16 Measuring Inflation
The Aggregate Price Level

• The **aggregate price level** is a measure of the overall level of prices in the economy.
• To measure the aggregate price level, economists calculate the cost of purchasing a **market basket**.
• A **price index** is the ratio of the current cost of that market basket to the cost in a base year.

Price index in a given year = \[
\frac{(\text{Cost of market basket in a given year})}{(\text{Cost of market basket in base year})} \times 100
\]
# Market Baskets and Price Indexes

## Calculating the Cost of a Market Basket

### Table 16-1

<table>
<thead>
<tr>
<th></th>
<th>Pre-frost</th>
<th>Post-frost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price of orange</td>
<td>$0.20</td>
<td>$0.40</td>
</tr>
<tr>
<td>Price of grapefruit</td>
<td>0.60</td>
<td>1.00</td>
</tr>
<tr>
<td>Price of lemon</td>
<td>0.25</td>
<td>0.45</td>
</tr>
<tr>
<td>Cost of market basket</td>
<td>$(200 \times $0.20) +$</td>
<td>$(200 \times $0.40) +$</td>
</tr>
<tr>
<td>(200 oranges, 50 grapefruit, 100 lemons)</td>
<td>$(50 \times $0.60) +$</td>
<td>$(50 \times $1.00) +$</td>
</tr>
<tr>
<td></td>
<td>$(100 \times $0.25) = $95.00</td>
<td>$(100 \times $0.45) = $175.00</td>
</tr>
</tbody>
</table>
Market Baskets and Price Indexes

- The **inflation rate** is the percentage change in a price index.
- The most common is the **Consumer Price Index** or **CPI**.
- The **CPI** measures the cost of the market basket for a typical urban American family.

*Excludes motor fuel.*
The CPI, 1913 – 2013

Log CPI
(1982 – 1984 = 100)
Other Price Measures

• A similar index to CPI for goods purchased by firms is the **producer price index**.

• Economists also use the **GDP deflator**, which measures the price level by calculating the ratio of nominal to real GDP.

\[
\text{GDP Deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100
\]
The CPI, PPI, and the GDP Deflator

Percent change in the CPI, PPI, GDP deflator

Year


-20 -15 -10 -5 0 5 10 15 20 25%
Economics in Action: Indexing to the CPI

• The CPI has a direct and immediate impact on millions of Americans.

• Many payments are tied or “indexed” to the CPI.

• Today, 55 million people receive checks from Social Security which are indexed to CPI inflation.