Objectives

- Describe what the gross domestic product measures.
- Learn two ways to calculate the gross domestic product, and explain why they are equivalent.
11.1 Estimating Gross Domestic Product (GDP)

*Key Terms*

- economy
- gross domestic product (GDP)
- consumption
- investment
- aggregate expenditure
- aggregate income
The National Economy

- National economics, or macroeconomics, focuses on the overall performance of the economy.

- Economy describes the structure of economic activity in a locality, a region, a country, a group of countries, or the world.
Gross Domestic Product

- **Gross domestic product (GDP)** measures the market value of all final goods and services produced in the United States during a given period.
- GDP includes production in the United States by foreign firms.
- GDP excludes foreign production by U.S. firms.
National Income Accounts

- Organize huge quantities of data collected from a variety of sources across the United States
- Keep track of the value of final goods and services
No Double Counting

- *Intermediate goods and services* are those purchased for additional processing and resale.
- Sales of intermediate goods and services are excluded from GDP to avoid the problem of *double counting*.
- GDP also ignores most of the secondhand value of used goods, such as existing homes and used cars.
Calculating GDP

- GDP based on the expenditure approach
- GDP based on the income approach
GDP Expenditure Approach

- The expenditure approach to GDP adds up the spending on all final goods and services produced in the economy during the year.
- **Consumption** consists of purchases of final goods and services by households during the year.
- **Investment** consists of spending on new capital goods and additions to inventories.
- **Aggregate expenditure** equals the sum of consumption, investment, government purchases, and net exports.

\[ C + I + G + (X - M) = GDP \]
GDP Income Approach

- The income approach to GDP adds up the aggregate income earned during the year by those who produce that output.

- **Aggregate income** equals the sum of all the income earned by resource suppliers in the economy.

\[ \text{Aggregate expenditure} = \text{GDP} = \text{Aggregate income} \]
### Computation of Value Added for a New Wooden Desk

<table>
<thead>
<tr>
<th>Stage of Production</th>
<th>(1) Sale Value</th>
<th>(2) Cost of Intermediate Goods</th>
<th>(3) Value Added</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logger</td>
<td>$ 20</td>
<td>—</td>
<td>$20</td>
</tr>
<tr>
<td>Miller</td>
<td>$ 50</td>
<td>$ 20</td>
<td>$30</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>$120</td>
<td>$ 50</td>
<td>$70</td>
</tr>
<tr>
<td>Retailer</td>
<td>$200</td>
<td>$120</td>
<td>$80</td>
</tr>
</tbody>
</table>

Market value of final good: $200
11.2 Limitations of GDP Estimation

Objectives

- Identify what types of production GDP calculations neglect.
- Determine why and how to adjust GDP for changes over time in the general price level.
11.2 Limitations of GDP Estimation

**Key Terms**

- depreciation
- nominal GDP
- real GDP
- consumer price index (CPI)
11.2 Limitations of GDP Estimation

What GDP Misses

- Household production
- Underground economy
- Leisure, quality, and variety
- Depreciation
- GDP does not reflect all costs
Household Production

- Because official GDP figures ignore most home production, these figures understate actual production in economies where families do more for themselves and buy less in the market.
Underground Economy

- The *underground economy* includes activity that goes unreported either because it’s illegal or because those involved want to evade taxes on otherwise legal activity.

- The underground economy also is called the black market or “working off the books.”
Leisure, quality, and variety

- GDP fails to capture changes in leisure time.
- GDP also often fails to reflect changes in the quality of existing products and the availability of new ones.
- These factors make GDP a less-reliable measure of an economy’s standard of living.
Depreciation

- **Depreciation** measures the value of the capital stock that is used up or becomes obsolete in the production process.

- Gross domestic product is called “gross” because it does not take into account this depreciation.
GDP Does Not Reflect All Costs

- Negative externalities
- Both GDP and net national product ignore the depletion of natural resources.
Adjusting GDP for Price Changes

- Nominal GDP versus real GDP
- Price indexes
  - Consumer price index
  - GDP price index
Nominal GDP Versus Real GDP

- **Nominal GDP** is the economy’s output based on the prices at the time of the transaction; current-dollar GDP.
- **Real GDP** is the economy’s aggregate output measured in dollars of constant purchasing power; GDP measured in terms of the goods and services produced.
Price Indexes

An index number compares the value of a variable in a particular year to its value in a base year, or reference year.
Example of Price Index (Base Year = 2002)

<table>
<thead>
<tr>
<th>Year</th>
<th>(1) Price of Bread in Current Year</th>
<th>(2) Price of Bread in Base Year</th>
<th>(3) Price Index $ (3) = (1)/(2) × 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>$1.25</td>
<td>$1.25</td>
<td>100</td>
</tr>
<tr>
<td>2007</td>
<td>$1.30</td>
<td>$1.25</td>
<td>104</td>
</tr>
<tr>
<td>2008</td>
<td>$1.40</td>
<td>$1.25</td>
<td>112</td>
</tr>
</tbody>
</table>

Figure 11.3
Consumer Price Index

- The **consumer price index (CPI)** measures changes over time in the cost of buying a “market basket” of goods and services purchased by a typical family.

- The CPI is reported monthly, based on prices from thousands of sellers across the country.
GDP Price Index

- The GDP price index includes all goods and services produced.

\[
\text{GDP price index} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100
\]