Hot Topics in Asset/Liability Management

Shifting from Rising Rates to Uncertainty to Falling Rates

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Session Overview

- Industry and Balance Sheet Trends
- Regulatory Update
- “Advanced” ALCO Strategy – Addressing Falling Rates
- Concerns for a Risk Manager

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Margin Trends

Net Interest Margin (from Beginning of “Tightening” Cycle to 2Q19)

NIM & Yield on Earning Assets (%)

5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00

Cost of Funds (%)

1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00

2015 2016 2017 2018

Net Interest Margin (LS) Yield on Earning Assets (LS) Cost of Funds (RS)

Source: S&P Market Intelligence, Banks between $100MM and $3B in Assets

Margin Trends

Net Interest Margin: End of 2015 through 1Q2017 (Are We Really Tightening?)

NIM & Yield on Earning Assets (%)

5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00

Cost of Funds (%)

1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00

2015 2016 2017 2018

Little movement through first 3 Rate Hikes.
Of course, those occurred over 15 months.

Net Interest Margin (LS) Yield on Earning Assets (LS) Cost of Funds (RS)

Source: S&P Market Intelligence, Banks between $100MM and $3B in Assets

Margin Trends

Net Interest Margin: 1Q2017 through 2018 (Yes. Bring on the Bear Flattener)

NIM & Yield on Earning Assets (%): 5.00, 4.50, 4.00, 3.50, 3.00, 2.50, 2.00, 1.50, 1.00, 0.50, 0.00

Cost of Funds (%): 1.00, 0.90, 0.80, 0.70, 0.60, 0.50, 0.40, 0.30, 0.20, 0.10, 0.00

2015, 2016, 2017, 2018

A True Rising Rate Environment: *7 Rate Hikes in < 2 Years*

****Fed Funds = +175 bps***

****3 Month LIBOR = +180 bps***

****2 Year Treasury = +135 bps***

****5 Year Treasury = +62 bps***

****10 Year Treasury = +26 bps***

****Net Interest Margin = +19bps***

****Yield on Earning Assets = +55 bps***

****Cost of Funds = +34 bps***

Net Interest Margin (LS) — Yield on Earning Assets (LS) — Cost of Funds (RS)

Source: S&P Market Intelligence, Banks between $100MM and $3B in Assets

Margin Trends

Net Interest Margin (The Fed Pivots and so do NIMs)

NIM & Yield on Earning Assets (%)

5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00

Cost of Funds (%)

1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00

2015
2016
2017
2018

Zero Rate Hikes in 2019 →
Cost of Funds still up *13 bps*

Net Interest Margin (LS)
Yield on Earning Assets (LS)
Cost of Funds (RS)

Source: S&P Market Intelligence, Banks between $100MM and $3B in Assets

Key Points

- Evident that Cost of Funds, and namely Cost of Deposits, operate with a lag.
  - Case in point: rising Cost of Funds in 2019 despite falling rates.

- Combined with a continued flat curve, margin compression became reality and looks to continue to be a concern.

- **Hot Topic #1**
  - *How will your Cost of Funds behave through a Fed easing cycle?*
    - It will depend on:
      - Your funding needs → robust or tepid loan demand?
      - Rate competition in your market
      - How much does the Fed ease?
        - A few insurance cuts ("mid-cycle adjustment") or 2008 style cuts

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Topic #1: How will your Cost of Funds behave through a Fed easing cycle?

Ways to Address

- **Quantify the Risks**
  - Look at Stressed Bull Steepener / Falling Rate environments
    - Focus on Down 50-75 bps Steepener or Parallel Shifts
    - *Stress your Betas*: Consider Using a Beta of *Zero*

    - Additional scenario: 2007-2008 style cuts
      - Classic Bull Steepener with a drop of Fed Funds to 25 bps
      - Range bound intermediate-to-long end of the yield curve
      - Is this scenario favorable or unfavorable?
        - Answer will likely lie with the proximity of your Cost of Funds to their natural zero-bound floors.
        - The previous cycle left depositories with *much* more room to cut deposit rates.

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Margin Trends

Net Interest Margin (pre-crisis to 2Q19)

NIM & Yield on Earning Assets (%)

8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00

Cost of Funds (%)

4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Net Interest Margin (LS) Yield on Earning Assets (LS) Cost of Funds (RS)

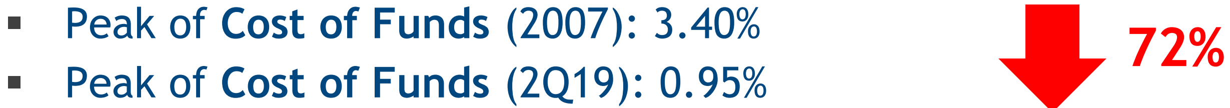
Source: S&P Market Intelligence, Banks between $100MM and $3B in Assets

Key Points

- Makeup of Net Interest Margins are significantly different now vs. pre-crisis.

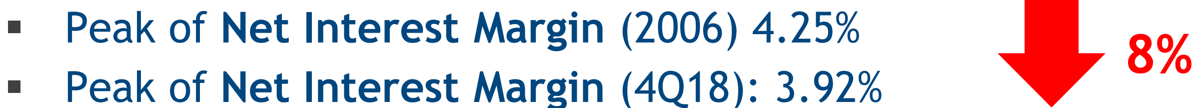
  - Peak of **Yield on Earning Assets** (2007): 7.13%
  - Peak of **Yield on Earning Assets** (2Q19): 4.71%

34%



  - Peak of **Cost of Funds** (2007): 3.40%
  - Peak of **Cost of Funds** (2Q19): 0.95%

72%



  - Peak of **Net Interest Margin** (2006) 4.25%
  - Peak of **Net Interest Margin** (4Q18): 3.92%

8%

- Net Interest Margins only **8%** lower in this cycle.
  - Why? Maintaining margin in the 2010's was a function of two critical components:
    1) Maintaining yield on asset side (loan floors).
    2) Growing Noninterest DDA and cutting deposit rates as much as possible.
  - Yield on Earning Assets fell by less than half of the amount of Cost of Funds.
  - COF in 2007 was 3.7x higher than current COF.

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2005-2019 Margin Trends

Net Interest Margin (Cause for Compression and Concern)

NIM & Yield on Earning Assets (%)

8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00

Cost of Funds (%)

4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Cost of Funds dropped *293 bps* from peak to trough.

< 100bps

Net Interest Margin (LS) Yield on Earning Assets (LS) Cost of Funds (RS)

Source: S&P Market Intelligence, Banks between $100MM and $3B in Assets

Hot Topic #2

- *In light of little room to lower Cost of Funds, how are depositories positioned for falling rates?*

- We can utilize peer data of interest rate risk profiles to help answer this question.

  - This isn't a foolproof analysis: different institutions have different goals, lines of business, assumptions, etc.

  - A simple average of a set of interest rate risk profiles tend to show a slightly asset-sensitive, but relatively risk neutral, exposure to changing rates.

  - In reality, most depositories skew asset-sensitive or liability-sensitive.
    - We see a "cancelling out" effect when looking at aggregate peer data.

- Solution: let's look at asset-sensitive and liability-sensitive profiles separately.

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Interest Rate Risk Trends

- First, about the data set:
  - **196** Banks and Credit Unions
  - Risk profiles from **3/31/19** Reporting
  - Overall Average Asset Size: **$685 Million**
- **106** Banks
  - Average Asset Size: **$1 Billion**
- **90** Credit Unions
  - Average Asset Size: **$305 Million**
- From that set, we separate out into three groups:
  - **Asset-Sensitive** (exhibit benefit in rising rates)
  - **Liability Sensitive** (exhibit deterioration in rising rates)
  - **Neutral** (gains in some rising rates but losses in others)
    - Excluded from this analysis
    - Only represents **7%** of set (13 of 196 institutions)

Topic #2: How are you positioned for falling rates?

Asset-Sensitive Short Term Risk Profiles

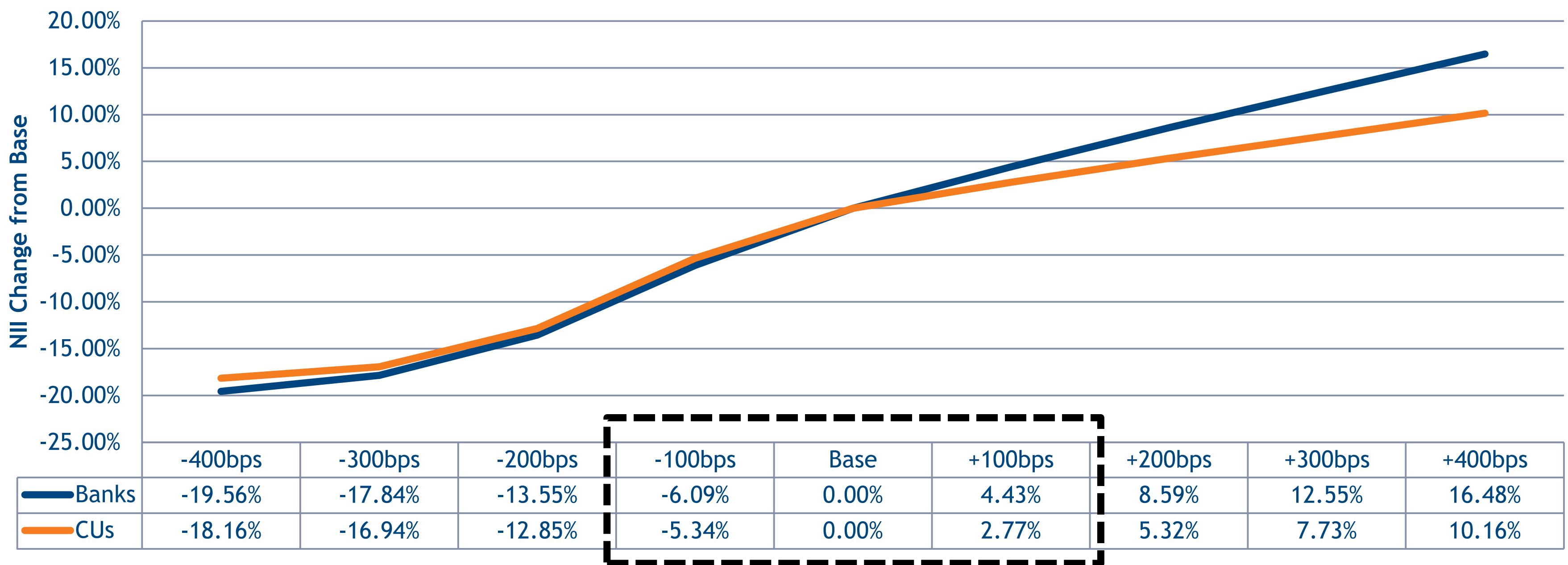
	-400bps	-300bps	-200bps	-100bps	Base	+100bps	+200bps	+300bps	+400bps
Banks	-19.56%	-17.84%	-13.55%	-6.09%	0.00%	4.43%	8.59%	12.55%	16.48%
CUs	-18.16%	-16.94%	-12.85%	-5.34%	0.00%	2.77%	5.32%	7.73%	10.16%

Source: STRH, FIMAC Solutions, FICast Data

- This sample includes roughly 75% of Banks and just under 50% of credit unions.
  - 123 Institutions | Average Asset Size $625 Million
    - 43 Credit Unions | Average Asset Size $225 Million
    - 80 Banks | Average Asset Size $843 Million

Topic #2: How are you positioned for falling rates?

Observations of Asset-Sensitive Short Term Risk Profiles



	-400bps	-300bps	-200bps	-100bps	Base	+100bps	+200bps	+300bps	+400bps
Banks	-19.56%	-17.84%	-13.55%	-6.09%	0.00%	4.43%	8.59%	12.55%	16.48%
CUs	-18.16%	-16.94%	-12.85%	-5.34%	0.00%	2.77%	5.32%	7.73%	10.16%

Source: STRH, FIMAC Solutions, FICast Data

- Continues to be the most widespread risk profile, with common attributes:
  - Sizable cash positions
  - Significant allocation to adjustable-rate loans
  - Low cost of funds with minimal room to fall

- Key Observation: ***Asymmetric Relationship between Rising and Falling Rates***
  - These institutions project to lose more when rates fall than they stand to gain when rates rise.
  - On average, losing **2.12%** more in -100bps Scenario than gaining in +100bps Scenario

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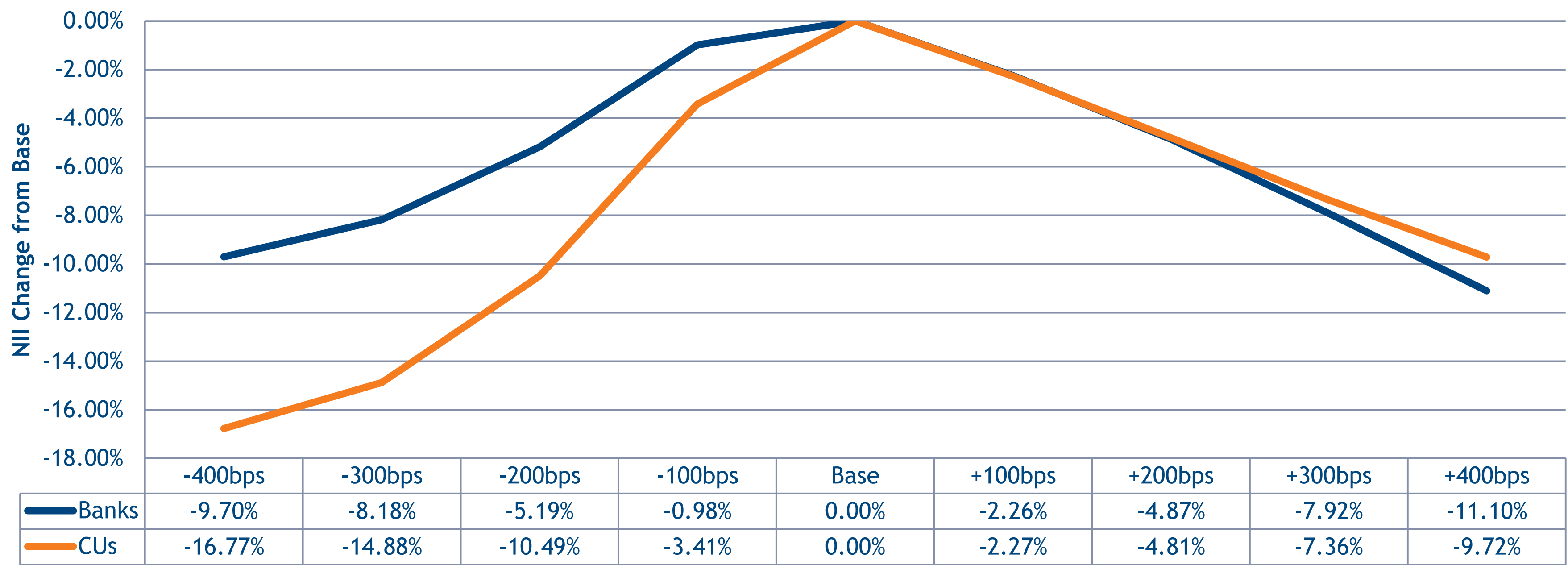
Topic #2: How are you positioned for falling rates?

Liability-Sensitive Short Term Risk Profiles



	-400bps	-300bps	-200bps	-100bps	Base	+100bps	+200bps	+300bps	+400bps
Banks	-9.70%	-8.18%	-5.19%	-0.98%	0.00%	-2.26%	-4.87%	-7.92%	-11.10%
CUs	-16.77%	-14.88%	-10.49%	-3.41%	0.00%	-2.27%	-4.81%	-7.36%	-9.72%

Source: STRH, FIMAC Solutions, FICast Data

- This sample includes roughly 45% of credit unions and about 20% of banks.
  - 60 Institutions | Average Asset Size $880 Million
    - 39 Credit Unions | Average Asset Size $430 Million
    - 21 Banks | Average Asset Size $1.7 Billion

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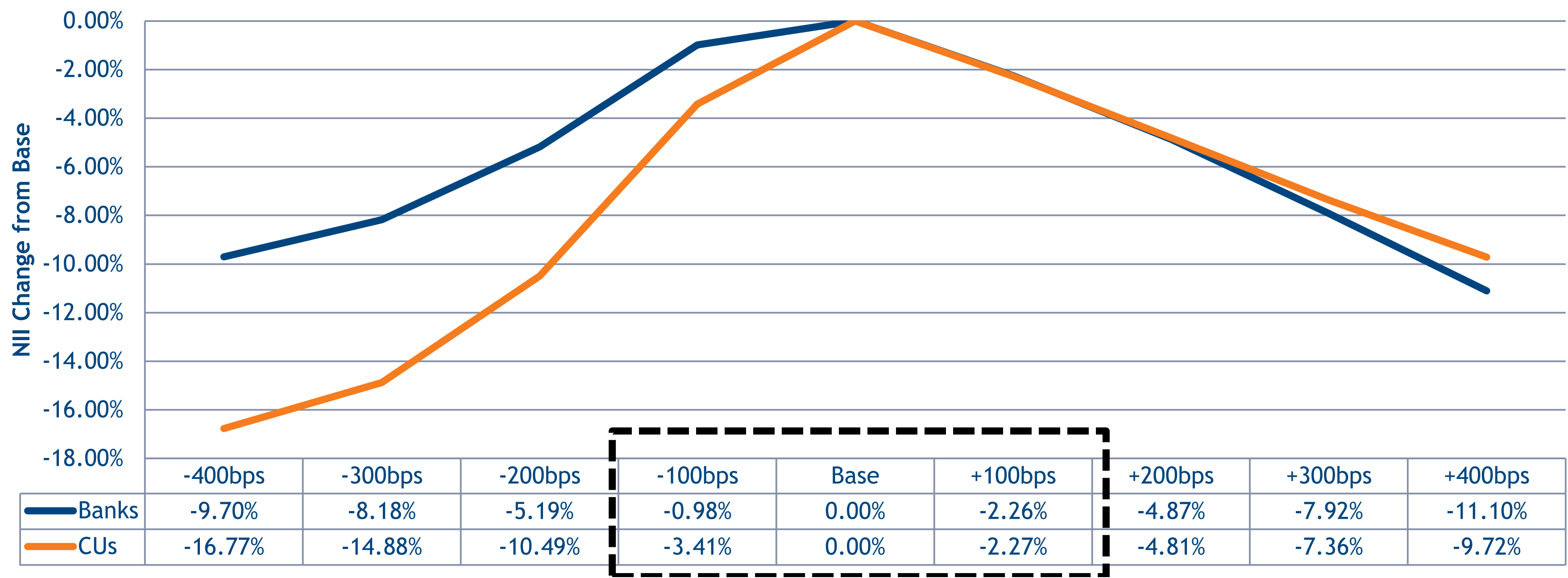
Topic #2: How are you positioned for falling rates?

Liability-Sensitive Short Term Risk Profiles



	-400bps	-300bps	-200bps	-100bps	Base	+100bps	+200bps	+300bps	+400bps
Banks	-9.70%	-8.18%	-5.19%	-0.98%	0.00%	-2.26%	-4.87%	-7.92%	-11.10%
CUs	-16.77%	-14.88%	-10.49%	-3.41%	0.00%	-2.27%	-4.81%	-7.36%	-9.72%

Source: STRH, FIMAC Solutions, FICast Data

- Roughly half of credit unions, smaller portion of banks. Tilt to larger asset size.
- Common attributes:
  - More rate sensitive deposits and/or shorter funding profile
  - More tilt to fixed rate assets
  - Low loan/deposit ratios, with more reliance on longer securities for yield
  - Still, relatively little room to drop rates

- Case in point, ***still projected to lose Net Interest Income as rates fall.***

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Topic #2: How are you positioned for falling rates?

Key Points

- The vast majority of depositories project to see a drop in earnings as rates fall.
  - Already evident in margin numbers in the First Half of 2019.
- Future exposure to falling rates could potentially be more severe than forecasted risk profiles project.
  - A -100bps Shock result will assume some level of drop in deposit rates. Will that Beta come to fruition?
- For example, in a survey of roughly 50 STRH ALM customers, these were Falling Rate Beta Assumptions, on average:
  - NOW = 29 bps (average starting rate = 0.19%)
  - Savings = 29 bps (average starting rate = 0.29%)
  - **Money Markets = 53 bps (average starting rate = 0.70%)**
- For modeling purposes, the Beta assumption is critical, particularly for Money Markets.
- We believe it's very possible that even with September, October and/or December rate cuts, that we won't see a commensurate drop in Cost of Funds.
  - After all, **Cost of Funds operate with a lag.**
- If market rates are falling, but Cost of Funds are rising, what else could be driving funding costs?

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Balance Sheet Trends

Loans to Assets

70%
68%
66%
64%
62%
60%
58%
56%

67.7%
68.4%

2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2Q2019

- Overall Loan growth has slowed down but remains on the rise.
- As a % of assets, Loans peaked at the end of 2018, but ***Loan/Asset ratios are still above the pre-crisis peak.***
    - How are those loans being funded?

Source: S&P Market Intelligence, Banks between $100MM and $3B in Assets

Balance Sheet Trends

Core Deposits vs. Loans

80%
75%
70%
65%
60%
55%
50%

2010 2011 2012 2013 2014 2015 2016 2017 2018

In early 2013, these ratios were 16% apart.

Mid-2019 → 3% apart.

'Core Deposits' / Assets   Loans/Assets

As loan growth has continued, funding through Core Deposits has declined.

- Defined simply as **Total Deposits less Brokered Deposits and Jumbo Time Deposits**, Core Deposit funding peaked in 2013.
  - Increased reliance on Noncore funding, where you have less control, combined with Rising Rates equals increasing Cost of Funds.
    - Potentially some upside if rates fall, but enough to keep up with falling asset yields?

Source: S&P Market Intelligence, Banks between $100MM and $3B in Assets

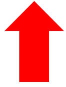
Balance Sheet Trends

Liquid Asset Cushion vs. Noncore Funding Reliance

30%
25%
20%
15%
10%
5%
0%

2010 2011 2012 2013 2014 2015 2016 2017 2018

Liquid Assets / Assets
Noncore Funding / Assets

- **Liquid Assets** (*Cash & Due, Fed Funds Sold, Unencumbered Securities*)
- **Noncore Funding** (*Jumbo, Brokered Deposits, Total Borrowings*) 
- In aggregate, tight liquidity is a reality for many institutions.
  - **Two implications of that fact are our next two Hot Topics.**

Source: S&P Market Intelligence, Banks between $100MM and $3B in Assets

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Hot Topic #3

- *Where is the current focus from a regulatory standpoint?*

- Given the previous three slides, it should not be terribly surprising there has been an increased focus on ***liquidity***.

    - Based on both anecdotal evidence and recent regulatory communication regarding Interest Rate Risk and Liquidity.

Hot Topic #4

- *Is tight liquidity driving rising Cost of Funds?*

- On slide 17 we asked, "if market rates are falling, but Cost of Funds are rising, what else could be driving funding costs?"

    - Tight liquidity may be the answer, with a bit of help from the regulatory focus on liquidity.

Largely status quo building upon 2010 Interagency Guidance

- Recent communication has been liquidity focused:
    - **Summer 2017 Supervisory Insights**, Community Bank Liquidity Risk: Trends and Observations from Recent Examinations
    - **November 2017 Interagency Bank Teleconference** – Liquidity and Funding Risk Management
    - **April 2018 Presentation from the St. Louis Fed**, The "New Normal" of Liquidity: Current Environment, Funding Sources and Examination Expectations

- In Supervisory Insights, "importance of liquidity risk management" specifically cited as "many banks continue to increase lending and reduce their holdings of liquid assets."

Regulatory Liquidity

- Quite simply, the "highest concern is when noncore funding is used for rapid loan growth," according to St. Louis Fed.
  - Headwinds in the funding space for community depositories have been acknowledged by regulatory bodies:
    - Intense Rate Competition
    - Growing customer preference to high yielding deposit alternatives from nonbanks
- Explicit mention of 4 Funding Trends of Concern in 2017 Interagency Teleconference:
  1) Deposits paying well above market rates
  2) Brokered, Internet, Listing Service Deposits
  3) Uninsured Deposits, including Public Deposits
  4) Borrowed Funds
- As you become more reliant on noncore funding, expectations for your next exam should be to present **more robust liquidity and funding risk management.**

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Hot Topic #4

- *Is tight liquidity driving rising Cost of Funds?*

- Let's revisit the facts from previous slides:

1) Cost of Funds started increasing in 2017, over a year after first rate hike.

2) Loan growth has been strong. There are profitable assets to fund.

3) Core Deposit growth did not keep up with loan growth.

4) Depositories became more reliant on Noncore funding, as market rates rose.

5) Also in late 2017, regulators became explicit about liquidity concerns.

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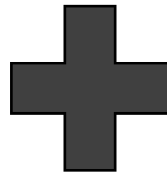
Topic #4: Is tight liquidity driving rising Cost of Funds?

Takeaways from 5 Facts:

Rising Noncore Funding costs due to Jay Powell and Company



Regulatory incentive to raise Retail Deposit rates to alleviate liquidity concerns

Reasonable explanation for:

1) Cost of Funds increasing 34 bps from Q2 2017 - Q42018

2) Cost of Funds increasing 13 bps in 2019

(despite plummeting market rates)

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Revisiting Balance Sheet Trends

Liquid Asset Cushion vs. Noncore Funding Reliance

Fed Tightening begins.

Cost of Funds begin to rise.

30%
25%
20%
15%
10%
5%
0%

2010 2011 2012 2013 2014 2015 2016 2017 2018

Liquid Assets / Assets — Noncore Funding / Assets

- Coincidence that Cost of Funds began to rise as liquidity positions tightened?
  - We would argue **No.**

- Additionally, Cost of Funds do operate with a lag.

- ***Prediction: we will not see Cost of Funds relief in 2019, even if we see more rate cuts.***

Source: S&P Market Intelligence, Banks between $100MM and $3B in Assets

Market Expectations

Implied Probabilities of Rate Cuts based on Fed Funds Futures

Current Implied Probabilities — 3) Add/Remove Rates

Dates: Meeting / Calculation — Calculated 08/22/2019 — Based on rate 2.00-2.25

Meeting	Hike Prob	Cut Prob	0.75-1	1-1.25	1.25-1.5	1.5-1.75	1.75-2	Fwd Rate
09/18/2019	0.0%	100.0%	0.0%	0.0%	0.0%	2.1%	97.9%	1.87
10/30/2019	0.0%	100.0%	0.0%	0.0%	1.4%	64.7%	33.9%	1.71
12/11/2019	0.0%	100.0%	0.0%	0.8%	39.9%	46.0%	13.3%	1.56
01/29/2020	0.0%	100.0%	0.4%	20.8%	43.0%	29.2%	6.5%	1.43
03/18/2020	0.0%	100.0%	5.4%	26.3%	39.6%	23.6%	4.9%	1.37
04/29/2020	0.0%	100.0%	9.9%	29.1%	36.2%	19.6%	3.8%	1.31
06/10/2020	0.0%	100.0%	14.0%	30.7%	32.7%	16.2%	3.0%	1.26
07/29/2020	0.0%	100.0%	17.1%	31.0%	29.6%	13.8%	2.5%	1.21
09/16/2020	0.0%	100.0%	19.7%	30.8%	26.7%	11.7%	2.0%	1.17

- ***Bottom line: the market expects rates to fall. Significantly.***
- ***With sticky Cost of Funds, but falling asset yields, this is salt on the wound of an already difficult operating environment. So…***

Source: Bloomberg

Hot Topic #5

- *What strategies work in a Falling Rate environment?*

  - We'll tackle this by looking at segments of the balance sheet that are particularly critical when facing falling rates.

    - Loans
    - Retail Funding
    - Wholesale Funding
    - Investment Portfolio
    - Hedging opportunities

Topic #5: Strategies in a Falling Rate Environment

- On the loan side, it's vital to understand the exposure that truly exists to falling rates.
  - The first step is getting a handle on your data.

  - You're already generating very detailed loan (and deposit) data each quarter for Interest Rate Risk reporting → be sure you're getting the most out of that process.

  - First, have a clear grasp of:
    1) Your allocation to fixed vs. adjustable loans
    2) Your exposure to specific market indices
    3) Contractual loan floors in place

  - This may seem elementary, but having a clear presentation of this information, and how it is shifting through time, is a valuable tool.

Topic #5: Strategies in a Falling Rate Environment

Loan Mix and Index Concentration

	Construction	Commercial Real Estate	Commercial & Industrial	Residential Mortgage	Consumer	Total
1 Month LIBOR	119,066,627	690,333,197	572,703,198	-	-	1,382,103,022
3 Month LIBOR	-	-	-	-	-	-
12 Month LIBOR	10,775,286	107,383,108	1,734,368	210,835,023	-	330,727,784
1 Year CMT	-	-	-	4,029,325	-	4,029,325
5 Year CMT	-	-	-	-	-	-
10 Year CMT	-	-	-	-	-	-
5 Year FHLB	-	3,474,167	1,524,792	2,429,973	-	7,428,932
Prime	141,063,975	480,506,828	602,566,350	58,570,288	2,140,681	1,284,848,122
	-	-	-	-	-	
Total Adjustable Loans	270,905,888	1,281,697,300	1,178,528,708	275,864,609	2,140,681	3,009,137,186
Adjustable Loan Allocation (%)	77.8%	59.3%	81.3%	65.2%	13.3%	68.4%
Total Adjustable Loans (Yield)	6.08%	5.77%	6.09%	4.71%	6.06%	5.82%
Total Fixed Loans	77,102,376.82	878,317,849.58	270,483,155.42	147,163,249.48	14,014,865.02	1,387,081,496
Fixed Loan Allocation (%)	22.2%	40.7%	18.7%	34.8%	86.7%	31.6%
Total Fixed Loans (Yield)	5.50%	5.14%	5.79%	4.98%	5.89%	5.27%
Total Loans	348,008,265	2,160,015,150	1,449,011,863	423,027,858	16,155,546	4,396,218,682
Total Loans (Yield)	5.95%	5.51%	6.03%	4.80%	5.91%	5.65%
Loans Rate Sensitive ≤ 12 Months	297,075,971	1,267,120,529	1,334,401,077	164,722,533	9,969,659	3,073,289,768
Loans Rate Sensitive ≤ 12 Months (%)	85.36%	58.66%	92.09%	38.94%	61.71%	69.91%

Topic #5: Strategies in a Falling Rate Environment

Loan Mix and Index Concentration

Key Questions to Answer:

- Concentration of Fixed vs. Adjustable
  - Fixed?
    - Confirm your intuition of principal cash flow back to you over coming year.
  - Adjustable?
    - Reprice Structure
    - Index Concentration
      - ○ How close is each index to its natural floor?
      - ✓ Prime is 5.25% with presumed natural floor of 3.25% (200 bps left to fall)
      - ✓ Conversely, 5 Year CMT at 1.50% (at best, ~140 bps left to fall)
      - ○ Do you have exposure to a change in Prime/Fed Funds/LIBOR basis?
  - Next, how helpful will Loan Floors be as rates fall?

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Loan Floor Analysis

	Construction	Commercial Real Estate	Commercial & Industrial	Residential Mortgage	Consumer	Total
Total Adjustable Loans	270,905,888	1,281,697,300	1,178,528,708	275,864,609	2,140,681	3,009,137,186
Adjustable Loan Allocation (%)	77.78%	59.30%	81.28%	65.15%	13.32%	68.40%
Total Adjustable Loans Coupon	5.88%	5.70%	5.96%	4.69%	6.37%	5.73%
Balance with Floor	167,769,471	280,699,707	291,729,928	260,906,261	54,765	1,001,160,132
Allocation with Floor (%)	61.93%	21.90%	24.75%	94.58%	2.56%	33.27%
Weighted Average Coupon	5.99%	5.81%	6.32%	4.63%	7.30%	5.68%
Weighted Average Floor	5.09%	4.63%	4.99%	3.26%	6.12%	4.46%
Floor Range Below Current Coupon						
<= 0%	11,126,536	53,892,515	15,985,936	13,082,320	-	94,087,307
0% - 0.25%	23,688,579	14,721,574	11,175,633	1,321,663	-	50,907,448
0.25% - 0.50%	26,066,467	11,064,176	13,376,986	4,681,608	23,840	55,213,078
0.50% - 0.75%	19,594,320	13,162,160	6,533,628	5,774,328	-	45,064,436
0.75% - 1.00%	29,143,479	13,444,883	99,109,010	118,204,067	-	259,901,439
1.00% - 1.25%	18,863,046	20,862,645	7,781,984	17,136,298	-	64,643,973
1.25% - 1.50%	18,966,443	79,679,924	33,548,333	23,313,752	18,190	155,526,641
1.50% - 1.75%	10,436,958	12,134,890	18,508,245	19,784,504	-	60,864,598
1.75% - 2.00%	7,035,565	34,698,664	43,426,955	37,074,285	12,735	122,248,204
2.00% - 2.50%	2,848,078	23,140,837	35,463,925	9,112,594	-	70,565,434
2.50% - 3.00%	-	1,212,584	6,439,277	2,652,216	-	10,304,077
3.00% - 5.00%	-	2,684,854	380,016	928,112	-	3,992,982
5.0% - 10.00%	-	-	-	7,840,514	-	7,840,514
>10%	-	-	-	-	-	-

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Topic #5: Strategies in a Falling Rate Environment

Loan Floors

Key Questions to Answer:

- How many of my adjustable loans have floors?
- Even for those that do, how far do rates have to fall before they really kick in?
  - Find the pain point → Can help illustrate other parts of balance sheet to compensate.
- Will there be relationship repercussions to enforcing these floors?
  - Needs to be a discussion point with loan committees etc.
- Are *credit* issues possible if we enforce our floors?
- Spinning off that discussion, how do we need to adjust how we structure future adjustable loans?
- Additional strategic conversations to have…can we meaningfully tilt new loans to fixed?

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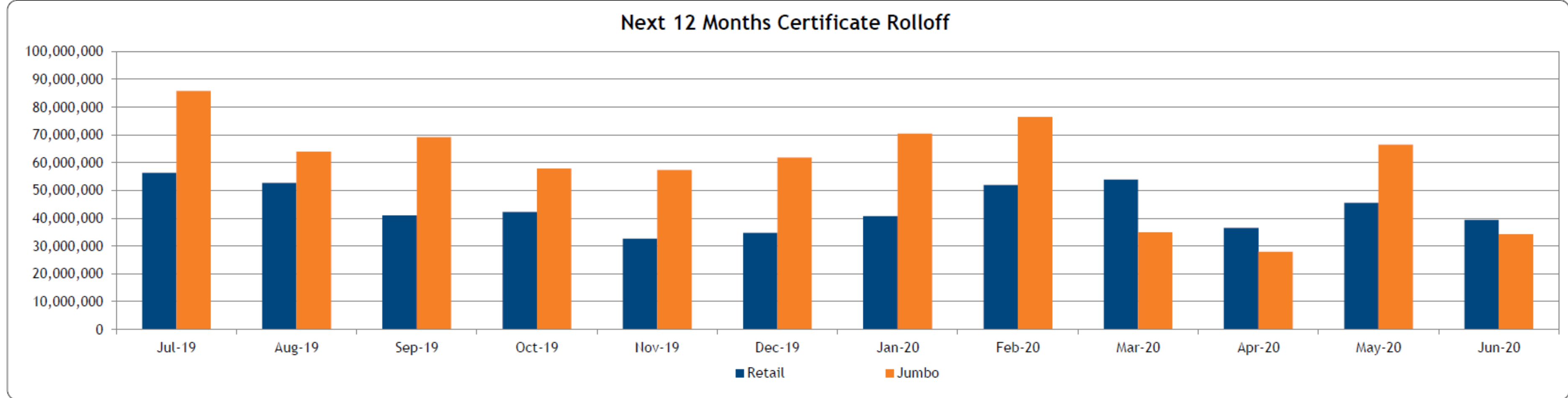
Topic #5: Strategies in a Falling Rate Environment

General Loan Strategy

- If you have meaningful risk to falling rates and low cost of funds, it almost goes without saying that a tilt to Fixed will be beneficial. Some extension is okay.
  - Is it realistic to tilt future growth towards Fixed?
- Consider a change to what is considered "success."
  - **From 2015-2018, success = growth**
  - **In 2019, maybe success = maintaining margin + preferable structure**

Topic #5: Strategies in a Falling Rate Environment

Get a Handle on your Funding → Certificate Maturity Schedule



	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Total
Retail													
Monthly Balance	56,374,763	52,781,863	41,036,415	42,286,688	32,647,291	34,744,058	40,766,393	52,033,711	53,904,005	36,464,596	45,548,299	39,361,835	**527,949,918**
Quarterly Balance		150,193,041			109,678,037			146,704,109			121,374,730		
Monthly Rate	2.07%	2.12%	2.10%	2.20%	2.20%	2.26%	2.31%	2.26%	2.30%	2.28%	2.33%	2.14%	**2.21%**
Quarterly Rate		2.10%			2.22%			2.29%			2.25%		
Jumbo													
Monthly Balance	85,760,510	64,007,296	69,151,716	57,833,757	57,339,035	61,814,306	70,467,232	76,387,224	34,937,915	27,989,864	66,471,936	34,277,154	**706,437,944**
Quarterly Balance		218,919,521			176,987,098			181,792,371			128,738,954		
Monthly Rate	2.34%	2.34%	2.17%	2.42%	2.37%	2.56%	2.45%	2.37%	2.39%	2.53%	2.53%	2.54%	**2.40%**
Quarterly Rate		2.29%			2.45%			2.40%			2.53%		
Total													
Monthly Balance	106,601,455	87,591,869	82,641,098	75,090,334	67,489,744	72,418,774	83,425,219	96,315,701	66,631,440	48,340,845	84,015,176	55,229,242	**1,234,387,862**
Quarterly Balance		**276,834,421**			**214,998,852**			**246,372,360**			**187,585,263**		
Monthly Rate	**2.23%**	**2.24%**	**2.14%**	**2.33%**	**2.31%**	**2.46%**	**2.40%**	**2.33%**	**2.33%**	**2.39%**	**2.45%**	**2.33%**	**2.32%**
Quarterly Rate		**2.21%**			**2.37%**			**2.35%**			**2.40%**		

Topic #5: Strategies in a Falling Rate Environment

Deposit Funding Strategy
*Retail, Jumbo, Brokered CD Funding

- Quantify balances and rates you have rolling off over the coming year.
  - Do you have upside to earnings by repricing at lower rates?

- If you have 2.25% CD rates scheduled to mature, this should present some upside.

- But, be sure actual renewal rates are meaningfully lower (if that is your strategy).

  - Use a similar schedule to be proactive and stay on top of big chunks of funding coming due.

  - 2020 maturities should allow for potentially meaningful downward repricing if something close to forward rate expectations hold.

Topic #5: Strategies in a Falling Rate Environment

Deposit Funding Strategy

*Non-Maturity Deposit Funding

- Many NOW & Savings accounts are still fairly close to their natural floors.
  - Their risk of not repricing lower more likely to be already shown in IRR reports.
- Money Markets appear to have more risk (of staying elevated) but more upside (if you can pass through rate decreases).
- Do not be afraid of dropping rates (you may not lose as much money as you think).
  - But, be aware of the impact if you have to become more reliant on Wholesale Funding.
- At what point are you running off relationships you want to keep?

Topic #5: Strategies in a Falling Rate Environment

Wholesale Funding Strategy

- Stay short.

- Consider structured advances.
  - Not for everybody.

  - Take what the environment gives you.
    - Volatility → UP
    - Rates expectations → DOWN

  - Consequently, rates on Convertible Advances attractive.
    - Recent offering from FHLB:
      - 10yr/3mo Bermudan Qtrly Call = **0.67%**

  - Downside? I could get my funding called *if rates go up* (that's ok if I'm asset sensitive)

    -Or *rates go way down* (at what point will 0.67% term wholesale funding be unattractive?)

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Topic #5: Strategies in a Falling Rate Environment

Investment Portfolio Strategy

- Be cognizant of Premium risk in MBS and CMOs.
  - Prepayment risk has been a reality and looks to continue.

- Convexity has tremendous value in this environment.
- Even with flat/inverted curve, adding duration is helpful (as balance sheet allows)

- Take what the market gives you:
  - Short Municipals carry strong bid due to robust retail demand driven by tax reform.
  - The Municipal curve is still steep.
  - Consider selling short Municipals and extending out the curve.
  - Take a gain, pick up yield, and enhance performance in falling rates.

  - 20/30yr MBS cheaper on a relative value basis than 10/15yr.
    - If you keep premiums manageable, these will outperform if rates fall.
    - Downside is performance if rates go back up, but your own loan portfolio is ok with that.
    - Consider the entire balance sheet, and your investment portfolio should complement it.

Topic #5: Strategies in a Falling Rate Environment

Off Balance Sheet Strategy

- A trend we've seen from larger asset sensitive community and regional banks:
  - Large notional, macro balance sheet hedges
  - Most frequently in the form of Floors or Collars
- Those executed 4Q2018 or even 1Q2019 have been homeruns.
- Unfortunately, floor premiums or yield give up on float-to-fixed interest rate swaps are prohibitive at this point.
- Still, in the event of effective insurance cuts, a soft landing, and a re-steepening of the curve/resumption of Fed tightening, an idea to consider in the future.

Concerns for a Risk Manager

Summary

- A flat to inverted yield curve + falling rates is a very difficult operating environment.
- Proof is easy to see in actual 2019 earnings and our projected risk profiles.

- A major concern for a Risk Manager:
  - This is a low/falling rate environment driven by something that likely largely has little effect on your day to day operations – trade with China.
  - A risk manager should have concern that loan and deposit growth continue at reasonable rates (your local economy is fine after all), but given the rate environment, existing and new volume are no longer at sustainable levels from a margin standpoint.
  - That is when you “manage” risk or control what you can control.

- Maybe expectations need to be reevaluated → **margin maintenance over growth.**
- Tough decisions may need to be made that have impact on relationships.
- Hope is to strike a balance with continued healthy growth at sustainable margin levels.

- **These conversations should be the major focus as we approach budget season.**

Concerns for a Risk Manager

Summary

- **Prepare:**
  - Quantify earnings exposure if rates continue to fall, while your deposit costs stay flat.
  - Analyze loan floors in place and exposure to Prime, LIBOR, and other indices.
  - Get a handle on how you'll replace future term funding, both retail and wholesale

- **Consider:**
  - Some of the strategies proposed.
  - Understand these are not one size fits all, but be open-minded.
  - Be aware of the upsides and downsides to any strategy, and model if needed.
  - Discuss potential impact on customer relationships.
  - There will be a give-up (there always is) … but if that give-up takes place in a scenario where your institution will outperform (rising rates?), you might consider that **prudent risk management.**

- **Implement:**
  - The playbook of 2017-2018 is out the window for most, so balance sheet management shouldn't look like last year. Keep that in mind as you look ahead to 2020.

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