CHIEF INVESTMENT OFFICE

Fixed Income Spotlight

Fixed Income and Cash: Strategic and Tactical Investment Considerations

October 2023

All data, projections and opinions are as of the date of this report and subject to change.

SUMMARY

- Cash is not an investment asset. While cash retains its principal value, it has not historically delivered returns above inflation over longer time periods.
- Extending out of cash into longer-term, high-quality Fixed Income helps investors to have a more reliable and predictable annual income stream.
- Yields are attractive versus the last 20 years, and higher yields help cushion any further price declines associated with rising rates.

View the CIO Viewpoint ▶

ASSET CLASS WEIGHTINGS

Asset Class	Underweight		Neutral	Overweight	
Fixed Income	•	•	●	•	•
U.S. Investment Grade Taxable	•	•	•	●	•
International	•	•	●	•	•
Global High Yield Taxable	•	●	•	•	•

These Chief Investment Office (CIO) views relate to fully-diversified, multi-asset class portfolio and use the asset class breakdown of the CIO "High Tax/Balanced" Allocation. Source: Global Wealth & Investment Management Investment Strategy Committee as of October 5, 2023.

FIXED INCOME U.S. RATES FORECAST

(% end of period)	Spot	4Q23	1Q24	2Q24
Fed Funds Range	5.33	5.50-5.75	5.50-5.75	5.25-5.50
2-Year T-Note	5.02	4.75	4.55	4.35
5-Year T-Note	4.69	4.30	4.10	4.05
10-Year T-Note	4.72	4.00	3.80	3.75
30-Year T-Bond	4.89	4.20	4.00	3.95

Source: BofA Global Research U.S. Rates Research; October 6, 2023; spot price as of that date. Note: Federal funds rate forecasts are model expectations; other values are for market rates. The forecasts in the table above are the baseline view from BofA Global Research team. The Global Wealth & Investment Management (GWIM) Investment Strategy Committee (ISC) may make adjustments to this view over the course of the year and can express upside/downside to these forecasts. **There can be no assurance that the forecasts will be achieved. Economic or financial forecasts are inherently limited and should not be relied on as indicators of future investment outcomes.**

FIXED INCOME AT A GLANCE

Rates Markets	29-Sep	Last Month	Change
Fed Funds rate	5.38%	5.38%	+0 bps
3-month Treasury Bills	5.45%	5.45%	+0 bps
U.S. 2-year Note	5.05%	4.87%	+18 bps
U.S. 5-year Note	4.61%	4.26%	+36 bps
U.S. 10-year Note	4.57%	4.11%	+46 bps
U.S. 30-year Note	4.70%	4.21%	+49 bps
FF / 10s Curve	-80 bps	-127 bps	+46 bps
2s / 10s Curve	-47 bps	-76 bps	+28 bps
German 10-year	2.84%	2.46%	+38 bps
UK 10-year	4.44%	4.36%	+8 bps
Japanese 10-year	0.76%	0.65%	+11 bps

Credit Markets	29-Sep	Last Month	Change
U.S. Investment Grade (Spread)	+121 bps	+118 bps	+3 bps
U.S. High Yield (Spread)	+394 bps	+372 bps	+22 bps
U.S. High Yield (Yield)	8.88%	8.41%	+47 bps
Emerging Markets (U.S.$, Spread)	+316 bps	+317 bps	-1 bps
10-year AAA Municipal	3.44%	2.87%	+57 bps
10-year Muni / Treasury Ratio	75.3%	69.8%	+5.5%

Index Returns	1-month	12-months	Year-to-Date
U.S. Treasury	-2.2%	-0.8%	-1.5%
U.S. MBS	-3.2%	-0.2%	-2.3%
U.S. ABS	-0.4%	2.8%	2.0%
U.S. CMBS	-1.0%	0.9%	0.2%
U.S. Corporate	-2.7%	3.6%	0.0%
U.S. High Yield	-1.2%	10.3%	5.9%
U.S. Leveraged Loans	0.9%	13.0%	10.2%
U.S. Municipals	-2.9%	2.7%	-1.4%
U.S. Municipal High Yield	-3.4%	3.5%	0.0%

Bps refers to basis points. Source: Bloomberg. Data as of September 29, 2023 and subject to change. **Past performance is no guarantee of future results. Please refer to the end of the document for asset class proxies and index definitions.**

Trust and fiduciary services are provided by Bank of America, N.A., Member FDIC and a wholly owned subsidiary of Bank of America Corporation ("BofA Corp.").
Investment products:

Are Not FDIC Insured	Are Not Bank Guaranteed	May Lose Value

Please see last page for important disclosure information.

Should investors think of cash as an investment asset? While cash is absolutely critical for investors, it should not be considered a long-term investment asset. Investors should hold enough cash for spending needs and as a "rainy day" fund for emergencies. Cash is considered "risk-free," as its principal value is generally secure.

In reality, no asset is truly risk-free. Holding excessive cash significantly increases "reinvestment risk"—the risk that by the time an investor looks to deploy cash, rates have moved lower and are no longer as attractive. If growing real (inflation-adjusted) wealth is an investment goal, cash can be quite risky. That's because cash has historically only kept pace with inflation (Exhibit 1). Similar to running on a treadmill, cash leaves investors exactly where they start—with no growth in purchasing power.

Investors should not, therefore, consider cash an "investment" asset. It is a "safety" asset and the cost of that illusion of "safety" is significantly lower return potential.

Market assets historically do a much better job growing inflation-adjusted wealth. Minimizing cash to an appropriate level and maximizing market assets is one of the most important determinants of a investor's long-term portfolio returns.

What role does Fixed Income play in a portfolio? High-quality Fixed Income delivers coupon and principal payments with minimal credit risk, and therefore offers three potential portfolio benefits. First, and most importantly, a steady, reliable and predictable yield. Second, it may appreciate in value if the economy weakens. Third, it may appreciate in value if risk assets decline.

When held over longer time periods, Fixed Income returns are steadier and considered more predictable than Equity returns.

With reliable yield, Fixed Income diversifies a portfolio via more consistent returns than Equities. The S&P 500 has returned around 8% annually since 1927, but with massive volatility: 65% of the time the S&P 500 return was anywhere between -11% and +27%.[1] The majority of Equity returns are due to price appreciation or depreciation, not dividends. Conversely, Fixed Income delivers reliable cash flow: coupon income—not price changes—is the main determinant of returns (Exhibit 2).

Short rates are relatively high. Can cash be an appropriate substitute for Fixed Income in investment portfolios? No. Cash does not offer Fixed Income's benefits. Cash provides "variable"—not fixed—income that will change over multiple years; it will not appreciate in value in an economic downturn, and it has positive macroeconomic risk.

Substituting cash for Fixed Income may amplify macroeconomic risk in a portfolio, making it potentially less diversified and resilient to a weaker economy, and riskier overall relative to a variety of economic outcomes.

Portfolio construction should blend assets with different risk exposures. For example, stocks have positive macroeconomic risk: if the economy does well, earnings may grow and stocks may increase. Bonds, conversely, have negative macroeconomic risk: if the economy does well, rates may go up, causing bond prices to drop. Therefore, a portfolio of stocks and bonds has lower overall macroeconomic exposure: the portfolio has distinct asset classes that may behave differently in changing economic conditions. That helps balance risk in a portfolio.

Cash—like stocks—has positive macroeconomic risk. If the economy does well, interest rates and cash yields may increase. Conversely, neither stocks nor cash likely increase in price or cash flow if the economy weakens (Exhibit 3).

Exhibit 1: Historically, Cash Has Only Kept Pace With Inflation While Market Assets Have Delivered Returns Significantly Above Inflation.

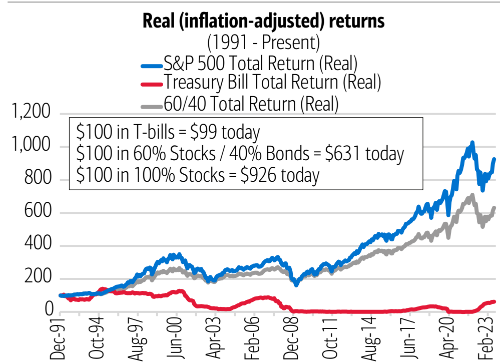


Exhibit 2: High-quality Bond Yields Are Currently 5.43%[2] And Around 95% Are Correlated With Future Returns.

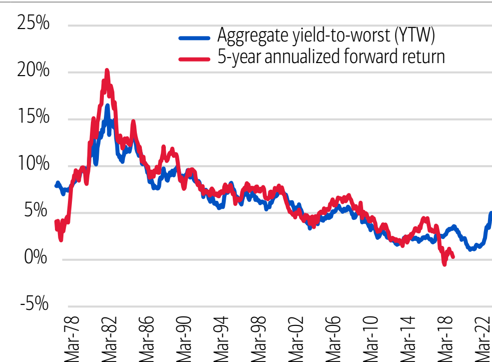


Exhibit 3: Cash Has Provided Variable Income. Cash Yields Are More Volatile and Less Predictive Of Future Returns.

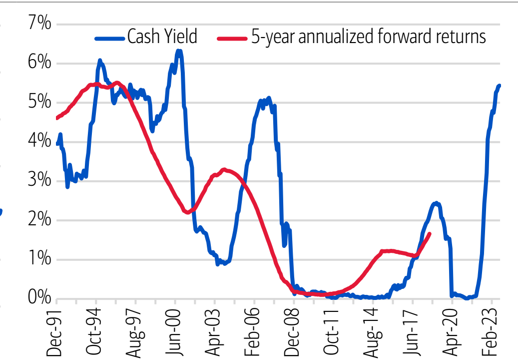


Exhibit 1 Sources: Bloomberg; Bureau of Labor Statistics; Chief Investment Office. Index Proxies: Bloomberg Treasury Bill Index for cash returns; S&P 500 Index Total Return for stock returns; S&P 500 Index Total Return (60%) and the Bloomberg Aggregate Bond Index (40%) as a proxy for 60% stock/40% bond allocation return values. All values were discounted by headline consumer price inflation (U.S. Consumer Price Inflation Urban Consumers, not seasonally adjusted.) Exhibit 2 Sources: Bloomberg; Bloomberg Aggregate Bond Index; Chief Investment Office. As of September 27, 2023. Exhibit 3 Sources: Bloomberg; Bloomberg Treasury Bill Index is used as a proxy for cash returns; Chief Investment Office. As of Septemver 27, 2023. **Past performance is no guarantee of future results. Please refer to index definitions at the end of this report. It is not possible to invest directly in an index.**

[1] Sources: S&P 500 Index price returns; Bloomberg; Chief Investment Office calculations. Data as of September 27, 2023.

[2] Sources: Bloomberg; Bloomberg Indexes. Data as of September 27, 2023. Unless otherwise noted, all references to "Fixed Income" and "high-quality Fixed Income" refer to the Bloomberg Aggregate Bond Index.

Is Fixed Income currently attractive? Yes, for several reasons in our opinion. First, Investment-grade Fixed Income yields, per the September 27 Bloomberg Aggregate Bond Index, are 5.43%. Yields have been lower than this 95% of the time over the last two decades. Returns over a three-year or longer timeframe have historically been closely correlated to that starting yield, as referenced in Exhibit 2.[3]

Second, Treasury Inflation-Indexed yields ("real yields") are relatively high. Five-year real yields are 2.45%, 445 basis points (bps) (4.45%) higher than in 2021 when they were negative (-2%).[4] Negative real yields mean investors would lose purchasing power every year. These yields are also attractive relative to the last two decades, are generally less volatile than nominal yields, and are positively correlated with near- and long-term returns (Exhibit 4).

Third, since yields are significantly higher now, they have more potential to lower in an economic downturn than when they were exceptionally low, which would allow Fixed Income portfolios to increase in price. In 2020 and 2021, rates averaged less than 1.5% and the Federal Reserve (Fed) was unlikely to cut rates below zero.[5] Therefore, at those already very low yields, rates had limited ability to move significantly lower and create any price appreciation or diversification benefit.

Fourth, even if yields move higher from here, they are considered less likely to be as significant a drag on total returns from simply a mathematical perspective. Higher yields help cushion price drops from rising rates, making interest rate risk a less pressing concern for investors as rates rise. Yields are much higher now relative to duration, which should be a benefit to investors.

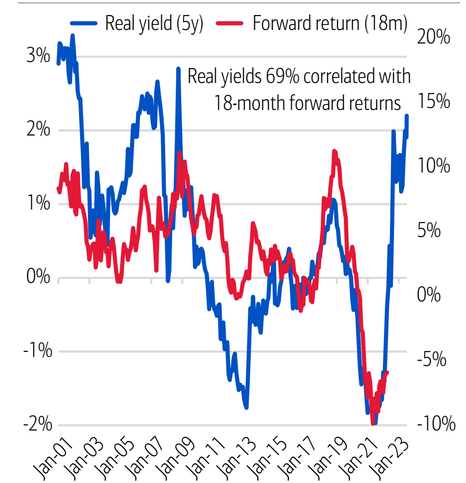
What is duration in regard to Fixed Income, and why does it matter? Duration is the approximate percentage change in a bond price for a 100 bps (1%) move in interest rates. For example, based on the Bloomberg Aggregate, Investment-grade yields are currently 5.43%[6] and the index has a duration of 6.2. If rates moved to 6.43% (+100 bps), the index would drop in value by about -6.2%. Duration therefore measures interest rate risk—the size of potential price declines if rates move up. Longer maturity bonds generally have higher durations, and cash has essentially no duration.

At extremely low yields, duration can be a significant drag on total returns if rates move higher. In August 2020, rates were around 1%, and index duration was around 6. If rates rose to 2% (+100 bps), prices would decline by about -6%. Since bonds only earned 1% per year, all things being equal it would take six years for yields to completely erase that 6% price decline. Dividing the price change implied by duration (6%) by the yield (1%) gives an approximate "time to break even." It should be noted this is an approximate "rule of thumb" only, simply used to roughly compare potential price volatility to the yield being earned. In other words, how much yield an investor receives in compensation for taking interest rate risk.

With rates at 5.43% and duration at 6.2, the "time to break even" is about 1.1 years (6.2%/5.43%). Even in the late 1980s when rates were close to 10%, "time to break even" was close to six months (Exhibit 5). On this metric, yields also look attractive on a long-term timeframe.

Investors can have the ability to compound real wealth in a meaningful way in government-guaranteed securities with no credit risk.

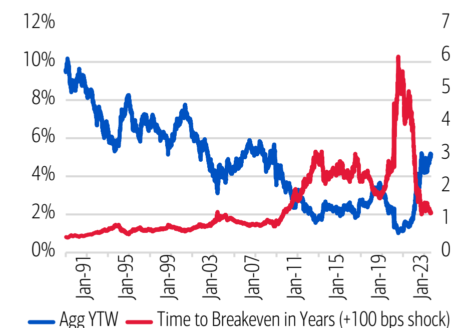
Exhibit 4: Inflation-adjusted Yields Are High And Have Been Predictive of Shorter-Term Fixed Income Returns.



Source: Bloomberg; Chief Investment Office. As of September 27,-2023. **Past performance is no guarantee of future results. Please refer to index definitions at the end of this report. It is not possible to invest directly in an index.**

Since rates are much higher now, time to break even is less of a concern as investors receive significantly more yield now relative to interest rate risk.

Exhibit 5: Yields Are Much Higher Relative To Duration Currently, Lessening "Time To Break Evens".



Sources: Bloomberg; Bloomberg Aggregate Index; Chief Investment Office. As of September 27,-2023. **Past performance is no guarantee of future results. Please refer to index definitions at the end of this report. It is not possible to invest directly in an index.**

[3] Sources: Bloomberg; Bloomberg Indexes; Chief Investment Office calculations. Data as of September 27, 2023.

[4] Source: Bloomberg. Data as of September 27, 2023.

[5] Source: Bloomberg Aggregate Index. Data as of September 27, 2023.

[6] Source: Bloomberg Aggregate Index. Data as of September 27, 2023.

If you want to be tactical, how can you manage duration through the rate cycle, and what does that currently mean? Within the business cycle, interest rates follow predictable pattern as policymakers change rate policy to actively manage the economy. Increasing duration towards the end of an expansion—when rates are peaking, but before the Fed starts cutting—is a standard strategy. The market currently expects no additional rate hikes this cycle. Based on history, starting to extend duration near the end of the rate hike cycle is generally prudent.

The Chief Investment Office (CIO) recently moved to slight overweight duration and may further increase duration exposure if rates become even more attractive and feels it would be prudent.

The yield environment is favorable versus the last 15 to 20 years. Real rates are attractive as well, close to 2.5% in five-years, and inflation-adjusted yields have been historically less volatile. Yields are even more attractive if the hiking cycle is almost done, or the U.S. is near a recession (Exhibit 6).

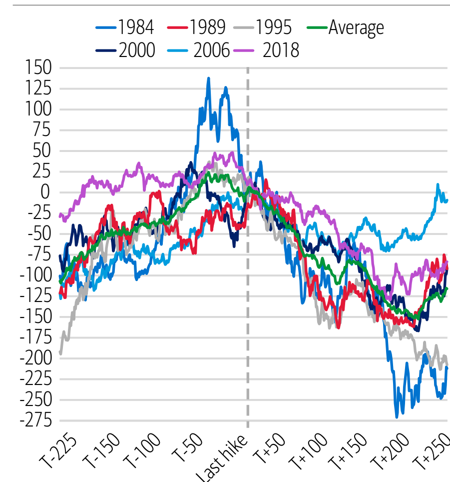
The CIO judiciously adds to assets as valuations improve. We do not pick market tops or bottoms; markets change quickly—yields can "gap" lower on any risk-off event. Our view is that, on balance, over the next 12 to 18 months, reinvestment risk (lower rates) will likely be a more pressing concern than rate risk (higher rates), and so adding some duration seems prudent.

Getting more exposed to Fixed Income via more duration when risk assets are nowhere near recessionary levels can also be prudent portfolio management, in our opinion. Extending duration may also be appropriate for investors looking to "lock-in" an approximate amount of income for a defined period. Cash creates the risk of lower income in the future if rates decline. With high-quality Fixed Income yields at 5.43% and a 6.2 duration, investors who have the ability and willingness to hold bonds over a multi-year (three-to-seven year) time horizon may achieve yields that approximate that number. Extending duration can help decrease risk of income declining as yields decline.

The CIO does not recommend a specific duration for investors. Like the appropriate amount of cash, this is an investor-specific decision. Investors with longer timeframes, specific yield objectives, and better ability and willingness to not react to bond price changes may tolerate higher durations. For investors who are focused on benchmark returns, the market duration of 6 may be appropriate place to start the conversation. When CIO recommends duration positioning, it is always relative to the investor-specific strategic direction and not any absolute duration level.

The CIO duration view is not a short-term opinion on rates. It is based on other critical factors.

Exhibit 6: Historically, Treasury Yields Begin Their Peaking Process As The Last Fed Rate Hike Nears And Rally Thereafter.



Source: Bloomberg; Federal Reserve; Chief Investment Office calculations. As of October 2023.

Asset Class Proxies and Index Definitions

Securities indexes assume reinvestment of all distributions and interest payments. Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index. Indexes are all based in dollars.

ICE BofA U.S. Corporate Index tracks the performance of U.S. dollar denominated investment grade corporate debt publicly issued in the US domestic market.

Municipals/Bloomberg Muni Bond Index measures the performance of the Bloomberg U.S. Municipal bond market, which covers the USD- denominated Long-Term tax-exempt bond market with four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

Bonds/Bloomberg U.S. Aggregrate Bond Index (40%) is a broad base, market capitalization-weighted bond market index representing intermediate term investment grade bonds traded in the United States.

High-grade/U.S. Investment Grade/Bloomberg U.S. Corporate Bond Index measures the investment grade, fixed-rate, taxable corporate bond market. It includes U.S. dollar-denominated securities publicly issued by U.S. and non-U.S. industrial, utility and financial issuers.

U.S. High Yield/Bloomberg U.S. Corporate High Yield Index: The Bloomberg U.S. Corporate High Yield Bond Index measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below.

U.S. Municipal High Yield/Bloomberg High Yield Municipal Index is a benchmark that covers the high yield portion of the USD-denominated long-term tax exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

Emerging Market/Bloomberg Emerging Market USD Index is a flagship hard currency Emerging Markets debt benchmark that includes USD-denominated debt from sovereign, quasi sovereign, and corporate EM issuers.

Cash/U.S. Treasury/Bloomberg U.S. Treasury Index Total Return measures U.S. dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury. Treasury bills are excluded by the maturity constraint, but are part of a separate Short Treasury Index. STRIPS are excluded from the index because their inclusion would result in double-counting.

U.S. Mortgage-backed Securities (MBS)/Bloomberg U.S. Mortgage-backed Securities Index is the U.S. MBS component of the U.S. Aggregate index. The MBS Index covers the mortgage-backed pass-through securities of Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

Corporates/Bloomberg U.S. Corporate Index measures the investment grade, fixed-rate, taxable corporate bond market. It includes U.S. dollar-denominated securities publicly issued by U.S. and non-U.S. industrial, utility and financial issuers. The U.S. Corporate Index is a component of the U.S. Credit and U.S. Aggregate Indices.

Government/Credit/ICE BofA Global Govt Bond Index + ICE BofA Global Large Cap Quasi-Govt Index (i) The ICE BofA Global Government Index tracks the performance of publicly issued investment grade sovereign debt denominated in the issuer's own domestic currency. (ii) The ICE BofA Global Large Cap Quasi-Government Index tracks the performance of large capitalization investment grade quasi-government debt publicly issued in the major domestic and euro-bond markets, including agency, foreign government, local government, supranational and government guaranteed securities. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch).

U.S. Aggregate/Bloomberg U.S. Aggregate Bond Total Return is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market.

Bloomberg Capital Asset-Backed Securities (ABS) Index is composed of debt securities backed by credit card, auto and home equity loans that are rated investment grade or higher by Moody's.

Bloomberg U.S. Commercial Mortgage Backed Securities (CMBS) Index is the Bloomberg Non-Agency Investment Grade CMBS: BBB Total Return Index Unhedged.

S&P/LSTA Leveraged Loan Index is a market value-weighted index designed to measure the performance of the U.S. leveraged loan market based upon market weightings, spreads and interest payments.

Bloomberg 1-10-year Municipal Bond Index is a total return performance benchmark for municipal bonds that are backed by insurers with Aaa/AAA ratings and have maturities of at least one year.

Bloomberg 1-10-year U.S. Treasury Index measures the performance of public obligations of the U.S. Treasury with maturities of 10 years and greater, including securities that roll up to the U.S. Aggregate, U.S. Universal, and Global Aggregate Indices.

Stocks/S&P 500 Index Total Return (60%) is a stock market index tracking the stock performance of 500 of the largest companies listed on stock exchanges in the United States.

ICE BofA Investment-grade Index tracks the performance of U.S. dollar-denominated, investment grade (IG), asset-backed securities publicly issued in the U.S. domestic market.

ICE BofA High Yield tracks the performance of U.S. dollar denominated below investment grade corporate debt publicly issued in the U.S. domestic market.

Important Disclosures

Investing involves risk, including the possible loss of principal. Past performance is no guarantee of future results.

Bank of America, Merrill, their affiliates, and advisors do not provide legal, tax, or accounting advice. Clients should consult their legal and/or tax advisors before making any financial decisions.

This information should not be construed as investment advice and is subject to change. It is provided for informational purposes only and is not intended to be either a specific offer by Bank of America, Merrill or any affiliate to sell or provide, or a specific invitation for a consumer to apply for, any particular retail financial product or service that may be available.

The Chief Investment Office (CIO) provides thought leadership on wealth management, investment strategy and global markets; portfolio management solutions; due diligence; and solutions oversight and data analytics. CIO viewpoints are developed for Bank of America Private Bank, a division of Bank of America, N.A., ("Bank of America") and Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S" or "Merrill"), a registered broker-dealer, registered investment adviser and a wholly owned subsidiary of BofA Corp.

The Global Wealth & Investment Management Investment Strategy Committee (GWIM ISC) is responsible for developing and coordinating recommendations for short-term and long-term investment strategy and market views encompassing markets, economic indicators, asset classes and other market-related projections affecting GWIM.

BofA Global Research is research produced by BofA Securities, Inc. ("BofAS") and/or one or more of its affiliates. BofAS is a registered broker-dealer, Member SIPC, and wholly owned subsidiary of Bank of America Corporation.

All recommendations must be considered in the context of an individual investor's goals, time horizon, liquidity needs and risk tolerance. Not all recommendations will be in the best interest of all investors.

Asset allocation, diversification and rebalancing do not ensure a profit or protect against loss in declining markets.

Dividend payments are not guaranteed, and are paid only when declared by an issuer's board of directors. The amount of a dividend payment, if any, can vary over time.

Investing in fixed-income securities may involve certain risks, including the credit quality of individual issuers, possible prepayments, market or economic developments and yields and share price fluctuations due to changes in interest rates. When interest rates go up, bond prices typically drop, and vice versa. Income from investing in municipal bonds is generally exempt from Federal and state taxes for residents of the issuing state. While the interest income is tax-exempt, any capital gains distributed are taxable to the investor. Income for some investors may be subject to the Federal Alternative Minimum Tax (AMT). Tax-exempt investing offers current tax-exempt income, but it also involves special risks. Single-state municipal bonds pose additional risks due to limited geographical diversification. Interest income from certain tax-exempt bonds may be subject to certain state and local taxes and, if applicable, the alternative minimum tax. Any capital gains distributed are taxable to the investor. Investments in high-yield bonds (sometimes referred to as "junk bonds") offer the potential for high current income and attractive total return but involve certain risks. Changes in economic conditions or other circumstances may adversely affect a junk bond issuer's ability to make principal and interest payments. Treasury bills are less volatile than longer-term fixed income securities and are guaranteed as to timely payment of principal and interest by the U.S. government. For investments in Agency Mortgage-backed Securities (AMBS) and Mortgage-backed Securities (MBS), generally, when interest rates decline, prepayments accelerate beyond the initial pricing assumptions, which could cause the average life and expected maturity of the securities to shorten. Conversely, when interest rates rise, prepayments slow down beyond the initial pricing assumptions, and could cause the average life and expected maturity of the securities to extend, and the market value to decline. Most senior/leveraged loans are made to corporations with below investment-grade credit ratings and are subject to significant credit, valuation and liquidity risk. The value of the collateral securing a loan may not be sufficient to cover the amount owed, may be found invalid or may be used to pay other outstanding obligations of the borrower under applicable law. There is also the risk that the collateral may be difficult to liquidate, or that a majority of the collateral may be illiquid.

The credit quality ratings represent those of Moody's Investors Service, Inc. ("Moody's") or Standard & Poor's Corporation ("S&P") and/or Fitch Ratings ("Fitch") credit ratings. The ratings represent their opinions as to the quality of the securities they rate. Ratings are relative and subjective and are not absolute standards of quality. The security's credit quality does not eliminate risk. For information regarding the methodology used to calculate the ratings, please visit Moody's at www.moodys.com, S&P at www.standardandpoors.com and/or Fitch at www.fitchratings.com.

© 2023 Bank of America Corporation. All rights reserved.