

Assignment 6: Answers

(December 11, 1998)

1. Basic calculations for corporates.

- (a) Prices are the sum of the product of cashflows times the relevant discount factors. The discount factors for the various rating classes are

Maturity (Yrs)	Treasury	Aaa	Baa
0.5	0.9757	0.9733	0.9713
1.0	0.9518	0.9477	0.9441
1.5	0.9296	0.9229	0.9175
2.0	0.9083	0.8989	0.8921

The prices are 103.063 (treasury), 102.056 (Aaa), and 101.318 (Baa). The risk to the cashflows is reflected in the prices: the Baa bonds are the most risky and therefore have the lowest price.

- (b) Yields on the 3 bonds are 4.874% (treasury), 5.402% (Aaa), and 5.792% (Baa). These come from the yield-to-maturity (or IRR) calculation we've done many times before. The risk to the cashflows is reflected in the yields, too: the Baa bonds are the most risky and therefore have the highest yield. The spreads on the two corporates are differences between their yields and the treasury yield: 52.8 BPs (Aaa) and 91.8 BPs (Baa).

2. Behavior of spreads. The point is that such analysis is inevitably a mixture of the quantitative (for example, Merrill's assessment of Niagara Mohawk) and the qualitative (the macroeconomic and market environment that led to "gapping"). My answer is one approach to the issues, but not necessarily the only one that makes sense.

- (a) In hindsight, it seems the spread was the result of
- panic over economic collapse in Russia and weakness in other parts of the world that led investors to shift into very safe assets like US treasuries ("flight to quality"), and
 - lack of liquidity following the forced liquidation of some of the enormous positions held by hedge funds.

In the last few months, much of the sharp increase in spreads has reversed itself. Merrill's comment that the increase "is alarming" is an understatement, but if they claim surprise, as well, they don't know their history.

- (b) Your call. You could point out the ratios used by rating forms and statistical rating approaches (the coverage ratio, for example). You would likely also bring up the nature of Niagara Mohawk's business (esp given the ongoing deregulation of utilities) and the quality of their management.

3. Your choice. I look forward to seeing some interesting ones.