The Investment Outlook for 2023

The year ahead outlook: A slow economy but better markets

In brief

- Near-term recession is too close to call. However, lower inflation and slower growth over the next few years seem very likely.
- After a dreadful year, return prospects for bonds in 2023 look much better as the Fed concludes its rate hiking cycle. Investors can take advantage of higher yields in short-dated bonds while adding duration as a hedge against market volatility and maintaining a high quality bias in credit.
- Globally, 2023 should see substantial (albeit incomplete) normalization in inflation levels, a pause in central bank hikes and a hangover for the real economy from last year's inflation surge and aggressive rate hikes. China may be an exception to the rule of global deceleration, with a slow (but bumpy) shift away from "zero COVID".
- U.S. equity returns will be driven by earnings against a backdrop characterized by elevated market volatility. In this environment, companies with pricing power and stable cash flows – that are trading at reasonable valuations – are most attractive.
- While risks around the international growth outlook are high for 2023, they are also much better reflected in equity valuations (and currencies) – and "less bad" news can be enough to fuel a powerful rebound once the worst is priced into earnings expectations.
- Alternatives have benefited from an environment of easy money for the past decade – a trend that has come to an end. The new combination of higher rates and demand for capital will allow for more differentiation between winners and losers.
- ESG was confronted with headwinds in 2022, yet commitments from policymakers this year could fuel investments in sustainable technology and infrastructure for the next decade.
- Despite uncertainty on the horizon, significant valuation imbalances across markets mean there is more upside potential than downside risk in investing today.

J.P.Morgan
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The U.S. economy: Looking beyond the cycle

2022 turned out to be another very difficult year. Widespread vaccination and less lethal strains of COVID-19 led to lower fatality rates, allowing most pandemic-weary populations around the world to move back toward normal activity. However, supply chain disruptions, the lingering effect of fiscal stimulus and Russia's invasion of Ukraine caused inflation to surge to its highest level in 40 years. The Federal Reserve (Fed), like other central banks, tightened aggressively, triggering sharp sell-offs in both fixed income and equity markets. Mid-term elections resulted in a divided government, suggesting little prospect of structural reform to address long-term problems or provide fiscal support should the economy falter. And even as inflation pressures ease at the end of 2022, recession is widely predicted for 2023.

For investors, however, it is important to look beyond the cycle. While a 2023 recession is quite possible, it should be a mild one if it occurs. More importantly, with inflation continuing to fade and fiscal policy likely on hold, the Fed is likely to end its tightening cycle early in the new year and inflation could begin to ease before the end of 2023. A slower-growing economy will likely temper wage demands, helping stabilize corporate margins after a difficult 2023. By 2024, the U.S. economy may well be back on a path that looks much like that of the late 2010s – slow growth, low inflation, moderate interest rates and strong corporate margins. While this may not represent an exciting prospect for the average American worker or consumer, it is an environment that could be very positive for financial markets.

For real output, slower growth looks inevitable, while recession is not. Three forces, in particular, will put downward pressure on GDP growth.

First, consumer spending will be hit by the lagged effects of fading fiscal stimulus. Of course the consumer aid embedded in the massive pandemic relief bills of 2020 and 2021 is long gone. However, at least for a while, consumers have tried to maintain the level of consumption that this aid enabled. Consequently, the personal savings rate, which averaged 7.7% of disposable income over the five years prior to the pandemic, fell to 2.3% by October of this year. In reality, many households are continuing to save. However, many others are accumulating debt to maintain their spending in a way that is not sustainable, and this should lead to much slower growth in real consumer spending in the year ahead.

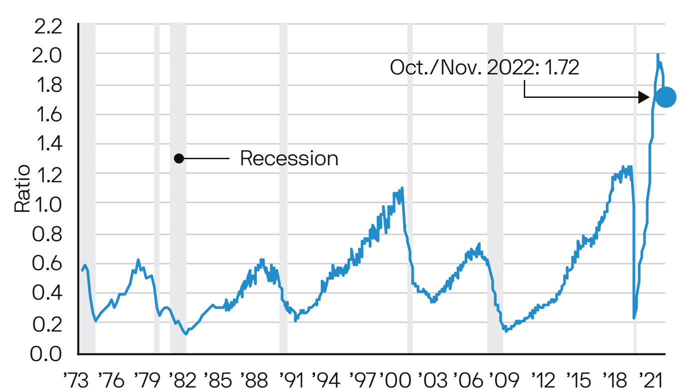
Second, both home building and home buying are falling sharply due to a more than doubling of mortgage rates since the start of the year. This, of course, hurts construction employment, but also all the activities involved in buying a new house, including furniture, appliances and relocation services.

And, third, both slower growth overseas and a high dollar should hurt international trade in the year ahead.

It should be noted, however, that there are some offsetting factors that could limit any downturn in economic activity. Consumer spending will be aided by hefty cost-of-living adjustments to Social Security payments and tax bands at the start of the year and the further suspension, at least for a few months, of federal student loan payments. In addition, light vehicle sales should rise in 2023 as the inventory position improves. The slump in single-family housing starts should be partially offset by strong activity in the multi-family sector. And while U.S. manufacturing exports will likely be hurt by a higher dollar, strong demand for U.S. energy and food commodities should prevent an outright collapse in exports.

Excess demand for labor should limit any increase in unemployment

Exhibit 1: Ratio of job openings to job seekers
Job openings* lagged 1 month divided by unemployed persons, SA



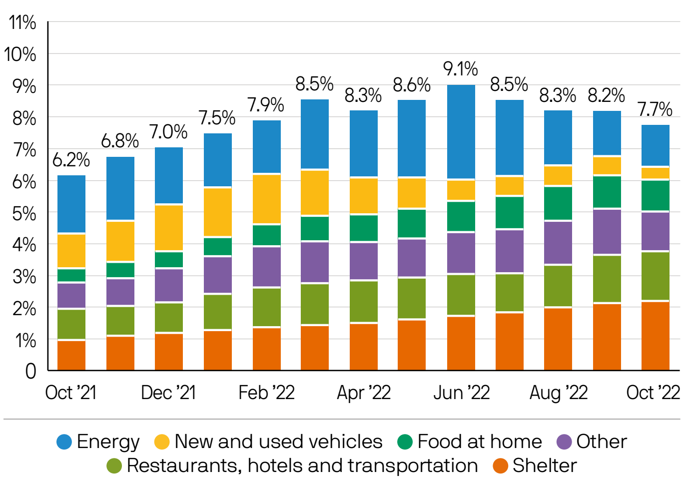
Source: U.S. Department of Labor, J.P. Morgan Asset Management. *JOLTS job openings from February 1974 to November 2000 are J.P. Morgan Asset Management estimates. Data are as of December 5, 2022.

A second broad support for the U.S. economy should come from the labor market. While the excess demand for labor appears to have peaked in the spring of 2022, there were still 1.7 job openings for every person unemployed in early November. This should keep payroll job growth positive into 2023 and limit any increase in the unemployment rate in 2023.

And then there is inflation. The October CPI report showed consumer prices up 0.4% for the month and 7.7% year-over-year, down from a peak of 9.1% in June. Energy prices rose for the month, following three consecutive declines, and food prices climbed by a still very high 0.6%. However, supply chain pressures are easing and global food and energy prices have both eased somewhat in the face of slower growth in Europe, China and the United States.

Inflation pressures are continuing to fade

Exhibit 2: Contributors to headline inflation
Contribution to y/y % change in CPI, not seasonally adjusted



Source: Bureau of Labor Statistics, Federal Reserve Bank of Philadelphia, University of Michigan, J.P. Morgan Asset Management. Contributions mirror the BLS methodology on Table 7 of the CPI report. Values may not sum to headline CPI figures due to rounding and underlying calculations. "Shelter" includes owners' equivalent rent and rent of primary residence. "Other" primarily reflects household furnishings, apparel, education and communication services, medical care services and other personal services. Data are as of December 5, 2022.

Going forward we expect many of these trends to continue, although they will be partly offset by strong gains in the rent and owners' equivalent rent categories. We expect the year-over-year gain in headline CPI to fall to 6.8% by December, 4.2% by the second quarter of 2023 and 3.5% by the fourth quarter of next year. The October CPI reading translated into a 6.0% year-over-year gain in the personal consumption deflator (which is the Fed's favorite measure of inflation), and we expect this to decline to 2.7% year-over-year by the fourth quarter of 2023, not too far from the Fed's 2% target.

Fixed Income: A "pivot"-al year for the Fed

Fixed income investors will be happy to close the book on 2022 after one of the worst years on record for bonds, driven by the Fed's most aggressive rate hiking campaign since the 1980 Volcker-era tightening. While an end to the current tightening cycle should bring some much-needed stability to the bond market in 2023, investors should consider:

1. How far will the Fed go before concluding its rate hiking campaign?
2. How might credit perform in a year where both economic and profit growth are set to slow?
3. How will impaired liquidity impact price action?

Path for policy rates

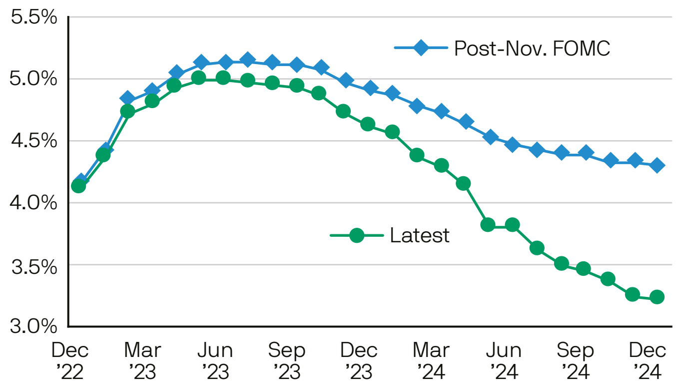
The Fed is widely expected to enter the final inning of its rate hiking cycle in 1Q23. At the time of writing, markets anticipate the fed funds rate will reach a peak (terminal) rate of 5.0% (or a target range of 4.75%-5.00%) by May 2023. A reasonable path could see the committee hike by 50 basis points (bps) at its December 2022 meeting, followed by 25bps increases in February and March of next year.

Thereafter, as signs of slowing growth and softening inflation become clear, markets expect the Fed to cut rates to 4.6% by year-end (**Exhibit 3**). While the Fed may still feel compelled to see clear signs inflation is heading toward 2% before easing policy, broad economic weakness may force a data-dependent Fed to pivot sooner than it would like.

All things considered, the upside risk the Fed hikes too much is limited, and we believe short-term rates have fully priced in the next few moves from the Fed, which should allow front-end yields to stabilize. Longer-term interest rates, which are driven by real growth and inflation expectations, are likely to decline amidst weakening economic activity and a more cautious Fed.

The market now expects a lower terminal rate

Exhibit 3: Fed funds futures, %



Source: FactSet, CME Group, J.P. Morgan Asset Management. Post-Nov. FOMC reflects market data for November 3, 2022, which serves as the peak federal funds terminal rate in futures markets. Data are as of December 5, 2022.

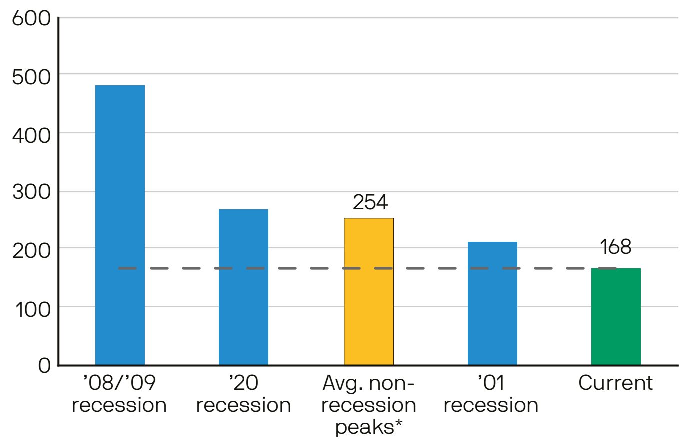
Credit outlook

With investment-grade (IG) and high-yield (HY) corporate bonds yielding close to 6% and 9%, respectively, investors may be tempted to dip their toes back into lower-rated credits. However, in our view, credit spreads have not widened enough, particularly for low-quality bonds, to compensate for the rising risk of default amid a rising economic backdrop next year.

As highlighted in **Exhibit 4**, in previous non-recession market corrections, IG and HY spreads peaked at roughly 250bps and 850bps, while current spreads are at 170bps and 490bps, respectively. Given IG bond spreads are providing greater compensation for the expected pickup in defaults, investors may want to maintain a high-quality credit bias within portfolios.

Corporate bond spreads still appear low given recession risks ...

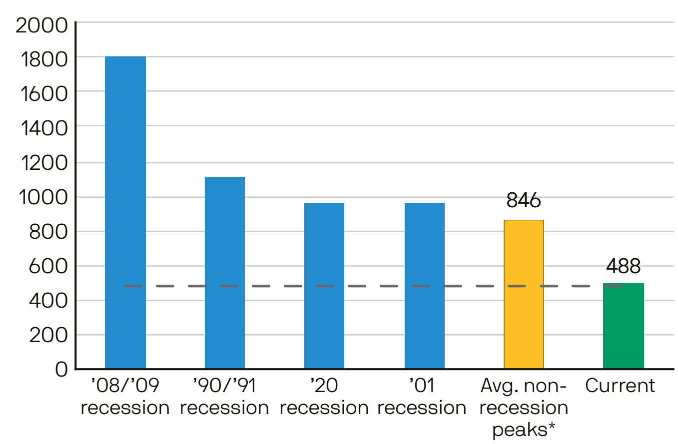
Exhibit 4A: IG spread-to-worst, basis points, monthly, 2000-present



Source: J.P. Morgan. Spread-to-worst indicated are the difference between the yield-to-worst of a bond and yield-to-worst of a U.S. Treasury security with a similar duration. Investment grade is represented by the J.P. Morgan JULI IG Index. *Average non-recession peaks include the peak in spreads during the Tech' bubble (2002), European sovereign debt crisis (2011) and Oil collapse/strong dollar episode (2016). Data are as of December 5, 2022.

... particularly for high yield bonds

Exhibit 4B: HY spread-to-worst, basis points, monthly, 1990-present



Source: J.P. Morgan Global Economic Research. Spread-to-worst indicated are the difference between the yield-to-worst of a bond and yield-to-worst of a U.S. Treasury security with a similar duration. High yield is represented by the J.P. Morgan Domestic High Yield Index. *Average non-recession peaks include the peak in spreads during the Asian financial/currency crisis (1998), Tech' bubble (2002), European sovereign debt crisis (2011) and Oil collapse/strong dollar episode (2016). Data are as of December 5, 2022.

Liquidity conditions

Liquidity is defined as the market's ability to facilitate the purchase or sale of an asset without causing a change in the asset's price. In light of the fact that the previous episode of quantitative tightening (QT) concluded with a liquidity-induced sell-off, investors may be worried that history could repeat itself. High frequency data[1] on bid-ask spreads[2], order book depth[3] and price impact[4] suggest that while the Treasury market is less liquid than in previous years, it is not so unusually illiquid as to warrant concern.

The deterioration in liquidity conditions is due in part to post-Global Financial Crisis legislation that has constrained dealer balance sheet growth relative to the growth in Treasury debt and risk aversion among financial institutions and market makers, as well as the reduction in the size of the Fed's balance sheet (QT) and removal of bank reserves from the system. Though not an immediate issue, lower-than-normal liquidity could lead to continued fixed income volatility in 2023.

Investment implications

As the Fed concludes its rate hiking cycle in the first quarter of 2023, yields should stabilize, allowing interest rate volatility to settle down. Investors should take advantage of yields in short-dated bonds, while increasing exposure to long-dated bonds which should benefit from declining yields driven by falling inflation and real growth.

IG spreads are currently at roughly 66% of their average historical non-recession peak, while HY spreads are only at 58%. Given a more somber economic outlook, an overweight to IG bonds seems appropriate relative to HY.

Due to the regulatory environment and growth in Treasury debt, dealers have little capacity to mediate the market on their own, causing more frequent bouts of market illiquidity. While this should have a limited impact on long-term returns, it could amplify price shocks amid heightened market volatility.

In some ways, the market's use of the term "pivot" to describe Fed action in 2022 is analogous to "transitory" in describing inflation in 2021. While the latter has begun to play out, at some point the Fed will have to pivot to a more dovish stance given a slowing U.S. economy, potentially in 2H23. At that point, extending duration and reassessing corporate credit fundamentals will be important in adjusting bond allocations.

International economy: Feeling the hangover of elevated inflation and higher rates—with China being the exception to the rule

For the global economy in 2022, it all began and ended with inflation (with the exception of China). The year's biggest surprise was how high inflation got, how persistently it remained elevated and how diversified inflationary pressures were by items and countries. By the end of 3Q22, global inflation reached 7.9% year-over-year, a 40-year high, driven by:

1. High commodity prices due to supply issues exacerbated by the war in Ukraine,
2. Still elevated goods prices due to post-pandemic supply and demand imbalances and
3. High services prices due to the reopening bounce amidst tight labor markets.

[1] The findings quoted are based on Michael Fleming and Claire Nelson, "How Liquid Has the Treasury Market Been in 2022?," Federal Reserve Bank of New York Liberty Street Economics, November 15, 2022, https://libertystreeteconomics.newyorkfed.org/2022/11/how-liquid-has-the-treasury-market-been-in-2022/.

[2] Bid-ask spread: the difference between the lowest ask price and the highest bid price for a security.

[3] Order book depth: the average quantity of securities available for sale or purchase at the best bid and offer prices.

[4] Price impact is measured in 32nds of a point per $100 million in net order flow (buyer-initiated trading volume less seller-initiated trading volume), where a point equals 1% of par. A higher price impact suggests reduced liquidity.

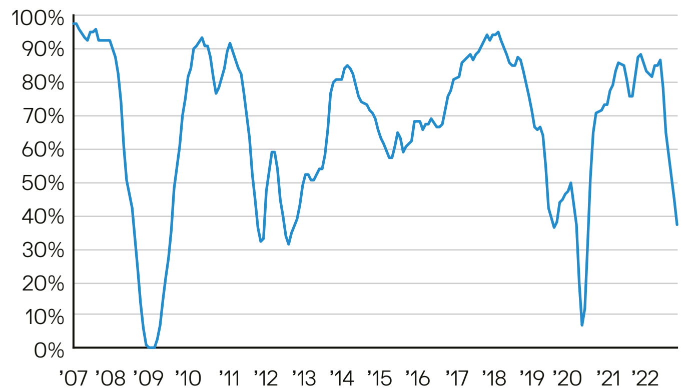
Sequentially, however, both headline and core inflation began to moderate at the end of 3Q, as commodity prices came off the boil, goods delivery times substantially normalized and services demand began to peak. 2023 should be a year of a substantial (albeit incomplete) normalization in inflation, led by emerging markets ex-China and followed by Canada, the UK and Europe as the year progresses.

For many central banks, the battle with inflation is not quite over as 2023 begins, with some additional hikes rolling over into the first quarter of the new year. However, central bank rate hikes should end as the second quarter of the year begins (with the exception of Japan, which may finally get going on its long road toward less easy policy). Rate cuts will likely have to wait until 2024 (with the exception of some emerging markets, like some in Latin America) as rates remain restrictive for longer to ensure inflation continues its journey downward.

2023 will likely be characterized by real economic growth feeling the hangover of 2022's high inflation and quick journey toward neutral or restrictive rates. As the year comes to a close, the global economy has already lost substantial speed, with only 37% of countries registering a manufacturing PMI over 50 (signaling accelerating momentum) in November, a big step down from April when 89% did so (**Exhibit 5**). The question for 2023 is how much further the global PMI will fall. Recession odds are particularly elevated in the UK and Europe given the energy price shock reverberating through the region's industry and household pocketbooks. The key question is how deep a recession could be, which will depend on how cold the winter months are and whether energy supplies are sufficient without mandatory rationing measures. Meanwhile, the Canadian economy is in relatively better shape, thanks to a degree of isolation from the energy crisis unfolding overseas. For emerging markets ex-China, the question is one of a substantial loss of speed, as the reopening bounce fades, labor markets soften and higher rates pinch activity.

As 2022 comes to a close, the global economy is rapidly losing speed

Exhibit 5: % of countries with manufacturing PMI over 50, 3-month moving average

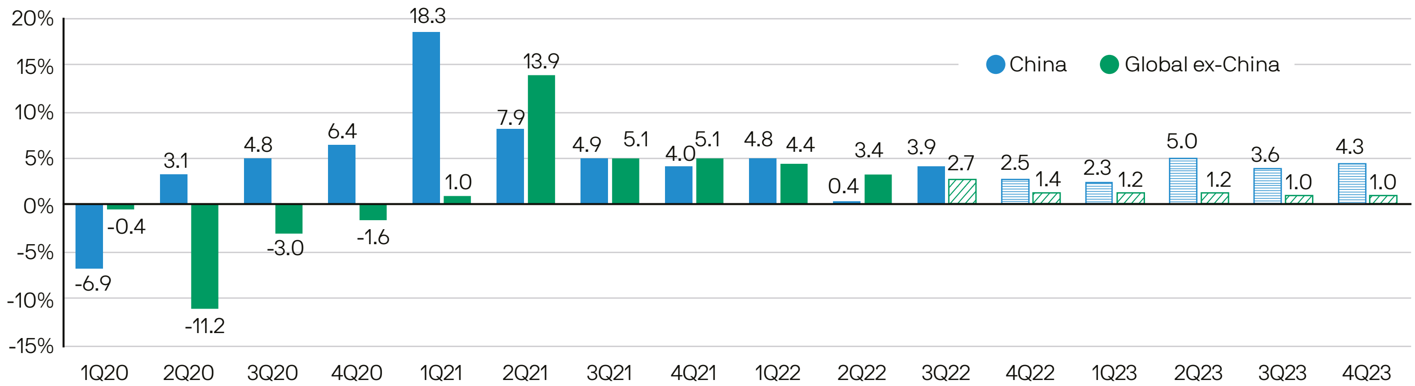


Source: Markit, J.P. Morgan Asset Management. Data are as of December 5, 2022.

The one exception to the international economy's economic activity downward spiral is likely China. As usual, China follows its own economic, policy and political cycles separate from the rest of the world. 2022 was the year of China's hangover from its "zero COVID" policy, regulatory cycle and housing reform. Can 2023 be the year of its re-energizing? In 3Q22, China's economy re-accelerated with GDP rising 3.9% year-over-year versus 2Q's meager 0.4% pace. Looking ahead, the question for investors is how much speed China's economy can pick up this quarter and in 2023 (**Exhibit 6**). This depends on an improvement in local consumer and business confidence, providing a boost to domestic demand. With the conclusion of the twice a decade Party Congress in October, political uncertainty was removed. In November, policymakers made three encouraging steps toward boosting confidence ahead: 1) more targeted implementation of "zero COVID" policy, laying the groundwork for more substantial easing as the year progresses; 2) liquidity and credit injections into the beleaguered real estate sector to provide a floor to its deceleration; and 3) symbolic gestures toward the United States and other nations to lower the temperature of geopolitical uncertainty. These steps in the right direction, if followed through, suggest some re-acceleration in China's economic growth in 2023 (although a full return to normal will have to wait until 2024).

As the rest of the world decelerates, China may finally pick up a bit of steam

Exhibit 6: Real GDP, year-over-year % change



Source: FactSet, J.P. Morgan Asset Management. Shaded figures represent J.P. Morgan Global Economic Research estimates for GDP growth. Data are as of December 5, 2022.

In 2022, the U.S. dollar fully reflected uneven central bank tightening and global growth fears. Despite a late year pull back, it was up 9% year-over-year by the end of November to its highest level, in real terms, since 1985. While a slide in the U.S. dollar would be welcomed by central bankers and investors around the world, it may be delayed until rate differentials stabilize convincingly and global economic growth surprises turn less negative. Although delayed, a decline in the U.S. dollar is not canceled for 2023, aiding central bankers' fights against inflation and U.S. dollar-based investors' international returns as the year goes on.

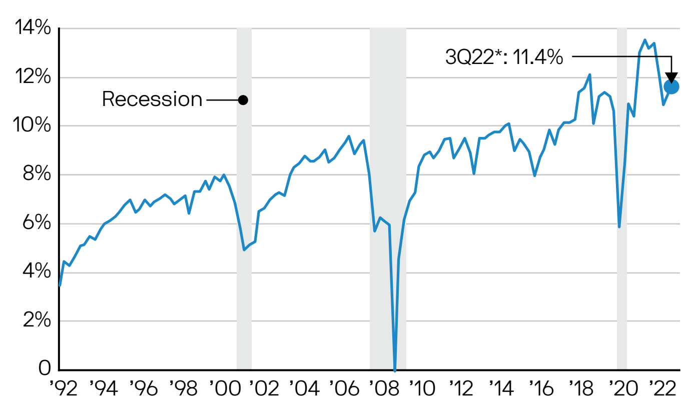
U.S. equities: Three questions for 2023

2022 was a year characterized by extreme capital market volatility. Uncertainty around the trajectory of inflation led interest rates to rise sharply, undermining equity market valuations that had been sitting well above long-term averages. Looking ahead to 2023, we are faced with three questions: What is the outlook for earnings? Do valuations have further to fall? And when will volatility decline?

The outlook for earnings will depend on the evolution of economic growth; if a recession can be avoided, we would expect earnings to be roughly flat relative to 2022 levels. However, if the U.S. economy falls into recession, history suggests earnings could decline by as much as 15%–20%. Perversely, stubborn inflation could support earnings. With inflation only gradually decelerating, rising prices will continue to offset higher costs in certain industries, leaving margins as the key driver of earnings. While margins will continue to decline, they should settle around 10%, rather than falling to the long-term average.

Profit margins look set to revert to the trend rather than their average

Exhibit 7: S&P 500 quarterly operating earnings/sales



Source: BEA, Compustat, FactSet, Standard & Poor's, J.P. Morgan Asset Management. Past performance is not indicative of future returns. * 3Q22 operating margins are based on 95.4% of S&P 500 companies having reported earnings. Data are as of December 5, 2022.

If earnings are expected to be flat to down, how much will investors be willing to pay for these earnings? Although the S&P 500 forward P/E ratio now sits near its long-run average, valuations will decline further if a recession begins to materialize. However, it is not clear that valuations need to retreat to levels seen during the Global Financial Crisis, as the combination of a mild recession and the higher quality nature of companies suggests markets could find support at higher valuations than in the past. Furthermore, as slower expected growth leads bond yields to decline, equity valuations should find additional support.

Although the outlook for risk assets is improving, plenty of questions remain unanswered. We have seen peak inflation, peak Fed hawkishness and (hopefully) peak geopolitical tensions, but these issues have not gone away and will remain as a source of volatility. However, if we do experience a mild recession next year, markets will begin to look to the coming cycle well in advance of the economic data improving. In fact, since 1960, the S&P 500 has bottomed an average of 6 months before the unemployment rate has peaked. As such, there is light at the end of the tunnel, but it is not clear how long the tunnel might be. Until we have that clarity, we prefer companies with pricing power and consistent cash flows that are trading at reasonable valuations.

International equities: Has sentiment gotten depressed enough?

While 2023 may see the storm hit the real economy, 2022 was the year the storm was felt in financial markets, including international equities (with the MSCI All Country World Index ex-U.S. down 15% in U.S. dollars). Will the sun shine brighter in 2023?

This year's negative returns were driven by a sizable multiple contraction of 15% and a drag from currency weakness of 9%. Earnings themselves held up because of still resilient demand, higher prices, weaker currencies benefiting exporters and elevated commodity prices benefiting energy and materials companies. 2023 will likely see the reverse, with still elevated earnings expectations needing to be revised lower (especially in Europe where consensus still looks for 0% earnings growth amidst a likely recession), likely offset by some multiple expansion and currency strength as investors gain more confidence the worst has been priced into expectations as the year goes on.

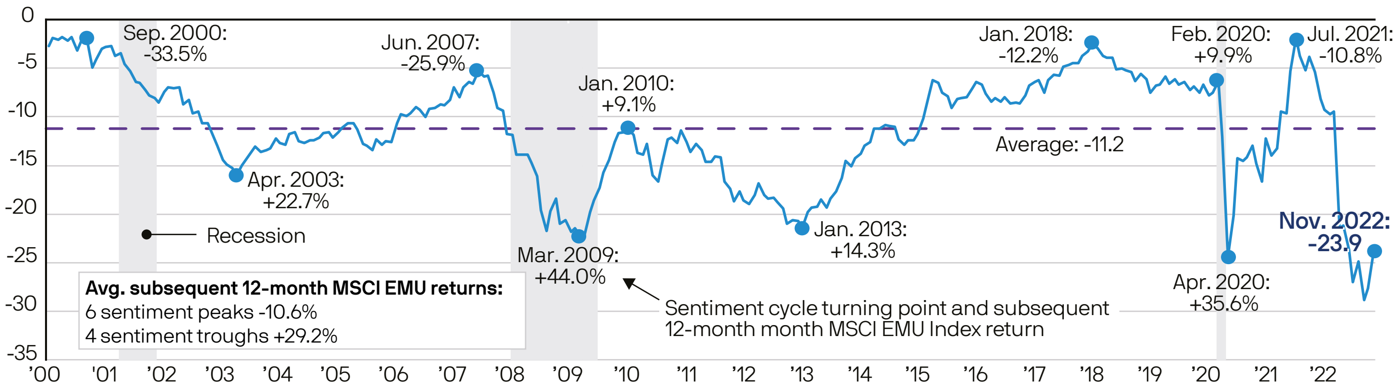
While multiple contraction also occurred in the United States in 2022, the starting point there was much higher, leaving U.S. equities at average valuations. In contrast, every other major region now has valuations significantly below their long-term averages, especially Japan (-35%), Europe (-18%) and China (-15%). As a result, the valuation discount of international equities to U.S. markets is now at -30%, even larger than at the start of the year. While risks around the international growth outlook are high for 2023, they are also much better reflected in valuations – and "less bad" news can be enough to fuel a powerful rebound once the worst is priced into earnings expectations.

In particular, Chinese equities (and hence broader emerging markets) have the potential to be the first to turn in the right direction. China's valuations are now at low levels comparable to previous reform and regulatory cycles (2008, 2011, 2015, 2018), its next 12 months' earnings expectations are lower versus the start of the year by 11 percentage points, positioning is light following two years of a bear market and positive catalysts for investor confidence are taking shape. These include a move toward more pragmatic implementation of "zero COVID" policy and housing reforms, as well as a dialing down of tensions with the United States and other Western countries. With that said, it is key for investors to invest in the "new new China" by focusing especially on A-shares, which grant exposure to the priority areas of business technology, domestic demand and the energy transition.

While investors' portfolios' exposure to international has decreased significantly during the asset class' decade plus of underperformance versus U.S. equities (with the average advisor portfolio analyzed by our Portfolio Insights team holding a 10 percentage point underweight to international equities), the strategic investment opportunities overseas have not shrunk. Quite the opposite, they have gained in size and relevance for generating strong returns in the future. These themes include the technology needed to transform the global economy, the solutions needed to engineer an energy transition, the traditional energy to keep the global economy humming in the meantime and the growth of the new class of consumers. These are themes that can be found across regions, such as business technology companies in China, Korea and Taiwan; renewable energy, commodity and electric vehicle companies in Europe, China and Latin America;

Already depressed sentiment suggests strong returns up ahead

Exhibit 8: European Commission Consumer Confidence Index and subsequent 12-month MSCI EMU return (LCL)



Source: European Commission, FactSet, MSCI, J.P. Morgan Asset Management. Peak is defined as the highest index value before a series of lower lows, while a trough is defined as the lowest index value before a series of higher highs. Subsequent 12-month MSCI EMU returns are price returns only in local currency, which excludes dividends. Past performance is not a reliable indicator of current and future results. Data are as of December 5, 2022.

energy companies in Latin America, the Middle East and Canada; and luxury goods companies listed in Europe that derive the majority of their revenue from emerging consumers. Historically, investors have been rewarded for investing when confidence is already depressed due to cyclical considerations. The average 12-month subsequent return after previous eurozone consumer sentiment troughs (such as these) of 29% in local currency (**Exhibit 8**) suggest strong sunshine up ahead, perhaps in 2023.

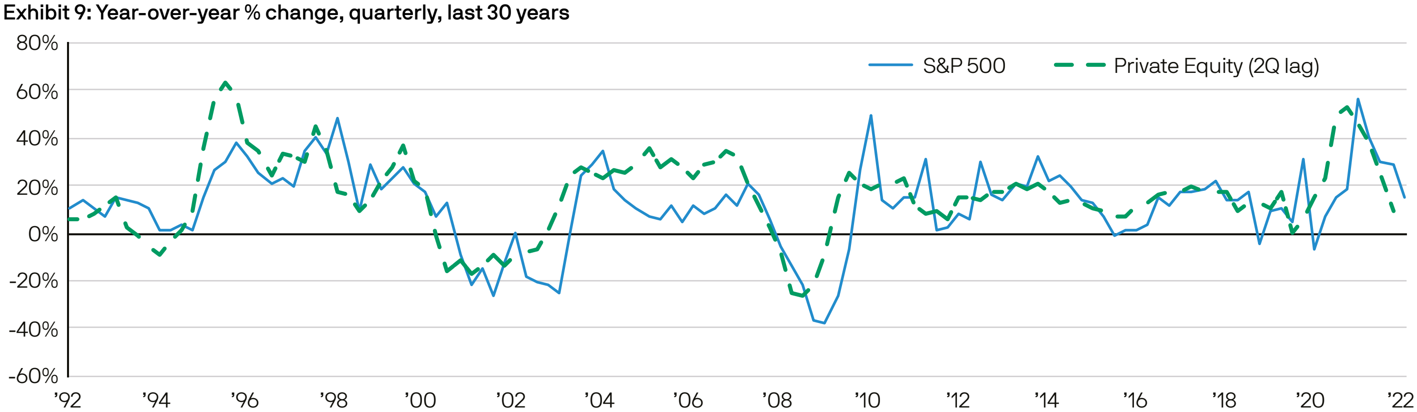
Alternatives: Write-downs are coming

Public markets sold off aggressively in 2022, but private market valuations have been slower to adjust. This has left many investors overallocated to alternatives and wondering when asset values will be written down. Our work suggests a two- to three-quarter lag between public equity market drawdowns and markdowns of private equity assets. Furthermore, transaction markets have begun to soften, supporting the idea that write-downs are coming. On the other hand, declining valuations suggest that opportunities may begin to emerge in 2023.

The U.S. real estate market is looking somewhat expensive in aggregate, but beneath the surface we continue to observe significant dispersion. Industrial assets remain expensive, whereas vacancy rates in the office and retail sectors are near all-time highs. As we look ahead, private real estate assets seem well positioned to deliver stable cash flows and public market diversification, even if capital values decline. Looking across real assets more broadly, infrastructure can help hedge against inflation, and transportation assets should benefit as global trade continues to normalize.

Changes in private asset valuations tend to lag the public markets

Exhibit 9: Year-over-year % change, quarterly, last 30 years



Source: Burgiss, FactSet, J.P. Morgan Asset Management. Data are as of December 5, 2022.

Within financial alternatives, the coming adjustment in private equity valuations should create an opportunity for funds that are in the process of raising capital. Meanwhile, middle market direct lending continues to look well positioned in the current environment given higher underwriting quality and the ability of lenders to renegotiate terms if the economic backdrop becomes increasingly challenging. Furthermore, a potential recession and higher interest rates have increased the probability of a default cycle in 2023, suggesting that distressed and special situation investors may find themselves with a more robust opportunity set than they have seen in some time. Finally, given the lack of resolution on the Fed, geopolitics and inflation, it seems reasonable to expect volatility will persist; this, coupled with higher base rates, should support hedge fund performance.

Alternatives have benefited from an environment of easy money for the better part of the past decade, which has now come to an end. The new combination of higher rates and demand for capital will allow for more differentiation between winners and losers, and potentially support active management going forward. We still see value in adding alternatives to a portfolio for the long run; the reality, however, is that taking an outcome-oriented approach and focusing on manager selection will be more important than ever in the years ahead.

ESG: Incremental progress on a gradual transition

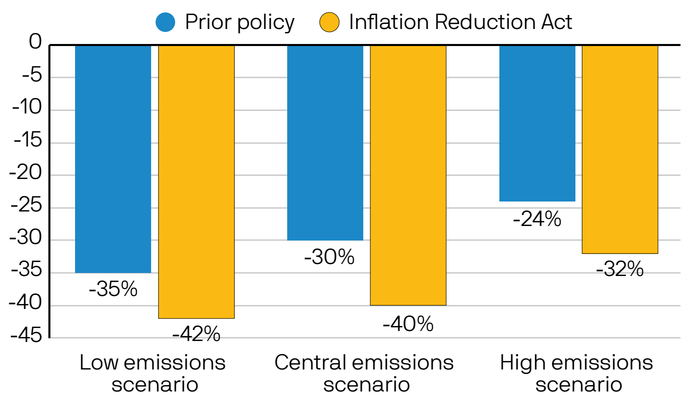
Headwinds materialized in 2022 for ESG investing. The war in Ukraine caused energy prices to surge and energy stocks to soar, while defense spending became crucial to war efforts, posing a philosophical challenge to ESG investing. Yet, the case strengthened for an energy transition over the long run to reduce tenuous geopolitical dependencies, and policymakers acted accordingly.

The United States made its largest federal commitment to climate in history in the Inflation Reduction Act, targeting $369 billion in spending on tax credits for clean energy and electric vehicles and targeted investment toward clean energy technology and projects. It puts the United States on track to reduce carbon emissions by 40% by 2030, compared to 30% without it. Combined with last year's infrastructure bill, this could create many opportunities in areas like batteries, electric vehicle charging stations, smart grids, energy efficiency and clean manufacturing. Public investment and incentives can reduce barriers to entry for the private sector and spur innovation.

Looking ahead, although sustainable investing has become deeply politicized, it presents opportunities for risk management and growth for all investors – regardless of their politics. Environmental, social and governance data can be used as additional inputs in the risk management process and are highly customizable to express a range of views. While areas like e-commerce, streaming and social media are pillars of technology, these areas may not be able to repeat past growth in the future. Instead, investors will have to unearth new opportunities for innovation. Some of these may intersect with sustainability, like renewable energy, green technology, cybersecurity and democratizing health care and medicine. The time horizon is long, but in the years ahead, near-term ESG headwinds should give way to long-term investment opportunities.

U.S. carbon emissions are expected to fall further by 2030 because of the Inflation Reduction Act

Exhibit 10: %, change from 2005 levels



Source: Rhodium Group, J.P. Morgan Asset Management. The high, central and low emissions scenarios reflect uncertainty around future fossil fuel prices, economic growth and clean technology costs. Past performance is not a reliable indicator of current and future results. Data as of December 5, 2022.

Asset allocation against the odds: Portfolio positioning in a challenged environment

Looking forward to 2023, investors will continue to face a difficult and confusing environment, including the lingering impacts of COVID-19, the war in Ukraine and fears of fading inflation transitioning to concerns about recession. However, long-term investors should try to look beyond short-term challenges and uncertainties and recognize that better valuations at the end of 2022 should set up opportunities going forward.

Aggressive U.S. monetary policy tightening boosted yields in 2022, resulting in the worst year for bond investors in decades. While the near-term path for U.S.

rates is somewhat muddy, short rates will likely stabilize while long yields should move lower on deteriorating economic conditions. Moreover, the unwillingness of most central banks to keep pace with Fed hiking suggests that international demand for U.S. bonds will remain solid. Given this backdrop, bond investors seeking protection should extend duration, while those seeking income should shorten it; in either situation, an allocation to high-quality bonds is prudent.

For equities, United States value continues to trade at a discount and strong operating leverage within certain value sectors should support earnings growth. Still, investors would be wise to consider long-term allocations too, namely through exposure to high-quality growth names. Taking a more holistic view, broad valuation discounts mean that opportunities exist at the security level regardless of style tilt. Outside of the U.S., foreign markets have struggled. Moving into 2023, investors should be cautious about international allocations, but recognize that an overvalued dollar and inexpensive valuations should be tailwinds for these markets.

Across asset classes, diversification has been challenging, with positive stock/bond correlations through 2022. While falling inflation should reverse this trend, investors may still want to add alternatives to their portfolios for additional diversification benefits, in addition to the enhanced income and return potential that these assets can provide.

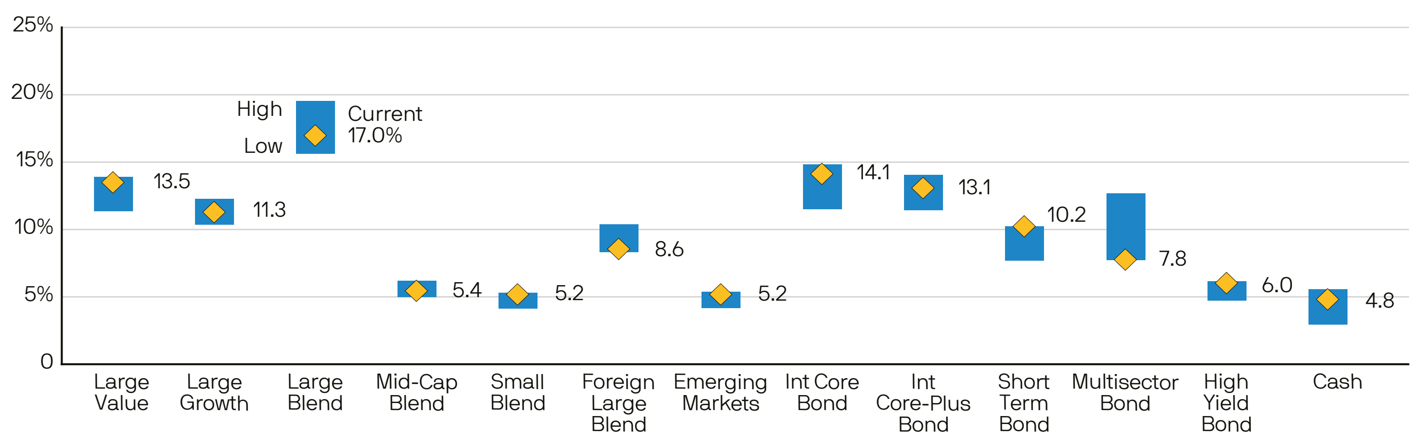
The unifying theme, then, for 2023 is that while uncertainty remains, there is more upside potential than downside risk in global capital markets. Investors can feel comfortable with allocations across both stocks and bonds, whether they be domestic or overseas. Moreover, the future performance potential from these assets means that investors can focus less on the noise and more on the signal: cheap valuations and reasonably good fundamentals, especially over the long term.

Looking at portfolio positioning through the lens of Morningstar categories and our portfolio analysis tools, investors are only partially implementing these views. Allocations to U.S. value remain elevated, though assets have been shifted back into growth as of late; in fact, at the security level, the average analyzed portfolio shows an overweight to growth, an indication of style shift thanks to passive investing. Meanwhile, bond allocations are more skewed toward quality and duration than in recent months, though HY exposure may be too high given economic headwinds. International markets, particularly on the developed side, are persistent underweights relative to our strategic asset allocation views, perhaps reflecting geopolitical concerns. In sum, today's opportunities have not been fully embraced.

In sum, a very turbulent macro environment in recent years has both depressed financial assets in general and led to significant dislocations within and across asset classes. While the turbulence and uncertainty are not done, markets tend to move ahead of the business cycle. As a consequence, at the start of 2023, investors should reassess their portfolio positioning, both with regard to their own goals and the opportunities that distorted valuations present for active portfolio management and security selection across broadly diversified portfolios.

Investors are not positioned to take advantage of the best opportunities in 2023

Exhibit 11: Average allocation in 60/40 portfolios trailing 12 months



Source: J.P. Morgan Asset Management. Represents the average allocation to respective Morningstar category for all moderate (60/40) portfolios run through the Portfolio Insights tools over a trailing 12 month period. Data as of October 31, 2022.

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Index definitions

All indexes are unmanaged and an individual cannot invest directly in an index. Index returns do not include fees or expenses.

The **Composite PMI future output index** is a gauge of economic growth and can provide valuable insights into GDP, service sector growth and industrial production trends well ahead of official data.

The **Bloomberg Euro Aggregate Corporate Index** is a benchmark that measures the corporate component of the Euro Aggregate Index. It includes investment grade, euro-denominated, fixed-rate securities.

The **Bloomberg Pan-European High Yield Index** measures the market of non-investment grade, fixed-rate corporate bonds denominated in the following currencies: euro, pounds sterling, Danish krone, Norwegian krone, Swedish krona, and Swiss franc. Inclusion is based on the currency of issue, and not the domicile of the issuer. The index excludes emerging market debt.

The **Bloomberg U.S. Aggregate Treasury Bond Index** is a broad-based benchmark that measures the investment grade, U.S. dollar denominated, fixed-rate taxable bond market. This includes Treasuries, government-related and corporate securities, mortgage-backed securities, asset-backed securities and collateralized mortgage-backed securities.

The **ICE BofA MOVE Index** tracks fixed income market volatility.

The **J.P. Morgan Corporate Emerging Markets Bond Index Broad Diversified (CEMBI Broad Diversified)** is an expansion of the J.P. Morgan Corporate Emerging Markets Bond Index (CEMBI). The CEMBI is a market capitalization weighted index consisting of U.S. dollar denominated emerging market corporate bonds.

The **J.P. Morgan Emerging Markets Bond Index Global Diversified (EMBI Global Diversified)** tracks total returns for U.S. dollar-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, Eurobonds. The index limits the exposure of some of the larger countries.

The **J.P. Morgan GBI EM Global Diversified** tracks the performance of local currency debt issued by emerging market governments, whose debt is accessible by most of the international investor base.

The **J.P. Morgan Leveraged Loan Index** is designed to mirror the investable universe of U.S. leveraged loans.

The **MSCI ACWI (All Country World Index)** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets.

The **MSCI EAFE Index (Europe, Australasia, Far East)** is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the US & Canada.

The **MSCI Emerging Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets.

The **MSCI Europe Index** is a free float-adjusted market capitalization index that is designed to measure developed market equity performance in Europe.

The **MSCI Pacific Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the Pacific region.

The **MSCI World with USA Gross Index** measures the performance of the large and mid-cap segments across 23 Developed Markets (DM) countries. With 1,540 constituents, the index covers approximately 85% of the global investable equity opportunity set.

The **Russell 1000 Index**® measures the performance of the 1,000 largest companies in the Russell 3000.

The **Russell 1000 Value Index**® measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

The **S&P 500 Index** is widely regarded as the best single gauge of the U.S. equities market. The index includes a representative sample of 500 leading companies in leading industries of the U.S. economy. The **S&P 500 Index** focuses on the large-cap segment of the market; however, since it includes a significant portion of the total value of the market, it also represents the market.

The **U.S. Treasury Index** is a component of the U.S. Government index.

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