

Problem Set #2

Answer Key

$$1. \quad a) \quad \text{NGDP}_{1990} = \$6,000 \times 500,000 + \$12,000 \times 1,000,000 = \cancel{\$15,000,000,000}$$

$$\text{NGDP}_{2005} = \$2,000 \times 5,000,000 + \$20,000 \times 1,500,000 = \$40,000,000,000$$

$$b) \quad \text{RGDP}_{1990} = \$15,000,000,000$$

$$\text{RGDP}_{2005} = \$6,000 \times 5,000,000 + \$12,000 \times 1,500,000 = \$48,000,000,000$$

$$c) \quad \frac{\$48,000,000,000 - \$15,000,000,000}{\$15,000,000,000} \times 100 = 220\%$$

$$d) \quad \text{RGDP}_{1990} = \$2,000 \times 500,000 + \$20,000 \times 1,000,000 = \$21,000,000,000$$

$$e) \quad \frac{\$40,000,000,000 - \$21,000,000,000}{\$21,000,000,000} \times 100 \approx 90.5\%$$

f) In 1990 computers were expensive relative to cars. Thus, when base year is 1990, the large rise in computer production b/w 1990 & 2005 is multiplied by a big price (\$6,000), resulting in a large increase in real GDP. The opposite is true when the base year is 2005 as the large increase in computer production is multiplied by a relatively low price (\$2,000).

2.

$$a) \text{CPI}_{1990} = 100$$

$$\text{CPI}_{2005} = \frac{\$2,000 \times 500,000 + \$20,000 \times 1,000,000}{\$15,000,000,000} \times 100 = 140$$

$$b) \text{Def}_{1990} = 100$$

$$\text{Def}_{2005} = \frac{\$40,000,000,000}{\$48,000,000,000} \times 100 = 83.34$$

$$c) \frac{140 - 100}{100} \times 100 = 40\%$$

$$\frac{83.34 - 100}{100} \times 100 = -16.67\%$$

d) In 1990, computers comprised a small portion of the CPI basket. Thus, in a Laspeyres index (CPI), the large drop in the price of computers will be outweighed by the increase in the price of cars. For a Paasche Index (Deflator), the weight given to computers is much greater b/c they comprise a much larger portion of GDP in 2005 than in 1990. Thus, in this index the reduction in computer prices will outweigh the increase in car prices.

- 3.
- a) Yes, durable consumption
 - b) No, used good
 - c) No, transfer of an asset
 - d) Yes, business fixed investment
 - e) Yes, inventory investment
 - f) No, transfer payment
 - g) Yes, government expenditure