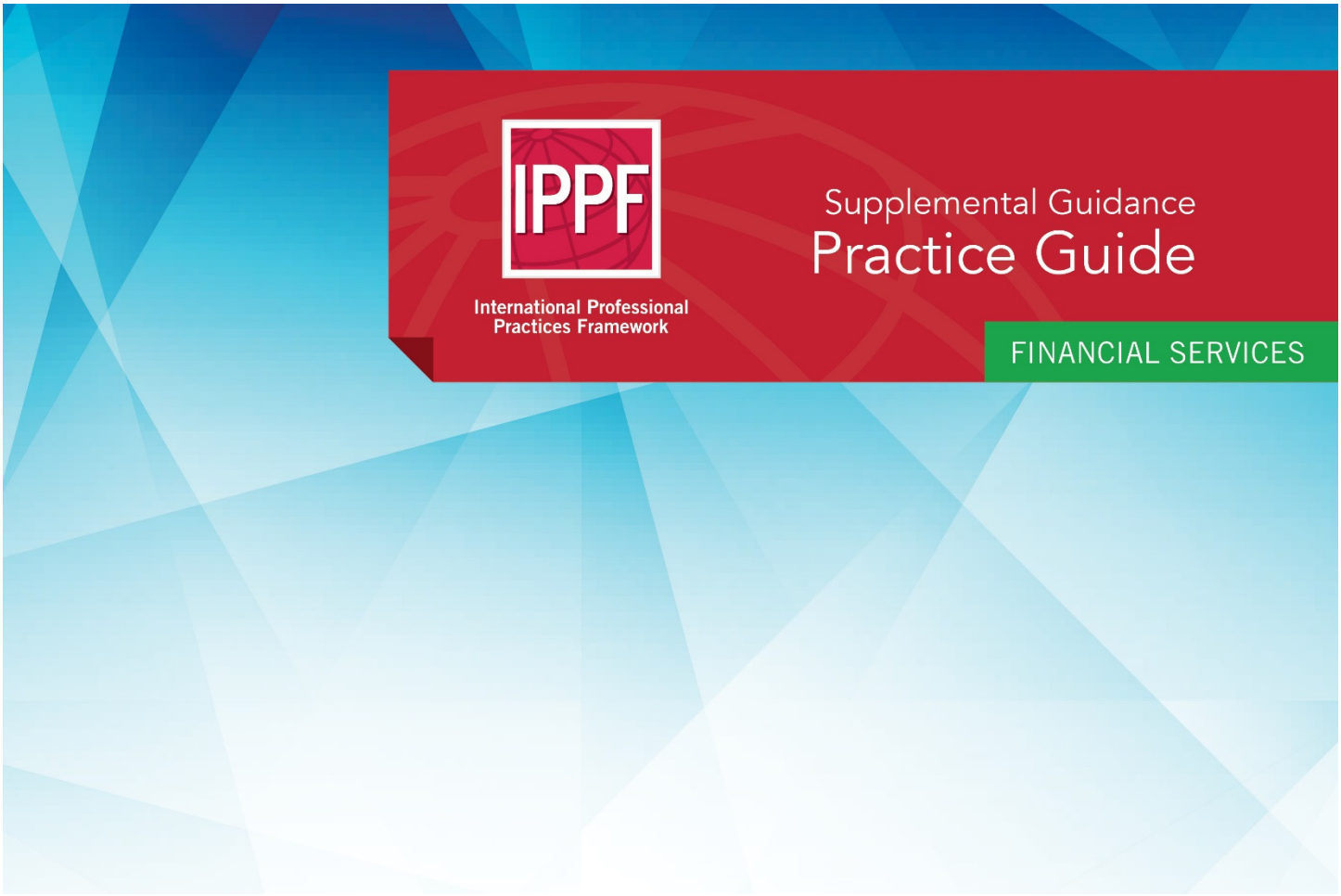
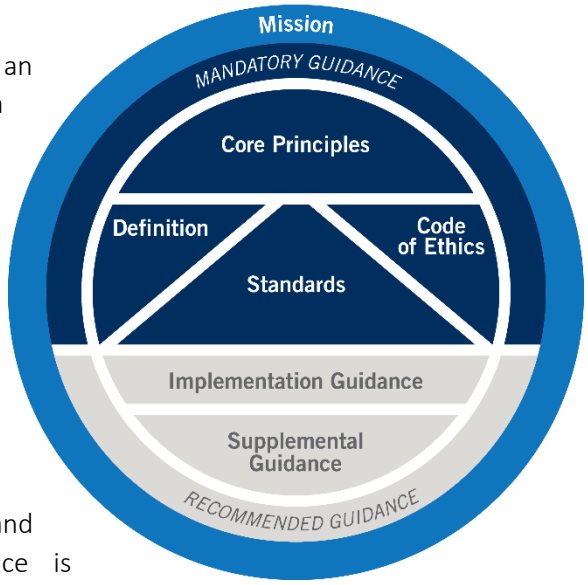


Auditing Credit Risk Management

The Institute of Internal Auditors | Global

About the IPPF

The International Professional Practices Framework® (IPPF®) is the conceptual framework that organizes authoritative guidance promulgated by The IIA for internal audit professionals worldwide.



Mandatory Guidance is developed following an established due diligence process, which includes a period of public exposure for stakeholder input. The mandatory elements of the IPPF are:

- Core Principles for the Professional Practice of Internal Auditing.
- Definition of Internal Auditing.
- Code of Ethics.
- *International Standards for the Professional Practice of Internal Auditing*.

Recommended Guidance includes Implementation and Supplemental Guidance. Implementation Guidance is designed to help internal auditors understand how to apply and conform with the requirements of Mandatory Guidance.

About Supplemental Guidance

Supplemental Guidance provides additional information, advice, and best practices for providing internal audit services. It supports the *Standards* by addressing topical areas and sector-specific issues in more detail than Implementation Guidance and is endorsed by The IIA through formal review and approval processes.

Practice Guides

Practice Guides, a type of Supplemental Guidance, provide detailed approaches, step-by-step processes, and examples intended to support all internal auditors. Select Practice Guides focus on:

- Financial Services.
- Public Sector.
- Information Technology (GTAG®).

For an overview of authoritative guidance materials provided by The IIA, please visit www.globaliia.org/standards-guidance.

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Executive Summary

Credit risk has always been considered a key risk for financial services organizations and, for a good number of organizations, maybe the most critical risk. After the global financial crisis, regulators and supervisors focused on this risk, emphasizing the necessity of having accurate models that can measure the capital impact of credit activities, the risk of leveraged finance, and the great importance of counterparty risk.

These new requirements and supervisors' expanded expectations are giving internal audit a more relevant and active role in the assessment of credit risk. In addition, an organization's board of directors has direct responsibility on the credit risk oversight and governance, so internal audit should give independent assurance per their Mission, Core Principles, and *Standards* (as contained in the 2017 IPPF) to the appropriate governance body.

The purpose of this guidance is to provide internal auditors with a baseline skill set that allows them to test and evaluate the effectiveness of the organization's credit risk management framework and processes.

Introduction

This guide provides support to internal auditors in the financial services sector with auditing credit risk. Credit risk is one of the essential **risk** categories of the financial services sector. Regulators across the globe are focused on financial services organizations' credit **risk management** activities. Moreover, regulators and supervisors consider managing the credit risk one of the pillars required to maintain a robust and solvent financial sector, which in turn encourages a steady economic condition.

Note: Terms in bold are defined in the glossary in Appendix B. In addition, acronyms used in this guide are spelled out in Appendix C.

Given the complexity and importance of managing credit risk within a financial services organization, this guidance will focus on credit risk arising from a financial services firm's lending practices. Further guidance will address more complex topics such as derivatives, hybrid investment portfolios, options, and other structured securities.

After reading this guidance, internal auditors should be able to:

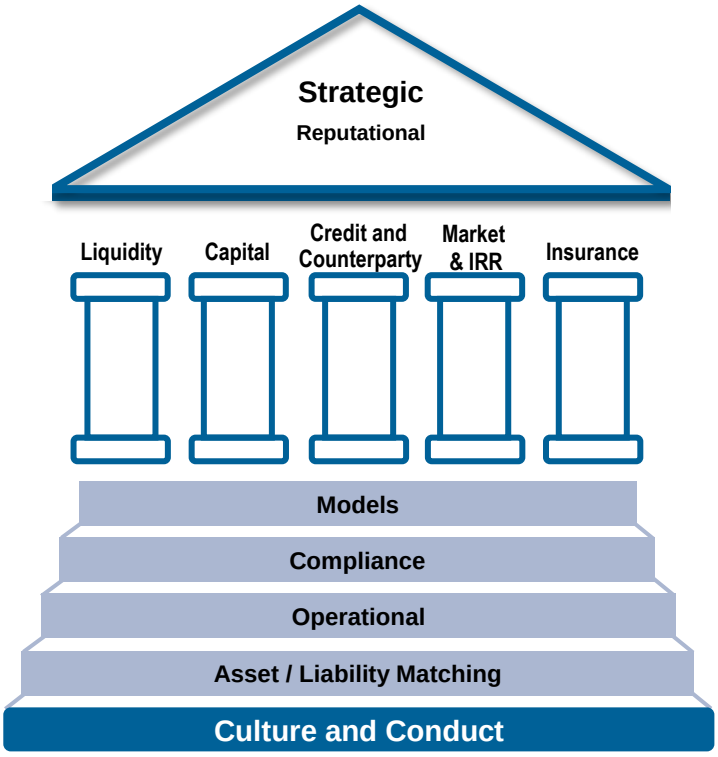
- Understand the importance of credit risk in a financial services context.
- Understand the regulatory environment and requirements related to credit risk.
- Understand the governance and risk management processes surrounding credit risk.
- Describe the nature and basis of measurement of the probability of default.

- Design an audit engagement that assesses the appropriateness and effectiveness of the credit risk management framework and the adequacy of the institution's credit profile.
- Be able to apply IPPF and risk-based internal audit techniques to assess and audit credit risk in their organization.

Business Significance: Risks and Opportunities

To properly manage the risks facing their organization, employees must understand the terminology associated with risk management, compliance, and internal auditing. One tool to communicate risk information across an organization is a risk framework. The IIA's Financial Services Guidance Committee has developed a comprehensive risk framework specifically for financial services organizations. This risk framework, depicted in Figure 1, considers the major areas of risk applicable to the financial services industry on a global basis.

Figure 1: The IIA's Financial Services Risk Framework



Source: The Institute of Internal Auditors.

The definition of *Credit and Counterparty Risk* is "the potential that a financial organization, borrower, or counterparty will fail to meet its obligations in accordance with agreed terms."[1]

(For definitions of each element of The IIA's Financial Services Risk Framework, please see IIA Practice Guide, "Foundations of Internal Auditing in Financial Services Firms.")

The basic concept of credit and counterparty risk is fairly straightforward: each year a certain percentage of borrowers and counterparties will default. If the Probability of Default (PD) forecast is lower than the realized default rates, the organization will have additional write-offs, so it is important that the financial services organization generates reasonable and stressed forecasts of their PD risks.

These write-offs may be offset by amounts collected during the organization's collections and recovery processes, so the PD forecast data feeds into forecasting of the expected Loss Given Default (LGD). Multiplying the PD and the LGD results in the total Expected Loss (EL) for the time period. If the realized loss is larger than the EL, the return on equity (ROE) will be less than the amount forecasted by management. If the realized loss is smaller than the EL, the ROE will be more than forecasted by management. The EL can be calculated as a percentage (EL = PD*LGD) or it can be calculated in terms of money by multiplying PD, LGD, and the Exposure at Default (EAD). The dollar amount of EAD becomes concrete when calculating the value of an asset at the point of default or over time.

Further, EL can be affected by fluctuations in credit lines. This concept is referred to as the Credit Conversion Factor (CCF). The CCF applies primarily to credit cards or similar loans and credit lines where there is a finite value, but obligors are not paying in regular installments as the balance changes. This makes it impossible to know what will happen within the account over time as the obligor may withdraw funds from the available credit line.

If the account goes into default, how can EAD be accurately measured if the amount the obligor owes is unknown?

The CCF requires the institution to analyze the obligor's behaviors using historical data to estimate how much of their exposure will convert into losses at the time of default. The EL calculation becomes:

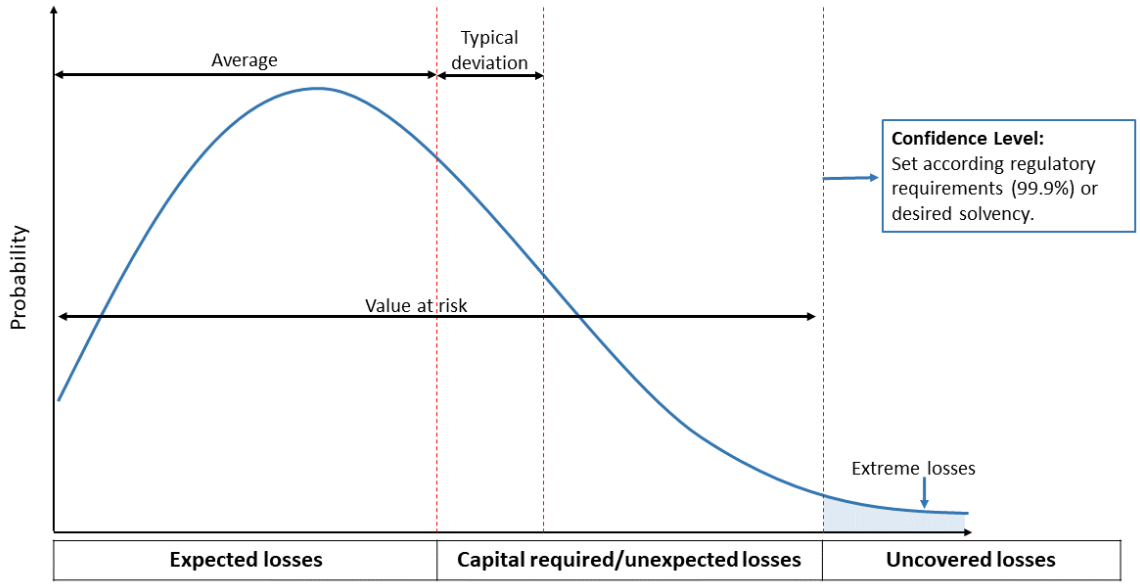
$$EL = (\text{Withdrawn amount} + CCF * \text{unwithdrawn amount}) * LGD * PD$$

A key element in the EL equation is LGD. LGD tools (e.g., appraisals, blue book values, resale stats, stock prices, futures) are used to assess the value and/or the quality of an asset the organization holds in exchange for providing funds. Collateral can be hard assets such as cars and machinery, mortgages, commodities, or any number of other assets. The higher the value of the security, the lower the LGD and the lower the EL.

1. "Principles for the Management of Credit Risk," Basel Committee on Banking Supervision, September 2000, https://www.bis.org/publ/bcbs75.pdf.

As shown in Figure 2, unexpected losses produced by credit portfolios are covered up to a confidence level of 99.9% by the capital. The confidence level will be set by the relevant regulator and/or Basel standards.

Figure 2: Credit Losses



Source: The Institute of Internal Auditors.

While the theory is simple, credit and counterparty risks are multi-faceted with risk impacts that reach into nearly all of a financial services organization's businesses. Internal auditors working in a financial services environment should understand that credit risk is managed by a complex web of controls that include both subjective decision-making processes and objective data.

According to the relevance of credit risk in a financial services organization's balance sheets, the widespread manifestation of this risk could jeopardize the viability and the sustainability of the company. For example, a credit problem in a portfolio of loans, if left undetected and unmanaged, can grow into a crisis that could impact the capital adequacy and liquidity of a financial institution.

For a full discussion of credit risk and its effect on capital adequacy and liquidity in financial institutions, please see IIA Practice Guides, "Auditing Capital Adequacy and Stress Testing for Banks," and "Auditing Liquidity Risk: An Overview."

Key Credit Risk-related Regulations

Basel II Capital Requirements

There are three acceptable approaches to determining LGD values per Basel II:

1. The Advanced Internal Ratings Based (A-IRB) or the Advanced approach, in which institutions use internal models to determine their own PD and LGD values.
2. The Foundation Internal Ratings Based (F-IRB), in which institutions are allowed to model only a specific set of parameters and must use prescribed calibrations for certain asset classes.
3. The Standardized Approach, in which regulators prescribe risk weights for various asset classes. Usually, this approach requires more capital allocation.

Institutions may choose which method they will use by asset class; however, there are excluded asset classes (e.g., A-IRB for mortgages and F-IRB for corporates). Most institutions will use a single method for the whole portfolio rather than picking and choosing by asset class. Globally, the standardized approach has been favored by supervisors in the initial phase of Basel II implementation.

The most updated version of Basel III shows three impacts on how organizations calculate LGD.

LGD Calculation Impact 1 – Removed the option to use the advanced IRB (A-IRB) approach for certain asset classes that cannot be modelled in a robust and prudent manner. These include exposures to large and mid-sized corporates, and exposures to banks and other financial institutions.

This table outlines the revised scope of approaches available under Basel III for certain asset classes compared to the Basel II framework (Figure 3).

Figure 3: Comparison of Basel II and Basel III Available Approaches for Asset Classes

Revised scope of IRB approaches for asset classes		
Portfolio/exposure	**Basel II: available approaches**	**Basel III: available approaches**
Large and mid-sized corporates (consolidated revenues > €500m)	A-IRB, F-IRB, SA	F-IRB, SA
Banks and other financial institutions	A-IRB, F-IRB, SA	F-IRB, SA
Equities	Various IRB approaches	SA
Specialized lending*	A-IRB, F-IRB, slotting, SA	A-IRB, F-IRB, slotting, SA

*With respect to specialized lending, banks would be permitted to continue using the advanced and foundation IRB approaches. The Committee will review the slotting approach for specialized lending in due course.

Source: Basel Committee on Banking Supervision*: High-level summary of Basel III reforms* (Basel, Switzerland: Bank for International Settlements, 2017), Table 2. https://www.bis.org/bcbs/publ/d424_hlsummary.pdf.

LGD Calculation Impact 2 – Adopted "input" floors (for metrics such as probabilities of default [PD] and loss given default [LGD]) to ensure a minimum level of conservativism in model parameters for asset classes where the IRB approaches remain available (Figure 4).

Figure 4: Minimum Parameters for IRB Approaches

Minimum Parameter Values in the Revised IRB Framework*				
	Probability of Default (PD)	Loss Given Default (LGD)		Exposure at Default (EAD)
		Unsecured	Secured	
Corporate	5 bp**	25%	Varying by collateral type: ■ 0% financial ■ 10% receivables ■ 10% commercial or residential real estate ■ 15% other physical	EAD subject to a floor that is the sum of (i) the on-balance sheet exposures; and (ii) 50% of the off-balance sheet exposure using the applicable Credit Conversion Factor (CCF) in the standardized approach
Retail classes: Mortgages QRRE*** transactors QRRE revolvers Other retail	 5 bp 5 bp 10 bp 5 bp	 N/A 50% 50% 30%	 5% N/A N/A Varying by collateral type: ■ 0% financial ■ 10% receivables ■ 10% commercial or residential real estate ■ 15% other physical	

*The LGD and EAD floors are only applicable in A-IRB approaches. The EAD floors are for those exposures where EAD modelling is still permitted. The LGD floors for secured exposures apply when the exposure is fully secured (i.e., the value of collateral after the application of haircuts exceeds the value of the exposure). The LGD floor for a partially secured exposure is calculated as a weighted average of the unsecured LGD floor for the unsecured portion and the secured LGD floor for the secured portion. ** BP refers to basis points. *** QRRE refers to qualifying revolving retail exposure.

Source: Basel Committee on Banking Supervision*: High-level summary of Basel III reforms* (Basel, Switzerland: Bank for International Settlements, 2017), Table 3. https://www.bis.org/bcbs/publ/d424_hlsummary.pdf.

LGD Calculation Impact 3 – Provided greater specification of parameter estimation practices to reduce risk weighted asset (RWA) variability.[2]

In general, internal auditors should monitor their organization's capital ratios and confirm they stay within the requirements. Some internal audit activities may analyze the collateral, foreign exchange, and other factors and recalculate the organization's ratios themselves to confirm they agree with the organization's reporting.

2. Basel Committee on Banking Supervision*: High-level summary of Basel III reforms* (Basel, Switzerland: Bank for International Settlements, 2017). https://www.bis.org/bcbs/publ/d424_hlsummary.pdf.

Risk Weighted Assets

RWAs are an estimate of risk that determines the minimum level of regulatory capital a bank must maintain to deal with unexpected losses.[3] The concept of RWA is simple, but calculating it for a financial institution of any size is a challenge.

Banks are required to hold capital in proportion to the risk level associated with the assets on their balance sheets. However, there are many specifications regarding how to classify assets and regulatory adjustments to be made based on numerous factors. Further, depending on the bank's status in terms of phase-in periods, these criteria may vary. To add to the complications, starting balances for both on- and off-balance sheet exposures and applicable risk weights form the foundation for estimates of post-stress testing capital ratios. Deficiencies or inaccuracies in these starting balances will compound throughout the capital planning process.

Here is a simplified example of the RWA concept:

> Cash and high-quality investment grade sovereign bonds are deemed to exhibit little if any credit risk. Therefore, banks could assign them no risk score and reserve no capital. Conversely, a subprime mortgage that is 90 days past due on its payments may require a capital reserve of 50 percent or more of its anticipated cash flows.

To calculate RWA, banks must perform this evaluation process for the entire asset side of the balance sheet and sum up the capital required based on the assigned risk weightings. That sum is the minimum required capital level for that bank.

In addition to the widely accepted Basel II and III capital requirement standards, two regulations impacting credit risk are Current Expected Credit Losses (CECL) issued in the United States by the Financial Accounting Standards Board (FASB) and International Financial Reporting Standard Nine (IFRS 9) issued in Europe. Both regulations affect the way financial services firms must calculate estimated losses and their associated capital charges and reserves.

CECL

Currently the impairment model required by FASB is based on actual incurred losses, and investments or loans are recognized as impaired when there is no longer an assumption that future cash flows will be collected in full under the originally contracted terms. Under CECL, financial services firms will be required to use historical information, current conditions, and reasonable forecasts to estimate the expected loss over the life of the investment or loan.

According to FASB, the reasoning behind the implementation of CECL is that it "aligns the accounting with the economics of lending by requiring institutions to immediately record the full

3. Basel Committee on Banking Supervision: Basel III: Finalising post-crisis reforms (Basel, Switzerland: Bank for International Settlements, 2017). https://www.bis.org/bcbs/publ/d424.pdf.

amount of credit losses that are expected in their loan portfolios, providing investors with better information about those losses on a more timely basis."[4]

IFRS 9

IFRS 9, which replaced IAS 39 as of January 2018, is similar to CECL in that it is focused on future expected losses. IFRS 9 uses 12-month expected losses for Stage 1 and lifetime expected losses for Stage 2 and 3, as shown in Figure 5.

IFRS 9 requires the organization to recognize the instrument when the contract is finalized, at its fair value, and classify the assets by their cash flow characteristics including:

- Amortized cost if the asset is held within a business model whose objective is to hold assets to collect contractual cash flows; and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.
- Fair value through other comprehensive income if the asset is held in a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets.
- Fair value through profit or loss if the asset is not held in a business model consistent with one of the first two categories.[5]

Similar to securities accounting rules in which securities are held either to maturity or as "available for sale," assets must be reclassified if the entity changes its business model for managing that asset.

Audit Consideration

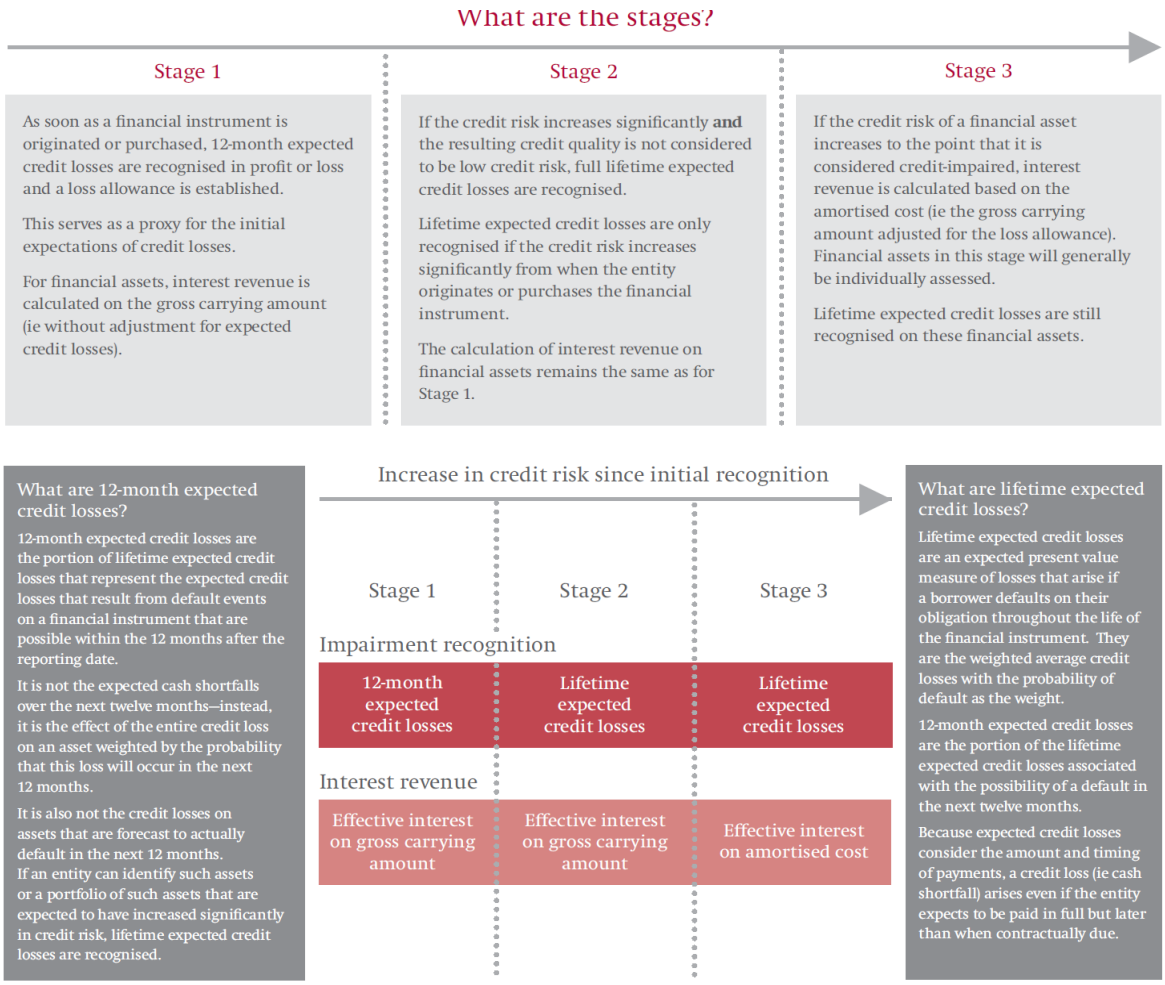
Internal auditors should verify their organization is documenting the process it will use or is using to comply with CECL and/or IFRS 9 including models used and model risk management activities implemented including model validation and vendor management activities.

In addition, internal auditors should understand the rationale of the hypothesis management is using to develop the compliance processes so they can evaluate the effectiveness of the entire process.

See IIA Practice Guides "Auditing Model Risk Management" and "Auditing Third-party Risk Management" for more information.

4. FASB Issues New Guidance on Accounting for Credit Losses, June 16, 2016. https://www.fasb.org/cs/ContentServer?c=FASBContent_C&cid=1176168232900&d=&pagename=FASB%2FFASBContent_C%2FNewsPage.
5. IFRS 9 Financial Instruments, accessed November 18, 2019. https://www.ifrs.org/issued-standards/list-of-standards/ifrs-9-financial-instruments/.

Figure 5: Overview of the Impairment Requirements



Source: IFRS 9 Financial Instruments, July 2014, 16-17. https://www.ifrs.org/-/media/project/fi-impairment/ifrs-standard/published-documents/project-summary-july-2014.pdf. See Appendix E for complete copyright information.

Credit Ratings

Agencies such as Experian and TransUnion numerically rate the credit worthiness of borrowers, including individuals, corporations, governments, and other types of entity. Each agency has its own model for calculating credit ratings and although the results for entities rated may be close, they are rarely exactly the same. Some credit agencies will provide weights of various criteria considered in generating a credit score; however, for any borrower, the most important factor in determining the credit score is timely bill payment.

Similar to credit ratings for borrowers, bond issuers are evaluated for creditworthiness but using different criteria. Moody's, Standard & Poor's, and Fitch are the world's three main bond rating agencies. The major criteria used to rate bonds is the issuer's financial ability to make interest payments and repay the loan in full at maturity. This rating also affects the **yield** the issuer must pay to entice investors. Lower rated bonds will pay a higher yield corresponding to the higher risk involved in lending the issuer funds. Generally, bonds are categorized into investment-grade

(higher ratings) and high-yield (lower ratings). High-yield bonds are also referred to as non-investment grade or junk bonds.

Studies have shown that lower rated bonds have a higher probability of default and do so more rapidly than investment-grade bonds. Ratings agencies typically issue annual reports illustrating defaults across a variety of industries.[6]

Most financial services firms will have their own processes for rating the creditworthiness of their corporate and retail clients. Ratings published by agencies are only available for companies that have issued publicly traded debt, which would exclude many small and mid-sized companies.

For financial services firm managing credit risk, this data indicates that lower credit ratings for borrowers and/or lower credit ratings for bonds generate higher risk levels, requiring more capital (reserves) held against losses than higher ratings would. Conversely, instruments with higher ratings have lower capital requirements.

Risk increases with time even for borrowers with good credit and bonds of investment grade, and markets are not immune to unexpected risks. Indeed, the global financial crisis of 2008 illustrated the weakness of relying solely on credit ratings to value credit portfolios and reserves. As a result, financial services firms should have additional measures in place to monitor the economic health of their borrowers and bond issuers.

Counterparty Credit Risk

This is the potential that a financial organization, borrower, or counterparty will fail to meet its obligations in accordance with agreed terms." An economic loss would occur if the transactions or portfolio of transactions with the counterparty has a positive economic value at the time of default.

Unlike a firm's exposure to credit risk through a loan, where the exposure to credit risk is unilateral and only the lending bank faces the risk of loss, CCR creates a bilateral risk of loss: the market value of the transaction can be positive or negative to either counterparty to the transaction. The market value is uncertain and can vary over time with the movement of underlying market factors.

Counterparty credit risk is associated with the risk of derivatives investing, which is beyond the scope of this practice guide. However, internal auditors should be familiar with the concept.

Source: BIS, *CRE – Calculation of RWA for credit risk*, December 15, 2019, https://www.bis.org/basel_framework/chapter/CRE/51.htm.

6. S&P Global Ratings, "Default, Transition, and Recovery: 2018 Annual Global Corporate Default And Rating Transition Study," April 9, 2019. https://www.spratings.com/documents/20184/774196/2018AnnualGlobalCorporateDefaultAndRatingTransitionStudy.pdf.

Credit Risk Governance

All financial services organizations should have a defined credit risk management framework. The board is responsible for monitoring the credit risk management framework and the governance structures that surround that framework. Standard 2120 – Risk Management states, "The internal audit activity must evaluate the effectiveness and contribute to the improvement of risk management processes." So it is important for internal auditors to understand the governance structures and processes associated with credit risk management.

Credit **risk strategy** or strategies, policies, and processes should be reviewed by the board annually at a minimum. In larger organizations, the credit policies may be tailored for different regions and/or customer types. For example, policies for retail customers might be different from those for large warehouse organizations.

The board may create/revise the credit risk strategy annually with smaller units reviewing the strategy and policies more frequently. For example, geopolitical issues may necessitate more frequent reviews. When governments change, there may be an impact on the country's economy, triggering ripple effects for organizations doing business there. In this case, organizations doing business in affected areas may wish to review their credit strategy and policies quarterly.

A Global Example

In Mexico, by regulation, financial institutions must have a risk management committee, credit committee, and audit committee.

One large financial institution located in Mexico City has a risk management committee that meets monthly, and that covers all risks with the first, second, and third lines of defense. They also cover credit risk. This committee combines the risk management and credit committees into one body.

The audit committee, which meets quarterly, should have members who are external and independent.

Both committees receive risk reports. Some strategies, policies, and transactions are approved by the risk management committee with others approved by the audit committee depending on established criteria for escalation and/or delegation of authorities.

Most financial services organizations have a credit committee that reviews the credit risk management framework, capital strategy, risk aggregation, and concentration limits. They may also be responsible for setting credit risk limits. The credit committee may be the body responsible for reporting on credit risk to the board. Credit committees should meet frequently — perhaps once per week and more often if events merit more attention.

Financial services organizations may also have an asset/liability committee (ALCO). The ALCO should review the capital plan, monitor conformance to the institution's stated **risk appetite**, and oversee decision-making related to managing assets and liabilities. This oversight includes evaluating and reacting to changing market conditions and ensuring the adequacy of liquidity and capital resources. In smaller financial services organizations such as local banks or credit unions,

these duties may be covered by a credit committee made up of senior lending officials, the chief loan officer, the CEO, CFO, and others as appropriate. Alternatively, the senior executive team in total may perform these duties. In both cases, the audit committee (known as the supervisory committee in credit unions) monitors the committees/teams.

Risk management (the second line of defense) plays a key role in managing credit risk.[7] For larger corporations, each line of business (i.e., retail, commercial) may have their own risk management committees that meet regularly to discuss all types of risk including credit risk.

These committees may have external considerations when setting limits, including but not limited to:

- Limits from the bank or regulator(s) related to their capital requirements.
- Limits on exposure to shareholders or other parties.

In general, the risk management function recommends the risk appetite, targets, and limits related to credit risk that are consistent with the organization's **risk profile** and strategy to the board. Front office activities should ensure that approved credit risk requirements are fulfilled. Risk management can then perform their challenge and monitoring responsibilities, which positions internal audit to provide assurance on the efficiency and effectiveness of the credit risk management processes.

Additional Resources

Please see BCBS "Guidance on credit risk and accounting for expected credit losses" that includes the 11 principles around which credit risk supervisory guidance should be structured.

https://www.bis.org/bcbs/publ/d350.pdf.

Audit Consideration

Internal auditors should verify there is a clear exception process for violations of credit risk limits, review if there is enough information on exceptions performance, and verify that the organization uses that information to take corrective actions.

Further, the credit committee, another second line of defense function or other relevant personnel, should regularly review exception reports and communicate significant exceptions to executive management and the board as necessary.

Internal auditors should verify if the exception process for violations of credit risk limits is clear, monitored, and communicated.

7. The Institute of Internal Auditors. The IIA's Position Paper: The Three Lines of Defense in Effective Risk Management and Control (Altamonte Springs: The Institute of Internal Auditors, 2013). https://global.theiia.org/standards-guidance/recommended-guidance/Pages/The-Three-Lines-of-Defense-in-Effective-Risk-Management-and-Control.aspx.

Risk Appetite

The IIA defines risk appetite as the level of risk that an organization is willing to accept.[8] The risk appetite framework forms the basis of capital policies and governs the strategies and processes the organization uses to meet its objectives. The risk appetite framework is defined by BCBS as "the overall approach, including policies, processes, controls, and systems, through which risk appetite is established, communicated, and monitored."[9] This definition includes the interaction between capital preservation and funding costs as well as interactions between credit, market, operational, and systemic risks.

Once the board and senior management have determined the organization's risk appetite, the business will then translate, in quantitative terms, the annual budgets and targets within the limits of the risk appetite and liquidity, capital, and efficiency plans established. They may be considering a strategy that includes increasing placements in the retail sector, for example. They may perform new evaluations on sectors of the economy in which the risk profile has changed.

Credit risk is quantified using two main metrics: expected loss (EL) and economic capital (EC). The expected loss reflects the average value of the estimated losses (i.e., the cost of the business) and is associated with the organization's policy on provisions, while economic capital is the amount of capital necessary to cover unexpected losses (i.e., if actual losses are higher than expected losses). These risk metrics influence risk decisions that optimize profitability by impacting business strategies and operational decisions such as approving individual loans, price setting, assessing nonperforming loans, and more.

Once this analysis is completed, the business may allocate their portfolio according to their parameters and needs, such as sector, region, country, etc. This comprises the organization's proposed risk appetite. From there, the risk management committee, or other appropriate governing body, will set the credit risk limits for the organization, thereby forming the operational part of the organization's risk appetite.

Credit Risk Management

In financial services organizations, credit, once granted, is subject to a process including measuring and monitoring performance of the loans, various credit administration and servicing processes (depending on the product) and collections, if the borrower fails to meet their obligations on time (Figure 6).

8. The Institute of Internal Auditors, *International Professional Practices Framework* (Florida: The Institute of Internal Auditors, 2017), 243. https://bookstore.theiia.org/international-professional-practices-framework-ippf-2017-edition.
9. Basel Committee on Banking Supervision. *Consultative Document, Guidelines, and Corporate governance principles for banks* (Basel, Switzerland: Institution for International Settlements, 2014). https://www.bis.org/publ/bcbs294.pdf.

Figure 6: Credit Risk Management Process

Source: The Institute of Internal Auditors.

Credit Granting Process – The granting criteria comprise creditworthiness measures. The criteria should be well defined in the credit policy and include the target market, understanding of the borrower and counterparty, purpose and structure of the credit, and source of repayment. The borrower must be classified as being able to repay the loan. The source of repayment should focus mainly on the cash flows of the borrower rather than the collateral. The collateral used or pledged as a guarantee if the debtor fails to repay the credit must be of a nature and value consistent with the borrower's request for funds.

This process, referred to as underwriting, entails the organization's ability to determine the borrower's creditworthiness. Questions to help determine this vary depending on unique circumstances and may include inquiries such as, "Is it a commercial credit in which machines are purchased to generate some kind of return? Or is this an individual consumer loan to buy a car?" Each scenario will have different underwriting requirements. Loans may be secured by any number of options — securities, property, money held in an account, etc.

The granting process should include in addition to approving new credits, the amendment, renewal, and refinancing of existing credits. All extensions of credit must be made on an arm's-length basis. In particular, credits to related companies and individuals must be authorized on an exception basis, monitored with particular care and other appropriate steps taken to control or mitigate the risks of non-arm's length lending.

"Exception to policy" loans should have an appropriate approval process in place, and differentiated monitoring to assess performance. Approval can be obtained at an individual credit manager, credit committee, or board credit committee level depending on the amount involved. When auditing financial statements, external auditors often examine samples of those types of loans.

Loan File Maintenance and Review Process – Once a credit is granted, it is the responsibility of the business unit, often in conjunction with a credit administration support team, to ensure that the credit is properly maintained. This includes verifying that all required documentation for the loan file is properly retained at underwriting and approval, keeping the credit file up to date, obtaining current financial information, sending renewal notices, and preparing various documents such as loan agreements.

Credit Servicing Process – Servicing loans can take many forms; however, collecting borrowers' payments and applying them to the contract's accounts is the main focus. For many types of loans, servicing can include paying taxes, insurance, or other fees for the borrower and creating escrow accounts to hold the money until it is required.

Collections Process – Also known as recovery, this is a key part of credit risk management, and entails a significant degree of specialization. Recovery includes activities geared toward reducing the consequences of loss events, before such events occur (arrears management or early nonpayment management) and also after such events occur (recovery of nonperforming loans, recovery of written-off loans, and management of foreclosed assets and execution of guarantees). Thus, in its preventive management phase, recovery management is connected with prior monitoring processes, to anticipate the default event and with it take the most appropriate corrective measures for each situation. Collections personnel should anticipate the deterioration/arrears to establish strategies or measures to avoid nonpayment.

Credit Risk Measurement and Monitoring Processes – After a loan is approved and the risk is included in the portfolio, a continuous monitoring process of risks assumed is required. Financial organizations must anticipate situations in which risk levels may be increased and corrective measures and actions might have to be taken. BCBS encourages banks to "develop and utilize an internal risk rating system in managing credit risk. The rating system should be consistent with the nature, size, and complexity of a bank's activities."[10]

Asset valuation and loan loss reserves (LLR) – The correct accounting valuation of assets for credit risks can be made by two valuation criteria: 1) amortized cost, which is the difference between the starting amount and the repayment value at maturity, minus the impairment value reduction that would have been recognized either directly as a decrease in assets or by provisions; and 2) fair value, which is the value by which the asset can be acquired, the market value being used as a reference, or failing that, by valuation techniques.

The purpose of the LLR is to reflect estimated credit losses within an institution's portfolio of loans and leases. Estimated credit losses are estimates of the current amount of loans with sufficiently high probability of default and the institution's inability to recover the funds given the facts and circumstances since the evaluation date. The LLR is presented on the balance sheet as a contra-asset account that reduces the amount of the loan portfolio reported on the balance sheet.

The Role of Internal Audit

The role of internal audit is to independently assess the adequacy and effectiveness of the policies, procedures, and processes applied by the organization to manage credit risk. The internal audit activity provides assurance on whether the outcomes achieved by management affected by credit risk align with the mission, strategies, and risk appetite of the organization, in addition to stated policies and procedures and regulatory requirements. Internal audit also verifies the correctness of the accounting criteria and the adequacy of the LLR.

10. Basel Committee on Banking Supervision, "Principles for the Management of Credit Risk" (Basel, Switzerland: Bank for International Settlements, n.d.). https://www.bis.org/publ/bcbsc125.pdf.

Depending on the size and structure of the organization, there may be a global internal audit activity that resides at the organization's headquarters, with local internal audit teams residing in key locations where the organization has a presence. Local internal audit teams provide knowledge of unique local practices, regulations, and other helpful information. The global internal audit activity may be useful in assisting local units by:

- Auditing new accounting policies, rules, and regulations.
- Developing work programs for local units to cover products offered at that unit.
- Reviewing the risk universe for all locations to ensure all units are covering risks in the agreed cycle.
- Reviewing and providing comments on policies including working with compliance, legal, and other stakeholders to obtain and integrate their feedback.
- Reviewing the credit process and helping management in identifying risks and providing comments on the control environment and controls within the credit process.
- Reviewing the internal credit risk rating system.
- Reviewing the adequacy of the loan loss reserves provision.

In addition to the audits listed in the annual internal audit plan, internal audit activities may receive requests from the audit committee or board to review certain loan portfolios or other products and processes. The board may also request that the CAE provide comments on the credit policy to assess the adequacy of loan loss amounts. Issues such as these may come from the organization's other risk management functions, such as operational risk that may trigger the board to request additional work for the internal audit activity to perform.

Change Management

Financial services firms may be affected by change management risks in numerous ways. New products are an obvious source, but so are expansions or modifications to existing products, services, or systems offered or used by the organization. Also, marketing an existing product to a new location may lead to additional/different regulatory requirements. A financial services organization may also change the underlying reference security or technical currency of an existing product, thus, generating change management risks.

In general, most financial services organizations rely on the second line of defense (operational risk) for oversight of product development programs, issue and progress tracking, and reporting. The operational risk function may also be in the position to provide credible challenge and escalation of issues as appropriate. Relating to change management, organizations should consider operational risks such as:

- Inadequate infrastructure to support products.
- Inadequate funding.
- Issues with people, processes, or technology.
- Inadequate training.

New products or changes to existing products may also affect the risk of fraud. The organization's second line of defense may require new fraud monitoring processes and/or technologies to avoid losses.

Finally, the organization should have an exit strategy if a product fails. Risk exposures that could occur beyond the normal expected losses should be thoroughly considered and documented.

Internal audit may be involved in the process for implementing new financial services products. Some organizations invite many departments from the first, second, and third line in their product line development process to offer opinions on potential risks (risk within the sector, data required, regulatory issues, etc.). At the end of this process, internal audit may complete a checklist or audit program to provide assurance to management and the board that appropriate steps were taken and accomplished according to procedures.

Internal audit would not be involved in determining the product's ultimate suitability for the organization. However, that does not mean that internal auditors cannot or should not identify additional risks not detected during the product development process.

Planning and Performing the Engagement

Gather Information

The CAE, or internal auditors assigned by the CAE, should be involved in various meetings throughout the organization regarding strategic planning, capital planning, and other types of risk including credit risk. Internal auditors attending these meetings should be conscious of the information that pertains to credit risk. This information will also help internal auditors identify where credit-related risk information is retained in the organization.

Large global financial services organizations tend to have many business lines that would be exposed to credit risks. Smaller organizations, insurance companies, and/or other types of financial services-related businesses may have a smaller selection of credit products, but the risks for those products remain largely the same. Examples of major business lines organizations may engage in include, but is not limited to:

Retail – Also known as consumer banking or personal banking, retail banking is the division of the institution that deals directly with individual customers. Institutional branches are part of the retail organization along with other entry channels such as phone apps and internet-based banking sites.

Wholesale – Refers to banking services between merchant institutions and other financial institutions. Wholesale banking deals with larger clients, such as major corporations and other institutions are in this category. Services may include currency conversion, working capital financing, inventory financing, large trade transactions, among other types of service.

Private banking – This focuses on high net worth individuals (HNWI) who are provided personalized financial advice and management of their investment portfolios. Private banking often includes loans secured by liquid items such as bonds, deposits, and investment funds.

Small and Medium Enterprises (SME) – This includes the funding of small and medium-sized businesses (any entity, regardless of its legal form, which carries out economic activity), and represents a major part of the business finance market in which capital for different types of firms is supplied, acquired, and priced. Credit approval is usually granted through a mix among models and underwriter judgment.

Credit risk information can be gathered from any of these business lines. However, the scope of this guide is structured around loans to retail customers for clarity and simplicity.

Standard 2010 – Planning states, "The **chief audit executive** must establish a risk-based plan to determine the priorities of the internal audit activity, consistent with the organization's goals." Once internal auditors have identified the departments, functions, and roles in the organization that are relevant to managing credit risk, they should gather relevant documentation to support the preliminary risk assessment and plan the audit engagement.

The following elements can help internal auditors understand the level of credit risk the institution is willing to accept in the pursuit of its stated objectives.

- Charters, policies, **risk appetite statement** (RAS), and other mandate information for the governance entities responsible for establishing the credit risk management strategy, policies, and procedures.
- Policies and procedures regarding all phases of the credit process from granting to collections. A good place to search for this information would be personnel associated with loan review.
- Results of modeling for credit risks (PD and LGD) and results of monitoring the power of differentiation from credit risk models.
- Assessment on the sufficiency of loan loss reserves (EL and EAD) for nonperforming loans.
- Reports containing the results of stress testing various shocks to the credit portfolio.
- Evolution of capital allocation for credit risk management.

Internal auditors should also ask for related escalation protocols to understand what happens when a loan is approved outside of typical parameters or as an exception to policy.

Risk Assessment

Credit risk assessments may be conducted top down and bottom up. A bottom up credit risk assessment in a large organization would be performed locally with results rolled up to the corporate level. Corporate level internal auditors may identify high risk portfolios based on ratios (i.e., nonperforming loans, cost of credit) to assist them in evaluating the risk assessment results passed up to them from local internal auditors, but they may take the final decision on what risks

to cover. Smaller organizations may be able to conduct credit risk assessments from the top down starting with the board's credit risk strategy and ending with risk assessments on key products.

Depending on the size and business model of the financial services organization, sources of credit risk may be aligned with product examples as shown in Figure 7.

Figure 7: Sources of Credit Risk

■ Loans	■ Financial futures
■ Banking book	■ Swaps
■ Trading book	■ Bonds
■ Acceptances	■ Equities
■ Banking transactions	■ Options
■ Trade financing	■ Extension of commitments and guarantees
■ FX transactions	■ Settlement of transactions
■ Off balance sheet	

Source: The Institute of Internal Auditors.

See Appendix D for sample credit risks.

The ultimate scope and objectives of an audit should inform how the preliminary risk assessment is focused and performed.

Planning the Engagement

To satisfy Standard 2210 – Engagement Objectives and Standard 2220 – Engagement Scope, some approaches the CAE may consider are:

Product audits – For many institutions the largest credit risks exist in the areas of auto, mortgage, and credit cards, so planning an audit approach by product is reasonable.

Business line audits – Some internal audit activities may plan their audits around business lines, such as commercial banking because they are able to get a broad view of the credit risk processes in the business line at a higher level than a product audit would allow. Further, procedures vary between business lines, so internal auditors should not assume two business lines are identical.

Audit Consideration

Financial institutions may have many entities auditing various aspects of credit risk. Internal audit, regulators, credit risk review functions, compliance, and others may be constantly asking for the same information.

Internal audit should attempt to coordinate as much as possible with other entities to avoid audit fatigue.

For information on coordinating with others during an audit, see IIA Practice Guide "Coordination and Reliance: Developing an Assurance Map."

Also see Standard 2050 – Coordination and Reliance.

Specific credit risk audits – If market events or the institution's credit portfolio performance warrant a different approach, internal auditors may choose to audit a specific credit risk such as concentration risk. Internal auditors may analyze the controls related to concentration risk in a cross-section of products and business lines.

Credit risk process audits – Internal audit may choose to design an audit engagement regarding portfolio management that would cover credit approval processes for a selection of products depending on volume. Another approach would be auditing loan impairment provisions within which internal auditors would cover retail and include the different portfolios depending on the volume and/or their risk levels. A further example is to conduct a review of nonperforming loans (NPLs) that could consist of examining how a local unit deals with the accounting and the portfolio valuation (marking to market).

To accurately and completely examine credit risk in an organization, internal auditors should ensure they are independent (Standard 1100 – Independence and Objectivity) and that the appropriate technical skill sets are employed (Standard 1200 – Proficiency and Due Professional Care). The most common way internal auditors or second line personnel may have their independence impaired regarding credit risk is if they are involved with loan reviews, or the development, implementation, or validation of any relevant models.

Internal auditors may also have their independence compromised by being part of a team developing a new product if their duties on that team cross over from being an observer to participating in product design. If this situation occurs, auditors involved should not be part of the audit team if their involvement occurred within the past year. Standard 1120 – Individual Objectivity states, "Internal auditors must have an impartial, unbiased attitude and avoid any conflict of interest." The interpretation of the standard says a conflict of interest can create an appearance of impropriety that can undermine confidence in the auditor, the internal audit activity, and the profession.

Standard 1130 – Impairment to Independence or Objectivity states, "If independence or objectivity is impaired in fact or appearance, the details of the impairment must be disclosed to appropriate parties. The nature of the disclosure will depend upon the impairment." The interpretation of this standard outlines further parameters that must considered when assigning auditors to an audit or consulting project.

In conformance with Standard 2230 – Engagement Resource Allocation, the interpretation indicates the CAE should assess the skills of internal audit team members periodically to ensure that the internal audit activity has the appropriate skills to evaluate the area under review.

As mentioned, large financial services organizations may also have a credit review function that resides within the lending unit. If so, the CAE must decide if that work can be relied upon. If the CAE chooses to or is required to rely on other service providers, as noted in Standard 2050 – Coordination and Reliance, they should carefully consider the competency, objectivity, and due

professional care of the other providers, as well as clearly understand the scope, objectives, and results of their work. Ultimately, the CAE retains the responsibility for ensuring adequate support exists for the conclusions and opinions reached by the internal audit activity, even if that includes work contributed by others. (For information on coordinating with others during an audit, see IIA Practice Guide "Coordination and Reliance: Developing an Assurance Map.")

During planning, internal auditors document information in engagement workpapers as mandated by Standard 2330 – Documenting Information. This information becomes part of the engagement work program that must be established to achieve the engagement objectives, as required by Standard 2240 – Engagement Work Program.

The process of establishing the engagement objectives and scope may produce any or all of the following workpapers:

- Process maps.
- Summary of interviews.
- Preliminary risk assessment (e.g., risk and control matrix and heat map).
- Rationale for decisions regarding risks included in the engagement.
- Criteria used to evaluate the area or process under review including criteria to evaluate management's self-assessment results (required for assurance engagements, according to Standard 2210.A3).

Evaluating Management's Self-assessment Results

One large bank reports on management or audit identified issues. When internal auditors perform the engagement, they first ask for any management self-identified issues, and they validate those under four criteria:

1. Timeliness.
2. Adequate risk assessment.
3. Reasonable action plans.
4. Issues escalated to an appropriate governance forum.

If management's self-identified issues pass these four criteria, the internal auditors give the credit to management. The two ultimate grades given include:

1. The control rating.
2. Management action grade.

On issues and corrective actions that are accepted, internal auditors may do some testing but not complete testing. They may also seek evidence of progress on actions noted.

Performing the Engagement

Evaluating Credit Risk Governance

Generally, within credit risk life cycle processes, the greatest responsibility of credit approval and recovery would be the responsibility of the first line, while monitoring is more developed by the second line. However this does not exempt the first line from carrying out process controls that allow it to correct deviations with budgets and meet the entity's risk appetite. A comprehensive work program for credit risk should focus on both the first line and the second line as well as the higher credit risk governance committees mentioned in the Credit Risk Governance section of this document.

Some important considerations should be confirmed as part of Standard 2240 – Engagement Work Program.

- Credit risk committees, whose activities must be documented, will be of particular relevance to demonstrate the second line is appropriately supervising the first line. Know Your Customer (KYC) rules are an important component of an audit of the credit risk processes. The objective of KYC is to ensure credit is granted to a known customer that is not subject to sanctions or associated with criminal activity. The purpose of the loan must be known and the customer as represented in the application must actually exist.
- Credit risk decisions are taken within individual and committee mandates, as prescribed by the authorities delegated to them from the organization's board. Those responsible for making risk decisions (individuals and committees) should be provided with relevant and updated information from any appropriate risk assessments. Material risk decisions may be subject to challenge by the second line of defense.
- To have greater efficiency in the decision-making process, financial institutions may distribute the responsibilities from the main credit committees to an analyst. Distributing responsibility is often based on materiality, so lower risk/amount operations can be authorized directly by salespersons or loan officers with the support of a scoring mechanism that requires the more risk-exposed loans to be approved by higher level committees.
- Committee structures also may vary. Depending on the size of the financial institution, it may be necessary to create different committees with varying levels of approval power. There may also be cases in which the board itself participates in the decision approval involving the most or highest risk.
- There should be evidence that committees are executing their oversight functions of credit policies and monitoring portfolios by effectively challenging actions taken by the first line as appropriate. This requires them to monitor the portfolio's performance to identify deviations that may require action.
- Board members will assess if the risk committee is effectively monitoring whether strategic goals are being met within the risk appetite of the organization.
- Internal audit should confirm the sufficiency of capital allocated for credit risk.

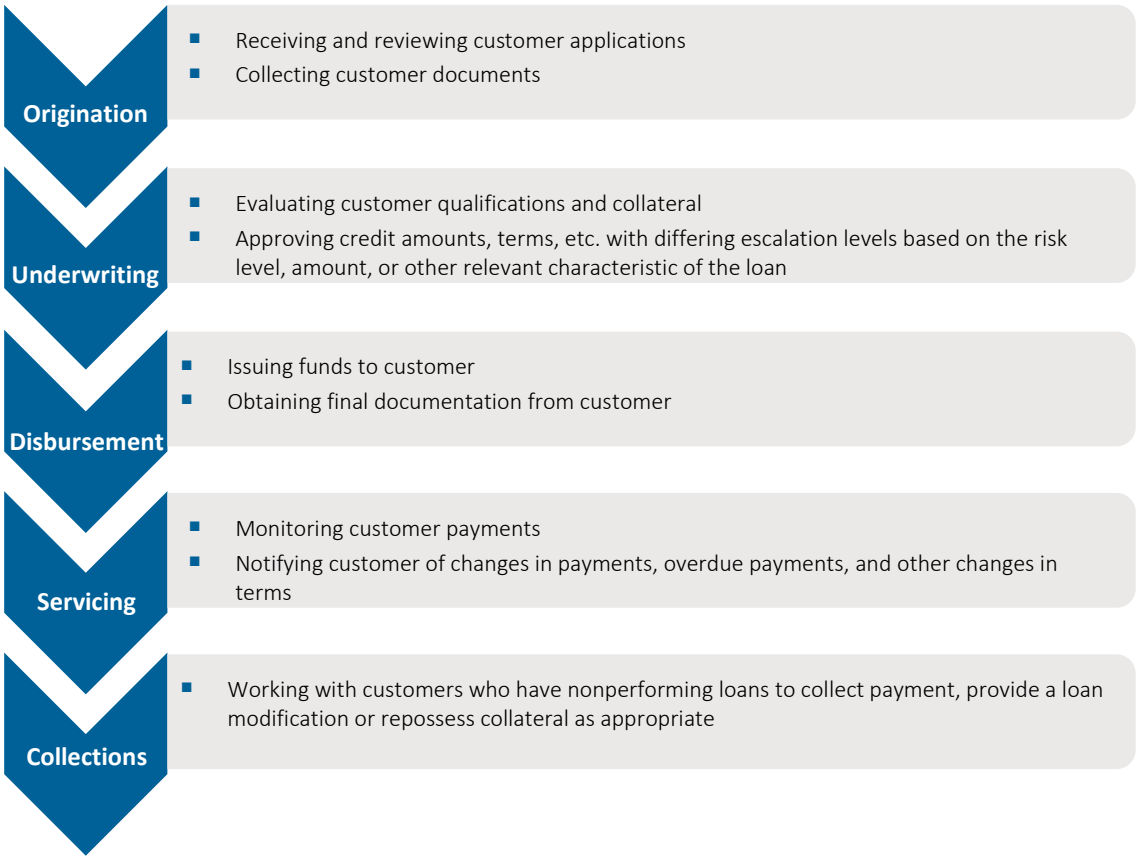
Overall Segregation of Duties

One of the key controls that should be in place throughout the credit processes is segregation of duties (Figure 8). There should be a separation between the client contact and the back office that determines criteria and approval. Some good practices may include:

- Credit officers should have approval limits on a loan-by-loan basis, and their compensation should consider not only the volume of loans, but also the performance of their portfolio to encourage approval of loans to customers with the ability to pay.
- No employee should have the power to both originate and approve a loan.
- No employee from sales or credit granting functions should know the criteria used for the credit risk modeling and auto-approval program.

- No credit manager should have the ability to approve loans of all sizes and risk levels.
- There should be appropriate escalation protocols in place to prevent an individual from exposing the institution to outsized credit risks without checks and balances.

Figure 8: Segregation of Duties



Source: The Institute of Internal Auditors.

Internal auditors may want to review job descriptions of personnel in these areas to confirm they reflect proper segregation of duties.

Audit Consideration

Loan officers should have the ability to challenge the rejection or approval of loans. There should be a defined escalation process that allows them to express their views.

Credit Granting

In performing an internal audit engagement on the credit granting process, review the underwriting criteria and scorecards the institution uses, to determine applications to pursue and what information should be passed to and requested by underwriting. In organizations that operate branches, the first check on creditworthiness lies with the loan originator, with the organization's scoring systems as a secondary check.

In digital channels, some institutions use scorecards in which borrowers are rated high risk (red), medium risk (yellow), or low risk (green). Green loans may be processed by an auto-approval program in which the applicant's creditworthiness is evaluated by an algorithm. Such loans would not reach an employee until the approval stage or even the servicing stage, given there are no issues requiring intervention.

The credit granting process must involve the approval of loans outside of the credit policy and standards. The institution should set limits for different types of exposures, and internal auditors should verify that limits are reasonable and portfolio performance is in line with the organization's risk appetite. To accomplish this, internal auditors may select a sample of exceptions and walk through how they were handled from identification to approval to the point when the loan was disbursed and passed to servicing. Internal auditors should verify that deviations from credit policy are tracked, monitored, and reported.

Internal auditors should also review the data in the loan system and the source documents. Internal auditors may take a sample of loans and validate important figures and documents are complete, relevant, accurate, and timely, and if the PD and LGD are adequately set based on the credit risk policy. This activity should include a review of the valuation of collateral to verify the correctness of the loan-to-value (LTV) ratio. They may also sample loans, looking at the output of financial models used to make sure the results are reasonable.

Loan File Maintenance and Review

Some regulators may require a loan review function that provides senior management with an independent view of the quality with which the lending function is performing their duties. This function may reside in the second or first line. This review is to ensure business units are adhering to credit risk policies and procedures and reviewing the adequacy of the internal control environment.

However, even in this situation (and certainly if no loan review function exists), internal auditors should be doing some level of loan file review in credit-risk focused engagements. Most internal audit programs covering loan file review are straightforward with similar steps such as:

- Reviewing any loan file review work done by the second line of defense (this could be loan file review personnel, compliance personnel, etc.).
- Verifying the file is complete in terms of required documentation.
- Reviewing the balances, fees, payments, and other monetary changes to the loan to confirm the system is calculating these sums according to the agreed terms of the loan.
- Analyzing the portfolio profitability versus the cost of credit.
- Reviewing the risk classification or risk scorecard of the borrower and the portfolio in which the loan resides if appropriate.
- Double checking that provisions associated with the loan are calculated accurately.

Credit Servicing

Auditing of credit servicing, especially mortgage servicing, may be handled by departments such as customer care, accounts receivable, and the credit back office. However, if internal audit plans to perform testing on credit servicing, collateral registration in the systems, payment posting, and fee practices would be key areas on which to focus.

Internal auditors can approach this by reviewing a sample of servicing records from the servicer's primary system. If issues are discovered, internal auditors may review primary documentation (e.g., applications, statements, copies of payment records) to determine their origin. If consumer complaints or document reviews indicate potential violations of compliance rules or regulations in these areas, auditors may consider expanding their sample to determine if the errors or rule violations are systemic or isolated to one loan type or borrower population.

Credit Collections

Many organizations may have a collections department. Internal auditors may select a sample of nonperforming loans and review the accounts' status with appropriate personnel. For loans listed as "repossessed," internal auditors should confirm the disposition of the collateral. Internal auditors can also assess if repossessed collateral has been inventoried, monitored, and converted into money as soon as possible while minimizing the credit loss.

As with any credit-risk focused audit engagement, internal auditors should obtain exception reports and note any uncollected fees, judgments, or other monies due the institution. Any waived fees should be documented with proper approval according to the organization's policies and procedures. Uncollectable loans should be correctly listed on delinquency reports and charged off within a reasonable amount of time. Any legal procedures should also be examined to ensure the organization is following its own policies and procedures regarding litigation of bad debt.

Resources

For organizations that outsource loan servicing, refer to IIA Practice Guide "Auditing Third-party Risk Management."

Nonperforming Exposures and Forbearance

BCBS has developed guidelines for common definitions for the two most important terms assessed – "nonperforming exposures" and "forbearance."

The definitions are built on commonalities in existing definitions, and they aim to provide clarity in terminology and guidance on quantitative and qualitative criteria for credit categorization.

In addition, the definitions help improve the identification and monitoring of nonperforming exposures and forbearance, as well as promote consistency in supervisory reporting for these two key categories of asset quality.

Source: Basel Committee on Banking Supervision. *Guidelines: Prudential treatment of problem assets – definitions of non-performing exposures and forbearance.* https://www.bis.org/bcbs/publ/d403.pdf.

This information should be reported to management; internal auditors should check that management reporting is complete and accurate.

Revenue recognition and reserving for loan losses is another area internal auditors should consider in their credit risk assessment. Many institutions use data analytics to gather samples of nonperforming loans to check provisioning and ensure assets are allocated to the appropriate accounts and listed properly on aging reports. See page 16 for the section on asset valuation and loan loss reserves for more information.

Financial services firms use varying criteria to categorize their loans as performing or nonperforming. According to international standards, nonperforming exposures are loans that are 90 days past due, but there are different criteria (e.g., 180 days) in the IRB approach for retail and public sector exposures. Internal auditors should be aware of the nuances that can be present in loan categorization frameworks. Further, the definition of default does not cover all circumstances in which a loan may be nonperforming. The regulatory definition of default only covers cases of distressed loan restructuring in which the institution loses money (a loan may be nonperforming prior to this stage), and accounting standards for recognizing impairment may differ based on national guidance.

Variances According to Accounting Frameworks

Under IFRS 9's Appendix A, "impaired exposures" are those that are considered "credit-impaired." Under U.S. Generally Accepted Accounting Principles (GAAP), "impaired exposures" are those exposures for which credit losses are measured under ASC Topic 326 and for which the bank has recorded a partial write-off.

Under IFRS 9, the identification of an exposure as nonperforming does not necessarily have an effect on the impairment stage in which this exposure is allocated for accounting purposes. Under the U.S. GAAP Current Expected Credit Loss model, the identification of an exposure as nonperforming is not intended to affect the estimation of credit losses.

Forbearance is an important concept to understand because granting forbearance measures to a counterparty will not automatically move the nonperforming loan to performing status, but it can be an additional input for moving a performing loan to nonperforming status. According to BCBS, "Forbearance is a concession granted to a counterparty for reasons of financial difficulty that would not be otherwise considered by the lender. Forbearance recognition is not limited to measures that give rise to an economic loss for the lender."[11] Forbearance is not the same as commercial renegotiation or refinancing. Forbearance should not be used to avoid categorizing loans as nonperforming when they meet the criteria of a nonperforming loan.

11. Basel Committee on Banking Supervision, "Guidelines: Prudential treatment of problem assets – definitions of non-performing exposures and forbearance" (Basel, Switzerland, Bank for International Settlements, 2016.). https://www.bis.org/bcbs/publ/d403.pdf.

Credit Risk Measurement and Monitoring Process

According to BCBS, "The basis for an effective credit risk management process is the identification and analysis of existing and potential risks inherent in any product or activity."[12] Institutions should have a thorough understanding of the risks involved with individual borrowers and how the combination of borrowers in a portfolio may be affected by risk as well.

The complexity of the work program for credit risk measurement and monitoring will depend to a degree on the size of the institution, the complexity of their lending portfolios, and the products offered. Larger institutions may have internal software that monitors credit risk, anti-money laundering (AML), and more. Internal auditors in these institutions sometimes have access to that software that has been customized to alert them to transactions meeting certain criteria.

Effective credit risk measurement and monitoring programs should include both quantitative and qualitative factors. Subjective measures such as collateral quality, unpaid taxes, economic changes, scoring agencies can all affect a borrower's worthiness. Therefore, organizations should have a well-designed risk rating system to monitor the credit risk exposure in different portfolios. In very small institutions, monitoring the risk ratings of individual borrowers may be adequate. In larger institutions with complex portfolios, there will be more detailed and sophisticated risk rating and monitoring systems that may be used to monitor risk exposure per individual borrower but also capital allocation to strategies, pricing of credits, and profitability of transactions and relationships.

All of these risk ratings should be compared to the institutions' stated risk appetite and **risk limits**. Internal auditors should perform walk throughs or tests to verify that limit breaches are brought to the attention of senior management promptly and that they are resolved within the institution's stated policies and procedures.

Analytical Techniques/Models

In many cases, models are used in decision-making to accelerate the processes and to ensure homogeneity in the application of defined strategies and their measurement. Consequently, the model management process includes:

- Identifying the modeling needs and the availability of correct and sufficient data for that purpose.
- The construction of these models and their validation by the pertinent specialized functions.

Audit Consideration

For some models, local regulators may require internal auditors to test certain risk aspects to make sure the models comply with regulatory expectations.

12. Basel Committee on Banking Supervision, "Principles for the Management of Credit Risk" (Basel, Switzerland: Bank of International Settlements, n.d.). https://www.bis.org/publ/bcbsc125.pdf.

- Continuous evaluation of the suitability of models used in applying strategies to ensure they continue to fulfill the target for which they were developed, and, if not, to activate the corresponding actions to modify and adjust them.

Some internal audit activities may not have the skill sets in house to audit credit risk models CAEs in this situation may check to verify all policies, procedures, and other documentation related to the models is complete and updated. They may also take a sample of loans and look at the output of the models to make sure the results are reasonable. Other options including seeking external assistance from qualified third-party providers.

Additional Information

It is beyond the scope of this practice guide to provide detailed information on each model used in credit risk management. References are provided in Appendix E. For general information on auditing models, see IIA Practice Guide "Auditing Model Risk Management."

Institutions using models may use a great variety of them. No matter the size and scope of the institution's modeling activity, there should be a complete and updated model inventory to guide internal audit. If there is a model validation function within the institution, internal auditors may review their activities to confirm the validators are following the approved governance protocols, policies, and procedures. Some internal audit activities may choose to replicate the model validator's work on a subset of their monitoring activities.

In institutions with resources skilled in auditing models, their procedures are likely to rely on metrics to manage the volume of data. For example, if there is a concentration of alarms in a portfolio, internal auditors may examine the incident and re-review the model validation. Internal auditors should work with the business in these situations because there may be sound reasons for a portfolio to go outside its usual boundaries.

Reporting

To satisfy Standards 2400 – Communicating Results and 2410 – Criteria for Communicating after completion of an engagement, the internal audit activity must communicate the engagement's objectives, scope, and results. According to the interpretation of Standard 2410 – Criteria for Communicating, "Opinions at the engagement level may be ratings, conclusions, or other descriptions of the results. Such an engagement may be in relation to controls around a specific process, risk, or business unit. The formulation of such opinions requires consideration of the engagement results and their significance."

Appendix A. Relevant IIA Standards and Guidance

The following IIA resources were referenced throughout this practice guide. For more information about applying the *International Standards for the Professional Practice of Internal Auditing*, please refer to The IIA's Implementation Guides.

Standards
Standard 1100 – Independence and Objectivity
Standard 1120 – Individual Objectivity
Standard 1130 – Impairment to Independence or Objectivity
Standard 1200 – Proficiency and Due Professional Care
Standard 2050 – Coordination and Reliance
Standard 2210 – Engagement Objectives
Standard 2220 – Engagement Scope
Standard 2230 – Engagement Resource Allocation
Standard 2240 – Engagement Work Program
Standard 2330 – Documenting Information
Standard 2400 – Communicating Results
Standard 2410 – Criteria for Communicating
Guidance
Practice Guide "Auditing Capital Adequacy and Stress Testing for Banks," 2018.
Practice Guide "Auditing Liquidity Risk: An Overview," 2017.
Practice Guide "Auditing Model Risk Management," 2018.
Practice Guide "Auditing Third-party Risk Management," 2018.
Practice Guide "Coordination and Reliance: Developing an Assurance Map," 2018.
Practice Guide "Foundations of Internal Auditing in Financial Services," 2019.
Other Resources
IIA Position Paper, "The Three Lines of Defense in Effective Risk Management and Control," 2013.

Appendix B. Glossary

Terms identified with an asterisk (*) are taken from the "Glossary" of *The IIA's International Professional Practices Framework*®, 2017 edition.

capital adequacy – Enough capital to run an institution's business while still absorbing the risk and volatility of its credit, market, and operational threats.

chief audit executive* – Describes the role of a person in a senior position responsible for effectively managing the internal audit activity in accordance with the internal audit charter and the mandatory elements of the International Professional Practices Framework. The chief audit executive or others reporting to the chief audit executive will have appropriate professional certifications and qualifications. The specific job title and/or responsibilities of the chief audit executive may vary across organizations.

compliance* – Adherence to policies, plans, procedures, laws, regulations, contracts, or other requirements.

control* – Any action taken by management, the board, and other parties to manage risk and increase the likelihood that established objectives and goals will be achieved. Management plans, organizes, and directs the performance of sufficient action to provide reasonable assurance that objectives and goals will be achieved.

control environment* – The attitude and actions of the board and management regarding the importance of control within the organization. The control environment provides the discipline and structure for the achievement of the primary objectives of the system of internal control. The control environment includes the following elements:

- Integrity and ethical values.
- Management's philosophy and operating style.
- Organizational structure.
- Assignment of authority and responsibility.
- Human resource policies and practices.
- Competence of personnel.

liquidity – The ability of a bank to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses.

risk* – The possibility of an event occurring that will have an impact on the achievement of objectives. Risk is measured in terms of impact and likelihood.

risk appetite* – The level of risk that an organization is willing to accept.

risk appetite statement – The written articulation of the aggregate level and types of risk that a bank will accept, or avoid, in order to achieve its business objectives. It includes quantitative measures expressed relative to earnings, capital, risk measures, liquidity and other relevant measures as appropriate. It should also include qualitative statements to address reputation and conduct risks as well as money laundering and unethical practices.

risk limit – Specific quantitative measures or limits based on, for example, forward-looking assumptions that allocate the bank's aggregate risk to business lines, legal entities as relevant, specific risk categories, concentrations and, as appropriate, other measures.

risk management* – A process to identify, assess, manage, and control potential events or situations to provide reasonable assurance regarding the achievement of the organization's objectives.

risk profile – Point-in-time assessment of a bank's gross risk exposures (i.e., before the application of any mitigants) or, as appropriate, net risk exposures (i.e., after taking into account mitigants) aggregated within and across each relevant risk category based on current or forward-looking assumptions.

risk strategy – The organization's plan to achieve its mission and vision and apply its core value.

yield – cash, usually expressed as a percentage, investors receive from investment instruments; may be added to the security's principle or paid directly to the investor.

Appendix C. Acronym Guide

Acronym	Expansion
A-IRB	Advanced internal ratings based
ALCO	Asset/liability committee
AML	Anti-money laundering
BCBS	Basel Committee on Banking Supervision
CAE	Chief audit executive
CCF	Credit conversion factor
CCR	Counterparty credit risk
CECL	Current expected credit losses
EAD	Exposure at default
EC	Economic capital
EL	Expected loss
FASB	Financial Accounting Standards Board
F-IRB	Foundation internal ratings based
GAAP	Generally accepted accounting principles
HNWI	High net worth individuals
IIA	The Institute of Internal Auditors
IFRS	International Financial Reporting Standard
LGD	Loss given default
LLR	Loan loss reserves
LTV	Loan-to-value (ratio)
PD	Probability of default
RAS	Risk appetite statement
ROE	Return on equity
RWA	Risk weighted assets
S&P	Standard & Poor's
SA	Standardized approach
SME	Small and medium enterprise

Appendix D. Sample Credit Risks

Risk	Description
Concentration	The institution will incur significant credit losses stemming from a concentration of exposures to a small group of borrowers, to a set of borrowers with similar default behavior or to highly correlated financial assets. Common subcategories of concentration risk are: ▪ Single-name concentrations (including a client or group of connected clients as defined for large exposures). ▪ Sectoral concentration. ▪ Geographical concentration. ▪ Product concentration. ▪ Collateral and guarantees concentration.
Counterparty	The risk exposure that may arise from total or partial breach of the financial obligations contracted with the entity. It is a bilateral credit risk, as it may affect both parties of the transaction, and it is uncertain, since it is conditioned by the behavior of markets.
Country	The risk exposure incurred in transactions in which the debtor resides in a country other than that of the lending unit, due to circumstances other than the normal commercial risk.
Sovereign	The risk of default associated with lending to states or entities guaranteed by them, understanding that legal actions against the borrower or party ultimately obliged to pay may be ineffective on grounds of sovereignty.
Cross Border	Foreign creditors or individuals in a country are unable to repay debts due to downturns in the value of the currency or currencies in which they are denominated.
Collections	Third parties used in collections (e.g., repossession firms) misrepresenting the law, the credit agreement between the institution and the borrower or the institution's policies. Illegal foreclosures.

Source: Adapted from European Banking Authority, Guidelines on common procedures and methodologies for the supervisory review and evaluation process (SREP), December 19, 2014. https://eba.europa.eu/sites/default/documents/files/documents/10180/935249/4b842c7e-3294-4947-94cd-ad7f94405d66/EBA-GL-2014-13%20%28Guidelines%20on%20SREP%20methodologies%20and%20processes%29.pdf.

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Figure 5: Overview of the Impairment Requirements was sourced from IFRS 9 Financial Instruments, July 2014, p 16-17. https://www.ifrs.org/-/media/project/fi-impairment/ifrs-standard/published-documents/project-summary-july-2014.pdf.

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