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A NEW YORK LIFE INVESTMENTS COMPANY

INSIGHTS & PERSPECTIVES

MACKAY MUNICIPAL MANAGERS™

JANUARY 2025

US Taxable Municipal Bonds: Beyond the Basics

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

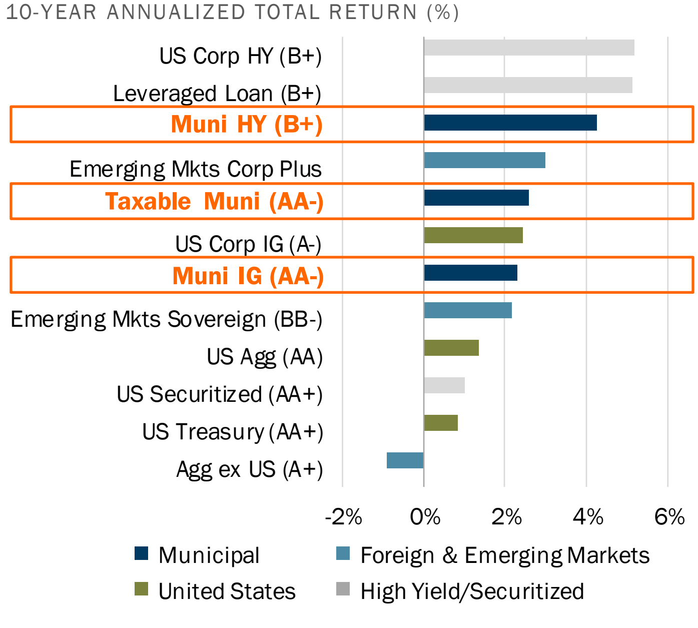
US retail investors have long dominated the US municipal bond market, but over the last decade institutional interest in the sector has soared, particularly outside the US. So far, these non-traditional investors have been rewarded. Over the last 10 years, municipal bonds have performed well (see Figure 1). Consequently, the taxable municipal sector's 2.6% annualized total return for the period outperformed the 2.4% return on US corporate investment-grade bonds, a staple in most institutional portfolios. 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.

New Interest in an Old Sector

Institutional interest in 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.[1] Over the past decade the market continued to grow, and today stands at approximately $800 billion[2].

FIGURE 1: MUNICIPAL BONDS HAVE HISTORICALLY PERFORMED WELL

10-YEAR ANNUALIZED TOTAL RETURN (%)



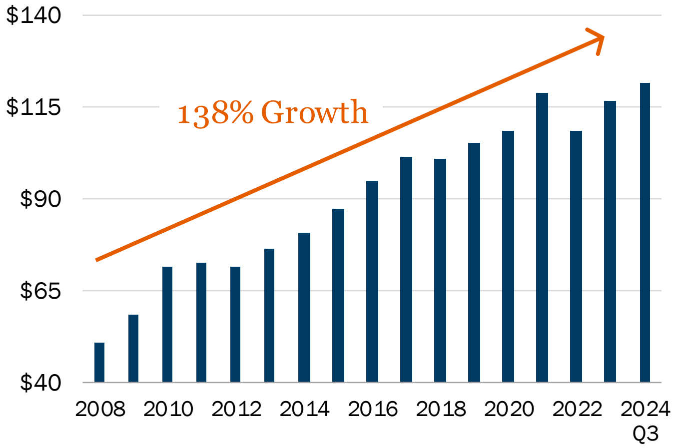
December 31, 2014 to December 31, 2024
Please see disclosures at the end of this document for additional information including index descriptions. The above returns represent those of certain indices. As the above represents index returns, no fees or expenses were included in the above results. **It is not possible to invest directly into an index. Past performance is not indicative of future results.**
Source: Bloomberg, ICE Data

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[3] have resulted in increased foreign demand of taxable municipals. Foreign ownership has more than doubled from $51 billion in 2008 to over $121 billion as of September 30, 2024. (see Figure 2).

1. SIFMA.org; U.S. Municipal Issuance
2. Bloomberg as of 12/31/2024.
3. Under Solvency II, capital requirements are determined on the basis of a 99.5% value-at-risk measure over one year, meaning that enough capital must be held to cover the market-consistent losses that may occur over the next year with a confidence level of 99.5%, resulting from changes in market values of assets held by insurers.

FIGURE 2: FOREIGN OWNERSHIP: 138% GROWTH

$US BILLIONS



Source: Federal Reserve Z.1 Statistical Release, 3Q 2024 Report

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 ratings of municipals versus other fixed income sectors.

In addition, non-US 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.[4] 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.[5] 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.

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 $4.2 trillion in outstanding bonds, municipal bonds make up nearly 10% of the value of the $46 trillion U.S. bond market. (Source: SIFMA as of Q3 2024)

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 over 40% of the municipal bonds outstanding. (Source: SIFMA as of 3Q 2024) 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.

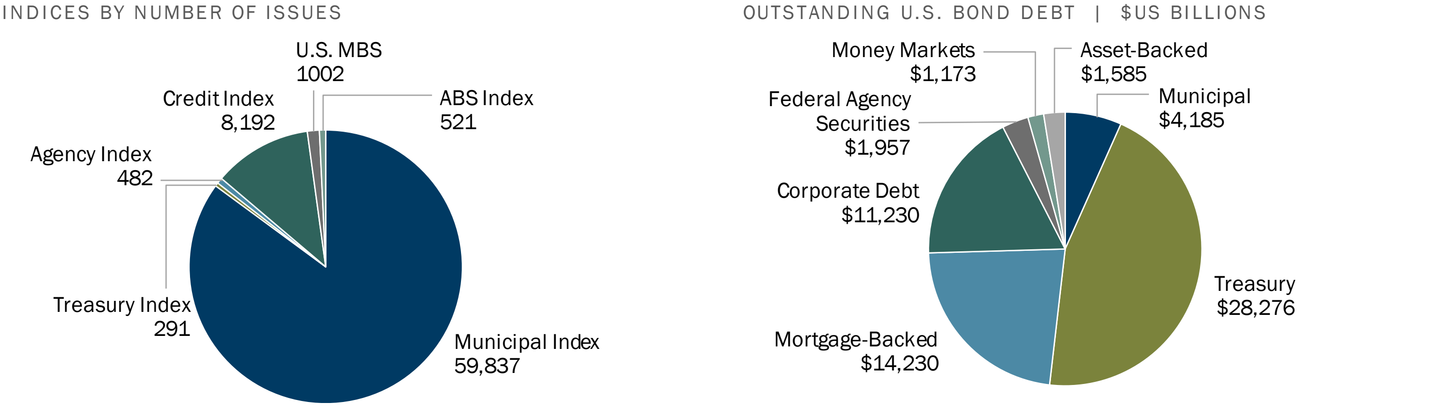
But not all muni bonds are tax-exempt: The U.S. tax code strictly limits the volume of tax-exempt municipal bonds for each of the thousands of issuers, and restricts the eligible purposes for issuing them. Issuers that need to issue more debt than allowed, or to fund a non-permitted purpose, tap the 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. Nearly $800 billion in taxable municipal bonds were outstanding as of December 31, 2024. (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.

Recently taxable issuance has been heavily constrained by several factors, including a higher than anticipated rates environment that has made taxable advance refundings less appealing as well as the strong financial state of many market issuers.

4. September 14, 2017 the treatment for infrastructure corporates was published in the Official Journal of the EU, June 8, 2017.
5. Solvency II Implications for Asian Life Insurers, Ernst & Young, Copyright 2011 EYGM Ltd. Please see first section in the Appendix "Municipals as Liquid Infrastructure Investments Under Solvency II" for additional information.

FIGURE 3: US$4.2 TRILLION U.S. MUNICIPAL BOND MARKET HAS OVER 7X THE AMOUNT OF ISSUES AS THE CORPORATE MARKET



Data as of December 31, 2024.
Source: Bloomberg

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 60,000 issuers, over 80% of all issuers in the total US bond index (see Figure 3). In contrast, the corporate bond market, with more than twice as much value, has far fewer issues: the corporate credit index includes less than 9,000. The Treasury market is huge, with over $28 trillion in value, but the index includes just 291 issues.

Market fragmentation, limited sell-side research and the prevalence of buy and hold investors often 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 Long Durations

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. Additionally, even in today's rising rate environment, Taxable municipal bonds have still maintained the yield advantage. In December 2024, yields on double-A (AA) rated taxable municipal bond of eight years or longer were 59 basis points higher than yields on comparable Treasuries (see Figure 4). Also evident is the yield advantage of Taxable Municipals over comparably rated US Corporates.

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 37% of taxable municipals outstanding have maturities of 10 to 20 years; another 22% are even longer (see 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 over the last five years, the breakdown has evolved. Approximately 2/3 of the taxable 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.

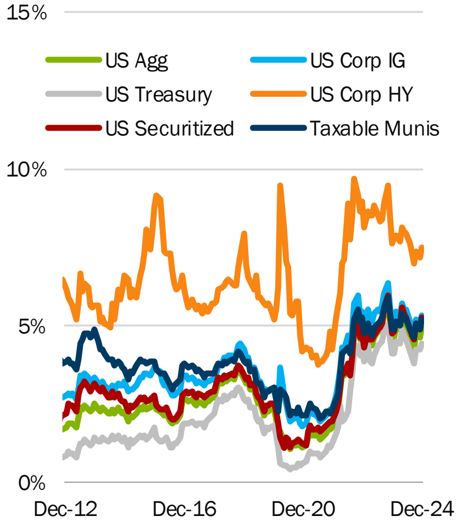
Low Correlations and Broad Diversification

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 (see 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 US Corporate bond master (ticker: LUACTRUU) has only three.

FIGURE 4: MUNICIPALS CAN PROVIDE ATTRACTIVE YIELDS

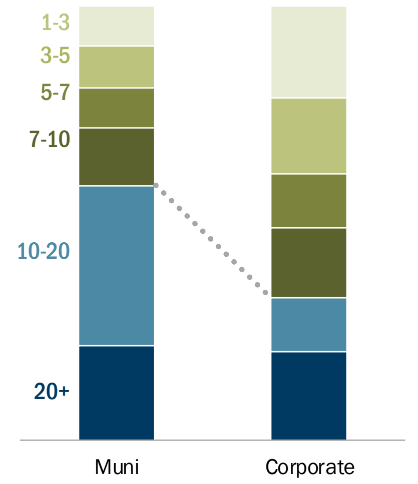
YIELD-TO-WORST



December 31, 2012–December 31, 2024
It is not possible to invest directly into an index.
Source: Bloomberg, ICE Data. See disclosures at the end of this document for additional information, including index descriptions.

FIGURE 5: MOST TAXABLE MUNICIPALS ARE INTERMEDIATE TO LONG BONDS

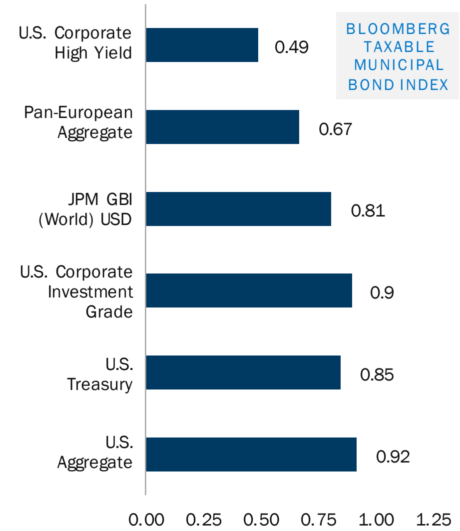
MATURITY DISTRIBUTION OF OUTSTANDING BONDS | IN YEARS



As of December 31, 2024
Source: Bloomberg, Bloomberg Municipal Index – Taxable Bonds, Bloomberg US Corporate Bond Index. See index definitions at the end of this document.

FIGURE 6: TAXABLE MUNIS DIVERSIFY OTHER BOND SECTORS

CORRELATION TO OTHER SECTORS

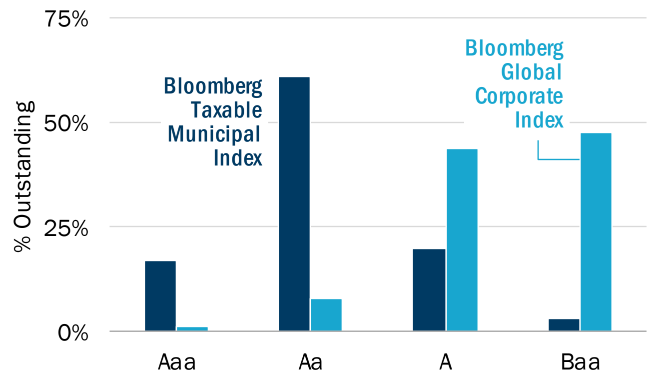


December 31, 2014 To December 31, 2024
It is not possible to invest directly into an index.
Source: Bloomberg and Credit Suisse.
See index definitions at the end of this document.

High 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. Approximately 60% of US municipal bonds outstanding are A rated or better; only a tiny portion are below investment-grade. In contrast, only about 8% of the global corporate bond market is double-A rated, and approximately 48% is triple-B rated (see Figure 7).

FIGURE 7: MOST TAXABLE MUNIS ARE HIGH QUALITY RATINGS DISTRIBUTIONS: TAXABLE MUNICIPAL VS. GLOBAL CORPORATE BONDS

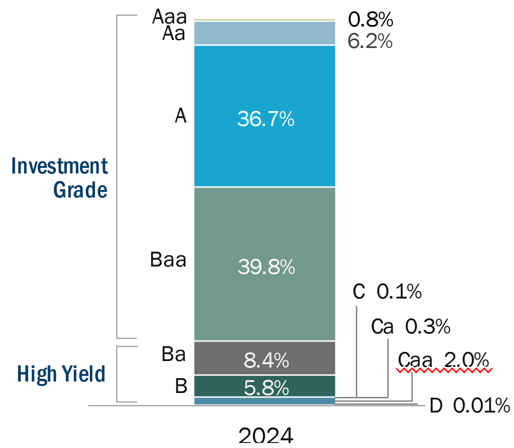


Data as of December 31, 2024
Taxable Municipals represented by ICE BofA Broad US Taxable Municipal Securities Index (TXMB). Global Corporates represented by Bloomberg Global Aggregate Corporates Index. See index definitions at the end of this document.
Source: Bloomberg.

As of the end of December 2024, the share of investment- grade US corporates with a triple-B rating was 40%, up from 22% ten years earlier (see 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 and would be forced to liquidate their holdings at inopportune times, pushing prices down further.

FIGURE 8: US CORPORATE CREDIT MARKET HAS CHANGED

RATINGS DISTRIBUTION | BLOOMBERG U.S. CORPORATE AGGREGATE AND U.S. HIGH YIELD



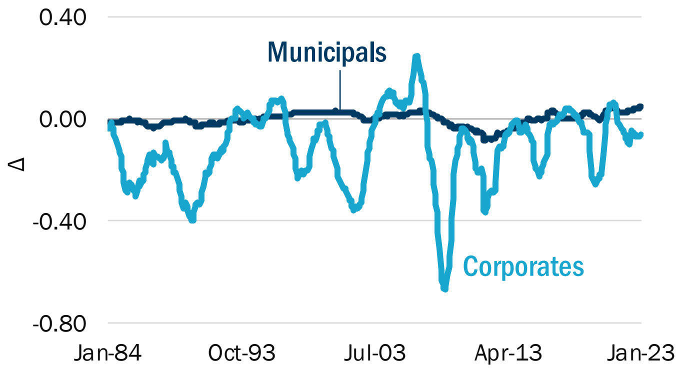
As of December 31, 2024
Please see Disclosures in the Appendix for additional information, including index descriptions. Due to rounding the sum of items may not equal 100%.
Source: High Yield: Bloomberg U.S. High Yield Index; Investment Grade: Bloomberg U.S. Corporate Aggregate

Historically, municipal bond ratings have been far more stable than corporate bond ratings, as Figure 9 shows. Why is this? 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 2014 is 0.06%, slightly down from the historical average of 0.08%, which dates back to 1970; meanwhile the average five-year global corporate default rate was 8.2% since 2014, up 120 basis points from its historical average of 7.0% since 1970. (Source: Moody's, US municipal bond defaults and recoveries, 1970-2023, data report, October 24, 2024.

FIGURE 9: MUNI RATINGS HAVE BEEN RELATIVELY STABLE MOODY'S RATING DRIFT 1984-2022 FOR U.S. MUNICIPALS AND GLOBAL CORPORATES



As of January 1, 2023
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: Moody's US Municipal Bond Defaults and Recoveries, Moody's Trends in Global Corporates Rating Transitions

Infrastructure Issuance and Opportunities

We expect strong issuance of taxable municipal bonds in the future. After decades of neglect, US infrastructure earned a C- on The American Society of Civil Engineers (ASCE)'s 2021 Infrastructure Report Card. Bringing US 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.

Making a Strategic Allocation to US Municipal Bonds

In conclusion, the addition of taxable municipal bonds can 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.

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.

FIGURE 10: ~$550B OVER 5 YEARS IN NEW FEDERAL SPENDING INCLUDES

TRANSPORTATION $321.5B

Roads & Bridges $110B	Passenger & Freight Rail $66B	Airports & Ports $42B
Highway & Pedestrian Safety $11B	Infrastructure Resilience $46B	Public Transit $39B
	Electric Vehicle Charging Stations $7.5B	

UTILITIES $138B

Updating Power Grid $73B
Broadband Access $65B

ENVIRONMENTAL $143B

Clean Water $55B	
Water Clean Up $21B	Waterways $17B
Resilience Funding Against Droughts and Floods $50B	

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.

Disclosures

ADDITIONAL INFORMATION FOR FIGURE 1

US Corp HY: ICE BoA US High Yield Index; Taxable Muni: ICE BoA Taxable Municipal Index; Muni HY: Bloomberg Municipal High Yield Index; Emerging Mkts Sovereign: ICE BoA Emerging Markets BBB & Lower Sovereign; Emerging Mkts Corp: ICE BoA Emerging Markets Corporate Plus Index; US Corp IG: Bloomberg US Corp. Investment Grade; Leveraged Loan: S&P/LSTA Leveraged Loan Index; Muni IG: Bloomberg Municipal Bond Index; US Agg: Bloomberg US Aggregate Bond Index; US Securitized: Bloomberg U.S. Securitized MBS/ABS/CMBS Index; US Treasury: Bloomberg US Treasury Index; Agg ex US: Bloomberg Global Aggregate ex USD Index.

ADDITIONAL INFORMATION FOR FIGURE 3

ABS Index: Bloomberg U.S Securitized MBS/ABS/CMBS Index
MBS Index: Bloomberg U.S Securitized MBS/ABS/CMBS Index
Credit Index: Bloomberg U.S. Credit Index
Agency Index: Bloomberg U.S. S Securitized MBS/ABS/CMBS Index
Treasury Index: Bloomberg U.S. Treasury Index
Municipal Index: Bloomberg Municipal Bond Index

ADDITIONAL INFORMATION FOR FIGURE 4

US Treasury: ICE BofA US Treasury Index
US Corp AA: ICE BofA AA US Corporate Index
Taxable Muni: ICE BofA Broad US Taxable Municipal Securities Index
Tax-Exempt Muni: ICE BofA US Municipal Securities Index

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: JPM GBI (World) USD Index
U.S. Corporate Investment Grade: Bloomberg U.S. Corporate Investment Grade Index
U.S. Treasury: Bloomberg U.S. Treasury Index
U.S. Aggregate: Bloomberg U.S. Aggregate Index
Taxable Municipal Investment Grade Index: Bloomberg U.S. Taxable Municipal Index

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ICE BOFA TAXABLE MUNICIPAL INDEX

ICE BofA U.S. Taxable Municipal Securities Index tracks the performance of U.S. dollar denominated investment grade taxable m unicipal 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). In addition, qualifying securities must have at least one-year remaining term to final maturity, at least 18 months to maturity at point of issuance, a fixed coupon schedule and a minimum amount outstanding of $250 million. Callable perpetual securities qualify provided they are at least one year from the first call date. Fixed-to-floating rate securities also qualify provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Original issue zero coupon bonds and ""global"" securities (debt issued simultaneously in the eurobond and U.S. domestic markets) qualify for inclusion in the Index. Tax-exempt U.S. municipal, 144a and securities in legal default are excluded from the Index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index.

BLOOMBERG MUNICIPAL HIGH YIELD INDEX

An unmanaged index of smunicipal 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 le ast $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.

ICE BOFA EMERGING MARKETS BBB & LOWER SOVEREIGN

ICE BofA 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). Countries that are not rated, or that are rated "D" or "SD" by one or severa l rating agencies qualify for inclusion in the index but individual non-performing securities are removed. Qualifying securities must have at least one year remaining term to final maturity, at least 18 months to maturity at point of issuance, a fixed or floating coupon and a minimum amount outstanding of $250 million . Local currency debt is excluded from the Index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of th e month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index.

ICE BOFA EMERGING MARKETS CORPORATE PLUS INDEX

ICE BofA Emerging Markets Corporate Plus Index tracks the performance of U.S. dollar and euro denominated emerging markets no n-sovereign debt publicly issued in the major domestic and eurobond markets. In order to qualify for inclusion in the Index an issu er 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. The FX-G10 includes all Euro members, the U.S., Japan, the U.K., Canada, Australia, New Zealand, Switzerland, Norway and Sweden. Individual securities of qualifying issuers must be denominated in U.S. dollars or euro, must have at least one year remaining term to final maturity, at least 18 months to final maturity at p oint of issuance, and a fixed coupon. In addition, bonds of qualifying issuers must have at least 250 million (EUR or USD) in outstanding face value. The index inc ludes corporate and quasigovernment debt of qualifying countries, but excludes sovereign and supranational debt. Origi nal issue zero coupon bonds, ""global"" securities (debt issued simultaneously in the eurobond and U.S. domestic bond markets), 144a securities and pay-in-kind securities, including toggle notes, qualify for inclusion in the Index. Contingent capital securities ("cocos") are excluded, but capital securities where conversion can be mandated by a regulatory authority, but which have no specified trigger, are included. Other hybrid capital securities, such as those issues that potentially convert into preference shares, those with both cumulative and non-cumulative coupon deferral provisions, and those with alternative coupon satisfaction mechanisms, are also included in the in dex. Callable perpetual securities qualify provided they are at least one year from the first call date. Fixed-to-floating rate securities also qualify provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Central bank issued, equity-linked and legally defaulted securities are excluded from the index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the ind ex.

BLOOMBERG U.S. CORPORATE INVESTMENT GRADE INDEX

The 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.

S&P/LSTA LEVERAGED LOAN INDEX

The 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.

BLOOMBERG MUNICIPAL BOND INDEX

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. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. They must have an outstanding par value of at least $7 million and be issued as part of a transaction of at least $75 million. The bonds must be fixed rate, have a date-date after December 31, 1990, and must be at least one year from their maturity date. Remarketed issues, taxable municipal bonds, bonds with floating rates, and derivatives, are excluded from the benchmark. The index has four main sectors: general obligation bonds, revenue bonds, ins ured bonds (including all insured bonds with a Aaa/AAA rating), and prerefunded bonds. Most of the index has historical data to January 1980. In addition, sub-indices have been created based on maturity, state, sector, quality, and revenue source, with inception dates later than January 1980.

BLOOMBERG U.S. AGGREGATE BOND INDEX

The 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 b e 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 U.S. SECURITIZED MBS/ABS/CMBS INDEX

The 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 progra m, coupon, and vintage.

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.

BLOOMBERG GLOBAL AGGREGATE EX USD INDEX

The Bloomberg Global Aggregate ex USD 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. Bond issued in USD are excluded.

ICE BOFA U.S. TREASURY INDEX

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. Callable perpetual securities qualify provided they are at least one year from the first call date. Fixed-to-floating rate securities also qualify provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Bills, inflation-linked debt and strips are excluded from the Index; however, original issue zero coupon bonds are included in the index and the amounts outstanding of qualifying coupon securities are not reduced by any portions that have been stripped. Securities issued or marketed primarily to retail investors do not qualify for inclusion in the index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index.

ICE BOFA AA U.S. CORPORATE INDEX

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. Original issue zero coupon bonds, 144a securities (with and without registration rights), and pay-in-kind securities (including toggle notes) are included in the index. Callable perpetual securities are included provided they are at least one year from the first call date. Fixed-to-floating rate securities are included provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Contingent capital securities (“cocos”) are excluded, but capital securities where conversion can be mandated by a regulatory authority, but which have no specified trigger, are included. Other hybrid capital securities, such as those issues that potentially convert into preference shares, those with both cumulative and non-cumulative coupon deferral provisions, and those with alternative coupon satisfaction mechanisms, are also included in the index. Equity-linked securities, securities in legal default, hybrid securitized corporates, euro dollar bonds (USD securities not issued in the U.S. domestic market), taxable and tax-exempt U.S. municipal securities and DRD-eligible securities are excluded from the index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index.

ICE BOFA BROAD U.S. TAXABLE MUNICIPAL SECURITIES INDEX

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). The call date on which a pre-refunded bond will be redeemed is used for purposes of determining qualification with respect to final maturity requirements. Minimum size requirements vary based on the initial term to final maturity at time of issuance. Securities with an initial term to final maturity greater than or equal to one year and less than five years must have a current amount outstanding of at least $10 million. Securities with an initial term to final maturity greater than or equal to five years and less than ten years must have a current amount outstanding of at least $15 million. Securities with an initial term to final maturity of ten years or more must have a current amount outstanding of at least $25 million. “Direct pay” Build America Bonds (i.e., a direct federal subsidy is paid to the issuer) qualify for inclusion in the index, but “tax-credit” Build America Bonds (i.e., where the investor receives a tax credit on the interest payments) do not. Local bonds issued by U.S. territories within their jurisdictions that are tax exempt within the U.S. territory but not elsewhere are excluded from the Index. All 144a securities, both with and without registration rights, and securities in legal default are excluded from the Index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index.

ICE BOFA U.S. MUNICIPAL SECURITIES INDEX

ICE BofA U.S. Municipal Securities Index tracks the performance of U.S. dollar denominated investment grade tax exempt debt publicly issued by U.S. states and territories, and their political subdivisions, in the U.S. domestic market. Qualifying securities must have at least one year remaining term to final maturity, at least 18 months to final maturity at the time of issuance, a fixed coupon schedule and an investment grade rating (based on an average of Moody’s, S&P and Fitch). Minimum size requirements vary based on the initial term to final maturity at time of issuance. Securities with an initial term to final maturity greater than or equal to one year and less than five years must have a current amount outstanding of at least $10 million. Securities with an initial term to final maturity greater than or equal to five years and less than ten years must have a current amount outstanding of at least $15 million. Securities with an initial term to final maturity of ten years or more must have a current amount outstanding of at least $25 million. The call date on which a pre-refunded bond will be redeemed is used for purposes of determining qualification with respect to final maturity requirements. Original issue zero coupon bonds are included in the Index. Taxable municipal securities, 144a securities and securities in legal default are excluded from the Index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index.

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 korun a (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.

JPM GBI (WORLD) USD

The 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.

BLOOMBERG U.S. TAXABLE MUNICIPAL INDEX

The 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. If only two of the three agencies rate the security, the lower rating is used to determine index eligibi lity. If only one of the three agencies rates a security, the rating must be investment-grade. They must have an outstanding par value of at least $7 million and be issued as part of a transaction of at least $75 million. The bonds must be fixed rate and must be at least one year from their maturity date. Remarketed issues (un less converted to fixed rate), bonds with floating rates, and derivatives, are excluded from the benchmark.

BLOOMBERG US TREASURY: INTERMEDIATE INDEX

The Bloomberg US Treasury: Intermediate Index measures US dollar-denominated, fixed-rate, nominal debt issued by the US Treasury with maturities of 1 to 9.9999 years to maturity.

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 outstan ding. 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. CORPORATE HIGH YIELD INDEX

The 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 Fi tch) 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. Must have at least one year to final maturity regardless of call features. Must have at least $150 million par amount outstanding. Must be rated high-yield (Ba1/BB+ or lower) by at least two of the following ratings agencies: Moody's, S&P, Fitch. Must be fixed rate, a lthough it can carry a coupon that steps up or changes according to a predetermined schedule. Must be dollar-denominated and non-convertible. Must be publicly issued.

BLOOMBERG U.S. TAXABLE MUNICIPAL INDEX

The 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. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. They must have an outstanding par value of at least $7 million and be issued as part of a transaction of at least $75 million. The bonds must be fixed rate and must be at least one year from their maturity date. Remarketed issues (unless converted to f ixed rate), bonds with floating rates, and derivatives, are excluded from the benchmark.