

Chapter 11 Questions Answers:

2. The residents of Vegopia spend all of their income on cauliflower, broccoli, and carrots. In 2010, they buy 100 heads of cauliflower for \$200, 50 bunches of broccoli for \$75, and 500 carrots for \$50. In 2011, they buy 75 heads of cauliflower for \$225, 80 bunches of broccoli for \$120, and 500 carrots for \$100. a. Calculate the price of each vegetable in each year. b. Using 2010 as the base year, calculate the CPI for each year. c. What is the 2011 inflation rate?

Answers: a. Find the price of each good in each year:

Year	Cauliflower	Broccoli	Carrots
2010	\$2	\$1.50	\$0.10
2011	\$3	\$1.50	\$0.20

b. If 2010 is the base year, the market basket used to compute the CPI is 100 heads of cauliflower, 50 bunches of broccoli, and 500 carrots. We must now calculate the cost of the market basket in each year:

$$2010: (100 \times \$2) + (50 \times \$1.50) + (500 \times \$0.10) = \$325$$

$$2011: (100 \times \$3) + (50 \times \$1.50) + (500 \times \$0.20) = \$475$$

Then, using 2010 as the base year, we can compute the CPI in each year:

$$2010: \$325/\$325 \times 100 = 100$$

$$2011: \$475/\$325 \times 100 = 146$$

c. Use the CPI to compute the inflation rate for 2011: $(146 - 100)/100 \times 100\% = 46\%$

7. The New York Times cost \$0.15 in 1970 and \$2.00 in 2009. The average wage in manufacturing was \$3.23 per hour in 1970 and \$20.42 in 2009. a. By what percentage did the price of a newspaper rise?

a. $(\$2.00 - \$0.15)/\$0.15 \times 100\% = 1,233\%$ (text answer, but $[\ln(2) - \ln(.15)]*100 = 208\%$ or $(2-.15)= 1.85$ over the average of 2 and .15 which is \$1.08 yielding 172%, still the price of newspapers rose by more than 10 times, so 1200% is fine too. **b. By what percentage did the wage rise?** b. Average wages rose about 5 times or 532% $(\$20.42 - \$3.23)/\$3.23 \times 100\% = 532\%$.

c. In each year, how many minutes does a worker have to work to earn enough to buy a newspaper? In 1970 it took about 3 minutes of work to buy a newspaper, in 2009 it took almost 6 minutes

(1970: $\$0.15/(\$3.23/60) = 2.8$ minutes. In 2009: $\$2.00/(\$20.42/60) = 5.9$ minutes).

d. Did workers' purchasing power over newspapers rise or fall?

Workers' purchasing power fell in terms of newspapers, in 1970 they only had to work 3 minutes while in 2009 they had to work 6 minutes to buy a newspaper.

[What about movie ticket prices? \$1.55 or 29 minutes in 1970 vs. \$7.50 or just 22 minutes in 2009, so the price of movie tickets fell relative to wages, if we believe [these ticket prices](#)} Why is it not quite true that the New York Times cost \$2.00 in 2009? In the bad old days (during the 1970s) the NY Times had to compete with the Post and the Daily News (what are they you ask?). Today the cost of printed paper can be deceiving, and inequality among New York's (and America's) newspapers is growing. Why? Is this what is happening to income equality as well? <http://www.poynter.org/latest-news/business-news/the-biz-blog/171827/new-circulation-numbers-likely-to-show-sunday-strength-impact-of-paid-digital/>

8. The chapter explains that Social Security benefits are increased each year in proportion to the increase in the CPI, even though most economists believe that the CPI overstates actual inflation. a. If the elderly consume the same market basket as other people, does Social Security provide the elderly

with an improvement in their standard of living each year? Explain. Mankiw (2013-02-01). Principles of Macroeconomics (Page 232). South-Western. Kindle Edition.

a. If the elderly consume the same market basket as other people, Social Security would provide the elderly with an improvement in their standard of living each year because the CPI overstates inflation and Social Security payments are tied to the CPI. See answer to review question 2: The three problems in the consumer price index as a measure of the cost of living are: (1) substitution bias, which arises because people substitute toward goods that have become relatively less expensive; (2) the introduction of new goods, which are not reflected quickly in the CPI; and (3) unmeasured quality change (this certainly applies to health care).

b. In fact, the elderly consume more healthcare compared to younger people, and healthcare costs have risen faster than overall inflation. What would you do to determine whether the elderly are actually better off from year to year? b. Because the elderly consume more health care than younger people do, and because health care costs have risen faster than overall inflation, it is possible that the elderly are worse off. To investigate this, you would need to put together a market basket for the elderly, which would have a higher weight on health care. You would then compare the rise in the cost of the "elderly" basket with that of the general basket for CPI, keeping in mind the other problems with a CPI measure. During the 1970s, the CPI was measured using mortgage payments determined by nominal interest rates (this is a mistake by the BLS, why?). This really benefitted the elderly because many own their own homes (why does the nominal interest rate for mortgages overstate the cost of owning your own home, especially when inflation is high?). We hope perhaps that the elderly can pay for the added cost of health care with the income gains from home ownership and a long mis-measured CPI (pray for the Chain Index).

9. When deciding how much of their income to save for retirement, should workers consider the real or the nominal interest rate that their savings will earn? Explain. In deciding how much income to save for retirement, workers should consider the real interest rate, because they care about their purchasing power in the future, not simply the number of dollars they will have. Real interest rates are adjusted for inflation, so if inflation reflects the elderly's living costs, they will need the inflation related component of interest rates just to cover higher living costs in the future.

10. Suppose that a borrower and a lender agree on the nominal interest rate to be paid on a loan. Then inflation turns out to be higher than they both expected. a. Is the real interest rate on this loan higher or lower than expected? When inflation is higher than was expected, the real interest rate is lower than expected. For example, suppose the market equilibrium has an expected real interest rate of 3% and people expect inflation to be 4%, so the nominal interest rate is 7%. If inflation turns out to be 5%, the real interest rate is 7% minus 5% equals 2%, which is less than the 3% that was expected

b. Does the lender gain or lose from this unexpectedly high inflation? Does the borrower gain or lose? Because the real interest rate is lower than was expected, the lender loses and the borrower gains. The borrower is repaying the loan with dollars that are worth less than was expected.

c. Inflation during the 1970s was much higher than most people had expected when the decade began. How did this affect homeowners who obtained fixed-rate mortgages during the 1960s? How did it affect the banks that lent the money? Homeowners in the 1970s who had fixed-rate mortgages from the 1960s benefited from the unexpected inflation, while the banks that made the mortgage loans were harmed.

10. d. In many respects, inflation is a tax on the poor and boon to the rich (unless their German) Why? What % of Americans own their own homes (roughly)? How does inflation affect renters? You may know that mortgage interest is tax deductible for many families, even on very expensive homes (2nd homes?). So inflation benefits homeowners at the expense of many other groups. President's Bush and Clinton promoted home ownership for everyone, which given the sub-prime crisis, did not work out that well (see Blinder, After the Music stopped). Not that this is not worth trying again (just in case inflation ever returns....).

While we do not need to feel sorry for the banks, why don't they gain when inflation is lower than expected (as much as one might think, if one held a bond that paid 8% interest and inflation fell from 5% to 2% for example).

Average Circulation at the Top 25 U.S. Sunday Newspapers

Preliminary figures filed with AAM. Subject to audit.

Newspaper Name	Print	Total Digital	Total Average Circulation	Total Branded Editions	Total Average Circulation		Percent Change
			Excluding Branded	Print & Digital	As of 03/31/13	As of 03/31/12	
NEW YORK TIMES	1,254,506	1,067,923	2,322,429		2,322,429	2,003,247	15.9%
HOUSTON CHRONICLE	412,329	90,369	502,698	539,691	1,042,389	1,106,379	-5.8%
LOS ANGELES TIMES	775,641	178,369	954,010		954,010	952,762	0.1%
WASHINGTON POST	639,966	31,135	671,101	166,913	838,014	719,301	16.5%
CHICAGO TRIBUNE	706,840	74,484	781,324		781,324	779,440	0.2%