The CPI Basket, Figure 5.12

- Apparel (4 percent)
- Other goods and services (5 percent)
- Education and communication (5 percent)
- Recreation (6 percent)
- Medical care (6 percent)
- Food and beverages (16 percent)
- Transportation (18 percent)
- Housing (40 percent)

Sources: United States Census Bureau, and Bureau of Labor.
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Simplified CPI (Consumers' Price Index)

- basket of goods + services
  - apples
  - bananas

\[ P_a \times \phi_a = \text{expenditure on apples} \]
\[ P_b \times \phi_b = \text{expenditure on bananas} \]

\[ (P_a \times \phi_a) + (P_b \times \phi_b) = \text{total expenditure} \]

Key behavioural assumptions

- \[ \frac{P_a \times \phi_a}{\text{total exp.}} = \text{constant} = \bar{\phi}_a < 1.0 \]
- \[ \frac{P_b \times \phi_b}{\text{total exp.}} = \text{constant} = (1 - \bar{\phi}_a) < 1.0 \]
- \[ \text{total expenditure} = \text{income} = Y \]
by assumption

\[ p_a \times \phi_a = \bar{p}_a \times \gamma \]

calculating!

- \[ p_a + \Delta \phi_a + \phi_a \times \Delta p_a = \Delta \gamma \]

- \[ \frac{p_a \times \Delta \phi_a}{p_a \times \phi_a} + \frac{\phi_a + \Delta p_a}{p_a \times \phi_a} = \frac{\Delta \gamma}{\gamma} \]

- \[ \frac{\Delta \phi_a}{\phi_a} + \frac{\Delta p_a}{p_a} = \frac{\Delta \gamma}{\gamma} \]

summarizing:

spreadsheet

<table>
<thead>
<tr>
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<th>( \frac{\Delta p_a}{p_a} )</th>
<th>( \frac{\Delta p_b}{p_b} )</th>
<th>( \frac{\Delta \gamma}{\gamma} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{\Delta \phi_a}{\phi_a} )</td>
<td>-1</td>
<td>?</td>
<td>+1</td>
</tr>
<tr>
<td>( \frac{\Delta \phi_b}{\phi_b} )</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>