MEKETA

INVESTMENT GROUP

San Joaquin County Employees' Retirement Association (SJCERA)

Q4 2022

Quarterly Report

Table of Contents

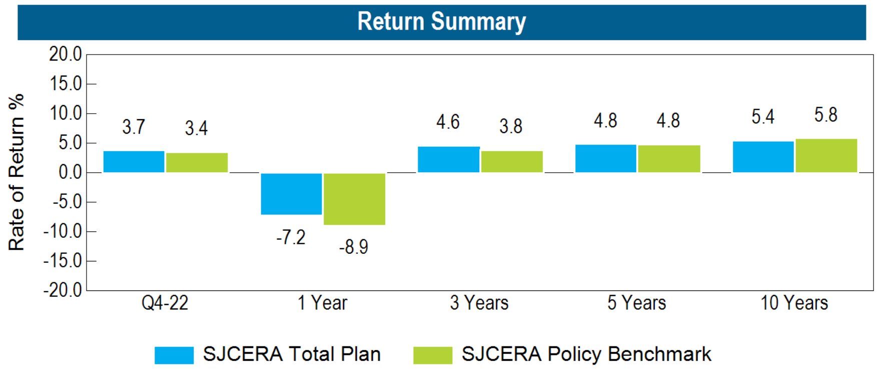
Introduction

Introduction

The SJCERA Total Portfolio had an aggregate value of $3.82 billion as of December 31, 2022. During the latest quarter, the Total Portfolio increased in value by $150.3 million, and over the one-year period, the Total Portfolio decreased by $252.5 million. The movements over the quarter and one-year periods were primarily driven by investment returns. In October 2022 the IMF maintained their lowered global growth forecast at 3.2% (in-line with the 10-year average) but made additional downgrades across some countries. Inflation, tighter monetary policy, the war in Ukraine, and the pandemic all remain key. The dynamic of emerging economy growth being higher than developed markets remains. The US experienced a notable downgrade (1.6% versus 2.3%) given the Fed becoming increasingly hawkish. The euro area forecast experienced an upgrade revision (3.1% versus 2.6%) as generous fiscal stimulus programs offset higher energy costs. China received a downgrade (3.2% versus 3.3%) given the lingering impact from tight COVID-19 restrictions and local real estate risks.

Recent Investment Performance

The Total Portfolio outperformed the policy benchmark for the quarter, 1-, and 3-year periods by 0.3%. 1.7%, and 0.8%, respectively, and the Median Public Fund for the 1- and 3-year periods by 3.9% and 0.1%, respectively. The overall portfolio, net of fees, was in line with the policy benchmark over the 5-year period. Over the 10-, 15-, 20- and 25-year periods, the portfolio trailed its benchmark by (0.4%), (0.7%), (0.5%), and (0.1%), respectively. The portfolio trailed the Median Public Fund for the quarter, 5-, 10-, 15-, 20-, and 25-year periods by (1.3%), (0.4%), (1.5%), (1.9%), (1.3%), and (0.8%), respectively.



Summary of Cash Flows

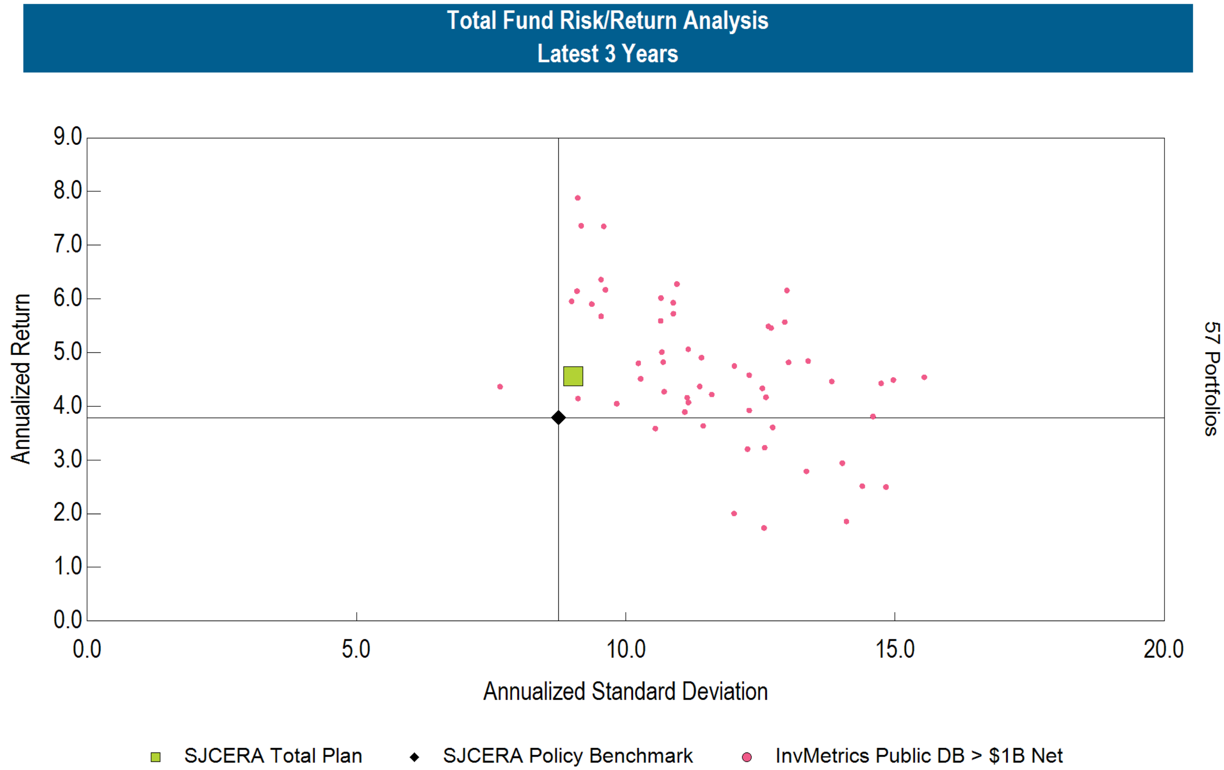
	Fourth Quarter	One Year
Beginning Market Value	$3,666,456,931	$4,069,276,979
Net Cash Flow	$12,233,368	$37,268,720
Net Investment Change	$138,053,851	-$289,801,549
Ending Market Value	$3,816,744,150	$3,816,744,150

	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs	25 Yrs
SJCERA Total Plan - Net	**3.7**	**-7.2**	**4.6**	**4.8**	**5.4**	**3.7**	**5.9**	**5.6**
SJCERA Total Plan - Gross	**3.8**	**-6.7**	**5.1**	**5.5**	**6.2**	**4.4**	**6.5**	**6.1**
SJCERA Policy Benchmark[2]	*3.4*	*-8.9*	*3.8*	*4.8*	*5.8*	*4.4*	*6.4*	*5.7*
Over/Under (vs. Net)	0.3	1.7	0.8	0.0	-0.4	-0.7	-0.5	-0.1
InvMetrics Public DB > $1B Net Median[1]	*5.0*	*-11.1*	*4.5*	*5.4*	*6.9*	*5.6*	*7.2*	*6.4*

[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	**-7.2**	**4.6**	**4.8**	**5.4**
Risk Adjusted Median	-10.2	3.6	4.1	5.5
Excess Return	3.0	1.0	0.7	-0.1



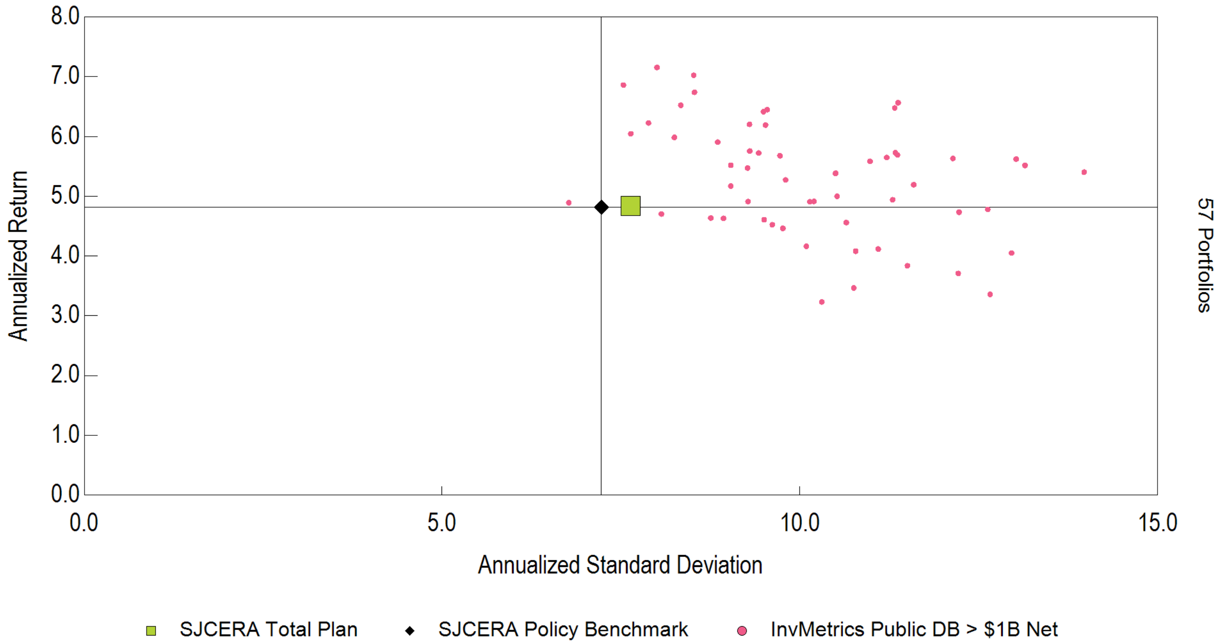
	Anlzd Return[1]	Anlzd Standard Deviation	Sharpe Ratio[2]
SJCERA Total Plan	4.56%	9.02%	0.43
SJCERA Policy Benchmark	3.79%	8.75%	0.36
InvMetrics Public DB > $1B Net Median[3]	4.51%	11.41%	0.34

[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.

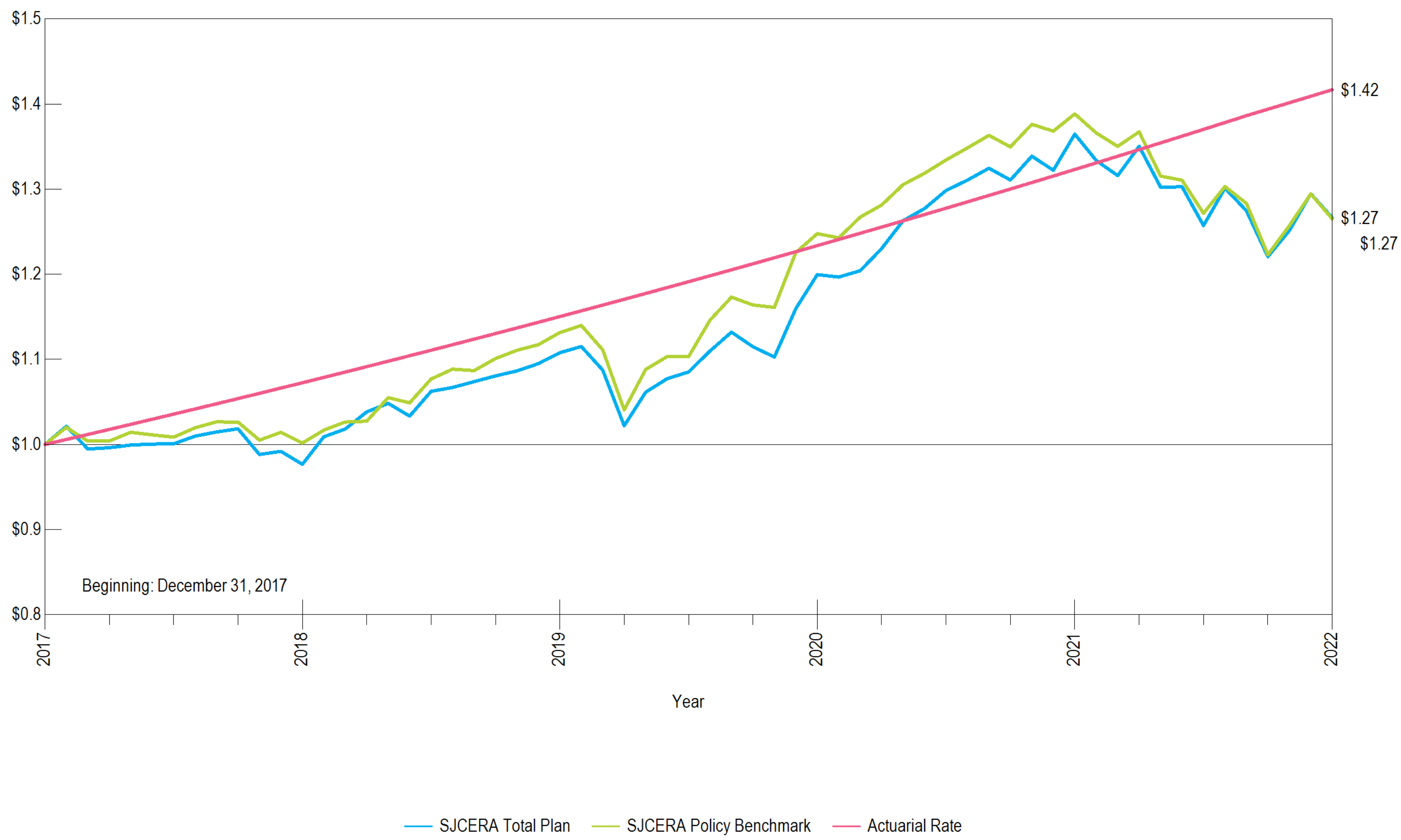
Total Fund Risk/Return Analysis
Latest 5 Years



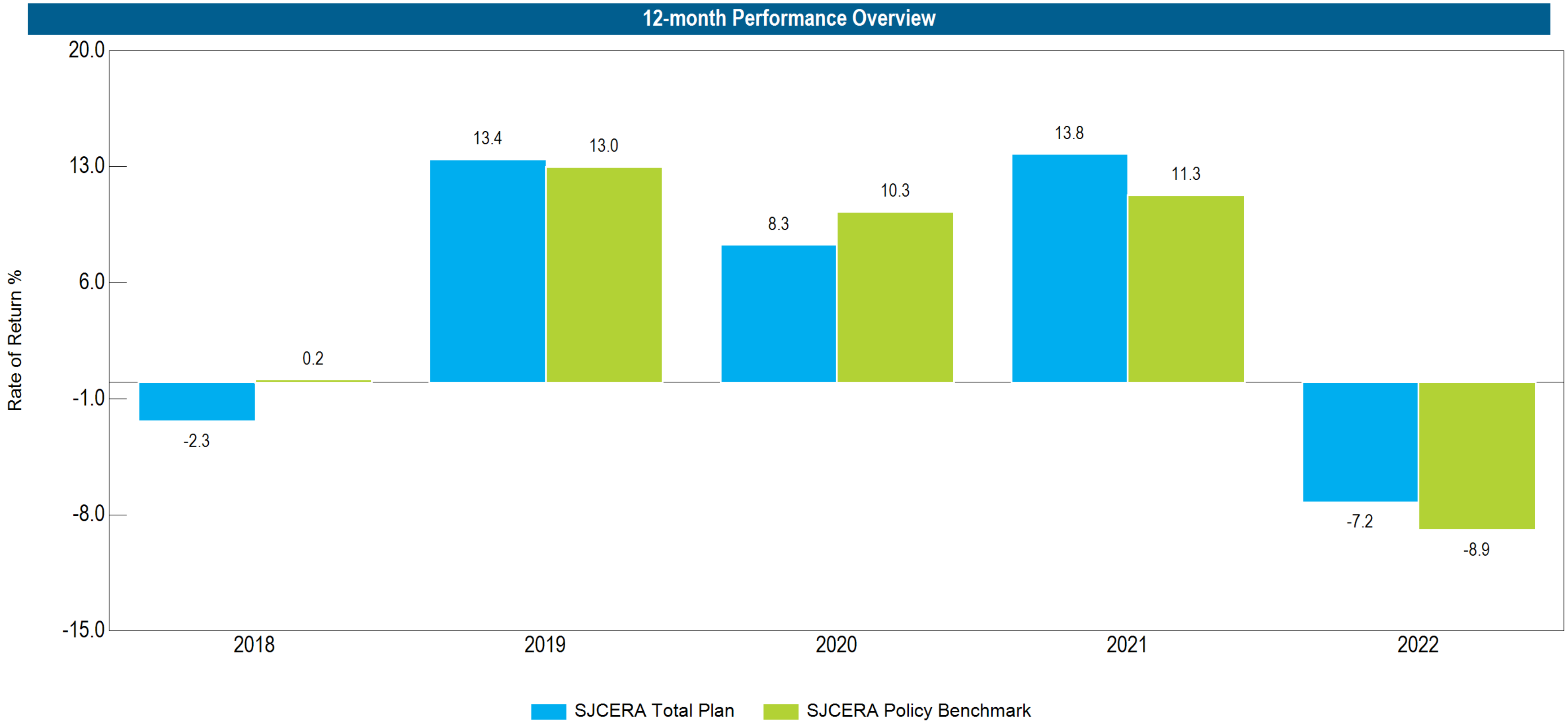
	Anlzd Return[1]	Anlzd Standard Deviation	Sharpe Ratio[2]
SJCERA Total Plan	4.84%	7.64%	0.48
SJCERA Policy Benchmark	4.82%	7.23%	0.50
InvMetrics Public DB > $1B Net Median[3]	5.39%	10.09%	0.40

[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%



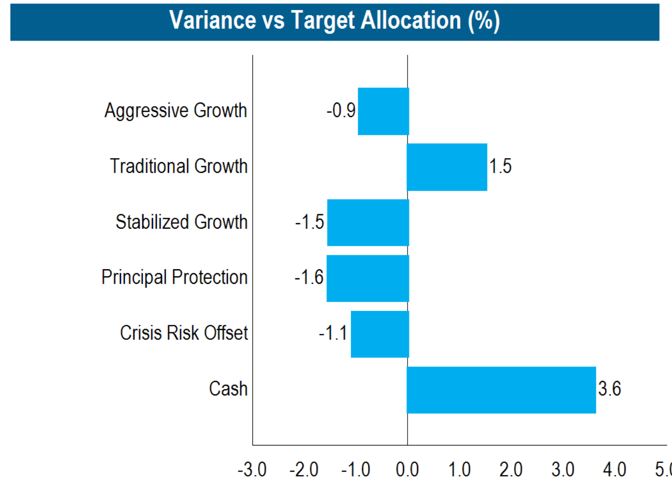
12-month absolute results have been positive over three of the last five calendar year periods, net of fees. The SJCERA Total Portfolio outperformed the policy target benchmark during three of these five periods, net of fees.

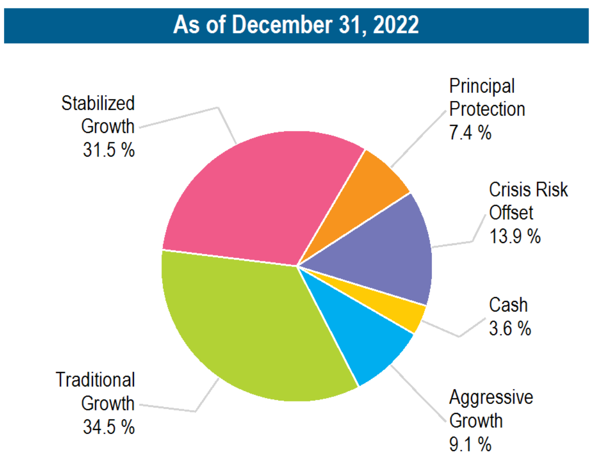
Portfolio Review

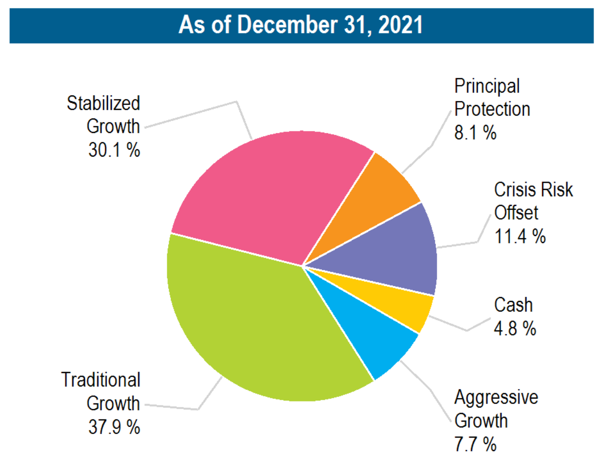
Asset Allocation | As of December 31, 2022

Asset Allocation vs. Target	Current	Current	Policy	Difference*
Broad Growth	**$2,863,675,402**	**75.0%**	**76.0%**	**-1.0%**
Aggressive Growth	$345,920,182	9.1%	10.0%	-0.9%
Traditional Growth	$1,316,806,591	34.5%	33.0%	1.5%
Stabilized Growth	$1,200,948,629	31.5%	33.0%	-1.5%
Diversified Growth	**$815,322,700**	**21.4%**	**24.0%**	**-2.6%**
Principal Protection	$284,210,015	7.4%	9.0%	-1.6%
Crisis Risk Offset	$531,112,685	13.9%	15.0%	-1.1%
Cash[2]	**$137,746,049**	**3.6%**	**0.0%**	**3.6%**
Cash	$137,746,049	3.6%	0.0%	3.6%
Total[1]	**$3,816,744,150**	**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 December 31, 2022

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
SJCERA Total Plan	**3,816,744,150**	**100.0**	**3.7**	**-7.2**	**4.6**	**4.8**	**5.4**
SJCERA Policy Benchmark[2]			*3.4*	*-8.9*	*3.8*	*4.8*	*5.8*
Broad Growth	**2,863,675,402**	**75.0**	**5.4**	**-8.7**	**5.2**	**5.8**	**6.6**
Aggressive Growth Lag	**345,920,182**	**9.1**	**-0.3**	**18.0**	**19.8**	**16.3**	**13.0**
Aggressive Growth Blend			*-2.7*	*0.3*	*11.7*	*9.6*	*9.3*
Traditional Growth	**1,316,806,591**	**34.5**	**10.0**	**-17.7**	**2.5**	**4.1**	**7.3**
MSCI ACWI IMI Net			*9.8*	*-18.4*	*4.4*	*5.7*	*8.5*
Stabilized Growth	**1,200,948,629**	**31.5**	**2.5**	**-3.8**	**4.7**	**5.0**	**3.7**
SJCERA Stabilized Growth Benchmark[4]			*2.4*	*2.3*	*4.5*	*5.0*	*5.5*
Diversifying Strategies	**815,322,700**	**21.4**	**-2.8**	**0.2**	**1.8**	**2.2**	**3.1**
Principal Protection	**284,210,015**	**7.4**	**2.6**	**-10.0**	**-2.6**	**0.4**	**2.1**
Bloomberg US Aggregate TR			*1.9*	*-13.0*	*-2.7*	*0.0*	*1.1*
Crisis Risk Offset Asset Class	**531,112,685**	**13.9**	**-5.5**	**8.6**	**4.9**	**3.5**	**5.2**
CRO Benchmark[3]			*-1.1*	*-4.8*	*2.5*	*3.2*	*3.5*
Cash and Misc Asset Class	**109,127,470**	**2.9**	**0.8**	**1.5**	**0.6**	**1.0**	**0.7**
ICE BofA 91 Days T-Bills TR			*0.8*	*1.5*	*0.7*	*1.3*	*0.8*

[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.

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Aggressive Growth Lag[2]	**345,920,182**	**100.0**	**-0.3**	**18.0**	**19.8**	**16.3**	**13.0**
Aggressive Growth Blend			*-2.7*	*0.3*	*11.7*	*9.6*	*9.3*
Blackrock Global Energy and Power Lag[2]	35,481,416	10.3	4.7	10.6	7.0	--	--
MSCI ACWI +2% Blend			*-6.2*	*-18.7*	*6.3*	--	--
Lightspeed Venture Ptnrs Select V Lag[2]	6,919,385	2.0	-8.2	--	--	--	--
MSCI ACWI +2% Blend			*-6.2*	--	--	--	--
Morgan Creek III Lag[2]	4,660,219	1.3	5.4	-22.4	-15.8	-8.3	--
MSCI ACWI +2% Blend			*-6.2*	*-18.7*	*6.3*	*6.4*	--
Morgan Creek V Lag[2]	7,814,665	2.3	-1.7	5.6	11.8	12.9	--
MSCI ACWI +2% Blend			*-6.2*	*-18.7*	*6.3*	*6.4*	--
Morgan Creek VI Lag[2]	23,692,977	6.8	-4.4	4.8	18.3	18.5	--
MSCI ACWI +2% Blend			*-6.2*	*-18.7*	*6.3*	*6.4*	--
Ocean Avenue II Lag[2]	39,458,381	11.4	8.0	37.2	41.4	32.1	--
MSCI ACWI +2% Blend			*-6.2*	*-18.7*	*6.3*	*6.4*	--
Ocean Avenue III Lag[2]	52,508,432	15.2	-1.8	28.7	26.8	33.4	--
MSCI ACWI +2% Blend			*-6.2*	*-18.7*	*6.3*	*6.4*	--
Ocean Avenue IV Lag[2]	60,121,478	17.4	18.0	52.3	40.2	--	--
MSCI ACWI +2% Lag[2]			*-6.2*	*-18.7*	*6.3*	--	--
Non-Core Real Assets Lag[2,3]	96,317,799	27.8	-11.1	1.6	11.0	7.2	8.3
NCREIF ODCE +1% lag (blend)			*0.6*	*22.1*	*12.5*	*10.3*	*11.0*
Stellex Capital Partners II Lag[2]	18,945,430	5.5	0.3	19.9	--	--	--
MSCI ACWI +2% Lag[2]			*-6.2*	*-18.7*	--	--	--

[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.

Aggressive Growth

During the latest three-month period ending December 31, 2022, eight out of SJCERA's nine aggressive growth portfolios outperformed their MSCI ACWI +2% Blended benchmark. Non-Core Real Assets trailed its benchmark by (11.7%), please note that return data for this asset class is lagged one quarter and the benchmark returned 0.6% for the period.

BlackRock Global Energy and Power, a fund with a focus on infrastructure, outperformed its target benchmark over the quarter, 1- and 3-year periods by 10.9%, 29.3% and 0.7%, respectively.

Lightspeed Venture Partners Select V, the newest manager in the asset class, underperformed its target benchmark over the quarter by (2.0%).

Morgan Creek III outperformed its benchmark by 11.6% for the quarter. However, the manager lagged its benchmark over the 1-, 3- and 5-year periods by (3.7%), (22.1%) and (14.7%), respectively.

Morgan Creek V outperformed its benchmark over the quarter, 1-, 3- and 5-year periods by 4.5%, 24.3%, 5.5% and 6.5%, respectively.

Morgan Creek VI outperformed its benchmark over the quarter, 1-, 3- and 5-year periods by 1.8%, 23.5%, 12.0% and 12.1%, respectively.

Ocean Avenue II, outperformed its benchmark for the quarter, 1-, 3- and 5-year periods by 14.2%, 55.9%, 35.1% and 25.7%, respectively.

Ocean Avenue III, outperformed its benchmark for the quarter, 1-, 3- and 5-year periods by 4.4%, 47.4%, 20.5% and 27.0%, respectively.

Ocean Avenue IV, outperformed its benchmark for the quarter, 1- and 3-year periods by 24.2%, 71.0% and 33.9% respectively.

Non-Core Real Assets underperformed its NCREIF ODCE +1% benchmark over the quarter, 1-, 3-, 5- and 10-year periods by (11.7%), (20.5%), (1.5%), (3.1%) and (2.7%), respectively.

Stellex II, outperformed its benchmark during the quarter and 1-year period by 6.5% and 38.6%, respectively.

Asset Class Performance Net-of-Fees | As of December 31, 2022

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Traditional Growth	**1,316,806,591**	**100.0**	**10.0**	**-17.7**	**2.5**	**4.1**	**7.3**
MSCI ACWI IMI Net			*9.8*	*-18.4*	*4.4*	*5.7*	*8.5*
SJCERA Transition	3,063	0.0					
Northern Trust MSCI World	1,142,805,711	86.8	10.3	-17.8	--	--	--
MSCI World IMI Net USD			*9.9*	*-18.2*	--	--	--
PIMCO RAE Emerging Markets	75,977,117	5.8	14.8	-10.1	2.1	1.2	2.8
MSCI Emerging Markets			*9.7*	*-20.1*	*-2.7*	*-1.4*	*1.4*
GQG Active Emerging Markets	55,830,063	4.2	3.2	-21.1	--	--	--
MSCI Emerging Markets			*9.7*	*-20.1*	--	--	--
Invesco REIT	42,190,636	3.2	3.4	-24.2	-1.1	3.4	6.4
FTSE NAREIT Equity REIT			*5.2*	*-24.4*	*-0.1*	*3.7*	*6.5*

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

Traditional Growth

During the latest three-month period ending December 31, 2022, the traditional growth asset class outperformed its MSCI ACWI IMI benchmark by 0.2% with two of the four managers outperforming their benchmarks.

Northern Trust MSCI World, the Plan's new Passive Global Equity manager, outperformed its benchmark over the past quarter by 0.4% and outperformed over the 1-year period by 0.4% 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 5.1%, 10.0%, 4.8%, 2.6% and 1.4%, respectively.

GQG Active Emerging Markets, Underperformed its MSCI Emerging Markets benchmark by (6.5%) for the quarter and (1.0%) 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 (1.8%), (1.0%), (0.3%) and (0.1%), respectively; however, it outperformed its benchmark for the trailing 1-year period by 0.2%.

Asset Class Performance Net-of-Fees | As of December 31, 2022

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Stabilized Growth	**1,200,948,629**	**100.0**	**2.5**	**-3.8**	**4.7**	**5.0**	**3.7**
SJCERA Stabilized Growth Benchmark[2]			*2.4*	*2.3*	*4.5*	*5.0*	*5.5*
Risk Parity Asset Class	**358,053,648**	**29.8**	**5.5**	**-24.2**	**-2.4**	**0.8**	**0.3**
ICE BofAML 3mo US TBill+4%			*1.8*	*5.5*	*4.7*	*5.3*	*4.8*
Bridgewater All Weather	182,185,578	15.2	7.1	-22.0	-1.5	1.1	2.3
Bridgewater All Weather (blend)			*1.8*	*5.5*	*4.7*	*5.3*	*5.4*
PanAgora Diversified Risk Multi Asset	175,868,070	14.6	3.8	-26.3	-3.2	0.5	--
ICE BofAML 3mo US TBill+4%			*1.8*	*5.5*	*4.7*	*5.3*	--
Liquid Credit	**224,861,262**	**18.7**	**4.4**	**-5.4**	**0.2**	**1.8**	**2.3**
50% BB US HY/50% S&P LSTA Lev Loan			*3.5*	*-5.9*	*1.3*	*2.8*	*3.9*
Neuberger Berman	95,758,518	8.0	4.5	-10.5	-1.0	--	--
33% ICEBofAMLUSHY /33%JPMEMBI Global Div /33% S&P LSTALevLoan			*4.9*	*-9.9*	*-0.9*	--	--
Stone Harbor Absolute Return	129,102,744	10.8	4.3	-1.3	1.1	2.1	2.4
ICE BofA-ML LIBOR			*0.8*	*1.2*	*0.8*	*1.4*	*1.0*
Private Credit Lag	**366,600,960**	**30.5**	**0.3**	**6.3**	**4.7**	**3.5**	**4.5**
Custom Credit Benchmark			*0.4*	*-8.4*	*0.9*	*2.3*	*3.8*
Blackrock Direct Lending Lag	89,801,555	7.5	1.7	4.7	--	--	--
CPI + 6% BLK Blend			*2.1*	*2.0*	--	--	--
Crestline Opportunity II Lag	15,440,117	1.3	-5.6	-5.7	0.2	0.1	--
Credit Blend S&P/LSTA Lev Loan +3%			*2.1*	*2.0*	*7.0*	*7.5*	--
Davidson Kempner Long-Term Distressed Opportunities Fund V, L.P. Lag	47,540,041	4.0	-0.8	3.5	--	--	--
Credit Blend S&P/LSTA Lev Loan +3%			*2.1*	*2.0*	--	--	--

[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.

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
HPS European Asset Value II, LP Lag	30,548,373	2.5	1.9	8.4	--	--	--
Credit Blend S&P/LSTA Lev Loan +3%			*2.1*	*2.0*	--	--	--
Medley Opportunity II Lag	4,378,784	0.4	0.0	-9.9	-7.9	-10.1	-2.2
Credit Blend S&P/LSTA Lev Loan +3%			*2.1*	*2.0*	*7.0*	*7.5*	*8.2*
Mesa West IV Lag	20,938,833	1.7	1.0	2.0	5.8	6.9	--
Credit Blend S&P/LSTA Lev Loan +3%			*2.1*	*2.0*	*7.0*	*7.5*	--
Oaktree Middle-Market Direct Lending Lag	31,348,478	2.6	0.0	13.0	15.4	--	--
Credit Oaktree Blend			*2.1*	*2.0*	*8.9*	--	--
Raven Opportunity III Lag	58,435,316	4.9	1.8	16.4	9.7	10.1	--
Credit Blend S&P/LSTA Lev Loan +3%			*2.1*	*2.0*	*7.0*	*7.5*	--
White Oak Summit Peer Lag	25,781,013	2.1	-3.8	-8.3	-1.5	1.9	--
Credit Blend S&P/LSTA Lev Loan +3%			*2.1*	*2.0*	*7.0*	*7.5*	--
White Oak Yield Spectrum Master V Lag	42,388,450	3.5	0.4	2.9	--	--	--
Credit Blend S&P/LSTA Lev Loan +3%			*2.1*	*2.0*	--	--	--
Private Core Real Assets Lag	251,432,758	20.9	0.0	29.0	19.0	15.7	15.0
NCREIF ODCE +1% lag (blend)[2]			*0.6*	*22.1*	*12.5*	*10.3*	*11.0*

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

[2] NCREIF ODCE Net + 1% 10/1/2012-present. NCREIF Property Index previously.

Stabilized Growth

During the latest three-month period ending December 31, 2022, ten of SJCERA's fifteen Stabilized Growth managers underperformed their benchmarks while the other five 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 produced a flat return for the quarter.

Bridgewater All Weather, one of the Plan's Risk Parity managers, outperformed its benchmark during the most recent quarter by 5.3%. However, the manager underperformed over the 1-, 3-, 5- and 10-year periods by (27.5%), (6.2%), (4.2%), and (3.1%), respectively.

PanAgora DRMA, one of the Plan's Risk Parity managers, outperformed its T-Bill +4% benchmark over the quarter by 2.0%. PanAgora trailed the benchmark over the 1-, 3- and 5-year time periods by (31.8%), (7.9%), and (4.8%), respectively.

Neuberger Berman, one of the Plan's Liquid Credit managers, underperformed its benchmark for the quarter, 1- and 3-year time periods by (0.4%), (0.6%), and (0.1%), respectively.

Stone Harbor, the Plan's Absolute Return Fixed Income manager, underperformed its ICE BofAML LIBOR index over the 1-year period by (2.5%), but outperformed over the quarter, 3-, 5- and 10-year periods by 3.5%, 0.3%, 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 by (0.4%), but outperformed over the 1-year period by 2.7%.

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 (7.7%), (7.7%), (6.8%) and (7.4%), respectively.

Davidson Kempner, the Plan's newest Private Credit manager, trailed its benchmark by (2.9%) during the most recent quarter; however, it outperformed the benchmark over the 1-year period by 1.5%.

Stabilized Growth (Continued)

HPS EU, one of the Plan's newer Direct Lending managers, trailed its benchmark for the 4th quarter by (0.2%); however, it outperformed over by 6.4% 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 (2.1%), (11.9%), (14.9%), (17.6%), and (10.4%) respectively.

Mesa West RE Income IV, one of the Plan's Commercial Mortgage managers, produced a positive return of 2% over the 1-year period, which matched the benchmark. However, it lagged the benchmark by (1.1%), (1.2%), and (0.6%) over the quarter, 3- and 5-year periods, respectively.

Oaktree, a Middle-Market Direct Lending manager, trailed its benchmark over the quarter by (2.1%) but outperformed over the 1- and 3-year periods by 11.0% and 6.5%, respectively.

Raven Opportunity III underperformed its target for the quarter by (0.3%); however, it outperformed the benchmark for the 1-,3- and 5-year periods by 14.4%, 2.7%, and 2.6%, 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 (5.9%), (10.3%), (8.5%) and (5.6%), respectively.

White Oak Yield Spectrum Master V outperformed its benchmark over the 1-year period by 0.9%, but trailed the benchmark over the most recent quarter by (1.7%).

Private Core Real Assets, trailed the NCREIF ODCE +1% benchmark over the most recent quarter by (0.6%); however, it exceeded the target over the 1-, 3-, 5- and 10-year time periods by 6.9%, 6.5%, 5.4%, and 4.0%, respectively.

Asset Class Performance Net-of-Fees | As of December 31, 2022

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Principal Protection	**284,210,015**	**100.0**	**2.6**	**-10.0**	**-2.6**	**0.4**	**2.1**
Bloomberg US Aggregate TR			*1.9*	*-13.0*	*-2.7*	*0.0*	*1.1*
Dodge & Cox Fixed Income	194,027,727	68.3	3.0	-10.6	-1.0	1.3	2.4
Bloomberg US Aggregate TR			*1.9*	*-13.0*	*-2.7*	*0.0*	*1.1*
DoubleLine	6,064	0.0	0.8	-76.6	-37.3	-23.0	-10.4
Bloomberg US Aggregate TR			*1.9*	*-13.0*	*-2.7*	*0.0*	*1.1*
Loomis Sayles	90,176,224	31.7	1.6	--	--	--	--
Bloomberg US Aggregate TR			*1.9*	--	--	--	--

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

Principal Protection

During the latest three-month period ending December 31, 2022, two of SJCERA's Principal Protection managers outperformed the Bloomberg US Aggregate Index benchmark and the third underperformed the Bloomberg US Agg for the quarter.

Dodge & Cox, the Plan's Core Fixed Income manager, earned a positive quarterly return of 3.0%, outperforming the US Agg by 1.1%. It led its benchmark by 2.4%, 1.7%, 1.3% and 1.3% 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 0.8%, underperforming its benchmark by (1.1%). The manager also underperformed its benchmark over the trailing 1-, 3-, 5- and 10-year time periods by (63.6%), (34.6%), (23.0%) and (11.5), respectively.

Loomis Sayles, the Plan's newest Principal Protection manager, was funded in Q1 2022 and trailed the US Agg during Q4 by (0.3%).

Asset Class Performance Net-of-Fees | As of December 31, 2022

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Crisis Risk Offset Asset Class	**531,112,685**	**100.0**	**-5.5**	**8.6**	**4.9**	**3.5**	**5.2**
CRO Benchmark[2]			*-1.1*	*-4.8*	*2.5*	*3.2*	*3.5*
Long Duration	**111,838,858**	**21.1**	**-0.6**	**-28.1**	**-7.2**	**-2.2**	**--**
Bloomberg US Treasury Long TR			*-0.6*	*-29.3*	*-7.4*	*-2.2*	*--*
Dodge & Cox Long Duration	111,838,858	21.1	-0.6	-28.1	-7.2	-2.2	--
Bloomberg US Treasury Long TR			*-0.6*	*-29.3*	*-7.4*	*-2.2*	*--*
Systematic Trend Following	**241,200,705**	**45.4**	**-7.2**	**31.6**	**14.8**	**7.5**	**9.5**
BTOP 50 (blend)			*-4.4*	*13.8*	*9.5*	*6.0*	*4.2*
Graham Tactical Trend	118,635,452	22.3	-5.0	33.4	11.8	7.2	--
SG Trend			*-6.1*	*27.4*	*13.9*	*8.4*	*--*
Mount Lucas	122,565,253	23.1	-9.2	29.9	18.0	7.6	8.5
BTOP 50 (blend)			*-4.4*	*13.8*	*9.5*	*6.0*	*4.2*
Alternative Risk Premium	**178,073,122**	**33.5**	**-6.0**	**19.4**	**2.3**	**1.5**	**2.7**
5% Annual (blend)			*1.2*	*5.0*	*5.0*	*5.0*	*7.1*
AQR Style Premia	55,128,736	10.4	12.5	30.5	5.7	-1.9	--
5% Annual			*1.2*	*5.0*	*5.0*	*5.0*	*--*
Lombard Odier	55,784,436	10.5	-4.1	-6.1	-5.6	--	--
5% Annual			*1.2*	*5.0*	*5.0*	*--*	*--*
P/E Diversified Global Macro	67,159,950	12.6	-18.4	52.1	5.7	3.0	--
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 December 31, 2022, two out of six of SJCERA's Crisis Risk Offset managers outperformed their respective benchmarks, one manager was in line with the target, and three managers underperformed the benchmark.

Dodge & Cox Long Duration produced a negative quarterly return of (0.6%), which was in line the Bloomberg US Long Duration Treasuries benchmark. The manager also matched its benchmark return over the 5-year period and it outperformed the target over the 1- and 3-year periods by 1.2% and 0.2% respectively.

Graham Tactical Trend, one of the Plan's Systematic Trend Following managers, outperformed the SG Trend Index for the quarter and 1-year periods by 1.1% and 6.0%, respectively. The manager trailed the benchmark over the 3- and 5-year periods by (2.1%) and (1.2%), respectively.

Mount Lucas, one of the Plan's Systematic Trend Following managers, underperformed the Barclays BTOP 50 Index for the quarter by (5.7%); however, it outperformed the target over the 1-, 3-, 5- and 10-year periods by 15.0%, 8.1%, 1.4%, and 4.2%, respectively.

AQR, one of the Plan's Alternative Risk Premium managers, outperformed its 5% Annual target for the quarter, 1- and 3-year periods by 11.3%, 25.5% and 0.7%, respectively. That said, it trailed the benchmark over the 5-year period by (6.9%).

Lombard Odier, an Alternative Risk Premium manager, underperformed its 5% Annual benchmark over the quarter, 1- and 3-year periods by (5.3%), (11.1%) and (10.6%), respectively.

P/E Diversified, one of the Plan's Alternative Risk Premium managers, underperformed its 5% Annual target for the quarter and 5-year periods by (19.6%)% and (2.0%), respectively. However, the manager outperformed the target over the trailing 1- and 3-year periods by 47.1% and 0.7%, respectively.

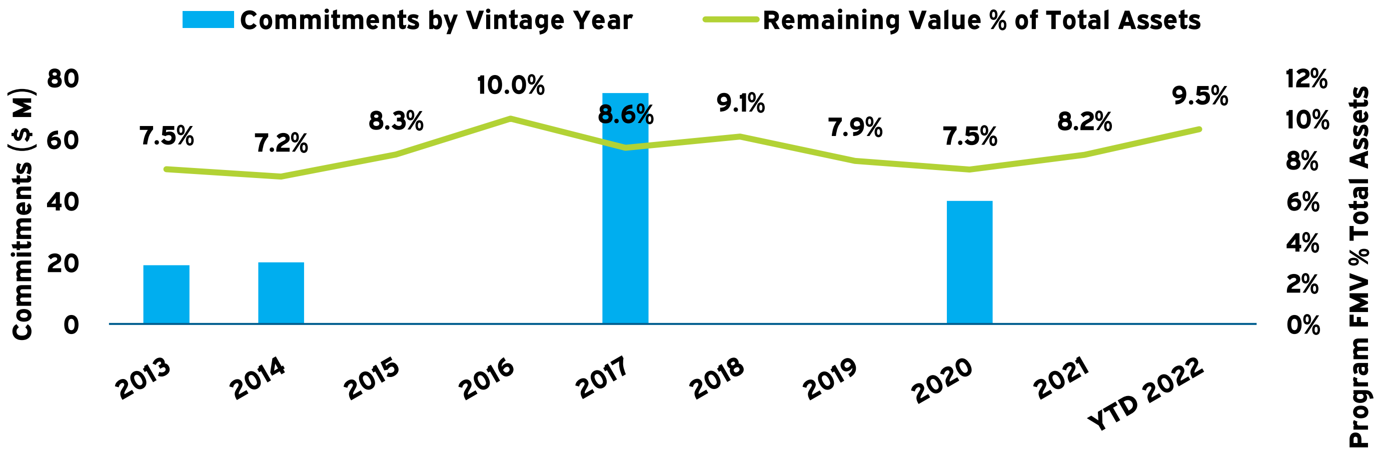
Real Estate Program

September 30, 2022

Table of Contents | As of September 30, 2022

Introduction

The Retirement Association's target allocation towards real estate assets is 10-12%. As of September 30, 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 $347.8 million at quarter-end.



Program Status

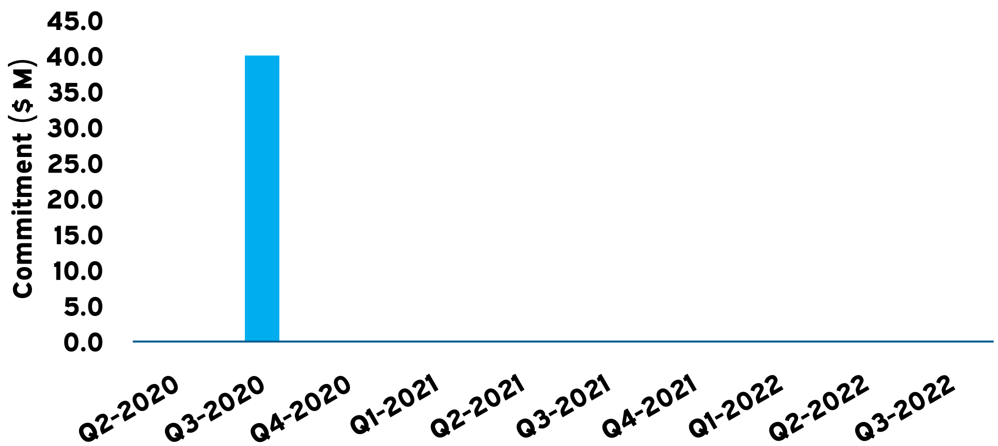
No. of Investments	18
Committed ($ MM)	501.6
Contributed ($ MM)	450.4
Distributed ($ MM)	383.0
Remaining Value ($ MM)	347.8

Performance Since Inception

	Program
DPI	0.85x
TVPI	1.62x
IRR	8.2%

Commitments

Recent Quarterly Commitments



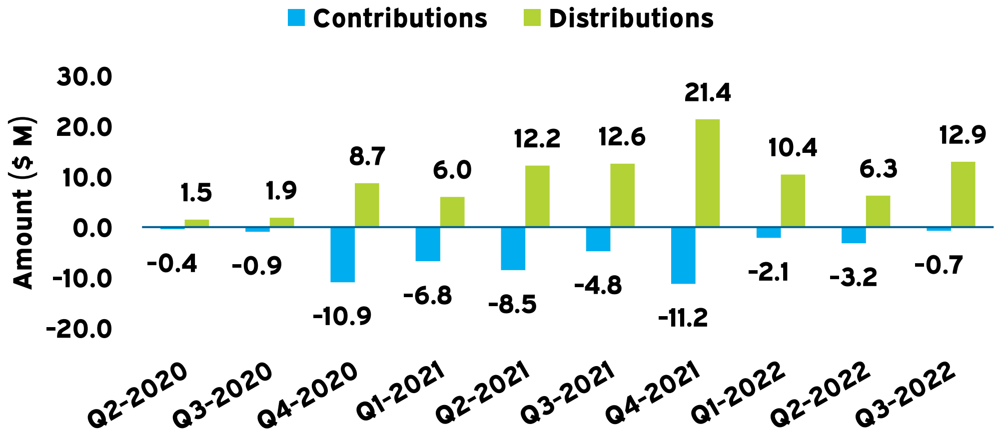
Commitments This Quarter

Fund	Strategy	Region	Amount (MM)

None to report.

Cash Flows

Recent Quarterly Cash Flows



Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount ($MM)
Prologis Logistics	2004	Core	North America	0.75

Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount ($MM)
Stockbridge RE III	2017	Value-Added	North America	6.36
Greenfield VIII	2017	Opportunistic	North America	2.29
Greenfield VII	2013	Opportunistic	North America	1.76

Significant Events

- → In September 2022, Stockbridge Value Fund III closed on the sale of Barrett Pavilion, a retail center in Atlanta, Georgia, for a gross sales price of $58.8 million, generating a realized IRR of 41.7% and an equity multiple of 2.2x to the Fund. During the entire quarter, the fund recorded an income return of 1.5% and an appreciation return of (0.5%), due to steady cash flows, the completion of value-enhancing projects and executed dispositions.
- → Prologis Targeted US Logistics Fund acquired five new buildings in the third quarter. The properties constitute a mix of value-add and core profiles, with four buildings located in Phoenix and one building located in Portland. The fund's operating environment remains healthy as rent continues to rise and vacancy rate remains low at 3.1%.
- → Greenfield Acquision Partners VII diposed of two industrial properties in the third quarter, Newark Industrial, which resulted in a 26.4% gross IRR and 2.1x gross multiple, and Savannah Port Logistics Center, resulting in a 38.7% gross IRR and a 2.2x gross multiple. As of September 30, 2022, there have been 41 realizations resulting in a gross IRR of 18.2% and gross equity multiple of 2.2x.
- → During the third quarter, Greenfield Acquisitions Partners VIII ("Grandview I-A") completed the sale of Roanoke Logistics Center, a newly developed industrial property in Roanoke, Texas, resulting in a distribution of $11.2 million in aggregate to LPs.
- → During the third quarter, Berkeley Partners Value Industrial Fund V acquired two new assets, including a multi-tenant building in Northwest Atlanta and a single-tenant warehouse in Taunton, Massachusetts. The Fund also closed on the disposition of One Puzzle Lane, a single-tenant property located in Newton, New Hampshire.

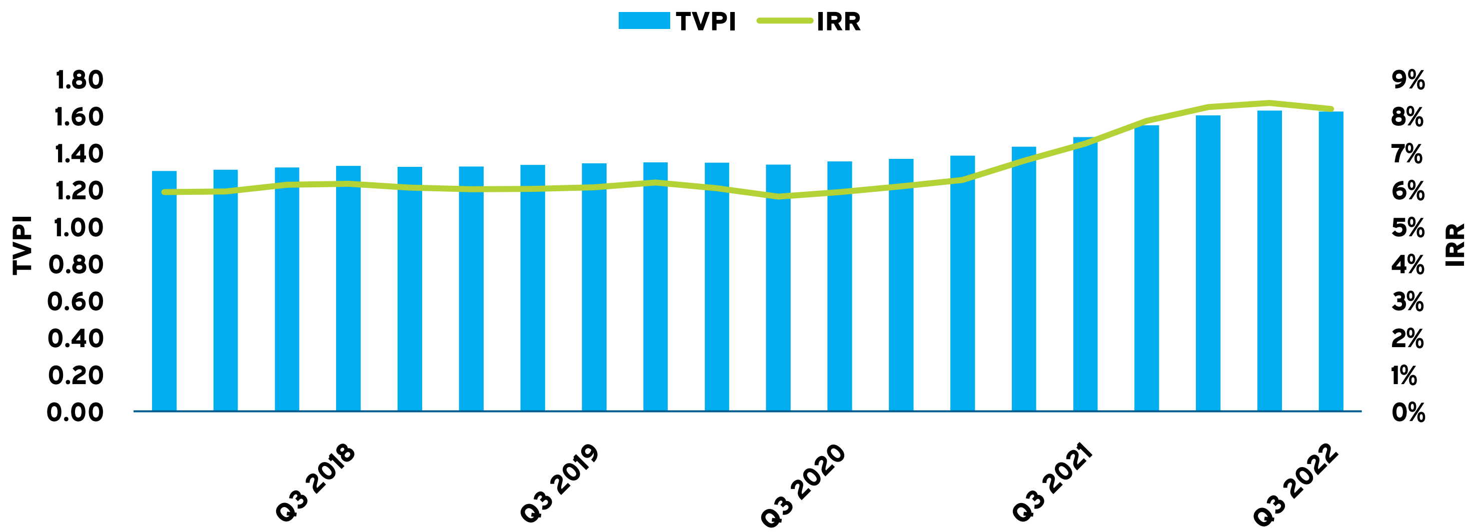
By Strategy

Group	Number	Committed ($ MM)	Contributed ($ MM)	Unfunded ($ MM)	Distributed ($ MM)	Remaining Value ($ MM)	Exposure ($ MM)	DPI (X)	TVPI (X)	IRR (%)
Core	3	120.5	126.9	0.0	32.4	251.4	251.4	0.26	2.24	9.7
Opportunistic	9	204.1	182.3	23.2	220.0	28.3	51.5	1.21	1.36	5.8
Value-Added	6	177.0	141.3	39.1	130.7	68.0	107.1	0.92	1.41	10.0
Total	**18**	**501.6**	**450.4**	**62.3**	**383.0**	**347.8**	**410.1**	**0.85**	**1.62**	**8.2**

By Vintage

Group	Number	Committed ($ MM)	Contributed ($ MM)	Unfunded ($ MM)	Distributed ($ MM)	Remaining Value ($ MM)	Exposure ($ MM)	DPI (X)	TVPI (X)	IRR (%)
Open-end Fund	3	120.5	126.9	0.0	32.4	251.4	251.4	0.26	2.24	9.7
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	0.7	0.7	0.68	0.71	-3.8
2007	4	96.0	84.0	12.0	115.8	6.4	18.4	1.38	1.45	7.4
2011	2	50.0	38.3	11.7	47.2	4.0	15.7	1.23	1.34	9.4
2012	2	36.0	33.9	2.9	48.9	0.1	2.9	1.45	1.45	12.5
2013	1	19.1	18.3	0.8	29.5	2.7	3.5	1.61	1.76	13.6
2014	1	20.0	19.0	1.8	14.7	11.1	12.8	0.77	1.35	7.6
2017	2	75.0	63.4	13.1	53.7	45.4	58.5	0.85	1.56	19.8
2020	1	40.0	22.3	19.5	2.9	25.9	45.4	0.13	1.29	NM
Total	**18**	**501.6**	**450.4**	**62.3**	**383.0**	**347.8**	**410.1**	**0.85**	**1.62**	**8.2**

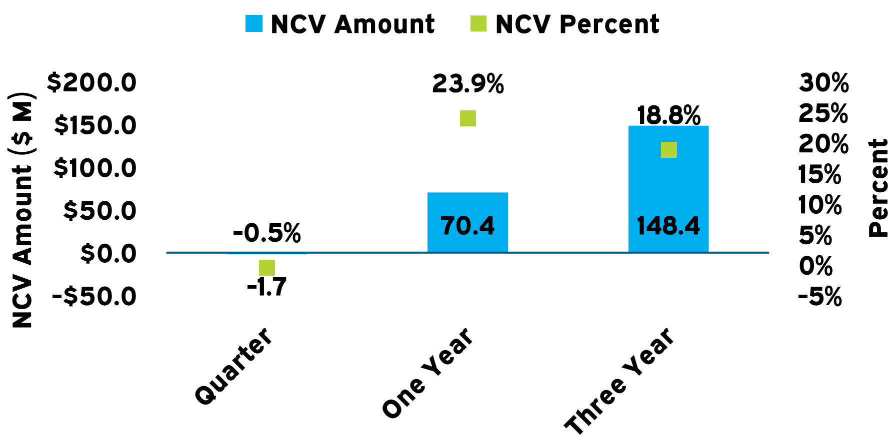
Since Inception Performance Over Time



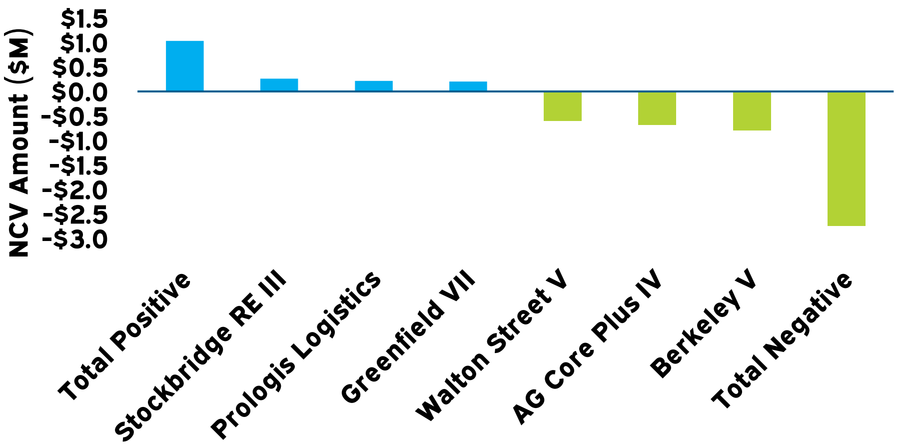
Horizon IRRs

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Aggregate Portfolio	23.8	17.6	13.0	12.4	8.2
Public Market Equivalent	-26.3	-9.2	-3.0	0.5	1.3

Periodic NCV



1 Quarter Drivers Of NCV

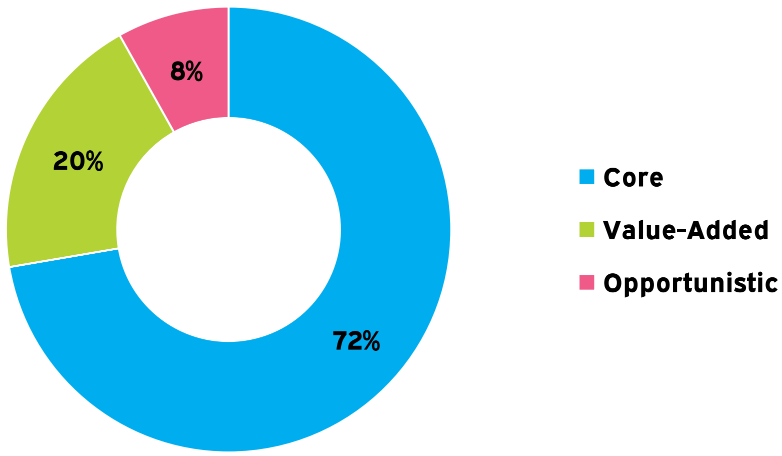


Fund Performance: Sorted By Vintage And Strategy

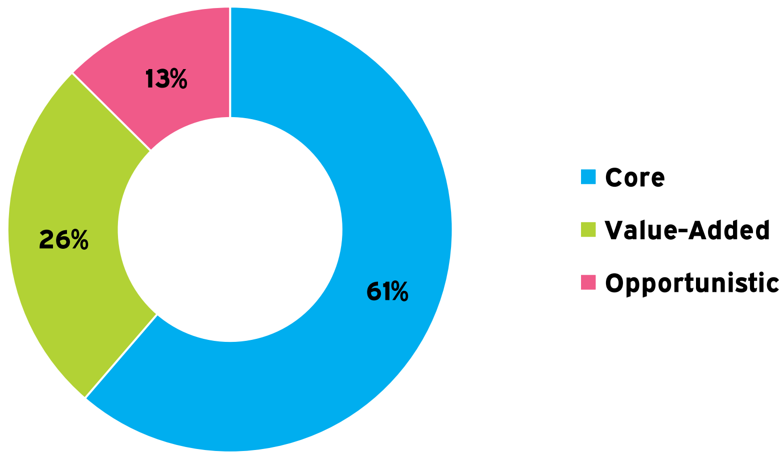
By Investment	Vintage	Strategy	Committed ($ MM)	Contributed ($ MM)	Unfunded ($ MM)	Distributed ($ MM)	Remaining Value ($ MM)	TVPI (X)	IRR (%)
Principal US	Open-end	Core	25.0	25.0	0.0	0.0	46.7	1.87	9.6
Prologis Logistics	Open-end	Core	50.5	56.9	0.0	22.4	138.4	2.83	9.7
RREEF America II	Open-end	Core	45.0	45.0	0.0	10.0	66.3	1.70	9.5
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	0.7	0.71	-3.8
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	33.3	0.1	1.58	7.8
Walton Street VI	2007	Opportunistic	15.0	13.3	1.7	15.2	6.1	1.60	8.2
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	4.0	1.31	9.1
Miller Global VII	2012	Opportunistic	15.0	12.1	2.9	16.0	0.1	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	2.7	1.76	13.6
AG Core Plus IV	2014	Value-Added	20.0	19.0	1.8	14.7	11.1	1.35	7.6
Greenfield VIII	2017	Opportunistic	30.0	24.3	7.2	21.4	18.4	1.64	23.9
Stockbridge RE III	2017	Value-Added	45.0	39.1	5.9	32.3	27.0	1.52	17.5
Berkeley V	2020	Value-Added	40.0	22.3	19.5	2.9	25.9	1.29	NM
Total			**501.6**	**450.4**	**62.3**	**383.0**	**347.8**	**1.62**	**8.2**

By Strategy

Percent of FMV

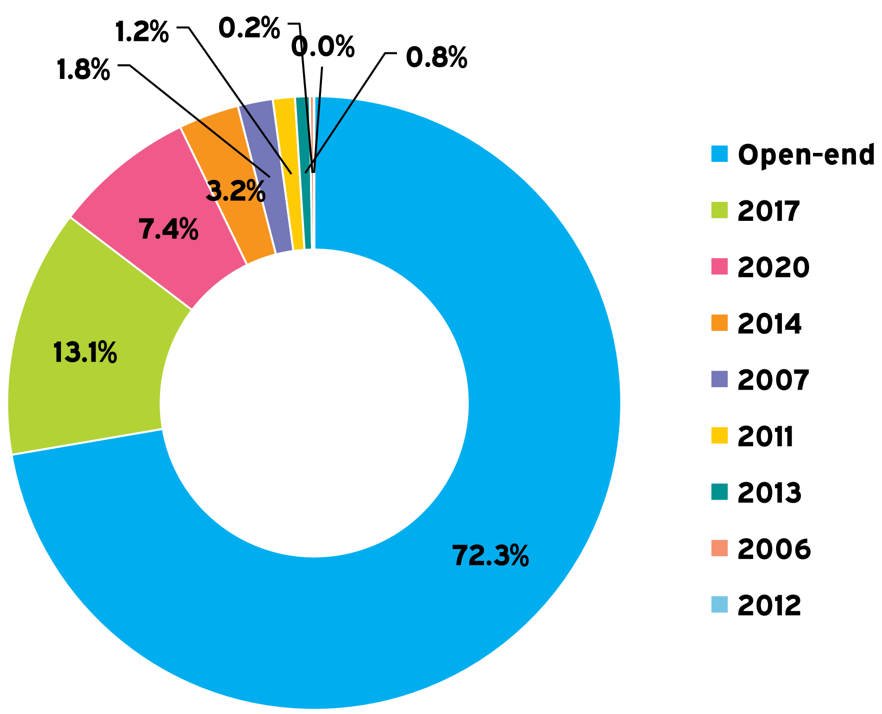


Percent of Exposure

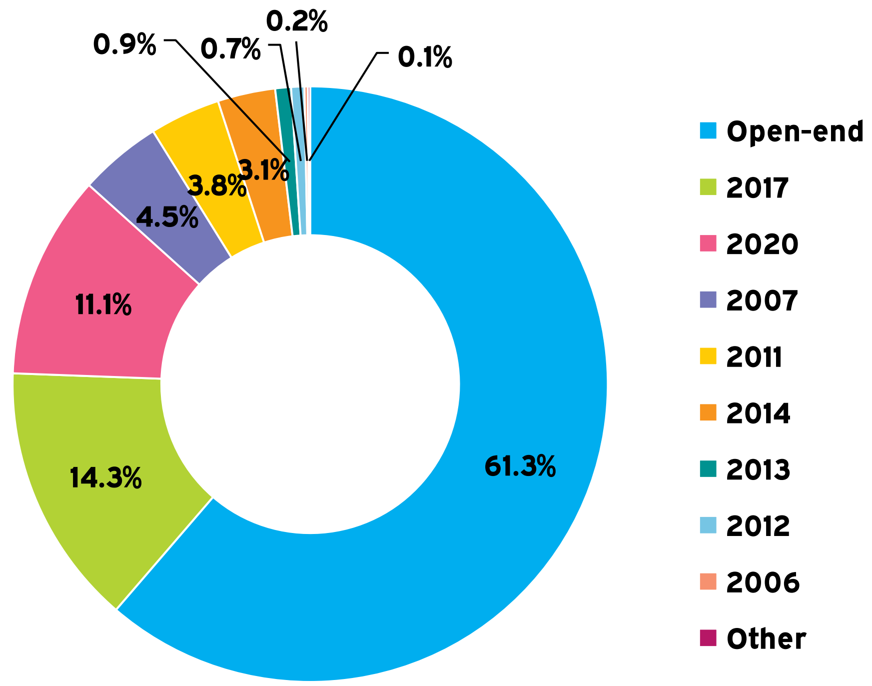


By Vintage

Percent of FMV

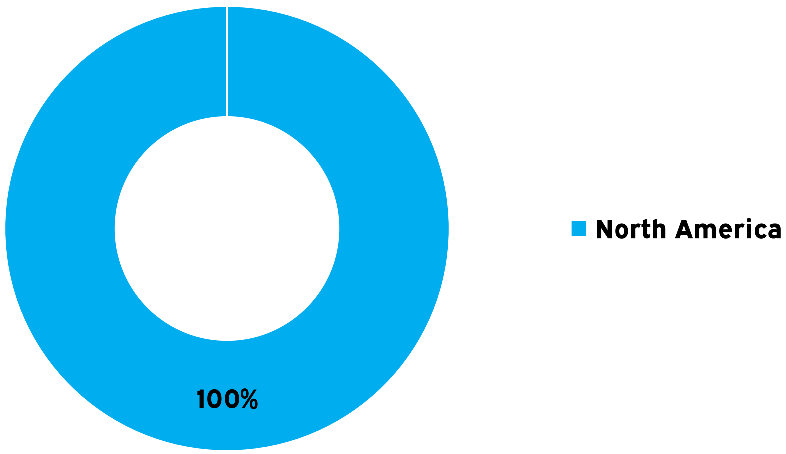


Percent of Exposure

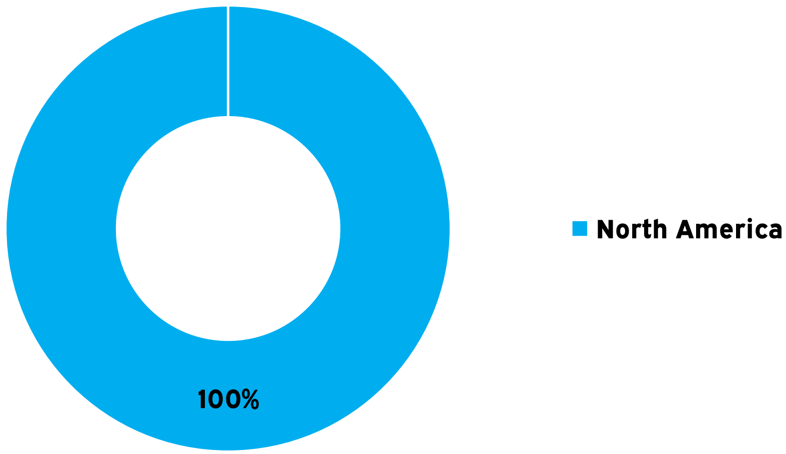


By Geographic Focus

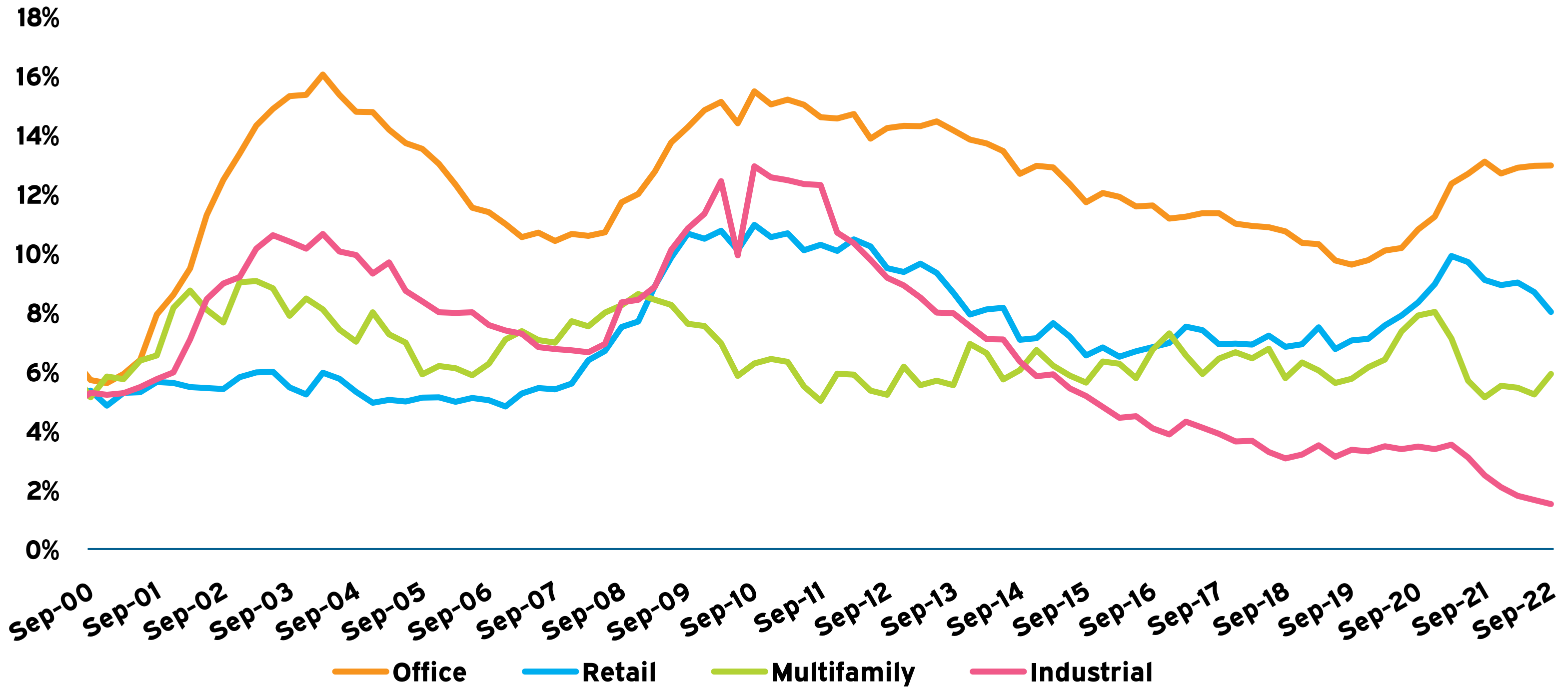
Percent of FMV



Percent of Exposure



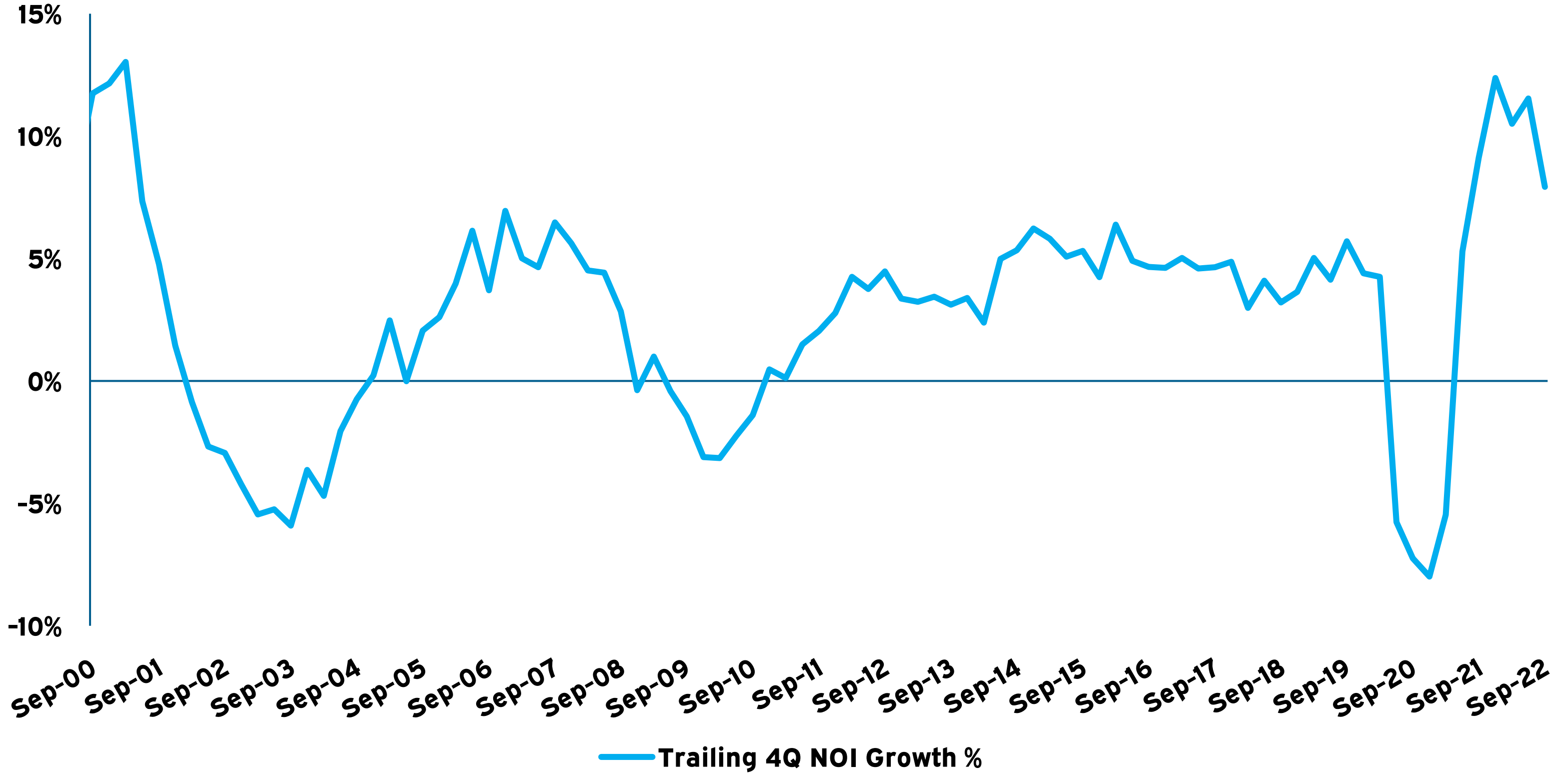
Real Estate Fundamentals
Vacancy by Property Type[1]



In the third quarter of 2022, vacancy rates increased slightly for multifamily, while vacancy rates for retail and industrial decreased. Office vacancy remained flat quarter-over-quarter. Retail saw the largest decrease in vacancy rates, moving down 68 basis points in Q3. Multifamily vacancies increased 69 basis points in Q3 2022, and industrial vacancies fell another 14 basis points to set a new all-time low at 1.5%. Office vacancies increased slightly by 2 basis points in Q3 2022 to remain at 13.0%. Compared to one year ago, vacancy rates in industrial decreased 97 basis points, retail decreased 109 basis points, multifamily increased 79 basis points., and office decreased 13 basis points. Overall, the vacancy rate across all property types decreased 65 basis point from Q3 2021.

[1] Source: NCREIF

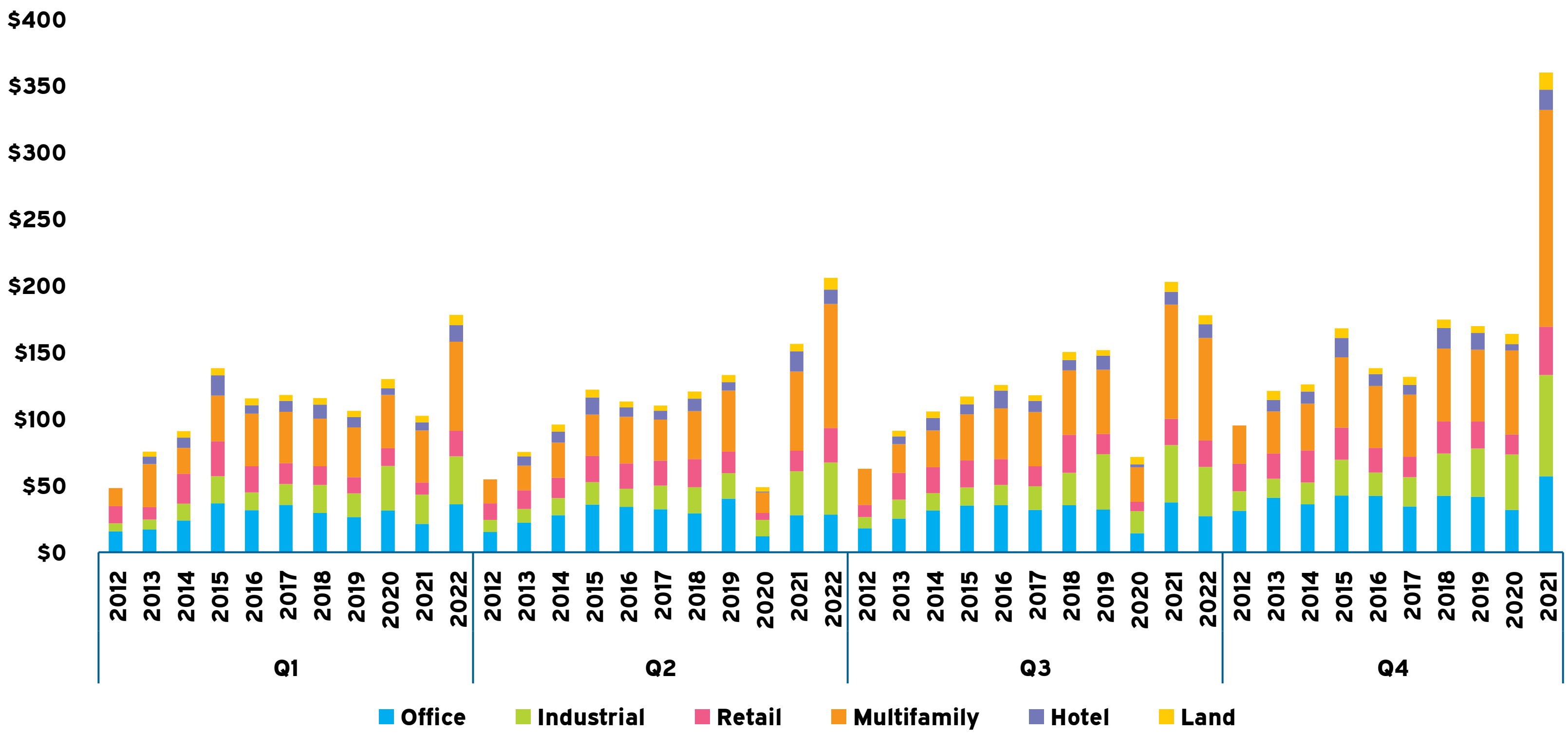
NOI Growth[1]



The trailing twelve-month rate of NOI growth decreased in Q3 2022 to 7.9%. Resilient demand and near immediate take-up of new supply in the industrial sector underpinned the continued NOI growth. Industrial NOI growth is trending at 13.6% for the trailing year ending Q3 2022. Office NOI growth has moved back to negative territory to -0.8% year-over-year, and Apartment NOI (a sector with “gross” rents, compared to “net” rents in other property types) experienced positive NOI growth at 17.6% year-over-year as occupancy levels and rental rate growth remained strong. Retail NOI growth moderated, now at 4.1% year-over-year.

[1] Source: NCREIF

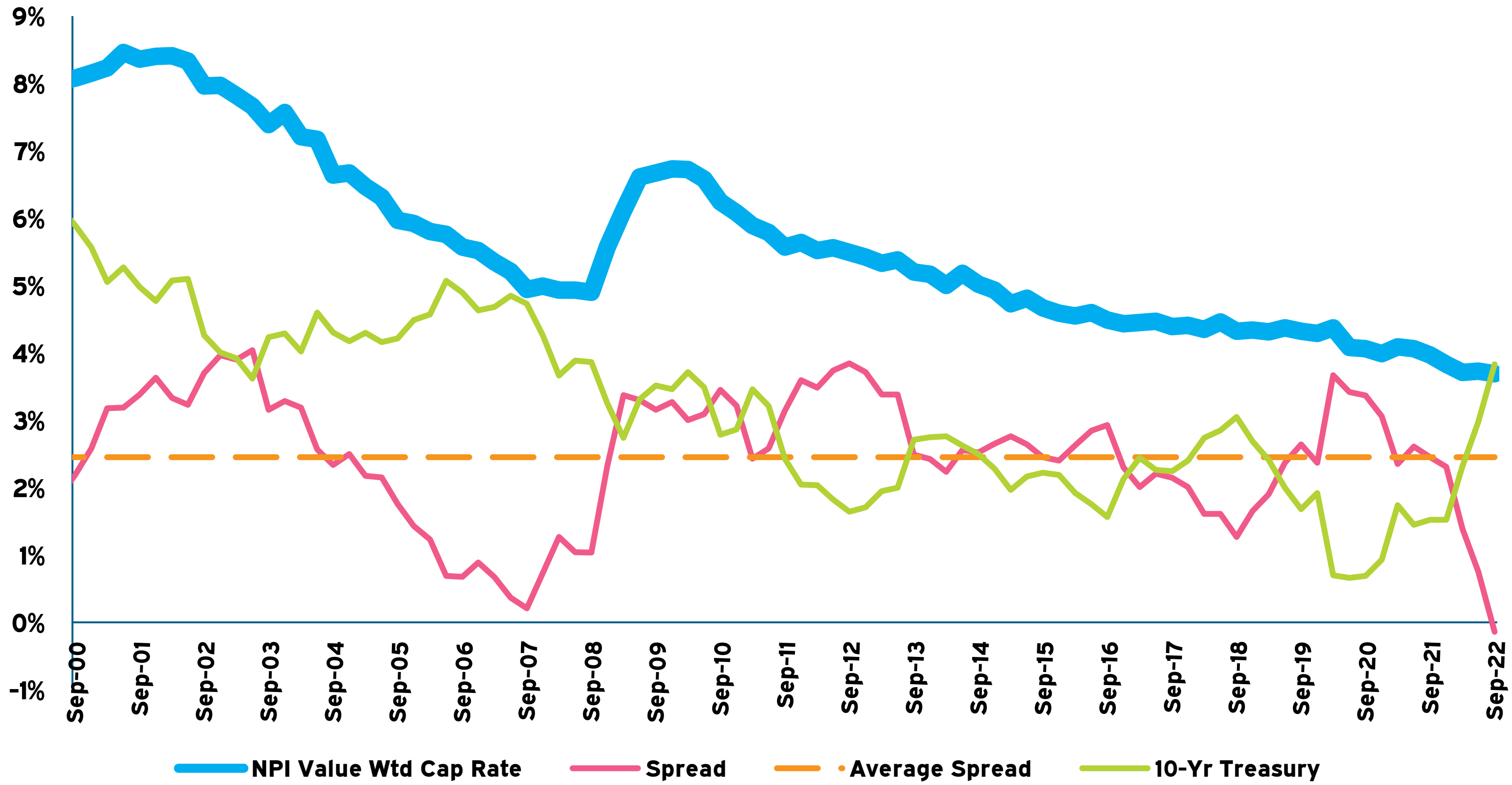
Transaction Volume ($bn)[1]



Private real estate transaction volume for properties valued over $2.5 million for Q3 2022 was down from Q3 2021 to $178 billion. Compared to a year ago, most property types saw decreases in transaction volume: office (-28%), multifamily (+10%), land (+9%), and industrial (+14%). Retail transaction volume increased slightly by 2%, and hotel transaction volume was up 6%. Multifamily and industrial properties made up the largest percentages of total transaction volume during the quarter, at 43% and 21%, respectively.

[1] Source: PREA

Real Estate Capital Markets
Cap Rates vs. 10-Year Treasury[1]



The NPI Value Weighted Cap Rate was unchanged in Q3 2022 at 3.7%. The 10-year Treasury yield increased by 85 basis points in Q3 2022 to 3.8%. The spread between cap rates and treasury yields (-14 basis points) is now negative for the first time since 1991 and is well below the long-term average spread of 249 basis points.

[1] Source: NCREIF and US Department of the Treasury

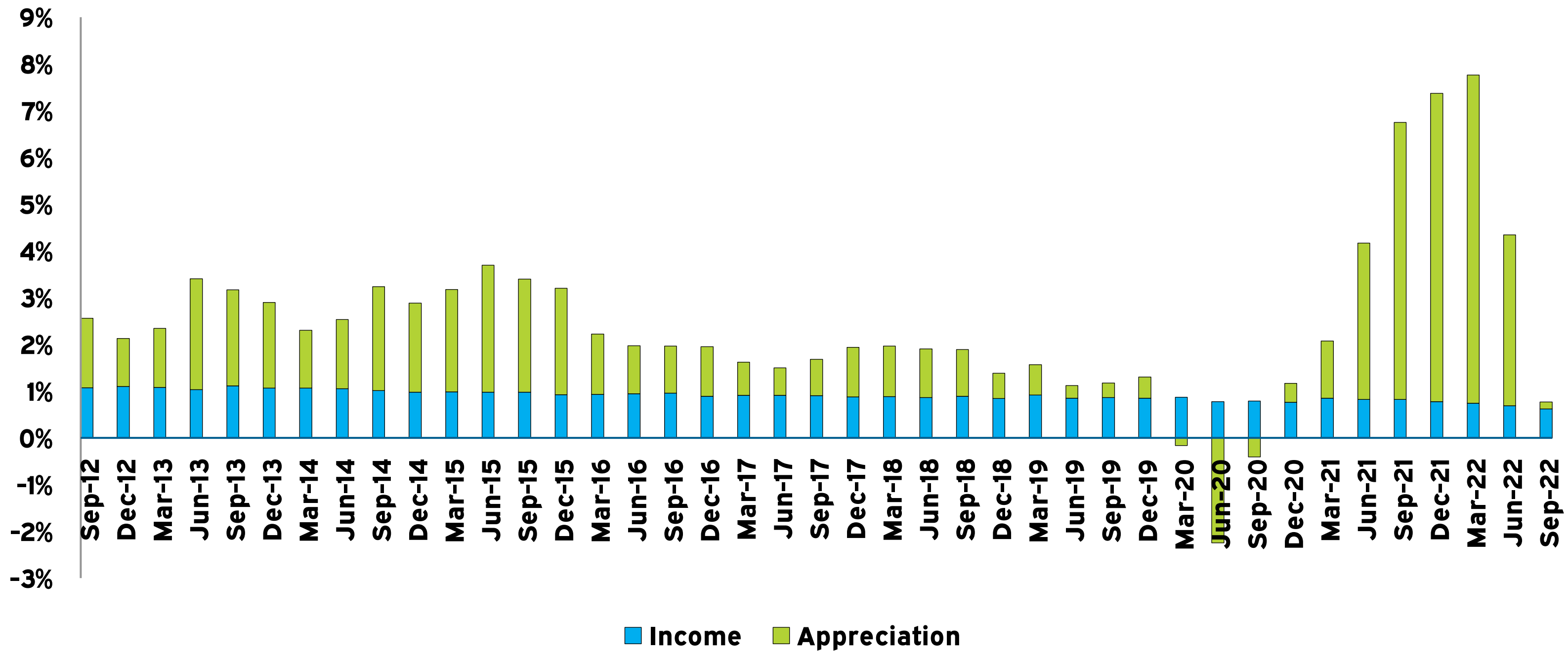
Trailing Period Returns[1]

As of September 30, 2022	1 Year	3 Years	5 Years	10 Years
NFI-ODCE (EW, net)	21.7%	12.1%	9.9%	10.3%
NFI-ODCE (VW, net)	21.0	11.4	9.3	9.9
NCREIF Property Index	16.1	9.9	8.6	9.5
NAREIT Equity REIT Index	-16.3	-1.1	4.0	7.0

Private real estate indices were slightly positive in Q3 2022 and continue to be positive over the 1-year, 3-year, 5-year, and 10-year time horizons. The NFI-ODCE Equal Weight Index posted a weaker return in Q3 2022 of 0.8%, however private core real estate continues to vastly outperform the public index over the trailing one-year period. Indeed, private core real estate has outperformed the public index for all periods presented. Public real estate performance continues to be volatile, returning -10.8% in Q3 2022, after posting a 16.2% return in Q4 2021.

[1] Source: NCREIF

ODCE Return Components [1]
(Equal Weight, Net)



The NFI-ODCE Equal Weight return in Q3 2022 moderated significantly, producing a 0.8% net return for the quarter. This represents a significant decrease from Q1 2022's record setting return of 7.8%. Small upward adjustments to the discount rate, used in valuations to reflect increasing interest rates and the cost of debt financing, chipped away at the appreciation component of returns. The income component of the quarterly return has slowly decreased over time, now at 0.6% for Q3 2022.

[1] Source: NCREIF

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.

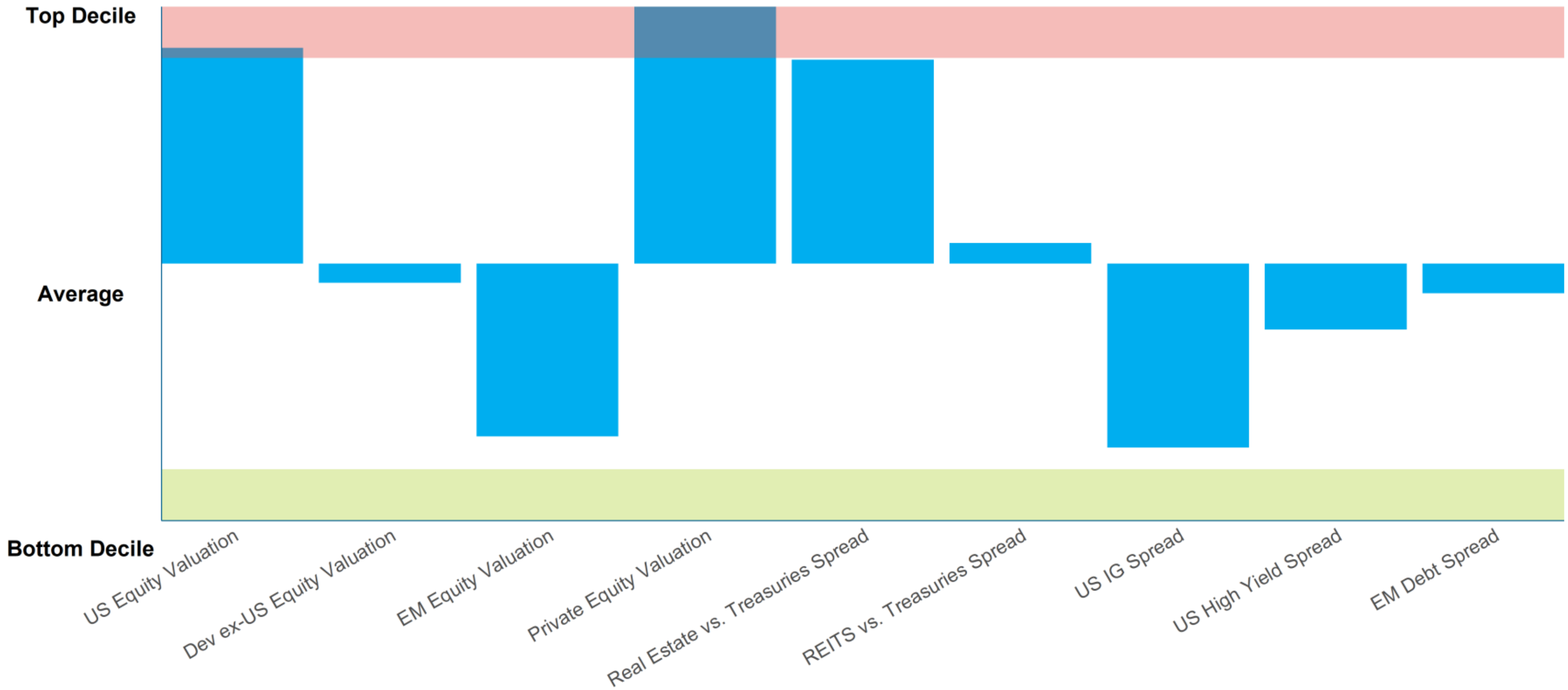
Capital Markets Outlook & Risk Metrics

As of December 31, 2022

Capital Markets Outlook

- → Major equity and bond markets finished 2022 in negative territory, marking one of the worst years for investors since the early 1980s. However, many markets showed some resiliency with positive performance in the second half of the year.
- → China's relaxation of its Zero COVID policy helped support equity market rallies on the hopes of a re-opening boom after a long period of underperformance.
- → US equity markets lagged Non-US equity markets in December as the ECB's gradualist approach to interest rate hikes helped support better than expected economic growth.
- → With the notable support from China's equity rally and a weaker US dollar, emerging markets outperformed US stocks.
- → Value stocks took the lead in December, proving more resilient than growth stocks both in and outside of the US.
- → In spite of slowing inflation, major fixed income markets sold off in December and finished the year in double digit negative territory.
- → Short-term rates continued to climb due to the Fed's 50 bp rate hike in December, leading to a steep inversion of the yield curve.
- → Natural resource stocks and commodities sold off in December but retained solid positive returns for the full year.

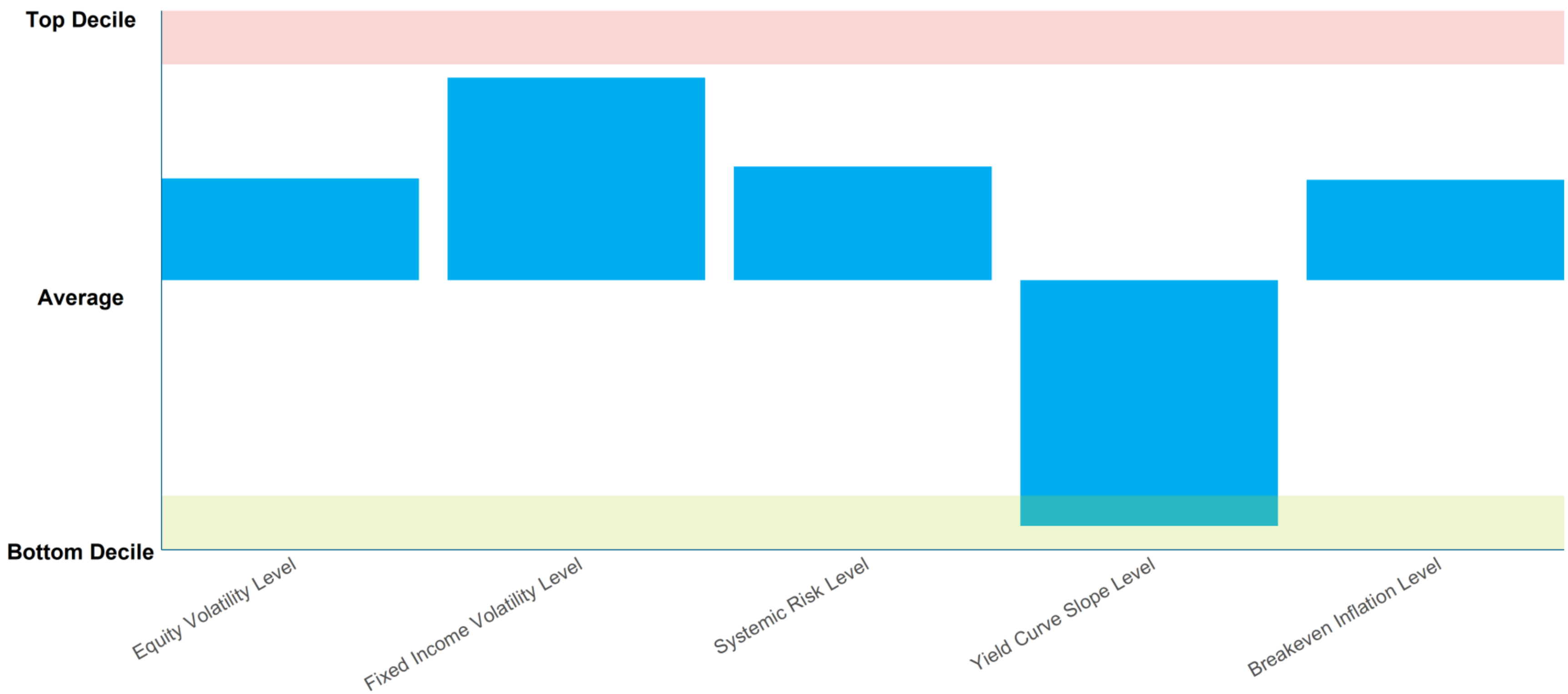
Risk Overview/Dashboard (1)
(As of December 31, 2022)[1]



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

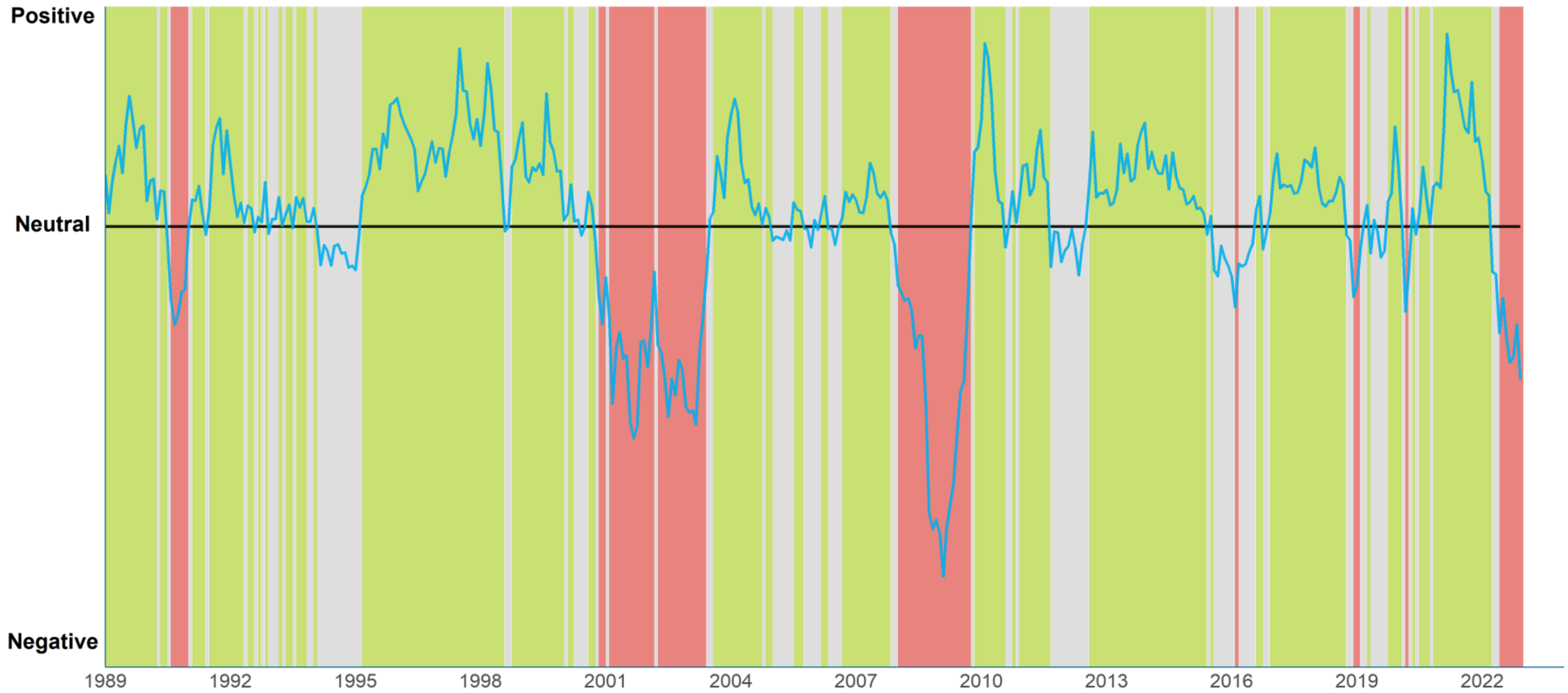
[1] With the exception of Private Equity Valuation, that is YTD as of December 31, 2021.

Risk Overview/Dashboard (2)
(As of December 31, 2022)

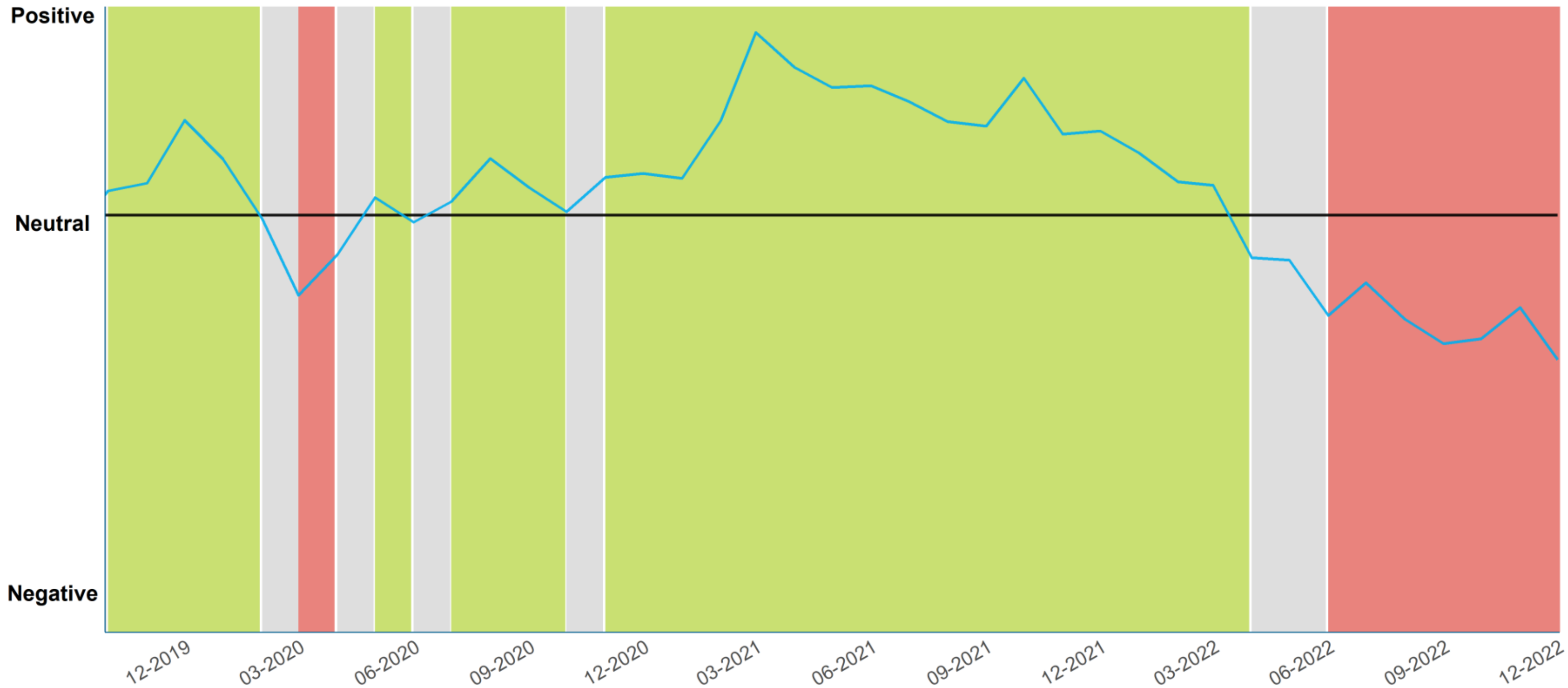


→ Dashboard (2) shows how the current level of each indicator compares to its respective history.

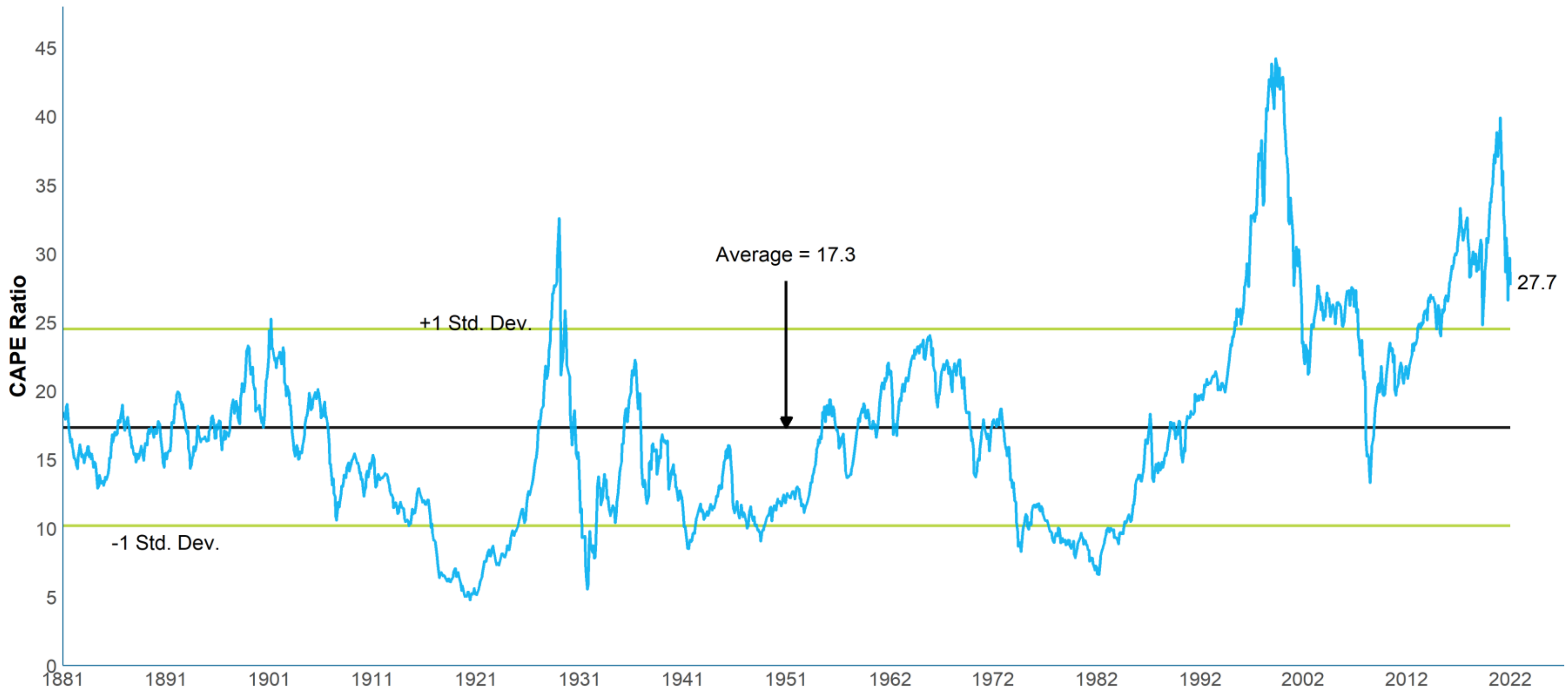
Market Sentiment Indicator (All History)
(As of December 31, 2022)



Market Sentiment Indicator (Last Three Years)
(As of December 31, 2022)



US Equity Cyclically Adjusted P/E[1]
(As of December 31, 2022)



→ 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.

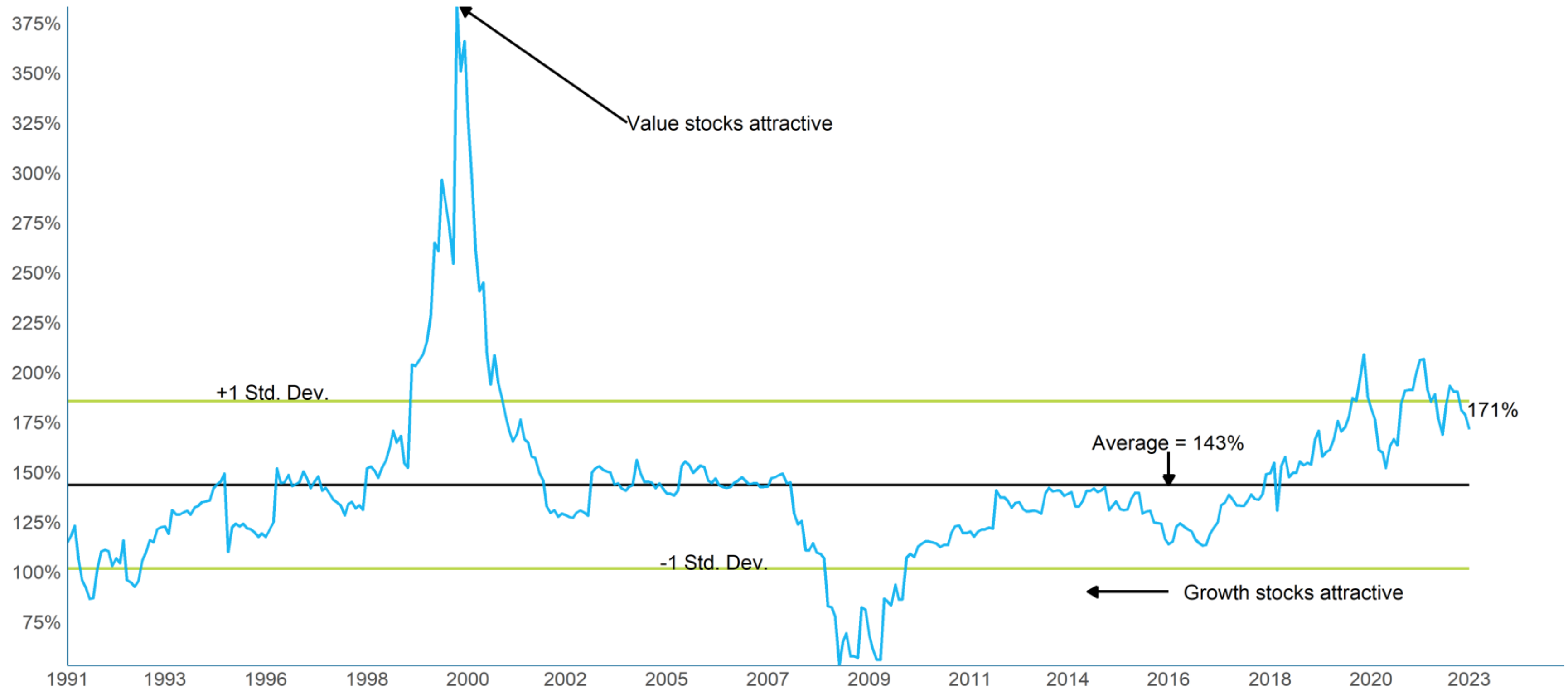
Small Cap P/E vs. Large Cap P/E[1]
(As of December 31, 2022)

→ 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. Earnings figures represent 12-month "as reported" earnings.

Growth P/E vs. Value P/E[1]

(As of December 31, 2022)

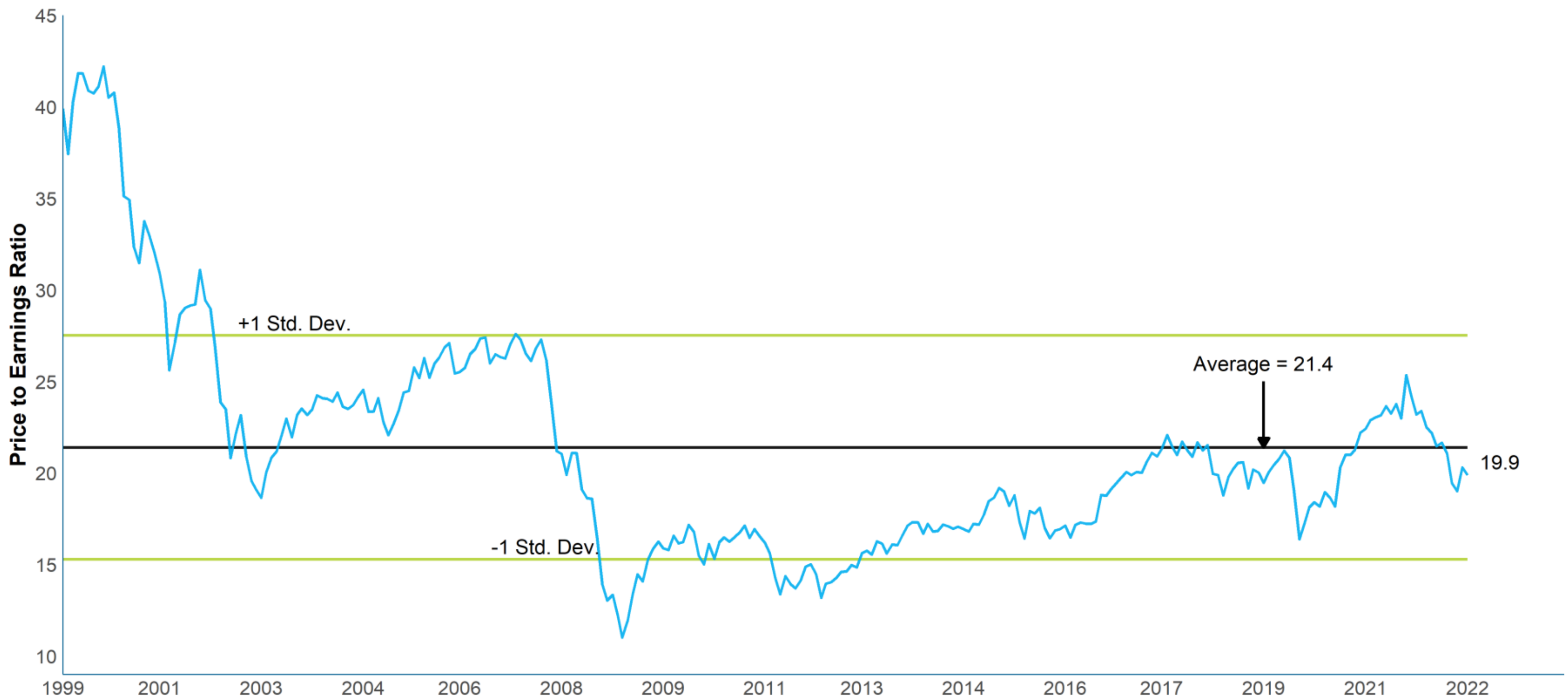


→ This chart compares the relative attractiveness of US growth equities vs. US value equities on a valuation basis. A higher (lower) figure indicates that value (growth) is more attractive.

[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 December 31, 2022)

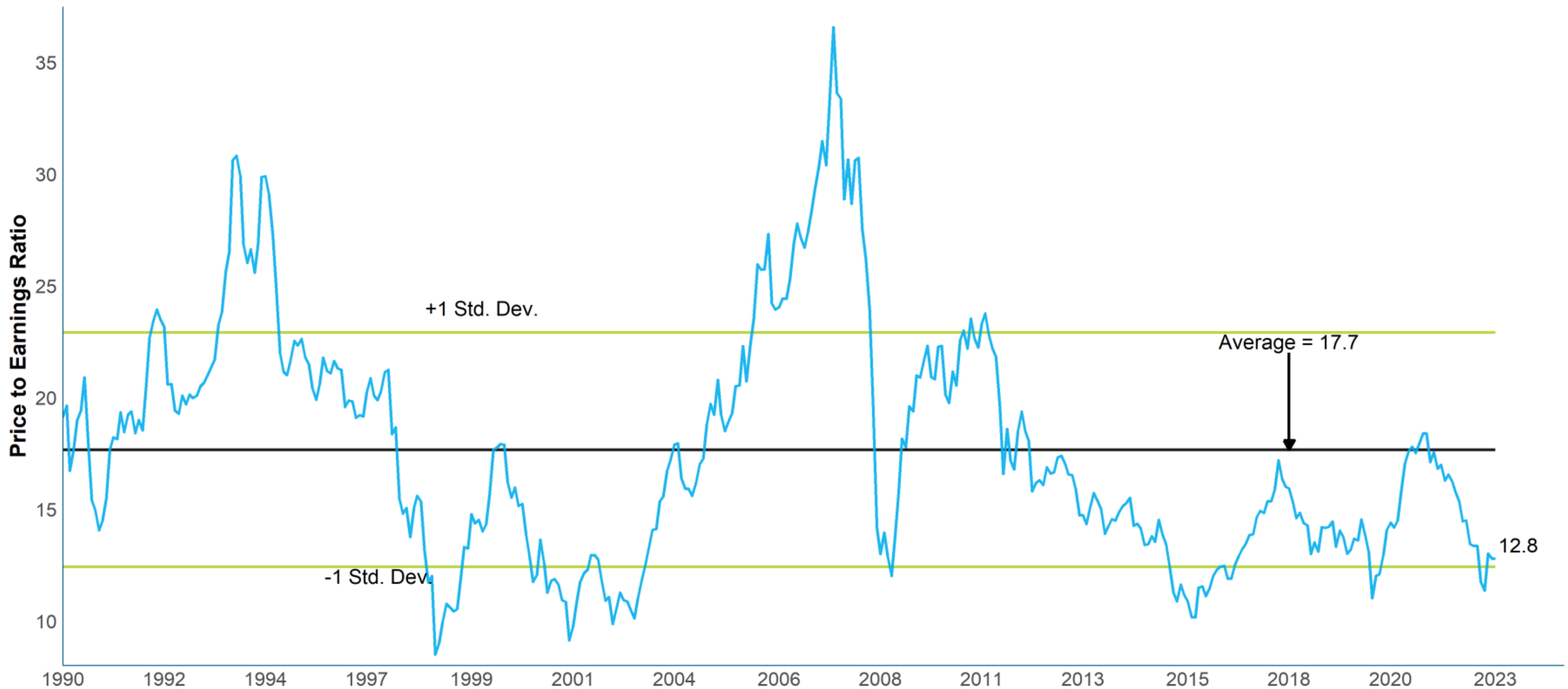


→ This chart details one valuation metric for developed international equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[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]

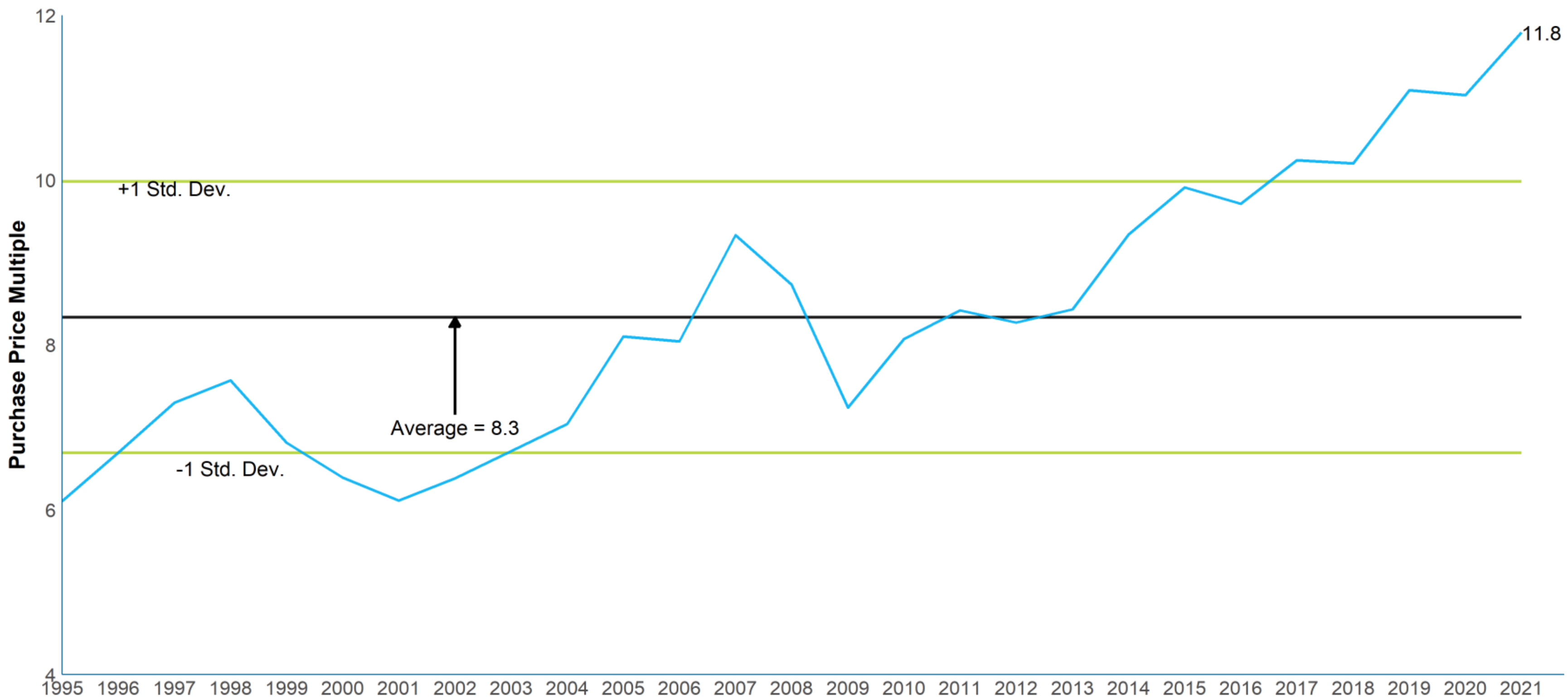
(As of December 31, 2022)



→ 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.

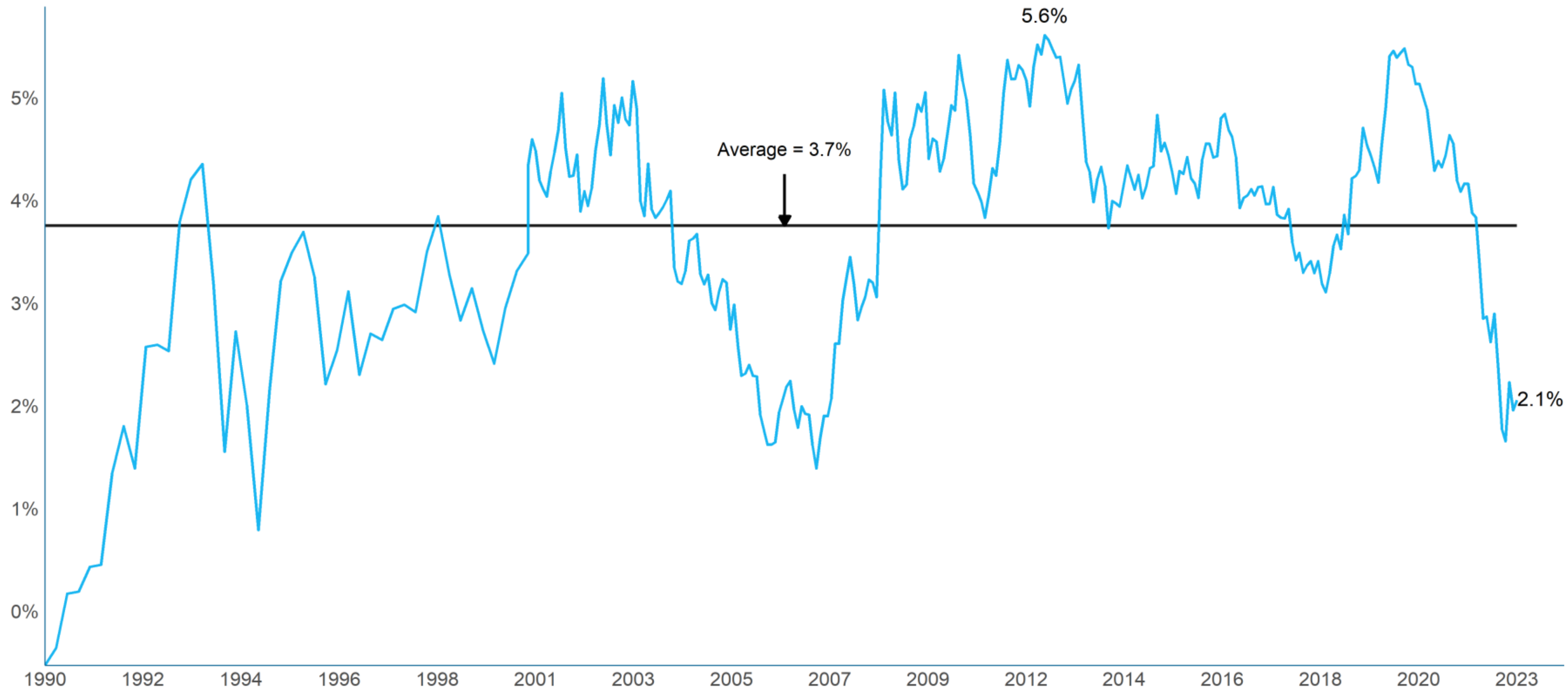
Private Equity Multiples[1]
(As of December 31, 2022)[2]



→ 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: S&P LCD Average EBITDA Multiples Paid in All LBOs.
[2] Annual Data, as of December 31, 2021

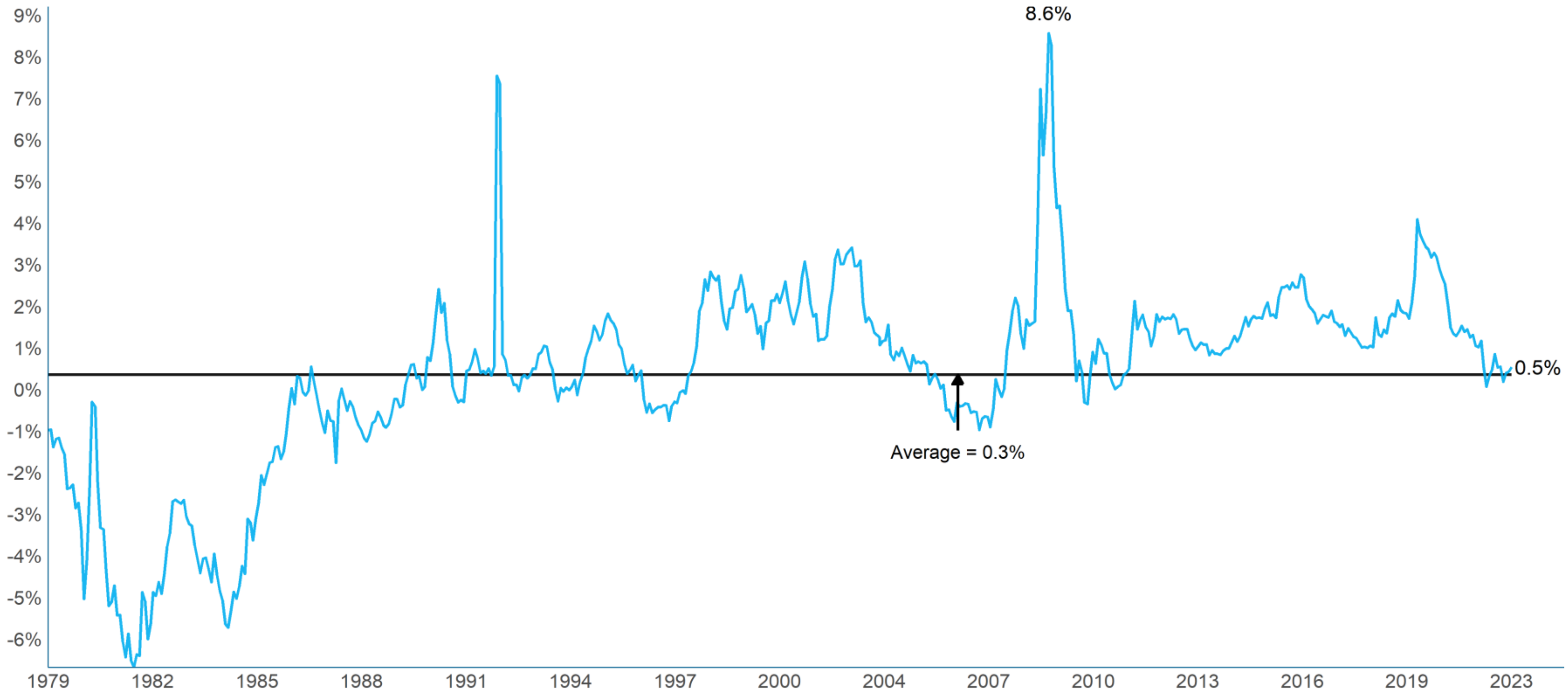
Core Real Estate Spread vs. Ten-Year Treasury[1]
(As of December 31, 2022)



→ 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 December 31, 2022)

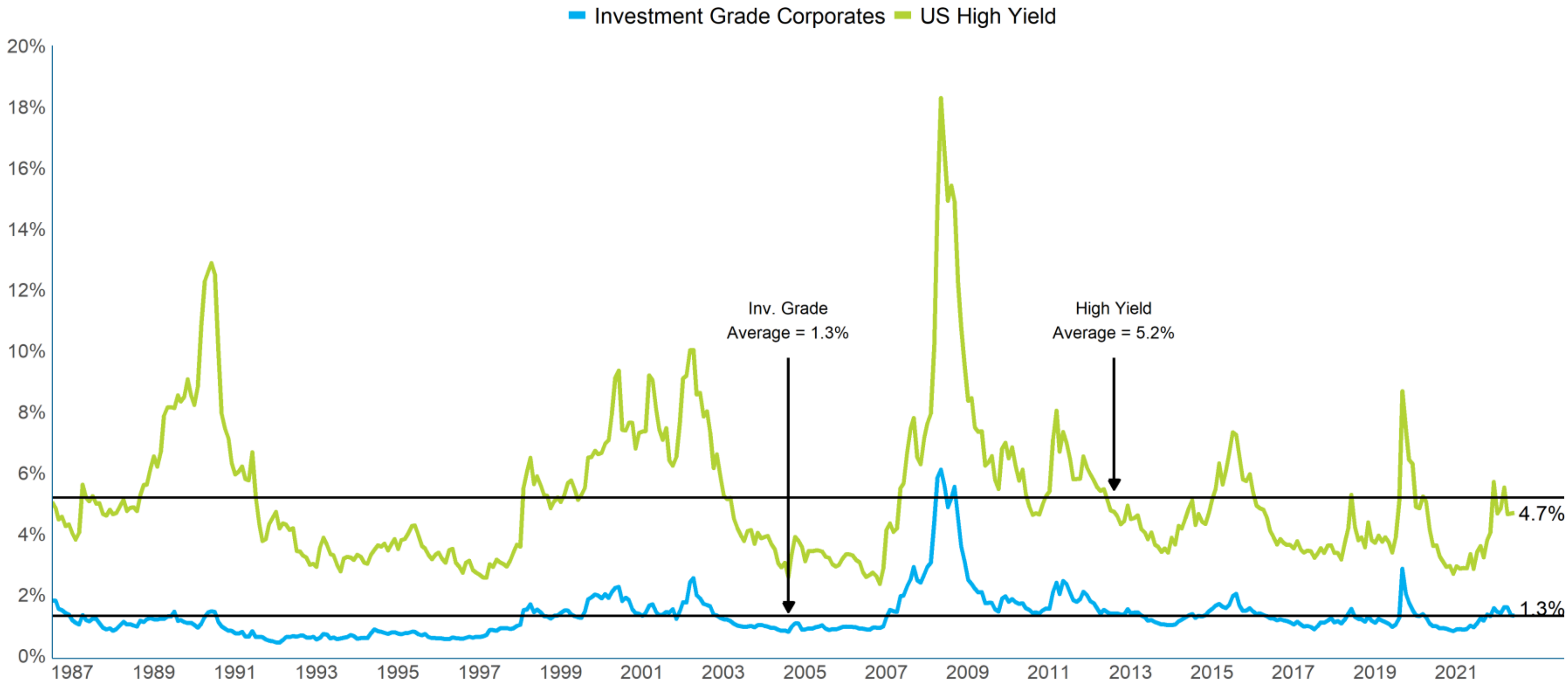


→ This chart details one valuation metric for the public REITs market. A higher (lower) figure indicates cheaper (more expensive) valuation.

[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]

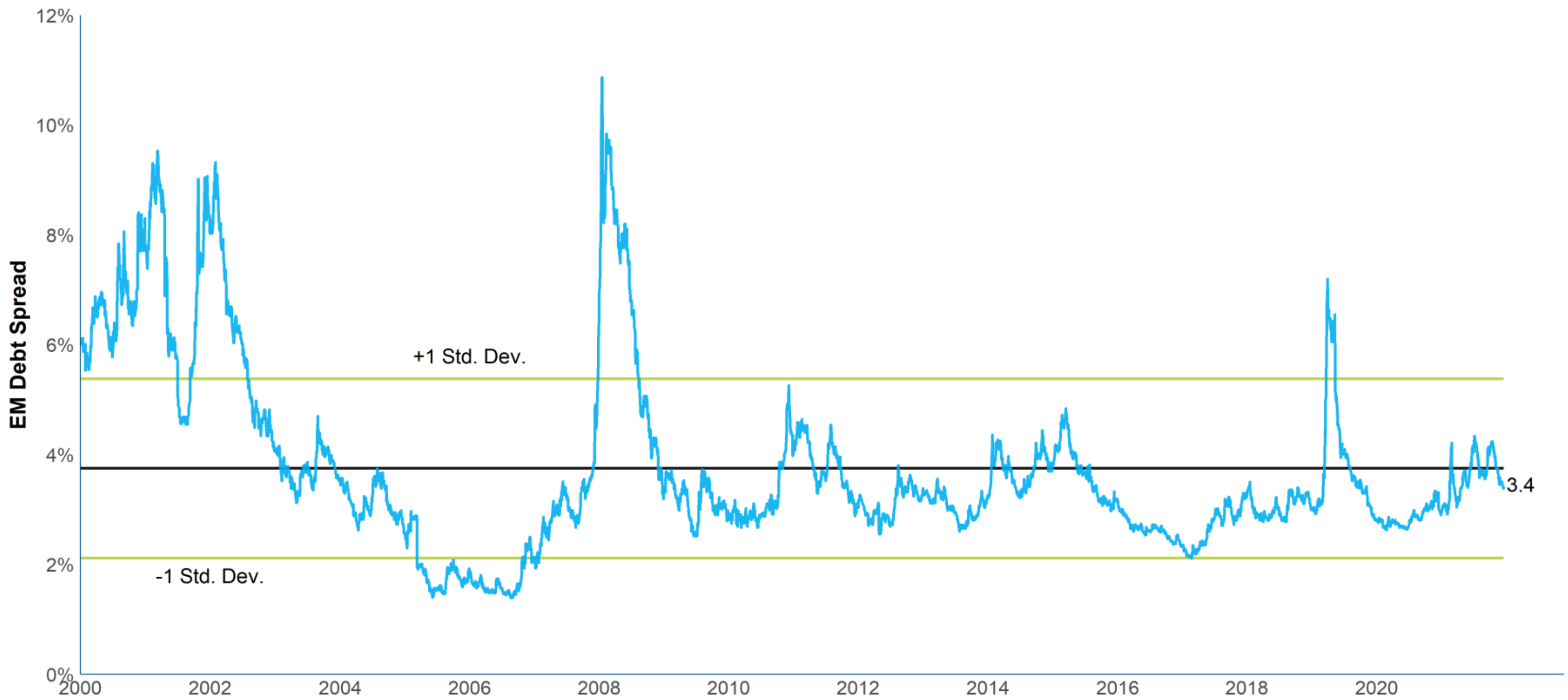
(As of December 31, 2022)



→ 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.

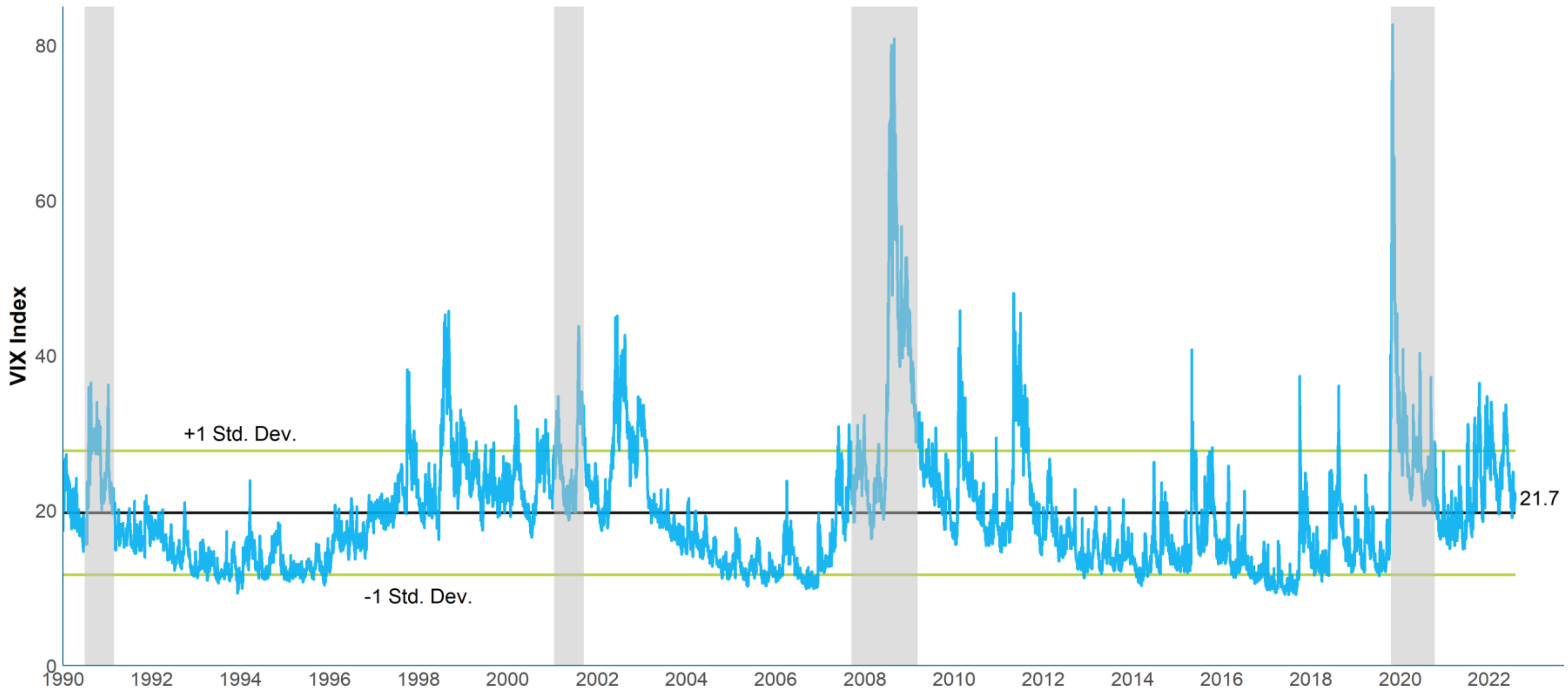
Emerging Market Debt Spreads[1]
(As of December 31, 2022)



→ 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.

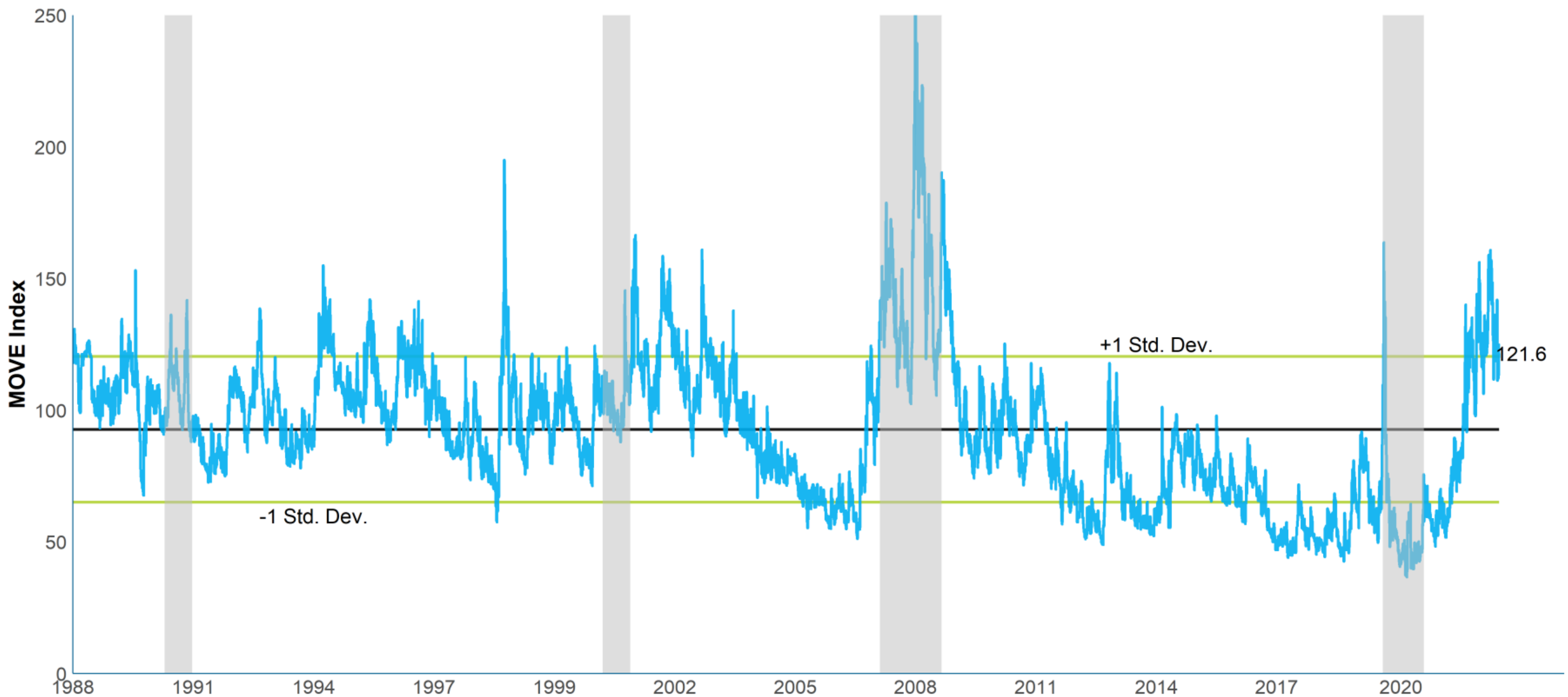
Equity Volatility[1]
(As of December 31, 2022)



→ 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.

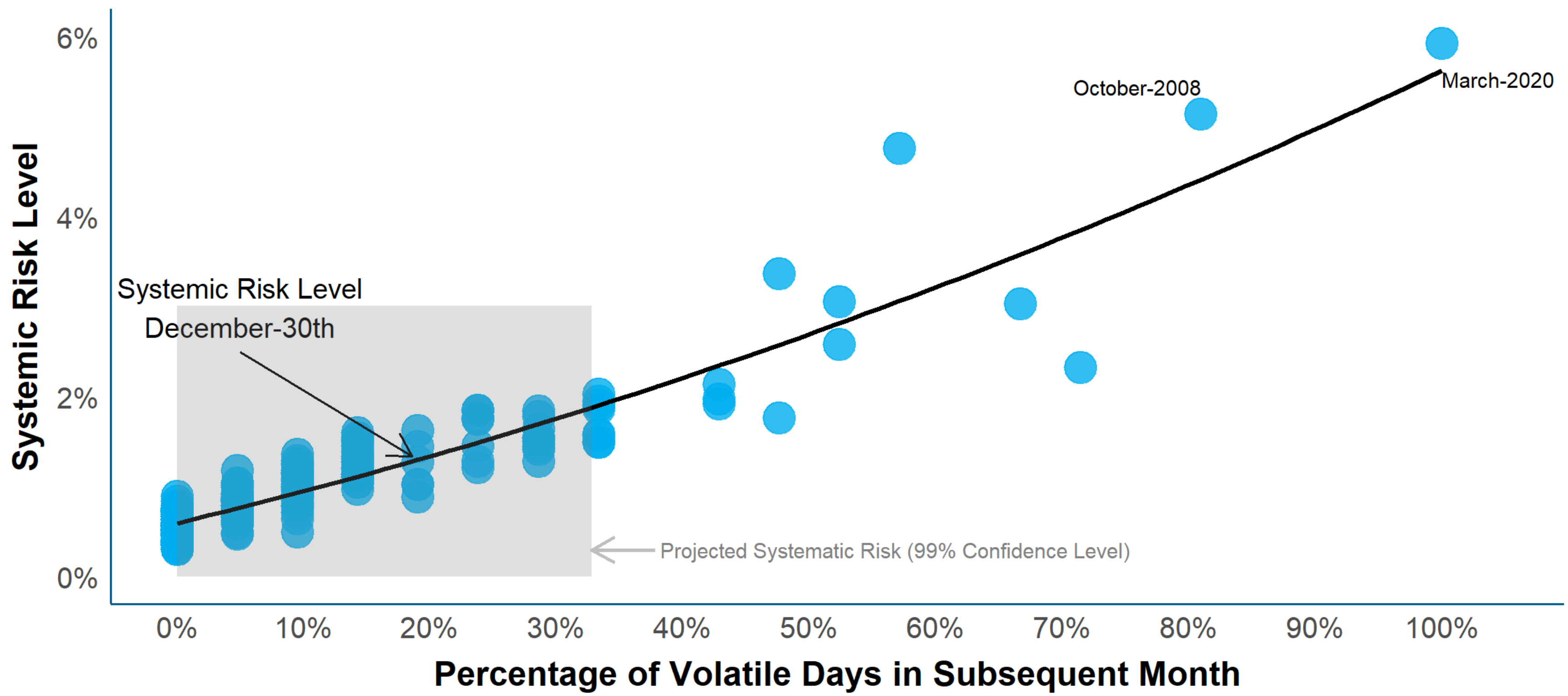
Fixed Income Volatility[1]
(As of December 31, 2022)



→ 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.

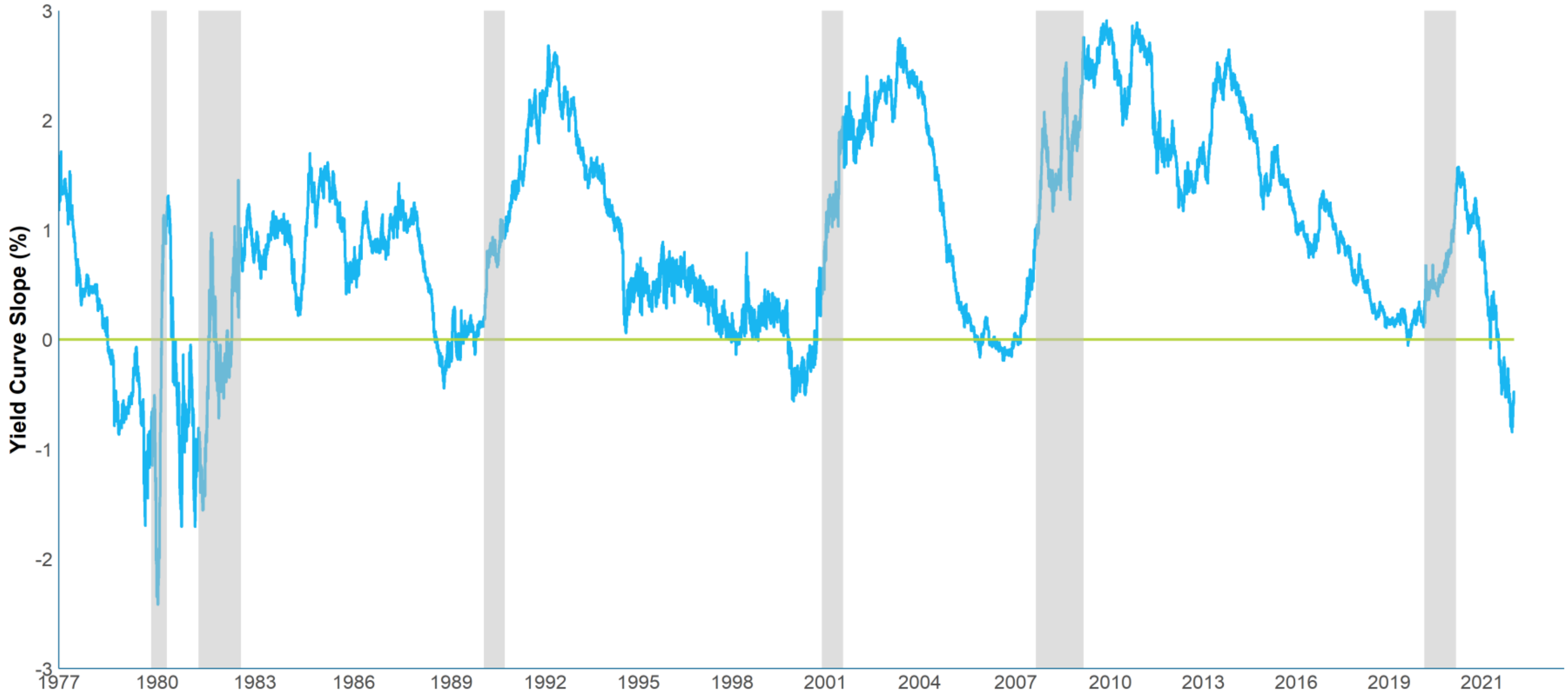
Systemic Risk and Volatile Market Days[1]
(As of December 31, 2022)



→ 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.

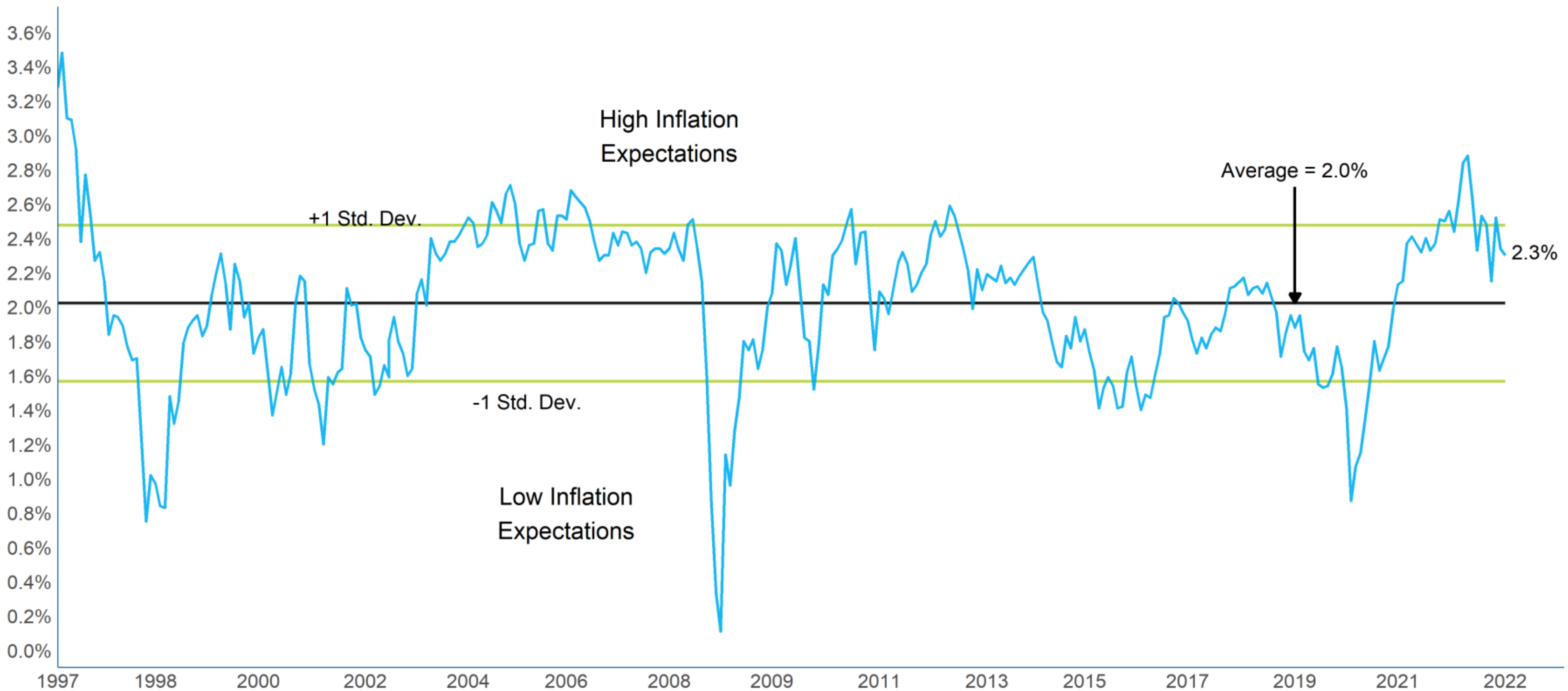
Yield Curve Slope (Ten Minus Two)[1]
(As of December 31, 2022)



→ 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.

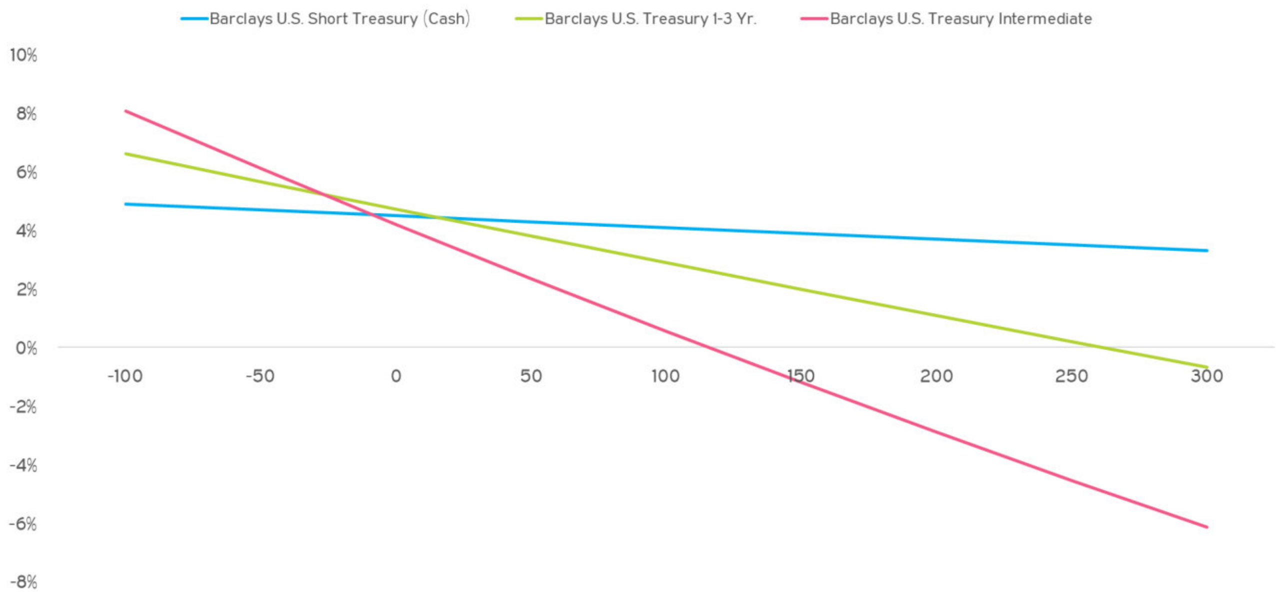
Ten-Year Breakeven Inflation[1]
(As of December 31, 2022)



→ 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).

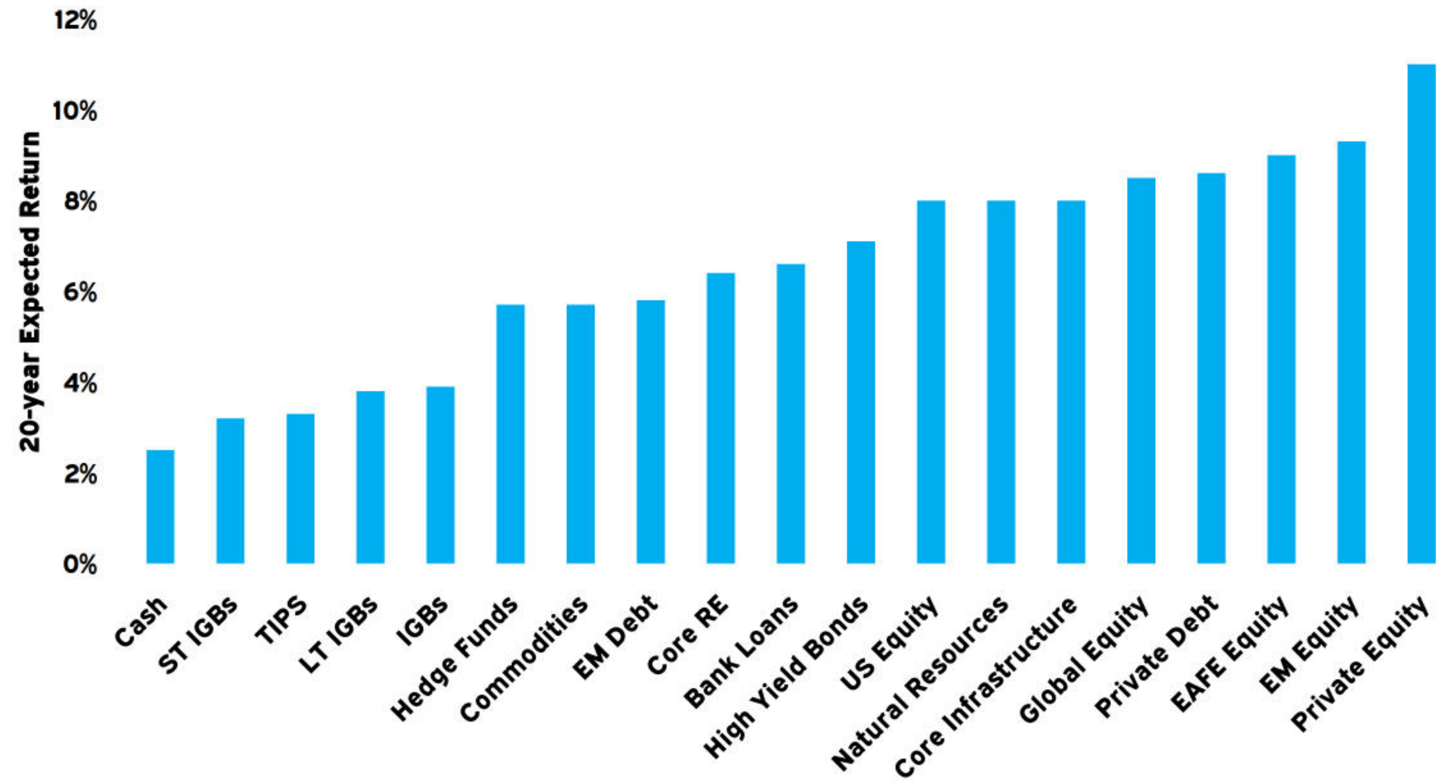
Total Return Given Changes in Interest Rates (bps)[1]
(As of December 31, 2022)



	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)	4.9%	4.7%	4.5%	4.3%	4.1%	3.9%	3.7%	3.5%	3.3%	0.40	4.50%
Barclays US Treasury 1-3 Yr.	6.6%	5.7%	4.7%	3.8%	2.9%	2.0%	1.1%	0.2%	-0.7%	1.86	4.72%
Barclays US Treasury Intermediate	8.1%	6.1%	4.2%	2.3%	0.5%	-1.2%	-2.9%	-4.5%	-6.1%	3.76	4.20%
Barclays US Treasury Long	22.0%	12.6%	4.1%	-3.6%	-10.4%	-16.4%	-21.5%	-25.7%	-29.1%	16.19	4.08%

[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 2022 Intrayear 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 December 31, 2022, 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 December 31, 2022, 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 December 31, 2022, 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:

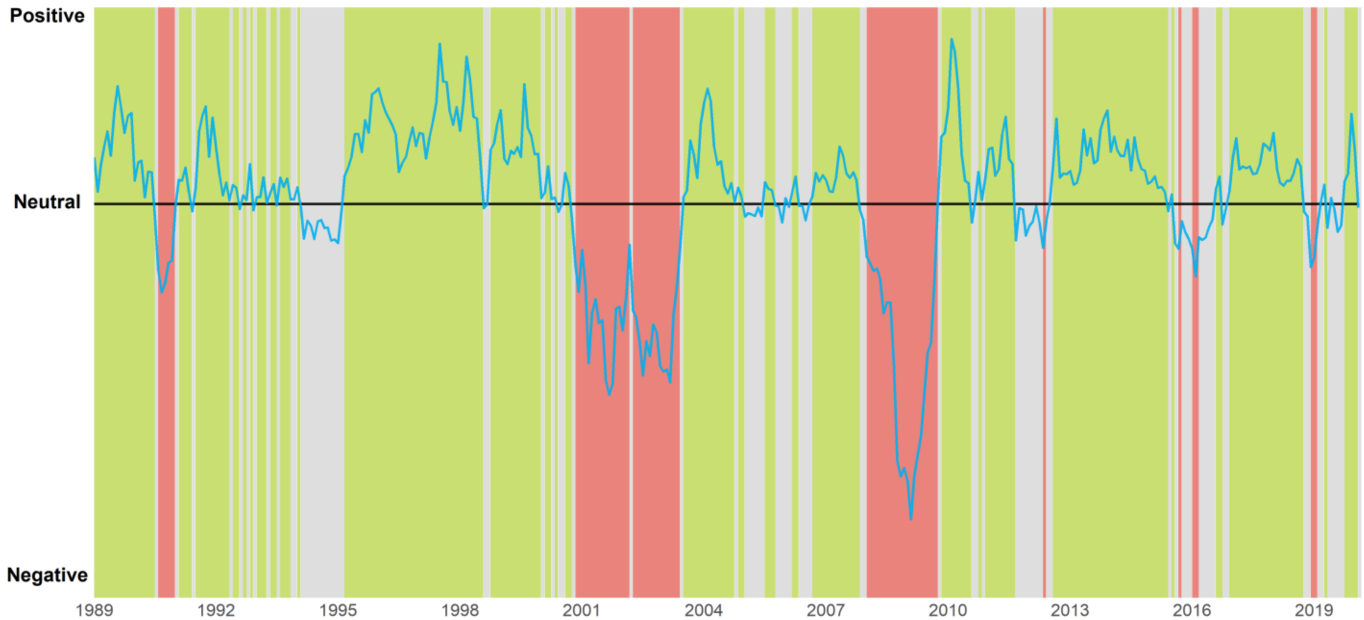
What is the Meketa Market Sentiment Indicator (MIG-MSI)?

→ 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 December 31, 2022

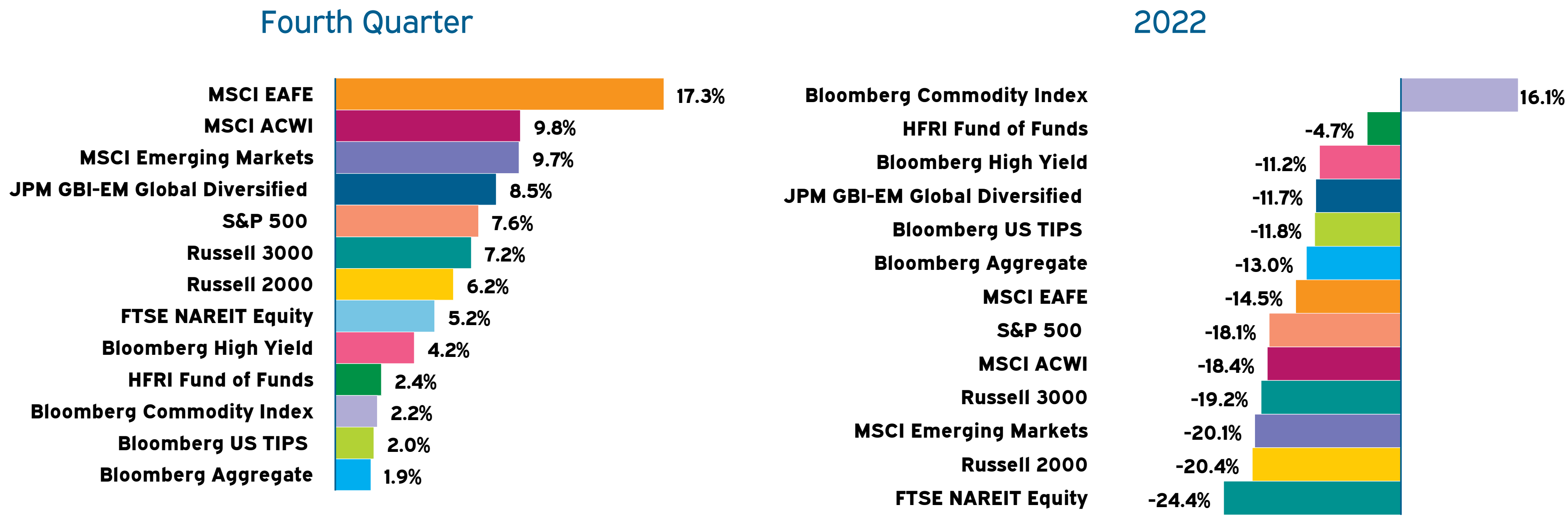
Commentary

→ Ending a very tough year, most asset classes posted gains in the fourth quarter on signs that policy tightening would slow given cooling inflation.

- Chairman Powell's testimony in November reiterated previous messaging on persistent and high inflation and the need for an extended period of monetary tightening weighing on assets in December. Markets remained focused though on signs that inflation is falling and that the size of future Fed rate hikes could be lower.
- US equity markets sold off (-5.9%) in December but returned 7.2% in the fourth quarter as investors balanced the Fed's caution with improving inflation data.
- In developed equity markets outside the US, sentiment deteriorated somewhat in December, but they posted a strong fourth quarter return of 17.3% driven by a falling US dollar and results in Europe where inflation started to slow.
- Emerging market equities declined in December too (-1.4%) but less than the US and also had a strong fourth quarter (+9.7%). A weaker US dollar, declining inflation globally, and signs of China reopening its economy all contributed to the results.
- Bonds experienced one of the worst years on record given inflation levels and the rapid rise in interest rates. Optimism over declining inflation and a slower pace of policy tightening benefited bonds overall in the fourth quarter though.

→ Looking to 2023, the path of inflation and monetary policy, slowing growth globally, China reopening its economy, and the war in Ukraine will all be key.

Index Returns[1]



→ After broad declines in Q3 driven by expectations for further policy tightening, most major asset classes were up in the fourth quarter on hopes of inflation and policy tightening peaking.

→ Outside of commodities, all other public market asset classes declined in 2022. It was the first time since the 1960s that both stocks and bonds declined together in a calendar year.

[1] Source: Bloomberg and FactSet. Data is as of December 31, 2022.

Domestic Equity Returns[1]

Domestic Equity	December (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-5.8	7.6	-18.1	7.7	9.4	12.6
Russell 3000	-5.9	7.2	-19.2	7.1	8.8	12.1
Russell 1000	-5.8	7.2	-19.1	7.3	9.1	12.4
Russell 1000 Growth	-7.7	2.2	-29.1	7.8	11.0	14.1
Russell 1000 Value	-4.0	12.4	-7.5	6.0	6.7	10.3
Russell MidCap	-5.4	9.2	-17.3	5.9	7.1	11.0
Russell MidCap Growth	-6.0	6.9	-26.7	3.9	7.6	11.4
Russell MidCap Value	-5.1	10.5	-12.0	5.8	5.7	10.1
Russell 2000	-6.5	6.2	-20.4	3.1	4.1	9.0
Russell 2000 Growth	-6.4	4.1	-26.4	0.6	3.5	9.2
Russell 2000 Value	-6.6	8.4	-14.5	4.7	4.1	8.5

US Equities: Russell 3000 Index declined 5.9% for December but gained 7.2% for the quarter. Historic inflation and rapidly rising interest rates led to significant declines (-19.2%) for the full year.

→ US stocks fell broadly in December on the Federal Reserve signaling its continued resolve to raise rates but gained overall for the quarter on hopes that interest rates could be peaking soon given slowing inflation.

→ All sectors declined during December, led by consumer discretionary and technology with defensive sectors declining less. For the quarter though, most sectors were up led by energy and industrials.

→ In a continuation on the overall trend in 2022 value stocks outperformed growth stocks in the fourth quarter given higher interest rates and slowing growth.

[1] Source: Bloomberg. Data is as of December 31, 2022.

Foreign Equity Returns[1]

Foreign Equity	December (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-0.7	14.3	-16.0	0.1	0.9	3.8
MSCI EAFE	0.1	17.3	-14.5	0.9	1.5	4.7
MSCI EAFE (Local Currency)	-3.0	8.7	-7.0	3.6	3.8	7.6
MSCI EAFE Small Cap	1.1	15.8	-21.4	-0.9	0.0	6.2
MSCI Emerging Markets	-1.4	9.7	-20.1	-2.7	-1.4	1.4
MSCI Emerging Markets (Local Currency)	-2.0	6.6	-15.5	0.1	1.3	4.6
MSCI China	5.2	13.5	-21.9	-7.5	-4.5	2.4

Developed international equities (MSCI EAFE) rose 0.1% in December and an impressive 17.3% in the fourth quarter. Emerging markets (MSCI EM) fell -1.4% in December but gained 9.7% for the quarter. Inflation and rising rates also weighed on international equities last year, as well as a strong US dollar for most of the year.

→ International developed market equities, specifically Europe, held up better relative to the rest of the world in December with the MSCI EAFE up 0.1%. In the fourth quarter, they returned a significant 17.3% due in part to the recent weakness in the US dollar (they returned only 8.7% in local terms) leading to lower declines for the year.

→ In December emerging markets outperformed the US but trailed developed market equities as China's rally was not enough to offset weakness elsewhere (e.g., India -5.5%). For the quarter, a weakening US dollar and China reopening led to strong results (+9.7%), but emerging markets remained the weakest for 2022 due to China.

→ Like the US, value outpaced growth globally in 2022.

[1] Source: Bloomberg. Data is as of December 31, 2022.

Fixed Income Returns[1]

Fixed Income	December (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-0.3	2.2	-13.0	-2.5	0.2	1.3	5.1	6.2
Bloomberg Aggregate	-0.5	1.9	-13.0	-2.7	0.0	1.1	4.7	6.4
Bloomberg US TIPS	-1.0	2.0	-11.8	1.2	2.1	1.1	4.4	6.7
Bloomberg High Yield	-0.6	4.2	-11.2	0.0	2.3	4.0	9.0	4.4
JPM GBI-EM Global Diversified (USD)	2.2	8.5	-11.7	-6.1	-2.5	-2.0	5.8	4.9

Fixed Income: The Bloomberg Universal fell -0.3% in December but rose 2.2% for the fourth quarter. Last year was one of the worst on record, with the broad bond market declining 13%.

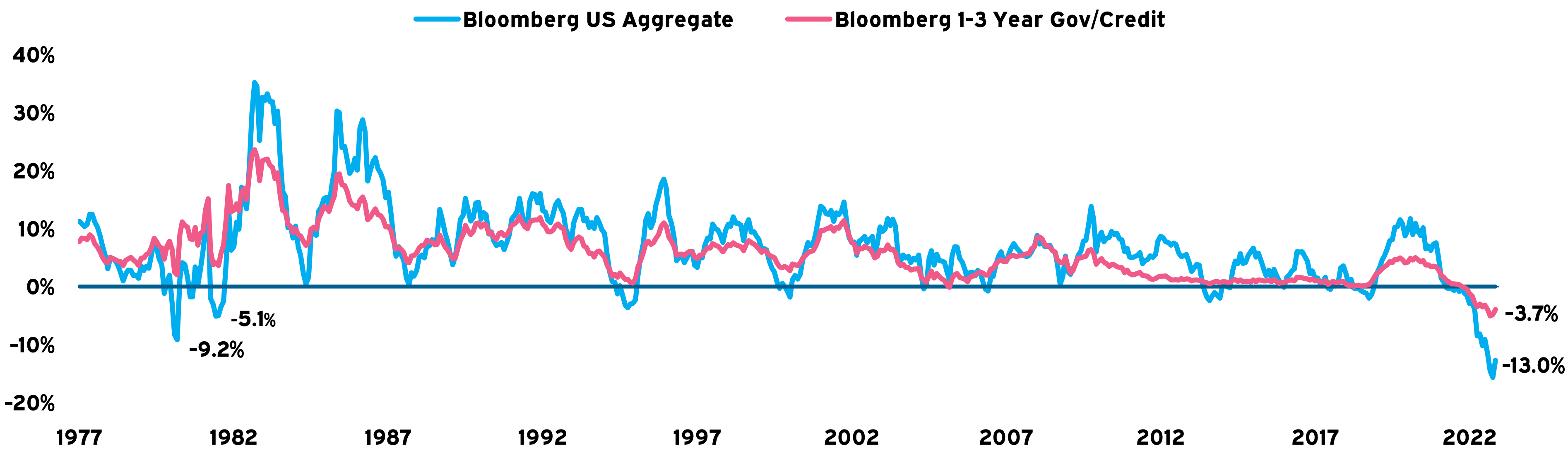
→ The Federal Reserve reconfirming its commitment to tighten policy in the face of high inflation weighed on US fixed income in December. For the quarter though the broad US bond market (Bloomberg Aggregate) was up 1.9% on hopes that inflation would continue to decline and corresponding expectations for the slowing of policy rate hikes.

→ TIPS produced similar results to the broad US bond market for the quarter but outperformed for the year given their inflation adjustment.

→ Riskier bonds outperformed for the quarter due to improving risk sentiment with emerging market bonds performing particularly well.

[1] Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of December 31, 2022. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.

Fixed Income
Rolling One-year Returns[1]



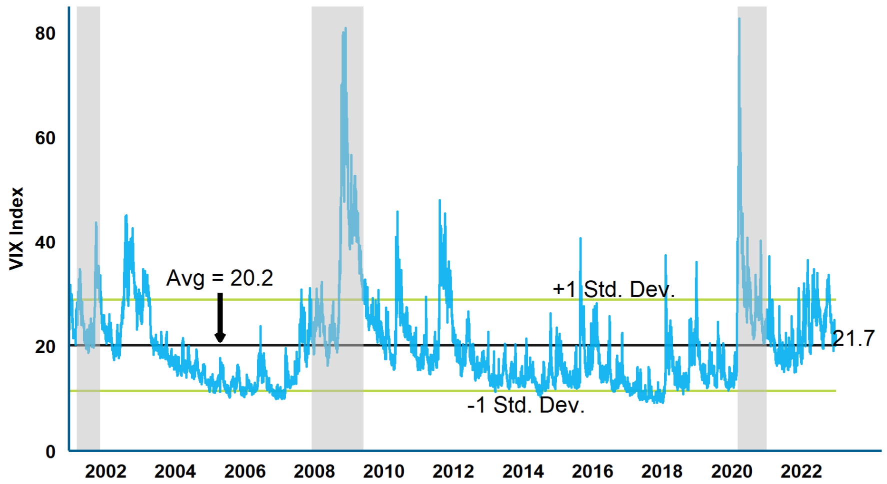
→ Last year was one of the worst return periods for the US bond market given the historic inflation levels and the corresponding rapid rise in interest rates.

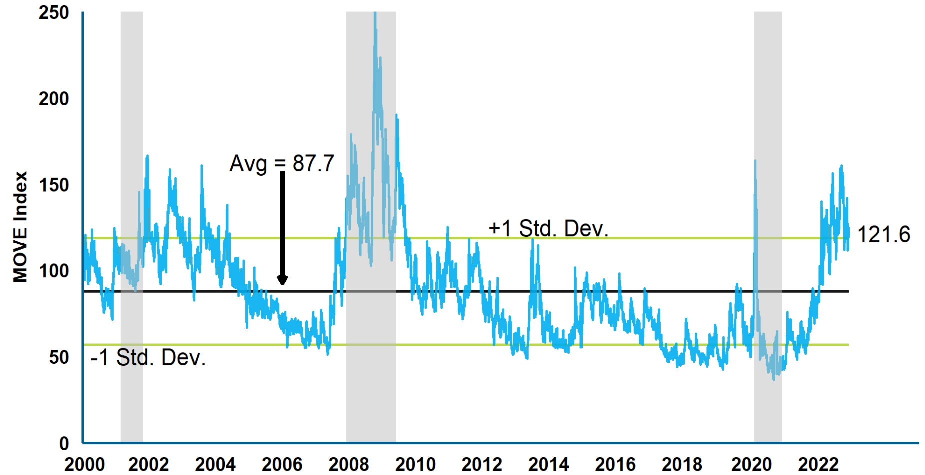
→ The broad bond market (Bloomberg US Aggregate) declined 13% in 2022 making it one of the worst periods on record.

→ Short-term bond declines were far smaller (-3.7%) last year, but also were one of the worst on record.

[1] Source: Bloomberg. Data is as of December 31, 2022.

Equity and Fixed Income Volatility[1]



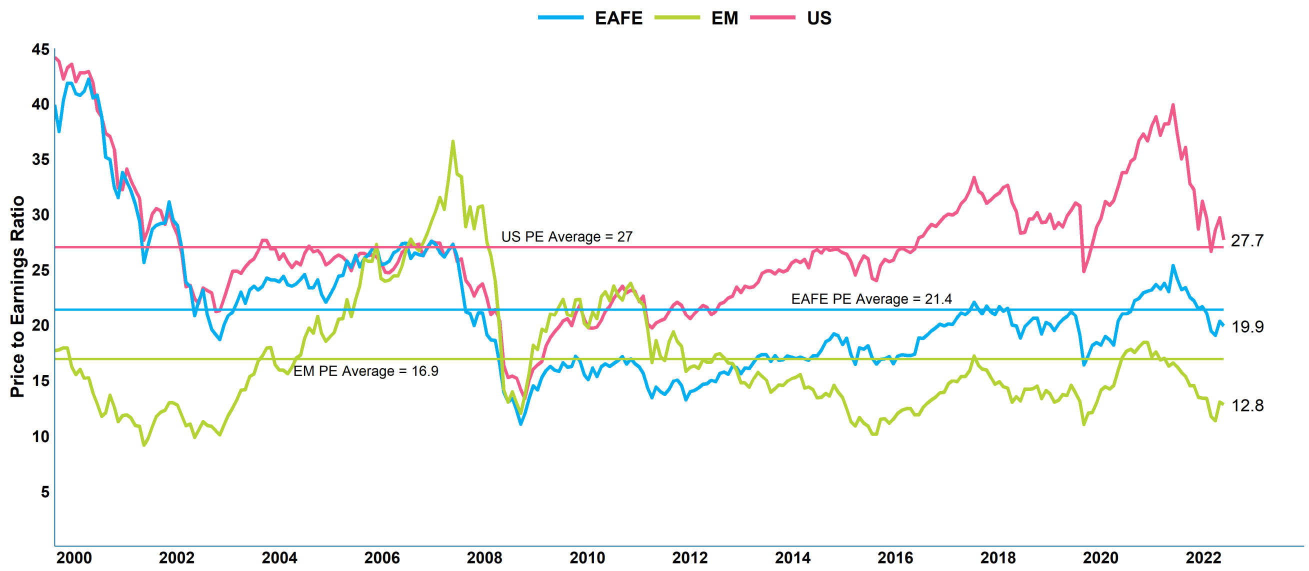


→ Volatility in equities (VIX) finished the year down from its highs and near its long run average as investors anticipated the potential end of Fed rate hikes this year.

→ Fixed income (MOVE) remained elevated and well above its long-run average at year-end due to the uncertain path of US interest rates as the Federal Reserve continues its hawkish stance on inflation.

[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 December 2022. The average line indicated is the average of the VIX and MOVE values between January 2000 and the recent month-end respectively.

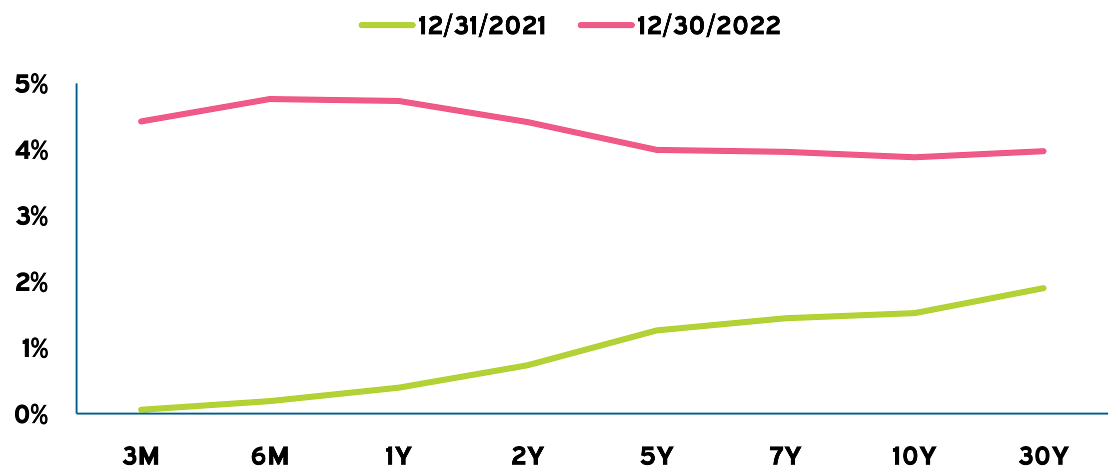
Equity Cyclically Adjusted P/E Ratios[1]



- → After December's sell-off, US equity price-to-earnings ratio finished the year near its long-term (21st century) average.
- → International developed market valuations rose but remain below their own long-term average, with those for emerging markets the lowest and well under the long-term average.
- → Price declines have been the main driver of recent multiple compression as earnings have remained resilient. Concerns remain over whether earnings strength will continue in the face of slowing growth.

[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 December 2022. 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.

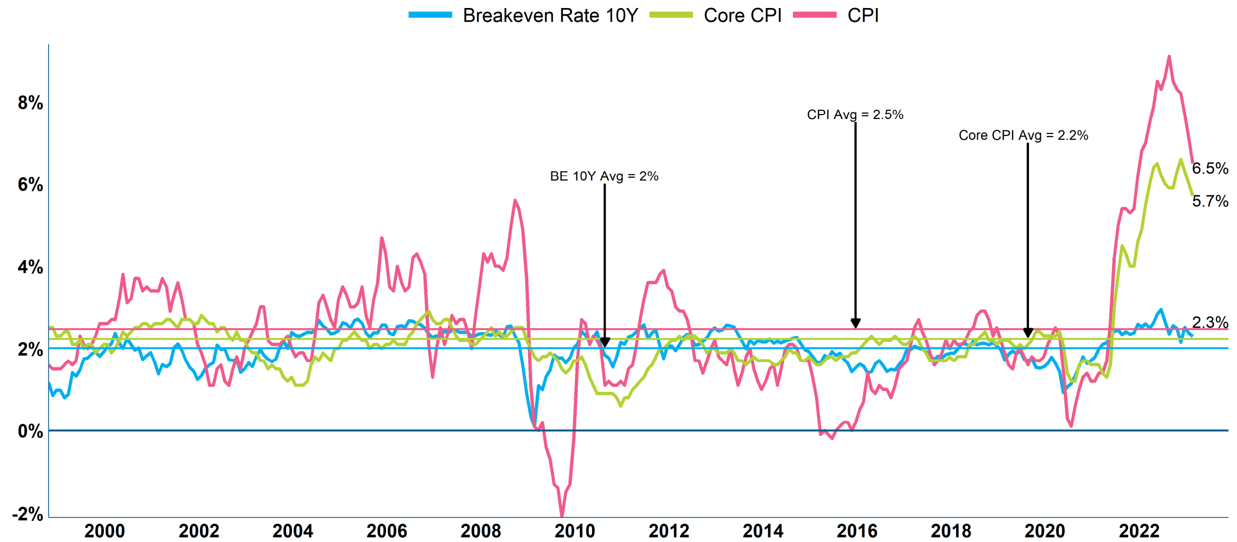
US Yield Curve[1]



- → In December, policy-sensitive interest rates at the front-end of the curve continued to rise with the two-year Treasury yield increasing from 4.3% to 4.4%. Longer dated ten-year Treasury yields also increased (3.6% to 3.9%). For the year, the yield curve rose dramatically across maturities and moved from steep to inverted.
- → The Fed remains strongly committed to fighting inflation, as it increased rates another 50 basis points to a range of 4.0% to 4.5% at its December meeting. This brought the total number of increases for 2022 to seven.
- → The yield spread between two-year and ten-year Treasuries narrowed somewhat to -0.54% after finishing November at -0.70%. The more closely watched measure by the Fed of three-month and ten-year Treasuries also remained inverted. Historically, inversions in the yield curve have often preceded recessions.

[1] Source: Bloomberg. Data is as of December 31, 2022.

Ten-Year Breakeven Inflation and CPI[1]



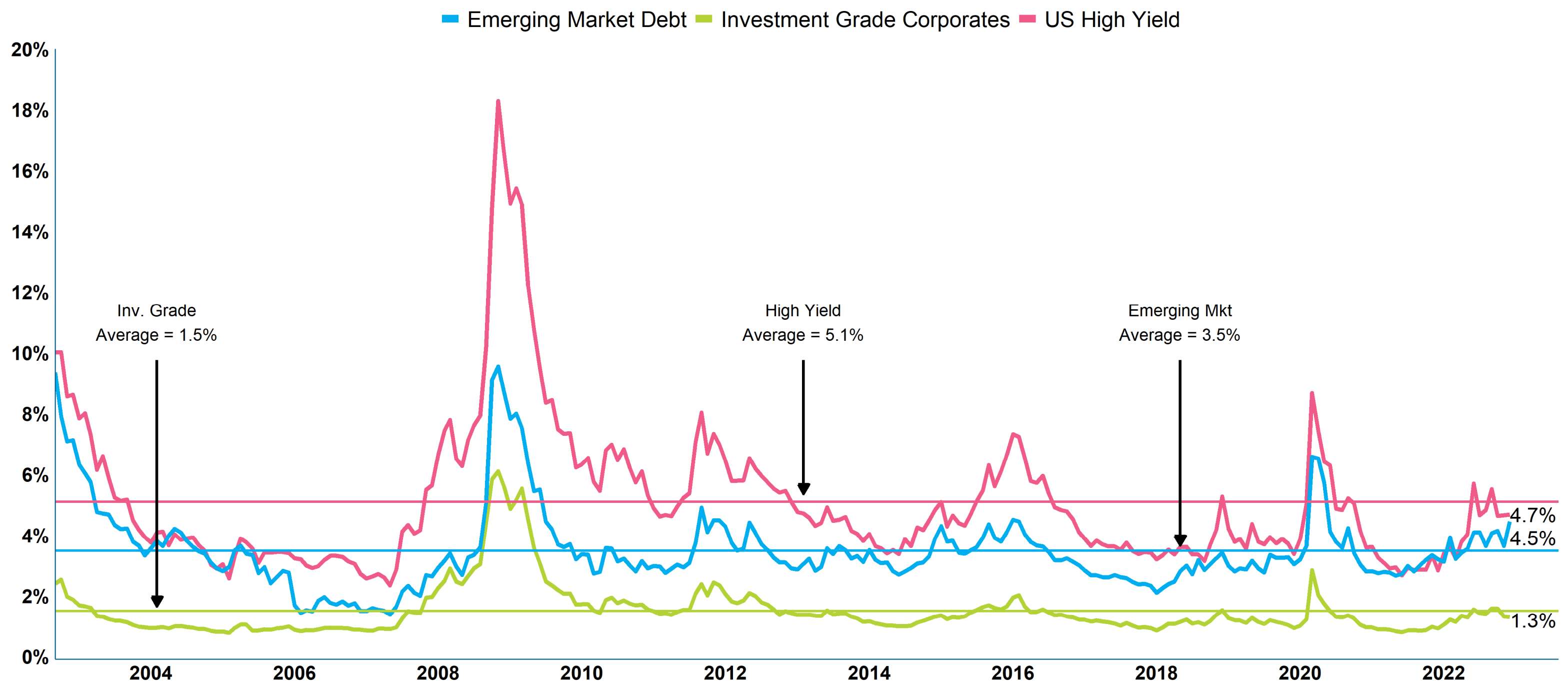
→ In December inflation continued to decline (6.5% versus 7.1%) matching expectations and providing support for the Fed to slow the pace of policy tightening. Energy prices fell again for the month but remain up 7.3% from a year prior, while food prices fell slightly, and stickier service prices continued to increase.

→ Core inflation – excluding food and energy – also continued to decline in December (5.7% versus 6.0%) and matched estimates.

→ Inflation expectations (breakevens) declined slightly for the month (2.3% versus 2.4%) and remain well below current inflation levels as investors anticipate a significant moderation in inflation.

[1] Source: Bloomberg. Data is as of December 2022. 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]

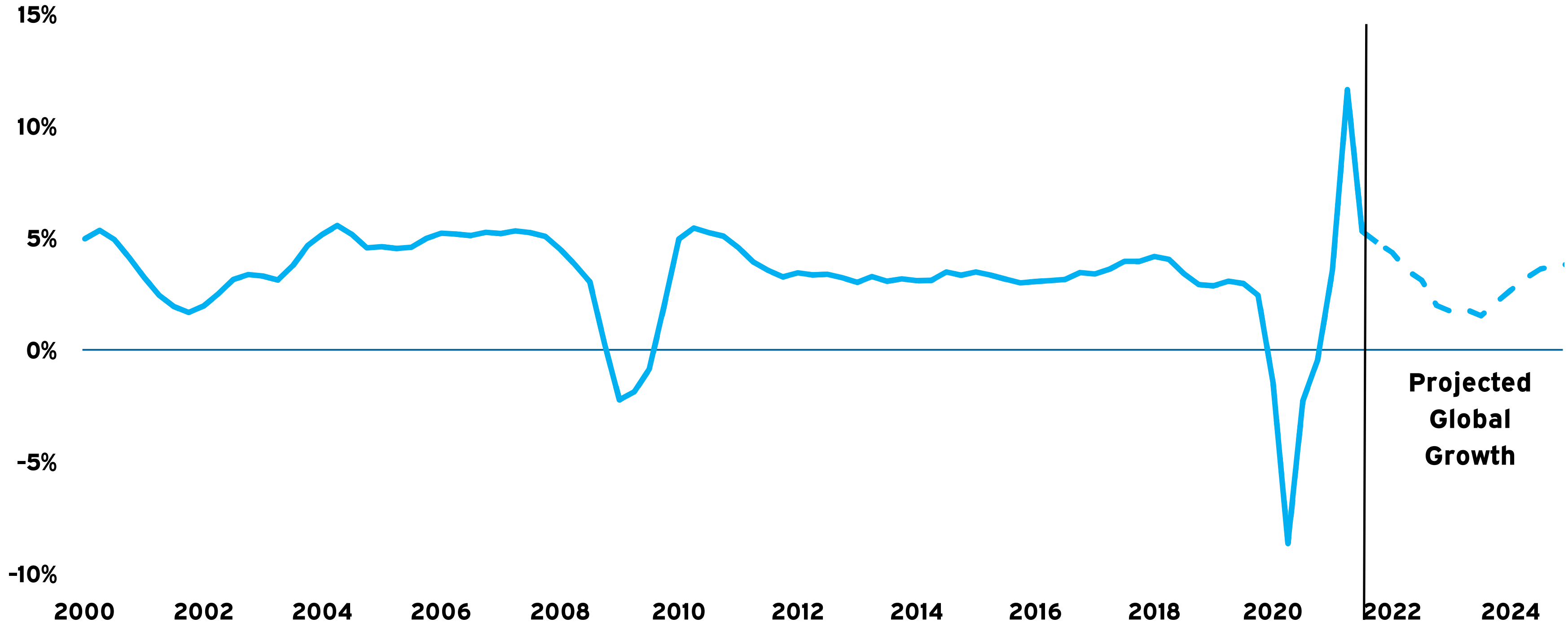


→ High yield spreads (the added yield above a comparable maturity Treasury) finished December at 4.7% (the same as the end of November) remaining below their long-run average.

→ Investment grade spreads also held steady at 1.3% as attractive yields and strong balance sheets continued to attract investors, while emerging market spreads rose (4.5% versus 3.6%) due to concerns regarding slower growth and lower commodity prices.

[1] Sources: Bloomberg. Data is as of December 31, 2022. 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]

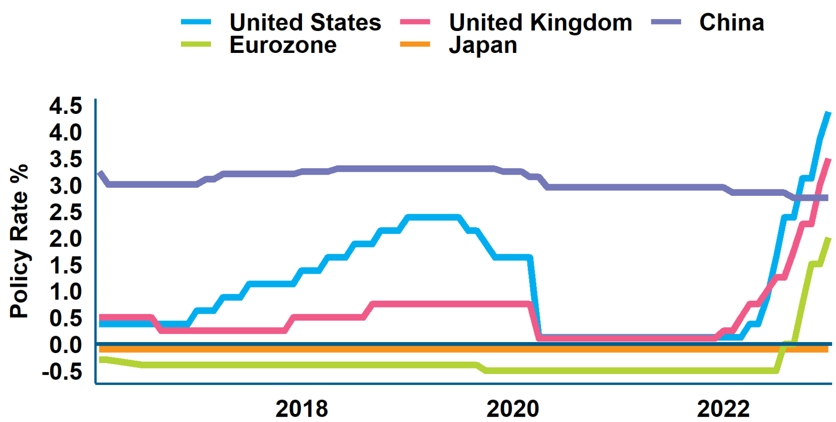


- → Global economies are expected to slow in 2023 compared to 2022, with risks of recession increasing given persistently high inflation and related tighter monetary policy.
- → The delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

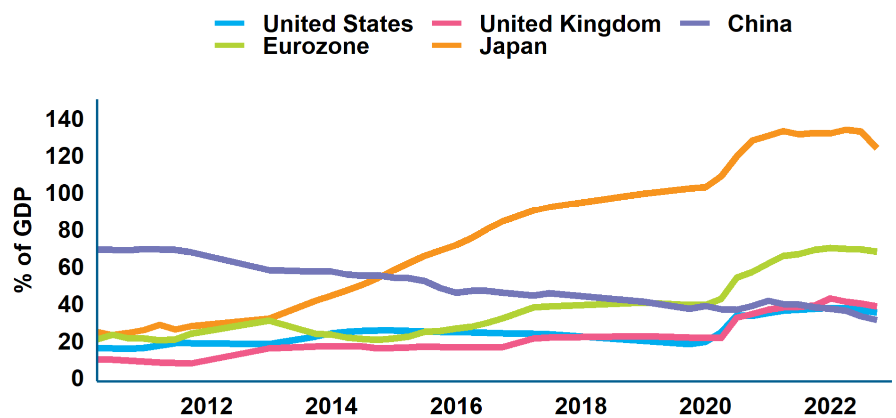
[1] Source: Oxford Economics (World GDP, US$ prices & PPP exchange rate, real, % change YoY). Updated December 2022.

Central Bank Response[1]

Policy Rates



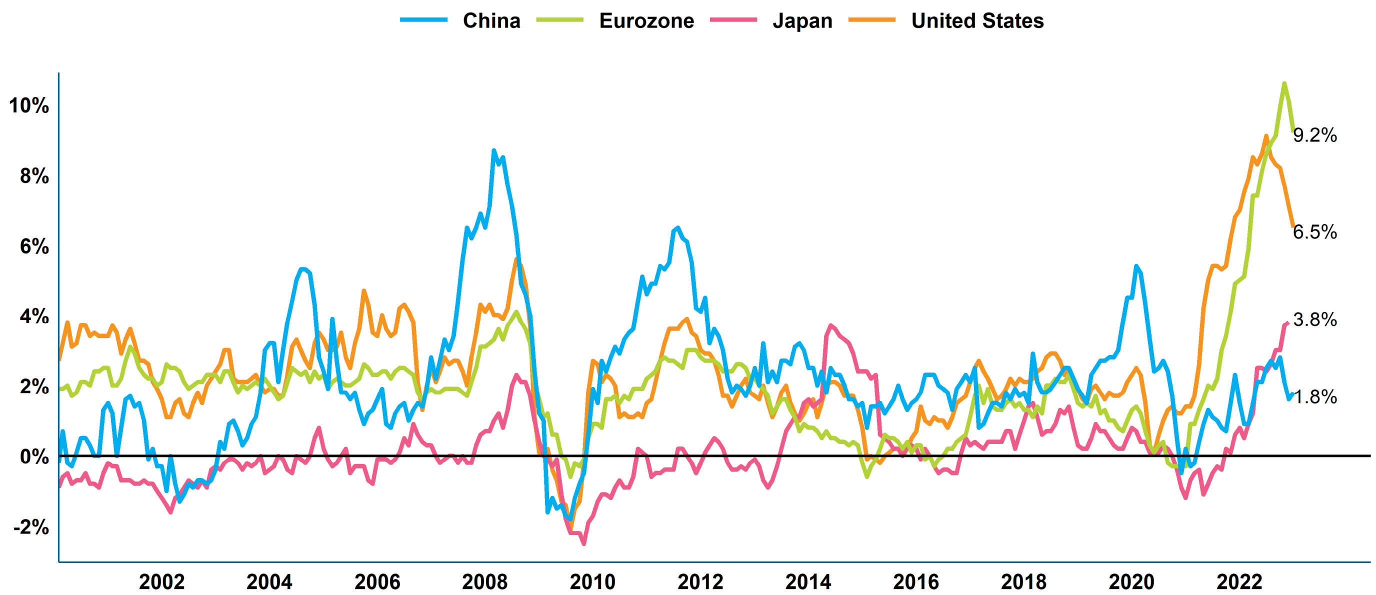
Balance Sheet as % of GDP



- → In 2022 many central banks aggressively reduced pandemic-era policy support in the face of high inflation with the US taking a more aggressive approach.
- → In December, the Bank of Japan relaxed its target yield for the 10-year bond which may mark an incremental step toward policy normalization after eight years of quantitative easing.
- → The one notable central bank outlier is China, where the central bank has lowered rates and reserve requirements in response to slowing growth.
- → The risk remains for a policy error, particularly overtightening, as record inflation and aggressive tightening to date could heavily weigh on global growth. The Federal Reserve's policy rate path could diverge from others this year given their strong early start to tightening.

[1] Source: Bloomberg. Policy rate data is as of December 31, 2022. 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.

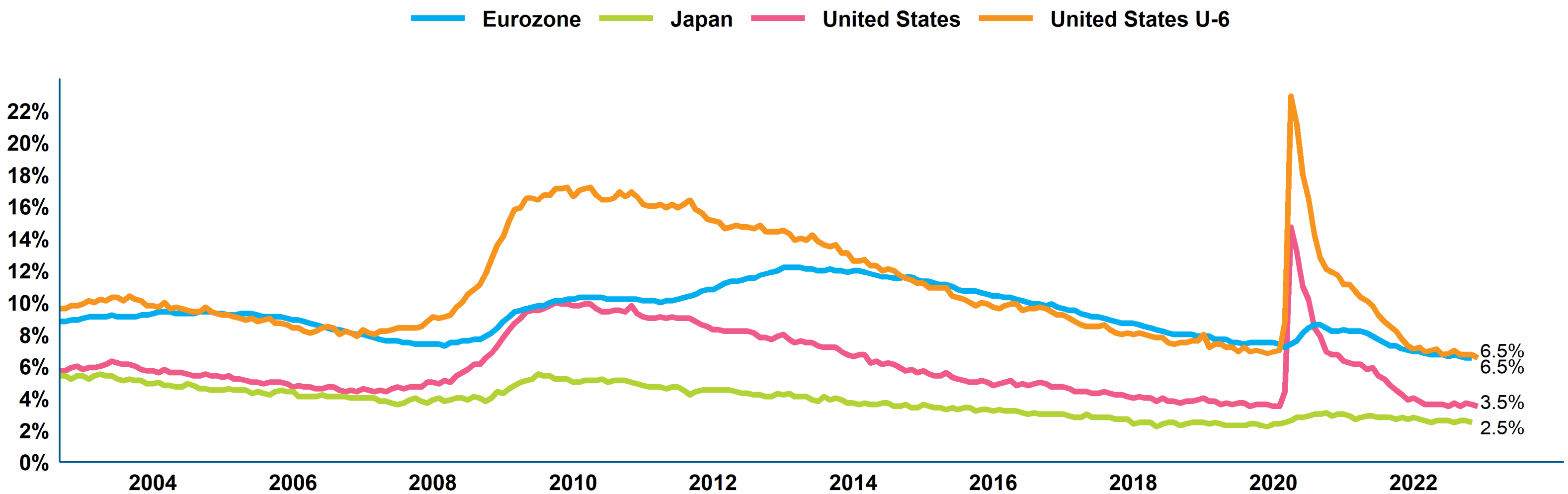
Inflation (CPI Trailing Twelve Months)[1]



- → Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it has reached levels not seen in many decades.
- → Inflation pressures are slowly declining in the US, but they remain elevated, while in Europe they have reached historic levels due to skyrocketing energy prices and a weak euro.
- → 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 of December 2022. The most recent Japanese inflation data is as of November 2022.

Unemployment[1]



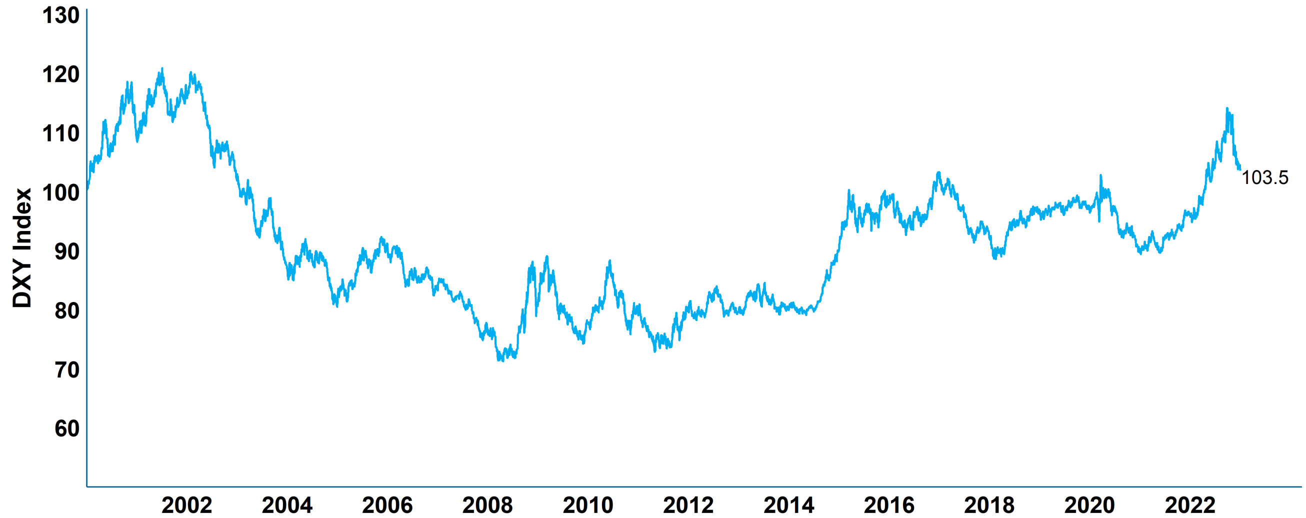
→ As economies have largely reopened, helped by vaccines for the virus, improvements have been seen in the labor market.

→ Despite slowing growth and high inflation, the US labor market remains a bright spot. Unemployment in the US, which experienced the steepest rise from the pandemic, has remained in a tight 3.5%-3.7% range for most of the year.

→ 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 December 31, 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of November 30, 2022.

US Dollar versus Broad Currencies[1]



- → Overall, the US dollar continued to weaken from its recent peak in December as declining inflation supported the case for the Federal Reserve to slow its tightening.
- → The dollar finished the year much higher than it started though due to the increased pace of policy tightening, stronger relative growth, and safe-haven flows.
- → As we look to 2023, the track of inflation across economies and the corresponding monetary policy will likely be key drivers of currency moves.

[1] Source: Bloomberg. Data as of December 31, 2022.

Summary

Key Trends:

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

→ Monetary policy could diverge in 2023 with the Fed pausing and others continuing to tighten. The risk of policy errors in both directions remains.

→ Growth will continue to slow globally next year, with many economies likely falling into recessions. 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. Higher energy and food prices could weigh on consumer spending.

→ Valuations have significantly declined in the US to around long-term averages, largely driven by price declines. The key 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

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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.