FREE
TUTORIAL

DSCR
DEBT SERVICE COVERAGE RATIO

DSCR Introduction

This tutorial and the accompanying sample workbook focuses on the Debt Service Coverage Ratio (DSCR) which is widely used in Project Finance models. It is a debt metric used to analyse the project's ability to repay debt periodically.

DSCR = Cashflow Available for Debt Service / Debt Service (P+I)

There are other definitions of DSCR that are used in other fields except Project Finance[1]:

In "Corporate Finance",

….it refers to the amount of cashflow available to meet annual interest and principal payments on debt including sinking fund payments.

In "Government Finance",

….it is the amount of exporting earnings needed to meet annual interest and principal payments on a country's external debts.

In "Personal Finance",

….it is a ratio used by bank loan officers in determining income property loans. The ratio of over 1.0 x would mean the property is generating enough income to pay its debt obligations.

1) Definition of DSCR extracted from Investopedia

DSCR Definition in Project Finance

In Project Finance modelling, Cashflow Available for Debt Service (CFADS) is used as the numerator, rather than EBITDA or Net Operating Income, which is used in Corporate Finance modelling.

The DSCR can be calculated using several different methods:

- Quarterly CFADS / Quarterly Debt Service;
- Semi-Annual CFADS / Semi-Annual Debt Service;
- Annual CFADS / Annual Debt Service;
- Backward and forward looking CFADS and Debt Service (e.g. 6-Month look-back or (x) periods look-back ; 6-Month look-forward or (x) periods look-forward);

> "If you would like to learn more about debt metrics widely used in project finance and other items relating to project finance modelling, then you should attend the Project Finance Modelling (A) course."
>
> Nick Crawley, Managing Director
> Navigator Project Finance

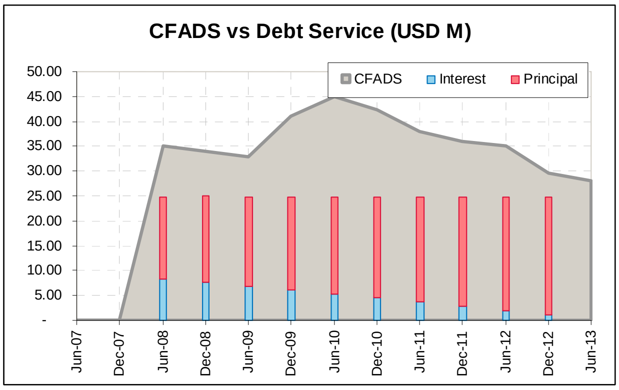
Applications of DSCR in Project Finance

The Term Sheet definition of DSCR drives the debt sizing of the project. A key point to keep in mind when performing debt sizing analysis based on ratios that are defined as the average DSCR over several periods, is that sizing performed purely using DSCR can result in periods where there is not enough actual cashflow to repay debt.

Public Courses by Navigator Project Finance

- Project Finance Modelling (A)
- Project Finance Modelling (B)
- Debt Modelling Masterclass
- VBA for Financiers

In these more complicated scenarios a VBA script is usually the only way to solve the problem, but correctly implemented this can be made very transparent and efficient.



Screenshot #1: Graph CFADS vs Debt Service

The illustration above shows the proportions of Cashflow Available for Debt Service compared to Total Debt Service (Interest + Principal).

With CFADS significantly larger than Debt Service it is clear that there is a significant buffer in the project to protect the lenders from decreased cashflows from the project due to, for example, operation inefficiencies post the end of construction.

Debt Sizing Considerations – DSCR < 1.00x

A DSCR of less than one means that the cashflows from the project are not strong enough to support the level of debt.

In a debt sizing phase of a project, this could be managed by using one of the following structures. Be careful when modelling around a DSCR < 1.00x this is such a fundamental issue that correct approach needs careful consideration. If a senior facility does not allow for capitalisation of un-payable sums do not model it that way.

Sculpted Debt Repayments

This will ensure that a lower principal repayment is applied in a period with lower Cashflow Available for Debt Service (CFADS). Please refer to tutorial titled "Debt Sculpting" on debt sculpting to achieve a Target DSCR.

Grace Period

A Grace Period is the number of months or years in the beginning of the debt term, where there is no obligation by the borrower to repay debt. This is particularly common in projects where there is a ramp-up phase, such as toll roads and other types of infrastructure projects.

Debt Service Reserve Account (DSRA/c)

A Debt Service Reserve Account works as an additional security measure for the lender as it ensures that the borrower will always have funds deposited for the next x months of debt service. Commonly the Debt Service Reserve Account target is defined as six or twelve months of debt service.

Please refer to our Tutorials on Debt Sizing and Debt Service Reserve Account to learn more about these 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
www.navigatorpf.com/training/tutorials

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- Singapore
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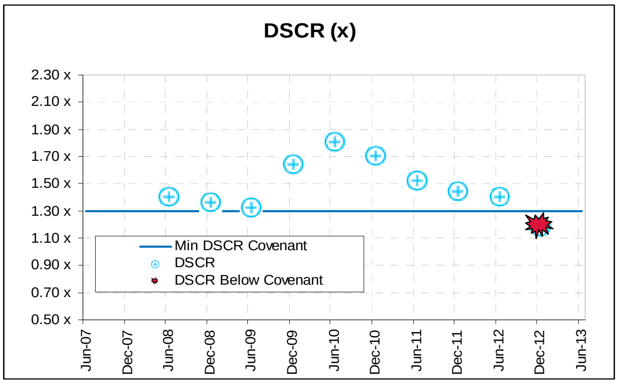
Breaching a DSCR Covenant

Screenshot #2 in the next page illustrates a graph highlighting a weak cashflow in the last period (December 2012) of a project where the DSCR drops below the Term Sheet DSCR Covenant of 1.30x.



Screenshot #2: DSCR Graph highlighting the Minimum DSCR

Points to keep in mind when calculating a DSCR

- The DSCR is a key Project Finance Ratio which is calculated during the debt term.
- DSCR measures how many times the CFADS can repay the Scheduled Debt Service.
- Usually DSCR is calculated in every period.
- Identification of the Minimum DSCR is the primary method to identify a period of weak CFADS to service the debt obligations.

	Average	Min	Min Period
DSCR	1.48 x	1.19 x	31-Dec-12

Screenshot #3: Table highlighting the Minimum DSCR

- However, when DSCR is measured in every period, the DSCR can be a volatile measure and may fluctuate from period to period.
- To counter this effect the DSCR is often calculated on a look-back rolling basis e.g. 12-Month or 4-Quarter look-back. In every period the CFADS and Debt Service of the current quarter and the preceding 3 quarters are compared.
- The DSCR ((X) periods look-back) may produce a smoother, less sensitive DSCR.

  Please note that a DSCR (per period) could have a DSCR of < 1.00 but a rolling 12-Month measure would mask this.

About Navigator Project Finance

Founded in 2004, Navigator Project Finance Pty Ltd (Navigator) is the project finance modelling expert. Headquartered in Sydney, Australia, Navigator is raising the global benchmark in financial modelling services to the project finance sector. Navigator designs and constructs financial models for complex project financings, offers training courses throughout the Middle East, Asia and Europe, and conducts independent model reviews of project finance transaction models. Navigator delivers fast, flexible and rigorously-tested project finance services that provide unparalleled transparency and ease of use.

Customers include market leaders such as Deutsche Bank, ANZ Investment Bank, Bovis Lend Lease, Oxiana, Mirvac Property, Westpac and the Commonwealth Bank of Australia, together with leaders from the finance, mining, property, utilities, banking, chemical and infrastructure sectors.

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