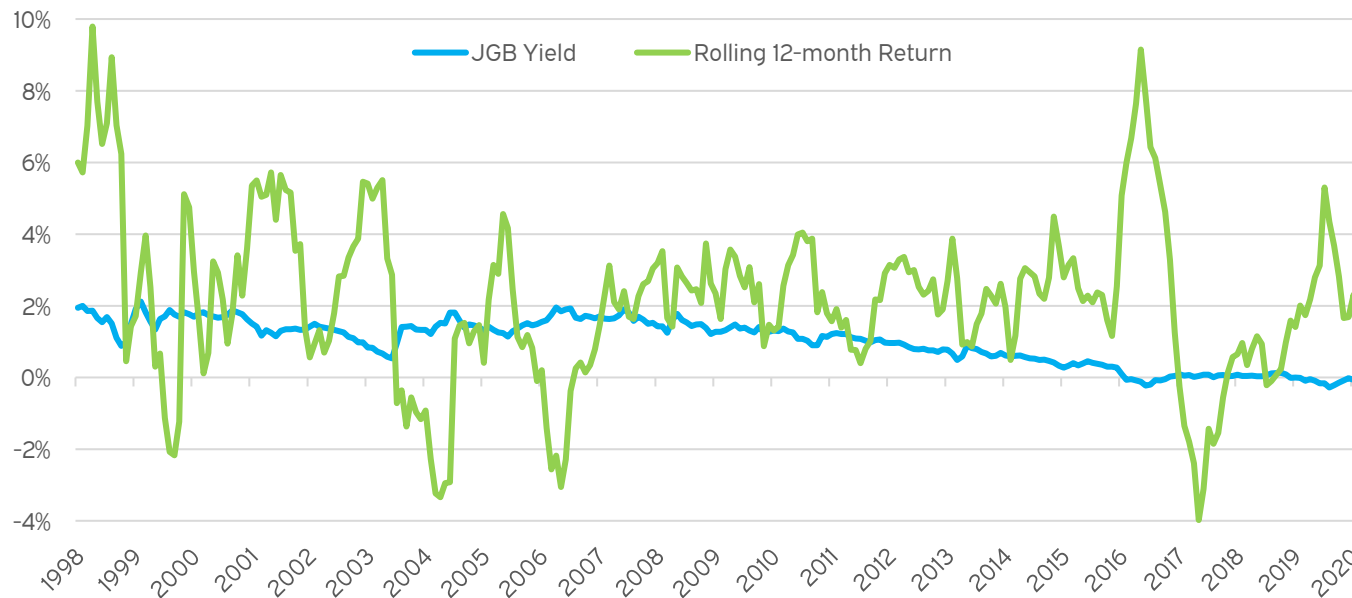
The Barbell Approach: Mixing Low and High Risk Assets

- Target returns for institutional investors have been declining, but not nearly as quickly as interest rates.
- Low interest rates flow through to many asset classes, thus lowering their expected return.
- The lower expected return across asset classes argues for a “barbell approach” to portfolio structuring.
 - This means owning higher-risk assets such as equities along with hedges such as long Treasuries and other Risk Mitigating Strategies (RMS).
- It effectively “crowds out” assets with expected returns in the middle that tend to be correlated with higher risk assets.
 - It will be harder for high yield, bank loans, EM debt, GTAA, and traditional hedge funds to find a home.
- A barbell approach takes on risk more efficiently.
 - It provides better downside protection than a typical portfolio that theoretically has the same level of risk in it.

Should We Fear Bonds When Rates Are Low?

- If the Fed wants to keep rates steady, they can, implying limited downside to bonds.
- A good case study is Japan, who instituted a Zero Interest Rate Policy (ZIRP) in 1999.
- Since the inception of ZIRP in Japan, government bonds have produced fairly steady, if modest, returns.
 - The average annual return was 1.9%, and the worst 12-month decline was a -4% drawdown.

Japanese Government Bond Yields and Returns¹

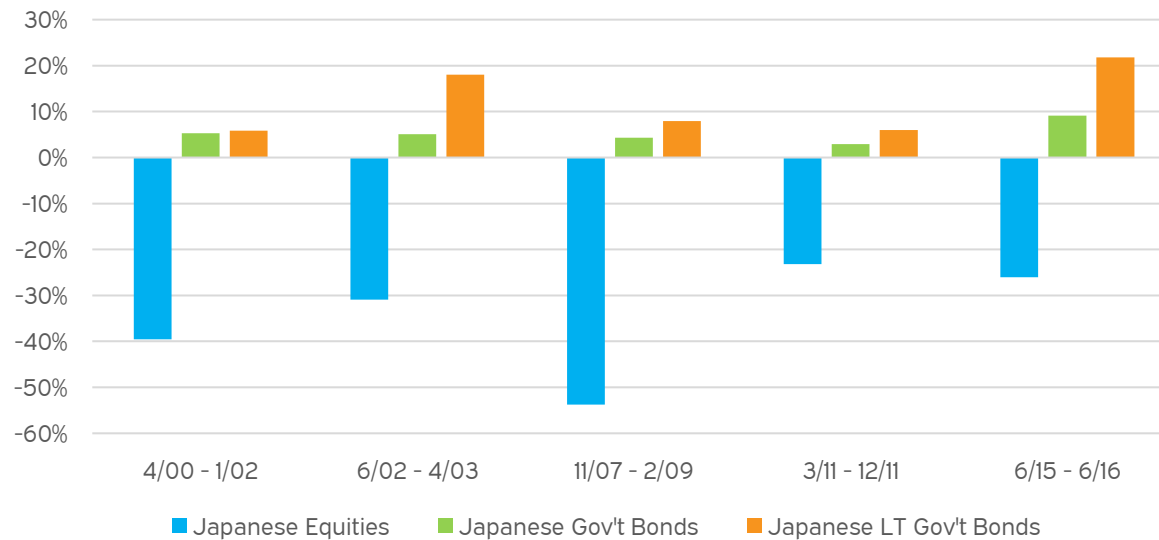


¹ Data Source for JGB returns is the ICE BofA Japan Government Index and its components. 10-year rates fell and stayed below 2% in 1998, hence we used this as the inception point for our analysis.

But Can Bonds Still Provide A Hedge?

- There is an unknown level below which rates cannot fall, perhaps -1.0%.
 - This places a limit on how good of a hedge bonds, especially long bonds, can provide.
- During the worst drawdowns in Japan, government bonds consistently served as a hedge.
 - Long-term government bonds served as a better hedge, despite the low starting yield.

Worst Drawdowns During ZIRP (Cumulative Return)¹



- The 2015-16 drawdown is particularly informative, as the 10-year rate at the start of the period was just 0.46%, and it declined to -0.23%.

¹ Data Source for JGB returns is the ICE BofA Japan Government Index and its components; for equities, the source is MSCI Japan (local currency).

Risk Mitigating Strategies

- Risk Mitigating Strategies, or “RMS,” is an asset allocation program designed to provide robust, impactful diversification benefits and defensive characteristics relative to growth-like asset classes.
- RMS programs are designed to have:
 - Low correlation with traditional portfolios
 - Low to negative correlations to equities during volatile markets or equity drawdowns
- RMS programs generally incorporate at least several of the following strategies:
 - Long Term US Treasuries
 - Trend Following
 - Global Macro
 - Long Volatility
- By diversifying across several of these strategies, it reduces the reliance upon any single component.
 - Each strategy will react differently, depending on the type and magnitude of the drawdown, thus supporting a portfolio approach to building an RMS program

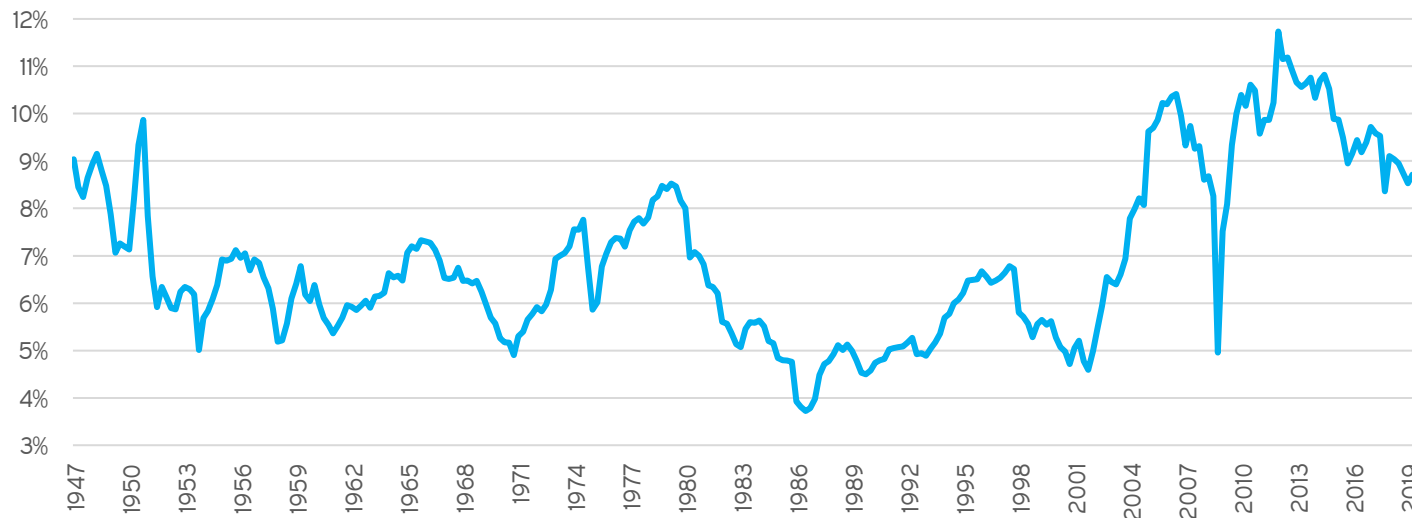
Continue To Accept Risk

- Given lower interest rates, achieving your target return will require continuing to invest in risky assets.
 - Risky assets are less attractive in absolute terms, but perhaps more attractive in relative terms.
- Continue to take advantage of illiquidity via private markets.
 - Private equity, infrastructure and real estate all offer higher relative returns while offering some diversification benefits.
- Ramping up in private markets cannot happen overnight, especially given the amount of capital overhang and current pause in transactions.
 - That means public equities will have to be the mainstay of portfolios.
- But be cognizant of the risks of equities.
 - While we continue to expect equities to produce higher returns than lower risk assets, we expect those returns will be lower than they have been over the past decade.

Stick with Equities, But Be Aware of the Risks

- Despite the downturn in 1Q20, US equity valuations are well above long-term averages.
- US equities had numerous tailwinds over the prior ten years, many of which are not likely to repeat.
 - Declining interest rates reduced borrowing costs.
 - Net buybacks boosted earnings per share.
 - Tax cuts provided a one-time increase to cash and after-tax earnings.
 - Economic pressures muted labor costs and expanded profit margins.

US Corporate Profits as a % of GDP¹



¹ Source: FRED. Represents Corporate Profits After Tax (without IVA and CCAAdj) as a percentage of Nominal GDP.

Be Opportunistic... and Strategic

- The market has rewarded those investors who were willing and able to think opportunistically during past periods of market stress.
 - We don't yet know what the best opportunities are going to be this time around (e.g., TALF, distressed credit).
- An opportunistic approach requires patience (i.e., waiting for the "fat pitch") and a contrarian nature (i.e., having the courage to stand against the dominant view)
 - Major opportunities occur infrequently and are very hard to time
 - Such opportunities are often contrarian in nature
 - Valuations drive long-term returns, but bubbles can last for many years
- Most investors are probably best served by a systematic approach
- Target ranges should be pre-defined and adhered to
- Rely predominantly on strategic asset allocation
- But allow for opportunistic movements when:
 - Valuations are at extreme levels, and
 - You have a high level of confidence in your decision

Pivot in Real Estate

- This crisis has accelerated several secular trends that were already underway.
 - The decline of brick and mortar retail had already begun.
 - It may also launch the shift toward more working from home (i.e., less need for office space).
 - And less travel (i.e., lower demand for hospitality and leisure destinations).
 - Outcomes for student housing and senior housing will vary (for different reasons).
- Core real estate has significant exposure to the above property types and cannot get out of them any time soon.
 - Pricing in core RE does not yet reflect any of this yet.
 - If they did, the ability to acquire high quality, income-producing assets at attractive price points would be a welcomed opportunity.
- Non-core strategies tend to be more focused on particular geographies or property types.
 - This allows us (and your investment managers) to be more selective and create strategic overweights and underweights.
- Hence we suggest tilting toward non-core strategies that will benefit from these secular changes.

Move Forward Selectively in Infrastructure

- Infrastructure could be one of the “winners” coming out of this.
- That said, there will be winners and losers within infrastructure from a sector standpoint.
- Transportation infrastructure has been hit hard and may not recover quickly.
- Midstream energy (e.g., pipelines) may be like the fiber cable of 20 years ago – overbuilt for the demand we are actually going to see in the near future.
 - Many existing contracts are take-or-pay, which makes counter-party risk a real issue.
- Renewables are going to become a more attractive investment option.
 - This shift may accelerate due to technological improvements and policy decisions.
- Communications infrastructure may be one of the other winners, as demand for wireless capacity grows.
- Continue to allocate to infrastructure, with a bias toward funds that should benefit from these secular shifts.

Summary

- Rates are incredibly low. This does not bode well for future returns.
- It will be more difficult than ever for you to achieve your target return.
 - While doing so will prove challenging, it is not impossible.
- Through a combination of options, you can improve your odds of success.
 - Take a barbell approach to asset allocation.
 - Stick with risky assets, both public and private.
 - Be opportunistic, and patient.
 - Pivot in real estate.
 - Move forward selectively in infrastructure.
- Uncertainty is high.
 - If you just don't know where the market is heading, have a little humility and diversify.

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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. $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} \times (\text{market return} - \text{Risk Free Rate})]$.

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 its 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.

SI: Since Inception

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.

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.

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.

Tracking Error: A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

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%.

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

Yield to Worst: The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

NCREIF Property Index (NPI): Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE): Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

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

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

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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.