Real Options Valuation

RiskBusiness Latin America

OVERVIEW OF ROV BASEL CREDIT, MARKET, OPERATIONAL, LIQUIDITY (CMOL) RISK SOFTWARE

ROV CMOL comes in 5 languages (English, Chinese, Portuguese, Russian, and Spanish) and has several main analytical areas briefly described below. A wealth of resources is available to get you started including Online Getting Started Videos, Getting Started Guides, Case Studies, White Papers, and Sample Models.

The CMOL software was developed to perform a comprehensive analysis for banks based on Basel II and Basel III requirements on credit, market, operational, and liquidity risks. CMOL takes all of our advanced risk and decision analytical methodologies and incorporates them into a simple-to-use and step-by-step integrated software application suite that is used by small to midsize banks. It simplifies the risk-based Basel requirements and empowers a bank's stakeholders and decision makers with insights from powerful analytics using simple to interpret results and reports.

CMOL ANALYTICAL CAPABILITIES

Credit Risk: Applies Basel II/III requirements on credit modeling (residential mortgages, revolving credit, wholesale corporate and sovereign debt, and miscellaneous credit), computes Regulatory Capital (RC), Risk-Weighted Assets (RWA), and Economic Capital (EC), given inputs such as historical default data to compute Probability of Default (PD), Loss Given Default (LGD), and Exposure at Default (EAD).

Market Risk: Computes gross Value at Risk (VaR) and internal simulated VaR with various holding days and VaR percentiles.

Operational Risk: All of Basel's Operational Risk methods such as the Basic Indicator Approach (BIA), The Standardized Approach (TSA), Alternate Standardized Approach (ASA), Revised Standardized Approach (RSA), and Advanced Measurement Approach (AMA) are supported in the software. Monte Carlo Risk Simulation methods are used in concert with convolution of probability distributions of operational risk Severity and Frequency to determine Expected Losses (EL), Unexpected Losses (UL), and estimation of Basel's OPCAR or Operational Capital at Risk values for the AMA approach.

Liquidity Risk: Asset Liability Management modeling approaches to compute Liquidity Gap, Economic Value of Equity (EVE), and Net Income Margin (NIM) based on interest rate risk and liquidity risk, with stress testing and scenario analysis.

Analytical Models: Provides structural, time-series, portfolio, and credit models on estimating PD, EAD, LGD, credit exposures, options-based asset valuation, volatility, debt instrument valuation, Credit Conversion Factors (CCF), Loan Equivalence Factors (LEQ), and a myriad of other models.

Monte Carlo Risk Simulation: Access to 50 probability distributions including Extreme Value Distributions (EVT) for estimating and simulating Severity of Operational Losses (e.g., Fréchet, Generalized Pareto, Gumbel, Logistic, Log-Logistic, Lognormal, and Weibull) and Frequency of Operational Risk Events (e.g., Poisson).

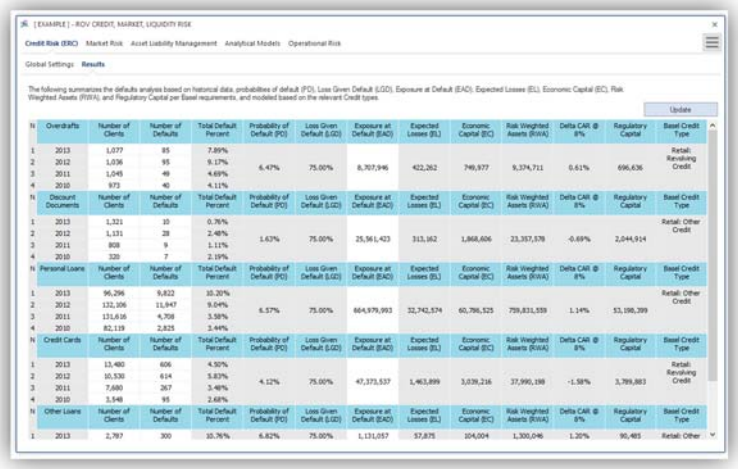
CMOL CUSTOMIZATION, TRAINING, AND CONSULTING

Our firm also performs customized and generalized training on CMOL modules, as well as providing consulting services for the purposes of getting our banking clients started quickly with their customized modules.

CREDIT RISK

The following methodologies are supported in the CMOL software:

- Applies Basel II/III Credit Risk models for Residential Mortgages, Revolving Credit, Wholesale Corporate and Sovereign Debt, and Miscellaneous Credit.
- Uses historical default data to determine the historical Probability of Default (PD) or enter your own PD estimates.
- Computes and returns the Regulatory Capital (RC), Risk-Weighted Assets (RWA), and Economic Capital (EC), given inputs such as historical default data to compute Probability of Default (PD), Loss Given Default (LGD), and Exposure at Default (EAD).
- Generates multiple months of Credit Risk analysis, saves, backs up, and encrypts your sensitive data using 256-bit encryption protocols.



MARKET RISK

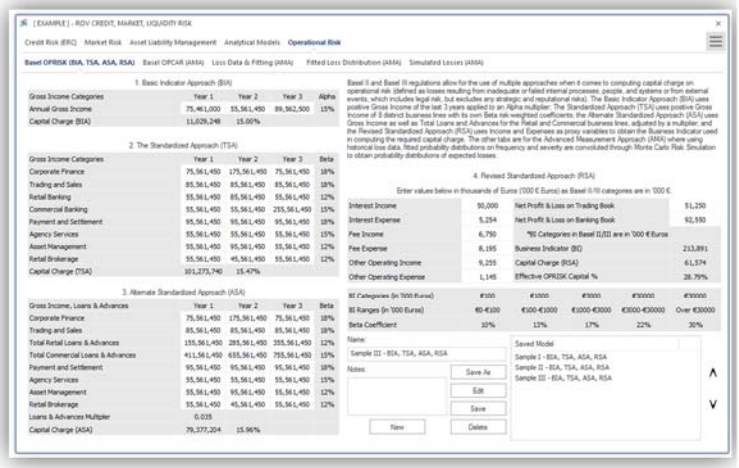
The following methodologies are supported in the CMOL software:

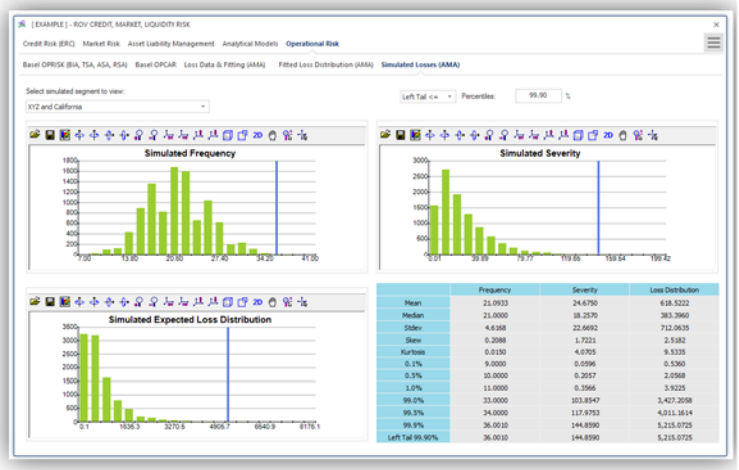
- Uses historical data on asset holdings, foreign and domestic currency amounts, to generate gross Value at Risks (VaR).
- Returns internal simulated VaR with various holding days and VaR percentiles.
- Returns Central Bank requirements for VaR computations based on asset holdings and positions.
- Creates VaR charts and reports over time.

OPERATIONAL RISK

The following methodologies are supported in the CMOL software:

- Basic Indicator Approach (BIA) using gross income and an alpha multiplier to estimate required Capital Charge.
- The Standardized Approach (TSA) using gross income on 8 separate business lines with their respective beta coefficients to compute the weighted average Capital Charge.
- Alternate Standardized Approach (ASA) using a mixture of gross income as well as revenues from commercial and retail advances and loans to determine the required Capital Charge.
- Revised Standardized Approach (RSA) using income-based Business Indicators (BI) from three subcomponents of the bank's overall businesses to obtain the Capital Charge, including income and expenses based on Interest, Financial, and Services components.
- Advanced Measurement Approach (AMA) is supported in the software. Monte Carlo Risk Simulation methods are used in concert with convolution of probability distributions of operational risk Severity and Frequency to determine Expected Losses (EL), Unexpected Losses (UL), and estimation of Basel's OPCAR or Operational Capital at Risk values for the AMA approach.

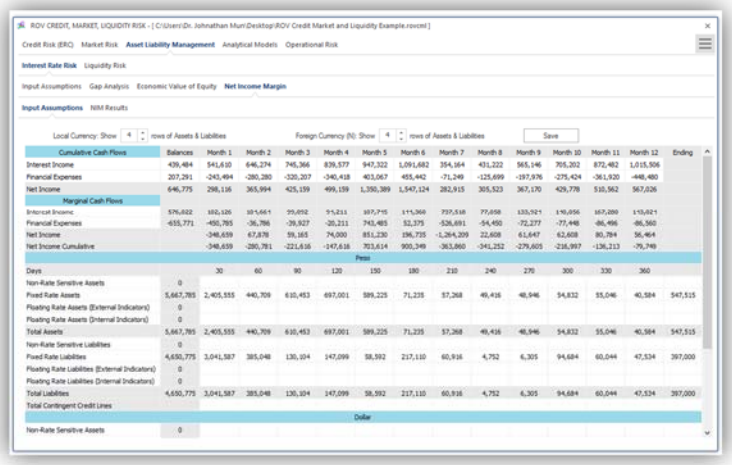


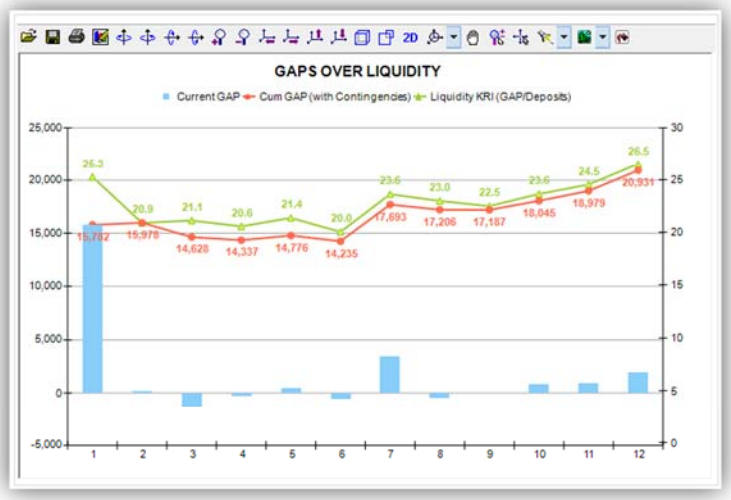


LIQUIDITY RISK (ASSET LIABILITY MANAGEMENT)

The following methodologies are supported in the CMOL software:

- Uses interest-sensitive Asset and Liability historical data in computing Asset Liability Management (ALM) modeling.
- Computes Liquidity Gap, Economic Value of Equity (EVE), and Net Income Margin (NIM) based on interest rate risks and liquidity risks.
- Stress Testing and Scenario Analysis are applied.





ANALYTICAL MODELS

Provides models on estimating and valuing PD, EAD, LGD, Volatility, Credit Exposures, Options-based Asset Valuation, Debt Valuation, Credit Conversion Factors (CCF), Loan Equivalence Factors (LEQ), Options Valuation, Hedging Ratios, and multiple other models.

Real Options Valuation

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