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Municipalities:

Efficient and Effective Cash Management

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Cash Flow Requirements

How much liquidity do you need?

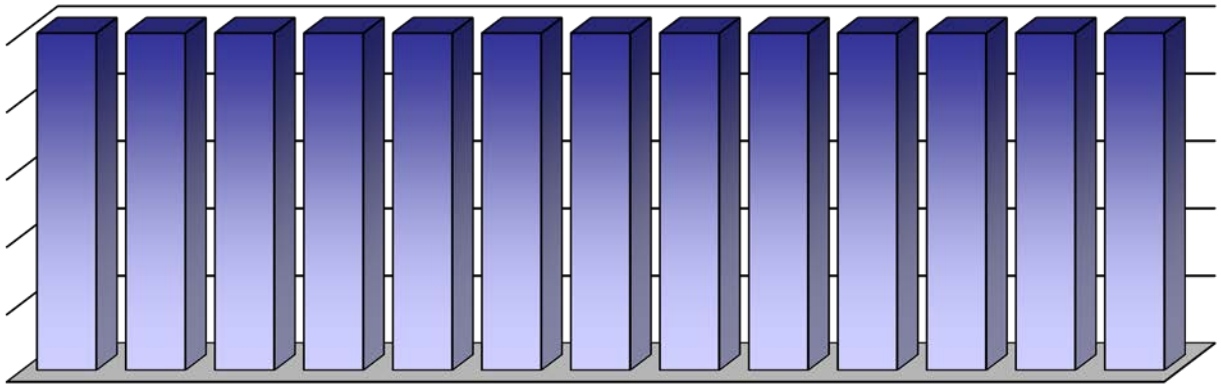
- What is the timing?

- How accurately does your cash flow sources and uses match?

- Can you afford to have some uncertainty in your cash flow from the investment portfolio?

The Cash Flow Ladder

When institutions create a fixed income portfolio, most investment officers think of a traditional “laddered” approach as distributing principal cash flows evenly across the maturity spectrum, i.e. the same amount of money maturing in each annual bucket.



The “Wedge” Cash Flow Ladder

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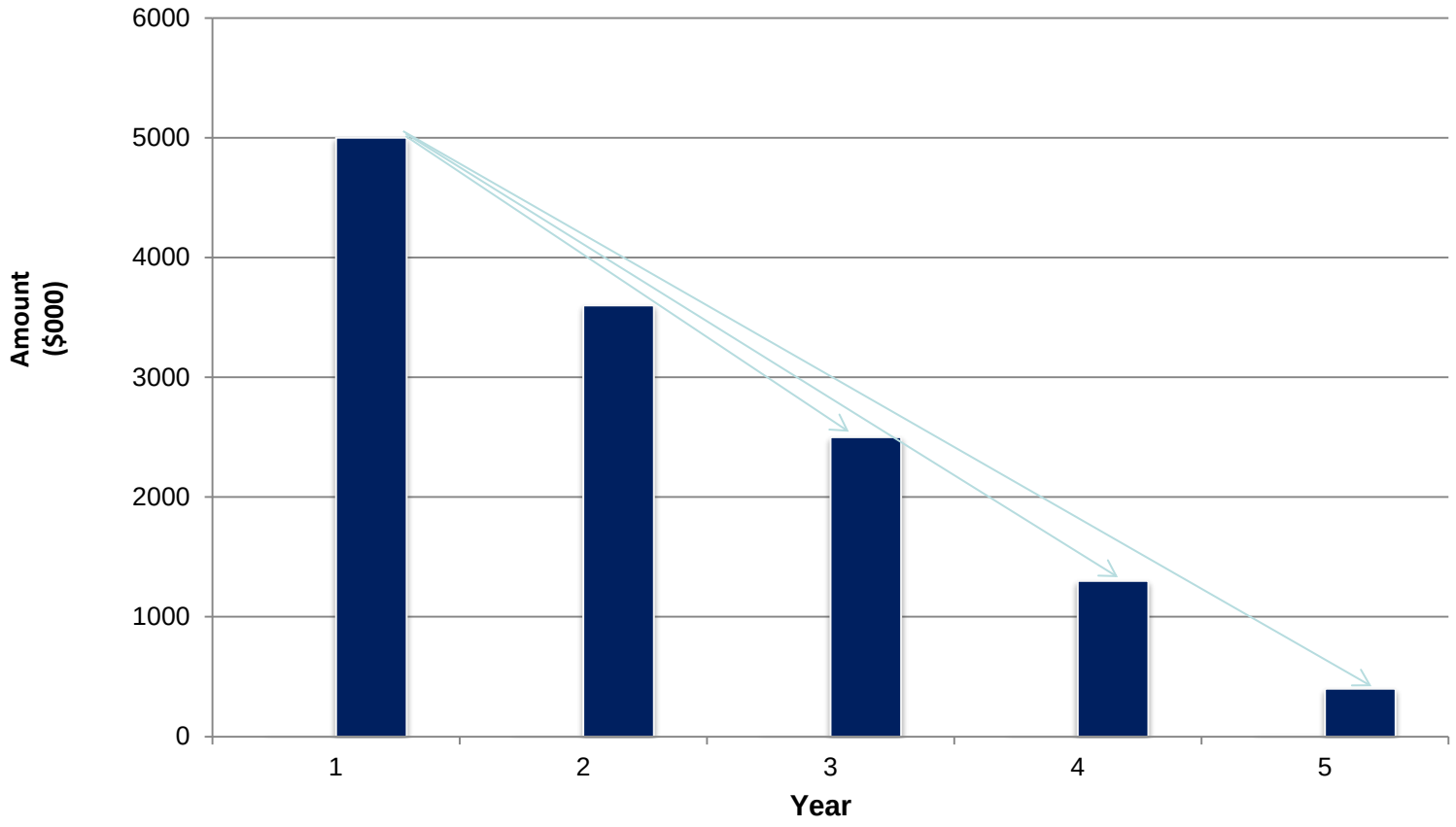
Projected Cash Flows - 5 yr. Annual (Principal and Interest)



The “Wedge” Cash Flow Ladder

A “wedge” cash flow profile ladders all cash flows – both principal and interest – in a **descending** format to generate more cash flow in earlier periods. Yearly cash flows mimic a downward sloping right-hand triangle…

Wedge Cash Flow Profile

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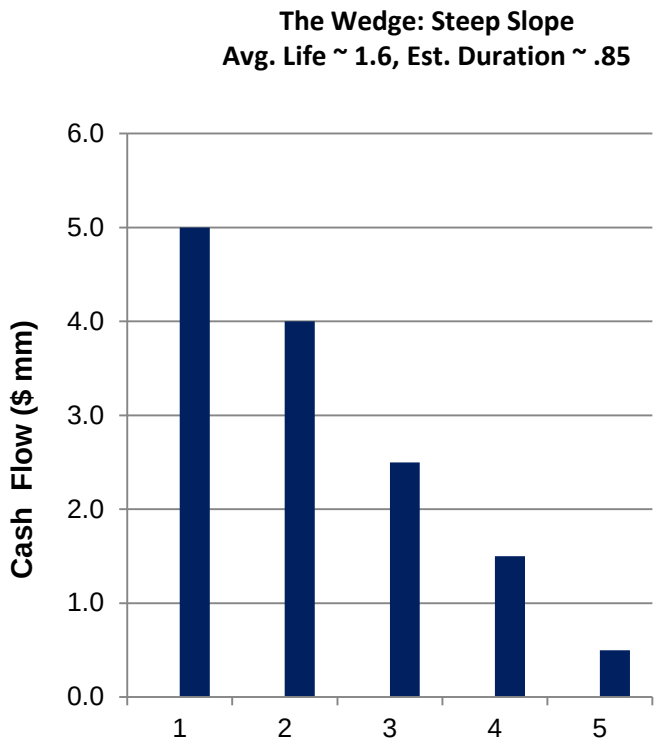
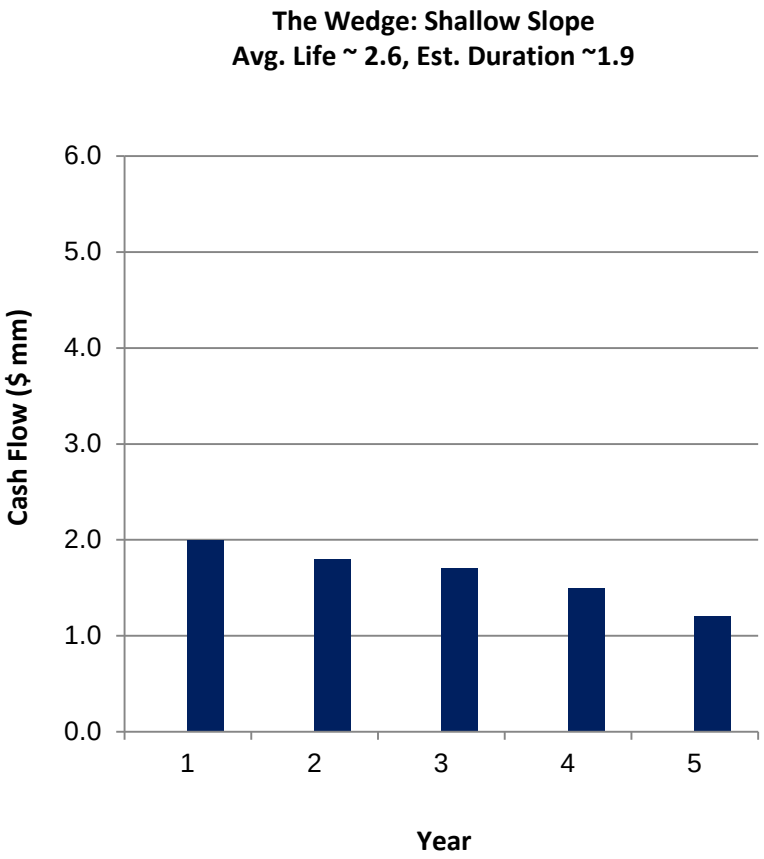
A favorable "wedge cash flow" profile can be illustrated by yearly cash flows that mimic a downward sloping right triangle. Current biases are towards a shallow sloping cash flow curve **(right chart below)** based on FOMC guidance. When biases change, a steeper slope is reflected in anticipation of higher rates **(left chart below).**

[Note: WAL, Duration, and Cash Flows are examples only]

Representative Annual Projected Cash Flows – 5 Years, Principal and Interest





The “Wedge” Cash Flow Ladder

Increasing or decreasing the weighted average life (WAL) of the portfolio can affect the slope of the wedge.

A shorter WAL creates a steeper sloped wedge, while a longer WAL creates a shallower sloped wedge.

The “Wedge” Cash Flow Ladder

Many of our clients, find this approach to have some distinct advantages over a traditional ladder:

- Everybody likes “getting their money back.”
- Additional cash flow reduces near-term liquidity risk.
- A cash flow ladder can provide a “backstop” to extension risk.
- If and when interest rates rise, earlier cash flows enhance the ability to manage the portfolio.

The “Wedge” Cash Flow Ladder

We do **NOT** advocate placing outright directional bets within an investment portfolio. The wedge is not an attempt to forecast future interest rate changes.

In general, building diversified portfolios using a mix of bullets and amortizing and callable products across a longer maturity spectrum, creates the wedge profile that is fluid in all three interest rate scenarios.

The “Wedge” Cash Flow Ladder

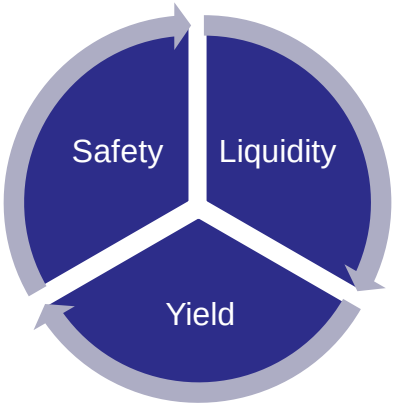
Rising Rates: earlier cash flows represent reinvestment opportunity at higher yields.

Falling Rates: later cash flows lock in and maintain yield to offset reinvestment risk of earlier cash flows.

Flat Rates / Sideways Markets: given a positive sloping yield curve, the diversified portfolio’s longer WAL leads to overall higher yield performance.

How does your Investment Policy differ from State Code?

- Too restrictive?
- Enough flexibility?
- Does it match your objectives?



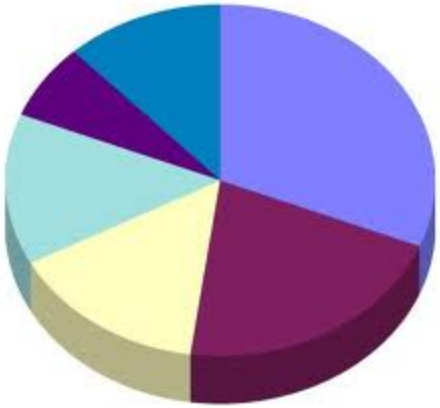
Things to consider:

- Risk tolerance
- Exposure limits
- Portfolio diversification
- Risk vs. Reward
- Relative value
- In-house resources
- Reporting and accounting requirements

Asset Allocation Strategies

Investment Options:

- U.S. Treasury notes and bonds
- Agency securities
- Negotiable certificates of deposit
- Corporate medium term notes
- State obligations (municipal bonds)
- Asset-backed and Mortgage-backed securities
- Bankers acceptances
- Commercial paper
- Money market funds



*Not all products listed may be permissible or suitable for all municipalities.

Identifying, Understanding and Managing Risk

Risk Avoidance is not a Conservative Strategy

- Credit Risk
- Concentration Risk
- Event Risk
- Call Risk
- Price Volatility Risk
- Duration Risk
- Prepayment Risk
- Geographic Risk
- Liquidity Risk
- Extension Risk
- Opportunity Cost Risk
- Systemic Risk
- Economic Risk
- Market Risk
- Inflationary Risk
- Political Risk
- Un Foreseen Risk

Asset Allocation Strategies

US Treasury Notes and Bonds

- Interest rate risk

Agency Securities

- Interest rate risk
- Re-investment risk

Negotiable Certificates of Deposit

- Interest rate risk

*Not all products listed may be permissible or suitable for all municipalities.

Asset Allocation Strategies

Corporate Medium Term Notes

- Interest rate risk
- Credit risk

State Obligations (Muni Bonds)

- Interest rate risk
- Credit risk
- Re-investment risk
- Geographic risk

Asset-backed & Mortgage-backed Securities

- Interest rate risk
- Pre-payment risk
- Re-investment risk
- Geographic risk

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Asset Allocation Strategies

Bankers acceptances

- Interest rate risk
- Credit risk

Commercial paper

- Interest rate risk
- Credit risk

Money market funds

- Opportunity cost

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Identifying and Managing Risk

Interest rate risk

- Ensure liquidity
- Balance maturities
- Match cash flows

Re-investment risk

- Diversify structure
- Review/analyze underlying collateral

Credit risk

- Perform adequate due diligence
- Maintain periodic reviews
- Adhere to issuer limits

Pre-payment risk

- Diversify structure
- Review/analyze underlying collateral
- Periodically review collateral performance

Geographic risk

- Diversify positions
- Review/analyze underlying collateral

Opportunity cost

- Proactive portfolio management
- Be aware of your options
- Flexible investment policy

Seven Approaches for Any Market

- Have a strategy.
- Be comfortable with your investments.
- Understand WHY the investment fits into your portfolio.
- Review the performance of your portfolio.
- Diversify.
- Do not try to time the market.
- Invest regularly.

A History of Interest Rates

30 Years of Falling Interest Rates

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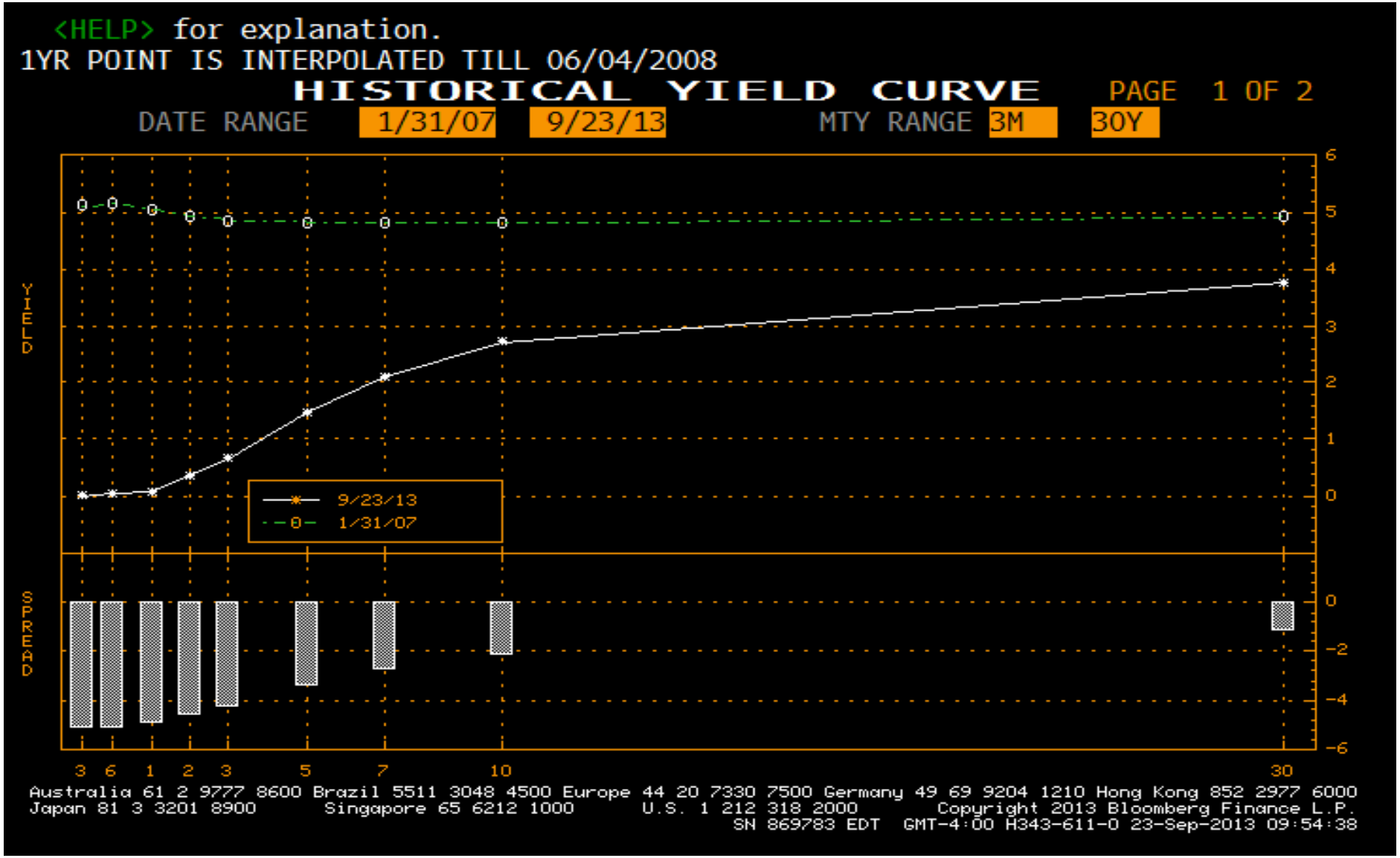
Source: Bloomberg

History of Interest Rates



Source: Bloomberg

History of Interest Rates

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<HELP> for explanation.

HISTORICAL YIELD CURVE PAGE 2 OF 2

DATE RANGE 1/31/07 9/23/13 MTY RANGE 3M 30Y

	1/31/07	9/23/13	Change
3 MONTH	5.103	0.010	-5.0930
6 MONTH	5.137	0.041	-5.0963
1 YEAR		0.096	
2 YEAR	4.916	0.330	-4.5861
3 YEAR	4.847	0.681	-4.1658
5 YEAR	4.800	1.460	-3.3393
7 YEAR		2.093	
10 YEAR	4.808	2.715	-2.0926
30 YEAR	4.907	3.745	-1.1616

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Source: Bloomberg

How Long Can Low Interest Rates Persist?

Japan's 10-year Treasury Note

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Source: Bloomberg

Federal Reserve Policy 2013

- The Federal Reserve confirmed their intent to do whatever it takes to get the economy turned around.
- Those who have structured their investment portfolios for higher interest rates are on the wrong side of the Fed.
- One of the top trading and investment axioms of all-time is...

DON'T FIGHT THE FED!!

Federal Reserve Policy Implications

- Those who have made a directional bet by staying too short on the curve and/or in cash while waiting for yields to go back up are fighting the Fed.

- They have paid, and continue to pay, an enormous opportunity cost with ever-increasing reinvestment risk. Maturing investments are getting replaced at much lower yields than the original coupon, resulting in larger and larger amounts of foregone interest income as the yield curve collapses year after year.

Putting Excess Liquidity to Work

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Opportunity Cost of waiting to put money to work

If I wait in fed funds, at what yield do I need to invest in the future?

Assumed Investment:	$10,000,000
Overnight Funds Rate	0.25%
Alternative Investment Yield:	1.25%
Alternative Final Maturity	3.00

Months Waiting	Assumed Fed Funds Rate	Accumulated Income	Alt Inv Yield	Accumulated Income	Foregone Income	Remaining term (Yrs)	Inc Needed through Maturity to "Breakeven"	Yield Needed to BE
3	0.25%	$6,250	1.250%	$31,250	($25,000)	2.75	$368,750	1.34%
6	0.25%	$12,500	1.250%	$62,500	($50,000)	2.50	$362,500	1.45%
9	0.25%	$18,750	1.250%	$93,750	($75,000)	2.25	$356,250	1.58%
12	0.25%	$25,000	1.250%	$125,000	($100,000)	2.00	$350,000	1.75%
15	0.25%	$31,250	1.250%	$156,250	($125,000)	1.75	$343,750	1.96%
18	0.25%	$37,500	1.250%	$187,500	($150,000)	1.50	$337,500	2.25%
21	0.25%	$43,750	1.250%	$218,750	($175,000)	1.25	$331,250	2.65%
24	0.25%	$50,000	1.250%	$250,000	($200,000)	1.00	$325,000	3.25%
27	0.25%	$56,250	1.250%	$281,250	($225,000)	0.75	$318,750	4.25%
30	0.25%	$62,500	1.250%	$312,500	($250,000)	0.50	$312,500	6.25%

** This "breakeven" calculator is based on several assumptions including but not limited to assuming the fed funds rate remains constant, and the alternative investment is held to maturity. The sale of any security prior to maturity may result in a capital gain or loss which may affect its total return. The risk of the alternative investment may be greater than fed funds. These risks include but are not limited to market risk, liquidity risk, prepayment risk, credit risk, basis risk, interest rate risk, and reinvestment risk.*

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Thank You!

The information in this document has been obtained from sources we believe to be reliable, however, we do not guarantee it is accurate or complete. Parts of this document are based on assumptions, which we believe to be reasonable and supportable, however, future events may influence actual performance. The projections contained herein are hypothetical in nature, and do not reflect actual balance sheet or investment results and are not guarantees of future results. This document is not and should not be construed as an offer or solicitation of an offer to buy or sell any security or securities. From time to time officers, employees of the firm, or the firm itself holds a position in the securities referred herein, or acts as principal in transactions referred to herein. As with all debt securities, sale prior to maturity may cause principal gain or loss. Securities have inherent risk, including credit, prepayment, extension and market risk. This information is subject to change without notice. First Empire Securities, Inc., Member FINRA/SIPC

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