Brown ADVISORY
Thoughtful Investing.

2023 ASSET ALLOCATION

PERSPECTIVES / OUTLOOK

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EXECUTIVE SUMMARY

We are pleased to announce Outlook 2023, which seeks to share our thinking on what we view as key investment themes in the year ahead. This year's report analyzes the following topics, among others:

- After a reset in asset valuations, we are more constructive about risk-adjusted returns in the years ahead. Areas of the bond market are particularly attractive given the more compelling yields compared to the cash flow yields in equities **(page 6)**. This is allowing us to re-build our bond allocations and simplify our portfolios.

- The ability to generate meaningful returns with relatively modest risk in fixed income allows us to be more opportunistic elsewhere. Energy transition **(page 17)**, continued technological innovation with artificial intelligence (AI) reaching an inflection point **(page 7)** and the secular trends driving growth in emerging markets (EM) in China and beyond **(page 25)** are among the major themes creating investment opportunities in the years ahead in our view. China's re-opening combined with their massive accumulation of excess savings may help turn the tide of the country's fundamentals and investor perception.

- Inflation has begun to cool, but the job market remains historically tight, wage growth is strong and the cost of housing continues to rise **(page 15)**. We're also seeing a growing trend of onshoring and a slowdown of global trade which could prove inflationary. So, while markets are pricing in a quick return to normal on inflation, we are more circumspect, and are maintaining the inflation protection and positioning shifts we made in recent years.

- Growth stocks have re-priced lower, but are still trading at a historical premium to value stocks **(page 21)**. Given the inflation and interest rate picture, we argue for continued emphasis on valuation discipline and a focus on free cash flow generation. One lesson from the tech bubble bursting in 2000 was to remain patient in waiting for both valuations and fundamentals to re-set, and acknowledging that there may be multiple false dawns **(page 11)**.

- Small-cap equities appear to offer attractive relative valuations and fundamentals and have underperformed in recent years. A more domestic orientation and favorable earnings revisions may serve as tailwinds. A flow of funds into passive and private investments over the last several years may have contributed to this opportunity **(page 21)**.

- A recession in 2023 is widely expected by strategists, economists and leading economic indicators **(page 16)**, but investors are increasingly discounting a potential "soft-landing" scenario. A healthy consumer and strong job market have provided momentum to the economy, and surprising resilience in corporate earnings. However, excess savings for consumers are falling, borrowings are on the rise, and the impacts of higher rates are just beginning to weigh on the economy **(page 19)**. We expect a material slowdown and think inflation may remain elevated, and thus believe some conservatism in our positioning is warranted.

- The direction of interest rates will also impact high sovereign debt loads globally by leading to growing interest payments, and this may be a key variable underpinning economic stability over the coming years **(page 14)**.

YEAR IN REVIEW

We would like to take a moment to send our best wishes for the health and safety of all of our readers, their families and friends. The last year was a tumultuous one for many reasons. We will be discussing the investment implications of various developments throughout this report. As we begin, we would like to say we are especially grateful for the privilege of helping our clients navigate through these uncertain times.

WHEN THE TIDE GOES OUT

We don't want to sugarcoat it. We've just closed out what was one of the most challenging years for traditional stock and bond investing in nearly 100 years. The year was also marked by a major human tragedy in the war in Ukraine, which has resulted in enormous suffering and displacement. Beyond the direct consequences, the conflict has also stressed already-challenged global supply chains, increased geopolitical tensions well beyond the region, and caused a dramatic jump in food and energy insecurity. This in turn reversed years of reductions in carbon emissions as much of Europe turned back to legacy sources of energy, and it sparked greater debate around energy security and the transition to renewables.

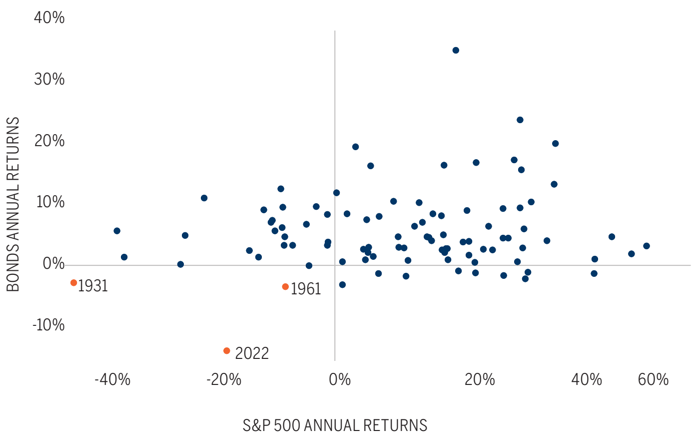
The inflationary pressures created by these geopolitical factors, labor shortages and the unprecedented monetary and fiscal support by governments have been a central factor for markets over the past two years. This year saw a dramatic reversal in the easy money regime that has played a leading role in elevating asset prices for nearly a decade and a half following the Global Financial Crisis (GFC) as shown in chart (Please see chart Monetary U-Turn on page five). We've gone from some of the easiest monetary policies on record to some of the tightest in short order, from pedal to the metal to slamming on the brakes.

Today we're staring down the prospect of what may be the most anticipated recession in modern history. An inverted yield curve, leading economic indicators and the majority of economists are predicting growth will go negative in 2023. Investor sentiment is recovering from multi-year lows, however, and the calls for a "soft landing" are growing louder. We're not so sure, as monetary tightening will take effect with a long lag which will have impacts throughout 2023. Valuations have become more reasonable, with fixed-income markets offering some of their most attractive risk-adjusted returns in over a decade. Stock market valuations have begun reflecting a more normal interest rate environment, but aren't yet a bargain as a whole, and there may still be downside to corporate earnings. Given that bonds and cash again offer attractive returns, in our view, we are able to simplify portfolios somewhat and increase liquidity while reducing risk. If animal spirits continue to elevate, improving yields allow us to increase our defensiveness with a lower opportunity cost. And while the year has seen setbacks in the transition to clean energy, the secular drive behind the energy transition may have indeed redoubled and created opportunities as we discuss later.

The traditional 70/30 stock/bond portfolio lost 17 percent in 2022 (please see chart below) which was the worst performance since 2008, an outlier result driven largely by the historically poor performance of bonds but part of a larger re-setting of the valuations of all asset classes. Typically a source of stability in portfolios, bonds generally

ONE FOR THE HISTORY BOOKS

A traditional 70% stock and 30% bond portfolio had one of its worst performances in a century. Spiking rates due to Fed policy hammered not only equities but fixed income, which had little cushion to absorb the blow after a decade of ultra low rates.



SOURCE: BLOOMBERG. BOND MARKET YEARLY RETURN USING BLOOMBERG U.S. AGGREGATE BOND INDEX (1976-PRESENT). BLOOMBERG GOV'T/CREDIT INDEX (1973-1975), AND BROWN ADVISORY CALCULATIONS BASED ON INTEREST RATES AND CREDIT SPREAD DATE FROM NBER (1922-1972). ORANGE DENOTES WHERE BOTH STOCKS AND BONDS PRODUCED NEGATIVE RETURNS. DATES: 12/31/1922 TO 12/31/2022 added to risk this past year as inflation hit levels not seen since the 1980s. Central bankers tightened financial conditions at the fastest pace in 40 years, and bond yields rose sharply from meager levels. Since the GFC, central banks worldwide had relied on ever-more accommodative monetary policy and stimulus measures to accomplish their goals. This equilibrium of low inflation allowing low-interest rates, which had driven valuations higher for years, reversed abruptly in a matter of months as it became clear that inflationary forces were not in fact "transitory." Thus, individuals, investors and central bankers alike were quickly forced to wean themselves from the addiction to stimulus and zero interest rates. While some had seen this outcome as likely given the level of stimulus, the speed of its arrival, and the inflationary force driving it, surprised many. The various bubbles inflated by low rates, from cryptocurrencies to SPACs and high multiple technology stocks, began to pop in 2021. However, in 2022, this re-rating broadened, impacting markets across asset classes and geographies. The result was valuations across all asset classes re-setting to more normal levels and, we would argue, providing us more solid footing for markets going forward. Investing is all about looking forward and much of what we've seen this year has improved our outlook for returns.

A GLASS HALF FULL

In the face of many macro headwinds, from supply chain disruptions to war to quickly rising interest rates and a strong U.S. dollar, company performance was far better than many feared. Many companies were able to raise prices to make up for most of their rising costs. Earnings showed modest growth despite falling profit margins. Delinquencies and defaults remained low as consumers benefited from excess savings and continued to spend in the face of rising prices. The fall in asset prices was predominately about falling valuations, mostly as a result of rising interest rates and borrowing costs but also in anticipation of the fundamental weakness expected, as a result of this tighter monetary policy.

Perhaps most importantly, bond yields rose to a point where stocks are no longer the only game in town; one can earn over 4% on short-term U.S. Treasuries and 5-6% in high-quality corporate bonds according to yields data from Bloomberg. This is a breath of fresh air. The need to take on more risk and illiquidity to get higher returns has lessened considerably, which is a blessing for investors. Cash no longer burns a hole in your pocket. As fundamental investors, we are delighted to see an increasing focus on foundational concepts like profitability and balance sheets–with interest rates at 0%, there was a lot of fuzzy math and aggressive assumptions underlying eye-watering valuations for high-growth companies and speculative assets. The era of "free money" is over.

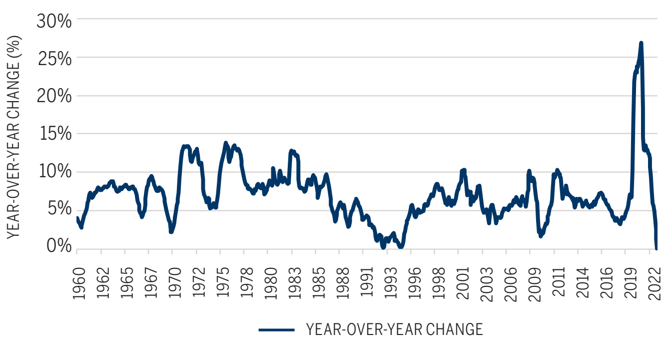
We enter 2023 with many unanswered questions but seemingly on a more sustainable path. Inflation appears to have peaked, we're closer to the end than the beginning of the interest rate-hiking cycle, and valuations have re-set to near historical averages. Europe appears to have avoided the worst-case energy crisis, and China is finally re-opening its economy. We're finding far more companies where we think we can earn compelling rates of return. There are glimmers of hope in the midst of this bear market, and we must always remember that markets are forward-looking mechanisms–prices will likely rise before the fundamentals bottom out.

We believe that the most important issue for markets remains the direction of inflation and interest rates. Unlike in past bear markets, if inflationary pressures remain high, central banks won't be able to rush to the rescue as they have in the past with their "helicopter money." This is a dynamic for which we all must be prepared and is very different than the last 30 years. In our minds, this warrants continued conservatism as well as sticking to our playbook for investing. This emphasizes cash flows, a strict valuation discipline and caution around leverage. We believe we need to focus on quality, sustainable businesses that can succeed in a weaker economy with higher costs of capital and an environment where cash flow is king. And unlike in the recent past, we would expect bonds to provide much better downside protection in the event of a recession in 2023 and have built back up our exposure to the asset class.

There are some sticky components to inflation such as ultra-tight labor markets, a structural undersupply of housing in the U.S., under-investment in global

MONETARY U-TURN

Money supply growth has gone from record expansion to contraction in short order. Prices for most asset classes rose with money supply growth and then contracted with it as well.



SOURCE: BLOOMBERG
DATES: 12/31/1960 - 12/31/2022

commodity production and the energy challenge in Europe. There is also the risk that we've hit peak globalization, and the onshoring of production and duplication of supply chains will likely put upward pressure on prices–the costs of countries bringing crucial production "in-house." Taiwan Semiconductor's buildout of a new $40 billion production facility in Arizona is a headline of this trend. The CHIPs act and the banning of exports of high-performance semiconductors to China will likely have an even greater impact. We are forcing the creation of multiple semiconductor supply chains. We believe these shifts are going well beyond semiconductors to other electronics, industrials, energy, medical supplies and other important industries. We don't predict the end of globalization, but the tailwind of growing global trade and increased benefits from outsourcing may be shifting into a slight headwind. This trend may add to inflationary pressures and negatively impact corporate margins.

TURNING THE PAGE

Central bankers have slammed on the brakes, and we are just starting to see their impact on inflation and growth. The price of money has increased at the fastest rate in decades, and the supply of money has declined year-over-year for the first time since the Federal Reserve began tracking it in 1960. This should bring inflation lower and slow economic growth. We are also just beginning to see what impact higher rates may have on government spending, as the cost of bloated debt balances at the government level will likely rise materially in the coming years. This could crowd out spending in other areas or lead to austerity measures and higher tax rates, slowing down growth and inflation.

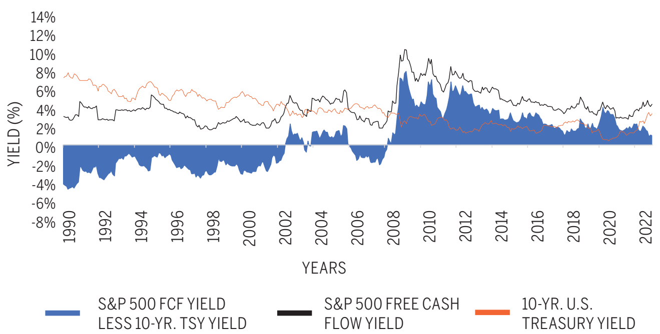
On balance, we're of the view that inflation is set to moderate due to the tightening of monetary policy and the slowing economic growth, but remain higher than normal. We've already seen a big shift down in recent months, particularly in core inflation. If one strips out shelter/rent from inflation as well, core CPI is down to just a 2% annualized rate in Q4 2022 according to data from the Bureau of Labor Statistics. And while shelter costs may remain high, rising rates are likely to slow price and rent gains considerably. But the long-term structural drivers of inflation suggest a higher level than we have become accustomed to in the past 30 years that were once dubbed the "great moderation." We don't make yearly forecasts on inflation, growth or market levels, but we do plan for different scenarios. The potential that inflation could be structurally higher is one reason we continue to look for inflation protection such as infrastructure and real estate as well as value-oriented exposure in our portfolios despite the outperformance of these categories in 2022. We believe this new playbook and set of market leaders may be relevant for multiple years to come.

While decisive central bank action should help moderate inflation, there is a price to pay on the other side. We have already seen interest rates cause a material slowdown in the economy and more interest rate-sensitive segments of the economy, like housing, are experiencing significant pain. This pain is likely to build because higher interest rates take time to have a full impact as more and more debts must be renewed at higher rates. The Conference Board Leading Economic Index® (LEI) has already turned negative and stands at a level that has presaged a recession in all eight past occurrences since the Index was created in 1960.

Beyond the economic impact, we are seeing a financial market impact of the withdrawal of liquidity. The hardest hit areas have typically been those which benefited the most from the excessive liquidity of the past few years. SPACs, cryptocurrencies and speculative growth companies (both public and private) have generally seen massive declines in value. FTX and its spectacular fall may be the poster child of the excess and suspension of disbelief at the crossroad of all of these categories. The fallout in private markets is still a bit uncertain given the lower frequency of marks and falling transaction volumes but we expect continued pressure on valuations there as they catch-up with public markets. We are paying particular attention to some of the innovations in private lending markets such as peer-to-peer lending. These unproven methods attracted meaningful capital offering high rates to a yield- starved market, but now their credit diligence will be put to the test. But improving lending standards, less rampant speculation and a real cost of capital are all welcome changes in our view.

THEY DON'T PAY ME ENOUGH FOR THIS?

With aggressive rate hikes over the year, the equity risk premium - or compensation that investors receive for taking the risk of owning stocks instead of bonds - plunged to lows not seen since prior to the Global Financial Crisis as measured by the spread between the free cash flow yield and Treasuries. This may make bonds as relatively attractive to stocks as they have been in a decade and a half.



SOURCE: BLOOMBERG DATES: 01/31/1990 TO 02/07/2023

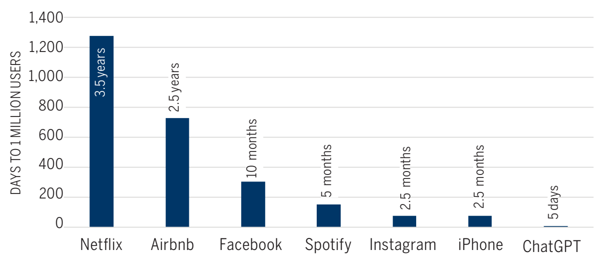
IT'S ALIVE!

This year has already seen important milestones in artificial intelligence with the release of two incredible tools from OpenAI, ChatGPT-3 and Dall-E2. These programs have caught the attention of not just the technology community but the world at large. ChatGPT reached 1 million users just five days after it launched, a viral pace of adoption that left the records of other tech platforms in the dust, according to Statista. So many people have been using ChatGPT that they have had to throttle usage. These tools demonstrate just how far we've come in computers' ability to take enormous amounts of data, both images and text, and answer complex questions, create new media and art and even hold a conversation. Importantly, they show that computers aren't just going to improve efficiency for repetitive and recollective tasks, but also creative ones. The implications on our daily lives of these technologies over the next decade appear to be immense.

We are also focused on what their more immediate investment implications will be. In January, Google declared a "code red" as it scrambled to respond to the threat posed to its core search business by ChatGPT, according to the New York Times. Google has long invested in AI, and investors are anticipating the company's response in what may be an AI "arms race" over the next several years. But while Microsoft's Bing has seen a resurgence in use, it isn't clear to us that Google's dominance in search advertising is at risk. The cost of using this type of AI in searches is roughly ten times that of standard searches according to Bloomberg and the output isn't yet optimized for the quick and accurate answers and links that consumers expect. We believe that it is highly likely that tech giants like Google and Microsoft, both of which are core positions in our portfolios, will play a big role in these advancements. But we believe there is also likely to be a thriving ecosystem of AI startups that create applications using ChatGPT or other AI tools. We've seen private equity funding in AI skyrocket in the past year, and many of our venture capital investments have been taking part in this trend, seeding what we hope will be some of the winners of tomorrow.

THAT WAS FAST

The viral uptake of AI services like ChatGPT has eclipsed that of even other marquee technologies in what may be seen as a measure for its disrupting potential.



SOURCE: STATISTA AS OF JAN 23, 2023

ChatGPT has shown the ability to draft legal documents, write and debug software code, pen new plays in the style of a particular author, draft A+ term papers and provide creative prompts to break writer's block. New York and Seattle schools have already banned the use of ChatGPT, citing concerns over cheating and a general subversion of learning. Can a computer already get better grades at school than most students? Meanwhile, Dall-E and other visual programs like it, have shown the ability to create brand-new realistic and surrealistic images based only on simple prompts, unlocking new realms of creative expression and idea generation.

OpenAI was originally created as a non-profit, to "ensure that artificial intelligence benefits all of humanity," funded by Sam Altman, the former Y Combinator President and Elon Musk. Many saw their entry into the field as a counterweight to the increasing dominance of big tech companies like Google—a way to avoid concentration of power in what may be the most important technological field of the next century. In 2019, OpenAI changed their structure to become an unusual hybrid between for-profit and non-profit, allowing investors up to a 100x return before the company would revert to its non-profit status. This allowed the company to raise $10 billion from Microsoft, who recently announced they aim to double down with another $10 billion investment in 2023, according to Bloomberg. In order to train artificially intelligent systems, you need a lot of computing power and even more data and the big tech companies have both in spades.

While there have long been fears that humans would be losing their jobs to machines, what these developments have shown us is there may be far more "white collar" corporate jobs that are impacted, as opposed to the jobs in manufacturing and the checkout line that we've seen to date. Jobs in law, software programming, and even creative areas, like design and writing, will likely be impacted. What comes this decade is likely to unleash both a new level of labor productivity and efficiency and perhaps a new wave of white-collar fear with respect to employment opportunities. It may be fortunate that this is happening at a time where we have an historic labor imbalance with more job openings than unemployed workers as of February 2023, according to the Bureau of Labor Statistics.

The year has also foreshadowed some of the challenges tech giants will face navigating these uncharted waters. In February, Google shares saw a meaningful sell-off after the marketing campaign for its chatbot response to ChatGPT included some errors and suggested to investors that Google may be ill-prepared for the competition. Later in the month, Microsoft's initial attempts to unveil a trial version of its Bing search engine with new AI chatbot integration generated what users saw as combative and alarming responses to some queries. Even if these glitches are worked out, we believe these companies will be navigating what could be a new era of AI ethics and regulatory and security scrutiny.

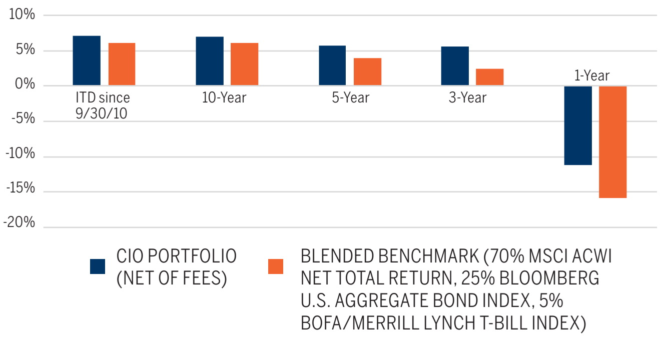
The year ahead should be packed with promise and peril as these technologies reach a new inflection point in their development. We will be monitoring it closely and responding accordingly.

TAKING STOCK: A LOOK AT PERFORMANCE

Similar to last year, we wanted to include the results of our investment decisions over the past year as well as over longer periods of time. As a reminder, all portfolios we build are customized to our clients' individual goals and circumstances. However, we have kept track of the CIO portfolio to act as a "report card" on this group's investment decisions, both from an asset allocation and investment selection perspective, over time. This portfolio is constructed by our CIOs, managed in real-time, and informed by our research teams and investors across the firm. It is a blend of our various investment views, informed by both top down macroeconomic analysis and bottom-up company analysis. It is a common ground that aims to reflect our highest conviction asset allocation decisions but is meant to encourage rather than stifle debate. Importantly, our clients' portfolios are constructed individually, tailored to their liquidity needs, risk tolerance and investment philosophy by their Brown Advisory team. This exercise allows us to evaluate our investment research and decision-making process and hold our CIO group to account, and is presented from the standpoint of a 70/30 stocks/bonds portfolio that is not taxable.

While negative absolute returns are never welcome, we are pleased we were able to provide relative downside protection in a difficult year for investors throughout 2022. This downside protection came from both positive asset allocation decisions along with strong relative performance among our investments in various asset classes. We outline some of the key contributors and detractors over the last twelve months:

ANNUALIZED PERFORMANCE



SOURCE: BROWN ADVISORY, BLOOMBERG AS OF 12/31/2022
*BLENDED BENCHMARK IS 70% MSCI ACWI; 25% BLOOMBERG U.S. AGGREGATE BOND INDEX; 5% BOFA/MERRILL LYNCH T-BILL INDEX.
The CIO portfolio is a hypothetical portfolio. Brown Advisory's CIO portfolio allocation is managed to match the allocation of the blended benchmark. The CIO portfolio performance shown is net of account level fees using the highest fee possible and net of underlying manager fees, includes the reinvestment of dividends and is rebalanced at the manager's discretion. The portfolio includes private investments and would typically be suitable for a qualified purchaser tax-exempt client.

KEY CONTRIBUTORS

- **Underweight bonds and duration:** We maintained an underweight position in fixed income portfolios and kept our duration short heading into 2022. Being shorter duration relative to the fixed income benchmark in a year where rates saw a historic rise was a ballast and led to our fixed income portfolios outperforming in 2022.
- **Overweight value equities:** Since 2021, we've been advocating a balanced approach to equity style factors, with a slight tilt to quality value over the last twelve months. This relative overweight to value equities generally protected portfolios from the sharp valuation reversal seen across equity markets in 2022, particularly among hyper-growth and speculative stocks trading at high multiples. We have since neutralized our value overweight in small cap stocks by adding to small cap growth companies.
- **Infrastructure allocations:** Global infrastructure allocations added downside protection to portfolios, playing a defensive role given the mission-critical nature of infrastructure while providing some inflation hedging due to long-term pricing contracts that are adjusted to inflation for these assets.
- **Strong active management across certain asset classes:** Select investments in large-cap value, emerging markets, developed non-U.S. markets, and fixed income added relative performance.

- **Alternative managers in hedge funds, private equity and real estate:** Our emphasis in illiquid alternative investments provided much-needed diversification when both traditional stocks and bonds were experiencing large drawdowns. Investments across real estate, multi-strategy hedge funds and private credit were particularly additive.

KEY DETRACTORS

- **Underweight cash:** In a year where investors had few places to hide, being close to fully invested and being underweight cash, versus the blended benchmark, was a relative headwind.
- **Quality bias and Energy underweight:** Last year was a challenging one for higher quality companies, which typically trade at premium valuations due to their higher growth and better returns on capital. Valuation was the key determinant of returns in 2022, and these companies saw their valuations come down more than the broader market. Given the cyclical and low-margin nature of many commodity and energy businesses, we tend to be structurally underweight this sector given our quality bias. In a year where energy stocks were up over 50%, this was a meaningful drag on performance. We remain confident that a focus on these types of businesses, particularly in an uncertain and inflationary environment, is an important core component of our portfolios.

INVESTMENT LANDSCAPE

RAYS OF SUNSHINE AFTER THE 100-YEAR STORM?

2022 saw significant volatility across financial markets, but the bond market's volatility has been especially historic. Multi-decade highs in inflation caused a dramatic reversal in monetary policy. The result has been the worst bear market in the modern history of the global bond market. The Bloomberg U.S. Aggregate Bond Index returned -13.0% in 2022; the worst previous yearly return in the 50-year history of the broad U.S. bond market indices was -2.9% in 1994 for the Bloomberg U.S. Aggregate Bond Index. But it is actually even more historic than that. Using data on yields and spreads from the National Bureau of Economic Research (NBER), we have developed estimates for bond market returns going back over 100 years and even then, there is nothing remotely close to the experience in 2022 (1969 was the worst year using our estimates, edging out 1994 at around -3.0%). There were four key factors:

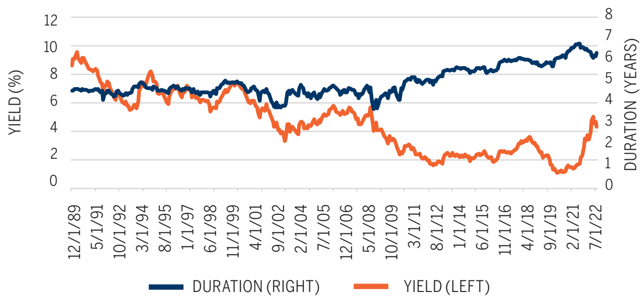
1. Dramatic shift in Fed Policy – a key factor to 2022's bond market rout is where we started. The Fed was coming off a policy of extreme stimulus in an effort to blunt the impact of the pandemic. Even when inflation began to rise above target in 2021, most central banks' now infamous view was that it would be transitory and recede once the economy worked through the reopening and pandemic-related supply chain challenges. Instead, inflation accelerated further with added fuel from Russia's invasion of Ukraine in February of 2022. All of this caused the Fed to tighten policy at the fastest rate since the early 1980s. Fed Funds are on pace to rise to 4.5% in eleven months on top of quantitative tightening. For context, the previous largest increase over such a period in the last 40 years was 2.5% in 1989 according to Federal Reserve data as of January 31, 2023. The result is that most of the Treasury curve is on pace for increases on par with or exceeding the largest calendar-year increase since the regular issuance of Treasuries began in the early 1960s.

2. Widening spreads – during most years when interest rates are rising, credit spreads tighten and provide diversification for bond investors. This is because it is usually a strong economy that is driving both the rise in rates and the decline in spreads. However, supply-related issues caused increasing concerns about the economy as rates rose to keep up with inflation in 2022. This caused corporate spreads to expand, with investment-grade spreads 38 basis points wider than they began the year and high-yield spreads 152 basis points wider, based on Bloomberg U.S. Corporate Bond Index for Investment-grade credit and Bloomberg U.S. Corporate High-Yield Bond Index for high-yield as of 12/31/2022. So, credit has underperformed Treasuries adding to negative returns.

3. Low yields – in normal times, yield is the primary return driver for fixed income and typically provides a solid ballast for investors. However, with the Federal Reserve's posture coming out of the pandemic, yields across the bond market were near all-time lows (the Bloomberg U.S. Aggregate Bond Index yielded 1.75% at the beginning of the year). This left little income to offset the aforementioned impacts of rising interest rates and widening spreads.

CRUISING FOR A BRUISING

Coming into 2022, bond indices had yields at historic lows and durations at historic highs. When the Fed raised rates sharply over the course of the year, it was a recipe for disaster and led to a historically bad year for bonds.



SOURCE: BLOOMBERG. BASED ON BLOOMBERG U.S. AGGREGATE BOND INDEX.
DATES: 12/31/1989 - 01/31/2023

4. **Long duration** – along with low yields, bond indices have generally become longer duration as governments and corporations (municipalities being a notable exception) looked to lock in low-interest rates with long-duration issuance and mortgage-related bonds extended as refinancing activity dried up. This increased the sensitivity to interest rates just as those rates began their dramatic rise.

Understanding how we got here, the landscape after this historic rout looks markedly different and may be creating a far more attractive opportunity set moving forward. The yield on the Bloomberg Aggregate Bond Index is 4.5% as of February 7, 2023 (the chart on the previous page shows the sharp rise). This is just below our estimate of the average bond market yield over the last 100 years (5.1%). We have gone from historic lows to the historical average in just one year.

Additionally, we looked at history for times when the bond market's yield was similar to today in order to get a sense for what that has historically portended for returns. Over the last 100 years, the yield has been around this same level (+/-1%) on 23 occasions (looking at calendar year-ends) with a sample size that has years in six different decades and during periods of rising rates, falling rates and multiple recessions. **Over the ensuing two years, every instance showed positive returns and the median was 5.2% annualized (unsurprisingly, similar to the yield).** The worst annualized return was 0.8% after December 31, 1966, and the best was 7.3% after December 31, 1993 according to Brown Advisory calculations as of 12/31/2022. Given that the median return (5.2%) is similar to our long-term return estimate for fixed income and the yield offered by most bond strategies, this is probably a good base-case return for core bonds. When we consider interest rate risk, the combination of slowing economic growth with the ongoing threat of inflation makes the outlook for interest rates difficult to discern. However, it does appear the direction is reasonably symmetrical unlike where we began 2022 when rates could rise by far more than they could fall (one of the reasons we were looking to keep duration fairly short). Additionally, as recession risk rises relative to inflation risk, we believe high-quality bonds and duration in those bonds provide greater diversification to our equity exposure.

Critically, these higher levels of yield across the bond market offer far more ballast should interest rates continue to rise. Therefore, even if we are in a period of secularly rising rates, bonds can still produce a return. If we look at the last period of secularly rising interest rates from 1954-1981 (when the 10-year Treasury went from under 2%

Lessons From the '90s

As investors, we are often looking to the past for parallels to the current environment. The rapid post-pandemic rise and subsequent collapse of hyper-growth technology stocks echoes the late 1990's technology bubble. Technology stocks have benefited from a surge in demand as purchasing habits changed during the COVID lockdowns of 2020, similar to the growth spurt during the foundational development of the internet in the late 1990s. Valuations in both instances benefited from falling interest rates. Both booms also saw demand fueled by record levels of new company formation coming from private market investors. In both environments, valuations soared to unsustainable levels as investors chased companies fearing that they were going to miss out on the next Microsoft or Amazon.

The question we ask ourselves today is what lessons can be learned from the early 2000's technology bubble implosion. We believe the first lesson is it never pays to jump at the first valuation collapse. The technology bubble bursting was not followed by a v-shaped recovery. It was characterized by periods of recovery as investors attempted to buy stocks on the cheap only to be followed by more selling pressure, and all the while, growth slowed while both valuations and fundamentals normalized. High-growth software companies today have seen their price-to-sales multiples tumble from above 40 times to 10 times today, according to Bloomberg, but this valuation is only attractive if the company can continue to grow at an above-average rate and is certain to have attractive free cash flow margins. The second important lesson from the 2000s scars is to not underestimate the importance that new company formation has had on near-term growth. Much like the late 1990's, venture capital has fueled massive new company formation. These new companies have spent record venture dollars buying software for new colleagues, cloud computing subscriptions and advertising on social media sites. As the 2000 bubble burst, companies like Cisco, Intel and Microsoft saw demand disappear from new companies when the venture dollars dried up. We are starting to see some of the same issues today with Amazon AWS slowing, social media ad spending slowing and software demand waning. The 2000s have taught us to not ignore this second derivative impact.

All is not lost because, much like the technology bubble burst, we believe there are going to be some great companies that survive these challenges and become the next Amazon, Apple or Netflix. We would also note that the business models, scale and profitability of many of these technology companies are more advanced than their counterparts in the 2000 bubble, so the fallout may be less severe.

to nearly 16%) bonds were still able to generate positive returns in 21 out of 27 years according to Bloomberg.

All of these are reasons why we have been progressively adding back to our bond exposures as we believe core bonds are increasingly offering reasonable risk/reward and diversification amidst an environment of tremendous uncertainty.

STILL VIGILANT

The impact of tighter financial conditions is having a major impact on liquidity across all of the financial markets. The turmoil that hit the U.K. Gilt market (one of the largest sovereign bond issuers in the world) in September shows how even markets that are usually highly liquid could be impacted. After a selloff sparked by a poorly received budget proposal by then-Prime Minister Liz Truss, large pension plans were forced to unwind losses on interest rate derivatives which created a cycle of selling and caused the 10-year U.K. Gilt to rise by over 1.3% in just three days according to Bloomberg. Given the leverage on public sector balance sheets and the prospects of increasing debt service costs, the risk of a repeat in another sovereign bond market is quite real. We believe it would be even more challenging in a market where either external funding is high (like many emerging markets) or without a free-standing currency (such as eurozone members). These challenged liquidity dynamics and the potential for them to impact even some traditional safe havens highlight the need to keep a reserve of liquidity to ensure both the security of financial needs but also to be opportunistic when such liquidity events occur where long-term investors can take advantage.

THE GEOPOLITICAL CURVE BALL

Complicating all of this further are the rising geopolitical challenges with the war in Ukraine being prominent. Beyond the humanitarian toll, the impacts on energy and food markets have weighed on the global economy. The energy situation in Europe has, thus far, not proved as dire as feared because governments have been able to stockpile natural gas supplies and gain alternate sources of energy, such as the recently completed LNG port in Germany, far faster than anticipated. However, a lot of risks remain including how this affects political unity in Europe, the risk of the conflict widening and the risk that the much-needed energy transition suffers a major setback.

Developments in China are another geopolitical wildcard. President Xi's consolidation of power was made complete as he attained an unprecedented third term as leader of the world's second largest economy. Tensions between the U.S. and China remain high as China tries to ensure an increased level of economic independence from the West. This creates significant uncertainty from the potential for military action against Taiwan, to the trade policy with other Asian nations, to the status of Hong Kong to how foreign companies and investors will be treated doing business in China.

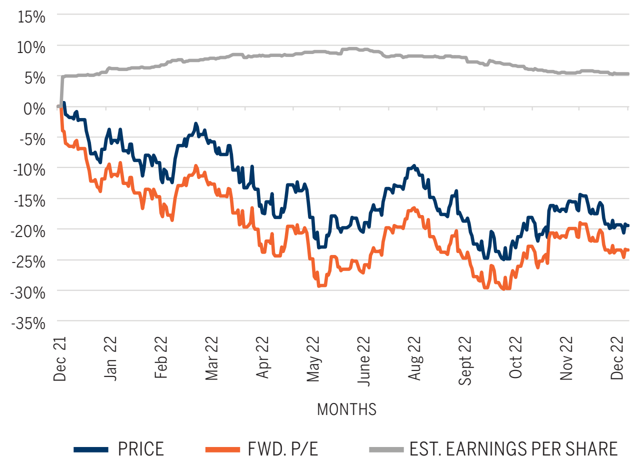
Either way, China is set to play an important role in both the growth and inflation outlook for the years ahead, but is harder to predict than ever. They are in the midst of a tumultuous exit from three years of lockdowns, a controversial political transition, a real estate crisis and regulatory uncertainty that has left the economy in recession and their markets trading close to all-time low valuations of just 13x forward P/E according to Bloomberg, as of 12/31/2022. Many global investors have thrown in the towel on China, and with such negative sentiment and relatively inexpensive valuations, we often take the opposite view and lean in. It is the world's second largest economy, a deep and inefficient market, and there are some great investors on the ground who have been able to outperform. We've selectively added, particularly in portfolios that were underweight the region but have stopped short of larger moves and acknowledge why some of our clients don't want any exposure to the country.

What makes China so difficult for investors is the political structure, the power of a single individual in determining the outcomes of companies and industries without a real legislative process. The risks in China have also increased the last few years, not just the internal politics but the geopolitics in relation to the U.S. and Taiwan and the economic risks of their over-levered real estate sector and their aging demographics. China's birth rate has dropped by 40% since the start of the pandemic according to Bloomberg, and that has added to the impacts of their previous one-child policy. Their working-age population is now projected to drop by 20% in the next 20 years according to Bloomberg, which will likely be a real drag on growth. A key consideration of our investment in Asia is the long-term growth of the region, and we believe potential growth actually looks higher outside of China these days in places like India and southeast Asia, which is why we've also been increasing exposure there.

So how do we balance the risks and opportunities amidst all of these uncertainties? Valuations have improved meaningfully, but the areas of the market that are truly cheap are so with good reason. Furthermore, a key change from a year ago is the opportunity cost of defense is now far lower with bonds (and even cash instruments) providing decent return outlooks. Therefore, we are remaining very circumspect about reaching too far out the risk spectrum. There are a few areas where we have been adding such as small-cap stocks, where valuations are particularly low relative to history, and there's less sensitivity to the geopolitical issues, but we believe the opportunities appear more company-specific than macro at this point. We have selectively added to credit and distressed strategies as bond yields have risen and certain sectors, like consumer, have come under stress. Within hard-hit areas, like technology stocks and Asia, we believe there are really solid companies that have sold off indiscriminately, and our teams are combing through the carnage to find those gems. But on a broad basis, we have increased our allocation to more defensive areas like bonds and Treasuries, given the higher yields and being in a position to take advantage of the volatility that we believe is likely to come. On the other side, we are reducing a number of the alternative investments we used to overcome the paltry yields offered in cash and bonds over the last few years. These strategies, such as hedge funds, private credit and real estate, served us well along with our shorter-duration posture as interest rates rose and remain a part of portfolios. But with bond yields at higher levels, we don't need as much exposure to these alternatives.

TAKE A HIKE (OR SEVEN)

The Fed hiked interest rates seven times in 2022–the fastest pace in four decades - causing bond yields to surge and the price-to-earnings multiple investors are willing to pay to sink. Corporate earnings, though, remained robust even as the Fed slammed on the brakes.



SOURCE: BLOOMBERG. FORWARD PRICE TO EARNINGS FOR THE S&P 500 INDEX. DATES: 12/31/21 - 02/07/2023

PUBLIC SECTOR DEBT

Over the last 15 years, governments around the world have twice jumped into economic catastrophes and provided massive stimulus in an effort to cushion the blow both during the Great Financial Crisis and the Global COVID Pandemic. This policy certainly limited the related economic downturns but came at the cost of putting tremendous leverage on public sector balance sheets. For most of that time, there was an equilibrium of low inflation and low interest rates which helped keep the cost of this debt low. Even when there were challenges around debt levels, monetary policymakers were able to intervene with stimulus, such as during the eurozone crisis. But, once again, this monetary flexibility was reliant on docile inflation.

So now that inflation is back and interest rates have risen, will all of this public sector debt become a massive problem? Most likely it will take time for the pressure of these higher rates to weigh on public sector balance sheets. Every major economy's debt load has an average maturity of over five years, so we believe debt financing costs will rise gradually, according to Bloomberg and government sources. It is important to remember that many countries have had very high debt-to-GDP ratios in the past without sparking a crisis (for instance, the U.S. and U.K. after World War II or Japan for the last 20 years).

	Debt to GDP (%)	Budget Deficit to GDP (%)	Avg. Debt Maturity (years)
Canada	31.6	-1.9	6.1
France	101.1	-5.2	8.3
Germany	47.0	-2.6	6.7
Italy	138.3	-5.5	0.7
Japan	168.1	-6.9	8.9
Spain	102.8	-4.9	7.8
UK	84.3	-0.7	15.0
USA	99.6	-4.4	5.7

Source: Bloomberg as of Calendar Year 2022

However, the turmoil that gripped the U.K. Gilt market in late September shows how that timeline could be accelerated if a liquidity challenge is added to the mix. In that case, the Bank of England (BOE) was able to prevent a self-perpetuating cycle of higher yields by re-starting their bond-buying program. However, this would be far more complicated if it occurred in an economy that either has a higher debt-to-GDP, significant debt in a non-domestic currency (common among emerging markets), greater external (foreign) funding or that does not control their own monetary policy. Some nations that would be vulnerable on this basis would include Egypt, Nigeria and Italy.

For all nations with elevated debt-to-GDP the weight of that debt is expected to continue growing and raises the risk of something going wrong whether it is driven by market volatility, capital flows or political discord (such as the U.S. debt ceiling). Therefore, we have added to our scenario analysis a "sovereign debt debacle" potential, but also this is impacting our long-term view of economic growth. While it is not massive at this point, we believe it will grow for nations that do not take steps to reduce their debt loads.

THE CRITICAL PATH FOR INFLATION

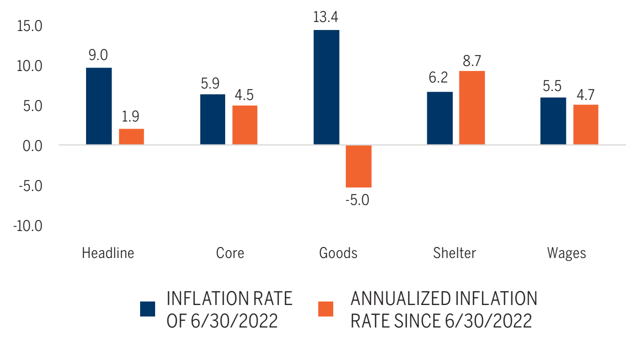
Coming into the year, inflation had been largely dormant for nearly 40 years. In fact, over the last 20 years, the largest global central banks spent far more effort combatting deflation than inflation. During 2021, inflation was showing signs of life not seen for a very long time. Fueled by fiscal and monetary stimulus efforts intended to combat the economic impacts of the pandemic and the influx of demand created by the so-called "re-opening." But 2022 saw these inflationary sparks turn into a blaze. The outbreak of war in Ukraine caused major disruptions in food and energy markets which added major supply-side inflationary pressures on top of the existing, mostly demand-side, inflationary dynamics. Once these inflationary forces combined, major central banks realized that inflation was not going to be transitory and they turned to swiftly tighten policy. As the months went by inflation not only persisted, but it also broadened out from being focused heavily on goods prices and then just as those cooled, there were steep price increases in services with shelter costs rising particularly rapidly. This made clear just how far behind the curve monetary policy had been. As a result, the Federal Reserve raised rates at the fastest pace since the early 1980s and the money supply has declined on a year-over-year basis for the first time since at least 1960 according to Bloomberg.

We believe inflation is likely to continue to be the fulcrum issue moving forward given how heavily that could dictate interest rates which, in turn, could meaningfully impact the magnitude of the economic slowdown and eventual rebound. On this front, there have been some optimistic signs. At the end of 2022, we finally started to see inflation decelerating in a broad way, but there is still a long way to go. Auspiciously, two of the best leading indicators for inflation have also been easing. Wage inflation has been moderating in recent months and survey data indicates that further deceleration is expected. Inflation expectations have also come down meaningfully. Two-year market expectations, using the Treasury Inflation Protected Securities (TIPS) market as a proxy, have gone from nearly 5% in the spring to just over 2% at the beginning of 2023. This reflects the market's view that central banks are catching up to inflation. Given the dramatic shift in central bank policy around the world, it would be surprising if we do not see a moderation, but given how far away inflation is from central bank targets, the road back could be long and very bumpy. We would note that it is not outside of the realm of possibility that we're talking of deflation sometime in 2023 if tight money leads to a deeper recession.

After the dust settles from this economic cycle, there is a structural question as to whether inflation will be able to go back to the levels we had grown accustomed to during most of the last 30 years. Some of the forces that helped hold inflation down are still present, such as slowing demographic growth and the impact of technology. However, others may be reversing, such as globalization and de-unionization. The global rise of nationalism and rising geopolitical tensions, most notably between the U.S. and China, look to have ended the era of declining trade barriers. There are movements across major economies to

A MIXED BAG

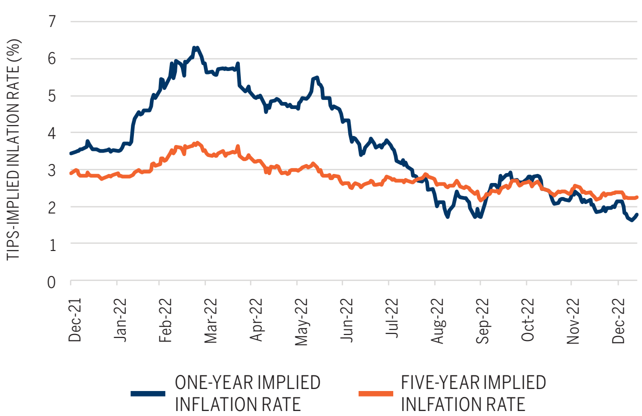
Falling energy and car prices have led to moderation in overall inflation, but services (driven by shelter) and wages are showing only mild progress.



SOURCE: BLOOMBERG. AS OF 11/30/2022.

ROLLING OVER (BUT JUST PLAYING DEAD?)

After peaking earlier in the year, inflation expectations in the bond market rolled over following a series of Fed rate hikes in the fall. Whether Fed action is enough to vanquish stubborn inflation or if any reprieve may be temporary, as it was for a spell in the 1970s, remains hotly debated by investors.



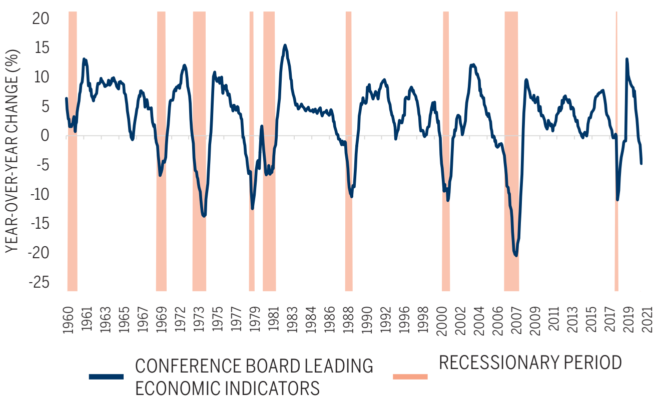
SOURCE: BLOOMBERG
DATES: 12/31/2021 - 02/07/2023

secure supply chains by onshoring or nearshoring. Within energy, this issue has become particularly prominent as energy insecurity grips Europe. We believe this has the potential to raise costs as prices become less globally interchangeable; thus, there is less competition for price across nations. Unionization movements had one of their best years in decades in 2022 with high-profile wins at Amazon and Starbucks. Centralization in the labor force has the potential to increase labor costs and raise the risk of the so-called inflationary "wage-price spiral" where contractual links between wages and inflation may lead to a cycle that is hard to break. Both of these issues are, so far, small in the scheme of the global economy, but they are two forces no longer pushing inflation down and if the trends gain steam, could start having a more significant impact.

All of this leaves us in a place where we believe the most likely outcome is a continued moderation of inflation, but how quickly it declines and where it ultimately settles out still feel highly uncertain. As was previously discussed, the maneuverability of fiscal and monetary policy becomes far greater to provide a cushion for the economic slowdown if inflation falls quickly. But one important change from a year ago is the resolve of central banks to combat inflation. Many wondered if they would be willing to risk a recession to bring down inflation, but the dramatic steps taken in 2022 seem to have answered this question. Furthermore, monetary policymakers around the world know that their credibility to fight inflation is on the line. We believe this lowers the risk that meaningfully elevated inflation continues for many years but raises the risk that central banks raise rates too far and cause a more severe recession (see our scenario analysis on page 27 for more detail).

DON'T LOOK DOWN

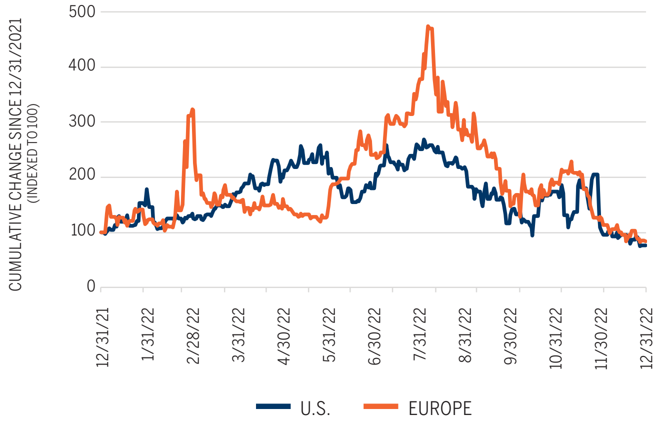
A decline in the Leading Economic Indicators Index by the Conference Board that mirrors the pace of the current dip has come prior to all nine recessions since 1960. That could mean current slowdown in economic activity the indicators capture may be heralding another downturn.



SOURCE: BLOOMBERG DATES: 1/31/1959 - 12/31/2022

HOT AIR BALLOONED

After surging over the summer months, natural gas prices have fallen to below pre-Ukraine invasion levels. An unusually warm winter along with frantic efforts to source and conserve gas have led to strong inventories and a more robust European economic backdrop than some investors had feared.



SOURCE: BLOOMBERG
DATES: 12/31/2021 - 02/07/2023

A RENEWED PUSH FOR RENEWABLES

Over the past year, we have received many questions from clients about the economic and societal challenges presented by the COVID pandemic, the war in Ukraine and the downstream effects of these two global crises, specifically the transition from fossil fuels to lower carbon solutions. Global greenhouse gas (GHG) emissions are expected to reach record levels in 2022. Today, the world is burning more coal than at any point in history according to the International Energy Agency (IEA) (coal accounts for nearly 40% of global GHG). Geopolitical tensions and the resultant global energy crisis are putting a spotlight on the need for greater energy independence and are advancing the energy transition "conversation" from timely to urgent.

The war in Ukraine has sent shockwaves through the entire global energy complex, with Europe being the most vulnerable today. The European Union (EU) imported roughly 45% of its gas from Russia in 2021, according to the IEA, and recently has been forced to take drastic steps to reduce this dependence. Europe has had to find cheaper sources of energy as Russia shut off supplies and many countries that have coal power plants have been forced to turn them back on temporarily. We believe this pivot should be short-term as the IEA expects a sharp decline in coal usage by 2025 as renewables ramp up. Germany has made multiple announcements in 2022 about speeding up its development of wind and solar to reduce the region's reliance on Russian gas. Overall ambitions are for renewable sources to account for 80% of Germany's electricity needs by 2030 and 100% by 2035, according

Sustainable Investing: Policy and Regulation Developments

- Climate risk has collected **corporate endorsement** as greater than 450 companies in the S&P 500 Index have climate -related information in their 10-K filing (according to Center of Audit Quality). But, the reporting methodologies vary by company. This has grabbed the attention of the SEC which has introduced a proposal for the enhancement and standardization of climate related disclosures. This SEC proposal has created a lively debate as companies would be required to report GHG emissions in their public filings for the first time. The SEC is currently reviewing comments received in June 2022, and it could take several months before we know the outcome.

- The **U.S. Inflation Reduction Act (IRA**) is transformative legislation whereby a majority of the spending targets climate and energy initiatives totaling more than $369 billion. The bill directs this funding to sectors that are the key contributors to GHG–transport, electrical power and industrial–and the largest allocation is directed to clean energy. This legislation provides incentives for utilities to reduce carbon in the power industry and steers more tax credits to storage and carbon capture solutions, according to Congressional documents. Furthermore, there are incentives for electric vehicles such as tax credits for the purchase of new and used vehicles. In addition, there are meaningful tax credits for alternative power such as solar, wind and geothermal.

- The EU issued its **"REPowerEU"** plan in May 2022 which was itself an ambitious response to the twin challenges of climate change and the war in Ukraine. It provided a roadmap to cutting Russian gas consumption by two-thirds before the end of 2022 and completely ending its use by 2030. But only a few months later, Russia's on and off-again approach to supplies for various countries spurred the EU to reconvene and pass a separate emergency commitment that would cut natural gas demand by 15% for one year.

- The implementation in the EU of **Sustainable Finance Disclosure Regulation** (SFDR) –placed into effect March 2021 –aims to increase transparency and ESG (Environmental, Social and Governance) responsibility as well as to avoid green-washing in the finance industry. SFDR classifies sustainable investment strategies into three areas: Article 6 (not promoted as sustainable), Article 8 (promotes ESG but sustainable Investing is not the core objective) and Article 9 (products with a sustainable investment objective). Asset managers that sell funds in the EU are required to self-classify.

to Bloomberg. We expect other EU nations—especially those with an established base of renewable energy infrastructure—to follow a similar path of support. While some feared that the Ukraine war would somehow lead to a deceleration of renewable energy expansion in Europe (and some regions have made a short-term pivot back to coal this past year with the IEA estimating that EU demand for coal has risen by 6% in 2022), and doubled consumption of liquified natural gas from the U.S., we believe that the long-term future for renewables in Europe is as bright as ever. That, however, does not solve the short-term problem of how Europeans will power and heat their homes affordably. Europe continues to face elevated energy uncertainty as the continent attempts to cut off its reliance on Russian oil and gas, presenting a headwind to economic growth (shown on the upper right hand side on page 16). Today, there are conflicting demands on how companies will supply more power, while at the same time mapping out a plan to accelerate the transition to a cleaner energy future.

This past year was historic for public policy legislation providing long-awaited catalysts for companies where governments and states pursue low-carbon projects and address the impacts of climate change.

For the first time, these policies will provide needed stimulus to drive investment dollars toward lower carbon technologies and business practices. While U.S. federal policies have long provided similar types of subsidies and tax credits in the energy industry, those prior policies were all passed with short leashes of one or two years before expiration. This made it difficult for responsible companies to do any kind of long-term business planning around renewable energy. However, the new IRA legislation (shown in the table above) is climate stimulus on a level that we have never seen before and should be in place for up to 10 years. We believe this legislation will finally give companies the confidence and the industry stability to move forward with renewable investment in the U.S.

We believe there are opportunities to decarbonize portfolios in most industries and across both public and private markets. Today, companies we hold are exploring a variety of innovative concepts. Our focus is to make sure our managers have a thoughtful investment process for these holdings. In the table above, we share a few examples of investments focused on this long-term secular trend. Today there are important political, social and technology advancements, along with corporate and supply chain impetus, behind the energy transition. We believe this urgency will open up opportunities for sustainable investments across most, if not all, industries. On December 12, the President of the European Commission, Ursula von der Leyen, stated "We must scale up and accelerate the deployment of renewables. We must go big and we must be fast." We look backward to 2022 as the year of climate policy legislation. We look forward to 2023 as the first of many years whereby states, governments and companies will determine how to achieve these climate goals and how to get the actual work done. The ensuing years will likely be complex and non-linear. For those who seek to invest in that transition, this will likely be a multi-year process as we continue to look across the value chain for investment opportunities.

The U.S. Utility sector is at the heart of the energy transition and is undergoing important changes primarily in electric power and gas. These companies are adapting to the necessity of cleaner energy production (i.e., wind, solar, batteries, storage, carbon capture), the complexities of regulatory changes and spending on infrastructure upgrades (i.e., mature gas distribution, grid reliability, aging water pipes, treatment facilities and wastewater). Utilities remain large owners of renewable assets, and these companies will likely have more representation in sustainable manager portfolios going forward. Lastly, the industry is receiving an additional push from the subsidies tied to the new IRA legislation.

- One of our managers focuses on asset owners of renewable energy infrastructure involved in direct power generation, transmission and distribution. Portfolio holdings are thematically aligned with reducing CO2 emissions and capturing the growth in electricity consumption driven through renewables.

- Hannon Armstrong* (HASI) is a pure-play renewable infrastructure-focused REIT with a strong track record of providing financing to public and private sector operators. The company has a specific focus on projects in wind and solar generation and energy efficiency upgrades. It also has a pipeline to gain exposure to utilities and corporates as they build renewable generation and other sustainable infrastructure assets.

**Examples for illustrative purposes only. The information provided in this material is not intended to be and should not be considered to be a recommendation or suggestion to engage in or refrain from a particular course of action or to make or hold a particular investment or pursue a particular investment strategy, including whether or not to buy, sell, or hold any of the securities mentioned. It should not be assumed that investments in such securities have been or will be profitable. To the extent specific securities are mentioned, they have been selected by the author on an objective basis to illustrate views expressed in the commentary and do not represent all of the securities purchased, sold or recommended for advisory clients.*

IS ANYONE SPENDING THEIR BALANCE SHEET CASH?

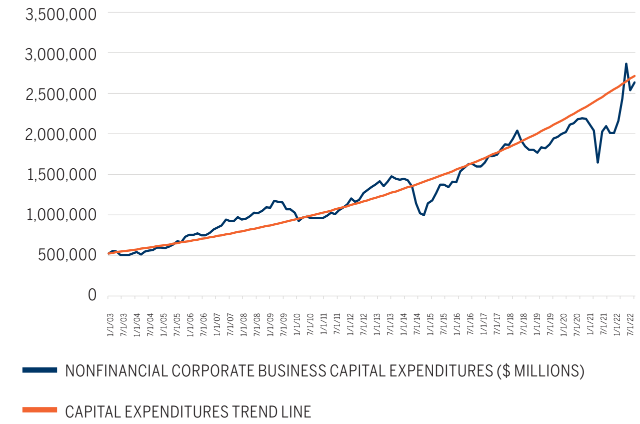
The emergence from the pandemic, ongoing supply chain disruptions and the transition to lower carbon emissions are all transforming how countless companies and industries consider future capital spending (i.e., capex). U.S. business capital investment has stagnated relative to GDP since the 1990s as companies have apportioned a smaller percentage of cash flows to capital expense. Following the Great Financial Crisis, the sacred catchphrase for corporate spending was "anything but capex." Since 2008, most companies outside of technology have been fixated on preserving and improving balance sheets, stacking up cash flow and propelling profitability through spending on maintenance capex and operations. Today the pendulum is beginning to swing in the other direction, at least for a few industries. The U.S. government is full speed ahead with higher capital spending. Meanwhile companies that are centered on domestic production and productivity growth, such as oil producers and utilities, are also ramping up spending. We see a continued trend in technology companies chasing future growth, while offsetting rising inflation costs (e.g., cloud services).

The potential for a new capital investment cycle in sectors, such as energy, utilities, industrials, transportation and manufacturing, after years of underinvestment, is a positive tailwind for value investors in the coming years. We expect that within these industries, Green Capex will amass a great deal of attention with companies and will drive the next era of infrastructure and investment for a low-carbon future. The environment is changing for oil producers as these companies consider climate risks as part of their strategy for future capital spending. Oil and gas companies have a tenured proficiency in building complex infrastructure, such as fixed platforms, pipelines and floating systems. Many are now translating this knowledge into expediting the development of renewable technologies.

In the technology industry, the story is a little different as companies have invested capital to maximize their growth and growth can be expensive. This growth capex has been steady (and massive) for many year–Alphabet, Amazon, Apple, Meta and Microsoft had combined capital spending of approximately $140 billion in 2021, according to Bloomberg and company financial reports. Despite the potential drag to cash flow, this spending binge continues as companies like Meta have announced plans for capex at 28% of revenue in 2022 and climbing to 30% of revenue in 2023. As labor challenges and costs persist, many companies have redirected their investment capital towards automation. Amazon is also redirecting capital by cutting capex for its retail business, while at the same time, continuing to spend on the expansion of their AWS data centers. Despite the difficult macro backdrop, Oracle has plowed more than $6.7 billion into capex over the past year as the company expands its cloud business, based on company commentary. Another new trend is the expectation for a rebound in tourism as global COVID protocols and policies become more and more relaxed. Disney, which spends most of its capital expenditures

MAKING UP FOR LOST TIME

Business' capital expenditures increased sharply in the reopening phase following COVID-19 lockdowns after dropping below trend in the outbreak of the pandemic. Nonfinancial Corporate Business; Total Capital Expenditures, Transactions; Gross Domestic Product.



SOURCE: FEDERAL RESERVE ECONOMIC DATABASE (FRED).
DATES: 1/1/2003 - 7/1/2022 (LATEST AVAILABLE).

on theme parks, plans to increase spending nearly 37% to more than $6.7 billion in 2023. The question we are asking ourselves is are we at the dawn of a new capex cycle? Probably not, but we are watching these developments closely and are paying particular attention to subsequent productivity gains, changes to free cash flow and ROIC (i.e., return on invested capital). Any rapid acceleration of spending can present both opportunities and challenges.

STATE OF THE CONSUMER

Consumers across most major economies built up meaningful savings in recent years due to pandemic stimulus measures. This helped fuel robust consumer spending during the so-called re-opening trade and despite the pinch of inflation, consumer spending has remained strong. This has been key to overall economic strength in the face of tightening monetary policy. Consumer spending was responsible for all the economic growth in the U.S. economy in the first three quarters of 2022, according to the Bureau of Economic Analysis.

However, despite strong wage growth, consumer incomes have not kept up with inflation so consumers have had to supplement spending by drawing down savings and increased borrowing. Consumer balance sheets are still quite strong with debt-to-income at fairly normal levels and over two trillion dollars' worth of excess savings in the bank. However, consumers are unlikely to keep up this pace of spending for a number of reasons:

1. Given the negative turn in leading indicators, the odds that the labor market softens and consumer incomes are further pressured seems far more likely than a substantive increase.

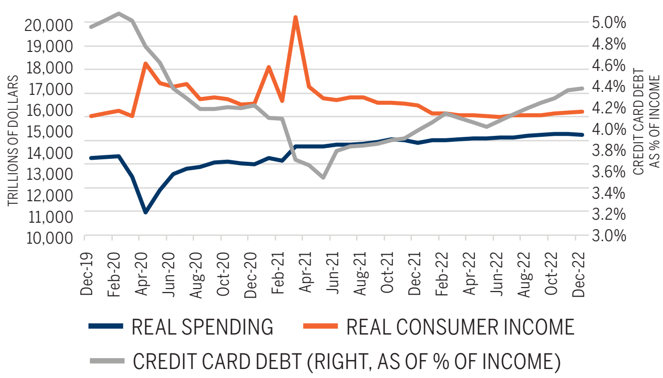
2. History suggests that excess savings cannot be relied upon to fuel spending longer-term. While consumers may spend savings on essential purchases or larger purchases that were already planned (for instance, if you had your heart set on a new car or had planned a family vacation), new discretionary purchases require consumers to feel confident.

3. Higher interest rates, which have already had a major dampening impact on the housing market, have increased the costs for all large purchases that require financing. According to the Federal Reserve, credit card interest rates have hit a multi-decade high at the same time as the growth of credit balances have hit their highest rates since 2011.

Therefore, we are expecting consumer spending to soften meaningfully in 2023, but the degree is very important. This will depend largely on inflation, interest rates and developments in the labor market. The good news is that with consumer balance sheets in good shape, spending is unlikely to see a dramatic falloff, but it is unlikely to provide the ballast to the economy that it did in 2022.

TAKING CREDIT

The U.S. consumer is in solid shape overall, bolstered by multi-decade highs in employment and accumulated savings from the pandemic. However, inflation and some economic slowing does seem to be taking its toll as credit card debt ticks up in a sign that savings may be running low.



SOURCE: BLOOMBERG.
DATES: 12/31/2019 - 12/31/2022.

OUR CURRENT STANCE

There are enormous contradicting forces pushing and pulling the global economy and markets as we emerge from global lock-downs and wean ourselves from historically stimulative monetary and fiscal policies around the globe. We have an ongoing war that risks escalation, a fresh debt ceiling debate in the U.S. and a complex picture for inflation and growth. So while valuations have generally re-set to more normal levels and we are expecting better long-term returns and finding more compelling investment opportunities, we believe the wide range of outcomes today requires both diversification and some conservatism.

LIGHT AT THE END OF THE TUNNEL

So how do we balance the risks and opportunities amidst all of these uncertainties? Valuations have improved meaningfully, but many areas of the market that are truly cheap are so with good reason. Furthermore, a key change from a year ago is the declining opportunity cost of defense with bond yields (and even cash instruments) providing decent return outlooks. Therefore, we are remaining circumspect about reaching too far out of the risk spectrum. There are a few areas where we have been adding investments such as small-cap stocks, where valuations are particularly low relative to history and there's less sensitivity to the geopolitical issues, but broadly speaking, the opportunities appear more company-specific than macro at this point. Within hard-hit areas, like technology stocks and Asia, we believe there are really solid companies that have sold off indiscriminately, and our teams are combing through the carnage to find those gems. But on an asset class basis, we have increased our allocation to more defensive areas, like bonds and Treasuries, given the higher yields and to be in a position to take advantage of the volatility that we believe is likely to come. On the other side, we are reducing a number of the alternative investments we used to overcome the paltry yields offered in cash and bonds over the last few years. These strategies served us well along with our shorter-duration posture as interest rates rose. At the same time, we are maintaining allocations to more high-quality equity strategies which are populated by companies that we believe have the strength of balance sheets, business models and pricing power to endure the uncertainties around input costs, inflation and recession.

In client portfolios, we are looking to strike the right balance of capital preservation and income generation during volatile market periods while at the same time positioning portfolios for future opportunities. Over the past year, we have shifted our asset allocation to reflect the improvements in bond yields and valuations while also emphasizing defensive diversification to keep portfolios prepared for a wide range of outcomes including elevated inflation, recession and recovery. We have focused our asset allocation changes on balancing growth and value within equities emphasizing high-quality companies with strong cash flow and pricing power. Within fixed income, we are still carrying lower duration to reduce interest rate risk. We have emphasized strategies, such as infrastructure and real assets, that provide lower correlations to both traditional fixed income and equities and a hedge to inflationary pressures. We made marginal changes in the latter part of 2022, including a slight shift back toward core bonds and incrementally adding back to equity beta, particularly within small-cap companies.

Heading into 2023, we continue to have a cautious posture. For one, equity valuations from an index-level perspective are not cheap. Looking at a rough proxy of equity risk premium (such as S&P 500 Index earnings yield minus 10-year Treasuries yield), one could argue stocks still have more downside before they become attractive relative to fixed income. In any case, we are remaining patient, rebalancing when appropriate and keeping our focus on the long-term (tenets of investing that stand the test of time). Despite this, we are looking for dislocation opportunities that we believe could produce attractive returns looking out a few years from today.

HOW ARE WE POSITIONED

Equities

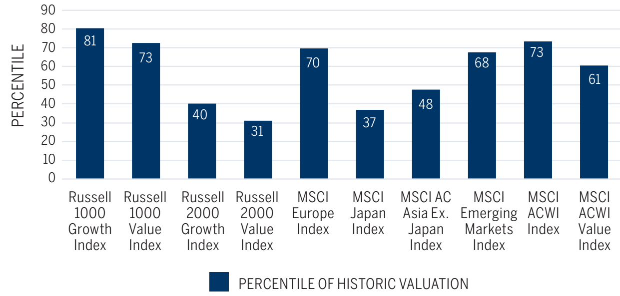
Throughout 2022, we've maintained a balance between growth and value equities with an emphasis on quality–companies that we believe have healthy balance sheets, wide competitive moats and strong unit economics to navigate an increasingly challenged economic environment. While valuations have broadly come down due to the sharp rise in interest rates, we find small-cap U.S. equities to be relatively more attractive compared to large-cap U.S. equities from a valuation perspective. We believe this opportunity in small-cap equities is representative of a broader opportunity in active management, and may be setting up interesting long-term opportunities for our clients.

- **Adding to Global Quality Equities:** We see an opportunity in growth at a reasonable price–companies and strategies for client portfolios that are trading at attractive valuations while offering long-term growth at the same time. We prefer "quality value" exposure, particularly in non-U.S. markets, given the MSCI EAFE Index's overweight allocations to "lower-quality" industries, such as auto manufacturers, money center banks and energy companies. For many globally-oriented companies, the multinational nature of these businesses also means they generally benefit from a stronger dollar (translation to higher earnings from a local currency perspective). We focus on companies with high returns on invested capital, low leverage and sales growth above the global equity benchmark.

- **Adding to U.S. Small-Cap and Increasing Growth:** Small-cap U.S. equities are becoming increasingly attractive in our view as the valuation spread between large-cap and small-caps widens. We see opportunities across both small-cap growth and value and prefer quality, looking to avoid unprofitable or speculative companies in the small-cap universe. Small-cap growth companies have seen their valuations re-set more quickly; thus, we have moved back to an equal weight between growth and value in small caps. Small-cap stocks are undoubtedly more tied to the U.S. economic cycle (and therefore, more insulated from geopolitical issues)–a majority of revenues and profits are derived from the U.S. While an economic slowdown presents a risk to the near-term outlook for small caps, we would note that small-cap stocks tend to perform better coming out of a recession. Given where valuations are trading, we see small-caps pricing in more downside risk than their larger-cap counterparts; thus, feel comfortable adding.

ALL OVER THE PLACE

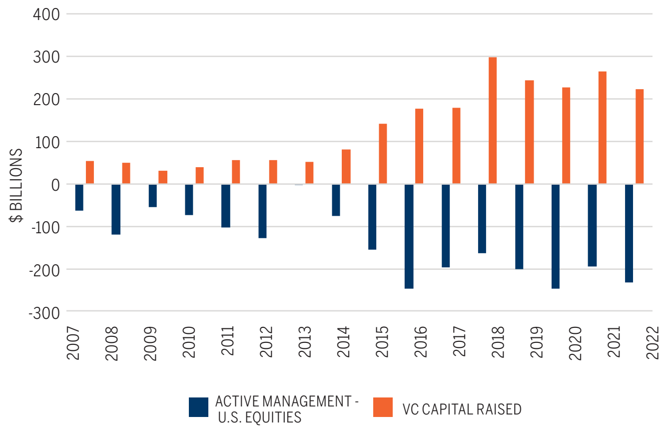
Valuations relative to history for different categories of the stock market vary considerably, with small cap, value and international segments trading at a discount to historical valuations while large cap growth name valuations remain elevated.



SOURCE: BLOOMBERG. LONG-TERM HISTORY 1996-2023,
CURRENT PERCENT RANK BASED ON CAPE RATIO AS OF 02/07/2023

SMALL AND OVERLOOKED?

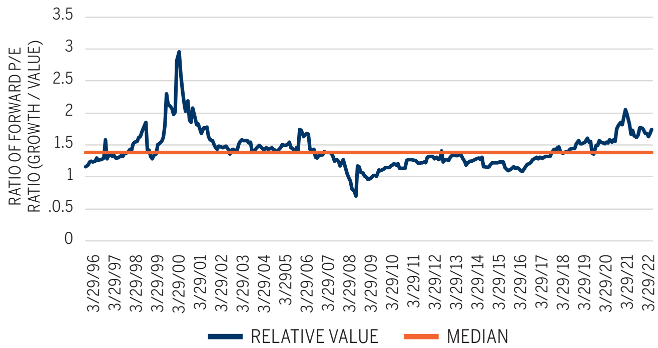
As allocations to passive investments on one hand and private markets on the other grow in popularity as we discussed in last year's report, an opportunity may be created for small-cap companies with the right fundamentals given the sector's attractive valuations.



SOURCE: PITCHBOOK FOR VENTURE CAPITAL DATA. MORNINGSTAR INC. FOR ACTIVE MANAGEMENT. DATES: 12/31/2006 - 2/1/2023. ALTERNATIVE INVESTMENTS AVAILABLE FOR QUALIFIED PURCHASERS/ACCREDITED INVESTORS ONLY.

THERE'S STILL VALUE IN VALUE

While the gap closed somewhat over the course of the year, value stocks still offer more attractive valuations than their growth peers.



SOURCE: BLOOMBERG LONG-TERM HISTORY 1996 TO 2023.
CURRENT PERCENT RANK BASED ON CAPE RATIO AS OF 02/07/2023.
VALUE REPRESENTED BY RUSSELL 1000 VALUE INDEX, GROWTH REPRESENTED BY RUSSELL 1000 GROWTH INDEX.

- **Modest Tilt to Value Within Equities:** Broadly speaking, we are remaining slightly overweight value equities relative to the global equity benchmark. While valuations on large-cap growth companies have fallen meaningfully since last year, growth valuations are still trading above historical levels. With the economic environment and hawkish monetary policy likely to persist as inflation remains above policy targets, we see headwinds for select portions of the growth equity market from both a valuation and fundamental basis. We prefer less economically-sensitive value exposure, focusing on companies that we believe have growing cash flows, relatively stable end-market demand and attractive valuations.

- **Maintain Non-U.S. allocations:** The economic environment in 2023 for non-U.S. stocks will likely be challenging, with the ongoing war in Ukraine and tighter global monetary policy putting a dampener on global growth. However, we've maintained our allocations in both developed non-U.S. and emerging markets despite some of the near-term challenges. From a valuation perspective, non-U.S. stocks remain relatively less expensive than those in U.S. markets, perhaps justifiably so. However, as we mentioned above, multiple contraction remains a bigger risk for U.S. companies in a higher-rate environment. Additionally, non-U.S. equities could receive a boost if the U.S. dollar were to weaken. Last year was a marquee year for the greenback, with "U.S. dollar strength" weighing on unhedged returns for U.S. investors in non-U.S. equities. There is a risk that reverses as the U.S. gets closer to easing monetary policy as Europe tightens in earnest. Finally, bearish investor sentiment may have already priced in a meaningful recession in markets like Europe and Emerging Asia. As we highlight in the "EM: China and Beyond?" section on page 25, a China reopening could be a boost to economic activity. Likewise, U.S. company earnings growth remains positive (albeit slowing), suggesting expectations remain slightly rosier in the U.S. Given these factors, we have maintained non-U.S. allocations in client portfolios.

- **Infrastructure and Energy Transition:** We have increased allocations to infrastructure and companies backed by real assets, particularly those tied to the ongoing energy transition. Many of these companies exhibit qualities that are defensive in nature– nondeferrable demand backed by long-term contracts with prices tied to inflation. Allocations in infrastructure were particularly helpful in providing downside protection last year. The S&P Global Infrastructure Index was down -0.2% in 2022, compared to the sharp -18.0% return for the MSCI ACWI. While these assets have a defensive role, we also see interesting long-term opportunities for these companies, including the ongoing energy transition which will require massive investment in infrastructure.

FIXED INCOME

Throughout 2020 and 2021, we reduced fixed income exposure and meaningfully shortened duration given the historic lows in interest rates. This positioning provided some downside protection as rates rose last year. Given much higher levels of yields today, we are in the beginning phases of leaning back into duration as the risk of a recession increases and rates have turned positive relative to expected rates of inflation.

- **Gradually Leaning into Duration across Core Bonds and Treasuries:** In normal times, we think high-quality bonds like U.S. Treasuries can provide useful protection in a recessionary scenario. The starting yield-to-worst on the Bloomberg U.S. Aggregate Bond Index more than doubled in 2022, rising from 1.8% in the beginning of 2022 to 4.6%. We believe this higher starting yield presents a better long-term return outlook from core fixed income, and we're beginning to unwind some of our short-duration positioning as a result. This shift comes as economic risks increase with central banks ready to keep a hawkish stance in 2023.

- **Finding Selective Opportunities in Credit:** Credit spreads across investment-grade and high-yield credit increased in 2022 but remain near long-term averages. This is not necessarily enough to make for a broad opportunity, but disparities are wide under the surface, and we are starting to see individual situations where we believe default risk is low and yields are attractive.

- **Getting back to longer-term strategic allocations in fixed income:** We entered 2022 being underweight in fixed income. Now that yields have moved dramatically higher, we have been intentionally slowing allocations into fixed-income "alternatives," such as real estate and hedge funds, that we leaned into when rates were at historic lows to reallocate back into core fixed income. While interest rate risks remain, we think bonds at this point will return to the role of a diversifying hedge to equities given the rising risk of recession.

PRIVATE INVESTMENTS

Private markets were not immune to the challenging macroeconomic environment in 2022. Higher interest rates, tighter financial conditions, weak capital markets activity and lower valuations all proved to be challenges for private market investors as well. After a torrid year of private market activity in 2021, deal flow and exit activity slowed meaningfully in 2022 as General Partners (GPs) took a more cautious approach to deploying capital amidst the broad market and valuation reset. An emphasis on liquidity and limiting cash burn have become top-of-mind, with many private companies taking cost-saving measures to limit the need to raise capital at the risk of experiencing a "down round." Similarly, the IPO market largely dried up in 2022, again a reflection of a more cautious and sober approach across private equity and venture.

Despite these challenges, we still believe private investments play a meaningful role in client portfolios and continue to commit capital on a systematic basis across private equity, private credit and real estate. We believe our partnerships with top-tier GPs across private asset classes give us the ability to navigate this environment while setting up the potential to generate long-term outperformance for our clients.

- **Venture capital:** The pullback in public market valuations across growth equities and recent IPOs will undoubtedly filter its way through to private markets, and we've already seen the impact in late-stage venture, with perhaps more room for downward adjustments in valuations. We have heard of term sheets being pulled while companies have put an emphasis on reducing cash burn, in some cases resulting in layoffs. From a deal flow perspective, many "non-traditional" investors in the venture space, including hedge funds, mutual funds and corporate venture capital arms, have slowed down capital deployment. We continue to favor early-stage ventures, where we believe the runway for growth and innovation remain large while scaling our relationships with high-conviction managers. We believe we can take advantage of what's sure to remain a volatile and difficult environment for venture-backed companies.

- **Value exposure in buyout provides a ballast:** Similar to venture capital, valuations in the buyout space will likely be impacted by the reset seen in public markets for the coming quarters. From a financing perspective, higher rates have impacted the costs associated with leveraged buyout transactions. Our exposure in buyout has generally tilted more towards value-oriented companies, which may be more insulated from the heavier growth sell-off in public markets. Most of our managers use lower leverage levels, providing more flexibility to navigate difficult economic periods. We take comfort in the fact that our managers have ample dry powder to take advantage of potentially interesting buying opportunities as valuations continue to correct.

- **Private credit / income:** Most private credit exposure in our portfolios is focused on floating-rate senior direct lending in companies that are typically highly cash-flow generative with healthy balance sheets. We believe this core exposure provides a ballast in income-oriented portfolios. We've also been leaning into specialty finance, such as real estate lending and entertainment royalties, which are less correlated income streams and can provide diversification during volatile periods.

- **Real estate:** Real estate transactions slowed down in the second half of 2022 as a tough debt financing environment and higher cap rates put a dampener on capital market activity. While slower economic growth and higher interest rates impact real estate markets, we still see strong long-term macroeconomic trends in select segments, such as multi-family, seniors housing and industrial. We believe managers we invest in have good relationships with both national and regional lenders to secure attractive financing and are able to source deals that are typically harder to access.
  Additionally, we believe our managers can add value via internal operations, which are less dependent on macroeconomic factors, to drive rent growth or property value.

HEDGE FUNDS

Last year was one in which exposure to hedge funds was quite additive, outperforming any combination of stocks or bonds, which both suffered. The dispersion of hedge fund performance was quite wide, however. Generally speaking, long-short equity strategies, particularly those heavily exposed to growth equities, struggled to generate alpha, while multi-strategy, long-short credit, event-driven and distressed funds were able to capitalize on volatility to provide downside capture with lower correlations to both stocks and bonds. We continue to gradually shift capital from equity long-short exposure to strategies across long-short credit / distressed, event-driven and multi-strategy managers with the goal of providing portfolio diversification from this allocation. Our focus remains on:

- **Long-short credit, distressed and multi-strategy:** We've continued to have success in the long-short credit, distressed, event-driven and multi-strategy space. These strategies have generally been able to take advantage of heightened interest rate volatility and idiosyncratic opportunities across the capital structures of companies undergoing change or in some state of stress. Additionally, many of these strategies hedge to minimize macroeconomic risk while emphasizing idiosyncratic positions in their portfolios.

- **Smaller, nimbler equity long-short managers:** Our decision to allocate to smaller managers who are nimbler and willing to short equities has been a positive, as they have generally outperformed their larger counterparts. These managers have benefited from a greater level of flexibility to invest in small and midcap companies as well as a continued dedication to the short side of their books.

- **Diversifying exposure to health care/biotechnology specialists:** We continue to like the inefficiency of the biotechnology space and the ability for investors with backgrounds in the life sciences to add alpha through both long and short investments. Despite recent volatility, we believe the long runway for biotech innovation and the possibility of increased M&A activity by large pharma could provide support for the space.

- **Public, private hybrid:** We have been selective about the investors we partner with who invest in both public and private markets, and we continue to raise the bar for these strategies. Many of these managers have been aggressive in marking their private portfolios lower, which was a drag on 2022 performance. With that said, we maintain conviction in this area given strong longer-term performance and the flexibility to allocate capital flexibly between public and private markets based on the opportunity set.

EM: CHINA AND BEYOND

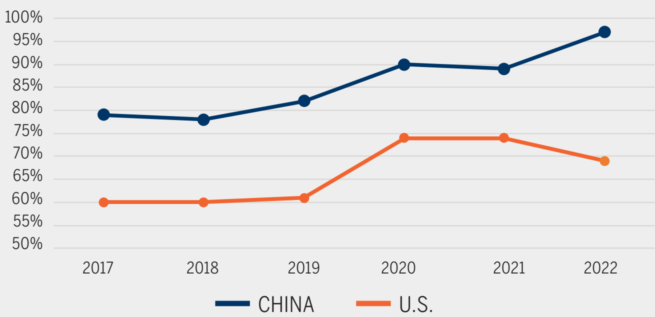
2022 proved to be yet another volatile year for Emerging Markets (EM) investors. The U.S. dollar surged against EM currencies due to the Federal Reserve's monetary tightening policies, presenting a headwind to U.S.-based investors in Emerging Markets. With that said, not all Emerging Markets sold off in unison, an important reminder that EM equity is not a monolithic asset class. Commodity-sensitive markets in the Middle East, Latin America and Africa benefited from the boost in energy prices during the year. Meanwhile, Asian equities were hampered by slowing global economic activity, China's sluggish economic growth due to Zero-COVID policies and a sharp contraction in the Chinese property market.

Geopolitical risk remains elevated in 2023, including those of U.S. and China tensions as the latter evaluates its support to Russia and imposes sanctions on some U.S. defense manufacturers, according to Bloomberg. Central bank tightening will likely put pressure on EM economies. Unsurprisingly, China will have an outsized role across both geopolitics and the global economy. President Xi Jinping's consolidation of power during the nation's 20th National Party Congress (a quinquennial gathering of the nation's governing body to determine leadership of the Chinese Communist Party) emphasized the risk that Chinese economic and geopolitical policies will go as Xi wants it to go. While the outcome of the 20th National Party Congress was largely anticipated, investors and policymakers across the globe will have to pay close attention to how Xi responds to some of the pressing challenges facing the world's second largest economy.

Perhaps the biggest question facing China is how it responds to the Chinese government's 180-degree policy turn from zero-COVID to re-opening. Since the start of the pandemic, China had taken a draconian approach to containing COVID-19. However, surprising protests across the country toward the end of 2022 put unprecedented political pressure on Xi to backtrack some of the country's zero-COVID policies.

HIDDEN TIGER?

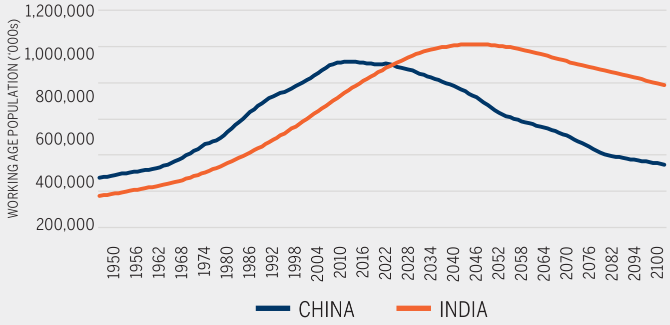
Emerging from multi-year COVID-lockdowns, Chinese consumers are flush with savings even as U.S. consumers wind down their excess savings. The pent-up demand from Chinese consumers could serve as an important tailwind for the global economy.



BANK DEPOSITS AS PERCENT OF GDP. SOURCE: BLOOMBERG. DATES: 2017 - 2022.

PASSING THE TORCH

While China's pent up consumer demand could add a tailwind in the near term, over the longer horizon the attractiveness of the emerging market opportunity set also includes other countries with more favorable demographics and income growth potentials like India,



SOURCE: UNITED NATIONS ESTIMATES. FORECASTS BEYOND 2022

While COVID-19 cases have skyrocketed, China's reopening could unleash a wave of pent-up demand and spending. The chart on the bottom left of this page shows the growth of deposits as a percentage of GDP in both China and the U.S. While Chinese households have traditionally had higher savings rates than those of U.S. households, deposits in China grew quite rapidly in 2022, due to two major factors: Zero-COVID policies hampering consumption and the severe deleveraging in the property market. These excess savings could provide a spending boost similar to what was seen in the U.S. after re-opening.

As the government prepares to reverse not only Zero-COVID policies but also loosen financial regulation on the real estate market, 2023 could be a year where China loosens policy and rebounds in a strong way while the rest of the world experiences a moderate economic slowdown.

As we mentioned in last year's publication, China offers opportunities for investors who can carefully navigate the idiosyncrasies of both the onshore and offshore markets. A potential cyclical rebound in China presents a different narrative from the rest of the world heading into 2023. From a valuation perspective, Chinese equities remain relatively inexpensive compared to both developed and other select Emerging Market economies. Finally, we cannot ignore the trends of "de-globalization" which started since the early 2010s but accelerated in earnest since the start of the COVID-19 pandemic. As U.S.-China geopolitical tensions remain elevated, even a slight de-coupling of global trade and financial systems make China and EM allocations more "diversifying" in portfolios. We'd also note several large U.S.-based companies continue to have meaningful exposure to domestic Chinese markets. For all of these reasons, we've maintained allocations to China and Emerging Markets broadly.

2023 ASSET ALLOCATION VIEWS

Our asset allocation stance is largely based on our long-term return and drawdown risk estimates across asset classes. For equities, the key inputs for our long-term return estimates are starting valuations, economic growth expectations (or potential GDP growth) and changes in interest rates. For fixed income the predominate indicator of return is starting yields (incorporating both base government bond yields and spreads) with some influence from the slope of the yield curve and anticipated changes in yields.

The dramatic rise in bond yields coupled with a meaningful decline in equity market valuations have improved our outlook for long-term returns across most asset classes. The increase in long-term returns is reasonably close between equities and fixed income such that the relative attractiveness did not change meaningfully, with a slight advantage to bonds on a risk-adjusted basis. However, these traditional asset classes have become far more attractive relative to alternatives compared to the last few years when bond yields were low and equity market valuations were elevated.

Medium-Term Outlook (18 to 36 Months)

During 2022 the global economy faced significant headwinds coming from rising interest rates, continuing supply chain challenges from the pandemic, commodity disruptions from the war in Ukraine and China's zero-COVID policy which weighed on demand and production in the world's economy. That being said, growth was still positive for the year across major economies. However, the risk of recession is significant in 2023 as all these forces will likely continue to weigh on economic growth. The lagged impacts of tightening policy put even further pressure on economic growth. Of the 11 previous times the Federal Reserve went on a tightening cycle, seven ended in recession and given that this has been the most dramatic tightening cycle since the early 1980s, the odds of avoiding recession appear low. However, we believe there are reasons for optimism as economic imbalances are not nearly as significant as in 2001 or 2008, and private sector balance sheets are in a strong position. In many ways, the direction of inflation appears critical. If inflation moderates reasonably quickly and central banks can pivot and provide stimulus, it should both cushion the severity of the slowdown but also provide fuel for a more robust rebound. Conversely, if inflation remains stubborn (as it did in 2022) then central banks may have to decide between quashing inflation or allowing a sharper and longer lasting economic downturn.

Therefore, the two most significant changes to our scenario analysis are a more pessimistic base case and that the odds of a monetary policy mistake have tilted from being too loose to being too tight. The conflict in Ukraine and the corresponding impact on commodity markets fueled a supply-side inflation shock on top of the already considerable inflationary pressures. This led central banks to tighten policy far more than we had been expecting which is already weighing on economic conditions, and we expect to exert further pressure in 2023. Additionally, during 2022, the determination of central bankers to bring down inflation hardened significantly as they know their inflation-fighting reputation is on the line raising the risk of an over-tightening of policy but reducing the risk of a prolonged period of problematically high inflation.

Some additional specific changes include two new bearish scenarios:

- **Conflict expanding** – the conflict in Ukraine has already had significant impacts on the global economy but should the conflict widen or if another geopolitical hotspot erupts into open conflict the consequences could become far more dramatic.

- **Sovereign debt** – higher interest rates means higher borrowing costs and governments around the world have accumulated significant debt loads to combat the impacts of the pandemic. For vulnerable nations (i.e. high debt-to-GDP, externally funded debts, lack of monetary control), this could bring into question the ability to repay and potentially spark a local or regional debt crisis. Additionally, rising political rifts both within nations and across nations, raise the rise of a politically-oriented debt crisis such as the ongoing U.S. debt ceiling debates.

CURRENT SCENARIO ANALYSIS (AS OF DEC. 31, 2022)*

Base-Case Scenario

Slowing Growth Brings Slower Inflation The weight of higher interest rates restrains economic growth such that many major economies face a mild-to-moderate recession with strong private sector balance sheets cushioning the blow. The upside is that this economic slowdown cools inflationary pressures allowing central banks to provide stimulus. *Most Likely Scenario*

Bull-Case Scenarios	Bear-Case Scenarios
Strong Rebound The economic slowdown and improving supply chains spur a sharp slowdown in inflation allowing central banks to provide significant stimulus which fuels a strong economic rebound. *Moderate to Low Likelihood*	**Monetary Over-Tightening** Global central banks continue to aggressively tighten policy to thoroughly quash inflation causing a deep global recession to take hold. *Moderate Likelihood*
Durable Cycle Despite higher interest rates, strong balance sheets are able to endure and keep economic growth positive and easing supply chain and geopolitical challenges moderate inflation. *Low Likelihood*	**Inflation Heat** Inflation continues to defy expectations forcing interest rates even higher, despite the economic slowdown, which further pressures corporate margins and prevents central banks from providing stimulus to help the economy rebound. *Moderate Likelihood*
Growth with Inflation Central banks accept higher levels of inflation and provide more accommodative policy preventing a recession but with inflation remaining elevated. *Low Likelihood*	**Globalization Receding** Geopolitical tensions continue to rise and countries respond to slower economic growth with more nationalist policies. Global trade suffers, damaging global economic growth. *Moderate Likelihood*
	Sovereign Debt Debacle As rising interest rates put further pressure on sovereign balance sheets, multiple major economies face sovereign debt crises forcing fiscal austerity. *Low Likelihood*
	Conflict Expanding The current conflict in Ukraine expands causing a much larger disruption to trade in addition to the direct costs of conflict. *Low Likelihood*

* THIS SCENARIO ANALYSIS WAS PREPARED BY BROWN ADVISORY. PLEASE SEE THE END OF THIS DOCUMENT FOR IMPORTANT DISCLOSURES.

CONCLUSION

The past year was one of the most challenging ones on record for financial markets. Both bonds and stocks faced remarkable headwinds as policymakers embarked on an abrupt U-turn to halt inflationary pressures that ran at multidecade highs and proved more persistent than had originally been anticipated.

As discussed in this report, we believe 2022's sharp correction has created the foundations for a more constructive environment in the years ahead. After more than a decade and a half since the GFC, we believe that fixed-income markets now offer attractive yields and can serve as a meaningful ballast in portfolios. Corporate earnings have held up relatively well, with much of the decline in stock prices driven by multiple contraction due to higher interest rates instead of dramatically deteriorating fundamentals. The U.S. consumer remains in solid shape, with job availability at all-time highs by many measures and household balance sheets robust.

Secular themes that we anticipate to offer compelling investment opportunities also remain intact and are in fact in many cases accelerating. The invasion of Ukraine has catalyzed enormous investment in energy transition and renewable energy technologies. Advances in artificial intelligence, perhaps illustrated most vividly by the viral spread of ChatGPT, may herald leaps in innovations and productivity gains. Our privately-held portfolios continue to look promising, with a continuing housing shortage providing tailwinds to real estate and repositioning by companies creating opportunities for various flavors of private equity.

We want to take the opportunity to thank you once again for the confidence and trust you have placed in us. We welcome your questions and thoughts and look forward to continuing the discussion.

The views expressed are those of the author and Brown Advisory as of the date referenced and are subject to change at any time based on market or other conditions. These views are not intended to be and should not be relied upon as investment advice and are not intended to be a forecast of future events or a guarantee of future results. Past performance is not a guarantee of future performance and you may not get back the amount invested.

ESG considerations are one of multiple informational inputs into the investment process, alongside data on traditional financial factors, and so are not the sole driver of decision-making. ESG analysis may not be performed for every investment in our portfolios. ESG considerations that are material will vary by investment style, sector/industry, market trends and client objectives. Ours strategies seek to identify companies that we believe may have desirable ESG outcomes, but investors may differ in their views of what constitutes positive or negative ESG outcomes. As a result, our strategies may invest in companies that do not reflect the beliefs and values of any particular investor. Our strategies may also invest in companies that would otherwise be screened out of other ESG oriented portfolios. Security selection will be impacted by the combined focus on ESG assessments and forecasts of return and risk. Our strategies intend to invest in companies with measurable ESG outcomes, as determined by Brown Advisory, and seek to screen out particular companies and industries. Brown Advisory relies on third parties to provide data and screening tools. There is no assurance that this information will be accurate or complete or that it will properly exclude all applicable securities. Investments selected using these tools may perform differently than as forecasted due to the factors incorporated into the screening process, changes from historical trends, and issues in the construction and implementation of the screens (including, but not limited to, software issues and other technological issues). There is no guarantee that Brown Advisory's use of these tools will result in effective investment decisions.

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Certain market and economic events having a positive impact on performance may not repeat themselves. No assurance can be given that any such opportunity's investment objectives will be achieved or that investors will receive a returnof any of their capital.

Unless otherwise indicated, the information presented herein does not include the effect of administrative fees, taxes and other fund or account expenses; such fees and expenses will lower performance and diminish liquidity. Private equity investments will be characterized by a high degree of risk, volatility and illiquidity due, among other things, to the nature of the investments. A prospective investor should thoroughly review the confidential information contained herein and in the Offering Materials pertaining to any investment, and carefully consider whether such an investment is suitable to the investor's financial situation and goals. Investors should have the financial ability and willingness to accept the risks and lack of liquidity that are characteristic of the investments described in the Memorandum pertaining to an investment opportunity. Investors should pay particular attention to the risk factors described in the Memorandum pertaining to an investment opportunity.

Prior access to investment opportunities is not an indication that these opportunities or similar opportunities will be available to investors. The selected investments listed herein do not represent all securities purchased, sold or recommend during this period.

The following indexes were used throughout this report to represent returns and characteristics of various asset classes and regions:

U.S. Equities: The **S&P 500® Index** represents the large-cap segment of the U.S. equity markets and consists of approximately 500 leading companies in leading industries of the U.S. economy. Criteria evaluated include: market capitalization, financial viability, liquidity, public float, sector representation, and corporate structure. An index constituent must also be considered a U.S. company. The **S&P Global Infrastructure Index** is designed to track companies from around the world chosen to represent the listed infrastructure industry while maintaining liquidity and tradability. Standard & Poor's, S&P, and S&P 500 are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"), a subsidiary of S&P Global Inc. **The Russell 1000® Growth Index** measures the performance of the large-cap growth segment of the U.S. equity universe. It includes those Russell 1000 Index companies with higher price-to-book ratios and higher forecasted growth values. **The Russell 1000® Value Index** measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 1000 Index companies with lower price-to-book ratios and lower forecasted growth values. **The Russell 2000® Value Index** measures the performance of small-cap value segment of the U.S. equity universe. Russell Indexes are completely reconstituted annually. The **Russell 2000® Growth Index** measures the performance of the small- cap growth segment of the US equity universe.

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Emerging market equities: **The MSCI Emerging Markets Index** captures large and mid cap representation across 25 Emerging Markets (EM) countries*. With 1,422 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country. The MSCI Emerging Markets Net Total Return (USD) Index tracks the performance of the MSCI Emerging Markets Index in U.S.-dollar terms. **The MSCI Japan® Index** is designed to measure the performance of the large- and mid-cap segments of the Japanese market. EAFE equities: The **MSCI ACWI Value Index** captures large and mid cap securities exhibiting overall value style characteristics across many Developed Markets countries and Emerging Markets (EM) countries. **The MSCI EAFE Index** is designed to represent the performance of large- and mid-cap securities across developed markets in Europe, Australasia and the Far East, excluding the U.S. and Canada. **The MSCI Asia ex Japan Index** captures large- and mid-cap representation across several developed market countries (excluding Japan) and several emerging markets countries in Asia. Global equities: **The MSCI All-Country World Index**, or "ACWI," captures large- and mid-cap representation across several developed and emerging markets. The **MSCI Europe Index** is an indicator of the performance of the stock markets of developed European countries. It measures the performance of large and mid-cap companies across many developed markets in Europe. All MSCI indexes and products are trademarks and service marks of MSCI or its subsidiaries. The **BofA Merrill Lynch 3-Month T-Bill Index** is an unmanaged index that measures returns of three-month Treasury Bills.

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The **Bloomberg Aggregate Bond Index** is an unmanaged, market-value weighted index composed of taxable U.S. investment grade, fixed rate bond market securities, including government, government agency, corporate, asset-backed and mortgage-backed securities between one and 10 years.

The **Bloomberg US Government/Credit Bond Index** is a broad-based flagship benchmark that measures the non-securitized component of the US Aggregate Index. The index includes investment grade, US dollar-denominated, fixed-rate treasuries, government-related and corporate securities.

The **Bloomberg U.S. Corporate High Yield Bond Index** measures the USD-denominated, high yield, fixed-rate corporate bond market.

The **Bloomberg U.S. Corporate Bond Index** measures the investment grade, fixed-rate, taxable corporate bond market.

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Terms and definitions: Earnings Growth refers to the growth rate of a company's net profit. **Price-Earnings Ratio (P/E Ratio)** is the ratio of the share of a company's stock compared to its per-share earnings. **Forward P/E Ratio** refers to the P/E ratio based on a company's estimated earnings over the pending one-year period. The **price-to-sales ratio** is a valuation ratio that compares a company's stock price to its revenues. **Free cash flow yield** compares the free cash flow per share a company is expected to earn against its market value per share. The ratio is calculated by taking the free cash flow per share divided by the current share price. **Earnings per share** is calculated as a company's profit divided by the outstanding shares of its common stock. The resulting number serves as an indicator of a company's profitability. **Return on invested capital** is a calculation used to determine how well a company allocates its capital to profitable projects or investments. It is the amount of money a company makes that is above the average cost it pays for its debt and equity capital. **Yield to worst** is a measure of the lowest possible yield that can be received on a bond that fully operates within the terms of its contract without defaulting. It is a type of yield that is referenced when a bond has provisions that would allow the issuer to close it out before it matures.