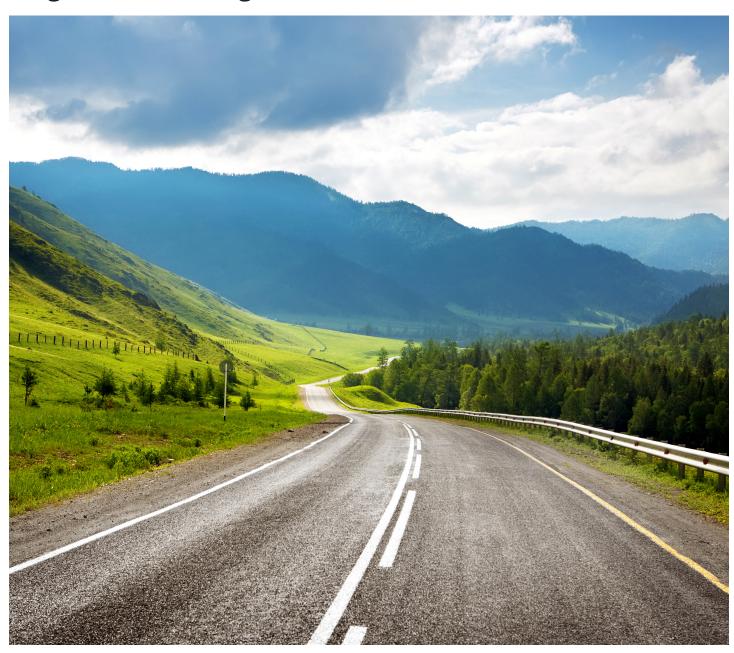
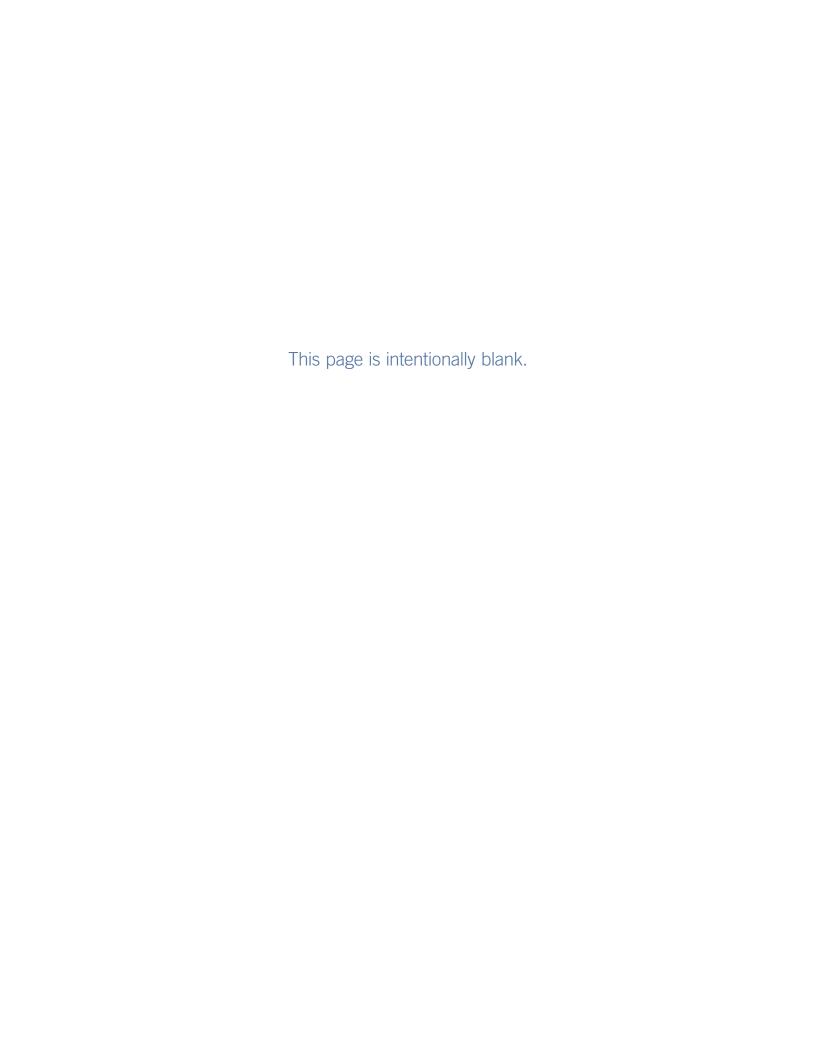
Year Ahead 2023

Long and Variable Lags







PUBLICATION DETAILS

Investment Strategy Group

Michael Crook, Chief Investment Officer Sam McFall, Managing Director Andrew Murray, Managing Director Nora Pickens, Managing Director

Project management and editing

Rachel Hassett, Communications Director

Report design

 $George\ Stilabower\ (\underline{www.gsdesign.work})$

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Year Ahead 2023

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Long and Variable Lags

By Michael Crook, Chief Investment Officer

e published our 2022 Year Ahead, Hurry Up and Wait, on December 6, 2021. The general message from that outlook was that an overly accommodative Fed had created a situation in which "an inflation-driven policy error could happen before they can react to it..." and strong demand coupled with broadening inflation would force the Fed to accelerate a monetary policy tightening cycle. We predicted that the Fed would need to "hurry up" and hike rates much faster than the long and meandering path they were forecasting at the time.

While we were directionally correct, we underestimated how quickly monetary policy would shift in 2022. The Fed Funds rate was 0–0.25% at the beginning of the year, and market participants thought we would end the year at 1.25–1.5%. Instead, we ended the year at 4.25–4.5%, a full 3% higher than what was priced in just 12 months ago. We also never quite made it to the "wait." Inflation proved to be far more resilient than the Fed and more forecasters expected, forcing them to continually escalate their hawkish rhetoric and actions.

Stock and bond markets were quickly repriced in the face of higher rates. While markets recovered near the end of the year, at their worst, the MSCI All Country World index declined 25.7%, the Bloomberg Aggregate Bond index fell 16.8%, and a 60/40 portfolio comprised of the two indexes fell 21.4% (see Fig. 1 and all charts for this article on pg. 6). Some asset classes held up or even produced positive returns — value equities, commodities, real assets, and certain types of private debt, for example — but they were hardly sufficient to offset losses in broader markets.

As we head into 2023, the main question facing markets has changed from whether central bankers will do enough to fight inflation to whether they can orchestrate a soft landing. We see some reasons for optimism since labor markets remain strong and household balance sheets are healthy, but history suggests the Fed won't successfully trigger an immaculate disinflation without a coinciding recession.

The Waiting Game

Economist Milton Friedman was known for saying that monetary policy affects economic conditions after a "lag that is both long and variable." Current Fed Chair Jerome Powell has also started using the same language to describe the expected As we head into 2023, the main question facing markets has changed from whether central bankers will do enough to fight inflation to whether they can orchestrate a soft landing.

impact of 2022's hiking cycle as he prepares markets for a Fed pause, even though inflation has yet to return to 2% (Fig. 2).

Current market pricing indicates the Fed will hike short-term rates to 5%, leave them there for most of 2023, and then start cutting rates near the end of the year (Fig. 3). Federal Open Market Committee (FOMC) members, including Powell, have leaned into this terminal rate forecast. Monetary policy is currently tighter than it has been since before the financial crisis, and it is quite reasonable that Powell would like to pause and see how those lags play out across the broader economy.

Will holding the Fed Funds rate at 5% for 6-9 months, as the market expects, be enough to crush inflation? In our opinion, probably not. We believe there remains a good chance that the Fed will either continue hiking above 5% or hold rates at 5% for longer than is currently priced into markets. At present, US labor markets are slowly cooling but remain very tight. Job openings, for example, have retreated from their highs but are far above 2019 levels (Fig. 4). Nonfarm payroll growth has slowed from 600k per month at the end of 2021 but remains in the 200-300k per month range today. The trends are pointing in the right direction, but at the current pace, it'll take some time for labor markets to cool enough to bring inflation significantly down.

Additionally, consumer demand and nominal income growth remain elevated and could be surprisingly resilient to the tightening cycle. Households still have approximately \$1–1.5 trillion of excess savings that were accumulated during COVID that will support spending over the next 6–12 months, and despite additional use of consumer debt recently, overall debt service remains at all-time lows (Fig. 5). Most importantly (in our minds, at least), nominal aggregate income growth remains far too high and commensurate with inflation of 4–5%. The Fed will be hard-pressed to navigate all these crosscurrents successfully.

What does this mean for investors? We expect more twosided volatility in 2023 as market participants bounce between hawkishness and dovishness, depending on the data flow of the day. It is also important to remember that the Fed — or any central bank — has never successfully brought inflation down from elevated levels without causing a recession in the process. Once unemployment starts rising, it usually continues to increase until we have a recession. This backdrop frames our current positioning.

Portfolio Positioning

The substantial shift in real interest rates over the last 12 months has resulted in inflation-adjusted yields on highquality fixed income, including municipal bonds, that have not been seen since the financial crisis. While many investors are attracted to the high short-term yields available in cash-like products, there's a real risk to hiding out in cash and not locking in higher yields while they are still available.

We're somewhat concerned that US equity prices have not priced in a potential 2023 or 2024 earnings recession (Fig. 6). The 2022 equity market decline was due to higher interest rates, not lower earnings forecasts, and markets could see an additional downside if earnings fall this year. The last four US recessions resulted in earnings per share declines of 33% on average.

However, there are pockets of relative value within equity markets. From a valuation perspective, US large-cap growth remains expensive relative to value, US small-cap is cheap relative to large-cap, and European equities are cheap relative to US equities (Fig. 7).

Valuations are reasonable guides to long-term returns but are virtually useless at forecasting returns within 3-5 years. Price momentum, which has behavioral finance underpinnings (to paraphrase Warren Buffett: in the short term, the market is a voting machine; in the long term, it is a weighing machine), tends to be a better indicator of

near-term prospects. Generally speaking, we look for alignment between valuation and price momentum when making tactical shifts.

Within equities, our models remain overweight US versus international, US large-cap value versus growth, and low volatility/high-dividend equities versus growth. US growth equities remain overvalued and low-volatility equities typically outperform during recessions.

We have a small model overweight to high yield municipal bonds in our tax-exempt bond models and recently added a small overweight to high yield corporate fixed income in our taxable bond portfolios. However, we remain relatively conservative in our overall bond positioning. We are neutral duration in our bond models (i.e., don't hide in cash or reach for yield) and would only consider increasing credit exposure if high yield spreads moved back toward 600bps.

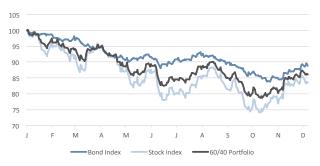
The Long View

We've always been sympathetic to English economist John Maynard Keynes's pithy quote about the uselessness of the long run: "But this long run is a misleading guide to current affairs. In the long run, we are all dead. Economists set themselves too easy, too useless a task, if in tempestuous seasons they can only tell us, that when the storm is long past, the ocean is flat again."

Our tactical guidance discussed so far seeks to provide a guide to current affairs. That being said, and the near-term hurdles we discussed earlier notwithstanding, long-run prospects have improved meaningfully for investors (Fig. 8). Higher interest rates and risk premiums have pushed expected returns to levels not seen for quite some time and longer-term investors can be optimistic about forwardlooking returns.

Fig. 1: Core asset classes struggled in 2022

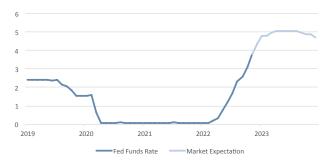
Bloomberg Aggregate Bond Index and MSCI ACWI



Source: Bloomberg, Mill Creek.

Fig. 3: Market participants now expect the Fed to hike to 5%

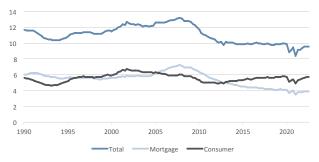
Expected Fed Funds path based on current forward-curve structure



Source: Bloomberg, Mill Creek.

Fig. 5: Household balance sheets remain strong

Debt service as a % of disposable income



Source: Bloomberg, Mill Creek.

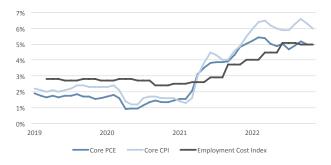
Fig. 7: Growth equities continue to trade at an unusually high premium Relative forward valuation of Russell 1000 Growth vs. Value



Source: Bloomberg, Mill Creek.

Fig. 2: Inflation stabilized around 5% in 2022

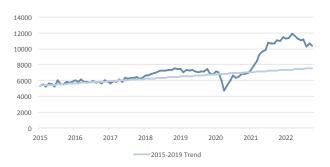
Year-over-year change



Source: Bloomberg, Mill Creek.

Fig. 4: The labor market remains historically tight

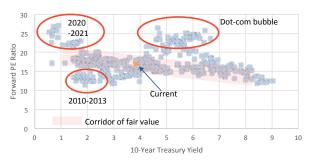
Job openings (thousands)



Source: Bloomberg, Mill Creek

Fig. 6: US equity valuations have not priced in a recession

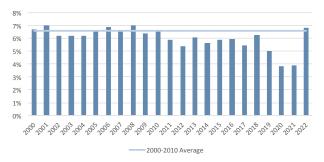
Forward PE ratios plotted against Treasury yields, 1990-2022



Source: Bloomberg, Mill Creek.

Fig. 8: Forward-looking portfolio returns have recovered

Estimated forward-looking return on a 60/40 stock/bond portfolio



Source: Aswath Damodaran Online, Bloomberg, Mill Creek.

House View Summary

Global economy

- We are approaching the latter innings of coordinated global central bank hiking. As a result, most major central banks are expected to slow or stop rate hikes during the first half of 2023.
- US growth continues to moderate but remains at or above the long-term trend. US inflation has stabilized but remains above the Fed's long-term target.
- The Fed would like to pause and allow the "long and variable lags" of monetary policy to work through the economy. Fed policy is tighter than it has been since 2008 and interest rate-sensitive sectors of the economy have been hit hard.
- Europe appears headed for stagflation (elevated inflation and recession) and the energy supply remains a risk through the winter. European electricity prices have begun to spike as cold weather sets in.
- In the face of public protests and deteriorating investor confidence, China has begun to loosen zero-COVID policies.

Market perspective

- The Fed will likely hike until short-term interest rates are at or near 5%. Further hikes or cuts will be data-dependent.
- We believe long-term interest rates are now more likely to fall than rise. Fed policy will remain appropriately restrictive and a growth slowdown or recession remains likely for 2023. Investors hiding in cash should consider extending the duration to lock in higher interest rates before the opportunity has passed.
- We maintain tactical positions in high yield corporate and high yield municipal bonds.
- Rising interest rates were the main catalyst for US equity losses in 2022. Equity markets have not priced negative earnings revisions into the market and further near-term downside remains possible if

- earnings are revised down significantly. Despite (or because of) near-term uncertainty, forward-looking equity returns have risen to multiyear highs.
- European equities <u>currently trade at a historically large</u> discount to US equities, but the overhang of geopolitical risk prevents us from tactically overweighting European equities at the current time.
- · We expect broad commodity prices to continue declining as global economic growth slows.
- The housing market, an important leading indicator for the US economy, has slowed considerably.

Portfolio positioning

- · We are neutral duration in our taxable and tax-exempt fixed income portfolios.
- We are overweight high yield municipal bonds in our tax-exempt FI portfolios and high yield corporate bonds in our taxable FI portfolios.
- Within equities, we are overweight US equities, value equities, and low-volatility equities.
- We are overweight private debt and absolute return hedge funds versus fixed income.
- · We recommend allocating a portion of equity exposure to private equity.

Risks we're watching

- Additional geopolitical risk spilling out of China or Russia
- · US inflation that reaccelerates and requires a resumption of the hiking cycle
- A significant 2023 corporate earnings recession
- Signs that 2023 job losses will push the 2023 unemployment rate above 4.6%, leading to an economic and earnings recession

Please click any link to access additional information and insights.

Fourth Quarter 2022 Market Review

- Elevated inflation led global central banks to hike policy rates aggressively over the course of the year. Higher interest rates led to price declines in nearly all risk assets.
- The US continues to experience excess aggregate demand. The housing sector ground to a halt during the second half of 2022, but other sectors of the economy were minimally impacted by Fed rate hikes.
- · Most other developed economies faced a different problem last year: high inflation and anemic economic growth.
- China followed a stringent zero-COVID policy throughout the year but removed most restrictions in December.
- Fixed income markets incurred their largest losses in a generation. The Bloomberg Aggregate Bond Index fell 13% whereas the Bloomberg Municipal Bond Index declined 8.5%. Our preferred positioning in municipal

- bonds, represented by the Bloomberg 1-10 Year Blend (1-12) Index, declined 4.8%.
- Global equity markets fell 15-20% in 2022. Despite significant dollar strength, international developed market equities outperformed US equities. Value equities highdividend equities, and low-volatility equities all outperformed growth equities by a significant margin.
- Diversified commodity portfolios experienced steep gains during the first five months of the year, gave back some of those gains in June, and flatlined over the second half of the year. Commodity portfolios produced total returns of about 16% for the year.
- The hedge fund universe exhibited single-digit losses for the year, on average. The macro strategies universe produced positive returns and the equity long/short universe experienced an average decline of about 10%.

Index Returns	Q4 2022	Q3 2022	Q2 2022	Q1 2022	2022	3 years	5 years	10 years
Global Equities	9.8%	-6.8%	-15.7%	-5.4%	-18.4%	4.0%	5.2%	8.0%
US Equities	7.2%	-4.5%	-16.7%	-5.3%	-19.2%	7.1%	8.8%	12.1%
Large Cap US	7.2%	-4.6%	-16.7%	-5.1%	-19.1%	7.3%	9.1%	12.4%
Mid Cap US	9.2%	-3.4%	-16.8%	-5.7%	-17.3%	5.9%	7.1%	11.0%
Small Cap US	6.2%	-2.2%	-17.2%	-7.5%	-20.4%	3.1%	4.1%	9.0%
US Growth	2.3%	-3.4%	-20.8%	-9.3%	-29.0%	7.3%	10.4%	13.8%
US Value	12.2%	-5.6%	-12.4%	-0.8%	-8.0%	5.9%	6.5%	10.2%
International Equities	17.3%	-9.4%	-14.5%	-5.9%	-14.5%	0.9%	1.5%	4.7%
Emerging Market Equities	9.7%	-11.6%	-11.5%	-7.0%	-20.1%	-2.7%	-1.4%	1.4%
US Taxable Bond Market	1.9%	-4.8%	-4.7%	-5.9%	-13.0%	-2.7%	0.0%	1.1%
US Municipal Bond Market	3.1%	-2.3%	-0.8%	-4.8%	-4.8%	-0.1%	1.4%	1.7%
Hedge Funds	0.2%	0.5%	-3.7%	-1.4%	-4.4%	1.9%	1.4%	1.8%
Diversified Commodities	2.2%	-4.1%	-5.7%	25.5%	16.1%	12.7%	6.4%	-1.3%
Gold	9.8%	-8.1%	-6.7%	5.9%	-0.3%	6.3%	7.0%	0.9%

Key Rates (as of stated date)	12/31/22	9/30/22	6/30/22	3/31/21	12/31/21	12/31/19	12/31/17	12/31/12
US 10-Year Treasury	3.9%	3.8%	3.0%	2.3%	1.5%	1.9%	2.4%	1.8%
Barclays Aggregate Bond Index	4.7%	4.8%	3.7%	2.9%	1.8%	2.3%	2.7%	1.7%
BBarc Muni 1-10Yr Blend (1-12) Index	3.0%	3.6%	2.6%	2.2%	0.7%	1.4%	2.0%	1.4%

Source: Bloomberg, Mill Creek. Returns for periods greater than one year are annualized. Index rates are yield to worst. Indices used to represent periodic capital markets returns include: MSCI ACWI (Global equities), Russell 3000 (US equities), Russell 1000 (Large Cap US), Russell Mid Cap US (Mid Cap US), Russell 2000 (Small Cap US), Russell 3000 Growth (US Growth), Russell 3000 Value (US Value), MSCI EAFE (International Developed), MSCI Emerging Markets Index (Emerging Markets Equities), Bloomberg Aggregate Bond Index (US Taxable Bonds), Bloomberg 1–10 Year Municipal Bond Index (US Municipal Bonds), HFRX Global Hedge Fund Index (Hedge Funds), Bloomberg Commodity Index TR (Diversified Commodities), and Gold Spot Price (Gold).

Fixed Income

Change Happens "Gradually, Then Suddenly"

Nora Pickens, Managing Director

or fixed income investors, 2022 provided a rude awakening to the bond market's vulnerabilities. The year started with the 10-year US Treasury yield at 1.51% and Fed Funds rate expectations of sub-1% through December. Fast-forward 12 months and the picture couldn't be more different. With inflation above 5% for the first time since the early 1980s and the Federal Reserve enacting seventeen 25bps rate hikes in 2022, bonds faced unusually strong headwinds. The taxable bond market lost 13%, its worst performance on record, and the 10-year Treasury skyrocketed past 4% for the first time in 15 years. For perspective, these rate moves equate to a 2.4 standard deviation event, expected to occur just 0.8% of the time (Fig. 9).

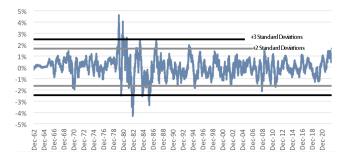
However, for all the hardship that fixed income investors endured in 2022, there are a few silver linings to consider as we forge ahead. First and foremost, our forward return expectations over the next few years are at the highest level in over a decade. The US taxable bond market's trailing five-year return turned negative for the first time since the index's inception in 1976 (Fig. 10). Bond math suggests this result is unsustainable (one's starting yield

should roughly equal going forward annualized returns for the duration of an underlying investment assuming no principal loss), and the recent selloff is overdone. As such, we expect bond portfolios to earn higher returns than the US taxable market's current yield of 4.7% over the next few years.

In terms of tactical positioning, we remain neutral duration across our model portfolios. Late-cycle dynamics typically favor overweighting duration as economic growth stalls and an eventual pivot to rate cuts draws closer. Since 1990, for example, long-dated Treasuries have outperformed the 1-3-year Treasury Index by 12% on average over the 12 months following the Fed's second-to-last rate hike. However, we remain cognizant that the Fed's battle against inflation has yet to be resolved. A key risk is that the (expected) Fed pause at 5–5.25% is not enough to tame inflation, Powell restarts the hiking cycle, and long rates move back up. For now, our neutral-duration stance reflects a balanced view between the bond market's muchimproved value proposition and lingering uncertainties around the interplay between inflation and Fed policy.

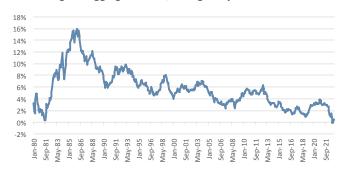
Fig. 9: Interest rate volatility spiked in 2022

US Treaury 10-Yr Yield, rolling six-month change



Source: Bloomberg, Mill Creek

Fig. 10: Breakneck pace of interest rate hikes sank the bond market Bloomberg US Aggregate Index, rolling five-year total return



Source: Bloomberg, Mill Creek.

Global Equities

Deteriorating Fundamentals Continue to Weigh on Equities

Sam McFall, Managing Director

quities investors endured an extremely volatile market in 2022, driven primarily by the Fed's aggressive monetary policy, which triggered a significant valuation rerating. As a result, the widely tracked S&P 500 index is on pace for its worst calendar year of performance since 2008. During the year, the S&P experienced a peakto-trough drawdown of 25% as well as three separate bear market rallies exceeding 10% (Fig. 11). Many of 2021's darlings, including meme stocks and speculative growth stocks, have fallen 70-90%.

The near-term outlook for equities remains challenged. While market participants are focused on the Fed's next move and the potential for a recession, fundamentals are rapidly deteriorating due to tighter financial conditions (Fig. 12). According to data compiled by Yardeni Research, consensus expectations are for shallow earnings recession, defined as two consecutive quarters of negative EPS growth, in the first half of 2023. In our view, current expectations still seem too optimistic in a recessionary scenario where earnings could fall at least 10-20%. While US equity valuations have rerated lower this year, they are still not cheap

Fig. 11: 2022 was the first sustained bear market since the Great Financial Crisis

S&P 500 performance



Source: Bloomberg, Mill Creek. Data as of 12/9/2022

and trade well above levels typically seen in a recession. As conditions tighten, equities are highly correlated to the move in real interest rates, so we believe there is still some downside potential ahead and we could even test the lows if the Fed must continue raising rates past 5%. While the first half of 2023 may exhibit more volatility and downside risk, we are more optimistic that volatility will be two-sided as the Fed and markets hone in on the end of the Fed tightening cycle.

Entering 2023, we remain overweight US equities versus the rest of the world, overweight value relative to growth, and underweight emerging markets, but we are actively looking for an opportunity to adjust our positioning to take advantage of areas with more attractive valuations and momentum. As we have previously written, international equities and small-cap equities trade at attractive valuations relative to US equities and large-cap equities. Should the recent momentum of these stocks continue, we are prepared to shift capital their way. Growth equities and emerging market equities have been sold relentlessly this year, but we believe there may soon be an opportunity to judiciously add to high-quality growth and certain emerging markets like China.

Fig. 12: Earnings recession has not been priced in yet S&P 500 aggregate earnings



Source: Bloomberg, Mill Creek. Data as of 12/8/2022

Private Credit

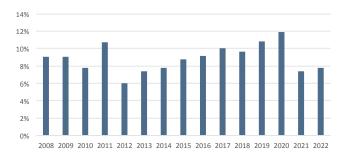
Rising Rates Expand the Opportunity Set for Private Debt

Nora Pickens, Managing Director

verall, the private debt industry has held up well in the face of aggressive monetary policy and volatile capital market conditions (Fig. 13). Broad-based default metrics are low and the floating rate nature of (most) securities cushioned against rising rates. Deal activity was heavy in 1Q22 but materially dropped off thereafter as market participants paused to reevaluate the pricing land-scape against a much higher Fed Funds rate. This was particularly true for equipment and venture lending. Today, the premium in private credit has declined as public market corporate bonds now trade in the \$80–90 range amid the market selloff. This yield compression is typical during periods of high volatility. We expect it will persist over the next few quarters as private debt portfolios gradually fold in new originations with wider credit spreads.

Part of our thesis in constructing a diversified, private income portfolio is allocating to strategies with low leverage, run by management teams with deep, well-established sourcing networks positioned to play offense during periods of capital market volatility. This dynamic has started to play out and we believe it will continue through 2023. The disjointed public markets have enabled our managers to negotiate better pricing, stronger covenants, and lower

Fig. 13: Private debt has performed well through market cycles
Direct lending median IRR by vintage year



Source: Pitchbook, Mill Creek.

loan-to-value collateral packages. For example, our commercial real estate bridge lender experienced a 7% greater inbound volume during 2Q22, mostly from prospective borrowers who had deals repriced or pulled altogether. It allowed the team to boost lender-friendly terms, such as requiring more up-front equity from sponsors, charging an interest rate premium, and securing higher Secured Overnight Financing Rate (SOFR) floors (Fig. 14). Our direct lender to registered investment companies saw 200-300 basis points of pricing improvement compared to last year and has started to opportunistically add beaten-down public positions to the mix. Finally, our US agriculture real estate lender is fielding a number of inbound requests from farmers in greater need of strategic financing alternatives in light of banks pulling back due to regulatory capital constraints.

As we move deeper into this economic cycle, we remain focused on top of the capital structure, highly collateralized, inflation-protected investments originated by those with specialized knowledge in their field. The downturn is providing our managers with some of the best opportunities in years, but we remain vigilant about maintaining a conservative risk profile rather than reaching for yield.

Fig. 14: Private debt has benefited from rising SOFR rates





Source: Bloomberg, Mill Creek.

Private Equity

Facing Down an Uncertain Macro Environment

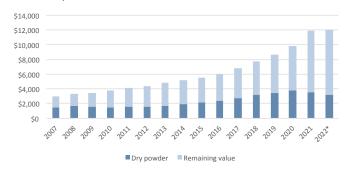
Andrew Murray, Managing Director

ver the past decade, most PE managers have benefited from a supportive macro environment with easy access to low-cost credit financing to support their transaction activity. Furthermore, managers have exhibited confidence in their hands-on approach to value-creation initiatives enabling them to profit in nearly any macroeconomic environment. Their ability to thrive in the pandemic-induced chaos profoundly supported this thesis. But now, as we enter 2023, the macroeconomic environment, which has been severely impacted by inflation and geopolitical tensions in China and Eastern Europe, has become top of mind for investors. In our view, investors should take these key considerations into review as we move into the new year:

- 1. The scale of private markets is larger and more well-funded than ever before. While institutional investors have begun to pull back on allocations, the sheer size and depth of the market is an important factor to consider as we head into what may be a recessionary environment. While valuations and earnings forecasts may trend downward, we do not expect this market to come to a halt as it has in prior recessionary periods (Fig.15).
- 2. The scale of this capital formation, as well as a large and talented pool of private equity professionals, has supported a meteoric rise in transaction activity. While short-term slowdowns may occur, we do not expect the long-term trend line to shift dramatically (Fig. 16).
- **3. Investors continue to stay close to home** as the world witnesses several chaotic and uncertain geopolitical events. North America's market share is greater than ever, suggesting that nationalist, onshoring tendencies have impacted the market substantially. Apple, TSMC, and large allocators appear to be staying close to home (Fig. 17).

Entering 2023, we remain focused on small- and middle-market buyout strategies in North America where specialized skill sets can create value in platforms that are attractive to the larger PE manager universe. We also remain active in the venture capital segment where long-term innovation trends spur new business growth.

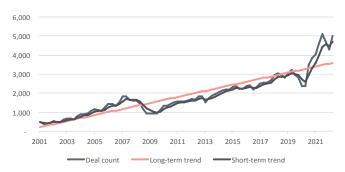
Fig. 15: Private equity markets are bigger than ever Private capital AUM (\$B)



Source: Pitchbook, Q3 2022 PE Fundraising Report. Data as of 9/30/2022.

Fig. 16: Deal activity reached all-time highs

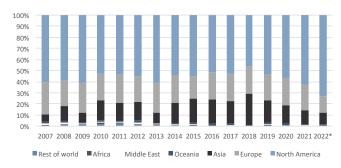
Rolling six-month PE deal count trends



Source: Pitchbook, Q4 2022 Quantitative Perspectives.

Fig. 17: North American market share is greater than ever

Private capital funds (%) by region



Source: Pitchbook, Q3 2022 PE Fundraising Report. Data as of 9/30/2022

Tax Planning Considerations

Please refer to this table for tax planning thresholds for 2023. We encourage you to consult with your investment officer to discuss how these new thresholds relate specifically to you and your family.

Important Tax Planning Thresholds (2023 vs. 2022)						
Retirement	2023	2022				
401(k), 403(b), 457 limits	\$22,500	\$20,500				
Catch-up contributions (age 50+)	\$7,500	\$6,500				
IRA contribution	\$6,500	\$6,000				
IRA catch-up contribution	\$1,000	\$1,000				
Limit on annual additions to Defined Contribution plan (for example, SEP IRA)	\$66,000	\$61,000				
Limit on annual additions to Defined Benefit plan	\$265,000	\$245,000				
Estate and gift tax	2022	2021				
Annual gift exclusion	\$17,000	\$16,000				
Estate and GST exemption amount	\$12,920,000	\$12,060,000				

Disclosure

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