Macroeconomics: Part II

Economic Growth and Aggregate Supply
TWO MAJOR THEMES OF MACROECONOMICS

BUSINESS CYCLE (AD central):
- This has been major discussion up to now (Keynesian multiplier, money, AD shifts, etc.)
- Primarily involves different AD theories
- Short-run impact of 9-11 will be on C and I through psychological impact and profit concerns

ECONOMIC GROWTH (AS central):
- Involves growth in potential output rather than actual output
- Long-run impact of 9-11 through lower investment in productive capital and trade “frictions”
Plan for the second half of the course

- Economic Growth (3)
- Unemployment and Inflation (3)
- Fiscal policy and the surplus (2)
- International (4)
Pause for reflection

Some exciting questions

1. Why the rise and fall of the budget surplus?
2. Has the US economic “miracle” of the 1990s gone the way of the dot.coms?
3. What is globalization and what are its effects and its perils?
4. Why is the U.S. trade deficit so large?
5. What will be the economic impacts of 9-11?
Recall definition of **potential output**:

- Output at low unemployment
- … or where u rate = lowest sustainable u rate (NAIRU)
- In terms of AS-AD model:
  - short run has upward-sloping AS
  - long run has vertical AS
- Remember: economic growth considers growth in potential output
  … while business cycle theory considers growth in actual output.
Ratio Actual to Potential GDP

[Graph showing the ratio of actual to potential GDP from 1980 to 2000.]
What is Economic Growth?

Growth of what?
In macroeconomics, we deal with market activity (real GDP)

…This is not equivalent to economic welfare or happiness (omits pollution, health status, crime, terrorism, waiting in line,...)

GDP is an imperfect measure of economic well-being ...

… but it’s the best we have.
Growth in per capita income
(average, percent per year)
How Good were the “Good Old Days”?  
2000 v. 1900

Work, leisure, and retirement
Composition of output: decline of farming and rise of services
Your night life and the camping experience
The medical revolution
The computer revolution
Growth is primarily qualitative, not quantitative change
Migratory worker, Texas, 1940
Christmas Dinner, 1936, rural Iowa
Farming the rocks, Morocco, 2001
Travel, 1907: Stieglitz
Tuberculosis of spine
The mortality rate from Tuberculosis in Finland and Sweden (per thousand) 1750 - 1980.
## Four wheels of growth

<table>
<thead>
<tr>
<th>Factor</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Resources (L)</td>
<td>Labor Force, Literacy, skills, honesty</td>
</tr>
<tr>
<td>Natural resources (R)</td>
<td>Oil and gas, soils, climate</td>
</tr>
<tr>
<td>Capital stocks (K)</td>
<td>Equipment, structures, software, Social overhead capital</td>
</tr>
<tr>
<td>Technology (A)</td>
<td>Science and engineering, Management, Intellectual property rights</td>
</tr>
</tbody>
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Economic Growth in the 20th Century

Growth in output per hour (% per year)

Trends of Economic Growth

- Capital deepening: capital stock has grown more rapidly than population and employment
- Strong upward trend in per capita output and real wages
- Little change in the share of income going to capital or labor.
- Output has grown faster than the weighted average of the growth of inputs — indicating importance of technological change.
(a) Output, Labor, Capital

- Output, capital, population (percent of 1900, ratio scale)
- Real domestic product (Q)
- Capital stock (K)
- Population (L)

Year:
- 1900
- 1920
- 1940
- 1960
- 1980
- 2000
THE NEOCLASSICAL GROWTH MODEL

- Considers labor and capital; omits land, environment, and natural resources
- Labor growth is exogenous
- Capital accumulation by saving
- Technological change central but generally treated as exogenous
- Closed economy
The Model in Pictures

Production Function

\[ Q = A F(K, L) \]

\[ \Delta K = I = S \]
Applications of Economic-Growth Theory

**Understanding economic history**
- productivity slowdown and rebound, the miracle economies, Russian collapse, economic regress, economic development

**Understanding economic policy**
- how to grow faster, role of monetary and fiscal policy, promoting technological change