

Banking Industry Breakout

November 8, 2019 | BNN Accounting Update

BAKER
NEWMAN
NOYES

WELCOME

Accounting & Audit Update

- Jeff Skaggs & Nathalia Bergamini

Taxation of Financial Institutions: The Past, the Present, & the Future

- Roger Poulin

Afternoon break

Cannabis Legalization in MA

- Steven Hoffman

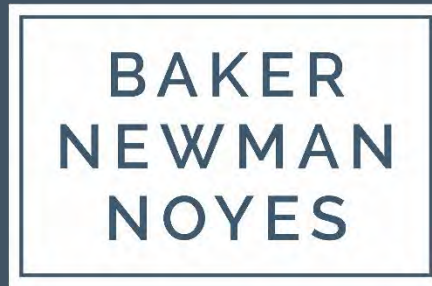
Balance Sheet Strategies

- Frank Farone

Accounting & the Banking Industry: What's new in 2019 and Beyond?

Jeff Skaggs & Nathalia Bergamini

November 8, 2019



What you'll hear today



**HOT
TOPICS**



**NEW ACCOUNTING
PRONOUNCEMENTS**



**CECL SURVEY
RESULTS**

Disclaimer of Liability: This publication is intended to provide general information to our clients and friends. It does not constitute accounting, tax, or legal advice; nor is it intended to convey a thorough treatment of the subject matter.

HOT TOPICS

Jeff Skaggs

Regulatory

- FDIC – Risk focused and innovating?
 - FIL-47-2019
 - Op-Ed by FDIC chair Jelena McWilliams

“I am on a mission to change how the Federal Deposit Insurance Corporation views innovation, and I need some help.”
- Upcoming regulatory focus
 - Economic downturn on horizon
 - Focus on:
 - Liquidity
 - Asset quality
 - Policy exceptions
- LIBOR phase out

Technology

- 2019 Tech Trends – How are banks spending?
 - “The desire to streamline customers’ experience and improve efficiency is driving bank technology strategies across the industry, as most executives and directors believe their offerings are ‘adequate,’ according to Bank Director’s 2019 Technology Survey, sponsored by CDW.”
 - “68% say they’re investing in automation in fiscal year 2019, and 67% are investing money to enhance the bank’s digital channels.
 - “Despite the rise of the digital channel, 51% of respondents say the branch is equally important to online and mobile channels when it comes to growing the bank. More than half indicate they’re upgrading branch and ATM technology.”

**All quotes taken from Bank Director 2019 Technology Survey Report (October 2, 2019)*

Technology (cont.)

Key Findings:

Loyal to the core

- >50% of respondents say their core contract expires within the next five years.
- 60% say they're unlikely to switch to a new provider.

But banks aren't satisfied

- 21% are completely satisfied with their core provider.

Rising budgets

- 45% say their technology budget has risen between 5% to 10% for FY2019.
- Almost 25% report a budget increase of more than 15%.
- Median reported budget was \$750,000 for FY2019.

Where the money's going

- 50% are hiring consultants to supplement in-house expertise.
- 43% are bringing on additional employees to focus on technology and innovation.

More expertise needed

- 53% say technology is on the agenda at every board meeting – up 3 points from last year's survey.
- 80% say the board needs to enhance its technology expertise.
- 43% say they have a technology expert on the board.

Technology (cont.)

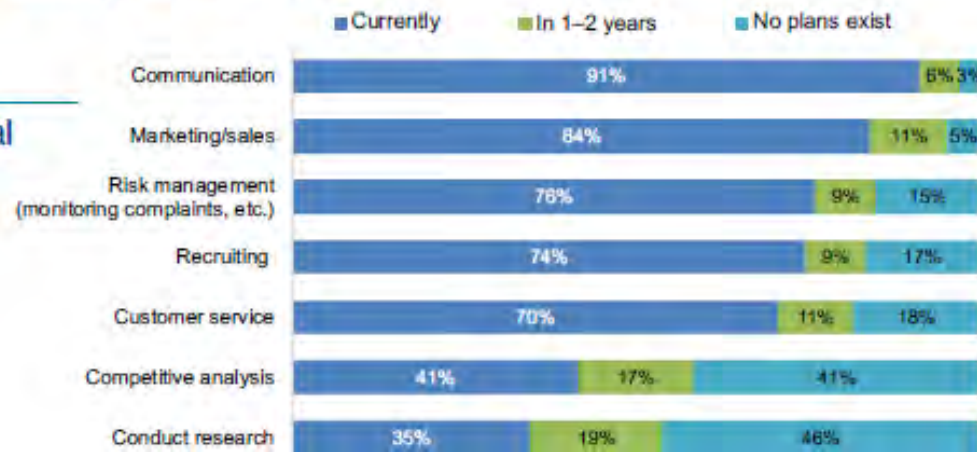
- State of social media - ABA 2019 study:

<https://bankingjournal.aba.com/2019/08/the-2019-state-of-social-media-in-banking/>

How are banks using social media?

Figure 3:

Does your bank use social media for the following activities?



**From The State of Social Media Banking (ABA, 2019)*

Technology (cont.)

- Could banks do a better job with social media?

“Most bankers in our survey were relatively unconfident about their bank’s social media prowess.”

- Regulatory issues



Audit Committee/Governance

Newest exposure facing community bank boards?

CYBERCRIMES

<https://www.bankdirector.com/issues/risk/newest-exposure-facing-community-bank-boards/>

Audit Committee/Governance (cont.)

AICPA CECL Practice Aid

<https://www.aicpa.org/content/dam/aicpa/interestareas/frc/accounting/financialreporting/downloadabledocuments/cecl-audit-practice-aid.pdf>

NEW ACCOUNTING PRONOUNCEMENTS

Nathalia Bergamini

Topic 606 – *Revenue from Contracts with Customers*

- Effective Dates:
 - Public companies: fiscal years beginning after December 15, 2017
 - Non-public companies: fiscal years beginning after December 15, 2018
- Financial reporting implications:
 - Minimal impact to financial institutions

Revenue	
Out of Scope	In Scope
<ul style="list-style-type: none">• Interest income• Premium and discount amortization• Loan prepayment fees• Loan origination fees• Loan late fees• Loan commitment fees	<ul style="list-style-type: none">• Sale of OREO• Deposit related fees• Overdrafts, wire transfer, ATM, monthly service fee• Asset management income• Trust income

Topic 606 – *Revenue from Contracts with Customers* (cont.)

- What should you be doing now?
 - Identify significant revenue streams that are in scope
 - Review standard contracts in accordance with the standard's five step process
 - Contact external advisors as needed
- Other Implications
 - Could impact borrowers' financial statements
 - Timing of revenue recognition
 - May result in lost revenues upon adoption
 - Expected to normalize over the next years
 - Impact on loan covenants
 - DSCR & EBITDA

Topic 606 – *Revenue from Contracts with Customers* (cont.)

Facts	Topic 605	Topic 606
<ul style="list-style-type: none"> • \$3,000,000 in total contracts <ul style="list-style-type: none"> • \$750,000: software sale • \$2,250,000 three-year support contract • Total expenses before interest, depreciation and amortization: <ul style="list-style-type: none"> • Yr 1 \$1,200,000 • Yr 2 \$900,000 • Yr 3 \$850,000 • Annual debt service <ul style="list-style-type: none"> • \$75,000 	<ul style="list-style-type: none"> • Recognize revenue in three equal annual installments <ul style="list-style-type: none"> • Yr 1 - \$1,000,000 • Yr 2 - \$1,000,000 • Yr 3 - \$1,000,000 • DSCR <ul style="list-style-type: none"> • Yr 1 (2.67X) • Yr 2 1.33X • Yr 3 2.00X • EBITDA <ul style="list-style-type: none"> • Yr 1 (\$200,000) • Yr 2 \$100,000 • Yr 3 \$150,000 	<ul style="list-style-type: none"> • Recognize software sale immediately and support contract over the life of the contract <ul style="list-style-type: none"> • Yr 1 - \$1,500,000 • Yr 2 - \$750,000 • Yr 3 - \$750,000 • DSCR <ul style="list-style-type: none"> • Yr 1 4.00X • Yr 2 (2.00X) • Yr 3 (1.33X) • EBITDA <ul style="list-style-type: none"> • Yr 1 \$ 300,000 • Yr 2 (\$150,000) • Yr 3 (\$100,000)

Topic 842 - *Leases*

- Effective Dates:
 - Public companies: fiscal years beginning after December 15, 2018
 - Non-public companies: fiscal years beginning after December 15, 2020
- Financial reporting implications:
 - Requires leases to be recorded on the balance sheet with a lease liability for the obligation and a right-of-use asset
 - Exception: Short-term leases
 - Income statement differences for financing leases and operating leases
 - Disclosures: Qualitative and quantitative information about leases
- Other Implications
 - Capital Ratios
 - Borrower's loan covenants
 - Current Ratio
 - Leverage Ratio

Topic 842 – *Leases* (cont.)

Prior to Adoption of ASC 842		Post Adoption of ASC 842	
• Total Current Assets:	\$45,000	• Total Current Assets:	\$ 45,000
• Total Current Liabilities:	\$37,000	• Total Current Liabilities:	\$ 48,000
• Total Liabilities:	\$57,000	• Total Liabilities:	\$112,000
• Total Equity:	\$73,000	• Total Equity:	\$ 73,000
• ROU Asset:	\$ 0	• ROU Asset:	\$ 54,500
• Lease liability:	\$ 0	• Lease liability:	\$ 55,000
• Current Ratio:	1.22	• Current Ratio:	0.94
• Leverage Ratio:	0.78	• Leverage Ratio:	1.53
In Compliance		Out of Compliance	

ASU 2016-01 - Recognition and Measurement of Financial Assets and Financial Liabilities

- Effective Dates:
 - Public companies: fiscal years beginning after December 15, 2017
 - Non-public companies: fiscal years beginning after December 15, 2018
- Requires equity investments to be measured at fair value with changes in fair value recognized in net income
 - Exception: Investments accounted for under the equity method of accounting, or those that result in consolidation of the investee
- Investments in limited partnerships
 - After ASU 2016-01: cost method may be used
 - Determine if equity method is required
 - Evaluate if investment does not qualify for the proportional amortization method

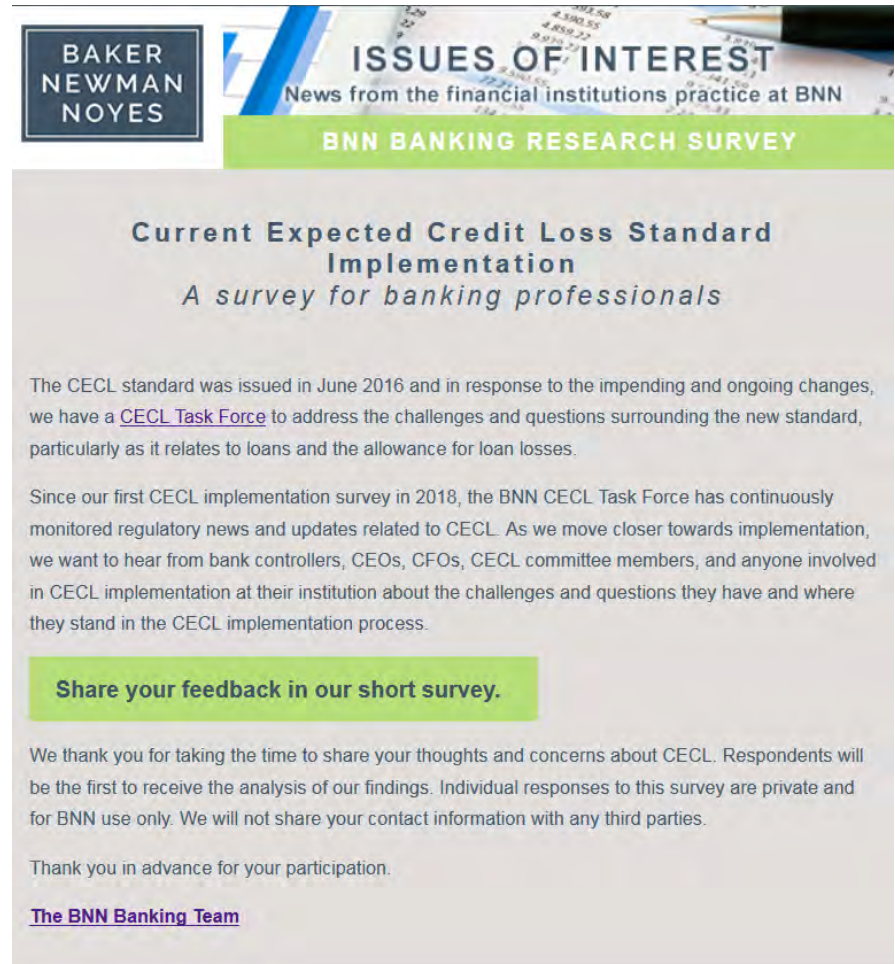
CECL SURVEY RESULTS

Nathalia Bergamini

BNN CECL Implementation Survey

Preliminary feedback

- Goal: Assess the status and success of CECL implementation in the New England banking industry
- 15 responses to date (*survey is still open, ongoing*)
- We are analyzing direct feedback from banks and financial institutions on the status of CECL implementation and the challenges they face



The graphic is a promotional flyer for a survey. At the top left is the Baker Newman Noyes logo. To its right is a header section with the text 'ISSUES OF INTEREST' and 'News from the financial institutions practice at BNN'. Below this is a green bar with the text 'BNN BANKING RESEARCH SURVEY'. The main title of the survey is 'Current Expected Credit Loss Standard Implementation' with the subtitle 'A survey for banking professionals'. The body text explains the CECL standard and the purpose of the survey. A green button prompts users to 'Share your feedback in our short survey.' The footer includes a thank you message and the BNN Banking Team contact information.

**BAKER
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ISSUES OF INTEREST
News from the financial institutions practice at BNN

BNN BANKING RESEARCH SURVEY

**Current Expected Credit Loss Standard
Implementation**
A survey for banking professionals

The CECL standard was issued in June 2016 and in response to the impending and ongoing changes, we have a [CECL Task Force](#) to address the challenges and questions surrounding the new standard, particularly as it relates to loans and the allowance for loan losses.

Since our first CECL implementation survey in 2018, the BNN CECL Task Force has continuously monitored regulatory news and updates related to CECL. As we move closer towards implementation, we want to hear from bank controllers, CEOs, CFOs, CECL committee members, and anyone involved in CECL implementation at their institution about the challenges and questions they have and where they stand in the CECL implementation process.

Share your feedback in our short survey.

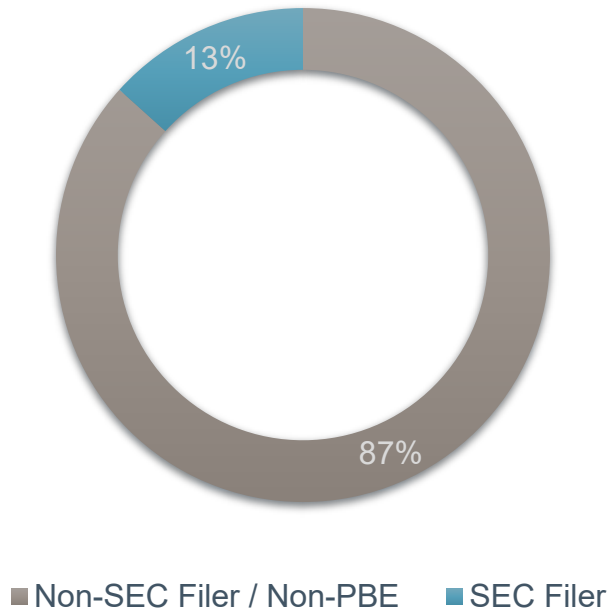
We thank you for taking the time to share your thoughts and concerns about CECL. Respondents will be the first to receive the analysis of our findings. Individual responses to this survey are private and for BNN use only. We will not share your contact information with any third parties.

Thank you in advance for your participation.

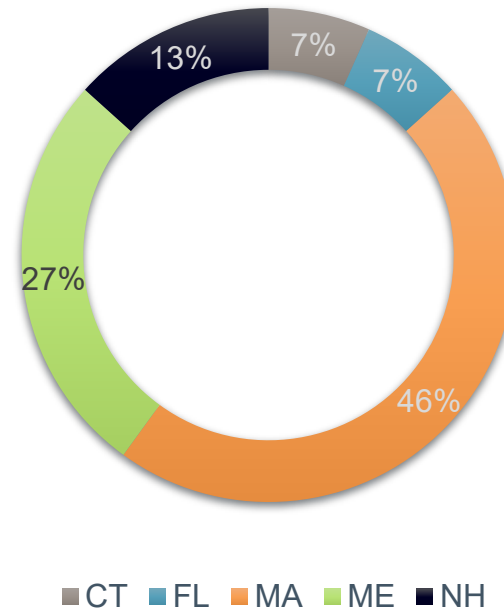
[The BNN Banking Team](#)

Who responded?

Institution Type



Location



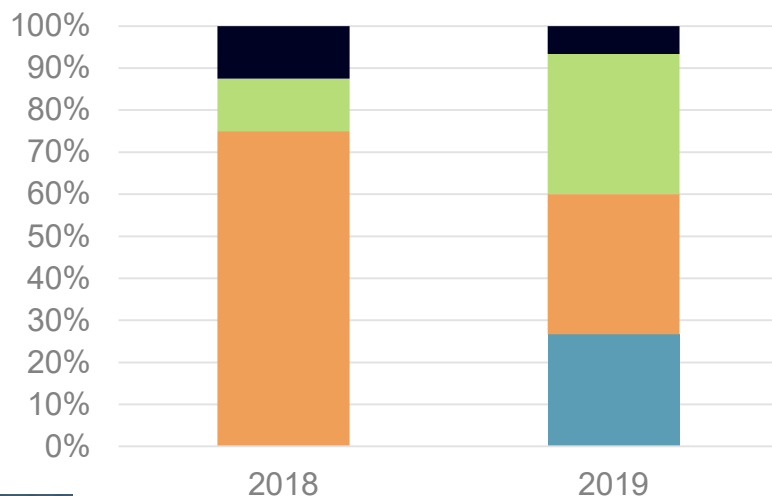
What did they say?

- Almost all respondents expect CECL to cause some or significant increase to the current reserve level or remain consistent with current ALLL model
- Approximately 60% of respondents are making satisfactory progress towards CECL implementation and are also planning to use a third-party vendor as a starting point
- The proposed delay in the effective date for CECL will not change the implementation timeline
 - 80% will proceed as planned
 - 20% plans to delay certain stages of CECL
 - To allow more time to work on modeling and run parallel and simulations

Implementation Status: Are you on track?

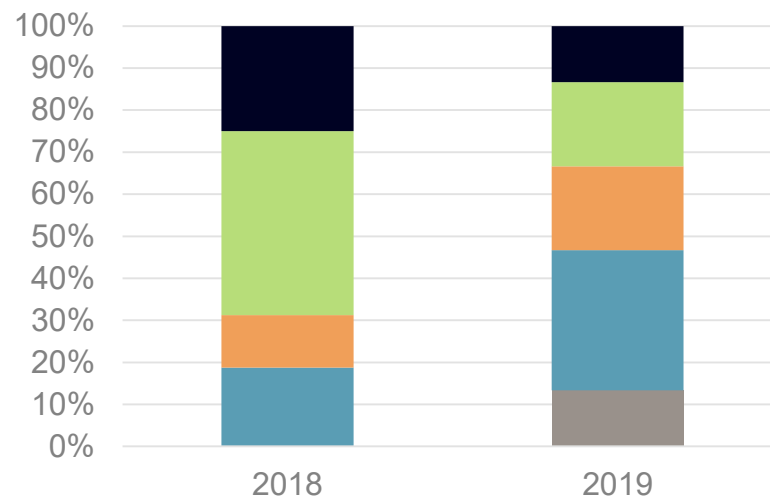
Do you feel on track?

- Far behind
- A bit behind
- We're on track
- Slightly ahead of schedule
- Ahead of schedule



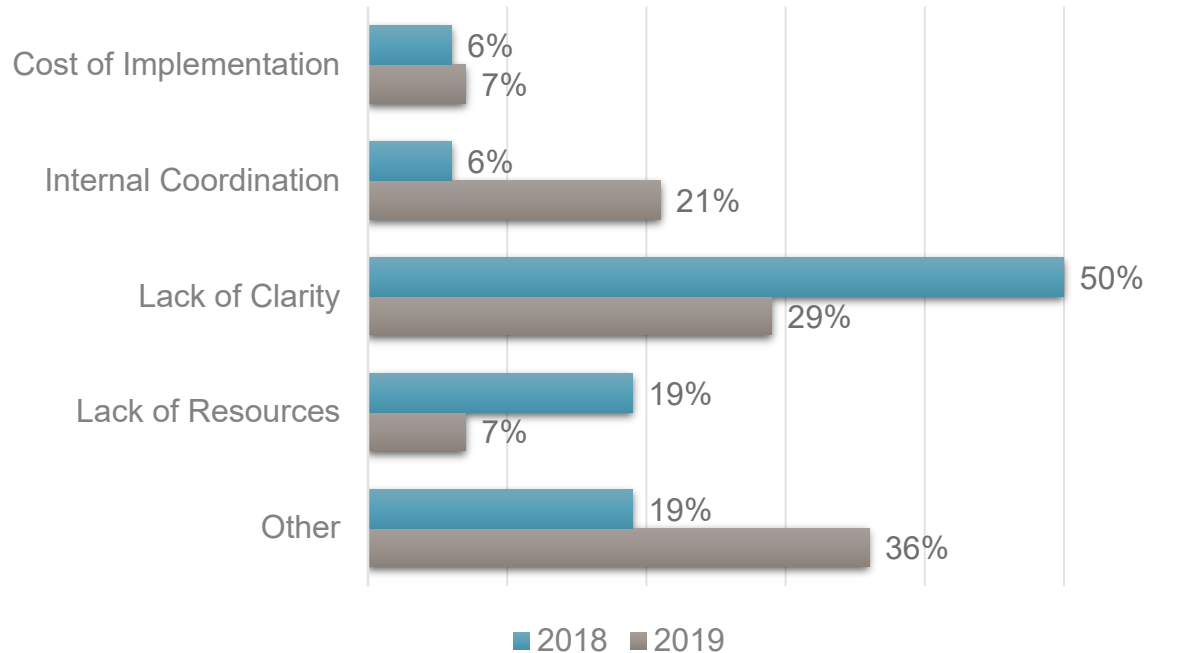
What is your current status?

- Pre-Planning
- Planning & Research
- Scenarios & Modeling
- Data Testing
- Parallel Runs & Validation



What are you struggling with?

Biggest Challenges



The “other” stuff

- Selecting the right method
- Determining the appropriate pre-payment speeds
- How to supplement data with industry or peer information in an appropriate way
- Coordination with third-party vendor

More to come...

- The survey remains open and we invite our banking clients and friends to continue to share their feedback.
- Our goal is to better understand the current outlook of CECL implementation from the bank perspective, and share those trends with you.
- You can access the survey here:
<https://www.surveymonkey.com/r/5NTNTJB>

Need help now?



Access BNN's CECL Toolkit online!

- ✓ CECL timeline and checklist for SEC filers AND non-SEC filers
 - ✓ Example allowance for loan loss calculator
- ✓ Additional slides from BNN CECL presentations
 - ✓ Other CECL articles and alerts

[www.bnn CPA.com/industries/banking_and_financial_services/current
_expected_credit_loss_standard](http://www.bnn CPA.com/industries/banking_and_financial_services/current_expected_credit_loss_standard)

We'd love to hear from you.



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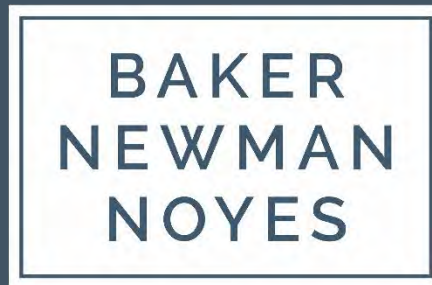
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Taxation of Financial Institutions:

The Past, The Present, & The Future

Roger Poulin

November 8, 2019



Here with you today



ROGER POULIN, CPA

Tax Principal

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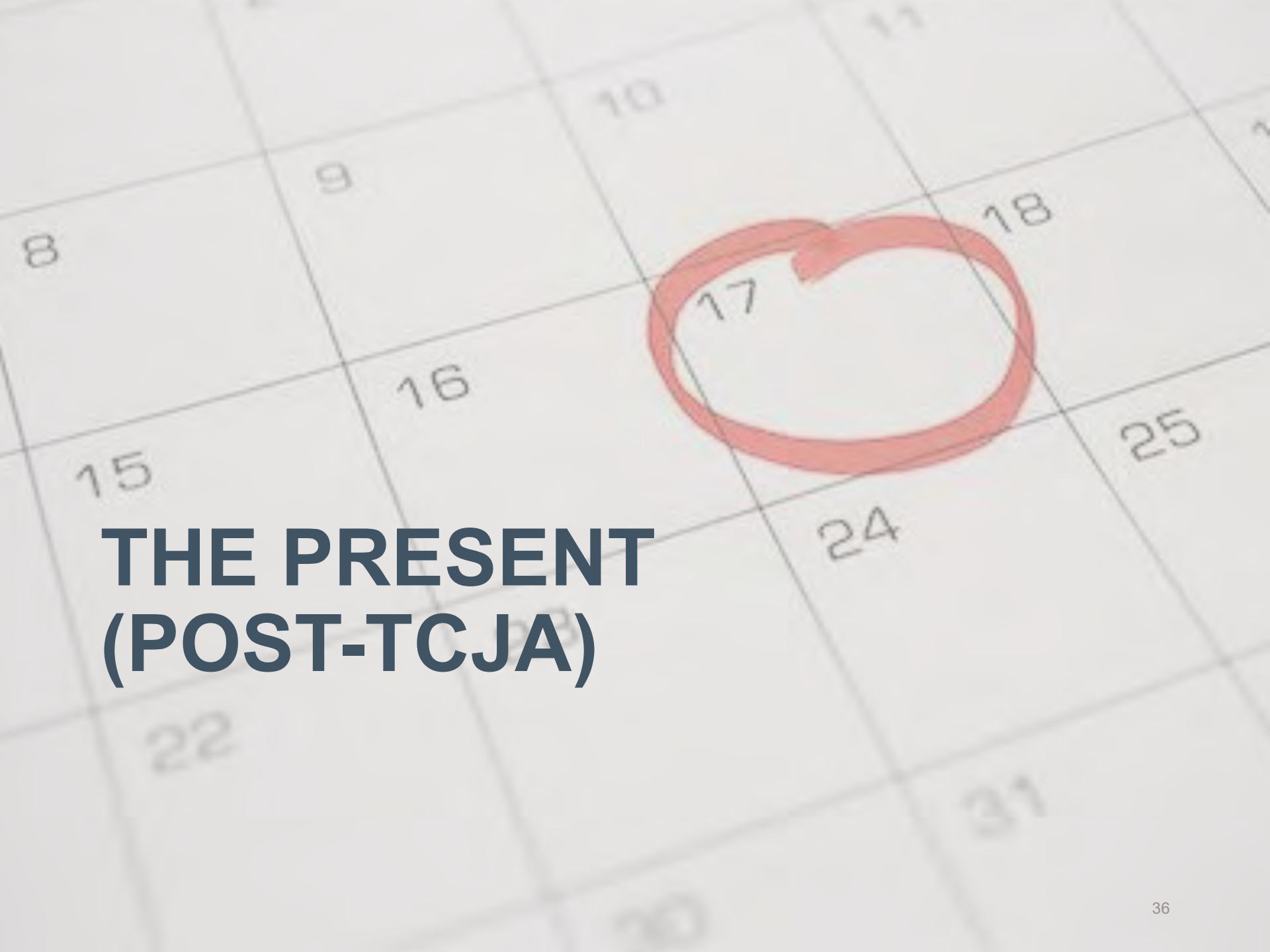
207.879.2100

THE PAST (PRE-TCJA)



Tax Landscape Prior to TCJA

- Graduated Corporate tax rates – generally 34% or 35%
- Higher rates generally provided higher rate of returns for BOLI/Municipal/Tax Credit investment
- Example:
 - Bank A has \$5,000,000 of taxable income. At 34% this is federal tax of \$1,700,000.
 - Post TCJA \$5,000,000 of taxable income produces \$1,050,000 of tax at 21%.
 - Tax savings of \$650,000.



THE PRESENT (POST-TCJA)

TCJA Changes Impacting Financial Institutions

- Tax rate a flat 21% for C Corporations
- AMT repealed for C Corp
- More opportunity for accelerated tax depreciation
- Tax credits mostly unmodified
- Parking expenses to be disallowed
- Entertainment 100% disallowed
- Interest expense can be limited under 163j

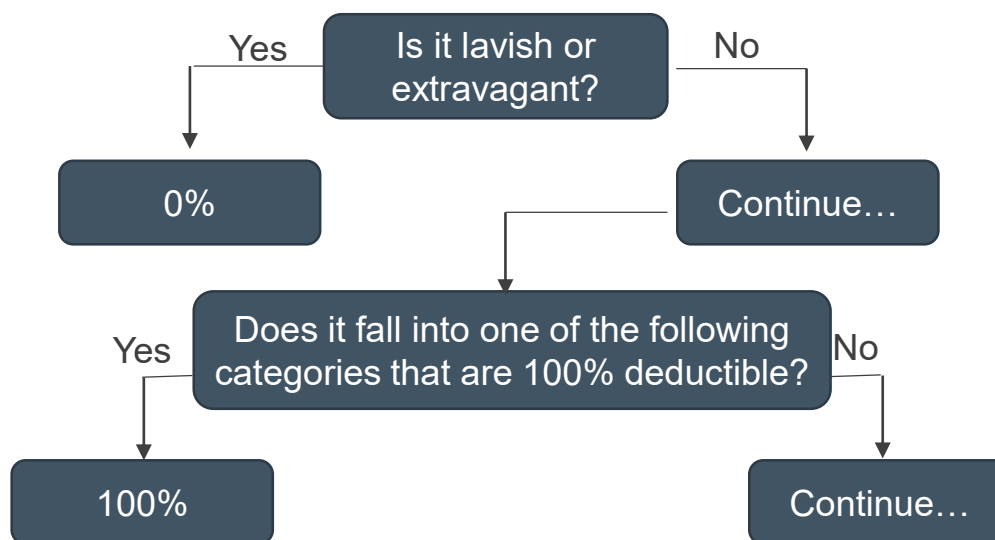
Meals and entertainment

- Summary of key changes
 - Entertainment expenses are now 0% (formerly 50% in most cases) deductible
 - De minimis fringe benefits in the form of food and beverages are now 50% (formerly 100%) deductible



Determining Deductibility Percentage

Decision tree for determining deductibility percentage for meals and entertainment under §274



100% Deduction applies to expenses that are:

- Treated as taxable employee compensation;
- Reimbursed by a third party under an accountable plan;
- For recreational, social, or similar activities (other than club dues) primarily for the benefit of non-highly compensated employees, i.e. the April 15 Happy Hour exception
- For goods, services, or facilities made available to the general public;
- Sold in a bona fide transaction for adequate and full consideration;
- Includible in the income of an independent contractor as compensation for services, but only if the amount is properly reported on a Form 1099-MISC if the amount is \$600 or more; or
- Provided to crew members of certain commercial ships or to workers on certain offshore oil or gas platforms (see Code Section 274(n)(2)(C).)

Entertainment, Amusement, or Recreation

- Is the activity “of a type generally considered to constitute entertainment, amusement, or recreation”
- If yes, does it fall into one of these categories?

Expenses which are directly related to business meetings of the taxpayer’s employees, stockholders, agents, or directors

Yes

50% deductible

Expenses directly related and necessary to attend a meeting or convention of an organization which is tax-exempt under Code §501(c)(6). Examples of such organizations are business leagues, chambers of commerce, real estate boards, and boards of trade.

Yes

50% deductible

If the answer is “no”, it’s 0% deductible.

Qualified Transportation Fringe Benefits

- TCJA changed the taxation of an employer's cost of providing employee parking and transportation costs
- IRS Notice 2018-99 issued to provide examples and guidance on disallowed parking expenses
- Primary use test is key factor in determining disallowed expenses. Looking for locations where employees use 50% or greater of the available spots on a typical business day.
- In general it has been our experience that only headquarters or main offices tend to have employees take up 50% or more parking spaces available



Qualified Transportation Fringe Benefits (cont.)

- Expenses to be disallowed if primary use is employee parking. Type of costs include, but are not limited to: repairs, maintenance, plowing, utilities, insurance, taxes, rent, interest, trash removal, cleaning, landscape costs, and security. It does not include depreciation.
- Lot aggregation (or disaggregation is allowed) within the same city:
 - If bank had a headquarter and two other locations in the same city they could aggregate all 3 locations into one lot and see if the primary use changes
 - It could be beneficial to disaggregate the lots if for example the primary use is employee parking when aggregated but when you disaggregate you can remove certain costs from the calculation such as security at one lot.

Example 1

- Company X owns a parking lot on its business campus. Parking expenses total \$100,000. The lot has 100 spaces, which are used as follows:
 - 60 are not reserved but are typically used by employees
 - 40 are typically either empty or used by customers and visitors

Example 1 (cont.)

- As 60 out of 100 spots are typically used by employees the primary use is employee parking.
- 60% of the costs of the lot are not allowed as deductions and therefore are permanent book to tax differences,

$$60/100 * \$100,000 = \$60,000 \text{ disallowed}$$

- If we were to change facts such that:
 - Lot A has 100 spots, 60 used by employees and 40 used by others and no reserved spots
 - Lot B, in the same city as Lot A, has 100 spots, 30 used by employees and 70 others and no reserved spots
 - We would aggregate Lot A and Lot B so that of the total 200 spots only 90 are used by employees and as such the primary use of the combined lot is general public parking and all expenses are allowed to be deducted.

163(j) Interest Disallowance

- In general interest expense of a bank is not limited as interest income is greater than interest expense
- Limitations can come from partnership investments as limitations are calculated at the entity level
- If disallowed at the entity level the deduction is disallowed for the investor member
- May convert ordinary deductions throughout the investment period to a capital loss upon sale
- The partnership investments and the general partner can elect out by electing to depreciate using ADS life. That creates an analysis to factor in the extended depreciation life versus disallowed interest expense.

Moving Expenses

- Repeal of exclusion for qualified moving expense reimbursements
- Must be included on W-2
- Some employers are doing a gross-up, i.e. making an additional payment to the employee to cover the taxes on the reimbursement



Depreciation Changes – Section 179

- Section 179 is an annual election allowing taxpayers an immediate write off of certain fixed assets after applying several limitations.
 - **Income Limitation.** Must have taxable income to take Section 179.
 - **Dollar Cost Limitation.** Maximum Deduction \$1,000,000 (total). Investment Limitation. Overall purchases limited to \$2,500,000. Any excess amount over the threshold is a dollar for dollar reduction in the expense. Example: CPA Inc. purchased \$2.75 million of equipment in 2018. Their Section 179 expense would be limited to \$750,000 (\$1,000,000 – (\$2,750,000 - \$2,500,000)).

Depreciation Changes – Section 179 (cont.)

- Section 179 can be taken on:
 - “New” or used assets
 - Includes any 179 expense on Section 1245 personal property including computer software
 - Includes any 179 expense on the following improvements to nonresidential real property:
 - Roofs
 - HVAC property
 - Fire protection and alarm systems
 - Security Systems

Taxpayer may elect for the qualified real property to be eligible for Section 179

- Many states decouple from federal Section 179. See State Tax Considerations.

Depreciation Changes - Bonus Depreciation

Under the ***Tax Cuts and Jobs Act***, Sec. 168(k) provides a depreciation deduction equal to 100% of the adjusted basis of qualifying property in the first year it is acquired and placed in service **after September 27, 2017**.

The percentage phases down:

- 80 percent for property placed in service after 12/31/2022, and before 1/1/2024;
- 60 percent for property placed in service after 12/31/2023, and before 1/1/2025;
- 40 percent for property placed in service after 12/31/2024, and before 1/1/2026;
- 20 percent for property placed in service after 12/31/2025, and before 1/1/2027;
- 0 percent (bonus expires) for property placed in service after 12/31/2026

Property can be **NEW or USED**

No income or investment limitations apply.

Qualified improvement property (QIP)

- Any improvement to an interior portion of a building which is nonresidential real property if such improvement is placed in service after the date the building was first placed in service.
- Certain improvements not included. Such term shall not include any improvement for which the expenditure is attributable to—
 - the enlargement of the building,
 - any elevator or escalator,
 - the internal structural framework of the building.

Qualified improvement property (QIP) (cont.)

- Qualified Leasehold Improvement Property, Qualified Retail Improvement Property, and Qualified Restaurant Property repealed after December 31, 2017
- For tax years 1/1/18 onward – 39* Year Recovery Period using Straight-line (MSL). Eligible for Section 179 **NOT** Bonus Depreciation.

** Legislative committee reports indicate QIP will be 15-year property and bonus eligible. However, tax regulations were not updated. Technical corrections to the regulations are expected.*

Tax Credit Changes

- Research and development tax credit – retained
- Low-income housing tax credit – retained
- Energy credit – retained
- New markets tax credit – retained
- 20% historic rehabilitation tax credit – retained
 - But must be claimed ratably over a 5-year period
 - 10% rehabilitation tax credit formerly available for non-historic structures was repealed
- New credit available for certain compensation paid in 2018 and 2019 to employees on medical or family leave

Section 451(b) – Year of Inclusion

- Old Law:
 - In general income is included in taxable income in the year in which the all events test is met.
- New law:
 - All events test is not met any later than the year in which income is included in an applicable financial statement
 - This does not apply for OID or mortgage servicing
 - Effective for tax years beginning after 12/31/18
 - Any change would be a section 481(a) adjustment over 6 years starting with 2019

Other considerations

- Consider Net Operating Loss Carryovers – 80% Limit
- Capital Gain Deferral – Opportunity Zones
- Like-kind exchanges now only for real property

State and Local Tax (SALT)

- Nexus can be created through lending and other activities
 - Economic nexus vs. Physical nexus
 - Physical location of employee (including remote employees)
 - Location of collateral often can trigger a filing requirement
 - *Wayfair* may prompt more states to consider economic nexus provisions
 - Some states have bright-line nexus triggers for banks:
 - NY: \$1,000,000 in receipts
 - CT: \$500,000 in receipts
 - MA: 100 or more customers, \$10,000,000 in MA assets, \$500,000 receipts
 - NC: \$5,000,000 or more in loans

THE FUTURE...



Future Considerations

- 2020 election has potential to have major impact on tax rates and TCJA provisions
- Many candidates, and even the current administration, have discussed potential for corporate tax rate to increase
- Tax rates going up would be the reverse of what occurred after the rate went down:
 - Would try to accelerate income and defer deductions
 - Would change pricing and value of BOLI, municipal investments, and other tax exempt vehicles
 - Banks with DTAs would record tax benefits due to the deferred tax asset revaluation

We'd love to hear from you.



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Cannabis Legalization in Massachusetts

An Overview and Update

November 8, 2019 | Steven Hoffman

Chairman, Cannabis Control Commission

Timeline

November 6, 2012	Massachusetts Voters Legalize Medical Marijuana (63% - 37%)
June 25, 2015	First Medical Marijuana Dispensary Opens
November 8, 2016	Massachusetts Voters Approve Question 4, Legalizing the Adult Use of Marijuana (53% – 47%)
July 19, 2017	Massachusetts Legislature Passes H. 3818 (Chapter 55)
September 1, 2017	Appointment of Cannabis Control Commission (CCC)
March 15, 2018	Promulgation of Final Regulations
April 1, 2018	First Applications for Marijuana Establishment Licenses Accepted
June 20, 2018	First Provisional Licenses Issued
November 20, 2018	First Adult Use Marijuana Establishments Open
December 31, 2018	Medical Marijuana Regulatory Oversight Transitioned from Department of Public Health to CCC
September 24, 2019	Revised Regulations for Medical and Adult Use Marijuana Approved by the CCC

Fundamental Differences Between Medical and Adult Use Regulations

	Medical Marijuana	Adult Use Marijuana
Access	State Issued Medical Marijuana Card	Proof of Age
Minimum Age	18	21
Taxes	Untaxed	Up to 20% <ul style="list-style-type: none"> • State Sales Tax • State Excise Tax • Optional Municipal Tax
Types of Licenses	Vertically Integrated	Multiple by Type
Local Control	<ul style="list-style-type: none"> • Zoning • Letter of Non-Opposition • Medical Operators must be allowed to open adult use 	<ul style="list-style-type: none"> • Zoning • Host Community Agreement

Local Control

- Statutory Controls:
 - Ban
 - Limit under 20%
 - Limit to less than # of RMDs
- Zoning Controls
 - Use districts
 - Overlay districts
 - Signage
 - Agricultural Exemption
- Host Community Agreements



Licensing Process



LICENSING PROCESS

1

Application of Intent

- Incorporation
- Capital
- Bond
- Property Interest
- Municipal Information
- Positive Impact on DIA

2

Background Check

- All executives, managers, persons or entities with direct or indirect authority over the management policies, cultivation or security operations
- Fingerprint check
- Nationwide civil & criminal

3

Management and Operations Profile

- Certificate of Good Standing with SoS and DOR
- Business Plan
- Operating Policies and Procedures
- Training Plan

OVERVIEW OF REGULATIONS: TYPES OF LICENSES

Cultivation



Craft
Cooperatives



Micro Businesses



Product
Manufacturing



Retail



Research



Transporter



Independent
Testing Labs



Delivery



Social
Consumption



Approved Adult Use Applications

By status (As of October 10, 2019)

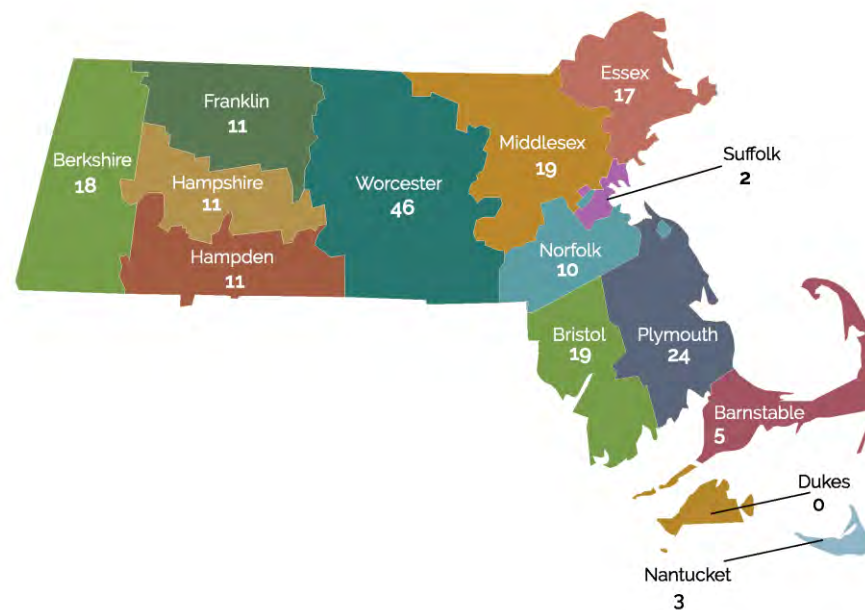
Type	#
Provisionally Approved	12
Provisional License	104
Final License	25
Commence Operations	66
Total	207

Provisionally approved means approved by the Commission but has not submitted license fee payment yet – provisional license has not started

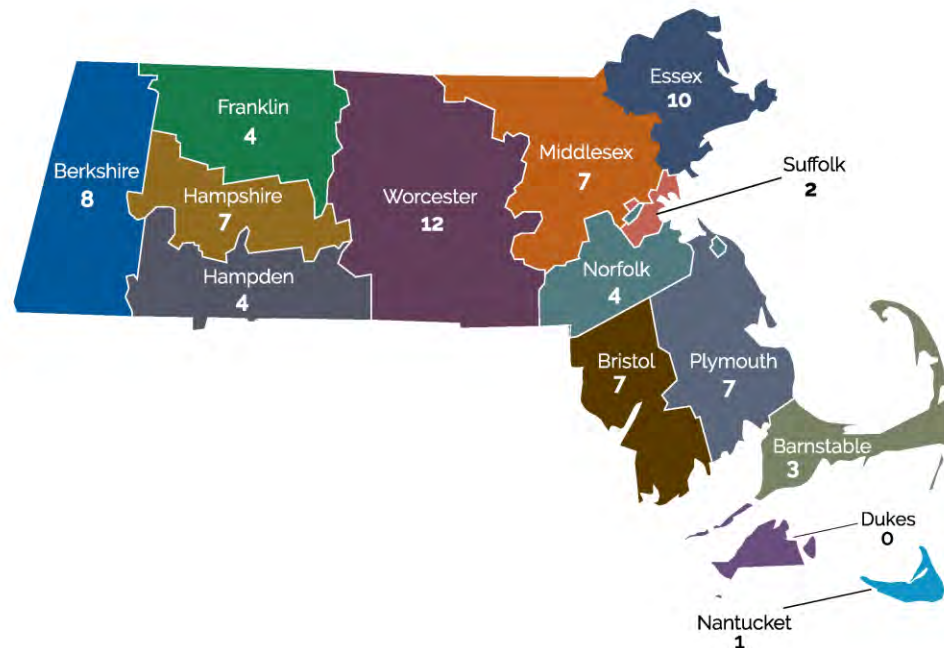
Approved Adult Use Applications By Type (As of October 10, 2019)

Type	#
Craft Marijuana Cooperative	0
Independent Testing Laboratory	3
Marijuana Cultivator	64
Marijuana Microbusiness	4
Marijuana Product Manufacturer	53
Marijuana Research Facility	0
Marijuana Retailer	80
Marijuana Transporter with Other Existing ME License	1
Marijuana Third Party Transporter	2
Total	207

Location of Marijuana Establishment Licenses (By County; As of September 12, 2019)



Location of Marijuana Retailer Applications (By County; As of September 12, 2019)



Sales and Tax Revenue from Adult Use

As of September 30, 2019

\$315MM

Tax Revenue
Generated

Municipal Tax:
\$9MM



**TOTAL
\$62MM**

Medical Marijuana Licensing Status

As of October 10, 2019

Category	Number
Pending	57
Provisional	95
Final	5
Commence Operations	53

Medical Marijuana Program Status

As of October 10, 2019

Category	Number
Certified Patients	67,480
Active Certified Patients	60,971
Active Caregivers	6,438
Registered Certifying Clinicians	318

What's Next?

The Licensing Queue (as of October 10, 2019)

Type	#
Pending	377
Withdrawn	374
Incomplete	3379
Commission Action Taken (Approved/Denied)	211
Total	4341

What's Next?

Ongoing Challenges And Opportunities

- **Vaping Ban**
- **Social Equity**
- **Diversity**
- **Industry Structure**
 - **Craft Cultivation Cooperatives**
 - **Independent Testing Labs**
 - **Research Licenses**
- **HCA Process and Content**
- **Banking**



Thank You!

Steven Hoffman
steven.j.hoffman@mass.gov
MassCannabisControl.com



Financial
Performance

Regulatory
Compliance



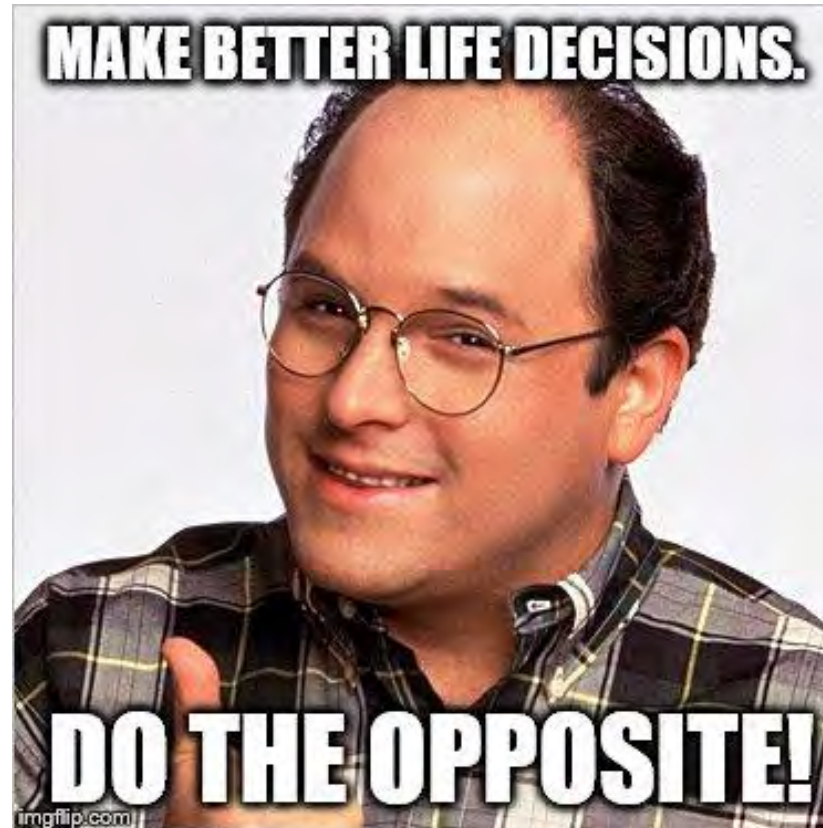
◆ *Risk Management Strategy & Solutions* ◆

Balance Sheet Strategies in an Inverted Yield Curve Environment Why Now is the Best Time to Formulate a Winning Game Plan!

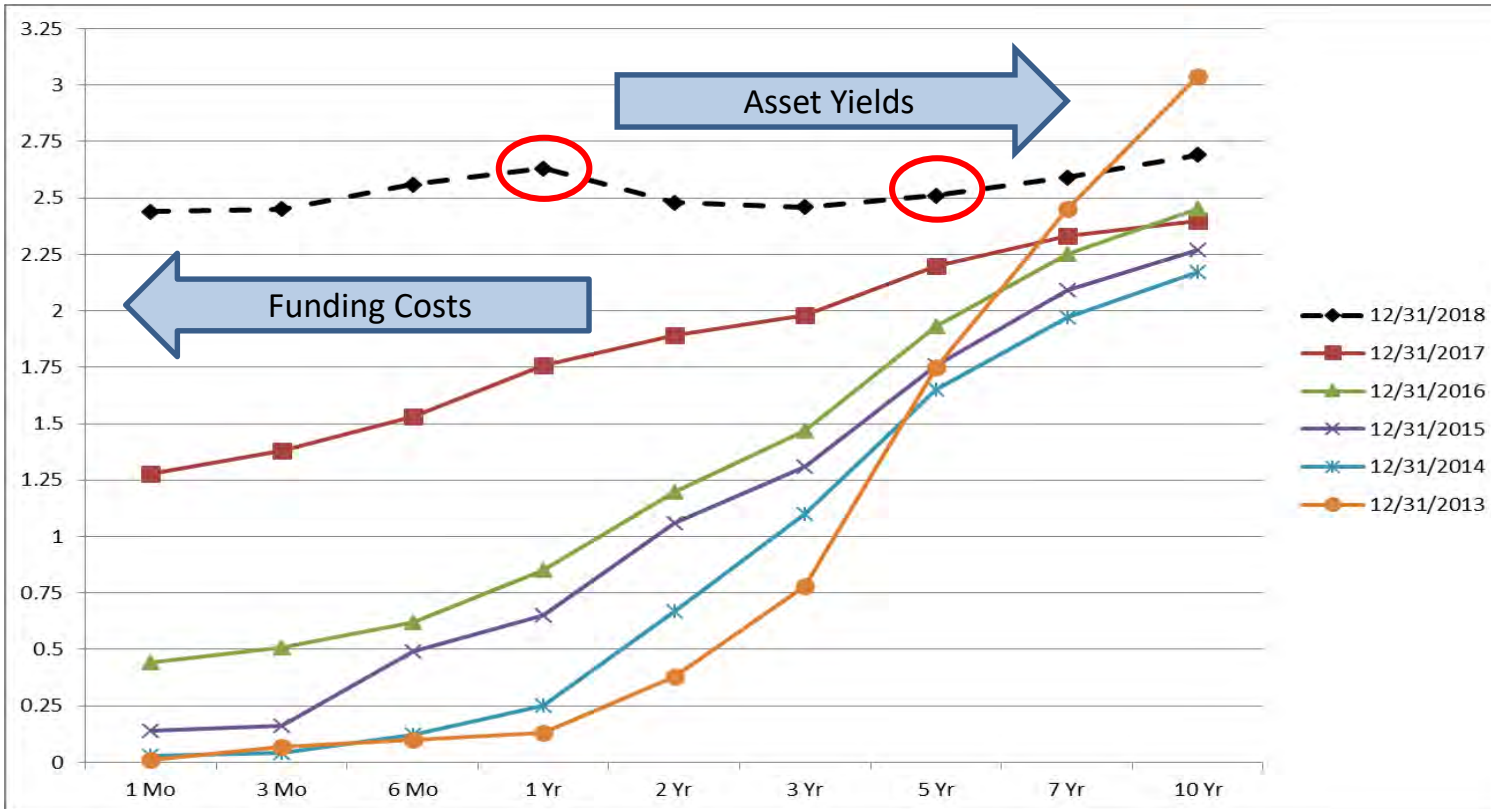
November 8, 2019

Frank L. Farone, Managing Director
ffarone@darlingconsulting.com

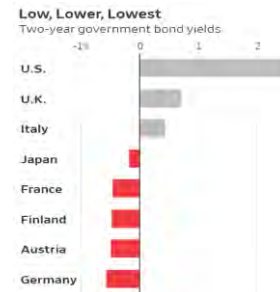




YOUR Strategies Throughout Journey?



US Long Term Rates High vs. rest of G7 at negative rates?





“No reason for great concern”

John Snow (Treasury Secretary) – January 2006

“I would not interpret the currently very flat yield curve as indicating a significant economic slowdown to come”

Ben Bernanke – March 2006

“I don’t think I’m concerned with it (flat yield curve).”

Bill Gross – January 2007

10 YR TSY - 1 YR TSY		
First Inversion	Recession Start	Lead (Months)
Dec-56	Aug-57	8
Sep-59	Apr-60	7
Dec-67	Dec-69	24
Mar-73	Nov-73	8
Sep-78	Jan-80	16
Sep-80	Jul-81	10
Feb-89	Jul-90	17
Apr-00	Mar-01	11
Jan-06	Dec-07	23

Flattening Curve Last October (Expecting 3 FED Hikes)

Think Opposite? **BUY LONG ASSETS Before Curve Inverts!!**



4.05% GNMA Jumbo MBS \$95 13/32 (No Credit Risk)

Enter all values and hit <GO>

G2 MA5125 Mtge		Actions		Settings		Yield Table							
G2JM 3 N		3.466(352)7		CUSIP 36179 TVS1		Pool Level		As of 10/2018					
10/2018	39P 0.6C 0.0B	Traits	JM, 30/360	Coupon	3.0000	Maturity	4/20/2048	CA	38%	2018	99%		
3Mo	22 0.3 0.0	4/1/2018	42,749,983	Delay	19	Next Pay	11/20/20...	VA	10%	2017	1%		
6Mo	283 2.5 0.0	10/1/2018	41,794,686	TV	89	Accrual	10/1-10/31	MD	10%	2016	0%		
12Mo	-- -- --	Factor	0.97765386	W/O LS	672,785	MAXLS	1,563,126	TX	6%	2015	0%		
Life	283 2.5 --	# Loans	68										

1) Price-to-Yield

Settle	10/18/18	+300 MED	+200 MED	+100 MED	0 MED	-100 MED	-200 MED	-300 MED
Vary	0	98 PSA	107 PSA	145 PSA	297 PSA	843 PSA	1299 PSA	1334 PSA
Price	95-13	3.5839	3.6038	3.6902	4.0520	5.3503	6.4114	6.4940
Avg Life		10.30	9.89	8.43	5.13	2.10	1.42	1.38
Mod Duration		7.90	7.63	6.64	4.31	1.91	1.32	1.28
Prin Win	Date	11/18-2/48	11/18-2/48	11/18-2/48	11/18-2/48	11/18-6/47	11/18-7/34	11/18-9/33
I Spread		42	44	56	102	247	366	375

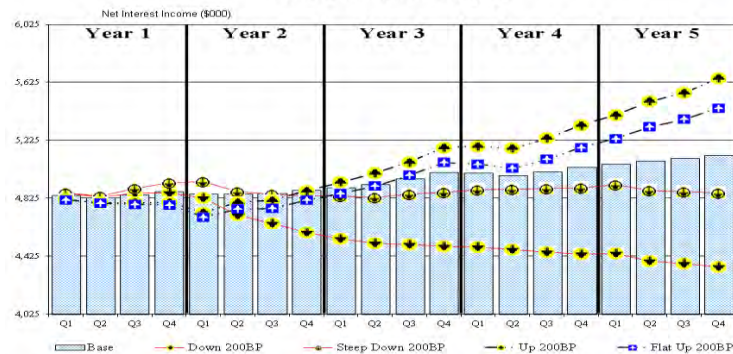
Oct18	Sep	Aug	Jul	Jun	May	Apr	Mar	Feb	Jan	Dec	Nov	GOVT(I	6M	1Y	2Y	3Y	5Y	7Y	10Y	30Y
39P	16	6	1634	35	115	--	--	--	--	--	--	9:47	2.46	2.66	2.87	2.95	3.02	3.11	3.16	3.34
0.6C	0.2	0.1	13.1	0.2	0.5	--	--	--	--	--	--	Disc	30/360			5Y	99-10%	7Y	99-11	

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. 1 212 316 2000
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SN 494376 H330-3460-3 16-Oct-18 9:48:24 EDT GMT-4:00

BUY JUMBO MBS 4.05%; Fund Short; 90bp Spread Too Thin?

1 Year Ago: 3-4 Fed Hikes Ahead...Let's Wait to Buy... Think Opposite!

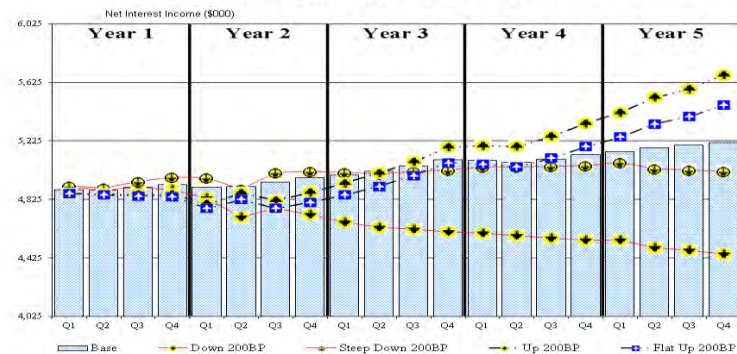
Base Simulation as of 9/30/2018



NII SUMMARY

	Down 200BP	Steep Down 200BP	Base	Up 200BP	Flat Up 200BP
Year-1 NII	19,414	19,527	19,388	19,201	19,186
Year-2 NII	18,767	19,507	19,437	19,208	19,011
Year-3 NII	18,058	19,386	19,776	20,183	19,822
Year-4 NII	17,848	19,663	20,024	20,921	20,360
Year-5 NII	17,559	19,532	20,364	22,088	21,372

\$25MM Leverage to fund 30Yr Jumbo MBS



NII SUMMARY

	Down 200BP	Steep Down 200BP	Base	Up 200BP	Flat Up 200BP
Year-1 NII	19,595	19,749	19,625	19,445	19,415
Year-2 NII	19,025	19,897	19,750	19,353	19,155
Year-3 NII	18,529	20,055	20,170	20,203	19,833
Year-4 NII	18,277	20,202	20,418	20,982	20,408
Year-5 NII	17,971	20,158	20,758	22,197	21,452

CHANGE / DIFFERENCE IN RESULTS

	Down 200BP	Steep Down 200BP	Base	Up 200BP	Flat Up 200BP
Year-1 NII	181	222	237	244	249
Year-2 NII	258	391	313	145	143
Year-3 NII	474	670	394	20	11
Year-4 NII	429	639	394	60	47
Year-5 NII	412	628	394	98	80

**"Spread Too Thin"
@90bps?**

Strategy assumes \$25MM of 18 month FHLD Advances to fund a 30 Year Jumbo MBS.
At maturity, 18 month advances roll into shorter 1 month products.

Today's INVERTED Curve: FFS vs. 10 year!



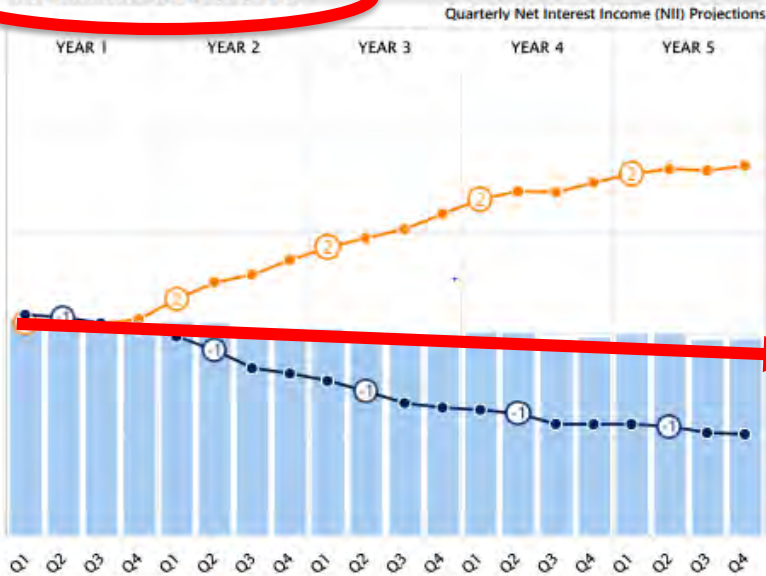
1 Yr. Ago Yield Curve vs. Today...Total Surprise?

Now What Do We Do?

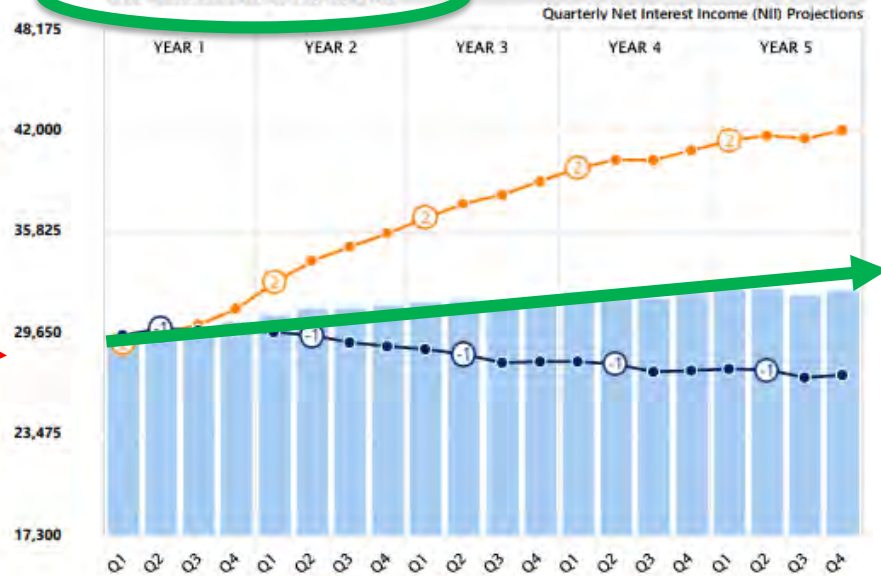


Lower Yields on Loans & Investments, Higher COST of FUNDS = LOWER NII

Base Simulation as of 06/30/2019



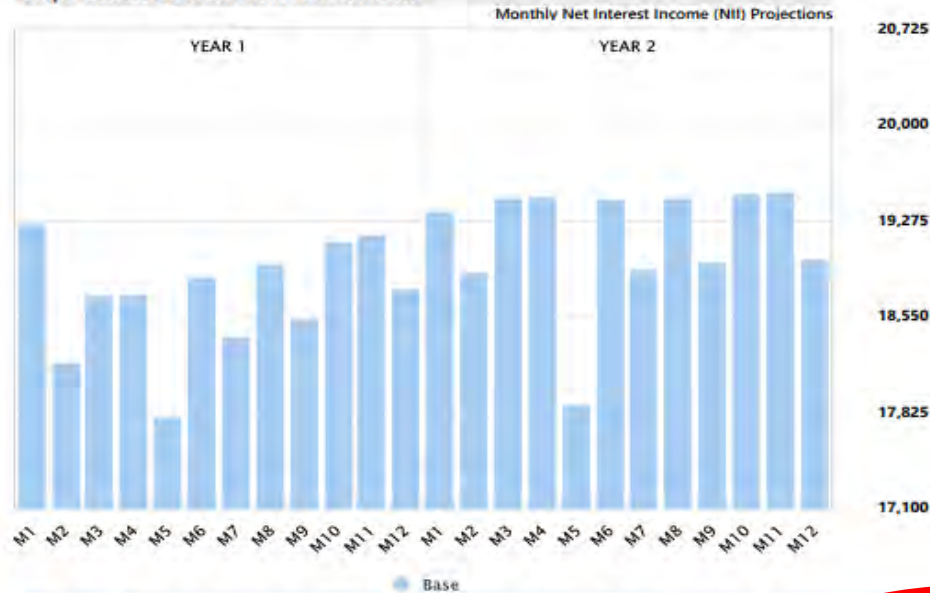
Base Simulation as of 06/30/2018



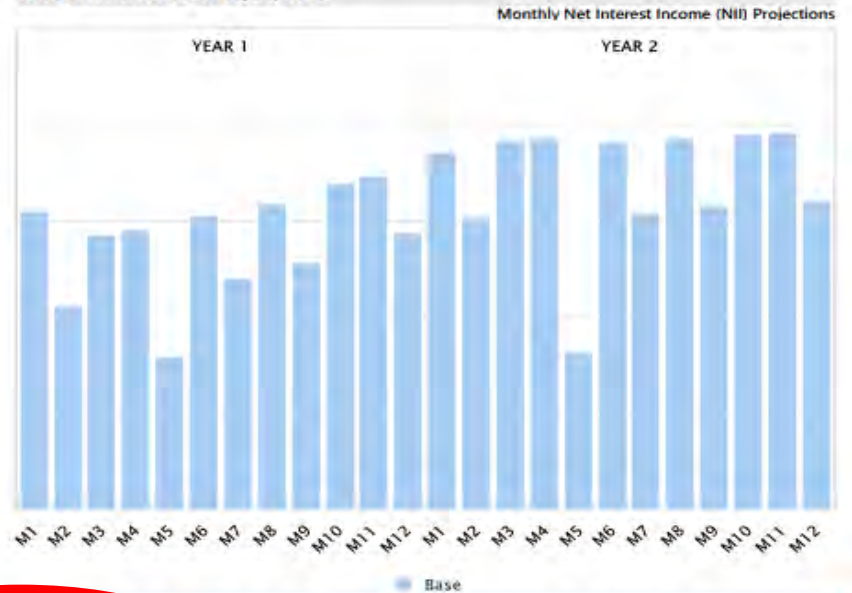
NII RESULTS

	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5
UP 200BP	121,059	131,723	143,135	153,060	158,316	1,166	-5,640	-7,962	-7,722	-8,166	119,893	137,363	151,096	160,781	166,482
BASE	121,515	120,436	118,645	118,250	117,949	2,030	-4,270	-8,056	-10,076	-11,262	119,485	124,706	126,701	128,325	129,211
DOWN 100BP	121,480	112,619	103,206	97,808	95,023	2,448	-4,411	-9,469	-12,414	-13,781	119,031	117,030	112,675	110,222	108,805

50bps Decrease in Short Term Market Rates



Base Simulation as of 09/30/2019

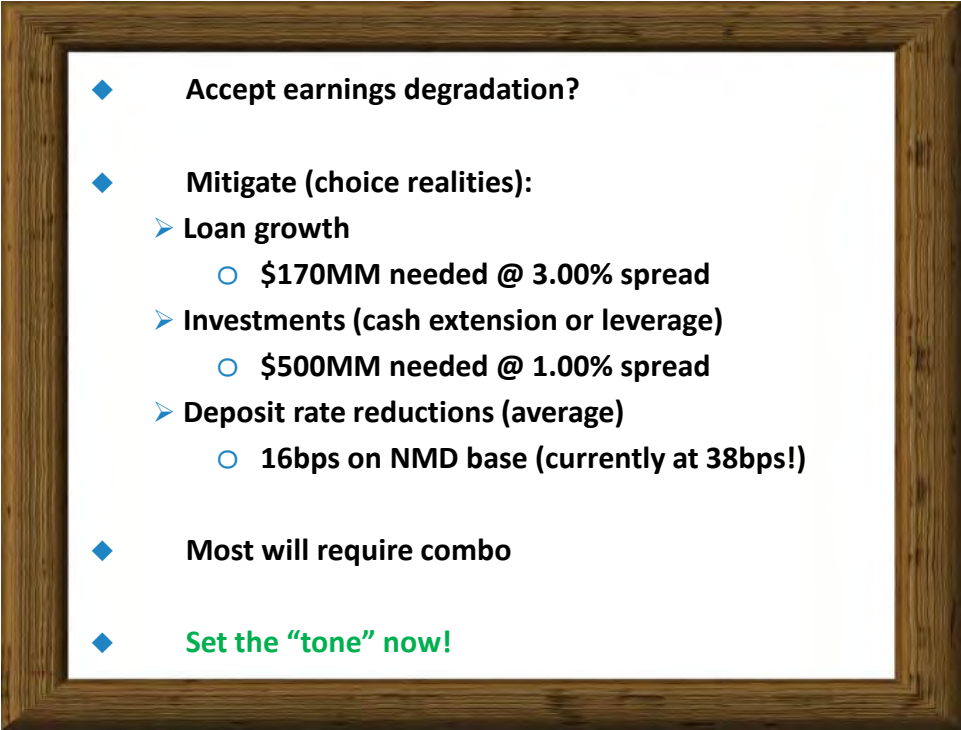


NII RESULTS					
	Y1	Y2	Y1	Y2	
BASE	224,547	229,777	-4,964	-5,219	229,511
			DIFFERENCE		234,996

. All short term market rates (1Y and less) are decreased by 50bps.

. This scenario represents no changes to deposit rates, with the exception of Public NOW (fully indexed).

Frame the Current Business Issue:
Then, “What Do We Do?”

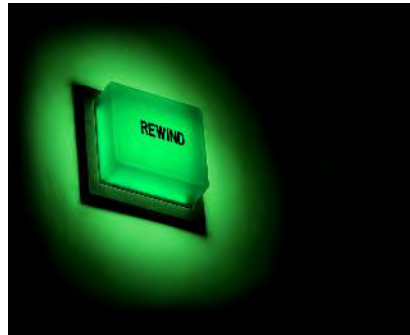
- 
- ◆ **Accept earnings degradation?**
 - ◆ **Mitigate (choice realities):**
 - **Loan growth**
 - \$170MM needed @ 3.00% spread
 - **Investments (cash extension or leverage)**
 - \$500MM needed @ 1.00% spread
 - **Deposit rate reductions (average)**
 - 16bps on NMD base (currently at 38bps!)
 - ◆ **Most will require combo**
 - ◆ **Set the “tone” now!**

Hit the Rewind Button

Back to the Future

2018-2019

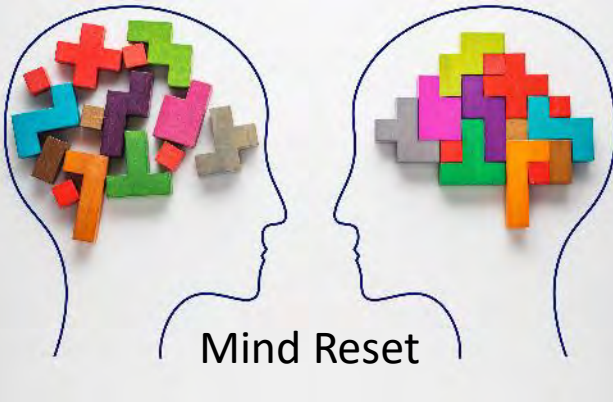
- ◆ **Lengthen** Asset Durations
- ◆ **Shorten** Funding Maturities



Conventional Wisdom?

2018-2019

- ◆ **Shorten** Asset Durations
- ◆ **Lengthen** Funding Maturities



- ◆ Target more fixed-rate oriented loans for portfolio?
- ◆ Have more **discipline** with ALCO decisions?
- ◆ Accept lower security yields for call protection?
- ◆ Promote shorter-term CD Specials?
- ◆ Maintain shorter wholesale maturity structures, or Leverage our capital to hedge our worst case scenario ?
- ◆ Buy VERY CHEAP insurance against falling rates (e.g. interest rate floors)?
- ◆ Pre-invest 2019 Investment Cash Flows, Etc...



Avoid future need to build a time machine to go back and “fix” or correct?

$$\boxed{\text{ROA}} \times \boxed{\text{LEVERAGE}} = \text{ROE (Net Income/Capital)}$$

➤ Increase margin

- Asset Yields
- Cost of Funds
- Fee Income
- Expense Control
- Asset Sales (Gains? How Replace \$?)

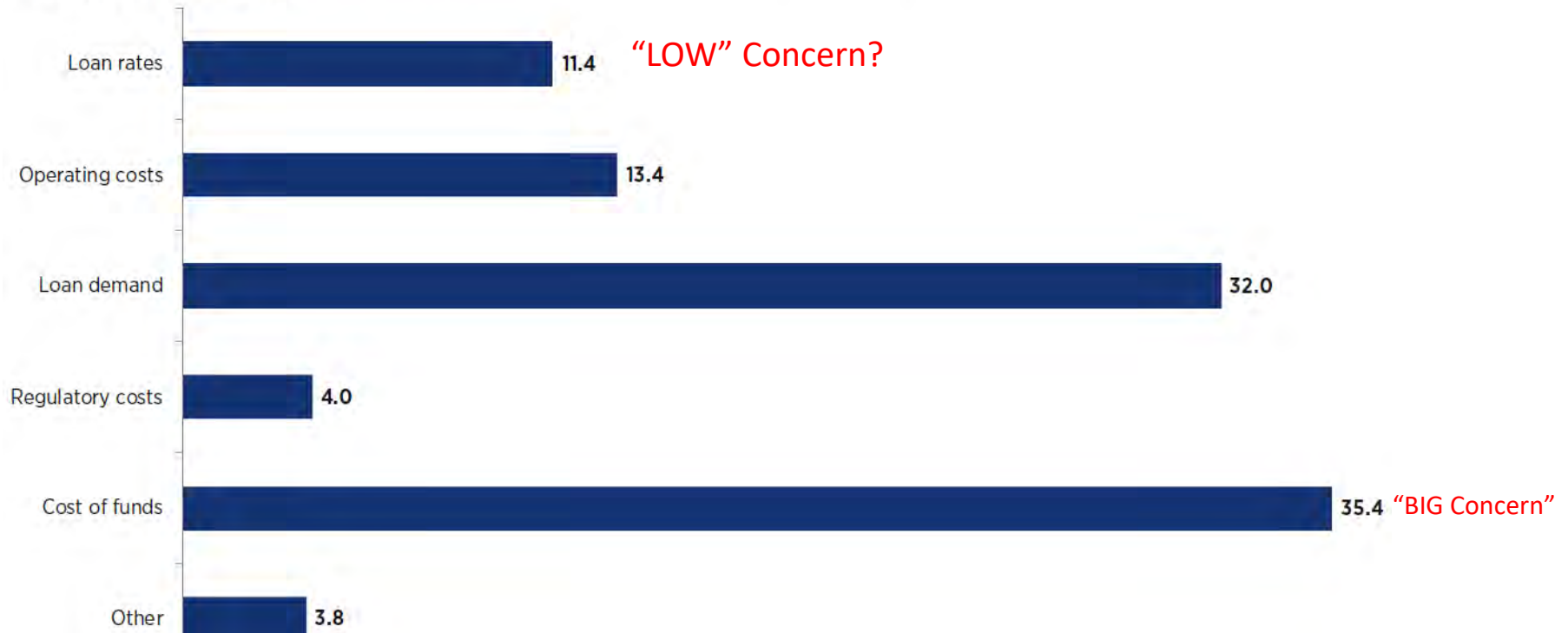
➤ Growth

- Local
- Expansion
- Acquire
- Wholesale Markets

To Grow We NEED Funding...

Funds Management Is “Key” Now

Which of the following is likely to have the biggest influence on profitability over the next 12 months?

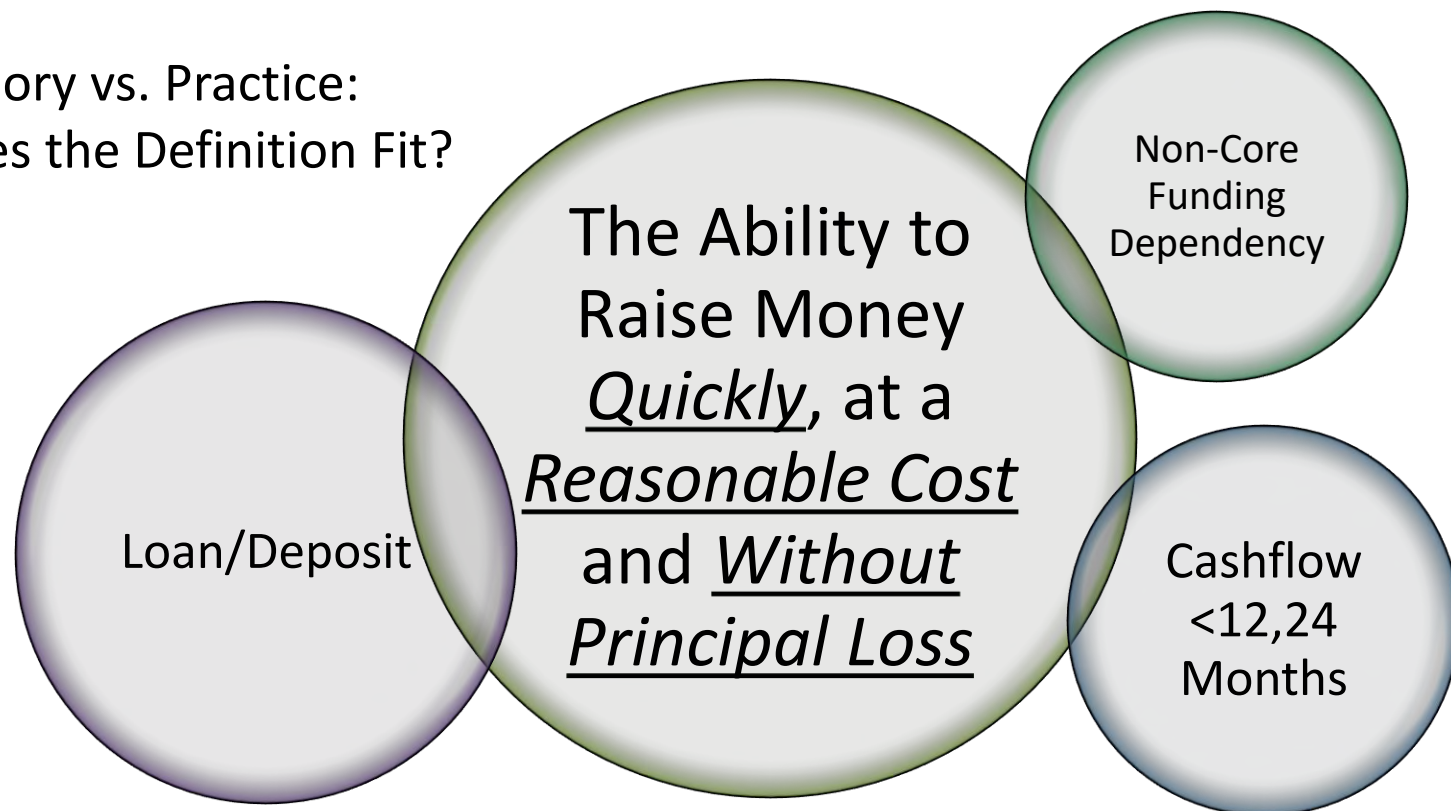




Liquidity,
Liquidity,
Liquidity!

- ◆ “On Balance Sheet” Liquidity: A Key Regulatory Focus
- ◆ Loan/Deposit Ratio Discussions “Resurfacing”
- ◆ Notable Increase in Interim Liquidity Exams
- ◆ Deeper Dives into Contingency Liquidity Planning Robustness

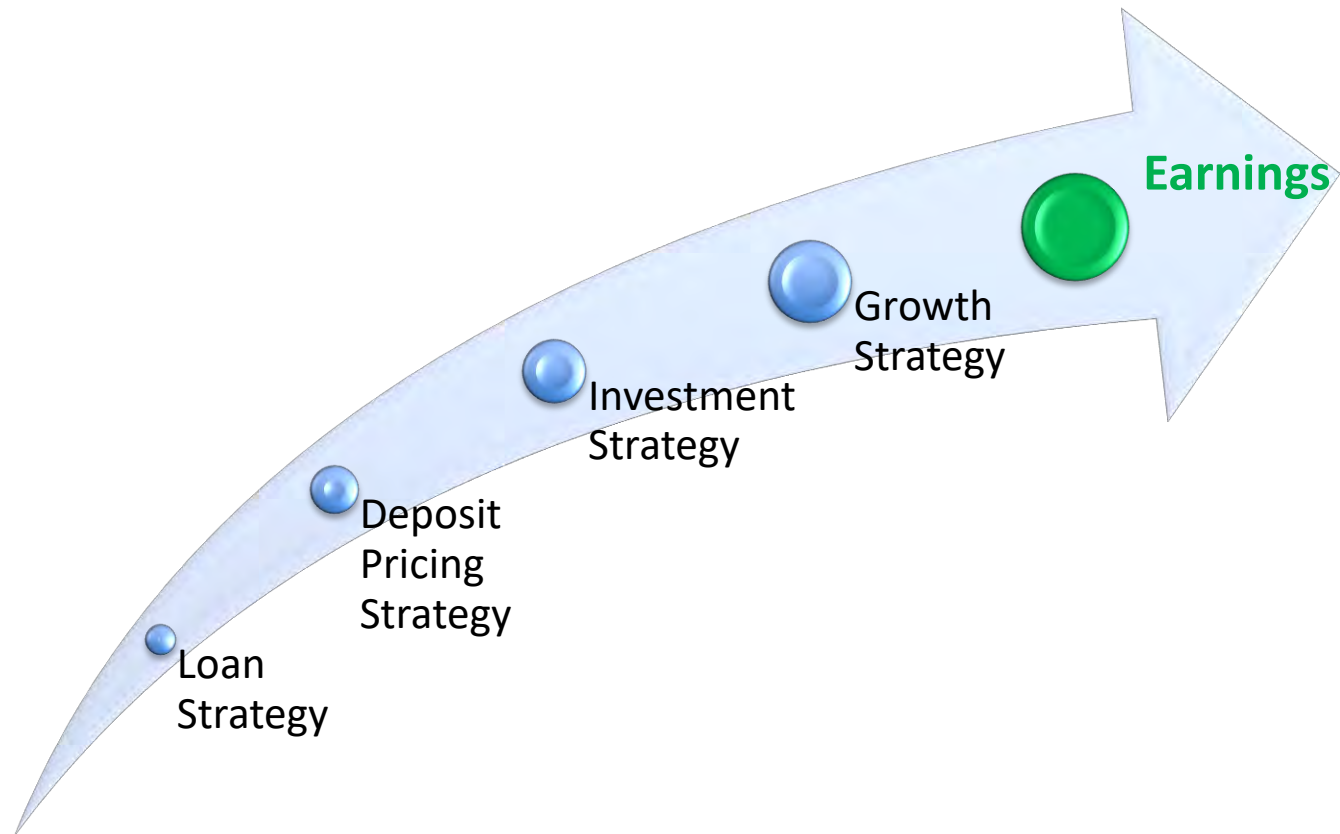
Theory vs. Practice:
Does the Definition Fit?



TIER 1 BASIC SURPLUS				TOTAL ASSETS 577,945	Other Liquidity Items			
Overnight Funds Sold & Short-Term Investments (avg. balance, if wide daily fluctuations)					Other Investments			
	TREASURIES & AGENCIES	AGENCY MBS/CMO	NON-AGENCY MBS/CMO		MARKET VALUE	PLEGDED	AVAIL.	
Collateral Value	100%	95%	90%		Corporates	0	0	
Market Value	0	29,920	0		Municipals	19,579	0	
Less Securities Pledged to:					Equities	1	0	
FHLB	0	0	0		Other	0	0	
Fed Discount/Other Secured	0	-1,439	0		Total	19,580	0	
Wholesale Repos	0	0	0				19,580	
Retail Repos/Sweeps	0	0	0					
Municipal Deposits	0	0	0					
Other	0	0	0					
Available / Unencumbered Security Collateral	0	27,057	0	27,057				
Over Collateralized Securities Pledging Position				1,367				
Cash flow (< 30 Days) from Securities not listed above				895				
Other Liquid Assets (Int Bearing Deposits, MM Mutual Funds, etc.)				748				
Total Liquid Assets				42,893				
Volatile Liabilities Coverage:								
Maturing Unsecured Liabilities (< 30 Days)				0				
Deposit Coverage (5% of Assets/7% of Deposits)				(28,281)				
Tier 1 Basic Surplus (\$ and % of assets)				14,612	2.5%			
TIER 2 BASIC SURPLUS				POLICY LIMITS (min) Well Cap. < Well Cap.	Unrealized Gain/Loss on Securities (AFS & HTM)			
					TOTAL PORTFOLIO SURPLUS BONDS	TIER 1 BASIC % OF ASSETS	TIER 1 % OF ASSETS	
A. Maximum Borrowing Line at FHLB (Up to 25% of Assets)	144,486				Base	944	261	
B. Loan Collateral at the FHLB (net of haircut)	174,399				Shock Up 100BP	-533	-128	
C. Excess Loan Collateral (if A < B)	29,913				Difference	-1,477	-389	
Maximum Borrowing Capacity (Lesser of A or B)	144,486						0.1%	
Collateral Currently Encumbered by Outstanding Advances/Letters of Credit	89,687						0.0%	
Remaining FHLB Loan Based Borrowing Capacity	54,799						0.1%	
Tier 2 Basic Surplus				69,411	12.0%			
TIER 3 BASIC SURPLUS				Notes	1. There are no Municipal deposits requiring collateral.			
Maximum Board Authorized Brokered/National Deposit Capacity (10% of Assets)	57,795				2. Deposit Coverage metrics are as follows: 25% of CDs Maturing < 30 Days = \$1,399; 30% of Jumbo CDs Maturing < 30 Days = \$287; 10% of Other Deposits = \$26,595.			
Current Brokered/National Deposit Balances	16,216				3. The Maximum Borrowing Line at the FHLB represents the Bank's internal policy for maximum borrowing capacity.			
Remaining Capacity to Utilize Brokered/National Deposits	41,579				4. Qualifying loan collateral as of 6/30/2019 is comprised of \$120.7MM of Residential loans and \$53.7MM of CRE loans (net haircut).			
Tier 3 Basic Surplus				110,990	19.2%	5. FRB Discount Window is secured by MBS collateral.		
						6. The \$12 million unsecured Fed Funds Line represents \$5MM with Co-operative Central Bank and \$7MM with PCBB (available July 2019). Although unsecured, the Co-operative Central Bank reserves the right to request collateral at any time that loan balances may be outstanding.		

LIQUIDITY: LOW RISK													
BASIC SURPLUS	POLICY	JUN19	MAR19	DEC18	SEP18	JUN18	OTHER LIQUIDITY MEASURES	POLICY	JUN19	MAR19	DEC18	SEP18	JUN18
Basic Surplus (Min.)		3.5	3.2	3.4	3.6	3.9	Borrowings / Assets (Max.)	35.0	20.6	20.5	24.4	26.0	27.0
Basic Surplus w/ FHLB (Min.)	2.0	17.9	17.8	20.3	13.0	15.7	Brokered Deposits / Assets (Max.)	50.0	16.4	16.9	17.9	15.8	16.6
Basic Surplus w/ FHLB & Brokered (Min.)	8.0	51.5	50.9	52.4	47.3	49.1	Total Wholesale Funds / Assets (Max.)	65.0	37.0	37.4	42.4	43.8	43.6
							Net Loans / Deposits		122.3	123.6	129.0	140.4	136.5
							Net Loans / Assets		83.7	84.5	84.3	85.1	84.3
							National Deposits / Assets	15.0	12.7	10.7	6.0	5.3	4.1

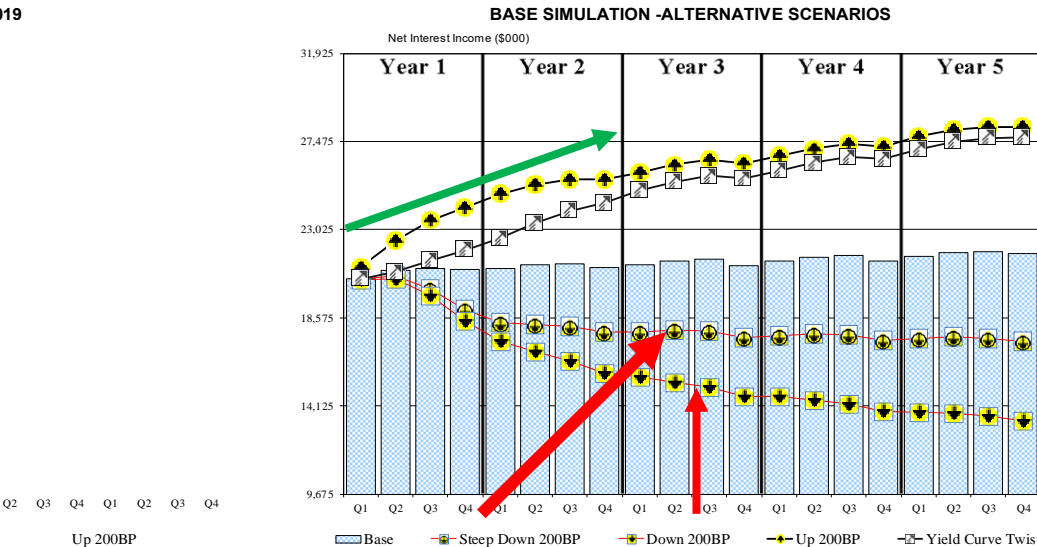
	Value	Percentile	Bank Peer		Value	Percentile	Bank Peer
R OA	2.25	93	1.37	Equity / Tot Assets	9.30	9	12.68
R OE	24.33	97	11.40	Lev Cap / Tot Assets	9.05	6	12.37



7 Common Excuses NOT to Use Wholesale Funding

1. Wholesale funding is too costly
2. Deposits reflect relationships, borrowings do not
3. Wholesale funding does not increase value of franchise or attain mission of our institution
4. Lack of spread (hint: best opportunities when spread tightest)
5. Negative regulatory attitude (perpetuates board/Mgm't negativity)
6. No **need** for funds, **flush with cash!**
7. Not set up to borrow! (Really?! Liquidity Mgm't malpractice!)

19



Key Points:

- ✓ Asset sensitive and ultimately very well positioned for higher interest rates
- ✓ Amount of overall rising rate benefit will depend on (1) pace of rate hikes and (2) shape of market yield curves and “when” rates rise!
- ✓ Falling rates proves to be the most problematic scenario for NII
- ✓ Deposit stability and pricing sensitivity remain important “unknowns”; Revisit MCOF wholesale

Up 200BP

	NII SUMMARY				
	Steep Down 200BP	Down 200BP	Base	Up 200BP	Yield Curve Twist
Year-1 NII	80,232	79,135	83,579	91,232	84,900
Year-2 NII	72,597	66,349	84,731	101,219	94,252
Year-3 NII	71,299	60,618	85,453	105,136	101,778
Year-4 NII	70,555	57,093	86,177	108,445	105,675
Year-5 NII	70,024	54,568	87,241	112,207	109,862

Slope Matters...A LOT!!

Where Do We Want to Position Our Funding? At What Cost?

Non-Maturity Deposit Products

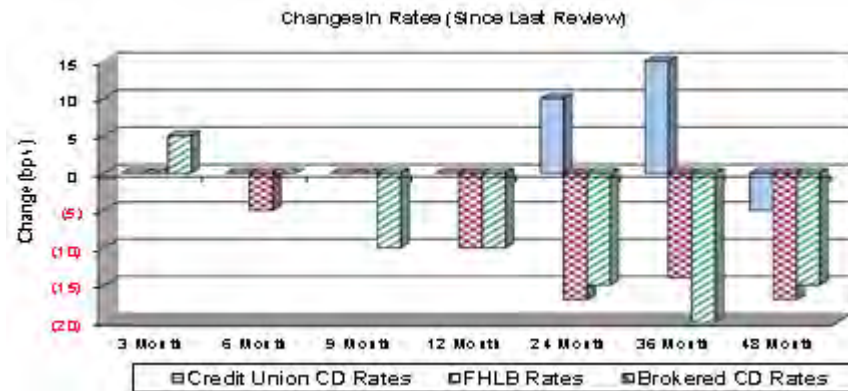
	Rate (APY)	
Primary Savings	0.30%	
Owners Choice Savings	0.30%	
Preferred Savings	0.30%	Low Tier
Preferred Savings	0.85%	High Tier
Preferred Plus Savings	0.30%	Low Tier
Preferred Plus Savings	2.02%	High Tier

Time Deposits

	Rate (APY)
3 Month	0.90%
6 Month	0.90%
9 Month	1.41%
12 Month	1.75%
24 Month	2.53%
36 Month	2.78%
48 Month	2.73%
60 Month	2.78%

Time Deposits Specials / Promotions

- Consider 7 month CD @2.25%!
- 11 month 2.30%
- 2-3 year 1.75%
- 4 & 5 year 1.80%



Time Deposits Maturing Next 6 Months

BALANCE: \$196,967
RENEWAL RATE: 2.25%

RUNOFF PROTECTED

	RATE DECREASE	
	0.25%	0.50%
10.00%	4.50%	6.75%
20.00%	3.25%	4.25%
30.00%	2.83%	3.42%
50.00%	2.50%	2.75%

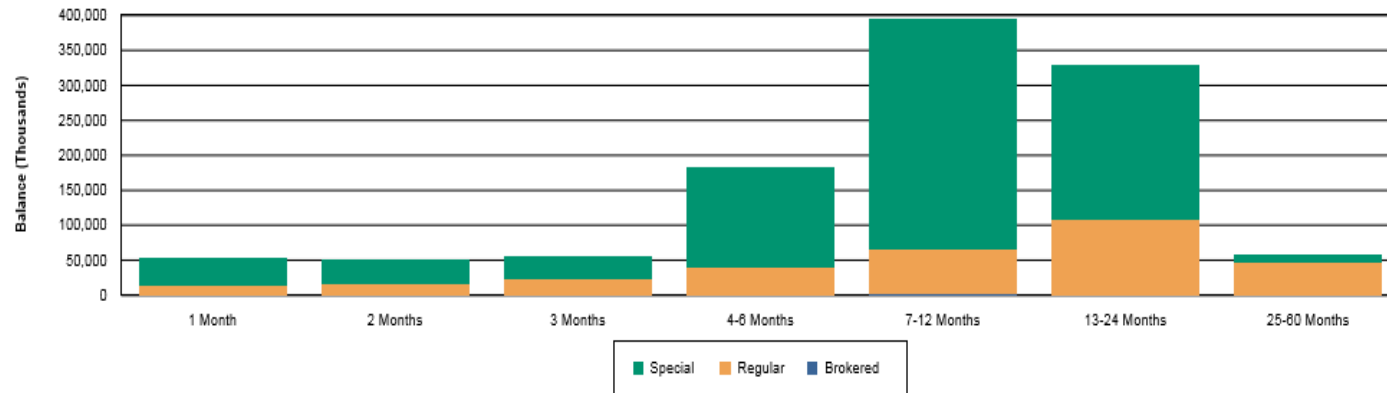
If cost to retain is 2.25% in local market for 2 year CD...consider offering 7 month CD @1.75%

Need to replace any outflows at these rates to "break-even"

Long-Term Classic Advance Rates

Effective 12:27 PM
October 7, 2019

Term	Reg.	CDA	CDA Extra
1yr	1.88	1.79	1.76
2yr	1.83	1.61	1.57
3yr	1.80	1.58	1.53
5yr	1.82	1.60	1.53
7yr	2.01	1.78	1.69
10yr	2.23	1.99	1.88

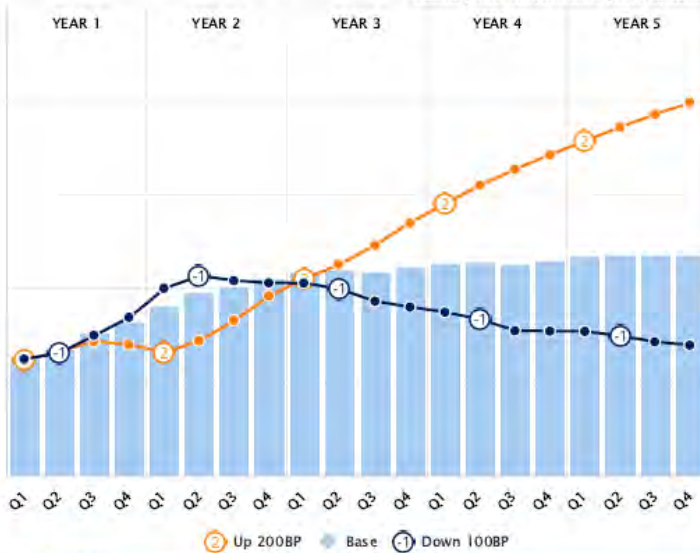


	1 Month	2 Months	3 Months	4-6 Months	7-12 Months	13-24 Months	25-60 Months	60+ Months	Total
Regular	12,789	14,594	23,666	38,747	64,121	107,088	45,856	-	306,839
	1.50%	1.51%	1.60%	1.30%	1.90%	2.15%	1.94%	-	1.97%
	508	501	888	1,369	2,426	3,930	1,619	-	11,037
Special	41,486	36,787	32,684	143,737	328,976	222,122	11,761	-	817,552
	1.92%	1.95%	1.96%	2.45%	2.80%	2.72%	2.41%	-	2.53%
	787	761	796	3,366	7,106	5,096	318	-	18,230
Brokered	-	-	-	-	996	-	-	-	996
	-	-	-	-	2.40%	-	-	-	2.40%
	-	-	-	-	1	-	-	-	1
Total	54,255	51,380	56,350	182,484	394,093	329,208	57,616	-	1,125,387
	1.82%	1.83%	1.85%	2.14%	2.48%	2.47%	2.04%	-	2.37%
	1,293	1,262	1,482	4,735	9,533	9,026	1,937	-	29,268
Cumulative	54,255	105,636	161,986	344,470	738,563	1,067,771	1,125,387	1,125,387	
	1.82%	1.82%	1.83%	2.09%	2.30%	2.39%	2.37%	2.37%	
	1,293	2,555	4,037	8,772	18,305	27,331	29,268	29,268	

Pricing Relief ? Drop 8 month CD to 2.00%

Modified CD Strategy - 8 Month Special @ 2.00%

Quarterly Net Interest Income (NII) Projections



Base Simulation as of 06/30/2019

Quarterly Net Interest Income (NII) Projections



NII RESULTS

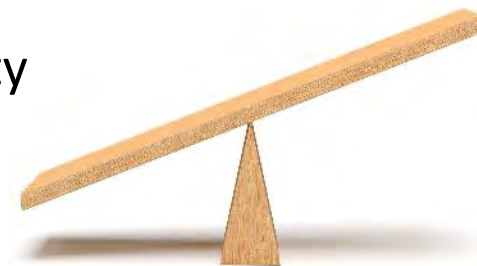
	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5
UP 200BP	50,007	51,725	57,534	63,340	67,780	981	2,608	2,994	3,049	3,075	49,026	49,117	54,540	60,291	64,706
BASE	50,710	54,579	56,224	56,808	57,382	981	2,611	2,997	3,052	3,078	49,729	51,968	53,227	53,756	54,304
DOWN 100BP	50,643	55,261	54,232	52,037	50,849	975	2,014	2,139	2,178	2,196	49,667	53,248	52,093	49,859	48,653
DIFFERENCE															

1. Assumes 8 Month CD Special rate is lowered to 2.00%

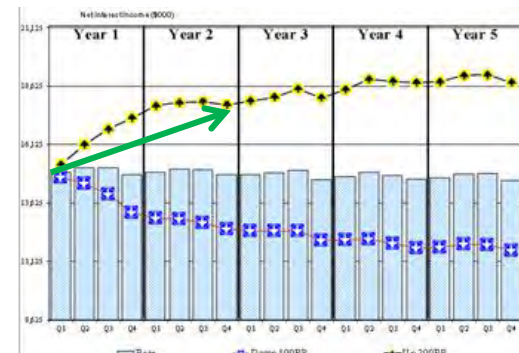
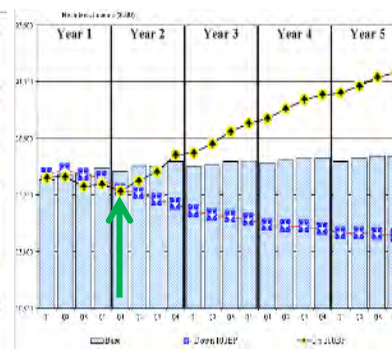
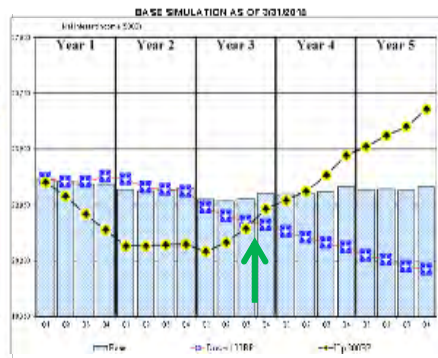
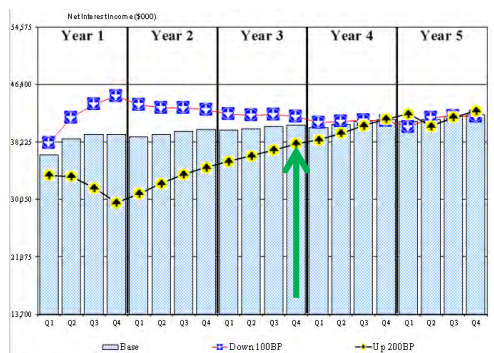


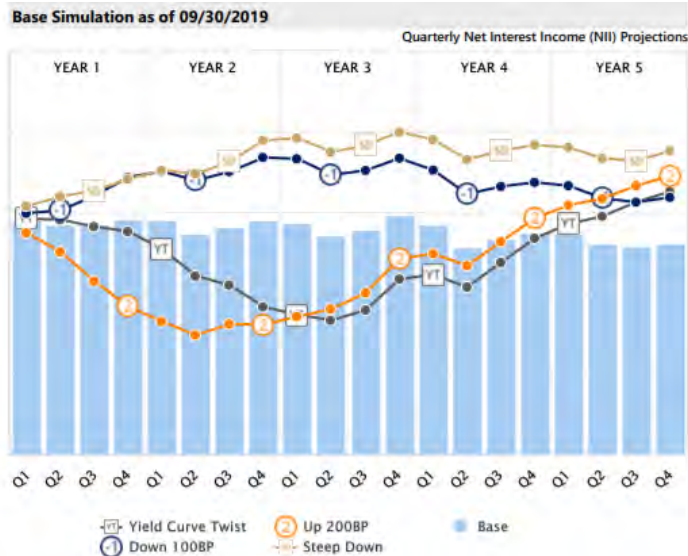
Liability Sensitive

- ◆ *Few Do Not Have* Fixed Rate Capacity
- ◆ “Matched Funding” a Myth
- ◆ Biases “Get in the Way”



Asset Sensitive





NII RESULTS

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
YIELD CURVE TWIST	50,473	46,648	44,784	47,594	51,566
UP 200BP	47,419	43,381	45,601	49,035	52,752
BASE	50,654	50,402	50,362	49,656	49,285
DOWN 100BP	52,210	54,213	54,534	53,311	52,434
STEEP DOWN	52,631	54,823	56,187	55,708	55,318

Considerations:

- ◆ Balancing exposure to both rising and falling rates
- ◆ If extending: How far? How much of protection?
- ◆ Cost of insurance to rising? Free today w/inversion
- ◆ Understand most effective options
- ◆ Should be able to extend assets
- ◆ Deposit strategy: New money (MCOF issue)
- ◆ Keep funding “short” or go longer? Swap?
- ◆ Mismatched leverage or growth
- ◆ AVOID selling options
- ◆ Swaps/Caps (Last of layer approach)

NOTE: Decline in 5 Year Rate to 1.20% (Market Overly Pessimistic?)

Financial Institutions Group - Market Update

Friday, October 4, 2019

Chatham
FINANCIAL

90 Day History - 5 Year Swap (1m LIBOR)

Index Rates		Treasury Rates		Fed Funds Swap Rates	
Term	Rate	Term	Rate	Term	Rate
1m LIBOR	1.978%	3 Month Bill	1.69%	1 Year	1.34%
3m LIBOR	2.027%	6 Month Bill	1.65%	2 Year	1.16%
6m LIBOR	1.951%	2 Year Note	1.40%	3 Year	1.09%
12m LIBOR	1.853%	3 Year Note	1.36%	4 Year	1.07%
Prime	5.000%	5 Year Note	1.35%	5 Year	1.07%
Eff. Fed Funds	1.830%	10 Year Note	1.53%	7 Year	1.10%
SOFR Rate	1.840%	30 Year Bond	2.02%	10 Year	1.18%

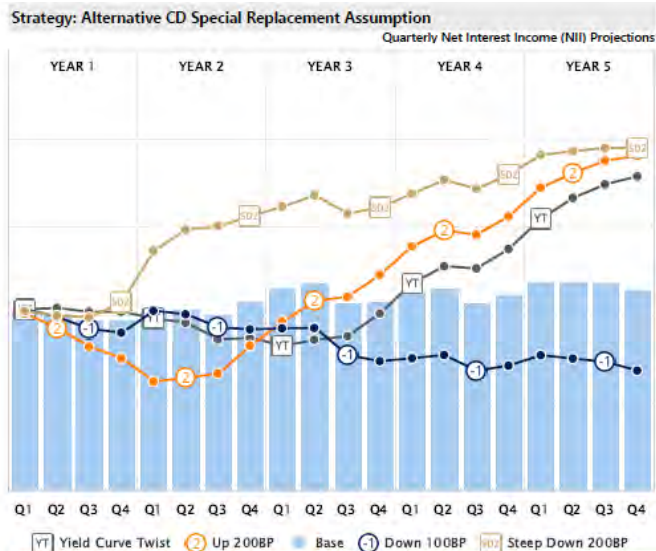


1m LIBOR Swap Rates						
Term	Bullet	Amortization Period				
		10	15	20	25	30
1	1.48%	1.48%	1.48%	1.48%	1.48%	1.48%
2	1.29%	1.30%	1.30%	1.29%	1.29%	1.29%
3	1.23%	1.24%	1.23%	1.23%	1.23%	1.23%
4	1.20%	1.22%	1.21%	1.21%	1.21%	1.21%
5	1.20%	1.22%	1.21%	1.21%	1.20%	1.20%
7	1.23%	1.23%	1.23%	1.23%	1.23%	1.23%
10	1.31%	1.25%	1.28%	1.29%	1.30%	1.30%

3m LIBOR Swap Rates						
Term	Bullet	Amortization Period				
		10	15	20	25	30
1	1.64%	1.64%	1.64%	1.64%	1.64%	1.64%
2	1.43%	1.44%	1.43%	1.43%	1.43%	1.43%
3	1.35%	1.36%	1.36%	1.35%	1.35%	1.35%
4	1.32%	1.34%	1.33%	1.32%	1.32%	1.32%
5	1.31%	1.33%	1.32%	1.32%	1.32%	1.31%
7	1.34%	1.35%	1.34%	1.34%	1.34%	1.34%
10	1.41%	1.37%	1.39%	1.40%	1.41%	1.41%

PRIME Swap Rates						
Term	Bullet	Amortization Period				
		10	15	20	25	30
1	4.44%	4.44%	4.44%	4.44%	4.44%	4.44%
2	4.23%	4.24%	4.23%	4.23%	4.23%	4.23%
3	4.14%	4.16%	4.15%	4.15%	4.15%	4.15%
4	4.10%	4.12%	4.11%	4.11%	4.11%	4.11%
5	4.09%	4.11%	4.10%	4.10%	4.09%	4.09%
7	4.12%	4.12%	4.12%	4.12%	4.12%	4.12%
10	4.18%	4.14%	4.16%	4.17%	4.17%	4.18%

Strategy #1: Lower CD Rates- Incent Shorter

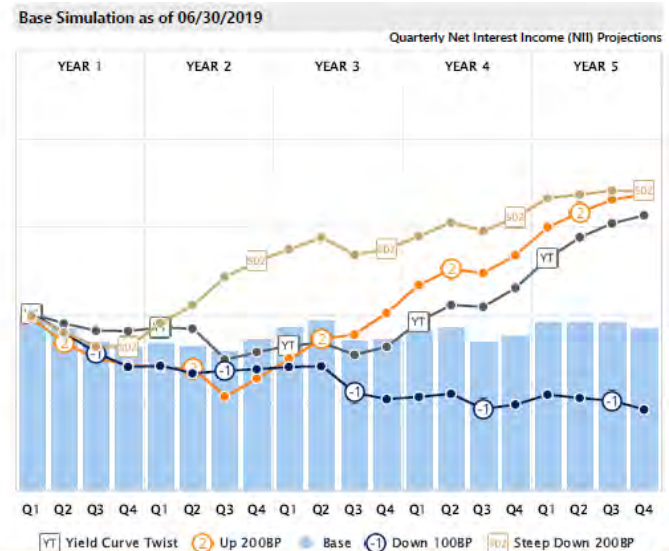


NII RESULTS

	Y1	Y2	Y3	Y4	Y5
YIELD CURVE TWIST	17,748	17,506	17,453	18,293	19,200
UP 200BP	17,418	17,005	17,896	18,729	19,514
BASE	17,685	17,778	17,965	17,951	18,083
DOWN 100BP	17,602	17,620	17,336	17,095	17,105
STEEP DOWN 200BP	17,732	18,745	19,058	19,326	19,749

	Y1	Y2	Y3	Y4	Y5
YIELD CURVE TWIST	183	155	172	483	491
UP 200BP	121	102	473	485	491
BASE	205	446	476	485	491
DOWN 100BP	247	618	478	485	491
STEEP DOWN 200BP	298	762	525	532	539

DIFFERENCE

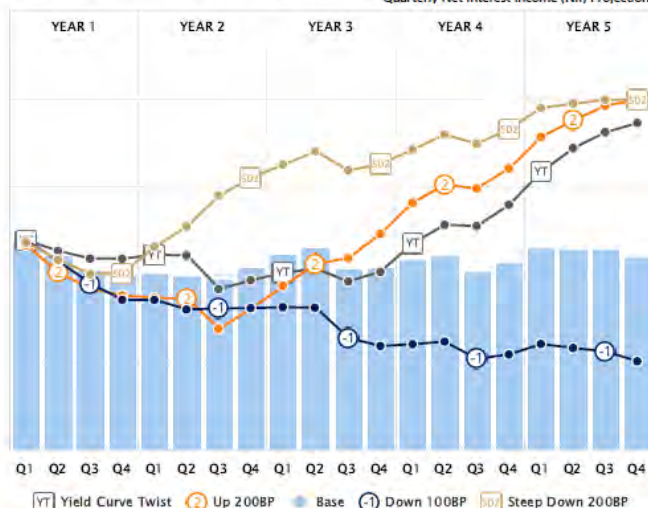


1. Alternative simulation assumes 50% of all non-special CD maturities and 100% of all existing CD specials replace evenly into a 5 month CD special @ 1.65% and a 11 month CD special @ 1.85%.
2. Base simulation assumes 50% of all non-special CD maturities and 100% of all existing CD specials replace into a 15 month CD special @ 2.20%.

Strategy #2: \$20MM Bond Leverage Jumbo 30 Year MBS Funded by Short Borrowings w/Swaps

Strategy: \$20MM Investment Leverage with Hedge

Quarterly Net Interest Income (NII) Projections

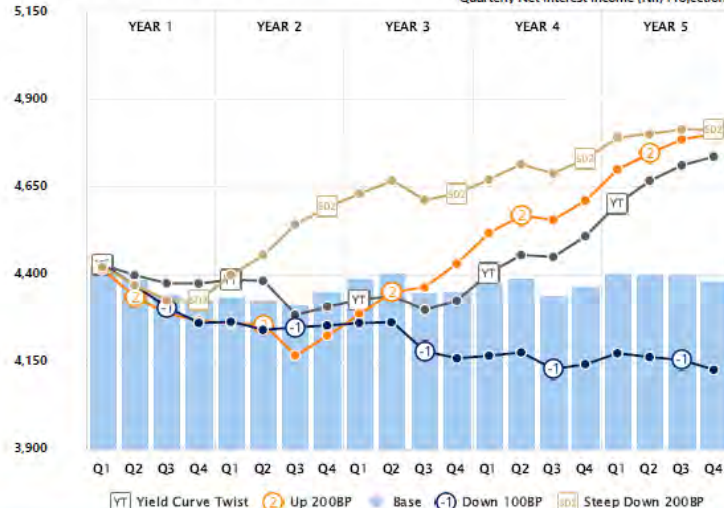


NII RESULTS

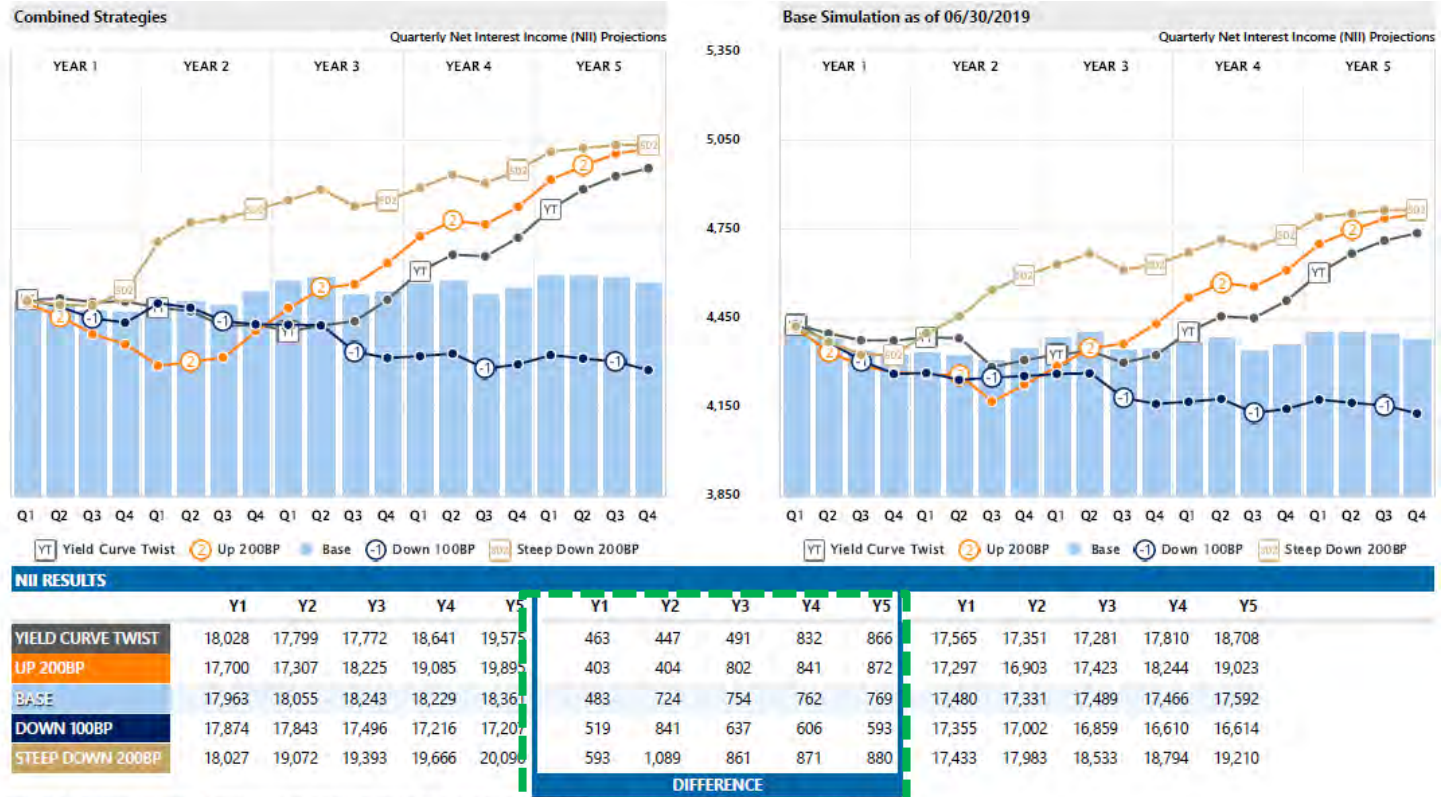
	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5
YIELD CURVE TWIST	17,845	17,644	17,601	18,158	19,083	280	293	320	348	375
UP 200BP	17,579	17,205	17,752	18,600	19,404	282	302	329	356	381
BASE	17,758	17,609	17,767	17,744	17,869	278	278	278	278	278
DOWN 100BP	17,627	17,225	17,018	16,732	16,715	272	223	160	121	101
STEEP DOWN 200BP	17,728	18,310	18,869	19,134	19,551	295	326	336	340	341
DIFFERENCE										

Base Simulation as of 06/30/2019

Quarterly Net Interest Income (NII) Projections



1. Alternative simulation assumes \$20 million of short-term FHLB advances @ 2.29% are utilized to purchase GNMA Jumbo 30Y MBS @ 3.06%.
2. Alternative simulation also assumes a \$20 million 7 year pay fixed (1.53%) receive floating 3 month LIBOR (2.14%) interest rate swap.



WF Financial Institutions

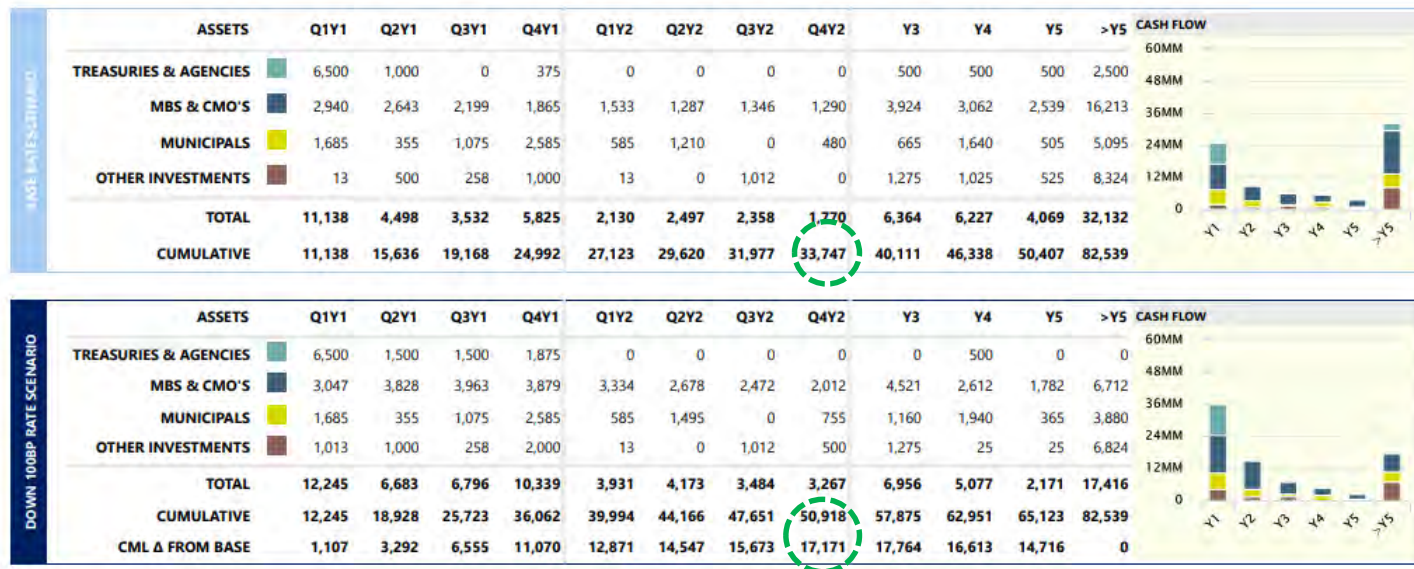
GNMA 3.5% Jumbo 30 yr Amort. Pass Through: 3 Months old.

G2 MA6030 Mtge				Actions		Settings		Yield Table							
G2JM 3.5 N				4.001(356)3		CUSIP 36179UVX7		Pool Level		As of 10/2019					
10/2019	198P	1.2C	0.08	Traits	JM, 30/360	Coupon	3.50%	Maturity	7/20/49	CA	49%	Other	0%		
3Mo	450	1.8	0.3	7/1/2019	775,863,366	LTV/HLTV	94/94	Accrual	11/1-11/30	VA	12%	2019	100%		
6Mo	--	--	--	10/1/2019	768,980,667	MAXLS	2,108,562	Next Pay	12/20/19	MD	5%	2018	0%		
12Mo	--	--	--	Factor	0.99112898	WAOLS	629,152			CO	5%	2017	0%		
Life	450	1.8	--	# Loans	1,276										
1) Price-to-Yield															
Settle	11/20/19	+300 MED	+200 MED	+100 MED	0 MED	-100 MED	-200 MED	-300 MED							
Vary	0	103 PSA	118 PSA	164 PSA	263 PSA	535 PSA	1036 PSA	1217 PSA							
Price	102-01	3.2516	3.2364	3.1890	3.0844	2.8017	2.3250	2.1629							
Avg Life		10.38	9.73	8.09	5.87	3.33	1.93	1.69							
Mod Duration		8.06	7.64	6.57	5.01	3.05	1.84	1.62							
Prin Win	Date	12/19-6/49	12/19-6/49	12/19-6/49	12/19-6/49	12/19-6/49	12/19-10/45	12/19-2/40							
I Spread		145	145	145	143	120	70	55							
Oct19	Sep	Aug	Jul	Jun	May	Apr	Mar	Feb	Jan	Dec	Nov				
198P	1010	67	--	--	--	--	--	--	--	--	--				
1.2C	4.0	0.1	--	--	--	--	--	--	--	--	--				

G2 MA6030 Mtge				Scenarios		Stratify		Actions		Settings		Yield Table	
G2JM 3.5 N				4.001(356)3		CUSIP 36179UVX7		Pool Level				As of 10/2019	
10/2019	198P	1.2C	0.08	Traits	JM, 30/360	Coupon	3.50%	Maturity	7/20/49	CA	49%	Other	0%
3Mo	450	1.8	0.3	7/1/2019	775,863,366	LTV/HLTV	94/94	Accrual	11/1-11/30	VA	12%	2019	100%
6Mo	--	--	--	10/1/2019	768,980,667	MAXLS	2,108,562	Next Pay	12/20/19	MD	5%	2018	0%
12Mo	--	--	--	Factor	0.99112898	WAOLS	629,152			CO	5%	2017	0%
Life	450	1.8	--	# Loans	1,276								
1) Price-to-Yield													
Cashflows													
3) Table													
3) Graph													
3) Close Report													
10 Bond Flow													
An investor in this GNMA, jumbo, 30 YR AM pass through can expect to receive roughly half of their initial investment back between years 4 & 5 through accumulated monthly P&I based upon the history of the collateral and the prepayment assumptions supplied by Bloomberg.													
Orig Bal	775,863,366	USD	Your Orig Bal	2,025,000									
Prev Bal	766,492,055		Your Prev Bal	2,000,541									
Accrued 0.1847 for 19 days, Start 11/01/19, Delay 19, WAL 5.865													
Show precise amount													
Annually													
Dates													
Balance													
Sched													
Unsched													
Interest													
Cashflow													
Coupon													
Totals													
1.	11/20/2020	1,855,624		35,340	109,578	68,043	212,960	3,500					
2.	11/20/2021	1,604,401		33,680	217,542	61,176	312,399	3,500					
3.	11/20/2022	1,324,511		30,108	249,782	51,527	331,416	3,500					
4.	11/20/2023	1,091,472		26,391	206,648	42,494	275,533	3,500					
5.	11/20/2024	898,174		23,132	170,166	34,996	228,294	3,500					
6.	11/20/2025	737,979		20,276	139,919	28,779	188,974	3,500					
7.	11/20/2026	605,343		17,772	114,864	23,629	156,265	3,500					
8.	11/20/2027	495,635		15,578	94,130	19,367	129,075	3,500					
9.	11/20/2028	404,990		13,654	76,990	15,843	106,487	3,500					
Oct19	Sep	Aug	Jul	Jun	May	Apr	Mar	Feb	Jan	Dec	Nov		
198P	1010	67	--	--	--	--	--	--	--	--	--		
1.2C	4.0	0.1	--	--	--	--	--	--	--	--	--		

Investments

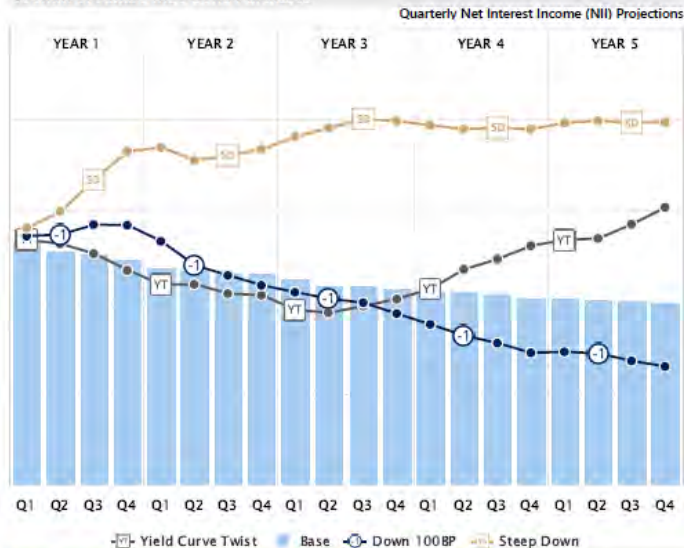
- ◆ Review plan for reinvestment of upcoming cash flow
 - Discuss merits of pre-investment strategies
 - Review any “repositioning” opportunities (sell Callable Bonds and re-



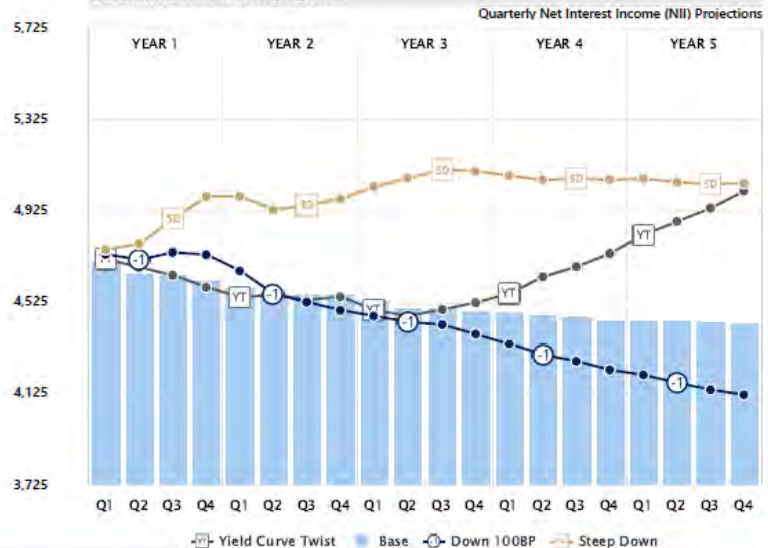
\$50MM Leverage Blend 20 Year & 30 Yr. MBS

4 Year Fixed Pay Swap and 1 Month Advances (Split 50/50)

\$50MM of Jumbo MBS Bond Purchases



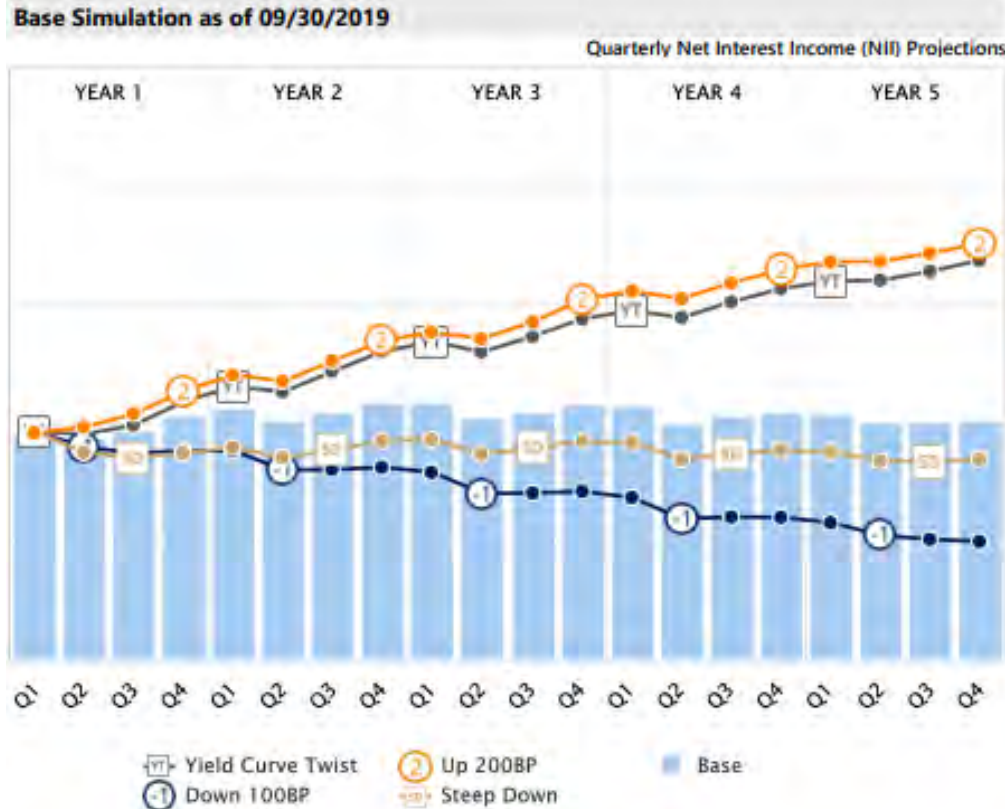
Base Simulation as of 09/30/2019



NII RESULTS

	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5
YIELD CURVE TWIST	18,977	18,321	18,014	18,734	19,403	356	135	45	121	-239	18,621	18,186	17,968	18,613	19,642
BASE	18,994	18,668	18,410	18,262	18,149	356	373	373	373	371	18,638	18,295	18,036	17,889	17,779
DOWN 100BP	19,357	18,714	18,103	17,455	17,120	441	480	389	324	480	18,917	18,234	17,715	17,131	16,640
STEEP DOWN	20,013	20,703	21,173	21,144	21,246	604	864	877	884	1,049	19,409	19,840	20,296	20,260	20,197
DIFFERENCE															

Simulation assumes a \$25MM purchase of Jumbo 30Yr MBS @ 2.47% and \$25MM of Jumbo 20Yr MBS @ 2.51% funded with 1Mo FHLB advances @ 1.99% and 4Yr swap rate @ 1.45%.



Considerations:

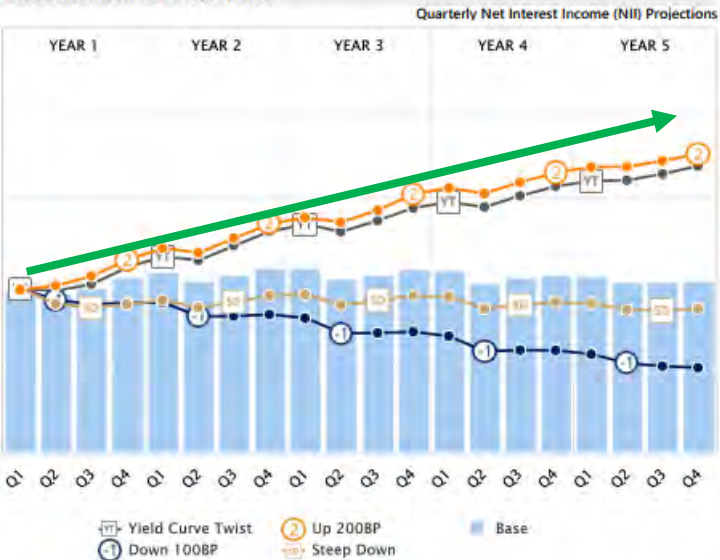
- ◆ Extend cash/pre-invest (MBS, DUS, Trsy)
- ◆ Consider buying call protection
- ◆ Mismatched leverage(using swaps too)
- ◆ Understand capacity to extend assets
("core funding" utilization...)
- ◆ Flexibility with commercial deals and structures; front run repricing deals
- ◆ Hold LOW loan/value fixed rate mortgages
- ◆ Positioning of wholesale funding and deposit specials "short"
- ◆ Understand role of derivatives

30 Year FR Mortgages Fund With 1 Month Advance

What's "Really" Underlying Funding for Mortgages? See NEXT Slide...



Base Simulation as of 09/30/2019



Historical
“Re-Steepening”

Impending
Global Recession?

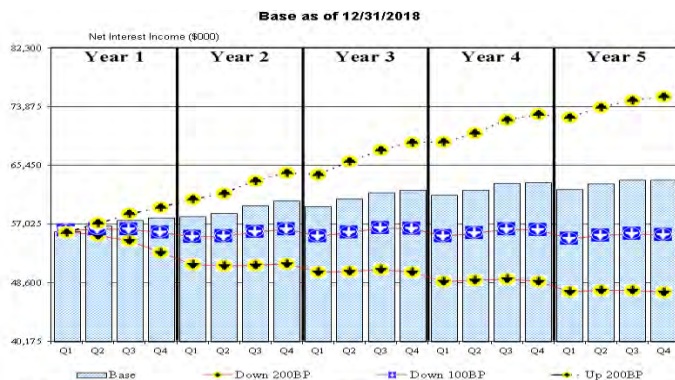
Key Points:

- ✓ Asset sensitive and very well positioned for higher interest rates
- ✓ Amount of overall rising rate benefit will depend on (1) pace of rate hikes and (2) shape of market yield curves
- ✓ **Falling rates remains the most problematic scenario for NII**
- ✓ Deposit stability and pricing sensitivity remain important “unknowns”; Revisit MCOF wholesale

NII RESULTS					
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
YIELD CURVE TWIST	231,250	244,791	255,525	264,752	273,652
UP 200BP	233,220	247,849	259,527	270,186	278,826
BASE	229,511	234,996	235,253	233,859	232,360
DOWN 100BP	224,822	219,518	212,948	205,859	199,623
STEEP DOWN	223,997	223,879	224,813	223,176	221,233

Hedge Risk to Falling short rates with Swap 12/2018

(90bps Income Benefit Today or \$10MM)



NII SUMMARY

	Down 200BP	Down 100BP	Base	Up 200BP
Year-1 NII	218,921	224,393	228,230	230,920
Year-2 NII	204,795	222,675	236,656	248,687
Year-3 NII	201,028	223,975	243,548	266,592
Year-4 NII	195,639	223,481	248,854	283,707
Year-5 NII	189,546	221,319	251,446	296,297



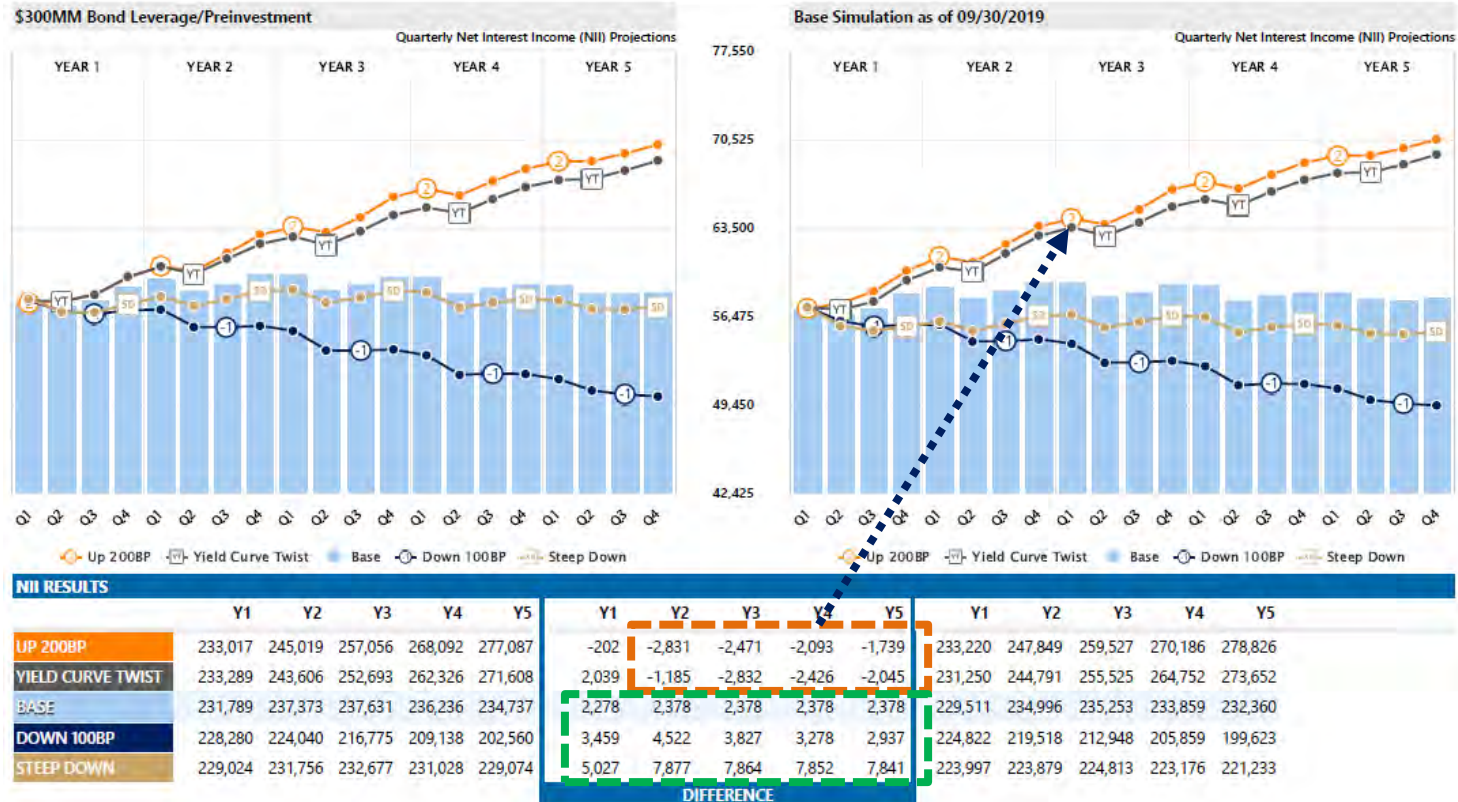
NII SUMMARY

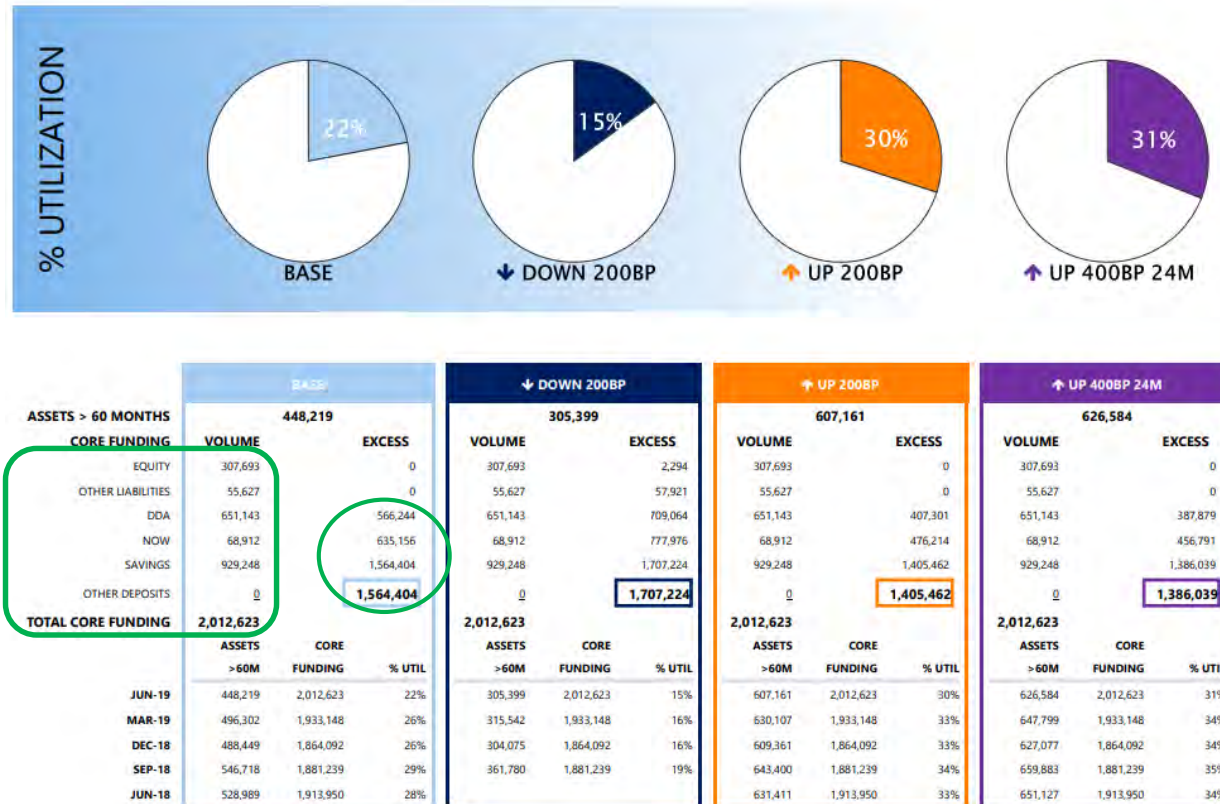
	Down 200BP	Down 100BP	Base	Up 200BP
Year-1 NII	230,838	229,539	226,805	215,753
Year-2 NII	228,170	233,550	235,031	223,062
Year-3 NII	224,403	234,850	241,923	239,957
Year-4 NII	219,014	234,356	247,229	267,082
Year-5 NII	212,921	232,194	249,821	269,662

CHANGE / DIFFERENCE IN RESULTS

	Down 200BP	Down 100BP	Base	Up 200BP
Year-1 NII	11,917	5,146	-1,625	-15,167
Year-2 NII	23,375	10,875	-1,625	-26,825
Year-3 NII	23,375	10,875	-1,625	-26,825
Year-4 NII	23,375	10,875	-1,625	-26,825
Year-5 NII	23,375	10,875	-1,625	-26,825

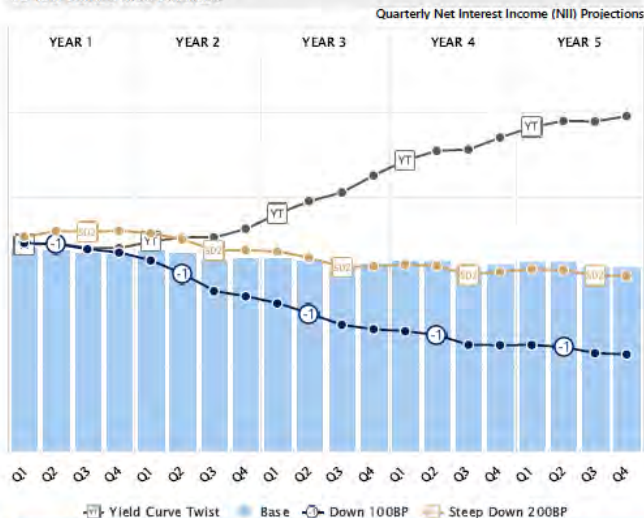
5 Year \$1.250B swap: receive 2.39% and pay 1mth LIBOR





Buy \$200MM, MBS @3.02%, Fund From **CASH @2.00%** (vs. 3-4 yr. Ave. Life CMOs)

30 Year Jumbo MBS Purchase



NII RESULTS

	Y1	Y2	Y3	Y4	Y5
YIELD CURVE TWIST	124,129	126,595	136,761	148,320	155,390
BASE	123,227	122,116	120,326	119,930	119,629
DOWN 100BP	123,817	115,469	106,125	100,795	98,077
STEEP DOWN 200BP	127,502	124,791	120,454	118,323	117,450

	Y1	Y2	Y3	Y4	Y5
YIELD CURVE TWIST	1,526	180	-593	-790	-985
BASE	1,712	1,680	1,680	1,680	1,680
DOWN 100BP	2,337	2,849	2,919	2,987	3,053
STEEP DOWN 200BP	3,091	4,027	4,128	4,229	4,330

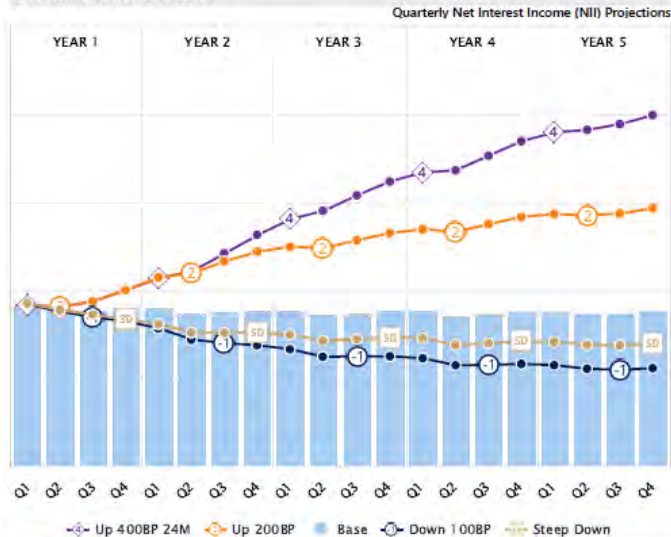
DIFFERENCE

Base Simulation as of 06/30/2019



1. Alternative simulation assumes \$200 million of FRB cash is used to purchase 30 year Jumbo MBS (@ 3.02%), immediately.
2. Base simulation assumes \$102.5 million of FRB cash is used to purchase 3-4 year fixed rate CMOs (@ 2.25%) over the remainder of the year.

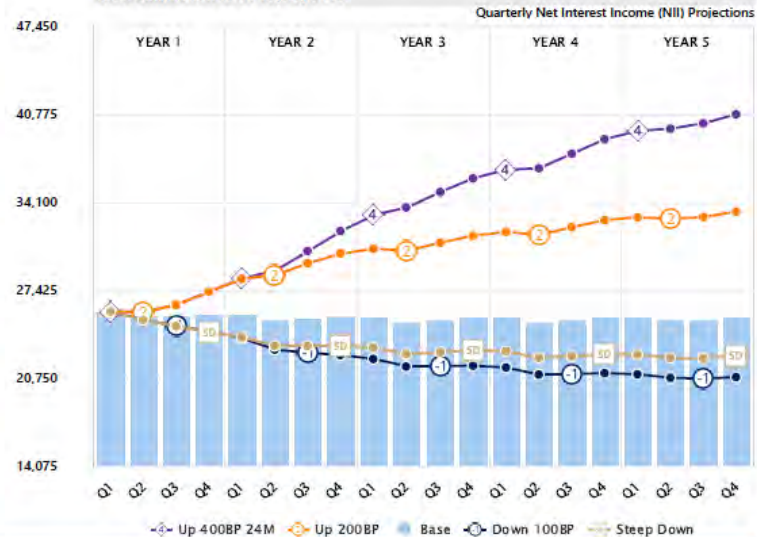
\$100MM CRE Loan Growth



NII RESULTS

	Y1	Y2	Y3	Y4	Y5
UP 400BP 24M	106,586	119,098	136,602	149,251	159,723
UP 200BP	106,559	117,159	124,365	129,365	133,241
BASE	104,840	103,943	103,389	103,270	103,497
DOWN 100BP	102,664	94,938	90,225	87,682	86,199
STEEP DOWN	103,220	97,538	95,261	94,107	93,548

Base Simulation as of 09/30/2019



	Y1	Y2	Y3	Y4	Y5
UP 400BP 24M	1,272	-517	-1,047	-660	-334
UP 200BP	1,272	534	731	906	1,050
BASE	2,170	2,175	2,175	2,175	2,170
DOWN 100BP	2,619	2,994	2,894	2,805	2,724
STEEP DOWN	3,232	3,964	3,950	3,939	3,928

DIFFERENCE

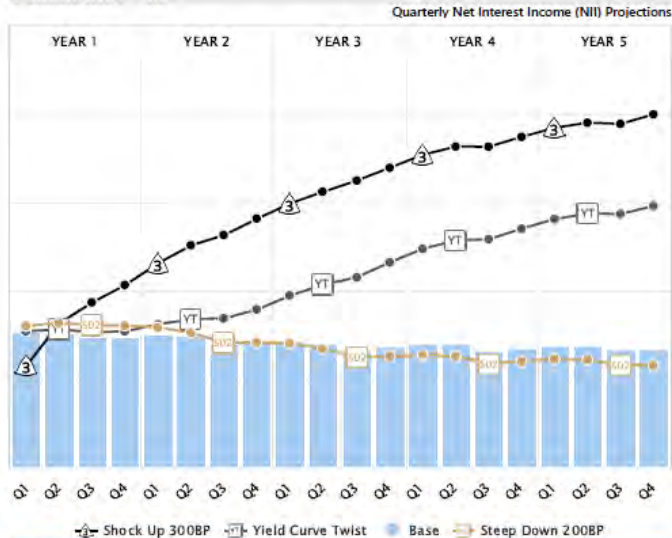
	Y1	Y2	Y3	Y4	Y5
UP 400BP 24M	105,313	119,615	137,649	149,911	160,057
UP 200BP	105,287	116,625	123,634	128,459	132,192
BASE	102,670	101,768	101,214	101,095	101,327
DOWN 100BP	100,046	91,944	87,331	84,877	83,475
STEEP DOWN	99,988	93,574	91,311	90,168	89,620

In the first month of the simulation short-term cash equivalents @ 1.80% are being utilized to fund \$100MM of 10/25 CRE growth @ 4.00%.

10 Year Comm. RE Loans 4.25%, 5 Yr. Swap Funding

Despite Asset Sensitive, Won't Book FR Deals; EVE Concerns

\$150MM SWAP - NII

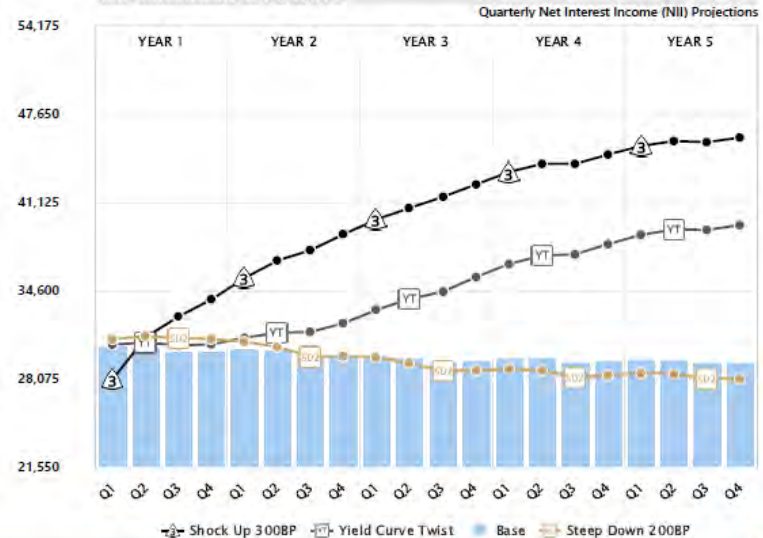


NII RESULTS

	Y1	Y2	Y3	Y4	Y5
SHOCK UP 300BP	130,057	153,259	169,388	181,066	188,182
YIELD CURVE TWIST	126,495	130,423	141,599	153,592	161,316
BASE	125,376	124,282	122,500	122,105	121,811
STEEP DOWN 200BP	128,329	124,941	120,473	118,209	117,205

Assume that \$150MM of CRE loans @ 4.25% is funded with cash equivalents @ 2.35%
\$150MM interest rate swap paying fixed @ 1.54% is receiving 1 month LIBOR @ 2.025%

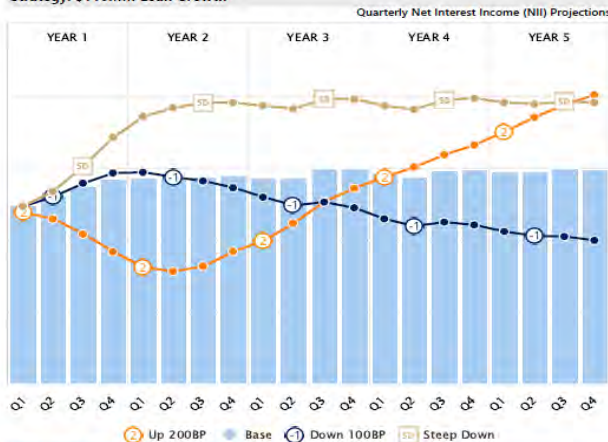
Base Simulation as of 06/30/2019



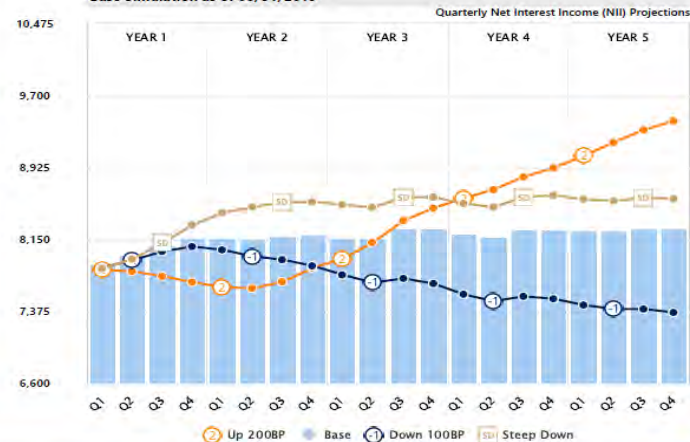
	Y1	Y2	Y3	Y4	Y5
SHOCK UP 300BP	125,953	148,786	164,580	175,949	182,421
YIELD CURVE TWIST	122,603	126,415	137,354	149,110	156,375
BASE	121,515	120,436	118,645	118,250	117,949
STEEP DOWN 200BP	124,410	120,764	116,326	114,094	113,121

DIFFERENCE

Strategy: \$110MM Loan Growth



Base Simulation as of 08/31/2019



NII RESULTS

	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5
UP 200BP	33,054	31,556	33,736	35,992	38,098	1,962	740	817	955	1,082	31,092	30,816	32,919	35,037	37,016
BASE	34,693	35,311	35,477	35,509	35,626	2,568	2,571	2,570	2,570	2,568	32,125	32,740	32,907	32,939	33,058
DOWN 100BP	34,753	35,195	34,180	33,325	32,764	2,865	3,375	3,303	3,213	3,133	31,888	31,820	30,877	30,113	29,630
STEEP DOWN	35,385	38,297	38,481	38,472	38,504	3,171	4,238	4,236	4,191	4,153	32,214	34,059	34,245	34,281	34,351

DIFFERENCE

YR 2 % CHANGE FROM YR 1 BASE

	POLICY	Y1	POLICY	Y2		Y1	Y2		POLICY	Y1	POLICY	Y2
UP 200BP	-10.0%	-4.7%	-9.0%			-1.5%	-5.0%		-10.0%	-3.2%		-4.1%
BASE			1.8%				-0.1%					1.9%
DOWN 100BP	-10.0%	0.2%	1.4%			0.9%	2.4%		-10.0%	-0.7%		-0.9%
STEEP DOWN	-10.0%	2.0%	10.4%			1.7%	4.4%		-10.0%	0.3%		6.0%
						DIFFERENCE						

DIFFERENCE

1. Alternative simulation assumes \$110MM of loan growth (30% in 30Y Fixed Residential @ 3.75% and 70% in CRE 5/5 Adj. @ 4.50%) is funded with a mix of cash, deposit inflows and borrowings.

7 Great “Strategic” Reasons to Use Wholesale Funding

Mirror, Mirror on the Wall, What’s the **Smartest Decision of All?**

1. Wholesale Funding least costly funding at the margin and reliable (dividend impact)
2. Depositors NOT always Relationships, high cost form of borrowing?
3. Provides opportunities to increase earnings, provide added value to customers/members, and ultimately increases value of franchise and attain mission of your organization
4. Lack of spread does not mean lack of opportunity to better manage risk and take advantage of opportunities; consider MCOF and functional cost vs. deposits (**Hint: best opportunities when spread tightest**)
5. Negative Regulatory Attitude by “some” but not agency wide; must defend your position and have policies that make sense and support decision making
6. Excess Cash can be costly and Risky! put to better use and use FHLB as “Just in Time” inventory funds management
7. Risk Management: Derivatives are a valuable tool used in combination with advances that should not be ignored!



Set the Right Tone @ ALCO

**YOUR FUTURE HASN'T
BEEN WRITTEN YET.
NO ONE'S HAS. YOUR
FUTURE IS WHATEVER
YOU MAKE IT. SO
MAKE IT A GOOD ONE.**

Doc Brown
Back to the Future

