May 2021

Invesco

Investment Insights | Invesco Fixed Income

US municipal bonds can be considered a natural fit for ESG investment

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Overview

- Many of the ideals of responsible investing are embedded in US municipal bonds.
- Municipal bonds can help European investors meet ESG investment objectives while at the same time providing attractive yields and potential advantages under Solvency II.
- The Invesco Fixed Income Municipal team has managed assets using an integrated ESG and impact investment approach since 2013.

When seeking to build an ESG-focused portfolio, fixed income investors often look first to the corporate sector. The corporate sector offers plentiful data and information and ESG ratings on specific securities. While the US municipal sector tends to be less widely recognized in the ESG investing space, many of the ideals of responsible investing are embedded in most US municipal bonds (from here, referred to as municipal bonds). Invesco Fixed Income believes this natural alignment provides an opportunity for investors to combine potentially robust returns with environmental, social, and governance (ESG) goals.

We know many of our European clients have clear ESG goals. We are also mindful that our European insurance clients are working to adhere to the Solvency II directive. This paper explains how municipal bonds can help European investors meet ESG investment objectives while at the same time offering attractive yields and potential advantages under Solvency II. Because municipal issuers focus on social services and community-based projects, municipal bonds can be considered in many ways "a natural fit" with ESG investing. At the same time, taxable municipals can offer attractive relative value versus corporate bonds (even after hedging costs) and higher capital-adjusted yields compared to other types of bonds under Solvency II.

Municipal financing supports ESG goals

The USD3.8 trillion municipal bond market is a vital source of funding for many projects across the US. Municipal debt proceeds often contribute to social and environmental improvements, such as the development and maintenance of physical infrastructure (water and sewers, bridges, mass transit, roads and bridges) and social infrastructure (education and health care). In general, the integration of ESG metrics into the municipal investment process allows security selection among issuers that provide clean, affordable, and equitable services.

Municipals: ESG features and benefits

Municipal bonds often finance projects devoted to services and infrastructure intended to improve communities and the lives of residents.

The social and environmental outcomes of municipal bond financings are often measurable and significant, a win for many ESG investors seeking impact.

Taxpayers benefit from municipal bonds through tax exemptions and issuing governments through reduced financing costs.

Municipal projects are inherently ESG-oriented

The municipal asset class is broad and comprises various sectors, including state and local governments, water and sewer operations, public power, health care, and transportation. In many sectors, issuers have been focused on reducing carbon emissions for years, especially state and local governments. The state of California, for example, supports one of the most ambitious climate change programs and goals in the country. Enacted legislation includes the reduction of greenhouse gas emissions to 40% below 1990 levels by 2030. Several states are also participating in so-called "cap and trade" initiatives, such as the Regional Greenhouse Gas Initiative or RGGI.[1] RGGI participants seek to reduce CO2 emissions from power plants by requiring them to acquire CO2 allowances through auctions.

Institutions of higher education have also become involved in reducing carbon emissions. According to the Environmental and Energy Study Institute, as of 2009, 650 higher education institutions had signed the American College and University Presidents' Climate Commitment, through which higher education leaders pledged to achieve emission reductions and carbon neutrality.[2] According to Second Nature, 10 colleges and universities had achieved carbon neutrality as of the end of 2020.[3]

These are just a few examples of how municipal issuers have focused on reducing carbon emissions. We expect more to follow suit, especially given the severe impact of natural disasters on so many US cities and states in recent years.

In addition to environmental considerations, the municipal asset class generally seeks to ensure that its activities and operations are socially and governmentally responsible. One of the primary missions of public K-12 schools, for example, is to provide quality education to all residents. Water and sewer systems and public power utilities provide essential services to residents at a relatively affordable cost, with rates intended to cover operating costs versus to generate returns. Municipal issuers are also increasingly focused on improved governance. This includes adopting the Governmental Accounting Standards Board's best practices for accounting and financial reporting and budgeting practices and providing frequent financial and operating disclosures. In addition, state and local governments have made efforts to improve pension funding, a long-term liability that has been historically neglected.

Municipal entities also issue bonds to help achieve certain social objectives. Common projects or initiatives funded with these social bonds include affordable housing, education, and job creation. The state of Michigan's Strategic Fund, administered by the Michigan Economic Development Corporation, for example, issues bonds to fund initiatives to promote long-term prosperity and employment, including promoting the skilled trades.

Invesco and ESG

Invesco is committed to adopting and implementing responsible investment principles in a manner consistent with our fiduciary responsibilities to our clients. We have strengthened our position in this regard in several ways, including through industry advocacy, leadership, and innovation. Invesco became a signatory to the UN-backed Principles for Responsible Investment in 2013 and has since achieved an A+/A rating in each of the six principles for incorporating ESG into our investment practices. We are also disclosers to the Carbon Disclosure Project and supporters of the Task Force for Climate-Related Financial Disclosure.

Invesco Fixed Income, ESG integration, and better long-term risk-adjusted return potential

Invesco Fixed Income has managed ESG-aware portfolios for more than two decades, and our approach has evolved over time. While exclusion-based screening once dominated ESG integration, it has been gradually replaced with or augmented by positive, best-in-class guided mandates.

Whether applied to a state that prizes public health, a city that raises employment rates, or a utility that maximizes renewable energy sources, we believe ESG metrics can serve as leading indicators of a municipality's future prosperity, resulting in better potential long-term, risk-adjusted returns for investors. With this in mind, we look for a combination of "materiality" and "momentum." Materiality means accounting for ESG considerations that will likely have a significant impact on an issuer's ability to meet its debt obligations. Momentum means determining which issuers are outpacing their peers in making progress toward ESG considerations.

Invesco Fixed Income encourages momentum by engaging with issuers. We work with Invesco's Global ESG team and other experts to provide our views on matters such as corporate strategy, transparency, capital allocation, and ESG concerns. In keeping with Invesco's overall approach, we view active ownership as a critical element of our fiduciary responsibilities.

ESG analysis tailored to municipals

Because the municipal asset class composes many different sectors, Invesco Fixed Income identifies ESG-related risk factors for each sector. This allows our analysts to compare issuers within the same sector to uncover best-in-class opportunities. Among the large number of potential risk factors, we identify and gather data about risks that could have a material impact on an issuer's ability and willingness to repay debt obligations. Direct engagement is also central to our approach since it enables analysts to learn more about how issuers view risk factors and how they intend to address them in the future. Once data points have been gathered, individual E, S, and G scores are computed, along with an overall ESG score. ESG momentum is also captured through trend assessments. As with our corporate research, this information is stored on the Invesco Fixed Income research platform, allowing portfolio managers across asset classes to easily access it.

Figure 1: Example of ESG-related risk factors

ESG scoring methodology focuses on ESG-related issues that could ultimately impact quality of life of current and future residents.

Poor air quality can negatively impact quality of life and result in population loss; could also increase health care costs and business costs due to more stringent environmental regulations.

Poor quality of education can result in population loss and reduce its attractiveness for existing or future employers.

Poor budgeting practices can result in unexpected budget deficits, which could result in rating downgrades and higher borrowing costs; pension liabilities are long-term liabilities that could impair financial performance and weaken issuers' budgetary flexibility.

States	Public power
• Low carbon energy generation • Average household carbon footprint • CO2 per capita	• Production/generation - % from coal • Renewable energy development program
• Graduation rates • Test score average • Affordability	• Energy conservation program
• Budgeting practices • Pensions and other post-employment benefits	• Cyber security plan • Board diversity

Health care	Cities
• Average age of hospitals in the system	• CO2 emissions targets/policies
• Average hospital quality rating • Average hospital Case Mix Index • Medicaid as percent of net patient revenue	• Livability score • Quality of schools • Crime • Affordability
• Board diversity • Pension funding ratio	

For illustrative purposes only.

Municipals as an investment solution

In addition to satisfying ESG considerations, municipal bonds provide potential solutions for a range of EMEA investors. Insurers can take advantage of municipals' favorable liability-matching features, for example, and investors seeking relative value versus European corporate bonds (even after hedging costs), may consider municipals (Figure 2).

Figure 2: British pound and euro-hedged gross yields

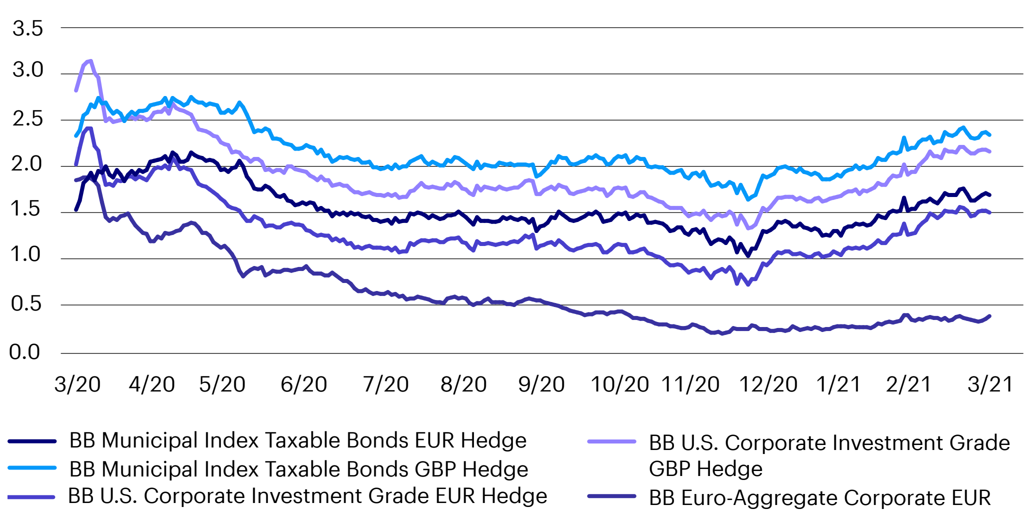
Index	Yield – hedged (%)	Duration	Moody's rating
British pound-hedged			
Bloomberg Barclays U.S. Treasury	0.9	6.8	Aaa
Bloomberg Barclays Municipal Index Taxable Bonds	2.1	9.4	Aa2/Aa3
Bloomberg Barclays U.S. Corporate Investment Grade	2.1	8.5	A3/Baa1
Bloomberg Barclays Euro-Aggregate: Corporate	1.6	5.2	A3/Baa1
Bloomberg Barclays Sterling Aggregate: Corporate	2.2	8.5	A3/Baa1
Euro-hedged			
Bloomberg Barclays U.S. Treasury	0.0	6.8	Aaa
Bloomberg Barclays Municipal Index Taxable Bonds	1.0	9.4	Aa2/Aa3
Bloomberg Barclays U.S. Corporate Investment Grade	1.1	8.5	A3/Baa1
Bloomberg Barclays Euro-Aggregate: Corporate	0.6	5.2	A3/Baa1
Bloomberg Barclays Sterling Aggregate: Corporate	1.1	8.5	A3/Baa1

Source: Invesco Vision, gross yields as of February 28, 2021.

Why consider taxable municipal bonds

In the US, municipal bond interest payments are traditionally exempt from federal income taxes and, sometimes, state income taxes for domestic investors. For investors who do not pay US taxes, these tax features might be considered a drawback since nominal yields may be driven down by investors who can utilize tax deductions. This is why non-US investors typically focus on taxable municipal issues. Since income from such bonds is taxable, they have tended to trade at a higher yield than tax-exempt municipals, as shown in Figure 3. Figure 4 shows yields on taxable municipal bonds are often comparable to yields on bonds issued by other taxable entities, such as corporate issuers.

Figure 3: Historical yield comparison – municipals versus alternative investments (%)



Sources: Bloomberg L.P. Bloomberg Barclays Indices. Data from March 31, 2020, to March 31, 2021.

Figure 4: Yield and risk profile comparison – municipals versus alternative investments

Index	Yield	Duration	Credit quality
Bloomberg Barclays Municipal Index Taxable Bonds Total Return Index Value	2.32	9.79	AA2/AA3
BB Municipal Index Taxable Bonds EUR Hedge	1.53	9.79	AA2/AA3
BB Municipal Index Taxable Bonds GBP Hedge	2.19	9.79	AA2/AA3
BB U.S. Corporate Investment Grade	2.14	8.61	A3/BAA1
BB U.S. Corporate Investment Grade EUR Hedge	1.35	5.36	A3/BAA1
BB U.S. Corporate Investment Grade GBP Hedge	2.01	5.36	A3/BAA1
BB Euro-Aggregate Corporate	0.38	7.68	A3/BAA1

Source: Bloomberg L.P. Data as of March 31, 2021.

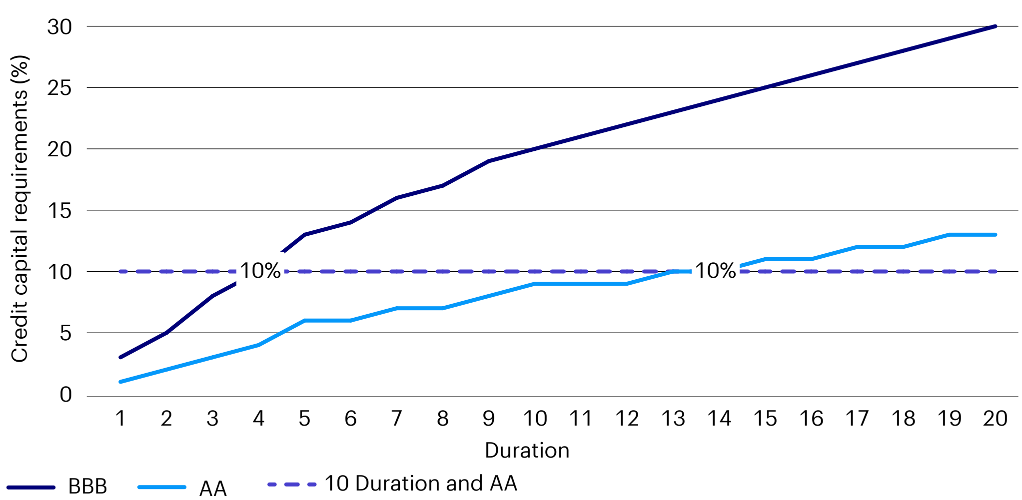
Municipal bonds for insurers

There are many features of typical municipal bonds that make them particularly worthy of consideration among insurers for matching long-term liabilities. Attractive features include lower default rates, higher recovery rates, and predictable long-term income. Whereas corporate credits tend to have lower average credit ratings, most US state and local governments are highly rated. Roughly 98% of US municipal issuers rated by Moody's are currently rated investment grade.[4] By comparison, only 52% of global corporate issuers are rated investment grade.[4] Accordingly, it comes as no surprise that municipal default rates have been exceptionally low, especially when compared to US corporate bonds.

Solvency II and US municipal bonds

Since January 2016, European-based insurers have been subject to Solvency II and its capital requirements. Due to the impact of credit ratings on the calculation of the spread risk charge, municipals' high-quality profile may be attractive for insurers regulated under Solvency II. This is especially true for insurers searching for "cheap" sources of duration to match longer-dated liabilities since the credit rating is a key input into the calculation of credit spread capital requirements under Solvency II. For example, a BBB bond with a duration of four years is equivalent to a AA bond with a duration of 13 years (Figure 5).

Figure 5: Solvency II credit spread capital requirements



Source: Solvency II Delegated Acts (European Commission).

Invesco Fixed Income Municipal team — expertise and experience

The Invesco Fixed Income Municipal team has been managing assets using a proprietary impact and ESG scoring system since 2013. Proprietary credit research and risk management form the foundation of our investment process. The expertise of our deep and experienced team of investment professionals spans the entire municipal investment universe. The team maintains an integrated, team-based investment process that combines the strength of our fundamental credit research with the market knowledge and investment experience of our portfolio managers.

Additional benefits may be obtained with taxable municipals. Because taxable municipal bonds typically pay higher yields than equivalently rated public credit or corporate bonds, expected capital-adjusted returns are higher versus other types of bonds. This is true even if taxable municipal bonds are treated as US dollar-denominated corporate bonds under Solvency II (which is a popular approach used by some insurers).

The low historical default rate of US municipal bonds compared to corporate bonds with equivalent credit quality is especially important for insurers searching for a "profitable" source of duration to match longer-term liabilities. Municipals' well-documented lower default rate is key for insurers using the matching adjustment (UK and Spain). Thanks to this low historical default rate, a low fundamental spread could be estimated by matching adjustment users. The key takeaway is that US taxable municipal bonds exhibit higher expected returns on solvency capital requirement (RoSCR) and capital-adjusted yields than other types of bonds (Figure 6).

Figure 6: Regulatory capital-adjusted yields (hedged)

Index	Yield – hedged (%)	Duration	Moody's rating	Credit spread SCR (%)	RoSCR (%)	Yield – CoC (%)
British pound-hedged						
Bloomberg Barclays U.S. Treasury	0.9	6.8	Aaa	0.0	NA	0.9
Bloomberg Barclays Municipal Index Taxable Bonds	2.1	9.4	Aa2/ Aa3	9.2	22.3	1.1
Bloomberg Barclays U.S. Corporate Investment Grade	2.1	8.5	A3/ Baa1	12.8	16.7	0.9
Bloomberg Barclays Euro-Aggregate: Corporates	1.6	5.2	A3/ Baa1	9.8	16.3	0.6
Bloomberg Barclays Sterling Aggregate: Corporate	2.2	8.5	A3/ Baa1	13.0	16.9	0.9
Euro-hedged						
Bloomberg Barclays U.S. Treasury	0.0	6.8	Aaa	0.0	NA	0.0
Bloomberg Barclays Municipal Index Taxable Bonds	1.0	9.4	Aa2/ Aa3	9.2	10.8	0.1
Bloomberg Barclays U.S. Corporate Investment Grade	1.1	8.5	A3/ Baa1	12.8	8.6	-0.2
Bloomberg Barclays Euro-Aggregate: Corporates	0.6	5.2	A3/ Baa1	9.8	6.1	-0.4
Bloomberg Barclays Sterling Aggregate: Corporate	1.1	8.5	A3/ Baa1	13.0	8.5	-0.2

Source: Invesco Vision, gross yields as of February 28, 2021. CoC: Cost Regulatory Capital calculated as 10% of Credit Spread Capital Requirements (10% Required RoE; 100% solvency assumption). RoSCR: Return on Credit Spread Capital Requirements (10% Required RoE; 100% solvency assumption).

Conclusion

Invesco Fixed Income believes municipal bonds offer inherent alignment to ESG principles and can help European investors meet their responsible investing objectives. At the same time, they offer valuable investment solutions, including liability matching and the potential to achieve attractive returns under Solvency II. Taxable municipals may be especially attractive to European investors, given their yield advantage over tax-exempt municipals and favorable characteristics versus many corporate bonds.

Invesco Fixed Income believes sustainable investing can be a powerful tool for change, and municipal bonds can play an important role in ESG investment portfolios. Because universal ESG rating standards are not available for the municipal asset class, we believe the expertise of proven municipal bond portfolio managers is critical in identifying the best opportunities.

1. A "cap" is a limit on levels of pollution. "Trade" refers to the market-based approach of controlling pollution in which a central authority allocates or sells a limited number of permits that allow the discharge of a specific quantity of a specific pollutant over a set time period.
2. Source: What We Can Learn from Colleges and Universities Meeting Their Net Carbon Neutral Goals | Article | Environmental and Energy Study Institute, May 2020.
3. Source: Carbon Neutral Colleges and Universities (secondnature.org), April 2021.
4. Source: Moody's Investor Service, July 15, 2020.

About risk

The value of investments and any income will fluctuate (this may partly be the result of exchange rate fluctuations), and investors may not get back the full amount invested. Past performance is not a guide to future returns.

Fixed income investments are subject to credit risk of the issuer and the effects of changing interest rates. Interest rate risk refers to the risk that bond prices generally fall as interest rates rise and vice versa. An issuer may be unable to meet interest and/or principal payments, thereby causing its instruments to decrease in value and lowering the issuer's credit rating.

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