

Macroeconomic Principles  
Second Exam – Spring 2007  
Schellberg  
Answer Section

Multiple Choice

- 1: D
- 2: D
- 3: B
- 4: C
- 5: E
- 6: B
- 7: D
- 8: B
- 9: A
- 10: A
- 11: C
- 12: C
- 13: A
- 14: B
- 15: B
- 16: A
- 17: B
- 18: D
- 19: D
- 20: D
- 21: C
- 22: E
- 23: B
- 24: A

PART II (40 points)

1. (10 points) GDP is not a perfect measure of economic well-being. Pick two of the following list. For each item you choose, discuss the source of mismeasurement of economic well-being. Does each of these contribute to well-being?
  - a. Home production  
*Consists of activities in the home that are not sold in the marketplace. This includes cooking, cleaning, and child care and vegetable gardens. These provide food, hot meals and care for families, so are beneficial, but are not included in GDP. Thus, GDP understates well-being.*
  - b. Economic bads  
*Are undesirable byproducts of our society, such as pollution and crime. By counting the goods in GDP, such as autos and computers, and not deducting those things that give us disutility, such as dirty air and vandalized homes, we are overstating the well-being of the nation.*
  - c. Leisure  
*Consists of the free time one has for general enjoyment of life. –e.g. time spent golfing. Since GDP just measures material goods, it understates well-being. Note: This makes intertemporal comparisons especially difficult. Over the last 100 years, material goods production (real GDP) has grown, but so has leisure time, as people work fewer hours today than in earlier times. GDP thus understates the growth in well-being, measuring only the growth in material goods.*
  - d. Underground economy  
*Includes all legal and illegal services of unreported activity. This includes barter, tips, and other unreported income such as cash only services of doctors (so they don't have to pay tax on the income). These services are beneficial, treating the sick, and providing services at restaurants. But they are missed by GDP, so GDP understates well-being. Certain less savory activities, such as drugs and prostitution, are also missed by GDP. Depending on one's point of view, these may not be considered beneficial to society.*
  - e. Unequal income distribution  
Real GDP or RGDP only gives an average income. GDP tells us nothing about the distribution of income. There may be poor people who have much lower standards of living than the numbers suggest.

f. Quality of life (e.g. happy home life, good health etc.)

GDP only measures material goods. It does not measure whether a person has good health or suffers from pain, physical or emotional. Some people have a happy home life, others suffer from drug addictions, or abusive spouses. Depending on one's personal situation, one may lead a very satisfying life, in spite of low income, or conversely, an unsatisfying life, full of discord and personal strife, in spite of high income. While greater income probably means a more satisfying and easier life on average, e.g. fewer problems paying bills, being evicted, or cars that break down every day, greater material well-being is no guarantee of a happier or more satisfying life.

2. (12 points)

e. Find the total consumer expenditure for the following market basket of goods, both in 2005 and 2006. Show your work.

|          | Quantity | 2005<br>Prices | 2005<br>Expenditure | 2006<br>Prices | 2006<br>Expenditure |
|----------|----------|----------------|---------------------|----------------|---------------------|
| Meat     | 100 lbs. | \$3.00/lb      | \$300               | \$3.20/lb.     | \$320               |
| Clothing | 15 units | \$20/unit      | \$300               | \$20/unit      | \$300               |
| Gasoline | 200 gal. | \$2.50/gal.    | \$500               | \$2.80/gal.    | \$560               |
|          |          |                | \$1100              |                | \$1180              |

f. If 2005 is the base year, find the consumer price index in 2005.

$$CPI = \frac{\text{Current Year Market Basket}}{\text{Base Year Market Basket}} \times 100$$

$$= \frac{\$1100}{\$1100} \times 100 = 100$$

g. Find the consumer price index in 2006. Show your work.

$$CPI = \frac{\$1180}{\$1100} \times 100$$

$$= 107.27$$

d. Compute the inflation rate between 2005 and 2006. Show your work.

$$\text{Inflation rate} = \frac{\text{this year's CPI} - \text{Last year's CPI}}{100}$$

$$= \frac{107.27 - 100}{100} = 7.27\%$$

100

3. (18 points) The following national income data are available for the country of Malaria for the year 2005. All figures are in billions of Malari dollars.

|  | (\$billions) |
|--|--------------|
| Consumption                                | 430          |
| Savings                                    | 30           |
| Depreciation                               | 40           |
| Indirect business taxes                    | 20           |
| Government transfer payments               | 50           |
| Government purchases of goods and services | 90           |
| Profits                                    | 80           |
| Wages and Salaries                         | 240          |
| Investment                                 | 110          |
| Rental income                              | 20           |
| Change in inventories                      | 30           |
| Imports                                    | 40           |
| Exports                                    | 70           |
| Interest                                   | 50           |
| Proprietor's income                        | 10           |

a. Compute GDP by the output (expenditure) method. Show your work.

$$\text{GDP} = C + I + G + (\text{EX} - \text{IM})$$

$$= 430 + 110 + 90 + (70 - 40)$$

$$= \$660 \text{ Billion}$$

- b. Suppose the GDP deflator for 2005 is 110. Compute real GDP for 2005. Show your work.

$$\begin{aligned} \text{Real GDP} &= \frac{\text{GDP}}{\text{GDP Deflator}} \times 100 \\ &= \frac{\$660 \text{ Billion}}{110} \times 100 \\ &= \$600 \text{ Billion} \times 100 \end{aligned}$$

- c. Suppose the population of Malaria is 1 billion in 2005. Compute real GDP per capita for 2005.

$$\begin{aligned} \text{RGDP per capita} &= \frac{\text{Real GDP}}{\text{Population}} \\ &= \frac{\$600 \text{ Billion}}{1 \text{ Billion}} = \$600 \end{aligned}$$

- d. Suppose real GDP grows by 10% between 2005 and 2015, but the population grows by 20%. What happens to the standard of living of the average citizen of Malaria? Explain.

Answer 1

*Real GDP grows slower than the population, which implies that the output per person will fall. Thus, the standard of living of the average citizen is falling.*

Answer 2

*Real GDP (2015) = \$660 Billion (10% higher than in 2005)*

$$\text{RGDP per capita (2015)} = \frac{\$660 \text{ Billion}}{\$1.2 \text{ Billion}} = \$550$$

*A smaller RGDP per capita in 2015 shows that the standard of living is decreasing.*

- e. If nominal GDP was \$550 billion in the year 2000, the base year, we can conclude that prices have (pick one; *increased*, decreased) between 2000 and 2005, and the aggregate quantity of output produced has (pick one; *increased*, decreased) over this same period.

Note: *Real GDP (2000) = \$550 Billion, because the price level is 100 in the base year.*

*Real GDP (2005) = \$600 Billion, as computed in part b. The price level is 105. Thus both prices and real GDP have increased over the five year period.*