



Solution Overview

MARCH 2016

ADVANCED ANALYTICS TO SUPPORT IFRS9/CECL AND STRESS TESTING

Z-RiskEngine® is an advanced customisable solution suite designed to support IFRS9/CECL and Stress Testing as a single integrated SAS solution. This approach, developed by Aguais and Associates, is now available globally to financial institutions for the first time - but it isn't new. Our team has spent over 10 years developing, refining and implementing this approach in two large global banks.

ACCURATE IFRS9/CECL ECLS AND STRESS LOSS PROJECTIONS

New regulations for projecting forward-looking expected credit losses (ECLs) to support IFRS9 and CECL impairment calculations require banks to utilise advanced analytics to satisfy key accuracy requirements. This is because wholesale loan losses over the cycle have varied by as much as a factor of 10 times due to systematic credit cycles. To support these complex objectives Z-RiskEngine provides an integrated key solution suite to support financial institution's ongoing regulatory, accounting and risk management objectives.

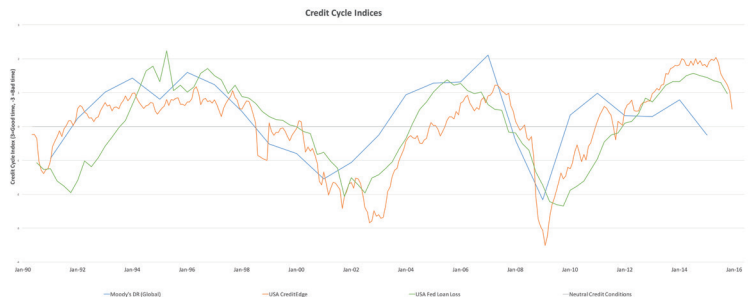
This solution incorporates an advanced credit analytics framework designed to *Unlock Credit Cycles* – the key component of accurately projecting ECL impairments. Z-RiskEngine supports 'unbiased probability weighted forward-looking ECLs' as required by IFRS9/CECL through simulation of industry and regional credit cycles using mean reversion and momentum models to assess ECLs over all possible risks – these simulated ECLs are unconditional, representing all possible future scenarios. Z-RiskEngine also supports scenario based conditional, forward-looking base and stress loss projections as required by Stress Testing regulations by making use of macro-economic factors consistently developed with credit-factor bridge models.



Z-RiskEngine.com

CREDIT CYCLES MATTER

25 Years of Credit Cycle Indexes for Defaults, Losses and CreditEdge™ EDFs



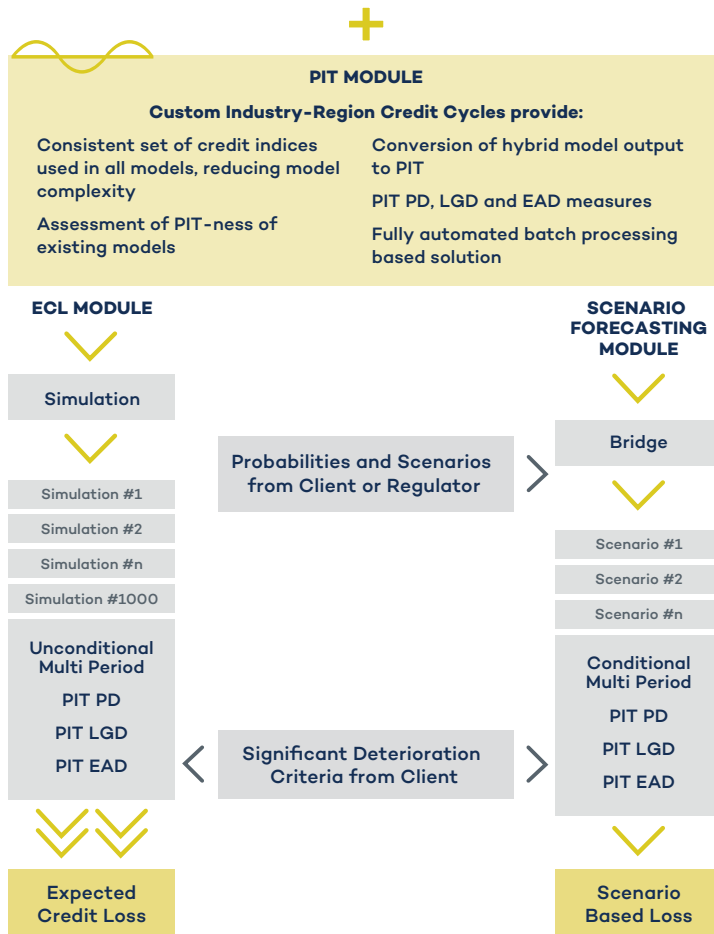
Source: CreditEdge™, Moody's Investors Services, Federal Reserve and Z-RiskEngine® models

CUSTOMISED AND INTEGRATED ACROSS REGULATORY OBJECTIVES AND CREDIT MODELS

Z-RiskEngine provides a comprehensive integrated solution for estimating ECLs for regulatory, accounting and risk management objectives. The solution encompasses software tools and customised credit cycle analytics that leverage financial institution's own credit portfolio data and credit models. The solution suite:

- constructs custom credit cycle indexes (Z) pertinent to an institution's industry and regional footprint,
- applies these indexes in converting existing internal PD, LGD and EAD model estimates to current Point-In-Time (PIT), reflecting the most accurate PIT starting point for projecting wholesale ECLs,
- estimates models for forecasting the Z factors Point-In-Time (PIT) either unconditionally using simulations of past Z factor information or conditionally using macroeconomic factors,
- uses these Z factor forecasting models based on mean reversion and momentum analytics in generating probabilistic Z scenarios or a small number of deterministic ones,
- integrates these Z scenarios with existing PIT PD, LGD and EAD models to produce correlated PIT PD, LGD, EAD term-structures, and,
- forms averages of the probabilistic-scenario ECL term structures for individual facilities thereby determining unconditional values over the lifetime of each facility.

Existing Client Models and Data: PD, LGD, EAD and Stress Testing

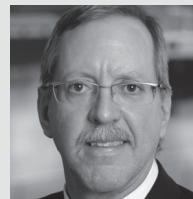


TRUSTED AND COMPLIANT APPROACH

The Z-RiskEngine solution brings together 10+ years of research and development on Point-In-Time (PIT) and Through-The-Cycle (TTC) dual ratings for commercial and corporate portfolios and is based on Black-Sholes-Merton, CreditMetrics and other leading credit portfolio models. This approach was developed and implemented at two large global banks and formally signed-off under the banks' Basel Waivers. Z-RiskEngine is a completely redeveloped solution based on this approach and will be released as a SAS solution suite in September 2016.

For further information on Z-RiskEngine and to see a demonstration, please contact the Z-RiskEngine team.

Authors:



Scott D. Aguais, PhD
SAguais@Z-RiskEngine.com



Lawrence R. Forest, Jr PhD
LForest@Z-RiskEngine.com

SOLUTION BATCH AUTOMATION SUPPORTS LOW BUILD AND OPERATIONAL COSTS

Z-RiskEngine is a SAS® software based solution that supports complex credit analytics calculations and batch model automation. Z-RiskEngine is designed to integrate directly with a financial institution's internal client static data and wholesale credit exposures by obligor/facility type and utilises each bank's own PD, LGD, EAD credit models. These internal models are assessed for their 'degree of PIT-ness' and then together with industry and regional credit cycles – customised to each bank's portfolio footprint – are used to convert these PD, LGD and EAD estimates to multi-year PIT PDs, LGDs and EADs. The advanced analytics and batch processing architecture can be run either in simulation mode assessing ECLs in detail on an unconditional or probability-weighted basis or in deterministic scenario mode to assess stress or baseline ECLs – bottom-up by facility and borrower.

Solution automation: our solution expertise embedded in the solution suite and our experience modelling credit cycles means Z-RiskEngine can be licensed and implemented at a fraction of in-house build cost. Batch processing power enables the assessment of large portfolios of tens of thousands of customers and exposures in an efficient way supporting lower operational costs.

Z-RiskEngine®
Unlocking Credit Cycles

Z-RiskEngine.com