

IRD midterm

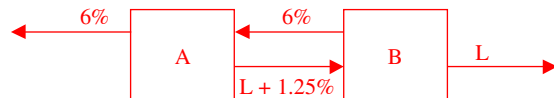
(10 points each, unless specified)

IMPORTANT! show your steps to earn partial credits

1. Given

	fixed	floating
A	6%	L+2%
B	4.5%	L

Perform a comparative advantage analysis (i.e. draw those boxes) to let A and B equally split the total comparative advantage.



2. Given

term (i)	P(0,i)
1	0.95
2	0.90
3	0.86

Compute 2-year swap rate and 3-year swap rate.

3. Use the discount factor curve in the previous question, compute the zero yield curve and zero forward curve.

				cont		disc	
t	disc	pv01	w	spot	fwd	spot	fwd
1	0.95	0.95	5.2632	5.1293%	5.1293%	5.2632%	5.2632%
2	0.9	1.85	5.4054	5.2680%	5.4067%	5.4093%	5.5556%
3	0.86	2.71	5.1661	5.0274%	4.5462%	5.1559%	4.6512%

4. Let the yield curve be $y = a + b \ln(t + 1)$. Derive forward curve. (note that

$$d \ln(x) / dt = 1/x \quad f = \frac{dy}{dt} = \frac{b}{t+1}$$

5. Answer the following questions.

- (3) Prime and subprime are what kind of fixed income securities? **MBS**
- (6) Which of the following fixed income securities are **federal** tax free? (i) Treasuries, (ii) **municipal bonds**, (iii) Yankee bonds.
- (3) Explain 30/360 daycount convention. **30 days a month and 360 days a year**
- (6) What are the three term structure hypotheses? **pure expectation, liquidity preference, preferred habitat (market segmentation)**
- (2) Name a fixed income security that is ideal to hide assets/liabilities (i.e. it is an off-balance sheet item). **swap, forward**