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Market discount bonds and the de minimis exception



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A bond is considered to be a market discount bond if it is bought in the secondary market at a price that is below par (or below the adjusted issue price in the case of an original issue discount bond). Market discount bonds produce a yield that is greater than the tax-exempt yield at which the bond was originally issued. The predictable increase in value that occurs as the bond approaches maturity, when it will be worth par, is the accretion of the discount.

Since 1993, taxpayers have been required to treat the interest income attributable to the accretion of market discount as ordinary income, rather than as tax-exempt income or capital gain. Because of the recent rise in interest rates, this tax on the accretion of market discount has become a matter of greater interest in the municipal market and has caused investors to consider whether the amount of the discount is more than a de minimis amount.

THE RISE IN RATES HAS CREATED MORE MARKET DISCOUNTS

Between the end of April and the end of October 2023, yields on general obligation bonds, rated triple-A, due in ten years have risen from 2.35% to 3.61%, while the yields of bonds due in 30 years have climbed from 3.39% to 4.57% (according to the MMD scale of Refinitiv). If a bond due in ten years was originally sold on 30 Apr 2023 with a coupon of 2.50% and a yield of 2.35%, its price would have been \$101.33.

However, if on 31 Oct 2023 that same 2.50% bond yielded 3.60%, it would have been priced at \$91.22. Someone who bought that bond on 31 October and held the bond to maturity would have to pay tax on the increase in value of \$8.78 per \$100 par. To compensate for the tax, a buyer would demand a higher yield than would be required for a par or premium bond.

Prior to 1993, the appreciation of market discount bonds would have been treated as capital gain, but since then the appreciation has been treated as ordinary income, unless the amount of the discount was so small as to be considered “*de minimis*” (Latin for “of the smallest”). If the amount of the discount is greater than 0.25 times the number of complete years to maturity, the accretion is ordinary income, otherwise it is capital gain. For the bond in the earlier example, with a nine full years to maturity, to qualify for the exception, the discount could be no more than \$2.25.

Under current law, the effect of this tax is softened somewhat by two provisions. The first is the exception for *de minimis* amounts of discount noted previously. The second is that one does not have to pay the tax until the bond is sold by the investor or retired by the issuer.

HOW IS THE ACCRETION CALCULATED?

If we think of a bond as earning interest equal to its yield multiplied by its price, then we can say that the amount that accretes in any period is the amount by which interest earned exceeds coupon interest received. However, the price that we use for this calculation at any point in the bond’s history will be the adjusted purchase price, which is the sum of (a) the price paid for the bond plus (b) the discount that has already been accreted.

Table 1 shows how the accreted discount would be calculated for a 2.50% bond that was bought on 31 Oct 2023 at a price of \$91.22 to yield 3.60% to maturity on 30 Apr 2033. In the first semiannual period, the yield of 3.60% multiplied by the price of \$91.22 produces earned interest of \$1.64 per \$100 par, which exceeds by \$0.39 the semiannual coupon payment of \$1.25. Adding that accretion of \$0.39 to the starting price of \$91.22 generates a new starting price of \$91.61 for the next period. Table 1 shows how the discount would accrete in every semiannual period to maturity.

Table 1: How the discount would accrete to maturity

*Accretion of 2.50% bond yielding 3.60%
Semiannual payments over 9.5 years*

Period ended	Starting adjusted price	Interest earned	Coupon payment	Accreted discount	Ending adjusted price
31 Oct 2023					91.22
30 Apr 2024	91.22	1.64	1.25	0.39	91.61
31 Oct 2024	91.61	1.65	1.25	0.40	92.01
30 Apr 2025	92.01	1.66	1.25	0.41	92.41
31 Oct 2025	92.41	1.66	1.25	0.41	92.83
30 Apr 2026	92.83	1.67	1.25	0.42	93.25
31 Oct 2026	93.25	1.68	1.25	0.43	93.68
30 Apr 2027	93.68	1.69	1.25	0.44	94.11
31 Oct 2027	94.11	1.69	1.25	0.44	94.56
30 Apr 2028	94.56	1.70	1.25	0.45	95.01
31 Oct 2028	95.01	1.71	1.25	0.46	95.47
30 Apr 2029	95.47	1.72	1.25	0.47	95.94
31 Oct 2029	95.94	1.73	1.25	0.48	96.41
30 Apr 2030	96.41	1.74	1.25	0.49	96.90
31 Oct 2030	96.90	1.74	1.25	0.49	97.39
30 Apr 2031	97.39	1.75	1.25	0.50	97.90
31 Oct 2031	97.90	1.76	1.25	0.51	98.41
30 Apr 2032	98.41	1.77	1.25	0.52	98.93
31 Oct 2032	98.93	1.78	1.25	0.53	99.46
30 Apr 2033	99.46	1.79	1.25	0.54	100.00



The amount of interest that accretes in any period is the amount by which interest earned exceeds coupon interest received.

WHAT HAPPENS IF YOU SELL BEFORE MATURITY?

Suppose the investor sold the bond on 31 Oct 2025, when the bond had an adjusted purchase price (APP) of \$92.83 (highlighted in the table). If the bond were sold at a price of \$92.00, the difference between the sale price of \$92.00 and the purchase price of \$91.22 (i.e., the appreciation of \$0.78) would be taxed as ordinary income, and there would be no capital gain since the sale price is less than the adjusted purchase price. If the bond were sold at a price of \$94.00, the difference between the APP of \$92.83 and the purchase price of \$91.22 would be treated as ordinary income (\$1.61), and the difference between the sale price of \$94.00 and APP of \$92.82 would be capital gain (\$1.17).

Purchase price	\$91.22	\$91.22
Market discount	0.78	1.61
Lesser of sale price or APP	92.00	92.83
Capital gain	0.00	1.17
Sale price	92.00	94.00

WHAT HAPPENS IF THE BOND WAS ORIGINALLY ISSUED AT A PRICE BELOW PAR?

When a tax-exempt bond is originally issued at a price below par, the accretion of the original issue discount (OID) will be treated as tax-exempt income. If the bond is subsequently purchased at a price below the accreted adjusted issue price (AIP), it is necessary for the purchaser to consult two accretion schedules:

- One for the adjusted issue price
- One for the adjusted purchase price

Consider a zero-coupon bond sold on 30 Apr 2023 at a yield of 2.35% to maturity in ten years. It would have been issued with a price of \$79.17. Six months later, after accreting \$0.93, it would have an adjusted issue price (AIP) of \$80.10. Suppose someone bought that bond on 31 Oct 2023, with

a yield of 3.60% at a price of \$71.25. In that case, the amount of tax-exempt original issue discount would be \$19.90 ($100.000 - 80.10 = 19.90$), while the amount of taxable market discount that would be accreted if the bond is held to maturity would be \$8.85.

Adjusted issue price	\$80.10
Purchase price	– \$71.25
Market discount	\$8.85

As explained more fully in the Appendix, the bond's cost basis would be increased by the amount of original discount that accretes in each semiannual period. The amount of taxable market discount would be the amount by which the accretion from the purchase price exceeds the accretion from the original issue discount price. If the bond were bought at a price higher than the adjusted issue price, then the full amount of the accretion would be tax-exempt.

HOW DOES THE MUNICIPAL MARKET TREAT MARKET DISCOUNT BONDS?

Since the tax on market discount reduces the return on a bond below what it would be if the bond were bought at a price of par or higher, this reduction in return is factored into the way bonds are priced. If the investor does not expect to pay the tax until the bond matures, then the value of the bond should be reduced by the present value of the future tax. This can be accomplished by reducing the expected maturity value by the amount of the tax when pricing the bond.

However, lowering the price to reflect the effect of the tax will increase the amount of the discount and thus the amount of the tax, which means that a few iterations will be needed. For example, the market discount on a 2.5% bond priced at \$91.22 to yield 3.60% to maturity in 9.5 years would be \$8.78. For someone in the 32% bracket, the tax would be \$2.81, implying that the net amount to be received at maturity would be \$97.19, which we use as the ending value when pricing the bond in our second round of computations.

Market discount bonds and the de minimis exception

After some iterations, we find that a dollar price of \$88.62 and a yield of 3.95% would provide an after-tax yield of 3.60%. We can prove this by computing the present value of the tax of \$3.65 (= 0.32 x (100 - 88.62)), discounted over 19 semiannual periods at 1.80% (= 0.5 x 3.60%).

$$\frac{\$3.65}{1.0180^{19}} = \text{\$2.60 present value of tax liability}$$
$$\begin{array}{r} \$91.22 \\ - 2.60 \\ \hline \$88.62 \end{array}$$

To guard against the loss of value that occurs when bonds are priced at a market discount, institutional investors have demonstrated a strong preference for premium bonds, with higher coupon rates. This preference can be observed in the Standard & Poor's Municipal Bond Index, which as of 31 Oct 2013, had an average market yield of 4.63%, but where over 64% of the market value was in bonds with coupon rates of 5% or more. This preference for premium bonds has also affected the benchmarks used in pricing municipal bonds. Currently, the MMD scale by Refinitiv constructs a yield curve of callable bonds by assuming that all bonds carry a 5% coupon.

Because municipal bond funds are designed to provide tax-exempt interest dividends to their shareholders, such funds generally avoid investments that produce income taxed as ordinary income. Consequently, municipal bond funds are unlikely to purchase bonds with discounts that are below the de minimis threshold, which reduces the liquidity for such bonds.

A recent report published by the Brookings Institute, "Pushing Bonds Over the Edge: Investor Demand and Municipal Bond Liquidity," found that as interest rates rise, trading activity increases for bonds whose prices are between 5% and 10% above the de minimis threshold but slows as prices decline to less than 5% above the threshold and drops sharply when prices are below the threshold.

In addition, trading costs increase when prices are below the threshold. In November 2023, the Municipal Securities Rulemaking Board issued a report, "Tax and Liquidity Considerations for Buying Discount Bonds," which warned retail investors that bonds purchased at a discount could be less liquid than premium bonds because of the tax on market discount.

APPENDIX

WHAT HAPPENS IF THE BOND WAS ORIGINALLY ISSUED AT A PRICE BELOW PAR?

We earlier considered a 10-year, zero-coupon bond sold on 30 Apr 2023 at a yield of 2.35% to maturity in ten years. It would have been issued with a price of \$79.17. Six months later, after accreting \$0.93, it would have an adjusted issue price (AIP) of \$80.10. The de minimis amount for an original issue discount bond (OID) would be 0.0025 times the AIP of the bond at time of purchase times 9 full years till maturity, or \$1.80 in our example.

As noted earlier, if someone bought that bond on 31 Oct 2023, with a yield of 3.60% at a price of \$71.25, the amount of tax-exempt original issue discount would be \$19.90, while the amount of taxable market discount that would be accreted if the bond is held to maturity would be \$8.85.

Table 2 shows the schedule for accreting the market discount (based on a 3.60% yield) and the original issue discount (which is tax-exempt income, based on a 2.35% yield). In the case of zero coupon bonds, the amount of interest earned is the amount of discount that is accreted. For that reason, we do not need columns to compute the excess of interest earned over coupon payment received.

Table 2: Schedule for accreting the discounts

Accretion of 0.00% bond

Semiannual payments over 9.5 years

Period ended	3.60% yield		2.35% yield	
	Interest earned	Ending adjusted purchase price	Interest earned	Ending adjusted issue price
31 Oct 2023		71.25		80.10
30 Apr 2024	1.28	72.53	0.94	81.04
31 Oct 2024	1.31	73.84	0.95	81.99
30 Apr 2025	1.33	75.17	0.96	82.95
31 Oct 2025	1.35	76.52	0.97	83.93
30 Apr 2026	1.38	77.90	0.99	84.91
31 Oct 2026	1.40	79.30	1.00	85.91
30 Apr 2027	1.43	80.73	1.01	86.92
31 Oct 2027	1.45	82.18	1.02	87.94
30 Apr 2028	1.48	83.66	1.03	88.97
31 Oct 2028	1.51	85.17	1.05	90.02
30 Apr 2029	1.53	86.70	1.06	91.08
31 Oct 2029	1.56	88.26	1.07	92.15
30 Apr 2030	1.59	89.85	1.08	93.23
31 Oct 2030	1.62	91.47	1.10	94.33
30 Apr 2031	1.65	93.11	1.11	95.43
31 Oct 2031	1.68	94.79	1.12	96.56
30 Apr 2032	1.71	96.49	1.13	97.69
31 Oct 2032	1.74	98.23	1.15	98.84
30 Apr 2033	1.77	100.00	1.15	100.00

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In this table we see that the purchase price accretes faster than the original issue discount price.

If the bond is sold before maturity, the maximum taxable accreted market discount would be the amount by which the accretion of the purchase price was greater than the accretion of the original issue discount price (since the latter is tax-exempt income). In other words, the amount of accreted market discount is the difference between the cumulative accretion based on the purchase price and the cumulative accretion of tax-exempt income based on the issue price.

For example, if the bond were sold on 31 Oct 2025, the purchase price would have increased by \$5.27 from \$71.25 to \$76.52, while the original issue price would have increased by \$3.83 from \$80.10 to \$83.93. Thus, the maximum amount of accreted market discount would be \$1.44 (\$5.27-\$3.83).

	Adjusted purchase price	Adjusted issue price	Market discount
31 Oct 2025	76.52	83.93	
31 Oct 2023	- 71.25	- 80.10	
Accretion	5.27	- 3.83	= 1.44

The investor’s basis in an original issue discount bond is the purchase price plus the amount of original issue discount that has been accreted. In our example, the bond’s tax basis would be \$75.08 (71.25 + 3.83). If the bond were sold on 31 Oct 2025 at a price of \$80.00, in addition to the accreted market discount of \$1.44 and the accreted original issue discount of \$3.83 (of tax-exempt interest), the bond would have a capital gain of \$3.48, which is the difference between the sale price of \$80.000 and the adjusted purchase price of \$76.52.

Purchase price	71.25
OID	3.83
Tax basis	75.08
Market discount	1.44
Lesser of sale price or APP	76.52
Capital gain	3.48
Sale price	80.00

If the bonds were sold for less than the adjusted purchase price of \$76.52, there would be no capital gain, and the amount of the market discount would be reduced. For example, if the sale price were \$76.00, the calculations would be:

Purchase price	71.25
OID	3.83
Tax basis	75.08
Market discount	0.92
Lesser of sale price or APP	76.00
Capital gain	0.00
Sale price	76.00

If the sale price is less than the tax basis, then the investor would have a capital loss. In our example, the bond’s tax basis of \$75.08 implies a loss of \$1.08 if the bond were sold for \$74.00:

Purchase price	71.25
OID	3.83
Tax basis	75.08
Market discount	0.00
Capital gain/loss	-1.08
Sale price	74.00

For more information, please visit nuveen.com.

Endnotes

Sources

“Pushing Bonds Over the Edge: Investor Demand and Municipal Bond Liquidity”

John Bagley, Stefan Gissler, Kent Hiteshew, & Ivan T. Ivanov

https://www.brookings.edu/wp-content/uploads/2023/05/muni_liquidity_july_updated.pdf

“Tax and Liquidity Considerations for Buying Discount Bonds”

<https://www.msrb.org/sites/default/files/Tax-and-Liquidity-Considerations-for-Buying-Discount-Bonds.pdf>

A convenient source for information on the tax treatment of market discount municipal bonds is Publication 550 by the Internal Revenue Service

<https://www.irs.gov/pub/irs-pdf/p550.pdf>

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