MEKETA | 45
CELEBRATING A MILESTONE | YEARS

San Joaquin County Employees' Retirement Association (SJCERA)

Q1 2023

Quarterly Report

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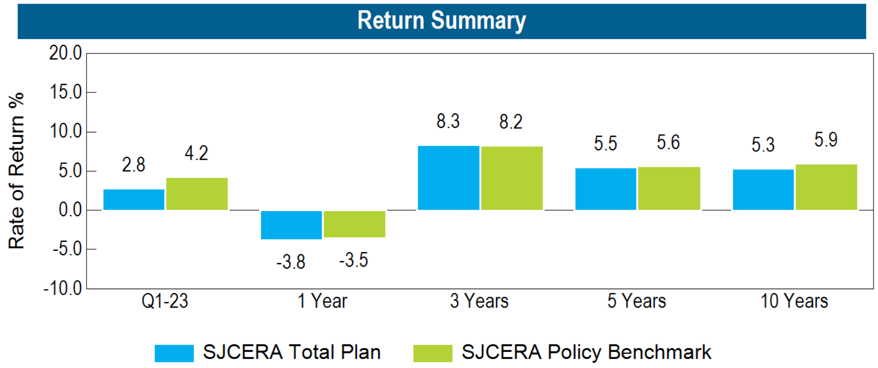
Introduction

Introduction

The SJCERA Total Portfolio had an aggregate value of $3.94 billion as of March 31, 2023. During the latest quarter, the Total Portfolio increased in value by $140.7 million, and over the one-year period, the Total Portfolio decreased by $93.3 million. The movements over the quarter and one-year periods were primarily driven by investment returns. Last year central banks aggressively tightened policy given inflation levels. It is likely policy will peak this year given slowing inflation and signs of stress in the banking sector. Questions remain about the ultimate peak of interest rates across economies and whether we will have some policy easing later this year. China's central bank is one notable exception where policy remains supportive (lower reserve requirements and bank securitization of non-performing loans). Looking ahead the risk remains for a policy error as central bank's attempt to balance bringing down inflation, maintaining financial stability, and growth.

Recent Investment Performance

On a net-of-fees basis, the Total Portfolio outperformed the policy benchmark over the 3-year trailing period by 0.1%. However, it lagged the benchmark over the quarter, 1-, 5-, 10-, 15-, 20-, and 25-year periods by (1.4%), (0.3%), (0.1%), (0.6%), (0.8%), (0.7%), and (0.2%), respectively. The Total portfolio outperformed the Median Public Fund over the trailing 1-year period by 0.4%. Over the quarter, 3-, 5-, 10-, 15-, 20- and 25-year periods, the portfolio trailed the Median Public Fund by (0.9%), (2.8%), (0.8%), (1.9%), (1.8%), (1.4%), and (0.9%).



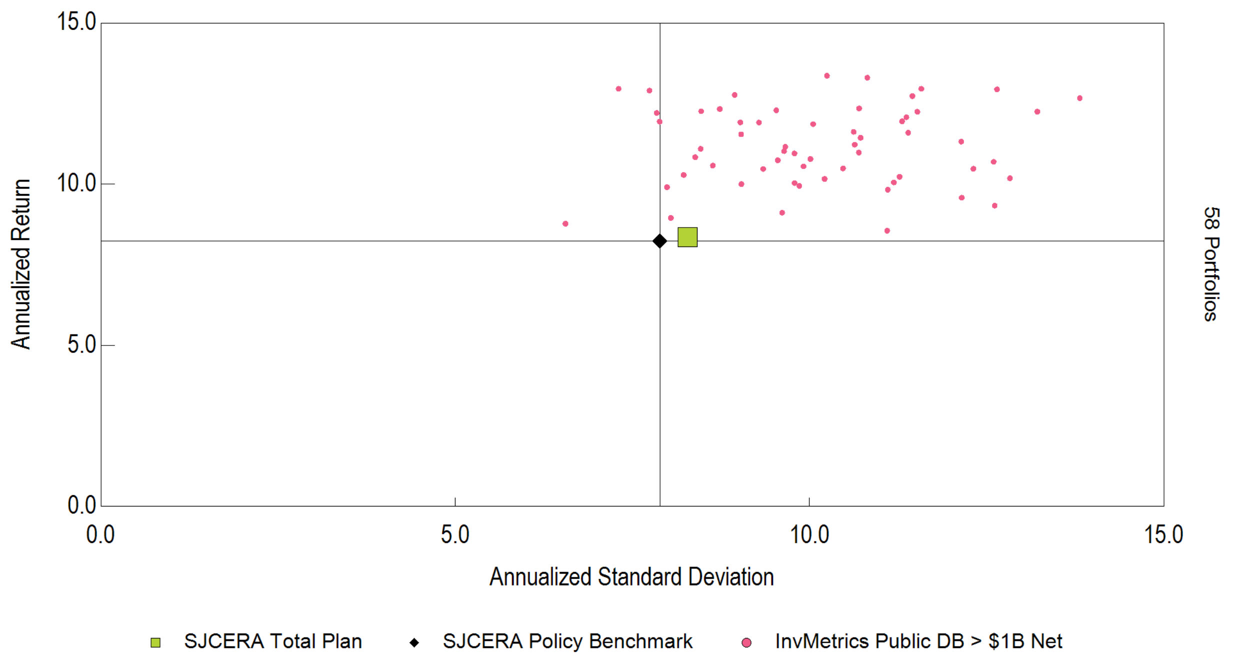
Summary of Cash Flows	First Quarter	One Year
Beginning Market Value	$3,798,476,373	$4,032,449,191
Net Cash Flow	$36,246,512	$56,212,277
Net Investment Change	$104,472,999	-$149,465,584
Ending Market Value	$3,939,195,885	$3,939,195,885

	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs	25 Yrs
SJCERA Total Plan - Net	**2.8**	**-3.8**	**8.3**	**5.5**	**5.3**	**4.3**	**6.1**	**5.4**
SJCERA Total Plan - Gross	**2.8**	**-3.4**	**8.9**	**6.1**	**6.1**	**5.0**	**6.8**	**5.9**
SJCERA Policy Benchmark[2]	*4.2*	*-3.5*	*8.2*	*5.6*	*5.9*	*5.1*	*6.8*	*5.6*
Over/Under (vs. Net)	-1.4	-0.3	0.1	-0.1	-0.6	-0.8	-0.7	-0.2
InvMetrics Public DB > $1B Net Median[1]	*3.7*	*-4.2*	*11.1*	*6.3*	*7.2*	*6.1*	*7.5*	*6.3*

[1] Investment Metrics Total Fund Public Universe >$1 Billion, net of fees.
[2] Policy Benchmark composition is listed in the Appendix.

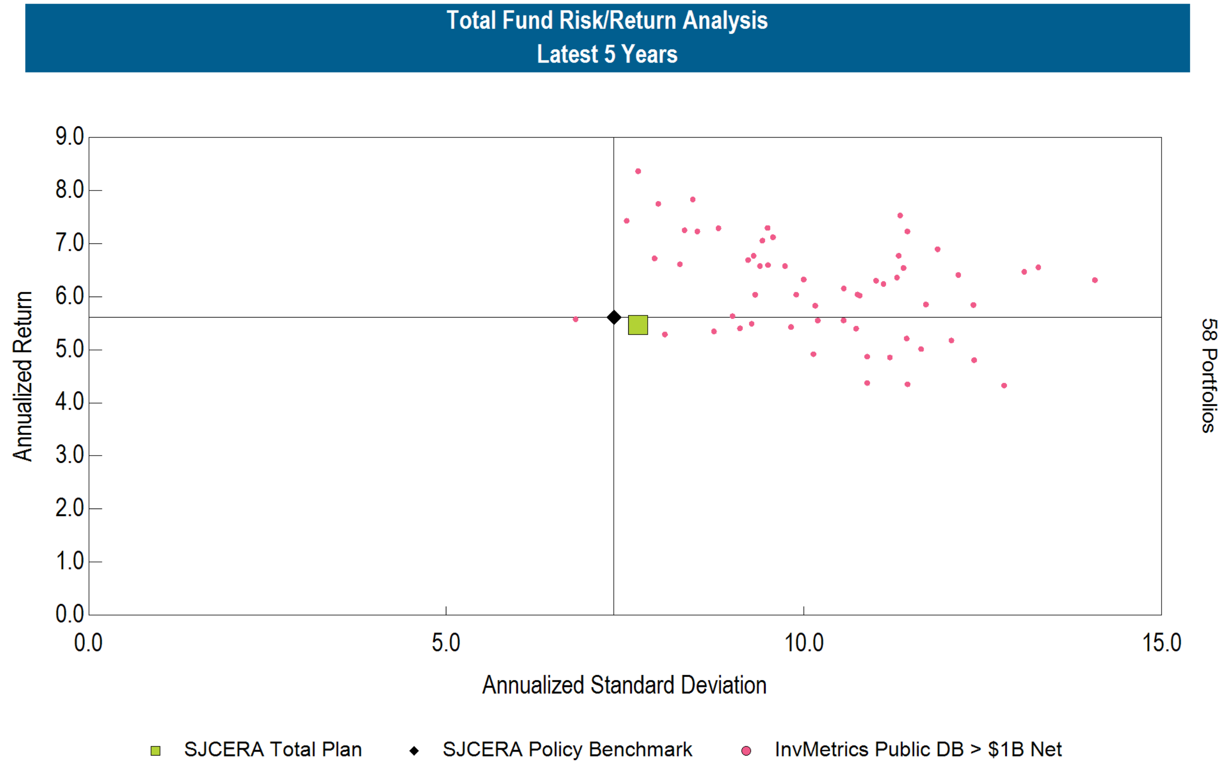
Risk-Adjusted Return vs Peers	1 Yr	3 Yrs	5 Yrs	10 Yrs
SJCERA Total Plan - Net	**-3.8**	**8.3**	**5.5**	**5.3**
Risk Adjusted Median	-3.7	9.2	4.7	5.4
Excess Return	-0.1	-0.9	0.8	-0.1

Total Fund Risk/Return Analysis
Latest 3 Years



	Anlzd Return[2]	Anlzd Standard Deviation	Sharpe Ratio
SJCERA Total Plan	8.34%	8.28%	0.90
SJCERA Policy Benchmark	8.23%	7.89%	0.93
InvMetrics Public DB > $1B Net Median[3]	11.13%	10.03%	1.01

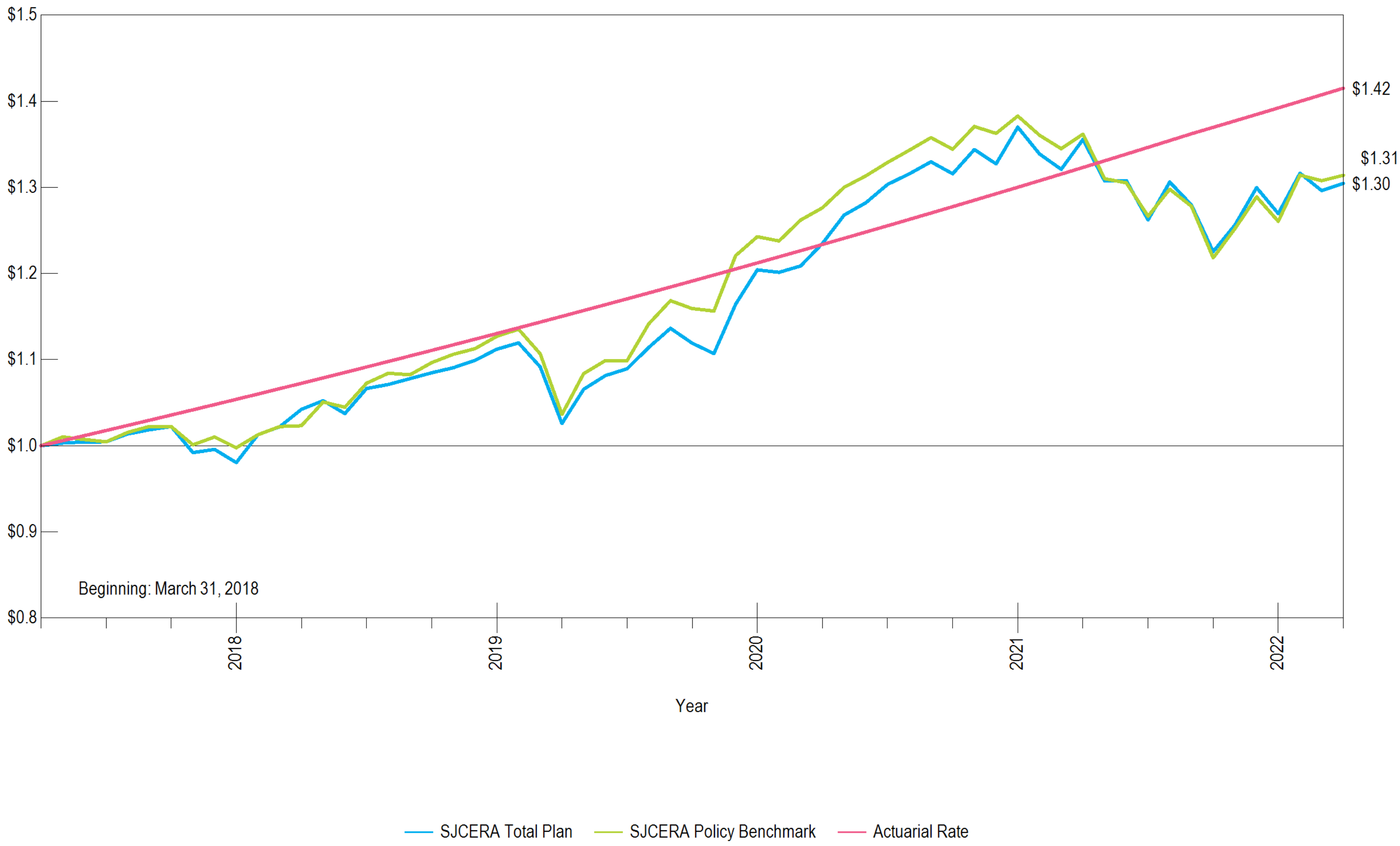
[1] Returns are net of fees.
[2] Computed as annualized return less the risk free rate, divided by the annualized standard deviation.
[3] Investment Metrics Total Fund Public Universe >$1 Billion, net of fees.



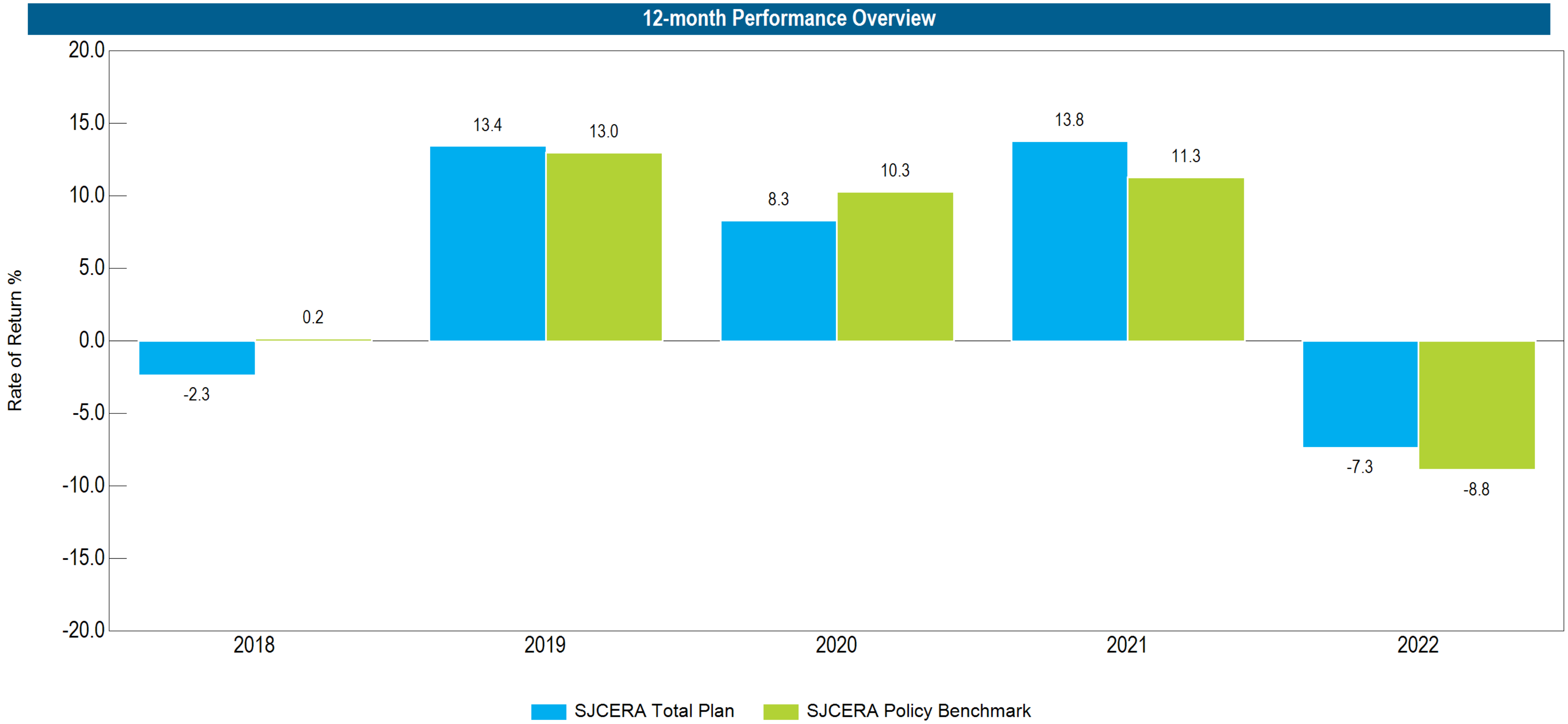
	Anlzd Return[2]	Anlzd Standard Deviation	Sharpe Ratio
SJCERA Total Plan	5.46%	7.68%	0.54
SJCERA Policy Benchmark	5.61%	7.34%	0.58
InvMetrics Public DB > $1B Net Median[3]	6.27%	10.17%	0.46

[1] Returns are net of fees.
[2] Computed as annualized return less the risk free rate, divided by the annualized standard deviation.
[3] Investment Metrics Total Fund Public Universe >$1 Billion, net of fees.

Growth of a Dollar - Latest 5 Years



[1] 6.75% Acturial Rate from 9/1/2022 to present. 7.0% Actuarial Rate from 1/1/2020 to 8/31/2022. 7.25% Actuarial Rate from 1/1/2018 to 12/31/2019. 7.4% Actuarial Rate from 8/1/2016-12/31/2017. 7.5% Actuarial Rate from 1/1/2012-7/31/2016; previously 8.0%

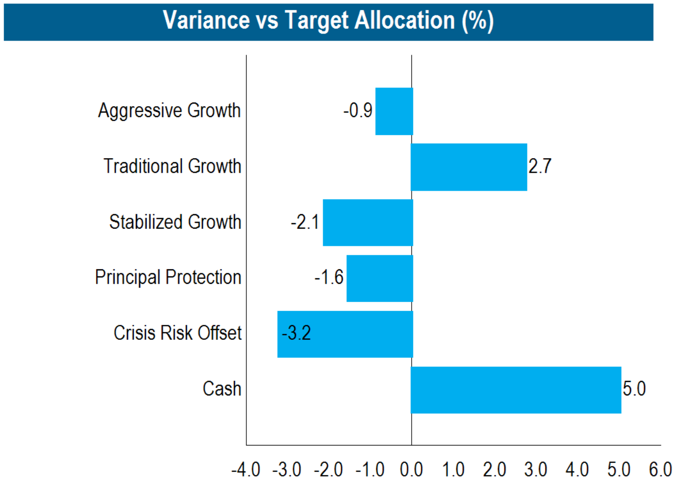


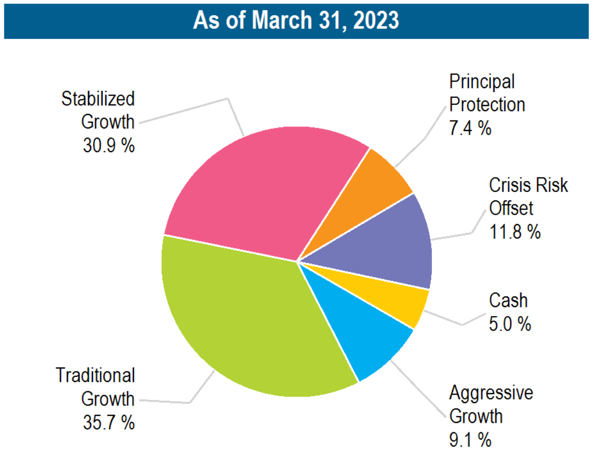
[1] 12-month absolute results have been positive over three of the last five calendar year periods, net of fees. The SJCERA Total Portfolio outperformed the policy target benchmark during three of these five periods, net of fees.

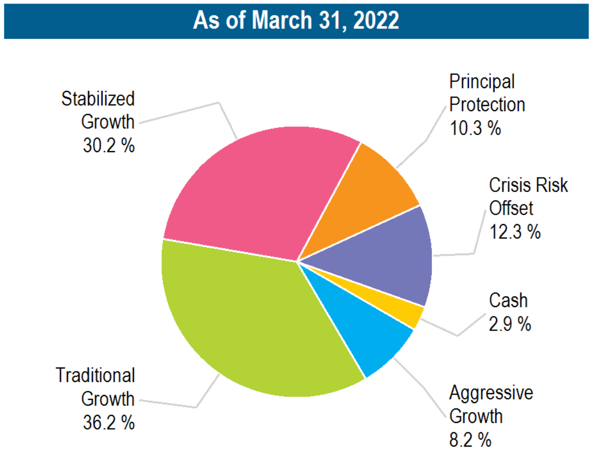
Portfolio Review

Asset Allocation vs. Target	Current	Current	Policy	Difference*
Broad Growth	**$2,984,405,664**	**75.8%**	**76.0%**	**-0.2%**
Aggressive Growth	$360,387,593	9.1%	10.0%	-0.9%
Traditional Growth	$1,407,857,630	35.7%	33.0%	2.7%
Stabilized Growth	$1,216,160,441	30.9%	33.0%	-2.1%
Diversified Growth	**$757,267,468**	**19.2%**	**24.0%**	**-4.8%**
Principal Protection	$293,110,614	7.4%	9.0%	-1.6%
Crisis Risk Offset	$464,156,855	11.8%	15.0%	-3.2%
Cash[2]	**$197,522,752**	**5.0%**	**0.0%**	**5.0%**
Cash	$197,522,752	5.0%	0.0%	5.0%
Total[1]	**$3,939,195,885**	**100.0%**	**100.0%**	

*Difference between Policy and Current Allocation







[1] Market values may not add up due to rounding.
[2] Cash asset allocation includes Parametric Overlay.

Asset Class Performance Net-of-Fees | As of March 31, 2023

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
SJCERA Total Plan	**3,939,195,885**	**100.0**	**2.8**	**-3.8**	**8.3**	**5.5**	**5.3**
SJCERA Policy Benchmark[2]			*4.2*	*-3.5*	*8.2*	*5.6*	*5.9*
Broad Growth	**2,984,405,664**	**75.8**	**3.4**	**-4.3**	**11.4**	**6.5**	**6.4**
Aggressive Growth Lag	**360,387,593**	**9.1**	**0.2**	**6.3**	**18.9**	**14.7**	**12.4**
Aggressive Growth Blend			*2.6*	*-4.4*	*9.3*	*9.7*	*9.3*
Traditional Growth	**1,407,857,630**	**35.7**	**6.9**	**-6.9**	**15.3**	**5.7**	**7.4**
MSCI ACWI IMI Net			*6.9*	*-7.7*	*15.6*	*7.3*	*8.5*
Stabilized Growth	**1,216,160,441**	**30.9**	**0.5**	**-3.9**	**5.9**	**5.2**	**3.6**
SJCERA Stabilized Growth Benchmark[4]			*1.5*	*3.3*	*7.2*	*5.1*	*5.4*
Diversifying Strategies	**757,267,468**	**19.2**	**-0.2**	**-1.8**	**-0.6**	**2.4**	**3.0**
Principal Protection	**293,110,614**	**7.4**	**3.1**	**-2.5**	**-1.0**	**0.9**	**2.3**
Bloomberg US Aggregate TR			*3.0*	*-4.8*	*-2.8*	*0.9*	*1.4*
Crisis Risk Offset Asset Class	**464,156,855**	**11.8**	**-2.2**	**-0.8**	**0.0**	**3.6**	**5.1**
CRO Benchmark[3]			*1.3*	*-3.0*	*1.0*	*3.8*	*3.6*
Cash and Misc Asset Class	**166,709,695**	**4.2**	**0.7**	**2.3**	**0.8**	**1.1**	**0.7**
ICE BofA 91 Days T-Bills TR			*1.1*	*2.5*	*0.9*	*1.4*	*0.9*

[1] Market values may not add up due to rounding.
[2] Policy Benchmark composition is listed in the Appendix.
[3] 30% ICE BofAML 3 month US T-Bill + 4%, 52% 50% BB High Yield/50% S&P Leverage Loans, 18% NCREIF ODCE + 1% Lag.
[4] (1/3) BB Long Duration Treasuries, (1/3) BTOP50 Index, (1/3) 5% Annual.

Asset Class Performance Net-of-Fees | As of March 31, 2023

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Aggressive Growth Lag[2]	**360,387,593**	**100.0**	**0.2**	**6.3**	**18.9**	**14.7**	**12.4**
Aggressive Growth Blend			*2.6*	*-4.4*	*9.3*	*9.7*	*9.3*
Blackrock Global Energy and Power Lag[2]	37,457,395	10.4	-3.5	3.7	5.6	--	--
MSCI ACWI +2% Blend			*10.4*	*-16.3*	*6.6*	--	--
Lightspeed Venture Ptnrs Select V Lag[2]	8,406,757	2.3	-1.3	--	--	--	--
MSCI ACWI +2% Blend			*10.4*	--	--	--	--
Morgan Creek III Lag[2]	4,660,219	1.3	0.0	-11.9	-10.8	-10.1	--
MSCI ACWI +2% Blend			*10.4*	*-16.3*	*6.6*	*8.0*	--
Morgan Creek V Lag[2]	6,974,665	1.9	0.0	-0.9	10.9	11.0	--
MSCI ACWI +2% Blend			*10.4*	*-16.3*	*6.6*	*8.0*	--
Morgan Creek VI Lag[2]	23,692,977	6.6	0.0	-10.0	17.8	16.2	--
MSCI ACWI +2% Blend			*10.4*	*-16.3*	*6.6*	*8.0*	--
Ocean Avenue II Lag[2]	37,682,566	10.5	-4.5	12.0	39.2	26.6	--
MSCI ACWI +2% Blend			*10.4*	*-16.3*	*6.6*	*8.0*	--
Ocean Avenue III Lag[2]	52,236,036	14.5	2.9	16.9	26.3	25.8	--
MSCI ACWI +2% Blend			*10.4*	*-16.3*	*6.6*	*8.0*	--
Ocean Avenue IV Lag[2]	58,810,100	16.3	9.7	42.1	35.5	--	--
MSCI ACWI +2% Lag[2]			*10.4*	*-16.3*	*6.6*	--	--
Non-Core Real Assets Lag[2,3]	99,717,632	27.7	-2.3	-9.5	8.8	6.6	7.5
NCREIF ODCE +1% lag (blend)			*-4.9*	*7.6*	*10.0*	*8.8*	*10.2*
Stellex Capital Partners II Lag[2]	30,749,246	8.5	-1.3	21.2	--	--	--
MSCI ACWI +2% Lag[2]			*10.4*	*-16.3*	--	--	--

[1] Market values may not add up due to rounding.
[2] Lagged 1 quarter.
[3] Trailing Non-Core real estate performance includes returns provided by prior real estate consultant from inception through Q419.
[4] Q422 data not available at the time of this report. Values reported reflect Q322 market value adjusted by Q422 cash flows.

Aggressive Growth

During the latest three-month period ending March 31, 2023, of the six managers who have reported results, none of them outperformed the 10.4% mark that the MSCI ACWI + 2% benchmark set for the period; however, we are still waiting on performance data from the three Morgan Creek funds. Non-Core Real Assets outperformed its benchmark by 2.6%, please note that return data for this asset class is lagged one quarter.

BlackRock Global Energy and Power, a fund with a focus on infrastructure, underperformed its target benchmark over the quarter and 3-year periods by (13.9%) and (1.0%), respectively. It did, however, outperform the benchmark by 20% over the 1-year period.

Lightspeed Venture Partners Select V, the newest manager in the aggressive growth sleeve, underperformed its target benchmark over the quarter by (11.7%).

Morgan Creek Funds III, V, & VI, Morgan Creek is still waiting on their auditor to finish reviewing their 2022 year-end performance, as a result the 0.0% listed in the QTD performance column of this report is a placeholder for data still being audited. Once that data is available, we will update the quarterly performance numbers, and as a result the historical performance numbers will also be revised.

Ocean Avenue II, underperformed its benchmark for the quarter by (14.9%). However, it outperformed the benchmark over the 1-, 3- and 5-year periods by 28.3%, 32.6%, and 18.6%, respectively.

Ocean Avenue III, underperformed its benchmark for the quarter by (7.5%). That said, it outperformed its benchmark over the 1-, 3- and 5-year periods by 33.2%, 19.7% and 17.8%, respectively.

Ocean Avenue IV, underperformed its benchmark for the quarter by (0.7%). However, it outperformed over the 1- and 3-year periods by 58.4% and 28.9% respectively.

Non-Core Real Assets outperformed its NCREIF ODCE +1% benchmark over the quarter by 2.6%. However, it underperformed over the 1-, 3-, 5- and 10-year periods by (17.1%), (1.2%), (2.2%), and (2.7%), respectively.

Stellex II, underperformed its benchmark during the quarter by (11.7%); however, it outperformed the benchmark over the 1-year period by 37.5%.

Asset Class Performance Net-of-Fees | As of March 31, 2023

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Traditional Growth	**1,407,857,630**	**100.0**	**6.9**	**-6.9**	**15.3**	**5.7**	**7.4**
MSCI ACWI IMI Net			*6.9*	*-7.7*	*15.6*	*7.3*	*8.5*
SJCERA Transition	3,118	0.0					
Northern Trust MSCI World	1,227,697,446	87.2	7.4	-6.5	--	--	--
MSCI World IMI Net USD			*7.3*	*-7.3*	--	--	--
PIMCO RAE Emerging Markets	79,199,262	5.6	4.2	-2.7	18.4	1.3	3.5
MSCI Emerging Markets			*4.0*	*-10.7*	*7.8*	*-0.9*	*2.0*
GQG Active Emerging Markets	57,769,292	4.1	3.5	-11.4	--	--	--
MSCI Emerging Markets			*4.0*	*-10.7*	--	--	--
Invesco REIT	43,188,513	3.1	2.4	-17.5	9.3	5.0	5.9
FTSE NAREIT Equity REIT			*2.7*	*-19.2*	*12.1*	*6.0*	*6.0*

[1] Market values may not add up due to rounding.

Traditional Growth

During the latest three-month period ending March 31, 2023, the traditional growth asset class matched its MSCI ACWI IMI benchmark with two of the four managers outperforming their benchmarks.

Northern Trust MSCI World, the Plan's Passive Global Equity manager, outperformed its benchmark over the past quarter by 0.1% and outperformed over the 1-year period by 0.8% as well.

PIMCO RAE Emerging Markets, one of SJCERA's Active Emerging Markets Equity managers, outperformed its MSCI Emerging Markets Index benchmark for the quarter, 1-, 3-, 5- and 10-year trailing time periods by 0.2%, 8.0%, 10.6%, 2.2% and 0.5%, respectively.

GQG Active Emerging Markets, Underperformed its MSCI Emerging Markets benchmark by (0.5%) for the quarter and (0.7%) for the 1-year period.

Invesco, the Plan's Core US REIT manager, underperformed the FTSE NAREIT Equity REIT Index for the quarter, 3-, 5- and 10-year periods by (0.3%), (2.8%), (1.0%) and (0.1%), respectively; however, it outperformed its benchmark for the trailing 1-year period by 1.7%.

Asset Class Performance Net-of-Fees | As of March 31, 2023

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Stabilized Growth	**1,216,160,441**	**100.0**	**0.5**	**-3.9**	**5.9**	**5.2**	**3.6**
SJCERA Stabilized Growth Benchmark[2]			*1.5*	*3.3*	*7.2*	*5.1*	*5.4*
Risk Parity Asset Class	**379,187,859**	**31.2**	**5.9**	**-15.6**	**3.0**	**2.3**	**1.1**
ICE BofAML 3mo US TBill+4%			*2.1*	*6.6*	*4.9*	*5.5*	*4.9*
Bridgewater All Weather	194,896,842	16.0	7.0	-13.2	4.3	2.8	2.9
Bridgewater All Weather (blend)			*2.1*	*6.6*	*4.9*	*5.5*	*5.5*
PanAgora Diversified Risk Multi Asset	184,291,017	15.2	4.8	-18.0	1.7	1.7	--
ICE BofAML 3mo US TBill+4%			*2.1*	*6.6*	*4.9*	*5.5*	--
Liquid Credit	**229,408,414**	**18.9**	**2.0**	**-0.4**	**5.6**	**2.0**	**2.4**
50% BB US HY/50% S&P LSTA Lev Loan			*3.4*	*-0.3*	*7.3*	*3.5*	*4.0*
Neuberger Berman	98,057,798	8.1	2.4	-3.4	4.8	--	--
33% ICEBofAMLUSHY /33%JPMEMBI Global Div /33% S&P LSTALevLoan			*2.9*	*-2.5*	*4.8*	--	--
Stone Harbor Absolute Return	131,350,616	10.8	1.7	2.0	6.4	2.3	2.5
ICE BofA-ML LIBOR			*1.1*	*2.4*	*1.0*	*1.6*	*1.1*
Private Credit Lag	**369,046,775**	**30.3**	**-2.1**	**0.0**	**4.2**	**3.6**	**3.0**
Custom Credit Benchmark			*3.4*	*-6.0*	*1.3*	*2.8*	*3.9*
Blackrock Direct Lending Lag	88,584,831	7.3	-4.2	-1.5	--	--	--
CPI + 6% BLK Blend			*3.4*	*2.2*	--	--	--
Crestline Opportunity II Lag	13,111,344	1.1	-8.7	-15.9	-2.3	-1.9	--
Credit Blend S&P/LSTA Lev Loan +3%			*3.4*	*2.2*	*7.6*	*7.7*	--
Davidson Kempner Long-Term Distressed Opportunities Fund V, L.P. Lag	47,376,527	3.9	-0.3	-0.6	--	--	--
Credit Blend S&P/LSTA Lev Loan +3%			*3.4*	*2.2*	--	--	--

[1] Market values may not add up due to rounding.
[2] 30% ICE BofAML 3 month US T-Bill + 4%, 52% 50% BB High Yield/50% S&P Leverage Loans, 18% NCREIF ODCE +1% Lag.

Asset Class Performance Net-of-Fees | As of March 31, 2023

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
HPS European Asset Value II, LP Lag	25,485,809	2.1	2.6	9.8	--	--	--
Credit Blend S&P/LSTA Lev Loan +3%			*3.4*	*2.2*	--	--	--
Medley Opportunity II Lag	4,378,784	0.4	0.0	0.0	-7.0	-9.4	-2.4
Credit Blend S&P/LSTA Lev Loan +3%			*3.4*	*2.2*	*7.6*	*7.7*	*8.4*
Mesa West IV Lag	37,723,245	3.1	-1.3	-1.9	4.6	6.0	--
Credit Blend S&P/LSTA Lev Loan +3%			*3.4*	*2.2*	*7.6*	*7.7*	--
Oaktree Middle-Market Direct Lending Lag	30,874,431	2.5	-4.6	1.8	11.7	--	--
Credit Oaktree Blend			*3.4*	*2.2*	*6.7*	--	--
Raven Opportunity III Lag	56,961,866	4.7	-2.5	6.9	7.4	8.3	--
Credit Blend S&P/LSTA Lev Loan +3%			*3.4*	*2.2*	*7.6*	*7.7*	--
White Oak Summit Peer Lag	24,855,132	2.0	0.7	-10.2	-2.0	1.6	--
Credit Blend S&P/LSTA Lev Loan +3%			*3.4*	*2.2*	*7.6*	*7.7*	--
White Oak Yield Spectrum Master V Lag	39,694,806	3.3	0.0	2.1	3.6	--	--
Credit Blend S&P/LSTA Lev Loan +3%			*3.4*	*2.2*	*7.6*	--	--
Private Core Real Assets Lag	238,517,393	19.6	-5.0	9.5	16.0	14.0	14.1
NCREIF ODCE +1% lag (blend)[2]			*-4.9*	*7.6*	*10.0*	*8.8*	*10.2*

[1] Market values may not add up due to rounding.
[2] NCREIF ODCE Net + 1% 10/1/2012-present. NCREIF Property Index previously.
[3] Q422 data not available at the time of this report. Values reported reflect Q322 market value adjusted by Q422 cash flows.

Stabilized Growth

During the latest three-month period ending March 31, 2023, twelve of SJCERA's fifteen Stabilized Growth managers underperformed their benchmarks while the other three outperformed. Several managers in this asset class are in the process of investing capital and may underperform as assets are invested (typically known as the J-curve effect). Included in this group is private core real assets, which lagged the benchmark by (0.1%).

Bridgewater All Weather, one of the Plan's Risk Parity managers, outperformed its benchmark during the most recent quarter by 4.9%. However, the manager underperformed over the 1-, 3-, 5- and 10-year periods by (19.8%), (0.6%), (2.7%), and (2.6%), respectively.

PanAgora DRMA, one of the Plan's Risk Parity managers, outperformed its benchmark over the quarter by 2.7%. PanAgora trailed the benchmark over the 1-, 3- and 5-year time periods by (24.6%), (3.2%), and (3.8%), respectively.

Neuberger Berman, one of the Plan's Liquid Credit managers, underperformed its benchmark for the quarter and 1- year periods by (0.5%) and (0.9%), respectively. The manager was in line with the benchmark over the 3-year time period returning 4.8%.

Stone Harbor, the Plan's Absolute Return Fixed Income manager, underperformed its ICE BofAML LIBOR index over the 1-year period by (0.6%), but outperformed over the quarter, 3-, 5- and 10-year periods by 0.6%, 5.4%, 0.7%, and 1.4%, respectively.

BlackRock Direct Lending, one of the Plan's newer Private Credit managers, trailed its CPI +6% BLK Blend benchmark over the quarter and 1-year periods by (7.6%) and (3.7%), respectively.

Crestline Opportunity II, the Plan's Credit, Niche Alternatives and Hedge Fund Secondaries manager, trailed its benchmark over the quarter, 1-, 3- and 5-year periods by (12.1%), (18.1%), (9.9%) and (9.6%), respectively.

Davidson Kempner, the Plan's newest Private Credit manager, trailed its benchmark over the quarter and 1-year periods by (3.7%) and (2.8%) respectively.

Stabilized Growth (continued)

HPS EU, one of the Plan's newer Direct Lending managers, trailed its benchmark for the quarter by (0.8%); however, it outperformed by 7.6% over the 1-year period.

Medley Opportunity II, one of the Plan's Direct Lending managers, lagged its benchmark over the quarter, 1-, 3-, 5- and 10-year time periods by (3.4%), (2.2%), (14.6%), (17.1%), and (10.8%), respectively.

Mesa West RE Income IV, one of the Plan's Commercial Mortgage managers, lagged its benchmark over the quarter, 1-, 3-, and 5-year time periods by (4.7%), (4.1%), (3.0%), and (1.7%), respectively.

Oaktree, a Middle-Market Direct Lending manager, trailed its benchmark over the quarter and 1-year periods by (8.0%) and (0.4%), respectively; however, it outperformed over the 3-year period by 5.0%.

Raven Opportunity III underperformed its target for the quarter and 3-year periods by (5.9%) and (0.2%), respectively; however, it outperformed the benchmark for the 1- and 5-year periods by 4.7% and 0.6%, respectively.

White Oak Summit Peer, one of the Plan's Direct Lending managers, underperformed its index over the trailing quarter, 1-, 3- and 5-year time periods by (2.7%), (12.4%), (9.6%) and (6.1%), respectively.

White Oak Yield Spectrum Master V trailed its benchmark over the quarter, 1- and 3-year period by (3.4%), (0.1), and (4.0%).

Private Core Real Assets, trailed the NCREIF ODCE +1% benchmark over the most recent quarter by (0.1%); however, it exceeded the target over the 1-, 3-, 5- and 10-year time periods by 1.9%, 6.0%, 5.2%, and 3.9%, respectively.

Asset Class Performance Net-of-Fees | As of March 31, 2023

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Principal Protection	**293,110,614**	**100.0**	**3.1**	**-2.5**	**-1.0**	**0.9**	**2.3**
Bloomberg US Aggregate TR			*3.0*	*-4.8*	*-2.8*	*0.9*	*1.4*
Dodge & Cox Fixed Income	199,944,563	68.2	3.0	-2.8	0.3	2.1	2.6
Bloomberg US Aggregate TR			*3.0*	*-4.8*	*-2.8*	*0.9*	*1.4*
DoubleLine	6,128	0.0	1.0	-75.7	-36.3	-22.9	-10.5
Bloomberg US Aggregate TR			*3.0*	*-4.8*	*-2.8*	*0.9*	*1.4*
Loomis Sayles	93,159,923	31.8	3.3	-4.3	--	--	--
Bloomberg US Aggregate TR			*3.0*	*-4.8*	--	--	--

[1] Market values may not add up due to rounding.

Principal Protection

During the latest three-month period ending March 31, 2023, one of SJCERA's Principal Protection managers outperformed the Bloomberg US Aggregate Index benchmark, one was in line with the benchmark, and the third underperformed the target for the quarter.

Dodge & Cox, the Plan's Core Fixed Income manager, earned a positive quarterly return of 3.0%, matching the US Agg for the period. It led its benchmark by 2.0%, 3.1%, 1.2% and 1.2% for the trailing 1-, 3-, 5- and 10-year periods, respectively.

DoubleLine, the Plan's Mortgage-Backed Securities manager, provided a positive quarterly return of 1.0%, underperforming its benchmark by (2.0%). The manager also underperformed its benchmark over the trailing 1-, 3-, 5- and 10-year time periods by (70.9%), (33.5%), (23.8%) and (11.9%), respectively.

Loomis Sayles, the Plan's newest Principal Protection manager, was funded in Q1 2022 and outperformed the US Agg during the quarter and 1-year periods by 0.3% and 0.5% respectively.

Asset Class Performance Net-of-Fees | As of March 31, 2023

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Crisis Risk Offset Asset Class	**464,156,855**	**100.0**	**-2.2**	**-0.8**	**0.0**	**3.6**	**5.1**
CRO Benchmark			*1.3*	*-3.0*	*1.0*	*3.8*	*3.6*
Long Duration	**119,413,368**	**25.7**	**6.7**	**-14.7**	**-10.8**	**-0.2**	**--**
Bloomberg US Treasury Long TR			*6.2*	*-16.0*	*-11.3*	*-0.4*	*--*
Dodge & Cox Long Duration	119,413,368	25.7	6.7	-14.7	-10.8	-0.2	--
Bloomberg US Treasury Long TR			*6.2*	*-16.0*	*-11.3*	*-0.4*	*--*
Systematic Trend Following	**228,531,735**	**49.2**	**-5.3**	**0.9**	**12.4**	**7.1**	**9.2**
BTOP 50 (blend)			*-3.7*	*1.4*	*9.4*	*5.9*	*3.8*
Graham Tactical Trend	110,996,394	23.9	-6.4	1.0	12.0	7.0	--
SG Trend			*-7.3*	*0.3*	*10.2*	*7.7*	*--*
Mount Lucas	117,535,341	25.3	-4.1	0.8	12.8	7.0	8.3
BTOP 50 (blend)			*-3.7*	*1.4*	*9.4*	*5.9*	*3.8*
Alternative Risk Premium	**116,211,752**	**25.0**	**-4.9**	**8.9**	**-4.6**	**0.8**	**2.3**
5% Annual (blend)			*1.2*	*5.0*	*5.0*	*5.0*	*6.9*
AQR Style Premia	54,545,728	11.8	-1.1	15.9	8.6	-2.2	--
5% Annual			*1.2*	*5.0*	*5.0*	*5.0*	*--*
P/E Diversified Global Macro	61,666,024	13.3	-8.2	21.1	-10.4	3.6	--
5% Annual			*1.2*	*5.0*	*5.0*	*5.0*	*--*

[1] Market values may not add up due to rounding.
[2] (1/3) BB Long Duration Treasuries, (1/3) BTOP50 Index, (1/3) 5% Annual.

Crisis Risk Offset

During the latest three-month period ending March 31, 2023, two out of five of SJCERA's Crisis Risk Offset managers outperformed their respective benchmarks and three managers underperformed the benchmark.

Dodge & Cox Long Duration produced a positive quarterly return of 6.7%, which outperformed the Bloomberg US Long Duration Treasuries benchmark by 0.5%. The manager also outperformed its benchmark over the 1-,3- and 5-year periods by 1.3%, 0.5%, and 0.2% respectively.

Graham Tactical Trend, one of the Plan's Systematic Trend Following managers, outperformed the SG Trend Index for the quarter, 1-, and 3-year periods by 0.9%, 0.7%, and 1.8% respectively. The manager trailed the benchmark over the 5-year period by (0.7%).

Mount Lucas, one of the Plan's Systematic Trend Following managers, underperformed the Barclays BTOP 50 Index over the quarter and 1-year periods by (0.4%) and (0.4%), respectively; however, it outperformed the target over the 3-, 5- and 10-year periods by 3.4%, 1.1%, and 4.5%, respectively.

AQR, one of the Plan's Alternative Risk Premium managers, underperformed its 5% Annual target for the quarter and 5-year periods by (2.3%) and (7.2%), respectively; however, it outperformed the target over the 1- and 3-year periods by 10.9% and 3.6%, respectively.

P/E Diversified, one of the Plan's Alternative Risk Premium managers, underperformed its 5% Annual target for the quarter, 3- and 5-year periods by (10.4%), (15.4%) and (1.4%), respectively. However, the manager outperformed the target over the trailing 1-year period by 16.1%.

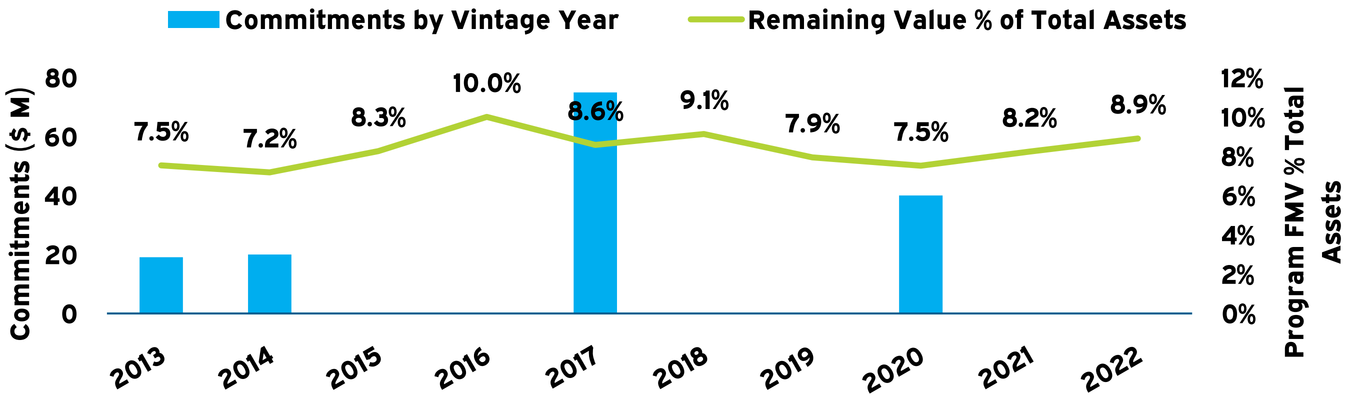
Real Estate Program

December 31, 2022

Table of Contents | As of December 31, 2022

Introduction

The Retirement Association's target allocation towards real estate assets is 10-12%. As of December 31, 2022, the Retirement Association had invested with eighteen real estate managers (three private open-end and fifteen private closed-end). The aggregate reported value of the Retirement Association's real estate investments was $338.2 million at quarter-end.



Program Status

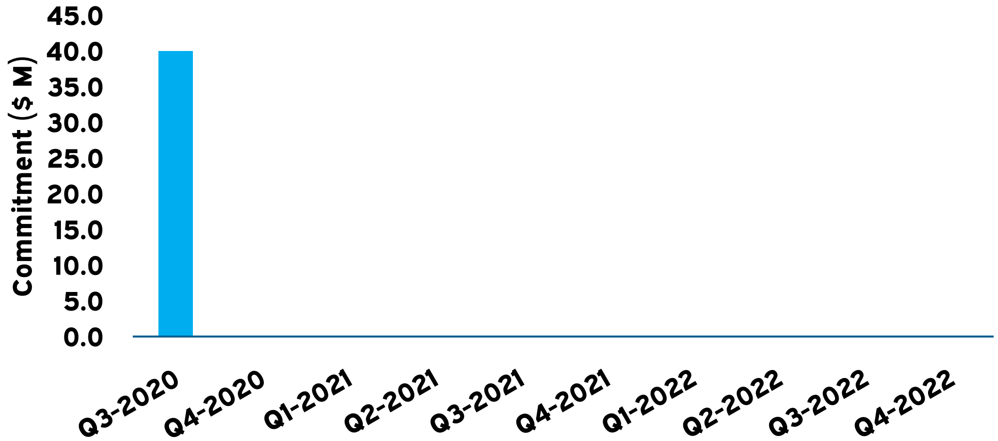
No. of Investments	18
Committed ($ M)	501.6
Contributed ($ M)	458.8
Distributed ($ M)	387.4
Remaining Value ($ M)	338.2

Performance Since Inception

	Program
DPI	0.84x
TVPI	1.58x
IRR	7.8%

Commitments

Recent Quarterly Commitments

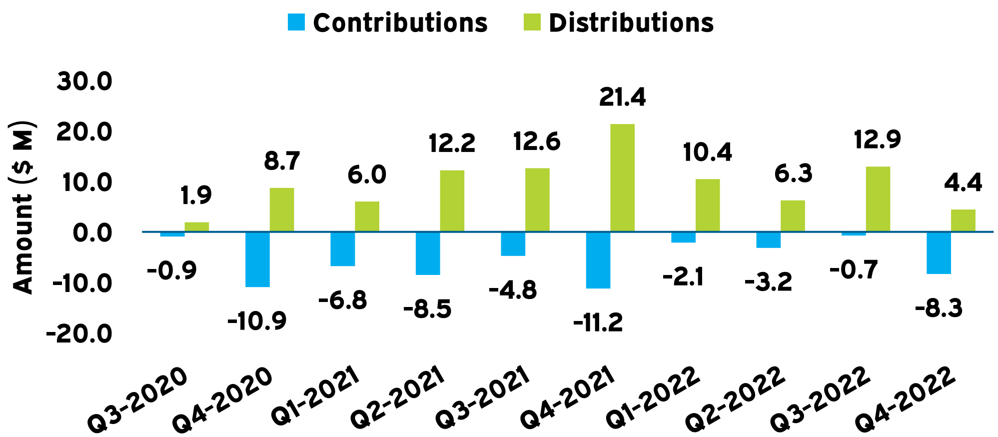


Commitments This Quarter

Fund	Strategy	Region	Amount (M)
None to report.			

Cash Flows

Recent Quarterly Cash Flows



Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount ($M)
Berkeley V	2020	Value-Added	North America	5.29
Stockbridge RE III	2017	Value-Added	North America	2.31
Prologis Logistics	2004	Core	North America	0.75

Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount ($M)
Grandview I-A	2017	Opportunistic	North America	1.84
Stockbridge RE III	2017	Value-Added	North America	1.20
Prologis Logistics	2004	Core	North America	0.75

Significant Events

→ During the fourth quarter, Berkeley Partners Value Industrial Fund V completed four acquisitions, including three properties in Massachusetts and one portfolio in Phoenix, AZ. Fund V also closed on the disposition of 333 Centennial Parkway, a multi-tenant property in Louisville, Colorado, in December 2022, generating $35.2 million in proceeds and a 2.5x gross return.

→ In October 2022, Grandview I-A (fka Greenfield Acquisition Partners VIII) sold I-75 Logistics Center, an industrial development site in Pasco County, FL for $59 million after acquiring the land parcel in 2021.

→ Prologis Targeted U.S. Logistics Fund acquired one asset in the fourth quarter of 2022 for $10.9 million. The acquisition constitutes a last-touch facility in New York/New Jersey, adjacent to an existing USLF property. Overall, the Fund experienced a -5.8% net appreciation return for the quarter as valuation repricing continues with cap rate expansion, although the operating environment remains strong within industrial.

→ During the fourth quarter, Stockbridge Value Fund III closed on the sale of two assets, first exiting its investment in Burnham 600, an office asset in Chicago, for a gross sales price of $10.8 million in October 2022. The office building was exited at a loss, producing a 0.3x gross multiple. Subsequently, in November 2022, Stockbridge closed on the disposition of the Elk Grove Village, a component of Chicago Infill Industrial, for a gross sales price of $70.0 million.

→ In December 2022, Walton Street Real Estate Fund V sold Las Lapalpas/Mahekal resort hotel for $56 million, with an 8% cap rate. Fund V also sold Esmerelda, a portion of the MERCAP Retail Portfolio, in December 2022, distributing $2.1 million to the venture partners.

→ Miller Global VI and Miller Global VII were both liquidated in the fourth quarter.

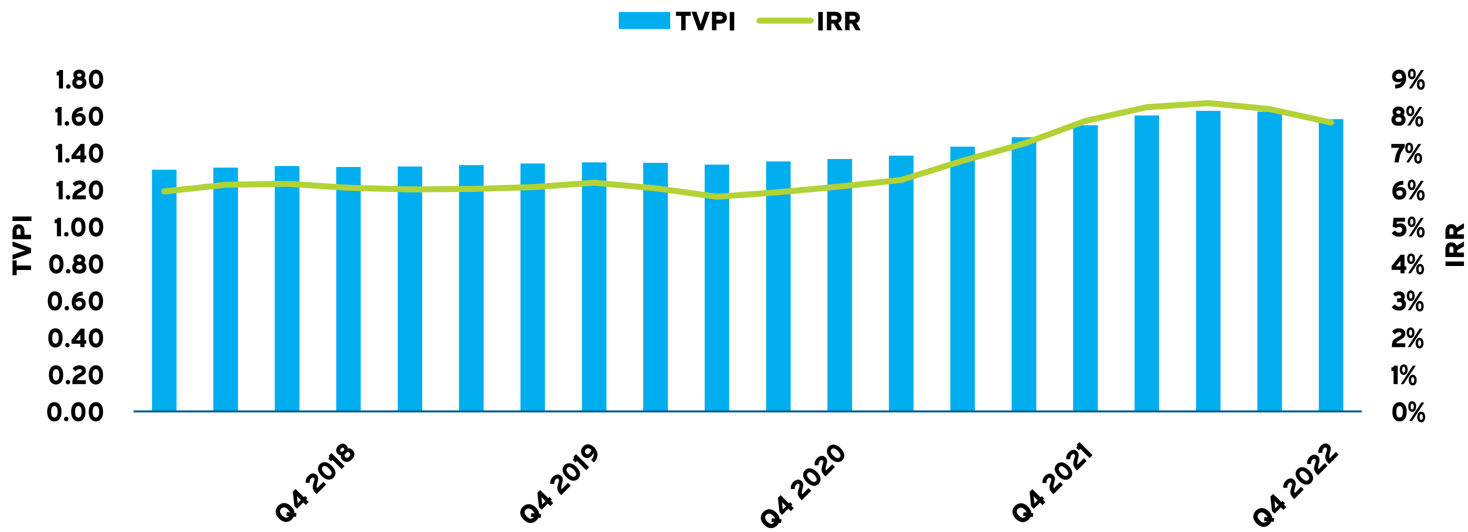
By Strategy

Group	Number	Committed ($ M)	Contributed ($ M)	Unfunded ($ M)	Distributed ($ M)	Remaining Value ($ M)	Exposure ($ M)	DPI (X)	TVPI (X)	IRR (%)
Core	3	120.5	127.6	0.0	33.5	238.5	238.5	0.26	2.13	9.0
Opportunistic	9	204.1	182.3	23.2	222.0	27.4	50.6	1.22	1.37	5.9
Value-Added	6	177.0	148.9	31.5	131.9	72.3	103.8	0.89	1.37	9.6
Total	**18**	**501.6**	**458.8**	**54.7**	**387.4**	**338.2**	**393.0**	**0.84**	**1.58**	**7.8**

By Vintage

Group	Number	Committed ($ M)	Contributed ($ M)	Unfunded ($ M)	Distributed ($ M)	Remaining Value ($ M)	Exposure ($ MM	DPI (X)	TVPI (X)	IRR (%)
Open-end Fund	3	120.5	127.6	0.0	33.5	238.5	238.5	0.26	2.13	9.0
2005	1	15.0	14.5	0.5	17.6	0.0	0.5	1.21	1.21	3.4
2006	1	30.0	30.0	0.0	20.4	1.0	1.0	0.68	0.72	-3.6
2007	4	96.0	84.0	12.0	115.9	6.6	18.6	1.38	1.46	7.4
2011	2	50.0	38.3	11.7	47.2	4.1	15.8	1.23	1.34	9.4
2012	2	36.0	33.9	2.9	49.0	0.0	2.9	1.45	1.45	12.5
2013	1	19.1	18.3	0.8	29.5	2.3	3.1	1.62	1.74	13.4
2014	1	20.0	19.0	1.8	14.7	9.9	11.7	0.77	1.29	6.3
2017	2	75.0	65.7	10.8	56.7	45.8	56.6	0.86	1.56	19.4
2020	1	40.0	27.6	14.2	2.9	29.9	44.1	0.11	1.19	16.1
Total	**18**	**501.6**	**458.8**	**54.7**	**387.4**	**338.2**	**393.0**	**0.84**	**1.58**	**7.8**

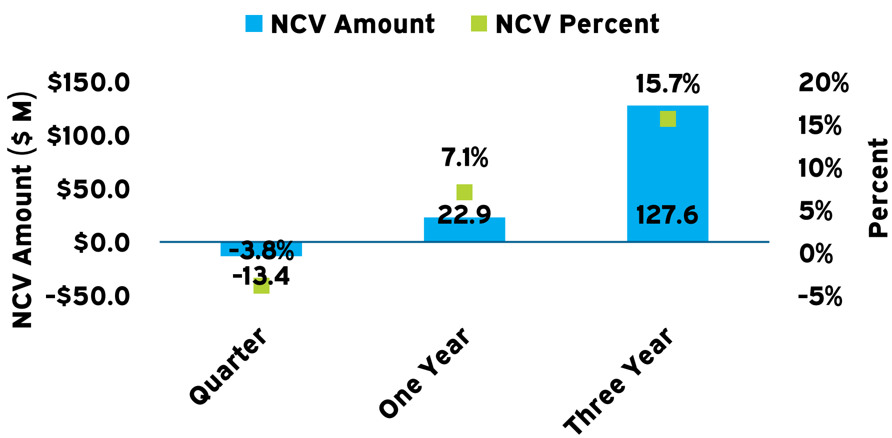
Since Inception Performance Over Time



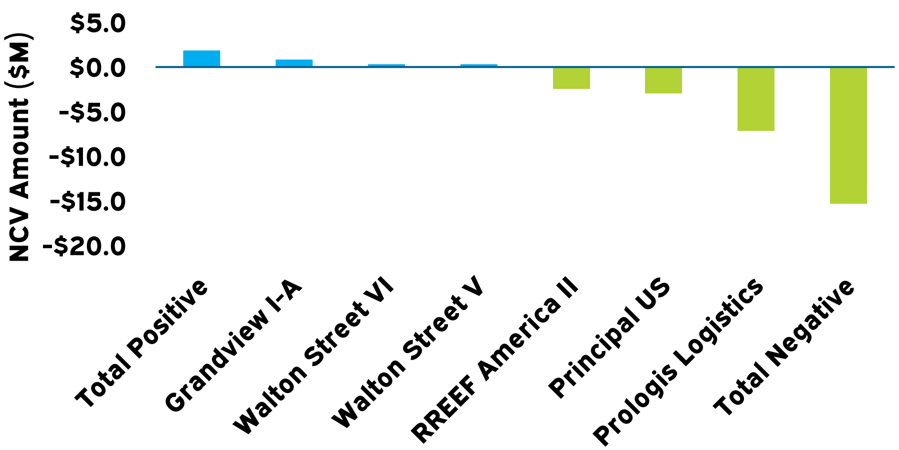
Horizon IRRs

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Aggregate Portfolio	7.1	15.2	11.9	11.7	7.8
Public Market Equivalent	-29.6	-6.4	-2.1	0.9	1.8

Periodic NCV



1 Quarter Drivers Of NCV

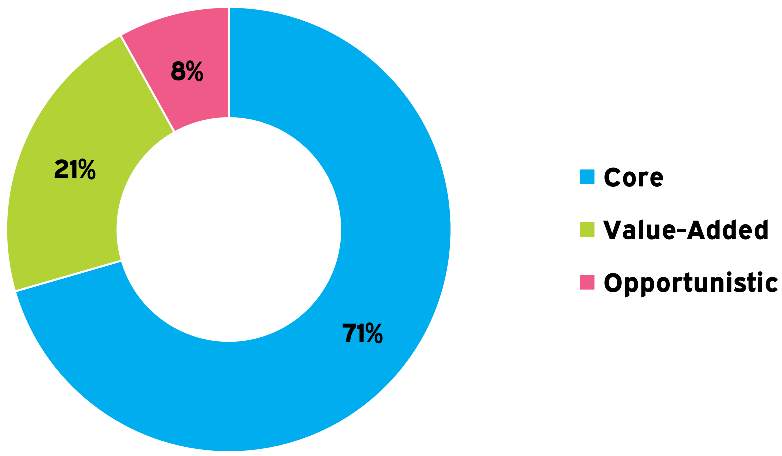


Fund Performance: Sorted By Vintage And Strategy

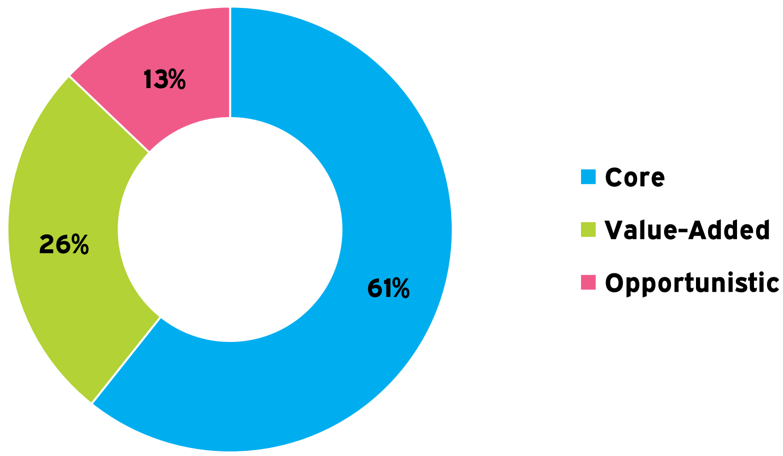
By Investment	Vintage	Strategy	Committed ($ M)	Contributed ($ M)	Unfunded ($ M)	Distributed ($ M)	Remaining Value ($ M)	TVPI (X)	IRR (%)
Principal US	Open-end	Core	25.0	25.0	0.0	0.0	43.8	1.75	8.3
Prologis Logistics	Open-end	Core	50.5	57.6	0.0	23.1	131.3	2.68	9.2
RREEF America II	Open-end	Core	45.0	45.0	0.0	10.4	63.5	1.64	8.6
Miller GLobal Fund V	2005	Opportunistic	15.0	14.5	0.5	17.6	0.0	1.21	3.4
Walton Street V	2006	Opportunistic	30.0	30.0	0.0	20.4	1.0	0.72	-3.6
Greenfield V	2007	Opportunistic	30.0	29.6	0.4	40.4	0.2	1.37	8.3
Miller Global VI	2007	Opportunistic	30.0	21.1	8.9	33.4	0.0	1.58	7.7
Walton Street VI	2007	Opportunistic	15.0	13.3	1.7	15.2	6.4	1.63	8.4
Colony Realty III	2007	Value-Added	21.0	20.0	1.0	26.9	0.0	1.35	5.3
Greenfield VI	2011	Opportunistic	20.0	19.2	0.8	26.2	0.0	1.37	9.6
Almanac Realty VI	2011	Value-Added	30.0	19.1	10.9	21.0	4.1	1.31	9.1
Miller Global VII	2012	Opportunistic	15.0	12.1	2.9	16.1	0.0	1.33	14.4
Colony Realty IV	2012	Value-Added	21.0	21.7	0.0	32.9	0.0	1.51	11.9
Greenfield VII	2013	Opportunistic	19.1	18.3	0.8	29.5	2.3	1.74	13.4
AG Core Plus IV	2014	Value-Added	20.0	19.0	1.8	14.7	9.9	1.29	6.3
Grandview I-A	2017	Opportunistic	30.0	24.3	7.2	23.3	17.4	1.67	23.7
Stockbridge RE III	2017	Value-Added	45.0	41.4	3.6	33.5	28.4	1.50	17.0
Berkeley V	2020	Value-Added	40.0	27.6	14.2	2.9	29.9	1.19	16.1
Total			**501.6**	**458.8**	**54.7**	**387.4**	**338.2**	**1.58**	**7.8**

By Strategy

Percent of FMV

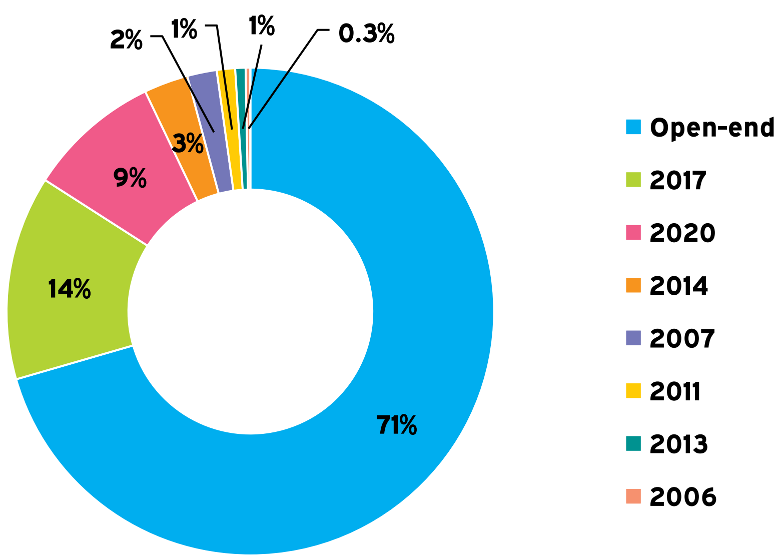


Percent of Exposure

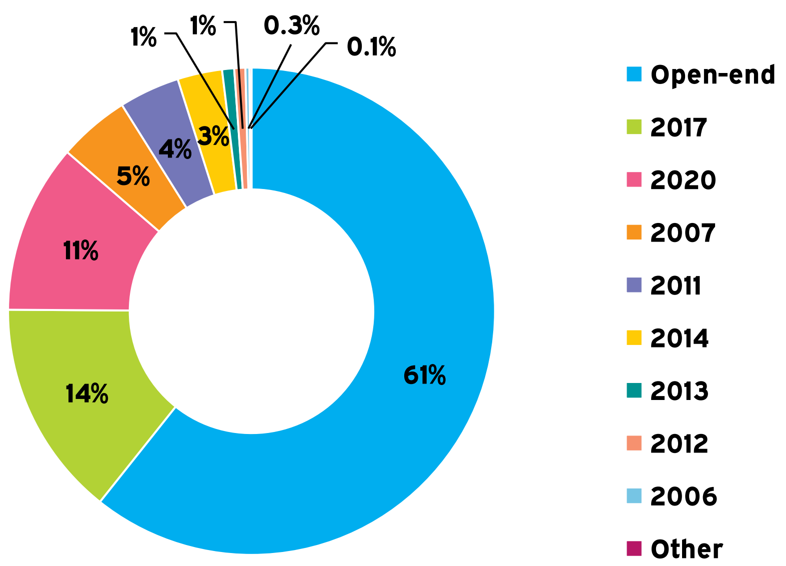


By Vintage

Percent of FMV

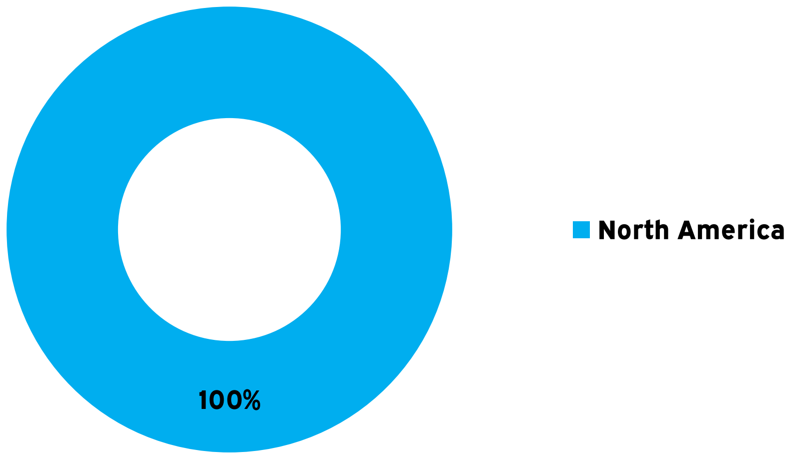


Percent of Exposure

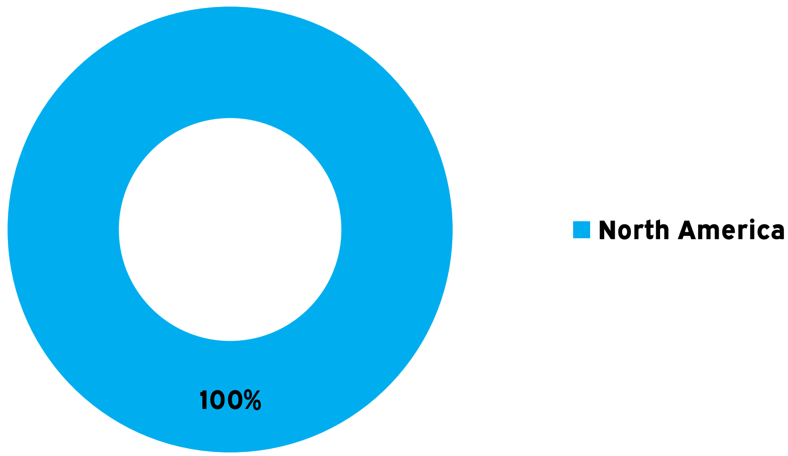


By Geographic Focus

Percent of FMV



Percent of Exposure



Below are details on specific terminology and calculation methodologies used throughout this report:

Committed	The original commitment amount made to a given fund. Some funds may be denominated in non-USD currencies, and such commitment amounts represent the sum of fund contributions translated to USD at their daily conversion rates plus the unfunded balance translated at the rate as of the date of this report.
Contributed	The amount of capital called by a fund manager against the commitment amount. Contributions may be used for new or follow-on investments, fees, and expenses, as outlined in each fund's limited partnership agreement. Some capital distributions from funds may reduce contributed capital balances. Some funds may be denominated in non-USD currencies, and such aggregate contributions represent the sum of each fund contribution translated to USD at its daily conversion rate.
Distributed	The amount of capital returned from a fund manager for returns of invested capital, profits, interest, and other investment related income. Some distributions may be subject to re-investment, as outlined in each fund's limited partnership agreement. Some funds may be denominated in non-USD currencies, and such aggregate distributions represent the sum of each fund distribution translated to USD at its daily conversion rate.
DPI	Acronym for "Distributed-to-Paid-In", which is a performance measurement for Private Market investments. The performance calculation equals Distributed divided by Contributed. DPIs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa.
Exposure	Represents the sum of the investor's Unfunded and Remaining Value.
IRR	Acronym for "Internal Rate of Return", which is a performance measurement for Private Market investments. IRRs are calculated by Meketa based on daily cash flows and Remaining Values as of the date of this report. IRRs for funds and groupings of funds are net of all fund fees and expenses as reported by fund managers to Meketa.
NCV	Acronym for "Net Change in Value", which is a performance measurement for Private Market investments. The performance calculation equals the appreciation or depreciation over a time period neutralized for the impact of cash flows that occurred during the time period.
NM	Acronym for "Not Meaningful", which indicates that a performance calculation is based on data over too short a timeframe to yet be meaningful or not yet possible due to inadequate data. Meketa begins reporting IRR calculations for investments once they have reached more than two years since first capital call. NM is also used within this report in uncommon cases where the manager has reported a negative Remaining Value for an investment.

Public Market Equivalent ("PME")	A calculation methodology that seeks to compare the performance of a portfolio of private market investments with public market indices. The figures presented in this report are based on the PME+ framework, which represents a net IRR value based on the actual timing and size of the private market program's daily cash flows and the daily appreciation or depreciation of an equivalent public market index. Meketa utilizes the following indices for private market program PME+ calculations: Infrastructure: Dow Jones Brookfield Global Infrastructure Index Natural Resources: S&P Global Natural Resources Index Private Debt: Meryl Lynch High Yield Master II Bond Index Private Equity: MSCI ACWI Investable Market Index Real Assets (excluding Real Estate): Equal blend of Dow Jones Brookfield Global Infrastructure Index and S&P Global Natural Resources Index Real Assets (including Real Estate): Equal blend of Dow Jones Brookfield Global Infrastructure Index, S&P Global Natural Resources Index, and Dow Jones U.S. Select Real Estate Securities Index Real Estate: Dow Jones U.S. Select Real Estate Securities Index
Remaining Value	The investor's value as reported by a fund manager on the investor's capital account statement. All investor values in this report are as of the date of this report, unless otherwise noted. Some funds may be denominated in non-USD currencies, and such remaining values represent the fund's local currency value translated to USD at the rate as of the date of this report.
TVPI	Acronym for "Total Value-to-Paid-In", which is a performance measurement for Private Market investments. The performance calculations represents Distributed plus Remaining Value, then divided by Contributed. TVPIs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa.
Unfunded	The remaining balance of capital that a fund manager has yet to call against a commitment amount. Meketa updates unfunded balances for funds to reflect all information provided by fund managers provided in their cash flow notices. Some funds may be denominated in non-USD currencies, and such unfunded balances represent the fund's local currency unfunded balance translated to USD at the rate as of the date of this report.

Capital Markets Outlook & Risk Metrics

As of March 31, 2023

Capital Markets Outlook

→ Despite banking turmoil in the US and Switzerland, most global markets posted positive returns in the month of March and for the first quarter of 2023.

→ Chinese equities outperformed emerging and developed markets in March although the performance of on-shore markets lagged Hong Kong and US-listed Chinese securities.

→ Developed market equities lagged US and emerging market equities with growth stocks outperforming value stocks in March.

→ US stocks posted a strong start to the year in the first quarter with large cap and growth stocks outperforming small cap and value stocks.

→ Commodities turned negative in the first quarter weighing on natural resource stocks in the month of March.

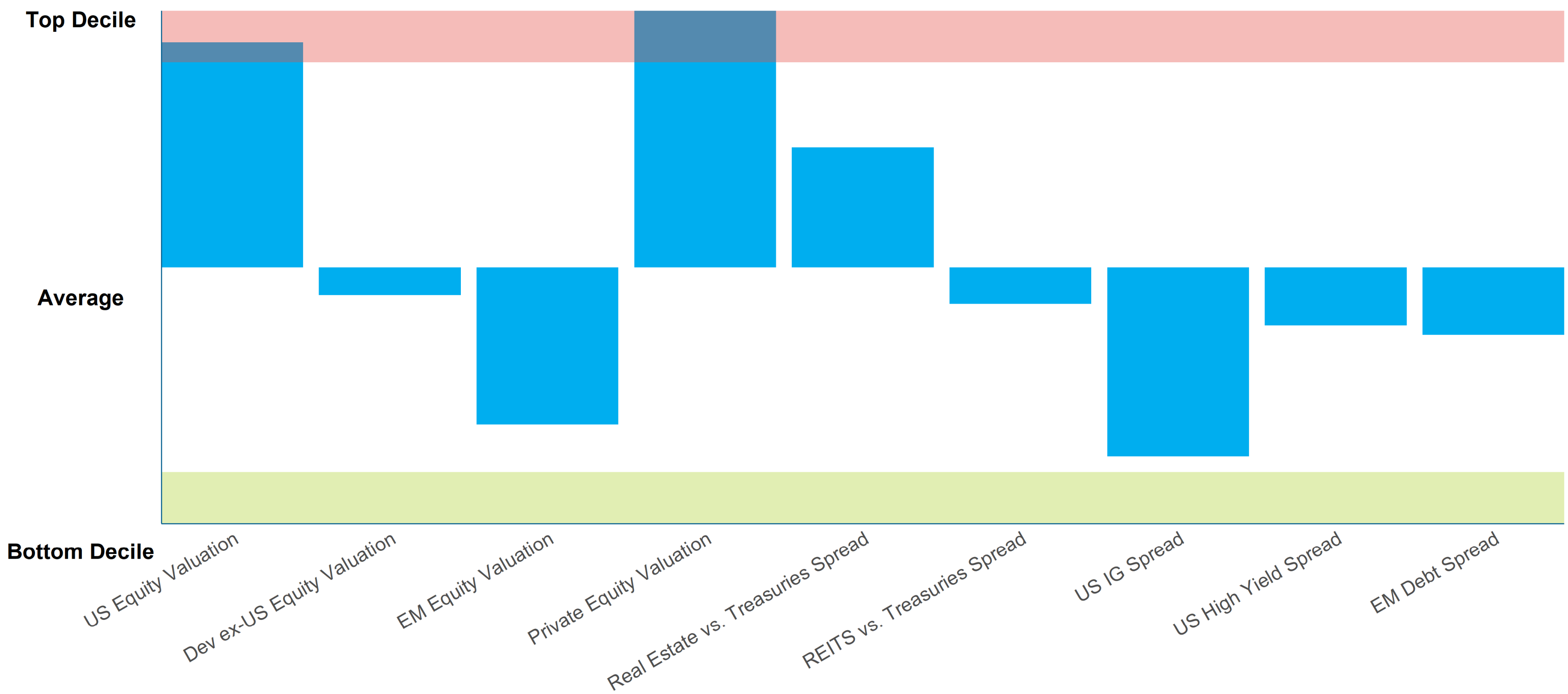
→ Most fixed income markets posted positive returns in March and for the first quarter, despite their sell-off in February.

→ The US yield curve remains steeply inverted with short-duration bond yields rising whereas longer dated bond yields fell with long-duration credit and government indices posting strong returns in the first quarter.

→ Undeterred from bank turmoil, the Fed and the ECB raised interest rates in February. While they appear focused on fighting inflation with higher interest rates, markets appear unconvinced.

→ The drive to fight inflation may stall economic growth and increase downward pressure on corporate earnings, stock valuations, and bond returns.

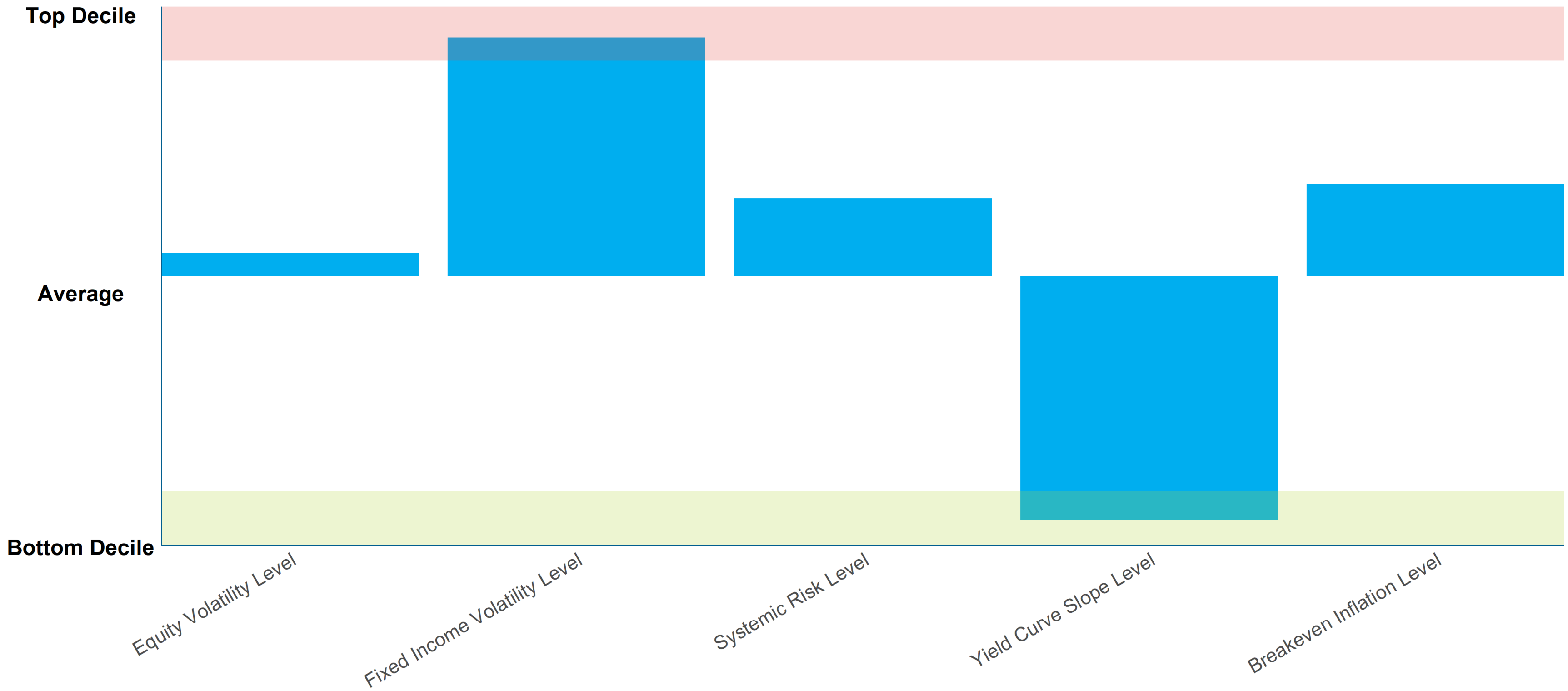
Risk Overview/Dashboard (1)
(As of March 31, 2023)[1]



→ Dashboard (1) summarizes the current state of the different valuation metrics per asset class relative to their own history.

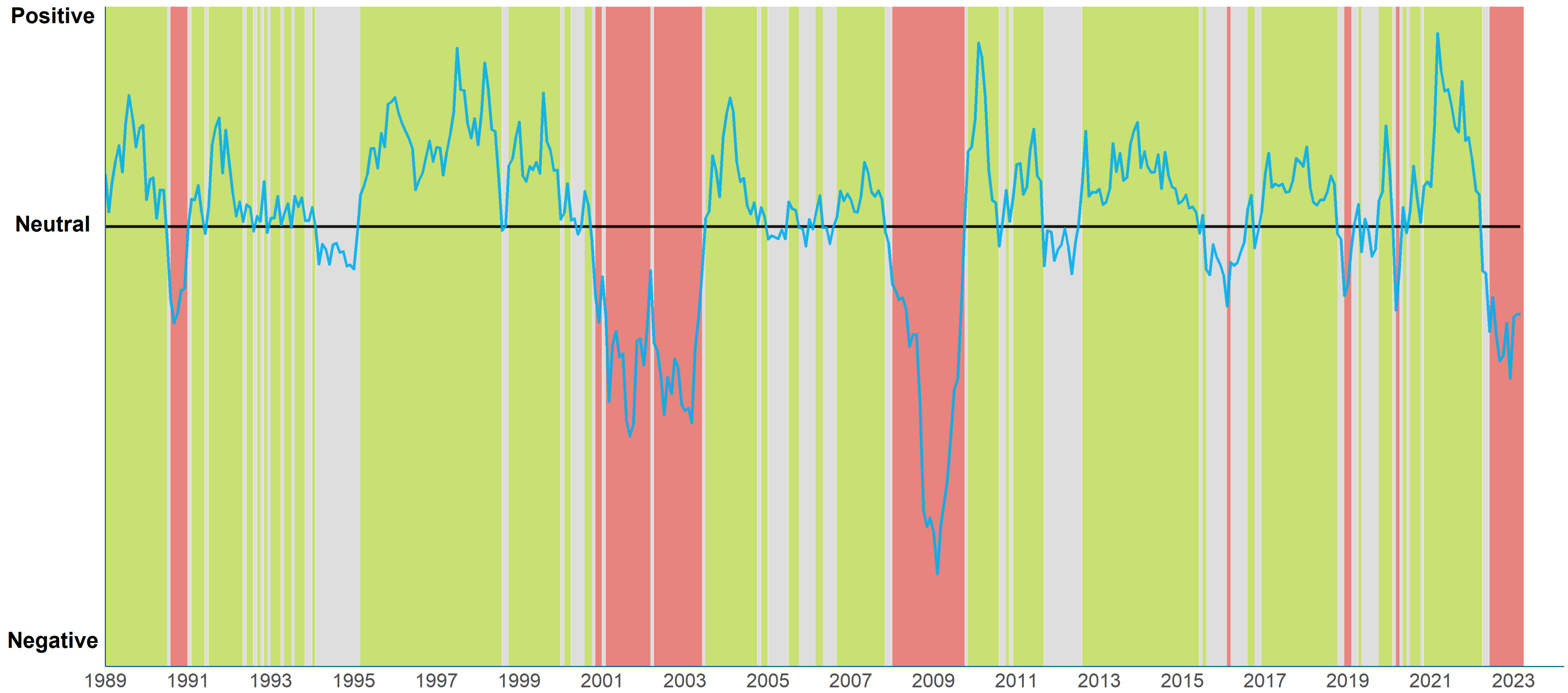
[1] With the exception of Private Equity Valuation, that is YTD as of December 31, 2022.

Risk Overview/Dashboard (2)
(As of March 31, 2023)

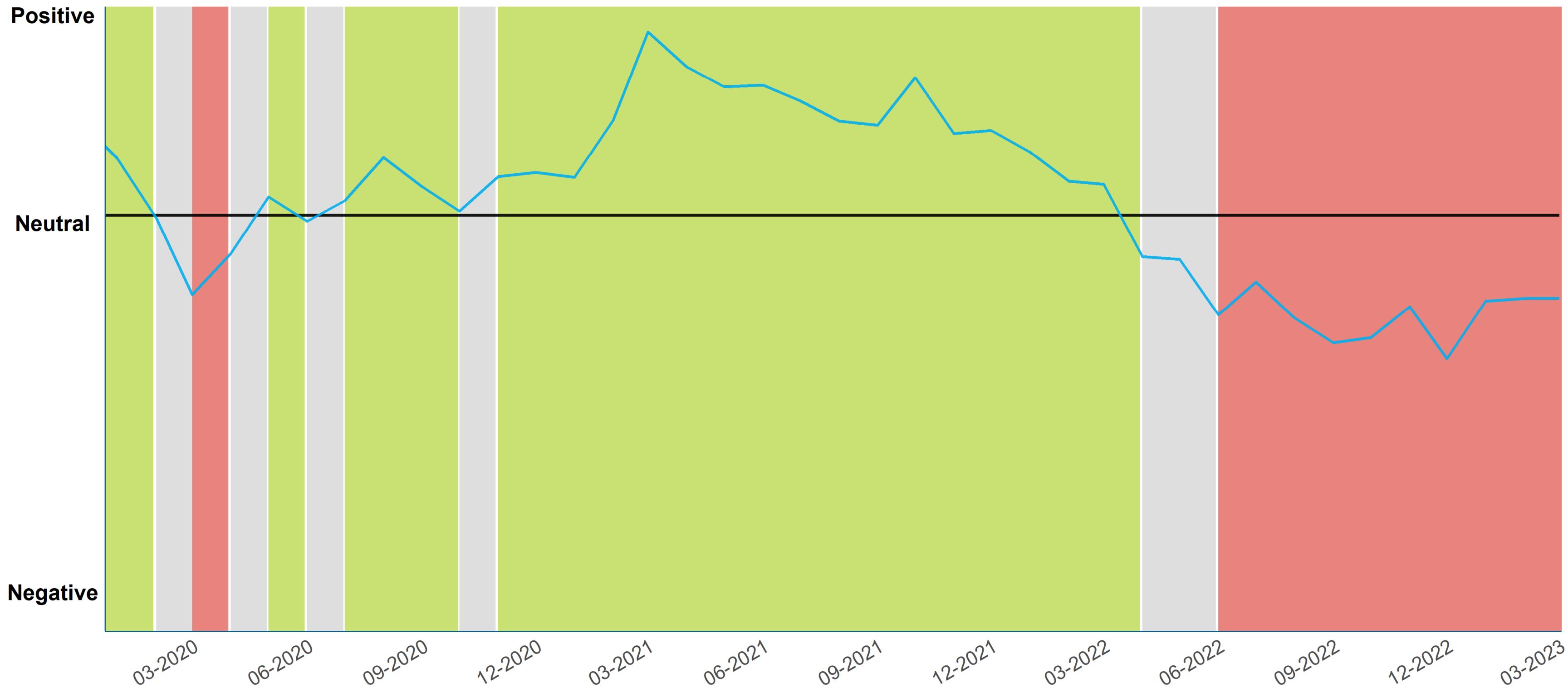


→ Dashboard (2) shows how the current level of each indicator compares to its respective history.

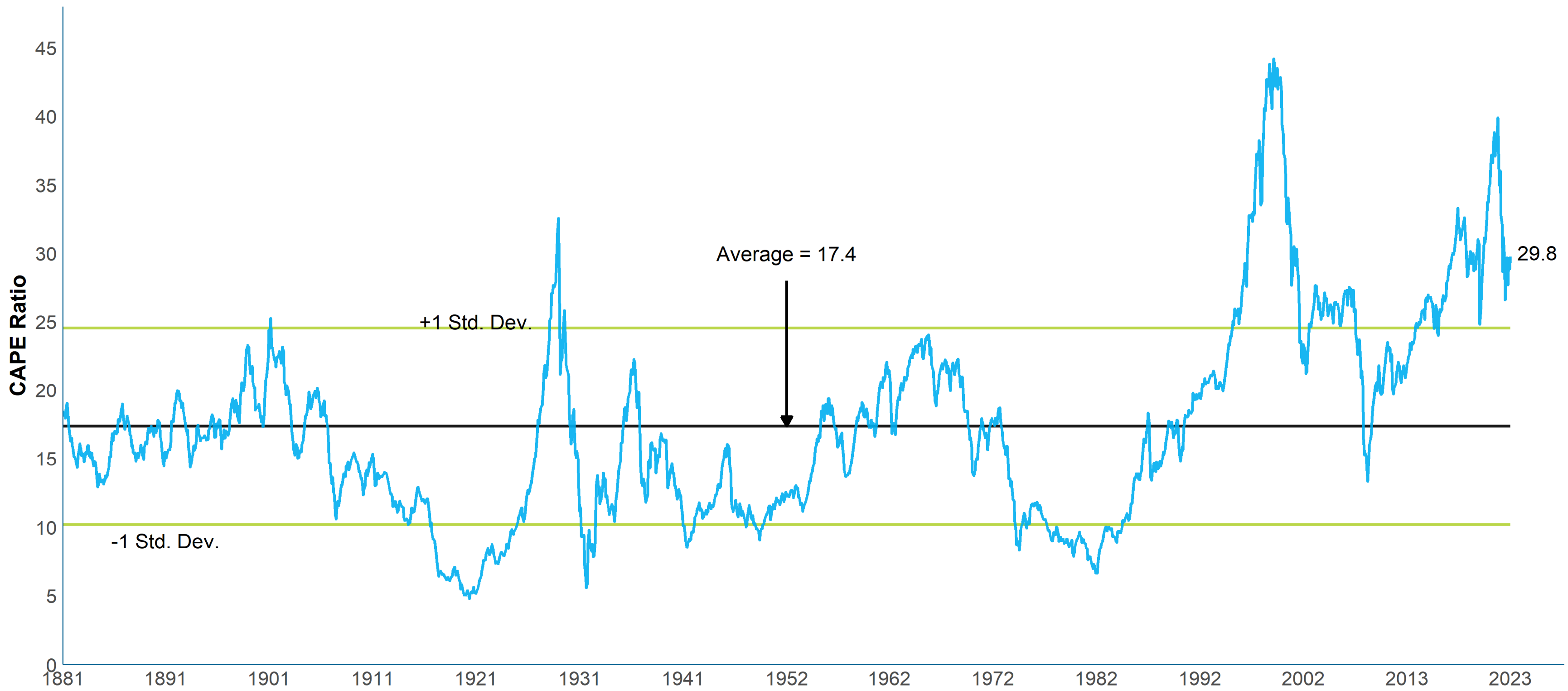
Market Sentiment Indicator (All History)
(As of March 31, 2023)



Market Sentiment Indicator (Last Three Years)
(As of March 31, 2023)



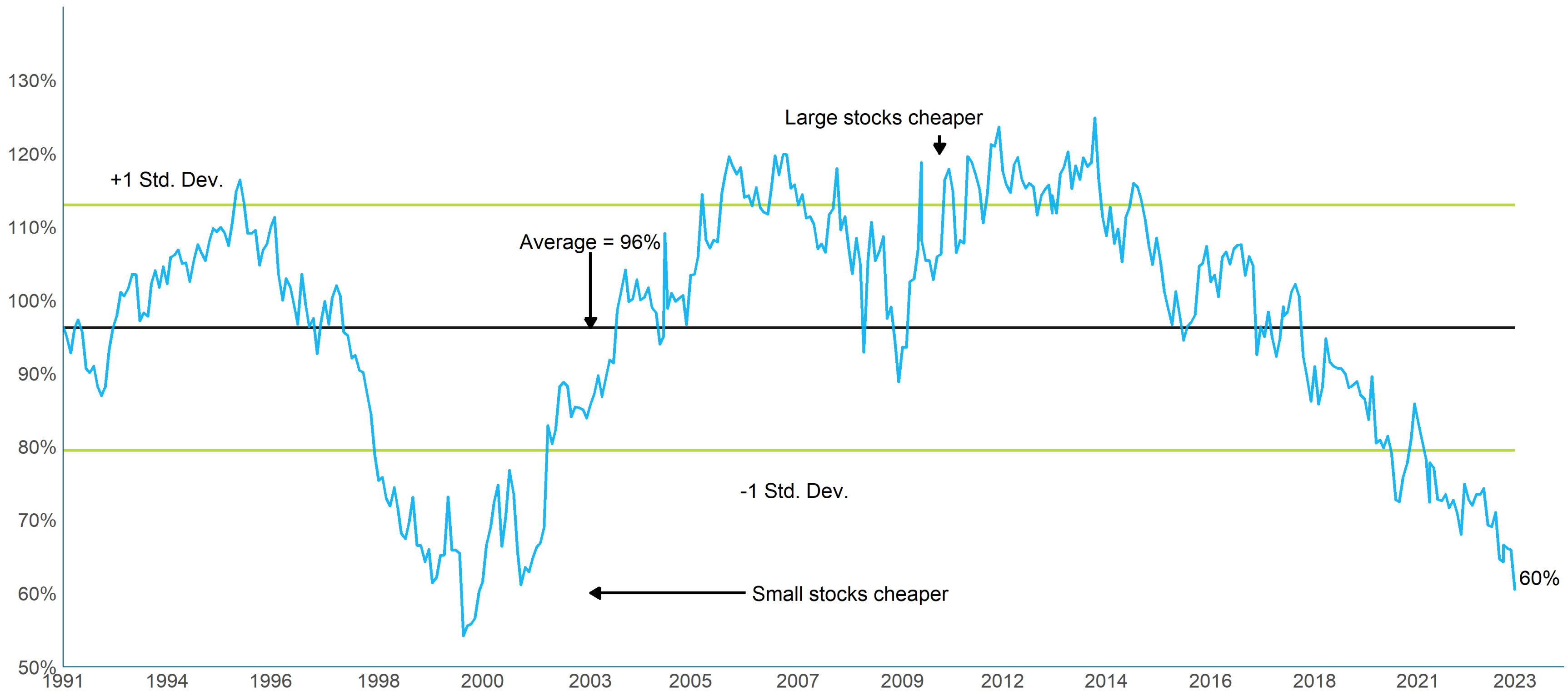
US Equity Cyclically Adjusted P/E[1]
(As of March 31, 2023)



→ This chart details one valuation metric for US equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group.

Small Cap P/E vs. Large Cap P/E[1]
(As of March 31, 2023)



→ This chart compares the relative attractiveness of small cap US equities vs. large cap US equities on a valuation basis. A higher (lower) figure indicates that large cap (small cap) is more attractive.

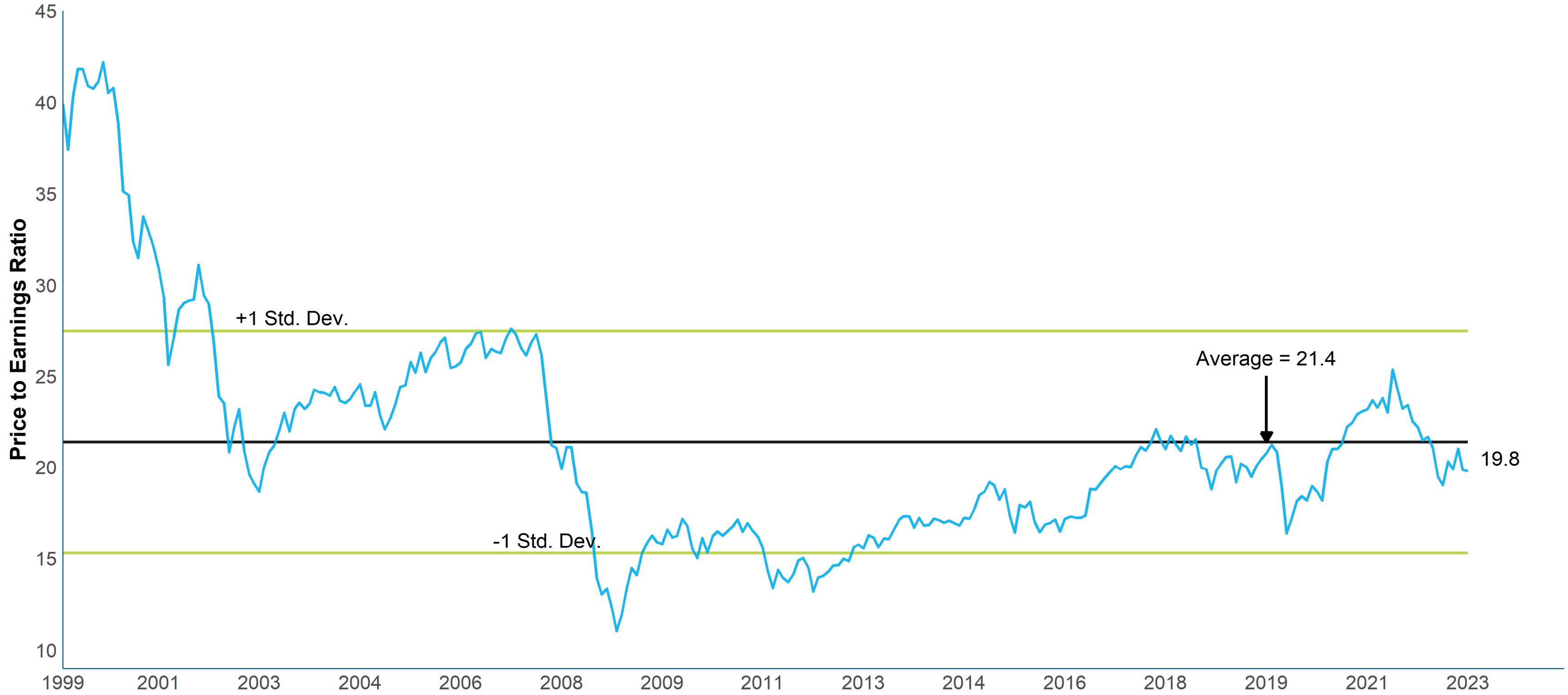
[1] Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments and Bloomberg. Prior months unavailable on Bloomberg are backfilled with last reported earnings. Earnings figures represent 12-month "as reported" earnings.

Growth P/E vs. Value P/E[1]
(As of March 31, 2023)

→ This chart compares the relative attractiveness of US growth equities vs. US value equities on a valuation basis. A higher (lower) figure indicates that value (growth) is more attractive.

[1] Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.

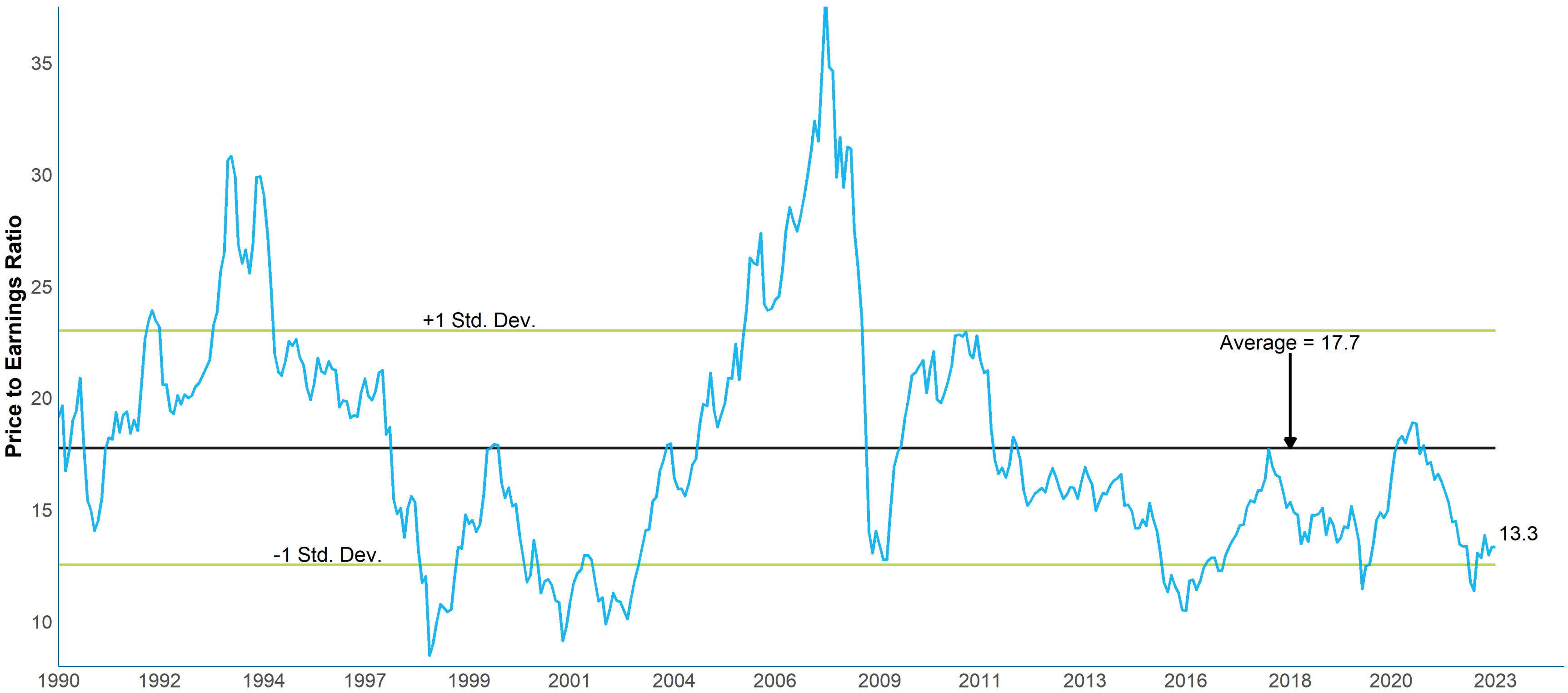
Developed International Equity Cyclically Adjusted P/E[1]
(As of March 31, 2023)



→ This chart details one valuation metric for developed international equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Developed International Equity (MSCI EAFE Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

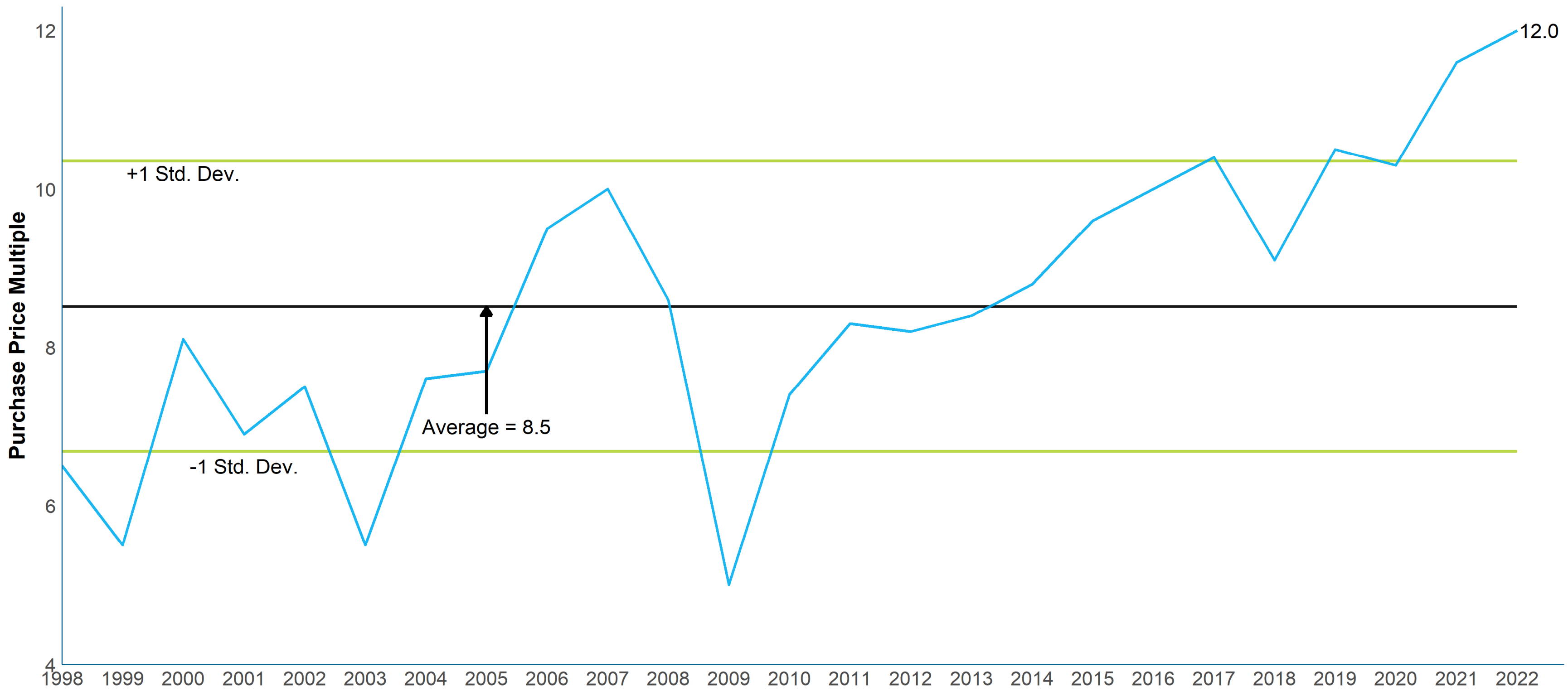
Emerging Market Equity Cyclically Adjusted P/E[1]
(As of March 31, 2023)



→ This chart details one valuation metric for emerging markets equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

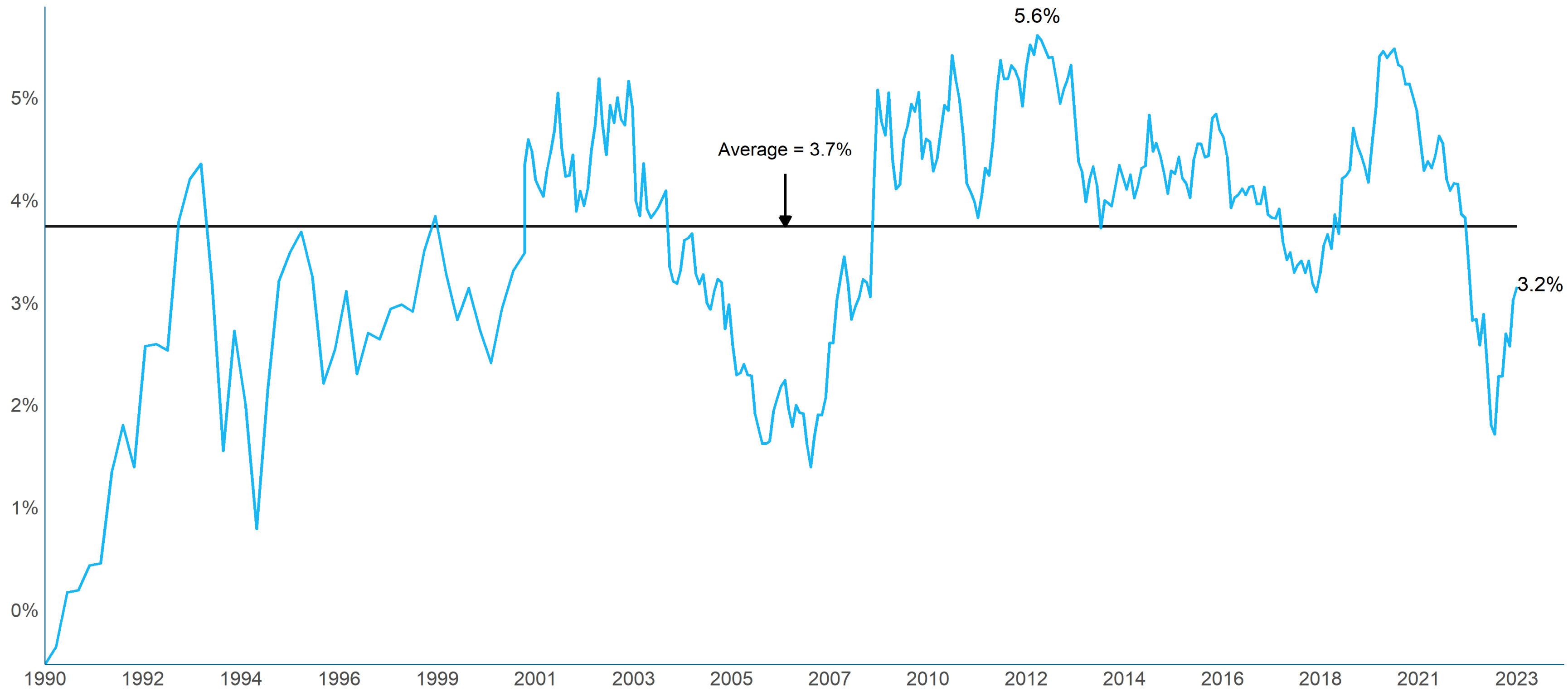
Private Equity Multiples[1]
(As of March 31, 2023)



→ This chart details one valuation metric for the private equity market. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Private Equity Multiples – Source: Preqin Median EBITDA Multiples Paid in All LBOs.

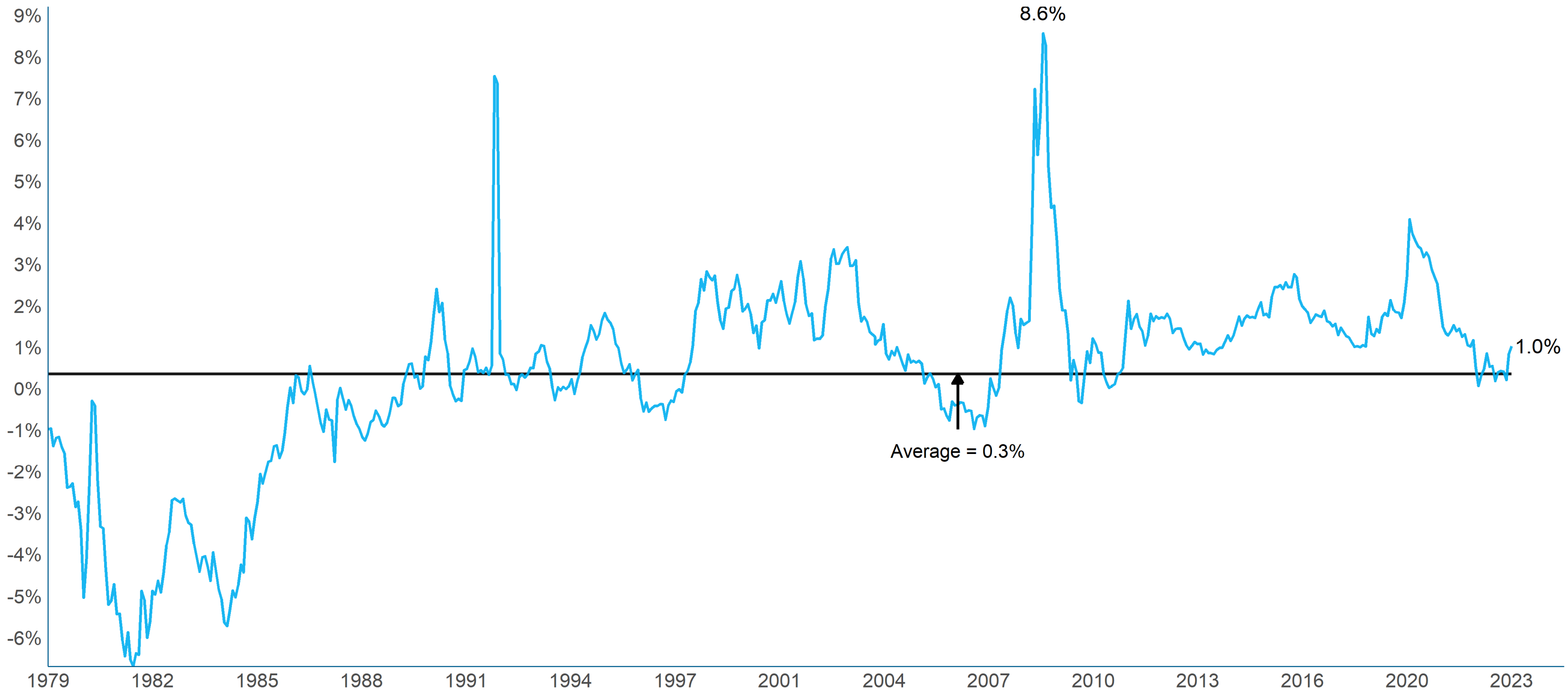
Core Real Estate Spread vs. Ten-Year Treasury[1]
(As of March 31, 2023)



→ This chart details one valuation metric for the private core real estate market. A higher (lower) figure indicates cheaper (more expensive) valuation.

[1] Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction-based indices from Real Capital Analytics and Meketa Investment Group.

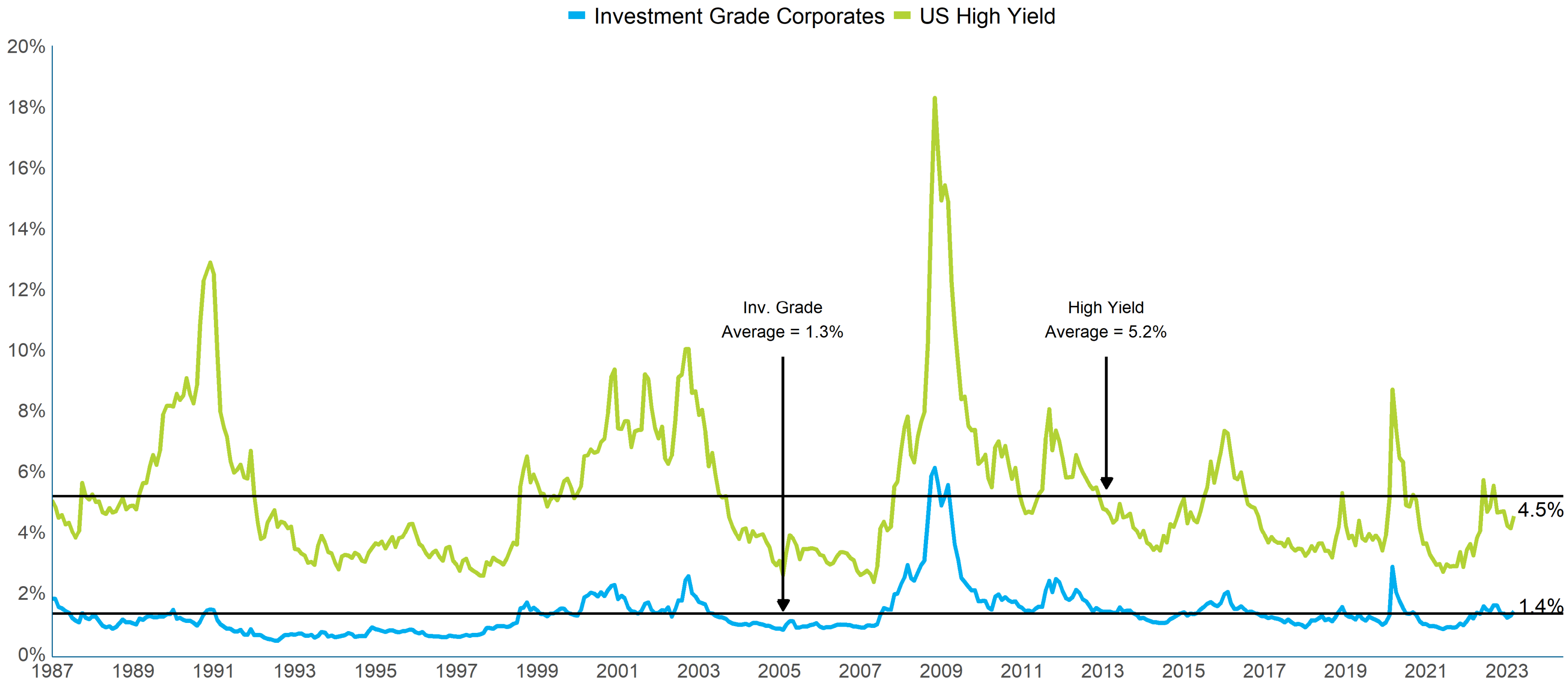
REITs Dividend Yield Spread vs. Ten-Year Treasury[1]
(As of March 31, 2023)



→ This chart details one valuation metric for the public REITs market. A higher (lower) figure indicates cheaper (more expensive) valuation.

[1] REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity Index.

Credit Spreads[1]
(As of March 31, 2023)



→ This chart details one valuation metric for the US credit markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

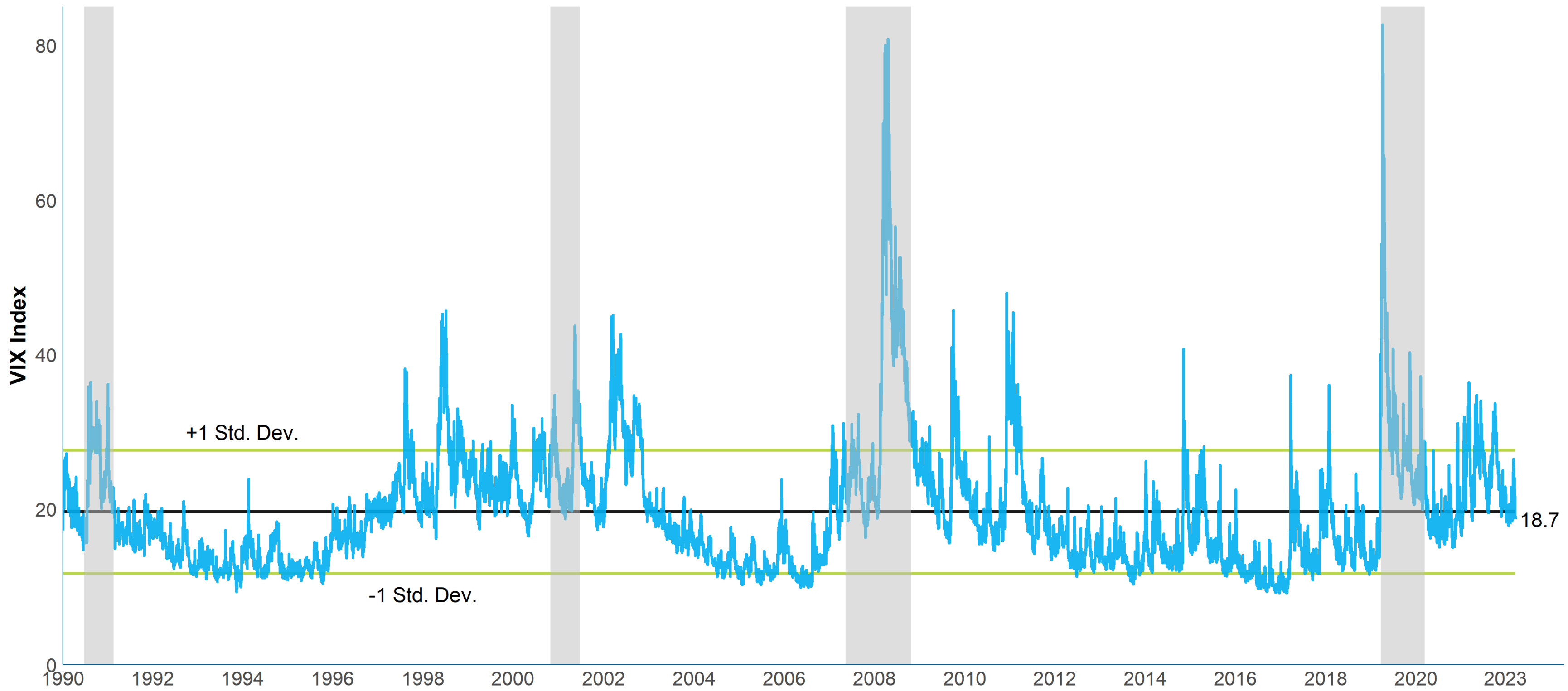
[1] Credit Spreads – Source: Bloomberg. High Yield is proxied by the Bloomberg High Yield Index and Investment Grade Corporates are proxied by the Bloomberg US Corporate Investment Grade Index. Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year US Treasury yield.

Emerging Market Debt Spreads[1]
(As of March 31, 2023)

→ This chart details one valuation metric for the EM debt markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

[1] EM Spreads – Source: Bloomberg. Option Adjusted Spread (OAS) for the Bloomberg EM USD Aggregate Index.

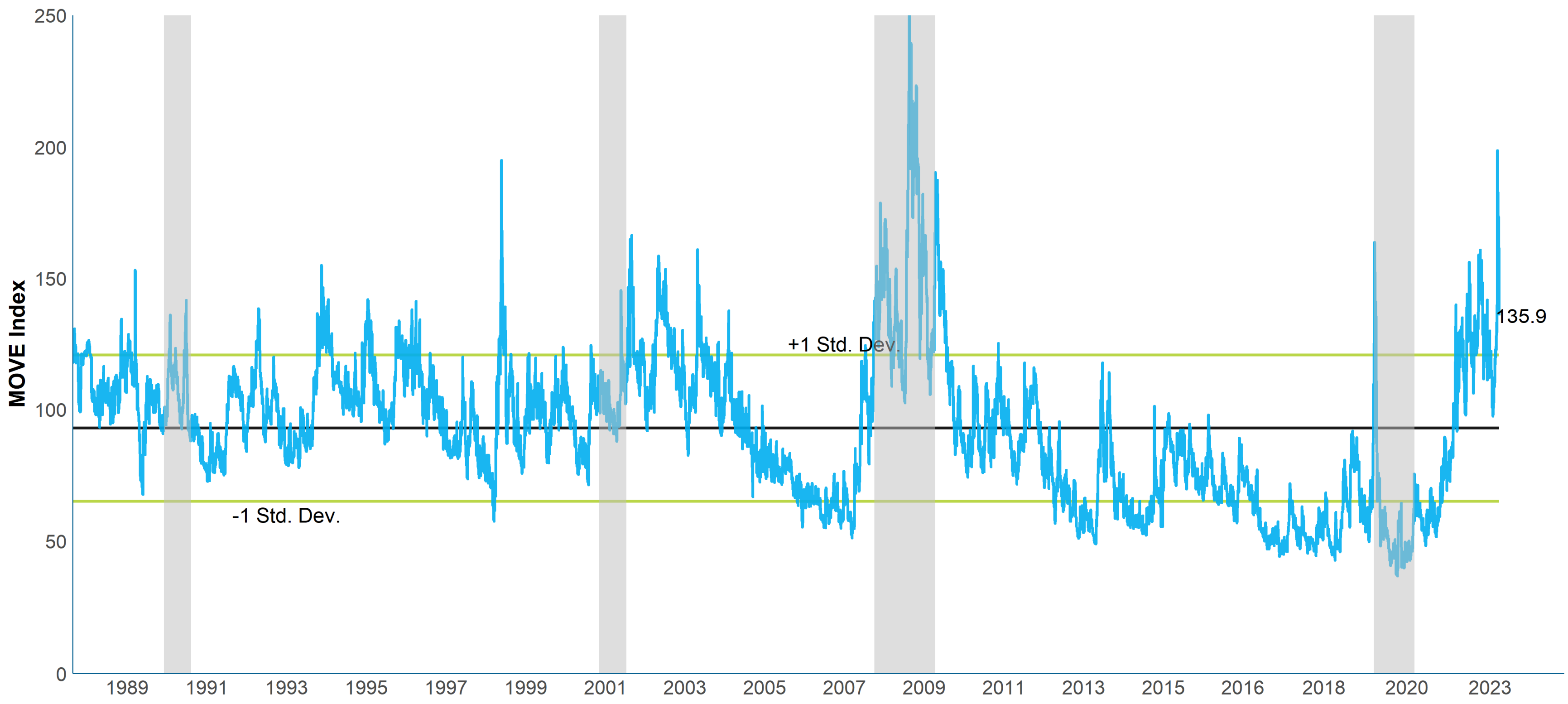
Equity Volatility[1]
(As of March 31, 2023)



→ This chart details historical implied equity market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

[1] Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.

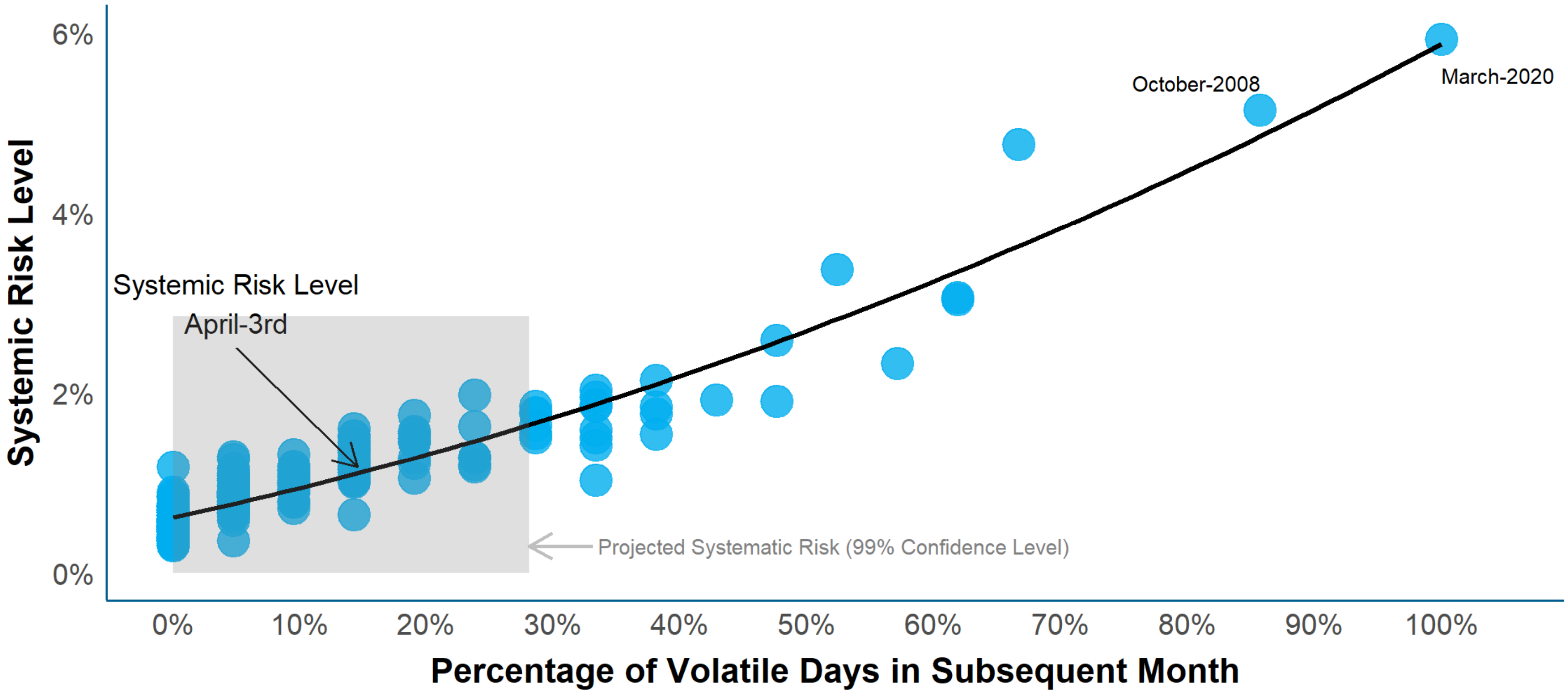
Fixed Income Volatility[1]
(As of March 31, 2023)



→ This chart details historical implied fixed income market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

[1] Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Fixed Income Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.

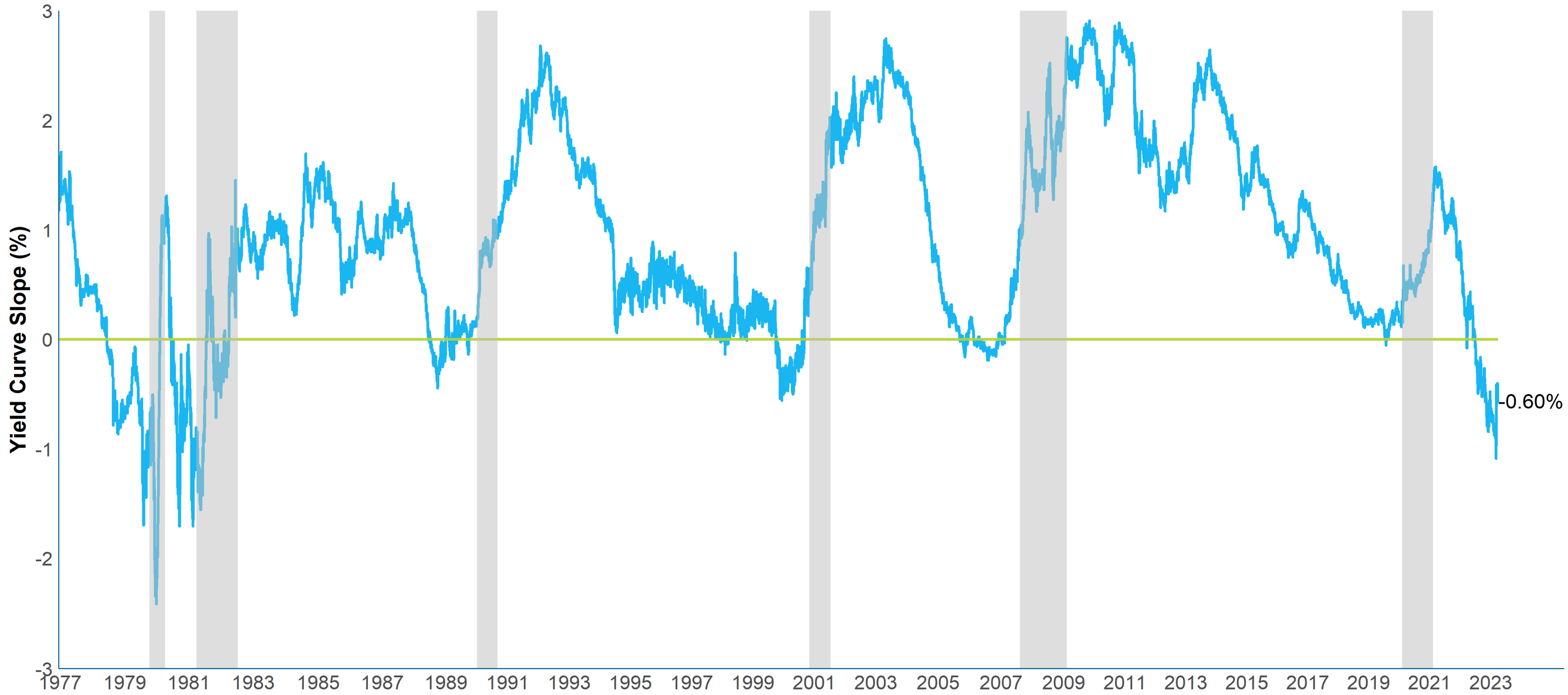
Systemic Risk and Volatile Market Days[1]
(As of March 31, 2023)



→ Systemic Risk is a measure of 'System-wide' risk, which indicates herding type behavior.

[1] Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

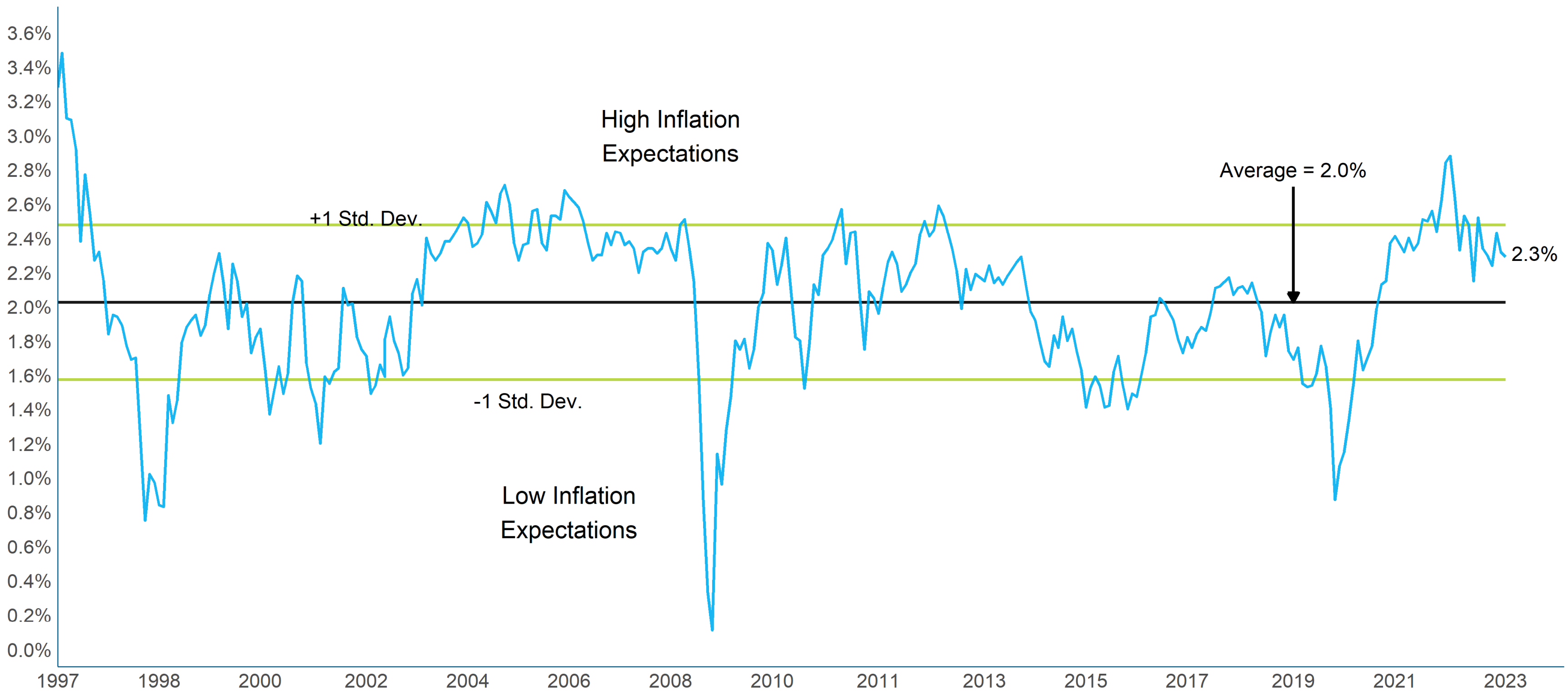
Yield Curve Slope (Ten Minus Two)[1]
(As of March 31, 2023)



→ This chart details the historical difference in yields between ten-year and two-year US Treasury bonds/notes. A higher (lower) figure indicates a steeper (flatter) yield curve slope.

[1] Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.

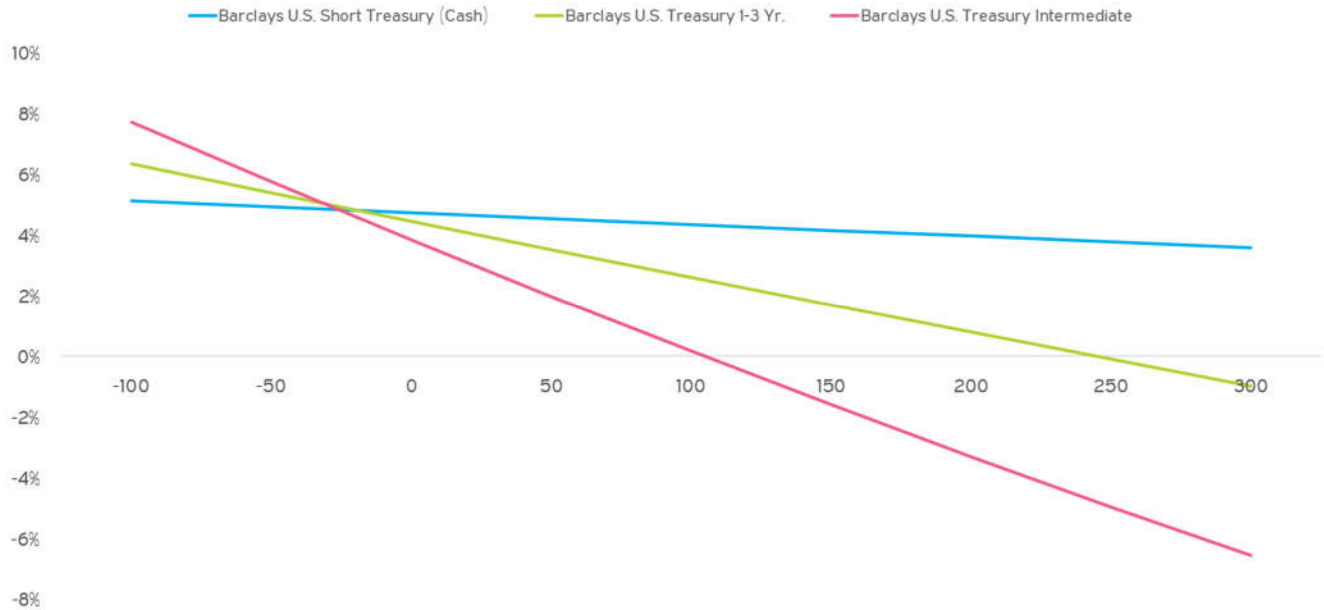
Ten-Year Breakeven Inflation[1]
(As of March 31, 2023)



→ This chart details the difference between nominal and inflation-adjusted US Treasury bonds. A higher (lower) figure indicates higher (lower) inflation expectations.

[1] Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

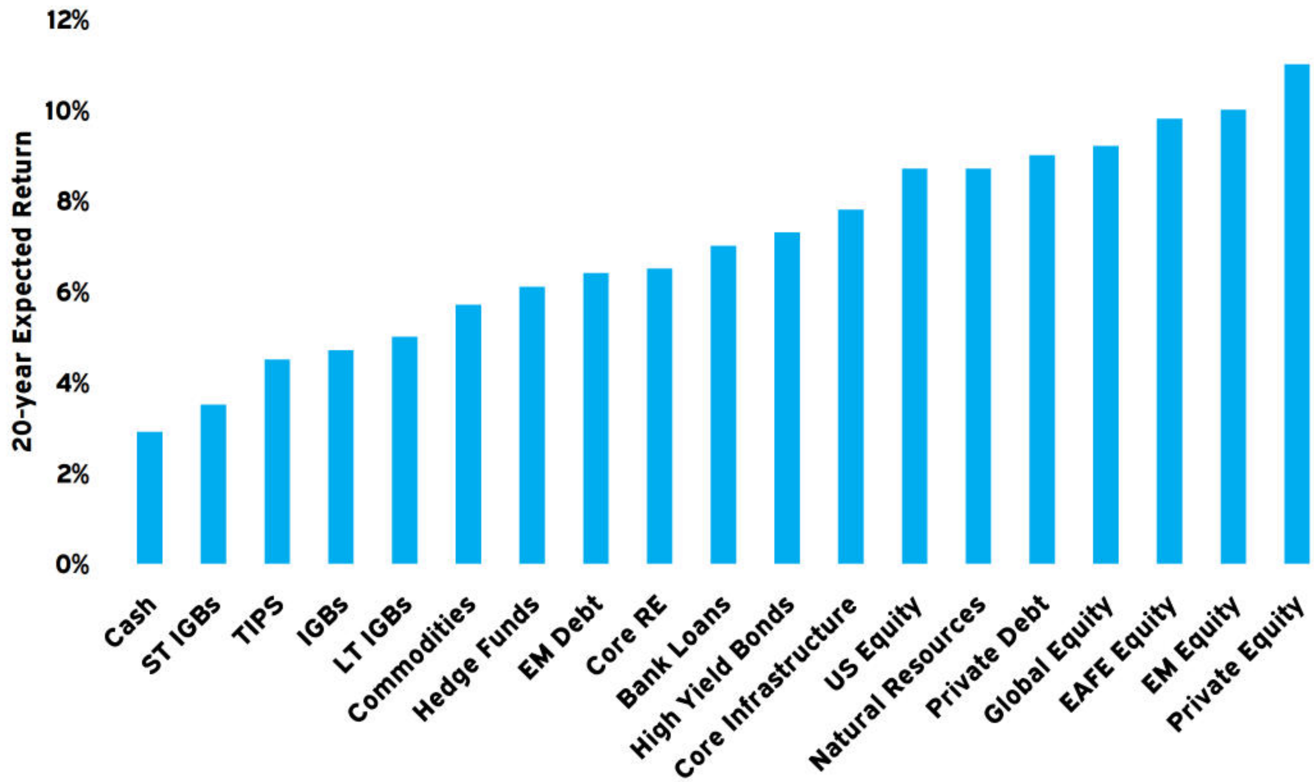
Total Return Given Changes in Interest Rates (bps)[1]
(As of March 31, 2023)



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays US Short Treasury (Cash)	5.1%	4.9%	4.7%	4.5%	4.4%	4.2%	4.0%	3.8%	3.6%	0.39	4.74%
Barclays US Treasury 1-3 Yr.	6.3%	5.4%	4.5%	3.5%	2.6%	1.7%	0.8%	-0.1%	-1.0%	1.87	4.46%
Barclays US Treasury Intermediate	7.7%	5.8%	3.8%	2.0%	0.2%	-1.6%	-3.3%	-5.0%	-6.6%	3.78	3.84%
Barclays US Treasury Long	21.9%	12.4%	3.8%	-4.0%	-10.9%	-16.9%	-22.0%	-26.3%	-29.7%	16.36	3.77%

[1] Data represents the expected total return from a given change in interest rates (shown in basis points) over a 12-month period assuming a parallel shift in rates. Source: Bloomberg, and Meketa Investment Group.

Long-Term Outlook – 20-Year Annualized Expected Returns[1]



→ This chart details Meketa's long-term forward-looking expectations for total returns across asset classes.

[1] Source: Meketa Investment Group's 2023 Asset Study.

Appendix

Data Sources and Explanations[1]

→ US Equity Cyclically Adjusted P/E on S&P 500 Index – Source: Robert Shiller and Yale University.

→ Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.

→ Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.

→ Developed International Equity (MSCI EAFE) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

→ Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

→ Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.

→ Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction-based indices from Real Capital Analytics and Meketa Investment Group.

[1] All Data as of March 31, 2023, unless otherwise noted.

Appendix

Data Sources and Explanations[1]

→ REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity Index.

→ Credit Spreads – Source: Bloomberg High Yield is proxied by the Bloomberg High Yield Index and Investment Grade Corporates are proxied by the Bloomberg US Corporate Investment Grade Index.

- Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year Treasury Yield.

→ EM Debt Spreads – Source: Bloomberg, and Meketa Investment Group. Option Adjusted Spread (OAS) for the Bloomberg EM USD Aggregate Index.

→ Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.

→ Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.

→ Systemic Risk and Volatile Market Days – Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

→ Systemic Risk, which measures risk across markets, is important because the more contagion of risk that exists between assets, the more likely it is that markets will experience volatile periods.

[1] All Data as of March 31, 2023, unless otherwise noted.

Appendix

Data Sources and Explanations[1]

→ Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.

→ Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

[1] All Data as of March 31, 2023, unless otherwise noted.

Meketa Market Sentiment Indicator

Explanation, Construction and Q&A

Meketa has created the MIG Market Sentiment Indicator (MIG-MSI) to complement our valuation-focused Risk Metrics. This measure of sentiment is meant to capture significant and persistent shifts in long-lived market trends of economic growth risk, either towards a risk-seeking trend or a risk-aversion trend.

This appendix explores:

→ What is the Meketa Market Sentiment Indicator?

→ How do I read the indicator graph?

→ How is the Meketa Market Sentiment Indicator constructed?

→ What do changes in the indicator mean?

Meketa has created a market sentiment indicator for monthly publication (the MIG-MSI – see below) to complement Meketa's Risk Metrics.

→ Meketa's Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk concerns long before a market correction take place. The MIG-MSI helps to address this early-warning bias by measuring whether the markets are beginning to acknowledge key Risk Metrics trends, and / or indicating non-valuation-based concerns. Once the MIG-MSI indicates that the market sentiment has shifted, it is our belief that investors should consider significant action, particularly if confirmed by the Risk Metrics. Importantly, Meketa believes the Risk Metrics and MIG-MSI should always be used in conjunction with one another and never in isolation. The questions and answers below highlight and discuss the basic underpinnings of the Meketa MIG-MSI:

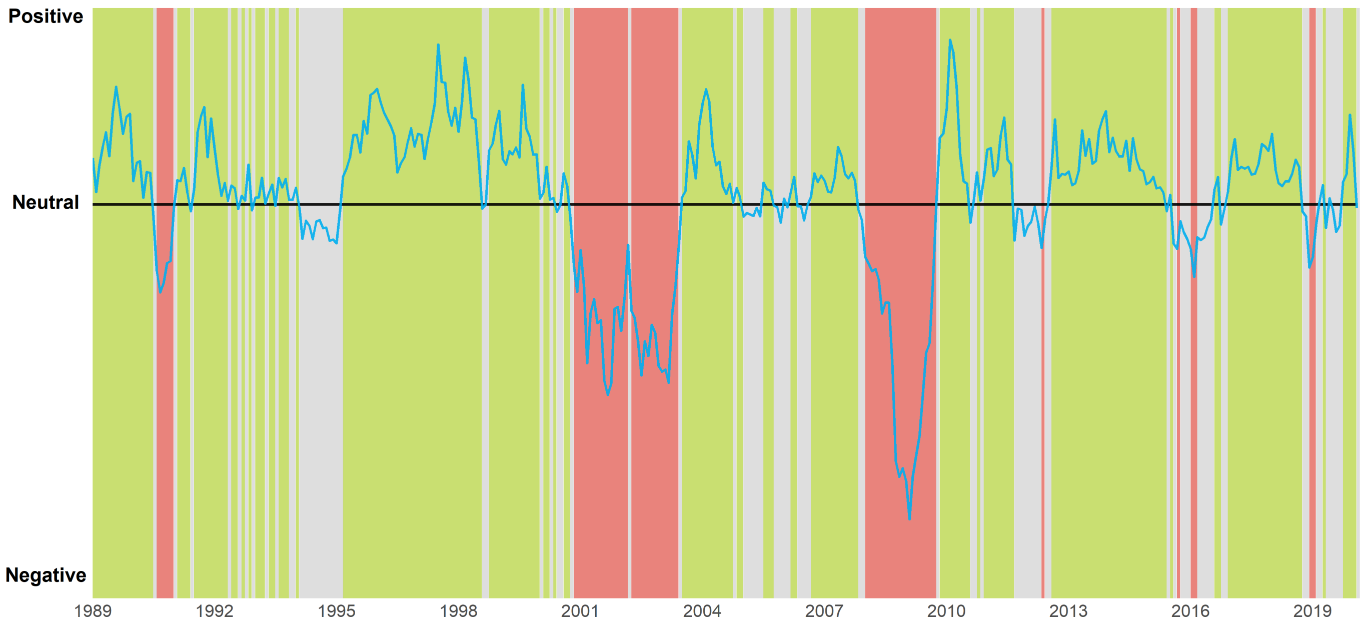
What is the Meketa Market Sentiment Indicator (MIG-MSI)?

→ The MIG-MSI is a measure meant to gauge the market's sentiment regarding economic growth risk. Growth risk cuts across most financial assets and is the largest risk exposure that most portfolios bear. The MIG-MSI takes into account the momentum (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

How do I read the Meketa Market Sentiment Indicator graph?

→ Simply put, the MIG-MSI is a color-coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the MIG-MSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the MIG-MSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.

→ Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.



How is the Meketa Market Sentiment Indicator (MIG-MSI) Constructed?

→ The MIG-MSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:

- Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months).
- Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration US Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight).
- Both measures are converted to Z-scores and then combined to get an "apples to apples" comparison without the need of re-scaling.

→ The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure[1]. The color reading on the graph is determined as follows:

- If both stock return momentum and bond spread momentum are positive = GREEN (positive).
- If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive).
- If both stock return momentum and bond spread momentum are negative = RED (negative).

[1] Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.
"Time Series Momentum" Moskowitz, Ooi, Pedersen, August 2010. *http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf*

What does the Meketa Market Sentiment Indicator (MIG-MSI) mean? Why might it be useful?

→ There is strong evidence that time series momentum is significant and persistent. Across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12-month period. The MIG-MSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

Economic and Market Update

Data as of March 31, 2023

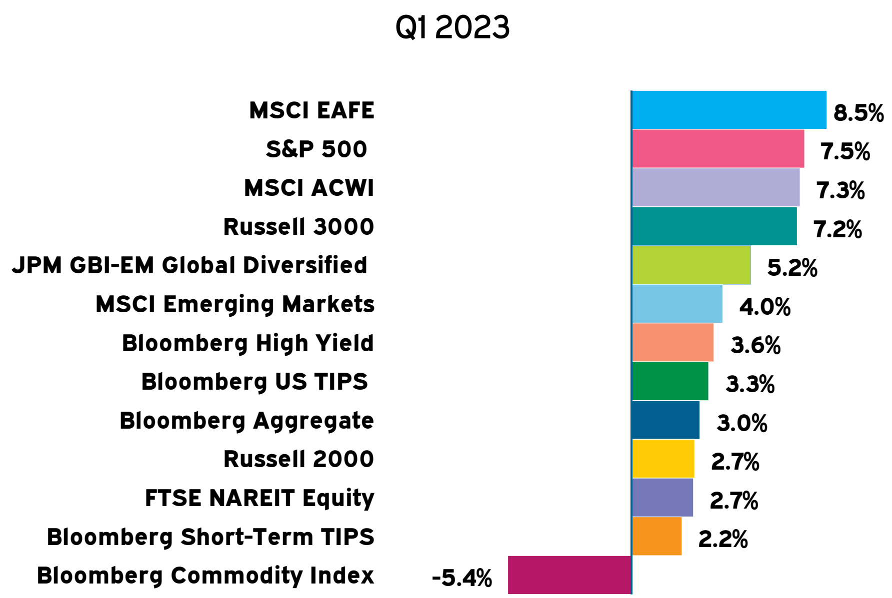
Commentary

→ It was a volatile quarter for most asset classes driven by evolving monetary policy expectations and high-profile bank failures. Ultimately, investors remained focused on slowing inflation and potentially peaking rate hikes leading to positive results across most asset classes for the quarter.

- The Fed's, and others', quick responses to pressures in the banking sector brought confidence back to the markets in March with the crisis driving the terminal policy rate expectations lower.
- US equity markets (Russell 3000) rallied in March (+2.7%) finishing the first quarter in strongly positive territory (+7.2%). Growth significantly outperformed value for the quarter, driven by the technology sector.
- Non-US developed equity markets (MSCI EAFE +2.5%) also posted positive returns in March. They returned 8.5% for the quarter, finishing ahead of US equities.
- Emerging market equities had positive returns for the month (+3.0%) supported by Chinese equities (+4.5%) and a weaker US dollar. They trailed developed market equities for the quarter partly due to higher US-China tensions.
- On expectations for lower inflation and concerns over the banking sector, bonds rallied in March, with the broad US bond market (Bloomberg Aggregate) rising 2.5%. For the quarter, the broad US bond market was up 3.0%.

→ This year, the path of inflation and monetary policy, slowing global growth, and the war in Ukraine, as well as recent pressures in small- and medium-sized regional banks in the US, will all be key.

Index Returns[1]



→ Despite volatility during the quarter, public markets, except commodities, finished the first quarter of 2023 in positive territory adding to the strong gains from the fourth quarter of last year.

[1] Source: Bloomberg and FactSet. Data is as of March 31, 2023.

Domestic Equity Returns[1]

Domestic Equity	March (%)	Q1 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	3.7	7.5	-7.7	18.6	11.2	12.2
Russell 3000	2.7	7.2	-8.6	18.5	10.4	11.7
Russell 1000	3.2	7.5	-8.4	18.6	10.9	12.0
Russell 1000 Growth	6.8	14.4	-10.9	18.6	13.6	14.6
Russell 1000 Value	-0.5	1.0	-5.9	17.9	7.5	9.1
Russell MidCap	-1.5	4.1	-8.8	19.2	8.0	10.0
Russell MidCap Growth	1.4	9.1	-8.5	15.2	9.1	11.2
Russell MidCap Value	-3.1	1.3	-9.2	20.7	6.5	8.8
Russell 2000	-4.8	2.7	-11.6	17.5	4.7	8.0
Russell 2000 Growth	-2.5	6.1	-10.6	13.4	4.3	8.5
Russell 2000 Value	-7.2	-0.7	-13.0	21.0	4.5	7.2

US Equities: Russell 3000 Index rose 2.7% in March and 7.2% in Q1.

→ US stocks rose in aggregate for the month and quarter as investors were optimistic that the Federal Reserve may end its policy tightening earlier than expected. However, turmoil in the regional banking industry weighed on segments of the market.

→ The small cap and value indices were more exposed to the banking turmoil and underperformed their broad market indices by significant margins.

→ Large cap stocks were driven higher by the continued strength of the technology and communication services sectors. This same dynamic contributed to the continued outperformance of growth stocks against their value counterparts across the capitalization spectrum.

[1] Source: Bloomberg. Data is as of March 31, 2023.

Foreign Equity Returns[1]

Foreign Equity	March (%)	Q1 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	2.4	6.9	-5.1	11.8	2.5	4.2
MSCI EAFE	2.5	8.5	-1.4	13.0	3.6	5.0
MSCI EAFE (Local Currency)	0.5	7.5	3.8	14.6	6.3	7.3
MSCI EAFE Small Cap	-0.2	4.9	-9.8	12.1	0.9	5.8
MSCI Emerging Markets	3.0	4.0	-10.7	7.8	-0.9	2.0
MSCI Emerging Markets (Local Currency)	2.2	3.8	-6.6	8.8	1.9	5.0
MSCI China	4.5	4.7	-4.7	-2.6	-4.0	3.4

Foreign Equity: Developed international equities (MSCI EAFE) rose 2.5% in March and 8.5% for the quarter. Emerging market equities (MSCI EM) rose 3.0%. for the month and 4.0% in the first quarter.

→ Non-US equities also recovered in March with developed markets (MSCI EAFE) outpacing US equities (8.5% versus 7.2%) for the quarter and emerging markets (MSCI Emerging Markets) trailing (4.0% versus 7.2%).

→ Developed market equities also benefited from expectations that monetary policy may be peaking on declining inflation. The continued weakness in the US dollar also added to the quarterly results (+1%) for US investors.

→ Emerging market equities started the year with optimism over the reopening of China's economy, but the escalation of US-China tensions and the broader banking crisis led to weaker relative results compared to developed markets.

[1] Source: Bloomberg. Data is as of March 31, 2023.

Fixed Income Returns[1]

Fixed Income	March (%)	Q1 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Barclays Universal	2.3	2.9	-4.6	-2.0	1.0	1.6	4.8	6.3
Bloomberg Barclays Aggregate	2.5	3.0	-4.8	-2.8	0.9	1.4	4.4	6.5
Bloomberg Barclays US TIPS	2.9	3.3	-6.1	1.8	2.9	1.5	4.1	7.0
Bloomberg Short-term TIPS	1.9	2.2	-0.3	3.5	3.0	1.5	4.6	2.5
Bloomberg Barclays High Yield	1.1	3.6	-3.3	5.9	3.2	4.1	8.5	4.2
JPM GBI-EM Global Diversified (USD)	4.1	5.2	-0.7	0.9	-2.4	-1.5	7.1	5.1

Fixed Income: The Bloomberg Universal rose 2.3% in March and 2.9% in Q1 as global sovereign debt yields fell on monetary policy expectations.

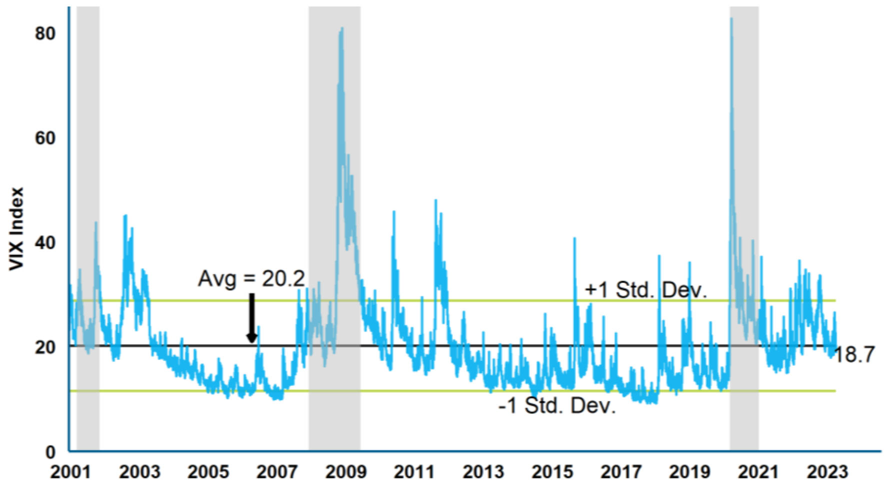
→ Anecdotal reports suggest bouts of flight-to-quality flows during the peak of interest rate volatility connected to the banking sector pushed sovereign debt yields lower. These concerns largely outweighed continued inflation concerns and caused investors to adjust their policy expectations.

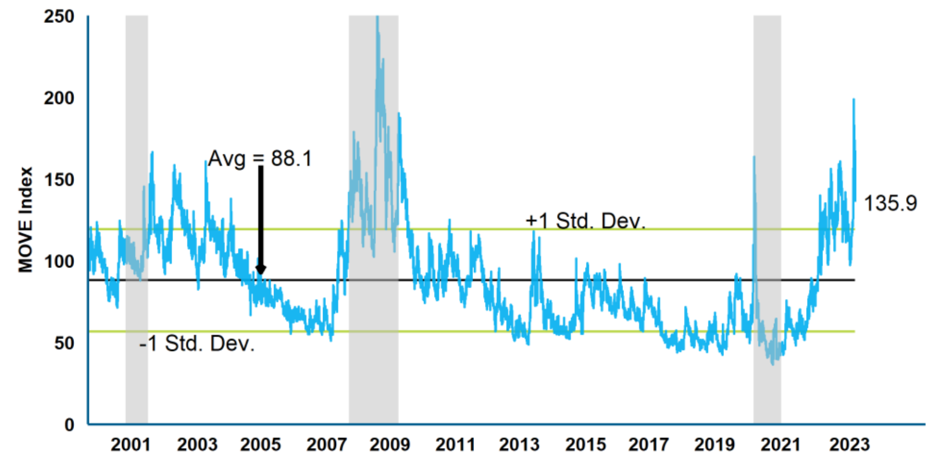
→ The broad TIPS index outperformed the broad US bond market (Bloomberg Aggregate) in March and for the quarter.

→ High yield bonds had the weakest results in March driven by banking sector weakness but outperformed the broad US bond market for the quarter.

[1] Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of March 31, 2023. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.

Equity and Fixed Income Volatility[1]



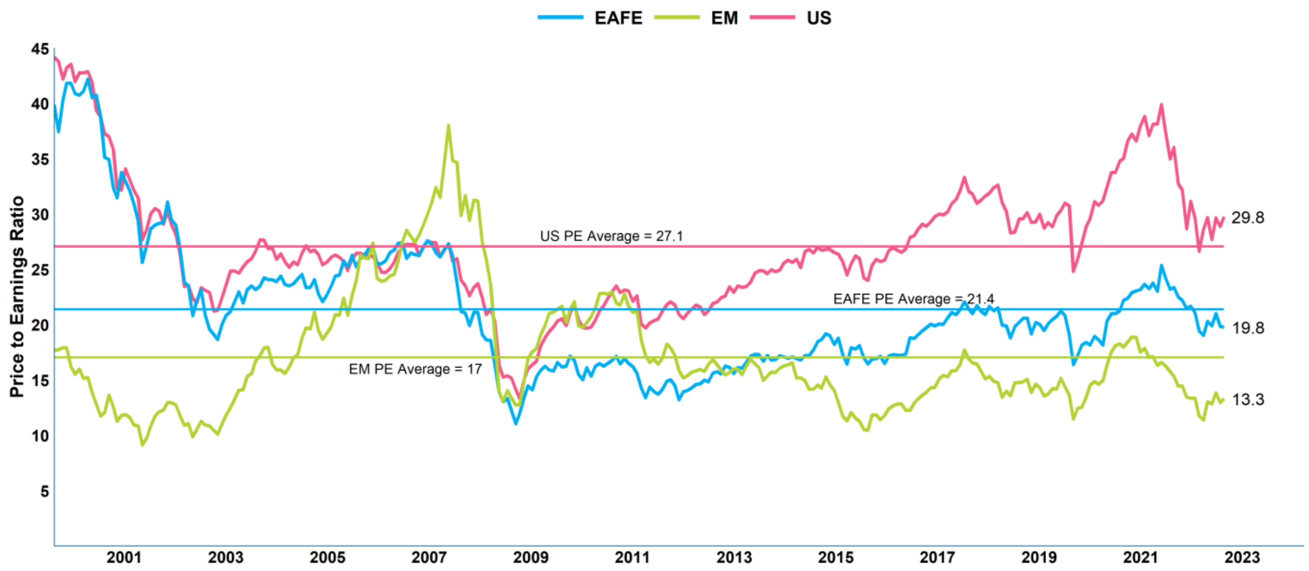


→ Volatility in equities (VIX) remained subdued through the end of March as investors continued to anticipate the end of the Fed's policy tightening.

→ In comparison, the bond market remains on edge with the more policy sensitive MOVE (fixed income volatility) remaining well above its long-run average. During the quarter it hit the highest level since the Global Financial Crisis as the banking sector issues created uncertainty over how the Fed would balance fighting inflation and maintaining financial stability.

[1] Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of March 2023. The average line indicated is the average of the VIX and MOVE values between January 2000 and March 2023.

Equity Cyclically Adjusted P/E Ratios[1]

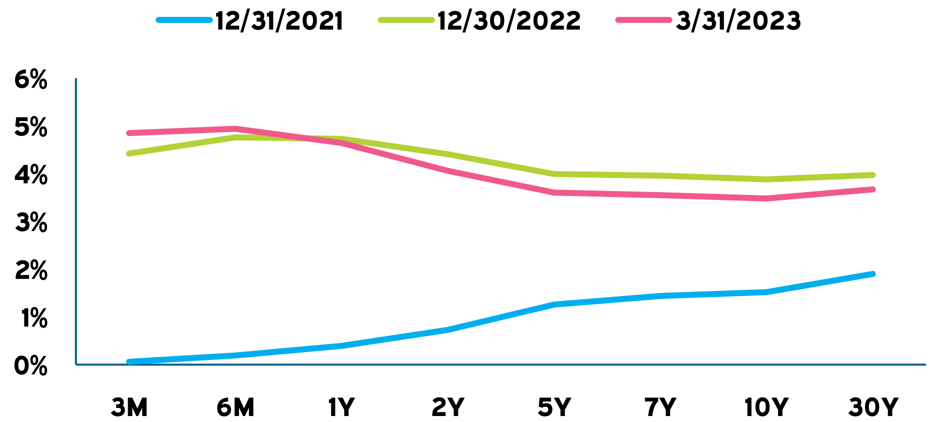


→ After its dramatic decline last year the US equity price-to-earnings ratio remains above its long-run (21st century) average.

→ International developed market valuations are slightly below their own long-term average, with those for emerging markets the lowest and well under the long-term average.

[1] US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of March 2023. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to the recent month-end respectively.

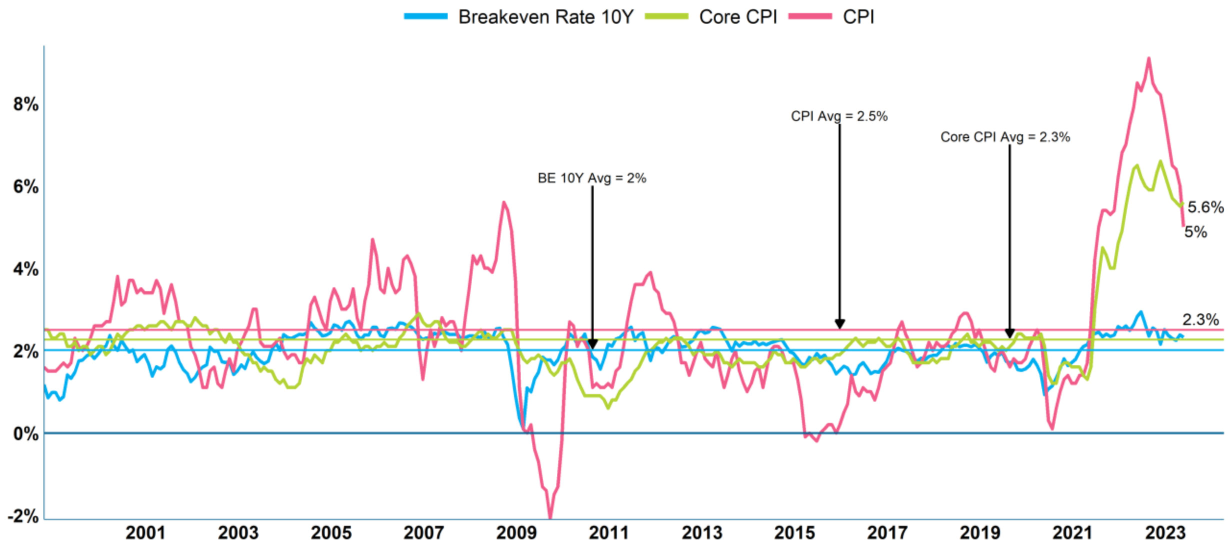
US Yield Curve[1]



- → It was a volatile quarter for interest rates, particularly shorter-dated maturities. Except for the shortest maturities, rates largely declined across the yield curve in the first quarter on expectations of peaking policy.
- → After hitting -1.07% in early March, the yield spread between two-year and ten-year Treasuries finished the quarter at -0.55% as policy-sensitive rates at the front-end of the curve declined faster than longer maturities. The more closely watched measure by the Fed of three-month and ten-year Treasuries also remained inverted. Inversions in the yield curve have often preceded recessions.
- → The Fed remained committed to fighting inflation, despite pressures in the banking sector, raising rates another 25 basis points to a range of 4.75% to 5.0% at its March meeting.

[1] Source: Bloomberg. Data is as of March 31, 2023.

Ten-Year Breakeven Inflation and CPI[1]



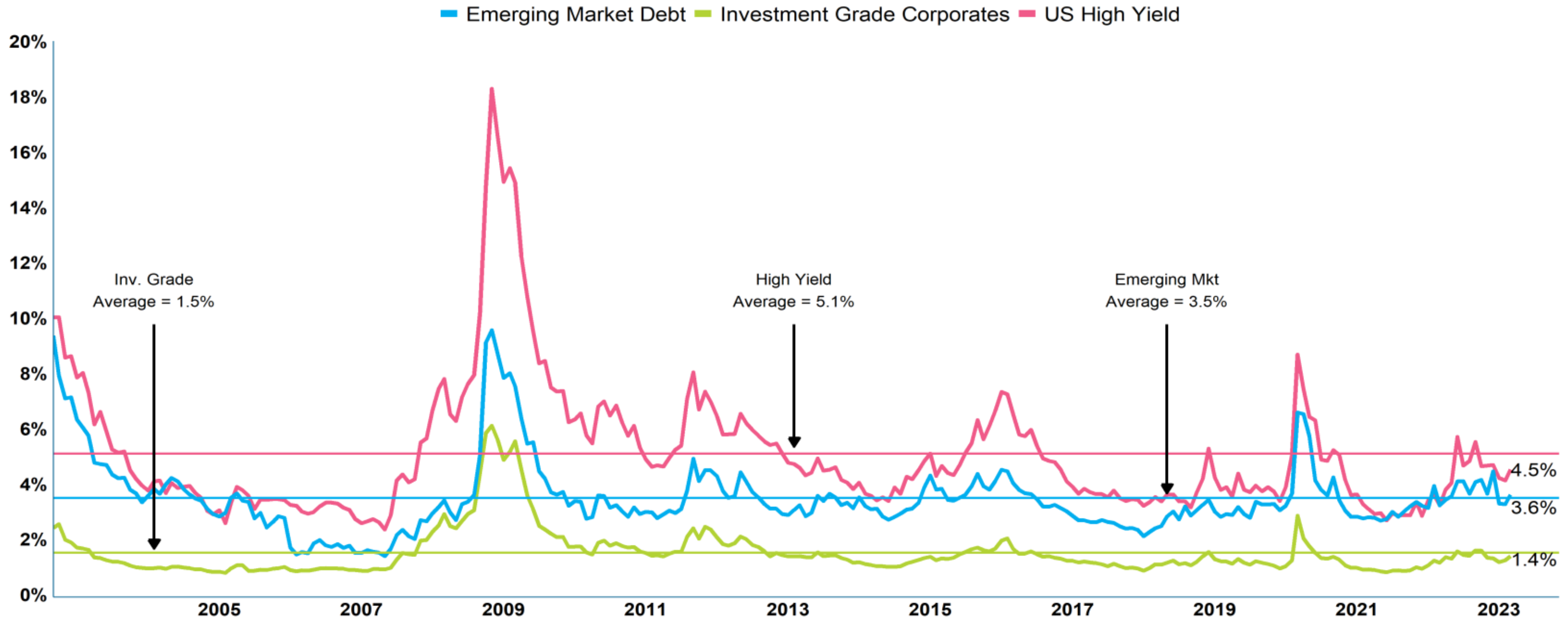
→ Inflation continued to decline in March with the year-over-year reading falling from 6.0% to 5.0% and coming in slightly below the 5.1% expectations. The rate of price increases also slowed on a month-over-month basis (0.1% versus 0.4%), with food prices only slightly higher and energy prices declining.

→ Core inflation – excluding food and energy - rose (5.6% versus 5.5%) mostly driven by transportation and housing.

→ Inflation expectations (breakevens) were volatile over the month and declined on net, but nonetheless ended the month at 2.3% (roughly where it started the quarter).

[1] Source: Bloomberg. Data is as of March 31, 2023. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end, respectively. Breakeven values represent month-end values for comparative purposes.

Credit Spreads vs. US Treasury Bonds[1]

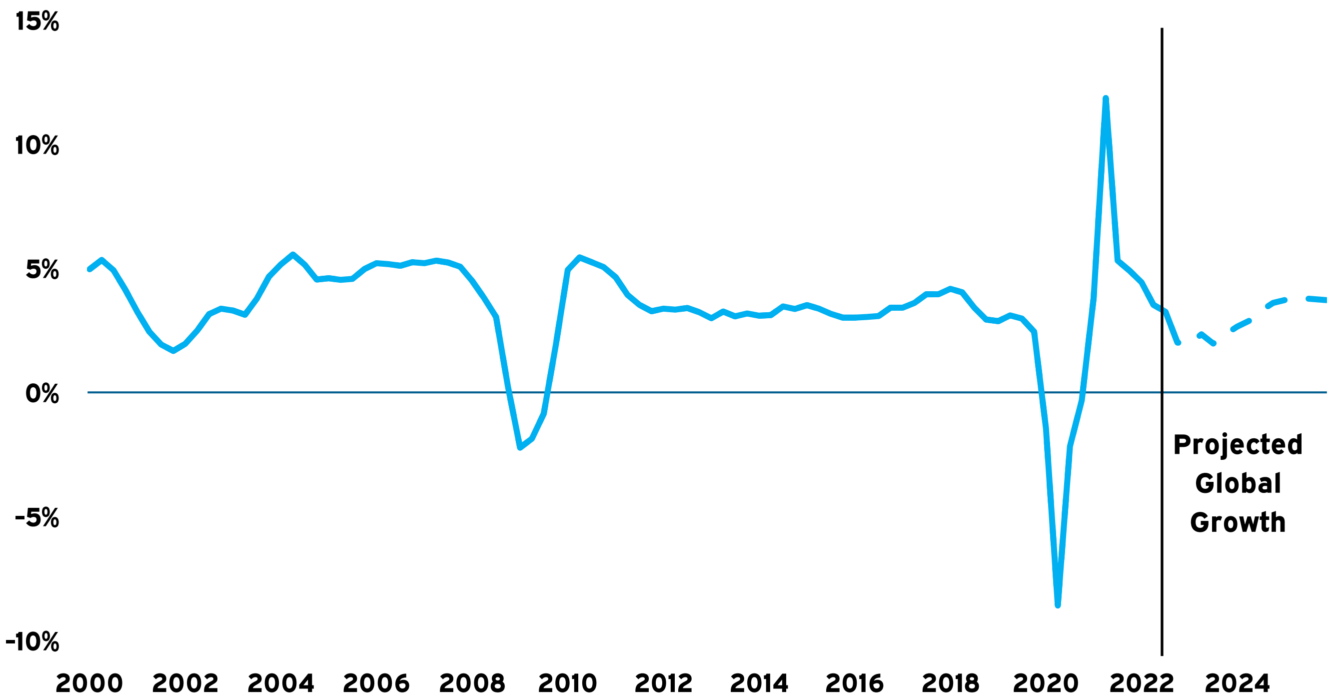


→ Spreads (the added yield above a comparable maturity Treasury) experienced a significant spike in March during the banking crisis but subsequently declined as the Fed and others stepped in to provide support.

→ High yield spreads rose from 4.1% to a peak of 5.2% in March before finishing the quarter at 4.5% (lower than the start of the quarter by 0.2%). Investment grade spreads also spiked in March (1.2% to 1.6%) but also fell from their peak to 1.4%. Emerging market spreads finished the quarter at 3.6% experiencing the largest decline (-0.9%).

[1] Sources: Bloomberg. Data is as of March 31, 2023. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the recent month-end, respectively.

Global Real Gross Domestic Product (GDP) Growth[1]



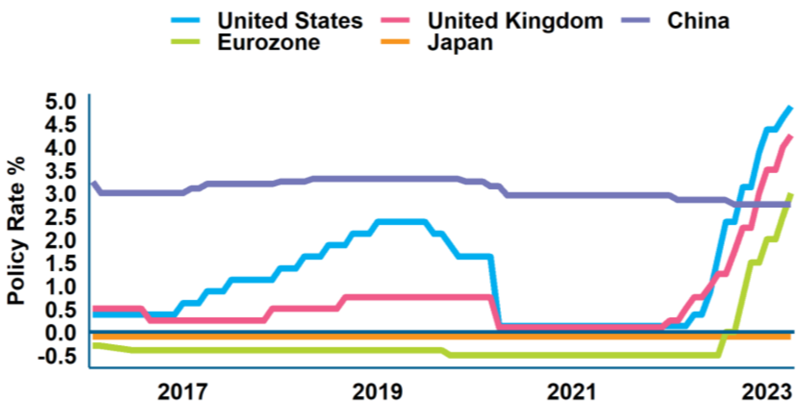
→ Global economies are expected to slow in 2023 compared to 2022, with risks of recession increasing given persistently high inflation and related tighter monetary policy.

→ The delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

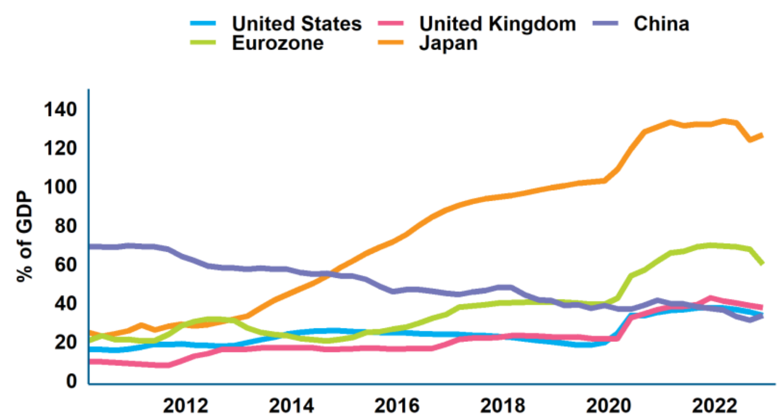
[1] Source: Oxford Economics (World GDP, US$ prices & PPP exchange rate, real, % change YoY). Updated March 2023.

Central Bank Response[1]

Policy Rates



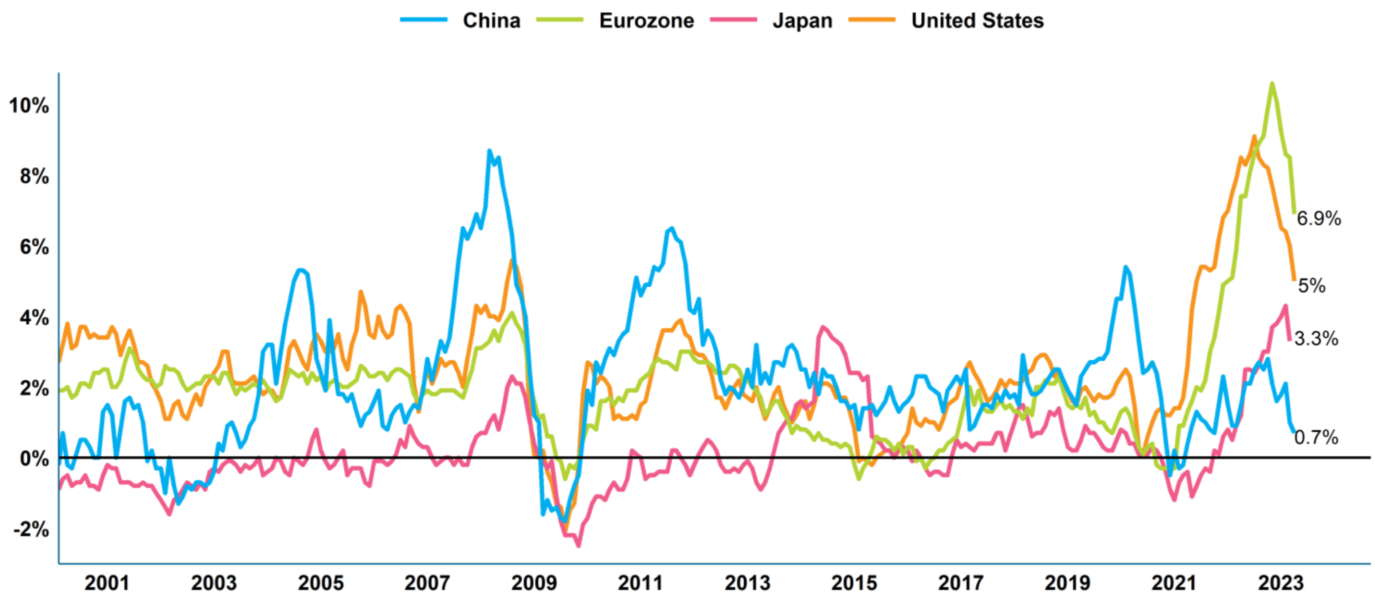
Balance Sheet as % of GDP



- → In 2022, many central banks aggressively reduced pandemic-era policy support in the face of high inflation with the US taking the most aggressive approach. Slowing inflation and recent signs of instability in the banking sector have led to expectations for the slowing of policy tightening going forward.
- → In March, the Fed, FDIC, and Treasury provided deposit guarantees after high profile bank failures revealed bank capital losses on US Treasurys related to higher interest rates and lax risk management.
- → China's central bank is one notable exception. They are expected to maintain an accommodative monetary stance to support the economy. They cut bank reserves requirements to improve bank liquidity and banks have also securitized over $390 billion in non-performing loans to improve loan quality ratios.
- → Looking ahead the risk remains for a policy error as central banks attempt to balance bringing down inflation, maintaining financial stability, and growth.

[1] Source: Bloomberg. Policy rate data is as of March 31, 2023. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of December 31, 2022.

Inflation (CPI Trailing Twelve Months)[1]



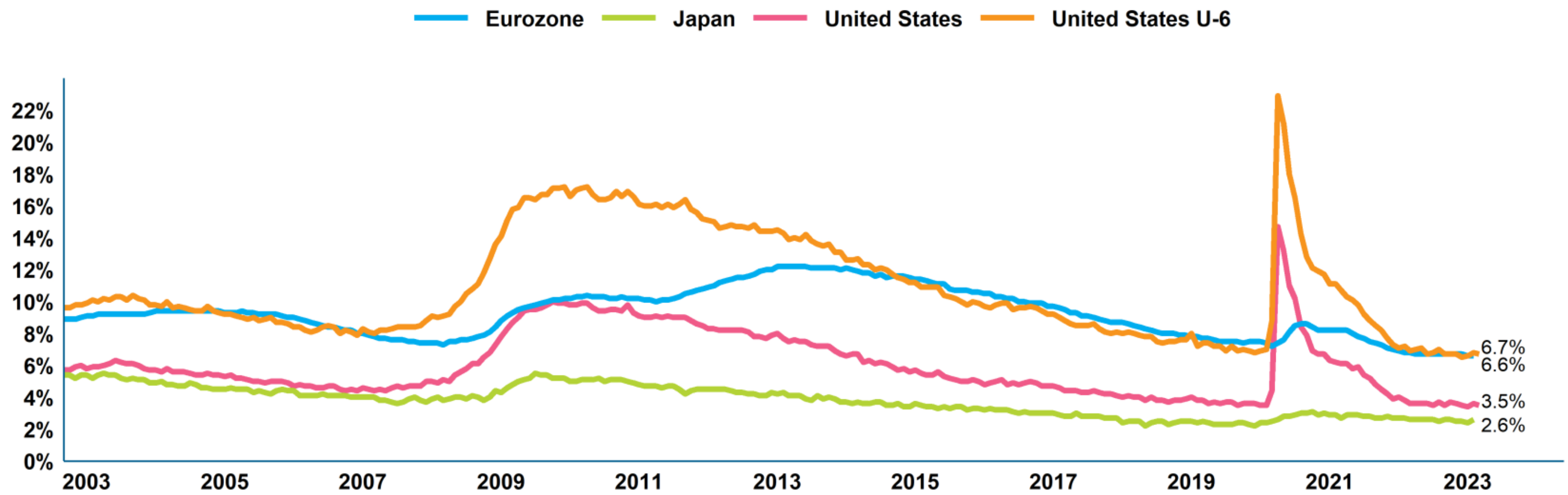
→ Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it reached levels not seen in many decades.

→ Inflation pressures are slowly declining in the US as supply issues ease, but they remain elevated, while in Europe they have also started to fall as energy prices have eased.

→ Lingering supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher commodity prices driven by the war in Ukraine have been key global drivers of inflation.

[1] Source: Bloomberg. Data is as March 31, 2023. The most recent Japanese inflation data is as of February 2023.

Unemployment[1]



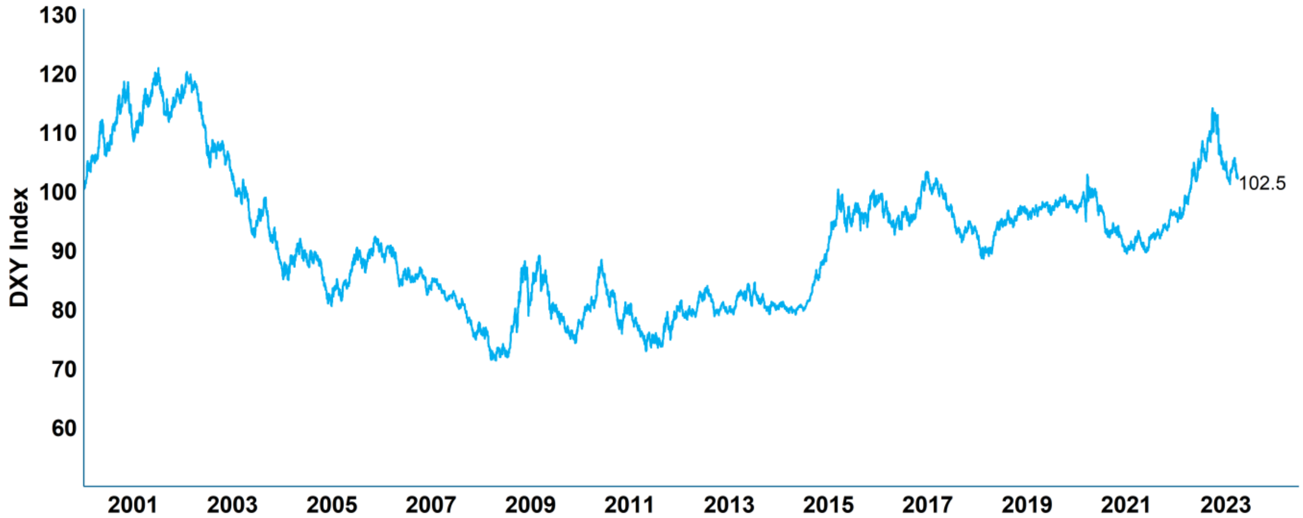
→ Labor markets have significantly improved from the pandemic as economies have largely reopened.

→ Despite slowing growth and high inflation, the US labor market remains a particular bright spot. Unemployment in the US, which experienced the steepest rise, recently has returned to pre-pandemic levels. Broader measures of unemployment (U-6) remain higher at 6.7% but have also declined dramatically from their peak.

→ The strong labor market and higher wages, although beneficial for workers, motivates the Fed's efforts to fight inflation, likely leading to higher unemployment.

[1] Source: Bloomberg. Data is as March 31, 2023, for the US. The most recent data for Eurozone and Japanese unemployment is as of February 2023.

US Dollar versus Broad Currencies[1]



→ The dollar finished 2022 much higher than it started, due to the increased pace of policy tightening, stronger relative growth, and safe-haven flows. Late last year and into early this year, the dollar experienced some weakness though as investors anticipated the end of Fed tightening.

→ Overall, the US dollar depreciated in March and finished the quarter slightly lower than where it started as weaker economic data and bank turmoil drove interest rates lower in the US.

→ This year, the track of inflation across economies and the corresponding monetary policies will likely be key drivers of currency moves.

[1] Source: Bloomberg. Data as of March 31, 2023.

Summary

Key Trends:

→ The impacts of record high inflation will remain key, with market volatility likely to stay high.

→ Recent issues related to the banking sector have created a delicate balance for central banks to continue to fight inflation but also try to maintain financial stability.

→ Global monetary policies could diverge in 2023 with the Fed pausing and others continuing to tighten. The risk of policy errors remains elevated given persistent inflation pressures and a strong US labor market.

→ Growth is expected to slow globally this year, with many economies forecast to tip into recession. Inflation, monetary policy, and the war will all be key.

→ In the US, the end of many fiscal programs is expected to put the burden of continued growth on consumers. Costs for shelter, medical care, and education could continue to rise, keeping 'sticky price' inflation at elevated levels.

→ The key for US equities going forward will be whether earnings can remain resilient if growth continues to slow.

→ Outside the US, equity valuations remain lower in both emerging and developed markets, but risks remain, including potential continued strength in the US dollar, higher inflation particularly weighing on Europe, and China's rushed exit from COVID-19 restrictions and on-going weakness in the real estate sector.

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

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

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

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

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. 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%.

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

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.

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

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.