

**FINC 423**  
**Advanced Corporate Finance**  
**Fall 2020**

**Group Homework #10**

**Estimation of the Bond Rating, Beta and  
Required Return on Debt for the Recapitalized Firm**

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In this assignment you will assess the effect of a proposed change in leverage by your firm on its bond rating and required return on debt. Handout #26 should serve as a guide in your efforts to study the effects of recapitalization on the firm's debt, and Handout #18 for the effect on equity. You also need the results from Group Homework #9, where you estimate the balance sheets and income statement of the recapitalized firm. Clearly, you should clean-up any problems with your estimates from these assignments before proceeding.

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**Effects of Recapitalization on the Firm's Bond Rating and Cost of Debt**

You will try to estimate the effect of the proposed change of leverage on the firm's bond rating. You should use the results of the regression model based on the work of Bloom, Lim and McKinlay (BLM). This is described in Handout #26, on pages 1 - 4. You are not to estimate the regression yourself, you will use the parameters provided in the handout.

On the Bloomberg terminal you can find the current S&P and Moody's ratings of the firm's debt. You probably collected this with the data on the firm's debt earlier from the Bloomberg Terminal.

First, use the BLM model to estimate the hypothetical rating for the bonds of the firm as currently levered. You will need to compute (1) the logarithm of firm size (in \$M), (2) the coverage ratio, (3) the total-debt-to-asset ratio, and (4) the ROA. The hypothetical rating that you calculate using the regression model will probably differ from the actual. You will need to know the extent of this discrepancy to adequately judge the effect of the recapitalization on the rating and required yield on debt.

Next, you will use the figures from Homework #9, where you estimate income statements and (book value) balance sheets for the recapitalized firm, to calculate the ratios (described above) at the new capital structure. These are then substituted into the BLM model to see the effect of the recapitalization on the bond rating.

Then, comes the most interesting part. You should think about how much the recapitalization may raise the firm's cost of debt financing. For instance, if the firm's current rating is BBB, and you think that the recapitalization would drop their rating by three notches (to BB), what will happen to the yield on the bonds the firm will issue and also its outstanding debt? This is clearly not an exact science, but requires some sound judgment on your part. I would suggest that you use the Curve Finder (CRVF) on the Bloomberg Terminal to plot the current yield for your firm's debt (along the yield curve) with those for bond indices of ratings that your firm might slip into following the recapitalization. If your firm's curve is not available on the CRVF, you will have to collect information on the yields of appropriate bond portfolios using the CMX function on the Bloomberg Terminal. You need to consider not only the yield that the new bonds will bear, but also about the firm's existing debt; in this case it is useful to know the weighted-average time-to-maturity of the firm's outstanding bonds (many groups have already executed this computation in Group Homework #7). The CMX function on the Bloomberg Terminal may provide with data that will be helpful to make such guesses.

For the analysis of the effect of the recapitalization on debt, prepare a brief summary explaining what you feel will happen to your firm's bond rating and borrowing costs on new debt funding and the existing securities if they double the book value of long-term debt on the balance sheet. This is not a formal memorandum. Just a few sentences, so that I can check your reasoning against your empirical results.

Provide supporting documents on the firm's income statements and balance sheets before and after recapitalization (from Group Homework #9). Be sure to clearly state the rate that you are assuming must be paid on the newly issued bonds to calculate the leveraged income statement. Also, provide the Excel spreadsheet showing your estimate of the market value and weighted-average yield-to-maturity of the firm's current long-term debt (from Group Homework #7). You should now calculate the weighted-average time-to-maturity of the firm's long-term debt in the spread sheet if you have not already done so. Finally, provide any information from the CRVF and CMX functions in the Bloomberg terminal that you use to estimate the rates on the firm's debt following recapitalization.