

SIMON FRASER UNIVERSITY
Department of Economics

Econ 842
International Monetary Economics

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Spring 2020

PROBLEM SET 2 - EXCHANGE RATES
(Due March 18)

1. (25 points). **Debt Overhang and Debt Forgiveness. Or, Is Bono Right?** Consider a small open economy that inherits a large debt, D , which is scheduled to be paid off in the second period. A representative agent in the country has the utility function

$$U = \log C_1 + \beta \log C_2$$

First-period endowment income is Y_1 . Capital depreciates by 100% during production, so second-period output is just $Y_2 = I^\alpha$, where $I = K_2$ is date-1 investment. In the second-period, foreign creditors will be able to force the country to pay ηY_2 in debt repayments. (Assume the debt is so large that the country cannot fully repay it even if it invests all its resources).

- (a) Write down the country's optimization problem, and solve for its optimal choice of investment, I^* , and the associated level of debt repayment, $\eta(I^*)^\alpha$.
 - (b) Now assume that at the beginning of period-1, creditors decide to partly forgive the country's debt, writing down the face value to $\eta(I^*)^\alpha$, the amount they expect to be repaid if they do nothing. Does this cost the creditors anything? Is the debtor country better off? Explain intuitively.
 - (c) Suppose the creditors are heartless profit maximizers. Is the strategy in part (b) optimal for them? Briefly describe their optimal strategy.
2. (25 points). Collect quarterly (3-month) data on interest rates and the nominal exchange rate for the USA and Canada, going back as far as possible (but not before 1973). Both interest rates and the exchange rate should be sampled at the end-of-period (not averaged). Interest rates for both countries should be on government Treasury Bills. (I can provide the data if you are having trouble finding it).
- (a) Plot the data, and comment on any interesting features or time periods.
 - (b) Test Uncovered Interest Parity by regressing changes in the log exchange rate on the interest rate differential. Test the hypothesis that UIP holds.
 - (c) If you reject, briefly discuss a couple of possible interpretations/explanations.