HOMEWORK 6

1. The goal of this homework exercise is to basically replicate the Black-Derman-Toy example presented in class. The data for the volatility of r is in the file voldat. The file pfilea. has the term structure data. The file bdttree. has my bdt tree.

Note that exactly replicating my numbers is not required. Each program has its own particular features and quirks and it is almost impossible to get two numerical programs programmed by two different people to give exactly the same results. Try your best. Usually, if you do it right, you will be close to my numbers; if you do it wrong, you will be way off and mostly likely the tree will explode.

The best approach will be to program and to solve at each date for the correct drift or r^* that matches the discount bond price. This tree could also be built in Excel using the solver algorithm, but this could be a little tedious since you have to manually use the solver 20 times. Its your call on how to proceed.

2. Once the tree is built, compute the expected value as of time zero, of the value of r in .50 years, in 1.00 years, etc. out to the last date on the tree. Graph the expected r value against the horizon. Contrast this with the forward rate for the same horizon computed using the initial term structure data in pfilea.