What is Duration Risk?
How can we manage it?

A Lesson in Liquidity

OHIO GFOA

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Today's Presenter

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Risks of Public Funds Investing

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"Lions, and tigers, and bears…OH MY!"

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3 Pillars of Public Funds Investing

1 SAFETY

2 LIQUIDITY

3 YIELD

Safety, Liquidity, Yield

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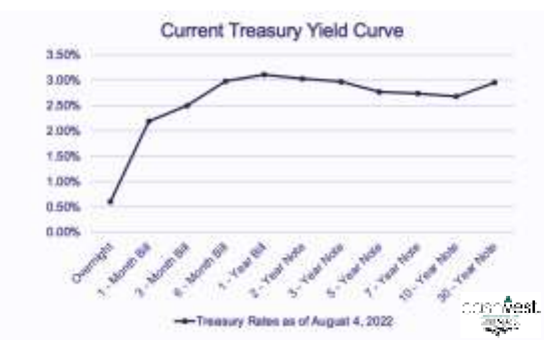

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Basics of Bonds

Fixed Rate

Cash-flow

Example: A $1,000 5 year bond with a 5% coupon rate pays $50 per year until maturity.

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Rates Drive Bond Price Changes

Example: The same $1,000 5-year 5% coupon bond from the last slide will be worth less if market rates increase to 6%.

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Interest Rate Risk

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Duration Calculates Future Price Changes

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STAR OH Yields

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GFOA Best Practices

Diversification

"Diversification is achieved by investing in a variety of securities with dissimilar risk characteristics that respond differently to changes in the market. Areas where diversification can be achieved include the maturity distribution in a portfolio (market and liquidity risk), sector allocation (credit risk), issuer allocation (credit risk), and the structures (non-callable vs. callable) of securities (market and liquidity risk)."

https://www.gfoa.org/materials/diversifying-the-investment-portfolio

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GFOA Best Practices

Hold to Maturity

Local governments may sell an investment before its final maturity date and net a gain, but it is not prudent to plan to do this at the time of investment.

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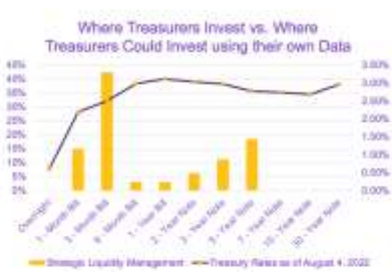

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Comparing the two "strategies"

Portfolio 1 - expected return of 2.27%

Portfolio 2 - expected return of 2.61%

- Increased expected return of 0.34% on a base of $10 million **means $34,000 more resources.**
- Also moving from an expected return of 2.27% to 2.61% is a 15% increase in expected interest earnings.
- Most importantly....this has been achieved without taking on significant credit risk (we are only using treasuries).

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3 things that may be keeping us in a more passive vs. more active approach:

How do we gain the confidence to invest our portfolio longer, yet still safely, to generate more yield and still maintain good liquidity?

- Investment Policy
- Banking Partners and Understanding Fees/ECR (Earnings Credit Rates)
- Cash Forecasting

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Investment Policy

Investment Policy Statement:

- The vast majority of local governments have an investment policy.
- It is a GFOA recommended and best practice.
- It is prudent to have one. (Many have elements that document and support internal controls.)
- Many state laws require this.
- Most state laws have a wide enough range of options to allow us to do more than we are doing now with our cash.

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Banking and Financial Partners

- The vast majority of banks that work with local governments have a wide range of options to help you invest and manage your cash.
- Registered Investment Advisors and Brokerage Firms can help with the purchase and/or sale of fixed income securities.
- Local government investment pools have an important role as a tool to implement a more active investment strategy.

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Cash Forecasting

- Every finance/treasury office does some sort of cash forecast but the way we have traditionally performed cash forecasting is likely the number one thing that's keeping us from moving to a more active investment strategy.
  - Our staff and banking partners are there and ready but it's likely that we don't have the data that gives us the information and confidence to optimize our investments.
    - Essentially we don't have the information and analytics that will tell me for how long and in what amounts the dollars I receive will be in my treasury for me to safely invest. (This is what we refer to as liquidity rather than cash flow).

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Liquidity Data vs. Cash Flow

Daily *ins* and *outs* of revenues & expenditures
- cash flow

The *measurement* & *value* of all your entity's cash
- liquidity

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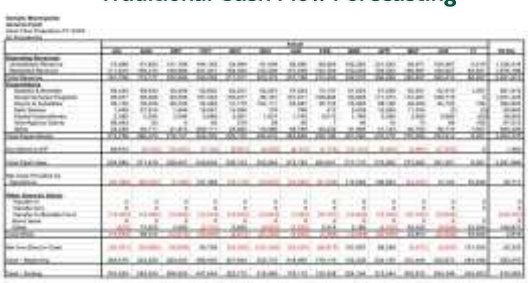
Traditional Cash Flow Forecasting



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"Most public entities say they don't have the time to look at data or document any value found in it."

-Ash Center for Democratic Governance and Innovation at the Harvard Kennedy School

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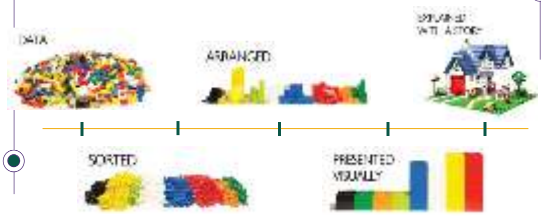

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Liquidity Displayed for Decision Making

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Liquidity Displayed for Decision Making

	Strategic Liquidity: $55.3 million							
	Level 5	Level 4	Level 3	Level 2	Level 1	Cushion	Working Capital	Total
Amount	4,500,000	4,500,000	10,500,000	10,500,000	17,500,000	7,800,000	11,898,234	$67,198,234
Duration	24 - 30 months	18 - 24 months	12 - 18 months	6 - 12 months	Up to 6 months	Up to 30 days	daily	Varies
Benchmark Rate	3.03%	3.07%	3.11%	2.98%	2.50%	2.19%	2.19%	2.65%
Benchmark Value	136,350	138,150	326,550	312,900	437,500	170,820	260,571	$1,782,843

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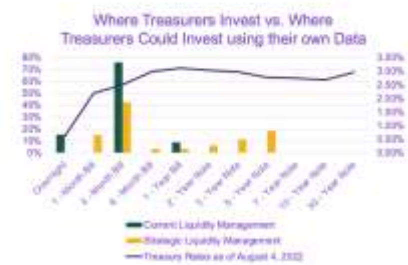

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Prudently investing public funds is a bit like climbing a staircase

Stable, steady, upward progression is the key. The sooner you put available cash to work earning interest, the higher your net earnings will be. A series of safe, dependable, laddered investments that take into consideration the factors of, **"how much", for "how long"**, and then researching the most advantageous interest rates available, is the key to success.

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Define Your Strategy

- **Laddered** - Consistent
- **Matched** - Analytical
- **Barbell** - Mixed

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Comparing peer bank benchmarks can make a real difference in earnings!

Benchmarking bank rates against U.S. Treasury rates, and against other comparable banks, ensures that you and your taxpayers are **receiving full marketplace value** on deposits.

	Term	Rate
Option #1	12-month CD	3.00%
Option #2	12-month T-bill	2.92%
Option #3	6-month T-bill	2.46%
Option #4	6-month CD	2.00%
Option #5	90-day T-bill	1.70%
Option #6	90-day CD	1.75%
Option #7	checking acct	0.50%

Range of recent interest rate quotes on a $5,000,000 investment:

- Benchmarks help you know more about what your cash is worth, and they ensure you are always maximizing the value on all financial resources.
- $5m @ 3.00% = **$150,000** interest revenue
- $5m @ 0.50% = **$25,000** interest revenue

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Earnings Credit Rate

- Your Earnings Credit Rate (ECR) is the rate your bank "pays" you on the balances held in deposit accounts. Typically the ECR is used to generate earnings to offset your bank fees.
- Depending on how you have structured your bank relationships and the volume and types of services used your level of fees and the related ECR can be quite important as a piece of your liquidity puzzle.
- The important thing to know about ECR….it is set by the bank and typically not benchmarked or indexed off any particular market place rate. It can be wholly discretionary.
- Even if you don't think you pay any bank fees your balances have an implied value relative to the bank services you use.

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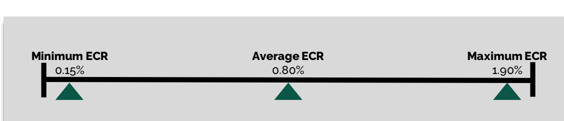
Current Range of ECRs



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Takeaways

- Use your data, stress test your cash and display it in a way that allows you to “see” how long you can invest it.
- Use the yield curve and fixed income to increase prudently the return on your cash.
- Review your bank fees and ECR for “hidden” opportunities to nudge your expected value and return higher.

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Thank you for attending

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