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Chapter 12: Evaluating the Economy

Lesson 1 Measuring the Nation's Output and Income

ESSENTIAL QUESTION

How do we determine the economic and social well-being of the United States?

Reading HELPDESK

Academic Vocabulary

excluded not counted or included

Content Vocabulary

gross domestic product (GDP) dollar value of all final goods, services, and structures produced within a country's national borders during a one-year period

intermediate products products that are components of other final products already included in the GDP; for example, new tires and radios for use on new cars

secondhand sales sales of used goods; category of activity not included in GDP computation

nonmarket transactions economic activity not taking place in the market, and therefore, not included in GDP; examples include services of homemakers and work done around the home

underground economy unreported legal and illegal activities that do not show up in GDP statistics

base year year serving as point of comparison for other years in a price index or other statistical measure

real GDP gross domestic product after adjustments for inflation; same as GDP in constant dollars

current GDP gross domestic product measured in current prices, unadjusted for inflation

real GDP per capita gross domestic product on a per person basis

gross national product (GNP) the market value of goods and services produced by labor and property supplied by U.S. residents

net national product (NNP) gross national product minus depreciation charges for wear and tear on capital equipment; measure of net annual production generated with labor and property supplied by a country's residents

national income (NI) net national product less indirect business taxes; measure of a nation's income

personal income (PI) total amount of income going to the consumer sector before individual income taxes are paid

disposable personal income (DPI) personal income less individual income taxes; total income available to the consumer sector after income taxes

household basic unit of consumer sector consisting of all of the people who occupy a house, apartment, or separate living quarters

unrelated individual person living alone or with nonrelatives even though that person may have relatives living elsewhere

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family two or more people living together that are related by blood, marriage, or adoption

net exports of goods and services net expenditures by the output-expenditure model's foreign sector; equal to total exports less total imports

output-expenditure model macroeconomic model describing aggregate demand by the consumer, investment, government, and foreign sectors; GDP = C + I + G + F

TAKING NOTES:
Key Ideas and Details

Use a graphic organizer like this one to identify the three types of GDP.

Types of GDP
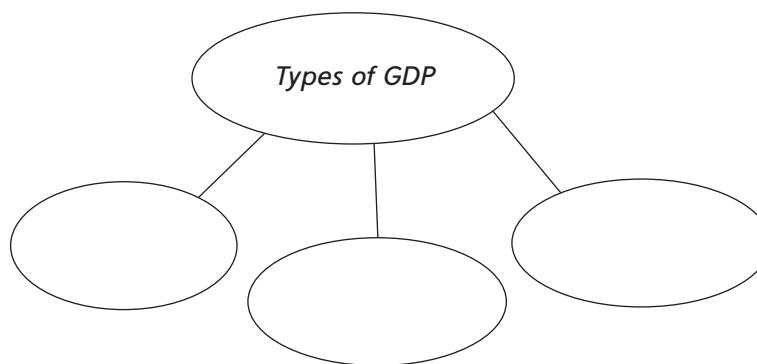
GDP—The Measure of National Output

Guiding Question *What does GDP tell us about the economy?*

Macroeconomics *studies the economy as a whole. Macro, as people often call it, uses a set of comprehensive measures in the National Income and Product Accounts (NIPA) to keep track of the nation's production, consumption, saving, investment, and income.*

Gross domestic product (GDP) is a comprehensive measure of national output. It is the total market value of all final goods and services produced within a country during a 12-month period.

Measuring Current GDP

Measuring GDP is not hard. You multiply all of the final goods and services produced in 12 months by their prices. Then add them up to get the total dollar value.

Figure 12.1 provides a simple example. The first column has three product categories used in the National Income and Product Accounts (NIPA). The categories are goods, services, and structures. The structures category includes residential housing, apartments, and commercial buildings. The quantity column shows the total number of final goods, services, and structures produced in the year. The price column shows the average price of each product. To get GDP, we simply multiply the quantity of each good by its price and then add the results. This is shown in the last column of the table.

Of course it is not possible to record every single good, service, and structure produced during the year. Instead, government statisticians use scientific sampling methods to estimate the quantities and prices of the individual products. To keep the report as current as possible, they estimate GDP quarterly, or every three months. Later, when they have more accurate data, they revise the numbers for those months. As a result, it takes several months to know how the economy actually performed.

Some Things Are Excluded

Intermediate products are **excluded** because GDP is a measure of final output only. Intermediate products are goods used to make other products that are already counted in GDP. If you have to buy

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new tires for your car, for example, the tires are counted in GDP. They were meant for your final use and were not combined with other parts to make a different product. But tires on a new car are not counted separately because their value is already included in the price of the car. Other goods, such as flour and sugar, are part of GDP if a customer buys them for final use. But if a baker buys them to make bread for sale, only the value of the bread is counted.

Secondhand sales are the sales of used goods. These are also excluded from GDP because there is no new production. Products that already exist are simply going from one owner to another. The sale of a used car, a house, or an MP3 player may give the sellers cash that they can use on new purchases, but only original sales of new products are included in GDP.

Nonmarket transactions are economic activities that do not cost money in the market. These are also excluded. For example, GDP does not count the value of your services when you mow your own lawn or do your own home repairs. However, these activities would be counted if you paid someone else to do them. For this reason, services that homemakers provide are excluded from GDP even though they would amount to billions of dollars each year if they were actually paid for in the market.

Finally, economists don't include transactions in the **underground economy** in GDP. These are economic activities that people don't report for legal or tax reasons. Some of these activities are illegal, such as gambling, prostitution, and selling drugs. Other activities are legal but still not reported, such as sales at farmers' markets or bake sales.

Current GDP vs. Real GDP

GDP can seem to increase whenever prices go up because of the way it is measured. For example, let's suppose that the number of new cars, new tires, and other products in Figure 12.1 stays the same for a few years. But if their prices go up, GDP will go up. So economists adjust GDP for inflation in order to compare GDP accurately over time.

To do this, economists use a set of constant prices in a **base year**. A base year is a year that economists use for their comparisons. For example, if they figure out GDP for several years in a row based only on 2009 prices, then they know that any increases in GDP must be due to changes in quantity and not price.

This measure is called **real GDP**, or GDP measured with a set of constant base-year prices. But the terms *GDP*, *nominal GDP*, and **current GDP** all mean that economists measured the output of one year using the actual prices from that year without adjusting for inflation. Since prices change from year to year, measuring GDP without adjusting for inflation makes the economy look like it's growing faster than it really is.

GDP per Capita

Sometimes economists adjust GDP for population. For example, they may want to know how a country's economy is growing over time. Or they might want to compare one country's GDP to another country's GDP. Then they would use **real GDP per capita***, or real GDP divided by the population. This would show the amount of output for each person. Economists can measure per capita GDP with current prices, or they can adjust for inflation.*

What GDP Does Not Tell Us

GDP is a very useful statistic because it tells us how well our economy is doing. But there are several things that GDP does not tell us. For example:

- **Composition of output**—GDP tells us nothing about the types of products being produced. For example, if GDP increases by $10 billion, we know that production is growing and that income is

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being generated. We would probably see this growth as a good thing. But we might feel differently if we discovered that all of the increase in output was from the production of military nerve gas rather than new highways, libraries, and parks.

- **Quality of life impacts**—Production may have a negative impact on the quality of life. Building 10,000 new homes may at first seem to be good for the economy. But if the construction damaged a wildlife refuge or hurt the environment, we might think differently about the value of the homes.
- **Nonmarket activities**—GDP understates the total amount of productive activity in the economy because it does not count a spouse's or homemaker's work in the home.
- **Improved product quality**—GDP does not measure changes in product quality. For example, a $1000 computer today may be far better than a $1000 computer five years ago, but both would count the same in GDP.

GDP is simply the total market value of all final goods and services produced within a country in one year. It is nothing more, and it is nothing less. We have to use other measures to see the impact of the production of the new goods and services. GDP does not tell us anything about them.

A Measure of Economic Performance and Well-Being

Even though GDP was never supposed to measure prosperity, GDP does contribute to our overall well-being. For example, we know that market transactions only happen when the buyer and the seller think they are better off after they have made the transaction. This means that every time a new product is produced and sold, there are at least two parties that are happier—the buyer and the seller.

When we think about the trillions of new products produced and sold in a year, it is easy to understand why people see GDP as a gauge of our country's overall economic health. If more things are produced and sold, there are more individuals who feel better off.

☑ Reading Progress Check

Explaining What does GDP measure, and why is it important?

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Measures of National Income

Guiding Question *Why is national income measured in several different ways?*

When business activity creates output, it creates jobs and income for someone. Since GDP measures output, we can also use it to look at income. GDP is like a two-sided coin: one side shows output, and the other side shows an equal amount of income.

GDP is the largest and most important measure in the National Income and Product Accounts (NIPA). But we can also use the NIPA for five other measures of income.

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Gross National Product

Our first measure of the country's total income is **gross national product (GNP)***. GNP is the market value of goods and services produced by labor and property supplied by U.S. residents, who may or may not physically be in the U.S. at all times. This is very similar to GDP, but there are big differences between GDP and GNP. The most important difference is that GDP is a measure of total national* output*, while GNP is a measure of total national* income*.*

Net National Product

The second measure of national income is **net national product (NNP)***. NNP is GNP minus depreciation (reduction in value). Depreciation is also called* capital consumption allowances*. It represents the capital equipment that wore out or became obsolete during the year.*

National Income

The third measure in the NIPA is **national income (NI)***. National income is NNP minus all taxes, except corporate profits tax. Examples of these taxes, also called* indirect business taxes*, are excise taxes, property taxes, licensing fees, customs duties, and general sales taxes.*

Personal Income

The fourth measure of the nation's total income is **personal income (PI)***. PI is the total amount of income that consumers receive before paying individual income taxes. Personal income does include income from other sources such as Social Security paid to retired people.*

Disposable Personal Income

The fifth measure of income in the NIPA is **disposable personal income (DPI)***. This is the total income that consumers have after personal income taxes. It is the smallest measure of income, but it is important because it shows the actual amount of money consumers can spend.*

Your disposable income is the amount of money you get from your employer after taxes and Social Security have been taken out of your check. When you look at your paycheck, you are looking at your share of the nation's DPI.

> ### ✅ Reading Progress Check
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> ***Summarizing*** What are the different measures of national income?
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Exploring the Essential Question

You are applying for a part-time job at a local supermarket. You plan to work 15 hours a week. You will be paid every two weeks with all taxes taken out of your check. The pay per hour is the minimum wage in your state, which is $8 an hour. You will pay 10 percent of each paycheck in taxes and Social

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Security. Do the math and figure what your Personal Income (PI) will be and what your Disposable Personal Income (DPI) will be every two weeks.
   a. PI: $240; DPI: $236
   b. PI: $260; DPI $256
   c. PI $240; DPI $216
   d. PI $320; DPI $300

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Economic Sectors and Circular Flows

Guiding Question *What are the four components of GDP?*

The macro economy is made up of several different parts, or sectors. These sectors are part of the cycle of economic activity shown in **Figure 12.2.** *The sectors receive income from other sectors and also produce income for other sectors. This is what creates the circular flow.*

   Production creates income that flows to the consumer (C), investment (I), government (G), and net foreign (X — M) sectors, where X stands for exports and M for imports. These sectors use the income to purchase the nation's output.

Consumer Sector

The largest sector in the economy is the consumer, or household, sector. Its basic unit is the **household,** *which refers to all of the people who live in a house, apartment, or room that is a separate living space. Households include relatives and anyone else who shares the same living space, such as renters, foster children, and employees.*

   A household can also be just one **unrelated individual**. An unrelated individual is a person who lives alone even though he or she may have family living somewhere else. Finally, a household can be a **family**, a group of two or more people related by blood, marriage, or adoption who live together.

   The consumer sector is shown as **C** in Figure 12.2. It receives its income as disposable personal income. This is the income that is left over after all of the depreciation, business and income taxes, and FICA payments are taken out, and after any income received in transfer payments is added back in.

Investment Sector

The next sector of the macroeconomy is the business, or investment, sector. This is labeled **I** *in Figure 12.2. This sector is made up of proprietorships, partnerships, and corporations that produce the nation's output. The income of this sector comes from the retained earnings—the profits not paid out to owners—that are subtracted from NI. Depreciation and capital consumption allowances that are subtracted from GNP are also counted in this sector.*

Government Sector

The third sector is the public, or government, sector. This includes all local, state, and federal levels of government. Shown as **G** *in Figure 12.2, this sector receives its income from indirect business taxes, corporate income taxes, Social Security contributions, and individual income taxes.*

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Net Foreign Sector

The fourth sector of the macroeconomy is the net foreign sector. (This sector is not shown in Figure 12.2.) This sector includes all consumers and producers outside the United States. The foreign sector buys many U.S. goods and services that make up our GDP. These goods are exports and could be things like tractors, airplanes, and agricultural products, as well as services such as insurance. In return, the foreign sector supplies products to U.S. consumers. These products are imports, for example, Korean steel and Brazilian shoes. The foreign sector's purchases are called **net exports of goods and services**. *They are abbreviated as (X − M) to show the difference between exports (X) and imports (M).*

This sector does not have a specific source of income. Instead, it represents the difference between the dollar value of goods sent abroad (exports) and the dollar value of goods purchased from abroad (imports). If the two values are close, the foreign sector seems small, even when large numbers of goods and services are traded.

The Output-Expenditure Model

We can also show the consumption part of the circular flow as an algebraic formula called the **output-expenditure model**. *We can write this formula like this:*

$$GDP = C + I + G + (X − M)$$

The formula says that GDP is equal to the sum of the aggregate (combined total) demand for output by the consumer, investment, government, and net foreign sectors.

Economists use the output-expenditure model to show the macroeconomic version of total spending by all sectors of the economy.

✅ **Reading Progress Check**

Describing How does the foreign sector fit into the output-expenditure model?

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