Getting Ready for CECL – Why Start Now?
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- Models, data, software and research for financial risk analysis and related professional services
Today’s Presenters

Presenter

Team Lead, Impairment, Capital Planning and Stress Testing

Anna Krayn is a Senior Director and Team Lead, responsible for solution structuring across Moody’s Analytics products and services focusing on impairment, stress testing and capital planning solutions. Her clients include a variety of financial services institutions, including those in the banking and insurance sectors across Americas. Prior to her current role, she was with Enterprise Risk Solutions as engagement manager leading projects with financial institutions across Americas in loss estimation, enhancements in internal risk rating capabilities and counterparty credit risk management. Anna holds a B.S. and MBA from Stern School of Business at New York University.

Moderator

Head of Regulatory Compliance and Capital Management Team

Michael leads the Regulatory Compliance and Capital Management solutions team for the Americas. He focuses on assisting banks across the United States with various aspects of the CCAR/DFAST and Basel regulations. Michael joined Moody’s Analytics in 2002 and spent a number of years managing the firm’s relationships with large global financial institutions.

Prior to joining Moody’s Analytics, Michael worked in Investment Banking at Commonwealth Associates, a boutique firm. He holds a BA from Fordham University along with an MBA in Marketing from the Fordham Graduate School of Business.
What is CECL and how did we get here?

- This summer, FASB issued a new accounting model for recognition and measurement of credit losses for loans and debt securities.
- The standard aims to address delayed recognition of losses inherent in the incurred loss reserving model.
- Scope: financial instruments measured at amortized cost basis
  - Loans held for investment
  - Debt securities held to maturity
- For more information on the new standard and its implications, see The Long Road to CECL webinar (in association with GARP and E&Y)
Market participants have started preparations

Moody’s Analytics is conducting a survey to assess US bank preparation for CECL. Preliminary results indicate that early stage activities are under way.

Source: Moody’s Analytics, as of August 2016
Significance of the challenges cannot be underestimated

Anticipated Increase in Allowance

- Increase: 62%
- Decrease/Flat: 12%
- Unknown: 26%

Anticipated Challenges by Size of Institution

<table>
<thead>
<tr>
<th></th>
<th>&lt;$5b</th>
<th>$5b-$10b</th>
<th>$10b-$50b (DFAST)</th>
<th>$50b+ (CCAR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Life-of-Loan Loss Models</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>~</td>
</tr>
<tr>
<td>Automation of Process / Calculations</td>
<td>~</td>
<td>×</td>
<td>~</td>
<td>~</td>
</tr>
<tr>
<td>Reporting / Disclosures</td>
<td>×</td>
<td>~</td>
<td>~</td>
<td>✓</td>
</tr>
</tbody>
</table>

✓ Challenges anticipated
× No challenges expected
~ Mixed responses

Source: Moody’s Analytics, as of August 2016
Lessons learned from IFRS 9 Implementation

November 2009 IASB Exposure Draft
March 2013 Exposure Draft
July 2014 Final Standard
2015 TRG Meetings
1/1/2018 Mandatory Effective Date

Re-deliberations
Re-deliberations

Observations on Complexity of Implementation

» **Broad scope of impact**: IFRS 9 impairment affects processes from origination to portfolio monitoring at each reporting period, with a direct impact to capital

» **Calculation complexity**: Credit risk model parameter extrapolation and macro-economic forecasting at exposure and/or portfolio level is a data-dependent exercise with multiple calculation sources, and therefore both a methodology and technology challenge

» **Data**: Gaps are significant as stage allocation logic does not exist in legacy systems (30 days past due marker is insufficient) and “best-available” as per BCBS 239 is required for staging disclosures

» **Governance and controls**: Since calculation involves a series of judgments, models are complex and impact is significant, internal controls are key to manage inherent conflicts of interest (e.g. firm-wide governance of scenarios, enhanced model validation, greater involvement of internal audit)

» Most banks are expecting to have an end-to-end process (staging and classification, provision calculation, reporting) implemented by the end of 2016 for first impact analysis and parallel runs (projects were kicked off in 2015)
### Anticipated challenges: Credit Loss Methodologies

<table>
<thead>
<tr>
<th>Steps</th>
<th>Methodology</th>
<th>Details</th>
</tr>
</thead>
</table>
| 1     | Historical Losses (Loss Rate, Roll Rate) | » Easily available data (internal and industry)  
» Intuitive NCO / NPL / etc. driven approach |
| 2     | TTC Loss Estimation (PD / LGD / EAD) | » Often outputs of scorecards  
» Relatively stable through time  
» Useful for capital adequacy assessment |
| 3     | PIT Loss Estimation (PD / LGD / EAD) | » Reflects state of economic cycle  
» Can be forward-looking  
» Estimates prob. weighted mean of future paths  
» Less complex than scenario-conditioned estimates |
| 4     | Scenario Conditioned Loss Estimation (PD / LGD / EAD) | » Explicitly incorporates scenarios forecasts  
» Uses only a representative sample of future paths  
» Less complex than simulation-based approaches  
» Commonly used for stress testing |

### Strengths
- Incorporates historical experience
- Incorporates current conditions
- Incorporates forecasts
- Forecast life of loan ECL
  - Segment-appropriate
- Reflects state of economic cycle
- Can be forward-looking
- Estimates prob. weighted mean of future paths
- Less complex than scenario-conditioned estimates
- Explicitly incorporates scenarios forecasts
- Uses only a representative sample of future paths
- Less complex than simulation-based approaches
- Commonly used for stress testing

### Gap to CECL
- Incorporates historical experience
- Incorporates current conditions
- Incorporates forecasts
- Forecast life of loan ECL
  - Segment-appropriate
- Commonly used for stress testing
- Easily available data (internal and industry)
- Relatively stable through time
- Useful for capital adequacy assessment
- Reflects state of economic cycle
- Can be forward-looking
- Estimates prob. weighted mean of future paths
- Less complex than simulation-based approaches
- Commonly used for stress testing
- Explicitly incorporates scenarios forecasts
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**Getting Ready for CECL: Why Start Now?**

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Anticipated challenges: Process and Systems

Data
- Exposures
- Collateral
- Client
- Scenarios

Calculation
- PD/LGD Models
- Cash flows
- Lifetime ECL

Analysis
- Variance
- Drill-down

Expert Overlay
- Management input

Posting
- Extract into GL
- Regulatory reports

Workflow
The regulators view CECL as an interdisciplinary exercise.

From the presentation by Rusty Thompson, Deputy Comptroller and Chief Accountant, OCC

*September, 2016*
Planning the CECL Project

CECL Implementation Phase

AUTOMATE & REPORT

» Calculation engine / model execution
» Workflow administration
» Management reporting

QUANTIFY

》 Credit risk models
》 Cash flow generation
》 Economic forecasts

ORGANIZE & GOVERN

》 Gap analysis
》 Framework design
》 Project planning

EDUCATE

» Key Stakeholder Education (Management, Board)
》 Internal Training
》 Operational Training

Range of Activities

» Benchmark Data
》 Qualitative Adjustments Framework

» G/L Posting
》 Forecasting and Planning
》 Disclosures

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Why start now? Implementation timeline can be tight

**Preparation**
- Gap Analysis (review of available data, models, systems)
- Initial impact analysis
- Requirements gathering
- Project plan definition
- Methodology framework design (and Segmentation)

**Methodology Design**
- Data gathering
- Risk modeling (incl. linkage to stress testing, if appropriate)
- Provisioning methodology
- Overlay approach
- Validation
- Documentation
- Training

**Software Implementation**
- Process definition
- System requirement gathering
- Data mapping
- Model deployment
- GL reconciliation
- Interface configuration
- Report / disclosure configuration
- UAT
- Production support

**Parallel Run**
- Entire process (models, implementation) should be subject to parallel run

*Some activities can be run in parallel*
How Moody’s Analytics can help
Solutions to Support CECL Impairment Calculation

» Business intelligence tools
» Dashboards for management reporting
» GL Posting & Regulatory Reporting

» Automation of a repeatable CECL process
» Overrides management
» Integration with firm’s core systems

» Aggregated analytics to quickly test sensitivity to changing scenarios

» Historical economic data
» Probability-weighted scenario

» Historical credit data across asset classes
» EL benchmarking for user defined cohorts and data supplementation

» Credit models across major asset classes
» Cash flow generation
» Deployed off-the-shelf or calibrated with firm’s internal data

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Moody’s CECL Councils: Collaborating with the Industry

<table>
<thead>
<tr>
<th>Activities</th>
<th>Benefits for Participants</th>
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<tbody>
<tr>
<td>» Discuss key implementation challenges</td>
<td>» Network with leading impairment accounting practitioners</td>
</tr>
<tr>
<td>» Share best practices regarding implementation timelines, governance structure, and modeling methodologies</td>
<td>» Define specific impairment calculation methods for different asset classes and different-sized institutions</td>
</tr>
<tr>
<td>» Deep dives into current provision calculation practices and gaps relative to CECL requirements</td>
<td>» Help shape design of your and our loss estimation tools</td>
</tr>
</tbody>
</table>

Three Groups to “Right” Size CECL Implementation

- Community Banks
- Regional Banks
- Large Banks

High-Level Timelines

- Form Councils: Current point
- Meeting #1: Q4 2016-Q1 2017
- Other Meetings: TBD

If you would like to participate, please email us at Events@moodys.com
Moody’s Analytics CECL webinar series 2016
Don’t miss the next in the series:

Leveraging Basel and Stress Testing Models for CECL
Tuesday, October 11, 2016 | 1PM EST | 11AM PST

The Value of Granular Risk Rating Models for CECL
Tuesday, November 15, 2016 | 1PM EST | 11AM PST

Register at www.moodysanalytics.com/cecl
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2016 Top Ten
Overall #7 out of 100

RiskTech
2015 Fintech Rankings
Pulseonomics
Crystal Ball Award
Recognized as a Top Solution Provider

Moody’s Analytics
moodyanalytics.com/awards
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