

KPMG LLP Credit Risk Management Practices Survey on the Allowances for Loan and Lease Losses

> Survey Results June 17, 2013

Administrative

- CPE regulations require that online participants take part in online questions
 - Attendees must respond to a minimum of four questions per 50 minutes for one CPE credit
 - Polling questions will appear on your media player
 - Results will be reviewed in the aggregate; no responses will be tracked back to any individual or organization
 - Do not view the presentation on slide show mode polling questions will not appear
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KPMG National Credit Practice

Our credit professionals bring deep advisory and industry experience relevant to the entire "cradle to grave" credit lifecycle, such as marketing, underwriting, servicing, reserving, and resolution. KPMG's seasoned professionals advise our clients in Data Management, Analytics, Risk Rating, CCAR, Stress Testing, Basel, Regulatory Reporting, and Regulatory Requirements for both Commercial and Consumer Credit.

- **Credit Analytics** A full range of services including assessment of reserving practices and the Allowance for Loan and Lease Losses (ALLL), credit model development, management and validation, model parameter design and implementation, credit risk reporting, portfolio analytics, Basel II and economic capital assessments, CCAR and Stress Testing programs, as well as Data Governance and Integrity program assessments and development.
- Credit Processes Process improvement services designed to optimize credit risk management while capturing any opportunities for enhancement. Services include operational assessments and gap analyses, business process flow mapping as well as assessment, design and implementation of improved policies, procedures and controls.
- Credit File Review Either ongoing or one time review of loan files to determine reliability of the risk rating process and compliance with policies and procedures. KPMG offers large scale file review as an outsourced service, in response to regulatory directives, and as part of the due diligence for acquisitions and divestitures.

Executive Summary – Survey Overview

KPMG designed the Survey to:

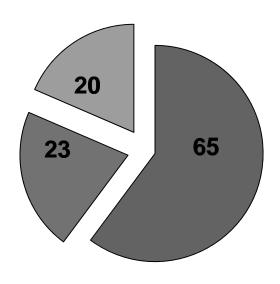
- Provide current state benchmarking information across a range of financial services institutions
- Help provide insight across our client base for both advisory and audit engagements
- Provide a baseline to empirically identify trends in the industry by performing the survey on an ongoing basis

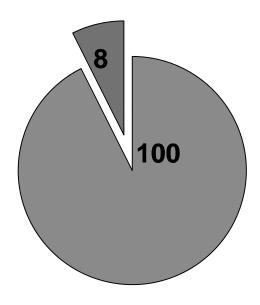
2013 survey will be sent to clients in late Q3

KPMG received 108 responses to the 2012 ALLL Survey:

- 65 Responses from Small banks; 23 from Medium banks; and 20 from Large banks (see slide 10 in Demographics for definitions)
- 108 Responses with information on commercial ALLL practices
- 16 Responses with information on consumer ALLL practices
- 107 Responses on practices around qualitative and unallocated components of the ALLL
- 91 Responses with information on risk rating systems

Size of Financial Institution





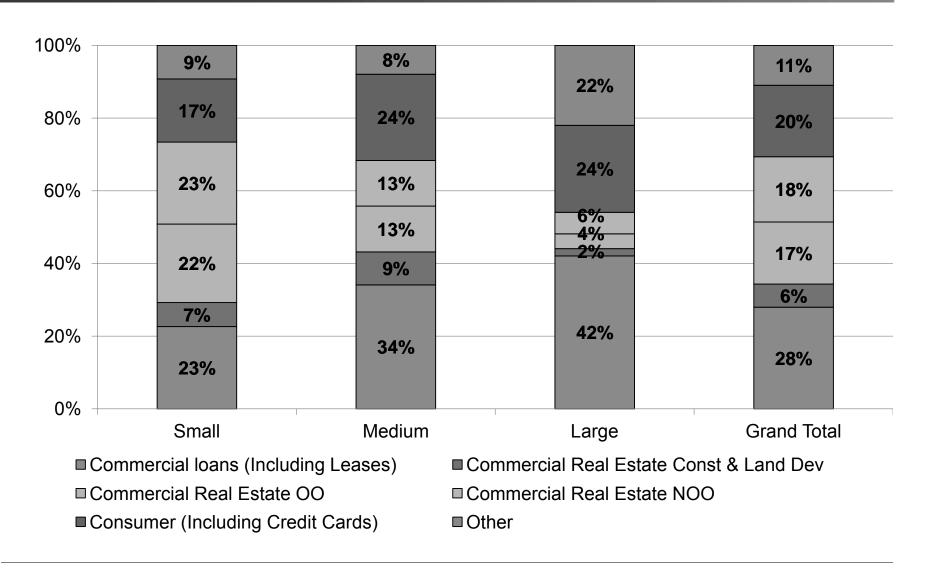
■Small: <\$5B

■ Medium: \$5B to \$50B

■Large: >50B



Average Portfolio Composition by Size of Institution



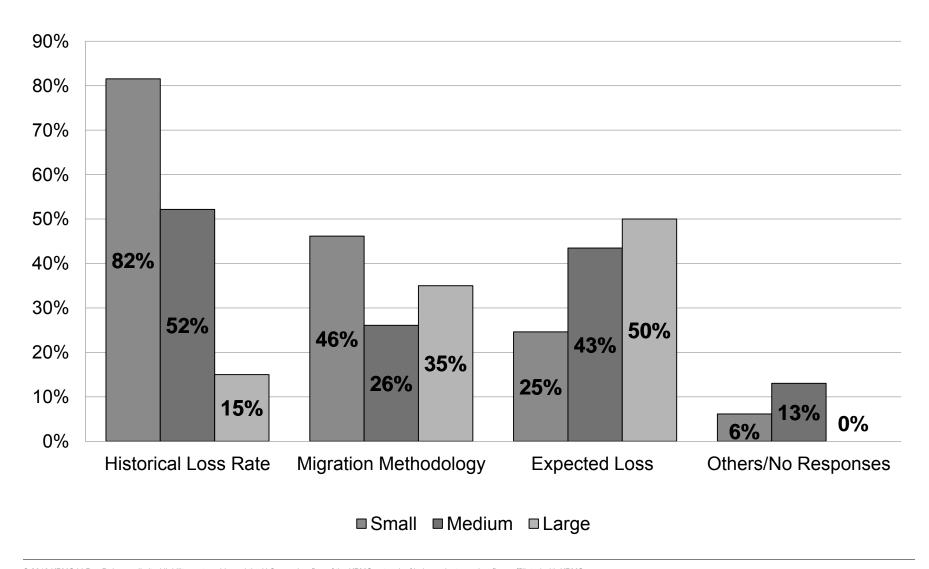
Polling Question 1

Are you directly involved in preparing or reviewing the ALLL estimates for your organization?

- ☐ Yes

Commercial ASC 450-20/FAS 5 Quantitative Methodology

Commercial – Type of Quantitative Methodology Used



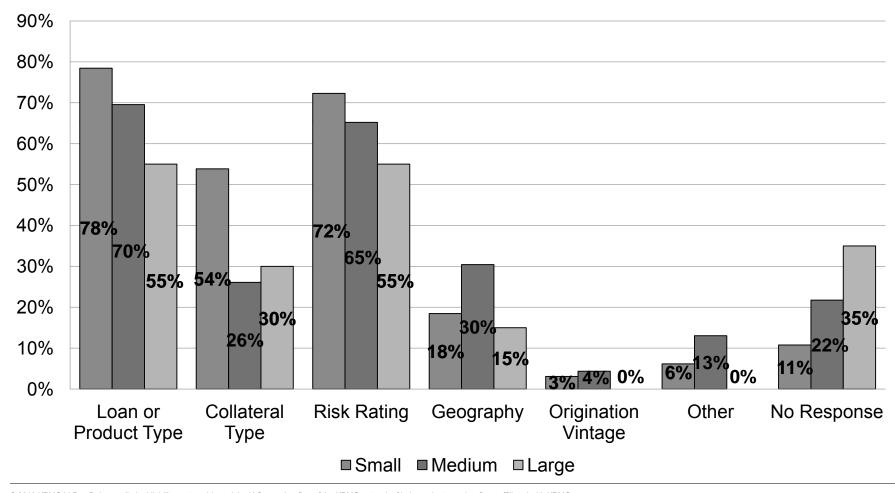
Key Assumptions for Commercial Quantitative Methodologies

In estimating quantitative methodologies there are a number of common assumptions that can have a significant impact, including:

- 1. Portfolio segmentation criteria
- 2. Loss emergence period (LEP)
- 3. Look-back period (LBP)
- Unfunded commitments
- 5. Point-in-time (PIT) or Through-the-cycle (TTC) risk rating approach

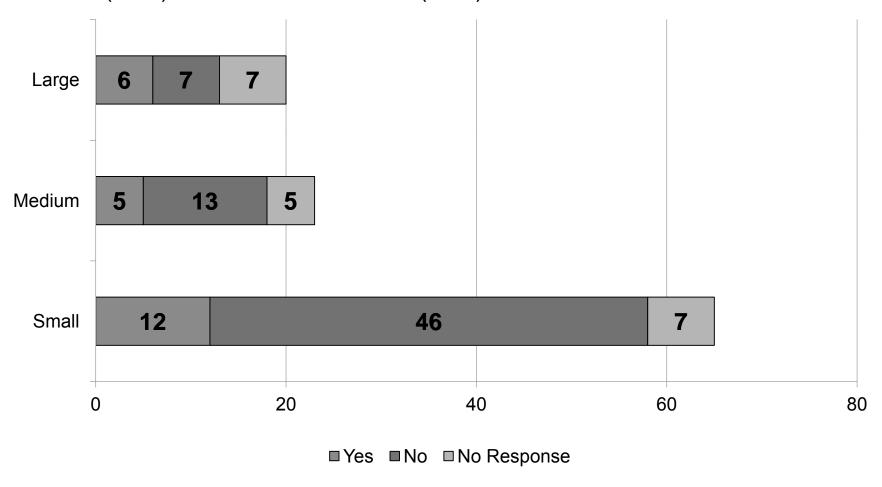
Commercial Quantitative Methodology – Portfolio Segmentation Criteria

Most common segmentation criteria are loan/product type and risk rating, followed by collateral type and geography



Commercial Quantitative Methodology– Loss Emergence Period (LEP) Determined

Larger banks are more likely to determine the LEP (46%) compared to medium banks (28%) and small-sized banks (21%)



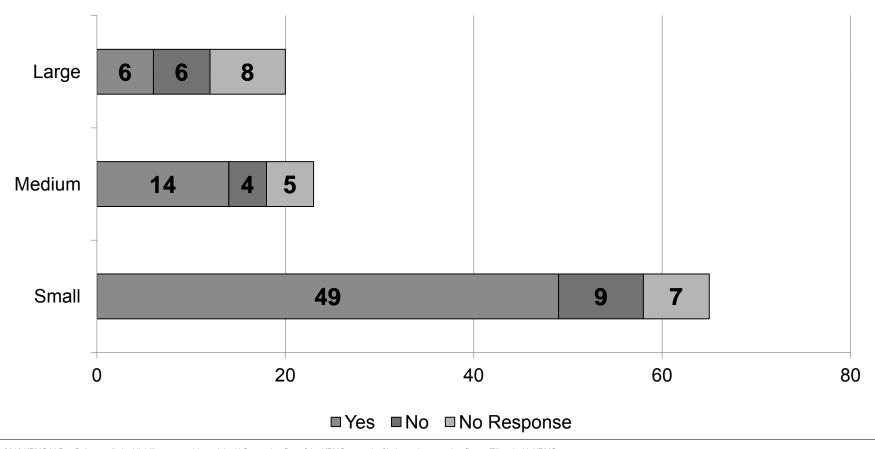
Commercial Quantitative Methodology – Loss Emergence Period (Months)

For the 23 Respondents that do measure Commercial LEP, the average LEP was roughly 2.5 years or 31 months across all categories

| Commercial Loan Type | Median LEP in Months | Mean LEP in Months |
|-------------------------|----------------------|--------------------|
| Commercial Loans | 33 | 31 |
| CRE Loans | 33 | 32 |
| Multi-Family Loans | 33 | 32 |
| Commercial Leases | 25 | 26 |
| A&D Loans | 33 | 32 |

Commercial Quantitative Methodology – Look-Back Period (LBP) Determined

The majority of survey Respondents (70%) report having a specific LBP in determining loss rates



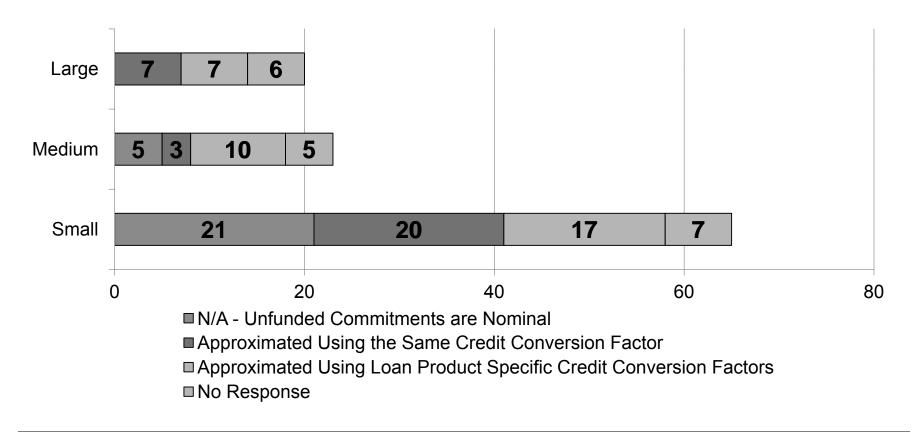
Commercial Quantitative Methodology – Look-Back Period (Months)

For the 69 Respondents that indicated they do have a LBP, the average LBP was 2.9 years or 35 months across all categories

| Commercial Loan Type | Median LBP in Months | Mean LBP in Months |
|-------------------------|----------------------|--------------------|
| Commercial Loans | 36 | 36 |
| CRE Loans | 36 | 36 |
| Multi-Family Loans | 36 | 36 |
| Commercial Leases | 30 | 32 |
| A&D Loans | 36 | 36 |

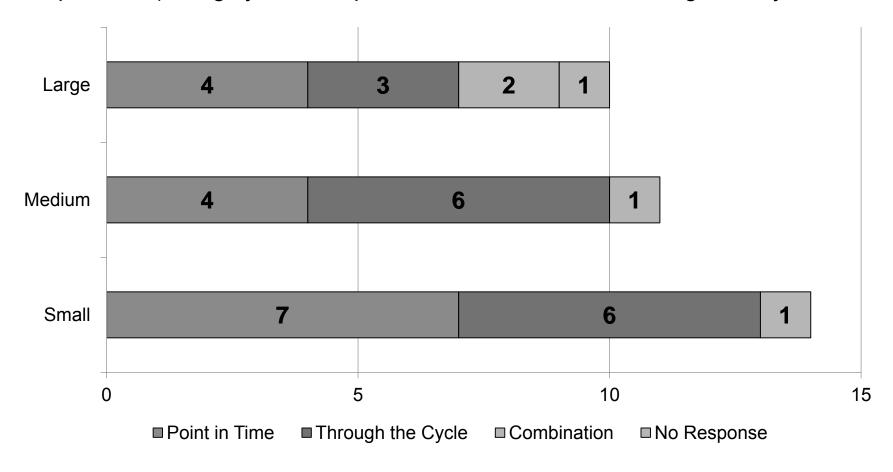
Commercial Quantitative Methodology – Reserve for Unfunded Commitments

47% of Respondents use the same credit conversion factor across various loan products and 53% use loan product specific credit conversion factors



Commercial Quantitative Methodology – For PD Calculation in the EL Methodology – PIT vs. TTC?

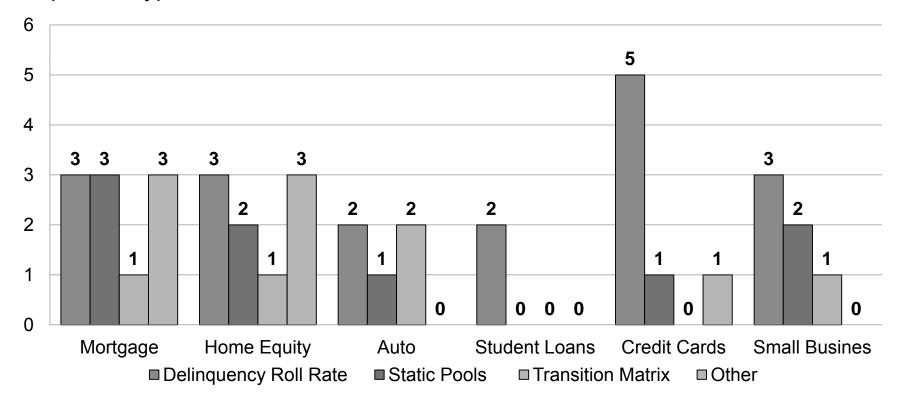
For those Respondents that use an expected loss methodology (35 out of 90 Respondents), roughly half use point-in-time and half use through-the-cycle



Consumer – ASC 450-20/ FAS 5 Quantitative Methodology

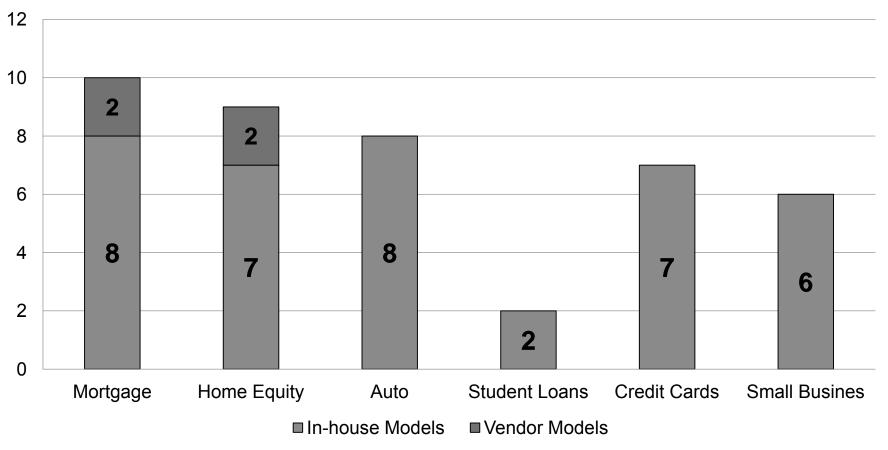
Consumer Quantitative Methodology – Type of Mathematical/Statistical Model

- Methodologies for consumer loans range from use of historical loss rates to transition matrices, static pool analysis and delinquency roll rate models.
- No clear preference for type of mathematical/statistical model used for any product type



Consumer Quantitative Methodology – In-house vs. Vendor Models

Most of the 16 Respondents used models developed in-house vs. external vendor models



Note: The numbers on this slides reflects the results of the 16 Respondents that use a separate consumer methodology from commercial methodology.

Consumer Quantitative Methodology – Loss Emergence Period (Months)

- Residential mortgage products median LEP of 21-24 months
- Most other consumer products average a shorter LEP of 12-18 months
- Many banks use a 12-month LEP for retail loans with a minority of banks using a longer LEP for certain products

| Consumer Loan Type | Median | Mean |
|--------------------|--------|------|
| Mortgage | 21 | 34 |
| Home Equity | 24 | 37 |
| Auto | 14 | 19 |
| Credit Cards | 24 | 24 |
| Student Loans | 12 | 14 |
| Small Business | 18 | 21 |

Consumer Quantitative Methodology – Look-Back Period (Months)

- The average LBP across consumer products ranged from 34-54 months (2.8 to 4.5 years).
- Those portfolios with higher loss rates and those who use simpler methodologies tend to have a shorter LBP.

| Consumer Loan Type | Median | Mean |
|--------------------|--------|------|
| Mortgage | 30 | 34 |
| Home Equity | 36 | 37 |
| Auto | 60 | 53 |
| Student Loans | 54 | 54 |
| Credit Cards | 24 | 35 |
| Small Business | 48 | 42 |

Definition

The Loss Emergence Period (LEP) is typically defined as the amount of time from the event that triggers a loss (incurred) to the confirmation of the loss (Impairment reserve determined or charge-off).

How LEP is Used

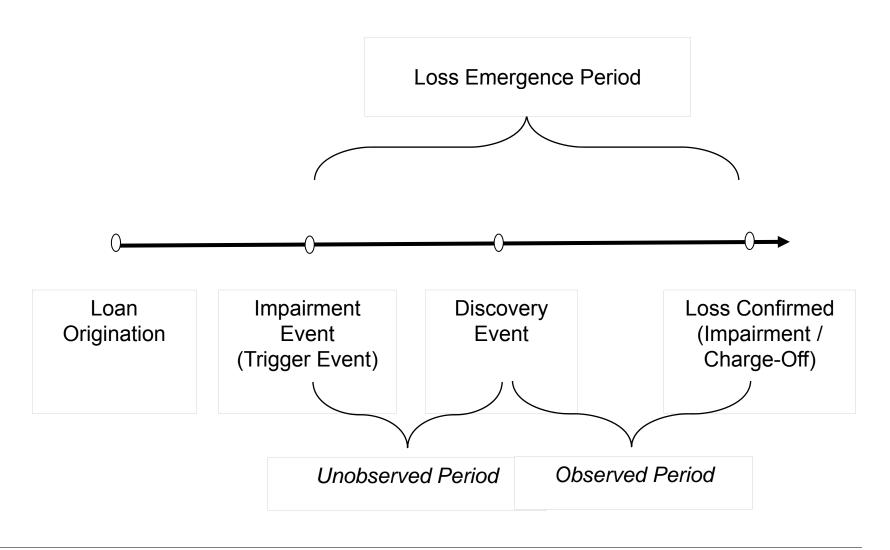
The LEP is used to determine the amount of time a Bank should hold reserve for in accordance with the incurred loss concept (i.e., a loss forecasting period)

Impact:

- LEP too short Potential under-statement of reserves incurred losses not recognized
- LEP too long Potential overstatement of reserves Inclusion of losses associated with defaults that had not yet been triggered as of the financial statement date

A wide range of practices:

- Regulators typically do not allow periods less than one year
- Many banks continue to use one year as a practical expedient based on what they have done historically
- Leading banks are trying to quantify LEP using migration analytics and portfolio data



Loan Origination – Date of account opening / funding

Impairment Event (Trigger Event) – Event in life of loan that will result in the loss, not usually not readily observable

- Commercial: loss of major customer, industry structural change
- Consumer: loss of job, medical problem, divorce

Discovery Event – The point at which the lender identifies the Impairment Event, generally through covenant violation, deterioration in financial statements, default, or other indictors of account status (days delinquent)

Unobserved Period – Period of time before discovery event

Observed Period – Period of time post discovery to impairment / charge-off

Loss Incurred – Point at which the loss amount is finally determined through impairment measurement or charge-off

Loss Emergence Period – The number of months from the Impairment Event (or Trigger Event) to Loss Incurred

Generally calculated either at a portfolio level or by major loan type Commercial

- Downgrade to Watch list/SM/SS is typically used as a proxy for the discovery event
- Some institutions review the credit files retroactively to identify the exact timing of the event, rather than relying on change in rating date
- Some banks use Weighted Average Term to Maturity (WATM) or Weighted Average Tenor (WAT) as a proxy for commercial LEP

Consumer

 30/60 Day Delinquency to Charge-off plus a management estimate for the time from the trigger event to delinquency is often used proxy for consumer LEP

Important to remember that LEP is an estimate based on:

- Best available data for a reasonable approximation (inherently imprecise)
- An average from many loans that share some common characteristics
- · Industry information such as peer surveys, industry group studies
- Discussions with primary regulator on experience with similar portfolios

Key is to have a structured and consistent process for estimation

Potential impact of a Change in LEP on the ALLL (Example: 1 year to 2 years)

- The probability that an obligor will default over a two-year period is not necessarily twice that of default over a one-year period
- Default rates often vary over the life of a loan (as can be seen in vintage curve analysis);
 as such, historical analyses of default rates can be affected by differences in the seasoning of assets across time

| S&P's Cumulative Default Rates (1981-2012) | | |
|--|--------|--------|
| | 1-Year | 2-Year |
| AA | 0.02% | 0.07% |
| Α | 0.07% | 0.17% |
| BBB | 0.22% | 0.63% |
| BB | 0.86% | 2.60% |
| В | 4.28% | 9.58% |
| Caa-C | 26.85% | 35.94% |

Source: 2012 Annual Global Corporate Default Study And Rating Transitions

Polling Question 2

Is your organization currently collecting data / information on defaulted borrowers to help in estimating ALLL LEP assumptions for your portfolios?

- □ For both commercial and consumer
- □ Just commercial
- ☐ Just consumer
- □ Neither
- Do Not Know

Industry Trends – FASB Exposure Draft

Summary and Background of FASB Proposed Approach

- The FASB Current Expected Credit Loss (CECL) requires more timely recognition and measurement of credit losses, as well as additional transparency about credit risk
- The FASB proposed a single model to account for credit losses on loans, debt securities, trade, lease and other receivables (i.e. assets not measured through FV). Although the CECL attempts to have a unified approach to credit loss measurement, we expect the biggest impact to occur for loans currently accounted for under FAS 5
- Institutions would be required to estimate the cash flows that they do no expect to collect
 which represents a "Life of Loan" allowance estimate (i.e. the expected loss model) as
 compared to the current method where the entity will wait for indication of asset
 deterioration (i.e. the incurred loss model)
- An estimate of expected credit losses would be based on all relevant internal and external information, including data from past events (including historical loss experience with similar assets), current conditions, and reasonable and supportable forecasts

Bottom-line: Of your recorded balance, what do you think will not be collected, no matter if that loss comes tomorrow or ten years from now?

Industry Trends – FASB Exposure Draft

Develop an Action Plan

- Although the current CECL is in draft form, banks should consider bringing this to the attention of a wider group of internal stakeholders (finance / credit / business lines)
- More proactive management strategies also include gap analyses to help identify:
 - Potential impact
 - Link to existing ALLL model assumptions (e.g. LEP)
 - Identification of additional data requirements
 - Input to the FASB's requests for responses to the draft

Earlier awareness of potential impact will prepare stakeholders for a smoother transition to this approach should the current CECL model become finalized.

Industry Trends – FASB Exposure Draft

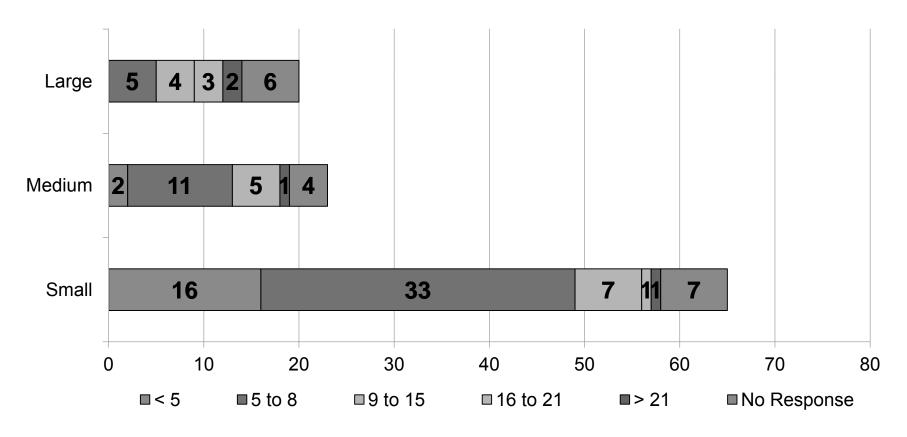
Key Considerations and Impacts

| Allowance Levels | Impact to the allowance level is difficult to estimate and would depend on the final form of the CECL. The proposal draft differs from GAAP as recognition of credit impairment would not be based on any triggering event; and instead will be recognized earlier and potentially immediately after funding |
|---|---|
| Forecasted Data | The expected credit loss estimate under the proposed approach would require forecasted data and potentially greater reliance on models, including prepayment model assumptions. The length of the forecast would depend on the length of the financial asset's contractual terms. |
| Changes to ACL Infrastructures | Additional data requirements may be needed to perform the estimate including access to more granular loan data, probabilistic modeling capabilities (for forecasting purposes) as well as non-data related infrastructural changes such as updating policies and procedures, controls, and guidance. |
| Impact on Capital Requirements | Consider the interaction between the proposed impairment model and regulatory capital requirements. Particular, the adoption of CECL is likely to lead to an increase in the recorded ACL. Changes under Basel III reduce the extent to which the allowance can be included in regulatory capital, and thus the adoption of CECL may require some banks to reassess their capital adequacy. |
| Reporting and Disclosure Requirements | Increased management judgment on the quantitative component of the allowance would result in the need for greater transparency and disclosure requirements including but not limited to the following: Qualitative information about how ACL estimates are developed, including factors that influence the current estimate, changes in those factors that affect the estimate, etc. The transition from the institution's previous ACL incurred loss methodology to the current expected loss methodology. The effect of the adoption on the financial statement line items, if material. |

Risk Rating Systems

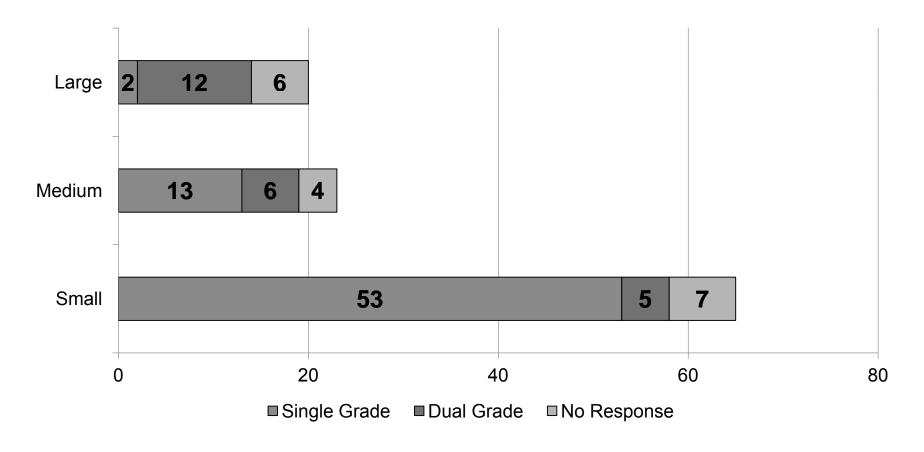
How Many Pass Risk Ratings are in the Risk Rating System?

- The number of pass ratings is positively correlated with size of the institution
- 75% of large institutions have more than eight pass ratings, only 43% of medium institutions and 25% of small institutions have the same



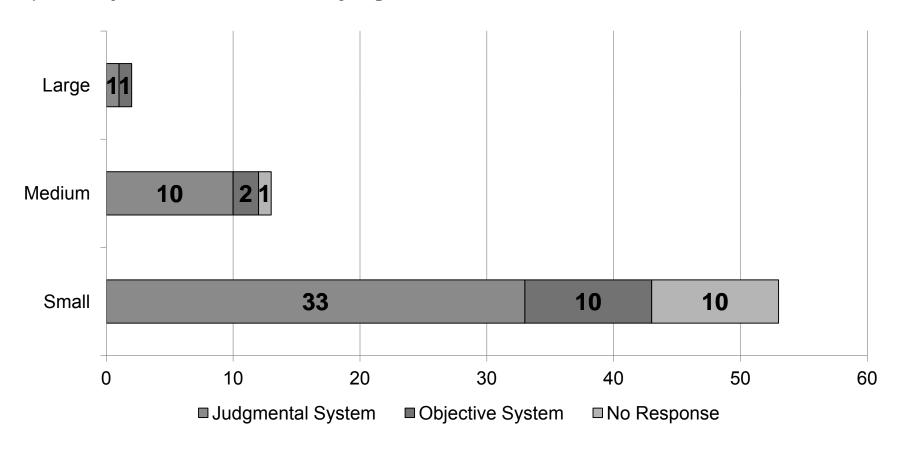
High Level Description of the Risk Rating System

86% of large bank respondents use a dual grade system, whereas only 32% of medium bank and 9% of small bank respondents use a dual grade system



For Respondents with Single Grade Systems, Describe the System

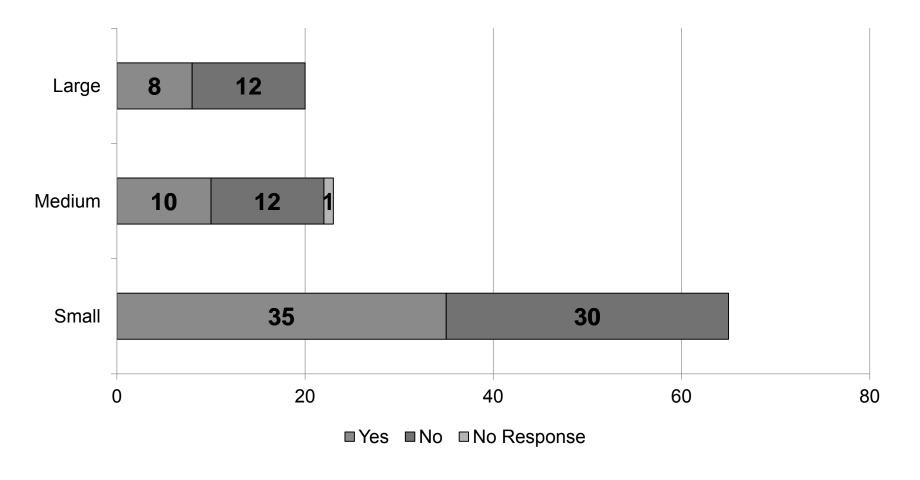
23% of the Respondents described their risk rating systems as primarily objective (scorecard / model driven), whereas 77% described their systems as primarily based on individual judgment



Qualitative and Unallocated Methodology

Respondents Use of a Qualitative and Unallocated Reserves

Roughly half of the Respondents have both a qualitative allowance and an unallocated reserve



Qualitative and Unallocated Methodology

Qualitative and unallocated components

Intended to estimate risk factors that are not fully captured by a bank's quantitative models

Unallocated component – typically tied to risks that are difficult to quantify (e.g., impact immediately after natural disaster)

Qualitative component – typically tied to specific considerations as enumerated in 2006 Interagency Regulatory Guidance ¹

- Since then, many institutions have replaced some or all of their unallocated reserves with these qualitative reserves
- Roughly half of institutions surveyed continue to have both a qualitative allowance and an unallocated reserve
- The unallocated reserve tends to be smaller relative to the size of the qualitative reserve in a typical quarter

¹ OCC 2006-47, Interagency Policy Statement on the Allowance for Loan and Lease Losses

Qualitative Methodology

| | Nine Interagency Qualitative Factors to Consider for ASC 450-20 / FAS 5 Reserve | | |
|---|--|--|--|
| 1 | Changes in lending policies and procedures, including changes in underwriting standards and collection, charge-off, and recovery practices not considered elsewhere in estimating credit losses. | | |
| 2 | Changes in international, national, regional, and local economic and business conditions and developments that affect the collectability of the portfolio, including the condition of various market segments. | | |
| 3 | Changes in the nature and volume of the portfolio and in the terms of loans. | | |
| 4 | Changes in the experience, ability, and depth of lending management and other relevant staff. | | |
| 5 | Changes in the volume and severity of past due loans, the volume of nonaccrual loans, and the volume and severity of adversely classified or graded loans. | | |
| 6 | Changes in the quality of the institution's loan review system. | | |
| 7 | Changes in the value of underlying collateral for collateral-dependent loans. | | |
| 8 | The existence and effect of any concentrations of credit, and changes in the level of such concentrations. | | |
| 9 | The effect of other external factors such as competition and legal and regulatory requirements on the level of estimated credit losses in the institution's existing portfolio. | | |

Qualitative Methodology – Qualitative Factors Considered

Regulatory Feedback

39 of the 53 respondents indicated primary regulator feedback on the use of both a qualitative and an unallocated reserve. Of these 39 respondents:

- 31 (79%) indicated that their primary regulatory was satisfied with the bank's approach,
- 5 (13%) indicated that the Unallocated was subject to a limitation
- 3 (8 percent) indicated that either the primary regulator or external auditor was not comfortable

Of the 108 respondents...

- 64 percent of Respondents indicated they explicitly addressed at least 7 of the 9 factors set forth in regulatory guidance
- 14 Respondents indicated they considered "Other" factors not specified in the regulatory guidance

Qualitative Methodology – Qualitative Factors Not Considered

Most common factors not considered by Respondents:

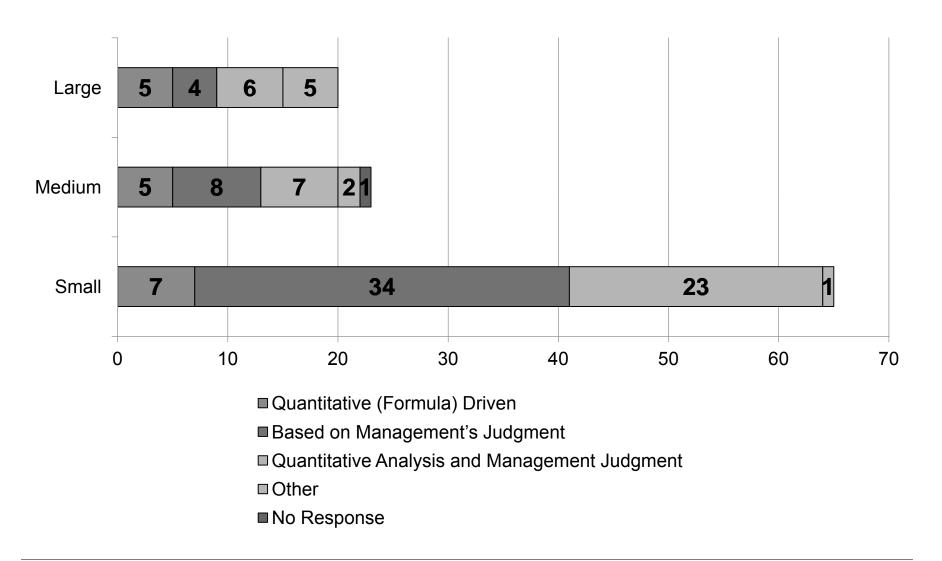
- 1. External factors (48%)
- 2. Loan review systems (45%)
- Changes in collateral value for collateral dependent loans (35%)
- 4. Changes in Management (34%)
- 5. Concentrations of credit (28%)

Smaller banks were more likely to cover all of the qualitative factors relative to larger banks

 Larger bank methodologies may already incorporate such that additional adjustments for some of these factors may not be warranted

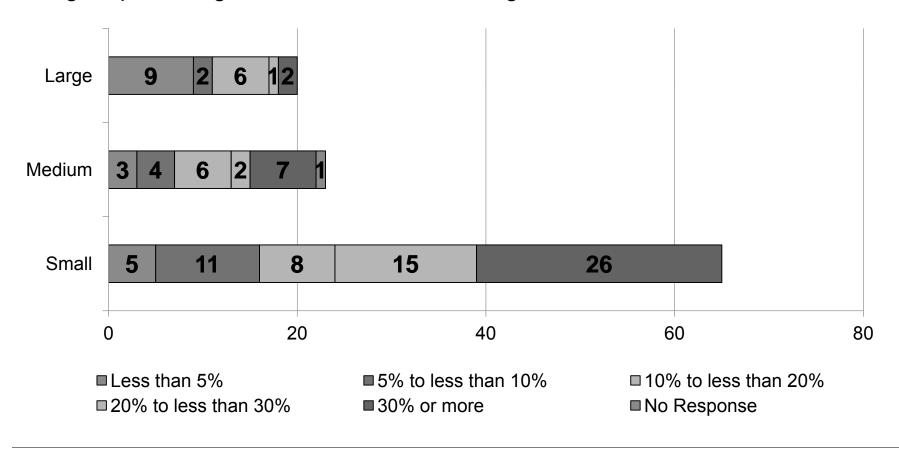
Important to document rationale for why specific actors are not considered (e.g. how they are fully captured by the bank's quantitative methodology)

Qualitative Methodology – How are Qualitative Factors Determined?



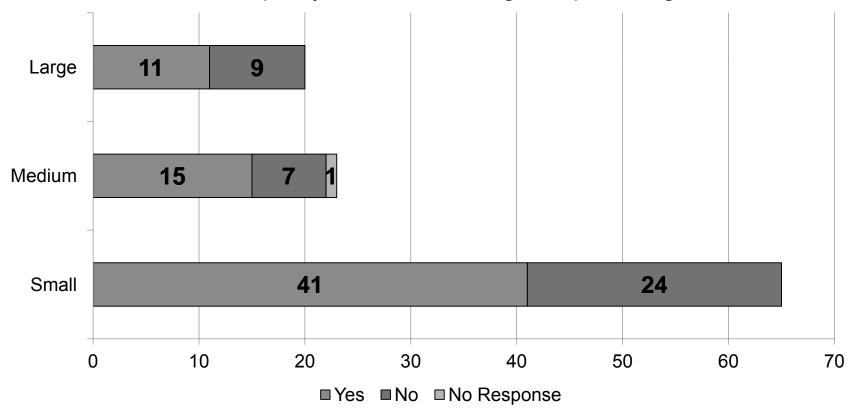
Qualitative and Unallocated Component of the ALLL as a % of the Total ASC 450-20 / FAS 5 ALLL

- 36 Respondents (33%) have a combined Qualitative and Unallocated Component of 30% or more of the Total ASC 450-20/FAS ALLL
- Higher percentages are concentrated among Small banks



Is the Qualitative Component of the ALLL Evaluated for Directional Consistency?

- 40 Respondents do not consider directional consistency of the qualitative component
- Trend and the level of qualitative/unallocated reserves should be "directionally consistent" with asset quality trends and changes in prevailing conditions



Polling Question 3

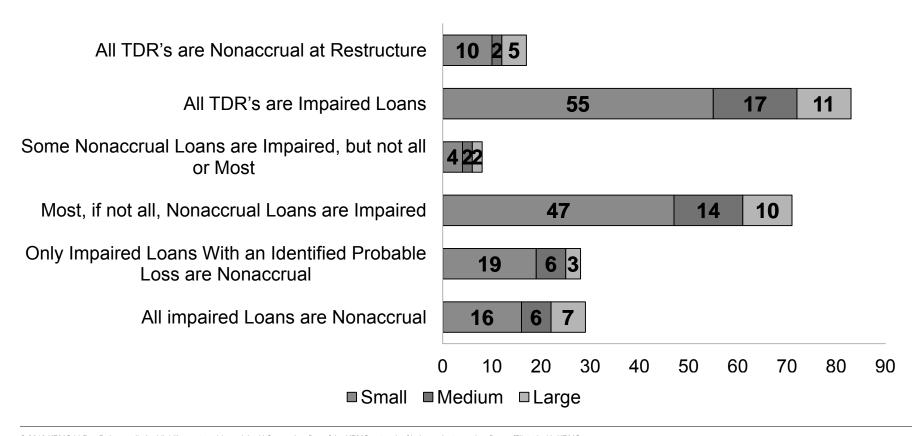
What is the single biggest risk that you are currently capturing as part of your qualitative factor framework?

- Economic Conditions
- ☐ Asset Quality
- Model Imprecision
- □ Regulatory Uncertainty
- Underwriting/Policy Changes
- ☐ Geographic, Industry, or other Concentrations
- Other

TDRs, Nonaccrual and Impairment

TDRs, Nonaccrual Status, and ASC 310-10 / FAS 114 Impairment

- Recent regulatory guidance issued in 2012 provided more clarity around what constitutes a TDR and how to measure TDRs
- 77% of the Respondents consider TDRs to be impaired, 66% consider a loan that has been placed on nonaccrual status to be impaired



Model Validation and Backtesting

Validation and Backtesting

Model Validation – Requirements are outlined in OCC 2011-12 with focus on:

- 1. Evaluation of conceptual soundness of models
 - Model inputs, processing, and reporting
- 2. Ongoing monitoring of models
 - Whether models are performing as expected
 - Identification and impact of potential limitations and assumptions
- 3. Outcomes Analysis
 - Assessment of the accuracy of estimates or forecasts, an evaluation of rankordering ability, or other appropriate tests (including backtesting)
 - Should involve a range of tests because any individual test will have weaknesses

Backtesting

One form of outcomes analysis – allows comparison of the ALLL at a point in time with the actual losses the bank experienced over the loss emergence period

Key Challenge

Assessing the output of an ALLL model when the ALLL estimate is typical conservative and aimed at balancing the concerns of a number of stakeholders

Validation and Backtesting

A wide range of industry practices

- Most banks perform some type of validation activity around the ALLL
- Focus tends to be on input testing and calculation methodology
- Outcomes analysis component focuses on whether or not the output is within a reasonable range, rather than quantification of error
- Outcomes analysis in the form of backtesting can be very difficult for banks with longer LEP

"Models with long forecast horizons should be back-tested, but given the amount of time it would take to accumulate the necessary data, that testing should be supplemented by evaluation over shorter periods" OCC 2011-12

Validation and Backtesting

Survey Results – Model Validation

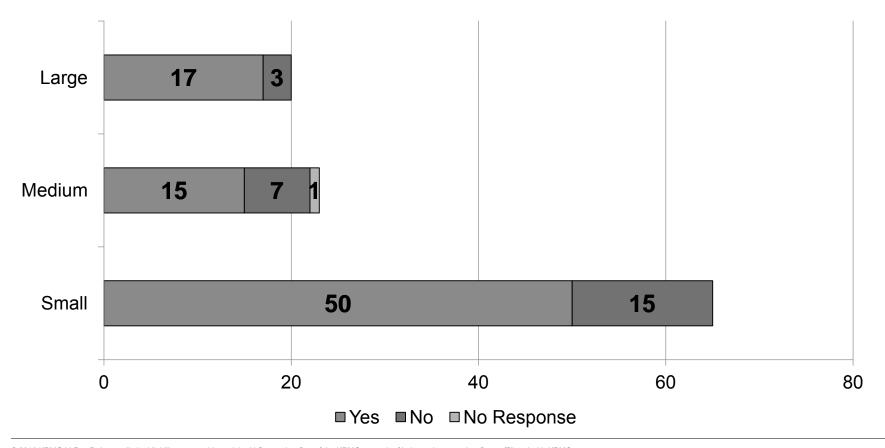
- 76% of banks indicated that they have performed some type of model validation around the ACL
- 50% of those that have not validated the model indicated that they are considering it in the next 12 months
- A similar (although smaller) number of banks say they backtest their ALLL

Survey Results - Backtesting

- Majority of Large (75 %) and medium-sized (82%) respondents periodically backtest their ALLL model(s)
- Only 35 out of the 65 small banks (55%) perform ALLL model backtesting
- Backtesting results are lower than reported in the validation results above, suggesting that some institutions may not be conducting a full model validation, but rather selected components of a validation
- Many banks' ALLL estimates have an element of conservatism built into the process to account for uncertainty in the estimation process which results in over-estimation bias when the ALLL backtesting results are reviewed across an economic cycle

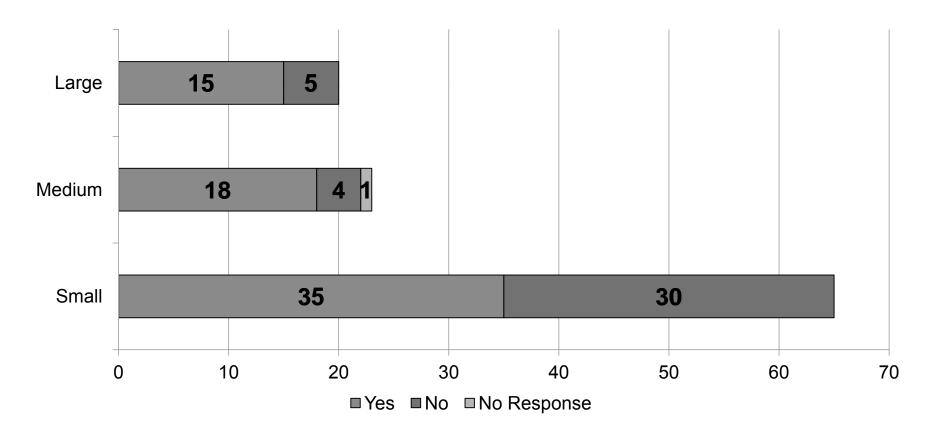
Has a Model Validation Been Performed?

- 76% of Respondents have performed an ALLL model validation in the past 12 months
- Smaller banks typically perform ALLL validation on an ad hoc basis



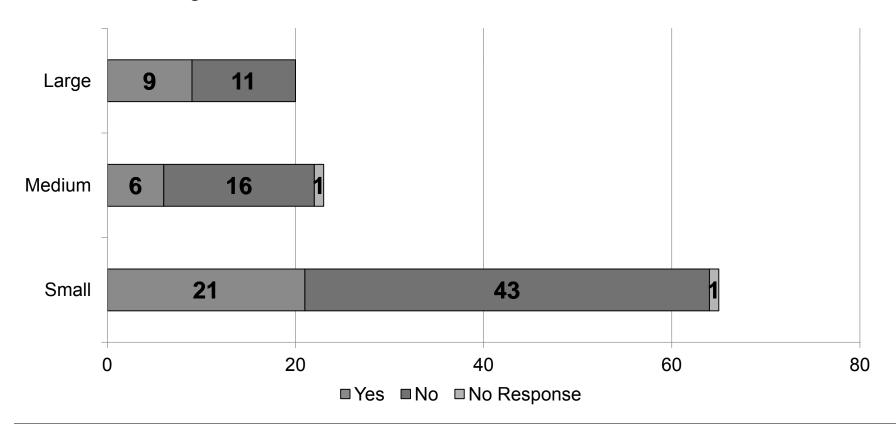
Is the ALLL Backtested Periodically?

■ 75% of the large banks and 82% of the medium banks periodically backtest their ALLL models, while only 55% of the small banks perform ALLL model backtesting



Backtesting of ASC 310-10 / FAS 114 Reserves

- Many banks that backtest ASC 310-10 / FAS 114 reserves seek to understand if their original impairment analysis was an accurate predictor of the ultimate loss
- While the majority of the banks do not perform this type of backtesting, almost 50% of the large banks do backtest their ASC 310-10 / FAS 114 reserve



Polling Question 4

Does your bank currently perform backtesting for ALLL estimates as part of the model validation exercise?

- □ Yes
- □ No
- □ Do Not Know

Questions?

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