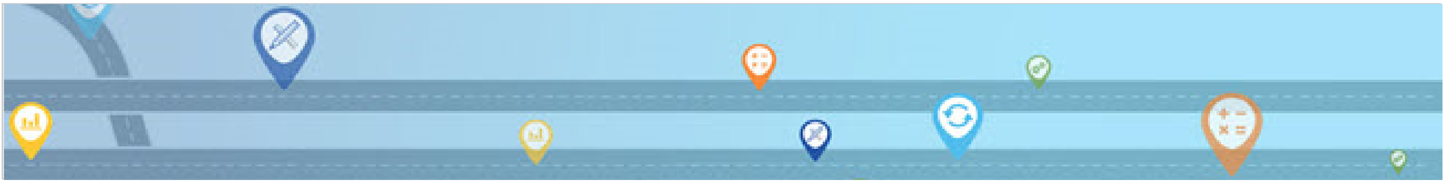
MOODY'S ANALYTICS



CECL FAQs

Moody's Analytics helps firms with implementation of expected credit loss and impairment analysis for CECL and other evolving accounting standards. We provide advisory services, data, economic forecasts, models, and process automation solutions that make compliance with these standards faster and easier.

Contact Us

Americas
+1.212.553.1653

Europe
+44.20.7772.5454

Asia-Pacific
+852.3551.3077

Japan
+81.3.5408.4100

CECL Modeling FAQs

The Financial Accounting Standards Board's new current expected credit loss impairment standards require timely, forward-looking measurement of lifetime risk using credible models. We answer the leading questions related to modeling challenges.

Are non-U.S. banks/bank holding companies subject to CECL or CECL-like jurisdictional requirements?

Those that have a parent company in the U.S. but exposure outside the U.S. are subject to CECL.

Does Basel III/Basel Committee on Banking Supervision address CECL in any manner?

Basel models are different than stress-testing and CECL models, although there are some commonalities with IFRS 9 accounting standards. For instance, with IFRS 9, Basel models can be used as a starting point where or when origination PDs are not available.

Why is the current generally accepted accounting principles allowance for loan and lease losses distinct from risk estimates, and how does CECL remove this barrier?

Many of the quantitative risk measurement tools/dual risk rating models available today are forward-looking but were often ignored for historical loss history and qualitative adjustments. The guidelines under CECL to incorporate forward-looking information provide an opportunity to develop a single credit risk quantification framework that supports underwriting and portfolio management and provides inputs into the allowance process.

Which modeling methods or techniques are acceptable for CECL?

Loan-level, vintage/cohort-level, or credit transition matrix models are acceptable for CECL. Choice of CECL methodology for each institution will depend on the institution's size and portfolio materiality, data availability, development and processing costs, and availability of existing models. Forecasts and estimates based on industry data provide a low-cost solution for smaller institutions. It should be noted that unlike some other asset classes, consumer credit typically encompasses a lot of data and models (origination scorecards, pricing models, stress-testing, etc.). All of these models could either be utilized or go under revision because of CECL.

What should banks consider when using existing models for CECL?

A variety of approaches are acceptable for CECL, ranging from roll-rate and vintage/cohort models to more sophisticated loan-level and credit-transition models. Lenders that have been through the Federal Reserve's Dodd Frank Act stress test or Comprehensive Capital Analysis and Review stress-testing process may be tempted to reuse their models for the CECL exercise. Recycling or adapting existing models for CECL would be cost effective, but there may be some concern that models developed for stress-testing may be overly conservative for financial accounting purposes.

Should banks with total assets of more than $50 billion use loan-level CECL models?

Institutions are not required to use loan-level models. CECL allows for loan pooling.

What is your opinion on using stress-test models for CECL?

Stress-testing models are often a good choice for CECL, however users would need to confirm that the model, which was built for stress-testing usually under adverse scenarios, produces accurate baseline forecasts required for CECL. They would also need to extend forecasts to lifetime, which could be a challenge for many institutions.

What are some of the pros and cons of loan-level versus cohort-level or portfolio-level models for consumer lending portfolios?

Portfolio-level models that estimate losses at the asset class level can capture broad sensitivities of performance to economic events and assume consistency of portfolio profile. But they ignore seasoning (or aging) of loans. Loan-level models have the advantage of delivering loan-level forecasts and being able to control for heterogeneity within a portfolio. These types of models provide the most complex and flexible approach. Vintage/cohort models group loans by common characteristics such as vintage, credit score, etc. They can provide a happy medium between portfolio and loan level by identifying key areas of risk within a portfolio while maintaining model stability. They also do a good job of linking macroeconomic scenarios to credit risk parameters.

Do you expect CECL to increase expected credit losses for commercial and industrial loans?

The impact of transitioning to CECL depends on several factors, including:

» The effect of current and forward-looking conditions at the reporting date (favorable or unfavorable).
» The portfolio contractual maturity relative to the existing loss emergence period assumption.
» The quality of portfolio.

In a case where macroeconomic variables are on a quarterly basis and probability of default is on an annual basis, can I find the average macroeconomic variable and regress it against the annual PD?

Yes. This can be done. Macro variables can be averaged if they are rates or summed if they are levels. Preferably, though, quarterly PDs should be used for CECL because of reporting requirements.

Does the probability of default/loss given default approach for C&I portfolios meet CECL's requirement to estimate losses on a collective basis where similar characteristics exist?

The PD/LGD approach meets CECL's requirement as long as the approach has the correct risk drivers included. LGD models typically consider the debt type, seniority of the loan, and segmentation. In this case, it would fulfill the CECL requirements.

What differentiates the drivers of LGD from PD?

LGD depends on multiple factors such as recovery/collection efforts as well as current collateral prices. LGDs can be more volatile and sometimes not intuitively move with the economy due to the first factor. PDs in general move more intuitively with the business cycle.

Is a PD model that does not explicitly include macro forecasts compliant with CECL?

If a PD model can demonstrate that it includes forecasts implicitly, then it could be compliant although how the requirement is met must be clearly documented.

Can banks that have only one risk rating (versus dual risk rating) use PD and LGD?

Not necessarily. To use the PD/LGD method for a given portfolio segment, the bank can have PD and LGD estimates for each of the positions in that segment. However, CECL does not require that the bank have dual risk ratings corresponding to these PD and LGD estimates. That said, we believe that the best approach is to work toward harmonization of risk ratings, reserves, and (where applicable) stress-testing.

Is there a model or metric to map internal ratings to external ratings?

There is no set formula, and it depends in large part on the methodology used internally. For example, if the methodology follows the Moody's Investors Service methodology, then it can be a reasonably simple mapping. However, if the internal ratings include both a point-in-time and a through-the-cycle measure of credit risk, then a customized calibration between the Moody's Investor Service rating scale and the internal scale might be required.

How do the regulators view a proprietary model such as Moody's Analytics?

Based on our experience with IFRS 9 internationally, regulators have viewed the use of proprietary economic models favorably, provided that they are well-grounded in economic theory, well-documented and transparent, and capture the inter-relationships between economic indicators such that a shock to a given factor is propagated throughout the system. The Moody's Analytics economic forecasting models meet all of these criteria.

How can you ensure the lifetime loss rate is the right number? For example, actual versus predicted values, and back-testing?

With a time series of loan observations, one can calculate at each snapshot: (1) the net charge-offs of each loan observed over its remaining life (net of recoveries); and (2) the lifetime loss rate or loss rate curve predicted. Several statistical techniques can be deployed to evaluate the appropriateness of the estimate for different segments.

Could you comment on reserves for unfunded commitments as they relate to committed and unilaterally cancelable lines of credit under CECL?

CECL uses the term "unconditionally cancelable," not "unilaterally." If the commitment to extend funds is unconditionally cancelable, institutions do not need to estimate expected credit loss on the off-balance sheet part. To look for that "condition," institutions can look at the underwriting documentation that proves the loan is unconditionally cancelable.

If all expected losses are recorded immediately, would that cause a huge surge in reserves at the beginning of the implementation of CECL in the 2019-2020 time frame?

Transition to CECL will require a onetime balance sheet or retained earnings cumulative effect adjustment upon adoption. Building up reserves using CECL methodology before adoption is prohibited. The impact would differ based on the methodologies used and assets assessed. Ideally, institutions should do parallel runs for a year to compare both CECL and incurred loss in preparation for CECL adoption.

How can expected life term be applied to a credit card portfolio?

Expected life term can be defined based on the payment pattern and outstanding balance as of the reporting date, given that credit card "commitment" is considered to be unconditionally cancelable.

How do you define "lifetime" for demand loans and revolving lines of credits?

For all revolving-type of loans that do not have an unconditionally cancelable clause in contracts, new draws are included in balance projections and balances are modeled as such. For bankcards that have this issue we are expecting further guidance from FASB, but there are ways to deal with the issue in either case.

Do net present value considerations need to be taken into account in models that are not discounted cash flow models? For example, in PD/EAD/LGD models?

Although it's important to consider the net present value loss calculation, it is not part of the formal CECL requirement for methodologies other than DCF. Regardless of the modeling framework, multiple calculations can be performed to ensure that the results are reasonable, and no single methodology is at an advantage.

How can a through-the-cycle LGD be converted to a point-in-time LGD?

A TTC LGD can be converted into a PIT LGD by considering current economic conditions directly in the methodology. Alternatively, the TTC LGD estimate could be calibrated to an LGD calculation that is based on current economic conditions.

For small banks lending to companies that do not have public credit ratings, is there a way to imply a credit rating?

Private companies with financial statement data can use Moody's Analytics RiskCalc™ models to derive a point-in-time (up to five years) PD that is already CECL-compliant. Public companies can use the data provided by Moody's Analytics CreditEdge™ public firm PD model. Companies that meet neither of these conditions could feasibly be modeled by using a proxy, for example, an aggregate of similar firms.

CONTACT DETAILS

Visit us at **moodysanalytics.com** or contact us at a location below.

AMERICAS
+1.212. 553.1653
clientservices@moodys.com

EMEA
+44.20.7772.5454
clientservices.emea@moodys.com

ASIA (Excluding Japan)
+852.3551.3077
clientservices.asia@moodys.com

JAPAN
+81.3.5408.4100
clientservices.japan@moodys.com