Lecture 2: Basic Definitions

- GDP
- Inflation Rate
- Unemployment Rate
- Trade and Budget Deficits
Gross Domestic Product

• First thing we look at (its rate of growth)
• Aggregate output: Not easy!
  – Sum of apples and oranges
  – Double-counting
• Example
A Simple Economy

• Steel Company
  – Revenue from sales $100
  – Expenses (wages) 80
  – Profit 20

• Car Company
  – Revenue from sales $210
  – Expenses
    • Wages $70
    • Steel purchases 100
  – Profit 40

• What is this economy’s GDP?
Calculating GDP

- Method 1: GDP is the value of the final goods and services produced by the economy during a given period
- Method 2: GDP is the sum of valued added produced....
- Method 3: GDP is the sum of incomes in the economy...
Nominal vs Real GDP

- Nominal GDP: sum of final goods produced times their current price
  - Growth due to quantity (production)
  - Growth due to prices
- Real GDP: … times their base year price
- Example (next trp.)
- GDP Growth: \( \frac{(Y(t)-Y(t-1))}{Y(t-1)} \)
## Nominal vs Real GDP

### Year 0

<table>
<thead>
<tr>
<th>Q</th>
<th>P</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potatoes</td>
<td>100,000</td>
<td>$1</td>
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<tr>
<td>Cars</td>
<td>10</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>Nominal GDP</strong></td>
<td></td>
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</tbody>
</table>

### Year 1

<table>
<thead>
<tr>
<th>Q</th>
<th>P</th>
<th>Value</th>
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<tbody>
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<tr>
<td>Cars</td>
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<td>$10,000</td>
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<tr>
<td><strong>Nominal GDP</strong></td>
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</tbody>
</table>
The Inflation Rate

- More than one…. \( \frac{(P(t)-P(t-1))}{P(t-1)} \)
- GDP deflator and CPI
- GDP deflator = Nominal GDP / GDP
  - \( P_0 = 1 \)
  - \( P_1 = \frac{230,000}{210,000} = 1.1 \) (approx.)
- NGDP growth = GDPg + Inflation (defl)
- 15 5 10
- Why do we care?
The Unemployment Rate

• Labor force (L) = Empl. (N) + Unemployed (U)
• Unemployment Rate (u) = U/L
• Willing to work? Looking for work? L < Pop.
  – Not in the labor force
  – Discouraged workers (recessions)
• High unemployment often comes hand on hand with low participation rate :
  • L/Pop of working age
• U.S. (u = 4%, pr = 80% ) France (u=13%, pr = 65%)
• Why do we care? Too high and…. too low??
Deficits

• Expenditure > Income
• Trade Deficit:
  – Imports > Exports
  – U.S. today (FED, Treasury, Japan)
• Budget deficit
  – Gov. Expenditure > Gov. Revenue
• Why do we care? Smoothing; Argentina… the US
First Model: The Goods Market

Production → Income → Demand