

LECTURE 13: GDP I

- I. Definition of GDP
 - a. *Gross Domestic Product* (GDP) is the total (gross) market value of all final goods and services produced within a country's borders in a year.
 - i. This is useful in estimating the size of a country's economy and, by comparing it to the previous year's GDP, if and how much the economy is growing.
- II. A manufacturing game
- III. GDP dissected
 - a. GDP focuses on *goods and services*: objects people buy and tasks people perform for others (like going to the doctor). It does not include charitable giving and favors done for others.
 - b. GDP adds together the *market value* of all goods and services, or all the prices of all goods and services sold.
 - i. This allows us to capture the value of the good, including its component parts. The wheat used to make \$3 worth of bread cannot be worth more than \$3...unless the baker is a very poor businessperson. But they won't be around for very long.
 - c. GDP only considers *final* goods or service, or items that are not usually transformed into other items. Microchips aren't counted but computers are. If microchips were counted, its value would be counted twice (once for leaving the microchip factory, and once as part of the computer).
 - i. Goods like microchips are considered *intermediary goods* (as opposed to final goods).
 - d. GDP only considers when the good or service is *produced*. Objects sold in the secondary market (e.g. a used car, an old house, the Pokémon cards you found in your closet) are not included in GDP. Claims to a financial asset, such as a stock or a bond, are similarly not included. One person sells their share of Company A to another person; the amount and value of Company A's assets didn't change.
 - e. GDP is *confined to a country* and includes the economic activity within that country's borders. If an immigrant works temporarily in the United States, their work increases the U.S.'s GDP. If an

American travels to another country to work, their work *does not* increase the U.S.'s GDP.

- i. *Gross National Product* (GNP) follows production based on permanent residents rather than a country's borders. Most of the time, GNP and GDP are very similar but GDP has evolved to be the more common measurement.
- f. GDP is also *confined to a year*, like an annual salary. The Bureau of Economic Analysis also calculates it on a per-quarter basis but the yearly GDP is the most common measure.
- i. One of the nice things about GDP on a yearly basis rather than a quarter is that we get a big picture for the whole year. Quarterly GDP tends to be high in the winter and summer and tends to be lower in the fall and spring.
 - ii. This, in turn, makes it easy to calculate growth rates:

$$\text{Growth rate (\%)} = \left(\frac{GDP_{now} - GDP_{before}}{GDP_{before}} \right) (100)$$

For example, if GDP was \$13.67 trillion in 2012 and 13.44 in 2011¹, then the growth rate was $(13.67 - 13.44) / (13.44) (100) = (0.23) / (13.44) (100) = \text{about } 1.71\%$

IV. What are the biggest economies?

- a. *GDP per capita* is GDP divided by the number of people in the economy ("per capita" is Latin for "for each head")
 - i. This is useful to determine how wealthy an average person is in a country, or the average income.
 - ii. For example, the U.S.'s GDP per capita is about \$50,000 while Mexico is about \$16,000;² this gives a good idea why so many people in Mexico wish to come to the U.S.

V. Two equations

- a. There are two ways to break down GDP to help us understand what it includes.
- b. The first is the *spending* approach. What did people spend their money on?

$$Y = C + I + G + NX$$

¹ <http://www.multpl.com/us-gdp-inflation-adjusted/table>

² 2012 data, from CIA World Fact Book. These data are adjusted for purchasing power (i.e. the price level in a country). Without adjusting for purchasing power, Mexico is closer to \$10,000 per person. The United States is about the same: \$49,000.

- i. Where Y is GDP;
 - ii. C is consumption (like when you buy an ice cream bar);
 - iii. I is investment (like when you buy an ice cream maker);
 - iv. G is government spending (like when the government buys you ice cream);
 - v. NX is exports – imports: exporting ice cream increases GDP and importing ice cream decreases it (because it wasn't produced in the U.S.).
- c. Another way to think about GDP is the *income* approach. How did people get their money?

$$Y = \text{wages} + \text{rent} + \text{interest} + \text{profit}$$

- i. Where Y is still GDP;
- ii. Wages are all the salaries of everyone in a country;
- iii. Rent includes all the money people get from physical assets;
- iv. Interest is everyone's income from keeping money in a bank;
- v. Profit is the money business owners keep after they receive revenue and pay their costs.