



# Capital Perspectives

Monthly investment analysis and insights from Wilmington Trust Investment Advisors

## ON THE RECORD

### Our 2023 Capital Markets Forecast’s Inflationary Vortex: A Late-Summer Reassessment

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**Tony Roth**  
Chief Investment Officer

We are just past the halfway point of 2023, a natural time to pause and assess what has changed since the start of the year. In fact, the first seven months have certainly included twists and turns that few could have foreseen when the year began. In this late-summer check-in, we take stock of how our capital markets views have evolved, including what we predicted correctly, where we missed the mark, and what it means for client portfolios. In summary, our [Capital Markets Forecast \(CMF\)](#) is playing out largely as expected, and the U.S. economy has surprised to the upside. We maintain caution in our outlook for the remainder of the year.

#### Inflationary vortex dissipating

Our 2023 CMF dug into the main issue facing consumers, policymakers, and investors: inflation. At the start of the year, our economics team predicted headline inflation—as measured by the year-over-year (y/y) change in the Consumer Price Index (CPI)—would continue its descent from the June 2022 peak, reaching “roughly 3% by mid-2023.” In fact, the headline CPI clocked in exactly at 3.0% in June 2023. More importantly (given the distortions that can be caused by base effects), the headline CPI has slowed from a three-month average annualized change of more than 10% to just 2.7% (Figure 1). This was aided by a 10% decline in commodity prices<sup>1</sup> and slowing of goods inflation, as supply-chain pressures continued to abate, and consumption shifted from goods to services.

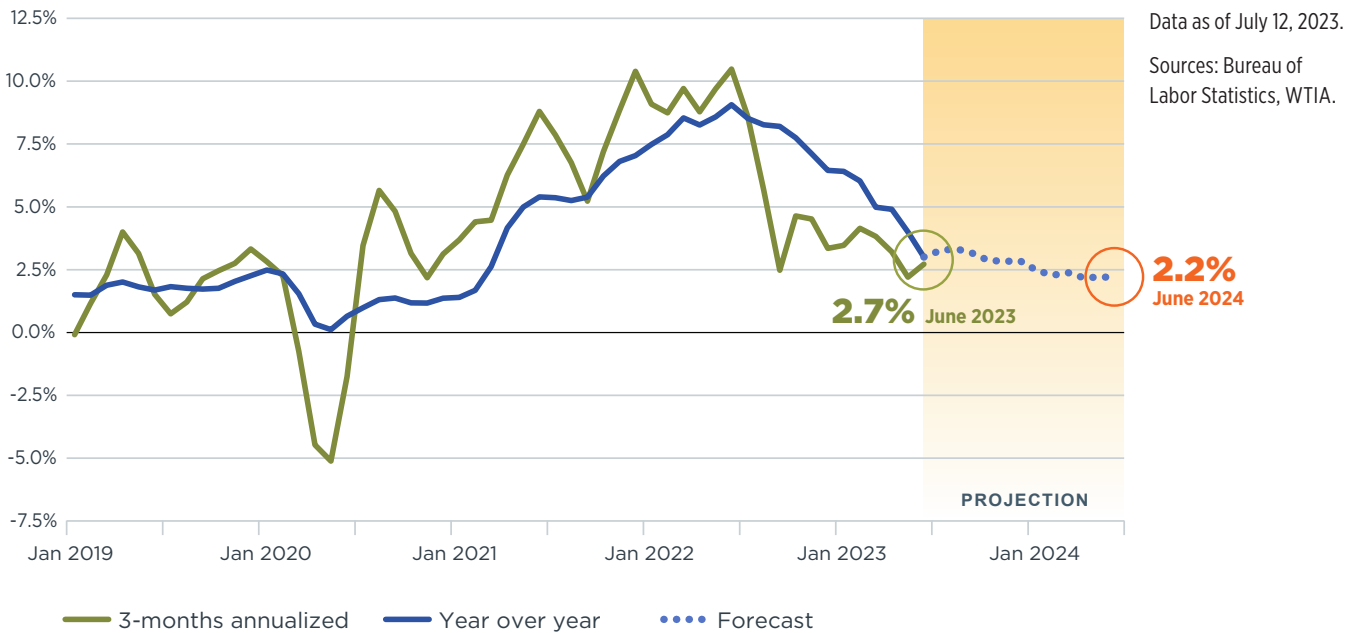
<sup>1</sup> As measured by the Bloomberg Commodity Index between December 2022 and June 2023.

Continued

Figure 1

**U.S. inflation is moderating**

Consumer Price Index (CPI) inflation (% change)



**It is quite possible that July will prove to have been the last hike of the cycle. At this point, however, we are expecting one final “insurance” hike by the Fed, which likely will come in November.**

Core (stripping out food and energy) and services inflation have both slowed as well, but, as predicted, at a slower pace. We are encouraged by the most recent data, which are showing convincing disinflation in services and shelter (the latter of which has been evident in more real-time housing and rental data but tend to show up in the CPI with a significant lag of 12 to 18 months). This improvement in the inflation picture comes despite a continued tight and overall robust labor market—of particular importance to services inflation given the prominent role that wages play in the cost structure of services-oriented businesses.

The Fed’s monetary policy has also transpired largely as predicted, with us anticipating the fed funds rate to reach “5.0% or slightly higher” in 2023; the Federal Open Market Committee (FOMC) raised its policy rate to a range of 5.25–5.50% at the July meeting. With inflation showing notable improvement toward the Fed’s target, it is likely that the FOMC exercises patience going forward, taking time to assess the impact of the tightening already implemented, before increasing rates even further. It is quite possible that July will prove to have been the last hike of the cycle. At this point, however, we are expecting one final “insurance” hike by the Fed, which likely will come in November.

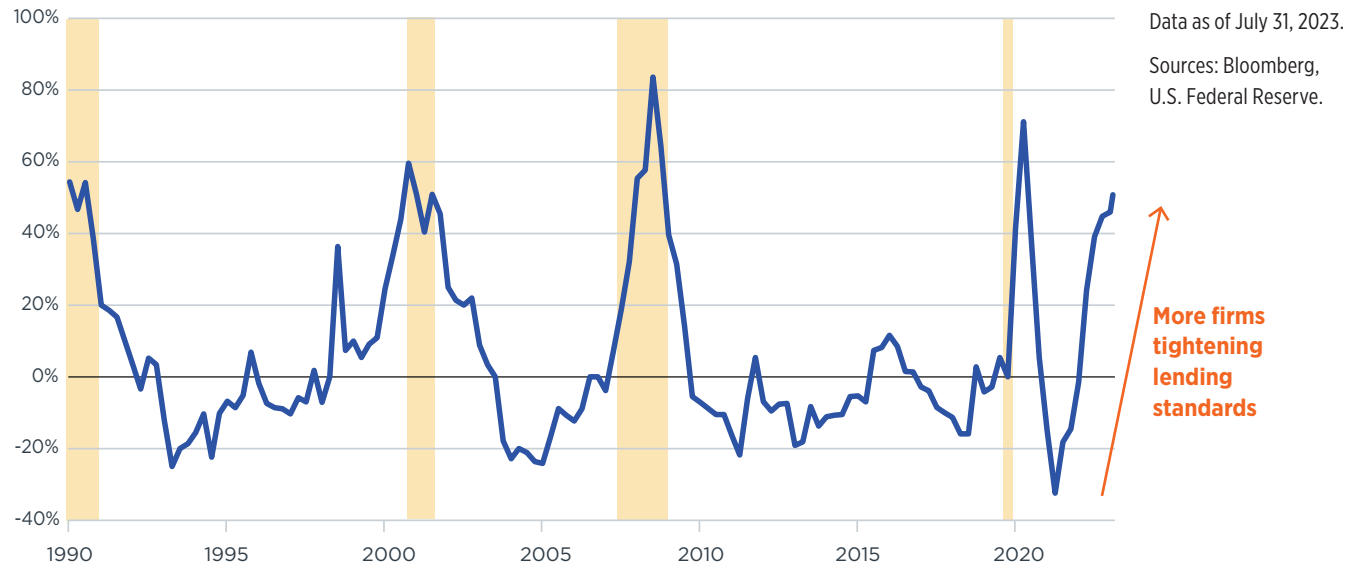
Financial conditions, by measures such as the Fed’s Senior Loan Officer Opinion Survey, have tightened significantly (Figure 2). The March bank failures were one artifact of the historic rapidity with which financial conditions tightened. Nonetheless, deposit flight and bank stress have now subsided. Other measures of financial conditions indicate that the long and variable lags of the Fed’s 525 basis points, or bps (5.25%), of tightening since March 2021 have yet to be fully manifest in the real economy—a risk discussed more below.

Continued

Figure 2

### Lending conditions are tightening

Senior loan officer opinion survey—Net percent of lenders tightening standards for C&I loans to large/medium firms



For more on our expectations for AI and how we are investing in this theme, see our recent paper, [“The Future of AI Is Here: Investment Risks & Opportunities.”](#)

### Revisiting our themes

Despite an expectation of near-term inflation falling from lofty levels, our Capital Markets Forecast delved into three structural themes expected to exert upward pressure on medium-term inflation. These three themes—a *tight labor market*, *U.S.-China tensions*, and *the transition to a greener energy landscape*—continue to challenge inflation’s return to the Fed’s 2% target on a sustainable basis.

- **Labor market inflection.** We identified structural changes to the labor market resulting in labor shortfall and potentially persistent above-trend wage growth. Since publishing our outlook, we have grown less pessimistic due to an unexpectedly large influx of prime-age workers back into the work force, an acceleration of immigration, and a leap forward in the field of artificial intelligence, or AI. (For more on our expectations for AI and how we are investing in this theme, see our recent paper, [“The Future of AI Is Here: Investment Risks & Opportunities.”](#)) These factors are all contributing to a loosening of the labor market, a slowing of wage growth, and disinflation.

The prime-age labor participation has increased to 83.5%, the highest rate in more than 21 years (Figure 3). The overall size of the labor force has made considerable gains but remains below trend due to a continued decline in participation for ages 55+. Job openings and quits are both nicely off their highs and wage pressures have ebbed but are still above the 15-year average.

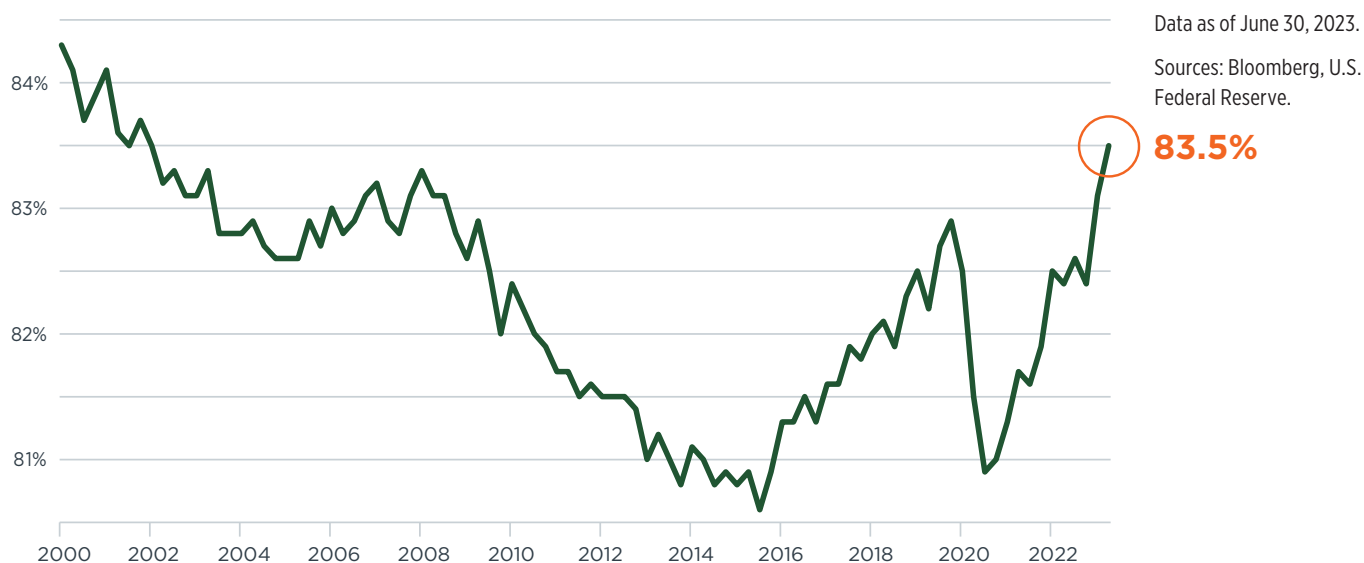
The present environment is exposing a de-linkage between wage growth and overall inflation—something that has happened historically and can persist for extended periods of time. One explanation could be companies utilizing technology to realize productivity gains. Meanwhile, positive real wages are

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Figure 3

**Surge in prime-age labor force participation**

U.S. labor force participation rate (25-54)



**In the medium term, tensions between the U.S. and China remain at a slow boil, and “tit for tat” export restrictions continue to be levied between the two countries on critical semiconductor technologies and inputs.**

buoying the consumer. In the long term, demographic challenges including retirements, low immigration rates, and slowing population growth will not be easily solved, but higher productivity is certainly part of the answer.

- **China’s socioeconomic evolution.** Our second theme centered on the short-, medium-, and long-term inflationary impacts of China’s economy. In the short term, China has turned out to be a surprising contributor to the global disinflation experienced this year for two important reasons. First, the abrupt relaxation of China’s zero-COVID policy in December 2022 (shortly after our CMF went to print) helped ease supply-chain pressures, particularly evident in the absence of ships lined up outside of West Coast ports. Additionally, China’s economic recovery has proven lackluster at best, which has weighed on global growth and kept a lid on commodity prices. Structural issues within the property market are hampering policymakers’ enthusiasm for dramatic stimulus.

In the medium term, tensions between the U.S. and China remain at a slow boil, and “tit for tat” export restrictions continue to be levied between the two countries on critical semiconductor technologies and inputs. Interest in diversifying supply chains away from China is building, with the U.S. and other parts of Asia standing to benefit.<sup>2</sup> The reversal of globalization is almost certain to be inflationary. Though—similar to China’s demographic demise—these themes are likely to play out over a long time horizon.

- **Energy’s tenuous transition.** The third theme in our outlook examined the impact of the green energy transition on long-term inflation. That said, a decline in energy prices, including a 33% y/y decline in the price of WTI crude oil through June, has been a gift to consumers and monetary policymakers alike. In addition, Russian oil output has been steady and continues to find willing buyers (thanks

<sup>2</sup> Oxford Economics.

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**While we have upgraded our economic outlook, reducing the odds of a recession to roughly 50/50 or even slightly in favor of a soft landing, it is too early to call the “all clear.”**

in large part to China and India). However, extreme weather and continued policymaker focus on climate change threatens investment in fossil fuels. A global shortfall of fossil fuel production that is outstripped by medium-term demand is expected to exert upward pressure on headline inflation. As evidence, the U.S. crude oil rig count has fallen 15% since the start of the year alone and is down 67% from the 2014 peak.

### **Marginal upgrade to the economic outlook**

At the start of the year, we placed roughly 55%–60% odds on a recession occurring in 2023. As we sit today, the weight of economic signals point to continued U.S. economic resiliency. The labor market is expanding at a solid pace. Consumers, while having eroded a good chunk of their excess cash, are supported by positive real wages and continue to spend. Business sentiment has improved somewhat, and corporate capital expenditures remain positive. The U.S. economy grew at a real rate of 2.0% and 2.4% in the first and second quarters, respectively.

As a result, we have upgraded our economic outlook, reducing the odds of a recession to roughly 50/50 or even slightly in favor of a soft landing. Most encouraging is the evidence that disinflation can and has occurred without weakness in the labor market. In other words, a recession may not be a necessary condition for breaking the back of overall inflation, as many, including ourselves, feared. Still, it is too early to call the “all clear” and move definitively to a base case of a soft landing.

The Core Personal Consumption Expenditures Index (PCE), which is the Fed’s preferred measure of inflation and the one to which its 2% target best applies, is still averaging about 3.4% on a three-month annualized basis and 4.1% y/y. That is not close enough to the Fed’s target to claim victory. While the Fed will certainly cease rate increases before core inflation hits its target (because of the lagged impact of policy tightening), the central bank is unlikely to *cut* rates until there is more evidence that inflation will not stage a resurgence. There is a risk that the last few miles to the Fed’s target could take longer, giving more time for the lagged effects of the Fed’s policy to weaken the overall economy to the point of sustained contraction.

While inflation has come down nicely and much of the economic data are holding up well, there are a few key risks worth monitoring. The first is the blaring signal coming from the yield curve, which has proven prescient in predicting prior recessions. The 10-year-minus-3-month portion of the yield curve has been inverted for eight months. Looking at the past six recessions, the time between inversion and recession has averaged 11 months.<sup>3</sup> While it is certainly the case that markets have been wringing their hands about a recession for over a year now, we are just now entering the window when Fed policy historically bites its hardest. The lagged effects could very well be longer this time around, given the extraordinary amount of COVID-related fiscal stimulus pumped into the economy. This could mean higher rates for longer and a deeper recession.

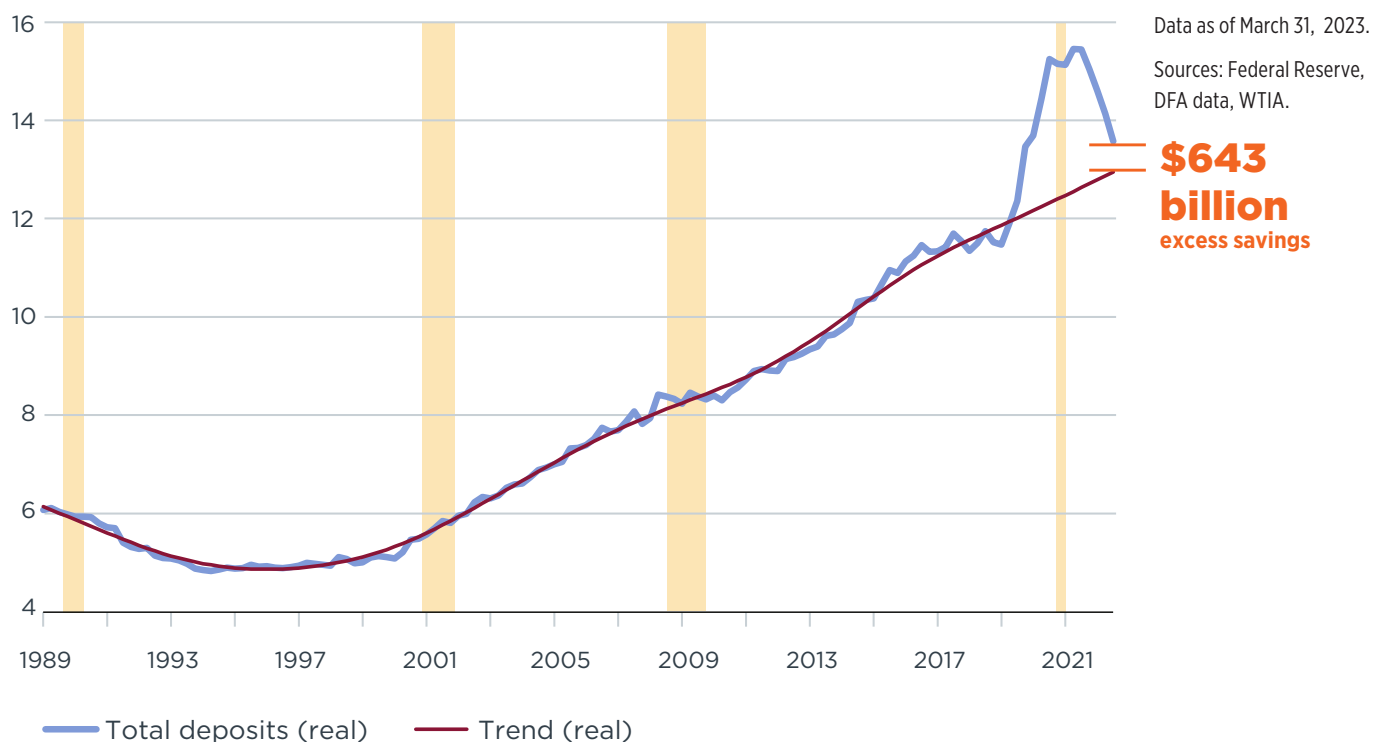
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<sup>3</sup> Sources: Bloomberg, NBER, WTIA.

Figure 4

**Consumers' excess savings is coming back down to earth**

Total household deposits through 1Q 2023



Both total deposits and trend are in real terms, meaning adjusted for inflation.

**Since the start of the year, we have held a modest underweight to equities versus our long-term strategic asset allocation target. While the market melt-up has not benefited our tactical asset allocation positioning, the modest underweight has served as an insurance policy of sorts against a deterioration in the economy.**

Other, perhaps yellow flags, are coming from signs of fraying at the edge of the U.S. consumer. Personal consumption has indeed held up very well to date and, as noted above, is now supported by positive real wages. However, consumers' excess savings is being depleted at a rapid rate (Figure 4). In addition, key credit metrics, including credit card delinquencies and auto loan rejections, are deteriorating at a pace that suggests they may overshoot prepandemic averages.

**Patience in portfolios**

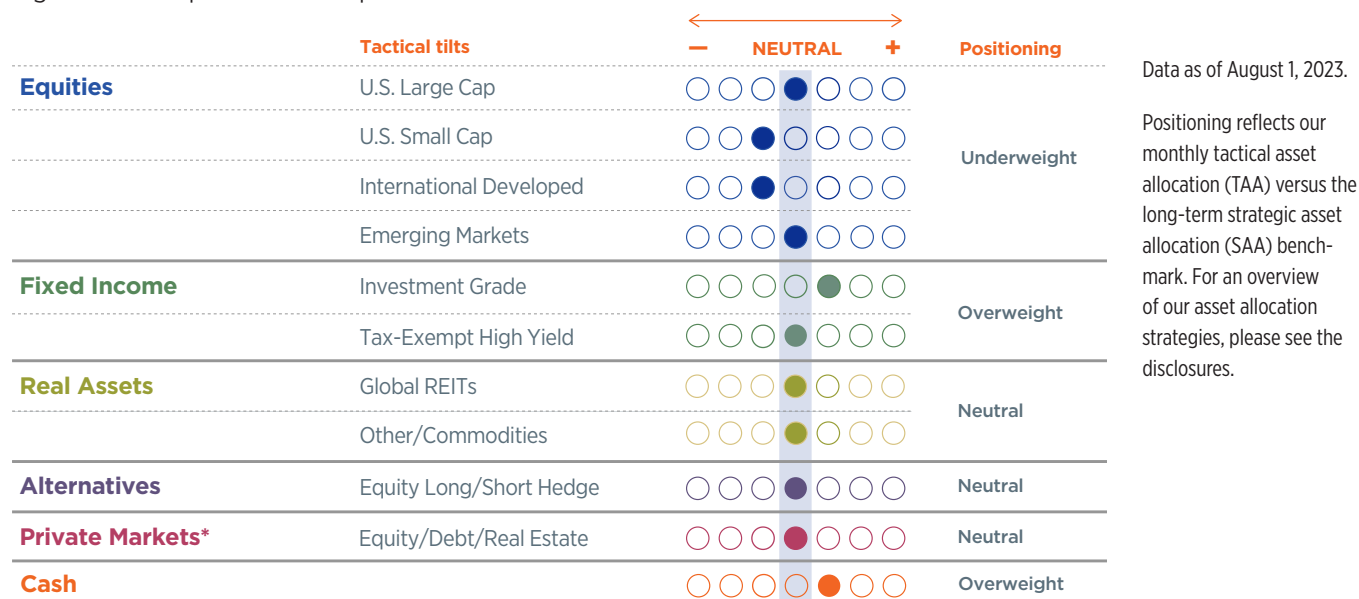
Since the start of the year, we have held a modest underweight to equities versus our long-term strategic asset allocation target, specifically within U.S. small-cap and international developed equities. Within equities, we have preferred growth over value and emphasized quality—a factor that encapsulates profitability, low leverage, and steady earnings growth. While the market melt-up has not benefited our tactical asset allocation positioning, the modest underweight has served as an insurance policy of sorts against a deterioration in the economy. Luckily, our full allocation to U.S. large cap (which has been the best-performing asset class this year, according to the S&P 500), along with our portfolio construction and patience in rebalancing accounts have all helped to offset the performance drag of our underweight to equities, allowing our average portfolio to perform in line with the blended benchmark. We have essentially paid insurance in the form of our

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Figure 5

**Current positioning**

High-net-worth portfolios with private markets\*



Data as of August 1, 2023.  
Positioning reflects our monthly tactical asset allocation (TAA) versus the long-term strategic asset allocation (SAA) benchmark. For an overview of our asset allocation strategies, please see the disclosures.

\* Private markets are only available to investors that meet Securities and Exchange Commission standards and are qualified and accredited. We recommend a strategic allocation to private markets but do not tactically adjust this asset class.

**We would caution against extrapolating the gains from the first half of the year into the second half. With recession odds still around a coin flip, we are hesitant to lean into risk.**

equity underweight but still managed to keep up with the benchmark during a challenging time.

Fortunately for everyone, when it comes to the 60/40\* stock/bond portfolio, our prediction that 2022 would end up being a painful anomaly, rather than the start of a pattern, has proven correct. With global equities returning 18.5% year to date and investment-grade municipal bonds up 2.8%, a 60/40 split between those asset classes is producing a solid 15% return through July. Our structural overweight to the U.S. versus non-U.S., something we discussed in our CMF, is also paying dividends over a naïve, market-cap-weighted benchmark.

We continue to look through short-term market noise and evaluate risk and return potential for asset classes over a 9- to 12-month horizon. That process leads us to the conclusion that patience is warranted on behalf of investors. We would caution against extrapolating the gains from the first half of the year into the second half. With recession odds still around a coin flip, we are hesitant to lean into risk. The market appears to be fully pricing a soft landing, and investors (particularly retail investors) have rushed back into equities.

Small-cap equities are quite exposed to elevated interest rates given their debt profile, and Europe appears to be in recession. China’s growth is languishing as well. Even in the case of a soft landing, expectations for earnings growth in the fourth quarter of 2023 and all of 2024 may be too optimistic. However, continued improvement in our economic outlook and further reduction of our recession odds

\* S&P 500 and Bloomberg U.S. Aggregate.

Continued

**Continued improvement in our economic outlook and further reduction of our recession odds would warrant consideration of adding to U.S. small cap, as well as potentially shifting from growth toward more cyclical value.**

would warrant consideration of adding to U.S. small cap, as well as potentially shifting from growth toward more cyclical value.

We believe the strong equity market performance warrants an evaluation of your portfolio's current allocation versus the target set for your individual goals. In most cases, a diversified portfolio will have drifted away from target, leaving the account with an equity exposure meaningfully above the target exposure and potentially necessitating a trim of equities (and purchase of bonds) to bring that allocation back in line. We advise speaking to your advisor to see if this is applicable to your portfolio.

Best,

A handwritten signature in black ink that reads "Tony". The signature is written in a cursive, slightly slanted style.





## ASSET CLASS OVERVIEW

# Equities

**Andrew H. Hopkins, CFA**  
Head of Equity Research

AS OF JULY 31, 2023

	Month	YTD	Trailing 12-month return
S&P 500	3.21	20.64	12.99
Russell 2000 Index	6.11	14.67	7.87
MSCI EAFE Index	3.24	15.28	16.79
MSCI Emerging Markets Index	6.23	11.42	8.35

Sources: FactSet, Bloomberg. Investing involves risks and you may incur a profit or a loss. Past performance cannot guarantee future results. Indices are not available for direct investment.

### What we are seeing now

U.S. equity markets are recovering the losses endured last year with particular strength in the largest growth stocks. The likelihood of a recession has been fading as the number of rate hikes expected from the Federal Reserve is limited. Earnings estimates have been relatively stable and are expected to rise roughly 10% next year. With estimates stable and an expectation of Fed rate cuts next year as inflation fades, the valuation of the market looks reasonable. Technology-focused equities have performed well on the prospect of continued investment in Generative AI, where productivity enhancements can be significant in many parts of the economy. After a strong first half of the year for technology, July presented the market with a breather from the lopsided performance, a result of strength from cyclical and value-oriented parts of the market.

The large-cap S&P 500 index rose 3.21% in July, while the more cyclical Russell 2000 Index rose 6.11%. The Russell 1000 Value Index saw an increase of 3.52%, while the Russell 1000 Growth Index rose 3.37%. The best performance came from mostly cyclical sectors, including energy, communication services, financials, and utilities. Underperforming sectors included the longer-duration assets in consumer discretionary, real estate, and technology.

### What's changing

The impact of a reopening in China on the world economy has so far been very subdued but may see some progress with stimulus coming from the government. Domestically, the Fed is likely to keep rates high for a period of time which may dampen growth prospects in the near term. So far, credit issues seem to be minimal, and the employment picture remains strong. These will be watched closely for signs of degradation.

### What we expect

Equity markets are trading as though the prospect of a recession is unlikely, so any signs of deterioration in the economic environment are likely to result in downside to the market as valuations look full. The bullish view would imply lower interest rates in 2024 along with rising earnings expectations. Rising earnings expectations may be difficult to achieve from current levels as the source of margin improvement for the market may be hard to find. Many of the sources of earnings issues like excess inventory and supply-chain issues have either been fixed or are in the process of being fixed this year. Excess spending from government support is fading and impediments to spending from the return of active student loan payments may keep a lid on discretionary spending looking forward.

# Disclosures

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Investing involves risks and you may incur a profit or a loss. Past performance does not guarantee future results. Diversification does not ensure a profit or guarantee against a loss. There is no assurance that any investment strategy will succeed.

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Alternative assets, such as strategies that invest in hedge funds, can present greater risk and are not suitable for all investors.

Any positioning information provided does not include all positions that were taken in client accounts and may not be representative of current positioning. It should not be assumed that the positions described are or will be profitable or that positions taken in the future will be profitable or will equal the performance of those described.

Indices are not available for direct investment. Investment in a security or strategy designed to replicate the performance of an index will incur expenses, such as management fees and transaction costs that will reduce returns.

## **An overview of our asset allocation strategies:**

Wilmington Trust offers seven asset allocation models for taxable (high-net-worth) and tax-exempt (institutional) investors across five strategies reflecting a range of investment objectives and risk tolerances: Aggressive, Growth, Growth & Income, Income & Growth, and Conservative. The seven models are High-Net-Worth (HNW), HNW with Liquid Alternatives, HNW with Private Markets, HNW Tax Advantaged, Institutional, Institutional with Hedge LP, and Institutional with Private Markets. As the names imply, the strategies vary with the type and degree of exposure to hedge strategies and private market exposure, as well as with the focus on taxable or tax-exempt income.

Model Strategies may include exposure to the following asset classes: U.S. large-capitalization stocks, U.S. small-cap stocks, developed international stocks, emerging market stocks, U.S. and international real asset securities (including inflation-linked bonds and commodity-related and real estate-related securities), U.S. and international investment-grade bonds (corporate for Institutional or Tax Advantaged, municipal for other HNW), U.S. and international speculative grade (high-yield) corporate bonds and floating-rate notes, emerging markets debt, and cash equivalents. Model Strategies employing nontraditional hedge and private market investments will, naturally, carry those exposures as well. **Each asset class carries a distinct set of risks, which should be reviewed and understood prior to investing.**

## **Allocations:**

Each strategy group is constructed with target policy weights for each asset class. Wilmington Trust periodically adjusts the policy weights' target allocations and may shift from the target allocations within certain ranges. Such tactical allocation adjustments are generally considered on a monthly basis in response to market conditions.

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## Disclosures Continued

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The asset classes and their current proxies are:

- Large-cap U.S. stocks: Russell 1000® Index
- Small-cap U.S. stocks: Russell 2000® Index
- Developed international stocks: MSCI EAFE® (Net) Index
- Emerging market stocks: MSCI Emerging Markets Index
- U.S. inflation-linked bonds: Bloomberg US Treasury Inflation Notes TR Index Value Unhedged\*
- International inflation-linked bonds: Bloomberg World ex US ILB (Hedged) Index
- Commodity-related securities: Bloomberg Commodity Index
- U.S. REITs: S&P US REIT Index
- International REITs: Dow Jones Global ex US Select RESI Index
- Private markets: S&P Listed Private Equity Index
- Hedge funds: HFRX Global Hedge Fund Index
- U.S. taxable, investment-grade bonds: Bloomberg U.S. Aggregate Index
- U.S. high-yield corporate bonds: Bloomberg U.S. Corporate High Yield Index
- U.S. municipal, investment-grade bonds: S&P Municipal Bond Index
- U.S. municipal high-yield bonds: 60% Bloomberg High Yield Municipal Bond Index / 40% Municipal Bond Index
- International taxable, investment-grade bonds: Bloomberg Global Aggregate ex US
- Emerging bond markets: Bloomberg EM USD Aggregate
- Cash equivalent: 30-day U.S. Treasury bill rate

### **All investments carry some degree of risk.**

Return volatility, as measured by standard deviation, of asset classes is often used as a proxy for illustrating risk. Volatility serves as a collective, quantitative estimate of risks present to varying degrees in the respective asset classes (e.g., liquidity, credit, and default risks). Certain types of risk may be underrepresented by this measure. **Investors should develop a thorough understanding of the risks of any investment prior to committing funds.**

**Quality ratings** are used to evaluate the likelihood of default by a bond issuer. Independent rating agencies, such as Moody's Investors Service and Standard & Poors, analyze the financial strength of each bond's issuer. Ratings range from Aaa or AAA (highest quality) to C or D (lowest quality). Bonds rated Baa3 or BBB and better are considered **Investment Grade**. Bonds rated Ba1 or BB and below are **Speculative Grade** (also **High Yield**.)

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# Glossary

**30-day U.S. Treasury bill rate Bank of America Merrill Lynch U.S. 3-Month Treasury Bill Index** measures the performance of a single U.S. Treasury bill added to the index at the beginning of the month and held for a full month; the issue is replaced with a newly selected issue at each month-end and the index will often hold the Treasury bill issued at the most recent three-month auction, it is also possible for a seasoned six-month bill to be selected.

**Basis points** refers to a common unit of measure for interest rates and other percentages in finance. One basis point is equal to 1/100th of 1%, or 0.01%, or 0.0001, and is used to denote the percentage change in a financial instrument.

**Beta** is a measure of how an individual asset moves when the overall stock market increases or decreases. Thus, beta is a useful measure of the contribution of an individual asset to the risk of the market portfolio when it is added in small quantity.

**The Bloomberg Agriculture Subindex Total Return (BCOMAGTR)**, formerly known as Dow Jones-UBS Agriculture Subindex Total Return (DJUBAGTR), is a commodity group subindex of the Bloomberg CTR composed of futures contracts on coffee, corn, cotton, soybeans, soybean oil, soybean meal, sugar and wheat and reflects the return on fully collateralized futures positions and is quoted in USD.

**The Bloomberg Commodity Index** is composed of futures contracts and reflects the returns on a fully collateralized investment in the BCOM; it combines the returns of the BCOM with the returns on cash collateral invested in 13 week (3 Month) U.S. Treasury Bills.

**The Bloomberg Commodity Total Return index (BCOMTR)** is composed of futures contracts and reflects the returns on a fully collateralized investment in the BCOM and combines the returns of BCOM with the returns on cash collateral invested in 13 week (3 Month) U.S. Treasury Bills.

**The Bloomberg Dollar Spot Index** tracks the performance of a basket of 10 leading global currencies versus the U.S. Dollar. It has a dynamically updated composition and represents a diverse set of currencies that are important from trade and liquidity perspectives.

**The Bloomberg Energy Subindex Total Return (BCOMENTR)**, formerly known as Dow Jones-UBS Energy Subindex Total Return (DJUBENTR), is a commodity group subindex of the Bloomberg CTR composed of futures contracts on crude oil, heating oil, unleaded gasoline and natural gas and reflects the return on fully collateralized futures positions and is quoted in USD

**The Bloomberg Global Aggregate Bond Index** measures the performance of global investment-grade fixed-rate debt markets, including the U.S., Pan-European, Asian-Pacific, Global Treasury, Eurodollar, Euro-Yen, Canadian, and investment-Grade 144A index-eligible securities.

**The Bloomberg Industrial Metals Subindex Total Return Index (BCOMTNT)**, formerly known as Dow Jones-UBS Industrial Metals Subindex Total Return (DJUBINTR), is a commodity group subindex of the Bloomberg CTR composed of longer-dated futures contracts on aluminum, copper, nickel and zinc and reflects the return on fully collateralized futures positions and is quoted in USD.

**Bloomberg Municipal Bond Index** covers the four main sectors of the USD-denominated long-term tax-exempt bond market: state, and local, general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

**The Bloomberg Precious Metals Subindex Total Return (BCOMPRTTR)**, formerly known as Dow Jones-UBS Precious Metals Subindex Total Return (DJUBPRTR), is a commodity group subindex of the Bloomberg CTR composed of futures contracts on gold and silver. It reflects the return on fully collateralized futures positions and is quoted in USD.

**The Bloomberg U.S. Aggregate Index** measures the performance of the entire U.S. market of taxable, fixed-rate, investment-grade bonds. Each issue in the index has at least one year left until maturity and an outstanding par value of at least \$250 million.

**The Bloomberg US Credit Index** measures the investment grade, US dollar-denominated, fixed-rate, taxable corporate and government related bond markets. It is composed of the US Corporate Index and a non-corporate component that includes foreign agencies, sovereigns, supranationals and local authorities.

**The Bloomberg U.S. High Yield Corporate Index**, formerly Lehman Brothers U.S. High Yield Corporate Index, measures the performance of taxable, fixed-rate bonds issued by industrial, utility, and financial companies and rated below investment grade. Each issue in the index has at least one year left until maturity and an outstanding par value of at least \$150 million.

**The Bloomberg U.S. Mortgage Backed Securities Index** measures the performance of investment grade fixed-rate mortgage-backed pass-through securities of GNMA, FNMA, and FHLMC.

**The Bloomberg US Treasury US TIPS TR USD index** measures the performance of rules-based, market value-weighted inflation-protected securities issued by the U.S. Treasury. It is a subset of the Bloomberg US Treasury Inflation-Linked Bond Index (Series-L), which measures the performance of the US Treasury Inflation Protected Securities (TIPS) market. Federal Reserve holdings of US TIPS are not index eligible and are excluded from the face amount outstanding of each bond in the index.

**Cambridge Global Private Equity Index** is a horizon calculation based on data compiled from 2,354 private equity funds, including fully liquidated partnerships, formed between 1986 and 2019. All returns are net of fees, expenses, and carried interest.

**Consumer price index** measures the price of consumer goods and how they're trending and is a tool for measuring how the economy as a whole is faring when it comes to inflation or deflation.

**Coupon, coupon rate, or coupon payment** is the annual interest rate paid on a bond, expressed as a percentage of the face value and paid from issue date until maturity.

**Dow Jones Global ex. US Select RESI Index** tracks the performance of equity real estate investment trusts (REITs) and real estate operating companies (REOCs) traded globally, excluding the U.S.

**Drawdown** is a peak-trough decline during a specific period for an investment, trading account, or fund and is usually quoted as the percentage between the peak and the subsequent trough.

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## Glossary Continued

**Drift** occurs when an asset or investment diverges significantly from its objective or investment style, such as market capitalization. It can result naturally from capital appreciation in one asset relative to others in a portfolio, a change in a fund's management, or a manager who begins to diverge from the portfolio's mandate. It can be corrected by rebalancing the fund to optimal weights.

**Duration risk** is the risk associated with the sensitivity of a bond's price to a one percent change in interest rates. The higher a bond's duration, the greater its sensitivity to interest rates changes.

**Equity risk premium** is the extra return that's available to equity investors above the return they could get by investing in a riskless investment like T-Bills or T-Bonds or cash.

**ESG** is a strategy that integrates environmental, social, and governance (ESG) factors into the investment process may avoid or sell investments that do not meet criteria set forth by the investment manager. Such investments may perform better than investments selected utilizing ESG factors.

**Event-driven hedge fund strategies** attempt to take advantage of temporary stock mispricing before or after a corporate event takes place. An event-driven strategy exploits the tendency of a company's stock price to suffer during a period of change.

**Federal funds rate** is the interest rate at which depository institutions lend reserve balances to other depository institutions overnight on an uncollateralized basis.

**Global intangible low-taxed income (GILTI)** is a category of income that is earned abroad by U.S.-controlled foreign corporations (CFCs) and is subject to special treatment under the U.S. tax code.

**Gold** can be significantly affected by international monetary and political developments as well as supply and demand for gold and operational costs associated with mining.

**Headline inflation** is a measure of the total inflation within an economy, including commodities such as food and energy prices, which tend to be much more volatile and prone to inflationary spikes.

**HFR® (HedgeFundResearch) Indices** are the established global leader in the indexation, analysis and research of the hedge fund industry. They are broadly constructed indices designed to capture the breadth of hedge fund performance trends across all strategies and regions.

**HFRX Absolute Return Index and the HFRX Global Hedge Fund Index** represent the overall composition of the hedge fund universe and comprise all eligible hedge fund strategies and selects constituents that characteristically exhibit lower volatilities and lower correlations to standard directional benchmarks of equity market and hedge fund industry performance.

**HFRX Global Hedge Fund Index** is designed to be representative of the overall composition of the hedge fund universe and are asset weighted based on the distribution of assets in the hedge fund industry.

**Inflation-linked bonds** are a specific type of index-linked securities that are tied to the costs of consumer goods as measured by the Consumer Price Index (CPI) or another index. Their values increase during inflationary periods, which reduces the risk of uncertainty.

**The 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 and is considered to be a key indicator of the state of the U.S. economy.

**ISM Non-Manufacturing Index** is an economic index based on surveys of more than 400 non-manufacturing (or services) firms' purchasing and supply executives and is part of the ISM Report On Business—Manufacturing (PMI) and Services (PMI).

**ISM Services Prices Paid Index** is a diffusion index calculated by adding the percent of responses indicating they paid more for inputs plus one-half of those responding who paid the same; resulting in a single number that is seasonally adjusted.

**LIBOR** is the average interbank interest rate at which a selection of banks on the London money market are prepared to lend to one another.

**Long, or a long position**, describes an investor's expectation of a holding's future value. A position that the investor expects will rise in value and plans to hold for a long period of time is often described as "held long." It is the opposite of short, or a short position.

**M2 money supply** is a measure of the money supply that includes cash, checking deposits, and other types of deposits that are readily convertible to cash such as CDs.

**Macro hedge fund strategies** generally focus on financial instruments that are broad in scope and move based on systemic or market risk (not security specific). In general, portfolio managers who trade within the context of macro strategies focus on currency strategies, interest rates strategies, and stock index strategies.

**MSCI AC Asia ex Japan Index** captures large- and mid-cap representation across two of three developed markets countries (excluding Japan) and nine emerging markets countries in Asia. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

**MSCI All Country World Index (ACWI)** is a stock index designed to track broad global equity-market performance. Maintained by Morgan Stanley Capital International (MSCI), the index comprises the stocks of about 3,000 companies from 23 developed countries and 26 emerging markets.

**MSCI China Index** captures large- and mid-cap representation across China A shares, H shares, B shares, Red chips, P chips and foreign listings (e.g. ADRs). The index covers about 85% of this China equity universe. Currently, the index includes large-cap A and mid-cap A shares represented at 20% of their free float adjusted market capitalization.

**MSCI EAFE Growth Index** captures large- and mid-cap securities exhibiting overall growth style characteristics across developed markets countries around the world, excluding the U.S. and Canada.

**MSCI EAFE Index** is an equity index which captures large and mid-cap representation across 21 Developed Markets countries around the world, excluding the U.S. and Canada. With 902 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

**MSCI EAFE® (net) Index** measures the performance of approximately 20 developed equity markets, excluding those of the United States and Canada; total returns of the index are net of the maximum tax withholding rates that apply in many countries to dividends paid to non-resident investors.

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## Glossary Continued

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**MSCI Emerging Markets (net) Index** captures large- and mid-cap representation across 27 emerging markets countries. With 1,407 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

**MSCI EAFE Value Index** captures large- and mid-cap securities exhibiting overall value style characteristics across developed markets countries around the world, excluding the U.S. and Canada.

**MSCI Emerging Markets Index** captures large- and mid-cap representation across 26 emerging markets countries. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

**MSCI Europe Index** captures large- and mid-cap representation across 15 developed markets (DM) countries in Europe. The index covers approximately 85% of the free float-adjusted market capitalization across the European DM equity universe.

**MSCI Japan Index** is designed to measure the performance of the large- and mid-cap segments of the Japanese market. The index covers approximately 85% of the free float-adjusted market capitalization in Japan.

**MSCI United Kingdom Index** is designed to measure the performance of the large- and mid-cap segments of the UK market. The index covers approximately 85% of the free float-adjusted market capitalization in the UK.

**Personal consumption expenditures** is the primary measure of consumer spending on goods and services in the U.S. economy and is the primary engine that drives future economic growth.

**Price-to-earnings (P/E) ratio** measures a company's current share price relative to its earnings per share (EPS).

**Producer Price Index (PPI)** is a family of indexes measuring the average change in selling prices received by domestic producers of goods and services.

**Real estate investment trusts**, or REITs, are companies that own, operate, or finance income-generating real estate. Similar to mutual funds, REITs pool the capital of numerous investors, allowing them to earn dividends from real estate investments without having to buy, manage, or finance properties themselves.

**Relative value hedge fund strategies** cover a variety of low-volatility trading strategies with the consistent theme of attempting to reduce market risk, i.e., the manager seeks to generate a profit regardless of which direction the markets are moving. All relative value strategies minimize market risk by taking offsetting long and short positions in related stocks, bonds, and other types of securities.

**Reverse optimization** uses risk estimates and optimal portfolio weights (asset allocations) to derive the forward-looking returns that generate the highest expected risk-adjusted return for the portfolio; in contrast, traditional optimization uses risk estimates and forward-looking return assumptions to derive the portfolio weights (asset allocations) that generate the highest expected risk-adjusted return for the portfolio. Reverse optimization can be used to test or validate market outcomes in addition to (not as a replacement for) other methods of analysis.

**Risk assets** refers to assets that are not risk-free, such as currencies, equities, and other financial instruments. Treasuries are not included.

**Russell 1000® Index** measures the performance of the 1,000 largest companies in the Russell 3000 Index, representing approximately 92% of the total market capitalization of the Russell 3000 Index.

**Russell 1000 Growth** is a market capitalization-weighted index that measures the performance of the large-cap growth segment of U.S. equity securities; it includes the Russell 1000 index companies with higher price-to-book ratios and higher forecasted growth values.

**Russell 1000 Value** is a market capitalization-weighted index that measures the performance of the large-cap value segment of U.S. equity securities; it includes the Russell 1000 index companies with lower price-to-book ratios and lower expected growth values.

**Russell 2000® Index** measures the performance of the 2,000 smallest companies in the Russell 3000 Index, which represents approximately 8% of the total market capitalization of the Russell 3000 Index.

**S&P 500 index** measures the stock performance of 500 large companies listed on stock exchanges in the U.S. and is one of the most commonly followed equity indices.

**The S&P Developed Property index** defines and measures the investable universe of publicly traded property companies domiciled in developed markets. The companies in the index are engaged in real estate related activities, such as property ownership, management, development, rental and investment.

**S&P Listed Private Equity Index** comprises the leading listed private equity companies that meet specific size, liquidity, exposure, and activity requirements. The index is designed to provide tradable exposure to the leading publicly-listed companies that are active in the private equity space.

**The S&P Municipal Bond Index** is a broad, market value-weighted index that seeks to measure the performance of the U.S. municipal bond market.

**S&P US REIT Index** measures the investable U.S. real estate investment trust market and maintains a constituency that reflects the market's overall composition.

**Short-duration Treasury securities** are backed by the full faith and credit of the U.S. government. They typically mature in one year or less.

**Short, or short position**, refers to a trading technique in which an investor sells a security with plans to buy it later; it is used when an investor expects the price of a security to fall in the short term.

**Stagflation** is persistent high inflation combined with high unemployment and stagnant demand in a country's economy.

## Glossary Continued

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**Tail risk** is the probability that the asset performs far below or far above its average past performance. Investors are most concerned with “left” tail risk, or the likelihood that observations fall three standard deviations below the average expected return.

**Value sectors or stocks**, generally refer to those trading at levels perceived to be below their fundamentals.

**Yield curve** plots yields (interest rates) of bonds having equal credit quality but differing maturity dates. The slope of the yield curve gives an idea of future interest rate changes and economic activity.

**Yield to maturity** is the estimated total return on a bond if the bond is held until it matures.

**Yield to worst** measures the lowest possible yield that can be received on a bond with an early retirement provision and must always be less than yield to maturity because it represents a return for a shortened investment period.