ECON 4100: Monetary Economics
Homework 1
Lastrapes
Fall 2008

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1. What is the main cost of a barter exchange system, and how does 'indirect barter' help reduce this cost? How does 'money' evolve from indirect barter?

2. For each of the following items, state if it serves as money in the modern economy, and briefly explain why or why not: checking deposits at banks, time deposits at banks, a credit card, a debit card, Federal Reserve notes, Bank of England notes, American Gold Eagles.

3. How does 'credit' money differ from 'base' money? Under a gold standard, how can credit money increase a nation's money supply, without a change in the quantity of gold? Who ultimately determines the stock of nominal money under a fiat money system?

4. Using the St. Louis Fed's data set (http://research.stlouisfed.org/fred2/), compute the value of the real money supply in the US in January 2007 and January 2008, where nominal money is measured as M2 and the price level is measured as the consumer price index for all urban consumers (use the seasonally adjusted data for each, denoted *SA*). What was the growth rate of the real money supply over this period? What was the CPI inflation rate over this period? Conceptually, what is the difference between nominal money and real money?

5. Use the model of the gold standard developed in class to predict the effects of the following events on an economy's price level (P), nominal money supply (M) and monetary gold stock (G) in the short-run and the long-run.
   a. An increase in the economy's production of goods and services.
   b. A decrease in the monetary authority's gold reserve ratio.
   c. A gold discovery (like the 1849 gold rush in the US).
   d. An increase in the country's international trade deficit.
   e. An increase in the *nominal* price of gold by the government.

6. During World War I, the US remained on the gold standard, unlike Europe. US exports rose during the war, as the US produced much of the supplies its allies needed to fight the war. Now look at this chart of historical gold prices in the US. Was the behavior of the US price level (as measured by the wholesale price index) during this period consistent with the predictions of the gold standard model in the face of rising exports? Why or why not?

7. Imagine an economy on a bimetallic standard in which the government mint freely coins gold and silver (but does not exchange one for the other). In particular, the mint will convert 0.75 ounces of silver into a $1 silver coin and 0.5

ounces of gold into a \$10 gold coin. Suppose that the market price of an ounce of gold rises to 16 ounces of silver.

a. What would tend to happen to the money supply in circulation in this economy, and why? Does your answer depend on whether exchange at "non-par" values is costly?
b. What could the monetary authority do to maintain the circulation of gold and silver at par in this case?

8. What do you think are the primary drawbacks of a monetary system based on an 'oil' standard,' under which the central bank would fix the nominal, or dollar, price of oil by agreeing to convert dollars into barrels of oil on demand (and vice versa)?

9. Radford (1945) details the use of 'cigarette currency' in German POW camps during World War II.
   a. According to Radford, what were the characteristics of cigarettes that led to their use as a medium of exchange and unit of account?
   b. Using our model of a commodity standard, explain why an increase in the demand for cigarettes for *smoking* would cause 'deflation' in the POW camp (see Radford, pp. 194-195).
   c. Since cigarettes were the medium of exchange and the unit of account in the POW camps, what is the value of Pg in the cigarette economy?

10. With respect to the overall stock of money, what are the two potential drawbacks of a fractional reserve banking system? How can the 'lender of last resort' function of a central bank help solve one of these problems.

11. Redemption of bank notes was often costly in a system of many private banks, as in the antebellum US. What is a clearinghouse organization, and how can the clearinghouse make inter-bank note redemption less costly? With a clearinghouse, what would tend to happen to the amount of high-powered money (say gold) relative to banknotes, and why?

12. Dowd ("The Establishment of Central Banking," p. 42) claims that "a recurrent theme in English history is the government's perpetual shortage of money." When was the Bank of England chartered, and how did it help the English government finance its expenditures?

13. The following dates were milestones in the evolution of monetary standards in the US: 1792, 1834, 1862, 1873, 1879, 1934, and 1971. For each date, identify the relevant event and provide a brief explanation.

14. Define the problem of 'moral hazard' in the context of the markets for borrowing and lending. How can this problem lead to a collapse of financial markets? How do banks attempt to solve this problem?

15. Answer the following two questions on the computation of interest rates. a) The yield-to-maturity on a 3-year coupon bond is 5%. The bond has a face value of $10,000 and an annual coupon rate of 6%, with coupon payments made at the end of each year. What is the current price of this bond? b) You purchased shares of stock last year at a price of $1,000, and sold the stock a year later for $1,025. If the rate of return during this period from holding the stock was 4%, what was the value of the dividend you received during the period?