

## Not all DSCRs are created equal

Investors and rating agencies commonly refer to the debt service coverage ratio (DSCR) of a project when assessing its credit risk. The DSCR ratio is usually defined as:

$$\text{DSCR} = \text{Cashflow available for debt service} / (\text{Interest} + \text{principal})$$

Depending on the vintage of the PPP transaction, projects have been sized at a variety of DSCRs. In the pre-GFC era – DSCRs as low as 1.1x were not uncommon. In the post GFC world, coverage is higher with DSCRs typically 1.2-1.25x but creeping somewhat lower than 1.2x over the past 12-18 months.

On face value, it may appear that the DSCR on its own would be a very good indicator of credit risk as it represents the equity buffer afforded debt in meeting its current debt service payments. This is due to the fixed nature of the revenue stream in a PPP.

This is true where the debt financing of the PPP is term-matched, that is the debt maturity is equal to the concession length of the PPP. However, following the GFC it has not been possible for most PPPs to secure term-matched finance. In fact, most PPPs, with concession lengths of 20-25 years, are typically financed with 5 year bank debt – which needs to be refinanced 4 or 5 times over the life of the transaction.

Chart 1 and Chart 2 are the same PPP project (they have the same service payment cashflows from Government) but are sized with different levels of base interest rates.

Somewhat obviously – if base rates are higher – for a given revenue stream you will have lower levels of debt. Conversely, if base rates are lower, debt will be higher (as less of the payment stream needs to be used to repay interest, more can be dedicated to repaying principal).

This means that projects with the same DSCR can actually have quite different debt balances (and, hence, implicit equity buffers) depending on the interest rate environment when the deal was struck.

Chart 1: PPP Project - 1.18x DSCR, 4.5% interest rate

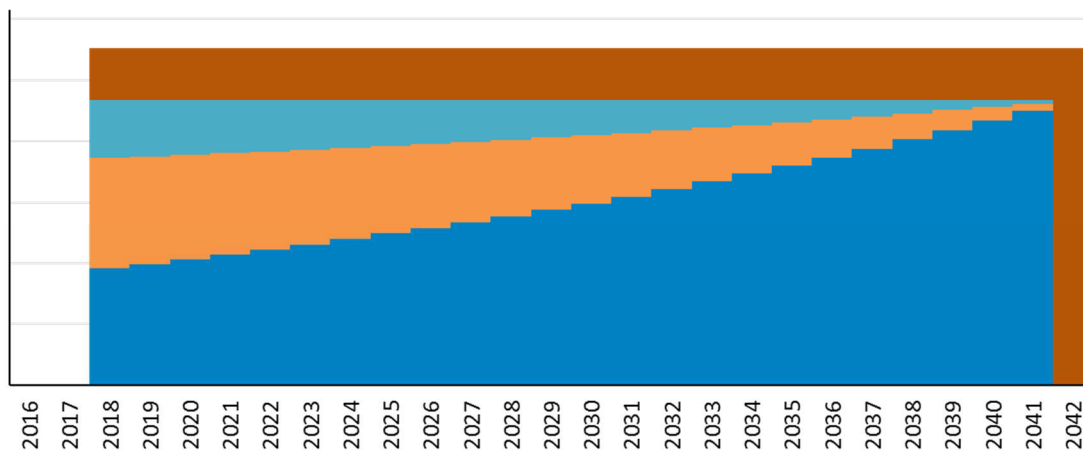
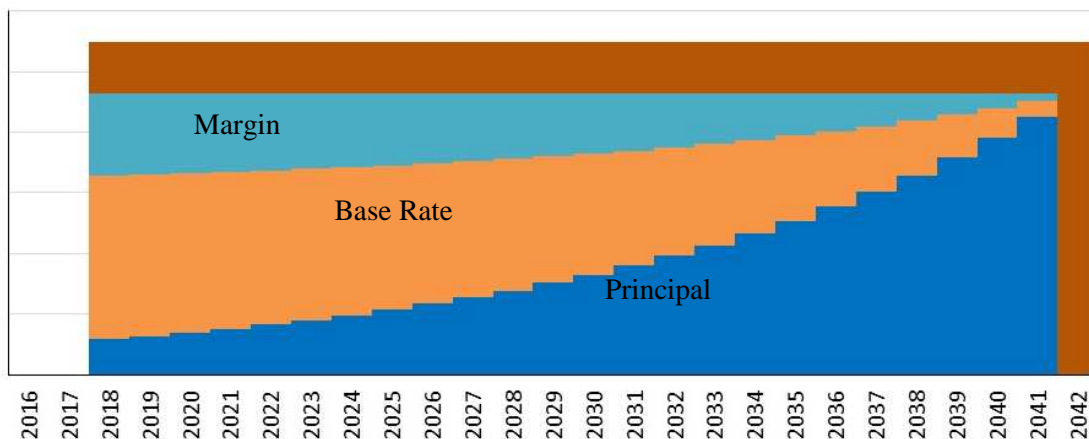


Chart 2: PPP Project - 1.18x DSCR, 9.0% interest rate





**When does Equity walk?**

For most transactions, base rates are locked in for the full life of the transaction using a long-term interest rate swap (or in some cases, via an agreement with the State).

However, at each refinancing, the credit margin will potentially change. The biggest determinant of refinancing credit margins will be the macro environment at the time.

If credit spreads are higher – then equity will need to make an equity injection to de-lever (assuming target DSCRs are constant over time). The actual injection may be larger as DSCRs are counter-cyclical. That is, the market usually requires higher DSCRs at times with higher credit spreads.

The key question is whether equity will fund this equity injection or walk. Equity will walk when prospective IRR on injection is too low (or negative).

**Worked example**

The following table provides sensitivities for a PPP with an initial bid equity IRR of 9%, bid DSCR of 1.18x, bid margin of 1.3% and base rate of 2.5% (3.8% all in). We then modelled a debt refinance at year 5 of operations and scenario tested different refinance margins. Assuming a 10% prospective IRR on injection is the threshold for equity, then the refinance will be highly stressed, and equity likely to walk, if margins reach around 3.0%.

Table 1: Walk away equity IRR sensitivities

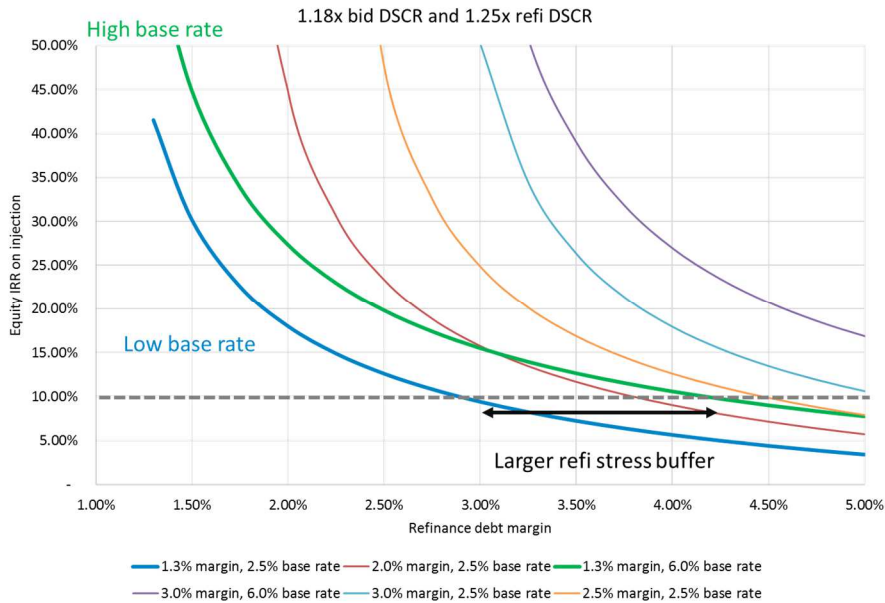
	Case	IRR from start	Walk away IRR	Equity injection at refi	Refi margin
1	Base case, 1.18x DSCR	9.00%	-	-	1.30%
2	Refi margin = 1.3%	8.24%	41.53%	3.46	1.30%
3	Refi margin = 1.5%	7.60%	30.21%	4.75	1.50%
4	Refi margin = 1.75%	6.87%	22.62%	6.33	1.75%
5	Refi margin = 2%	6.20%	18.07%	7.86	2.00%
6	Refi margin = 2.25%	5.58%	14.98%	9.34	2.25%
7	Refi margin = 2.5%	5.01%	12.72%	10.78	2.50%
8	Refi margin = 2.75%	4.48%	10.97%	12.17	2.75%
9	Refi margin = 3%	4.00%	9.56%	13.52	3.00%
10	Refi margin = 3.25%	3.55%	8.39%	14.83	3.25%
11	Refi margin = 3.5%	3.14%	7.41%	16.10	3.50%
12	Refi margin = 3.75%	2.75%	6.57%	17.34	3.75%
13	Refi margin = 4%	2.40%	5.83%	18.54	4.00%



**Other starting points**

We then undertook similar analysis for a range of different starting debt size assumptions. The blue line below is the base case scenario mentioned above with a base rate of 2.5%. We then looked at the scenario where the bid financial close base rate is 6% (3.5% higher) – under this scenario a stressed refinance would occur when refinance margins are greater than 4% (the green line in chart 3). There is a much lower probability of equity walking.

Chart 3: Equity IRR at other starting debt assumptions



**Conclusion**

There is more to the credit risk profile of a PPP than looking at the straight coverage and leverage metrics. Investors should consider the debt environment that PPP debt is being issued in. PPP debt issued in a low margin, low base rate environment will have higher levels of refinance risk compared to their peers when debt was issued in a higher interest rate environment. Where there is risk, there is also opportunity, and we view this risk as being often mispriced in this sector.