Mini-case 3: Yield Curve Hypotheses and the Effects of Economic Events

CONCEPTS IN THIS CASE

term structure of interest rates
default
default risk
risk premium
yield curve
pure expectations theory
market segmentation theory
liquidity premium theory

Your employer (a bank) has decided to offer five-year loans to its small business customers. You have been presented the task of determining what the appropriate minimum interest rate should be for the most credit-worthy customer. The decision to select a particular fixed rate for the loans depends on our forecast of the interest rates and our internal efficiency in managing the loan. This requires compensation for the costs of making the loan plus profit. You are to use the most recent five-year Canada bond as the basis for determining the minimum interest rate on the small business fixed-rate loans.

Your loan supervisor indicates that the bank needs to charge two percentage points more than the expected interest rate on Canada bonds for these loans. In addition, the bank has estimated the liquidity premium to be 0.9%. Given this information, and the fact that you know you will need to defend your recommendation, you start to analyze current interest rates as follows:

1. Access local or Internet articles that describe theories about the form of a yield curve.
2. Obtain current information on the Canadian yield curve.
3. Plot the current Canadian yield curve and interpret its shape using
   a. The Pure Expectations Theory
   b. The Market Segmentation Theory
   c. The Liquidity Premium Theory
   d. Which theory (a, b, or c) do you think best describes the curve?
4. Given the information in responses 1, 2, 3 above, use the pure expectations theory to calculate and predict interest rates as follows:
   a. If the one-year interest rate is expected to be the same as the yield curve over the next three years, what interest rate is expected on a two-year bond one year from now?
   b. What interest rate is expected on a three-year bond one year from now?
   c. What relationship do you find between interest rates and maturity?
   d. If investors attach liquidity premiums of 0.0025, 0.0075 and 0.0085 to the one-, two- and three- year bonds:
      i. What would be the interest rate on a two-year security?
      ii. What would be the interest rate on a three-year security?
      iii. What is the forward rate for one-year Canada bonds one year from now?
      iv. What is the adjusted forward rate for one-year Canada bonds one year out?
5. After describing the current yield curve and forecasting interest rates using both the pure expectations and liquidity premium methods above,
   a. What is your recommended minimum interest rate for the five-year fixed rate loans?
   b. How would this rate be adjusted for customers that have some credit risk?