



Refunding bonds: strategies to generate savings

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welcome



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agenda

- Municipal bonds
- Bond market overview
- Refunding and other options; rising interest environment
- Refunding bonds and example: State of Wisconsin G.O. refunding

municipal bonds



what is municipal bond?

- Debt security: An obligation to pay a stated amount of money at a fixed future date made for the purpose of incurring debt.
- Primary way that municipal governments (cities and counties) borrow money for capital projects
- Advantages of municipal bonds compared to other types of municipal borrowing (bank loans, placements, etc.)
 - Tax-exemption
 - Competitive market
 - Structuring flexibility



types of municipal bonds: serial vs. term

- **Serial bonds**

- Bonds of an issue that mature in consecutive years or other intervals and are not subject to mandatory sinking fund provisions.

- **Term bonds**

- Bonds that come due in a single maturity whereby the issuer may agree to make periodic payments into a sinking fund for mandatory redemption of term bonds before maturity or for payment at maturity.

types of municipal bonds: federal tax status

Tax status of bond issues

Tax-exempt bonds – Interest paid to bondholder is not subject to taxation as income

- Generally, lower interest rate, factoring in tax savings to bondholder
- Generally redeemable at par plus accrued interest, but can include redemption premium

Taxable bonds – Interest paid to bondholders is subject to taxation as income

- Generally, higher interest rate because interest income is taxable
- Often include “make-whole” redemption provisions



types of municipal bonds: security

General obligation bonds

- Pledge of full faith and credit of the issuer
- Supported by the issuer's ability to levy and collect ad valorem taxes

Revenue bonds

- Backed by the revenues of a facility/system/enterprise that is being financed
 - Sewer, water, sales tax, income tax, TIF revenue bonds
- Generally, not a tax/general obligation pledge (unless it's a "double-barrel" pledge)
 - Typically involves a trust indenture, which may contain various covenants
 - Debt service coverage ratio
 - Liquidity ratios
 - Reporting requirements
 - Additional debt limitations



municipal bond overview: optional calls

- Most municipal bond issuers sell a portion of tax-exempt bond issues (usually maturities after 10 years or greater) as callable bonds
- Callable bonds permit the borrower to call back the bonds from the bondholder at a specified price
- Rules as to when and at what price the borrower can call the bonds are stated in the Official Statement
- The ability to call bonds is important to the borrower because if interest rates decrease, a borrower can refund the bonds for savings



refunding bonds

- **Current refundings:** Old debt is paid off within 90 days of the issuance of the new bonds
- **Advance refundings:** The proceeds of the new bonds are deposited into escrow to pay the old debt off in more than 90 days of the issuance of the new bonds. As a result of tax law changes in 2017, these are generally taxable transactions.
- **Forward refunding:** Type of current refunding. Refunding bonds aren't legally issued until within 90 days of the call date, but the key parameters (interest rate, issue date, bond size, etc.) of the issue are determined before then.

bond market overview



Fed funds rate (lower bound)

FRED  — Federal Funds Target Range - Lower Limit



Shaded areas indicate U.S. recessions.

Source: Board of Governors of the Federal Reserve System (US)

fred.stlouisfed.org



The Fed's New Dot Plot

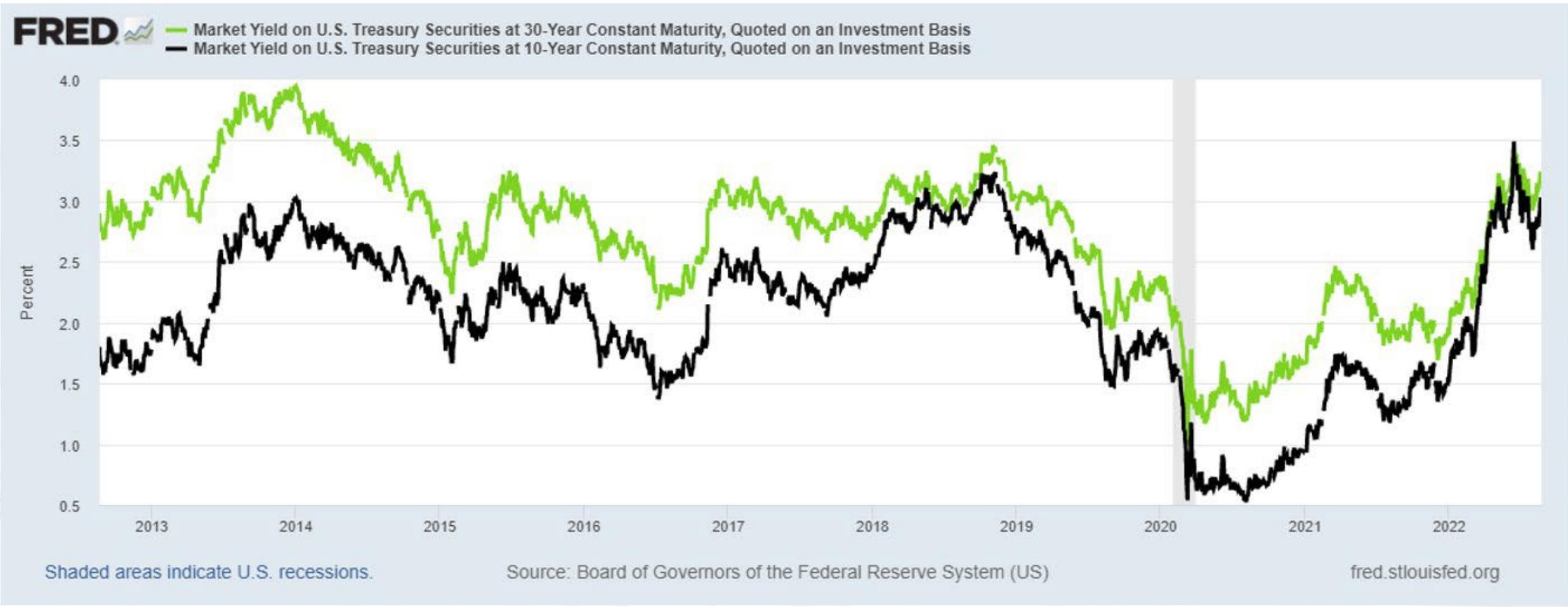


Source: Bloomberg

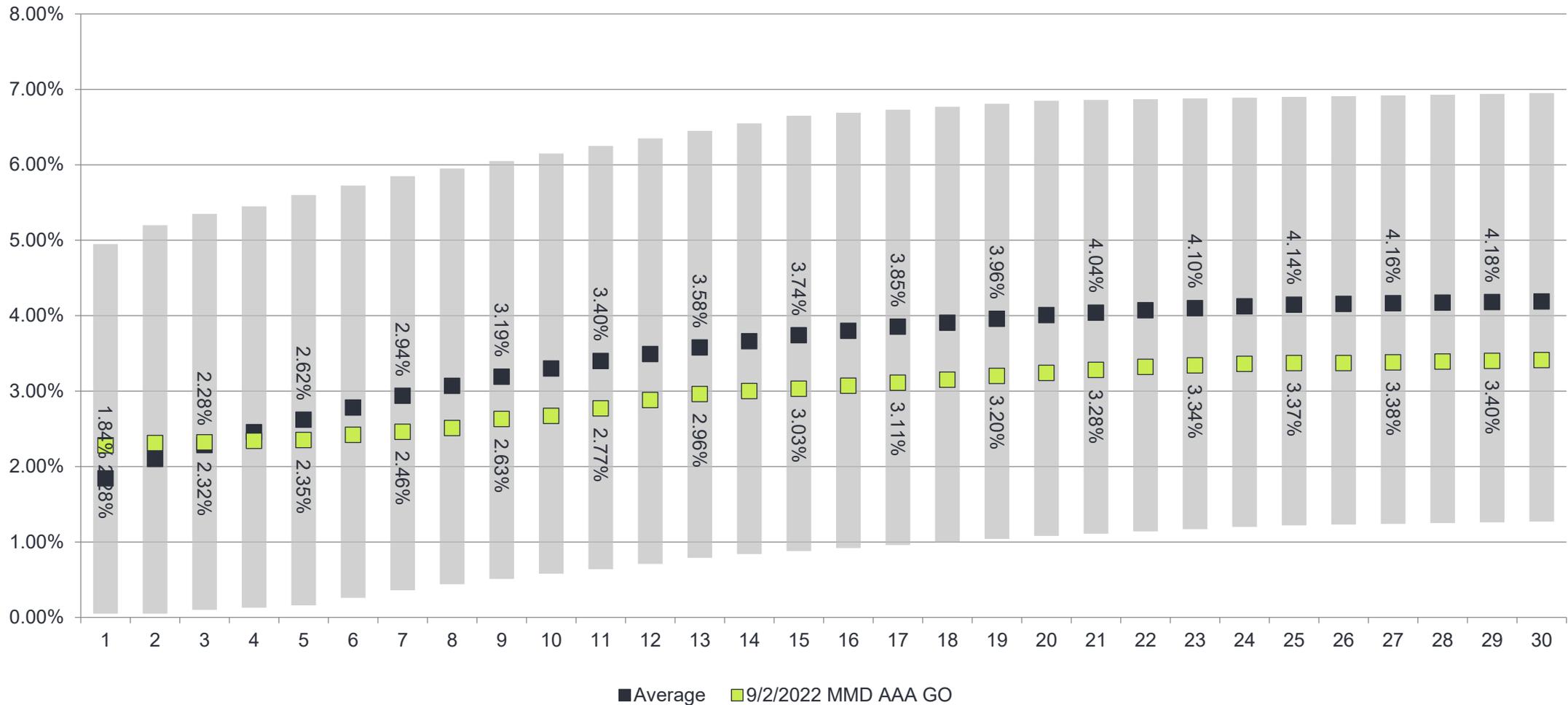
Bloomberg



US Treasury rates



MMD yield curve vs historical



**refunding
and other
options;
rising
interest rate
environment**



REFUNDING AND OTHER OPTIONS

**recent
historic low
interest rates
– refunding
transactions**

Stay calm

- Investors and financial media may be sensitive to and sensationalize market movement.
- A 50 bps (0.5%) increase on \$1 million in principal equates to \$5,000 in additional annual interest cost.
- Important to remember many bonds are secured by property taxes or retail sales. Inflation can result in increased governmental revenue via higher taxable sales and property values.

be patient

- Recent spike in refunding transactions result of 'advance refunding' issues; with time a 'current refunding' can occur with debt service savings
- Generally economic cycles occur; what goes up must come down also generally applies to interest rates.
- Increase in interest rates can actually help advance refunding transactions; escrow yield

discuss options with municipal advisor

- Forward delivery transactions; price bonds now for issuance/delivery at a date more than 5 weeks after pricing and within current refunding window
- Tender/bond repurchase; offer to purchase bonds back from investors at a negotiated price
- Structure of new money bond issues; provide good redemption provisions that are advantageous to issuer
- Short-term borrowing/BANs/Commercial paper; best place to borrow in a rising rate environment is along the front-end of the yield curve
- An inflationary environment is no time to borrow money based on uncertain knowledge of project costs

investment considerations

- Keep investment maturities short between 3-12 months
- As investments mature, stay in the 3- to 12- month range until Fed signals a pause in rate increases
- In the months preceding an expected Fed rate pause, begin extending investment maturities provided you are confident of liquidity needs
- Despite rate environment, still prudent to match investments to the draw schedule by building a monthly investment ladder; review draw schedule and update as needed



The background features a series of concentric, semi-transparent red circles that create a ripple effect, centered on the right side of the frame. The circles vary in opacity, with the innermost being the most vibrant and the outermost being the most faded.

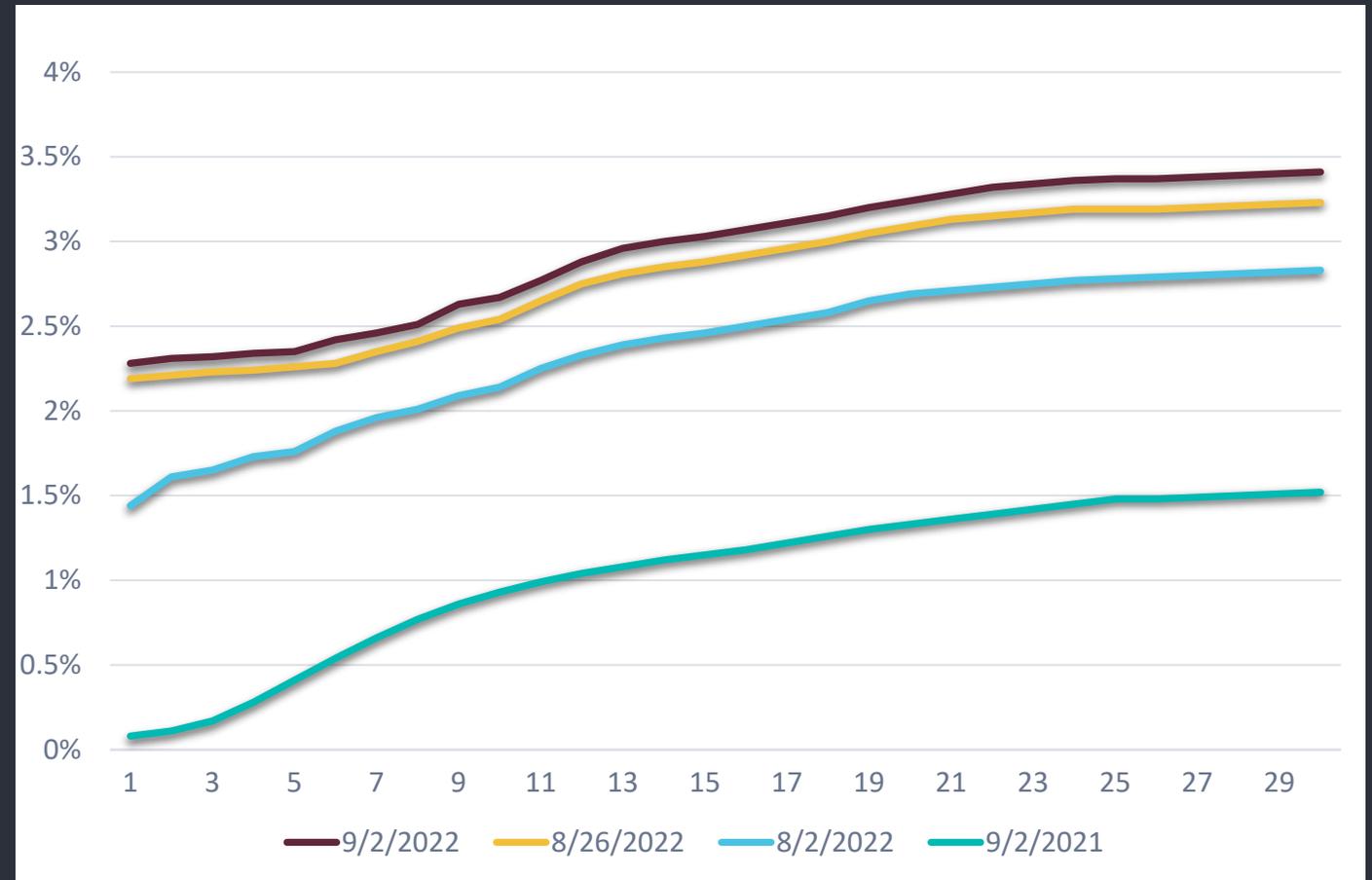
refunding bonds

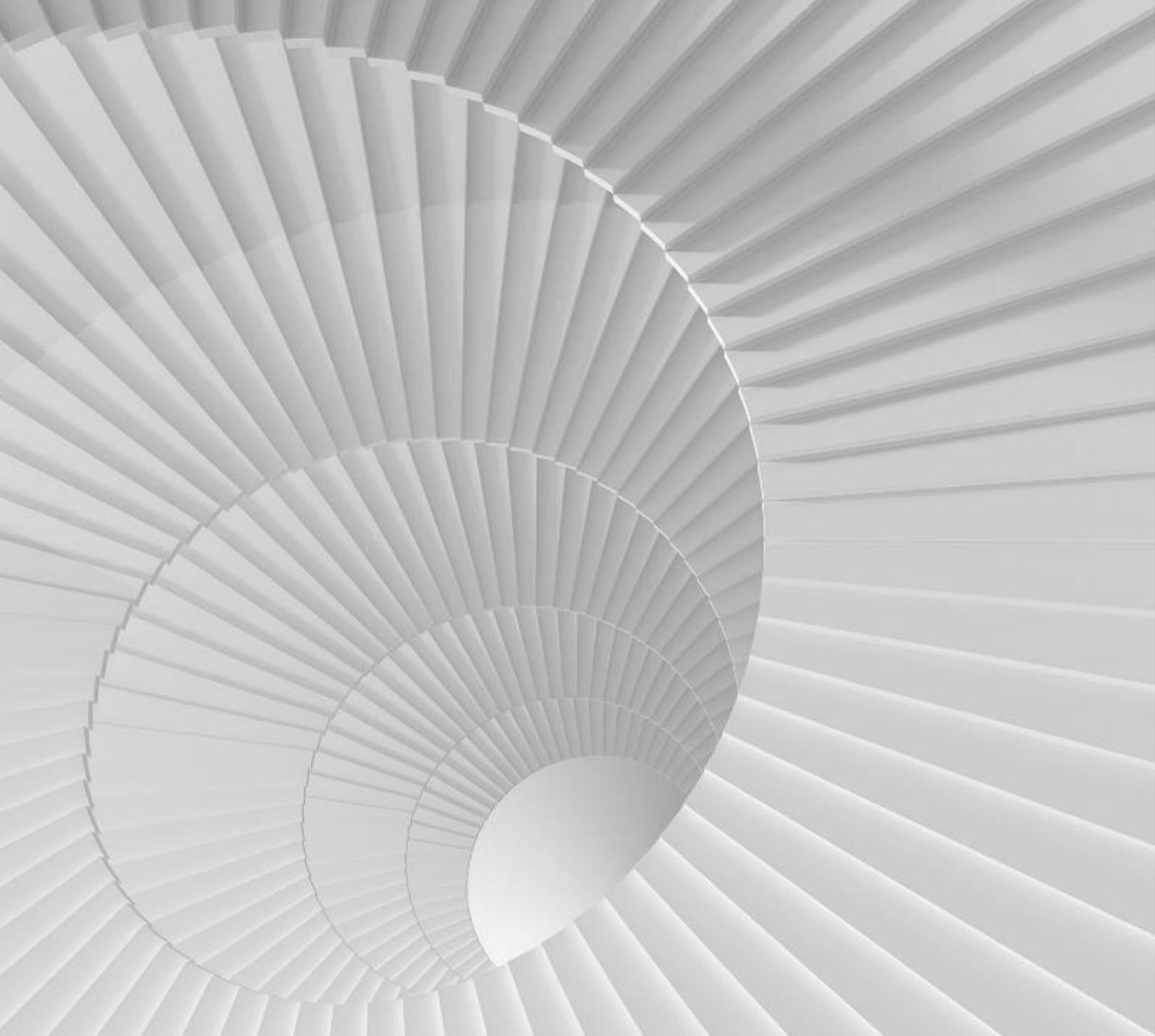
refunding bonds

- Refundings are debt issues used to retire previously issued bonds (current refunding) or to provide for future debt service payments on previously issued bonds (advance refunding or defeasance)
- Refundings are completed for a variety of reasons:
 - Provide debt service savings to the borrower
 - Restructure debt service
 - Remove restrictive bond covenants

refunding bonds: using yield curve

At a 10-year call date, bonds originally issued with maturities greater than 10 years can be refunding with yields for bonds with less than 10 years.





refunding bonds: savings and other metrics

Refunding savings are the savings obtained by comparing the debt service on the prior refunded bonds with the debt service on the new refunding bonds

- Savings are typically assessed on a present value basis and discounted back to the date of issue
- PV Savings/Debt Service
- Negative arbitrage
- Breakeven

refunding example

refunding example:

\$326,370,000

State of Wisconsin General Obligation Refunding Bonds of 2021, Series 4 (Taxable)

OFFICIAL STATEMENT

New Issue

This Official Statement provides information about the Bonds. Some of the information appears on this cover page for ready reference. To make an informed investment decision, a prospective investor should read the entire Official Statement.

\$326,370,000

STATE OF WISCONSIN

GENERAL OBLIGATION REFUNDING BONDS OF 2021, SERIES 4 (TAXABLE)

Dated: Date of Delivery **Due: May 1, as shown below**

Ratings AAA Kroll Bond Rating Agency, Inc.
Aa1 Moody's Investors Service, Inc.
AA+ S&P Global Ratings

Taxable Interest on the Bonds is included in gross income for federal income tax purposes—*See pages 11-14.*

Interest on the Bonds is not exempt from current State of Wisconsin income or franchise taxes—*See page 14.*

Redemption The Bonds maturing on or after May 1, 2032 are callable at par on May 1, 2031 or any date thereafter—*See page 3.*

The Bonds are subject to redemption at any time at the make-whole redemption price—*See pages 3-4.*

Security Purpose General obligations of the State of Wisconsin—*See page 3.*
Proceeds from the Bonds are being used for the advance refunding of general obligation bonds previously issued by the State of Wisconsin for general governmental purposes—*See pages 2-3.*

Interest Payment Dates May 1 and November 1

First Interest Payment Date May 1, 2022

Delivery On or about September 23, 2021

Denominations Multiples of \$5,000

Bond Counsel Foley & Lardner LLP

Registrar/Paying Agent Secretary of Administration

Issuer Contact Wisconsin Capital Finance Office
(608) 267-0374; DOACapitalFinanceOffice@wisconsin.gov

Book-Entry System The Depository Trust Company—*See pages 5-6.*

2020 Annual Report This Official Statement incorporates by reference, and makes updates and additions to, **Parts I, II, and III** of the State of Wisconsin Continuing Disclosure Annual Report, dated December 23, 2020.

The prices and yields listed below were determined on September 1, 2021 at negotiated sale.

CUSIP	Due (May 1)	Principal Amount	Interest Rate	Price at Issuance	First Optional	Call Price
					Par Call Date (May 1) ^(a)	
97705M VL6	2027	\$ 6,310,000	1.081%	100.000%	Not Callable	-
97705M VM4	2028	6,375,000	1.231	100.000	Not Callable	-
97705M VN2	2029	31,135,000	1.402	100.000	Not Callable	-
97705M VP7	2030	5,655,000	1.502	100.000	Not Callable	-
97705M VQ5	2031	43,860,000	1.622	100.000	Not Callable	-
97705M VR3	2032	44,675,000	1.772	100.000	2031	100%
97705M VS1	2033	45,565,000	1.902	100.000	2031	100
97705M VT9	2034	46,535,000	2.002	100.000	2031	100
97705M VU6	2035	47,575,000	2.102	100.000	2031	100
97705M VV4	2036	48,685,000	2.202	100.000	2031	100

^(a) All of the Bonds are subject to optional redemption on any Business Day at the Make-Whole Redemption Price described under "THE BONDS; Redemption Provisions; *Optional Redemption With Make Whole Premium*" herein.

Citigroup
Stifel
Loop Capital Markets
UBS

American Veterans Group, PBC
Jefferies
Stern Brothers

September 1, 2021

refunding example: summary



GO Refunding Bonds of 2021, Series 4 (Taxable)

Issue*	■ \$283,565,000* State of Wisconsin General Obligation Refunding Bonds of 2021, Series 4 (Taxable)
Ratings	■ Moody's, S&P, Kroll (Applied for)
Security	■ Full faith, credit, and taxing power of the State of Wisconsin
Use of Proceeds	■ Advance refunding of certain of the State's outstanding GO Bonds ■ Pay certain costs of issuance
Structure*	■ Interest payments on May 1 and November 1, commencing May 1, 2022 ■ Annual principal payments on May 1, 2022 – 2037*
Redemption Features*	■ Optional redemption and / or mandatory sinking fund redemption prior to maturity
Tax Status	■ Federally Taxable and Wisconsin Taxable
Bond Counsel	■ Foley & Lardner LLP
Senior Manager	■ Stifel
Co-Senior Manager	■ Loop Capital Markets
Co-Managers	■ Citigroup; Jefferies; UBS; American Veterans Group, PBC; Stem Brothers

Preliminary Financing Schedule*		Senior Managing Underwriter <i>Stifel</i>	Municipal Advisor <i>Baker Tilly Municipal Advisors</i>
Date	Event		
August 17, 2021	Post POS and Internet Road Show		
Week of August 30, 2021	Pricing	Omar Daghestani <i>Managing Director</i> daghestanio@stifel.com 312-454-3845	Brad Elmer <i>Managing Director</i> Brad.Elmer@bakertilly.com 608-513-0992
Week of September 20, 2021	Closing and Delivery		

*Preliminary, subject to change

refunding example: analysis

(assumes September 2021 transaction date)

Refunding Opportunities						Present Value Savings		OCI Test			Escrow Efficiency	Breakeven
Series	Maturity Date	Interest Rate	Par Amount	Call Date	Call Price	Savings: Current Scale	% Savings	Savings: Scale Minus 25 bps	% Savings	% Change in Savings	Savings vs. Current PV Savings	Taxable Advance To TE Current
2013-1	5/1/24	5.00%	39,335,000	5/1/23	100	1,378,525	3.50%	1,665,479	4.23%	20.82%	76.07%	1.03%
2018A	5/1/24	5.00%	18,020,000	5/1/23	100	631,571	3.50%	763,029	4.23%	20.81%	76.07%	1.03%
2018B	5/1/24	5.00%	9,365,000	5/1/23	100	328,202	3.50%	396,521	4.23%	20.82%	76.06%	1.03%
2013-1	5/1/25	4.00%	250,000	5/1/23	100	12,247	4.90%	14,696	5.88%	19.99%	76.01%	1.05%
2018A	5/1/28	5.00%	13,010,000	5/1/23	100	1,866,298	14.35%	2,101,232	16.15%	12.59%	84.94%	1.43%
2018B	5/1/28	5.00%	11,445,000	5/1/23	100	1,641,892	14.35%	1,848,521	16.15%	12.58%	84.94%	1.43%
2013-1	5/1/27	5.00%	11,350,000	5/1/23	100	1,357,911	11.96%	1,532,104	13.50%	12.83%	83.87%	1.46%
2018A	5/1/27	5.00%	12,375,000	5/1/23	100	1,480,504	11.96%	1,670,429	13.50%	12.83%	83.87%	1.46%
2018B	5/1/27	5.00%	10,890,000	5/1/23	100	1,302,980	11.96%	1,469,976	13.50%	12.82%	83.88%	1.46%
2013-1	5/1/33	4.13%	830,000	5/1/23	100	120,293	14.49%	145,165	17.49%	20.68%	79.72%	1.49%
2016D	5/1/37	5.00%	33,550,000	5/1/24	100	7,111,168	21.20%	8,500,983	25.34%	19.54%	76.93%	1.63%
2016D	5/1/30	5.00%	14,550,000	5/1/24	100	2,065,046	14.19%	2,406,384	16.54%	16.53%	77.77%	1.80%

- Percentage Savings
- OCI Test
- Escrow Efficiency
- Breakeven – Taxable Advance to TE Current



refunding example: results

- \$58 million in present value savings
- Savings in every year with higher savings between 2022 and 2026
- Issuer will have option on “how” the savings are realized

SAVINGS

STATE OF WISCONSIN
GENERAL OBLIGATION REFUNDING BONDS OF 2021, SERIES 4 (TAXABLE)
******* FINAL NUMBERS | 2:00 PM CT, WEDNESDAY, SEPTEMBER 1, 2021 *******

Date	Prior Debt Service	Refunding Debt Service	Savings	Present Value to 09/23/2021 @ 1.9038834%
06/30/2022	14,281,000.00	3,658,485.42	10,622,514.58	10,568,520.62
06/30/2023	14,281,000.00	6,041,535.56	8,239,464.44	8,030,609.56
06/30/2024	14,281,000.00	6,041,535.56	8,239,464.44	7,879,871.92
06/30/2025	14,281,000.00	6,041,535.56	8,239,464.44	7,731,963.68
06/30/2026	14,281,000.00	6,041,535.56	8,239,464.44	7,586,831.74
06/30/2027	14,281,000.00	12,351,535.56	1,929,464.44	1,770,294.22
06/30/2028	14,281,000.00	12,348,324.46	1,932,675.54	1,740,184.89
06/30/2029	38,961,000.00	37,029,848.20	1,931,151.80	1,706,525.11
06/30/2030	13,047,000.00	11,113,335.50	1,933,664.50	1,673,402.92
06/30/2031	51,167,000.00	49,233,397.40	1,933,602.60	1,642,277.91
06/30/2032	51,271,000.00	49,336,988.20	1,934,011.80	1,607,135.68
06/30/2033	51,369,500.00	49,435,347.20	1,934,152.80	1,572,441.41
06/30/2034	51,472,750.00	49,538,700.90	1,934,049.10	1,538,177.28
06/30/2035	51,580,250.00	49,647,070.20	1,933,179.80	1,503,885.49
06/30/2036	51,686,250.00	49,757,043.70	1,929,206.30	1,467,811.77
	460,521,750.00	397,616,218.98	62,905,531.02	58,019,934.19

Savings Summary

PV of savings from cash flow	58,019,934.19
Plus: Refunding funds on hand	105.51
	<hr/>
Net PV Savings	58,020,039.70



contact us with any questions



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Firm stats



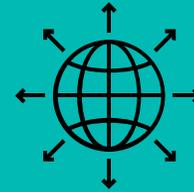
\$1.3

billion in revenue



6,500

team members



23

states

8

countries

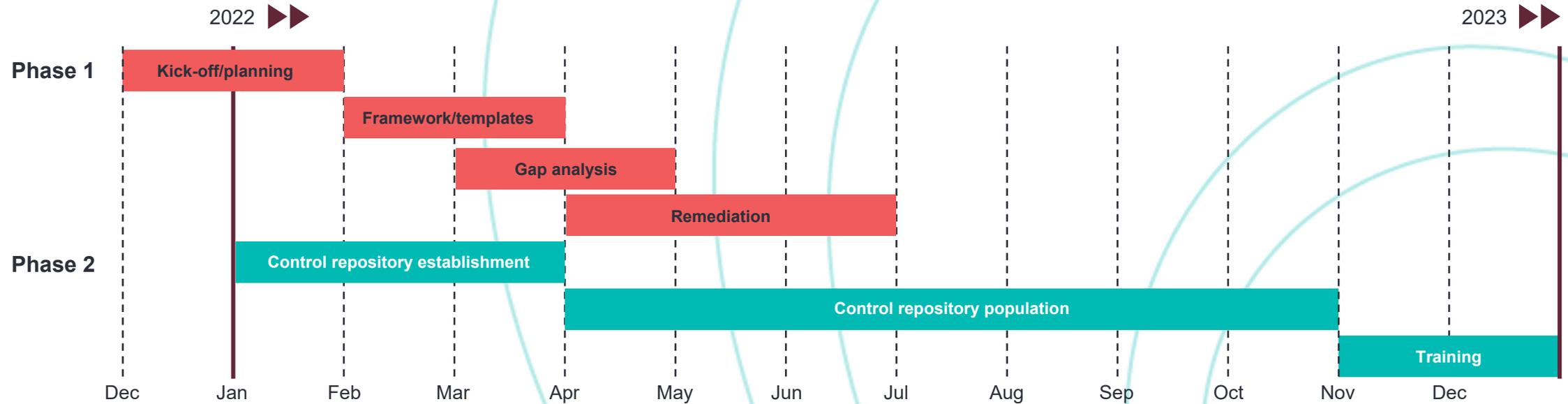


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higher education
clients

LEARN MORE

Services timeline



Framework

Critical success factors

Flexible, agile team structure

Transparent service delivery

Rigorous, proven methodology

TAILORED PROJECT MANAGEMENT FRAMEWORK

Client engagement model

Project management organization and
structure

Corporate alignment and capabilities

Project management support

Project management methodology

Critical success factors

Experienced, committed leadership

Multi-level quality assurance

Open and direct lines of communication

Solutions



Application Development

Introducing innovative applications and services into uncharted territory opens you up to opportunity — and risk. We help you successfully blaze the trail. Baker Tilly's experience enables us to envision and create custom solutions that enhance customer engagement and refine your operational efficiency.



Cloud Infrastructure

Chances are, the business environment you face today looks quite a bit different than just a few years ago. Fortunately, cloud is revolutionizing business in ways that can help you keep up, giving life to new products and services. Baker Tilly can implement, scale and secure your cloud technology to help you leverage it for innovation and growth.



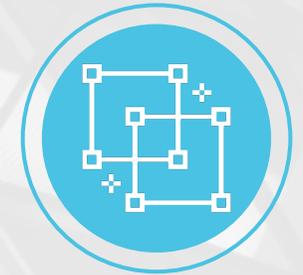
Data Solutions

Capturing the data that matters most and bringing it into focus is no trivial matter. Rely on our experience to drive your business forward. At Baker Tilly we help our clients derive value from data, whether it's through advanced machine learning, data visualization or working to implement new data processes for a "single source of truth."



Enterprise Solutions

Selecting, implementing or optimizing an enterprise technology solution is a complex endeavor. After we understand your business needs, we will use our experience and best practices to strengthen your company's performance and to achieve your goals.



Transformation Services

When developed and implemented appropriately, digital transformation is the game-changer you're looking for. From improved operational efficiency and workplace productivity, to better customer experiences—all geared toward accelerating sustainable growth for the long run. Let Baker Tilly guide the transformation that separates you from everyone else.



At a glance

\$3.9B

Combined
Revenue (U.S.)

10th

Largest International
Network

742

Offices

122

Firms

146

Territories/
Countries

36k⁺

People

9%

Growth

State funnel



Stacked approach

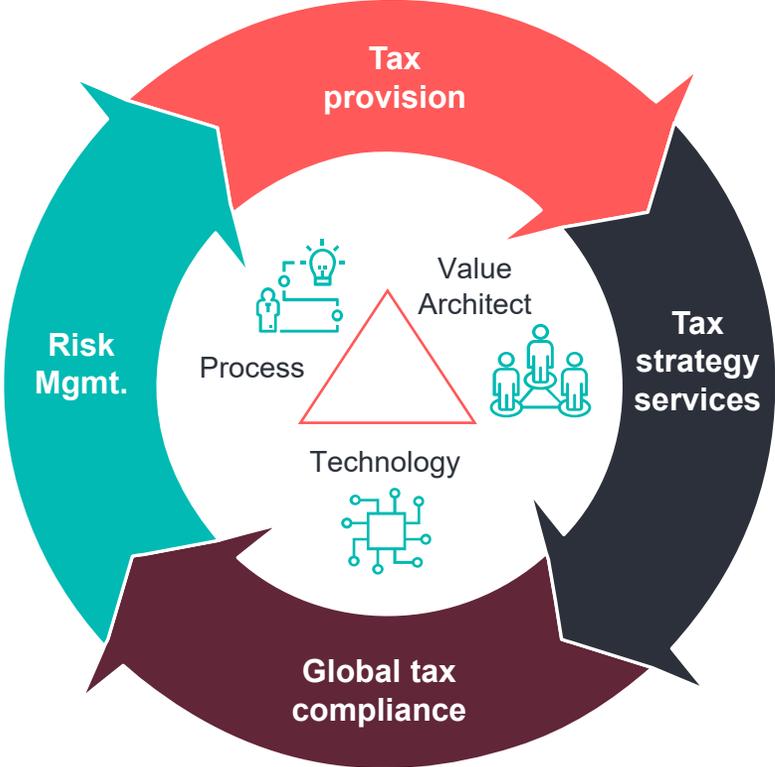
Tenets of our approach



Tenets of our approach



Tax managed services (option 1)



Tax managed services (option 2)

