Whitman College
Econ 407
Exam 1
October 19, 2010

Write all of your answers in your blue book. Show all of your work. The exam ends at 2:20.

1. In Money and the Mechanism of Exchange W. S. Jevons writes that “in a state of barter the price-current list would be a most complicated document, for each commodity would have to be quoted in terms of every other commodity.” He goes on to note that “between one hundred articles there must exist no less than 4950 possible ratios of exchange, and all these ratios must be carefully adjusted so as to be consistent with each other, else the acute trader will be able to profit by buying from some and selling to others.” (p. 58)

In “The Economic Organization of a P.O.W. Camp” R. A. Radford writes

> We reached a transit camp in Italy about a fortnight after capture and received ¼ of a Red Cross food parcel each a week later. At once exchanges, already established, multiplied in volume. Starting with simple direct barter, such as a non-smoker giving a smoker friend his cigarette issue in exchange for a chocolate ration, more complex exchanges soon became an accepted custom. Stories circulated of a padre who started off round the camp with a tin of cheese and five cigarettes and returned to his bed with a complete parcel in addition to his original cheese and cigarettes; the market was not yet perfect. Within a week or two, as the volume of trade grew, rough scales of exchange values came into existence. (p. 191)

Suppose a Red Cross package contains 1 jar of jam, 1 tin of cheese, 1 bar of chocolate, 1 tin of beef, and 50 cigarettes.

(a) (3pts) For the five items in a Red Cross package, there are 10 ratios of exchange. How many ratios of exchange would there be for 12 items?

(b) (12pts) Copy the table below into your blue book. In the 10 lower off-diagonal cells in the table, fill in ratios of exchange that would allow an acute padre to start at one end of a P.O.W. camp with one tin of cheese and five cigarettes and finish with a complete Red Cross package in addition to the original cheese and cigarettes. In words, describe each of the trades the padre would make.

Ratios of Exchange for the Five Items in a Red Cross Package

	Jam	Cheese	Chocolate	Beef	Cig
Jam					
Cheese					
Chocolate					
Beef					
Cigarette					

2. Consider Adam Smith's "Of the Origin and Use of Money."

(a) (5pts) According to Smith, what made it "necessary…to affix a public stamp upon certain quantities of such particular metal, as were in those countries commonly made use of to purchase goods"?

(b) (5pts) What, according to Smith, was the motivation for princes and sovereign states to have "diminished the real quantity of metal, which had been originally contained in their coins"?

(c) (5pts) How, according to Smith, did debasement of coins affect individuals?

3. (20pts) In his article "Deflating the Case for Zero Inflation," Rao Aiyagari argues that a monetary policy targeting zero inflation would not provide the benefits claimed by many of the proponents of such a policy.

Consider Aiyagari's argument that proponents of zero-inflation policy exaggerate the benefits from reductions in **unanticipated** inflation. Explain this argument.

4. Consider a zero-coupon bond that has 20 years until maturity, a face value of $100,000 and an annual yield to maturity of 4.20%.

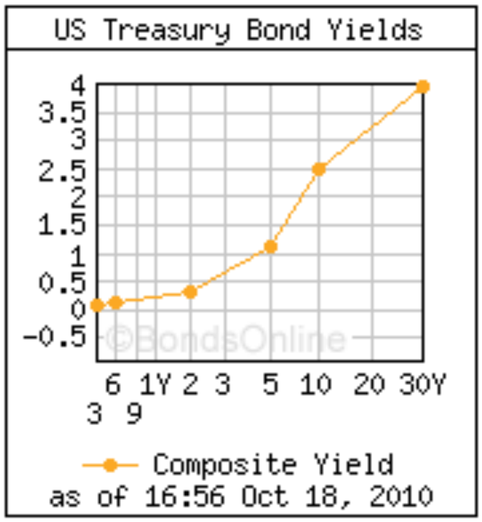
(a) (5pts) What is the price of this bond?

(b) (5pts) Use this bond as an example to explain why the price of a bond and its interest rate are inversely related.

(c) (10pts) Would you say that 20 year bonds have fairly high price volatility in response to changes in interest rates? Use this bond as an example to explain your reasoning.

5. Consider the October 18, 2010 yields (reported in percentage terms) for United States government Treasury debt that appear in the table and the graph below. Use these yields to answer each of the following questions. For each question, suppose that the assumptions of the Pure Expectations Theory of the term structure of interest rates hold, and suppose that people are expecting the inflation rate to be 1.5% per year for each of the next ten years.

Maturity	Yield
3 Month	0.09
6 Month	0.14
2 Year	0.34
5 Year	1.11
10 Year	2.49
30 Year	3.93



(a) (10pts) What annual yield to maturity are people expecting on a three year Treasury note that will be offered for sale two years from now?

(b) (5pts) What **real** annual yield to maturity are people expecting on the three year Treasury note that will be offered for sale two years from now?

(c) (10pts) What **real** annual yield to maturity are people expecting on a five year Treasury note that will be offered for sale five years from now?