



Z-RiskEngine® MODULES

Advanced solution providing a single integrated architecture for assessing IFRS9/CECL Expected Credit Loss (ECL) and running Stress Tests.

Z-RiskEngine is a SAS® based advanced solution designed to accurately project future ECLs for wholesale, corporate and commercial portfolios. ZRE's primary advancement is to unlock complex industry and region credit cycles to convert TTC PD, LGD and EAD models into PIT measures – accurately projecting wholesale credit losses requires PIT measures to be successful and satisfy IFRS9/CECL and Stress Testing regulations.

ZRE-PIT



Point-in-Time Module

Calculates 1 year unconditional Point-In-Time PD, LGD and EAD measures by leveraging a client's existing credit models.

Creates customised credit cycles derived from external vendor data, internal loss data, or other indicators and combines them with client's data to produce 1 year PD, LGD and EAD measures.

ZRE-ECL



Expected Credit Loss Module

Calculates unconditional lifetime Expected Credit Losses (ECL) for a client's portfolio.

Uses 1-year PIT values from Z-RiskEngine's PIT module, Monte Carlo simulation of credit indices and correlation between PD, LGD & EAD to produce ECL values for IFRS9/CECL.

ZRE-SFM



Scenario Forecasting Module

Calculates conditional lifetime Expected Credit Losses (ECL) for a client's portfolio based on prescribed macroeconomic scenarios.

Uses 1-year PIT values from Z-RiskEngine's PIT module, client's existing macroeconomic models or ZRE built macroeconomic models and correlation between PD, LGD & EAD to produce conditional loss forecasts for IFRS9/CECL and stress testing.

SOLUTION DEPLOYMENT

- Ready-to-deploy code libraries integrated with an institution's existing SAS® infrastructure
- Integrates with portfolio data at an institution's prescribed level of granularity (counterparty, facility or transactional)
- Code configured via easy to manage configuration files
- No operating system installation or system registry changes required, minimising IT support
- Input and output API provides guidance on integration with an institution's existing data

SOLUTION SUPPORT

- Customised documentation and user guides
- Code audits and intermediate data outputs can be provided to assist with audit requirements
- Updates and upgrades to existing versions can be deployed remotely
- Online and phone support

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Z-RISKENGINE MODULE	ZRE-PIT	ZRE-ECL	ZRE-SFM
SOLUTION FEATURES	<ul style="list-style-type: none"> • Rapid & efficient batch processing of client data • Intuitive design facilitates simplistic execution of software • Deployment leverages existing SAS infrastructure 		
	<ul style="list-style-type: none"> • Dynamic conversion of existing model outputs to PIT values 	<ul style="list-style-type: none"> • IFRS9/CECL and Stress Testing compatible methodology • PIT PD term structures enables Significant Deterioration calculations 	<ul style="list-style-type: none"> • Leverages client's existing macroeconomic forecasting models or the Z-RiskEngine generated macroeconomic scenarios • Scenario specific forecast of Industry-Region credit cycle indices • Scenario specific calculation of lifetime PIT PD, LGD and EAD term structures • Scenario specific calculation of lifetime ECL incorporating correlation in PD, LGD and EAD
INPUTS	<ul style="list-style-type: none"> • Vendor data for deriving credit cycle indices • Macroeconomic data • Internal historical loss data • Client PD, LGD, EAD data 	<ul style="list-style-type: none"> • One year Point-In-Time PD, LGD and EAD measures from PIT module • Client interest rate, maturity and future exposure profile data • Client's significant deterioration parameterisation 	<ul style="list-style-type: none"> • Range of macroeconomic scenario forecasts • Probabilities assigned to range of macroeconomic scenario forecasts
		<ul style="list-style-type: none"> • Industry-Region credit cycle indices tailored to a client's portfolio • Industry and Region credit cycle indices composition weights tailored to a client's portfolio • Parameterisation tailored to the client's portfolio PD, LGD & EAD models 	<ul style="list-style-type: none"> • Choose from a range of pre-defined Significant Deterioration methods • Future assumptions on utilisation and limits can be reflected in lifetime EAD profile
OUTPUTS	<ul style="list-style-type: none"> • Output at borrower, facility or transactional Level • Dynamic reporting including drill down capabilities 		
	<ul style="list-style-type: none"> • One year PIT PD, LGD and EADs • Visualisation of credit cycle indices and PIT values 	<ul style="list-style-type: none"> • Probability weighted average lifetime ECL calculation • Visualisation of term structures and significant deterioration • Lifetime unconditional PIT PD, LGD, EADs • Lifetime ECL calculation • Lifetime PIT PD, LGD, EAD & ECL unconditional term structures 	<ul style="list-style-type: none"> • Scenario specific lifetime PIT PD, LGD, EADs • Scenario specific lifetime ECL calculation