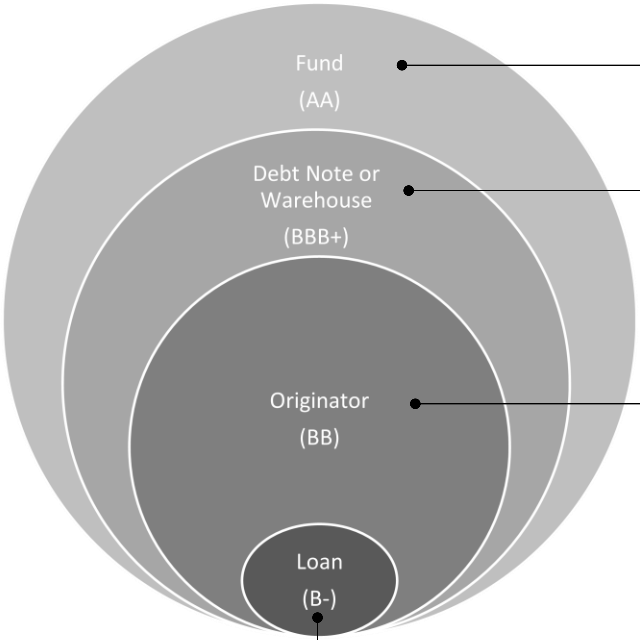
Credit Rating and Portfolio Credit Quality Monitoring
Private Credit Fund Services

Open Analytics

open-analytics.com.au

Bottom-Up Risk Estimation and Credit Ratings for Private Credit Funds

Open Analytics credit rating service for private credit funds includes a comprehensive bottom-up risk assessment and credit ratings for individual loans, originators, debt securities and entire funds. In addition to providing credit ratings for debt notes and funds, the solution can be used to design debt securities and investment strategies required to achieve a target credit rating, given a pool underlying assets.



Fund loss estimates and credit rating based on threshold loss methodology. Rating reflects likelihood of a negative return on the aggregated pool of funding warehouses and debt notes in the fund.

Funding warehouse and debt note loss estimates and credit ratings based on threshold loss methodology. Rating reflects likelihood of a negative return on the warehouse or debt note. Driven by underlying lender loss distributions, ratings factor in capital structure including subordination (attachment points), senior positions (detachment points) and credit enhancements.

Loss distribution model which aggregates all loans in the originator pool considering portfolio concentrations, asset correlations and collateral price volatility. Also includes portfolio credit quality monitoring, back-testing, peer benchmarking and point in cycle analysis.

Credit risk estimates and back-testing can also be used by the originators for credit provisioning under AASB-9 and for capital adequacy assessment.

We also offer a comprehensive due diligence and financial risk assessment for originators through our strategic partner Creditsource.

Loan-level PD, EAD, LGD and ECL estimates derived from our benchmark industry models. Allows the flexibility to include each individual lender's available data to calibrate default rates, credit conversion factors and collateral recoveries. We also offer loan-level credit reporting and monitoring of external bureau scores via our commercial bureau partner CreditorWatch.

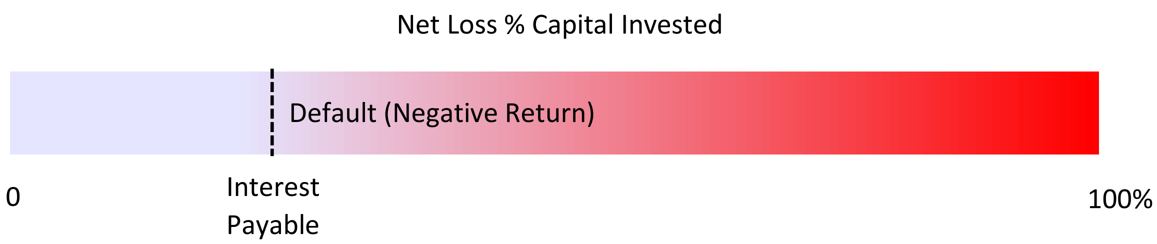
Credit Ratings for Debt Notes and Funds

Credit Ratings published by rating agencies classify companies by default risk (probability of default). Where “default” is defined as a “failure to meet financial commitments”. The table below shows the mapping of PD estimates to credit ratings.

Rating	Rating PD Benchmark	Default Frequency
AAA	0.01%	1-in-10,000
AA	0.02%	1-in-5,000
A	0.05%	1-in-2,000
BBB+	0.10%	1-in-1,000
BBB	0.15%	1-in-667
BBB-	0.20%	1-in-500
BB+	0.30%	1-in-333
BB	0.50%	1-in-200
BB-	1.00%	1-in-100
B+	2.00%	1-in-50
B	3.30%	1-in-30
B-	6.50%	1-in-15

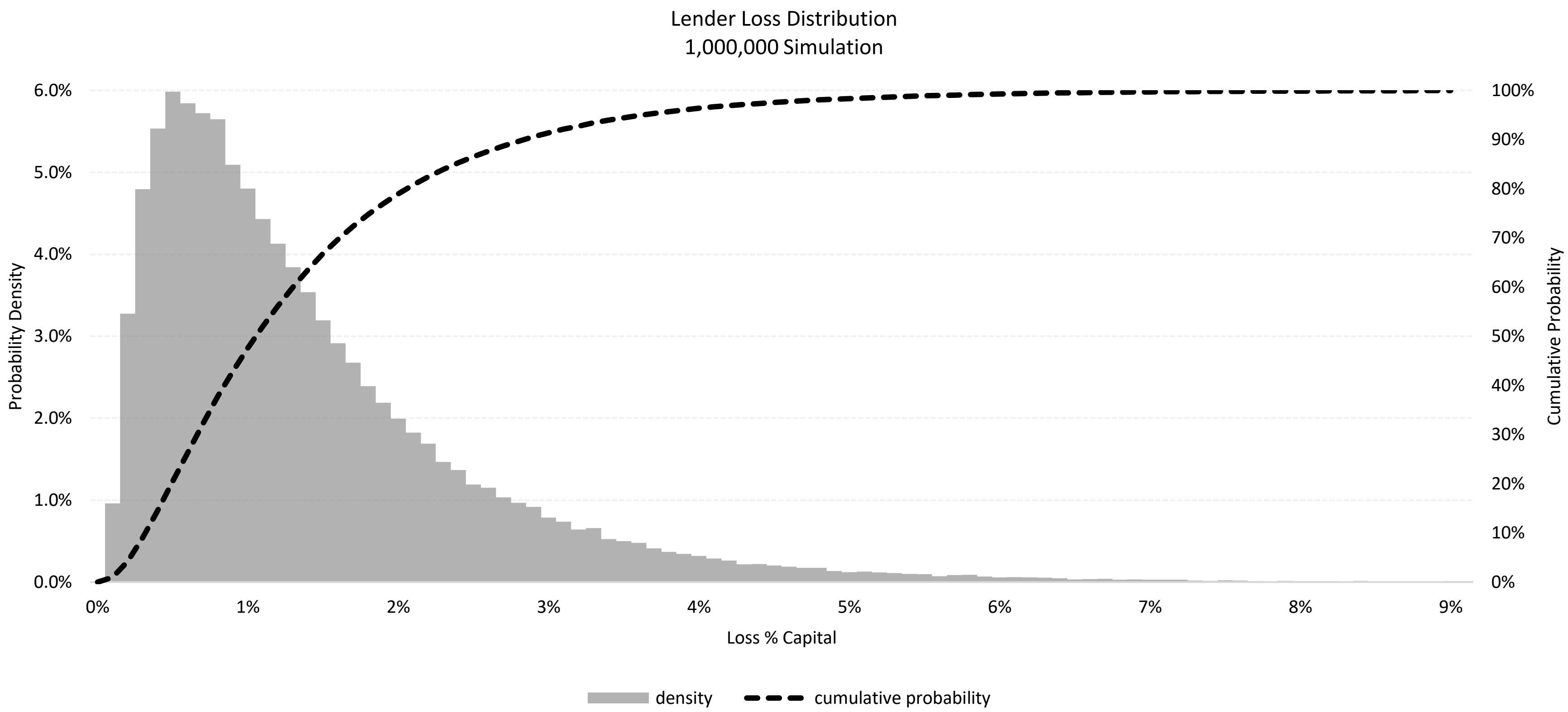
We model loss distributions and expected loss for debt notes and fund using a **Threshold Loss Method**. This approach defines an annual loss of capital at a certain level as a default event on a debt note and estimate the probability of default based on the likelihood of exceeding the loss threshold.

We define a default event as a loss greater than the interest payable on a debt security, i.e. a loss that results in a negative return for investors.



Loss Distributions

Loss distributions for each originator are estimated using a simulation approach. The approach is similar to economic capital models used by major banks for capital allocation and risk-based pricing.



Underlying models that generate the loss distribution include Probability of Default, Exposure at Default and Open Analytics industry collateral haircut LGD model. Modes can be applied to a wide range of asset classes using our industry benchmark data and each originators loss experience. Loss distributions for the lenders can be used to measure the probability of losses exceeding any threshold loss rate enabling a value at risk assessment.

Model Components (Loan-Level Models)

Our bottom-up expected credit loss (ECL) model combines Point-In-Time (forward-looking) risk estimate models to derive expected loss under a range of economic scenarios. Underlying PD, EAD and LGD models produce estimates over a 1-year horizon for stage 1 (performing) exposures and over the remaining term of the facility for stage 2 and 3 (non-performing) exposures.

Remaining Term (N)

State of the Cycle (Z)

Asset Price Index (ΔZ)

Facility Effective Interest Rate

Core Risk Estimates

$$ECL_t^N = Exposure_t \times \sum_{n=1}^{N} \boxed{PD_t^n(Z) \times EAD_t^n \times LGD_t^n(\Delta Z)} \times (1 + EIR)^{-n}$$

Probability of Default

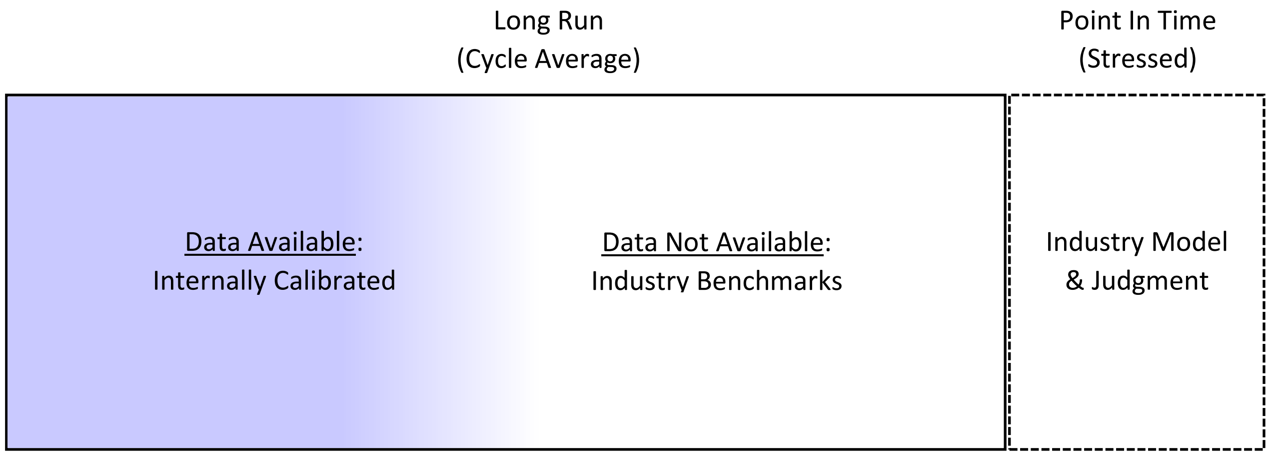
Exposure At Default

Loss Given Default

Our benchmark industry models allow the flexibility to include each individual lender's available data to calibrate roll rates, default rates by PD segments, credit conversion factors and collateral recoveries. Our ECL framework also allows a range of design choices for PD, EAD and LGD segmentation and other components of the models.

Benchmarks vs Internally Calibrated Risk Estimates

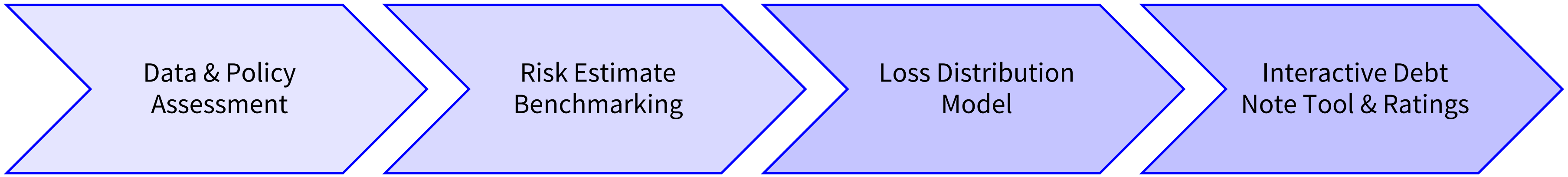
The Open Analytics hosted credit rating solution leverages internal data where it is available in sufficient volumes, and industry benchmarks aligned to Australian national averages where data is not available.



Risk estimates also allow funds or lenders design choices and input, including any considerations for any non-standard product features or risk mitigants which are expected to result in PD, EAD or LGD outcomes being higher or lower than industry averages.

Rapid Deal Assessment Service

We offer a rapid deal assessment service which provides a review of credit policy and quantification of a prospective originator's risk profile. The service includes an interactive rating tool which allows you to design a debt note based on the risk profile of any originator, setting the level of first loss buffers or credit enhancement required to achieve a desired credit rating and risk return profile for investors. The solution implementation occurs in 4 stages and is delivered within 2 weeks as summarised below.

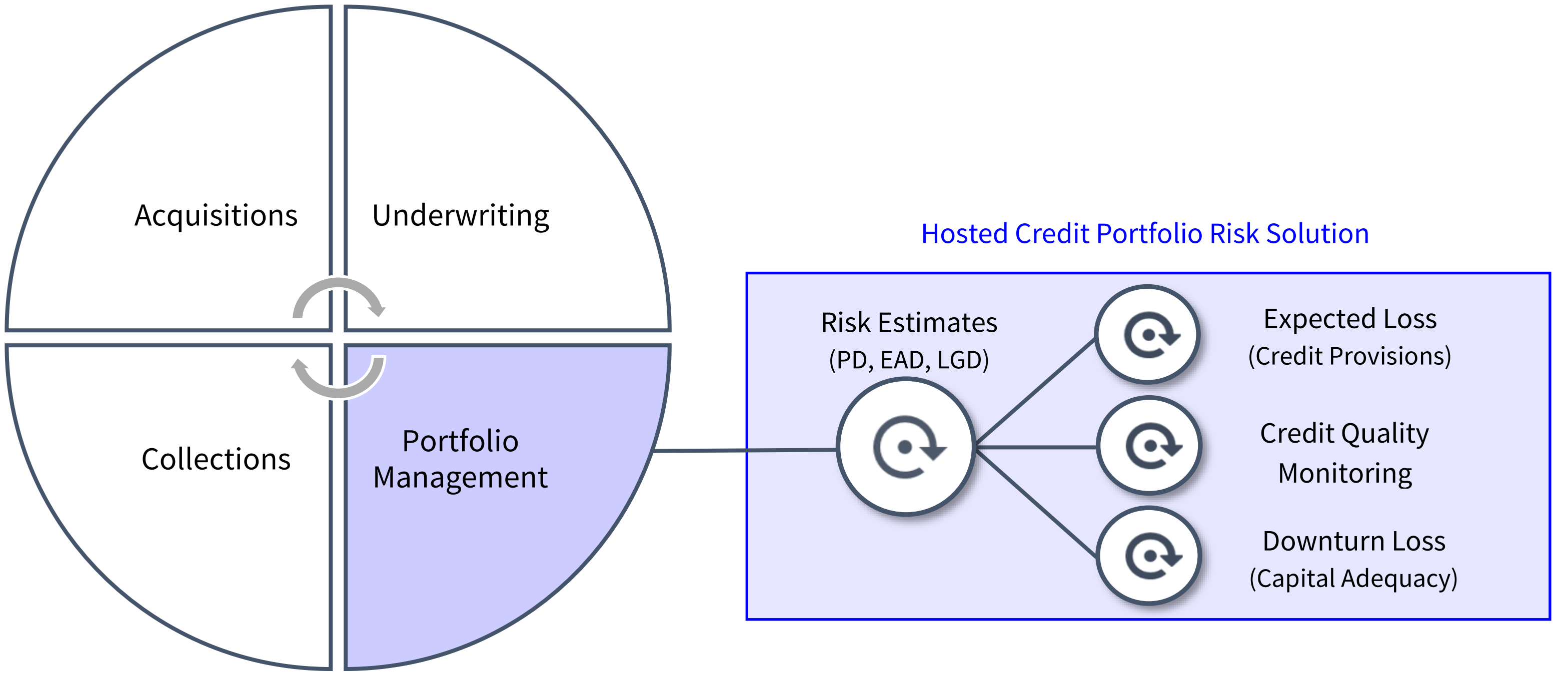


1. Data and Policy Assessment: We assess policy and data to determine appropriate benchmarks. For establish portfolios, portfolio default and loss performance can also be supplied to supplement benchmarks
2. Risk Estimate Benchmarking: Following the policy and data assessment, risk estimate models are calibrated to our external benchmarks and industry risk estimate models.
3. Loss Distribution Model: Loss distributions are generated based on underlying risk estimates to provide an assessment of tail risk required to set credit ratings and set credit enhancement to the level required to achieve a desired rating.
4. Interactive Debt Note Tool and Credit Rating: An interactive tool is provided to clients which allows to set level of subordination, attachment and detachment points and interest payable on debt notes. Settings can be adjusted to achieve a desired credit rating.

The solution is focused on exploring "how to say yes" to deal rather than applying rigid criteria or back-and-white ratings. The interactive debt note tool allows funders to understand what deal parameters including credit enhancements, first loss buffers and pricing for the originator will make the risk-reward outcome right for investors.

Hosted Credit Portfolio Risk

For funds interested in regular risk assessment and monitoring, Open Analytics' hosted Credit Portfolio Risk solution provides core risk measurement, dynamic credit ratings and portfolio quality monitoring for all originators on an ongoing basis. The solution can also be used to assign AASB9 compliant credit provisions for both funds and originators. See demo here: fund-demo.oa-cpr.com.au. (password: fund-demo)



The solution is adaptable to any portfolio type and any level of data maturity. For established lenders with significant data assets, risk estimates are calibrated to internal performance data to best reflect your customer base and risk profile. For startups or lenders with limited data, customers can take advantage of Open Analytics' industry benchmark models, fine-tuned with decades of experience developing and managing risk estimate models for the full spectrum of credit providers in Australia and New Zealand. Our industry benchmark models provide a sound foundation for credit risk estimates and provisions for new lenders which evolves as your data assets grow.

Pricing

Pricing for our services is provided below. Pricing is subject to a maximum of 5 lenders per asset class and 6 asset classes. Where these thresholds are exceeded, pricing is individually assessed and negotiated.

Fund Number of Asset Classes	Fund Credit Rating (One-Off Fee)	Hosted CPR (Quarterly)	Hosted CPR (Monthly)
1	$40,000	$17,500	$6,750 p/month
2	$70,000	$25,500	$10,750 p/month
3	$95,000	$33,500	$14,750 p/month
4	$115,000	$41,500	$18,250 p/month
5	$130,000	$48,500	$21,250 p/month
6	$145,000	$54,000	$24,250 p/month

Pricing for credit rating and rapid deal assessment for prospective lenders are provided below.

Lender Number of Asset Classes	Deal Assessment Service (One-Off Fee)
1	$10,000
2	$15,500
3	$19,500
4+	Individually priced

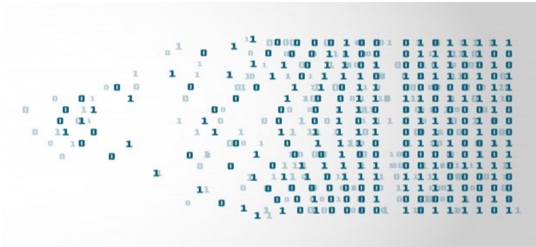
Asset classes supported are listed below:

Asset Class	Description
Commercial property secured lending	Any lending to commercial entities secured by property, including both residential and commercial property.
Commercial asset finance	Leasing, chattel mortgages and any other loan secured by depreciating business assets provided to commercial entities.
Commercial livestock finance	Term or bullet repayment loans to fund cattle and livestock for commercial entities.
Commercial invoice finance	Short-term funding secured by trade receivables provided to commercial entities.
Commercial unsecured term lending	All commercial term lending that is not secured by tangible assets.
Commercial unsecured revolving	Revolving facilities including credit cards, overdrafts and lines of credit provided to commercial entities, not secured by tangible assets.
Consumer mortgages	Any lending to individuals secured by property, including both residential and commercial property.
Consumer vehicle finance	Term or bullet repayment loans for purchase of vehicles by individuals.
Consumer unsecured term lending	All fixed term lending to individuals that is not secured by tangible assets.
Consumer unsecured revolving	Revolving facilities including credit cards, overdrafts and lines of credit provided to individuals, not secured by tangible assets.

About Open Analytics

Open Analytics is an Australian financial services consulting company founded on a vision to modernise and strengthen underwriting, risk management and customer engagement for banks and credit providers. We offer a unique design methodology and holistic approach to implementing pro-active, efficient and ethical credit risk management and decisioning processes with a strong emphasis on long-term sustainability and optimized risk-reward outcomes.

Credit Data Architecture and Data Enrichment



Expertise in structured data-model implementation, designed to enrich the value of lender's data assets by increasing interpretability, traceability and consistency of data.

Predictive Modelling and Machine Learning

Specialised in advanced predictive modelling and machine learning methods which maximize the use of a broad range of data types to predict and mitigate credit risk.

Credit Risk Management and Underwriting

Credit policy and automated decisioning process design including acquisitions strategy, underwriting policy, marketing, credit line management, risk-based pricing and collections.

Open Analytics provide a combination of credit risk and data science expertise required to deliver our client's objectives. Our blend of traditional credit risk management and advanced technical modelling capabilities makes us unique in our ability to develop best in market credit models and automated data-driven credit processes. We have a unique skillset in designing the complete pipeline to manage all aspects of building, implementing and managing predictive models. We deliver complete solutions covering data sourcing, data preparation, data quality control, feature engineering, model development, model deployment, validation and model monitoring.

Contact

For any questions regarding our hosted risk estimates and provisioning solution, please contact our team by emailing us at contact@open-analytics.com.au