SESSION FIVE
Refunding an Issue

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PAYING OFF AN EXISTING LOAN WITH A NEW LOAN:

MORTGAGE EXAMPLE:

- Mortgages can be prepaid at any time
- Considerations:
  - Transaction cost
  - Term of new loan (e.g., a new 30-year loan would extend overall repayment)

BOND EXAMPLE:

- Bond investor has call protection, most commonly for 10 years
- Borrower has call option

OPTIONAL REDEMPTION:

SAMPLE PROVISION:

The Series 2024 Bonds maturing on and after **August 1, 2033**, are **subject to redemption** prior to their respective stated maturity dates, **at the option of the County**, … on or after **August 1, 2034** at the principal amount of the Bonds called for redemption, together with interest accrued thereon, **without premium**……

First 10 years call protected

First optional call date

Call price – at par in this case

TYPES OF REFUNDINGS & TIMING

» **Refunding bonds are characterized as either <u>current</u> refunding or <u>advance</u> refunding**

CURRENT REFUNDING:

- New bond proceeds are used to call refunded bonds within 90 days
- Tax-exempt bonds can be issued to currently refund outstanding tax-exempt bonds

ADVANCE REFUNDING:

- Refunding bonds are issued more than 90-days before call date
- Proceeds sized to be sufficient to fund an escrow that, along with interest earnings, will pay debt service until the call date and then call the bonds
- Advance refundings are typically less efficient, especially when the interest rate earned on escrow is less than the borrowing rate (negative arbitrage)

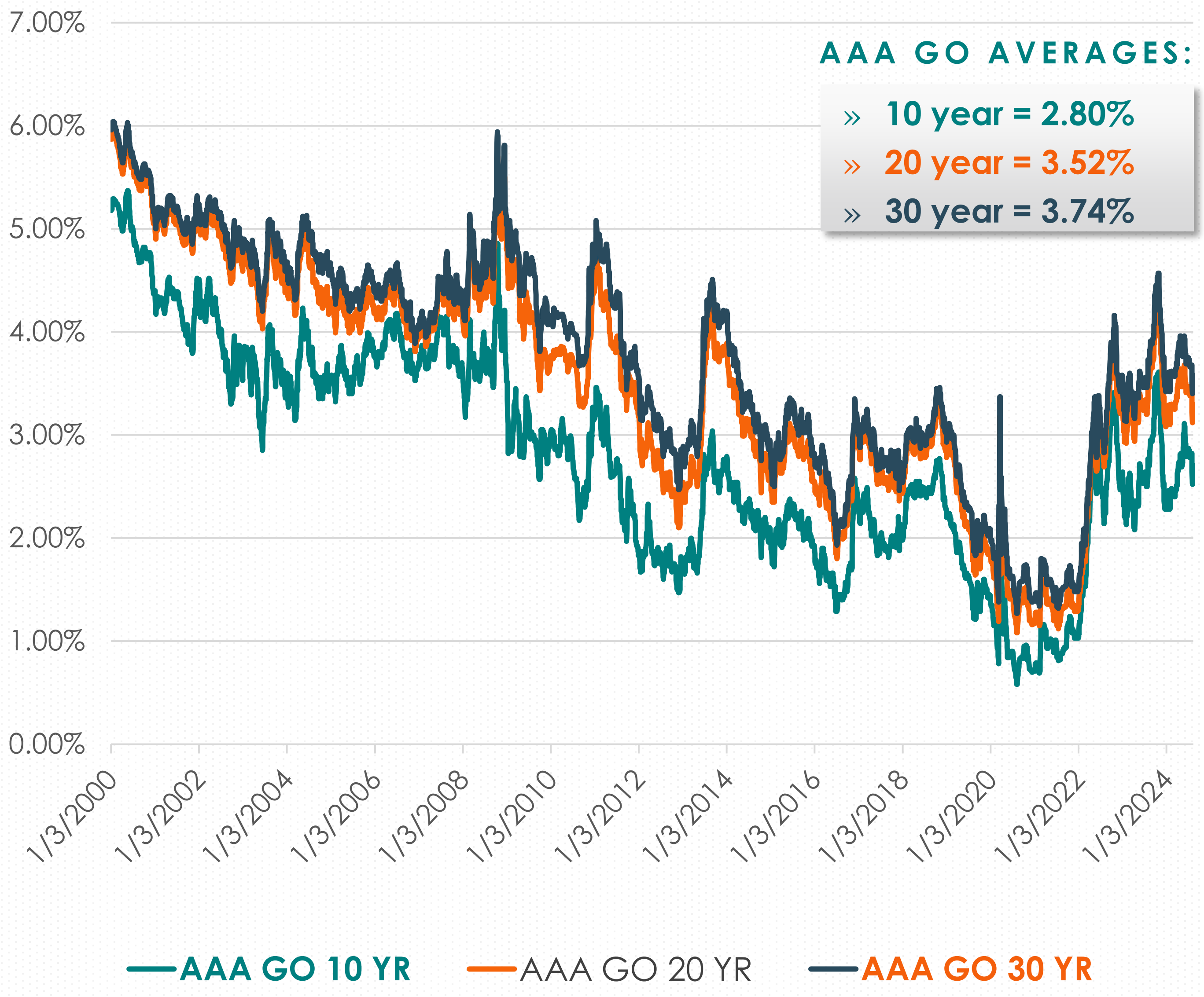
<u>Tax-exempt</u> advance refunding eliminated in 2017

Some agencies have issued **<u>Taxable</u>** bonds to advance refund, still generating savings.

CAPTURING SAVINGS

- **What goes up, must (?) go down**
- **When to examine a bond for a refunding?**
  - Nine months to a year before the optional call date
  - More frequently if market and policies might support a taxable advance refunding
- **When evaluating a bond for refunding savings, the coupon rate of existing debt is compared to the true interest cost of the refunding bonds**

CYCLICALITY OF INTEREST RATES

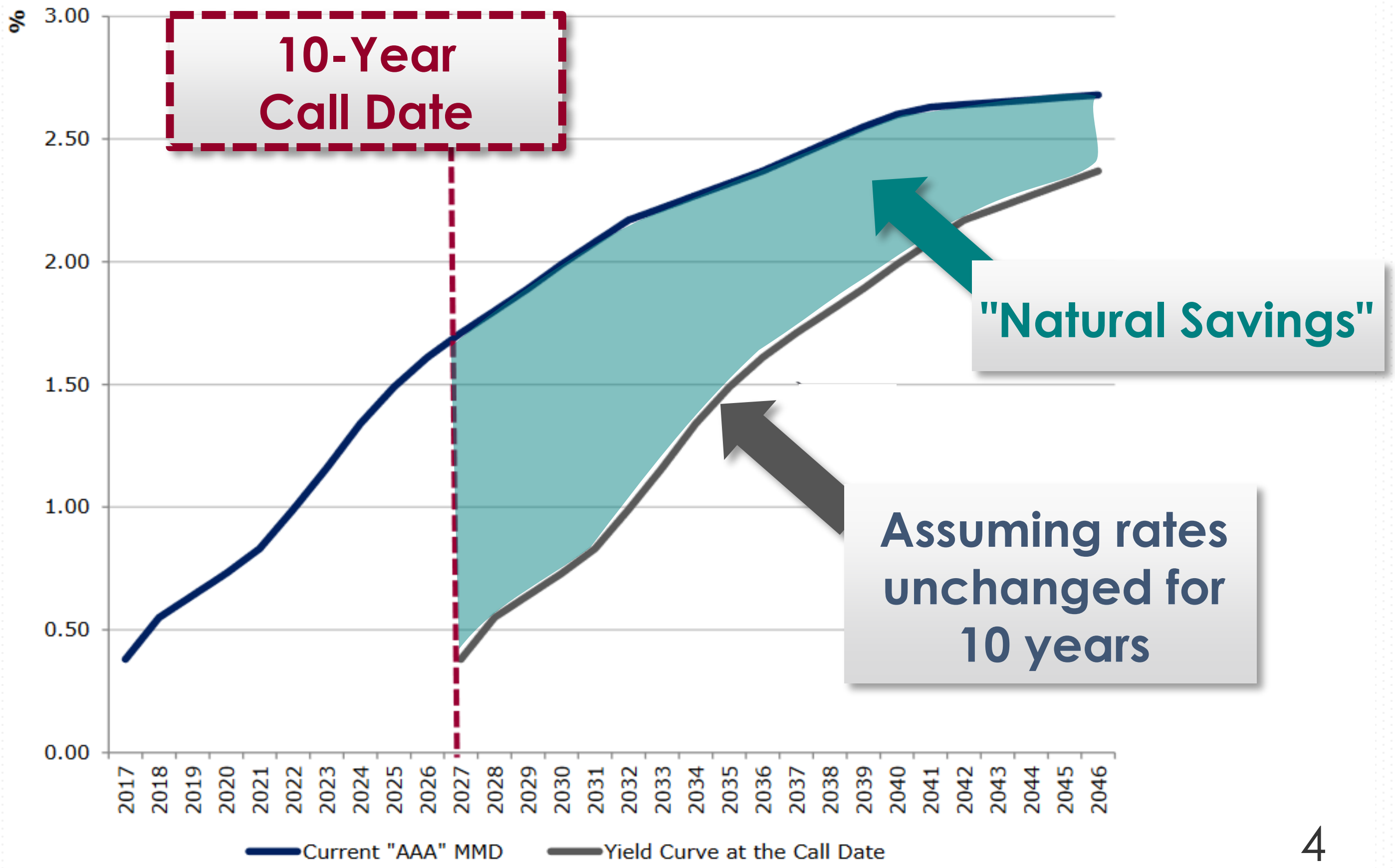


WHAT CREATES SAVINGS?

- Because of the typical shape of the yield curve, the passage of time alone may create savings
- At the optional call date, there is a "roll down" for corresponding maturities (e.g., years 10-30 are now years 0-20)
- The common use of "premium couponing" (e.g., 5% coupons to yield 3% to the investor) creates a higher likelihood of future refunding: creates "optionality"

ROLLING DOWN THE YIELD CURVE

YEAR	PAR	COUPON	YIELD
2032	$1,975,000	5.000	2.500
2033	$2,075,000	5.000	2.610
2034	$2,180,000	5.000	2.720
2035	$2,290,000	5.000	2.820



MEASURING SAVINGS

- **Savings typically presented as "present value savings"**
- Future cashflows typically discounted by the arbitrage yield on the refunding bonds (the current cost of funds)
- Most common measurement is present value savings divided by par amount of refunded bonds, shown as a percent
- Net-to-net refunding takes into account other factors, such as investment earnings on debt service reserve fund

Savings Summary:

» $845,073 Avg. Annual Cash Flow Savings
» $11,540,160 NPV Savings
» 26.4% Savings of Refunded Bonds (Par Amount of $35.7M)

Date	Prior Debt Service	Refunding Debt Service	Savings	Present Value Savings
2/1/2024	$4,629,263	$3,623,350	$997,027	$970,601
2/1/2025	$4,629,263	$3,622,100	$998,277	$960,388
2/1/2026	$4,629,263	$3,625,600	$994,777	$945,783
2/1/2027	$4,628,013	$3,623,350	$995,777	$935,413
2/1/2028	$4,627,263	$3,625,350	$993,027	$921,455
2/1/2029	$4,630,700	$3,626,100	$995,714	$912,793
2/1/2030	$4,630,500	$3,625,350	$996,264	$902,251
2/1/2031	$4,629,700	$3,622,850	$997,964	$892,861
2/1/2032	$4,628,100	$3,623,350	$995,864	$880,214
2/1/2033	$4,630,500	$3,622,750	$998,864	$872,113
2/1/2034	$4,630,500	$3,624,800	$996,814	$859,936
2/1/2035	$4,630,500	$3,623,850	$997,764	$850,488
2/1/2036	$4,630,500	$1,884,900	$515,334	$434,014
	$62,541,481	$47,503,333	$12,676,102	$11,539,860

REFUNDING SAVINGS

WHEN TO PULL THE TRIGGER?

A MOVING TARGET:

- Rule of thumb was often 3% PV savings
- "Conservative" polices called for 5% savings
- Prior to recent interest rate run-up, double-digit savings were common

CITY& COUNTY OF SAN FRANCISCO DEBT POLICY

1. *General Obligation Bonds*: GOs will be used to finance or refinance the [illegible] improvement, and/or construction of real property or real property [illegible] Such facilities include but are not limited to libraries, hospitals, parks, [illegible] facilities, cultural, affordable housing, and educational facilities. [illegible] will be used to finance facilities or projects that benefit the public [illegible] achieve a particular public safety or social objective for City [illegible]

[illegible] LRBs will be used to finance the acquisition, [illegible]

Absent any significant non-economic factors, it is the policy of the City that a refunding should produce minimum debt service savings of at least 3% of the par value of the refunded bonds on a net present value basis, using the refunding issue's True Interest Cost ("TIC")[1] as the discount rate.

may be eligible for capital lease financing. Eligible equipment must have a per unit cost of at least $100,000 unless it is an integral part of a system (such as a computer network) where the aggregate of the various components must total at least $100,000. The useful life of the item must be in excess of three years and at least 120% of the financing and refinancing term.

5. *Refunding Obligations*: Refunding bonds will be issued typically to achieve debt service savings for the City, although other non-economic factors may support the issuance of such obligations. Pursuant to section Charter section 9.109 and section 43.8.4(b) of the City's Administrative Code, the Board of Supervisors will establish by resolution the minimum savings to be generated by the issuance of such refunding.

Absent any significant non-economic factors, it is the policy of the City that a refunding should produce minimum debt service savings of at least 3% of the par

BEST PRACTICES

Refunding Municipal Bonds

Issuers should include guidelines and criteria in their debt management policies that address when a refunding is permitted based on potential debt service savings or other criteria, preservation of future refunding flexibility when issuing any new money debt, and monitoring of refunding opportunities on outstanding debt.

FORMAL POLICY VS. WISE PRACTICE

- Policies typically set a "minimum" goal
  - Risk of losing an opportunity
  - Risk of leaving significant savings on the table
- Refunding options have value; in practice, only can be exercised every ten years
- Prior to the call date, the challenge of a forward or advance
  - Bird in the hand vs. potential future savings
- After the call date, the call option is a 'wasting asset'

ANALYZING YOUR BREAKEVEN

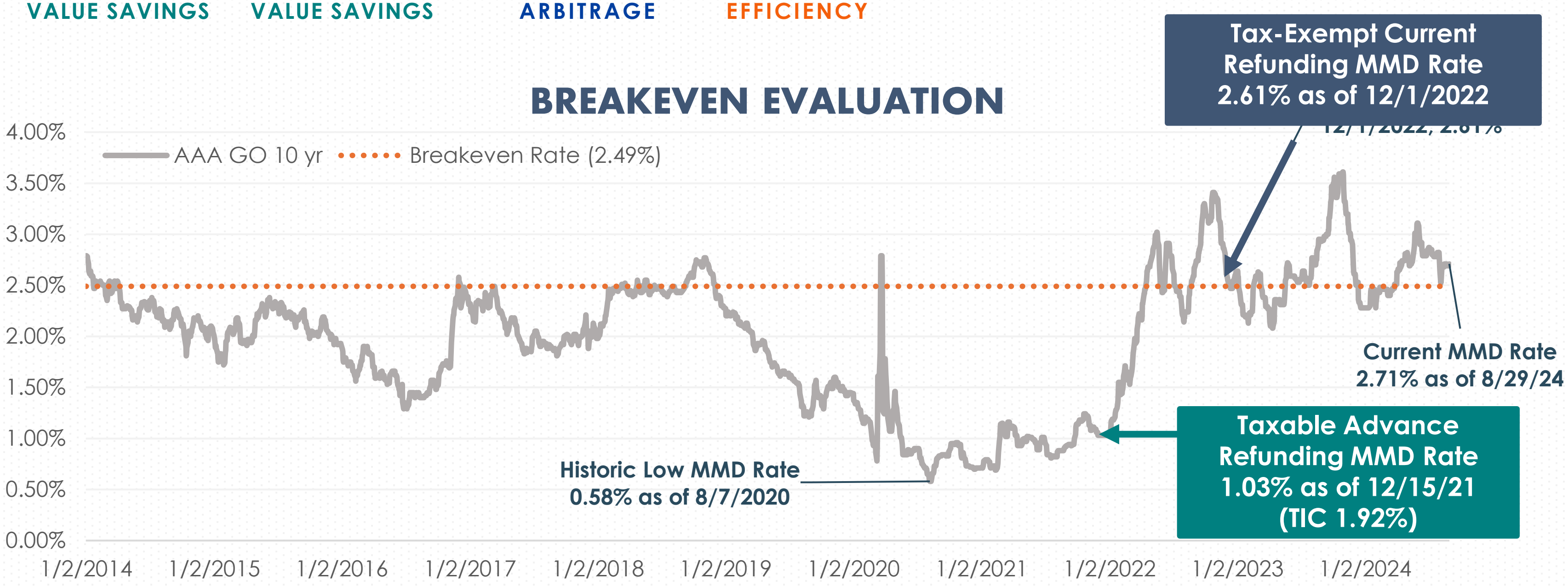
- Evaluating todays known savings vs potential future savings
- When evaluating a taxable advance refunding, it is helpful to calculate the break-even rate as compared to a future current refunding
- **Negative arbitrage** is the dollar cost of the escrow above what the dollar cost if invested at the arbitrage yield
- **Escrow efficiency** measures the relationship of this cost to the escrow relative savings

SAMPLE ANALYSIS 2021:

SUMMARY OF REFUNDING SAVINGS:	TAXABLE ADVANCE REFUNDING 12/15/2021 SEPTEMBER 2021 RATES	TAX-EXEMPT CURRENT REFUNDING 12/1/2022 SEPTEMBER 2021 RATES	BREAKEVEN ANALYSIS +156 BASIS POINTS
True Interest Cost (TIC):	1.92%	0.93%	2.49%
Escrow Size	$233,864,124	$213,912,804	$213,912,804
Negative Arbitrage	$7,255,650	$140,882	$417,508
Net Present Value (PV) Savings	**$31,221,695**	**$49,548,834**	**$31,154,833**
% Savings of Refunded Bonds	**14.7%**	**23.3%**	**14.6%**
Escrow Efficiency	**81.1%**	**99.7%**	**98.7%**

ESCROW EFFICIENCY CALCULATION:

$31,221,695 (NET PRESENT VALUE SAVINGS) **/ $31,221,695** (NET PRESENT VALUE SAVINGS) **+ $7,255,650** (NEGATIVE ARBITRAGE) **= 81.1%** (ESCROW EFFICIENCY)



MMA FINE TUNES POTENTIAL SAVINGS ON A REFUNDING

- When a partial refunding is possible, no need to refund maturities that don't meet goals

MATURITY-BY-MATURITY REFUNDING MONITOR

REFUNDED MATURITY	REFUNDED COUPON	REFUNDED PAR	CALL DATE	CALL PRICE	ESCROW RATE	REFUNDING YIELD	REFUNDING PAR	NPV SAVINGS	SAVINGS AS % OF REFUNDED PAR	NEGATIVE ARBITRAGE	ESCROW EFFICIENCY
8/1/2025	4.00%	$2,090,000	8/1/2024	100	1.32%	1.54%	$2,222,072	$28,223	1.35%	$7,952	78%
8/1/2026	4.00%	2,440,000	8/1/2024	100	1.32%	1.77%	2,594,189	68,798	2.82%	18,930	78%
8/1/2027	3.00%	2,815,000	8/1/2024	100	1.32%	1.92%	2,936,953	38,995	1.39%	28,753	58%
8/1/2028	4.00%	3,185,000	8/1/2024	100	1.32%	2.07%	3,386,268	165,324	5.19%	41,038	80%
8/1/2029	4.00%	3,615,000	8/1/2024	100	1.32%	2.22%	3,843,440	212,836	5.89%	55,801	79%
8/1/2030	4.00%	4,070,000	8/1/2024	100	1.32%	2.18%	4,327,193	313,378	7.70%	60,056	84%
8/1/2031	4.00%	4,555,000	8/1/2024	100	1.32%	2.28%	4,842,841	381,061	8.37%	74,945	84%
8/1/2032	4.00%	5,080,000	8/1/2024	100	1.32%	2.38%	5,401,017	448,020	8.82%	92,188	83%
8/1/2033	4.00%	5,635,000	8/1/2024	100	1.32%	2.53%	5,991,089	482,587	8.56%	116,540	81%
8/1/2034	4.00%	6,225,000	8/1/2024	100	1.32%	2.68%	6,618,372	500,516	8.04%	144,467	78%
8/1/2039	4.00%	41,455,000	8/1/2024	100	1.32%	3.05%	44,074,639	2,500,909	6.03%	1,217,266	67%

OTHER REFUNDING CONSIDERATIONS

CASH FLOW RESTRUCTURE:

- Restructuring debt payments with a modified amortization schedule and/or repayment term can help issuers better align with annual cash flows.

RISK REDUCTION:

- Refunding bonds can help to take advantage of enhanced credit profile and/or valuation if there has been improvement since the original issuance.
- Replacing variable-rate debt with fixed-rate debt.

RATE MANAGEMENT:

- Front-loading savings can help to reduce and/or stabilize rates for escalating debt service.

AMEND OR REMOVE RESTRICTIVE COVENANT:

- Onerous covenants may be revisited and potentially removed, particularly when replacing a short-term note with longer term debt.

FORWARD DELIVERY REFUNDING

- **Tax-exempt current refunding will always generate greater savings than taxable advance, all else equal… but waiting until near the call date entails risk of interest rates rising**

- **Forward delivery refunding is a middle-ground approach: locks in the bulk of the economics, at the expense of leaving a slice of potential savings on the table**
  - » Refunding bonds are <u>priced</u>, locking-in savings, well ahead of the call date (e.g., a year)
  - » Bonds <u>settle</u> within 90 days of call date, allowing for tax-exempt status
  - » Pricing premium for delayed settlement -- typically ~5 bps per month between pricing and delivery but can vary
  - » A relatively short "forward" usually more favorable than issuing advance refunding bonds at taxable rates

- **Additional considerations:**
  - » Some potential incremental effort (updating OS)
  - » Savings begin only after the call date
  - » Practical limit to how far ahead of the call date a forward is feasible

- **If a forward is not feasible, more exotic strategies (e.g., "Cinderella" refunding) can accomplish similar objectives**

EXAMPLE: OPTIONS IN FALL 2024 FOR BONDS CALLABLE IN SUMMER 2025

	TAXABLE ADVANCE	T-E CURRENT*	T-E FORWARD
PRICE:	Oct 2024	May 2025	Oct 2024
SETTLE:	Nov 2024	May 2025	May 2025
CALL DATE:	Aug 2025	Aug 2025	Aug 2025
NPV SAVINGS:	$8m / 10%	$12m / 15%	$10m / 12.5%

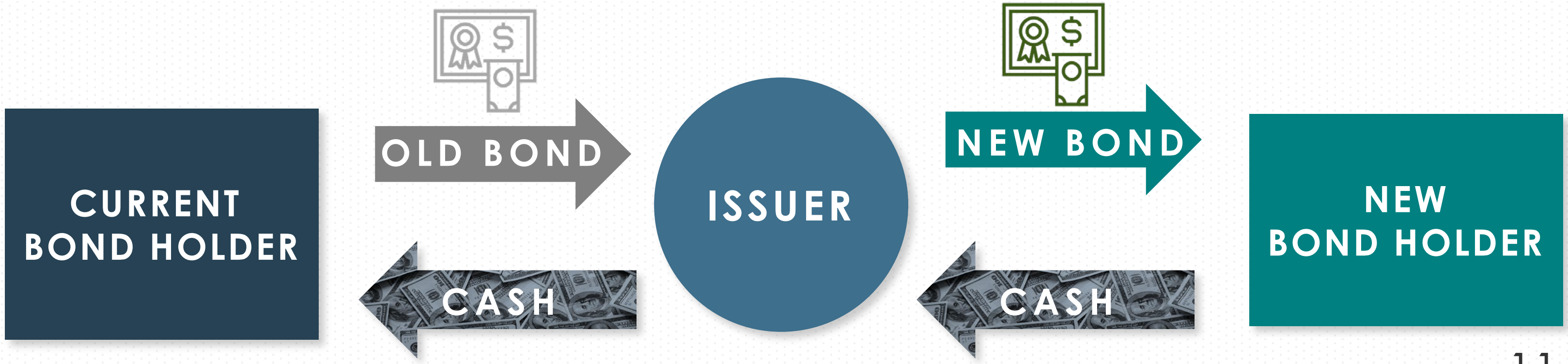
* illustrative option in fall 2024

TENDER OPTIONS

- **Refunding** is a financial process by which an issuer refinances outstanding bonds that have reached their first optional call date by issuing new bonds
  - » Gives the Issuer the right to retire all or part of the bonds before maturity at the **Issuer's discretion**
- **Tender** is an alternate financing process used to achieve issuer savings available to refinance bonds that have not reached their first optional call date to capture savings
  - » A tender gives bond holders the right to give back their bonds before maturity at the **investor's discretion**

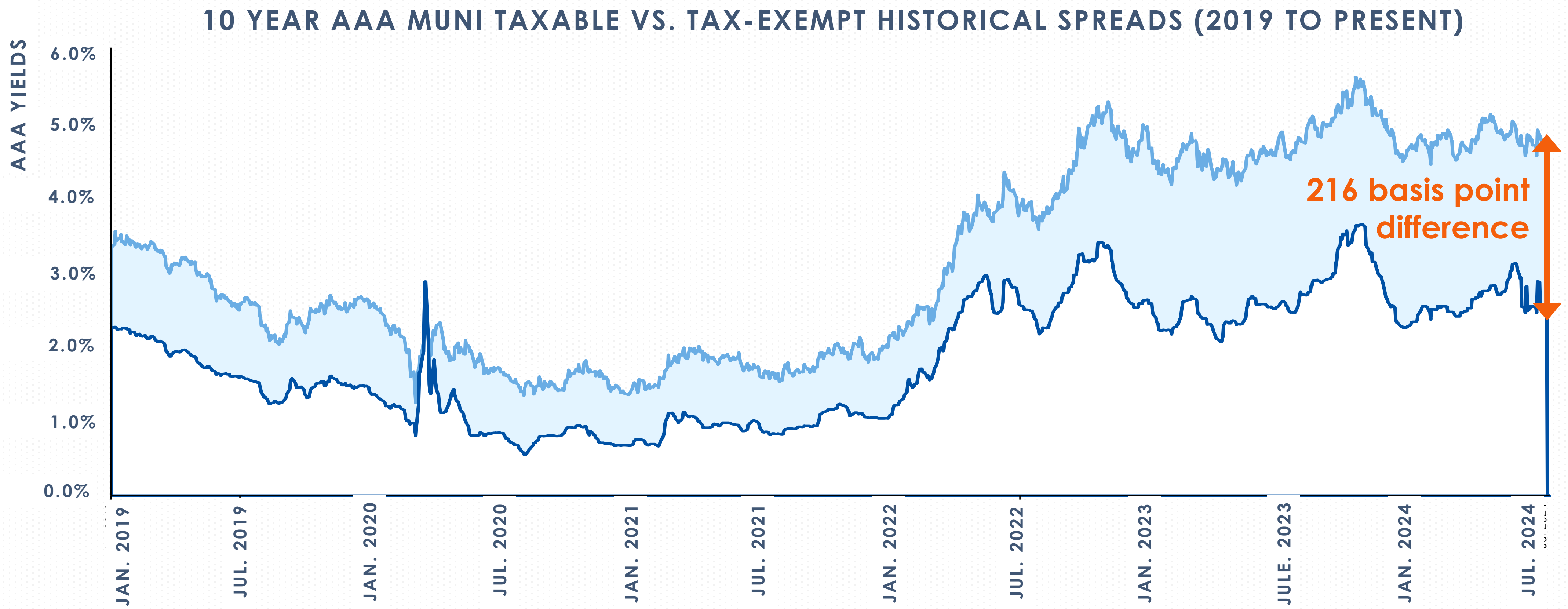
TENDER MECHANICS

- **Issuer makes a public offer (through an investment bank) to Bond Holders (investors) to give up their bonds at a predetermined price in exchange for cash**
  - » High-interest rate environment incentive for investors to give up bonds to buy higher coupons
  - » Investor has the discretion to participate in a tender
  - » Issuer is in control of what bonds are ultimately accepted for refinancing (i.e., must meet a minimum savings threshold)
- **Issuer issues refunding bonds in connection with the tender process**
  - » To generate cash to pay investors for their bonds
- **Net result is taxpayer savings**
  - » Understanding holder types and investor motivations is key to generating high levels of participation



TENDER MARKET DYNAMICS

- This current opportunity to buy back debt at deep discounts, generate economic savings, and enhance optionality is market driven, with benefits and challenges changing over time
- Many investors who purchased bonds in previous low-interest rate environments have seen the value of their bonds decrease as interest rates have risen over the past two years

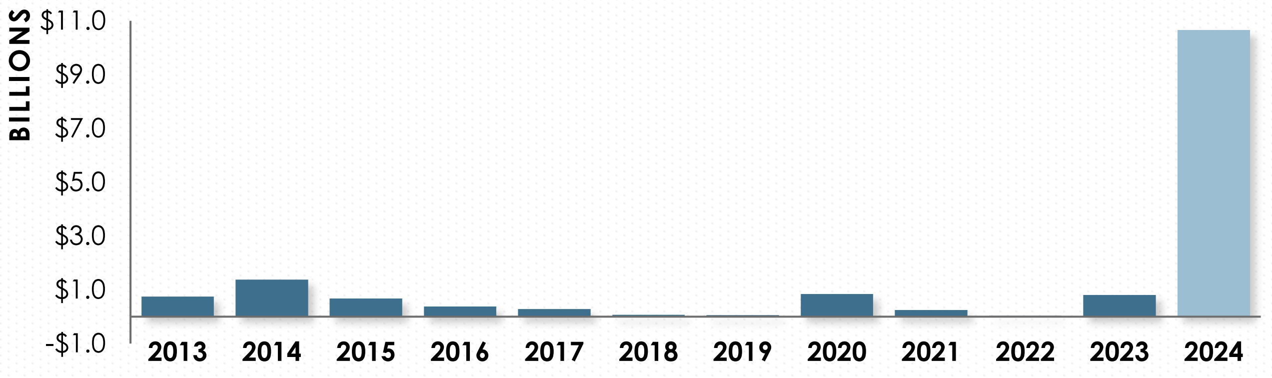


OTHER REFUNDING OPPORTUNITIES

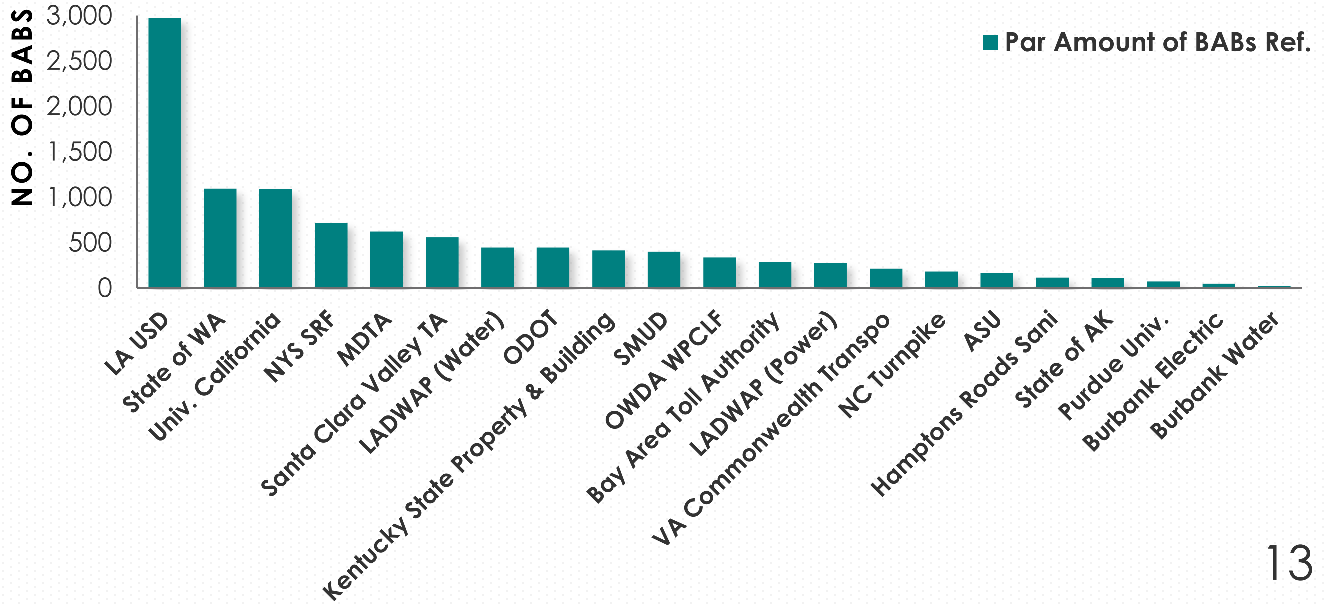
BABS

- **Build America Bonds ("BABs") are taxable bonds subsidized by the Federal Government**
  - » Introduced in 2009 as part of the American Recovery and Reinvestment Act
  - » Bond program expired in 2010
  - » Most BABs were sold with a "make-whole redemption" language
  - » The primary benefit of refinancing BABs using the extraordinary redemption provision make-whole call is to eliminate future sequestration risk, not to achieve debt service savings
  - » Under current market conditions, high taxable rates have reduced the make whole call prices for taxable debt, and certain BABs can be refunded with tax-exempt bonds at a slight cost or even with some savings
  - » Saw a significant increase in BABs refundings in 2024

BAB REFUNDED PAR AMOUNT ($B) SINCE ANNOUNCEMENT OF SEQUESTRATION



SOME OF THE LARGEST ISSUERS IN THE MUNI MARKET ARE REFUNDING OUTSTANDING BABS WITH MWC ERPS



LEGAL CONSIDERATIONS

- Refunding is an issuance of new bonds (the refunding bonds) to pay debt service on a prior issue (the refunded bonds)
- Legal Authority:
  - General Obligation refunding bonds are typically issued under Articles 9 and 11 of Chapter 3 of Part 1 of Division 2 of Title 5 of the Government Code
  - Revenue refunding bonds are typically issued under Article 10 of Chapter 3 of Part 1 of Division 2 of Title 5 of the Government Code
- Purpose of a refunding is either to reduce the debt service on the financing or to remove or replace a restrictive covenant imposed by the terms of the refunded bonds (for example, an excessive coverage ratio)
- For accounting purposes, refunded bonds are not considered part of the issuer's outstanding debt because the refunded bonds are to be paid from the proceeds of the refunding bonds and not from the revenues originally pledged
- Refunded bonds may continue to hold a lien on the revenues originally pledged, however, unless the indenture or bond resolution provides for defeasance of the refunded bonds prior to maturity or redemption
- General rule is there must be savings

CONCLUSION

- Remember that the option to call bonds has a value
- It can only be exercised once every ten years
- Use it wisely!!

- Question debt policy refunding targets
- Rules-of-thumb: they may not be well informed

- With the common use of 5% or higher coupons (premium bonds), municipal bond loans can be thought of as bullet loans (effectively "coming due" in ten years), but with an interest rate cap of 5% if you don't refund

- Approach refunding opportunities with caution
- Virtually everybody advising you regarding a refunding only makes money if you refund your bonds

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QUESTIONS?

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