# How to Calculate Your FAS 5 Reserves

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# Learning Objectives

- What is FAS 5 (ASC 450-20)
- FAS 5 (ASC 450-20) vs. FAS 114 (ASC 310-10-35)
- Key Characteristics of FAS 5 Loan Pools
- Challenges Assembling FAS 5 Pools
- Historical Loss Rates
- Qualitative and Environmental Factors
- Understand Different Historical Loss Rate Methodologies
- Things to Remember

# What is FAS5 (ASC 450-20)?

- Formerly known as the Statement of Financial Accounting Standards No. 5, Accounting for Contingencies (FAS 5) Accounting Standards Codification Subtopic 450-20 is a principal source of guidance on accounting for impairment in a loan portfolio under GAAP

- It provides guidance on loss estimates for groups, or pools, of non-impaired and/or homogeneous loans grouped together based on similar risk characteristics

# FAS 5 (ASC 450-20) vs. FAS 114 (ASC 310-10-35)

- General Reserve vs. Specific Reserve
- Non-Impaired Loans vs. Impaired Loans
- Homogeneous Pools vs. Individual Loans

# Key Characteristics of FAS 5 Loan Pools

- Homogeneous pools
- Historical loss rates
- Qualitative or environmental factor adjustments

# Challenges Assembling FAS 5 Pools

- Appropriate segmentation varies based on institution's size and portfolio composition
- It is possible to be too granular or too broad
- To sub-segment or not to sub-segment
- Breaking out CRE portfolio
- Separating HELOCs from other pools

# How to Calculate Quantitative Factors

- Peer banks
  - » When to use peer banks' data
  - » How to navigate away from peer banks
- Your historical loss rates
  - » Previous call reports
  - » Internal loss rates
- Migration analysis
- PD (probability of default) and LGD (loss given default)
- Loss discovery
- CECL: Vintage, Discounted Cash Flow (DCF)

# Historical Loss Rate Analysis

| Historical Loss Rate Analysis | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **C&I Pass, SM, Substandard** | Q3 2010 | Q4 2010 | Q1 2011 | Q2 2011 | Q3 2011 | Q4 2011 | Q1 2012 | Q2 2012 | TOTALS |
| Net Charge Offs | .5 | 5 | 6 | 2 | 2 | 3 | 6.5 | 3 | 28 |
| Starting Loan Balance | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 |
| Additional Loan Balance | 0 | 7 | 11 | 15 | 20 | 21 | 27 | 32 | |
| Additional Net Charge Offs | 0 | 0 | 1.5 | 4.5 | 2 | 4 | 0 | 4 | 16 |
| Ending Loan Balance | 224.5 | 227 | 228.5 | 233.5 | 241 | 239 | 245.5 | 250 | 236.125 |
| Total Net Charge Offs | | | 44 | | | | | | |
| Average Loan Balance | | | 236.125 | | | | | | |
| Annual Historical Loss Rate | | | 0.1863419 / 2 = **0.093171** | | | | | | |

# Applying Quantitative Factors

- Determining appropriate loss horizon
- Challenges in aggregating data if breaking into new segments or attempting migration analysis for first time
- Weighted average or straight average?
- Annualizing loss rates correctly

# What is Migration Analysis

- A methodology for determining, through the bank's experience over a historical analysis period, the rate of loss incurred on pools of similar loans by migration to loss from a risk sub-segment within that particular loan type (or portfolio wide by risk classification)

- May take many forms, ranging from a portfolio wide tracking of the volume of loans that migrated to a loss from a set risk rating or delinquency bucket within a defined loss horizon to a more granular analysis by loan type and risk rating

# Migration Analysis

| Migration Analysis | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **C&I - Pass** | Q3 2010 | Q4 2010 | Q1 2011 | Q2 2011 | Q3 2011 | Q4 2011 | Q1 2012 | Q2 2012 | TOTALS | |
| Net Charge Offs | | 2 | 3 | 1 | 2 | | 3 | 1 | 12 | Migration = 0.08 |
| Starting Loan Balance | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | |
| Additional Loan Balance | | 5 | 8 | 8 | 11 | 11 | 13 | 16 | | |
| Additional Net Charge Offs | | | 1 | 2 | 2 | 1 | | 2 | 16 | |
| Ending Loan Balance | 150 | 153 | 154 | 155 | 157 | 160 | 160 | 163 | 156.5 | |
| **C&I - Special Mention** | Q3 2010 | Q4 2010 | Q1 2011 | Q2 2011 | Q3 2011 | Q4 2011 | Q1 2012 | Q2 2012 | TOTALS | |
| Net Charge Offs | 0.5 | 1 | 1 | | | 2 | 1.5 | 1 | 7 | Migration = 0.14 |
| Starting Loan Balance | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | |
| Additional Loan Balance | | 1 | 2 | 5 | 5 | 6 | 8 | 9 | | |
| Additional Net Charge Offs | | | 0.5 | 1.5 | | 1 | | 1 | 4 | |
| Ending Loan Balance | 49.5 | 50 | 50.5 | 53.5 | 55 | 53 | 56.5 | 57 | 53.125 | |
| **C&I - Substandard** | Q3 2010 | Q4 2010 | Q1 2011 | Q2 2011 | Q3 2011 | Q4 2011 | Q1 2012 | Q2 2012 | TOTALS | |
| Net Charge Offs | | 2 | 2 | 1 | | 1 | 2 | 1 | 9 | Migration = 0.36 |
| Starting Loan Balance | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | |
| Additional Loan Balance | | 1 | 1 | 2 | 4 | 4 | 6 | 7 | | |
| Additional Net Charge Offs | | | | 1 | | 2 | | 1 | 4 | |
| Ending Loan Balance | 25 | 24 | 24 | 25 | 29 | 26 | 29 | 30 | 26.5 | |

# Historical Loss vs. Migration Analysis

| Migration Analysis vs. Historical Loss Rate Method ALLL Provisions | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Migration Analysis for ALLL Provisions using Current Balances* | | | | | *Using Re-Structured Ratings* | | |
| C&I Pass | 163 | 0.08 | 13.04 | | 183 | 0.08 | 14.64 |
| C&I Special Mention | 57 | 0.14 | 7.98 | | 57 | 0.14 | 7.98 |
| C&I Substandard | 30 | 0.36 | 10.80 | | 10 | 0.36 | 3.60 |
| **Total ALLL Provision** | | | **31.82** | | | | **26.22** |
| | | | | | | | |
| *Historical Loss Rate Analysis for ALLL Provisions using Current Balances* | | | | | *Using Re-Structured Ratings* | | |
| C&I | 250 | 0.093 | 23.29 | | 250 | 0.093 | 23.29 |
| **Total ALLL Provision** | | | **23.29** | | | | **23.29** |

# PD/LGD Method

- Uses pre-determined measures of default and loss to calculate expected loss
  - » Probability of Default % is assigned to each risk rating or segment
  - » Loss Given Default is a variable (%) assigned to each loan that reflects losses within the loan's industry or product

- Probability of Default (PD)
  - » % likelihood a borrower will not make full and timely repayment of their credit obligations within one year

# PD/LGD Method

## LOSS GIVEN DEFAULT (LGD)

- Loss amount if there is a default (%)

## EXPOSURE AT DEFAULT (EAD)

- Loan Amount at the time of default

## EXPECTED LOSS

- = EAD x PD x LGD

# PD/LGD Method – Things to Consider

- PD and LGD are estimates based on the past experience of each bank
  - » A migration analysis of loans moving to default and losses incurred, across economic environments, is necessary
  - » A representative LGD may be difficult to determine if losses are low or portfolio segment is statistically small
    - Industry LGD is available through third party vendors
- Each risk rating or level may only have one PD, regardless of industry, but LGD rates will vary
  - » LGD rates are unique to each line of business or industry

# PD/LGD Method – Things to Consider

- PD and LGD rates should be re-evaluated periodically
  - » Following economic recovery or recession
  - » Bank merger
  - » Changes in portfolio concentration

# Loss Discovery Method

Twist on historical loss

# Loss Discovery Method

- Loss discovery period, or loss emergence period, is the period of times that it takes, on average, for the bank to identify when a borrower cannot meet their obligations to when a charge off occurs
  - » An addition to existing reserve calculations
- A factor, representing the period, is added to the reserve calculation
  - » Balance x (Loss Rate + Qualitative adjustments) x Loss discovery period = FAS 5 Reserve
- Different loss discovery periods among products
  - » Consumer loans or as little as six months (or .5)
  - » Commercial loans as much as one or two years
    - Annual visit with annual financials

# Loss Discovery Method - Things to Consider

- When developing discovery periods the bank must evaluate:
  - » Customer contact and its affect on recognizing default and loss
  - » Watch list and credit review processes and their ability to discover additional risk
  - » Initial and repeat delinquencies to uncover patterns
  - » Frequency of covenants and their timely receipt

# What are Qualitative Factors

- Q factors are used to reflect risk in the portfolio not captured by the historical loss data
- These factors augment actual loss experience and help to estimate the probability of loss within a loan portfolio based upon emerging or inherent risk trends

# Evaluating Qualitative & Environmental Factors

- Utilize standard factors from Interagency Guidance
- Many are inherently subjective, but use quantitative support where possible
  - » Changes in Delinquency
  - » Changes in Collateral Values
  - » Economic Conditions
- Determine drivers for each factor
- Trend from previous quarter

# Evaluating Qualitative & Environmental Factors

- Demonstrate directional consistency
- Adequate support for assumptions
- Consider establishing a qualitative scoring matrix
- Document, justify and defend

# Documenting Q Factors

- Changes in lending policies and procedures, including changes in underwriting standards and collections, charge offs, and recovery practices
- Changes in international, national, regional, and local conditions
- Changes in the nature and volume of the portfolio and terms of loans

# Documenting Q Factors (cont.)

- Changes in the experience, depth and ability of lending management
- Changes in the volume and severity of past due loans and other similar conditions
- Changes in the quality of the institution's loan review system
- Changes in the value of underlying collateral for collateral-dependent loans

# Documenting Q Factors (cont.)

- The existence and effect of any concentrations of credit and changes in the level of such concentrations.
- The effect of other external factors (i.e., competition, legal and regulatory requirements) on the level of estimated credit losses

# Things to Remember

- Able to defend look-back period and loss rate weightings
- Find the proper balance of granularity for segmentation
- Move towards more comprehensive calculations as your institution grows in size
- Consistently apply and properly document