



PROJECT LIFE COVER RATIO – PLCR

Introduction

The Project Life Cover Ratio (“PLCR”) is commonly used debt metric in project finance. Together with the Debt Service Cover Ratio (“DSCR”) and Loan Life Cover Ratio (“LLCR”), these debt metrics in one form or another usually appear in project finance term sheets and loan documentation so need to be modelled clearly and accurately.

In an earlier tutorial, we covered the definition and calculation of the LLCR. Well the PLCR is akin to the LLCR and is the ratio of the net present value of the cashflow over the remaining full life of the project to the outstanding debt balance in the period.

This tutorial and the accompanied workbook cover the definition of the PLCR, show how to calculate this ratio and highlights key points to keep in mind when modelling PLCR.

Definition

Generally the PLCR is calculated as:

$$PLCR = X / Y, \text{ where:}$$

$$X = NPV [\text{CFADS over Project Life}]$$

$$Y = \text{Debt Balance B/f}$$

Unlike the LLCR where the CFADS is calculated over the scheduled life of the loan, the cashflow for PLCR is calculated over the “Project Life”.

In practice, lenders often build in a safety cushion and ignore the revenue or cashflow beyond a certain cut-off date. This allows lenders to protect against relying on potentially more uncertain future cashflows. It is common to encounter an end date for the PLCR calculation in the term sheet or loan documentation before the end of the project life. This means the qualifying period for CFADS in PLCR calculation is only from Commercial Operation Date (“COD”) and up to such end date.

The example in the workbook assumes the end date for the PLCR calculation is 12 months before the end of the operations

PLCR Calculation	
End Date for PLCR calculation	Date 30-Jun-16
Discount Rate for PLCR post Final Maturity	% p.a. 8.00%
Timing	
	Construction Operations
Start date	01-Jan-09 01-Jul-09
Duration	6.00 Mth(s) 8.00 Yr(s)
End date	31-Dec-08 30-Jun-09 30-Jun-17

Screenshot: Assumption for PLCR calculation

PLCR calculation

Calculation of PLCR is similar to that of LLCR, with certain differences as highlighted below.

Step 1: Calculate the discount rate (“r”)

This is the discount rate for discounting the CFADS. Similar to the LLCR, a typical Discount Rate would be the cost of debt and be calculated efficiently as:

$$r = \text{Interest} / \text{Debt Balance B/f}$$

Note that the CFADS qualified for PLCR calculation extends beyond the loan life. So what is the discount rate to be used post loan final maturity date? This depends upon a lenders’ perception on the certainty risk of the projected cashflows beyond the loan life.

Loan documentation often states the discount rate to be used post the loan life, which should be at least equal or even greater to the cost of debt of the senior debt at final maturity date to account for greater risk. Lets face it, if it was of similar perceived why not lend out that far?

Our simple example assumes a discount rate for the PLCR calculation post final maturity debt (final maturity of senior debt is 30-Jun-15) to be 8.00% p.a. or 1.94% p.q.

Period Start	Jan-15	Apr-15	Jul-15	Oct-15	Jan-16	Apr-16	Jul-16
Period End	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16
Construction							
Operations							
PLCR							
Discount rate							
Senior Debt: Interest	0.15	0.08	-	-	-	-	-
Senior Debt: Balance b/f	8.97	4.52	-	-	-	-	-
All-in Rate “r”	1.68%	1.70%	0.00%	0.00%	0.00%	0.00%	0.00%
r for PLCR calculation	1.68%	1.70%	1.94%	1.94%	1.94%	1.94%	0.00%
1 + r	1.017	1.017	1.019	1.019	1.019	1.019	1.000

Screenshot: Discount rate for PLCR calculation

Step 2: Create binary flag for Project Life

PLCR takes into account the NPV of CFADS over the life of a project or if otherwise a specified cut-off date (end date).

The end date for PLCR calculation is usually stated in the term sheet or loan documentation, or else it should be the end of operations date.

The qualifying CFADS for PLCR calculation shall then include the period from start of operations or commercial operation date (“COD”) up to the end date.

$$\text{CFADS (Qualifying)} = \text{CFADS} * \text{Project Life (Binary Flag)}$$



Step 3: Calculate CFADS (NPV)

This is similar to the LLCR calculation except that the CFADS is taken into account up to the end date as explained in Step 2 above.

r for PLCR calculation	1.70%	1.94%	1.94%	1.94%	1.94%	0.00%
1 + r	1.017	1.019	1.019	1.019	1.019	1.000
CFADS (NPV)						
Loan Life						
Project Life						
CFADS	5.72	7.64	6.26	5.00	(2.00)	(2.00)
CFADS (Qualifying)	5.72	7.64	6.26	5.00	(2.00)	-
CFADS (NPV)	21.74	16.38	9.06	2.98	(1.96)	-

$$\frac{=((-1.96) + 5.00)}{1.019} = 2.98$$

Screenshot: Calculating CFADS (NPV)

Step 4: Calculate PLCR

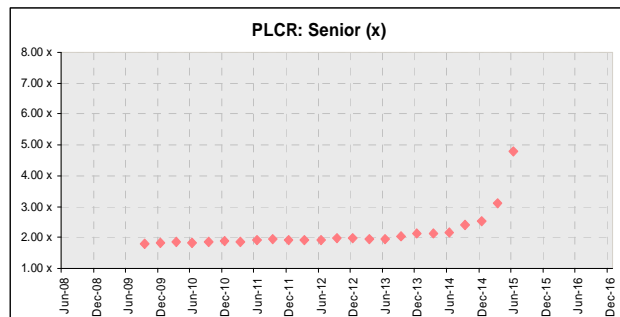
Bring in the CFADS (NPV) that has been calculated in Step 3 and the debt balance b/f.

PLCR shall then be calculated using formula below.

$$\text{PLCR} = \text{CFADS (NPV)} / \text{Debt Balance B/f}$$

Period Start	Apr-14	Jul-14	Oct-14	Jan-15	Apr-15	Jul-15
Period End	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15
Construction						
Operations						
CFADS (NPV)	47.31	42.30	33.62	27.82	21.74	16.38
Senior Debt: Balance b/f	21.88	17.65	13.35	8.97	4.52	
PLCR	2.16 x	2.40 x	2.52 x	3.10 x	4.80 x	0.00 x

Screenshot: PLCR Calculation



Screenshot: PLCR Chart

"If this is new to you but you find yourself needing to calculate the LLCR and PLCR metrics in your position as a Project Finance analyst then I recommend you to attend the Project Finance Modelling (A) course."

Nick Crawley, Managing Director
Navigator Project Finance

Variations in the PLCR definition

Similar to the LLCR definition, it is not uncommon to find the balance of the project's cash account, or the Debt Service Reserve Account ('DSRA') added to the numerator or netted from the numerator. Note that extreme caution needs to be applied when assessing the economics of a project where the PLCR is supported with cash account balances.

When the DSRA is included, the PLCR is calculated as:

$$\text{PLCR} = (\text{NPV [CFADS over Project Life]} + \text{DSRA/c Balance b/f}) / \text{Debt Balance b/f}$$

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- Debt Modelling Masterclass
- VBA for Financiers

Common mistakes in the PLCR calculation

Discount rate post loan final maturity date:

It is a common mistake to model the discount rate post loan final maturity date to be 0.00% because the modelled cost of debt post the final maturity date is nil or just the base rate.

Note that the projected cashflows beyond the loan life are even more uncertain to be relied on and therefore should be discounted with the rate at least equal to cost of debt of the senior debt at the final maturity date. One school of thought is to add the default margin to the cost of debt. The alternative is to leave it at the cost of debt on the basis it could be refinanced. The reality is that it makes little difference as it is so far out for long term financings.

Should the PLCR always be higher than LLCR?

Common sense would indicate that the PLCR should be higher than the LLCR owing to a longer evaluation period.

Be careful, the PLCR could be less than the LLCR, because projects particularly in mining or resource-based projects often have a substantial mine rehab cost or closure costs towards the end of the Project Life which can dramatically reduce the CFADS (numerator for PLCR).

Please refer to our Tutorials on DSCR and LLCR to learn more about Debt Metrics topics. If you have any feedback or suggestions on any of our Tutorials or for future developments we would like to hear from you!

The team at Navigator Project Finance
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Navigator Project Finance Pty Ltd P +61 2 9229 7400 E enquiry@navigatorPF.com

