

ECON106V LAB #8



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How much money do you make or lose if you resell the bond on Sep. 30, 2011?

FV: \$1,000

aHPR: \$424

Price @ $t = 0$	\$276.36
Price @ $t = 0.25$	\$994.07
Sell @ 3 months \rightarrow 29.75 yrs. remaining	YTM = 0.0002%
Amount Earned/Lost	-\$5.93

How much money do you make or lose if you resell the bond on Sep. 30, 2011 and if all yields wind up are 2% higher than in the previous table?

Price: \$1,000

Price @ $t = 0$	\$276.36
Price @ $t = 0.25$	\$545.19
Sell @ 3 months → 29.75 yrs. remaining	YTM = 0.0206%
Amount Earned/Lost	-\$454.81

Why are you losing money under this alternative scenario?

You are losing money under this alternative scenario because the yield to maturity is higher, and there is still 29.75 years remaining until the bond matures, resulting in a greater loss when sold before maturity.

How much 5 year ZCB do you have to short to create a portfolio that would have the following property: in response to a 1% increase in interest rate, the amount of money you lose on your long position is approximately equal to the amount you would gain on your short position?

Borrowing \$6,000 → Net \$5,000 (Now)

-\$6,000	Price @ $t = 0.25$	\$5,733	Amount Earned/Lost:	\$266.21
\$1,000	Price @ $t = 0.25$	\$427	Amount Earned/Lost:	-\$572.79
			Total	-\$306.58

We need to short sell approximately \$839.00 of the same zero-coupon bond that we hold at long to create a portfolio where the amount of money lost on the long position is approximately equal to the amount gained on the short position in response to a 1% increase in interest rate.

How much money do you make or lose in the two scenarios if, on Sep. 30, 2011, you re-sell the 30 year ZCB and close your short position in the 5 year ZCB?

Long Position in 30 Years			Percentage Change
June 30	PV – 30 Years	\$1,000	
	FV	\$3,618.42	
Sep. 30 (if rates go up)	PV – 30 Years	\$1,534.82	53.48%
Sep. 30 (if rates go down)	PV – 30 Years	\$861.50	-13.85%

			Percentage Change
June 30	PV – 5 Years	-\$6,000	
	FV	-\$6,546.92	
Sep. 30 (if rates go up)	PV – 5 Years	-\$6,241.52	-4.03%
Sep. 30 (if rates go down)	PV – 5 Years	-\$5658.41	5.69%

How much money do you make or lose in the two scenarios if, on Sep. 30, 2011, you re-sell the 30 year ZCB and close your short position in the 5 year ZCB?

Overall Portfolio			Percentage Change
June 30	PV	-\$5,000	
Sep. 30 (if rates go up)	PV	-\$4,706.70	5.87%
Sep. 30 (if rates go down)	PV	-\$4,796.91	4.06%

Can you find a scenario for the yield curve on Sep 30 that would make you lose money?

Borrowing \$6,000 → Net \$5,000 (Now)

-\$6,000	Price @ $t = 0.25$	\$5,733	Amount Earned/Lost:	\$266.21
\$1,000	Price @ $t = 0.25$	\$427	Amount Earned/Lost:	-\$572.79
			Total	-\$306.58

In this scenario, we are losing money for the yield curve on Sep. 30.