Discounted Cash Flow

Method #4: Synthetic Rating

In the absence of credit ratings, investors can estimate a "**synthetic rating**" using the company's interest coverage ratio, which measures a company's ability to pay its interest expenses and debt.

This approach is useful for unrated companies or to complement official ratings. However, it could potentially misclassify a company's true credit risk, given its reliance on historical financial data.

Synthetic Rating Formula

The cost of debt using the estimated synthetic rating spread can be calculated as follows:

$$r_d = r_f + \text{Estimated Synthetic Rating Spread} + \text{Country Spread}$$

where:

- r_d = pre-tax cost of debt
- r_f = risk-free rate; government bond yield matching company's average debt maturity.

To estimate the synthetic rating spread, the interest coverage ratio (ICR) must be calculated:

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest Expense}}$$

The higher the ICR, the safer the borrower, and the lower the estimated synthetic rating spread.

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Synthetic Rating Steps

Step #1: Calculate the interest coverage ratio (ICR) for the company (EBIT / interest expense).

Step #2: Estimate the synthetic rating spread. Use Aswath Damodaran's tables that relate the ICR of a firm to a synthetic rating and a default spread that goes with the rating.

- **Note**: There are two separate tables (for non-financial service firms only). One for larger firms (market cap > $5B), the other for smaller and riskier firms.

Step #3: If the company has significant exposure to country risk, add appropriate portion of country spread.

Step #4: Calculate after-tax r_d by multiplying pre-tax r_d by $(1 - t_c)$.

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Synthetic Rating Example

Calculate the interest coverage ratio (ICR) for Costco (COST) based on FY 2024 income statement data:

- Interest Expense = $169M
- EBIT = $9,285M

$$ICR_{COST} = \frac{\$9,285\text{M}}{\$169\text{M}} \rightarrow 54.94$$

Based on the synthetic rating table (for larger firms) from Damodaran, this implies a default spread of 0.59%.

Then, we can calculate the cost of debt as follows, with a U.S. 10-year risk-free rate of 3.88% and marginal tax rate of 21%:

$$r_{d(COST)} = (3.88\% + 0.59\%) \times (1 - 0.21) \rightarrow 3.53\%$$

For larger firms (market cap > $5 billion)			
If interest coverage ratio is			
>	*≤ to*	*Rating is*	*Spread is*
-100000	0.199999	D2/D	20.00%
0.2	0.649999	C2/C	17.00%
0.65	0.799999	Ca2/CC	11.78%
0.8	1.249999	Caa/CCC	8.51%
1.25	1.499999	B3/B-	5.24%
1.5	1.749999	B2/B	3.61%
1.75	1.999999	B1/B+	3.14%
2	2.2499999	Ba2/BB	2.21%
2.25	2.49999	Ba1/BB+	1.74%
2.5	2.999999	Baa2/BBB	1.47%
3	4.249999	A3/A-	1.21%
4.25	5.499999	A2/A	1.07%
5.5	6.499999	A1/A+	0.92%
6.5	8.499999	Aa2/AA	0.70%
8.50	100000	Aaa/AAA	0.59%

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