CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

MUNICIPAL DEBT ESSENTIALS
DEBT 3: DEBT ADMINISTRATION
MARCH 19, 2015 RIVERSIDE, CA

Session Five:
Investing Bond Proceeds

Presented by

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Finally, We Can Build Our Project!



When to Think About Investments?

- Developing “net” costs in funding plan
  - Critical when determining how much to raise/borrow
- When bond documents are being drafted
  - Definition of “permitted investments”
- Well BEFORE the bond pricing
  - Allows time to implement the investment “game plan” <u>at bond closing</u>

Why Having a Strategy Is Important

Increases the potential for higher earnings on the proceeds of a debt issue.

- Reduce amount you need to borrow
- Potential to lessen the amount you may need to spend from general fund
- Optimize retainable earnings
- Plan in place for “best case scenario” positive arbitrage liability

Factors Influencing Investment Decisions

- Arbitrage rebate requirements
- Structure of the bonds and type of fund
- Cash flow schedules
- Permitted investments
- Prevailing and expected investment/rate environment

Factor: Arbitrage Rebate Requirements

- Arbitrage rules apply to every tax-exempt/tax-advantaged borrowing
- Limits earnings on gross proceeds to the bond yield
  - "Positive Arbitrage" = Actual Earnings > Earnings @ arbitrage yield (positive earnings yield spread)
  - "Negative Arbitrage" = Actual Earnings < Earnings @ arbitrage yield (negative earnings yield spread)

Arbitrage Considerations

Consider how arbitrage impacts the investment strategy across funds.

- Arbitrage is cumulative over the life of a bond issue - negative arbitrage can blend away positive
- Yield restriction is also cumulative but begins at the end of the so-called temporary period
  - Waiving the temporary period starts the clock early in the low interest rate environment

Factor: Bond Structure

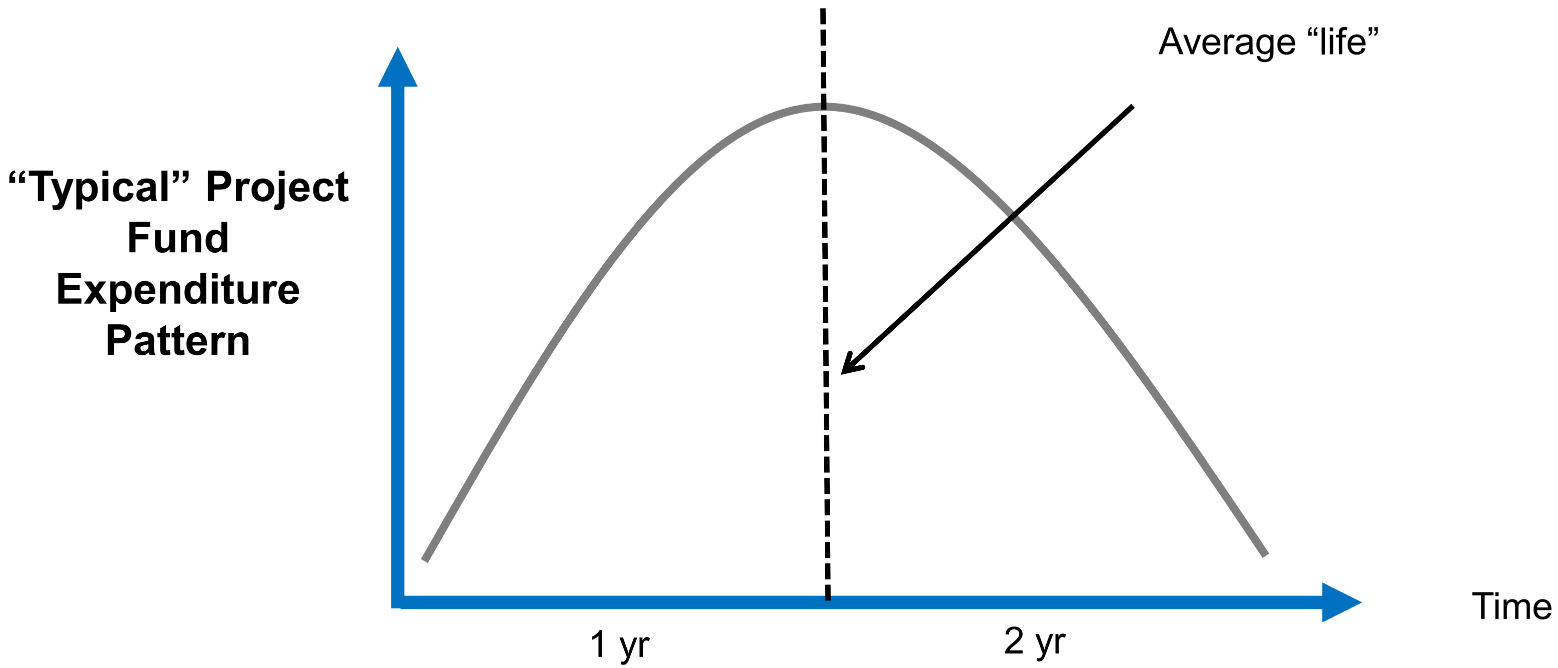
- General Obligation Bonds typically have one major fund
  - Project Fund

- Revenue Bonds may have multiple funds

– Project Fund – Capitalized Interest (Cap-I) Fund – Debt Service Reserve Fund	Debt Funded
– Debt Service (P&I) Funds – Revenue Fund – Other Reserve Funds	Funded by project revenues or other sources

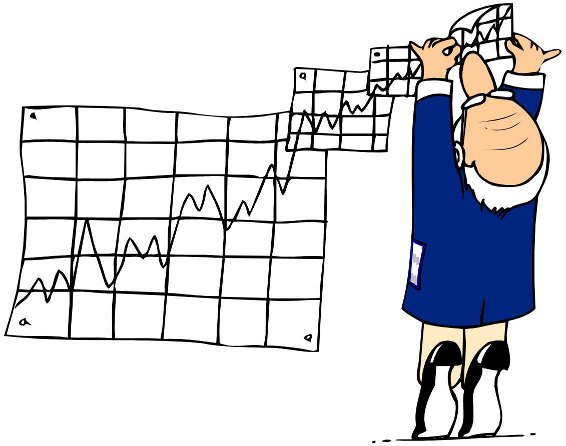
Factor: Cash Flow Schedule - Project

- Press engineers and project managers for a *conservative* yet *reliable* project time table
- Project proceeds are typically spent within 3 years
- Average life is approximately 1–1 ½ years



If Draw Schedule Is Uncertain…

- Analyze historical capital spending patterns
- Structure investments around conservative estimates
- Build in additional liquidity
- Invest in securities that can be easily liquidated
- Rebalance based on changes in cash flows and/or market conditions

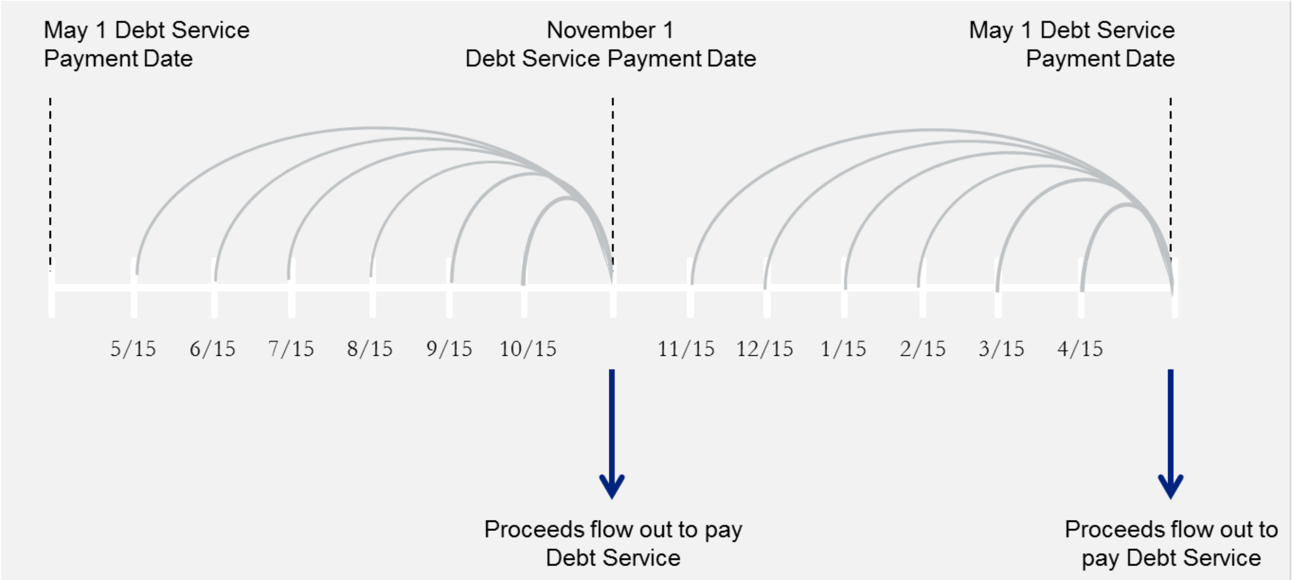


If Draw Schedule Is Rather Certain…

- Ladder investments, targeted to specific cash flow needs
- Monitor periodically to determine if actual expenditures are in line with expected project fund draws
- Rebalance based on changes in cash flows and/or market conditions

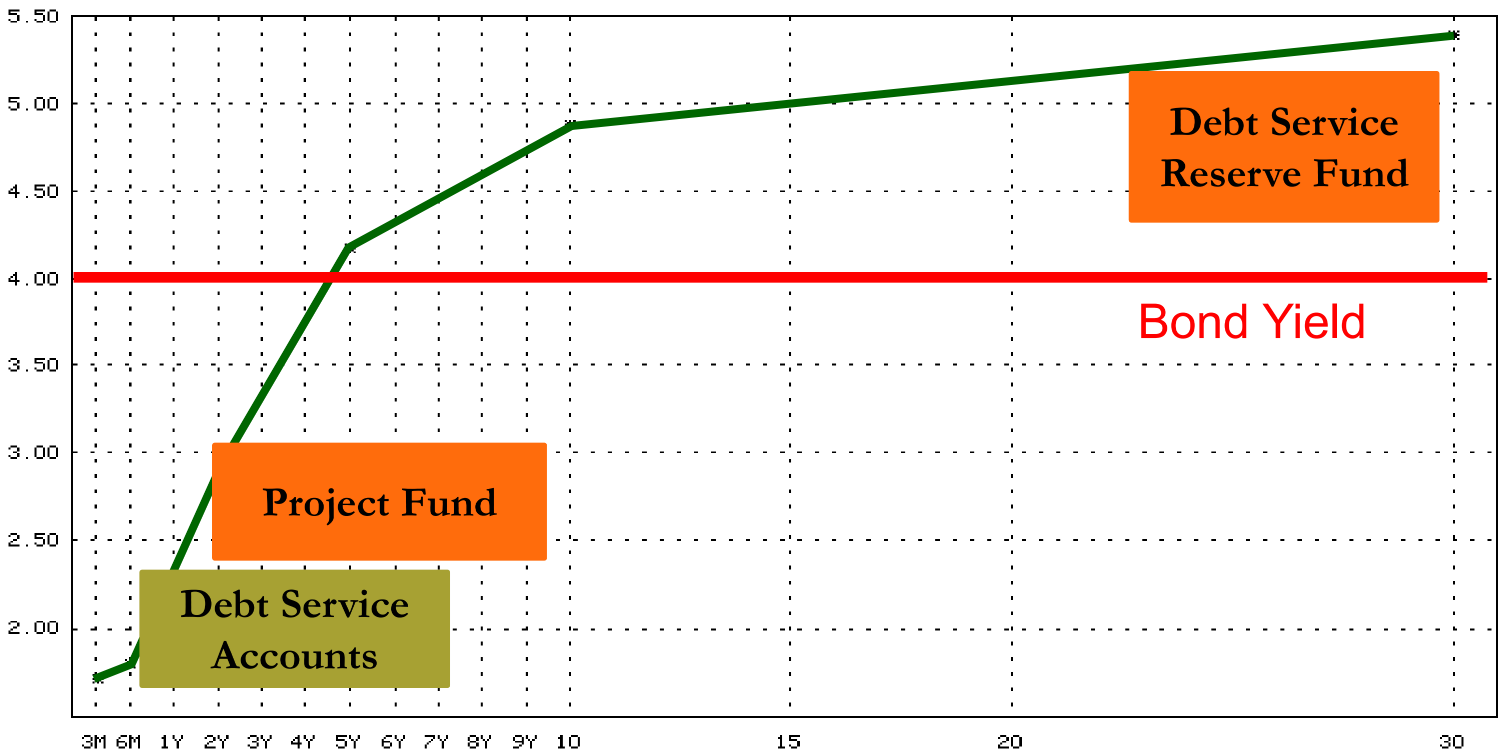
Factor: Cash Flow Schedule – Other Funds

- Debt Service Reserve
  - Mark-to-market
  - Amortization
- Capitalized Interest
- Debt Service
  - Bona Fide?



Cash Flow Will Impact Return

"Normal" U.S. Treasury Yield Curve



Source: Bloomberg

Factor: Permitted Investments

Investments determined by:

- Government Code
  - CGC Sections 5903(e) and 5922(d)
- **Bond documents**
- Investment policies
- Bond insurer requirements
- Rating agency requirements

Know Your Risks and Remember Objectives

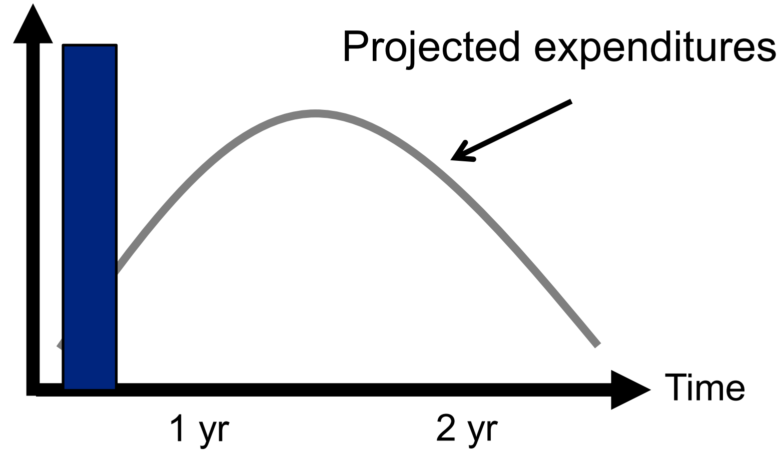
- Interest rate risk
  - Risk that bond prices will fall as interest rates rise
- Reinvestment risk
  - Risk that future coupons from a bond will have to be invested at a lower rate
- Credit/Default risk
  - Risk that an issuer fails to make scheduled interest or principal payments
- Call risk
  - Risk that a bond will be called by its issuer

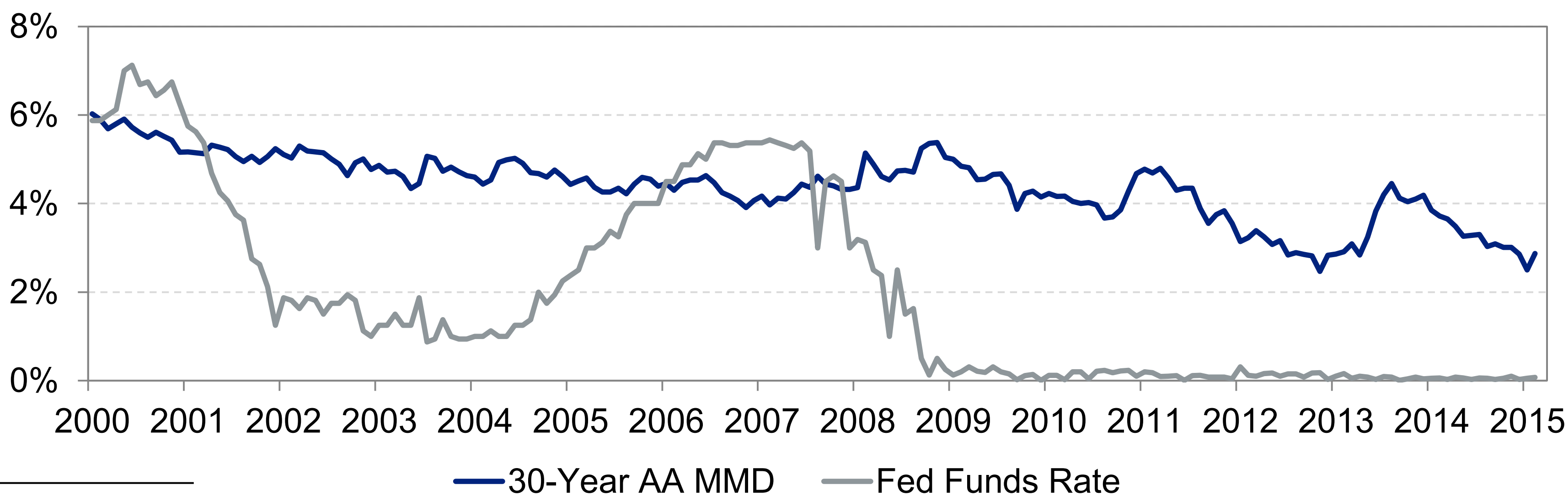
Typical Investments for Bond Funds

- Liquidity vehicles:
  - Local government investment pools
  - Money market fund
- Portfolio of securities
- Structured products
  - Investment agreements/GICs
  - Repurchase agreements
  - Forward delivery agreements
- Combination strategy

Liquidity Vehicle Strategy

- Convenient
- Typically overnight liquidity
- Variable rate
- Net asset value (NAV)

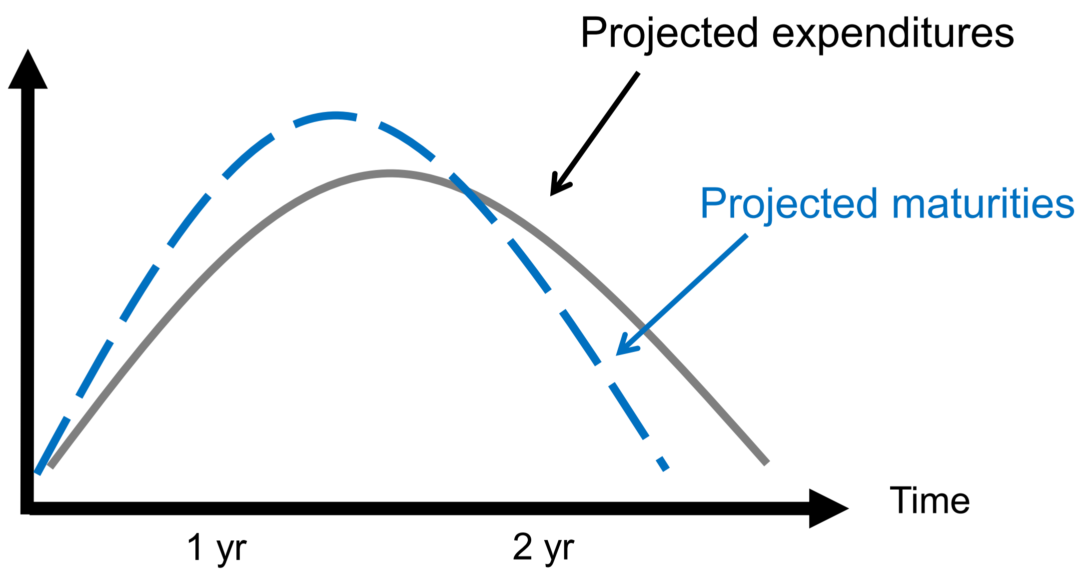




Sources: Bloomberg, Municipal Market Data

Portfolio of Securities Strategy

- Laddered to match project fund schedule
- Fixed rate of interest for life of the security
- Reinvestment risk if draw schedule is delayed



- Interest rate risk if security must be sold prior to maturity

Typical Security Options

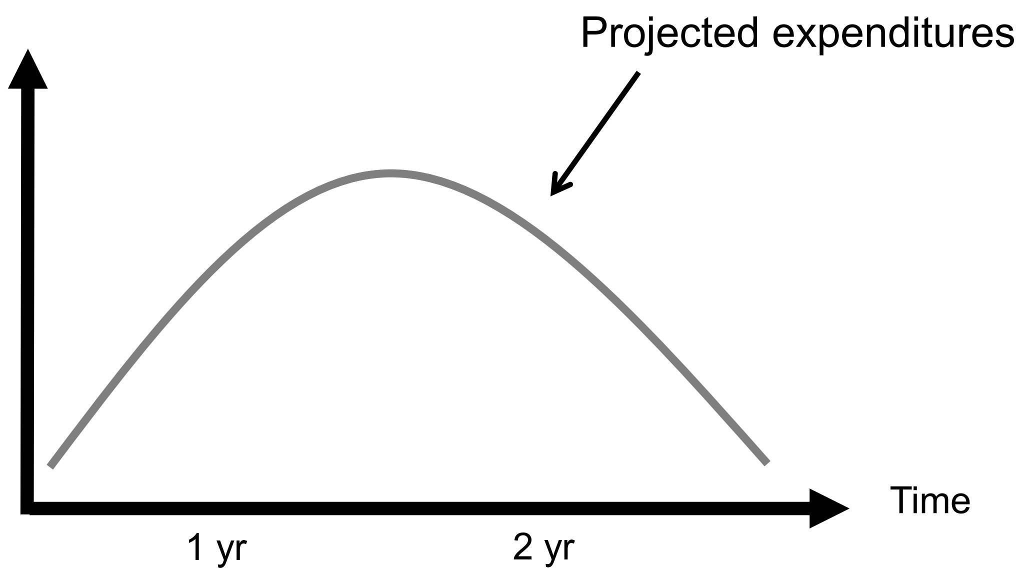
As of February 28, 2015

Maturity	Treasury	Federal Agency	AA Corporate	A Corporate	Municipal
3-Month	0.01%	0.08%	0.15%	0.24%	-
6-Month	0.07%	0.15%	0.19%	0.34%	-
1-Year	0.19%	0.26%	0.89%	0.92%	0.14%
2-Year	0.62%	0.70%	1.23%	1.33%	0.44%
3-Year	0.99%	1.04%	1.37%	1.53%	0.79%
5-Year	1.50%	1.66%	1.92%	2.21%	1.19%
10-Year	1.99%	2.29%	2.76%	3.05%	2.02%

- *Sources: PFMAM, Bloomberg, TradeWeb.*
- *For three- and six-month maturities data was obtained from the Bloomberg CP A1+/P1 index; data for longer maturities was calculated using the average yield for corporates in the second highest ratings category of the ML Master Index with similar maturities. Municipal Yields sourced from AAA Muni Yield Curve.*

Structured Products Strategy

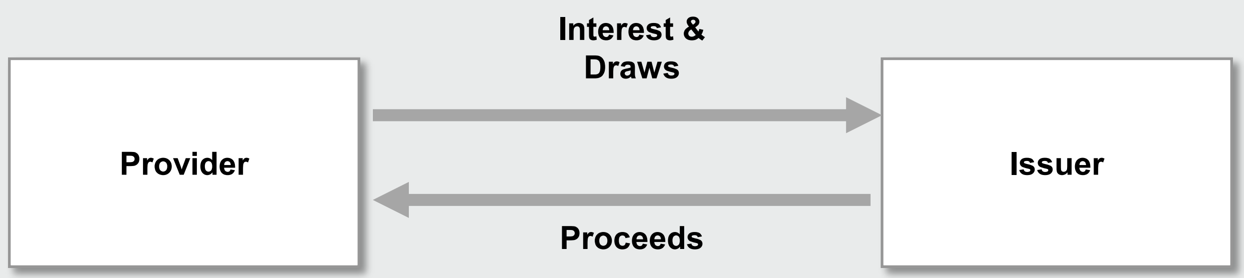
- Laddered to match project fund schedule
- Fixed rate of interest for life of the investment
- No reinvestment rate risk



- Some interest rate risk (product dependent)
- Credit risk to provider

Uncollateralized Investment Agreements

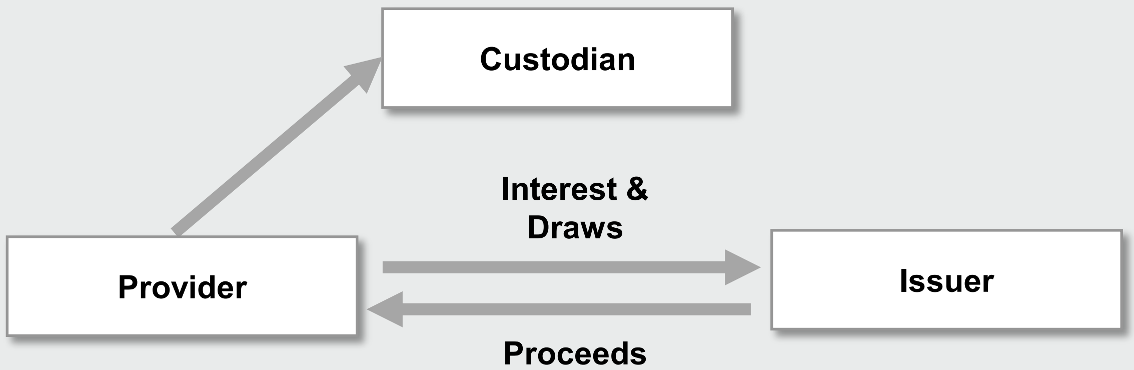
- Provider guarantees a rate of return on all invested proceeds
- Security for investment is the pledge/guarantee of the counterparty



- Issuer wires Project Funds to Provider
- Provider Pays interest and returns principal for project costs

Collateralized Investment Agreements

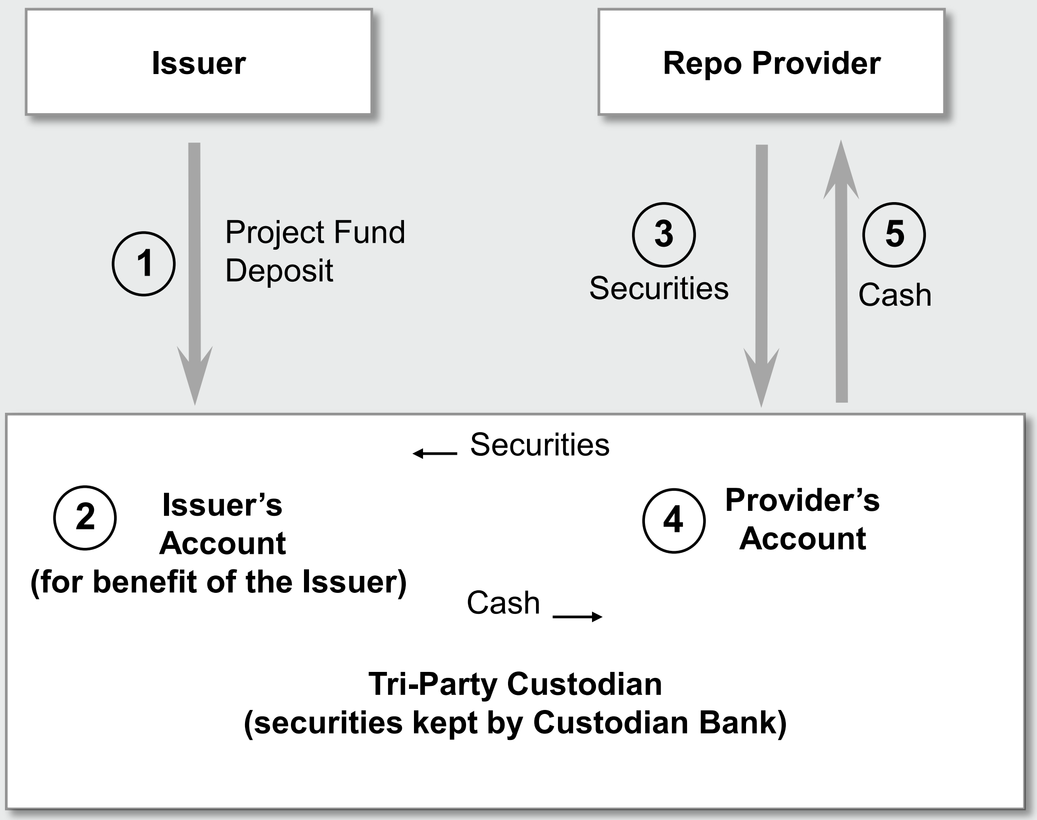
- Provider posts collateral to a third-party custodian to secure investment



- Issuer wires Project Funds to Provider
- Provider delivers collateral securities to a Custodian
- Provider pays interest and returns Principal for project costs

Flexible Repurchase Agreements

- Provider sells securities to an investor with a pledge to repurchase them in the future



1. Issuer wires Project Fund balance to Tri-Party Custodian.

2. Custodian establishes account for Issuer and an account for Repo Provider.

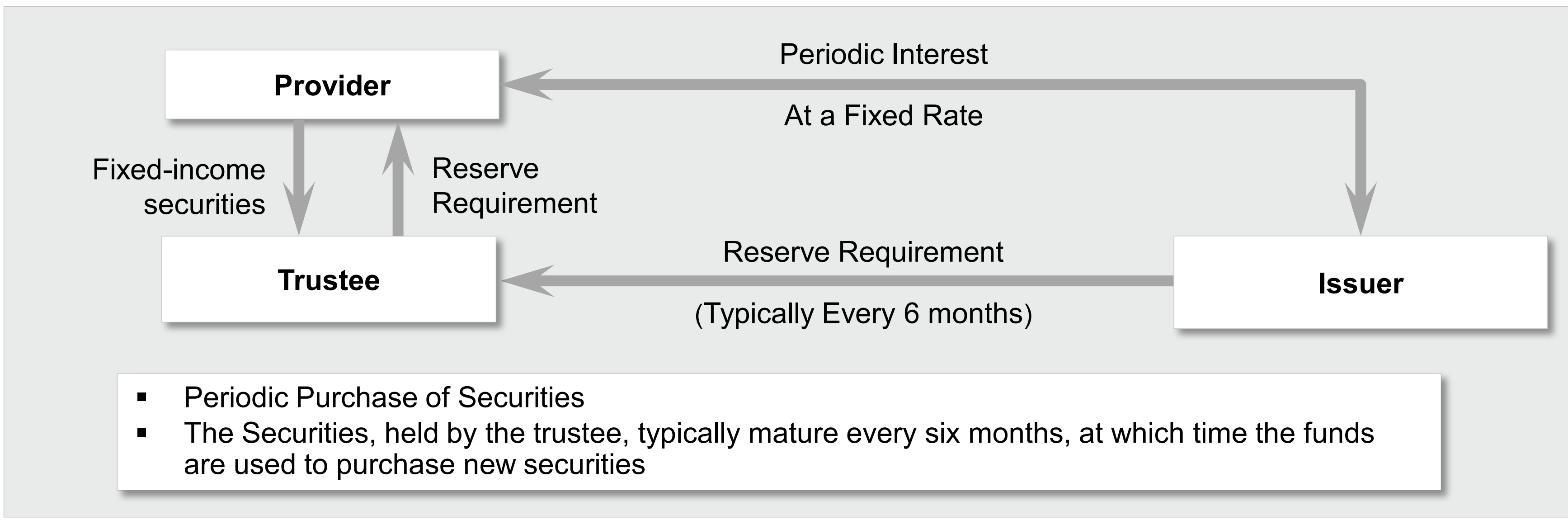
3 Repo Provider delivers securities to the Provider's account with Custodian.

4. Custodian transfers securities to Issuer's Custodian account and cash to Provider's account as payment for purchase of the securities.

5. Custodian sends cash to Repo Provider.

Forward Delivery Agreements

- Provider is required to sell eligible securities the investor based on a pre-set schedule



Structured Products Strategy – Current Market

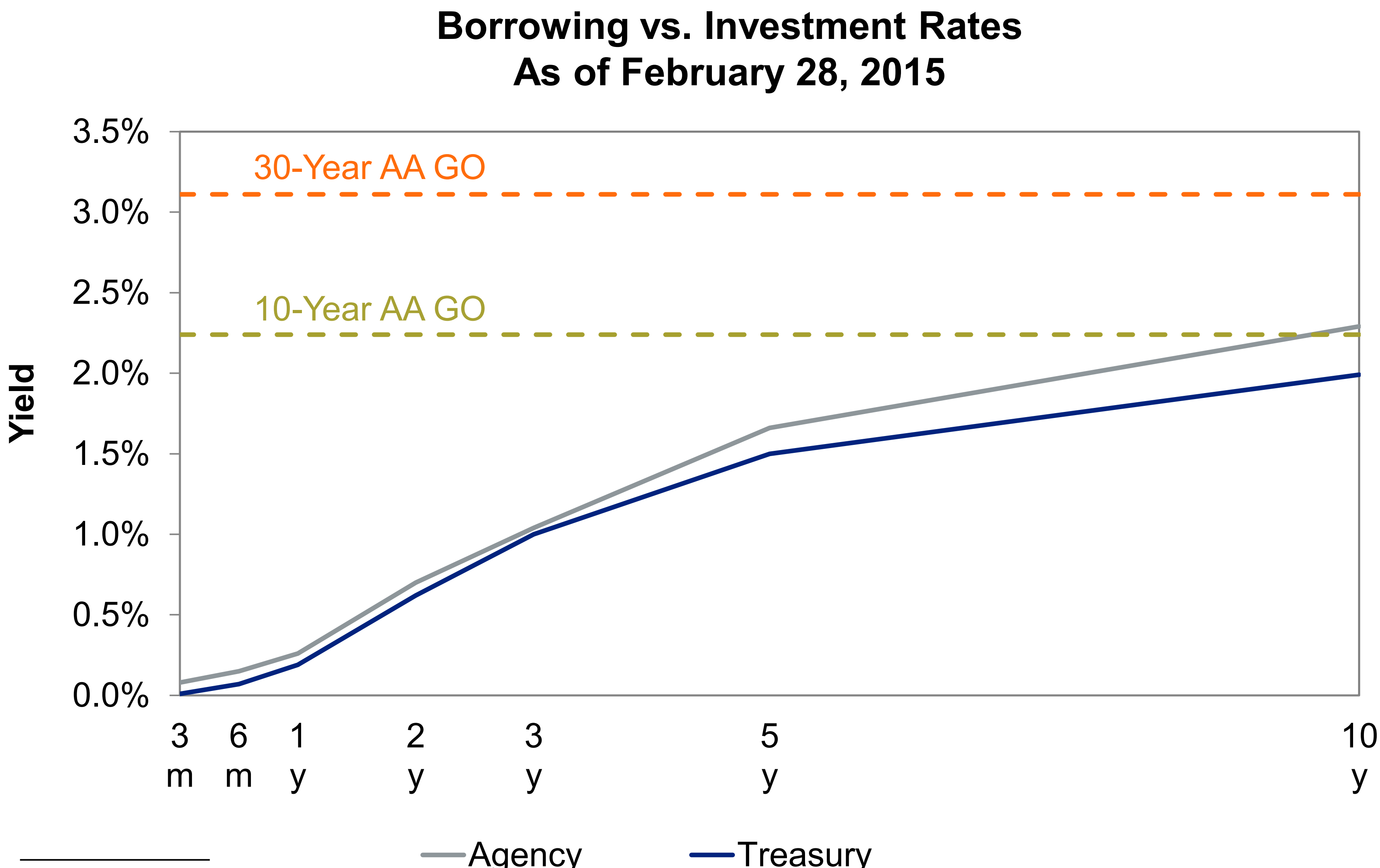
- Difficult, if not impossible, to meet the safe harbor
  - GICs: 1 – 2 providers
  - Repo: 2 – 6 providers
  - FDAs: 2 – 4 providers

	As of May 20, 2008		As of February 28, 2015	
Provider	Moody's Rating	S&P Rating	Moody's Rating	S&P Rating
AEGON	Aa3	AA	A1	AA
AIG	Aa2	AA-	Baa1	A-
Ambac	Aaa	AAA	WR (last: Caa2)	NR (last: CC)
Bank of America NA	Aaa	AA+	A3	A
Barclays Bank	Aa2	AA-	**A3**	**A**
Bayerische Landesbank	Aa2	A	Baa1	NR (last: BBB+)
Citigroup	Aa3	AA-	Baa2	A-
Credit Suisse	Aa2	A+	A2	A
Depfa Bank	Aa3	A+	A2	BBB+
Deutsche Bank	Aa1	AA	A2	A+
FSA (Assured Guaranty)	Aaa	AAA	A2	AA-
Hypo Bank	A1	A+	Baa3	BBB
JPMorgan	Aaa	AA	Aa3	A+
Lehman Brothers	A1	A+	WR (last: C)	NR (last: D)
MBIA	Aaa	AAA	Caa2	CCC
Morgan Stanley	Aa3	AA-	Baa1	A-
Natixis	Aa2	AA	A2	A
Rabobank	Aaa	AAA	Aa2	AA-
RBC Capital Markets	Aaa	AA-	Aa3	AA-
Societe Generale	Aa2	AA-	A2	A
SunTrust Bank	Aa2	AA-	A3	BBB+
Trinity (GE Capital)	Aaa	AAA	Aa3	AA+
Wells Fargo (Wachovia)	Aa1	AA+	A2	A+

Sources: Bloomberg, Standard & Poor's, Moody's

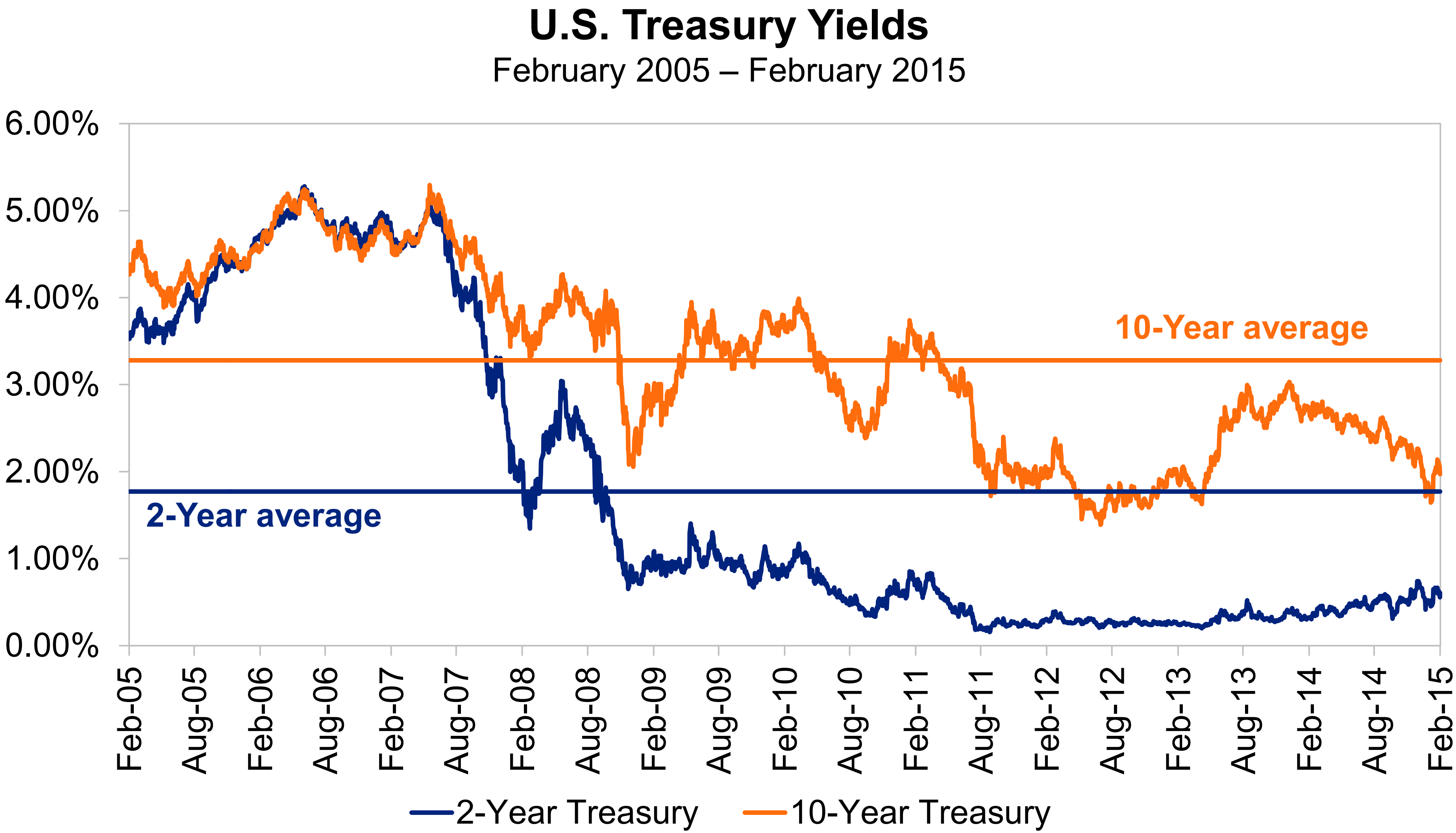
■ Downgrade within same category, ■ 1-notch downgrade, ■ 2+ notch downgrade.

Factor: Current Rate Environment



Sources: Bloomberg, Municipal Market Data

Interest Rates Are Near Historic Lows



Source: Bloomberg

Patient FOMC

January

28

- Economic activity has been ***expanding at a solid pace***…labor market conditions have improved further, with ***strong job gains and a lower unemployment rate***…recent declines in energy prices have boosted household purchasing power.

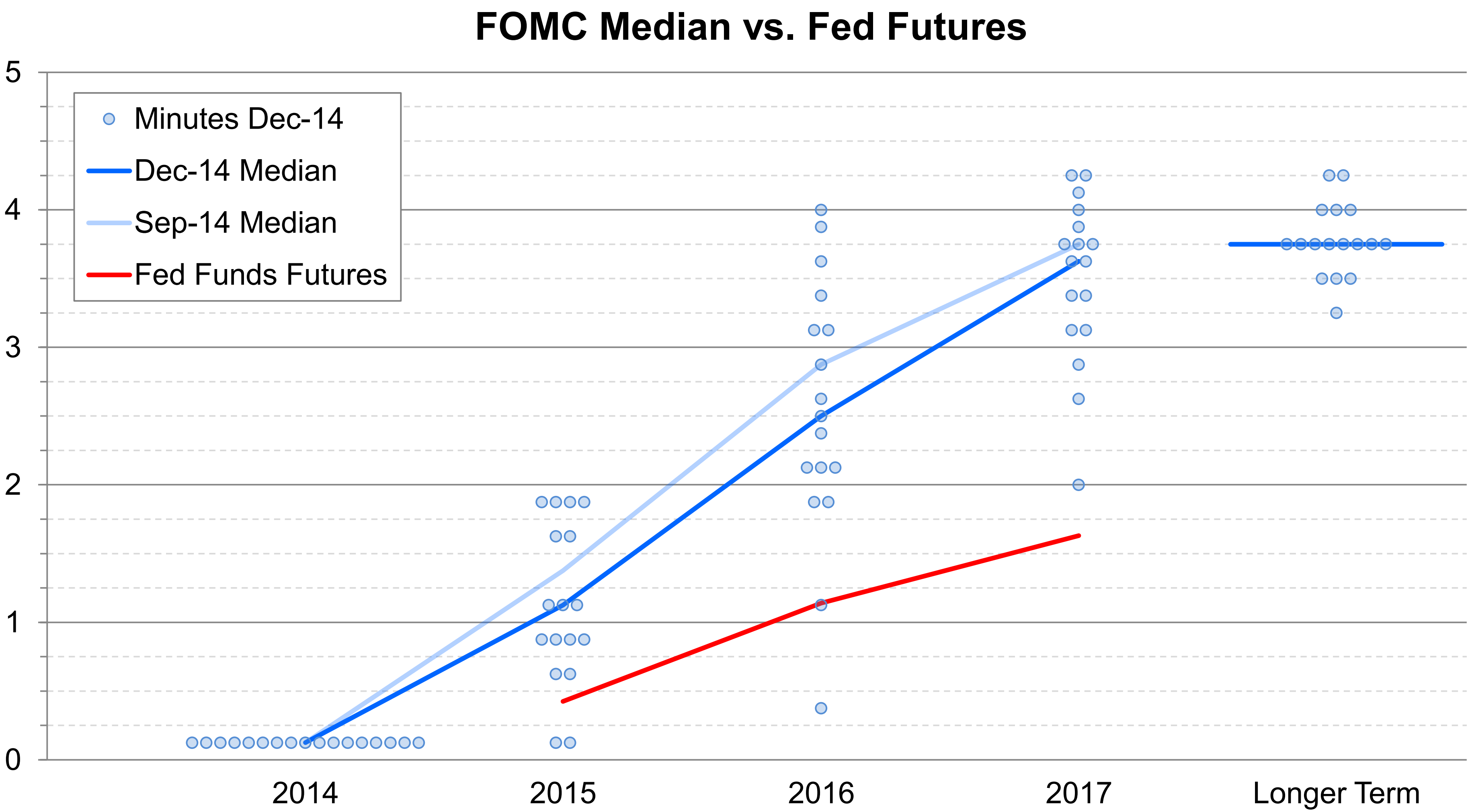
- ***Inflation has declined further*** below the Committee's longer run objective, ***largely reflecting declines in energy prices***…inflation is ***anticipated to decline further in the near term***, but the Committee expects inflation to rise gradually toward 2%...as the labor market improves further and the transitory effects of lower energy prices and other factors dissipate.

- The current 0 – 0.25% target range for the federal funds rate remains appropriate…the Committee judges that ***it can be patient in beginning to normalize the stance of monetary policy***.

- *If incoming information indicates faster progress…then increases in the target range for the federal funds rate are likely to occur sooner…if progress proves slower than expected, then increases in the target range are likely to occur later.*

Source: Federal Reserve

Market Expectations



Fixed-Income Index Returns

As of February 28, 2015 **Returns for periods ended 2/28/15**

	Effective Duration	Yield	1 Year	3 Years	5 Years
1-3 Year Indices					
U.S. Treasury	1.88	0.62%	0.66%	0.58%	0.93%
Agency	1.77	0.73%	0.77%	0.68%	1.06%
Corp A-AAA	2.02	1.23%	1.19%	1.88%	2.32%
1-5 Year Indices					
U.S. Treasury	2.71	0.91%	1.16%	0.81%	1.60%
Agency	2.21	0.92%	1.21%	0.93%	1.50%
Corp A-AAA	2.83	1.59%	1.96%	2.59%	3.26%
Master Indices (Maturities 1 Year and Greater)					
U.S. Treasury	6.22	1.41%	5.16%	1.99%	3.82%
Agency	3.77	1.30%	3.44%	1.69%	2.72%
Corp A-AAA	6.95	2.54%	6.43%	4.48%	5.95%

- *Source: BofA Merrill Lynch Indices*
- *Returns for greater than one year are annualized*

Putting It In To Practice

- AA – Certificates of Participation
- Bond yield = 3.37%
- Call date = 5/1/2025
- Maturity date = 5/1/2045

Fund	Deposit	Average Life	Final Maturity	Present Value of 0.01%
Project Fund	$20,000,000	1 year 4 Months	August 1, 2017	$2,543
Reserve Fund	$1,553,394	20 Years	May 1, 2045	$3,017

Present value of 0.01% is calculated as earnings on funds at 0.01% discounted at Bond Yield to 3/4/2015.

Strategy Comparison in Current Environment

- Project Fund

Vehicle	Yield	Earnings	Estimated Rebate	Risks
Liquidity Vehicle	7 bps	$17,656	($802,931)	• Reinvestment
Portfolio of Securities (Government)	19 bps	$48,013	($774,922)	• Interest rate • Reinvestment
Portfolio of Securities (Government and Corporates)	22 bps	$55,620	($767,903)	• Credit • Interest rate • Reinvestment

- Reserve Fund

Vehicle	Yield	Earnings	Expected Rebate	Risks
Portfolio of Securities[1] (Government)	0.92%	$45,136	($120,804)	• Interest rate • Reinvestment

1. Assumes Reserve is invested in government portfolio to 4/30/18.

Strategy Analysis

Case	Scenario	Initial Rate	Reinvest Rate	Arbitrage Earned	Net Overall Arbitrage Position[1]
A	Interim Portfolio	0.92%	N/A	($120,804)	($888,708)

Analysis to Call Date

Case	Scenario	Initial Rate	Reinvest Rate	Arbitrage Earned	Net Overall Arbitrage Position[1]
B	Case A, then Historic Rate[2]	0.92%	3.28%	($263,316)	($1,031,219)
C	Case A, then Zero Liability	0.92%	13.55%	$767,903	$0

Analysis to Maturity Date

Case	Scenario	Initial Rate	Reinvest Rate	Arbitrage Earned	Net Overall Arbitrage Position[1]
B.2	Case A, then Historic Rate[3]	0.92%	4.02%	$46,148	($721,755)
C.2	Case A, then Zero Liability	0.92%	6.94%	$767,903	$0

1. Net Overall Arbitrage Position assumes Construction Fund PV Arbitrage Earnings of negative $767,903.

2. Historic Rate is based on the ten year average of the 10-year U.S. Treasury as of February 28, 2015.

3. Historic Rate is based on the ten year average of the 30-year U.S. Treasury as of February 28, 2015.

Ready, Set, Go! The MA Rule

- Segregate bond proceeds from other funds to aid in MA Rule compliance
- Work with an SEC-registered investment advisor (RIA)
- Designate an Independent Registered Municipal Advisor (IRMA) if taking advice from your broker/dealer

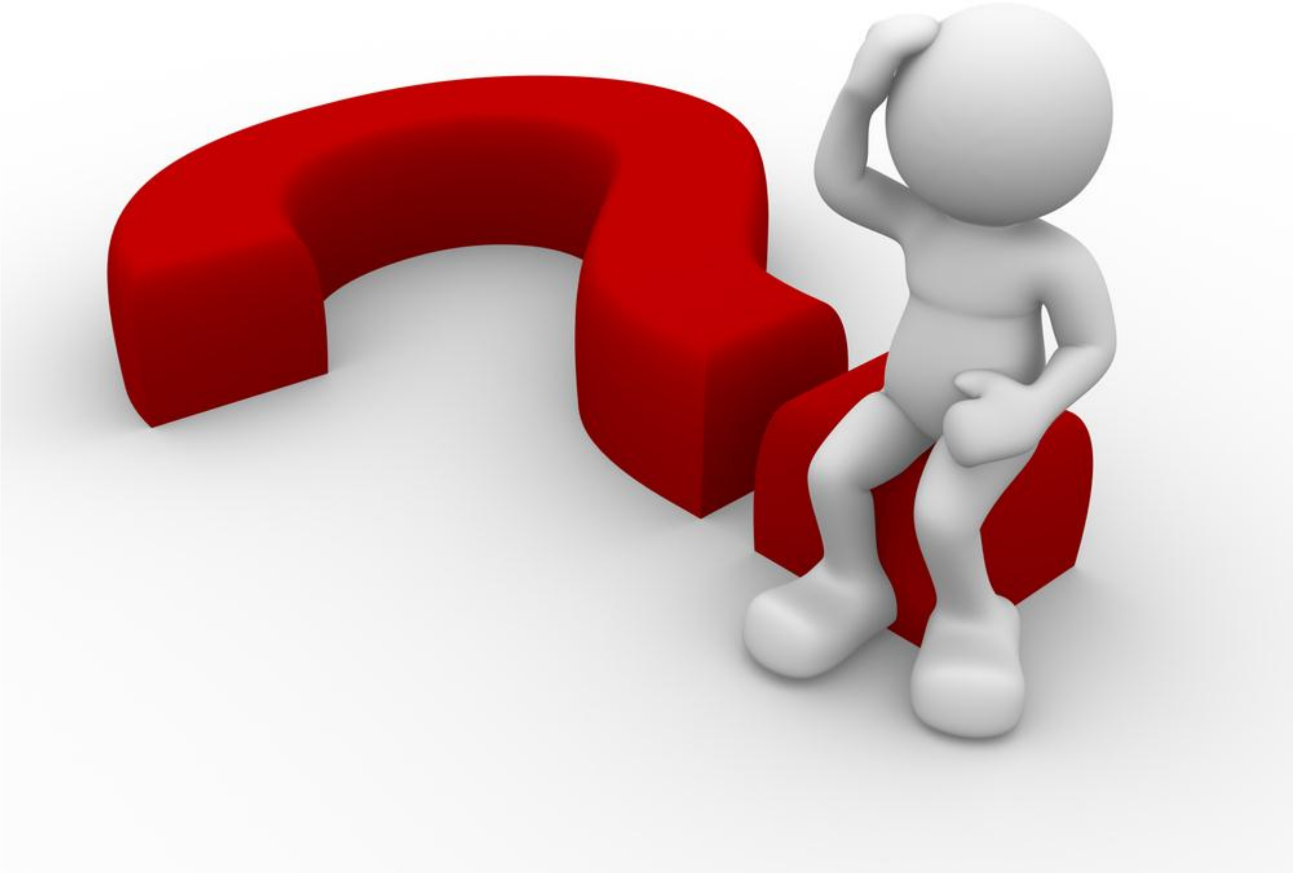
Stay Compliant and Monitor Your Investments

- Expenditures
  - Enforce requisition disbursement requirements dictated under indentures
  - Monitor authorized disbursements
  - Require authorized signers
- Arbitrage rebate liability
- Bond financing rules

Summary

- Understand cash flow needs
- Strategize about investment options during bond issuance process
- Assess current market environment
- Implement strategy
- Monitor proceeds throughout the life of the project and restructure, if needed

Thank You!



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