Lesson 4: Gross Domestic Product
Reading: Chapter 7

In this lesson we will:
- Learn what Gross Domestic Product is and how to measure nominal and real GDP
- Study the different components of GDP and why GDP is a poor measure of welfare

GDP: The total market value of all the newly produced, final goods and services within a country during a given period of time, usually a year.

Final Goods: Goods that are produced for final use rather than inputs in the production of other goods (i.e., intermediate goods).

List 3 intermediate goods. Eggs for a cake?

What does GDP count and does not count?
- Only final goods and services are counted. Intermediate goods are not counted because their value is embodied in the final goods that they are used for. (Example: wheat is an intermediate good in the production of bread and other baked goods.)
- Financial transactions (such as investment in stock) and income transfers (such as unemployment compensation) are not counted. Why?
- Only production within the country is counted. How about Toyotas produced in US?
- Only goods and services that are produced in the current year are counted. A used car is not counted but the salesman’s commission is counted, why?
  - Goods that are not sold are counted as inventory (at the market value), and once they are sold they are marked as a negative investment and positive consumption. When are we more likely to have inventories, during expansions or recessions?

Added Value: Value of the final product minus the value of the intermediate goods used to produce it. We produce certain goods because their value is worth more than the total value of the inputs necessary to produce them. List the steps necessary to produce bread.

There are two approaches to measure GDP: the Expenditure and the Income Approach.
Expenditure Approach: Measures the total money spent on final goods and services.
Income Approach: Measures the total income received by the factors of production that produced final goods and services. Why should these approaches yield the same number?

Expenditure is divided into spending by 4 sectors: GDP (Y) = C + I + G + (X − M)
- Private Sector: personal consumption by households (C). Personal consumption comprises 68% of GDP and is composed primarily of non-durable goods as food & gas.
- Business Sector: gross private domestic investment by firms (I). Gross investment comprises 18% of GDP and includes both net investment (investment in new capital) and depreciation (replacement of capital that has been worn down).
- Public Sector: Government expenditure (G) in public goods and administration comprises 18% of GDP. What does the government purchase?
- International Sector: Net exports (X − M), which equal the amount that foreigners spend on our goods (exports) minus what we spend on their goods (imports). −3%
Components of GDP using the income approach:
- Workers’ compensation (in a form of wages and benefits) comprises 58% of GDP
- Proprietor income (income earned by entrepreneurs) comprises 7% of GDP
- Corporate profit (compensation earned by stock holders) comprises 9% of GDP
- Indirect Business Taxes, such as excise tax, comprise 7% of GDP. Why count this?
- Net interest comprises 6% of GDP. Who gains from interest payments?
- Depreciation comprises 13% of GDP. Why do we count depreciation?
- Net income to foreigners (income earned by foreigners in the US minus income earned by Americans abroad) is a small and positive component of GDP (app. $5 billion)

Nominal GDP in a given year = Σ Quantity of good X * Price of good X

Nominal GDP: The monetary value of the total output produced in the economy.

Real GDP: Value of total output after it is adjusted to account for changes in prices (deflated). Why can’t we use nominal GDP if we want to compare growth in production?
- GDP must be deflated to convert it to the dollar terms of a base year.
  Real GDP_{2004} = Nominal GDP_{2004}/GDP deflator_{2000}

GDP deflator: A price index designed to measure changes in the price level. It is based on a basket of goods that represents the goods and services included in GDP.
- Real GDP per capita (per person) is often used to measure social welfare.

Problems with real GDP as a measure of social welfare:
- GDP deflator overestimates inflation by about 1% by ignoring changes in the quality of goods and in the basket’s composition. How will this change our estimation of GDP?
- GDP ignores non-market activities such as household production (examples?), exchanges of gifts and underground production that are not reported to the INS (such a babysitting). Why isn’t not reported? These activities account for 10-15% of production.
- GDP ignores leisure activities. European take more vacations than Americans, y.
- How do increases in medical expenses affect GDP? Our medical expenses are growing at a rate of 7% a year. Why?
- GDP ignores environmental quality. A fast economic growth often comes at a great cost to the environment, as is the case in China and Indonesia.
- GDP ignores the importance of political freedom and social justice. Singapore had one of the highest growth rates in the 1980s & 1990s, but it also has very strict rules.

Trends in GDP and Welfare:
- GDP in the US is increasing at about 3% annually. Why is growth important?
- Japan’s GDP per capita ($38k) is higher than US’s ($35k). Are Japanese better off?
- Europe’s GDP/capita is 20k; though, Luxembourg is the wealthiest country on earth
- Human Development Index ranks the US sixth and Norway first

Other Measures of Income:
- Gross National Income: GDP – Net Income by Foreigners
- National Income: GNP – Depreciation – Indirect Taxes