ECON 110, Prof. 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.* If you were born about 1990, let's guess that your parents were college age in 1978 and your grandparents were college age in 1948. Let's see what has changed since they were young.

   First, some data: with 1983=100, the CPI was 24.1 in 1948, 65.2 in 1978, and it is 207.0 in 2008.

   (a) In 2008 the typical cost of a movie was $7.00 (I know this seems hard to believe, but that is the official statistic). 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 2008 setting 2008 = 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 2008, using the CPI? Using the actual movie prices? (Hint, figure out how many doublings occurred and use the Rule of 70 backwards.)

   (d) What is wrong with the following statement: "Since movie prices are a part of the CPI, but they don't go up at the same

exact rate as the CPI, the CPI must not be calculated correctly."

2. 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 funnelled 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.

Review Problems only, not to turn in:

3. *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.

4. *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) Using the Rule of 70 and your answer to (a), how long will it take for video game prices to double. (Be careful, your answer to part (a) is *five* years of inflation, not one.)

(c) 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?

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

5. *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. *HardBop_a.*

a) P b) N c) P d) N or P, depending on interpretation of "too high:" "too high to achieve positive condition X" or "undesirably high." e) P f) N

4. *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) In part (a) we found 118% inflation over a period of 5 years. That is approximately 3.6% per year. By the rule of 70, this is about 70/3.6=19.4 years for prices to double.

Alternatively, the rule of 70 says that it takes about $70/18 = 3.9$ 5-year periods for prices to double. Since $3.9 \times 5 = 19.4$, the answer is the same.

(c) 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.

(d) 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.

4

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.

5. *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.