WELLS FARGO
Investment Institute

December 2022

2023 Outlook

Recession, recovery, and rebound

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Recession, recovery, and rebound

December 2022

As investors, we gladly close the books on 2022. Equity and bond benchmark indexes posted deeply negative returns this past year, a double dose of disappointment unmatched over the past 50 years.

While not unusual for equities to routinely post difficult years, the bond market inked its second year in a row of negative returns, a feat not seen since 1958-59. Ironically, U.S. bonds have never posted three consecutive years of negative returns, setting up for what we believe will be an exciting 2023 as interest rates peak– and one we have already begun positioning for within our current guidance.

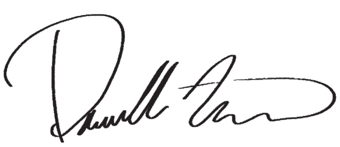
> *"In investing, what is comfortable is rarely profitable."*
>
> — Robert Arnott

A fitting symmetry of a bull market that began during the pandemic with a huge liquidity surge now reconciles itself to a bear market grappling with a massive liquidity drain, as many factors coalesce simultaneously to tighten financial conditions. High inflation and the end of pandemic-related transfer payments reduced real disposable income in 2022; however, real spending growth remained more resilient as consumers unleashed pent-up demand and shifted focus from goods spending to services spending.

2023 may actually see this situation reverse as the drivers of inflation—oil prices, food prices, wage gains, and productivity—give way and the pace of inflation drops. We expect a U.S. recession in the first half of 2023, as well as a continued global economic slowdown, as last year's hawkish monetary policy and money growth slowdown works with a lag. That should drive down corporate earnings growth and create important inflection points for investors over the next 9 to 12 months.

From a market perspective, we prefer to step deliberately through this kind of turbulence as the U.S. economy weathers the fastest pace of real rate tightening in modern history. Bear markets are ultimately a function of price and time. We believe both will run their course in 2023. While we expect 2023 to be a volatile and challenging year as we make this transition, paradoxically we believe it may create strong opportunities for investors to reposition for growth and back into a more pro-risk stance as the next economic recovery and bull market emerge.

This outlook offers a road map of specific advice and guidance for the coming year. As often as I extol the guidance of our strategy team, advice is only as good as what can be understood and applied. It is our job to make these words on the following pages have shape, meaning, and impact for you as an investor. We take that role extremely seriously and exercise it with the utmost care. On behalf of my Wells Fargo Investment Institute colleagues and all our advisors, I want to thank you for the trust you extend to us as our clients.



Darrell L. Cronk, CFA
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What's inside

- We expect a recession in early 2023, recovery by midyear, and a rebound that gains strength into year-end. Nevertheless, full-year U.S. economic growth and inflation targets may reflect mostly the recession.
- Dollar strength early in the year should flatten and partially reverse its upward trajectory, as slowing inflation and Federal Reserve (Fed) interest-rate cuts in the second half of 2023 remove a key source of support.

- We expect earnings to decline in 2023 but see equity market gains as investors anticipate a late-2023 to 2024 recovery.
- We favor U.S. large-cap and U.S. mid-cap equities over international equities and remain tilted toward quality and defensive sectors. Our positioning will likely shift to more cyclical in 2023 as we anticipate the eventual recovery.

- We expect U.S. Treasury yields to decline in 2023 as we go through an economic recession and in anticipation of policy rate cuts from the Fed.
- We believe increasing exposure in long-term fixed income and extending duration may provide an advantage before considering lower credit exposure.

- We expect commodities to perform well in 2023, especially energy-related commodities and equities and high-quality master limited partnerships (MLPs).
- We expect real estate investment trusts (REITs) to underperform equity markets but see some value in the Self-storage, Retail, and Data Centers sub-sectors.

- We believe Relative Value and Macro hedge funds can provide solutions for equity and credit market diversification, as well as real yield, for the near future.
- We anticipate selective opportunities in Private Equity.

*Alternative investments are not appropriate for all investors and are only open to “accredited investors” or “qualified investors” within the meaning of the U.S. securities laws. They are speculative, highly illiquid, and designed for long-term investment and not as trading vehicles.

Please see pages 25–27 for important definitions and risk considerations.

2023 economic and market forecasts

-1.3%

U.S. GDP (gross domestic product) growth

We expect an economic recovery after midyear, but the moderate recession that we anticipate to come first is the main driver behind our forecast for a contraction for the year as a whole.

	Average % change from the same period a year ago, unless otherwise noted	
Global Economy	**Latest**	**2023 target**
U.S. GDP Growth	3.3% (Period ending Q3)	-1.3%
U.S. Inflation[1]	7.7% (Oct)	2.2% (Dec)
U.S. Unemployment rate[2]	3.6% (Oct)	5.2% (Dec)
Global GDP Growth[3]	3.4% (Period ending Q3)	0.9%
Global Inflation[1, 3]	7.7% (Q3)	4.0% (Q4)
Developed-Market GDP Growth	3.2% (Period ending Q3)	-1.3%
Developed-Market Inflation[1]	9.2% (Q3)	3.0% (Q4)
Emerging-Market GDP Growth	3.6% (Period ending Q3)	2.6%
Emerging-Market Inflation[1]	6.7% (Q3)	4.8% (Q4)
Eurozone GDP Growth	4.1% (Period ending Q3)	-3.4%
Eurozone Inflation[1]	10.0% (Nov)	2.1% (Dec)

Sources: Bloomberg and Wells Fargo Investment Institute, as of November 30, 2022. The targets for 2023 are based on forecasts by Wells Fargo Investment Institute as of December 6, 2022. GDP = Gross Domestic Product. **Forecasts, targets, and estimates are based on certain assumptions and our current views of market and economic conditions, which are subject to change. An index is unmanaged and not available for direct investment. Past performance is no guarantee of future results.**

[1] 12-month change, as of the date indicated.

[2] 3-month average as of date indicated.

[3] Global GDP and Inflation are GDP-weighted averages for developed and emerging economies.

Foreign currency exchange rates	**2022 latest***	**2023 year-end target**
Dollar/euro exchange rate	$1.04	$1.01–$1.09
Yen/dollar exchange rate	¥138	¥130–¥140

3.50%–3.75%

Federal funds rate

This forecast anticipates multiple policy interest-rate reductions after rates peak above 4.50% early in 2023.

Fixed income targets	**2022 latest***	**2023 year-end target**
10-year U.S. Treasury yield	3.64%	3.50%–4.00%
30-year U.S. Treasury yield	3.76%	3.50%–4.00%
Federal funds rate	3.75%–4.00%	3.50%–3.75%

Sources: Wells Fargo Investment Institute and Bloomberg, December 6, 2022. *Latest economic and market data as of November 30, 2022. **Forecasts, targets, and estimates are based on certain assumptions and our current views of market and economic conditions, which are subject to change. Past performance is no guarantee of future results.**

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Real assets targets	2022 latest*	2023 year-end target
West Texas Intermediate crude (barrel)	$80	$100–$120
Brent crude (barrel)	$85	$105–$125
Gold (troy ounce)	$1,769	$1,900–$2,000
Bloomberg Commodity Index	252	270–290

Equity targets	2022 latest*	2023 year-end target
S&P 500 Index	4,080	4,300–4,500
Earnings per share	220	205
Russell Midcap Index	2,860	2,900-3,100
Earnings per share	156	145
Russell 2000 Index (small cap)	1,886	1,800-2,000
Earnings per share	79	70
MSCI EAFE Index	1,945	1,700-1,900
Earnings per share	155	130
MSCI Emerging Markets Index	952	800-1,000
Earnings per share	83	70

Sources: Wells Fargo Investment Institute and Bloomberg, December 6, 2022. *Latest economic and market data as of November 30, 2022; latest 2022 earnings-per-share figures reflect consensus estimates. **Forecasts, targets, and estimates are based on certain assumptions and our current views of market and economic conditions, which are subject to change. An index is not managed and not available for direct investment. Past performance is no guarantee of future results.**

$100–$120

West Texas Intermediate crude

Another year of energy price gains is likely as the economic recovery sparks greater demand while global supply struggles to keep pace.

4,300–4,500

S&P 500 Index

Once investors begin to anticipate economic and earnings recovery, we expect the S&P 500 Index to gain into year-end.

A year of global economic transitions

Key takeaways

- Our forecast for a *moderate* recession in 2023 is based on a resilient labor market, slowing inflation, and lower interest rates.
- We believe that a recession and unwinding inflationary shocks of the past 18 months will allow inflation to decline to under 3% on a year-over-year basis by year-end 2023.
- Much lower inflation and easier Fed policy should allow the U.S. dollar to peak early in the year, and then partially reverse its 2022 gains by year-end.

What it may mean for investors

- Prospects for a more moderate economic recession in the U.S. than overseas support our favorable view of U.S. over international financial markets.

Main risks to the economic outlook

- We expect a moderate recession into mid-2023, but a deeper or longer recession could result in the unlikely event that inflation stays higher for longer or that the Fed overshoots with its interest-rate hikes.

A two-chapter outlook for the U.S. and global economies

We expect the U.S. and global economies to face a moderate recession through the summer in 2023 followed by a second-half recovery capable of extending into 2024. Our view is that inflation's noticeable decline will be the other dominant theme in 2023, shaping the trajectory of economic growth and interest rates.

More trade-sensitive, manufacturing-oriented economies abroad are bracing for a steeper economic slowdown from interest-rate increases and market liquidity pressure potentially more serious than in the U.S. Fuel costs already are more elevated than those in the U.S. Export prospects are being dented by weak economic growth in China, dimming prospects for world trade, and the deflationary effects of a strengthening dollar. Our expectations for the dollar's continued strength early in 2023 should restrain overseas opportunities for investors, as it adds to the local-currency cost of commodities and dollar-denominated debt issuance.

The U.S. should avoid some of the challenges contributing in the past to a deep recession and drawn-out recovery. Household and bank finances are in reasonably good shape. The U.S. economy also is supported by a more resilient labor market. And we're counting on a break in 2023 inflation to take enough pressure off purchasing power and interest rates to moderate the economic downturn.

The global recession should end sometime around mid-2023. A deeper or longer contraction seems unlikely, but we will be watching two main risks. First is the risk of tightening financial conditions tied to, among other things, higher interest rates, the Fed's quantitative tightening (the reduction in cash as the Fed shrinks its balance sheet), a strong dollar, and reduced money supply growth. Second, any new commodity shortages could raise raw materials prices, prolong high inflation and monetary policy restrictions, and thereby extend the recession.

Riding the return to slower inflation

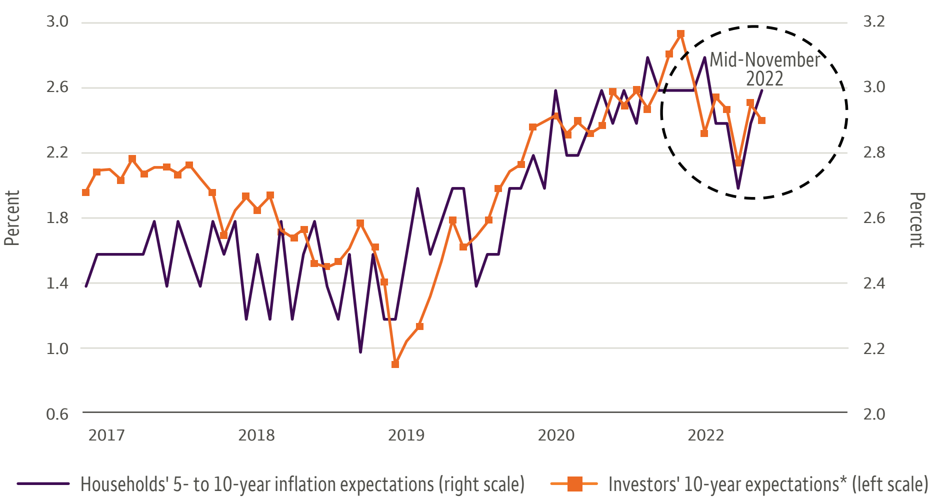
Our conviction is that inflation will decline, leaving its December 2022 to December 2023 rate below 3%. Inflation is susceptible to declines now that a series of shocks contributing to inflation's "spike" are unwinding:

- The recession should reduce demand for an array of goods and economically sensitive services, like travel and entertainment. Goods price inflation started responding to a rotation of spending toward services and to declining freight costs in 2022.
- Inflation for "stickier," less economically sensitive prices — excluding housing — was back down to a December 2021 low by the end of September 2022.
- Housing price declines should continue to gain momentum, while mortgage rates remain elevated and the weak economy undermines household formations.

Please see pages 25–27 for important definitions and risk considerations.

Long-term restraints on inflation are intact and should also contribute to inflation's reversal lower. Cost-of-living adjustments still are less common in labor negotiations now than they have been in the past, and globalization still is a force containing costs despite recent erosion. Financial barriers to entry by new firms are less imposing in today's less capital-intensive, more services-oriented economy. And prices have become more transparent with the growing use of the internet as a shopping vehicle. The chart below shows that long-term inflation expectations were remarkably contained through inflation's rapid rise in 2021 and 2022. These long-term factors should continue this pattern in 2023.

Investor, household long-term inflation expectations still well contained



*As measured by the inflation rate needed to equate the yield on a 10-year Treasury inflation-protected security with the yield on a 10-year conventional security.

Sources: University of Michigan; Bloomberg Financial News, LLC; and Wells Fargo Investment Institute, as of November 15, 2022. Monthly data, December 2017 to November 2022.

Dollar's rise may slow, and possibly reverse

We expect the dollar to recover from its reversal in late 2022 and remain firm into early 2023. Compared with other economies, we look for the U.S. economy to enjoy greater resilience. Notably, the larger U.S. economy depends on trade and imported energy less than the rest of the world. This comparative independence has allowed the Fed to raise interest rates faster, further, and more aggressively than other developed market central banks. Comparatively higher U.S. interest rates and the perceived safe haven status of the dollar reinforce the greenback's global strength.

Fed pivot may be the turning point

However, over the course of 2023, we expect these drivers to change in ways that may lead to a slowing of the dollar's ascent, a flattening, and a partial reversal of its upward trajectory. A Fed pivot toward interest-rate cuts, which we expect in the second half of 2023 as inflation slows noticeably, will undercut a major support for the dollar. Related to this, a peak in U.S. Treasury yields will likely ease downward pressure on the Japanese yen by discouraging further outflows, and a hawkish European Central Bank may find that its rate increases gain more traction in supporting the euro in this context.

Steadier dollar to ease pressure on emerging currencies

If the dollar does peak against developed market currencies in 2023, as we expect, with the euro and yen finally finding some support, emerging market currencies may also stabilize as the pressure of a globally strong dollar is eased. Ongoing stress within the Chinese economy that has resulted in a weaker yuan, however, may mean that this anchor for the broader emerging market currency universe may be less firm than before. That will allow for outperformance of those currencies more closely linked to the U.S. economy than to China as the former emerges from recession.

Please see pages 25–27 for important definitions and risk considerations.

Stay with quality until broader opportunities emerge

Key takeaways

- We expect earnings to contract in 2023 as the recession leads to declining revenues and profit margins. Valuations should rebound in 2023 to lift equity markets by year-end as early-cycle dynamics begin to take hold.
- With an economic recession looming, we remain defensively positioned. However, as investors begin to look past the recession to a recovery, our guidance likely will lean more cyclically.

What it may mean for investors

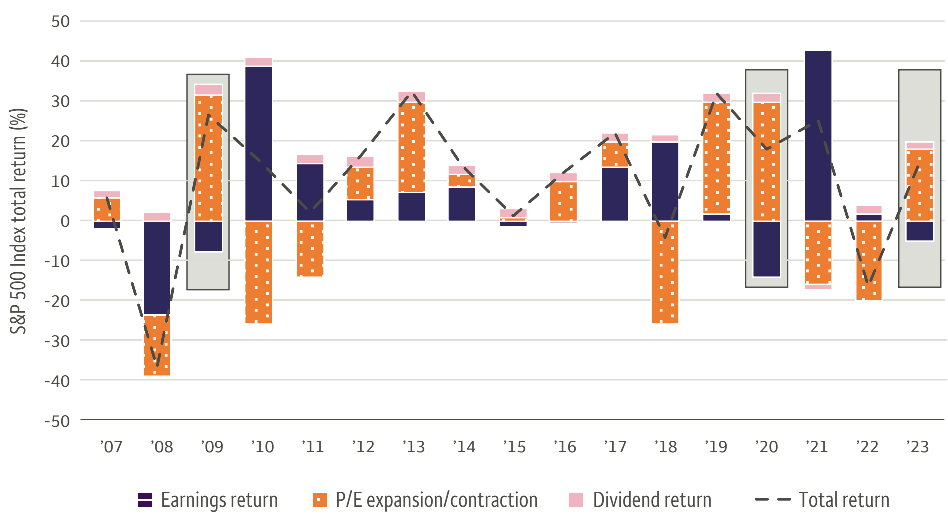
- We were defensively positioned from the first quarter of 2022, but 2023 should bring opportunities for investors to position more for recovery following the first-half recession.

Earnings likely to contract

In the U.S., we expect corporate revenue to decline as the economy falls into recession. Also, we see operating margins slipping from record levels as sales growth stalls and interest, labor, and input expenses remain elevated. While 2022 earnings were better than expected, 2023 earnings are likely to contract early in the year due to the projected economic weakness in the coming quarters. We see earnings rebounding toward the end of 2023 if the U.S. economy begins to grow again as we expect.

Our forecasts for the recession to end in mid-2023, inflation to cool, and the Fed to begin easing policy should lead to improving investor sentiment and higher price/earnings (P/E) multiples. Investors should anticipate the late-2023 to 2024 economic and earnings recovery to send equity prices higher. Similar to prior early cycles (2009 and 2020), equity prices likely will increase much more rapidly than earnings can recover, leading to above-average P/E multiples. However, once earnings catch up to prices, the multiple should normalize at a lower level. The chart below shows historical calendar-year contributions to return for the S&P 500 Index compared with our forecasts for 2022 and 2023.

2023 S&P 500 Index total return expected to be driven by P/E expansion



Sources: Bloomberg and Wells Fargo Investment Institute. Yearly data: 2007 – 2023. 2022 and 2023 are Wells Fargo Investment Institute estimates. Gray boxes highlight the first year of recoveries in 2009 and 2020 and our forecast in 2023. **Forecasts and targets are based on certain assumptions and on our current views of market and economic conditions, which are subject to change.**

We continue to favor higher-quality U.S. large-cap and mid-cap equities over small-cap equities and international equities. This defensive positioning likely will benefit investors early in the recession. However, equity markets are forward-looking and should begin pricing in a recovery before the recession ends. Our conviction is that investors will find opportunities to increase equity exposure in 2023, likely leaning into more economically sensitive areas of the market.

International equity markets face headwinds that ultimately keep us less favorable compared with U.S. equities through 2023. In aggregate, international earnings growth prospects lag those for the U.S., while sentiment, geopolitical tensions, and the dollar's strength reinforce our preference for U.S. over international markets.

We see no catalyst for sustained international equity market outperformance in 2023. The dollar may surrender some of its 2022 appreciation but should stay strong enough to maintain a headwind for international returns. Meanwhile, elevated commodity prices will likely help commodity exporters but undercut earnings among commodity importers. And a difficult European recession should weigh on developed market returns.

Favored asset classes

- U.S. Large Cap Equities
- U.S. Mid Cap Equities

Favored equity sectors

- Energy
- Health Care
- Information Technology

Stay balanced and focus on quality sectors

We continue to prefer balance, patience, and a tilt toward quality, both across equity sectors and at the sub-industry level. Our favored sectors remain Information Technology (IT), Health Care, and Energy, while we remain unfavorable on the highly cyclical Consumer Discretionary sector and the interest-rate-sensitive Real Estate sector.*

IT has high-quality attributes, and we remain attracted to the numerous secular growth drivers that underpin the sector. IT's largest constituents sport particularly strong financial health, while more broadly, many companies within the sector have high margins, low balance-sheet leverage, and solid long-term growth prospects. Within the IT sector, we favor the IT Services, Networking Equipment, Payment Processors, Semiconductor Equipment, and Software sub-industries because we expect relatively resilient corporate tech spending even in an uncertain macroeconomic backdrop and supply chain reshoring. We remain neutral on Semiconductors and PC Hardware due to concerns on the economic cycle but would note that valuations for these sub-industries and IT more generally have become more reasonable in recent quarters.

Our preference for the Health Care sector comes from its mix of defensive and quality characteristics. For instance, we expect the Managed Care sub-industry to maintain strong earnings stability while also continuing to benefit from the effects of an aging population. We also favor the Life Sciences and Medical Devices sub-industries, as we expect these areas to continue exhibiting strong and consistent organic growth due to increasing adoption of advanced medical technologies that include biologics, diagnostics, and robotic surgery. We are neutral on large-cap Pharmaceuticals, as we view the fundamentals as balanced — generally strong earnings stability, offset by varying exposure at the company level to pandemic-related product lines (such as vaccines) and a wide spread of pipeline quality. Meanwhile, we remain unfavorable on Generic Pharmaceutical companies, where we continue to believe that fundamentals remain questionable.

*Sub-industry analysis prepared by Wells Fargo Advisors Global Securities Research (GSR). For more detailed information at the sub-industry level, please see "2023 Equity Sector Outlook: Balanced and ready", December 2022.

Please see pages 25–27 for important definitions and risk considerations.

We favor the Energy sector, as we expect secular supply constraints to persist for some time and ultimately see higher prices for the underlying commodities into 2023. Valuations are also attractive in our view, and although capital returns could moderate somewhat relative to 2022, the sector's dividend yield remains well in excess of the S&P 500 Index. Within this sector, we prefer Integrated Oil and Gas companies that have strong capital bases and a positive relationship with commodity price levels.

We prefer market-weight allocations to the Consumer Staples and Utilities sectors due to the earnings stability these sectors are likely to achieve during an economic downturn. Within Consumer Staples, we expect Food and Staples Retailing to benefit from aggressive inventory reduction and to gain market share as consumers become increasingly value-conscious.

We are neutral to unfavorable on the majority of cyclical sectors but would note that these sectors provide potential opportunities for investors looking to maintain balance within portfolios. More defensive sub-industries would include Defense Contractors within Industrials, Property and Casualty Insurance within Financials, Industrial Gases within Materials, and Automotive Retail within Consumer Discretionary. On the other hand, with an eye toward an eventual recovery, we continue to favor Railroads in Industrials, Internet Retail within Consumer Discretionary, and Universal Banks within Financials. Our overall sector positioning likely will shift from a more quality and defensive posture to a more broadly cyclical one in 2023 as markets look through the recession to the recovery and rebound.

Equity sector and sub-industry preferences

Sector guidance	Sector	Sub-industry guidance: Favorable	Sub-industry guidance: Unfavorable
Favorable	Energy	Integrated Oil; Midstream C-Corps	Refiners
	Health Care	Life Sciences Tools & Services; Managed Care; Medical Devices & Equipment	Generic Pharmaceuticals
	Information Technology	IT Services; Networking Equipment; Payment Processors; Semiconductor Equipment; Software	Storage & Peripherals
Neutral	Communication Services	Integrated Telecom Services; Interactive Home Entertainment; Interactive Media & Services	Alternative Carriers; Publishing
	Consumer Staples	Beverages; Food & Staples Retailing; Household Products	Tobacco Products
	Financials	Insurance Brokers; Property & Casualty Insurance; Universal Banks	Business Development Companies; Mortgage REITs
	Industrials	Defense Contractors; Multi-Industrials; Railroads	Airlines; Commercial Aerospace
	Materials	Industrial Gases	—
	Utilities	Electric Utilities; Independent Power & Renewable Electricity Producers; Multi Utilities; Water Utilities	—
Unfavorable	Consumer Discretionary	Automotive Retail; General Merchandise Stores; Internet & Direct Marketing Retail	Automobile Manufacturers; Homebuilding; Casinos & Gaming; Restaurants
	Real Estate	Self-storage REITs; Retail REITs; Data Centers REITs	Apartment REITs; Single Family Home REITs; Manufactured Homes REITs; Office REITs, Health Care REITs

Favored sub-subsectors by Wells Fargo Advisors Global Securities Research group. Favored sectors by Wells Fargo Investment Institute. As of December 6, 2022.

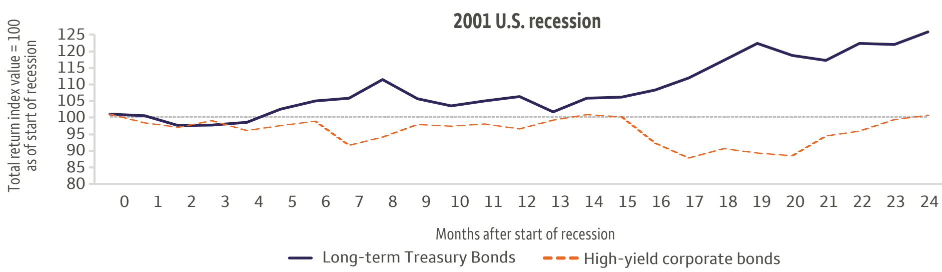
Please see pages 25–27 for important definitions and risk considerations.

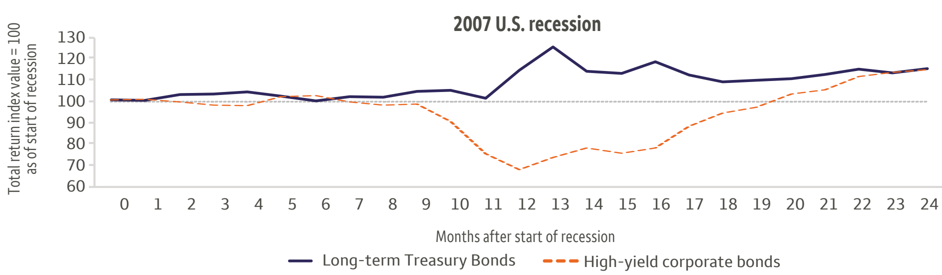
Sharp U-turn ahead

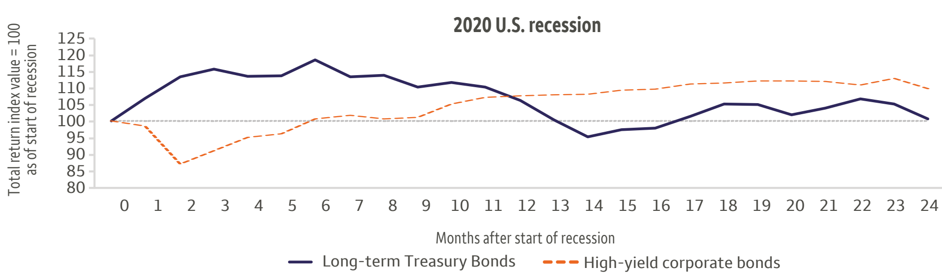
We believe the Fed will pivot away from raising borrowing costs in 2023 after signs that inflation is waning and a recession has taken hold. The Fed will play a key role as it begins to cut policy rates in the second half of the year to aid the economic recovery. Although the Fed plans to continue with balance-sheet reduction, potentially tight credit conditions in the broader financial system could cause the Fed to inject cash in markets where buyers or sellers suddenly disappear.

Extending fixed-income maturities

Long-term Treasury bonds provided relatively more stable total returns than high-yield corporate bonds in the 12-month period following the start of the past three U.S. recessions.







Sources: Bloomberg and Wells Fargo Investment Institute, as of October 14, 2022. Monthly data, March 2001 to February 2003, December 2007 to November 2009, February 2020 to January 2022. Representative indexes include Bloomberg U.S. Long Treasury Total Return Bond Index and Bloomberg U.S. High-Yield Corporate Bond Total Return Index. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- We believe the Fed will pivot away from monetary policy tightening in 2023 after signs of waning inflation pressures begin to emerge and the recession takes hold.
- We believe that a 2023 recession may result in even stronger demand for municipal bonds because they tend to be perceived as a haven for their lower volatility during times of turbulence.

What it may mean for investors

- Long-term yields tend to peak before the Fed finishes raising rates. We favor remaining nimble in bond portfolio allocations with a barbell strategy that lengthens maturities but also takes advantage of ultra-short-term yields. An eventual economic recovery in the latter half of the year should begin to support credit-oriented asset classes and sectors.

Favored sectors

- Long-Term Fixed Income
- Short-Term Fixed Income
- Municipal Securities

We expect U.S. Treasury yields to decline in 2023 during the economic recession and as investors anticipate eventual rate cuts from the Fed. Ultimately, we expect opportunities for many fixed-income asset classes to begin to recover from the unprecedented[1] losses of 2022. We believe that increasing exposure in long-term fixed income will provide an advantage before opportunities appear in lower credit exposure (see chart on previous page). We expect long-term yields will begin to decline well before we reach the peak in high-yield credit spreads — a pattern that repeated in the past three recessions.

Investors' focus in 2023 should remain on the Fed, whose interest-rate hikes typically overshoot and tip the economy into a recession. We already see this pattern repeating, and our targets anticipate lower short- and long-term interest rates by year-end 2023.

Problematic backdrop for global bonds

Sustained inflation pressure overseas should continue to push policy rates and long-term yields higher in developed markets outside the U.S. Nevertheless, higher U.S. rates are likely to keep U.S. markets more attractive and support the dollar's strength, at least until the U.S. recession pushes all U.S. interest rates lower later in 2023. We are keeping our preference for U.S. fixed income over developed ex-U.S. markets.

Two crosscurrents leave our outlook neutral on emerging market sovereign debt denominated in dollars, at least at the start of the year. The negatives include recessions among the developed economies and slow growth in global trade and the Chinese economy. Higher yields in these markets and well-contained sovereign credit spreads in the larger emerging economies offset the negatives enough for us to prefer holding long-term target allocations, at least until we expect global economic improvement, in the second half of 2023.

Corporate bonds may experience a correction

We believe investment-grade corporate issuers will enter 2023 from a position of strength with interest coverage ratios at all-time highs and debt maturities pushed out into the future. Downgrades on the scale of past recessions are unlikely for investment-grade issuers. However, longer-term credit deterioration could occur for issuers with severe earnings drawdowns, credit-negative capital allocation priorities, and longer-term destruction of business strength. Credit spreads (risk premium over Treasuries) for investment-grade and high-yield corporate bonds are currently hovering near long-term averages, but we expect that increased volatility and a decline in corporate profits in the upcoming quarters will diminish the appetite for credit risk and cause spreads to widen.

1. Double-digit decline (-13.1%) in the Bloomberg U.S. Aggregate Total Return Bond Index year to date as of November 30, 2022 — the lowest figure since index inception in 1976

Please see pages 25–27 for important definitions and risk considerations.

The high-yield market should remain bifurcated with strong credit metrics, especially in double B (BB) ratings but with signs of weakness developing for those securities rated single B (B) and below. The increase in short-term rates that has already taken place will likely stress the lower-quality issuers moving forward as debt service costs increase, leaving less capital available for investment or debt reduction. Currently, we expect high-yield defaults to climb slightly in 2023 but only moving closer toward long-term averages. We prefer higher-quality issuers with stronger balance sheets and cash flows and with relatively better liquidity.

Consider municipal bonds

We believe municipal bond issuers — backed by federal tax-exempt status, strengthened reserves, strong fiscal governance, conservative debt structures, and budget-balancing powers — are generally well positioned to withstand current economic pressures heading into 2023.*

During the past three recessions, municipal bonds have, on average, declined less and recovered the value lost at a faster pace than investment-grade corporate bonds. Municipal credits also continue to carry an average rating that is significantly higher than corporates and with a much lower default rate.

We believe a recession in 2023 may result in even stronger demand for municipal bonds, as investors perceive them as a haven for their lower volatility during times of turbulence. We remain favorable on municipals, and for investors in higher effective tax brackets, municipal securities remain relevant and an important part of fixed-income positioning.

Fixed-income sector and sub-sector preferences

	Sub-sectors	
Sectors	**Favorable**	**Unfavorable**
Investment-Grade Corporate bonds (neutral)	Utilities, Health Care, Oil & Gas	Industrials, Consumer Discretionary
Municipal bonds (favorable)	Essential Service and Tax Supported; Transportation (for more aggressive investors)	Higher Education (niche, private institutions) and Health Care (smaller providers)

Sub-sector guidance by Wells Fargo Advisors Global Securities Research group. Sector guidance by Wells Fargo Investment Institute. As of December 6, 2022.

*Sub-sector guidance by Wells Fargo Advisors Global Securities Research group. Sector guidance by Wells Fargo Investment Institute.

Commodity future still looks bright

Key takeaways

- We are favorable on Commodities in 2023, as the bull super-cycle is still young.
- We are unfavorable on REITs overall due to rising interest rates and an impending recession.

What it may mean for investors

- We favor overweighting Commodities in portfolios while underweighting REITs.

Favorable on Commodities, particularly Energy

Commodities have had a strong two-year run, and we expect more gains in 2023 as many commodities remain structurally undersupplied. We enter 2023 favorable on Commodities, and within the commodity sectors, we like Energy the best. We also continue to favor large, well-capitalized, broadly diversified Midstream Energy companies — both Master Limited Partnerships (MLPs) and C-Corporations. We remain unfavorable on Real Estate Investment Trusts (REITs) due to rising interest rates and an impending recession.

Structural undersupply drives bull super-cycle

Commodity prices tend to move together over multiyear periods called super-cycles (see chart on next page). We believe a new bull super-cycle began in March 2020 (chart, solid orange line on following page). Bull super-cycles appear as strong commodity price performance, driven primarily by supply limitations. Lack of supply helped drive positive commodity returns in 2021 and 2022, and we suspect it will again in 2023. That said, commodity price gains may be back-end loaded in 2023, as we anticipate a recession in the first half. Once recession fears cool in the second half and demand picks up, we are anticipating that commodity prices will begin to rise.

Oil on track for more gains

Oil prices are likely on track for another positive year, driven by production challenges and strategic opportunities in large oil-producing countries. The U.S., as an example, has slowed its production growth while U.S. policy preferences have shifted toward renewable energy sources. Sensing this shift in U.S. policies, the Organization of the Petroleum Exporting Countries (OPEC+) has made key strategic moves to minimize supplies while maximizing price. Limited global production growth will likely keep prices moving higher over the next few years.

Gold under pressure

While the commodity bull super-cycle has us positive on Commodities generally, we are neutral on the Precious Metals sector, which includes gold. Gold has positives, but its negatives have been directing prices for some time now. The dollar's 2022 ascent to a 20-year high was gold's most potent negative, but the 2023 flattening and then reversal lower in the dollar's value that we expect should relieve some pressure on gold. Other positives that may help in 2023 are a favorable supply/demand balance and oversold price conditions (cheap versus other commodities and negative investor sentiment). Our 2023 target range of $1,900 to $2,000 reflects in-line commodity performance plus a bit extra, while gold appears oversold. We caution investors, though, not to be too aggressive with gold until it shows better price action.

Please see pages 25–27 for important definitions and risk considerations.

REITs not keeping pace

With spiking interest rates and a likely recession on the horizon, REITs should continue to lag. Softness in REIT values is not necessarily unexpected, as real estate can be one of the earliest sectors hit when recession is on the table. As long as interest rates continue to rise, we will likely remain unfavorable on REITs (versus other S&P 500 sectors). Even if interest rates level off, we may remain unfavorable, with yields on many Treasury bills and other Treasuries competitive with the average REIT dividend yield.

We enter 2023 with an unfavorable rating on REITs overall; a favorable rating on Self-storage REITs, Retail REITs, and Data Centers REITs; and an unfavorable rating on Residential sub-industry REITs (Apartment, Single Family Home and Manufactured Homes), Office REITs, and Health Care REITs.

Favored sectors

- Commodities
- Self-storage REITs
- Retail REITs
- Data Centers REITs

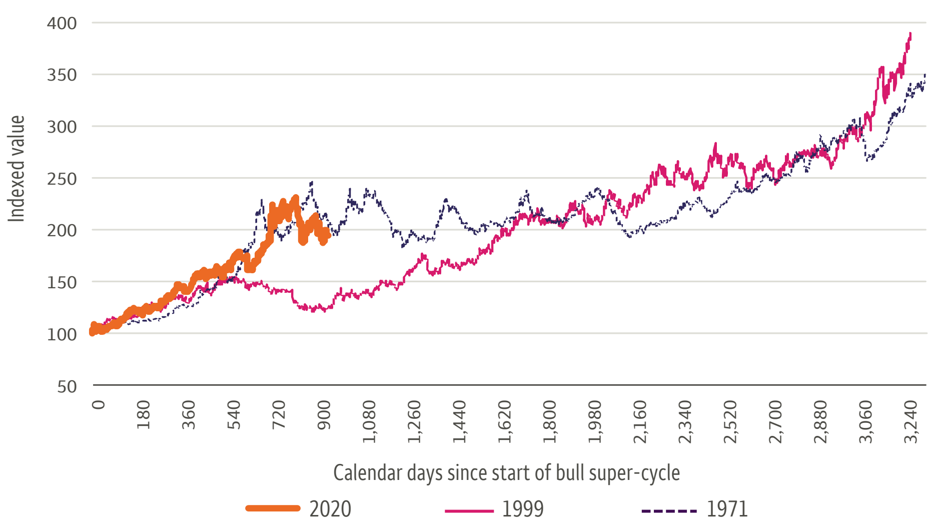
Midstream Energy (MLPs and C-Corporations)

Higher oil prices and comparatively high dividend yields have helped many Midstream Energy companies outperform in recent years, and we're expecting more positive momentum in 2023.

We expect Midstream companies to perform well in 2023, especially large, well-capitalized, broadly diversified ones. We prefer Midstream C-Corporations over MLPs, as the C-Corporation structure is more likely to attract outside capital.

Modern commodity bull super-cycles

Commodity prices tend to move together over multiyear periods called super-cycles. We believe a new bull super-cycle began in March 2020 (chart, solid orange line). Bull super-cycles are marked by strong commodity price performance, driven primarily by lack of supply.



Sources: Bloomberg, Wells Fargo Investment Institute as of November 14, 2022. Daily data. Indexed to 100 as of the start of the bull super-cycle. Performance measured from October 4, 1971 - November 20, 1980, July 13, 1999 - July 2, 2008, and March 18, 2020 - November 14, 2022. Commodity performance measured by the Bloomberg Commodity Total Return Index and Refinitiv Equal Weight Commodity Index. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Opportunities in alternative investments

Key takeaways

- While equity and bond market volatility remain elevated, we favor strategies that offer low correlation to these traditional markets.
- Credit markets have begun to show signs of weakness despite relatively low default and distress ratios. As conditions continue to deteriorate, we will look to shift our guidance on distressed investing within both Event Driven and Private Debt strategies.

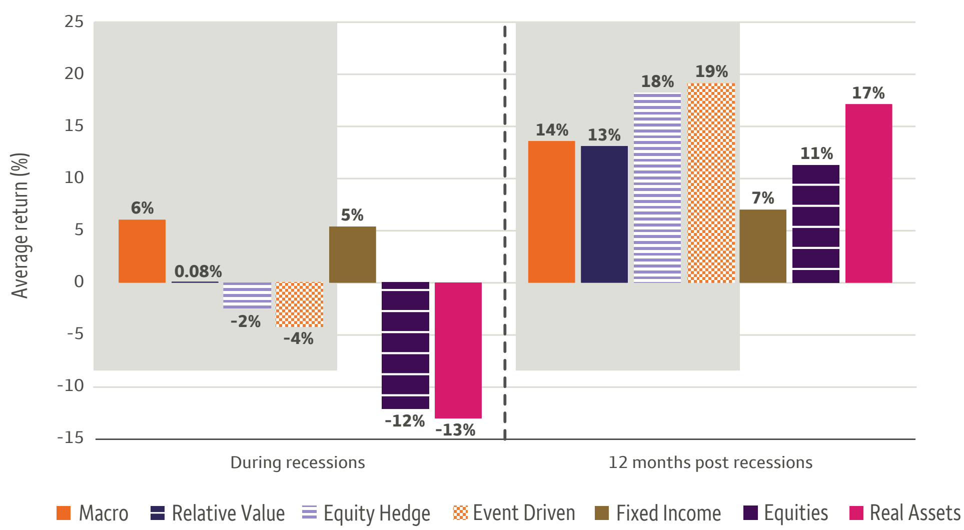
What it may mean for investors

- Late cycle is an opportune time to allocate to alternative investment strategies that have low correlation to equities and fixed income in our view. Consider allocations to Macro and Relative Value, but be prepared to add Event Driven and Equity Hedge as we approach recessionary conditions and subsequent recovery.

Given the evolving economic downturn, elevated inflation, monetary tightening, and the downward trends in stocks and bonds, we prefer using alternative strategies to further diversify risk, which can be accomplished through several hedge fund and private capital strategies.

Our cyclical guidance for the Global Macro and Relative Value strategies remains favorable. We believe both strategies are likely to benefit from a shifting collection of persistent market dislocations and longer-term secular trends. As shown in the chart below, both Macro and Relative Value generated higher returns than equities and real assets during past recessions since 1990. By contrast, Equity Hedge and Event Driven outperformed after these recessions. We expect Global Macro to continue to benefit from several drivers, including inflation, a strong dollar, the commodity super-cycle, higher interest rates, and heightened market volatility.

While Macro and Relative Value performed well during recessions since 1990, Equity Hedge and Event Driven strategies led 12 months after



Sources: Bloomberg and Wells Fargo Investment Institute. Data as of October 2022. Recent recessions include the National Bureau of Economic Research's defined recessions since 1990. The Macro strategy is represented by the HFRI Macro Total Return Index. The Relative Value strategy is represented by the HFRI Relative Value Total Return Index. The Equity Hedge strategy is represented by the HFRI Equity Hedge Total Return Index. The Event Driven strategy is represented by the HFRI Event-Driven Total Return Index. Fixed Income is represented by the Bloomberg U.S. Aggregate Total Return Index. Equities are represented by the MSCI ACWI Gross Total Return USD Index. Real Assets are represented by the Bloomberg Commodity Total Return Index. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** See index definitions at end of report.

Alternative investments are not appropriate for all investors and are only open to "accredited investors" or "qualified investors" within the meaning of the U.S. securities laws. They are speculative, highly illiquid, and designed for long-term investment and not as trading vehicles.

Please see pages 25–27 for important definitions and risk considerations.

Staying selective through economic transitions

The litany of headwinds facing the current global economy includes elevated inflation pressures, a retrenching consumer, restrictive monetary policy, and rising debt levels. Given this backdrop, we continue to prefer Global Macro and Relative Value strategies, which have historically tended to exhibit lower correlations to traditional stock and bond markets.

Hedge Fund strategies, such as Global Macro and Relative Value, offer diversification benefits through lower correlations to traditional stocks and bonds. Global Macro strategies often perform well when there are persistent trends, such rising (or falling) prices in commodities, currencies, equity indexes, or interest rates. Relative Value strategies can perform well regardless of market direction, as the ability to hedge out market risks can prove valuable during recessionary environments. Within Relative Value, we believe the environment should set up well for Long/Short Credit strategies, as the ability to isolate price discrepancies or generate alpha (excess return over the benchmark) from both the long and short portfolios becomes more prevalent as intra-security correlations decline.

Anticipating recession, we hold a favorable view of Distressed Credit. While the distressed credits are scarce today, the opportunity set should expand significantly, as over-levered businesses are impacted by increasing debt service levels and slowing demand from a stressed consumer.

Lastly, for investors with longer-term investment horizons, we maintain our neutral view of private capital strategies, including Private Equity, Private Debt, and Private Real Estate. For Private Equity, we continue to see opportunities within Small- and Mid-Cap Buyout funds, given the more significant valuation dislocations. While we have seen acute weakness in technology companies recently, which has hurt exit valuations for Growth and Venture Capital funds, we view this as a good entry point for these strategies, knowing they have multiple years to deploy capital at more attractive prices.

In Private Debt and Private Real Estate, the impact of higher interest rates may take several months to be fully reflected in the form of credit market stress and lower real estate valuations. We are currently waiting for more attractive entry points as the opportunity set becomes more attractive. Given the long-term nature of private investments, we prefer qualified investors methodically allocate across core Private Capital strategies annually to ensure diversification.

Favored hedge fund strategies and sub-strategies

- **Relative Value:** Arbitrage
- **Relative Value:** Long/Short Credit
- **Macro:** Systematic
- **Macro:** Discretionary
- **Event Driven:** Distressed Credit

Favored Private Capital strategies and sub-strategies

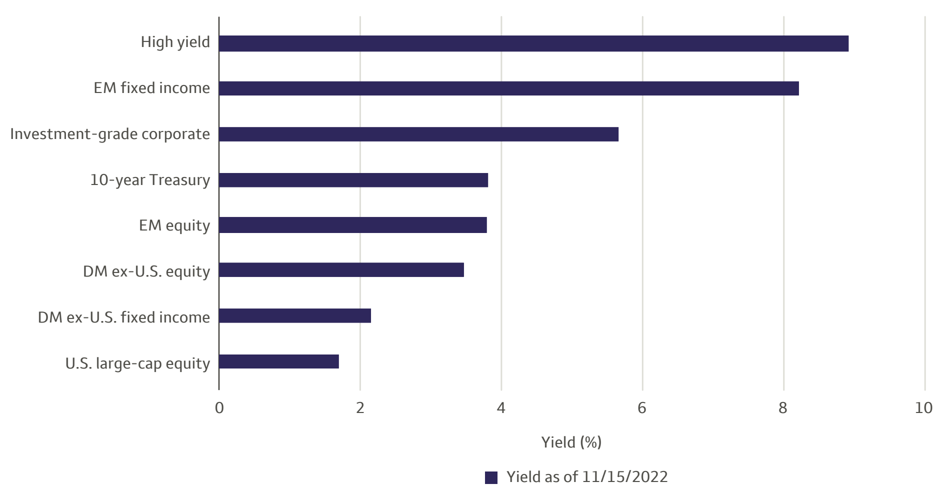
- **Private Equity:** Small- and Mid-Cap Buyout
- **Private Equity:** Growth Equity and Venture Capital

Our top five portfolio ideas for 2023

1 Reconsider portfolio allocations

As investors prepare for 2023, we believe now is an opportune time to reassess the balance between income and growth assets. Income-seeking investors during the past several years may have relied on a mix of dividend payouts, income from real estate and other assets, and coupons from fixed-income assets to support income needs. Now with a shift in the interest-rate environment, bonds are currently offering a more attractive source of income. For example, the 10-year U.S. Treasury bond is yielding 4.0% compared with a 1.8% dividend from the S&P 500 Index. As the chart below shows, investors now have potential for more attractive yields from fixed-income asset classes than from the equity markets. For more growth-oriented investors, equities should continue to provide more opportunities for capital appreciation than fixed income. However, we expect volatility to remain elevated in 2023, particularly in the first half. A volatile period may offer opportunities for investors with additional cash on the sidelines to gradually add to their equity positions to prepare for a turnaround in the second half of 2023, when we expect the economy to start improving, inflation to moderate, and Fed tightening to ease.

Fixed-income yields are exceeding dividends from equities



Sources: Bloomberg, Morgan Stanley Capital International (MSCI), and Wells Fargo Investment Institute, as of November 15, 2022. DM = developed market. EM = emerging market.

For illustrative purposes only. U.S. large-cap equity: S&P 500 Index, DM ex-U.S. fixed income: J.P. Morgan GBI Global Ex U.S. Index, DM ex-U.S. equity: MSCI EAFE Index, EM equity: MSCI Emerging Markets Index, EM fixed income: J.P. Morgan EMBI Global Index, High yield: Bloomberg U.S. Corporate High Yield Bond Index and Investment-grade corporate: Bloomberg U.S. Corporate Bond Index. An index is unmanaged and not available for direct investment. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted. **Past performance is no guarantee of future results.** See index definitions at end of report.

Please see pages 25–27 for important definitions and risk considerations.

2 Position equities for a moderate recession and a second-half recovery

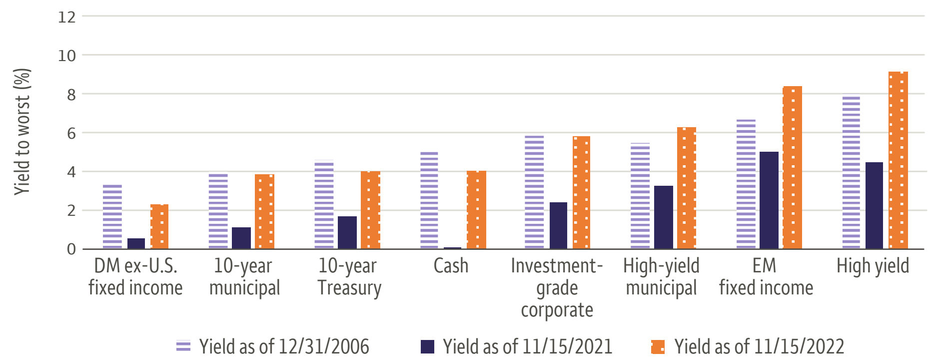
Heading into 2023, we prefer an underweight to global stocks as the economy continues to slow, yet we do see opportunities to add to equity positions on the horizon. Based on our view of a recession in early 2023, we advocate remaining defensively positioned in equities, favoring high-quality U.S. large-cap and mid-cap equities over small-cap and international equities and, in U.S. markets, the Information Technology, Health Care, and Energy sectors. Over the first two quarters of 2023, investors should have more clarity regarding a credible pivot from the Fed, potentially signaling an opportunity for investors to add risk to their portfolios. Once the economy starts to mend, a recovery later in 2023 and into 2024 should send stock prices and price-to-earnings multiples higher even as earnings contract.

In this scenario, we may prefer shifting to an overweight position in equities, including higher allocations to U.S. small-caps stocks. The sharp rise in the U.S. dollar should ease in 2023 but not reverse course, providing little tailwind for international stocks.

3 Lock in higher-yielding bonds

With many interest rates above pre-2008 levels but likely approaching a peak, fixed income appears attractive again (see chart on following page). Short-term fixed income is attractive today, with 12-month Treasury yields increasing from 0.1% a year ago to over 4.0%. If the Fed cuts rates next year as we expect, short-term rates should decline. We believe long-term yields are nearing peak levels and represent good value, so we prefer to add to longer-term bonds. Once yields peak and inflation eases, long-term bonds should become more attractive versus shorter-term bonds. We also suggest patience with lower-quality bonds. High-yield bonds currently offer attractive long-term value, but we remain unfavorable on non-investment-grade debt and are waiting for spreads to widen further before considering an upgrade to the sector. At this stage in the cycle, we prefer that investors increase duration (a measure of a bond's interest rate sensitivity) before considering lower-quality debt.

Many yields have soared to pre-financial crisis levels



Sources: Bloomberg and Wells Fargo Investment Institute, as of November 15, 2022. DM = developed market. EM = emerging market.

For illustrative purposes only. Emerging Market: J.P. Morgan EMBI Global Index, High yield: Bloomberg U.S. Corporate High Yield Bond Index, High yield municipal: Bloomberg U.S. Municipal High Yield Index, Investment-grade corporate: Bloomberg U.S. Corporate Bond Index, Developed Market ex-U.S.: J.P. Morgan GBI Global Ex U.S. Index, and Cash: Bloomberg U.S. Treasury Bills (1–3M) Index. An index is unmanaged and not available for direct investment. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted. **Past performance is no guarantee of future results.** See index definitions at end of report.

4 Resist the urge to time the markets

Market timing involves moving all or a significant portion of a portfolio into or out of asset classes based on near-term market expectations. Unfortunately, such a strategy is nearly impossible to accomplish successfully. Our research has found that the stock market's best and worst days often follow each other closely and occur during periods of high volatility — often during a bear market — making it all the more difficult to time.*

Instead of timing the markets with large allocation changes, we prefer more modest tactical adjustments for short-term investors. Our guidance combines a quality approach in equities, a barbell between short- and long-term fixed-income assets, low-correlated alternative strategies, and commodities — for the longer supply-demand rebalancing in those markets. Once we anticipate recovery and lower interest rates, we expect to shift gears to more cyclical opportunities.

For their part, investors with a long time horizon may want to consider following our guidance in a disciplined, patient, and incremental way. The fixed-income barbell and our preference for commodities and higher-quality U.S. equity sectors should offer some attractive long-term entry points while markets remain volatile in the coming months. The same patient and disciplined approach should apply later in the year, but over the potentially broader opportunity set that typically accompanies an economic recovery.

*Wells Fargo Investment Institute, The perils of trying to time volatile markets, September 14, 2022.

Please see pages 25–27 for important definitions and risk considerations.

5 Manage volatility in uncertain markets

Market volatility was elevated in 2022, reflecting investor uncertainty in an environment where stocks and bonds have moved in the same direction — an unusual market trend. The traditional portfolio with 60% in equities and 40% in fixed income (60/40 portfolio) did not provide its typical downside mitigation amidst a backdrop of higher inflation, rising interest rates, and expectations of a global recession. However, a portfolio with broader diversification may have benefited from allocations to commodities and alternative investments.

Over the past year, as shown in the table below, a portfolio that held allocations to commodities and alternative investments experienced smaller losses and lower risk compared with a portfolio with 60% global equities and 40% global bonds. Over a 10-year period, annualized returns were almost 1% higher for the diversified portfolio while keeping portfolio risk at a lower level than a 60/40 portfolio, demonstrating the benefit of diversification. With elevated risk of recession and volatility in the first half of 2023, a diversified portfolio that includes commodities and alternative investments could help investors manage near-term risks by enhancing risk-adjusted returns and smoothing out performance over time.

Allocation	12-month return (%)	12-month standard deviation (%)	10-year annualized return (%)	10-year annualized standard deviation (%)
Moderate growth and income illiquid allocation	-11.41	12.19	6.15	7.92
60% global equities/40% global bonds blend	-19.86	14.46	4.96	9.66

Sources: © 2022 Morningstar Direct, all rights reserved,* and Wells Fargo Investment Institute, as of October 31, 2022. Allocations use Private Equity and Private Debt until June 30, 2022, and Private Real Estate until September 30, 2022. Private Equity is rolled into U.S. small-cap equity as of July 1, 2022. Private Debt is rolled into high-yield fixed income as of July 1, 2022. Private Real Estate is rolled into public real estate as of October 1, 2022.

Performance results for moderate growth and income and the 60/40 blend are for illustrative purposes only and are calculated using blending index returns. Moderate growth and income allocation is dynamic and changes as needed with adjustments to the strategic allocations. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses, or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Standard deviation is a measure of the volatility of returns. The higher the standard deviation, the greater volatility has been. See pages 25–27 for composition of the allocations, risks, and definitions of indexes.

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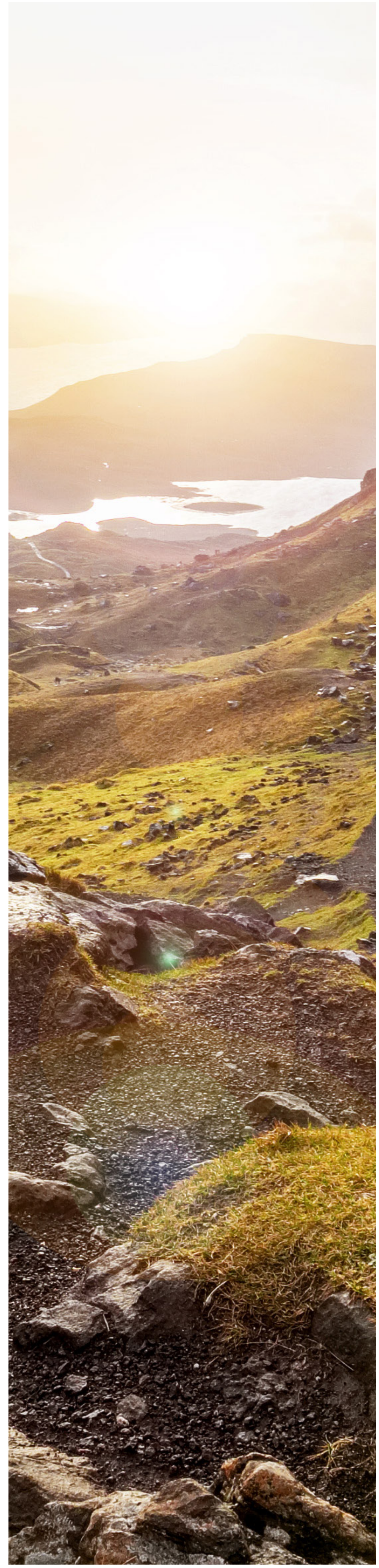

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Resources

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Definitions

Illiquid (Four Asset Group) Portfolio – Moderate Growth & Income:

Moderate Growth & Income is composed of: 2% Bloomberg U.S. Treasury Bill (1–3 Month) Index, 21% Bloomberg U.S. Aggregate Bond Index, 4% Bloomberg U.S. Corporate High Yield Bond Index, 4% JPM EMBI Global Index, 18% S&P 500 Index, 8% Russell Midcap Index, 3% Russell 2000 Index, 6% MSCI EAFE Index, 6% MSCI Emerging Markets Index, 6% NCREIF Property Index, 2% Bloomberg Commodity Index, 10% HFRI Fund Weighted Composite Index, 7% Cambridge Associates U.S. Private Equity Index, 3% Burgiss Private Debt Index. U.S. Investment Grade Fixed Income encompasses the allocations to Short Term, Intermediate Term, and Long Term.

Bloomberg U.S. Corporate Bond Index: The Bloomberg US Corporate Bond Index measures the investment grade, fixed-rate, taxable corporate bond market. It includes USD denominated securities publicly issued by US and non-US industrial, utility and financial issuers.

Bloomberg U.S. High-Yield Corporate Bond Total Return Index: The Bloomberg US Corporate High Yield Bond Index measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below. Bonds from issuers with an emerging markets country of risk, based on Bloomberg EM country definition, are excluded

Bloomberg U.S. Long Treasury Total Return Bond Index: The Bloomberg US Treasury: Long Index measures US dollar-denominated, fixed-rate, nominal debt issued by the US Treasury with 10 years or more to maturity.

Burgiss Group, LLC (Burgiss) Private Debt Index is a pooled quarterly time weighted rate of return series based on data compiled by the Burgiss Group, LLC (Burgiss) from over 800 private debt funds (generalist, senior, mezzanine, and distressed debt), including fully liquidated partnerships, formed after 1986. The return series is net of fees, expenses, and carried interest. The benchmark is issued on a quarterly basis, approximately 80 calendar days after quarter end.

Cambridge Associates LLC U.S. Private Equity Index uses a horizon calculation based on data compiled from more than 1,400 institutional-quality buyout, growth equity, private equity energy, and subordinated capital funds formed between 1986 and 2021. The funds included in the index report their performance voluntarily and therefore the index may reflect a bias towards funds with records of success. Funds report unaudited quarterly data to Cambridge Associates when calculating the index. The index is not transparent and cannot be independently verified because Cambridge Associates does not identify the funds included in the index. Because Cambridge Associates recalculates the index each time a new fund is added, the historical performance of the index is not fixed, can't be replicated and will differ over time from the day presented. The returns shown are net of fees, expenses and carried interest. Index returns do not represent fund performance.

Commodities: Bloomberg Commodity Index is comprised of 23 exchange-traded futures on physical commodities weighted to account for economic significance and market liquidity.

Commodity Composite measures a basket of commodity prices as well as inflation. It blends the historical commodity index introduced by George F. Warren & Frank A. Pearson, former academics at Cornell, collected and published commodity price data in their book, Prices, and the producer price index for commodities (PPI-Commodities), and the National Bureau of Economic Research (NBER) Index of Wholesale Prices of 15 Commodities, the Reuters Continuous Commodity Index, and the Bloomberg Commodity Index Total Return. The index components and weightings, from Warren and Pearson's Prices, change over time but the 11 commodity groups used from 1786-1932 are: Farm Products, Foods, Hides and Leather products, Textile Products, Fuel and Lighting, Metals and Metal Products, Building Materials, Chemicals and drugs, Spirits (stopped tracking 1890), House furnishing Goods, and Miscellaneous. The PPI-Commodities is compiled by the Bureau of Labor Statistics and shows the average price change from the previous month for commodities such as energy, coal, crude oil and the steel scrap. The NBER Index of Wholesale Prices of 15 Commodities is a measure of price movements of 15 sensitive basic commodities whose markets are presumed to be among the first to be influenced by changes in economic conditions. The Reuters Continuous Commodity Index comprises 17 commodity futures that are continuously rebalanced: cocoa, coffee, copper, corn, cotton, crude oil, gold, heating oil, live cattle, Live hogs, natural gas, orange juice, platinum, silver, soybeans, sugar no. 11, and wheat.

Consumer Price Index (CPI) produces monthly data on changes in the prices paid by urban consumers for a representative basket of goods and services.

Developed Markets Ex-U.S. Equities: MSCI EAFE Index is a free float-adjusted market capitalization index that is designed to measure equity market performance across 21 developed market countries excluding the U.S. and Canada.

Developed Market Ex-U.S. Fixed Income: JP Morgan Global Ex United States Index (JPM GBI Global Ex-US) is a total return, market capitalization weighted index, rebalanced monthly, consisting of the following countries: Australia, Germany, Spain, Belgium, Italy, Sweden, Canada, Japan, United Kingdom, Denmark, Netherlands, and France.

Emerging Market Equities: MSCI Emerging Markets Index is a free float-adjusted market capitalization index designed to measure equity market performance of emerging markets. The index consists of 23 emerging market countries.

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Emerging Market Fixed Income: JPM EMBI Global Index is a U.S. dollar-denominated, investible, market cap-weighted index representing a broad universe of emerging market sovereign and quasi-sovereign debt. While products in the asset class have become more diverse, focusing on both local currency and corporate issuance, there is currently no widely accepted aggregate index reflecting the broader opportunity set available, although the asset class is evolving.

Global Hedge Funds: HFRI Fund Weighted Index is a global, equal-weighted index of over 2000 single-manager funds that report to HFR Database. Constituent funds report monthly net-of-all-fees performance in U.S. dollars and have a minimum of $50 Million under management or a 12-month track record of active performance.

HFRI Equity Hedge Total Return Index: Investment Managers who maintain positions both long and short in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage employed, holding period, concentrations of market capitalizations and valuation ranges of typical portfolios. EH managers would typically maintain at least 50% exposure to, and may in some cases be entirely invested in, equities, both long and short.

HFRI Event-Driven Total Return Index: Investment Managers who maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including but not limited to mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments. Security types can range from most senior in the capital structure to most junior or subordinated, and frequently involve additional derivative securities. Event Driven exposure includes a combination of sensitivities to equity markets, credit markets and idiosyncratic, company specific developments. Investment theses are typically predicated on fundamental characteristics (as opposed to quantitative), with the realization of the thesis predicated on a specific development exogenous to the existing capital structure.

HFRI Macro Total Return Index: Investment Managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top down and bottom up theses, quantitative and fundamental approaches and long and short term holding periods. Although some strategies employ RV techniques, Macro strategies are distinct from RV strategies in that the primary investment thesis is predicated on predicted or future movements in the underlying instruments, rather than realization of a valuation discrepancy between securities. In a similar way, while both Macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact movements in underlying macroeconomic variables may have on security prices, as opposes to EH, in which the fundamental characteristics on the company are the most significant are integral to investment thesis.

HFRI Relative Value Total Return Index: Investment Managers who maintain positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities. Managers employ a variety of fundamental and quantitative techniques to establish investment theses, and security types range broadly across equity, fixed income, derivative or other security types. Fixed income strategies are typically quantitatively driven to measure the existing relationship between instruments and, in some cases, identify attractive positions in which the risk adjusted spread between these instruments represents an attractive opportunity for the investment manager. RV position may be involved in corporate transactions also, but as opposed to ED exposures, the investment thesis is predicated on realization of a pricing discrepancy between related securities, as opposed to the outcome of the corporate transaction.

Note: HFRI Indices have limitations (some of which are typical of other widely used indices). These limitations include survivorship bias (the returns of the indices may not be representative of all the hedge funds in the universe because of the tendency of lower performing funds to leave the index); heterogeneity (not all hedge funds are alike or comparable to one another, and the index may not accurately reflect the performance of a described style); and limited data (many hedge funds do not report to indices, and, therefore, the index may omit funds, the inclusion of which might significantly affect the performance shown. The HFRI Indices are based on information self-reported by hedge fund managers that decide on their own, at any time, whether or not they want to provide, or continue to provide, information to HFR Asset Management, L.L.C. Results for funds that go out of business are included in the index until the date that they cease operations. Therefore, these indices may not be complete or accurate representations of the hedge fund universe, and may be biased in several ways. Returns of the underlying hedge funds are net of fees and are denominated in USD.

MSCI ACWI Gross Total Return USD Index: The MSCI ACWI Gross Return USD Index is a free-float weighted equity index. MXWD includes both emerging and developed world markets.

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NCREIF Property Index is a quarterly time series composite total rate of return measure of investment performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only.

Refinitiv Equal Weight Commodity Index: The Continuous Commodity Futures Price Index is an equal-weighted geometric average of commodity price levels relative to the base year average price.

U.S. High Yield Fixed Income: Bloomberg U.S. Corporate High Yield Bond Index covers the universe of fixed-rate, noninvestment-grade debt.

U.S. Large Cap Equities: S&P 500 Index consists of 500 stocks chosen for market size, liquidity, and industry group representation. It is a market-value-weighted index with each stock's weight in the index proportionate to its market value.

U.S. Mid Cap Equities: Russell Midcap Index measures the performance of the 800 smallest companies in the Russell 1000 Index, which represent approximately 25% of the total market capitalization of the Russell 1000 Index.

U.S. Municipal Fixed Income: Bloomberg U.S. Municipal High Yield Index is considered representative of the broad market for investment grade, tax-exempt bonds with a maturity of at least one year.

U.S. Small Cap Equities: 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.

U.S. Taxable Investment Grade Fixed Income: Bloomberg U.S. Aggregate Bond Index is a broad-based measure of the investment grade, US dollar-denominated, fixed-rate taxable bond market.

U.S. Treasury Fixed Income: Bloomberg U.S. Treasury Bills (1-3M) Index is representative of money markets.

Risk considerations

Forecasts and targets are based on certain assumptions and on our current views of market and economic conditions, which are subject to change.

All investing involves risks, including the possible loss of principal. There can be no assurance that any investment strategy will be successful and meet its investment objectives. Investments fluctuate with changes in market and economic conditions and in different environments due to numerous factors, some of which may be unpredictable. Asset allocation and diversification do not guarantee investment returns or eliminate risk of loss. Each asset class has its own risk and return characteristics, which should be evaluated carefully before making any investment decision. The level of risk associated with a particular investment or asset class generally correlates with the level of return the investment or asset class might achieve. Some of the risks associated with the representative asset classes include:

General market risks

Stock markets, especially foreign markets, are volatile. A **stock's** value may fluctuate in response to general economic and market conditions, the prospects of individual companies, and industry sectors. **International investing** has additional risks including those associated with currency fluctuation, political and economic instability, and different accounting standards. This may result in greater share price volatility. These risks are heightened in emerging and frontier markets. Investing in **small- and mid-cap companies** involves additional risks, such as limited liquidity and greater volatility.

Investments in **fixed-income securities, including municipal securities**, are subject to market, interest rate, credit, liquidity, inflation, prepayment, extension, and other risks. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in a decline in the bond's price. **High-yield fixed-income** securities are considered speculative, involve greater risk of default, and tend to be more volatile than investment-grade fixed-income securities. **Municipal securities** may also be subject to the alternative minimum tax and legislative and regulatory risk, which is the risk that a change in the tax code could affect the value of taxable or tax-exempt interest income.

Sovereign debt is generally a riskier investment when it comes from a developing country and tends to be a less risky investment when it comes from a developed country. The stability of the issuing government is an important factor to consider, when assessing the risk of investing in sovereign debt, and sovereign credit ratings help investors weigh this risk.

U.S. government securities are backed by the full faith and credit of the federal government as to payment of principal and interest if held to maturity. Although free from credit risk, they are subject to interest rate risk.

Mortgage-related securities are subject to prepayment and call risks in addition to the risks of investing in debt securities. Call risk is the risk that the issuer will redeem the issue prior to maturity. This may result in reinvestment risk, which means the proceeds will generally be reinvested in a less favorable environment. Changes in prepayments may significantly affect yield, average life, and expected maturity.

Investment in **Master Limited Partnerships (MLPs)** involves certain risks which differ from an investment in the securities of a corporation. MLPs may be sensitive to price changes in oil, natural gas, etc., regulatory risk, and rising interest rates. A change in the current tax law regarding MLPs could result in the MLP being treated as a corporation for federal income tax purposes which would reduce the amount of cash flows distributed by the MLP. Other risks include the volatility associated with the use of leverage; volatility of the commodities markets; market risks; supply and demand; natural and man-made catastrophes; competition; liquidity; market price discount from Net Asset Value and other material risks.

Currency risk is the risk that foreign currencies will decline in value relative to that of the U.S. dollar. Exchange rate movement between the U.S. dollar and foreign currencies may cause the value of a portfolio's investments to decline.

Bond rating firms, such as Moody's, Standard & Poor's and Fitch, use different designations consisting of upper- and lower-case letters 'A' and 'B' to identify a bond's credit quality rating. 'AAA' and 'AA' (high credit quality) and 'A' and 'BBB' (medium credit quality) are considered investment grade. Credit ratings for bonds below these designations ('BB', 'B', 'CCC', etc.) are considered low credit quality, and are commonly referred to as "junk bonds".

Sector investing

Sector investing can be more volatile than investments that are broadly diversified over numerous sectors of the economy and will increase a portfolio's vulnerability to any single economic, political, or regulatory development affecting the sector. This can result in greater price volatility. Risks associated with the **Information Technology** sector include increased competition from domestic and international companies, unexpected changes in demand, regulatory actions, technical problems with key products, and the departure of key members of management. Technology and Internet-related stocks, especially smaller, less-seasoned companies, tend to be more volatile than the overall market. **Real estate** investments have special risks, including possible illiquidity of the underlying properties, credit risk, interest rate fluctuations, and the impact of varied economic conditions.

Alternative investments

Alternative investments, such as **hedge funds, private equity/private debt, and private real estate funds** are speculative and involve a high degree of risk that is appropriate only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program. They entail significant risks that can include losses due to leveraging or other speculative investment practices, lack of liquidity, volatility of returns, restrictions on transferring interests in a fund, potential lack of diversification, absence and/or delay of information regarding valuations and pricing, complex tax structures and delays in tax reporting, and less regulation and higher fees than mutual funds. Hedge fund, private equity, private debt, and private real estate fund investing involve other material risks, including capital loss and the loss of the entire amount invested. A fund's offering documents should be carefully reviewed prior to investing.

Private debt strategies seek to actively improve the capital structure of a company, often through debt restructuring and deleveraging measures. Such investments are subject to potential default, limited liquidity, the creditworthiness of the private company, and the infrequent availability of independent credit ratings for private companies. Investing in distressed companies is speculative and involves a high degree of risk. Because of their distressed situation, these securities may be illiquid, have low trading volumes, and be subject to substantial interest rate and credit risks. **Private capital investments** are complex, speculative investment vehicles not appropriate for all investors. They are not subject to the same regulatory requirements as registered investment products and engage in leverage and other aggressive investment practices. There is often limited (or even nonexistent) liquidity and a lack of transparency regarding the underlying assets.

Hedge fund strategies, such as **Event Driven, Equity Hedge, Global Macro, Relative Value, Structured Credit, and Long/Short Credit**, may expose investors to the risks associated with the use of short selling, leverage, derivatives, and arbitrage methodologies. Short sales involve leverage and theoretically unlimited loss potential because the market price of securities sold short may continuously increase. The use of leverage in a portfolio varies by strategy. Leverage can significantly increase return potential but create greater risk of loss. Derivatives generally have implied leverage, which can magnify volatility and may entail other risks, such as market, interest rate, credit, counterparty, and management risks. Private capital investments are complex, speculative investment vehicles not appropriate for all investors. They are not subject to the same regulatory requirements as registered investment products and engage in leverage and other aggressive investment practices. There is often limited (or even nonexistent) liquidity and a lack of transparency regarding the underlying assets.

Real assets

Real assets are subject to the risks associated with **real estate, commodities,** and other investments and may not be appropriate for all investors. The **commodities markets,** including investments in **gold and other precious metals**, are considered speculative, carry substantial risks, and have experienced periods of extreme volatility. Investing in a volatile and uncertain commodities market may cause a portfolio to rapidly increase or decrease in value, which may result in greater share price volatility. Investments in commodities may be affected by changes in overall market movements, commodity index volatility, changes in interest rates, or factors affecting a particular industry or commodity. Products that invest in commodities may employ more complex strategies, which may expose investors to additional risks. Investment in **real estate securities** includes risks, such as the possible illiquidity of the underlying properties, credit risk, interest rate fluctuations, and the impact of varied economic conditions.

Investment expertise and advice to help you succeed financially

Wells Fargo Investment Institute is home to 200 investment professionals focused on investment strategy, asset allocation, portfolio management, manager reviews, and alternative investments. Its mission is to deliver timely, actionable advice that can help investors achieve their financial goals.

For assistance with your investment planning or to discuss the points in this report, please talk to your investment professional.

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