

Quiz A for 9:45 Class: 7/11/12

Name Key

Assume that you can buy or sell the following securities:

Security	Price Today	Payoff one year from today if the economy is:		Payoff two years from today if the economy is:	
		Strong	Weak	Strong	Weak
TaxCut	\$65	\$15	\$5	\$100	\$0
Market	\$100	\$10	\$0	\$150	\$50

Assume also that you can buy or short-sell risk-free bonds that mature either a year from today or two years from today for whatever amount you chose. The return on these bonds is 2.5% per year.

- What investment in the market and risk-free bonds will generate cash flows identical to those generated by TaxCut?
- Calculate the no-arbitrage price for TaxCut?

Note: Feel free to answer parts "c" and "d" with a table

- What set of transactions today will generate an arbitrage profit today?
- What cash flows (each trade and total) will your transactions produce today, a year from today, and two years from today? Note: Use a "+" for inflows and a "-" for outflows.

a. Buy market, buy bond that matures for \$5 in one year, short sell bond that matures for \$50 in two years.

$$b. 100 + \frac{5}{1.025} - \frac{50}{(1.025)^2} = 100 + 4.878 - 47.591 = 57.2873$$

c+d

Trans	\$0	S	W	S	W
+2 short Taxcut	+65	-15	-5	-100	-0
+2 buy market	-100	+10	+0	+150	+50
+2 buy 1-yr bond	-4.878	+5	+5	0	0
+2 short 2-yr bond	+47.591	0	0	-50	-50
<u>Total</u>	<u>+7.713</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
	+1	+1	+1	+1	+1