Comptroller's Handbook

Safety and Soundness

Capital Adequacy (C) | Asset Quality (A) | Management (M) | Earnings (E) | Liquidity (L) | Sensitivity to Market Risk (S) | Other Activities (O)

Allowances for Credit Losses

Version 1.0, April 2021

References to reputation risk have been removed from this booklet as of March 20, 2025. Removal of reputation risk references is identified by a strikethrough. Refer to OCC Bulletin 2025-4.

Office of the Comptroller of the Currency

Contents

Introduction

The Office of the Comptroller of the Currency's (OCC) *Comptroller's Handbook* booklet, "Allowances for Credit Losses," is prepared for OCC examiners in connection with the examination and supervision of national banks, federal savings associations, and federal branches and agencies of foreign banking organizations (collectively, banks). Each bank's risk profile is different, and examiners should apply the information in this booklet consistent with each bank's individual circumstances. When it is necessary to distinguish between them, national banks, federal savings associations (FSA), and covered savings associations are referred to separately.[1]

This booklet provides examiners with information regarding allowances for credit losses (ACL) and includes OCC examination procedures for examiners to use for performing reviews beyond the core assessment in the "Community Bank Supervision," "Federal Branches and Agencies Supervision," and "Large Bank Supervision" booklets of the *Comptroller's Handbook*. Examiners should use this booklet for banks that have adopted the current expected credit losses (CECL) methodology under Accounting Standards Codification (ASC) Topic 326.[2] Examiners should continue to use the "Allowance for Loan and Lease Losses" booklet for banks that have not adopted CECL.

Throughout this booklet, the abbreviation "ACL" refers to individual ACLs for financial assets measured at amortized cost and determined in accordance with the CECL methodology described in ASC Subtopic 326-20. Expected credit losses for off-balance-sheet credit exposures are recognized in a liability separate and distinct from the ACL. Impaired available-for-sale debt securities may have an ACL recognized under ASC Subtopic 326-30.

Interagency Policy Statement on Allowances for Credit Losses

Throughout this booklet, excerpts from the "Interagency Policy Statement on Allowances for Credit Losses" are identified in text boxes like this one. The text boxes, and their notes, are numbered. Refer to OCC Bulletin 2020-49, "Current Expected Credit Losses: Final Interagency Policy Statement on Allowances for Credit Losses," for the full text of the interagency policy statement.

This booklet makes minor text adjustments to the Interagency Policy Statement for context and abbreviations.

[1] Generally, references to "national banks" throughout this booklet also apply to federal branches and agencies of foreign banking organizations unless otherwise specified. Refer to the "Federal Branches and Agencies Supervision" booklet of the *Comptroller's Handbook* for more information regarding applicability of laws, regulations, and guidance to federal branches and agencies. Certain FSAs may make an election to operate as covered savings associations. Refer to OCC Bulletin 2019-31, "Covered Savings Associations Implementation: Covered Savings Associations," and 12 CFR 101, "Covered Savings Associations."

[2] The effective date for ASC Topic 326 is based on a bank's characteristics, including a bank's U.S. Securities and Exchange Commission filing status, as described in ASC paragraph 326-10-65-1, with early adoption permitted only at the beginning of a bank's fiscal year.

Background

An ACL for loans replaces the former allowance for loan and lease losses (ALLL). The ALLL, originally referred to as the "reserve for bad debts," was a valuation reserve each bank established and maintained by credits or debits against the bank's operating income. The objective of a valuation reserve is to estimate uncollectible amounts used to reduce the book value of loans and leases to the amount expected to be collected. An ACL similarly represents an estimate of uncollectible amounts maintained through charges to a valuation reserve adjusted through a bank's operating income. The measurement framework and conceptual basis supporting an ACL differ from that of the ALLL.

After the 2008 global economic crisis, banks and financial statement users expressed concern that U.S. generally accepted accounting principles (GAAP) restricted the ability to record credit losses that were expected but did not yet meet the probable threshold. Various stakeholders requested that accounting standard-setters, the Financial Accounting Standards Board (FASB) and International Accounting Standards Board, work to enhance standards on loan-loss provisioning to incorporate more forward-looking information. Standard-setters concluded that the approach for determining the impairment of **financial assets**, based on a probable threshold and an incurred notion, delayed the recognition of credit losses on loans and resulted in loan-loss allowances that were "too little, too late." As a result, the FASB issued a new accounting standard, Accounting Standards Update (ASU) 2016-13, ASC Topic 326, "Financial Instruments – Credit Losses," on June 16, 2016. ASC Topic 326 introduces the CECL methodology for estimating ACLs.[3]

By issuing ASC Topic 326, the FASB

- removed the probable threshold and the incurred notion as triggers for credit loss recognition, and instead adopted a standard that states that financial instruments carried at amortized cost should reflect the net amount expected to be collected.
- broadened the range of data that are incorporated into the measurement of credit losses to include forward-looking information, such as reasonable and supportable forecasts, in assessing the collectibility of financial assets.
- introduced a single measurement objective for all financial assets carried at amortized cost.

ASC Subtopic 326-20, "Financial Instruments – Credit Losses, Measured at Amortized Cost," and ASC Subtopic 326-30, "Financial Instruments-Credit Losses, Available-for-Sale Debt Securities," replace existing guidance on loan and **debt security**[4] impairment in ASC Subtopic 310-10, "Receivables – Overall"; ASC Subtopic 310-30, "Receivables – Loans and Debt Securities Acquired With Deteriorated Credit Quality"; ASC Subtopic 450-20,

[3] For more information, refer to OCC Bulletin 2016-21, "Current Expected Credit Losses: Joint Statement on the New Accounting Standard on Financial Instruments - Credit Losses," which supports the reasonable and practical implementation of ASC Topic 326, taking into consideration each bank's asset size, complexity, and risk profile.

[4] Terms that are **boldfaced** on first mention are defined in appendix H, "Glossary."

"Contingencies – Loss Contingencies"; and ASC Topic 320*,* "Investments – Debt and Equity Securities."

Overview

> **Excerpt 1: Interagency Policy Statement on Allowances for Credit Losses**
>
> An ACL is a valuation account that is deducted from, or added to, the **amortized cost basis** of financial assets to present the net amount expected to be collected over the **contractual term** of the assets. ASC Topic 326 applies to all banks, regardless of size, that file regulatory reports for which the reporting requirements conform to GAAP.

An ACL is recorded on the balance sheet as a valuation account, reported as a contra asset, that reduces the balance of financial assets carried at amortized cost. An ACL is measured as the difference between an asset's amortized cost basis and the net amount expected to be collected over the asset's contractual term. The contractual term of a financial asset is defined as the asset's contractual life adjusted for prepayments, renewal and extension options that are not unconditionally cancellable by the bank, and the execution of a reasonably expected **troubled debt restructuring** (TDR).[5]

To be consistent with ASC Topic 326, management should consider the effects of past events, current conditions, and reasonable and supportable forecasts of the collectibility of the bank's financial assets when estimating the net amount expected to be collected.[6] For periods beyond which management can forecast future economic conditions, management should revert to historical loss information (referred to as the **reversion period**) for the remaining life of the financial asset. An ACL should not reflect any losses associated with operational, general, or unspecified business risks.

> **Excerpt 2: Interagency Policy Statement on Allowances for Credit Losses**
>
> Estimating appropriate ACLs involves a high degree of management judgment and is inherently imprecise. A bank's process for determining appropriate ACLs may result in a range of estimates for expected credit losses. A bank should support and record its best estimate within the range of expected credit losses.

[5] Each bank determines how it defines a reasonable expectation of executing a TDR. For more information, refer to the "Troubled Debt Restructurings" section and appendix B of this booklet.

[6] Recoveries are a component of management's estimation of the net amount expected to be collected for a financial asset. For more information, refer to the "Expected Recoveries" section of this booklet.

Scope of Current Expected Credit Losses Methodology

Excerpt 3: Interagency Policy Statement on Allowances for Credit Losses

The CECL methodology described in ASC Subtopic 326-20 applies to financial assets held at amortized cost, net investments in leases, and **off-balance-sheet credit exposures**, whereas ASC Subtopic 326-30 applies to available-for-sale (AFS) debt securities. Items within the scope of ASC Subtopic 326-20 include

- loans held for investment.
- overdrawn deposit accounts (i.e., overdrafts) that are reclassified as held-for-investment loans.
- held-to-maturity (HTM) debt securities.
- receivables that result from revenue transactions within the scope of ASC Topic 606 on revenue from contracts with customers and Topic ASC 610 on other income, which applies, for example, to the sale of foreclosed real estate.
- reinsurance recoverables that result from insurance transactions.
- receivables related to repurchase agreements and securities lending agreements.
- net investments in leases recognized by a lessor.
- accrued interest receivables. (See note 1.)
- off-balance-sheet credit exposures including off-balance-sheet **loan commitments**, standby letters of credit, financial guarantees not accounted for as insurance, and other similar instruments except those within the scope of ASC Topic 815, "Derivatives and Hedging."

The CECL methodology described in ASC Subtopic 326-20 does not apply to

- financial assets measured at **fair value** through net income, including those assets for which the fair value option has been elected.
- AFS debt securities.
- loans held for sale (HFS).
- policy loan receivables of an insurance entity.
- loans and receivables between entities under common control.
- receivables arising from operating leases.

Note 1: ASC Topic 326 permits a series of accounting policy elections related to accrued interest receivable. These elections are made upon adoption of ASC Topic 326 and may differ by financial asset portfolio. Refer to the glossary entry "accrued interest receivable" in the call report instructions for more information.

Some banks reserve for **transfer risk** as part of an ACL, a separate reserve, or both. 12 CFR 28.52, "Allocated Transfer Risk Reserve" (national banks),[7] requires establishing and maintaining an allocated transfer risk reserve, in limited circumstances.[8]

[7] There is not a similar regulation for FSAs.

[8] For more information, refer to the "Risk Management" section of the "Country Risk Management" booklet of the *Comptroller's Handbook*.

Documentation of ACLs

Excerpt 4: Interagency Policy Statement on Allowances for Credit Losses

For financial and regulatory reporting purposes, ACLs and provisions for credit losses (PCL) must be determined in accordance with GAAP. ACLs and PCLs should be well documented, with clear explanations of the supporting analyses and rationale. Sound policies, procedures, and control systems should be appropriately tailored to a bank's size and complexity, organizational structure, business environment and strategy, risk appetite, financial asset characteristics, loan administration procedures, investment strategy, and management information systems. (See note 2.) Maintaining, analyzing, supporting, and documenting appropriate ACLs and PCLs in accordance with GAAP is consistent with safe and sound banking practices.

Note 2: Management often documents policies, procedures, and controls related to ACLs in accounting or credit risk management policies, or a combination thereof.

Examiners' Review of ACLs

Excerpt 5: Interagency Policy Statement on Allowances for Credit Losses

Examiners are expected to assess the appropriateness of management's loss estimation process and the appropriateness of the bank's ACL balances as part of supervisory activities. The review of the ACLs, including the depth of the examiner's assessment, should be commensurate with the bank's size, complexity, and risk profile. Examiners generally assess the credit quality and credit risk of a bank's financial asset portfolios, the adequacy of the bank's credit loss estimation processes, the adequacy of supporting documentation, and the appropriateness of the reported ACLs and PCLs in the bank's regulatory reports and financial statements, if applicable. Examiners may consider the significant factors that affect collectibility, including the value of collateral securing financial assets and any other repayment sources. Supervisory activities may include evaluating management's effectiveness in assessing credit risk for debt securities (both prior to purchase and on an ongoing basis).

In reviewing the appropriateness of a bank's ACLs, examiners may

- evaluate the bank's ACL policies and procedures and assess the loss estimation method(s) used to arrive at overall estimates of ACLs, including the documentation supporting the reasonableness of management's assumptions, valuations, and judgments. Supporting activities may include
  - evaluating whether management has appropriately considered historical loss information, current conditions, and reasonable and supportable forecasts, including significant qualitative factors that affect the collectibility of the financial asset portfolios.
  - assessing loss estimation techniques, including loss estimation models, if applicable, as well as the incorporation of qualitative adjustments to determine whether the resulting estimates of expected credit losses are in conformity with GAAP and regulatory reporting requirements.
  - evaluating the adequacy of the documentation and the effectiveness of the controls used to support the measurement of the ACLs.

- assess the effectiveness of board oversight as well as management's effectiveness in identifying, measuring, monitoring, and controlling credit risk. This may include, but is not limited to, a review of underwriting standards and practices, portfolio composition and trends, credit risk review functions, risk rating systems, credit administration practices, investment securities management practices, and related management information systems and reports.
- review the appropriateness and reasonableness of the overall level of the ACLs relative to the level of credit risk, the complexity of the bank's financial asset portfolios, and available information relevant to assessing collectibility, including consideration of current conditions and reasonable and supportable forecasts. Examiners may include a quantitative analysis (e.g., using management's results comparing expected write-offs to actual write-offs as well as ratio analysis) to assess the appropriateness of the ACLs. This quantitative analysis may be used to determine the reasonableness of management's assumptions, valuations, and judgments and understand variances between actual and estimated credit losses. Loss estimates that are consistently and materially over or under predicting actual losses may indicate a weakness in the loss forecasting process.
- review the ACLs reported in the bank's regulatory reports and in any financial statements and other key financial reports to determine whether the reported amounts reconcile to the bank's estimate of the ACLs. The consolidated loss estimates determined by the bank's loss estimation method(s) should be consistent with the final ACLs reported in its regulatory reports and financial statements, if applicable.
- verify that models used in the loss estimation process, if any, are subject to initial and ongoing validation activities. Validation activities include evaluating and concluding on the conceptual soundness of the model, including developmental evidence, performing ongoing monitoring activities, including process verification and benchmarking, and analyzing model output. (See note 3.) Examiners may review model validation findings, management's response to those findings, and applicable action plans to remediate any concerns, if applicable. Examiners may also assess the adequacy of the bank's processes to implement changes in a timely manner.
- review the effectiveness of the bank's third-party risk management framework associated with the estimation of ACLs, if applicable, to assess whether the processes are commensurate with the level of risk, the complexity and nature of the relationship, and the bank's organizational structure. Examiners may determine whether management monitors material risks and deficiencies in third-party relationships, and takes appropriate action as needed. (See note 4.)

When assessing the appropriateness of ACLs examiners should recognize that the processes, loss estimation methods, and underlying assumptions a bank uses to calculate ACLs require a substantial degree of management judgment. Even when a bank maintains sound procedures, controls, and monitoring activities, the estimate of expected credit losses is not a single precise amount and may result in a range of acceptable outcomes for these estimates. This is a result of the flexibility ASC Topic 326 provides banks in selecting loss estimation methods and the wide range of qualitative and forecasting factors that are considered.

Management's ability to estimate expected credit losses should improve over the contractual term of financial assets as substantive information accumulates regarding the factors affecting repayment prospects. Examiners generally should accept a bank's ACL estimates and not seek adjustments to the ACLs when management has provided adequate support for the loss estimation process employed, and the ACL balances and the assumptions used in the ACL estimates are in accordance with GAAP and regulatory reporting requirements. It is inappropriate for examiners to seek adjustments to ACLs for the sole purpose of achieving ACL levels that correspond to a peer group median, a target ratio, or a benchmark amount when management has used an appropriate expected credit loss framework to estimate expected credit losses.

Note 3: Refer to the interagency statement titled "Supervisory Guidance on Model Risk Management," conveyed by OCC Bulletin 2011-12, "Sound Practices for Model Risk Management: Supervisory Guidance on Model Risk Management." The statement addresses the incorporation of vendor products into a bank's model risk management framework following the same principles relevant to in-house models.

Note 4: For guidance on third-party service providers, refer to OCC Bulletin 2013-29, "Third-Party Relationships: Risk Management Guidance"; OCC Bulletin 2017-7, "Third-Party Relationships: Supplemental Examination Procedures"; and OCC Bulletin 2020-10, "Third-Party Relationships: Frequently Asked Questions to Supplement OCC Bulletin 2013-29."

When there are concerns about whether the bank has appropriately established an ACL in accordance with GAAP, examiners are encouraged to confer with the bank's external auditor.[9] Additionally, the OCC's Office of the Chief Accountant can provide accounting guidance and assist in discussions of ACLs with bank management and the bank's external auditor.

Excerpt 6: Interagency Policy Statement on Allowances for Credit Losses

If the examiner concludes that a bank's reported ACLs are not appropriate or determines that its ACL evaluation processes or loss estimation methods are otherwise deficient, these concerns should be noted in the report of examination or supervisory letter and communicated to the board of directors and senior management. Additional supervisory action may be taken based on the magnitude of the shortcomings in ACLs, including the materiality of any errors in the reported amounts of ACLs.

After considering all available information, if the examiner identifies weaknesses in the bank's ACL methodologies, governance, policies, processes, or control systems, the examiner should determine whether the weaknesses warrant supervisory action (e.g., communicating the OCC's concern with a deficient practice to the bank in a matter requiring attention (MRA)).[10] If management revises ACL methodologies to address an OCC-identified deficient practice, examiners should determine whether any previously filed call reports have been materially misstated.[11] If the call reports have been materially misstated, the OCC would typically direct management to amend the affected call reports. Examiners

[9] For more information, refer to the "Internal and External Audits" booklet of the *Comptroller's Handbook*.

[10] For more information, refer to the "Supervisory Actions" section of the "Bank Supervision Process" booklet of the *Comptroller's Handbook*.

[11] As stated in the call report instructions and addressed in FASB Concepts Statement No. 8, "Conceptual Framework for Financial Reporting," "information is material if omitting it or misstating it could influence decisions that users make on the basis of the financial information of a specific reporting entity." In other words, materiality is an entity-specific aspect of relevance based on the nature or magnitude or both to which the information relates in the context of an individual entity's financial report. Materiality is also described in ASC paragraphs 250-10-S99-1 and S99-2, formerly U.S. Securities and Exchange Commission's Staff Accounting Bulletin (SAB) No. 99 and No. 108 (SAB 99 and SAB 108). ASC paragraphs 250-10-S99-1 and S99-2 require management to consider both quantitative and qualitative factors when assessing an item's materiality.

should evaluate whether to cite a violation for failure to file an accurate call report.[12] Enforcement actions may require a bank to take corrective actions to improve its ACL processes or maintain appropriate ACL balances.[13]

When examiners determine that an ACL balance is inappropriate, the OCC should direct management to redetermine an estimate that would, based on available information, restore the ACL balance to an appropriate level, unless the bank's safety and soundness is of imminent or serious concern. If examiners conclude that management's redetermined ACL balance is not appropriate, examiners should estimate an appropriate ACL based on available information, and the OCC should direct bank management to make the necessary adjustments to bring the ACL to an appropriate level. Estimates should be based on an analysis of the bank's applicable financial asset portfolios using the evaluation process described in this booklet, should be well-supported, and must be consistent with GAAP.[14]

When the bank's safety and soundness is an imminent or serious concern due to an inappropriate ACL balance, examiners should determine the appropriate ACL amount(s), and the OCC should direct management to restore ACL(s) to the appropriate level(s). Such determinations should be made in consultation with the examiner-in-charge (EIC), OCC management, OCC legal counsel, and subject matter experts, as applicable. Estimates should be based on an analysis of the bank's applicable financial asset portfolios using the evaluation process described in this booklet, should be well-supported, and must be consistent with GAAP.[15]

Risks Associated With ACLs

From a supervisory perspective, risk is the potential that events will have an adverse effect on a bank's current or projected financial condition[16] and resilience.[17] The OCC has defined eight categories of risk for bank supervision purposes: credit, interest rate, liquidity, price, operational, compliance, strategic~~, and reputation~~. These categories are not mutually exclusive. Any product or service may expose a bank to multiple risks. Risks may also be interdependent and may be positively or negatively correlated. Examiners should be aware of and assess this interdependence. Refer to the "Bank Supervision Process" booklet of the *Comptroller's Handbook* for an expanded discussion of banking risks and their definitions.

[12] Refer to 12 USC 161, "Reports to Comptroller of the Currency" (national banks) and 12 USC 1464(v), "Reports of Condition" (FSAs).

[13] For more information regarding matters requiring attention, violations of laws and regulations, and enforcement actions, refer to the "Bank Supervision Process" booklet of the *Comptroller's Handbook.*

[14] Refer to 12 USC 1831n, "Accounting Objectives, Standards, and Requirements."

[15] Ibid.

[16] Financial condition includes impacts from diminished capital and liquidity. Capital in this context includes potential impacts from losses, reduced earnings, and market value of equity.

[17] Resilience recognizes the bank's ability to withstand periods of stress.

The risks typically associated with ACLs are credit, operational, compliance, strategic~~, and reputation~~. The risks associated with the various types of lending, and the management of those risks, are discussed in subject-specific booklets of the *Comptroller's Handbook* (examples include "Commercial Real Estate Lending" and "Residential Real Estate Lending").

Credit Risk

Credit risk is the risk to current or projected financial conditions and resilience arising from an obligor's failure to meet the terms of any contract with the bank or otherwise perform as agreed. Credit risk arises in conjunction with a broad range of bank activities, including selecting investment portfolio products, derivatives trading partners, or foreign exchange counterparties. Credit risk also arises due to country or sovereign exposure, as well as indirectly through guarantor performance.

ACLs do not directly create credit risk. Rather, ACLs quantify the credit risk inherent in the bank's assets. Accurate, timely, and effective risk identification and risk rating practices are critical to estimate appropriate ACLs. Deficiencies in a bank's risk rating system, loan or investment review function, or weaknesses related to other credit risk assessment factors (including qualitative factors) can mask credit risks in financial assets. Such weaknesses can hinder management's ability to effectively identify higher-risk assets, delay the recognition of credit losses, and result in inappropriate ACL balances. ACLs exist to cover credit losses associated with the bank's financial assets. Inappropriate ACL balances contribute to an increased level of credit risk. Adequate management of ACLs is an integral part of a bank's credit risk management.

Operational Risk

Operational risk is the risk to current or projected financial condition and resilience arising from inadequate or failed internal processes or systems, human errors or misconduct, or adverse external events.

Operational risk related to ACL estimation processes depends on bank-specific factors, such as

- volume and complexity of the bank's financial assets.
- adequacy of personnel (e.g., experience, competency, and number).
- quality of credit risk review systems.
- effectiveness of collaboration between parties involved in ACL processes.
- adequacy of risk management systems and internal controls.
- quality of management and board reports.
- data integrity.
- effectiveness of **model** risk management practices.

Key for controlling operational risk are the quality of the audit function, governance, third-party risk management, and controls protecting the confidentiality, integrity, and availability of bank information. If ongoing monitoring or periodic validation of ACL methodologies is not conducted effectively, ACL estimation processes may not produce appropriate ACLs in accordance with GAAP. Errors or omissions in ACL estimates may cause financial misstatements and regulatory reporting errors.

Compliance Risk

Compliance risk is the risk to current or projected financial condition and resilience arising from violations of laws or regulations, or from nonconformance with prescribed practices, internal bank policies and procedures, or ethical standards. This risk exposes a bank to potential fines, civil money penalties, payment of damages, and the voiding of contracts.

A materially misstated ACL[18] may constitute a violation of the laws requiring banks to file accurate call reports.[19] Filing a false or misleading call report may subject the bank to civil money penalties or other enforcement actions. Deficient ACL processes could also constitute noncompliance with 12 CFR 30, appendix A, "Interagency Guidelines for Establishing Safety and Soundness," which states that a bank "must estimate the inherent losses in those assets and establish reserves that are sufficient to absorb estimated losses."

Strategic Risk

Strategic risk is the risk to current or projected financial condition and resilience arising from adverse business decisions, poor implementation of business decisions, or lack of responsiveness to changes in the banking industry and operating environment.

Changes in the bank's business strategies, including acquisition and expansion of loan product lines, and changes in credit risk appetite, underwriting standards, or risk profile, can result in strategic risk, particularly when such changes are not taken into account in ACL methodologies. Weak or ineffective management and board oversight increases the risk of inadequately assessing the impact on ACLs and determining interdependent risks such as credit ~~and reputation~~ risks. Management and board reporting that does not incorporate results from a change in business strategy can negatively affect ACL estimation processes.

~~Reputation Risk~~

~~Reputation risk is the risk to current or projected financial condition and resilience arising from negative public opinion.~~

~~Banking analysts, shareholders, and investors routinely track the level and trends in the balance of a bank's ACLs and PCLs. Adverse trends in ACLs and PCLs in relation to publicized measures of asset quality, such as the level of nonperforming loans, or other credit metrics, can subject the bank to unfavorable market perception. Enforcement actions involving a bank's restatement of prior period financial results or a need to improve its~~

[18] Refer to footnote 11 and the call report instructions for definition of materiality.

[19] Refer to 12 USC 161 (national banks), and 12 USC 1464(v) (FSAs).

~~processes for determining and maintaining ACLs could affect the bank's reputation and the market's perception of the bank.~~

Estimating ACLs

To determine a bank's ACL estimates for assets carried at amortized cost, management develops assumptions for the key components: data, segmentation, contractual term, method, the **reasonable and supportable period**, reversion, and qualitative factors. A sound risk management framework is the foundation for reasonably and reliably estimating ACLs. A weak credit risk rating system or inadequate charge-off processes can result in inaccurate data inputs used for estimating ACLs and can lead to inappropriate ACLs.[20]

The following summarizes the seven primary ACL components, which are discussed in greater detail later in this booklet. The extent to which each component contributes to the overall ACLs depends on the size, composition, and complexity of the bank's financial asset portfolios.

- **Data:** The quality of the bank's data sources is critically important as a foundation on which ACL estimates are generated. Historical data may be internal or external and should be complete, accurate, and relevant. Data should be subjected to appropriate governance and controls.
- **Segmentation:** Financial assets should be segmented based on similar risk characteristics.
- **Contractual term of financial assets:** The contractual term of financial assets is a significant driver of ACL estimates. Financial assets or pools of financial assets with shorter contractual maturities typically result in a lower reserve than those with longer contractual maturities. As the average life of a financial asset or pool of assets increases, there generally is a corresponding increase to the ACL estimate because the likelihood of default is considered over a longer time frame.
- **Credit loss measurement method:** Measurement methods for estimating ACLs include loss rate, **roll rate**, **vintage analysis**, discounted cash flow (DCF), and probability of default/loss given default (PD/LGD) methods. Other methods may also be appropriate to reasonably estimate the expected collectibility of financial assets. A bank may apply different estimation methods to different groups of financial assets.
- **Reasonable and supportable forecasts:** ASC Topic 326 requires management to consider reasonable and supportable forecasts that affect expected collectibility of financial assets as a new requirement under CECL. Forecasts should incorporate anticipated changes in the economic environment that may affect credit loss estimates over a time horizon when management can reasonably support and document expectations. Forward-looking information may reflect positive or negative expectations relative to the current environment.
- **Reversion period:** ASC Topic 326 does not require management to estimate a reasonable and supportable forecast for the entire contractual life of financial assets. Management may apply reversion techniques for the contractual life remaining after considering the reasonable and supportable forecast period. Reversion allows management to apply a historical loss rate (e.g., the long-term average or mean loss) to latter periods of the financial asset's life. ASC Topic 326 requires reversion only when

[20] For more information, refer to the "Risk Management" section of this booklet.

the contractual life of the financial asset exceeds the period over which management can establish a reasonable and supportable forecast.

- **Qualitative factor adjustments:** ACL estimates should reflect consideration of all significant factors relevant to the expected collectibility of the bank's financial assets as of the reporting date. Qualitative factors reflect the impact of conditions not captured elsewhere, such as the historical loss data or within the economic forecast. The qualitative considerations may be captured directly within measurement models or as additional components in the overall ACL methodologies. ASC Subtopic 326-20 includes a non-exhaustive listing of qualitative factors; management should consider those relevant to the bank as of the reporting date.

Primary ACL Components

Data

A bank should collect and maintain relevant data to support the bank's estimates of lifetime expected credit losses in a way that aligns with the method or methods it uses to estimate its ACLs. The bank should begin by identifying currently available relevant data that should be maintained. The bank should then consider whether additional data may be relevant and would need to be collected and maintained for a period sufficient to implement each method the bank has selected.[21]

Management should consider available information relevant to assessing the collectibility of cash flows. This information may include internal information, external information,[22] or a combination of both relating to past events, current conditions, and reasonable and supportable forecasts.[23] Examples of data elements that may be needed to calculate ACLs depend on the methodology used and include

- asset type or product.
- collateral type.
- origination and maturity dates.
- renewal and prepayment dates.
- amount at origination.
- interest rate.
- charge-off[24] amounts and dates.

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[21] For more information, refer to question 25 in "Frequently Asked Questions on the New Accounting Standard on Financial Instruments—Credit Losses" conveyed by OCC Bulletin 2019-17, "Current Expected Credit Losses: Additional and Updated Interagency Frequently Asked Questions on the New Accounting Standard on Financial Instruments–Credit Losses."

[22] For more information, refer to the "Use of External Data" section of this booklet.

[23] For more information, refer to question 26 in "Frequently Asked Questions on the New Accounting Standard on Financial Instruments—Credit Losses" conveyed by OCC Bulletin 2019-17.

[24] Consistent with FASB ASC Topic 326, the terms "charge-off" and "write-off" are synonymous.

- recovery amounts and dates.
- internal or external credit scores or credit ratings.
- risk ratings and risk rating migrations.
- contractual term loss amounts for loans with similar risk characteristics.
- delinquent and nonaccrual loan volumes and trends.
- past due status (e.g., current, 30 days, 60 days, or 90 days past due).
- if a loan has been granted an extension, deferral, or participation in some kind of payment relief program.

The OCC encourages management to discuss the availability of historical loss data internally with lending, credit risk management, information technology, and other functional areas and with the bank's core loan service providers. System changes and other changes related to the collection and retention of data may be warranted.[25] For example, a change in ACL methodologies or the purchase or origination of a new financial asset product or type could create the need for additional data or retention of data for a longer time frame (e.g., prepayment and recovery data). If developing policies and procedures relative to any new data, management typically reviews these policies and procedures with the bank's core loan service provider or other relevant third parties to identify any challenges or limitations.

In some instances, data availability (or lack thereof) influences the types of ACL loss methodologies that are most appropriate for the bank. As the size, complexity, and risk profile of the bank and its portfolios evolve, the data and methodologies also may need to evolve to remain appropriate. Banks may use external data when sufficient internal data are not available. Examiners should determine whether management identified any data gaps and if any such data gaps materially affect ACL estimates.

Charge-Off and Recovery Data

Excerpt 7: Interagency Policy Statement on Allowances for Credit Losses

Historical loss information generally provides a basis for a bank's assessment of expected credit losses. Historical loss information may be based on internal information, external information, or a combination of both. Management should consider whether the historical loss information may need to be adjusted for differences in current asset-specific characteristics such as differences in underwriting standards, portfolio mix, or when historical asset terms do not reflect the contractual terms of the financial assets being evaluated as of the reporting date.

Management should then consider whether further adjustments to historical loss information are needed to reflect the extent to which current conditions and reasonable and supportable forecasts differ from the conditions that existed during the historical loss period. Adjustments to historical loss information may be quantitative or qualitative in nature and should reflect changes to relevant data (such as changes in unemployment rates, delinquency, or other factors associated with the financial assets).

[25] For more information, refer to question 25 in "Frequently Asked Questions on the New Accounting Standard on Financial Instruments—Credit Losses" conveyed by OCC Bulletin 2019-17.

The first step in developing reliable credit loss data is establishing sound criteria for the charge-off of loans and securities against ACLs. Timely charge-offs and subsequent **recoveries** form the foundational data that become a bank's historical loss record. The FASB's guidance for write-offs and recoveries states that write-offs of financial assets, which may be full or partial write-offs, shall be deducted from the allowance. Financial asset charge-offs should generally be debited to ACLs.[26] If charge-offs exceed the amount of ACLs or result in inappropriate ACLs, PCL expense should be recognized on the income statement immediately to restore the ACLs to an appropriate level. Under no circumstances should charge-offs be debited to retained earnings. Furthermore, write-offs must be recorded in the period in which the financial assets are deemed uncollectible. Actual recoveries of financial assets and trade receivables previously written off shall be recognized and included in a bank's historical loss record when received.[27]

When an asset is fully or partially charged off, a new amortized cost basis for the asset is established. Once a new amortized cost basis has been established for a financial asset through a charge-off, this cost basis cannot be increased at a later date. It is an unacceptable accounting practice to reverse the previous charge-off and re-book the charged-off asset after management concludes the prospects for recovering the charge-off have improved, regardless of whether management assigns a new account number to the asset or the borrower signs a new note.

Examiners should determine if a bank's policies and procedures for charge-offs and recoveries are appropriate and reflect consideration of these principles and requirements. The federal banking agencies have communicated longstanding risk management principles for determining charge-offs. For commercial loans and securities, the charge-off principles are described in the "Uniform Agreement on the Classification and Appraisal of Securities Held by Depository Institutions" conveyed by OCC Bulletin 2013-28, "Classification of Securities: Interagency Guidance." For retail loans, the charge-off principles are described in the "Uniform Retail Credit Classification and Account Management Policy" conveyed by OCC Bulletin 2000-20. The "Instructions for Preparation of Consolidated Reports of Condition and Income" (call report instructions) explain requirements for the recognition of recoveries.

[26] When a loan is charged off, accrued but unpaid interest and fees should be charged off. The bank may make a policy election to charge off uncollectible accrued interest receivable through reversing interest income, recognizing a PCL, or reducing the ACL. For more information, refer to the glossary entry "accrued interest receivable" in the call report instructions.

[27] For more information, refer to ASC paragraph 326-20-35-8, "Write-Offs of Financial Instruments," and the "Expected Recoveries" section of this booklet.

Use of External Data

> **Excerpt 8: Interagency Policy Statement on Allowances for Credit Losses**
>
> Forecasts may include data from internal sources, external sources, or a combination of both. Management is not required to search for all possible information nor incur undue cost and effort to collect data for its forecasts. However, reasonably available and relevant information should not be ignored in assessing the collectibility of cash flows.
>
> ACLs should be well documented, with clear explanations of the supporting analyses and rationale. Maintaining, analyzing, supporting, and documenting appropriate ACLs and PCLs in accordance with GAAP is consistent with safe and sound banking practices. Internal control systems for the ACL estimation processes should provide reasonable assurance regarding the relevance, reliability, and integrity of data and other information used in estimating expected credit losses.

Other available internal or external data may enhance the quality of forecasts used to determine the best estimate of expected credit losses. Management should evaluate the facts and circumstances unique to the bank's financial asset portfolios to determine the appropriate course of action with respect to data needs. Management may determine that the bank's internal information does not, by itself, sufficiently support the bank's estimation of expected credit losses.[28] While internal data are often more precise because they are based on a bank's actual balance-sheet composition, the process to estimate ACLs may not be limited solely to internal data. Management may consider using external information from peers, regulatory sources, or other third parties to supplement the bank's own historical data. For example, management may use external data when a bank introduces or acquires a new lending product, is newly formed, or when data are insufficient, incomplete, or inaccurate. External data can serve as a starting point but may need to be adjusted or supplemented with more information to reflect the bank's unique portfolio credit risk characteristics and appropriately capture expected credit losses. Using data from peer banks that offer similar product types or have portfolios with similar risk characteristics, geographic locations, and other attributes promotes data comparability and relevancy. Differing loan attributes (e.g., underwriting standards, collateral coverage, contractual term, delinquency status, or time since origination) reduce comparability and may affect the bank's loss estimates.

Examiners should assess whether management reasonably supported the similarities of the bank's and peers' portfolio(s) comprising the external data. Examiners should also assess any adjustments made to the external data and the bank's documentation supporting the adjustments. Examiners should determine how adjustments are captured (quantitatively or qualitatively) in the bank's ACL estimates.

[28] Refer to questions 7 and 8 under topic 12D, "Allowance for Credit Losses," of the *Bank Accounting Advisory Series*.

Segmentation

Assets are evaluated on a collective (or pool) basis or individually, as applicable consistent with ASC Topic 326. This section of the booklet discusses collectively and individually evaluated financial assets, respectively.

Collectively Evaluated Financial Assets

Excerpt 9: Interagency Policy Statement on Allowances for Credit Losses

ASC 326-20 requires expected losses to be evaluated on a collective, or pool,[29] basis when financial assets share similar risk characteristics. Financial assets may be segmented based on one characteristic, or a combination of characteristics.

Examples of risk characteristics relevant to this evaluation include

- internal or external credit scores or credit ratings.
- risk ratings or classifications.
- financial asset type.
- collateral type.
- size.
- effective interest rate.
- term.
- geographical location.
- industry of the borrower.
- vintage.

Other risk characteristics that may be relevant for segmenting HTM debt securities include issuer, maturity, coupon rate, yield, payment frequency, source of repayment, bond payment structure, and embedded options.

Management should evaluate financial asset segmentation on an ongoing basis to determine whether the financial assets in the pool continue to share similar risk characteristics. If a financial asset ceases to share risk characteristics with other assets in its pool, it should be moved to a different segment with assets sharing similar risk characteristics or evaluated individually if such a segment does not exist.

ASC Topic 326 does not prescribe a process for segmenting financial assets for collective evaluation. Therefore, management should exercise judgment when establishing appropriate segments or pools. Management should evaluate financial asset segmentation on an ongoing basis to determine whether the financial assets in the pool continue to share similar risk characteristics. If a financial asset ceases to share risk characteristics with other assets in its segment, it should be moved to a different segment with assets sharing similar risk characteristics if such a segment exists.

[29] Pools are commonly referred to as segments.

Segmentation groups loans with similar risk characteristics together into pools.[30] Inadequate segmentation can result in an allowance for a portfolio that is lower than what the allowance would be if high-risk loans were segregated and grouped together for evaluation in one or more separate segments. Too much segmentation could prevent management from appropriately supporting a loss rate due to insufficient default and credit loss information. Management may consider both credit and noncredit characteristics when determining if assets share similar risk characteristics. Examples of credit characteristics include borrower's credit score, delinquency status, and loan-to-value ratio. Examples of noncredit characteristics include origination vintage, geography, origination channel, product type, tenor of product, and level of concentrations of credit. Examiners should review the bank's documentation of the segmentation scheme, rationale, and changes made to the segmentation scheme and rationale over time.[31]

An asset does not need to receive the same segmentation treatment throughout the asset's life. Additionally, situations may arise when new or additional segments may be needed. Examples include the introduction of new products, significant changes to the bank's underwriting standards or practices, or changes in customer behavior, such as repayment trends.

Individually Evaluated Financial Assets

Excerpt 10: Interagency Policy Statement on Allowances for Credit Losses

If a financial asset does not share similar risk characteristics with other assets, expected credit losses for that asset should be evaluated individually. Individually evaluated assets should not be included in a collective assessment of expected credit losses.

For individually evaluated assets, an ACL is determined separately for each financial asset. Management must measure the expected credit losses based on an appropriate method per ASC Subtopic 326-20, similar to collectively evaluated financial assets. Management conclusions should be based on a well-documented analysis.

When a bank uses the present value of expected future cash flows to measure an ACL for an asset, it typically documents

- the amount and timing of cash flows.
- the **effective interest rate (EIR)** used to discount the cash flows.
- the basis for the determination of cash flows, including consideration of past events, current conditions, and reasonable and supportable forecasts about the future.

[30] For an example of segmentation, refer to appendix G of this booklet.

[31] For more information on segmentation, refer to OCC Bulletin 2012-6, "Interagency Guidance on ALLL Estimation Practices for Junior Liens: Guidance on Junior Liens."

Collateral-Dependent Financial Assets

> **Excerpt 11: Interagency Policy Statement on Allowances for Credit Losses**
>
> ASC 326-20 defines a **collateral-dependent** asset as a financial asset for which the repayment is expected to be provided substantially through the operation or sale of the collateral when the borrower, based on management's assessment, is experiencing financial difficulty. For regulatory reporting purposes, the ACL for a collateral-dependent loan is measured using the fair value of collateral, regardless of whether foreclosure is probable. (See note 5.)
>
> Note 5: The agencies, at times, prescribe specific regulatory reporting requirements that fall within a range of acceptable practice under GAAP. These specific reporting requirements, such as the requirement for banks to apply the practical expedient in ASC 326-20-35-5 for collateral-dependent loans, regardless of whether foreclosure is probable, have been adopted to achieve safety and soundness and other public policy objectives and to ensure comparability among banks. The regulatory reporting requirement to apply the practical expedient for collateral-dependent financial assets is consistent with the agencies' long-standing practice for collateral-dependent loans, and it continues to be limited to collateral-dependent loans. It does not apply to other financial assets such as HTM debt securities that are collateral-dependent.

Collateral-dependent status is determined as of the reporting date. Whether the underlying collateral is expected to be a substantial source of repayment for an asset depends on the availability, reliability, and capacity of sources other than the collateral to repay the debt. Generally, repayment would be expected to be provided substantially by the sale or continued operation of the underlying collateral if cash flows to repay the asset from all other available sources (including guarantors) are expected to be no more than nominal.

> **Excerpt 12: Interagency Policy Statement on Allowances for Credit Losses**
>
> When estimating the ACL for a collateral-dependent financial asset, ASC 326-20 requires the fair value of collateral to be adjusted for estimated **costs to sell** if repayment or satisfaction of the asset depends on the sale of the collateral. If repayment is dependent only on the operation of the collateral, and not on the sale of the collateral, the fair value of the collateral would not be adjusted for estimated costs to sell.

ASC Subtopic 326-20 requires use of fair value measurement[32] in estimating the ACL on a collateral-dependent asset for which foreclosure is probable. ASC Subtopic 326-20 prohibits delaying recognition of credit losses until the foreclosure occurs. If the fair value of the collateral, adjusted for costs to sell if applicable, is less than the amortized cost basis of the collateral-dependent asset, the difference is recorded as an ACL.

Additionally, any asset or portion of an asset that meets the federal banking agencies' loss classification definition should be charged off in the period in which it is classified as a loss.[33]

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[32] For more information, refer to ASC Topic 820, "Fair Value Measurement."

[33] Refer to the "Rating Credit Risk" booklet of the *Comptroller's Handbook* for the interagency loan classification definitions.

Excerpt 13: Interagency Policy Statement on Allowances for Credit Losses

The fair value of collateral securing a collateral-dependent asset may change over time. If the fair value of the collateral as of the ACL evaluation date has decreased since the previous ACL evaluation date, the ACL should be increased to reflect the additional decrease in the fair value of the collateral. If the fair value of the collateral has increased as of the ACL evaluation date, the increase in the fair value of the collateral is reflected through a reduction in the ACL. However, if the amount expected to be collected (i.e., the fair value of collateral adjusted for selling costs, if applicable, for a collateral-dependent loan) exceeds the asset's amortized cost basis, any negative ACL increasing the net carrying value of the collateral-dependent asset is limited to the amount previously charged off. Changes in the fair value of collateral should be supported and documented through recent appraisals or evaluations.

For collateral-dependent assets, examiners should assess[34]

- the bank's determination of fair value including the use of appraisals, evaluations, or financial statements.
- the quality of appraisals or evaluations and the expertise and independence of the appraiser or person performing the evaluation.
- the supporting rationale for adjustments to appraisal, evaluation, or financial statement values, if applicable.
- the determination of costs to sell, if applicable.

Depending on the facts and circumstances, including how current the appraisal or evaluation is and whether there have been significant changes since the appraisal or evaluation, the most recent market value may differ from the fair value of the collateral as of the balance-sheet date. Changing market conditions, changes in the underlying collateral condition, or changes in property use should result in a review of the assumptions supporting the appraisal or evaluation. Management should adjust the value as necessary to reflect factors or events subsequent to the appraisal or evaluation date that affect the fair value of the collateral as of the balance sheet date. Banks should have sound processes and controls for ordering and reviewing appraisals and evaluations and monitoring valuations of collateral for real estate secured assets and related transactions such as modifications and workouts.[35] If the collateral value has increased and a charge-off was previously recorded, the charge-off cannot be reversed at the individual loan level, but the increase in fair value of the collateral can be reflected as a reduction to an ACL not to exceed the amount previously charged off.

Some financial assets that are evaluated individually under the fair value of collateral method may be fully collateralized and, therefore, require zero ACL. This could occur if cash interest payments received have been applied to reduce the amortized cost basis while the asset is on

[34] Refer to 12 CFR 34, subpart C, for the OCC's appraisal regulations. For guidance regarding appraisals and evaluations, refer to OCC Bulletin 2010-42, "Sound Practices for Appraisals and Evaluations: Interagency Appraisal and Evaluation Guidelines," and OCC Bulletin 2018-39, "Appraisals and Evaluations of Real Estate: Frequently Asked Questions."

[35] For more information about appraisal and evaluation programs, refer to OCC Bulletins 2010-42 and 2018-39.

nonaccrual, or there has been a charge-off of the asset. Individually evaluated financial assets with either no ACL or a negative ACL should receive closer examiner attention than assets with an ACL because such assets generally carry heightened credit risk. Additionally, credit enhancements that are not **freestanding contracts** must be included in the calculation of an ACL on collateral-dependent financial assets.[36]

Contractual Term of Financial Assets

> **Excerpt 14: Interagency Policy Statement on Allowances for Credit Losses**
>
> ASC 326-20 requires a bank to measure estimated expected credit losses over the contractual term of its financial assets, considering expected prepayments. Renewals, extensions, and modifications are excluded from the contractual term of a financial asset for purposes of estimating the ACL unless there is a reasonable expectation of executing a TDR or the renewal and extension options are part of the original or modified contract and are not unconditionally cancellable by the bank. If such renewal or extension options are present, management must evaluate the likelihood of a borrower exercising those options when determining the contractual term. For example, if a bank has a loan with a one-year maturity, the loan's contractual term would be one year even if the bank expects to continue renewing the loan.

Pool-based assumptions for a pool's contractual term (i.e., average life) should be based on the contractual maturity of the financial assets within the pool and adjusted in accordance with GAAP, if appropriate. For example, changes in payoff profiles such as straight-line amortization or bullet payment could significantly affect estimated prepayment timing and amount. Similarly, if management includes 10-year and 15-year loans in a single pool, and management starts originating a higher percentage of 15-year loans, management should reassess the pool's contractual term used in the ACL estimation. Management should support its determination of the contractual term of each segment or pool of assets.

For certain products or portfolios other considerations could be relevant to determining the contractual term for purposes of assessing the expected life. For assets without stated maturity dates, such as lines of credit, the contractual term should be consistent with the terms outlined in the credit agreement. For example, if amounts borrowed on a **line of credit** are payable one year after the draw and are not unconditionally cancellable, the contractual term for the estimate of expected credit losses should be based on the one-year period, even if the draw date and amount are not yet known.[37]

[36] For more information, refer to ASC paragraph 326-20-30-12, "Credit Enhancements."

[37] For more information, refer to the "Off-Balance-Sheet Credit Exposures" section and appendix H of this booklet.

Estimated Prepayments

Management should review the bank's historical information, if available, to determine the extent to which prepayments have reduced contractual terms.[38] If the bank does not have internal prepayment data and management cannot support that prepayments are immaterial, management would typically obtain available peer or industry prepayment data. ASC Subtopic 326-20 allows estimated prepayments to be considered quantitatively when embedded into the historical loss information or in the assessment of qualitative factors.

Troubled Debt Restructurings

Excerpt 15: Interagency Policy Statement on Allowances for Credit Losses

Expected credit losses on financial assets modified in TDRs or reasonably expected to be modified in TDRs (collectively, TDRs) are estimated under the same CECL methodology that is applied to other financial assets measured at amortized cost. Expected credit losses are evaluated on a collective basis, or, if a TDR does not share similar risk characteristics with other financial assets, on an individual basis.

FASB ASC Topic 326 allows a bank to use any appropriate loss estimation method to estimate ACLs for TDRs. However, there are circumstances when specific measurement methods are required. If a TDR, or a financial asset for which a TDR is reasonably expected, is collateral-dependent, the ACL is estimated using the fair value of collateral.

In addition, when management has a reasonable expectation of executing a TDR or if a TDR has been executed, the expected effect of the modification (e.g., term extension or interest rate concession) is included in the estimate of the ACLs. Management should determine, support, and document how it identifies and estimates the effect of a reasonably expected TDR and estimates the related ACL. The estimated effect of reasonably expected TDRs may be included in a bank's qualitative factor adjustments.

ASC Subtopic 326-20 requires adjustment of the contractual term when management has a reasonable expectation at the reporting date that the bank will execute a TDR with a borrower. ASC Subtopic 326-20 does not define reasonable expectation. The determination of when a TDR is reasonably expected is based on management judgment and is identified on an individual asset basis. Banks' policies should address the definition of a reasonably expected TDR to help ensure an ACL is recorded in accordance with GAAP and regulatory reporting requirements. The estimated ACL attributable to the reasonably expected TDR population may be measured on a collective basis. In general, the determination that there is a reasonable expectation of a TDR at the reporting date would be made after management knows the borrower is experiencing financial difficulty but before management grants a concession to the borrower. A bank's workout processes for various modification options contribute to the judgment of whether a TDR is expected, the types of concessions that may be granted, and the timelines involved in contract revision or negotiation.

[38] ASC Topic 326 requires a bank to measure estimated expected credit losses over the contractual term of its financial assets, which includes considering expected prepayments.

For a loan rated substandard, generally there is a reasonable expectation a bank may execute a TDR through modification or forbearance either near or at the contractual maturity. By definition, substandard loans have a well-defined weakness or weaknesses that jeopardize repayment of the debt. There is a greater likelihood that the borrower on a substandard loan is experiencing financial difficulties, and the borrower may not be able to repay the outstanding balance or extend, renew, or modify the loan at market terms upon the loan's contractual maturity. For purposes of estimating credit losses on substandard loans when there is a reasonable expectation of a TDR, management should generally consider periods of time beyond the contractual maturity unless (1) management expects to perform additional underwriting and will price the loan commensurate with the borrower's credit risk, or (2) management will obtain additional credit risk mitigation to bring the loan into conformance with the bank's policy.

Another example of a reasonably expected TDR is when a borrower experiences financial distress, and management has begun to negotiate a potential concession. Although the modification contract has not been executed, and management may not have determined the details of the concession, management's consideration of the concession is a strong indicator of a reasonably expected TDR. Management may use historical information to estimate the amount of the modification's expected credit loss, such as an analysis that indicates a bank typically charges off a certain percentage of the amortized cost basis upon modification.

If management expects a modification, but the modification is not reasonably expected to be a TDR, the modification should not be considered when measuring an ACL. For example, management would not adjust an asset's contractual term in an ACL for a borrower that management determined was not experiencing financial difficulty before an extension with a term modification.

Expected Recoveries

ASC Subtopic 326-20 requires management to estimate the net amount it expects to collect for a financial asset. Recoveries should be included in the net amount expected to be collected, such as cash from the borrower (principal and interest payments), collateral (e.g., property, plant, equipment, residences, and vehicles), and sale proceeds of a nonperforming financial asset to a third party (e.g., the sale of defaulted credit card balances to a debt collector or the sale of a troubled commercial loan to a third party). Expected proceeds from freestanding insurance agreements should not be included as recoveries within ACL estimates; freestanding insurance instruments are accounted for separately under GAAP.

It is unlikely the total ACL balances will be negative. In some circumstances, an ACL for a specific portfolio or loan may be negative because the amount expected to be collected, including expected recoveries, exceeds the financial asset's amortized cost basis. This could occur when a bank has previously charged down financial assets and collateral values subsequently increase or when the borrower or guarantor makes payments not previously expected (including past-due amounts).

Expected recoveries should be included as an adjustment to an ACL and should not be used to write up (i.e., increase) the amortized cost basis of the financial asset, even if the amount expected to be collected exceeds the amortized cost basis. Expected recoveries of amounts previously charged off or expected to be charged off that are included in ACLs must not exceed the aggregate amounts previously charged off or expected to be charged off.[39] For example, a collateral-dependent financial asset is charged down from $300,000 to $100,000. If management subsequently expects to collect $350,000, management may only record a negative ACL to increase the net carrying amount up to the original $300,000. The remaining $50,000 collateral value in excess of cost basis is not immediately recognized. To the extent the collateral value remains above the cost basis, recognition of the $50,000 gain would occur upon foreclosure and transfer to other real estate owned or upon sale of the property before foreclosure. Banks should support an expectation of future expected payments, particularly when those amounts were previously deemed uncollectible and charged off for an individual financial asset. Bank procedures for estimating recoveries should be applied consistently.

Credit Loss Measurement Methods

Excerpt 16: Interagency Policy Statement on Allowances for Credit Losses

ASC Topic 326 does not require the use of a specific loss estimation method for purposes of determining ACLs. Various methods may be used to estimate the expected collectibility of financial assets, with those methods generally applied consistently over time. The same loss estimation method does not need to be applied to all financial assets. Management is not precluded from selecting a different method when it determines the method will result in a better estimate of ACLs.

Management may use a loss-rate method, PD/LGD method, DCF method, a method that uses aging schedules, or another reasonable method to estimate expected credit losses. The selected method(s) should be appropriate for the financial assets being evaluated, consistent with the bank's size and complexity.

Different estimation methods may be applied to different pools of financial assets. The measurement methods used to estimate ACLs must be in accordance with GAAP.

There is no expectation that a small, noncomplex bank use a sophisticated measurement model to satisfy the requirements of ASC Topic 326. The method used should be appropriate for estimating an ACL for a given pool of financial assets. For example, while a bank may be large or complex, a specific pool could be insignificant to the bank and a noncomplex estimation method may be appropriate for that pool.

The methods in the following sections of the booklet explain approaches to generating an expected credit loss estimate. As banks' processes evolve, other methods could emerge that are not discussed in this booklet.

[39] Refer to ASC paragraph 326-20-30-1.

Loss-Rate Methods

A net loss-rate method measures the amount of charge-offs, net of recoveries, over the contractual term of a financial asset or pool of financial assets. Generally, expected net loss rates are derived from historical loss information. Management applies the expected net loss rates to the outstanding balance of the subject financial asset or pool of financial assets as of a specific point in time (this does not include expected losses on future assets not currently recorded). Generally, calculations used to develop a net loss rate are relatively simple; however, certain inputs may need additional analysis. The calculation of the net loss rate solely using historical data does not include expectations of future or recent changes in credit quality; adjustments may need to be considered as part of the overall ACL estimation processes.

Loss-rate methods[40] can involve a variety of approaches. Three common loss-rate approaches are as follows:

- **Open pool or snapshot method:** The starting point for the calculation consists of assets that are outstanding at the end of a given time frame and are made up of assets that were originated in various years. Additional assets may be added to pools of loans under an open pool method.
- **Closed pool or cohort method:** This method consists of pools of assets originated only in one time frame. The pools of assets under a closed pool method are static and run off.
- **Weighted average remaining maturity (WARM) method:**[41] A loss-rate method that estimates expected credit losses over the remaining life of the financial assets and uses a weighted average of the assets' contractual terms to estimate the pool's remaining contractual term. The WARM method uses average annual net charge-off rates and the amortization-adjusted remaining life, plus qualitative adjustments to estimate the ACLs.

Probability of Default/Loss Given Default Method

The PD/LGD method estimates expected credit losses by considering three inputs:

PD: The PD is the probability that a financial asset will experience default over a particular time frame. The PD is commonly referred to as the frequency or likelihood of default. The PD is typically calculated as a percentage of the total segment balance that has defaulted over a specific time frame (e.g., contractual term). The PD may be adjusted for current conditions and reasonable and supportable forecasts.

LGD: The LGD is the loss rate expected at the time of default. The LGD represents the amount of defaulted financial assets ultimately charged off. The LGD is sometimes referred to as the severity of the loss. LGD is typically determined using the bank's historical information about financial assets that have defaulted and subsequently been charged off, net

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[40] For more information, refer to ASC paragraphs 326-20-55-18 to 55-27.

[41] For more information, refer to the FASB Staff Question and Answer (Q&A) Topic 326, No. 1, "Whether the Weighted-Average Remaining Maturity Method Is an Acceptable Method to Estimate Expected Credit Losses."

of recoveries. Similar to the PD calculation, the bank may directly adjust the LGD for current conditions and reasonable and supportable forecasts.

Exposure at default (EAD): The EAD is the projected balance of the financial asset at the time of default. For example, if a financial asset has a balance of $1,000, but the bank expects the borrower to make payments such that the loan is $900 when it defaults, then the EAD is $900. Using these three inputs, the calculation of expected credit losses is determined by the following equation:

$$Expected\ credit\ losses = PD\ \times LGD\ \times EAD$$

There is no common definition of what constitutes a default. Many banks define default as when a financial asset becomes 90 days past-due, fails to pay beyond a certain date, or does not pay off at maturity.

Management's documentation of the assumptions in the PD/LGD method is an essential part of the estimation process. Default probabilities and loss rates tied to defaults may vary by industry, product, geography, or time frame. Banks should document the inputs, data, and assumptions used for the PD/LGD method.

Vintage Method

The vintage method,[42] similar to other methods, measures the amount of charge-offs, net of recoveries, over the contractual term of a pool of financial assets. It is a closed pool method focusing on the origination period (referred to as a vintage). A vintage can reflect changes in underwriting, regulations, or economic conditions during a particular year, quarter, month, or another length of time, depending upon the product and origination volume.

The vintage method is best suited for portfolios that have large data sets and predictable loss patterns comparable with past and future periods and may be driven, in part, by the time frame of origination. The vintage method may be inappropriate for a portfolio in which losses are idiosyncratic (e.g., losses vary by loan or loan segments) or when the pool contains a small number of assets.

Assets are segmented and stratified by origination period. Assets can be sub-segmented by a secondary risk characteristic, such as risk rating. The loss rate by vintage is calculated as the ratio of the losses in the period to the original vintage balance. To calculate the lifetime loss rate, the net charge-offs of each vintage are divided by the original principal balance, which remains the denominator in each calculation. The loss experience of the original balance is tracked and summed over the contractual term yielding a cumulative life-of-loan loss rate based on historic averages.

This process is repeated for each vintage pool. After accumulating the data and calculating the loss rates, management can analyze trends and calculate expected vintage loss rates for future periods. To start, management estimates loss rates for future periods based on

[42] Refer to ASC paragraphs 326-20-55-29 to 55-31 for an example of the vintage method.

historical trends. Adjustments to historical loss rates may be necessary based on changes in conditions and the reasonable and supportable forecast period outlook. Depending on differences in the composition of the vintages, different adjustment factors may be necessary for each vintage. Once management calculates the expected future loss rates for each vintage, the original principal balance for each vintage is multiplied by the expected future loss rate to determine an ACL. Qualitative adjustments can then be made by vintage or evaluated at the pool level. Management should not double count losses in both the loss rates and qualitative factors, as this would be inconsistent with accounting standards.

Roll-Rate Method

The roll-rate[43] method uses delinquency and LGD to estimate future losses. More frequently applied to retail portfolios, this method uses migration analysis that tracks loans as they migrate (or roll) through different delinquency categories to loss classification (i.e., charge-off). The financial assets in the portfolios are segmented based on delinquency. This method is best used for very short-duration, unsecured loans.

After the roll rate is calculated, it is applied to the amortized cost basis of the financial assets at quarter end in each of the respective period end delinquency categories. The total of all balances in each delinquency bucket multiplied by the appropriate roll rate are aggregated to arrive at the estimated ACL. Under the roll-rate method, adjustments for qualitative factors and reasonable and supportable forecasts can be applied within the model at the individual roll-rate level or as an adjustment to model output.

Discounted Cash Flow Method

ASC Topic 326 allows, but does not require, the use of a DCF method to estimate expected credit losses.[44] A DCF method is, however, likely required when the effects and impacts of the economic loss associated with a TDR can only be captured through such an approach (e.g., an interest rate concession). The requirements to estimate lifetime expected credit losses[45] by considering available information relevant to assessing the collectibility of the cash flows, including current conditions and reasonable and supportable forecasts, still apply when using the DCF method. Examiners should evaluate management's best estimate of expected future cash flows based on reasonable and supportable assumptions and projections. If management estimates a range for either the amount or timing of cash flows, examiners should also assess the documentation and support for the estimate.

ACL measurements using a DCF method may be applied on a pool basis using assumptions reflecting average characteristics of the assets in the pool (e.g., average contractual term, prepayment speed, default rate) or applied to an asset evaluated individually. Under the DCF method, an ACL is estimated as the difference between the amortized cost basis and the

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[43] For an example of a roll-rate analysis, refer to appendix G of the "Credit Card Lending" booklet of the *Comptroller's Handbook*.

[44] Refer to ASC paragraphs 326-20-30-3 through 30-4.

[45] Refer to ASC paragraphs 326-20-30-6 through 30-9.

present value of cash flows expected to be collected. If a bank chooses to use a DCF method, expected cash flows must be discounted at the effective interest rate of the asset.[46]

The EIR used to discount cash flows of a financial asset is the contractual interest rate adjusted for net deferred fees or costs, premium, or discount existing at the origination or acquisition of the asset. The EIR represents management's expected yield over the contractual life of the asset upon its origination or acquisition. If the financial asset's contractual interest rate varies based on subsequent changes in an independent factor, that financial asset's EIR shall be calculated based on the factor as it changes over the life of the financial asset.[47] Examples of independent factors include the reference rate or covenants that change pricing based on collateral coverage or leverage ratio. Management is not required to project changes in the independent factor for purposes of estimating expected future cash flows. Examiners should determine whether management projects changes in the factor for purposes of estimating future cash flows and confirm that the same projections in determining the EIR were used to discount those cash flows. Lastly, examiners should verify that management's choice of projecting discount rate (and cash flows) is applied consistently for all financial assets whose contractual interest rate varies based on subsequent changes in an independent factor.

Refer to ASC Section 326-20-55 and FASB Staff Q&A Topic 326, No. 1: "Whether the Weighted Average Remaining Maturity Method is an Acceptable Method to Estimate Expected Credit Losses" for illustrative methodology examples.

Reasonable and Supportable Forecasts

Excerpt 17: Interagency Policy Statement on Allowances for Credit Losses

When estimating expected credit losses, ASC Subtopic 326-20 requires management to consider forward-looking information that is both reasonable and supportable and relevant to assessing the collectibility of cash flows. Reasonable and supportable forecasts may extend over the entire contractual term of a financial asset or a period shorter than the contractual term. ASC Subtopic 326-20 does not prescribe a specific method for determining reasonable and supportable forecasts nor does it include bright lines for establishing a minimum or maximum length of time for the reasonable and supportable forecast period. Judgment is necessary in determining an appropriate period(s) for each bank. Reasonable and supportable forecasts may vary by portfolio segment or individual forecast input. These forecasts may include data from internal sources, external sources, or a combination of both. Management is not required to search for all possible information nor incur undue cost and effort to collect data for its forecasts. However, reasonably available and relevant information should not be ignored in assessing the collectibility of cash flows. Management should evaluate the appropriateness of the reasonable and supportable forecast period each reporting period, consistent with other inputs used in the estimation of expected credit loss.

[46] Refer to ASC paragraph 326-20-30-4.

[47] Ibid.

Generally, forecasts should address anticipated changes in the economic environment over a time frame that management can reasonably support. Some banks may be able to develop reasonable and supportable forecasts over the entire contractual term of the financial asset or a group of financial assets; however, ASC Subtopic 326-20 does not require management to develop a forecast for the entire contractual term. ASC Subtopic 326-20 recognizes that estimating expected credit losses requires a significant amount of management judgment, and as the length of the forecast increases, the judgment involved also increases. The length of the forecast period may vary among banks and portfolios within the same bank. It is generally inappropriate for management to assert that it cannot develop a reasonable and supportable forecast of any length of time and instead rely solely on historical loss information with no consideration of forward-looking information. Generally, it also is inappropriate for management to shorten the reasonable and supportable forecast period and not consider available information relevant to the expected credit loss estimate.

The length of the forecast period is not an accounting policy election but rather an assumption in ACL methodologies that should be subjected to appropriate governance and controls (similar to how management treats other methodology assumptions in its ACLs). Banks should support the appropriateness of the forecast period selection. Banks should periodically review their reasonable and supportable forecast period and make any necessary changes to the period being used to properly estimate expected credit losses.[48] For example, a bank may determine that it is appropriate to shorten or lengthen its reasonable and supportable forecast period from prior periods because of changes in the uncertainty of some or all of the inputs and assumptions used to measure expected credit losses.

Forward-looking information typically reflects management's expectation of changes to relevant macroeconomic data such as changes in unemployment rates and property values or other factors associated with the financial asset's collectibility. The factors that management considers in developing the forecast should be appropriate and relevant. For example, if a bank has a narrow geographic footprint, a national economic forecast may not be appropriate. When developing the forecast, management may use internal data, external data, or a combination of both. Management may find that the bank's internal information is sufficient in determining collectibility or may use a third-party forecast.

Excerpt 18: Interagency Policy Statement on Allowances for Credit Losses

Banks may develop reasonable and supportable forecasts by using one or more economic scenarios. FASB ASC Topic 326 does not require the use of multiple economic scenarios; however, banks are not precluded from considering multiple economic scenarios when estimating expected credit losses.

Economic scenarios used in ACL methodologies vary from bank to bank and can include "worst case" and "best case," for example. ASC Subtopic 326-20 does not require management to develop a detailed economic forecast if forward-looking information relevant

[48] Refer to question 12 under topic 12D, "Allowance for Credit Losses," of the *Bank Accounting Advisory Series*.

to estimating credit losses is incorporated through other means, such as a well-supported qualitative adjustment.

Developing forecasts does not require a bank to perform computer-based modeling. ASC Subtopic 326-20 allows forward-looking information to be incorporated into the estimate of expected credit losses quantitatively or qualitatively. Forecast adjustments may also be applied through qualitative adjustments or as an overlay to the quantitative loss estimate. Regardless of the approach, forecasts should be appropriately supported and subjected to appropriate governance and controls.

Reversion Period

Excerpt 19: Interagency Policy Statement on Allowances for Credit Losses

When the contractual term of a financial asset extends beyond the reasonable and supportable period, FASB ASC Topic 326 requires reverting to historical loss information, or an appropriate proxy, for those periods beyond the reasonable and supportable forecast period (often referred to as the reversion period). Management may revert to historical loss information for each individual forecast input or based on the entire estimate of loss.

For time frames beyond which management is able to make or obtain reasonable and supportable forecasts of expected credit losses, it is inappropriate for management to assume that the financial assets will experience zero credit losses if there is even a remote risk of loss. Rather, management must revert to historical loss information that is associated with the specific financial asset or group of financial assets.[49]

Management may choose to revert to historical loss information at the input or output level. If management chooses to revert at the input level, individual economic variables may revert to historical trends specific to that variable after a set time frame. Using reversion at the input level, there may be differing lengths of reasonable and supportable forecasts for the individual inputs (e.g., macroeconomic variables), and not all inputs may revert at the same time or in the same manner. If management chooses to revert at the output level, it may elect to revert at the parameter level (e.g., PD, LGD, or EAD) or revert at the aggregate expected credit loss level. Using reversion at the output level, management reverts to historical loss information without regard to individual inputs.

Excerpt 20: Interagency Policy Statement on Allowances for Credit Losses

FASB ASC Topic 326 does not require the application of a specific reversion technique or use of a specific reversion period. Reversion to historical loss information may be immediate, occur on a straight-line basis, or use any systematic, rational method. Management may apply different reversion techniques depending on the economic environment or the financial asset portfolio. Reversion techniques are not accounting policy elections and should be evaluated for

[49] Refer to ASC paragraph 326-20-30-9.

appropriateness each reporting period, consistent with other inputs used in the estimation of expected credit losses.

Two examples of other rational and systematic reversion methods include using mathematical functions to determine the rate of reversion to a long-term rate and analyzing previous credit cycles and modeling a loss curve based on historical reversion to a long-term rate.

Excerpt 21: Interagency Policy Statement on Allowances for Credit Losses

ASC Subtopic 326-20 does not specify the historical loss information that is used in the reversion period. This historical loss information may be based on long-term average losses or on losses that occurred during a particular historical period(s). Management may use multiple historical periods that are not sequential. Management should not adjust historical loss information for existing economic conditions or expectations of future economic conditions for periods beyond the reasonable and supportable period. Management should consider whether the historical loss information may need to be adjusted for differences in current asset specific characteristics such as differences in underwriting standards, portfolio mix, or when historical asset terms do not reflect the contractual terms of the financial assets being evaluated as of the reporting date.

ASC Subtopic 326-20 does not require management to revert to a long-term historical average loss rate as the bank's historical loss experience. Management may select a specific historical period that is relevant to the period of the remainder of the financial asset's contractual term and may use multiple historical periods that are not sequential.

It is important to recognize that the portion of the expected credit loss estimate generated from the reversion period may make up a significant portion of the overall ACL estimates of expected credit losses. For example, if a financial asset has a long contractual term, such as 30 years, but management is only able to generate a reasonable and supportable forecast for a short time frame, such as one year, and losses tend to occur after the first year, then the portion of the estimate of expected credit losses that represents the reversion period may make up a substantial part of the total.

Qualitative Factor Adjustments

Excerpt 22: Interagency Policy Statement on Allowances for Credit Losses

The estimation of ACLs should reflect consideration of all significant factors relevant to the expected collectibility of the bank's financial assets as of the reporting date. Management may begin the expected credit loss estimation process by determining its historical loss information or obtaining reliable and relevant historical loss proxy data for each segment of financial assets with similar risk characteristics. Historical credit losses (or even recent trends in losses) generally do not, by themselves, form a sufficient basis to determine the appropriate levels for ACLs.

Management should consider the need to qualitatively adjust expected credit loss estimates for information not already captured in the loss estimation process. These qualitative factor adjustments may increase or decrease management's estimate of expected credit losses.

Historical loss experience generally provides a quantitative starting point for management's estimate of expected credit losses. Consistent with ASC Subtopic 326-20, management should consider relevant qualitative factors that may cause the current expected credit loss estimate of the financial asset portfolio as of the evaluation date to differ from the historical loss experience.

Banks have flexibility in how to estimate expected credit losses. For example, a bank can incorporate qualitative factor adjustments through

- stand-alone adjustments applied to the quantitatively calculated ACLs.
- adjustments to individual inputs within a model that, as appropriate, increase or decrease the calculated historical loss rate applied to a pool of financial assets. Such adjustments are often referred to as model overlays.
- a combination of standalone adjustments and adjustments to individual inputs within a quantitative calculation.

For example, a bank may estimate the expected effect of loosened underwriting by including a separate standalone adjustment that is added to a quantitatively calculated ACL for a specific pool of assets. Another bank may adjust a PD within a PD/LGD model to reflect increased PD because of loosened underwriting. Lastly, a bank may use a combination of these adjustments, as long as the effects are not double-counted in the total ACL estimates.

All of these methods of reflecting expected credit losses are acceptable provided the adjustments for qualitative factors are reasonably and consistently determined and are adequately supported.

Excerpt 23: Interagency Policy Statement on Allowances for Credit Losses

Adjustments should not be made for information that has already been considered and included in the loss estimation process.

For example, as originally projected losses due to loosened underwriting standards are reflected in historical loss data through actual charge-offs (for a bank that uses a loss-rate method), the effects would eventually be fully captured in the quantitative portion of an ACL. During the transition period, however, the effects of loosened underwriting may not fully be captured in a quantitative ACL and may require a qualitative adjustment for a period of time. The qualitative adjustment amount declines when the impact of loosened underwriting is reflected in historical loss data and captured in the quantitative loss estimation processes.

Excerpt 24: Interagency Policy Statement on Allowances for Credit Losses

Management should consider the qualitative factors that are relevant to the bank as of the reporting date, which may include

- the nature and volume of the bank's financial assets.
- the existence, growth, and effect of any concentrations of credit.
- the volume and severity of past due financial assets, the volume of nonaccrual assets, and the volume and severity of adversely classified or graded assets. (See note 6.)
- the value of the underlying collateral for loans that are not collateral-dependent.
- the bank's lending policies and procedures, including changes in underwriting standards, collections, write-offs, and recoveries.
- the quality of the bank's credit review function.
- the experience, ability, and depth of the bank's lending, investment, collection, and other relevant management and staff.
- the effect of other external factors such as the regulatory, legal, and technological environments; competition; and events such as natural disasters.
- actual and expected changes in international, national, regional, and local economic and business conditions and developments (see note 7) in which the bank operates that affect collectibility of financial assets.

Management may consider the following qualitative factors for HTM debt securities as of the reporting date (see note 8):

- The effect of recent changes in investment strategies and policies.
- The existence and effect of loss allocation methods, the definition of default, the impact of performance and market value triggers, and credit and liquidity enhancements associated with debt securities.
- The effect of structural subordination and collateral deterioration on tranche performance of the debt securities.
- The quality of underwriting for the collateral backing the debt securities.
- The effect of legal covenants associated with debt securities.

Note 6: Adversely classified or graded loans are loans rated substandard (or its equivalent) or worse under the bank's loan classification system. For criteria related to the classification of an investment security, refer to the interagency policy statement "Uniform Agreement on the Classification and Appraisal of Securities Held by Depository Banks" issued by the OCC, the Board of Governors of the Federal Reserve, and Federal Deposit Insurance Corporation in October 2013. (Refer to OCC Bulletin 2013-28.)

Note 7: Changes in economic and business conditions and developments included in qualitative factor adjustments are limited to those that affect the collectibility of a bank's financial assets and are relevant to the bank's financial asset portfolios. For example, an economic factor for current or forecasted unemployment at the national or state level may indicate a strong job market based on low national or state unemployment rates, but a local unemployment rate, which may be significantly higher, because, for example, of the actual or forecasted loss of a major local employer may be more relevant to the collectibility of a bank's financial assets.

Note 8: This list is not all-inclusive, and not all of the factors listed are relevant to all banks all of the time.

There may be additional qualitative factors that are more likely to affect the collectibility of HTM debt security portfolios. Credit loss and recovery experience may vary significantly depending on the stage of the business cycle. For example, an overreliance on historical loss information drawn from experience during a period of economic growth is unlikely to result in realistic estimates of credit losses during an economic downturn.

Examiners should determine whether management considered the qualitative and environmental factors relevant to the financial assets in the bank's portfolio as of the evaluation date. The documentation of adjustments to historical loss rates on pools of financial assets may vary, depending on the sophistication of ACL evaluation processes and the extent of available data. For noncomplex banks, the documentation could be a simple narrative that describes recent trends and conditions and management's conclusions as to the factors' effect on charge-offs. In banks with greater analytical capabilities, the adjustments to historical loss experience may be based on the results of a regression analysis or other modeling technique. In any case, examiners should consider whether management's documentation reflects consideration of relevant qualitative factors and provides reasonable support for management's conclusions about the adjustments' effect on loss recognition.

Excerpt 25: Interagency Policy Statement on Allowances for Credit Losses

Changes in the level of a bank's ACLs may not always be directionally consistent with changes in the level of qualitative factor adjustments due to the incorporation of reasonable and supportable forecasts in estimating expected losses. For example, if improving credit quality trends are evident throughout a bank's portfolio in recent years, but management's evaluation of reasonable and supportable forecasts indicates expected deterioration in credit quality of the bank's financial assets during the forecast period, the ACL as a percentage of the portfolio may increase.

Zero Loss Considerations

Excerpt 26: Interagency Policy Statement on Allowances for Credit Losses

There may be certain financial assets for which the expectation of credit loss is zero after evaluating historical loss information, making necessary adjustments for current conditions and reasonable and supportable forecasts, and considering any collateral or guarantee arrangements that are not free-standing contracts. (See note 9.)

Note 9: ASC Topic 326 defines a freestanding contract as entered into separate and apart from any of the entity's other financial instruments or equity transactions or in conjunction with some other transaction and is legally detachable and separately exercisable.

ASC Subtopic 326-20 requires that an estimate of expected credit losses be recorded for all financial assets held at amortized cost even if the risk of loss is remote, regardless of the method applied to estimate credit losses. ASC Subtopic 326-20 does not require measurement of expected credit losses on a financial asset (or group of financial assets) for which the expectation of nonpayment of the amortized cost basis is zero.

It is inconsistent with ASC Subtopic 326-20 to assume that the risk of nonpayment is zero for a financial asset that is secured by collateral simply because the current value of the collateral exceeds the amortized cost basis of the asset, unless the asset is a collateral-dependent financial asset.[50] Rather, consistent with ASC Subtopic 326-20, management would consider potential future changes in collateral values and historical loss experience for financial assets that were secured by similar types of collateral. There are special considerations, however, when a collateral maintenance provision exists.[51]

Excerpt 27: Interagency Policy Statement on Allowances for Credit Losses

Factors to consider when evaluating whether expectations of zero credit loss are appropriate may include:

- A long history of zero credit loss.
- A financial asset that is fully secured by cash or cash equivalents.
- High credit ratings from rating agencies with no expected future downgrade.
- Principal and interest payments that are guaranteed by the U.S. government.
- The issuer, guarantor, or sponsor can print its own currency and the currency is held by other central banks as reserve currency.
- The interest rate on the security is recognized as a risk-free rate.

A loan that is fully secured by cash or cash equivalents, such as certificates of deposit issued by the lending bank, would likely have zero credit loss expectations. Similarly, the guaranteed portion of a U.S. Small Business Administration loan or security purchased on the secondary market through the Small Business Administration's fiscal and transfer agent would likely have zero credit loss expectations if these financial assets are unconditionally guaranteed by the U.S. government.

Management may apply similar treatment to guaranteed portions of U.S. Department of Veterans Affairs and U.S. Federal Housing Administration home loans. There are potential guarantee implications if the lender fails to comply with Veterans Affairs lender/servicer requirements. In these cases, zero loss estimates would typically be supported with empirical evidence, such as a bank's favorable claims history. If there is evidence of noncompliance or lack of full guarantee repayment, adjustments may be warranted.

Excerpt 28: Interagency Policy Statement on Allowances for Credit Losses

Examples of HTM debt securities that may result in expectations of zero credit loss include U.S. Treasury securities as well as mortgage-backed securities issued and guaranteed by the Government National Mortgage Association, the Federal Home Loan Mortgage Corporation, and the Federal National Mortgage Association.

Additionally, a collateral-dependent loan that has been charged down to the fair value of collateral may not require an ACL.

[50] For more information, refer to the "Collateral-Dependent Financial Assets" section of this booklet.

[51] For more information, refer to appendix F, "Financial Assets Secured by Collateral Maintenance Provisions," of this booklet.

> **Excerpt 29: Interagency Policy Statement on Allowances for Credit Losses**
>
> Assumptions related to zero credit loss expectations should be included in the bank's ACL documentation.

Regulatory Considerations for Debt Securities

There are regulatory considerations that relate to the investment portfolio. 12 CFR 1 is the primary regulation governing the securities portfolio of a national bank. 12 CFR 160 implements the statutory requirements that establish permitted types of investments for FSAs.[52]

National banks: Type I securities[53] are not subject to investment grade criteria for determining eligibility to purchase.[54] Examiners should not criticize a national bank for the absence of individual credit analysis or designation of zero credit loss for Type I securities, which are considered credit risk free. For Type I securities such as government general obligations (and municipal revenue bonds for well-capitalized banks), examiners should determine whether management has performed credit analysis consistent with the regulation and safe and sound banking practices.[55]

FSAs: The Home Owners' Loan Act (12 USC 1461 et seq.) and 12 CFR 160 establish that FSA investments are subject to terms, conditions, or limitations prescribed by the OCC by policy directive, order, or regulation. Examiners should not criticize an FSA for the lack of credit determination or designation of zero credit loss for securities issued by the U.S. government, such as U.S. Treasury securities, and by a government-sponsored enterprise. Impairment in U.S. Treasuries and government-sponsored enterprise securities is considered a non-credit event and would be accounted for through other comprehensive income, if applicable. An FSA may invest in state and local government obligations subject to appropriate underwriting and certain limitations established in 12 CFR 160.42. The FSA

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[52] For more information about the investment authorities of FSAs, refer to 12 USC 1464(c) and Office of Thrift Supervision*'s Examination Handbook,* section 540, "Investment Securities," and section 230, "Equity Investments." Additionally, section 5(c) of the Home Owners' Loan Act (12 USC 1464(c)) permits FSAs to invest in federal government, government-sponsored entities, and other government securities and instruments without limit. FSAs may acquire investment grade commercial paper and certain corporate securities within limits established by 12 USC 1464(c)(2)(D). Investment grade is defined as a security that meets the creditworthiness standards described in 12 USC 1831e.

[53] Typical Type I securities, as defined at 12 CFR 1.2(j), include U.S. Treasury, agency, and municipal government general obligations. For well-capitalized national banks, as defined in 12 CFR 6.4, municipal revenue bonds are considered Type I securities. For banks that are not well-capitalized, municipal revenue bonds are Type III securities.

[54] This is explained in the "Guidance on Due Diligence Requirements in Determining Whether Securities Are Eligible for Investment" conveyed by OCC Bulletin 2012-18, "Alternatives to the Use of External Credit Ratings in the Regulations of the OCC: Final Rules and Guidance."

[55] For more information, refer to OCC Bulletin 2012-18.

must consider, as appropriate, the interest rate, credit, liquidity, price, transaction, and other risks associated with the investment activity and determine that such investment is appropriate. The FSA must determine that the obligor has adequate resources and willingness to provide for all required payments on its obligations in a timely manner. Examiners should determine whether management performed credit analysis consistent with the regulation and safe and sound banking practices.[56]

Estimation of ACLs for Available-for-Sale Debt Securities

> **Excerpt 30: Interagency Policy Statement on Allowances for Credit Losses**
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> FASB ASC Subtopic 326-30, “Financial Instruments – Credit Losses – Available-for-Sale Debt Securities,” describes the accounting for expected credit losses associated with AFS debt securities. Credit losses for AFS debt securities are evaluated as of each reporting date when the fair value is less than amortized cost. FASB ASC Subtopic 326-30 requires credit losses to be calculated individually, rather than collectively, using a DCF method, through which management compares the present value of expected cash flows with the amortized cost basis of the security. An ACL is established, with a charge to the PCL, to reflect the credit loss component of the decline in fair value below amortized cost. If the fair value of the security increases over time, any ACL that has not been written off may be reversed through a credit to the PCL. The ACL for an AFS debt security is limited by the amount that the fair value is less than the amortized cost, which is referred to as the fair value floor.

Under ASC Subtopic 326-30, AFS debt securities follow the AFS debt securities model, rather than the CECL ACL measurement model.[57] AFS debt securities are evaluated for impairment on an individual security basis and cannot be evaluated collectively. An ACL on an individual AFS debt security is limited to the difference between the fair value and the amortized cost basis, establishing a fair value floor. This fair value floor acknowledges that management can limit its credit loss exposure by selling an AFS debt security. Because there is no requirement to consider the length of time a security has been in an unrealized loss position when determining if the security has experienced a credit loss, banks should not establish length of time thresholds that would delay credit loss recognition.

At the end of each reporting period, when evaluating AFS debt securities for impairment, the first step is determining whether the security is impaired. If fair value is greater than amortized cost, the security is not impaired. Any unrealized gain is recognized in other comprehensive income, and the AFS debt security should not have an ACL.

If the fair value is less than amortized cost, the security is impaired. The next step for impaired AFS debt securities is to determine the bank’s intent or requirement to sell. If the bank intends to, or would “more likely than not” be required to sell the security before recovery of the amortized cost, the bank measures the loss based on the fair value and

[56] Ibid.

[57] For more information about the key components of the AFS credit loss model, refer to ASC paragraphs 326-30-35-6 through 35-11 and ASC paragraphs 326-30-55-1 through 55-4.

records a write-down through earnings in the amount that amortized cost exceeds fair value, establishing a new amortized cost basis. For these securities, any subsequent increases in fair value do not increase the amortized cost basis; rather, the increase in fair value is recognized as a prospective yield adjustment and/or a gain on sale, as applicable.

Excerpt 31: Interagency Policy Statement on Allowances for Credit Losses

If management intends to sell an AFS debt security or will more likely than not be required to sell the security before recovery of the amortized cost basis, the security's ACL should be written off and the amortized cost basis of the security should be written down to its fair value at the reporting date with any incremental impairment reported in income.

For AFS debt securities that management does not intend to sell and is not "more likely than not" required to sell, management would recognize any credit loss on individual securities through an ACL rather than a direct charge-off. For such AFS debt securities, credit improvement in subsequent periods is recognized immediately by reversing an ACL, as opposed to recognizing these improvements over time as a yield adjustment.

Excerpt 32: Interagency Policy Statement on Allowances for Credit Losses

A change during the reporting period in the non-credit component of any decline in fair value below amortized cost on an AFS debt security is reported in other comprehensive income, net of applicable income taxes. (See note 10.)

When evaluating impairment for AFS debt securities, management may evaluate the amortized cost basis including accrued interest receivable, or may evaluate the accrued interest receivable separately from the remaining amortized cost basis. If evaluated separately, accrued interest receivable is excluded from both the fair value of the AFS debt security and its amortized cost basis. (See note 11.)

Note 10: Non-credit impairment on an AFS debt security that is not required to be recorded through the ACL should be reported in other comprehensive income as described in ASC paragraph 326-30-35-2.

Note 11: The accounting policy elections described in the "Accrued Interest Receivable" section of this policy statement apply to accrued interest receivable recorded for an AFS debt security if a bank excludes applicable accrued interest receivable from both the fair value and amortized cost basis of the security for purposes of identifying and measuring impairment.

If the bank has the intent and the ability to hold the impaired security, the bank should determine if the impairment is due to credit loss or non-credit loss. There are numerous factors that may be considered when determining if impairment is due to credit loss, such as[58]

- the extent to which the fair value is less than the amortized cost basis.

[58] Refer to ASC paragraphs 326-30-55-1 through 4.

- adverse conditions specifically related to the security, a related industry, or a geographic area (for example, changes in the financial condition of the issuer of the security, or in the case of an asset-backed debt security, in the financial condition of the underlying loan obligors).
- payment structure of the debt security (for example, whether it is backed by loans with nontraditional terms) and the likelihood of the issuer being able to make payments that increase in the future.
- failure of the issuer of the security to make scheduled interest or principal payments.
- any changes to the rating of the security by an external rating agency.[59]
- whether the security is issued by the U.S. government or a government-sponsored enterprise.

ASC Subtopic 326-30 requires credit losses to be calculated individually, rather than collectively, using a DCF method. The bank should make its best estimate of the cash flows expected to be collected based on past events, current conditions, and reasonable and supportable forecasts.[60] The cash flows expected to be collected should be discounted at the EIR implicit in the security at the date of acquisition. The amount of loss (credit and non-credit) is subject to the fair value floor described above. An ACL is established for the amount of credit loss with a corresponding increase to the provision for credit losses on AFS debt securities. Any non-credit portion of the loss is recognized in other comprehensive income.

Off-Balance-Sheet Credit Exposures

Excerpt 33: Interagency Policy Statement on Allowances for Credit Losses

FASB ASC Topic 326 requires that a bank estimate expected credit losses for off-balance-sheet credit exposures within the scope of FASB ASC Topic 326 over the contractual period during which the bank is exposed to credit risk. The estimate of expected credit losses should take into consideration the likelihood that funding will occur as well as the amount expected to be funded over the estimated remaining contractual term of the off-balance-sheet credit exposures. Management should not record an estimate of expected credit losses for off-balance-sheet exposures that are unconditionally cancellable by the issuer.

Management must evaluate expected credit losses for off-balance-sheet credit exposures as of each reporting date. While the process for estimating expected credit losses for these exposures is similar to the one used for on-balance-sheet financial assets, these estimated credit losses are not recorded as part of the ACLs because cash has not yet been disbursed to fund the contractual obligation to extend credit. Instead, these loss estimates are recorded as a liability, separate and distinct from the ACLs. (See note 12.) The amount needed to adjust the liability for expected credit losses for off-balance-sheet credit exposures as of each reporting date is reported in net income.

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[59] For more information, refer to OCC Bulletin 2012-18.

[60] Refer to ASC paragraph 326-30-55-2.

> Note 12: The ACL associated with off-balance-sheet credit exposures is included in the "Allowance for Credit Losses on Off-Balance-Sheet Credit Exposures" in Schedule RC-G, "Other Liabilities," in the call report.

Banks may have off-balance-sheet credit exposures, such as commitments to extend credit to commercial customers or home equity lines of credit (HELOC), for which the bank is contractually obligated to fulfill any draws made by the borrower on those commitments. For off-balance-sheet credit exposures that do not meet the definition of a derivative and are not subject to ASC Topic 815, the associated liability for expected credit losses for off-balance-sheet credit exposures should be recognized and measured under ASC Subtopic 326-20. Expected credit losses on these credit exposures are estimated over the contractual period during which the bank is exposed to credit risk due to the contractual obligation to extend credit to the borrower.

The bank may have commitments to extend credit that are cancellable at any time at the bank's discretion (e.g., credit lines in the credit card portfolio). ASC Subtopic 326-20 refers to these as unconditionally cancellable by the lender. If the commitment can be unilaterally cancelled by the lender, then the bank should not record or measure an estimate of expected credit losses.

Consolidating and Finalizing ACL Estimates

> **Excerpt 34: Interagency Policy Statement on Allowances for Credit Losses**
>
> Management is responsible for maintaining ACLs at appropriate levels and for documenting its analyses in accordance with the concepts and requirements set forth in GAAP, regulatory reporting requirements, and the "Interagency Policy Statement on Allowances for Credit Losses." Management should evaluate the ACLs reported on the balance sheet as of the end of each period, and debit or credit the related PCLs to bring the ACLs to an appropriate level as of each reporting date.
>
> Estimating appropriate ACLs involves a high degree of management judgment and is inherently imprecise. A bank's process for determining appropriate ACLs may result in a range of estimates for expected credit losses. A bank should support and record its best estimate within the range of expected credit losses.

ACL summary schedules provide the support for consolidation of ACL estimates for review and reporting purposes. The summary schedules document the relationship between the findings of the detailed analysis of the loan and securities portfolios and the amount of ACLs and provisions reported each period. The summary typically contains common elements such as

- the estimate of the expected credit loss or range of loss estimated for each category evaluated (e.g., pools and individual financial assets).
- the aggregate estimated credit loss using the bank's methodologies.
- a summary of current ACL balances.

- the amount, if any, by which an ACL is to be adjusted.
- sub-schedules, if applicable, of credit loss estimates that reconcile to the summary schedule, depending on the level of detail that supports ACL analyses.

Excerpt 35: Interagency Policy Statement on Allowances for Credit Losses

When an appropriate expected credit loss framework has been used to estimate expected credit losses, it is inappropriate for the board of directors or management to make further adjustments to ACLs for the sole purpose of reporting ACLs that correspond to a peer group median, a target ratio, or a budgeted amount. Additionally, neither the board of directors nor management should further adjust ACLs beyond what has been appropriately measured and documented in accordance with FASB ASC Topic 326.

A bank's review and approval process for ACLs relies on data and information provided in the consolidated summary. There should generally be no material differences between the consolidated loss estimate, as determined by ACL methodologies, and final ACL balances reported in the bank's financial statements. During the review process, management may identify necessary adjustments to the consolidated loss estimate recommended to provide a better estimate of the expected credit losses as of the balance-sheet date. The adjustments may be due to information as of the balance-sheet date that is not known at the time of the initial loss estimate but surfaces subsequently (including subsequent events that provide additional evidence about conditions that existed as of the balance-sheet date).

It is important that these adjustments are consistent with GAAP and reviewed and approved by appropriate personnel, departments, or committees. It would be appropriate for the summary to provide each subsequent reviewer with an understanding of the support behind these adjustments. Management should document the nature of any supplemental adjustments and the underlying rationale for making the changes to ACLs. This documentation should be provided to those making the final determination of ACL amounts.

Examiners should assess the frequency, materiality, reasonableness and support of adjustments made by management. Examiners should investigate potential reasons for the adjustments and determine whether there are gaps in the bank's processes or weaknesses in the methodology and determine whether such gaps and weaknesses are deficient practices.

ACLs could include an unallocated portion that is not attributed to specific pools of assets. An unallocated amount may be an acceptable part of ACLs under GAAP as long as it is appropriately supported by management's objective evidence, analysis, and documentation.

Capital Considerations

On February 14, 2019, the OCC, Federal Reserve, and Federal Deposit Insurance Corporation (collectively, federal banking agencies) published a final rule in the *Federal Register* (2019 final rule) that[61]

- conforms definitions in the agencies' capital and non-capital rules to the CECL standard.
- provides an option to elect a regulatory capital transition under 12 CFR 3 for banks that experience a decrease in capital as a result of adopting the CECL standard.

The 2019 final rule allows banks to phase in, for regulatory capital purposes over a three-year period, the day-one adverse effects on regulatory capital resulting from adopting CECL. The final rule includes a new term, adjusted allowances for credit losses (AACL), for regulatory capital purposes. AACL excludes ACLs on **purchased credit deteriorated** (PCD) and AFS debt securities, and AACL includes the liability for expected credit losses on off-balance-sheet credit exposures. In contrast, an ACL applies to both financial assets and AFS debt securities.

On October 1, 2020, the federal banking agencies published a final rule in the *Federal Register* (2020 final rule) that provides eligible banks with an option to mitigate estimated capital effects of CECL for two years, followed by the three-year transition period. To be eligible to elect this option, a bank must have adopted CECL during 2020. The 2020 final rule provides relief to allow banks to better focus on supporting lending to creditworthy borrowers in light of strains on the economy resulting from the coronavirus pandemic.[62]

The 2020 final rule does not replace the three-year transition option in the 2019 final rule; a bank may elect the three-year transition option in the 2019 final rule at the time that the bank adopts CECL. Banks that adopted CECL in 2020 may elect the options in both the 2019 final rule and the 2020 final rule; all other banks may elect the option in the 2019 final rule at the time of their CECL adoption.[63]

Tier 2 Capital

When calculating its total capital ratio using the standardized approach as defined in the OCC's capital regulations,[64] a bank is permitted to include in its tier 2 capital the amount of AACL up to 1.25 percent of the bank's standardized total risk-weighted assets (excluding its

[61] For more information, refer to OCC Bulletin 2019-10, "Implementation of Current Expected Credit Loss Standard: Final Rule."

[62] For more information, refer to OCC Bulletin 2020-30, "Regulatory Capital: Joint Statement on the Interaction of the Revised Transition of the CECL Methodology for Allowances With Section 4014 of the CARES Act."

[63] For more information, refer to OCC Bulletin 2020-85, "Current Expected Credit Losses: Final Rule."

[64] Refer to 12 CFR 3.20(d)(3). Any amount of ACL greater than the 1.25 percent limit is deducted from standardized total risk-weighted assets.

standardized market risk-weighted assets, if applicable). Also, advanced approaches banks[65] must include in their advanced approaches-adjusted total capital the amount by which eligible credit reserves exceed total expected credit losses, up to a limit of 0.6 percent of credit risk-weighted assets.[66]

[65] A bank is an advanced approaches bank if it is a subsidiary of a globally systemically important bank holding company, as identified pursuant to 12 CFR 217.402, or a category II bank as defined in 12 CFR 3.2. Refer to 12 CFR 3.100.

[66] Eligible credit reserves and expected credit losses are defined in 12 CFR 3.2.

Risk Management

Each bank should identify, measure, monitor, and control risk by implementing an effective risk management system appropriate for the size and complexity of its operations. When examiners assess the adequacy of the bank's risk management system, they consider the bank's policies and procedures, personnel, processes, and control systems. Refer to the "Corporate and Risk Governance" booklet of the *Comptroller's Handbook* for an expanded discussion of risk management.

Responsibilities of the Board of Directors

Excerpt 36: Interagency Policy Statement on Allowances for Credit Losses

The board of directors, or a committee thereof, is responsible for overseeing management's significant judgments and estimates used in determining appropriate ACLs. The board of directors' oversight activities are subject to review by examiners and should include:

- retaining experienced and qualified management to oversee all ACL and PCL activities.
- reviewing and approving the bank's loss estimation policies and loss charge-off policies, including any revisions thereto, at least annually.
- reviewing management's assessment of the loan review system and management's conclusion and support for whether the system is sound and appropriate for the bank's size and complexity.
- reviewing management's assessment of the effectiveness of processes and controls for monitoring the credit quality of the investment portfolio.
- reviewing management's assessments of and support for the estimated amounts reported each period for the ACLs and PCLs.
- requiring management to periodically validate, and, when appropriate, revise loss estimation methods and supporting assumptions.
- approving the internal and external audit plans for the ACLs, as applicable.
- reviewing any identified audit findings and monitoring resolution of those items.

Responsibilities of Management

Excerpt 37: Interagency Policy Statement on Allowances for Credit Losses

Management is responsible for maintaining ACLs at appropriate levels and for documenting its analyses in accordance with the concepts and requirements set forth in GAAP, regulatory reporting requirements, and this policy statement. Management should evaluate the ACLs reported on the balance sheet as of the end of each period (and for credit unions, prior to paying dividends), and debit or credit the related PCLs to bring the ACLs to an appropriate level as of each reporting date. The determination of the amounts of the ACLs and the PCLs should be based on management's current judgments about the credit quality of the bank's financial assets and should consider known and expected relevant internal and external factors that significantly affect collectibility over reasonable and supportable forecast periods for the bank's financial assets as well as appropriate reversion techniques applied to periods beyond the reasonable and supportable forecast periods. Management's evaluations are subject to review by examiners.

In carrying out its responsibility for maintaining appropriate ACLs, management should adopt and adhere to written policies and procedures that are appropriate to the bank's size and the nature, scope, and risk of its lending and investing activities. These policies and procedures should address the processes and activities described in the "Documentation Standards" section of this policy statement.

Management fulfills other responsibilities that aid in the maintenance of appropriate ACLs. These activities include, but are not limited to

- establishing and maintaining appropriate governance activities for the loss estimation processes. These activities may include reviewing and challenging the assumptions used in estimating expected credit losses and designing and executing effective internal controls over the credit loss estimation methods.
- periodically performing procedures that compare credit loss estimates to actual write-offs, at the portfolio level and in aggregate, to confirm that amounts recorded in the ACLs were sufficient to cover actual credit losses. This analysis supports that appropriate ACLs were recorded and provides insight into the loss estimation process's ability to estimate expected credit losses. This analysis is not intended to reflect the accuracy of management's economic forecasts.
- periodically validating the loss estimation processes, including changes, if any, to confirm processes are appropriate for the bank.
- engaging in sound risk management of third parties involved (see note 13) in ACL estimation processes, if applicable, to ensure that the loss estimation processes are commensurate with the level of risk, the complexity of the third-party relationship, and the bank's organizational structure.

Additionally, if a bank uses loss estimation models in determining expected credit losses, management should evaluate the models before they are employed and modify the model logic and assumptions, as needed, to help ensure that the resulting loss estimates are consistent with GAAP and regulatory reporting requirements. (See note 14.) To demonstrate such consistency, management should document its evaluations and conclusions regarding the appropriateness of estimating credit losses with models. When used for multiple purposes within a bank, models should be specifically adjusted and validated for use in ACL loss estimation processes. Management should document and support any adjustments made to the models, the outputs of the models, and compensating controls applied in determining the estimated expected credit losses.

Note 13: Guidance on third-party service providers may be found in OCC Bulletin 2013-29, "Third-Party Relationships: Risk Management Guidance"; OCC Bulletin 2017-7, "Third-Party Relationships: Supplemental Examination Procedures"; and OCC Bulletin 2020-10, "Third-Party Relationships: Frequently Asked Questions to Supplement OCC Bulletin 2013-29."

Note 14: Refer to the interagency statement titled "Supervisory Guidance on Model Risk Management," conveyed by OCC Bulletin 2011-12. The statement also addresses the incorporation of vendor products into a bank's model risk management framework following the same principles relevant to in-house models.

Policies and Procedures

Excerpt 38: Interagency Policy Statement on Allowances for Credit Losses

The policies and procedures governing a bank's ACL processes and the controls over these processes should be designed, implemented, and maintained to reasonably estimate expected credit losses for financial assets and off-balance-sheet credit exposures as of the reporting date. The policies and procedures should describe management's processes for evaluating the credit quality and collectibility of financial asset portfolios, including reasonable and supportable forecasts about changes in the credit quality of these portfolios, through a disciplined and consistently applied process that results in an appropriate estimate of the ACLs. Management should review and, as needed, revise the bank's ACL policies and procedures at least annually, or more frequently if necessary.

A bank's ACL-related policies and procedures for the systems, processes, and controls necessary to maintain appropriate ACLs should address

- processes that support the determination and maintenance of appropriate levels for ACLs that are based on a comprehensive, well-documented, and consistently applied analysis of a bank's financial asset portfolios and off-balance-sheet credit exposures. The analyses and loss estimation processes used should consider all significant factors that affect the credit risk and collectibility of the financial asset portfolios,
- the roles, responsibilities, and segregation of duties of the bank's senior management and other personnel who provide input into ACL processes, determine ACLs, or review ACLs. These departments and individuals may include accounting, financial reporting, treasury, investment management, lending, special asset or problem loan workout teams, retail collections and foreclosure groups, credit review, model risk management, internal audit, and others, as applicable. Individuals with responsibilities related to the estimation of ACLs should be competent and well-trained, with the ability to escalate material issues.
- processes for determining the appropriate historical periods to use as the basis for estimating expected credit losses and approaches for adjusting historical loss information to reflect differences in asset specific characteristics, as well as current conditions and reasonable and supportable forecasts that are different from conditions existing in the historical period.
- processes for determining and revising the appropriate techniques and periods to revert to historical loss information when the contractual term of a financial asset or off-balance-sheet credit exposure extends beyond the reasonable and supportable forecast period.
- processes for segmenting financial assets for estimating expected credit losses and periodically evaluating the segments to determine whether the assets continue to share similar risk characteristics.
- data capture and reporting systems that supply the quality and breadth of relevant and reliable information necessary, whether obtained internally or externally, to support and document the estimates of appropriate ACLs for regulatory reporting requirements and, if applicable, financial statement disclosure requirements.
- the description of the bank's systematic and logical loss estimation process for determining and consolidating expected credit losses to ensure that the ACLs are recorded in accordance with GAAP and regulatory reporting requirements. This may include
  - management's judgments, accounting policy elections, and application of practical expedients (see note 15) in determining the amount of expected credit losses.
  - the process for determining when a loan is collateral-dependent.

  - the process for determining the fair value of collateral, if any, used as an input when estimating the ACL, including the basis for making any adjustments to the market value conclusion and how costs to sell, if applicable, are calculated.
  - the process for determining when a financial asset has zero credit loss expectations.
  - the process for determining expected credit losses when a financial asset has a collateral maintenance provision.
  - a description of and support for qualitative factors that affect collectibility of financial assets.
- procedures for validating and independently reviewing the loss estimation process as well as any changes to the process from prior periods.
- policies and procedures for the prompt charge-off of financial assets, or portions of financial assets, when available information confirms the assets to be uncollectible, consistent with longstanding regulatory classification principles and reporting requirements.
- the systems of internal controls used to confirm that the ACL processes are maintained and periodically adjusted in accordance with GAAP and interagency guidelines establishing standards for safety and soundness.

Note 15: A practical expedient is when GAAP allows alternative accounting principles that would otherwise not be generally accepted. They are generally considered simplifications to reduce cost and burden of complying with the otherwise required accounting principles. While some practical expedients are optional (i.e., accounting policy elections), others may be required if applicable (e.g., use of the collateral-dependent practical expedient for banks' collateral-dependent financial assets).

Banks often include policies, procedures, and controls related to ACLs in accounting or credit risk management policies, or a combination thereof.

Control Systems

Control systems are the functions (such as internal and external audits, credit risk review, quality control, quality assurance, and model validation) and information systems that bank managers use to measure performance, make decisions about risk, and assess the effectiveness of processes and personnel. A common risk management system used in many banks, formally or informally, involves three lines of defense: (1) frontline units, business units, or functions that create risk; (2) independent risk management, credit risk review, compliance officer, and chief credit officer to assess risk independent of the units that create risk; and (3) internal audit, which provides independent assurance.

Control systems may exist in the first, second, or third lines of defense. The roles and responsibilities and related control systems of each line of defense may vary given a bank's size, complexity, and risk profile. For example, in small, noncomplex banks, control systems are often integrated in the first line. Large, complex banks often formally use the three lines of defense and have control system responsibilities segregated in a different line of defense. Regardless of whether the control system resides in the same business as the activity or area it oversees, an effective control system is independent of the area it oversees.[67]

[67] For more information about the three lines of defense, refer to the "Corporate and Risk Governance" booklet of the *Comptroller's Handbook.*

Each bank should have internal controls and information systems that are appropriate to the bank's size and the nature, scope, and risk of the bank's activities that provide for, among other things, timely and accurate financial, operational, and regulatory reports.[68] The effectiveness of internal controls is assessed through the bank's risk reviews (often second line of defense) and audit program (third line of defense). Risk reviews may include model validation, credit risk review, appraisal and evaluation review, stress testing, compliance reviews, and back testing the expected loss estimate. Audit programs are the independent control function that verifies the effectiveness of the bank's risk management system.

Excerpt 39: Interagency Policy Statement on Allowances for Credit Losses

Control systems for the ACL estimation processes should

- provide reasonable assurance regarding the relevance, reliability, and integrity of data and other information used in estimating expected credit losses.
- provide reasonable assurance of compliance with laws, regulations, and the bank's policies and procedures.
- provide reasonable assurance that the bank's financial statements are prepared in accordance with GAAP, and the bank's regulatory reports are prepared in accordance with the applicable instructions.
- include a well-defined and effective loan review and grading process that is consistently applied and identifies, measures, monitors, and reports asset quality problems in an accurate, sound, and timely manner. The loan review process should respond to changes in internal and external factors affecting the level of credit risk in the portfolio.
- include a well-defined and effective process for monitoring credit quality in the debt securities portfolio.

An effective credit risk review system provides management with accurate and timely credit quality information for financial and regulatory reporting purposes, including the determination of appropriate ACLs. Ongoing or periodic review of a bank's loan portfolio is particularly important to the estimation of ACLs because loss expectations may change as the credit quality of a loan changes.[69]

Data Integrity

The design and implementation of an internal control environment for data used within ACL estimates should be appropriate for the bank's size and complexity. The reasonableness of ACL estimates highly depends on using relevant and reliable data and applying these data using a consistent method. It is important that management consider the relevant data the bank's information systems are capturing, relevant data not being captured that may be necessary to reasonably estimate expected credit losses, and controls over the completeness and accuracy of these data. Under CECL, data that have not previously been used for

[68] Refer to 12 CFR 30, appendix A.

[69] For more information, refer to OCC Bulletin 2020-50, "Credit Risk: Interagency Guidance on Credit Risk Review Systems."

financial and regulatory reporting purposes may be used to estimate expected credit losses. Consequently, the data may not have been subject to an adequate internal control structure and procedures for financial and regulatory reporting. In such cases, the design and implementation of an internal control environment that is appropriate to the bank's size and complexity are essential for data that were not previously collected or maintained or were not previously used for financial and regulatory reporting. Controls should be in place for

- the data's completeness and accuracy.
- maintenance of sources of information used to support ACLs (e.g., spreadsheets, reports, and systems).
- relevant and reliable data (regardless of their source) used within models.
- validation to support model choices, including the overall theoretical construction, key assumptions, data, and specific mathematical calculations.[70]
- proper use of password-protection and read-only functions.
- independent review or validation of changes (e.g., changes to spreadsheets and models) by a party independent of ACL processes.
- data backup or disaster recovery procedures.

Internal and External Audit

Audits of ACL estimation processes involve an independent party reviewing source documents, underlying assumptions, and calculations to determine whether the established methodologies support reasonable ACL estimates. The bank's internal and external audit functions typically audit the bank's ACLs and related processes.[71]

Internal Audit

The internal audit function's primary role is to independently and objectively review and evaluate bank activities. This role helps to maintain and improve the efficiency and effectiveness of the bank's risk management system, internal control systems, and corporate governance. The frequency of the audits of ACLs and associated internal controls should be commensurate with the bank's size, complexity, and risk profile. Internal audit should assess the risks of material misstatement posed by estimates of expected credit loss and evaluate control effectiveness. An auditor may assess

- governance and controls.
- model risk management.
- third-party risk management.
- data relevance and reliability.
- portfolio segmentation (pooling).
- adjustments to historical loss information.

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[70] For more information regarding model validation, refer to OCC Bulletin 2011-12.

[71] For more information about internal and external audit functions and risk-based auditing, refer to the "Internal and External Audits" booklet of the *Comptroller's Handbook.*

- adjustments to reasonable and supportable forecasts.
- implementing reversion.
- estimation uncertainty.
- elements susceptible to management's bias.

An independent bank function (e.g., model risk management) typically assesses items that are quantitative in nature, such as portfolio segmentation or implementing reversion. Internal audit reviews the work performed by independent functions to test adherence to bank policies.

External Audit

An external audit program provides the board with information about the bank's financial reporting risk areas, e.g., the bank's internal controls over financial reporting, the accuracy of its recording of transactions, including any **uncorrected misstatements** identified by the external auditor, and the completeness of its financial reports prepared in accordance with applicable accounting standards. ACLs are typically reviewed as part of the external audit program, as it relates to the bank's annual reporting requirements.[72] Examiners should consider evaluating the external audit's scope and procedures related to the ACL when examiners identify concerns with the bank's ACL balances.

Banks subject to Sarbanes–Oxley Act audits requirements[73] must include an audit opinion on the effectiveness of the banks' internal controls over financial reporting in their financial statements filed with the U.S. Securities and Exchange Commission. The auditor opines on whether the company has effective internal controls over financial reporting. This generally includes reviewing controls over ACL processes. The integrated audit opinion may cover ACL **critical audit matters** (CAM) and deficiencies in internal controls over financial reporting.

Analysis and Validation

Excerpt 40: Interagency Policy Statement on Allowances for Credit Losses

Various techniques are available to assist management in analyzing and evaluating the ACLs. For example, comparing estimates of expected credit losses to actual write-offs in aggregate, and by portfolio, may enable management to assess whether the bank's loss estimation process is sufficiently designed. (See note 16.) Further, comparing the estimate of ACLs to actual write-offs at the financial asset portfolio level allows management to analyze changing portfolio

[72] Banks with more than $500 million in assets are required to have external audit programs that conform to 12 CFR 363.2(a), "Annual Reporting Requirements." For more information, refer to the "Internal and External Audits" booklet of the *Comptroller's Handbook.*

[73] Banking organizations are directly subject to the Sarbanes–Oxley Act if they have a class of securities registered or they are required to file reports under the Securities Exchange Act of 1934 (public banking organizations). For applicability to nonpublic companies refer to OCC Bulletin 2003-21, "Application of Recent Corporate Governance Initiatives to Non-Public Banking: Interagency Statement."

characteristics, such as the volume of assets or increases in write-off rates, which may affect future forecast adjustments. Techniques applied in these instances do not have to be complex to be effective, but, if used, should be commensurate with the bank's size and complexity.

Note 16: Banks using models in the loss estimation process may incorporate a qualitative factor adjustment in the estimate of expected credit losses to capture the variance between modeled credit loss expectations and actual historical losses when the model is still considered predictive and fit for use. Banks should monitor this variance, and changes to the variance, to determine if the variance is significant or material enough to warrant further changes to the model.

The following sections of this booklet discuss common ways management can analyze and validate ACLs.

Back Testing

Back testing is used to measure model outcomes and can take many forms based on the model's objective. Back testing provides insight into a model's ability to estimate credit losses and helps support the conclusion that ACLs were appropriate to cover actual credit charge-offs. Back testing at the financial asset portfolio level allows management to analyze changing portfolio characteristics, such as volume of assets or increases in charge-off rates, which may alter future forecast adjustments. Three examples of back testing are

- comparing prepayment and recovery projections to actual prepayments and recoveries.
- comparing projected balances to actual balances to test the reasonableness of contractual term and attrition assumptions.
- comparing projected losses to actual charge-offs to test the reasonableness of loss-rate estimates.

Analyzing the results of even high-quality and well-designed back testing can pose challenges, because back testing is not a straightforward, mechanical process that always produces unambiguous results. Results exhibiting deviations or mismatches do not always indicate a faulty estimation or assumption. For example, actual credit charge-offs may materially deviate from estimated losses for reasons outside of management's control, such as a local natural disaster. Management would use judgment to determine whether back-testing results warrant an adjustment to ACL estimates.

Sensitivity Analysis

Sensitivity analysis is a method that may be used to understand and address estimation uncertainty. Sensitivity analysis of ACLs is the review of how changes to various scenarios or assumptions could impact loss estimates. This analysis increases management's understanding, in advance, of how a range of economic outcomes or changes to primary assumptions might impact a bank's ACLs. Management may perform a sensitivity analysis of alternative economic scenarios, selected modeling choices and assumptions (e.g., reasonable and supportable forecast horizons, reversion methods, estimation data, and probability weightings, as applicable), loss-rate methodologies, and alternative risk characteristics (e.g., FICO score, delinquency status, or risk ratings).[74]

Ratio Analysis

Excerpt 41: Interagency Policy Statement on Allowances for Credit Losses

Ratio analysis may also be useful for evaluating the overall reasonableness of ACLs. Ratio analysis assists in identifying divergent or emerging trends in the relationship of ACLs to other factors such as adversely classified or graded loans, past due and nonaccrual loans, total loans, historical gross write-offs, net write-offs, and historic delinquency and default trends for securities.

Comparing the bank's ACLs to those of peer banks may provide management with limited insight into management's own ACL estimates. Management should apply caution when performing peer comparisons as there may be significant differences among peer banks in the mix of financial asset portfolios, reasonable and supportable forecast period assumptions, reversion techniques, the data used for historical loss information, and other factors.

When used prudently, comparison of estimated expected losses to actual write-offs, ratio analysis, and peer comparisons can be helpful as a supplemental check on the reasonableness of management's assumptions and analyses. Because appropriate ACLs are bank-specific estimates, the use of comparisons does not eliminate the need for a comprehensive analysis of financial asset portfolios and the factors affecting their collectibility.

When an appropriate expected credit loss framework has been used to estimate expected credit losses, it is inappropriate for the board of directors or management to make further adjustments to ACLs for the sole purpose of reporting ACLs that correspond to a peer group median, a target ratio, or a budgeted amount.

Validation of Methodology

Excerpt 42: Interagency Policy Statement on Allowances for Credit Losses

After analyzing ACLs, management should periodically validate the loss estimation process, and any changes to the process, to confirm that the process remains appropriate for the bank's size, complexity, and risk profile. The validation process should include procedures for review by a party with appropriate knowledge, technical expertise, and experience who is independent of the bank's credit approval and ACL estimation processes. A party who is independent of these processes could be from internal audit staff, a risk management unit of the bank independent of management supervising these processes, or a contracted third party. One party need not perform the entire analysis as the validation may be divided among various independent parties. (See note 17.)

Note 17: Engaging the bank's external auditor to perform the validation process described in this excerpt when the external auditor also conducts the bank's independent financial statement audit may impair the auditor's independence

[74] For more information, refer to OCC Bulletin 2012-14, "Stress Testing: Interagency Stress Testing Guidance."

under applicable auditor independence standards and prevent the auditor from performing an independent audit of the bank's financial statements.

ASC Subtopic 326-20 does not specify a method for measuring expected credit losses and allows a bank to choose methods that reasonably reflect the bank's expectations of the credit loss estimate. Validation of ACL methodologies is sensitive to the loss forecasting approach and assumptions selected. For example, risk managers choose the model, conditioning variables, estimation data, length of the reasonable and supportable forecast horizon, reversion method, and the path of macroeconomic conditions.

Validation of a bank's ACL methodologies can vary in accordance with the bank's complexity, size, and inherent risk and the bank's ACL processes. Banks may have different types of models and assumptions supporting the end-to-end ACL processes. Sound validation activities are ongoing, and practices such as the back testing of expected loss results and sensitivity analysis of material assumptions are important tools that can help management confirm the soundness of its ACL methodologies. Effective outcomes analysis allows the board and management to understand and analyze the various choices and components of ACL methodologies, and to assess the adequacy of reserves over a variety of economic conditions.

Model Risk Management

Excerpt 43: Interagency Policy Statement on Allowances for Credit Losses

If a bank uses loss estimation models in determining expected credit losses, management should evaluate the models before they are employed and modify the model logic and assumptions, as needed, to help ensure that the resulting loss estimates are consistent with GAAP and regulatory requirements. (See note 18.) To demonstrate such consistency, management should document its evaluations and conclusions regarding the appropriateness of estimating credit losses with models.

Note 18: Refer to the interagency statement titled "Supervisory Guidance on Model Risk Management" conveyed by OCC Bulletin 2011-12. The statement addresses the incorporation of vendor products into a bank's model risk management framework following the same principles relevant to in-house models.

Banks may incorporate a qualitative factor adjustment in the estimate of expected credit losses to capture the variance between modeled credit loss expectations and actual historical losses when the model is still considered predictive and fit for use. Banks would typically monitor this variance, as well as changes to the variance, and determine if the variance is significant or material enough to warrant further changes to the model.

Even with skilled modeling and robust validation, model risk cannot be eliminated. Model risk is the potential for adverse consequences from decisions based on incorrect or misused model outputs and reports. Model risk can lead to financial loss, poor business and strategic decision making~~, or damage to a bank's reputation~~. Appropriate model risk management governs the use of models and fits into the bank's overall governance framework. Sound model governance includes board and management oversight, policies, procedures, planning, assessing risk, internal audit, model inventory documentation, and data management.

Model risk can be effectively managed if management establishes limits on model use, monitors model performance, appropriately adjusts or revises models over time, and supplements model results with other analysis and information. Informed conservatism, in either the inputs or the design of a model or through explicit adjustments to outputs, can be a helpful short-term tool. Consistent with sound model risk management, management should strive to develop and use accurate models and address model weaknesses in a timely manner.

Validation activities include evaluating and concluding on the conceptual soundness of the model. This includes evaluating the model's developmental processes and evidence. Additional validation activities include monitoring model performance and assessing model output. Banks may conduct validation in-house, or may outsource it to a third party. If the bank's ACL methodologies involve third-party models, bank management should determine whether models are working as intended and if existing validation activities are sufficient. A bank's customization choices should be documented and justified as part of the validation, and the relevance and appropriateness of any third-party provided data or assumptions should be validated. If a third party provides the bank with a report of independent certification or validation of a third-party model, the report should identify model aspects that were reviewed, highlight potential deficiencies over a range of financial and economic conditions (as applicable), and determine whether adjustments or other compensating controls are warranted. Bank management should understand any of the limitations experienced by the validator in assessing the processes and codes used in the model.[75]

Excerpt 44: Interagency Policy Statement on Allowances for Credit Losses

When used for multiple purposes within a bank, models should be specifically adjusted and validated for use in ACL loss estimation processes. Management should document and support any adjustments made to the models, the outputs of the models, and compensating controls applied in determining the estimated expected credit losses.

Banks may, for example, use stress testing models in ACL estimation processes. There are significant differences in the underlying purpose and requirements of stress testing compared with those applicable to estimating expected credit losses under CECL. If a bank plans to use its stress testing model(s) as a building block in the development of its models for ACL estimations, management should understand any modeling differences and make appropriate adjustments to the stress testing model(s). Management should confirm that the resulting adjusted model(s) that will be used to support its ACL estimation processes are fit for the purpose of estimating ACLs under GAAP.[76]

[75] For more information, refer to OCC Bulletin 2011-12 and question 22 in OCC Bulletin 2020-10.

[76] For more information, refer to question 41 of "Frequently Asked Questions on the New Accounting Standard on Financial Instruments—Credit Losses" conveyed by OCC Bulletin 2019-17.

Third-Party Risk Management

A bank may engage a third party for all or part of the bank's ACL processes.[77] For example, a bank may use third-party ACL models, use third-party data, or engage a third party for model validation activities.

The bank's use of third parties does not diminish the board and senior management's responsibility to ensure that the activity is performed in a safe and sound manner and complies with applicable laws and regulations. Management should adopt third-party risk management processes commensurate with the level of risk and complexity of the bank's third-party relationships and organizational structure. Third parties used in a bank's ACL estimation processes should be incorporated into the bank's third-party risk management processes. The board and management should provide more comprehensive and rigorous oversight and management of third-party relationships that involve critical activities.[78]

A sufficient management review of controls around a third-party ACL model may include a combination of a review of the third party's system and organization controls (SOC) reports as well as a model validation contracted by management. A SOC report typically covers more generalized controls common to all users, whereas a bank-specific validation may also be necessary to test bank-specific data, settings, and inputs.

[77] The OCC does not require banks to engage third parties to assist management in calculating the ACL.

[78] Refer to OCC Bulletin 2013-29 and OCC Bulletin 2020-10 for more information regarding third-party risk management.

Examination Procedures

This booklet contains expanded procedures for examining ACL estimation processes beyond the core assessment contained in the "Community Bank Supervision," "Federal Branches and Agencies Supervision," and "Large Bank Supervision" booklets of the *Comptroller's Handbook*. Examiners determine which expanded procedures to perform, if any, during examination planning or after drawing preliminary conclusions during the core assessment.

Examiners may use the "Suggested Request List" list in appendix A of this booklet as a guide when determining the appropriate materials to request from the bank for the ACL examination.

Scope

These procedures are designed to help examiners tailor the examination to each bank and determine the scope of the ACL examination. Examiners should consider work performed by internal and external auditors, independent risk management (e.g., model validation), and other examiners reviewing related areas. Examiners should perform only those objectives and procedures relevant to the scope of the examination as determined by the following objectives. Seldom is every objective or step of the expanded procedures necessary.

Objective: Determine the scope of the ACL examination and identify examination objectives and activities necessary to meet the needs of the supervisory strategy for the bank.

1. Review the following for previously identified deficiencies related to ACLs or the areas affecting ACLs (e.g., credit administration, credit risk ratings, loss mitigation, collection, and charge-off practices). These previously identified deficiencies may require follow-up for the purposes of the ACL examination. Review the following, as applicable:

    - Supervisory strategy
    - Scope memorandum
    - Previous supervisory activity work papers
    - Previous supervisory letters and reports of examination, and management's responses
    - Bank correspondence regarding ACL methodologies and estimates
    - Model validation and ongoing model performance reports
    - Internal and external audit reports related to ACLs or other areas affecting ACLs, work papers, and management's responses.
    - Credit risk review and loan review reports and management's response.

2. Determine whether there have been any significant changes in ACL processes or methodology since the last examination, such as

    - staff responsible for the primary oversight of ACLs.
    - review and approval processes for changes to the bank's written ACL policies and procedures.

- review and approval processes for management's ACL estimates each quarter before the completion of the call report.
- primary responsibilities of credit administration, finance, accounting, and model risk management in the ACL estimation processes.
- the nature and extent of model use in ACL estimation processes.
- model risk management practices.
- balance-sheet composition (in terms of dollar volume, percentage, or growth).
- estimation methods used.
- primary assumptions that may drive significant changes in ACL estimates, which may differ across banks and portfolios (e.g., segmentation, contractual term, economic scenario, reasonable and supportable period, reversion technique, or qualitative factors).
- third-party relationships.

3. Review the Uniform Bank Performance Report, and other OCC reports and analytical tools relating to ACLs. Identify trends in growth rates, portfolio composition, concentrations, portfolio performance, pricing, contractual term by loan type, and other factors that may affect the bank's credit risk profile and corresponding estimation of expected losses. Assess any change in strategic direction, product mix, or policies, as well as increases in credit risk relevant for evaluating ACL levels.

4. Review policies, procedures, and reports that management uses to supervise ACLs, focusing on any significant changes or trends since the last examination.

5. Review ACLs reported in the bank's most recent regulatory reports and financial reports (quarterly U.S. Securities and Exchange Commission's Form 10-Q filings and annual Form 10-K filings, as applicable) to confirm these amounts reconcile to the bank's ACL analyses. For any material difference between the result of the bank's ACL analyses and the reported ACLs, investigate the reasons for and explanation of the material difference to determine if it can be adequately explained. In particular, if the internal ACL analyses reflect an "unallocated" amount of ACL and external regulatory and financial reports do not reflect an "unallocated" amount for ACLs, discern how the unallocated amounts were allocated prior to finalizing regulatory and financial reports. Discuss the results with the loan portfolio manager, EIC, or credit team lead, as applicable, to determine next steps if material differences are not reconciled.

6. Based on the analysis of the information in this objective and discussion with management, determine the scope and objectives of ACL examination.

7. Select from the following examination procedures the necessary steps to meet examination objectives and the supervisory strategy.

Appropriateness of Allowance for Credit Losses Methodologies

Conclusion: ACL methodologies are (appropriate or not appropriate).

The conclusion on ACL methodologies considers the bank's policies, processes, personnel, and control systems.

Policies

Policies are statements of actions adopted by a bank to pursue certain objectives. Policies guide decisions, often set standards (e.g., on risk limits), and should be consistent with the bank's underlying mission, risk appetite, and core values. Policies should be reviewed periodically for effectiveness and approved by the board or designated committee. Procedures outline the detailed actions and steps to effectively implement established policies.

Examiners should review the bank's policies when there are changes in the bank's strategic objectives, standards, size, complexity, or risk profile. These changes may be signaled by new or modified products and services, changes in board or management composition, or alterations in the bank's lending area or geographic footprint. Examiners should review policies if there is a material change in the bank's ACL methodologies. Examiners may also choose to review material policy changes or a policy change log.

Objective: To determine whether the bank has effective policies and procedures that are consistent with safe and sound banking practices and are appropriate for the size, nature, and scope of the bank's operations and ACLs.

1. Determine whether ACL policies and procedures provide sufficient description of the methodology for consistently estimating and maintaining appropriate ACLs, including detail supporting key decisions, judgments, and interpretations. Consider

    - the bank's size, complexity, condition, and risk.
    - the nature and extent of significant, unique, or concentrated loan portfolios.
    - sophistication of loan origination, servicing, and collection systems.
    - sophistication of data capture and reporting systems.

2. Determine whether ACL policies and procedures appropriately address roles, responsibilities, and segregation of duties of management and other personnel who provide input into ACL processes, determine ACLs, or review ACLs. Segregation of duties includes interactions among independent risk management, credit administration, finance, accounting, audit, credit risk review, or any others involved in the determination of ACLs.

3. Determine whether ACL policies and procedures describe the bank's systematic and logical loss estimation process for determining and consolidating expected credit losses to facilitate recording ACLs in accordance with GAAP and regulatory reporting requirements. Consider whether policies and procedures address

   - processes for determining the appropriate historical period(s) to use as the basis for estimating expected credit losses and approaches for adjusting historical loss information to reflect differences in asset-specific characteristics, as well as current conditions and reasonable and supportable forecasts that are different from conditions in the historical period(s).
   - techniques used to revert to historical loss information when the contractual term of a financial asset or off-balance-sheet credit exposure extends beyond the reasonable and supportable forecast period(s).
   - processes for segmenting and periodically evaluating pools of financial assets that share similar risk characteristics not otherwise individually evaluated.
   - how assets are identified and treated when evaluated individually.
   - guidelines for estimating the contractual term of the asset, including prepayment and determining whether an asset has a reasonable expectation of becoming a TDR.
   - determining reasonable and supportable forecasts that affect expected collectibility.

4. Determine whether ACL policies and procedures adequately address data capture and reporting systems that supply the quality and breadth of relevant and reliable information necessary, whether obtained internally or externally, to support and document the estimates of appropriate ACLs for regulatory reporting requirements and, if applicable, financial statement and disclosure requirements.

5. Determine whether policies and procedures address

   - management judgment.
   - accounting policy elections and application of practical expedients in determining the amount of expected credit losses.
   - the process for determining when a loan is collateral-dependent.
   - the process for determining the fair value of collateral, if any, used as an input when estimating an ACL, including the basis for making any adjustments to the market value conclusion and how costs to sell, if applicable, are calculated.
   - the process for determining when a financial asset has zero credit loss expectations.
   - the process for determining expected credit losses when a financial asset has a collateral maintenance provision.
   - a description of and support for qualitative factors that affect collectibility of financial assets.

6. Determine whether policies and procedures address the prompt charge-off of financial assets, or portions of financial assets, when available information confirms the assets to be uncollectible, consistent with longstanding regulatory classification principles and reporting requirements.

7. Determine whether policies and procedures include a description of internal controls used to maintain and periodically adjust ACL processes in accordance with GAAP and interagency guidelines establishing standards for safety and soundness.

8. Determine whether ACL policies provide for a board review of management's assessment of the appropriateness of ACLs each quarter before completion of the call report.

9. Determine whether ACL policies provide for a periodic validation review of ACL processes as well as any changes to the processes by parties independent of ACL processes.

10. Verify that the board or designated committee reviews and approves, at least annually, the bank's ACL policies.

11. Determine through review or discussion with examiners reviewing these areas whether commercial and retail loan policies and procedures provide for

    - timely and accurate credit classification and risk grading for commercial and retail lending activities, including current assessment of collateral value in support of classified loans.
    - timely charge-off for uncollectible balances of commercial loans (refer to the call report instructions and definition of "loss" in the "Rating Credit Risk" booklet of the *Comptroller's Handbook*).
    - timely charge-off of uncollectible balances of retail loans (refer to OCC Bulletin 2000-20).
    - timely designation of nonaccrual.
    - timely identification of TDRs and reasonably expected TDRs.
    - timely reductions or terminations of cancellable off-balance-sheet credit exposures based on deterioration of the borrower's financial capacity or deterioration in the condition or value of collateral.

Processes

Processes are the procedures, programs, and practices that impose order on a bank's pursuit of its objectives. Processes define how daily activities are carried out. Effective processes are consistent with the underlying policies and are governed by appropriate checks and balances (such as internal controls).

Objective: To determine whether the bank has sufficient processes in place to estimate appropriate ACLs.

1. Evaluate whether ACL processes are reasonable and supportable, consistent with underlying policies and procedures, and effectively communicated to appropriate staff. Assess the methodologies management uses to arrive at the overall ACL estimates. Specifically, review the ACL processes that generated the most recent ACL estimates along with the supporting documentation.

In making the assessment,

- consider whether the bank's ACL processes are commensurate with the bank's credit risk profile, composition, and complexity of the commercial and retail lending portfolios, including PCD loans. Refer to appendix C of this booklet for more information on PCD loans.
- evaluate whether the management information systems (MIS) functionalities are commensurate with the complexity of the bank's lending activities and risk profile. Assess if management's assumptions, valuations, and adjustments are reasonably supported and documented.
- determine if management has established reasonable thresholds that trigger a secondary review of adjustments to forecasts. Thresholds may be warranted for changes in the quantitative loss estimation process or adjustments to qualitative factors.

2. Evaluate whether ACL processes include the appropriate asset population for ACL estimations. The appropriate asset population should not include assets measured at fair value through net income, including those assets for which the fair value option has been elected; loans HFS; policy loan receivables of an insurance entity; loans and receivables under common control; and receivables arising from operating leases.

Historical Loss Information

3. Evaluate whether management has sufficiently documented the historical loss calculation. Determine whether the historical time frame chosen and length of the historical period were appropriate for each pool of assets. Refer to appendix D of this booklet for more information, including when to recognize charge-offs for loans carried at amortized cost that are transferred to HFS.

4. Determine whether management used any third-party data to supplement the bank's historical data and whether the data used are relevant and appropriate.

Segmentation

5. Evaluate whether the asset portfolios are appropriately segmented into pools sharing common risk characteristics (e.g., financial asset type, collateral type, credit score, or external credit ratings, risk ratings or classifications, industry, and geography).

6. Determine whether management has identified and defined segments, documented its segmentation methodology, and periodically evaluated the segments to confirm they continue to share common risk characteristics.

7. Determine whether management's ACL processes include appropriate identification of higher-risk retail loans, such as second-lien residential real estate secured products. If so, determine whether the loans are appropriately segmented. Refer to OCC Bulletin 1999-10, "Subprime Lending Activities"; OCC Bulletin 1999-15, "Subprime Lending:

Risk and Rewards" (national banks); OCC Bulletin 2012-6, "Interagency Guidance on ALLL Estimation Practices for Junior Liens: Guidance on Junior Liens"; and OCC Bulletin 2014-29, "Risk Management of Home Equity Lines of Credit Approaching the End-of-Draw Periods: Interagency Guidance."

8. Evaluate how management determines which loans and HTM securities should be evaluated individually, including rationale to support that the individually evaluated securities do not share similar risk characteristics with existing segments.

9. Verify that individually evaluated loans are not double-counted in the ACL estimates (i.e., if a financial asset is evaluated individually, that asset should not be included in a collective assessment or segment).

Collateral-Dependent Loans

10. Assess the appropriateness of the process for identifying collateral-dependent loans and whether processes are consistent with GAAP. Refer to OCC Bulletin 2013-26, "Troubled Debt Restructurings: Guidance on Certain Issues Related to Troubled Debt Restructurings."

11. Assess the adequacy of collateral valuation processes, including the methods, frequency, and sources.[79]

12. Determine whether management has a process to

    - properly adjust the collateral value to fair value as of the balance-sheet date by considering changes in market conditions after the appraisal date that affect fair value of the collateral as of the balance-sheet date.
    - reasonably estimate the costs of selling the collateral.
    - validate the reasonableness of the adjustment based on the actual subsequent sale of the collateral.

13. For collateral-dependent loans with collateral shortfalls, determine whether management charges off the amount deemed uncollectible in a timely manner.

Contractual Term

14. Evaluate whether the contractual term determination used by management for each individual loan or segment is reasonable, properly applied, and appropriately documented.

15. Evaluate whether management has properly identified TDRs and reasonably expected TDRs for commercial and retail loans. For more information, refer to the TDR discussion in appendix B of this booklet.

[79] Refer to OCC Bulletins 2010-42 and 2018-39.

Loan Recoveries

16. Determine whether the bank's charge-off and recovery practices conform with bank policy and accounting requirements that prohibit recovery to ACLs of amounts not previously charged off against ACLs. If uncollectible balances of accrued finance charges, interest, or fees are not charged off from ACLs, select a sample of transactions and verify any subsequent recoveries of these amounts are not added back to ACLs.

Credit Loss Measurement Method

17. Evaluate whether the credit loss estimation method for each segment is reasonable, properly applied, and adequately supported by documentation. Evaluate the appropriateness of loss estimation methods considering the complexity, size, and composition of the pool of financial assets. Focus on at least one significant commercial product and one significant retail product to evaluate the loss estimation method(s) used. Coordinate the review of loss estimation methods with the review of qualitative factor adjustment(s).

    Note: The examiner may choose not to review either a retail or commercial product if that segment of lending is insignificant at the bank.

Reasonable and Supportable Forecasts

18. Assess the adequacy of the bank's approach and support for adjusting historical loss information for reasonable and supportable forecasts. Determine if management adequately supported the length of the reasonable and supportable period(s) and considered relevant and reasonably available information. If third-party economic data were used, assess how management confirmed or supported the data's relevancy and reliability.

19. If management elects to use multiple economic scenarios, evaluate whether the weighting or selection of these scenarios was properly supported and is periodically reevaluated.

20. Assess the reasonableness of the economic scenario design, including how frequently management revises the economic forecast to anchor the forecasts to current macroeconomic conditions. Consider

    - how changes in the economic scenarios are documented, reviewed, and approved.
    - whether the process allows for sufficient flexibility for changing macroeconomic conditions.

21. Assess how reasonable and supportable forecasts used in ACLs compare to other areas where forecasted information is used (e.g., budgeting, capital planning, evaluation of deferred tax assets, and goodwill impairment).

Reversion

22. Determine whether the length of the reversion period and the method used for each pool were adequately documented and supported.

23. Assess the appropriateness of selected time frame(s) used to support historical losses and whether the historical loss period reverted to was appropriately supported.

Qualitative Factors

24. Evaluate whether qualitative factors relevant to the bank's ACL estimates are appropriately identified, selected, and documented.

25. Evaluate whether management consistently tracks and analyzes supporting data relevant to qualitative factors.

    Note: While qualitative factors may affect the bank's cash flow expectations for AFS debt securities used in a bank's DCF calculation, the OCC has no expectation for banks to develop and apply a separate qualitative analysis outside of the DCF model.[80]

26. If supervisory concerns exist with credit risk identification processes (e.g., untimely charge-offs and inaccurate or untimely risk rating downgrades), determine whether management properly adjusted qualitative factors in light of process weaknesses.

Available-for-Sale Debt Securities

27. Determine if management appropriately assessed the AFS debt security portfolio for impairment (i.e., if the fair value of the security is lower than amortized cost) and whether impairment was credit-related or noncredit-related using individual evaluation (i.e., no pooling of assets).

28. Determine whether management used the DCF method using the effective interest rate as the discount rate to determine credit impairment for AFS debt securities.

Loan Charge-Offs and Collections

29. Determine whether loans are charged off in a timely manner with appropriate review and approval, and determine whether effective collection efforts are made on charged-off loans. Examiners may be able to leverage recently completed loan review or internal audit work when completing this procedure. Collection processes are typically reviewed by examiners doing other credit process evaluations or credit file review; however, examiners should consider conducting this review if it is not being conducted during the supervisory cycle. If collection efforts are not effective, examiners should discuss with

[80] For more information, refer to the "Interagency Policy Statement on Allowances for Credit Losses," pages 10-11.

management how the ACL methodology considers the ineffective collection efforts (e.g., qualitative factors or an adjustment to the recovery input).

Consider whether

- the bank uses the regulatory classification principles outlined in the "Uniform Agreement on the Classification and Appraisal of Securities Held by Depository Institutions," the "Uniform Retail Credit Classification and Account Management Policy,"[81] and the interagency classification definitions included in the "Rating Credit Risk" booklet of the *Comptroller's Handbook*. If not, assess the appropriateness of the bank's practices.
- collection efforts are continued for charged-off loans until the potential for recovery is exhausted. For a bank that may sell a portfolio of charged-off loans, determine whether collection efforts are continued for these loans until a decision to sell is reached. For more information, refer to appendix D of this booklet, "Transfer of Loans Held for Investment to Held for Sale."
- collection progress reports are prepared and reviewed by appropriate management personnel for all loans charged off for which collection efforts are continuing.

Credit Card Portfolios

30. Determine whether management's ACL processes for credit card loans appropriately consider expected credit losses in

    - current and delinquent loans.
    - finance charges, interest, and fees capitalized to loan balance.
    - accounts that are over the assigned credit limit but are current on payments.
    - accounts that are in workout programs and subject to TDR accounting requirements or are reasonably expected to be in workout programs and become TDRs.

    For more information, refer to OCC Bulletin 2003-1, "Credit Card Lending: Account Management and Loss Allowance Guidance."

[81] The "Uniform Agreement on the Classification and Appraisal of Securities Held by Depository Institutions" was conveyed by OCC Bulletin 2013-28. The "Uniform Retail Credit Classification and Account Management Policy" was conveyed by OCC Bulletin 2000-20.

31. Determine whether ACL estimation processes appropriately consider

- an estimate of expected losses in loan balances (including finance charges, interest, and fees already capitalized into the loan balances) that existed as of the balance-sheet date.[82]
- an estimate of expected credit losses for unfunded commitments to lend over the contractual period during which the bank is obligated to extend credit to the borrower. Credit losses expected on unfunded credit card lines that are not unconditionally cancellable should be recognized in a separate liability for expected credit losses on off-balance-sheet credit exposures rather than within ACLs.

  Note: Generally, credit card lines are unconditionally cancellable by the lender. Unconditionally cancellable commitments should have no liability for off-balance-sheet credit exposures recorded. Management should verify whether the credit card lines are unconditionally cancellable per the loan agreement and the degree to which the bank has exercised the right to cancel.

32. Determine whether management has appropriately supported segmentation of the credit card portfolio based on shared risk characteristics, such as expected common repayment characteristics or patterns (e.g., transactor or revolver) to determine average contractual life. Evaluate management's support for any credit card repayment estimation approaches selected.

Other Considerations

33. Determine whether management, as a part of the overall ACL estimation processes, appropriately estimates expected credit losses for PCD assets. For more information, refer to appendix C, "Purchased Credit Deteriorated Assets."

34. If the bank's ACL estimates include an amount labeled as unallocated (e.g., an overall adjustment portion of ACLs that is not attributed to specific segments of the loan portfolio), determine whether it is appropriately supported and includes an explanation for each component of the "unallocated" amount, including how the component has changed over time based on changes in the environmental factors that gave rise to the component.

35. Determine management's accounting policy for treatment of accrued interest receivables for each class of financial asset in accordance with the policy elections outlined in call report instructions.

36. Review for reasonableness the amounts reported in Schedule RC-G, "Other Liabilities," for expected credit losses on off-balance-sheet credit exposures. While reviewing the

[82] The bank has the option of recognizing expected loss of accrued interest (including finance charges and fees) in an ACL, a contra-asset account separate from an ACL, or reversal of interest and fee income calendar year-to-date. The bank should have a consistently applied policy about which option the bank uses. This examination procedure about accrued interest applies when the bank recognizes expected loss of accrued interest in an ACL.

bank's analysis of expected credit loss estimation for off-balance-sheet credit exposures, assess the completeness of the analysis based on the types of off-balance-sheet credit exposures present at the bank as of the financial statement date. Credit losses should not be recognized for off-balance-sheet credit exposures that are unconditionally cancellable by the issuer such as unfunded credit card balances when the cardholder agreement stipulates that the available credit may be unconditionally cancelled by the bank at any time.

37. Determine whether management has a process to estimate expected credit losses on off-balance-sheet credit exposures (unless these exposures are unconditionally cancellable by the lender), and verify that management includes such estimate in the bank's other liabilities account.

38. Assess management's practices for reducing and terminating open lines of credit such as HELOCs or other open-end retail commitments to lend. Determine the applicability and need for a liability for expected credit losses on off-balance-sheet credit exposures.

Personnel

Personnel are the bank staff and managers who execute or oversee processes. Personnel should be qualified and competent, and should perform appropriately. They should understand the bank's mission, values, principles, policies, and processes. Banks should design compensation programs to attract, develop, and retain qualified personnel. In addition, compensation programs should be structured in a manner that encourages strong risk-management practices.

Objective: To determine management's ability to execute or supervise ACL processes in a safe and sound manner.

1. Determine whether the management structure, staffing, roles, and responsibilities for ACL processes are commensurate with the size and complexity of the bank's activities, including commercial lending, retail lending, and investing.

2. Determine whether the primary members of management responsible for ACL processes demonstrate a sufficient knowledge and understanding of

    - accounting principles and regulatory guidance related to ACLs.
    - changes in the regulatory, accounting, or technological environment affecting ACL processes.

3. Determine the roles of credit administration or credit risk management, finance and accounting, treasury, and other departments in estimating ACLs. Determine whether there is effective collaboration among relevant parties that need to be involved in ACL processes. Confirm that management segregates duties when appropriate. Assess the expertise of those who have the responsibilities and involvement in ACL processes, specifically, those responsible for

- timely initiation of credit classification and approval of assigned risk grade.
- credit risk review.
- initiation and approval of loan charge-offs and securities charge-offs.

4. Review loan committee, board, and other relevant minutes for ACL-related information. Assess the adequacy of information reviewed by the committees. Determine whether there is evidence of a credible challenge of management's decisions and recommendations recorded in board or board committee meeting minutes regarding ACL balances and methodologies.

Control Systems

Control systems are the functions (such as internal and external audits, risk review, and quality assurance) and information systems, including models that bank managers use to measure performance, make decisions about risk, and assess the effectiveness of processes. Control functions should have clear reporting lines, adequate resources, and appropriate authority. MIS should provide complete, timely, accurate, and relevant feedback.

Objective: To determine whether control systems are in place and operate effectively to mitigate the risks associated with ACLs.

1. Determine whether the board has effective oversight of the ACL processes, including whether the board or designated committee

   - has the knowledge and expertise to provide effective oversight of ACL processes.
   - reviews and approves the bank's written ACL policies at least annually.
   - reviews management's assessment and justification that the loan review system is sound and appropriate for the bank's size and complexity.
   - reviews management's assessment and justification for estimated ACLs as of the balance-sheet date and the resulting PCLs for the reporting period.
   - requires management to periodically validate, report, and, when appropriate, revise ACL estimation methodologies.
   - confirms that appropriate internal controls over ACL processes are effective, periodically validated, and any material weaknesses are resolved in a timely manner.

Internal Audit

2. Determine the reliability and adequacy of the work performed by the bank's internal audit related to ACLs. Consider

   - the scope and frequency of the review(s) in relation to the size, risk profile, and complexity of the bank's commercial and retail lending and investing activities.
   - the independence and competency of internal audit staff performing ACL reviews.
   - the most recent internal audit report for ACL processes. Determine whether management has taken corrective actions to appropriately address the identified issues

and concerns. Determine whether internal audit has performed follow-up reviews of management's corrective actions.

External Audit

3. Review external audit work related to ACLs and determine the adequacy of management's response to corresponding audit findings. Consider

   - the external auditor's reports on financial statements and on effectiveness of internal controls over financial reporting, management letter of internal control findings (if applicable), and any other communications to the board or audit committee.
   - all significant deficiencies or material weaknesses identified by the external auditor, and the impact on ACL balances. Determine whether management responded in a timely manner to the material weaknesses or deficiencies with appropriate corrective actions.
   - any uncorrected misstatements identified by the external auditor. If significant, the examiner should discuss with the loan portfolio manager, EIC, or credit team lead, as applicable.

Credit Risk Review

4. Determine whether the bank maintains an effective credit risk review for identifying, monitoring, and addressing asset quality problems in a timely manner.

   Note: Complete this step in conjunction with any supervisory activities or persons responsible for reviewing credit risk review overall.

   Consider whether

   - problem commercial and retail loans are identified in a timely manner and assigned appropriate risk ratings and accrual status.
   - charge-off of any commercial or retail loan (or portion thereof) is taken in a timely manner to maintain the integrity of historical loss data.
   - there are adverse conclusions from recent TDR reviews.

Model Risk Management

5. Determine whether the bank's ACL models are effectively incorporated in the bank's model risk management framework.

6. Assess the adequacy of model risk management practices for the bank's ACL models. Consider whether model risk management is consistent with complexity and usage of models within ACL processes.

7. Determine whether the bank periodically conducts independent reviews of internal controls over data input and assumptions for models used to estimate ACLs.

Review model validation findings, management's response to those findings, and applicable action plans to remediate any concerns (if applicable). Assess the adequacy of management's processes for implementing changes in response to model validation findings. Examiners are encouraged to involve members from the Office of the Chief Accountant and from the Economics Department's Risk Analysis Division team when evaluating complex models.

8. Assess the adequacy of independent validation of the model's conceptual soundness.

   Consider whether

   - the validations are independent relative to ACL processes or the component part being reviewed.
   - the individuals conducting the validation have the appropriate background to conduct such a review and are independent of the model owner.
   - the scope and frequency of the validation reviews are adequate and include the following three core elements:
     - Evaluation of conceptual soundness, including developmental evidence.
     - Ongoing monitoring, including process verification and benchmarking.
     - Outcomes analysis, including back-testing.

9. Assess the adequacy of processes for maintaining model integrity.

   For third-party models, consider whether

   - models are kept current.
   - management understands the model's key inputs and assumptions.
   - management has received sufficient training and has sufficient documentation to successfully use and interpret model results.
   - management has assessed whether the third party can continue to provide ongoing support and documentation of the model and its methods.
   - data feeds sourcing the model are integrated appropriately.

   For internally developed models, consider whether

   - sufficient documentation for the model's methods, operating code, and data sources exists so that the model's operation is not solely dependent on one or two key employees.
   - the model is kept current.
   - a source independent of the persons or units that developed and maintain the model has tested and validated the model's calculations and methods.
   - the bank has appropriate controls for data integrity.

Validation of Methodology

10. Determine whether management has appropriately provided for an independent validation of ACL processes, and any changes to processes, to confirm that they remain appropriate for the bank's size, complexity, and risk profile.

    Note: Validation should be conducted even for banks whose ACL estimates do not include the use of models. For more information, refer to the "Analysis and Validation" section of this booklet.

Third-Party Risk Management

11. Review the effectiveness of the bank's third-party risk management associated with the estimation of ACLs to assess whether the processes are commensurate with the level of risk, the complexity and nature of the relationships, and the bank's organizational structure. Consider[83]

    - whether management conducts adequate due diligence and ongoing monitoring.
    - whether management properly assessed and identified risks and direct and indirect costs associated with the relationship.
    - whether sufficient controls exist relative to confidentiality and integrity of bank information, business resumption, and contingency plans.
    - the adequacy of ongoing monitoring and related internal controls testing to identify, escalate as needed, and remediate significant issues or concerns.
    - whether existing contracts are periodically reviewed to confirm that they address pertinent risks as well as legal and regulatory requirements.
    - whether the bank has sufficient in-house expertise and resources to manage third-party relationships and associated risks.

Performance Analysis

12. Determine what techniques management uses to evaluate ACLs (e.g., back testing, sensitivity analysis, peer comparison, ratio analysis, or attribution analysis). Assess the appropriateness of management's support and documentation for making changes to ACL estimates (or choosing to not make changes).

13. Determine whether the results of analysis and evaluation of ACLs were reported to the board or designated committee in a timely manner.

[83] For supplemental examination procedures regarding third-party risk management, refer to OCC Bulletin 2017-7.

Data Controls

14. Assess the quality of the reference data set used in ACL estimation processes. Consider

- whether data needed for the estimation is accurate, complete, and relevant. Examples of data used in an ACL estimation include
  - amortized loan cost.
  - prepayment data.
  - repayment patterns (e.g., transactors versus revolvers).
  - loan extension, modification, and renewals (dates and amounts).
  - loan attributes used to determine portfolio segments.
  - loan attributes used to adjust for current asset-specific risk characteristics.
  - historical loss and recovery information, including date of loss or recovery recognition.
  - economic data supporting forecasts.
  - borrower data.
  - collateral values.
  - securities attributes used to determine portfolio segments.
- whether data are accurately aggregated for all significant sources throughout the bank.
- whether data are appropriately reconciled. Determine which data are imported manually into ACL estimation processes and evaluate the bank's controls that are intended to ensure data accuracy.

Appropriateness of ACL Balances

Conclusion: The bank's ACL balances are (appropriate or inappropriate).

Objective: Determine the appropriateness of ACL balances through a review and analysis of ACL trends as well as an assessment of the significance of identified methodology and risk management deficiencies impacting ACLs.

1. Review the trends of ACL balances and identify root causes for any material changes in ACL balances. Evaluate management's support or rationale if ACL balances are not directionally consistent with credit quality trends.

   Note: Changes in ACLs may not be directionally consistent with credit trends in the loan portfolio (e.g., trends in nonperforming assets, past dues, borrower characteristics, and classified assets) due to management's reasonable and supportable forecast adjustments, among other factors.

2. Determine whether prior period ACL balances support subsequent actual charge-offs for high-risk portfolios. Consider changes in volumes and trends of loans in workout or modification programs that could mask or delay charge-offs. If adverse trends are noted, discuss with management the possible causes.

3. Determine whether any deficiencies in policies, processes, personnel, or control systems exist that significantly impact or have the potential to significantly impact ACL balances. If so, determine whether this results in the most recent or prior period ACL balances being materially misstated, and if any supervisory action is warranted (e.g., matters requiring attention or violation citation).

4. Determine, based on the result of other examination areas, whether any deficiencies are identified in the bank's risk identification and classification processes. If so, determine whether this results in the most recent or prior period ACL balances being materially misstated, and if any supervisory action is warranted (e.g., matters requiring attention or violation citation).

5. Determine, from a sample testing of loans and securities, whether management is recording charge-offs in a timely manner based on polices developed using regulatory classification principles. If not, determine whether this results in management's most recent or prior period ACL balances being materially misstated. Examiners may also leverage the results of internal credit risk review, quality control reviews (e.g., internal or external credit risk reviews), or audit reports. For more information regarding sampling, refer to the "Sampling Methodologies" booklet of the *Comptroller's Handbook.*

6. Determine from a sample of individually evaluated loans or HTM securities with a low or zero credit loss determination if management appropriately supported ACL estimates. For

more information regarding sampling, refer to the "Sampling Methodologies" booklet of the *Comptroller's Handbook.*

7. For AFS securities with fair value below amortized cost that the bank has the intent and ability to hold, determine whether management has

   - performed the appropriate analysis to determine credit loss from noncredit loss and created a sufficient valuation account for any credit loss.
   - properly reported noncredit loss in other comprehensive income (OCI).

8. For AFS securities with fair value below amortized cost that the bank does not have the intent to hold, or more likely than not would be required to sell the security before recovery of the amortized cost basis, determine whether management

   - properly charged off credit loss through earnings.
   - wrote down the security to its new amortized cost basis.

Conclusions

Objective: To determine, document, and communicate overall findings and conclusions regarding the ACL examination.

1. Discuss preliminary examination findings and conclusions with the EIC, including

    - appropriateness of ACL methodologies.
    - appropriateness of ACL balances.
    - quantity of associated risks.
    - quality of risk management (adequacy of policies, processes, personnel, and control systems).
    - aggregate level and direction of associated risks.
    - overall risks associated with ACL estimation processes.
    - departures from GAAP[84] or call report instructions.
    - deficient practices.
    - violations of laws, such as 12 USC 161 (national banks) or 12 USC 1464(v) (FSAs).

Summary of Risks Associated With ACLs				
Risk category	Quantity of risk (Low, moderate, high)	Quality of risk management (Weak, satisfactory, insufficient, strong)	Aggregate level of risk (Low, moderate, high)	Direction of risk (Increasing, stable, decreasing)
Credit				
Operational				
Compliance				
Strategic				
~~Reputation~~				

2. If substantive safety and soundness concerns remain unresolved that may have a material adverse effect on the bank, consider further expanding the scope of the activity (e.g., using verification procedures).

3. If examiners identified weaknesses in the bank's ACL methodologies, governance, policies, processes, or control systems, the examiner should determine whether the weaknesses warrant supervisory action (e.g., communicating the OCC's concern with a deficient practice to the bank in an MRA). Refer to the "Examiners' Reviews of ACLs" section of this booklet for more information about supervisory actions.

[84] Examiners are strongly encouraged to consult with the Office of the Chief Accountant when there is a departure from GAAP.

4. If examiners determined ACL balances are inappropriate, and the bank's safety and soundness is not of imminent or serious concern, the OCC should direct management to redetermine an estimate that would, based on available information, restore ACL balances to an appropriate level. If examiners conclude that management's redetermined ACL balance is not appropriate, they should estimate an appropriate ACL based on available information, and the OCC should direct bank management to make the necessary adjustments to bring the ACL to an appropriate level. Estimates should be based on an analysis of the bank's applicable financial asset portfolios using the evaluation process described in this booklet, should be well-supported, and must be consistent with GAAP.

5. When the bank's safety and soundness is an imminent or serious concern due to inappropriate ACLs, examiners should determine appropriate ACL amounts, and the OCC should direct management to restore ACLs to the appropriate level. Such determinations should be made in consultation with the EIC, OCC management, OCC legal counsel, and subject matter experts, as applicable. The estimate should be based on an analysis of the bank's applicable financial asset portfolios using the evaluation process described in this booklet, should be well-supported, and must be consistent with GAAP.

6. Discuss examination findings with management, including the appropriateness of ACL balances, violations, deficient practices, and conclusions about risks and risk management practices. If necessary, obtain commitments for corrective action.

7. Compose conclusion comments, highlighting any issues that should be included in the report of examination or supervisory letter. If necessary, compose matters requiring attention and violation write-ups.

8. Update the OCC's supervisory information systems and any applicable ROE schedules or tables.

9. Document recommendations for the supervisory strategy (e.g., what the OCC should do in the future to effectively supervise ACLs, including time frames, staffing, and workdays required).

10. Update, organize, and reference work papers in accordance with OCC policy.

11. Appropriately dispose of or secure any paper or electronic media that contain sensitive bank or customer information.

Note: To reach an examination conclusion on the liability for expected credit losses on off-balance-sheet credit exposures, if applicable, examiners can generally apply all the conclusion procedures in this section of the booklet.

Internal Control Questionnaire

An internal control questionnaire helps an examiner assess the bank's ACL-related internal controls. These questionnaires typically address standard controls that provide day-to-day protection of the bank's assets and financial records. The examiner decides the extent to which it is necessary to complete or update questionnaires during examination planning or after reviewing the findings and conclusions of the core assessment.

Policies and Processes

1. Has the board or designated committee, consistent with its duties and responsibilities,

    a. reviewed and approved the bank's loss charge-off and loss estimation policies, including any revisions thereto, at least annually?
    b. reviewed management's assessment of the credit risk review system and management's conclusion and support for whether the system is sound and appropriate for the bank's size and complexity?
    c. reviewed management's assessment of the effectiveness of processes and controls for monitoring the credit quality of the investment portfolio?
    d. reviewed management's assessments of and justifications for the estimated amounts reported each period for ACLs and PCLs?
    e. required management to periodically validate and, when appropriate, revise loss estimation methods?
    f. approved the internal and external audit plans for ACLs, as applicable?
    g. reviewed any identified audit findings and monitored resolution of those items?
    h. established sound policies and processes related to remediation of asset quality problems in an appropriate and timely manner?
    i. established sound policies and procedures for the timely charge-off of loans and securities and accrued interest or fees that are confirmed to be uncollectible as well as collection efforts to be undertaken after charge-off?
    j. reviewed the risk control functions' organizational structure to ensure conflicts of interest are avoided?

2. Has management, consistent with its duties and responsibilities,

    a. evaluated ACLs reported on the balance sheet as of the end of each period, and debited or credited related PCLs to bring ACLs to an appropriate level as of each reporting date?
    b. adopted and adhered to written policies and procedures that are appropriate to the bank's size and the nature, scope, and risk of its lending and investing activities?

Estimation Methodology and Documentation

1. Do ACL processes provide a complete written description of the methodologies used for each portfolio type, including the following information, accompanied by appropriate supporting documentation:

a. Quantitative calculations used and the qualitative factors derived?
b. Time frame covered by the historical data?
c. Date of information included in the analysis?
d. Complete descriptions and definitions of items used in the analysis?
e. Segmentation of portfolios and the rationale for the segmentations?
f. Reliability and integrity of the data used?

2. Do the bank's ACL methodologies include documentation of how qualitative factor adjustments are derived and applied?

3. Do the bank's ACL methodologies consider and document the level, severity, and trend of classified, delinquent, or nonaccrual loans?

4. Do the bank's ACL methodologies appropriately document and track credit losses by segmenting the portfolios consistent with the bank's size and scale of lending (for example, by loan category, loan classification, product type, geographic locations, collateral type, or other relevant groupings)?

5. Do the bank's ACL methodologies consider and document any additional risk of loss due to concentrations of credit or the layering of credit risks within a segment?

6. Do the bank's ACL estimates include an amount labeled as unallocated or that is otherwise not allocated to a specific portfolio or asset class? If so, do the bank's ACL policies and procedures require proper documentation of how such amount is derived, how it reflects expected loss estimate determined in accordance with GAAP, and how it is reported in regulatory and financial reports?

Loan and Interest/Fee Charge-Offs

1. Are accrued but unpaid interest and fees charged off against the appropriate allowance account? If they are accounted for within ACLs, it is appropriate to charge them off against ACLs. If they are accounted for in a contra asset account separate from the ACL, it is appropriate to charge them off against the separate contra asset account instead of ACLs.

2. Are the preparation and posting of any subsidiary records of charged-off loans performed or reviewed by persons who do not also

   a. issue official checks and drafts without dual control?
   b. handle cash?

3. Are notes for charged-off loans maintained under dual custody?

4. Are collection efforts continued for charged-off loans until the potential for recovery is exhausted? For a bank that may sell a portfolio of charged-off loans, are collection efforts continued until a decision to sell is reached?

   Note: For more information, refer to appendix D of this booklet.

5. Are periodic progress reports prepared and reviewed by appropriate management personnel for all loans charged off for which collection efforts are continuing?

6. Are appropriate internal control procedures in place to safeguard and record recoveries, including requirements that only losses charged against ACLs can be recovered to the ACLs?

ACL Appropriateness Evaluation and Validation Process

1. Does management develop sufficient documentation about the process and methodology to support the appropriateness of the current quarter-end's ACLs and liability for expected credit losses on off-balance-sheet credit exposures?

2. Does management have a requirement for validation and sufficient documentation about the methodologies to validate and back-test the usage of previous quarters' ACLs by comparing with actual subsequent charge-offs over the anticipated period of coverage?

3. Does management periodically test and validate the appropriateness of the ACLs reported in the past, review the results, and report its findings to the board? When appropriate, are ACL estimation methodologies revised based on the validation findings and input from the board?

4. Does management assess at least quarterly ACL estimates, review the appropriateness, make necessary adjustments, and report the assessment and justification of ACLs to the board for review and approval, before filing the call report or issuing any other financial statements?

5. Does the bank retain documentation of its quarterly review of the appropriateness of ACLs as well as documentation of validation analysis conducted?

Conclusion

1. The above information as completed (is or is not) sufficient to determine the quality of ACL-related internal controls. Explain any weakness briefly and draw a conclusion as to its effect on any specific examination or verification procedure. Determine if there are any additional internal auditing procedures, accounting controls, administrative controls, or other circumstances that can impair any controls or mitigate any weaknesses indicated above.

2. Based on a composite evaluation, as evidenced by answers to the foregoing questions, ACL-related internal controls are (strong, satisfactory, insufficient, or weak).

Verification Procedures

In rare circumstances, verification procedures are used to verify the existence of assets and liabilities, or test the reliability of financial records. Examiners generally do not perform verification procedures as part of a typical examination. Rather, verification procedures are performed by examiners or third parties when substantive safety and soundness concerns are identified and not mitigated by the bank's risk management systems and internal controls.

1. Reconcile the total charged-off loans since the last examination date as recorded in the charged-off ledger to the total debit entries in ACLs for the same period.

2. Select charged-off loans and HTM investments and

   a. examine supporting documentation.
   b. trace approval by the directors, as evidenced in the minutes of board meetings.

3. Select recovery entries in the charged-off ledger since the last examination and compare to credit entries in ACL accounts.

Appendixes

Appendix A: Suggested Request List

This suggested request list is provided as a guide and should be modified as needed depending on the scope of the supervisory activity and the bank's size, complexity, and risk profile. The EIC is responsible for obtaining the information and managing the examination to avoid duplicate requests to the bank. The EIC should indicate which items need to be provided before the start of the examination and which will be reviewed during the examination. If activities are being conducted throughout the supervisory cycle, examiners should only request the information they need to complete the current activity.

During examination planning, the EIC should discuss obtaining the requested information in a digital format with management. Include the following paragraph in the request letter:

> In order for us to prepare effectively for this supervisory activity, please provide the information listed in the attachment to this request letter in digital format and send to the designated EIC via OCC secure mail or large file transfer tool, which can be accessed by going to www.banknet.gov. When accessing BankNet is not possible, we request that the data be faxed to a designated number at our office. For larger pieces of hard-copy information and for security purposes, we request that you provide the information by postal mail using a tracking service. Please indicate whether hard-copy information needs to be returned.

1. A current organizational chart that includes the names of personnel responsible for ACLs.

2. Policies and procedures regarding the determination of ACLs.

3. Loan and investment policies and procedures regarding

    a. loan classification, nonaccrual designation, and charge-off approval for loan and HTM investment types.
    b. collateral valuations for classified secured loans (commercial and retail).
    c. designation of and accounting for TDRs and reasonably expected TDRs for commercial and retail loans.
    d. cancellation of commitments to lend for commercial lines of credit, stand-by letters of credit, and open-end consumer lines of credit (e.g., credit cards and HELOCs).

4. Policies and procedures related to any other financial assets (e.g., off-balance-sheet items, leases) with associated ACL estimates.

5. Management's most recent memorandum(s) or reports detailing its conclusion on the appropriate level of ACLs to the board or designated committee. Please indicate who prepares the memorandum or report (finance, accounting, credit, loan review, or

combination), who contributes to the memorandum's or report's final content, and how frequently the memorandums or reports are prepared.

Additionally, examiners may request supporting memorandum(s) or reports from the bank's credit or loan review areas. These supporting memorandums can provide detail regarding changes and adjustments influencing the memorandum or report of the overall ACLs.

6. Documentation and work papers to support management's most recent ACL estimates and memorandum, including

    a. schedules reflecting historical data for credit losses, recoveries, etc., by segment.
    b. schedules reflecting the calculations based on historical data inputs and management-derived qualitative factors.
    c. schedules reflecting current volumes and historical volumes of past-due loans, nonaccrual loans, individually evaluated loans, and TDRs by segment.
    d. schedules reflecting historical and refreshed credit grades for commercial loans (criticized asset reports) or credit bureau/behavior scores for retail loans (by number of accounts and outstanding balances). Include commercial and retail loans designated as TDRs and reasonably expected TDRs for the past four quarters.
    e. schedules detailing how expected credit losses are estimated for off-balance-sheet credit exposures and reported in "other liabilities."
    f. schedules detailing how expected credit losses for accrued interest or finance charges and loan fees are estimated and held (either as a separate component of ACLs or as a separate valuation allowance).

7. Current and prior year credit risk review reports for each commercial and retail portfolio reviewed.

8. Current and prior year approved budgets detailing expected credit losses, recoveries, and provision expenses in aggregate and for significant portfolios (in terms of dollar volume, percentage, or growth).

9. Current and prior year internally developed forecasts of expected credit losses and recoveries for significant commercial and retail loan portfolios, including supporting documentation or analysis.

10. A summary of the primary assumptions used in ACL estimation processes, including support for segmentation, contractual terms for segments and individually evaluated loans, methods used for each segment, reasonable and supportable forecasts, reversion technique, and qualitative factors. Also provide all documentation and analyses (including any back-testing or sensitivity analysis) that support the reasonableness of these assumptions.

11. Documentation of the underlying methodologies and processing components for any models used in the estimation of ACLs. For third-party models provide system access for examiners to review system components and outputs.

12. A summary of significant changes to ACL estimation processes since the last examination. Include new software or software upgrades to third-party models, new or revised assumptions, and new documentation associated with prior assumptions.

13. ACL analyses performed since [placeholder for time frame] including back testing, sensitivity analysis, ratio analysis, peer comparison, multiple economic scenario analysis, or attribution analysis.

14. The most recent ACL validations. Include management responses to any model validation findings, along with plans for corrective action.

15. Reports of internal audit reviews, credit risk reviews, or external consultant reviews of ACL estimation processes since [placeholder for time frame]. Examiners may request work papers during the examination.

16. External audit reports issued by an independent public accountant.

17. External audit reports regarding ACLs as well as any associated controls over ACLs.

18. Auditor communications and presentations to the board or audit committee related to ACLs.

19. A list of third-party relationships related to ACL estimations (e.g., third parties engaged to perform aspects of ACL estimations, third-party models, third-party data). Examiners may request a sample of contacts, due diligence, and ongoing monitoring during the examination.

Please note that examiners may request additional information to assist in evaluating this area during the review.

Appendix B: Troubled Debt Restructurings

A restructuring constitutes a TDR[85] if the creditor, for economic or legal reasons related to the debtor's financial difficulties, grants a concession to the debtor that it would not otherwise consider. The accounting standards applicable to TDRs are in ASC Subtopic 310-40 and ASC Subtopic 326-20. ASC Subtopic 310-40 describes the accounting for the identification of TDRs whereas ASC Subtopic 326-20 describes the accounting for the measurement of ACLs for TDRs. Determining whether a restructured loan is a TDR requires considering the facts and circumstances surrounding the modification. No single factor, by itself, drives this determination. The impact of all modified terms should be considered in their totality.

Furthermore, an overall general decline in the economy or some deterioration in a borrower's financial condition does not automatically indicate that the borrower is experiencing financial difficulties, but it may indicate that financial difficulty is reasonably expected. In general, the determination that there is a reasonable expectation of a TDR at the reporting date is made after the bank has knowledge that the borrower is experiencing financial difficulty but before the bank grants a concession. Refer to the "Troubled Debt Restructurings" section of this booklet for more information on reasonably expected TDRs.

The following are key references regarding TDRs:

- *Bank Accounting Advisory Series*, topic 2A, "Loans: Troubled Debt Restructurings," and topic 12B, "Credit Losses: Troubled Debt Restructurings"
- Call report instructions' glossary entry for "troubled debt restructurings"
- OCC Bulletin 2014-4, "Secured Consumer Debt Discharged in Chapter 7 Bankruptcy: Supervisory Expectations"
- OCC Bulletin 2013-26, "Troubled Debt Restructurings: Guidance on Certain Issues Related to Troubled Debt Restructurings"
- OCC Bulletin 2012-10, "Troubled Debt Restructurings, Supervisory Guidance on Accounting and Reporting Requirements"
- OCC Bulletin 2009-32, "Commercial Real Estate (CRE) Loans: Guidance on Prudent CRE Loan Workouts"

ASC Subtopic 326-20 focuses on collective, or pooled, assessment for all financial assets with shared risk characteristics, including a modification that results in a TDR. Identification of TDRs should be done on an individual loan-by-loan basis. A bank may combine individually identified TDRs into a pool of homogenous loans that share similar risk characteristics.

There is no requirement to pool TDRs separately from non-TDRs if they share similar risk characteristics. However, if TDRs do not share risk characteristics with the non-TDRs then

[85] OCC Bulletin 2013-26 provides more information on TDRs, such as accrual status, regulatory credit risk grade, classification and write-off treatment, and capitalized costs. OCC Bulletin 2013-26 remains applicable, unless affected by ASC Topic 326. Information on the reporting of a subsequent restructuring of a TDR may be found in the call report instructions.

they should be pooled separately. If a TDR does not share similar risk characteristics with other financial assets, then it is evaluated individually.

Banks should have clear policies and procedures for identifying TDRs when loans are modified. For example, procedures should generally address the process for flagging a modified or renewed loan for review, considering the factors to assess TDR status, and designating responsibility for the TDR decision. Banks should clearly document and support the facts and circumstances analyzed for each modification or renewal and the conclusion reached.[86]

The "Individually Evaluated Financial Assets" section of this booklet discusses collateral dependency and ACL measurements for collateral-dependent loans. Unless the modified loan is a collateral-dependent TDR, expected credit losses should be measured based on the principles in ASC Subtopic 326-20. If the concession to the borrower is an interest rate concession, a more-than-insignificant delay in payments (e.g., term extension),[87] or any other concession that cannot be measured using the methods in ASC Subtopic 326-20, then ACL measurements must use a DCF method. This is because interest rate concessions and payment delay concessions do not generally result in a loss to the amortized cost basis of the asset; however, ASC Subtopic 310-40 requires that all concessions be captured as part of ACLs. Further, when an individual loan is specifically identified as a reasonably expected TDR, the bank must use a DCF method (or a method reconcilable with DCF) if the TDR involves a concession that can be captured only by using a DCF method. Refer to the "Discounted Cash Flow Method" section of this booklet for additional information on applying a DCF method.

When a contractual balloon payment is required at maturity under the terms of a TDR that is not collateral-dependent, significant uncertainty may exist regarding the borrower's ability to refinance or repay the debt at maturity. When estimating expected future cash flows for purposes of measuring expected credit losses, management should consider all available evidence, with greater weight given to evidence that can be objectively verified. When no sources of cash flows are reasonably expected to be available to support the assumption that the borrower will be able to repay or refinance the secured loan at maturity, an acceptable method for estimating expected future cash flows can be to base the expected payment at maturity on the current fair value of the collateral, less estimated costs to sell. Using the fair value of the collateral, less selling costs, in lieu of the expected payment at maturity, does not suggest 100 percent probability of default at maturity. Rather, it recognizes the value inherent in the collateral to satisfy repayment of the loan. However, if the contractual balloon payment at maturity is lower than the current fair value of the collateral, less estimated costs to sell, the balloon payment amount should be used as the final cash flow in the impairment analysis since there is no collateral deficiency.

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[86] For more information, refer to OCC Bulletin 2012-10.

[87] Refer to ASC paragraph 310-40-15-17.

A TDR represents part of a creditor's ongoing effort to recover its investment in the original loan. When discounting expected future cash flows of a restructured loan, the creditor shall use the effective interest rate of the original loan prior to the TDR.

For a variable rate loan, the lender may use the rate in effect when the loan meets the TDR criterion and hold it constant for subsequent expected credit loss measurement. Lenders have the option, however, to recalculate the effective interest rate as the interest rate (index) changes in subsequent periods.[88] Banks are expected to apply either the fixed effective interest rate at the date of modification or the variable effective interest rate based on changes in an independent factor consistently over reporting periods for similar types of loans. Additionally, the use of a fixed or variable interest rate is applicable for purposes of determining the expected future cash flows as well as the effective interest rate of a restructured loan, and an entity's accounting policy choice is expected to be applied consistently.[89]

Examples 1 and 2 explain the effective interest rate calculation for a loan with an introductory rate and a variable rate loan, respectively.

Example 1

Example 1 uses the following assumptions:

- Original residential mortgage loan of $100,000.
- Zero net deferred origination fees and costs.
- Loan term is 30 years.
- Loan is fully amortizing over the term.
- Initial introductory rate (i.e., teaser rate) of 5 percent for the first three years. Rate is fixed during the introductory period.
- Original contractual interest rate is prime plus 7 percent.
- The prime rate at origination is 4 percent.
- The loan underwent a modification determined to be a TDR at the end of year three. The prime rate as of the date of the modification is 6 percent.

Question: What is the effective interest rate to be used in the impairment calculation?

Answer: For purposes of the present value calculation, the effective interest rate to be used for discounting is a blend of (1) 5 percent for three years, and (2) 13 percent (i.e., prime of 6 percent at date of modification plus 7 percent) for the remaining 27 years. The blended effective interest rate may be fixed at the date of loan modification and used whenever the loan is assessed for impairment throughout the life of the loan. Alternatively, the discount rate may be updated for actual changes in prime over the remaining 27 years of the loan.

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[88] For more information, refer to ASC paragraph 326-20-30-4.

[89] Refer to question 7 under topic 12 B, "Troubled Debt Restructurings," of the *Bank Accounting Advisory Series*.

Example 2

The same facts exist as in example 1, except that the loan's interest rate prior to modification is floating prime plus 7 percent since origination (i.e., there is no introductory, or teaser, rate period).

Question: What is the effective interest rate at the date of modification?

Answer: The effective interest rate is a blend of (1) actual historical prime plus 7 percent over the first three years and (2) 13 percent (i.e., prime of 6 percent at date of modification plus 7 percent under the terms of the original contract) for the remaining 27 years.

The blended effective interest rate may be fixed at the date of loan modification and used whenever the loan is assessed for impairment throughout the life of the loan. Alternatively, the discount rate may be updated for actual changes in prime over the remaining 27 years of the loan.

Appendix C: Purchased Credit Deteriorated Assets

ASC Subtopic 326-20 applies to all acquired individual financial assets, or acquired groups of financial assets with similar risk characteristics that, as of the date of acquisition, have experienced a more-than-insignificant deterioration in credit quality since origination as determined by the acquiring bank's assessment.

Identifying PCD Financial Assets

PCD financial assets are acquired assets that, as of the acquisition date, have experienced a more-than-insignificant deterioration in credit quality since origination. Accounting standards do not explicitly define "more-than-insignificant deterioration of credit quality," and evaluation involves significant judgment.

As noted in ASC Subtopic 326-20, some indicators of loans that have experienced more-than-insignificant deterioration of credit quality since origination may be loans

- that are delinquent at the acquisition date.
- that have been downgraded since origination.
- that have been placed on nonaccrual status.
- for which, after origination, credit spreads have widened beyond the thresholds stated in the bank's policy.

These indicators represent only a few of the possible indicators a bank may consider in determining whether a financial asset should be classified as a PCD asset. There are other acceptable considerations for identifying PCD loans and securities. When assessing whether credit quality has deteriorated, a bank must compare the credit quality of the financial assets at the time they were originated with the credit quality at the time of acquisition.[90] For example, a loan that was originated with poor credit quality should not be accounted for as PCD if there has been no further deterioration in its credit quality since origination.

For individually identifying PCD loans, an acquiring bank may set policies, including thresholds based on the type of loan products.

Commercial loans are generally classified or graded into risk categories as part of an ongoing credit review process. The acquiring bank may identify commercial loans with evidence of deterioration using the acquired bank's record of changes in classification and accrual status. Such records may also provide evidence concerning whether it is probable that the acquiring bank will be unable to collect all **contractually required payments receivable**.

In contrast, retail loans are generally not individually reviewed or graded, and nonaccrual and charge-off policies vary by product. For instance, some types of retail loans are immediately charged off when the loan is a certain number of days past due and may never be classified as nonaccrual. As a result, indicators of credit quality deterioration for retail loan products may

[90] Refer to ASC paragraph 326-20-30-15.

vary depending on the products and may include nonaccrual classification, past due status, or FICO score and changes therein.

Initial Measurement at Acquisition

Acquired financial assets are recorded at the purchase price plus the initial estimate of the ACL at the date of acquisition, which becomes the initial amortized cost basis for the PCD asset. This is often referred to as the gross-up approach because the amortized cost basis of the financial asset is grossed up by the initial estimate of credit losses. There is no effect on earnings for the initial (i.e., day one) ACL estimates for PCD assets.

The day one ACLs for pools of PCD assets are estimated on a collective basis. ACLs are then allocated to each individual asset in the pool, which creates the amount to be added to the purchase price of the asset and establishes the amortized cost basis of each individual asset. Any noncredit discount or premium resulting from purchasing a pool of PCD financial assets should be allocated to each individual asset based on the established amortized cost basis.

ASC Subtopic 326-20 applies to a bank's initial estimate of ACLs for PCD financial assets. There is no requirement that a bank use a DCF method for this estimate; however, GAAP requires that if a bank uses a method other than DCF for this initial estimate, the estimate should be based on the unpaid principal balance of those PCD financial assets. Any credit portion of a fair value adjustment from acquisition should not be used to offset or reduce estimated ACLs on these PCD assets. The entire fair value adjustment is accounted for as a purchase premium or discount that will be amortized or accreted into income over the remaining lives of the assets in accordance with ASC Subtopic 310-20.

For financial assets previously identified as purchased credit impaired (PCI), upon the transition to PCD, ACLs must be estimated according to the requirements of ASC Subtopic 326-20. The gross-up entry for these assets would then be the difference between new ACLs calculated under ASC Subtopic 326-20 and existing allowances that had previously been recorded on those PCI assets.

Example 3 explains the initial measurement at acquisition.

Example 3

Bank A identifies an acquired loan as having more than insignificant deterioration in credit quality since origination and determines the following information at the acquisition date:

- Contractually required payments receivable (unpaid principal balance): $1 million
- Initial investment[91] (fair value of the loan): $750,000
- ACL based on the unpaid principal balance: $175,000
- Non-credit discount: $75,000

[91] The initial investment is the amount paid to the seller plus any fees paid or less any fees received.

At the acquisition date, Bank A records the loan at the value of the contractual unpaid principal balance of $1 million and the cash paid of $750,000 on its books. Then, the bank records an initial ACL estimate of $175,000. The remaining difference of $75,000 is a noncredit discount on the acquired loan. The amortized cost basis of the financial asset as of the acquisition date is $925,000, which equals the purchase price plus an ACL (i.e., the unpaid principal balance less the noncredit discount). The following are the journal entries to record the acquisition of the PCD loan, the related ACL, and the noncredit discount:

Account	Debit	Credit
Loans	$1,000,000	
Cash		$750,000
ACL		$175,000
Loans – noncredit discount		$75,000

Collective Measurement

ASC Subtopic 326-20 requires, on an ongoing basis, the collective (pooled) assessment of expected credit losses when financial assets share similar risk characteristics. If a PCD financial asset shares similar risk characteristics with other financial assets, it is included in the collective evaluation with those other financial assets. There is no requirement that PCD financial asset be pooled separately from non-PCD financial assets if they share similar risk characteristics. However, if PCD financial assets do not share risk characteristics with the other financial assets then they should be pooled separately. If an individual PCD financial asset does not share similar risk characteristics with other financial assets, then it is evaluated individually.

There is no requirement in ASC Subtopic 326-20 that the integrity of the pool be maintained. Assets may be added to the pool if they share similar risk characteristics. Similarly, assets should be removed from the pool if they no longer share similar risk characteristics.

Pools of loans that were previously identified as PCI under ASC Subtopic 310-30 can be maintained if the bank elects to do so on a pool-by-pool basis. If the bank makes this election, then certain guidance under ASC Subtopic 310-30 would continue to apply as it relates to the pool as a **unit of account**.[92]

Subsequent Measurement

After acquisition, the bank must update its ACL estimates for PCD financial assets each reporting period. Under ASC Subtopic 326-20, the bank should continue to consistently apply the method used for the initial ACL estimates for subsequent reporting periods. As with the initial estimate, GAAP requires that if a method other than DCF is used, that an ACL is calculated using the unpaid principal balance of the financial asset rather than the

[92] For specific guidance, refer to ASC paragraphs 310-30-15-6, 310-30-35-15, and 310-40-1 to 40-2. Outside of these requirements regarding the unit of account, all other aspects of ASC Subtopic 326-20 apply to the pool for purposes of estimating expected credit losses.

amortized cost basis. Unlike the initial day one estimate, subsequent adjustments to an ACL are made through the provision expense account and do have a direct impact on the bank's earnings.

The noncredit discount or premium recorded on day one that was allocated to each individual asset within the pool and the accretion or amortization of those amounts continues to follow existing GAAP.[93]

Charge-Offs

Charge-offs (partial or full) of the contractual loan balances of PCD loans are determined on an individual asset level regardless of whether the loan is evaluated individually or collectively for ACL estimation. Charge-offs reduce an ACL for the individual loan or the pool of loans.

Modifying or Restructuring PCD loans

In determining whether the modification of a PCD asset is a TDR, the bank should follow TDR guidance in ASC Subtopic 310-40. The bank should consider all aspects of the modification in determining whether it has granted a concession and whether the modification is a TDR. Following the TDR designation, the financial asset should be accounted for under TDR-related guidance.

[93] Refer to ASC Subtopic 310-10-35 and ASC Subtopic 310-20-35.

Appendix D: Transfer of Loans Held for Investment to Held for Sale

When management decides to sell a loan or portion thereof that was not originated or initially acquired with the intent to sell, the loan should be clearly identified and transferred to the HFS account.[94]

The transfer to the HFS account should be recorded at the lower of cost or fair value on the date the decision to sell is made. When fair value is less than the amortized cost basis of the loan on the transfer date, the loan is written down to the fair value, resulting in the new cost basis of the loan HFS. The charge-down amount is charged to an ACL. To the extent that the loan's reduction in value has not already been provided for in an ACL, an additional provision should be made to maintain an ACL at an appropriate level.

After the transfer, the HFS loan must be revalued at each subsequent reporting date until sold and be reported at the lower of cost or fair value.[95] Any declines in value and recoveries of such declines in value occurring after the transfer should be accounted for as increases and decreases in a valuation allowance for the HFS loan, not as adjustments to an ACL or as a direct credit or debit to the HFS loan's cost basis. Changes in this valuation allowance should be reported in current earnings, not as the provision expense. The valuation allowance for HFS loans cannot be reduced below zero (i.e., cannot have a debit balance). Such valuation allowances are not reported as part of ACLs and are not eligible for inclusion in tier 2 capital for risk-based capital purposes.

[94] For more information, refer to OCC Bulletin 2001-15, "Loans Held for Sale: Guidance," and ASC Subtopics 35-1 and 35-48.

[95] Refer to ASC paragraph 948-310-35-1 and ASC paragraph 310-10-35-48 for HFS accounting for mortgage and non-mortgage loans, respectively.

Appendix E: Credit Card ACLs

Generally, credit cards are accounts with **revolving privileges** for which the borrower is not required to pay the entire outstanding balance at the end of each period, which accrues interest. Revolving accounts, once the borrower makes charges, generally include a funded portion and an unfunded portion. An ACL is estimated for the funded portion, which is the outstanding credit card loan balance. The unfunded portion, the difference between the total exposure and the funded amount, is an off-balance-sheet credit exposure that the bank can typically unconditionally cancel at any point in time. Off-balance-sheet credit exposures that are unconditionally cancelable by the bank do not have an ACL. Refer to the "Off-Balance-Sheet Credit Exposures" section of this booklet for further details.

Segmentation

Credit cards are generally structured to be longer-term instruments but can be shorter-term instruments at the borrower's option. Loan duration typically lengthens during recessionary periods and shortens during expansionary periods.

Minimum payment formulas can have the effect of further delaying principal payment requirements, which may affect the contractual life of the loan. For example, a minimum payment of 1 percent of the balance, plus finance charges and fees (e.g., late fees and over-limit fees), is an implied amortization of 100 months, or 8.3 years. Liberal repayment programs can result in **negative amortization**. Prolonged negative amortization, inappropriate fees, and other practices can inordinately compound or protract consumer debt, mask portfolio performance and quality, and raise safety and soundness concerns.[96] Payment behavior and risk profiles are key loss drivers. Portfolios with longer-life revolving balances generally result in higher ACLs, all else equal.

Banks should consider borrower payment behavior when segmenting the credit card portfolio because payment behavior can be a significant driver of credit losses for credit card loans. Credit card borrowers who generally pay their credit card balance in full and on time each billing cycle are referred to as "**transactors**." Accounts of transactors are repaid very quickly, tend to experience very low credit losses, and do not incur finance charges or late fees. Credit card borrowers who do not pay their outstanding credit card balances in full each billing cycle are referred to as "**revolvers**." Revolvers' balances are generally repaid over longer periods of time, experience a higher level of credit losses than transactors, and incur finance charges and late fees.

A bank may need to further segment revolvers' accounts to appropriately consider factors influencing credit losses, such as the borrower's

- average historical payment rate or pattern.
- utilization rate in relation to the account limit.
- delinquency history and status.

[96] For more information, refer to OCC Bulletin 2003-1.

- current credit bureau score and the directional trend.
- contract terms and conditions (e.g., charge cards).
- repayment program, if applicable, which typically would be considered a TDR.

When management is segmenting accounts, the lower level of credit risk with charge card accounts should be considered. Charge card programs typically require payment in full each billing cycle with payment behavior similar to transactors. These charge card programs are likely to have short contractual terms. Repayment programs that allow the borrower to pay less than the full balance generally have a higher level of credit losses.

Estimation Methods

Banks have flexibility in how they handle subsequent credit card payments and future draws. The bank's process for allocating future payments is a significant part of ACL estimation process for credit card accounts and affects the estimated contractual term of the credit card accounts. There are many acceptable payment allocation methods for credit cards, and the FASB noted that the first-in, first-out payment allocation method as well as the Credit Card Accountability Responsibility and Disclosure Act of 2009 (CARD Act)[97] payment allocation method may be acceptable, but that other methods may also be acceptable.[98] A bank's payment allocation method should reflect the credit risk in the credit card portfolio and should not inappropriately reduce the contractual term. Loss curves (rates) should typically include data from defaulted accounts, and curves should be adjusted for changing economic cycles when appropriate.

[97] The CARD Act governs the way banks track balances, calculate finance charges, and apply payments on credit cards. The CARD Act dictates the application of payments based on annual percentage rates, such as when credit cards offer promotional rates for cash advances or balance transfers. Refer to the Truth in Lending Act (15 USC 1601 et seq.) implemented by Regulation Z (12 CFR 1026), as amended by the CARD Act, Pub. L. No. 111-24.

[98] FASB Board Minutes from October 4, 2017, state "The Board observed this decision is consistent with [ASC Topic 326] which allow[s] various approaches to be used to determine management's best estimate consistent with its credit risk management perspective."

Appendix F: Financial Assets Secured by Collateral Maintenance Provisions

Excerpt 45: Interagency Policy Statement on Allowances for Credit Losses

Banks may have financial assets that are secured by collateral (such as debt securities) and are subject to collateral maintenance agreements requiring the borrower to continuously replenish the amount of collateral securing the asset. If the fair value of the collateral declines, the borrower is required to provide additional collateral as specified by the agreement.

Common examples of collateral maintenance provisions include margin lending arrangements, reverse repurchase arrangements, and securities borrowing arrangements.

Excerpt 46: Interagency Policy Statement on Allowances for Credit Losses

ASC Topic 326 includes a practical expedient for financial assets with collateral maintenance agreements where the borrower is required to provide collateral greater than or equal to the amortized cost basis of the asset and is expected to continuously replenish the collateral. In those cases, management may elect the collateral maintenance practical expedient and measure expected credit losses for these qualifying assets based on the fair value of the collateral. (See note 19.) If the fair value of the collateral is greater than the amortized cost basis of the financial asset and management expects the borrower to replenish collateral as needed, management may record an ACL of zero for the financial asset when the collateral maintenance practical expedient is applied. Similarly, if the fair value of the collateral is less than the amortized cost basis of the financial asset and management expects the borrower to replenish collateral as needed, the ACL is limited to the difference between the fair value of the collateral and the amortized cost basis of the asset as of the reporting date when applying the collateral maintenance practical expedient.

Note 19: For example, a bank enters into a reverse repurchase agreement with a collateral maintenance agreement. Management may not need to record the expected credit losses at each reporting date as long as the fair value of the security collateral is greater than the amortized cost basis of the reverse repurchase agreement. Refer to ASC paragraph 326-20-55-46 for more information.

If the fair value of the collateral at the reporting date is less than the amortized cost basis of the financial asset, a bank must limit the ACL on the financial asset to the difference between the fair value of the collateral at the reporting date and the amortized cost basis of the financial asset.

Example 4

This example from ASC paragraphs 326-20-55-46 to 55-47 is one way that a bank may implement the guidance on collateral maintenance provisions.

The bank enters into a reverse repurchase agreement with Entity I. Under the terms of the agreement, Entity I sells securities to the Bank with the expectation that it will repurchase those securities for a certain price on an agreed-upon date. In addition, the agreement contains a provision that requires Entity I to provide collateral as security, with that collateral valued daily. The amount of the collateral is adjusted up or down to reflect changes in the fair value of the underlying securities transferred. This collateral maintenance provision is designed to ensure that at any point during the arrangement, the fair value of the collateral continually equals or is greater than the amortized cost basis of the reverse repurchase agreement.

At the end of the first reporting period after entering into the agreement with Entity I, the bank evaluates the reverse repurchase agreement's collateral maintenance provision to determine whether they can use the practical expedient for estimating expected credit losses. The bank determines that although there is a risk that Entity I may default, the bank's expectation of nonpayment of the amortized cost basis on the reverse repurchase agreement is zero because Entity I continually adjusts the amount of collateral so that the fair value of the collateral is always equal to or greater than the amortized cost basis of the reverse repurchase agreement. In addition, the bank continually monitors that Entity I adheres to the collateral maintenance provision. As a result, the bank uses the practical expedient and does not record expected credit losses at the end of the first reporting period because the fair value of the security collateral is greater than the amortized cost basis of the reverse repurchase agreement. The bank performs a reassessment of the fair value of collateral in relation to the amortized cost basis each reporting period.

Appendix G: Examples

The examples in this section are hypothetical, are for reference only, and do not indicate any supervisory preference.

Segmentation

This example illustrates one bank's segmentation of consumer, residential real estate, commercial real estate, construction and development loans, and municipal debt securities using multiple credit characteristics or attributes. To determine the appropriate segmentation, management considered attributes, portfolio materiality, and credit portfolio management practices such as stress testing and market analyses. Refer to table 1 for an example segmentation scheme for a loan portfolio.

Table 1: Example Loan Portfolio Segmentation

Asset category		Secondary segmentation characteristic		Additional segmentation characteristic	
1	Commercial				
2	Consumer	2a	Credit card	2a(i)	FICO score bands
		2b	Auto		
		2c	Other consumer		
3	CRE	3a	Owner-occupied CRE		
		3b	Non-owner-occupied CRE	3b(i)	Multifamily
				3b(ii)	Office
				3b(iii)	Warehouse
				3b(iv)	Retail
				3b(v)	Hospitality
4	Residential real estate	4a	Loans secured by first liens on 1- to 4-family residential properties	4a(i)	Loans in accordance with policy
				4a(ii)	Loans with policy exceptions
		4b	Lines of credit secured by junior liens on 1- to 4-family residential properties	4b(i)	Approaching or entering end-of-draw (EOD)
				4b(ii)	Not approaching or entering EOD
5	Construction and development	5a	Commercial construction		
		5b	Residential construction – individuals		
		5c	Residential construction – developers		
		5d	Commercial land		
		5e	Residential land	5e(i)	Northeast
				5e(ii)	Southern
				5e(iii)	Midwest
				5e(iv)	Other
6	U.S. government agency obligations	6a	Issued by U.S. government agencies		
		6b	Issued by U.S. government-sponsored agencies		
7	Securities issued by states and political subdivisions in the United States	7a	General obligation bonds	7a(i)	Credit ratings
		7b	Revenue bonds		

First, management segmented the bank's portfolio by major asset type using call report categories (this is not inclusive of all call report categories). Next, management segmented the consumer loans by product types. As the bank has significant exposure in credit card loans, management considered additional segmentation within the credit card portfolio. Historically, losses in the credit card portfolio have correlated to borrowers' FICO scores. Management stratified the credit card portfolio further by FICO score bands. For auto loans and other consumer loans, management determined that further segmentation of these portfolios would not provide meaningful data due to their immaterial outstanding balances.

The bank has material holdings of commercial real estate. Management segments the commercial real estate into non-owner-occupied and owner-occupied real estate. Historical loss experience indicates a higher credit risk profile for non-owner-occupied real estate; management further divided this segment by property type: multi-family, office, warehouse, retail, and hospitality.

The bank has a significant portfolio of residential real estate loans and lines of credit. Residential mortgage loans are secured by first liens, while HELOCs are typically secured by junior liens. Management has observed increased losses for first lien residential loans made with policy exceptions. This portfolio has been further divided by those loans made with and without policy exceptions. Management's ongoing monitoring identified that HELOCs approaching EOD periods are subject to elevated borrower default risk associated with loss of line utility and payment shocks (e.g., converting from interest-only payments during the draw period to amortizing or balloon payments after the draw period). The bank further segments the HELOCs with EOD exposures from the rest of the HELOCs. In accordance with its policies and procedures, the bank performs prudent outreach, modification, or other workout programs for HELOCs with EOD exposures. Since workout programs are routinely offered on this segment, the bank should evaluate whether there are reasonably expected TDRs within the population and adjust ACLs for those identified.

The construction and development portfolio was further segmented by type of project. Because the bank's portfolio is heavily concentrated in residential land development in distinct markets, a tertiary segmentation attribute was selected to reflect the lending profile and economic factors that are specific to each region.

Lastly, management might choose to segment the bank's HTM securities for the purposes of estimating a corresponding ACL. Management does not further segment the U.S. government and agency securities since the bank's policy supports zero loss for these securities. Management decides to segment the bank's portfolio of municipal bonds to group general obligation bonds in one pool separate from the revenue bonds. There are only two, small revenue bonds in the portfolio, so management chooses not to segment further. However, the portfolio of general obligation bonds is significant; management decides to segment by credit rating to capture issuer risk dynamics.

Collateral-Dependent Financial Assets

This section includes examples of how management may implement ASC Subtopic 326-20 for estimating an ACL for a collateral-dependent financial asset.

Example 1

Bank Z has a loan secured by an income-producing property such as a shopping mall (Loan A). Management risk rated the loan substandard as the borrower's financial condition and repayment capacity deteriorated, and the bank determined the borrower is experiencing financial difficulty. The bank expects that the cash flows to repay Loan A will be derived substantially from the property's continued generation of net operating income from rental revenue, and there are no other available and reliable repayment sources. Loan A is considered collateral-dependent. The measurement of the expected credit loss will not be adjusted for costs to sell as cash flows will continue to come from the operation of the collateral.

Example 2

Bank Z has a loan to a manufacturer secured by the real estate used by the borrower's business that is risk rated substandard (Loan B). Bank Z anticipates the cash flows to repay Loan B to be derived from the borrower's ongoing manufacturing business operations. Loan B is not considered collateral-dependent because the loan is not expected to be repaid substantially from cash flows from the sale or operation of the collateral, even though the borrower is experiencing financial difficulty. Nevertheless, if the borrower's condition worsens so that any future payments from the operation of the business are expected to be nominal and repayment instead is expected to depend substantially on the sale or operation of the underlying collateral, Loan B would then be considered collateral-dependent.

Example 3

Bank Z has a commercial loan (Loan C) to a business secured by accounts receivable and inventory. The borrower is risk rated substandard, because the business has consistently underperformed relative to projections and now the negative performance variances have increased substantially. The bank considers this to be a well-defined weakness. While a modest amount of accounts receivable and inventory collateral exists, it is insufficient to cover the loan balance and may be difficult to liquidate. There are no other available and reliable repayment sources. Management acknowledges that the borrower is experiencing financial difficulty and considers Loan C to be collateral-dependent. The measurement of expected credit loss should be estimated through evaluation of the accounts receivable and inventory values. The portion of loan C that is in excess of the accounts receivable and inventory should be confirmed as loss.

Appendix H: Glossary

Definitions for items marked with * are from the "Master Glossary" of the ASC.

Amortized cost basis*: The amount at which a **financing receivable** or investment is originated or acquired, adjusted for applicable accrued interest, accretion or amortization of premium, discount, and net deferred fees or costs, collection of cash, charge-offs, foreign exchange, and fair value hedge accounting adjustments.

Critical audit matter (CAM): Any matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee, and that relates to accounts or disclosures that are material to the financial statements, and that involves especially challenging, subjective, or complex judgments.[99]

Collateral-dependent financial asset: A financial asset for which the repayment is expected to be provided substantially by the underlying collateral when the borrower is experiencing financial difficulty based on the bank's assessment as of the reporting date.[100]

Contractual term: A financial asset's contractual life adjusted for prepayments, renewal and extension options that are not unconditionally cancellable by the bank, and reasonably expected troubled debt restructurings.[101]

Contractually required payments receivable*: The total undiscounted amount of all uncollected contractual principal and contractual interest payments both past due and scheduled for the future, adjusted for the timing of prepayments, if considered, less any reduction by the investor. For an acquired asset-backed security with required contractual payments of principal and interest, the contractually required payments receivable is represented by the contractual terms of the security. When contractual payments of principal and interest are not specified by the security, it is necessary to consider the contractual terms of the underlying loans or assets.

Costs to sell: Incremental direct costs to transact a sale, including broker commissions, legal and title transfer fees, and closing costs that must be incurred before legal title can be transferred.

Debt security*: Any security representing a creditor relationship with an entity. The term debt security also includes all of the following:

- Preferred stock that by its terms either must be redeemed by the issuing entity or is redeemable at the option of the investor.

[99] Refer to Public Company Accounting Oversight Board AS 3101, "The Auditor's Report on an Audit of Financial Statements When the Auditor Expresses an Unqualified Opinion."

[100] Refer to ASC paragraph 326-20-35-5.

[101] Refer to ASC paragraph 326-20-30-6.

- A collateralized mortgage obligation (or other instrument) that is issued in equity form but is required to be accounted for as a nonequity instrument regardless of how that instrument is classified (that is, whether equity or debt) in the issuer's statement of financial position.
- U.S. Treasury securities.
- U.S. government agency securities.
- Municipal securities.
- Corporate bonds.
- Convertible debt.
- Commercial paper.
- All securitized debt instruments, such as collateralized mortgage obligations and real estate mortgage investment conduits.
- Interest-only and principal-only strips.

The term debt security excludes all of the following:

- Option contracts.
- Financial futures contracts.
- Forward contracts.
- Lease contracts.
- Receivables that do not meet the definition of security and are not debt securities, for example,
  - trade accounts receivable arising from sales on credit by industrial or commercial entities.
  - loans receivable arising from consumer, commercial, and real estate lending activities of financial banks.

Effective interest rate (EIR)*: The rate of return implicit in the financial asset, that is, the contractual interest rate adjusted for any net deferred fees or costs, premium, or discount existing at the origination or acquisition of the financial asset. For purchased financial assets with credit deterioration, however, to decouple interest income from credit loss recognition, the premium or discount at acquisition excludes the discount embedded in the purchase price that is attributable to the acquirer's assessment of credit losses at the date of acquisition.

Fair value*: The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Financial asset*: Cash, evidence of an ownership interest in an entity, or a contract that conveys to one entity a right to do either of the following:

- Receive cash or another financial instrument from a second entity.
- Exchange other financial instruments on potentially favorable terms with the second entity.

Financing receivable*: A financing arrangement that has both of the following characteristics:[102]

- It represents a contractual right to receive money in either of the following ways:
  - On demand.
  - On fixed or determinable dates.
- It is recognized as an asset in the entity's statement of financial position.

Freestanding contract*: A freestanding contract is entered into under either of the following terms:

- Separate and apart from any of the entity's other financial instruments or equity transactions.
- In conjunction with some other transaction and is legally detachable and separately exercisable.

Issuer*: The entity that issued a financial instrument or may be required under the terms of a financial instrument to issue its equity shares.

Line-of-credit arrangement*: A line-of-credit or revolving-debt arrangement is an agreement that provides the borrower with the option to make multiple borrowings up to a specified maximum amount, to repay portions of previous borrowings, and to then reborrow under the same contract. Line-of-credit and revolving-debt arrangements may include both amounts drawn by the debtor (a debt instrument) and a commitment by the creditor to make additional amounts available to the debtor under predefined terms (a loan commitment).

Loan commitment*: Loan commitments are legally binding commitments to extend credit to a counterparty under certain prespecified terms and conditions. They have fixed expiration dates and may either be fixed-rate or variable-rate. Loan commitments can be either of the following:

- Revolving, in which the amount of the overall commitment is reestablished upon repayment of previously drawn amounts.
- Nonrevolving, in which the amount of the overall commitment is not reestablished upon repayment of previously drawn amounts.

Loan commitments can be distributed through syndication arrangements, in which one entity acts as a lead and an agent on behalf of other entities that will each extend credit to a single borrower. Loan commitments generally permit the lender to terminate the arrangement under the terms of covenants negotiated under the agreement.

[102] Refer to ASC paragraphs 310-10-55-13 through 55-15 for more information on the definition of financing receivable, including a list of items that are excluded from the definition (for example, debt securities).

Model: A quantitative method, system, or approach that applies statistical, economic, financial, or mathematical theories, techniques, and assumptions to process input data into quantitative estimates.[103]

Negative amortization: An increase in the loan balance that occurs when a loan payment is insufficient to cover the interest and fees due and payable for the payment period and the resulting deficient amount is capitalized into the loan's balance.[104]

Off-balance-sheet credit exposure: Credit exposures on off-balance-sheet loan commitments, standby letters of credit, financial guarantees not accounted for as insurance, and other similar instruments, except for instruments within the scope of ASC Topic 815 on derivatives and hedging or accounted for as insurance. Off-balance-sheet credit exposures that are unconditionally cancellable by the issuer should not have an associated ACL.[105]

Policy election: ASC Topic 326 permits a series of independent accounting policy elections related to accrued interest receivables that may result in measurement outside of ACLs. Policy elections occur when there are two or more generally accepted accounting principles, and an entity must elect which accounting policy to apply. Accounting policies should generally be applied consistently each period (though GAAP may allow entities to make separate elections in different situations, such as separate elections for different classes of financing receivables). This consistency for accounting policy elections differs from accounting estimates, which should generally be updated (or reevaluated) each reporting period.

Purchased financial assets with credit deterioration (PCD)*: Acquired individual financial assets (or acquired groups of financial assets with similar risk characteristics) that as of the date of acquisition have experienced a more-than-insignificant deterioration in credit quality since origination, as determined by an acquirer's assessment.

Reasonable and supportable period: The period starting at the reporting date and extending until the bank is no longer able to develop reasonable and supportable forecasts. The reasonable and supportable period may include expectations of economic conditions.[106]

Recoveries: Recoveries are a component of management's estimation of the net amount expected to be collected for a financial asset. Expected recoveries of amounts previously charged off or expected to be charged off that are included in ACLs may not exceed the aggregate amounts previously charged off or expected to be charged off.[107]

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[103] This definition is from the "Supervisory Guidance on Model Risk Management" conveyed by OCC Bulletin 2011-12.

[104] This definition is from the "Retail Lending" booklet of the *Comptroller's Handbook*.

[105] Refer to ASC paragraph 326-20-30-11.

[106] Refer to ASC paragraph 326-20-30-9.

[107] Refer to footnote 10 in the "Interagency Policy Statement on Allowance for Credit Losses," conveyed by OCC Bulletin 2020-49, and ASC paragraph 326-20-30-1.

Reversion period: The period of forecasted losses that is beyond the reasonable and supportable period but before the period where forecasted losses are based solely on historical loss information. Use of a reversion period is required unless the reasonable and supportable forecast period extends through the contractual term of a financial asset or reversion is immediate (i.e., a reversion period of zero). Reversion may be at either the input level or based on the entire estimation. Reversion may be immediate, straight-line, or another rational and systematic basis.[108]

Revolver: Credit card customer who pays less than the full outstanding balance on its account each month (so that the account "revolves").[109]

Revolving privileges*: A feature in a loan that provides the borrower with the option to make multiple borrowings up to a specified maximum amount, to repay portions of previous borrowings, and to then re-borrow under the same loan.

Roll rate: Roll rates measure the movement of accounts and balances from one payment status to another (e.g., percentage of accounts or dollars that were current last month rolling to 30 days past due this month).[110]

Segmentation: The level at which an entity develops and documents a systematic methodology to determine its allowance for credit losses.[111]

Uncorrected misstatements: During the course of an audit, the auditor accumulates misstatements. A misstatement is a difference between the amount, classification, presentation, or disclosure of a reported financial statement item and what would be required for the item to be presented fairly in accordance with the applicable financial reporting framework (e.g., GAAP). Misstatements can arise from error (e.g., unintentional misstatement) or fraud. The auditor communicates accumulated uncorrected misstatements to the entity's audit committee, typically at the conclusion of the audit. Uncorrected misstatements are misstatements, other than those that are clearly trivial, that management has not corrected.[112]

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[108] Refer to the "Interagency Policy Statement on Allowance for Credit Losses," ASC paragraph 326-20-30-8, ASC paragraph 326-20-30-9, and FASB Q&A Topic 326 No. 2, "Developing an Estimate of Expected Credit Losses on Financial Assets."

[109] This definition is from the "Credit Card Lending" booklet of the *Comptroller's Handbook*.

[110] Ibid.

[111] Referred to as "portfolio segment" in the ASC "Master Glossary." For more information on segmentation, refer to ASC paragraphs 326-20-50-3 and 326-20-55-10.

[112] For more information, refer to American Institute of Certified Public Accountants AU-C Section 450, "Evaluation of Misstatements Identified During the Audit," and Public Company Accounting Oversight Board AS 2810, "Evaluating Audit Results."

Transfer risk: Transfer risk is the possibility that an asset cannot be serviced in the currency of payment because of a lack of, or restraints on the availability of, needed foreign exchange in the country of the obligor.[113]

Transactor: Credit card customer who pays its balances in full each month.[114]

Troubled debt restructuring (TDR)*: A restructuring of a debt constitutes a troubled debt restructuring if the creditor for economic or legal reasons related to the debtor's financial difficulties grants a concession to the debtor that it would not otherwise consider.

Unit of account*: The level at which an asset or liability is aggregated or disaggregated in an ASC Topic for recognition purposes.

Vintage analysis: Grouping loans by origination time frame (e.g., quarter) for analysis purposes. Performance trends are tracked for each vintage and compared with other vintages for similar time on book.[115]

[113] This definition is from the "Rating Credit Risk" booklet of the *Comptroller's Handbook*.

[114] This definition is from the "Credit Card Lending" booklet of the *Comptroller's Handbook*.

[115] Ibid.

Appendix I: Abbreviations

AACL	adjusted allowances for credit losses
ACL	allowance for credit losses
AFS	available-for-sale
ALLL	allowance for loan and lease losses
AS	Auditing Standard
ASC	Accounting Standards Codification
ASU	Accounting Standards Update
CAM	critical audit matter
CFR	Code of Federal Regulations
CECL	current expected credit losses
DCF	discounted cash flow
EAD	exposure at default
EIC	examiner-in-charge
EIR	effective interest rate
FASB	Financial Accounting Standards Board
FICO	Fair Isaac Corp.
FSA	federal savings association
GAAP	generally accepted accounting principles
HELOC	home equity line of credit
HFS	held for sale
HTM	held-to-maturity
LGD	loss given default
MIS	management information systems
MRA	matter requiring attention
OCC	Office of the Comptroller of the Currency
OCI	other comprehensive income
PCD	purchased credit deteriorated
PCI	purchased credit impaired
PCL	provision for credit losses
PD	probability of default
Q&A	question and answer
SAB	U.S. Securities and Exchange Commission Staff Accounting Bulletin
SOC	system and organization controls
TDR	troubled debt restructuring
USC	U.S. Code
WARM	weighted average remaining maturity

References

Listed references apply to national banks and FSAs unless otherwise noted.

Laws

12 USC 161, "Reports to Comptroller of the Currency" (national banks)
12 USC 1461 et seq., "Home Owners' Loan Act" (FSAs)
12 USC 1464(c), "Loans and Investments" (FSAs)
12 USC 1464(v), "Reports of Condition" (FSAs)
12 USC 1831e, "Activities of Savings Associations" (FSAs)
12 USC 1831n, "Accounting Objectives, Standards, and Requirements"
15 USC 1601 et seq., "Truth in Lending Act"
Pub. L. 111-24, "Credit Card Accountability Responsibility and Disclosure Act of 2009"

Regulations

12 CFR 1, "Investment Securities" (national banks)
12 CFR 3, "Capital Adequacy Standards"
12 CFR 6.4, "Capital Measures and Capital Categories"
12 CFR 28.52, "Allocated Transfer Risk Reserve" (national banks)
12 CFR 30, appendix A, "Interagency Guidelines Establishing Standards for Safety and Soundness"
12 CFR 34, subpart C, "Appraisals"
12 CFR 101, "Covered Savings Associations" (FSAs)
12 CFR 160, "Lending and Investment" (FSAs)
12 CFR 217.402, "Identification As a Global Systemically Important BHC"
12 CFR 363, "Annual Independent Audits and Reporting Requirements"
12 CFR 1026, "Truth In Lending (Regulation Z)"

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"Allowance for Loan and Lease Losses"
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"Residential Real Estate Lending"
"Retail Lending"

Office of Thrift Supervision Examination Handbook (FSAs)

Section 230, "Equity Investments"
Section 540, "Investment Securities"

OCC Issuances

Bank Accounting Advisory Series
OCC Bulletin 1999-10, "Subprime Lending Activities"
OCC Bulletin 1999-15, "Subprime Lending: Risks and Rewards" (national banks)
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