



Financial
Performance

Regulatory
Compliance

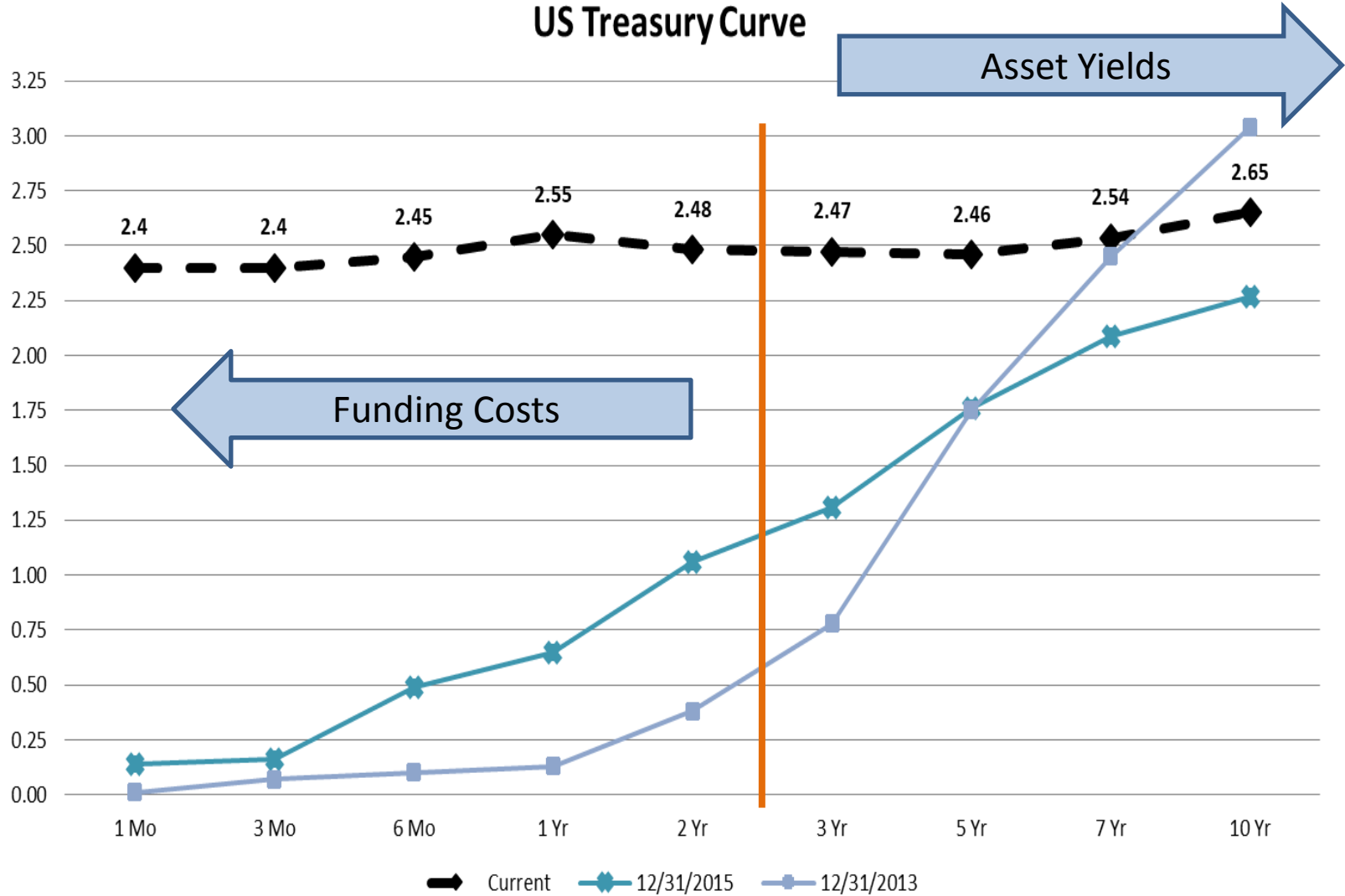
◆ *Risk Management Strategy & Solutions* ◆

Conquering the Liquidity and Pricing Dilemma on Both Sides of the Balance Sheet

Spring 2019

FHLB Des Moines Regional Member Meetings

US Treasury Curve



◆ Deposits

- Expect costs to continue to increase

◆ Lending

- Activity slowing while spreads tightening
- Institutions rethinking growth at thinner margins

◆ Interest Rate Risk

- Uncertainty abounds. . . don't lose sight of rates falling
- Market expects a rate cut before a rate hike

◆ Regulatory

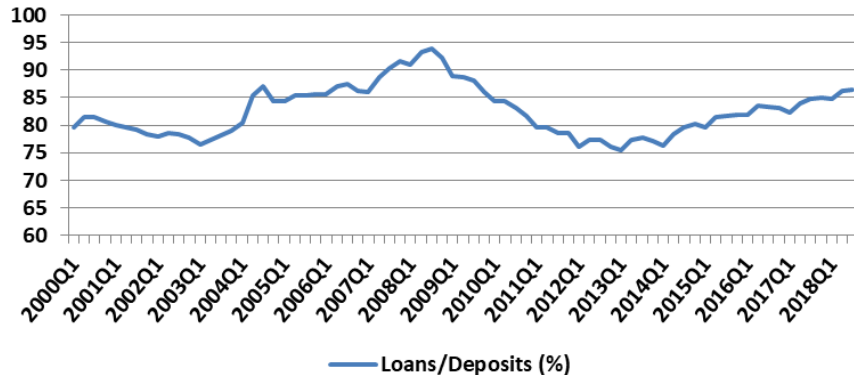
- All eyes on liquidity

1. Identify Your Liquid Asset Cushion
2. Overcome Regulatory Pressures on PVL
3. Develop a Dynamic Forecast & Stress Test Framework
4. Revitalize Your Risk Monitor
5. Deposit Strategies to Improve Liquidity

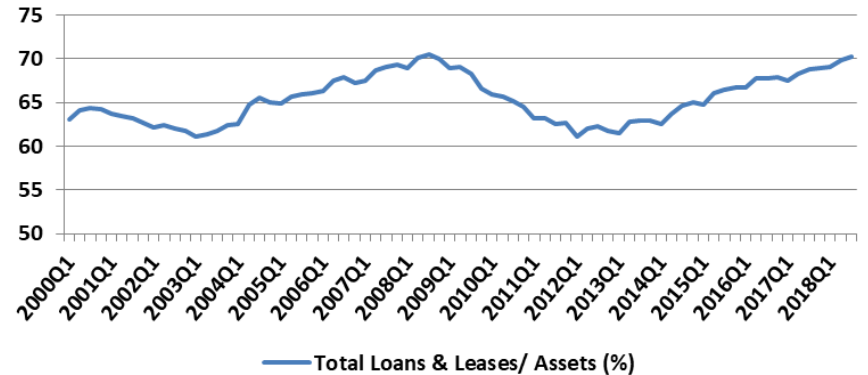
“The declining liquid asset cushions and increased use of potentially non-stable liquidity sources...suggest that small banks as a group are increasing their liquidity risk profiles...” – FDIC Supervisory Insights, Summer 2017

- Loan growth continues to outpace deposit growth
- Institutions have shifted cash flows from investments into loans

Loans/Deposits (%)



Loans/Assets (%)



Source: S&P Global

Identify *Your* Liquid Asset Cushion

I. LIQUID ASSETS

TOTAL ASSETS =	1,200,000			
Overnight Funds Sold & Short-Term Investments (avg. balance, if wide daily fluctuations)				40,000
Security Collateral		UST & Agency	MBS / CMOs	
	<i>Collateral Value</i>		Agency Backed	Munis
		100%	95%	90%
Total Market Value of Securities	35,000	35,000	85,000	0
Less Securities Pledged to:				
FHLB	0	0	0	0
Fed Discount/Other Secured	0	0	0	0
Wholesale Repos	0	0	0	0
Retail Repos/Sweeps	0	0	-10,000	0
Municipal Deposits	0	0	-25,000	0
Other	0	0	0	0
Available / Unencumbered Security Collateral	35,000	35,000	47,500	0
Total Unpledged Securities				82,500
Over Collateralized Securities Pledging Position				0
Cash flow (< 30 Days) from Securities not listed above				0
Other Liquid Assets				0
TOTAL LIQUID ASSETS				122,500

Pct. Of Assets

10.2%

If “stronger” liquid asset cushion
then consider:

- ◆ Keep cash to work
- ◆ Identify ability to shift liquidity into loans
- ◆ Consider more of a defensive deposit strategy
- ◆ Maximize alternative funding sources
- ◆ Develop a strong contingency funding plan

If “tighter” liquid asset cushion
then consider:

- ◆ Define liquid asset cushion
- ◆ May have to be more offensive in deposit pricing strategies
- ◆ Consider alternative pledging options
- ◆ Maximize alternative funding sources
- ◆ Defend with “Total” liquidity (next slide)

Availability of Wholesale Funding Channels?

“An institution should diversify available funding sources in the short-, medium-, and long-term. Funding should also be diversified across a full range of retail as well as secured and unsecured wholesale sources of funds, consistent with the institution's sophistication and complexity.”

– Interagency Policy Statement on Liquidity, Spring 2010

II. SHORT TERM / POTENTIALLY VOLATILE LIABILITIES & COVERAGES

Maturing Unsecured Liabilities (< 30 Days)	5,000
Deposit Coverages	
25% of CDs Maturing < 30 Days	2,500
30% of Jumbo CDs Maturing < 30 Days	5,000
10% of Other Deposits	65,000
TOTAL SHORT TERM / POTENTIALLY VOLATILE LIABILITIES & COVERAGES	77,500

Reserve based on funding concentrations

BASIC SURPLUS 45,000 3.8%

III. QUALIFYING FHLB LOAN COLLATERAL

A. Maximum Borrowing Line at FHLB	420,000
B. Qualifying Loan Collateral at the FHLB (net of haircut)	325,000
C. Excess Loan Collateral (if A < B)	
Maximum Borrowing Capacity (Lesser of A or B)	325,000
Collateral Currently Encumbered by Outstanding Advances/Letters of Credit	105,000
REMAINING FHLB LOAN BASED BORROWING CAPACITY	220,000

Available borrowing capacity vs. wholesale reliance

BASIC SURPLUS W/ FHLB 265,000 22.1%

IV. BROKERED DEPOSIT ACCESS

Maximum Board Authorized Brokered Deposit Capacity (10% of Total Assets)	120,000
Current Brokered Deposit Balances	0
REMAINING CAPACITY TO UTILIZE BROKERED DEPOSITS	120,000

Brokered capacity

BASIC SURPLUS W/ FHLB & BROKERED DEPOSITS 385,000 32.1%

Revitalize Your Risk Monitor

	Risk Level 1	Risk Level 2	Risk Level 3	Current Value	12/31/2017 Value	Risk Level	Cons. Periods Triggered	Stress Level
Indicators - Heightened Funding Needs								
1. \$ Change in Loan Growth less Non-Brokered Deposit Growth (3 Months)	\$20,000	\$30,000	\$40,000	-\$8,858	\$23,442	N/A	N/A	N/A
2. % Change in Non-Maturity Deposit Balances (3 Months)	-5.00%	-7.00%	-10.00%	3.34%	1.19%	N/A	N/A	N/A
3. % Increase in Utilization of LOC	5.00%	10.00%	15.00%	-0.09%	2.51%	N/A	N/A	N/A
4. % Change in Large Deposit Relationships	10.00%	20.00%	30.00%	2.50%	5.76%	N/A	N/A	N/A
Indicators - Liquidity/Funding Ratios								
5. Liquid Assets / Assets 1	10.00%	7.50%	5.00%	9.00%	12.23%	Level 1	1	Level A
6. Basic Surplus - Core (as a % of Assets)	2.50%	0.00%	-2.50%	5.55%	5.30%	N/A	N/A	N/A
7. Basic Surplus w/FHLB Loan Collateral	10.00%	5.00%	2.50%	19.01%	18.20%	N/A	N/A	N/A
8. Basic Surplus w/FHLB & Brokered	15.00%	12.50%	10.00%	26.34%	25.60%	N/A	N/A	N/A
9. FHLB Borrowings / Assets 2	7.50%	20.00%	35.00%	8.10%	7.70%	Level 1	4	Level A
10. Brokered Deposits / Assets 3	5.00%	7.50%	10.00%	6.00%	8.50%	Level 1	9	Level A
11. Wholesale Funds / Assets 4	15.00%	20.00%	30.00%	16.22%	16.20%	Level 1	4	Level A
12. Free FHLB Loan Collateral / Assets	5.00%	2.50%	0.00%	14.01%	15.75%	N/A	N/A	N/A
13. Public Deposits / Total Deposits 5	10.00%	12.50%	15.00%	10.99%	10.56%	Level 1	3	Level A
14. Potential Volatile Liabilities 6	25.00%	50.00%	75.00%	29.23%	28.76%	Level 1	3	Level A
15. Uninsured Deposits	0.00%	0.00%	0.00%	0.00%		N/A	N/A	N/A
16. Large Deposit Relationships	0.00%	0.00%	0.00%	0.00%		N/A	N/A	N/A
Indicators - Capital at Risk								
17. Commercial RE Loans / Capital 7	200.00%	300.00%	400.00%	349.72%	352.64%	Level 2	10	Level A
18. ALLL / Non-Current Loans	2.00%	1.00%	0.50%	2.47%	2.45%	N/A	N/A	N/A
19. Non-Performing Loans / Gross Loans	3.00%	5.00%	7.00%	1.14%	1.15%	N/A	N/A	N/A
20. Tier One Leverage Capital Ratio	7.00%	6.00%	5.00%	9.25%	9.23%	N/A	N/A	N/A
21. Total Risk Based Capital Ratio	11.00%	10.50%	10.00%	13.58%	13.50%	N/A	N/A	N/A
22. Texas Ratio	20.00	35.00	50.00	18.38	18.50	N/A	N/A	N/A

Source: Liquidity360®

Potential volatile liabilities have increased to 29% and have triggered Risk Level 1.

Management has applied a **low stress level response** as the total liquidity position (on-balance sheet as well as access to wholesale funding) remains strong. Additionally, the high concentration of volatile deposits have been analyzed and defended based on the strong core relationship with the customers.

Management will continue to closely monitor changes to liquidity levels moving forward.

Identify At-Risk Customer Concentration *(Potentially Volatile Liabilities)*

- ◆ High Rate Deposits (e.g. reference point = national rate caps)

- ◆ Uninsured Deposits

- ◆ Concentrations (e.g. depositors Funding Types & Potential Risk:
 - ✓ Municipal / Public Funding
 - ✓ Reciprocal Depositors
 - ✓ Large Single Source Relationships (e.g. $\geq 2\%$ of total deposits)

December 2016

Product	National Rate	Rate Cap
Savings	0.06	0.81
Checking	0.04	0.79
MMDA	0.08	0.83
6M CD	0.13	0.88
12M CD	0.22	0.97
24M CD	0.36	1.11
36M CD	0.49	1.24

Fed Funds: .75%

FHLB 1 Year: 1.15%

Brokered CD 1 Year: 1.10%

December 2017

Product	National Rate	Rate Cap
Savings	0.06	0.81
Checking	0.04	0.79
MMDA	0.09	0.84
6M CD	0.17	0.92
12M CD	0.29	1.04
24M CD	0.44	1.19
36M CD	0.59	1.34

1.50%

2.05%

1.90%

March 2019

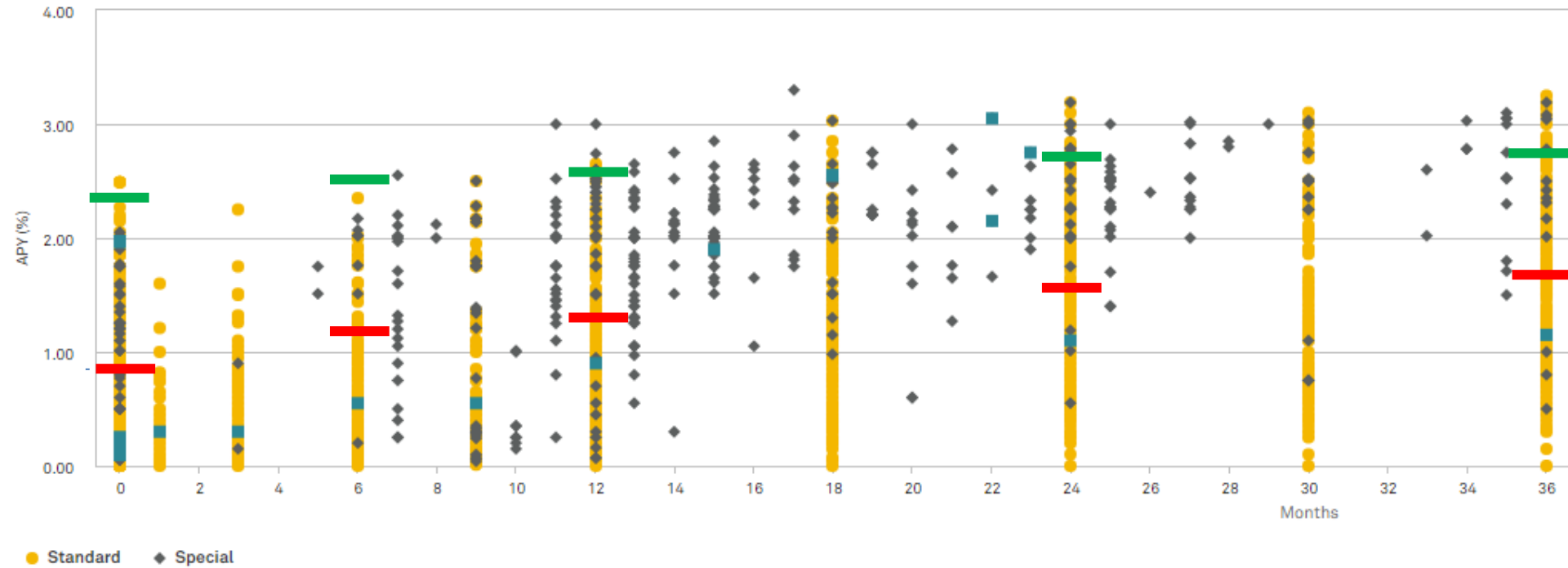
Product	National Rate	Rate Cap
Savings	0.10	0.85
Checking	0.06	0.81
MMDA	0.18	0.93
6M CD	0.38	1.13
12M CD	0.65	1.40
24M CD	0.85	1.60
36M CD	0.98	1.73

2.25%

2.70%

2.45%

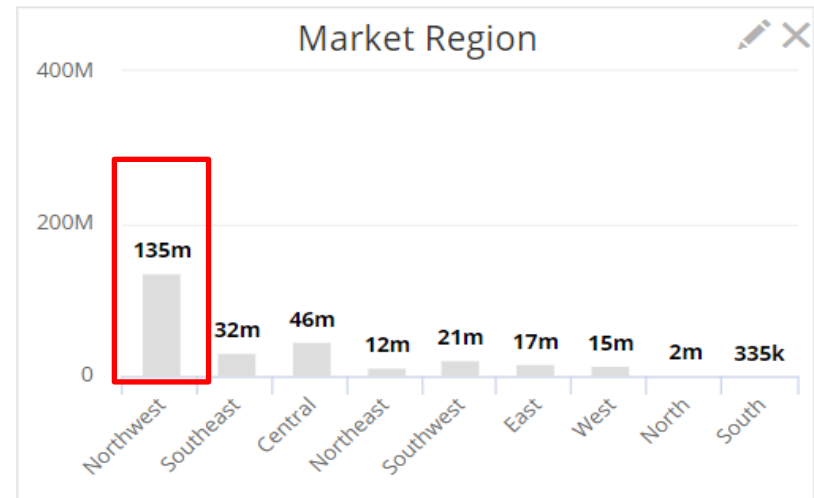
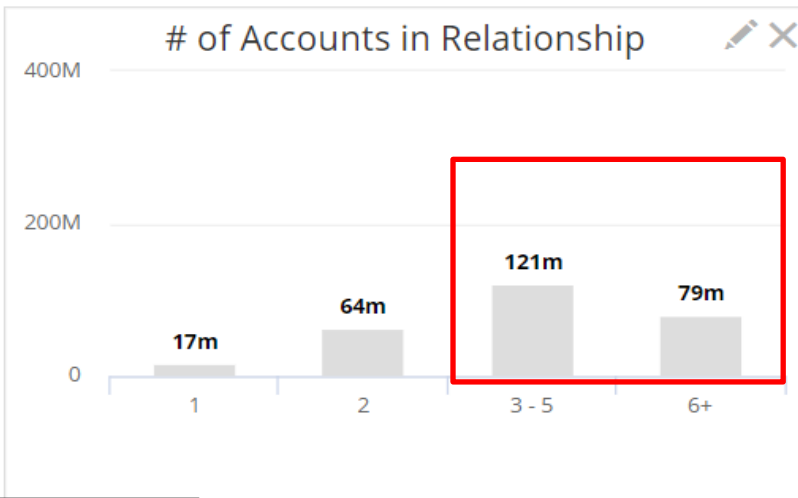
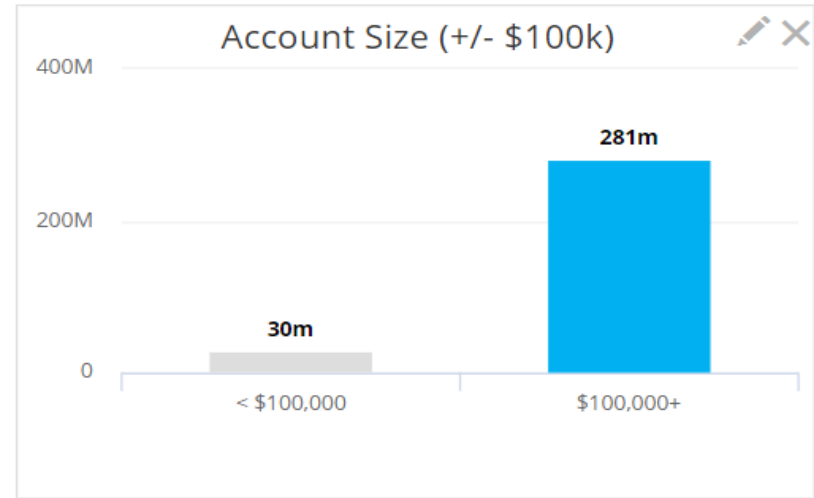
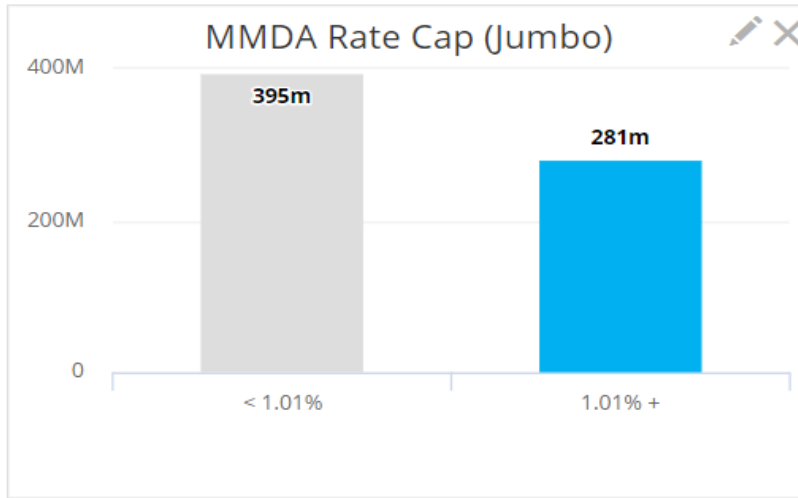
Checking, Money Market, Savings, Time Deposit - includes Missouri Market Rates



*S&P Global

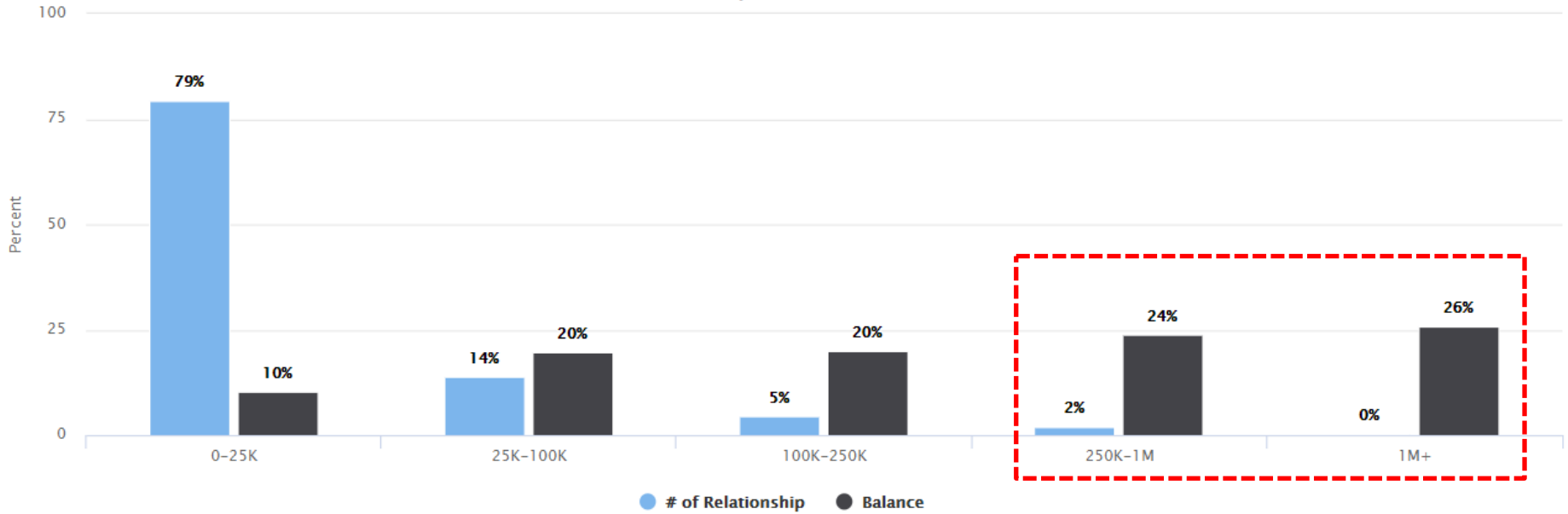
FDIC High Rate Deposit levels (as of 3/4/19)

FHLB Dividend Adjusted Rates (3/4/19)



Source: Deposits360[®]

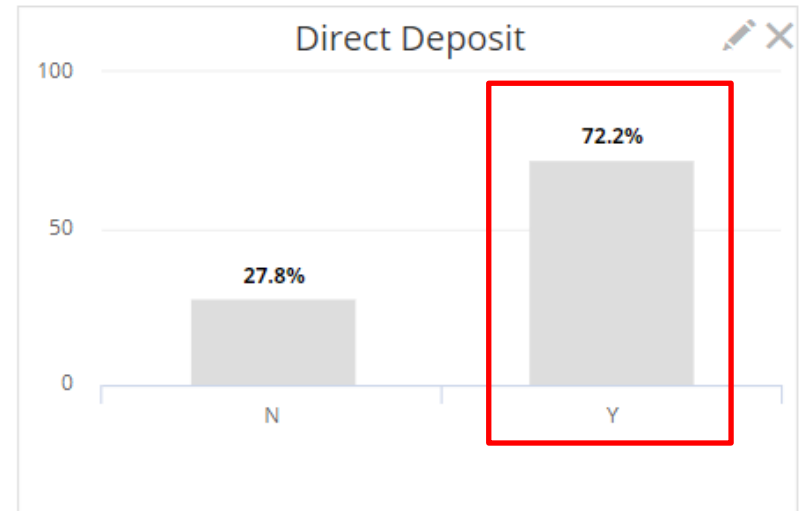
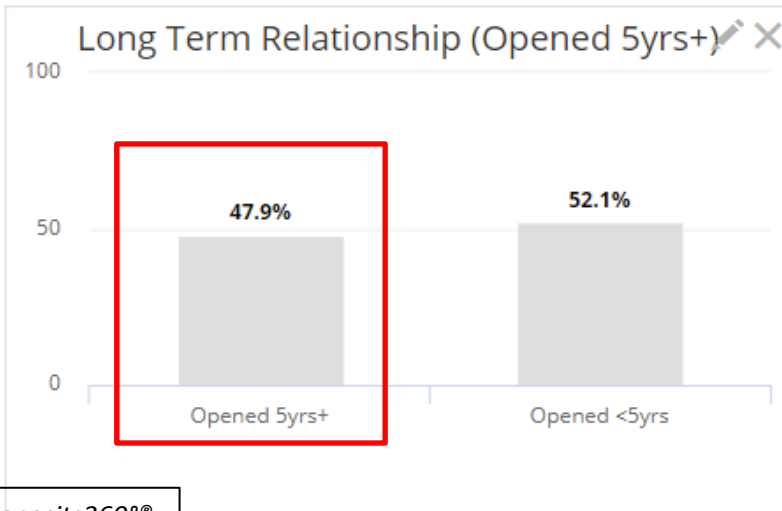
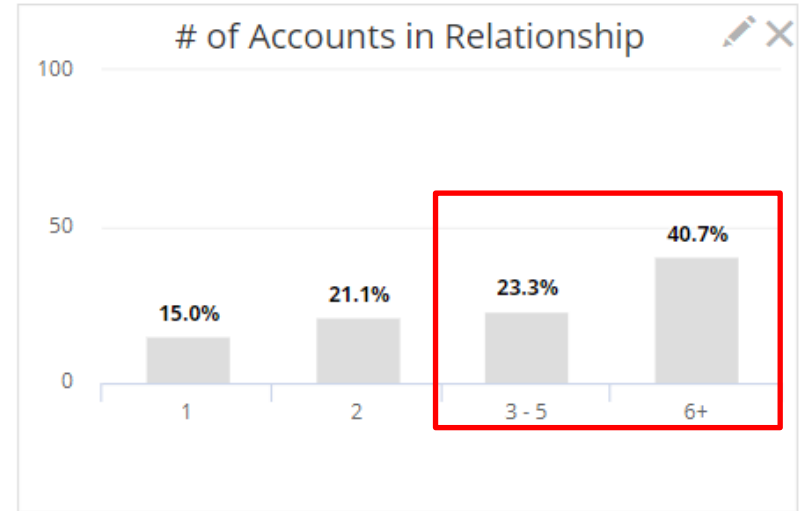
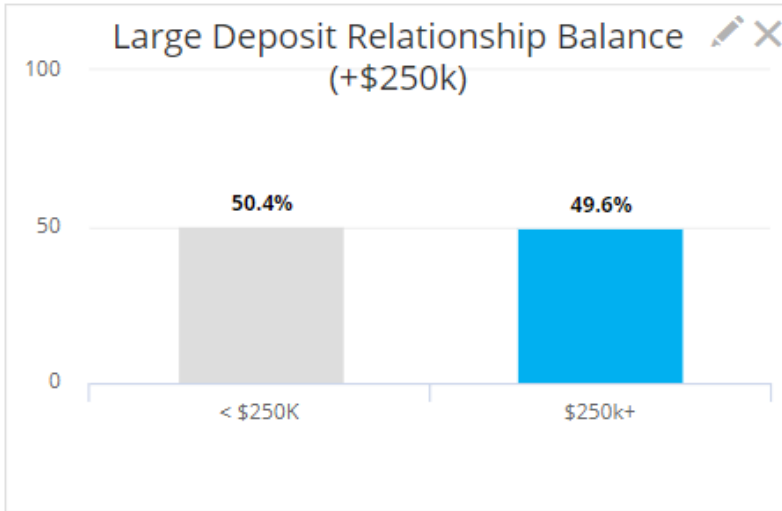
Relationship Concentration



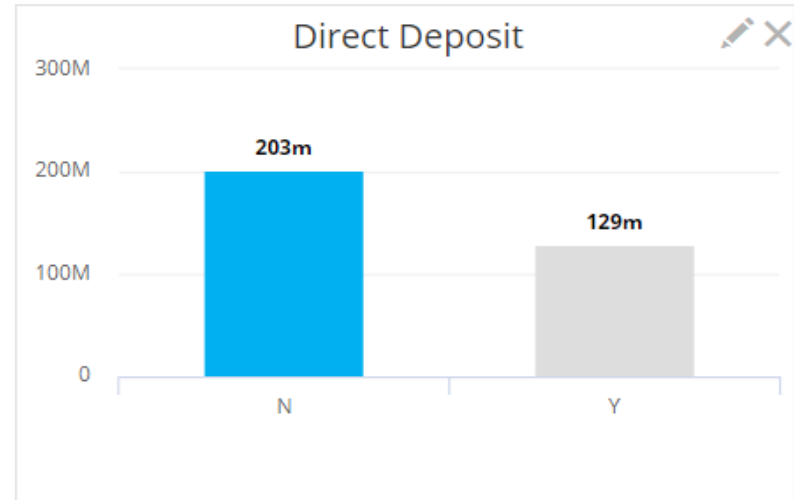
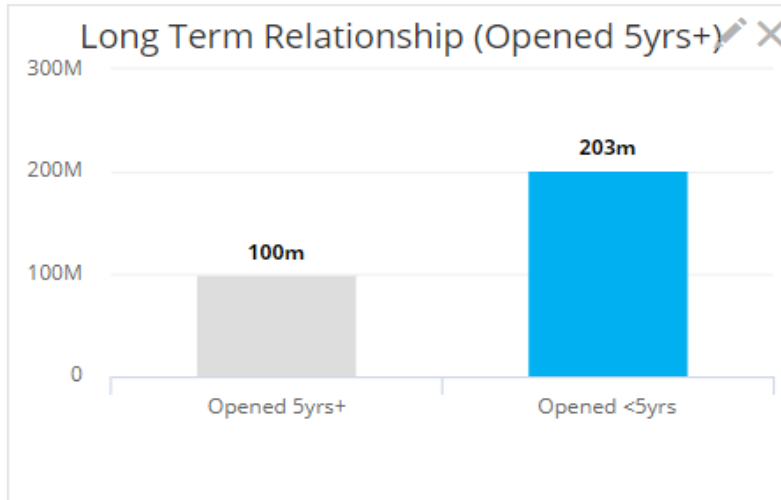
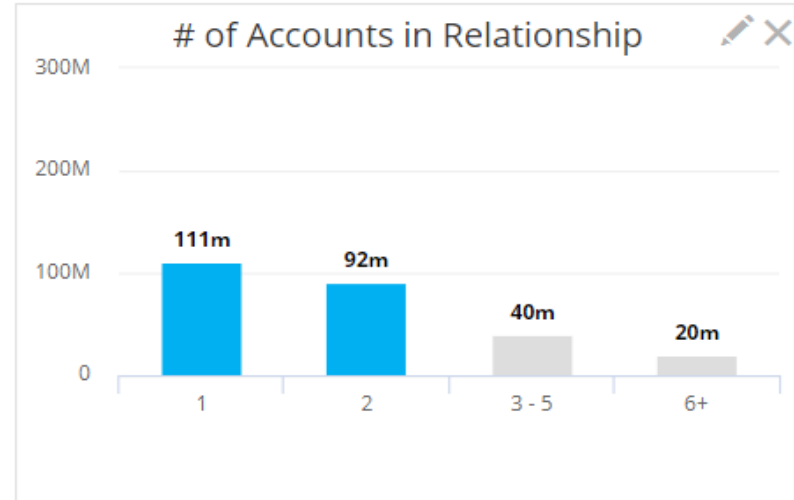
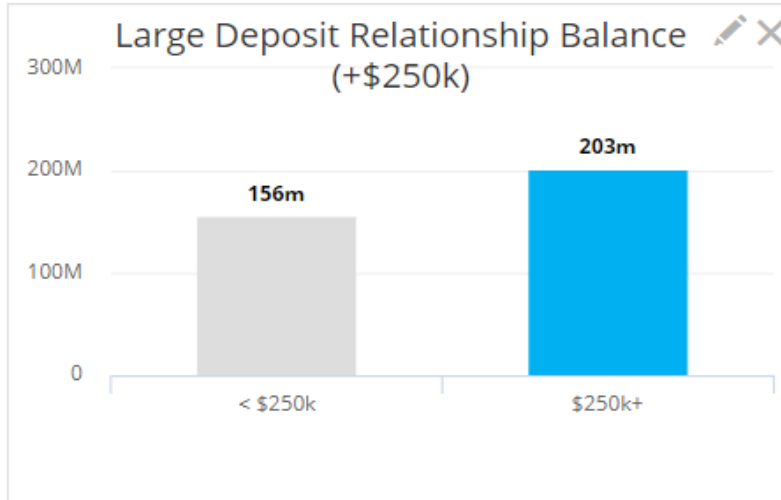
Relationship Balance	Balance		Relationships	
	\$	%	#	%
0-25K	228,065,445	10.46%	49,335	79.36%
25K-100K	432,528,132	19.84%	8,580	13.80%
100K-250K	438,818,857	20.12%	2,860	4.60%
250K-1M	521,281,558	23.91%	1,239	1.99%
1M+	559,845,294	25.67%	154	0.25%
Total	2,180,539,286	100.00%	62,168	100.00%

50% of Total Balances

Source: Deposits360®



Source: Deposits360®



Source: Deposits360®

Develop a Dynamic Forecast & Stress Test Framework

					JUN-18	SEP-18	DEC-18	MAR-19
Cash In/Out Flow					(\$1,500)	(\$1,500)	(\$1,500)	(\$1,500)
Cumulative					\$18,502	\$17,002	\$15,502	\$14,002
Starting Cash Position				\$20,002				
COLLATERALIZED/SECURED FUNDING RESOURCES	Gross Avail. Collateral	Weighted Haircut	Avail. Coll. (Net Haircut)	Avail. Capacity				
Free UST/GSE Bond Collateral	\$51,547	5.00%	\$48,970	\$48,970	\$48,970	\$48,970	\$48,970	\$48,970
Free Non-GSE Bond Collateral			\$0	\$0	\$0	\$0	\$0	\$0
Loan Based Borrowing Capacity (FHLB)			\$143,190	\$72,990	\$77,189	\$81,388	\$85,587	\$89,787
<i>Residential Mtg Loan Collateral (FHLB)</i>	\$147,464	25.00%	\$110,598	\$40,398	\$42,965	\$45,532	\$48,099	\$50,666
<i>Non-Residential Mtg Loan Collateral (FHLB)</i>	\$65,183	50.00%	\$32,592	\$32,592	\$34,224	\$35,856	\$37,488	\$39,121
TOTAL PRIMARY LIQUIDITY				\$121,959	\$126,158	\$130,358	\$134,557	\$138,756
				23.06%	23.48%	23.88%	24.27%	24.65%
Unsecured Funding								
Remaining Brokered Deposit Capacity	\$53,001			\$49,478	\$49,478	\$49,478	\$49,478	\$49,478
Other Unsecured Funds (i.e. Fed Fund Lines)				\$0	\$0	\$0	\$0	\$0
Other Secured Funding Resources								
Other Loan Based Borrowing Capacity (FRB)			\$0	\$0	\$0	\$0	\$0	\$0
TOTAL OTHER LIQUIDITY RESOURCES				\$49,478	\$49,478	\$49,478	\$49,478	\$49,478
				9.36%	9.21%	9.06%	8.93%	8.79%
Total Funds Availability (\$000)				\$191,439	\$194,138	\$196,838	\$199,537	\$202,236
Total Assets (\$000)				\$528,841	\$537,341	\$545,841	\$554,341	\$562,841
Total Funds Availability (% of Assets)				36.20%	36.13%	36.06%	36.00%	35.93%

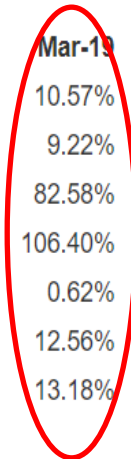
\$40MM loan growth
\$34MM deposit growth

\$20,002

\$14,002

Source: Liquidity360®

Liquidity Ratios	Min / Max	Current	Jun-18	Sep-18	Dec-18	Mar-19
Cash + Unencumbered Coll. / Assets		13.06%	12.41%	11.78%	11.17%	10.57%
Fair Value of Securities / Assets		9.75%	9.61%	9.48%	9.35%	9.22%
Net Loans / Assets		79.70%	80.45%	81.18%	81.89%	82.58%
Net Loans / Deposits	125.00	104.40%	104.93%	105.43%	105.93%	106.40%
Brokered Deposits / Assets	10.00	0.66%	0.65%	0.64%	0.63%	0.62%
Borrowings / Assets		13.27%	13.09%	12.91%	12.73%	12.56%
Wholesale Funds / Assets	25.00	13.93%	13.74%	13.55%	13.36%	13.18%



Contracting Economy

- Collateral haircuts
- Loan Cash Flows (NPAs, Production/Growth)
- Deposit Runoff
- Below well-capitalized (low probability/high risk)

Expanding Economy

- Loan growth > deposit growth
- Collateral Valuations (i.e. depreciation)
- Higher wholesale levels

Institution-Specific

- Deposit concentrations (Potential Volatility)
- ICS/CDARs
- Loan concentrations

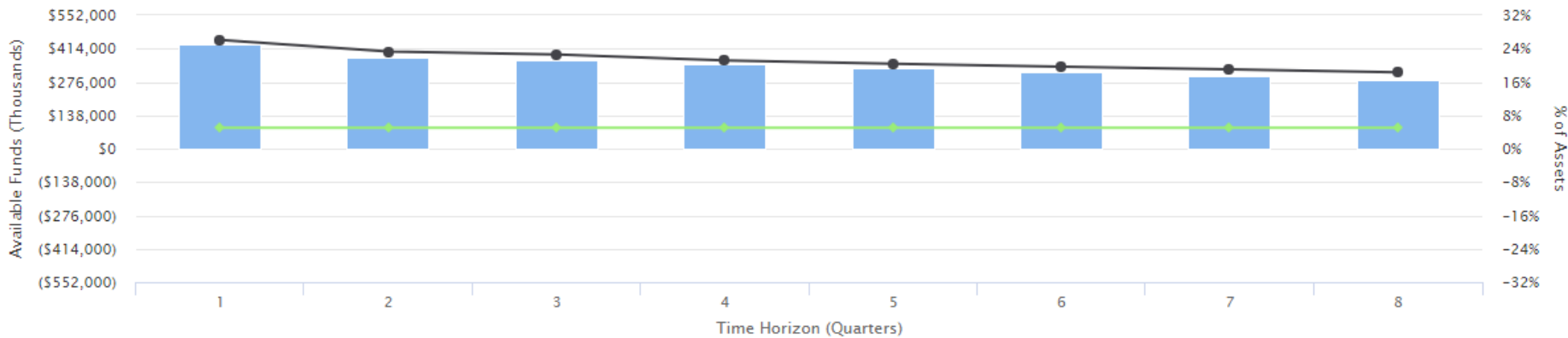
Regional

- Industry specific
- Environmental threats

Increased haircuts (last crisis)

Deposit runoff (from study)

Stress 1 – LIQUIDITY FORECAST (TOTAL FUNDS AVAILABLE)



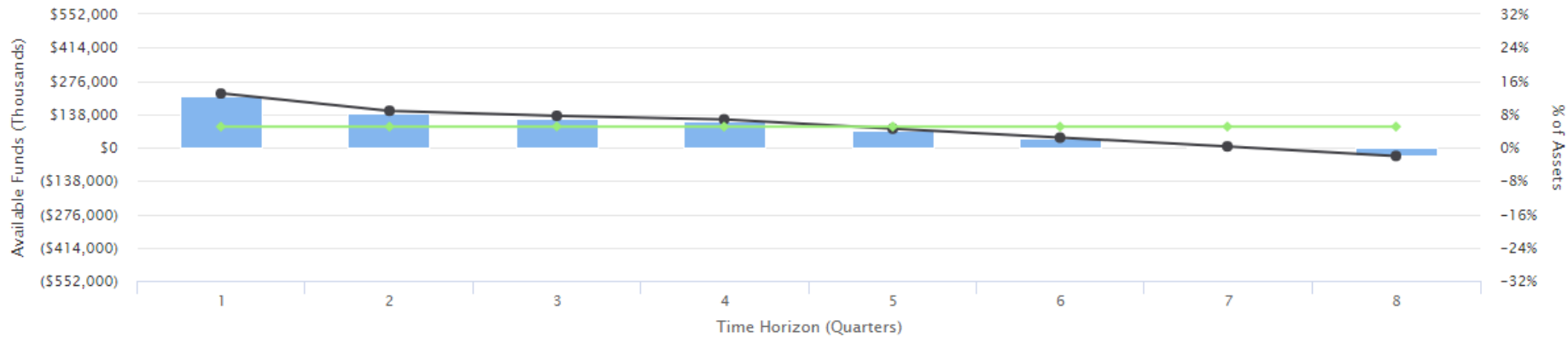
	1	2	3	4	5	6	7	8
Total Funds Available	\$429,632	\$375,131	\$365,703	\$348,762	\$331,350	\$315,497	\$300,313	\$285,432
Avail. Funds (% of Assets)	26.02%	23.26%	22.56%	21.14%	20.38%	19.67%	18.98%	18.29%
Liquidity Minimum/Assets	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%

Remove unsecured funding lines

How long until we feel the pressure?

Severe Stress Scenario Remediation Plan

Stress 3 – LIQUIDITY FORECAST (TOTAL FUNDS AVAILABLE)

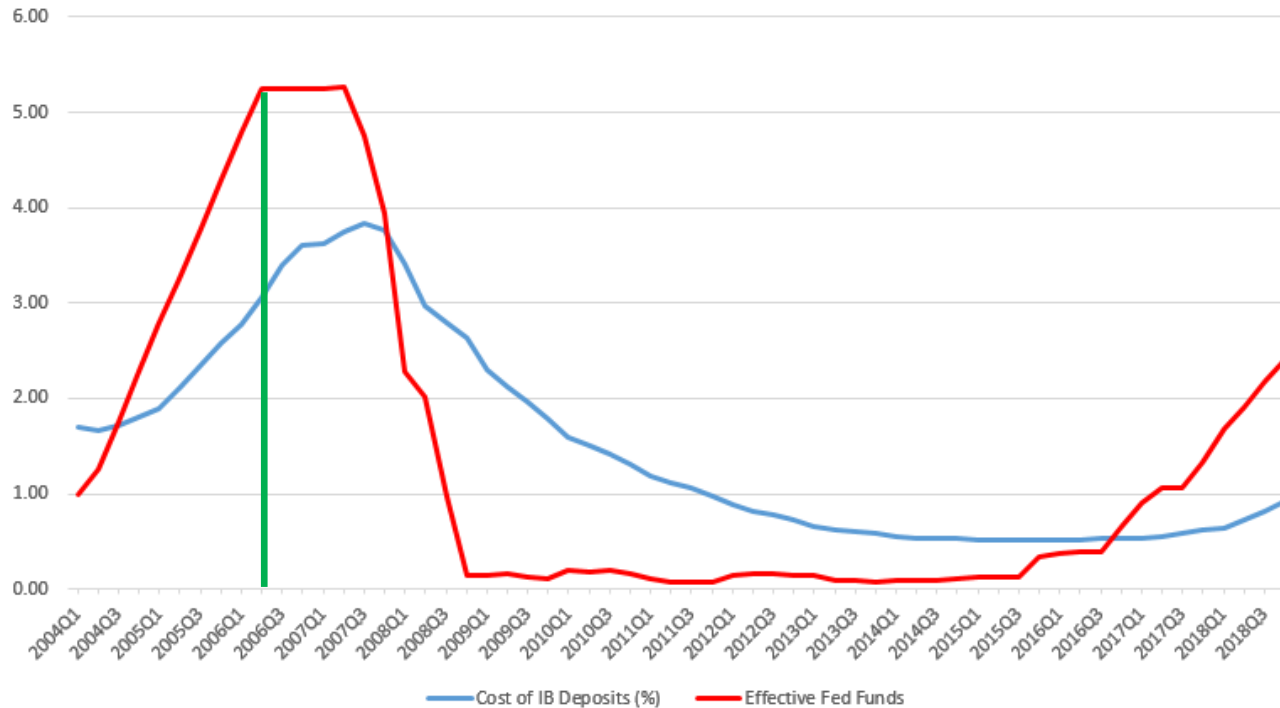


	1	2	3	4	5	6	7	8
Total Funds Available	\$212,108	\$140,255	\$120,338	\$108,538	\$71,451	\$36,788	\$4,101	(\$30,380)
Avail. Funds (% of Assets)	12.98%	8.82%	7.58%	6.76%	4.53%	2.37%	0.27%	-2.02%
Liquidity Minimum/Assets	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%

Source: Liquidity360®

Deposit Strategies to Improve Liquidity

Interest Bearing Deposit Rate History



Beta

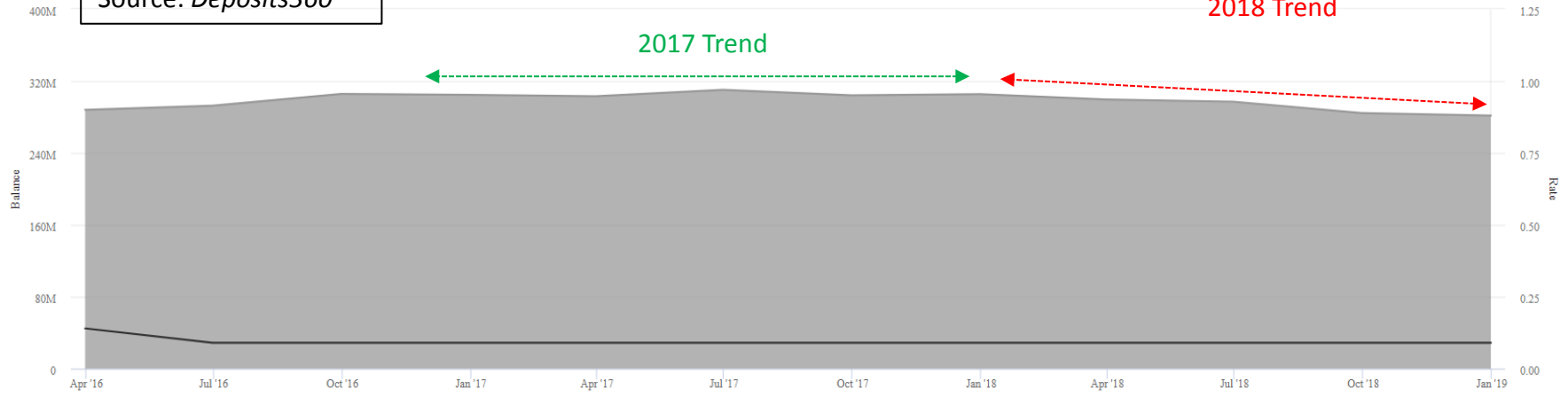
Historical Regression Analysis	
Full Rise +425bps: Q1 04 - Q2 07	46%
First 125bps: Q1 04-Q4 04	9%
Next 100bps: Q4 04 -Q2 05	31%
Next 100bps: Q2 05-Q4 05	47%
Last 100bps: Q4 05-Q2 07	103%

SAV-



Source: Deposits360®

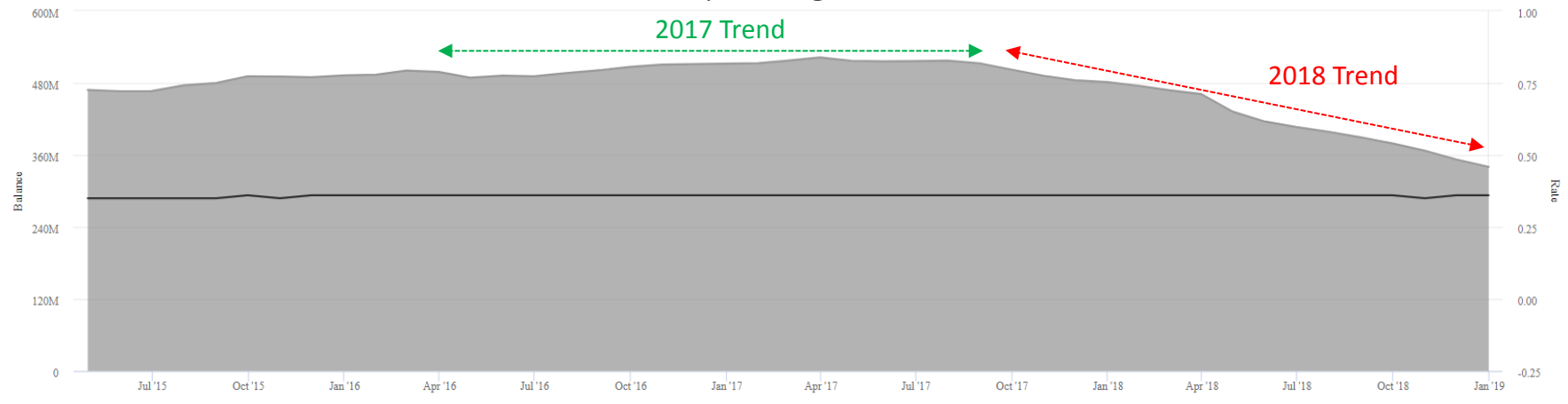
Deposit Migration



MMDA-



Deposit Migration



NEW FUNDS COST ANALYSIS

Rate to be Paid on New Deposits: 2.50%

Weighted Avg. Rate Paid on Funds Converted 0.95%

Hurdle Rate (i.e. Marginal Cost) 3.00%

20% Attrition replaced @ 2.75%
80% Retention @ 0.50%

TOTAL BALANCE IN NEW ACCOUNT			MARGINAL COST NEW BALANCES
Converted	New	Acquisition Ratio	
0%	100%		2.50%
10%	90%	1 : 9.00	2.67%
20%	80%	1 : 4.00	2.89%
30%	70%	1 : 2.33	3.16%
40%	60%	1 : 1.50	3.53%
50%	50%	1 : 1.00	4.05%
60%	40%	1 : 0.67	4.83%
70%	30%	1 : 0.43	6.12%
80%	20%	1 : 0.25	8.70%

MMDA

BALANCE: \$521,000

CURRENT RATE: 0.50%

RUNOFF PROTECTED	RATE INCREASE		
	0.25%	0.50%	0.75%
20.00%	1.75%	3.00%	4.25%
40.00%	1.13%	1.75%	2.38%
60.00%	0.92%	1.33%	1.75%

Annualized NII Impact (000s) (\$1,303) (\$2,605) (\$3,908)

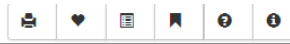
Benchmark
Wholesale
Costs

Term	FHLB (Net Stock Dividend)
90-Day	2.46
1	2.56
2	2.59
3	2.61
4	2.65
5	2.69
7	2.96
10	3.19

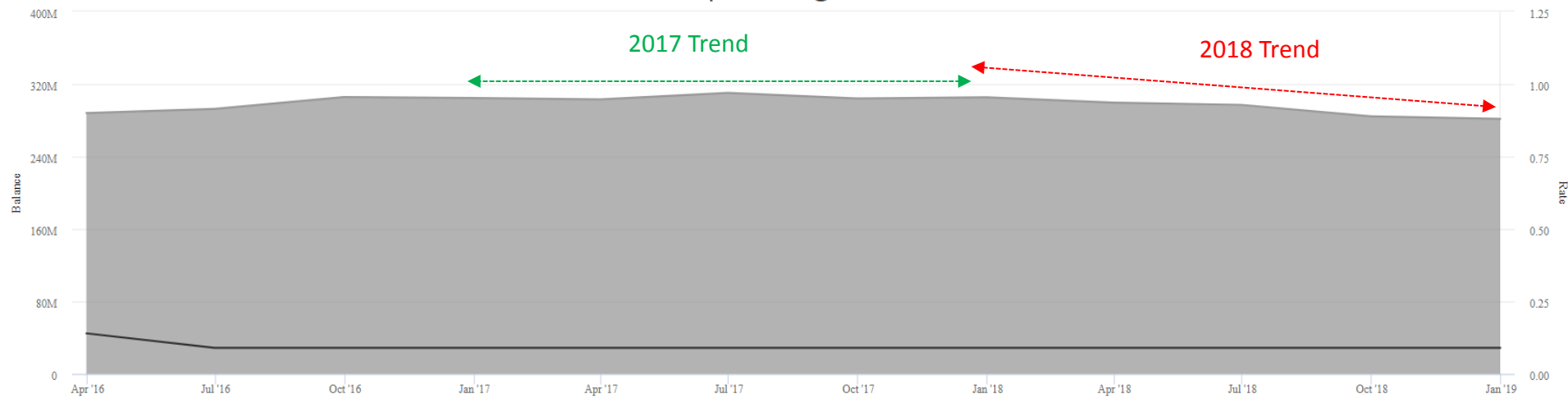
DEFENSIVE DEPOSIT TACTICS...

Monitoring and Managing Attrition

SAV-

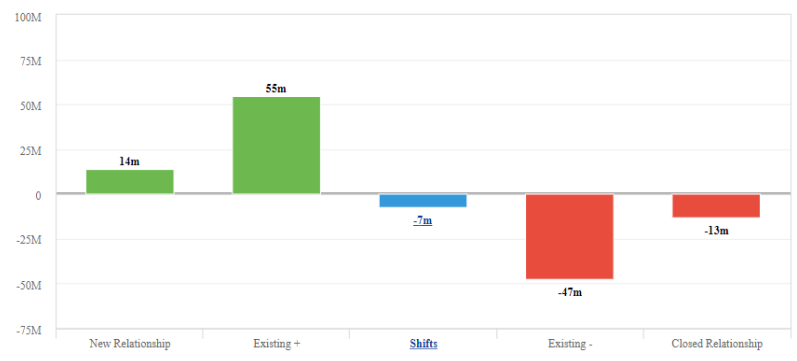


Deposit Migration



Source: *Deposits360*™

2017 Trends



Attrition
22%

Total Relationship Balance

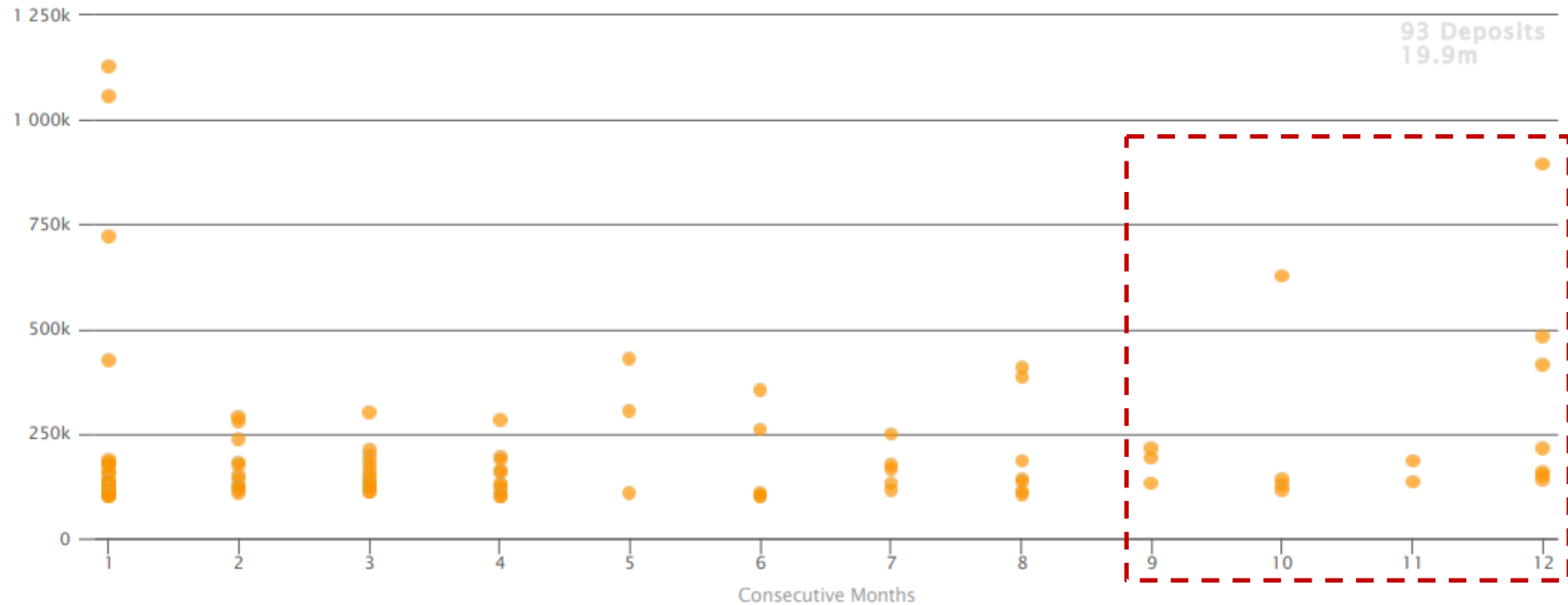
Relationship Number	↕	Existing - Balance	↕	12/31/2017	↕	12/31/2018	↕	Difference	↕
EA6B683		-\$1,766,839.30		\$2,413,256.51		\$110,110.52		-\$2,303,145.99	
64C31B3		-\$1,321,172.80		\$1,324,323.13		\$3,150.33		-\$1,321,172.80	
88BFE2E		-\$859,112.53		\$2,211,099.48		\$1,351,986.95		-\$859,112.53	
058F0BD		-\$738,336.24		\$742,642.31		\$0.24		-\$742,642.07	
0BCED8E		-\$727,978.61		\$846,555.67		\$29,411.93		-\$817,143.74	
86F671B		-\$600,668.90		\$714,079.47		\$113,410.57		-\$600,668.90	
965D430		-\$563,871.23		\$1,143,003.99		\$579,132.76		-\$563,871.23	
0E908C6		-\$539,886.72		\$667,322.91		\$46,563.25		-\$620,759.66	
F6169A1		-\$522,998.31		\$595,594.47		\$72,596.16		-\$522,998.31	
2C7D05D		-\$518,512.75		\$646,822.82		\$128,310.07		-\$518,512.75	

Source: *Deposits360*®

Relationship Declining Balances

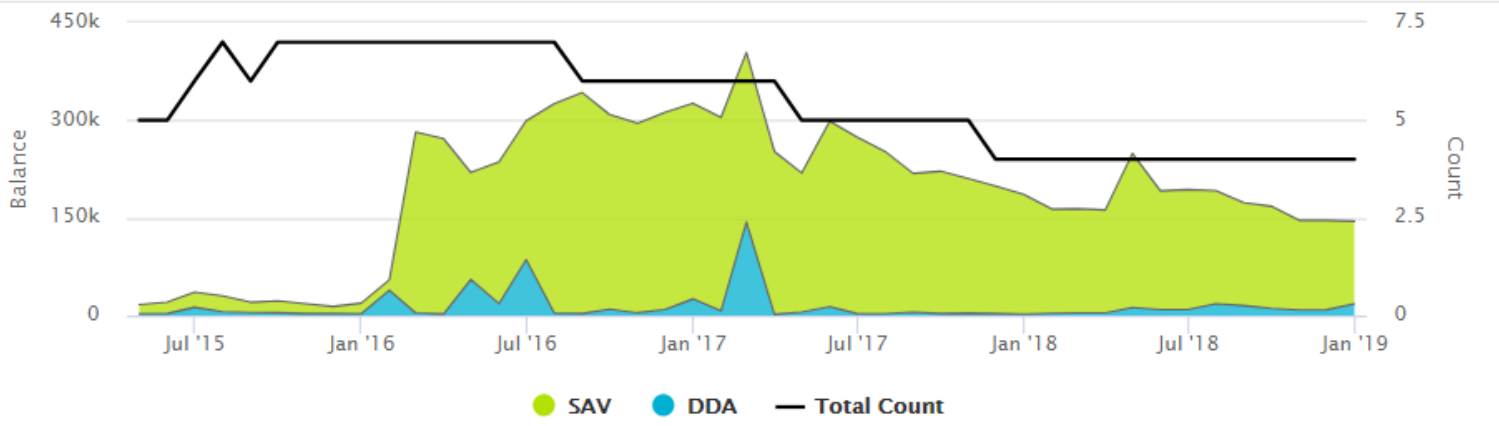
12/31/2018

93 Deposits
19.9m

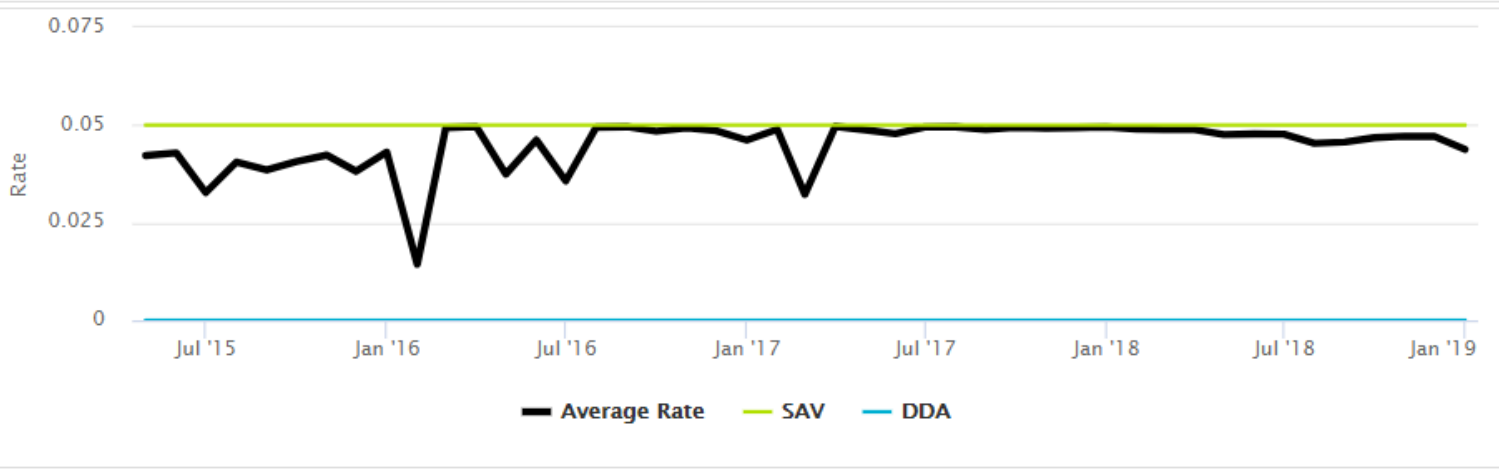


Relationships at Risk?

Source: *Deposits360*®



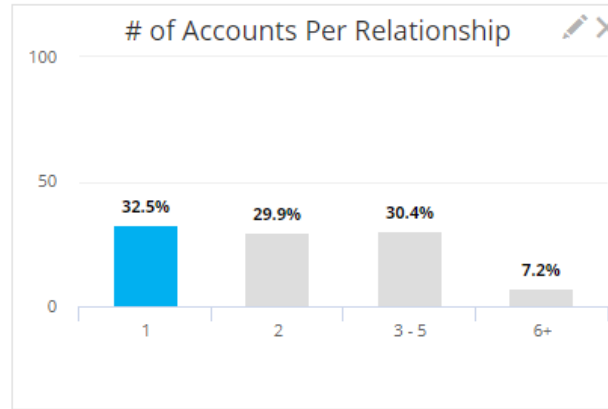
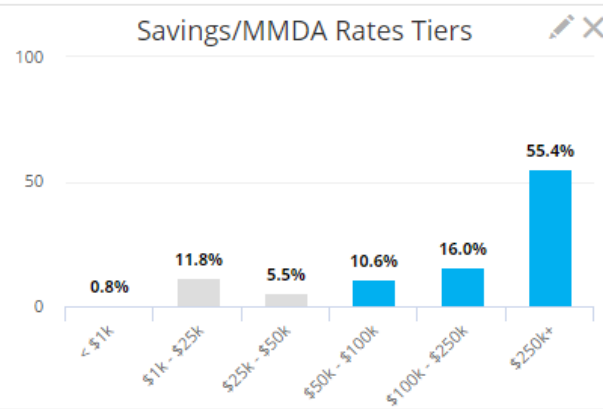
DETAILS	
Date Opened:	08/21/2001
Date Closed:	N/A
Customer Age:	61
Zip Code:	03874
Branch:	
Gender:	N/A
Relationship Age:	17 Years
Market Region:	1
Account Fees:	0.00



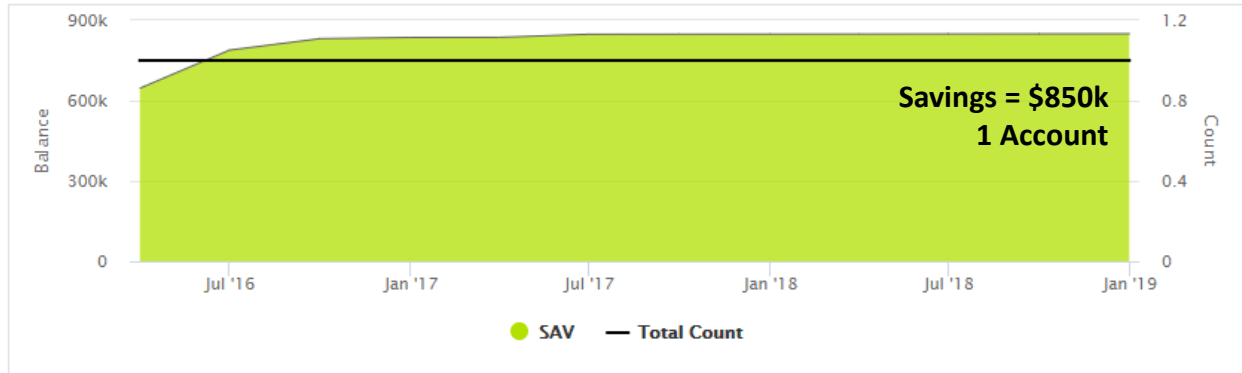
Attributes	
Auto Bill Pay	
Remote Capture	X
Out of Market	X
Debit Card	✓
Account Fee	✓
Direct Deposit	✓
Public Funds	X
Mobile Banking	X
Bill Pay	✓
Internet Banking	✓
Overdraft	✓
Opened Online	X

Source: Deposits360®

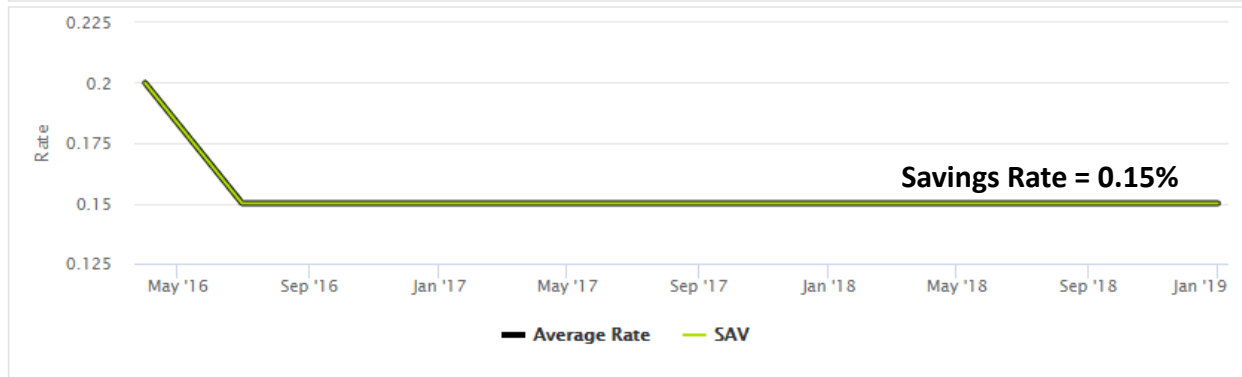
Single Source Customers



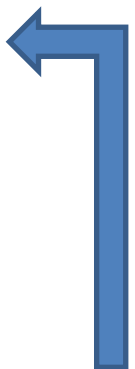
Source: *Deposits360*®



DETAILS	
Date Opened:	10/29/2008
Date Closed:	N/A
Customer Age:	64
Zip Code:	02090-2142
Branch:	Main Office
Gender:	F
Relationship Age:	10 Years
Market Region:	N/A
Account Fees:	N/A

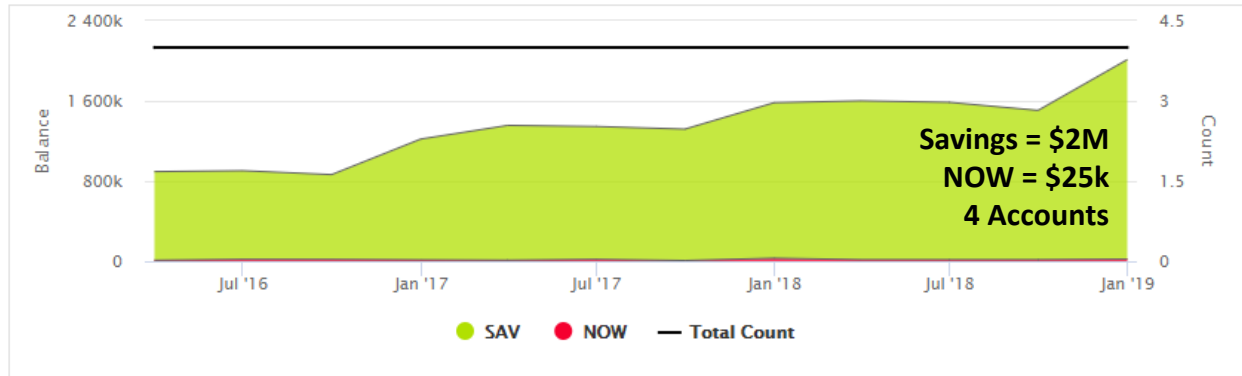


Attributes	
Auto Bill Pay	
<input checked="" type="checkbox"/> Remote Capture	
Out of Market	
<input checked="" type="checkbox"/> Debit Card	
<input checked="" type="checkbox"/> Account Fee	
<input checked="" type="checkbox"/> Direct Deposit	
<input checked="" type="checkbox"/> Public Funds	
<input checked="" type="checkbox"/> Mobile Banking	
<input checked="" type="checkbox"/> Bill Pay	
Internet Banking	
<input checked="" type="checkbox"/> Overdraft	

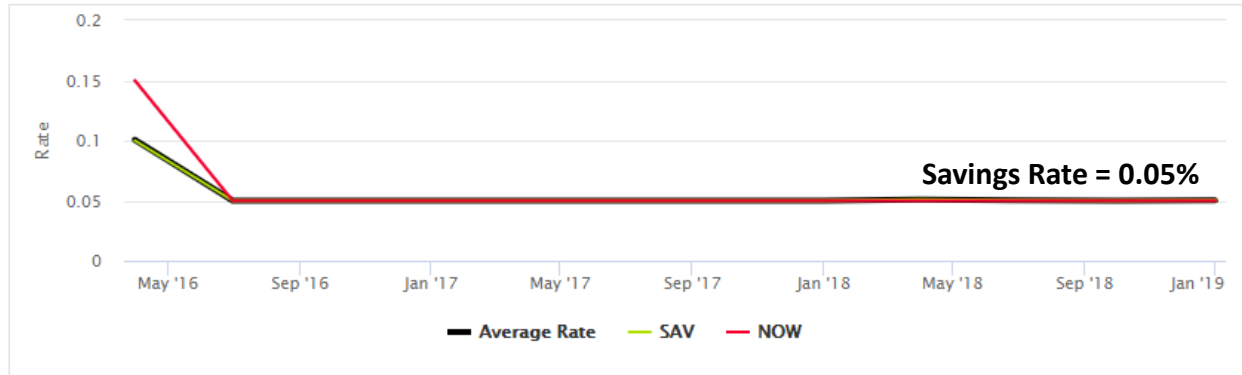


No Additional Services with the Institution

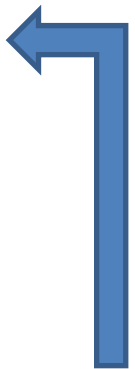
Source: *Deposits360*®



DETAILS	
Date Opened:	07/15/1995
Date Closed:	N/A
Customer Age:	59
Zip Code:	02081-1120
Branch:	Walpole
Gender:	F
Relationship Age:	23 Years
Market Region:	N/A
Account Fees:	N/A



Attributes	
Auto Bill Pay	
<input checked="" type="checkbox"/> Remote Capture	
Out of Market	
<input checked="" type="checkbox"/> Debit Card	
<input checked="" type="checkbox"/> Account Fee	
<input checked="" type="checkbox"/> Direct Deposit	
<input checked="" type="checkbox"/> Public Funds	
<input checked="" type="checkbox"/> Mobile Banking	
<input checked="" type="checkbox"/> Bill Pay	
Internet Banking	
<input checked="" type="checkbox"/> Overdraft	



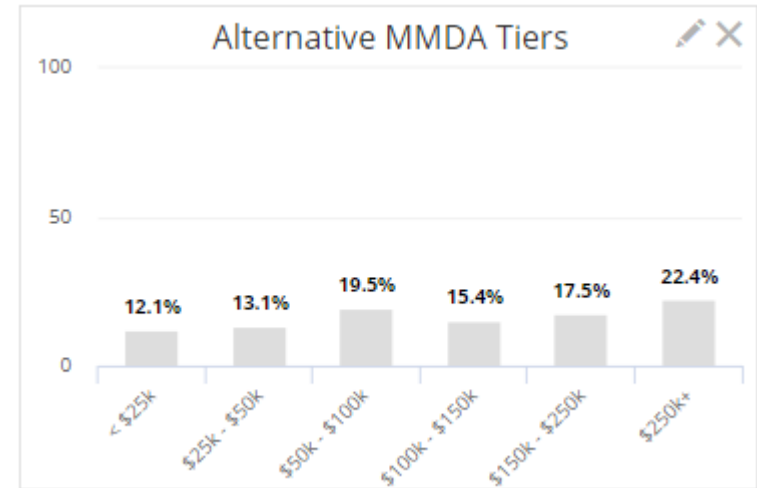
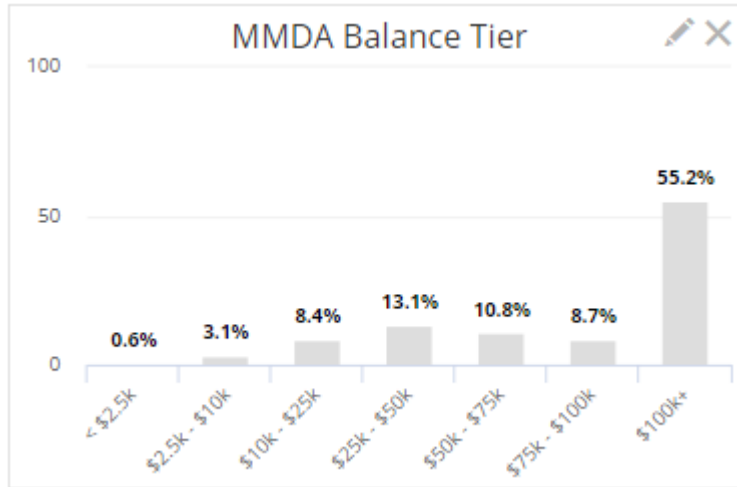
Additional Services with the Institution

Source: Deposits360®

Next Move on MMDAs?

% of Balance

Source: Deposits360®



Alternative Tier/Pricing Adjustments to Maintain Current Cost of Funds

MMDA Current Tiers	\$0-\$2.5k	\$2.5-\$10K	\$10k-\$25k	\$25k-\$50k	\$50k-\$75k	\$75k-\$100K	\$100k+	Total
Rate (on Bank website)	0.10%	0.15%	0.20%	0.20%	0.30%	0.30%	0.30%	0.27%
Balance	\$4,345,018	\$23,776,345	\$63,923,061	\$99,616,061	\$82,027,208	\$66,224,769	\$418,691,192	\$758,603,654
% of Total MMDA	1%	3%	8%	13%	11%	9%	55%	100%
Annual Interest Expense	\$4,345.02	\$35,664.52	\$127,846.12	\$199,232.12	\$246,081.62	\$198,674.31	\$1,256,073.58	\$2,067,917.29
Alternative Tiers	\$0-\$25K	\$25k-\$50K	\$50k-\$100k	\$100k-\$150k	\$150k-\$250MM	\$250k+	Total	
Rate	0.20%	0.20%	0.30%	0.30%	0.30%	0.30%	0.27%	
Balance	\$92,044,423	\$99,616,061	\$148,251,977	\$116,543,910	\$132,505,579	\$169,641,704	\$758,603,654	
% of Total MMDA	12%	13%	20%	15%	17%	22%	100%	
Annual Interest Expense	\$184,088.85	\$199,232.12	\$444,755.93	\$349,631.73	\$397,516.74	\$508,925.11	\$2,084,150.48	

Incremental Interest Expense as Rates Rise (Per +25bp)								
Fed Funds Increase:	0.25%							
MMDA Current Tier	\$0-\$2.5k	\$2.5-\$10k	\$10k-\$25k	\$25k-\$50k	\$50k-\$75k	\$75k-\$100k	\$100k+	Total
Beta	25%	25%	50%	50%	75%	75%	80%	71%
Balance	\$4,345,018.00	\$23,776,345.00	\$63,923,061.00	\$99,616,061.00	\$82,027,208.00	\$66,224,769.00	\$418,691,192.00	\$758,603,654.00
Additional Expense	\$2,715.64	\$14,860.22	\$79,903.83	\$124,520.08	\$153,801.02	\$124,171.44	\$837,382.38	\$1,337,354.60
Alternative Tiers	\$0-\$25k	\$25k-\$50k	\$50k-\$100k	\$100k-\$150k	\$150k-\$250MM	\$250k+		Total
Beta	25%	50%	50%	75%	100%	100%		71%
Balance	\$92,044,423.00	\$99,616,061.00	\$148,251,977.00	\$116,543,910.00	\$132,505,579.00	\$169,641,704.00		\$758,603,654.00
Additional Expense	\$57,527.76	\$124,520.08	\$185,314.97	\$218,519.83	\$331,263.95	\$424,104.26		\$1,341,250.85

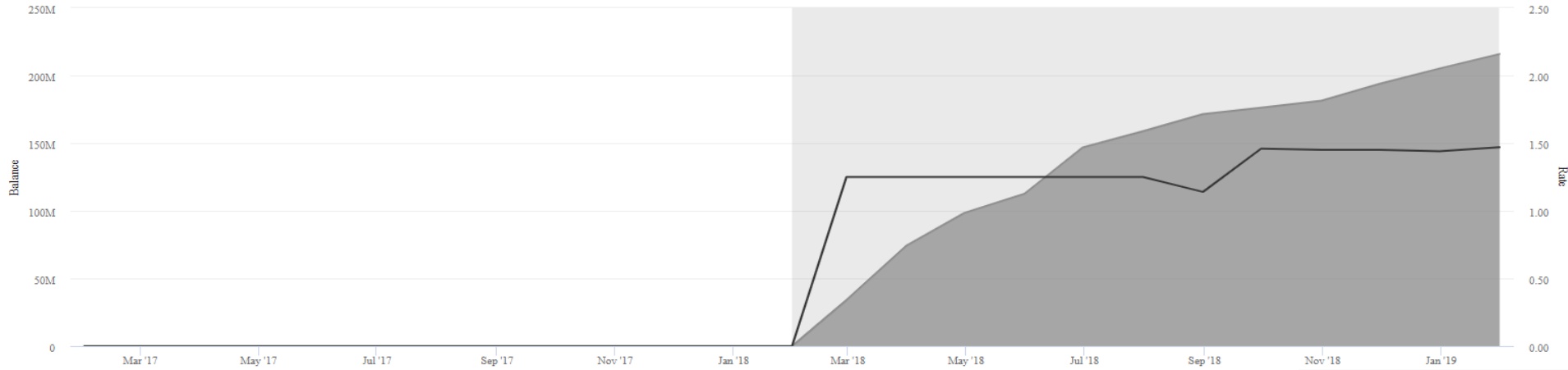
A change in tier structure could:

- Provide incentives for largest customers
- Allow more pricing flexibility as rate rise
- Entice lower-balance customers to increase wallet share

MMDA - Super-

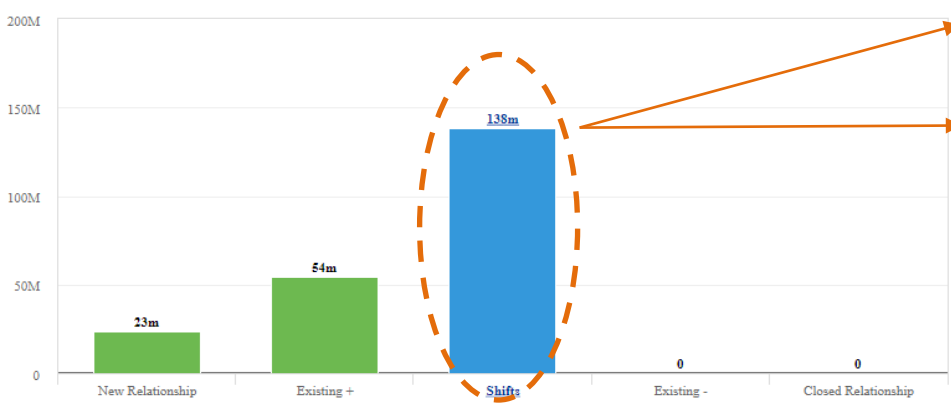


Deposit Migration



01/31/2018 - 01/31/2019

Source: Deposits360®



MCOF
2.93%

Cannibalization
64%

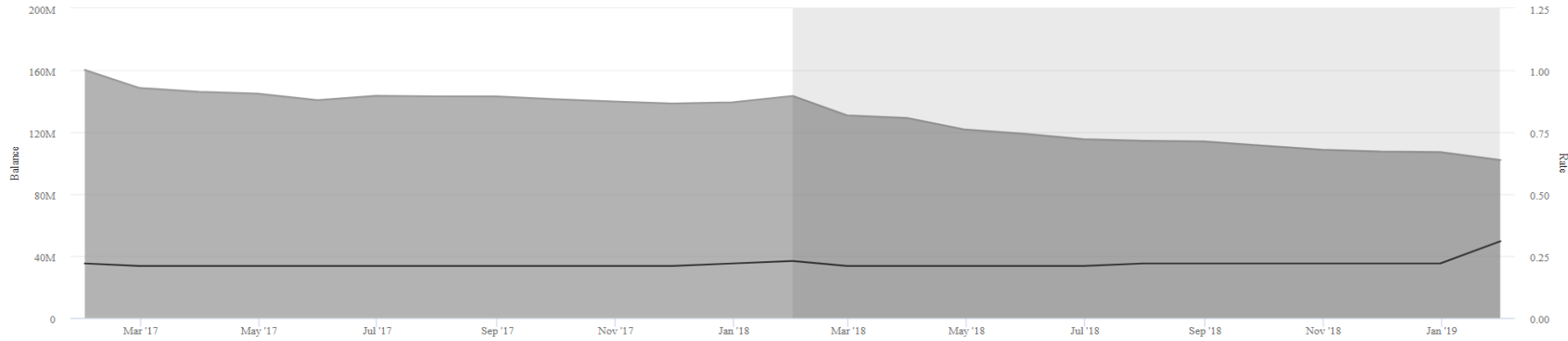
Attrition
0%

	Balance(1,000s)	Rate	# Rel.
Starting Balance	0k	0.00	0
INFLOW			
New Relationship	23,382k	1.40	117
Existing +	54,425k	1.54	437
SHIFTS			
DDA	5,504k	0.00	142
NOW	9,230k	0.06	136
SAV	3,681k	0.05	74
MMDA	111,982k	0.73	435
TD	7,741k	0.86	90
OUTFLOW			
Existing -	0k	0.00	0
Closed Relationship	0k	0.00	0
Ending Balance	215,945k	1.47	825

MMDA-



Deposit Migration



	Balance(1,000s)	Rate	# Rel.
Starting Balance	143,413k	0.23	2,172
INFLOW			
New Relationship	594k	0.15	28
Existing +	18,147k	0.25	867
SHIFTS			
DDA	-300k	0.00	362
NOW	-372k	0.05	235
SAV	27k	0.05	60
MMDA	-25,763k	1.46	201
TD	-6,352k	2.05	215
OUTFLOW			
Existing -	-23,493k	0.22	776
Closed Relationship	-3,942k	0.19	98
Ending Balance	101,960k	0.31	1,868

- ✓ Lost just \$10MM
- ✓ Retained \$30MM through promotional MMDA & CDs
- ✓ Maintain \$100MM at just 30 bps

Source: Deposits360®

OFFENSIVE DEPOSIT TACTICS...

Deposit Promotions and Campaigns

Key Questions on Deposit Promotions

- What drives pricing decisions, competition or liquidity needs?
- How much are the promotions really costing me?
- Will I have more success on a CD or NMD promotion?
- What hurdles (i.e. requirements) should be included?
- Should I target-market (vs. “billboard” campaign)?
- Is my front-line staff prepared?

Special 11 Month-



Deposit Migration



02/28/2018 - 07/31/2018

Source: *Deposits360*®

	Balance(1,000s)	Rate	# Rel.
Starting Balance	0k	0.00	0
INFLOW			
New Relationship	12,604k	1.96	93
Existing +	20,209k	1.97	576
SHIFTS			
DDA	2,413k	0.00	130
NOW	7,218k	0.08	452
SAV	3,246k	0.05	140
MMDA	21,987k	0.41	243
TD	47,791k	0.94	592
OUTFLOW			
Existing -	0k	0.00	0
Closed Relationship	0k	0.00	0
Ending Balance	115,468k	1.97	1,186

11 Month CD Special

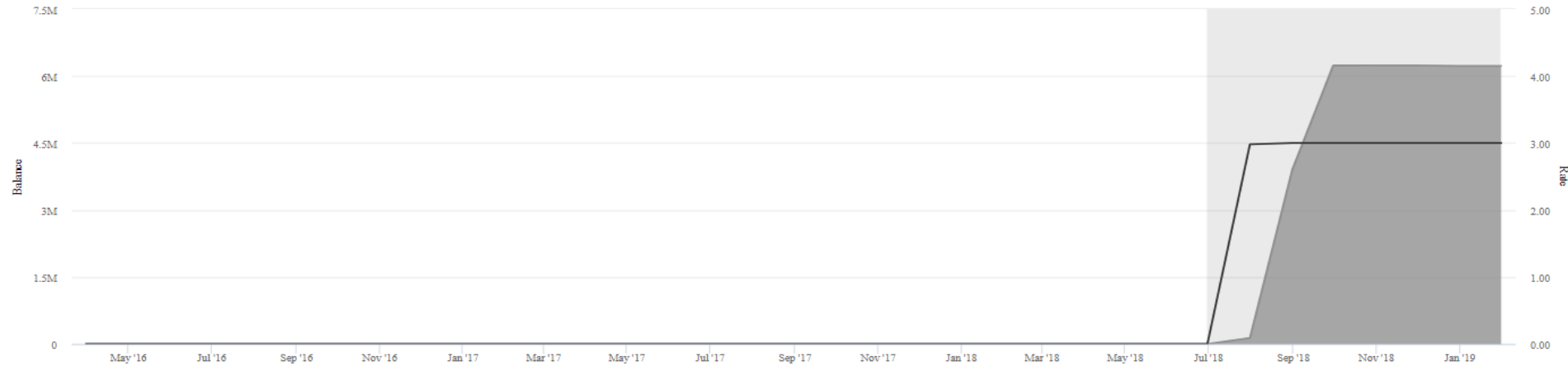
	Balance(1,000s)	Rate	# Rel.
Starting Balance	0k	0.00	0
INFLOW			
New Relationship	7,121k	2.24	73
Existing +	16,886k	2.16	380
SHIFTS			
DDA	1,830k	0.00	103
NOW	3,854k	0.10	282
SAV	1,945k	0.05	122
MMDA	17,279k	0.49	159
TD	26,540k	1.45	436
OUTFLOW			
Existing -	0k	0.00	0
Closed Relationship	0k	0.00	0
Ending Balance	75,455k	2.16	857

Source: *Deposits360*®

Special 8 month-



Deposit Migration



06/30/2018 - 01/31/2019

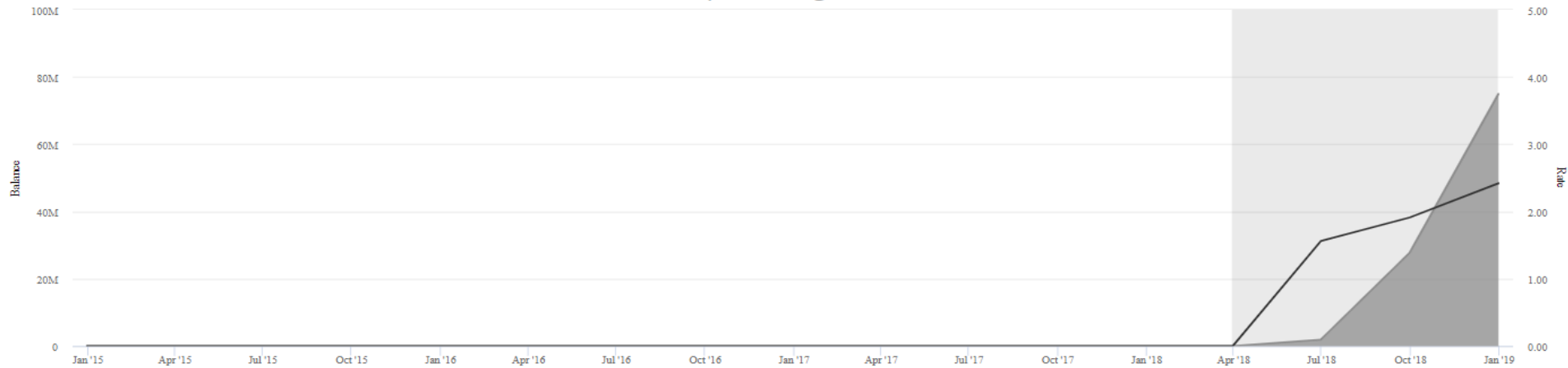
Source: Deposits360[®]

	Balance(1,000s)	Rate	# Rel.
Starting Balance	0k	0.00	0
INFLOW			
New Relationship	5,134k	3.00	105
Existing +	470k	3.02	10
SHIFTS			
DDA	6k	0.00	2
NOW	329k	0.15	8
SAV	230k	0.15	6
MMDA	8k	0.35	1
TD	51k	0.67	5
OUTFLOW			
Existing -	0k	0.00	0
Closed Relationship	0k	0.00	0
Ending Balance	6,228k	3.00	124

MMDA - Indexed-



Deposit Migration



03/31/2018 - 12/31/2018

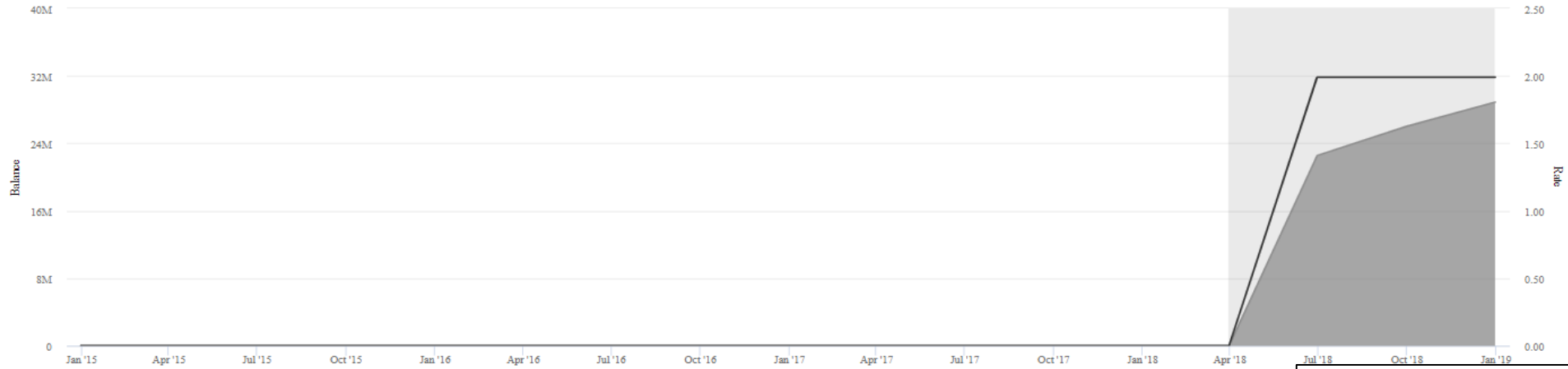
Source: Deposits360®

	Balance(1,000s)	Rate	# Rel.
Starting Balance	0k	0.00	0
INFLOW			
New Relationship	29,993k	2.42	178
Existing +	28,065k	2.41	240
SHIFTS			
DDA	606k	0.00	59
NOW	852k	0.07	40
SAV	671k	0.05	42
MMDA	9,432k	0.72	59
TD	5,339k	1.57	61
OUTFLOW			
Existing -	0k	0.00	0
Closed Relationship	0k	0.00	0
Ending Balance	74,958k	2.42	465

Special 12 Month-



Deposit Migration



03/31/2018 - 12/31/2018

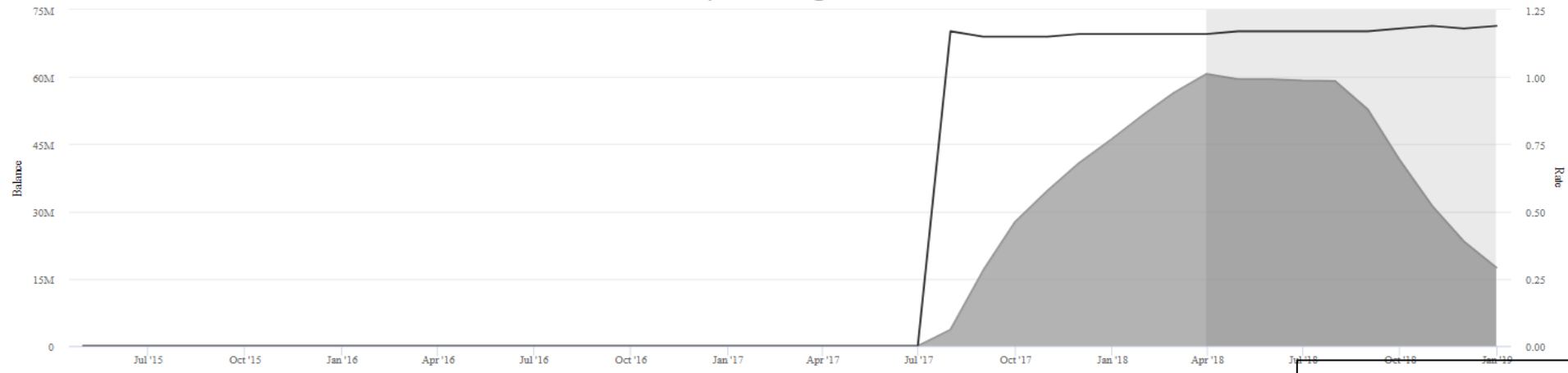
Source: Deposits360®

	Balance(1,000s)	Rate	# Rel.
Starting Balance	0k	0.00	0
INFLOW			
New Relationship	11,894k	1.99	205
Existing +	12,102k	1.99	281
SHIFTS			
DDA	103k	0.00	32
NOW	109k	0.06	23
SAV	572k	0.05	43
MMDA	1,037k	0.70	26
TD	3,071k	1.55	108
OUTFLOW			
Existing -	0k	0.00	0
Closed Relationship	0k	0.00	0
Ending Balance	28,889k	1.99	577

Special 13 Month-



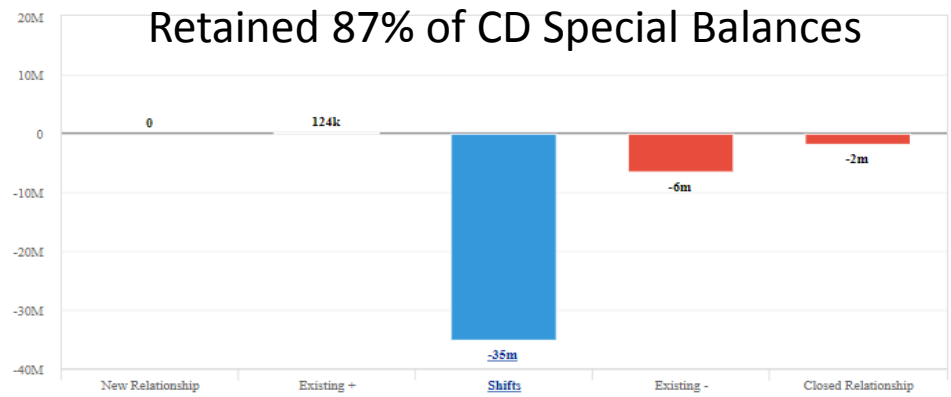
Deposit Migration



Source: Deposits360®

03/31/2018 - 12/31/2018

Retained 87% of CD Special Balances



	Balance(1,000s)	Rate	# Rel.
Starting Balance	60,694k	1.16	768
INFLOW			
New Relationship	0k	0.00	0
Existing +	124k	1.18	97
SHIFTS			
DDA	-86k	0.00	24
NOW	-690k	0.05	118
SAV	-114k	0.05	50
MMDA	-2,580k	0.89	74
TD	-31,652k	1.96	463
OUTFLOW			
Existing -	-6,443k	1.15	232
Closed Relationship	-1,745k	1.14	23
Ending Balance	17,507k	1.19	242

Lending Strategies

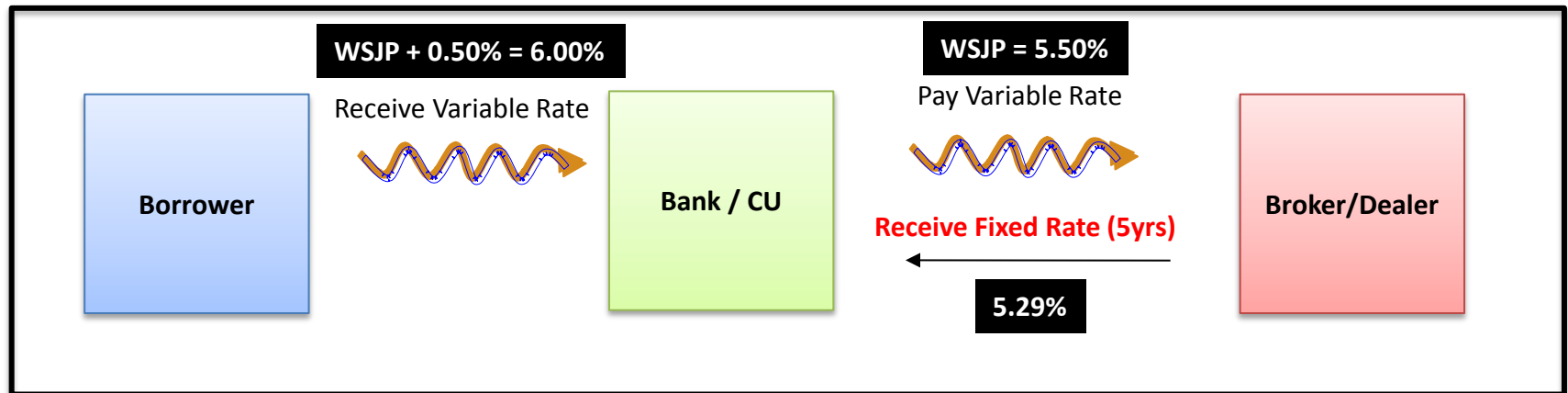
- ◆ Fixed Rate Lending: “What’s the Buzz”
- ◆ The “Matched Funding” Myth
- ◆ Pressures to Extend? Some Negotiation Strategies
- ◆ Revisiting Adjustable CRE Repricing Terms/Conditions
- ◆ Front Running Refinancing Risk
- ◆ Prepayment Penalties: “The Great Giveaway”
- ◆ Relationship Managers vs. Lenders: What’s in a Name?
- ◆ Loan Pricing Models
- ◆ Why Changes in Derivatives Accounting Matter
- ◆ Some Comments on Residential/Consumer Lending

Pricing Interest Rate Risk...Swap Benchmarking

- Start with Floating Rate Reference Quote (based on credit premium)
 - Example - Prime + 0.50%

- “Convert” Floating to Fixed Quotes Using Swap Rates

Interest Rate Swap Mechanics



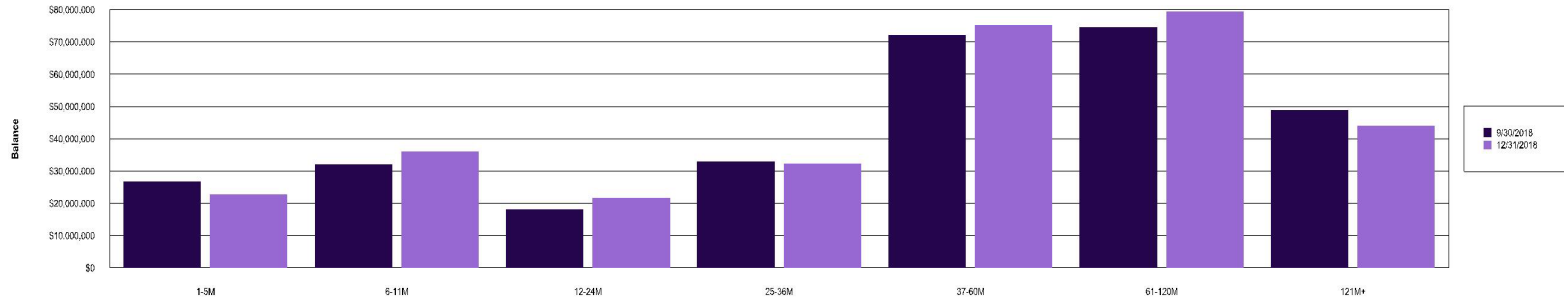
1m LIBOR Swap Rates						
Term	Bullet	Amortization Period				
		10	15	20	25	30
1	2.53%	2.51%	2.53%	2.53%	2.53%	2.53%
2	2.48%	2.49%	2.48%	2.48%	2.48%	2.48%
3	2.44%	2.45%	2.44%	2.44%	2.44%	2.44%
4	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
5	2.44%	2.44%	2.44%	2.44%	2.44%	2.44%
7	2.48%	2.47%	2.48%	2.48%	2.48%	2.48%
10	2.57%	2.49%	2.54%	2.55%	2.56%	2.56%
11	2.59%		2.55%	2.57%	2.58%	2.58%
12	2.61%		2.56%	2.58%	2.59%	2.60%
13	2.63%		2.57%	2.60%	2.61%	2.62%
14	2.65%		2.57%	2.61%	2.62%	2.63%
15	2.66%		2.56%	2.61%	2.63%	2.64%
20	2.68%			2.61%	2.64%	2.66%
25	2.68%				2.64%	2.66%
30	2.68%					2.65%

Cost of Forward Starting 1m LIBOR Swaps						
Term	Forward Period					
	3m	6m	9m	12m	24m	36m
1	0.01%	-0.01%	-0.05%	-0.10%	-0.19%	-0.15%
2	-0.02%	-0.04%	-0.06%	-0.09%	-0.12%	-0.05%
3	-0.01%	-0.02%	-0.04%	-0.05%	-0.04%	0.04%
4	0.00%	-0.01%	-0.01%	-0.02%	0.02%	0.09%
5	0.00%	0.00%	0.00%	0.01%	0.05%	0.12%
7	0.01%	0.01%	0.02%	0.02%	0.07%	0.15%
10	0.01%	0.02%	0.02%	0.03%	0.08%	0.13%

PRIME Swap Rates						
Term	Bullet	Amortization Period				
		10	15	20	25	30
1	5.48%	5.49%	5.48%	5.48%	5.48%	5.48%
2	5.40%	5.40%	5.40%	5.40%	5.40%	5.40%
3	5.33%	5.34%	5.34%	5.33%	5.33%	5.33%
4	5.29%	5.30%	5.30%	5.29%	5.29%	5.29%
5	5.29%	5.30%	5.29%	5.29%	5.29%	5.29%
7	5.31%	5.32%	5.31%	5.31%	5.31%	5.31%
10	5.38%	5.33%	5.36%	5.37%	5.37%	5.37%
11	5.40%		5.37%	5.38%	5.39%	5.39%
12	5.42%		5.38%	5.40%	5.41%	5.41%
13	5.44%		5.39%	5.41%	5.42%	5.43%
14	5.45%		5.39%	5.42%	5.43%	5.44%
15	5.46%		5.39%	5.43%	5.44%	5.45%
20	5.49%			5.43%	5.46%	5.47%
25	5.49%				5.45%	5.47%
30	5.49%					5.46%

As of March 2019

Repricing Schedule



12/31/2018																
	1-5 M		6-11 M		12-24 M		25-36 M		37-60 M		61-120 M		121+ M		Total	
	Balance	Rate	Balance	Rate	Balance	Rate	Balance	Rate	Balance	Rate	Balance	Rate	Balance	Rate	Balance	Rate
CRE	3,106,465	4.63	11,124,968	4.90	11,927,867	4.37	21,990,482	4.31	34,667,332	4.32	7,557,788	4.45	3,188,696	5.35	93,563,598	4.45
HE	5,842,347	4.73	814,090	2.99	110,307	2.99	-	-	-	-	13,397	3.00	2,776,309	5.37	9,556,450	4.74
Install	1,011,393	4.12	-	-	864	18.00	4,368	14.03	4,734	15.00	240	18.00	-	-	1,021,599	4.23
Res.	3,354,821	4.32	7,393,013	5.14	4,956,315	3.99	10,368,389	3.89	38,632,632	3.88	67,080,646	3.87	38,072,867	3.92	169,858,681	3.95
Res-Const.	9,570,755	5.41	16,850,974	5.50	4,689,340	5.57	-	-	1,922,247	4.41	4,718,317	4.21	-	-	37,751,633	5.27
Total Loan	22,885,781	4.91	36,183,044	5.19	21,684,693	4.54	32,363,240	4.18	75,226,945	4.10	79,370,387	3.94	44,037,872	4.11	311,751,961	4.29

9/30/2018																
	1-5 M		6-11 M		12-24 M		25-36 M		37-60 M		61-120 M		121+ M		Total	
	Balance	Rate	Balance	Rate	Balance	Rate	Balance	Rate	Balance	Rate	Balance	Rate	Balance	Rate	Balance	Rate
CRE	3,477,369	4.65	11,255,468	4.90	12,780,627	4.42	22,376,782	4.33	33,854,968	4.30	6,575,627	4.40	3,206,652	5.35	93,527,493	4.45
HE	6,543,568	4.12	331,417	2.99	-	-	-	-	-	-	70,466	4.40	1,132,563	5.29	8,078,014	4.24
Install	1,033,819	4.11	-	-	858	18.00	4,645	13.75	5,002	15.00	378	18.00	-	-	1,044,702	4.22
Res.	4,941,861	4.20	9,625,612	4.92	3,440,105	3.32	10,541,853	3.90	36,550,306	3.81	64,097,379	3.85	38,141,506	3.92	167,338,622	3.92
Res-Const.	10,839,599	5.37	10,789,217	5.55	1,858,293	5.44	-	-	1,825,747	4.42	3,829,511	4.25	6,534,922	5.24	35,677,289	5.24
Total Loan	26,836,215	4.71	32,001,715	5.10	18,079,882	4.31	32,923,281	4.19	72,236,023	4.06	74,573,361	3.92	49,015,643	4.22	305,666,120	4.25

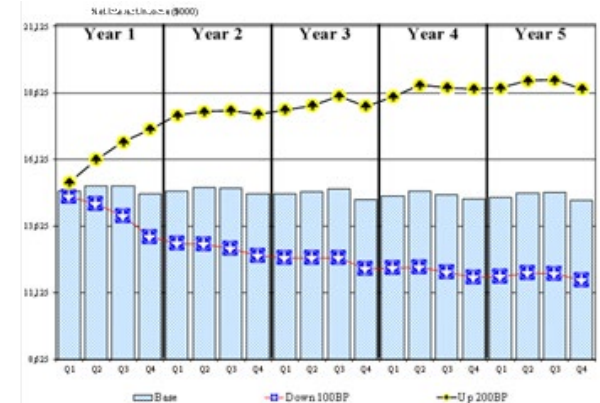
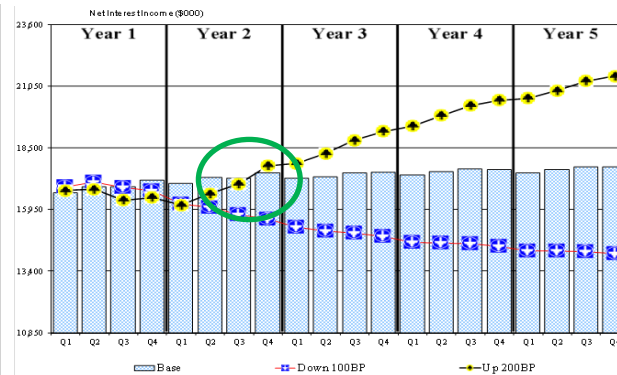
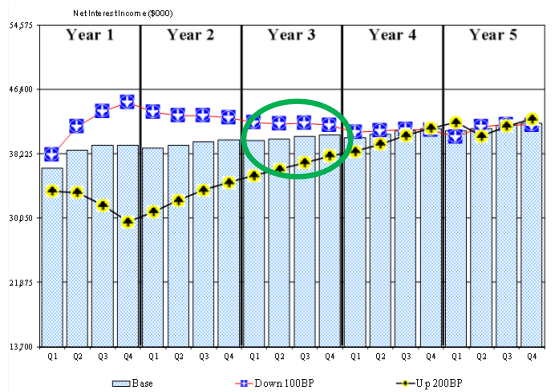
Merit to pro-actively renegotiating prior to contractual reset?

Volume	Rate	Orig. Date	Term	Margin	Cap	Floor	Reprice Date
\$2,868,497	5.00%	6/15/2009	301	3.75%	100.00%	-	7/1/2019
\$1,619,686	4.25%	10/30/2014	181	3.50%	100.00%	4.25%	11/1/2019
\$1,152,473	4.64%	7/1/2010	180	3.75%	100.00%	-	7/1/2019
\$1,122,337	4.64%	6/9/2010	181	3.75%	100.00%	6.25%	7/1/2019
\$472,426	4.38%	9/22/2005	301	3.50%	100.00%	-	10/1/2019
\$415,360	4.75%	8/18/2014	181	3.75%	100.00%	4.75%	9/1/2019
\$380,478	6.00%	7/5/2007	181	3.75%	100.00%	-	8/1/2019
\$339,651	4.63%	6/30/2004	181	3.75%	100.00%	-	7/1/2019
\$314,075	4.16%	11/19/2008	301	3.50%	100.00%	-	12/1/2019
\$308,977	6.13%	8/31/2005	301	3.50%	100.00%	-	9/1/2019
\$264,207	4.00%	11/10/2014	301	3.75%	100.00%	4.00%	12/1/2019
\$247,953	4.25%	8/10/2007	301	3.50%	100.00%	-	9/1/2019
\$225,624	5.52%	6/11/2008	301	3.25%	100.00%	-	7/1/2019
\$194,902	5.75%	6/28/2006	301	3.50%	100.00%	3.50%	7/1/2019
\$185,677	4.63%	10/31/2007	181	3.75%	100.00%	3.75%	11/1/2019

- Could any of these loans go elsewhere at reset?
- Can we pro-actively lock in at a higher rate (albeit lower than contractual reset) and recast prepayment penalties/ additional fees?

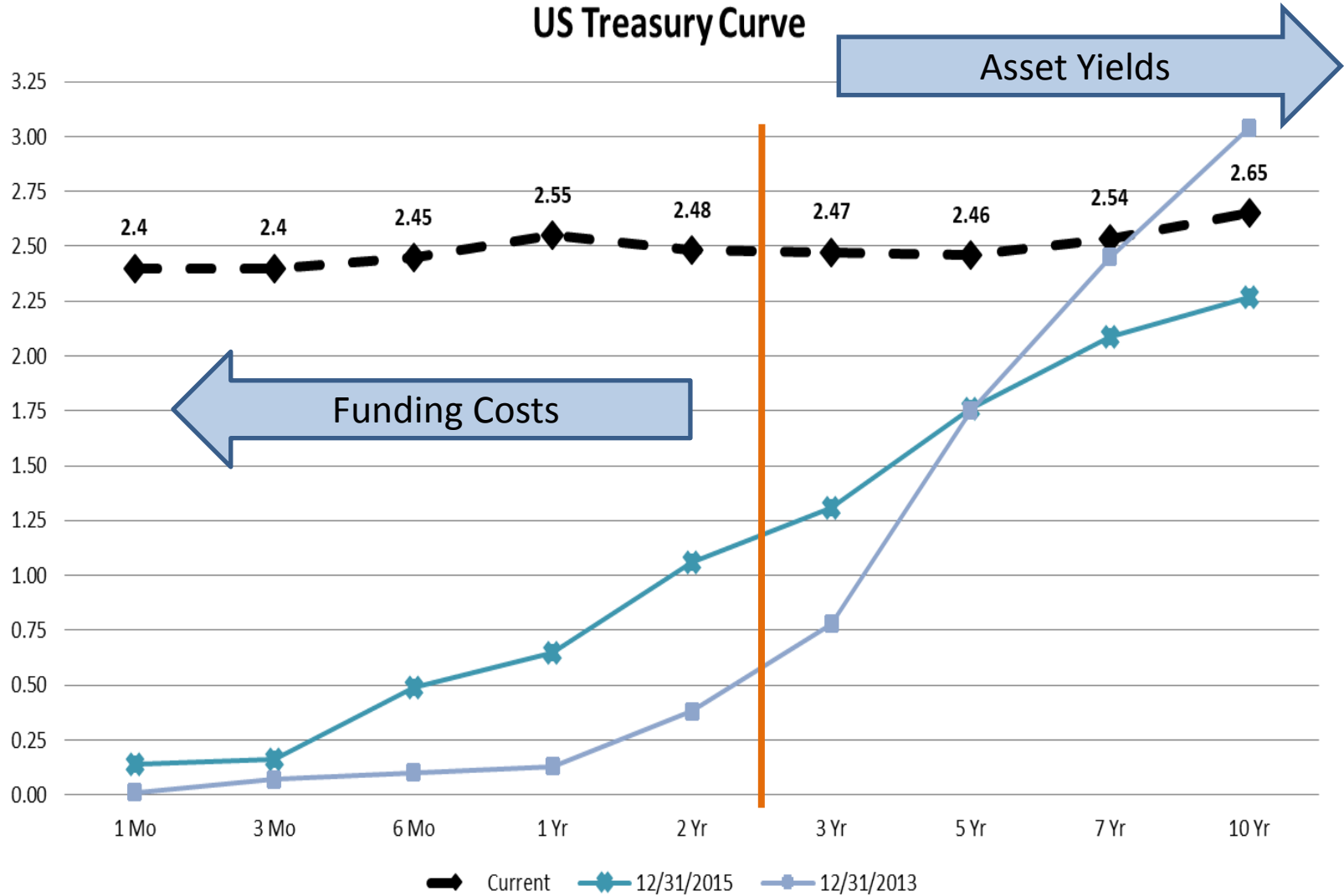


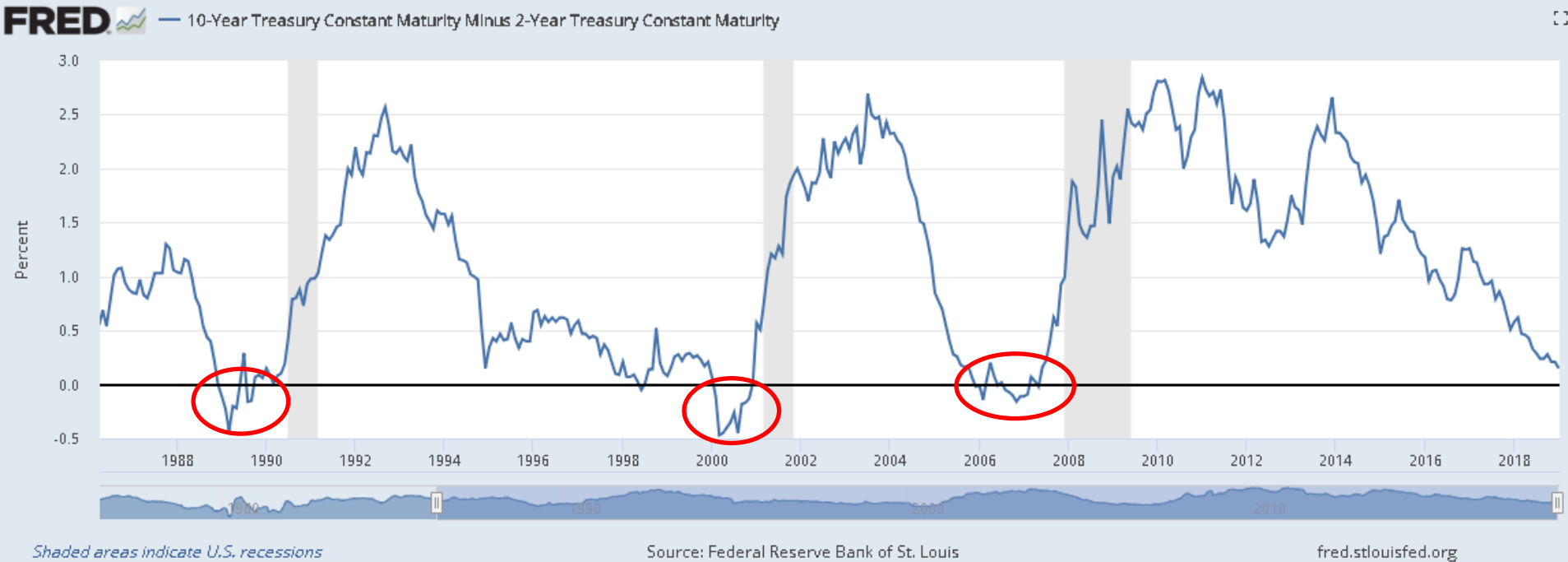
- ◆ Awareness Varies
- ◆ Appetites Vary
- ◆ Biases “Get In The Way”



Interest Rate Risk

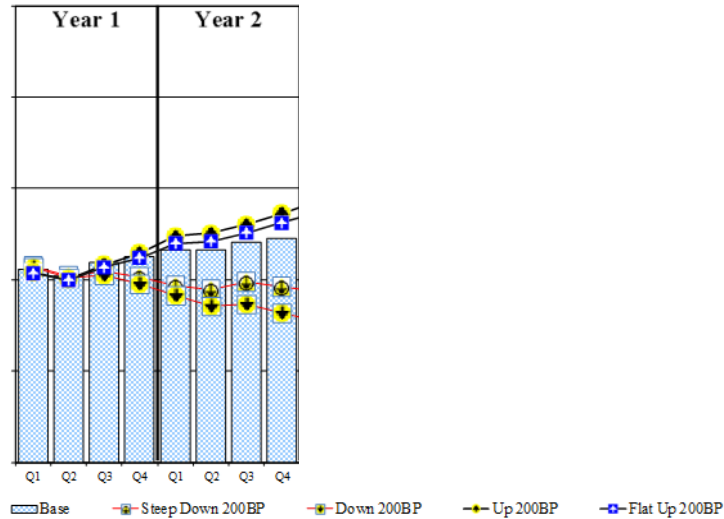
US Treasury Curve



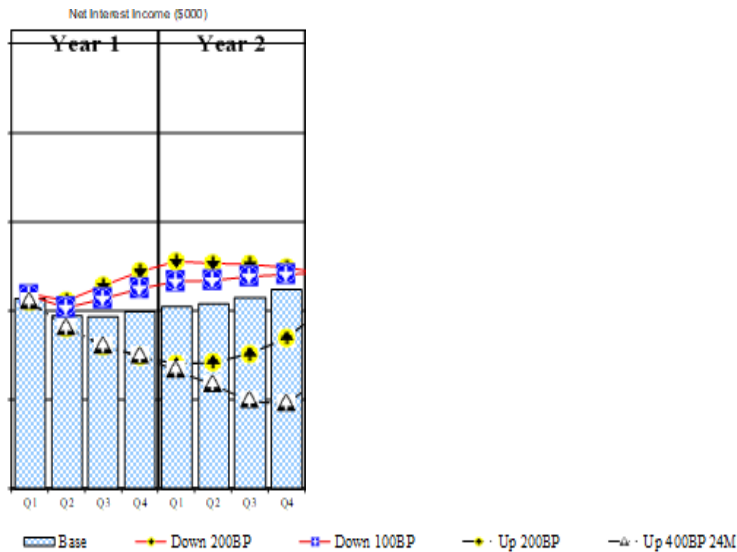


5 Common Missteps

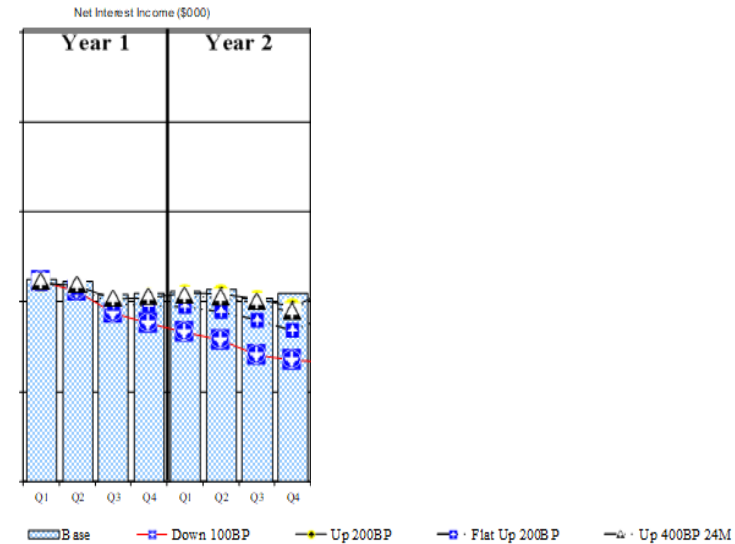
- ◆ Short-term simulations (1-2 years)
- ◆ Focus specifically on rising rates
- ◆ Focus on shocks vs. ramps
- ◆ Statistical review vs. graphical analysis
- ◆ Industry standard assumptions

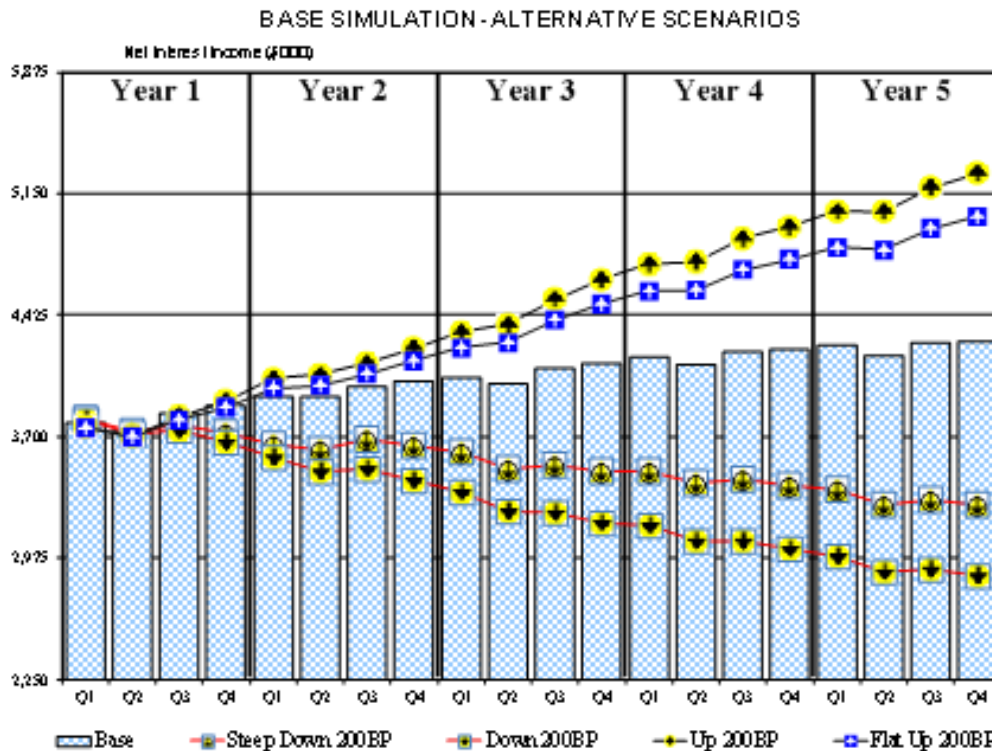


Liability Sensitive



A Little of Both

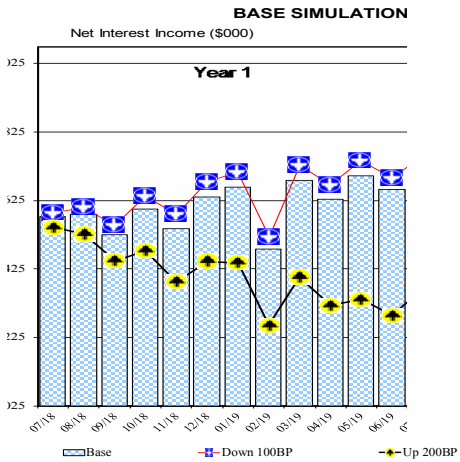




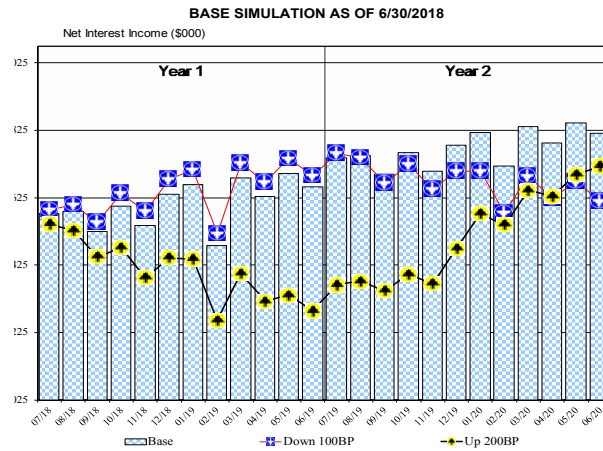
Considerations:

- ◆ Extend cash/pre-invest
- ◆ Consider buying call protection
- ◆ Mismatched leverage
- ◆ Understand capacity to extend assets (“core funding” utilization)
- ◆ Flexibility with commercial deals and structures
- ◆ Hold portion of fixed rate mortgages
- ◆ Positioning of wholesale funding and deposit specials
- ◆ **Understand role of derivatives (floors, receive fixed swaps, etc.)**

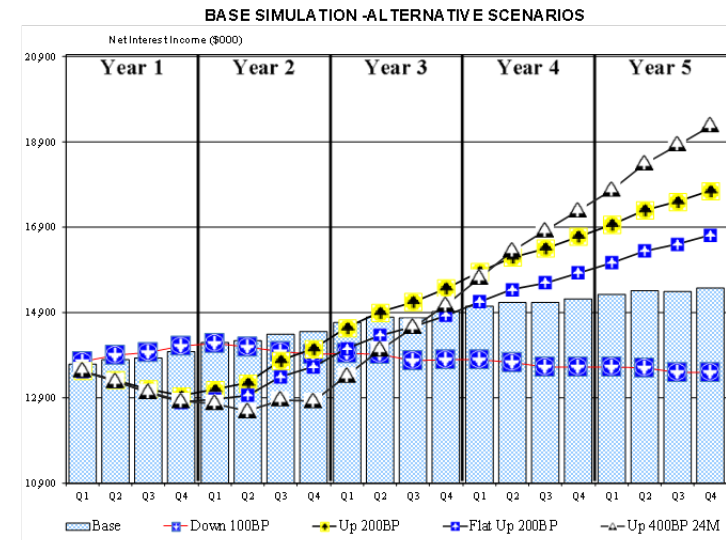
1 Year Simulation



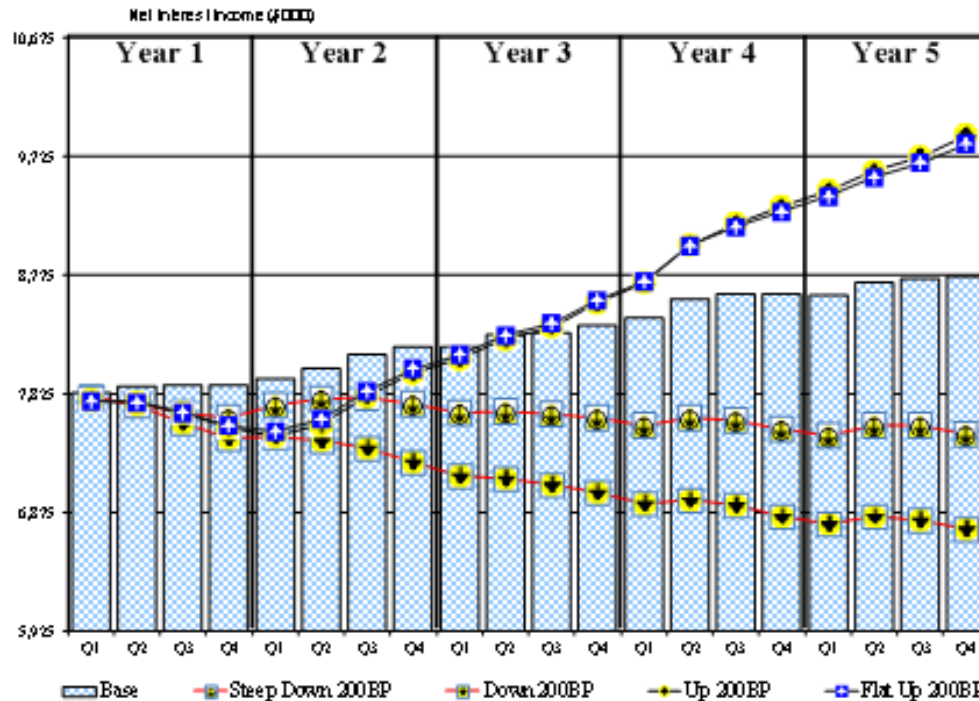
2 Year Simulation



5 Year Simulation



BASE SIMULATION - ALTERNATIVE SCENARIOS



Considerations:

- ◆ Balancing exposure to both rising and falling rates
- ◆ If extending: Understanding how far and how much of protection
- ◆ Cost of insurance? Understand most effective options
- ◆ Should be able to extend assets if disciplined with funding
- ◆ Deposit strategy: new money focus
- ◆ **Swaps/Caps (last of layer approach)**

Liability Sensitive Considerations

Fair Value Hedge (Shorten Assets):

- ✓ Swap Pool of Fixed Rate Assets to Floating
 - “Last-Of-Layer” Method
 - Allows for Partial Term hedging

Cash Flow Hedge (Lengthen Liabilities):

- ✓ Interest Rate Caps: ***Straight Line Premium Amortization***
 - Extend funding with same annual insurance cost

Asset Sensitive Considerations

Cash Flow Hedge (Lengthen Assets):

- ✓ Swapping Prime Floating Loans to Fixed Rate
 - Credit Spreads No Longer Matter
 - Greater flexibility in establishing pools

- ✓ Interest Rate Floors: ***Straight Line Premium Amortization***

Fair Value Hedge (Shorten Liabilities):

- ✓ Swapping Fixed Rate Debt to Floating
 - ✓ Can Hedge Partial Term vs. Entire Term

Case Study 1



	Policy Guidelines	11/30/2018	8/31/2018	5/31/2018	2/28/2018	11/30/2017
LIQUIDITY						
Basic Surplus (Min.)		6.6%	7.2%	5.8%	6.6%	6.5%
Basic Surplus w/ FHLB (Min.)	4.00%	30.5%	32.1%	30.8%	28.8%	28.7%
Basic Surplus w/ FHLB & Brokered (Min.)	8.00%	40.5%	42.1%	40.8%	38.8%	33.7%
Borrowings / Assets (Max.)	20.00%	4.1%	3.8%	3.8%	4.8%	5.1%
Brokered Deposits / Assets (Max.)	10.00%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Wholesale Funds / Assets (Max.)	30.00%	4.1%	3.8%	3.8%	4.8%	5.1%

I. LIQUID ASSETS				
Overnight Funds Sold & Short-Term Investments (avg. balance, if wide daily fluctuations)				33,486
Security Collateral		UST & Agency	MBS / CMOs	
	<i>Collateral Value</i>		Agency Backed	Private Label
		100%	95%	90%
Total Market Value of Securities		49,524	45,988	0
Less Securities Pledged to:				
FHLB		-478	0	0
Fed Discount/Other Secured		0	0	0
Wholesale Repos		0	0	0
Retail Repos/Sweeps		0	0	0
Municipal Deposits		-1,493	0	0
Other		<u>0</u>	<u>0</u>	<u>0</u>
Available / Unencumbered Security Collateral		47,554	43,689	0
				91,243
Over Collateralized Securities Pledging Position				478
Government Guaranteed Loans				1,397
Cash flow (< 30 Days) from Securities not listed above				0
Other Liquid Assets (Int. Bearing Deposits, MM Mutual Funds, etc.)				0
TOTAL LIQUID ASSETS				126,603

TOTAL ASSETS = 1,059,061

**Pct. Of
Assets**

12.0%



II. SHORT TERM / POTENTIALLY VOLATILE LIABILITIES & COVERAGES

Maturing Unsecured Liabilities (< 30 Days)			0
Deposit Coverages			
25% of Regular CDs Maturing < 30 Days			1,294
30% of Jumbo CDs Maturing < 30 Days	6.3%	}	1,850
10% of Other Deposits	of Total Deposits		53,179
TOTAL SHORT TERM / POTENTIALLY VOLATILE LIABILITIES & COVERAGES			

BASIC SURPLUS

70,280

6.6%

2.0%

III. QUALIFYING FHLB LOAN COLLATERAL

A. Maximum Borrowing Line at FHLB (Up to 50% of Assets)		529,530
B. Qualifying Loan Collateral at the FHLB (net of haircut)		296,714
C. Excess Loan Collateral (if A < B)		
Maximum Borrowing Capacity (Lesser of A or B)		296,714
Collateral Currently Encumbered by Outstanding Advances/Letters of Credit		43,504
REMAINING FHLB LOAN BASED BORROWING CAPACITY		253,210

BASIC SURPLUS W/ FHLB

323,489

30.5%

4.0%

8.0%

IV. BROKERED DEPOSIT ACCESS

Maximum Board Authorized Brokered Deposit Capacity (10% of Total Assets)		105,906
Current Brokered Deposit Balances		0
REMAINING CAPACITY TO UTILIZE BROKERED DEPOSITS		105,906

BASIC SURPLUS W/ FHLB & BROKERED DEPOSITS

429,395

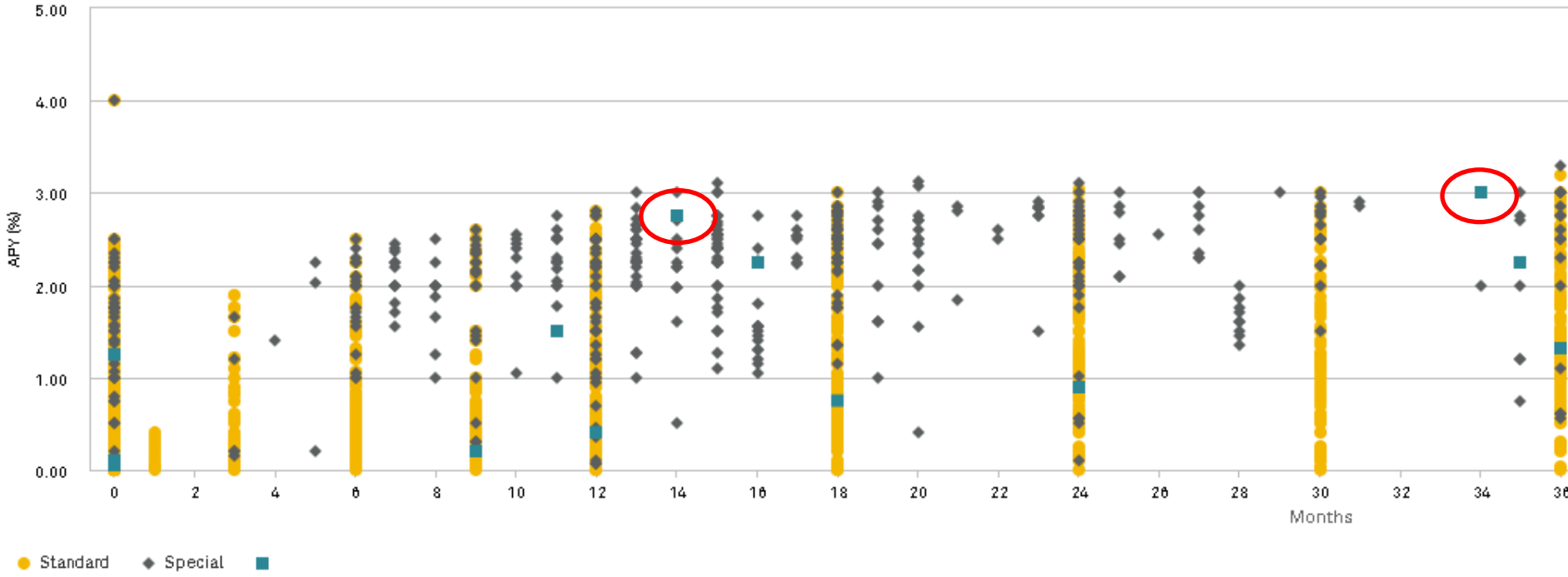
40.5%

8.0%

<u>Policy Limits (Min.)</u>	
<u>Well Capitalized</u>	<u>< Well Capitalized</u>

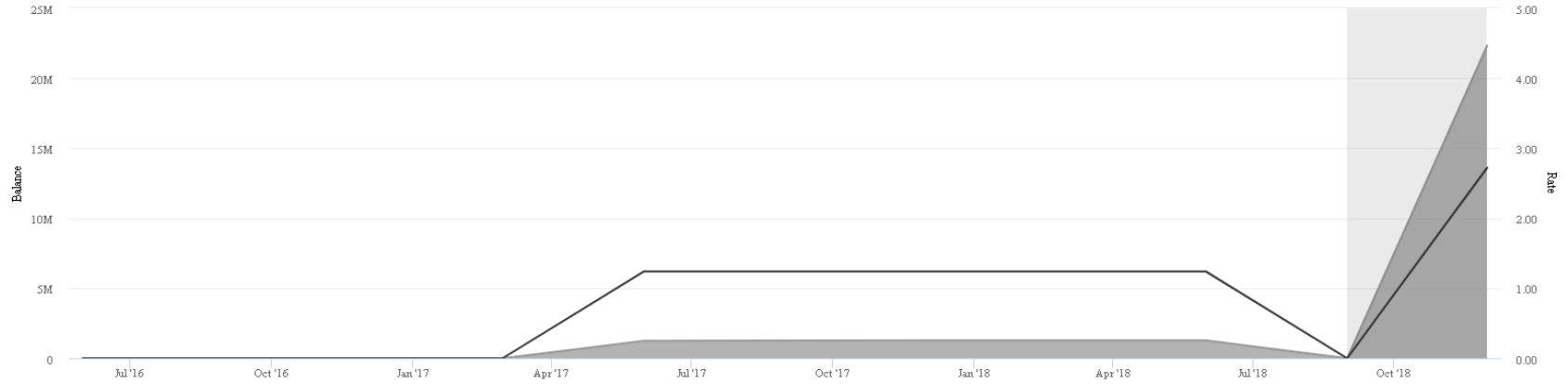
Net Loan Growth	\$25MM
Net Deposit Flows	\$5MM
Net Cash Flow	\$-20MM
Cash/Investment Cash Flow Due	\$38MM
Wholesale Funding Maturities	\$10MM

Checking, Money Market, Savings, Time Deposit - includes Massachusetts Market Rates



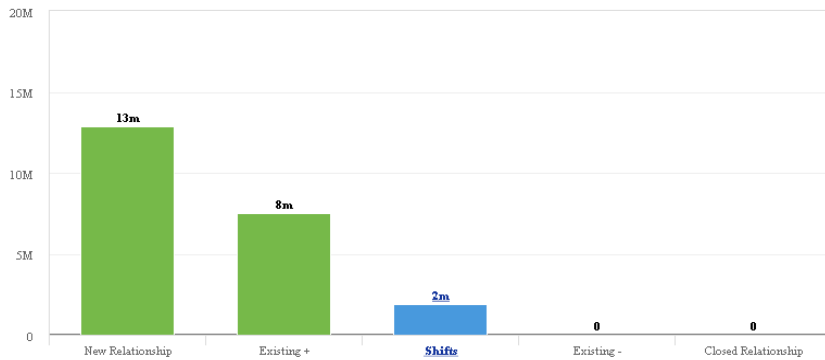
Special 14 Month-

Deposit Migration



08/31/2018 - 11/30/2018

Calculate

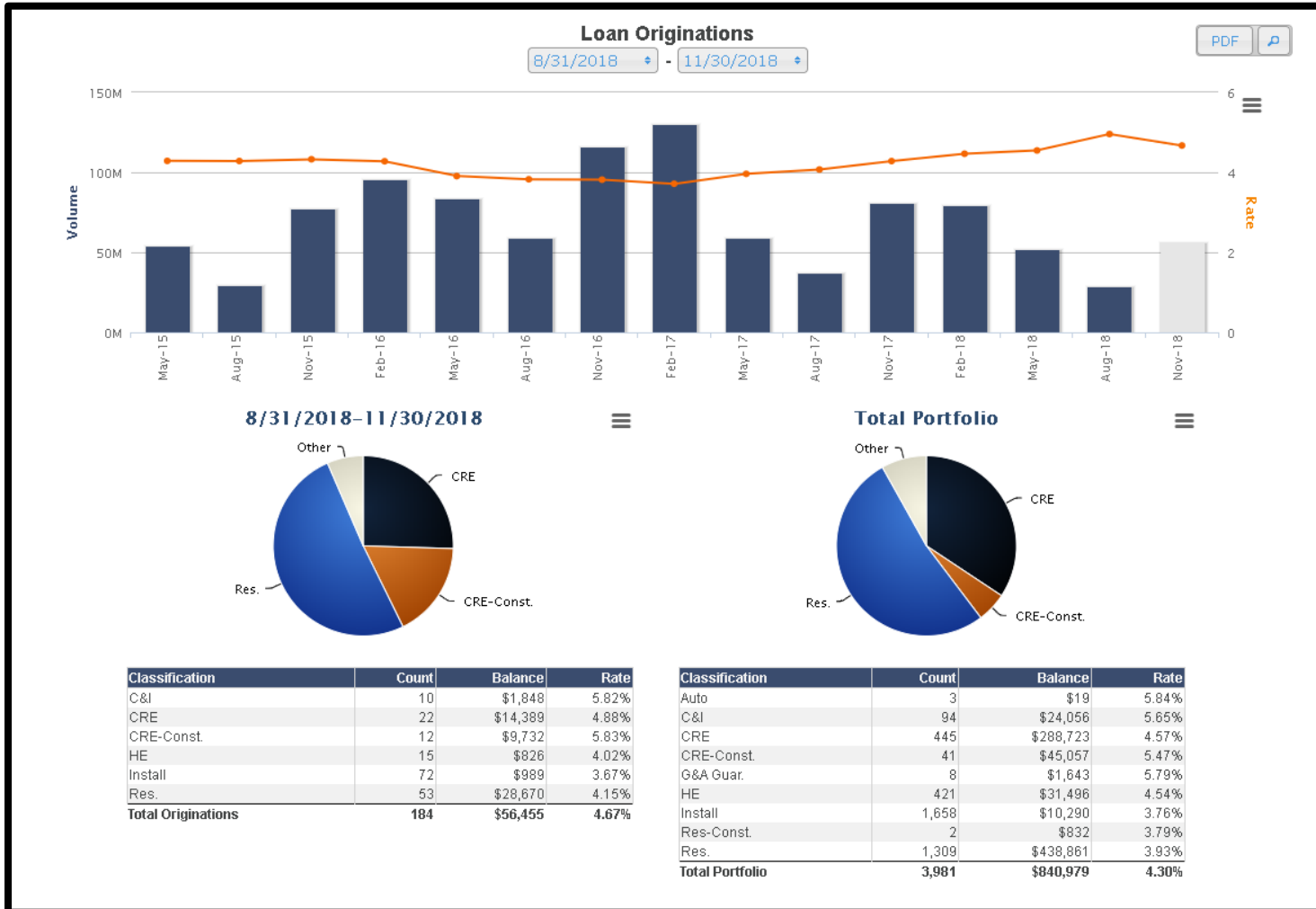


MCOF
2.91%

Cannibalization
9%

Attrition
0%

	Balance(1,000s)	Rate	# Rel.
Starting Balance	0k	0.00	0
INFLOW			
New Relationship	12,892k	2.72	140
Existing +	7,511k	2.72	110
SHIFTS			
DDA	157k	0.00	18
NOW	5k	0.05	3
SAV	1,298k	0.70	28
MMDA	10k	0.22	2
TD	442k	1.02	15
OUTFLOW			
Existing -	0k	0.00	0
Closed Relationship	0k	0.00	0
Ending Balance	22,315k	2.72	264



Origination Yields
Since Last Fall:

- 4.67%
- 4.96%
- 4.55%
- 4.46%
- 4.28%

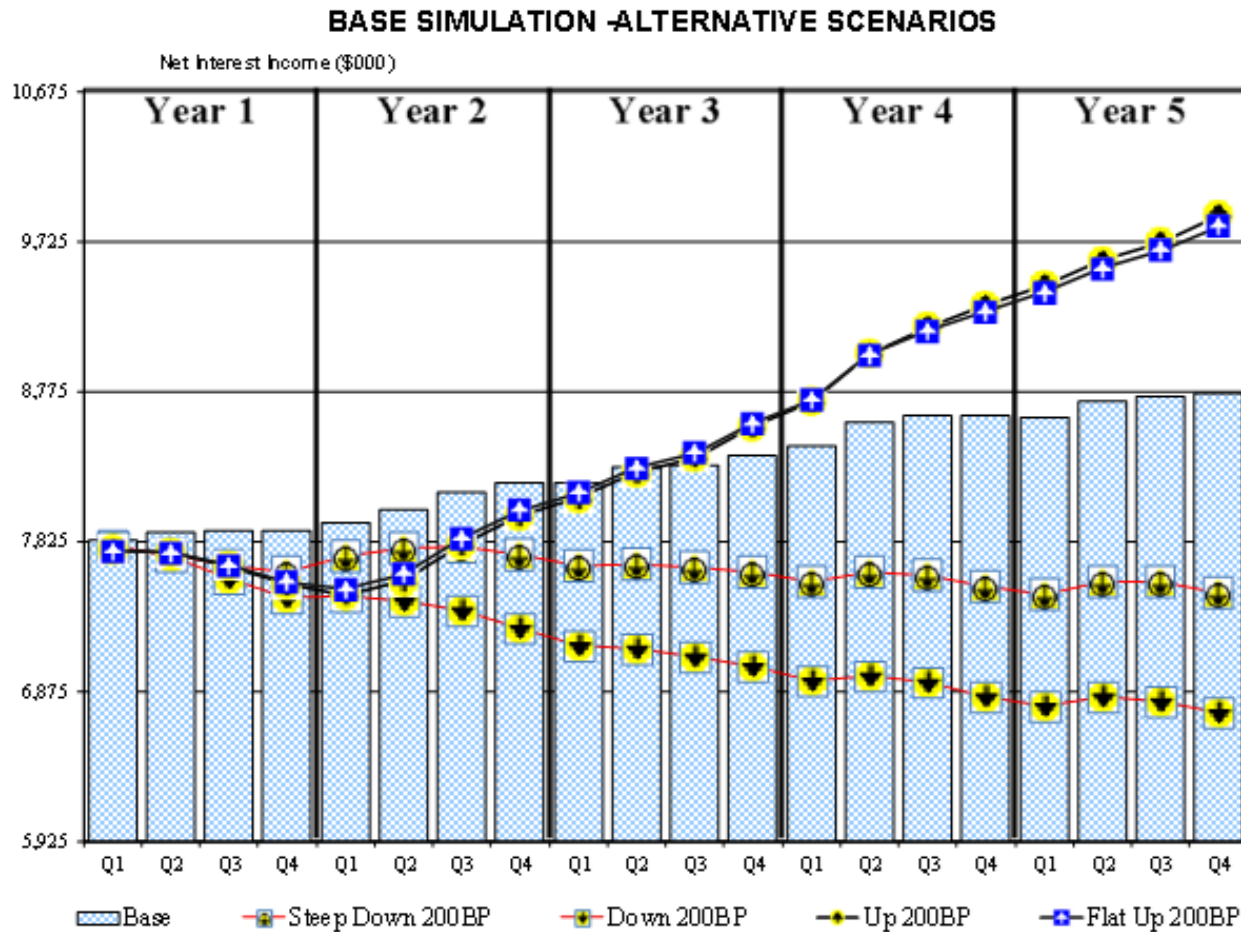


CRE														
	Originations					Cap			Floor			Total Portfolio		
	Count	Volume	Rate	Term	Margin	Count	Volume	Rate	Count	Volume	Rate	Count	Volume	Rate
Fixed	5	\$3,469	4.91%	63	-	-	-	-	-	-	-	148	\$83,233	4.86%
Adjustable	15	\$10,813	4.85%	235	2.43%	15	\$10,813	16.72%	15	\$10,813	4.14%	258	\$180,656	4.48%
CMT 1 Year (12M)	7	\$4,404	4.50%	360	2.75%	7	\$4,404	10.50%	7	\$4,404	2.75%	87	\$33,740	4.36%
FHLB Boston 5 Year (60M)	8	\$6,409	5.09%	149	2.21%	8	\$6,409	21.00%	8	\$6,409	5.09%	134	\$112,535	4.68%

Res.														
	Originations					Cap			Floor			Total Portfolio		
	Count	Volume	Rate	Term	Margin	Count	Volume	Rate	Count	Volume	Rate	Count	Volume	Rate
Fixed	27	\$13,746	4.57%	339	-	-	-	-	-	-	-	886	\$263,252	4.17%
10Yr	2	\$331	3.88%	120	-	-	-	-	-	-	-	36	\$4,009	3.31%
15Yr	3	\$1,112	4.23%	180	-	-	-	-	-	-	-	126	\$22,654	3.43%
30Yr	22	\$12,302	4.62%	360	-	-	-	-	-	-	-	661	\$228,095	4.25%
Adjustable	26	\$14,924	3.77%	351	2.75%	26	\$14,924	9.77%	26	\$14,924	2.75%	423	\$175,609	3.56%
CMT 1 Year (12M)	26	\$14,924	3.77%	351	2.75%	26	\$14,924	9.77%	26	\$14,924	2.75%	409	\$172,771	3.56%
	53	\$28,670	4.15%	345								1,309	\$438,861	3.93%

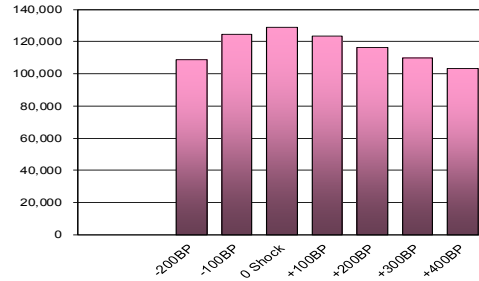
- ◆ How has pricing changed given recent yield curve movements?
- ◆ Falling rate protection remains critical

	Policy Guidelines	11/30/2018	8/31/2018	5/31/2018	2/28/2018	11/30/2017
INTEREST RATE RISK						
Earnings at Risk (Max.)						
Pct.(%) Change in Net Interest Income with +/- 200bps ramp (12 Mths)						
Year 1 NII (% Change from Year 1 - Base)	-10.00%					
Down 200BP		-2.9%	-2.4%	-2.2%	-2.1%	-2.1%
Up 200BP		-2.4%	-2.2%	-2.5%	-2.7%	-2.9%
Year 2 NII (% Change from Year 1 - Base)						
Base		2.5%	1.4%	2.5%	2.1%	-0.2%
Down 200BP		-6.1%	-7.3%	-6.1%	-6.2%	-8.9%
Up 200BP		-2.1%	-2.1%	0.4%	-0.6%	-3.5%
Core Funding Utilization (Max.)						
Base		49.4%	46.8%	42.9%	43.1%	40.7%
Down 200BP		24.9%	39.7%	35.9%	34.5%	28.5%
Up 200BP		54.8%	51.6%	47.7%	48.8%	48.5%
EVE Analysis						
Pre-shock EVE ratio		12.55%	12.57%	12.66%	12.34%	12.53%
Post-shock EVE ratio	7.00%	10.12%	11.48%	11.76%	10.68%	11.30%
Basis Point Change in EVE		-243	-109	-90	-166	-123
Percentage Change in EVE	-20.00%	-15.62%	-6.38%	-4.53%	-22.84%	-7.68%
Policy Guidelines are for -200 scenario. See EVE report for detail.		-200	-100	-100	+400	-100

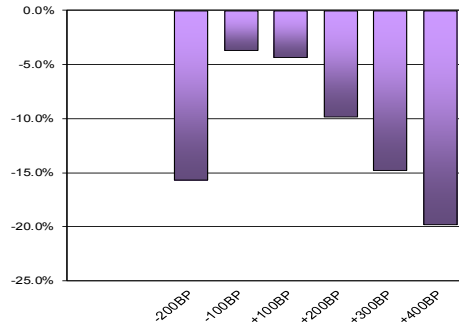


6.5 year life (Study)

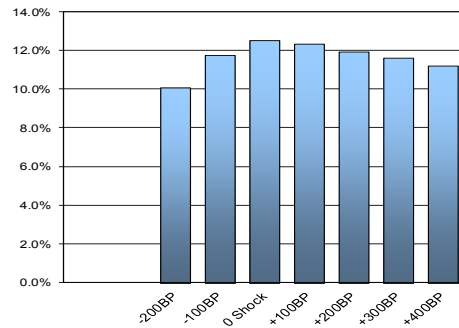
Economic Value of Equity (\$000s)



EVE (\$) - Pct. Chg from 0 Shock

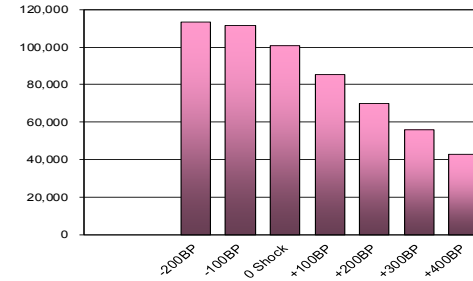


EVE Ratio (EVE/EVA)

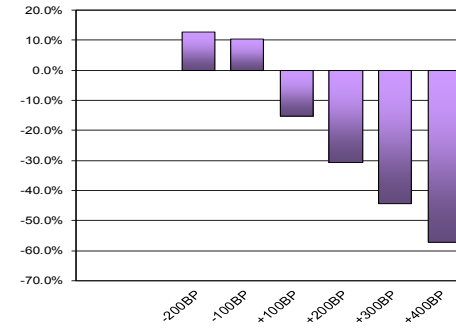


2.5 year life (Stress)

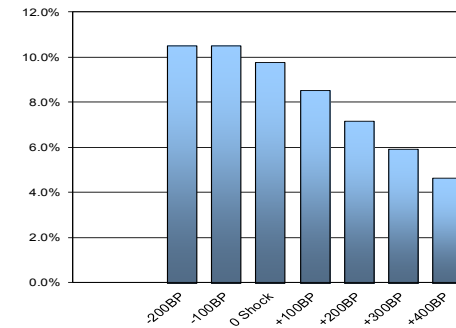
Economic Value of Equity (\$000s)



EVE (\$) - Pct. Chg from 0 Shock



EVE Ratio (EVE/EVA)



	Policy Guidelines	11/30/2018	8/31/2018	5/31/2018	2/28/2018	11/30/2017
CAPITAL RATIOS						
Tier 1 Leverage (Min.)	5.00%	10.83%	10.57%	10.52%	10.35%	10.33%
Total Risk Based (Min.)	10.00%	17.53%	17.00%	16.63%	16.38%	16.40%
Common Equity Tier 1 (Min.)		16.82%	16.31%	15.95%	15.70%	15.72%
<i>Capital Ratios are based upon the 9/30/2018 call report.</i>						
OTHER BALANCE SHEET INFORMATION						
Balance Sheet Spread		2.96%	2.97%	3.06%	3.01%	2.98%
Total Assets (Millions)		\$1,059.1	\$1,053.1	\$1,053.6	\$1,049.3	\$1,041.5
Investments (Millions)		\$158.5	\$178.2	\$151.0	\$159.7	\$162.4
Gross Loans (Millions)		\$843.7	\$820.3	\$848.5	\$835.2	\$822.3
Deposits (Millions)		\$887.9	\$886.1	\$884.9	\$873.3	\$858.9
Borrowings (Millions)		\$43.5	\$39.5	\$39.8	\$50.0	\$53.5
Net Loans / Assets		79.3%	77.5%	80.2%	79.2%	78.6%
Net Loans / Deposits		94.6%	92.2%	95.5%	95.1%	95.3%
Loan Loss / Loans		0.57%	0.58%	0.56%	0.57%	0.58%

Elements of Strategies:

Funding

- Discuss growth expectations for 2019
 - o Differentiate offensive and defensive strategies
- Discuss recent pricing trends... *How much more can we lag on the NMD base?*
- Review balance migration and retention trends... *What were differences in 14 and 16 Month Special activity?*
- Discuss wholesale funding game plan

Lending

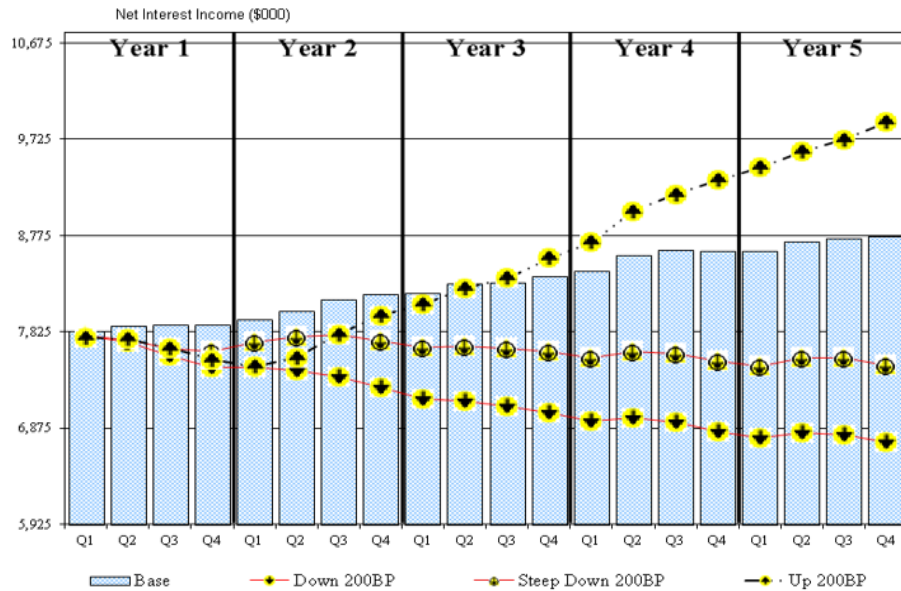
- Discuss growth expectations for 2019. . . ***\$25 million of quarterly fixed rate growth (see simulation)***
- Discuss pricing and structure... *Can we keep pushing yields higher?*
- Review capacity for adding duration within the portfolio
- Protect against falling rates... *If cannot include at origination, can we explore synthetic avenues via derivatives?*

Investments

- Discuss plan for upcoming cash flow and any excess cash
- Discuss on-balance sheet liquidity cushion and future ability to shift cash flow towards loans

Potential Strategy	Expected Results	Risks
<p>Originate and hold \$25 million fixed rate loans</p> <ul style="list-style-type: none"> - \$15MM CRE - \$10MM Res <p>Funded with ST FHLB advances</p>	<p><u>Liquidity:</u></p> <ul style="list-style-type: none"> ◆ Liquid Assets: Neutral/Slight Decline ◆ Total Liquidity: Down Marginally ◆ Liquidity Assessment: <i>Still Strong</i> <p><u>IRR:</u></p> <ul style="list-style-type: none"> ◆ Protect against falling rates ◆ Increase near-term exposure to rising rates <p><u>Earnings:</u></p> <ul style="list-style-type: none"> ◆ Higher run rate of income 	<ul style="list-style-type: none"> ◆ Credit ◆ Rates increase greater than expected over the long-term ◆ Prepayment risk if rates fall

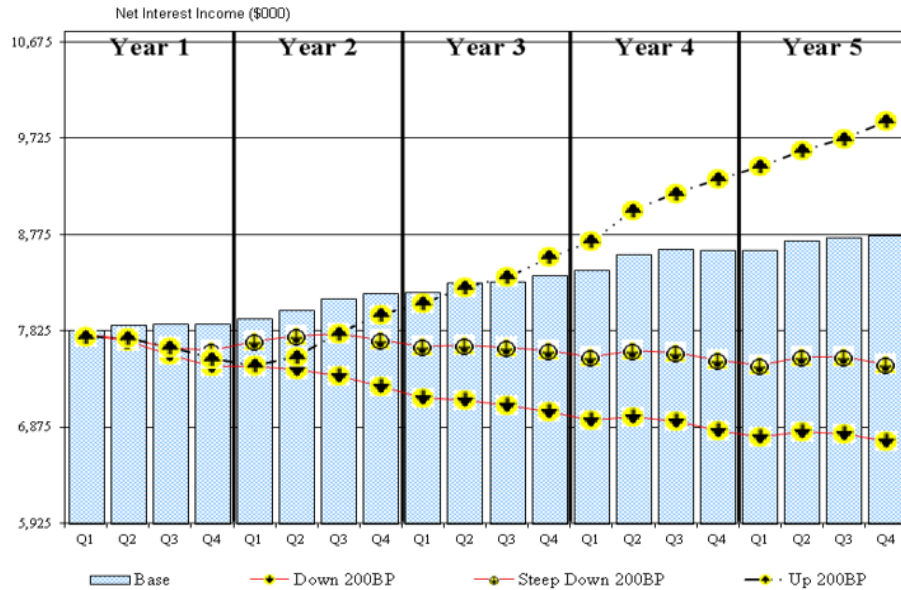
Base Simulation as of 11/30/2018



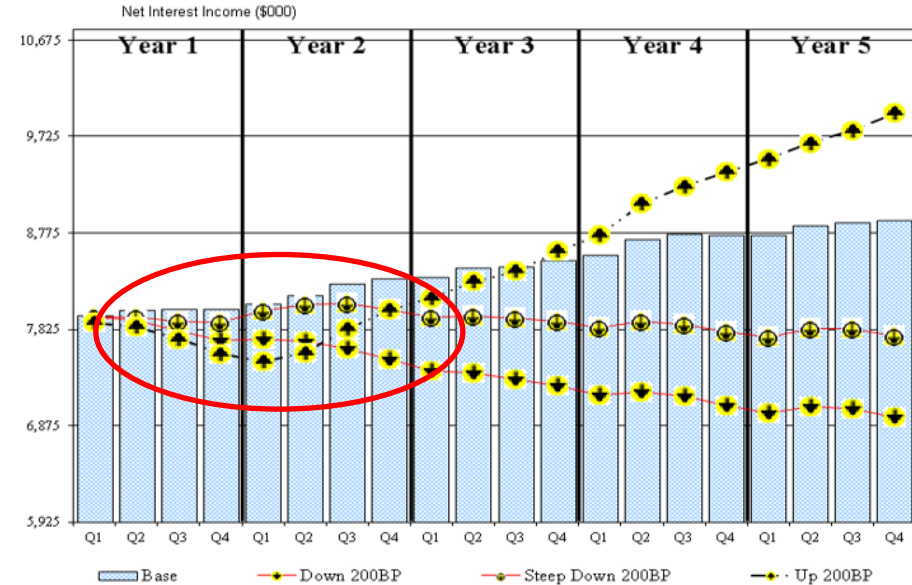
\$25MM Loan Growth Funded Short and Interest Rate Swap

Potential Strategy	Expected Results	Risks
<p>Originate and hold \$25 million fixed rate loans</p> <ul style="list-style-type: none"> - \$15MM CRE - \$10MM Res <p>Funded with ST FHLB advances</p> <p>Incorporate 2 Year Interest Rate Swap</p>	<p><u>Liquidity:</u></p> <ul style="list-style-type: none"> ◆ Liquid Assets: Neutral/Slight Decline ◆ Total Liquidity: Down Marginally ◆ Liquidity Assessment: <i>Still Strong</i> <p><u>IRR:</u></p> <ul style="list-style-type: none"> ◆ Protect against falling rates ◆ Neutralize exposure to rising rates over next two years <p><u>Earnings:</u></p> <ul style="list-style-type: none"> ◆ Higher run rate of income 	<ul style="list-style-type: none"> ◆ Credit ◆ Prepayment risk if rates fall ◆ Accounting risk ◆ Counterparty risk ◆ Price risk

Base Simulation as of 11/30/2018



\$25MM Fixed Rate Loan Growth



Year	-200 bps	-200 Stpn	Base	+200 bps
1	\$795	\$852	\$552	\$309
2	\$1,011	\$1,129	\$552	\$102
3	\$970	\$1,095	\$552	\$152
Total	\$2,776	\$3,076	\$1,656	\$563

Case Study 2

	Policy Guidelines	10/31/2018	7/31/2018	4/30/2018	1/31/2018	10/31/2017
LIQUIDITY						
Basic Surplus (Min.)		8.2%	9.5%	6.1%	5.5%	6.9%
Basic Surplus w/ FHLB (Min.)	10.00%	27.2%	28.0%	24.3%	22.8%	24.1%
Basic Surplus w/ FHLB & Brokered (Min.)	15.00%	42.2%	43.0%	33.6%	30.5%	34.0%
Borrowings / Assets (Max.)	25.00%	1.4%	1.9%	3.2%	3.8%	4.6%
Brokered Deposits / Assets (Max.)	15.00%	0.0%	0.0%	5.7%	7.3%	5.1%
Total Wholesale Funds / Assets (Max.)		1.4%	1.9%	8.9%	11.1%	9.6%

I. LIQUID ASSETS			
Overnight Funds Sold & Short-Term Investments (avg. balance, if wide daily fluctuations)			9,925
Security Collateral		UST & Agency	MBS / CMOs
	<i>Collateral Value</i>	100%	Agency Backed Private Label
		95%	90%
Total Market Value of Securities		17,253	52,173 0
Less Securities Pledged to:			
FHLB		0	0 0
Fed Discount/Other Secured		0	0 0
Wholesale Repos		0	0 0
Retail Repos/Sweeps		0	-4,713 0
Municipal Deposits		0	-12,713 0
Other		0	0 0
Available / Unencumbered Security Collateral		17,253	33,010 0
			50,263
Over Collateralized Securities Pledging Position			6,124
Government Guaranteed Loans			0
Cash flow (< 30 Days) from Securities not listed above			0
Other Liquid Assets (Int. Bearing Deposits, MM Mutual Funds, etc.)			3,500
TOTAL LIQUID ASSETS			69,811

TOTAL ASSETS = 484,033

Pct. Of Assets

14.4%

II. SHORT TERM / POTENTIALLY VOLATILE LIABILITIES & COVERAGES		
Maturing Unsecured Liabilities (< 30 Days)		0
Deposit Coverages		
25% of Regular CDs Maturing < 30 Days		2,521
30% of Jumbo CDs Maturing < 30 Days	7.2%	885
10% of Other Deposits	of Total Deposits	26,792
TOTAL SHORT TERM / POTENTIALLY VOLATILE LIABILITIES & COVERAGES		30,198

BASIC SURPLUS 39,613 8.2%

III. QUALIFYING FHLB LOAN COLLATERAL	
A. Maximum Borrowing Line at FHLB (Up to 50% of Assets)	242,017
B. Qualifying Loan Collateral at the FHLB (net of haircut)	104,860
C. Excess Loan Collateral (if A < B)	
Maximum Borrowing Capacity (Lesser of A or B)	104,860
Collateral Currently Encumbered by Outstanding Advances/Letters of Credit	12,680
REMAINING FHLB LOAN BASED BORROWING CAPACITY	92,180

BASIC SURPLUS W/ FHLB 131,793 27.2%

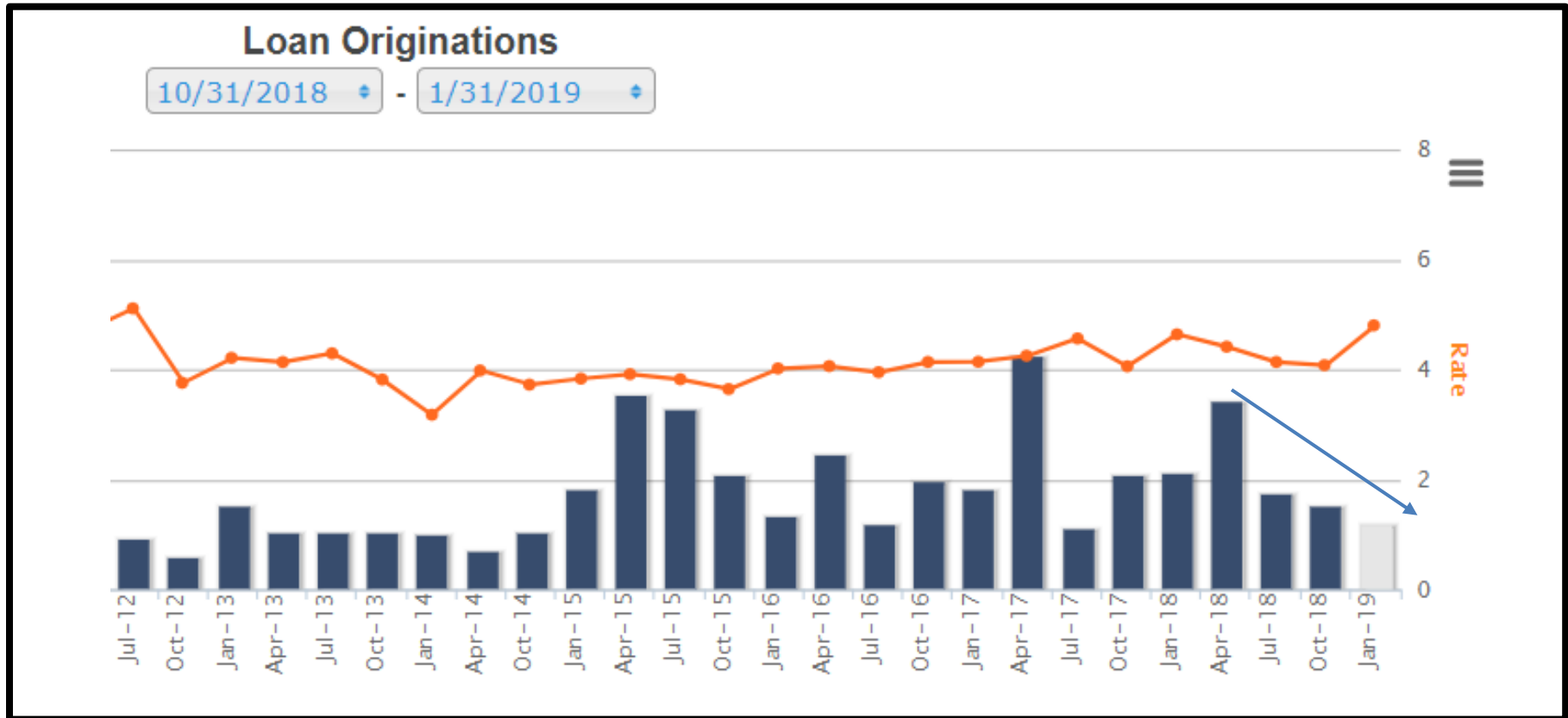
IV. BROKERED DEPOSIT ACCESS	
Maximum Board Authorized Brokered Deposit Capacity (15% of Total Assets)	72,605
Current Brokered Deposit Balances	0
REMAINING CAPACITY TO UTILIZE BROKERED DEPOSITS	72,605

BASIC SURPLUS W/ FHLB & BROKERED DEPOSITS 204,398 42.2%

Policy Limits (Min.)	
Well Capitalized	< Well Capitalized
8.2%	10.0%
27.2%	15.0%

Net Loan Growth	\$5MM
Net Deposit Flows	\$10MM
Net Cash Flow	\$5MM
Cash/Investment Cash Flow Due	\$15MM
Wholesale Funding Maturities	\$0MM

- What is the strategy with the cash surplus?
- How aggressive do we need to be with deposit pricing?
- How can increase loan activity?



Originations falling: Why? Accelerated refinancing activity? Losing deals on price?

Checking, Money Market, Savings, Time Deposit - includes Hillsborough, NH (County) Market Rates



Policy Guidelines	10/31/2018	7/31/2018	4/30/2018	1/31/2018	10/31/2017
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INTEREST RATE RISK

Earnings at Risk (Max.)

Pct.(%) Change in Net Interest Income with +/- 200bps ramp (12 Mths)

Year 1 NII (% Change from Year 1 - Base)

10.00%

Down 200BP

-2.0%

-1.3%

-0.8%

-0.9%

-0.9%

Up 200BP

-0.2%

0.5%

-0.6%

-1.5%

0.3%

24 Month NII (% Change from Base)

15.00%

Down 200BP

-7.1%

-3.2%

-3.1%

-3.1%

-3.3%

Up 200BP

1.8%

3.6%

3.1%

1.4%

3.5%

Core Funding Utilization (Max.)

Base

39.0%

37.4%

34.8%

35.2%

30.7%

Down 200BP

28.5%

32.5%

30.1%

30.4%

26.1%

Up 200BP

45.6%

44.3%

41.4%

42.4%

38.0%

EVE Analysis

Pre-shock EVE ratio

13.81%

12.70%

Post-shock EVE ratio

8.00%

11.83%

11.40%

Basis Point Change in EVE

-198

-130

Percentage Change in EVE

-20.00%

-10.83%

-8.61%

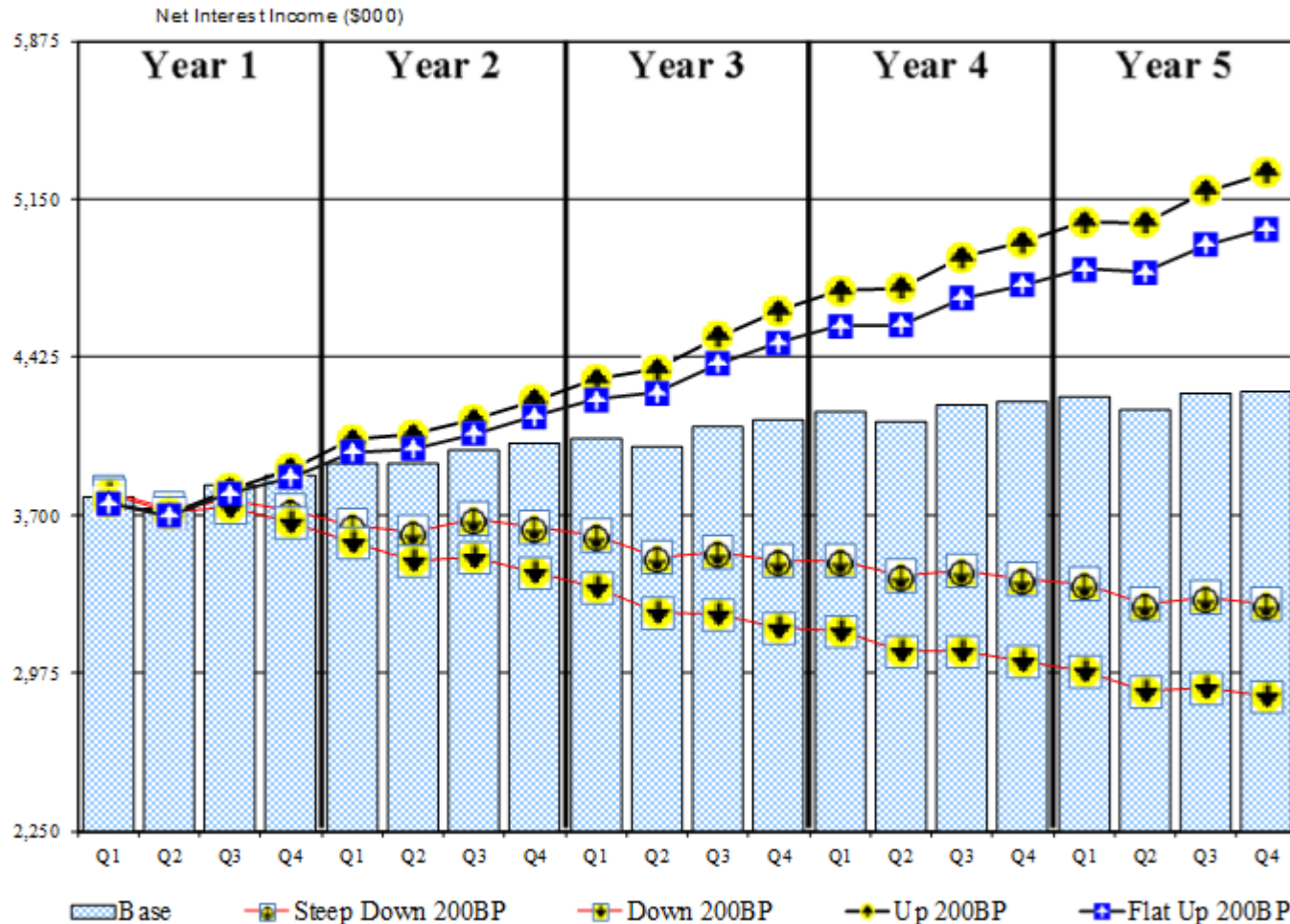
Policy Guidelines are for -200 scenario. See EVE report for detail.

-200

-100

Prior to the 10/31/2018 review, the down scenario represents a Down 100BP scenario.

BASE SIMULATION -ALTERNATIVE SCENARIOS



INTEREST RATE SCENARIOS

	Base		Down 200BP		Up 200BP		Up 400BP 24M	
Assets (> 60 Months)	95,212		69,529		111,499		113,471	
<u>Core Liabilities (> 60 Months)</u>	<u>Volume</u>	<u>Cumulative Excess</u>	<u>Volume</u>	<u>Cumulative Excess</u>	<u>Volume</u>	<u>Cumulative Excess</u>	<u>Volume</u>	<u>Cumulative Excess</u>
Equity	49,611		49,611		49,611		49,611	
Other Liabilities	6,386		6,386		6,386		6,386	
DDA	64,499	25,284	64,499	50,967	64,499	8,997	64,499	7,025
NOW	65,306	90,590	65,306	116,273	65,306	74,303	65,306	72,331
Savings	58,546	149,136	58,546	174,819	58,546	132,849	58,546	130,877
	244,348		244,348		244,348		244,348	
% Utilization	39.0%		28.5%		45.6%		46.4%	

Discuss in terms of capacity to add fixed rate assets

Policy Guidelines	10/31/2018	7/31/2018	4/30/2018	1/31/2018	10/31/2017
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CAPITAL RATIOS

Tier 1 Leverage (Min.)	8.00%	10.51%	10.91%	10.77%	10.58%	10.48%
Total Risk Based (Min.)	12.00%	16.32%	16.39%	16.18%	16.00%	16.16%
Common Equity Tier 1 (Min.)	8.00%	15.51%	15.58%	15.36%	15.19%	15.32%
<i>Capital ratios are from 9/30/2018 call report data.</i>						

OTHER BALANCE SHEET INFORMATION

Balance Sheet Spread		3.12%	3.06%	3.23%	3.42%	3.29%
Total Assets (Millions)		\$484.0	\$482.0	\$460.6	\$457.2	\$454.6
Investments (Millions)		\$97.8	\$101.0	\$81.4	\$77.5	\$84.5
Gross Loans (Millions)		\$352.7	\$348.0	\$349.3	\$349.2	\$339.8
Deposits (Millions)		\$421.4	\$417.1	\$392.2	\$386.3	\$380.7
Borrowings (Millions)		\$6.7	\$9.2	\$14.8	\$17.2	\$20.7
Net Loans / Assets	80.00%	72.4%	71.7%	75.3%	75.8%	74.2%
Net Loans / Deposits		83.1%	82.8%	88.4%	89.8%	88.6%
Loan Loss / Loans		0.70%	0.71%	0.70%	0.70%	0.71%

Elements of Strategies:

Funding

- Discuss pricing strategy given Fed pause and liquidity needs
- Review CD special activity...new money vs. cannibalization?
- Discuss next steps for MMDA pricing
- Discuss strategy for upcoming CD special maturities
- Update on municipal deposit activity and pricing strategy
- Review/discuss potentially volatile liabilities: High-rate deposit and uninsured deposit concentrations

Lending

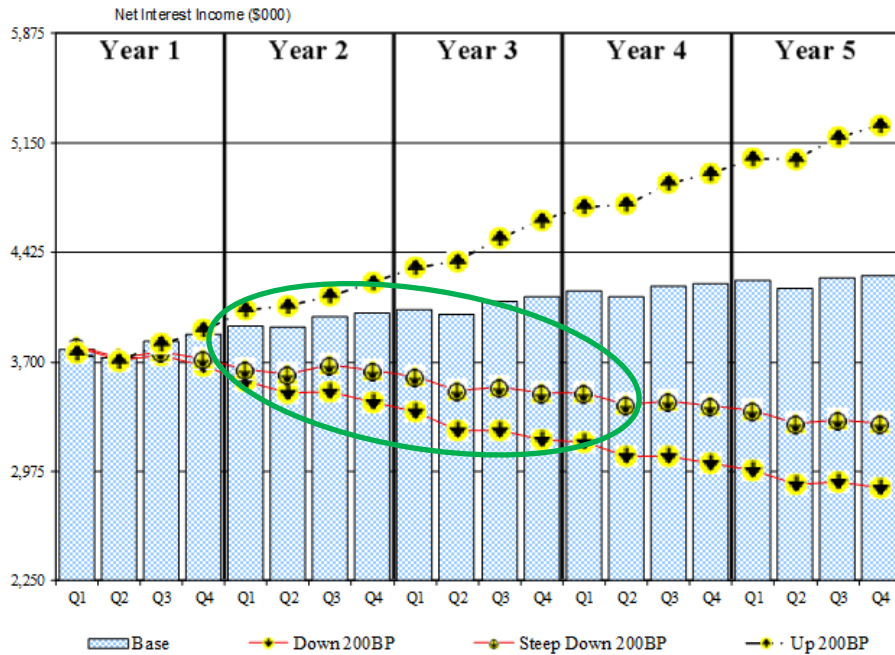
- Discuss capacity for fixed rate lending
- Discuss loan pricing activity given market rally
- Review upcoming loan repricings/maturities

Investments/Other

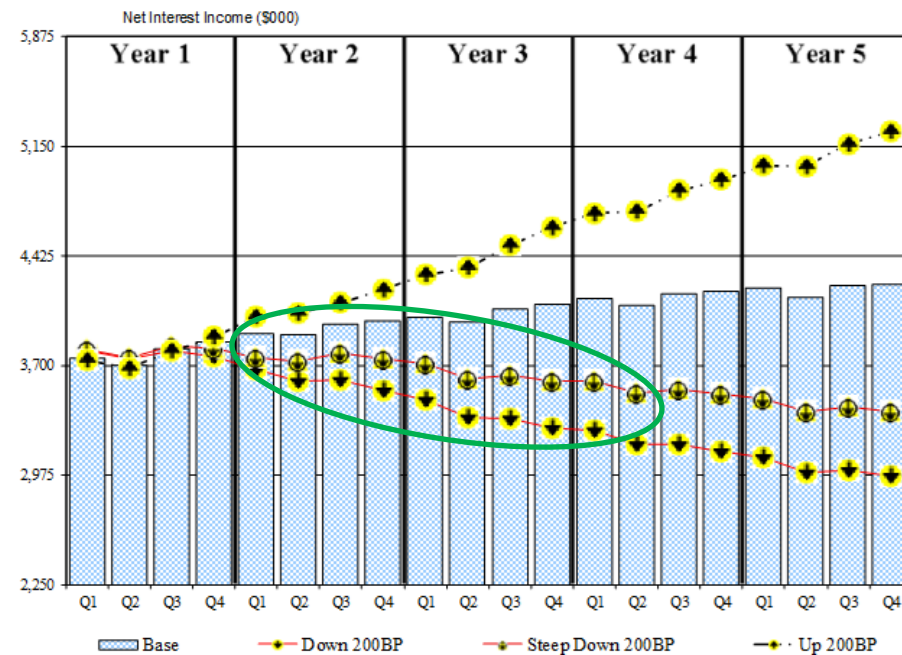
- Revisit hedging opportunities to protect against falling rates
- Discuss strategy for excess cash...review bond extension strategy and call protection securities

Potential Strategy	Expected Results	Risks
<p>Execute \$25MM at-the-money floor</p> <p>❖ <i>Recent FASB rule changing on hedge accounting allows for a macro-level hedge strategy that did not exist before</i></p>	<p><u>Liquidity:</u></p> <ul style="list-style-type: none"> ◆ Need to post collateral ◆ No material change <p><u>IRR:</u></p> <ul style="list-style-type: none"> ◆ Protects against worst case scenario: falling rates <p><u>Earnings:</u></p> <ul style="list-style-type: none"> ◆ Initial cost today 	<ul style="list-style-type: none"> ◆ Accounting risk ◆ Price risk ◆ Counter-party risk ◆ Rates increase <p><i>Keys to execute:</i></p> <ul style="list-style-type: none"> ◆ <i>Update policy</i> ◆ <i>ALCO/Board education</i> ◆ <i>Accounting understanding</i>

Base Model as of 10/31/2018



\$25MM Interest Rate Floor

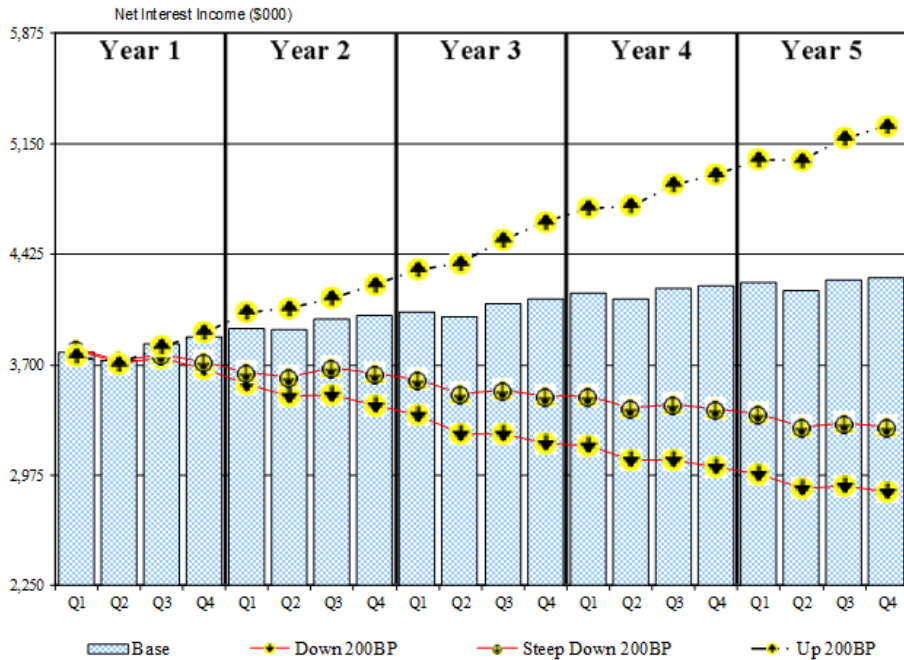


Year	-200 Stpn	Base	+200 bps
1	\$186	\$-87	\$-87
2	\$415	\$-87	\$-87
3	\$415	\$-88	\$-88
Total	\$1,016	\$-262	\$-262

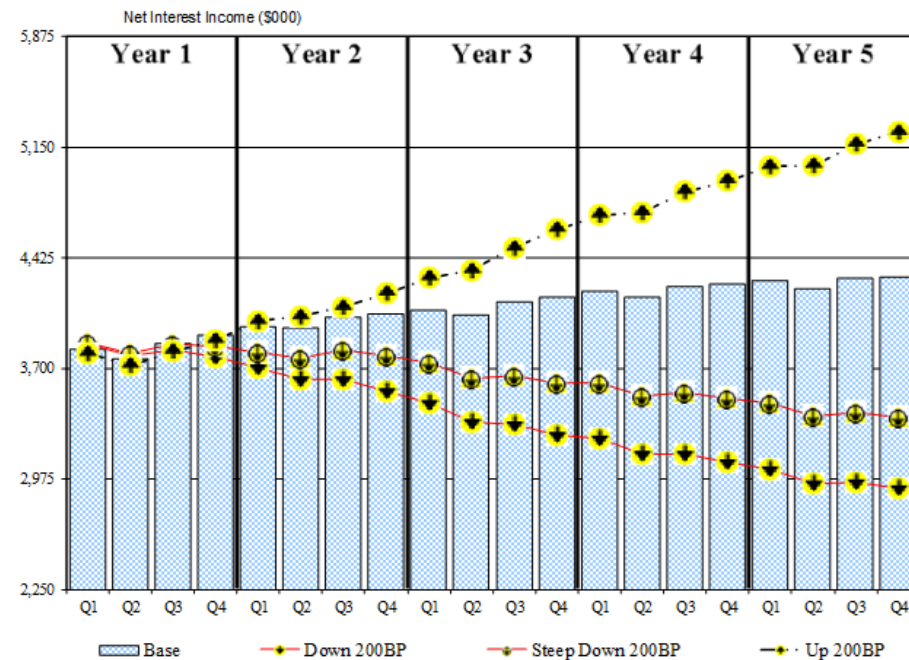
◆ Pricing reflective of Q4 levels...price of ATM floor much higher today

Potential Strategy	Expected Results	Risks
<p>Purchase \$15MM of Jumbo MBS 30Y (GNMA)</p> <p>Funded with cash</p>	<p><u>Liquidity:</u></p> <ul style="list-style-type: none"> ◆ Liquid Assets: Neutral ◆ Total Liquidity: Neutral <p><u>IRR:</u></p> <ul style="list-style-type: none"> ◆ Protect against falling rates ◆ Still maintain asset sensitive posture <p><u>Earnings:</u></p> <ul style="list-style-type: none"> ◆ Higher run rate of income immediately (don't have to wait for growth to materialize) 	<ul style="list-style-type: none"> ◆ Rates rise faster than expected (although IRR position holds asset sensitive posture) ◆ Opportunity cost if rates rise ◆ Price risk ◆ Prepayment optionality if MBS ◆ Premium risk?

Base Model as of 10/31/2018



\$15MM 30Y Jumbo MBS

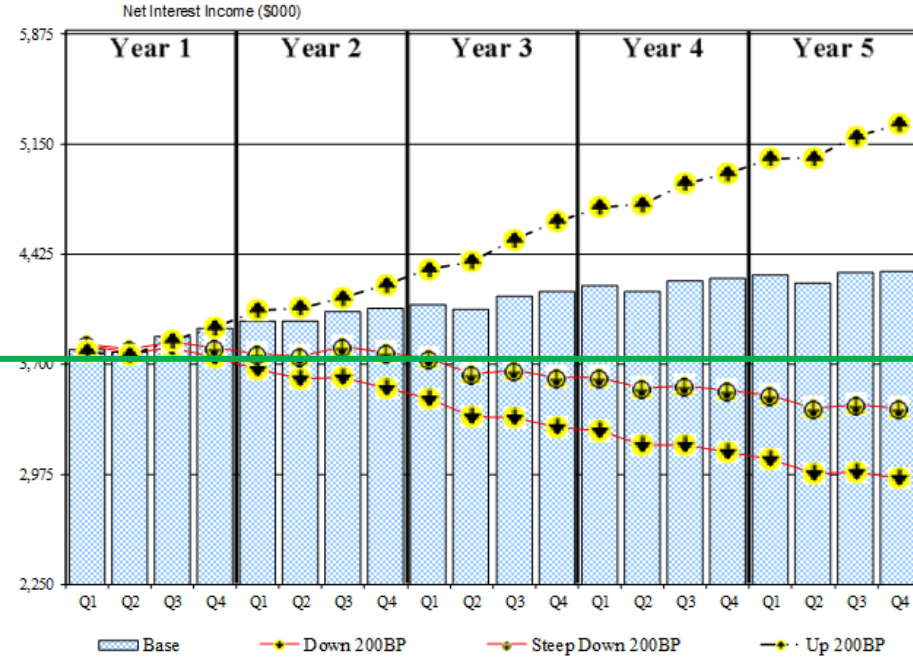
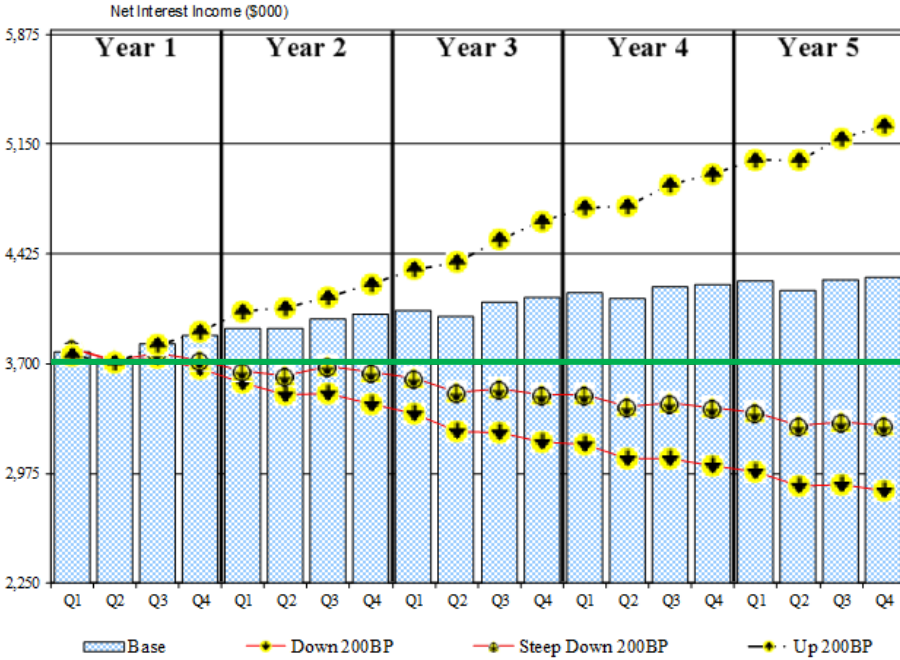


Year	-200 bps	-200 Stpn	Base	+200 bps
1	\$325	\$359	\$174	\$25
2	\$503	\$586	\$157	\$-129
3	\$369	\$486	\$158	\$-109
Total	\$1,197	\$1,431	\$489	\$-213

Potential Strategy	Expected Results	Risks
<p>Originate and hold fixed rate mortgages</p> <ul style="list-style-type: none"> - \$15MM 30Y resi next 90 days <p>Funded with 1 month & 1 Year FHLB advances</p>	<p><u>Liquidity:</u></p> <ul style="list-style-type: none"> ◆ Liquid Assets: Neutral/Slight Decline ◆ Total Liquidity: Down Marginally ◆ Liquidity Assessment: <i>Still Strong</i> <p><u>IRR:</u></p> <ul style="list-style-type: none"> ◆ Protect against falling rates ◆ Still maintain asset sensitive posture <p><u>Earnings:</u></p> <ul style="list-style-type: none"> ◆ Higher run rate of income in all scenarios modeled 	<ul style="list-style-type: none"> ◆ Credit ◆ Prepayment risk if rates fall

Base Model as of 10/31/2018

\$15MM Residential Loan Growth



Year	-200 bps	-200 Stpn	Base	+200 bps
1	\$248	\$284	\$200	\$152
2	\$428	\$517	\$222	\$16
3	\$411	\$512	\$218	\$24
Total	\$1,087	\$1,313	\$640	\$192

- ◆ Investments
- ◆ Loans
- ◆ Deposits
- ◆ Wholesale
- ◆ Other

- ◆ Let Your Balance Sheet Talk
- ◆ Squeeze More Out of Your Lending Success by Looking Through Different Lenses
- ◆ Maximize Availability at FHLB (and don't forget the dividend impact)
- ◆ Be Prepared for Your Next Exam (Liquidity!)
- ◆ Deposit Strategies that Make Sense Given Your Liquidity Position
- ◆ Derivatives for Community "Banking," A Game Changer!
- ◆ Don't Forget About Declining Rates
- ◆ ALCO as a Profit Center for Strategic Decision Making