



Article

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CECL Roundtable FAQs

In light of the Current Expected Credit Loss accounting standard to be issued by the Federal Accounting Standards Board, Moody's Analytics hosted a CECL Economic Scenario roundtable at the New York Stock Exchange attended by a selection of the largest and most complex financial institutions in the United States. The objective was to have an open dialogue around economic forecasting techniques for calculating life-of-loan expected credit losses.

In helping all financial institutions navigate the challenges of CECL, Moody's Analytics details the findings of the forum with this FAQ document.

Moody's Analytics Global Model

Does Moody's Analytics make qualitative adjustments to the Global Macroeconomic Model?

Yes, our economists make adjustments to the forecasts produced by our global macro model. These adjustments are largely around reconciling recent historical information and events with the model's projections. Assumptions concerning key political events and policy changes are also incorporated in the model through these adjustments. Examples include the impact of higher U.S. tariffs, the Iranian oil sanctions, Brexit, and the recent election outcome in Mexico. The adjustments are documented and made available to clients through the country scenario narratives and the Précis Macro.

Are material changes in forecasts and scenarios documented?

Yes, Moody's Analytics produces a Monthly Forecast Changes document that describes changes in the baseline forecasts, and the reasons for those changes, for a core set of variables including variables provided by regulators for stress testing. If there is no change to a variable, that is highlighted as well. The change document includes both a narrative description of changes as well as a spreadsheet quantifying the magnitude of changes.

Changes to scenario assumptions are covered in the Scenario Narratives documentation and the Précis Macro, both of which are published every month.

The Scenario Studio platform used by our economists to generate global forecasts facilitates the process of change documentation through the audit trail, which helps track what changes are made and the rationale.

What are the reasons that forecasts may change from month to month?

Changes in the baseline forecasts can be due to several factors including changes to the historical data, the assumptions, and re-estimations of the model's equations.

How often do model equations change?

Equation changes are made as needed, although given the large scale of the model, some equation changes occur each month. Equations are changed when the economists believe the model accuracy can be improved. Equations may also change if new variables are added to enhance the model or one data series is replaced by another.

Moody's Analytics equations are frozen annually from the October vintage through the CCAR vintage (typically January) to ensure there are no changes to interfere with clients' model validation during stress testing. When the model is unfrozen, we make any necessary adjustments identified during the freeze period.

Why is the U.S. unemployment rate used to drive the global forecasts, and not a global variable (like Global GDP)?

The U.S. unemployment rate is used because it tends to be the most important driver of the economy. The assumption is that the U.S. economy will affect the rest of the world through global linkages, although there is a lag for emerging economies. Moreover, the unemployment rate and GDP tend to be closely correlated over time. Global GDP might not necessarily display significant cyclical movements because countries enter or exit a downturn at different times. A deep downturn in one set of countries might be offset by the booming economy in another set of countries.

In CCAR expansion, how does Moody's Analytics know that the forecasts of the secondary variables derived from others get enough stress?

Moody's Analytics lets the secondary variables be determined by equations. We then check against the Fed narratives and past business cycles to confirm that the trends make sense, and make adjustments as needed.

Does Moody's Analytics use benchmark models for core variables?

Moody's Analytics does have separate models for some forecasts including High-Frequency GDP models. We do not benchmark to the consensus because the consensus forecasts are not the result of a model.

CECL Scenarios

How is probability weighting applied to Moody's Analytics scenarios?

A vector autoregression (VAR) model incorporating a number of key variables such as unemployment, GDP, house prices, and stock values is simulated numerous times to produce a distribution of possible paths for these variables. This distribution is validated against historical experience and is used to calculate the probabilities of the scenarios.

Why has a 96% probability historically been associated with some of the Moody's Analytics standard scenarios, rather than a more rounded percentage of 95%, for example?

The 96% is a 1-in-25 scenario, and is roughly consistent with the probability of CCAR severely adverse stress scenarios.

How often do Moody's Analytics scenarios change?

Whenever the baseline forecast changes, those changes flow through to the alternative scenarios. The qualitative scenario narratives describing the underlying assumptions for each scenario are subject to revision every month as new risks develop—although in practice, the revisions tend to be small month to month.

If significant forecast risks are identified, Moody's Analytics will develop a special set of idiosyncratic scenarios to address them, such as the recent Brexit scenarios or Trump Trade War scenarios.

How do clients adjust the Moody's Analytics scenarios to meet their own assumptions?

Clients may make their own economic judgments about what they believe will pass governance review. To incorporate these judgments, some clients make a qualitative overlay for selected variables, although those changes don't flow through to all variables in the forecast. Other clients find it better to change the path of selected variables and re-solve the model. Clients may agree with the scenarios but not the probability weights, and thus may change them. The key is to be able to defend and document whatever adjustments are made.

How many scenarios are banks using for CECL?

Several clients report they plan to use three scenarios for CECL—a baseline plus one more-optimistic and one more-pessimistic scenario. Others indicate that they are still deciding whether to use one scenario or multiple scenarios.

Clients using multiple scenarios plan to employ qualitative adjustments to fully capture the range of sensitivities and uncertainty. Some will run additional scenarios to understand the most extreme loss case under a downturn and adjust the baseline accordingly. Overlay factors besides economic factors need to be considered in these adjustments, including portfolio composition.

How will clients define the distribution of weights in a multiscenario approach?

Many clients advise that the range of scenario weights is a qualitative decision that is best supported by a simulation exercise. Since scenarios are hypothetical, their weights can't be supported by model back-testing.

What are some things to keep in mind when using the Consensus Forecast for CECL?

The Consensus Forecast is based on the view of multiple contributors; therefore, it is not model-driven and not necessarily internally consistent. There is no narrative to explain the quarter-to-quarter changes in the forecasts.

Forecast Horizon

How are clients determining the reasonable and supportable period?

Many clients are using a three-year horizon for the reasonable and supportable forecast period. This is on the basis that most losses are captured in the first three to four years, and it typically takes that long for the model to reflect a shock (downturn) scenario. The shorter the reasonable and supportable period, the less volatility is observed between highs and lows. A longer reasonable and supportable period is believed most relevant for longer-term assets such as mortgages.

Many clients believe it is challenging to defend a long-term reasonable and supportable period as far out as 30 years. Alternately, those who view the entire forecast period as reasonable and supportable believe long-term trends can be defended with proper governance and documentation.

Where does Moody's Analytics set the mean reversion?

Moody's Analytics does not hard-code the mean reversion period. It is determined by the model. The speed of the reversion depends on the asset class and macro variables

driving the forecast. Most variables revert after three to four years, as that is the period in which most activity occurs and the peaks/troughs are achieved. The mean reversion reflects the period after the turning point is reached and the trend changes direction.

The Moody's Analytics baseline never reverts to the mean as a flat line. How close the forecast comes back to baseline after a shock, and how fast, depends on the distance of the peak/trough from baseline at the turning point.

Do the narratives document the length of the forecast and when mean reversion kicks in?

Scenario narratives address assumptions on core variables that cascade to all others. The narratives may address mean reversion for those core variables.

What are the pros and cons of using the input reversion method to set the reversion (that is, revert model inputs to longer-term trends)?

Input reversion does not rely exclusively on historical losses and depends on the specification of the credit models to forecast a long-term trend. The benefit of this approach is that it formally incorporates the extrapolation to long-term trends with a quantitative, internally consistent approach. The drawback of this approach is that it may understate long-run losses as economic factors settle into their long-run trends. For shorter-term portfolios, this may not be an issue given that the bulk of the forecast loss will be realized during the near-term reasonable and supportable forecast period. In other cases, the impact may be mitigated through the consideration of multiple scenarios. A full-scale simulation of credit losses under thousands of economic paths would allow analysts to fully capture the convexity of losses in describing the loss distribution.

Another consideration worth noting is that there is no flexibility to set differing assumptions for each portfolio without making a qualitative adjustment on the outputs.

What are the pros and cons of using the output reversion method to set the reversion (that is, revert model outputs to historical loss rates)?

Output reversion provides more levers to pull and enables adjustments for other idiosyncratic factors that affect loss, such as the portfolio type and composition. It may be conceptually easier to break the lifetime loss forecast into

two distinct processes: a model-driven forecast during the reasonable and supportable period, and a data-driven forecast beyond this horizon. However, the determination of the historical loss rate brings its own set of challenges. For example, a lender will want to consider change in underwriting quality and product type in calculating the historical average. Seasoning or the aging of loans will be an important consideration as well, as the conditional loss rate on loans typically falls as they age. Institutions using output reversion will need to carefully analyze and document their decisions including their choice of their historical time period. Lenders with limited history may need to supplement their historical data with broader industry or peer-level data to pass audit and regulatory scrutiny.

How should it be handled if the historical loss rate on a portfolio is zero (for example, Aaa Bond portfolio)?

If the historical loss rate of a portfolio is zero, the loss forecasts may need to be based on broader industry trends. Lenders will need to look to external datasets in order to support their loss estimates.

Procyclicality

Will CECL be procyclical?

The motivation for adopting the CECL rule was to address the high degree of procyclicality in the current system. Loan loss reserves bottomed in 2006 just as house prices peaked and topped out in 2009 as the economy was in the full throes of the Great Recession. Nearly all industry participants agree that CECL will result in higher reserves compared with the incurred loss approach for most product categories. The question is whether those reserves will also increase concurrently with the economy deteriorating. The fact that CECL starts the loss recognition process at the time of loan origination should shift reserves in a countercyclical manner. However, the choice of credit loss forecasting methodology and forward-looking economic scenarios will impact just how countercyclical CECL turns out to be. To answer this question, institutions will need to estimate their CECL reserves at different turning points of the 2008-2009 business cycle. The feeling is that the extent of procyclicality will also depend on the portfolios in question. These back tests will help to inform institutions about their processes and allow them to refine their choices when it comes to using economic scenarios, setting a reasonable and supportable forecast period, and determining how they will

incorporate mean reversion in their processes.

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