MSRB
Municipal Securities Rulemaking Board

Negative Yield Municipal Bonds

INTRODUCTION

The purpose of this publication is to provide context on why a municipal bond may trade at or be priced to have a negative yield.[1] Periodically, the MSRB receives questions about trades, especially customer purchases reported to the MSRB's Real-Time Transaction Reporting System (RTRS) that have a negative yield on the trade. Although the overwhelming majority of municipal transactions have positive yields, there are a small number of transactions that show a negative yield. These trades can cause misunderstandings and concerns for some market participants, including individual investors. Some investors, in specific situations, may benefit from buying bonds that have a stated negative "yield to worst." Investing in negative yield-to-worst bonds requires a substantial amount of research.

For many years, investors heard about some sovereign short-term debt returning negative yields.[2] Some investors, for a variety of reasons, were willing to accept a slight loss to protect their principal. While tax-exempt benchmark rates have never been negative, in some cases municipal bond investors might encounter trades with a stated negative yield to worst on the MSRB's EMMA website. A negative yield is due to a unique bond structure of some municipal bonds. To be clear, despite buying bonds at a negative yield to worst, investors holding this type of debt are expecting a positive rate of return for most of their transactions. This publication will explain some unique aspects of the municipal bond market and explain how municipal bonds can appear to have a negative yield.

STRUCTURE

Most tax-exempt municipal bonds issued with a maturity greater than 10 years have a call provision in 10 years that enables an issuer to pay off investors and retire their debt prior to maturity but on or after the first call date. When a bond reaches the call date without being redeemed, the call feature usually reverts to a 30-day rolling call. This means, the issuer can redeem the bonds at any time with 30 days' notice to investors.[3]

1 This document was prepared for general informational purposes only, and it is not intended to provide, and does not constitute, investment, tax, business, legal or other advice.

2 David Jolly, "Germany Sells Bonds with Negative Yield at Auction," *The New York Times*, July 16, 2016.

3 If a notice of call for the entire issue occurs on or prior to the trade date, delivery cannot be made on the transaction. *See* Calculation of Price and Yield on Continuously Callable Securities.

YIELD CALCULATIONS

MSRB Rule G-15 requires dealers to display on the confirmation provided to the investor the lower yield for a bond between yield to maturity and a yield to a call. This is generally referred to as the yield-to-worst calculation and is the same yield the MSRB displays on EMMA. As a general matter, bonds that are purchased at a discount benefit from an early call, while bonds purchased at a premium achieve a lower (and possibly negative) return if the bond is called earlier because the gain or loss of principal contributes to the overall yield of the bond.

For example, if a bond has a 30-day rolling call, the bond would be priced to this 30-day call, and have a negative yield even if the bond trades at a small premium over par. Furthermore, the yield that is reported to the MSRB or calculated by the MSRB appears more negative than any dollar loss realized by an investor because all yield calculations are mathematically converted to an annualized rate to facilitate comparison to other yields. For yield calculations priced to a date that is significantly less than one year away, this mathematical adjustment can be very significant.[4] In addition, the actual yield realized from the bond by the investor cannot be determined with complete accuracy until after the bond has been called or matures. This is because the amount of time the bond is held is a key variable in calculating the actual total amount earned on the bond as opposed to the stated yield to worst.

EXAMPLE

Investor purchases a bond with a **4.25% coupon** and a **30-day rolling par (or anytime call) ($100)** call at **$101.50.**

↓

The **yield** on EMMA would show as **-13.315%.**

↓

However, the investor only **stands to lose 1.48% (101.50-100)/101.50)** if a call notice goes out immediately and the bonds are called in 30 days.

↓

In this instance, the yield to worst would be if the bonds are called right away. The industry standard calculation annualizes the yield even though the investor will only buy the bond and have it called one time.

[4] Unless the issuer misses payments of principal and interest.

WHAT HAPPENS IF THE BOND IS NOT CALLED RIGHT AWAY?

If a bond is not called at or close to the 30-day call, an investor can achieve a positive yield in a short period of time and a higher return than is possible by buying short-term bonds priced to maturity. That is because for every day the bond remains outstanding, the investor gets another day of interest from a bond with a coupon rate above the short-term market rate.

The example below shows that the realized return on this type of bond can be significantly higher than the stated yield to worst—and benchmark yields—largely based on the amount of time the bond remains outstanding.[5] For example, the rate of return on this bond if it remained outstanding for one year would be 3.34% compared to a benchmark 1-year yield of 0.60% on the date of purchase.

EXAMPLE

ON 04/16/2021

a customer purchased **$10,000 bonds**	with a coupon rate of **5.0%**	and a maturity of **11/01/2028.**	The bonds have a **30-day rolling call.**

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The bonds were purchased at a **$101.625 dollar price.**

↓

Yield reported on the trade above is **-13.982% to a 05/16/2021 call at $100.**

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Approximate **return** if the call notice is sent out immediately **(bonds called in 30 days) is -1.21%**

Approximate **return** if **bond called in two months is -0.79%.**

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Approximate **date** an investor would see their **return-to-date go positive is August 2021.**

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Approximate **return if bond called in one year** is **3.334%.**

↓

Benchmark yield on 04/16/2021 for a **1-year bond** was **0.60%**

[5] Assuming the bond was not called prior to maturity for any reason.

INVESTOR CONSIDERATIONS

In practice, investors who own potentially negative yield bonds determine a break-even date that they are comfortable with, which is largely determined by the investor's belief in the likelihood of the bonds being called. The break-even date is the date the investor would realize a zero return on the bond. If a bond is called before the break-even date, the investor would have a negative return, while if it is called after the break-even date or goes to maturity, the investor would have a positive return.[6] Investors may consider a variety of factors when determining a break-even date, including:

- The amount of bonds in the maturity and issue that are outstanding
- The coupon rate of the bonds
- The general level of municipal bond yields
- The frequency that the issuer comes to the new issue market
- The amount of cash and short-term assets the issuer holds
- Forward new issue calendars that might inform the investor of any upcoming new issues

In general, the more frequently an issuer comes to market and the more debt they have outstanding, the more opportunities they are likely to have to call a bond prior to maturity. Investors in this structure often buy multiple positions with negative yields over time with the belief that the bonds will remain outstanding. As demonstrated above, purchasing these types of bonds can have higher rates of return than purchasing short-term bonds priced to maturity but can add an element of uncertainty since it is unknown when the bonds will be redeemed.

VOLUME OF TRADES

To clarify, trades reported to the MSRB with a negative yield are not rare but they represent a fraction of the overall volume of trades reported. From January 2021 to December 2022, there were over 131,000 trades of fixed-rate securities with a par amount of $15.3 billion reported to the MSRB that had a negative yield.[7] Of these trades, approximately 47,000 were customer purchases totaling $6.5 billion. Importantly, for the same period of time, there were nearly 28,000 customer sales totaling $5.2 billion reported to the MSRB with a negative yield, meaning the customer received a price greater than the call price despite the short period of time to the next call date.

SUMMARY

The purpose of this education piece is to provide clarity on potential misunderstandings regarding bonds with negative yield to worst, not to encourage individual investors to seek out these types of investments. Although making an investment in bonds with a negative yield to worst may seem counterintuitive, purchasing negative yield bonds priced to a call can be part of an overall portfolio strategy. However, doing so requires extensive research on the bond and the issuer, as well as an awareness of general market conditions. Individual investors should also realize there are likely very limited opportunities to invest in these types of bonds. Despite these caveats, if any individual investor is contemplating such an investment, they should consider contacting an investment professional with a true understanding of the structure of these bonds and where similar bonds trade in the market.

[6] Assuming the issuer makes timely payment of principal and interest while the bonds are outstanding.

[7] Excluding variable rate securities and municipal commercial paper