

City of Marlborough Contributory Retirement System

Meeting Materials
November 30, 2021

Fund Evaluation Report

Agenda

1. Economic and Market Update Data as of October 31, 2021
2. Third Quarter 2021 Investment Review
 - Retirement System Summary
 - Retirement System Detail
 - Portfolio Reviews
3. Current Issue
 - Memorandum
4. Appendices
 - Meketa Investment Group Corporate Update
 - Disclaimer, Glossary, and Notes

Economic and Market Update

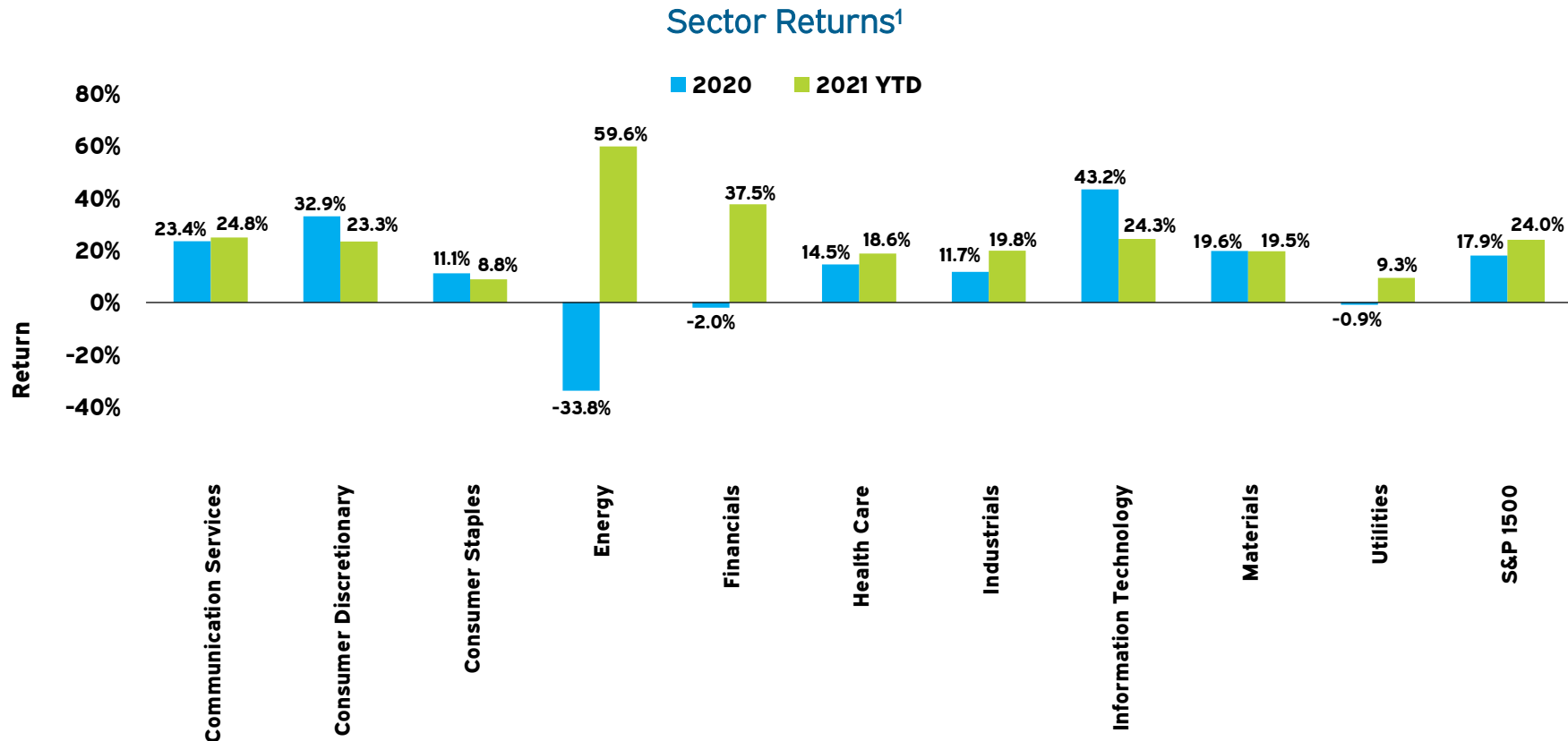
Data as of October 31, 2021

Market Returns¹

Indices	October	YTD	1 Year	3 Year	5 Year	10 Year
S&P 500	7.0%	24.0%	41.2%	22.5%	18.9%	15.9%
MSCI EAFE	2.5%	11.0%	33.5%	12.1%	9.8%	7.0%
MSCI Emerging Markets	1.0%	-0.3%	15.2%	13.1%	9.4%	4.7%
MSCI China	3.2%	-14.0%	-11.0%	12.6%	10.2%	7.4%
Bloomberg Barclays Aggregate	0.0%	-1.6%	-0.6%	5.5%	3.1%	3.0%
Bloomberg Barclays TIPS	1.1%	4.7%	6.9%	8.2%	4.7%	3.1%
Bloomberg Barclays High Yield	-0.2%	4.4%	10.5%	7.4%	6.3%	6.8%
10-year US Treasury	-0.3%	-4.5%	-4.8%	6.3%	2.2%	2.7%
30-year US Treasury	3.4%	-5.8%	-5.8%	12.0%	4.7%	5.0%

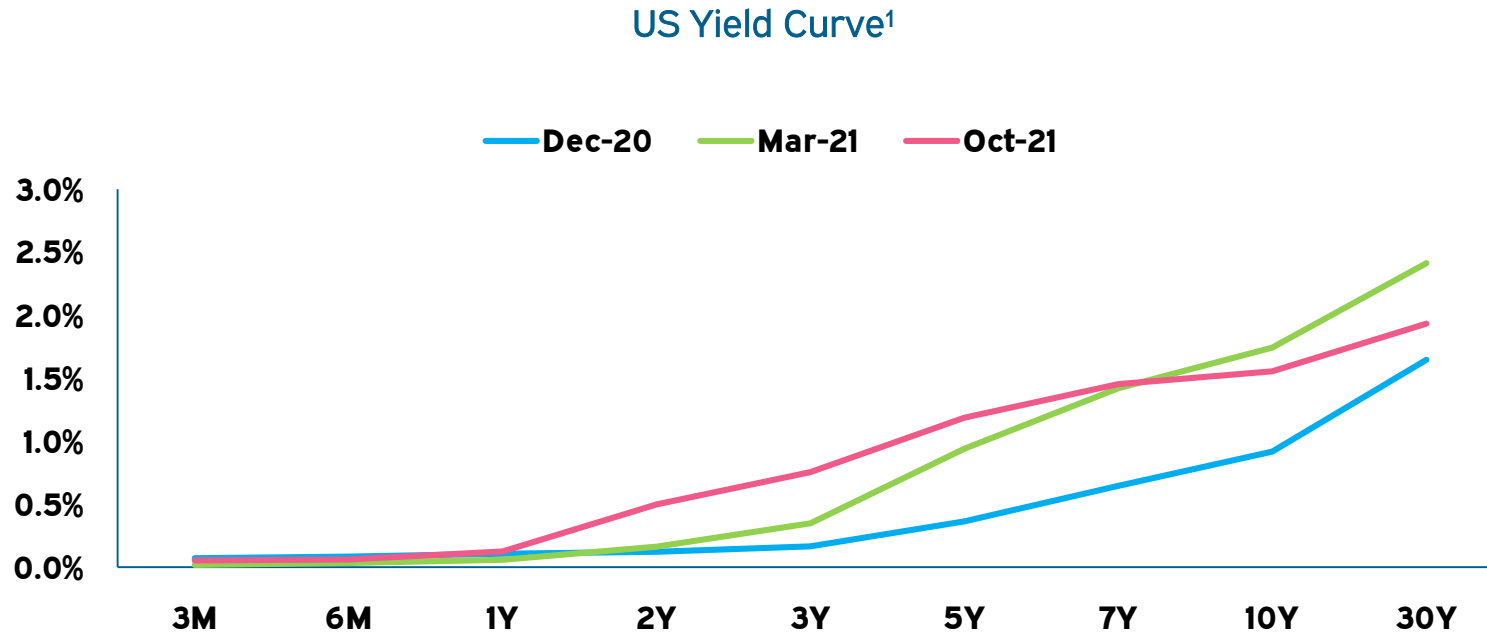
- Equity markets broadly increased in October with the US posting one of its best months since mid-2020. The US bounced back from a tough September (-4.7%), driven primarily by a strong earnings season, expectations for an orderly policy withdrawal, and potentially peaking inflation all contributing.
- In October, longer-dated Treasury securities provided mixed performance, with the 30-year being more heavily influenced by lower growth expectations versus 10-year yields rising on inflation concerns. TIPS outpaced the broad US bond market (Barclays Aggregate) on continued inflation worries, mainly driven by the disruption of supply chains around the globe.

¹ Source: Investment Metrics and Bloomberg. Data is as of October 31, 2021.



- In a reversal of the trend from last year, energy continues to lead the way on a year-to-date basis, followed by financials.
- The energy sector extended its gains in October (+14.6%), helped by rising demand and continued supply constraints. Higher energy prices remain a key part of inflationary pressures.

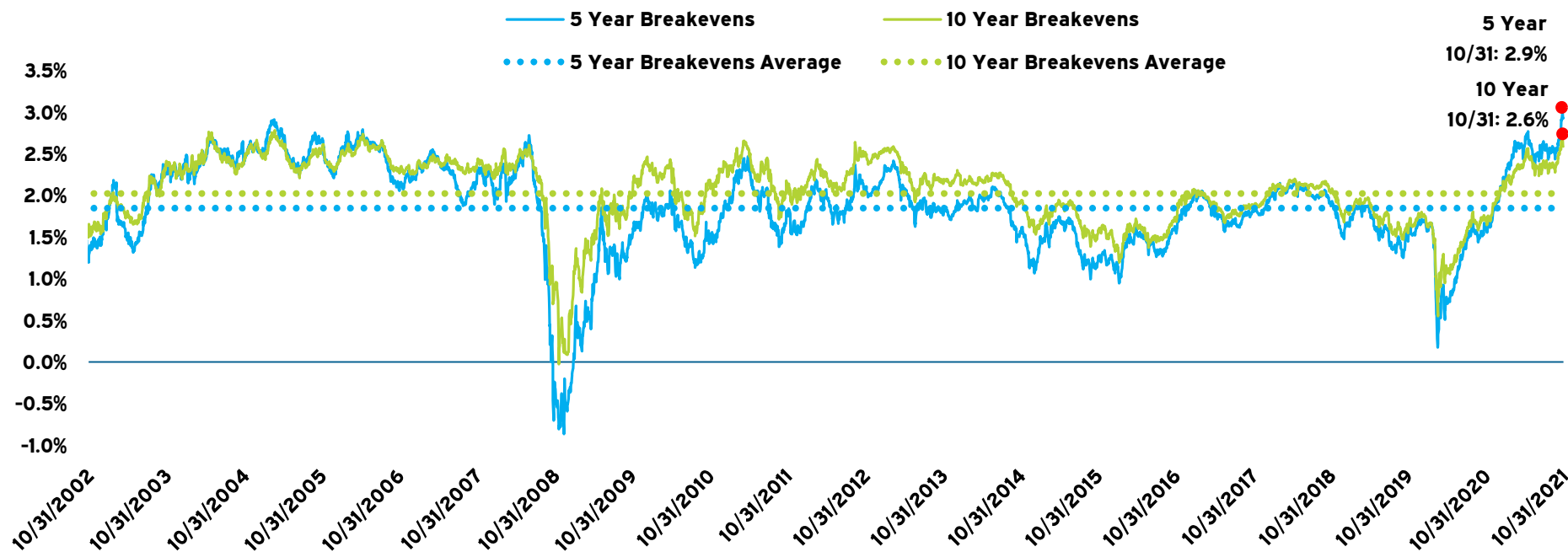
¹ Source: Bloomberg. Data is as of October 31, 2021.



- During the first half of 2021, the yield curve steepened, on higher growth and inflation expectations.
- While shorter-dated Treasury yields remained largely unchanged, rates in the 2-year to 5-year sector further increased on the September FOMC signal that policy rates may need to be tightened more aggressively than previously anticipated. Longer-term rates were mixed on greater inflation concerns versus declining growth expectations.
- The yield curve could continue its steepening if growth and inflation pressures build beyond current expectations. Alternatively, if the economy weakens, or if projected economic growth simply happens faster than expected, a flattening trend could continue.

¹ Source: Bloomberg. Data is as of October 31, 2021.

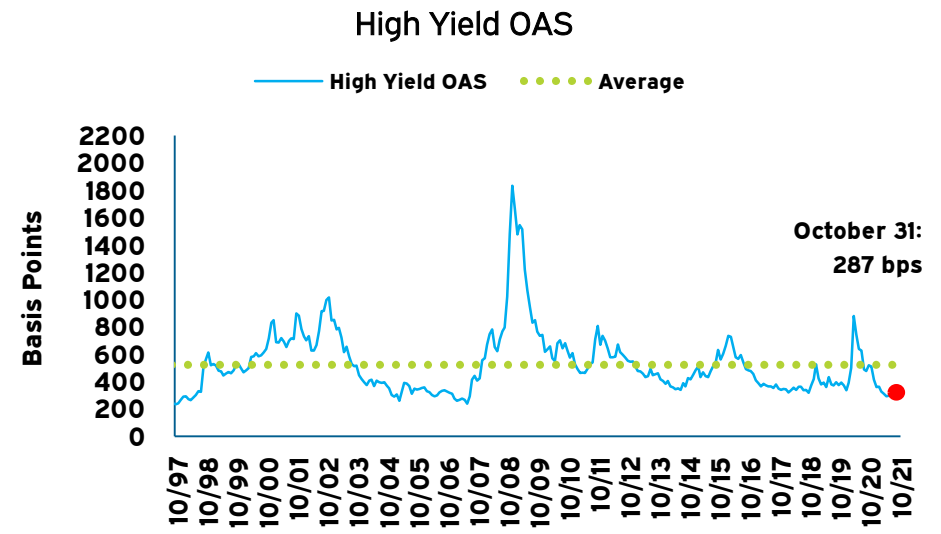
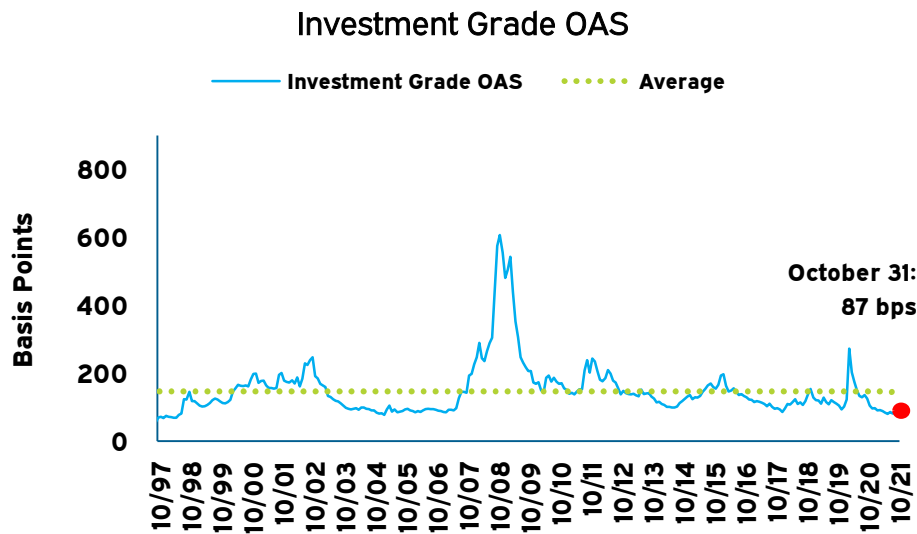
Breakeven Inflation¹



- Inflation expectations increased further in October, particularly over the short-term, and remain well above long-term averages. The economy reopening, supply chain issues persisting, and expected additional fiscal stimulus remain key drivers.
- Looking ahead, the track of economic growth, the persistence of supply chain issues, and the unprecedented US fiscal response will be key issues. Additionally, changes to Fed policy focused on an average inflation target may play a role in the inflation market dynamics.

¹ Source: Bloomberg. Data is as of October 31, 2021.

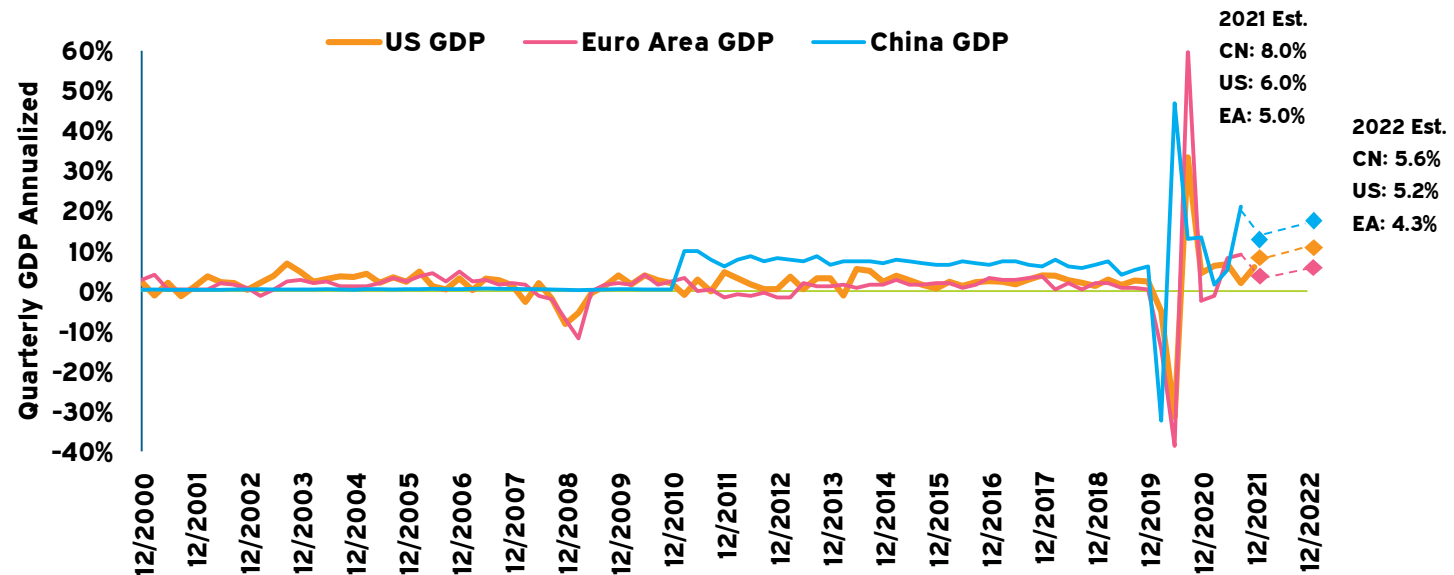
Credit Spreads (High Yield & Investment Grade)¹



- Credit spreads (the spread above a comparable maturity Treasury) for investment-grade and high yield corporate debt remain historically narrow despite continued economic uncertainty.
- Policy support and the search for yield in a low-rate environment have been key drivers in the decline in US credit spreads to below long-term averages, particularly for high yield issuers.

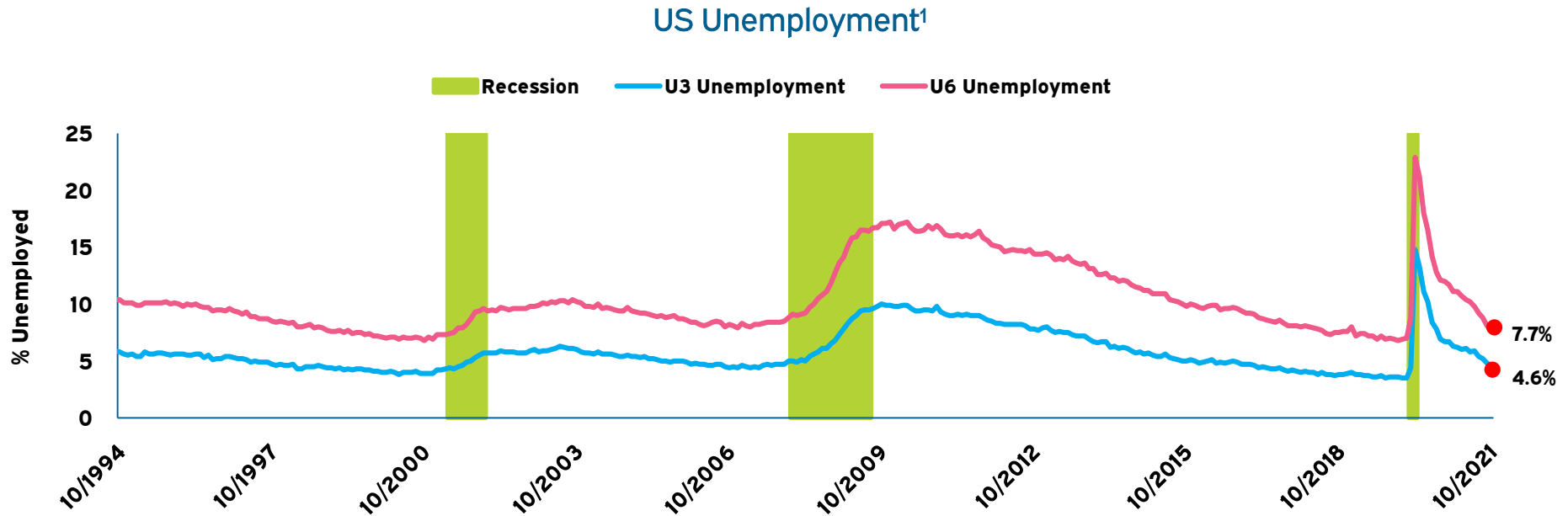
¹ Source: Barclays Live. Data represents OAS and is as of October 31, 2021.

GDP Data Shows Projected Improvements in 2021¹



- In late 2020 and early 2021, major economies grew at rates far above potential. These very high rates of growth are not expected to continue, with projections continuing to decline given supply disruptions, reopening trends moderating, and some countries continuing to struggle with the virus.
- The US is expected to grow faster than the euro area this year and next, with some growth pulled forward due to the relative success in distributing the vaccine and a substantially larger fiscal stimulus response to the pandemic.
- China is projected to grow at 8.0% in 2021 and 5.6% in 2022 both above the expected US growth rate. Questions remain though about the highly levered property market and government regulations.

¹ Source: Bloomberg, and IMF; Euro Area and China figures annualized by Meketa. Projections via October 2021 IMF World Economic Outlook and represent annual numbers.



- The unemployment rate (U3) continued its decline in October falling from 4.8% to 4.6%. It still remains above pre-pandemic levels though, but far below the pandemic peak.
- The broader measure of unemployment (U6) that includes discouraged and underemployed workers also continued to decline but remains much higher at 7.7%. Also, the labor force participation rate remains quite low and is 1.7% below the 61.6% level of February 2020.
- Pandemic related concerns, childcare issues, and a mismatch of skills and available jobs have contributed to the continued labor market issues. The track of the unemployment rate from here will be a key consideration in the Federal Reserve's pace of reducing its policy support.

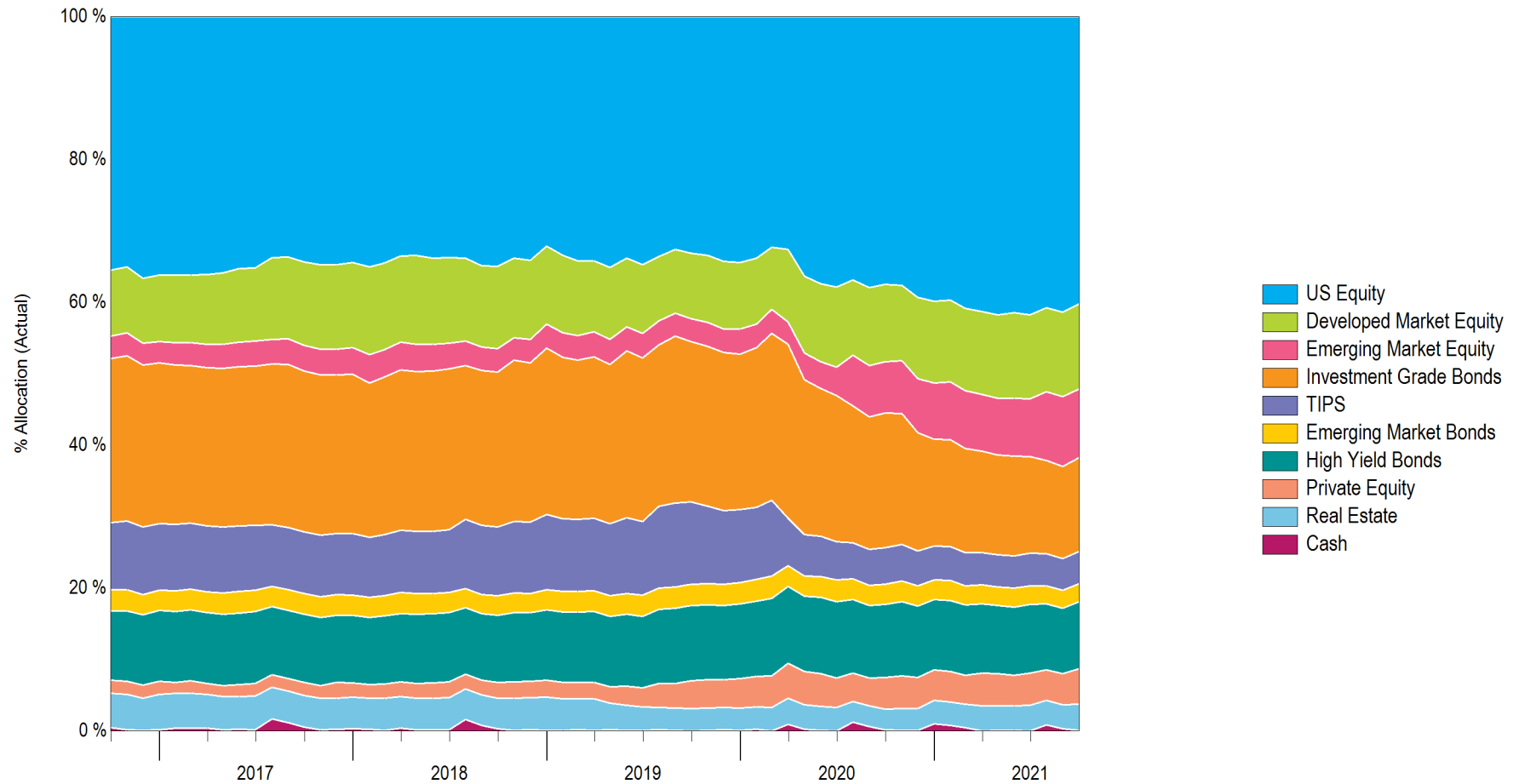
¹ Source: Bloomberg. Data is as of October 31, 2021. Bars represent recessions as observed by the National Bureau of Economic Research.

Third Quarter 2021 Investment Review

Retirement System Summary

Allocation vs. Targets and Policy				
	Current Balance	Current Allocation	Policy	Policy Range
US Equity	\$92,534,973	40%	38%	28% - 42%
Developed Market Equity	\$27,279,542	12%	12%	5% - 15%
Emerging Market Equity	\$22,095,075	10%	10%	1% - 12%
Investment Grade Bonds	\$30,241,261	13%	12%	10% - 25%
TIPS	\$10,344,556	4%	0%	0% - 10%
Emerging Market Bonds	\$5,873,648	3%	2%	1% - 5%
High Yield Bonds	\$21,613,431	9%	5%	5% - 12%
Private Equity	\$11,380,595	5%	5%	3% - 7%
Private Debt	--	--	4%	0% - 5%
Real Estate	\$8,494,646	4%	7%	2% - 10%
Infrastructure	--	--	5%	0% - 5%
Cash	\$151,345	0%	0%	0% - 5%
Total	\$230,009,072	100%	100%	

Asset Allocation History 5 Years Ending September 30, 2021



Asset Class Performance Summary											
	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Retirement System (net)	230,009,072	100.0	0.0	8.6	20.8	10.8	9.6	9.2	7.4	8.0	Jul-88
55% MSCI World & 45% Barclays Aggregate			0.0	6.3	14.8	10.0	9.1	8.5	6.7	7.3	Jul-88
65% MSCI World / 35% Barclays Aggregate			0.0	7.8	17.8	10.8	10.1	9.4	7.1	7.4	Jul-88
InvMetrics Public DB \$50mm-\$250mm Net Median			-0.2	8.6	19.6	10.5	10.4	9.8	7.2	7.8	Jul-88
Domestic Equity Assets (net)	92,534,973	40.2	-0.4	13.5	32.2	12.3	13.9	15.0	8.7	9.3	Oct-06
Russell 3000			-0.1	15.0	31.9	16.0	16.9	16.6	9.8	10.4	Oct-06
PRIT Domestic Equity			0.3	16.4	34.2	15.5	16.6	16.3	9.3	9.4	Oct-06
International Developed Markets Equity Assets (net)	27,279,542	11.9	-0.4	8.5	25.8	7.8	9.0	7.4	--	3.8	Oct-06
MSCI EAFE			-0.4	8.3	25.7	7.6	8.8	8.1	6.6	4.1	Oct-06
International Emerging Markets Equity Assets (net)	22,095,075	9.6	-6.5	2.3	22.6	11.7	10.7	--	--	8.1	Jan-15
MSCI Emerging Markets			-8.1	-1.2	18.2	8.6	9.2	6.1	11.0	6.6	Jan-15
Investment Grade Bonds Assets (net)	30,241,261	13.1	0.0	-1.6	-1.0	5.3	2.9	3.0	4.3	6.0	Jul-88
Bloomberg US Aggregate TR			0.1	-1.6	-0.9	5.4	2.9	3.0	4.3	6.0	Jul-88
PRIT Core Fixed Income			0.7	-1.5	-1.4	7.5	3.3	4.6	5.1	6.8	Jul-88
High Yield Bond Assets (net)	21,613,431	9.4	0.6	3.6	9.5	6.4	5.9	6.6	--	6.7	Sep-03
Bloomberg US High Yield TR			0.9	4.5	11.3	6.9	6.5	7.4	8.1	7.7	Sep-03
PRIT Public Value-Added Fixed Income			0.6	3.7	9.6	5.2	4.5	4.5	6.7	6.2	Sep-03
TIPS Assets (net)	10,344,556	4.5	1.7	3.4	5.1	7.4	4.3	3.1	--	4.2	Oct-05
Bloomberg US TIPS TR			1.8	3.5	5.2	7.4	4.3	3.1	5.1	4.3	Oct-05
Emerging Market Debt Assets (net)	5,873,648	2.6	-0.6	-0.9	6.7	5.9	4.3	--	--	5.3	Jan-15
JP Morgan EMBI Global Diversified			-0.7	-1.4	4.4	5.7	3.9	5.8	8.1	5.2	Jan-15
Open-Ended Real Estate (net)	6,361,444	2.8	6.1	14.5	16.8	8.3	8.3	10.5	7.1	8.2	Oct-95
NCREIF ODCE			6.6	13.2	14.6	7.1	7.5	9.9	7.9	9.0	Oct-95
Total Closed End Real Estate (net)	2,133,202	0.9	9.6	7.9	7.9	-15.9	-6.0	--	--	3.1	Jan-13
Private Equity Assets (net)	11,380,595	4.9	10.2	35.4	57.1	25.2	15.6	10.0	--	8.4	Oct-06
Cash (net)	151,345	0.1									

	Trailing Performance										Inception (%)	Inception Date
	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)		
Total Retirement System	230,009,072	100.0	--	0.0	8.6	20.8	10.8	9.6	9.2	7.4	8.0	Jul-88
55% MSCI World & 45% Barclays Aggregate				0.0	6.3	14.8	10.0	9.1	8.5	6.7	7.3	Jul-88
65% MSCI World / 35% Barclays Aggregate				0.0	7.8	17.8	10.8	10.1	9.4	7.1	7.4	Jul-88
InvMetrics Public DB \$50mm-\$250mm Net Median				-0.2	8.6	19.6	10.5	10.4	9.8	7.2	7.8	Jul-88
Domestic Equity Assets	92,534,973	40.2	40.2	-0.4	13.5	32.2	12.3	13.9	15.0	8.7	9.3	Oct-06
Russell 3000				-0.1	15.0	31.9	16.0	16.9	16.6	9.8	10.4	Oct-06
PRIT Domestic Equity				0.3	16.4	34.2	15.5	16.6	16.3	9.3	9.4	Oct-06
RhumbLine S&P 500 Index	36,305,650	15.8	39.2	0.6	15.8	29.8	15.9	16.8	16.6	9.5	7.7	Mar-99
S&P 500				0.6	15.9	30.0	16.0	16.9	16.6	9.5	7.7	Mar-99
eV US Passive S&P 500 Equity Net Median				0.6	15.8	29.8	15.9	16.7	16.5	9.4	7.6	Mar-99
Frontier Capital Appreciation	25,009,902	10.9	27.0	-2.6	11.7	45.7	11.0	12.7	--	--	13.1	Feb-13
Russell 2500 Growth				-3.5	4.8	32.0	16.0	18.2	17.2	11.6	15.4	Feb-13
eV US Small-Mid Cap Growth Equity Net Median				-0.1	9.8	35.7	18.5	20.0	17.1	11.8	15.8	Feb-13
RhumbLine HEDI	31,219,422	13.6	33.7	0.1	12.1	--	--	--	--	--	26.9	Nov-20
Russell 1000 HEDI Moderate GR USD				0.1	12.2	24.2	16.5	17.1	17.0	11.0	27.2	Nov-20
eV US Large Cap Core Equity Gross Median				0.3	15.5	29.9	14.9	16.3	16.3	10.2	33.2	Nov-20

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
International Developed Markets Equity Assets	27,279,542	11.9	11.9	-0.4	8.5	25.8	7.8	9.0	7.4	--	3.8	Oct-06
<i>MSCI EAFE</i>				-0.4	8.3	25.7	7.6	8.8	8.1	6.6	4.1	Oct-06
RhumbLine MSCI EAFE Index	27,279,542	11.9	100.0	-0.4	8.5	25.8	7.8	9.0	--	--	5.2	Aug-14
<i>MSCI EAFE</i>				-0.4	8.3	25.7	7.6	8.8	8.1	6.6	5.1	Aug-14
<i>eV EAFE All Cap Equity Net Median</i>				-1.5	8.5	25.1	7.8	8.5	9.2	7.8	6.1	Aug-14
International Emerging Markets Equity Assets	22,095,075	9.6	9.6	-6.5	2.3	22.6	11.7	10.7	--	--	8.1	Jan-15
<i>MSCI Emerging Markets</i>				-8.1	-1.2	18.2	8.6	9.2	6.1	11.0	6.6	Jan-15
DFA Emerging Markets	11,136,806	4.8	50.4	-6.3	4.9	27.2	9.1	8.8	--	--	6.6	Jan-15
<i>MSCI Emerging Markets</i>				-8.1	-1.2	18.2	8.6	9.2	6.1	11.0	6.6	Jan-15
<i>eV Emg Mkts All Cap Equity Net Median</i>				-7.4	-0.4	20.0	9.9	9.8	6.7	11.4	7.4	Jan-15
Driehaus Emerging Market Equity	10,958,269	4.8	49.6	-6.7	-0.6	17.6	13.9	12.3	--	--	9.4	Jan-15
<i>MSCI Emerging Markets</i>				-8.1	-1.2	18.2	8.6	9.2	6.1	11.0	6.6	Jan-15
<i>eV Emg Mkts All Cap Equity Net Median</i>				-7.4	-0.4	20.0	9.9	9.8	6.7	11.4	7.4	Jan-15
Investment Grade Bonds Assets	30,241,261	13.1	13.1	0.0	-1.6	-1.0	5.3	2.9	3.0	4.3	6.0	Jul-88
<i>Bloomberg US Aggregate TR</i>				0.1	-1.6	-0.9	5.4	2.9	3.0	4.3	6.0	Jul-88
<i>PRIT Core Fixed Income</i>				0.7	-1.5	-1.4	7.5	3.3	4.6	5.1	6.8	Jul-88
SSgA U.S. Aggregate Bond Index	30,241,261	13.1	100.0	0.0	-1.6	-1.0	5.3	2.9	3.0	4.3	4.5	May-01
<i>Bloomberg US Aggregate TR</i>				0.1	-1.6	-0.9	5.4	2.9	3.0	4.3	4.5	May-01
<i>eV US Core Fixed Inc Net Median</i>				0.0	-1.3	-0.4	5.6	3.2	3.4	4.6	4.8	May-01

Total Retirement System | As of September 30, 2021

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
High Yield Bond Assets	21,613,431	9.4	9.4	0.6	3.6	9.5	6.4	5.9	6.6	--	6.7	Sep-03
Bloomberg US High Yield TR				0.9	4.5	11.3	6.9	6.5	7.4	8.1	7.7	Sep-03
PRIT Public Value-Added Fixed Income				0.6	3.7	9.6	5.2	4.5	4.5	6.7	6.2	Sep-03
Shenkman Capital	21,613,431	9.4	100.0	0.6	3.6	9.5	6.4	5.9	6.6	--	6.7	Apr-06
Bloomberg US High Yield TR				0.9	4.5	11.3	6.9	6.5	7.4	8.1	7.4	Apr-06
eV US High Yield Fixed Inc Net Median				0.8	4.2	10.4	6.4	6.0	6.8	7.5	6.8	Apr-06
TIPS Assets	10,344,556	4.5	4.5	1.7	3.4	5.1	7.4	4.3	3.1	--	4.2	Oct-05
Bloomberg US TIPS TR				1.8	3.5	5.2	7.4	4.3	3.1	5.1	4.3	Oct-05
SSgA TIPS Index-NL	10,344,556	4.5	100.0	1.7	3.4	5.1	7.4	4.3	3.1	--	4.2	Oct-05
Bloomberg US TIPS TR				1.8	3.5	5.2	7.4	4.3	3.1	5.1	4.3	Oct-05
eV US TIPS / Inflation Fixed Inc Net Median				1.6	3.5	5.3	7.3	4.5	3.1	5.3	4.3	Oct-05
Emerging Market Debt Assets	5,873,648	2.6	2.6	-0.6	-0.9	6.7	5.9	4.3	--	--	5.3	Jan-15
JP Morgan EMBI Global Diversified				-0.7	-1.4	4.4	5.7	3.9	5.8	8.1	5.2	Jan-15
Payden Emerging Market Bond	5,873,648	2.6	100.0	-0.6	-0.9	6.7	5.9	4.3	--	--	5.3	Jan-15
JP Morgan EMBI Global Diversified				-0.7	-1.4	4.4	5.7	3.9	5.8	8.1	5.2	Jan-15
Open-Ended Real Estate	6,361,444	2.8	2.8	6.1	14.5	16.8	8.3	8.3	10.5	7.1	8.2	Oct-95
NCREIF ODCE				6.6	13.2	14.6	7.1	7.5	9.9	7.9	9.0	Oct-95
Clarion Partners	6,361,444	2.8	100.0	6.1	14.5	16.8	8.3	8.3	10.5	--	7.6	Oct-02
NCREIF ODCE				6.6	13.2	14.6	7.1	7.5	9.9	7.9	8.1	Oct-02

Total Retirement System | As of September 30, 2021

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Closed End Real Estate	2,133,202	0.9	0.9	9.6	7.9	7.9	-15.9	-6.0	--	--	3.1	Jan-13
Rockwood Capital Real Estate Partners Fund XI, L.P.	2,133,202	0.9	100.0	9.6	7.9	7.9	--	--	--	--	4.3	Dec-19
Private Equity Assets	11,380,595	4.9	4.9	10.2	35.4	57.1	25.2	15.6	10.0	--	8.4	Oct-06
North American Strategic Partners 2006	27,121	0.0	0.2									
Ironsides Partnership Fund IV	2,527,914	1.1	22.2									
Ironsides Direct Investment Fund IV	2,312,775	1.0	20.3									
Ironsides Partnership Fund V, L.P.	728,427	0.3	6.4									
Ironsides Direct Investment Fund V, L.P.	3,163,614	1.4	27.8									
HarbourVest 2019 Global Fund	2,620,744	1.1	23.0									
Cash	151,345	0.1	0.1									

Private Equity market values are as of June 30, 2021 and adjusted for subsequent flows.

North American Strategic Partners market value is cash adjusted as of June 30, 2021. The fund is currently in the liquidation process and will only be reported on annually (as of December 31).

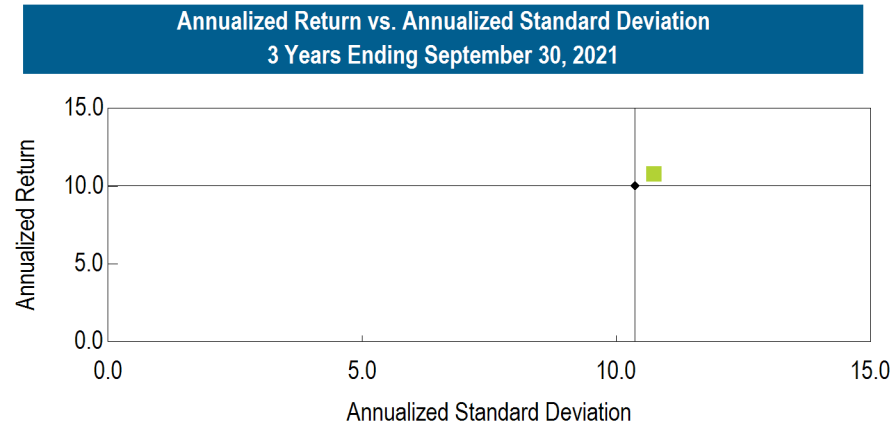
	Calendar Year Performance									
	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)
Total Retirement System	14.2	17.5	-4.5	13.0	8.7	-0.2	6.3	14.0	10.9	2.4
55% MSCI World & 45% Barclays Aggregate	12.9	19.1	-4.6	13.6	5.5	0.0	5.5	13.0	10.7	0.7
65% MSCI World / 35% Barclays Aggregate	13.7	21.0	-5.5	15.5	5.9	-0.2	5.4	15.9	11.9	-0.7
Domestic Equity Assets	13.4	27.6	-6.9	20.1	14.6	-1.6	13.1	33.1	15.3	0.0
Russell 3000	20.9	31.0	-5.2	21.1	12.7	0.5	12.6	33.6	16.4	1.0
PRIT Domestic Equity	18.9	30.5	-5.1	20.7	12.8	0.1	11.6	33.6	16.8	1.0
RhumbLine S&P 500 Index	18.3	31.4	-4.4	21.8	11.9	1.4	13.6	32.2	16.0	2.1
S&P 500	18.4	31.5	-4.4	21.8	12.0	1.4	13.7	32.4	16.0	2.1
Frontier Capital Appreciation	18.1	28.9	-13.9	19.1	20.5	-6.5	12.4	--	--	--
Russell 2500 Growth	40.5	32.7	-7.5	24.5	9.7	-0.2	7.1	40.6	16.1	-1.6
RhumbLine HEDI	--	--	--	--	--	--	--	--	--	--
Russell 1000 HEDI Moderate GR USD	18.5	32.7	-0.9	23.4	11.4	4.8	15.4	30.9	13.9	9.0
International Developed Markets Equity Assets	7.9	22.3	-13.5	24.9	1.4	-0.8	-8.7	21.2	15.0	-14.1
MSCI EAFE	7.8	22.0	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1
RhumbLine MSCI EAFE Index	7.9	22.3	-13.5	24.9	1.4	-0.8	--	--	--	--
MSCI EAFE	7.8	22.0	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1

Total Retirement System | As of September 30, 2021

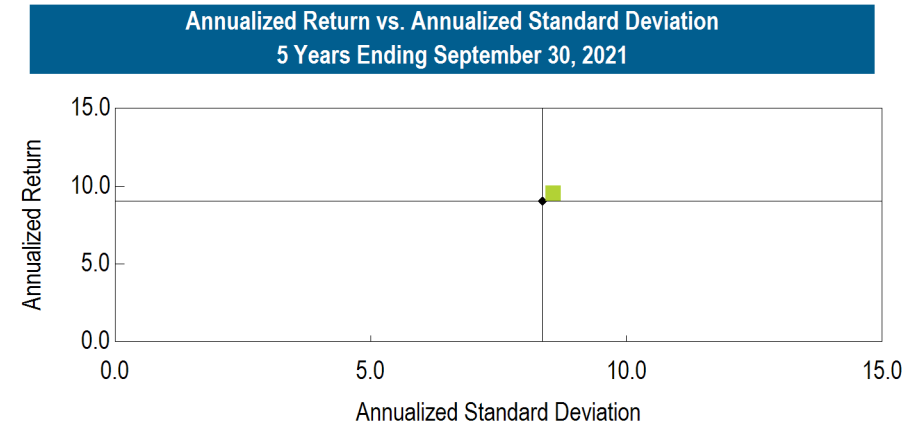
	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)
International Emerging Markets Equity Assets	21.1	20.7	-15.4	39.7	9.4	-12.7	--	--	--	--
<i>MSCI Emerging Markets</i>	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4
DFA Emerging Markets	13.9	16.0	-15.2	36.6	12.4	-14.9	--	--	--	--
<i>MSCI Emerging Markets</i>	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4
Driehaus Emerging Market Equity	28.0	25.3	-15.6	43.0	6.5	-10.6	--	--	--	--
<i>MSCI Emerging Markets</i>	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4
Investment Grade Bonds Assets	7.5	8.7	0.0	3.6	2.6	0.6	6.0	-2.0	4.3	7.8
<i>Bloomberg US Aggregate TR</i>	7.5	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2	7.8
<i>PRIT Core Fixed Income</i>	12.0	11.2	-0.9	5.3	3.9	-2.0	15.1	-2.9	6.2	8.0
SSgA U.S. Aggregate Bond Index	7.5	8.7	0.0	3.6	2.6	0.6	6.0	-2.0	4.3	7.8
<i>Bloomberg US Aggregate TR</i>	7.5	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2	7.8
High Yield Bond Assets	6.3	14.0	-1.8	6.5	12.6	-2.3	2.9	6.4	12.4	6.0
<i>Bloomberg US High Yield TR</i>	7.1	14.3	-2.1	7.5	17.1	-4.5	2.5	7.4	15.8	5.0
<i>PRIT Public Value-Added Fixed Income</i>	4.3	10.7	-2.5	8.5	11.2	-5.2	-0.7	-2.0	14.2	4.8
Shenkman Capital	6.3	14.0	-1.8	6.5	12.6	-2.3	2.9	6.4	12.4	6.0
<i>Bloomberg US High Yield TR</i>	7.1	14.3	-2.1	7.5	17.1	-4.5	2.5	7.4	15.8	5.0
TIPS Assets	10.9	8.4	-1.4	3.0	4.7	-1.4	3.6	-8.6	6.9	13.5
<i>Bloomberg US TIPS TR</i>	11.0	8.4	-1.3	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6
SSgA TIPS Index-NL	10.9	8.4	-1.4	3.0	4.7	-1.4	3.6	-8.6	6.9	13.5
<i>Bloomberg US TIPS TR</i>	11.0	8.4	-1.3	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6

Total Retirement System | As of September 30, 2021

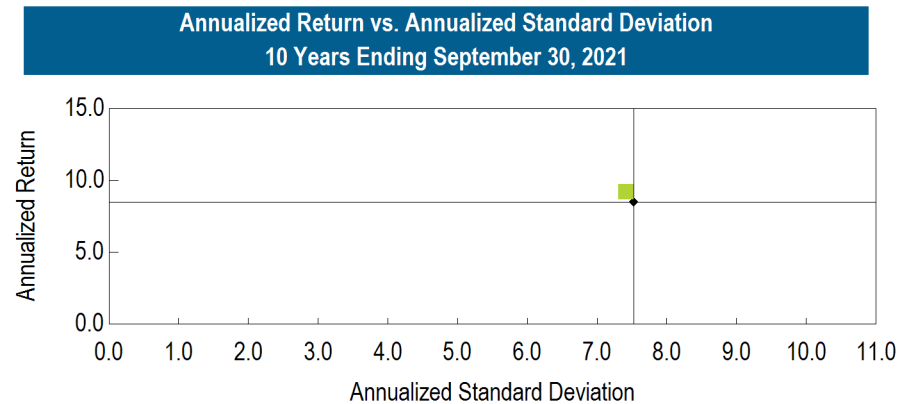
	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)
Emerging Market Debt Assets	6.2	16.5	-7.0	12.0	11.5	-0.8	--	--	--	--
<i>JP Morgan EMBI Global Diversified</i>	5.3	15.0	-4.3	10.3	10.2	1.2	7.4	-5.3	17.4	7.3
Payden Emerging Market Bond	6.2	16.5	-7.0	12.0	11.5	-0.8	--	--	--	--
<i>JP Morgan EMBI Global Diversified</i>	5.3	15.0	-4.3	10.3	10.2	1.2	7.4	-5.3	17.4	7.3
Open-Ended Real Estate	2.2	7.3	8.6	7.9	9.1	15.7	13.2	12.8	10.9	18.7
<i>NCREIF ODCE</i>	1.2	5.3	8.3	7.6	8.8	15.0	12.5	13.9	10.9	16.0
Clarion Partners	2.2	7.3	8.6	7.9	9.1	15.7	13.2	12.8	10.9	18.7
<i>NCREIF ODCE</i>	1.2	5.3	8.3	7.6	8.8	15.0	12.5	13.9	10.9	16.0
Total Closed End Real Estate	-5.3	-38.2	-1.8	15.1	9.5	23.8	13.3	18.8	--	--
Rockwood Capital Real Estate Partners Fund XI, L.P.	0.0	--	--	--	--	--	--	--	--	--
Private Equity Assets	22.9	17.7	10.2	-5.3	-2.8	8.6	5.5	9.1	12.2	3.6
North American Strategic Partners 2006										
Ironsides Partnership Fund IV										
Ironsides Direct Investment Fund IV										
Ironsides Partnership Fund V, L.P.										
Ironsides Direct Investment Fund V, L.P.										
HarbourVest 2019 Global Fund										
Cash										



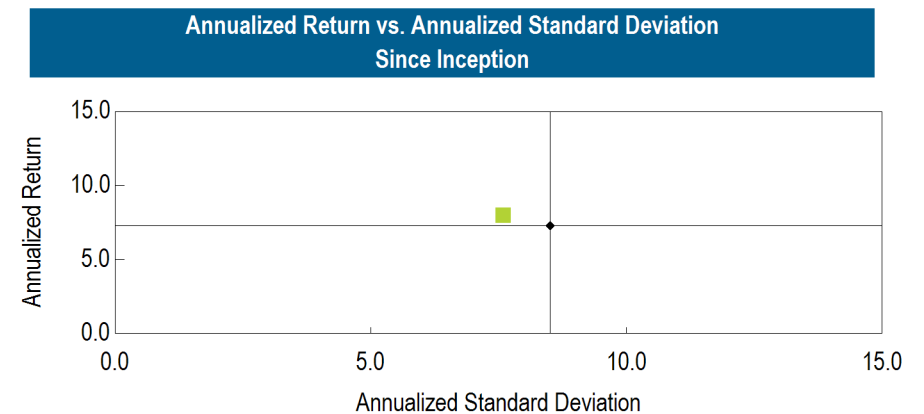
- Total Retirement System
- ◆ 55% MSCI World & 45% Barclays Aggregate



- Total Retirement System
- ◆ 55% MSCI World & 45% Barclays Aggregate

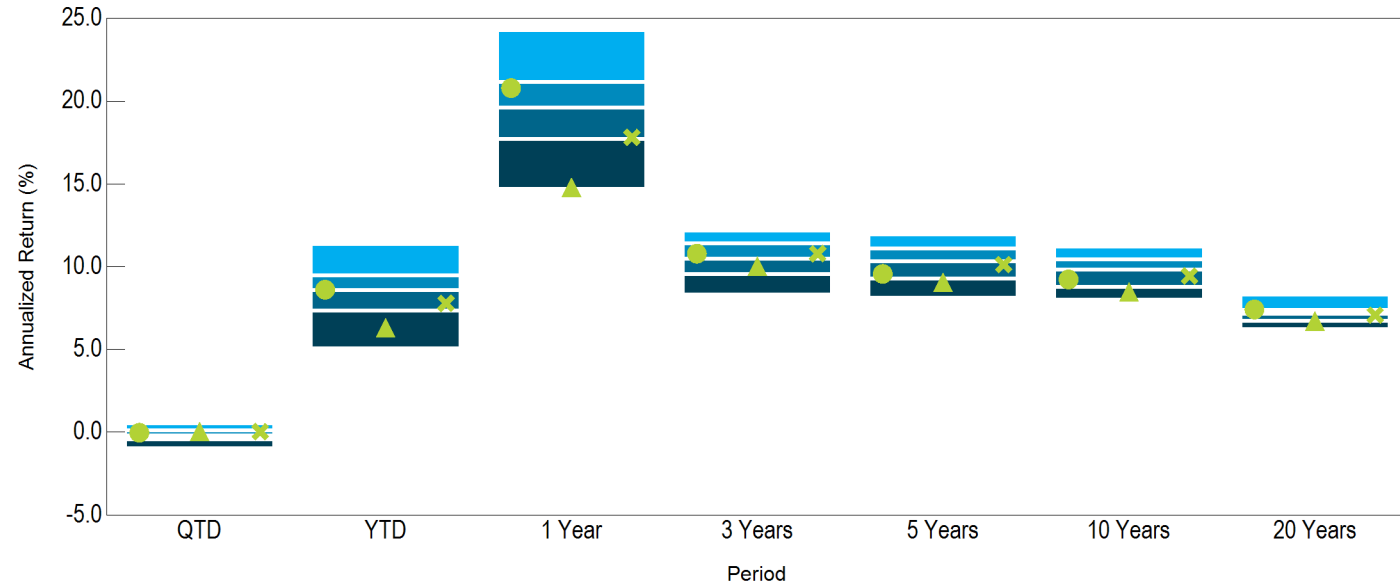


- Total Retirement System
- ◆ 55% MSCI World & 45% Barclays Aggregate



- Total Retirement System
- ◆ 55% MSCI World & 45% Barclays Aggregate

InvMetrics Public DB \$50mm-\$250mm Net Return Comparison
Ending September 30, 2021



	Return (Rank)													
5th Percentile	0.5		11.3		24.3		12.2		12.0		11.2		8.3	
25th Percentile	0.1		9.5		21.2		11.4		11.1		10.5		7.4	
Median	-0.2		8.6		19.6		10.5		10.4		9.8		7.2	
75th Percentile	-0.4		7.4		17.7		9.6		9.3		8.8		6.7	
95th Percentile	-1.0		5.1		14.7		8.3		8.1		8.0		6.2	
# of Portfolios	165		164		163		160		151		119		47	
● Total Retirement System	0.0	(37)	8.6	(50)	20.8	(29)	10.8	(38)	9.6	(69)	9.2	(58)	7.4	(25)
▲ 55% MSCI World & 45% Barclays Aggregate	0.0	(32)	6.3	(91)	14.8	(95)	10.0	(61)	9.1	(82)	8.5	(84)	6.7	(76)
✘ 65% MSCI World / 35% Barclays Aggregate	0.0	(33)	7.8	(69)	17.8	(75)	10.8	(38)	10.1	(57)	9.4	(56)	7.1	(61)

Statistics Summary						
5 Years Ending September 30, 2021						
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Retirement System	9.6%	8.6%	0.3	1.0	1.0	1.8%
55% MSCI World & 45% Barclays Aggregate	9.1%	8.4%	--	1.0	1.0	0.0%
Equity Assets	12.4%	15.5%	-1.4	1.0	0.7	3.1%
Russell 3000	16.9%	15.8%	--	1.0	1.0	0.0%
Domestic Equity Assets	13.9%	16.5%	-1.1	1.0	0.8	2.6%
Russell 3000	16.9%	15.8%	--	1.0	1.0	0.0%
RhumbLine S&P 500 Index	16.8%	15.2%	-1.5	1.0	1.0	0.0%
S&P 500	16.9%	15.2%	--	1.0	1.0	0.0%
Frontier Capital Appreciation	12.7%	22.9%	-0.7	1.1	0.5	7.5%
Russell 2500 Growth	18.2%	19.8%	--	1.0	0.9	0.0%
RhumbLine HEDI	--	--	--	--	--	--
Russell 1000 HEDI Moderate GR USD	17.1%	14.2%	--	1.0	1.1	0.0%
International Developed Markets Equity Assets	9.0%	14.6%	0.5	1.0	0.5	0.3%
MSCI EAFE	8.8%	14.6%	--	1.0	0.5	0.0%
RhumbLine MSCI EAFE Index	9.0%	14.6%	0.5	1.0	0.5	0.3%
MSCI EAFE	8.8%	14.6%	--	1.0	0.5	0.0%
International Emerging Markets Equity Assets	10.7%	16.5%	0.6	1.0	0.6	2.6%
MSCI Emerging Markets	9.2%	16.7%	--	1.0	0.5	0.0%

RhumbLine HEDI funded on 10/5/2020. Statistics will be reflected after first full calendar year.

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
DFA Emerging Markets	8.8%	17.5%	-0.1	1.0	0.4	3.8%
MSCI Emerging Markets	9.2%	16.7%	--	1.0	0.5	0.0%
Driehaus Emerging Market Equity	12.3%	16.0%	0.8	0.9	0.7	3.9%
MSCI Emerging Markets	9.2%	16.7%	--	1.0	0.5	0.0%
Investment Grade Bonds Assets	2.9%	3.3%	-0.1	1.0	0.6	0.1%
Bloomberg US Aggregate TR	2.9%	3.3%	--	1.0	0.6	0.0%
SSgA U.S. Aggregate Bond Index	2.9%	3.3%	-0.1	1.0	0.6	0.1%
Bloomberg US Aggregate TR	2.9%	3.3%	--	1.0	0.6	0.0%
High Yield Bond Assets	5.9%	6.6%	-0.7	0.9	0.7	0.9%
Bloomberg US High Yield TR	6.5%	7.3%	--	1.0	0.7	0.0%
Shenkman Capital	5.9%	6.6%	-0.7	0.9	0.7	0.9%
Bloomberg US High Yield TR	6.5%	7.3%	--	1.0	0.7	0.0%
TIPS Assets	4.3%	3.7%	-1.3	1.0	0.9	0.1%
Bloomberg US TIPS TR	4.3%	3.7%	--	1.0	0.9	0.0%
SSgA TIPS Index-NL	4.3%	3.7%	-1.3	1.0	0.9	0.1%
Bloomberg US TIPS TR	4.3%	3.7%	--	1.0	0.9	0.0%
Emerging Market Debt Assets	4.3%	10.3%	0.2	1.1	0.3	2.1%
JP Morgan EMBI Global Diversified	3.9%	9.0%	--	1.0	0.3	0.0%
Payden Emerging Market Bond	4.3%	10.3%	0.2	1.1	0.3	2.1%
JP Morgan EMBI Global Diversified	3.9%	9.0%	--	1.0	0.3	0.0%

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Open-Ended Real Estate	8.3%	4.6%	0.8	1.1	1.6	1.1%
NCREIF ODCE	7.5%	4.2%	--	1.0	1.5	0.0%
Clarion Partners	8.3%	4.6%	0.8	1.1	1.6	1.1%
NCREIF ODCE	7.5%	4.2%	--	1.0	1.5	0.0%
Total Closed End Real Estate	-6.0%	22.1%	-0.6	0.9	-0.3	21.8%
NCREIF ODCE	7.5%	4.2%	--	1.0	1.5	0.0%
Rockwood Capital Real Estate Partners Fund XI, L.P.	--	--	--	--	--	--
NCREIF-ODCE	7.5%	4.2%	--	1.0	1.5	0.0%
Comerica Short Term Fund	0.4%	0.2%	-1.9	-0.1	-3.0	0.3%
91 Day T-Bills	1.1%	0.2%	--	1.0	0.0	0.0%

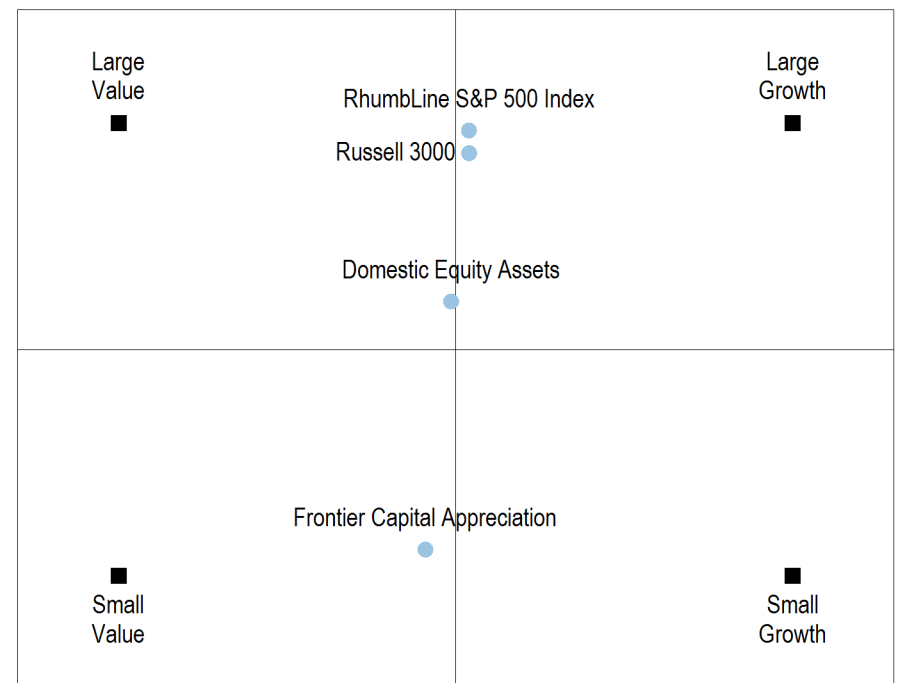
Rockwood Capital XI statistics will be reflected after first full calendar year.

Retirement System Detail

Asset Allocation on September 30, 2021

	Actual	Actual
Frontier Capital Appreciation	\$25,009,902	27.0%
RhumbLine HEDI	\$31,219,422	33.7%
RhumbLine S&P 500 Index	\$36,305,650	39.2%
Total	\$92,534,973	100.0%

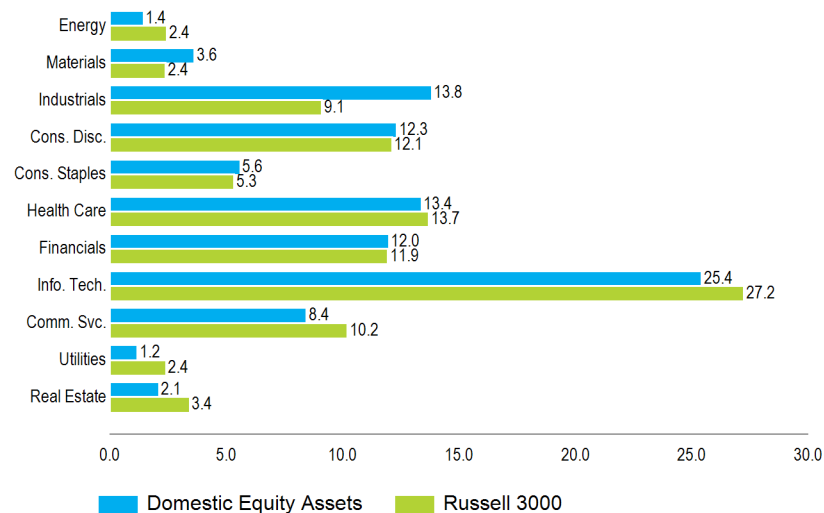
Domestic Equity Assets Style Map 3 Years Ending September 30, 2021



Domestic Equity Assets | As of September 30, 2021

Domestic Equity Assets Characteristics			
	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Market Value			
Market Value (\$M)	92.5	--	93.5
Number Of Holdings	676	3049	675
Characteristics			
Weighted Avg. Market Cap. (\$B)	400.5	466.6	372.1
Median Market Cap (\$B)	27.2	2.6	26.5
P/E Ratio	24.1	24.0	26.8
Yield	1.1	1.3	1.1
EPS Growth - 5 Yrs.	18.0	19.2	17.4
Price to Book	4.3	4.3	4.4

Sector Allocation (%) vs Russell 3000



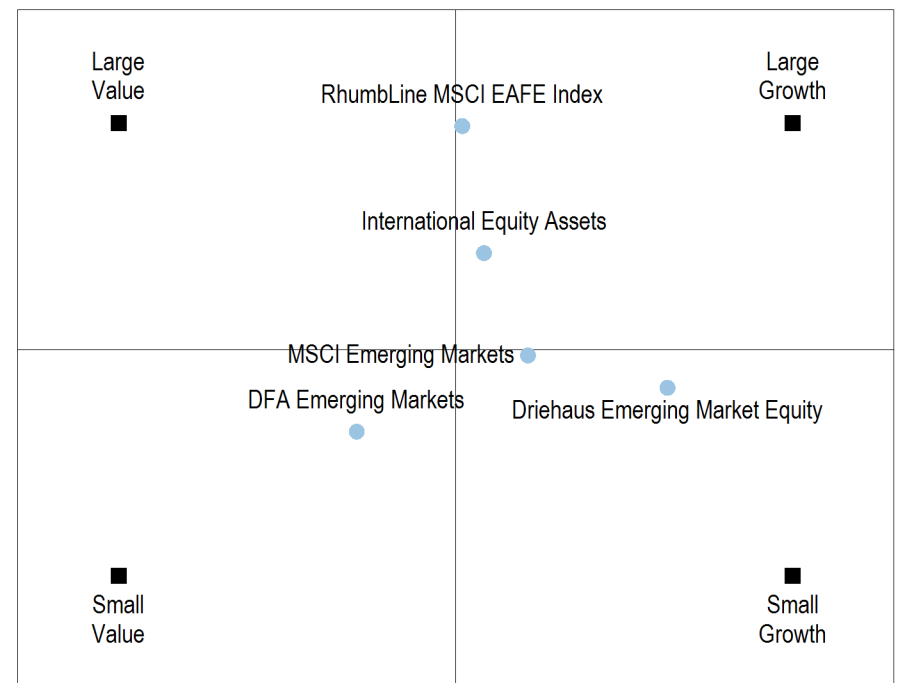
Top 10 Holdings

APPLE INC	4.3%
MICROSOFT CORP	4.2%
AMAZON.COM INC	2.8%
ALPHABET INC	1.7%
ALPHABET INC	1.6%
META PLATFORMS INC	1.6%
BERKSHIRE HATHAWAY INC	1.1%
JOHNSON & JOHNSON	0.9%
VISA INC	0.8%
NVIDIA CORPORATION	0.8%
Total	19.7%

Asset Allocation on September 30, 2021

	Actual	Actual
DFA Emerging Markets	\$11,136,806	22.6%
DrieHaus Emerging Market Equity	\$10,958,269	22.2%
RhumbLine MSCI EAFE Index	\$27,279,542	55.3%
Total	\$49,374,617	100.0%

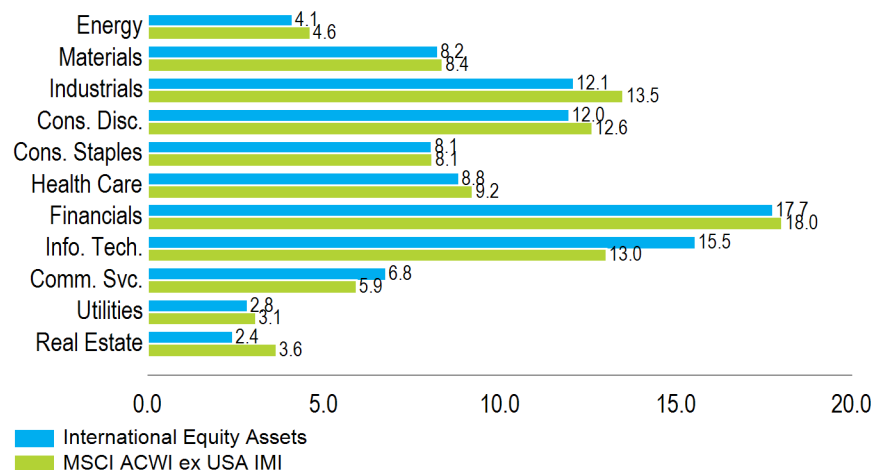
International Equity Assets Style Map 3 Years Ending September 30, 2021



International Equity Assets | As of September 30, 2021

International Equity Characteristics			
	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Market Value			
Market Value (\$M)	49.4	--	44.6
Number Of Holdings	6904	6736	6666
Characteristics			
Weighted Avg. Market Cap. (\$B)	102.2	81.1	110.8
Median Market Cap (\$B)	0.9	1.9	1.0
P/E Ratio	16.6	15.9	19.5
Yield	2.5	2.6	2.2
EPS Growth - 5 Yrs.	13.6	11.6	10.4
Price to Book	2.9	2.7	2.9

Sector Allocation (%) vs MSCI ACWI ex USA IMI



Top 10 Holdings

SAMSUNG ELECTRONICS CO LTD	1.9%
TENCENT HOLDINGS LTD	1.9%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.8%
ASML HOLDING NV	1.3%
NESTLE SA, CHAM UND VEVEY	1.2%
ROCHE HOLDING AG	0.9%
RELIANCE INDUSTRIES LTD	0.7%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	0.7%
LVMH MOET HENNESSY LOUIS VUITTON SE	0.7%
TOYOTA MOTOR CORP	0.6%
Total	11.6%

Country Allocation Report

As of 9/30/2021

Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.3%	7.0%	-6.7%
United States	2.7%	0.0%	2.7%
Europe Ex U.K.	29.8%	30.7%	-0.9%
United Kingdom	6.8%	9.5%	-2.7%
Pacific Basin Ex Japan	8.3%	7.5%	0.8%
Japan	13.5%	16.0%	-2.5%
Emerging Markets	37.5%	28.5%	9.0%
Other	1.1%	0.9%	0.2%
Total	100.0%	100.0%	0.0%

International Equity Country Allocation			
vs MSCI ACWI ex USA IMI			
Country	% of Total	% of Bench	% Diff
ARGENTINA	0.3%	0.1%	0.2%
AUSTRALIA	3.8%	4.7%	-0.8%
AUSTRIA	0.1%	0.2%	-0.1%
BAHRAIN	0.0%	0.0%	0.0%
BANGLADESH	0.0%	0.0%	0.0%
BELGIUM	0.4%	0.6%	-0.2%
BRAZIL	1.5%	1.3%	0.2%
CANADA	0.3%	7.0%	-6.7%
CHILE	0.1%	0.1%	0.0%
CHINA	10.3%	8.9%	1.4%
COLOMBIA	0.0%	0.1%	0.0%
CROATIA	0.0%	0.0%	0.0%
CZECH REPUBLIC	0.0%	0.0%	0.0%
DENMARK	1.5%	1.6%	-0.1%
EGYPT	0.0%	0.0%	0.0%
ESTONIA	0.0%	0.0%	0.0%
FINLAND	0.7%	0.7%	0.0%
FRANCE	6.1%	6.4%	-0.3%
GERMANY	5.1%	5.4%	-0.3%
GREECE	0.1%	0.1%	0.1%
HONG KONG	3.4%	1.8%	1.6%
HUNGARY	0.4%	0.1%	0.3%
INDIA	7.1%	3.8%	3.2%
INDONESIA	0.7%	0.4%	0.3%

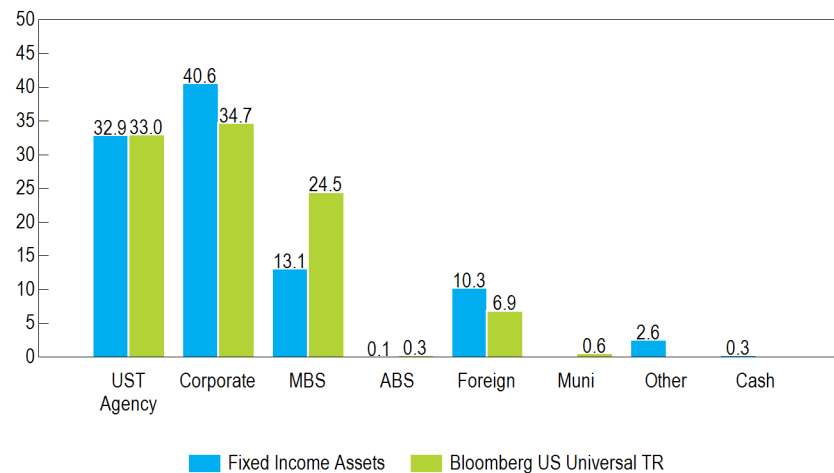
Country	% of Total	% of Bench	% Diff
IRELAND	0.6%	0.4%	0.2%
ISRAEL	0.3%	0.6%	-0.3%
ITALY	1.1%	1.6%	-0.5%
JAPAN	13.5%	16.0%	-2.5%
JORDAN	0.0%	0.0%	0.0%
KAZAKHSTAN	0.0%	0.0%	0.0%
KENYA	0.0%	0.0%	0.0%
KOREA	4.9%	3.8%	1.1%
KUWAIT	0.0%	0.2%	-0.2%
LEBANON	0.0%	0.0%	0.0%
LITHUANIA	0.0%	0.0%	0.0%
LUXEMBOURG	0.3%	0.0%	0.3%
MALAYSIA	0.5%	0.4%	0.0%
MAURITIUS	0.0%	0.0%	0.0%
MEXICO	1.1%	0.5%	0.5%
MOROCCO	0.0%	0.0%	0.0%
NETHERLANDS	4.5%	2.9%	1.6%
NEW ZEALAND	0.2%	0.2%	0.0%
NIGERIA	0.0%	0.0%	0.0%
NORWAY	0.3%	0.6%	-0.3%
OMAN	0.0%	0.0%	0.0%
OTHER	0.5%	0.0%	0.5%
PAKISTAN	0.0%	0.0%	0.0%
PERU	0.0%	0.0%	0.0%
PHILIPPINES	0.2%	0.2%	0.0%
POLAND	0.2%	0.2%	-0.1%
PORTUGAL	0.1%	0.1%	0.0%

Country	% of Total	% of Bench	% Diff
QATAR	0.1%	0.2%	-0.1%
ROMANIA	0.0%	0.0%	0.0%
RUSSIA	1.4%	0.9%	0.5%
SAUDI ARABIA	0.8%	0.9%	-0.1%
SERBIA	0.0%	0.0%	0.0%
SINGAPORE	0.9%	0.8%	0.1%
SLOVENIA	0.0%	0.0%	0.0%
SOUTH AFRICA	1.1%	0.9%	0.2%
SPAIN	1.3%	1.5%	-0.2%
SRI LANKA	0.0%	0.0%	0.0%
SWEDEN	1.9%	2.7%	-0.8%
SWITZERLAND	5.6%	5.7%	-0.1%
TAIWAN	6.1%	4.5%	1.6%
THAILAND	0.4%	0.5%	-0.1%
TUNISIA	0.0%	0.0%	0.0%
TURKEY	0.2%	0.1%	0.1%
UNITED ARAB EMIRATES	0.1%	0.2%	-0.1%
UNITED KINGDOM	6.8%	9.5%	-2.7%
UNITED STATES	2.7%	0.0%	2.7%
VIETNAM	0.1%	0.0%	0.1%
Total	100.0%	100.0%	0.0%

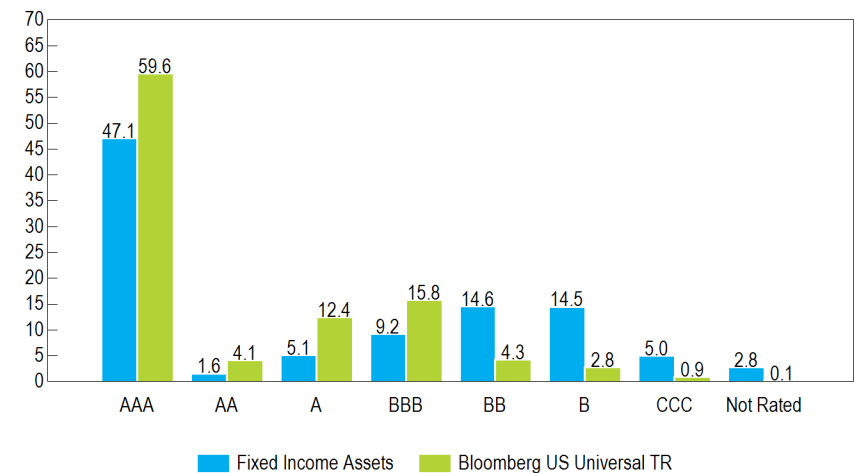
Asset Allocation on September 30, 2021		
	Actual	Actual
Payden Emerging Market Bond	\$5,873,648	8.6%
Shenkman Capital	\$21,613,431	31.8%
SSgA TIPS Index-NL	\$10,344,556	15.2%
SSgA U.S. Aggregate Bond Index	\$30,241,261	44.4%
Total	\$68,072,896	100.0%

Fixed Income Characteristics vs. Bloomberg US Universal TR			
	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Fixed Income Characteristics			
Yield to Maturity	3.0	1.9	2.9
Average Duration	5.6	6.6	5.7
Average Quality	A	AA	A
Weighted Average Maturity	8.1	8.5	8.1

Sector Allocation



Credit Quality Allocation



Portfolio Reviews

Account Information

Account Name	RhumbLine S&P 500 Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	3/01/99
Account Type	US Equity
Benchmark	S&P 500
Universe	eV US Passive S&P 500 Equity Net

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RhumbLine S&P 500 Index	0.6	15.8	29.8	15.9	16.8	16.6	7.7	Mar-99
S&P 500	0.6	15.9	30.0	16.0	16.9	16.6	7.7	Mar-99

Top 10 Holdings

APPLE INC	6.1%
MICROSOFT CORP	5.8%
AMAZON.COM INC	3.9%
META PLATFORMS INC	2.2%
ALPHABET INC	2.2%
ALPHABET INC	2.0%
TESLA INC	1.7%
NVIDIA CORPORATION	1.4%
BERKSHIRE HATHAWAY INC	1.4%
JPMORGAN CHASE & CO	1.3%
Total	28.0%

RhumbLine S&P 500 Index Equity Characteristics vs S&P 500

	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Market Value			
Market Value (\$M)	36.3	--	36.7
Number Of Holdings	506	505	507
Characteristics			
Weighted Avg. Market Cap. (\$B)	554.0	558.7	533.3
Median Market Cap (\$B)	30.7	30.7	30.4
P/E Ratio	25.5	25.5	27.9
Yield	1.4	1.4	1.4
EPS Growth - 5 Yrs.	18.5	18.5	18.0
Price to Book	4.5	4.5	4.7
Sector Distribution			
Energy	2.7	2.7	2.9
Materials	2.5	2.4	2.6
Industrials	8.0	7.9	8.5
Consumer Discretionary	12.3	12.9	12.3
Consumer Staples	5.7	6.2	5.8
Health Care	13.1	12.9	13.0
Financials	12.0	11.6	11.4
Information Technology	27.5	27.1	27.4
Communication Services	11.2	11.4	11.1
Utilities	2.4	2.3	2.4
Real Estate	2.6	2.5	2.6

RhumbLine HEDI | As of September 30, 2021

Account Information

Account Name	RhumbLine HEDI
Account Structure	Separate Account
Investment Style	Passive
Inception Date	11/01/20
Account Type	US Equity
Benchmark	Russell 1000 HEDI Moderate GR USD
Universe	eV US Large Cap Core Equity Gross

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RhumbLine HEDI	0.1	12.1	--	--	--	--	26.9	Nov-20
Russell 1000 HEDI Moderate GR USD	0.1	12.2	24.2	16.5	17.1	17.0	27.2	Nov-20

Top 10 Holdings

MICROSOFT CORP	5.5%
APPLE INC	5.4%
AMAZON.COM INC	3.7%
ALPHABET INC	2.4%
ALPHABET INC	2.2%
META PLATFORMS INC	2.1%
BERKSHIRE HATHAWAY INC	1.5%
JOHNSON & JOHNSON	1.3%
VISA INC	1.1%
MASTERCARD INC	1.1%
Total	26.3%

Rhumbline HEDI Characteristics

	Portfolio Q3-21	Portfolio Q2-21
Market Value		
Market Value (\$M)	31.2	31.2
Number Of Holdings	239	219
Characteristics		
Weighted Avg. Market Cap. (\$B)	498.5	471.9
Median Market Cap (\$B)	36.2	36.7
P/E Ratio	26.0	29.2
Yield	1.2	1.2
EPS Growth - 5 Yrs.	17.4	16.6
Price to Book	5.7	6.2
Sector Distribution		
Energy	0.0	0.0
Materials	2.5	2.6
Industrials	14.8	14.6
Consumer Discretionary	10.8	11.0
Consumer Staples	9.6	11.7
Health Care	13.1	12.0
Financials	11.2	10.4
Information Technology	26.2	25.1
Communication Services	9.7	10.9
Utilities	0.6	0.6
Real Estate	1.4	1.3

Russell 1000 HEDI benchmark characteristic data is unavailable.

Frontier Capital Appreciation | As of September 30, 2021

Account Information	
Account Name	Frontier Capital Appreciation
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	2/01/13
Account Type	US Equity
Benchmark	Russell 2500 Growth
Universe	eV US Small-Mid Cap Growth Equity Net

Portfolio Performance Summary								
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Frontier Capital Appreciation	-2.6	11.7	45.7	11.0	12.7	--	13.1	Feb-13
Russell 2500 Growth	-3.5	4.8	32.0	16.0	18.2	17.2	15.4	Feb-13

Top 10 Holdings	
BUILDERS FIRSTSOURCE INC	2.2%
CAESARS ENTERTAINMENT INC	2.1%
MACOM TECHNOLOGY SOLUTIONS HOLDINGS INC	2.0%
CASH - USD	2.0%
CONTROLADORA VUELA COMPANIA DE AVIACION SA DE CV	1.8%
DANA INC	1.8%
INSULET CORP	1.7%
KBR INC	1.7%
LPL FINANCIAL HOLDINGS INC	1.6%
COOPER COS INC (THE)	1.5%
Total	18.6%

Frontier Capital Appreciation Characteristics			
	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Market Value			
Market Value (\$M)	25.0	--	25.7
Number Of Holdings	135	1450	144
Characteristics			
Weighted Avg. Market Cap. (\$B)	7.9	7.8	7.6
Median Market Cap (\$B)	4.0	1.8	4.2
P/E Ratio	18.1	29.1	21.1
Yield	0.5	0.5	0.5
EPS Growth - 5 Yrs.	18.7	20.5	17.2
Price to Book	3.0	6.3	3.0
Sector Distribution			
Energy	1.3	1.9	1.8
Materials	6.9	2.9	8.4
Industrials	21.5	13.8	22.5
Consumer Discretionary	14.2	15.4	14.2
Consumer Staples	0.0	2.7	0.0
Health Care	14.1	24.7	13.3
Financials	12.9	5.4	12.3
Information Technology	21.1	27.7	21.3
Communication Services	2.4	2.4	1.4
Utilities	0.0	0.4	0.0
Real Estate	2.2	2.7	2.1

Account Information

Account Name	RhumbLine MSCI EAFE Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	8/01/14
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE
Universe	eV EAFE All Cap Equity Net

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RhumbLine MSCI EAFE Index	-0.4	8.5	25.8	7.8	9.0	--	5.2	Aug-14
MSCI EAFE	-0.4	8.3	25.7	7.6	8.8	8.1	5.1	Aug-14

Top 10 Holdings

NESTLE SA, CHAM UND VEVEY	2.1%
ASML HOLDING NV	1.9%
ROCHE HOLDING AG	1.5%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.2%
TOYOTA MOTOR CORP	1.1%
ASTRAZENECA PLC	1.1%
NOVARTIS AG	1.1%
NOVO NORDISK 'B'	1.0%
SONY GROUP CORPORATION	0.8%
UNILEVER PLC	0.8%
Total	12.6%

Rhumbline MSCI EAFE Index Characteristics

	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Market Value			
Market Value (\$M)	27.3	--	26.4
Number Of Holdings	843	842	842
Characteristics			
Weighted Avg. Market Cap. (\$B)	81.1	79.8	80.5
Median Market Cap (\$B)	14.1	14.4	14.2
P/E Ratio	18.0	17.8	21.2
Yield	2.7	2.7	2.5
EPS Growth - 5 Yrs.	10.3	9.9	6.2
Price to Book	2.8	2.8	2.7
Sector Distribution			
Energy	3.4	3.5	3.2
Materials	7.2	7.3	7.7
Industrials	15.6	15.8	15.3
Consumer Discretionary	12.6	12.8	12.9
Consumer Staples	10.1	10.2	10.3
Health Care	12.5	12.7	12.2
Financials	17.0	17.2	16.7
Information Technology	9.6	9.6	9.1
Communication	4.6	4.8	4.9
Services	3.2	3.3	3.4
Utilities	2.8	2.9	3.0
Real Estate			

Account Information	
Account Name	DFA Emerging Markets
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets
Universe	eV Emg Mkts All Cap Equity Net

Portfolio Performance Summary								
	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Inception	Inception
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Date
DFA Emerging Markets	-6.3	4.9	27.2	9.1	8.8	--	6.6	Jan-15
MSCI Emerging Markets	-8.1	-1.2	18.2	8.6	9.2	6.1	6.6	Jan-15

Top 10 Holdings	
SAMSUNG ELECTRONICS CO LTD	3.7%
TENCENT HOLDINGS LTD	3.3%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	3.0%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.5%
ALIBABA GROUP HOLDING LTD	1.3%
RELIANCE INDUSTRIES LTD	1.0%
CHINA CONSTRUCTION BANK CORP	0.9%
VALE SA	0.8%
PING AN INSURANCE GROUP	0.7%
INFOSYS LTD	0.6%
Total	16.7%

DFA Emerging Markets Characteristics			
	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Market Value			
Market Value (\$M)	11.1	--	9.9
Number Of Holdings	6041	1415	5806
Characteristics			
Weighted Avg. Market Cap. (\$B)	91.0	136.2	114.3
Median Market Cap (\$B)	0.6	7.1	0.7
P/E Ratio	11.8	13.3	14.2
Yield	2.9	2.5	2.4
EPS Growth - 5 Yrs.	16.1	15.1	14.7
Price to Book	2.5	2.8	2.7
Sector Distribution			
Energy	5.1	5.9	4.5
Materials	11.7	8.7	11.4
Industrials	8.5	4.9	8.7
Consumer Discretionary	12.1	14.7	13.5
Consumer Staples	6.2	5.9	6.0
Health Care	4.2	5.0	4.4
Financials	16.3	19.6	15.2
Information Technology	20.6	20.9	20.4
Communication Services	8.0	10.1	8.5
Utilities	3.3	2.3	2.8
Real Estate	3.8	2.1	3.7

Account Information

Account Name	Driehaus Emerging Market Equity
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets
Universe	eV Emg Mkts All Cap Equity Net

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Driehaus Emerging Market Equity	-6.7	-0.6	17.6	13.9	12.3	--	9.4	Jan-15
MSCI Emerging Markets	-8.1	-1.2	18.2	8.6	9.2	6.1	6.6	Jan-15

Top 10 Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	6.7%
TENCENT HOLDINGS LTD	5.4%
SAMSUNG ELECTRONICS CO LTD	5.2%
NORTHERN INSTITUTIONAL U.S. GOVERNMENT SELECT PORTFOLIO	2.9%
ICICI BANK LTD	2.7%
RELIANCE INDUSTRIES LTD	2.2%
SBERBANK OF RUSSIA OJSC	2.1%
OIL CO LUKOIL PJSC	2.0%
JD.COM INC	2.0%
TATA CONSULTANCY SERVICES LTD	1.8%
Total	32.9%

Driehaus Emerging Market Equity Characteristics

	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Market Value			
Market Value (\$M)	11.0	--	8.3
Number Of Holdings	94	1415	91
Characteristics			
Weighted Avg. Market Cap. (\$B)	167.9	136.2	201.8
Median Market Cap (\$B)	29.1	7.1	31.7
P/E Ratio	26.7	13.3	27.7
Yield	1.4	2.5	1.2
EPS Growth - 5 Yrs.	18.5	15.1	16.4
Price to Book	4.0	2.8	4.3
Sector Distribution			
Energy	4.8	5.9	3.2
Materials	7.1	8.7	6.9
Industrials	6.8	4.9	6.9
Consumer Discretionary	10.1	14.7	13.0
Consumer Staples	4.8	5.9	4.2
Health Care	4.1	5.0	4.5
Financials	21.2	19.6	18.0
Information Technology	25.8	20.9	28.0
Communication Services	11.1	10.1	11.3
Utilities	1.3	2.3	1.0
Real Estate	0.0	2.1	0.0

Account Information

Account Name	SSgA U.S. Aggregate Bond Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	5/01/01
Account Type	US Fixed Income Investment Grade
Benchmark	Bloomberg US Aggregate TR
Universe	eV US Core Fixed Inc Net

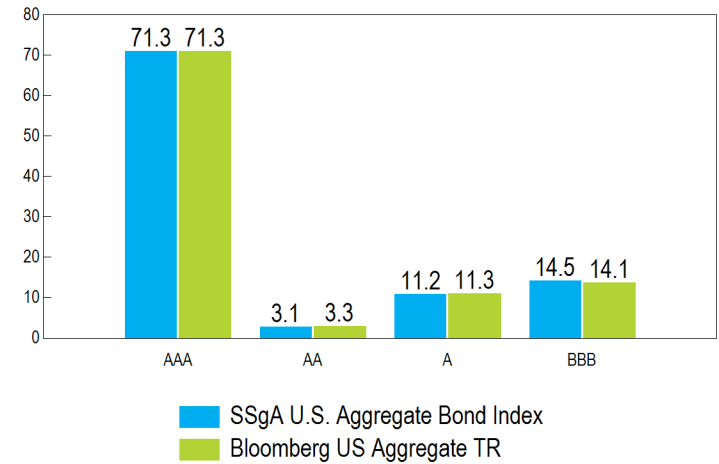
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA U.S. Aggregate Bond Index	0.0	-1.6	-1.0	5.3	2.9	3.0	4.5	May-01
Bloomberg US Aggregate TR	0.1	-1.6	-0.9	5.4	2.9	3.0	4.5	May-01

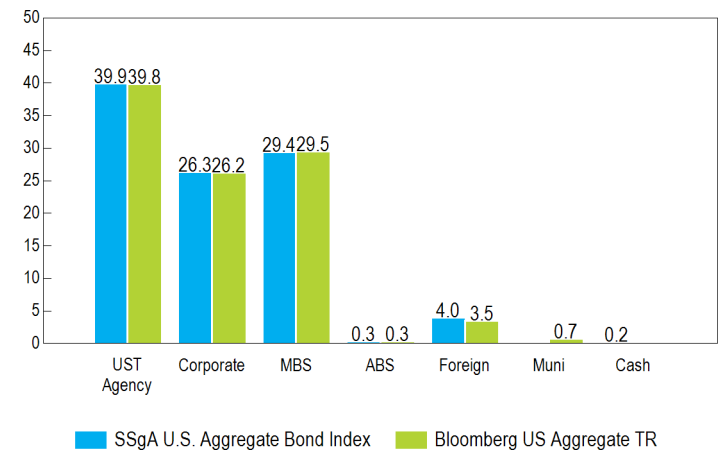
SSgA U.S. Aggregate Bond Index Characteristics vs. Bloomberg US Aggregate TR

	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Fixed Income Characteristics			
Yield to Maturity	1.6	1.5	1.5
Average Duration	6.7	6.8	6.6
Average Quality	AA	AA	AA
Weighted Average Maturity	8.4	8.6	8.3

Credit Quality Allocation



Sector Allocation



Shenkman Capital | As of September 30, 2021

Account Information

Account Name	Shenkman Capital
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	4/01/06
Account Type	US Fixed Income High Yield
Benchmark	Bloomberg US High Yield TR
Universe	eV US High Yield Fixed Inc Net

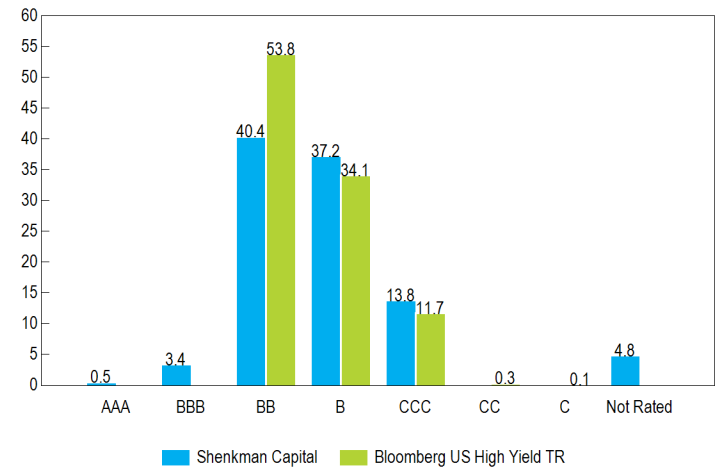
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Shenkman Capital	0.6	3.6	9.5	6.4	5.9	6.6	6.7	Apr-06
Bloomberg US High Yield TR	0.9	4.5	11.3	6.9	6.5	7.4	7.4	Apr-06

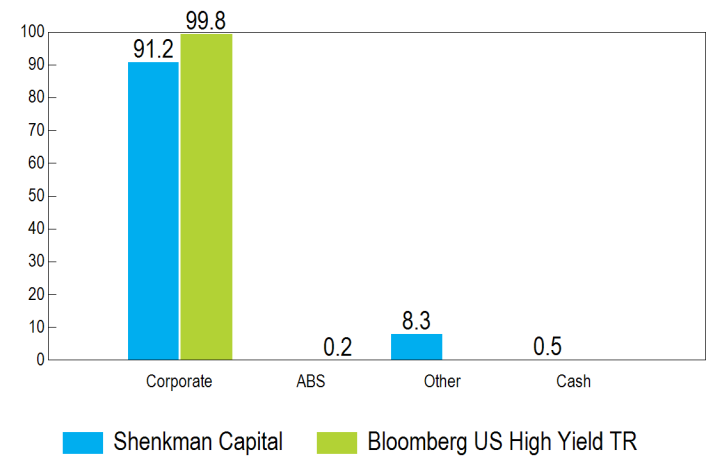
Shenkman Capital Characteristics vs. Bloomberg US High Yield TR

	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Fixed Income Characteristics			
Yield to Maturity	4.9	4.6	4.7
Average Duration	3.7	5.2	3.4
Average Quality	BB	B	BB
Weighted Average Maturity	6.4	6.6	6.5

Credit Quality Allocation



Sector Allocation



SSgA TIPS Index-NL | As of September 30, 2021

Account Information

Account Name	SSgA TIPS Index-NL
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	10/01/05
Account Type	US Inflation Protected Fixed
Benchmark	Bloomberg US TIPS TR
Universe	eV US TIPS / Inflation Fixed Inc Net

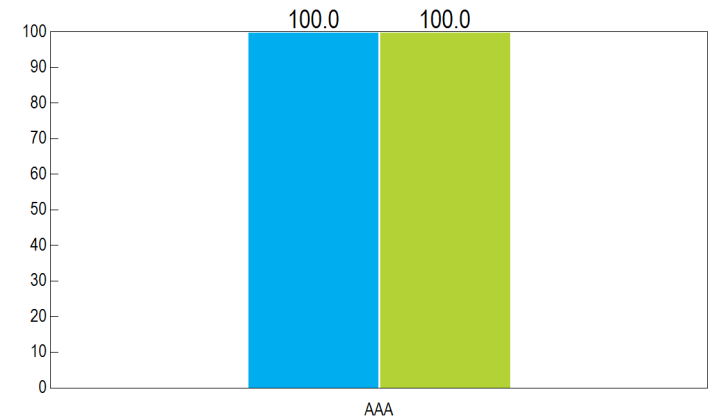
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA TIPS Index-NL	1.7	3.4	5.1	7.4	4.3	3.1	4.2	Oct-05
Bloomberg US TIPS TR	1.8	3.5	5.2	7.4	4.3	3.1	4.3	Oct-05

SSgA TIPS Index-NL Characteristics vs. Bloomberg US TIPS TR

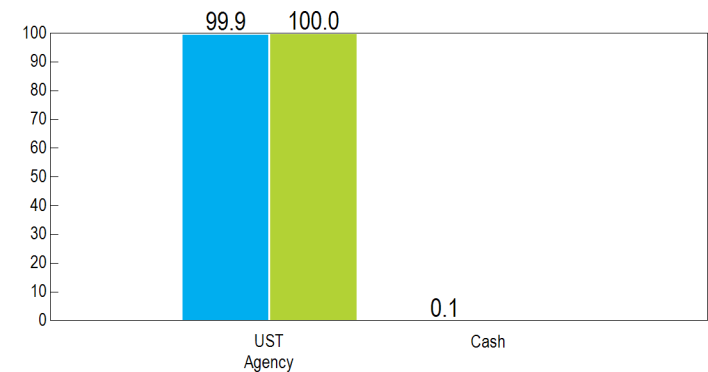
	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Fixed Income Characteristics			
Yield to Maturity	1.2	1.1	1.1
Average Duration	5.5	7.7	6.6
Average Quality	AAA	AAA	AAA
Weighted Average Maturity	8.2	8.2	8.0

Credit Quality Allocation



SSgA TIPS Index-NL Bloomberg US TIPS TR

Sector Allocation



SSgA TIPS Index-NL Bloomberg US TIPS TR

Account Information

Account Name	Payden Emerging Market Bond
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	International Emerging Market Debt
Benchmark	JP Morgan EMBI Global Diversified
Universe	

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Payden Emerging Market Bond	-0.6	-0.9	6.7	5.9	4.3	--	5.3	Jan-15
JP Morgan EMBI Global Diversified	-0.7	-1.4	4.4	5.7	3.9	5.8	5.2	Jan-15

Fund Characteristics as of September 30, 2021

Versus JP Morgan EMBI Global Diversified

Sharpe Ratio (3 Year)	0.4
Average Duration	7.6
Average Coupon	6.1%
Average Effective Maturity	12.4
R-Squared (3 Year)	1.0
Alpha (3 Year)	0.0%
Beta (3 Year)	1.1

Payden Emerging Market Bond Characteristics vs. JP Morgan EMBI Global Diversified

	Portfolio Q3-21	Index Q3-21	Portfolio Q2-21
Fixed Income Characteristics			
Yield to Maturity	6.3	4.4	6.4
Average Duration	7.6	7.9	7.8
Average Quality	BB	BB	BB
Weighted Average Maturity	12.4	12.4	12.4

Fixed Income Sectors as of September 30, 2021

GOVERNMENT	62.3%
MUNICIPAL	0.0%
CORPORATE	18.3%
SECURITIZED	0.0%
CASH & EQUIVALENTS	2.5%
DERIVATIVE	16.9%

Credit Quality as of September 30, 2021

AAA	0.0%
AA	4.0%
A	3.0%
BBB	21.0%
BB	26.0%
B	35.0%
Below B	8.0%
Not Rated	3.0%

Clarion Partners | As of September 30, 2021

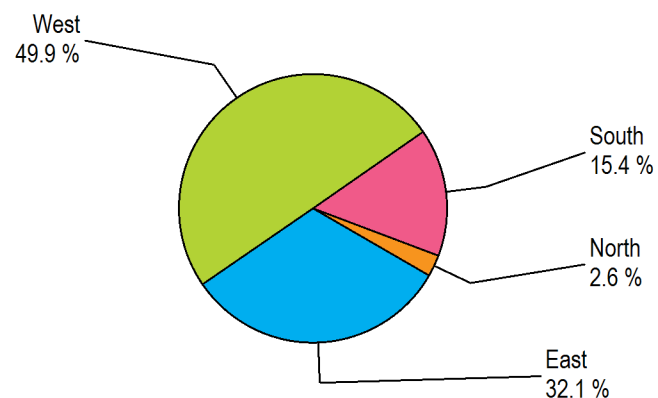
Account Information

Account Name	Clarion Partners
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	10/01/02
Account Type	Real Estate
Benchmark	NCREIF ODCE
Universe	

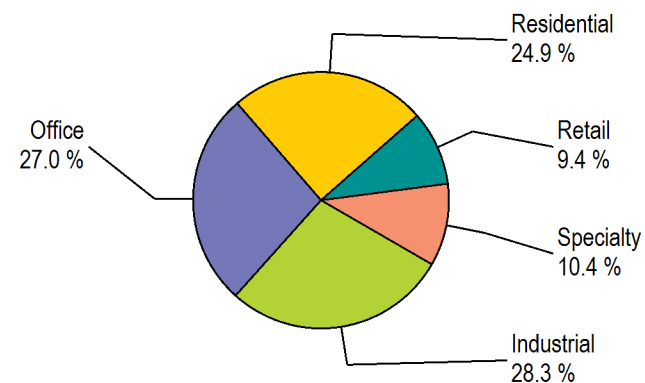
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Clarion Partners	6.1	14.5	16.8	8.3	8.3	10.5	7.6	Oct-02
NCREIF ODCE	6.6	13.2	14.6	7.1	7.5	9.9	8.1	Oct-02

Geographic Diversification



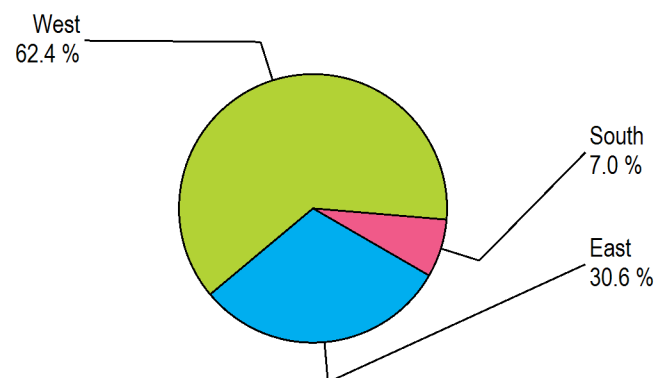
Property Type Allocation



Account Information

Account Name	Rockwood Capital Real Estate Partners Fund XI, L.P.
Account Structure	Other
Investment Style	Passive
Inception Date	12/01/19
Account Type	Real Estate
Benchmark	NCREIF-ODCE
Universe	

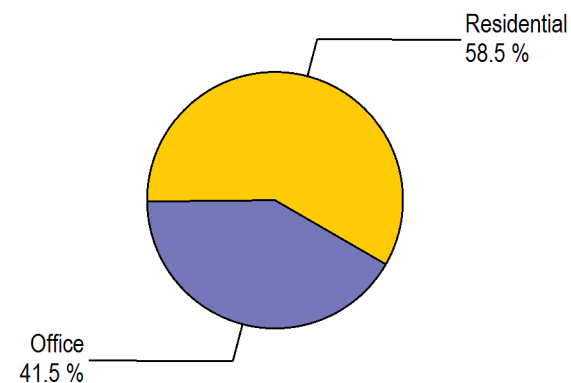
Geographic Diversification



Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Rockwood Capital Real Estate Partners Fund XI, L.P.	9.6	7.9	7.9	--	--	--	4.3	Dec-19

Property Type Allocation



Rockwood Real Estate characteristics are as of 6/30/21.

Non-Marketable Securities Overview						
As of September 30, 2021						
Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	IRR (%)
North American Strategic Partners 2006	2006	\$4,539,998	\$4,411,659	\$2,094,251	\$27,121	7.1
Ironsides Partnership Fund IV	2015	\$2,500,000	\$1,343,006	\$732,551	\$2,527,914	26.2
Ironsides Direct Investment Fund IV	2015	\$2,500,000	\$2,419,534	\$2,368,492	\$2,312,775	20.9
Ironsides Partnership Fund V, L.P.	2019	\$2,000,000	\$560,616	\$0	\$728,427	--
Ironsides Direct Investment Fund V, L.P.	2019	\$2,000,000	\$2,425,558	\$242,967	\$3,163,614	34.8
HarbourVest 2019 Global Fund	2019	\$4,000,000	\$1,840,000	\$123,999	\$2,620,744	--
Total Account		\$17,539,998	\$13,000,373	\$1,373,757	\$11,380,595	

IRRs for investments less than 2 years are not shown.

IRRs are as of 6/30/2021.

Annual Investment Expense Analysis As Of September 30, 2021				
Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Equity Assets		\$141,909,590		
Domestic Equity Assets		\$92,534,973		
RhumbLine S&P 500 Index	0.07% of First 25.0 Mil, 0.05% of Next 25.0 Mil, 0.04% Thereafter	\$36,305,650	\$23,153	0.06%
Frontier Capital Appreciation	0.79% of Assets	\$25,009,902	\$197,578	0.79%
RhumbLine HEDI	0.05% of Assets	\$31,219,422	\$15,610	0.05%
International Equity Assets		\$49,374,617		
International Developed Markets Equity Assets		\$27,279,542		
RhumbLine MSCI EAFE Index	0.08% of First 25.0 Mil, 0.07% of Next 25.0 Mil, 0.05% Thereafter	\$27,279,542	\$21,596	0.08%
International Emerging Markets Equity Assets		\$22,095,075		
DFA Emerging Markets	0.33% of Assets	\$11,136,806	\$36,751	0.33%
Driehaus Emerging Market Equity	0.90% of Assets	\$10,958,269	\$98,624	0.90%
Fixed Income Assets		\$68,072,896		
Investment Grade Bonds Assets		\$30,241,261		
SSgA U.S. Aggregate Bond Index	0.04% of Assets	\$30,241,261	\$12,097	0.04%
High Yield Bond Assets		\$21,613,431		
Shenkman Capital	0.45% of Assets	\$21,613,431	\$97,260	0.45%
TIPS Assets		\$10,344,556		
SSgA TIPS Index-NL	0.04% of Assets	\$10,344,556	\$4,138	0.04%
Emerging Market Debt Assets		\$5,873,648		
Payden Emerging Market Bond	0.69% of Assets	\$5,873,648	\$40,528	0.69%

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Real Estate Assets		\$8,494,646		
Open-Ended Real Estate		\$6,361,444		
Clarion Partners	1.10% of Assets	\$6,361,444	\$69,976	1.10%
Total Closed End Real Estate		\$2,133,202		
Rockwood Capital Real Estate Partners Fund XI, L.P.		\$2,133,202		
Private Equity Assets		\$11,380,595		
North American Strategic Partners 2006	0.8% on drawn and undrawn capital less investments sold or written off 5% carried interest, 8% preferred return	\$27,121		
Ironsides Partnership Fund IV	0% Management fee, 8% Preferred Return, 5% Carried Interest	\$2,527,914		
Ironsides Direct Investment Fund IV	0.5% Management fee, 8% Preferred Return, 15% Carried Interest	\$2,312,775		
Ironsides Partnership Fund V, L.P.		\$728,427		
Ironsides Direct Investment Fund V, L.P.	0.5% Management fee, 8% preferred return, 15% carried interest	\$3,163,614		
HarbourVest 2019 Global Fund	0.69% average annual management fee; 8.0% preferred return on secondary and direct investments and with corresponding carried interest of 12.5% on secondary and direct investments	\$2,620,744		
Cash		\$151,345		
Comerica Short Term Fund		\$151,345		
Total		\$230,009,072	\$617,311	0.27%

Current Issue

MEMORANDUM

TO: Board Members, Marlborough Retirement System
FROM: Henry Jaung, Steve MacLellan, Meketa Investment Group
DATE: November 19, 2021
RE: Best Practices for Cybersecurity and Cash Controls

In light of an uptick in cybersecurity attacks and entering a time of year with increased volumes of cash movements and potential for fraudulent activities, we would like to verify and/or update the processes used for cash controls by authorized signers and investment managers to ensure best practices are intact.

Best Practices for Cybersecurity:

1. All servers should be backed-up and encrypted.
2. Access to the network should immediately be disabled upon an employee's resignation.
3. Ensure proper staff cybersecurity training to avoid mistaken emails, phishing attacks, loss of critical information, etc.

Best Practices for Cash Controls:

1. Ensure personal data is stored in secure systems, locked, and accessible to critical personnel only.
2. Review and update authorized signer lists at least annually and immediately upon the departure of a signatory from the organization or the addition of a new signatory.
3. All wire instruction changes should be confirmed verbally to a different signatory.

Attached please find a template letter for you to review, update, sign and send to investment partners requesting confirmation of industry best practices for the security of systems and confidential information including personal employee details, wire instructions, bank account numbers, and investment activity. As described in the letter, please also include an attachment with the most up to date list of authorized signers for the System

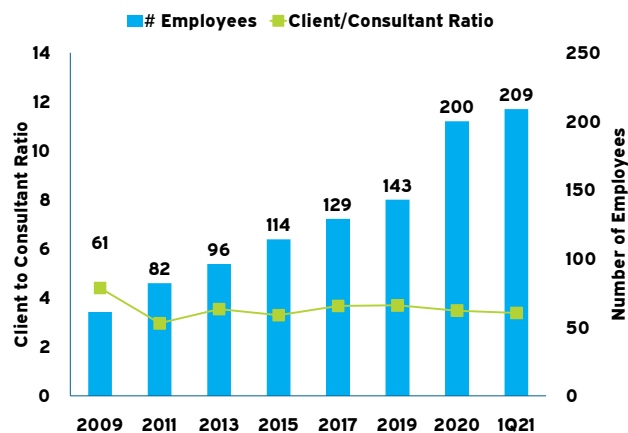
We thank you in advance for your continued effort to protect your data, personnel information, and investment activity. We hope by taking these additional preventative steps, we can minimize the risk of potential issues in the future. Please call us at 781-471-3500 should you have any questions.

Appendices

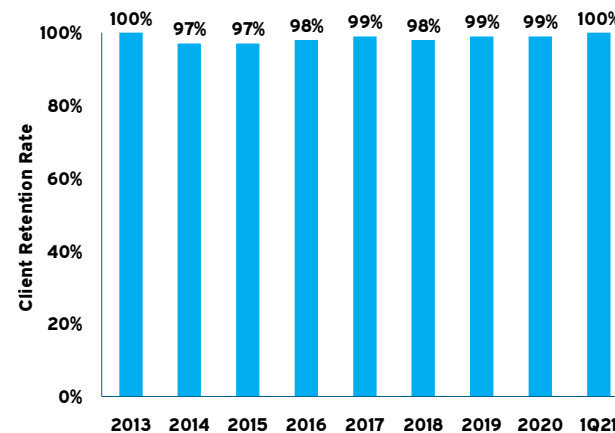
Meketa Investment Group Corporate Update

- Staff of 215, including 142 investment professionals and 43 CFA Charterholders
- 220 clients, with over 350 funds throughout the United States
- Significant investment in staff and resources
- Offices in Boston, Chicago, Miami, New York, Portland (OR), San Diego, and London
- We advise on \$1.6 trillion in client assets
 - Over \$125 billion in assets committed to alternative investments
 - Private Equity ■ Infrastructure ■ Natural Resources
 - Real Estate ■ Hedge Funds ■ Commodities

Client to Consultant Ratio¹



Client Retention Rate²



Meketa Investment Group is proud to work for over 5 million American families everyday.

¹ On March 15, 2019, 31 employees joined the firm as part of the merger of Meketa Investment Group and Pension Consulting Alliance.

² Client Retention Rate is one minus the number of clients lost divided by the number of clients at prior year-end.

Asset Classes Followed Intensively by Meketa Investment Group

Domestic Equities	International Equities	Private Equity	Real Assets	Fixed Income	Hedge Funds
<ul style="list-style-type: none"> - Passive - Enhanced Index - Large Cap - Midcap - Small Cap - Microcap - 130/30 	<ul style="list-style-type: none"> - Large Cap Developed - Small Cap Developed - Emerging Markets - Frontier Markets 	<ul style="list-style-type: none"> - Buyouts - Venture Capital - Private Debt - Special Situations - Secondaries - Fund of Funds 	<ul style="list-style-type: none"> - Public REITs - Core Real Estate - Value Added Real Estate - Opportunistic Real Estate - Infrastructure - Timber - Natural Resources - Commodities 	<ul style="list-style-type: none"> - Short-Term - Core - Core Plus - TIPS - High Yield - Bank Loans - Distressed - Global - Emerging Markets 	<ul style="list-style-type: none"> - Long/Short Equity - Event Driven - Relative Value - Fixed Income Arbitrage - Multi Strategy - Market Neutral - Global Macro - Fund of Funds - Portable Alpha

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

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.

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

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.