



WisdomTree
Economic & Investments
Chart Book
Q4 2023

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The views expressed herein are subject to change based on market and other conditions.

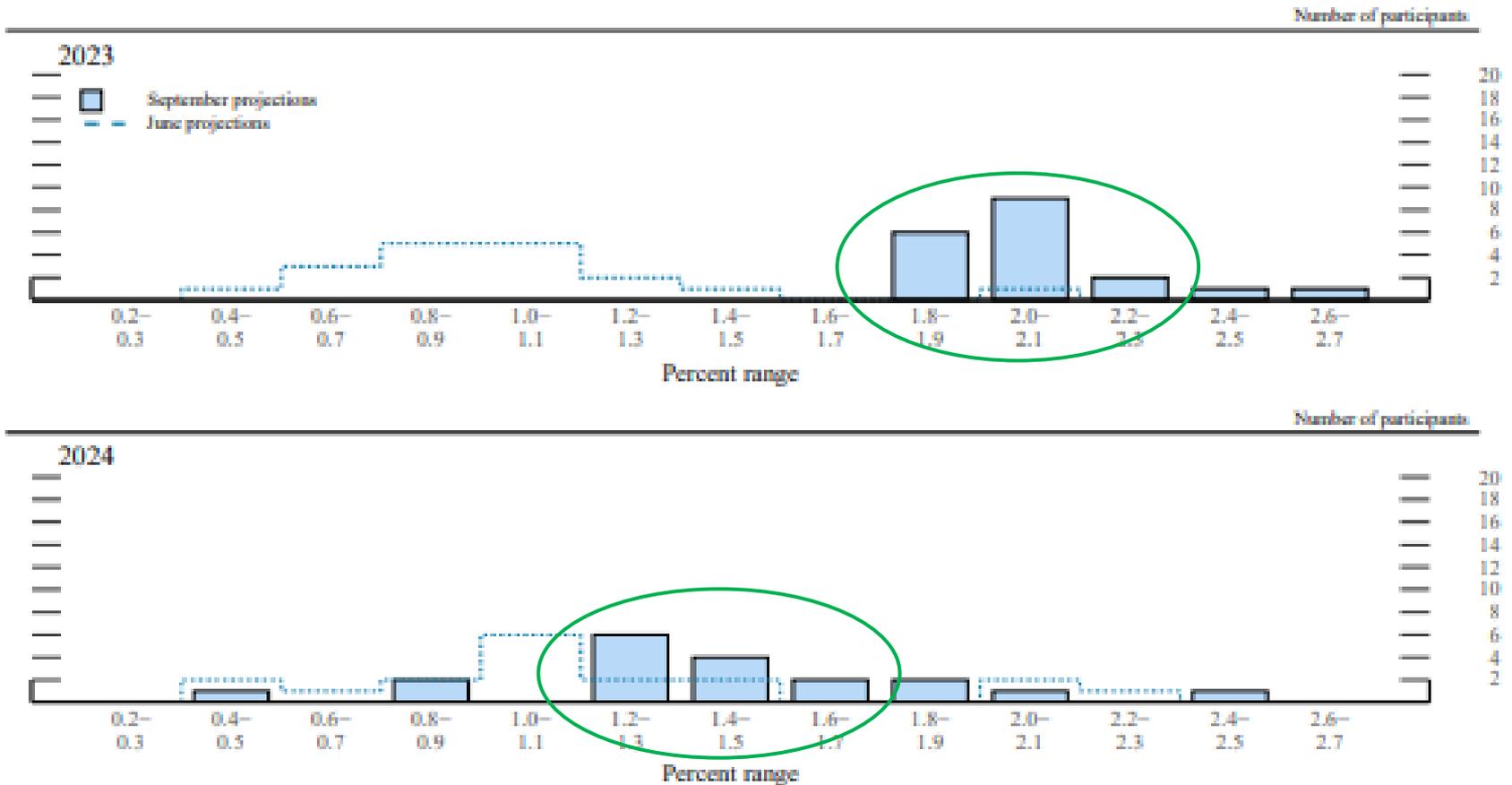
Please see the important disclosures at the end of this presentation.

Topics for discussion

- + Economic Outlook
- + Equity Outlook
- + Rates and Credit Outlook
- + Real Assets & Alternatives Outlook
- + Current WisdomTree Model Portfolio Asset Allocation Guidelines

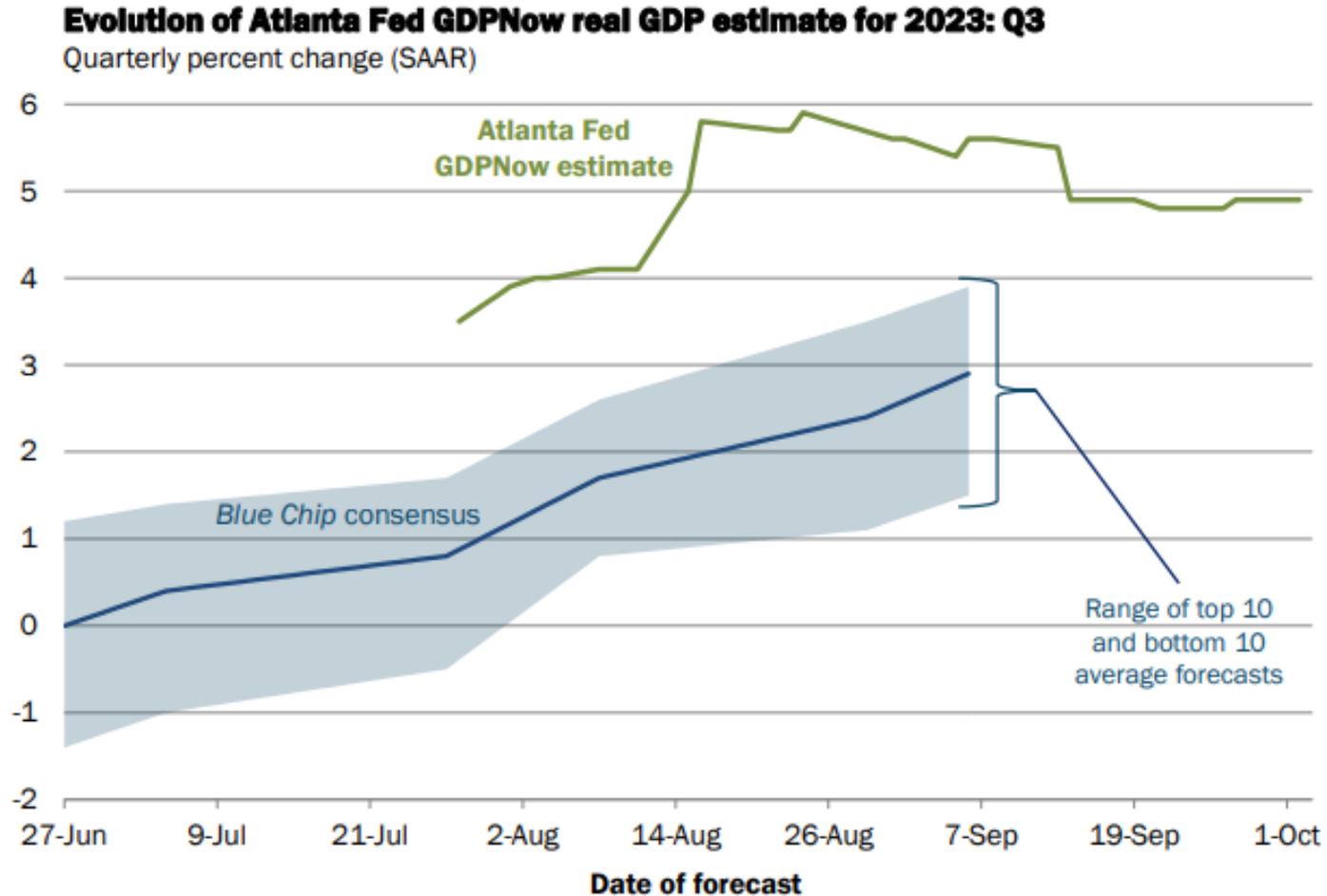
Economic Outlook

The Federal Open Market Committee (FOMC) is forecasting muted but positive economic growth over the next 12-18 months. Its forecasting accuracy historically has been poor, but it is helpful to know what they think.



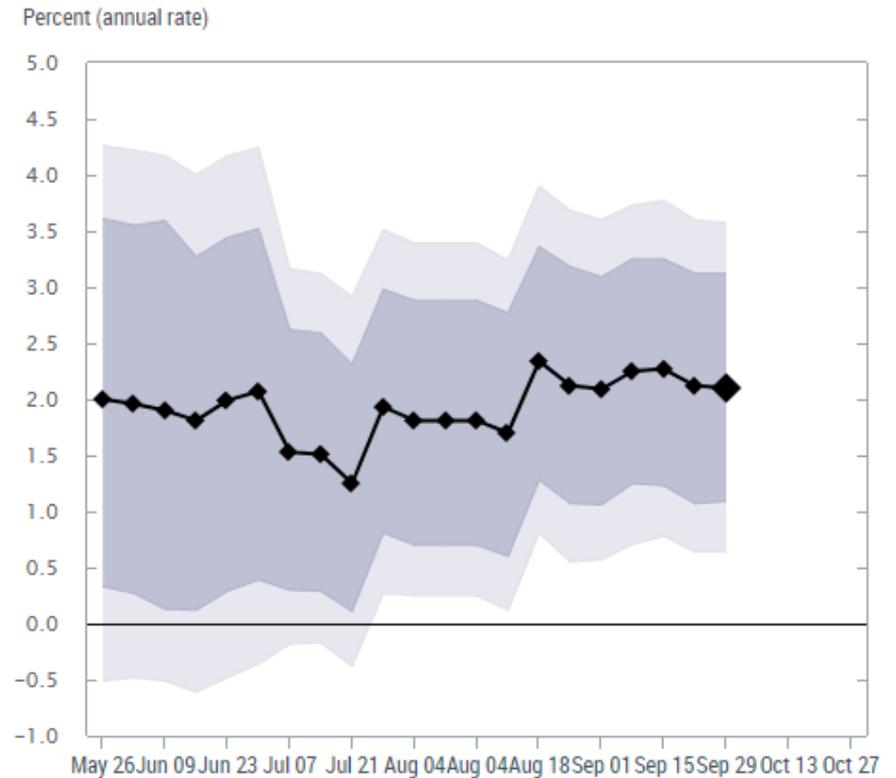
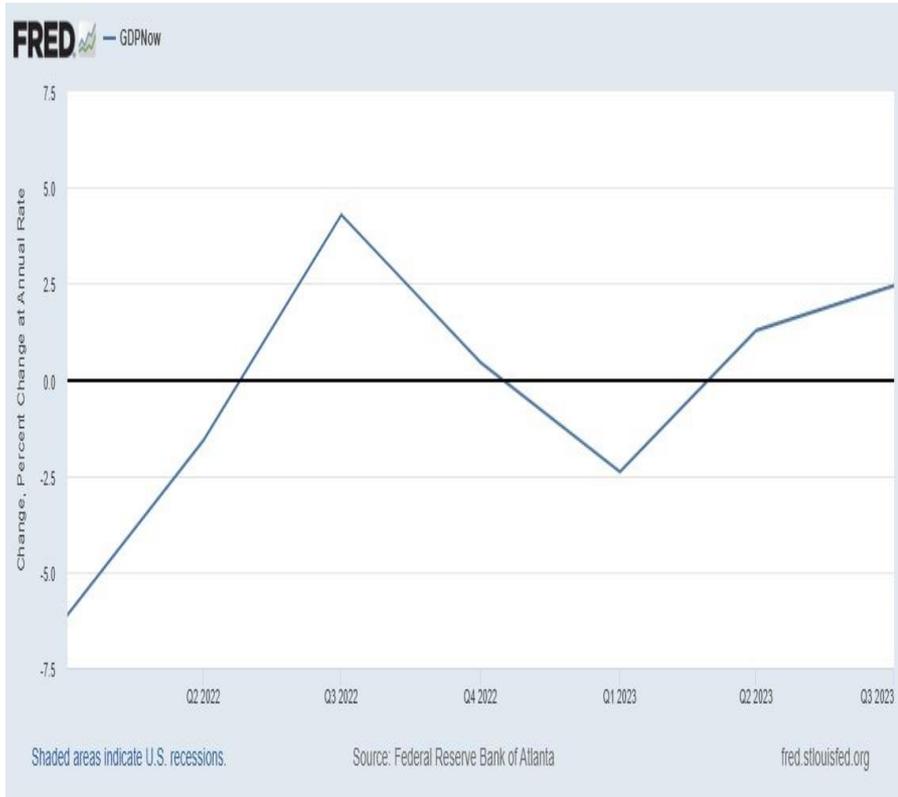
Source: The Federal Open Market (FOMC) "Summary of Economic Projections", as of September 20, 2023. These are projected numbers and actual results may differ.

The Atlanta Fed's "GDPNow" indicator suggests higher growth (currently just shy of 5%) for Q3 but is at odds (i.e., skewed higher) with other Fed estimates.



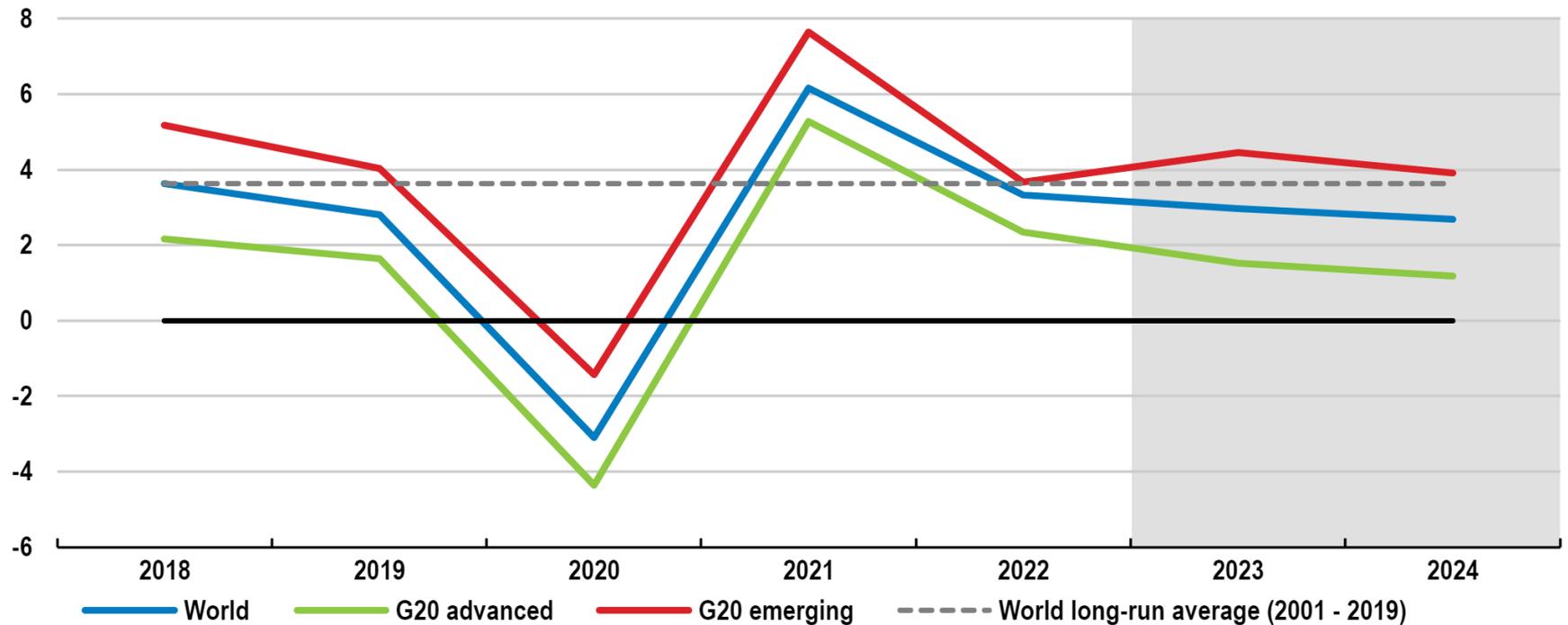
Source: The Atlanta Fed as of October 2, 2023. *Blue Chip Economic Indicators* and *Blue Chip Financial Forecasts*.
Note: The top (bottom) 10 average forecast is an average of the highest (lowest) 10 forecasts in the *Blue Chip* survey. SAAR=Seasonally adjusted annual rate.

Other Fed Banks have different opinions. Both the St. Louis Fed (left chart, at ~2.5%) and the New York Fed (right chart, at ~2.1%) are less optimistic.



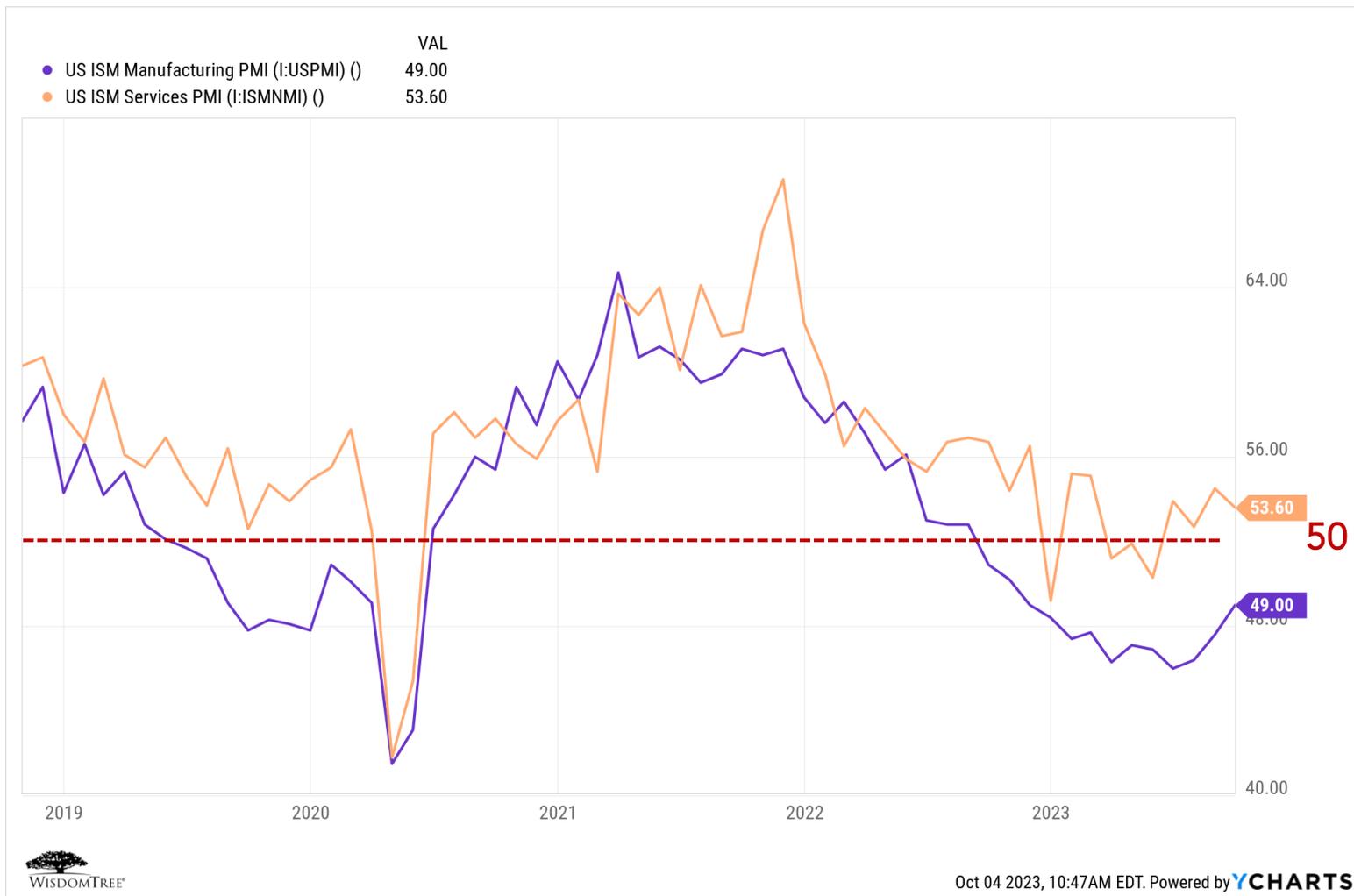
Sources: Left chart: The St. Louis Fed (FRED) GDPNow, through Q3 2023.
 Right chart: The New York Fed "Nowcast", through Q3 2023. These are economic estimates and subject to revisions.

The OECD (Organization for Economic Cooperation and Development) is forecasting subdued but positive global growth. China continues to struggle, which has a knock-on effect on other countries' growth rates.



Source: OECD Economic Outlook. Interim Report as of September 2023. There is no guarantee that any projection, forecast or opinion will be realized. Actual results may vary. The G20 is an intergovernmental forum comprising 19 sovereign countries, the European Union, and the African Union. It works to address major issues related to the global economy, such as international financial stability, climate change mitigation and sustainable development.

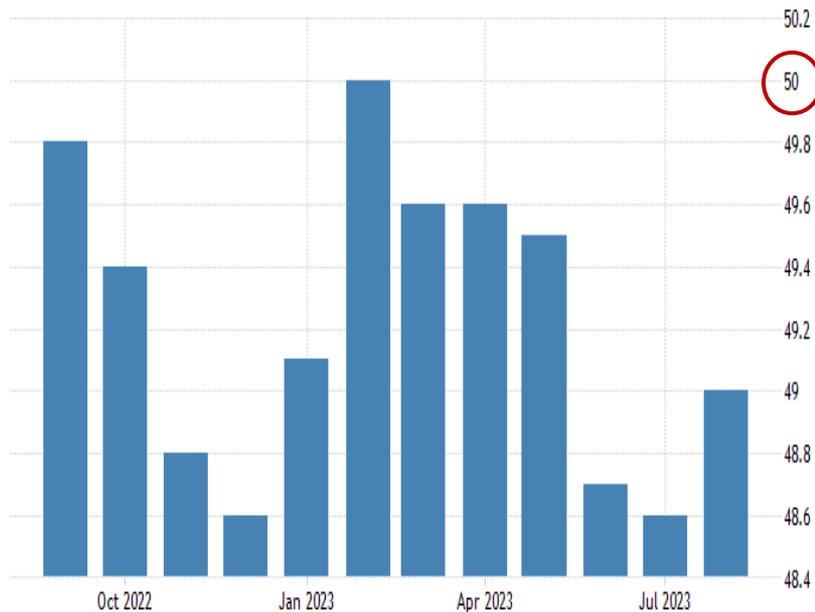
This chart shows U.S. manufacturing and services activity through September. Manufacturing remains in “contraction” (<50) territory, while services remains expansionary (>50). Another “mixed signal” on the overall economy, but one currently echoed in most developed economies.



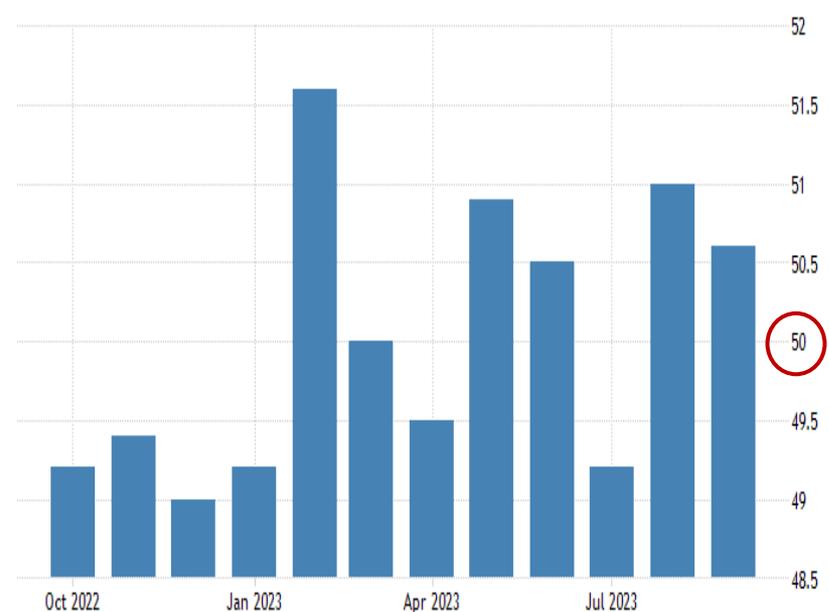
Source: Ycharts, through September 2023.

Global manufacturing (left-hand chart) remains in “contraction” territory (<50), while Chinese manufacturing (right-hand chart) remains in slightly expansionary territory (>50)—but there are other clear signs the Chinese economy is struggling. That is a problem for the rest of the world’s economic growth.

Global Manufacturing



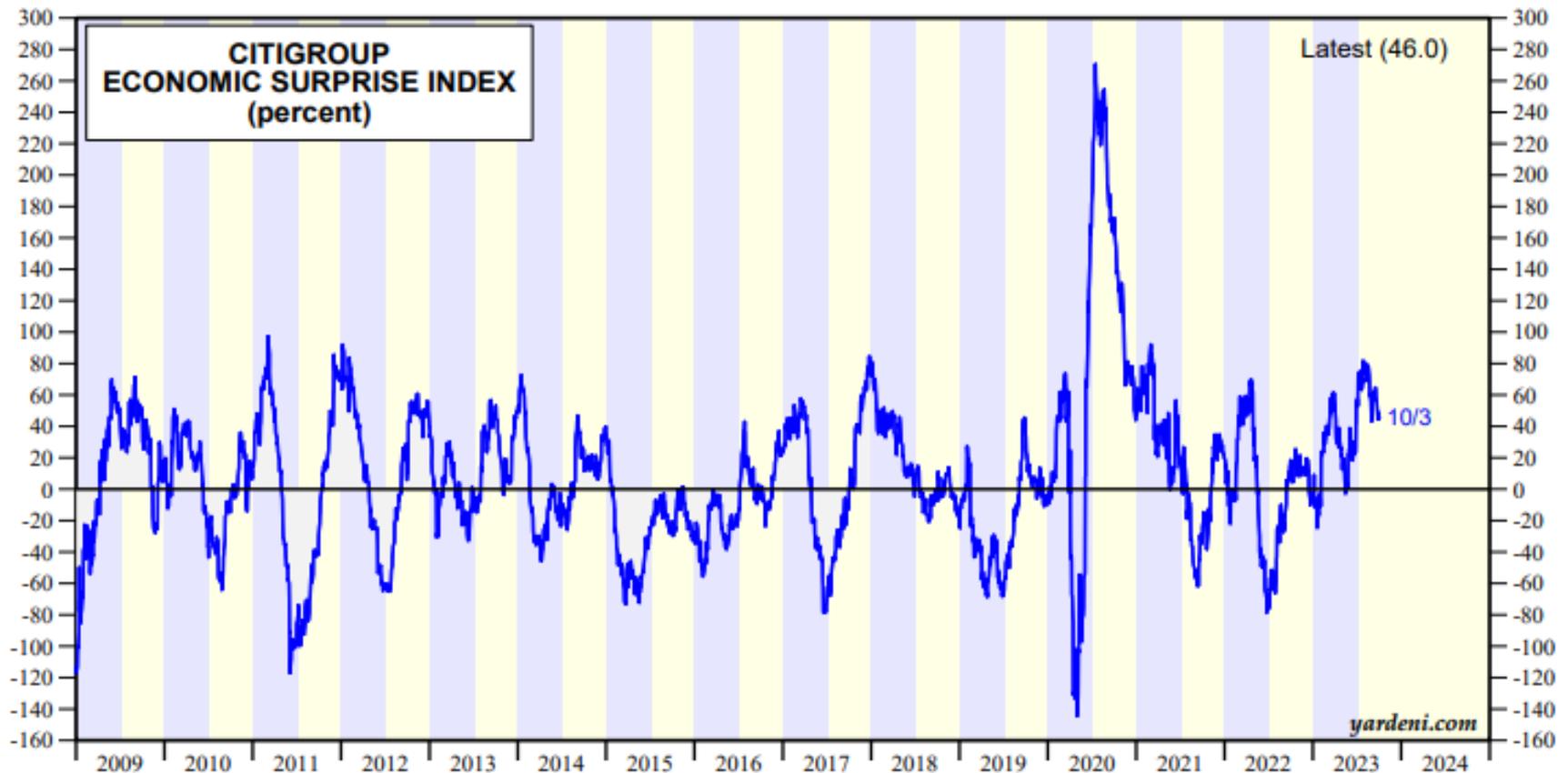
China's Manufacturing



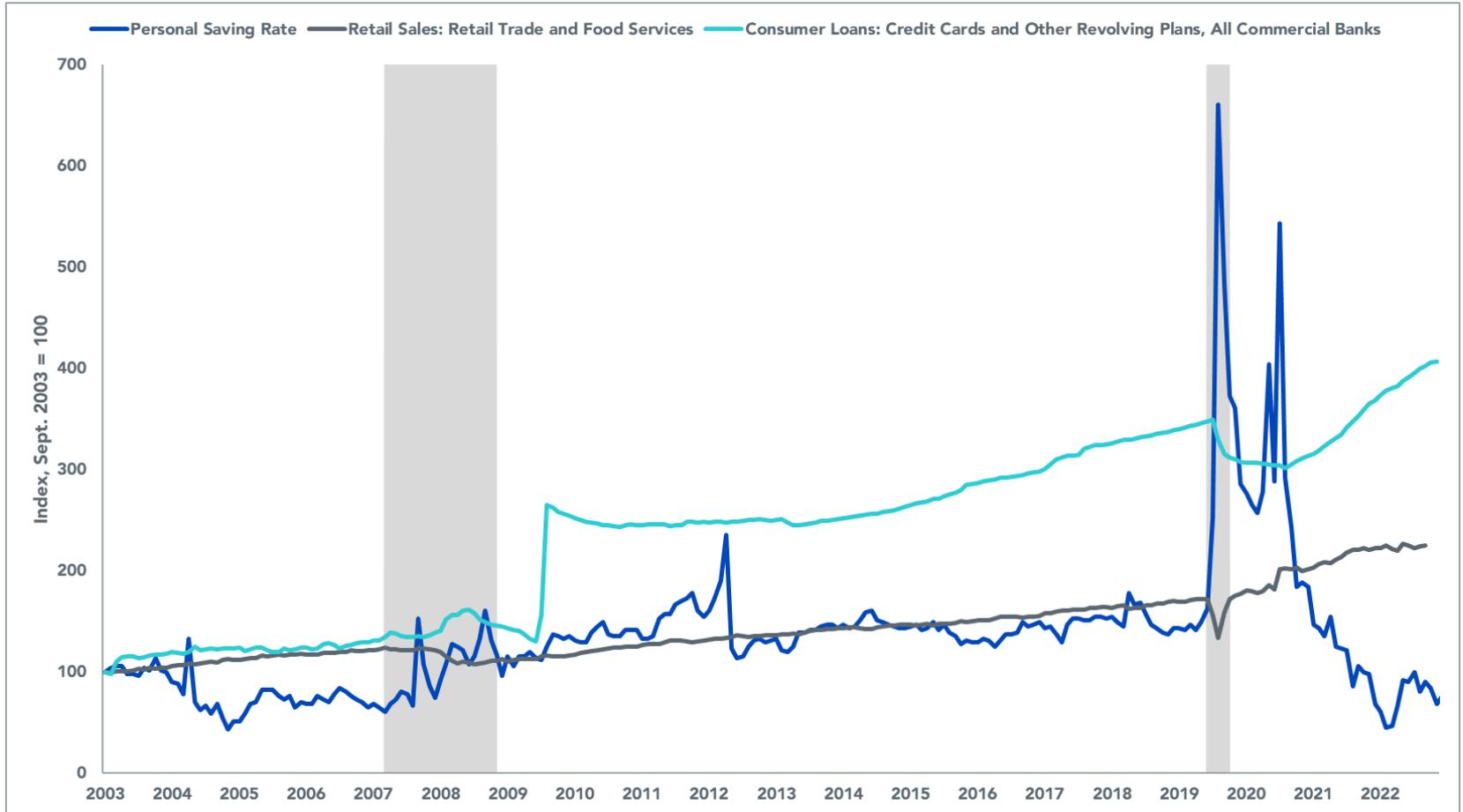
Source: Left hand chart illustrates Global PMI, from JP Morgan and Trading Economics, through September 2023. The right-hand chart illustrates China CAIXIN Manufacturing PMI, from Trading Economics, through September 2023.

This chart measures how actual economic data comes in relative to forecasted estimates. The absolute level matters, but the trend line (or momentum) is what we watch. The current trend suggests the economy is weakening.

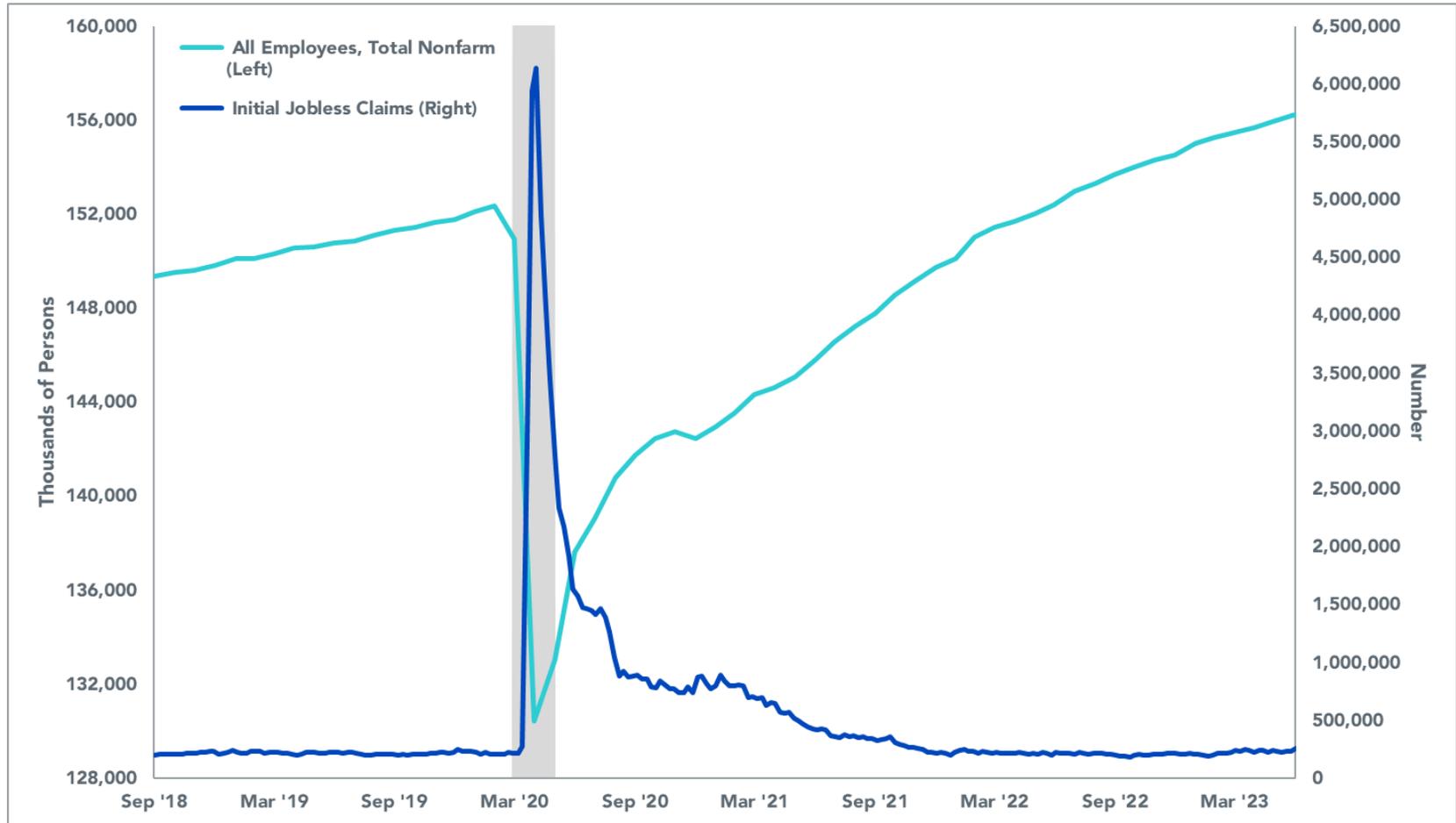
Citigroup Economic Surprise Index



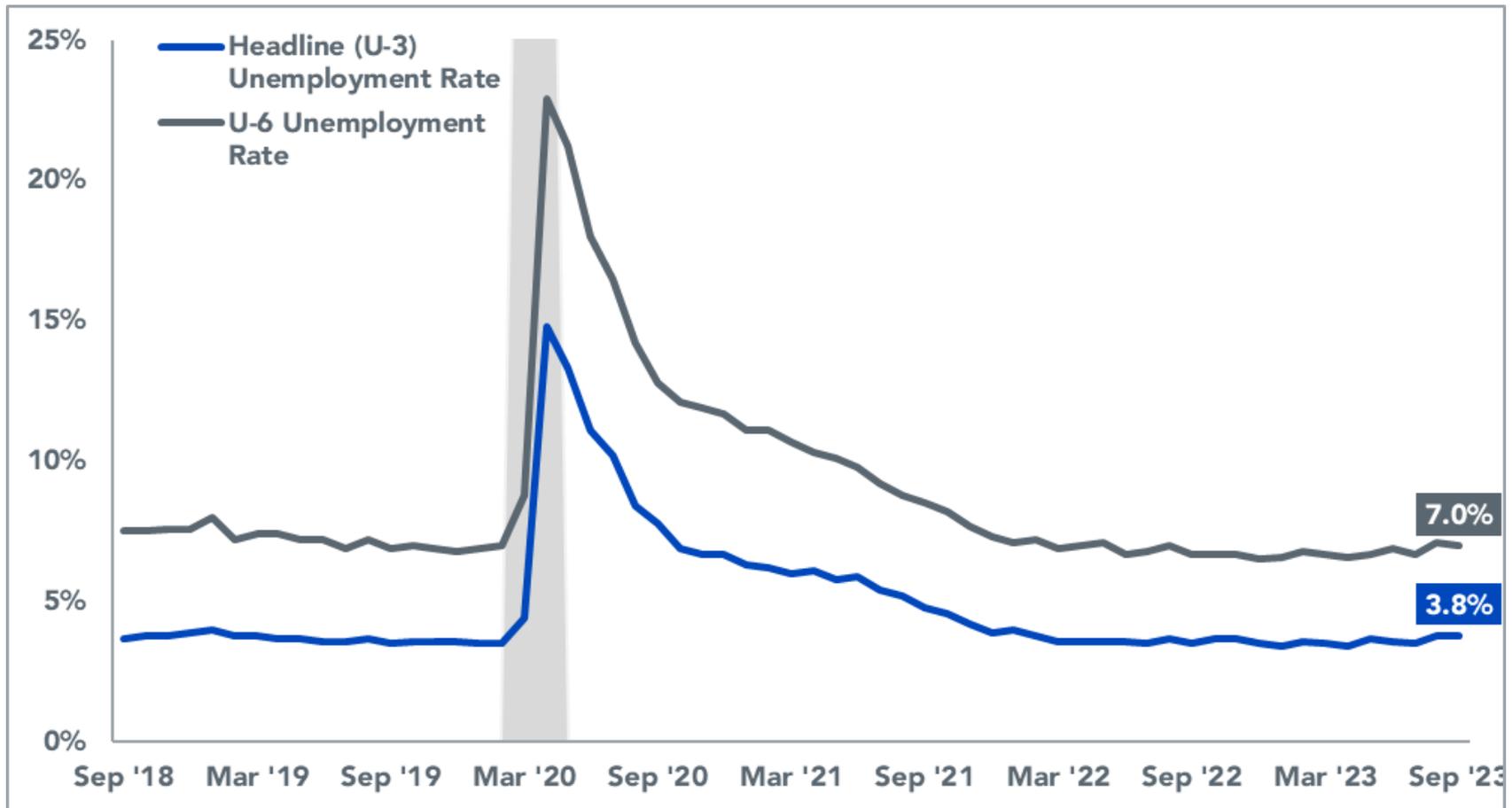
The personal savings rate (blue line) continues to decline. Retail sales (black line) continues its upward trend, but at a slowing rate, which is increasingly financed via credit card debt (teal line). Ultimately, this is not sustainable...something will have to give.



At the headline level, the labor market in the U.S. remains very solid in the wake of a more-resilient-than-expected economy. This seems to be frustrating the Fed, which (we believe) would like to end its rate hike policies but remains concerned that doing so before the labor market cools down might trigger another round of inflation.



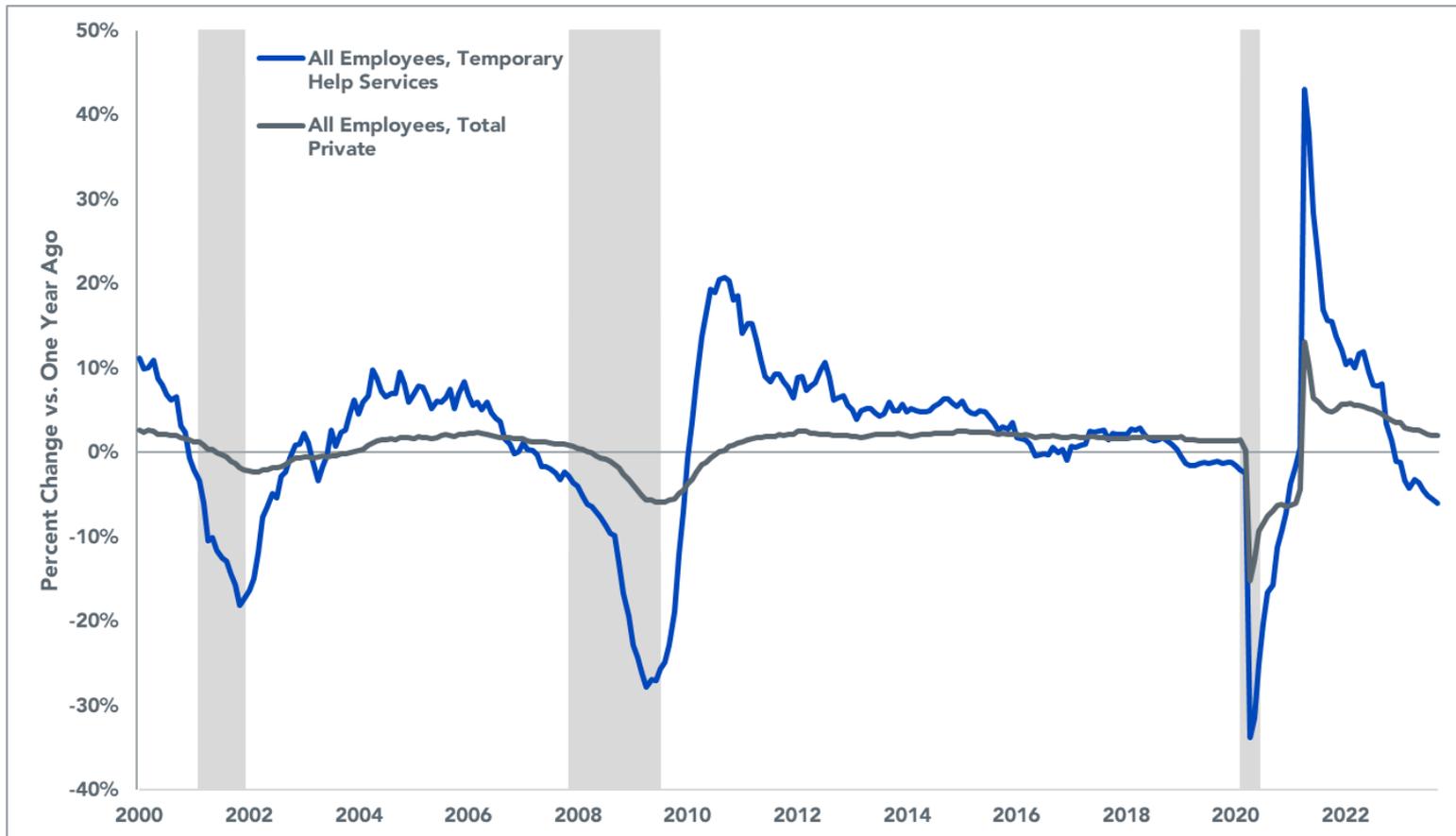
As mentioned, both the headline (“U-3”) and “partially employed” (“U-6”) unemployment levels signal a continued strong labor market, as do recent “JOLTs” (Job Openings and Labor Turnover) and ADP employment reports.



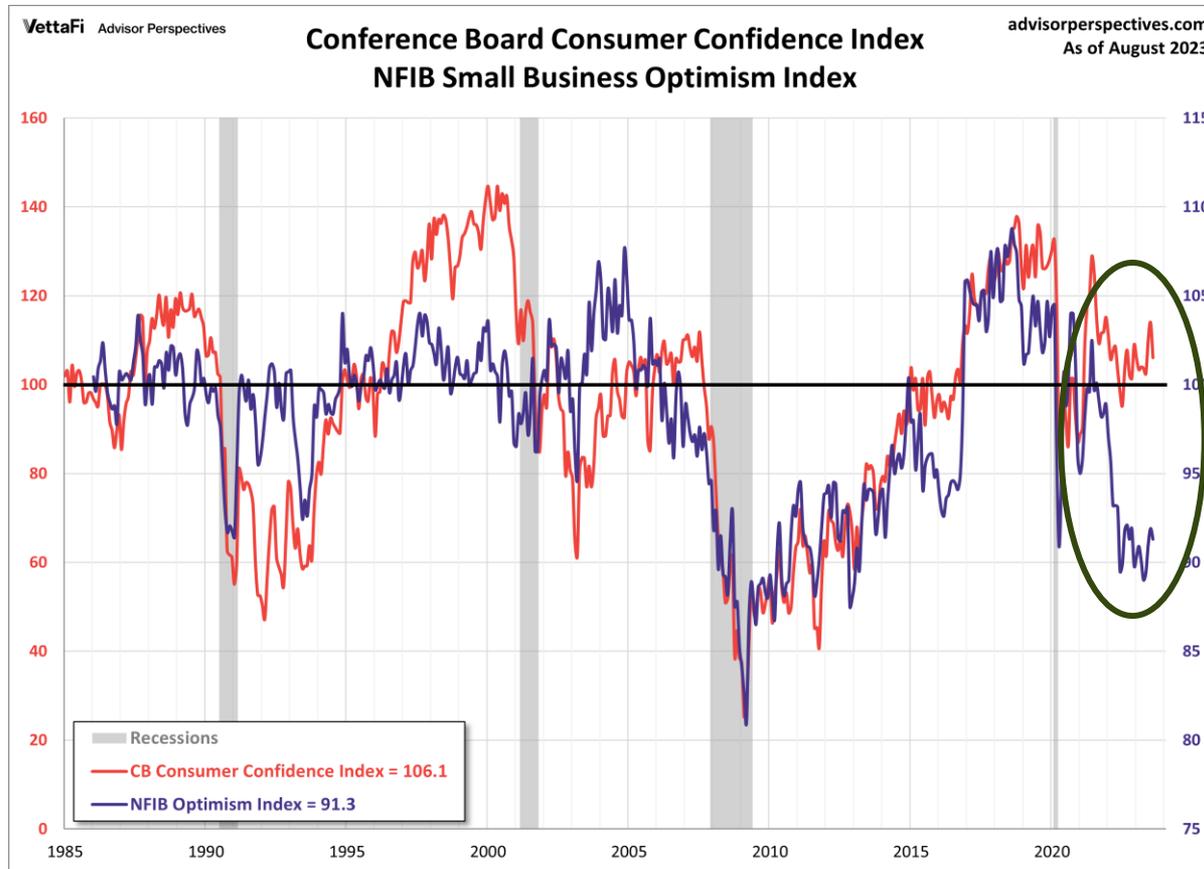
We find it useful, however, to also look at “the numbers behind the numbers.” Job openings have reversed trend and are ticking back up, but both the “hires” and “quits” rates are trending in the wrong direction.



As an interesting sidenote, the “Temporary Help Services” indicator (blue line) is more volatile than the headline total employment number (gray line), but also seems to be a reasonable leading indicator. So, its downward trend is worth watching.



Consumers (red line) and small business owners (blue line) are diverging in their sentiment, with consumers more optimistic (but trending downward), though both remain concerned about inflation, interest rates, and the economy. Small business owners (who drive ~50% of GDP growth) are especially concerned and are adjusting their hiring plans accordingly.

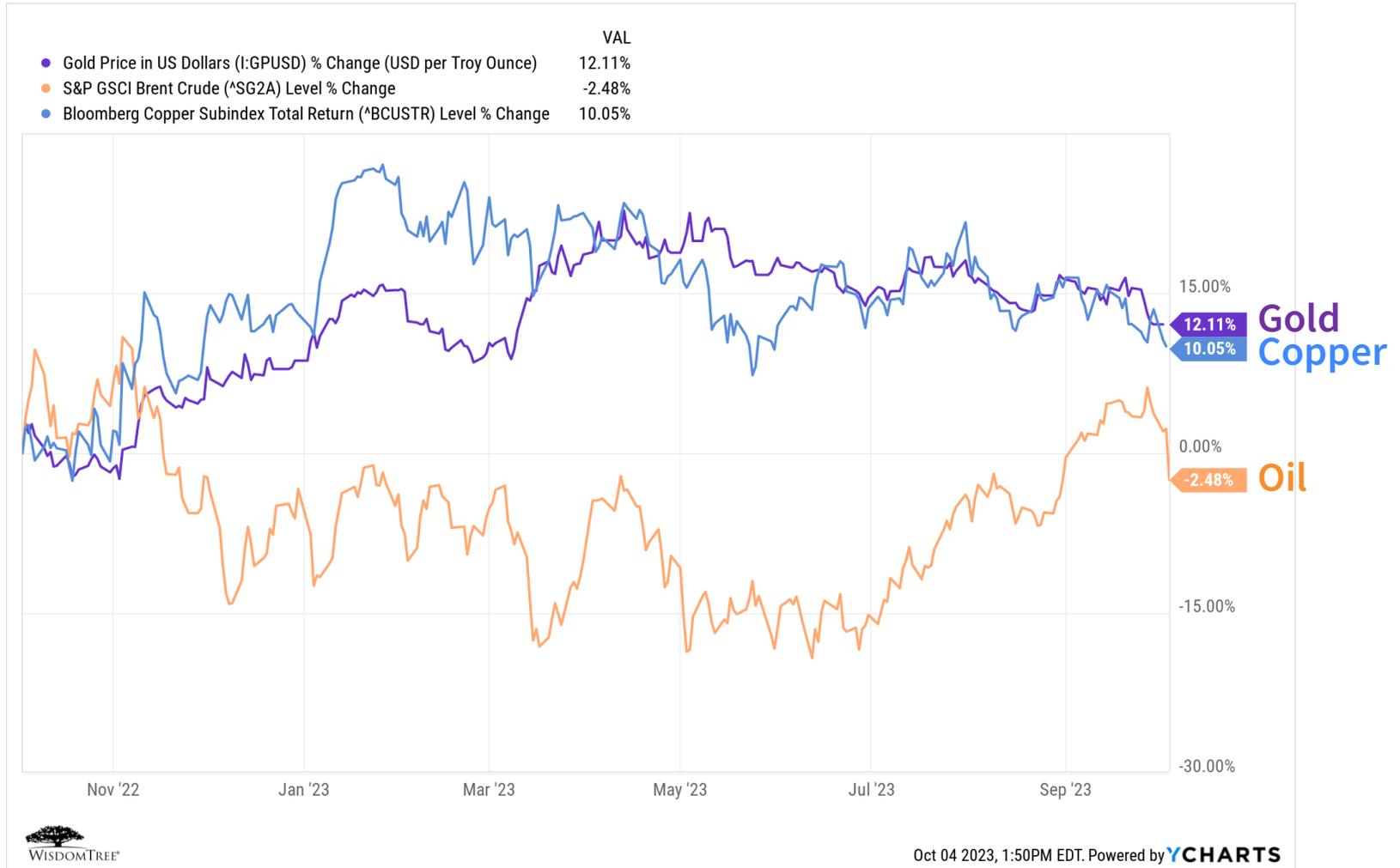


NFIB Research Foundation has collected Small Business Economic Trends Data with Quarterly surveys since 1973 and monthly surveys since 1986. The sample is drawn from the membership files of the National Federation of Independent Business (NFIB).

The dollar is on a tear. Based on the relative strength of the U.S. vs. other economies, as well as the general Fed and bond investor sentiment regarding rates, we don't see this changing anytime soon.

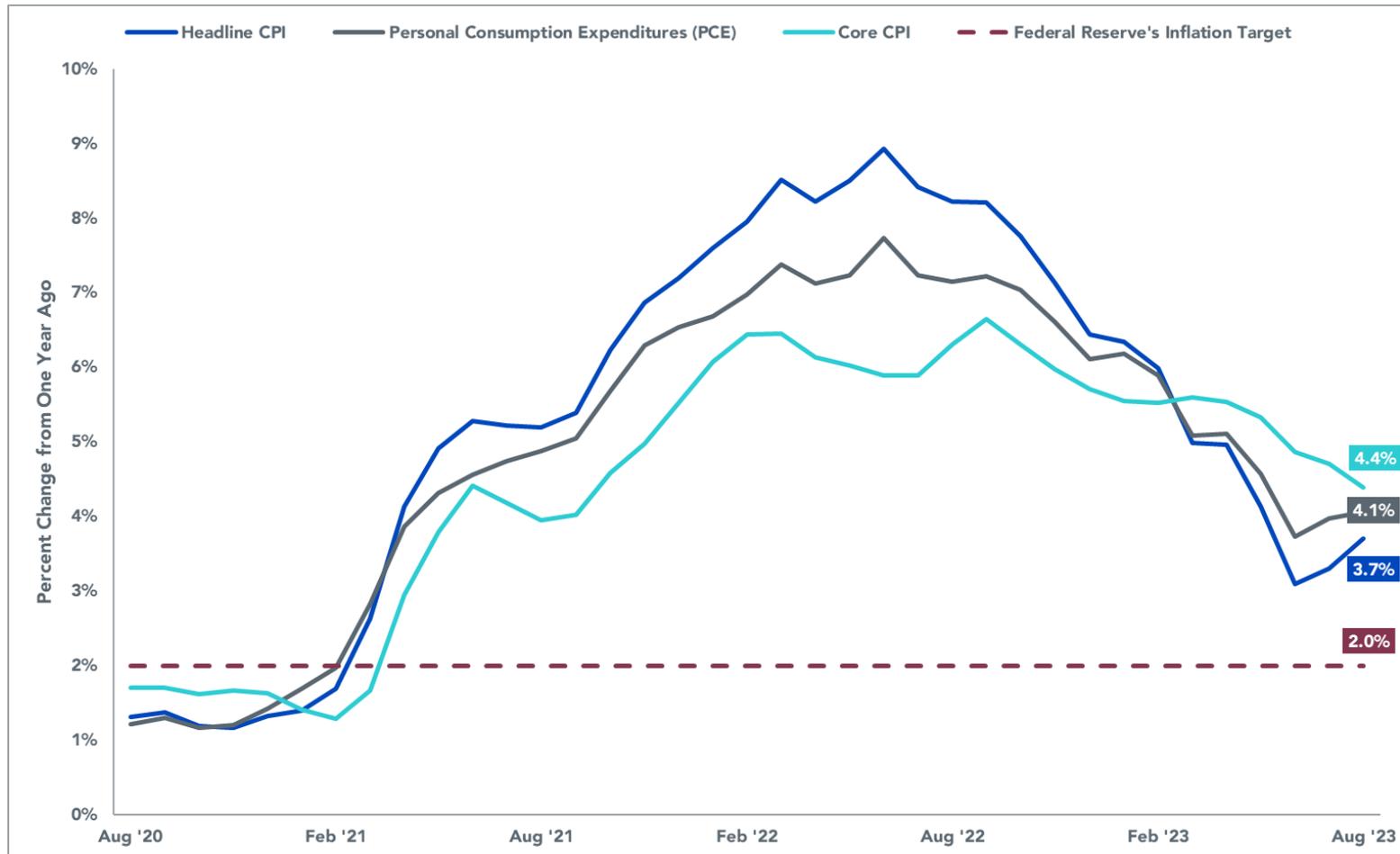


Oil is also on a tear, driven by announced production cuts from global providers, though it has fallen recently as demand slows. Copper is declining as the global economy, especially China, slows down. Gold is fading as real interest rates rise around the globe.



Source: Ycharts, 12-month data through October 3, 2023. You cannot invest in an index and past performance does not guarantee future results.

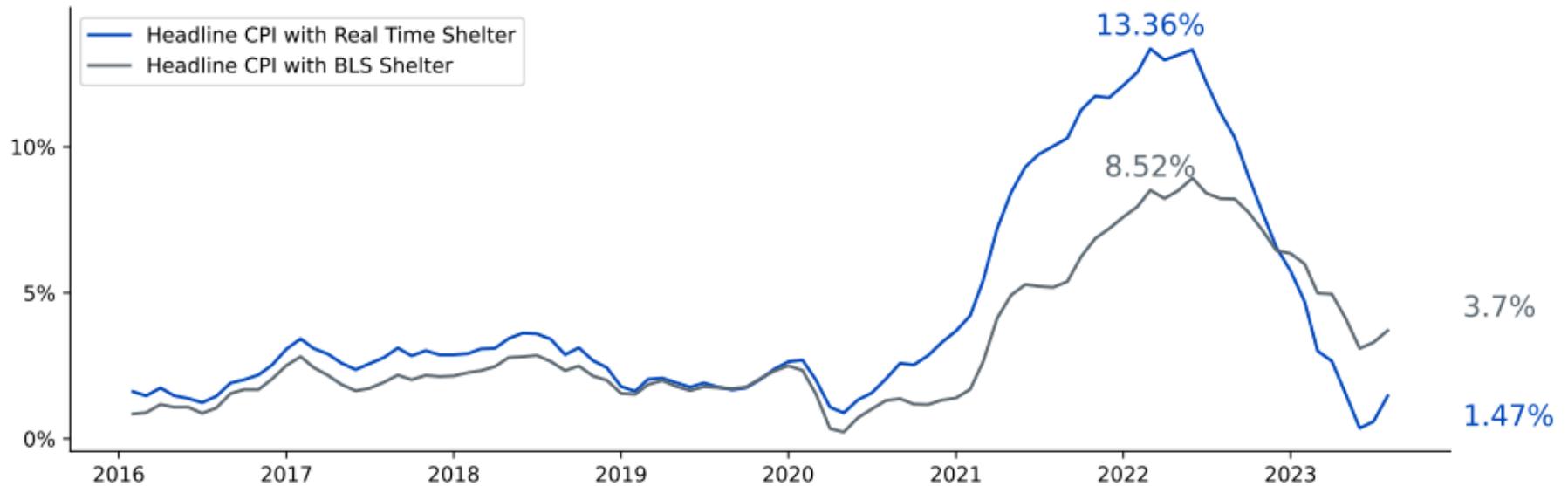
Inflation is falling but remains above the historical Fed “target rate” of 2%. However, if you examine the data using current “housing and shelter” numbers (versus the 6-month lagged data in the headline number), inflation seems well under control—we think the Fed may be making a mistake if they continue to raise rates, since there typically is a lag between the policy move and its impact on the economy.



Source: WisdomTree, Federal Reserve Bank of St. Louis (FRED), with most recent data available through September 2023.

If inflation is calculated using contemporaneous shelter/housing data, versus the 6-9 month lagged data used for the headline CPI, we see a different picture.

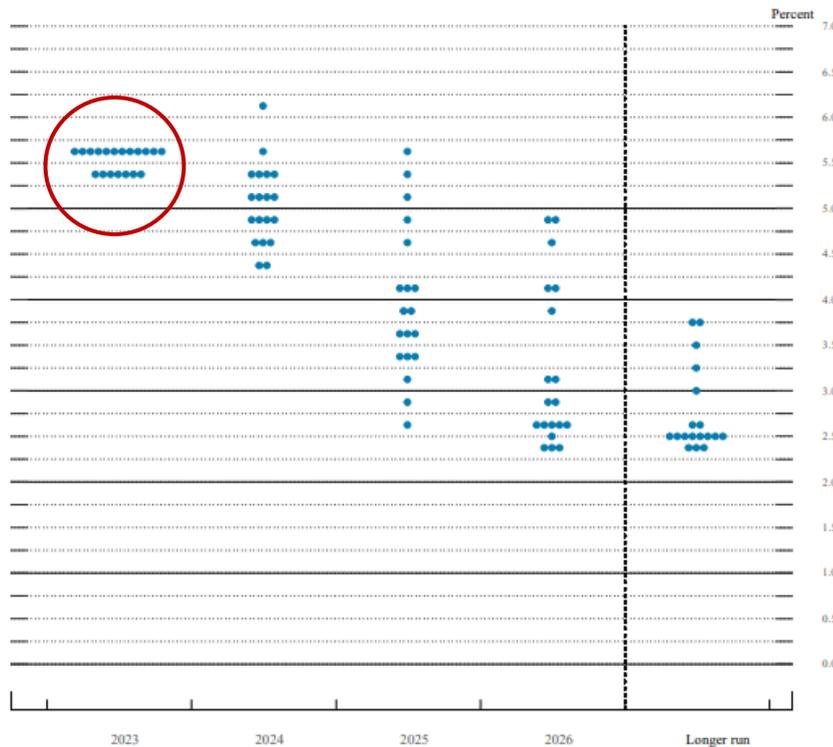
Trailing 12M Headline Inflation: with Alternative Shelter Metrics



Source: WisdomTree, through September 30, 2023. CPI data from BLS. Alternative measures of shelter include replacement Primary Rent with Zillow Rental Index and BLS Owners' Equivalent Rent with Case Shiller Housing Data.

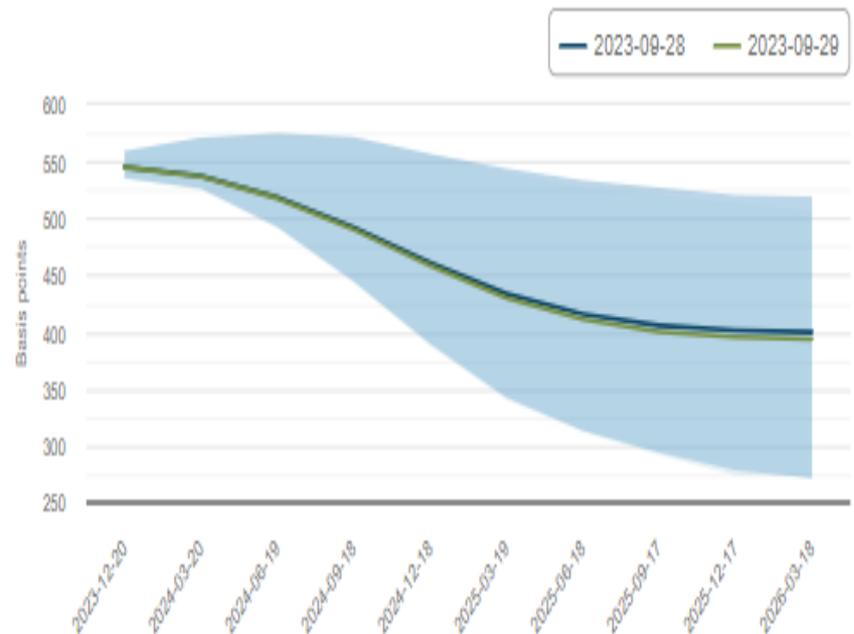
The chart on the left is the Fed “dot plot”—an (anonymous) dot represents where each active Fed official forecasts the Fed funds rate to be at different points in time. This chart suggests the Fed will remain “higher for longer” as it combats inflation. The chart on the right, however, is the Fed funds futures market, which seems to be pricing in that the Fed will back off over the next twelve months, suggesting the market believes we are at, or near, the end of the Fed rate hike cycle.

FOMC participants assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate.



The Expected Three-Month Average SOFR Path

Current target range: 525 - 550 basis points



Source: Left-Hand Chart is Financial Express and the Fed Board of Governors, as of September 2023. The Fed’s dot plot is a chart that records each Fed official’s projection for the central bank’s key short-term interest rate. The dots reflect what each U.S. central banker thinks will be the appropriate midpoint of the [Fed funds rate](#) at the end of each calendar year three years into the future, should the economy evolve as they expect. On the Y-axis is the fed funds rate, and on the X-axis is the year for which officials gave their forecast.

The right-hand-chart is sourced from the Atlanta Federal Reserve Bank., as September 30, 2023. This chart illustrates the market-implied probabilities of various ranges for the three-month average Fed funds rate. The Atlanta Fed’s methodology uses data on three-month Eurodollar futures, options on three-month Eurodollar futures from the [Chicago Mercantile Exchange \(CME\)](#), three-month LIBOR/Fed funds basis swap spreads expiring in 12 months, and the [Treasury yield curve](#).

Inflation is falling and wages have “caught up”, which should be positive for consumption. The current multiple labor strikes will have an impact on this relationship. Wage inflation is “sticky” – once you agree to pay someone more, it is hard to walk that back.

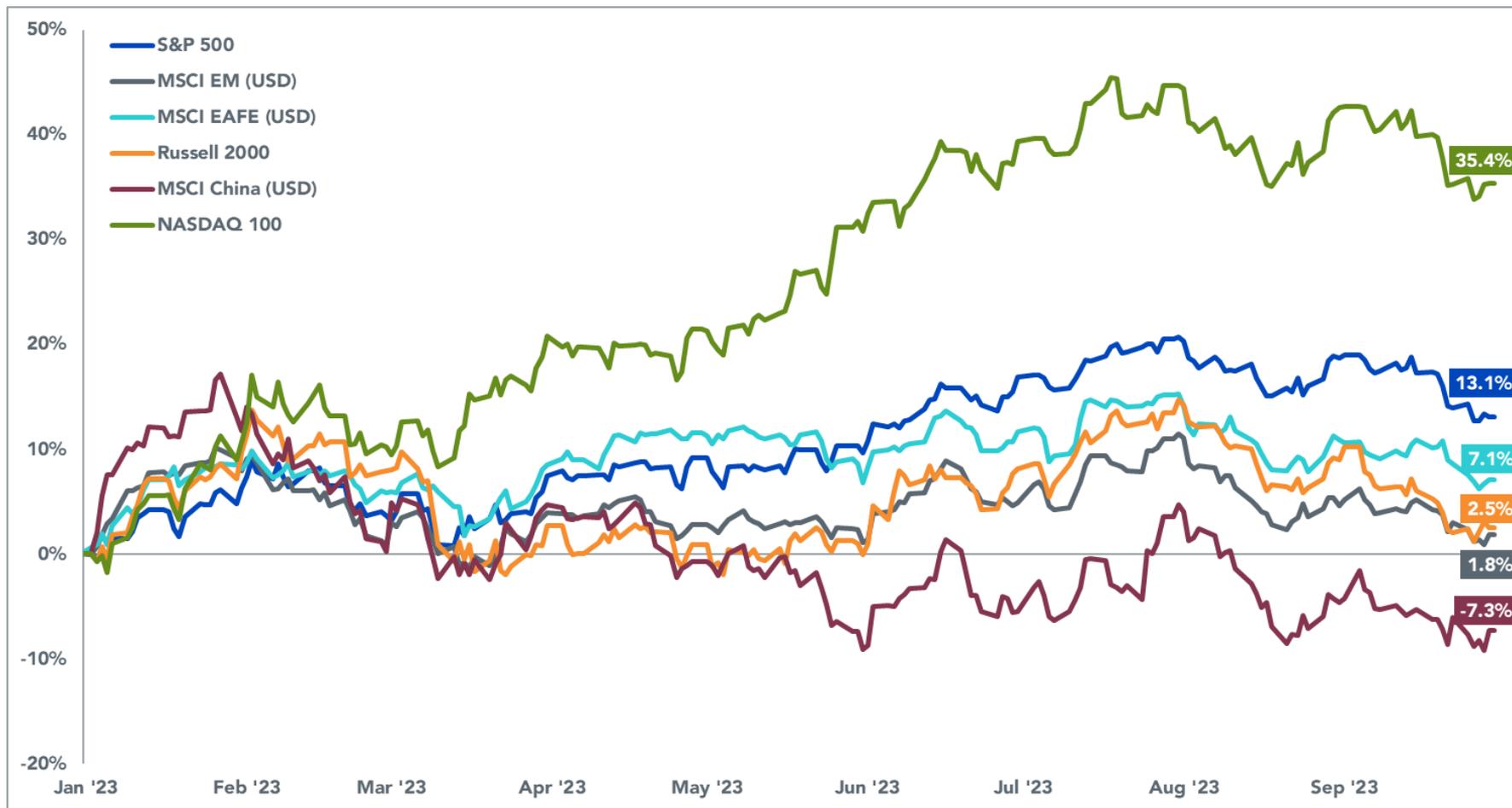


Economic Outlook Summary

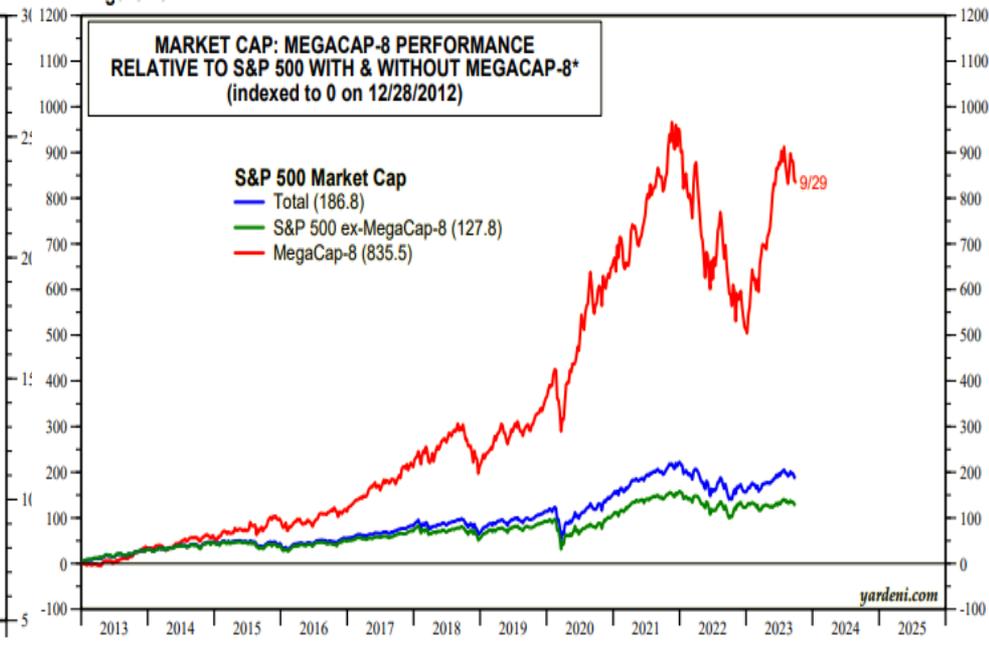
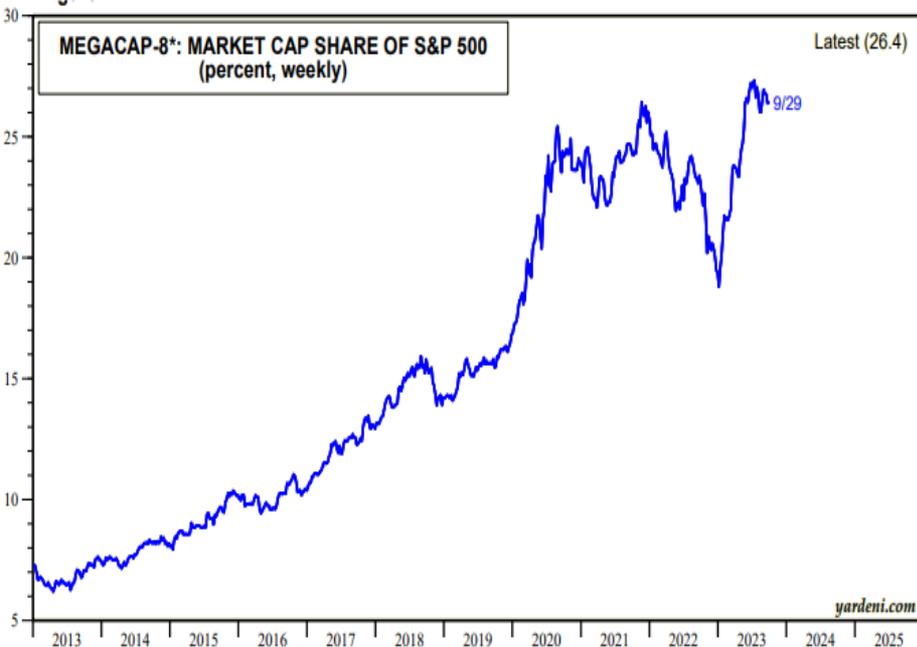
- + The U.S. and global economies are slowing but remain positive. U.S. labor market and consumption trends remain solid.
- + The Fed (for now) maintains its “data dependent” position, but the consensus is for at least one more rate hike over the next several months. We believe we are at or near the end of the rate hike cycle.
- + Fed policy, some economic indicators, and the inverted yield curve may still suggest a recession, but we face the possibility of a “soft landing.” We also think the “start date” for any potential recession consistently moves outward—in our opinion, maybe not until the second half of 2024 or later.
- + The “known unknowns” are geo-politics, specifically the ongoing Russia/Ukraine war and continued tensions between the U.S. and China, as well as the political dysfunction in Washington, D.C.

Equity Outlook

The “mega-cap tech” growth rally is fading as interest rates rise—as we suggested it might. But it still dominates YTD performance. We still like smaller cap, quality, value, and dividend paying stocks over the medium and longer term.



But, for now, it remains a market dominated by mega-cap tech artificial intelligence (“AI”) stocks...



* MegaCap-8 stocks include Alphabet, Amazon, Apple, Meta, Microsoft, Netflix, NVIDIA, and Tesla. Both classes of Alphabet are included. Source: Standard & Poor's and I/B/E/S data by Refinitiv.

* MegaCap-8 stocks include Alphabet, Amazon, Apple, Meta, Microsoft, Netflix, NVIDIA, and Tesla. Both classes of Alphabet are included. Source: Standard & Poor's and Yardeni Research Inc.

In Q3 we began to see a “re-rotation” back to value and, to a lesser degree, quality and dividends. Small caps continue to underperform, but the relative valuations are becoming significant.

U.S. Large Cap

Fundametrics Models: 13 Weeks Ending September 29, 2023



Source: Fundametrics research, excluding REITs
*Factor top 30% return relative to the equal weight US Large Cap universe

U.S. Small Cap

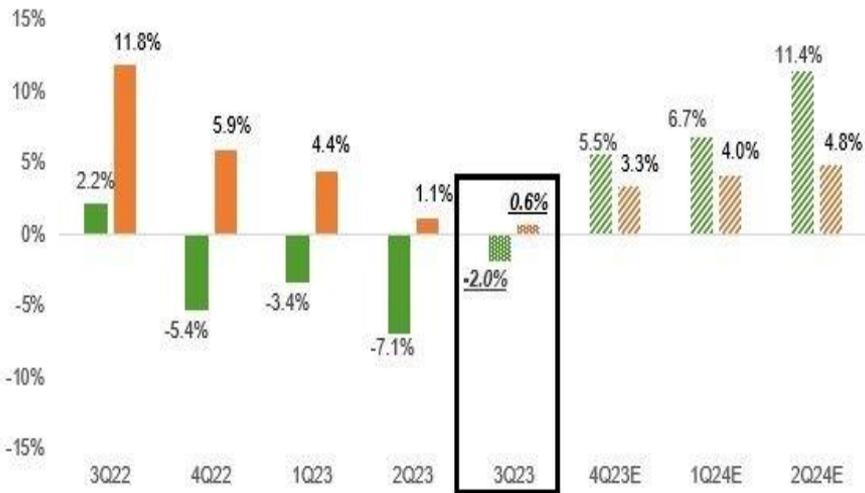
Fundametrics Models: 13 Weeks Ending September 29, 2023



Source: Fundametrics research, excluding REITs
*Factor top 30% return relative to the equal weight US Small universe

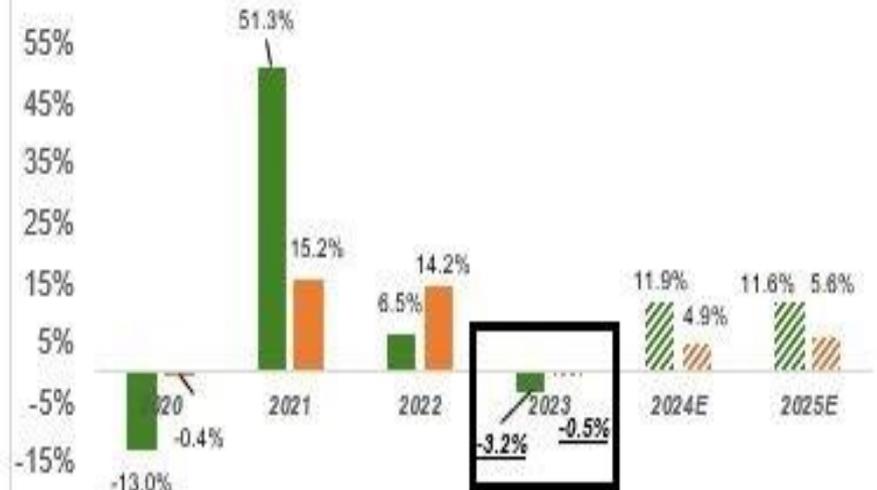
The Q3 earnings season is just beginning. Most analysts are forecasting an earnings decline but anticipate improved earnings over the next several quarters.

Quarterly Earnings & Revenue Growth (YoY)



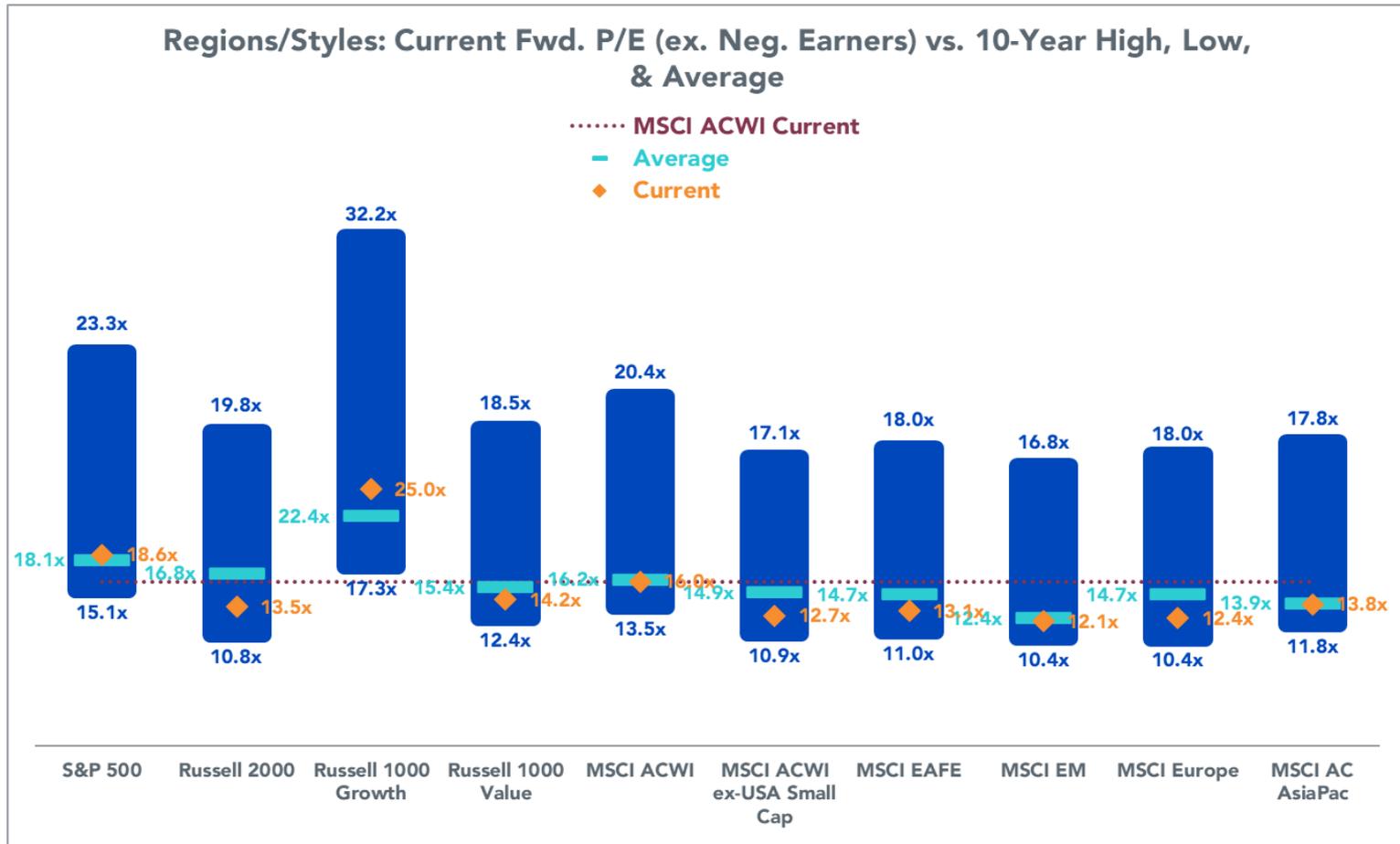
Source: Zacks Investment Research, Inc.

Annual Earnings & Revenue Growth Rate - S&P 500



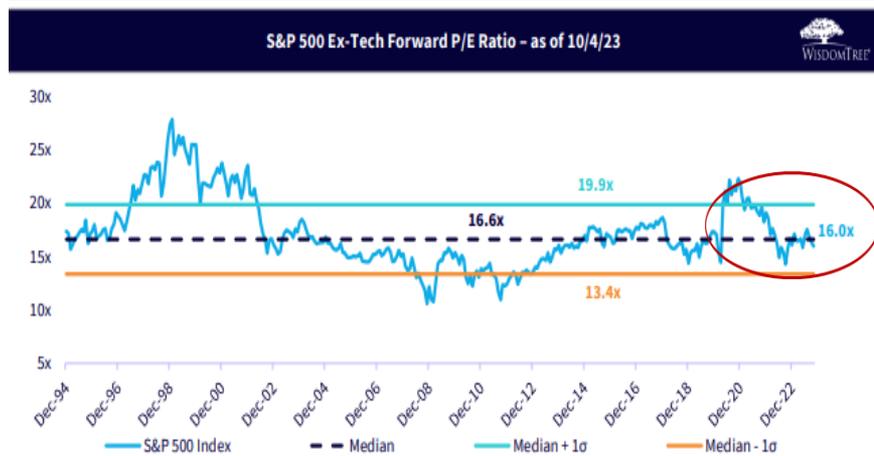
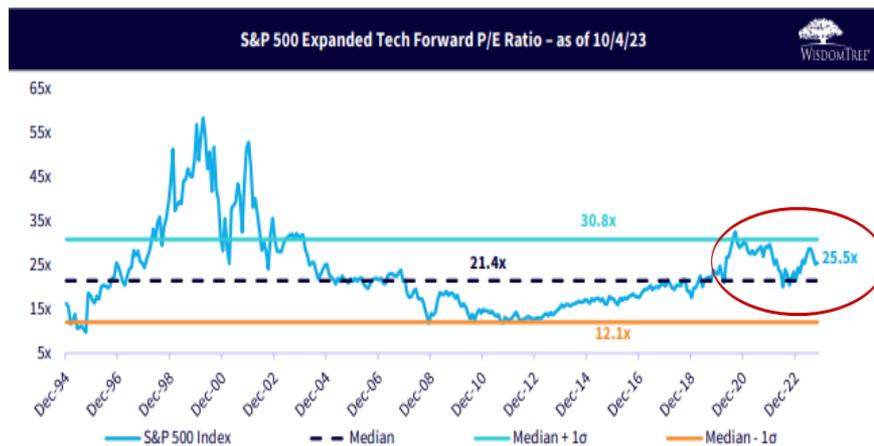
Source: Zacks Investment Research, Inc.

Market valuations are not a “screaming buy” but, outside of U.S. growth stocks, most valuations are in line with or below historical averages. There does appear to be relative value in global small caps.



Source: WisdomTree, FactSet as of 9/30/2023. You cannot invest directly in an index.

The “expanded tech stocks” still look richly valued, even after their recent “fade” as rates have risen. Small cap value stocks are discounted both relative to large cap stocks and to historical averages.



Russell Style Index Price-to-Earnings relative to History as of 10/4/23

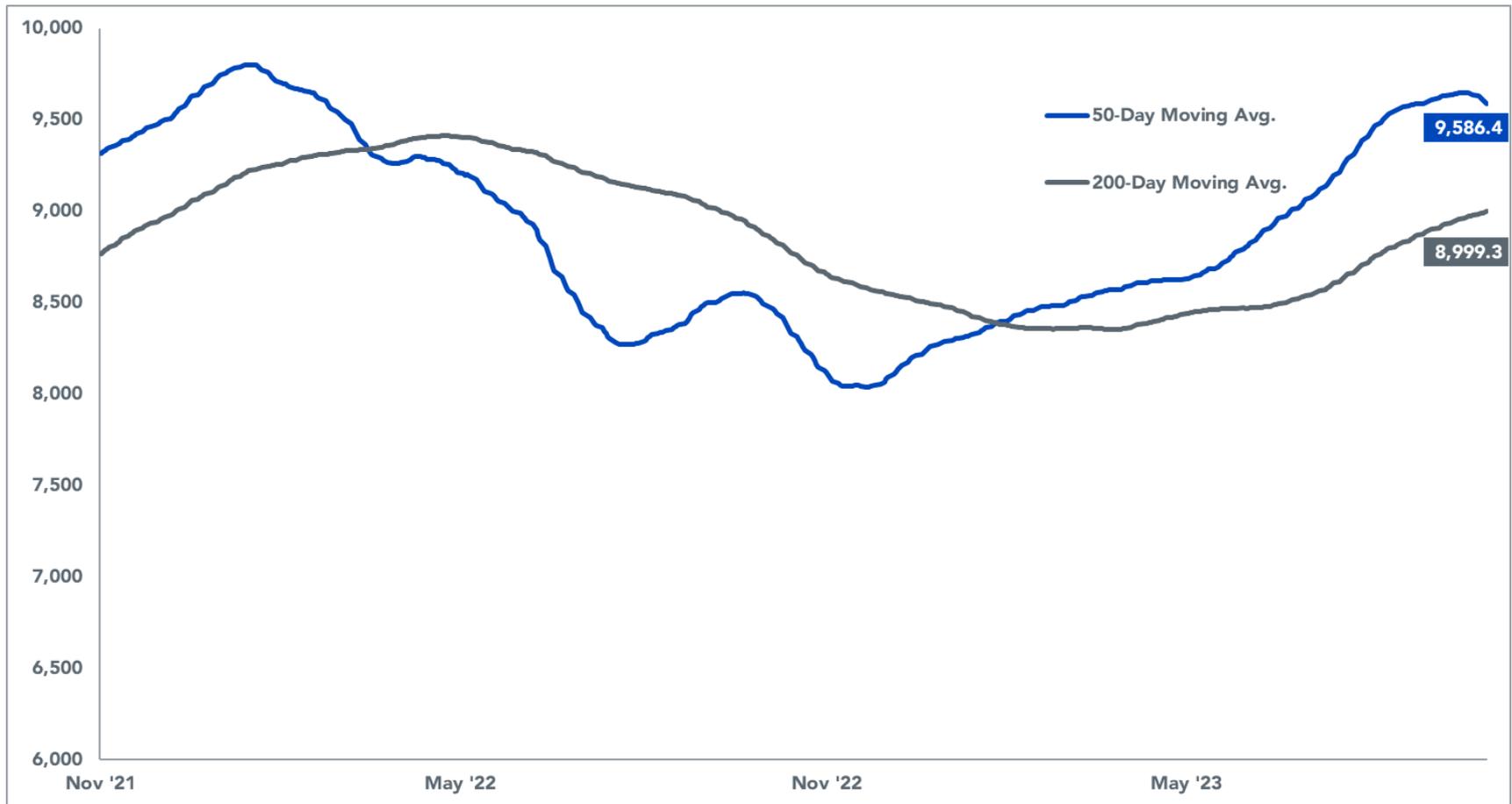
	Current Valuation / Historical Median since 4/30/02		
	Value	Blend	Growth
Large	14.3x / 14.7x	18.7x / 16.8x	25.5x / 19.4x
Mid	14.5x / 16.1x	16.6x / 17.9x	25.4x / 20.9x
Small	16.2x / 18.4x	21.9x / 23.0x	34.3x / 28.8x

	Current Valuation as Percent of Historical Median since 4/30/02		
	Value	Blend	Growth
Large	97.7%	111.5%	131.3%
Mid	90.0%	92.7%	121.4%
Small	87.7%	95.0%	119.2%

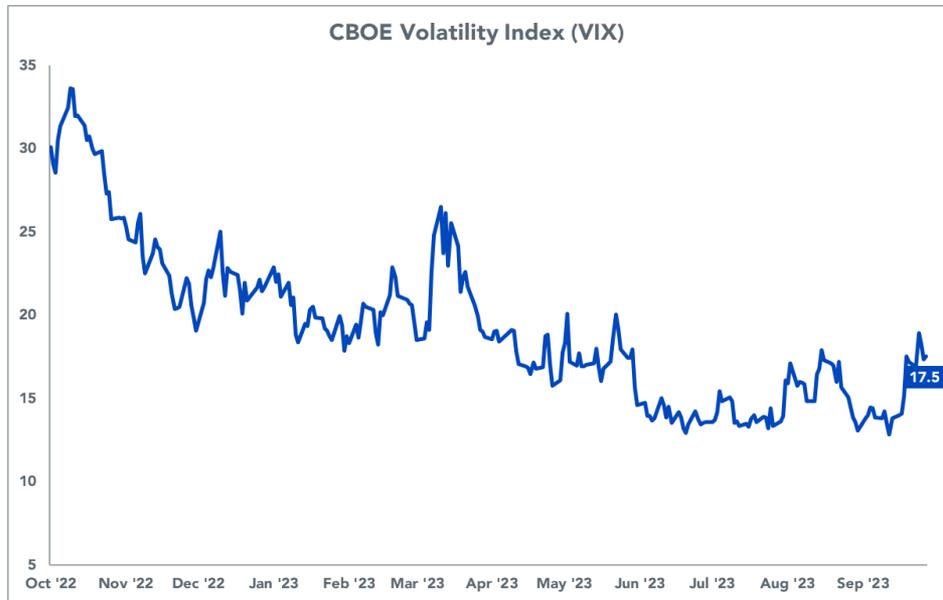
Source: WisdomTree, FactSet, Russell. Large-, mid-, and small-cap indexes are the Russell 1000, Russell Midcap, and Russell 2000 Indexes, respectively, and their corresponding growth and value style indexes. Price to earnings measured by estimated price-to-earnings ratios. You cannot invest directly in an index.

Source: WisdomTree, FactSet, S&P, as of October 4, 2023. You cannot invest directly in an index. Historical forward P/E measured since 12/31/1994. Expanded Tech includes the Information Technology sector, Interactive Home Entertainment subindustry, Interactive Media & Services subindustry, Amazon, E-Bay, Etsy, and Netflix. Ex-Tech excludes the expanded tech companies.

As measured by the 50-day / 200-day moving averages, equity market momentum remains solidly in positive territory, though it has declined over the past several weeks as interest rates have risen.

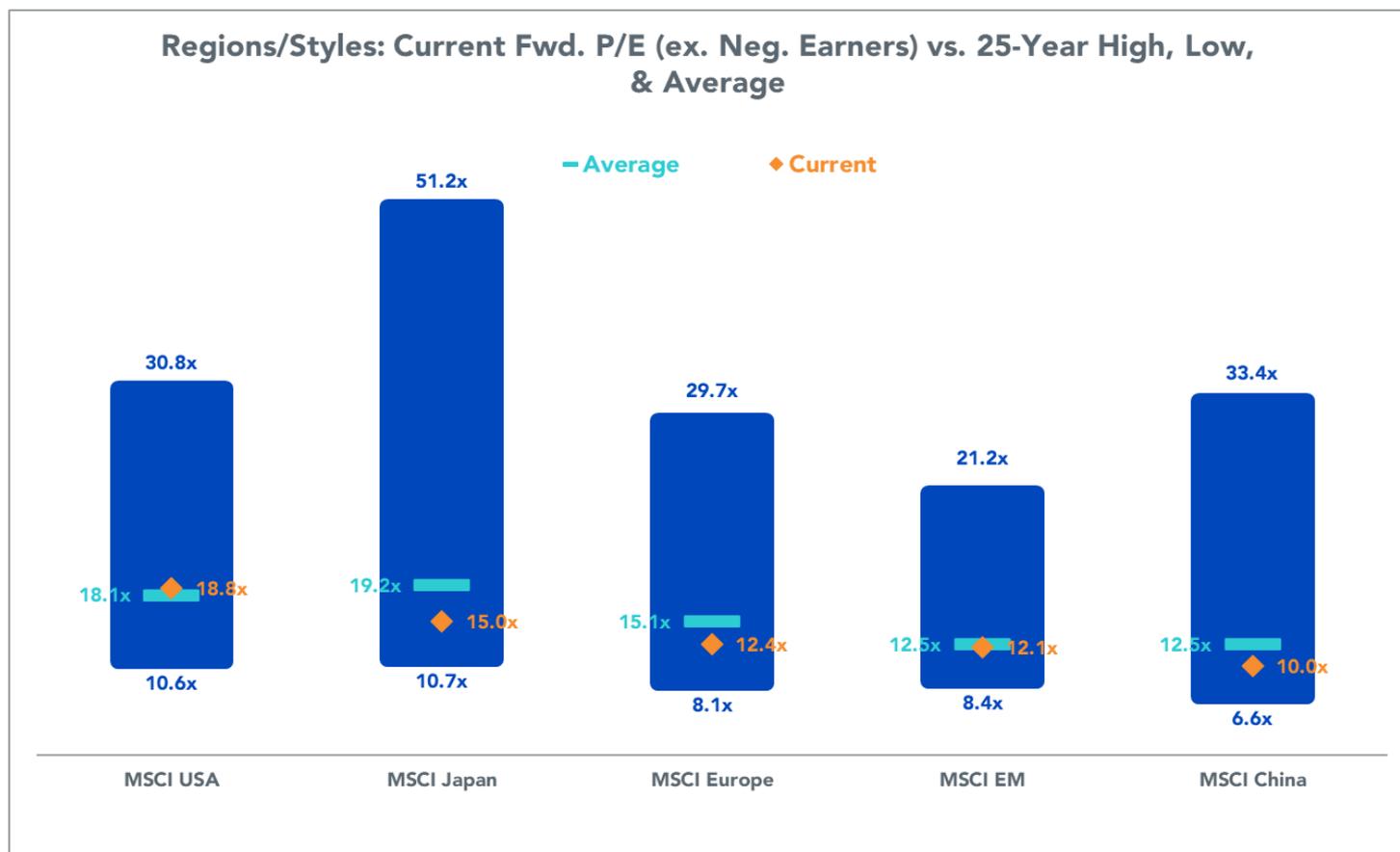


Equity market volatility, as measured by the “VIX” (left chart), has risen recently (as we thought it would) but still remains fairly low by historical standards. After increasing over the past several years, bond market volatility, as measured by the “MOVE” index (right chart), has fallen over the past several weeks, despite the rise in rates.

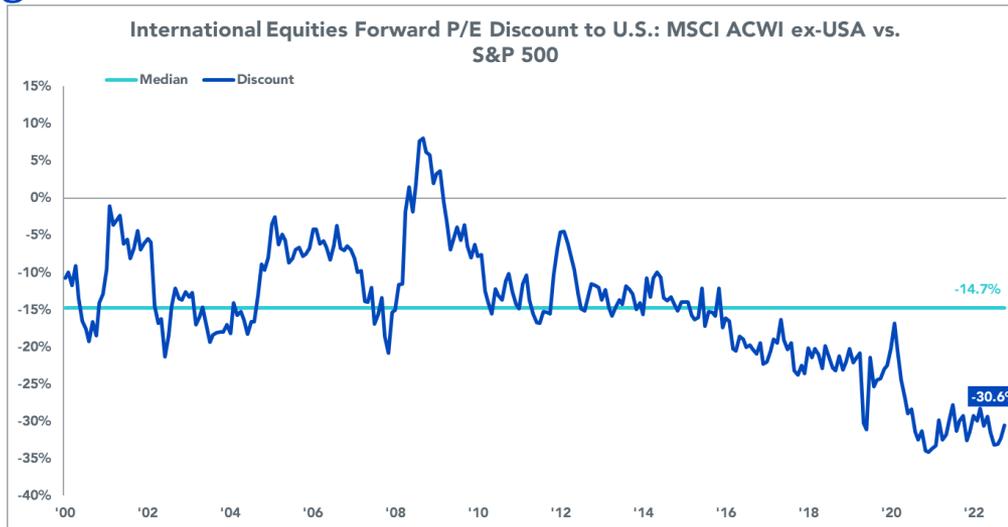


Source: Left chart: WisdomTree and FactSet, through September 30, 2023. The CBOE (Chicago Board of Exchange) Volatility Index, or VIX, is a real-time market index representing the market's expectations for volatility over the coming 30 days. Investors use the VIX to measure the level of risk, fear, or stress in the market when making investment decisions. You cannot invest in an index, and past performance is no guarantee of future results. Right chart: Yahoo!Finance, as of October 4, 2023. The MOVE index is a market-implied measure of bond market volatility. The MOVE index calculates the implied volatility of U.S. Treasury options using a weighted average of option prices on Treasury futures across multiple maturities (2, 5, 10, and 30 years). By capturing the expected fluctuations in interest rates, the index serves as a proxy for the bond market's overall sentiment regarding future interest rate movements.

Non-U.S. valuations look attractive versus the U.S., especially in Europe and China. But we have concerns about the macro-economic outlook in both places, as well as the future direction of the U.S. dollar, and have reduced our non-U.S. equity exposures accordingly.



As we've stated in the past, if you like attractive valuations and dividends (two primary investment themes for WisdomTree), non-U.S. markets continue to look interesting. But we don't love the macro-economic outlook or the upward trend in the U.S. dollar right now.



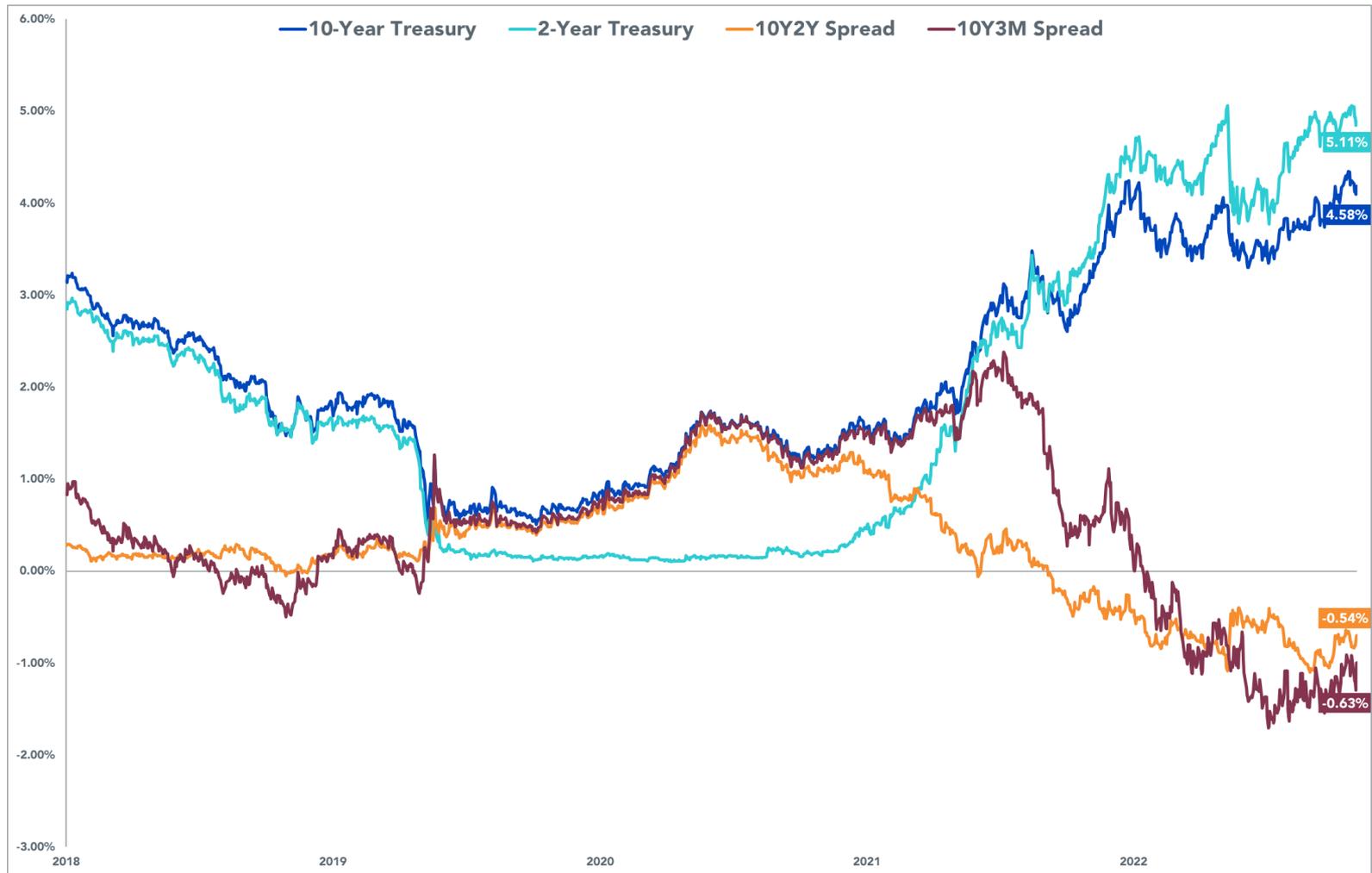
Source: WisdomTree and FactSet, as of September 30, 2023.

Equity Market Summary

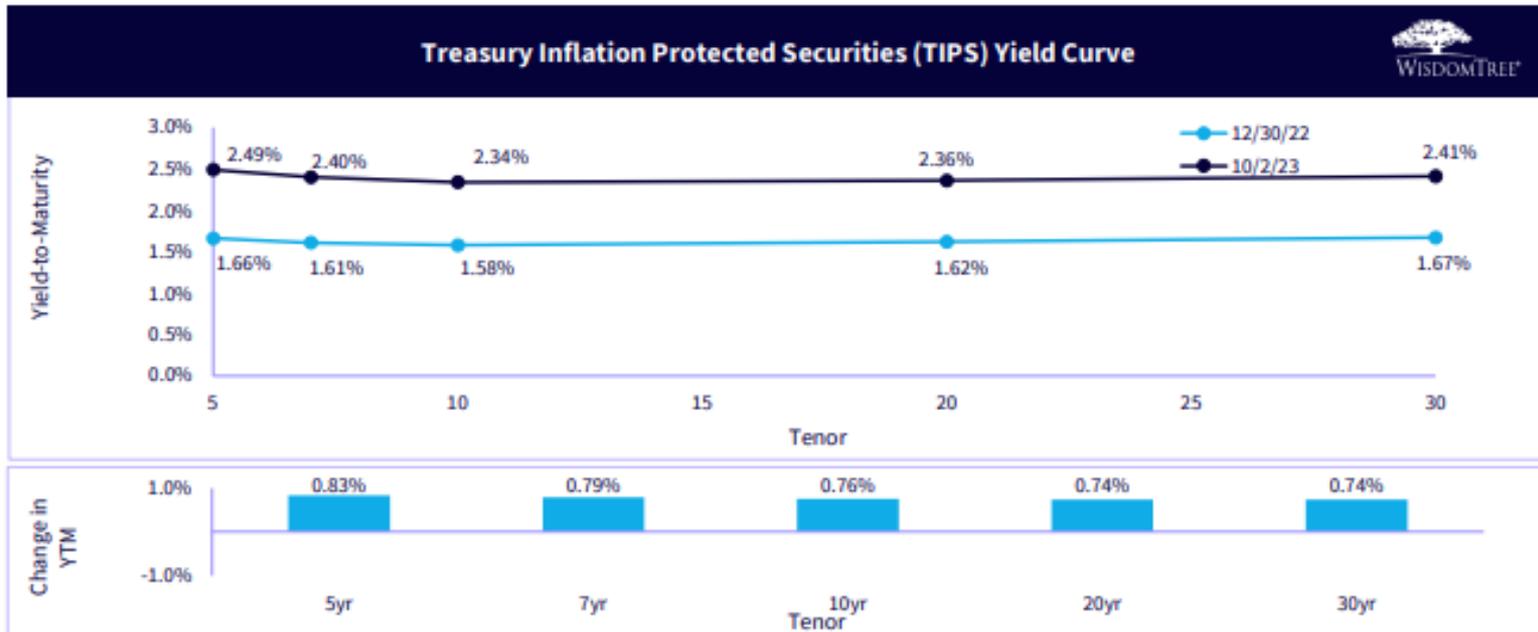
- + The equity market continues to be dominated YTD by mega-cap tech stocks, but we believe that trade is beginning to fade as interest rates rise—something we’ve anticipated for some time.
- + Small cap stocks continue to disappoint, but we think that a “relative value” re-rotation may be coming. We are starting to see that re-rotation in value and dividend stocks, though we maintain our belief in risk factor diversification.
- + We believe “quality” companies with stronger earnings, balance sheets, and cash flows will remain a primary performance-driving factor and our equity portfolios continue to have “anchor” exposures to this risk factor.
- + Due to macro-economic concerns and the current trend in the U.S. dollar, we made the decision to reduce our non-U.S. exposures (both EAFE and EM) and move to an overweight position in the U.S. We maintain our benchmark-relative overweight allocations to small cap stocks, both domestically and internationally.
- + Geo-political tensions and Washington D.C. political dysfunction remain high and may influence market behavior.
- + We expect market volatility will increase as we move through the year, and we continue to suggest both asset class and risk factor diversification within our equity portfolios.

Rates & Credit Outlook

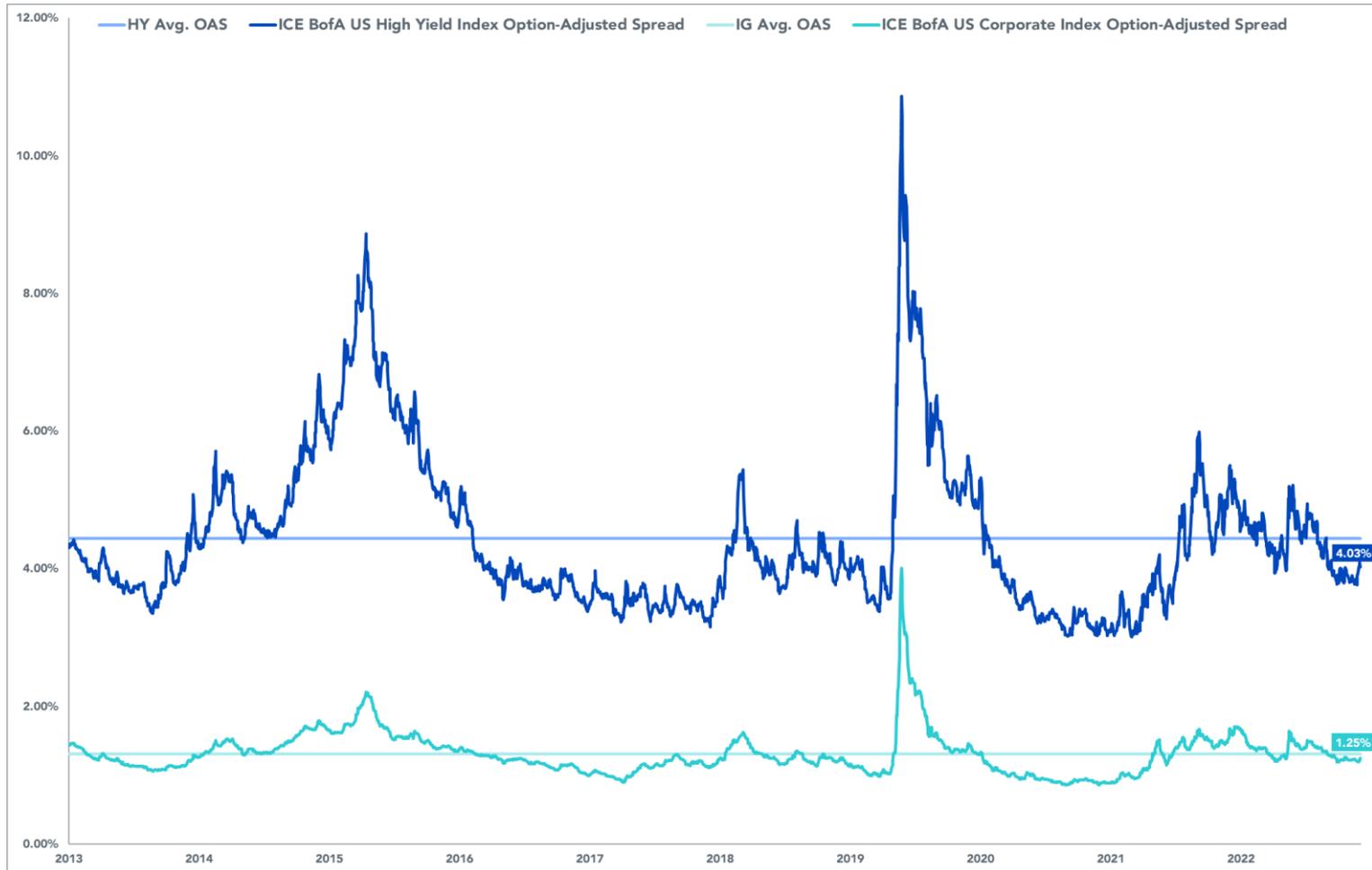
The yield curve remains inverted but may be beginning to normalize. “Higher for longer” remains our rates position, and we would still rather be “late than early” to the duration party.



U.S. Treasury real yields (nominal rate minus the inflation rate) have been solidly positive for more than a year—and we see no reason why they should trend back downward. Bond investors should consider leaning forward—there is income back in fixed income.

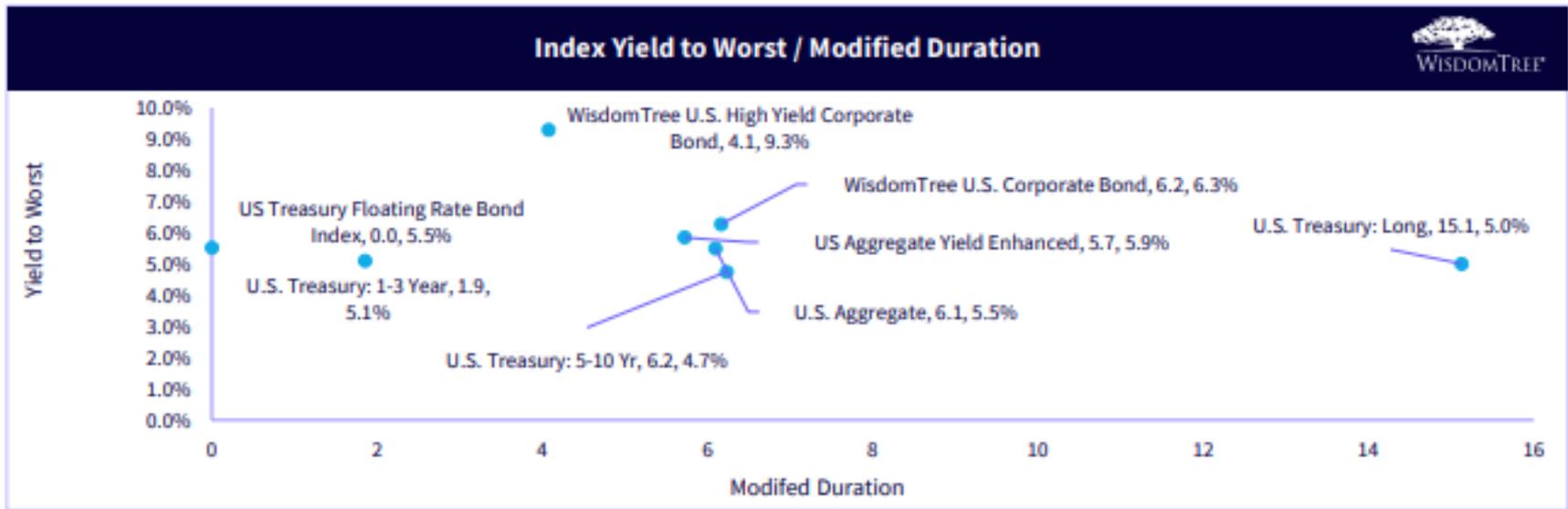


Credit spreads are in line with historical levels, despite rising default rates, suggesting the market is not panicked. Relative to the Bloomberg Aggregate index we remain short duration and overweight quality credit within our fixed income allocations. We did opt to reduce our high yield overweight exposure in favor of mortgage-backed securities within many of our fixed income allocations.



Source: WisdomTree, Federal Reserve Bank of St. Louis (FRED), with all data available through September 30, 2023.

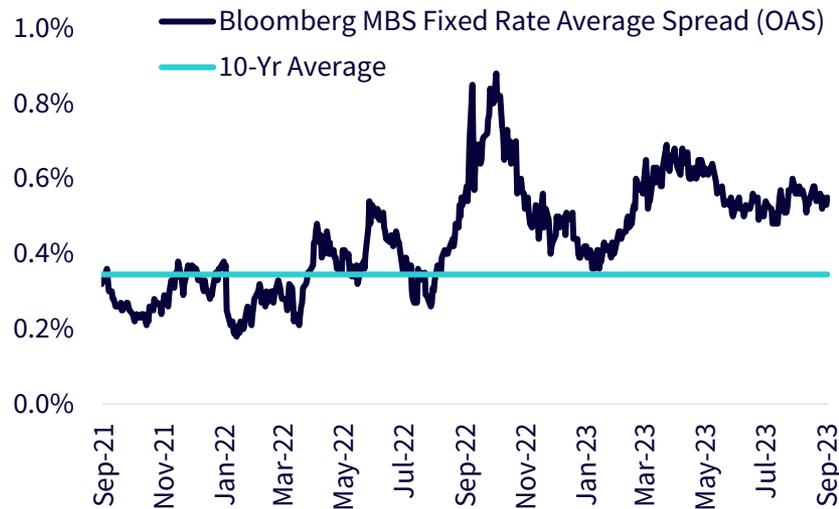
There still does not appear to be any reason to take excessive duration or credit risk – investors are not being paid to do so.



Why we selectively rotated from credit into mortgage-backed securities, but still like high yield.

- + Agency MBS offers high-quality, diversified fixed income exposure with spreads at historically attractive levels vs. long-term averages and corporate credit
- + However, high yield still provides a significant buffer for future uncertainty, and we remain modestly overweight quality-screened high yield credit

Agency MBS Spread (OAS) vs. Treasuries



1-Yr Horizon Returns: High-Yield Credit

		Spread movement (bps)				
		-100	-50	0	50	100
Rates movements (bps)	-100	13.6%	12.3%	11.0%	9.8%	8.5%
	-50	12.4%	11.1%	9.8%	8.5%	7.2%
	0	11.1%	9.8%	8.6%	7.3%	6.0%
	50	9.9%	8.6%	7.3%	6.0%	4.7%
	100	8.6%	7.3%	6.1%	4.8%	3.5%

Source: Bloomberg, as of September 19, 2023. Agency MBS Spread represented by the average Option Adjusted Spread (OAS) of the Bloomberg U.S. Agency MBS Index. Past performance is not indicative of future results. You cannot invest directly in an index.

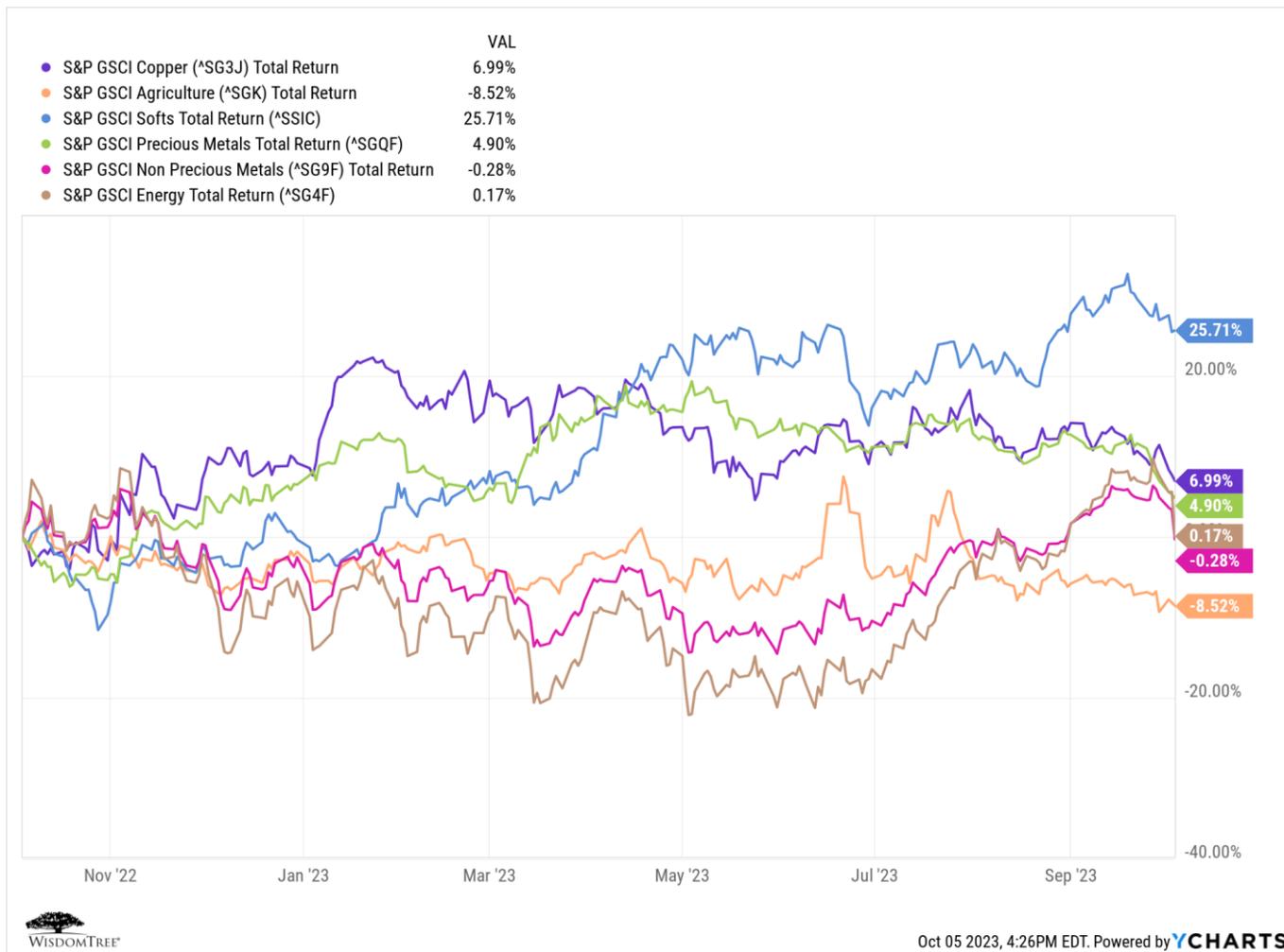
Source: Bloomberg, as of 6/21/2023. Based on yield to worst, duration, spread duration, and convexity of the Bloomberg US Corporate High Yield Index. Past performance is not indicative of future results. You cannot invest directly in an index.

Rates & Credit Market Summary

- + The Fed appears to be coming to the end of its rate hike cycle—maybe an additional rate hike in 2023. We do not anticipate any rate *cuts* anytime soon.
- + Our longer-term view is that rates will remain “higher for longer”—budget deficits, quantitative tightening, and a more-than-expected resilient economy all contribute to this view.
- + We would still rather be “late than early” to the duration trade, and we remain short duration within our fixed income portfolios relative to the Bloomberg Aggregate Bond Index. This has been a positive contributor to portfolio performance.
- + We believe there is still opportunity in U.S. floating rate Treasuries and high yield bonds. We remain overweight quality credit.
- + In our most recent Model Portfolio Investment Committee meeting, we did opt to trim some of our high yield overweight allocations in favor of what we view as a relative value trade into mortgage-backed securities.
- + For several years, investors were unable to generate much income out of their fixed income portfolios without taking on increased risk. We think those days are behind us, and advisors and investors should reevaluate (to the upside) their allocations and the role of fixed income within their portfolios.

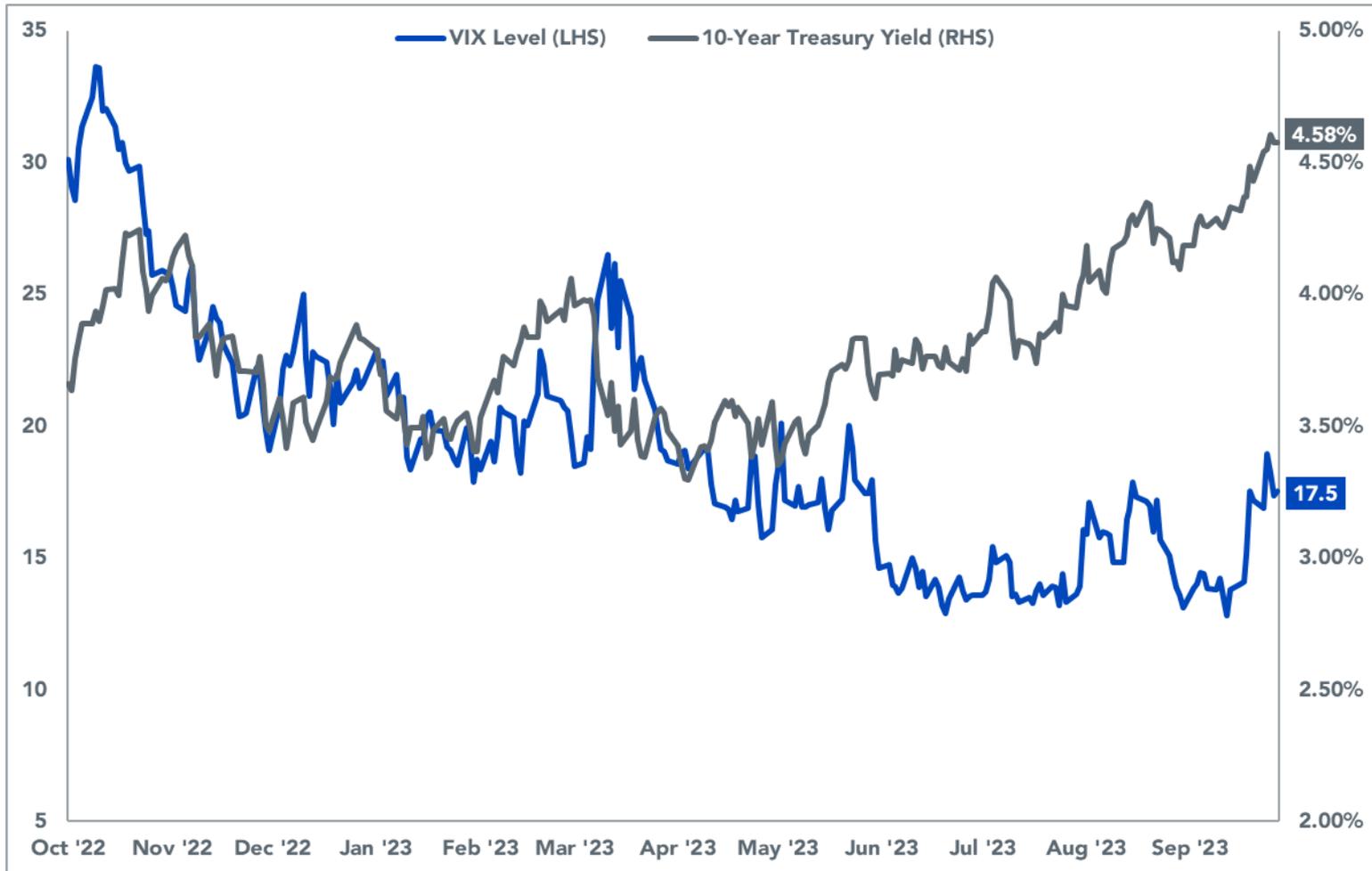
Real Assets & Alternatives Outlook

Commodity “softs” (coffee, sugar, cocoa, cotton, etc.) recently spiked and, after rising sharply over the summer, energy has receded as global demand has fallen, but most of the commodity complex has been range bound the past twelve months. We remain neutral in our portfolios that allocate to commodities. We still like MLPs.



Source: Ycharts, 12-moth data through July 13, 2023.. You cannot invest in an index and past performance does not guarantee future results.

Many alternative strategies work best when both rates and volatility are rising. We think volatility is complacent (i.e., too low) but rates certainly are moving higher. We continue to favor diversifying strategies, starting with managed futures.

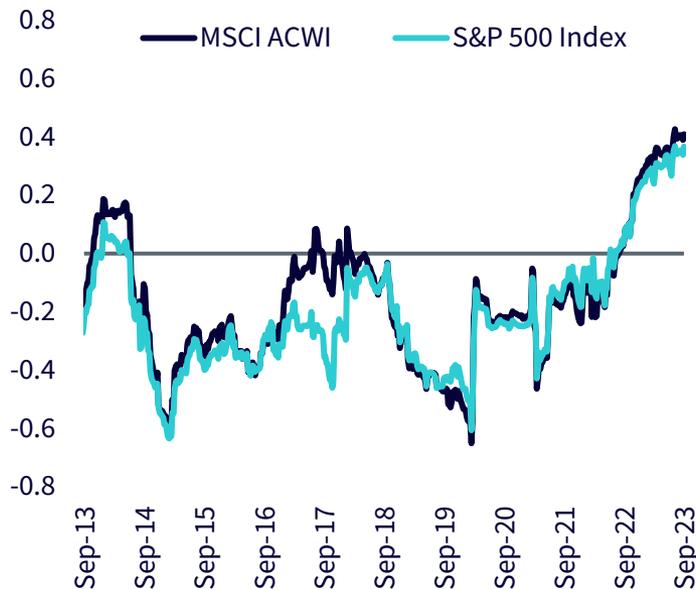


Source: Ycharts, 12-month data through July 13, 2023. You cannot invest in an index, and past performance does not guarantee future results.

As stock-bond correlations have recently turned positive, we believe alternative strategies can play an important role in portfolios.

- + Rolling 12-Month correlations between Treasuries and equities have been positive since 2022.
- + Trend-following strategies (managed futures) may be particularly relevant for investors seeking to generate returns less correlated with traditional asset classes.

Correlations with 10-Yr Treasuries



Source: FactSet, WisdomTree; As of September 15th, 2023. Based on rolling 12-Month correlations of weekly returns of MSCI ACWI, S&P 500 Index, and Bloomberg U.S. Treasury Bellwethers 10 Year Index. Past performance is not indicative of future results. You cannot invest directly in an index.

Current Correlation Matrix

	Global Equities	U.S. Equities	Treasuries	Trend	Commodities
Global Equities	1.00				
U.S. Equities	0.95	1.00			
Treasuries	0.09	0.07	1.00		
Trend	-0.20	-0.18	-0.58	1.00	
Commodities	0.26	0.19	0.00	0.16	1.00

Source: Bloomberg, WisdomTree; As of September 15th, 2023. Based on 3-Years of daily returns of MSCI ACWI, S&P 500 Index, Bloomberg U.S. Treasury Index, SG Trend Index, and Bloomberg Commodity Index. Past performance is not indicative of future results. You cannot invest directly in an index.

Real Assets & Alternatives Market Summary

- + We have moved to a “neutral” stance on broad-based commodities but continue to believe they can play a role within diversified portfolios, as both an inflation hedge and a potential driver of returns.
- + We continue to see increased investor interest in diversifying or lower correlated allocations, including alternative or “non-traditional” strategies. Our “Volatility Management” portfolio, which contains managed futures, equity long-short, options-based, short-biased, and diversified arbitrage strategies, provided excellent diversification benefits during a very volatile 2022 and so far in 2023.
- + Risk mitigation and the power of compounding remain powerful arguments for diversification, especially in the current market regime—an uncertain economy, rising interest rates, and (we believe), and potentially increased market volatility.
- + That is, if you don’t lose as much in down markets you don’t need to generate higher returns in up markets to still come out ahead.

Current WisdomTree Model Portfolio Asset Allocation Guidelines

Current Strategic Asset Class Positioning And Outlook

Equities	-	Neutral	+	Change
Equities vs. Bonds				
U.S. Large Cap Growth				
U.S. Large Cap Value				
U.S. Mid/Small Cap				▲
Developed International				▼
Developed International Small Cap				
Emerging Markets				▼
Emerging Markets Small Cap				
Fixed Income	-	Neutral	+	Change
Duration				
U.S. Treasuries				
Investment Grade Credit				
High Yield Credit				
Securitized Credit				▲
Non-U.S.				
Alternatives	-	Neutral	+	Change
Real Assets				
Volatility Management Strategies				

Source: WisdomTree, as of September 2023. Evaluations are subject to change as market conditions change. This is for illustration purposes only and does not represent investment advice. All evaluations are on a relative and not absolute basis. Red = a negative relative evaluation; gray = a neutral relative evaluation; green = a positive relative evaluation. You cannot invest in an index, and past performance does not guarantee future results.

Our current model portfolio asset allocation guidelines:

- + We remain in a neutral stance on stocks versus bonds. We prefer stocks for the long run but believe “there is income back in fixed income.”
- + The market seems to have priced in the end (or near the end) of the rate hike cycle and turned its focus to the overall economy and corporate earnings.
- + In equities, we decreased our generally benchmark-neutral allocations to EAFE and EM in favor of moving to overweight in the U.S., relative to the MSCI ACWI Index.
- + We still maintain explicit over-weight allocations to small-cap stocks in the U.S., EAFE, and EM.
- + For fundamental (valuation-driven) investors, we suggest taking a closer look at U.S. small cap and value stocks.
- + We believe the market is “re-rotating” back to our inherent tilts to value, size, dividends, and quality.
- + The dollar is on a rally and, given interest rate differentials and the relative strength of the U.S. economy (especially versus Europe and China), we think this may continue. This contributed to our decision to move to an overweight allocation to U.S. equities.

Investment themes for the remainder of 2023 and into 2024:

- + There is income back in fixed income. We currently believe there is relative value in high yield and floating rate Treasuries, and actively managed fixed income portfolios are back in “fashion”. We also see relative value opportunities in mortgage-backed securities.
- + Despite the growth and “AI-themed” mega-tech outperformance YTD, we believe value, dividend, quality, and size re-rotations within equities are beginning to appear.
- + We continue to be “alpha seeking” versus “beta surfing”—that is, this is a time to be more active (i.e., factor tilts) versus cap-weighted passive within the portfolio.
- + Consider alternatives for increased diversification in potentially volatile markets.

Glossary

Alpha: Can be discussed as both risk-adjusted excess return relative to a specific benchmark, or absolute excess return relative to a benchmark. It is sometimes more generally referred to as excess returns in general.

Artificial Intelligence (AI): A field which combines computer science and robust datasets to enable problem-solving.

Balance sheet: Refers to the cash and cash equivalents part of the Current Assets on a firm's balance sheet and cash available for purchasing new position.

Basis points (bps): 1/100th of 1 percent.

Beta: A measure of the volatility of a security or a portfolio in comparison to a benchmark. In general, a beta less than 1 indicates that the investment is less volatile than the benchmark, while a beta more than 1 indicates that the investment is more volatile than the benchmark.

CAIXEN Manufacturing PMI: The Chinese HSBC Manufacturing PMI is a composite indicator designed to provide an overall view of activity in the manufacturing sector and acts as a leading indicator for the whole economy.

Cash flows: A measure of how much cash a business generates after taking into account all the necessary expenses, including net capital expenditures.

Commercial mortgage-backed securities (CMBS): A fixed income security that is composed of multiple underlying commercial mortgages.

Commodity: A raw material or primary agricultural product that can be bought and sold.

Convertibles: Securities, usually bonds or preferred shares, that can be converted into common stock. Convertibles are most often associated with convertible bonds, which allow bond holders to convert their creditor position to that of an equity holder at an agreed upon price.

Coupon: The annual interest rate stated on a bond when it's issued. The coupon is typically paid semi-annually. This is also referred to as the "coupon rate" or "coupon percent rate."

Credit spread: The portion of a bond's yield that compensates investors for taking credit risk.

Dividend yield: A financial ratio that shows how much a company pays out in dividends each year relative to its share price.

Dot plot: A chart based on the economic projections of the Federal Reserve board members that illustrates their views on the appropriate pace of policy firming and provides a target range or target level for the federal funds rate.

Duration: A measure of a bond's sensitivity to changes in interest rates. The weighted average accounts for the various durations of the bonds purchased as well as the proportion of the total government bond portfolio that they make up.

EAFE: An acronym for Europe, Australasia, and the Far East, the most developed areas of the world outside of North America.

Earnings growth: The annual compound annual growth rate of earnings from investments.

Earnings per share (EPS): Total earnings divided by the number of shares outstanding. Measured as a percentage change as of the annual Index screening date compared to the prior 12 months. Higher values indicate greater growth orientation.

Emerging market (EM): Characterized by greater market access and less potential for operational risks when compared to frontier markets, which leads to a larger base of potentially eligible investors.

Fed funds futures: Financial contracts that represent the market opinion of where the daily official federal funds rate will be at the time of the contract expiry. The futures contracts are traded on the Chicago Mercantile Exchange (CME) and are cash settled on the last business day of every month. Fed fund futures can be traded every month as far out as 36 months.

Glossary

Fed funds rate: The rate that banks that are members of the Federal Reserve system charge on overnight loans to one another. The Federal Open Market Committee sets this rate. Also referred to as the “policy rate” of the U.S. Federal Reserve.

Federal Open Market Committee (FOMC): The branch of the Federal Reserve Board that determines the direction of monetary policy.

Federal Reserve (Fed): The Federal Reserve System is the central banking system of the United States.

Floating Rate Treasury: A debt instrument issued by the U.S. government whose coupon payments are linked to the 13-week Treasury bill auction rate.

Fundamentals: Attributes related to a company’s actual operations and production as opposed to changes in share price.

Gross domestic product (GDP): The sum total of all goods and services produced across an economy.

Growth: Style of investing emphasizing stocks with share prices typically higher in relation to financial metrics, such as dividends or earnings.

High Yield: Sometimes referred to as “junk bonds,” these securities have a higher risk of default than investment-grade securities.

Inflation: Characterized by rising price levels.

Inverted yield curve: An interest rate environment in which long-term debt instruments have a lower yield than short-term debt instruments of the same credit quality.

JOLTS: The Job Openings and Labor Turnover Survey (JOLTS) is a monthly report by the Bureau of Labor Statistics (BLS) of the U.S. Department of Labor counting job vacancies and separations, including the number of workers voluntarily quitting employment.

Low correlation: Characterized by assets that have a relatively lower correlation versus the market over time. This term is also associated with the low-correlation factor which associates these stock characteristics with excess returns versus the market over time.

Margins : Focused on issues impacting the overall economic landscape as opposed to those only impacting individual companies.

Momentum: Characterized by assets with recent price increase trends over time. This term is also associated with the Momentum Factor which associates these stock characteristics with excess return vs the market over time.

Mortgage-backed securities (MBS): A type of asset-backed security which is secured by a mortgage or collection of mortgages.

Master limited partnership (MLP): Investment structure where holdings typically must derive most of their cash flows from real estate, natural resources or commodities, combining the tax benefits of a partnership—taxes occur when holders receive distributions—with the liquidity of a publicly traded company.

Organization for Economic Cooperation and Development (OECD): the organization for economic co-operation and development aims to promote policies that will improve the economic and social well-being of people around the world.

Price-to-earnings (P/E) ratio: Share price divided by earnings per share. Lower numbers indicate an ability to access greater amounts of earnings per dollar invested.

Real yield: The annual interest rate that an investor demands for holding a bond to maturity including the impact of inflation.

Recession: Two consecutive quarters of negative GDP growth, characterized generally by a slowing economy and higher unemployment.

Risk asset: Any asset that carries a degree of risk. “Risk asset” generally refers to assets that have a significant degree of price volatility, such as equities, commodities, high-yield bonds, real estate and currencies.

Securitized: A debt security whose value is backed by an asset or pool of assets such as a mortgage.

Glossary

Size capitalization: A measure by which a company's size is classified. Large caps are usually classified as companies that have a market cap over \$10 billion. Mid-caps range from \$2 billion to \$10 billion. Small caps are typically new or relatively young companies and have a market cap between \$200 million and \$2 billion.

Spread: Typically refers to a difference between a measure of yield for one asset class and a measure of yield for either a different subset of that asset class or a different asset class entirely.

Treasury Inflation-Protected Securities (TIPS): Bonds issued by the U.S. government. TIPS provide protection against inflation. The principal of a TIPS increases with inflation and decreases with deflation, as measured by the Consumer Price Index. When a TIPS matures, you are paid the adjusted principal or original principal, whichever is greater.

Treasury notes: A debt obligation issued by the U.S. government that matures in less than 30 years.

Treasury rate: Refers to the current interest rate that investors earn on debt securities issued by the U.S. Treasury. The federal government borrows money by issuing U.S. Treasury bills, notes and bonds. The current Treasury rate is an important benchmark and indicator for investors and economists.

U.S. High Yield Master II Option-Adjusted Spread: Are the calculated spreads between a computed OAS index of all bonds in a given rating category and a spot Treasury curve. An OAS index is constructed using each constituent bond's OAS, weighted by market capitalization.

U.S. ISM Services PMI: The ISM services survey is part of the ISM Report On Business—Manufacturing (PMI) and Services (PMI).

U-3 unemployment level: The official unemployment rate. It measures the number of people who are jobless but actively seeking employment.

U-6 unemployment level: Measures the percentage of the U.S. labor force that is unemployed, plus those who are underemployed, marginally attached to the workforce, and have given up looking for work.

Valuation: Refers to metrics that relate financial statistics for equities to their price levels to determine if certain attributes, such as earnings or dividends, are cheap or expensive.

Value: Style of investing characterized by lower price levels relative to fundamentals, such as earnings or dividends. Prices are lower because investors are less certain of the performance of these fundamentals in the future. This term is also related to the value factor, which associates these stock characteristics with excess returns vs the market over time.

Volatility: A measure of the dispersion of actual returns around a particular average level.

Yield: The income return on an investment. Refers to the interest or dividends received from a security that is typically expressed annually as a percentage of the market or face value.

Yield curve: Graphical depiction of interest rates on government bonds, with the current yield on the vertical axis and the years to maturity on the horizontal axis.

Yield spread: The amount of incremental income a bondholder receives for assuming credit risk.

Yield to worst: The rate of return generated assuming a bond is redeemed by the issuer on the least desirable date for the investor.

Index Definitions

Bloomberg Aggregate Bond Index: Represents the investment-grade, U.S. dollar-denominated, fixed-rate taxable bond market, including Treasuries, government-related and corporate securities, as well as mortgage and asset backed securities.

Bloomberg Copper Sub Index: A commodity group subindex of the Bloomberg CI composed of futures contracts on Copper.

CAIXEN Manufacturing PMI: The Chinese HSBC Manufacturing PMI is a composite indicator designed to provide an overall view of activity in the manufacturing sector and acts as a leading indicator for the whole economy.

Case-Shiller Home Prices Indexes: The Standard & Poor's CoreLogic Case-Shiller Home Price Indices are repeat-sales house price indices for the United States. There are multiple Case-Shiller home price indices: A national home price index, a 20-city composite index, a 10-city composite index, and twenty individual metro area indices.

CBOE S&P 500 Volatility Index (VIX): A real-time index that represents the market's expectations for the relative strength of near-term price changes of the S&P 500 index.

Citigroup Economic Surprise Index: An indicator of how actual economic data compares to analyst expectations. A downward trend means actual data has been trending below expectations, and an upward trend means actual data has been trending above expectations.

Conference Board Consumer Confidence Index: The monthly Consumer Confidence Survey®, based on a probability-design random sample, is conducted for The Conference Board by Nielsen, a leading global provider of information and analytics around what consumers buy and watch. The Conference Board is a global, independent business membership and research association working in the public interest.

Consumer Price Index (CPI): A measure that examines the weighted average of prices of a basket of consumer goods and services, such as transportation, food and medical care. The CPI is calculated by taking price changes for each item in the predetermined basket of goods and averaging them; the goods are weighted according to their importance. Changes in CPI are used to assess price changes associated with the cost of living. Core CPI excludes food and energy costs.

Dow Jones FXCM Dollar Index: An index of the value of the United States dollar relative to a basket of four currencies: the Euro, the British Pound, the Japanese Yen, and the Australian Dollar.

ISM Manufacturing Index: Also known as the purchasing managers' index (PMI), is a monthly indicator of U.S. economic activity based on a survey of purchasing managers at more than 300 manufacturing firms. It is considered to be a key indicator of the state of the U.S. economy.

MOVE Index: Measures Treasury rate volatility through options pricing.

MSCI AC Asia Pacific Index: Captures large and mid cap representation across 5 Developed Markets countries and 8 Emerging Markets countries in the Asia Pacific region.

MSCI ACWI Index: A free-float adjusted market capitalization-weighted index that is designed to measure the equity market performance of developed and emerging markets. U.S. Corporate Master Option-Adjusted Spread: uses an index of bonds that are considered investment grade (those rated BBB or better). When the last calendar day of the month takes place on the weekend, weekend observations will occur as a result of month ending accrued interest adjustments.

MSCI ACWI ex-US Small Cap Index : captures small cap representation across 23 of 24 Developed Markets (DM) countries (excluding the US) and 21 Emerging Markets (EM) countries.

MSCI Japan Index : A market cap-weighted subset of the MSCI EAFE Index that measures the performance of the Japanese equity market.

MSCI China Index: A free float-adjusted, market capitalization-weighted equity index designed to measure the performance of the Chinese equity market.

MSCI EAFE Index: A market cap-weighted index composed of companies representative of the developed market structure of developed countries in Europe, Australasia and Japan.

MSCI Emerging Markets Index: A free-float weighted equity index that captures large and mid cap representation across Emerging Markets (EM).

Index Definitions

MSCI Europe Index: Represents the performance of large and mid-cap equities across 15 developed countries in Europe.

MSCI World ex-U.S. Small-Cap Index: Captures small cap representation across 22 of 23 Developed Markets countries (excluding the United States). With 2,590 constituents, the index covers approximately 14% of the free float-adjusted market capitalization in each country.

MSCI World Index: A free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets.

Nasdaq 100 Index: Includes 100 of the largest domestic and international non-financial companies listed on The Nasdaq Stock Market based on market capitalization. The Index reflects companies across major industry groups including computer hardware and software, telecommunications, retail/wholesale trade and biotechnology. It does not contain securities of financial companies, including investment companies.

Non-Manufacturing Index: Also known as NMI, measures business activity in the U.S. service economy.

NFIB Small Business Optimism Index: NFIB Research Foundation has collected Small Business Economic Trends Data with Quarterly surveys since 1973 and monthly surveys since 1986. The sample is drawn from the membership files of the National Federation of Independent Business (NFIB).

Russell 1000 Growth Index: A measure of the large-cap growth segment of the U.S. equity universe, selecting from the Russell 1000 Index.

Russell 1000 Index: A measure of the performance of the 1,000 largest companies by market capitalization in the Russell 3000 Index.

Russell 1000 Value Index: A measure of the large-cap value segment of the U.S. equity universe, selecting from the Russell 1000 Index.

Russell 2000 Index: Measures the performance of the small-cap segment of the U.S. equity universe. The Russell 2000 is a subset of the Russell 3000 Index representing approximately 10% of the total market capitalization of that index. It includes approximately 2000 of the smallest securities based on a combination of their market cap and current index membership.

S&P 500 Dividend Aristocrats Index: Measures the performance S&P 500 companies that have increased dividends every year for at least 25 consecutive years.

S&P 500 Growth Index: A market capitalization-weighted benchmark designed to measure the growth segment of the S&P 500 Index.

S&P 500 Index: A market capitalization-weighted benchmark of 500 stocks selected by the Standard and Poor's Index Committee designed to represent the performance of the leading industries in the United States economy.

S&P 500 Momentum Index: Designed to measure the performance of securities in the S&P 500 universe that exhibit persistence in their relative performance.

S&P 500 Quality Index: Designed to track high quality stocks in the S&P 500 by quality score, which is calculated based on return on equity, accruals ratio and financial leverage ratio.

S&P 500 Value Index: A market capitalization-weighted benchmark designed to measure the value segment of the S&P 500 Index.

S&P 600 Index: An index of small-cap stocks managed by Standard and Poor's. It tracks a broad range of small-sized companies that meet specific liquidity and stability requirements.

S&P 600 Value Index: An index of small-cap stocks managed by Standard and Poor's. It tracks a broad range of small-sized companies that meet specific liquidity and stability requirements.

S&P GSCI Brent Crude Index: Provides investors with a reliable and publicly available benchmark for investment performance in the Brent crude oil market.

S&P GSCI Index (Copper/Agriculture/Softs/Precious Metals/Non-Precious Metals/Energy): A leading measure of general commodity price movements and performance over time.

Zillow Rental Index: A dollar-valued index intended to capture typical market rent for a given segment and/or geography.

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