VI. INTRODUCTION TO MACROECONOMICS

A. The Importance of Economic Growth

1. Economic growth is the percentage increase in real gross domestic product (GDP).

2. Long-run versus short-run economic growth
   
   a. Long-run economic growth -- the average growth rate in real GDP over a 10-30 year period.
   
   b. Short-run economic fluctuations -- the growth rate in real GDP over a quarter or year.
       - During a recession or depression, the level of real GDP falls and thus the growth rate is negative.
       - During an expansion, the level of real GDP rises and thus the growth rate is positive.

3. The significance of long-run economic growth
   
   a. Why should we care about real GDP? It provides an indicator of our standard of living and quite possibly our quality of life.
   
   b. Why should we care about the growth rate in real GDP? The answer is compound growth explained in the appendix to chapter 19.
       - Compound interest and growth -- earning "interest on the interest"
       - \( (\text{Income at end}) = (\text{Income at beginning}) \times (1+\text{interest rate})^\text{number of years} \)
       - Rule of 72: number of years to double = \(0.72\times(\text{growth rate})\)
   
   c. Cross-country comparisons
B. National Income and Product Accounts

1. Preliminary Notes

   a. Nominal vs. real -- nominal statistics are measured in current dollars (in the current market prices), while real statistics are measured in constant dollars (adjusted so that the values have the same purchasing power in both time periods being compared).

   b. Levels vs. growth rates -- statistics recorded in levels describes the amount or total, while statistics recorded in growth rates describes the rates of change.

   c. Flows vs. stocks -- flow variables measure amounts for a given time period (e.g. month, quarter, year), while stock variables measure amounts at a specific instant.

2. Gross Domestic Product - 3 Equivalent Measurements

   Gross domestic product (GDP) -- the value of all final goods and services produced in an economy during a particular time period.

   a. The production approach to measuring GDP -- add up the production of goods and services in various industries.

      The Commerce Department adds up the market value of all goods and services produced over a certain time period, say a year. To avoid double-counting, the concept of value added was developed. Value added is essentially the difference between the revenue the firm earns by selling the good and the cost of the products used in the production (called intermediate goods).

   b. income approach to measuring GDP -- add up the payments to all the inputs or factors of production.

      In this case, the Commerce Department adds up the income earned from labor, capital and land. The two main components are labor (wages, salaries and fringe benefits) and capital income (profits, interest and rents).
c. spending approach to measuring GDP -- add up the expenditures on goods and services by different groups.

\[ Y = C + I + G + X \]

where \( Y \) = Gross domestic product

\[ C = \text{Consumption} = \text{spending by domestic households on final goods and services (consumer durables + nondurable goods + services)} \]

- Constitutes around 2/3 of all spending
- The most stable component of spending

\[ I = \text{Total Investment} = \text{purchases of new capital equipment (business and residential fixed investment) and inventory investment} \]

- Investment is the flow of new capital that is added to the existing stock of capital during a certain time period. \( I = K_{t+1} - K_t \)
- Positive inventory investment is an accumulation of inventory.
- The most volatile component of spending.

\[ G = \text{Government purchases of goods and services} \]

\[ X = \text{Net Exports} = \text{Exports - Imports} \]
3. Investment and Saving

  a. National saving is defined as income less private consumption and government purchases.

\[ S = Y - C - G \]

This definition tells us that increases in either private consumption or government spending lower national saving.

  b. Investment-saving identity:

\[ S = I + X \]

This identity tells us that national saving \((S)\) equals the sum of investment \((I)\) and net exports \((X)\).

4. The Price Indexes and Inflation

  a. A price level or index is created and maintained in order to deflate statistics in current dollars into constant dollars so that comparisons can be made through time and across countries.

  b. There are two types of price indexes: variable-weight and fixed-weight.

    i. A variable-weight price index computes how much today's goods and services would cost in the base year.

    ii. A fixed-weight price index computes how much a fixed basket of goods and services costs today vs. the base year.

  c. The consumer price index (CPI) is a fixed-weight price index, while the GDP deflator is a variable-weight price index.

  d. The inflation rate is the percentage change in the price index.