Your Loan Through a Credit Scorecard

Sample: a fictional condominium developer · Condo inventory loan · Residential condominium · $12,650,000 loan · London, ON

CHANCE OF DEFAULT (PD)	LOSS IF IT DEFAULTS (LGD)	AMOUNT AT RISK (EAD)	EXPECTED LOSS A YEAR
3.28%	28.11%	$12,650,000	$116,646
Within a year, on the CRE Engine's benchmark	Share of the loan the lender expects to lose	Drawn balance + 35% of undrawn	90% range $13,577 to $318,741

What this means for you

On the CRE Engine's benchmark, the chance that this loan defaults within a year is about 3.28%, which is about the same as a typical condo inventory loan on residential condominium (risk index 56 of 100, where 50 is typical). Expect standard pricing and conditions; the points below are where a lender will push. If it did default, the model expects the lender to lose 28% of what is owed after selling the property and paying costs.

Where you have room, and where you do not

- 24 of the 40 units must sell to repay the loan; prices can fall 40% before a full sell-out no longer repays it.
- At 4 sales a quarter, selling every unit takes about 30 months, against a 24-month loan term.
- In the downside (slower sales and lower prices) about $3,493,976 is still owed at maturity: plan the extension or paydown now.

What a lender will focus on

The drivers that weigh most on the default risk are Absorption / sales pace, Market depth & competing supply and Interest reserve & carrying-cost liquidity. The loss if things go wrong depends most on Bulk-sale discount on unsold units and Condo price volatility. These are the points to answer in your application package, before a credit officer raises them. The section “What you can do” below turns them into actions.

Lender terms, in plain language

- PD (probability of default): the chance the model gives that the loan defaults within a year.
- LGD (loss given default): the share of the loan the lender expects to lose if it does, after selling the property and paying legal and selling costs.
- EAD (exposure at default): what would be owed at that point, including undrawn amounts likely to be drawn first.
- Expected loss = PD x LGD x EAD: what the lender sets aside for risk each year; it drives pricing, covenants and how much it will lend.
- DSCR (debt service coverage): net operating income divided by the year's loan payments. Lenders want room above 1.00x, often 1.20x to 1.25x.
- LTV / LTC: the loan as a share of the property's value, or of the project's cost.
- Debt yield: net operating income divided by the loan; a quick test of how much income stands behind each dollar lent.

Decision-support analytics only; not credit, legal, regulatory, or investment advice.

Key findings, in lender terms

- 12-month expected loss is $116,646 (0.92% of exposure at default), from a 3.28% 12-month probability of default, a 28.11% loss given default and $12,650,000 of exposure at default. Over the 2-year term this implies a cumulative default probability of 6.45% and an indicative lifetime expected loss of $229,465.
- At origination: the loan is 55% of gross sell-out value and 59.7% of net sell-out value after selling costs; 24 of 40 units must sell to repay it, and prices could fall 40% before a full sell-out fails to repay it.
- Largest contributors to the default risk index (56.5 of 100): Absorption / sales pace, Market depth & competing supply and Interest reserve & carrying-cost liquidity.
- Loss severity is most sensitive to Bulk-sale discount on unsold units and Condo price volatility; exposure growth before default to Interest-reserve & carrying-cost draws pre-default and Sales reporting & release-price controls.
- Uncertainty: given the evidence credited to the scorecards, there is a 90% probability that 12-month expected loss lies between $13,577 and $318,741, and that the 12-month PD lies between 0.45% and 8.17%.
- Expert judgment on an industry benchmark gives a prior 12-month PD of 3.28%. No observed default experience was entered, so the posterior equals the prior.
- Repayment and exit (condo inventory loan): Downside (prices 10% lower, sales 40% slower): $3,493,976 (28% of the loan) is outstanding at maturity with 21 units unsold; repayment would need a 12-month extension. See the repayment and exit section for 1 further point.
- Cashflow stress: not applicable; a condo inventory loan is repaid from unit sales rather than property income.
- Physical risk: a 1-in-20-year damaging rainfall or flood event (a 10% chance over the term) would cost the sponsor $368,000 uninsured, and raise LGD from 28.11% to 32.85% if it preceded a default.

Project setup

Loan structure	Condo inventory loan	**Property type**	Residential condominium
Deal stage	Completed inventory	**Market**	London, ON
Loan amount (drawn)	$12,650,000	**Undrawn commitment**	$0
LTV / LTC	55%	**Collateral value**	$23,000,000
Interest rate	7.50%	**Loan term**	2 years
NOI (current / stabilized)	$0	**Covenant DSCR floor**	1.00x
Sponsor experience	12 years		

Decision-support analytics only; not credit, legal, regulatory, or investment advice.

The lender’s tests

The measures a lender checks at origination, with typical market ranges. The ranges are general conventions, not any lender’s policy.

Metric	Value	Basis	Indicative lender context
Loan to gross sell-out	55%	As entered	Commonly 50%-65% for completed condo inventory
Loan to gross sell-out (implied)	55.0%	Drawn loan / collateral value	Should agree with the input
Loan to net sell-out	59.7%	Loan / sell-out after selling costs	The cushion that sales must cover
Break-even price decline	40.3%	Fall in prices before a full sell-out fails to repay	Higher is safer
Months to sell all units	30	40 units at 4 a quarter	Compare with the 24-month term
Interest reserve	8.9 mo	Reserve / monthly interest at the opening balance	Commonly 6-12 months of interest

Input consistency checks passed

LTV agrees with loan and collateral value, and the driver ratings agree with the deal's own numbers.

Decision-support analytics only; not credit, legal, regulatory, or investment advice.

Risk scorecards: how the model reached its numbers

In short: each driver of risk is rated against a typical comparable loan, and the ratings move an industry benchmark up or down. Technically: each scorecard turns an expert-weighted assessment of the deal's risk drivers into a risk index (0-100). The index scales the industry benchmark symmetrically, from 0.5x for the lowest-risk profile through 1.0x for a neutral profile to 2.0x for the highest, to form an expert-informed prior. The prior, given a strength in equivalent observations, is then updated with the lender's own observed experience through a conjugate Beta-Binomial update: posterior = (prior strength x prior + observations x observed rate) / (prior strength + observations). The benchmark enters once, through the prior; with no observed data the posterior equals the prior.

12-month Probability of Default (PD)

Risk index 56.5 of 100. Largest contributors: Absorption / sales pace, Market depth & competing supply and Interest reserve & carrying-cost liquidity.

EXPERT-INFORMED PRIOR	OBSERVED EXPERIENCE	POSTERIOR PD
3.28%	None	3.28%
Benchmark scaled by the rated drivers	Posterior equals the prior	90% CI 0.45% to 8.17%

Loss Given Default (LGD)

Risk index 45.3 of 100. Largest contributors: Bulk-sale discount on unsold units and Condo price volatility.

EXPERT-INFORMED PRIOR	OBSERVED EXPERIENCE	POSTERIOR LGD
28.11%	None	28.11%
Benchmark scaled by the rated drivers	Posterior equals the prior	90% CI 13.29% to 45.47%

Exposure at Default (draw-down factor) (EAD)

Risk index 41.0 of 100. Largest contributors: Interest-reserve & carrying-cost draws pre-default and Sales reporting & release-price controls.

EXPERT-INFORMED PRIOR	OBSERVED EXPERIENCE	POSTERIOR EAD
35.31%	None	35.31%
Benchmark scaled by the rated drivers	Posterior equals the prior	90% CI 19.00% to 53.32%

Expected loss

12-month expected loss = PD x LGD x EAD

```
EL = 3.28% x 28.11% x $12,650,000
   = $116,646
```

Exposure at default = drawn balance + credit conversion factor x undrawn commitment = $12,650,000 + 35.31% x $0 = $12,650,000.

Uncertainty: each posterior is treated as a Beta distribution whose concentration is the total evidence behind it (the prior strength plus the observations entered). Drawing PD, LGD and the drawdown factor 20,000 times, independently, gives a 90% credible range for 12-month expected loss of $13,577 to $318,741 (median $88,532). The range is skewed: the median is below the expected loss because rare high-PD, high-LGD draws pull the mean up. Independence understates the range in a downturn, when defaults and loss severity tend to rise together.

Decision-support analytics only; not credit, legal, regulatory, or investment advice.

Indicative lifetime view: over the 2-year term, a constant 3.28% annual PD implies a cumulative default probability of 6.45% (1 - (1 - PD)^term) and an indicative lifetime expected loss of $229,465, undiscounted and assuming constant LGD and exposure.

Cashflow scenario analysis

Not applicable: a condo inventory loan is repaid from unit sales, so repayment is tested in the next section rather than through debt service coverage.

Repayment and exit: Condo inventory loan

Secured on completed, unsold condominium units and repaid from their sale. The projection sells units quarter by quarter, sweeps net proceeds to the lender, pays interest from the reserve and then the sponsor, and tests what is left at maturity.

UNITS TO REPAY THE LOAN
24 of 40
60% of inventory; break-even price fall 40%

BASE REPAYMENT
Q6
4 units a quarter; maturity Q8

DOWNSIDE BALANCE AT MATURITY
$3,493,976
28% of the loan; 21 units unsold

SPONSOR FUNDING (DOWNSIDE)
$1,051,676
Interest and carry before maturity; reserve out Q4

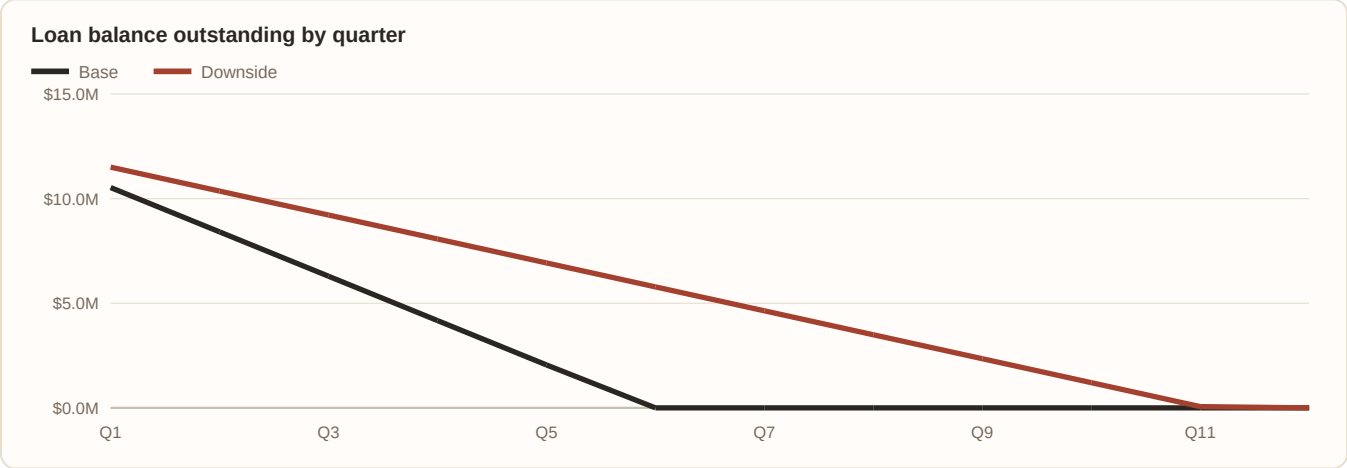
Unsold units	40	**Average list price**	$575,000
Price achieved	97% of list	**Selling and closing costs**	5%
Sales pace	4 units a quarter	**Proceeds swept to lender**	100%
Release price	110% of allocated loan	**Carrying cost per unsold unit**	$7,200 a year
Interest reserve	$700,000	**Downside stress**	prices -10%, sales 40% slower
Bulk-sale discount if enforced	20%	**Workout costs if enforced**	10% of value

Repayment and exit findings

- Downside (prices 10% lower, sales 40% slower): $3,493,976 (28% of the loan) is outstanding at maturity with 21 units unsold; repayment would need a 12-month extension.
- The interest reserve runs out in quarter 4 of the downside; the sponsor must fund $1,051,676 of interest and carrying costs before maturity.

Decision-support analytics only; not credit, legal, regulatory, or investment advice.

Measure	Base	Downside
Net proceeds per unit	$529,863	$476,876
Sales pace (units a quarter)	4.0	2.4
Units to sell to repay the loan	24	27
Loan / net sell-out value	60%	66%
Release price per unit	$347,875 (met)	$347,875 (met)
Quarter loan repaid	Q6 (month 18)	Q12 (month 36)
Interest reserve runs out	Q4 (month 12)	Q4 (month 12)
Sponsor funding before maturity	$384,330	$1,051,676
Balance at maturity	$0	$3,493,976
Bulk-sale recovery on unsold units	$3,312,000	$7,750,080
Indicative LGD if enforced at maturity	0.0%	0.0%



Quarterly sell-down, downside case

Quarter	Units sold	Units left	Net proceeds	Interest	Paid to lender	Reserve left	Sponsor funds	Balance
Q1	2.4	37.6	$1,144,503	$237,188	$1,144,503	$462,813	$72,000	$11,505,497
Q2	2.4	35.2	$1,144,503	$215,728	$1,144,503	$247,084	$67,680	$10,360,994
Q3	2.4	32.8	$1,144,503	$194,269	$1,144,503	$52,816	$63,360	$9,216,491
Q4	2.4	30.4	$1,144,503	$172,809	$1,144,503	$0	$179,033	$8,071,988
Q5	2.4	28.0	$1,144,503	$151,350	$1,144,503	$0	$206,070	$6,927,485
Q6	2.4	25.6	$1,144,503	$129,890	$1,144,503	$0	$180,290	$5,782,982
Q7	2.4	23.2	$1,144,503	$108,431	$1,144,503	$0	$154,511	$4,638,479
Q8 (mat.)	2.4	20.8	$1,144,503	$86,971	$1,144,503	$0	$128,731	$3,493,976
Q9	2.4	18.4	$1,144,503	$65,512	$1,144,503	$0	$102,952	$2,349,473
Q10	2.4	16.0	$1,144,503	$44,053	$1,144,503	$0	$77,173	$1,204,970
Q11	2.4	13.6	$1,144,503	$22,593	$1,144,503	$0	$51,393	$60,467
Q12	2.4	11.2	$1,144,503	$1,134	$60,467	$0	-	$0

Decision-support analytics only; not credit, legal, regulatory, or investment advice.

Sensitivity: Loan balance outstanding at maturity (% of loan)

Price decline / Sales pace slower by	0%	25%	50%
0%	0%	0%	33%
10%	0%	10%	40%
20%	0%	20%	46%

Physical-risk scenario: acute rainfall or flood event

A damaging heavy-rain or flood event at the property in year 2, applied to the Base NOI path. In the cash-flow test the owner funds the uninsured repairs, and uninsured repairs and lost rent reduce cash flow available for debt service. In the LGD overlay the event precedes a default with the damage left unrepaired, so uninsured damage and any value discount lower recoveries.

CHANCE OVER THE TERM
10%
1-in-20-year event: 4.88% a year, 1 - e^(-n/T)

COVERAGE TEST
n/a
Repaid from unit sales; the sponsor bears the cost

UNINSURED COST PER EVENT
$368,000
Expected $18,400 a year

LGD IF DAMAGE PRECEDES DEFAULT
32.85%
From 28.11%; conditional EL $136,337

Return period of damaging event	20 years	**Event year**	2
Repair cost	4% of collateral value	**Insured share of repairs**	60%
Rentable area affected	30%	**Rent lost while repairing**	4 months
Insured share of lost rent	50%	**Operating expense ratio**	40% of gross rent
Post-event value discount	5%	**Collateral after event**	$21,482,000 (from $23,000,000)

Year	NOI	Lost rent (uninsured)	Repairs (uninsured)	Cash flow for debt service	DSCR
1	$0	-	-	$0	n/a
2 (event)	$0	-	$368,000	-$368,000	n/a

Method: lost rent is grossed up from NOI using the operating expense ratio, because expenses continue while rent stops. The LGD overlay assumes recoveries scale with collateral value, LGD' = 1 - (1 - LGD) x (collateral after the event / collateral before). Event probabilities follow the peaks-over-threshold convention. Inputs are illustrative and should be informed by site-specific flood, drainage and insurance information.

What you can do

1. Fund the interest reserve for the slow case, not the base case. The reserve runs out in quarter 4 even in the base case, and in the downside you would fund about $1.05 million of interest and carrying costs yourself before maturity. Topping it up to 12 months of interest at closing (about $950,000) costs little more and is what a lender will ask for first.
2. Commit to a sales pace you can meet, with a plan if you miss it. Lenders will want a minimum pace (here, 3 closings a quarter, 75% of plan). Agree it up front, together with what happens on a miss (a pricing and broker review within 30 days), rather than have the lender impose a harsher cash trap later.

Decision-support analytics only; not credit, legal, regulatory, or investment advice.

3. Price the first units to repay the loan quickly. Setting release prices at 120% of the loan per unit for the first 20 units repays the loan while the best units sell, and frees the rest of the building from the lender's control sooner. Keep a written price floor (92% of the price list) so discounts never surprise the lender.
4. Agree the extension now, while you do not need it. The downside leaves about $3.5 million (28% of the loan) and 21 units unsold at maturity. One pre-agreed 12-month extension, conditional on 60% of the loan being repaid, a 0.50% fee and a fresh 6-month interest reserve, costs far less than negotiating at maturity.
5. Keep a rental fallback and know your bulk-sale value. Being ready to lease unsold units if sales stall for two quarters, and having a bulk-sale valuation in hand, supports the 20% bulk discount in the model and gives the lender a clear exit, which lowers its loss estimate.
6. Offer recourse that steps down. A guarantee of interest and carrying costs, and of 25% of principal that falls away once the loan is below half its original size, protects the lender when its exposure is highest and costs you little once sales are under way.

Methodology and limitations

- PD is a 12-month (annual) probability of default; expected loss is shown on a 12-month basis, with an indicative lifetime figure derived from the cumulative PD over the loan term.
- The posterior is a conjugate Beta-Binomial update of the expert-informed prior with the lender's own observed experience; for LGD and the drawdown factor the observed average is treated as a proportion in the same way. Observed data must come from a source other than the benchmark, or the evidence would be counted twice.
- Credible intervals treat each posterior as a Beta distribution with concentration equal to the prior strength plus the observations. They reflect the evidence behind the scorecards, not model or scenario risk, and the expected-loss range assumes PD, LGD and the drawdown factor are independent.
- This is a public sample: the rating rubric (driver weights, exposure ratings, benchmark rates and prior strengths) is withheld. Reports produced with an access code include it in full.
- Debt service for coverage is the payment on the drawn balance, interest-only; the cashflow scenarios stress NOI growth only, and vacancy is not modelled separately.
- The repayment and exit analysis follows how the loan structure is repaid: a refinance test at maturity (term, bridge and repositioning loans) sized on the lowest of LTV, DSCR and debt-yield constraints, a quarterly business-plan projection for transitional loans, and a quarterly unit sell-down for condo inventory loans. Base and downside cases are deterministic; HST, deposit defaults and lender-specific underwriting overlays are not modelled.
- Where included, the physical-risk scenario is a single deterministic event; it does not model flood depth, building-specific damage curves or insurer behaviour, which require site-specific engineering and insurance information.
- This report shows how a lender’s credit model would likely read the loan. It is decision support for the borrower, not a lender’s credit decision or a commitment to lend; every lender applies its own underwriting.

Decision-support analytics only; not credit, legal, regulatory, or investment advice.