

## Chapter 2

### A Tour of the Book

1. True/False/Uncertain
  - a. False.
  - b. Uncertain: the question should specify either real or nominal GDP.
  - c. True.
  - d. True.
  - e. False. The level of the CPI means nothing. Its rate of change tells us about inflation.
  - f. Uncertain. Which index is better depends on what we are trying to measure—inflation faced by consumers or inflation in the economy as a whole.
2. GDP and its Components
  - a. +\$100; Personal Consumption Expenditures
  - b. no change: intermediate good
  - c. +\$200 million; Gross Private Domestic Fixed Investment
  - d. +\$200 million; Net Exports
  - e. no change: the jet was already counted when it was produced, i.e., presumably when WestJet (or some other airline) bought it new as an investment.
3. Measured versus True GDP
  - a. Measured GDP increases by  $\$10 + \$12 = \$22$ . (Strictly, this involves mixing the final goods and income approaches to GDP. Assume here that the \$12 per hour of work creates a final good worth \$12.)
  - b. True GDP should increase by much less than \$22 because by working for an extra hour, you are no longer producing the work of cooking within the house. Since cooking within the house is a final service, it should count as part of GDP. Unfortunately, it is hard to measure the value of work within the home, which is why measured GDP does not include it.

4. Measuring GDP

- i. \$1,000,000 the value of the silver necklaces.
- ii. value added at the silver mine (the 1st Stage): \$300,000.  
at the second stage value added is  $\$1,000,00 - \$300,000 = \$700,000$ .  
GDP:  $\$300,000 + \$700,000 = \$1,000,000$ .
- iii. Wages:  $\$200,000 + \$250,000 = \$450,000$ .  
Profits:  $(\$300,000 - \$200,000) + (\$1,000,000 - \$250,000 - \$300,000)$   
 $= \$100,000 + \$450,000 = \$550,000$ .  
GDP:  $\$450,000$  (wages) +  $\$550,000$  (profits) =  $\$1,000,000$ .

5. Nominal and Real GDP

- a. 1998 GDP:  $10 * \$2,000 + 4 * \$1,000 + 1000 * \$1 = \$25,000$   
1999 GDP:  $12 * \$3,000 + 6 * \$500 + 1000 * \$1 = \$40,000$   
Nominal GDP has increased by 60%.
- b. 1998 real (1998) GDP: \$25,000  
1999 real (1999) GDP:  $12 * \$2,000 + 6 * \$1,000 + 1000 * \$1 = \$31,000$   
Real (1999) GDP has increased by 24%.
- c. 1998 real (1998) GDP:  $10 * \$3,000 + 4 * \$500 + 1,000 * \$1 = \$33,000$   
1999 real (1999) GDP: \$40,000.  
Real (1999) GDP has increased by 21.2%.
- d. The answers measure real GDP growth in different units. The growth rate does depend on the year used as base year. Neither answer is incorrect, just as measurement in inches is not more or less correct than measurement in centimeters. For more detail, you can read the appendix on chain-weighting.

6. The GDP Deflator

- a. 1998 base year:  
Deflator(1998)=1; Deflator(1999)=\$40,000/\$31,000=1.29  
Inflation=29%
- b. 1999 base year:  
Deflator(1999)=\$25,000/\$33,000=0.76; Deflator(2002)=1  
Inflation=(1-0.76)/0.76=.32=32%
- c. Analogous to 5d in that the choice of base year does change the rate of inflation. Intuitively, since production proportions for different products in the base years are different, the weights of goods in the price indexes are different.

7. The Unemployment Rate

- a. the labour force is the employed + the unemployed who are searching =  $14 + 2 = 16$  million
- b. the participation rate is  $16/18 = 88.8\%$
- c. the unemployment rate  $2/16 = 12.5\%$
- d. it would be  $3.5/17.5 = 20\%$

8. Chain-Type Indexes

- a.  $1998 \text{ real GDP} = 10 * \$2,500 + 4 * \$750 + 1000 * \$1 = \$29,000$   
 $1999 \text{ real GDP} = 12 * \$2,500 + 6 * \$750 + 1000 * \$1 = \$35,500$
- b.  $(35,500 - 29,000) / 29,000 = .224 = 22.4\%$
- c. Deflator in 1998 =  $\$25,000 / \$29,000 = .86$   
Deflator in 1999 =  $\$40,000 / \$35,500 = 1.13$   
Inflation =  $(1.13 - .86) / .86 = .314 = 31.4\%$ .
- d. Yes, see appendix for further discussion.

9. Hedonic Pricing

- a. The quality of a routine checkup improves over time. Checkups now may include EKGs, for example. Medical services are particularly affected by this problem due to constant improvements in medical technology.
- b. You need to know how the market values pregnancy checkups with and without ultra-sounds in that year.
- c. This information is not available since all doctors adopted the new technology simultaneously. Still, you can tell that the quality-adjusted increase will be lower than 20%.

10. Using the Web to get the most recent GDP information

Answers will vary depending on the website is accessed.