Reinsurance Receivables Under CECL
Agenda

1. Understanding CECL requirements for Reinsurance Receivables
2. Modeling approach
3. Q&A
Speakers

Masha Muzyka
Senior Director, Regulatory and Accounting Solutions
Moody’s Analytics

Yashan Wang
Senior Director
Quantitative Research
Moody’s Analytics
Common CECL Challenges for Reinsurance

- Contracts are highly customized and tailored
- Lack of historical loss experience data
- Accounting offset may exist

Leverage the expertise and experience on existing GAAP, SAP, SII and credit risk management practice
Understanding the CECL Requirements
Reinsurance Receivables: Definition

» Current FASB accounting master glossary:

*Reinsurance Recoverable/Receivable*

All amounts recoverables from reinsurers for paid and unpaid claim settlement expenses, including estimated amounts receivables for unsettles claims, claims incurred but not reported, or policy benefits.

» NAIC statutory report schedule F (for P&C business) use the same term and definition as existing GAAP.
Source of Uncollectible Receivables

» Disputes: due to the complexity of reinsurance contract, ceding company and its reinsurers may have different interpretation of the coverage
  - the terms of the reinsurance contract do not reflect the intent of the parties of the contract or there is a disagreement between the parties as to their intent the terms of the contract cannot be legally enforced
  - the reinsurance transaction performs differently than anticipated due to a flawed design of the reinsurance structure, terms or conditions
  - the interpretation of the laws and regulations, materially impacts a reinsurance transaction, etc.

» Financial difficulty: reinsurers may have trouble paying their claims on time

» Receivership: state regulator can take over once reinsurer is in trouble
CECL Requirement

» ASU 2016-13

– An entity shall measure contingent losses relating to disputed amounts in accordance with Subtopic 450-20 on loss contingencies. However, the ceding entity shall measure expected credit losses relating to reinsurance receivables in accordance with Subtopic 326-20 on financial instruments measured at amortized cost.

– only requires measurement of expected losses related to the credit risk of the reinsurer/assuming company.

» Removes the term “collectability” and requires entities to measure

– Contingent loss relating to disputed amounts following ASU 450-20, and

– Expected credit loss following CECL guidance for amortized cost instruments.
CECL Requirements (continued)

» Collective vs. individual assessment:
  – If similar risk characteristics are not present in the reinsurance receivables, the ceding insurer should measure expected credit losses on an individual basis.
  – Similar risk characteristics include, but not limited to:
    › Reinsurance agreements that have standardized terms
    › Reinsurance agreements that involve similar insured risks and underwriting practices
    › Reinsurance counterparties that have similar financial characteristics and face similar economic conditions.
Reinsurance Receivables and Impairments

» Reinsurance Receivables
  - *All amounts recoverable from reinsurers for paid and unpaid claim settlement expenses, including estimated amounts receivables for unsetsles claims, claims incurred but not reported, or policy benefits*
  - Only expected losses related to the credit risk of the reinsurer are subject to CECL

Top Down vs. Bottom Up

» Top Down Approach
  - Apply impairment rate for similarly rated companies based on duration of the receivables.
  - The challenge is the limited availability of historical loss data

» Bottom Up Approach
  - Calculate expected losses on a collective or individual basis based on PD of the reinsurers and LGD/EAD of the receivables
  - Useful for differentiating risk
Lifetime ECL Measurement

- Bottom up approach
  - Lifetime Expected Credit Loss (ECL) is calculated as

$\text{ECL}(t_0) = \text{AC}_{t_0} \cdot \text{PD}_{\text{Maturity}} \cdot \text{LGD}$

- Amortized Cost (AC) can be thought of as the discounted value of Exposure at Default (EAD)
- Probability of Default (PD) and Loss Given Default (LGD) are needed
CECL Modelling for Reinsurance Receivables

» CECL allowance covers losses from three types:

Type 1: ECL on paid and unpaid claim, not settled yet (Life & P&C)
  • Term is usually less than 6 months

Type 2: ECL from the IBNR claim (Life and P&C)
  • Term is around 6 month; typically less than one year

Type 3: ECL from future claim (Life)
  • Longer time horizon; term could be 10~20 years

» The three loss types above will have same PD term structure, but potentially different “maturity,” EAD, and LGD
Measuring PDs

» PDs should reflect
  › The likelihood that the contract will not be fulfilled, due to financial difficulties
  › Term structure of PDs
    – type 1 has shorter maturity than type 3
  › Point-in-Time and forward looking assessment of future risk

» PD sources: forward-looking assessments from the markets, e.g., Moody’s Expected Default Frequency (EDF)
  › Public firms: Implied from the equity market
  › Private firms: internal or external ratings + rating converter

» Additional considerations:
  › Parent vs subsidiary
  › Third-party guarantee
Moody’s Expected Default Frequency (EDF) Measure

» EDF measures are *predicted probabilities of default* over some time horizon, e.g., one year

» EDF measures are *cardinal*, or absolute, measures of credit risk: they do not just rank order credit risk; rather, they provide exact probabilities
  
  – An EDF measure of 1% for one-year horizon means that out of a portfolio of 100 firms of similar credit risk, we would expect one default by the end of the year, on average
  
  – An EDF of 1% carries the same expected default risk across the business cycle

» EDFs are *point-in-time* measures of credit risk, meaning that they reflect all relevant risks, short-term and long-term

» EDF measures are *not* “equity market signals”, they are measures of *credit risk*. EDF measures convey *fundamentally different information* from equity prices
EDF Measures Lead Realized Default Rates, and Generally Get the Levels Right As Well
EDF model in a nutshell

Distance-to-Default (DD) ≈ The number of standard deviations the Market Value of Assets is away from the Default Point
Differentiate Credit Risk for Each Company
Large Reinsurers in the US market
What if the Reinsurer Is a Private Firm? – Rating to PD Convertor

- Use the public firm EDF database to estimate the typical EDF given the rating
- Adjust for sector and country trends
- Use the EDF term structure to generate a Point-in-Time PD term structure
- Can be applied to a financial institution’s internal rating
Ratings Converted into “Point-in-Time 1-year PD”

Average EDF vs. Predicted PIT PD NA1(US) Fin

- Average EDF - IG
- Average EDF - HY
- Average Predicted PIT PD - IG
- Average Predicted PIT PD - HY

Years from 2000 to 2016
Should the PDs be Macro Scenario Conditioned?

» PDs based on market consensus reflect forward-looking assessment and implicit weighting of all possible future scenarios

» Reinsurers’ PDs are less sensitive to the macro variables than corporate borrowers

» CECL does not require explicit scenario conditioning

» In general, internal and external ratings may also reflect certain forward-looking assessment of future scenario that may significantly affect reinsurers (e.g., how strong this year’s hurricane season will be)

» If the internal or external ratings are 100% Through-The-Cycle (TTC), they need to be converted to a forward-looking Point-in-Time (PIT) version
» EAD and LGD for the three types should be estimated separately
  – Otherwise, EAD and LGD need to be expected value averaged across these types
  – The degree of uncertainty and difficulty in estimation increases from type 1 to type 3

» EAD
  – Exposure amount that may not be collectable
    › Reinsurers only pay a stated percentage of claims
      Ex. Coinsurance, Modco, Yearly renewable term
    › Reinsurers are required to pay out only if the total claims suffered by the ceding company in a given period exceed a stated amount (Catastrophe, stop loss coverage)
  – Can be potentially assessed from the actuarial system
  – Hardest for type 3
Modelling LGD

- LGD is closely linked to how EAD is parameterized
  - If EAD is the total amount in default, LGD = (1 - recoverable portion) of the EAD
  - If EAD is the amount the cannot be received, LGD = 100%
- LGDs for reinsurance contracts are typically low because of high seniority of reinsurance claims by regulation
- LGDs depend on specific arrangements between the ceding companies and their reinsurers and are influenced by contract type, collateral, etc.
  - If the contract is fully collateralized, LGD=0
Questions & Answers
CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND ITS RATINGS AFFILIATES ("MIS") ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MOODY'S PUBLICATIONS MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET PRICE VOLATILITY, CREDIT RISK AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

To the extent permitted by law, Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any rating, agreed to pay to Moody's Investors Service, Inc. for ratings opinions and services rendered by it fees ranging from $1,000 to approximately $2,700,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities that hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MICO of more than 5%, is posted annually at www.moodys.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657/AFSL 339569 and/or Moody's Analytics Australia Pty Ltd ABN 04 105 136 972/AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan K.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's K.K. Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws.

MOODY'S and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively. MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJKK or MSFJ (as applicable) for ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY300,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.