9 Introduction to Macroeconomics

10 The Circular-Flow Diagram and the National Accounts

11 Gross Domestic Product (GDP)

12 Interpreting Real Gross Domestic Product
Gross Domestic Product

• **Gross domestic product** or GDP measures the total value of all *final goods and services* produced in the economy during a given year.

• GDP does not include the value of *intermediate* goods (i.e., goods bought from one firm by another firm).
Calculating Gross Domestic Product

- GDP can be calculated three ways:
  - Add up the *value added* of all producers
  - Add up all *aggregate spending* on domestically produced final goods and services. This results in the equation: \( GDP = C + I + G + (X - IM) \)
  - Add up all income paid to factors of production
## Calculating Gross Domestic Product

2. Aggregate spending on domestically produced final goods and services = $21,500

<table>
<thead>
<tr>
<th></th>
<th>American Ore, Inc.</th>
<th>American Steel, Inc.</th>
<th>American Motors, Inc.</th>
<th>Total factor income</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value of sales</strong></td>
<td>$4,200 (ore)</td>
<td>$9,000 (steel)</td>
<td>$21,500 (car)</td>
<td></td>
</tr>
<tr>
<td><strong>Intermediate goods</strong></td>
<td>0</td>
<td>4,200 (iron ore)</td>
<td>9,000 (steel)</td>
<td></td>
</tr>
<tr>
<td><strong>Wages</strong></td>
<td>2,000</td>
<td>3,700</td>
<td>10,000</td>
<td>$15,700</td>
</tr>
<tr>
<td><strong>Interest payments</strong></td>
<td>1,000</td>
<td>600</td>
<td>1,000</td>
<td>$2,600</td>
</tr>
<tr>
<td><strong>Rent</strong></td>
<td>200</td>
<td>300</td>
<td>500</td>
<td>$1,000</td>
</tr>
<tr>
<td><strong>Profit</strong></td>
<td>1,000</td>
<td>200</td>
<td>1,000</td>
<td>$2,200</td>
</tr>
<tr>
<td><strong>Total expenditure by firm</strong></td>
<td>4,200</td>
<td>9,000</td>
<td>21,500</td>
<td></td>
</tr>
<tr>
<td><strong>Value added per firm</strong></td>
<td>4,200</td>
<td>4,800</td>
<td>12,500</td>
<td></td>
</tr>
</tbody>
</table>

1. Value of production of final goods and services, sum of value added = $21,500

3. Total payments to factors = $21,500
Calculating Gross Domestic Product

Components of U.S. GDP (billions of 2012 dollars)

GDP = C + I + G + (X – IM)

- Consumer spending = $11,249 (71.1%)
- Investment spending = $2,084 (13.2%)
- Government purchases of goods and services = $3,053 (19.3%)

Net exports X – IM = –$557 (-3.5%)
GDP: What’s in and what’s out?

- GDP measures **production** of goods & services
- GDP measures production within national borders
- Inputs are NOT in GDP
- Used goods are NOT in GDP
- Financial assets (e.g., stocks and bonds) are NOT in GDP
- When someone provides services for pay, those services are included as part of GDP, but the services of family members is not
- GDP includes an imputation for the value of “owner-occupied housing”