



Financial
Performance

Regulatory
Compliance



◆ Risk Management Strategy & Solutions ◆

Elevate Your Credit Union's Performance... Now is NOT the Time for Business as Usual!

October 11 & 12, 2017

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- ◆ CU Industry Trends/Issues
- ◆ Credit Union Earnings Model
- ◆ Risk/Return Trade-offs and Key Challenges for CU's
- ◆ Measuring and Managing Interest Rate Risk *Effectively*
- ◆ Case Studies and...Concluding Thoughts

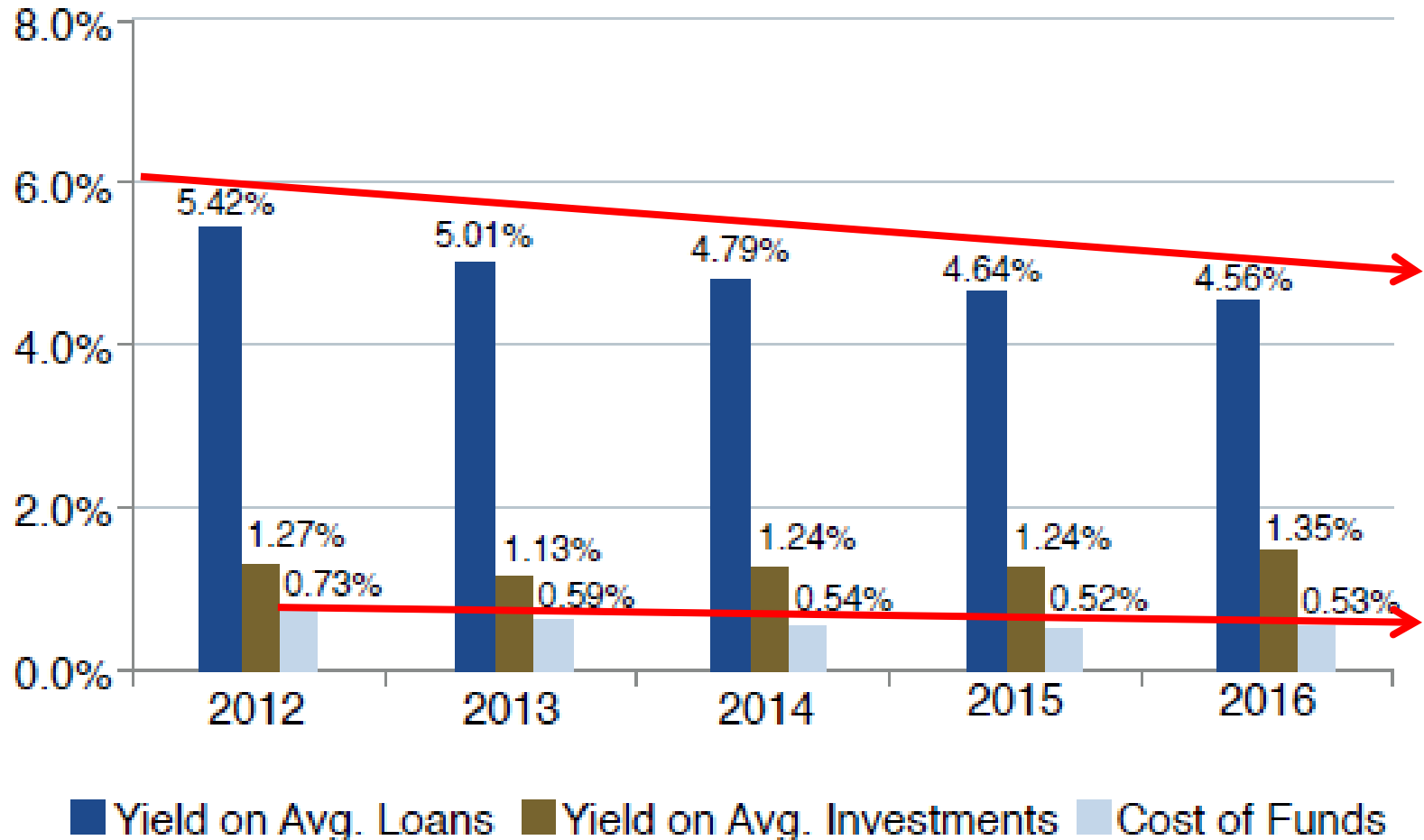


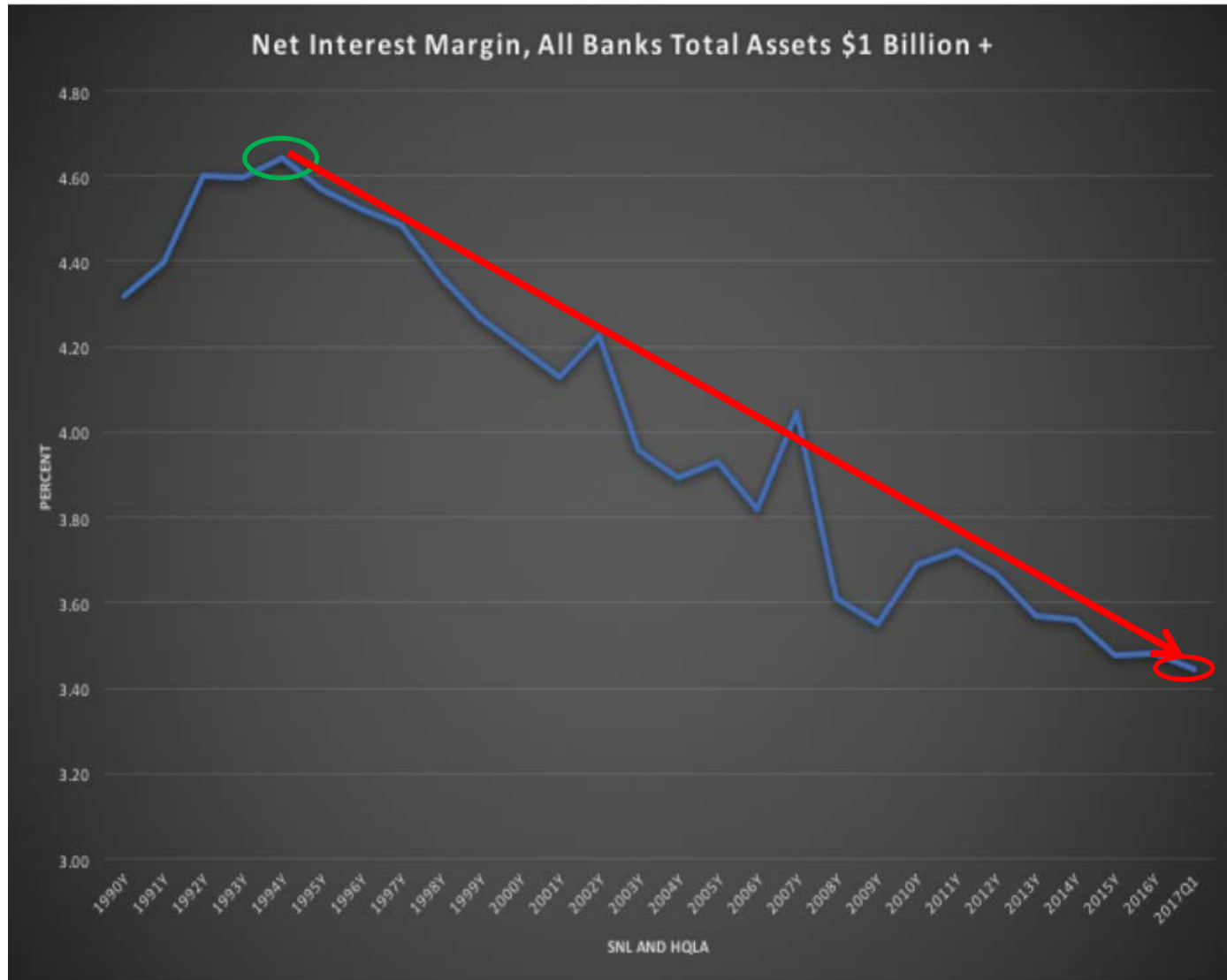
Number of Insured Credit Unions Reporting

	Federal Charter	State Charter	Total
2012	4,272	2,547	6,819
2013	4,105	2,449	6,554
2014	3,927	2,346	6,273
2015	3,764	2,257	6,021
2016	3,608	2,177	5,785

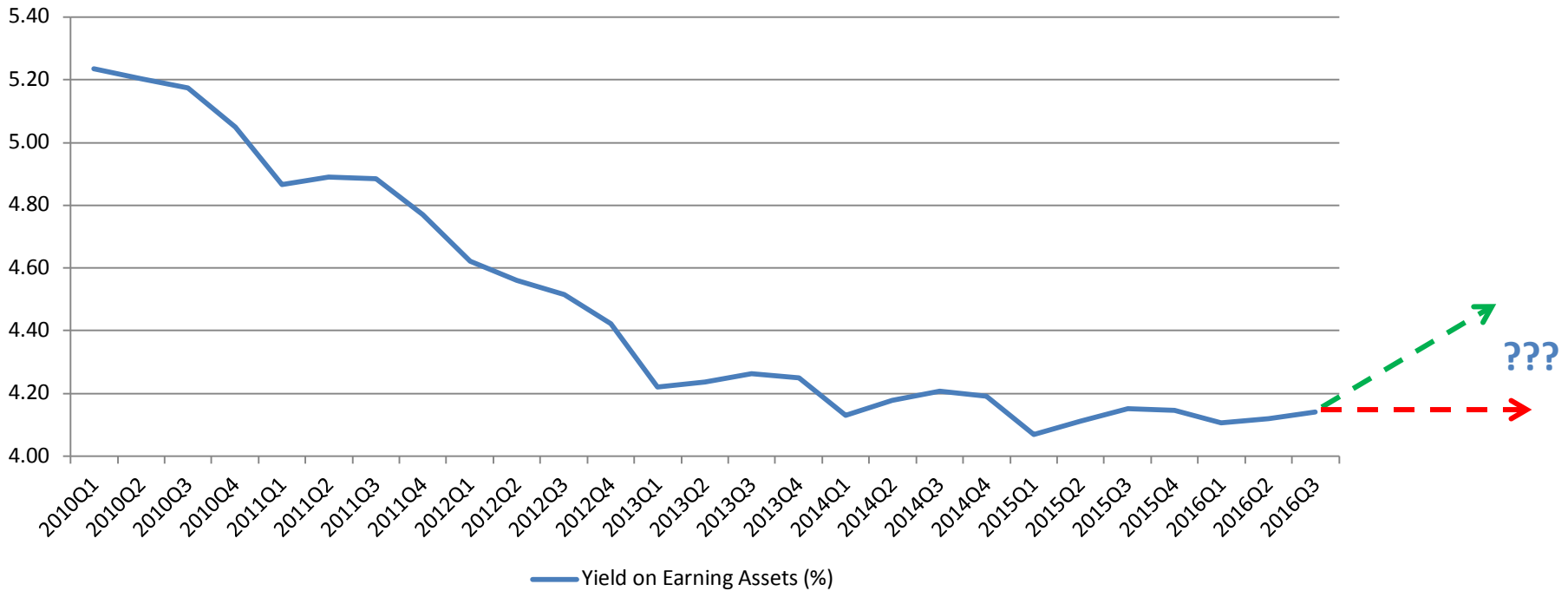


Yields vs. Cost of Funds

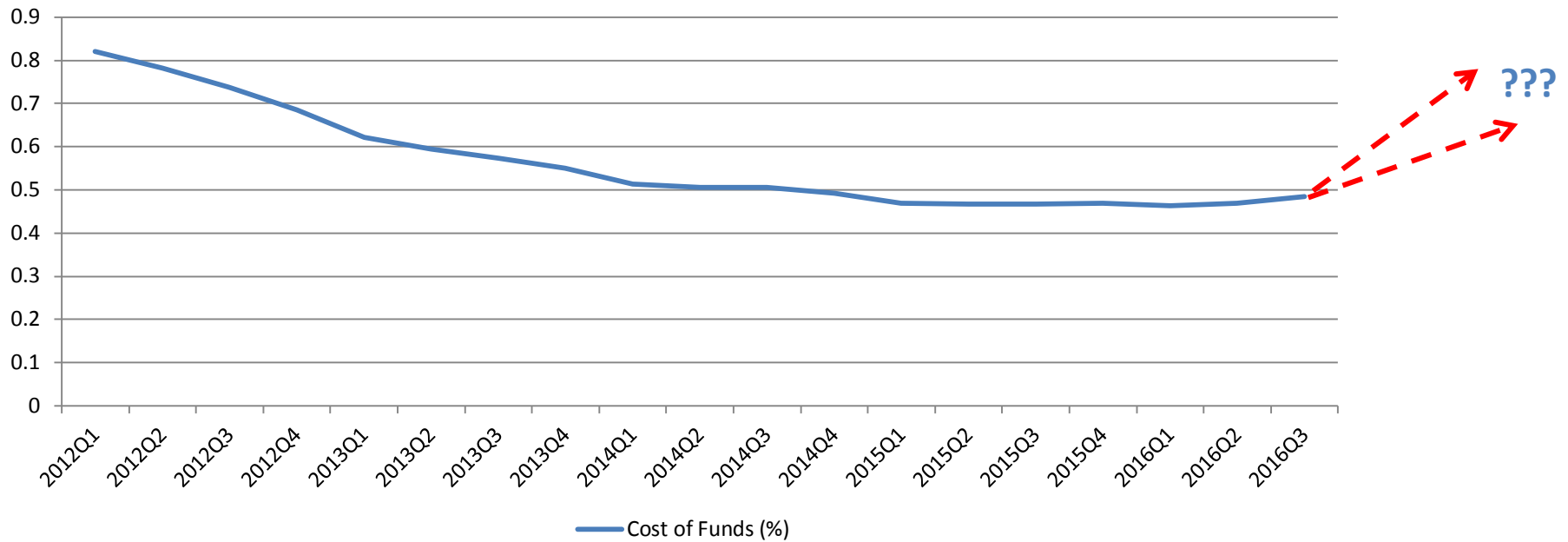




Yield on Earning Assets (%) (\$100mm-\$10B)

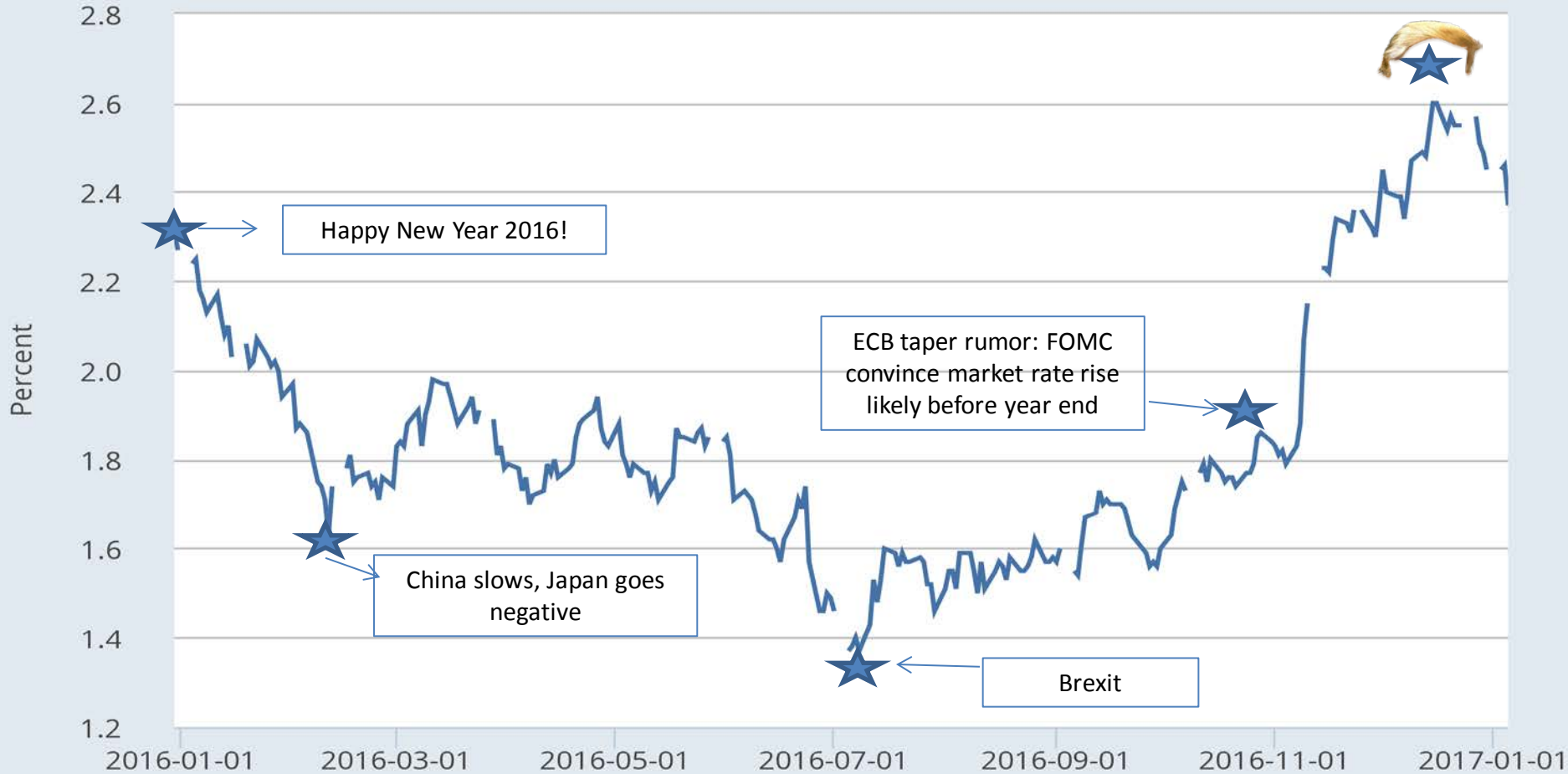


Cost of Funds (%) \$100MM-\$10B



FRED 

— 10-Year Treasury Constant Maturity Rate



Source: Board of Governors of the Federal Reserve System (US)

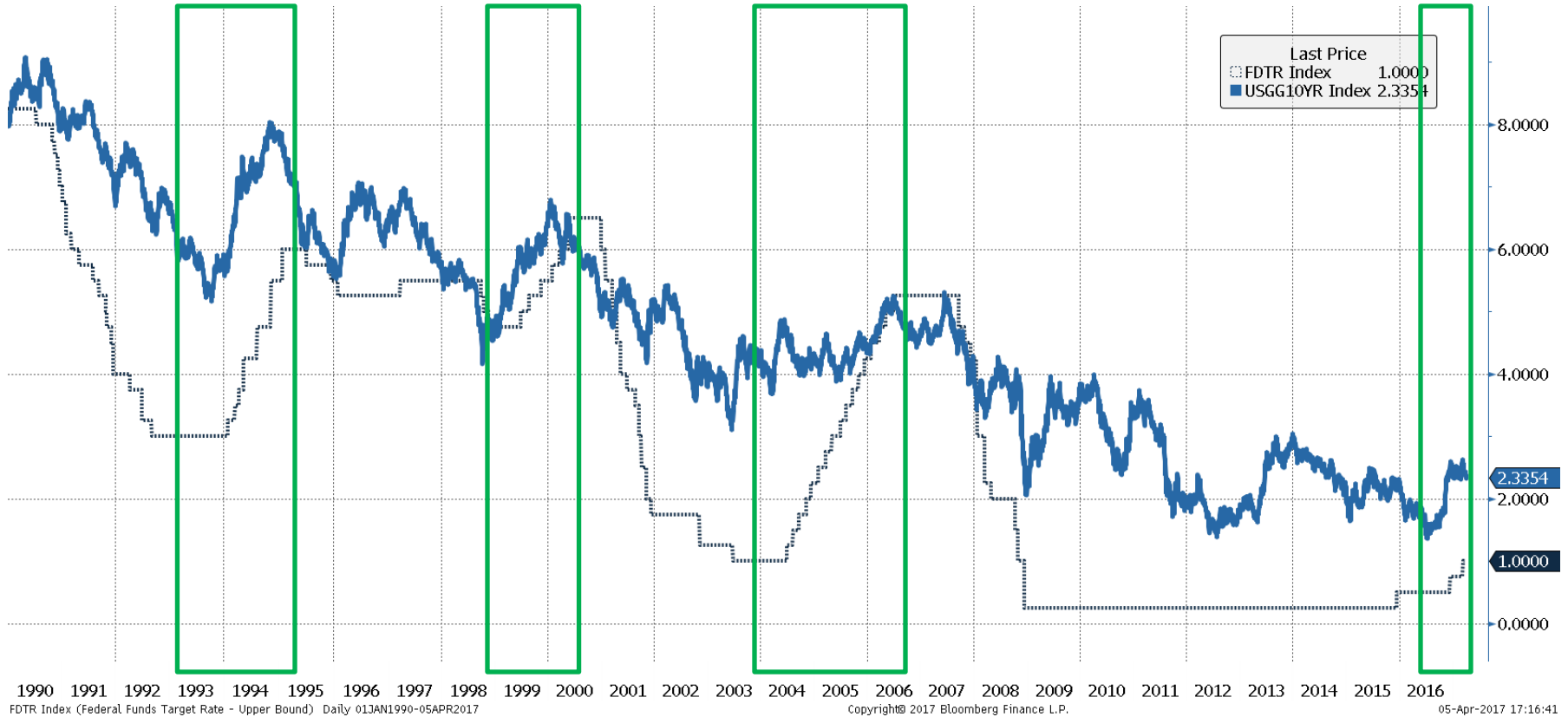
fred.stlouisfed.org

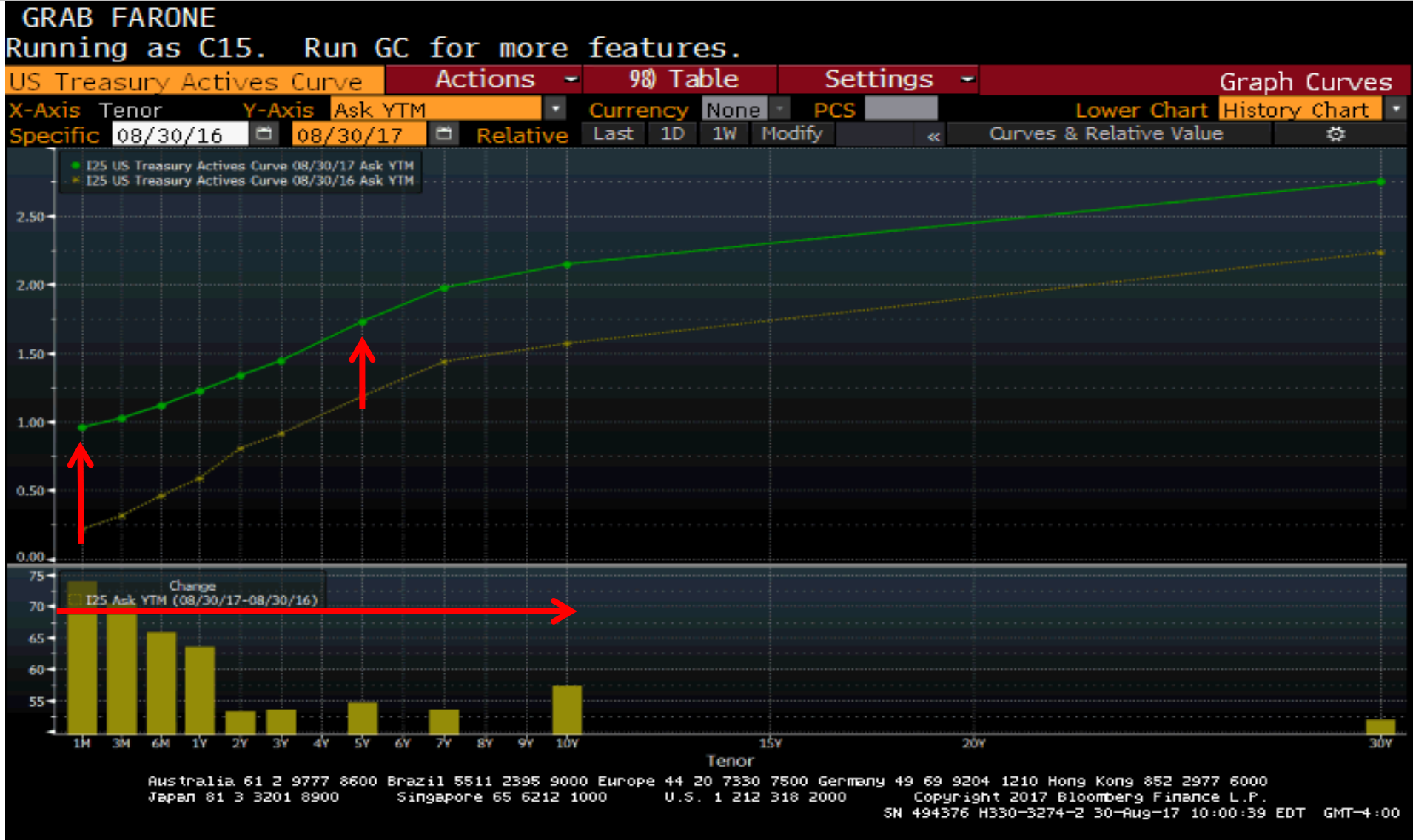
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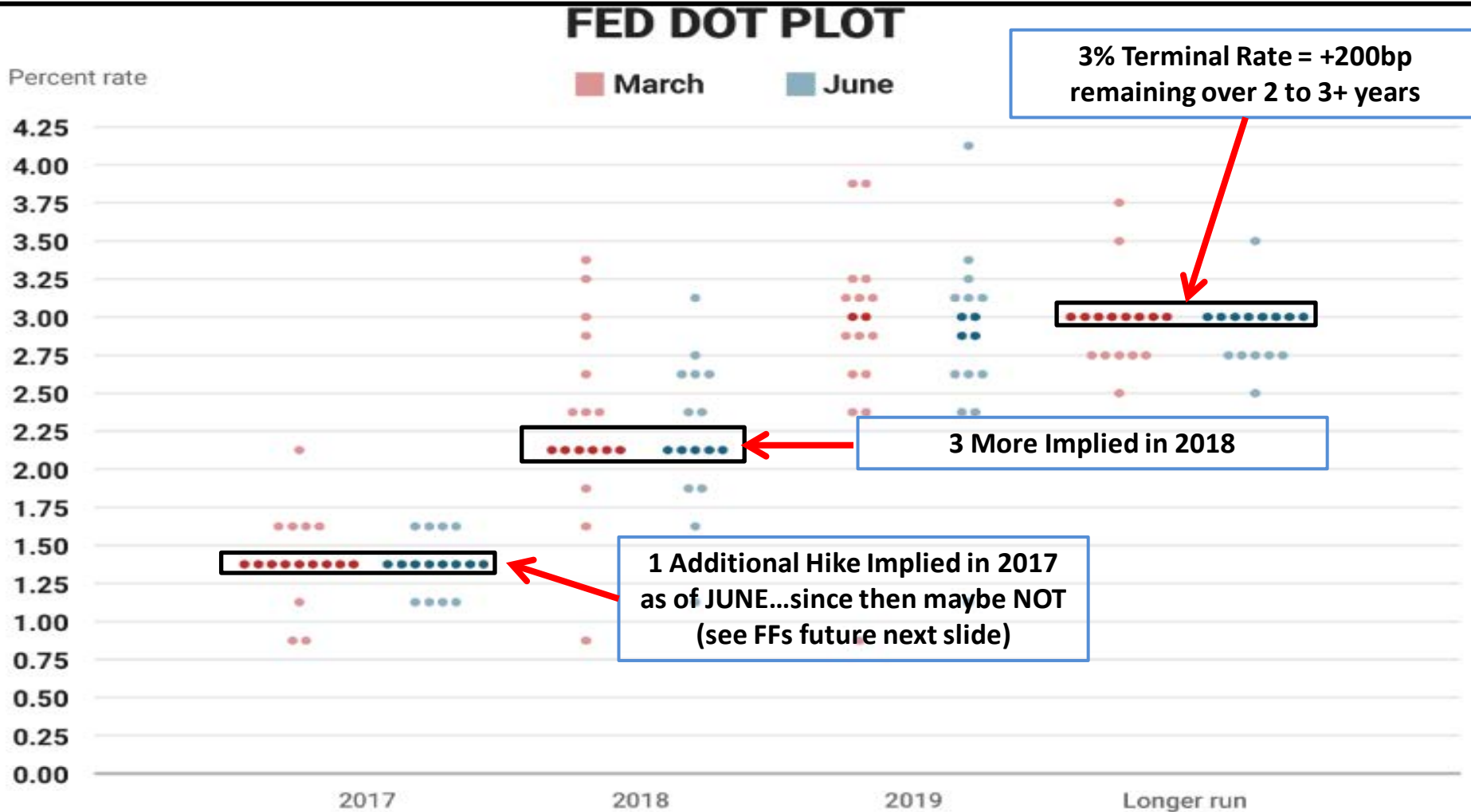
Long Rates tend to Move Ahead of Short Rates (both ways)

10 Year Treasury and Fed Funds





Fed Outlook More Dovish vs. Last Few Years



GRAB FARONE

99) Export Data

World Interest Rate Probability

United States

Instrument

Futures: Fed Funds - Effective

FED Effective Rate 1.16

1) Overview

2) Future Implied Probability

Current Implied Probabilities

3) Add/Remove Rates

Dates Meeting Calculation

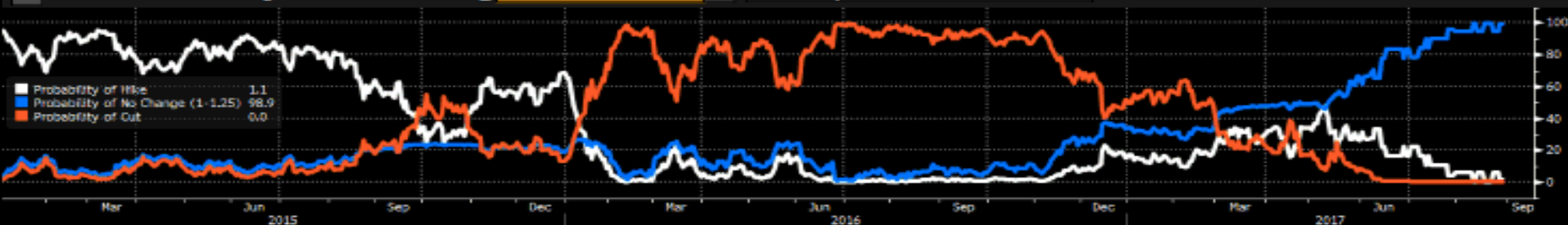
Calculated 08/30/2017

Based on rate 1.00-1.25

Meeting	Hike Prob	Cut Prob	0.75-1	1-1.25	1.25-1.5	1.5-1.75	1.75-2	2-2.25	2.25-2.5
09/20/2017	1.1%	0.0%	0.0%	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%
11/01/2017	1.9%	0.0%	0.0%	98.1%	1.9%	0.0%	0.0%	0.0%	0.0%
12/13/2017	33.2%	0.0%	0.0%	66.8%	32.6%	0.6%	0.0%	0.0%	0.0%
01/31/2018	33.7%	0.0%	0.0%	66.3%	32.9%	0.9%	0.0%	0.0%	0.0%
03/21/2018	47.0%	0.0%	0.0%	53.0%	39.5%	7.3%	0.2%	0.0%	0.0%
05/02/2018	46.4%	0.8%	0.8%	52.8%	39.1%	7.2%	0.2%	0.0%	0.0%
06/13/2018	56.0%	0.6%	0.6%	43.3%	41.6%	13.0%	1.5%	0.0%	0.0%
08/01/2018	55.5%	1.2%	1.2%	43.3%	41.2%	12.8%	1.4%	0.0%	0.0%
09/26/2018	60.6%	1.1%	1.1%	38.3%	41.4%	16.2%	2.8%	0.2%	0.0%

Historical Analysis for Meeting 09/20/2017

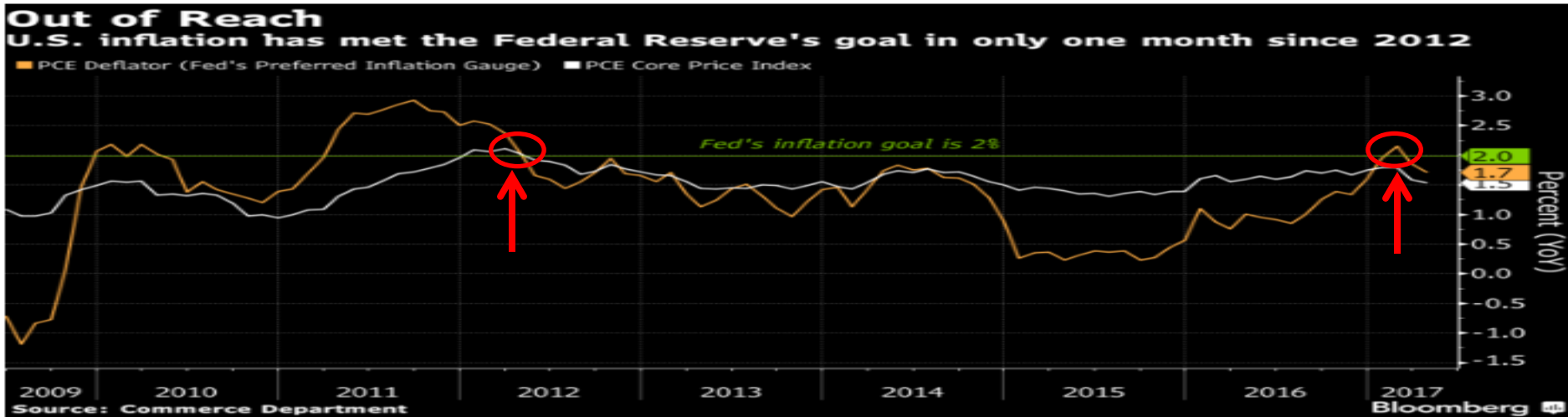
4) Add/Remove Series



Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000

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SN 494376 H330-3274-0 30-Aug-17 10:15:02 EDT GMT-4:00

Continued Disconnect Between Employment and Inflation



- ◆ Regulators making funding plans a higher priority topic
 - Particularly if regulatory liquidity “ratios” out of whack
 - Strong growth rates

- ◆ Loan pricing slow to respond to market rate increases
 - Pricing low due to flat curve
 - Competition still intense on underwriting and rate

- ◆ Funding costs creeping up
 - Deposit pricing has lagged greatly (where and when is tipping point?)
 - Wholesale moving with short-term market rates

- ◆ Flatter yield curve fears/looking at rates down?

- ◆ Most significant change in accounting rules that impact ALM in a decade!



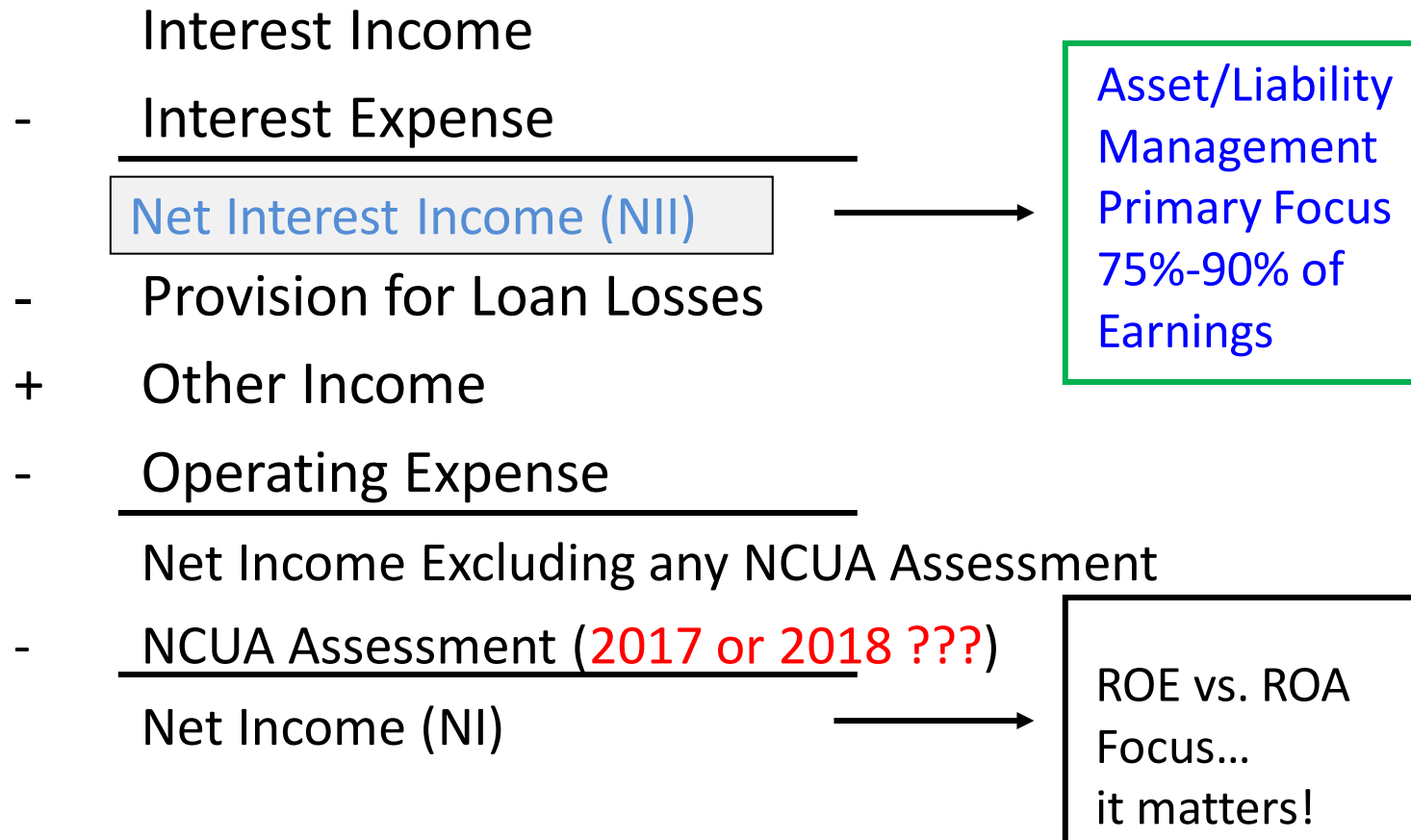
What is the Basic Business of a Credit Union?

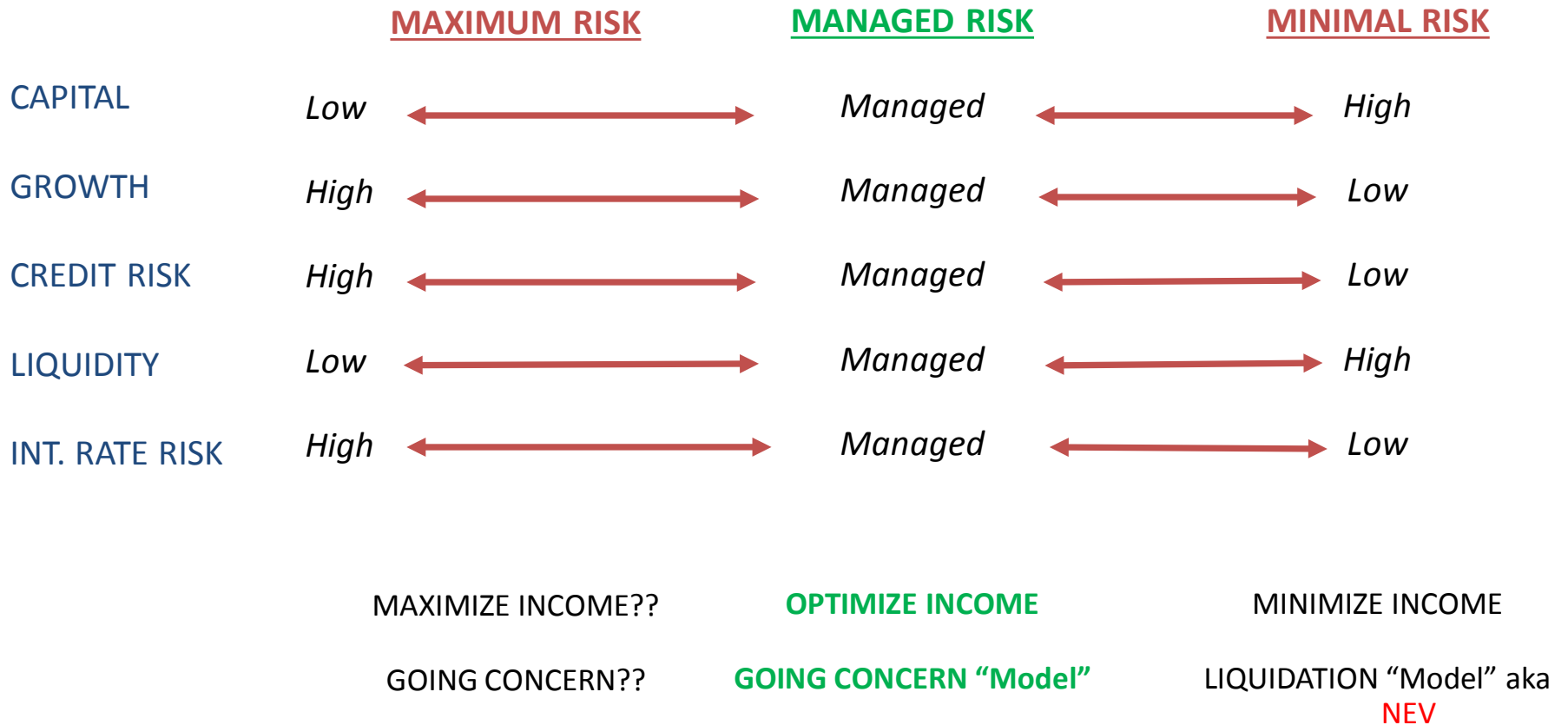


REVENUES: *Loans & Investments*

LESS: *Cost Of Funds*

NET INTEREST INCOME





Key Question: *Appropriate Accounting/Management Model?*

- ◆ Ratio Driven...
- ◆ Policies Designed around Regulatory Appeasement
- ◆ NEV Focus (for IRR)...**CAUTION**: “New” NEV Test
- ◆ Rate Shocks only 1 year
- ◆ Higher Capital = Safer, Less Risk?
- ◆ Liquidity Measurement & Mgm’t. (Underestimates)
- ◆ Borrowings Bad? (impacts “everything” esp. Earnings)
- ◆ Long Term Asset Ratio (what’s Long? Can we support?)
- ◆ NO Core Deposits Study to Support Decision Making
- ◆ ROA focus and Peer Comparison
- ◆ ALCO not considered important...a finance thing!

ROA

X

LEVERAGE

= ROE

- Increase Margin
 - Asset Yields
 - Cost of Funds

➤ Fee Income

➤ Expense Control

➤ Asset Sales (Gains)

➤ Growth

➤ Local

➤ Expansion

➤ Merger/Acquisition

➤ Capital Markets

What Separates the CU TOP Performers?

Key Factors: Size, Leverage, Asset Duration and Borrowing's

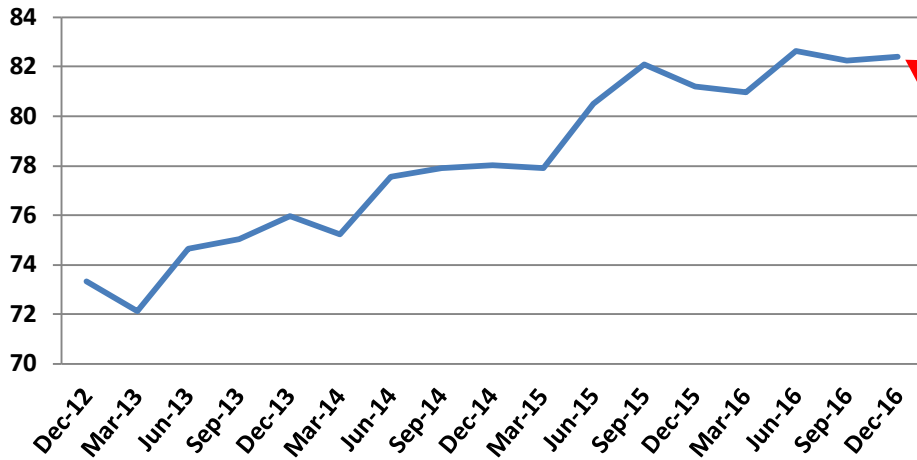
	Asset Group Under \$10 million	Asset Group \$10 million to \$100 million	Asset Group \$100 million to \$500 million	Asset Group \$500 million and Greater
# of Credit Unions	1,659	2,575	1,050	501
Total Assets	\$6.85 billion	\$97.32 billion	\$233.68 billion	\$954.69 billion
Average Assets/CU	\$4.13 million	\$37.79 million	\$222.55 million	\$1,905.57 million
Net Worth / Total Assets	15.14%	11.90%	10.92%	10.75%
Average Net Worth (non-dollar weighted)	16.51%	12.34%	10.96%	10.91%
Net Worth Growth*	0.24%	3.11%	5.56%	8.68%
Return on Average Assets (ROA)*	0.05%	0.33%	0.53%	0.88%
Net Interest Margin/Average Assets	3.34%	3.06%	3.06%	2.83%
Fee & Other Income/Average Assets	0.66%	1.15%	1.46%	1.35%
Operating Expense/Average Assets	3.70%	3.61%	3.67%	2.92%
Members / Full-Time Employees	405.92	393.99	346.35	397.90
Provision for Loan Loss/Average Assets	0.33%	0.29%	0.36%	0.43%
Loans / Shares	58.03%	61.06%	73.69%	83.16%
Delinquent Loans / Total Loans	1.97%	1.15%	0.91%	0.78%
% of Real Estate Loans Delinquent > 59 Days	1.83%	1.05%	0.80%	0.57%
% of Member Business Loans Delinquent > 59 Days	1.83%	0.71%	1.22%	1.69%
Net Charge-Offs/Average Loans	0.67%	0.53%	0.50%	0.56%
Share Growth*	0.66%	3.71%	5.73%	9.22%
Loan Growth*	1.48%	5.18%	8.39%	11.93%
Asset Growth*	0.61%	3.62%	5.74%	8.86%
Membership Growth*	-1.64%	0.23%	2.40%	6.41%
Net Long-Term Assets / Total Assets	9.54%	23.05%	31.44%	34.54%
Cash + Short-Term Investments / Assets	30.00%	21.44%	14.84%	12.13%
Borrowings / Shares & Net Worth	0.13%	0.23%	1.42%	4.90%

*Note: These items are based on the same federally insured credit unions reporting at 12/31/2015 and 12/31/2016, based on 12/31/2016 assets.

Liquidity & Funds Management

It's Game Time!

Loans / Deposits

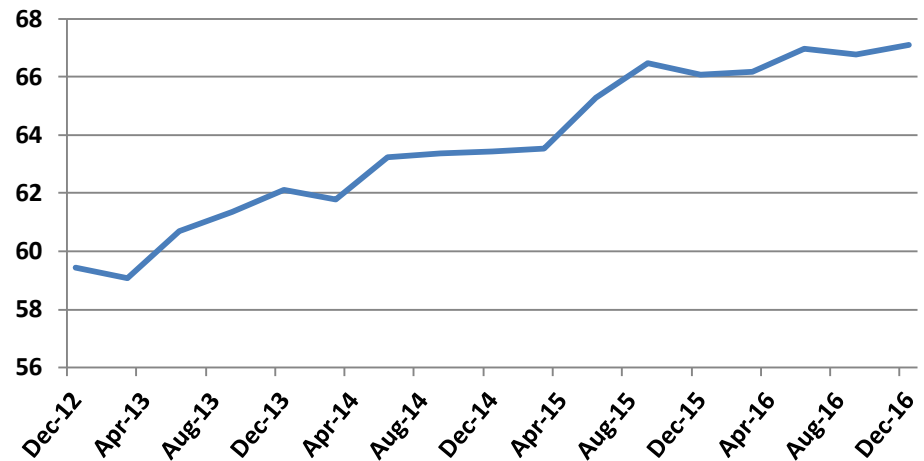


Loan growth is outpacing deposit growth

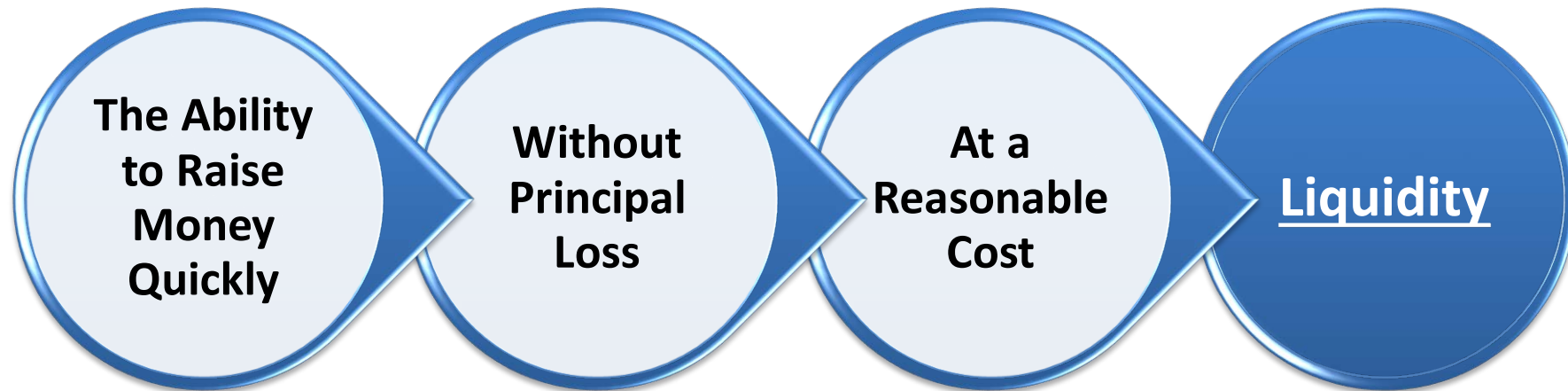
Policies???

Loans are becoming a bigger Percentage of total assets

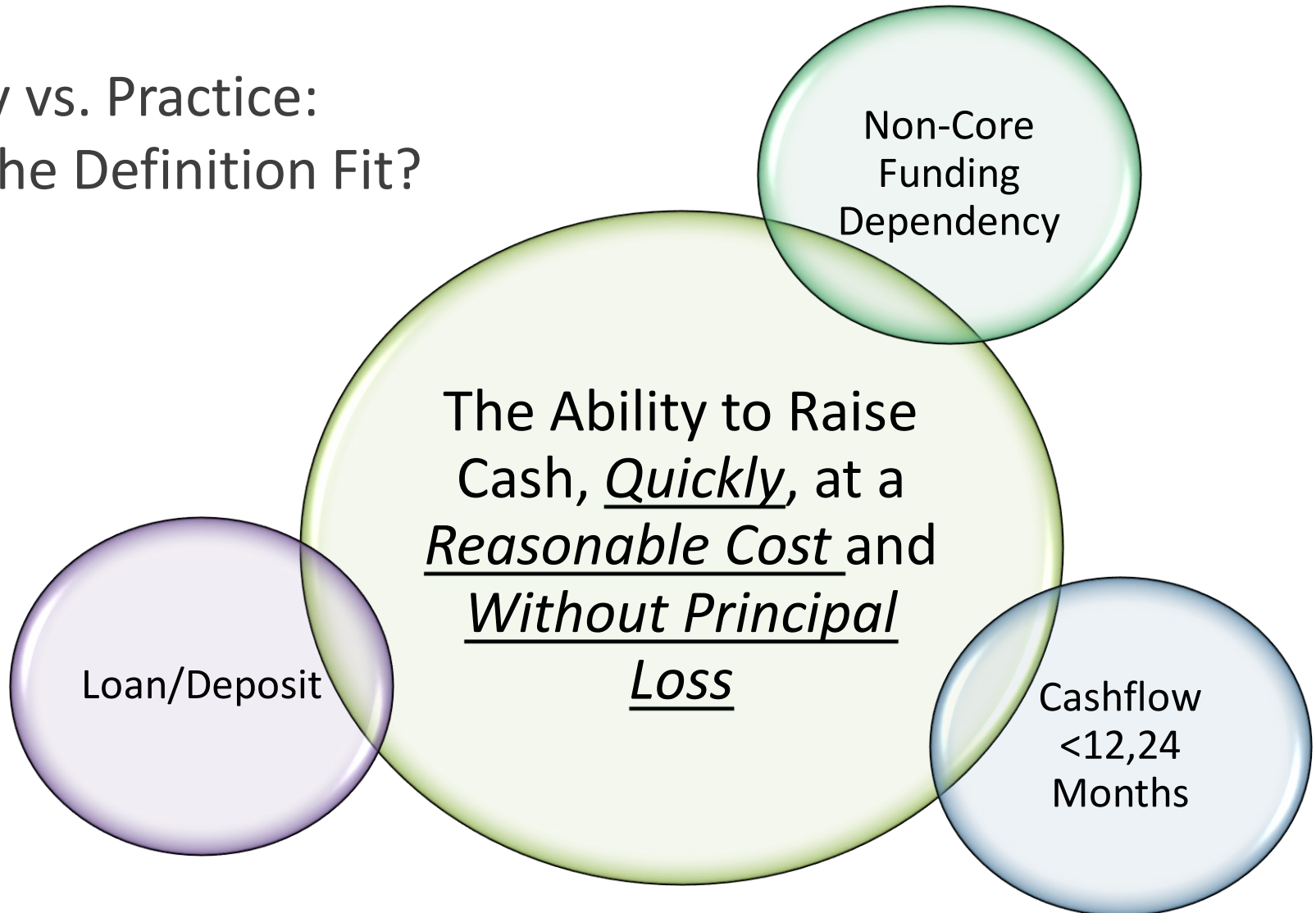
Loans / Assets



Measuring & Managing Liquidity



Theory vs. Practice:
Does the Definition Fit?



	<u>DEPOSITS</u>	<u>BORROWINGS</u>
RELATIONSHIPS?	Potentially	<i>No (Most Cases)</i>
PROTECTION?	Insurance	<i>Collateral</i>
AVAILABLE IN BULK?	At a Price	<i>Yes</i>
COST?	Rate + Cost of Conversion	<i>Coupon</i>
TERMS DETERMINED BY...	Customer	<i>FHLB Member</i>



Total Liquidity: Starting with Liquid Assets

I. LIQUID ASSETS

Overnight Funds Sold & Short-Term Investments (avg. balance, if wide daily fluctuations)					25,000	TOTAL ASSETS =	1,500,000
Security Collateral		UST & Agency	MBS / CMOs				
	<i>Collateral Value</i>		Agency Backed	Private Label			
		100%	95%	90%			
Total Market Value of Securities		35,000	125,000	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	0	0			
Municipal Deposits		0	-20,000	0			
Other		0	0	0			
Available / Unencumbered Security Collateral		<u>35,000</u>	<u>99,750</u>	<u>0</u>			
Over Collateralized Securities Pledging Position					134,750		
Government Guaranteed Loans					0		
Cash flow (< 30 Days) from Securities not listed above					0		
Other Liquid Assets					0	Pct. Of Assets	
TOTAL LIQUID ASSETS					159,750		10.7%



Total Liquidity: Adding Contingency Coverage and Off-Balance Sheet Capacity

II. SHORT TERM / POTENTIALLY VOLATILE LIABILITIES & COVERAGES

Maturing Unsecured Liabilities (< 30 Days)		0
Deposit Coverages		
25% of CDs Maturing < 30 Days	}	3,000
30% of Jumbo CDs Maturing < 30 Days		1,000
10% of Other Deposits		75,000
TOTAL SHORT TERM / POTENTIALLY VOLATILE LIABILITIES & COVERAGES		79,000

BASIC SURPLUS 79,500 5.3%

III. QUALIFYING FHLB LOAN COLLATERAL

A. Maximum Borrowing Line at FHLB (Up to 50% of Assets)	750,000
B. Qualifying Loan Collateral at the FHLB (net of haircut)	500,000
C. Excess Loan Collateral (if A < B)	
Maximum Borrowing Capacity (Lesser of A or B)	500,000
Collateral Currently Encumbered by Outstanding Advances/Letters of Credit	175,000
REMAINING FHLB LOAN BASED BORROWING CAPACITY	325,000

BASIC SURPLUS W/ FHLB 404,500 27.0%

IV. BROKERED DEPOSIT ACCESS

Maximum Board Authorized Brokered Deposit Capacity (15% of Total Assets)	225,000
Current Brokered Deposit Balances	30,000
REMAINING CAPACITY TO UTILIZE BROKERED DEPOSITS	195,000

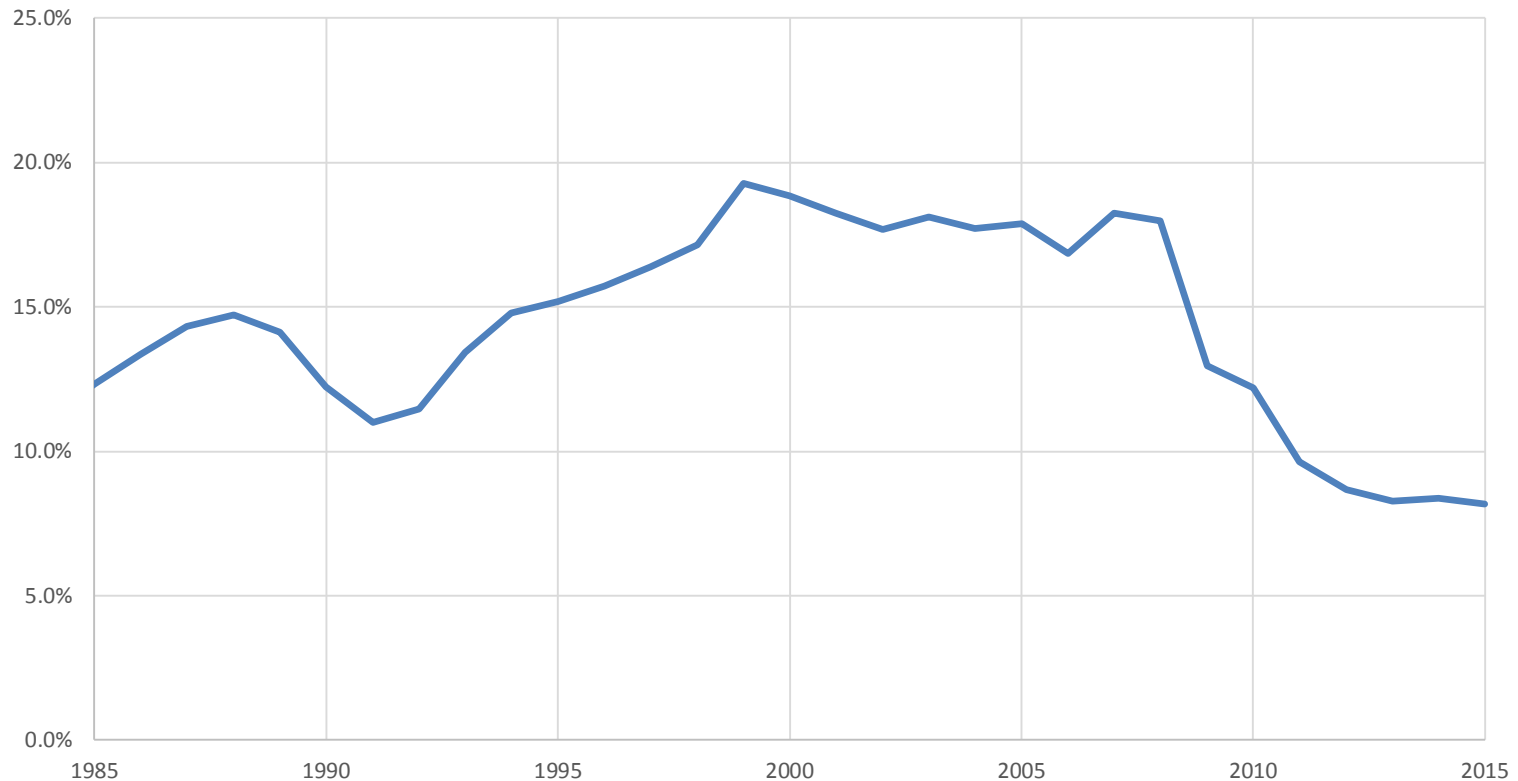
BASIC SURPLUS W/ FHLB & BROKERED DEPOSITS 599,500 40.0%

Net Loan Growth	\$XX
Net Deposit Flows	\$XX
Net Cash Flow	\$XX
Cash/Investment Cash Flow Due	\$XX
Wholesale Funding Maturities	\$XX

- ◆ Effective way to engage Lines Of Business at ALCO
- ◆ Promotes discussion of funding increases or shortfalls and strategies / action plans to address gaps

					Base Case - Forecast			
					Mar-16	Jun-16	Sep-16	Dec-16
Cash In/Out Flow					(\$33,837)	(\$28,397)	\$16,572	\$2,656
Cumulative					\$16,795	(\$11,602)	\$4,970	\$7,626
Starting Cash Position				\$50,632				
COLLATERALIZED/SECURED FUNDING RESOURCES	Gross Avail Collateral	Weighted Haircut	Avail. Coll. (Net Haircut)	Avail. Capacity				
Free UST/GSE Bond Collateral	\$105,173	5.00%	\$99,914	\$76,752	\$97,197	\$95,186	\$103,288	\$104,951
Free Non-GSE Bond Collateral			\$0	\$0	\$0	\$0	\$0	\$0
Loan Based Borrowing Capacity(FHLB)			\$324,308	\$272,813	\$275,357	\$280,669	\$284,257	\$282,541
<i>Residential Mtg Loan Collateral(FHLB)</i>	\$432,411	25.00%	\$324,308	\$272,813	\$275,357	\$280,669	\$284,257	\$282,541
<i>Non-Residential Mtg Loan Collateral (FHLB)</i>	\$0	0.00%	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL PRIMARY LIQUIDITY				\$349,566	\$372,554	\$375,855	\$387,545	\$387,492
				24.43%	26.46%	26.96%	27.01%	26.60%
OTHER LIQUIDITY RESOURCES	Maximum Capacity			Avail. Capacity				
Unsecured Funding								
Remaining Brokered Deposit Capacity	\$214,608			\$16,432	\$23,821	\$42,321	\$15,321	\$8,194
Other Unsecured Funds (i.e. Fed Fund Lines..)	\$14,000			\$14,000	\$14,000	\$14,000	\$14,000	\$14,000
Other Secured Funding Resource(s)								
Other Loan Based Borrowing Capacity (FRB)			\$20,809	\$20,809	\$20,809	\$20,809	\$20,809	\$20,809
TOTAL OTHER LIQUIDITY RESOURCES				\$51,241	\$58,630	\$77,130	\$50,130	\$43,003
				3.58%	4.16%	5.53%	3.49%	2.95%
Total Funds Availability (\$000)				\$451,439	\$447,979	\$441,383	\$442,645	\$438,121
Total Assets (\$000)				\$1,430,723	\$1,408,107	\$1,393,931	\$1,435,000	\$1,456,943
Total Funds Availability (% of Assets)				31.55%	31.81%	31.66%	30.85%	30.07%
LIQUIDITY MINIMUM (% of Assets)				5.00%	5.00%	5.00%	5.00%	5.00%
FUNDING EXCESS/(SHORTFALL)				\$379,902	\$377,574	\$371,686	\$370,895	\$365,274

Borrowings/Assets (%)



Source: FDIC Bank Data and Statistics (Commercial Banks and Savings Institutions)

- ◆ Diversity and availability
 - HQLA
 - FHLB
 - Brokered
 - National CDs
 - Unsecured lines
 - Federal Reserve

- ◆ Revisit / update policies

- ◆ Board discussion/education

- ◆ Address concerns/perceptions related to borrowings
 - Benefit of dividend rate
 - Can be least expensive funding at the margin
 - Control over amount, term, structure, etc.
 - No cannibalization or operating costs

1. Develop a 1-2Y baseline cash flow forecast
2. Create and apply various stress tests
3. Formulate the solutions (relief strategies)
4. Document “The Plan”
5. Inform the risk monitoring system

Indicators - Heightened Funding Needs

	User Response		Stress Level
	NO	YES	
1. Loss of Key Personnel Affecting Depositor Relationship	✓		N/A
2. Natural Disaster?	✓		N/A

Indicators - Capital at Risk

	User Response		Stress Level
	NO	YES	
3. Operating Loss for Period	✓		N/A
4. Well Capitalized Status Threatened by Credit Charge Offs	✓		N/A

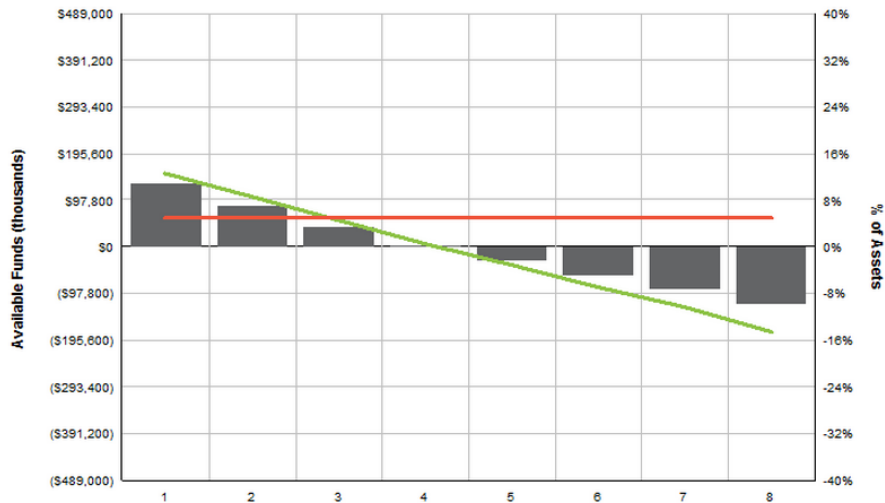
Indicators - Decrease in Funds Availability

	User Response		Stress Level
	NO	YES	
5. Real or Perceived Negative Publicity	✓		N/A
6. CAMELS 3 or Worse	✓		N/A

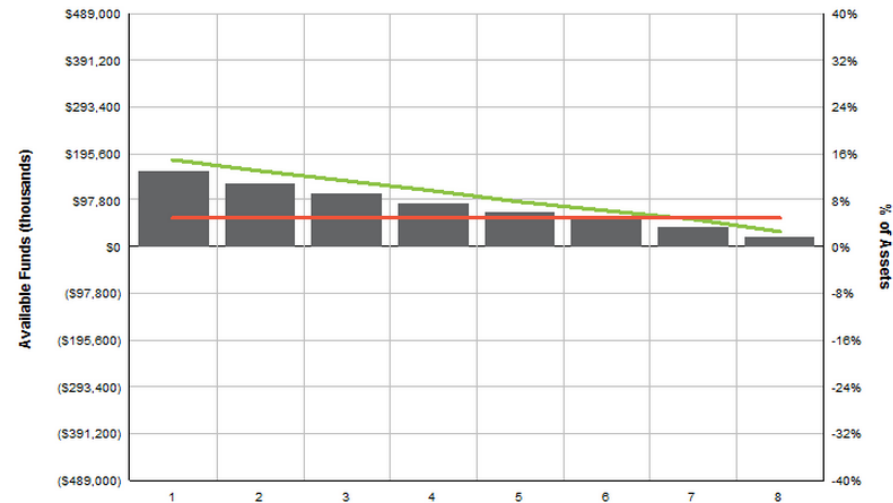
	Risk Level 1	Risk Level 2	Risk Level 3	Curr. Value	9/30/2016 Value	Risk Level	Cons. Periods Triggered	Stress Level
Indicators - Heightened Funding Needs								
1. \$ Change in Loan Growth less Non-Brokered Deposit Growth (3 Months)	\$50,000	\$75,000	\$100,000	\$17,128	\$58,128	N/A	N/A	N/A
2. % Change in Non-Maturity Deposit Balances (3 Months)	-5.00%	-7.00%	-10.00%	2.12%	2.82%	N/A	N/A	N/A
3. % Increase in Utilization of LOC (3 Month)	20.00%	30.00%	50.00%	0.00%	0.00%	N/A	N/A	N/A
Indicators - Liquidity/Funding Ratios								
4. Basic Surplus - Core (as a % of Assets)	5.00%	0.00%	-2.50%	3.22%	3.50%	Level 1	2	Level A
5. Basic Surplus w/FHLB Loan Collateral	12.00%	10.00%	5.00%	13.51%	14.35%	N/A	N/A	N/A
6. Basic Surplus w/FHLB & Brokered	15.00%	12.00%	7.00%	20.53%	21.57%	N/A	N/A	N/A
7. Brokered Deposits / Assets	5.00%	7.00%	10.00%	2.97%	2.78%	N/A	N/A	N/A
8. Wholesale Funds / Assets	10.00%	15.00%	20.00%	5.08%	4.07%	N/A	N/A	N/A
9. Free Investment Collateral & Short Term Inv.'s / Assets	7.50%	5.00%	2.50%	8.81%	9.23%	N/A	N/A	N/A
10. Free FHLB Loan Collateral / Assets	5.00%	2.50%	0.00%	10.29%	10.86%	N/A	N/A	N/A
Indicators - Capital at Risk								
11. % Change in Classified Loans	50.00%	100.00%	200.00%	-12.48%	-9.54%	N/A	N/A	N/A
12. ALLL/NPAs+PDs	1.00%	0.75%	0.50%	3.87%	2.61%	N/A	N/A	N/A
13. Non-Performing Loans / Gross Loans	1.00%	2.00%	3.00%	0.21%	0.29%	N/A	N/A	N/A
14. Non-Performing Loans / Tangible Capital	10.00%	15.00%	25.00%	1.92%	2.50%	N/A	N/A	N/A
15. Tier One Leverage Capital Ratio	6.50%	5.75%	5.00%	8.74%	8.69%	N/A	N/A	N/A
16. Total Risk Based Capital Ratio	11.00%	10.50%	10.00%	14.80%	15.13%	N/A	N/A	N/A

- ◆ Develop relief strategies that overcome the stress event
- ◆ Document an action plan with roles, responsibilities, timelines, etc.
- ◆ Evaluate post relief impact on risk monitoring triggers / limits

STRESS CASE #3 - LIQUIDITY FORECAST (TOTAL FUNDS AVAILABLE)



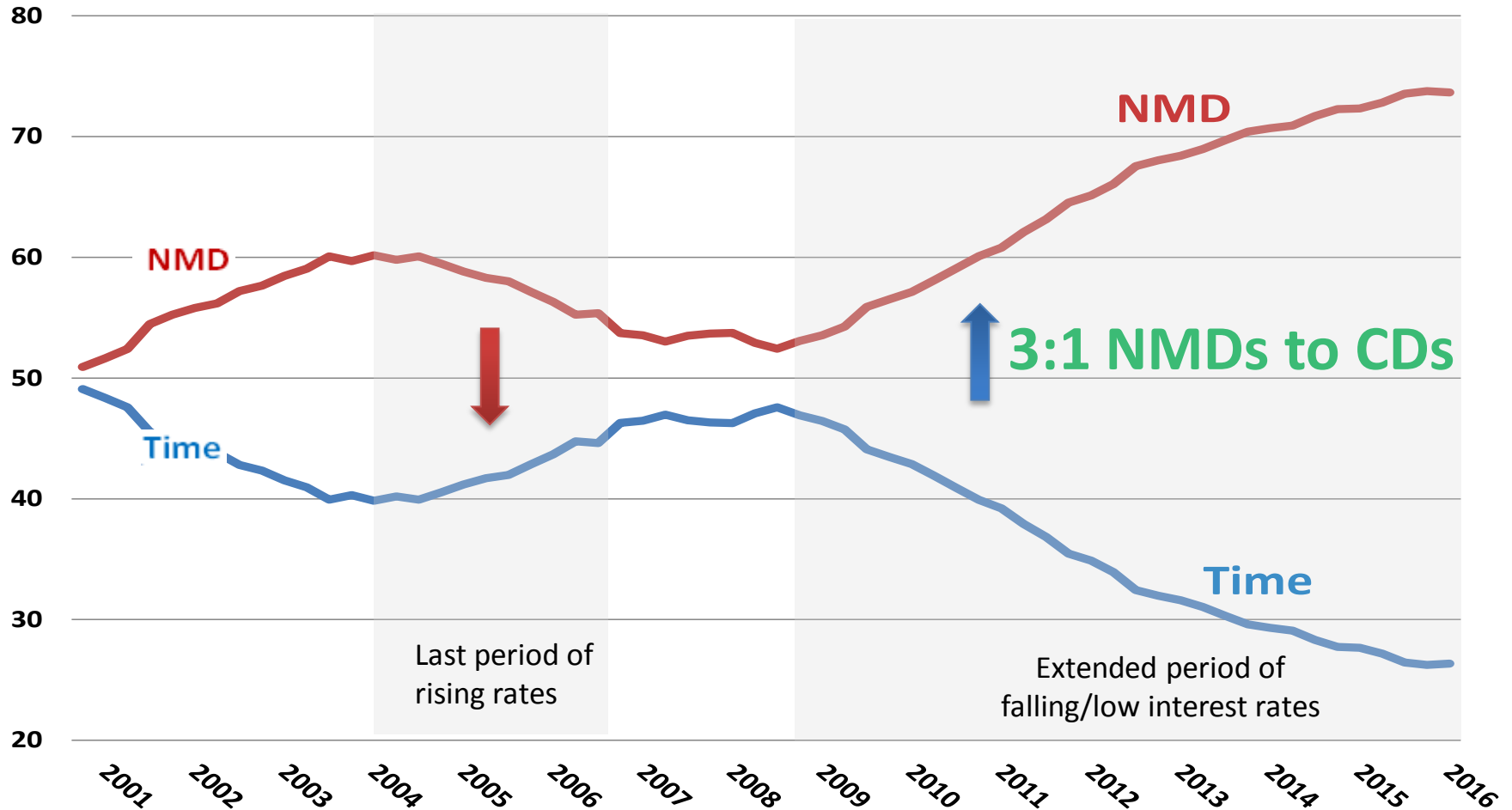
RELIEF CASE #3 - LIQUIDITY FORECAST (TOTAL FUNDS AVAILABLE)



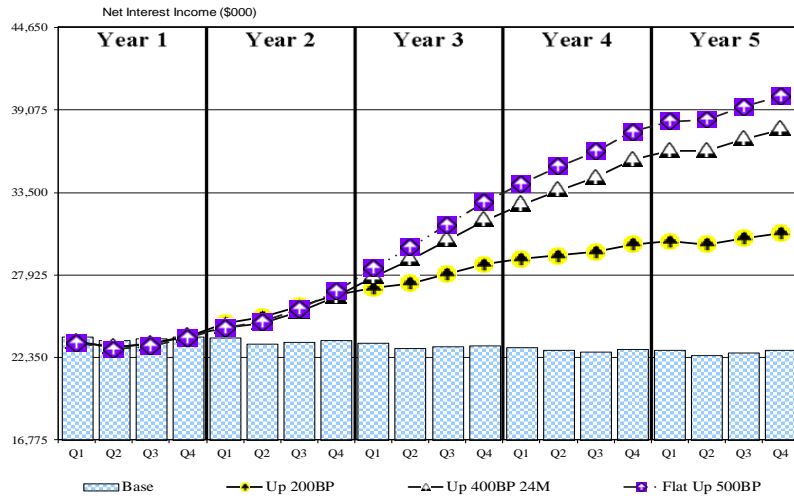
Retail Deposit Management

Understand Your Depositor Base using Analytics

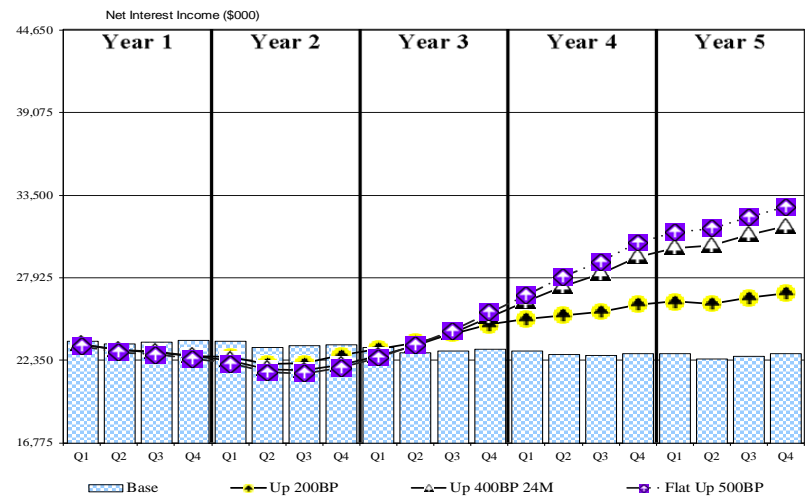
Non-Maturity and Time Deposits as a % of Total Deposits



Base Scenario As of 09/30/2016



Stress Test: Non-Maturity Deposit Migration



NII SUMMARY

	<u>Base</u>	<u>Up 200BP</u>	<u>Up 400BP 24M</u>	<u>Flat Up 500BP</u>
Year-1 NII	94,607	93,450	93,540	93,039
Year-2 NII	93,797	102,111	100,913	101,563
Year-3 NII	92,429	111,041	118,674	122,400
Year-4 NII	91,469	117,731	136,532	143,238
Year-5 NII	90,866	121,384	147,511	156,091

NII SUMMARY

	<u>Base</u>	<u>Up 200BP</u>	<u>Up 400BP 24M</u>	<u>Flat Up 500BP</u>
Year-1 NII	94,607	91,965	92,056	91,406
Year-2 NII	93,797	89,553	87,828	86,980
Year-3 NII	92,429	95,611	95,497	95,850
Year-4 NII	91,469	102,290	111,245	114,136
Year-5 NII	90,866	105,965	122,258	127,029

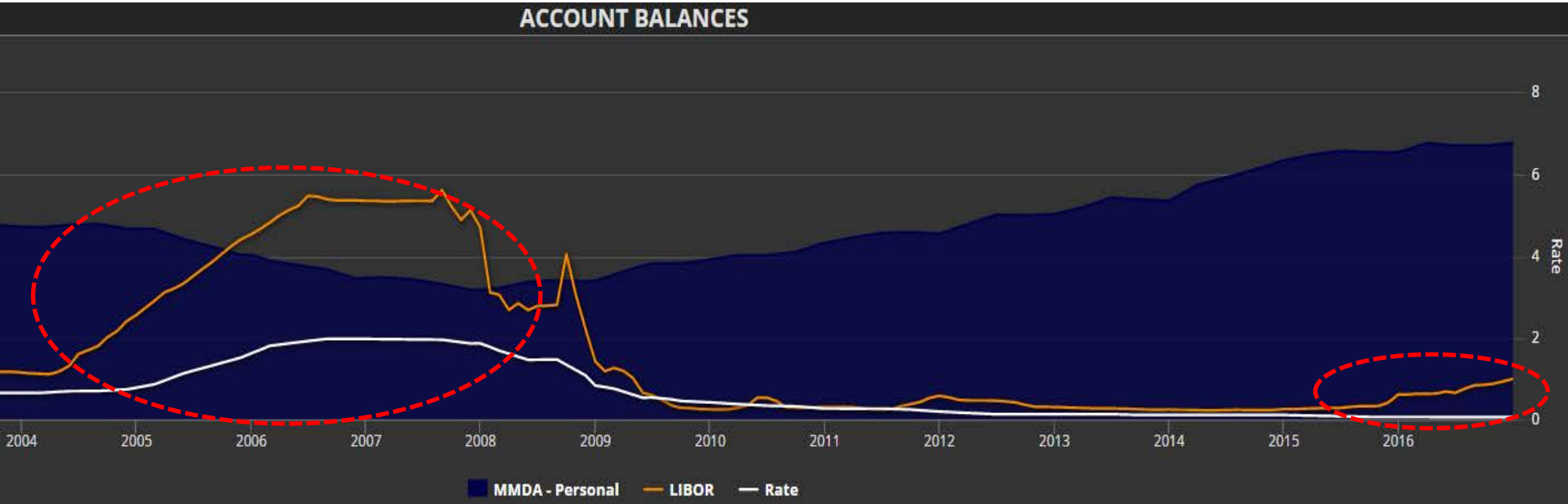
CHANGE / DIFFERENCE IN RESULTS

	<u>Base</u>	<u>Up 200BP</u>	<u>Up 400BP 24M</u>	<u>Flat Up 500BP</u>
Year-1 NII	0	-1,485	-1,485	-1,633
Year-2 NII	0	-12,558	-13,085	-14,583
Year-3 NII	0	-15,430	-23,177	-26,550
Year-4 NII	0	-15,441	-25,287	-29,102
Year-5 NII	0	-15,419	-25,252	-29,062

In the Up 200bps, Up400bps and Flat Up 500bps scenarios 25% of non-maturity deposits shift into a 1 Y FHLB advance evenly over months 7-18. □ Please refer to the Stress Test Methodology page for additional documentation.

Rate Index / Deposit Product	Actual Rate Movements				Assumed Rate Movements			(Savings) Cost			Next 25bps Fed Hike	
	Rate 3/31/2016	Rate 6/30/2017	Change (bps)	Beta (%)	Change (bps)	Beta (%)	End Rate	Rate (Savings) Cost	Current Balance	Annualized Int. Exp. (Savings) Cost	Assumed Change (bps)	Assumed Cost
Federal Funds	0.50%	1.25%	0.75%	100%								
Share Drafts - Regular	0.01%	0.01%	0.00%	0%	0.04%	5%	0.05%	-0.04%	2,230	(\$1)	0.01%	\$0
Share Drafts - Business Checking	0.01%	0.01%	0.00%	0%	0.04%	5%	0.05%	-0.04%	55,119	(\$21)	0.01%	\$7
Share Drafts - Enhanced Business Checking	0.25%	0.25%	0.00%	0%	0.47%	63%	0.72%	-0.47%	21,095	(\$99)	0.16%	\$33
Share Drafts - More	0.20%	0.21%	0.01%	1%	0.47%	63%	0.67%	-0.46%	63,226	(\$290)	0.16%	\$99
Share Drafts - High Yield - Green	0.15%	0.15%	0.00%	0%	0.47%	63%	0.62%	-0.47%	38,383	(\$180)	0.16%	\$60
Share Drafts - Health Savings	0.25%	0.25%	0.00%	0%	0.56%	75%	0.81%	-0.56%	15,733	(\$88)	0.19%	\$29
Share Drafts - Public	0.01%	0.01%	0.00%	0%	0.04%	5%	0.05%	-0.04%	34	(\$0)	0.01%	\$0
Member Shares - Regular	0.05%	0.06%	0.01%	1%	0.13%	18%	0.18%	-0.12%	357,778	(\$434)	0.04%	\$157
Member Shares - Business Savings	0.05%	0.05%	0.00%	0%	0.13%	18%	0.18%	-0.13%	13,647	(\$18)	0.04%	\$6
Member Shares - Savvy Little Saver	0.05%	0.05%	0.00%	0%	0.13%	18%	0.18%	-0.13%	8,365	(\$11)	0.04%	\$4
Member Shares - More	0.44%	0.46%	0.02%	3%	0.47%	63%	0.91%	-0.45%	506,092	(\$2,271)	0.16%	\$791
Member Shares - Club	0.05%	0.05%	0.00%	0%	0.13%	18%	0.18%	-0.13%	3,564	(\$5)	0.04%	\$2
Premium Plus - Jumbo Savings	0.32%	0.32%	0.00%	0%	0.56%	75%	0.88%	-0.56%	97,209	(\$547)	0.19%	\$182
IRA - Accumulation	0.10%	0.10%	0.00%	0%	0.19%	25%	0.29%	-0.19%	3,314	(\$6)	0.06%	\$2
IRA - Money Managers	0.18%	0.17%	-0.01%	-1%	0.38%	50%	0.56%	-0.39%	19,456	(\$75)	0.13%	\$24
Member Shares - Escrow	0.10%	0.10%	0.00%	0%	0.13%	18%	0.23%	-0.13%	14,009	(\$18)	0.04%	\$6
Money Manager - Regular	0.17%	0.17%	0.00%	0%	0.38%	50%	0.55%	-0.38%	205,251	(\$770)	0.13%	\$257
Money Manager - Business	0.18%	0.17%	-0.01%	-1%	0.38%	50%	0.56%	-0.39%	6,917	(\$27)	0.13%	\$9
Total	0.24%	0.25%	0.01%	1%	0.35%	47%	0.59%	-0.34%	\$ 1,431,422	(\$4,860)	0.12%	\$1,667

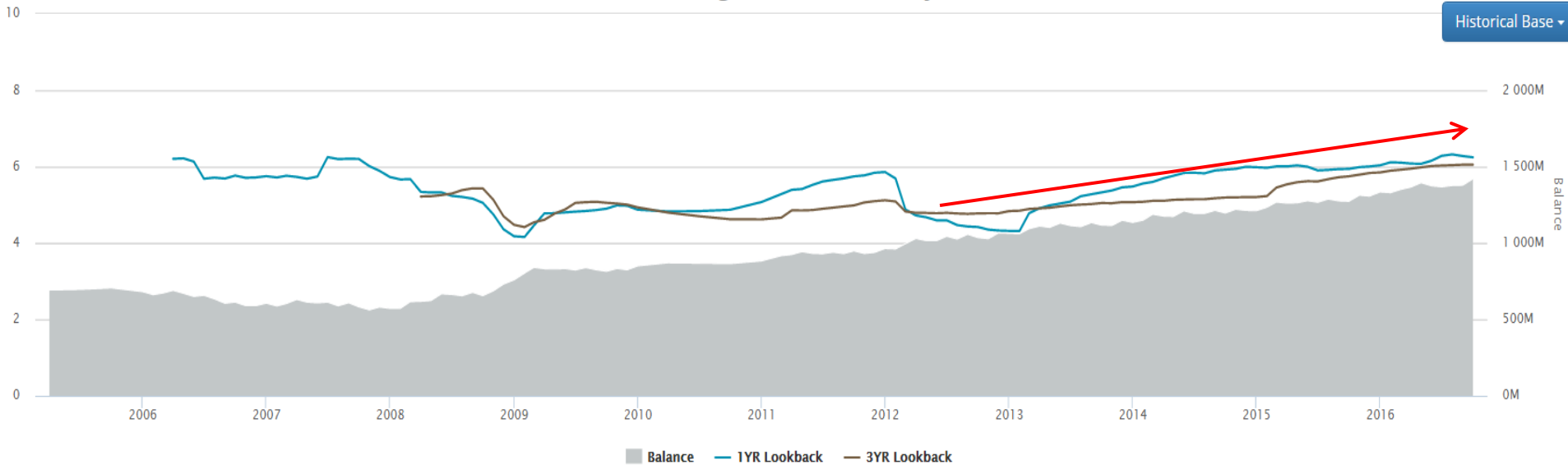
How much interest expense have we saved by lagging model betas?
 How much will next 25bp move cost based on current beta assumptions?



- ◆ 2004-2006 rate cycle +425bps
- ◆ 2015-present rate cycle +75bps
- ◆ What constitutes a rising rate scenario?
- ◆ Impact of initial “lag” on deposit sensitivity? Quantify!

Source: *Deposits360°*

Average Life Summary



- ◆ If you don't have this data, get it!
- ◆ Assessing from multiple “looks” is important
- ◆ Evaluate periods of extremes (use to formulate stress tests)

Source: Deposits360°

MMDA

BALANCE: \$100,000

CURRENT RATE: 0.40%

UP 100bp BETA: 0.75%

FED RATE INCREASE

0.25 0.75

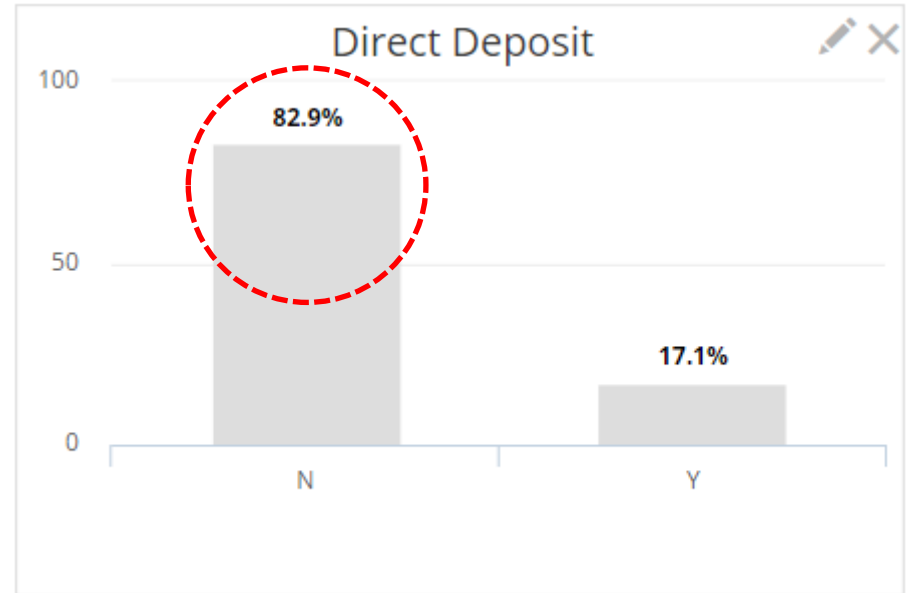
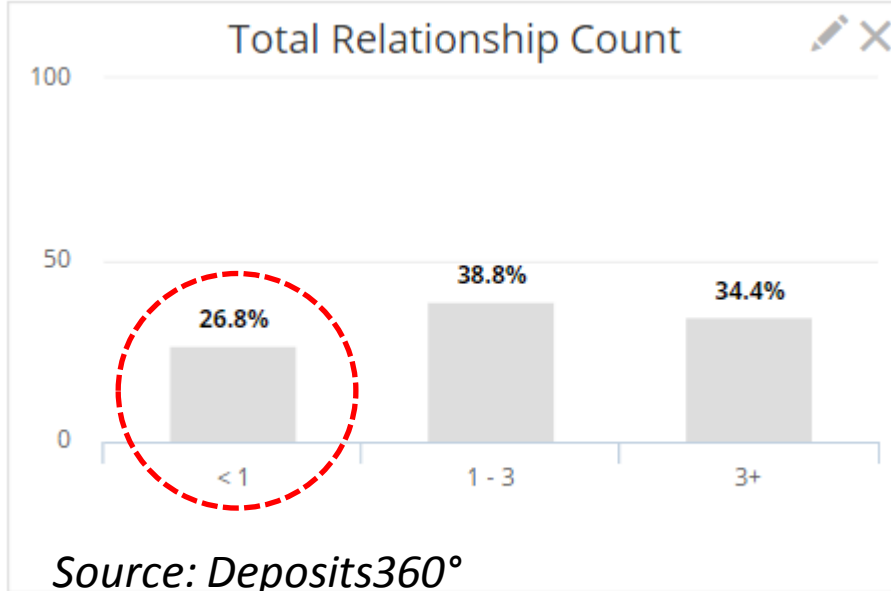
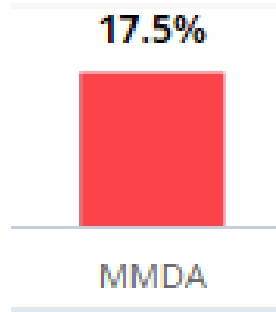
RATE INCREASE

		0.19%	0.56%
RUNOFF PROTECTED	5.00%	4.15%	11.65%
	15.00%	1.65%	4.15%
	25.00%	1.15%	2.65%

Annualized NII Impact (000s)

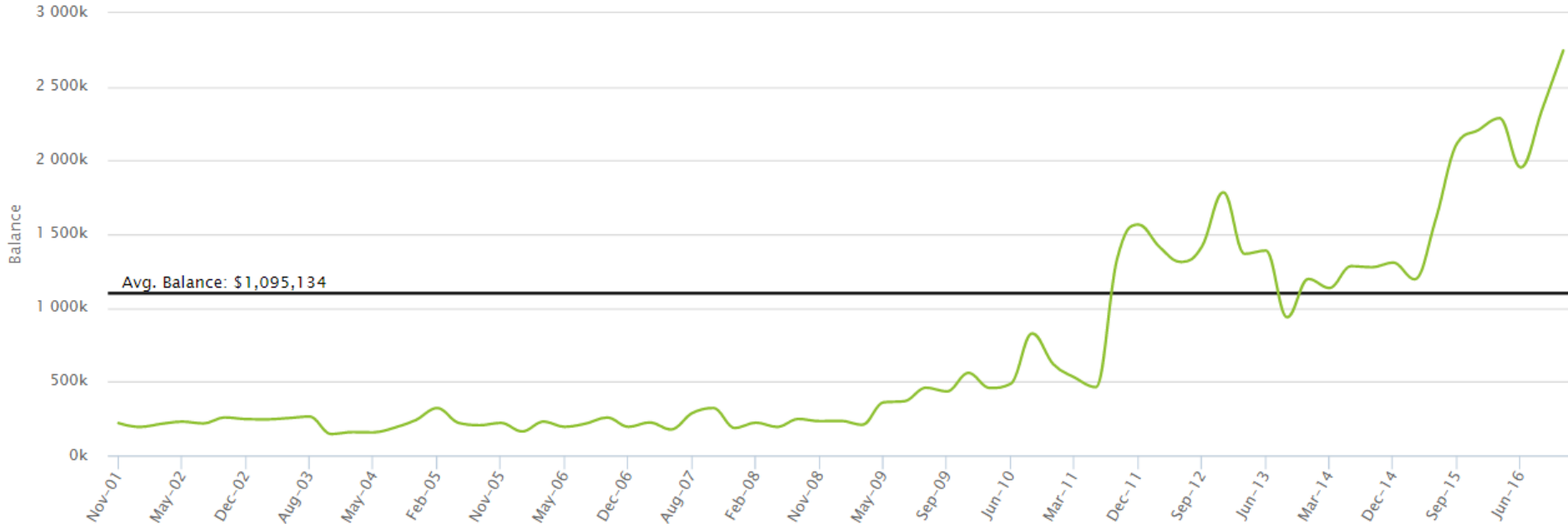
(\$188)

(\$563)



TOTAL NMD Balance History

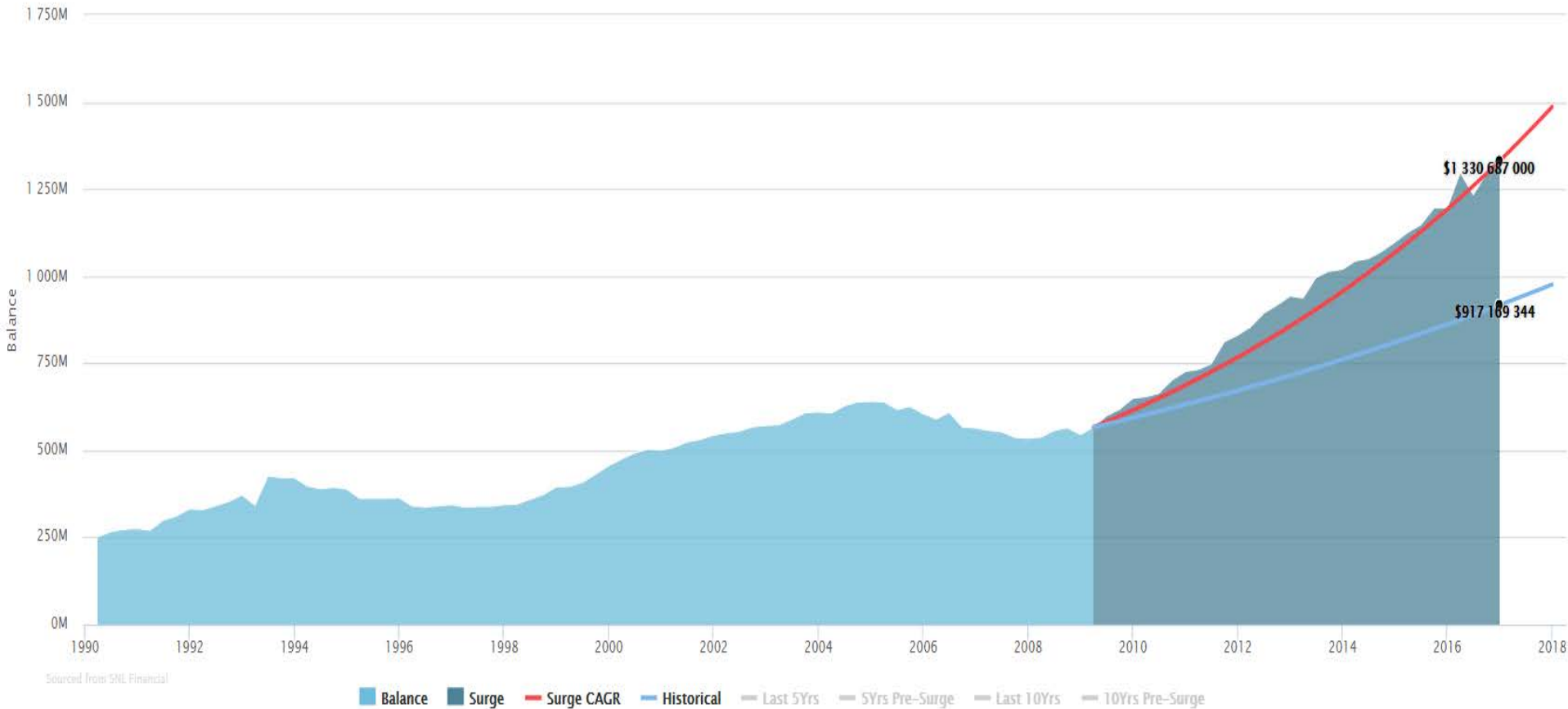
Balances: >1M



Acct. Number	Acct. Balance	Int. Rate	Date Opened
1432798	\$4,226,643	0.00%	05/01/1988
1926435	\$4,222,309	0.00%	10/24/2011
40053019	\$4,087,080	0.00%	10/15/2012
2000401563	\$3,455,914	0.35%	05/13/2016
50160555	\$3,454,887	0.00%	05/13/2016
2000141782	\$3,302,126	3.30%	06/20/2013

Source: Deposits360°

Surge Balances



Sourced from SNE Financial

Source: Deposits360°

- ☑ Learn more about your depositors
 - Identify potential “at risk” deposits (core vs. rate driven customers)
 - Identify concentrations or large dependencies

- ☑ Establish a deposit pricing game plan
 - Lags? CD specials/other products on the “shelf”? MMDA timing?

- ☑ Monitor deposit activities during this next rate cycle
 - Track rate sensitivities vs. most recent deposit study / '04-'06 cycle
 - Track migration/cannibalization of existing deposits
 - Review and adjust assumptions and strategy as we go

- ☑ Understand your true Marginal COF with raising rates
 - What are the effective costs inclusive of cannibalization?

Wholesale Funding Considerations



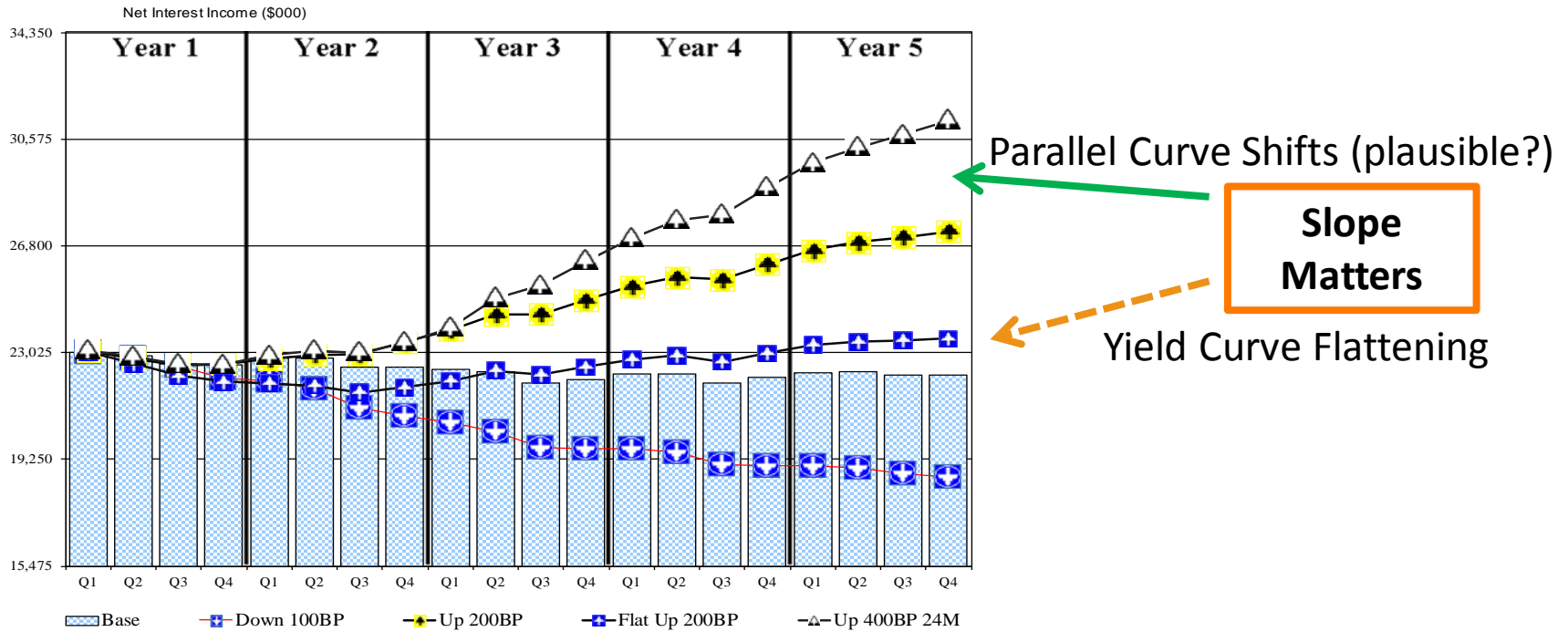
- ◆ Earnings at Risk – **RAMPS**
 - Static vs. Growth Model
 - Parallel & Non-Parallel Shifts
 - 1 -2 Year vs. 5 Year

Upwards of 25-30 scenarios *each* quarter!
YIKES...which to focus on?

- ◆ Earnings at Risk – **SHOCKS**
- ◆ Earnings at Risk – Net Income (KEY) versus Value at Risk – EVE
- ◆ Stress Testing
- ◆ Gap Reporting (1 year? Useful data base, look to >5 year results...)
- ◆ Core Funding Utilization...defines Fixed Rate Capacity, a **Powerful Tool!**

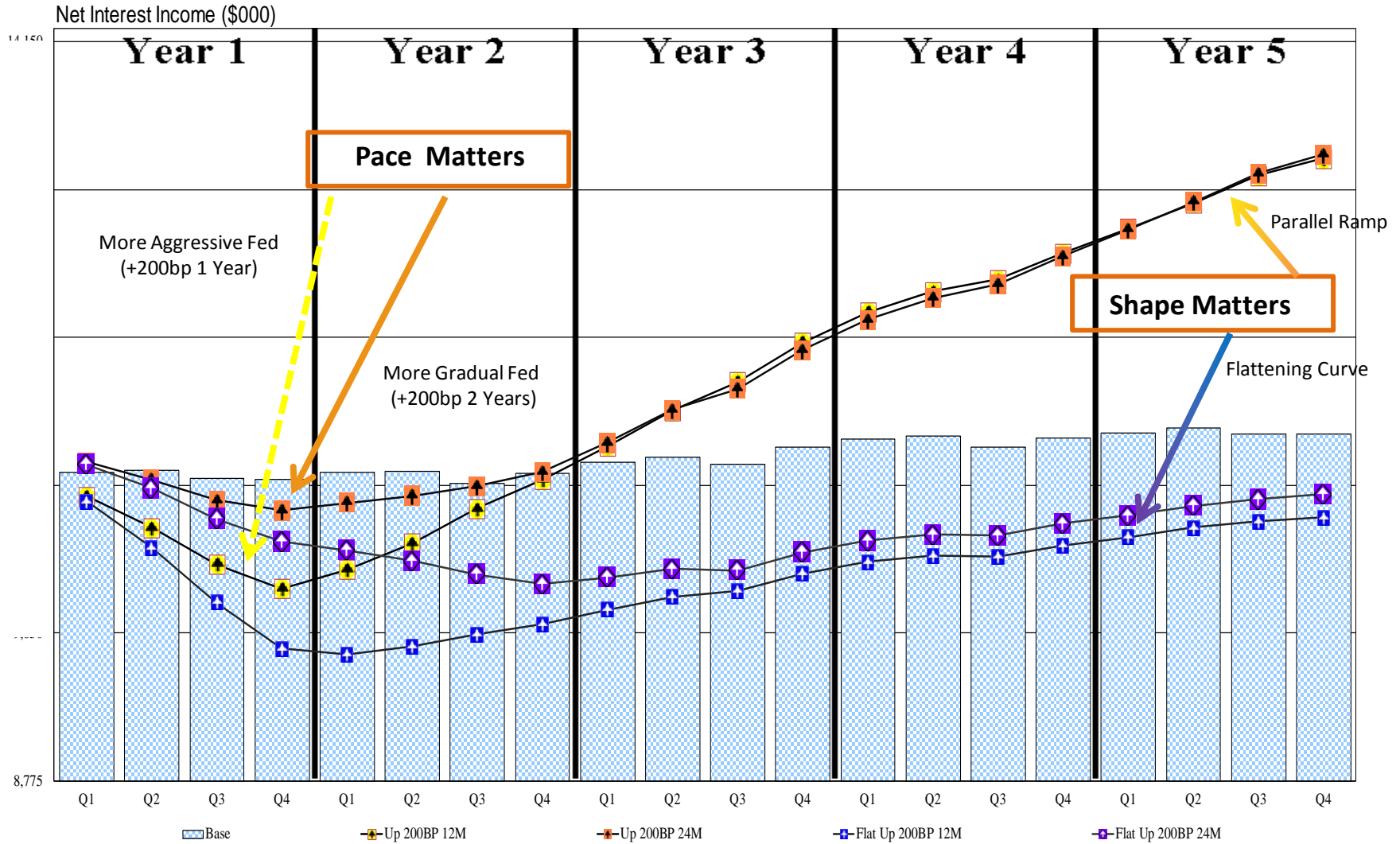
Which Core scenarios to FOCUS on when Making Decisions and Developing Strategies?

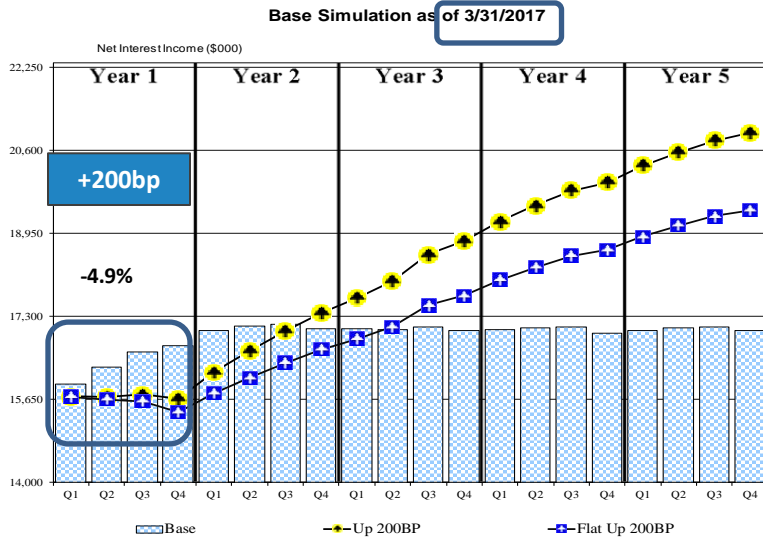
BASE SIMULATION -ALTERNATIVE SCENARIOS



NII SUMMARY

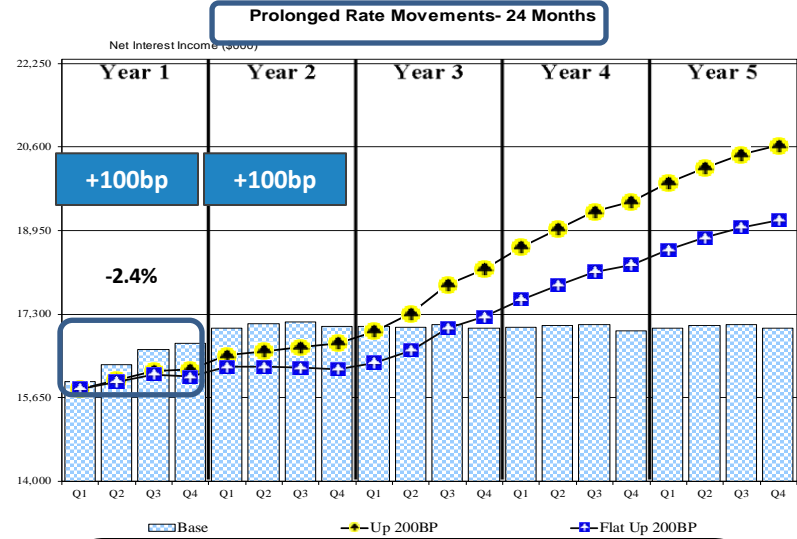
	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	90,562	91,191	91,103	89,894	91,230
Year-2 NII	85,655	90,642	92,121	87,221	92,442
Year-3 NII	80,054	88,855	97,455	89,157	100,541
Year-4 NII	77,194	88,613	102,806	91,418	111,585
Year-5 NII	75,368	89,110	108,016	93,694	121,993





NII SUMMARY

	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>
Year-1 NII	65,560	62,806	62,344
Year-2 NII	68,314	67,160	64,857
Year-3 NII	68,185	72,981	69,165
Year-4 NII	68,143	78,432	73,405
Year-5 NII	68,163	82,575	76,677



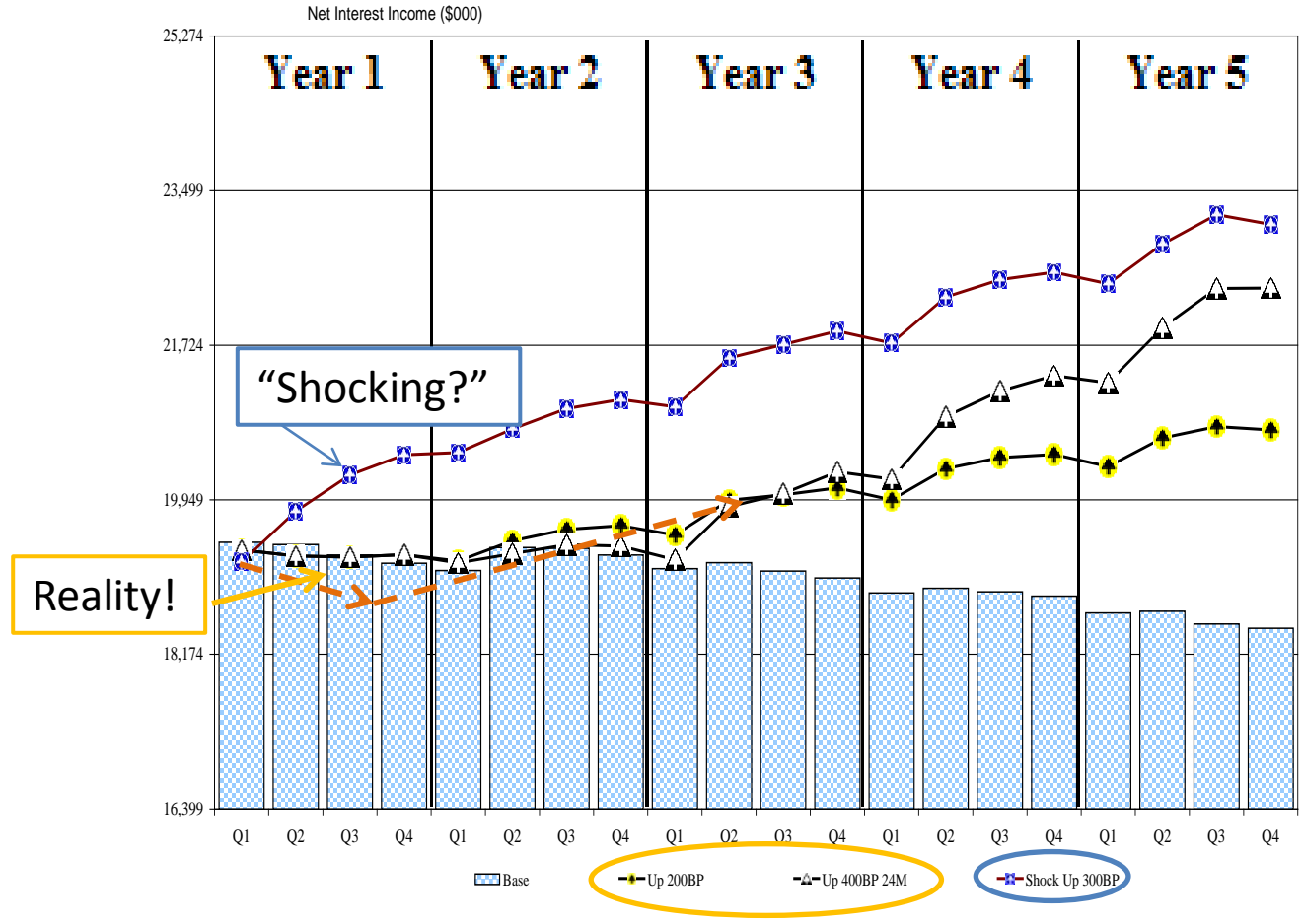
NII SUMMARY

	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>
Year-1 NII	65,560	64,219	63,977
Year-2 NII	68,314	66,425	64,979
Year-3 NII	68,185	70,343	67,193
Year-4 NII	68,143	76,447	71,874
Year-5 NII	68,163	81,160	75,564

CHANGE / DIFFERENCE IN RESULTS

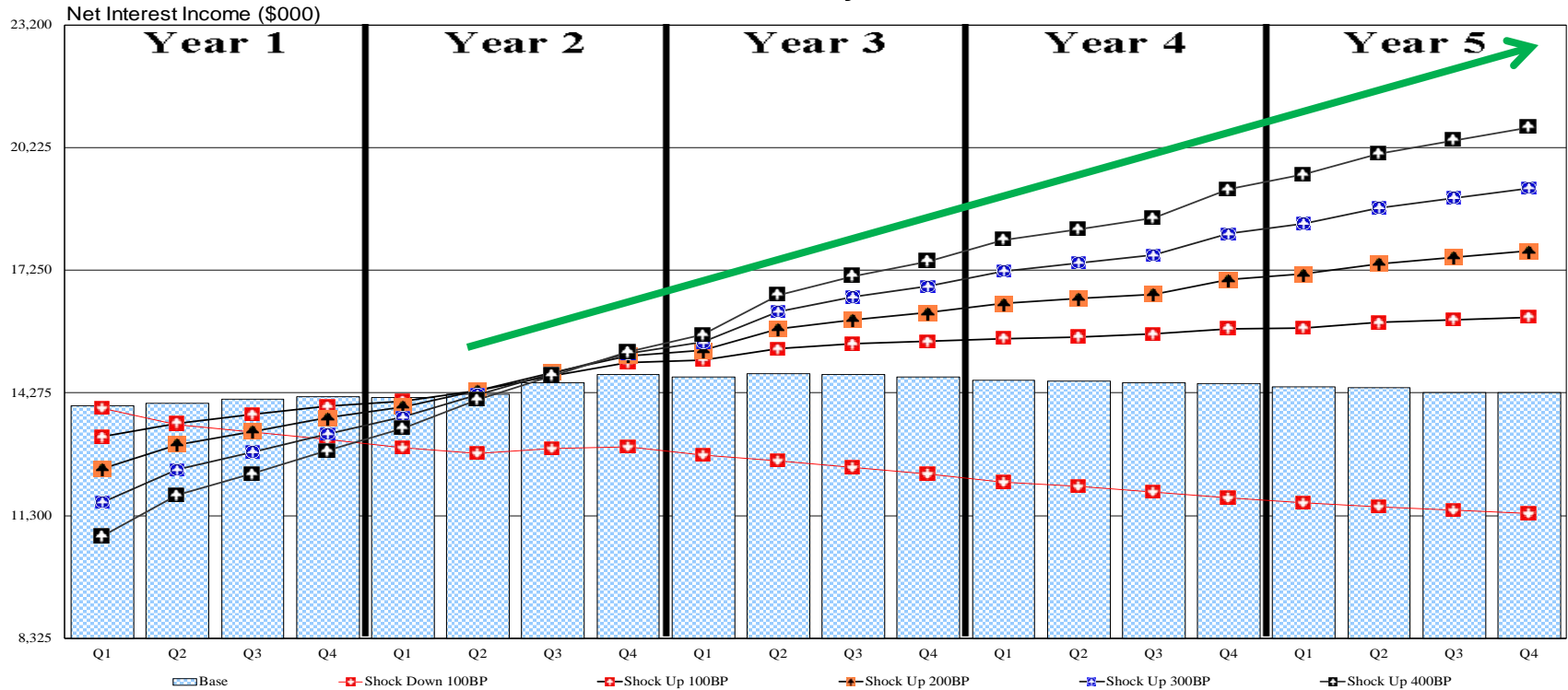
	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>
Year-1 NII	0	1,413	1,632
Year-2 NII	0	-735	122
Year-3 NII	0	-2,638	-1,973
Year-4 NII	0	-1,985	-1,531
Year-5 NII	0	-1,415	-1,113

Projected “exposure/benefit” depends on how fast rates move – pace matters!



Shocks Can Be Misleading; Why Ramps Are Also Important

Shock Analysis



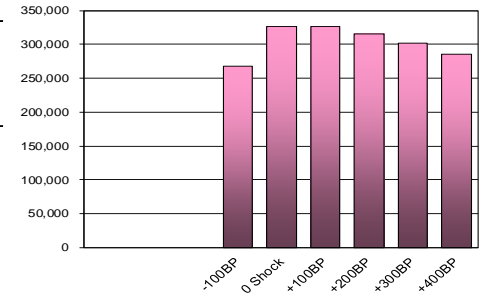
NII SUMMARY						
	Shock Down 100BP	Base	Shock Up 100BP	Shock Up 200BP	Shock Up 300BP	Shock Up 400BP
Year-1 NII	53,876	56,311	54,447	52,461	50,158	47,786
Year-2 NII	51,631	57,649	58,098	58,226	57,908	57,481
Year-3 NII	50,177	58,787	61,406	63,394	65,207	66,902
Year-4 NII	47,728	58,162	62,754	66,684	70,388	73,943
Year-5 NII	45,893	57,387	63,988	69,827	75,381	80,754

What's the Utility?
What doesn't it tell us?
What are the underlying Assumptions?
Be Careful!...

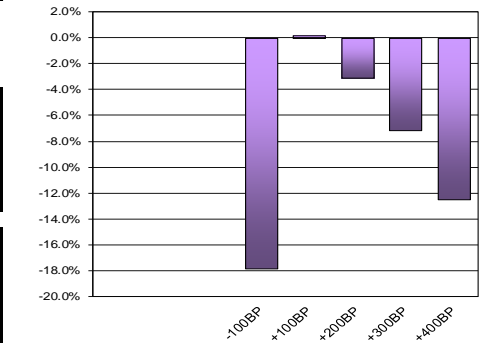
RATE SHOCK SCENARIOS

	Book Value	-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
ASSETS							
Investments	209,487	215,177	209,742	203,380	196,644	189,858	183,280
Loans	2,356,678	2,387,735	2,332,992	2,272,608	2,213,663	2,157,651	2,104,604
Other Assets	173,567	174,761	175,890	176,214	175,987	176,109	176,109
TOTAL ASSETS (EVA)	2,739,733	2,777,674	2,718,624	2,652,203	2,586,295	2,523,618	2,463,993
% Chg from 0 Shock	0.78%	2.17%		-2.44%	-4.87%	-7.17%	-9.37%
LIABILITIES							
Non Maturity Deposits	1,797,084	1,789,284	1,679,119	1,619,241	1,570,982	1,528,537	1,492,853
Time Deposits	462,759	467,550	462,670	457,846	453,131	448,520	444,011
Borrowings	231,453	232,367	230,726	229,160	227,634	226,147	224,699
Other Liabilities	19,450	20,194	19,573	18,836	18,065	17,325	16,616
TOTAL LIABILITIES (EVL)	2,510,747	2,509,395	2,392,089	2,325,083	2,269,812	2,220,530	2,178,179
% Chg from 0 Shock	4.96%	4.90%		-2.80%	-5.11%	-7.17%	-8.94%

Net Economic Value(\$000s)



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



		268,279	326,535	327,120	316,483	303,087	285,814
NET ECONOMIC VALUE (NEV)	228,986	268,279	326,535	327,120	316,483	303,087	285,814
% Chg from 0 Shock		-17.8%		0.2%	-3.1%	-7.2%	-12.5%
Policy Limits						-25.0%	
NEV Ratio (NEV/EVA)	8.36%	9.66%	12.01%	12.33%	12.24%	12.01%	11.60%
Policy Limits						6.00%	
BP Chg from 0 Shock		-235		32	23	0	-41

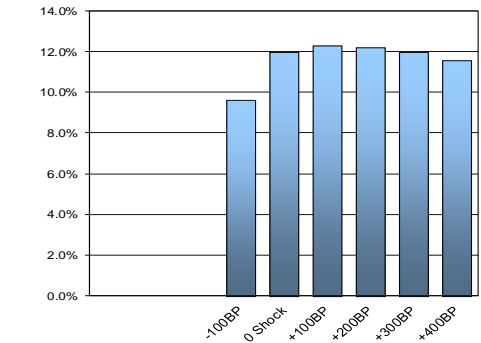
Exposure?
Worst Case is Falling

Risk Summary Grid*				
Post Shock NEV/EVA Ratio	0 to 100bp	100 to 200bp	200 to 400bp	Over 400bp
Over 10%	Min. Risk -1	Min. Risk -1	Min. Risk -1	Mod. Risk -2
6.00% to 10.00%	Min. Risk -1	Min. Risk -1	MOD. RISK (2)	Sig. Risk -3
4.00% to 6.00%	Min. Risk -1	Mod. Risk -2	Sig. Risk -3	High Risk -4
Below 4.00%	Mod. Risk -2	Sig. Risk -3	High Risk -4	High Risk -4

*Included for discussion purposes only. Grid evaluates +200/-100 scenarios for risk assessment.
*Current risk assessment for Risk Summary Grid is based on -100 scenario.

Non-maturity deposits are assumed to have a 7 year average life in the Base/0 Shock scenario based on recent CDA and internal data. Average lives on NMD's are varied in the different shock scenarios per recent CDA.

NEV Ratio (NEV/EVA)



7 Year Aggregate Average Life on NMDs

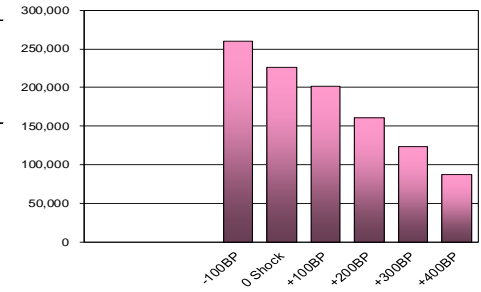
NCUA SUPERVISORY NEV TEST

	Book Value	-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
ASSETS							
Investments	209,487	215,177	209,742	203,380	196,644	189,858	183,280
Loans	2,356,678	2,387,735	2,332,992	2,272,608	2,213,663	2,157,651	2,104,604
Other Assets	173,567	174,761	175,890	176,214	175,987	176,109	176,109
TOTAL ASSETS (EVA)	2,739,733	2,777,674	2,718,624	2,652,203	2,586,295	2,523,618	2,463,993
% Chg from 0 Shock	0.78%	2.17%		-2.44%	-4.87%	-7.17%	-9.37%
LIABILITIES							
Non Maturity Deposits	1,797,084	1,797,084	1,779,113	1,743,531	1,725,740	1,707,949	1,690,158
Time Deposits	462,759	467,550	462,670	457,846	453,131	448,520	444,011
Borrowings	231,453	232,367	230,726	229,160	227,634	226,147	224,699
Other Liabilities	19,450	20,194	19,573	18,836	18,065	17,325	16,616
TOTAL LIABILITIES (EVL)	2,510,747	2,517,196	2,492,083	2,449,373	2,424,570	2,399,942	2,375,484
% Chg from 0 Shock	0.75%	1.01%		-1.71%	-2.71%	-3.70%	-4.68%
NET ECONOMIC VALUE (NEV)	228,986	260,478	226,541	202,830	161,725	123,676	88,509
% Chg from 0 Shock		15.0%		-10.5%	-28.6%	-45.4%	-60.9%
NEV Ratio (NEV/EVA)	8.36%	9.38%	8.33%	7.65%	6.25%	4.90%	3.59%
BP Chg from 0 Shock		104		-69	-208	-343	-474

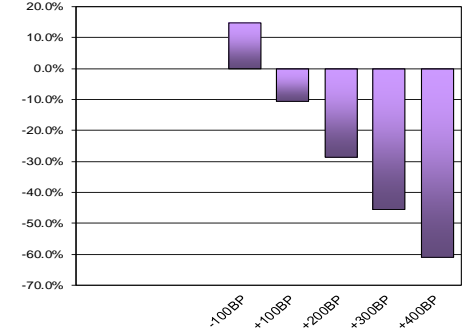
Exposure???:
Best Case is falling?
Worst Case is Rising?

Consider premiums equal average lives NMD @2 years

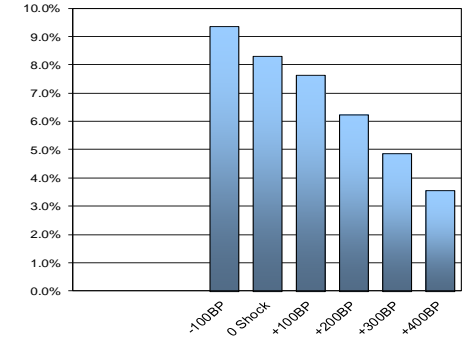
Net Economic Value (\$000s)



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



NEV Ratio (NEV/EVA)



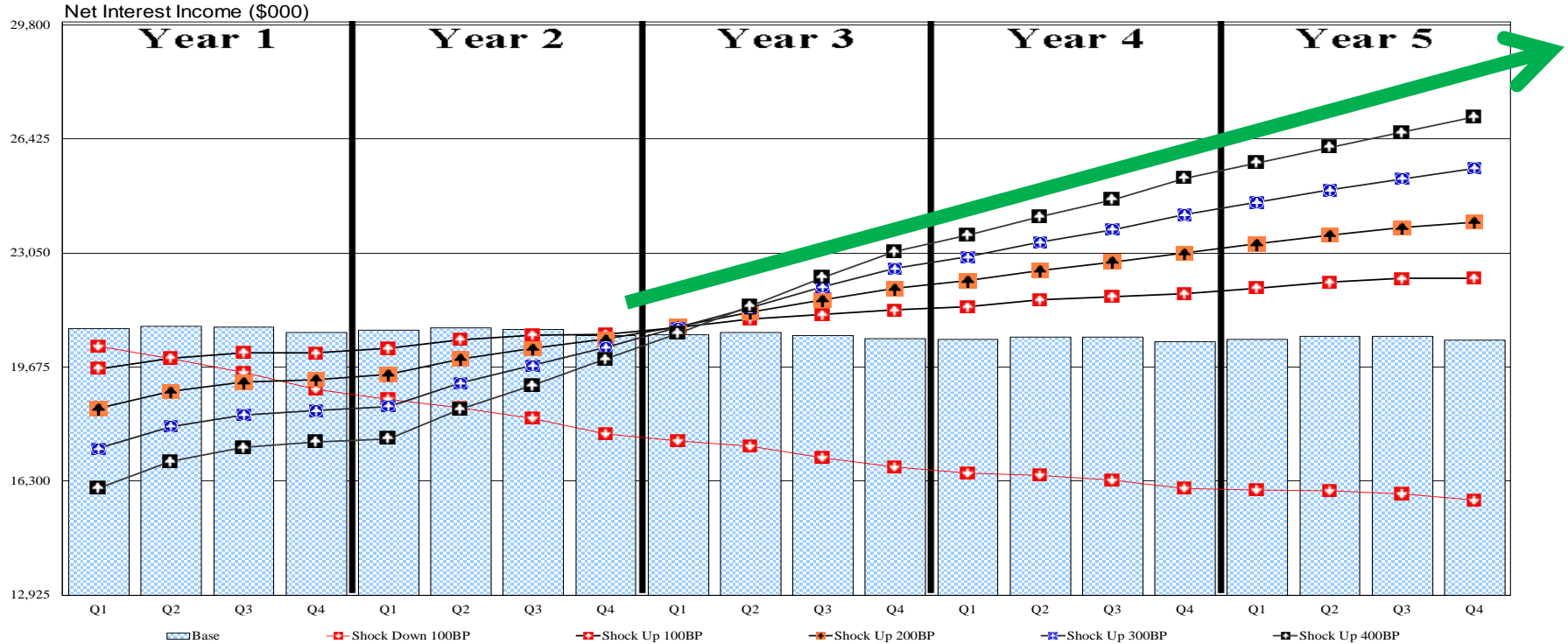
NCUA Supervisory Test Thresholds +300 Shock Scenario

Risk Level	Post-Shock NEV	NEV Sensitivity (%)
Low	> 7%	< 40%
Moderate	4% up to 7%	40% to 65%
High	2% up to 4%	65% to 85%
Extreme	< 2%	> 85%

NMD pricing for 0 shock and +300 based on NCUA guidance and all other scenarios are interpolated. NEV calculations are provided for informational purposes only.

- 100 Shock Scenario = Book Value (interpolated from NCUA guidance)
- 0 Shock Scenario = 1% Premium from Book Value
- +100 Shock Scenario = 2% Premium from 0 Shock (interpolated from NCUA guidance)
- +200 Shock Scenario = 3% Premium from 0 Shock (interpolated from NCUA guidance)
- +300 Shock Scenario = 4% Premium from 0 Shock
- +400 Shock Scenario = 5% Premium from 0 Shock (interpolated from NCUA guidance)

SHOCK ANALYSIS



NII SUMMARY						
	Shock Down 100BP	Base	Shock Up 100BP	Shock Up 200BP	Shock Up 300BP	Shock Up 400BP
Year-1 NII	78,720	83,226	79,772	75,936	71,839	67,716
Year-2 NII	73,055	83,025	81,989	80,095	77,705	75,033
Year-3 NII	68,539	82,463	84,540	85,835	86,922	87,578
Year-4 NII	65,423	82,048	86,727	90,604	94,228	97,587
Year-5 NII	63,728	82,123	88,804	94,682	100,277	105,601

BALANCE SHEET COMPARISON

	9/30/2016			6/30/2016			CHANGE Current vs. Prior			Balance	Rate	% of Assets
	Balance	Rate	% of Assets	Balance	Rate	% of Assets	Balance	Rate	% of Assets			
Investments	283,197	1.48	11%	237,361	1.56	10%	45,836	-0.08	1%			
Loans	2,195,374	4.16	83%	2,050,820	4.24	83%	144,554	-0.08	-1%			
Other Assets	171,625	0.00	6%	169,868	0.00	7%	1,757	0.00	0%			
Total Assets	2,650,196	3.60	100%	2,458,049	3.69	100%	192,147	-0.09	8%			
Non-Maturity Deposits	1,693,312	0.21	64%	1,686,293	0.21	69%	7,019	0.00	-5%			
Time Deposits	414,541	0.92	16%	417,318	0.93	17%	-2,777	-0.01	-1%			
Brokered Deposits	0	0.00	0%	0	0.00	0%	0	0.00	0%			
Borrowings	296,356	0.97	11%	115,806	1.17	5%	180,550	-0.20	6%			
Other Liabilities	22,788	0.00	1%	20,238	0.00	1%	2,550	0.00	0%			
Equity	223,200	0.00	8%	218,394	0.00	9%	4,806	0.00	0%			
Total Liabilities & Equity	2,650,196	0.39	100%	2,458,049	0.36	100%	192,147	0.03	8%			
BALANCE SHEET SPREAD		3.22			3.33			-0.12				

Balance sheet spread does not include the impact of off-balance sheet instruments (Swaps & Caps).

NET INTEREST INCOME SENSITIVITY

	9/30/2016		6/30/2016		CHANGE Current vs. Prior		
	Amount	%	Amount	%	Amount	%	
Year 1 NII Projections							Qtr.-over-Qtr: +\$192MM Growth -12bps "spread" = \$2.9MM increase NII
Down 100BP	82,021	-1.90%	78,787	-2.35%	3,234	0.45%	
Base	83,607		80,683		2,924		
Up 200BP	80,760	-3.41%	78,060	-3.25%	2,700	-0.15%	
Year 2 NII Projections							
Down 100BP	74,911	-10.40%	71,685	-11.15%	3,226	0.75%	
Base	82,037	-1.88%	79,370	-1.63%	2,667		
Up 200BP	81,307	-2.75%	78,948	-2.15%	2,359	-0.60%	
2-Year Cumulative NII Projections							
Down 100BP	156,932	-5.26%	150,472	-5.99%	6,460	0.73%	
Base	165,644		160,053		5,591		
Up 200BP	162,068	-2.16%	157,008	-1.90%	5,060	-0.26%	

90-Day LOOKBACK	9/30/2016	6/30/2016	3/31/2016
Prior 3 Mths' NII Projections (last review)	20,365	19,834	
Prior 3 Mths' NII Actuals	19,385	18,901	
Variance (\$000's and %)	980	933	4.94%

360-Day LOOKBACK
Prior 12 Mths' NII Projections
Prior 12 Mths' NII Actuals
Variance (\$000's and %)

NOTE #1: 9/30/2016 variance due to overprojected income on loans and higher cost of borrowings due to loan growth supported by FHLB Advances.

NOTE #2: The 6/30/2016 variance is attributable to over-projecting loan interest income (specifically Credit Cards, Auto, and Residential loans).

NOTE #3: Projections and actuals exclude fee income and off-balance sheet instruments (Swaps & Caps).



Same CU "Leveraged" Balance Sheet Comparison (6 months later)

Leveraged Balance Sheet

BALANCE SHEET COMPARISON

	6/30/2016			3/31/2016			CHANGE Current vs. Prior			Balance	Rate	% of Assets
	Balance	Rate	% of Assets	Balance	Rate	% of Assets	Balance	Rate	% of Assets			
Investments	1,182,700	3.36	41%	1,068,621	3.48	40%	114,079	-0.12	2%			
Loans	1,510,414	4.20	53%	1,469,099	4.26	54%	41,315	-0.06	-2%			
Other Assets	181,065	0.00	6%	159,340	0.00	6%	21,725	0.00	0%			
Total Assets	2,874,179	3.59	100%	2,697,060	3.70	100%	177,119	-0.11	7%			
Non-Maturity Deposits	1,905,664	0.16	66%	1,859,932	0.16	69%	45,732	0.00	-3%			
Time Deposits	324,665	0.78	11%	332,849	0.80	12%	-8,184	-0.02	-1%			
Brokered Deposits	30,069	0.26	1%	32,276	0.25	1%	-2,207	0.01	0%			
Borrowings	228,081	0.53	8%	115,704	0.64	4%	112,377	-0.11	4%			
Other Liabilities	41,973	0.00	1%	20,300	0.00	1%	20,300	0.00	1%			
Equity	343,724	0.00	12%	335,313	0.00	12%	8,411	0.00	0%			
Total Liabilities & Equity	2,874,179	0.24	100%	2,697,060	0.24	100%	177,119	0.00	7%			
BALANCE SHEET SPREAD		3.36			3.46			-0.10				

NET INTEREST INCOME SENSITIVITY

	6/30/2016		3/31/2016		CHANGE Current vs. Prior	
	Balance	%	Balance	%	Balance	%
Year 1 NII Projections						
Down 100BP	89,023	-0.65%	86,141	-0.62%	2,882	-0.04%
Base	89,610		86,677		2,933	
Up 200BP	86,540	-3.43%	84,923	-2.02%	1,617	-1.40%
Year 2 NII Projections						
Down 100BP	81,044	-9.56%	78,120	-9.87%	2,924	0.31%
Base	85,475	-4.61%	82,291	-5.06%	3,184	
Up 200BP	85,075	-5.06%	84,131	-2.94%	944	-2.12%
2-Year Cumulative NII Projections						
Down 100BP	170,067	-2.87%	164,261	-2.79%	5,806	-0.08%
Base	175,085		168,968		6,117	
Up 200BP	171,615	-1.98%	169,054	0.05%	2,561	-2.03%

90-Day LOOKBACK	6/30/2016	3/31/2016	12/31/2015
Prior 3 Mths' NII Projections (last review)	22,084	21,925	
Prior 3 Mths' NII Actuals	22,161	21,583	
Variance (\$000's and %)	-77	342	1.58%

360-Day LOOKBACK
Prior 12 Mths' NII Projections
Prior 12 Mths' NII Actuals
Variance (\$000's and %)

A detailed reconciliation of the current quarter can be found on the following page.

INTEREST RATE SCENARIOS

	Base		Down 100BP		Up 200BP		Up 400BP 24M	
Assets (> 60 Months)	309,579		260,986		351,036		355,537	
Core Liabilities (> 60 Months)	Volume	Cumulative Excess	Volume	Cumulative Excess	Volume	Cumulative Excess	Volume	Cumulative Excess
Equity	148,291		148,291		148,291		148,291	
Other Liabilities	26,865		26,865		26,865		26,865	
DDA	102,567		102,567	16,737	102,567		102,567	
NOW	97,265	65,409	97,265	114,002	97,265	23,952	97,265	19,451
Shares	452,402	517,811	452,402	566,404	452,402	476,354	452,402	471,853
Other Deposits	495	518,306	495	566,899	495	476,849	495	472,348
Borrowings	77	518,383	77	566,976	77	476,926	77	472,425
	827,962		827,962		827,962		827,962	
% Utilization	37.4%		31.5%		42.4%		42.9%	

NO History, NEW Client, First Meeting! What is an appropriate Recommendation???

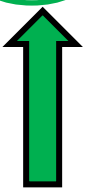
HISTORICAL ASSESSMENT

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NOTE #1: Core funding utilization measures the long term structural position of the balance sheet (i.e. NEV simulation) and quantifies the degree to which the Credit Union utilizes long-term (i.e. >5-years) funding sources to support long-term assets. The cumulative excess may be used as an indicator of the Credit Union's capacity to add additional long-term assets.

	Total		One Day		Jan-17		Feb-17		Mar-17		4-6 Months		7-12 Months		13-24 Months		25-36 Months		37-60 Months		>60 Months	
	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate
HE Adj 3M (Prime)	386	6.00	-	-	8	6.00	52	6.00	325	6.00	-	-	-	-	-	-	-	-	-	-	-	-
HE Adj 1Y (Prime)	35,418	5.55	-	-	2,036	5.85	2,744	5.62	2,987	5.63	9,023	5.38	18,628	5.58	-	-	-	-	-	-	-	-
HE Adj 1Y (Prime) Non-Accrual	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50
Home Equity Participations	27,210	3.38	-	-	27,210	3.38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Install Fixed -	24,305	9.38	-	-	1,854	9.31	1,089	9.48	1,063	9.44	3,014	9.45	5,419	9.39	8,180	9.36	3,555	9.35	130	8.21	-	-
Install Fixed - EDU	280	3.58	-	-	6	3.53	6	3.53	6	3.55	123	3.44	58	3.38	42	3.59	24	3.79	13	4.58	3	7.25
Install Fixed - OD	23	16.30	-	-	2	16.08	2	16.05	2	16.05	6	16.13	7	16.50	5	16.50	-	16.50	-	-	-	-
Install Non-Accrual	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94
Install Non-Accrual EDU	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28
Install Adj 1M (Prime)	3,871	13.50	-	-	3,871	13.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Install Adj 1M (Prime) EDU	44,451	5.86	-	-	44,451	5.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Install Adj 1M (Prime) Non-Accrual	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Install Adj 1M (Prime) Non-Accrual EDU	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Install Adj 1M (Share Rate)	863	2.15	-	-	863	2.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Auto Fixed -	169,444	3.45	-	-	7,353	3.55	6,858	3.32	6,817	3.34	19,783	3.34	36,368	3.37	56,487	3.47	29,716	3.57	6,063	3.72	-	-
Auto Fixed - Ind	35,446	3.96	-	-	1,127	3.96	1,120	3.96	1,125	3.97	3,308	3.97	6,412	3.97	11,721	3.97	8,668	3.95	1,965	3.87	-	-
Auto Non-Accrual	260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	260
Auto Adj 1M (Prime)	4,356	5.86	-	-	4,356	5.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Auto Adj 1M (Prime) Non-Accrual	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Credit Cards	88,476	9.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88,476
Loans HFS	4,754	3.95	-	-	4,754	3.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Great Lakes Student Loans	1,322	2.93	-	-	30	2.93	29	2.93	29	2.93	83	2.93	150	2.93	247	2.93	189	2.93	255	2.93	309	2.93
Deferred Fees	1,595	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,595
Other Loan Items	2,180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,180
Loan Loss Reserve	(17,608)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(17,608)
Loan Adjustment	(25)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(25)
Cash & Due	11,726	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,726
Fixed Assets	49,981	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49,981
Goodwill / Intangibles	6,331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,331
OREO	1,117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,117
NCUSIF	11,218	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,218
Other Assets	20,627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,627
Total Assets	1,395,416	3.95	14,186	0.74	118,658	5.02	27,629	4.14	32,529	4.06	90,962	3.94	174,579	3.96	246,436	3.81	174,000	3.76	206,857	3.62	309,579	4.07

What's funding the \$309MM of long-term assets 5+ years???





GAP Report "Liabilities"

	Total		One Day		Jan-17		Feb-17		Mar-17		4-6 Months		7-12 Months		13-24 Months		25-36 Months		37-60 Months		>60 Months	
	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate	Volume	Rate
IRA 24-35 Months	2,395	0.66	-	-	172	0.55	84	0.55	104	0.55	378	0.55	469	0.64	1,188	0.75	-	-	-	-	-	-
IRA 36-47 Months	1,008	0.94	-	-	2	0.75	27	0.75	11	0.75	90	0.75	222	0.76	293	1.01	363	1.07	-	-	-	-
IRA 48-59 Months	1,414	1.02	-	-	32	0.95	136	0.90	1	0.90	47	0.90	47	0.80	908	0.99	44	1.02	197	1.29	-	-
IRA 60+ Months	22,316	1.37	-	-	87	1.49	464	1.49	232	1.49	1,227	1.48	1,282	1.27	4,940	1.10	2,557	1.05	11,526	1.56	-	-
IRA Special 11 Months	2,701	1.00	-	-	252	0.93	241	1.08	398	1.00	523	0.98	1,287	1.02	-	-	-	-	-	-	-	-
IRA Special 12 Months	17	1.00	-	-	7	1.00	-	-	-	-	-	-	10	1.00	-	-	-	-	-	-	-	-
IRA Special 17 Months	4,968	1.14	-	-	424	1.00	113	1.07	103	0.99	589	1.10	2,194	1.24	1,544	1.08	-	-	-	-	-	-
IRA Special 23 Months	5,109	1.43	-	-	-	-	-	-	-	-	1,800	1.48	1,525	1.49	1,783	1.34	-	-	-	-	-	-
IRA Special 30 Months	6,009	1.57	-	-	-	-	-	-	-	-	-	-	201	1.70	4,078	1.62	1,730	1.44	-	-	-	-
Jumbo CD 12-17 Months	1,049	1.49	-	-	-	-	-	-	-	-	547	1.49	502	1.49	-	-	-	-	-	-	-	-
Jumbo CD 60+ Months	853	1.39	-	-	-	-	-	-	-	-	-	-	269	1.24	326	1.05	-	-	259	1.98	-	-
Jumbo CD Special 11 Months	2,317	1.43	-	-	698	1.40	504	1.48	-	-	609	1.48	506	1.34	-	-	-	-	-	-	-	-
Jumbo CD Special 17 Months	2,013	1.46	-	-	503	1.49	-	-	-	-	-	-	503	1.63	1,007	1.36	-	-	-	-	-	-
Jumbo CD Special 21 Months	4,650	1.17	-	-	-	-	-	-	-	-	-	-	1,612	1.14	3,038	1.19	-	-	-	-	-	-
Jumbo CD Special 21 Months COM	252	1.24	-	-	-	-	-	-	-	-	-	-	252	1.24	-	-	-	-	-	-	-	-
Jumbo CD Special 23 Months	4,329	1.68	-	-	309	1.73	-	-	789	1.73	1,301	1.63	1,085	1.76	845	1.58	-	-	-	-	-	-
Jumbo CD Special 23 Months COM	1,040	1.43	-	-	-	-	-	-	-	-	-	-	276	1.29	-	-	-	-	-	-	-	-
Jumbo CD Special 27 Months	370	1.74	-	-	-	-	-	-	-	-	-	-	-	-	370	1.74	-	-	-	-	-	-
Jumbo CD Special 30 Months	6,526	1.63	-	-	543	1.37	981	1.49	796	1.49	-	-	560	1.69	1,594	1.79	2,052	1.68	-	-	-	-
Jumbo CD Special 39 Months	251	1.00	-	-	-	-	-	-	-	-	-	251	1.00	-	-	-	-	-	-	-	-	-
Jumbo IRA 1-5 Months	325	0.20	-	-	-	-	325	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jumbo IRA 12-17 Months	614	0.40	-	-	-	-	-	-	-	-	-	614	0.40	-	-	-	-	-	-	-	-	-
Jumbo IRA 24-35 Months	304	1.98	-	-	-	-	304	1.98	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jumbo IRA 60+ Months	1,794	1.42	-	-	-	-	-	-	-	-	-	-	-	-	285	1.05	-	-	1,509	1.49	-	-
Jumbo IRA Special 30 Months	2,897	1.78	-	-	-	-	-	-	-	-	-	-	-	-	1,770	1.83	1,126	1.69	-	-	-	-
FHLB Fixed -	15,982	1.73	-	-	213	1.76	214	1.76	216	1.76	645	1.76	1,299	1.76	2,633	1.76	2,681	1.76	8,081	1.70	-	-
Warehouse Line Borrowings	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77
Other Liabilities	26,865	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26,865
Equity	149,215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	149,215
OCI (ASC 320)	(924)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(924)
Total Liabilities & Equity	1,395,416	0.46	-	-	19,222	1.11	22,613	1.27	221,162	0.49	56,529	1.21	73,971	1.15	123,773	1.27	23,552	1.38	26,634	1.61	827,961	0.12
Gap (and Rate Spread)	-	-	14,186	0.74	99,436	3.91	5,016	2.87	(188,633)	3.58	34,433	2.73	100,608	2.81	122,663	2.54	150,448	2.38	180,224	2.01	(518,382)	3.95
Cumulative Gap (Spread)	-	-	14,186	0.74	113,622	3.45	118,638	3.29	(69,995)	3.82	(35,562)	3.56	65,047	3.36	187,710	3.13	338,158	3.05	518,382	2.95	-	-3.48
RSA/RSL	-	-	-	-	-	6.17	-	1.22	-	0.15	-	1.61	-	2.36	-	1.99	-	7.39	-	7.77	-	0.37
Cumulative RSA/RSL	-	-	-	-	-	6.91	-	3.84	-	0.73	-	0.89	-	1.17	-	1.36	-	1.63	-	1.91	-	1.00
Gap/Total Assets	-	-	-	0.01	-	0.07	-	-	-	(0.14)	-	0.02	-	0.07	-	0.09	-	0.11	-	0.13	-	(0.37)
Cum. Gap/Total Assets	-	-	-	0.01	-	0.08	-	0.09	-	(0.05)	-	(0.03)	-	0.05	-	0.13	-	0.24	-	0.37	-	-

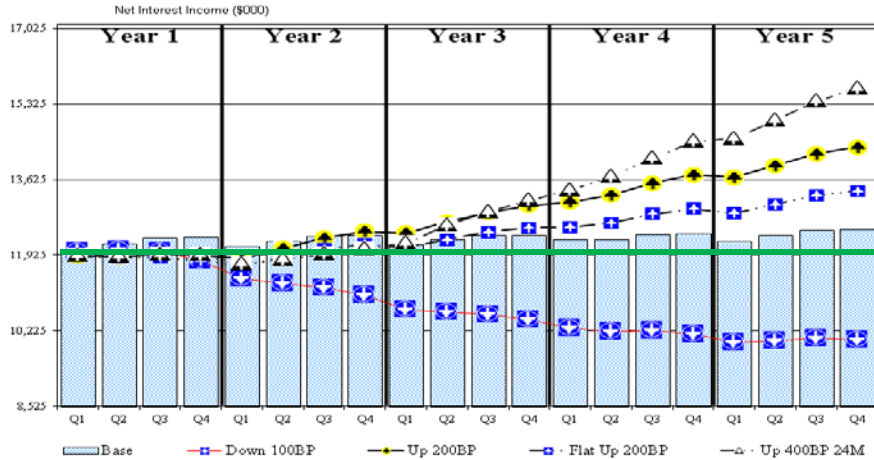
Answer: \$827MM of Long term, Non-rate sensitive Core Funds with \$518MM "excess" left over



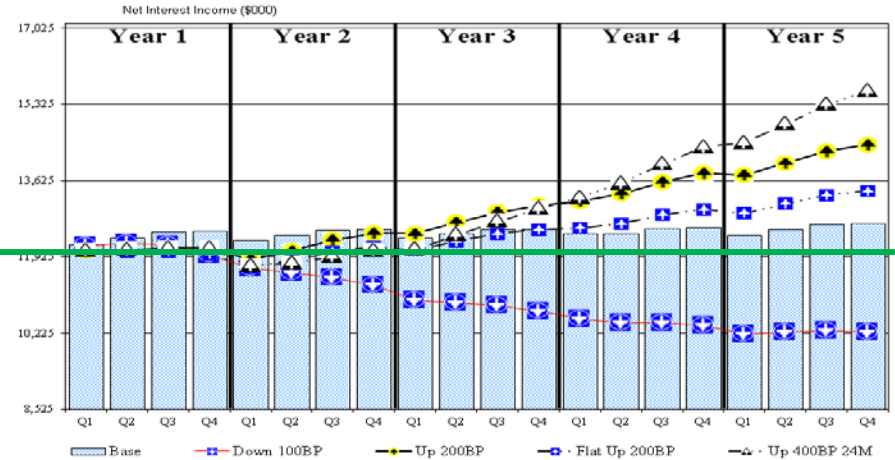
\$50MM Purchase of MBS (15 & 20 Year) funded by 1 yr. Advance

Balance Sheet can support holding Long Term Assets; consider Loans as an alternative

Base Simulation as of 12/31/2016



\$50MM MBS Purchases



NII SUMMARY

	Down 100BP	Base	Up 200BP	Flat Up 200BP	Up 400BP 24M
Year-1 NII	47,886	48,870	47,674	47,458	47,674
Year-2 NII	44,932	49,074	48,703	47,804	47,560
Year-3 NII	42,402	49,163	51,044	49,354	50,057
Year-4 NII	40,886	49,318	53,686	51,028	55,676
Year-5 NII	40,053	49,572	56,190	52,597	60,588

NII SUMMARY

	Down 100BP	Base	Up 200BP	Flat Up 200BP	Up 400BP 24M
Year-1 NII	48,553	48,551	48,381	48,130	48,381
Year-2 NII	46,988	49,784	48,682	47,735	47,494
Year-3 NII	43,411	49,873	51,117	49,334	50,215
Year-4 NII	41,838	50,027	53,873	51,074	55,168
Year-5 NII	40,962	50,282	56,463	52,704	60,296

CHANGE / DIFFERENCE IN RESULTS

	Down 100BP	Base	Up 200BP	Flat Up 200BP	Up 400BP 24M
Year-1 NII	667	881	708	672	708
Year-2 NII	1,056	710	-21	-60	-66
Year-3 NII	1,008	710	74	-20	-642
Year-4 NII	963	708	178	46	-509
Year-5 NII	909	710	272	100	-293

Purchase \$50MM of 15/20 year MBS (@ 2.62% and 3.04% respectively), funded with 1 year FHLB borrowings @ 1.39%.

INTEREST RATE SCENARIOS

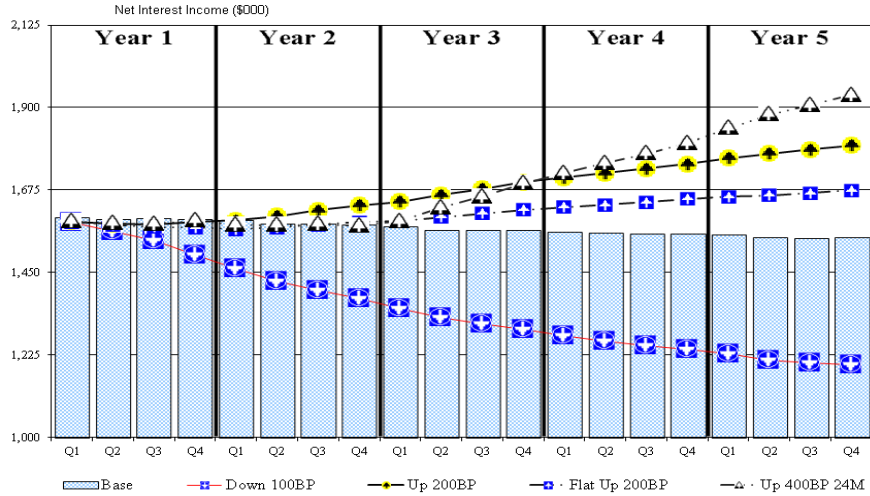
	Base		Down 100BP		Up 200BP		Up 400BP 24M	
Assets (> 60 Months)	58,004		39,276		69,818		71,467	
Core Liabilities (> 60 Months)	Volume	Cumulative Excess	Volume	Cumulative Excess	Volume	Cumulative Excess	Volume	Cumulative Excess
Equity	34,621		34,621		34,621		34,621	
Other Liabilities	4,030		4,030		4,030		4,030	
DDA	4,448		4,448	3,823	4,448		4,448	
NOW	17,806	2,901	17,806	21,629	17,806		17,806	
Shares	45,449	48,350	45,449	67,078	45,449	36,536	45,449	34,887
Other Deposits	212	48,562	212	67,290	212	36,748	212	35,099
Borrowings	0	48,562	5,000	72,290	0	36,748	0	35,099
	106,566		111,566		106,566		106,566	
% Utilization	54.4%		35.2%		65.5%		67.1%	

HISTORICAL ASSESSMENT

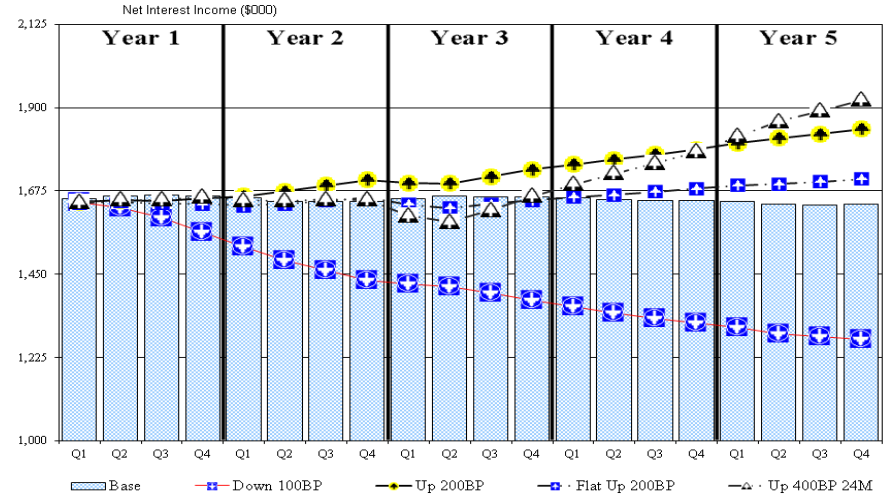
June 30, 2016	44.6%	27.9%	57.8%	59.3%
March 31, 2016	46.0%	30.5%	56.3%	57.5%

NOTE #1: Core funding utilization measures the long term structural position of the balance sheet (i.e. NEV simulation) and quantifies the degree to which the Credit Union utilizes long-term (i.e. >5-years) funding sources to support long-term assets. The cumulative excess may be used as an indicator of the Credit Union's capacity to add additional long-term assets.

Base Simulation as of 9/30/2016



\$15 Million Leverage



NII SUMMARY

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	6,185	6,387	6,339	6,313	6,347
Year-2 NII	5,665	6,335	6,448	6,308	6,317
Year-3 NII	5,283	6,267	6,679	6,423	6,566
Year-4 NII	5,030	6,226	6,910	6,555	7,048
Year-5 NII	4,840	6,182	7,118	6,658	7,565

NII SUMMARY

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	6,439	6,644	6,597	6,568	6,605
Year-2 NII	5,902	6,604	6,729	6,580	6,600
Year-3 NII	5,619	6,638	6,838	6,556	6,481
Year-4 NII	5,354	6,612	7,067	6,678	6,944
Year-5 NII	5,148	6,568	7,291	6,790	7,497

CHANGE / DIFFERENCE IN RESULTS

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	254	257	259	255	259
Year-2 NII	237	269	280	272	283
Year-3 NII	335	371	158	133	-85
Year-4 NII	324	386	156	122	-104
Year-5 NII	308	386	173	132	-68

This simulation assumes \$15MM of 30Y Jumbo MBS at 3.19% are purchased using 2Y FHLB advances at 1.40%. These advances are assumed to roll short upon maturity.

<u>STRATEGY</u>	<u>EXPECTED RESULTS</u>	<u>RISKS</u>
<p>Discuss Bond Portfolio Strategy:</p> <ul style="list-style-type: none"> • Discuss plan for upcoming security cash flow @\$14MM over next 12 months. <ul style="list-style-type: none"> ➤ Review risk vs. return dynamics of today’s higher rates and steeper curve and discounts now available on longer term Fixed Rate MBS ➤ Discuss recent purchases post quarter end ➤ Review leverage or “Pre-investment” strategy for next year’s investment cash flow (\$15MM) into MBS (see NII Simulation results) 	<ul style="list-style-type: none"> • Discuss @ ALCO. • Increased NII \$257,000 base case annually; \$800,000 - \$1MM over 5 years in +200bps scenarios, including “flattener” • Temporarily reduced capital “ratio” • Increased Tier 1 liquidity • Total liquidity neutral as MBS is eligible collateral • Reduced exposure to flat, falling and most rising rates • Reduced overhead expense ratio, improved efficiency ratio • Increased ROA and ROE 	<ul style="list-style-type: none"> • Discuss @ ALCO. • Extension risk of MBS • NO Premium risk (discounted bonds) • NEV impact/price risk • Opportunity cost if rates rise sufficiently and aggressively beyond year 5

Creating Clarity for Balance Sheet Management



- ◆ Interest Rate Risk
- ◆ Liquidity
- ◆ Capital/Earnings
- ◆ Credit

Misinformation/“Under-information” = Incorrect/Suboptimal Decisions

OBJECTIVES: *Lengthen Assets*
 Shorten Liabilities

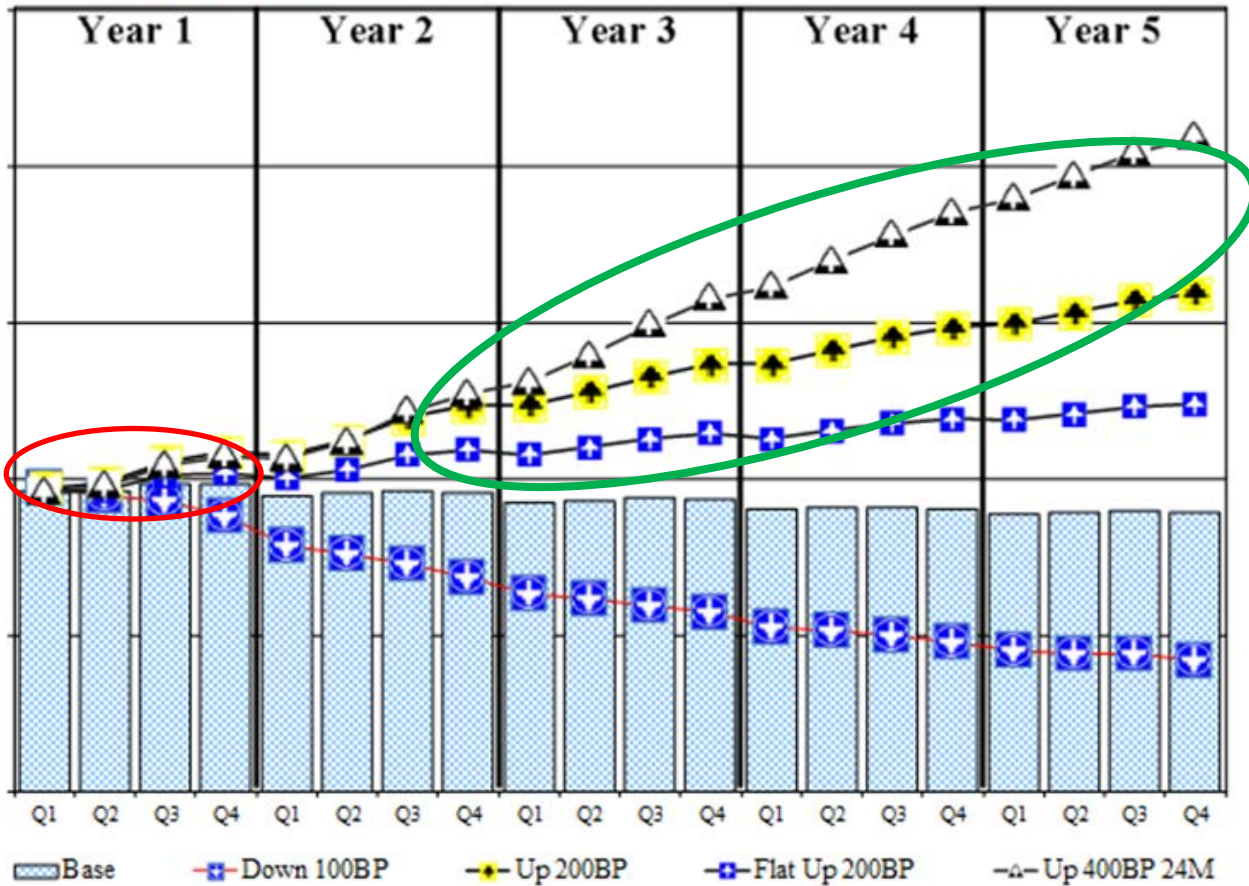


ASSET SENSITIVE DILEMMA:

- ◆ “Reluctance” to Utilize Capacity for Longer-Term Assets???

BASE SIMULATION -ALTERNATIVE SCENARIOS

Net Interest Income (\$000)



Considerations:

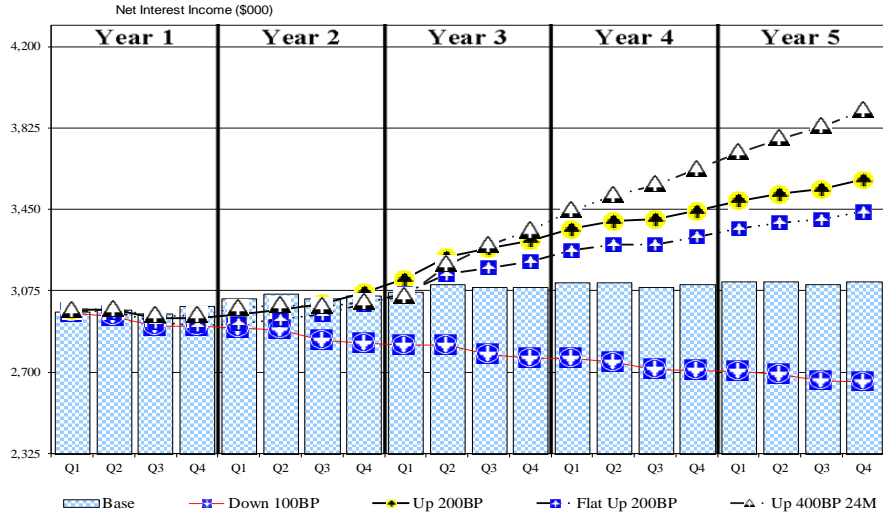
- ◆ Extend Cash
- ◆ Understand Capacity to Extend Assets
- ◆ Mismatched Leverage
- ◆ Hold Portion of Fixed Rate Mortgages
- ◆ Flexibility With Commercial Deals and Structures
- ◆ “Floors” or Last Layer Swaps? (derivatives)

PRIME Swap Rates						
Term	Bullet	Amortization Period				
		10	15	20	25	30
1	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%
2	4.42%	4.41%	4.41%	4.42%	4.42%	4.42%
3	4.46%	4.45%	4.45%	4.46%	4.46%	4.46%
4	4.50%	4.48%	4.49%	4.49%	4.49%	4.49%
5	4.54%	4.52%	4.53%	4.53%	4.53%	4.53%
7	4.66%	4.60%	4.63%	4.64%	4.65%	4.65%
10	4.77%	4.63%	4.71%	4.74%	4.75%	4.76%
11	4.79%		4.72%	4.75%	4.76%	4.77%
12	4.81%		4.73%	4.76%	4.78%	4.78%
13	4.82%		4.73%	4.77%	4.79%	4.80%
14	4.84%		4.74%	4.78%	4.80%	4.81%
15	4.85%		4.73%	4.79%	4.80%	4.82%
20	4.88%			4.79%	4.83%	4.85%
25	4.89%				4.82%	4.85%
30	4.88%					4.84%

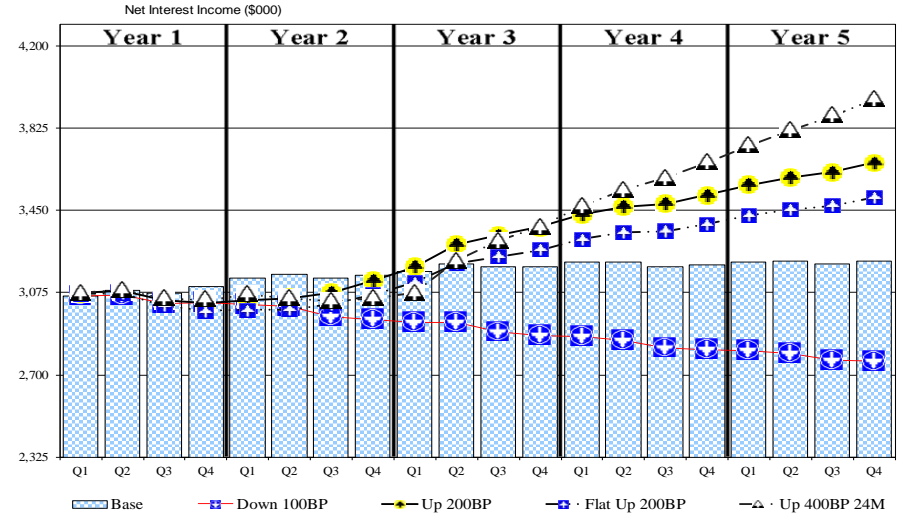


\$15 Million of 7 Year CRE(4.25% , 20 Year Amortization Funded with Blend of 1 Month FHLB/15 Month CDs

Base Simulation as of 6/30/2017



\$15MM CRE Loan Growth



NII SUMMARY

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	11,752	11,932	11,871	11,809	11,900
Year-2 NII	11,483	12,188	12,038	11,844	12,027
Year-3 NII	11,197	12,355	12,934	12,605	12,880
Year-4 NII	10,927	12,416	13,604	13,161	14,158
Year-5 NII	10,707	12,450	14,140	13,595	15,223

NII SUMMARY

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	12,179	12,336	12,221	12,147	12,250
Year-2 NII	11,955	12,609	12,299	12,082	12,198
Year-3 NII	11,654	12,776	13,199	12,837	12,978
Year-4 NII	11,371	12,837	13,899	13,412	14,281
Year-5 NII	11,139	12,871	14,458	13,860	15,398

CHANGE / DIFFERENCE IN RESULTS

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	427	403	350	338	350
Year-2 NII	472	421	260	238	170
Year-3 NII	458	420	265	232	98
Year-4 NII	444	421	294	250	122
Year-5 NII	432	421	318	265	176

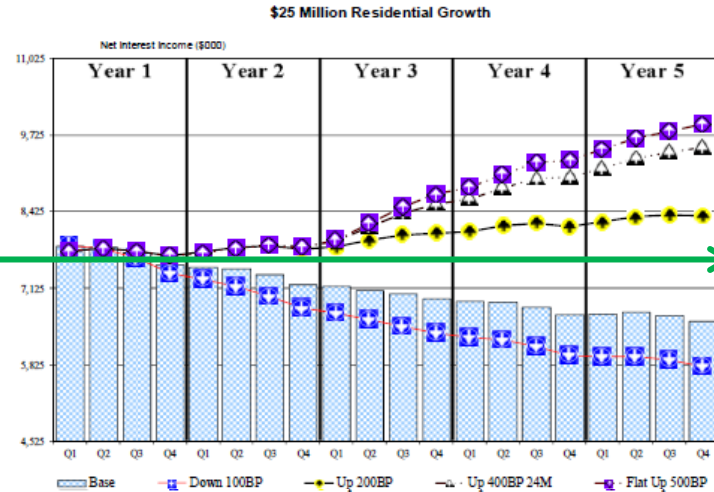
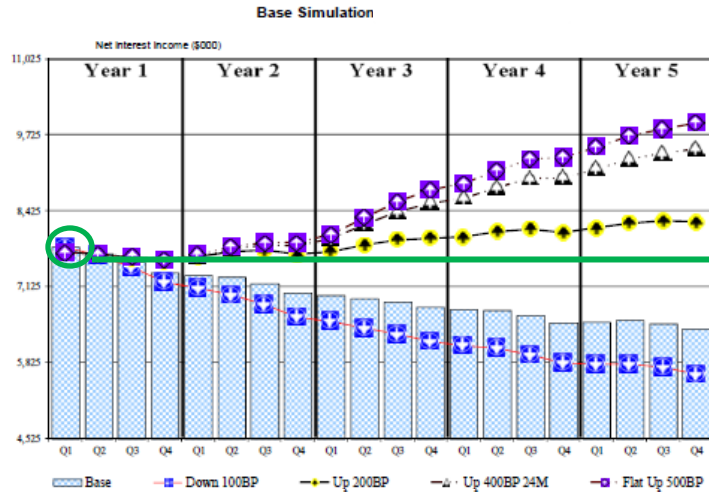
Simulation assumes \$15MM of 7Y CRE Fixed loan growth @ 4.25% funded with \$7.5MM of 1M FHLB Advances @ 1.37% and \$7.5MM of 15 Month CDs @ 1.50%.

1m LIBOR Floor Pricing (% of Notional)

Term	1M LIBOR Strike				
	0.50%	1.00%	1.50%	2.00%	3.00%
1	0.08%	0.08%	0.21%	0.68%	1.69%
2	0.08%	0.08%	0.41%	1.23%	3.17%
3	0.08%	0.20%	0.69%	1.79%	4.55%
4	0.16%	0.39%	1.05%	2.40%	5.85%
5	0.31%	0.65%	1.47%	3.04%	7.11%
7	0.67%	1.07%	2.36%	4.33%	9.49%
10	1.32%	2.20%	3.76%	6.26%	12.84%

*1ML = 1.23%

Also, Discuss Fixed Rate Commercial



NII SUMMARY

	Down 100BP	Base	Up 200BP	Up 400BP 24M	Flat Up 500BP
Year-1 NII	30,118	30,391	30,573	30,564	30,591
Year-2 NII	27,493	28,776	30,791	31,051	31,227
Year-3 NII	25,433	27,507	31,433	33,093	33,677
Year-4 NII	23,963	26,574	32,205	35,418	36,635
Year-5 NII	22,960	25,932	32,834	37,328	38,966

NII SUMMARY

	Down 100BP	Base	Up 200BP	Up 400BP 24M	Flat Up 500BP
Year-1 NII	30,647	30,942	30,996	30,987	30,964
Year-2 NII	28,206	29,511	31,183	31,198	31,197
Year-3 NII	26,131	28,242	31,852	33,045	33,392
Year-4 NII	24,646	27,309	32,655	35,446	36,434
Year-5 NII	23,629	26,666	33,311	37,424	38,837

Never Make Less \$\$\$ Than Today

CHANGE / DIFFERENCE IN RESULTS

	Down 100BP	Base	Up 200BP	Up 400BP 24M	Flat Up 500BP
Year-1 NII	528	551	423	423	373
Year-2 NII	713	735	393	147	-30
Year-3 NII	698	735	418	-48	-264
Year-4 NII	683	735	449	28	-202
Year-5 NII	669	735	477	95	-129

Opportunity Cost

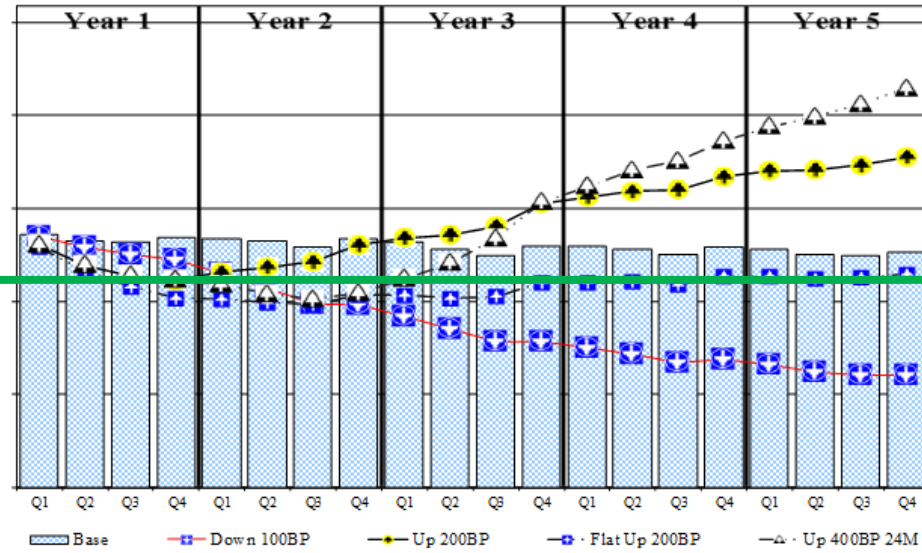
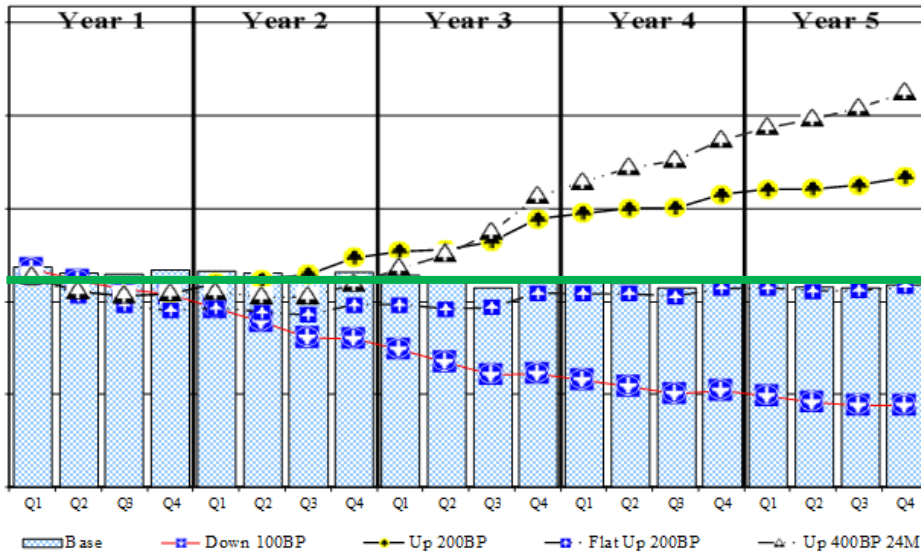
Q: What About Funding with Borrowings?

Base Simulation

Combined Cash Deployment

Net Interest Income (\$000)

Net Interest Income (\$000)



CHANGE / DIFFERENCE IN RESULTS

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	794	786	537	501	537
Year-2 NII	808	786	281	217	-9
Year-3 NII	777	786	342	240	-191
Year-4 NII	747	786	402	284	-59
Year-5 NII	720	786	453	283	54

OBJECTIVES: *Shorten Assets*
 Lengthen Liabilities

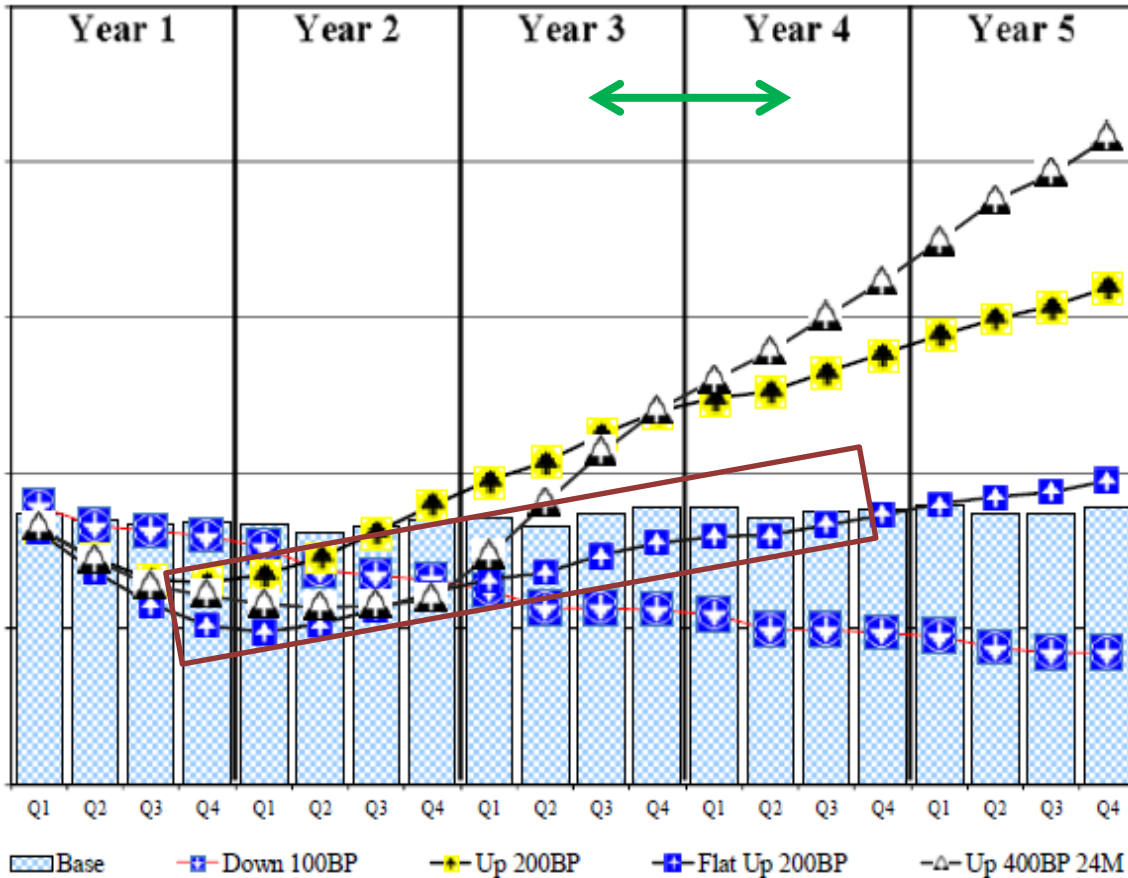


LIABILITY SENSITIVE DILEMMA:

- ◆ How Cover Cost of Insurance?
- ◆ Calculate the “breakeven” cost
- ◆ Don’t take medicine that’s worse than the poison?

BASE SIMULATION -ALTERNATIVE SCENARIOS

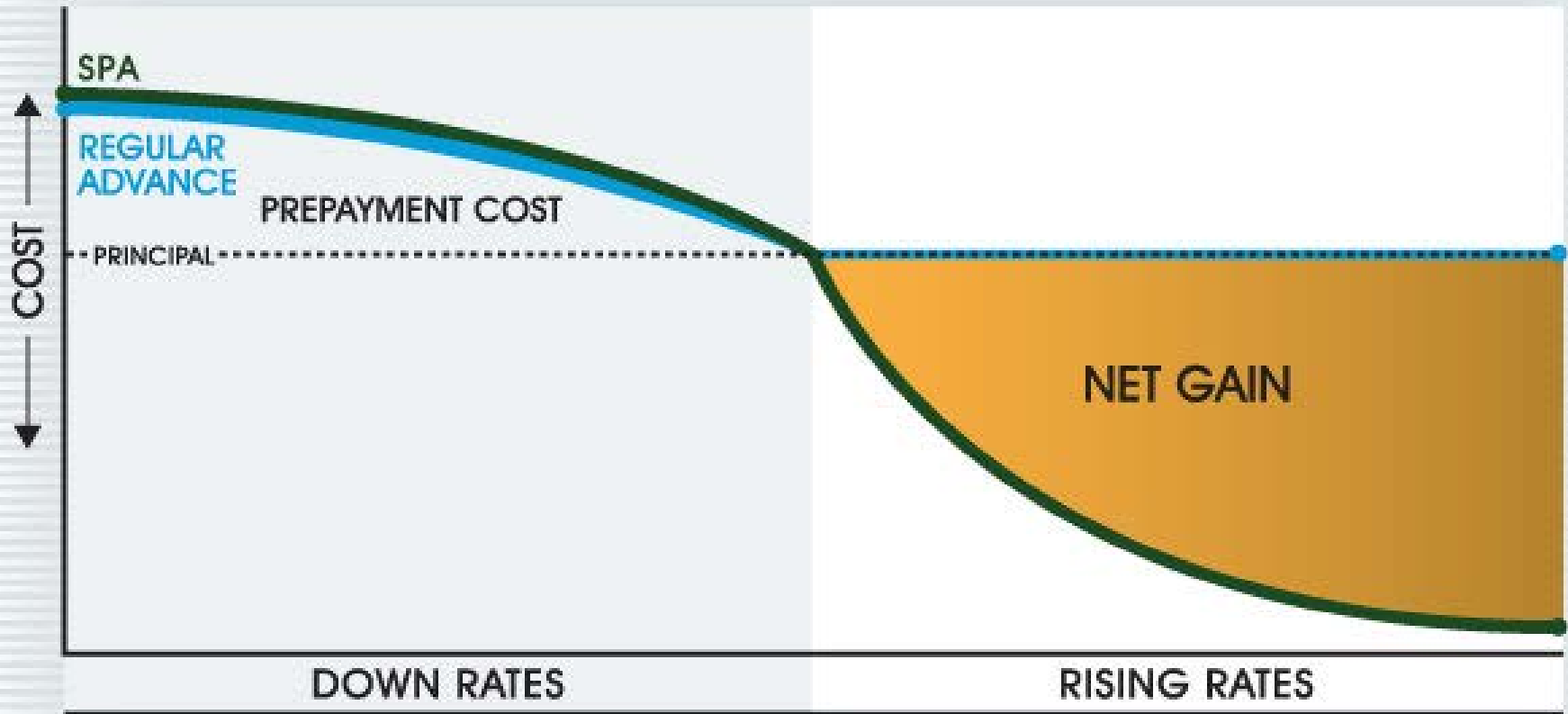
Net Interest Income (\$000)



Considerations:

- ◆ Magnitude of Exposure?
- ◆ More Fearful of Rising or Falling Rates?
- ◆ If Extending: How Much Insurance and How Far?
- ◆ Swaps/Caps
- ◆ Deposit Pricing Strategy
- ◆ Shorten Assets? Be Careful!!! EARNINGS?
- ◆ Investment Strategy
- ◆ Public Funds Strategy
- ◆ Mismatched Funding/Leverage

ADD SYMMETRY TO YOUR NEXT ADVANCE & POTENTIALLY REALIZE A GAIN IF INTEREST RATES RISE



- ◆ 30 year Mortg's @4.00% Funded by: Cash, 1, 5, 7 & 10 yr =2.15%
Initial Spread =1.85% (X \$20 Million= **\$370,000**)

Positive ROA & ROE Impact!

**Danger, Danger
Will Robinson!**

- Avoid CASH build up
 - **AVOID CALLABLE BONDS**
 - Beware PREMIUMS & ARMs
 - Libor Going away, REFI of ARMS
 - Compare to Loans (incl. 30 yr. FR)
 - Pre-Invest Cash flow (6 months)
 - Extension Risk Concerns?
 - Unrealized Losses a Concern???
- (Tip: compare “gains” on deposits funding the investments and NII!)

Key Question:

How does strategy fit with “YOUR” Risk Profile...Period!



Case Study:

More Loans, Less Investments...
HIGHER Earnings!

BALANCE SHEET COMPARISON

	5/31/2016			2/29/2016			CHANGE Current vs. Prior			5/31/2015		
	Balance	Rate	% of Assets	Balance	Rate	% of Assets	Balance	Rate	% of Assets	Balance	Rate	% of Assets
Investments	16,398	2.31	5%	17,274	2.25	6%	-876	0.06	0%	22,117	1.85	7%
Loans	270,844	5.04	86%	261,408	4.98	86%	9,436	0.06	0%	249,722	4.90	84%
Other Assets	27,026	0.84	9%	26,692	0.84	9%	834	0.00	0%	29,840	0.00	9%
Total Assets	314,768	4.53	100%	305,374	4.46	100%	9,394	0.06	3%	298,085	4.24	100%
Non-Maturity Deposits	192,055	0.43	61%	186,697	0.42	61%	5,358	0.01	0%	164,579	0.40	55%
Time Deposits	61,976	1.17	20%	63,076	1.17	21%	-1,100	0.00	-1%	66,862	1.25	22%
Brokered Deposits	0	0.00	0%	0	0.00	0%	0	0.00	0%	0	0.00	0%
Borrowings	33,000	0.70	10%	28,000	0.68	9%	5,000	0.02	1%	39,000	0.49	13%
Other Liabilities	2,352	0.00	1%	2,505	0.00	1%	-153	0.00	0%	3,721	0.00	1%
Equity	25,385	0.00	8%	25,096	0.00	8%	289	0.00	0%	23,922	0.00	8%
Total Liabilities & Equity	314,768	0.57	100%	305,374	0.56	100%	9,394	0.01	3%	298,085	0.57	100%
BALANCE SHEET SPREAD	3.96			3.90			0.06			3.68		

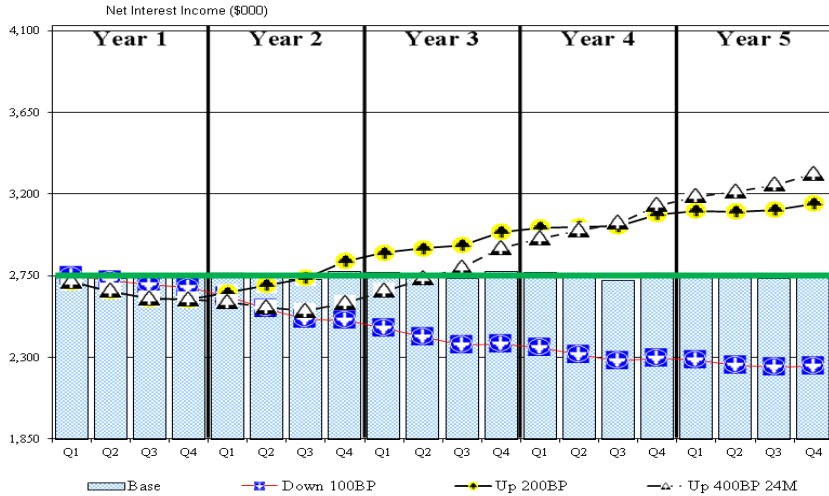
NET INTEREST INCOME SENSITIVITY

	5/31/2016		2/29/2016		CHANGE Current vs. Prior		5/31/2015	
	Value	%	Value	%	Value	%	Value	%
Year 1 NII Projections								
Down 100BP	12,324	-0.66%	11,757	-0.94%	567	0.29%	10,853	-1.18%
Base	12,405		11,869		536		10,983	
Up 200BP	12,039	-2.95%	11,563	-2.58%	476	-0.37%	10,617	-3.33%
Year 2 NII Projections								
Down 100BP	11,801	-4.87%	11,144	-6.11%	657	1.24%	10,218	-6.97%
Base	12,390	-0.12%	11,885	0.13%	505		11,006	0.21%
Up 200BP	12,394	-0.09%	11,982	0.95%	412	-1.05%	10,922	-0.56%
2-Year Cumulative NII Projections								
Down 100BP	24,125	-2.70%	22,901	-3.59%	1,224	0.89%	21,071	-4.17%
Base	24,795		23,754		1,041		21,989	
Up 200BP	24,433	-1.46%	23,545	-0.88%	888	-0.58%	21,539	-2.05%

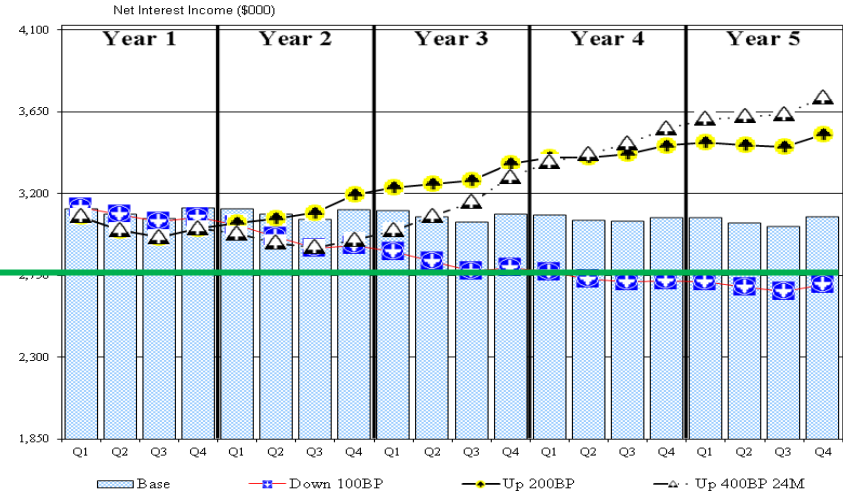
	5/31/2016		2/29/2016		11/30/2015		8/31/2015		5/31/2015	
90-Day LOOKBACK										
Prior 3 Mths' NII Projections (last review)	2,988		2,868		2,804		2,751		2,657	
Prior 3 Mths' NII Actuals	3,127		2,968		2,934		2,888		2,660	
Variance (\$000's and %)	-139	-4.45%	-100	-3.37%	-130	-4.43%	-137	-4.74%	-3	-0.11%
360-Day LOOKBACK										
Prior 12 Mths' NII Projections	11,411		11,080		10,807		10,475		10,155	
Prior 12 Mths' NII Actuals	11,917		11,450		11,142		10,774		10,393	
Variance (\$000's and %)	-506	-4.25%	-370	-3.23%	-335	-3.01%	-299	-2.78%	-238	-2.29%

Variances as of 5/31/2016, 2/29/16, 11/30/2015 and 8/31/2015 are due to loan growth (simulation assumes none) and BOLI income (not broken out in previous models).

Base Simulation as of 5/31/2015



Base Simulation as of 5/31/2016



NII SUMMARY

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	10,854	10,982	10,620	10,619
Year-2 NII	10,219	11,008	10,921	10,330
Year-3 NII	9,615	11,023	11,683	11,090
Year-4 NII	9,238	11,003	12,143	12,126
Year-5 NII	9,040	10,980	12,469	12,957

NII SUMMARY

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	12,324	12,405	12,039	12,039
Year-2 NII	11,801	12,390	12,394	11,754
Year-3 NII	11,271	12,328	13,128	12,515
Year-4 NII	10,935	12,265	13,684	13,822
Year-5 NII	10,762	12,213	13,935	14,595

CHANGE / DIFFERENCE IN RESULTS

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	1,470	1,423	1,420	1,420
Year-2 NII	1,582	1,382	1,472	1,423
Year-3 NII	1,656	1,305	1,446	1,425
Year-4 NII	1,697	1,262	1,541	1,696
Year-5 NII	1,722	1,233	1,467	1,639

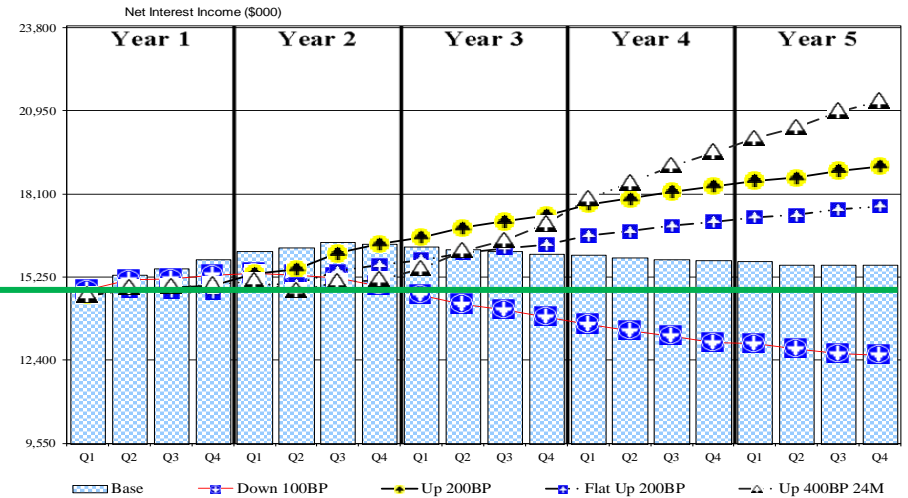
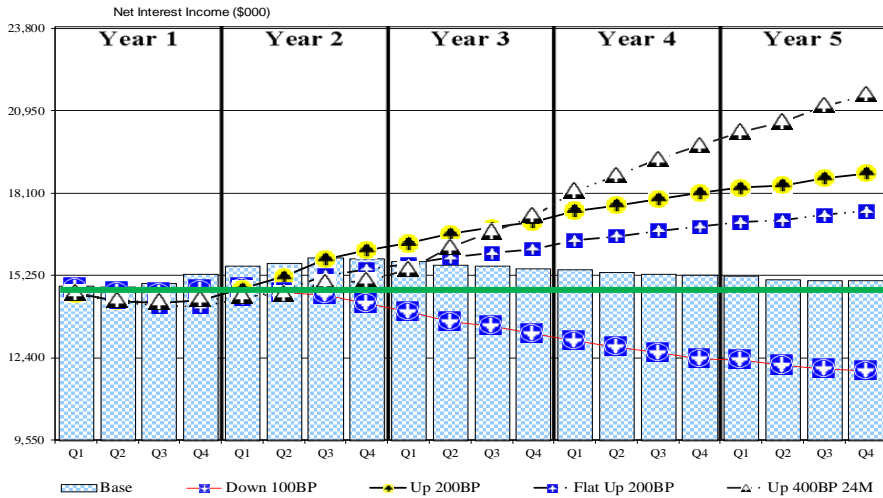
Case Study:

Slowing Demand for Auto Loans,
Extend Duration of Investments...
HIGHER Earnings, Better Risk Profile!

Purchase \$100MM Longer Term MBS (hold FR mortg's?)

Base Simulation as of 9/30/2016

\$100MM MBS



NII SUMMARY

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	58,941	59,974	57,696	57,321	57,720
Year-2 NII	58,341	62,942	61,934	59,911	59,160
Year-3 NII	54,361	62,365	67,066	63,706	65,706
Year-4 NII	50,721	61,312	71,160	66,806	75,874
Year-5 NII	48,413	60,480	74,058	69,068	83,388

NII SUMMARY

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	60,513	61,647	59,366	58,873	59,391
Year-2 NII	60,819	65,301	63,352	61,129	60,108
Year-3 NII	56,940	64,724	68,113	64,534	65,273
Year-4 NII	53,285	63,669	72,226	67,648	74,990
Year-5 NII	50,964	62,839	75,160	69,940	82,588

CHANGE / DIFFERENCE IN RESULTS

	<u>Down 100BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>	<u>Up 400BP 24M</u>
Year-1 NII	1,572	1,673	1,671	1,552	1,671
Year-2 NII	2,479	2,359	1,418	1,218	949
Year-3 NII	2,579	2,359	1,046	828	-432
Year-4 NII	2,564	2,356	1,066	841	-884
Year-5 NII	2,551	2,359	1,102	871	-800

Assumes \$100MM of MBS purchases in January 2017 (at a discount with a 8 yr avg life yielding 3.19%).
MBS purchases are funded with 1 yr FHLB advances @ 82bps.

- ✓ Rising Rates to the Rescue?...Focus on continued growth
- ✓ Cost of Funds Management is KEY-Understand Deposits at Risk & “Core”
- ✓ Be prepared - it’s game time with liquidity and funds management
- ✓ Know your TRUE Interest Rate Risk position – accurately measured?
- ✓ Policies to provide Maximum Flexibility to Manage your “Business”
- ✓ Develop Balance Sheet Strategies that drive Earnings and inspire decision-making then....“Execute” your game plan!

OPPORTUNITIES EXIST NOW! Take Action that fits your Credit Union, not what others are doing OR unwarranted Regulatory *fears!*

Wholistic ALCO



Whats *On*? Your MIND!

- ✓ Interest Rate Risk (Asset vs. Liability Sensitive)
- ✓ Role of Derivatives (Swaps/Caps/Floors)
- ✓ Capital Management
- ✓ Investment Portfolio Mgmt.
- ✓ Particular Regulatory Concerns/Issues
- ✓ Other

