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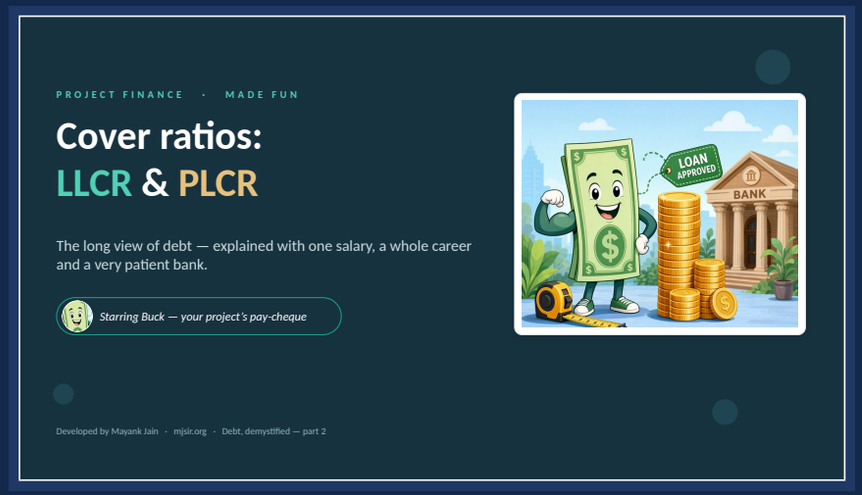
PRESENTATION · 19 PAGES

LLCR & PLCR — the long view

Debt, demystified part 2, with Buck: the three windows, the LLCR and the PLCR worked on a solar plant, break-evens, the tail, the quiet errors and a quiz.



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PROJECT FINANCE · MADE FUN

Cover ratios: LLCR & PLCR

The long view of debt — explained with one salary, a whole career and a very patient bank.



Starring Buck — your project's pay-cheque



Developed by Mayank Jain · mjsir.org · Debt, demystified — part 2

THE ONE ANALOGY

Buck’s three questions

Buck is your project: his salary is the CFADS, his EMI the debt service. The bank asks him three questions.

IN A PROJECT…		…IN BUCK’S LIFE
DSCR	→	Can this month’s salary pay this month’s EMI?
LLCR	→	Can every salary until the loan ends repay what he owes?
PLCR	→	Could every salary until he retires repay it?
Discount rate	→	The loan’s own interest rate
The tail	→	The working years left after the loan is paid



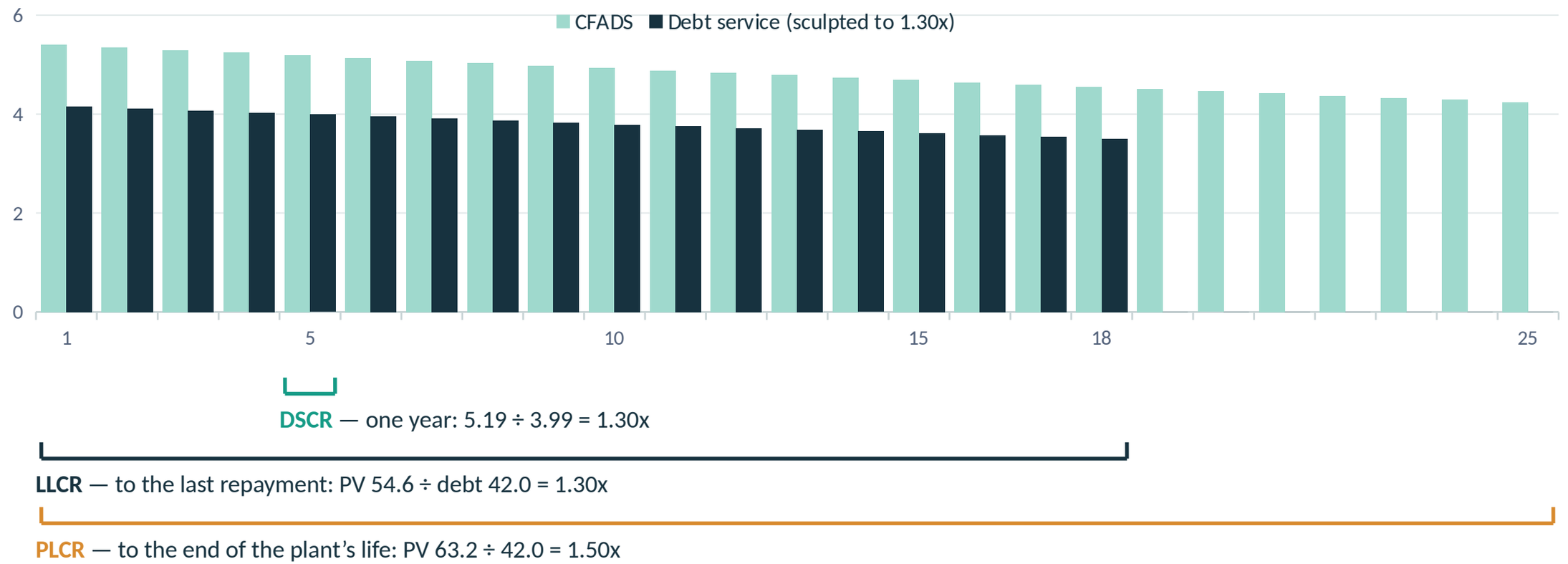
Buck and his very patient bank



Buck says — *The DSCR checks one pay-cheque. The LLCR and PLCR add up all of them — in today’s money.*

One cash flow, three windows

A made-up 100 MW solar plant: CFADS of USD 5.4 mn in year 1, 1% less each year, 25 years; debt of USD 42.0 mn over 18 years.



CFADS = revenue − operating costs − tax paid − maintenance capex ± working capital, as the loan agreement defines it. Cash, not profit.

Why one ratio is not enough

Each answers a different question — and each has a blind spot the others cover.

DSCR — a photograph

- One period at a time: CFADS ÷ the debt service due
- Catches the bad year the moment it comes

Blind spot: cannot see a contract ending in five years

LLCR — the whole loan

- Every remaining year to the last repayment, discounted
- Shows whether the loan, as a whole, is covered

Blind spot: it is an average — one bad year hides in it

PLCR — the whole project

- Adds the years after the loan: the tail
- Shows the room to reschedule if things go wrong

Blind spot: only as good as the tail's cash



Buck says — *Lenders read all three together — the minimum DSCR, the LLCR and the PLCR — never one headline number.*

The LLCR, without the headache

One idea: put every remaining pay-cheque into today's money and set it against the loan left.

LLCR = PV of CFADS to the last repayment ÷ debt outstanding

BUCK'S PAYSLIP · at COD	USD mn
PV of CFADS, years 1–18 at 6%	**54.6**
Debt outstanding	**42.0**
LLCR = 54.6 ÷ 42.0	**1.30x**

The rate is the loan's own: total interest ÷ debt brought forward, period by period.

THE INTUITION

At the loan's own rate, the debt is the present value of the debt service still to come.

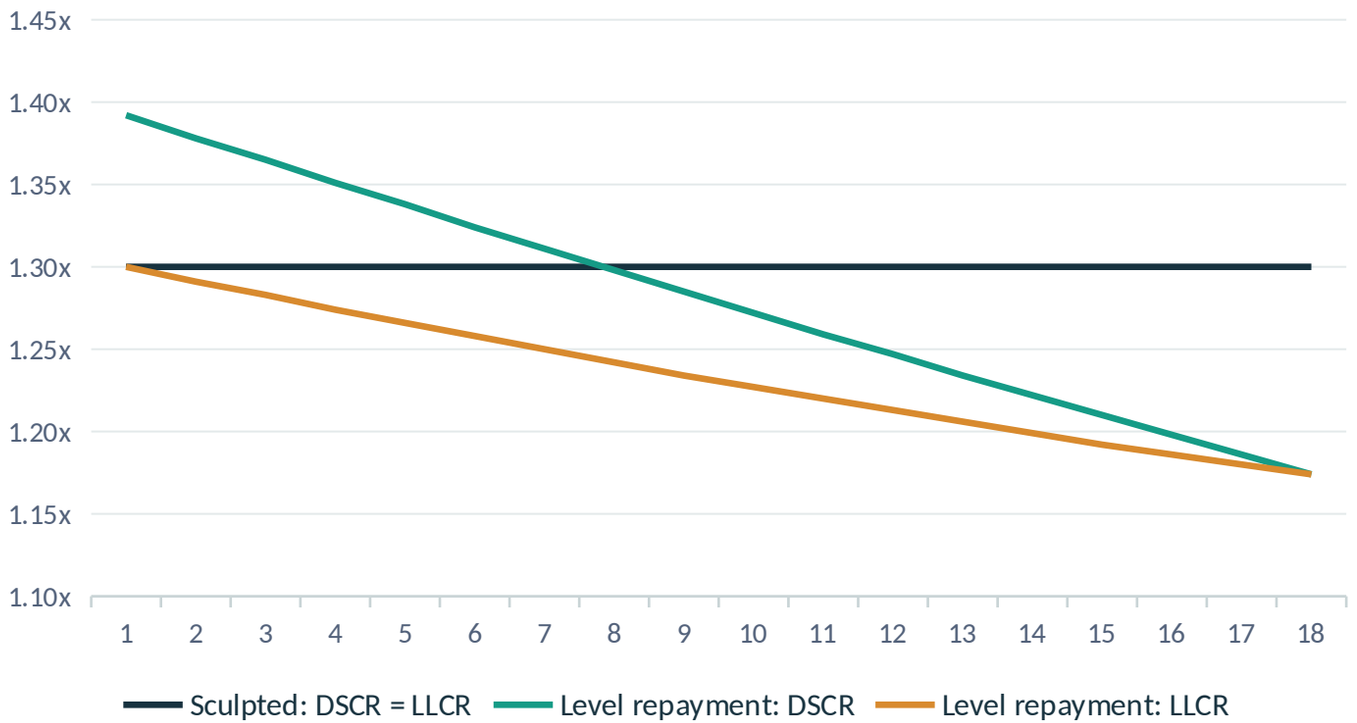
So the LLCR is simply cash ÷ debt service, both in today's money — like with like.



Buck says — *Discount at the loan's rate — not the equity's, not zero. The loan agreement says which rate.*

Sculpted, the LLCR equals the DSCR

The same USD 42.0 mn, repaid two ways. The DSCR sees the shape of the repayments; the LLCR at COD does not.



1 — Sculpted

DSCR 1.30x and LLCR 1.30x on every date — the same ratio.

2 — Level

DSCR 1.39x falling to 1.17x; average 1.28x.

3 — Rule of thumb

Steady cash, level repayment: LLCR ≈ the average DSCR.



Buck says — *At COD both loans show an LLCR of 1.30x. Only the DSCR tells you the level loan gets tight in its last years.*

How far can the cash fall?

The break-even: the fall in CFADS, every year, that brings a ratio down to 1.00x. Level repayment, the same plant.

23.1%

The LLCR's break-even: cash can fall this far before the loan, as a whole, is no longer covered

14.8%

The minimum DSCR's break-even: the last, tightest year fails first



The year that trips Buck up

Lenders size on the DSCR because a missed payment happens in one year, not on average. The LLCR's wider margin is comfort, not cash.



Buck says — *The LLCR forgives one bad year. The DSCR does not — and the lenders' lock-up reads the DSCR.*

Sizing the debt on a target LLCR

Turn the ratio round: the debt is the cash the loan's life can spare, in today's money, divided by the cover lenders want.

Debt = PV of CFADS over the tenor ÷ target LLCR

Target LLCR	Debt (USD mn)	Share of the USD 60 mn cost
1.30x	42.0	70%
1.35x	40.4	67%
1.40x	39.0	65%

The smallest test wins. Lenders work out the debt each way — the gearing cap, the target DSCR (sculpted), a minimum LLCR — and lend the smallest. For a sculpted loan the DSCR and the LLCR give the same answer.



Loan approved — at the smallest of the tests



Buck says — *Each 0.05x of extra cover costs about USD 1.5 mn of debt here — that is the price of the cushion.*

The PLCR — counting the tail

The same sum, run to the end of the plant's life: the years after the loan join the top line.

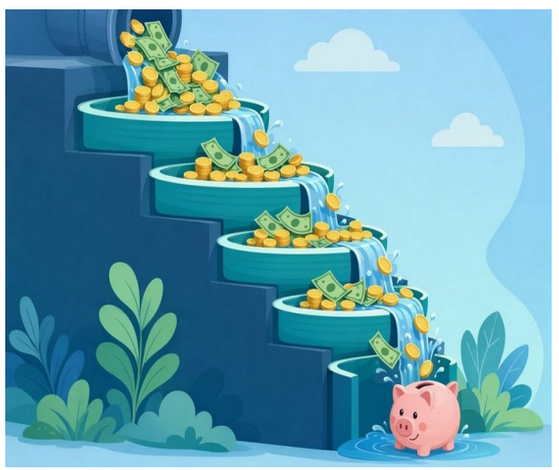
PLCR = PV of CFADS to the end of the project ÷ debt outstanding

Debt at COD — USD 42.0 mn

PV of CFADS — Years 1–18: 54.6 | Tail: 8.6

LLCR = 54.6 ÷ 42.0 = 1.30x **PLCR = 63.2 ÷ 42.0 = 1.50x**

As the debt is repaid and the tail stays, the PLCR climbs: 1.50x at COD, 2.0x in year 10, 8.3x in year 17.



The cash after the loan



Buck says — *The tail is the bank's spare room: if the loan must be rescheduled, there are years left to pay it from.*

Three choices that move the PLCR

The loan agreement makes them; a model must follow them.

1 · The rate after the loan

There is no loan rate after maturity — the agreement sets one.

At 0%: **1.56x**

At 6%: **1.50x**

At 9%: **1.48x**

Never 0%: later cash is less certain, not more.

2 · The cut-off date

Lenders often stop counting before the end of life — when the PPA ends, or a year or two before the last.

Cash after the cut-off is left out, however good it looks.

3 · The end-of-life costs

Decommissioning comes after the loan — but inside the PLCR.

USD 6 mn in year 25: PLCR at COD **1.50x → 1.47x**

In year 17: **8.29x → 7.15x**



Buck says — *A PLCR is only as honest as its last years: the rate, the cut-off and the clean-up all live there.*

Can the PLCR be lower than the LLCR? Yes

A made-up mine: CFADS of 30 a year for 7 years, a closure bill of 80 in year 7; the loan, at 8%, repaid in 5 years at 1.40x.



1.40x

LLCR — years 1–5

1.28x

PLCR — years 1–7

THE RESERVE TAIL

Mine lenders go further: they ignore the last part of the reserves (say a quarter) and want the loan repaid before it.



Buck says — *A closure bill after the loan still counts in the PLCR. For solar it trims; for a mine it can bite.*

The definition lives in the loan agreement

The usual reading, and the variations to check before a model is built.

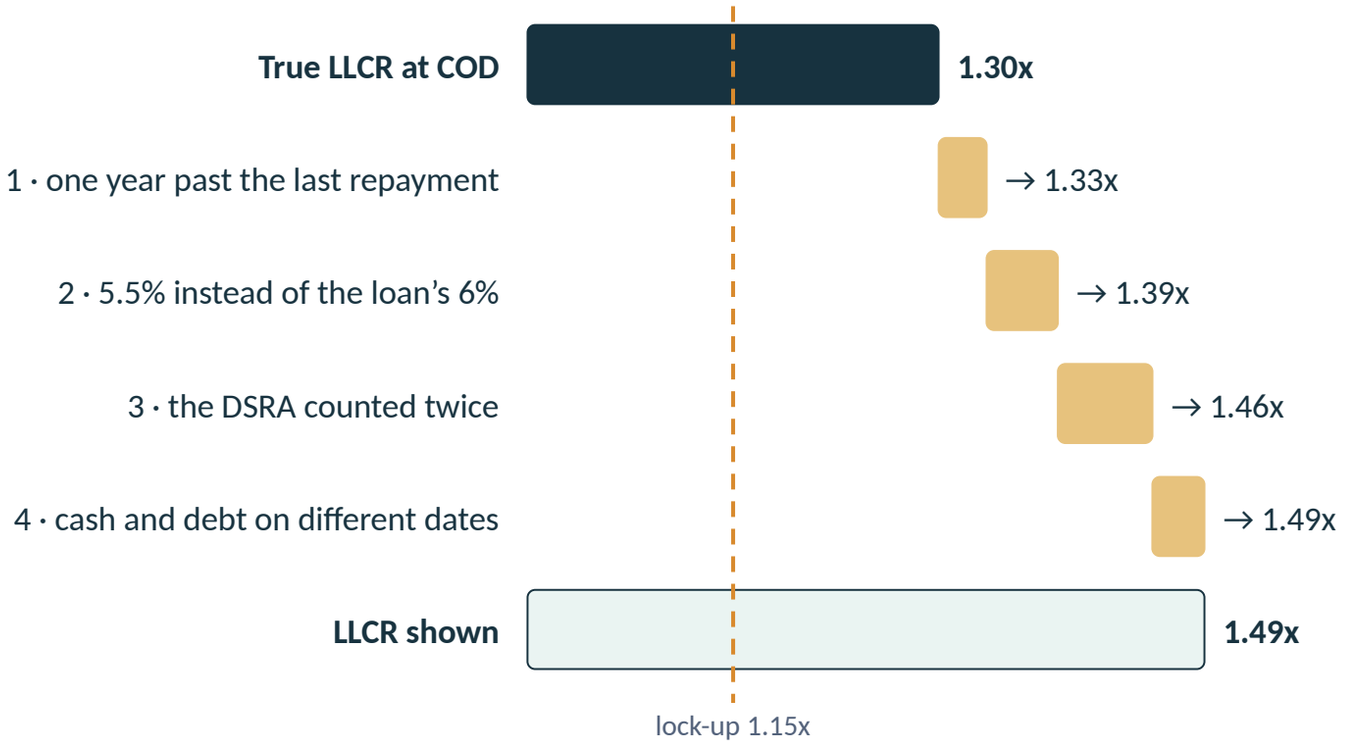
	The usual	The variation to look for
Top line	PV of CFADS	+ the DSRA (or cash) balance, added once, undiscounted: 1.35x instead of 1.30x
Discount rate	The loan's all-in rate (base + margin, or the hedged rate)	A rate fixed in the agreement; a blended rate across tranches
Window	To the last scheduled repayment	To a cut-off date; the PLCR to a date before the end of life
Test dates	Each calculation date from COD to the one before the last repayment	Historic and projected tests; a test at signing
Bottom line	Senior debt outstanding after the date's repayment	Net of the DSRA; with or without other tranches



Buck says — *Read the definition first, then build. Two models of the same deal can both be right — and differ by 0.05x.*

Four quiet errors that flatter the LLCR

No error flags, the balance sheet balances — and the cover looks better than it is. Each added in turn to the plant.





Each one small. Together: +0.19x



Buck says — *Against a 1.15x lock-up the headroom looks like 0.34x. It is 0.15x — half of what the model shows.*

Six checks that catch them

Run them on any model before the lenders do.

1	**Rebuild one date**	Work the LLCR by hand on one test date — CFADS, discount factors, debt — to the second decimal.
2	**Sculpted?**	Then the LLCR must equal the DSCR on every date. If not, the rate or the window is wrong.
3	**Level and steady?**	Then the LLCR is close to the average DSCR — a quick sense check.
4	**The last dates**	The LLCR stops one period before the last repayment; nothing counts after it.
5	**The period rate**	A quarterly model discounts at a quarterly rate, not the annual one.
6	**The right line**	The CFADS is the waterfall's line — not EBITDA, not cash after reserves.



Buck says — *The first check catches most of the others. If it takes more than a minute, the model needs another look.*

Covenants: a ladder, not a line

Each rung does something different. The levels below are examples; the loan agreement sets the real ones.

1.30x — **Sizing** The debt was sized to this. Below it the loan is fine — the cushion is being used.

1.15x — **Lock-up** No dividends: cash stays in the project until the ratio recovers (some loans sweep it to prepay debt).

1.05x — **Default** An event of default: the lenders may demand repayment, take the cash or step in.

1.00x — **Cash runs short** CFADS does not pay the debt service; the reserve accounts and the sponsors must.

WHEN THEY ARE TESTED

Look-back: the last 12 months, on each test date.

Look-forward: the next 12 months, as projected.

Some loans test the LLCR too — usually close to the DSCR target.



Buck says — *The PLCR is rarely a covenant. Lenders read it for the tail — and for a refinancing.*

QUIZ

Four questions, no calculator

Pick one answer each — the next slide has them.

Q1 **A loan is sculpted to a constant 1.30x DSCR. At COD its LLCR is...**

a) higher than 1.30x
b) exactly 1.30x
c) lower than 1.30x

Q2 **CFADS after the loan's last repayment rises. Which ratio moves?**

a) the DSCR
b) the LLCR
c) the PLCR

Q3 **A model discounts the tail at 0% after maturity. Its PLCR is...**

a) overstated
b) understated
c) unchanged

Q4 **Can the PLCR be lower than the LLCR?**

a) never
b) yes — when the end of life costs more than it earns
c) only in construction

How did you do?

The answer, and the one-line reason.

Q1 **A loan is sculpted to a constant 1.30x DSCR. At COD its LLCR is...**

a) higher than 1.30x
b) exactly 1.30x ✓
c) lower than 1.30x

At the loan's own rate, PV of cash = 1.30 × PV of debt service = 1.30 × the debt.

Q2 **CFADS after the loan's last repayment rises. Which ratio moves?**

a) the DSCR
b) the LLCR
c) the PLCR ✓

Only the PLCR counts the years after the loan.

Q3 **A model discounts the tail at 0% after maturity. Its PLCR is...**

a) overstated ✓
b) understated
c) unchanged

Later cash at 0% counts in full: 1.56x instead of 1.50x on the plant.

Q4 **Can the PLCR be lower than the LLCR?**

a) never
b) yes — when the end of life costs more than it earns ✓
c) only in construction

A closure or decommissioning bill after the loan: the mine shows 1.28x against 1.40x.

THE CHEAT-SHEET

Cover ratios, in one breath

1 **DSCR** — This period’s cash ÷ this period’s debt service — the one that locks the dividends.

2 **LLCR** — PV of cash to the last repayment ÷ the debt left — the loan as a whole. Sculpted, it equals the DSCR.

3 **PLCR** — The same to the end of the project — the tail. Mind the rate after maturity and the closing costs.

4 **TOGETHER** — Read the minimum, not the average; read the loan agreement before the formula.



That’s a wrap!

DSCR: *“Can I pay today?”* **LLCR:** *“Can I pay it all?”* **PLCR:** *“And if it takes longer?”*

Read with the guide “Cover ratios — DSCR, LLCR and PLCR” in the Knowledge Center at mjsir.org. Illustrative and educational — not financial advice.