Problem set 2:
Fixed Income Analysis

Problem 1

Suppose you fit the discount function

$$d(t) = \exp(-y(t)t) \tag{1}$$

to data where the function y is given by

$$y(t) = a + bt + ct^2. \tag{2}$$

a) Give an interpretation of $y(t)$.

b) Suppose you found $a = 0.015$. The next day you find $a = 0.016$. The parameters b and c were unchanged. What happened to the term structure?

c) Describe the term structure in the Nelson Siegel model if $b_2 = b_3 = 0$.

d) You are working as a trader using a term structure model based on a curve fitting. Your model gives perfect fit to the current term structure. A colleague fits a regression model to coupon bond yields and suggests long/short strategies based on miss-pricing relative to this model. Do you do the trade?

e) You have two competing models for y, one is an extended Nelson Siegel and the other is a cubic spline. Discuss how to evaluate them.

Problem 2 (CFA) Program Curriculum, Vol. 5. Reading 53, problem 16.