

#MuniFinance

12th Annual Municipal Finance Conference

Discussant Presentation Primary Market Considerations

Kevin Bain, City of Detroit Debt Manager

July 19, 2023



1. Key Reactions

2. Primary Market Considerations

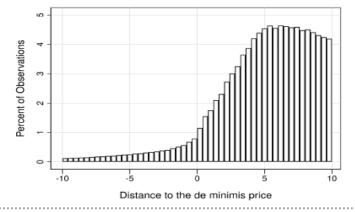
3. City of Detroit Bond Issuances

4.Takeaways and Feedback

Key Reactions

1. Impact on Liquidity

Panel A: Incidence of Trading

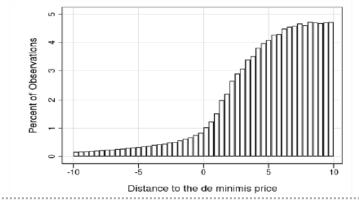


Panel A: Weekly Trades Distribution, Low Duration

Distance to the de minimis pric

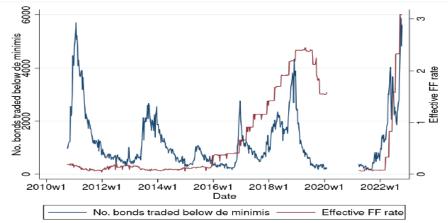
Percent of Observations

Panel B: Weekly Trades Distribution, High Duration



3. Susceptibility to Economic Shocks & **Monetary Policy**

Fed funds rate and bonds below the de minimis price



4. Why this Market Distortion?

"The current tax regime has been in place since May 1st 1993, when the Omnibus Budget Reconciliation Act (OBRA) of 1993 repealed the exemption of realized price appreciation on municipal bonds from ordinary income taxes. [...] Repealing the exemption of municipal bond proceeds was not among the major goals or provisions of the bill and was not expected to raise substantial government revenue"

2. Acceleration of Sell Off

How Taxable Bonds are Priced

In Taxable Bond Markets, Bonds are typically priced as follows:



Announce Sale: Par Value is Set preliminary pricing (interest rate) "suggested"



Investor Orders Taken ("Building the Order Book")

3 Interest Rate or Yield Set Based on Market Demand

4) Coupon Set so that Price equals Par at given yield

Characteristics Controlled by Issuer in Taxable Bonds

Par Value	Issuance Size	Yield	Coupon
Set by	Equals Par	Determined	Equals Yield
Issuer	(roughly)	by Market	(roughly)

Tax-Exempt Bond Market Differs

Though there may be other factors, the discounted bond tax rule is one reason that taxexempt bonds price differently.

- To avoid bonds falling below the de minimis price, taxexempt bonds are often issued at a premium
- Coupons are usually set at 5% at the outset
 - Can be lower (4% or 3%) for highly rated issuers and in low interest rate markets

Results:

- 1. Coupons don't equal Bond Yield
- 2. Issuance Size doesn't equal Par Value
- Distorts the market: Issuers have to choose to set either Par or Total Proceeds
 - Confounding factor: voter approved bonds

Characteristics Controlled by Issuer in Tax-Exempt Bonds

Par Value	Issuance Size	Yield	Coupon
Set by Issuer	Based on Yield compared to Coupon	Determined by Market	Set by Issuer

2021 Bond Transaction

\$135,000,000 CITY OF DETROIT County of Wayne, State of Michigan Unlimited Tax General Obligation Bonds, Series 2021A (Tax-Exempt) (Social Bonds) \$40,000,000 CITY OF DETROIT County of Wayne, State of Michigan Unlimited Tax General Obligation Bonds, Series 2021B (Taxable) (Social Bonds)

Dated Date: Date of Delivery

Due: As shown on inside cover

The Unlimited Tax General Obligation Bonds, Series 2021A (Tax-Exempt) (Social Bonds) (the "2021A Bonds") and Unlimited Tax General Obligation Bonds, Series 2021B (Taxable) (Social Bonds) (the "2021B Bonds" and together with the 2021A Bonds, the "Bonds"), of the City of Detroit, County of Wayne, State of Michigan (the "City") will be issued as fully registered bonds and, when issued, will be registered in the name of Cede & Co., as nominee for The Depository Trust Company, New York, New York ("DTC"), which will act as securities depository for the Bonds. Purchases of beneficial ownership interests in the Bonds will be made in book-entry-only form in denominations of \$5,000 or integral multiples thereof. Purchasers will not receive certificates representing their ownership interests in the Bonds purchased. So long as DTC or its nominee, Cede & Co., is the registered owner of the Bonds, principal of and interest on the Bonds will be paid directly to DTC by U.S. Bank National Association, Detroit, Michigan, as bond transfer agent (the "Transfer Agent"). Disbursement of payments to the DTC participants is the responsibility of DTC, and disbursements of payments to the boneficial owners is the responsibility of the DTC participants, as more fully described herein. See "THE BONDS – Book-Entry-Only System" herein.

Interest on the Bonds will be payable semiannually on April 1 and October 1 of each year, commencing on October 1, 2021. Interest shall be paid when due to the registered owner as shown by the registration books as of the 15th day of the month preceding the payment date for each interest payment. The Bonds are subject to redemption prior to maturity as described herein. See "THE BONDS – Redemption of 2021A Bonds" and "THE BONDS – Redemption of 2021B Bonds" herein.

The Bonds are being issued for the purpose of financing the cost of certain capital projects of the City and paying costs of issuance associated with the Bonds. The Bonds are full faith and credit, unlimited tax general obligations of the City duly authorized by the City's voters and secured by a pledge of the full faith and credit of the City. The City is authorized and required by law to levy and collect dedicated ad valorem taxes without limitation as to rate or amount upon all taxable property in the City to pay the principal of and interest on the Bonds when due. See "PURPOSE AND SECURITY" herein.

This cover page contains information for quick reference only. It is not a summary of this issue. Investors should read the entire Official Statement to obtain information essential to the making of an informed investment decision.

The Bonds are offered when, as and if issued by the City and accepted by the Underwriters, subject to prior sale, withdrawal or modification of the offer without notice, and to approval of legality of the Bonds by Miller, Canfield, Paddock and Stone, P.L.C., Detroit, Michigan, Bond Counsel. Certain legal matters will be passed upon for the Underwriters by Dickinson Wright PLLC, Lansing, Michigan. The Bonds are expected to be available for delivery in book-entry form through the facilities of DTC on or about February 11, 2021.

BofA Securities

Siebert Williams Shank & Co., LLC Huntington Capital Markets

Dated: February 4, 2021

Voters Approved \$250 million of Bonds for Neighborhood Improvements

February 2021: \$175 million UTGO bond sale

\$3.4bn in orders from 61 investors = over 20x subscription

+100 bps spread to AAA-rated MMD index on 30-year tax-exempt bond (Ba3/BB- rated)

130-160 bp spread improvement from October 2020 GO Bond issuance = average 3.36% interest rate

\$135m Tax-Exempt 🛨

- Yield: 3.369%
- Coupons: 5% and 4%
- Proceeds: \$165.7m

- \$40m Taxable Yield: 3.185%
 - Coupons: match yield
 - Proceeds: \$39.7m

2021 Tax-Exempt Bond Pricing Numbers

Unlimited Tax General Obligation Bonds, Series 2021A (Tax-Exempt) (Social Bonds)												
Mat.	MMD	MMD	Final Par	Subscrip-	Preliminary Pricing			Repricing/Verbal Award/Final Pricing				
(4/1)	(year)	Yield ⁽¹⁾	(\$000)	tion ⁽²⁾	Coupon	Spread (bps)	Yield	Coupon	Spread (bps)	Yield	Change	
2030	9	0.66%	3,075	8.0x	5.00%	135	2.01%	5.00%	125	1.91%	(10)	
2031	10	0.74%	3,230	9.3x	5.00%	135	2.09%	5.00%	125	1.99%	(10)	
2032	11	0.79%	3,225	9.5x	5.00%	135	2.14%	5.00%	125	2.04%	(10)	
2033	12	0.84%	3,370	9.4x	5.00%	135	2.19%	5.00%	125	2.09%	(10)	
2034	13	0.90%	3,525	11.3x	5.00%	135	2.25%	5.00%	123	2.13%	(12)	
2035	14	0.95%	5,105	13.8x	5.00%	135	2.30%	5.00%	123	2.18%	(12)	
2036	15	0.99%	5,365	11.7x	5.00%	135	2.34%	5.00%	123	2.22%	(12)	
2037	16	1.03%	5,630	11.7x	5.00%	135	2.38%	5.00%	123	2.26%	(12)	
2038	17	1.07%	5,910	12.7x	5.00%	135	2.42%	5.00%	122	2.29%	(13)	
2039	18	1.11%	6,210	14.8x	5.00%	135	2.46%	5.00%	121	2.32%	(14)	
2040	19	1.15%	6,520	19.4x	4.00%	150	2.65%	4.00%	128	2.43%	(22)	
2041	20	1.19%	6,780	22.3x	4.00%	150	2.69%	4.00%	128	2.47%	(22)	
2042	21	1.23%	7,050	23.8x	4.00%	150	2.73%	4.00%	128	2.51%	(22)	
2046	25	1.33%	31,600	30.9x	5.00%	130	2.63%	5.00%	100	2.33%	(30)	
2050	29	1.37%	38,405	30.2x	5.00%	130	2.67%	5.00%	100	2.37%	(30)	

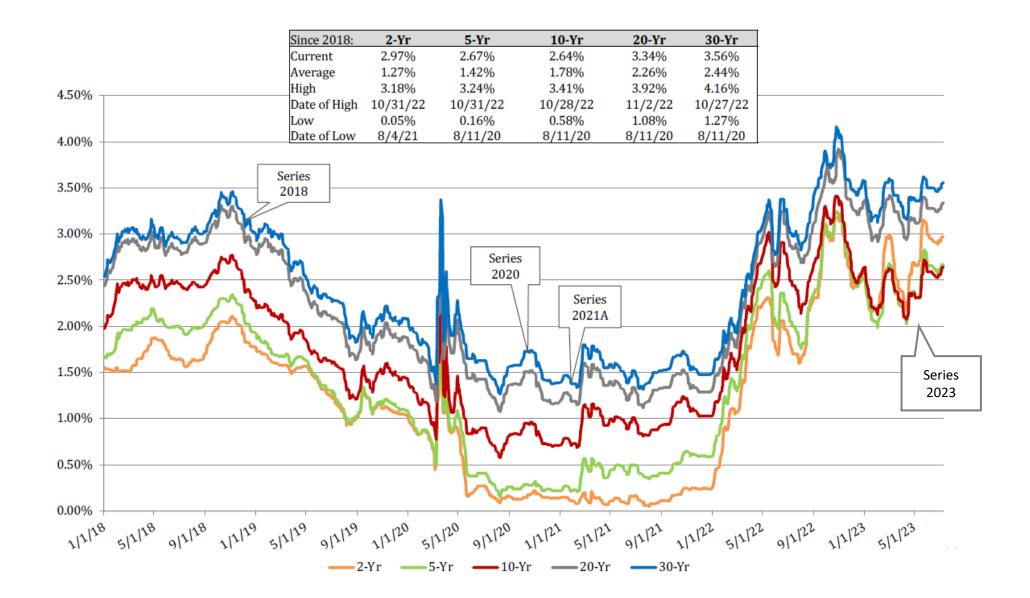
(1) April interpolated MMD as of 2/3/2021.

(2) Subscription is based on par offered and orders at the close of the order period; does not reflect final par amounts or dropped orders.

2021 Tax-Exempt Bond Pricing Numbers

Bond Component	Date	Principal	Coupon	Price	Issue Price
Tax-Exempt Serial Bon	ids:				
	04/01/2030	3,075,000.00	5.000%	125.796	3,868,227.00
	04/01/2031	3,230,000.00	5.000%	127.510	4,118,573.00
	04/01/2032	3,225,000.00	5.000%	126.984	4,095,234.00
	04/01/2033	3,370,000.00	5.000%	126.461	4,261,735.70
	04/01/2034	3,525,000.00	5.000%	126.044	4,443,051.00
	04/01/2035	5,105,000.00	5.000%	125.525	6,408,051.25
	04/01/2036	5,365,000.00	5.000%	125.112	6,712,258.80
	04/01/2037	5,630,000.00	5.000%	124.700	7,020,610.00
	04/01/2038	5,910,000.00	5.000%	124.393	7,351,626.30
	04/01/2039	6,210,000.00	5.000%	124.086	7,705,740.60
	04/01/2040	6,520,000.00	4.000%	114.031	7,434,821.20
	04/01/2041	6,780,000.00	4.000%	113.646	7,705,198.80
	04/01/2042	7,050,000.00	4.000%	113.262	7,984,971.00
2046 Tax-Exempt Terr	n Bond:				
	04/01/2043	7,330,000.00	5.000%	123.984	9,088,027.20
	04/01/2044	7,700,000.00	5.000%	123.984	9,546,768.00
	04/01/2045	8,085,000.00	5.000%	123.984	10,024,106.40
	04/01/2046	8,485,000.00	5.000%	123.984	10,520,042.40
2050 Tax-Exempt Terr	n Bonds:				
	04/01/2047	8,910,000.00	5.000%	123.577	11,010,710.70
	04/01/2048	9,355,000.00	5.000%	123.577	11,560,628.35
	04/01/2049	9,825,000.00	5.000%	123.577	12,141,440.25
	04/01/2050	10,315,000.00	5.000%	123.577	12,746,967.55
		135,000,000.00			165,748,789.50

Market Conditions (Historical MMD Rates)



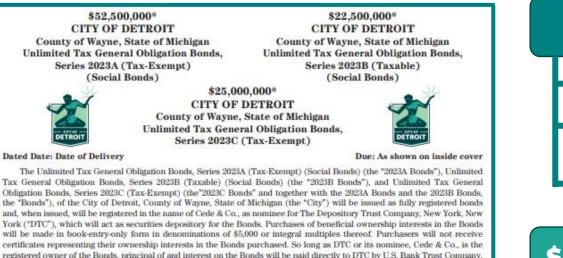
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Current Trading Levels

		Summary o	of Secondar			t, Michigan on (Trade Si	ze of \$150,000) or Greater)		
Summary of Secondary Trading Information (Trade Size of \$150,000 or Greater) Monday, May 1, 2023 to Tuesday, July 11, 2023										
Trade Call Trade Trade Interpolated Spread to										
Date	Series	Maturity	Date	Coupon	Yield	Price	Volume	MMD	MMD	Trade Type
				Tax-Exe	empt Seco	ndary Trade	s			
Unlimited Tax (General Oblig	ation Bonds								
5/11/2023	2018	4/1/2026	NC	5.000%	4.100%	\$102.415	\$220,000	2.480%	162	Customer sold
5/10/2023	2021A	4/1/2035	4/1/2031	5.000%	4.265%	\$104.871	\$500,000	2.480%	179	Customer bough
5/10/2023	2021A	4/1/2035	4/1/2031	5.000%	4.280%	\$104.771	\$500,000	2.480%	180	Customer sold
5/1/2023	2020	4/1/2037	4/1/2030	5.500%	4.560%	\$105.514	\$465,000	2.860%	170	Customer bough
5/1/2023	2020	4/1/2037	4/1/2030	5.500%	4.600%	\$105.274	\$465,000	2.860%	174	Customer sold
5/1/2023	2020	4/1/2039	4/1/2030	5.500%	4.700%	\$104.669	\$645,000	2.990%	171	Customer bough
5/1/2023	2020	4/1/2039	4/1/2030	5.500%	4.740%	\$104.431	\$645,000	2.990%	175	Customer sold
5/10/2023	2021A*	4/1/2040	4/1/2031	4.000%	4.780%	\$91.027	\$1,120,000	3.010%	177	Customer bough
5/8/2023	2021A*	4/1/2040	4/1/2031	4.000%	4.810%	\$90.701	\$1,160,000	3.010%	180	Customer sold
5/8/2023	2021A*	4/1/2041	4/1/2031	4.000%	4.840%	\$90.016	\$800,000	3.040%	180	Customer bough
5/8/2023	2021A*	4/1/2041	4/1/2031	4.000%	4.950%	\$88.803	\$800,000	3.040%	191	Customer sold
5/8/2023	2021A*	4/1/2042	4/1/2031	4.000%	4.870%	\$89.329	\$750,000	3.070%	180	Customer bough
5/8/2023	2021A*	4/1/2042	4/1/2031	4.000%	4.990%	\$87.973	\$750,000	3.070%	192	Customer sold

*Discount bonds traded below the de minimis threshold, capital gains subject to ordinary income tax

2023 Bond Transaction



registered owner of the Bonds, principal of and interests in the robust parchased. So forg as DTC of its itominee, ceale a Co., is the registered owner of the Bonds, principal of and interest on the Bonds will be paid directly to DTC by U.S. Bank Trust Company, National Association, Detroit, Michigan, as bond transfer agent (the "Transfer Agent"). Disbursement of payments to the DTC participants is the responsibility of DTC, and disbursements of payments to the beneficial owners is the responsibility of the DTC participants, as more fully described herein. See "THE BONDS – Book-Entry-Only System" herein. Interest on the Bonds will be payable semiannually on May 1 and November 1 of each year, commencing on November 1, 2023.

Interest on the Bonds will be payable semiannually on May 1 and November 1 of each year, commencing on November 1, 2023. Interest shall be paid when due to the registered owner as shown by the registration books as of the record date described herein. The Bonds are subject to redemption prior to maturity as described herein. See "THE BONDS – Redemption of 2023A Bonds," "THE BONDS – Redemption of 2023B Bonds" and "THE BONDS – Redemption of 2023C Bonds" herein.

The Bonds are being issued for the purpose of financing the cost of certain capital projects of the City and paying costs of issuance associated with the Bonds. The Bonds are unlimited tax general obligations of the City duly authorized by the City's voters and secured by a pledge of the full faith and credit of the City. The City is authorized and required by law to levy and collect dedicated ad valorem taxes without limitation as to rate or amount upon all taxable property in the City to pay the principal of and interest on the Bonds when due. See "PURPOSE AND SECURITY" herein.

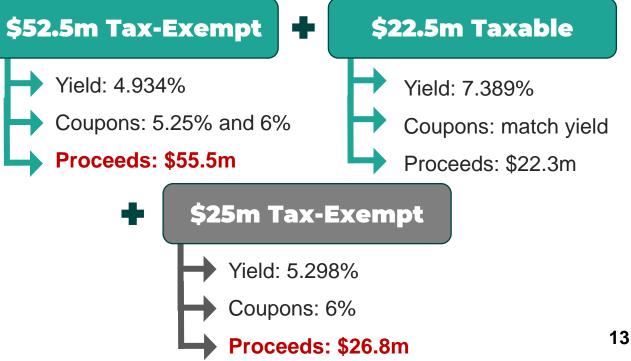
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BofA Securities Siebert Williams Shank & Co., LLC Huntington Capital Markets

July 2023: \$100 million UTGO bond sale \$75m NIP and \$25m Capital

- \$3bn in orders from 67 investors = over 30x subscription
- +175 bps spread to AAA-rated MMD index on 30-year tax-exempt bond (Ba1/BB+ rated)
- Tightened 25-50 bps across curve due to strong demand = average 5.30% interest rate <-- *just under 200 bps wider than 2021s*



2023 Tax-Exempt Bond Pricing Numbers

Bond Component	Date	Principal	Coupon	Price	Issue Price
Tax Exempt Serial Boi	nds:				
	05/01/2024	3,550,000.00	5.250%	100.587	3,570,838.50
	05/01/2025	6,735,000.00	5.250%	101.335	6,824,912.25
	05/01/2026	4,160,000.00	5.250%	102.130	4,248,608.00
	05/01/2027	1,190,000.00	5.250%	102.946	1,225,057.40
	05/01/2028	1,225,000.00	5.250%	103.697	1,270,288.25
	05/01/2029	2,685,000.00	5.250%	104.434	2,804,052.90
	05/01/2030	2,830,000.00	5.250%	105.038	2,972,575.40
	05/01/2031	2,975,000.00	5.250%	105.801	3,147,579.75
	05/01/2032	3,130,000.00	5.250%	106.343	3,328,535.90
	05/01/2033	3,295,000.00	5.250%	106.517	3,509,735.15
Term Bond May 1, 2	2039:				
	05/01/2034	3,470,000.00	6.000%	109.014	3,782,785.80
	05/01/2035	3,675,000.00	6.000%	109.014	4,006,264.50
	05/01/2036	3,900,000.00	6.000%	109.014	4,251,546.00
	05/01/2037	4,130,000.00	6.000%	109.014	4,502,278.20
	05/01/2038	4,380,000.00	6.000%	109.014	4,774,813.20
	05/01/2039	1,170,000.00	6.000%	109.014	1,275,463.80
Term Bond May 1, 2	2043:				
	05/01/2039	3,475,000.00	6.000%	107.322	3,729,439.50
	05/01/2040	4,920,000.00	6.000%	107.322	5,280,242.40
	05/01/2041	5,215,000.00	6.000%	107.322	5,596,842.30
	05/01/2042	5,530,000.00	6.000%	107.322	5,934,906.60
	05/01/2043	5,860,000.00	6.000%	107.322	6,289,069.20
		77,500,000.00			82,325,835.00

Summary of Bond Pricing Experience

The discounted bond tax rule has complex impacts on bond pricing between 2021 and 2023:

- Although market widened 200-300 bps, coupons only changed 25-100 bps
 - Yield was under 5%, but had to use 5.25% coupons per investor demand (to protect against discount)
 - > 5.25% coupons resulted in lower yield than 5% coupon
- Bonds price closer to Par in high-rate environment
 - Investors don't expect rates to increase much further, so risk of discount is lower
 - Results in far less premium (\$30 million in 2021 vs. \$4 million in 2023)

Why do we have this market complexity?



Secondary Market

- Investor demand for bonds decreases as price approaches tax-exempt threshold
- 2. Bonds below de minimis price are highly illiquid
- **3.** Monetary Policy actions can accelerate sell offs and drive down prices into illiquidity

Primary Market

- Investors demand that coupons are set well above yields
- 2. Bond yields are driven up by setting lower coupons
- **3.** Monetary Policy actions have mitigated impact on coupons, but high impact on issuance premiums

Feedback

The authors have delivered an excellent paper with stark findings supported by robust research methods. Next steps could include:



Expand Research into Primary Issuance Impacts Setting of coupons and handling of issuance premiums



3

Compare how bonds with different coupons trade • 2% vs. 3% vs. 4% vs. 5% vs. 6% coupons

Question who benefits from this tax rule

- Hedge Funds who buy at artificially low levels?
- Institutional Investors who get high coupons?
- Issuers who get bond premiums?



Answer whether the tax rule distorts the market with any benefit

Thank You

Questions?