

Wilshire

Wilshire Quarterly Market Update

Second Quarter 2023

Today's Agenda

- The economy looks resilient... is this what a "soft landing" looks like?
- Will the labor market and personal consumption deteriorate further?
- What is the outlook for corporate earnings?
- Can AI stocks grow to the sky (we asked ChatGPT, but it wouldn't/couldn't say)?
- Investor sentiment was extremely negative earlier this year but is sentiment now indicating complacency?
- How should investors position portfolios in light of divergent valuations between fixed income and equities?

Wilshire Firm Overview

Since 1972, Wilshire has been dedicated to improving investment outcomes for institutional investors and financial intermediaries worldwide.

- Institutional advisory and OCIO services
- Discretionary and advisory solutions for financial intermediaries
- Full spectrum provider of alternative investment solutions
- Multi-asset analytics

500+
clients

\$86 Billion
in assets under management

\$1.3 Trillion
in assets under advisement¹

\$4.9 Billion
in **alternative**
assets under management

\$68 Billion
in total **alternative**
assets invested by clients²

As of 3/31/2023.

¹Assets under advisement includes assets under management.

²Total alternative assets invested by clients includes alternative assets under management

Presenters



Josh Emanuel, CFA

Chief Investment Officer

20+ years of industry experience

As CIO, leads Wilshire's investment activities, including:

- investment strategy
- manager research
- quantitative alpha research
- portfolio management



Steve Foresti

Senior Advisor, Investments

30+ years of industry experience

Guides and supports Wilshire's investment and research efforts, including

- strategic asset allocation research
- capital market forecasts
- thought leadership

Market Performance Summary

Global Equities as of 6/30/2023

U.S. Equity	MTD (%)	QTD (%)	YTD (%)	1Y (%)
FT Wilshire 5000 Index SM	6.86	8.43	16.30	19.03
Standard & Poor's 500	6.61	8.74	16.89	19.59
FT Wilshire 4500 Index SM	8.65	5.40	8.96	13.72
MSCI USA Minimum Volatility	4.52	2.65	3.98	7.99

Source: Bloomberg. Indexes are total return.

U.S. Equity by Size/Style	MTD (%)	QTD (%)	YTD (%)	1Y (%)
FT Wilshire Large Cap Index SM	6.61	8.89	17.47	19.88
FT Wilshire Large Cap Growth Index SM	6.80	13.91	31.93	27.67
FT Wilshire Large Cap Value Index SM	6.39	3.86	4.66	12.34
FT Wilshire Small Cap Index SM	8.84	5.58	9.83	14.82
FT Wilshire Small Cap Growth Index SM	8.23	6.17	13.72	17.28
FT Wilshire Small Cap Value Index SM	9.43	4.97	6.06	12.40
FT Wilshire Micro Cap Index SM	7.14	3.93	2.49	5.56

Source: Bloomberg. Indexes are total return.

Data Source: Morningstar

Non-U.S. Equity	MTD (%)	QTD (%)	YTD (%)	1Y (%)
MSCI ACWI	5.81	6.18	13.94	16.53
MSCI ACWI ex USA	4.49	2.44	9.47	12.72
MSCI ACWI ex USA Minimum Volatility	2.00	2.67	6.52	6.36
MSCI EAFE	4.55	2.95	11.67	18.77
MSCI Emerging Markets	3.80	0.90	4.89	1.75
MSCI ACWI ex USA Small Cap	3.44	2.05	6.84	10.93

Source: Bloomberg. Indexes are total return.

Non-U.S. Equity (local currency)	MTD (%)	QTD (%)	YTD (%)	1Y (%)
MSCI ACWI	5.44	6.55	14.03	16.47
MSCI ACWI ex USA	3.57	3.36	9.74	12.58
MSCI ACWI ex USA Minimum Volatility	2.17	4.48	7.96	7.86
MSCI EAFE	3.60	4.28	12.10	17.50
MSCI Emerging Markets	3.45	1.71	5.55	3.28
MSCI ACWI ex USA Small Cap	2.93	3.87	8.37	12.50

Source: Bloomberg. Indexes are total return.

Fixed Income Markets as of 6/30/2023

U.S. Fixed Income	MTD (%)	QTD (%)	YTD (%)	1Y (%)
Bloomberg U.S. Aggregate	(0.36)	(0.84)	2.09	(0.94)
Bloomberg Long Term Treasury	(0.02)	(2.30)	3.72	(6.82)
Bloomberg Long Term Corporate	1.54	(0.54)	4.88	0.98
Bloomberg U.S. TIPS	(0.34)	(1.42)	1.87	(1.40)
Bloomberg U.S. Credit	0.31	(0.31)	3.13	1.39
Bloomberg U.S. Corporate High Yield	1.67	1.75	5.38	9.06
S&P/LSTA Leveraged Loan	2.26	3.15	6.50	10.71

Source: Bloomberg. Indexes are total return.

Market Rates	June 30	Mar 31	Dec 31	Sept 30
10-Year Treasury	3.84	3.47	3.88	3.83
10-Year Breakeven Inflation	2.23	2.32	2.30	2.15

Source: Bloomberg. Indexes are total return.

Global Fixed Income	MTD (%)	QTD (%)	YTD (%)	1Y (%)
Bloomberg Global Aggregate	(0.01)	(1.53)	1.43	(1.32)
Bloomberg Global Aggregate (Hdg)	(0.06)	0.06	2.96	0.52
Bloomberg EM LC Gov't Universal	(0.03)	(0.84)	1.95	2.00
Bloomberg EM LC Gov't Universal (Hdg)	0.52	1.91	3.92	6.34

Source: Bloomberg. Indexes are total return.

Real Assets	MTD (%)	QTD (%)	YTD (%)	1Y (%)
Wilshire US Real Estate Securities Index SM	5.44	3.29	6.85	(0.13)
Wilshire Global Real Estate Securities Index SM	4.11	1.87	4.26	(1.54)
FTSE Global Core Infrastructure 50/50	2.93	(0.10)	0.64	0.18
Alerian Midstream Energy	6.97	3.71	4.51	12.16
Bloomberg Commodity	4.04	(2.56)	(7.79)	(9.61)
Gold	(2.21)	(2.54)	5.23	6.20
Bitcoin	12.07	7.03	83.31	62.25

Source: Bloomberg. Indexes are total return.

Alternatives	MTD (%)	QTD (%)	YTD (%)	1Y (%)
Wilshire Liquid Alternative Index SM	1.35	1.38	2.60	2.46
Wilshire Liquid Alternative Equity Hedge Index SM	2.94	3.66	6.20	7.60
Wilshire Liquid Alternative Event Driven Index SM	0.92	(0.22)	0.20	1.39
Wilshire Liquid Alternative Global Macro Index SM	1.14	3.22	0.51	(1.18)
Wilshire Liquid Alternative Multi-Strategy Index SM	2.11	1.45	2.60	2.61
Wilshire Liquid Alternative Relative Value Index SM	0.20	(0.19)	1.34	0.29

Source: Bloomberg. Indexes are total return.

Economic Backdrop

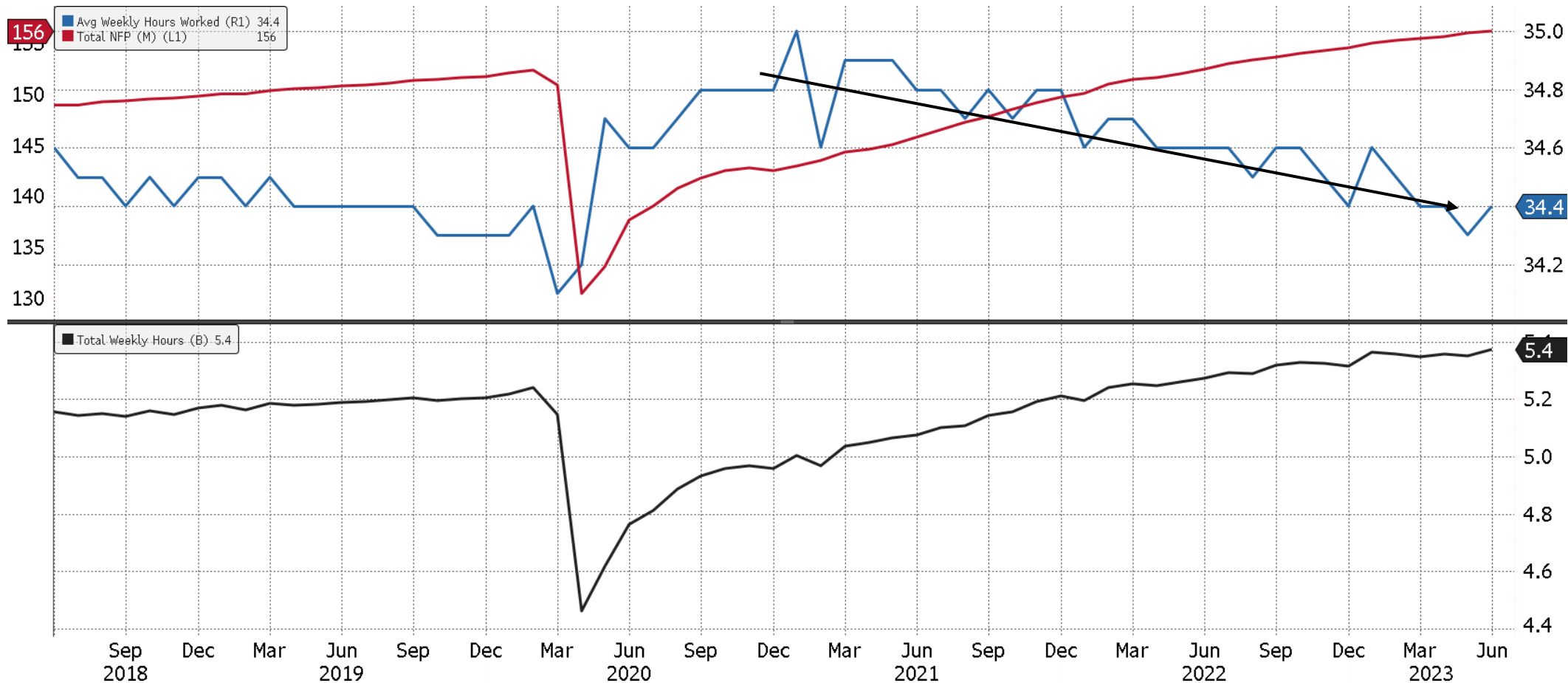
Job Market Looks Strong (and has generally exceeded expectations)...



NFP TCH Index (US Employees on Nonfarm Payrolls Total MoM Net Change SA) NFP v Survey Daily 31DEC2020-30JUN2023 Copyright© 2023 Bloomberg Finance L.P. 07-Jul-2023 07:13:31

Data Source: Bloomberg

Signs of Slowing: Plateau in Hours Worked



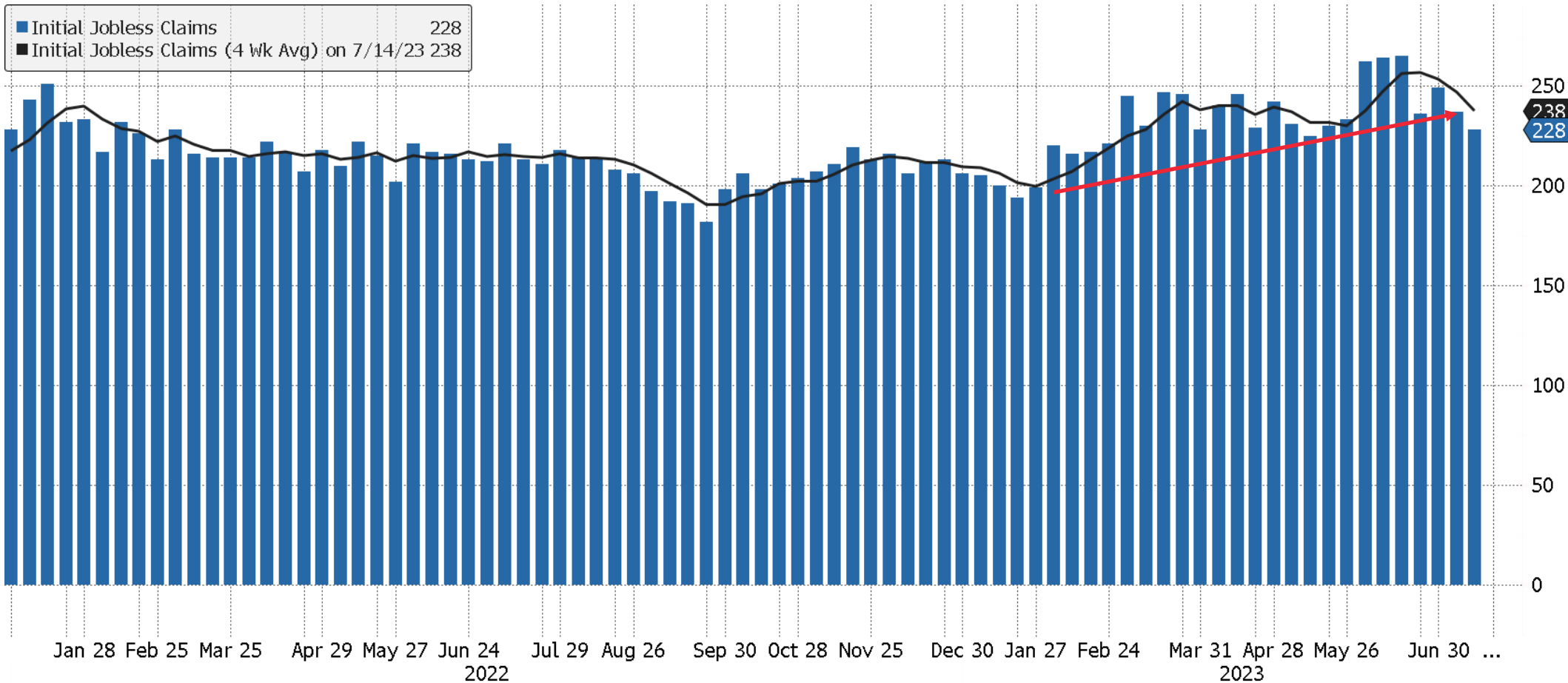
AWH TOTL Index (US Average Weekly Hours All Employees Total Private SA) Hours Worked Monthly 28JUN2018-07JUL2023

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07-Jul-2023 07:16:13

Data Source: Bloomberg

Signs of Slowing: Increase in Claims



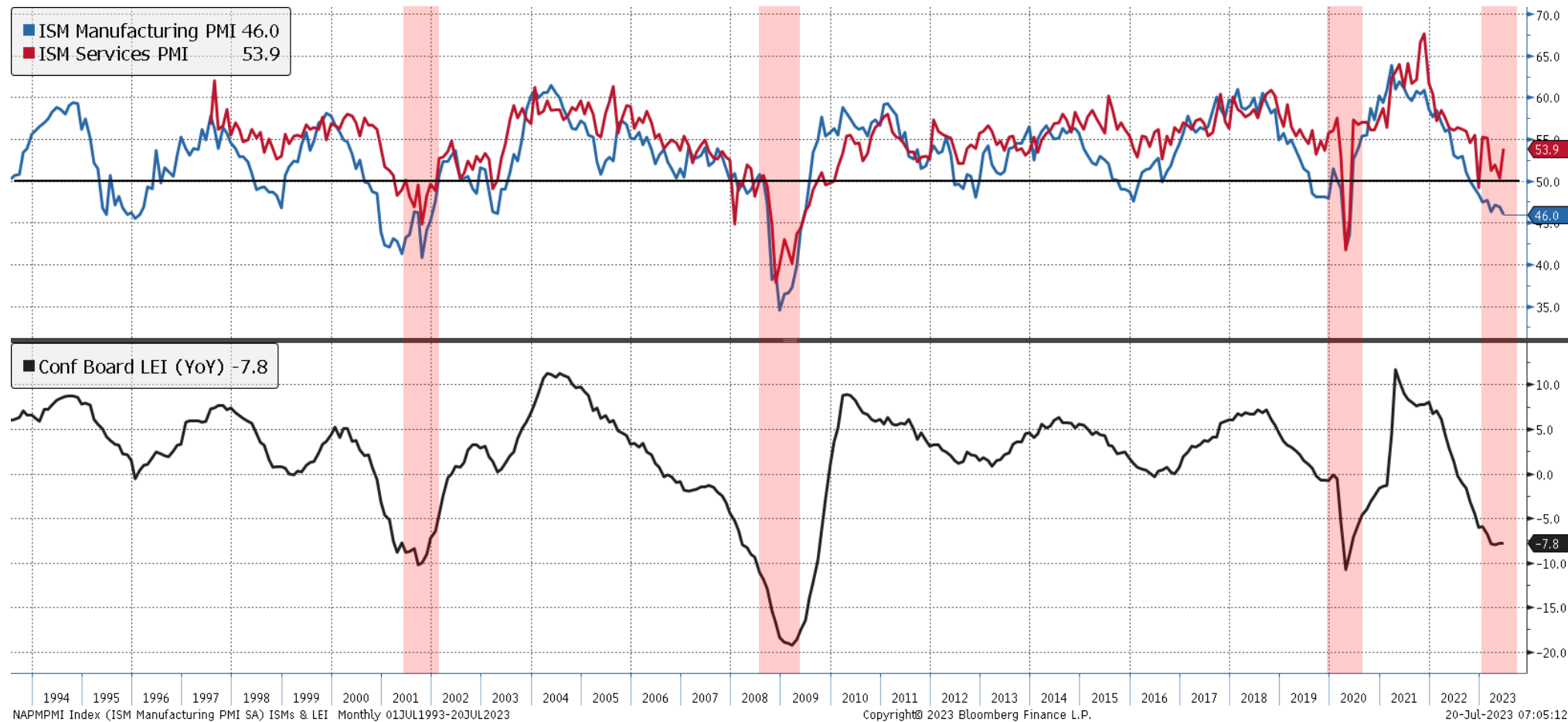
INJJC Index (US Initial Jobless Claims SA) Claims Daily 31DEC2021-20JUL2023

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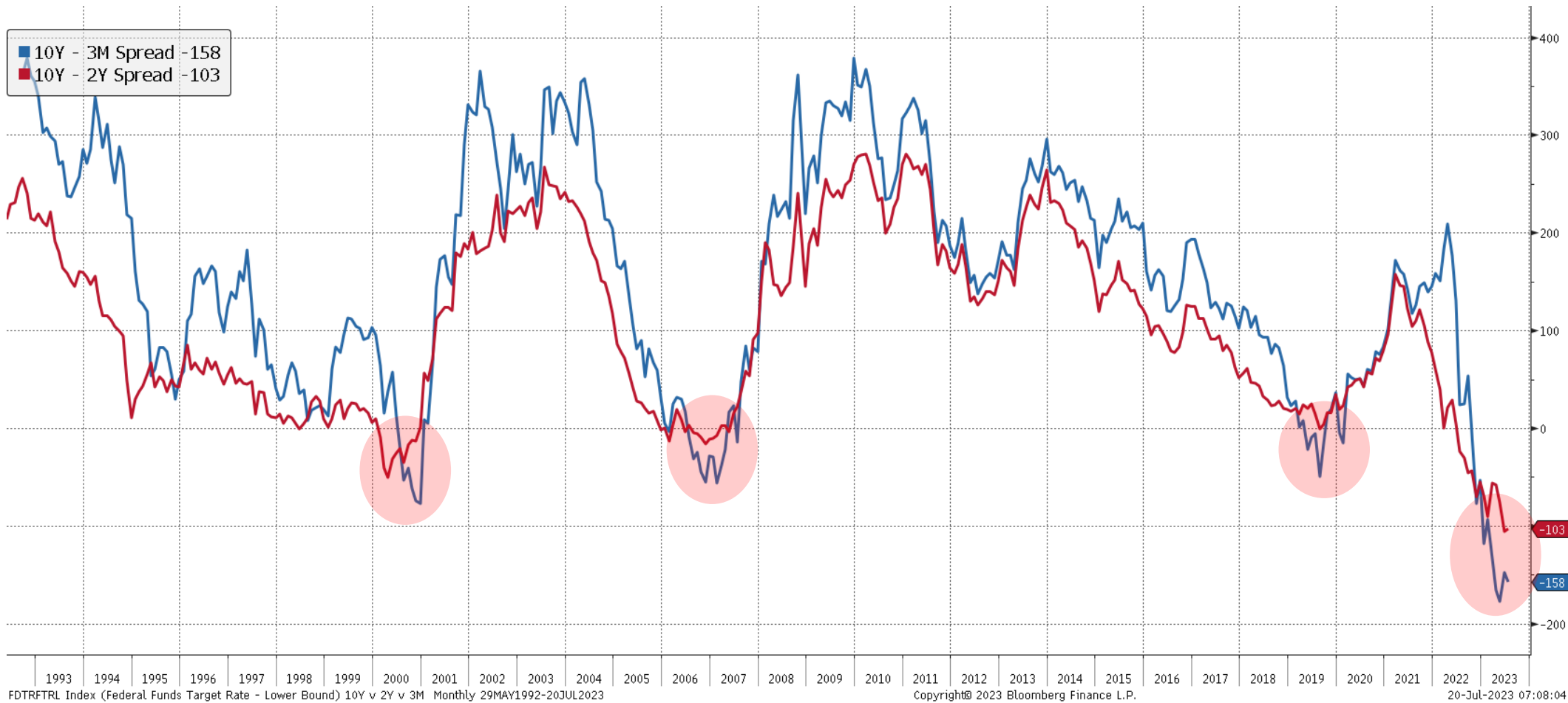
Data Source: Bloomberg

Surveys and Leading Indicators Pointing Down...



Data Source: Bloomberg

Yield Curve Flashing Red



Data Source: Bloomberg

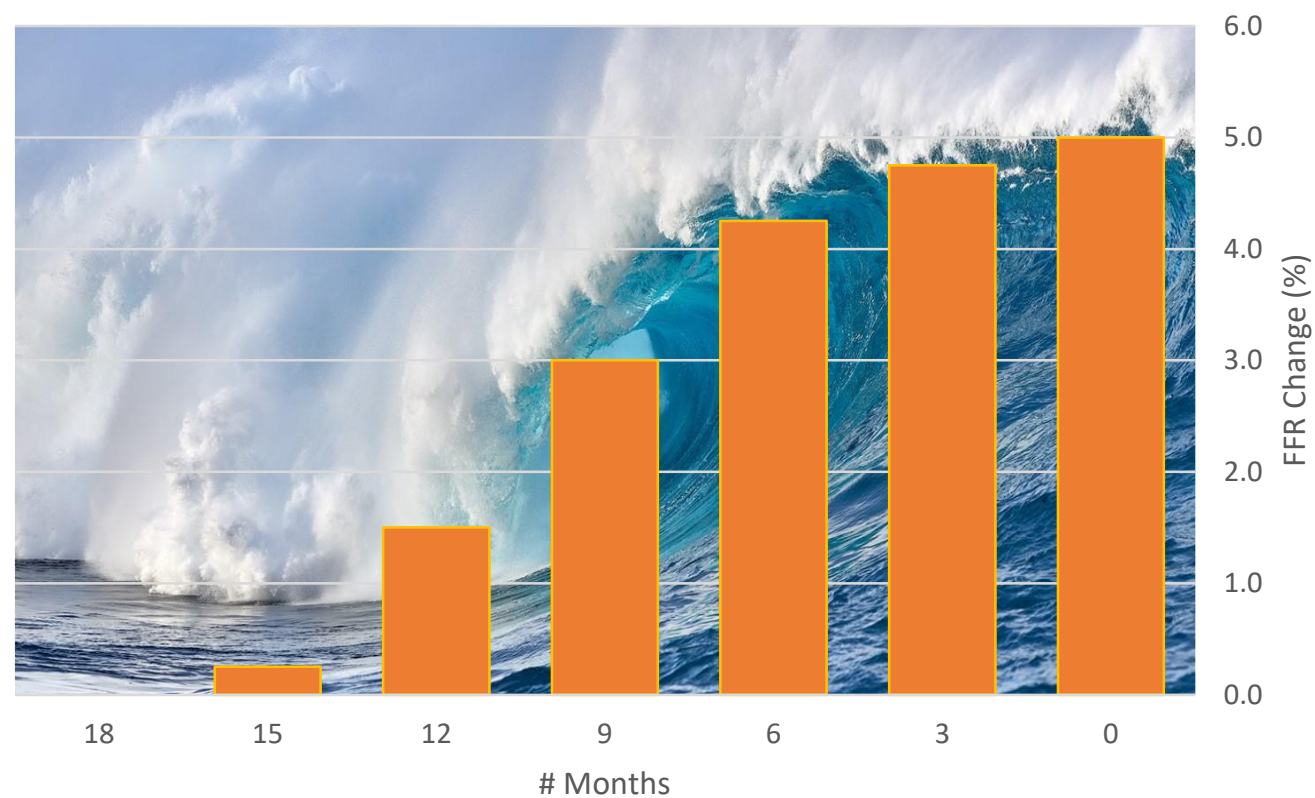
Are We There Yet?: Fed Journey toward the “Neutral Rate”



Data Source: Bloomberg

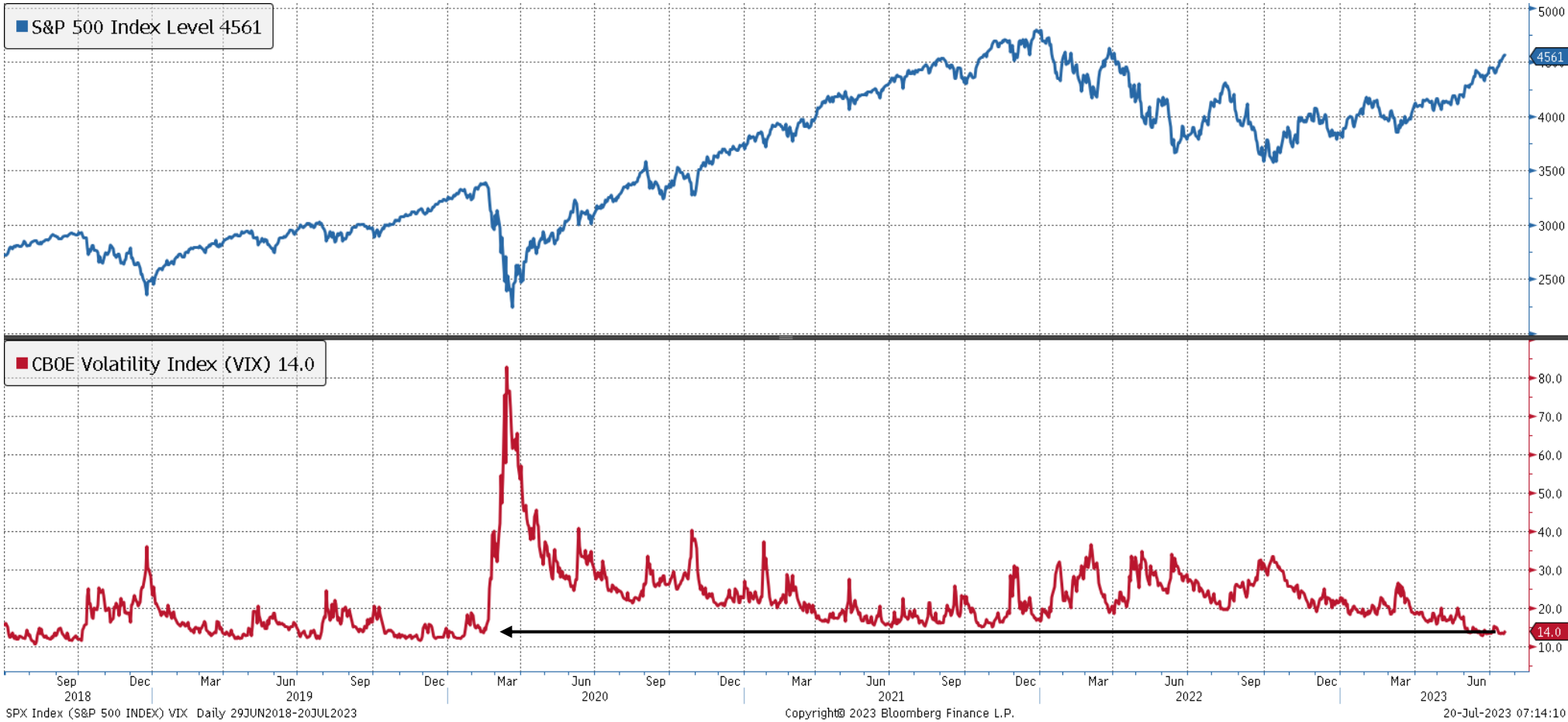
The Tightening Wave: Unpredictable but Building

FFR Change over Past X Months



Data Source: Bloomberg, Creative Source: 4ST

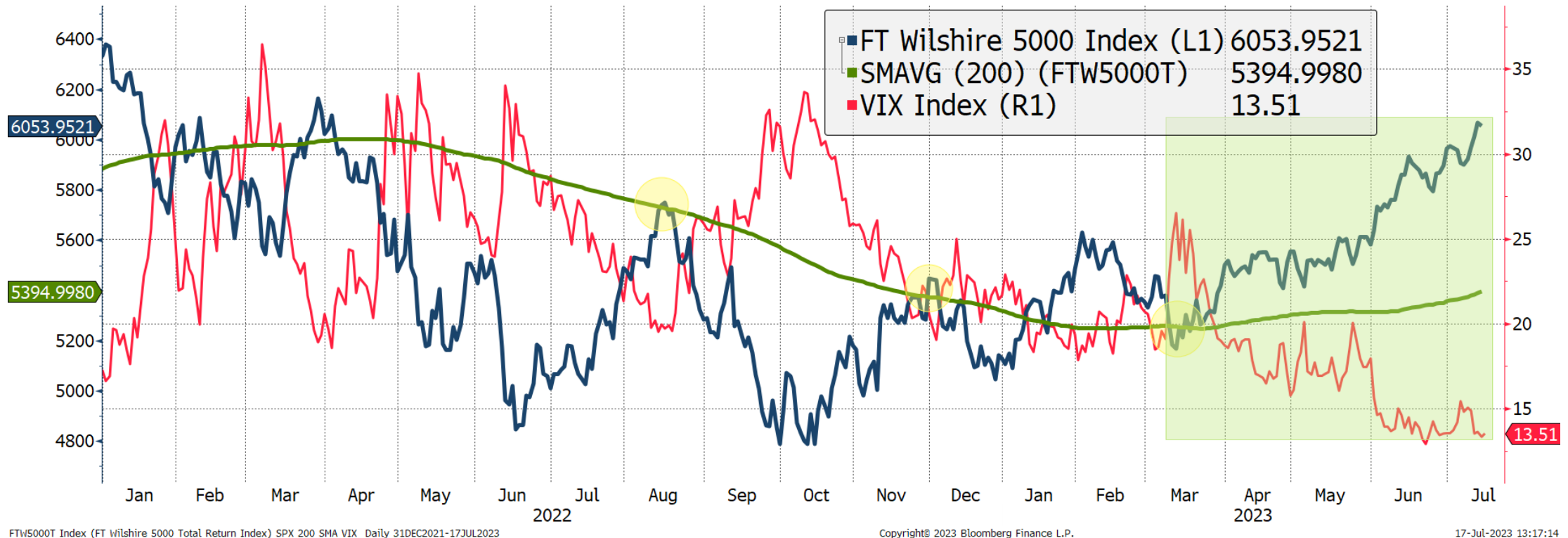
Meanwhile, Stocks Show No Fear...



Data Source: Bloomberg

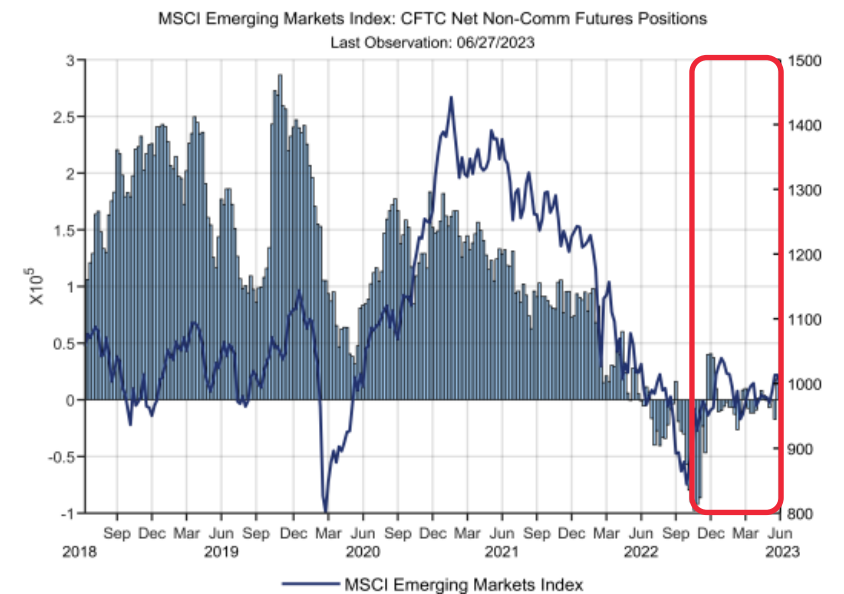
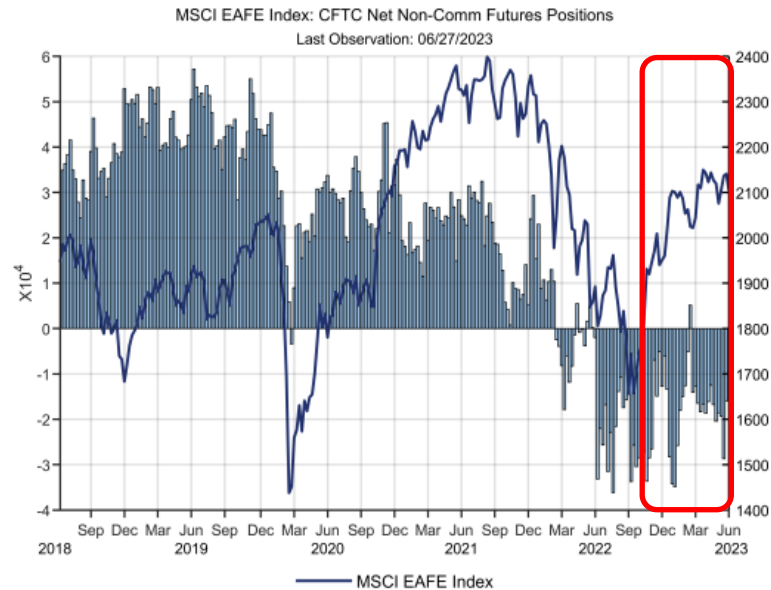
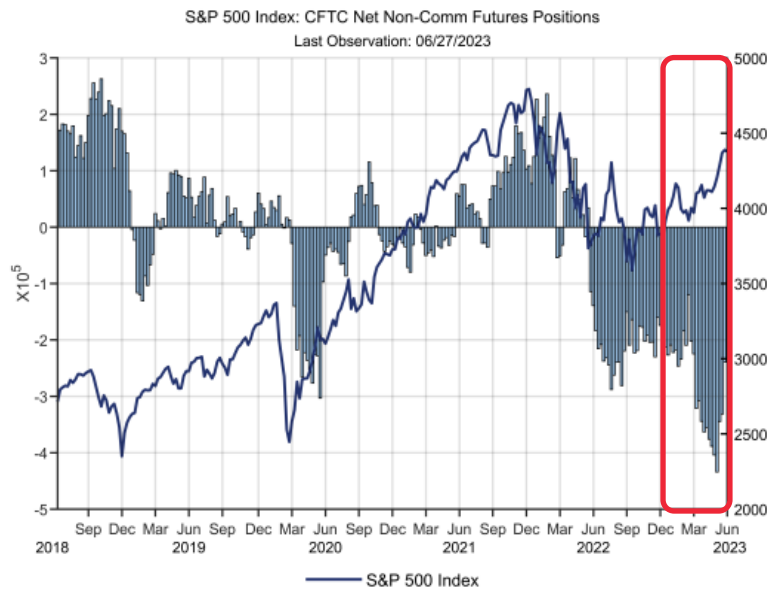
Economic & Market Outlook

Equities Continue to Show Technical Strength in the Face of Fundamental Uncertainty



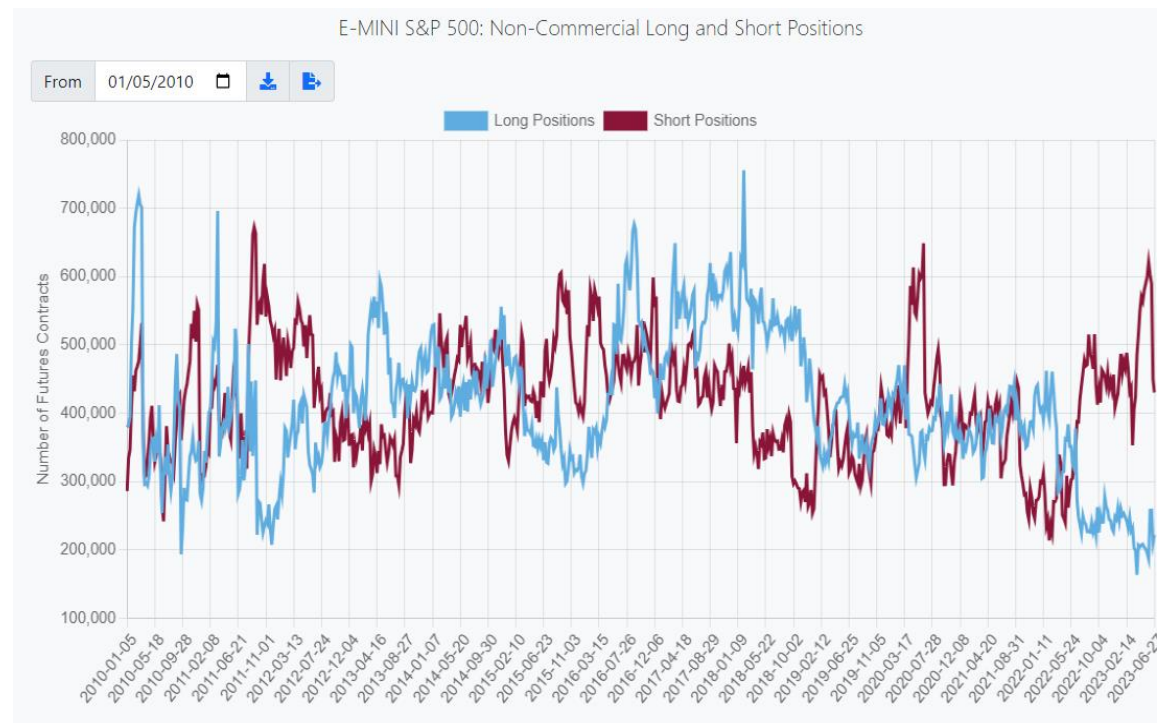
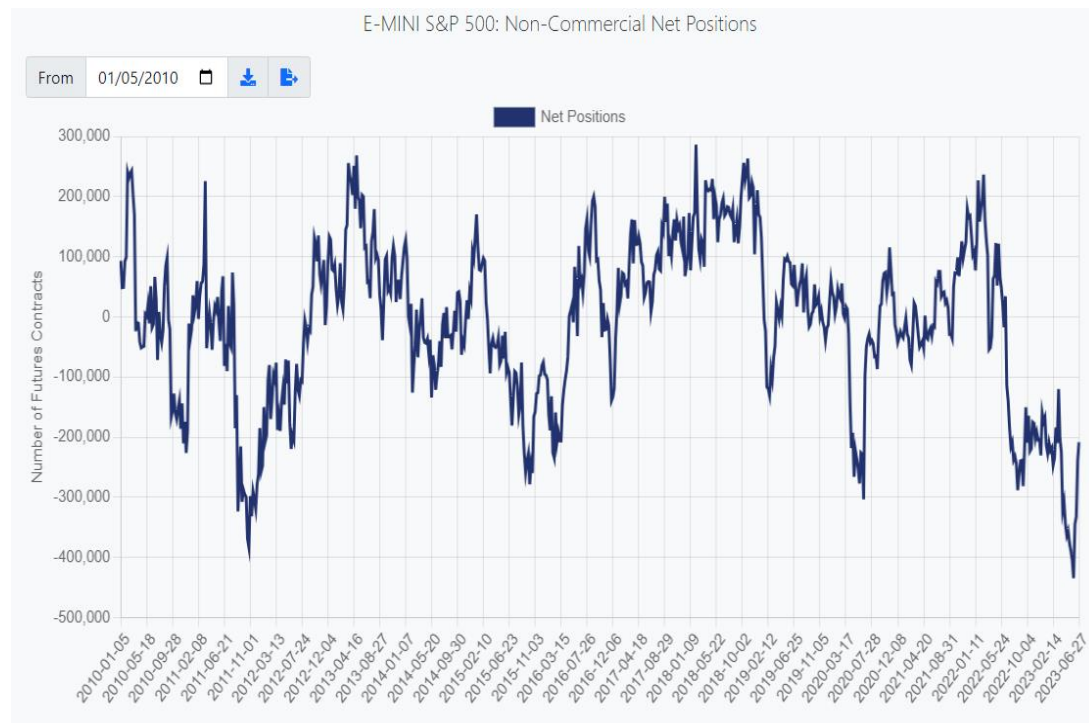
Data Source: Bloomberg

Speculative Equity Positioning Remains Negative



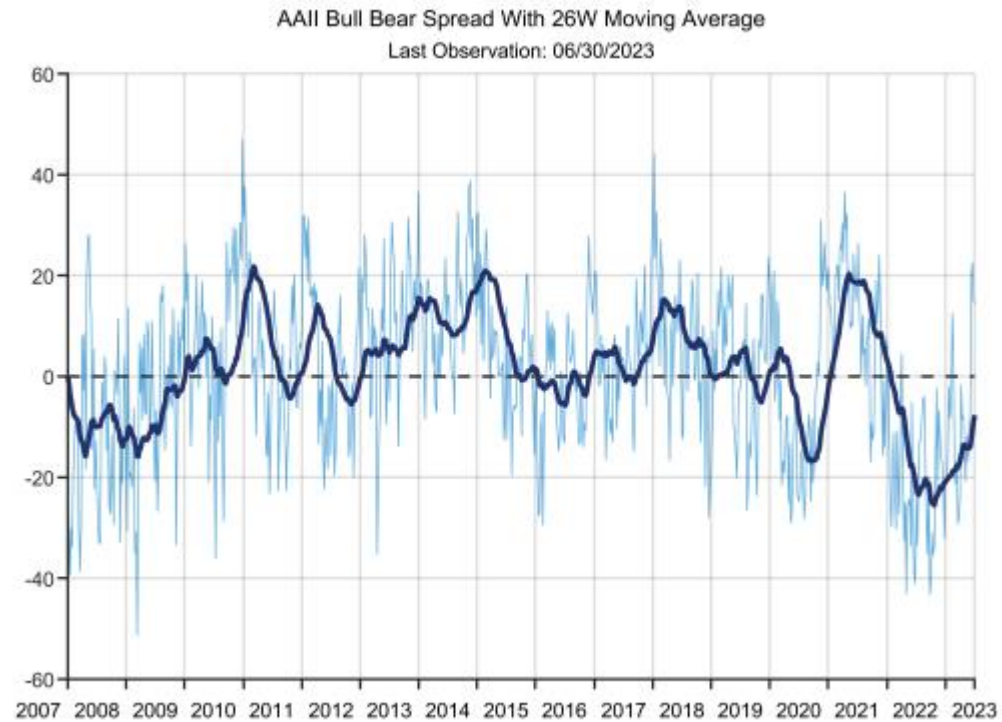
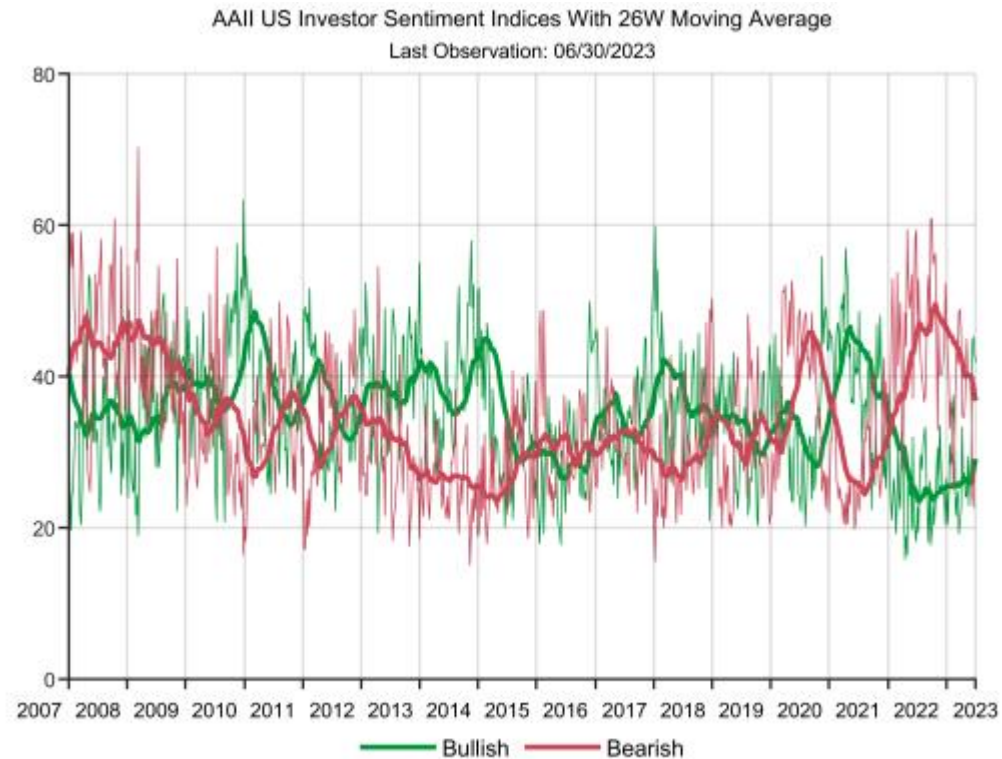
Data Source: Wilshire Advisors, Bloomberg

Speculative U.S. Equity Positioning is Less Negative Today, but Not Overextended



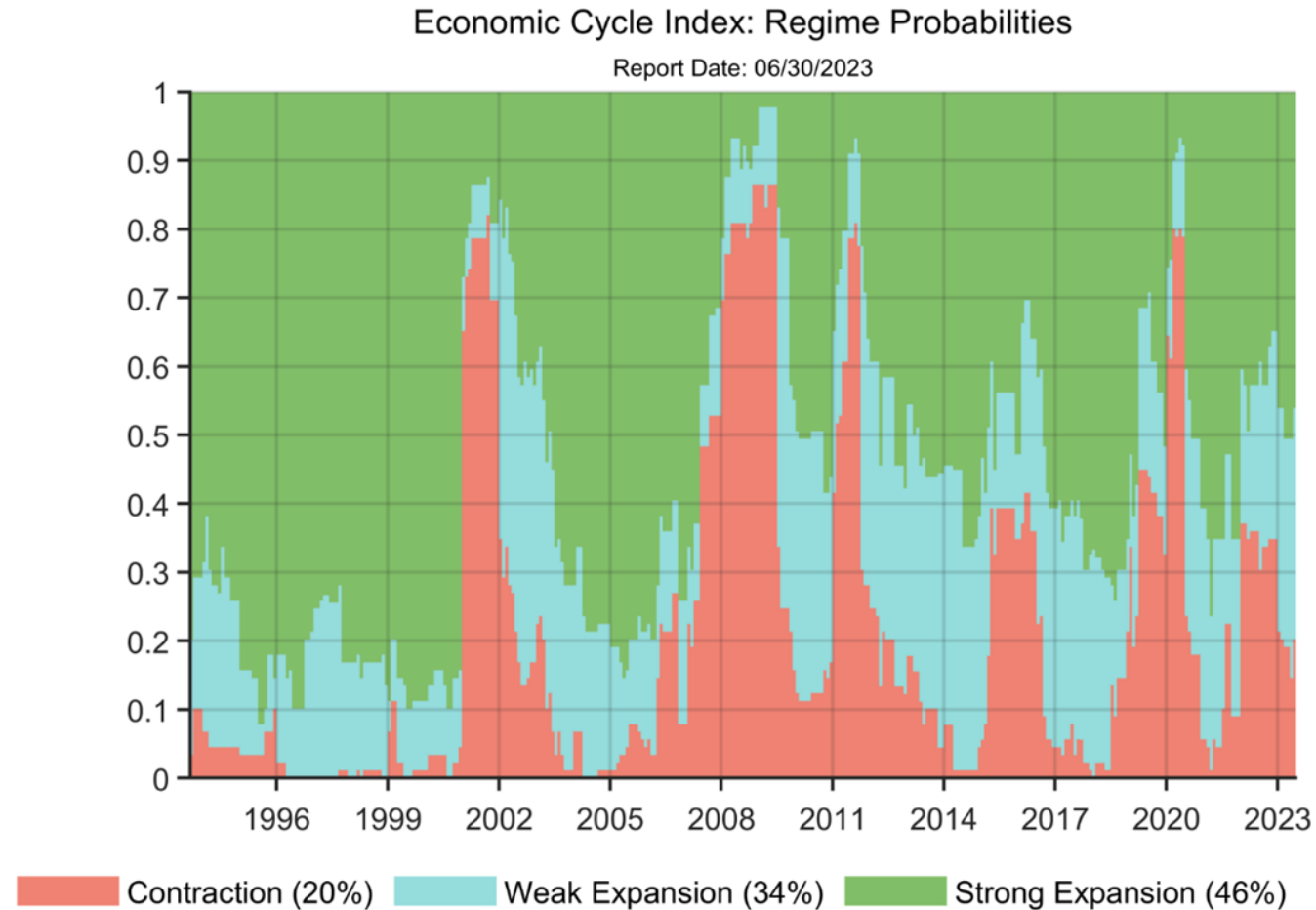
Data Source: Wilshire Advisors, CFTC

Investor Sentiment has Improved from Lows, but not Overextended



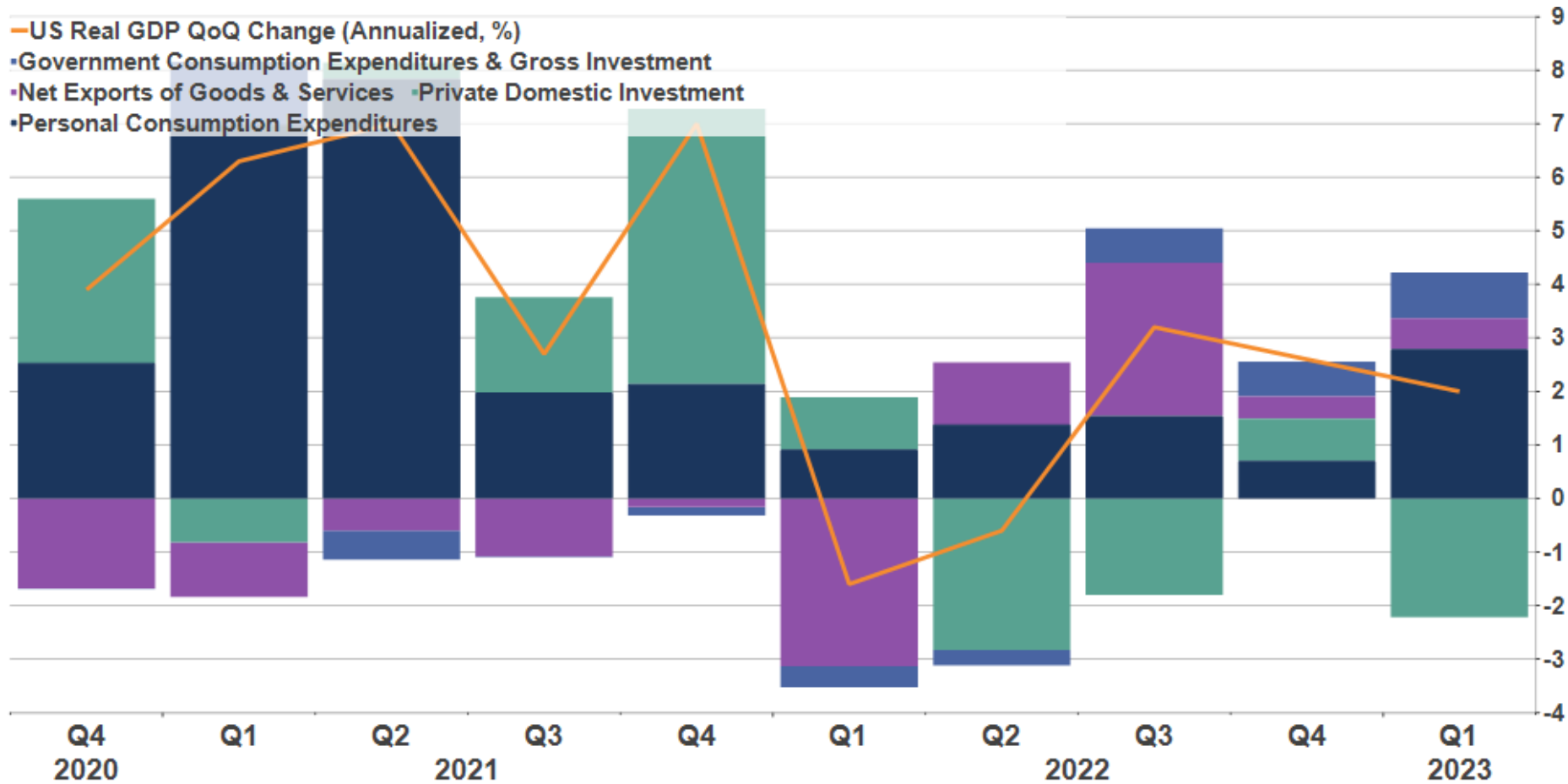
Data Source: Wilshire Advisors, Bloomberg

U.S. Economy Signals are Decreasing Probability of a Recession



Data Source: Wilshire

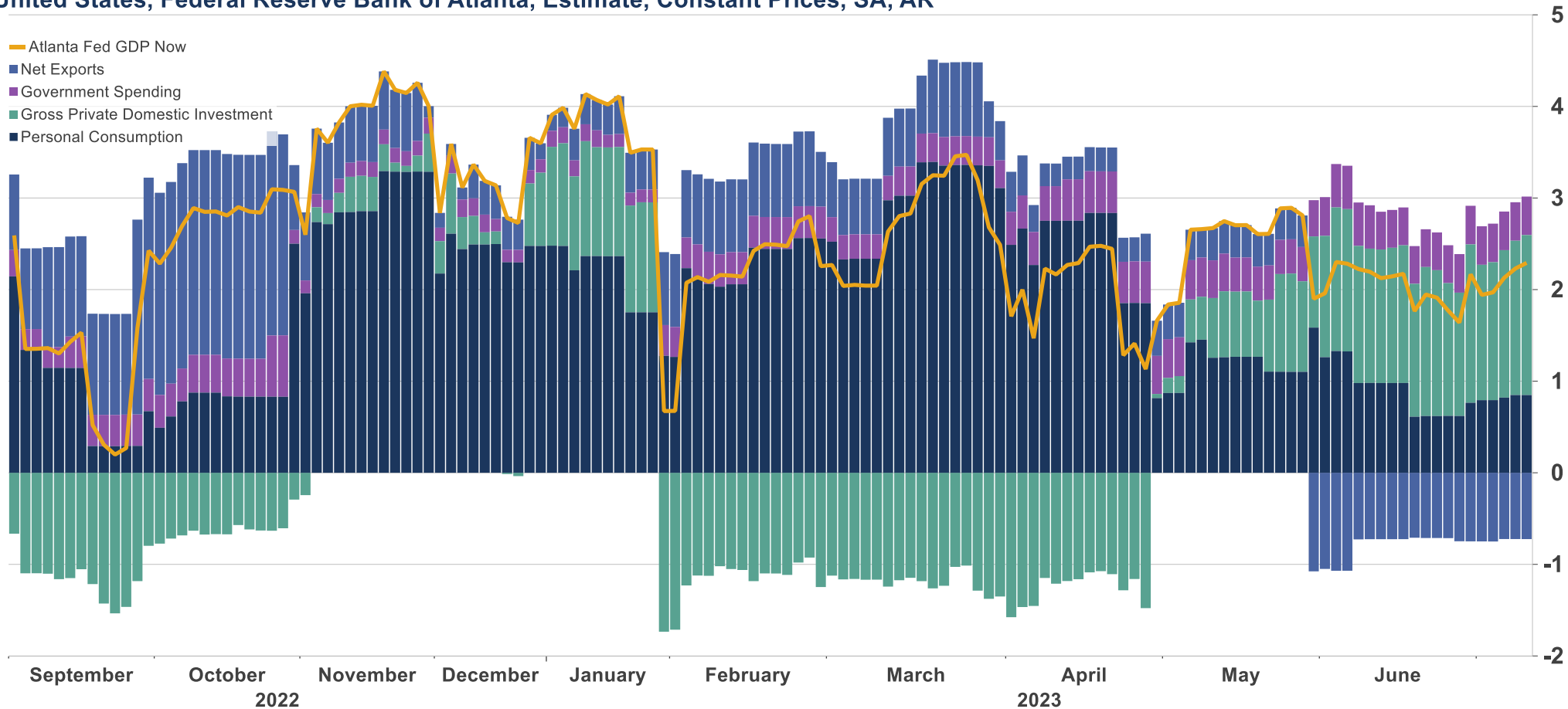
The U.S. Economy Continued to Expand on Resilient Personal Consumption



Data Source: U.S. Bureau of Economic Analysis (BEA), Macrobond

GDP Growth Outlook: Atlanta Fed GDPNow is Above 2.0% for Q2

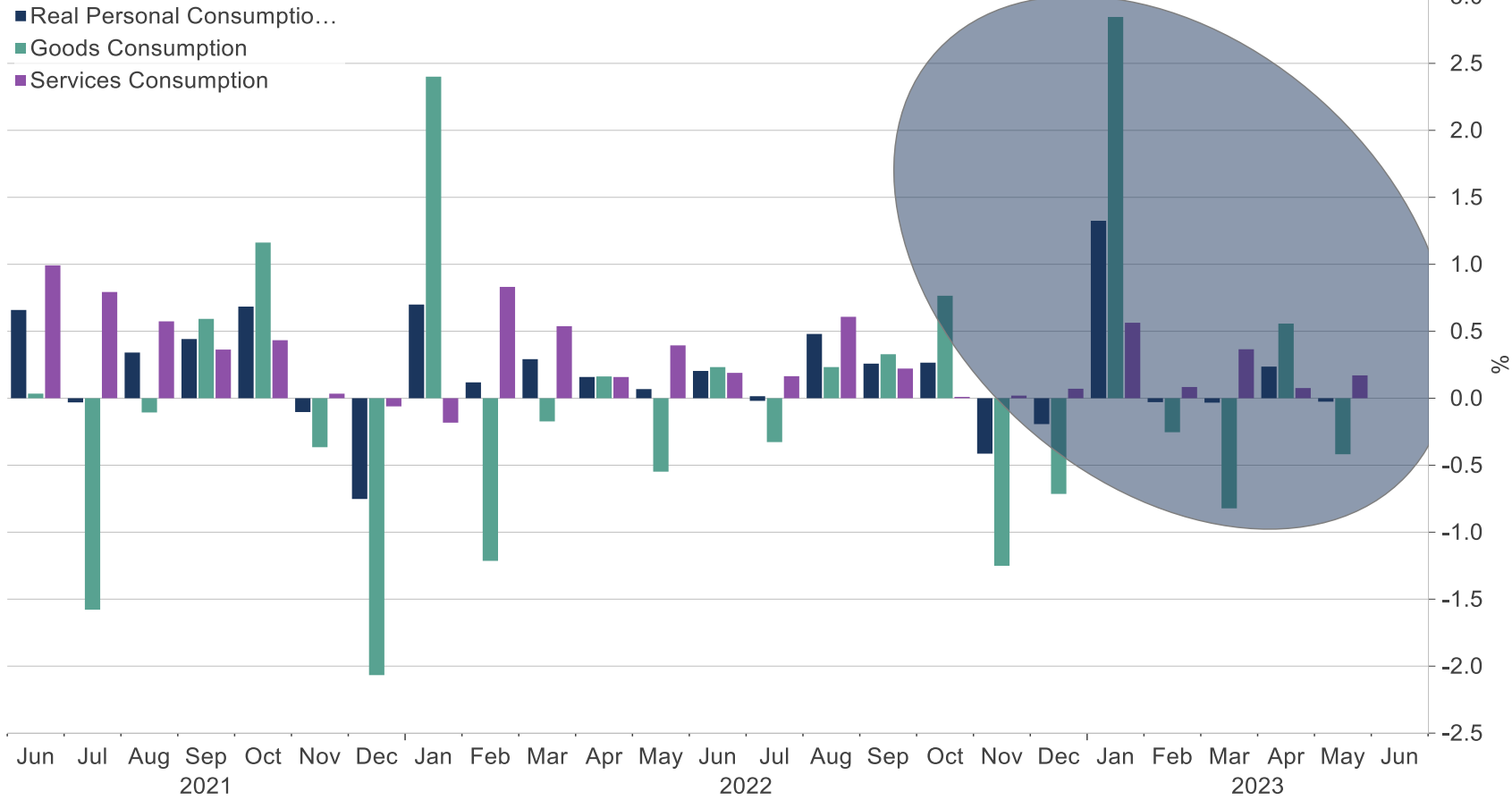
United States, Federal Reserve Bank of Atlanta, Estimate, Constant Prices, SA, AR



Source: Federal Reserve Bank of Atlanta, Macrobond

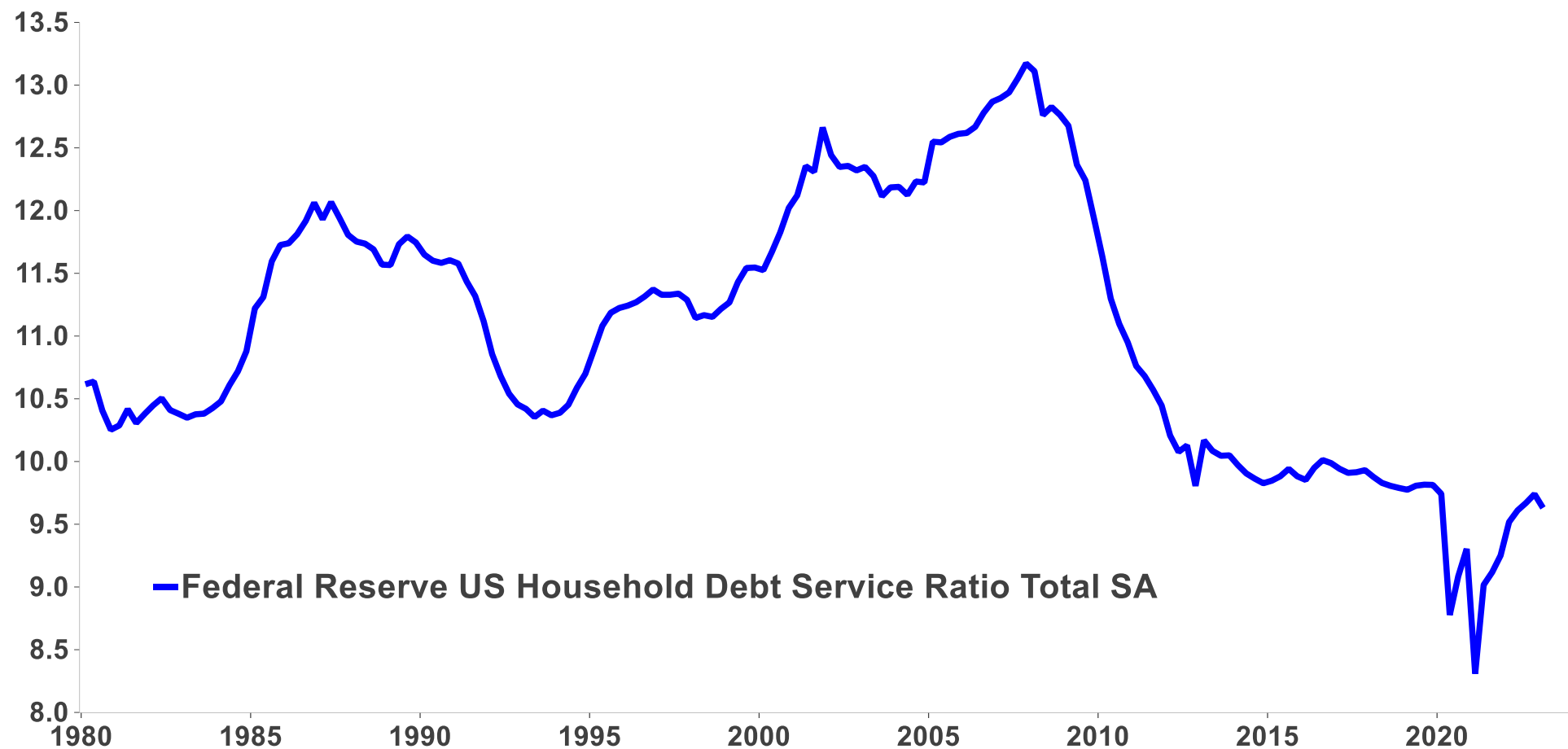
Personal Consumption Appears to Remain Positive in Q2

United States Personal Consumption Expenditures, Real, SA



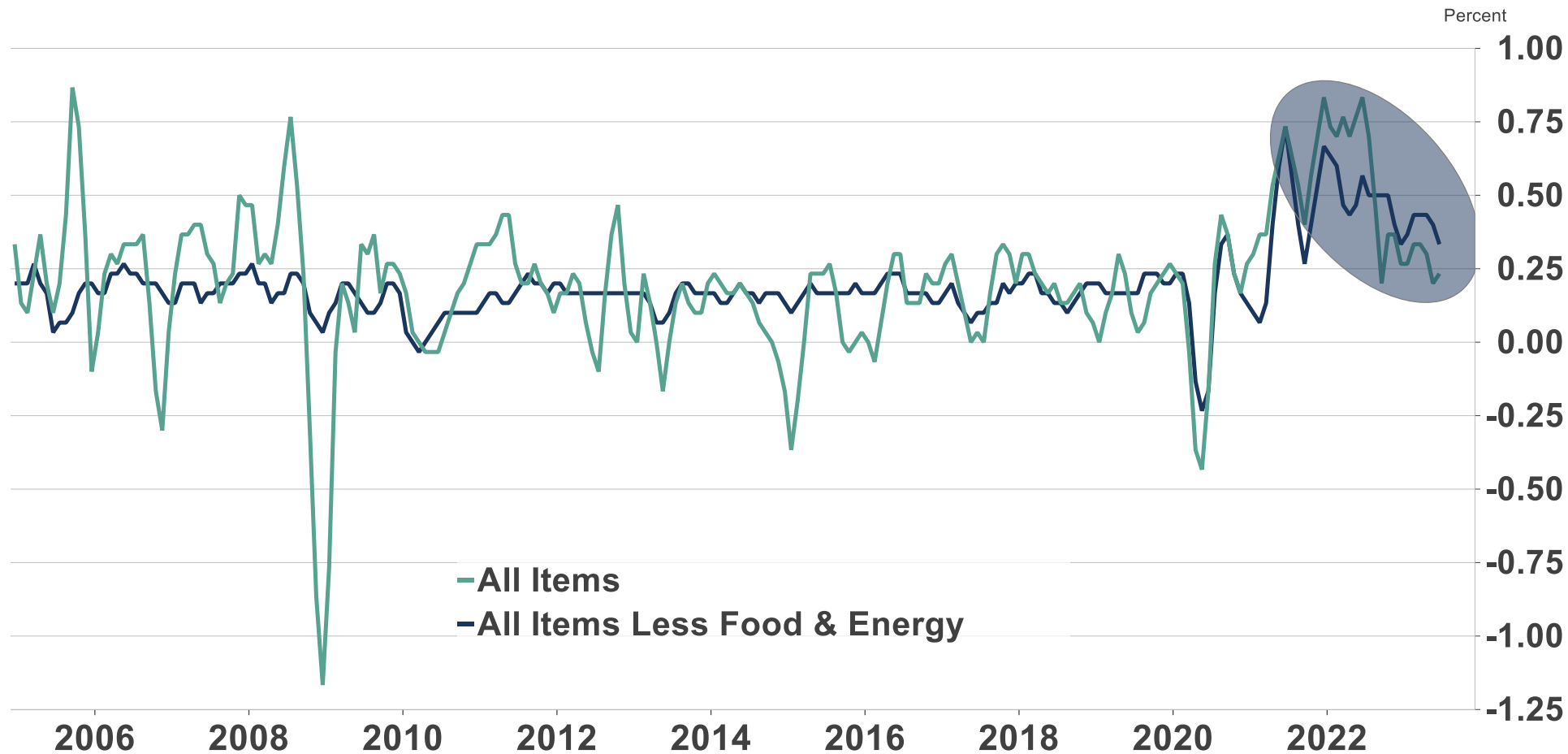
Source: U.S. Bureau of Economic Analysis (BEA), Macrobond

Household Debt Service is Low Relative to History



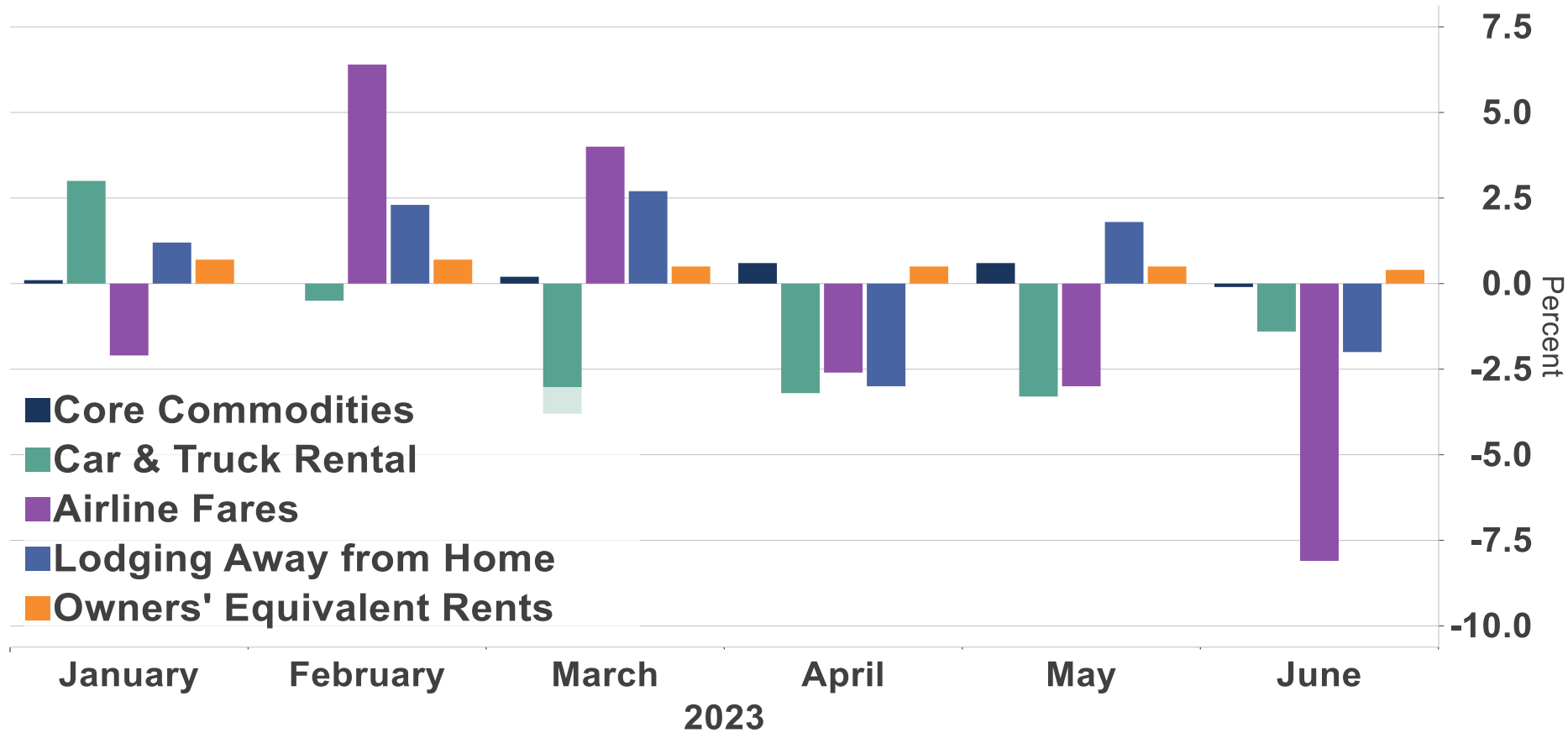
Data Source: Macrobond, Bloomberg

CPI Continues to Trend Lower, Serving as Potential Tailwind for Consumers



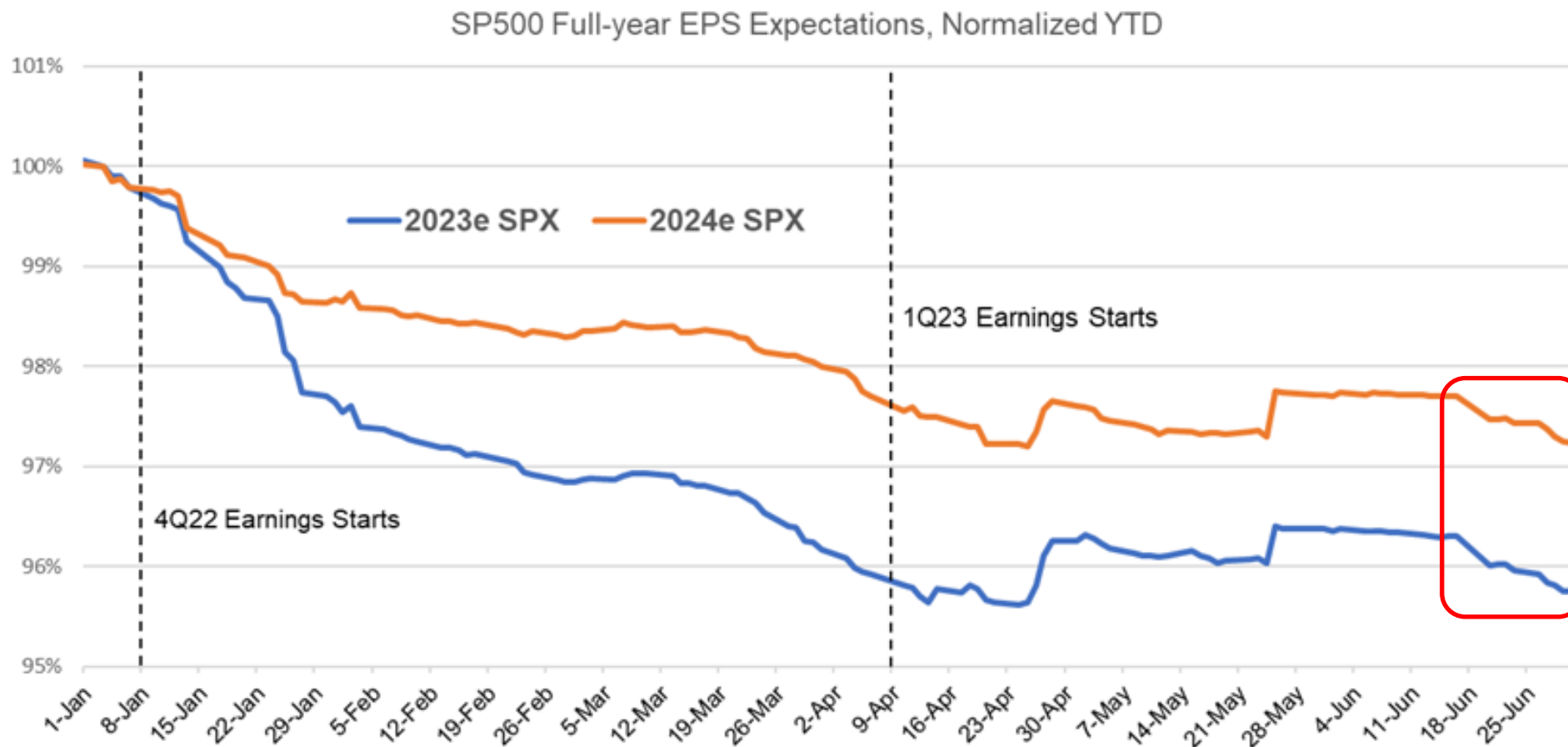
Data Source: Bloomberg

Shelter is the Remaining Anchor for Core CPI; Unlikely to Significantly Correct Lower



Data Source: Macrobond

U.S. Earnings Outlook



Data Source: Morgan Stanley Thematic Strategy, Factset

Price Movements Required to Get to Equilibrium Equity Valuations Based on EPS and Rates

		US 10 Year Treasury Yield (%)										
		2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50
US Equity 2023 EPS (\$)	250	11%	5%	1%	-4%	-8%	-12%	-15%	-18%	-21%	-24%	-26%
	245	8%	3%	-1%	-6%	-10%	-13%	-17%	-20%	-23%	-25%	-28%
	240	6%	1%	-4%	-8%	-12%	-15%	-18%	-21%	-24%	-27%	-29%
	235	4%	-1%	-6%	-10%	-13%	-17%	-20%	-23%	-26%	-28%	-31%
	230	2%	-3%	-8%	-12%	-15%	-19%	-22%	-25%	-27%	-30%	-32%
	225	0%	-5%	-10%	-13%	-17%	-20%	-23%	-26%	-29%	-31%	-34%
	220	-3%	-7%	-12%	-15%	-19%	-22%	-25%	-28%	-30%	-33%	-35%
	215	-5%	-9%	-14%	-17%	-21%	-24%	-27%	-30%	-32%	-34%	-37%
	210	-7%	-12%	-16%	-19%	-23%	-26%	-29%	-31%	-34%	-36%	-38%
	205	-9%	-14%	-18%	-21%	-24%	-27%	-30%	-33%	-35%	-37%	-40%
	200	-12%	-16%	-20%	-23%	-26%	-29%	-32%	-34%	-37%	-39%	-41%
	195	-14%	-18%	-22%	-25%	-28%	-31%	-34%	-36%	-38%	-41%	-43%
	190	-16%	-20%	-24%	-27%	-30%	-33%	-35%	-38%	-40%	-42%	-44%
	185	-18%	-22%	-26%	-29%	-32%	-35%	-37%	-39%	-42%	-44%	-45%
	180	-20%	-24%	-28%	-31%	-34%	-36%	-39%	-41%	-43%	-45%	-47%

Data Source: Wilshire Advisors, Bloomberg

There are Outsized Valuation Opportunities

Global Equity Markets Fundamentals As of 06/30/2023

	Dividend Yield			Profit Margin			Price to Sales			Price to Book			TR12M P/E			Forward P/E		
	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y
U.S. Equity	1.6	-0.6	-1.2	10.0	-0.1	0.7	2.5	0.0	1.1	4.3	0.8	1.7	21.3	-0.2	0.7	20.0	0.2	1.1
Developed Market	3.3	0.4	-0.1	9.0	0.9	1.6	1.3	0.1	1.0	1.6	0.2	0.6	14.3	-0.6	-0.5	13.6	-0.6	-0.2
Eurozone	3.3	0.3	-0.4	8.3	0.7	1.4	1.2	0.1	1.0	1.6	0.3	0.9	13.1	-0.7	-0.4	12.8	-0.6	-0.1
Japan	2.3	-0.4	0.3	6.2	0.3	0.9	1.0	0.6	1.3	1.5	1.3	1.3	18.2	0.4	-0.2	15.4	0.1	-0.1
UK	4.3	-0.0	0.2	11.2	1.2	1.8	1.3	0.4	1.0	1.7	0.2	-0.2	10.7	-1.2	-1.1	10.4	-1.1	-1.0
Emerging Market	3.0	0.7	0.7	9.5	0.1	0.5	1.2	-0.6	-0.0	1.5	-0.5	-0.4	12.9	-0.6	-0.4	12.7	-0.0	0.6
China	2.5	1.1	0.1	8.7	-1.1	-1.7	1.0	-1.2	-1.0	1.2	-1.5	-1.4	11.8	-1.0	-0.5	10.4	-1.0	-0.5
India	1.3	0.0	-0.2	8.5	0.2	-0.5	2.2	0.1	0.6	3.7	1.0	1.3	26.1	-0.1	0.9	21.9	-0.1	0.8
Brazil	6.6	0.4	1.2	14.8	0.7	1.2	1.0	-1.2	-1.1	1.6	-0.9	-0.2	6.5	-1.0	-1.7	8.0	-0.8	-1.3
South Korea	1.8	-1.9	0.2	5.6	-0.6	-0.2	0.7	-0.3	0.3	1.0	-0.3	-0.8	14.0	0.0	0.3	14.7	1.7	2.2

U.S. Equities Fundamentals As of 06/30/2023

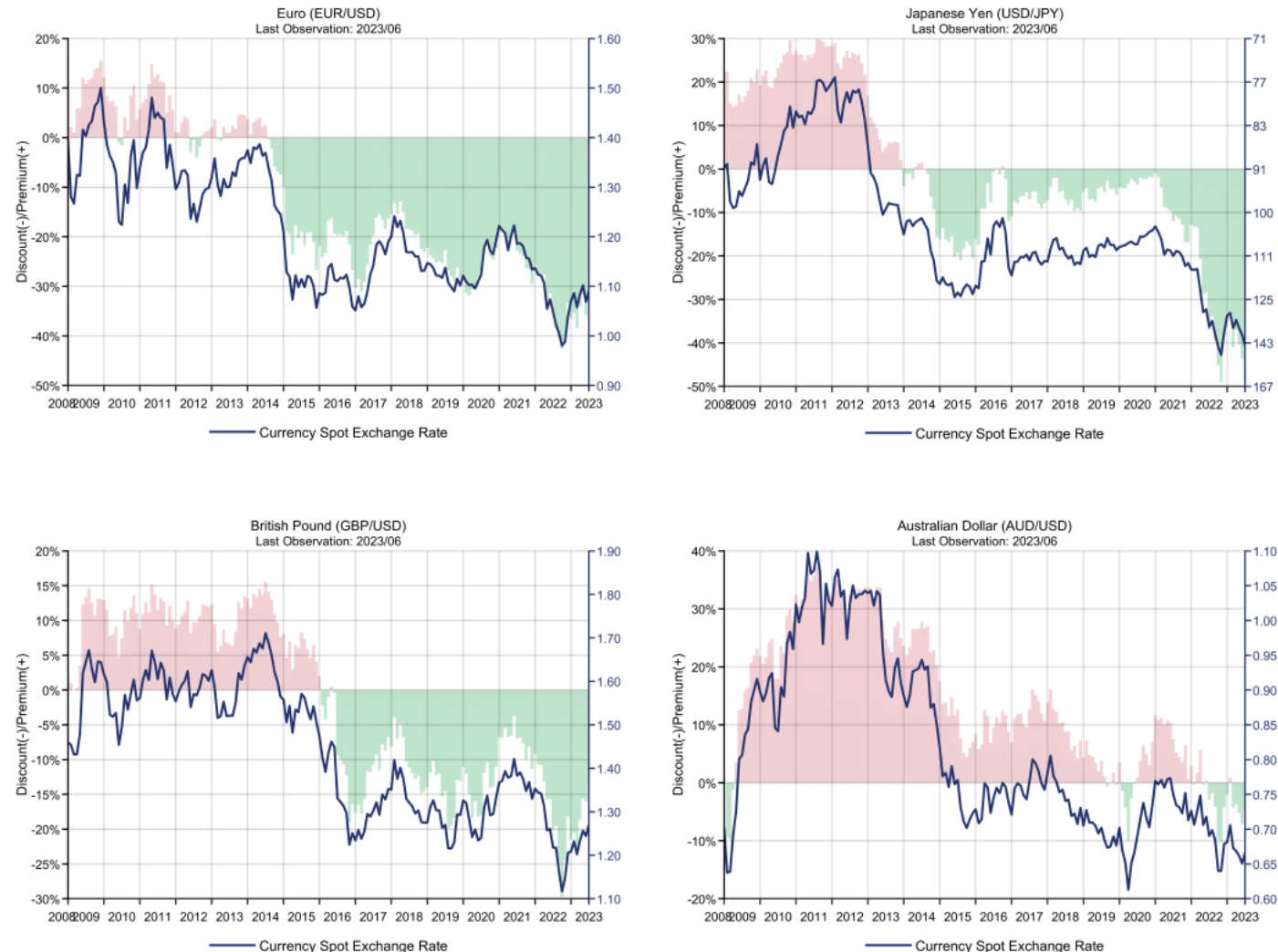
	Dividend Yield			Profit Margin			Price to Sales			Price to Book			TR12M P/E			Forward P/E		
	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y
Large Cap	1.6	-0.6	-1.2	10.0	-0.1	0.7	2.5	0.0	1.1	4.3	0.8	1.7	21.3	-0.2	0.7	20.0	0.2	1.1
Large Cap Growth	0.8	-1.1	-1.9	11.3	-0.8	0.6	3.9	-0.0	1.2	10.8	0.4	1.5	31.9	0.2	1.3	27.5	0.5	1.5
Large Cap Value	2.4	0.0	-0.3	8.4	0.1	0.6	1.6	-0.4	0.6	2.4	0.4	1.4	16.0	-0.6	-0.2	15.5	-0.3	0.3
Mid Cap	1.7	0.1	-0.1	6.8	0.5	0.8	1.6	-0.6	0.4	3.0	0.1	0.9	20.9	-0.6	-0.3	18.0	-0.6	-0.1
Small Cap	1.7	1.0	0.6	2.8	0.6	0.6	1.2	-0.5	0.1	2.1	-0.5	-0.0	30.8	-0.5	-0.3	24.9	-0.4	-0.0

Equities Relative Fundamentals As of 06/30/2023

	Dividend Yield			Profit Margin			Price to Sales			Price to Book			TR12M P/E			Forward P/E		
	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y	Value	Z-5Y	Z-15Y
US vs. EAFE	-1.7	-1.1	-1.5	1.0	-2.1	-1.3	1.9	-0.2	1.0	2.6	1.1	1.7	1.5	1.3	1.7	1.5	2.1	2.5
EAFE vs. EM	0.3	-0.6	-1.3	-0.5	1.5	1.8	1.1	1.6	1.1	1.1	1.3	0.8	1.1	-0.4	-0.3	1.1	-1.4	-1.2
US LC vs. US SC	-0.1	-2.3	-2.8	7.3	-1.2	-0.1	2.1	1.1	1.8	2.1	1.7	2.4	0.7	1.0	1.4	0.8	0.8	1.5
US LCG vs. US LCV	-1.6	-1.1	-1.1	2.9	-0.9	-0.1	2.4	0.4	1.5	4.5	0.2	1.4	2.0	1.6	2.2	1.8	1.4	2.1

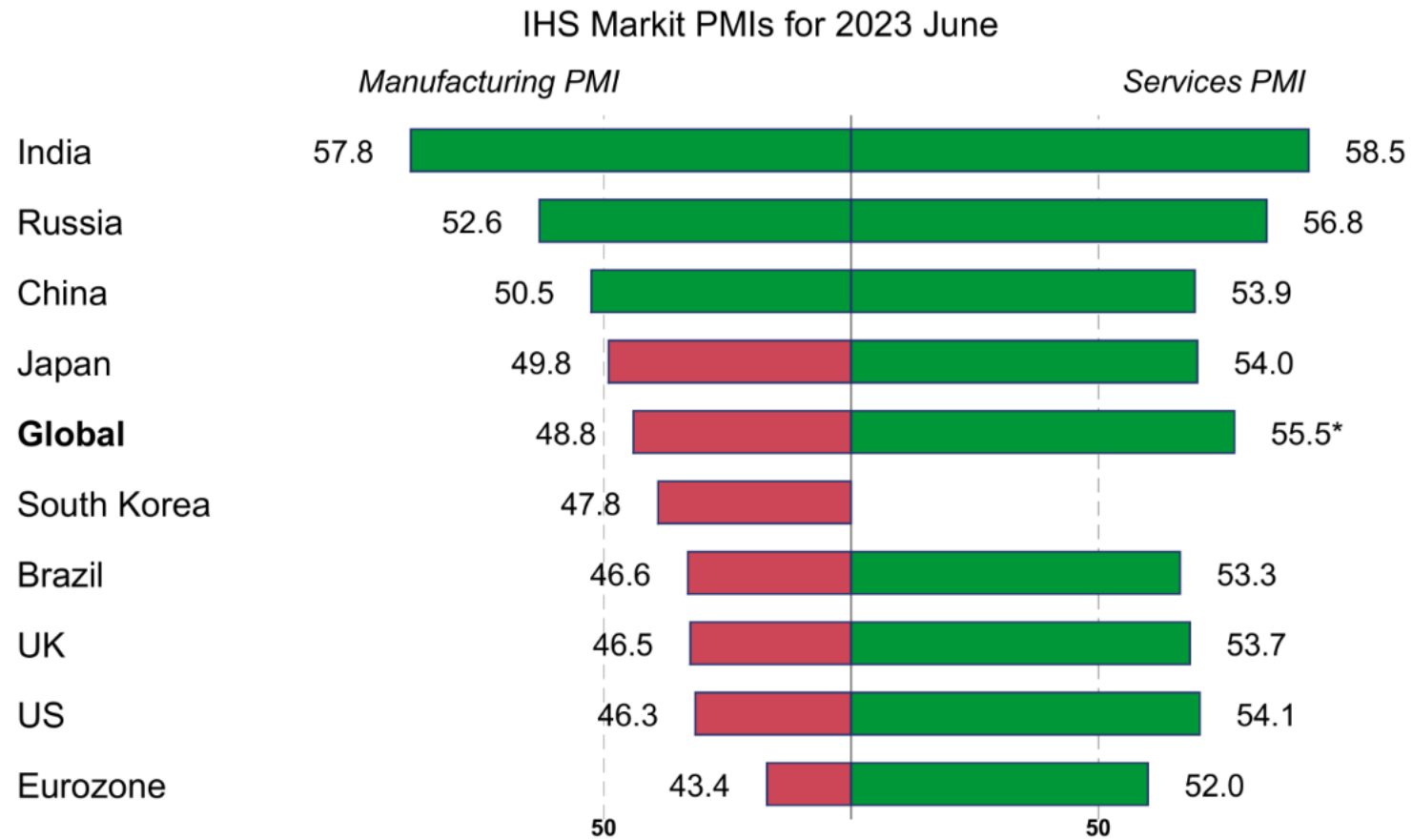
Data Source: Wilshire Advisors, Bloomberg

Equity Valuations: FX Valuations May be a Material Tailwind to Non-U.S. Returns



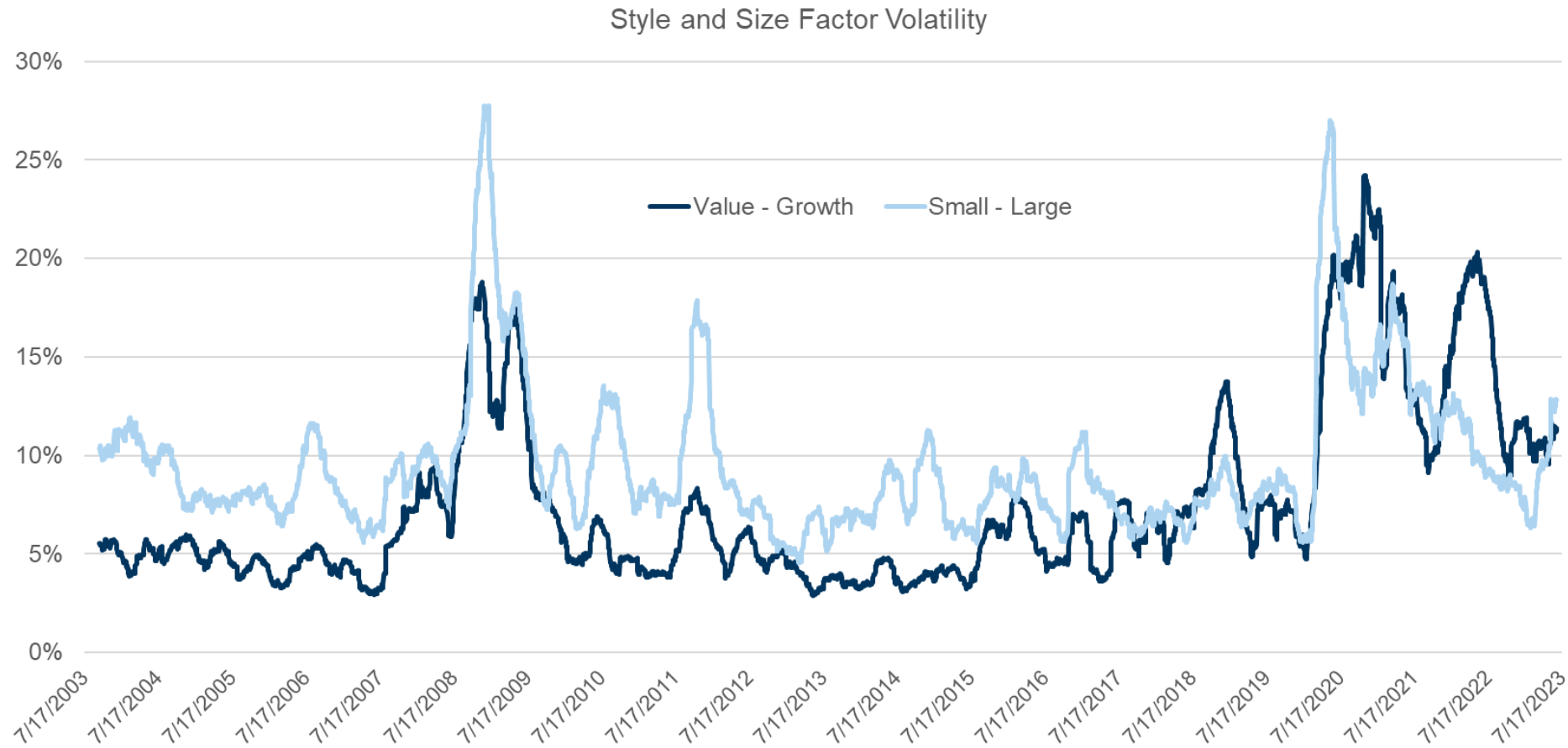
Data Source: Wilshire Advisors, Bloomberg

European Equities are Cheap for a Reason



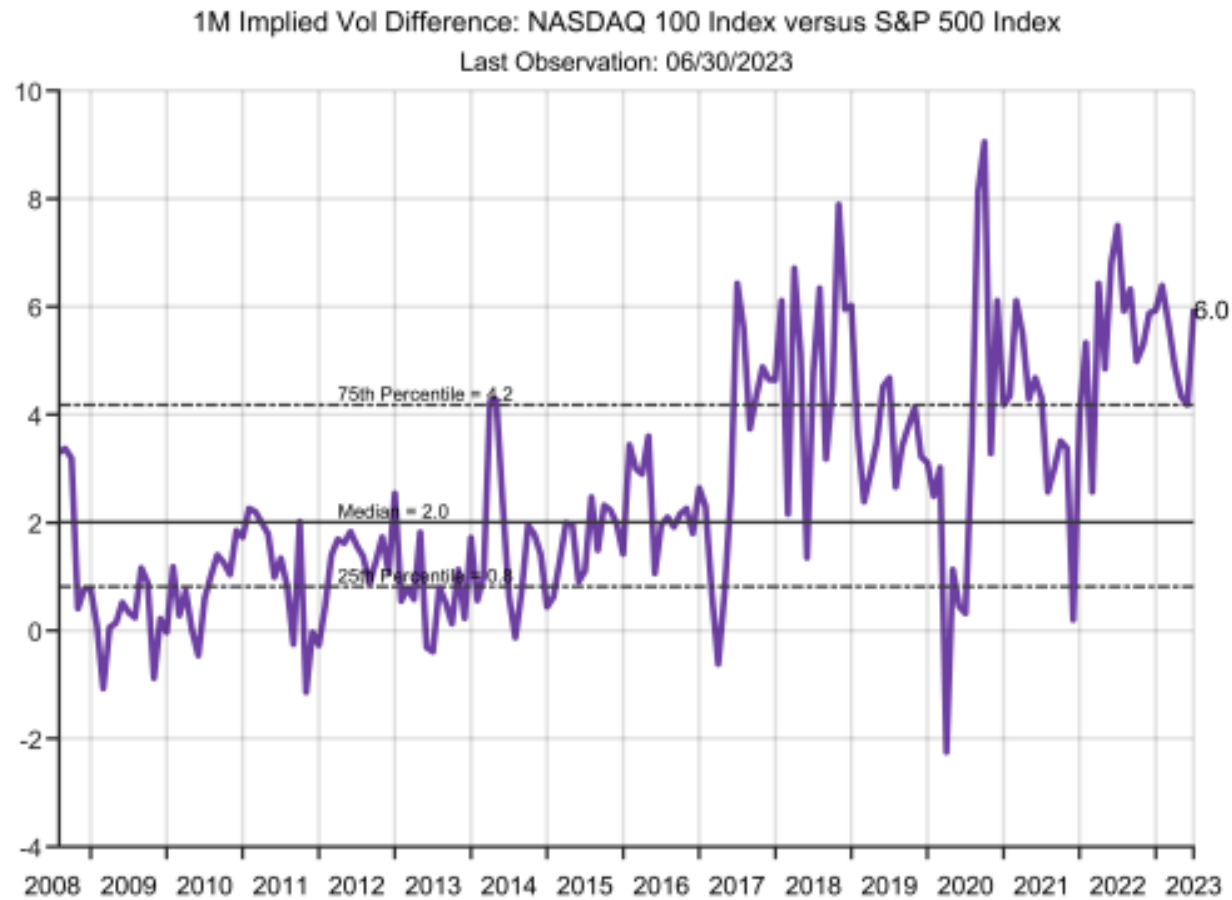
Data Source: Wilshire Advisors, Bloomberg

Factor Volatility has Fallen from COVID Highs, but Vols are Beginning to Rise



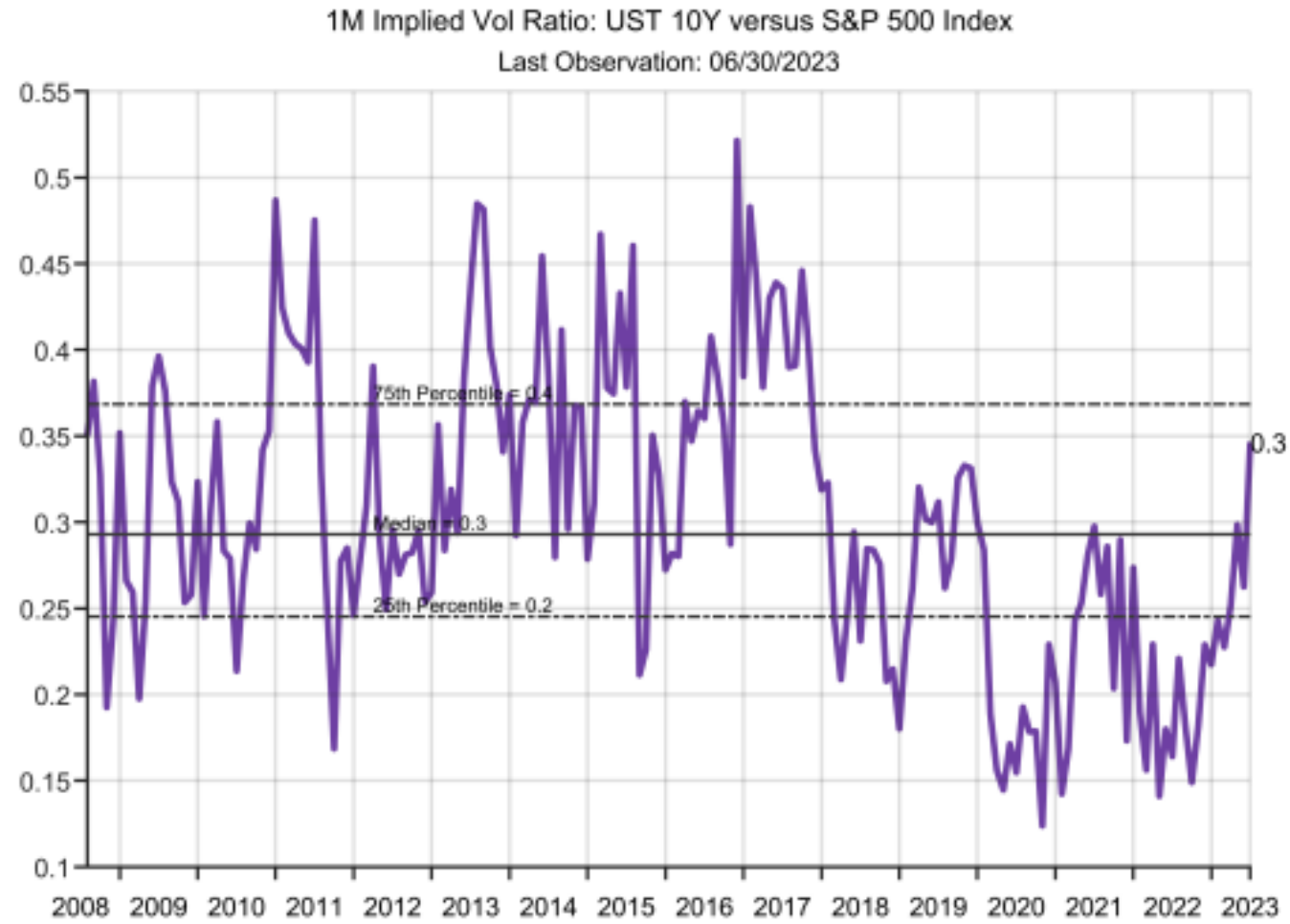
Data Source: Bloomberg

Market is Not Underpricing Equity Risk in NDX vs. SPX



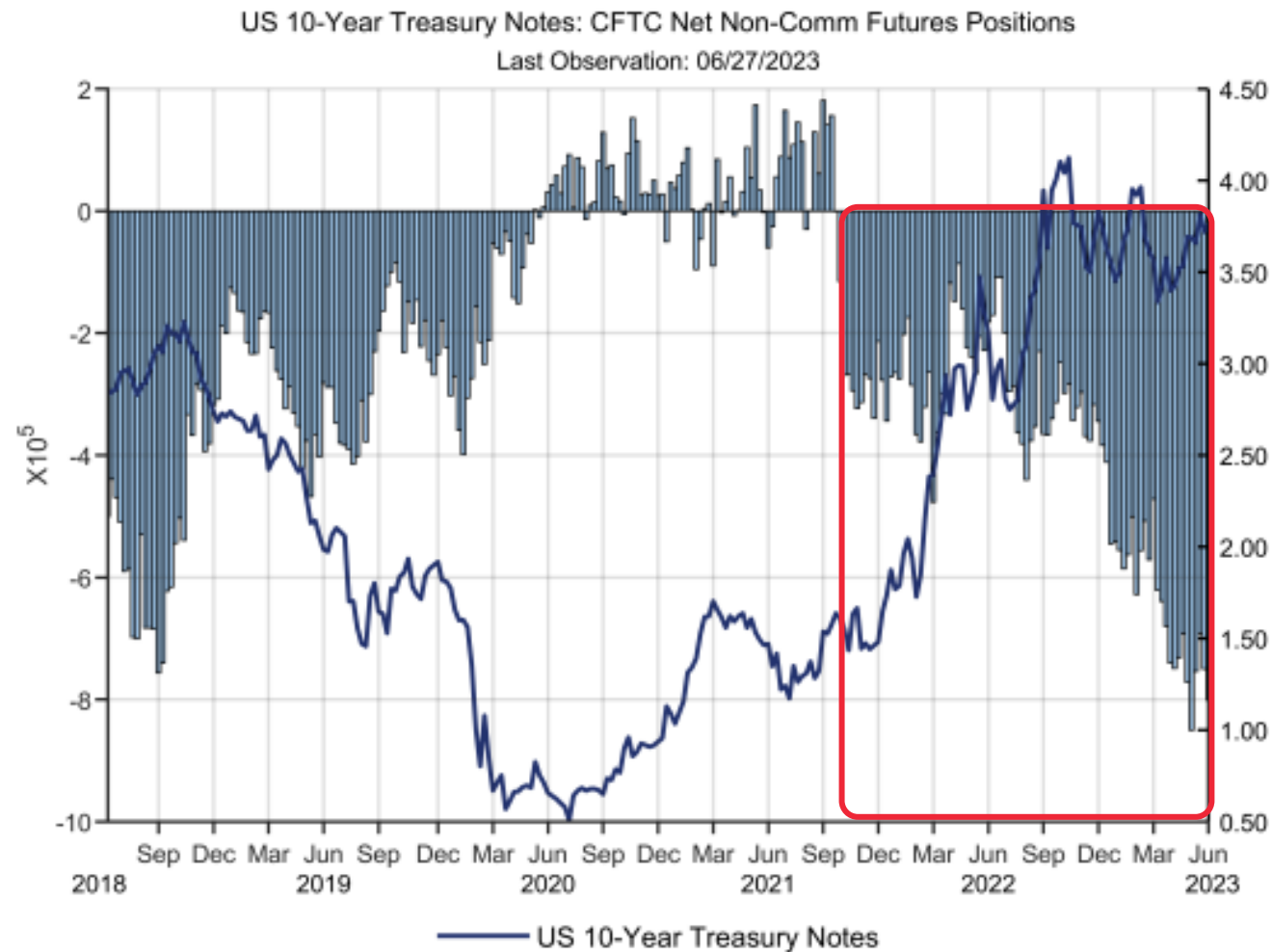
Data Source: Wilshire Advisors, Bloomberg

Market is Underpricing Equity Risk Relative to Bonds



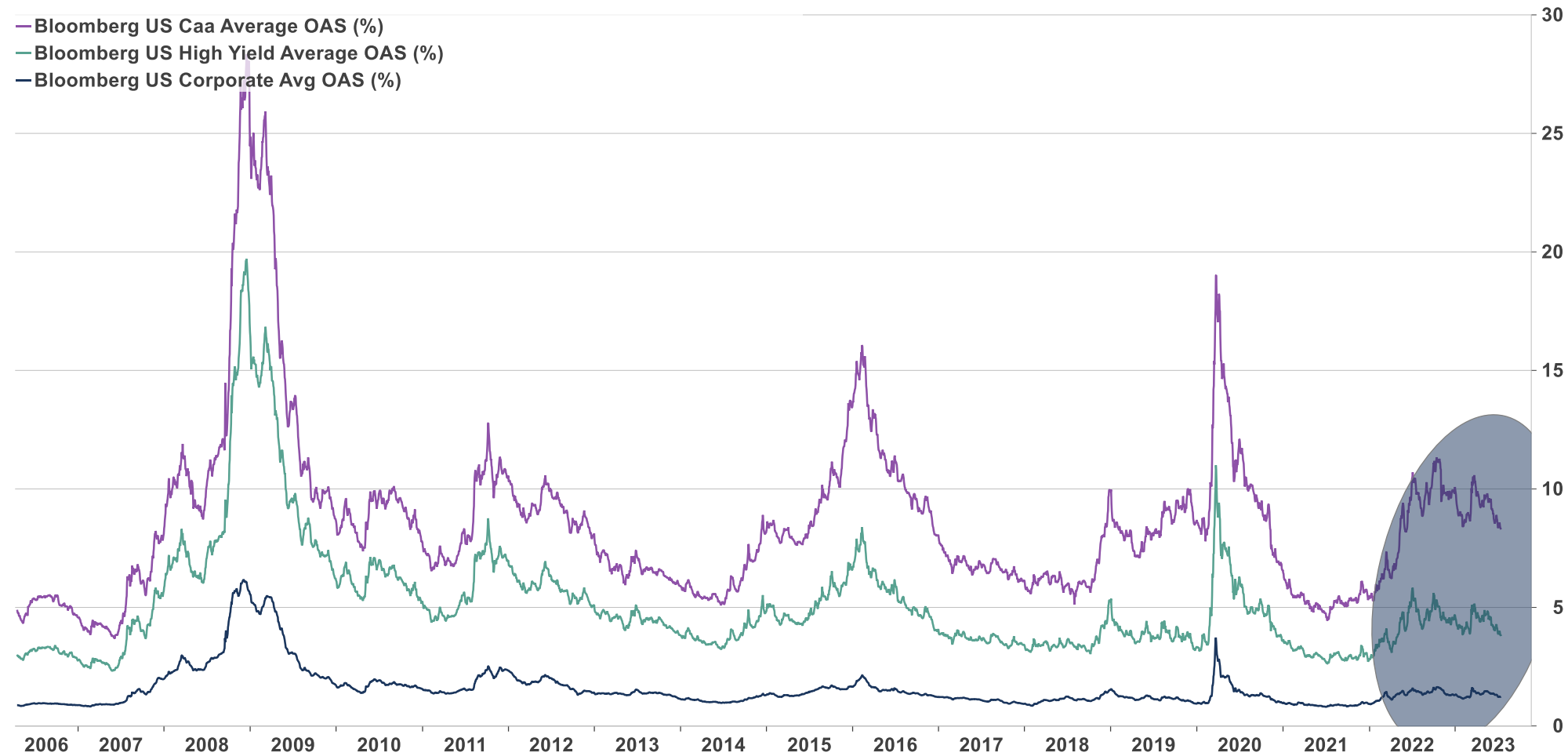
Data Source: Wilshire Advisors, Bloomberg

Rates Positioning Increasingly Short, Indicating Very Negative Sentiment



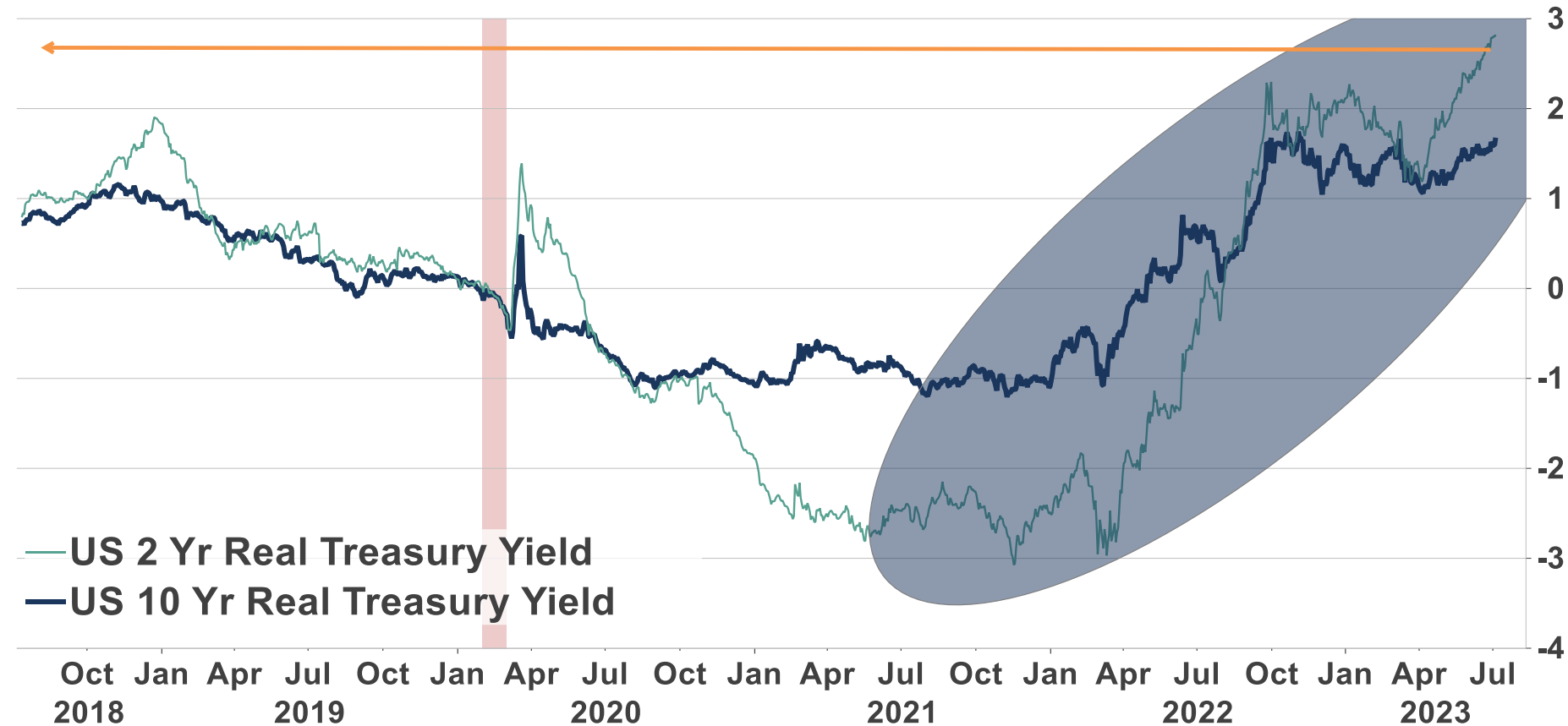
Data Source: Wilshire Advisors, Bloomberg

Credit Spreads Contracted; Valuations Less Compelling Given Elevated Risk



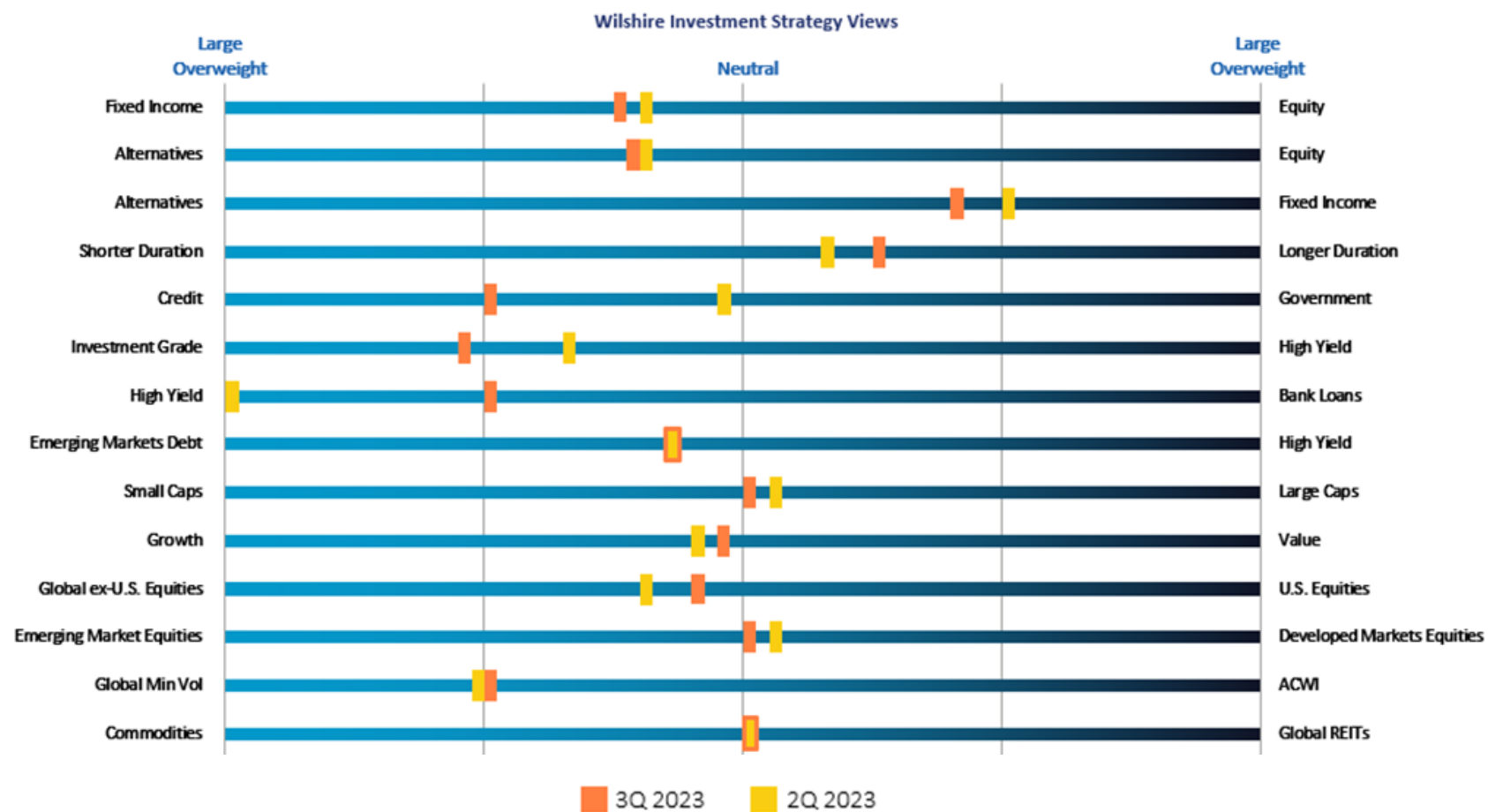
Data Source: Bloomberg

Real Yields Have Retraced Higher Recently; Valuations are Very Attractive and Duration Offers Diversification for Multi-Asset Investors



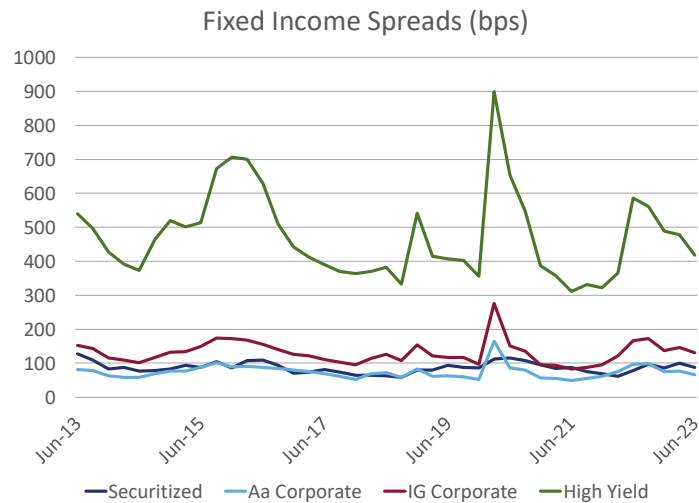
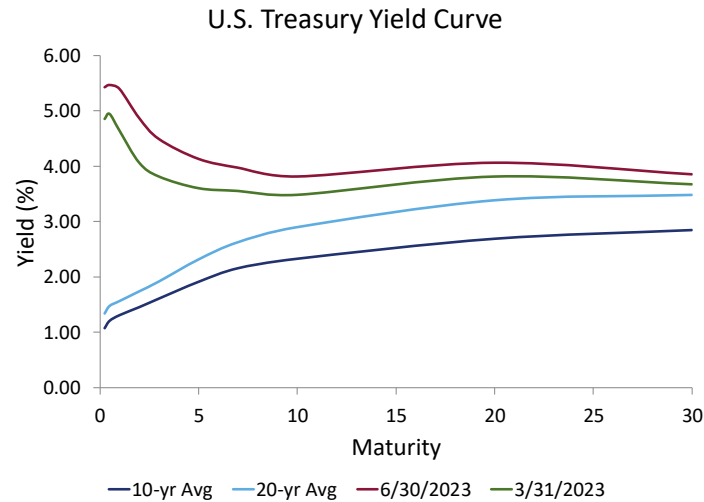
Data Source: Macrobond

Wilshire Investment Strategy Views



Market Forecasts

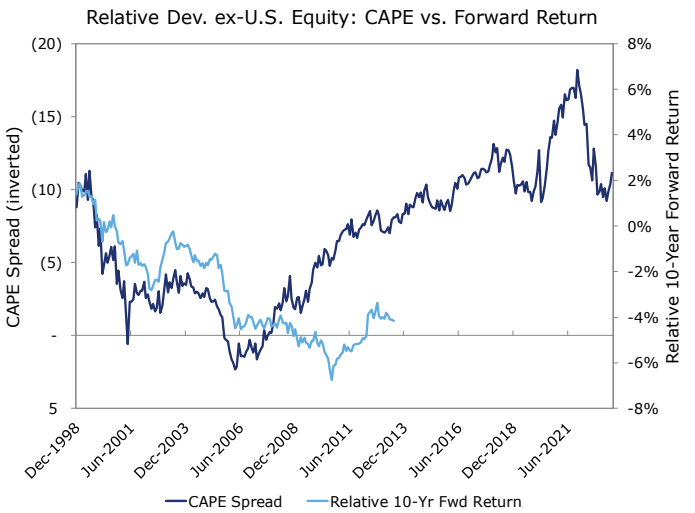
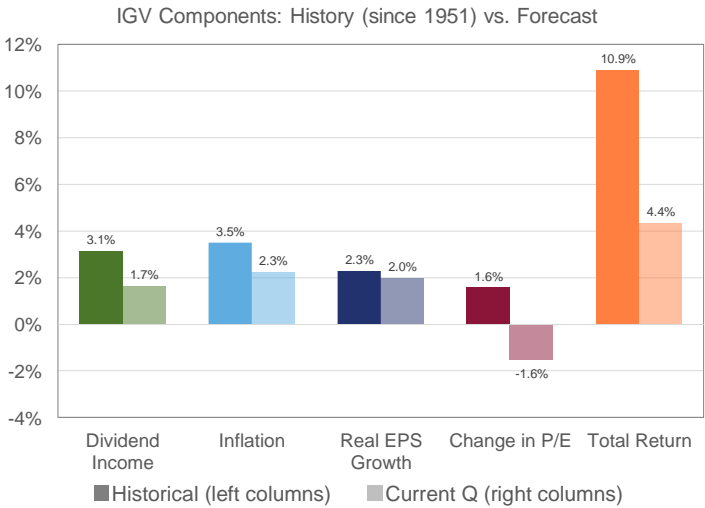
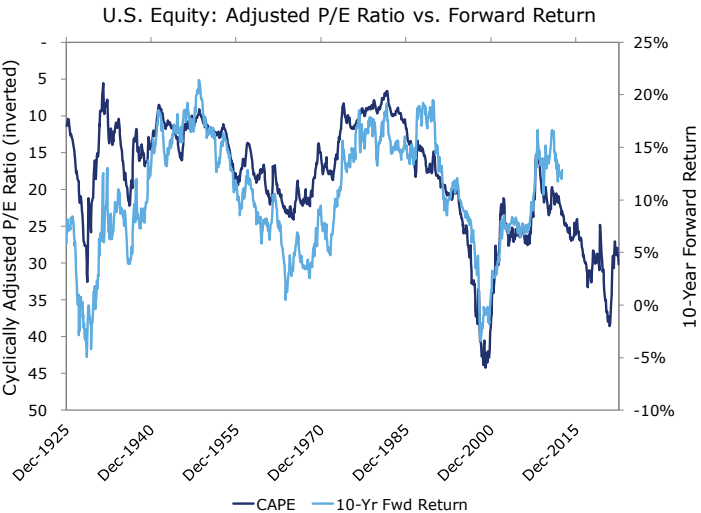
Fixed Income



Inflation & Fixed Income		Mar 2023	Change	Jun 2023
Inflation	10-Year Treasury Yield	3.47	0.37	3.84
	10-Year Real Yield	<u>1.15</u>	<u>0.47</u>	<u>1.62</u>
	Breakeven Inflation	2.32	(0.10)	2.22
	Inflation Forecast	2.25	0.00	2.25
Cash	91-Day T-Bill Yield	4.85	0.58	5.43
	T-Bill Yield in 10 Yrs	3.40	0.10	3.50
	Cash Forecast	3.65	0.20	3.85
Treasury	U.S. Treasury Idx Yield	3.83	0.54	4.37
	Treasury Idx Yield in 10 Yrs	4.30	0.10	4.40
	Treasury Idx Forecast	4.00	0.40	4.40
	U.S. LT Treasury Idx Yield	3.77	0.21	3.97
LT Treasury	LT Treasury Idx Yield in 10 Yrs	3.86	0.09	3.95
	LT Treasury Idx Forecast	3.75	0.25	4.00
Spread	U.S. Corporate Idx OAS	1.46	(0.16)	1.31
	Corporate Idx OAS in 10 Yrs	1.53	0.00	1.53
	Corporate Idx Forecast	5.15	0.35	5.50
	U.S. Core Bond Forecast	4.60	0.25	4.85
	U.S. LT Core Bond Forecast	4.60	0.20	4.80
	U.S. High Yield Idx OAS	4.78	(0.61)	4.17
High Yield	High Yield Idx OAS in 10 Yrs	5.36	(0.02)	5.33
	High Yield Bond Forecast	6.25	(0.05)	6.20

Equity Markets

Equity: Public & Private		Mar 2023	Change	Jun 2023
Equity	DDM	6.75	(0.15)	6.60
	IGV	5.35	(0.95)	4.40
	CAPE	7.00	(1.15)	5.85
	U.S. Equity Forecast	6.15	(0.65)	5.50
Dev-ex-US Equity Forecast		6.90	(0.40)	6.50
EM Equity Forecast		7.15	(0.40)	6.75
Private	Cost of Debt (Public)	5.40	0.25	5.65
	Cost of Debt (Private)	7.60	0.20	7.80
	Private Market Basket Forecast	9.60	(0.60)	9.00



Summary Changes

- Yield curve up across the maturity spectrum
 - Curve movements resulted in higher forecasts for government bond fixed income segments
 - Decrease in spreads for investment grade and high yield bonds; assumption for high yield down for the quarter
- Yields on public real asset securities are little changed; inflation assumption remains steady at 2.25%
- Equity assumptions are down, mainly on higher current valuations but also lower income return
- Equity risk premium continues to fall

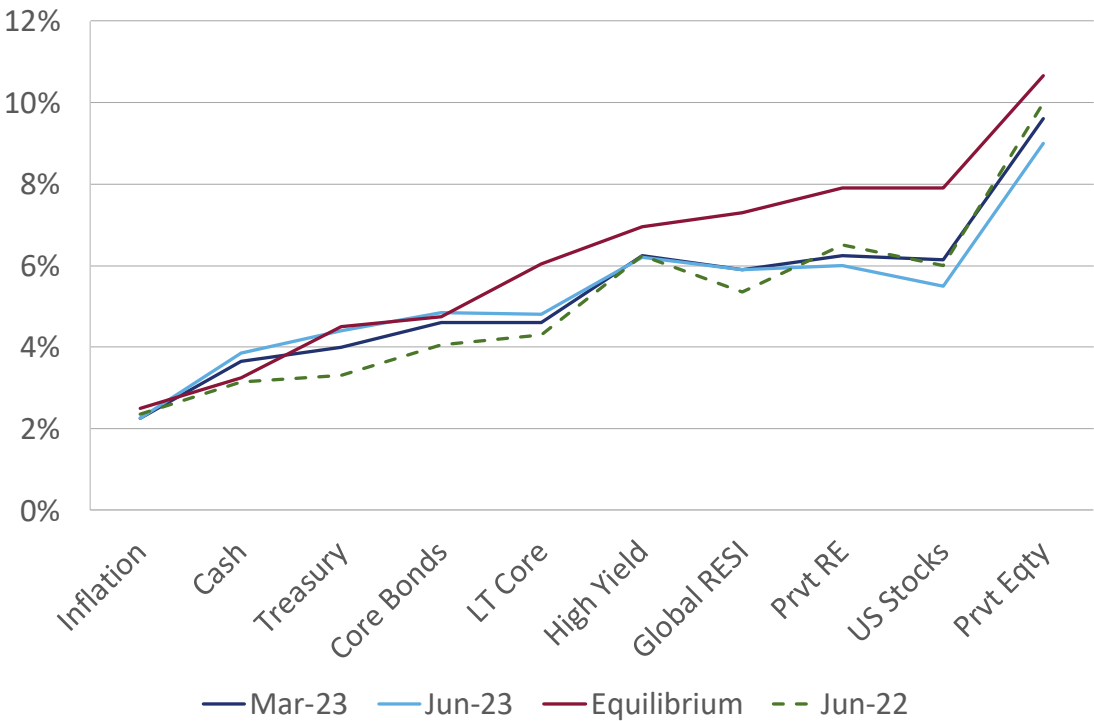
Asset Class Assumption	Total Return (%)			Risk (%)
	Mar 2023	Change	Jun 2023	
Inflation	2.25	0.00	2.25	1.75
Cash Equivalents	3.65	0.20	3.85	0.75
Treasuries	4.00	0.40	4.40	5.00
Core Bonds	4.60	0.25	4.85	4.70
LT Core Bonds	4.60	0.20	4.80	9.85
High Yield Bonds	6.25	-0.05	6.20	10.00
Private Credit	8.55	-0.20	8.35	12.75
Global RE Securities	5.90	0.00	5.90	16.45
Private Real Estate	6.25	-0.25	6.00	13.90
U.S. Stocks	6.15	-0.65	5.50	17.00
Dev. ex-U.S. Stocks	6.90	-0.40	6.50	18.00
Emerging Market Stocks	7.15	-0.40	6.75	26.00
Private Equity	9.60	-0.60	9.00	29.65
Global 60/40 (ACWI/U.S. Core)	6.15	-0.20	5.95	10.80

Implied Risk Premia	Relative Return (%)		
	Mar 2023	Change	Jun 2023
Cash - Inflation	1.40	0.20	1.60
Treasury - Cash	0.35	0.20	0.55
Core - Treasury	0.60	-0.15	0.45
Long-Term Core - Core	0.00	-0.05	-0.05
High Yield - Core	1.65	-0.30	1.35
Global RESI - Core	1.30	-0.25	1.05
U.S. Stocks - Core	1.55	-0.90	0.65
Private Equity - U.S. Stocks	3.45	0.05	3.50
Implied Real Return (ACA - CPI)			
U.S. Stocks	3.90	-0.65	3.25
U.S. Bonds	2.35	0.25	2.60
Cash Equivalents	1.40	0.20	1.60

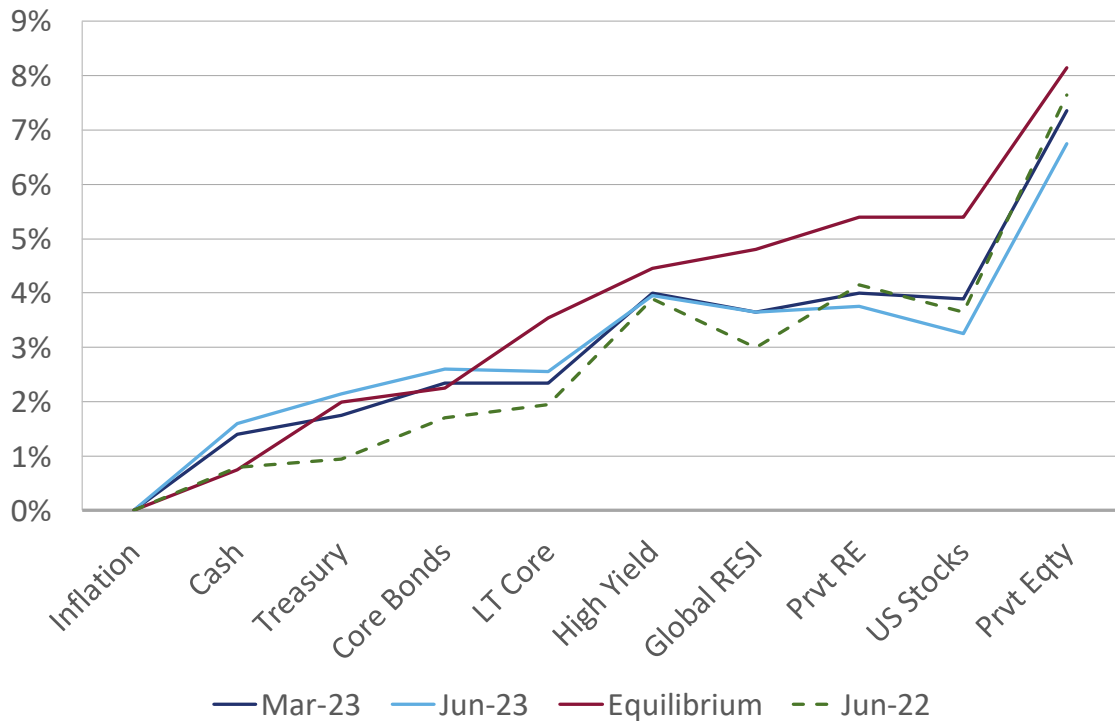
Equilibrium Assumptions

Current versus Equilibrium Asset Class Assumptions

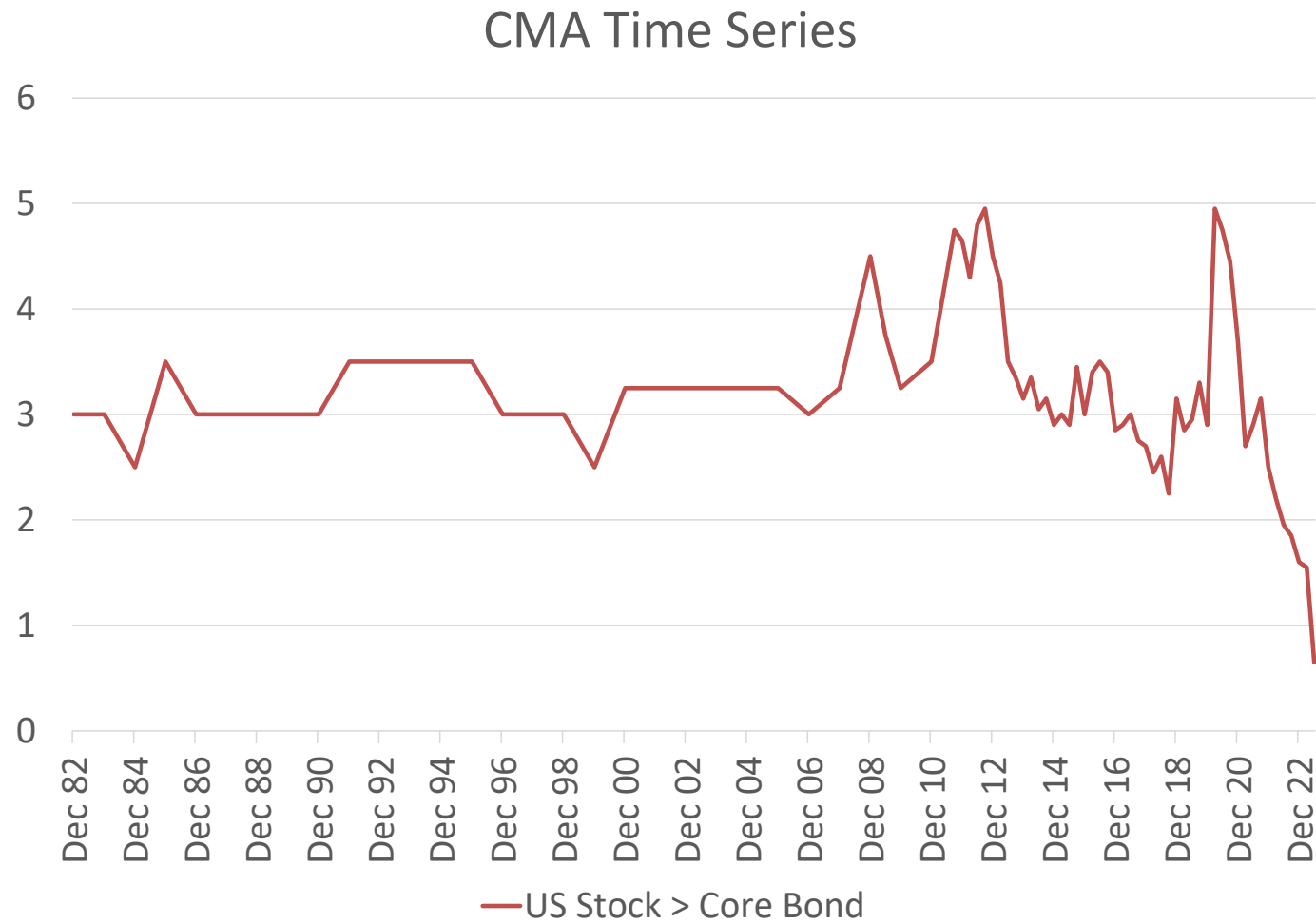
Nominal Returns



Real Returns



Equity Risk Premium at Lowest Level since We've been Forecasting Markets....



Question & Answer

Thank you for joining us!

Please use the Q&A panel to submit questions.



The screenshot shows a user interface for asking questions. At the top, there are three tabs: 'Ask a question' (highlighted in green), 'Rate this', and 'Details'. Below the tabs is a section titled 'Ask a question' containing a text input field with the placeholder 'Type your question here...'. At the bottom of this section is a link that says 'Not hearing audio? Click here for help'. To the right of the input field is a grey button labeled 'Send question'. Two red arrows originate from the text 'Please use the Q&A panel to submit questions.'; one arrow points to the 'Ask a question' tab, and the other points to the 'Send question' button.

To find out more about our solutions or speak to one of our experts, we're ready to connect you to the right team and answer any of your questions.

wilshire.com
contactus@wilshire.com
 +1 310 451 3051

Josh Emanuel
 Chief Investment Officer
jemanuel@wilshire.com

Steve Foresti
 Senior Advisor
sforesti@wilshire.com

Suehyun Kim
 Senior Vice President
shkim@wilshire.com

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