MARKET PULSE

MACRO VIEWS

CHINA GROWTH: GIR expects 2023 China growth at 6.0%, but we believe the growth impulses from reopening and policy support will be front-loaded this year. Going forward, we think the two most important factors determining the robustness of China's recovery are 1) limiting the growth drag from the property sector and 2) translating household's excess savings into consumption. For context, the household savings rate is currently at 33.5%, substantially above trend.

MONETARY POLICY: GIR has removed its June Fed rate hike call following tighter credit conditions. They expect the terminal rate of 5.00%-5.25% will be reached in May. For the ECB, they added back a 25bp hike in July for a terminal rate of 3.75% as strong underlying inflation indicators remain more concerning than banking tensions. GIR expects the BoE to also deliver a 25bp hike in May as wage growth reaccelerates.

US DEBT CEILING: The Treasury has stated it may exhaust its cash by early June, though variable tax receipts could push the deadline to late July. Regardless, we do not expect a US debt default. The closer the deadline gets, the more likely a short-term debt ceiling increase happens.

ARTIFICIAL INTELLIGENCE: In our view, roughly two-thirds of US jobs are exposed to some degree of AI automation, with high exposures in administrative and legal and low exposures in construction and maintenance. Still, the creation of new jobs has historically offset worker displacement from automation, with technology-driven new jobs accounting for 85% of the employment growth over the last 80 years.

MARKET VIEWS

US EQUITIES: US stock performance has been strong this year, with a handful of long-duration stocks benefitting from a steep decline in interest rates. Specifically, just seven names drove nearly 90% of the S&P 500's 7.5% return in 1Q. This lack of breadth may undermine the sustainability of this year's rally. In our view, capped valuations in conjunction with moderating earnings growth should limit further index-level gains.

EM EQUITIES: Despite a favorable backdrop of strong global equity performance, lower US rates, and a weakening US dollar, EM equities have underperformed relative to their DM peers. Still, we remain firm in our view that optimistic earnings estimates in more durable, consumer-oriented categories, alongside further US dollar deterioration, reaffirms a path for potentially strong EM performance in the longer term.

FX: Recent bilateral trade agreements have increased concern over de-dollarization. Despite these developments, we do not expect a challenger such as the Chinese yuan to replace the US dollar as the world's reserve currency. China's current account surplus incentivizes that limits be placed on yuan appreciation while other countries' foreign exchange pegs require adequate dollar reserves be held. Moreover, deep US capital markets may provide liquid asset classes to invest reserves, potentially incentivizing foreign central banks to hold US dollars.

MONEY MARKETS: Ultra-short fixed income fund inflows were pronounced following March's bank stress. The yields they still offer are difficult to contend but one key threat persists: reinvestment risk. We believe many investors stand to benefit from barbelling short-dated bonds with pockets of the market that have historically outperformed following the conclusion of Fed hiking cycles, such as HY municipal bonds.

ASSET CLASS OUTLOOK[1]

Less Favorable — More Favorable

EQUITY	Shorter Term	Longer Term
US Equity		
European Equity		
Japanese Equity		
Emerging Market (EM) Equity		
RATES		
US Government Fixed Income		
DM Government Fixed Income		
EM Debt Local		
Municipal Bonds		
CREDIT		
US Investment Grade		
US High Yield		
Euro Area Corporates		
Asia High Yield		
EM Debt Hard		
REAL ASSETS		
Oil		
Copper		
Gold		
Global Real Estate		
CURRENCIES		
US Dollar		
Euro		
British Pound		
Japanese Yen		
Chinese Renminbi		

ASSET CLASS FORECASTS[2]

	Current	3m	12m	% ∆ to 12m
S&P 500 ($)	4134	4000	4000	-3.2
STOXX Europe (€)	469	465	475	1.3
MSCI Asia-Pacific Ex-Japan ($)	518	535	610	17.8
TOPIX (¥)	2035	2000	2200	8.1
10-Year Treasury	3.6	3.8	3.8	22 bp
10-Year Bund	2.5	2.8	2.6	9 bp
10-Year JGB	0.5	0.7	0.7	28 bp
Euro (€/$)	1.10	1.05	1.10	0.3
Pound (£/$)	1.24	1.18	1.25	0.7
Yen ($/¥)	134	132	125	-6.9
Brent Crude Oil ($/bbl)	81.7	88	100	22.5
London Gold ($/troy oz)	1978	2050	2050	3.6

Source: Goldman Sachs Global Investment Research (GIR) and Goldman Sachs Asset Management as of April 2023. "US GDP growth" refers to US real gross domestic product growth, year-on-year. The economic and market forecasts presented herein are for informational purposes as of the date of this document. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this document. **Past performance does not guarantee future results, which may vary.**

Duration: Why, When, and How

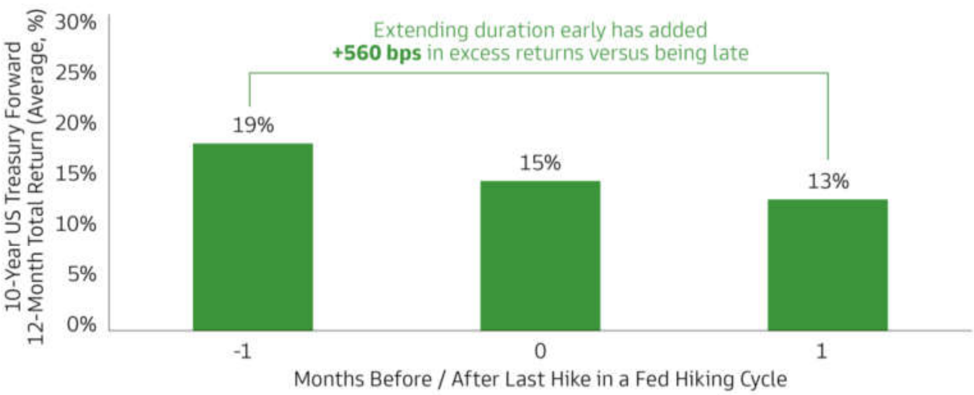
Our appetite for increasing duration in fixed income has grown as we near the end of the Fed's rate hiking campaign. In our view, the risk asymmetry is appealing as higher yields on the long end may counterbalance further rate upside. As such, we believe the decision to add back duration is best addressed now through municipal bonds. History has rewarded early duration movers in the past six hiking cycles, with municipal bonds also outperforming US T-bills following historical peaks in policy rates.

WHY: SHORT RATES FELL FASTER THAN LONG RATES AFTER THE LAST RATE HIKE

The potential benefits of owning short maturity bonds today seem irrefutable. However, we believe reinvestment risk is upon investors as monetary policy enters its final stretch. We believe investors should consider turning their attention to securing future yields over current ones as historical post-Fed tightening cycles have led to precipitous declines in front-end yields. We believe a similar dynamic might hold this time around, creating an opportune time to add back duration.

Source: Bloomberg and Goldman Sachs Asset Management

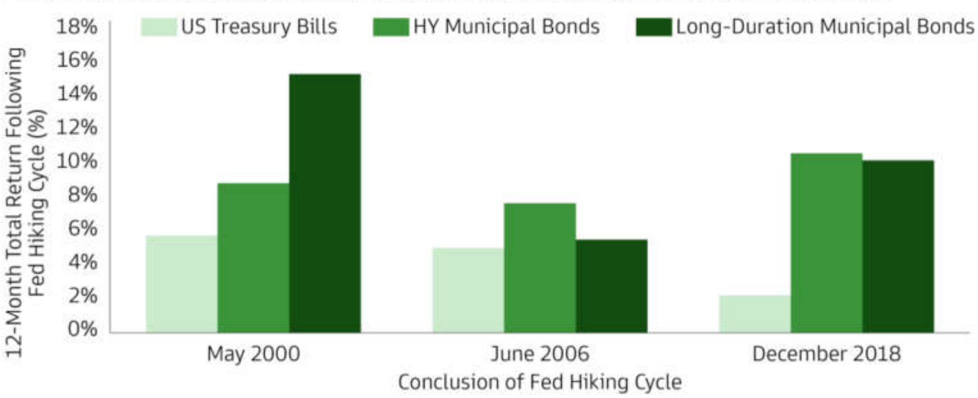
WHEN: EXTENDING DURATION EARLY HAS HISTORICALLY PROVED REWARDING



The early bird gets the worm. Being early on a duration call may offer upside for investors. With Fed funds rate near its peak, we believe the risk asymmetry has turned more favorable for lengthening duration. Market pricing reflecting limited rate upside may lessen future bond price sensitivity, while a fall in rates may bump returns higher. Ultimately, a high starting yield may help lock in attractive returns, with early duration extension adding 560bps more in alpha versus being late.

Source: Barclays and Goldman Sachs Asset Management

HOW: MUNIS HAVE POSTED ATTRACTIVE RETURNS AT HIKING CYCLE END



In our view, lengthening duration is particularly effective with municipal bonds. At the conclusion of the last three Fed hiking cycles, returns in high yield and long-duration municipal bonds have outperformed US T-bills on average by 4.7pp and 6.0pp, respectively. Light muni positioning has boosted yields relative to US Treasuries, and our expectation for a pick-up in summer flows against tight supply may invite another performance tailwind.

Source: Bloomberg and Goldman Sachs Asset Management

Top Section Notes: Chart shows the 2-Year US Treasury and 10-Year US Treasury yields since January 1, 2000. Shaded circles are centered on the month-end dates of the final hike of the Federal Funds rate during the past three Fed hiking cycles: May 31, 2000, June 30, 2006, and December 31, 2018. Middle Section Notes: As of March 31, 2023. The last months of the prior six Fed hiking cycles used are August 1984, February 1989, February 1995, May 2000, June 2006, and December 2018. **Past performance does not guarantee future results, which may vary.**

Important Information

1. Asset Class Outlook for equities, credits, sovereigns, real assets, and currencies are informed by Goldman Sachs Asset Management, Goldman Sachs Global Investment Research, and Goldman Sachs Investment Strategy Group views. The views expressed herein are as of April 2023 and subject to change in the future. “Shorter Term” view refers to less than 6 months. “Longer Term” view refers to 1–5 years. Individual portfolio management teams for Goldman Sachs Asset Management may have views and opinions and/or make investment decisions that, in certain instances, may not always be consistent with the views and opinions expressed herein.
2. Price targets of major asset classes are provided by Goldman Sachs Global Investment Research. Source: “Global equities flat, Commodities and EM underperformed” – 04/24/2023.

Page 1 Definitions

AI refers to artificial intelligence.

Alpha refers to returns in excess of the benchmark return.

Brent crude oil is a common international benchmark for oil prices.

Bbl refers to per barrel.

Bp refers to basis points.

DM refers to developed markets.

Duration refers to the sensitivity of bond prices to a change in interest rates.

EM refers to emerging markets.

GDP refers to Gross Domestic Product.

Hiking cycle refers to period where the Federal Reserve is raising the Federal Funds rate.

HY refers to high yield.

Fed refers to the Federal Reserve.

FOMC refers to Federal Open Market Committee.

FX peg refers to currency peg, a policy in which a national government or central bank sets a fixed exchange rate for its currency with a foreign currency or a basket of currencies and stabilizes the exchange rate between countries.

Pp refers to percentage point.

YE refers to year end.

Page 2 Definitions

Bottom Section Notes: Yield refers to Yield to Worst. Chart shows 12-month total returns of the FTSE 3-Month US T-Bill Index, Bloomberg Municipal High Yield Index, and Bloomberg Long Term Municipal Bond 22+ Index starting from end-date of months shown.

Glossary

The Bloomberg Municipal High Yield Bond Index is an unmanaged index made up of bonds that are non-investment grade, unrated, or rated below Ba1 by Moody's Investors Service with a remaining maturity of at least one year. The Index figures do not include any deduction for fees, expenses or taxes.

The Bloomberg US Aggregate Bond Index represents an unmanaged diversified portfolio of fixed income securities, including US Treasuries, investment grade corporate bonds, and mortgage backed and asset-backed securities.

The Dow Jones Equal Weight US Issued Corporate Bond Index is designed to track the total returns of 100 large and liquid investment-grade bonds issued by companies in the US corporate bond market.

The FTSE 3 Month US Treasury Bill Index is intended to track the daily performance of 3-month US Treasury bills. The indexes are designed to operate as a reference rate for a series of funds.

The MSCI AC Asia Pacific ex Japan Index captures large and mid cap representation across 4 of 5 Developed Markets countries and 8 Emerging Markets countries in the Asia Pacific region.

The MSCI EAFE Index is designed to represent the performance of large and mid-cap securities across 21 developed markets, including countries in Europe, Australasia and the Far East, excluding the U.S. and Canada. The Index represents approximately 85% of the free float-adjusted market capitalization in each of the 21 countries.

The MSCI Emerging Markets Equity Index is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets.

The S&P 500 Index is the Standard & Poor’s 500 Composite Stock Prices Index of 500 stocks, an unmanaged index of common stock prices. The index figures do not reflect any deduction for fees, expenses or taxes. It is not possible to invest directly in an unmanaged index.

The STOXX Europe 600 Index is derived from the STOXX Europe Total Market Index (TMI) and is a subset of the STOXX Global 1800 Index.

The Tokyo Price Index (TOPIX) is a metric for stock prices on the Tokyo Stock Exchange (TSE). A capitalization-weighted index, TOPIX lists all firms that have been determined to be part of the "first section" of the TSE.

The 10-Year US Treasury Bond is a US Treasury debt obligation that has a maturity of 10 years.

Indices are unmanaged. The figures for the index reflect the reinvestment of all income or dividends, but do not reflect the deduction of any fees or expenses which would reduce returns. Investors cannot invest directly in indices.

Risk Considerations

Equity securities are more volatile than bonds and subject to greater risks. Foreign and emerging markets investments may be more volatile and less liquid than investments in US securities and are subject to the risks of currency fluctuations and adverse economic or political developments. Investments in commodities may be affected by changes in overall market movements, commodity index volatility, changes in interest rates or factors affecting a particular industry or commodity. The currency market affords investors a substantial degree of leverage. This leverage presents the potential for substantial profits but also entails a high degree of risk including the risk that losses may be similarly substantial. Currency fluctuations will also affect the value of an investment.

Investments in fixed income securities are subject to the risks associated with debt securities generally, including credit, liquidity, interest rate, call and extension risk.

Income from municipal securities is generally free from federal taxes and state taxes for residents of the issuing state. While the interest income is tax-free, capital gains, if any, will be subject to taxes. Income for some investors may be subject to the federal Alternative Minimum Tax (AMT).

High yield fixed income securities are considered speculative, involve greater risk of default, and tend to be more volatile than investment grade fixed income securities.

A 10-Year Treasury is a debt obligation backed by the United States government and its interest payments are exempt from state and local taxes. However, interest payments are not exempt from federal taxes.

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