Current Expected Credit Loss (CECL) Model
Operational and Process Considerations

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Doug recently joined Wells Fargo to manage the CECL implementation effort across the firm among other risk initiatives within the Credit Capital, Allowance and Stress Testing (CCAST) group in Corporate Risk. Earlier this year he served as Global Head of Allowance for Loan and Leases Loss (ALLL) at GE Capital and led the re-engineering effort of the Allowance program when GECC was deemed a systemically important financial institution (SIFI). Prior to that experience, he served for 17 years at J.P. Morgan Chase in several roles, most recently as Managing Director in Corporate Risk with a focus on the Allowance, Economic Capital, Risk Reporting, CCAR/Stress Testing and other Regulatory Initiatives. He received a Bachelor’s degree in Economics from Trinity University in San Antonio, Texas and an MBA from New York University’s Stern School of Business.
Executive Summary

Overview

• CECL changes ALLL from an incurred loss approach to an expected loss approach.
• CECL is meant to address the delayed recognition of credit losses ("too little, too late") from the incurred loss approach.
• Institutions will be required to consider "reasonable and supportable forecasts."

Key Considerations

• Generally, ALLL levels may increase due to the extension of the forecast horizon from the loss emergence period to the life of the loan.
• The exclusion of anticipated extensions/renewals and new credit card volume could dampen the increase.
• Held-to-maturity (HTM) debt securities are in scope.
• Credit risk measurement approaches from existing ALLL process, Basel regulatory capital calculations, or stress testing (CCAR/DFAST) may be adapted and leveraged for CECL.
• As mentioned in their recent guidance1, regulatory agencies "expect the new accounting standard will be scalable to institutions of all sizes...taking into consideration the size, complexity and risk profile of each institution."

The introduction of the CECL model has broad implications and proper implementation requires significant firm-wide planning.

Key Questions

The CECL guidance raises many operational and ALLL process considerations. Key questions include:

• What level of sophistication is appropriate relative to your bank’s size and complexity?
• How should the remaining contractual life of the loan be measured?
• What is a ‘reasonable and supportable’ forecast period? Is it different by portfolio type or consistent? If based on your bank’s macroeconomic forecast period, should it be consistent?
• Can you use loss models from CCAR/DFAST that are tied to macroeconomic scenarios?
• What components, if any, could be leveraged from a Basel regulatory capital framework?
• How many years of data (e.g., look-back period) should be used for CECL? Is it portfolio dependent?
• How does the qualitative process change under CECL?
• After the reasonable and supportable forecast period or “post-reversion”, what timeframe from your historical loss experience should be used to estimate losses (e.g., entire credit cycle or a subset)?
• For TDRs, are you considering the approaches and results provided under both discounted cash flow (DCF) and other loss rate approaches? Would shifting to a loss rate approach be considered less sophisticated?
• Can you leverage your current life-of-loan models used for troubled debt restructuring (TDRs) and purchased credit impaired (PCI) portfolios for CECL? How do you support using different modeling approaches on the same portfolio?
• How do you incorporate the CECL approach for HTM debt securities? Any overlaps in risk characteristics, assumptions, and methodologies between loan and debt security portfolios (including available-for-sale (AFS) securities)?

While the CECL guidance allows for many approaches, documentation is critical in order to have transparency with auditors and regulators.

Conceptual Components of the Life of a Loan

According to CECL guidance, the life of a loan could be considered as three conceptual periods:

- A “reasonable and supportable forecast” (R&S) period;
- A period of reversion to historical loss experience; and
- A period reflecting historical loss experience.

Defining these periods will require significant judgment based on the trade-offs and available data.

Reasonable and Supportable Forecasts

Developing expected credit loss estimates over the reasonable and supportable (R&S) period requires management judgment and thorough documentation. Key considerations include:

- Not “one size fits all;” should be relevant to the institution and reflect management’s current outlook, not depict best or worst case scenarios.
- Loss forecasts over a R&S period should reflect expected macroeconomic conditions.
  - What types of models (stress testing, strategic planning, etc.) make sense?
  - Would you consider using more than one scenario and weighting them?
- The definition of what is a R&S forecast period leaves room for interpretation:
  - How long is the forecast horizon?
  - How long does it take for model forecasts to deteriorate (1 year, 3-5 years, etc.)?
  - What evidence would you need to provide to support your choice of the R&S period? Is back-testing and performance monitoring needed?
- Incorporates adjustments to reflect changes in underwriting standards, portfolio mix, remaining tenor.
- Trade-offs of longer or shorter R&S period:
  - Longer R&S forecast periods may pick up anticipated economic swings but add more volatility and may be more difficult to support and back-test.
  - Shorter R&S forecast periods may lower forecast volatility but miss anticipate cycle changes.
Post-Reversion Estimates

Another key aspect of CECL is how to forecast losses beyond the reasonable and supportable period.

- According to ASU 326-20-30-9, historic loss experience cannot be adjusted beyond the reasonable and supportable period for:
  - Existing economic conditions; or
  - Expectations of future economic conditions.

Key questions include:

- Is a separate modeling approach required for the post-reversion estimate?
- How should the post-reversion estimate be linked with the R&S period forecast?
- Is this expected to be a more stable portion of the total loss forecast?
- Is the approach the same or different by portfolio?
- How do you determine a portfolio snapshot on which to base your post-reversion losses after the R&S period migration?
- Do you align remaining contractual life at a loan level or some form of “bucketing”?
- How do you estimate post-reversion losses?
  - Input level: e.g., use “average” macroeconomic factors.
  - Output level: e.g., through-the-cycle loss rates.
- Can you select a subset of your historical loss history to determine your post-reversion loss levels?
  - Could that equate to having an expectation on future economic conditions?
  - Would that result in solving to a through-the-cycle estimate?

Thorough documentation and rationalization of assumptions is critical.

What existing approaches can be leveraged for CECL?

To support CECL implementation across the enterprise, approaches to loss estimation have several components that could be leveraged through an integrated approach.

Key examples from existing processes may include:

- Balance sheet mapping and exposure identification – common reference data definitions and classifications allow for a holistic balance sheet mapping and ongoing exposure identification activities
- Data sourcing – upfront activities to align data sourcing efforts can reduce redundant and erroneous data
- Infrastructure – common components including enterprise level data warehouses and related activities such as common data quality protocols can simplify infrastructure design, reduce cost, and enhance operational efficiencies
- Processes and controls – common process and control points may be used to reduce the operational burden
- Risk and collateral valuation models – quantitative tools can be aligned and calibrated for use across the capital management framework to maximize consistency.

<table>
<thead>
<tr>
<th>Possible Risk Parameters and Other Relevant Factors</th>
<th>Basel</th>
<th>Stress Testing (CCAR, DFAST)</th>
<th>Incurred Loss (Current US GAAP)</th>
<th>CECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability of Default (PD)</td>
<td>One year, through-the-cycle PD</td>
<td>Stressed point-in-time PD or other loss rate factors, aligned with a forecast horizon</td>
<td>Point-in-time PD or other loss rate factors, aligned to LEP</td>
<td>Combination of point-in-time and through-the-cycle PD, or other loss rate factors</td>
</tr>
<tr>
<td>Loss Given Default (LGD)</td>
<td>Downturn LGD</td>
<td>Through-the-cycle LGD</td>
<td>Through-the-cycle LGD</td>
<td>Through-the-cycle LGD</td>
</tr>
<tr>
<td>Other Factors (macro, etc.)</td>
<td>Not prescribed, but effective oversight should include macroeconomic factors in assessing reasonableness of regulatory capital estimates</td>
<td>Macroeconomic factors forecasted over 13 quarters for each scenario. Sensitivity of losses to these factors should be demonstrated and documented</td>
<td>Regulatory guidance adds the nine qualitative factors considered in the estimate (risk ID, policy and underwriting, asset quality trends, credit admin. and internal controls, portfolio growth and composition, external environment, etc.)</td>
<td>Macroeconomic forecasts aligned to “reasonable and supportable” period. Sensitivity of losses to these factors should be demonstrated and documented</td>
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</table>
Operational and Process Considerations

The following key operational and process considerations will need to be evaluated as institutions work towards CECL adoption.

- High quality (accurate and complete) historical loan level data will be needed for modeling.
- Both internal and external data may be needed to support CECL.
- Assumptions and methodologies regarding the treatment – and integration – of acquired portfolios into a bank’s loss history will need to be justified and documented.
- Begin with historical life-of-loan loss estimates and support adjustments.
- Determine the life of the loan time horizon by portfolio using the remaining contractual life of the loan by portfolio to estimate the time horizon for which to forecast losses.
  - This compared to the current loss forecast using the loss emergence period concept to provide a broad estimate of the potential impact.
- For commercial and credit card portfolios, increases due to the switch to life-of-loan may be offset somewhat by the absence of renewals/extensions and new credit card volume, respectively.

Enhancing Modeling Approaches

- Where detailed long-term forecasts are not available, forecasting credit losses would require significant judgment.
- Regulatory stressed scenarios are not intended to be used directly for accounting purposes.
- Institutions will need to develop and document processes to demonstrate appropriate scenarios used in ALLL estimation under CECL (i.e., scenario generation).
- Macroeconomic forecasts and other relevant information should be applied consistently across portfolios, where the credit risk drivers of the portfolios are affected by these forecasts/assumptions in a similar manner.
- Where Probability of Default models are used, PD term structures will need to be developed to align with the remaining contractual life of the loan for each portfolio, reduced by prepayment estimates.

Operational and Process Considerations (continued)

The process of determining whether loan modifications result in TDRs will not go away. The subsequent accounting for modified loans could change.

- For modifications that result in a TDR, the credit loss will be measured according to CECL so existing TDR models may need to be adjusted to include the reasonable and supportable, reversion, and post-reversion periods.
- While the standard allows for both DCF and loss rate approaches to determine impairment for TDRs, the DCF approach in place today may be preferable, particularly in the case of interest rate concessions.
- Non-TDR modifications, with terms comparable to loans to similar customers who are not refinancing or restructuring, continue to be treated as new loans (See ASU 310-20-35-9).

Other Considerations

- Upon adoption, the amortized cost basis for purchased credit deteriorated (PCD) assets should be adjusted to reflect the addition of the allowance for credit losses. Future purchases of PCD assets will require the same treatment.
- Presentation of the “grossed-up” purchased credit deteriorated loans and held-to-maturity debt securities will be more consistent with performing loans under CECL.
- Compliance with additional reporting and origination vintage-based disclosure requirements.

Transitioning from the current accounting guidance’s incurred loss approach to CECL will require a significant amount of thought and discussion with key stakeholders.
PD-based Example Using Simplifying Assumptions

One approach to assess the impact of CECL to the allowance for a commercial loan portfolio would be to extend the loss forecast horizon from the Loss Emergence Period (LEP) to the life of the loan.

- The Probability of Default (PD) parameter incorporates a forecast horizon denoted as the LEP or the period over which inherent losses are estimated (e.g. a 1-year PD estimate corresponds to a 12-month LEP).
- To assess the impact of CECL, the forecast horizon for the loan’s PD could be extended from the LEP to the life of loan.
- As a simplifying assumption, PDs are not sensitive to changing macroeconomic conditions over a R&S period.

**Step 1. Calculate the remaining life of the loan for the portfolio**

Two possible methods for calculating the contractual life of a loan are:

- Utilize the remaining contractual maturity of the portfolio at a loan level.
- Utilize a pooled approach of remaining contractual life, where pooled loans share similar risk characteristics (risk rating, maturity, delinquency, etc.).
  - However, pooling may result in relatively lower loss estimates due to inappropriate averaging of non-linear risks.

**Step 2. Using a PD term structure, estimate new PDs for each segment of the portfolio using that segment’s estimated life**

- PD models typically use transition matrices or other historical default studies to generate a “term structure” or a table of cumulative default probabilities by risk rating and across time periods (e.g., 1, 2, 3, etc. years).
- PD term structure can include prepayments if prepaid loans are included in the denominator for each loan “cohort.”
- The cumulative PD value estimated at the remaining contractual life can then be substituted for the PD based on LEP.

**Step 3. Analyze CECL Impact**

- Re-estimate ALLL through the PD-LGD model utilizing the substituted life-of-loan cumulative PDs.
- Refine the ALLL estimate further by removing simplifying assumptions (i.e., adjust for macroeconomic conditions over the reasonable and supportable period).
- Socialize with key stakeholders.

The level of sophistication should be aligned with the size, complexity, and risk profile of each institution.

Quantitative and Qualitative Adjustments

Historical loss information should be adjusted to align to current portfolio characteristics.

- For quantitative and qualitative methodologies, CECL guidance states:
  - “Consider relevant qualitative and quantitative factors that relate to the environment in which the entity operates and are specific to the borrower(s).” [ASU 326-20-30-7]
  - “Consider adjustments to historical loss information for differences in current asset specific risk characteristics, such as differences in underwriting standards, portfolio mix, or asset term within a pool at the reporting date or when an entity’s historical loss information is not reflective of the contractual term of the financial asset or group of financial assets.” [ASU 326-20-30-8]
  - “Adjustments to HLI may be qualitative in nature and should reflect changes related to relevant data (such as changes in unemployment rates, property values, commodity values, delinquency, or other factors that are associated with credit losses on the financial asset or in the group of financial assets).” [ASU 326-20-30-6]
- Many of these adjustments align to the nine qualitative factors within current regulatory guidance (2006 Interagency Policy Statement on the Allowance for Loan and Lease Losses).

<table>
<thead>
<tr>
<th>Category</th>
<th>9 Qualitative Factors Included in Regulatory Guidance</th>
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<tbody>
<tr>
<td>Policy and Underwriting</td>
<td>Changes in lending policies and procedures, including changes in underwriting standards and collection, charge-off, and recovery practices not considered elsewhere in estimating credit losses.</td>
</tr>
<tr>
<td>Asset Quality Trends</td>
<td>Changes in the nature and volume of the portfolio and in the terms of loans.</td>
</tr>
<tr>
<td>Credit Admin. and Internal Controls Risk Identification</td>
<td>Changes in the experience, ability, and depth of lending management and other relevant staff.</td>
</tr>
<tr>
<td>Portfolio Growth and Composition</td>
<td>Changes in the volume and severity of past due loans, the volume of nonaccrued loans, and the volume and severity of adversely classified or graded loans.</td>
</tr>
<tr>
<td>External Environment</td>
<td>The effect of any concentrations of credit, and changes in the level of such concentrations.</td>
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Institutions will need to assess adjustments to their historical loss experience within models to ensure relevance to current portfolio characteristics and also modify existing qualitative processes in line with this guidance.
**Debt Securities**

Impairment for held-to-maturity (HTM) and available-for-sale (AFS) debt securities will be recognized through a valuation allowance instead of a permanent write down of the amortized cost basis.

- **HTM** debt securities are covered under the new CECL guidance.
  - Important determinations will be needed for HTM securities portfolios which typically include U.S. Treasuries, Agency-backed mortgage securities, and other asset-backed securities.
  - Need to consider whether consistent approaches are applied across assets with similar risk characteristics to those within the lending portfolios (e.g., mortgage, auto, student, etc.).

- **AFS** debt securities, though not covered by CECL, will be affected by targeted changes to ASC 320.
  - Notion of other-than-temporary impairment (OTTI) will be replaced with a separate allowance.
  - A security is considered impaired if fair value less than cost basis.
  - Credit losses measured individually based on discounted cash flows.
  - Qualitative assessments of impairment may no longer be determined by the length of time the security's fair value is below amortized cost.
  - Allowance is limited to the difference between fair value and cost.
  - Recoveries in fair value after the balance sheet date may not be considered when assessing impairment.
  - AFS debt securities that qualify as PCD assets are accounted for similarly to HTM debt securities.

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**Action Items**

Successful CECL implementation requires a well thought-out, tactical plan that aligns with the Bank’s strategy. Key action items include:

- **Identify CECL Changes:**
  - Evaluate CECL and identify process and operational impacts.
  - Define the target future state (CECL compliance checklist).
  - Include possible linkages to IFRS 9 requirements, where applicable.

- **Conduct a gap assessment to identify process and operational impacts:**
  - Reasonable and Supportable, Reversion, and Post-reversion periods;
  - Opportunities to leverage components of existing credit models (Basel, stress testing, etc.);
  - Life of loan estimates and enhanced modeling approaches;
  - Data management;
  - Loan modifications;
  - Held-to-maturity debt securities;
  - Qualitative process; and
  - Disclosures.

- **Develop roadmaps and a CECL implementation playbook outlining how initiatives will be implemented through a unified strategy.**

- **Operationalize changes:**
  - Develop a detailed execution plan;
  - Develop proper governance to oversee implementation;
  - Identify/remediate implementation issues (iterative); and
  - Implement changes in a parallel process and analyze the ALLL impact (iterative).