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Fin 320

Homework 2

**Chapter 5**

5. If yield curves were flat this would mean that liquidity premiums wouldn’t really exist. This would make me more willing to accept the expectations theory which states that bonds are perfect substitutes for each other

6. If the yield curve started flat but then accelerated upwards as time to maturity increased, the market is predicting that short term rates will fall. The longer maturity bonds that are increasing in yield are suggesting that those rates are going to rise. Inflation with roughly stay the safe during the years in the flat part of the curve but then increase as the rate increases.

7. Short term interest rates follow the normal yield curve which signals that short rates will rise in the future. The inflation rate in the future will be increasing up until the inflection point at which it will start and maintain a decline.

2. According to the Liquidity Premium theory, the required rate of return is the average of 4 one year bonds plus the liquidity premium. (4.25% + 5.15% + 5.50% + 6.25) / 4 + liquidity premium at year 4 (0.5%) = 5.79%. Since 5.75 < 5.79, I would not purchase the T bill.

7. The expectations theory just takes the average of bonds at consecutive times within the range that you are looking for and just takes the average since the bonds are in sequential one year increments. A 3 year bond is the average of 1,2 and 3 year bonds which is 4.5%. A 6 year bond = (3%+4.5%+6%+7.5%+9%+10.5%) / 6 -> 6.75%. A 9 year bond is the average of bonds year one through nine -> 9.33%.

8. The Liquidity premium for each year now stands at .10%. This means for a 3 year bond, We take the value computed in the prior question and add the liquidity premium multiplied by the number of years on the bond. A 3 year bond would be 4.5% + (.1\*3) -> 4.8%. A 6-year bond would be 6.75% + (.1\*6) -> 7.35% and a 9 year bond would be 9.33% + (.1\*9).

**Additional Questions**

* 1. The Curve tells us that the economy is growing at a positive clip and that inflation is expected to be positive. While the short rates are near record lows, the curve is increasing so it is reasonable to say that rates will increase in the future
  2. According to the expectations theory, the expected rate of return should be the the same for bonds of different maturities. So the one year rate one year from now should equal (one year rate now) \* (one year rate one year from now) = (2 year rate)^2 which equals .390144%
  3. The two-year rate 5 years from now can be calculated by investing in a 7 year bond and comparing that to a rollover from a 5 year bond to a 2 year bond. 1.0136^7 must equal 1.0081^5 (5 year bond) multiplied by (1 + expected rate on 2 year bond at year 5)^2. After some calculation, we arrive at an expected 2 year rate at year 5 of 2.748% (Which is far too high).
  4.  The liquidity premium theory (restated in the image above) takes the liquidity premium into account. It states that the current two year spot price minus the liquidity premium to the power of years over one plus the current one year interest rate should give us our expected one year rate that is sensitive to the liquidity premium. After calculation, the expected one-year interest rate is 15 basis points.
  5. Since interest rates are rising, the expectations theory will always overstate the expected interest rate which yielded 39 basis points rather than the 15 from the liquidity risk premium model. The liquidity risk is subtracted from the 2 year spot price which is then divided by the same one year spot price. This method gives us a lower, more accurate, estimated interest rate.