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Private Credit Modeling

Underwrite, Model and Monitor a Direct Loan

Course Book

Eight modules, one running case, every figure computed.

Educational material. Not investment advice. Prepared with AI assistance.

MODULE 4

The economics: margin, floor, OID, fees, call protection, PIK and the all-in yield

Objectives

- Compute the cash coupon with a SOFR floor.
- Convert OID and fees into yield with the three-year convention and with an exact IRR.
- Explain why call protection and early repayment raise the yield.
- Measure the effect of a PIK toggle on the borrower's cash and the lender's yield.

The coupon

A floating rate loan pays a base rate plus a margin. Since the end of LIBOR, US loans use SOFR, the secured overnight financing rate published by the Federal Reserve Bank of New York; private loans usually reference Term SOFR or a compounded average for the interest period. As of 12 November 2026 the 30-day average SOFR was 3.92%. The running case assumes 3.90% for year 1, easing to 3.50%: an assumption, not a forecast.

The floor protects the lender if rates fall. With a 1.00% floor, the base rate used is max(SOFR, 1.00%). At today's SOFR the floor does not bite; if SOFR fell to 0.60% the loan would still pay 1.00% + 5.50% = 6.50%.

OID and fees

The borrower owes par, $178.5m, but the lender funds only 97.25% of it: an OID of 2.00% and a closing fee of 0.75%, 2.75% in total. The lender pays out $173.59m and is repaid $178.5m plus interest. That $4.91m difference is extra yield, earned over the life of the loan.

The market quotes it with a convention: spread the upfront points over an assumed three-year life. All-in spread = margin + upfront / 3 = 5.50% + 2.75% / 3 = 6.42%. Adding year 1 SOFR gives a quick all-in yield of 10.32%. The three-year life reflects the fact that most sponsored loans are refinanced or repaid well before maturity.

The exact yield

The convention is a shortcut. The exact answer is the internal rate of return of the lender's cash flows: the funded amount at closing, the cash interest, the amortization and sweep, and the repayment. Assuming Marston refinances at the end of year 3, at par because the call protection has expired:

Period	Lender cash flow ($m)
Closing	(173.59)
Year 1	22.37
Year 2	22.74
Year 3	180.93

The IRR of these flows is 10.35%, the yield to 3 years, close to the quick estimate of 10.32%. Held to maturity, the same loan yields 9.81%: the upfront points are spread over 6 years instead of 3, and SOFR is assumed to fall.

Call protection

Call protection, here a prepayment premium (102 in year 1, 101 in year 2, par after), charges a premium if the borrower repays or refinances early. (Soft call, in market usage, is a narrower premium that applies only to repricings.) If Marston refinanced after one year, the lender would receive 102: the yield to that date would be 14.49%, against 12.49% without the premium. After two years at 101, the yield would be 11.37%. Prepayments from the cash sweep are made at par: the premium applies to voluntary repayments and refinancings.

PIK toggle

Payment in kind interest is added to the loan instead of being paid. The running case gives the borrower an option to pay 2.00% of the margin in kind, at a 0.25% premium, so 2.25% accrues. With the toggle on in every year, year 1 cash interest falls from $16.78m to $13.21m and $4.02m is capitalized. More cash is left for the sweep, but the capitalized interest outweighs it: the loan to refinance in year 6 grows from $125.6m to $138.5m. The lender's yield rises to 10.59% to year 3 and 10.04% to maturity, but that extra yield is only earned if the loan is repaid: PIK raises the yield and the risk at the same time.

Worked example, step by step

1. Year 1 cash coupon: max(3.90%, 1.00%) + 5.50% = 9.40%.
2. Upfront points: OID 2.00% + fee 0.75% = 2.75%; price 97.25%; amount funded $173.59m.
3. Three-year convention: 5.50% + 2.75% / 3 = 6.42% all-in spread; + 3.90% SOFR = 10.32%.
4. Exact yield to year 3: IRR of the flows in the table = 10.35%.
5. Exact yield to maturity: 9.81%.
6. Refinanced after year 1 at 102: 14.49%; at par it would have been 12.49%.

Pitfalls

- Forgetting the OID when comparing two loans: the margin alone understates the yield.
- Applying the floor to the revolver as well when the document floors only the term loan (or the reverse).
- Charging the call premium on sweep prepayments.
- Counting PIK interest as cash income in a fund's distributable yield.

Summary

- Cash coupon = max(SOFR, floor) + margin: 9.40% in year 1.
- Upfront points of 2.75% add about 0.92% a year over a three-year life: all-in spread 6.42%.
- Exact yields: 10.35% to year 3, 9.81% to maturity; early repayment with call protection lifts the yield.
- A PIK toggle shifts interest from cash to principal: more yield, more risk.

In the Exercise Workbook: tab M4 Pricing: compute the coupon, the all-in spread and the IRR of the lender cash flows.

Practice questions

4.1 If SOFR fell to 0.60%, what rate would the term loan pay?

A. 7.10%

B. 6.50%

C. 6.10%

D. 5.50%

4.2 With PIK on in every year, what is the balance to refinance in year 6?

A. $147.9m

B. $138.5m

C. $178.5m

D. $125.6m

4.3 Which benchmark replaced USD LIBOR in US loans?

A. The prime rate

B. SOFR

C. The Fed funds target

D. EURIBOR