ECON 110, Professor Hogendorn

Problem Set 1

Note that all problem sets include both problems to turn in and review problems. Look over the review problems before working on the problem sets, because often they contain material showing you how to do the problems. Also, note that the review problems tend to be older, so they contain examples that are less current.

1. *Movies.* Let's guess that your parents were kids in 1978 and your grandparents were kids in 1948. Let's see what has changed since they were young.

   First, some data: with 1967=100, the CPI was 72.2 in 1948, 196.0 in 1978, and it is 721.2 in 2016.

   (a) In 2016 the typical cost of a movie was $8.60. If movie prices follow the CPI, how much did your parents pay in 1978 and your grandparents in 1948?

   (b) What are the CPIs for 1948, 1978 and 2016 setting 2016 = 100?

   (c) Actually, the real movie price in 1948 was $0.36 and in 1978 it was $2.34. What was the approximate yearly percentage inflation between 1948 and 1978, and 1978 and 2016, using the CPI? Using the actual movie prices? (Hint: the answer for 1948 to 78 is found using this formula:

   $$P_{1948}(1+\pi)^{30} = P_{1978}$$

   where π is the unknown inflation rate you are looking for. It's raised to the 30th power because there are 30 years between 1948 and 1978.)

(d) Why do you think that movie ticket prices don't increase at the same rate as the CPI?

2. *HardBop.* Identify the following as positive or normative statements:

   (a) "Hard bop" jazz music causes warts and hearing loss.

   (b) Free jazz music is an unparalleled musical experience.

   (c) The U.S. unemployment rate is lower than this time last year.

   (d) The U.S. unemployment rate is still too high.

   (e) Unemployment in teenage labor markets would go up if the minimum wage were raised.

   (f) The government should raise the minimum wage.

Review Problems only, not to turn in:

3. *CokePizza.* Suppose that a bottle of Coca-Cola costs $1.25 and a slice of pizza costs $1.50. Suppose you have $10 to spend. Draw a budget line diagram, with Coke on the horizontal axis and pizza on the vertical. Label the most pizzas and the most Cokes you could buy. What is the prize of pizza in terms of Coke?

4. The following quote from *The Economist* suggests some interesting things about money in Somalia, a country with very weak government: "Mogadishu's marketplaces ... bustle with enterprise. Many deals are done in Somali shillings, a currency without a central bank to support it. Local businessmen guess the shilling is kept afloat by 'common assent'. Remittances in hard currency funneled through *hawala* (Islamic word-of-mouth banks) may have more to do with it. The biggest of the banks, Dahabshiil, has offices in 40 countries. It moves a 'large share' of the $1 billion or more that Somalis abroad send to relatives back home each year."

(a) Based on the above, is the Somali shilling a metal money, a token money, or a fiat money? Explain.

(b) Based on the above, does the Somali shilling play each of the three roles of money? Explain.

5. *Niko.* In 2001, Niko bought four video game consoles: one from Microsoft for $300, one from Sony for $300, and two from Nintendo for $200 each.

   In 2006 Niko checked out the prices for systems from each manufacturer. A new console from Microsoft cost $280, a new console from Sony cost $400, and a new console from Nintendo cost $250.

   (a) Suppose we treat each console as an unchanging good, e.g. a 2001 console from Microsoft is the same as a 2006 console from Microsoft. Assuming all Niko buys are the consoles mentioned above, calculate a consumer price index for 2006 with 2001=100.

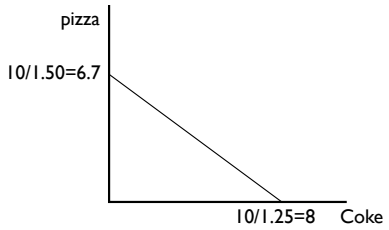
   (b) All three systems are upgraded with many new and better features: Microsfot Xbox to Xbox 360, Sony Playstation 2 to Playstation 3, Nintendo GameCube to Wii. Given this, is Niko worse off from the inflation?

   (c) Recall the three characteristics of money. Would Sony's Playstation 2 from 2001 make a good money?

6. *SW25.1* Which of the three traits of money do the following assets have, and which are they missing: a house, a day pass to an amusement park, Euros held by a resident of New Haven, CT, a painting, gold.

Answers to Review Problems:

3. *CokePizza_a.* The budget line diagram is



   The slope of the budget line is 6.7/8 = 0.8375. Thus one more Coke requires giving up about 0.84 slices of pizza. Or reversing that, one slice of pizza costs 1/0.8375 = 1.19 Cokes.

4. *Somali shilling_a.*

   (a) A metal money, i.e. a money that has some intrinsic value, seems to be ruled out since local businessmen say the shilling is kept afloat by common assent. Presumably they would know if it had intrinsic value. That same comment about common assent suggests that the Somali shilling is similar to a fiat money, since it rests on trust. On the other hand, it is not a conventional fiat money since there is no government or central bank to back it up. The Somali shilling also has features of a token money, in this case a token for dollars. Apparently the *hawala* hold balances of U.S. dollars but issue Somali shillings for local use.

   (b) The fact that the marketplaces "bustle with enterprise" suggests that the shilling can be used as a unit of account. (Though elsewhere I have read that it can take a wheelbarrow-full of them to make large transactions.) The many deals done in the currency also suggest that it works as a good medium of exchange. The question of store of value is more tricky, since

only trust and somewhat uncertain convertibility to US dollars back up the value of the currency. As long as these remain, then the shilling does store value, but this is clearly its biggest weakness.

5. *Niko_a.*

   (a) The 2001 quantities are 1, 1, and 2. The cost in 2001 was

   $$1 \times 300 + 1 \times 300 + 2 \times 200 = 1000$$

   The cost in 2006 of this combination would be

   $$1 \times 280 + 1 \times 400 + 2 \times 250 = 1180$$

   Thus the 2006 price index (with 2001=100) is

   $$\frac{1180}{1000} = 118\%$$

   Note that it doesn't matter whether Niko actually purchased more consoles in 2006, we just need the base year quantities to see how much inflation there was.

   (b) Presumably everyone agrees that these new consoles have better features than the old ones. If Niko values these new features 18% more than the old ones, then the inflation has no effect on Niko's welfare. If he values them more than 18% more, he is actually better off.

   (c) As a unit of account, Playstation 2's aren't too bad. They currently sell for around $40 give or take, which means all current prices would need to be divided by 40 to put them in terms of PS2s. This would be reasonably convenient, so they make a pretty good unit of account.

   As a medium of exchange, PS2s are pretty bulky and fragile to carry around and make exchanges with. More problematic,

they cannot be divided into smaller parts without breaking them, creating a significant inconvenience in using them in exchange.

As a store of value, PS2s have a problem: they are becoming increasingly obsolete, and therefore their use value is declining. But at least no new ones are being produced, so people would have some protection against inflation caused by creating more money.

6. *SW25.1_a.* House: store of value, not a medium of exchange because it is difficult to buy a loaf of bread with a house, not a unit of account because it would be difficult and to calculate the number of houses it would take to buy a loaf of bread.

   Day pass: a store of value, provided you can use the pass for some future day, not a medium of exchange except at the amusement park itself where the pass buys you admission, not a unit of account because prices are not measured in terms of day passes.

   Euros in New Haven: a store of value, not a medium of exchange because very few people in New Haven will accept Euros in exchange for goods, not a unit of account because in New Haven the value of goods is measured in dollars.

   Painting: a store of value.

   Gold: a store of value, an imperfect medium of exchange since there are probably some people (but not many) who will accept gold as a means of payment, not a unit of account because we do not measure the price of goods in grams of gold.