Chapter 23: Measuring a Nation’s Income
Principles of Economics, 8th Edition
N. Gregory Mankiw
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1. Introduction
a. We are now starting to study macroeconomics.
b. In microeconomics, we were only dealing with flows (the $Q$ was actually quantity per time period), now with macroeconomics we are dealing with stocks (balance sheet items) and flows (income statement items).
c. This week’s assignment has a lot of chapters, but a number—including this one—are fairly straightforward and easy to read.
d. Some of the variables we will investigate are:
i. total income and output
   (1) real and nominal
ii. inflation,
iii. unemployment,
iv. interest rates,
   (1) real and nominal
v. wages and
   (1) real and nominal
vi. exchange rates, and
vii. the trade balance.
e. In contrast to microeconomics, in which we usually investigated the impact of an exogenous change on usually just two variables such as price and quantity, in macroeconomics we potentially want to investigate the interaction between all the variables listed above.
f. We are now starting our investigation of macroeconomics.
i. Microeconomics is the study of how households and firms make decisions and how they interact in markets.  P. 474.
ii. Macroeconomics is the study of economy wide phenomena, including inflation, unemployment, and economic growth.  P. 474.
g. Because the economy as a whole is just a collection of many households and many firms interacting in many markets, microeconomics and macroeconomics are closely related.

2. The Economy’s Income and Expenditure
a. GDP measures two things:
i. total income and
ii. total expenditures.
b. For an economy as a whole, income has to equal expenditures.
c. This can be illustrated using a circular flow diagram.
i. Figure 1: The Circular Flow Diagram.  P. 475.
d. We can compute GDP for this economy in one of two ways:
i. by adding up the total expenditure by households or
ii. by adding up the total income paid by firms.
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3. The Measurement of Gross Domestic Product
   a. Gross domestic product (GDP) is
      i. the market value
      ii. of all
         (1) including housing services, but
         (2) excluding illegal drugs and domestic activities
      iii. final
         (1) inventory changes are treated as final
      iv. goods and services
      v. produced
         (1) does not include transactions involving items produced in
         the past,
      vi. within a country
      vii. in a given period of time. P. 476.
   b. FYI: Other Measures of Income, P. 478.
      i. Gross National Product is the market value of all final goods and
         services produced by permanent residents of a nation within a given
         period of time.
      ii. Net National Product
      iii. Personal Income
      iv. Disposable Personal Income

4. The Components of GDP Are an Identity: \( Y = C + I + G + NX \)
   a. This identity follows from the basic analysis of Keynes in which he argued
      that the output of a country was based on the demand for output by the
      different sectors of the economy.
      i. A depression or recession occurs when aggregate demand is
         inadequate.
      ii. This analysis from the 1930s justified a large increase in
         government involvement in the economy to provide for inadequate
         aggregate demand.
      iii. Remember that \( Y \) is national income, output and expenditure.
   b. Consumption is spending by households on goods and services, with the
      exception of purchases of new housing. P. 479.
   c. Investment is spending on capital equipment, inventories, and structures,
      including household purchases of new housing. P. 479.
      i. Unsold goods are treated as an investment in inventory.
   d. Government purchases are spending on goods and services by local, state,
      and federal governments. P. 480.
      i. Transfer payments are recorded elsewhere.
      ii. Therefore, the relative importance of state and local governments
increases relative to the federal government based on outlays.

e. Net exports are spending on domestically produced goods by foreigners (exports) minus spending on foreign goods by domestic residents (imports). P. 480.
i. Imports are subtracted because they are included in the other components of GDP.

f. In the News: Sex, Drugs and GDP, P. 480.
i. Some countries are debating what to include in their national accounts.

g. Case Study: The Components of U. S. GDP, P. 481.
i. Table 1: GDP and its Components. P. 482.

5. Real Versus Nominal GDP
a. A Numerical Example
i. Nominal GDP is the production of goods and services valued at current prices. P. 482.
ii. Table 2: Real and Nominal GDP. P. 483.
iii. Real GDP is the production of goods and services valued at constant (base year) prices. P. 483.
(1) It is calculated using constant base year prices.

b. The GDP Deflator
i. GDP deflator is a measure of the price level calculated as the ratio of nominal GDP to real GDP times 100. P. 484.
ii. GDP deflator = Nominal GDP/Real GDP x 100

i. Two important features:
(1) it grows, but
(2) not at a steady rate.

i. Up until 2008, there had been only two minor recessions since 1983.

d. Figure 2: Real GDP in the United States. P. 485.
e. Gauging the High Tech Economy, P. 486.
i. Productivity is difficult to measure.

6. Is GDP a Good Measure of Economic Well-Being?
a. GDP per capita is the most objective measure of material well-being.
b. It excludes
i. leisure,
ii. the environment and
iii. non-market work.
c. Case Study: International Differences in GDP and the Quality of Life, P. 490.
i. In richer countries, people live longer and have more education.
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ii. Table 3: GDP and the Quality of Life, P. 490.

7. Conclusion

8. Summary