Interest Rate Outlook and Risk Management
Federal Home Loan Bank of Boston Webinar

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This webinar is being recorded

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Agenda

I. Interest rate outlook
   - Federal funds rate
   - Long-term rates

II. Regulator commentary and balance sheet patterns
   - Across the U.S.
   - New England banks and credit unions

III. Recent advance rates and member activities

IV. Upcoming special advance offerings

I. Interest Rate Outlook

Monetary Policy at the Beginning of 2013: Extraordinary Times

- Fed funds rate target between zero and 25 basis points since December 2008
- "Evans rule:" Keep the target FFR range at zero to 25 basis points as long as
  - Unemployment above 6.5%
  - Inflation projections one to two years ahead below 2.5%
  - Long-term inflation expectations "anchored"
- QE3: $85 billion per month in Treasury and MBS purchases

Policy Triggers in Evans Rule

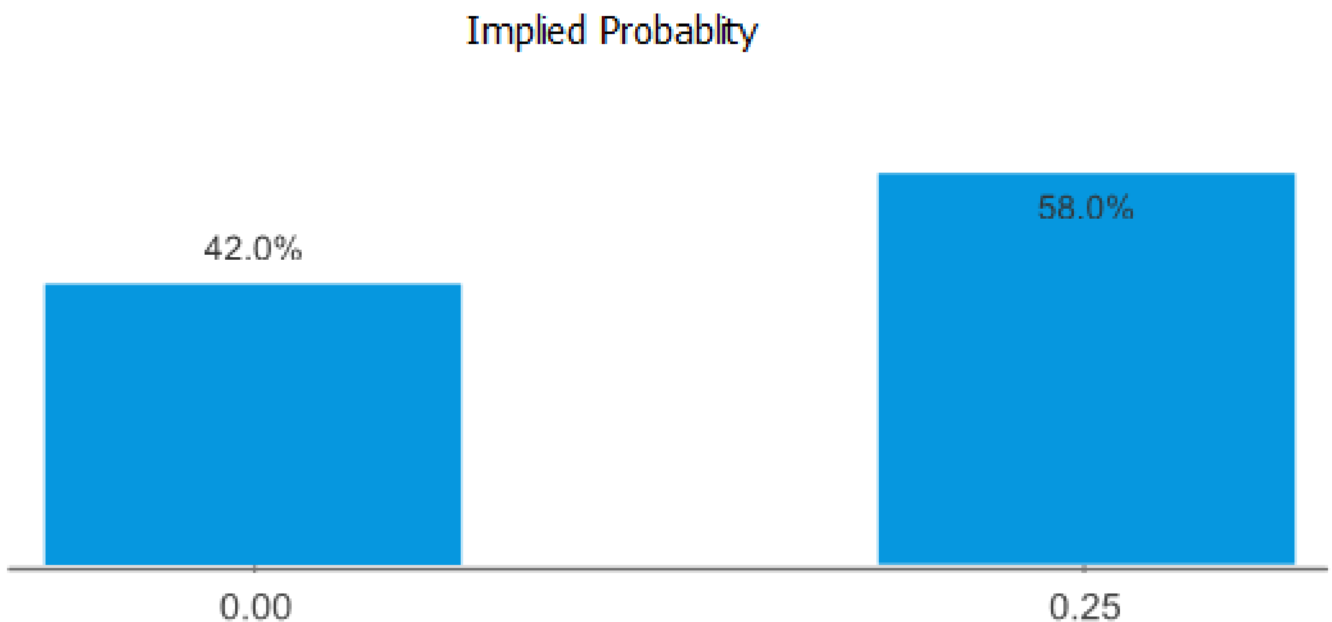
FOMC Participants' Projections As of December 2012

	Inflation			Unemployment		
	2013	**2014**	**2015**	**2013**	**2014**	**2015**
Upper End	2.0	2.2	2.2	7.8	7.4	6.8
Upper Central Tendency	2.0	2.0	2.0	7.7	7.3	6.6
Lower Central Tendency	1.3	1.5	1.7	7.4	6.8	6.0
Lower End	1.3	1.4	1.5	6.9	6.1	5.7

Increase in FFR likely to be triggered by decline in unemployment, rather than increase in inflation, sometime in 2015

Source: www.federalreserve.gov

Expected Fed Funds Rate on 1/30/2013 Based on 1/24/2013 Futures Prices



Source: www.cmegroup.com/fedwatch

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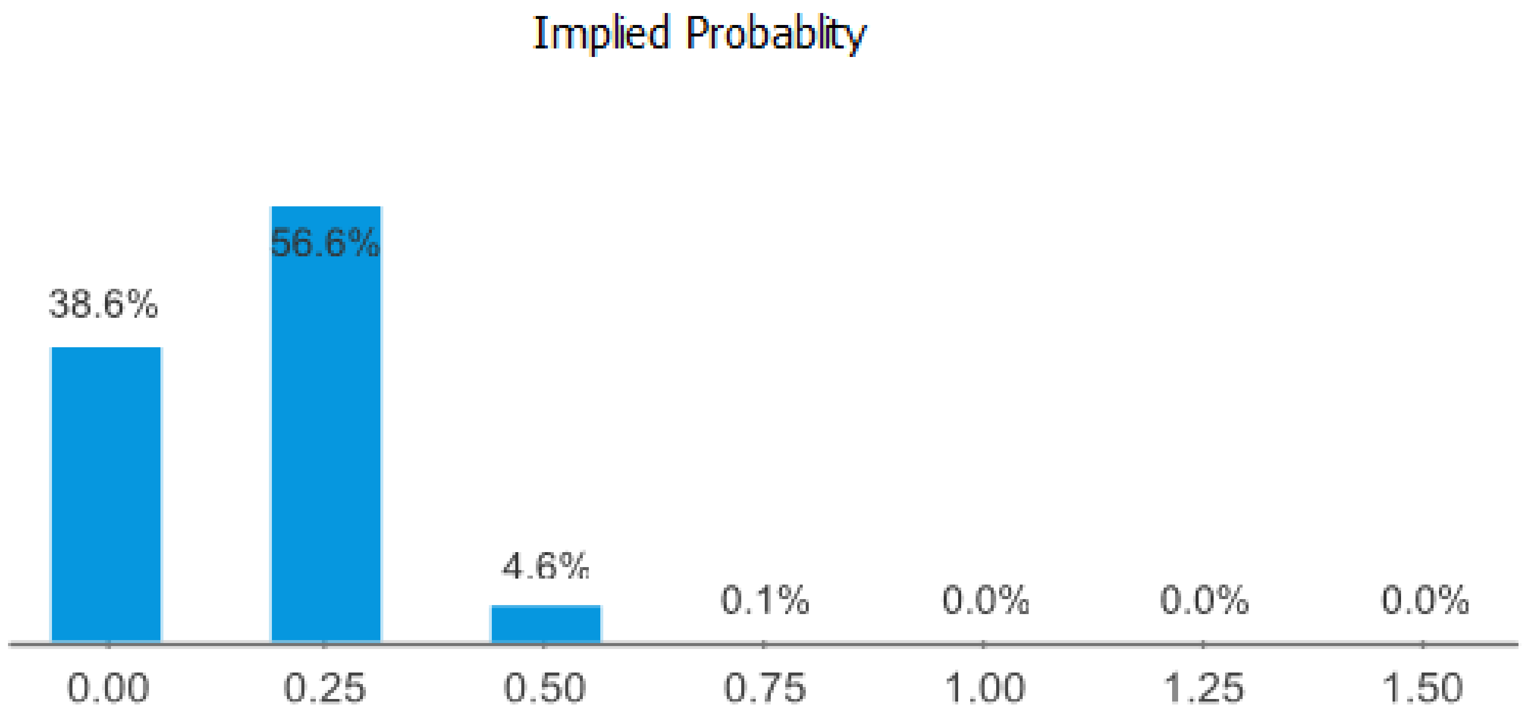
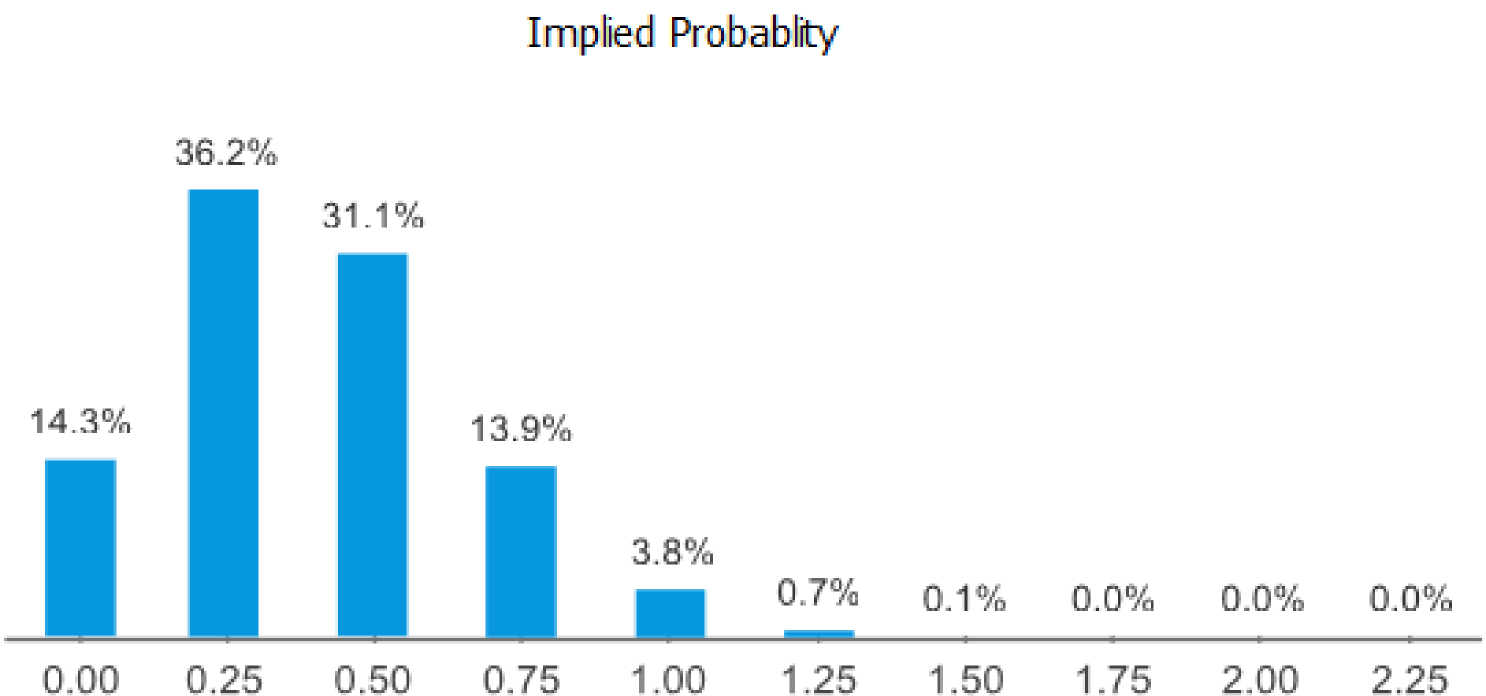
Expected Fed Funds Rate on 1/29/2014 Based on 1/24/2013 Futures Prices



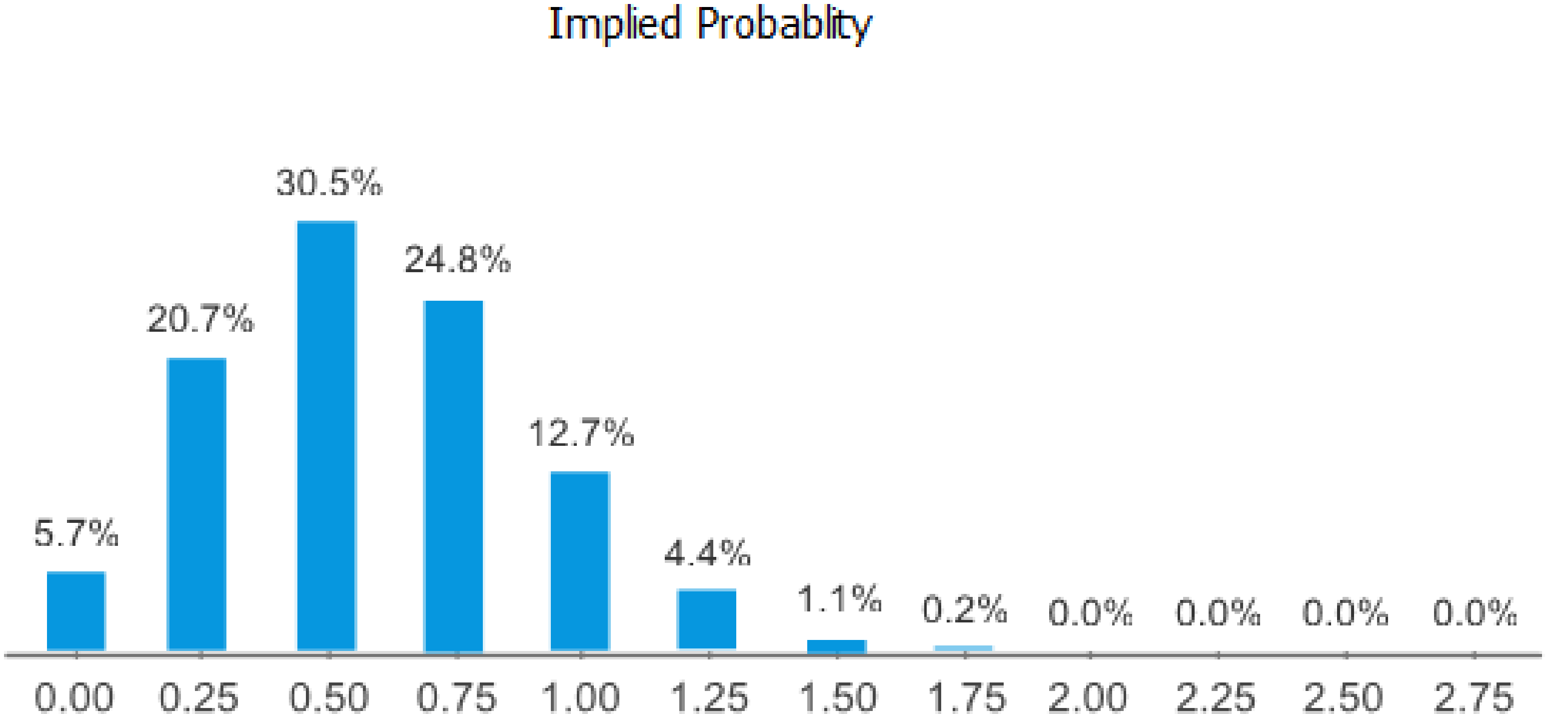
Source: www.cmegroup.com/fedwatch

Expected Fed Funds Rate on 1/28/2015 Based on 1/24/2013 Futures Prices

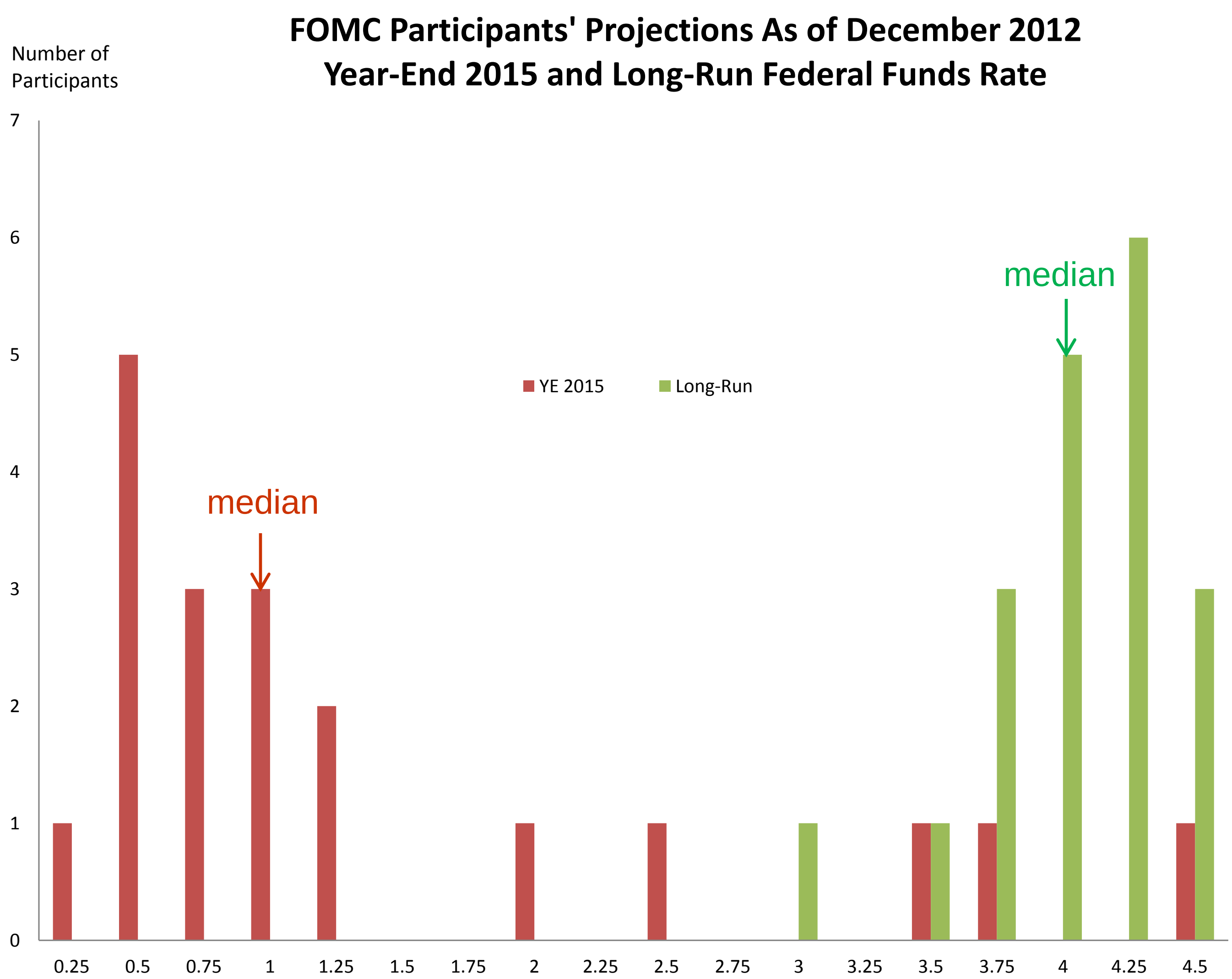


Source: www.cmegroup.com/fedwatch

Expected Fed Funds Rate on 6/17/2015 Based on 1/24/2013 Futures Prices



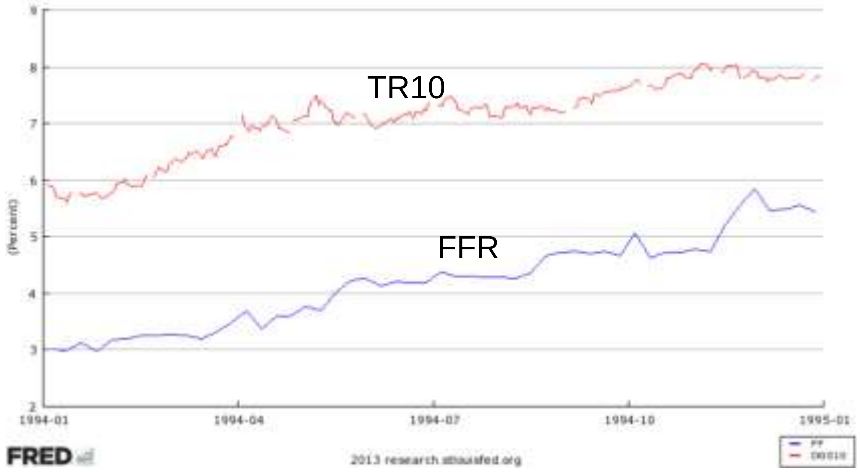
Source: www.cmegroup.com/fedwatch



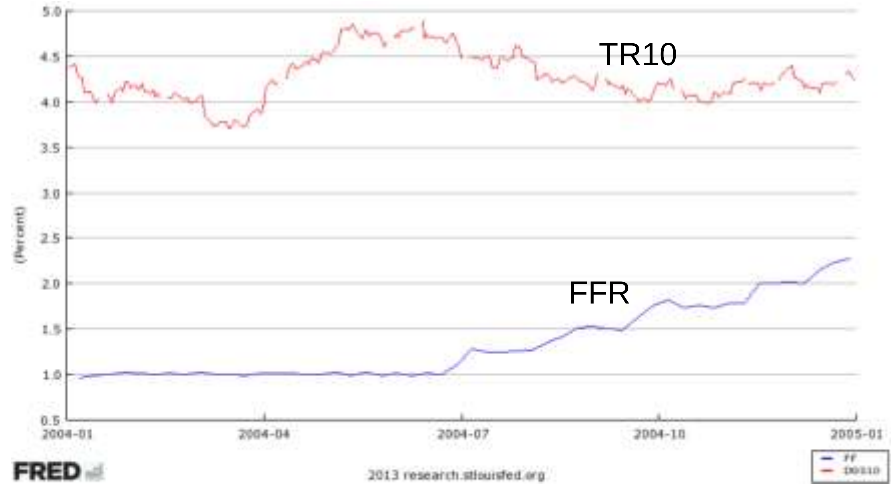
Source: www.federalreserve.gov

What About Long-Term Rates?

1994



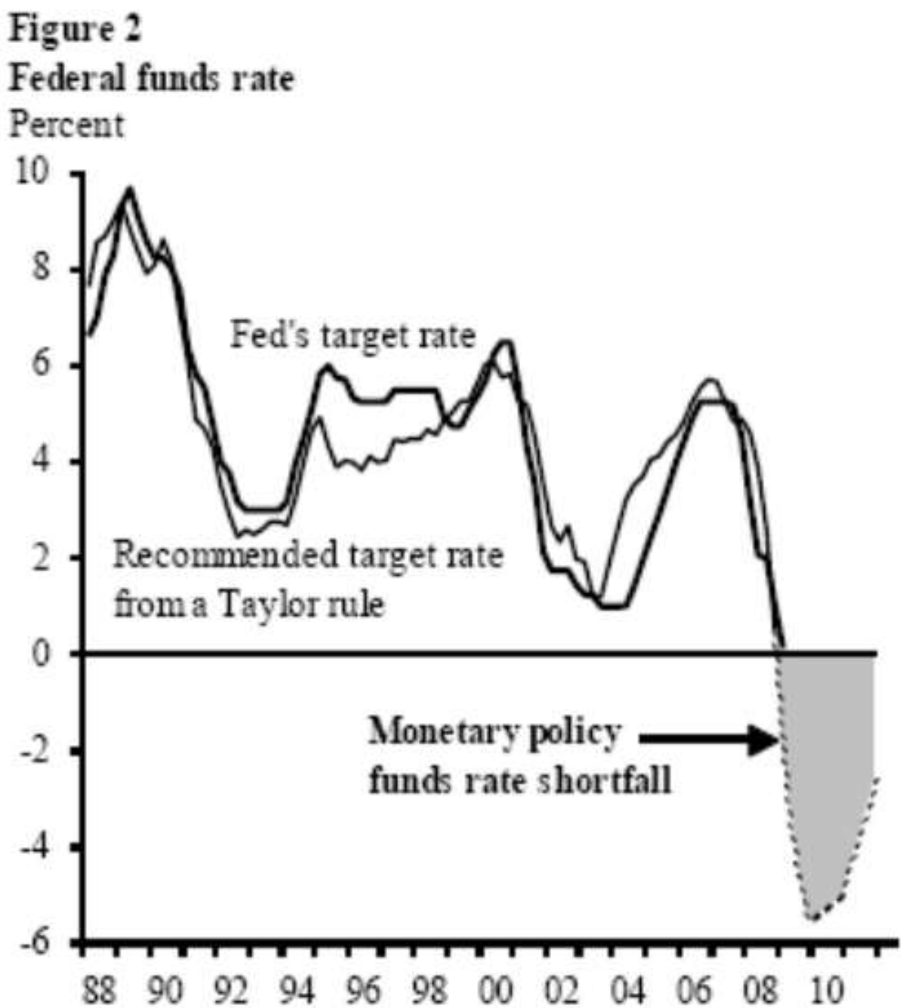
2004



Source: Federal Reserve Bank of St. Louis

What About Long-Term Rates, continued.

- As Fed tightened, yield curve steepened in 1994 (for part of year) and flattened in 2004.
- According to Donald Kohn, 2004 may have been special due to:
  - Strong demand for dollar-denominated assets from countries running current account surpluses (“global savings glut”)
  - Extremely low interest rate volatility contributed to investors’ willingness to extend duration (“great moderation”)
  - Rate movements in next tightening cycle may be more similar to 1994 than 2004.
- In fact, with short-term rates at the “zero lower bound,” long-term rates may increase *before* changes in the federal funds rate.



Zero lower bound on FFR

- ⇒ **Unconventional easing tools (QE) focusing on long-term rates**
- ⇒ **Next tightening cycle will likely begin with winding down of QE programs**
- ⇒ **Long-term rates may increase before FFR**

Source: Rudebsuch, Glen. "The Fed's Monetary Policy Response to the Current Crisis," FRBSF Economic Letter, May 2009

When Will QE End?

"…Officials have made it clear that they also expect to suspend asset purchases well before the unemployment rate reaches the 6.5 percent line…

Mr. Rosengren [Boston Fed President] said last year that the Fed should certainly continue the purchases until the unemployment rate declines at least below 7.25%...

James Bullard [St. Louis Fed President]…expected the unemployment rate to drop to near 7 percent by the end of the year and that it would then be appropriate for the Fed to consider suspending its program of asset purchases."

Source: "At Fed, Nascent Debate on When to Slow Asset Buying," New York Times, January 27, 2013

Expected Treasury Rates
Based on Dec 2012 Livingston Survey (Philadelphia Fed)

	3-Month Treasury	10-Year Treasury
December 2012	0.10	1.70
June 2013	0.11	1.88
December 2013	0.11	2.20
December 2014	0.20	2.75

Economists expect long-term rates to increase starting in 2013, well before changes in FFR

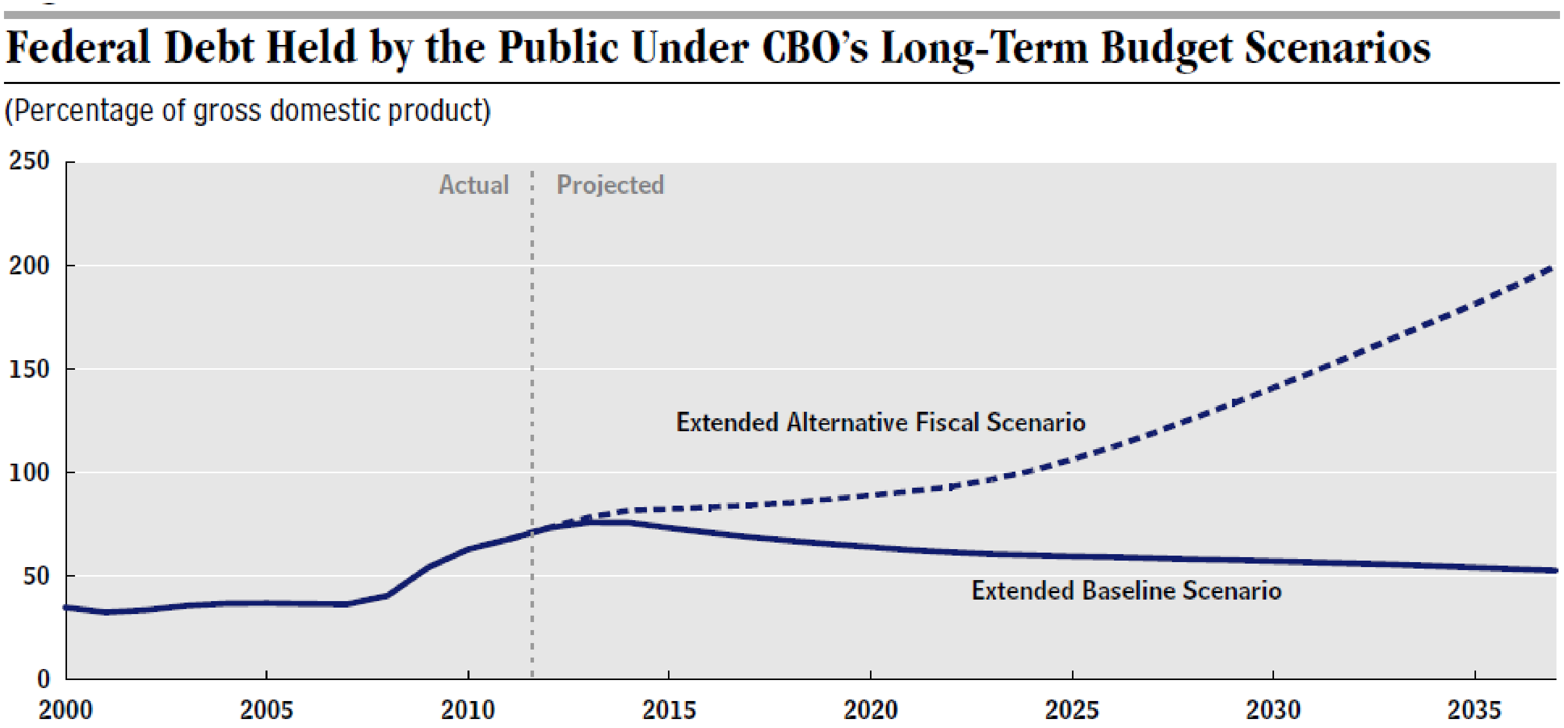
Source: www.philadelphiafed.org

Additional Factors to Consider:
1. History

	Percentage of One-Year Periods from 1955 to 2008 with Greater Than X Basis Point Change in Fed Funds Rate
200 basis points	30%
300 basis points	16%
400 basis points	9%

Source: “Nowhere to Go but Up: Managing Interest Rate Risk in a Low-Rate Environment,” FDIC Supervisory Insights, January 2010

Additional Factors to Consider:
2. Politics



Source: "Choices for Deficit Reduction," Congressional Budget Office, November 2012

Additional Factors to Consider:
3. Overseas Demand for Treasuries

"At the end of October 2012, foreign central banks held over $5.5 trillion in Treasury securities, including $1.2 trillion and $1.1 trillion held in reserves by the central banks of China and Japan, respectively. According to recent research, foreign demand for Treasuries has helped to lower Treasury yields substantially such that `if foreign official inflows into U.S. Treasuries were to decrease in a given month by $100 billion, 5-year Treasury rates would rise by about 40-60 basis points in the short run.'"

The Growing Exposure of New England Banks to Interest Rate Risk,
Banking New England, February 2013

Interest Outlook Summary

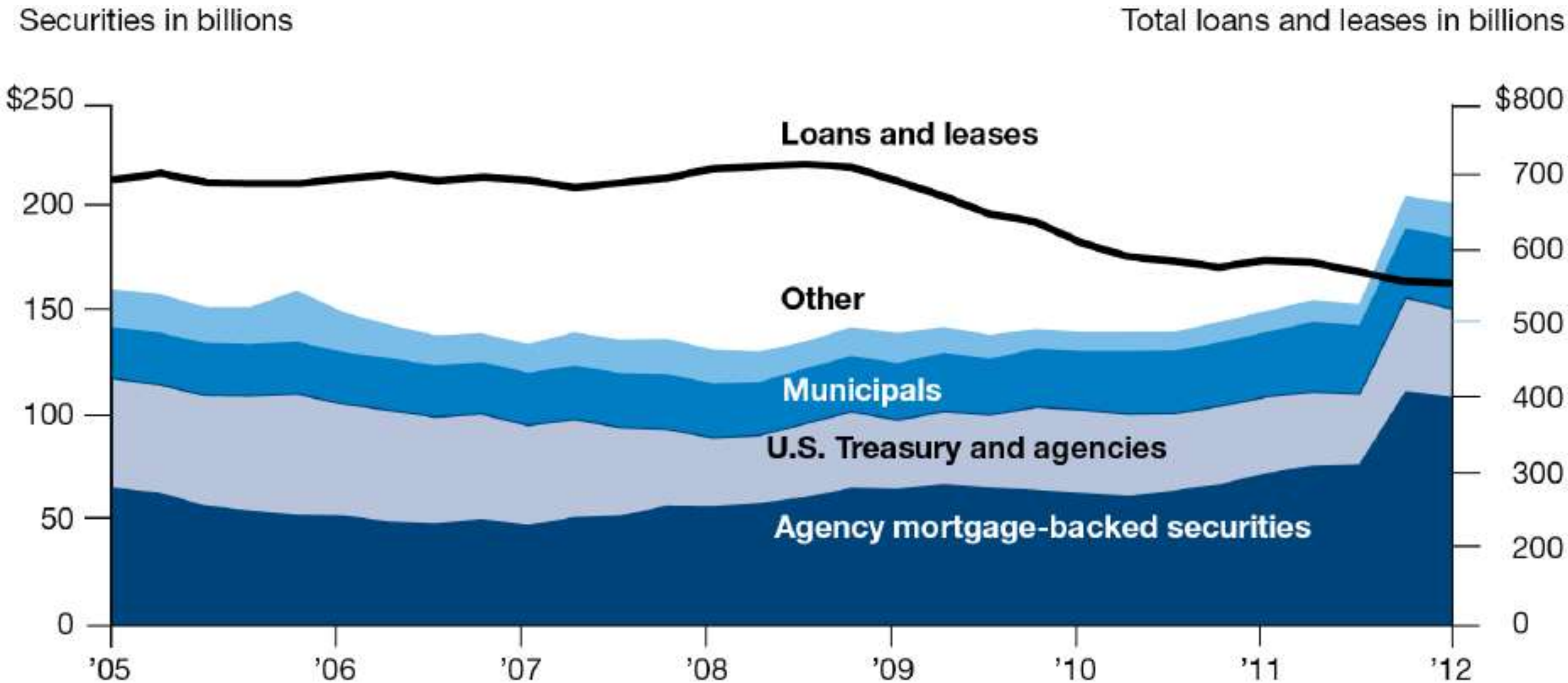
- Market data consistent with:
  - Fed funds rate staying flat through early 2015.
  - Short-term rates staying flat in 2013, rising modestly in 2014.
  - Long-term rates increasing in 2013 and 2014, potentially by substantial magnitudes.
  - Yield curve steepening well before changes in federal funds rate targets.
- Substantial uncertainty remains:
  - Significant disagreement among FOMC participants regarding magnitude of FFR increase in 2015
  - Rate increase in 2015 and beyond may be rapid, given the gap relative to “long-run” rates

II. Regulator Commentary and Balance Sheet Patterns

Office of the Comptroller Currency Semi-Annual Risk Perspective, Fall 2012

- Three patterns consistent with increasing exposure to rising rates for banks across the U.S:
  1. Concentration of investment portfolios in mortgage-backed securities
     - Greater exposure to prepayment risk
  2. Lengthening portfolio maturities
     - Greater exposure to capital losses when rates rise
  3. Flattening core deposit growth
     - Calls into question availability of deposits when rates rise
- Data for New England banks and credit unions show similar patterns.

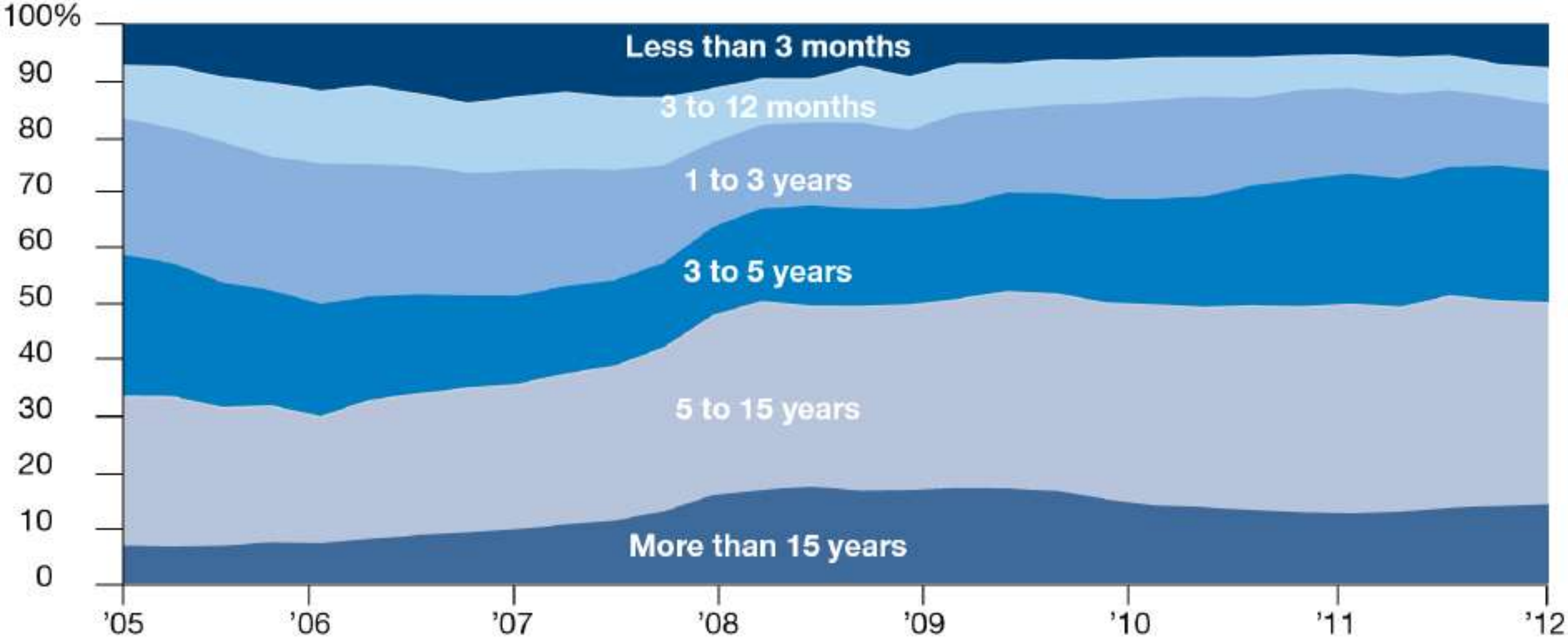
Concentration of Investment Portfolio in Mortgage Securities



Source: OCC Integrated Banking Information System.

Note: Federal savings associations are included beginning in the first quarter of 2012.

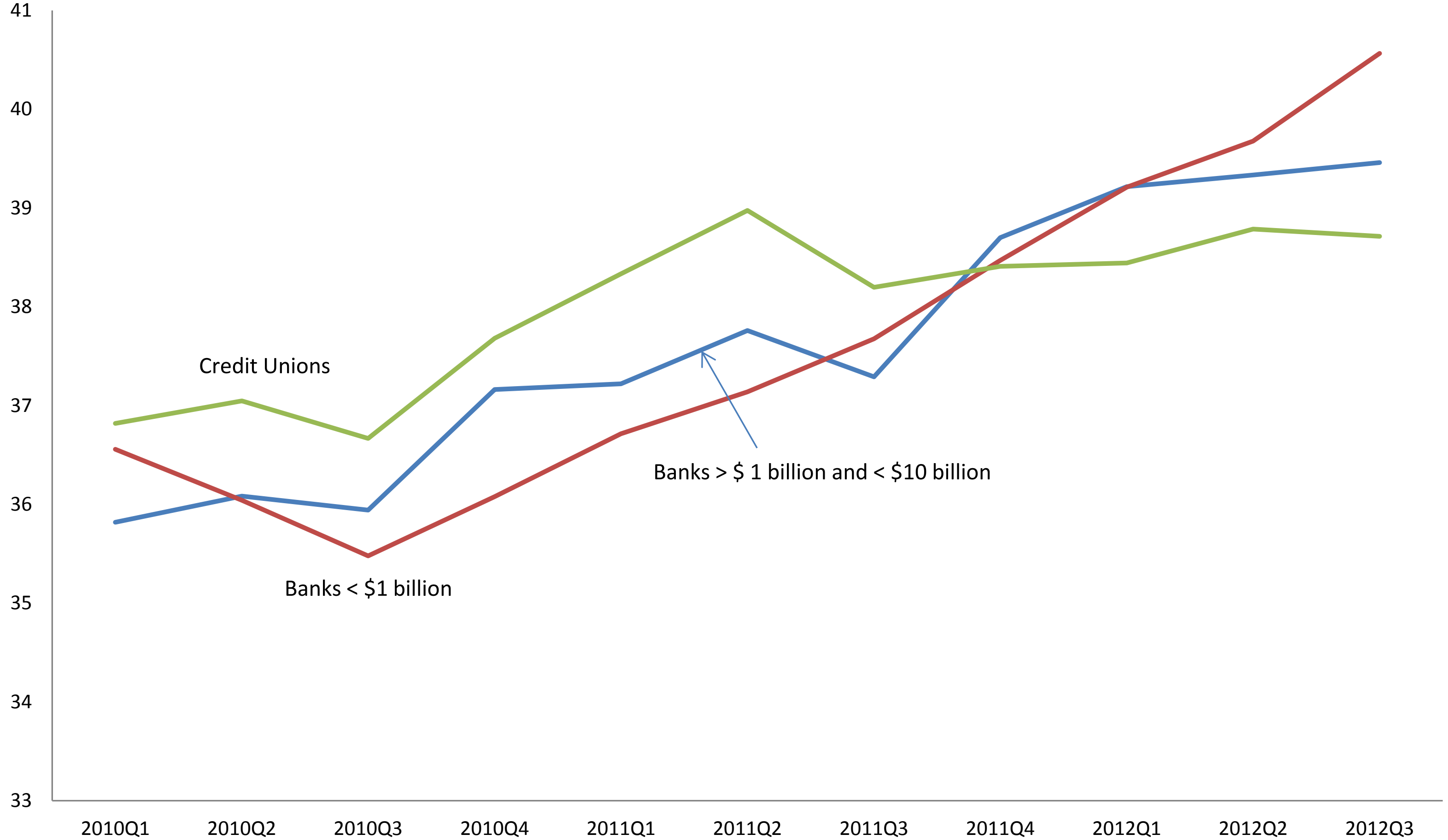
Lengthening Investment Portfolio Maturities



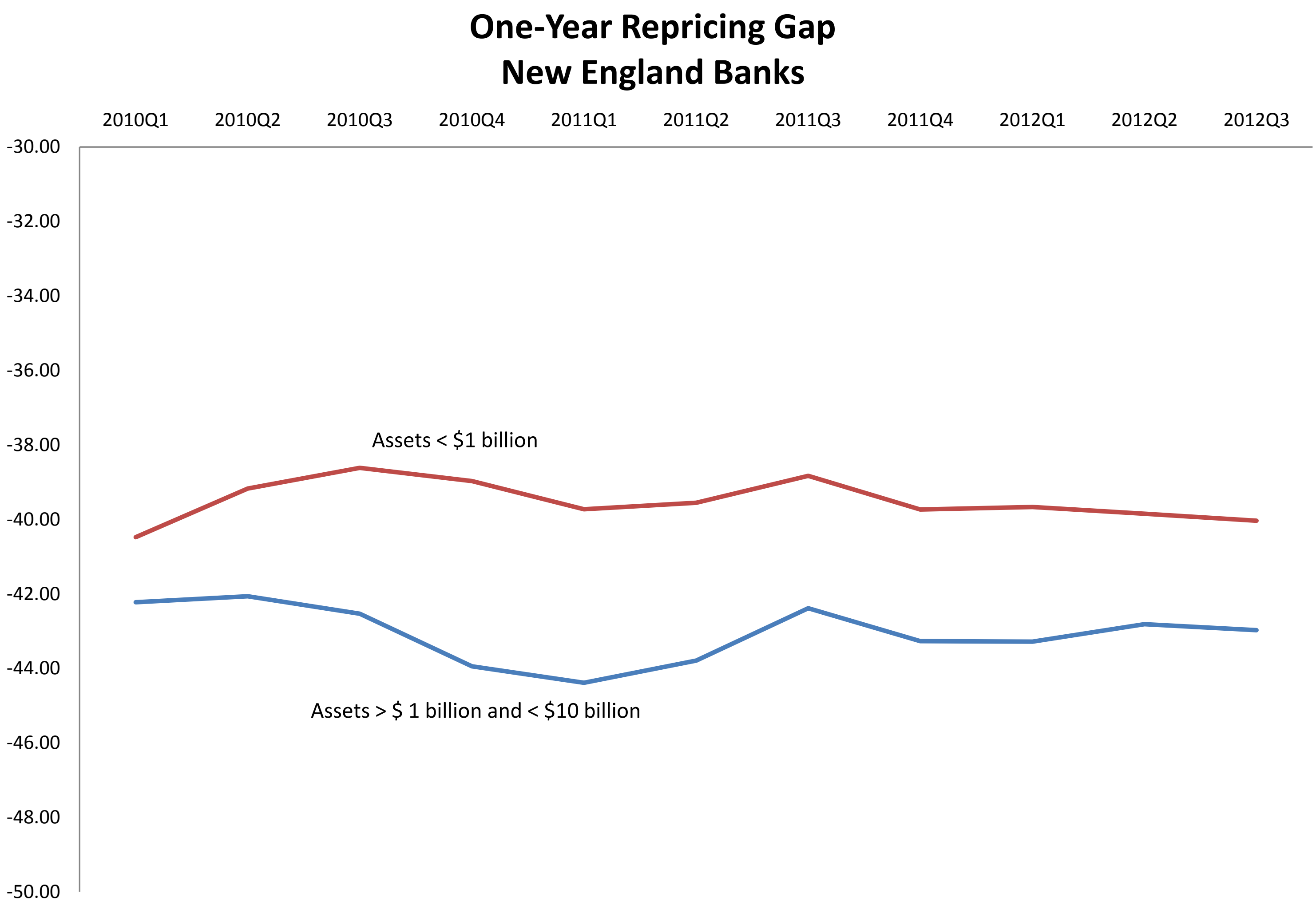
Source: OCC Integrated Banking Information System.

Note: Federal savings associations are included beginning in the first quarter of 2012.

Long-Term Assets / Total Assets
New England Banks and Credit Unions



Note: Asset-weighted averages shown.



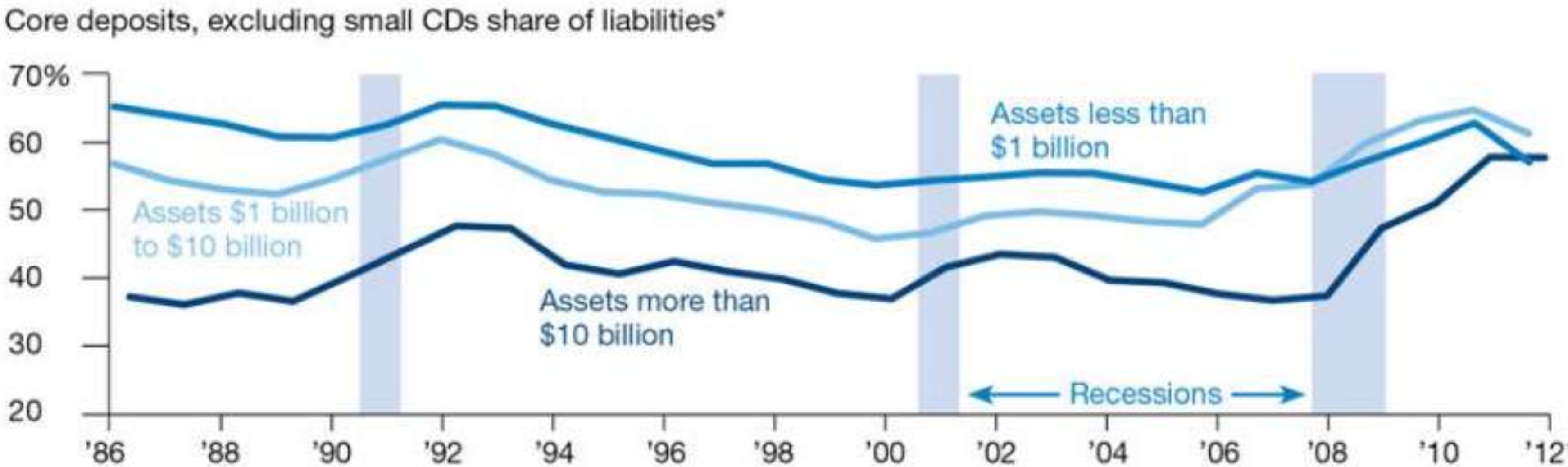
Note: SNL data for FDIC-insured banks in New England states; one-year repricing gap defined as (assets maturing or repricing within one year - liabilities maturing or repricing within one year) / total assets; asset-weighted averages shown.

Doug Gray, Managing Examiner, Federal Reserve Bank of Kansas City

"Those institutions extending asset maturities without a corresponding shift in liabilities are particularly exposed to significant upward movements in interest rates, which is not as uncommon as often perceived. In fact, the overnight federal funds rate experienced a change of 300 basis points or more over a 12-month period 15 percent of the time between 1955 and 2008. It was in response to the pressure banks faced to generate earnings and increase assets with longer maturities, while also shortening their liability maturities, that financial institution regulators issued an *Interagency Advisory on Interest Rate Risk* (interagency advisory) in 2010 and, earlier this year, a follow-up document, *Interagency Advisory on Interest Rate Risk Management: Frequently Asked Questions* (FAQs)."

Community Banking Connections, 3Q 2012

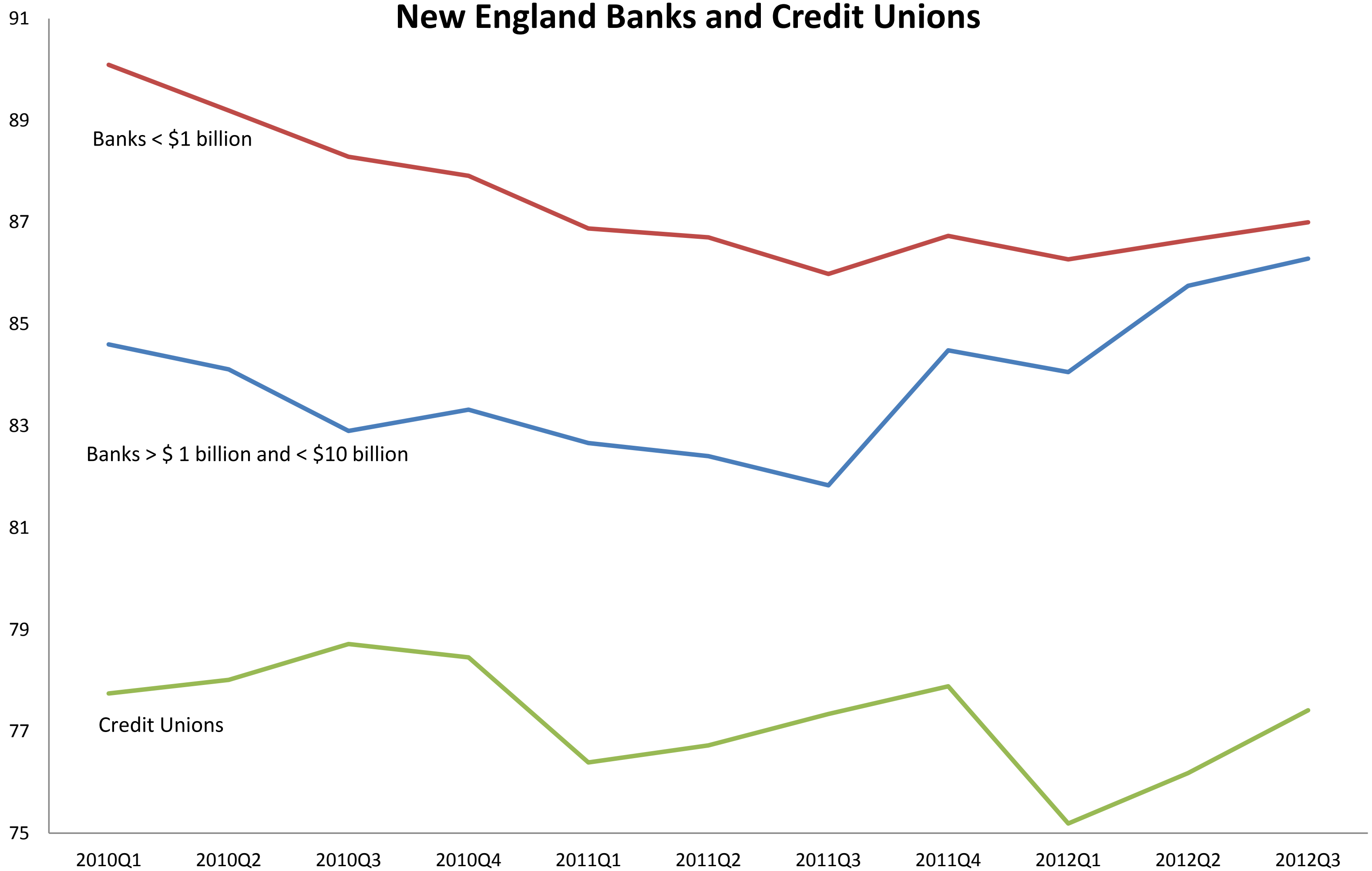
Flattening Core Deposit Growth



Source: OCC Integrated Banking Information System.

* 2012 data as of June 30, 2012; all other data as of year-end.

Net Loans and Leases / Deposits
New England Banks and Credit Unions



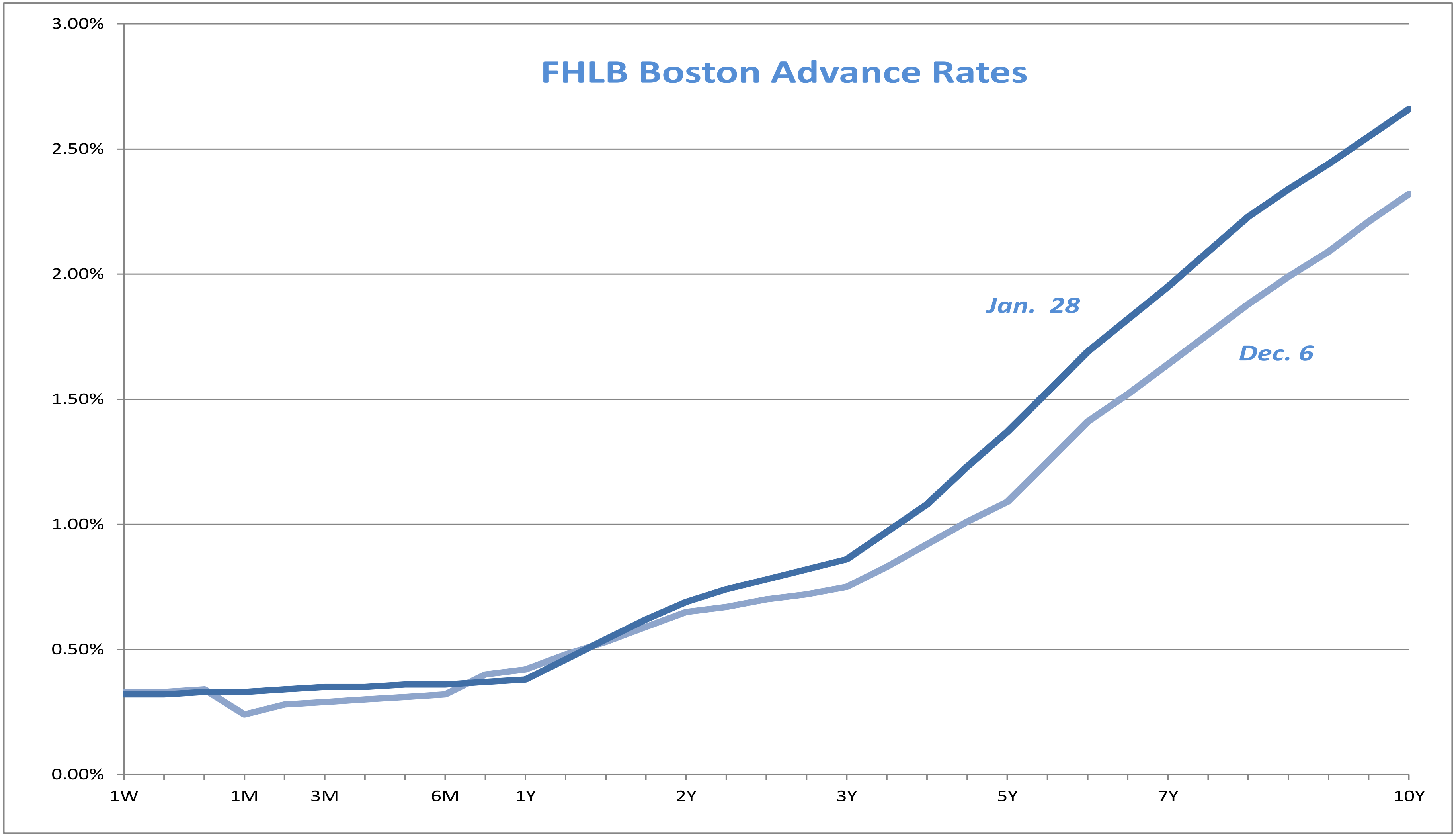
Note: Total Loans to Deposits for credit unions. Asset-weighted averages shown.

III. Recent Advance Rates and Member Activities

2012 Long-Term Advance Activity

- Recent survey indicates FHLB members are concerned with IRR
- During 2012 members borrowed $3.1B in long-term advances:
  - $1.9B in long-term advances
  - $0.5B in long-term advances under the Bank's Community Development advance programs
  - $0.7B in restructured advances
- More recently, during December:
  - 31 members borrowed $315M during 3 special offerings with terms between 1 and 7 years

Recent Rate Movements



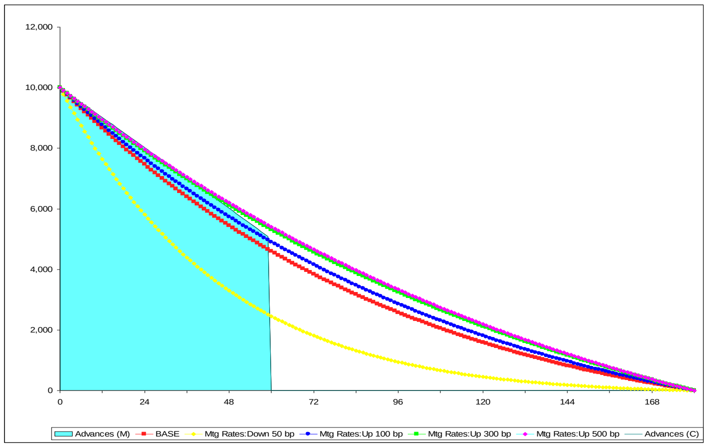
FHLB Boston
Implied Forward Advance Rates

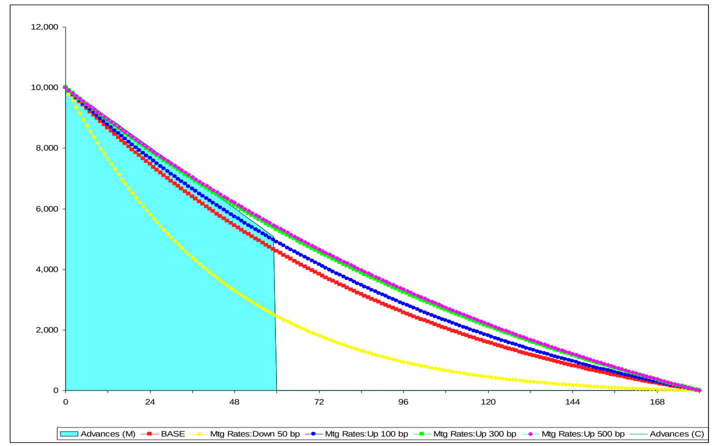
	Years to Maturity									
	1	2	3	4	5	6	7	8	9	10
28-Jan	0.38%	0.69%	0.86%	1.08%	1.37%	1.69%	1.95%	2.23%	2.44%	2.66%
YEARS FORWARD 1	1.00%	1.10%	1.32%	1.64%	1.99%	2.27%	2.58%	2.80%	3.05%	
2	1.21%	1.48%	1.85%	2.24%	2.52%	2.84%	3.06%	3.31%		
3	1.76%	2.17%	2.58%	2.85%	3.17%	3.37%	3.61%			
4	2.59%	3.00%	3.22%	3.53%	3.70%	3.92%				
5	3.41%	3.54%	3.84%	3.98%	4.19%					

Total Cost of Advances – 1 Year Horizon

Rates as of:	1/28/2013	Rate change:	50	bp
Horizon:	1/28/2014	Horizon Price	Total Cost	Value/ Roll
1 Year	0.38	100.00	0.38%	0.00%
2 Year	0.69	99.81	0.50%	(0.19)%
3 Year	0.86	99.35	0.21%	(0.65)%
4 Year	1.08	99.18	0.26%	(0.82)%
5 Year	1.37	99.19	0.56%	(0.81)%
6 Year	1.69	99.14	0.84%	(0.85)%
7 Year	1.95	98.66	0.61%	(1.34)%
8 Year	2.23	98.59	0.83%	(1.40)%
9 Year	2.44	97.93	0.37%	(2.07)%
10 Year	2.66	97.80	0.46%	(2.20)%

Funding 15-Year Fixed-Rate Mortgages





15-yr	**Fixed Rate Mortgage**	**2.875%**
50%	5-yr Amortizing advance	0.87%
50%	5-yr Classic Plus Cap (3mL Strike 2.50, 3x)	1.36%
Total Liabilities		1.12%
	Initial Net Spread	**1.76%**
	Average Net Spread (seven years)	
	Down 100 bp	0.52%
	Down 50 bp	1.03%
	Base case/Rates Flat	1.61%
	Up 100 bp	1.56%
	Up 300 bp	1.80%
	Up 500 bp	1.57%

15-yr	**Fixed Rate Mortgage**	**2.875%**
50%	5-yr Amortizing advance	0.87%
50%	5-yr Classic advance	1.23%
Total Liabilities		1.05%
	Initial Net Spread	**1.82%**
	Average Net Spread (seven years)	
	Down 100 bp	0.61%
	Down 50 bp	1.10%
	Base case/Rates Flat	1.69%
	Up 100 bp	1.63%
	Up 300 bp	1.35%
	Up 500 bp	1.00%

Solutions by Interest Rate Outlook

	Interest Rate Outlook			
	Falling Rates	Rates Unchanged	Rising Rates	Yield Curve Shape
Fixed Rate	S/T Classic S/T Amortizer Member Option	HLB Option	L/T Classic L/T Amortizer Symmetrical Prepay HLB Option Plus Cap Knockout Expander Classic Plus Cap	
Floating Rate	LIBOR Floater DN Auction Floater Slider	Flipper	Capped Floater Collar Corridor	Curve Flattener Curve Steepener

Key Solutions

- *Long-Term Classic*
  - Fund long-term assets
  - Manage IRR sensitivity
- *Classic Plus Cap*
  - Limit exposure to rising rates
  - Advance rate declines if rates rise above the cap strike level
- *Flipper*
  - Floating-rate advance where member receives sub-LIBOR funding during lock-out period
  - FHLB has option to cancel
  - If advance is not cancelled then “flips” to fixed rate

IV. Upcoming Advance Specials and Webinars

Upcoming Advance Special

- Multi-day Classic advance special
  - Tuesday, February 5, through Thursday, February 7
    - 10 a.m. to noon each day
- Multiple maturities
- Please contact the Money Desk 800-357-3452

Upcoming Webinar on Structured Advance Products

- Learn about FHLB structured advance products that can be used to protect net interest margin in a rising rate environment
  - Wednesday, February 13
  - 10:30 a.m. to 11:30 a.m.
- Watch your email for the invitation and to register