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

Assume that you can buy or sell the following securities:

<table>
<thead>
<tr>
<th>Security</th>
<th>Price Today</th>
<th>Payoff one year from today if the economy is:</th>
<th>Payoff two years from today if the economy is:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Strong</td>
<td>Weak</td>
</tr>
<tr>
<td>TaxCut</td>
<td>$120</td>
<td>$10</td>
<td>$0</td>
</tr>
<tr>
<td>Market</td>
<td>$100</td>
<td>$25</td>
<td>$15</td>
</tr>
</tbody>
</table>

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 choose. The return on these bonds is 3.5% per year.

a. What investment in the market and risk-free bonds will generate cash flows identical to those generated by TaxCut?

b. Calculate the no-arbitrage price for TaxCut?

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

c. What set of transactions today will generate an arbitrage profit today?
d. 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.

\[ a. \text{Buy market, short sell bond that matures in one year for } +15, \text{buy bond that matures in two years for } +30. \]

\[ b. 100 - \frac{15}{1.035^2} + \frac{30}{1.035^2} = 100 - 14.493 + 28.005 = 113.51 \]

\[ c + d \]

\[ \text{Trans} \]
\[ +120 \]
\[ -100 \]
\[ +25 \]
\[ +15 \]
\[ +1 \]

\[ \text{Total} \]
\[ +6.488 \]

\[ +1 \]