



# Investment of Idle Funds

**Tax Collectors & Treasurers Association of New Jersey  
52<sup>nd</sup> Annual Conference**

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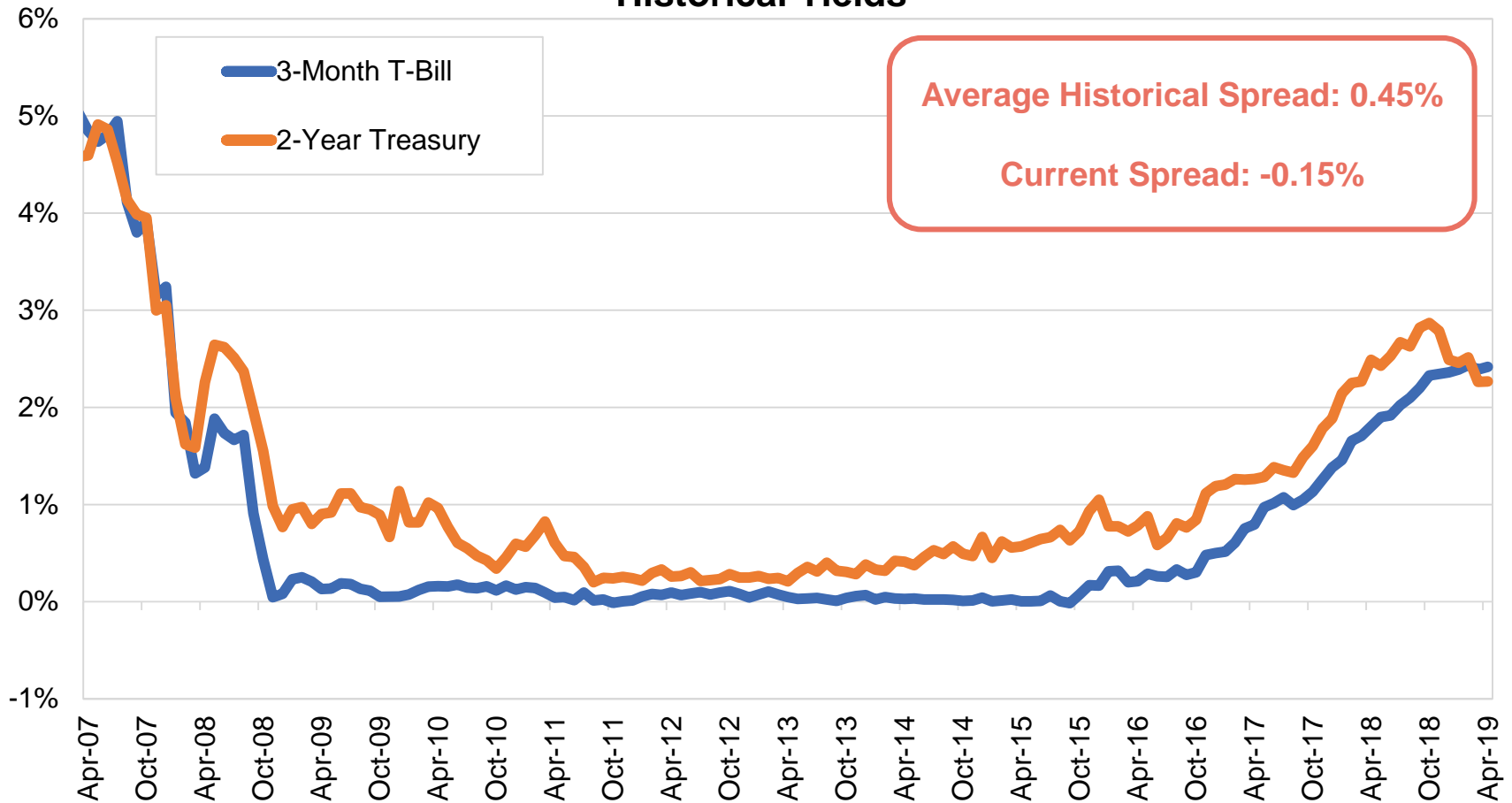
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# Why is Investing Idle Funds Important Now?

## Historical Yields

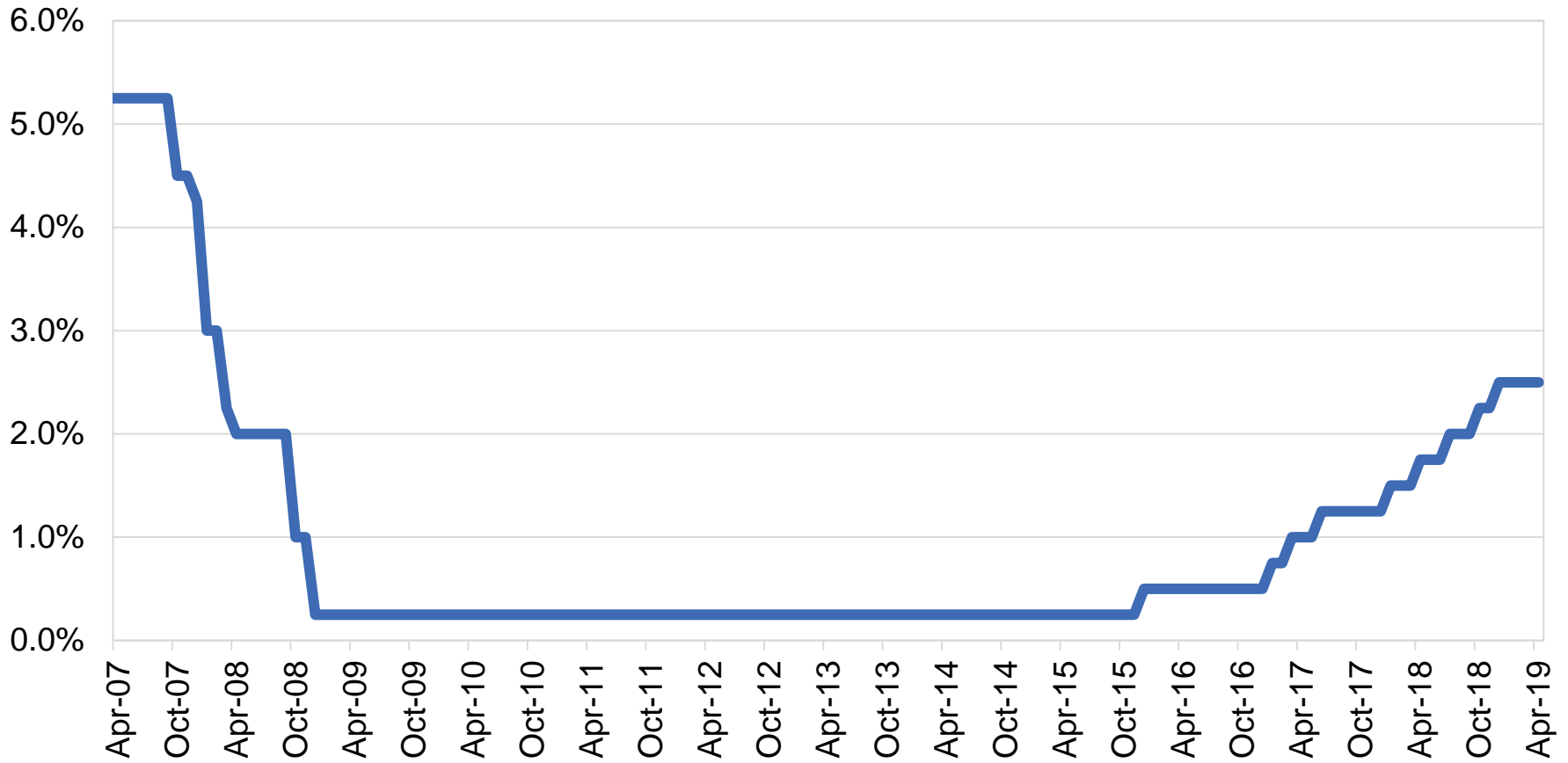


Source: Bloomberg. Average historical spread is the monthly spread from April 30, 2007 through March 31, 2019. Current spread as of April 30, 2019



# Fed Funds Target Range is Finally Moving Higher

## Historical Fed Funds Upper Range





# Investment Concepts



## Basis Points

**1 Basis Point = one 1/100 of 1%**

**100 Basis Points = 1.00%**

**$\frac{1}{2}\%$  = 50 Basis Points**

The difference between 2.36% and 2.00% is 36 basis points



## Components of Fixed Income Securities

### Face / Par

- **Principal amount of the bonds**
- Amount that will be repaid by issuer
- Price may be above (premium) or below (discount) the face amount

### Coupon

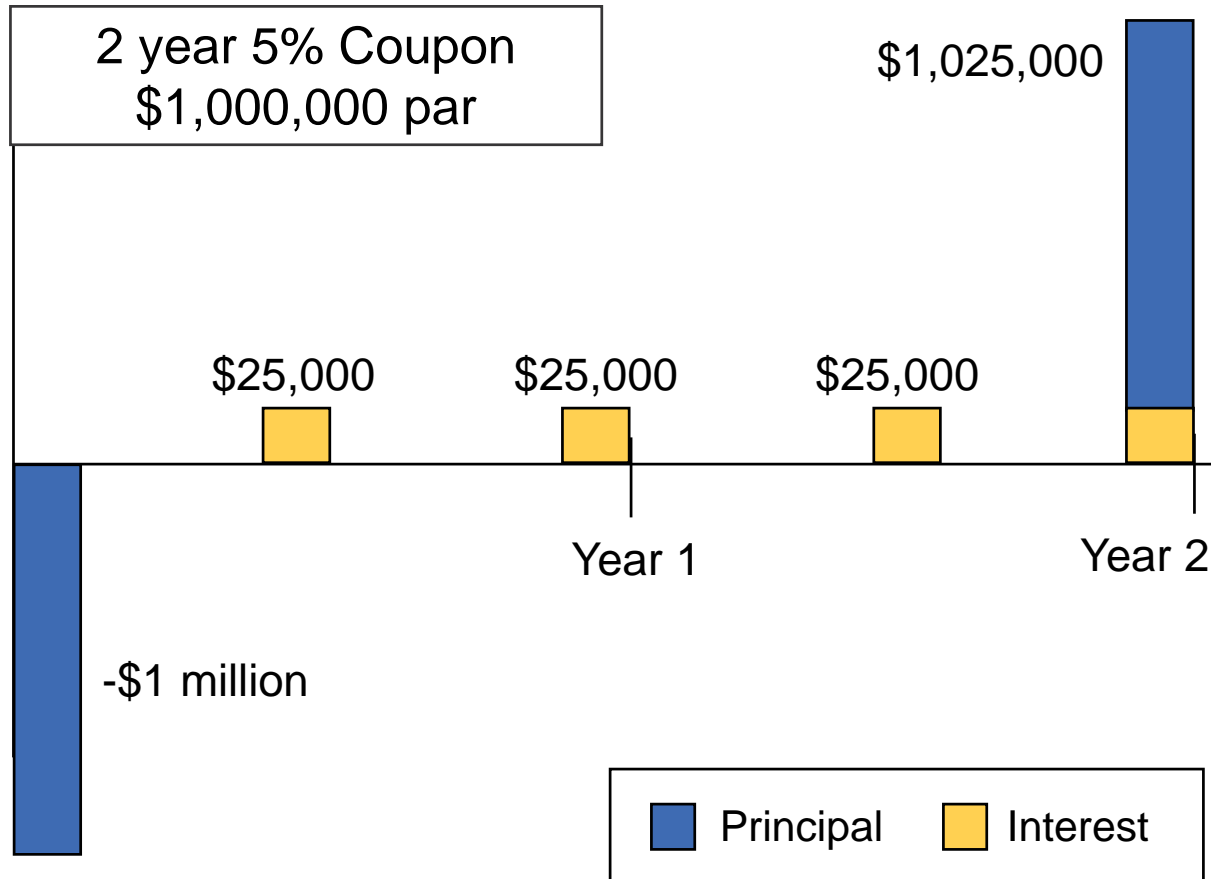
- **Periodic interest payment**
- Multiply coupon rate by face to compute interest
- Typically paid semi-annually

### Maturity

- **End of investment period**
- Term Bonds
- Callable Bonds



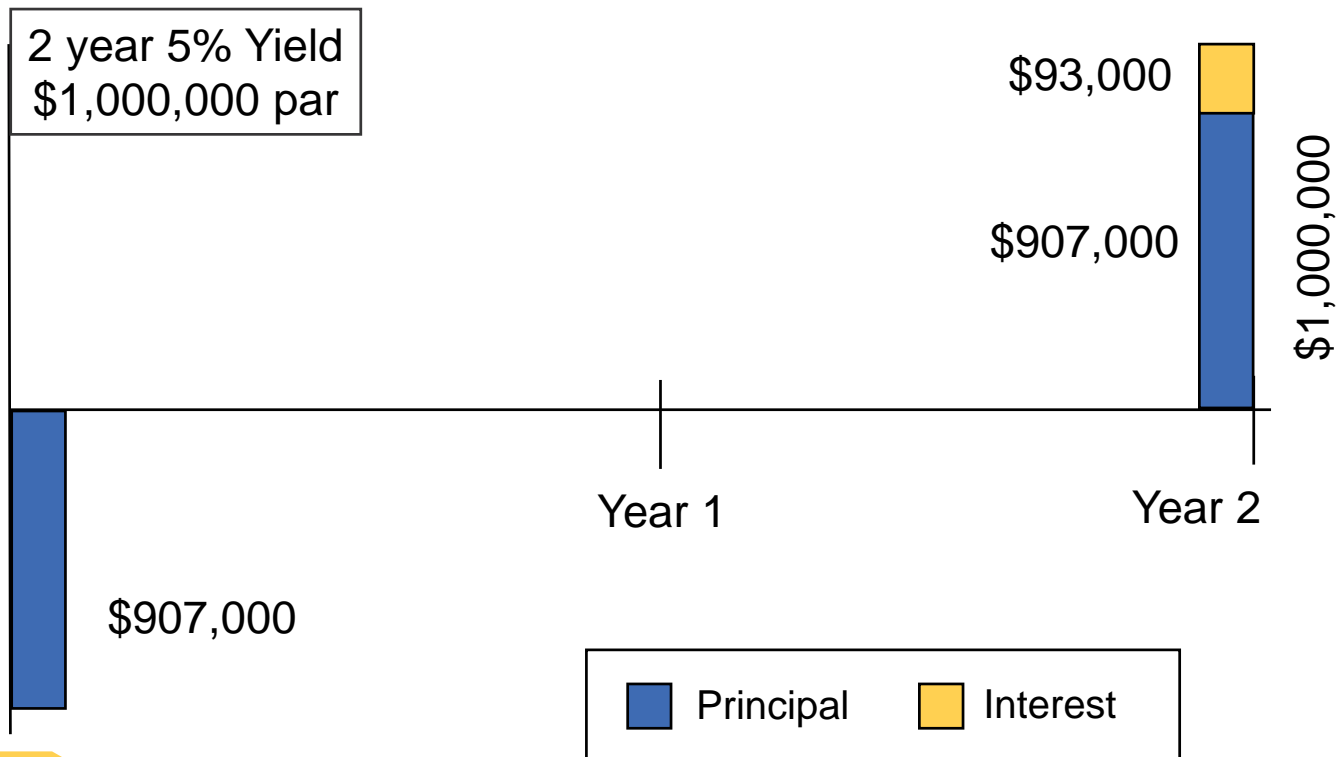
## Coupon Security: 2 Year, 5% Coupon, 5% Yield





## Zero Coupon Bonds: 2 Year, 0% Coupon, 5% Yield

- No periodic interest is paid
- All interest is paid at maturity
- Discounted
  - Securities are priced at a deep discount
  - Income is equal to the difference between the purchase price and the face amount







# Permitted Investments for New Jersey Local Governments



## Understanding Your Options

Sector	Example	Characteristics
Government Guaranteed	U.S. Treasury Bills, Notes, Bonds Ginnie Mae	<ul style="list-style-type: none"> <li>• Full faith guarantee</li> <li>• Active market</li> </ul>
Federal Agency	Fannie Mae, Freddie Mac, Federal Home Loan Bank, Federal Farm Credit	<ul style="list-style-type: none"> <li>• “Implicit backing”</li> <li>• Active market</li> <li>• 397 day maturity limit.</li> </ul>
Local Government Investment Pools	New Jersey Asset & Rebate Management Program, New Jersey Cash Management Fund	<ul style="list-style-type: none"> <li>• Overnight Liquidity</li> <li>• Rate that closely follows fed funds</li> </ul>
Money Market Fund	Government Money Market Mutual Fund	<ul style="list-style-type: none"> <li>• Overnight liquidity</li> <li>• Rate that closely follows fed funds</li> </ul>
Municipals	New Jersey School Districts, Municipalities, Counties	<ul style="list-style-type: none"> <li>• Less active secondary market</li> <li>• Backed by credit and taxing power of issuing entity, or revenue from a given project</li> </ul>
Bank Deposits	Local Banks	<ul style="list-style-type: none"> <li>• FDIC on first \$250,000</li> <li>• GUDPA up to NJ threshold</li> <li>• Collateral posted above threshold</li> </ul>
FDIC Insured CDs	Banks	<ul style="list-style-type: none"> <li>• Not very active secondary market</li> <li>• Potential illiquidity</li> <li>• Principal and Interest insured up to \$250,000</li> </ul>



# Risks Associated with Investing



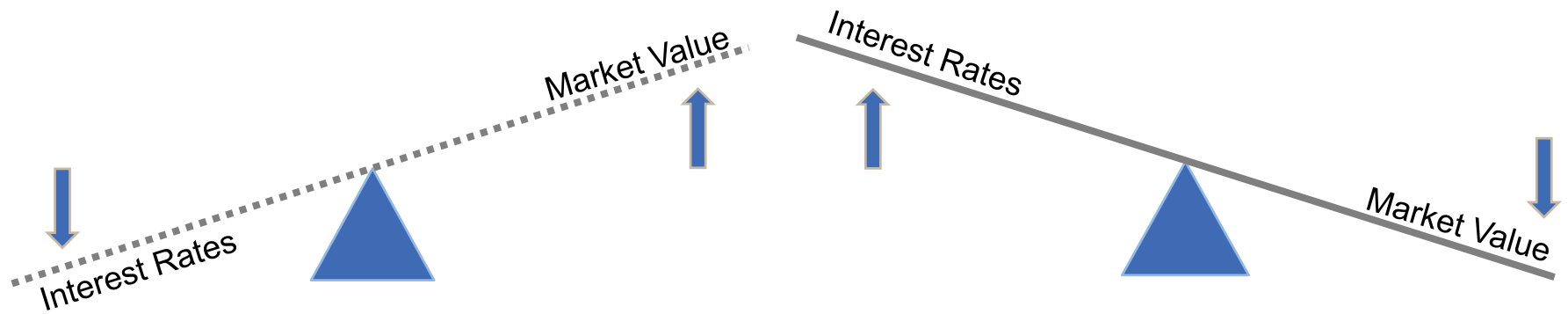
## Types of Risk

Type of Risk	Definition
<b>Interest Rate Risk</b>	Variability of return/price related to changes in interest rates
<b>Credit Risk</b>	Risk of default or decline in security value due to conditions outside investor's control
<b>Purchasing Power Risk</b>	Loss of purchasing power over time as a result of inflation
<b>Liquidity Risk</b>	Inability to sell portfolio holdings at a competitive price
<b>Reinvestment Risk</b>	The risk that a security's cash flow will be reinvested at a lower rate of return than what is being earned by the security



## Interest Rate Risk

- The effect of interest rate changes on the price/return of a security or portfolio
- Interest rates and portfolio value are **inversely** related (normally)





## Duration Explained

Think of it this way:

- Bonds are made up of future cash flows
  - Coupons and Par Payment
- Future Cash Flows are discounted to today at the bond's current yield
- If today's yield increases ... today's price decreases
- Why? We are discounting cash flows at a larger factor

2-year U.S. Treasury  
Par Value: \$1 million  
Coupon: 5%  
Current Yield to Maturity: 5%  
Issued and Bought November 1<sup>st</sup>  
Coupon Paid Annually

Receivables:  
**Annual \$50,000 coupon**  
\$50,000 Nov. 1, 2019  
\$50,000 Nov. 1, 2020  
**At Maturity: \$1mm par**  
Total Proceeds = \$1,100,000

**Cash Flows Discounted**  
**at 5% Yield = \$1mm**  
Present Values:  
Nov. 2019 coupon: \$47,619  
Nov. 2020 coupon: \$45,351  
Nov. 2020 par: \$907,029



## Duration Continued

- Takeaways:
  - Duration of cash flows matters
  - As yields move, so do current values
  - Longer cash flows have more price volatility than shorter ones
  - The total price change is (3.6%)
  - $(\$963k - \$1mm) / \$1mm$
  - That's nearly (4%), which =
  - $(2yr \text{ Duration}) \times (2\% \text{ Change in Yield})$

## Cash Flows Discounted at 5%

### Cash Flows Discounted at 5% Yield = \$1mm

Present Values:

Nov. 2019 coupon: \$47,619

Nov. 2020 coupon: \$45,351

Nov. 2020 par: \$907,029

Total: \$1,000,000

## Cash Flows Discounted at 7%

### Cash Flows Discounted at 7% Yield = \$963,840

Present Values:

Nov. 2019 coupon: \$46,730

Nov. 2020 coupon: \$43,672

Nov. 2020 par: \$873,438

Total: \$963,840

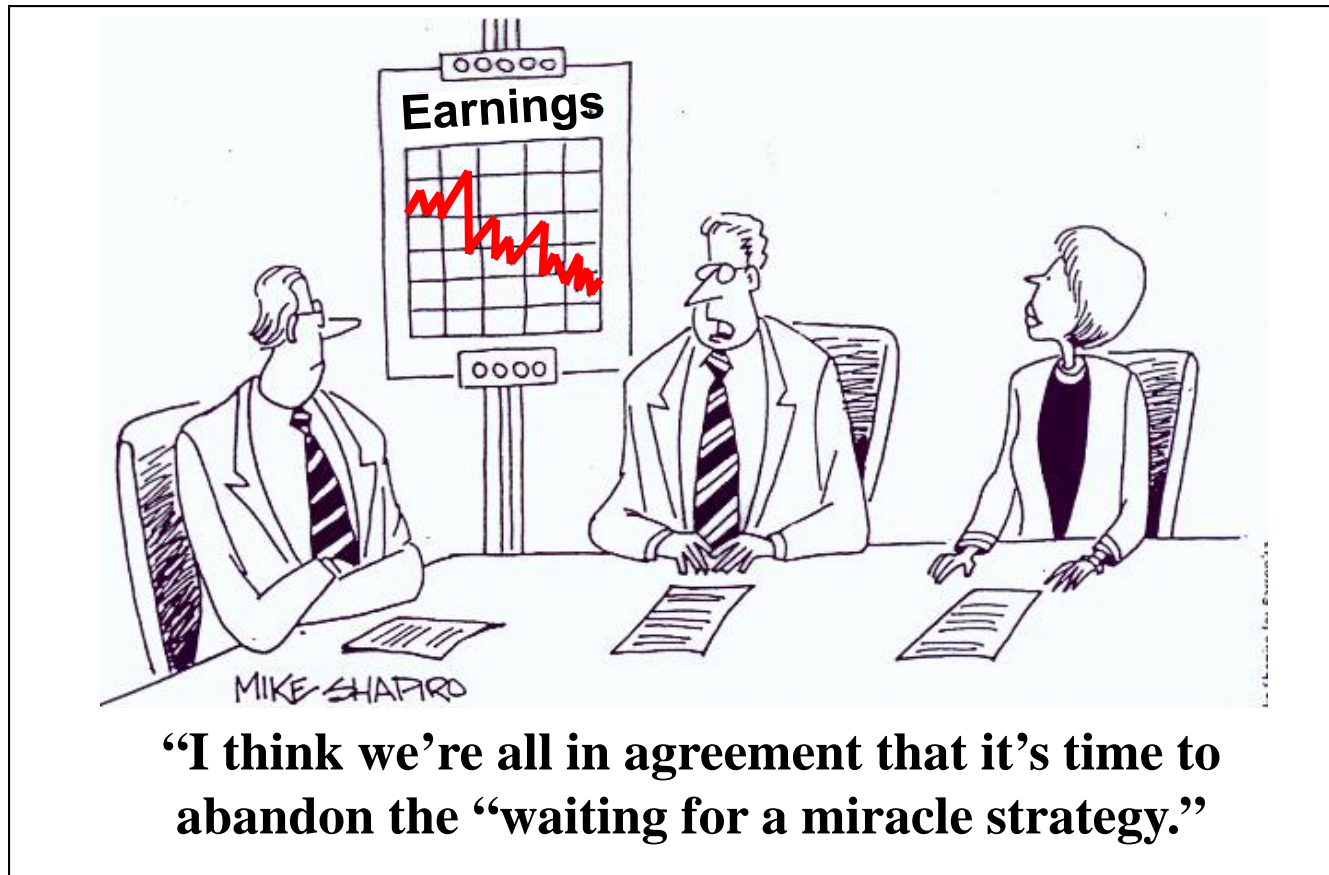


# Strategy Development





## What to Do?





# Understanding Liquidity Needs Through a Cash Flow Forecast



## Addressing Liquidity

“Who knows when a payment request will come through”

“Treasury is responsible for investing, but we don’t have any information on spending”

“No one tells us anything”

“Last month, Public Works walked in at 10AM with a voucher for \$4 million ... and wanted it paid immediately”

**What you need is liquidity.**

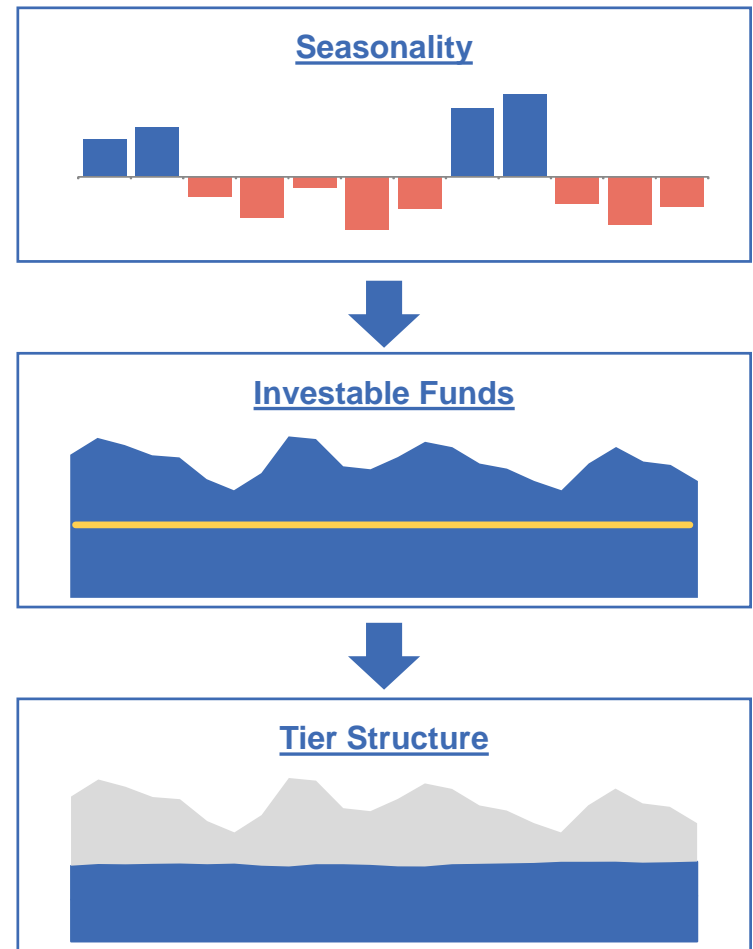
Thanks, make mine a double!





## Cash Flow Analysis Helps to Define Strategy

- Provides confidence in liquidity position
- How much can be invested, how much needs to remain liquid
- When and where are your stress points
- Assists with investment strategy development
- Potentially increase investment income while managing risk

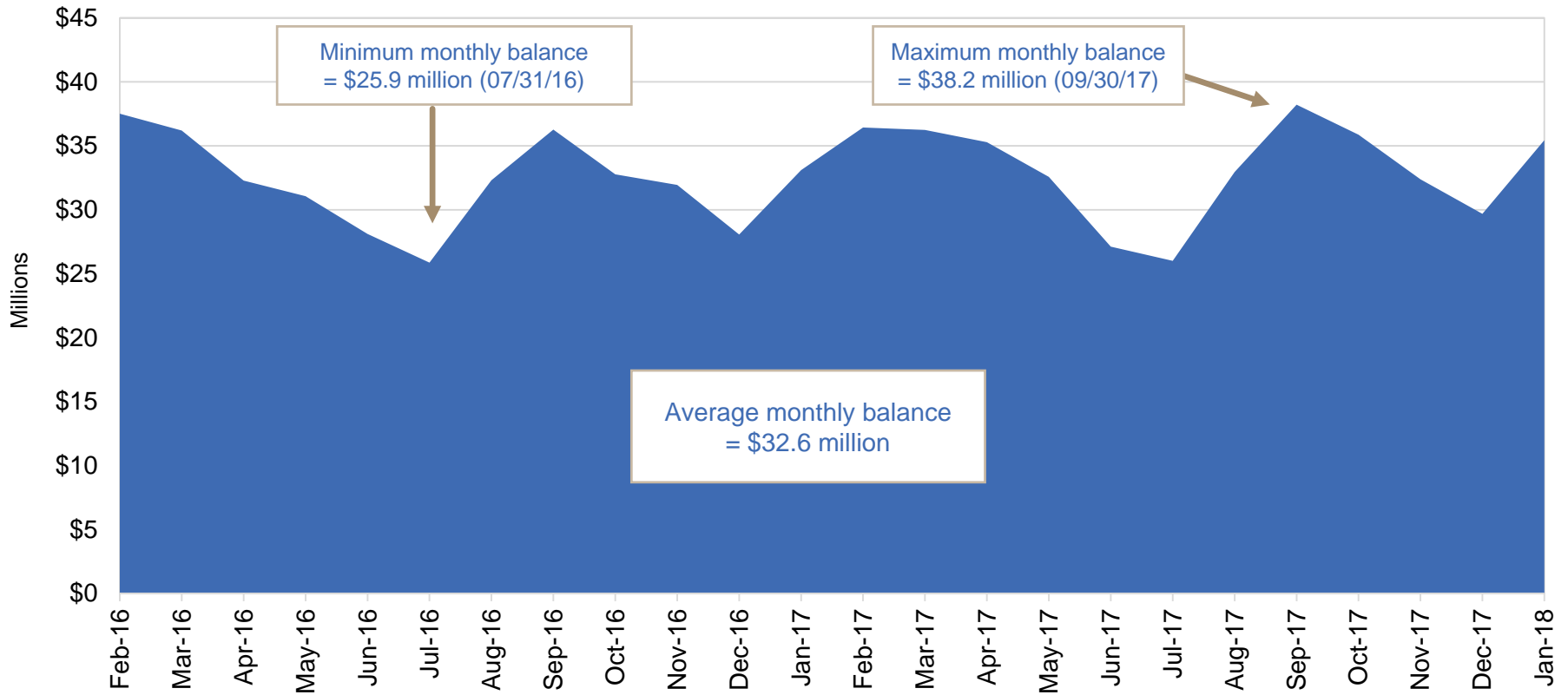




## Illustrative Cash Flow Analysis: Review Historical Balances

### Aggregate Portfolio Monthly Balances

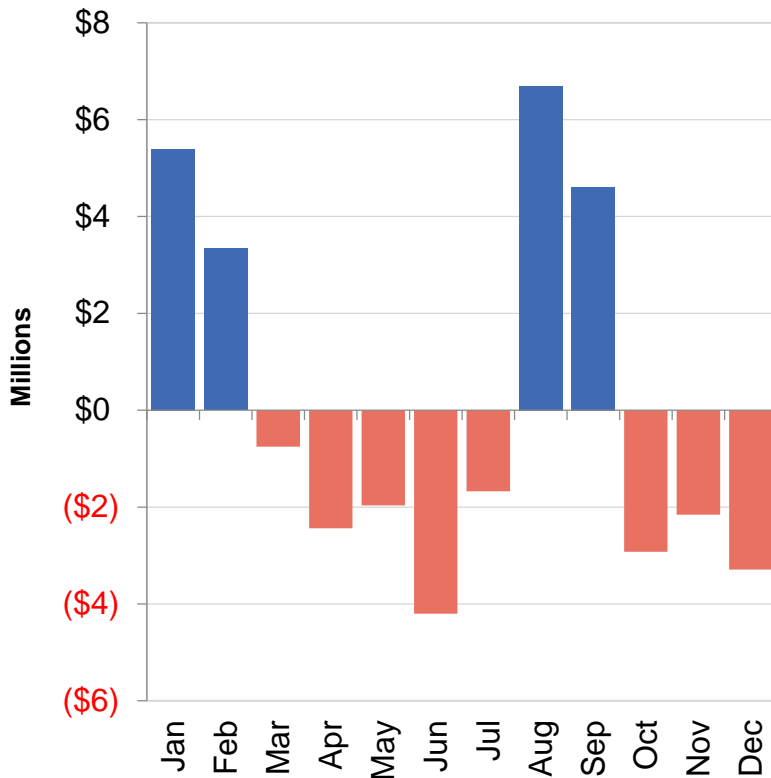
(February 2016 – January 2018)





## Illustrative Cash Flow Analysis: Analyze Seasonality of Cash Flows

### Average Change in Balances



### Cash Flow Analysis

Month	Average Monthly Change	# Negative Cash Flow Months	# Positive Cash Flow Months
January	5,396,739	0	2
February	3,333,749	0	1
March	(753,873)	2	0
April	(2,436,293)	2	0
May	(1,966,276)	2	0
June	(4,202,502)	2	0
July	(1,676,116)	2	0
August	6,693,700	0	2
September	4,611,369	0	2
October	(2,922,779)	2	0
November	(2,157,663)	2	0
December	(3,288,601)	2	0



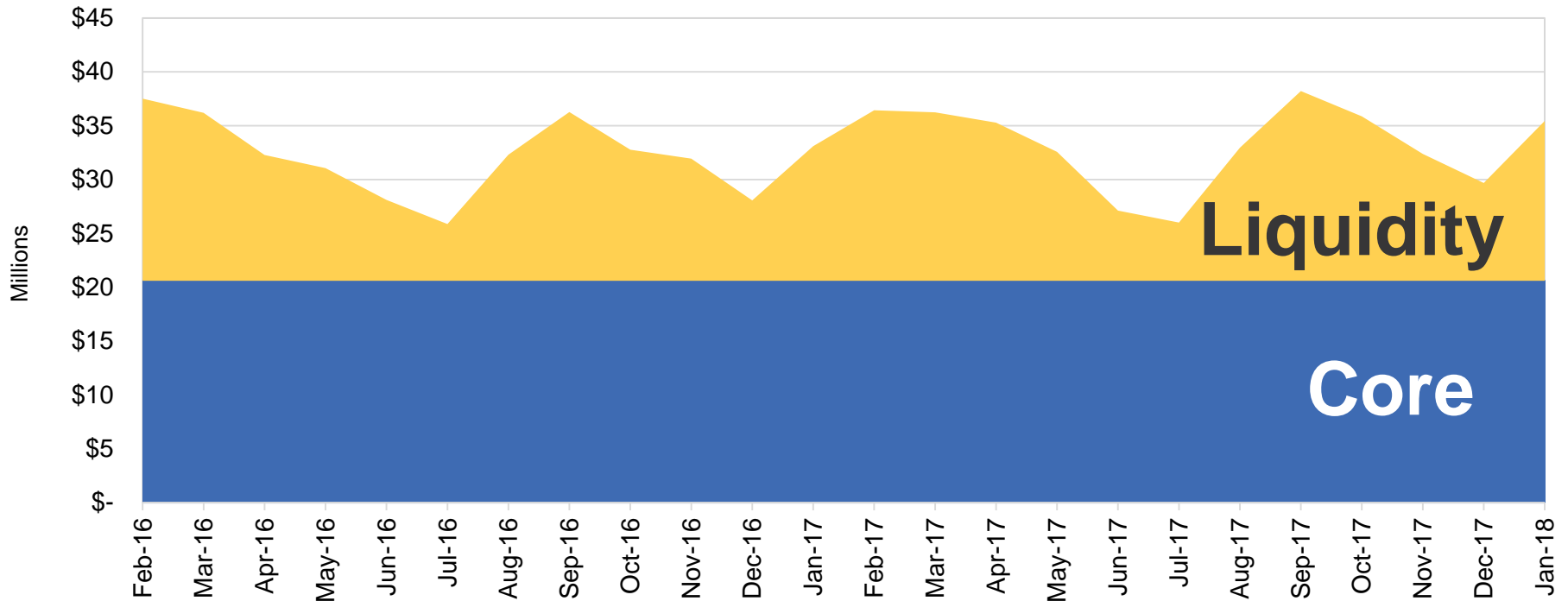
## Illustrative Cash Flow Analysis: Identifying Investable Funds

### Liquidity

- Manage liquidity needs
- Lower-risk investment strategy
- Lower expected earnings
- Cash and equivalents (0-1 year)

### Core

- Reserve funds not expected to be spent for the foreseeable future
- More volatile
- Longer-term high quality fixed income





# Developing an Investment Policy





## Investment Policy Statement

**Develop, Review, Amend, and**

**Then Review, Amend and Improve again**

## GFOA Model Investment Policy

<https://www.gfoa.org/investment-policy>

- ◆ Objectives
- ◆ Standard of Prudence
- ◆ Ethics & Conflicts
- ◆ Delegation of Authority
- ◆ Competitive Selection
- ◆ Safekeeping and Custody
- ◆ Authorized Investments
- ◆ Belts and Suspenders
  - Diversification
    - Sector
    - Issuer
  - Maximum Maturity
  - Security Downgrades
- ◆ Performance and Reporting Standards



## Key Investment Objectives

### For Operating Funds, Reserves, and Bond Proceeds:

- Provide necessary liquidity to cover both ongoing and unexpected cash needs



- Protect principal

- Maximize earnings recognizing need for safety & liquidity



# Implementation



## Brokers vs. Dealers

### Broker

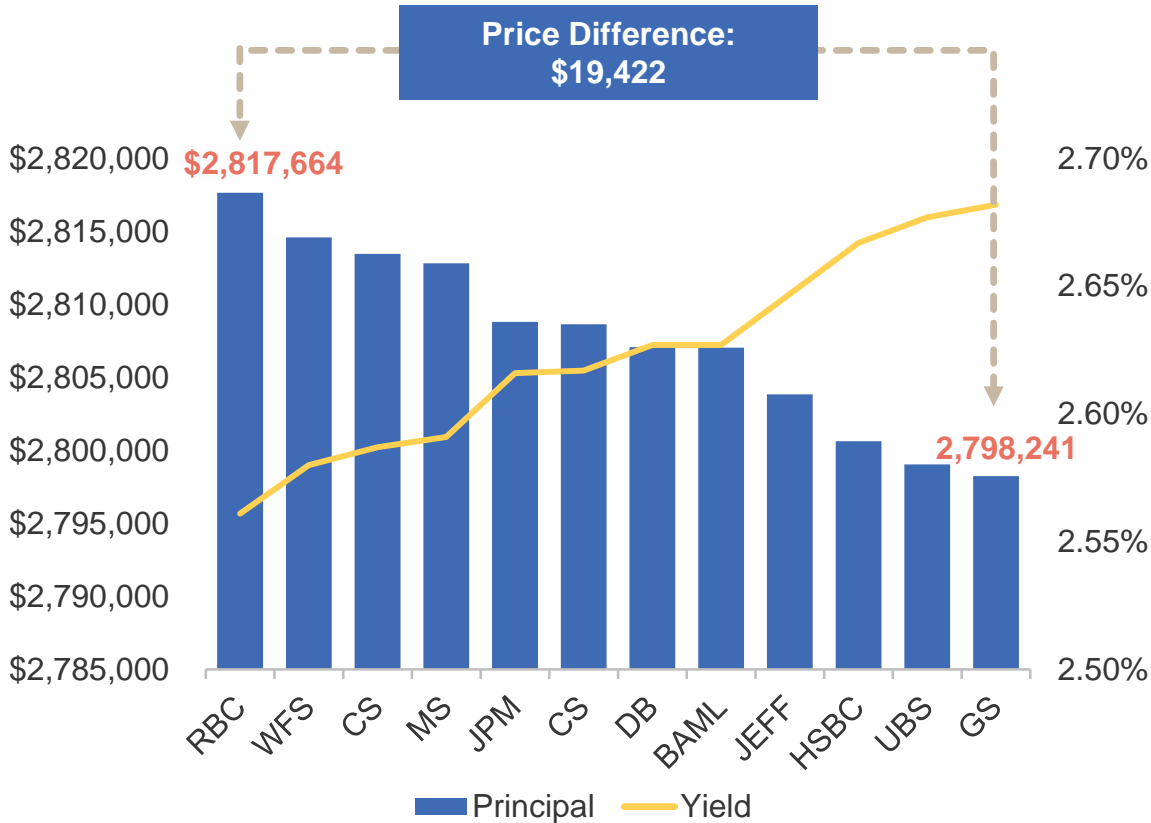
- ◆ Buys securities from seller - sells securities to buyers
- ◆ Owns no securities
- ◆ The difference between the buy price and the sell price is the broker's pay; can also earn a commission

### Dealer

- ◆ "Takes a position" in the market
- ◆ Owns securities
- ◆ Buys for and sells from "house" inventory
- ◆ The difference between the buy price and the sell price is the dealer's pay; can also earn a commission
- ◆ Trades for own account to produce income



# Value of Competitive Shopping



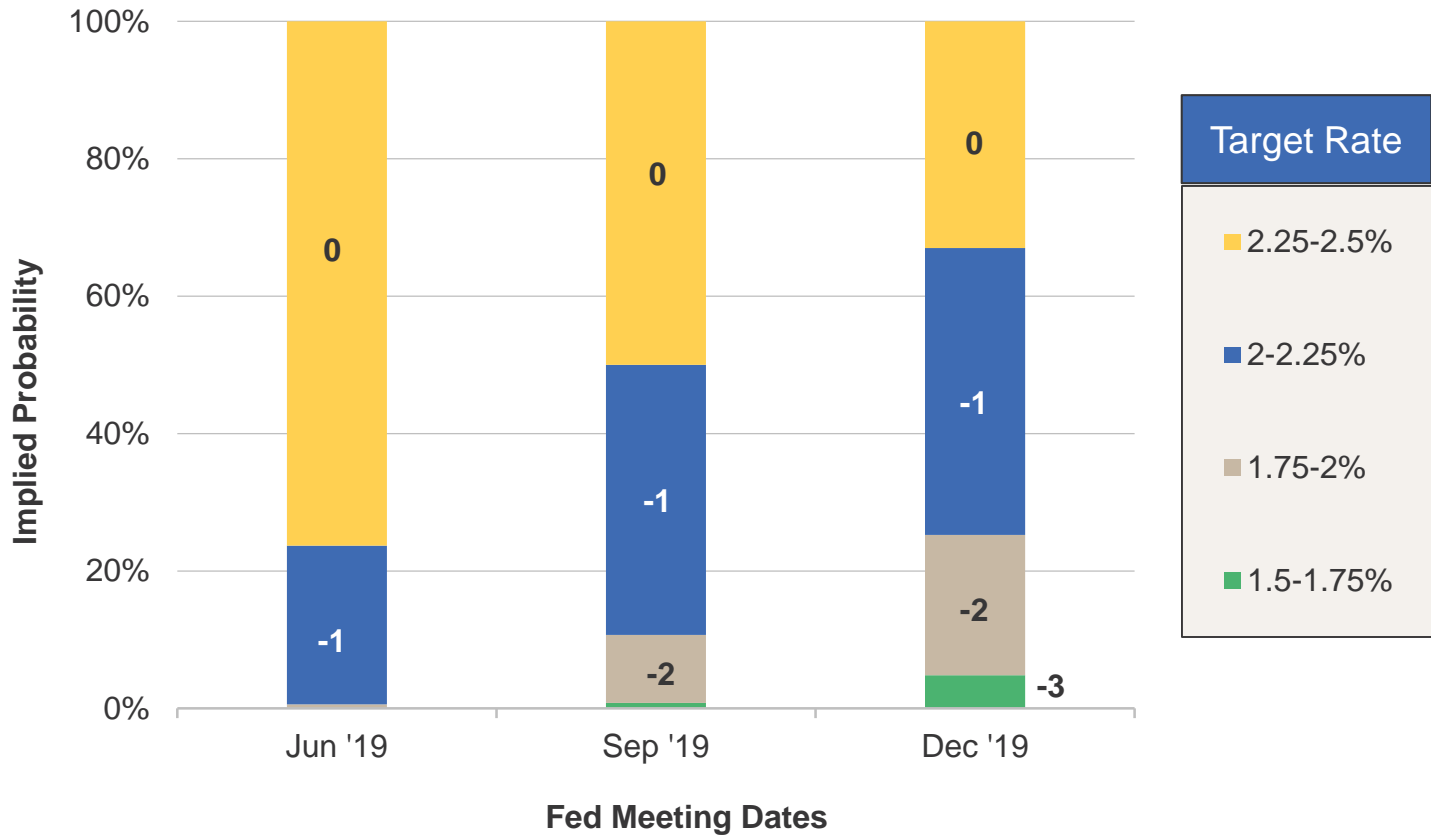
<u>Actual Trade</u>	
Issuer:	FHLB
Coupon:	3.50%
Maturity:	12/09/17
Par Amount:	\$2,671,000

*For illustrative purposes only.*



# What We're Watching

## Market Implied Fed Rate Hike Probability

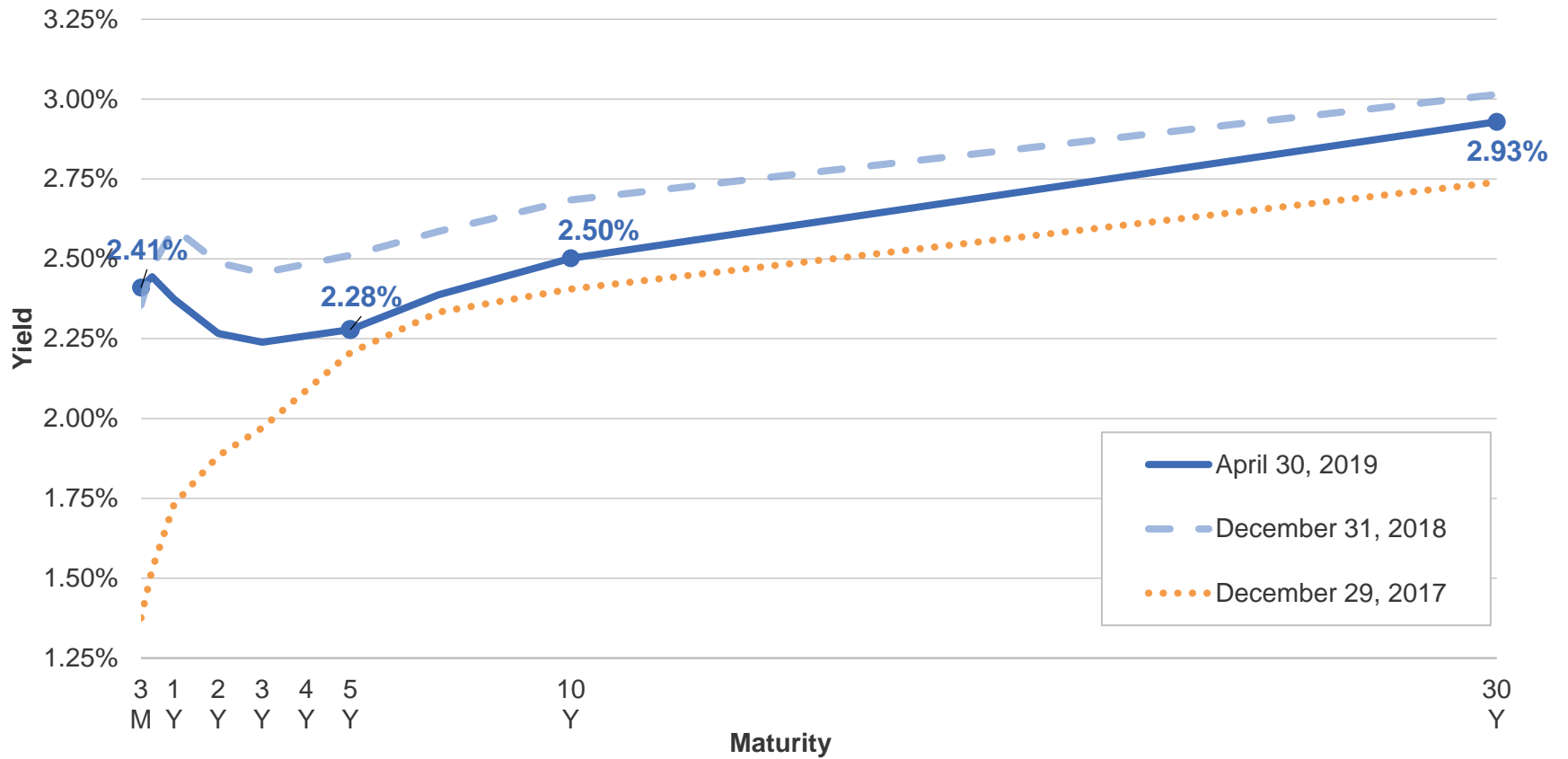


Source: Bloomberg. Implied Fed rate hike probability, as of 04/30/2019.



# Yield Curve Remains Partially Inverted

## U.S. Treasury Yield Curve



Source: Bloomberg, as of 4/30/19.



# Thank You!

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