Ec 365
Spring 2017
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ASSIGNMENT 6

(due Friday, November 10, 12pm)

1. Exercise

Use the article "Interest Reductions..." that is downloadable on the web site.

There is a government (e.g. England) that has a public debt in annuities at 3% and 4%.

1. *Assume the annuities are perpetual and that the price of the 3% is 90. What is the price of the 4%?*

(4/3) x 90 = 120.

2. *Assume that the 3% is perpetual and that the 4% is redeemable at par. The price of the 3% is 100 and it is expected to stay at that level. The government announces that it will redeem all the 4%, at par, 5 years from now. Determine the price of the 4% annuity just after the announcement. You will assume that people expect the policy of the government to be implemented for sure. (The redemption will financed by issuing annuities at 3%, but that financing is irrelevant for the answer to the question). You need a calculator or a spreadsheet program to answer the question. Explain carefully your computation.*

$100 + 1/(1+r) + \ldots + 1/(1+r)^5 = 100 + (1 - 1/(1+r)^5)/r$.

The interest rate r should be 3% because the price of the 3% annuity is 100. The answer I 104.58 but if you answer "a little less than 105" because of the discounting, that is a perfectly valid answer.

2. Questions

1. *Explain the difference between an interest reduction on redeemable debt and an interest reduction on non redeemable debt.*

The government may purchase a redeemable bond at any time and that can be financed by issuing a new debt with a coupon at a lower rate. That operation is profitable when the initial bond price is near 100 or above 100. The end result is a lowering

of the interest rate of the debt. Any interest reduction on a non redeemable debt is a (partial) default.

3. *Using the article "Interest Reductions...", discuss why an attempt to reduce the interest rate on the debt in England failed in 1737.*

See the article.