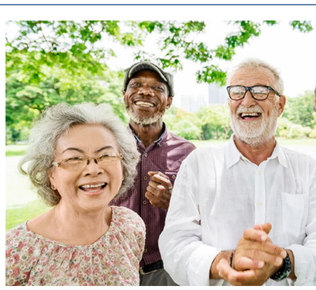
MILL CREEK CAPITAL ADVISORS

MC

OUR VALUES APPRECIATE YOURS

Q4 2022 Outlook

CONTENTS



Mill Creek recently partnered with Medicare Choice Group to present an **educational webinar on Medicare** eligibility, enrollment, coverage, and cost options.

Watch the webinar [here](). Passcode: D.q4X7Sg

03 Oct 2022

Continued Repression

The last three months have validated the macro perspective we laid out in our Q3 Outlook, "The Volcker Playbook." Inflation has proven stickier than many market participants expected, Fed Chair Jerome Powell has maintained hawkish rhetoric, and we continue to believe it remains more likely than not that this cycle will ultimately result in a recession.

Market participants perpetually underestimated the Fed's willingness to remain accommodative following the financial crisis of 2008. We assess that they are making the opposite error this cycle by consistently underestimating the resolve of the Fed to fight inflation. Our focus in this quarterly is examining those market expectations and whether they are yet creating risks worth taking in capital markets.

Inflation and Federal Reserve Policy

The Fed remains in full-hawk mode, but markets have slowly caught up. A third 75bps hike in September put the Fed Funds target at 3–3.25%. Market participants now expect another 75bps hike in November, 50bps in December, and one or two 25bps hikes early in 2023. This path would put us at a terminal Fed Funds rate of 4.25–4.5% (Fig. 1).

Will it be enough? Aggregate nominal income growth remains a key leading indicator — inflation will remain elevated as long as aggregate incomes continue to grow at nearly 10% (Fig. 2). Income growth must dissipate for inflation to decline, and the Fed will want to see consistently lower inflation numbers before pausing. We're a long way from that eventuality, leading us to believe the risk of a tightening cycle that lasts well into next year is currently underappreciated by market participants.

Interest Rates

We've communicated 3.5% as a reasonable target for the 10-year Treasury note based on the simple observation that the 10-year Treasury rarely trades above the Federal Open Market Committee (FOMC) median long-term projection for the Fed Funds rate (Fig. 3).

Market participants, as measured by the Treasury Forward Curve, now expect the 10-year Treasury to average 3.5% for the foreseeable future. Our updated assessment is that the 10-year could trade up to 4.5% over the next six months, particularly if aggregate income growth doesn't subside by the end of 2022.

Credit

Credit spreads, a measure of the compensation received for accepting company-specific credit risk when purchasing a bond, remain near their long-term averages. The credit spreads for the Bloomberg US Corporate Index and the US Corporate High Yield Index is 1.55% and 5.26%, respectively (Fig. 4). While spreads are higher than they were this time last year, they remain below the levels we typically see during recessions. Investment grade and high yield corporate spreads frequently exceed 3% and 8%, respectively, during recessions.

Relative complacency in credit markets can be interpreted as a positive indication that market participants believe corporate balance sheets are sufficiently strong to withstand an economic downturn, but the risks to that perspective are skewed to the downside. We're comfortable maintaining near-benchmark investment grade corporate bond exposure in our taxable fixed income portfolios but have yet to add a tactical high yield position.

Equities

We assess that interest rates have been the main driver of equity market declines this year. Longer-duration equities (e.g., growth stocks) have underperformed shorter-duration equities (e.g., value stocks), and valuations in equity markets also compressed as interest rates rose. US equities currently trade at 17x forward earnings — a valuation that aligns with the longer-term corridor of fair value (Fig. 5).

We do not believe meaningful reductions in corporate earnings have been priced into US equities. In the short term, our analysis indicates a soft-landing scenario that cuts S&P 500 earnings by 10% would lower the fair value of the S&P 500 by approximately 5%. A hard-landing 20% decline in earnings implies a more meaningful fair-value reduction of 7–10%.

On the other hand, higher interest rates and lower equity valuations imply higher forward-looking equity returns over the next 7–10 years. Our current capital market assumption for US equities stands at 9.2%, a significant revision upward from the beginning of the year and a number that should be quite attractive to most equity investors. We sometimes joke that it's a bad sign to enter a "Warren Buffett quote" market environment, but his adage "the stock market is a device to transfer money from the impatient to the patient" certainly seems worth considering.

Our Positioning

While we take tactical positions in portfolios, we eschew market timing and forecasting. Our process starts by reading the expectations implied in market valuations and then considering potential revisions to those expectations and assessing the risk-adjusted return prospects for various markets.

Within equities, we maintain a preference for the US versus international markets. This position has worked well since its inception in March 2020, but dollar strength (Fig. 6) and low relative valuations for international equities now put continued outperformance at risk. Our intention, at this point, is to maintain a US overweight until we see catalysts that could unlock valuation and currency tailwinds for international equities.

We're also overweight value versus growth within large-cap US equities. As discussed earlier, rising interest rates tend to punish growth equities more than value equities and, despite underperformance over the last two years, growth-oriented equities continue to trade at an unusually high premium to value equities (Fig. 7).

Several clients have pointed out that the 8.5% yield-to-worst for the US high yield index appears compelling from a total yield perspective, but it is important to note that much of that yield is generally driven by higher US Treasury rates. As discussed earlier, the Bloomberg US Corporate High Yield credit spread is at about 4.7%, far below the 8% or high spreads commensurate with historical recessions. We continue to monitor credit markets and watch for attractive tactical entry points.

Our perspective on a broader range of markets, along with links to relevant publications, can be found in our House View summary on page 4.

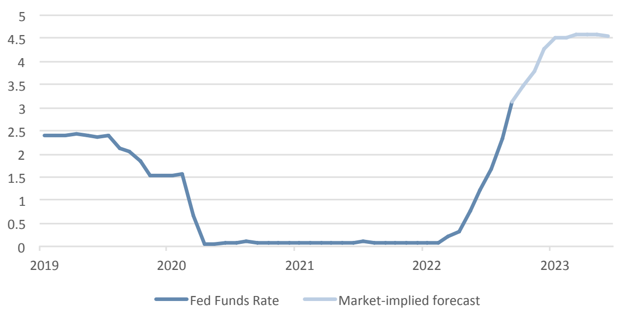
Buy the Dip?

Financial markets have a way of bringing out the worst reactions in all of us. Investors intellectually understand that seeking day-to-day certainty comes at a large long-term opportunity cost, but time horizons ebb and flow with the ups and downs of the market. Furthermore, naively "buying the dip" is little more than market timing.

We want to be prudent and proactive during times of volatility by combining an intrinsic value framework with appropriate time horizons. US equities currently provide a good example of how this process can work. Over a one-month period, the odds of a positive return in equities are only a bit better than a coin toss (Fig. 8), and substantial losses of -10 or -20% loom large. Investors that need month-to-month price stability should stick with cash. On the other hand, global equities have produced positive returns 99% of the time over 10-year horizons. That high probability of a positive return, coupled with a multi-year high forward-looking estimate return on US equities, makes this a prudent entry point for investors looking to put cash to work in the equity market.

Fig. 1: Market participants now expect the Fed to hike to 4.5%

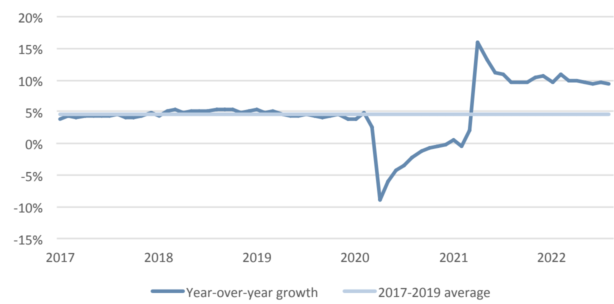
Expected Fed Funds path based on current forward-curve structure



Source: Bloomberg, Mill Creek.

Fig. 2: Nominal income growth has not slowed sufficiently

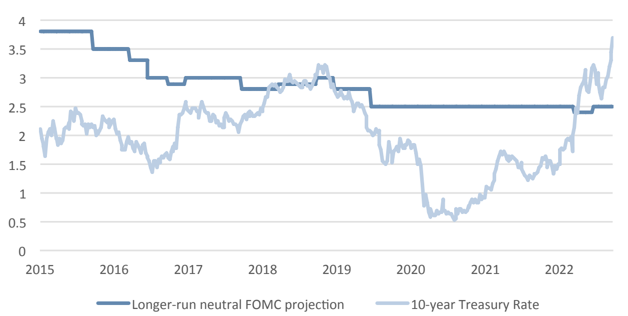
US Index of Aggregate Weekly Payrolls Total Private (yoy % change)



Source: Bloomberg, Mill Creek.

Fig. 3: The Fed will likely raise their estimate of "long-term neutral"

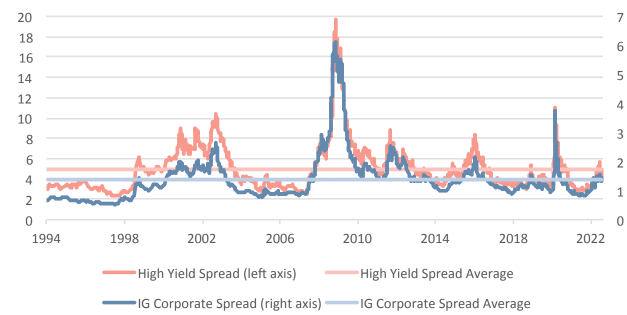
FOMC SEP Longer Run Fed Funds Rate (median)



Source: Bloomberg, Mill Creek.

Fig. 4: Credit spreads are not yet pricing in recession

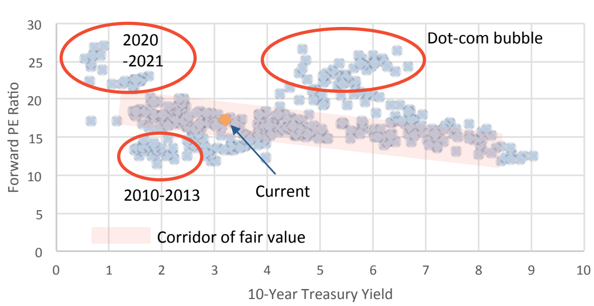
Corporate investment grade and high yield credit spreads



Source: Bloomberg, Mill Creek.

Fig. 5: US equity valuations are neither cheap nor expensive

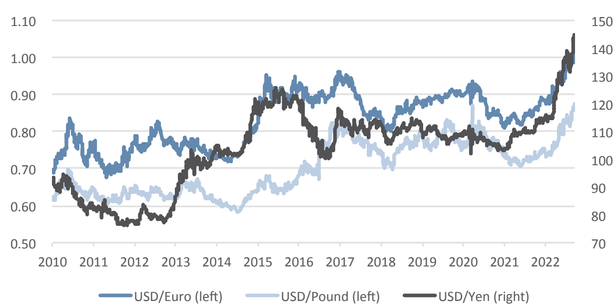
Forward PE ratios plotted against Treasury yields, 1990–2022



Source: Bloomberg, Mill Creek.

Fig. 6: The dollar has appreciated significantly

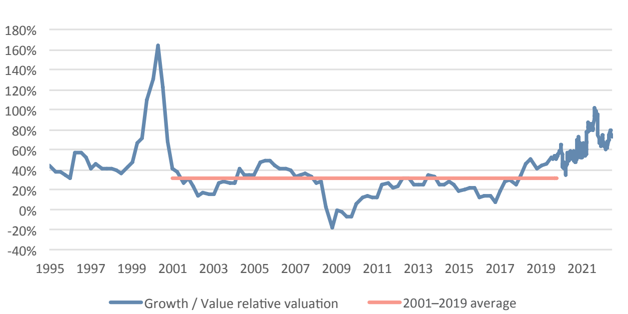
US dollar cross rates with the euro, pound, and yen



Source: Bloomberg, Mill Creek.

Fig. 7: Growth equities continue to trade at an unusually high premium

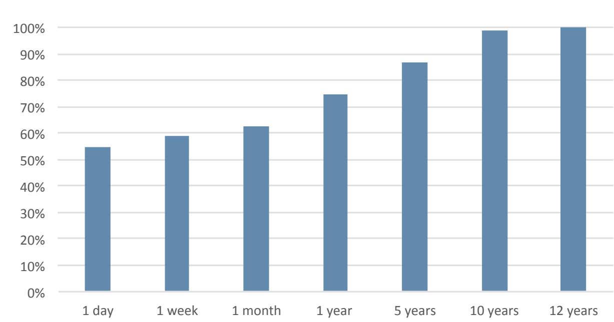
Relative forward valuation of Russell 1000 Growth vs. Value



Source: Bloomberg, Mill Creek.

Fig. 8: The likelihood of a positive equity return increases with time

Percentage of rolling periods with a positive return, 1988–2022



Source: Bloomberg, Mill Creek.

House View Summary

Global economy

- While most global central banks are hiking rates in unison, economic conditions are far from similar.
- US growth continues to moderate but remains at or above the long-term trend. As a result, nominal aggregate income growth needs to decline by nearly half — to about 5% — for the Fed to reach their inflation target.
- We believe Powell is following the 1979–1982 Volcker playbook. The Fed won't ease, regardless of economic growth concerns, until inflation has suitably declined over a sustained period.
- Europe appears headed for stagflation (elevated inflation and recession) and energy supply remains a significant risk through the winter.
- Some pundits have suggested China will loosen their zero-COVID policy after the party congress in October, but China's commitment to a zero-COVID policy appears strong. China continues to support economic stability through targeted fiscal stimulus while also supporting the Yuan against a strong dollar.

Market perspective

- The Fed will likely hike until short-term interest rates are at or near 4.5%. Further hikes will be data dependent.
- We believe 4–4.5% represents a reasonable cap on the 10-Year Treasury yield for 2022.
- We continue to watch for a tactical entry point for high yield corporate bonds, but credit spreads would need to increase by another 200bps to justify the potential risk.
- Rising interest rates have been the main catalyst for US equity losses this year. 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 currently trade at a historically large 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. Overall inventory remains historically low, but a record 7.3 months of new homes under construction will put pressure on prices through the remainder of 2022.

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.
- Within equities, we are overweight US versus international, large-cap value versus growth, and global small-cap 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

- Sustained oil prices above $150 per barrel
- US inflation that remains persistent and unresponsive to Fed action
- Exacerbated geopolitical tensions spilling out of the Russia-Ukraine war or China

Please click any link to access additional information and insights.

Third Quarter 2022: Market Review

Fixed Income

- Sovereign bond yields increased by 1-3% across most developed countries.
- The Bloomberg US Aggregate Bond Index declined by over 5%. The Bloomberg Global Aggregate ex-USD Bond Index fared even worse, declining by over 14%.
- Credit spreads increased over the quarter and US corporate high yield bonds declined nearly 2% on a total return basis.

Equities

- Global equities continued to decline. US equities significantly outperformed international and emerging market equities.
- US growth outperformed US value.
- Small cap slightly outperformed mid and large cap equities.

Index Returns	Q3 2022	Q2 2022	Q1 2022	Year-to-date	1 year	3 years	5 years	10 years
Global Equities	-6.8%	-15.7%	-5.4%	-25.6%	-20.7%	3.7%	4.4%	7.3%
US Equities	-4.5%	-16.7%	-5.3%	-24.6%	-17.6%	7.7%	8.6%	11.4%
Large Cap US	-4.6%	-16.7%	-5.1%	-24.6%	-17.2%	7.9%	9.0%	11.6%
Mid Cap US	-3.4%	-16.8%	-5.7%	-24.3%	-19.4%	5.2%	6.5%	10.3%
Small Cap US	-2.4%	-20.0%	-9.1%	-28.9%	-28.0%	5.0%	5.3%	9.7%
US Growth	-3.4%	-20.8%	-9.3%	-30.6%	-23.0%	10.2%	11.6%	13.4%
US Value	-5.6%	-12.4%	-0.8%	-18.0%	-11.8%	4.4%	5.1%	9.1%
International Equities	-9.4%	-14.5%	-5.9%	-27.1%	-25.1%	-1.8%	-0.8%	3.7%
Emerging Market Equities	-11.6%	-11.5%	-7.0%	-27.2%	-28.1%	-2.1%	-1.8%	1.0%
US Taxable Bond Market	-4.8%	-4.7%	-5.9%	-14.6%	-14.6%	-3.3%	-0.3%	0.9%
US Municipal Bond Market	-2.3%	-0.8%	-4.8%	-7.7%	-7.6%	-0.8%	0.7%	1.4%
Hedge Funds	0.6%	-3.7%	-1.4%	-4.5%	-4.4%	2.7%	1.7%	1.8%
Diversified Commodities	-4.1%	-5.7%	25.5%	13.6%	11.8%	13.5%	7.0%	-2.1%
Gold	-8.1%	-6.7%	5.9%	-9.2%	-5.5%	4.1%	5.3%	-0.6%

Key Rates (as of stated date)	9/30/22	6/30/22	3/31/22	12/31/21	9/30/21	9/30/19	9/30/17	9/30/12
US 10-Year Treasury	3.8%	3.0%	2.3%	1.5%	1.5%	1.7%	2.3%	1.6%
Barclays Aggregate Bond Index	4.8%	3.7%	2.9%	1.8%	1.6%	2.3%	2.6%	1.6%
BBarc Muni 1-10Yr Blend (1-12) Index	3.6%	2.6%	2.2%	0.7%	0.7%	1.5%	1.7%	1.3%

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).

Will near-term pain create better long-term opportunity for equity investors?

Interest Rates and Inflation

The Fed's resolve to rein in inflation via multiple interest rate hikes has driven sustained price volatility in 2022. Moreover, higher rates have led to a significant rerating of longer-duration growth equities while providing a meaningful boost to the US dollar. This has negatively impacted international equities for dollar-based investors. In the short run, additional rate hikes may impact consumer demand and corporate profits. Still, higher rates and lower valuations should signal higher future expected returns for longer-term investors.

Corporate Earnings

Management teams and analysts are concerned about a potential recession reflected in lower guidance and significant downward earnings revisions from the end of the second quarter. As a result, third-quarter estimates have been revised down by over 6% so far, but full-year earnings growth is expected to be in the mid-to-high single digits (Fig. 1).

The consensus outlook for earnings in 2023 appears optimistic given the current trend of downward revisions, which have yet to be priced in. Analysts expect around 7% growth in 2023 to around $240. A soft-landing scenario could see earnings decline about 10% to $200, while a hard-landing scenario could see earnings decline by 20% to around $180. We believe the potential for further downward revisions remains as Powell stays hyper-focused on inflation even if it brings "some pain."

Valuations

Based on consensus estimates from Bloomberg, the S&P 500 trades at 17x forward earnings as prices have fallen significantly. In contrast, earnings growth has been resilient, leading to a 25% reduction in the forward multiple. Historically, the market is neither cheap nor expensive. Our position is that the market trades around fair value. In an absolute sense, the market still looks expensive, but on a relative basis, the yield gap vs. the real 10-year US Treasury remains over 5%, which is in line with long-term averages.

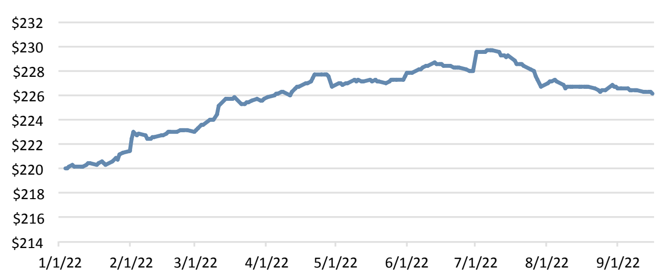
Overseas, the macroeconomic outlook appears weak, reflected in market valuations that have also rerated lower this year (Fig. 2). The MSCI EAFE index trades at 12x forward earnings and yields 3.5%, while the MSCI Emerging Markets index trades at 11x forward earnings and yields 3.0%. The US market has traded at a premium to the non-US market for years, but at some point, these valuations may become too attractive to ignore, especially if we begin to see a reversal in the strength of the US dollar.

Outlook and Positioning

In the short run, we remain cautious on equities, particularly growth equities, which have borne the brunt of the Fed's tighter monetary policy. Our portfolios have meaningful exposure to value stocks, which should do well as rates rise. We maintain an allocation to high-quality growth stocks through active managers who have shown an ability to grow revenues and add market share. We remain underweight in international equities including emerging markets. Our forward-looking capital market assumptions have equities earning high-single-digit returns now. As valuations have come down, global equities remain relatively attractive versus bonds for patient investors.

Fig. 1: Earnings revisions have begun to trend downward

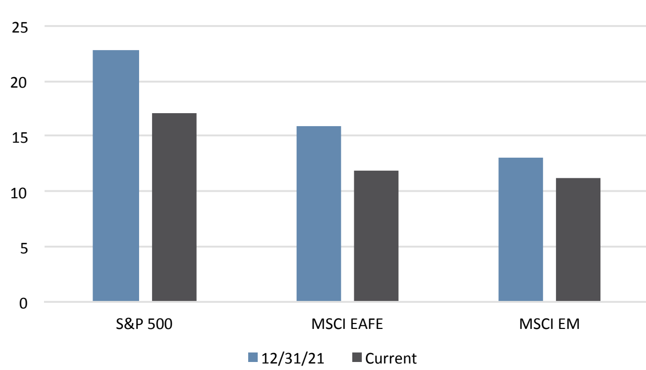
S&P 500 aggregate earnings



Source: Bloomberg, Mill Creek. Data as of 9/16/2022.

Fig. 2: Global valuations have rerated lower this year

Consensus forward P/E multiples



Source: Bloomberg, Mill Creek. Data as of 9/16/2022.

Investment strategy for foundations

Key message

Foundation and endowment portfolio managers face a difficult environment due to low interest rates and high inflation. A forward-looking return hurdle based on market-derived expectations for inflation and interest rates indicates that the total return necessary to meet typical foundation portfolio objectives are near all-time highs (Fig. 1). While some investment committees and portfolio managers will be compelled to "risk up" to try to meet their return and distribution objectives, doing so creates a nuanced set of trade-offs that impact the broader objectives that most foundations consider when determining success or failure.

Our view

1. Foundations face a challenging environment

- Periods of high interest rates and low inflation are Goldilocks for foundations. We are unfortunately not in such an environment.
- In order to maintain the inflation-adjusted value of its corpus, a foundation has to produce returns equal to or exceeding its distribution rate plus inflation.
- Market participants currently expect inflation to average 2.5–3% over the next five years.
- This means a foundation spending 5% annually would need to average returns of 7.5–8% to maintain the inflation-adjusted value of its corpus.
- A 60/40 equity/bond portfolio has produced annualized returns of about 6% over the last two decades.

2. Return objectives should be balanced with spending policy

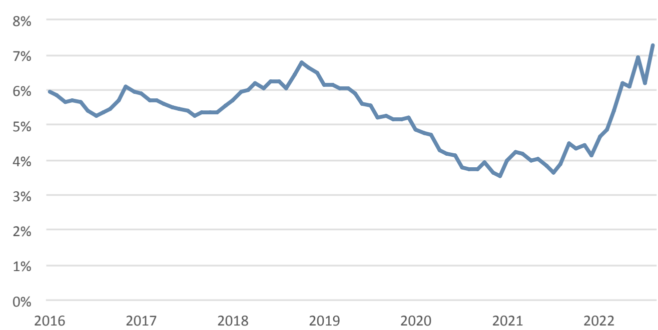
- Inflation-adjusted interest rates remain below 1%, forcing foundations that want to distribute 4–5% into holding and navigating risk assets.
- Prospective returns for balanced portfolios have improved significantly in 2022 (Fig. 2), but portfolio volatility creates path dependency and meaningful drawdowns over periods as short as five years.
- We believe some exposure to private assets can help provide diversification, bolster returns, and dampen realized volatility.
- We also believe it is important to hold at least three years of targeted spending in liquid assets like high-quality fixed income. These assets can be spent during downturns instead of "dollar cost ravaging" out of equities.

Fig. 1: Foundations face a steep return hurdle

Forward-looking total return hurdle, 2002–2022

Source: Bloomberg, Mill Creek. As of 9/20/22. Assumes a 5% annual spending target.

Fig. 2: Prospective 60/40 returns have improved



Source: Bloomberg, Aswath Damodaran Online, Mill Creek.

This summary is based on a forthcoming article by our CIO, **Michael Crook**, in the *Journal of Investing*, titled "Mission Impossible: Foundation Investment Policy in the Post-COVID World."

Around Mill Creek

Firm highlights, milestones, events, and resources

Chief Investment Officer Michael Crook provides investment update

On September 22, we hosted an Investment Update Livestream where we were joined by CIO Michael Crook and guest speaker Jason Diefenthaler, Head of Municipal Bond Strategies at Wasmer Schroeder. First, Michael provided our outlook on the financial markets, including historical context, a comparison to the Volcker period, and insight on the path ahead for markets as the Fed attempts to bring inflation under control. Then, Jason gave insight into the municipal bond market.

Watch the replay. Enter passcode: 8NgP6@?r

View presentation

This information is for educational purposes only. It is not intended to provide, and should not be relied upon for, investment, accounting, legal, or tax advice.

This presentation has been prepared by Mill Creek Capital Advisors, LLC ("MCCA"). Past performance is not necessarily indicative of future results, and there can be no assurance that any projections or estimates of future performance will be realized. We believe the information contained in this brochure to be reliable but do not warrant its accuracy or completeness. The opinions, estimates, investment strategies and views expressed in this report constitute the judgment of MCCA investment professionals, based on current market conditions and are subject to change without notice. You should not regard it as research or as a research report.

Model Portfolio Notes: The Model Portfolios are provided for informational purposes only. Although client portfolios are based on the guidelines of the model portfolios, the performance for Model Portfolios do not represent actual trading and do not reflect the actual client investment experience. Unless otherwise noted, performance shown for Model Portfolios reflect the gross returns earned by separate account Money Managers, the net returns of mutual funds and ETF shares, and the actual portfolio weights for each underlying investment strategy within a Model Portfolio for the periods shown. All returns are before MCCA's Advisory Fees. Application of such fees will reduce investment returns. Returns for periods longer than 1 year are annualized. Details on Model Portfolio performance calculations are available upon request. Inception date for all Model Portfolios is 12/31/2006 unless otherwise noted. Actual investment outcomes may vary by client portfolio.

Investing involves certain risks and there is no guarantee of profitability; investors may lose all of their investments. You should understand and carefully consider an investment's objectives, risks, fees, expenses and other information before investing. Diversification and asset allocation does not guarantee a profit and may not protect against market risk.

Index returns are provided for comparative purposes only. The Model Portfolios are not designed to invest like or replicate an index. It is not possible to invest directly in an index. Index performance does not reflect any management fees, transaction costs or other expenses that would be incurred by a portfolio or fund, or transactions in fund shares. Such fees, expenses and commissions would reduce returns.

New Hires

We are excited to continue to grow our team. Please welcome our newest additions:

Janina Horakova, Operations Analyst

Hritik Naik, Co-Op

Tyson Thrush, Operations Analyst

More on back page...

Mill Creek employees celebrate the firm's Sixteenth Anniversary

We were thrilled to bring our team together for a memorable night on Sept. 20 at the Merion Cricket Club in Haverford, Pennsylvania.

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 (www.gsdesign.work)

MILL CREEK

Our values appreciate yours

Disclosure

Past performance is no assurance of future results. This publication has been prepared by Mill Creek Capital Advisors, LLC ("MCCA") and is provided for information purposes only. The information contained in this publication has been obtained from sources that MCCA believes to be reliable, but MCCA does not represent or warrant that it is accurate or complete. The views in this publication are those of MCCA and are subject to change, and MCCA has no obligation to update its opinions or the information in this publication. More information about our Capital Market Assumptions is available upon request. While MCCA has obtained information believed to be reliable, neither MCCA nor any of its respective officers, partners, or employees accepts any liability whatsoever for any direct or consequential loss arising from any use of this publication or its contents. Unless otherwise noted, all market and price data are through September 30, 2022. Disclosure for third-party websites: This presentation may contain links to other websites, including links to the websites of companies that provide related information, products and services. Such external Internet addresses contain information created, published, maintained or otherwise posted by institutions or organizations independent of MCCA. These links are solely for the convenience of readers to this presentation, and the inclusion of such links does not necessarily imply an affiliation, sponsorship or endorsement. MCCA does not endorse, approve, certify or control these external Internet addresses and does not guarantee or assume responsibility for the accuracy, completeness, efficacy, timeliness or correct sequencing of information located at such addresses. Use of any information obtained from such addresses is voluntary, and reliance on it should only be undertaken after an independent review of its accuracy, completeness, efficacy and timeliness.

Certain of the statements set forth in this commentary constitute "forward-looking statements." All such forward-looking statements involve risks and uncertainties, and there can be no assurance that the forward-looking statements included in this commentary will prove to be accurate. In light of the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of such information should not be regarded as representations or warranties of MCCA and that the forward-looking statements will be achieved in any specified time frame, if at all.