Fixed Income
Study Questions for quiz on Inverse-Floater / Duration-related material

Problems. Show all work. Remember you will use your (financial) calculator on the quiz so you should practice answering the questions with a calculator. (You can check your answers on a spreadsheet.) At this point we continue to abstract from day-count convention issues, so assume that every coupon period is exactly one-half of a year, and that your trades settle on coupon payment dates, so that the dirty price equals the clean price.

1. Suppose that the yield curve is flat at 5% compounded-continuously. Consider a zero net investment portfolio consisting of a $5 million long position in a 10-year STRIPS and a $5 million short position in a 10-year floating-rate note (issued today) with quarterly reset, indexed to quarterly LIBOR, with a quarterly tenor. What is the DV01 of this portfolio? What does this DV01 mean (how would you explain it to a client)?

2. Consider a 5-year inverse floater that makes annual payments, has an annual tenor, and annual reset dates. The coupon rate at year t is $10\% - r_{1,t-1}$ where $r_{1,t-1}$ is the annually-compounded spot rate on a 1-year STRIPS at year $t-1$. Suppose that the yield curve is flat at 5% (continuously compounded). What is this inverse floater's duration?

3. Consider a leveraged 5-year inverse floater that makes annual payments, has an annual tenor, and annual reset dates. The coupon rate at year t is $20\% - 2 \cdot r_{1,t-1}$ where $r_{1,t-1}$ is the annually-compounded spot rate on a 1-year STRIPS at year $t - 1$. Suppose that the yield curve is flat at 5% (continuously compounded). What is the duration of this leveraged inverse floater?