U.S. taxable municipal bonds: Beyond the basics

NOVEMBER 2022

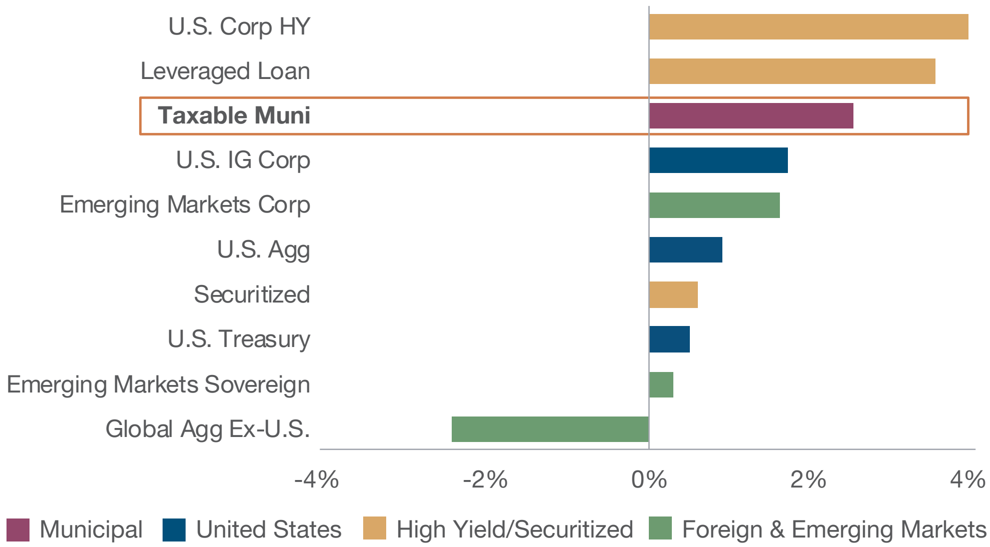
From MacKay Municipal Managers™

Preferential capital treatment, low correlations, historically stable ratings, and ESG friendly credits have piqued institutional interest in the taxable municipal bond asset class.

U.S. retail investors have long dominated the U.S. municipal bond market, but over the last decade, institutional interest in the sector has soared, particularly outside the U.S. So far, these non-traditional investors have been rewarded. Over the last 10 years, municipal bonds have performed well **(Figure 1)**. Consequently, the taxable municipal sector's 2.48% annualized total return for the period handily outperformed the 1.70% return on U.S. corporate investment-grade bonds, a staple in most institutional portfolios (**see Figure 1**). But strong returns are just one of many reasons that non-traditional investors have ventured into the asset class. Taxable municipal bonds are also garnering interest due to their high quality ratings, inefficient pricing, low correlations, diversification to other asset classes, and potential for liability matching.

Figure 1: Municipal bonds have historically performed well

10-year annualized total return (%)



Source: Morningstar, as of 9/30/2022. September 30, 2012-September 30, 2022. Please see "Important disclosure" beginning on page 8 for additional information, including indexes and index definitions. No fees or expenses were included in the above results. **It is not possible to invest directly into an index. Past performance is not indicative of future results.**

New York Life Investments

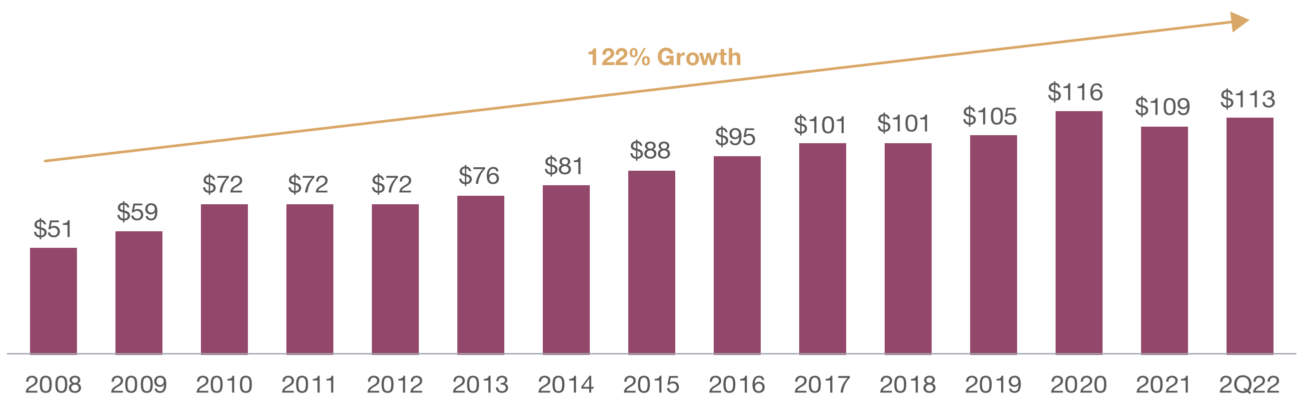
New interest in an old sector

Institutional interest for U.S. municipal bonds was whetted in 2009, when the Obama Administration created the Build America Bond (BAB) program to stimulate an economic recovery from the Great Recession. At the time, many states and cities were having difficulty tapping the traditional, tax-exempt municipal bond market to fund capital projects. As a solution, BABs subsidized the interest cost on taxable municipal bonds to make them affordable to issuers and broaden their potential investor base. Over the two years the program was in effect, issuance of taxable municipal bonds surged from $24 billion in 2008 to $85 billion in 2009 and $152 billion in 2010. (SIFMA.org; U.S. Municipal Issuance)

Supply piqued demand. Non-traditional investors learned that taxable municipals offered an array of structural benefits and can offer incremental return potential due to inefficient pricing in a fragmented market. Simply stated, what municipals lacked in liquidity, they made up for in higher yield spreads and total return potential. Diversification benefits and the possibility of lower capital charges have resulted in increased foreign demand of taxable municipals. Foreign ownership has doubled from $51 billion in 2008 to over $113 billion as of June 30, 2022. **(Figure 2)**.

Figure 2: Foreign ownership: 122% growth

US$ Billions



Federal Reserve, Financial Accounts of the United States, Z.1. As of June 30, 2022.

Municipals—A Primer

U.S. municipal bonds are the primary funding source for U.S. infrastructure. State, county and local governments and agencies issue these tradeable debt instruments to build highways, airports, water and sewer plants, and other structures that provide essential services to the public. With nearly $4.04 trillion in outstanding bonds, municipal bonds make up nearly 10% of the value of the $46 trillion U.S. bond market. (Source: U.S. Federal Reserve Z.1 Statistical Release as of Q4 2021)

Interest income from most municipal bonds is not subject to federal income tax, so individual U.S. investors have long dominated the market; today, individuals own about 40% of the municipal bonds outstanding. (Source: 1Q 2022 SIFMA) Some taxable U.S. institutions, such as nuclear decommissioning trusts, have also invested in the asset class for decades. Tax-exempt U.S. entities and non-U.S. investors that aren't subject to U.S. taxation have generally stayed away, because the yields on tax-exempt municipals are generally lower than yields on other bonds with similar duration.

But not all muni bonds are tax-exempt: The U.S. tax code strictly limits the volume of tax-exempt municipal bonds for each of the thousands of issuers, and restricts the eligible purposes for issuing them. Issuers that need to issue more debt than allowed, or to fund a non-permitted purpose, tap the taxable municipal bond market. Institutional investors' recent increased appetite for municipal bonds is focused on the taxable category, which generally offers higher yields because their interest payments aren't tax exempt. $840 billion in taxable municipal bonds were outstanding as of 7/20/2022. (Source: Bloomberg).

Municipals can also be categorized by their security features. About 30% of the taxable municipal index is made up of GOs "general obligation bonds," supported by the full faith and credit of the issuer. The rest are "revenue bonds," supported by a dedicated revenue stream, such as highway tolls or municipal water charges.

2022's taxable issuance has been heavily constrained by higher than anticipated rates environment that has made taxable advance refundings less appealing. However, we expect issuance to pick up for the remainder of the year, and remain at elevated levels.

Today, many institutional investors see taxable municipals as an attractive diversifier for their fixed income portfolio. Many of these investors welcome the historically higher credit quality and historically more stable ratings of municipals versus other fixed income sectors.

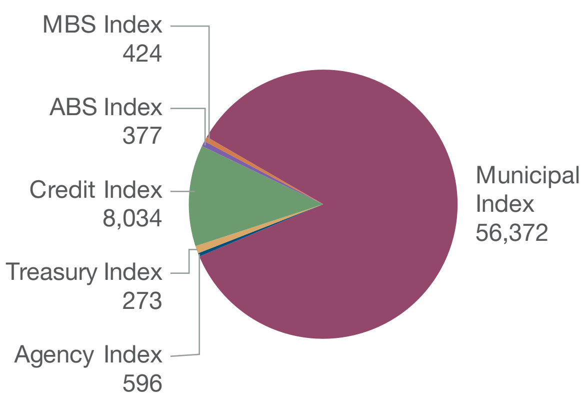
In addition, non-U.S. insurance and reinsurance firms like the potential for reduced capital charges. The European Union's Solvency II Directive could potentially reduce the capital charges on investments in bonds designated as "infrastructure corporates" by up to 25% relative to corporate bonds.[1] While the regulatory scheme applies only to EU-based insurers, it is becoming the de-facto risk framework throughout the world. For instance, many companies and regulators in Asia are closely following the development, with a view to obtaining similar regulatory treatment (e.g., Japan) or adopting elements of Solvency II in their own risk-management initiatives.[2]

An allocation to taxable municipal bonds that meets Solvency II criteria could help improve the capital efficiency of these insurers' portfolios.

While many investors have been focusing on the corporate bond and equity markets for their Environmental, Social and Governance (ESG) investment strategies, we believe that the municipal bond market is a natural fit for strategies with ESG considerations. Municipal bonds are the primary funding source for infrastructure projects in the United States. Many of these projects address environmental and social considerations and are also aligned with the sustainable development goals, including conservation projects for water and wastewater systems, wind farms, public education, non-profit hospitals, public transport and affordable housing. Our fundamental municipal credit analysis regularly takes ESG considerations into account when determining the underlying strength of a municipal credit.

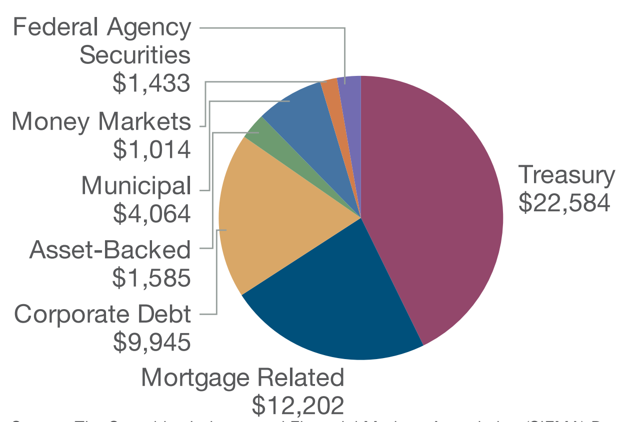
Figure 3: US$4.04 trillion U.S. bond market

Indices by number of issues



Source: Bloomberg. Data as of 2Q 2022. Please see "Important disclosure" beginning on page 8 for additional information, including idexes and index definitions.

Outstanding U.S. Bond Debt | $US Billions



Source: The Securities Industry and Financial Markets Association (SIFMA) Data as of 4Q 2021.

Pricing inefficiency creates opportunity

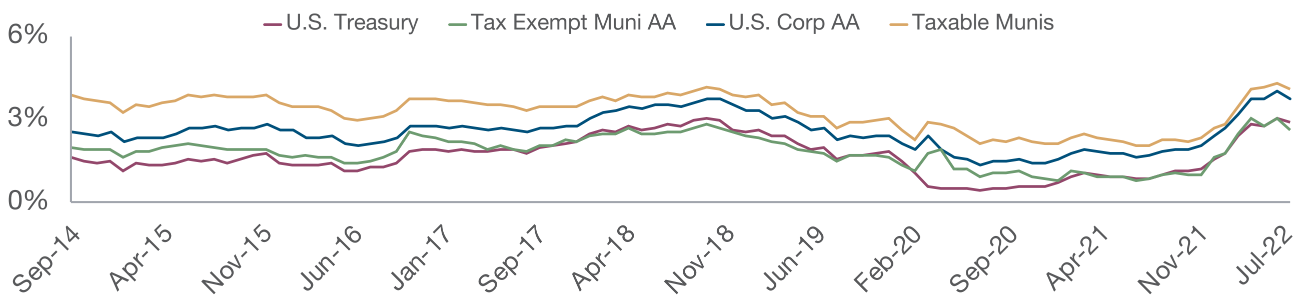
The municipal bond market is highly fragmented, and most issues are small; many are too tiny to be included in a market index. Yet the municipal bond index still includes approximately 56,000 issuers, over 80% of all issuers in the total U.S. bond index **(Figure 3)**. In contrast, the corporate bond market, with more than twice as much value, has far fewer issuers: the corporate credit index includes approximately 8,000 issuers. The Treasury market is huge, with over $15 trillion in value, but the index includes just 270 issues.

Market fragmentation, limited sell-side research and the prevalence of buy-and-hold investors often times leads to inefficient pricing. Pricing inefficiencies create opportunity for active investors with an edge in credit research and trading to seek greater yield and total return potential than the sector's typical buy-and-hold investors reap.

Competitive yields and duration

Institutional appetite for yield has also driven the sector's rapid growth over the last decade. With central banks around the world using quantitative easing programs to stimulate the global economy for much of this period, interest rates declined to historic lows. Yields on many sovereign bonds eventually fell into negative territory. Many investors have sought to enhance yields by increasing corporate or emerging-market credit risk during this time. However, even in today's rising rate environment, Taxable municipals have still maintained the yield advantage. In July 2022, yields on double-A (AA) rated taxable municipal bond were 120 basis points higher than yields on comparable Treasuries **(Figure 4)**. Also evident is the yield advantage of Taxable Municipals over comparably rated U.S. Corporates.

Figure 4: Municipals can provide attractive yields
Yield-to-worst



Source: ICE BofA & Bloomberg indices September 30, 2014 – July 31, 2022. Please see "Important disclosure" beginning on page 8 for additional information, including idexes and index definitions.

Duration is another key driver of growth. Because capital projects financed with taxable municipal bonds generally last for decades, they are typically financed with longer maturing bonds. Approximately 40% of taxable municipals outstanding have maturities of 10 to 20 years; another 24% are even longer **(Figure 5)**. Institutions seeking to immunize their long-dated obligations have welcomed this source of long-duration assets to match their long-term liabilities. Historically, issuance in this asset class was dominated by longer maturities, however, looking closely at 2020 through 2022 YTD issuance, the breakdown has evolved. Approximately 2/3 of the issuance during this time period was focused in the 0-15 year maturity buckets. And when including corporate cusip taxable munis, the opportunity set expands across the curve for those looking to match the duration of their liabilities.

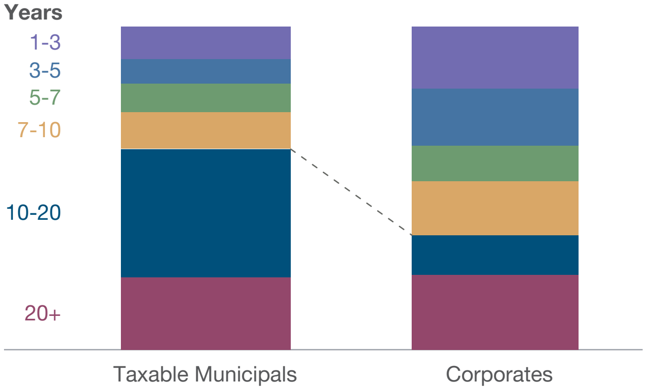
Low correlations and broad diversification

Municipal bonds also provide significant risk management benefits. An allocation to municipal bonds may help manage fixed-income portfolio volatility because municipal bond returns generally have a low correlation to other fixed-income sectors **(Figure 6)**. That's been true over decades for traditional tax-exempt municipals. It was also true for taxable municipals, although to a lesser extent.

The taxable municipal market has far fewer issuers than the tax-exempt market, but is well-diversified in purpose. They fund toll roads, bridges, light rail lines, airports, university and government buildings, water and sewer systems, fiber-optic telecom lines and electric supply and distribution systems. The issuers are also diversified by region, credit rating and security structure (e.g., callable vs non-callable bonds). As a comparison, the Bloomberg taxable municipal index (ticker: BTMNTR) has 13 distinct investable sub-sectors; in contrast, the Bloomberg U.S. Corporate bond master (ticker: LUACTRUU) has only three.

Figure 5: Most taxable municipals are intermediate to long bonds

Maturity distribution of outstanding bonds (In years)

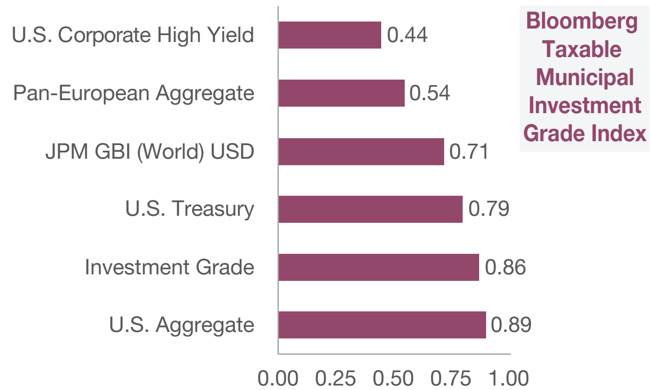


As of June 30, 2022.

Source: Bloomberg, Bloomberg Municipal Index – Taxable Bonds, Bloomberg U.S. Corporate Bond Index.

Figure 6: Taxable munis diversify other bond sectors

Correlation to other sectors



September 30, 2012 to September 30, 2022.

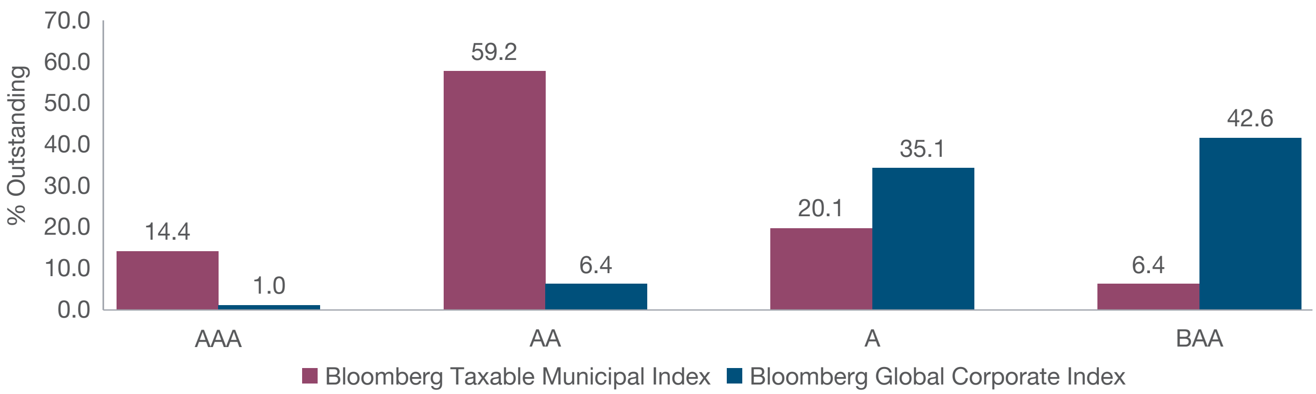
Source: Bloomberg Indices. Please see "Important disclosure" beginning on page 8 for additional information, including idexes and index definitions. It is not possible to invest directly into an index. Past performance is no guarantee of future results, which will vary.

Higher quality asset class and stable historical ratings

The relative high-quality nature of municipal bonds is also attractive for risk-conscious investors and insurers seeking to meet their capital requirements most efficiently. Over 76% of U.S. municipal bonds outstanding are A+ rated or better; only a tiny portion are below investment-grade. In contrast, less than 10% of the global corporate bond market is double-A rated, and nearly half is below-investment grade **(Figure 7)**.

Figure 7: Most taxable munis are high quality

Ratings distributions: Taxable municipal vs Global corporate bonds (%)



Source: Bloomberg Taxable Municipal Index, Bloomberg U.S. Corporate Index as of July 29, 2022. Moody's rates borrowers on a scale from Aaa through C. Aaa through Baa3 represent investment grade, while Ba1 through C represent non-investment grade. Standard & Poor's rates borrowers on a scale from AAA to D. AAA through BBB represent investment grade, while BB through D represent non-investment grade. Fitch rates borrowers on a scale from AAA to D. AAA to BBB represent investment grade, while BB through D represent non-investment grade.

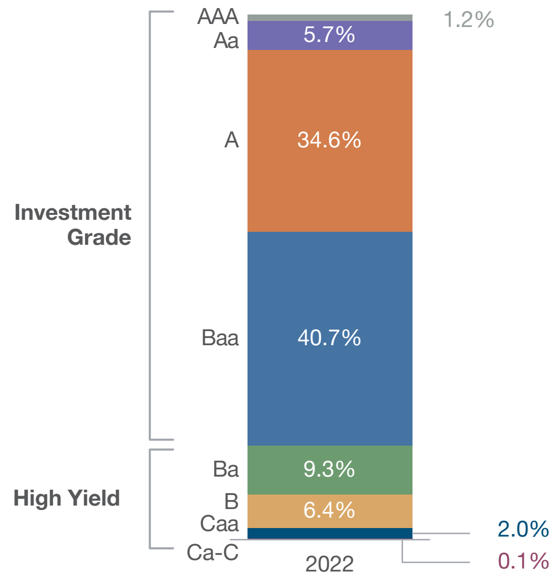
By the end of June 2022, the share of investment-grade corporates with a triple-B rating was 40%, up from 26% ten years earlier **(Figure 8)**. We believe these bonds are vulnerable to being re-rated below-investment grade during the next economic downturn. Investors that can't own below-investment grade debt would be forced to liquidate their holdings at inopportune times, pushing prices down further.

Historically, municipal bond ratings have been far more stable than corporate bond ratings, as **Figure 9** shows. Why should this be? Some corporations are vulnerable to event risks, such as leveraged buyouts, that rarely affect municipal bonds. More generally, corporations have fewer options to cover their debt in times of stress. Municipal bond issuers have more latitude. State and local governments can raise taxes, if necessary, to support the general obligation bonds which are backed by the issuer's full faith and credit. Revenue bonds, on the other hand, are backed by dedicated cash flow streams from tolls or other user fees for essential services. In many cases, these public enterprises are virtual monopolies. An airport or water/sewer system, for example, can often raise prices without losing customers.

A look at historical default rates also demonstrates the resiliency of the municipal bond asset class. In fact, the average five-year municipal default rate since 2012 is 0.1%, up just slightly from the historical average of 0.08%, which dates back to 1970; meanwhile the average five-year global corporate default rate was 7.2% since 2012, up 40 basis points from its historical average of 6.8% since 1970. (Source: Moody's, US municipal bond defaults and recoveries, 1970-2021, data report, 21 April 2022)

Figure 8: Corporate credit market has changed

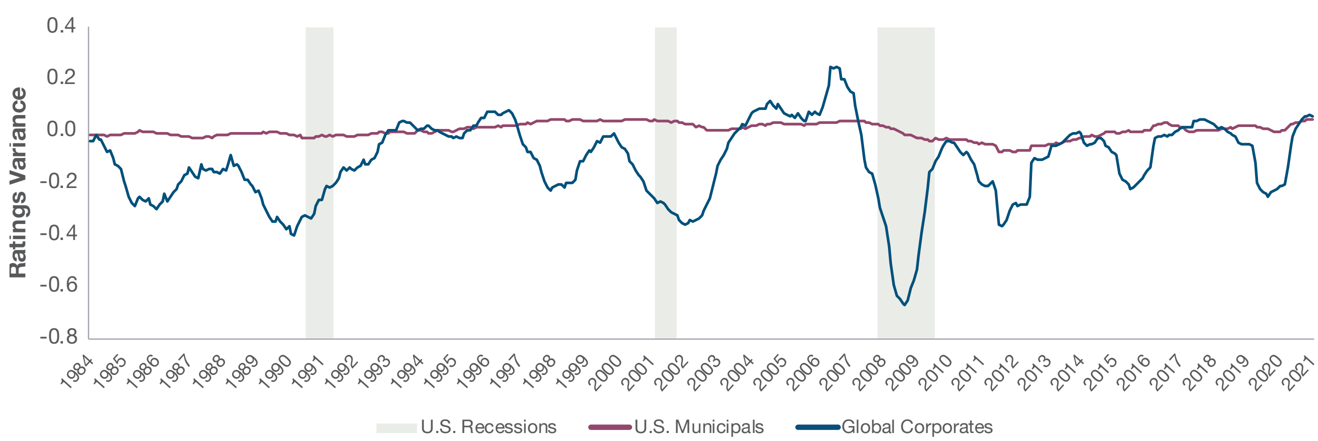
Ratings distribution | Bloomberg U.S. Corporate Aggregate and U.S. High Yield



Source: High Yield: Bloomberg U.S. High Yield Index; Investment Grade: Bloomberg U.S. Corporate Aggregate, as of 6/30/2022.

It is not possible to invest directly into an index. Please see disclosures for additional information, including index descriptions. Due to rounding the sum of items may not equal 100%.

Figure 9: Muni ratings have been relatively stable
Moody's rating drift 1984-2021 for U.S. municipals and global corporates



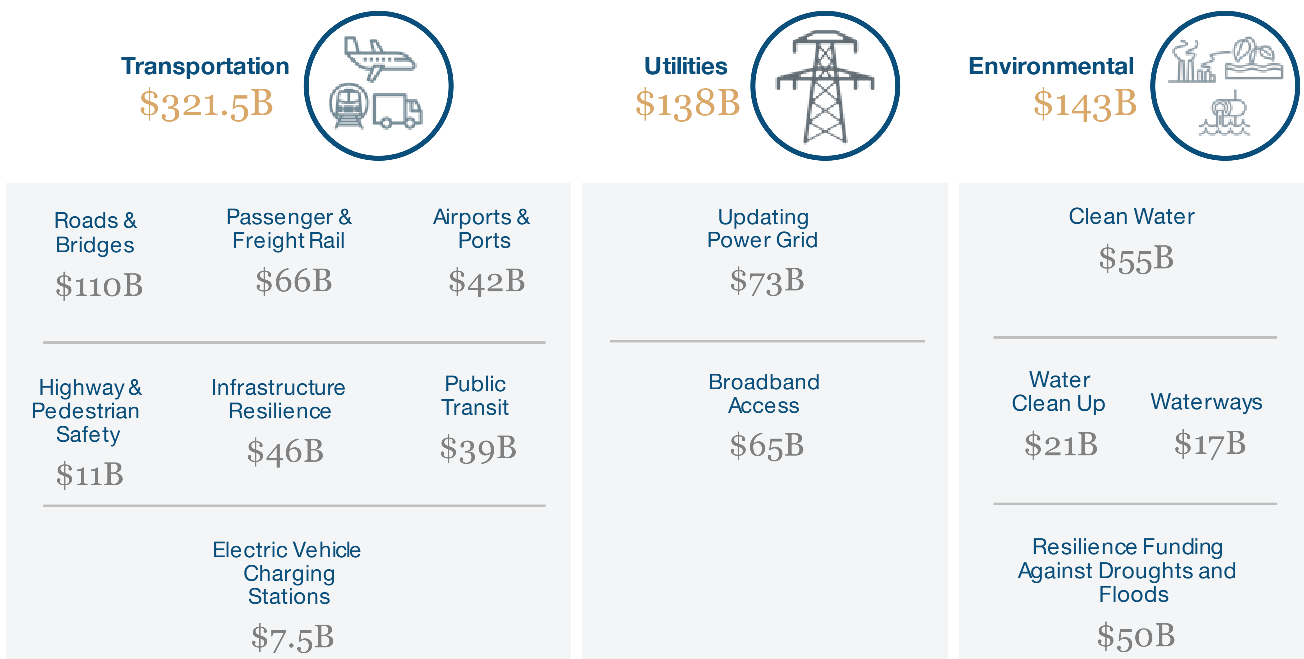
Rating drift measures the net average number of notches a credit changes over the study period. It is defined as the average upgraded notches per issuer minus the average downgraded notches per issuer.

Source: As of January 1, 2021. Moody's U.S. Municipal Bond Defaults and Recoveries, Moody's Trends in Global Corporates Rating Transitions. U.S. Municipals: Bloomberg Taxable Municipal Index; Global Corporate: Bloomberg Global Corporate Index. It is not possible to invest directly into an index. Please see "Important disclosure" beginning on page 8 for additional information, including idexes and index definitions.

Infrastructure opportunities and issuance

We expect the continued issuance of taxable municipal bonds in the future. After decades of neglect, U.S. infrastructure earned a C- on The American Society of Civil Engineers (ASCE)'s 2021 Infrastructure Report Card. Bringing U.S. infrastructure to a state of good repair would cost $5.9 trillion, the ASCE estimates. Although the federal government and some states have stepped up infrastructure investments in recent years, only 55% of the funds needed have been committed. Another $2.6 trillion in funding is needed over the next 10 years. The 2021 passage of the $1.2 trillion Infrastructure Investment and Jobs Act (IIJA) provides federal grant funding for much needed infrastructure programs. These funds are available for various projects through 2022 to 2026.

Figure 10: ~$550B over 5 years in new federal spending includes:



Note: Chart shows categories grouped into three sections, but many target more than one area of transportation, utilities, and the environment.

Source: American Society of Civil Engineers, Infrastructure Report Card 2021, March 2021 US Senate: Bipartisan Infrastructure Investment and Jobs Act Summary July 28, 2021.

Making a strategic allocation to U.S. municipal bonds

In conclusion, the addition of taxable municipal bonds may help improve the risk/return profile of a diversified fixed income portfolio. Lower correlations, incremental yield potential and the potential to generate alpha in a highly fragmented asset class all contribute positively to a portfolio's risk/return trade off. Over the last ten years, an allocation to taxable municipal bonds has improved the return per unit of risk on a portfolio of diversified U.S. bonds. We believe taxable-bond yields remain competitive and credit quality remains high; there are good fundamental reasons that we believe will allow credit ratings to remain relatively stable, and correlations to other fixed income sectors to remain low.

[1] 14th September 2017 the treatment for infrastructure corporates was published in the Official Journal of the EU, June 8, 2017.

[2] Solvency II Implications for Asian Life Insurers, Ernst & Young, Copyright 2011 EYGM Ltd. Please refer disclosure "Municipals as Liquid Infrastructure Investments Under Solvency II" for additional information.

About Risk:

All investments are subject to market risk and will fluctuate in value. Municipal bond risks include the ability of the issuer to repay the obligation, the relative lack of information about certain issuers, and the possibility of future tax and legislative changes, which could affect the market for and value of municipal securities. Investing in below investment grade securities may carry a greater risk of nonpayment of interest or principal than higher-rated securities. Bonds subject to interest rate risk and can lose principal value when interest rates rise. Bonds are also subject to credit risk which is the possibility that the bond issuer may fail to pay interest and principal in a timely manner.

Active management is the use of a human element, such as a single manager, co-managers or a team of managers, to actively manage a fund's portfolio. Active management strategies typically have higher fees than passive management.

Environmental, Social and Governance (ESG) managers may take into consideration factors beyond traditional financial information to select securities, which could result in relative investment performance deviating from other strategies or broad market benchmarks, depending on whether such sectors or investments are in or out of favor in the market. Further, ESG strategies may rely on certain values based criteria to eliminate exposures found in similar strategies or broad market benchmarks, which could also result in relative investment performance deviating. There is no assurance that employing ESG strategies will result in more favorable investment performance.

General disclosure

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Important disclosure

It is not possible to invest directly into an index.

Additional Information For Figure 1: U.S. Corp HY: ICE BofA U.S. High Yield Index; **Taxable Muni**: ICE BofA Taxable Municipal Index; **Emerging Mkts Sovereign**: ICE BofA Emerging Markets BBB & Lower Sovereign; **Emerging Mkts Corp**: ICE BofA Emerging Markets Corporate Plus Index; **U.S. Corp IG**: Bloomberg U.S. Corp. Investment Grade; **Leveraged Loan**: S&P/LSTA Leveraged Loan Index; **U.S. Agg**: Bloomberg U.S. Aggregate Index; **U.S. Securitized**: Bloomberg U.S. Securitized: MBS/ABS/CMBS; **U.S. Treasury**: Bloomberg U.S. Treasury Index; **Global Agg ex U.S.**: Bloomberg Aggregate Ex-U.S. Index.

Additional Information For Figure 3: MBS Index: Bloomberg U.S. Mortgage Backed Securities Index; **ABS Index:** Bloomberg U.S. Asset Backed Securities Index; **Credit Index:** Bloomberg U.S. Credit Index; **Treasury Index:** Bloomberg U.S. Treasury Index; **Agency Index:** Bloomberg U.S. Agency Index; **Municiapl Index:** Bloomberg Municipal Bond Index.

Additional Information For Figure 4: U.S. Treasury: ICE BofA U.S. Treasury Index; **U.S. Corp AA:** ICE BofA AA U.S. Corporate Index; **Taxable Muni:** ICE BofA Broad U.S. Taxable Municipal Securities Index; **Tax-Exempt Muni:** ICE BofA AA U.S. Municipal Securities Index.

Additional Information For Figure 9: U.S. Municipals: Bloomberg Taxable Municipal Index; **Global Corporate:** Bloomberg Global Corporate Index.

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Additional Information For Figure 6: U.S. Corporate HY: Bloomberg U.S. High Yield Index; **Pan-European Aggregate:** Bloomberg Pan-European Aggregate Index; **JPM GBI (World) USD:** J.P. Morgan Global Bond Index (GBI Global Unhedged USD); **U.S. Corporate IG:** Bloomberg U.S. Corporate Index; **U.S. Treasury:** Bloomberg U.S. Treasury Index; **U.S. Agg:** Bloomberg U.S. Aggregate Index; **Taxable Municipal IG:** Bloomberg Taxable Municipal Investment Grade Index.

Hypothetical Performance Disclosures This material contains hypothetical analysis based on the stated indices. The returns identified in Figure 10 reflect a backward looking analysis of the returns for each of the indices stated, with their stated weights, for the identified time period. Each Portfolio identified does not consider portfolio rebalancing, does not take into consideration any fees or expenses, is based on historical data for the stated time period and ending on July 31, 2020, and assumes denomination in U.S. dollar currency and is based on indices in which it is not possible to invest. MacKay Shields makes no representations that the identified portfolio allocation will actually reflect future results or that any investment will actually achieve results similar to those shown. These techniques do not predict future actual performance and are limited by assumptions that future market events will behave similarly to historical time periods or theoretical models.

Bloomberg Municipal High Yield Index is an unmanaged index of municipal bonds with the following characteristics: fixed coupon rate, credit rating of Ba1 or lower or non-rated using the middle rating of Moody's, S&P, and Fitch, outstanding par value of at least $3 million, and issued as part of a transaction of at least $20 million. In addition, the bonds must have a dated-date after December 31, 1990 and must be at least one year from their maturity date.

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

Bloomberg Municipal Investment Grade Bond Index is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. To be included in the index, bonds must be rated investment grade (Baa3/BBB- or higher) by at least two of the following agencies: Moody's, S&P, Fitch.

Bloomberg U.S. Aggregate Index represents securities that are SEC-registered, taxable, and dollar denominated. Must have at least one year to final maturity regardless of call features. Must have at least $300 million par amount outstanding. Must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. Must be dollar-denominated and non-convertible.

Bloomberg Global Aggregate - Corporate Index is a flagship measure of global investment grade, fixed-rate corporate debt. This multi-currency benchmark includes bonds from developed and emerging markets issuers within the industrial, utility and financial sectors.

Bloomberg Securitized MBS/ABS/CMBs Index tracks agency mortgage backed pass-through securities (both fixed-rate and hybrid ARM) guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC); investment grade debt asset backed securities; and investment grade commercial mortgage backed securities. The index is constructed by grouping individual pools into aggregates or generics based on program, coupon, and vintage.

Bloomberg U.S. Treasury Index measure the public obligations of the U.S. Treasury with a remaining maturity of one year or more. Must be a U.S. Treasury security. Must have at least $300 million par amount outstanding. Must be rated investment grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. Must be fixed rate. Must be dollar-denominated and non-convertible.

Bloomberg Aggregate ex-U.S. Index is a measure of global investment grade debt from 24 local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.

Bloomberg U.S. High Yield Index covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB+/BBB+ and below using the middle of Moody's, S&P, and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included. Original issue zeroes, step-up coupon structures, 144-As and pay-in-kind bonds (PIKs, as of October 1, 2009) are also included.

Bloomberg Pan-European Aggregate Index covers eligible investment grade securities from the entire European continent. The primary component is the Bloomberg Euro-Aggregate Index. In addition, the Bloomberg Pan-European Aggregate Index includes eligible securities denominated in British pounds (GBP), Swedish krona (SEK), Danish krone (DKK), Norwegian krone (NOK), Czech koruna (CZK), Hungarian forint (HUF), Polish zloty (PLN), Slovenian Tolar (SIT), Slovakian koruna (SKK), and Swiss franc (CHF). Apart from the currency constraint, the inclusion rules for the Pan-European Index are identical to those of the Bloomberg Euro-Aggregate Index.

Bloomberg U.S. Corporate Bond Index measures the investment grade, fixed-rate, taxable corporate bond market. It includes USD-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, and provided the necessary inclusion rules are met, U.S. Corporate Index securities also contribute to the multi-currency Global Aggregate Index.

Bloomberg U.S. Taxable Municipal Investment Grade Bond Index is a rules-based, market-value-weighted index engineered for the long-term taxable bond market. To be included in the index, bonds must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies if all three rate the bond: Moody's, S&P, Fitch.

Bloomberg U.S. Treasury: 5-10 Year Index measures U.S. dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury with 5-9.9999 years to maturity. Treasury bills are excluded by the maturity constraint, but are part of a separate Short Treasury Index.

Bloomberg U.S. Credit Index publicly issued U.S. corporate and specified foreign debentures and secured notes. Must be an investment grade credit security. Must have at least one year to final maturity regardless of call features. Must have at least $300 million par amount outstanding. Must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. Must be fixed rate. Must be dollar-denominated and non-convertible.

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Bloomberg U.S. Taxable Municipal Bond Index is a rules-based, market-value-weighted index engineered for the long-term taxable bond market. To be included in the index, bonds must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies if all three rate the bond: Moody's, S&P, Fitch.

ICE BofA U.S. High Yield Index tracks the performance of U.S. dollar denominated below investment grade corporate debt publicly issued in the U.S. domestic market. Qualifying securities must have a below investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date, a fixed coupon schedule and a minimum amount outstanding of $250 million.

ICE BofA U.S. Taxable Municipal Securities Index tracks the performance of U.S. dollar denominated investment grade taxable municipal securities publicly issued in the U.S. domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch).

ICE BofA Emerging Markets BBB & Lower Sovereign USD External Debt Index tracks the performance of U.S. dollar denominated emerging market and cross-over sovereign debt publicly issued in the eurobond or U.S. domestic market. Qualifying countries must have a BBB1 or lower foreign currency long-term sovereign debt rating (based on an average of Moody's, S&P and Fitch).

ICE BofA Emerging Markets Corporate Plus Index tracks the performance of U.S. dollar and euro denominated emerging markets non-sovereign debt publicly issued in the major domestic and eurobond markets. In order to qualify for inclusion in the Index an issuer must have risk exposure to countries other than members of the FX G10, all Western European countries, and territories of the U.S. and Western European countries.

ICE BofA U.S. Corporate Index tracks the performance of U.S. dollar denominated investment grade corporate debt publicly issued in the U.S. domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date, a fixed coupon schedule and a minimum amount outstanding of $250 million.

ICE BofA Broad U.S. Taxable Municipal Securities Index tracks the performance of U.S. dollar denominated debt publicly issued by U.S. states and territories, and their political subdivisions, in the U.S. domestic market. Qualifying securities must be subject to U.S. federal taxes and must have at least 18 months to maturity at point of issuance, at least one year remaining term to final maturity to enter the index and one month remaining term to final maturity to remain in the index, a fixed coupon schedule (including zero coupon bonds) and an investment grade rating (based on an average of Moody's, S&P and Fitch).

Bloomberg U.S. Asset Backed Securities Index

The index includes pass-through, bullet, and controlled amortization structures. Must have an average life of at least one year. Must have at least $500 million deal size and $25 million tranche size. Must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. Must be fixed rate. Must be the senior class, ERISA-eligible B or C tranche of the deal. Must belong to one of the following categories of asset-backed securities: Credit Card and Charge Card, Auto Loan, Utility.

Bloomberg U.S. Mortgage Backed Securities Index

The Bloomberg U.S. MBS Index covers the mortgage-backed pass-through securities of Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC). Must have a weighted average maturity (WAM) of at least one year. Must have at least $300 million par amount outstanding. Must be fixed rate.

Bloomberg U.S. Credit Index

Publicly issued U.S. corporate and specified foreign debentures and secured notes. Must be an investment grade credit security. Must have at least one year to final maturity regardless of call features. Must have at least $300 million par amount outstanding. Must be rated investment-grade (Baa3/ BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. Must be fixed rate. Must be dollar-denominated and non-convertible.

Bloomberg U.S. Agency Index

Publicly issued debt of U.S. Government agencies, quasi-federal corporations, and corporate or foreign debt guaranteed by the U.S. Government. Must be a U.S. Agency security. Must have at least one year to final maturity regardless of call features. Must have at least $300 million par amount outstanding. Must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. Must be fixed rate. Must be dollar-denominated and non-convertible.

Bloomberg U.S. Treasury Index

Public obligations of the U.S. Treasury with a remaining maturity of one year or more. Must be a U.S. Treasury security. Must have at least $300 million par amount outstanding. Must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. Must be fixed rate. Must be dollar-denominated and non-convertible.

ICE BofA U.S. Treasury Index tracks the performance of U.S. dollar denominated sovereign debt publicly issued by the U.S. government in its domestic market. Qualifying securities must have at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of $1 billion. Qualifying securities must have at least 18 months to final maturity at the time of issuance.

J.P. Morgan GBI series provides a comprehensive measure of local currency denominated fixed rate government debt consists of five core index products covering developed markets. The broadest series tracks 27 countries.

S&P/LSTA Leveraged Loan Index (the 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.

Alpha measures a fund's risk-adjusted performance and is expressed as an annualized percentage.

Correlation is a statistical measure that calculates the strength of the relationship between the relative movements of two variables. A correlation of -1.0 shows a perfect negative correlation, in which two variables move in exact opposite directions. A correlation of 1.0 shows a perfect positive correlation, in which two variables move in the same direction.

Capital charges is the cost of capital times the amount of invested capital. This capital charge is a dollar amount. By capital charge rate is just the cost of capital.

Callable and non-callable bonds: Callable bonds also come with a call date as part of the agreement, and the issuer is unable to call the bond until the predetermined date. Non-callable bonds, on the other hand, cannot be called until the date of maturity.

Diversification does not ensure a profit or protect against a loss in a declining market.

Standard deviation measures how widely dispersed returns have been over a specific period of time. A high standard deviation indicates that the range is wide, implying greater potential for volatility.

Yield to Worst is an estimate of the lowest yield that you can expect to earn from a bond when holding to maturity, absent a default. It is a measure that is used in place of yield to maturity with callable bonds. As callable bonds can be bought back before their stated maturity date, yield to maturity does not provide an accurate picture of what an investor can expect to earn.

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