Chapter 2: National-Income Accounting: Gross Domestic Product and the Price Level

Chapter Summary:

The chapter introduces the system of **National Income Accounts** with particular attention paid to the concept of GDP. The 3 conceptual approaches to GDP measurement (**production, expenditure, and income**) are described. Since goods produced are ultimately purchased, providing income to the seller, the 3 methods should yield similar results. The 4 categories of expenditure (**consumption, investment, government, and net exports**) are described in some detail; important attention to these descriptions now will help to avoid confusion later on. The assumption of a **closed economy** is discussed here and will be used consistently throughout the next 15 chapters. The difference between **nominal** and **real** values is discussed along with a description of the implicit price deflator. Differences between various price indices are discussed and a detailed look at the consumer price index (**CPI**) is featured in the "Back to Reality" section on page 31.

Chapter Outline:

I. Nominal and Real GDP
   A. Calculation of Real GDP
   B. Real GDP as a measure of Welfare

II. Alternative Views of GDP
   A. Expenditure Approach
   B. Income Approach
   C. Production Approach
   D. Seasonal Adjustment

III. Prices

Teaching Tips:

1. The National Bureau of Economic Research is a wonderful resource for teachers with internet access in the classroom. Up to the minute reports on a wide variety of leading indicators can help students obtain an up to the minute understanding of the economic conditions: available at http//nber.org/releases

2. Be sure to help students understand what GDP really measures by providing clear examples of what is *not* included: transfer payments, environmental

damages, non-market production, and so on. It is important also to emphasize that it is not a measure of wealth because it is a *flow* variable, not a stock variable.

3. It is important for students to understand the strengths and weaknesses of using real GDP as indicator of economic welfare. Consider using the example of increased spending in the aftermath of the 9/11 attacks in the US to discuss whether or not GDP adequately captures changes in social welfare.

4. The "Back to Reality" sections are an important feature of the textbook, providing students with examples of "real world" applications of economic theory. Students should be encouraged to read and discuss the "Problems with the consumer price index" on page 24.

5. Students should be encouraged to use price indices to make valid comparisons for data series other than GDP. For example, having students compare the evolution of the nominal federal minimum wage is an eye-opener. Have them compare the real salaries of minimum wage workers in San Diego, California and Hattiesburg Mississippi using regional price indices available at http://www.bestplaces.net. The regional CPI for San Diego is 177.1; for Hattiesburg it is 82.6. You can also use this site to discuss the limits of real GDP as a measure of living standards. If salaries could be adjusted for the difference in the cost of living, would students be indifferent between those two locations?

Answers to Review questions, pg. 26

1. Nominal GDP is the market value of final goods and services produced within a nation's borders during the period, measured in current prices. Real GDP is nominal GDP measured in base year prices, also known as "GDP in constant dollars."

2. It is enough to multiply the quantities produced in 2017 by the prices of 2016. The procedure and results for the two cases (a and b) in the Table 2.1 are:

a. 40*2+391*1 = 471 lower than chain-weighted real GDP
b. 70*2+500*1 = 640 higher than chain-weighted real GDP

3. The 3 approaches to measuring GDP discussed in the chapter yield the same results because they are looking at the same transaction from different perspectives. The expenditure approach looks at the various types of spending on final goods and services. But that spending generates income for others, so the amount of spending should be equal to the amount of income (after adjusting

for depreciation, net factor income earned abroad). The production approach measures the value of goods produced and sold by sector. Ultimately everything produced is sold and generates income for the factors of production, so there should be no difference in the estimates generated by the 3 approaches.

4. The implicit price deflator is a price index which is based on the weighted average price of all final goods and services produced; in the base year it is established at 100. The implicit price deflator is expressed as the ratio between nominal and real GDPx100. It differs from the CPI, which is a price index of a basket of consumer goods. Because of differences in the weights assigned to various goods (they are fixed for longer periods), the CPI tends to show a higher rate of inflation than the implicit price deflator.

5. As one of many possible examples, consider the following data for Ireland, 2005 (€ million):

Gross Domestic Product (GDP) at current market prices	161,163
plus Net factor income from the rest of the world	-25,248
Gross National Product (GNP) at current market prices	135,914
EU subsidies	2,237
EU taxes	-432
Gross National Income (GNI) at current market prices	137,719
less provision for depreciation	-16,896
less Non EU taxes	-21,494
plus Non EU subsidies	925
Net National Product	100,254
Gross National Disposable Income (GNDI)	136,515

Source: Central Statistics Office of Ireland

The reconciliation used here is similar, but does not exactly correspond to the example used in the text book. One interesting observation here is that Ireland has a significant difference between GDP and GNP, due perhaps to a large influx of foreigners participating in the "Celtic Tiger's" economic boom.

Answers to Problems for discussion, pg. 26

6. The answer to this question depends on the data downloaded.

7. The answer to this question depends on the data downloaded.

Official estimates of GDP do not measure welfare exactly, although higher GDP is highly correlated with widely accepted measures of welfare such as literacy, life expectancy, infant mortality rates and so forth. One of the reasons why GDP may underestimate the true change in welfare is because it fails to take into account non-market goods such as leisure. It also may fail to take into account changes in the quality of goods because these are not accurately captured in the implicit price deflator. On the other hand, GDP may overestimate changes welfare because it fails to take into the environmental impact of production. Clear cutting an old growth forest may simply convert a valuable non-market good to a less valuable market good, but the activity would tend to raise GDP. One way to take these effects into account is to incorporate the implicit value of nonmarket goods like leisure and environmental goods into a broader measure of welfare.