



Developing Conditional and Unconditional ECL Projections

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OVERVIEW

Under the forthcoming IFRS9 accounting rule and in the US under the pending CECL standards, credit institutions will be required to make detailed projections of expected credit losses (ECLs). These same institutions, in conducting regulatory stress tests, are already projecting losses under specified macroeconomic scenarios. This short note describes some key differences in the approaches for satisfying these distinct regulatory and accounting requirements.

In regulatory stress tests, the authorities or an institution's management determine both a baseline and at least one stressed macroeconomic scenario. To obtain the related credit-loss projections, an institution must translate the assumed paths for macroeconomic variables into the implied sequences of credit-factor values that enter into credit models and affect the PD, LGD and EADs of individual exposures.

In contrast to the deterministic approach just described, IFRS9 and CECL, which is not as far along in its formulation, call for the development of probability-weighted averages of the lifetime credit losses that would occur under multiple scenarios. IFRS9 also specifies that an institution consider all reasonable and supportable information including information that is forward looking:

'the objective of the impairment requirements is to recognise lifetime expected credit losses for all financial instruments to which there has been a significant increase in credit riskconsidering all reasonable and supportable information, including that which is forward looking'

FN (International Financial Reporting Standards, July 2014)

Z-RiskEngine provides an integrated solution on a single platform for projecting ECLs under either individual, deterministic or multiple statistical scenarios, to support both stress testing and IFRS9/CECL.

Z-RiskEngine®



DEVELOPING UNCONDITIONAL ECL PROJECTIONS

Z-RiskEngine embodies over 10 years of experience in developing industry and region credit factors (Z). These Z credit factors together with an array of point-in-time (PIT) PD, LGD, EAD and grade-transition models provide a solid foundation for determining the probability-weighted ECL estimates called for by IFRS9 or CECL.

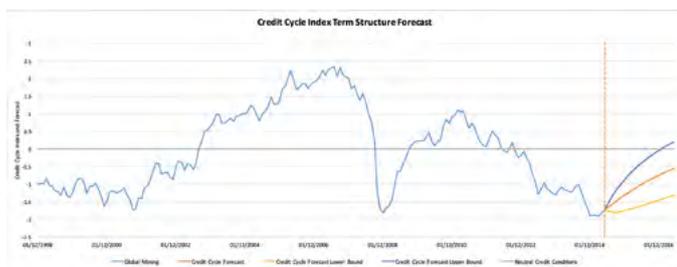
STATISTICAL SCENARIOS: A straight-forward way of producing unconditional ECL estimates from statistical scenarios involves:

- Estimating on the basis of historical experience, time-series models for the probabilistic evolution of industry and region, Z factors,
- Drawing many sequences of correlated, random shocks to derive a large number of Z scenarios,
- Entering the Z scenarios into the related grade-transition LGD, and EAD models and obtaining joint PD, LGD, and EAD scenarios,
- Calculating, for each set of industry and region, Z scenarios, the period-by-period, scenario-conditional ECLs as $\Delta PD \times ELGD \times EEAD$, and,
- Forming averages of the ECLs in the different scenarios and thereby obtaining an unconditional estimate of ECLs over multiple periods.

This average result is unconditional – meaning that it doesn't assume the occurrence of a particular economic or credit scenario, but instead corresponds to a probability-weighted average of the losses that would occur under all possible future scenarios.

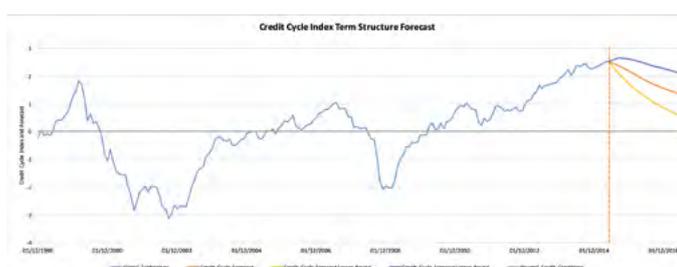
An accurate PIT starting point is critical to the derivation of accurate ECLs. To get such starting values, one needs both accurate PD, LGD, and EAD models and accurate measures of the relevant credit cycles. As an example of the need to account for cycles in some detail, see below the recent status and outlook for the Z indexes in the Global Mining and Global Technology sectors. Mining is now in a higher credit risk state and is expected to improve. Technology is in a relatively low-risk state and expected to move gradually toward average risk. These dissimilar outlooks can make a big difference in the related ECL estimates.

Credit Cycle Forecasts for Global Mining Industry



Source: CreditEdge™ and Z-RiskEngine® models.

Credit Cycle Forecasts for Global Technology Industry



Source: CreditEdge™ and Z-RiskEngine® models.

DEVELOPING CONDITIONAL ECL IMPAIRMENT PROJECTIONS

DETERMINISTIC (CONDITIONAL) SCENARIOS:

In stress testing, one starts with a particular scenario or scenarios. One can then apply Z-RiskEngine in developing the related ECL outcomes. One may perform this exercise by:

- Specifying various macro-economic scenarios selected to illustrate both baseline (e.g. median) and different levels of stress conditions,
- Applying 'bridge' models in translating the macroeconomic scenarios into industry and region credit-cycle scenarios, and,
- Entering each, credit-cycle scenario into the related PD, LGD, and EAD models in developing the implied loss scenarios.

Z-RiskEngine is designed to apply credit cycles in determining the losses implied by different scenarios. Since IFRS9 and CECL call for best estimates of ECLs, Z-RiskEngine can run multiple scenarios depicting the entire range of possible loss outcomes. Alternatively, one may apply Z-RiskEngine together with macroeconomic scenarios in assessing the deterministic estimates needed for regulatory stress tests.

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