

ECON 110, Prof. Hogendorn

Problem Set 1 Answers

1. *Movies_a.*

- (a) We need to deflate the 2008 price back to the previous years. We know that the 2008 price is 207% of 1983's price, and in turn 1978's price is 65.2% of 1983's. So the formulas are:

$$P_{1978} = \$7 \times \frac{65.2}{207} = \$2.20 \quad P_{1948} = \$7 \times \frac{24.1}{207} = \$0.82$$

- (b) The 2008 CPI is obviously 100. For 1948, we just need to divide the 1983-base CPI of 24.1 by the 1983-base CPI for 2008 of 207, or 11.6. For 1978, a similar operation yields $65.2/207=31.5$.
- (c) From 1948 to 1978, using the CPI and the actual movie prices gives, respectively:

$$11.6(1 + \pi)^{30} = 31.5 \Rightarrow \pi = 3.4\%$$

$$0.36(1 + \pi)^{30} = 2.34 \Rightarrow \pi = 6.4\%$$

From 1978 to 2008 is again 30 years, so the corresponding average inflation rates are

$$31.5(1 + \pi)^{30} = 100 \Rightarrow \pi = 3.9\%$$

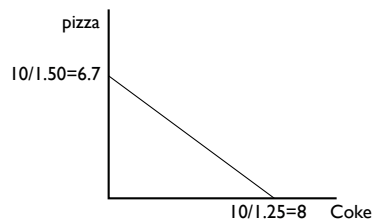
$$2.34(1 + \pi)^{30} = 7.00 \Rightarrow \pi = 3.7\%$$

- (d) It is true that movie prices are a *component* of the CPI, so when they go up, they affect the CPI. But in addition to inflation, some of the movie price changes are *real* price changes, reflecting movies becoming more or less expensive relative

to other *goods*, rather than purely *nominal* price changes with respect to the value of the dollar only.

In this case, it appears that the real price of movies relative to other goods rose dramatically over the period 1948–78, and then fell very slightly from 1978 to 2008. Most likely, your own movie-going buying power is about the same as your parents', but much less than your grandparents'.

2. *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.

3. *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.