# Sustainable Investing in Fixed Income

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## Introduction

The global market for "sustainable" fixed-income securities is estimated at over $1 trillion[1] and growing. It includes corporate, municipal, sovereign, and securitized bonds issued to finance businesses, infrastructure and projects designed to have positive environmental and social impact. The purpose of this paper is to explain TIFF's approach to sustainable fixed-income and how we are tapping into this opportunity set.

TIFF launched dedicated sustainability strategies in July of 2020. The dual mandate of these sustainability strategies is to seek investment returns in excess of CPI + 5% over market cycles while maximizing positive environmental and social impact. These strategies employ the same time-tested investment process that TIFF has used to manage capital for non-profits for thirty years, relying on superior manager selection across public equities, diversifying strategies, and fixed income. There are some modest but important differences in how we construct the sustainability portfolios, relative to TIFF's other comprehensive solutions, including how we manage fixed income.

Given historically low interest rates and credit spreads[2] globally, TIFF maintains a low duration[3] portfolio of Treasuries and Treasury inflation-protected securities (TIPS) in the fixed-income portion of most of our comprehensive portfolios (fixed income represents approximately 15% of these portfolios). An exception is in our sustainability portfolios where we seek opportunities to generate meaningful and transparent positive impact and obtain modestly increased yields in exchange for investment grade[4] credit risk. Because Treasuries and TIPs do not offer positive impact, in our view, a portion, not all, of the 15% fixed-income allocation in the sustainability portfolios is invested in investment grade sustainable fixed-income.

## Types of Sustainable Bonds

There are several ways to generate positive impact in investment grade credit. One is by investing in corporate green bonds, which include bonds issued by companies whose sole or primary business is related to sustainable development, such as renewable energy, energy efficiency or wastewater treatment businesses. Green bonds also include those issued by businesses seeking to improve their sustainability profiles, for example a utility financing the replacement of fossil fuels with renewable energy to generate electricity, a coffee company building out an organic farming value chain and providing education and loans to farmers, or a food and beverage company increasing its suite of healthy products. These bonds are typically used to fund specific projects but are supported by the balance sheet and cash flows of the parent company.

[1] BBVA Global Markets Research.

[2] Credit spread: the extra yield one receives for investing in fixed-income securities that are not risk-free like US Treasuries.

[3] Duration: the number of years to maturity of bonds; lower duration portfolios have lower sensitivity to changes in interest rates.

[4] Credit risk is measured on a spectrum. There are various levels of investment grade and high yield risk. Investment grade is typically riskier than Treasuries and less risky than high yield.

> **Types of Sustainable Bonds**
>
> - Corporate green bonds
> - Taxable municipal bonds focused on underserved communities
> - Mortgage-backed securities backed by loans to low and middle-income borrowers
> - Government-backed development bonds

A second credit sector offering opportunity for positive impact with low credit risk is the taxable municipal bond sector. This includes bonds issued to build schools, hospitals, and critical infrastructure, with a focus on underserved communities. In some cases, these bonds are backed by the full faith and credit of the municipalities. Another area of opportunity is securitized credit, including pools of mortgages lent by government-sponsored entities, including "Ginnie Mae" (the Government National Mortgage Association), to low and middle-income borrowers. These securities often support the development of affordable housing and bear little or no credit risk, as they receive full or significant backing from the US government. Lastly, sovereign governments, government-backed entities and development banks issue green and social bonds to finance sustainable development in specific countries around the world.

## Measuring Impact

Active sustainable fixed-income managers evaluate impact through an analysis of each bond's "use of proceeds" (the specific projects being financed by the bonds) and by monitoring impact KPIs (key performance indicators). Use of proceeds is typically spelled out clearly in bond offering documents, and KPIs align with the use of proceeds. For example, the impact attributed to bonds issued to build renewable generation may be measured in tons of carbon emissions avoided or megawatts of renewable capacity added. Impact KPIs for bonds issued to finance affordable housing and community development may include number of affordable housing units built, number of affordable mortgages guaranteed, community facilities built, or jobs created. Because use of proceeds tends to be clear and transparent, active managers can target investments in particular sustainability themes, such as affordable housing, financial inclusion, and climate change; they can also target specific **United Nations Sustainable Development Goals** (UN SDGs) and report on progress on impact KPIs.

## Managing for Impact and Bond Characteristics

The duration of the fixed-income allocation in the sustainability portfolios is approximately six years, consistent with the benchmark. This compares to duration of about two to three years in the fixed-income portion of TIFF's other comprehensive portfolios. The higher the duration, the more bond prices will decline in a rising rate environment; with rates at historic lows, we take this risk seriously. Duration risk is easily hedged, and we actively hedge duration in the sustainability portfolios. Credit risk is harder to hedge. Just under a third of the sustainable fixed-income portfolio is invested in bonds with virtually the same credit risk as US Treasuries, essentially risk-free, and over a third is invested in securities with credit ratings of AAA (highest investment grade rating), AA or A. Less than 5% is invested in high yield bonds. In exchange for taking duration and credit risk, we gain yield and transparent positive impact.

Credit risk is measured in a few ways, the most important being default risk. Default risk in investment grade credit is very low, even when looked at through the global financial crisis. In 2008 and 2009 there were no defaults in AAA-rated corporate bonds and a total of 1.7% for all of investment grade corporates (on a volume-weighted basis) compared to 22.1% in non-investment grade[5]. Exhibit 1 below shows annual credit losses for investment grade corporates on a global basis over the last approximately 36 years. Exhibit 2 shows a similarly benign experience for investment grade structured credit, looking at default rates. Exhibit 3 shows that defaults for munis have been lower than corporates over the last roughly 50 years.

Mark-to-market risk and downgrade risk are also important considerations when allocating to investment grade credit. As long-term investors, we expect to earn the yield on these securities over time and receive full principal at maturity in most cases; however, we are likely to experience mark-to-market drawdowns in certain securities during our hold period. This may be due to risk-off sentiment in the markets or fundamental deterioration in the credits. The latter can result in credit rating downgrades. That said, downgrades, or "ratings migrations," have been limited for investment grade corporate credits, structured credit, and munis, as seen in Exhibits 4, 5 and 6 below.

## Conclusion

**TIFF's dedicated sustainability strategies** seek to achieve our members' long-term return goals while maximizing positive impact. In exchange for increased but manageable risk relative to Treasuries, sustainable investment grade fixed-income strategies offer market-rate returns through investments in bonds that finance companies, infrastructure and development projects designed to produce positive environmental and social outcomes.

**About TIFF**

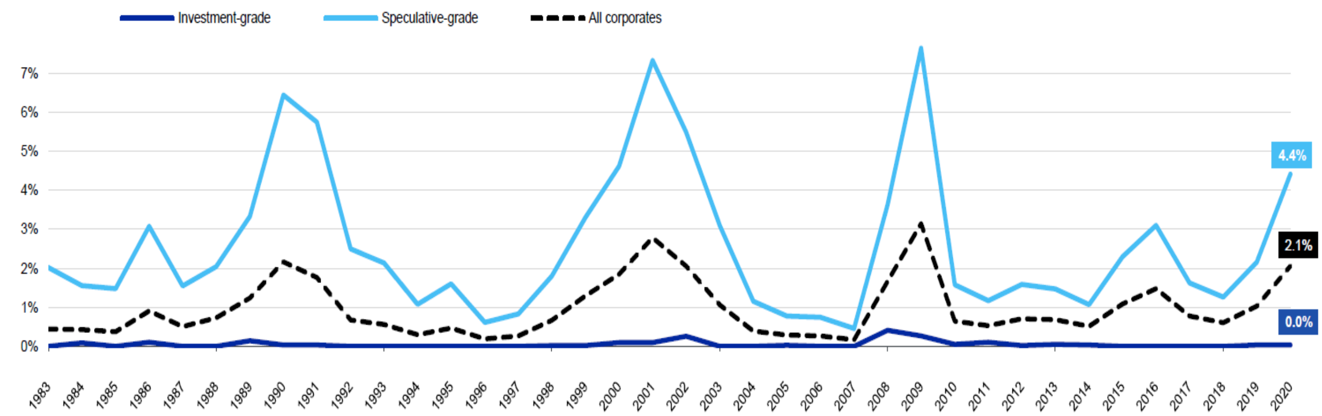
TIFF is a mission-driven, not-for-profit organization dedicated to delivering comprehensive investment solutions to foundations, endowments, and other charitable institutions. Since its inception in 1991, TIFF has exclusively served the non-profit community by providing experienced manager selection and access, risk-sensitive asset allocation, and integrated member service to institutions with long-term investment horizons.

**www.tiff.org**

[5] Moody's corporate annual default study, Feb 2019

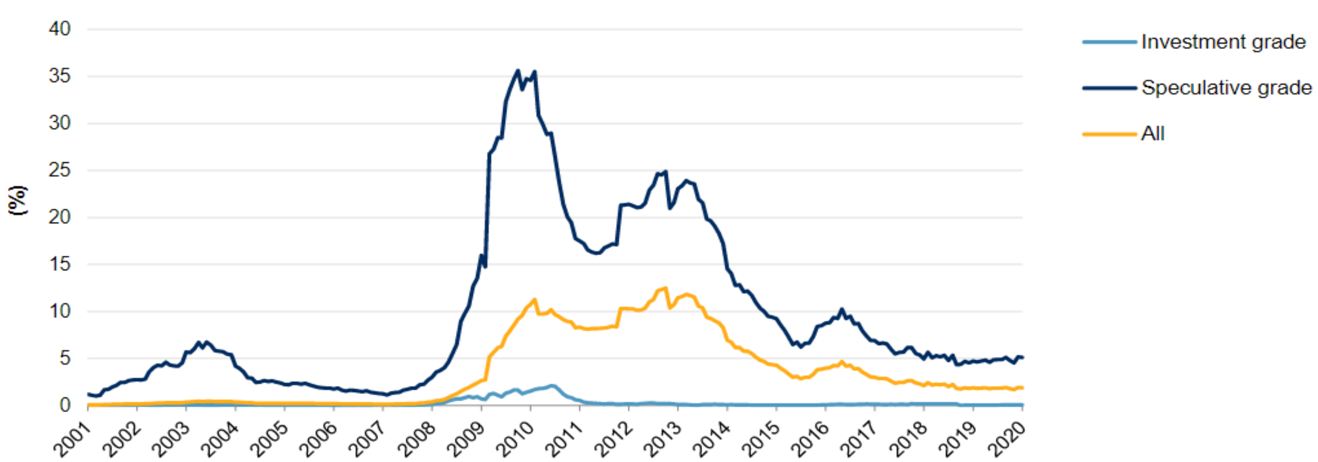
## Appendix

Exhibit 1: Annual credit loses, global corporate bonds




*Source: Moody's Investors Service*

Exhibit 2: 12-month trailing default rates, global structure credit




Source: S&P Global Ratings Research.

Exhibit 3: Cumulative default rates, munis and global corporates, 1970-2019

Municipals

| Rating | Average cohort count | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aaa | 1,003 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Aa | 6,980 | 0.00% | 0.00% | 0.00% | 0.01% | 0.01% | 0.01% | 0.01% | 0.02% | 0.02% | 0.02% |
| A | 4,873 | 0.00% | 0.01% | 0.02% | 0.02% | 0.03% | 0.04% | 0.06% | 0.07% | 0.09% | 0.10% |
| Baa | 676 | 0.03% | 0.11% | 0.21% | 0.34% | 0.47% | 0.61% | 0.74% | 0.87% | 0.99% | 1.10% |
| Ba | 111 | 0.24% | 0.67% | 1.10% | 1.58% | 1.98% | 2.28% | 2.64% | 2.99% | 3.30% | 3.57% |
| B | 23 | 2.77% | 5.48% | 8.09% | 10.14% | 12.20% | 13.68% | 14.71% | 15.46% | 16.30% | 17.49% |
| Caa-C | 11 | 8.92% | 13.97% | 17.22% | 19.03% | 20.26% | 21.51% | 22.45% | 23.47% | 24.45% | 25.07% |
| Investment-grade | 13,532 | 0.00% | 0.01% | 0.02% | 0.03% | 0.04% | 0.05% | 0.06% | 0.07% | 0.09% | 0.10% |
| Speculative-grade | 146 | 1.29% | 2.41% | 3.38% | 4.20% | 4.92% | 5.48% | 5.98% | 6.43% | 6.87% | 7.29% |
| All rated | 13,678 | 0.02% | 0.03% | 0.05% | 0.07% | 0.08% | 0.10% | 0.12% | 0.13% | 0.15% | 0.16% |

Global Corporates

| Rating | Average cohort count | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aaa | 105 | 0.00% | 0.01% | 0.01% | 0.03% | 0.08% | 0.13% | 0.18% | 0.24% | 0.30% | 0.36% |
| Aa | 411 | 0.02% | 0.06% | 0.11% | 0.19% | 0.29% | 0.40% | 0.52% | 0.62% | 0.71% | 0.79% |
| A | 879 | 0.05% | 0.16% | 0.33% | 0.51% | 0.73% | 0.98% | 1.24% | 1.52% | 1.81% | 2.11% |
| Baa | 847 | 0.16% | 0.41% | 0.72% | 1.10% | 1.47% | 1.86% | 2.24% | 2.65% | 3.09% | 3.58% |
| Ba | 461 | 0.88% | 2.40% | 4.14% | 6.01% | 7.77% | 9.44% | 10.93% | 12.38% | 13.86% | 15.40% |
| B | 562 | 3.26% | 7.71% | 12.32% | 16.52% | 20.33% | 23.69% | 26.68% | 29.27% | 31.66% | 33.70% |
| Caa-C | 337 | 9.68% | 17.19% | 23.56% | 28.95% | 33.56% | 37.24% | 40.41% | 43.32% | 45.89% | 47.89% |
| Investment-grade | 2,241 | 0.08% | 0.23% | 0.42% | 0.64% | 0.89% | 1.14% | 1.40% | 1.67% | 1.96% | 2.25% |
| Speculative-grade | 1,360 | 3.99% | 8.06% | 11.90% | 15.33% | 18.34% | 20.91% | 23.14% | 25.13% | 26.98% | 28.68% |
| All rated | 3,601 | 1.53% | 3.04% | 4.43% | 5.64% | 6.67% | 7.54% | 8.29% | 8.96% | 9.59% | 10.17% |

*Source: Moody's Investors Service*

Exhibit 4: Letter rating migration rates, global corporate bonds

**Average one-year letter rating migration rates, 1970-2020**

| | Aaa | Aa | A | Baa | Ba | B | Caa | Ca-C | WR | Def |
|---|---|---|---|---|---|---|---|---|---|---|
| Aaa | 87.90% | 7.76% | 0.58% | 0.07% | 0.02% | 0.00% | 0.00% | 0.00% | 3.67% | 0.00% |
| Aa | 0.78% | 85.39% | 8.40% | 0.41% | 0.06% | 0.03% | 0.02% | 0.00% | 4.89% | 0.02% |
| A | 0.05% | 2.48% | 87.14% | 5.10% | 0.44% | 0.10% | 0.04% | 0.00% | 4.60% | 0.05% |
| Baa | 0.03% | 0.13% | 3.89% | 86.34% | 3.54% | 0.64% | 0.14% | 0.02% | 5.14% | 0.15% |
| Ba | 0.01% | 0.04% | 0.39% | 6.01% | 76.68% | 7.00% | 0.72% | 0.11% | 8.23% | 0.81% |
| B | 0.01% | 0.03% | 0.12% | 0.42% | 4.76% | 73.60% | 6.75% | 0.53% | 10.78% | 3.02% |
| Caa | 0.00% | 0.01% | 0.02% | 0.07% | 0.28% | 5.99% | 69.08% | 2.91% | 14.42% | 7.21% |
| Ca-C | 0.00% | 0.00% | 0.04% | 0.07% | 0.41% | 2.13% | 9.54% | 38.00% | 20.18% | 29.62% |

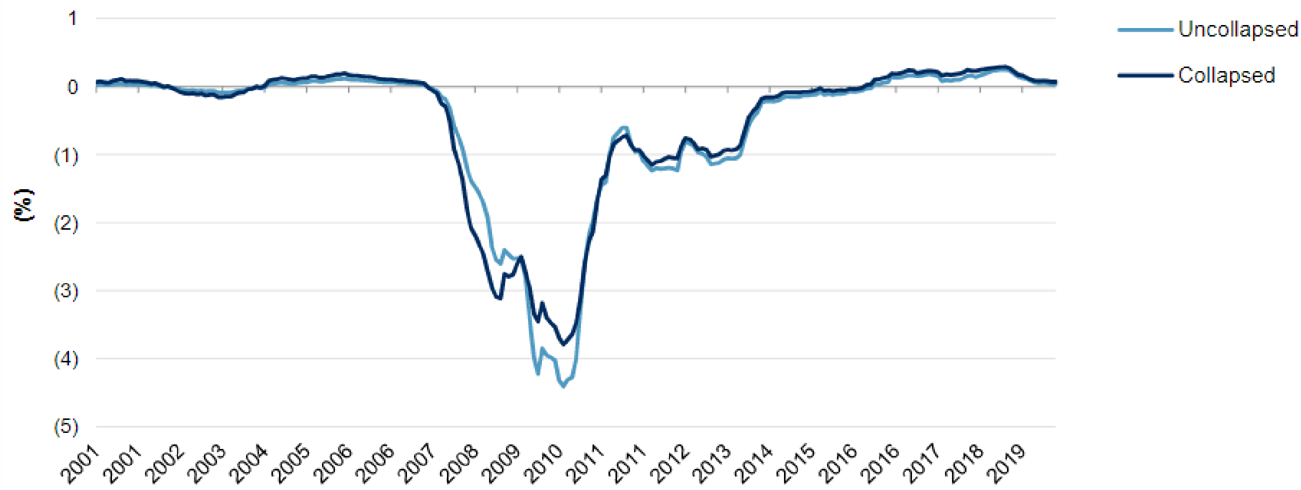
*Source: Moody's Investors Service*

**Average five-year letter rating migration rates, 1970-2020**

| | Aaa | Aa | A | Baa | Ba | B | Caa | Ca-C | WR | Def |
|---|---|---|---|---|---|---|---|---|---|---|
| Aaa | 54.46% | 22.59% | 4.81% | 0.61% | 0.30% | 0.03% | 0.04% | 0.00% | 17.10% | 0.07% |
| Aa | 2.07% | 46.40% | 23.77% | 3.82% | 0.74% | 0.25% | 0.11% | 0.03% | 22.56% | 0.25% |
| A | 0.17% | 7.21% | 52.40% | 14.28% | 2.32% | 0.69% | 0.14% | 0.01% | 22.14% | 0.64% |
| Baa | 0.14% | 0.92% | 11.75% | 50.65% | 7.95% | 2.47% | 0.52% | 0.09% | 24.22% | 1.29% |
| Ba | 0.03% | 0.18% | 2.37% | 14.63% | 28.26% | 11.37% | 2.06% | 0.12% | 34.59% | 6.38% |
| B | 0.02% | 0.07% | 0.41% | 2.28% | 7.53% | 23.01% | 6.49% | 0.59% | 44.06% | 15.54% |
| Caa | 0.00% | 0.00% | 0.09% | 0.56% | 1.43% | 7.49% | 14.81% | 1.21% | 50.95% | 23.46% |
| Ca-C | 0.00% | 0.00% | 0.30% | 0.75% | 1.59% | 4.44% | 2.86% | 2.86% | 48.03% | 39.17% |

*Source: Moody's Investors Service*

Exhibit 5: 12-month average change in credit quality, global AAA structured credit




Source: S&P Global Ratings Research.

“Uncollapsed” and “collapsed” refer to the study methodologies. Uncollapsed includes ratings history for all securities originally rated AAA. Collapsed includes a sampling.

Exhibit 6: Average one-year letter rating migration rates, munis, 1970-2019

| From/To: | Average cohort count | Aaa | Aa | A | Baa | Ba | B | Caa-C | Withdrawn | Default |
|---|---|---|---|---|---|---|---|---|---|---|
| Municipals | | | | | | | | | | |
| Aaa | 1,003 | 94.81% | 1.19% | 0.11% | 0.03% | 0.01% | 0.00% | 0.00% | 3.85% | 0.00% |
| Aa | 6,980 | 0.32% | 94.63% | 1.03% | 0.02% | 0.01% | 0.00% | 0.00% | 3.97% | 0.00% |
| A | 4,873 | 0.03% | 1.81% | 92.73% | 0.61% | 0.13% | 0.01% | 0.00% | 4.67% | 0.00% |
| Baa | 676 | 0.02% | 0.07% | 3.39% | 89.41% | 1.72% | 0.21% | 0.04% | 5.10% | 0.03% |
| Ba | 111 | 0.04% | 0.22% | 2.10% | 4.81% | 80.42% | 2.74% | 0.63% | 8.82% | 0.23% |
| B | 23 | 0.00% | 0.25% | 0.90% | 1.02% | 5.61% | 76.13% | 5.35% | 8.11% | 2.64% |
| Caa-C | 11 | 0.00% | 0.00% | 0.69% | 0.25% | 1.50% | 2.73% | 72.94% | 13.64% | 8.25% |

## Disclosures

**Past performance is no guarantee of future results and the opinions presented cannot be viewed as an indicator of future performance.**

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**Not all strategies are appropriate for all investors. There is no guarantee that any particular asset allocation or mix of strategies will meet your investment objectives. Diversification does not ensure a profit or protect against a loss.**

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