ECONOMICS 3020: ACCELERATED MACROECONOMICS

Baker Laboratories 119

MWF 10:10 AM - 11:00 AM
Unsold output goes into inventory, and is counted as “inventory investment”...whether the inventory buildup was intentional or not.

In effect, we are assuming that firms purchase their unsold output.
GDP: Income Approach

- Compensation of employees
- + Proprietors income (income of noncorporate businesses)
- + Rental Income
- + Corporate Profits
- + Net interest

TOTAL: National Income
GDP: Income Approach

National Income (from before)
+ Indirect Business Taxes
+ Cons. of Fixed Capital (Depreciation)

TOTAL: Gross National Product (GNP)

GNP
- Net Factor Payments

TOTAL: Gross Domestic Product (GDP)
Gross National Product (GNP): total income earned by the nation’s factors of production, regardless of where located.

Gross Domestic Product (GDP): total income earned by domestically-located factors of production, regardless of nationality.

\((\text{GNP} - \text{GDP}) = (\text{factor payments from abroad}) - (\text{factor payments to abroad})\)
40% of Armenian Males of Working Age are currently abroad. What is bigger for Armenia, GDP or GNP?
(GNP – GDP) as a percentage of GDP, 1997.

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.A.</td>
<td>0.1</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>3.3</td>
</tr>
<tr>
<td>Brazil</td>
<td>-2.0</td>
</tr>
<tr>
<td>Canada</td>
<td>-3.2</td>
</tr>
<tr>
<td>Chile</td>
<td>-8.8</td>
</tr>
<tr>
<td>Ireland</td>
<td>-16.2</td>
</tr>
<tr>
<td>Kuwait</td>
<td>20.8</td>
</tr>
<tr>
<td>Mexico</td>
<td>-3.2</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>3.3</td>
</tr>
<tr>
<td>Singapore</td>
<td>4.2</td>
</tr>
</tbody>
</table>
GDP Measures

- Total income
- Total output
- Total expenditure
- The sum of value-added at all stages in the production of final goods
Private Disposable Income is given by:

- GDP
- + NFP
- + TR (transfers from the Government)
- + INT (interest on Government Debt)
- - T (Taxes)

Net Government Income is given by

T-TR-INT
National Saving and where does it go

National Saving:

\[ S = Y + NFP - C - G \]

Or using \( Y = C + I + G + NX \)

\[ S = I + (NX + NFP) \]

Note that, national savings are the sum of private and government saving.

Therefore

Private \( S = I + (NX + NFP) \) - Govern. \( S \)
National Saving and where does it go

Finally, \( (NX + NFP) \) is called current account, CA, and represents the amount country lends abroad.

Therefore, Private Saving goes either to

• Domestic Investments, or
• Foreign Investments, or
• To cover government deficit.
Twin Deficits

Budget Deficits and Current Account deficits tend to appear simultaneously.

Why? You tell me looking at this equation

Private S = I + CA - Government S.

Hint: Budget Deficit means that government is dissaving, i.e. Government S is falling.
Real versus Nominal GDP

- GDP is the value of all final goods and services produced.

- Nominal GDP measures these values using current prices.

- Real GDP measure these values using the prices of a base year.
US Real and Nominal GDP, 1967-2001
The inflation rate is the percentage increase in the overall level of prices.

One measure of the price level is the GDP Deflator, defined as:

\[
\text{GDP Deflator} = 100 \times \frac{\text{Nominal GDP}}{\text{Real GDP}}
\]
Chain-Weighted Real GDP

- Over time, relative prices change, so the base year should be updated periodically.
- In essence, “chain-weighted Real GDP” updates the base year every year.
- This makes chain-weighted GDP more accurate than constant-price GDP.
- But the two measures are highly correlated, and constant-price real GDP is easier to compute…
- …so we’ll usually use constant-price real GDP.
Consumer Price Index - Construction

1) Survey consumers to determine composition of the typical consumer’s “basket” of goods.
2) Every month, collect data on prices of all items in the basket; compute cost of basket.
3) CPI in any month equals

\[ 100 \times \frac{\text{Cost of Basket in that Month}}{\text{Cost of Basket in Base Period}} \]
Why the CPI may Overstate Inflation

Substitution bias:

The CPI uses fixed weights, so it cannot reflect consumers’ ability to substitute toward goods whose relative prices have fallen.
Why the CPI may Overstate Inflation

Introduction of new goods:

The introduction of new goods makes consumers better off and, in effect, increases the real value of the dollar. But it does not reduce the CPI, because the CPI uses fixed weights.
Why the CPI may Overstate Inflation

Unmeasured changes in quality:

Quality improvements increase the value of the dollar, but are often not fully measured.
If computers with Pentium IV processor are recorded in the same category as computers with Pentium III, most likely we will see increase in price of computers, but this does not mean that there is inflation.

The speed of the hard drives goes up, their price goes up, but it does not mean that there is inflation.
The Boskin Panel’s “best estimate”: The CPI overstates the true increase in the cost of living by 1.1% per year.

Result: the BLS has refined the way it calculates the CPI to reduce the bias.

It is now believed that the CPI’s bias is slightly less than 1% per year.
CPI versus GDP deflator

Prices of capital goods
• Included in GDP deflator (if produced domestically)
• Excluded from CPI

Prices of imported consumer goods
• Included in CPI
• Excluded from GDP deflator

The basket of goods
• CPI: fixed
• GDP deflator: changes every year
Two Measures of Inflation
Real versus Nominal Interest Rate

Real interest rate is equal nominal interest rate minus inflation rate.

\[ r = i - \frac{P(t+1)-P(t)}{P(t)} \]

\( \frac{P(t+1)-P(t)}{P(t)} \) is the inflation rate

Real interest rate measures the change in the real value, i.e. purchasing power of an interest bearing asset.

Why is it relevant? You tell me…