

Meeting Material February 9, 2021

## Fund Evaluation Report

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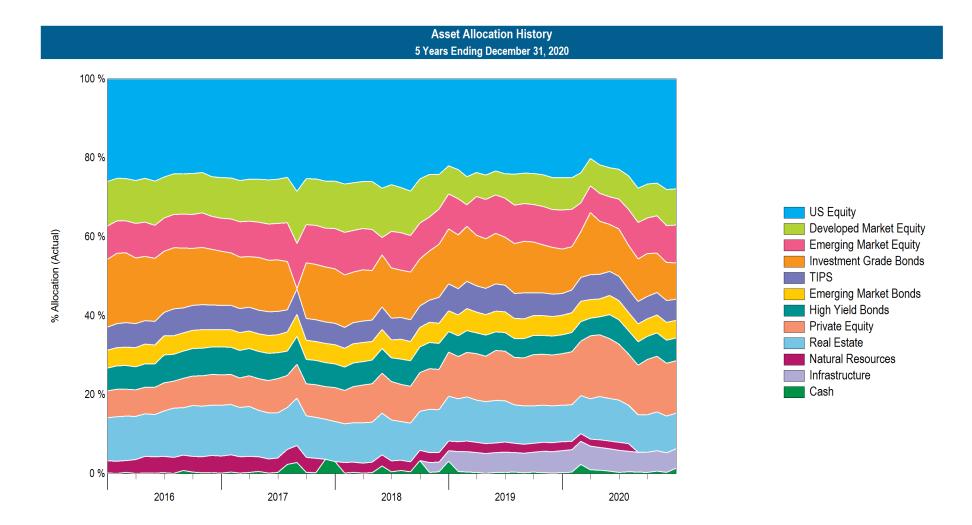
Fourth Quarter 2020 Performance Review

#### Retirement System Summary | As of December 31, 2020

Allocation vs. Targets and Policy									
	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?				
US Equity	\$57,616,000	28%	25%	20% - 30%	Yes				
Developed Market Equity	\$18,968,574	9%	10%	6% - 14%	Yes				
Emerging Market Equity	\$19,877,932	10%	10%	6% - 14%	Yes				
Investment Grade Bonds	\$19,180,567	9%	10%	6% - 14%	Yes				
TIPS	\$10,927,697	5%	6%	4% - 8%	Yes				
Emerging Market Bonds	\$9,268,865	4%	5%	3% - 7%	Yes				
High Yield Bonds	\$11,876,253	6%	6%	3% - 9%	Yes				
Private Equity	\$27,611,772	13%	10%	6% - 14%	Yes				
Real Estate	\$18,681,521	9%	10%	7% - 13%	Yes				
Natural Resources			3%	1% - 5%	Yes				
Infrastructure	\$10,159,163	5%	5%	0% - 8%	Yes				
Cash	\$2,787,948	1%	0%	0% - 5%	Yes				
Total	\$206,956,292	100%	100%						

Natural Resources allocation eliminated and assets moved to US Equities. Investment Policy Statement to be updated in early 2021 when Meketa's 2021 Asset Study is complete.







Asset Class Performance Summary											
	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date		
Total Retirement System	206,956,292	100.0	10.0	14.4	9.3	10.4	7.8	6.2	Jul-01		
60% MSCI ACWI / 40% Barclays Global Aggregate			10.1	14.0	8.3	9.5	6.8	6.4	Jul-01		
InvMetrics Public DB \$50mm-\$250mm Net Median			9.6	11.8	8.5	9.3	7.6	6.6	Jul-01		
Domestic Equity Assets	57,616,000	27.8	14.7	21.6	14.6	15.5	13.8	8.2	Jul-01		
Russell 3000			14.7	20.9	14.5	15.4	13.8	8.4	Jul-01		
eV US Large Cap Equity Gross Median			12.6	15.4	12.4	14.1	13.3	8.9	Jul-01		
Total International Developed Market Equity	18,968,574	9.2	16.5	9.3	4.8	8.3	6.4	6.5	Jul-01		
MSCI EAFE			16.0	7.8	4.3	7.4	5.5	5.5	Jul-01		
eV EAFE Core Equity Gross Median			15.0	9.8	5.2	8.4	7.3	7.3	Jul-01		
International Emerging Market Equity Assets	19,877,932	9.6	16.1	25.4	6.5	12.4	1.8	2.9	Jul-07		
MSCI Emerging Markets			19.7	18.3	6.2	12.8	3.6	3.9	Jul-07		
eV Emg Mkts Equity Gross Median			20.2	18.2	6.3	13.0	4.9	5.2	Jul-07		
Investment Grade Bond Assets	19,180,567	9.3	1.6	9.2	5.9	4.8	4.1	4.9	Jul-01		
BBgBarc US Aggregate TR			0.7	7.5	5.3	4.4	3.8	4.8	Jul-01		
eV US Core Fixed Inc Gross Median			1.1	8.6	5.9	5.0	4.4	5.3	Jul-01		
High Yield Bond Assets	11,876,253	5.7	7.6	9.1	6.9	7.9	6.9	6.7	Feb-05		
CSFB High Yield Index			6.1	5.5	5.5	8.2	6.5	6.8	Feb-05		
eV US High Yield Fixed Inc Gross Median			5.8	6.5	6.1	8.1	6.8	7.2	Feb-05		
TIPS Assets	10,927,697	5.3	1.6	11.0	5.9	5.0	3.8	4.6	Jul-07		
BBgBarc US TIPS TR			1.6	11.0	5.9	5.1	3.8	4.6	Jul-07		
eV US TIPS / Inflation Fixed Inc Gross Median			1.6	10.9	5.9	5.2	3.9	4.7	Jul-07		
Emerging Market Debt Assets	9,268,865	4.5	8.4	5.8	4.3	7.2		-0.6	Mar-13		
50% JPM EMBI GD / 50% JPM GBI-EM			7.7	4.0	4.1	7.0	3.9	2.6	Mar-13		
Real Estate Assets	18,681,521	9.0	1.0	0.9	6.1	7.1	10.1	5.9	Apr-05		
NCREIF ODCE (net)			1.1	0.3	4.0	5.3	8.9	6.1	Apr-05		



	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Equity Assets	27,611,772	13.3	13.2	25.8	18.4	14.5	11.3	7.3	Oct-03
Cambridge Associates US All PE (1 Qtr Lag)			11.0	13.5	14.0	13.4	13.9	14.4	Oct-03
Infrastructure Assets	10,159,163	4.9	4.2	3.1				9.1	Oct-18
CPI + 3%			1.3	4.3	4.8	4.9	4.7	4.7	Oct-18
Cash	2,787,948	1.3							



#### **Trailing Gross Performance** 10 Yrs Market Value % of % of QTD 1Yr 3 Yrs 5 Yrs Inception Inception (\$) Portfolio Sector (%) (%) (%) (%) (%) (%) Date 100.0 10.4 7.8 6.2 Jul-01 **Total Retirement System** 206.956.292 10.0 14.4 9.3 ---60% MSCI ACWI / 40% Barclays Global Aggregate 9.5 6.8 6.4 Jul-01 10.1 14.0 8.3 InvMetrics Public DB \$50mm-\$250mm Net Median 9.6 8.5 9.3 7.6 Jul-01 11.8 6.6 **Domestic Equity Assets** 27.8 27.8 21.6 14.6 15.5 13.8 8.2 Jul-01 57,616,000 14.7 Russell 3000 14.7 20.9 14.5 15.4 13.8 8.4 Jul-01 eV US Large Cap Equity Gross Median 12.6 15.4 12.4 14.1 13.3 8.9 Jul-01 SSgA Russell 1000 Value Index-NL 22,995,001 11.1 39.9 16.3 2.8 6.1 9.8 10.5 7.4 Jan-05 Russell 1000 Value 16.3 2.8 6.1 9.7 10.5 7.3 Jan-05 eV US Large Cap Value Equity Gross Median 15.8 4.4 6.9 10.6 11.1 8.3 Jan-05 SSgA Russell 1000 Growth-NL 30,015,371 14.5 52.1 11.4 38.5 22.9 21.0 17.2 12.6 Jul-07 21.0 17.2 12.6 Jul-07 Russell 1000 Growth 11.4 38.5 23.0 eV US Large Cap Growth Equity Gross Median 11.4 34.9 22.0 19.4 16.3 12.3 Jul-07 SSgA Russell 2000 Index-NL 4,605,629 2.2 8.0 31.4 20.0 10.3 13.3 11.3 12.8 Aug-10 11.2 Russell 2000 31.4 20.0 10.2 13.3 12.8 Aug-10 15.9 9.4 13.0 11.9 eV US Small Cap Core Equity Gross Median 27.8 13.5 Aug-10

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total International Developed Market Equity	18,968,574	9.2	9.2	16.5	9.3	4.8	8.3	6.4	6.5	Jul-01
MSCI EAFE				16.0	7.8	4.3	7.4	5.5	5.5	Jul-01
eV EAFE Core Equity Gross Median				15.0	9.8	5.2	8.4	7.3	7.3	Jul-01
SSgA MSCI EAFE Index-NL	12,244,382	5.9	64.6	16.1	8.3	4.7	7.9	5.9	6.9	Aug-10
MSCI EAFE				16.0	7.8	4.3	7.4	5.5	6.6	Aug-10
eV EAFE Core Equity Gross Median				15.0	9.8	5.2	8.4	7.3	8.5	Aug-10
SSgA MSCI EAFE Small Cap Index-NL	6,724,192	3.2	35.4	17.2	12.4	5.0	9.6	8.1	9.8	Aug-10
MSCI EAFE Small Cap				17.3	12.3	4.9	9.4	7.8	9.5	Aug-10
eV EAFE Small Cap Core Gross Median				15.1	11.1	4.1	9.2	9.2	11.0	Aug-10
International Emerging Market Equity Assets	19,877,932	9.6	9.6	16.1	25.4	6.5	12.4	1.8	2.9	Jul-07
MSCI Emerging Markets				19.7	18.3	6.2	12.8	3.6	3.9	Jul-07
eV Emg Mkts Equity Gross Median				20.2	18.2	6.3	13.0	4.9	5.2	Jul-07
GQG Partners Emerging Markets	19,877,932	9.6	100.0	16.1	34.8				25.3	Mar-19
MSCI Emerging Markets				19.7	18.3	6.2	12.8	3.6	14.9	Mar-19
eV Emg Mkts Equity Gross Median				20.2	<i>18.2</i>	6.3	13.0	4.9	15.6	Mar-19
Investment Grade Bond Assets	19,180,567	9.3	9.3	1.6	9.2	5.9	4.8	4.1	4.9	Jul-01
BBgBarc US Aggregate TR				0.7	7.5	5.3	4.4	3.8	4.8	Jul-01
eV US Core Fixed Inc Gross Median				1.1	8.6	5.9	5.0	4.4	5.3	Jul-01
Longfellow Investment Grade Bond	19,180,567	9.3	100.0	1.6	9.2	5.9		-	5.3	Sep-17
BBgBarc US Aggregate TR				0.7	7.5	5.3	4.4	3.8	4.8	Sep-17
eV US Core Fixed Inc Gross Median				1.1	8.6	5.9	5.0	4.4	5.3	Sep-17



	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
High Yield Bond Assets	11,876,253	5.7	5.7	7.6	9.1	6.9	7.9	6.9	6.7	Feb-05
CSFB High Yield Index				6.1	5.5	5.5	8.2	6.5	6.8	Feb-05
eV US High Yield Fixed Inc Gross Median				5.8	6.5	6.1	8.1	6.8	7.2	Feb-05
Lord Abbett High Yield Core	11,876,253	5.7	100.0	7.6	9.1				8.7	Jul-19
BBgBarc US High Yield TR				6.5	7.1	6.2	8.6	6.8	7.4	Jul-19
eV US High Yield Fixed Inc Gross Median				5.8	6.5	6.1	8.1	6.8	7.2	Jul-19
TIPS Assets	10,927,697	5.3	5.3	1.6	11.0	5.9	5.0	3.8	4.6	Jul-07
BBgBarc US TIPS TR				1.6	11.0	5.9	5.1	3.8	4.6	Jul-07
eV US TIPS / Inflation Fixed Inc Gross Median				1.6	10.9	5.9	5.2	3.9	4.7	Jul-07
SSgA TIPS-NL	10,927,697	5.3	100.0	1.6	11.0	5.9	5.0	3.8	4.6	Jul-07
BBgBarc US TIPS TR				1.6	11.0	5.9	5.1	3.8	4.6	Jul-07
eV US TIPS / Inflation Fixed Inc Gross Median				1.6	10.9	5.9	5.2	3.9	4.7	Jul-07



	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Emerging Market Debt Assets	9,268,865	4.5	4.5	8.4	5.8	4.3	7.2		-0.6	Mar-13
50% JPM EMBI GD / 50% JPM GBI-EM				7.7	4.0	4.1	7.0	3.9	2.6	Mar-13
Metlife Emerging Markets Debt (Net)	4,528,072	2.2	48.9	8.5	6.1	4.3			5.9	Nov-16
MetLife Custom Benchmark				6.3	5.4	4.8	7.0	4.7	5.2	Nov-16
Aberdeen Emerging Markets Bond Fund	4,740,793	2.3	51.1	8.3	5.5	4.3			6.3	Dec-16
JP Morgan EMBI Global Diversified				5.8	5.3	5.0	7.1	6.2	6.5	Dec-16
JP Morgan GBI EM Global Diversified TR USD				9.6	2.7	3.0	6.7	1.5	6.3	Dec-16
Real Estate Assets	18,681,521	9.0	9.0	1.0	0.9	6.1	7.1	10.1	5.9	Apr-05
NCREIF ODCE (net)				1.1	0.3	4.0	5.3	8.9	6.1	Apr-05
TA Associates Realty Fund X	315,194	0.2	1.7					_		
Intercontinental U.S. REIF (Net)	9,614,206	4.6	51.5	0.5	1.0	6.7	7.7		8.7	Oct-14
NCREIF ODCE (net)				1.1	0.3	4.0	5.3	8.9	6.9	Oct-14
AEW Core Property Trust (Net)	8,752,121	4.2	46.8	1.4	0.2	3.9	5.2		6.6	Oct-14
NCREIF ODCE (net)				1.1	0.3	4.0	5.3	8.9	6.9	Oct-14

#### Retirement System Summary | As of December 31, 2020

TA Associates Realty Fund X is based on September 30, 2020 fair market value, adjusted for subsequent cash flows. Metlife Custom Benchmark consists of 35% JP Morgan EMBI Global Diversified, 35% JP Morgan CEMBI Broad Diversified, and 30% JP Morgan GBI EM Global Diversified.

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Equity Assets	27,611,772	13.3	13.3	13.2	25.8	18.4	14.5	11.3	7.3	Oct-03
Cambridge Associates US All PE (1 Qtr Lag)				11.0	13.5	14.0	13.4	13.9	14.4	Oct-03
Ascent Venture Partners - Fund III	12,073	0.0	0.0							
Ascent Venture Partners - Fund IV	15,546	0.0	0.1							
Ascent Venture Partners - Fund V	812,451	0.4	2.9							
Ascent Venture Partners - Fund VI	1,423,159	0.7	5.2							
Constitution Capital Partners Ironsides III	6,452,541	3.1	23.4							
Constitution Capital Partners Ironsides IV	3,156,586	1.5	11.4							
Constitution Capital Partners Ironsides V	384,962	0.2	1.4							
Constitution Capital Direct IV	2,511,830	1.2	9.1							
Constitution Capital Direct V	2,853,992	1.4	10.3							
Goldman Sachs PEP 2005	257,192	0.1	0.9							
HarbourVest Partners VIII	424,759	0.2	1.5							
HarbourVest Partners IX	3,765,910	1.8	13.6							
HarbourVest X Buyout Fund	4,071,189	2.0	14.7							
HarbourVest Partners XI	1,469,581	0.7	5.3							

#### Retirement System Summary | As of December 31, 2020

Private Equity Assets are based on September 30, 2020 fair market value, adjusted for subsequent cash flows



#### 5 Yrs 10 Yrs Inception Inception Market Value % of % of QTD 1Yr 3 Yrs (\$) Portfolio Sector (%) (%) (%) (%) (%) (%) Date Infrastructure Assets 10,159,163 4.9 4.9 4.2 3.1 9.1 Oct-18 ---------CPI + 3% 1.3 4.3 4.8 4.9 4.7 4.7 Oct-18 IFM Global Infrastructure (U.S.), L.P. 10,159,163 4.9 100.0 4.2 3.1 9.1 Oct-18 ---------CPI + 3% 1.3 4.7 4.3 4.8 4.9 4.7 Oct-18 2,787,948 Cash 1.3 1.3 Cash STIF 2,787,948 1.3 100.0



Calendar Year Performance												
	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)		
Total Retirement System	14.4	17.6	-3.0	14.5	9.6	-2.7	4.3	10.9	12.2	2.2		
60% MSCI ACWI / 40% Barclays Global Aggregate	14.0	18.6	-6.0	17.1	5.7	-2.5	2.8	12.1	11.5	-2.1		
Domestic Equity Assets	21.6	30.9	-5.5	21.0	13.1	0.4	12.4	33.5	16.3	1.0		
Russell 3000	20.9	31.0	-5.2	21.1	12.7	0.5	12.6	33.6	16.4	1.0		
SSgA Russell 1000 Value Index-NL	2.8	26.5	-8.3	13.8	17.3	-3.7	13.4	32.5	17.4	0.4		
Russell 1000 Value	2.8	26.5	-8.3	13.7	17.3	-3.8	13.5	32.5	17.5	0.4		
SSgA Russell 1000 Growth-NL	38.5	36.4	-1.7	30.2	7.2	5.6	13.1	33.5	15.4	2.6		
Russell 1000 Growth	38.5	36.4	-1.5	30.2	7.1	5.7	13.0	33.5	15.3	2.6		
SSgA Russell 2000 Index-NL	20.0	25.6	-11.0	14.7	21.5	-4.4	5.0	38.9	16.4	-4.1		
Russell 2000	20.0	25.5	-11.0	14.6	21.3	-4.4	4.9	38.8	16.3	-4.2		
Total International Developed Market Equity	9.3	23.3	-14.7	27.5	1.6	2.0	-4.7	24.4	18.1	-12.6		
MSCI EAFE	7.8	22.0	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1		
SSgA MSCI EAFE Index-NL	8.3	22.5	-13.5	25.5	1.4	-0.5	-4.6	23.1	17.7	-11.9		
MSCI EAFE	7.8	22.0	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1		
SSgA MSCI EAFE Small Cap Index-NL	12.4	25.0	-17.6	33.3	2.4	9.7	-4.7	29.5	20.1	-15.0		
MSCI EAFE Small Cap	12.3	25.0	-17.9	33.0	2.2	9.6	-4.9	29.3	20.0	-15.9		
International Emerging Market Equity Assets	25.4	16.6	-17.3	32.5	11.7	-18.1	-4.4	-3.8	18.8	-25.6		
MSCI Emerging Markets	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4		
GQG Partners Emerging Markets	34.8											
MSCI Emerging Markets	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	<i>18.2</i>	-18.4		



#### Retirement System Summary | As of December 31, 2020

	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)
Investment Grade Bond Assets	9.2	8.9	-0.1	3.5	2.7	0.8	6.1	-3.1	4.6	8.5
BBgBarc US Aggregate TR	7.5	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2	7.8
Longfellow Investment Grade Bond	9.2	8.9	-0.1							
BBgBarc US Aggregate TR	7.5	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2	7.8
High Yield Bond Assets	9.1	15.9	-3.2	7.2	11.5	-0.2	4.1	6.0	13.6	6.2
CSFB High Yield Index	5.5	14.0	-2.4	7.0	18.3	-4.9	1.9	7.5	14.7	5.5
Lord Abbett High Yield Core	9.1									
BBgBarc US High Yield TR	7.1	14.3	-2.1	7.5	17.1	-4.5	2.5	7.4	15.8	5.0
TIPS Assets	11.0	8.4	-1.3	3.0	4.5	-1.4	3.6	-8.6	6.9	13.5
BBgBarc US TIPS TR	11.0	8.4	-1.3	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6
SSgA TIPS-NL	11.0	8.4	-1.3	3.0	4.5	-1.4	3.6	-8.6	6.9	13.5
BBgBarc US TIPS TR	11.0	8.4	-1.3	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6
Emerging Market Debt Assets	5.8	15.1	-6.9	13.3	10.0	-15.2	-8.5			
50% JPM EMBI GD / 50% JPM GBI-EM	4.0	14.3	-5.2	12.7	10.2	-7.1	0.7	-7.1	17.2	2.8
Metlife Emerging Markets Debt (Net)	6.1	14.5	-6.6	13.4						
MetLife Custom Benchmark	5.4	13.7	-4.0	10.6	10.0	-3.8	1.9	-4.4	17.9	2.0
Aberdeen Emerging Markets Bond Fund	5.5	15.7	-7.1	13.3						
JP Morgan EMBI Global Diversified	5.3	15.0	-4.3	10.3	10.2	1.2	7.4	-5.3	17.4	7.3
JP Morgan GBI EM Global Diversified TR USD	2.7	13.5	-6.2	15.2	9.9	-14.9	-5.7	-9.0	16.8	-1.8

Metlife Custom Benchmark consists of 35% JP Morgan EMBI Global Diversified, 35% JP Morgan CEMBI Broad Diversified, and 30% JP Morgan GBI EM Global Diversified.



	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)
Real Estate Assets	0.9	8.7	8.8	8.5	9.0	13.8	12.8	10.1	12.5	16.7
NCREIF ODCE (net)	0.3	4.4	7.4	6.7	7.8	14.0	11.5	12.9	9.8	15.0
TA Associates Realty Fund X										
Intercontinental U.S. REIF (Net)	1.0	8.9	10.5	7.5	10.9	12.5				
NCREIF ODCE (net)	0.3	4.4	7.4	6.7	7.8	14.0	11.5	12.9	9.8	15.0
AEW Core Property Trust (Net)	0.2	5.1	6.6	6.6	7.6	12.8				
NCREIF ODCE (net)	0.3	4.4	7.4	6.7	7.8	14.0	11.5	12.9	9.8	15.0
Private Equity Assets	25.8	15.7	14.0	11.8	6.3	0.8	13.5	9.5	9.2	7.9
Cambridge Associates US All PE (1 Qtr Lag)	13.5	9.5	19.2	16.8	8.7	6.0	17.9	17.5	<i>15.2</i>	15.1
Ascent Venture Partners - Fund III										
Ascent Venture Partners - Fund IV										
Ascent Venture Partners - Fund V										
Ascent Venture Partners - Fund VI										
Constitution Capital Partners Ironsides III										
Constitution Capital Partners Ironsides IV										
Constitution Capital Partners Ironsides V										
Constitution Capital Direct IV										
Constitution Capital Direct V										
Goldman Sachs PEP 2005										



	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)
HarbourVest Partners VIII										
HarbourVest Partners IX										
HarbourVest X Buyout Fund										
HarbourVest Partners XI										
Infrastructure Assets	3.1	14.6								
CPI + 3%	4.3	5.3	4.9	5.1	5.1	<i>3</i> .7	3.7	4.5	4.8	6.1
IFM Global Infrastructure (U.S.), L.P.	3.1	14.6								
CPI + 3%	4.3	5.3	4.9	5.1	5.1	<i>3</i> .7	3.7	4.5	4.8	6.1
Cash										
Cash STIF										



Statistics Summary										
	5 Y	ears Ending Decem	ber 31, 2020							
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error				
Total Retirement System	10.2%	7.6%	0.2	0.7	1.2	3.1%				
60% MSCI ACWI / 40% Barclays Global Aggregate	9.5%	9.8%		1.0	0.8	0.0%				
Total Equity	13.1%	15.3%	-0.7	0.9	0.8	3.5%				
Russell 3000	15.4%	16.0%		1.0	0.9	0.0%				
Domestic Equity Assets	15.4%	16.1%	0.0	1.0	0.9	0.3%				
Russell 3000	15.4%	16.0%		1.0	0.9	0.0%				
SSgA Russell 1000 Value Index-NL	9.7%	16.3%	-0.8	1.0	0.5	0.1%				
Russell 1000 Value	9.7%	16.3%		1.0	0.5	0.0%				
SSgA Russell 1000 Growth-NL	20.9%	16.3%	-2.0	1.0	1.2	0.1%				
Russell 1000 Growth	21.0%	16.3%		1.0	1.2	0.0%				
SSgA Russell 2000 Index-NL	13.2%	21.5%	-0.4	1.0	0.6	0.1%				
Russell 2000	13.3%	21.5%		1.0	0.6	0.0%				
International Equity Assets	9.8%	15.4%	0.1	1.0	0.6	3.2%				
MSCI ACWI ex USA IMI Gross	9.5%	15.7%		1.0	0.5	0.0%				
Total International Developed Market Equity	8.2%	16.0%	0.4	1.0	0.4	1.6%				
MSCI EAFE	7.4%	15.4%		1.0	0.4	0.0%				
SSgA MSCI EAFE Index-NL	7.7%	15.4%	2.3	1.0	0.4	0.1%				
MSCI EAFE	7.4%	15.4%		1.0	0.4	0.0%				

## MEKETA

## Massachusetts Housing Finance Agency Retirement System

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
SSgA MSCI EAFE Small Cap Index-NL	9.3%	17.4%	-0.3	1.0	0.5	0.2%
MSCI EAFE Small Cap	9.4%	17.6%		1.0	0.5	0.0%
International Emerging Market Equity Assets	11.8%	16.9%	-0.3	0.9	0.6	4.1%
MSCI Emerging Markets	12.8%	17.6%		1.0	0.7	0.0%
GQG Partners Emerging Markets						
MSCI Emerging Markets	12.8%	17.6%		1.0	0.7	0.0%
Fixed Income Assets	5.8%	4.7%	0.3	1.2	1.0	2.8%
BBgBarc US Universal TR	4.9%	3.1%		1.0	1.2	0.0%
Investment Grade Bond Assets	4.8%	3.2%	0.5	1.0	1.1	0.8%
BBgBarc US Aggregate TR	4.4%	3.2%		1.0	1.0	0.0%
Longfellow Investment Grade Bond						
BBgBarc US Aggregate TR	4.4%	3.2%		1.0	1.0	0.0%
High Yield Bond Assets	7.5%	9.0%	-0.3	1.1	0.7	2.2%
CSFB High Yield Index	8.2%	8.1%		1.0	0.9	0.0%
Lord Abbett High Yield Core						
BBgBarc US High Yield TR	8.6%	7.8%		1.0	1.0	0.0%
TIPS Assets	5.0%	3.6%	-1.8	1.0	1.1	0.0%
BBgBarc US TIPS TR	5.1%	3.6%		1.0	1.1	0.0%
SSgA TIPS-NL	5.0%	3.6%	-1.7	1.0	1.1	0.1%
BBgBarc US TIPS TR	5.1%	3.6%		1.0	1.1	0.0%

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Emerging Market Debt Assets	7.0%	11.9%	0.0	1.2	0.5	3.4%
50% JPM EMBI GD / 50% JPM GBI-EM	7.0%	9.9%		1.0	0.6	0.0%
Metlife Emerging Markets Debt						
MetLife Custom Benchmark	7.0%	8.4%		1.0	0.7	0.0%
Aberdeen Emerging Markets Bond Fund						
JP Morgan EMBI Global Diversified	7.1%	9.0%		1.0	0.7	0.0%
Real Estate Assets	7.0%	3.4%	1.1	1.1	1.7	1.5%
NCREIF ODCE (net)	5.3%	2.7%		1.0	1.5	0.0%
TA Associates Realty Fund X	13.1%	13.1%	0.6	2.3	0.9	12.1%
NCREIF ODCE (net)	5.3%	2.7%		1.0	1.5	0.0%
Intercontinental U.S. REIF	7.7%	3.8%	1.2	1.2	1.7	2.0%
NCREIF ODCE (net)	5.3%	2.7%		1.0	1.5	0.0%
AEW Core Property Trust	5.2%	2.6%	-0.1	0.9	1.5	1.3%
NCREIF ODCE (net)	5.3%	2.7%		1.0	1.5	0.0%
Private Equity Assets	14.5%	10.1%	0.4	0.9	1.3	4.2%
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
Ascent Venture Partners - Fund III	-20.6%	19.2%	-1.3	-0.8	-1.1	24.9%
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
Ascent Venture Partners - Fund IV	-47.5%	49.7%	-1.2	-0.2	-1.0	51.2%
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%

# MEKETA

## Massachusetts Housing Finance Agency Retirement System

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Ascent Venture Partners - Fund V	0.1%	8.9%	-1.2	0.3	-0.1	10.8%
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
Ascent Venture Partners - Fund VI	1.3%	7.8%	-1.3	0.4	0.0	9.1%
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
Constitution Capital Partners Ironsides III	16.9%	14.0%	0.3	0.7	1.1	12.4%
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
Constitution Capital Partners Ironsides IV						
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
Constitution Capital Partners Ironsides V						
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
Constitution Capital Direct IV						
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
Constitution Capital Direct V						
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
Goldman Sachs PEP 2005	4.5%	15.8%	-0.7	1.0	0.2	12.2%
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
HarbourVest Partners VIII	13.3%	12.0%	0.1	1.2	1.0	3.8%
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
HarbourVest Partners IX	18.5%	11.9%	1.2	1.1	1.5	4.8%
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%

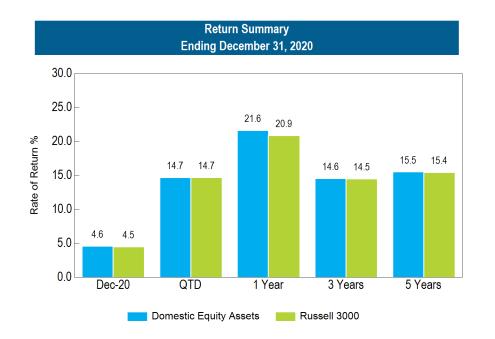


	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
HarbourVest X Buyout Fund						
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
HarbourVest Partners XI						
Cambridge Associates US All PE (1 Qtr Lag)	12.9%	9.8%		1.0	1.2	0.0%
Infrastructure Assets						
CPI + 3%	4.9%	0.7%		1.0	5.1	0.0%
IFM Global Infrastructure (U.S.), L.P.						
CPI + 3%	4.9%	0.7%		1.0	5.1	0.0%

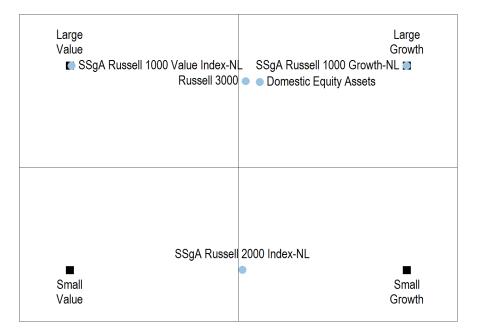


#### Domestic Equity Assets | As of December 31, 2020

Asset Allocation on December 31, 2020						
	Actual	Actual				
SSgA Russell 1000 Growth-NL	\$30,015,371	52.1%				
SSgA Russell 1000 Value Index-NL	\$22,995,001	39.9%				
SSgA Russell 2000 Index-NL	\$4,605,629	8.0%				
Total	\$57,616,000	100.0%				



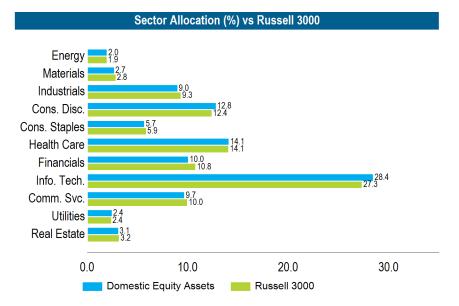
#### Domestic Equity Assets Style Map 3 Years Ending December 31, 2020



#### Domestic Equity Assets | As of December 31, 2020

Domestic Equity Assets Characteristics							
	Portfolio	Index	Portfolio				
	Q4-20	Q4-20	Q3-20				
Market Value							
Market Value (\$M)	57.6		50.7				
Number Of Holdings	3051	3058	3035				
Characteristics							
Weighted Avg. Market Cap. (\$B)	424.5	407.2	399.2				
Median Market Cap (\$B)	2.4	2.0	1.8				
P/E Ratio	29.9	29.1	24.6				
Yield	1.4	1.4	1.5				
EPS Growth - 5 Yrs.	13.9	13.3	20.8				
Price to Book	4.6	4.4	4.6				

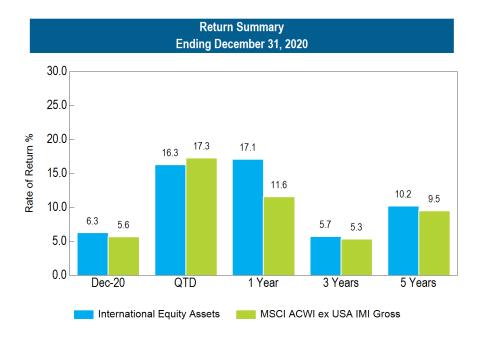
Top 10 Holdings	
APPLE INC	6.0%
MICROSOFT CORP	4.7%
AMAZON.COM INC	3.9%
FACEBOOK INC	1.8%
TESLA INC	1.5%
ALPHABET INC	1.4%
ALPHABET INC	1.4%
VISA INC	1.0%
BERKSHIRE HATHAWAY INC	1.0%
JOHNSON & JOHNSON	1.0%
Total	23.8%



	Portfolio	Index
	Q4-20	Q4-20
Sector Performance		
Energy	28.51	29.63
Materials	15.94	17.65
Industrials	16.80	17.39
Consumer Discretionary	13.57	14.15
Consumer Staples	6.88	7.02
Health Care	9.71	10.43
Financials	24.72	23.68
Information Technology	13.63	13.85
Communication Services	15.07	15.05
Utilities	7.06	7.58
Real Estate	6.90	9.33



Asset Allocation on December 31, 2020						
	Actual	Actual				
GQG Partners Emerging Markets	\$19,877,932	51.2%				
SSgA MSCI EAFE Index-NL	\$12,244,382	31.5%				
SSgA MSCI EAFE Small Cap Index-NL	\$6,724,192	17.3%				
Total	\$38,846,506	100.0%				





Yield

EPS Growth - 5 Yrs.

MERCADOLIBRE INC

ASML HOLDING NV

JD.COM INC

INFOSYS LTD

Total

YIBIN WULIANGYE CO LTD

TENCENT HOLDINGS LTD

RELIANCE INDUSTRIES LTD

Price to Book

#### Massachusetts Housing Finance Agency Retirement System

Total Inter	national Equity C	haracteristics	
	Portfolio	Index	Portfolio
	Q4-20	Q4-20	Q3-20
Market Value			
Market Value (\$M)	38.8		33.4
Number Of Holdings	3306	2361	3280
Characteristics			
Weighted Avg. Market Cap. (\$B)	124.3	100.4	136.7
Median Market Cap (\$B)	2.0	9.5	1.7
P/E Ratio	24.0	20.9	19.7

2.3

5.2

2.7

1.8

10.3

3.9

3.5%

3.2%

2.7%

2.6%

2.4%

2.4%

2.1%

2.0%

1.7%

1.6%

24.0%

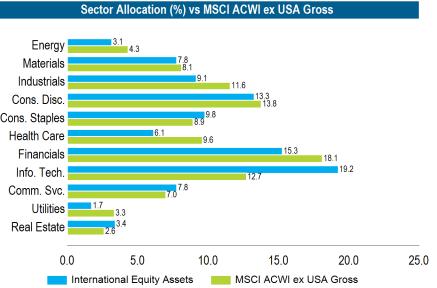
1.8

10.0

3.5

**Top 10 Holdings** 

International Equity	/ Assets	As of December 31, 2020
international Equity	ASSELS	AS UNDECENTIDEN SI, LULU



	Portfolio	Index
	Q4-20	Q4-20
Sector Performance		
Energy	29.07	19.63
Materials	19.23	18.64
Industrials	15.89	15.83
Consumer Discretionary	28.88	13.79
Consumer Staples	13.04	6.52
Health Care	6.46	5.66
Financials	28.15	22.76
Information Technology	23.78	24.47
Communication Services	19.48	12.81
Utilities	13.56	14.08
Real Estate	15.88	11.59

SAMSUNG ELECTRONICS CO LTD

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD

HOUSING DEVELOPMENT FINANCE CORP LTD



Total International Equity Region Allocation				
vs MSCI ACWI ex USA Gross				
Region	% of Total	% of Bench	% Diff	
North America ex U.S.	0.0%	6.3%	-6.3%	
United States	2.6%	0.0%	2.6%	
Europe Ex U.K.	25.6%	30.3%	-4.7%	
United Kingdom	6.9%	8.8%	-1.9%	
Pacific Basin Ex Japan	8.3%	7.3%	1.0%	
Japan	13.0%	15.9%	-2.9%	
Emerging Markets	38.0%	30.8%	7.2%	
Other	5.6%	0.6%	5.0%	
Total	100.0%	100.0%	0.0%	



Total Int	ernational Equity Country Allocation		
	vs MSCI ACWI ex USA Gross		
Country	% of Total	% of Bench	% Diff
ARGENTINA	2.7%	0.0%	2.7%
AUSTRALIA	4.5%	4.4%	0.1%
AUSTRIA	0.3%	0.1%	0.2%
BAHRAIN	0.0%	0.0%	0.0%
BANGLADESH	0.0%	0.0%	0.0%
BELGIUM	0.5%	0.6%	-0.1%
BRAZIL	2.6%	1.6%	1.0%
CANADA	0.0%	6.3%	-6.3%
CHILE	0.0%	0.2%	-0.2%
CHINA	16.7%	12.2%	4.6%
COLOMBIA	0.0%	0.1%	-0.1%
CROATIA	0.0%	0.0%	0.0%
CZECH REPUBLIC	0.0%	0.0%	0.0%
DENMARK	1.1%	1.6%	-0.5%
EGYPT	0.0%	0.0%	0.0%
ESTONIA	0.0%	0.0%	0.0%
FINLAND	0.7%	0.7%	0.0%
FRANCE	3.7%	6.9%	-3.2%
GERMANY	3.7%	5.9%	-2.2%
GREECE	0.0%	0.0%	0.0%



Country	% of	% of	
	Total	Bench	% Diff
HONG KONG	1.8%	2.0%	-0.3%
HUNGARY	0.0%	O.1%	-0.1%
INDIA	8.8%	2.9%	6.0%
INDONESIA	0.5%	0.4%	0.1%
IRELAND	0.5%	0.4%	O.1%
ISRAEL	0.6%	0.4%	0.2%
ITALY	1.2%	1.5%	-0.3%
JAPAN	13.0%	15.9%	-2.9%
JORDAN	0.0%	0.0%	0.0%
KAZAKHSTAN	0.0%	0.0%	0.0%
KENYA	0.0%	0.0%	0.0%
KOREA	3.5%	4.2%	-0.7%
KUWAIT	0.0%	0.2%	-0.2%
LEBANON	0.0%	0.0%	0.0%
LITHUANIA	0.0%	0.0%	0.0%
LUXEMBOURG	0.2%	0.0%	0.2%
MALAYSIA	0.0%	0.5%	-0.5%
MAURITIUS	0.0%	0.0%	0.0%
MEXICO	0.0%	0.5%	-0.5%
MOROCCO	0.0%	0.0%	0.0%
NETHERLANDS	5.1%	2.4%	2.7%
NEW ZEALAND	0.3%	0.2%	0.1%
NIGERIA	0.0%	0.0%	0.0%



Country	% of	% of	
,	Total	Bench	% Diff
NORWAY	0.5%	0.4%	0.2%
OMAN	0.0%	0.0%	0.0%
OTHER	2.2%	0.0%	2.2%
PAKISTAN	0.0%	0.0%	0.0%
PERU	0.0%	O.1%	-0.1%
PHILIPPINES	0.0%	0.2%	-0.2%
POLAND	0.0%	0.2%	-0.2%
PORTUGAL	0.1%	0.1%	0.0%
QATAR	0.0%	0.2%	-0.2%
ROMANIA	0.0%	0.0%	0.0%
RUSSIA	2.1%	0.8%	1.2%
SAUDI ARABIA	0.0%	0.8%	-0.8%
SERBIA	0.0%	0.0%	0.0%
SINGAPORE	1.7%	0.7%	1.1%
SLOVENIA	0.0%	0.0%	0.0%
SOUTH AFRICA	0.0%	1.1%	-1.1%
SPAIN	1.6%	1.5%	0.1%
SRI LANKA	0.0%	0.0%	0.0%
SWEDEN	2.3%	2.1%	0.2%
SWITZERLAND	4.0%	6.0%	-2.1%
TAIWAN	3.7%	4.0%	-0.3%
THAILAND	0.0%	0.6%	-0.6%
TUNISIA	0.0%	0.0%	0.0%



Country	% of Total	% of Bench	% Diff
TURKEY	0.0%	0.1%	-0.1%
UNITED ARAB EMIRATES	0.0%	0.2%	-0.2%
UNITED KINGDOM	6.9%	8.8%	-1.9%
UNITED STATES	2.6%	0.0%	2.6%
VIETNAM	0.0%	0.0%	0.0%
Total	100.0%	100.0%	0.0%

# MEKETA

Aberdeen Emerging Markets Bond Fund

Longfellow Investment Grade Bond

Lord Abbett High Yield Core

SSgA TIPS-NL

Total

Metlife Emerging Markets Debt

#### Massachusetts Housing Finance Agency Retirement System

Asset Allocation on December 31, 2020	Total Fixed Income Fixed Income Characteristics
Actual Actual	vs. BBgBarc US Universal TR

9.2%

37.4%

23.2%

8.8%

21.3%

100.0%

\$4,740,793

\$19,180,567

\$11,876,253

\$4,528,072

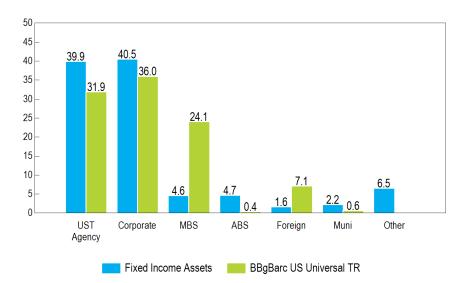
\$10,927,697

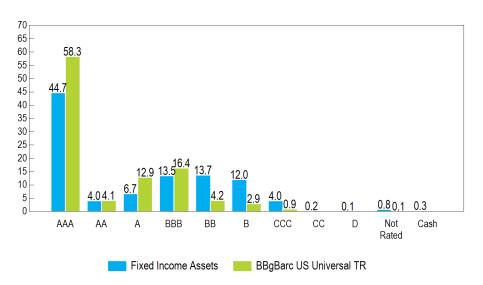
\$51,253,382

#### Fixed Income Assets | As of December 31, 2020

vs. BBgBarc	US Universal TR				
	Portfolio	Index	Portfolio		
	Q4-20	Q4-20	Q3-20		
Fixed Income Characteristics					
Yield to Maturity	2.62	1.41	2.84		
Average Duration	5.49	6.24	5.92		
Average Quality	А	AA	А		
Weighted Average Maturity	8.14	12.68	8.31		







**Credit Quality Allocation** 

## MEKETA

#### SSgA Russell 1000 Value Index-NL | As of December 31, 2020

Account Information		
Account Name	SSgA Russell 1000 Value Index-NL	
Account Structure	Commingled Fund	
Investment Style	Passive	
Inception Date	1/01/05	
Account Type	Equity	
Benchmark	Russell 1000 Value	
Universe	eV US Large Cap Value Equity Gross	

o Perforn	nance S	Summar	·у		
QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
16.3	2.8	6.1	9.8	7.4	Jan-05
16.3	2.8	6.1	9.7	7.3	Jan-05
15.8	4.4	6.9	10.6	8.3	Jan-05
42	62	60	65	84	Jan-05
	QTD (%) 16.3 16.3 15.8	QTD (%)         1 Yr (%)           16.3         2.8           16.3         2.8           15.8         4.4	QTD (%)         1 Yr (%)         3 Yrs (%)           16.3         2.8         6.1           16.3         2.8         6.1           15.8         4.4         6.9	(%)         (%)         (%)         (%)           16.3         2.8         6.1         9.8           16.3         2.8         6.1         9.7           15.8         4.4         6.9         10.6	QTD (%)         1 Yr (%)         3 Yrs (%)         5 Yrs (%)         Inception (%)           16.3         2.8         6.1         9.8         7.4           16.3         2.8         6.1         9.7         7.3           15.8         4.4         6.9         10.6         8.3

Top 10 Holdings	
BERKSHIRE HATHAWAY INC	2.5%
JPMORGAN CHASE & CO	2.2%
JOHNSON & JOHNSON	2.1%
WALT DISNEY CO (THE)	1.9%
VERIZON COMMUNICATIONS INC	1.4%
COMCAST CORP	1.4%
BANK OF AMERICA	1.4%
AT&T INC	1.2%
PFIZER INC	1.2%
INTEL CORP	1.2%
Total	16.5%

SSgA Russell 1000 Value Index-NL Characteristics				
	Portfolio	Index	Portfolio	
	Q4-20	Q4-20	Q3-20	
Market Value				
Market Value (\$M)	23.0		19.8	
Number Of Holdings	824	854	821	
Characteristics				
Weighted Avg. Market Cap. (\$B)	134.5	133.9	116.0	
Median Market Cap (\$B)	11.9	11.6	9.3	
P/E Ratio	22.9	22.8	18.7	
Yield	2.2	2.2	2.5	
EPS Growth - 5 Yrs.	5.9	5.9	6.0	
Price to Book	2.6	2.7	2.6	
Sector Distribution				
Energy	4.4	3.9	4.0	
Materials	4.8	4.8	4.8	
Industrials	13.4	13.5	13.0	
Consumer Discretionary	7.6	7.6	7.6	
Consumer Staples	7.6	7.6	8.3	
Health Care	13.4	13.5	14.3	
Financials	19.6	19.7	18.2	
Information Technology	9.9	9.7	9.9	
Communication Services	9.4	9.7	9.4	
Utilities	5.5	5.5	5.9	
Real Estate	4.4	4.4	4.5	

#### SSgA Russell 1000 Growth-NL | As of December 31, 2020

Account Information		
Account Name	SSgA Russell 1000 Growth-NL	
Account Structure	Commingled Fund	
Investment Style	Passive	
Inception Date	7/01/07	
Account Type	Equity	
Benchmark	Russell 1000 Growth	
Universe	eV US Large Cap Growth Equity Gross	

Portfolio Performance Summary						
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
SSgA Russell 1000 Growth-NL	11.4	38.5	22.9	21.0	12.6	Jul-07
Russell 1000 Growth	11.4	38.5	23.0	21.0	12.6	Jul-07
eV US Large Cap Growth Equity Gross Median	11.4	34.9	22.0	19.4	12.3	Jul-07
eV US Large Cap Growth Equity Gross Rank	50	34	42	29	37	Jul-07

Top 10 Holdings	
APPLE INC	11.6%
MICROSOFT CORP	9.1%
AMAZON.COM INC	7.5%
FACEBOOK INC	3.6%
TESLA INC	2.9%
ALPHABET INC	2.2%
ALPHABET INC	2.1%
VISA INC	2.0%
MASTERCARD INC	1.7%
NVIDIA CORPORATION	1.7%
Total	44.4%

SSgA Russell 1000 Growth-NL Characteristics							
	Portfolio	Index	Portfolio				
	Q4-20	Q4-20	Q3-20				
Market Value							
Market Value (\$M)	30.0		27.4				
Number Of Holdings	437	453	449				
Characteristics							
Weighted Avg. Market Cap. (\$B)	712.6	713.2	651.8				
Median Market Cap (\$B)	17.4	16.7	13.8				
P/E Ratio	40.0	40.0	33.3				
Yield	0.8	0.8	0.8				
EPS Growth - 5 Yrs.	22.7	22.7	27.6				
Price to Book	12.1	12.1	9.5				
Sector Distribution							
Energy	0.1	0.1	0.1				
Materials	0.8	0.8	0.9				
Industrials	4.5	4.5	4.6				
Consumer Discretionary	16.8	16.7	16.3				
Consumer Staples	4.6	4.5	4.8				
Health Care	13.6	13.6	13.8				
Financials	1.9	1.9	1.9				
Information Technology	45.0	45.2	44.0				
Communication Services	11.0	11.1	11.7				
Utilities	0.0	0.0	0.0				
Real Estate	1.6	1.6	1.8				

#### SSgA Russell 2000 Index-NL | As of December 31, 2020

Account Information					
Account Name	SSgA Russell 2000 Index-NL				
Account Structure	Commingled Fund				
Investment Style	Passive				
Inception Date	8/01/10				
Account Type	Equity				
Benchmark	Russell 2000				
Universe	eV US Small Cap Core Equity Gross				

Portfolio Performance Summary						
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
SSgA Russell 2000 Index-NL	31.4	20.0	10.3	13.3	12.8	Aug-10
Russell 2000	31.4	20.0	10.2	13.3	12.8	Aug-10
eV US Small Cap Core Equity Gross Median	27.8	15.9	9.4	13.0	13.5	Aug-10
eV US Small Cap Core Equity Gross Rank	20	33	44	45	72	Aug-10

Top 10 Holdings	
PENN NATIONAL GAMING INC	0.5%
CAESARS ENTERTAINMENT INC	0.5%
PLUG POWER INC	0.5%
SUNRUN INC	0.4%
MIRATI THERAPEUTICS INC	0.4%
DARLING INGREDIENTS INC	0.4%
ULTRAGENYX PHARMACEUTICAL INC	0.3%
DECKERS OUTDOOR CORP	0.3%
II VI INC	0.3%
ARROWHEAD PHARMACEUTICALS INC	0.3%
Total	4.1%

SSgA Russell 2000 Index-NL Characteristics						
	Portfolio	Index	Portfolio			
	Q4-20	Q4-20	Q3-20			
Market Value						
Market Value (\$M)	4.6		3.5			
Number Of Holdings	2042	2041	2019			
Characteristics						
Weighted Avg. Market Cap. (\$B)	3.3	3.3	2.4			
Median Market Cap (\$B)	0.9	0.9	0.6			
P/E Ratio	22.7	22.7	17.9			
Yield	1.0	1.0	1.3			
EPS Growth - 5 Yrs.	8.4	8.4	11.2			
Price to Book	3.0	3.0	2.9			
Sector Distribution						
Energy	2.1	2.1	1.9			
Materials	4.2	4.1	4.0			
Industrials	15.3	15.4	15.2			
Consumer Discretionary	13.0	13.0	13.4			
Consumer Staples	3.2	3.3	3.4			
Health Care	20.9	20.9	21.3			
Financials	15.3	15.5	14.8			
Information Technology	14.1	14.3	13.4			
Communication Services	2.3	2.4	2.3			
Utilities	3.0	2.9	3.2			
Real Estate	6.2	6.2	6.6			

#### SSgA MSCI EAFE Index-NL | As of December 31, 2020

Account Information					
Account Name	SSgA MSCI EAFE Index-NL				
Account Structure	Commingled Fund				
Investment Style	Passive				
Inception Date	8/01/10				
Account Type	Equity				
Benchmark	MSCI EAFE				
Universe	eV EAFE Core Equity Gross				

Portfolio Performance Summary						
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
SSgA MSCI EAFE Index-NL	16.1	8.3	4.7	7.9	6.9	Aug-10
MSCI EAFE	16.0	7.8	4.3	7.4	6.6	Aug-10
eV EAFE Core Equity Gross Median	15.0	9.8	5.2	8.4	8.5	Aug-10
eV EAFE Core Equity Gross Rank	36	62	56	63	87	Aug-10

Top 10 Holdings	
NESTLE SA, CHAM UND VEVEY	2.1%
ROCHE HOLDING AG	1.5%
ASML HOLDING NV	1.3%
NOVARTIS AG	1.3%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.1%
TOYOTA MOTOR CORP	1.0%
AIA GROUP LTD	1.0%
SAP SE	0.8%
ASTRAZENECA PLC	0.8%
SONY CORP	0.8%
Total	11.8%

SSgA MSCI EAFE Index-NL Characteristics						
	Portfolio	Index	Portfolio			
	Q4-20	Q4-20	Q3-20			
Market Value						
Market Value (\$M)	12.2		10.5			
Number Of Holdings	884	876	909			
Characteristics						
Weighted Avg. Market Cap. (\$B)	70.7	71.4	64.5			
Median Market Cap (\$B)	12.1	12.4	10.2			
P/E Ratio	22.3	22.2	19.3			
Yield	2.3	2.4	2.7			
EPS Growth - 5 Yrs.	3.1	2.9	3.8			
Price to Book	2.7	2.7	3.0			
Sector Distribution						
Energy	3.1	3.1	2.8			
Materials	7.8	7.9	7.6			
Industrials	15.2	15.2	15.2			
Consumer Discretionary	12.5	12.5	11.8			
Consumer Staples	10.5	10.9	11.9			
Health Care	12.8	12.9	14.2			
Financials	16.3	16.3	15.1			
Information Technology	8.9	8.9	8.6			
Communication Services	5.2	5.2	5.5			
Utilities	3.9	3.9	4.0			
Real Estate	3.1	3.1	3.1			

## MEKETA

#### Massachusetts Housing Finance Agency Retirement System

#### SSgA MSCI EAFE Small Cap Index-NL | As of December 31, 2020

# Account InformationAccount NameSSgA MSCI EAFE Small Cap Index-NLAccount StructureCommingled FundInvestment StylePassiveInception Date8/01/10Account TypeEquityBenchmarkMSCI EAFE Small CapUniverseeV EAFE Small Cap Core Gross

Portfolio Performance Summary						
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
SSgA MSCI EAFE Small Cap Index-NL	17.2	12.4	5.0	9.6	9.8	Aug-10
MSCI EAFE Small Cap	17.3	12.3	4.9	9.4	9.5	Aug-10
eV EAFE Small Cap Core Gross Median	15.1	11.1	4.1	9.2	11.0	Aug-10
eV EAFE Small Cap Core Gross Rank	29	46	46	42	75	Aug-10

Top 10 Holdings	
ASM INTERNATIONAL NV	0.4%
RIGHTMOVE PLC	0.3%
SIG COMBIBLOC GROUP AG	0.3%
D S SMITHPLC	0.3%
WEIR GROUP PLC	0.3%
INTERMEDIATE CAPITAL GROUP PLC	0.2%
VAT GROUP AG	0.2%
IMCD NV	0.2%
B&M EUROPEAN VALUE RETAIL SA	0.2%
METSO OUTOTEC OYJ	0.2%
Total	2.6%

SSgA MSCI EAFE Small Cap Index-NL Characteristics			
	Portfolio	Index	Portfolio
	Q4-20	Q4-20	Q3-20
Market Value			
Market Value (\$M)	6.7		5.7
Number Of Holdings	2372	2361	2325
Characteristics			
Weighted Avg. Market Cap. (\$B)	3.0	3.0	2.7
Median Market Cap (\$B)	1.2	1.2	1.1
P/E Ratio	19.9	19.9	17.7
Yield	2.0	2.0	2.3
EPS Growth - 5 Yrs.	3.6	3.6	5.4
Price to Book	2.4	2.4	2.3
Sector Distribution			
Energy	1.7	1.7	1.5
Materials	9.2	9.1	8.2
Industrials	23.1	23.2	22.0
Consumer Discretionary	12.7	12.8	12.9
Consumer Staples	5.8	5.8	6.9
Health Care	7.1	7.1	7.8
Financials	10.4	10.4	9.9
Information Technology	10.5	10.4	11.0
Communication Services	4.6	4.6	4.8
Utilities	2.9	3.0	2.7
Real Estate	11.9	12.0	12.2

# MEKETA

#### GQG Partners Emerging Markets | As of December 31, 2020

# Account InformationAccount NameGQG Partners Emerging MarketsAccount StructureCommingled FundInvestment StyleActiveInception Date3/31/19Account TypeNon-US Stock EmergingBenchmarkMSCI Emerging MarketsUniverseeV Emg Mkts Equity Gross

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date	
GQG Partners Emerging Markets	16.1	34.8			25.3	Mar-19	
MSCI Emerging Markets	19.7	18.3	6.2	12.8	14.9	Mar-19	
eV Emg Mkts Equity Gross Median	20.2	18.2	6.3	13.0	15.6	Mar-19	
eV Emg Mkts Equity Gross Rank	90	10			13	Mar-19	

Top 10 Holdings	
SAMSUNG ELECTRONICS CO LTD	6.7%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	6.1%
MERCADOLIBRE INC	5.1%
HOUSING DEVELOPMENT FINANCE CORP LTD	5.0%
YIBIN WULIANGYE CO LTD	4.7%
TENCENT HOLDINGS LTD	4.5%
JD.COM INC	3.8%
RELIANCE INDUSTRIES LTD	3.2%
ASML HOLDING NV	3.2%
INFOSYS LTD	3.1%
Total	45.6%

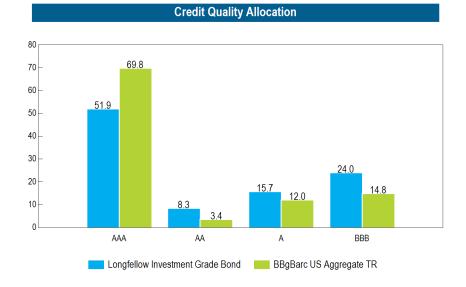
GQG Partners Emerging Markets Characteristics							
	Portfolio	Index	Portfolio				
	Q4-20	Q4-20	Q3-20				
Market Value							
Market Value (\$M)	19.9		17.2				
Number Of Holdings	58	1397	52				
Characteristics							
Weighted Avg. Market Cap. (\$B)	200.0	171.5	228.7				
Median Market Cap (\$B)	70.3	6.9	58.8				
P/E Ratio	27.4	19.1	21.4				
Yield	1.4	2.0	1.2				
EPS Growth - 5 Yrs.	17.2	9.4	17.4				
Price to Book	5.7	3.1	6.5				
Sector Distribution							
Energy	3.7	5.0	5.2				
Materials	7.2	7.6	4.7				
Industrials	0.8	4.2	0.0				
Consumer Discretionary	13.9	18.3	21.4				
Consumer Staples	10.7	5.8	8.5				
Health Care	1.9	4.8	2.2				
Financials	16.3	18.2	7.5				
Information Technology	28.3	20.6	27.4				
Communication Services	10.3	11.4	15.7				
Utilities	0.0	2.0	0.1				
Real Estate	0.7	2.1	0.7				

#### Longfellow Investment Grade Bond | As of December 31, 2020

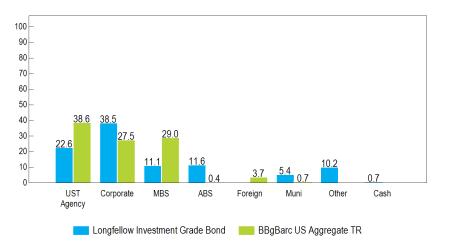
Account NameLongfellow Investment Grade BondAccount StructureSeparate AccountInvestment StyleActiveInception Date9/01/17Account TypeFixedBenchmarkBBgBarc US Aggregate TRUniverseeV US Core Fixed Inc Gross	Account Information					
Investment StyleActiveInception Date9/01/17Account TypeFixedBenchmarkBBgBarc US Aggregate TR	Account Name	Longfellow Investment Grade Bond				
Inception Date 9/01/17 Account Type Fixed Benchmark BBgBarc US Aggregate TR	Account Structure	Separate Account				
Account Type Fixed Benchmark BBgBarc US Aggregate TR	Investment Style	Active				
Benchmark BBgBarc US Aggregate TR	Inception Date	9/01/17				
	Account Type	Fixed				
Universe eV US Core Fixed Inc Gross	Benchmark	BBgBarc US Aggregate TR				
	Universe	eV US Core Fixed Inc Gross				

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date	
Longfellow Investment Grade Bond	1.6	9.2	5.9		5.3	Sep-17	
BBgBarc US Aggregate TR	0.7	7.5	5.3	4.4	4.8	Sep-17	
eV US Core Fixed Inc Gross Median	1.1	8.6	5.9	5.0	5.3	Sep-17	
eV US Core Fixed Inc Gross Rank	19	30	45		54	Sep-17	

Longfellow Investment Grade Bond Characteristics									
vs. BBgBarc US Aggregate TR									
	Portfolio	Index	Portfolio						
	Q4-20	Q4-20	Q3-20						
Fixed Income Characteristics									
Yield to Maturity	1.6	1.0	1.7						
Average Duration	6.2	6.4	6.3						
Average Quality	AA	AA	AA						
Weighted Average Maturity	8.1	13.7	8.3						



Sector Allocation



MEKETA INVESTMENT GROUP

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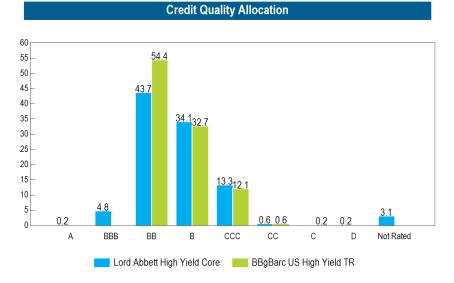
# Massachusetts Housing Finance Agency Retirement System

#### Lord Abbett High Yield Core | As of December 31, 2020

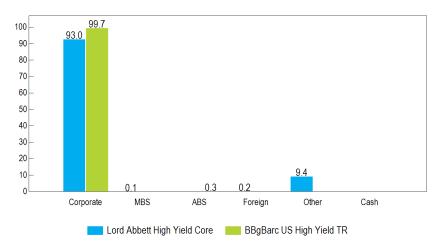
Account Information					
Account Name	Lord Abbett High Yield Core				
Account Structure	Commingled Fund				
Investment Style	Active				
Inception Date	7/01/19				
Account Type	Fixed				
Benchmark	BBgBarc US High Yield TR				
Universe	eV US High Yield Fixed Inc Gross				

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date	
Lord Abbett High Yield Core	7.6	9.1			8.7	Jul-19	
BBgBarc US High Yield TR	6.5	7.1	6.2	8.6	7.4	Jul-19	
eV US High Yield Fixed Inc Gross Median	5.8	6.5	6.1	8.1	7.2	Jul-19	
eV US High Yield Fixed Inc Gross Rank	10	11			15	Jul-19	

Lord Abbett High Yield Core Characteristics									
vs. BBgBarc US High Yield TR									
	Portfolio	Index	Portfolio						
	Q4-20	Q4-20	Q3-20						
Fixed Income Characteristics									
Yield to Maturity	5.0	4.9	5.8						
Average Duration	5.6	5.1	5.5						
Average Quality	В	В	В						
Weighted Average Maturity	7.0	6.5	7.0						



Sector Allocation

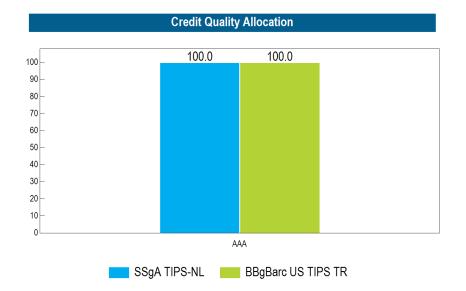


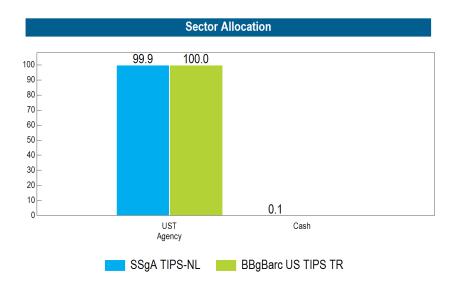
#### SSgA TIPS-NL | As of December 31, 2020

Account Information				
Account Name	SSgA TIPS-NL			
Account Structure	Commingled Fund			
Investment Style	Passive			
Inception Date	7/01/07			
Account Type	Fixed			
Benchmark	BBgBarc US TIPS TR			
Universe	eV US TIPS / Inflation Fixed Inc Gross			

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date	
SSgA TIPS-NL	1.6	11.0	5.9	5.0	4.6	Jul-07	
BBgBarc US TIPS TR	1.6	11.0	5.9	5.1	4.6	Jul-07	
eV US TIPS / Inflation Fixed Inc Gross Median	1.6	10.9	5.9	5.2	4.7	Jul-07	
eV US TIPS / Inflation Fixed Inc Gross Rank	61	49	60	69	68	Jul-07	

SSgA TIPS-NL Characteristics vs. BBgBarc US TIPS TR									
10.00954	Portfolio	Index	Portfolio						
	Q4-20	Q4-20	Q3-20						
Fixed Income Characteristics									
Yield to Maturity	0.7	0.6	0.7						
Average Duration	3.4	7.6	5.2						
Average Quality	AAA	AAA	AAA						
Weighted Average Maturity	8.1	8.1	8.4						





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# MEKETA

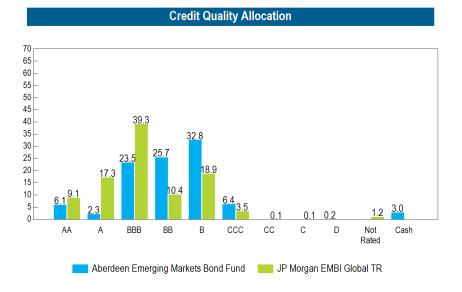
# Massachusetts Housing Finance Agency Retirement System

#### Aberdeen Emerging Markets Bond Fund | As of December 31, 2020

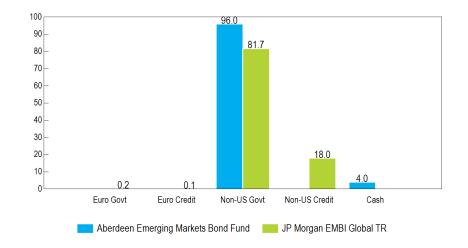
Account Information				
Account Name	Aberdeen Emerging Markets Bond Fund			
Account Structure	Commingled Fund			
Investment Style	Active			
Inception Date	12/01/16			
Account Type	Fixed			
Benchmark	JP Morgan EMBI Global Diversified			
Universe				

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date	
Aberdeen Emerging Markets Bond Fund	8.3	5.5	4.3		6.3	Dec-16	
JP Morgan EMBI Global Diversified	5.8	5.3	5.0	7.1	6.5	Dec-16	
JP Morgan GBI EM Global Diversified TR USD	9.6	2.7	3.0	6.7	6.3	Dec-16	

Aberdeen Emerging Markets Bond Fund Fixed Income Characteristics vs. JP Morgan EMBI Global TR							
vs. JP Morgan	I EMBI GIODAI IR						
Portfolio Index P							
	Q4-20	Q4-20	Q3-20				
Fixed Income Characteristics							
Yield to Maturity	5.2	3.6	5.9				
Average Duration	7.0	8.4	7.1				
Average Quality	BB	BBB	BB				
Weighted Average Maturity	11.1	13.1	11.4				

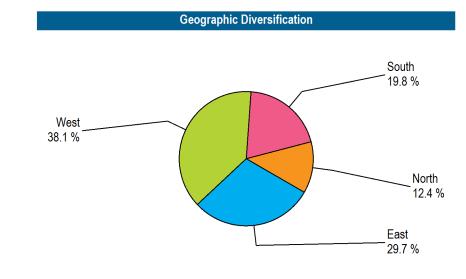


#### **Global Sector Allocation**

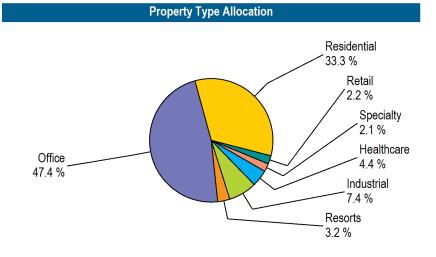


# MEKETA

#### Intercontinental U.S. REIF | As of December 31, 2020



North represents Midwest.

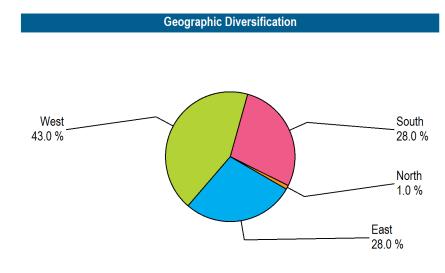


Account Information						
Account Name	Intercontinental U.S. REIF					
Account Structure	Other					
Investment Style	Active					
Inception Date	10/01/14					
Account Type	Real Estate					
Benchmark	NCREIF ODCE (net)					
Universe						

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date	
Intercontinental U.S. REIF	0.7	1.9	7.2	8.4	9.8	Oct-14	
NCREIF ODCE (net)	1.1	0.3	4.0	5.3	6.9	Oct-14	

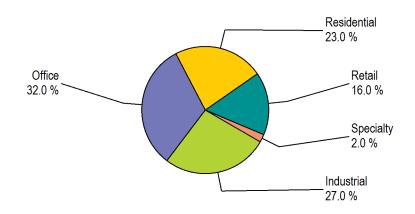
Note: As of December 31, 2020, the number of investments is 133.

#### AEW Core Property Trust | As of December 31, 2020



North represents Midwest.

Property Type Allocation



# Account Information Account Name AEW Core Property Trust Account Structure Commingled Fund Investment Style Active Inception Date 10/01/14 Account Type Real Estate Benchmark NCREIF ODCE (net)

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date	
AEW Core Property Trust	1.4	0.2	4.0	5.5	7.1	Oct-14	
NCREIF ODCE (net)	1.1	0.3	4.0	5.3	6.9	Oct-14	

Note: As of December 31, 2020, the number of investments is 83.

**MEKETA** 

Universe

# MEKETA

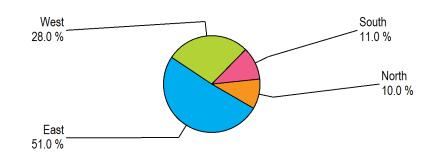
# Massachusetts Housing Finance Agency Retirement System

#### TA Associates Realty Fund X | As of December 31, 2020

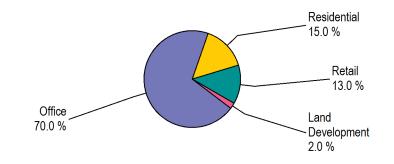
Account Information					
Account Name	TA Associates Realty Fund X				
Account Structure	Other				
Investment Style	Active				
Inception Date	4/01/13				
Account Type	Real Estate				
Benchmark	NCREIF ODCE (net)				
Universe					

	Non-Marketable Securities Overview							
	As of December 31, 2020							
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Real Estate	TA Associates Realty Fund X	2013	\$3,000,000	\$3,005,227	\$4,490,565	\$315,194	\$4,805,759	-\$5,227
	Total Account		\$3,000,000	\$3,005,227	\$4,490,565	\$315,194	\$4,805,759	-\$5,227





Property Type Allocation



#### Investment Strategy:

TA Associates Realty Fund X uses a value-added strategy to create a diversified portfolio of direct real estate investments. The strategy is anticipated to target under-leased office, industrial, multifamily, and retail assets that are expected to be well-located, functional buildings with strong net operating income (NOI) growth potential. Geographically, the fund will target over 35 U.S. markets with broad regional diversification targets of 25% to 40% in the west, 20% to 35% in the east, 20% to 30% in the south, and 10% to 20% in the Midwest. The fund will target 35% leverage, with a maximum of 50%. Most value-added improvements include redevelopment, repositioning, retenanting, or recapitalization.

Note: As of September 30, 2020, the number of investments is 11 and Net IRR is 12.70%.



#### Ascent Venture Partners - Fund III | As of December 31, 2020

Account Information				
Account Name	Ascent Venture Partners - Fund III			
Account Structure	Other			
Investment Style	Active			
Inception Date	6/01/01			
Account Type	Private Equity			
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)			
Universe				

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Ascent Venture Partners - Fund III	1999	\$1,500,000	\$1,395,000	\$1,721,907	\$12,073	\$1,733,980	\$105,000
	Total Account		\$1,500,000	\$1,395,000	\$1,721,907	\$12,073	\$1,733,980	\$105,000

#### Investment Strategy:

Ascent Venture Partners seeks to build private equity portfolios that are balanced with respect to industry (high and low technology ventures), and diverse with respects to company growth stage (from seed through buyout and re-capitalization). Ascent favors proven management teams and reasonable valuations. Ascent has shifted their focus to liquidating the remaining investments in the partnership.



#### Ascent Venture Partners - Fund IV | As of December 31, 2020

Account Information					
Account Name	Ascent Venture Partners - Fund IV				
Account Structure	Other				
Investment Style	Active				
Inception Date	3/19/04				
Account Type	Private Equity				
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)				
Universe					

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Ascent Venture Partners - Fund IV	2004	\$1,000,000	\$1,000,000	\$155,588	\$15,546	\$171,134	\$0
	Total Account		\$1,000,000	\$1,000,000	\$155,588	\$15,546	\$171,134	\$0

#### Investment Strategy:

Located in Boston, Ascent Venture Partners (formerly known as Pioneer Capital) was formed in 1999, after Landmark Partners purchased Pioneer's interest. Ascent focuses primarily on high growth companies in the information technology sector. Ascent is an active investor, typically taking a board seat in portfolio companies. As a result, Ascent has focused its investments in the Eastern United States.



#### Ascent Venture Partners - Fund V | As of December 31, 2020

Account Information					
Account Name	Ascent Venture Partners - Fund V				
Account Structure	Other				
Investment Style	Active				
Inception Date	9/22/08				
Account Type	Private Equity				
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)				
Universe					

	Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment	
Private Equity	Ascent Venture Partners - Fund V	2011	\$1,000,000	\$940,000	\$649,106	\$812,451	\$1,461,557	\$60,000	
	Total Account		\$1,000,000	\$940,000	\$649,106	\$812,451	\$1,461,557	\$60,000	

#### Investment Strategy:

Ascent Venture Partners V is an early stage venture capital fund focused on making investments within the technology products and services industry. Specific areas of interest include next generation software (open source and Software-as-a-Service), data management and analysis, automated computing, security and compliance, financial services, and applications associated with the convergence of remote devices. The GP is located in Boston and will invest in the eastern United States and Canada. The Fund will target companies that have pre-money valuations of \$3 to \$15 million and have the potential for a \$100 million exit value.



#### Ascent Venture Partners - Fund VI | As of December 31, 2020

Account Information						
Account Name	Ascent Venture Partners - Fund VI					
Account Structure	Other					
Investment Style	Active					
Inception Date	6/30/15					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Ascent Venture Partners - Fund VI	2015	\$1,500,000	\$1,245,000	\$0	\$1,423,159	\$1,423,159	\$255,000
	Total Account		\$1,500,000	\$1,245,000	\$0	\$1,423,159	\$1,423,159	\$255,000

#### Investment Strategy:

Ascent Venture Partners VI is a limited partnership that was formed on November 25, 2013 under the Delaware Uniform Limited Partnership Act and commenced operations on November 16, 2015. The purpose of the Partnership is to provide early stage financing to emerging technology companies.



#### Goldman Sachs PEP 2005 | As of December 31, 2020

Account Information					
Account Name	Goldman Sachs PEP 2005				
Account Structure	Other				
Investment Style	Active				
Inception Date	8/01/06				
Account Type	Private Equity				
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)				
Universe					

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Goldman Sachs PEP 2005	2006	\$3,000,000	\$2,931,387	\$3,510,523	\$257,192	\$3,767,715	\$68,613
	Total Account		\$3,000,000	\$2,931,387	\$3,510,523	\$257,192	\$3,767,715	\$68,613

#### Investment Strategy:

Goldman Sachs Private Equity Partners 2005 is a fund of funds formed to create a diversified portfolio of 18 to 25 partnerships. The Fund will invest opportunistically in order to commit to the "very best managers." The Fund expects to commit approximately \$40 million to each partnership. Previous funds have invested approximately 30% outside the U.S.

Note: As of September 30, 2020, the Net IRR is 4.59%.



#### HarbourVest Partners VIII | As of December 31, 2020

Account Information					
Account Name	HarbourVest Partners VIII				
Account Structure	Other				
Investment Style	Active				
Inception Date	12/20/07				
Account Type	Private Equity				
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)				
Universe					

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	HarbourVest Partners VIII	2006	\$2,500,000	\$2,323,678	\$3,733,220	\$424,759	\$4,157,979	\$176,322
	Total Account		\$2,500,000	\$2,323,678	\$3,733,220	\$424,759	\$4,157,979	\$176,322

#### Investment Strategy:

HarbourVest Partners, known as Hancock Venture Partners until 1997, was founded in 1982 to invest in private equity partnerships. The HarbourVest Partners VIII Investment Program consists of three separate fund of funds, each dedicated to distinct private equity strategies: buyout, venture capital and mezzanine debt partnerships. Each vehicle will invest primarily in newly raised funds, but will also invest a portion of assets in secondary interest.



#### HarbourVest Partners IX | As of December 31, 2020

Account Information						
Account Name	HarbourVest Partners IX					
Account Structure	Other					
Investment Style	Active					
Inception Date	10/22/13					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	HarbourVest Partners IX	2010	\$5,000,000	\$3,655,139	\$3,421,676	\$3,765,910	\$7,187,586	\$1,344,861
	Total Account		\$5,000,000	\$3,655,139	\$3,421,676	\$3,765,910	\$7,187,586	\$1,344,861

#### Investment Strategy:

HarbourVest Partners, known as Hancock Venture Partners until 1997, was founded in 1982 to invest in private equity partnerships. The HarbourVest Partners IX Fund consists of three separate fund of funds, each dedicated to distinct private equity strategies: buyout, venture capital, and mezzanine debt partnerships. Each vehicle will invest primarily in newly-raised funds, but will also invest a portion of assets in secondary interests.



#### HarbourVest X Buyout Fund | As of December 31, 2020

Account Information					
Account Name	HarbourVest X Buyout Fund				
Account Structure	Other				
Investment Style	Active				
Inception Date	4/06/16				
Account Type	Private Equity				
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)				
Universe					

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	HarbourVest X Buyout Fund	2016	\$6,500,000	\$2,980,366	\$391,457	\$4,071,189	\$4,462,646	\$3,519,634
	Total Account		\$6,500,000	\$2,980,366	\$391,457	\$4,071,189	\$4,462,646	\$3,519,634

#### Investment Strategy:

HarbourVest Partners, known as Hancock Venture Partners until 1997, was founded in 1982 to invest in private equity partnerships. The HarbourVest Partners X Fund consists of three separate fund of funds, each dedicated to distinct private equity strategies: buyout, venture capital, and mezzanine debt partnerships. Each vehicle will invest primarily in newly-raised funds, but will also invest a portion of assets in secondary interests.



#### HarbourVest Partners XI | As of December 31, 2020

Account Information						
Account Name	HarbourVest Partners XI					
Account Structure	Other					
Investment Style	Passive					
Inception Date	7/31/19					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	HarbourVest Partners XI	2019	\$5,000,000	\$1,320,334	\$54,539	\$1,469,581	\$1,524,120	\$3,679,666
	Total Account		\$5,000,000	\$1,320,334	\$54,539	\$1,469,581	\$1,524,120	\$3,679,666

#### Investment Strategy:

HarbourVest Partners, known as Hancock Venture Partners until 1997, was founded in 1982 to invest in private equity partnerships. The HarbourVest Partners XI Fund consists of three separate fund of funds, each dedicated to distinct private equity strategies: buyout, venture capital, and mezzanine debt partnerships. Each vehicle will invest primarily in newly-raised funds, but will also invest a portion of assets in secondary interests.



#### Constitution Capital Partners Ironsides III | As of December 31, 2020

Account Information						
Account Name	Constitution Capital Partners Ironsides III					
Account Structure	Other					
Investment Style	Active					
Inception Date	1/29/14					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Constitution Capital Partners Ironsides III	2014	\$5,000,000	\$3,554,585	\$119,753	\$6,452,541	\$6,572,294	\$1,445,415
	Total Account		\$5,000,000	\$3,554,585	\$119,753	\$6,452,541	\$6,572,294	\$1,445,415

#### Investment Strategy:



#### Constitution Capital Partners Ironsides IV | As of December 31, 2020

Account Information						
Account Name	Constitution Capital Partners Ironsides IV					
Account Structure	Other					
Investment Style	Active					
Inception Date	6/01/16					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Constitution Capital Partners Ironsides IV	2016	\$3,250,000	\$1,746,719	\$0	\$3,156,586	\$3,156,586	\$1,503,281
	Total Account		\$3,250,000	\$1,746,719	\$0	\$3,156,586	\$3,156,586	\$1,503,281

#### Investment Strategy:



#### Constitution Capital Partners Ironsides V | As of December 31, 2020

Account Information						
Account Name	Constitution Capital Partners Ironsides V					
Account Structure	Other					
Investment Style	Passive					
Inception Date	3/09/20					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Constitution Capital Partners Ironsides V	2020	\$2,500,000	\$372,978	\$2,289	\$384,962	\$387,251	\$2,127,022
	Total Account		\$2,500,000	\$372,978	\$2,289	\$384,962	\$387,251	\$2,127,022

#### Investment Strategy:



#### Constitution Capital Direct IV | As of December 31, 2020

Account Information					
Account Name	Constitution Capital Direct IV				
Account Structure	Other				
Investment Style	Active				
Inception Date	6/30/16				
Account Type	Private Equity				
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)				
Universe					

	Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment	
Private Equity	Constitution Capital Direct IV	2016	\$3,250,000	\$3,159,821	\$2,934,541	\$2,511,830	\$5,446,371	\$90,179	
	Total Account		\$3,250,000	\$3,159,821	\$2,934,541	\$2,511,830	\$5,446,371	\$90,179	

#### Investment Strategy:



#### Constitution Capital Direct V | As of December 31, 2020

Account Information					
Account Name	Constitution Capital Direct V				
Account Structure	Other				
Investment Style	Active				
Inception Date	3/27/19				
Account Type	Private Equity				
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)				
Universe					

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Constitution Capital Direct V	2019	\$2,500,000	\$2,785,319	\$768,783	\$2,853,992	\$3,622,775	-\$285,319
	Total Account		\$2,500,000	\$2,785,319	\$768,783	\$2,853,992	\$3,622,775	-\$285,319

#### Investment Strategy:

# Appendices

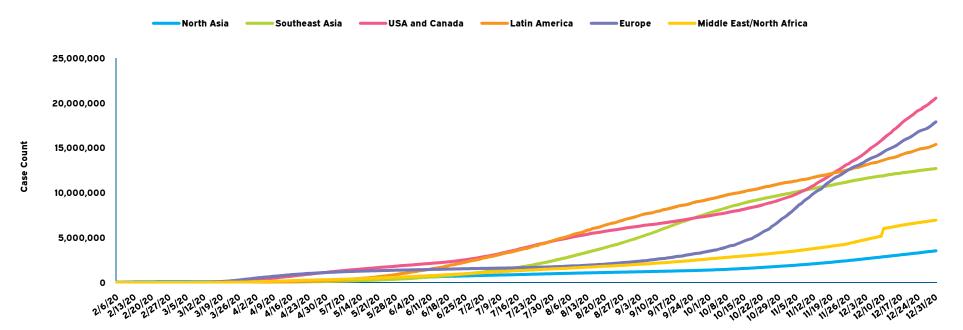
# MEKETA

# **Economic and Market Update**

# Data as of December 31, 2020







# Case Count by Select Region<sup>1,2</sup>

- Cases of COVID-19 continue to grow globally, with over 95 million reported cases across 191 countries.
- The US still has the highest number of infections, with Europe collectively following given the recent spike in cases there. India and Brazil also continue to struggle with the virus.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of December 31, 2020.

<sup>&</sup>lt;sup>2</sup> North Asia: China, Hong Kong, Japan, Russia, South Korea, and Taiwan. Southeast Asia: Singapore, India, Indonesia, Malaysia, Pakistan, Philippines, Thailand, Bangladesh, Sri Lanka, and Vietnam. Europe: Austria, Belarus, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Hungary, Italy, Netherlands, Norway, Poland, Romania, Spain, Sweden, United Kingdom, Switzerland, and Ukraine. Latin America: Chile, Brazil, Mexico, Argentina, Colombia, Peru, Venezuela, Ecuador, Panama, Paraguay, Costa Rica, Bolivia, Uruguay, El Salvador, Honduras, Cuba, Dominican Republic, Haiti, and Nicaragua. Middle East/North Africa: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Turkey, Tunisia, United Arab Emirates, and Yemen.

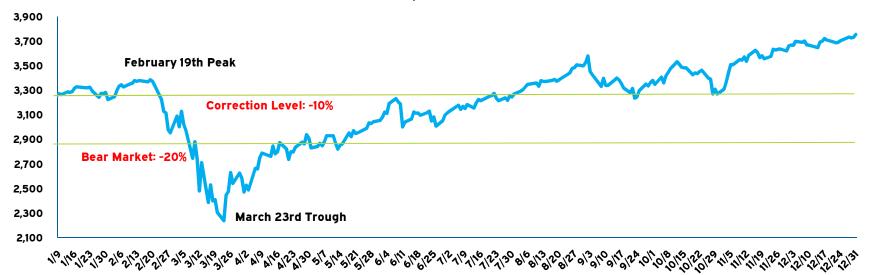
Indices	December	1 Year	3 Year	5 Year	10 Year
S&P 500	3.8%	18.4%	14.1%	15.2%	13.9%
MSCI EAFE	4.7%	7.8%	4.3%	7.4%	5.5%
MSCI Emerging Markets	7.4%	18.3%	6.2%	12.8%	3.6%
MSCI China	2.8%	29.5%	9.1%	15.1%	7.6%
Bloomberg Barclays Aggregate	0.1%	7.5%	5.3%	4.4%	3.8%
Bloomberg Barclays TIPS	1.2%	11.0%	5.9%	5.1%	3.8%
Bloomberg Barclays High Yield	1.9%	7.1%	6.2%	8.6%	6.8%
10-year US Treasury	-0.6%	10.6%	6.6%	4.1%	4.4%
30-year US Treasury	-1.5%	18.7%	10.9%	7.8%	8.3%

## Market Returns<sup>1</sup>

- In December, equities, particularly emerging markets, continued to do well given progress on a US fiscal package, the passing of the US presidential election, and positive developments regarding a COVID-19 vaccine. The yield curve steepened, weighing on Treasury prices.
- For the year, global risk assets recovered meaningfully from their declines to finish in strong positive territory, largely driven by record fiscal and monetary policy stimulus and much more certainty related to the containment of the virus.
- US equities and longer-dated Treasuries performed particularly well in 2020 given policy support. Equities in China likewise performed well as China contained the virus and consequently started the reopening of their economy earlier than others. European and Japanese equity markets lagged behind the US and emerging markets.

<sup>&</sup>lt;sup>1</sup> Source: InvestorForce and Bloomberg. Data is as of December 31, 2020.





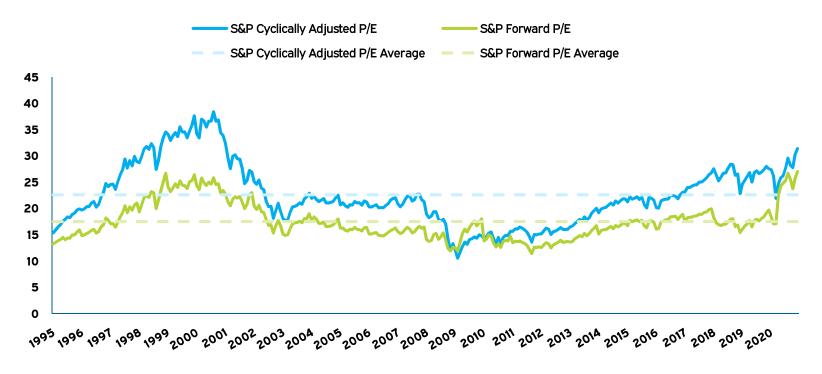
#### S&P 500 Surpasses Prior Peak<sup>1</sup>

- Given the anticipated economic disruption surrounding the pandemic, US stocks declined from a February peak into bear market (-20%) territory at the fastest pace in history.
- From the February 19 peak, the S&P 500 plunged 34% in just 24 trading days.
- After quickly rebounding from its lows and finishing above pre-COVID levels by August, the market appreciated 3.8% in December, bringing its year-to-date gain to 18.4%.
- A key risk going forward remains that a spike in COVID-19 cases could slow, or reverse, reopening plans. The distribution process of the vaccine and people's willingness to take it will be important as well.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of December 31, 2020.



## S&P Equity Valuations<sup>1</sup>

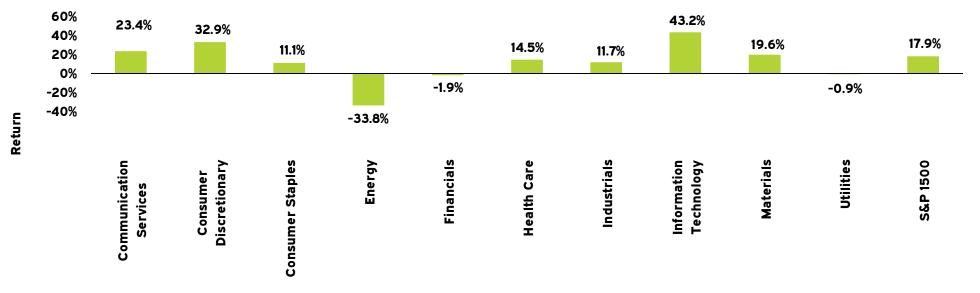


- With positive developments regarding COVID vaccines, valuations based on both forward- and backwardlooking earnings rose to levels not seen since 2001.
- Many are looking to expected improvements in earnings growth, as the US economy continues to reopen, to justify market levels, with historically low interest rates also providing support.

MEKETA INVESTMENT GROUP

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of December 31, 2020.





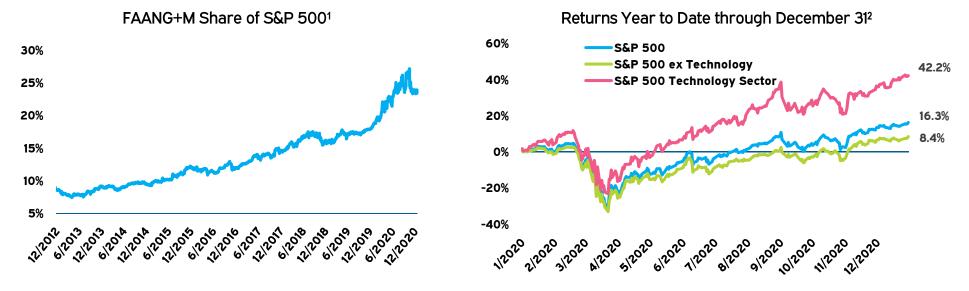
### 2020 Sector Returns<sup>1</sup>

- With the recent development of mutiple vaccines, there have been signs of a rotation into more cyclical stocks, but stay-at-home focused areas performed best in 2020.
- Information technology was the best performing sector, with a narrow group of companies including Amazon and Netflix driving market gains. The outperformance was due to consumers moving to online purchases and streaming services.
- The consumer discretionary sector also experienced gains as the economy reopened, people returned to work, and stimulus checks were spent.
- Energy was the sector with the greatest 2020 decline, triggered by the plunge in oil prices. Financials also struggled in this slow growth environment with demand for loans down and low interest rates weighing on loan revenue.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of December 31, 2020.



**Economic and Market Update** 



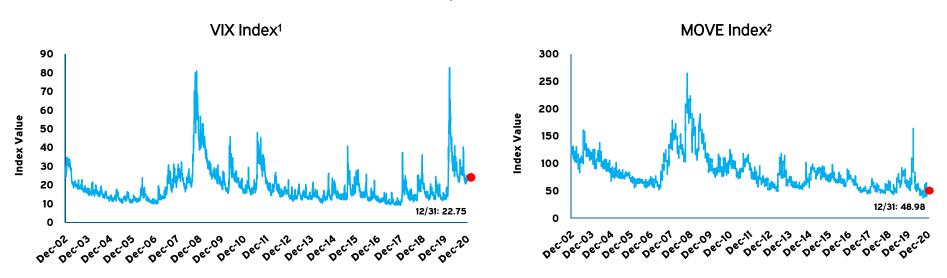
## Technology has led the way in the Rebound

- The market recovery was largely been driven by a few technology companies that benefited from the stay-at-home environment related to the virus.
- In 2020, the S&P 500 technology sector returned +42.2%, compared to +8.4% for the S&P 500 ex-technology index, with Amazon (+76%), Netflix (+67%), and Apple (+81%) posting especially strong results.
- The outsized relative returns of these companies caused them to comprise an increasingly large portion (23%) of the S&P 500, though this trend reversed in the finals months of 2020.

<sup>&</sup>lt;sup>1</sup> FAANG+M = Facebook, Amazon, Apple, Netflix, Google (Alphabet), and Microsoft. The percentage represents the aggregate market capitalization of the 6 companies compared to the total market capitalization of the S&P 500 as of December 31, 2020.

 $<sup>^2</sup>$  Each data point represents the price change relative to the 12/31/2019 starting value.





#### Volatility has Declined

- Expectations of short-term equity volatility, as measured by the VIX index, finished the year much lower than the record levels experienced in March.
- At the March peak, the VIX reached 82.7, surpassing the pinnacle of volatility during the GFC, thus showing the magnitude of the crisis and of investor fear.
- Expectations of volatility within fixed income, as represented by the MOVE index, also spiked earlier in 2020, then dropped to historic lows, helped by the broad level of monetary support and forward guidance by the Fed. Volatility expectations in fixed income increased slightly in December, with the uncertainty around the Georgia Senate race looming in early January.

<sup>&</sup>lt;sup>1</sup> Source: Chicago Board of Exchange. Data is as of December 31, 2020.

<sup>&</sup>lt;sup>2</sup> Source: Bloomberg. Data is as of December 31, 2020.



# Key Elements of the Next Round of US Fiscal Stimulus

	Joint Proposal				
Status	Final (voted on by house, senate and signed by President)				
Direct Payments	Up to \$600 for individuals or \$1,200 for married couples and up to \$600 for each qualifying child.				
Enhanced Unemployment	\$300 per week until mid-March				
Vaccines, testing and tracing	\$69 billion				
School aid	\$82 billion				
Transportation	\$45 billion				
Food / Agriculture aid	\$26 billion				
Rental Assistance	\$25 billion				
Rental Assistance	Extends the eviction moratorium now in effect until Jan. 31.				
State and Local Aid/Liability Protections	Excluded				
Small Business Relief	\$325 billion (\$284 billion in paycheck protection)				
Total	\$900 billion				

- Another round of fiscal stimulus totaling ~\$900 billion, representing the second largest package in history, was finalized in late December.
- It includes direct payments to individuals, enhanced unemployment benefits, small business support, and a variety of other allocations.
- The relief was much needed for the many who lost their jobs and for businesses, particularly services like restaurants, trying to survive.
- A further \$1.9 trillion in stimulus has been outlined by the incoming Biden Administration. The package includes additional direct payments, enhanced unemployment benefits, a \$15 dollar minimum wage, extending further the eviction moratorium, and state and local aid.

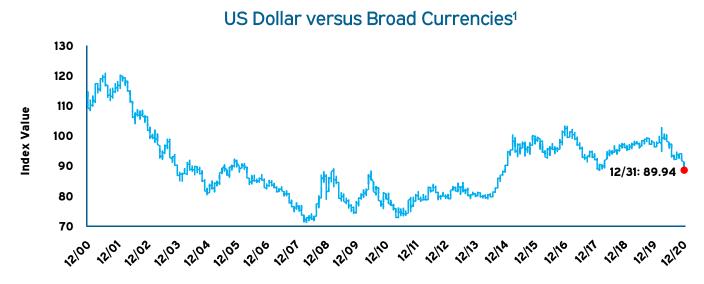


# Election Results Lead to a Narrowly Democratic Majority

	Result Change from Previous		Potential Implications					
Presidency	Presidency • Democratic victory.		Donald Trump, Republican, left office January 20th.		•	<ul> <li>Day one executive actions announced to set new 12 person COVID-19 task force, rejoin the WHO, repeal Muslim travel ban, reinstate DACA program, and rejoin Paris climate accord.</li> </ul>		
					•	Biden listed other priorities on the campaign trail that include addressing systemic racism, climate change, and expanding protections for union employees.		
					•	Additional plans include bills for infrastructure, trade, foreign policy, and tax increases, that all seem more likely given the results of the recent senate elections in Georgia.		
Senate	•		•	Biden's agenda is particularly impacted by a united Senate and Congress in a few key areas, namely the next round of fiscal stimulus (greater amount), cabinet appointments (more liberal), tax reform				
			President Harris casting the tiebreaking vote.		(more rollbacks of Trump cuts), and infrastructure spending (more green, higher in amount).			
House	•	Democratic majority maintained. As of January 13 <sup>®</sup> 222 seats for Democrats, 211 seats for Republicans, and 2 undecided.	•	Heading into the November 3, 2020, election, Democrats held a 232-197 advantage in the US House. Libertarians held one seat, and five seats were vacant.	•	While the Democrats maintained their majority and therefore control of the agenda, Republicans gained ground, setting up a battle for the midterms in 2022. Nancy Pelosi remains Speaker of the House.		

- After much turmoil, including a storming of the US Capitol, Joe Biden was confirmed by Congress as the winner of the presidential election.
- Two run-off elections in Georgia took place in January, with Democrats winning both seats and taking a narrow Senate majority (Vice President Kamala Harris will cast the deciding vote).
- The Democratic majority sets the stage for a decidedly more liberal agenda with a higher likelihood of a large fiscal stimulus package in the coming months.



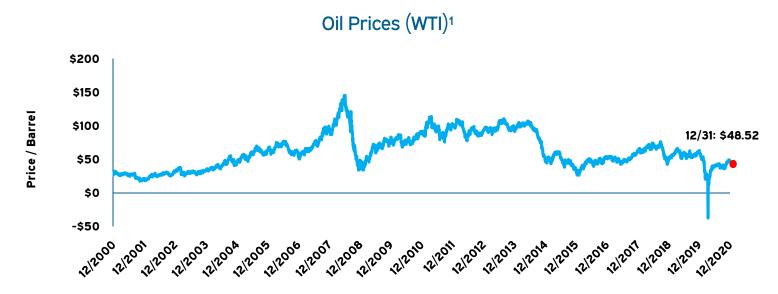


- As the crisis grew into a pandemic, investors' preferences shifted to holding US dollars and highly liquid, short-term securities like US Treasury bills.
- Recently we have seen some weakness in the dollar as the US struggles with containing the virus and investors seek higher growth non-US assets, particularly in emerging markets. This has created pressures on already stressed export-focused countries.
- Going forward, the dollar's safe haven quality and the relatively higher rates in the US could provide support.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Represents the DXY Index. Data is as of December 31, 2020.







- While global oil prices rallied from April lows, they remain below their pre-pandemic level.
- In a surprise early January announcement, Saudi Arabia agreed to cut oil production by 1 million barrels/day in February and March. Other OPEC+ countries will continue production at current levels, with the exception of Russia and Kazakhstan, which will slightly increase output.
- Looking forward, global economies slowly reopening in 2021, a weaker US dollar, and production cuts should be supportive for prices. However, oil could experience renewed downward pressure in the short-term, with the increasing virus spread potentially weighing on demand.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Represents WTI first available futures contract. Data is as of December 31, 2020.



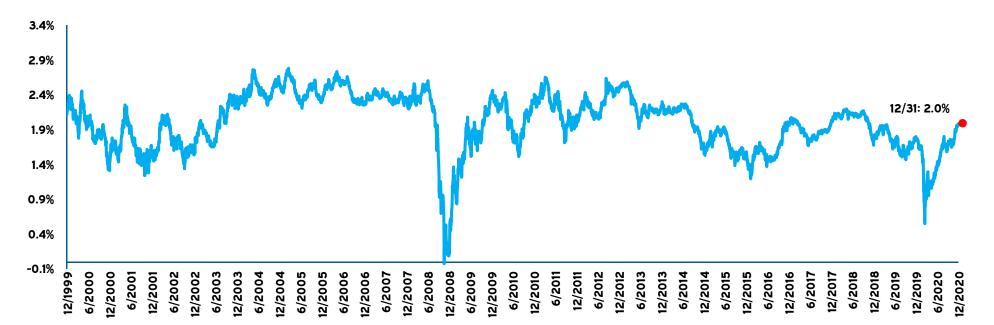


## US Yield Curve Declines<sup>1</sup>

- The US Treasury yield curve declined materially during 2020, driven by safe-haven demand, Federal Reserve polices (policy rate cuts and the quantitative easing program), and weak US economic fundamentals.
- Over the last few months, the curve steepened on gradual signs of economic improvement, vaccine developments, and expectations for longer-dated Treasury issuance to support additional fiscal stimulus in the coming months.
- Higher yields relative to other countries and the Fed potentially extending the duration of their purchases could counterbalance steepening trends.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of December 31, 2020.



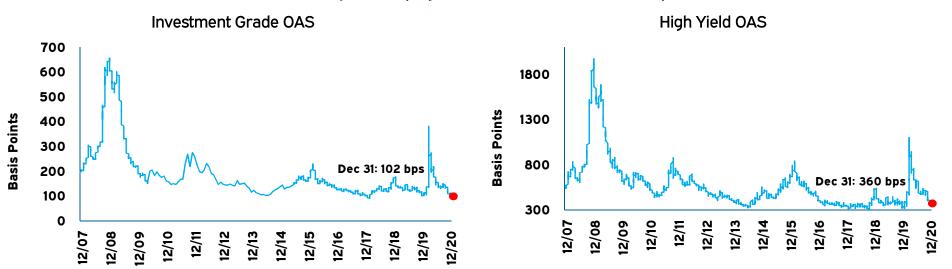


## 10-Year Breakeven Inflation<sup>1</sup>

- Inflation breakeven rates initially declined sharply, due to a combination of lower growth and inflation expectations, as well as liquidity dynamics in TIPS during the height of market volatility.
- Liquidity eventually improved and breakeven rates increased as deflationary concerns moderated. Recently, inflation expectations continued to increase given the vaccine announcements.
- Looking forward, the track of economic growth and the inflationary effects of the unprecedented US fiscal response will be key issues.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of December 31, 2020.





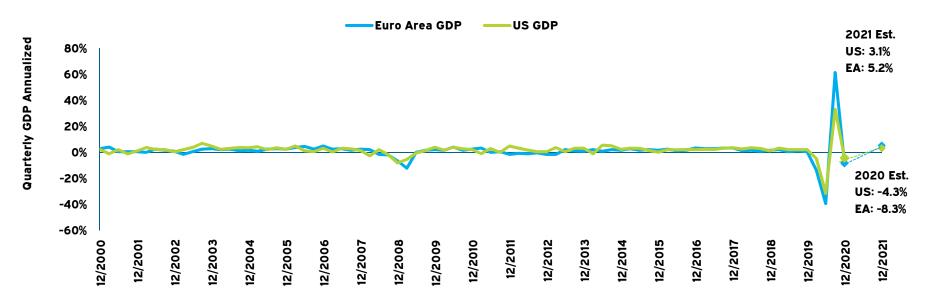
## Credit Spreads (High Yield & Investment Grade)<sup>1</sup>

- Credit spreads (the spread above a comparable Treasury) for investment grade and high yield corporate debt widened sharply at the start of the pandemic as investors sought safety.
- Investment grade bonds held up better than high yield bonds. The Federal Reserve's corporate debt purchase program for investment grade and certain high yield securities recently downgraded from investment grade, was well received by investors. The policy support and the search for yield in the low rate environment led to a decline in spreads to below long-term averages.
- Overall, corporate debt issuance has more than doubled since 2008, which magnifies the impact of deterioration in the corporate debt market. This is particularly true in the energy sector, which represents over 10% of the high yield bond market.

<sup>&</sup>lt;sup>1</sup> Source: Federal Reserve Bank of St. Louis Economic Research. Data is as of December 31, 2020.



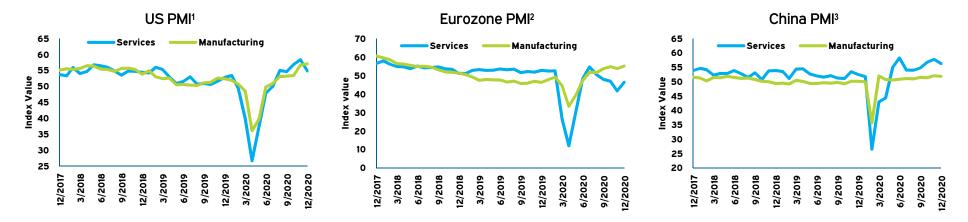




- The global economy faced major recessionary pressures this year, but optimism remains for improvements in 2021, as economies are expected to gradually reopen despite the recent spike in virus cases.
- Historic declines in growth in the US and Europe during the second quarter were followed by record increases in the third quarter, due to pent up demand from the lockdown measures earlier in the year.
- Recently, GDPNow from the Atlanta Fed estimated that fourth quarter US GDP growth could be 7.4% (QoQ annualized), down from original estimates. Full year US GDP growth is forecasted to decline by 4.3% by the IMF.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg, Atlanta FED and IMF. Q3 2020 data represents the second estimate of GDP for the Euro Area and United States. Euro Area figures annualized by Meketa. Projections via October 2020 IMF World Economic Outlook and represent annual numbers.





### **Global PMIs**

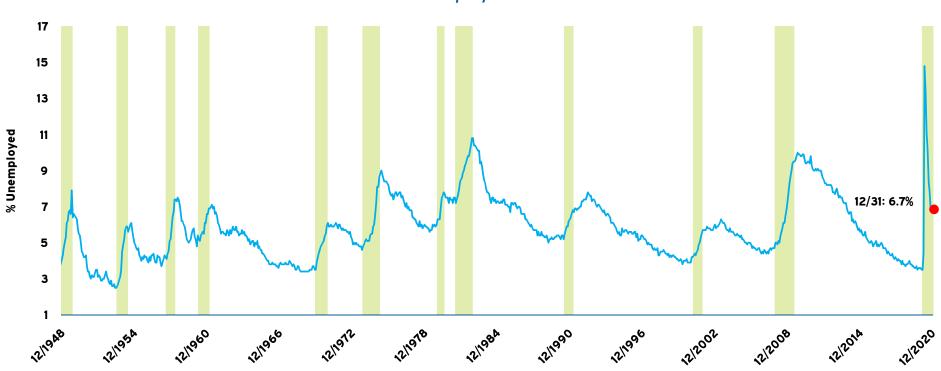
- Purchasing Managers Indices (PMI), based on surveys of private sector companies, initially collapsed across the world to record lows, as closed economies depressed output, new orders, production, and employment.
- Readings below 50 represent contractions across underlying components are a leading indicator of economic activity, including the future paths of GDP, employment, and industrial production.
- The services sector was particularly hard hit by stay-at-home restrictions in many places.
- As the Chinese economy reopened, their PMIs, particularly in the service sector, recovered materially. In the US, the indices have also improved from their lows to above contraction levels. In Europe, manufacturing has largely recovered, but services continue to show weakness due to increased lockdowns.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. US Markit Services and Manufacturing PMI. Data is as of December 2020.

<sup>&</sup>lt;sup>2</sup> Source: Bloomberg. Eurozone Markit Services and Manufacturing PMI. Data is as of December 2020.

 $<sup>^3</sup>$  Source: Bloomberg. Caixin Services and Manufacturing PMI. Data is as of December 2020.



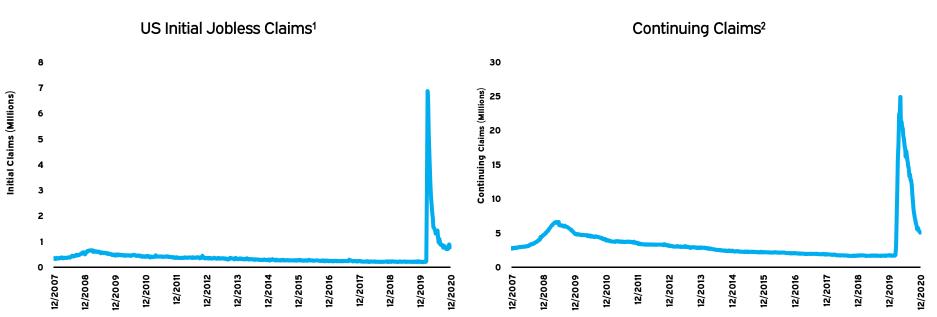


US Unemployment Rate<sup>1</sup>

- In December, the unemployment rate continued its decline from the recent April 14.7% peak, falling to 6.7%.
- Despite the improvement, unemployment levels remain well above pre-virus readings and are likely higher than reported, as some workers appear misclassified. According to the Bureau of Labor Statistics, absent the misclassification issue, the December unemployment rate would be higher by 0.6%.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of December 31, 2020. Bars represent recessions.

**MEKETA** 



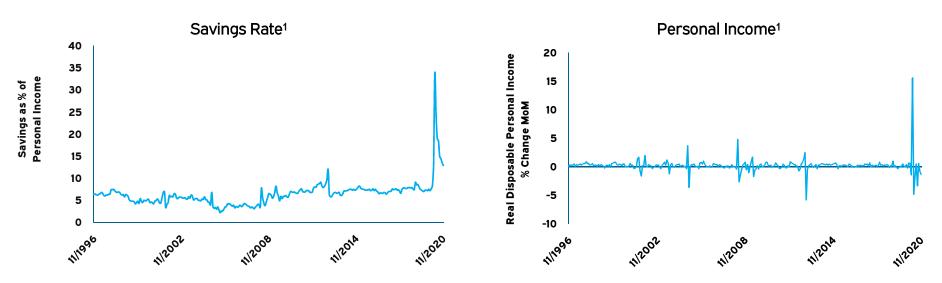
### **US Jobless Claims**

- Over the last 41 weeks, roughly 73 million people filed for initial unemployment. This level is well over three times the 22 million jobs added since the GFC, highlighting the unprecedented impact of the virus.
- Despite the continued decline in initial jobless claims to below one million per week, levels remain many multiples above the worst reading during the Global Financial Crisis.
- Continuing jobless claims (i.e., those currently receiving benefits) have also declined from record levels, but remain elevated at 5.1 million.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. First reading of seasonally adjusted initial jobless claims. Data is as of December 25, 2020.

 $<sup>^2</sup>$  Source: Bloomberg. US Continuing Jobless Claims SA. Data is as of December 25, 2020.



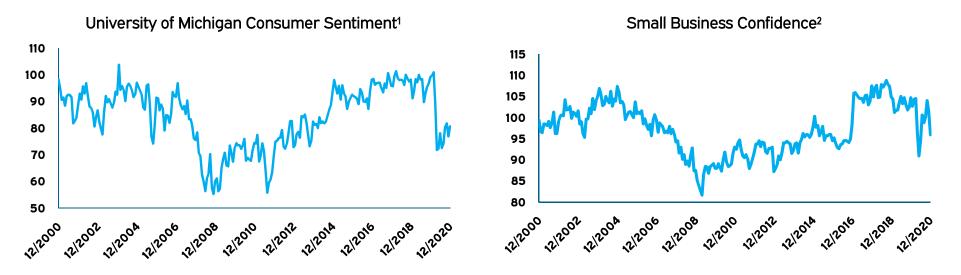


#### Savings and Spending

- Fiscal programs including stimulus checks, enhanced unemployment benefits, and loans to small businesses through the Paycheck Protection Program (PPP) have largely supported income levels through the shutdown. The growth in income declined dramatically as fiscal support waned.
- Despite the income support, the savings rate increased due to the decline in consumer spending, driven by the initial lock-down of the economy, and by uncertainties related to the future of the job market and stimulus programs.
- More recently, the savings rate declined from its peak as spending increased with the economy slowly reopening. Going forward, questions remain about how consumers will make use of the recently announced stimulus programs.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Latest data is as of November 2020.





## **Sentiment Indicators**

- The attitudes of businesses and consumers are useful indicators of future economic activity.
- Consumer spending comprises close to 70% of US GDP, making the attitudes of consumers an important driver of economic growth. Additionally, small businesses generate around half of US GDP, making sentiment in that segment important.
- Sentiment indicators have shown improvements as the economy re-opens, but increasing cases and greater restrictions could weigh on short-term sentiment.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. University of Michigan Consumer Sentiment Index. Data is as of December 31, 2020.

<sup>&</sup>lt;sup>2</sup> Source: Bloomberg. NFIB Small Business Optimism Index. Latest data is as of December 31, 2020.



Corporate Update

Meketa Investment Group Corporate Update

## **Corporate Update**

- Staff of 209, including 139 investment professionals and 41 CFA Charterholders
- 219 clients, with over 300 funds throughout the United States
- Significant investment in staff and resources
- Offices in Boston, Chicago, Miami, New York, Portland (OR), San Diego, and London

Hedge Funds

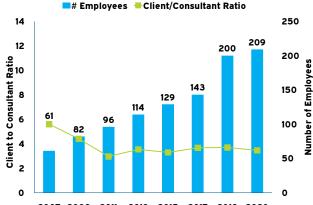
Meketa Investment Group is proud to work for over 5 million American families everyday.

• We advise on \$1.5 trillion in client assets

MEKETA

- Over \$125 billion in assets committed to alternative investments
  - Private Equity
    - Equity Infrastructure

Real Estate



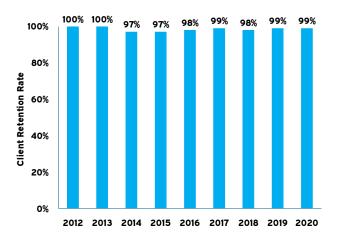
Client to Consultant Ratio<sup>1</sup>

2007 2009 2011 2013 2015 2017 2019 2020

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

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

Natural Resources Commodities



#### **Client Retention Rate<sup>2</sup>**



Domestic	International	Private	Real	Fixed	Hedge
Equities	Equities	Equity	Assets	Income	Funds
Passive Enhanced Index Large Cap Midcap Small Cap Microcap 130/30	<ul> <li>Large Cap Developed</li> <li>Small Cap Developed</li> <li>Emerging Markets</li> <li>Frontier Markets</li> </ul>	<ul> <li>Buyouts</li> <li>Venture Capital</li> <li>Private Debt</li> <li>Special Situations</li> <li>Secondaries</li> <li>Fund of Funds</li> </ul>	<ul> <li>Public REITs</li> <li>Core Real Estate</li> <li>Value Added Real Estate</li> <li>Opportunistic Real Estate</li> <li>Infrastructure</li> <li>Timber</li> <li>Natural Resources</li> <li>Commodities</li> </ul>	<ul> <li>Short-Term</li> <li>Core</li> <li>Core Plus</li> <li>TIPS</li> <li>High Yield</li> <li>Bank Loans</li> <li>Distressed</li> <li>Global</li> <li>Emerging Markets</li> </ul>	<ul> <li>Long/Short Equity</li> <li>Event Driven</li> <li>Relative Value</li> <li>Fixed Income Arbitrage</li> <li>Multi Strategy</li> <li>Market Neutra</li> <li>Global Macro</li> <li>Fund of Funds</li> <li>Portable Alph</li> </ul>



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

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

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

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

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

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

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

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

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



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

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

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

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%.

5% (discount) = 5 (yrs. to maturity)

1% pro rata, plus 5.26% (current yield)

6.26% (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.

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**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.