

36-201 Spring 1999 Solutions to Homework 12

1. Moore, 6.9 (p.366). The total cost of the Guru's purchases in 1985 is

Item	Quantity	Price	Cost
Olive Oil	20 pints	\$2.50/pint	\$50
Loincloth	2	\$2.75/each	\$5.5
<i>Atharva Veda</i>	1	\$10.95/each	\$10.95
			\$66.45

To find the fixed market basket Guru Price Index (1985=100) in 1995 we calculate the cost of the same products and quantities in 1995 (note that the quantities that the Guru purchased in 1995 are irrelevant to this problem).

Item	Quantity	Price	Cost
Olive Oil	20 pints	\$3.80/pint	\$76
Loincloth	2	\$2.80/each	\$5.6
<i>Atharva Veda</i>	1	\$12.95/each	\$12.95
			\$94.55

So the GPI (1985=100) for 1995 is

$$\frac{94.55}{66.45} \times 100 = 142.3$$

2. Moore, 6.13 (p.373).

We use the relationship

$$\begin{aligned} \text{Dollars in 1989} &= \text{Dollars in 1965} \times \frac{CPI\ 1989}{CPI\ 1965} \\ &= \$3,100 \times \frac{124}{31.5} = 12,203. \end{aligned}$$

So the Pontiac GTO gained \$17,000 - \$12,203 = \$4,797 (in 1989 dollars) in real terms.

3. Moore, 6.16 (p.374).

We use the relationship

$$\text{Dollars in 1955} = \text{Dollars in year } x \times \frac{CPI\ 1955}{CPI\ year\ x}$$

Year	Min. Wage	CPI	Min. Wage in 1955 dollars
1955	1.00	26.8	1.00
1960	1.00	29.6	0.91
1965	1.25	31.5	1.06
1970	1.60	38.8	1.11
1975	2.10	53.8	1.05
1980	3.80	82.4	1.00
1985	3.35	107.6	0.83
1990	3.80	130.7	0.78
1995	4.25	152.4	0.75



Although the actual minimum wage increased, after adjusting for inflation the “real” minimum wage rose only slightly at first and fell in recent years. That means, it could not catch up with inflation.

4. Moore, 6.28 (p.383).

UNIFORM CRIME REPORTS

- (a) This source contains data on the number of index offenses reported to city police, sheriffs and State police. Crime Index offenses are *murder and non-negligent manslaughter, forcible rape, aggravated assault, burglary, larceny, motor vehicle theft and arson*. This source also contains data on crimes cleared by arrest and on characteristics of persons arrested for all criminal offenses.
- (b) A possible bias of these data is the fact that agencies may underreport crimes for political reasons.
- (c) Every month, law enforcement agencies (city police, sheriffs and State police) send a report to the FBI stating the number of index offenses.
- (d) The data is collected monthly. There is also an annual report sent by the agencies.

NATIONAL CRIME VICTIMIZATION SURVEY

- (a) This survey measures rape, robbery, assault, household and personal larceny, burglary and motor vehicle theft.
- (b) Possible bias is the fact that interviewed persons can misunderstand the definitions of crimes, or may prefer not to declare being victims of certain kind of crimes.
- (c) This data is obtained through a questionnaire. The information at the web site <http://census.gov/prod/2/gen/96statab/statab.html> does not contain more details, however, you may be interested to know that this data source is based on a national probability sample of about 50,000 households. Personal and telephone interviews are used for alternate contacts.

- (d) The information at the web site does not contain an answer to this question. You may be interested to know that households in the sample are interviewed every 6 months for 3 years at a rate of 8,000 households per month.

5. Any reasonable summary will do.