Measuring Economic Performance

This lecture examines how output, inflation, and employment are measured.

Gross Domestic Product (GDP)

A. GDP measures the market value of all final goods and services produced in the United States during a given year.

   1. Real GDP is GDP measured in constant dollars. (i.e., prices are the same from year to year)

   2. Nominal GDP is GDP measured in current dollars. (i.e., prices vary from year to year)

B. Features of GDP

1. It includes only final goods and services.
2. It avoids double counting by not including intermediate goods and services.
3. GDP measured by expenditures = GDP measured by income.

C. Problems with GDP

1. It ignores the underground economy.
2. It neglects home production.
3. It disregards quality improvements.
4. It overlooks changes in leisure time.
5. It neglects externality costs.

D. Examples of goods and services included in GDP for 2017.
   1. A replacement window for a house built in 1983.
   2. A Dodge Charger built but not sold in 2017.
   3. The cost of your OU education in 2017.

E. Examples of goods and services NOT included in GDP for 2017.
   1. An iPhone built in China but sold in the U.S.
   2. A Dell laptop built in 2016 but sold in 2017.
   3. A Big Mac made and sold in Japan.
   4. Marijuana illegally grown in Kentucky.

Measuring GDP based on spending

A. Calculating GDP (the spending approach)

1. Definition (this equation will be referred to as the income identity equation)

   + Consumption (C)
   + Investment (I)
   + Government spending (G)
   + Net exports (X – IM)

   = GDP

   $$GDP = C + I + G + (X - IM)$$

2. Consumption
   a. Definition

      + Durable goods
      + Non-durable goods
      + Services

      = Consumption

   b. Durable goods are consumer goods, except housing, that last 3 or more years. (Ex. cars, dishwashers, and stereos)
   c. Non-durable goods are consumer goods that last less than 3 years. (Ex. food, clothing, and gasoline)
   d. Services are consumer spending on all non-physical goods. (Ex. haircuts, medical care, and education)

3. Investment

   a. Definition

      + Capital investment by firms

      + Residential investment

      + Inventory investment by firms

      = Investment

   b. Capital investment is spending on structures and equipment by firms.

   c. Residential investment is spending on <u>newly constructed</u> housing.

   d. Inventory investment is the change in the stock of inventories held by firms.

Definition

+	This year’s stock of inventories
–	Last year’s stock of inventories
=	Inventory investment by firms

4. Government spending
   a. It is the sum of federal, state, and local governments’ purchases of goods and services.
   b. It includes both government consumption and government investment.
   c. It does not include transfer payments.
5. Net exports, (X – IM)
   a. Exports, (X) – imports, (IM)
   b. It is sometimes called the trade balance.

B. Measuring GDP based on income

+	Employee compensation
+	Corporate profits
+	Proprietors' income
+	Rental income of persons
+	Net interest
=	National income
+	Sales and excise taxes
+	Business transfers
–	Net subsidies to government businesses
+	Statistical discrepancy
=	Net national product

+	Net national product
+	Depreciation
=	Gross national product
–	Net factor payments from abroad
=	Gross domestic product

C. Other national income accounting definitions

1. Personal income is the total income received by the public before taxes.

   \+ National income

   – Contribution for social insurance (social security taxes)

   – Corporate retained earnings

   \+ Non-business interest

   \+ Transfer payments from government and business

   = Personal income

2. <u>Disposable income</u> is personal income after taxes.

+ Personal income
– Personal income taxes

= Disposable income (Y_d)
– Consumption (C)

= Private Savings (S_P)

Savings and Investment in an Open Economy

A. Government savings (budget surplus/deficit)

+ Taxes (T)
– Government transfer payments (F)
– Interest on the government debt ($R \times D_G$)
– Government spending (G)

= Government savings (S_G)

B. Private savings (S_P)

+	GDP (Y)
+	Net factor payments from abroad (V)
+	Government transfer payments (F)
+	Interest on the government debt ($R \times D_G$)
–	Taxes (T)
–	Consumption (C)
=	Private savings (S_P)

C. National savings

+	Government savings (S_G)
+	Private savings (S_P)
=	National savings

D. Direct foreign investment in the U.S. (world savings in the U.S.)

– Net exports ($X - IM$)

– Net factor payments from abroad (V)

= Direct foreign investment in the U.S. (S_W)

E. Current account (CA) $= - S_W$

F. Investment

\+ Government savings (S_G)

\+ Private savings (S_P)

\+ Direct foreign investment in the U.S. (S_W)

= Investment

Measuring Inflation

A. Key definitions

1. The <u>price level</u> is the average price of a basket of goods and services in the economy.
2. The <u>inflation rate</u> is the rate of increase in the price level.

B. Price level measures

1. <u>Consumer price index</u> (CPI) measures the prices for a market basket of goods and services bought by consumers.
2. <u>Producer price index</u> (PPI) measures the prices for a market basket of goods and services bought by producers.
3. <u>GDP price deflator</u> measures the prices of all goods and services produced in the economy.
4. <u>Personal consumption expenditures (PCE) price deflator</u> measures the prices of all consumption goods in the economy.

C. Calculating the inflation rate

$$\pi = (P/P_{-1} - 1)\times 100$$

where π is the inflation rate this year, P is the price level (CPI, PPI, or GDP price deflator) this year, and P_{-1} is the price level last year.

D. Ex. Calculate the inflation rate for 2011.

Suppose $P_{10} = 120$ and $P_{11} = 126$

$$\pi_{11} = (P_{11}/P_{10} - 1)\times 100$$

$$\pi_{11} = (126/120 - 1)\times 100$$

$$\pi_{11} = (1.05 - 1)\times 100$$

$$\pi_{11} = 5\%$$

Measuring Employment

A. Household survey (called the Current Population Survey)

1. 100,000 adults are interview each month during the week that includes the 12th day of the month.
2. People are counted as employed for that month if they worked at least 1 hour during the survey week or if they were on vacation during that week.
3. People are counted as unemployed for that month if they did not work at least 1 hour during the survey week but looked for work during that week.
4. People are counted as not in the labor force for that month if they did not work at least 1 hour during the survey week and did not look for work during that week.

B. Establishment survey

1. Employers are interviewed to find out the exact number of people on the payroll at each workplace.
2. It excludes farm employees and the self-employed.